United States
Environmental Protection
Agency

Office of Research and
Development
Washington, DC 20460

June 2005

EPA 620/R-05/006

Environmental Monitoring and Assessment Program (EMAP)

Western Streams and Rivers Statistical Summary

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Statistical Summary

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Acknowledgments

The quality of this report was greatly improved by comments from Frank McCormick (USDA Forest Service), Gail Sloane (Florida DEP), Dan McKenzie (EPA ORD), Dixon Landers (EPA ORD), Bob Ozretich (EPA ORD) and Karl Hermann (EPA Region 8). The information in this document has been funded wholly or in part by the U.S. Environmental Protection Agency under contract 68-D-01-005 to Dynamac Corporation, cooperative agreement CR831682 to Oregon State University (Herlihy and Hughes), and EPA STAR grant R-82863701 (Hawkins). It has been subjected to review by the National Health and Environmental Effects Research Laboratory and approved for publication. Approval does not signify that the contents reflect the views of the Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Introduction

This statistical summary reports data from the Environmental Monitoring and Assessment Program (EMAP) Western Pilot (EMAP-W). EMAP-W was a sample survey (or probability survey, often simply called 'random') of streams and rivers in 12 states of the western U.S. (Arizona, California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington and Wyoming), comprising the conterminous portions of EPA Regions 8, 9 and 10.

The eventual objective of EMAP-W is to assess the ecological condition of, and relative importance of stressors in, streams and rivers of the West at multiple scales. This Statistical Summary is the first step in making that assessment, in that it reports on the validated and verified, but largely uninterpreted, data collected by EMAP-W.

Field sampling was conducted from 2000 through 2004, using a combination of State, Regional and contract crews. All crews were trained in the EMAP-W sampling protocols described in detail in Peck et al. (2005a) and Peck et al. (2005b). Identical sampling methods were used in all wadeable streams, and complementary methods were used in large rivers.

The purpose of this report is to provide the reader with sufficient information to understand how EMAP-W was conducted, and how the information can be interpreted. The statistical distribution(s) of measured variables and calculated metrics are included as appendices to each report section. Details of design, sampling and data analysis are given in each of the following sections of the report:

- Design – how were the sites chosen, and what do they represent
- Quality Assurance – how did we evaluate and document the quality of the data, during data collection, database development, and data analysis
- Reference Condition – several indicators require some estimate of reference condition, or expected condition; how were these estimates made?
- Extent of Resource – what have we learned about the total length of streams and rivers (and their size categories) in the West?
- Ecological Condition – we use biological indicators to measure ecological condition:
    - Benthic Macroinvertebrates – how we constructed metrics, a Multi-Metric Index, and a Predictive Model to interpret macroinvertebrate assemblage data
    - Aquatic Vertebrates – how we constructed metrics and a Multi-Metric Index to interpret aquatic vertebrate (fish and amphibians) assemblage data
- Environmental Stressors – we use chemical, physical and biological indicators to measure the stress to which streams and rivers are exposed:
    - Water Chemistry – which variables might be considered measures of stress and why
    - Physical Habitat – indicators of 8 dimensions of stream and river habitat, and how they indicate levels of stress on aquatic organisms

- Fish Tissue Contaminants – levels of toxic contaminants that accumulate in fish tissue and are considered contributions to stress
- Invasive Riparian Plants – information on the presence/absence of selected invasive alien plants that are commonly found in riparian areas of streams and rivers, and can be considered indicators of stress to riparian areas
- Other alien species – information on the presence/absence of selected invasive fish, amphibian and macroinvertebrate species that are potential stressors to biotic integrity.

Results are presented a three different levels of geographic resolution (illustrated in Figure 1):

- West-wide (12 states)
- Three major climatic/topographic regions – Mountains, Plains and Xeric (see Table 1)
- Ten ecological regions – aggregated from Omernik Level III (Omernik 1987) ecoregions (see Table 1)

References

Omernik, J. M. 1987. Ecoregions of the conterminous United States. Annals of the Association of American Geographers **77**:118-125.

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Peck, D. V., A. T. Herlihy, B. H. Hill, R. M. Hughes, P. R. Kaufmann, D. J. Klemm, J. M. Lazorchak, F. H. McCormick, S. A. Peterson, P. L. Ringold, T. Magee, and M. R. Cappaert. 2005b. Environmental Monitoring and Assessment Program - Surface Waters Western Pilot Study: Field Operations Manual for Wadeable Streams. EPA 600/R-05/xxx, U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC.

Reporting Units

Table 1. Aggregation of Level III ecological regions for reporting of EMAP West data. Abbreviations in parentheses are shortened forms of aggregate names, used throughout this report. Numbers in parentheses are the number of probability sites in each ecoregion.

Climatic/ Topographic Regions	Aggregated Ecological Regions	Omernik Level III Ecoregion Names (number)
Mountains (MT)	Southwestern Mountains (MT-SWEST)	Arizona/New Mexico Mountains (23) Southern California Mountains (8)
	Northern Rockies (MT-NROCK)	Blue Mountains (11) Northern Rockies (15) Idaho Batholith (16) Middle Rockies (17) Canadian Rockies (41)
	Pacific Northwest (MT-PNW)	Coast Range (1) Puget Lowland (2) Willamette Valley (3) Cascades (4) Sierra Nevada (5) North Cascades (77) Klamath Mountains (78) Eastern Cascades Slopes and Foothills (8)
	Southern Rockies (MT-SROCK)	Wasatch and Uinta Mountains (19) Southern Rockies (21)
Plains (PL)	Cultivated Northern Plains (PL-NCULT)	High Plains (25) Northern Glaciated Plains (36) Western Corn Belt Plains (47) Lake Agassiz Plain (48)
	Rangeland Plains (PL-RANGE)	Southwestern Tablelands (26) Northwestern Glaciated Plains (42) Northwestern Great Plains (43) Nebraska Sand Hills (44)

Climatic/ Topographic Regions	Aggregated Ecological Regions	Omernik Level III Ecoregion Names (number)
Xeric (XE)	Northern Xeric Basins (XE-NORTH)	Columbia Plateau (10) Snake River Plain (12) Northern Basin and Range (80)
	Xeric California Lowlands (XE-CALIF)	Southern and Central California Chaparral and Oak Woodlands (6) Central California Valley (7)
	Eastern Xeric Plateaus (XE-EPLAT)	Wyoming Basin (18) Colorado Plateaus (20) Arizona/New Mexico Plateau (22)
	Southern Xeric Basins (XE-SOUTH)	Central Basin and Range (13) Mojave Basin and Range (14) Chihuahuan Deserts (24) Madrean Archipelago (79) Sonoran Basin and Range (81)

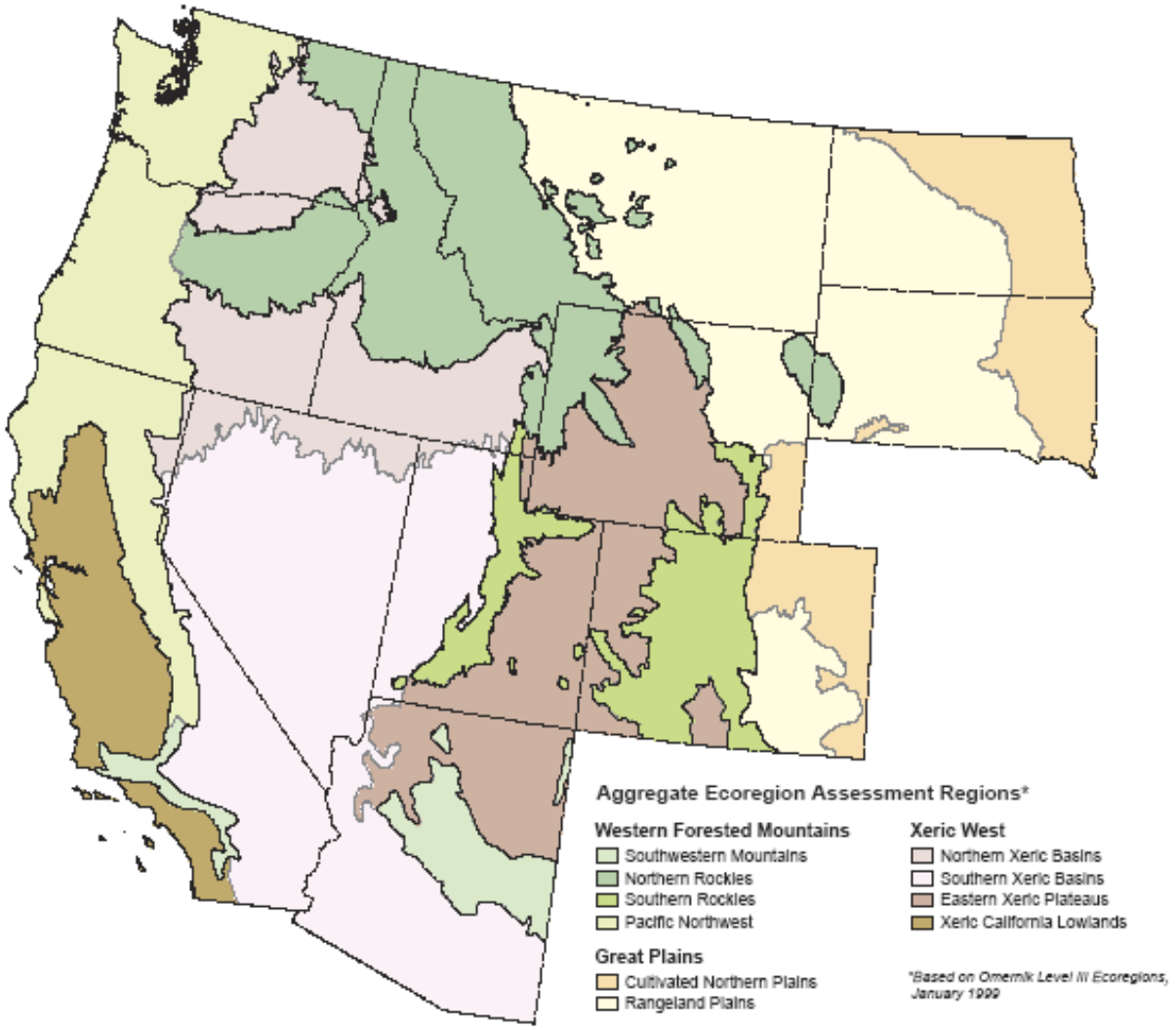


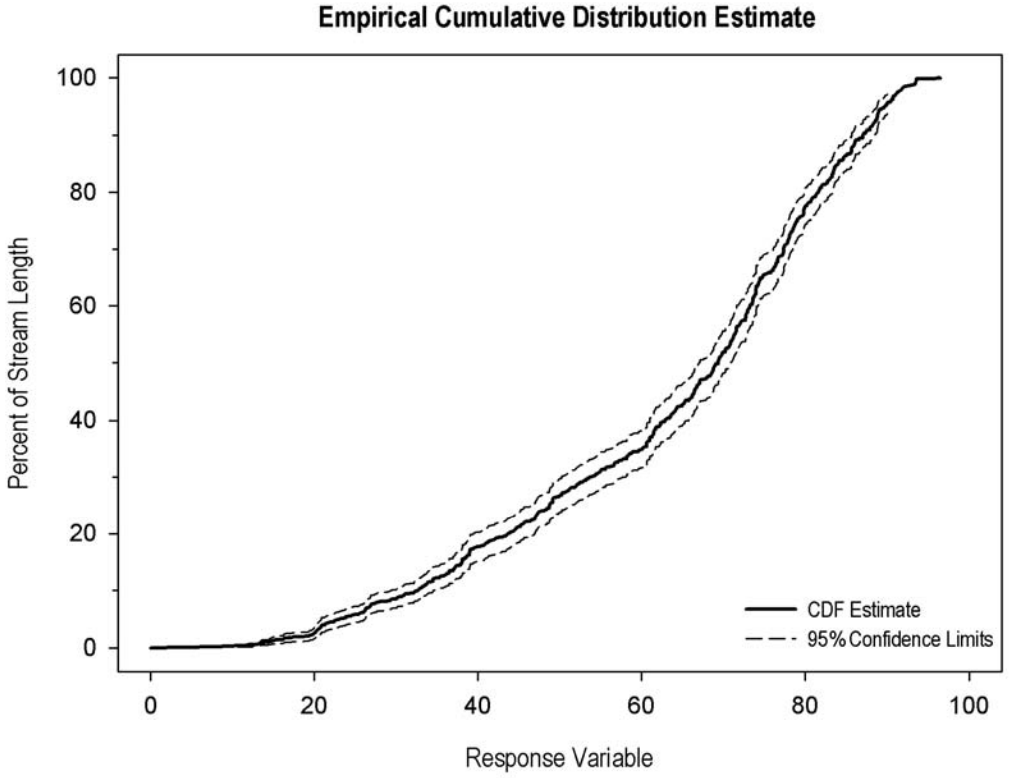
Figure 1 Map of three scales used in reporting EMAP West results: (1) All of EMAP West study area (12 states); (2) 3 major climatic/topographic regions (Mountains, Plains, Xeric); and (3) 10 aggregate ecological regions.

How to Use this Report

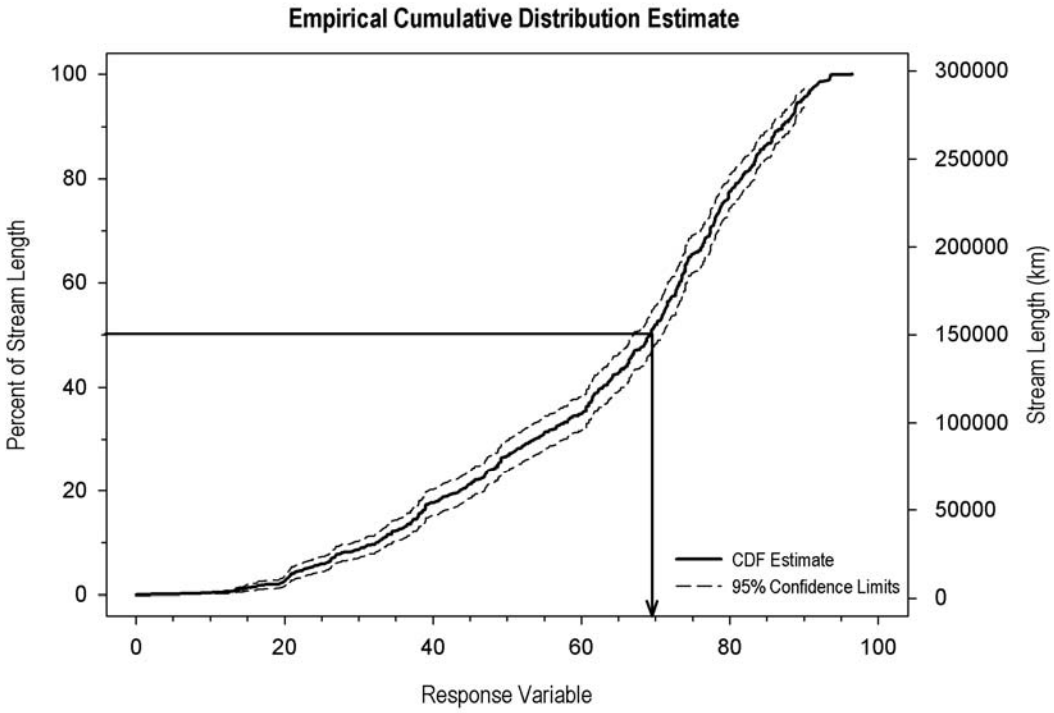
The introductory sections of this report (Design, Quality Assurance, Reference Condition) provide the background necessary for the reader to understand the design of EMAP-W. Each provides a narrative description of how EMAP-W was constructed to assure that the data could be used to estimate the ecological condition of streams and rivers throughout the West.

Each subsequent section (Extent, Ecological Condition, Stressors) presents the results of data collection. In addition to narrative descriptions of sampling methods, index and metric development, and summary statistical information, most of these sections present a series of graphs illustrating the range of values found for each variable (direct results of field or lab measurements), metric (a calculated variable, based on the raw data collected in the field or lab), or index (a composite of metrics) at three geographic scales: (1) West-wide; (2) Three climatic/topographic regions; and (3) Ten ecological regions. Each graph page consists of three elements: (1) an Empirical Cumulative Distribution estimate, (2) summary statistic estimates of percentiles, mean, and standard deviation, and (3) an empirical density estimate.

An example Empirical Cumulative Distribution (also known as cumulative frequency distributions, by convention abbreviated as CDF) is shown below with the following guide to interpretation.



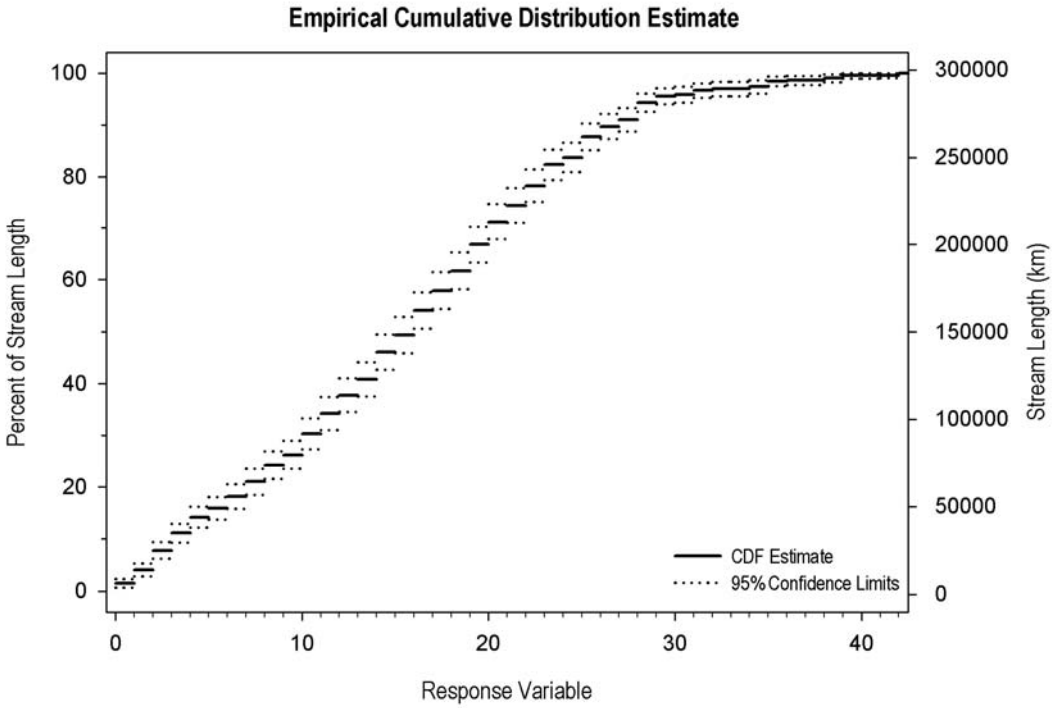
The solid line in the CDF (above) shows the entire cumulative distribution of the plotted variable in the population of streams being presented (e.g., West-wide, or in a single region). The left-hand Y axis shows the proportion of stream length with a particular characteristic, while the right-hand Y axis shows the actual stream length. The value of the plotted variable at 0% (or 0 km of stream length) is the minimum value in the region. The variable value at 100% is the maximum value in the region. At any point along the CDF, the corresponding value on the Y axis is the proportion (or length) of stream with a value of the plotted variable less than or equal to the corresponding value on the X axis. The median value, or 50th percentile, for example, is found by locating the 50% value on the left axis, moving horizontally across the graph to the CDF line, then reading down perpendicularly to the corresponding value on the X axis (see illustration, below). The median value of the variable shown in this example is ca. 70. An equally valid interpretation of this same information is that 50% of the stream length in this example region has a value of 70 or less for the plotted variable.



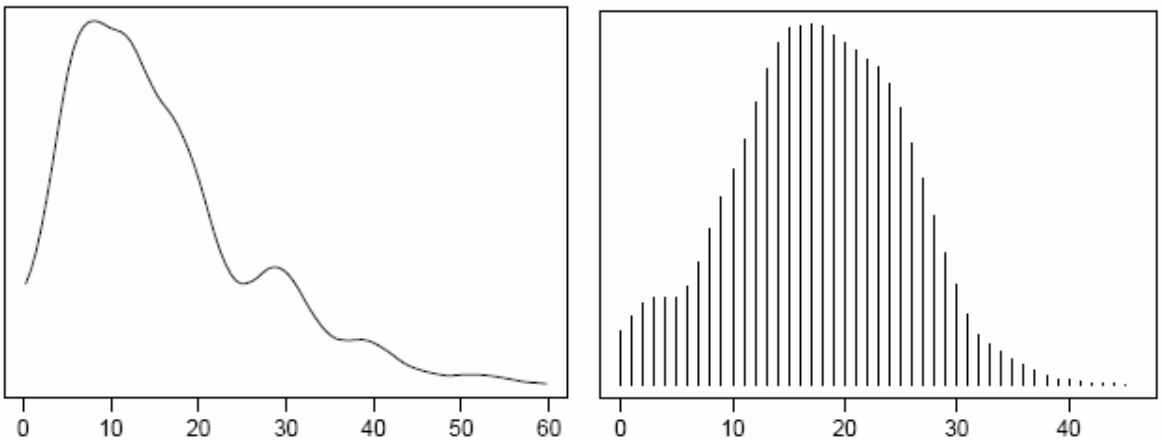
Each Empirical Cumulative Distribution also includes 95% confidence limits for the CDF. The confidence limits are only plotted for the percent of stream length between 5% and 95%. One of the strengths of the sample survey design implemented in EMAP-W is that it allows the calculation of uncertainty for any estimate we make. Using the example above, we can state with 95% confidence that the proportion of stream length with a variable value of 70 or less is between ca. 46% and 54% (the lower and upper confidence bounds around the CDF at X=70).

A similar CDF graphic is used for discrete data (e.g., the number of species in a particular taxonomic group, like EPT Taxa, where data values are integers). Its interpretation and use is the same as for continuous data. For each observed discrete

(integer) value a horizontal line segment is drawn at the estimated percent value. The confidence limits are plotted similarly.



An example Empirical Density estimate is shown below. An empirical density is similar to a smoothed histogram. For example, if the data were from a normal distribution, then the empirical density would appear "bell-shaped." The purpose for including it is to aid the reader in determining the "shape" of the distribution. It serves no other purpose. The left plot below is an example for a continuous variable. It illustrates a skewed distribution similar to a log normal distribution. The plot on the right is an example for a discrete distribution, with a shape that is more "bell-shaped". No vertical axis is given as the plots are scaled to have the total area (continuous) or total height (discrete) equal to 1.0, so that they reflect a probability distribution.



Quality Assurance

A comprehensive quality assurance (QA) program was developed and implemented for EMAP-West. The principal QA-related activities implemented for various data acquisition components of the study are presented in Table QA-1. These activities are part of a systematic approach to ensure that

1. Collection and measurement procedures were standardized among all participants in EMAP-West
2. Statistical control of measurement systems were maintained and feedback was provided so that corrective actions were taken when necessary
3. The performance of measurement systems was assessed periodically
4. Data were reviewed and validated to be sufficiently representative, accurate, precise, and complete for their intended use of developing appropriate indicators, defining reference condition, and integrating these with an appropriate probabilistic monitoring design to estimate ecological condition of streams in the western U.S.

Documentation included a “programmatic” quality assurance project plan (QAPP) developed for use with all EMAP-Surface Water research activities. Laboratory QAPPs were developed specifically for chemical analyses of stream water and fish tissue, and for benthic macroinvertebrates in fulfillment of EPA contract requirements. Field protocols and other activities were documented in two field operations manuals (one for wadeable streams, and one for non-wadeable streams and rivers), and each support laboratory developed standard operating procedures (SOPs) for laboratory methods.

QA activities associated with the survey design and population estimation analysis focused on accounting for the sampling status of all sites selected in terms of whether or not they were sampled, and if not, why not. This was necessary to provide accurate estimates of resource extent. The design included small sets of random samples, termed “partitions”. All sites in a partition that was used for field sampling had to be accounted for to allow for proper calculation of weighting factors used in population estimation. A subset of sites was selected each year as “revisit sites”. Each revisit site was attempted to be visited a total of four times (two times each in two successive years). Data from revisit sites were used as part of the metric evaluation process for various indicators, and to quantify various components of variability that affect either status or trend estimates.

All field crew personnel participated in a standardized field training session, held in different locations each year within the study area. Field trainers were experienced EMAP principal investigators from the Western Ecology Division. Each training session was 3-4 days, and included lectures, field demonstrations, and at least one practice field exercise. The field operations manual served as the basis for the field training program. Each field crew was visited at least once during the project by an experienced EPA Regional person who had completed the field training program to ensure the protocols were being implemented correctly and address questions the crew had regarding the

protocols. Field crews were offered an opportunity at the end of each year to suggest improvements to the field operations manual and other aspects of field operations.

All water and fish tissue contaminant samples were shipped from the field to a single laboratory (EPA Western Ecology Division, Corvallis, OR) for analysis. The laboratory participated in the inter-laboratory performance evaluation (PE) program developed by Environment Canada National Water Research Institute (NWRI) throughout the duration of EMAP-West. Two PE studies were conducted each year, each consisting of 20 samples representing a range of surface water types and analyte concentrations, plus 10 additional samples that were analyzed for total phosphorus. Further details of the QA activities related to water chemistry, and a summary of laboratory performance in the NWRI studies, can be found in the Water Chemistry section of this report. For analyses of metals in fish tissue contaminant samples, a Standard Reference Material (SRM; DORM-2 dogfish obtained from the National Research Council of Canada) was analyzed with every batch of samples. Results from the SRM analyses are summarized in the Fish Tissue Contaminant section of this report (Tables FT-1 and FT-2).

The principal QA activities for the physical habitat indicator included an extensive presentation on the collection of physical habitat data, including photographs of different conditions expected to be encountered. Physical habitat data from the field data forms were then subjected to a systematic, automated review process to produce validated data files of the correct structure for calculating metric variables. In addition, the accuracy of field crew identifications of invasive plants was assessed in two states (Oregon and Montana) by having a separate field crew comprised of experienced field botanists visit sites at a different time.

QA-related activities associated with the aquatic vertebrate assemblage indicator included sampling an extended sampling reach (equal to three times the normal length, or 300 times the mean channel width) at 1-2 non-wadeable sites each year. This "oversampling" effort provided additional information regarding the sufficiency of the sampling reach length in obtaining a representative sample of the aquatic vertebrate species present. To ensure the accuracy of field identifications, voucher specimens of aquatic vertebrates were obtained where allowed by scientific collecting permits and sent to the National Museum of Natural History (part of the Smithsonian Institution) for confirmation of the field identifications and archival in their permanent collection.

QA activities implemented for the benthic invertebrate assemblage indicator were focused on obtaining a sufficient sample in the field, on consistent processing of samples at the laboratory, and on taxonomy-related issues both within and among laboratories. Two invertebrate laboratories were involved in EMAP-West, and they collaborated closely on issues of taxonomic nomenclature and level of taxonomic resolution to minimize compatibility problems in the final benthic database. Taxonomic names were based on (or cross-referenced to) existing names in the Integrated Taxonomic Information System (ITIS) maintained by the U.S. Geological Survey. One or more suitable facilities will be identified for taxonomic reference specimens to be sent to for archival in permanent collections.

All of the various data components of EMAP-West were managed at the Western Ecology Division-Corvallis. A scanner based system was used to develop standardized

field data forms. Completed forms were scanned and fields the software could not recognize were presented onscreen to the operator, who either made corrections from the original field form or assigned a flag to the field for later reconciliation by a principal investigator. After initial review, the data were exported into various data files. These files, and data files from the various laboratories, were imported into a centralized Surface Water Information Management system (SWIM). Data files were verified and validated by various principal investigators prior to calculating metrics and indicator variables. The SWIM system tracked changes to files as they were updated, and provided a means for principal investigators and other project participants to access and download data files for validation or data analysis activities.

Survey Design

Description of Study Requirements

The **primary objectives** of this study are to estimate (1) the extent (length) of perennial and non-perennial streams and rivers, and (2) the condition of perennial streams and rivers in conterminous states of EPA Regions 8, 9, and 10. The twelve states included are Arizona, California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. The target population of perennial and non-perennial streams and rivers is defined by those present on the digital 1:100,000 scale U.S. Geological Survey (USGS) hydrologic maps that were incorporated into EPA's River Reach File (Version 3). All or the lower portions of the Columbia, Snake, Missouri, and Colorado Rivers are excluded. All of the Columbia River is excluded as is the Missouri River from its beginning at Three Forks. The Snake River is excluded below the Palisades Dam in Idaho to its confluence with the Columbia. The Colorado River is excluded from Eagle River until it leaves the United States.

To address the two objectives, two integrated surveys were conducted: a non-perennial survey and a perennial survey. Both surveys are used to provide information for the extent estimation objective. Only the perennial survey is used to provide information for the condition estimation objective.

Specific extent objectives are to estimate:

- Total stream and river channel length in the study region, by EPA Region, and by state.
- Total perennial stream and river channel length in the study area, by EPA Region, and by state.
- Total non-perennial stream and river channel length in the study area, by EPA Region, and by state.

Specific condition objectives are to estimate the condition of streams and rivers for the following subpopulations of perennial streams and rivers:

- All perennial streams and rivers (except the Columbia, Snake, Missouri, and Colorado) in the study area.
- All wadeable perennial streams within each of Regions 8, 9, and10 within the study area.
- All non-wadeable perennial rivers within each of Regions 8, 9, and 10 within the study area
- All wadeable perennial streams within each of the 12 states in the study area.
- All perennial streams within the Upper Missouri Basin within Region 8.
- All perennial streams within the northern California coastal drainage in Region 9.
- All perennial streams within the southern California coastal drainage in Region 9.
- All perennial streams and rivers within the Deschutes and John Day Hydrologic Units in Oregon in Region 10.
- All perennial streams and rivers within the Wenatchee Hydrologic Unit in Washington in Region 10.

- All perennial streams and rivers in the Northern Glaciated Plains (Omernik Level III ecoregions, January 1999) within North Dakota and South Dakota.
- All perennial streams and rivers in the Colorado Plateaus Ecoregion (Omernik Level III ecoregions, January 1999) within Region 8

Figure DE-1 illustrates the 12-state study region and the geographic coverage for the seven intensive study regions. For administrative reasons only, some of the intensive studies are designated as REMAP studies and others as Special studies. Operationally they are treated the same. REMAP identifies studies that are funded by the Regional EMAP project within EMAP.

In the rest of this section the term “streams” refers to both streams and rivers.

Description of the Sampling Frame

The sampling frame comes from U.S. EPA's River Reach File 3 - Alpha (RF3) and the USGS PNW River Reach File, both of which are based on digitized blue lines from 1:100,000 scale maps (Horn and Grayman, 1993). Based on prior information, it is known that RF3 incorrectly codes some stream segments. Incorrect code information occurs for (1) designating Strahler stream order; (2) delineating perennial and intermittent, (3) defining natural versus constructed channels, including newly modified channels, and (4) distinguishing irrigation return flow from irrigation delivery channels. In some cases, RF3 includes stream channels that are not actually present, due to (1) no definable channel present, (2) location is wetland/marsh with no defined channel, or (3) channel may be an impoundment. RF3 may also exclude some stream channels due to (1) mapping inconsistencies in construction of 1:100,000 maps, (2) digitization of map blue lines, or (3) inadequacy of photo information used to develop maps, e.g. heavily forested areas with low order streams. This study assumes that RF3 includes all stream channels specified by the definition of the target population. That is, if stream channels exist that are not included in RF3, they are not addressed by this study.

The sampling frame includes all RF3 stream channel segments coded as R, S, T, N, W, and U in RF3 for Regions 8 and 9, or stream channel segments coded as 412, 413, 414, 415, and 999 in Region 10. As stated above all or portions of the Columbia, Missouri, Snake, and Colorado are excluded from the sampling frame.

The sampling frame is subdivided into two major parts: (1) all RF3 stream segments coded as perennial (RF3 perennial) and (2) all RF3 stream segments coded as non-perennial, i.e., all other stream segments (RF3 non-perennial). The purpose of subdividing the sampling frame is to use one survey design for RF3 non-perennial streams and another survey design for RF3 perennial streams.

An additional concern with the sampling frame arises with rivers. Past experience has indicated that Strahler order calculated from RF3 can be incorrect for some higher order stream segments. This appears to be mainly due to “breaks” in the network as delineated by RF3, which results in middle portions of the rivers being incorrectly coded as 1st order (or other low stream orders). To alleviate this coding issue, we explicitly constructed a list of all rivers with drainage basins greater than 12,950 km^2.(5,000 mi^2). All river segments in RF3 associated with these “large rivers” are designated in the sampling frame as large rivers and are assumed to be perennial. Although it would be

desirable to validate all rivers, this was not possible within the time and resource constraints of the study. Note that no changes in the RF3 stream segments or associated codes are made. All other rivers with smaller drainage areas are included in the survey but are selected by Strahler order as coded in RF3.

Survey Design Description

The survey designs are different for the RF3 non-perennial and the RF3 perennial streams and rivers. That is, the overall survey design consists of two strata: RF3 non-perennial and RF3 perennial streams and rivers. Both strata are used for estimation of extent and only the RF3 perennial stratum is used for estimation of condition.

Omernik Level III ecoregions (revised January 1999) are aggregated into two categories: Mountainous/Humid and Arid. The purpose of the aggregation is to adjust for an expected difference in miscoding by RF3 of perennial streams and to assure that sites are selected from mountainous/humid and arid regions of a state. Definitions of the categories are given in Table DE-1 and shown in Figure DE-1.

RF3 Non-Perennial Stream Survey

The RF3 non-perennial survey is solely connected with the objectives of estimating the extent of the stream resource in the study area. The survey design is stratified by the twelve states. Within each state an unequal probability, spatially-balanced sample was selected (Stevens and Olsen, 2004). Unequal selection occurs by Strahler order categories (1^{st} , 2^{nd} , and 3^{rd} and higher) and by mountainous/humid and arid Omernik Level 3 ecoregion groups (note that these 2 aggregations of Omernik ecoregions, illustrated in Figures DE-1 and DE-2, are used only in the design of EMAP-West, and are not the same as the three climatic/topographic regions used for reporting results). Strahler 2^{nd} order streams are selected with 3 and 5 times the probability of 1^{st} order streams for arid and mountainous/humid ecoregions, respectively. Similarly, Strahler 3^{rd} and higher-order streams are selected with 6 and 20 times the probability of 1^{st} order streams for arid and mountainous/humid ecoregions, respectively. The unequal selection ensures that the number of site-evaluations on 2^{nd} and higher order streams and mountainous/humid regions is sufficient to estimate proportions of perennial and non-perennial streams that RF3 categorizes as non-perennial. Table DE-2 summarizes RF3 non-perennial streams and rivers by state, Strahler order category, and arid/humid ecoregion. Table DE-3 summarizes the number of sites by state, Strahler order category, and arid/humid ecoregion. Figure DE-2 shows their spatial distribution.

RF3 Perennial Stream Survey

The RF3 Perennial survey explicitly stratifies by the 12 states and within each state uses an unequal probability, spatially-balanced survey design (Stevens and Olsen, 2004). Unequal probability categories are defined by Strahler order categories (1st, 2nd, 3rd, >4th, and large river) and by Humid and Arid aggregated ecoregions (Table DE-1). Allocation of sites by order category gives an expected sample sizes resulting in an equal number of sites for categories 1st, 2nd, 3rd, >4th order, and 120 sites for large rivers. The expected sample size for the basic survey design is 50 sites per state, for a total of 600 unique sites to be sampled across the study region. In addition to the basic

survey design for each state, five intensive studies are incorporated in the survey design. Each EPA Region identified one or more intensive or REMAP studies. The studies are a northern California coastal special study, a southern California REMAP study, a Deschutes/John Day special study in Oregon, a Wenatchee basin REMAP study in Washington, an Upper Missouri River Basin special study, and a Colorado plains intensive study.

Table DE-4 summarizes the stream length (km) from RF3 that is coded perennial. The twelve state total stream length is 628,625 km. Prior experience in Oregon and limited information from other experiences in the West suggest that the miscoding of perennial stream channels varies by stream order and by Humid/Arid aggregated ecoregion. Landowner access denial may average approximately 20%. However, in the Central California Valley, Hall et al (1998) report approximately 18% access denial and 33%-46% no response from landowners. We combined these two sources of information to estimate the percentage of sites expected to be available for field sampling (Table DE-5). The final probability of selection is adjusted to incorporate these expected non-accessible rates (Table DE-6). For example, rather than selecting an equal number of sites by Strahler order category additional sites are selected for lower order Strahler order categories with the expectation that the final set of sampleable sites would be approximately equal.

Note that the site selection process also includes an over sample of sites that are available for use if the prior estimates do not result in the base sample meeting the sample size requirements. The over sample size was the same as the expected sample size for each state. If the over sample sites were insufficient, then additional over sample sites were selected until sufficient sampleable sites were found. Only Arizona required additional over sample sites. The over sample sites are given in a specified order to ensure that when they are added that the spatial-balance of the survey design is preserved. Stevens and Olsen (2004) describe the reverse hierarchical ordering process that makes this possible.

The five intensive study regions are incorporated by increasing the probability of selection of streams within the study region to achieve the expected sample size for that region. The same unequal probability selection is applied as for the state-wide sample. For the Upper Missouri River Basin study, the expected sample size was allocated to each of the four states in proportion to the Upper Missouri River Basin RF3 Perennial stream length that occurred in each state. This is necessary since each state is a separate stratum. Table DE-7 summarizes the expected sample size and realized sample size by state. Expected sample sizes reported are the 50 state-wide sites allocated to each state and the additional sites allocated for the five intensive studies that include parts of a state. A total of 1035 sites were planned to be sampled. Realized sample sizes reported are for the state-wide sample (assuming the intensive studies had not occurred) and the total number of sites sampled in the intensive studies (which includes state-wide sites as well as the additional intensive sites). Consequently, some sites are counted in both the state-wide and intensive realized sample size columns. The total realized sample size is the total number of unique sites sampled within a state.

In addition, the design incorporates a survey over time panel structure that allocates an equal number of samples for visits by year (2000-2003). The survey over time is intended to allocate approximately an equal number of sites to be visited each year within each state. This ensures that all four years are equally represented in the final sample. It also provided a mechanism to terminate the study early if budget reductions occurred. Each annual panel is a probability sample with the same properties as the original design except with one-fourth the sites. Consequently, any combination of the four panels is a probability sample, e.g., the study could have stopped after the first three panels were completed. Note that due to field implementation difficulties, some sites were not necessarily visited within the year planned, i.e., all panel 1 sites were not visited in year 1. All sites within each panel were visited during the study so that the resulting sites are a probability sample. No consequences are expected since most sites are visited within the year planned.

Figure DE-3 shows the spatial pattern of all sites (3228) evaluated in the study. All evaluated sites are used to estimate the extent of perennial streams. Note that some states evaluated many more sites than subsequently required for field sampling. Figure DE-4 shows the subset of sites valuated that were further investigated for potential field visits (2342) and are used in estimating condition. Figure DE-5 shows the final subset of sites that were perennial and were successfully sampled (965). Table DE-8 summarizes by state Evaluated sites, which are used for extent estimation and Used sites, which are used for condition estimation. Approximately 42% of the Used sites are non-target. Most non-target sites are non-perennial streams. The remaining non-target sites are canals, ditches, impoundments, wetlands, tidal streams or non-existent stream channels. Approximately 12% of the Used sites are sites where landowners denied access or could not be contacted to acquire access. Approximately 5% of the Used sites used could not to be physically accessed, mainly for safety reasons.

Estimates in the Statistical Summary are made for two sets of aggregated Omernik Level 3 ecoregions (Figure DE-6). Two general criteria are used to define the aggregated ecoregions: number of sites sampled and ecological similarity. Table DE-9 summarizes the number of sites by these ecoregions and Figure DE-7 shows the spatial distribution within aggregated ecoregions.

Variance Component Study

The survey design includes a plan to revisit a subset of sites. The objective is to estimate four sources of variability (see Kincaid et al. (2004) for a lake example). The sources of interest are (1) population variation: site-to-site, (2) year variation that is coherent that affects all sites, (3) site-by-year interaction: year-to-year site variation not accounted for by the common year variation across sites, and (4) residual variation: remaining variation which includes measurement error, analytical error, field crew variation, and temporal variation within the index period. The index period is the interval within a year when sampling is to be completed. A site-visit consists of a single visit to a stream site and completion of a suite of field evaluations to assess condition of the stream channel. Approximately, 10% of the total available site-visits for the study were allocated to variance component estimation. The sites selected for revisit are distributed according to Table DE-10. The sampling scheme for revisit sites is to

sample the site twice within the index period in two consecutive years, i.e., the site is visited four times. Approximately 12-13 sites were revisited each year. The four revisits at a site are necessary to estimate all four components of variation. This report does not include results for the variance component study.

Precision for Estimates

The RF3 Perennial Survey objective is the estimation of proportions of stream length with a specified characteristic, e.g., proportion of streams with a benthic macroinvertebrate IBI score less than 50. Another objective is the estimation of total stream length based on both the RF3 Perennial Survey and the RF3 Non-Perennial Survey. Although the total number of samples in the two studies is constrained by the available budget, the number of special study regions and sub-objectives of the study are not only constrained by budget decisions but also by consideration of the precision that could be expected. Approximate precision estimates for proportions can be obtained by assuming the survey designs are simple random samples. Under this condition the estimated confidence interval half-width (precision) can be estimated using procedures given by Cochran (1987) for proportions. Given the survey designs are actually based on the spatially-restricted survey designs described by Stevens and Olsen (2004), the actual precision estimates are expected to be better (smaller confidence intervals) than those stated below.

The confidence interval half-width (precision), as a percent, is determined from

$$\text{Half-width} = Z_{1-\alpha} * 100 * \text{Sqrt}[\, p(1-p)/n]$$

To calculate precision requires knowledge of p, the proportion to be estimated. However, a conservative estimate of precision can be obtained by assuming p to be 0.5, which gives the maximum variance. $Z_{1-\alpha}$ is related to the level of confidence required for the estimate. Table DE-10 gives the expected half-width of confidence intervals for selected sample sizes and two alternative true proportions.

Each state was allocated a minimum of 50 samples. If the true proportion is 20% and precision required is 95%, then the expected precision (confidence interval half-width) is ±11%. Estimates based on the base state-wide part of the RF3 Perennial survey are based on 600 sample sites. For proportions that are 50%, this results in an estimated precision of ±3-5%.

Information from a total of approximately 150 to 200 sites per state is available to calculate extent, 50 to100 from RF3 perennial survey and 100 from RF3 non-perennial survey. At 95% confidence and assuming proportion of 0.5, this gives an estimated precision of approximately 7-8% for extent estimates for each state.

Statistical Analysis of Survey Data

The study uses a stratified, spatially-balanced probability survey design with unequal probability of selection within strata. The objective is to estimate the empirical cumulative distribution (percent and stream length), percentiles, and means for stressor and condition indicators. To calculate these estimates, the statistical analysis must

incorporate the information about the survey design as well as the indicator values from the sites sampled. The purpose of this section is to describe the statistical analysis process.

The following steps are essential to the statistical analysis: (1) compiling evaluation status for each site in the study, (2) adjusting the survey design weights, (3) estimating the extent of perennial and non-perennial stream length, and (4) estimating the mean, cumulative distribution, and percentile values for all indicators. These steps are described in what follows.

The statistical analyses utilize the R statistical software (R Development Core Team 2004) and an R contributed library, psurvey.analysis (http://www.epa.gov/nheerl/arm), developed specifically for the statistical analysis of probability survey design data.

Compiling site evaluation status

Information from the site evaluation is to estimate the extent of perennial and non-perennial stream length in the study region. It is also used to estimate the extent of stream length associated with access denial by landowners and physically inaccessible streams.

Adjusting survey design weights

The survey design assigns a weight to each stream site selected for potential sampling. These weights must be used in the statistical analyses. The weights are in units of kilometers of stream length, e.g., a weight of 2.28 means that the sampled site represents 2.28 kilometers of stream length. The weights differ by State, Stralher order, and ecoregion categories used in the survey design. The initial weight assignments assume that the survey will be implemented as planned. Rarely is a design implemented exactly as planned. For example, suppose that a design has a sample size of 1,000 sites and that the decision is made to return from the field with 1,000 sites actually sampled. It may be necessary to evaluate 3,200 sites to identify 1,000 stream sites that result in a field sample. The remaining 2,200 are sites that are non-target or where landowners denied access, were physically accessible, or could not be sampled for other reasons. The initial weights are based on an assumed sample size of 1,000 rather than the actual sample size of 3,200. Consequently, the weights must be re-calculated, i.e., adjusted to account for the evaluation of 3200 stream sites rather than the initial plan to evaluate 1000 stream sites.

The study plan states that when an additional stream site is required in a state, the next stream site in the over sample list of stream sites will be used from that state. Under this provision, the weight adjustment is completed by state.

Estimating extent of stream length

Data for estimating the extent of perennial and non-perennial stream length is the evaluation status recorded for all stream sites evaluated for potential field sampling. Cochran (1987) gives the statistical procedure for estimating a total from an unequal probability sample. The local neighborhood variance estimate for the total is given by

Stevens and Olsen (2003). Both of these procedures are available in the psurvey.analysis library. In addition to study region estimates, estimates can be made by aggregated Omernik Level III ecoregions (e.g., Figure DE-1). Although an estimate can be made for any sub-region, unless the sample size is sufficiently large, the confidence intervals for the estimates may be so large that the estimate has high uncertainty.

Empirical cumulative distribution estimation

Many measured variables and calculated metrics are available for statistical analysis from the study. For this report, the mean, percentiles, and cumulative distribution for each variable and metric are estimated. Note that these estimates apply to the entire "population" of streams within each of the geographic regions reported. Since the survey design is a stratified, unequal probability design, the statistical estimation must account for the stratification and unequal probability of selection. This is done by utilizing the weights associated with each stream site. The weight represents the amount of stream length (km) that each site represents. The sum of the weights within each stratum equals the total stream length within each stratum, i.e., state. Cochran (1987) gives the equations for estimating the mean and Diaz-Ramos et al. (1996) give the equations for estimating the cumulative distribution (Estimation Methods 1 and 2). The percentiles are interpolated from the estimated cumulative distribution. The local neighborhood variance estimator described by Stevens and Olsen (2003, 2004) is used to calculate variance estimates for the mean and cumulative distribution. Confidence intervals are calculated assuming the estimates are from a normal distribution for the mean and cumulative distribution. Percentile confidence limits are interpolated from the cumulative distribution confidence limits. Plots of the empirical cumulative distribution estimates plot the entire range for the estimate but only the confidence limits for the percent of stream length between 5% and 95%. Note that the confidence limits are for the estimated percent and not for the estimated stream length. The confidence limits for stream length are wider since the total stream length must also be estimated.

Empirical density estimation

Another estimate for each measured variable or calculated metric is its empirical density. The empirical density is similar to a "smoothed" histogram for a variable. It would be "bell-shaped" if the data were similar to a sample from a normal distribution. The empirical density is estimated using averaged shifted histograms as described by Scott (1985). Scott's procedures are extended to use unequally weighted data, as arises in unequal probability surveys. Conceptually, the estimate is constructed by (1) creating a series of equal bin-size histograms that differ only in where the first bin starts. For example, if five histograms are to be averaged with a bin-size of 1 and the first bin being at 0, then the five histograms would start at 0, 0.2, 0.4, 0.6, and 0.8 keeping all bin-sizes at 1. The five histograms are then averaged and the plot constructed by connecting the average bin heights. The final density estimate is scaled so that the area under the curve is 1.

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Tables

Table DE-1 Aggregated arid and mountainous/humid ecoregions defined by Omernik Level III ecoregions (revised January 1999)

Mountainous/Humid Ecoregions	Arid Ecoregions
1. Coastal Range	6. Southern/Central Calif
2. Puget Lowland	7. Central Calif Valley
3. Willamette Valley	8. Southern Calif Mountains
4. Cascades	10. Columbia Plateau
5. Sierra Nevada	12. Snake River Basin
9. Eastern Cascades	13. Northern Basin and Rang
11. Blue Mountains	14. Mojave Basin and Range
15. Northern Rockies	18. Wyoming Basin
16. Montana Valley/foothill	20. Colorado Plateaus
17. Middle Rockies	22. Arizona/New Mexico Plateau
19. Wasatch and Uinta Mountains	23. Arizona/New Mexico Mountains
21. Southern Rockies	24. Southern Deserts
41. Canadian Rockies	25. Western High Plains
77. North Cascades	26. Southwestern Tablelands
78. Kalamath Mountains	42. Northwestern Glaciated Plains
	43. Northwestern Great Plains
	44. Nebraska Sand Hills
	46. Northern Glaciated Plains
	47. Western Corn Belt Plains
	48. Lake Agassiz Plain
	79. Madrean Archipelago
	80. Snake River High Desert
	81. Sonoran Basin and Range

Table DE-2 Stream and river length (km) in RF3 non-perennial sampling frame by state, Strahler order category, and arid/humid Omernik Level 3 ecoregions

State	Arid Ecoregions			Humid Ecoregions			Total
	1st	2nd	3rd+	1st	2nd	3rd+	
Arizona	153,949	31,093	20,046	0	0	0	205,088
California	151,865	25,939	15,608	26,044	2,630	978	223,063
Colorado	59,554	14,605	10,103	27,427	3,212	724	115,625
Idaho	49,018	6,729	3,815	19,419	1,579	527	81,087
Montana	87,964	25,588	18,270	55,217	7,033	2,096	196,168
North Dakota	58,682	15,811	9,429	0	0	0	83,922
Nevada	157,077	33,660	18,196	221	25	22	209,201
Oregon	39,820	7,552	5,053	33,992	4,413	975	91,806
South Dakota	91,255	24,791	19,347	4,318	982	353	141,046
Utah	69,209	14,939	8,879	14,938	2,031	579	110,574
Washington	28,042	5,157	1,769	15,011	1,221	291	51,492
Wyoming	81,485	18,275	12,334	14,584	1,789	659	129,127
Total	1,027,919	224,138	142,849	211,172	24,916	7,206	1,638,200

Table DE-3 Sample size for RF3 non-perennial survey by state, Strahler order category, and arid/humid Omernik Level 3 ecoregions

State	Arid Ecoregions			Humid Ecoregions			Total
	1st	2nd	3rd+	1st	2nd	3rd+	
Arizona	44	18	38	0	0	0	100
California	43	23	20	7	2	5	100
Colorado	30	19	22	11	8	10	100
Idaho	38	23	15	10	6	8	100
Montana	27	18	22	11	12	10	100
Nevada	47	35	18	0	0	0	100
North Dakota	33	35	32	0	0	0	100
Oregon	26	18	14	19	13	10	100
South Dakota	37	22	35	1	2	3	100
Utah	34	20	36	7	6	7	100
Washington	34	17	13	17	11	8	100
Wyoming	40	22	26	5	5	2	100
Total	433	270	281	88	65	63	1200

Table DE-4 Stream and river length (km) in RF3 Perennial sampling frame by state, Strahler order category, and arid/humid Omernik Level 3 ecoregions

State	Arid Ecoregions					Mountainous/Humid Ecoregions					Total
	1st	2nd	3rd	4th+	Large River	1st	2nd	3rd	4th+	Large River	
AZ	10,284	4,581	3,813	4,615	799	0	0	0	0	0	24,093
CA	23,300	6,626	5,171	5,944	925	28,892	11,622	7,211	5,525	553	95,769
CO	3,612	2,265	2,411	4,405	1,184	18,149	8,496	4,638	3,740	46	48,945
ID	11,460	4,581	3,776	4,944	1,228	36,398	13,710	6,778	4,242	615	87,732
MT	2,594	2,163	3,351	7,753	2,576	32,495	15,827	9,847	7,629	425	84,660
ND	759	1,183	2,552	7,301	1,403	0	0	0	0	0	13,197
NV	9,744	4,856	3,180	4,057	458	321	73	20	26	0	22,735
OR	3,604	1,878	1,781	3,006	657	40,898	14,985	9,506	9,063	689	86,067
SD	1,178	1,376	2,792	7,664	2,324	213	350	383	290	18	16,587
UT	7,257	2,293	2,230	3,616	927	5,973	2,965	1,788	1,128	66	28,242
WA	4,368	1,643	1,334	2,032	260	35,355	13,037	7,195	4,410	200	69,834
WY	5,812	3,508	4,052	8,354	891	14,993	6,784	3,955	2,415	0	50,764
Total	83,971	36,951	36,444	63,692	13,631	213,687	87,848	51,322	38,468	2,609	628,625

Table DE-5 Percentage of RF3 perennial stream sites expected to actually be perennial and accessible.

Strahler Order Category	Humid Ecoregion	Arid Ecoregion
1st	65%	30%
2nd	75%	50%
3rd	80%	50%
>4th	100%	90%
Validated rivers	100%	100%

Table DE-6 Unequal probability multipliers to achieve expected sample sizes.

Strahler Order Category	Humid Ecoregion	Arid Ecoregion
1st	1.55	3.33
2nd	1.33	2.00
3rd	1.25	2.00
>4th	1.00	1.10
Validated rivers	1.00	1.00

Table DE-7 Expected sample sizes by state and intensive study for the RF3 perennial survey

State	Expected Sample Size			Realized Sample Size		
	State-Wide	Intensive	Total	State-Wide	Intensive	Total
Arizona	50		50	47		47
California	50	100	150	50	132	169
Colorado	50	25	75	51	22	67
Idaho	50		50	48		48
Montana	50	87	136	49	52	69
Nevada	50		50	51		51
North Dakota	50	12	94	54	30	63
Oregon	50	100	150	61	95	146
South Dakota	50	24	102	55	74	76
Utah	50		50	55		55
Washington	50	50	100	49	55	100
Wyoming	50	37	87	49	42	75
Total	600	435	1035	619	502	966

Table DE-8 Number of sites evaluated, used, and sampled by state

State	Evaluated Sites	Used Sites				
		Total	Sampled	No access by landowner	Physically Inaccessible	Non-Target
Arizona	384	384	47	24	4	309
California	528	475	169	62	49	195
Colorado	203	125	67	22	0	36
Idaho	138	108	48	8	14	38
Montana	198	124	69	19	8	28
Nevada	208	106	51	5	2	48
North Dakota	204	151	63	4	1	83
Oregon	424	329	146	88	2	93
South Dakota	221	99	76	8	0	15
Utah	168	132	55	1	5	71
Washington	290	186	100	18	27	41
Wyoming	262	123	74	13	3	33
Total	3228	2342	965	272	115	990

Table DE-9 Number of sites sampled by aggregated Omernik Level 3 ecoregions

Aggregated Ecoregion	Evaluated for Extent	Used for Condition	Classification of Used Sites			
			Sampled	No access by landowner	Physically Inaccessible	Non-Target
Mountain	1480	1109	574	160	97	277
Plains	647	383	190	39	5	150
Xeric	1101	850	201	73	13	563
Total	3228	2342	966	272	115	990
MT-NRock	555	394	210	67	18	99
MT-PNW	577	437	227	67	57	86
MT-SRock	157	96	60	7	4	24
MT-SWest	191	182	77	19	18	68
PL- NCultivated	230	123	66	8	1	49
PL-Range	417	260	124	31	4	101
XE-CALIF	189	168	34	19	5	110
XE-EPLAT	300	225	71	13	2	139
XE-NORTH	202	138	49	28	3	58
XE-SOUTH	410	319	47	13	3	256
Total	3228	2342	965	272	115	990

Table DE-10 Number of site revisits by Strahler order category

Strahler Order Category	Number of First-Visit Sites			Number of Site Revisits	Total Site-visits
	Humid	Arid	Total		
1st	4	4	8	24	32
2nd	4	4	8	24	32
3rd	4	4	8	24	32
>4th	4	4	8	24	32
Large rivers	4	4	8	24	32
Total	20	20	40	120	160

Table DE-11 Confidence interval half-widths for 90 and 95 percent confidence intervals for sample sizes of 25, 50, 100, 400, and 1000 for two assumed true proportions.

Assumed True Proportion (%)	90% Confidence Level					95% Confidence Level				
	n=25	n=50	n=100	n=400	n=1000	n=25	n=50	n=100	n=400	n=1000
20%	±13	±9	±7	±3	±2	±16	±11	±8	±4	±3
50%	±17	±12	±8	±4	±3	±20	±13	±10	±5	±3

Figures

Figure DE-1. EMAP-West study area, with special interest areas highlighted. Areas shaded grey are mountainous/humid aggregated ecoregions; arid ecoregion areas are unshaded.

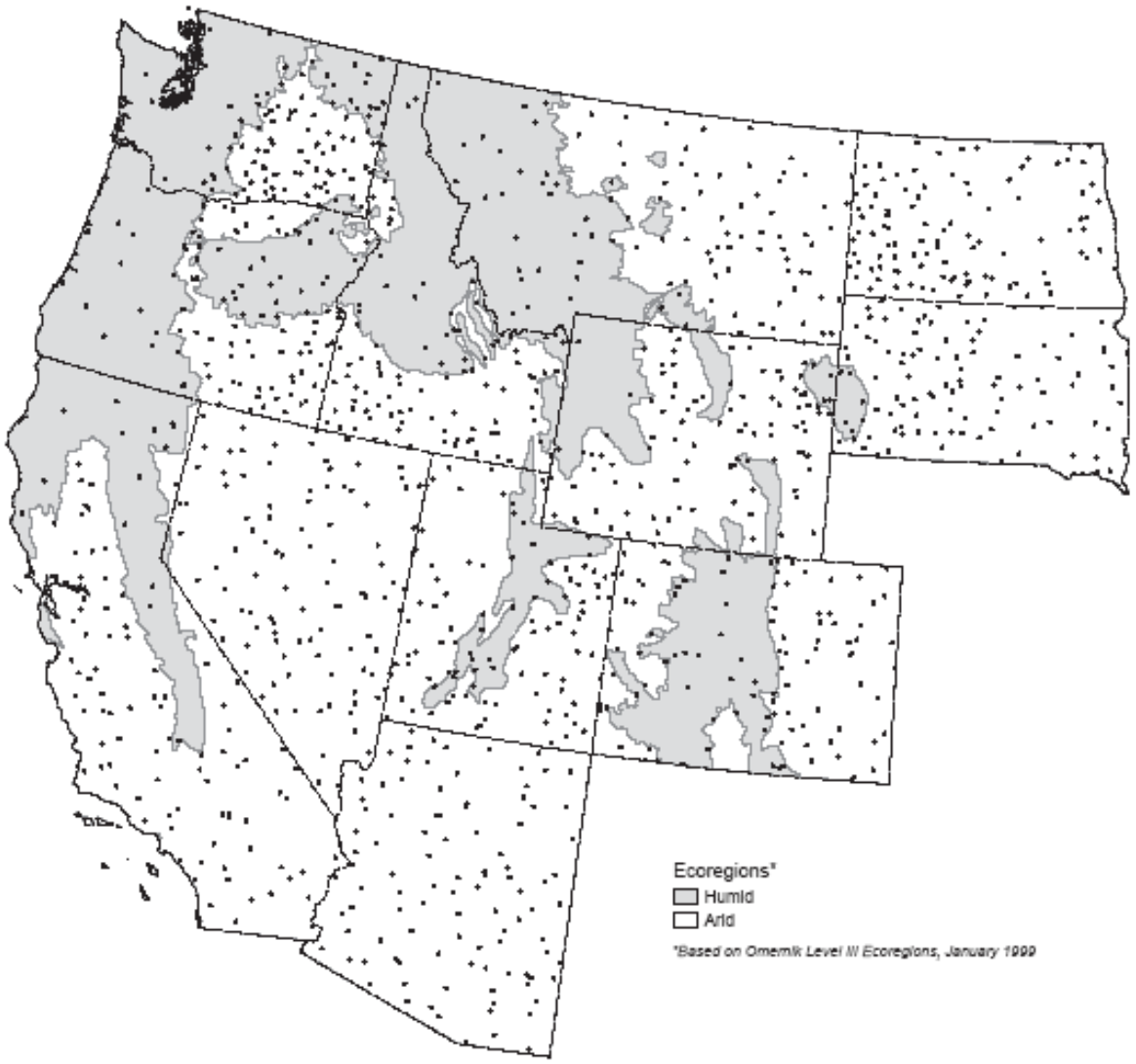

Figure DE-2. EMAP-West study area, with location of all evaluated non-perennial sites (n = 1200).

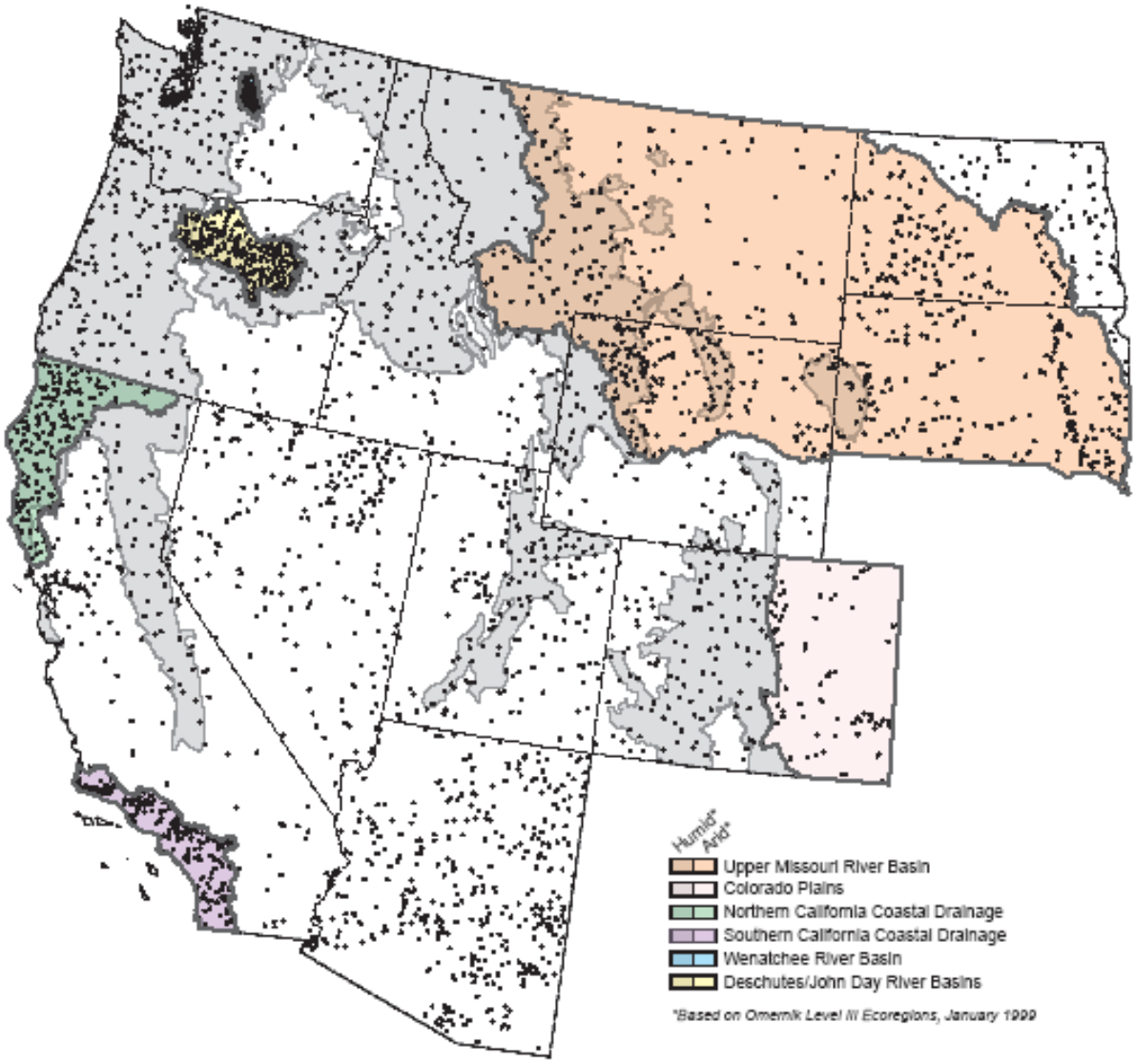

Figure DE-3. EMAP-West study area, with location of all evaluated perennial sites (n = 3228).

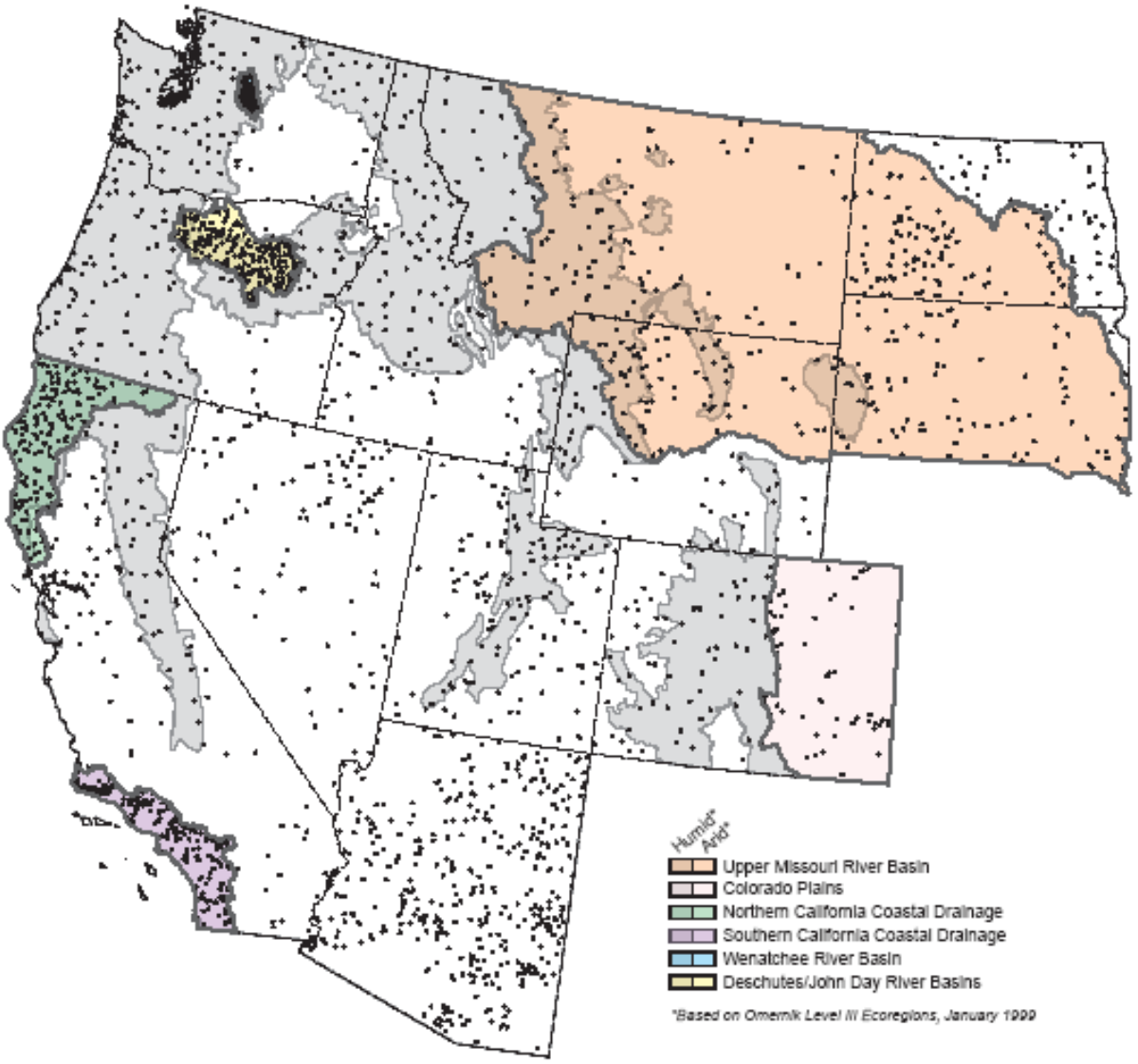

Figure DE-4. EMAP-West study area, with location of perennial sites used (listed as candidate sampling sites for field crews) in the design (n = 2342).

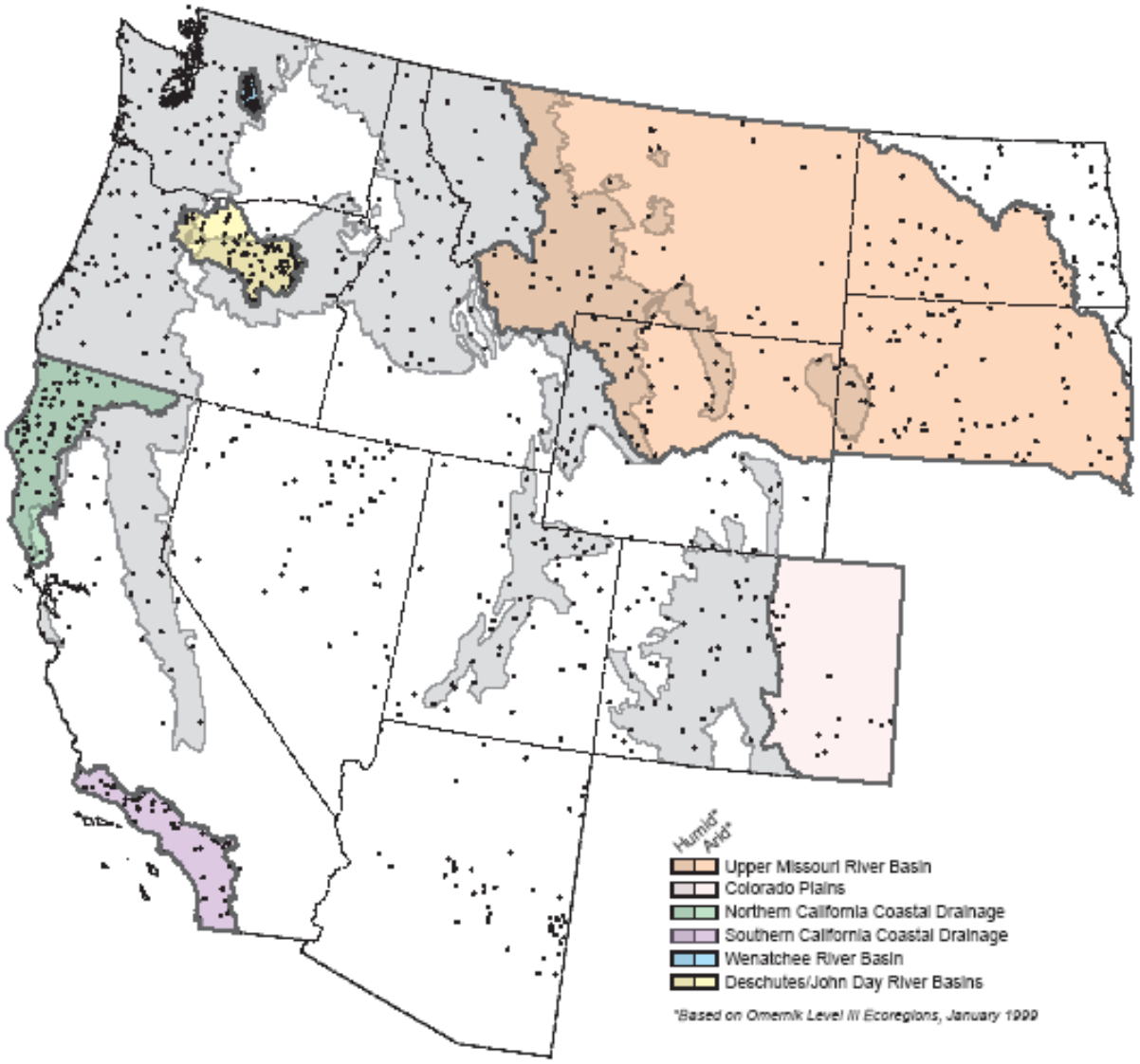

Figure DE-5. EMAP-West study area, with location of all sampled perennial sites (n = 965; years 2000-2004).

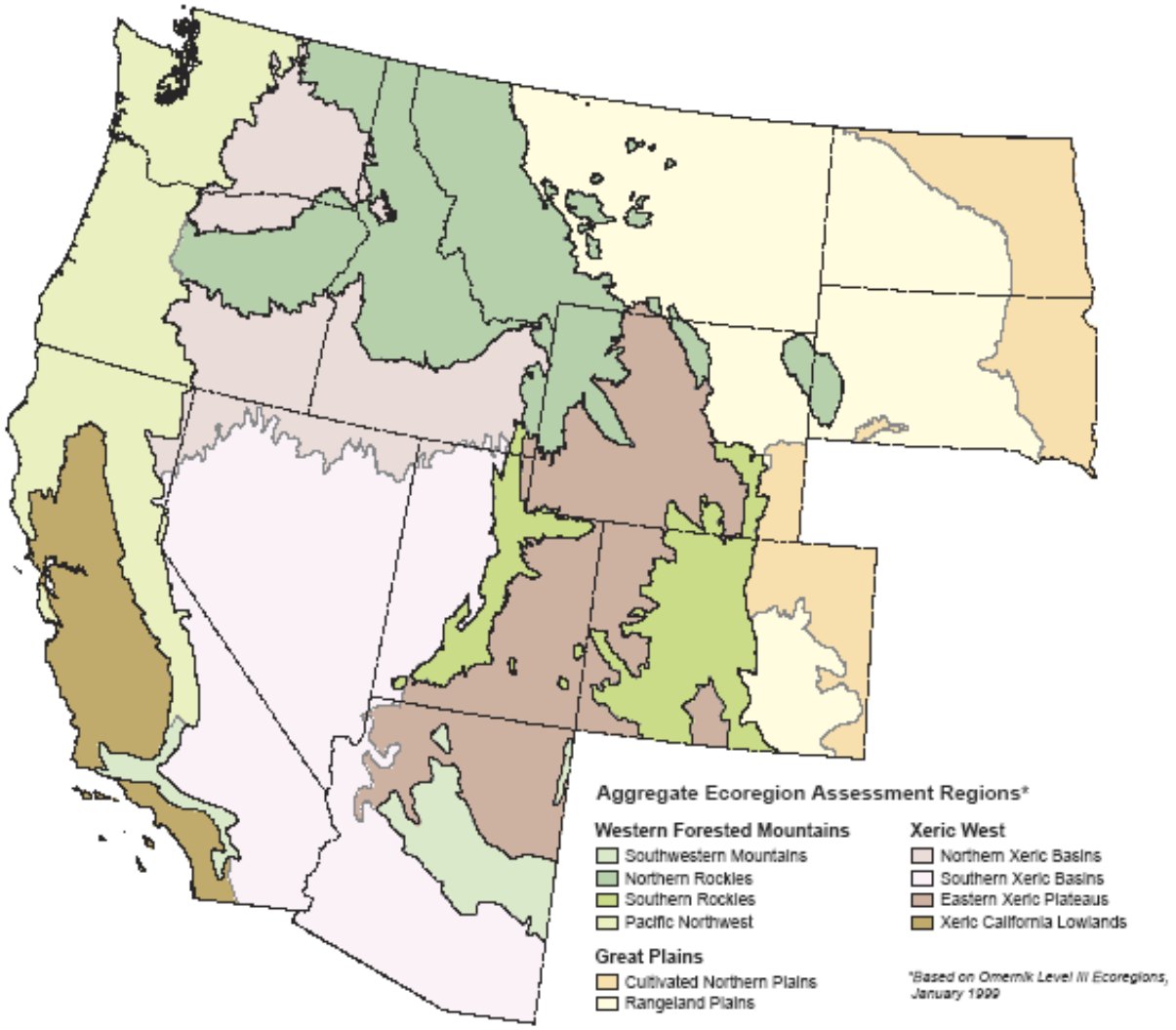

Figure DE-6 Map of three scales used in reporting EMAP West results: (1) All of EMAP West study area (12 states); (2) 3 major climatic/topographic regions (Mountains, Plains, Xeric); and (3) 10 aggregate ecological regions.

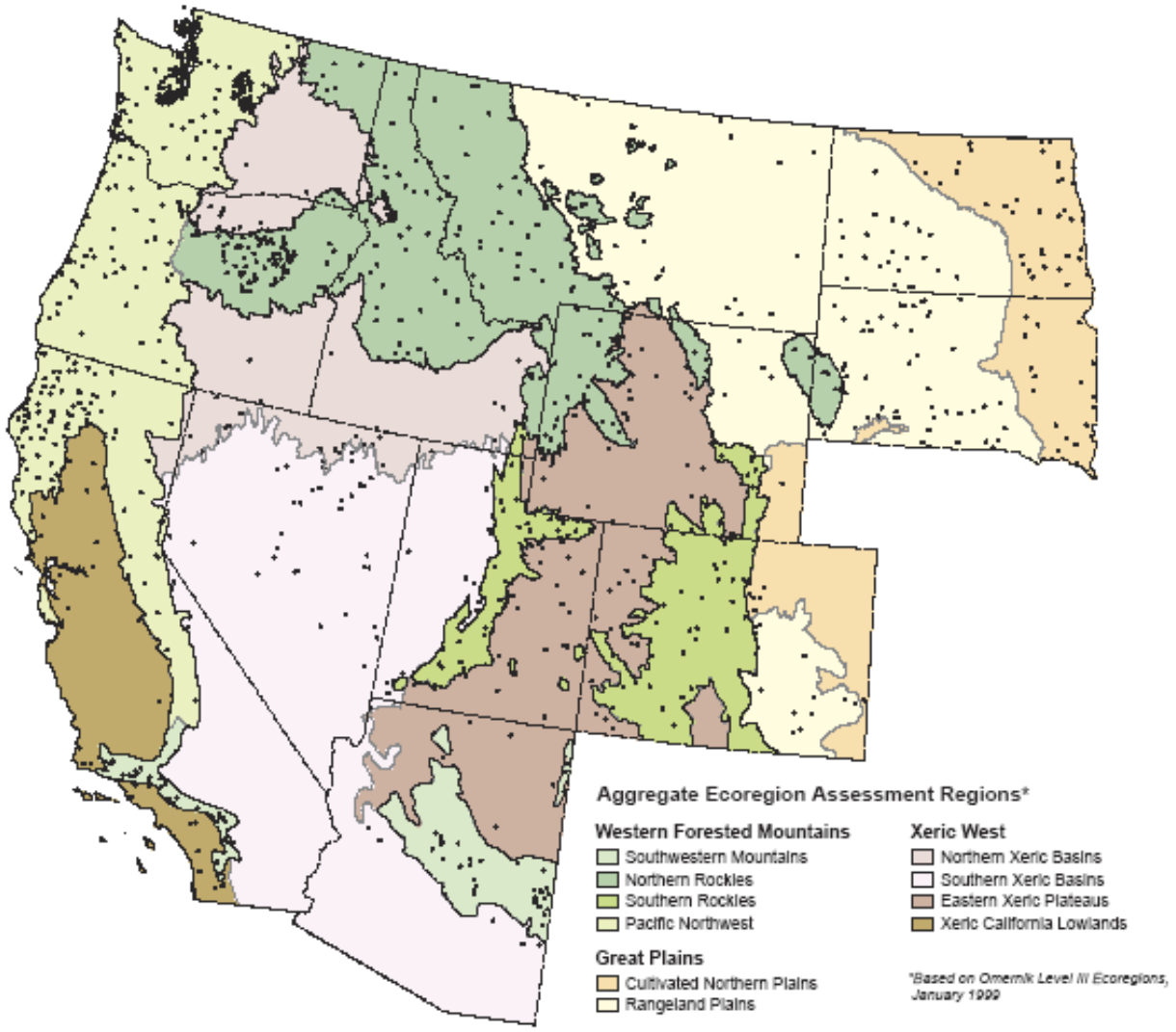

Figure DE-7. EMAP-West study area, with all scales of reporting units (West-wide, 3 climatic/topographic regions, 10 aggregate ecoregions) and locations sampled perennial sites.

Reference Condition

While the primary purpose of this report is to show the statistical distribution of key ecological variables (ecological condition indices and stressors) at multiple scales, development of many of the metrics and indices we report on require reference condition information in their development and interpretation. For example, the metrics and multimetric indices we report for macroinvertebrate and fish assemblages use sets of least-disturbed (reference) and most-disturbed sites to evaluate those metrics and indices. The predictive (O/E) modeling we report for macro-invertebrates is based solely on data from reference sites.

It is beyond the scope of this report to provide much background on the science and concept of reference condition; comprehensive discussions of the concept can be found in numerous published sources (Hughes 1995, Stoddard et al. In Press (2005)). Reference Condition represents natural or pre-Columbian conditions in the USA; reference sites represent the least-disturbed sites available, which in many cases are markedly disturbed. For the purposes of this report, it is important for the reader to know that we used least-disturbed sites chosen through the methods described below to represent the best (= least disturbed) ecological condition in each of the 10 ecological regions of the West (Figure RC-1). Inherent in this definition is the characteristic that reference conditions for one part of the West (e.g., any of the mountainous ecological regions) may be significantly less disturbed than those in another (e.g., either of the plains ecological regions). For example, Whittier et al. (In Press) reported that the most-disturbed sites in the xeric and mountain regions were disturbed to a similar degree as the least-disturbed sites in the plains.

Candidate reference sites were selected from three different sources:

- Hand-picked sites from State or other monitoring programs, often chosen through best-professional judgment (BPJ), and sampled by EMAP crews with EMAP protocols.
- EMAP probability sites that passed numerous chemical and physical criteria (below)
- Hand-picked sites identified through a GIS screening process (described in (Lattin et al. 2005, Lattin In Preparation), verified through BPJ, and sampled by EMAP crews with EMAP protocols.

In each case, candidate reference sites were carefully evaluated to assure that they represented the least-disturbed set of sites in their ecological region. This evaluation was carried out in three ways. Two sets of filtering criteria were developed according to the description in (Waite et al. 2000); the criteria were developed independently (by two individuals: Alan Herlihy and John Stoddard) and are listed in Tables RC-1 and RC-2. Sites were required to pass a series of chemical and physical criteria, developed by ecological region, to be considered least-disturbed.

A variant on the filtering approach, the goal of which is to identify least-disturbed sites along key environmental gradients, was also used (Whittier et al. In Press). In the Whittier approach, sites were evaluated relative to their position along natural

gradients—for example, those with the lowest total phosphorus concentrations relative to their elevation and stream size are more likely to be identified as reference sites. The physical and chemical variables used in each aggregate ecoregion, as well as the environmental gradients for each region, are listed in Table RC-3.

The three approaches yielded slightly different lists of candidate reference sites. To resolve these differences each candidate was evaluated according to how it was rated by each method. If all three methods agreed that a given site was in least-disturbed condition for its region, the site became a reference site for further analyses. If two of three methods identified a site as least disturbed, the data were re-evaluated to determine which criterion was violated. In general, sites were listed as least disturbed if they violated only one criterion (for one method), particularly if the only violation was for a catchment-scale variable (e.g., human landuse) versus a site-scale variable.

An analogous approach (implementing all three methods, and a resolution of differences) was used to identify the most-disturbed sites in each region. Criteria used to filter most-disturbed sites by the Herlihy and Stoddard approaches are listed in Tables RC-4 and RC-5. The Whittier method is very similar to the approach described earlier for least-disturbed sites, except that the most-disturbed sites (relative to their position along environmental gradients) are identified. Candidate sites that were identified as neither least-disturbed nor most-disturbed were put into an intermediate disturbance category.

In the case of benthic macroinvertebrates, we also used a large reference site database created by researchers at Utah State University (as part of the U.S. EPA STAR grant program, and through funding from the U.S. Forest Service), referred to here as STAR/R5BIO sites (Hawkins et al. 2003). Macroinvertebrate sampling methods for these sites were identical to the targeted riffle sampling method described for EMAP sites in Peck et al. (2005). The STAR/R5BIO sites were selected through a best professional judgment process, and carefully evaluated in the field by trained crews. These sites lacked sufficient data to implement any of the three EMAP approaches to identify least-, intermediate-, and most-disturbed sites. Instead, we relied on the rankings made by the STAR/R5BIO field crews—each site was assigned to one of four disturbance categories (“Pristine”, Minimally Disturbed, Least Disturbed, Disturbed; Hawkins et al. 2003; Table RC-6). In this report, we used all four categories of sites in the Plains ecoregions, but eliminated the Disturbed sites from the reference site list in the Mountains and Xeric ecoregions.

The results of the various efforts to identify least-disturbed sites in the West are shown in Figure RC-1. Approximately 230 reference sites were available for use in all indicator analyses; for the macroinvertebrates, an additional ca. 500 sites were available from the STAR/R5BIO programs, for a total of 730 reference sites.

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Tables

Table RC-1 Criteria used by Alan Herlihy to identify least-disturbed sites in each of 10 ecological regions of the West

Herlihy Criteria:	Total Phosphorus (µg/L)	Total Nitrogen (µg/L)	Chloride (µeq/L)	Sulfate (µeq/L)	pH	Turbidity (NTUs)	Riparian Disturbance (W1_HALL)	% Fines	Canopy Density (XCDENBK)
MT-PNW	<25	<750	<200	<200	<9		<0.5	<15%	>50%
MT-NROCK	<25	<750	<200	<200	<9		<0.5	<15%	>50%
NSROCK	<25	<750	<200	<200	<9		<1.0	<15%	>50%
MT-SWEST	<50	<750	<300		<9		<0.5	<15%	>50%
PL-RANGE	<150	<4500	<1000		<9	<50	<2.0	<90%	>25%
PL-NCULT	<150	<4500	<1000		<9	<50	<2.0	<90%	>25%
XE-CALIF	<50	<1500	<1000		<9	<25	<1.5	<50%	>50%
XE-NORTH	<50	<1500	<1000		<9	<25	<1.5	<50%	>50%
XE-SOUTH	<50	<1500	<1000		<9	<25	<1.5	<50%	>50%
XE-EPLAT	<50	<1500	<1000		<9	<25	<1.5	<50%	>50%

Table RC-2 Criteria used by John Stoddard to identify least-disturbed sites in each of 10 ecological regions of the West

Stoddard Criteria:	Total Phosphorus (µg/L)	Total Nitrogen (µg/L)	Chloride (µeq/L)	Sulfate (µeq/L)	pH	Turbidity NTUs	Riparian Disturbance (W1_HALL)	Relative Bed Stability (LRBS_ BW5)	Canopy Density (XCDENBK) or mean RBP Habitat (RH_XMET)
Region:									
MT-PNW	<25	<750	<200	<200	<9		<0.5	>-2.0	XCDENBK >50%
MT-NROCK	<25	<750	<200	<200	<9		<0.5	>-2.0	XCDENBK >50%
NSROCK	<25	<750	<200	<200	<9		<1.0	>-2.0	XCDENBK >50%
MT-SWEST	<50	<750	<300		<9		<0.5	>-2.0	XCDENBK >50%
PL-RANGE	<100	<1000	<1000		<9	<50		>-2.5	RH_XMET>12
PL-NCULT	<200	<2000	<1000		<9	<50		>-3.5	RH_XMET>12
XE-CALIF	<50	<1000	<1000	<2000	<9	<25	<1.5	>-2.0	
XE-NORTH	<50	<1500	<1000	<10000	<9	<25	<1.5	>-2.0	
XE-SOUTH	<50	<1500	<1000	<10000	<9	<25	<1.5	>-2.0	
XE-EPLAT	<50	<1500	<1000	<10000	<9	<25	<1.5	>-2.0	

Table RC-3 Variables used in Whittier ranking approach to identifying least-disturbed and most-disturbed sites in 3 aggregate ecological regions.

	Mountains	Plains	Xeric
Natural Gradients:	Elevation Reach Slope Stream Size	Longitude Elevation	Elevation Reach Slope Stream Size
Chemical Variables:			
Total Phosphorus	X	X	
Total Nitrogen	X	X	X
Turbidity	X	X	X
Chloride	X		X
Sulfate			X
DOC		X	X
Habitat Variables:			
% Fines	X	X	X
Riparian Disturbance	X	X	X
Natural Fish Cover	X	X	X
Riparian Vegetation	X	X	X
Catchment Variables:			
Road Density	X	X	X
Population Density	X	X	X
% Urban	X	X	X
% Agriculture	X	X	X

Table RC-4 Criteria used by Alan Herlihy to identify most-disturbed sites in each of 10 ecological regions of the West

Herlihy Criteria:	Total Phosphorus	Total Nitrogen	Chloride	Sulfate	pH	Turbidity	Riparian Disturbance (W1_HALL)	% Fines	Canopy Density (XCDENBK)
MT-PNW	>100	>1500	>1000	>1000	<6	>10	>3.0	>50%	<10%
MT-NROCK	>100	>1500	>1000	>1000	<6	>10	>3.0	>50%	<10%
NSROCK	>100	>1500	>1000	>1000	<6	>10	>3.0	>50%	<10%
MT-SWEST	>100	>1500	>1000	>1000	<6	>10	>3.0	>50%	<10%
PL-RANGE	>500	>10000	>5000		<6	>100	>3.0	>99%	<5%
PL-NCULT	>500	>10000	>5000		<6	>100	>3.0	>99%	<5%
XE-CALIF	>500	>10000	>5000	>10000	<6	>75	>3.0	>95%	<10%
XE-NORTH	>150	>5000	>5000		<6	>75	>3.0	>90%	<10%
XE-SOUTH	>150	>5000	>5000		<6	>75	>3.0	>90%	<10%
XE-EPLAT	>150	>5000	>5000		<6	>75	>3.0	>90%	<10%

Table RC-5 Criteria used by John Stoddard to identify most-disturbed sites in each of 10 ecological regions of the West

Stoddard Criteria:	Total Phosphorus	Total Nitrogen	Chloride	Sulfate	pH	Turbidity	Riparian Disturbance (W1_HALL)	Relative Bed Stability (LRBS_BW5)	Mean RBP Habitat (RH_XMET)
Region:									
MT-PNW	>200	>1000	>1000	>1000	>9	>50	>3.0	<-3.0	<6
MT-NROCK	>200	>1000	>1000	>1000	>9	>50	>3.0	<-2.0	<6
NSROCK	>200	>1000	>1000	>1000	>9	>50	>3.0	<-3.0	<6
MT-SWEST	>200	>1000	>1000		>9	>50	>3.0	<-2.0	<6
PL-RANGE	>900	>3000	>3000		>9	>200	>3.0	<-4.0	<6
PL-NCULT	>900	>4000	>2750		>9	>100	>3.0		<6
XE-CALIF	>300	>4000	>2500	>15000	>9	>50	>3.0	<-2.8	<6
XE-NORTH	>300	>4000	>2500	>15000	>9	>50	>3.0	<-2.8	<6
XE-SOUTH	>300	>4000	>2500	>15000	>9	>50	>3.0	<-2.8	<6
XE-EPLAT	>300	>4000	>2500	>15000	>9	>50	>3.0	<-2.8	<6

Table RC-6 Variables used in STAR/R5BIO approach to screen reference sites. Site ranks were reduced by one class if Lattin's orthophoto/GIS screening indicated watershed-wide disturbance.

Variables	"Pristine"	Minimally-disturbed	Least-disturbed	Disturbed, but best in wide area
Riparian Vegetative Cover	>95%	85-95%	75-85%	<75%
Hillslope Erosion	0	Some, local	Obvious, some stream deposition	Evident deposition; alters stream flow
Riparian Livestock Browsing	0-5%	5-25%	25-50%	>50%
Stream Incision	0	Old, not vertical	Deep, new floodplain	Deep, active
Bank Erosion	0-5%	5-15%	15-35%	>35%

Figures

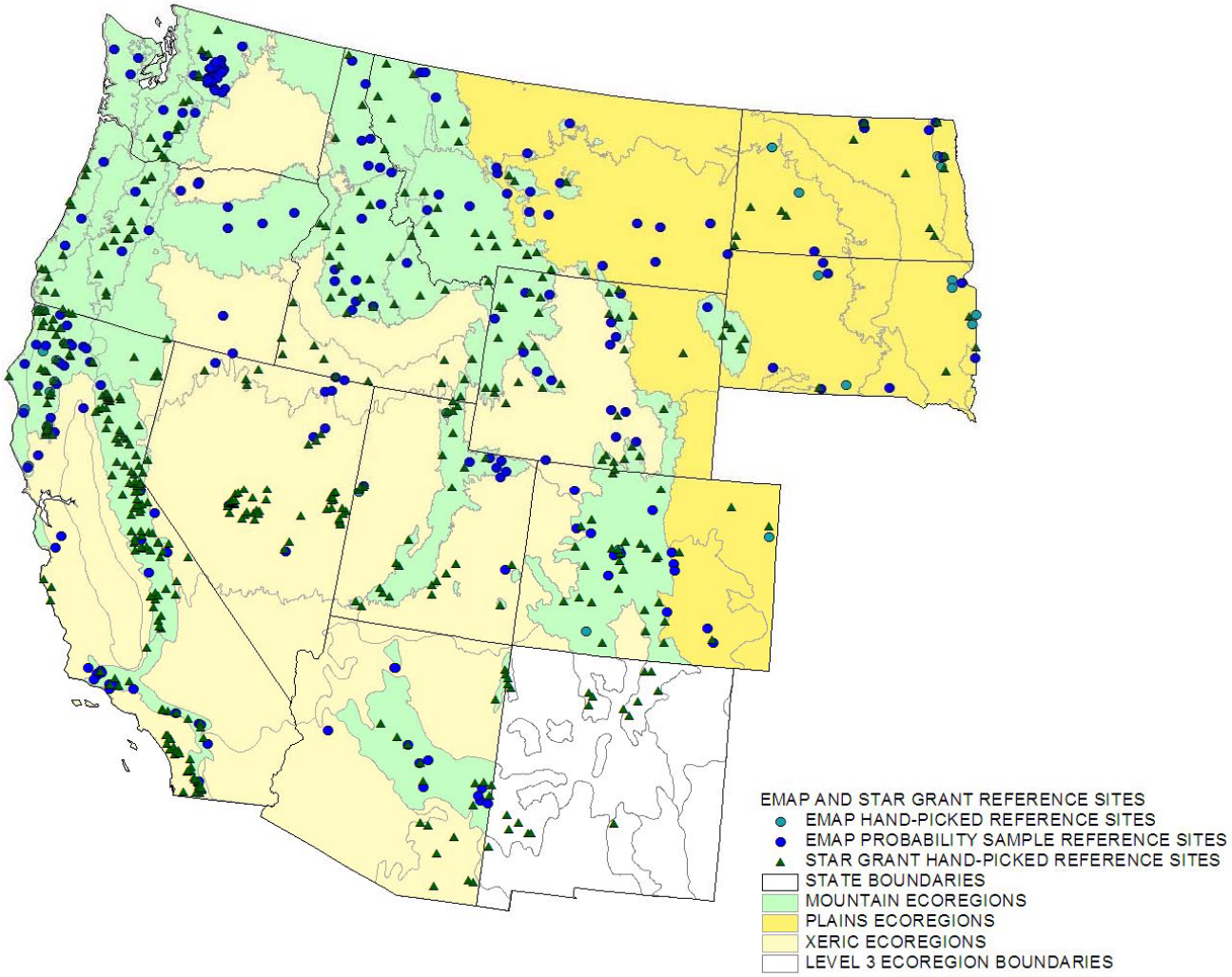

Figure RC-1 Location of EMAP and STAR/R5BIO reference sites resulting from EMAP efforts to identify least-disturbed sites across the West

Extent of Resource

Methods

For both the non-perennial and perennial surveys, the process to evaluate candidate sites selected by the survey design was the same. For each site, three basic questions were addressed to determine if a site met the criteria defined for the target population:

- Is there a stream channel present at the site coordinates?
- If a channel is present, is the flow perennial (i.e., believed to contain water all year in most years)?

The site evaluation was conducted independently of any information contained in RF3, using standardized procedures and data recording forms. The procedures allowed for various approaches to obtain the information, including maps, photos, publications, local contacts, and locally developed GIS coverages. In some cases, a field visit to a site was conducted to acquire or confirm the information. Different individuals or groups conducted site evaluations for each State; each group determined the best approach to use in acquiring the necessary information.

The results of the site evaluation were used to determine the status of the sites in the non-perennial survey. For the perennial survey, the site evaluation exercise also served to identify candidate field sampling sites. The status of candidate sites in the perennial survey was refined through reconnaissance visits conducted before sampling, and/or actual sampling visits.

For analysis, each site was classified into one of the "status" classes listed in Table EX-1. Target sites were those that met the explicit criteria defined for the target population (see "Description of Study Requirements" in Design section). Some target sites could not be sampled because of safety concerns, physical barriers that prevent access, or because permission to access the site was denied. Sites that are inaccessible or where permission to sample was denied represent part of the target population that cannot be assessed for ecological condition. Nontarget sites included sites on non-perennial streams, map errors (no stream channel at coordinates) or sites with perennial flow but which were not natural freshwater stream channels (e.g., impoundments, wetlands, tidally influenced, artificial canals or pipelines). For the non-perennial survey, two target classes and two non-target classes were used. Additional target classes were not used since the primary purpose of this survey was simply to identify the potential length of stream that was evaluated as having perennial flow, and also would have required in many cases the additional time and expense of a field visit. For the perennial survey, four target classes and one non-target class were used. Target sites were either confirmed as perennial, or presumed to be perennial in the absence of evidence to the contrary, and included sites that were inaccessible for field sampling and sites where access was denied. Non-target sites included non-perennial sites, perennial sites that were not streams, and map errors (no water at the site coordinates).

Initial weights computed for each site as part of the survey design process for selecting sites need adjustment prior to analysis so that they sum to the appropriate sampling

frame length derived from RF3 (Tables DE-2, DE-4; also see “Adjusting survey design weights” in Design section). Extent estimates were based on all sites that were evaluated (including those not considered later for field sampling). Sites that were included as both statewide sites and intensive studies (see Table DE-7) were included as part of the intensive study for the purpose of weight adjustment. Adjusted weights were calculated as:

$$w_{adj} = w_{init} \times \left(\frac{\sum_{s=1}^{S} L_{RF3}}{\sum_{n=1}^{N} w_{init}} \right)$$

where:

w_{adj} = adjusted site weight

w_{init} = initial site weight

$\sum_{s=1}^{S} L_{RF3}$ = Stream length in RF3-based sampling frame for study, summed over strata (=states) when study area included more than one state

$\sum_{n=1}^{N} w_{init}$ = Sum of initial weights of all sites in study

Six different adjusted weights were calculated to meet requirements for different types of estimates or for different indicators.

WGT_NONP	Used to estimate extent in non-perennial survey. Includes all sites.
WGT_EXT	Used to estimate extent in perennial survey; includes all sites that were evaluated.
WGT_COND	Used to estimate condition for benthos, fish, chemistry, and habitat indicators. Includes all sites in partition groups required for field sampling and all panel years (0-3).
WGT_INVP	Used to estimate condition for the invasive plant indicator. Includes all sites in partition groups required for field sampling in panel years 1-3.
WGT_FTIS	Used to estimate condition for fish tissue mercury indicator. Includes all sites in partition groups required for field sampling in panel years 0-2.
WGT_FTIS2	Used to estimate condition for fish tissue metals indicator. Includes all sites in partition groups required for field sampling in panel years 0-1.

For the non-perennial survey, a single weight adjustment was needed. For the perennial survey, six separate adjustment calculations were required for the different study components (Statewide, Upper Missouri Basin, N. California, S. California, Deschutes-John Day Basin, and Wenatchee Basin). Adjusted weights were computed using the Statistical Analysis System (SAS). Length estimation for both the non-perennial and perennial surveys was done using version 2.0.1 of the R statistical software (R Development Core Team 2004) and the cat.analysis function from version 2.5.1 of an R contributed library, psurvey.analysis. The output from this function was the estimated stream length represented in each status class. Precision was estimated as the 95% confidence interval as calculated using the local variance estimation procedure developed by Stevens and Olsen (2003).

Extent Estimates for Non-perennial and Perennial Surveys

Length estimates from both non-perennial and perennial surveys for the entire study area are presented in Table EX-2. One of the assumptions of EMAP-West is that the sampling frame derived from RF3 includes all stream channels specified by the definition of the target population. Approximately 113,600 km (7%) from the non-perennial survey sampling frame was evaluated as perennial and target. This length is not represented in the target population, and results in an underestimate of the length of the target population equal to about 18% of the total frame length for the perennial survey (628,625 km).

Non-target sites (resulting from coding errors or recent changes in the landscape) in the perennial survey sample frame represent an overestimate of the target population length. Approximately 186,000 km (30%) of the perennial survey sampling frame length was determined to be non-target. These sites also represent a “contamination” of the sampling frame that require additional reconnaissance to determine their target status, and potentially result in wasted time and costs associated with field visits that yield no samples or data.

As described in the Design section, unequal probability sampling was based in part on prior experience with the RF3 sampling frame and potential errors. To obtain some indication of the location and types of streams that were misclassified in both the non-perennial and perennial surveys, sites were plotted on a map that included state boundaries and the “arid” and “humid” ecoregion groups, and some indication of stream order. These plots are presented in Figure EX-1. Non-perennial sites classified as potential target population sites tended to be lower order streams in humid ecoregions or larger streams in arid ecoregions; no patterns by state boundaries were evident. Perennial survey sites classified as non-perennial sites tended to be smaller order streams in humid ecoregions and larger streams in arid ecoregions, which might be an indication of loss of water resources since the information used in RF3 to classify the site was produced. Arizona and North Dakota appear to have much higher numbers of misclassified perennial survey sites than other states, suggesting that differences in photointerpretation or quality of aerial photographs used to develop the maps on which RF3 is based on might also be a factor.

The results of the two surveys suggest that improvements in the sampling frame would be worthwhile. Sites coded as non-perennial in RF3 should be considered for inclusion,

given the estimated extent of potential target sites. Using the spatial distribution of misclassified sites (Figure EX-1) and information acquired from the site evaluation exercise and field sampling, it may be possible to identify areas and/or stream types that seem to be prone to misclassification and possible causes. This information could then be used to refine specific sampling frames, and possibly even NHD. Future frame development and site selection efforts would become more efficient and cost-effective, and length estimates derived from them would be more accurate, and yield more robust assessments of condition for reports such as the state 305b reports required by the Clean Water Act. Misclassified sites in both surveys can also be studied further to determine those characteristics that might be used to predict target (or non-target) status with some level of confidence to reduce the reliance on field evaluation activities.

Estimated Extent of Target Population from Perennial Survey

The total frame length for the perennial survey is 628,625 km (Table EX-2, also see Table DE-4). To estimate condition of the target population based on various indicators, length estimates are made using only the sites within partition groups that were required to obtain the required number of target and sampled sites. These partitions will also include non-target sites as well as target sites that could not be sampled because they were physically inaccessible or because permission to access was not obtained (see Table DE-8). Thus the length of the target population that can actually be assessed is less than the total represented in the sampling frame. By estimating the length associated with target sites that were not sampled, a more accurate assessment is achieved, and the potential impact of the non-sampled length can be evaluated in terms of the proportion of total resource length it represents and whether or not it represents a potential bias to the assessment of ecological condition.

Figure EX-2 summarizes the proportion of the perennial survey frame length that was sampled (and can be assessed for condition) versus other target and non-target categories. Out of the total frame length, about 48% (305,000 km) represents the potential target population that can be assessed for condition (Target-Sampled). About 12% of the total frame length can not be assessed due to lack of access permission, and about 6 % can not be assessed due to being physically inaccessible. Compare these results to those from Table DE-8, which provides this information in terms of numbers of sites rather than length of resource.

Figure EX-3 summarizes the proportion of perennial survey frame length in various status categories for the subpopulations being presented in this report. The length representing the portion of the target population that can be used to estimate condition was slightly less than 50% of the entire sampling frame, and was typically above 40% for the various subpopulations. The highest proportion of frame length classified as non-target is found in the xeric subpopulations, and ranged from approximately 20% in the Pacific Northwest Mountains subpopulation (MT-PNW) to over 70% in the southern xeric subpopulation (XE-SOUTH). In some areas, lack of permission to access sampling sites was a concern. However, the estimated proportion of frame length affected by this was fairly low (around 10%) and constant across all subpopulations. This indicates that in areas where the number of sites where permission could not be obtained was high, they tended to be sites having low adjusted weight values.

The estimated length of the target population varies slightly based on the particular adjusted weight variable used, due to differences in sample sizes, and the adjusted weight values of the individual sites included. These estimates are presented in Table EX-3 for both the total study area and for each subpopulation. These are the maximum values for length for any CDF developed for an indicator variable using a particular adjusted weight variable. Actual lengths assessed for a particular indicator are further reduced if there are missing values for the indicator variable due to any number of reasons that prevented collecting data at an individual site.

Tables

Table EX-1. Status classes used for estimating extent

NON-PERENNIAL SURVEY			
TARGET CLASSES		NON-TARGET CLASSES	
Perennial	Evaluated as perennial, representing a potential sampling site	Non-perennial	Evaluated as non-perennial
Inaccessible	Evaluated as perennial, but site could not be visited and sampled due to unsafe conditions or physical barriers	Perennial-Non-target	Evaluated as perennial, but is impounded, tidally-influenced, a non-target canal or pipeline, or a map error
PERENNIAL SURVEY			
TARGET CLASSES		NON-TARGET CLASSES	
Target-Sampled	Evaluated as perennial, and sampled as part of EMAP-West	Non-Target	Evaluated as non-perennial, or evaluated as perennial, but impounded, a non-target canal or pipeline, or a map error
Target-Not Sampled	Evaluated as perennial, but not required to be sampled to achieve the required sample size for population estimation		
Inaccessible	Evaluated as perennial, but site could not be visited or sampled due to physical barriers or unsafe conditions; represents part of target population that cannot be assessed for condition		
Access Denied	Evaluated as perennial, but access was denied by landowner; represents part of target population that cannot be assessed for condition		

Table EX-2. Estimated stream lengths (km) of target population from non-perennial and perennial surveys.

	RF3 FRAME SIZE (km)	EVALUATED NON-PERENNIAL	EVALUATED TARGET	EVALUATED NON-TARGET
NON-PERENNIAL SURVEY	1,638,200	1,477,521 (±62,704)	113,570 (±21,008)	47,109 (±18,103)
PERENNIAL SURVEY	628,625	Included in non-target estimate	442,859 (±14,187)	185,766 (±12,846)
TOTAL			556,429	

Table EX-3. Estimated lengths (km) of the target population lengths (km) that can be used to estimate condition based on different adjusted weight variables. Number of sites used to estimate length is in parentheses.

SUB-POPULATION	WGT_COND	WGT_INVP	WGT_FTIS	WGT_FTIS2
WEST-WIDE	(965) 304,544	(671) 305,559	(876) 300,830	(583) 304,721
MOUNTAINS	(573) 220,047	(392) 214,392	(517) 218,516	(355) 224,072
MT-NROCK	(210) 100,904	(147) 103,583	(190) 102,646	(130) 102,495
MT-PNW	(226) 84,184	(153) 79,852	(209) 82,285	(138) 85,240
MT-SROCK	(60) 32,106	(38) 27,432	(52) 30,881	(37) 33,186
MT-SWEST	(77) 2,853	(53) 2,938	(66) 2,704	(50) 3,153
PLAINS	(190) 35,142	(131) 36,581	(173) 34,270	(113) 32,926
PL-NCULT	(66) 8,004	(43) 7,240	(60) 7,797	(43) 8,256
PL-RANGE	(124) 27,138	(88) 29,341	(113) 26,473	(70) 24,671
XERIC	(201) 48,812	(147) 53,876	(185) 47,501	(114) 46,534
XE-CALIF	(34) 6,856	(26) 8,133	(34) 6,856	(22) 7,136
XE-EPLAT	(71) 20,981	(50) 22,131	(62) 20,870	(44) 20,657
XE-NORTH	(49) 11,600	(36) 13,870	(45) 10,414	(23) 8,535
XE-SOUTH	(47) 9,376	(34) 9,526	(44) 9,361	(25) 10,206

Figures

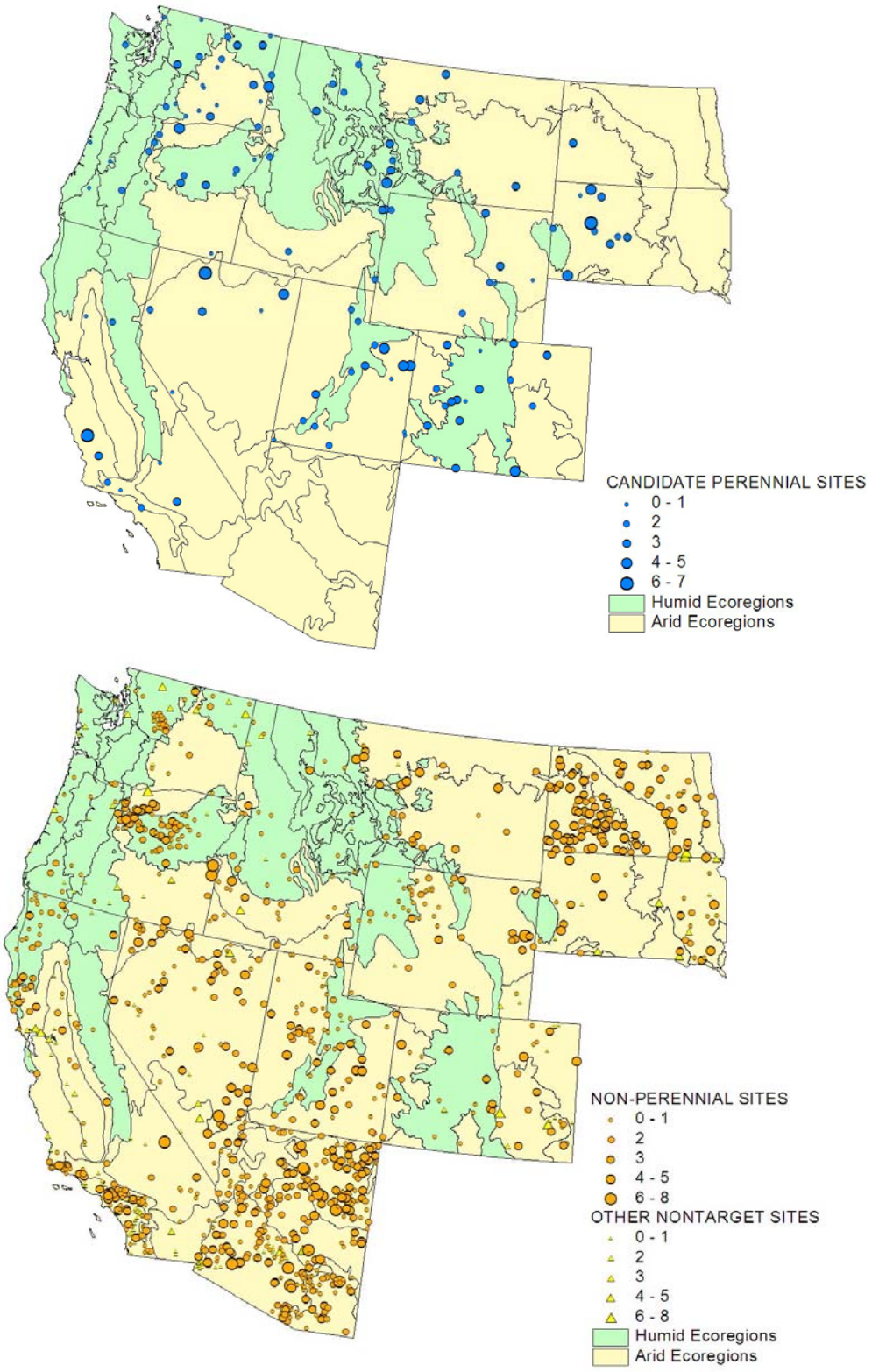

Figure EX-1. Location of misclassified sites in non-perennial survey (top) and perennial survey (bottom). Size of symbol indicates Strahler order.

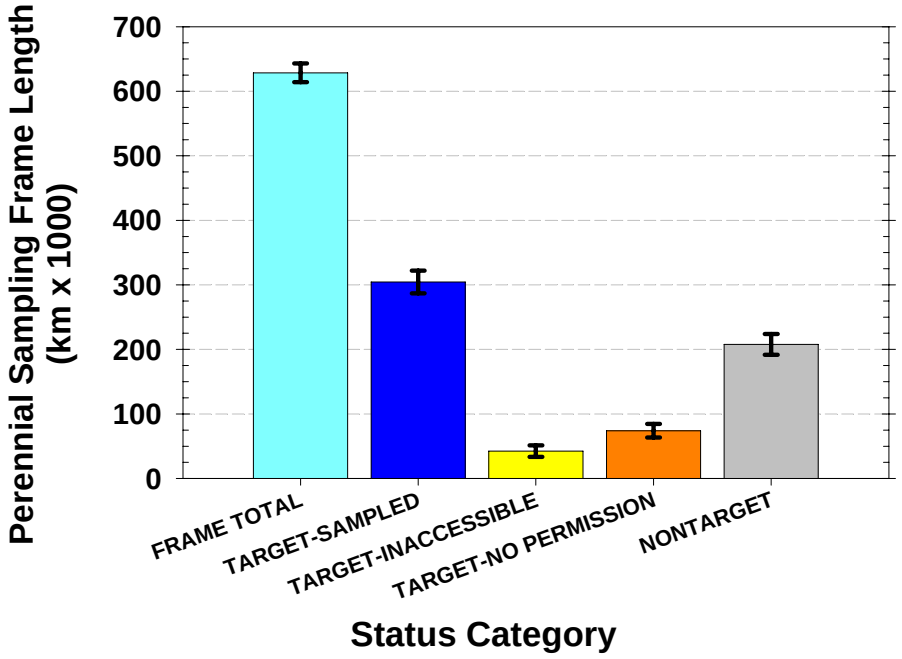

Figure EX-2. Estimated length of perennial survey sampling frame in various status categories. Target-Sampled represents the length of the target population for which condition can be estimated. Error bars are 95% confidence intervals.

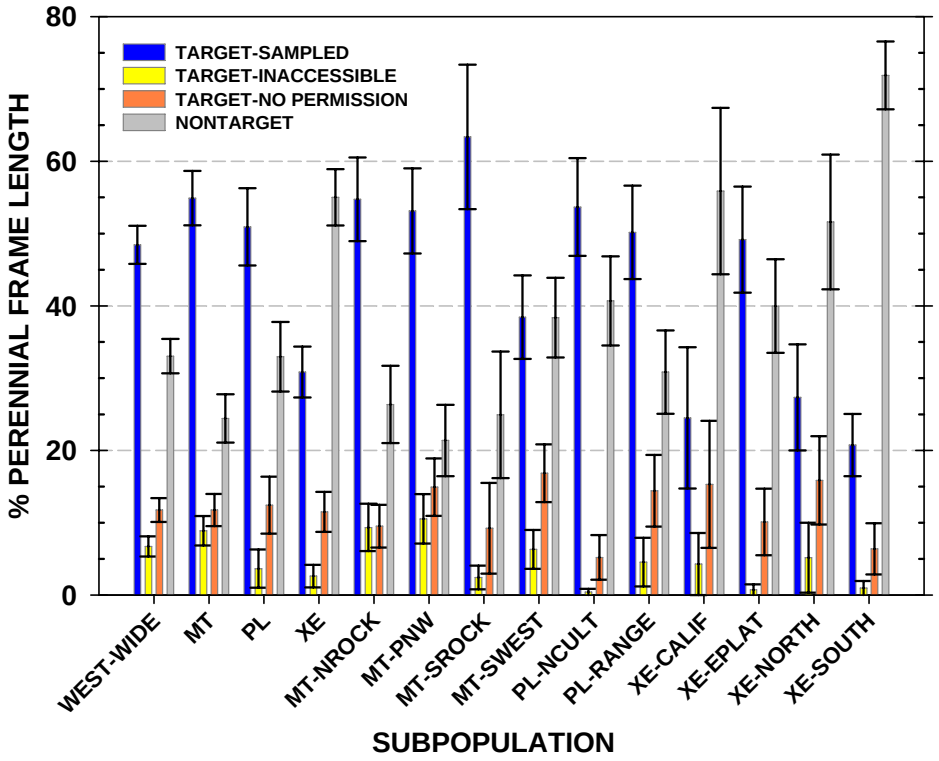

Figure EX-3. Estimated proportion of perennial survey frame length in each subpopulation in various status categories. Target-Sampled represents the proportion of the target population for which condition can be estimated. Error bars are 95% confidence intervals.

Benthic Macroinvertebrates

We use benthic macroinvertebrates (larval insects and other stream invertebrates such as snails and worms) to help understand how human activities/disturbances/stresses/ pressures affect the biotic or ecological condition of streams and rivers (e.g., to meet Clean Water Act mandates). In order to do this, we need to understand the structure and function of the benthic macroinvertebrate (BMI) assemblage in situations with no or low human disturbance and compare the current condition with that condition. We use human disturbance and related stressors to represent human presence on the landscape and consequent alterations to the fundamental processes that organize the BMI assemblages (i.e., delivery of water, nutrients, exotic chemicals, sediment, wood, energy; riparian functions; floodplain connections; imposition of barriers and channel modifications). We identified places (watersheds, stream reaches) that are the least disturbed by human activities/stressors and represent the broad range of natural factors that affect BMI assemblages. Then we characterized the BMI at these sites as a benchmark to evaluate the extent of change across all the probability sites. The process we used to select the least disturbed sites is described in detail in Waite et al. (2000) and Whittier et al. (In Press).

The taxonomic composition and richness of the BMI found in streams provide valuable information about the condition of streams and the potential stressors acting upon them. The challenge we face is extracting that information from the complex relative abundance data collected for BMI and presenting it in an informative way for managers and the general public. Two approaches have been developed and tested in various ecological settings across the U.S., in Canada, Europe, and Australia, and we employed both for EMAP-West:

- Multi-metric Index (MMI): This is the traditional approach used in the U.S. to analyze macroinvertebrate assemblage data (e.g., Barbour et al. 1995, Barbour et al. 1999, Karr and Chu 1999) - various composition, tolerance and richness characteristics of the assemblages are summarized as metrics, e.g., the number of mayfly species present. Each of a series of candidate metrics is evaluated against an array of criteria, and a subset of 5 to 10 of the best performing metrics are then combined into a multi-metric index, often called an Index of Biotic Integrity (IBI).
- O/E Index: This second approach posits that taxonomic composition across a set of reference sites can be modeled as a function of natural gradients (such as elevation, stream size, stream gradient, latitude, longitude) to estimate the expected taxonomic composition in the absence of human stressors (Hawkins et al. 2000, Wright 2000). This calibrated model is then used to estimate expected composition, usually expressed as richness, at “test” sites. The list of expected taxa that are observed at test sites is compared with the expected list as an Observed:Expected ratio (O/E index). Departures from a ratio of one indicate that the composition at a test site differs from that expected under less disturbed conditions.

Two programs contributed BMI samples that were used as a basis for both MMI and O/E development. EMAP-W contributed BMI samples derived from the probability survey, along with a small number of hand selected “reference site” samples. Utah State University, partially with support from the USEPA STAR grant program and from the U.S. Forest Service (R5BIO), collected samples at hundreds of reference sites across the 12 state EMAP-W region, as well as at reference sites in New Mexico (all referred to as STAR/R5BIO sites). The BMI data derived from the set of reference and probability sites that passed a series of screening criteria were used in model construction described later.

Macroinvertebrate field sampling and lab processing

EMAP:

Wherever possible, macroinvertebrate samples were collected at field sites with two protocols. In wadeable streams, EMAP crews collected:

1. A reach-wide sample consisted of a composite of 11 D-frame kicknet samples, one from each of the 11 standard transects used to characterize a reach—each kicknet sample collected all organisms within a one square foot area; and
2. A targeted riffle sample consisted of a composite of 8 samples taken randomly from four riffles, 2 samples per riffle—each D-frame kicknet sample collected all organisms within a one square foot area.

In non-wadeable streams and rivers, the reachwide protocol was implemented along the shoreline, but no targeted riffle sample was taken (nor were they taken in wadeable streams that had no riffle habitat present). Details of all sampling protocols are given in Peck et al. (2005b) and Peck et al. (2005a). Composite samples were preserved in the field with ethanol and transported to one of two laboratories for processing (samples collected in California were analyzed by the California Department of Fish and Game, all other samples were analyzed by EcoAnalysts in Moscow, Idaho).

STAR/R5BIO:

Targeted riffle samples were collected in the same way as the EMAP targeted riffle sample, preserved in the field and processed by the Utah State University laboratory. Reach-wide samples were not collected at STAR/R5BIO sites.

Lab processing and data files:

All labs used a fixed count protocol consisting of enumerating and identifying 500 individuals (+/- 10%) drawn from the composite sample, or a complete count if the composite sample contained fewer than 500 individuals. Individuals were identified to the lowest practical taxonomic level (in most cases, the genus level).

Raw data are contained in a BMI count file containing a sample-by-taxon summary of numbers of individuals of each taxon found in each sample and that taxon’s full taxonomy (phylum, class, order, etc.). Other summary files are derived from the BMI count files, sometimes in combination with other files.

Operational Taxonomic Units: Not all individuals can be classified to the same taxonomic level across samples and sites. For some analyses, an evaluation of the taxonomic consistency across samples and sites necessitates combining taxa to a coarser level than that indicated in the BMI count file in order to conduct cross site analyses at a common level of taxonomy. A single class of taxa combined in such a way is referred to as an “operational taxonomic unit” or OTU. The combined EMAP-W and STAR/R5BIO BMI data were evaluated to come up with OTU assignments, yielding approximately 550 OTUs. For various reasons, not all taxa can be assigned an OTU.

Standardizing counts: Although the lab processing protocol calls for a fixed count of 500 individuals, obtaining an exact fixed count is impractical. As a result, a subsampling technique is used to extract a true fixed count from the taxa enumerated for a sample. We used a fixed count of 300 individuals, drawn at random (without replacement) from each site’s BMI count file.

We created several operational BMI files that were used for the BMI MMI and O/E index. The key files are:

For the BMI MMI: A BMI metric file consisting of the array of candidate metrics was evaluated and culled to produce the BMI MMI. The BMI metric file used a 300 count subset from the BMI count file and retained the original level of taxonomy (i.e., did not use the OTU assignments). The types of metrics calculated are summarized in the next section.

For the O/E index: The BMI count file was first reduced to an OTU file (by eliminating ambiguous taxa), and then subsampled to a 300 count subset for each sample.

In some cases, we retained samples that did not contain at least 300 individuals. For sites classified as reference, we retained samples with at least 200 individuals; for all “test” sites, we retained the full count (low counts can indicate BMI responses to stressors).

We used the reach-wide data from each sites if a reach-wide sample was available, otherwise we used the targeted riffle data. Exploratory analyses that compared reach-wide richness with targeted riffle richness indicated very high correlation. In addition; multivariate plots of the assemblage composition within sites (in reach-wide and targeted riffle samples) showed little compositional difference compared with differences across sites.

Characterizing the assemblage

Multi-metric Index

Our goal was to produce three coordinated MMIs for EMAP-W: one for each of the three aggregated ecoregions presented in Figures 1 and DE-6. Because metric values varied widely across the geography of the West (as did expected metric values), we recognized that metrics would need to be selected and scored separately in the regions shown (Mountains, Plains and Xeric), but that the same process would need to be used for metric evaluation and scoring, so that the three MMIs could be combined in a single

assessment without introducing regional bias. The process we used to assure comparability between the regions is described in this section.

A total of 76 metrics were calculated from the BMI data collected by the EMAP-West and STAR/R5BIO programs. Each metric was then assigned to one of 6 metric classes, each of which is intended to capture a separate dimension of biotic integrity (Karr et al. 1986, Karr 1993, Barbour et al. 1999):

- **Richness -** the number of different kinds of taxa
- **Diversity -** evenness of the distribution of individuals across taxa
- **Composition -** the relative abundance of different kinds of taxa
- **Functional feeding groups -** primary method by which the BMI feed
- **Habit –** predominant BMI behavior, e.g., do taxa cling to substrates, or burrow into substrates?
- **Tolerance -** often expressed as a general tolerance to stressors

Assignments of functional feeding group, habit, and tolerance come from a master autecology file maintained (as of this writing) by TetraTech, Inc (Owings Mills, MD; Michael Barbour, personal communication). In most cases (the diversity metrics are the only exceptions), each autecological characteristic is represented by three metrics: (1) the total number of taxa with that characteristic (e.g., a single feeding group); (2) the proportion of all taxa with that characteristic; and (3) the proportion of all individuals in a sample with that characteristic. The complete list of candidate metrics and their metric classes are shown in Table MI-1.

We screened the pool of candidate metrics using a series of tests (below), with the goal of finding the one metric in each metric class with the best behavior (in terms of the tests described below). The tests were applied sequentially, and by ecoregion. For any ecoregion, metrics that failed a test were not considered for further evaluation and were not subjected to subsequent tests. Some metric scores are correlated with natural gradients; ideally, these correlations should be factored out. However, we did not screen the full set of candidate metrics. Instead, we examined the correlations of the final set of metrics with several natural gradients, and concluded that none of the final metrics were sufficiently correlated with natural gradients (i.e., stream size or slope) to warrant calibration.

- Range: If the range (difference between the maximum and minimum values) of a metric is small, or if most of the values are identical, then the metric is unlikely to provide information that helps differentiate sites from one another. We eliminated richness metrics if their range was less than 4, and eliminated any metric if more than 75% of the values were the same. Three metrics were eliminated from further consideration by the range test (Table MI-1).
- Signal to noise (S:N): Signal to noise is the ratio of variance between sites and the variance of repeated visits to the same site, and is a measure of how repeatable metric values are. A low value indicates that a metric has nearly as much variability within a site (over time) as it does across different sites, and thus

indicates a metric that does not distinguish well between sites. We calculated S:N ratios separately for each metric in each of 3 climatic/topographic regions (Table MI-2). We failed metrics with S:N values less than 1 in the Mountains (11 metrics failed), less than 0.7 in the Plains (23 failed), and less than 1.5 in the Xeric region (21 failed).

- Responsiveness: We examined whether metrics were responsive to key stressor indicators in two ways: by examining scatter plots of each metric vs. of a subset of chemical (e.g., nutrients, acidity, turbidity) and habitat (e.g., relative bed stability, riparian disturbance) variables; and by conducting F tests of the ability of metrics to distinguish between least-disturbed (a.k.a. reference) sites and most-disturbed (a.k.a., trashed) sites. Both analyses were conducted separately for the 3 climatic/topographic regions. Results of the F tests are shown in Table MI-2. If significant F test results were corroborated by scatter plots with individual stressors, we considered the metrics suitable for inclusion in the MMI. The list of metrics included in each climatic/topographic region's MMI was built by first taking the metric with the highest F score, then taking the metric with the next highest F score that represented a different metric class, and continuing until all of the metric classes were represented, provided that all of the metrics were not redundant.
- Redundancy: Only metrics that did not contain redundant information were included in the final MMIs. We estimated redundancy by creating a correlation matrix of metric values at reference sites (to avoid eliminating metrics that are correlated only because of their relationship to stressors that co-vary). Inclusion of redundant metrics adds little information to the MMI. We considered metrics redundant if their Spearman correlation coefficients were > 0.71 (corresponding to an r^2 value of 0.5). Metrics selected for inclusion first (i.e., those with higher F scores) were retained, and its redundant metric replaced with the next non-redundant metric in the same metric class. Spearman correlation coefficients for all of the metrics included in the final MMIs are shown in Table MI-3.

The results of the sequential inclusion of metrics in the final MMIs are shown in Table MI-4. Within each climatic/topographic region, the order in which metrics were included (i.e., highest F score first, next highest F score in a "new" metric class next, and so on) is also shown (in parentheses). Each MMI (for each climatic/topographic region) has one metric representing each metric class. In all cases, the first metrics chosen for inclusion (highest F scores) were Tolerance metrics. The least responsive metrics were always either Diversity metrics or Feeding Group metrics.

Before being combined into an MMI, each raw metric needs to translated to the same scale—a process we call 'scoring'. We chose to score the metrics continuously on a scale from 0 to 10. Metrics were scored separately by ecoregion, using a scheme intended to maximize differences in final IBI scores (Blocksom 2003): ceiling and floor values for each metric were defined to be the 5^{th} and 95^{th} percentile values observed in all sites. For positive metrics (e.g., those that are highest in reference sites), values less than the 5^{th} percentile were given a score of 0, those with values greater than the 95^{th} percentile were given scores of 10, and all metric values in between were interpolated linearly. Negative metrics were scored similarly, with the floor (95^{th} percentile) and

ceiling (5th percentile) values reversed. Ceiling and floor values for each metric are listed in Table MI-4. Scored metrics were summed (for a maximum combined score of 60) and the summed score was scaled to 100 by multiplying each sum by 1.666.

O/E Index

We followed the usual series of steps in the development of the O/E index (Moss et al. 1987, Clarke et al. 1996, Hawkins et al. 2000, Clarke et al. 2003). These include the following: (1) selection and sampling of reference and test sites; (2) development of the fixed count OTU BMI file (described above) for both reference and test sites; (3) identification of candidate predictor variables (and creation of corresponding database); (4) calibration of the predictive model; and (5) application of the predictive model to test sites.

Predictor variables: We considered the following list of natural variables that have been commonly used in predictive models in the past, or that are particularly relevant to Western systems:

- time of year (Julian day) when sample was collected
- site latitude
- site longitude
- site elevation (above mean sea level)
- watershed area (as an indicator of stream size)
- stream gradient
- flow variability (ratio of mean annual low flow to mean annual high flow)
- geology (dummy variables to indicate whether the dominant geology at a site was carbonate, gneiss, granitic, mafic, quaternary, sedimentary or volcanic)
- alkalinity
- mean annual site temperature (from PRISM, see below)
- mean annual precipitation (from PRISM, see below).

PRISM (Parameter-elevation Regressions on Independent Slopes Model) is an analytical model that uses point climate data and a digital elevation model to generate estimates of monthly and annual precipitation and air temperature (Daly et al. 1994).

Model calibration: The following steps are used in the development of a predictive model:

1. Reference sites are clustered into groups based on the similarity in composition and relative abundance of their BMI assemblages. The likelihood that a taxon occurs in a cluster (occurrence probability or frequency of occurrence in a cluster) is recorded.
2. The list of candidate predictor variables is screened using discriminant analysis to identify which subset of predictor variables best distinguishes among the clusters. The best set of predictor variables is combined in a discriminant function (DF) to determine the likelihood that any site occurs in any of the biologically determined groups, i.e., the DF estimates probability of group membership.

3. The probabilities that a particular taxon occurs in the different reference groups (from the group occurrence frequencies) are combined with the probabilities that a site belongs to each group (from the DF) to estimate the probability that the particular taxon would occur at any particular site, assuming that site was in reference condition. Summing the probabilities of expected taxon occurrences at a site across taxa yields the expected richness (E).
4. Comparison of a site's observed richness (for the set of reference site taxa) to its expected richness is the O/E index. Following Hawkins et al. (2000), only those taxa with predicted occurrence probabilities >0.5 at a site are included when calculating O/E for that site. If the composition of taxa at the test site is similar to that of the reference sites, the O/E ratio will be close to 1; departures from 1 indicate difference from the reference site condition.

For EMAP-W, we initially constructed an west-wide predictive model across all reference sites in the 13 state region (12 EMAP-W states plus New Mexico, where STAR/R5BIO reference site data were also available). The model consisted of 42 clusters with the following predictors as important discriminant variables: Elevation, Longitude, Latitude, site annual precipitation, Log Watershed area, day of the year, and sedimentary geology (0 or 1).

Model evaluation indicated that performance was reasonable for the Mountain region, poor for the Plains region, and intermediate for the Xeric region, judged against null models (Van Sickle et al. 2005) and past experience with model performance. We were also concerned that the preponderance of reference sites in the mountains controlled model performance in the other regions. As a result, we explored several ways of subdividing the reference sites into broad groups that were both ecologically sensible and that contained a sufficient number of reference sites for model building. This process entailed both examining the biological clusters from the 42-cluster model, and groups of sites derived by applying the same clustering approach to the natural environmental factors. After a series of iterations, we settled on five reasonably well defined geographic groupings, illustrated in Figure BN-1. The distribution of key geographic attributes for the 5 clusters are shown in Figure BN-2.

These clusters consist of sites that occur primarily in: 1) North and South Dakota and eastern Montana (basically Plains sites); 2) Oregon and Washington Cascades and coastal region, Northern California and coastal mountains, with some sites in the northern Rocky Mountains (Idaho and Montana); 3) Arid Southwest (California, Arizona, and New Mexico); 4) Interior high, forested mountains; and 5) Interior xeric plateaus. We developed satisfactory predictive models for the first two of these five clusters of sites; for clusters 3-5 we created regional (cluster-specific) null models. In addition, ca. 20 EMAP sites could not be reliably assigned to any of the 5 clusters; for these sites, O/E scores are based on the west-wide null model.

Validation of MMI and O/E Indices

There is always some concern that using the same set of sites to build BMI indices and then to assess BMI integrity will lead to difficulties with circular reasoning. To avoid this

difficulty as much as possible, we chose to set aside the data from a random set of sites in each ecoregion before model development. These sites could then be used to validate the models by comparing the behavior of the indices in sites present in the calibration and validation datasets.

For the MMI model construction, 25 least-disturbed (except in the Plains, where 20 sites were chosen), 25 moderately-disturbed and 25 most-disturbed sites (where disturbance class was based on chemical and physical habitat [non-biological] data) were chosen at random in each of the three climatic/topographic ecoregions and their data set aside for validation purposes. The small number of least-disturbed sites set aside in the Plains reflects the difficulty of finding many least-disturbed sites in this region. The MMI was developed using data from all non-validation (calibration) sites; scores were then calculated for both the calibration and validation datasets. Comparisons of the distribution of MMI scores in calibration and validation datasets are shown in Figures BN-3, BN-4 and BN5 (for the Mountains, Plains and Xeric regions, respectively). The validity of the MMI model is indicated by the lack of significant differences between the two datasets within each of the disturbance classes. In addition, all three regions show a general decrease in scores as one moves from the least-disturbed to the most-disturbed end of the gradient.

Because only least-disturbed (“reference”) sites are used in the O/E model development, and because the model(s) were built independent of ecoregions, creation of validation and calibration datasets proceeded somewhat differently than for the MMI. A total of 136 least-disturbed sites were chosen at random and set aside before the models were developed. Once the models were constructed, O/E scores were calculated for all sites. The best test of the validity of the O/E model is the comparison of scores in the least-disturbed sites in the calibration and validation datasets (Figure BN-6). This comparison shows no significant difference, and very similar ranges of scores. For completeness, we also include the comparison of scores in moderately-disturbed and most-disturbed sites (as for the MMI); these also show very similar distributions between the two datasets.

One further test of the validity of the MMI and O/E models is their performance in the types of statistical tests used to evaluate the metrics described earlier. Table MI-5 shows the signal:noise ratio, F test (for discriminating least-disturbed from most-disturbed sites), and the standard deviation of scores at reference sites (a standard measure of the precision of O/E models) for both indices. All of these tests suggest that both indices have excellent properties, and can be used to describe the ecological condition of streams and rivers across the West.

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Tables

Table MI-1. Candidate Macroinvertebrate Metrics (and results of range test)

Metric ID	Metric Class	Metric Description	Range Test
BURRPIND	HABIT	Burrower % Individuals	PASS
BURRPTAX	HABIT	Burrower % Distinct Taxa	PASS
BURRRICH	HABIT	Burrower Distinct Taxa Richness	PASS
CHIRPIND	COMPOSITION	Chironomid % Individuals	PASS
CHIRPTAX	COMPOSITION	Chironomid % Distinct Taxa	PASS
CHIRRICH	RICHNESS	Chironomid Distinct Taxa Richness	PASS
CLMBPIND	HABIT	Climber % Individuals	PASS
CLMBPTAX	HABIT	Climber % Distinct Taxa	PASS
CLMBRICH	HABIT	Climber Distinct Taxa Richness	PASS
CLNGPIND	HABIT	Clinger % Individuals	PASS
CLNGPTAX	HABIT	Clinger % Distinct Taxa	PASS
CLNGRICH	HABIT	Clinger Distinct Taxa Richness	PASS
COFIPIND	FEEDING	Collector-Filterer % Individuals	PASS
COFIPTAX	FEEDING	Collector-Filterer % Distinct Taxa	PASS
COFIRICH	FEEDING	Collector-Filterer Distinct Taxa Richness	PASS
COGAPIND	FEEDING	Collector-Gatherer % Individuals	PASS
COGAPTAX	FEEDING	Collector-Gatherer % Distinct Taxa	PASS
COGARICH	FEEDING	Collector-Gatherer Distinct Taxa Richness	PASS
DOM1PIND	DIVERSITY	Percent of Individuals in Dominant Taxa	PASS
DOM3PIND	DIVERSITY	Percent of Individuals in Top 3 Taxa	PASS
DOM5PIND	DIVERSITY	Percent of Individuals in Top 5 Taxa	PASS
EPHEPIND	COMPOSITION	Ephemeroptera % Individuals	PASS
EPHEPTAX	COMPOSITION	Ephemeroptera % Distinct Taxa	PASS
EPHERICH	RICHNESS	Ephemeroptera Distinct Taxa Richness	PASS
EPT_PIND	COMPOSITION	EPT % Individuals	PASS
EPT_PTAX	COMPOSITION	EPT % Distinct Taxa	PASS
EPT_RICH	RICHNESS	EPT Distinct Taxa Richness	PASS

Metric ID	Metric Class	Metric Description	Range Test
FACLPIND	TOLERANCE	Facultative % Individuals	PASS
FACLPTAX	TOLERANCE	Facultative % Distinct Taxa	PASS
FACLRICH	TOLERANCE	Facultative Distinct Taxa Richness	PASS
HBI	TOLERANCE	Hilsenhoff Biotic Index	PASS
HPRIME	DIVERSITY	Shannon Diversity	PASS
INTLPIND	TOLERANCE	Intolerant % Individuals	PASS
INTLPTAX	TOLERANCE	Intolerant % Distinct Taxa	PASS
INTLRICH	TOLERANCE	Intolerant Distinct Taxa Richness	PASS
MEGLPIND	COMPOSITION	Megaloptera % Individuals	FAIL
MEGLPTAX	COMPOSITION	Megaloptera % Distinct Taxa	FAIL
MEGLRICH	RICHNESS	Megaloptera Distinct Taxa Richness	FAIL
NOINPIND	COMPOSITION	Non-Insect % Individuals	PASS
NOINPTAX	COMPOSITION	Non-Insect % Distinct Taxa	PASS
NOINRICH	RICHNESS	Non-Insect Distinct Taxa Richness	PASS
NTOLPIND	TOLERANCE	Non-Tolerant % Individuals	PASS
NTOLPTAX	TOLERANCE	Non-Tolerant % Distinct Taxa	PASS
NTOLRICH	TOLERANCE	Non-Tolerant Distinct Taxa Richness	PASS
OLLEPIND	COMPOSITION	Oligochaete/Leech % Individuals	PASS
OLLEPTAX	COMPOSITION	Oligochaete/Leech % Distinct Taxa	PASS
OLLERICH	RICHNESS	Oligochaete/Leech Distinct Taxa Richness	PASS
OMNIPIND	FEEDING	Omnivore % Individuals	PASS
OMNIPTAX	FEEDING	Omnivore % Distinct Taxa	PASS
OMNIRICH	FEEDING	Omnivore Distinct Taxa Richness	PASS
PLECPIND	COMPOSITION	Plecoptera % Individuals	PASS
PLECPTAX	COMPOSITION	Plecoptera % Distinct Taxa	PASS
PLECRICH	RICHNESS	Plecoptera Distinct Taxa Richness	PASS
PREDPIND	FEEDING	Predator % Individuals	PASS
PREDPTAX	FEEDING	Predator % Distinct Taxa	PASS
PREDRICH	FEEDING	Predator Distinct Taxa Richness	PASS

Metric ID	Metric Class	Metric Description	Range Test
SCRPPIND	FEEDING	Scraper % Individuals	PASS
SCRPPTAX	FEEDING	Scraper % Distinct Taxa	PASS
SCRPRICH	FEEDING	Scraper Distinct Taxa Richness	PASS
SHRDPIND	FEEDING	Shredder % Individuals	PASS
SHRDPTAX	FEEDING	Shredder % Distinct Taxa	PASS
SHRDRICH	FEEDING	Shredder Distinct Taxa Richness	PASS
SIMPSON	DIVERSITY	Simpson Index	PASS
SPRLPIND	HABIT	Sprawler % Individuals	PASS
SPRLPTAX	HABIT	Sprawler % Distinct Taxa	PASS
SPRLRICH	HABIT	Sprawler Distinct Taxa Richness	PASS
SWIMPIND	HABIT	Swimmer % Individuals	PASS
SWIMPTAX	HABIT	Swimmer % Distinct Taxa	PASS
SWIMRICH	HABIT	Swimmer Distinct Taxa Richness	PASS
TOLRPIND	TOLERANCE	Tolerant % Individuals	PASS
TOLRPTAX	TOLERANCE	Tolerant % Distinct Taxa	PASS
TOLRRICH	TOLERANCE	Tolerant Distinct Taxa Richness	PASS
TOTLRICH	RICHNESS	Total Distinct Taxa Richness	PASS
TRICPIND	COMPOSITION	Trichoptera % Individuals	PASS
TRICPTAX	COMPOSITION	Trichoptera % Distinct Taxa	PASS
TRICRICH	RICHNESS	Trichoptera Distinct Taxa Richness	PASS

Table MI-2. Signal:Noise Ratios and F-Test Results for Candidate Macroinvertebrate Metrics

Metric ID	*Signal:Noise Ratios*			*F Tests (Least vs. Most Disturbed)*		
	Mountains	**Plains**	**Xeric**	**Mountains**	**Plains**	**Xeric**
BURRPIND	1.97	1.59	2.32	190.67	10.20	81.45
BURRPTAX	1.14	0.98	2.18	115.05	2.74	61.38
BURRRICH	0.83	0.42	1.45	103.99	0.07	15.62
CHIRPIND	1.54	1.48	2.89	30.05	0.78	5.14
CHIRPTAX	1.58	0.41	3.15	57.91	2.36	14.84
CHIRRICH	0.88	0.41	2.29	41.67	2.92	0.06
CLMBPIND	1.94	0.69	2.27	24.43	0.07	7.09
CLMBPTAX	1.35	0.93	1.41	61.76	2.12	18.24
CLMBRICH	1.24	0.66	1.05	50.12	0.77	5.19
CLNGPIND	1.89	0.09	1.31	71.80	7.62	31.57
CLNGPTAX	2.08	0.63	3.59	163.82	13.73	93.15
CLNGRICH	3.54	1.60	5.43	89.03	18.89	83.79
COFIPIND	1.68	0.35	1.24	10.48	5.51	0.75
COFIPTAX	2.63	0.51	1.58	1.62	2.00	0.68
COFIRICH	2.75	1.10	2.67	5.55	7.19	14.76
COGAPIND	1.82	0.98	2.80	38.12	1.72	22.05
COGAPTAX	1.33	0.84	1.14	25.60	0.03	0.02
COGARICH	1.25	0.43	2.23	15.56	10.65	25.04
DOM1PIND	0.88	0.69	1.46	3.47	10.55	17.74
DOM3PIND	1.20	0.79	2.01	5.53	7.21	30.94
DOM5PIND	1.41	0.67	2.48	6.38	7.93	33.59
EPHEPIND	2.89	1.32	3.77	52.42	5.39	19.27
EPHEPTAX	2.22	2.00	4.19	57.20	9.17	25.79
EPHERICH	2.97	2.89	6.67	29.50	23.05	40.46
EPT_PIND	2.46	0.76	2.58	140.14	12.98	56.58
EPT_PTAX	3.65	2.02	5.90	172.83	14.78	66.07
EPT_RICH	4.68	3.75	8.83	66.57	26.42	69.64
FACLPIND	2.31	0.95	2.54	0.07	3.95	31.41
FACLPTAX	3.38	1.09	1.82	30.82	2.13	0.00
FACLRICH	1.80	1.51	3.06	23.66	12.14	20.54
HBI	2.60	1.30	4.25	84.64	5.31	38.37
HPRIME	1.63	0.91	2.86	3.64	12.03	36.66
INTLPIND	3.21	0.63	3.48	90.41	13.49	50.77
INTLPTAX	5.56	1.62	7.18	173.05	24.66	78.14
INTLRICH	5.59	2.66	9.75	85.25	22.07	72.28
MEGLPIND	0.07	0.45	0.33	0.00	0.14	3.61

Metric ID	*Signal:Noise Ratios*			*F Tests (Least vs. Most Disturbed)*		
	Mountains	**Plains**	**Xeric**	**Mountains**	**Plains**	**Xeric**
MEGLPTAX	0.20	0.37	0.55	0.59	0.26	4.55
MEGLRICH	0.26	0.43	0.47	0.36	0.07	4.24
NOINPIND	2.90	1.67	3.63	190.27	12.66	95.03
NOINPTAX	2.21	3.18	3.98	178.95	2.28	101.95
NOINRICH	1.42	1.53	2.17	143.62	0.13	21.12
NTOLPIND	1.60	0.70	1.84	130.28	25.84	86.60
NTOLPTAX	1.60	0.70	1.84	182.55	28.73	84.63
NTOLRICH	1.60	0.70	1.84	81.47	24.99	77.78
OLLEPIND	2.51	1.54	2.23	100.77	7.91	39.30
OLLEPTAX	1.20	1.05	1.38	62.29	1.59	44.62
OLLERICH	0.72	0.52	0.60	55.85	0.06	19.97
OMNIPIND	5.54	1.11	4.01	39.35	3.59	23.86
OMNIPTAX	1.11	0.89	1.49	97.74	1.08	30.02
OMNIRICH	0.99	1.54	1.13	89.90	0.00	14.64
PLECPIND	3.52	3.36	2.09	31.26	7.44	21.24
PLECPTAX	3.42	0.72	2.46	66.81	9.65	36.30
PLECRICH	3.67	1.48	3.78	45.63	9.36	43.36
PREDPIND	1.67	2.86	5.63	9.86	6.86	0.05
PREDPTAX	1.09	0.86	0.98	2.86	1.87	1.92
PREDRICH	1.13	0.83	1.39	0.09	1.19	7.20
SCRPPIND	2.96	1.34	3.78	17.80	1.26	11.29
SCRPPTAX	2.03	1.31	2.26	26.28	1.51	3.27
SCRPRICH	2.79	1.83	3.79	15.60	4.16	11.75
SHRDPIND	3.44	1.06	2.77	9.04	0.15	4.47
SHRDPTAX	1.85	1.07	1.28	31.38	0.14	13.58
SHRDRICH	2.11	0.50	2.94	18.09	3.01	31.41
SIMPSON	1.42	0.80	2.03	3.42	10.74	23.07
SPRLPIND	2.08	1.87	3.05	32.87	0.01	16.53
SPRLPTAX	0.97	1.30	1.40	87.81	1.29	21.91
SPRLRICH	0.72	0.89	1.36	64.33	3.34	1.86
SWIMPIND	7.46	4.97	5.52	38.89	5.68	10.51
SWIMPTAX	1.75	1.20	2.35	122.25	7.66	14.97
SWIMRICH	1.60	0.70	1.84	106.81	4.51	6.22
TOLRPIND	1.05	1.34	2.28	169.08	3.73	85.05
TOLRPTAX	1.67	2.27	3.11	265.04	17.72	111.54
TOLRRICH	0.82	0.74	1.48	193.11	0.83	38.65
TOTLRICH	1.79	0.96	4.10	0.74	11.35	29.73
TRICPIND	2.28	0.23	1.20	25.16	6.96	26.81
TRICPTAX	1.64	1.25	2.61	79.73	5.22	33.72
TRICRICH	2.36	1.96	3.81	42.97	11.83	44.48

Table MI-3. Spearman Correlation Coefficients for Final Metrics

Metric ID	BURR PIND	CLNG PTAX	CLNG RICH	COGA RICH	DOM5 PIND	EPHE RICH	EPT_ PTAX	EPT_ RICH	HPRIME	NOIN PIND	OMNI PTAX	SHRD RICH	NTOL PTAX	NTOL RICH	TOLR PTAX
BURRPIND	1.00	-0.42	-0.21	0.34	-0.12	-0.09	-0.38	-0.14	0.14	0.43	0.28	-0.02	-0.37	-0.03	0.45
CLNGPTAX	-0.42	1.00	0.78	-0.28	-0.12	0.42	0.76	0.52	0.11	-0.36	-0.36	0.07	0.69	0.35	-0.61
CLNGRICH	-0.21	0.78	1.00	0.22	-0.54	0.68	0.68	0.85	0.58	-0.14	-0.27	0.43	0.65	0.79	-0.45
COGARICH	0.34	-0.28	0.22	1.00	-0.57	0.36	-0.19	0.33	0.63	0.28	0.07	0.32	-0.13	0.53	0.28
DOM5PIND	-0.12	-0.12	-0.54	-0.57	1.00	-0.50	-0.19	-0.60	-0.97	-0.18	0.06	-0.50	-0.20	-0.70	0.11
EPHERICH	-0.09	0.42	0.68	0.36	-0.50	1.00	0.66	0.83	0.54	-0.10	-0.19	0.32	0.48	0.70	-0.29
EPT_PTAX	-0.38	0.76	0.68	-0.19	-0.19	0.66	1.00	0.76	0.19	-0.34	-0.37	0.26	0.75	0.47	-0.58
EPT_RICH	-0.14	0.52	0.85	0.33	-0.60	0.83	0.76	1.00	0.65	-0.07	-0.25	0.57	0.62	0.88	-0.36
HPRIME	0.14	0.11	0.58	0.63	-0.97	0.54	0.19	0.65	1.00	0.20	-0.05	0.54	0.21	0.77	-0.08
NOINPIND	0.43	-0.36	-0.14	0.28	-0.18	-0.10	-0.34	-0.07	0.20	1.00	0.23	0.06	-0.31	0.04	0.36
NOINPTAX	0.49	-0.43	-0.27	0.19	0.01	-0.13	-0.36	-0.16	0.01	0.61	0.31	-0.10	-0.45	-0.12	0.63
OMNIPTAX	0.28	-0.36	-0.27	0.07	0.06	-0.19	-0.37	-0.25	-0.05	0.23	1.00	-0.14	-0.38	-0.20	0.33
SHRDRICH	-0.02	0.07	0.43	0.32	-0.50	0.32	0.26	0.57	0.54	0.06	-0.14	1.00	0.30	0.65	-0.19
TL05PTAX	-0.37	0.69	0.65	-0.13	-0.20	0.48	0.75	0.62	0.21	-0.31	-0.38	0.30	1.00	0.58	-0.68
TL05RICH	-0.03	0.35	0.79	0.53	-0.70	0.70	0.47	0.88	0.77	0.04	-0.20	0.65	0.58	1.00	-0.29
TOLRPTAX	0.45	-0.61	-0.45	0.28	0.11	-0.29	-0.58	-0.36	-0.08	0.36	0.33	-0.19	-0.68	-0.29	1.00

Table MI-4. Final Metrics, Order of Inclusion in MMI, and Ceiling/Floor Values

Metric Class	*Mountains*			*Plains*			*Xeric*		
	Metric	**Ceiling**	**Floor**	**Metric**	**Ceiling**	**Floor**	**Metric**	**Ceiling**	**Floor**
Composition	NOINPIND (3)	0	65	EPT_PTAX (4)	45	2	NOINPTAX (2)	3	36
Diversity	DOM5PIND (6)	32	90	HPRIME (5)	3	0.1	HPRIME (5)	3.1	0.5
Feeding	OMNIPTAX (5)	0	6	COGARICH (6)	16	4	SHRDRICH (6)	6	1
Habit	BURRPIND (2)	0	20	CLNGRICH (3)	7	0	CLNGPTAX (3)	35	0
Richness	EPT_RICH (4)	28	5	EPHERICH (2)	10	0	EPT_RICH (4)	18	1
Tolerance	TOLRPTAX (1)	0	30	NTOLRICH (1)	25	3	NTOLPTAX (1)	75	15

Table MI-5. Performance of MMI and O/E Models

	Signal:Noise Ratio	**F test**	**S.D. of reference sites***
Multi-Metric Index			
West-wide	5.55	781.1	0.42
Mountains	3.05	408.0	0.13
Plains	2.95	47.7	0.32
Xeric	9.39	210.3	0.2
Observed/Expected Index			
West-wide	2.41	353.9	0.22
Mountains	2.22	151.4	0.21
Plains	1.44	20.0	0.27
Xeric	2.59	156.3	0.22

* MMI values re-scaled by dividing all scores by mean of reference sites (to mimic scale of O/E model)

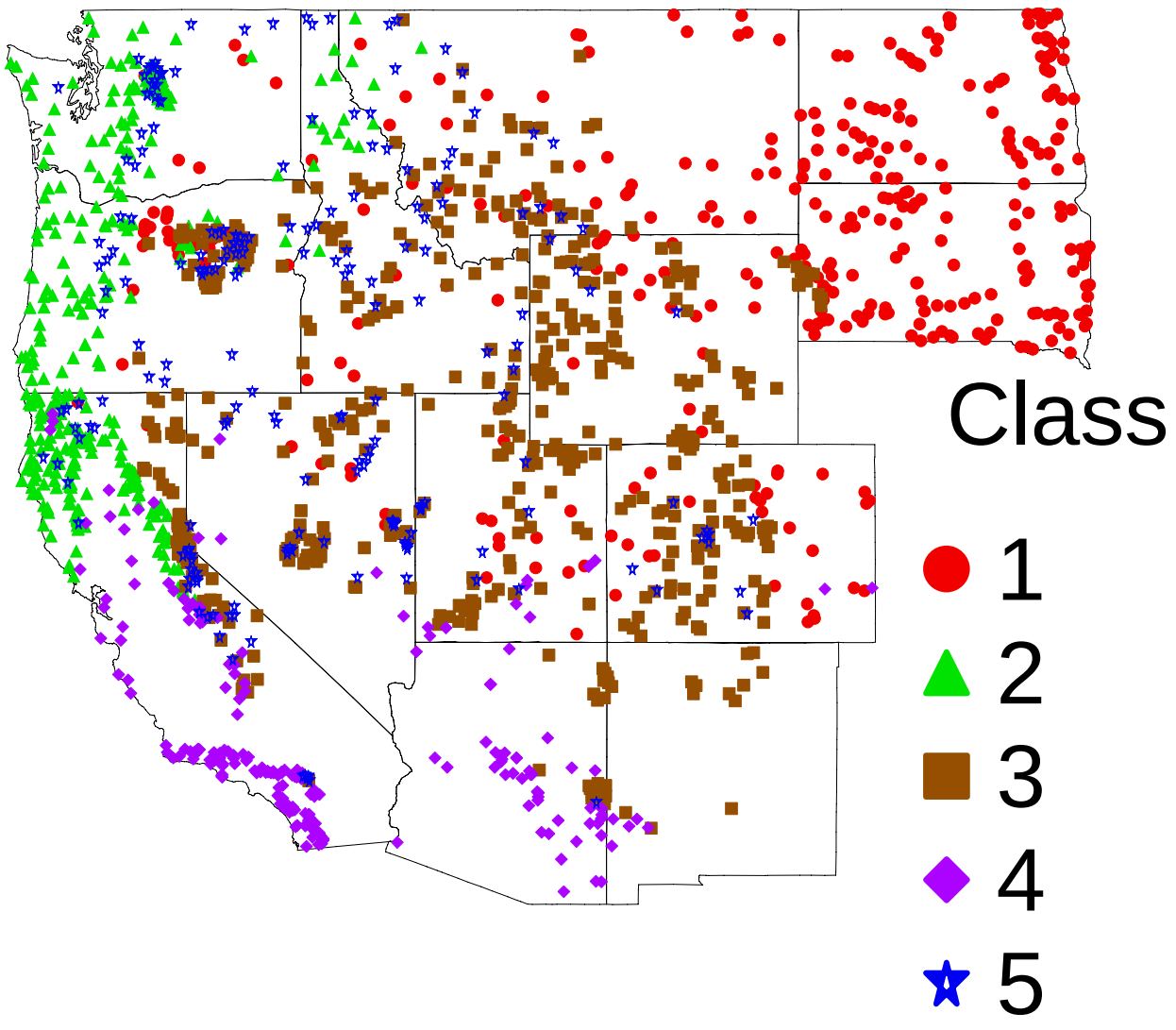


Figure BN-1. Location of Sampling Sites in Five Clusters Used in O/E Modeling

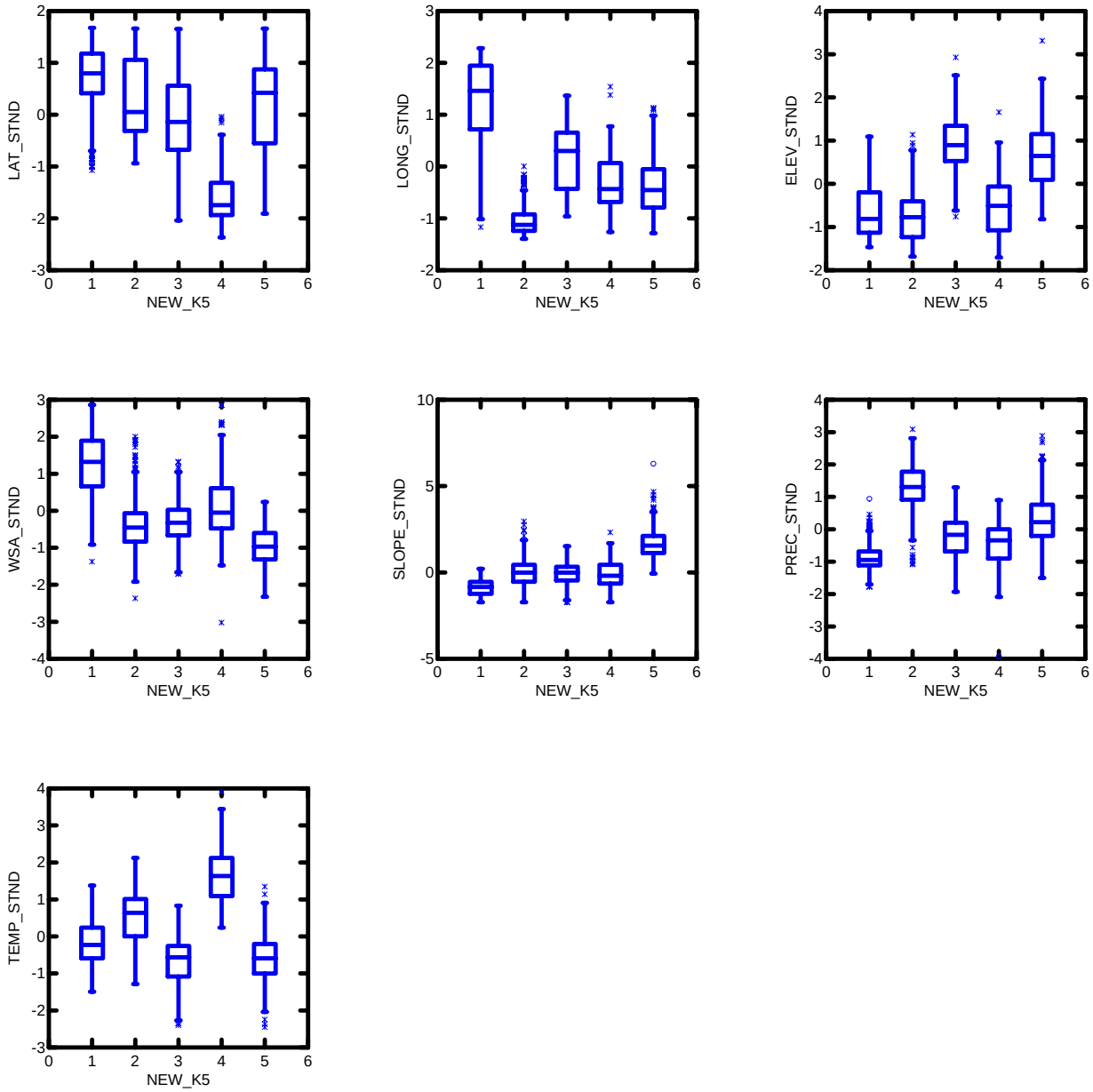


Figure BN-2. Distribution of Key Geographic Variables in Five Clusters Used in O/E Modeling

[Boxes in box-and-whisker plots indicate interquartile range and median (center line); whiskers show 10th and 90th percentiles; dots indicate 5th and 95th percentile values)

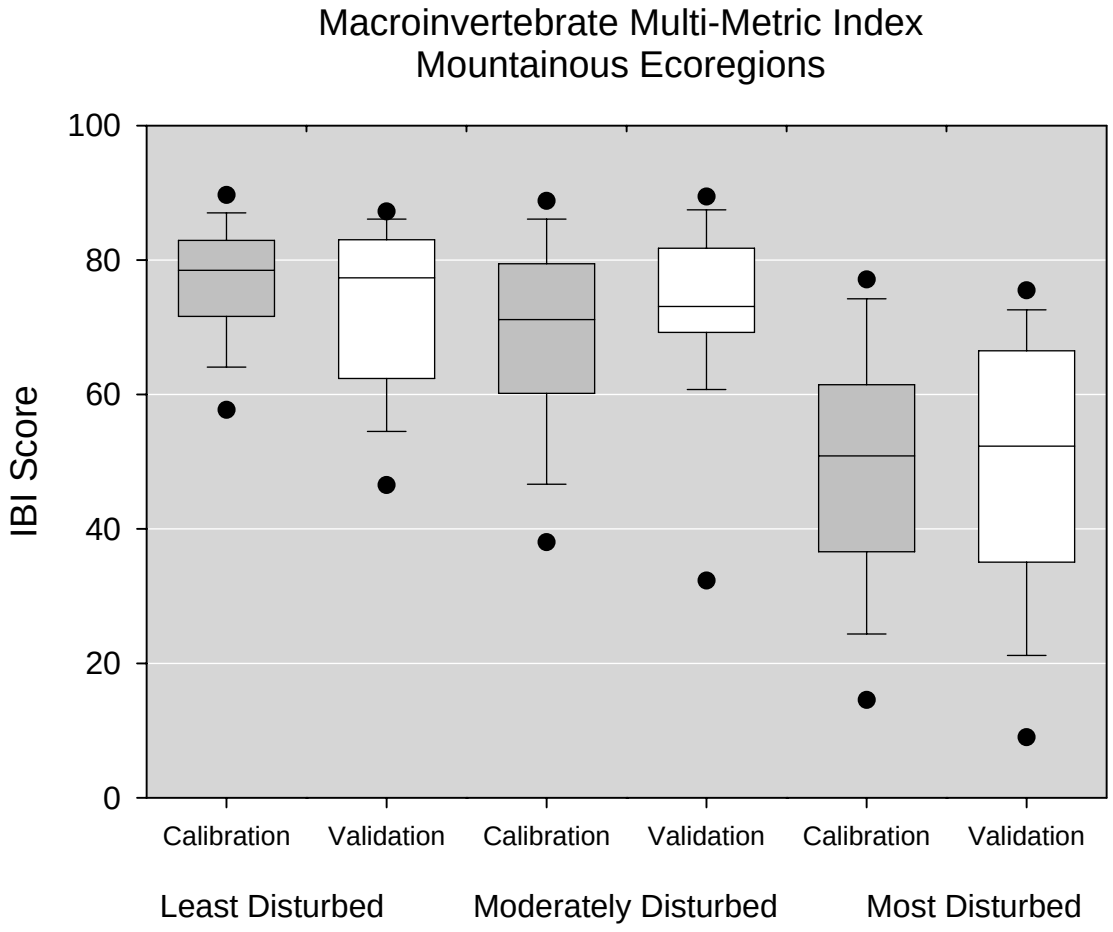


Figure BN-3. MMI Results for Calibration and Validation Datasets – Mountain Ecoregions

[Boxes in box-and-whisker plots indicate interquartile range and median (center line); whiskers show 10th and 90th percentiles; dots indicate 5th and 95th percentile values)

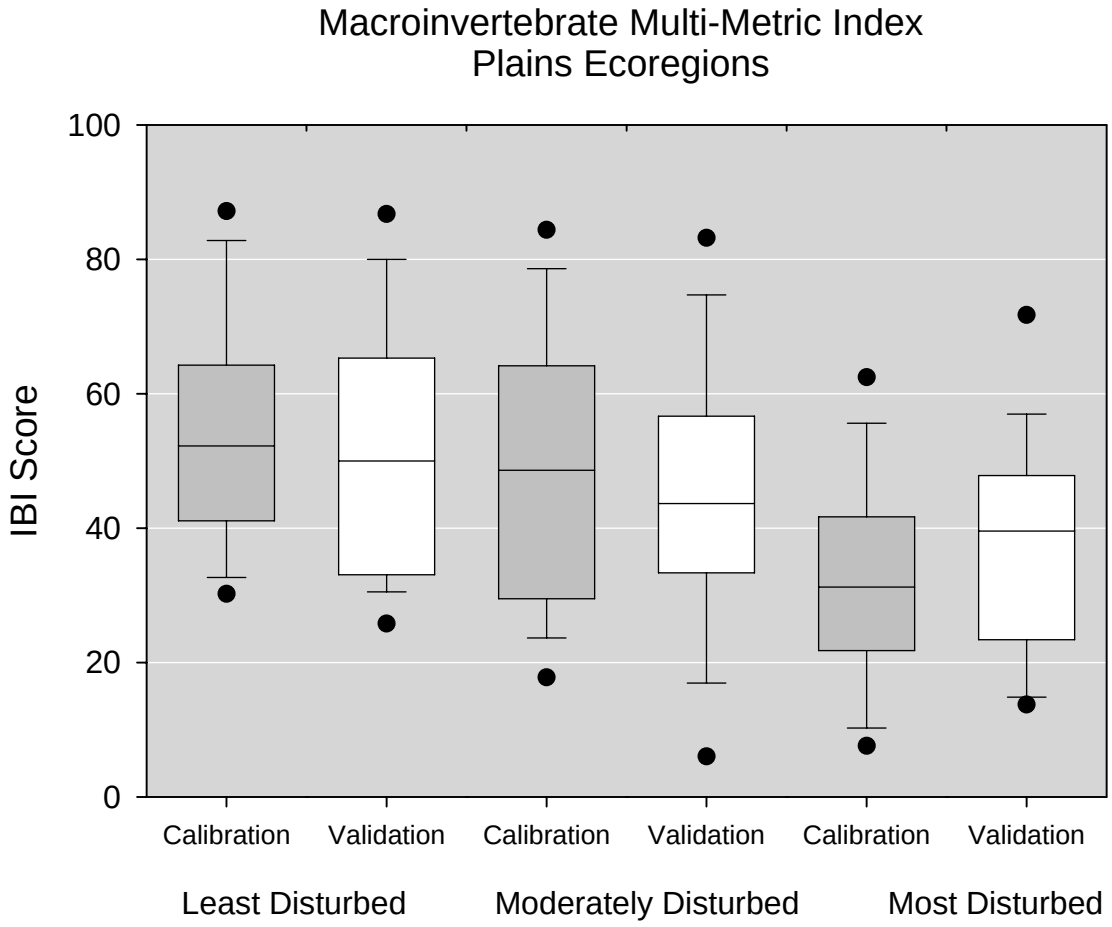


Figure BN-4. MMI Results for Calibration and Validation Datasets – Plains Ecoregions

[Boxes in box-and-whisker plots indicate interquartile range and median (center line); whiskers show 10th and 90th percentiles; dots indicate 5th and 95th percentile values)

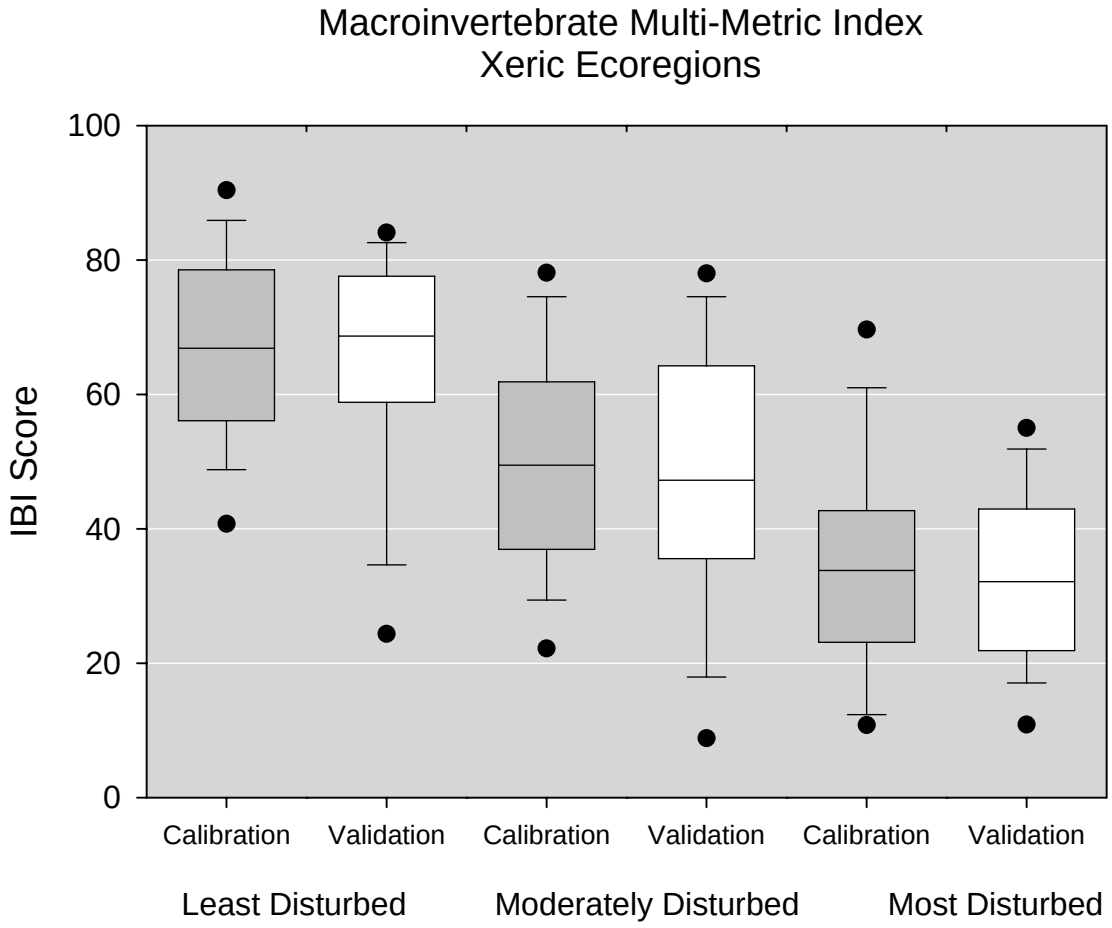


Figure BN-5. MMI Results for Calibration and Validation Datasets – Xeric Ecoregions

[Boxes in box-and-whisker plots indicate interquartile range and median (center line); whiskers show 10th and 90th percentiles; dots indicate 5th and 95th percentile values)

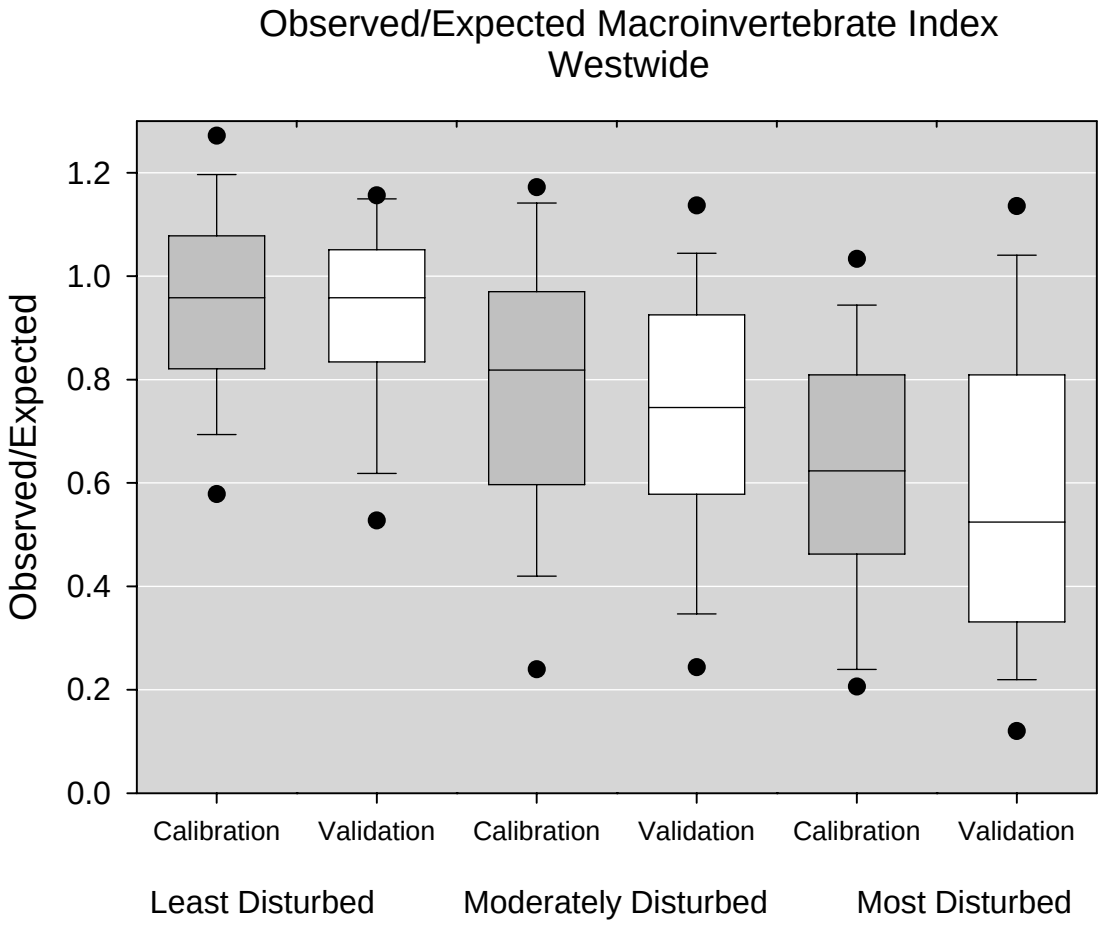


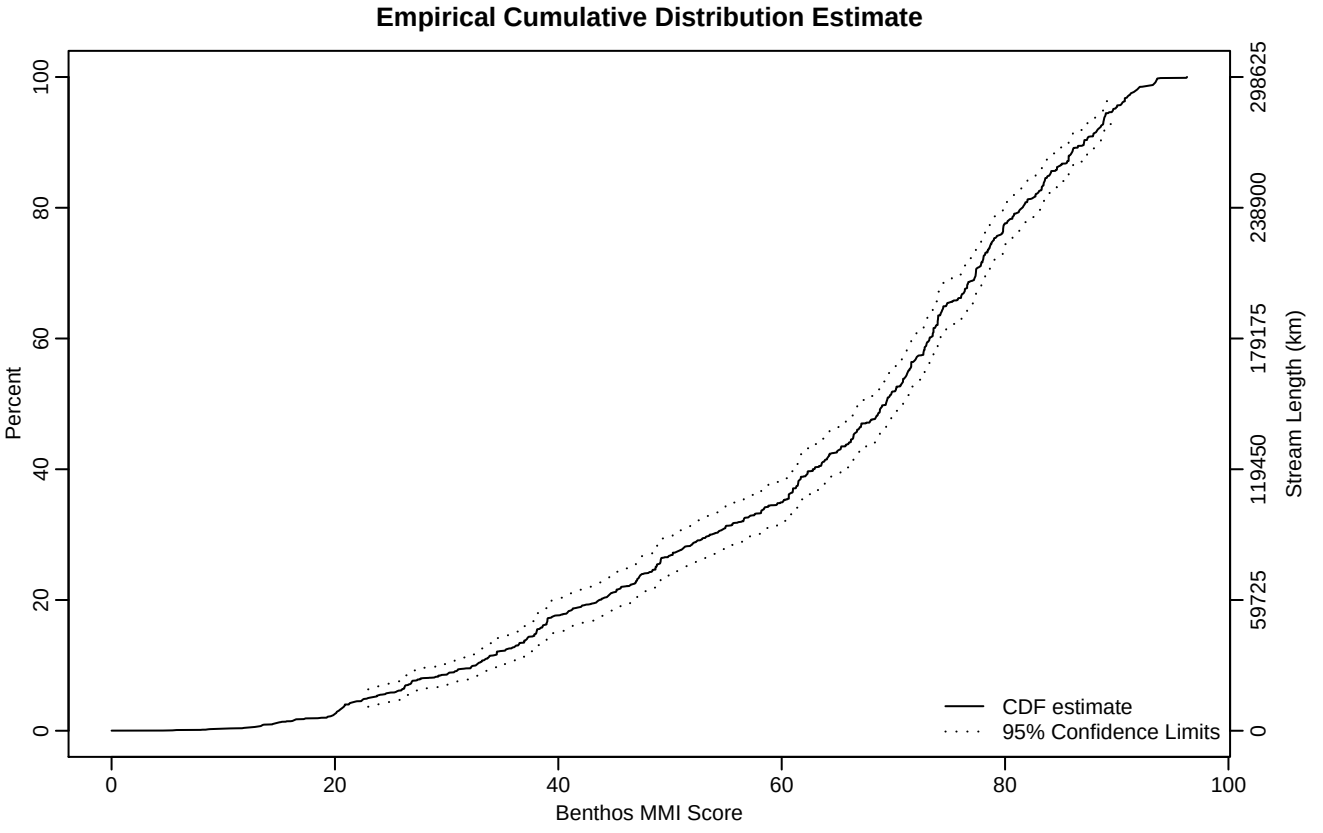
Figure BN-6. O/E Results for Calibration and Validation Datasets

Presentation of Results for Indices and Selected Metrics

The following pages present empirical cumulative distribution (CDF) plots for the Multi-Metric Index and its component metrics, the O/E Index, and a small number of special interest metrics. Please refer to the following table to decipher the somewhat cryptic metric names used in plots. The distributions for each variable are presented West-wide, for each of the three climatic/topographic regions, and for 10 aggregate ecoregions (see Figures 1 and DE-6 for the locations of ecological regions), along with a summary of each distribution's statistical parameters. For an explanation of how to interpret CDFs, please see the section "How to Use this Report" earlier.

Metric or Index	Description
BUG_MMI	Multi-metric Index for Macroinvertebrates
OBS_EXP	Observed/Expected Macroinvertebrate Richness
BURRPIND	Burrower % Individuals
CLNGPTAX	Clinger % Distinct Taxa
CLNGRICH	Clinger Distinct Taxa Richness
COGARICH	Collector-Gatherer Distinct Taxa Richness
DOM5PIND	Percent of Individuals in Top 5 Taxa
EPHERICH	Ephemeroptera Distinct Taxa Richness
EPT_PTAX	EPT % Distinct Taxa
EPT_RICH	EPT Distinct Taxa Richness
HPRIME	Shannon Diversity Index
INTLPTAX	Intolerant % Distinct Taxa
INTLRICH	Intolerant Distinct Taxa Richness
NOINPIND	Non-Insect % Individuals
NOINPTAX	Non-Insect % Distinct Taxa
NTOLPTAX	Non-Tolerant (Pollution Tolerance<6) % Distinct Taxa
NTOLRICH	Non-Tolerant (Pollution Tolerance<6) Distinct Taxa Richness
OMNIPTAX	Omnivore % Distinct Taxa
SHRDRICH	Shredder % Distinct Taxa
TOLRPTAX	Tolerant % Distinct Taxa
TOLRRICH	Total Distinct Taxa Richness

Figure BN−1 Indicator: BUG_MMI Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	22.97	20.79	26
10Pct	32.61	29.04	34.49
25Pct	48.71	46.37	51.13
50Pct	69.33	66.95	70.87
75Pct	78.95	77.88	80.65
90Pct	87.07	85.69	88.58
95Pct	89.67	88.81	90.83
Mean	63.49	62.17	64.81
Std Dev	18.57	17.62	19.53

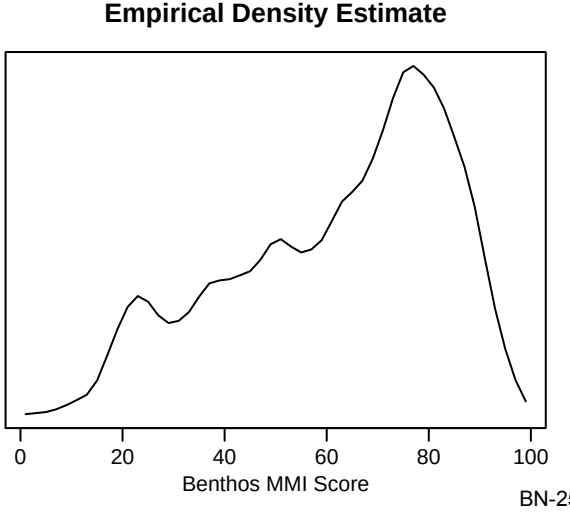
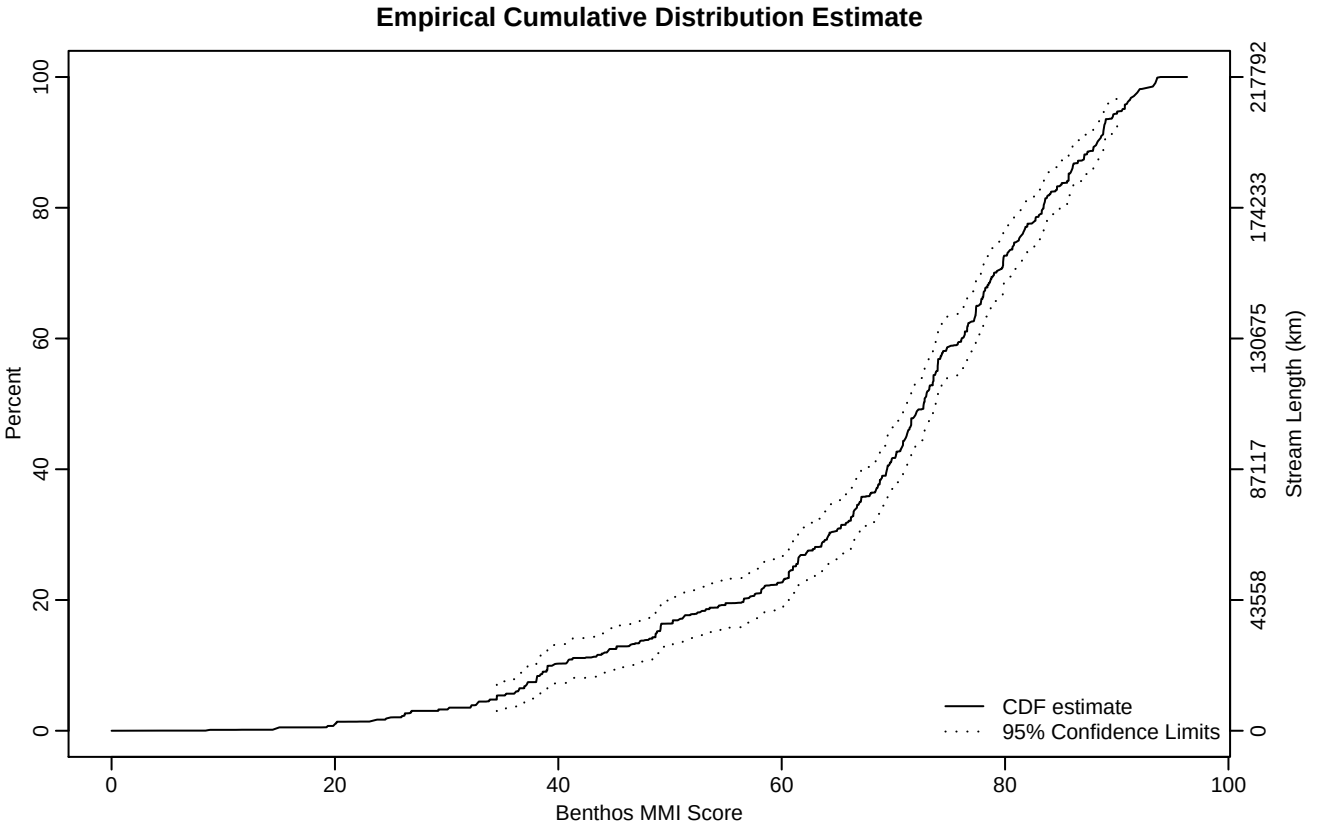


Figure BN−2 Indicator: BUG_MMI Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	34.49	29.25	37.09
10Pct	39.49	37.14	46.38
25Pct	61.01	57.59	63.85
50Pct	72.72	71.20	73.80
75Pct	81.22	79.78	83.28
90Pct	88.26	86.52	88.98
95Pct	90.50	88.91	91.62
Mean	68.86	67.32	70.40
Std Dev	16.08	14.93	17.23

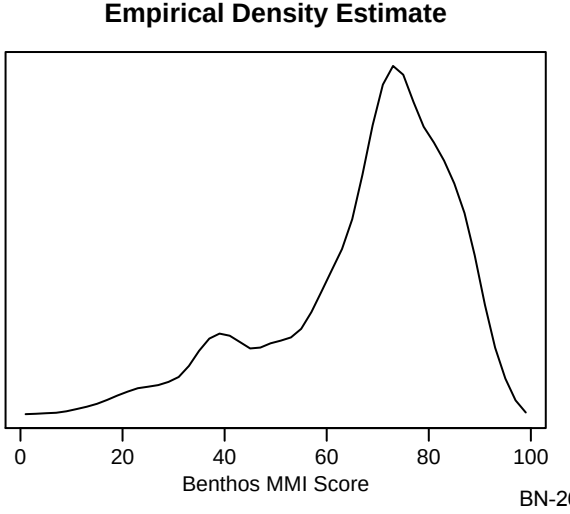
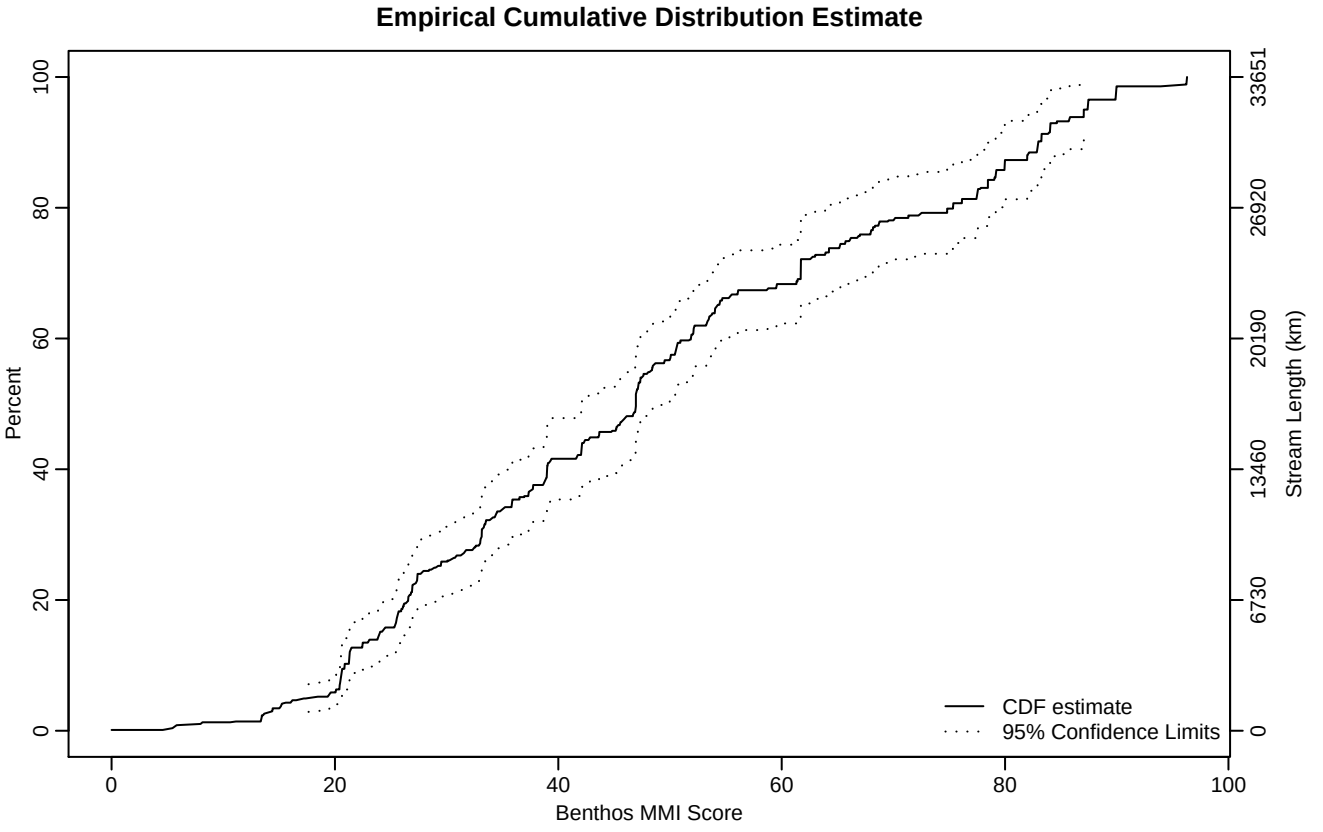


Figure BN−3 Indicator: BUG_MMI Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	17.63	14.23	20.44
10Pct	20.87	20.08	23.07
25Pct	29.05	26.45	33.15
50Pct	46.94	42.08	50
75Pct	66.08	61.42	76.14
90Pct	82.97	78.46	87.42
95Pct	87.05	83.25	96.29
Mean	48.75	45.88	51.63
Std Dev	20.54	19.05	22.02

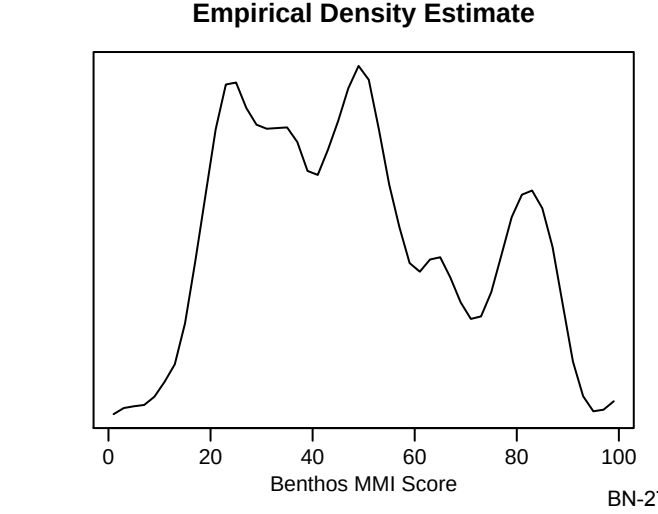
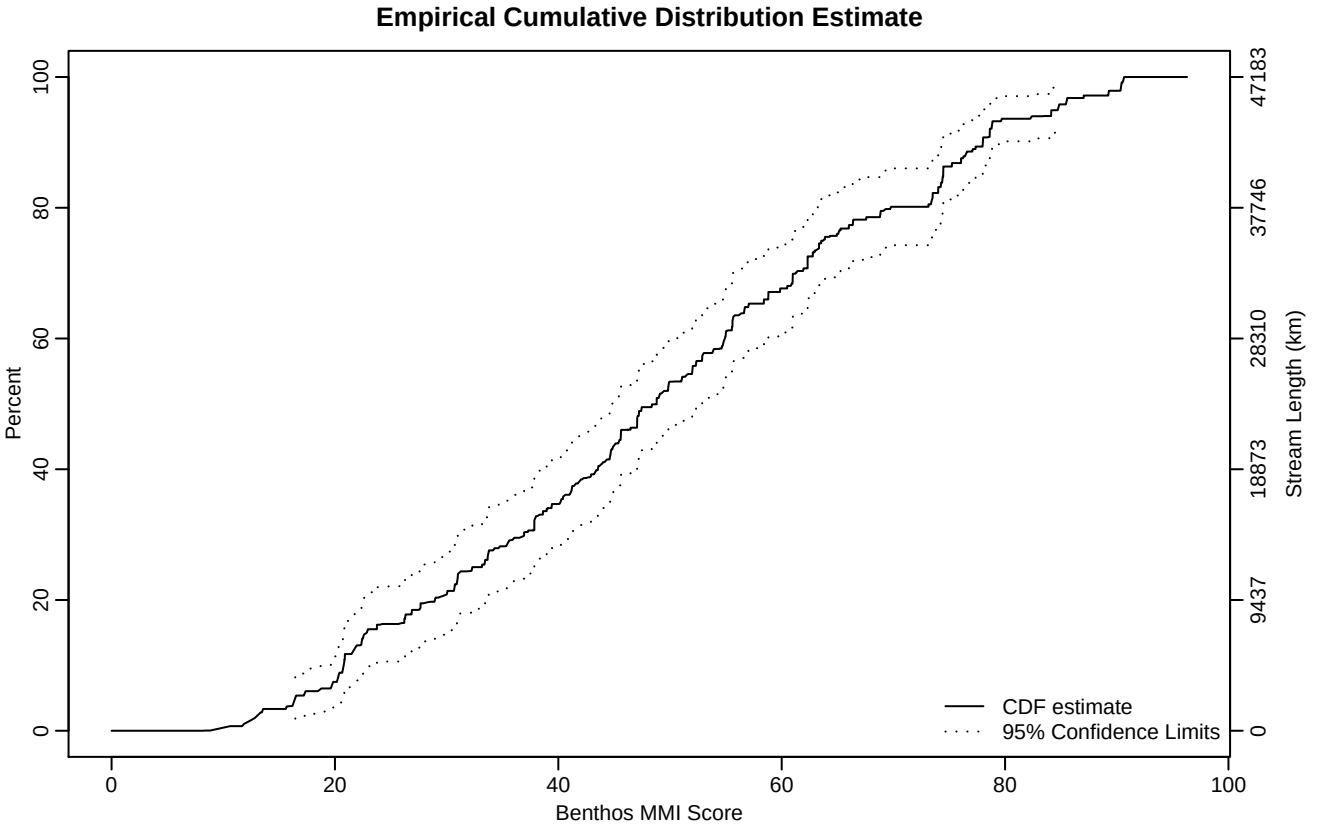


Figure BN−4 Indicator: BUG_MMI Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	16.44	13.19	19.84
10Pct	20.78	16.52	22.58
25Pct	32.30	27.58	37.85
50Pct	48.81	44.84	52.88
75Pct	63.73	60.97	73.49
90Pct	78.01	74.46	84.13
95Pct	84.72	78.63	90.38
Mean	49.23	46.12	52.35
Std Dev	19.31	17.89	20.73

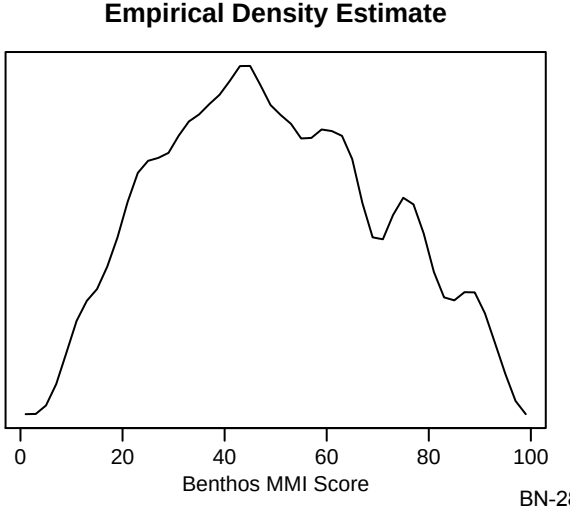
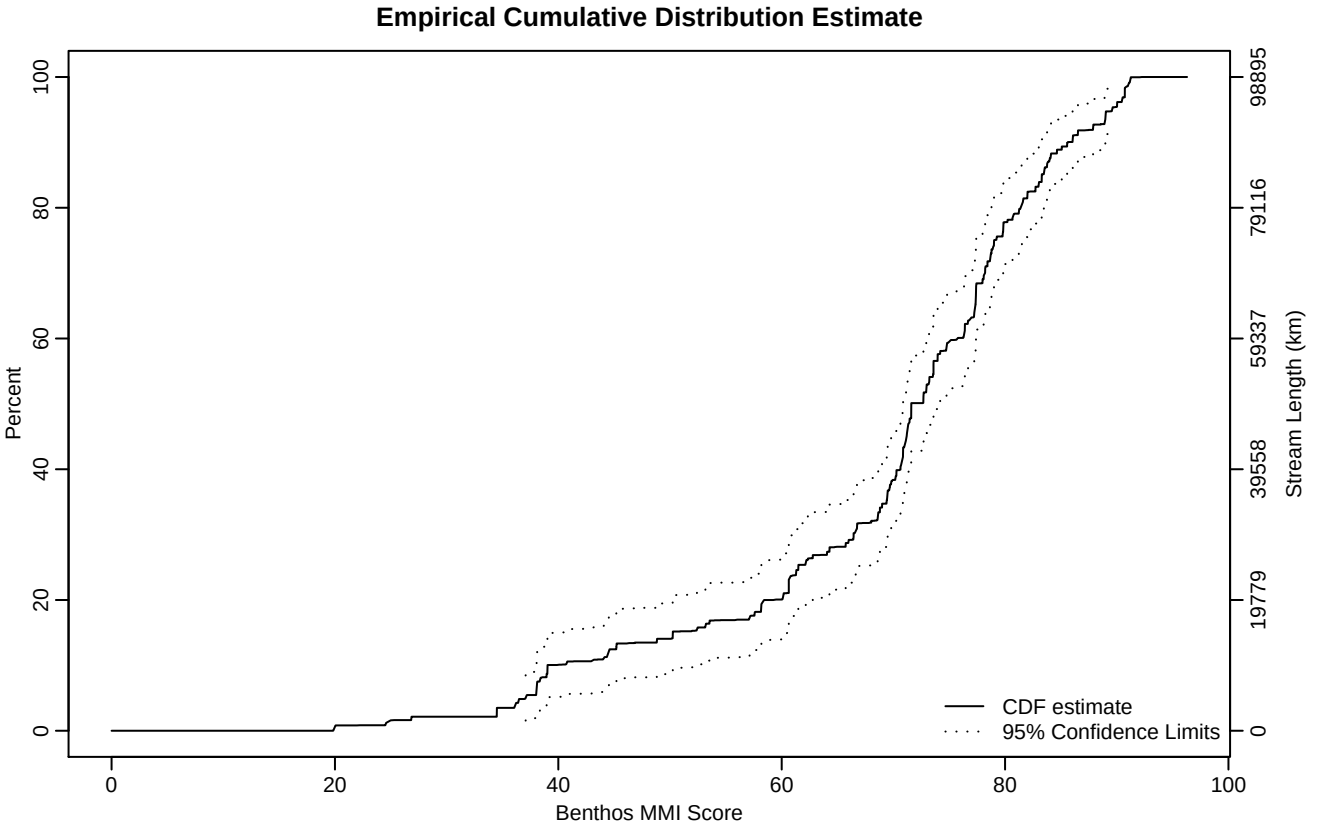


Figure BN−5 Indicator: BUG_MMI Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	37.07	24.99	38.95
10Pct	39.04	37.11	50.25
25Pct	61.49	58.15	66.76
50Pct	71.60	70.86	73.96
75Pct	79.02	77.43	81.99
90Pct	85.61	83.48	89.02
95Pct	89.58	86.52	90.83
Mean	69.06	66.80	71.33
Std Dev	14.41	12.91	15.90

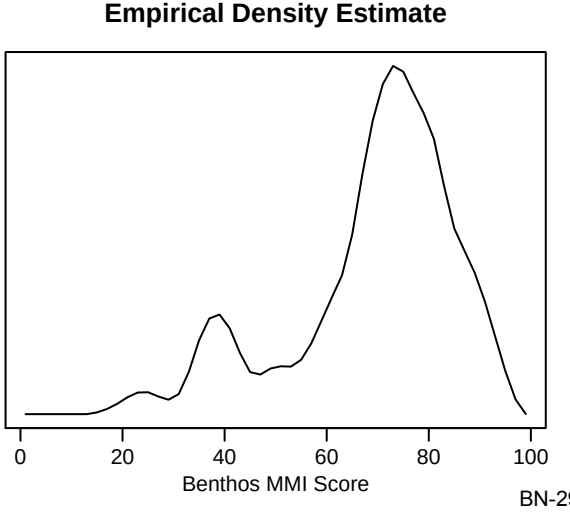
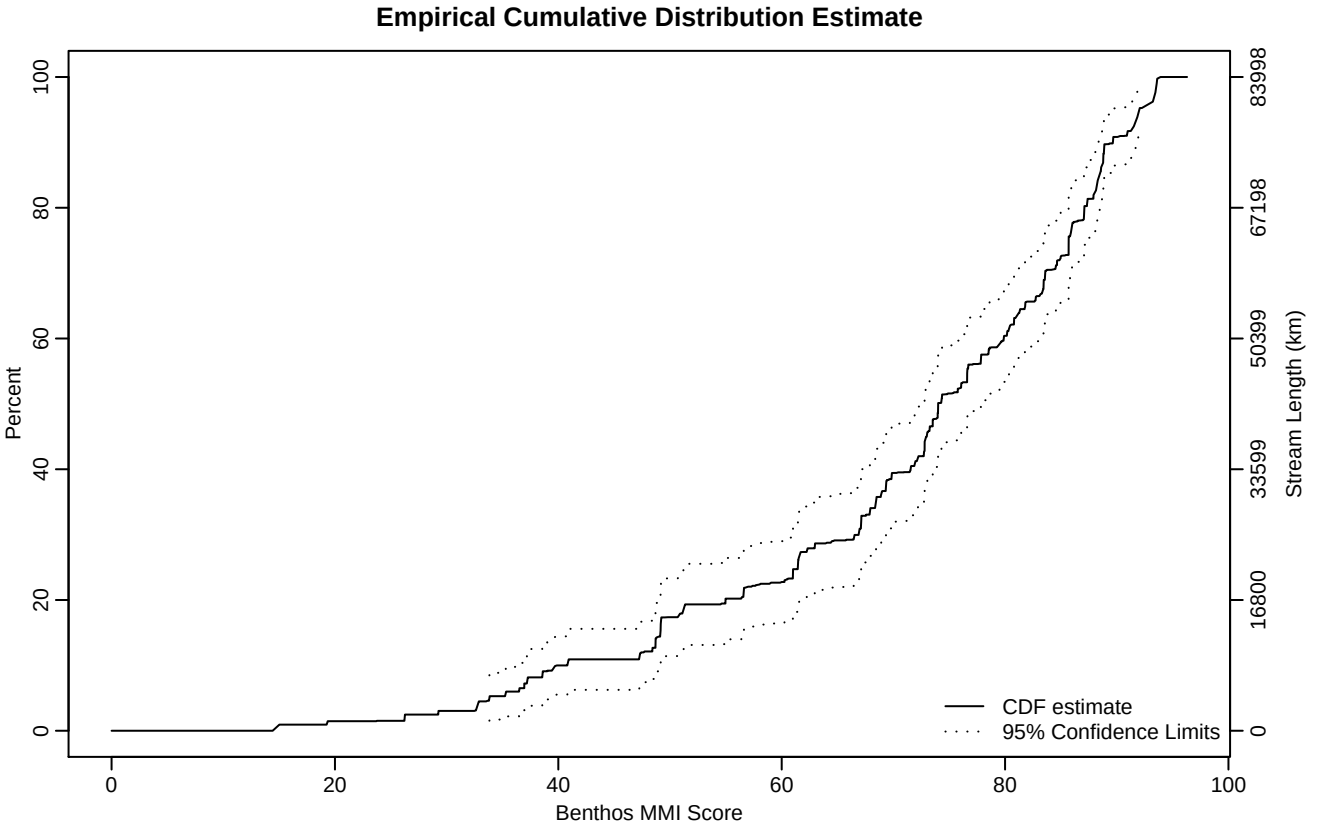


Figure BN−6 Indicator: BUG_MMI Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	33.83	26.23	38.56
10Pct	40.81	35.28	48.93
25Pct	61.45	51.21	67.10
50Pct	74.01	72.74	77.86
75Pct	85.69	83.45	87.91
90Pct	89.65	88.53	91.96
95Pct	92.02	90.91	93.57
Mean	70.87	68.19	73.54
Std Dev	17.19	15.28	19.11

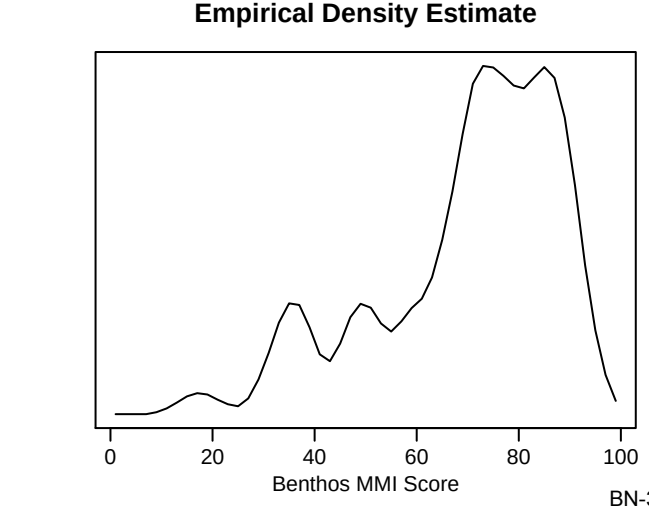
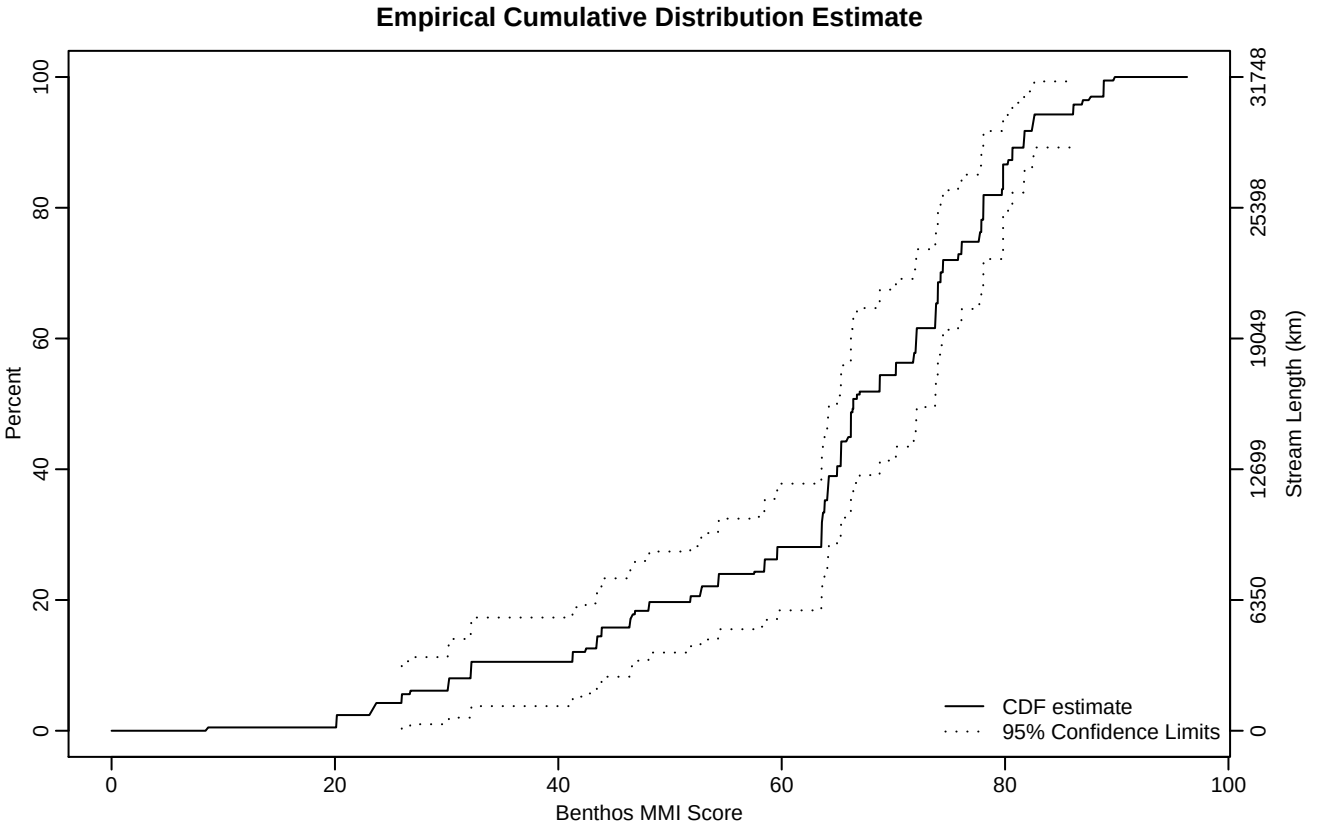


Figure BN−7 Indicator: BUG_MMI Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	25.98	8.60	32.19
10Pct	32.21	23.61	46.38
25Pct	58.45	46.39	63.82
50Pct	66.41	64.15	73.76
75Pct	77.65	73.81	79.82
90Pct	81.68	79.82	87.64
95Pct	86.11	81.67	89.82
Mean	64.29	60.81	67.78
Std Dev	16.75	13.78	19.72

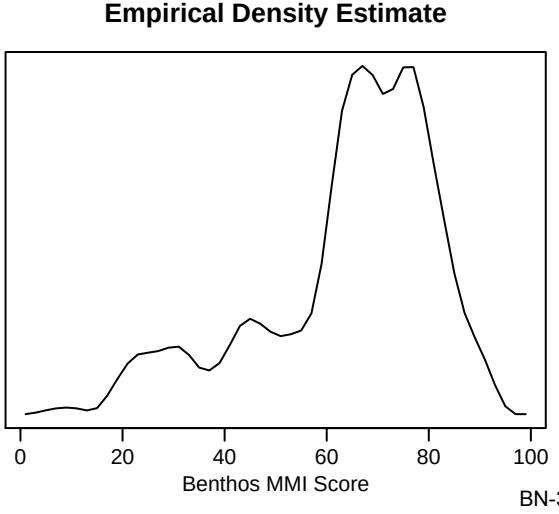
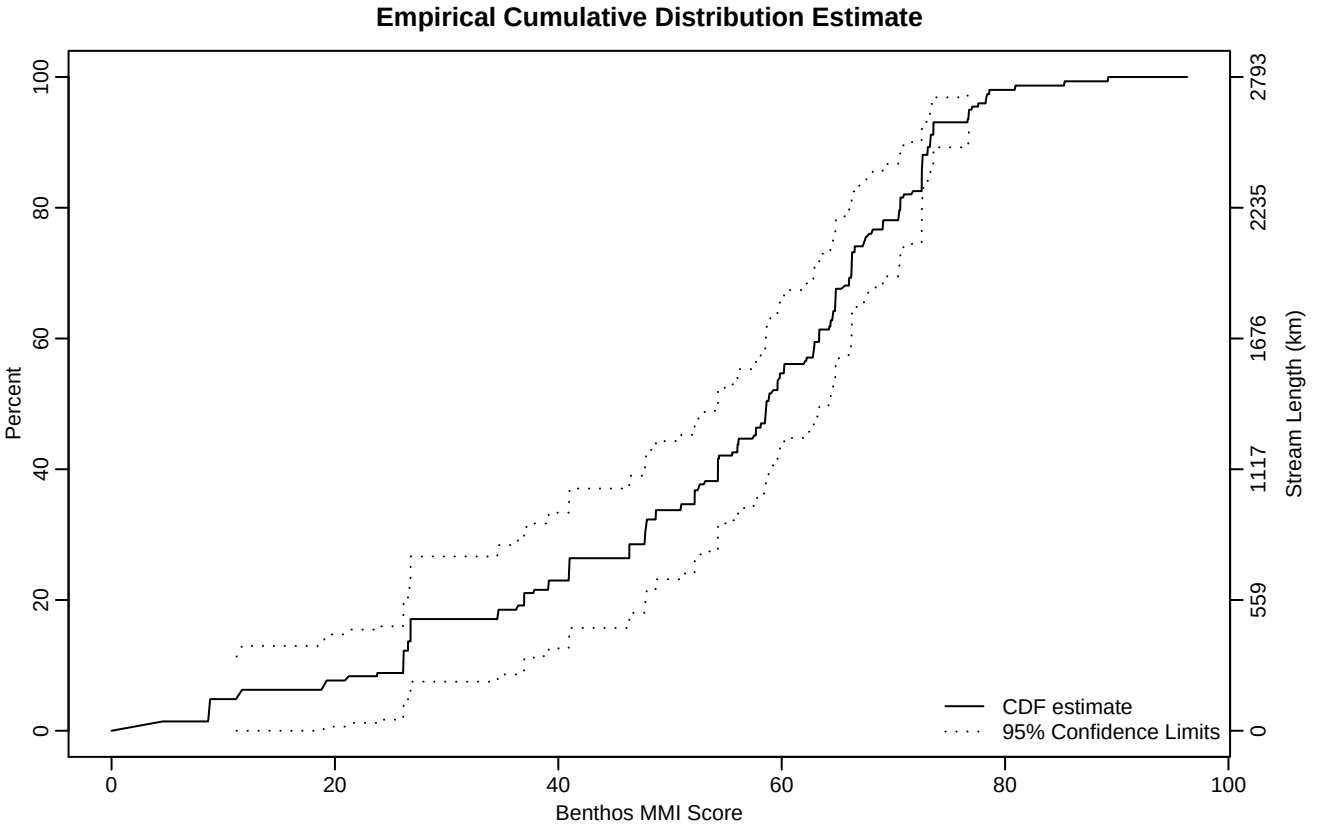


Figure BN−8 Indicator: BUG_MMI Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	11.20	0	26.14
10Pct	26.12	8.72	34.54
25Pct	40.98	26.77	52.20
50Pct	58.63	54.29	63.36
75Pct	67.44	64.81	72.54
90Pct	73.30	72.55	76.77
95Pct	77	73.58	78.59
Mean	53.68	49.21	58.15
Std Dev	18.23	15.39	21.08

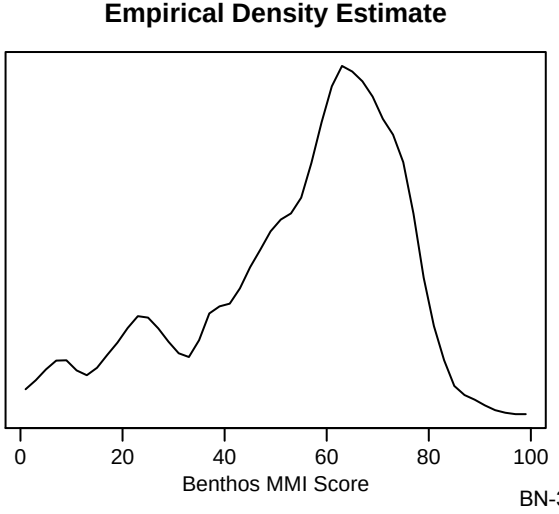
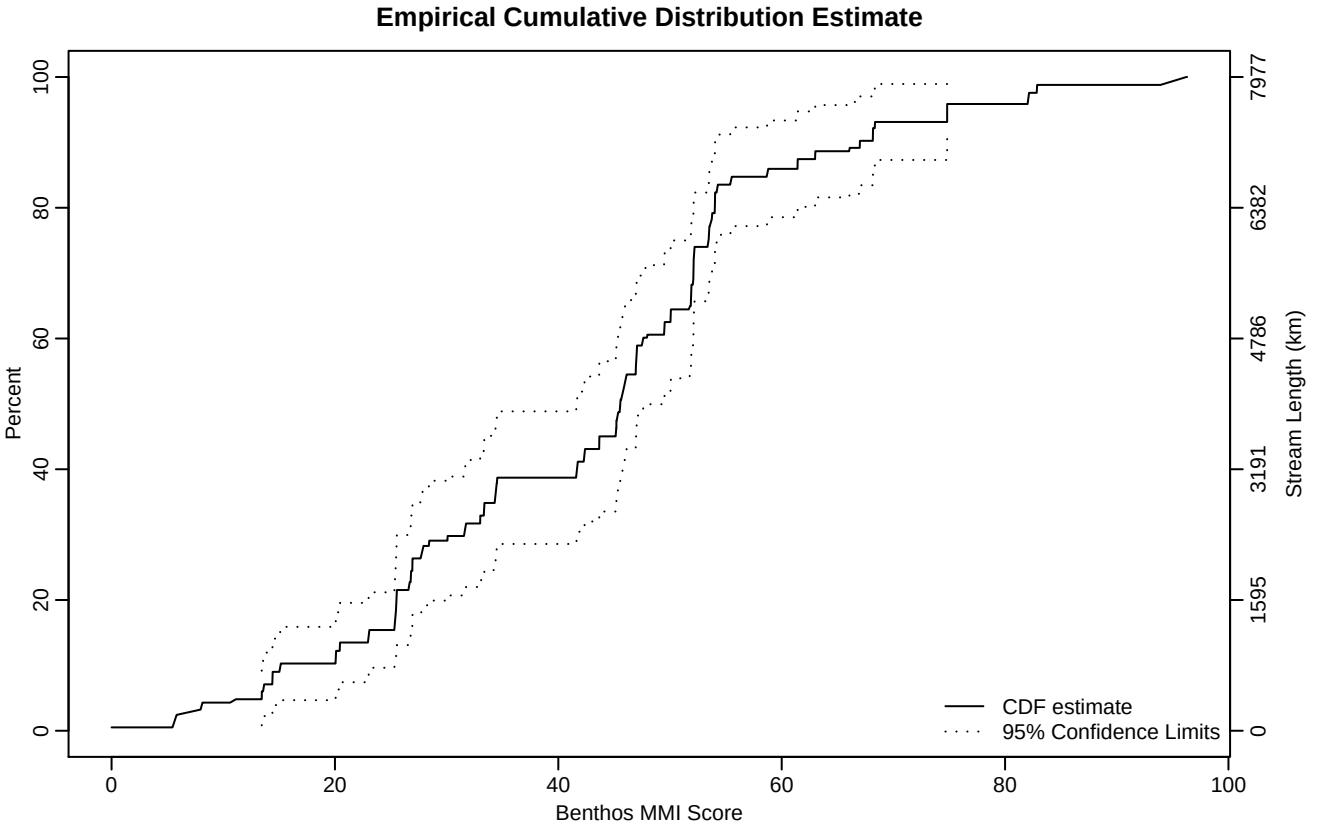


Figure BN−9 Indicator: BUG_MMI Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	13.44	5.53	15.03
10Pct	15.13	13.44	23.06
25Pct	26.93	25.36	33.35
50Pct	45.55	34.52	49.50
75Pct	53.45	51.89	54.26
90Pct	67	54.23	82.11
95Pct	74.82	66.09	96.23
Mean	42.63	39.02	46.24
Std Dev	17.82	15.02	20.61

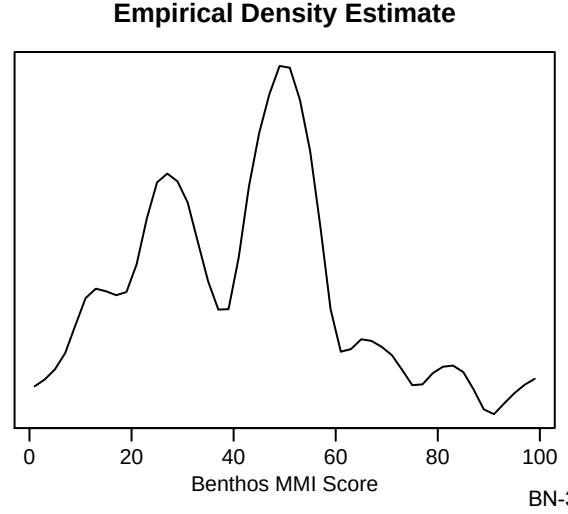
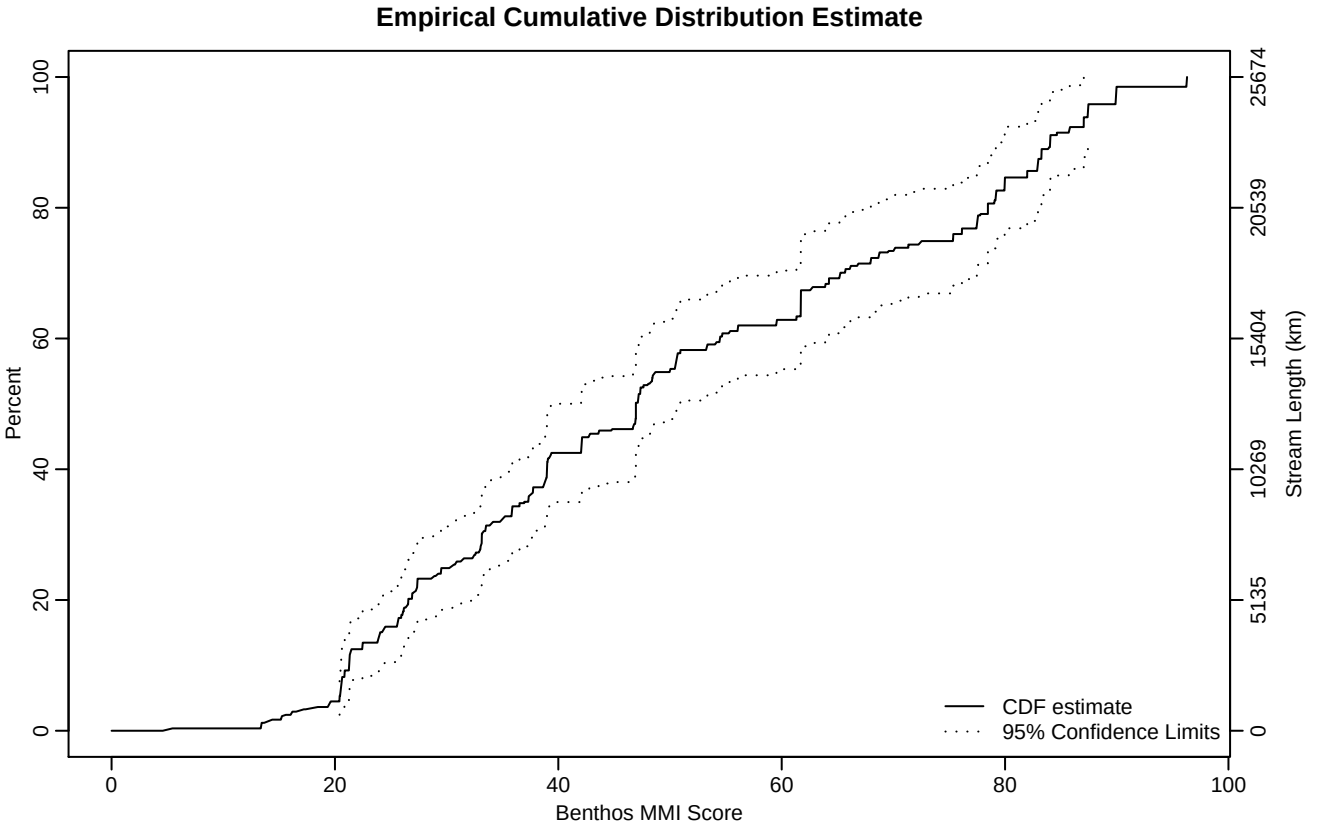


Figure BN−10 Indicator: BUG_MMI Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	20.41	16.11	20.59
10Pct	21.27	20.42	24.01
25Pct	30.33	26.16	33.91
50Pct	46.94	39.16	53.24
75Pct	75.33	62.59	79.22
90Pct	84.03	79.95	89.93
95Pct	87.43	83.28	96.29
Mean	50.65	47.06	54.25
Std Dev	21.23	19.50	22.96

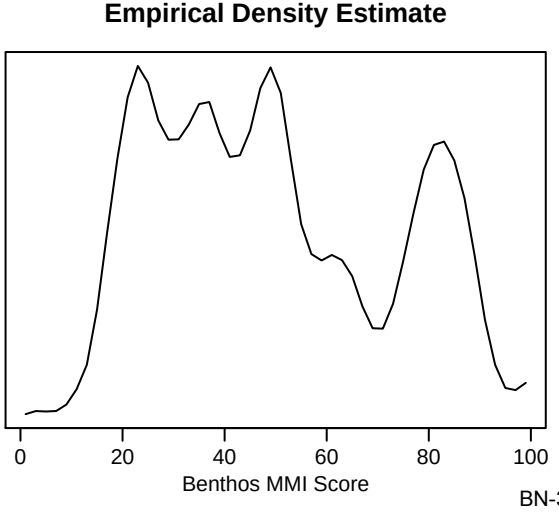
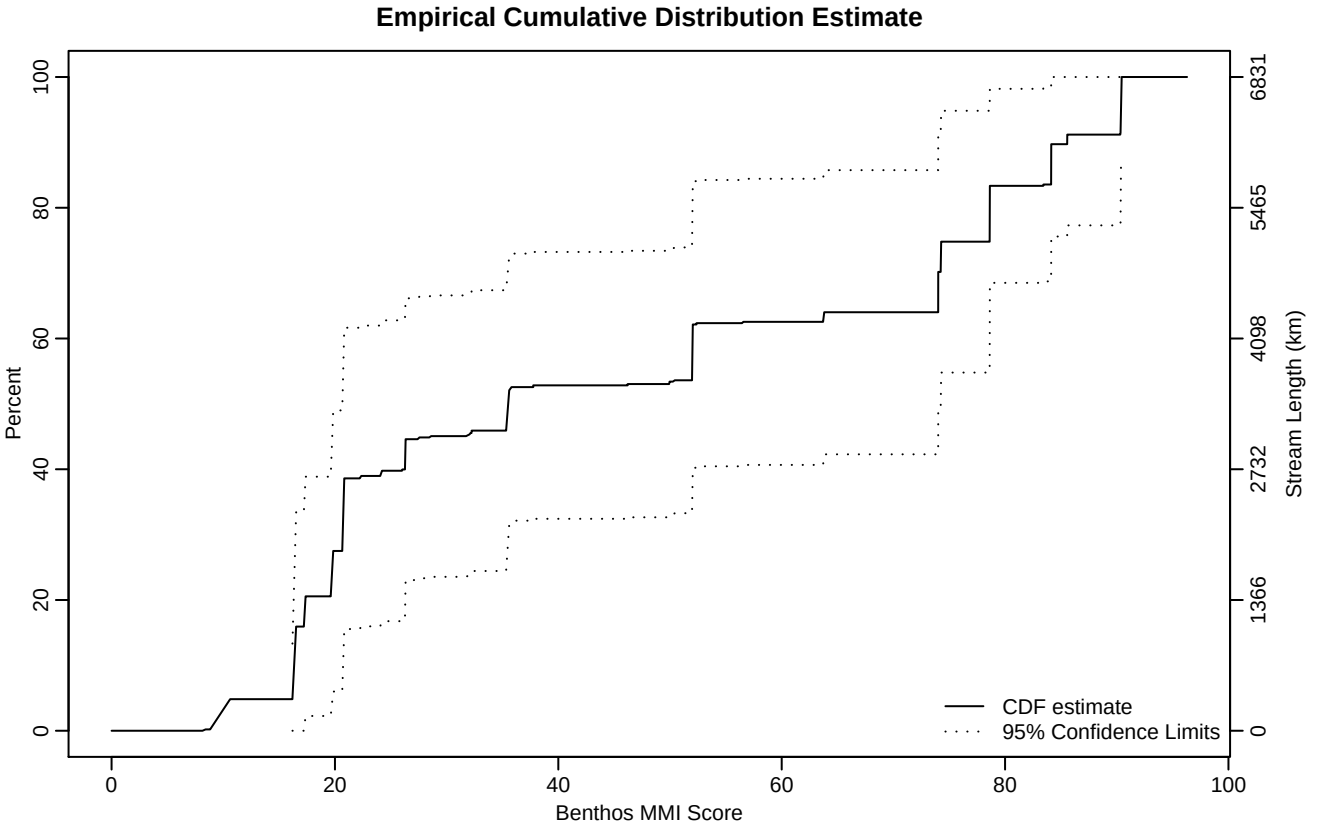


Figure BN−11 Indicator: BUG_MMI Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	16.19	0	16.44
10Pct	16.34	9.30	17.30
25Pct	19.76	16.25	26.31
50Pct	35.51	20.67	74.24
75Pct	78.62	51.98	90.38
90Pct	85.56	78.62	90.44
95Pct	90.38	78.63	90.44
Mean	46.54	33.68	59.40
Std Dev	28.67	24.93	32.41

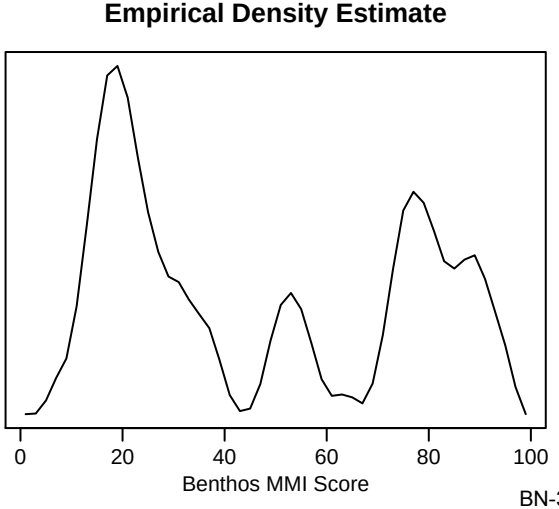
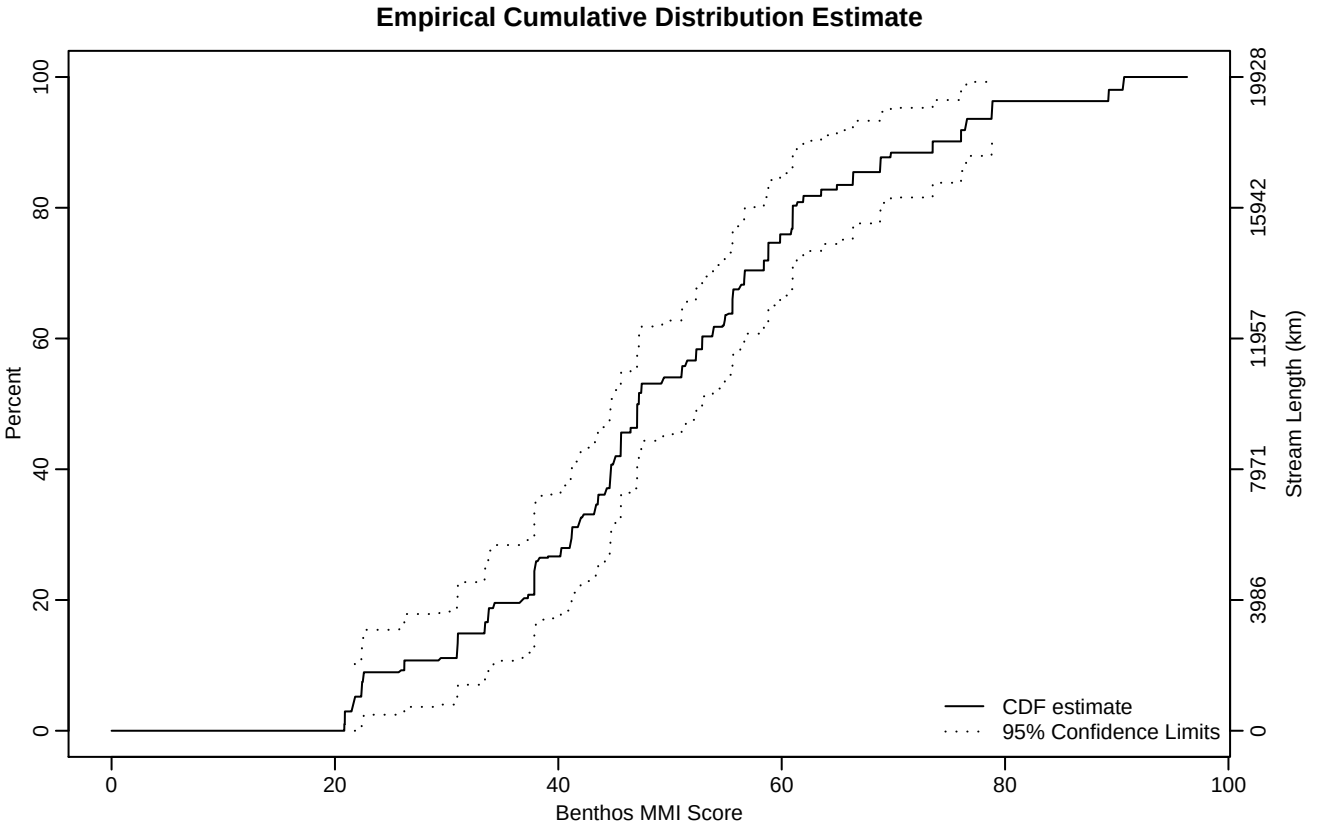


Figure BN−12 Indicator: BUG_MMI Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	21.78	20.88	22.57
10Pct	26.21	21.56	33.45
25Pct	37.91	33.41	43.39
50Pct	47.20	44.73	52.88
75Pct	59.86	55.59	66.39
90Pct	73.52	64.94	89.26
95Pct	78.83	73.52	90.66
Mean	49.73	46.59	52.86
Std Dev	14.69	12.25	17.13

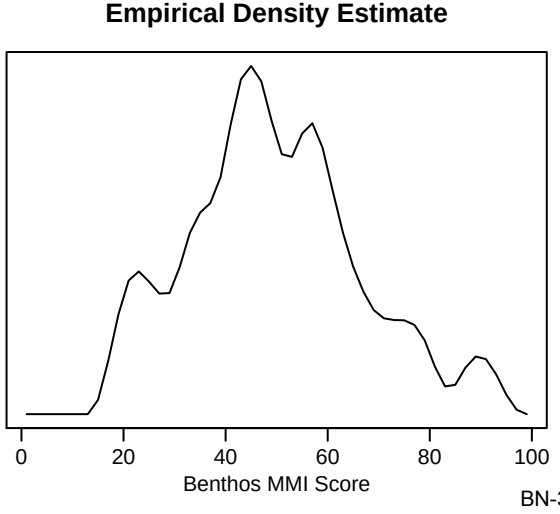
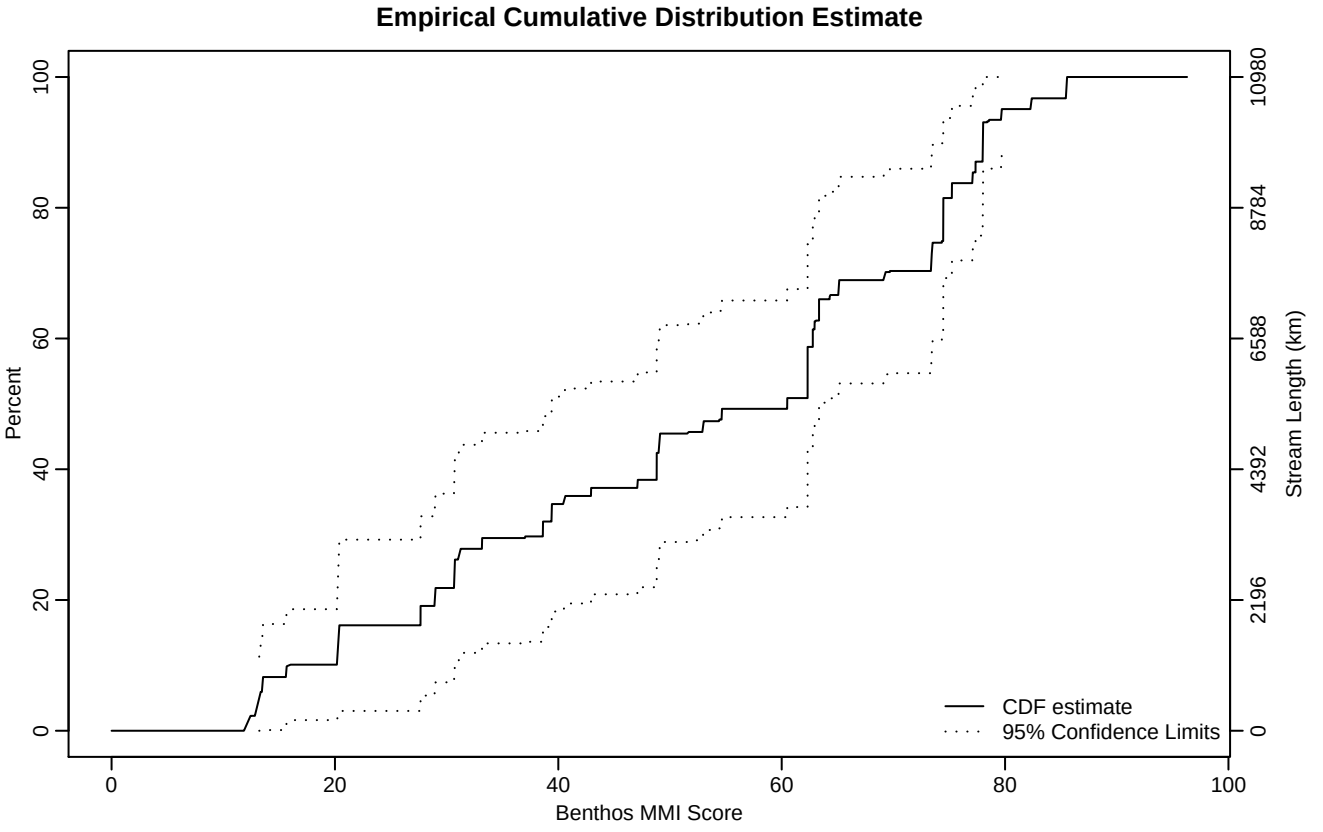


Figure BN−13 Indicator: BUG_MMI Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	13.22	12.15	15.63
10Pct	15.88	12.25	27.66
25Pct	30.72	20.20	48.81
50Pct	60.49	39.41	64.34
75Pct	74.46	62.78	78.02
90Pct	78.01	74.47	85.55
95Pct	79.70	77.99	85.55
Mean	52.07	44.10	60.03
Std Dev	22.18	19.04	25.32

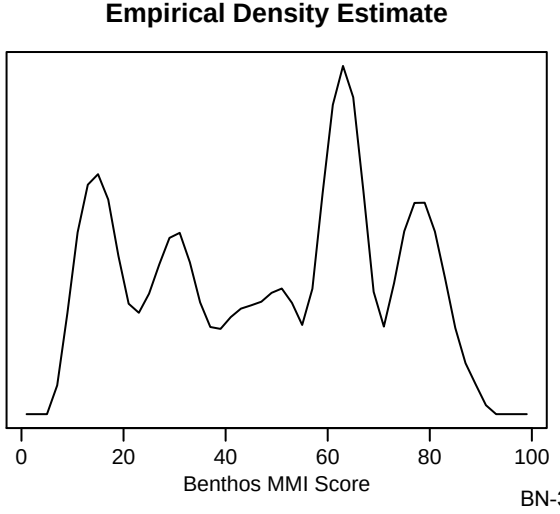
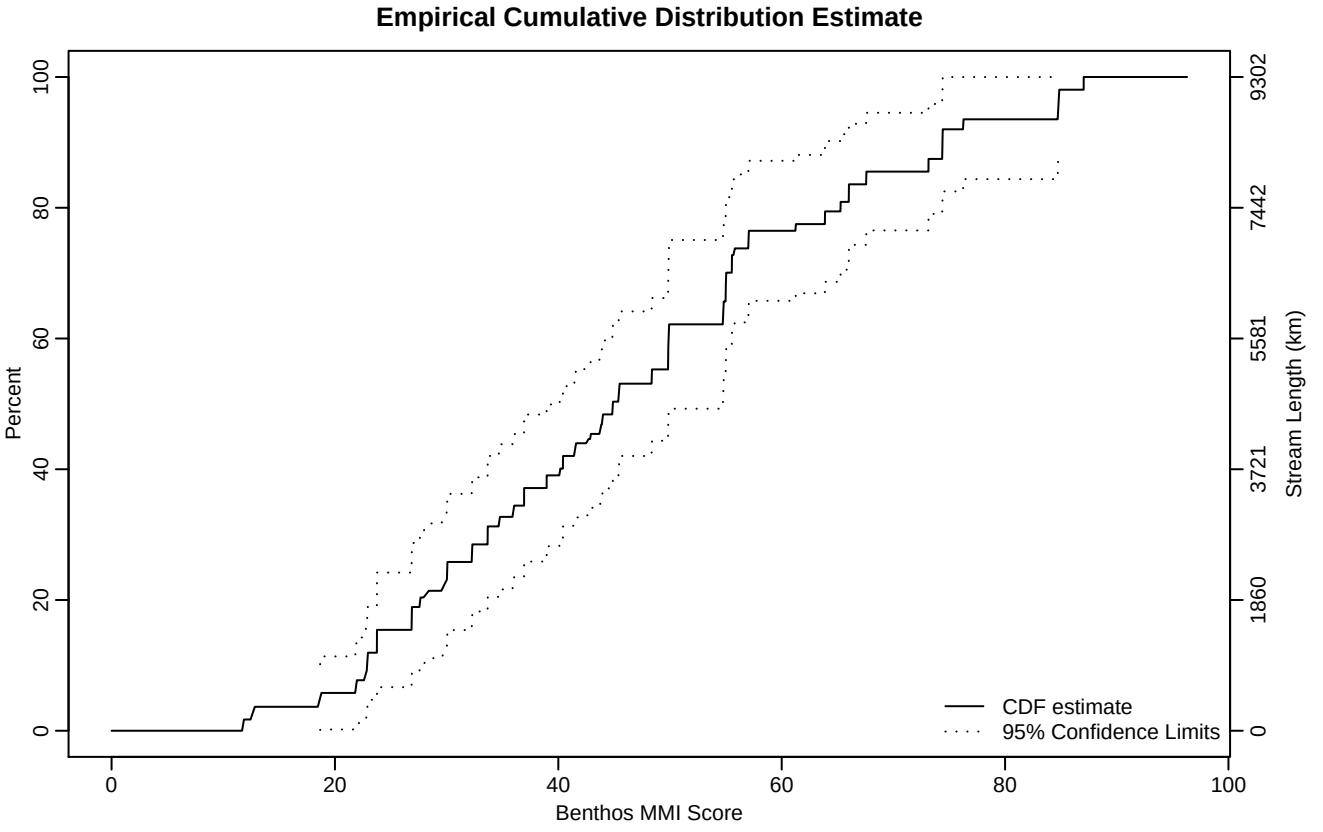


Figure BN−14 Indicator: BUG_MMI Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	18.67	11.74	22.86
10Pct	22.88	12.70	26.87
25Pct	30.06	23.76	36.93
50Pct	44.88	38.96	49.90
75Pct	57.03	54.74	73.14
90Pct	74.39	65.27	87.04
95Pct	84.76	73.14	87.04
Mean	46.59	42.19	51
Std Dev	16.36	13.89	18.83

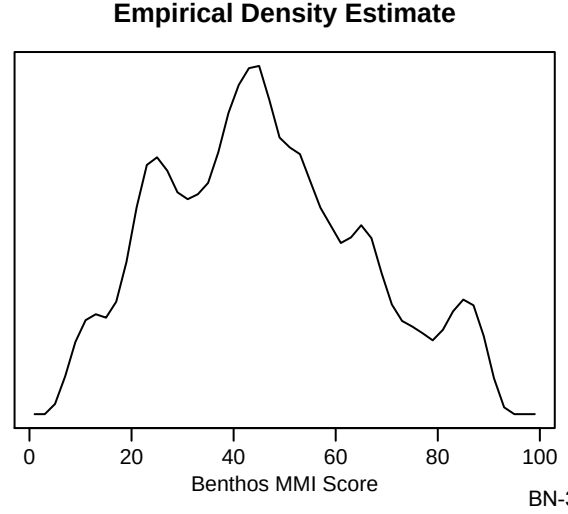
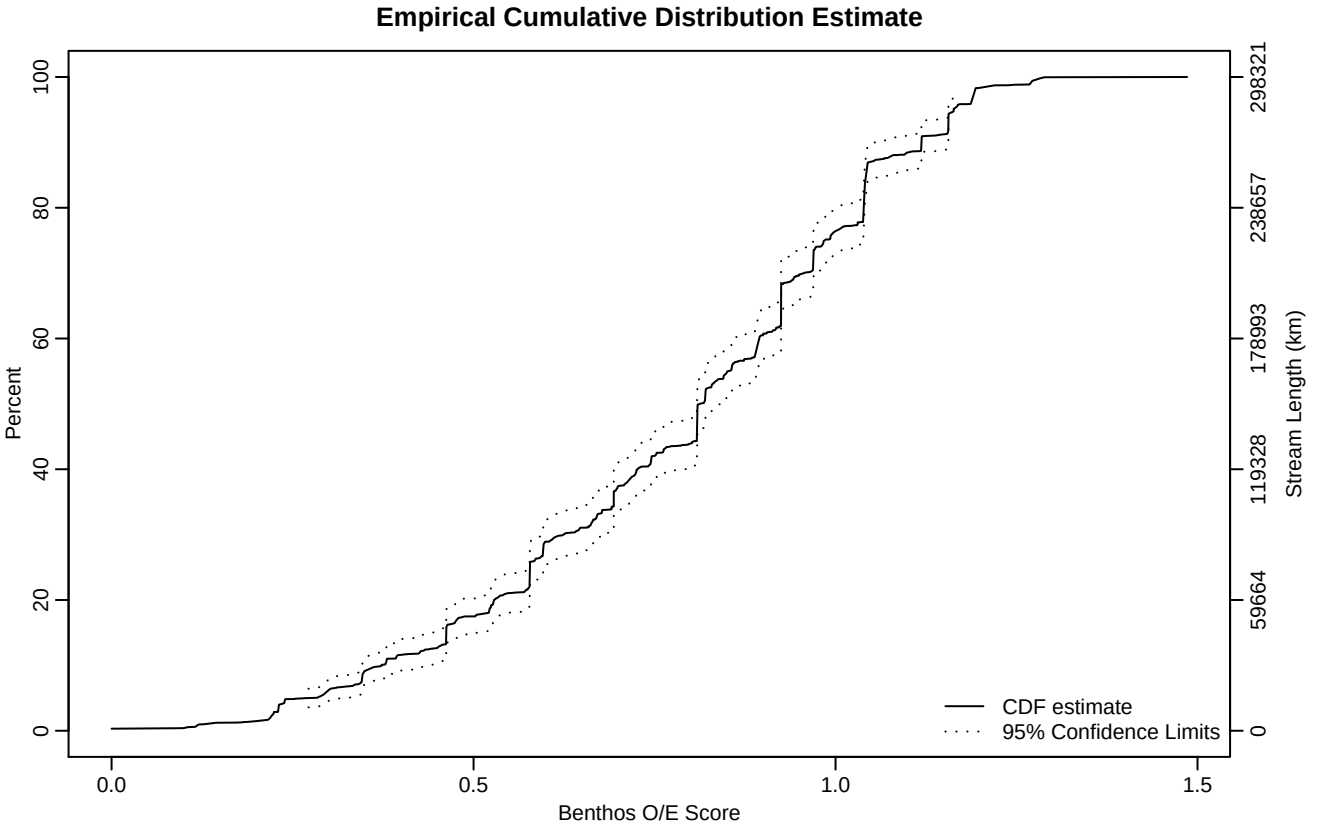


Figure BN−15 Indicator: OBS_EXP Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.27	0.23	0.30
10Pct	0.37	0.35	0.43
25Pct	0.58	0.58	0.60
50Pct	0.81	0.81	0.84
75Pct	0.98	0.97	1.04
90Pct	1.12	1.06	1.16
95Pct	1.16	1.16	1.19
Mean	0.78	0.76	0.80
Std Dev	0.27	0.25	0.28

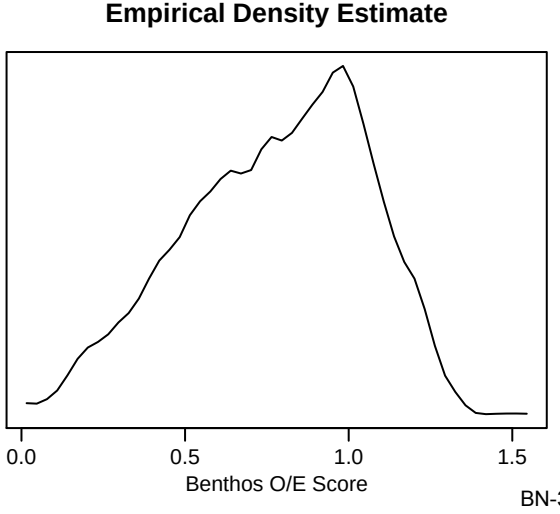
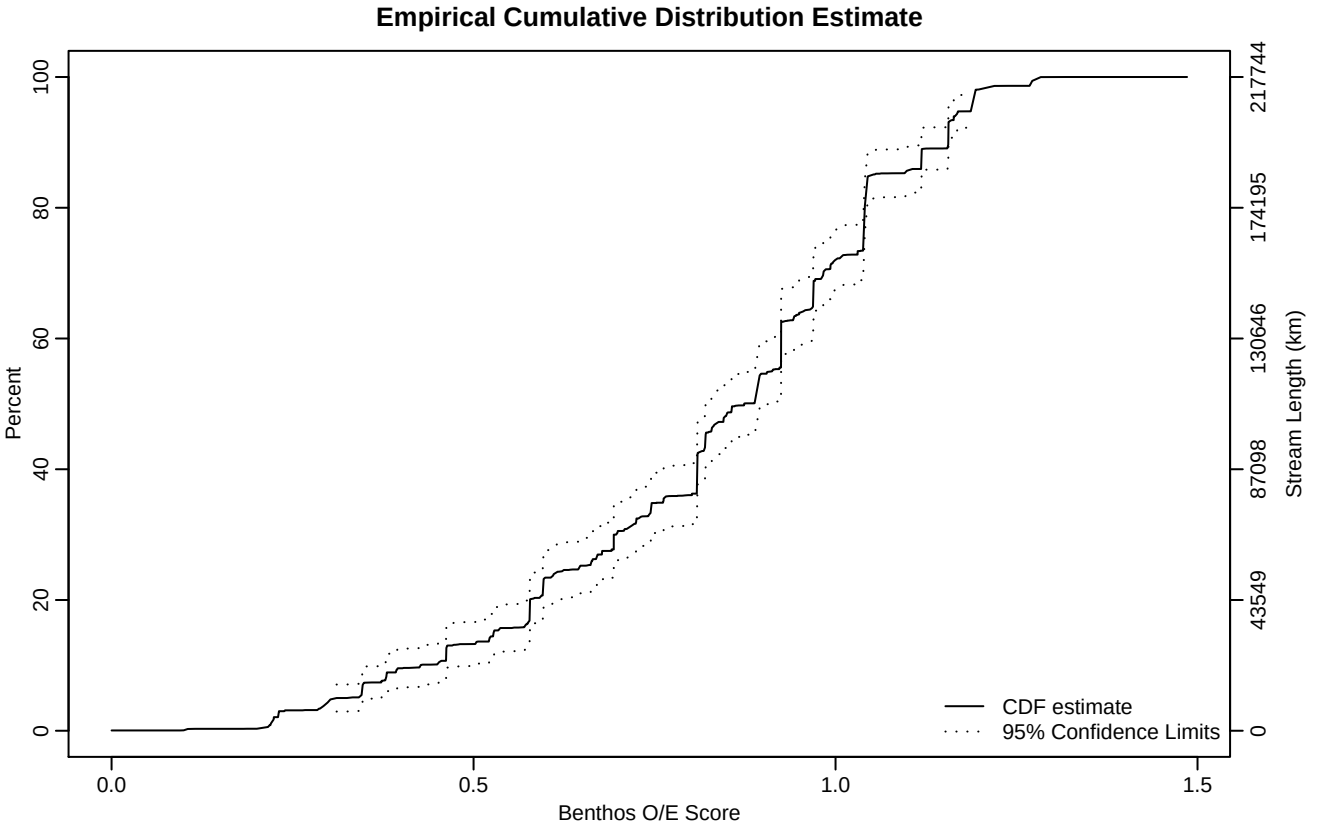


Figure BN−16 Indicator: OBS_EXP Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.31	0.23	0.35
10Pct	0.43	0.35	0.46
25Pct	0.65	0.60	0.69
50Pct	0.87	0.82	0.91
75Pct	1.04	0.99	1.04
90Pct	1.16	1.12	1.16
95Pct	1.19	1.16	1.19
Mean	0.82	0.80	0.85
Std Dev	0.25	0.24	0.27

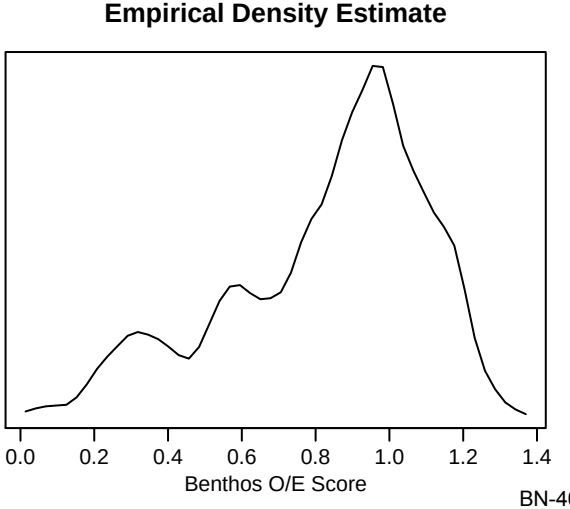
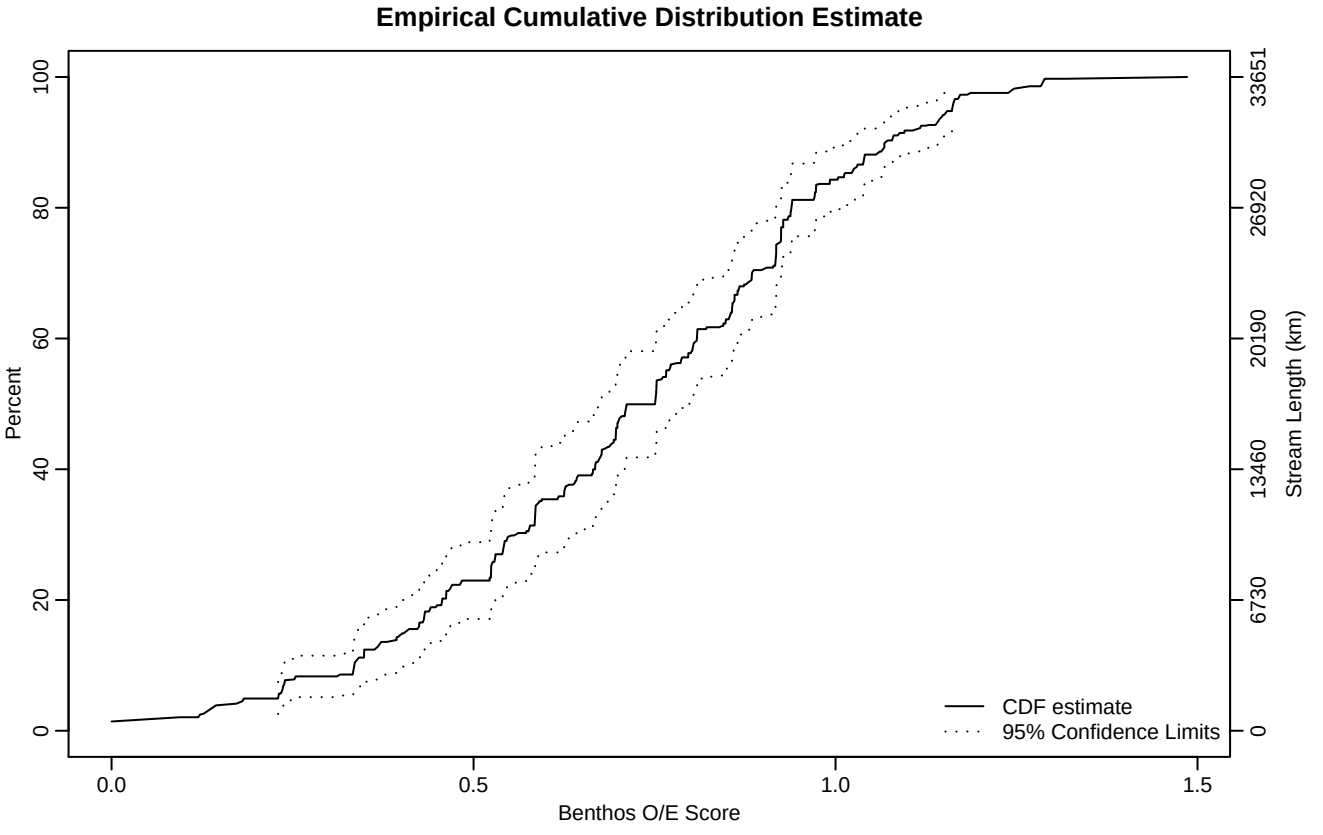


Figure BN−17 Indicator: OBS_EXP Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.23	0.13	0.24
10Pct	0.34	0.24	0.37
25Pct	0.52	0.45	0.58
50Pct	0.75	0.67	0.80
75Pct	0.92	0.88	0.97
90Pct	1.07	1.03	1.15
95Pct	1.16	1.11	1.25
Mean	0.71	0.67	0.75
Std Dev	0.28	0.25	0.31

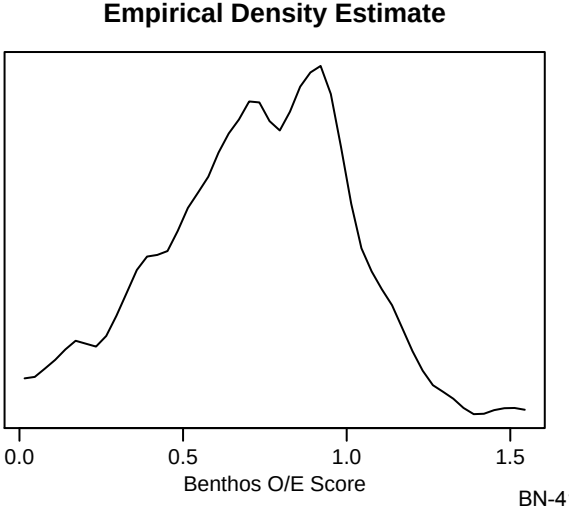
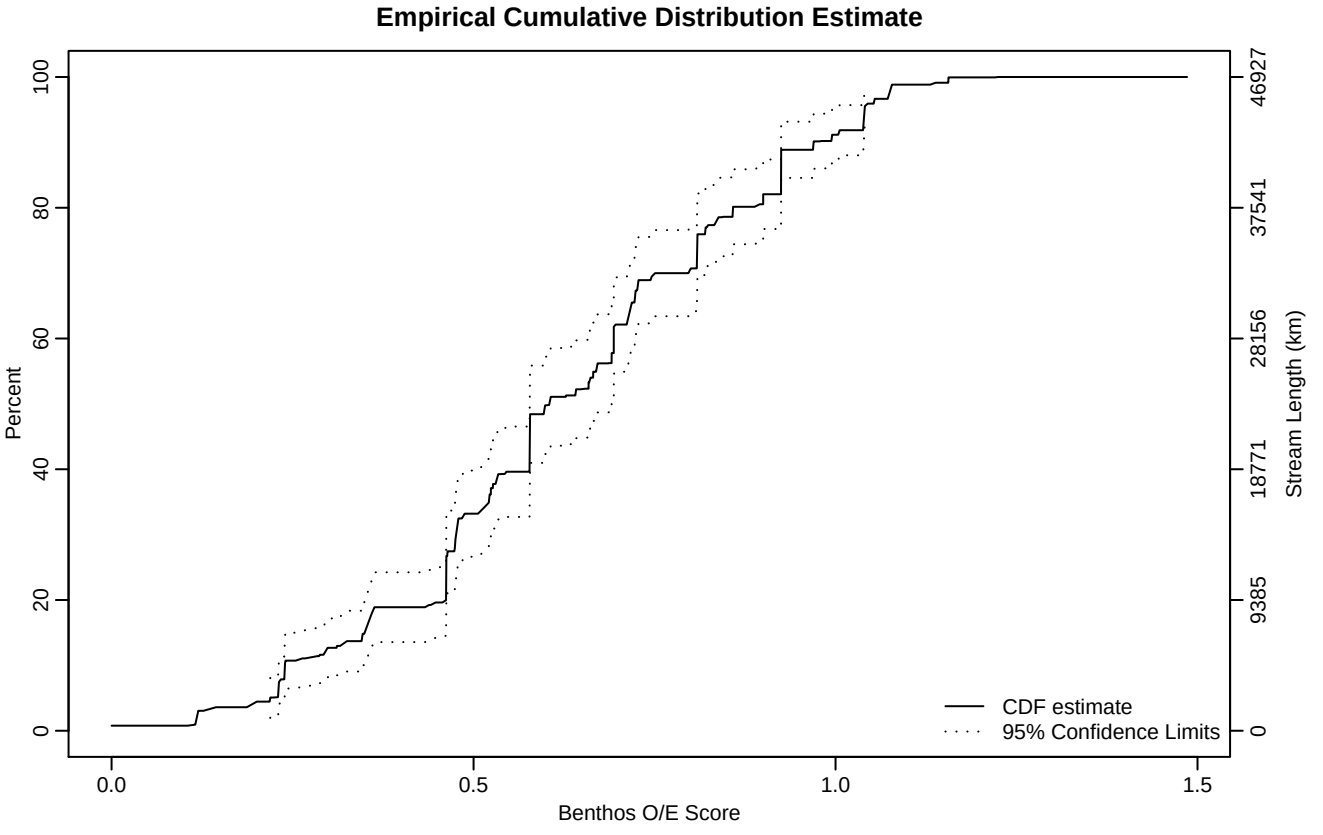


Figure BN−18 Indicator: OBS_EXP Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.12	0.24
10Pct	0.24	0.23	0.32
25Pct	0.46	0.44	0.48
50Pct	0.60	0.58	0.69
75Pct	0.81	0.73	0.90
90Pct	0.97	0.92	1.04
95Pct	1.04	1	1.13
Mean	0.63	0.59	0.66
Std Dev	0.24	0.22	0.26

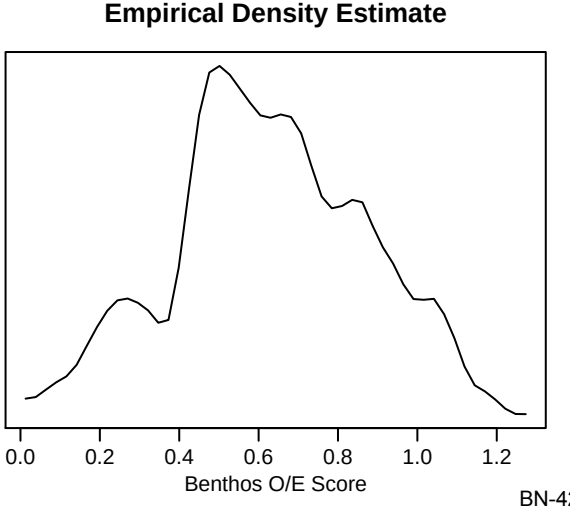
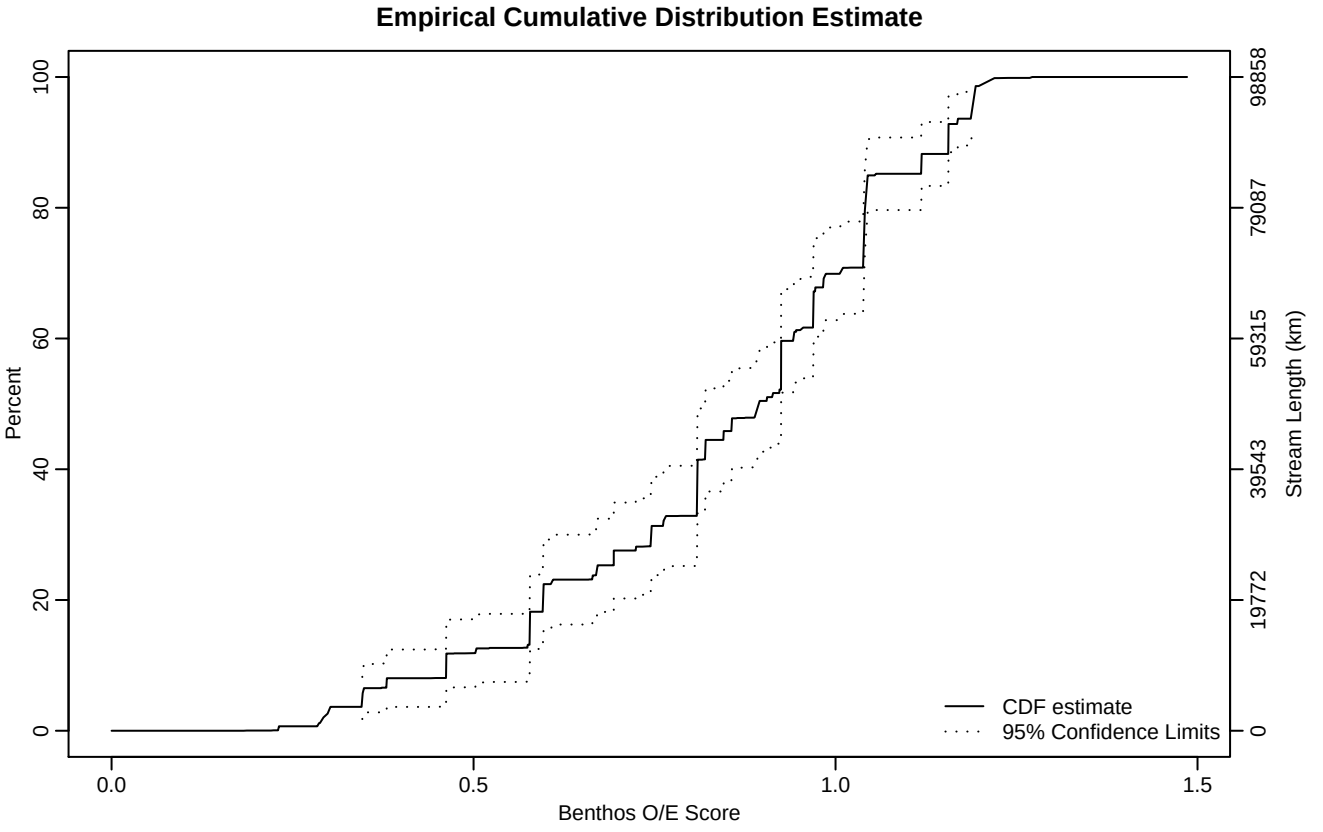


Figure BN−19 Indicator: OBS_EXP Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.35	0.29	0.38
10Pct	0.46	0.35	0.58
25Pct	0.67	0.58	0.76
50Pct	0.89	0.82	0.92
75Pct	1.04	0.97	1.04
90Pct	1.16	1.04	1.19
95Pct	1.19	1.16	1.21
Mean	0.84	0.80	0.88
Std Dev	0.24	0.22	0.26

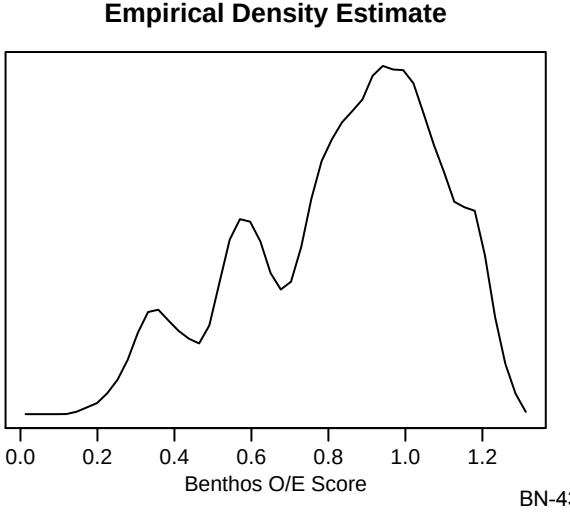
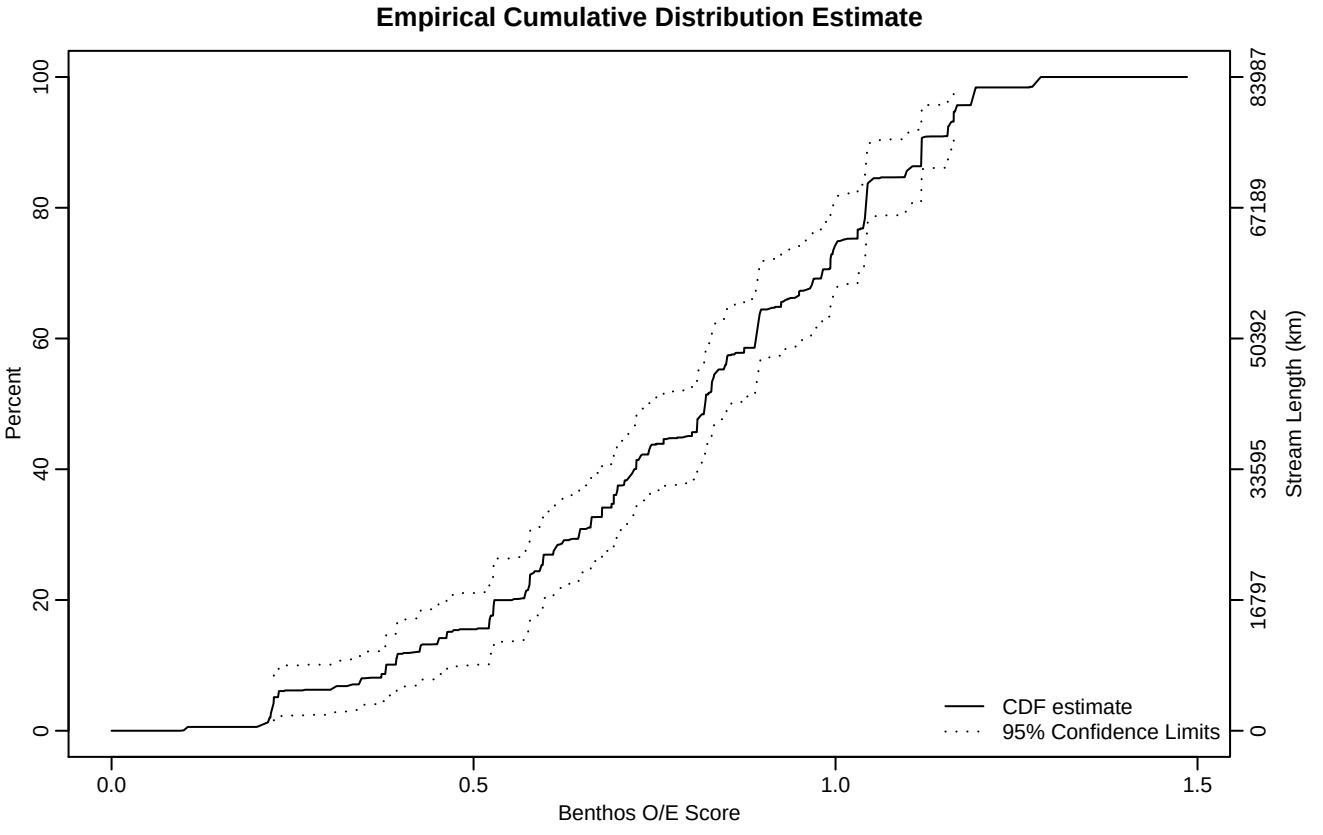


Figure BN−20 Indicator: OBS_EXP Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.22	0.37
10Pct	0.38	0.23	0.46
25Pct	0.59	0.53	0.66
50Pct	0.82	0.74	0.86
75Pct	1.01	0.97	1.04
90Pct	1.12	1.10	1.17
95Pct	1.17	1.15	1.28
Mean	0.79	0.75	0.83
Std Dev	0.27	0.24	0.29

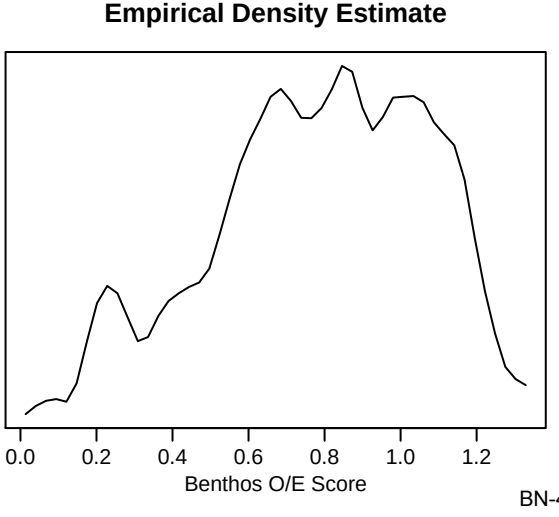
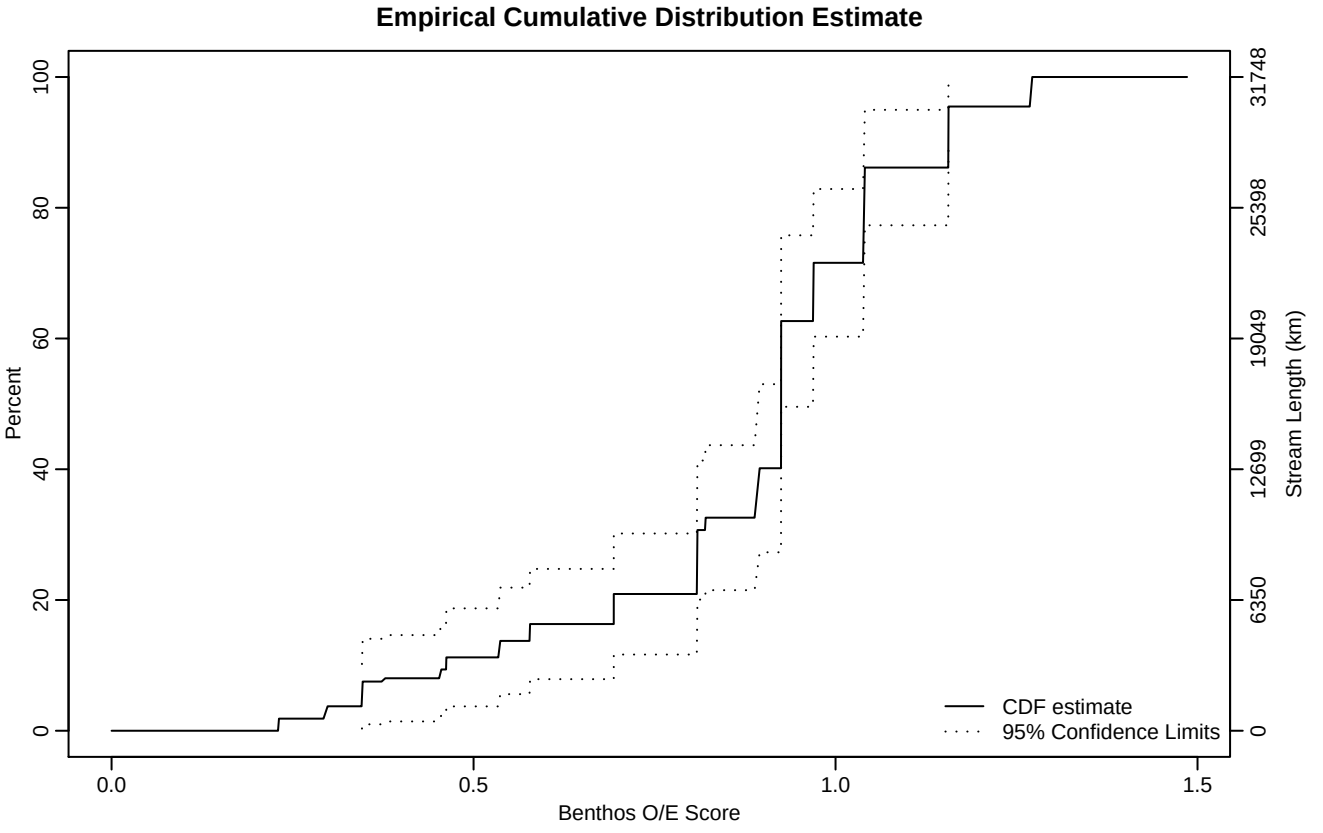


Figure BN−21 Indicator: OBS_EXP Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.35	0.23	0.46
10Pct	0.46	0.30	0.69
25Pct	0.81	0.58	0.89
50Pct	0.92	0.89	0.97
75Pct	1.04	0.97	1.16
90Pct	1.16	1.04	1.27
95Pct	1.16	1.16	1.27
Mean	0.87	0.82	0.93
Std Dev	0.24	0.19	0.28

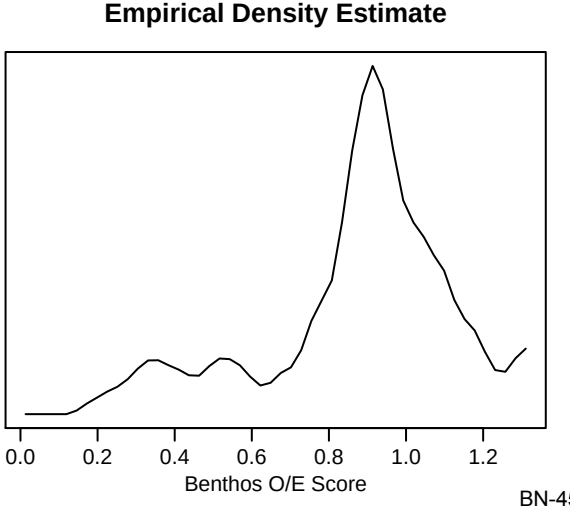
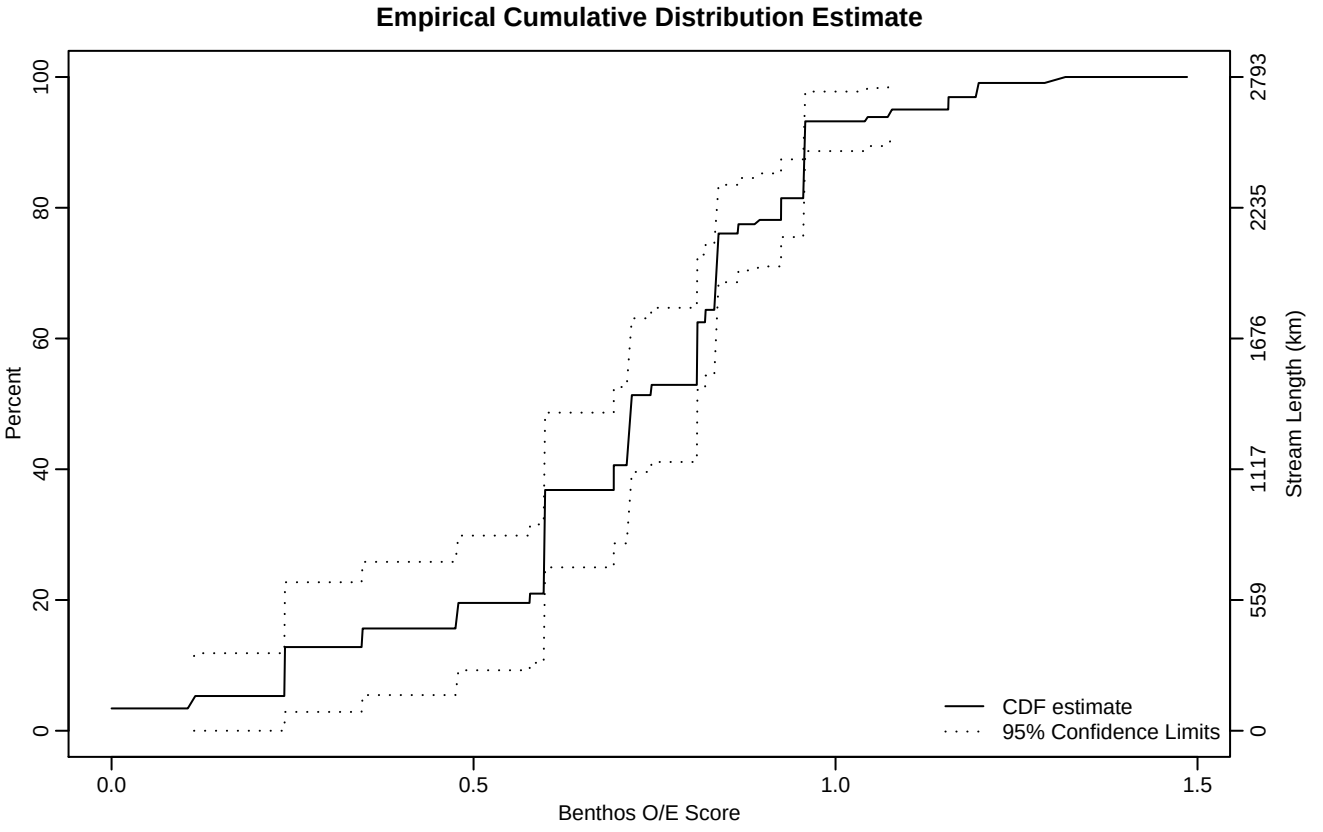


Figure BN−22 Indicator: OBS_EXP Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.11	0	0.24
10Pct	0.24	0.11	0.48
25Pct	0.60	0.35	0.60
50Pct	0.72	0.69	0.81
75Pct	0.84	0.83	0.96
90Pct	0.96	0.96	1.16
95Pct	1.08	0.96	1.30
Mean	0.70	0.63	0.77
Std Dev	0.25	0.20	0.30

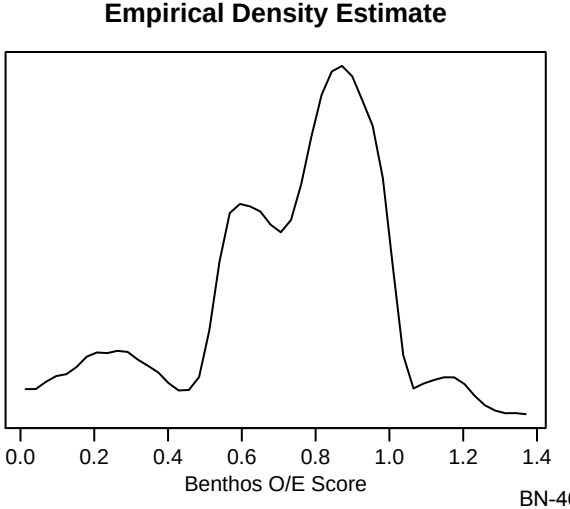
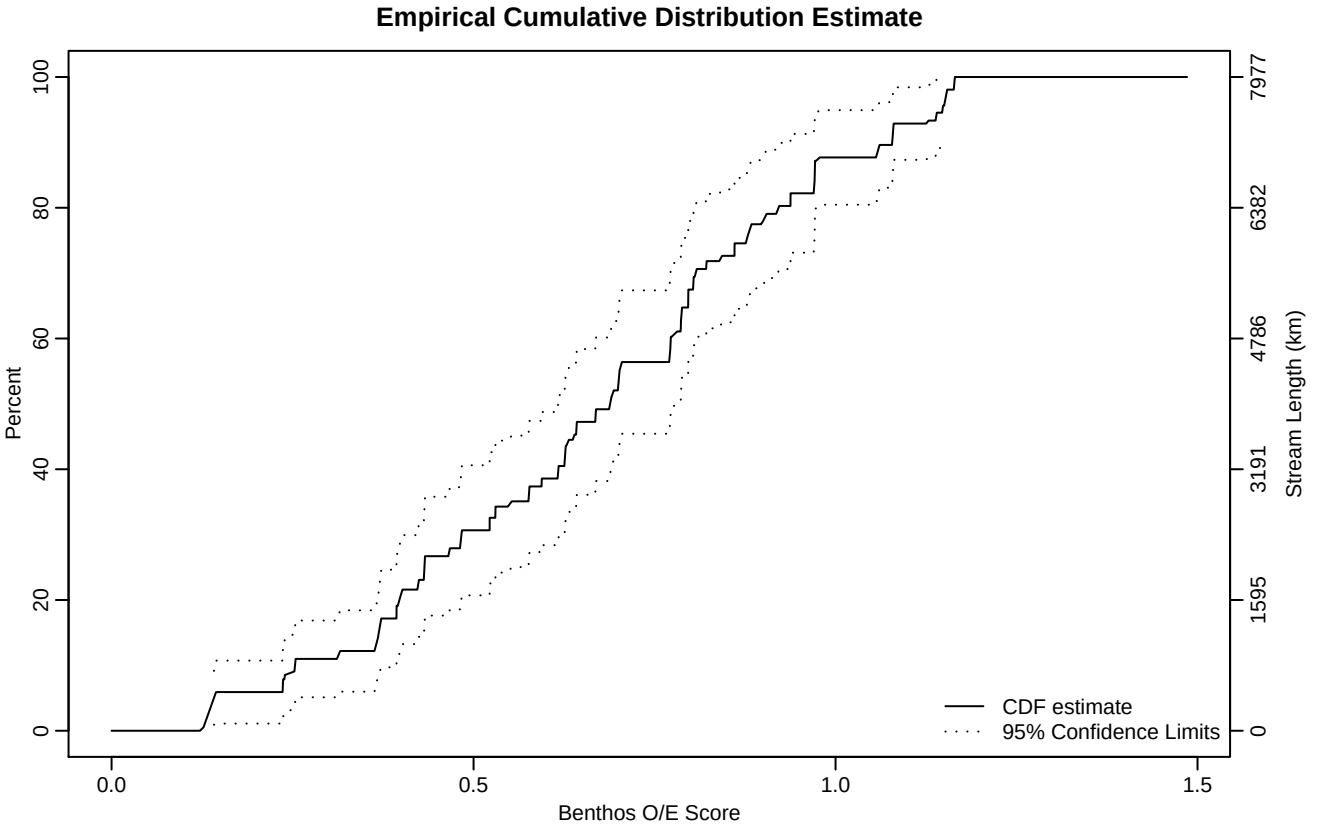


Figure BN−23 Indicator: OBS_EXP Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.14	0.14	0.24
10Pct	0.25	0.14	0.37
25Pct	0.43	0.37	0.53
50Pct	0.69	0.62	0.78
75Pct	0.88	0.80	0.97
90Pct	1.08	0.97	1.15
95Pct	1.15	1.06	1.16
Mean	0.67	0.61	0.73
Std Dev	0.28	0.25	0.31

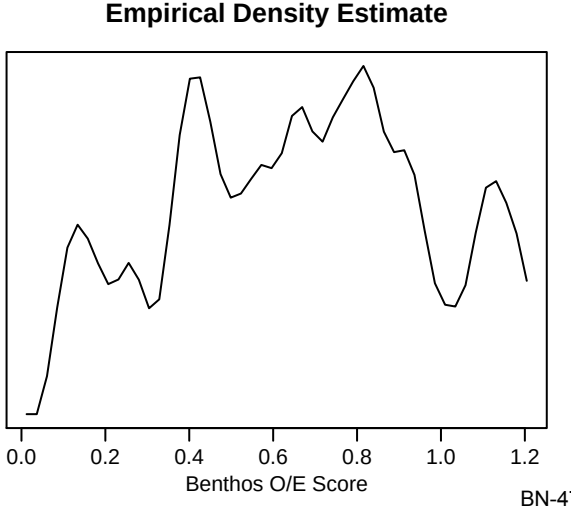
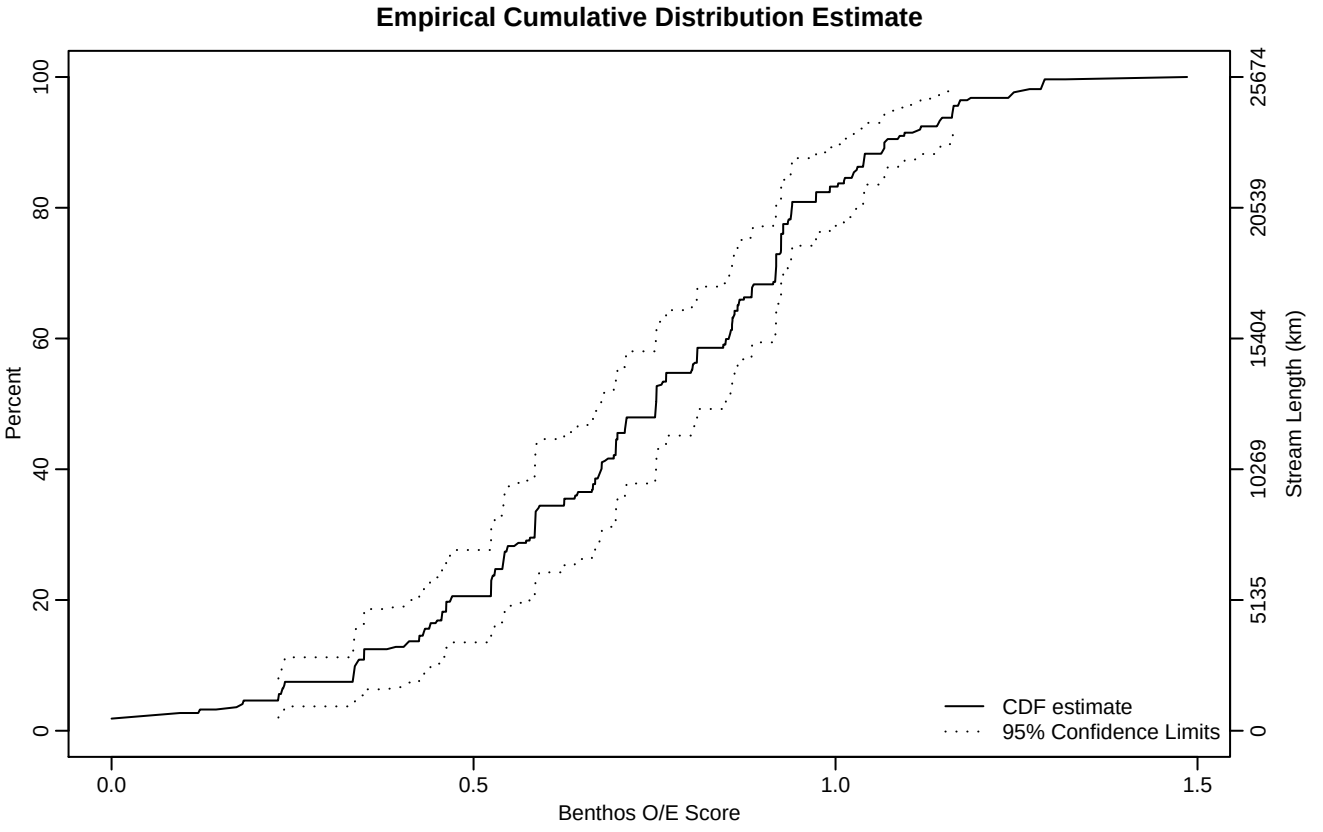


Figure BN−24 Indicator: OBS_EXP Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.23	0.04	0.33
10Pct	0.34	0.18	0.43
25Pct	0.54	0.45	0.59
50Pct	0.75	0.68	0.85
75Pct	0.92	0.88	0.99
90Pct	1.07	1.03	1.16
95Pct	1.16	1.09	1.29
Mean	0.73	0.68	0.78
Std Dev	0.28	0.24	0.31

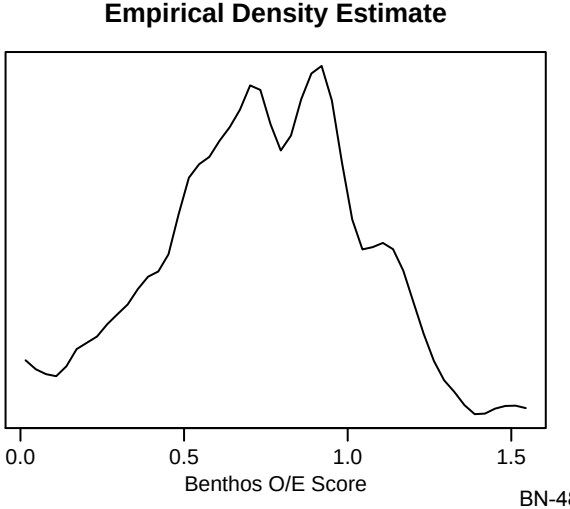
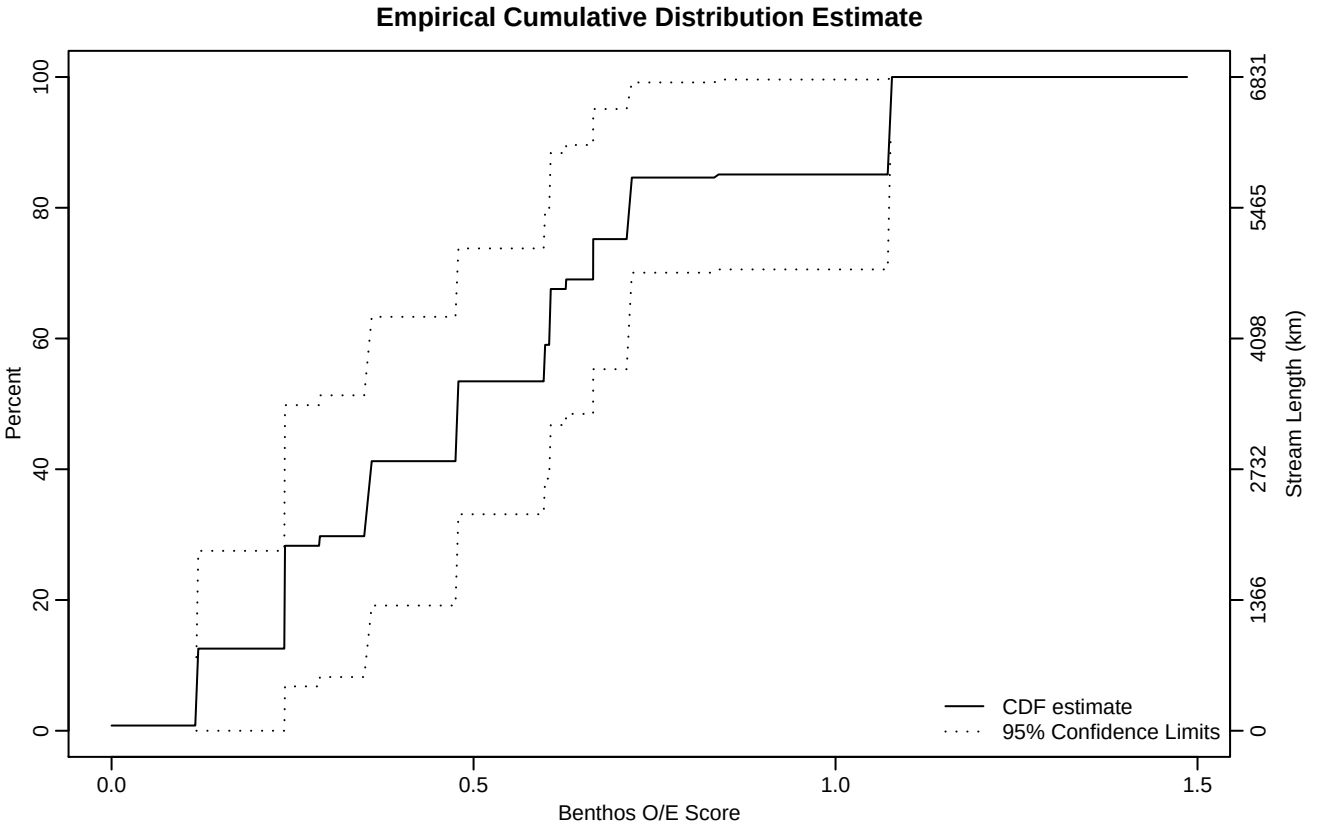


Figure BN−25 Indicator: OBS_EXP Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.12	0.12	0.12
10Pct	0.12	0.12	0.24
25Pct	0.24	0.12	0.36
50Pct	0.48	0.29	0.67
75Pct	0.67	0.60	1.08
90Pct	1.07	0.71	1.08
95Pct	1.08	0.72	1.08
Mean	0.52	0.39	0.66
Std Dev	0.30	0.23	0.37

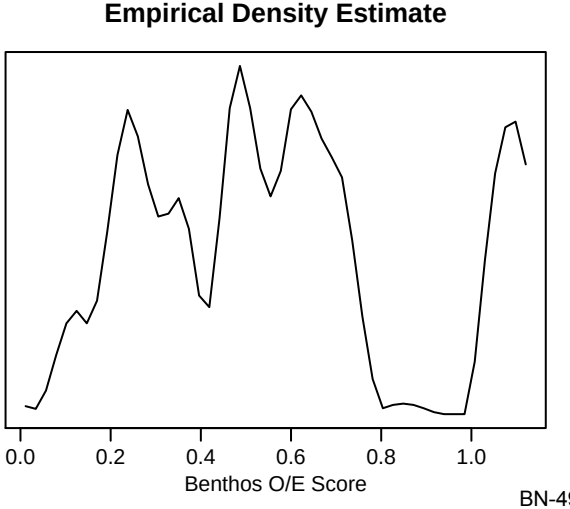
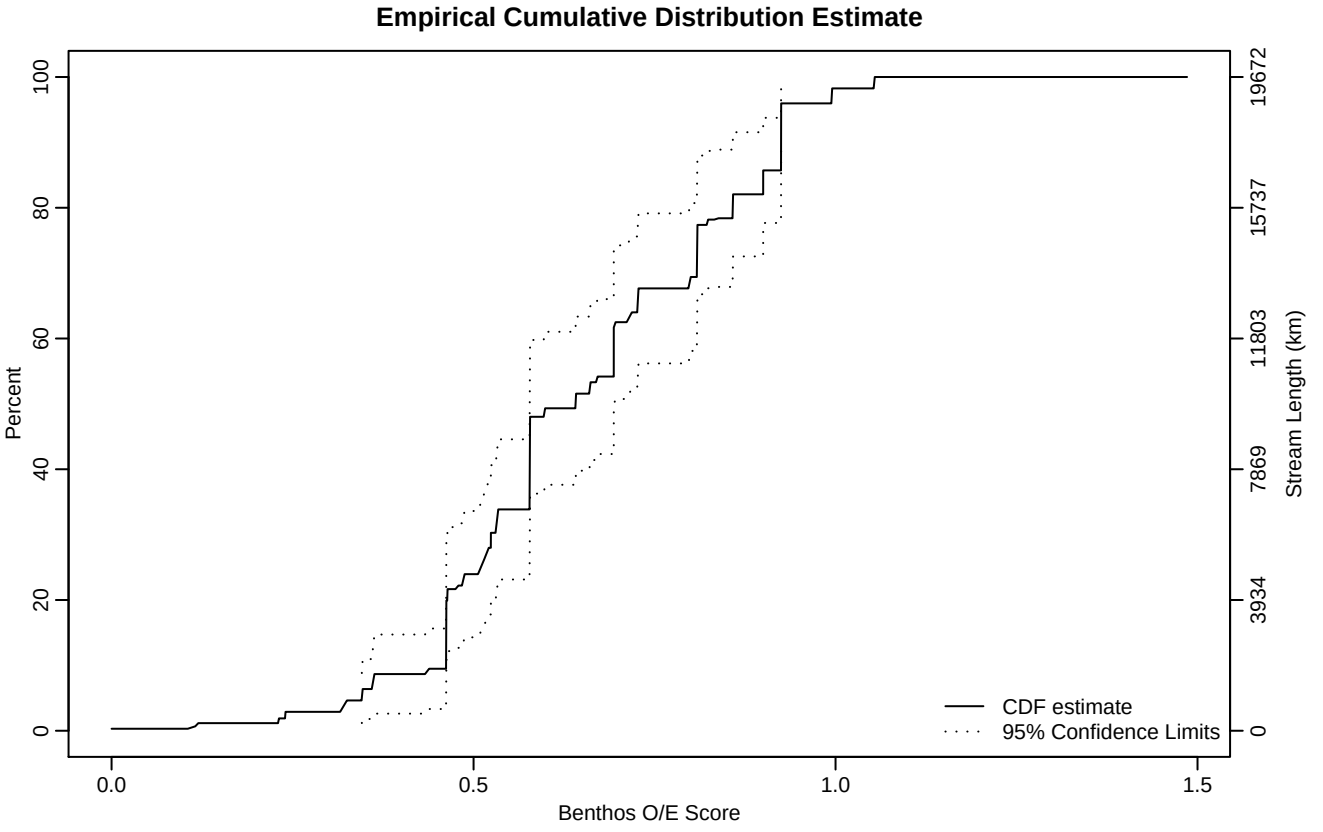


Figure BN−26 Indicator: OBS_EXP Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.35	0.23	0.43
10Pct	0.46	0.32	0.46
25Pct	0.51	0.46	0.58
50Pct	0.64	0.58	0.69
75Pct	0.81	0.72	0.92
90Pct	0.92	0.86	1
95Pct	0.92	0.92	1.05
Mean	0.65	0.61	0.70
Std Dev	0.19	0.17	0.21

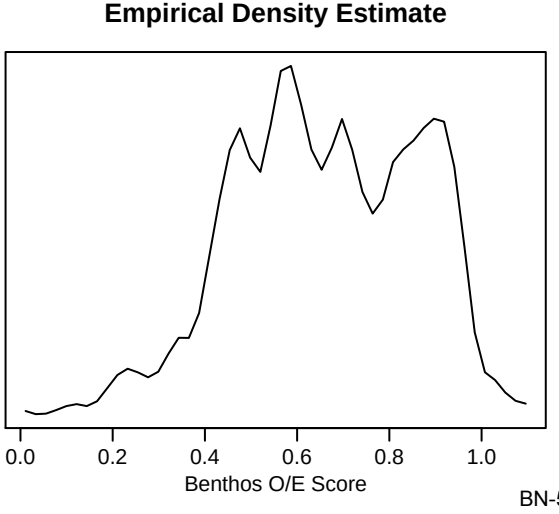
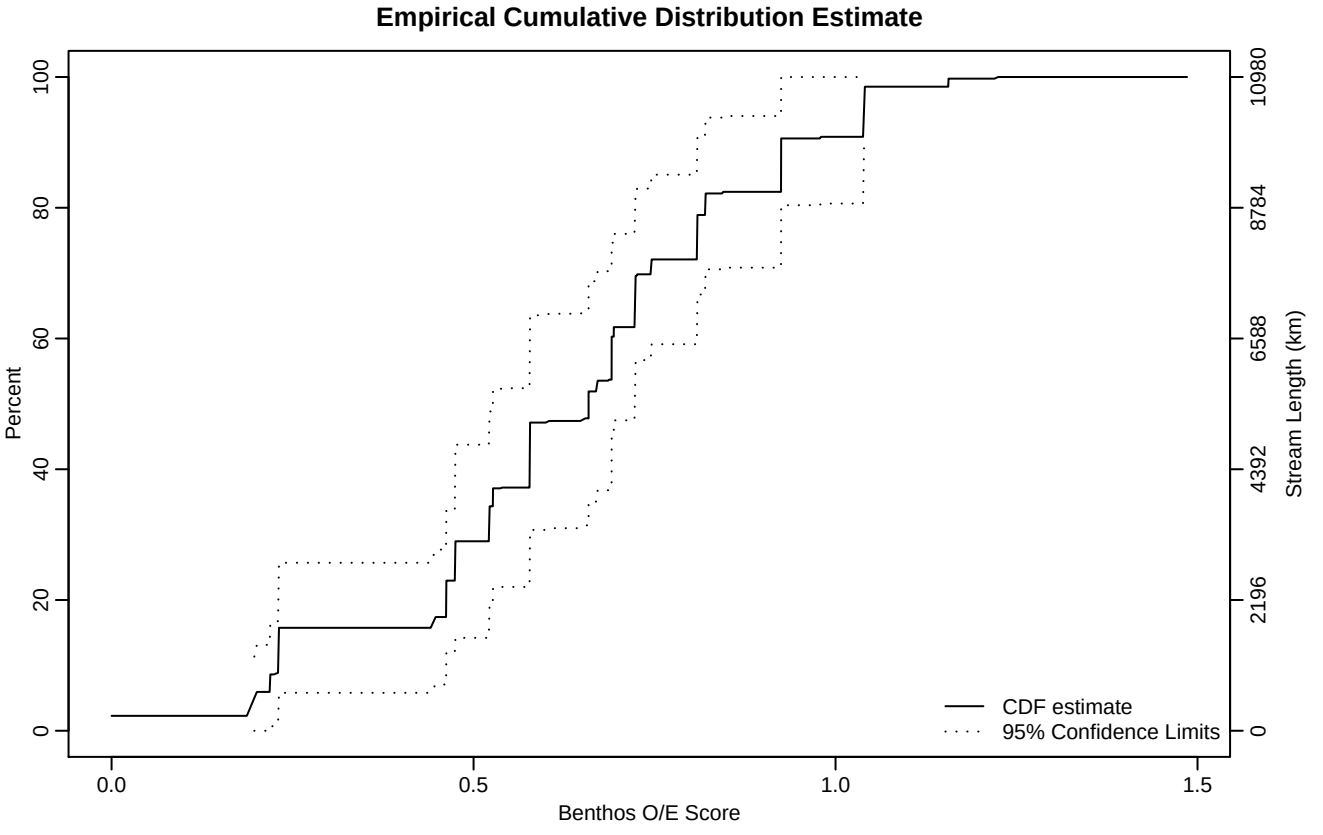


Figure BN−27 Indicator: OBS_EXP Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.20	0	0.23
10Pct	0.23	0	0.46
25Pct	0.47	0.23	0.53
50Pct	0.66	0.52	0.72
75Pct	0.81	0.72	0.92
90Pct	0.92	0.82	1.22
95Pct	1.04	0.92	1.22
Mean	0.63	0.55	0.70
Std Dev	0.24	0.20	0.27

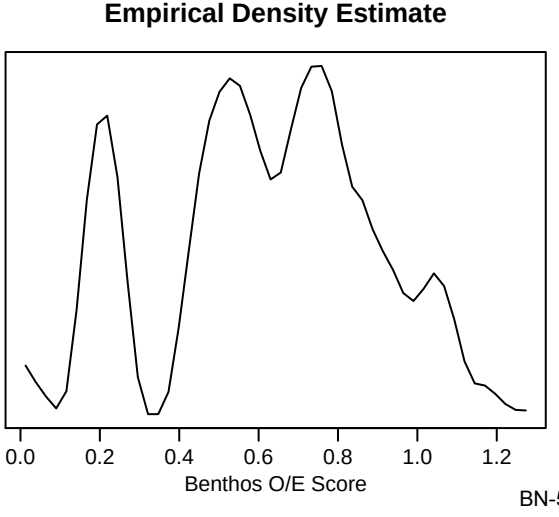
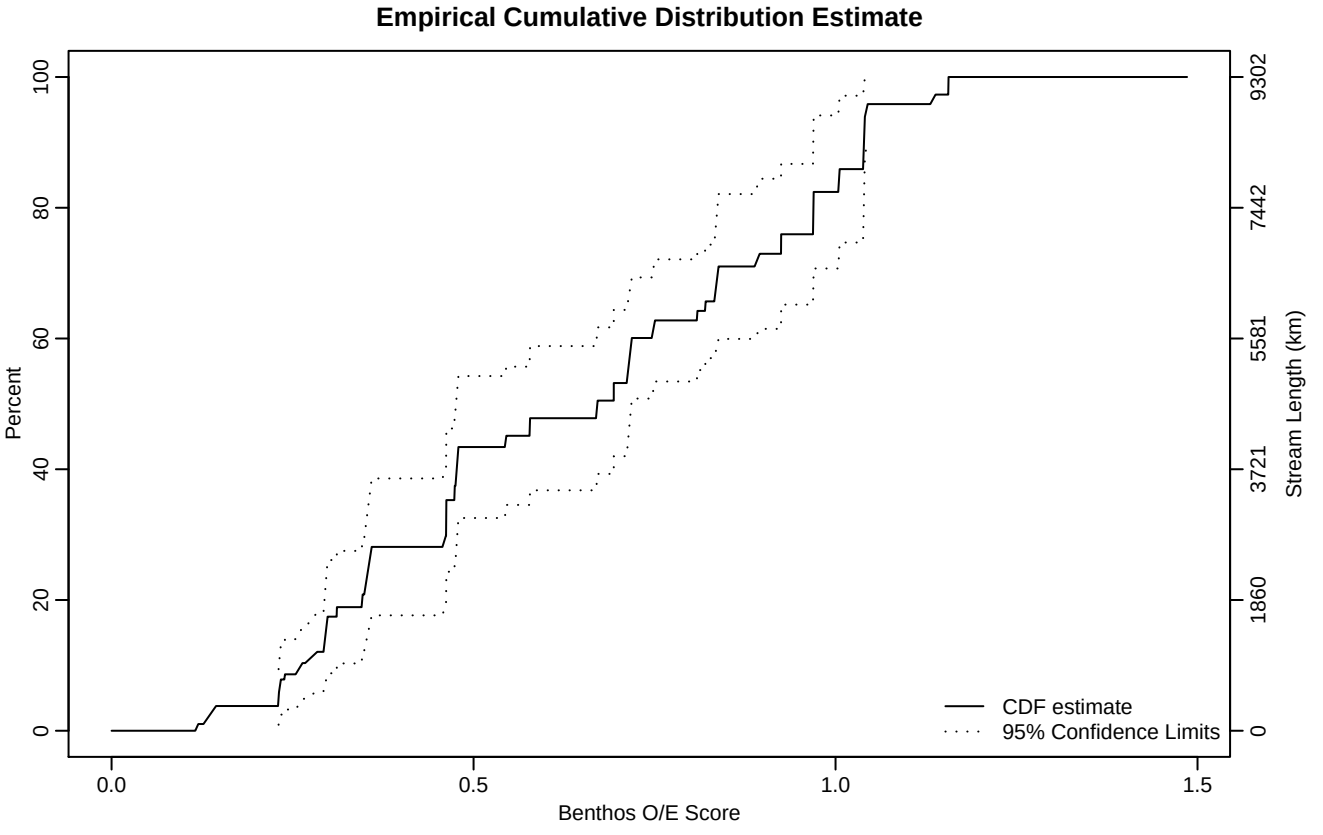


Figure BN−28 Indicator: OBS_EXP Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.23	0.12	0.26
10Pct	0.26	0.23	0.30
25Pct	0.35	0.30	0.46
50Pct	0.67	0.48	0.75
75Pct	0.92	0.75	1.04
90Pct	1.04	0.97	1.16
95Pct	1.04	1.04	1.16
Mean	0.65	0.59	0.71
Std Dev	0.25	0.22	0.28

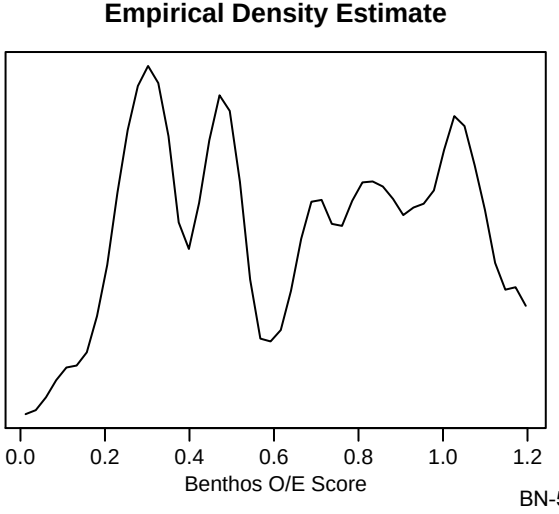
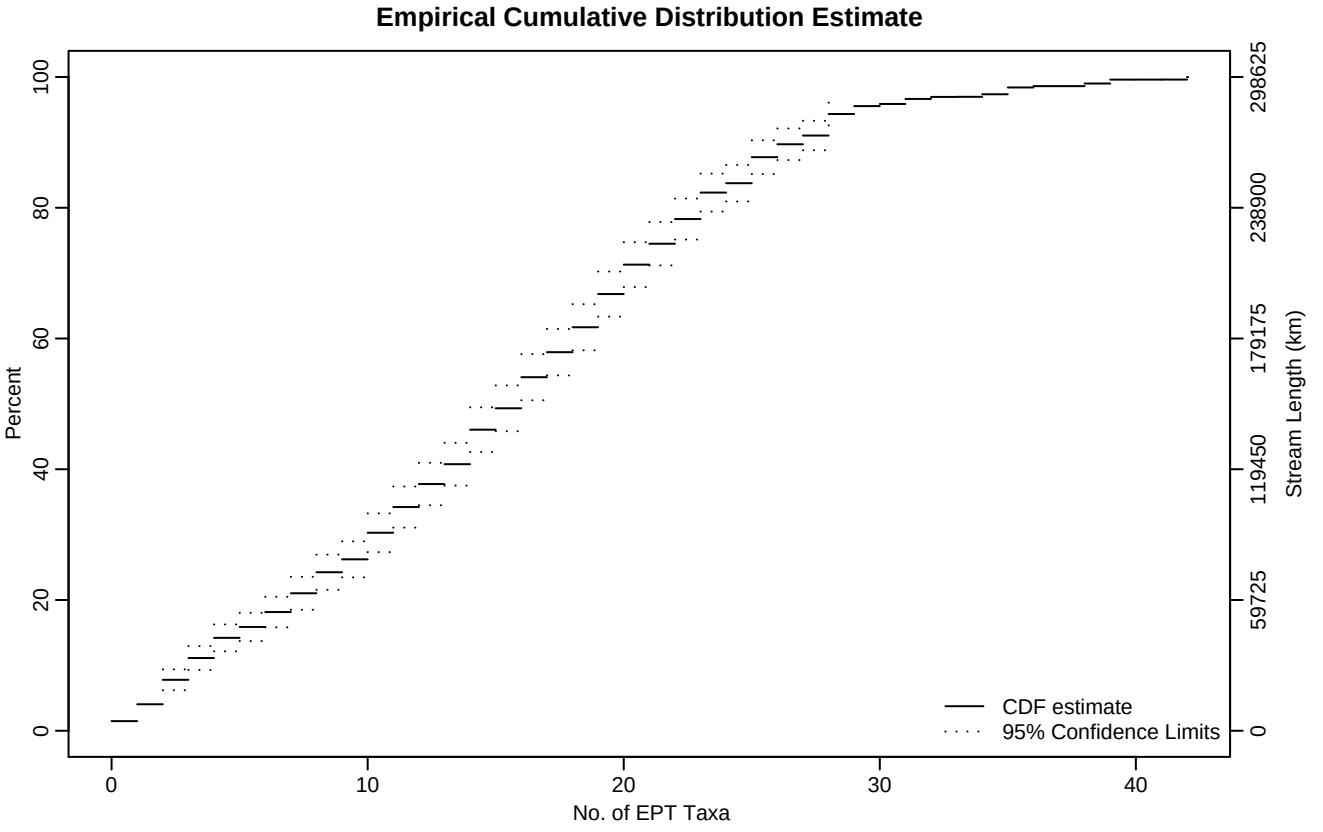


Figure BN−29 Indicator: EPT_RICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.25	0.89	1.59
10Pct	2.66	2.18	3.16
25Pct	8.38	7.38	9.38
50Pct	15.14	14.10	15.90
75Pct	21.13	20.09	22.03
90Pct	26.22	24.94	27.44
95Pct	28.55	27.65	31.51
Mean	15.51	14.96	16.07
Std Dev	7.35	6.98	7.72

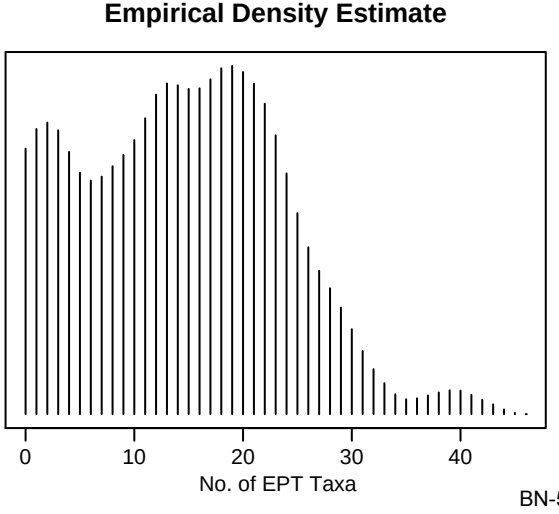
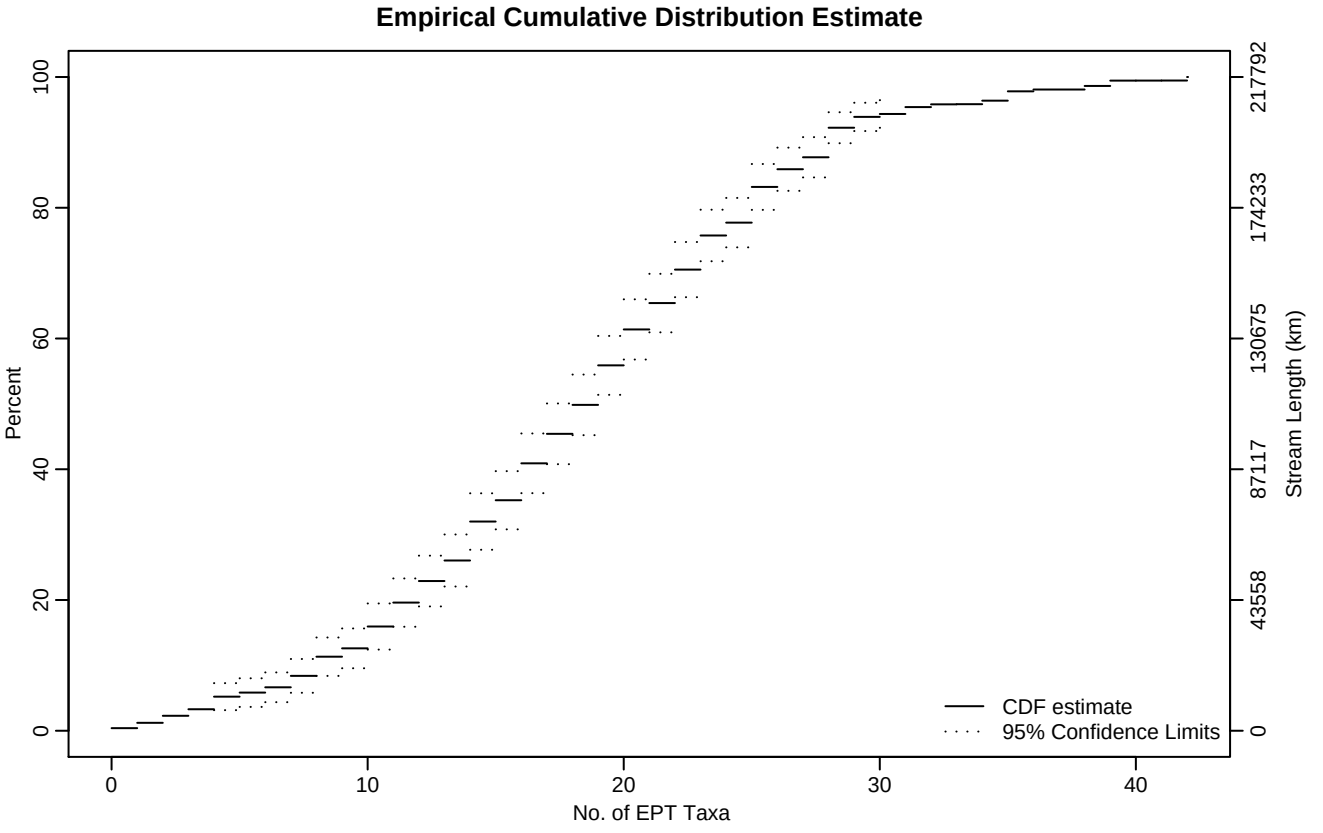


Figure BN−30 Indicator: EPT_RICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.89	3.04	5.99
10Pct	7.55	6.43	9
25Pct	12.67	11.42	13.50
50Pct	18.03	16.97	18.80
75Pct	22.85	22.02	24.29
90Pct	27.50	26.51	28.56
95Pct	30.62	28.36	34.55
Mean	18.36	17.67	19.06
Std Dev	7.18	6.72	7.63

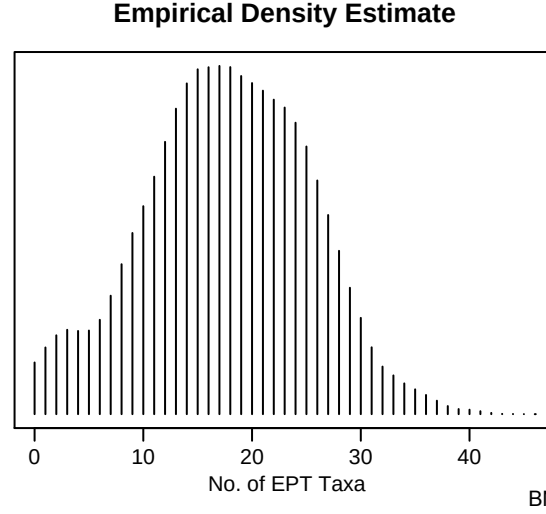
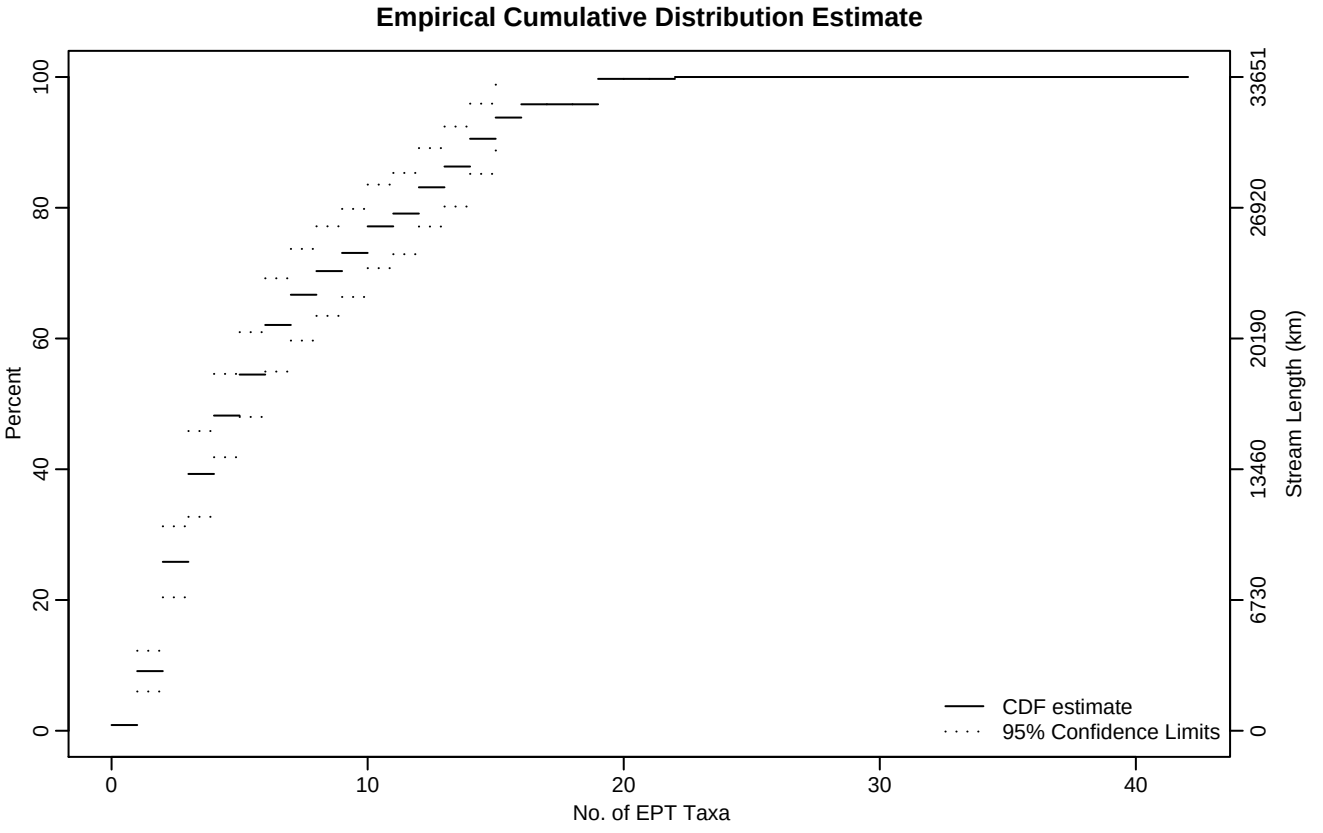


Figure BN−31 Indicator: EPT_RICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.40	0.60
10Pct	1.05	0.73	1.24
25Pct	1.95	1.75	2.19
50Pct	4.29	3.47	5.27
75Pct	9.47	7.52	11.57
90Pct	13.87	12.32	18
95Pct	15.59	13.88	21.91
Mean	6.53	5.79	7.28
Std Dev	4.46	4.10	4.83

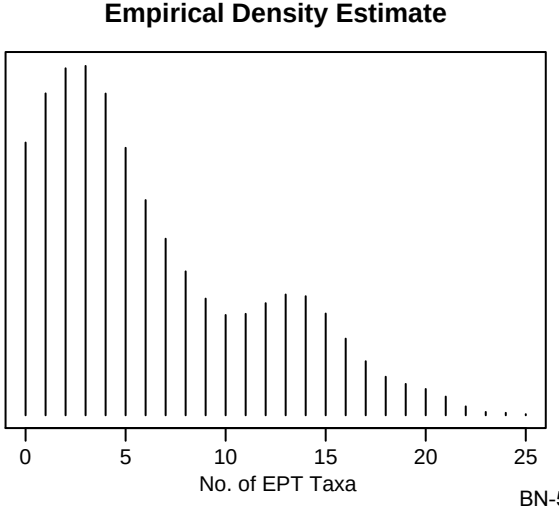
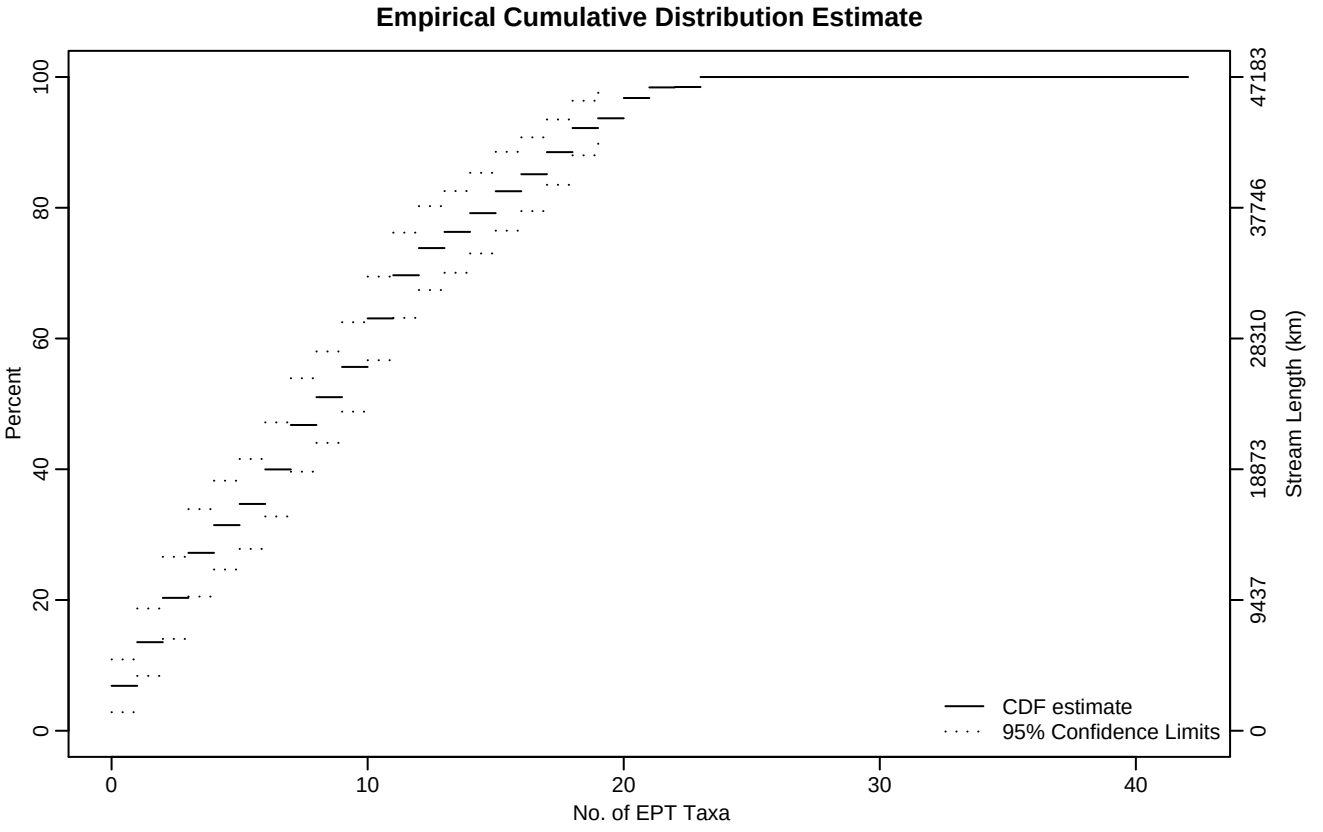


Figure BN−32 Indicator: EPT_RICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.32
10Pct	0.47	0	1.08
25Pct	2.68	1.74	3.99
50Pct	7.76	6.41	9.21
75Pct	12.47	10.82	14.71
90Pct	17.41	15.87	19.49
95Pct	19.42	17.63	22.47
Mean	8.75	7.80	9.69
Std Dev	5.79	5.35	6.22

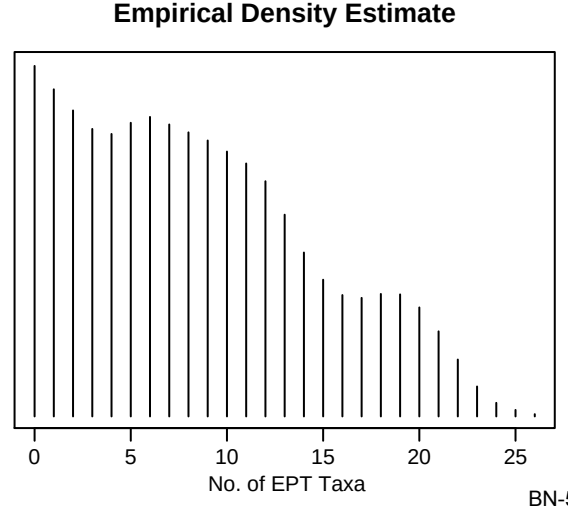
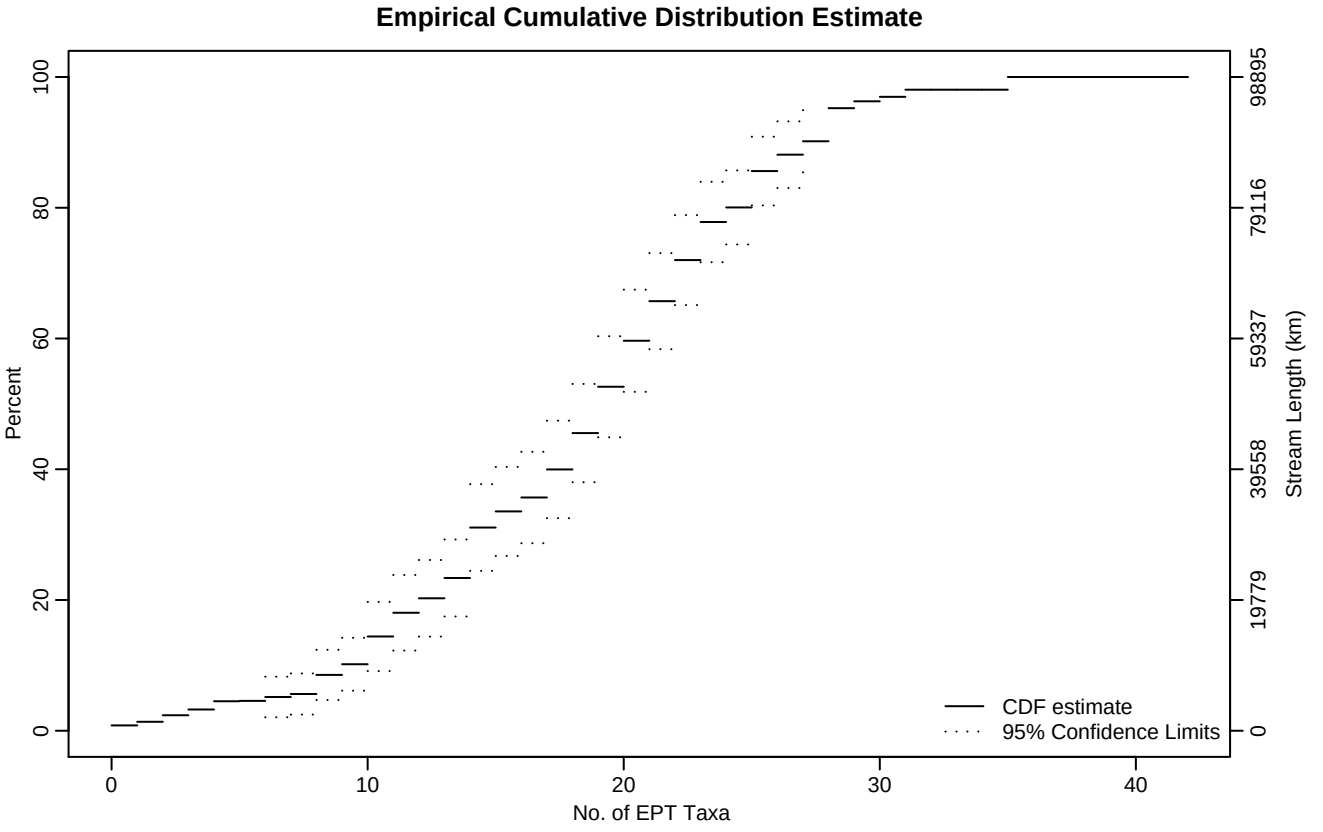


Figure BN−33 Indicator: EPT_RICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.73	1.68	7.80
10Pct	8.89	7.16	9.88
25Pct	13.21	11.36	14.03
50Pct	18.63	17.43	19.71
75Pct	22.52	21.38	24.33
90Pct	26.92	24.87	27.98
95Pct	27.95	27.01	34.90
Mean	18.39	17.40	19.38
Std Dev	6.39	5.77	7.02

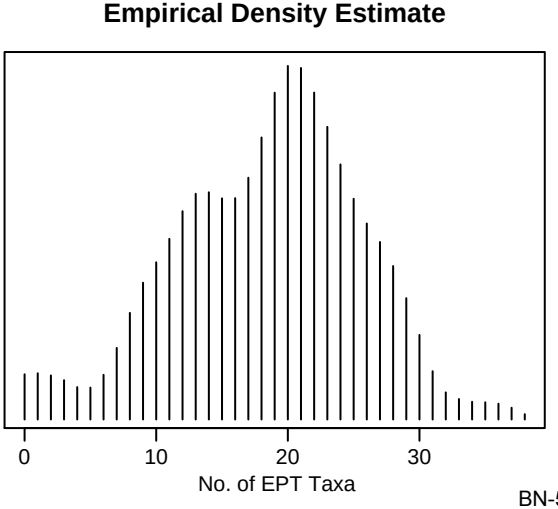
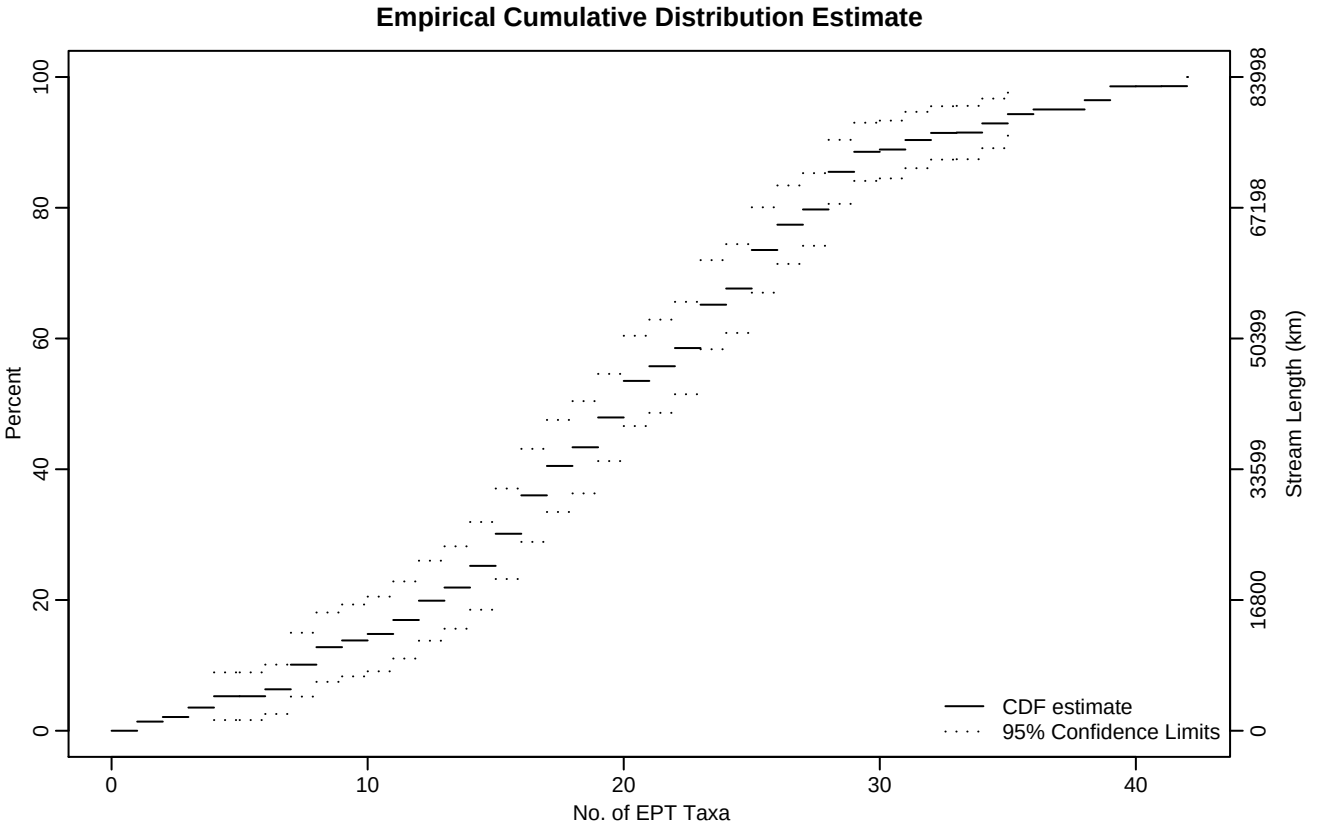


Figure BN−34 Indicator: EPT_RICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.84	1.74	6.46
10Pct	6.97	5.83	9.02
25Pct	13.93	11.58	15.21
50Pct	19.37	18.01	21.31
75Pct	25.38	24.10	27.35
90Pct	30.75	28.01	35.24
95Pct	35.95	33.12	38.88
Mean	20.06	18.78	21.34
Std Dev	8.58	7.80	9.37

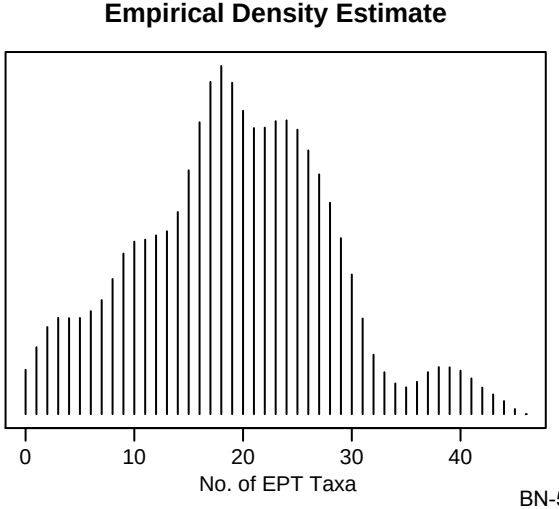
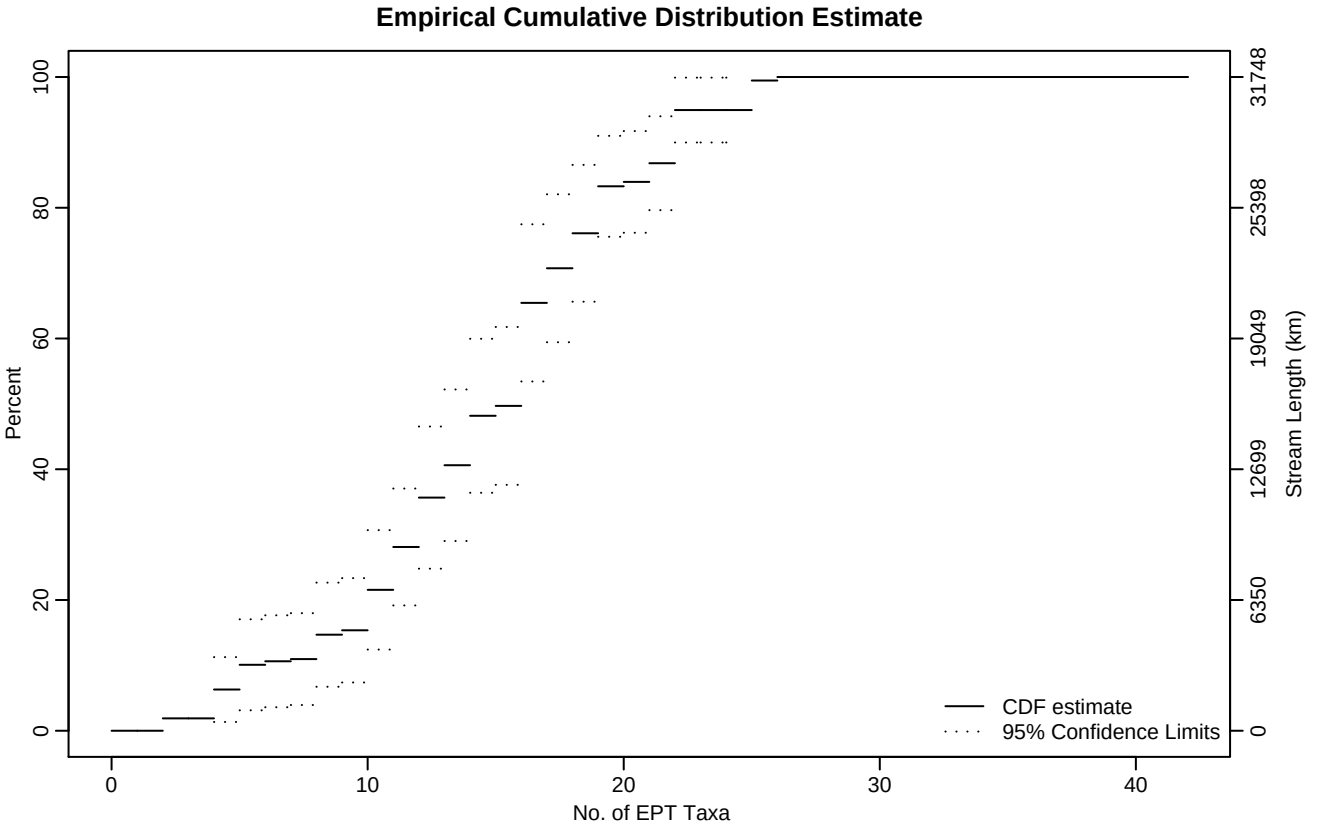


Figure BN−35 Indicator: EPT_RICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.70	1.99	4.48
10Pct	4.98	3.70	8.51
25Pct	10.53	9.05	11.83
50Pct	15.02	12.41	15.80
75Pct	17.80	15.89	20.80
90Pct	21.39	18.95	24.47
95Pct	24.01	21.39	26
Mean	14.54	13.32	15.76
Std Dev	5.46	4.53	6.38

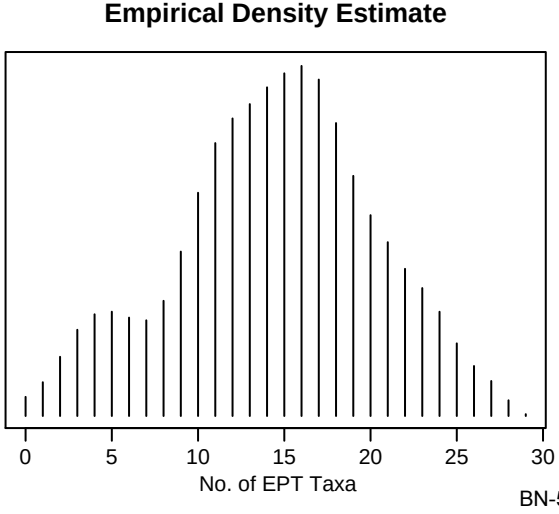
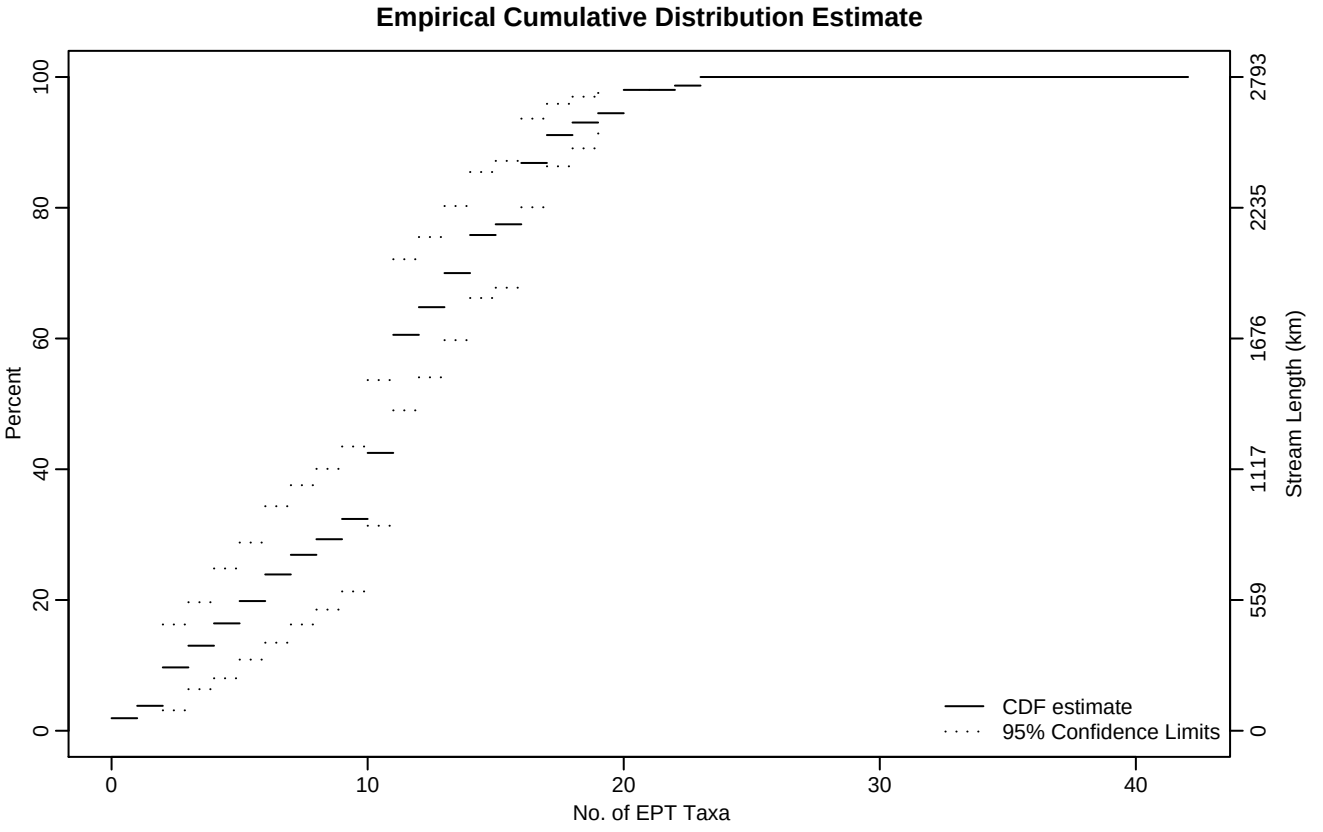


Figure BN−36 Indicator: EPT_RICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.20	0	1.90
10Pct	2.09	0.81	4.03
25Pct	6.36	3.43	9.31
50Pct	10.42	9.65	11.11
75Pct	13.86	12	15.83
90Pct	16.74	15.61	19.65
95Pct	19.15	17.38	21.17
Mean	10.71	9.62	11.80
Std Dev	5.18	4.58	5.78

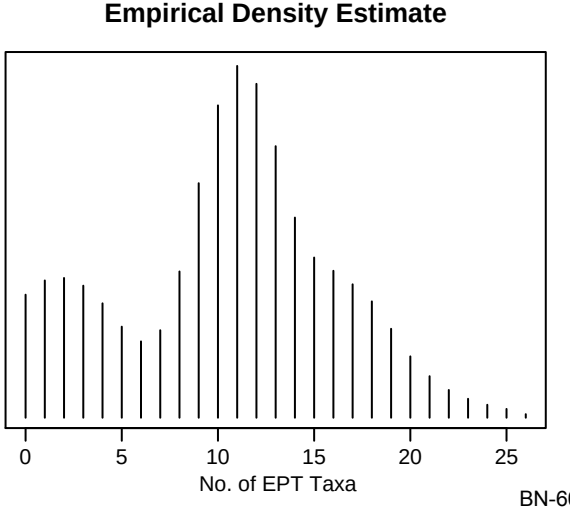
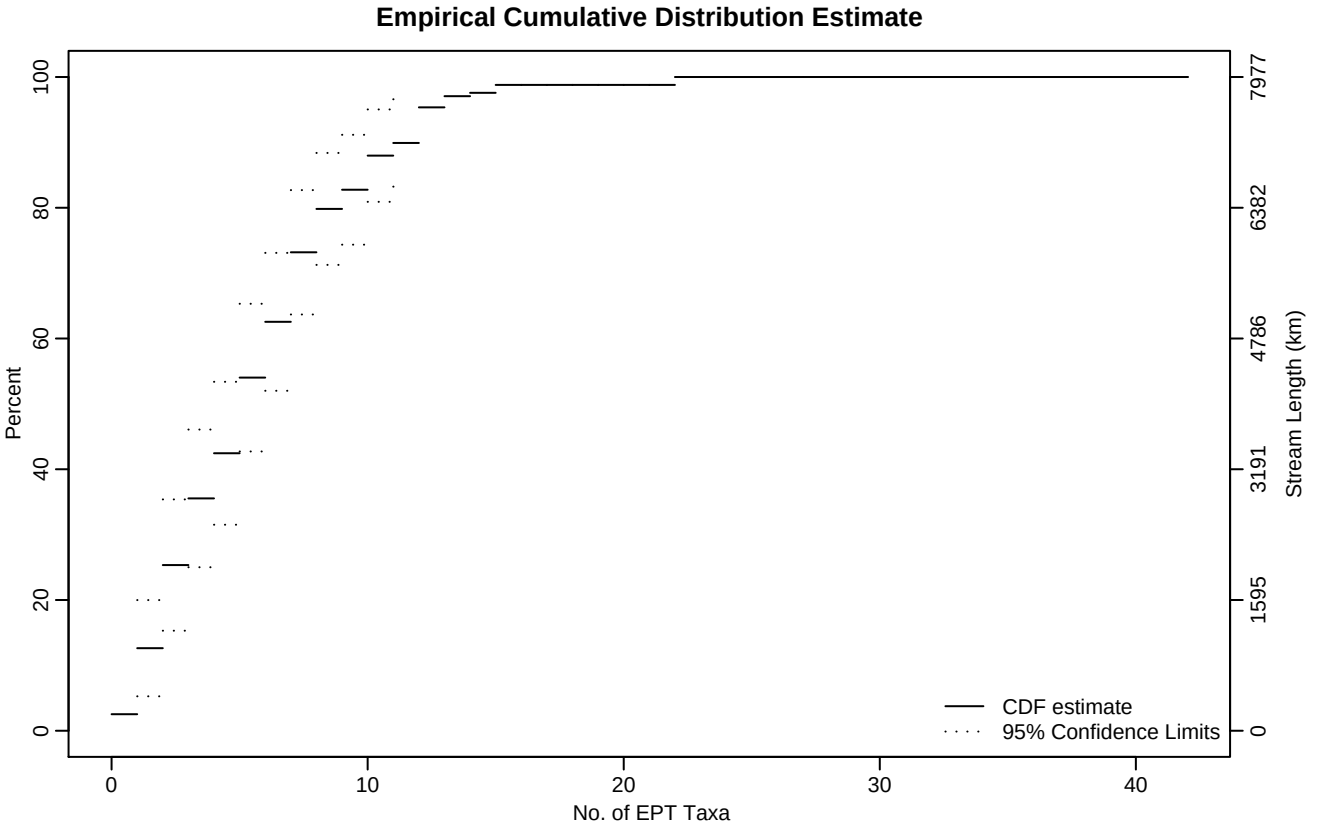


Figure BN−37 Indicator: EPT_RICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.24	0	0.51
10Pct	0.74	0.46	1.02
25Pct	1.97	1.38	2.71
50Pct	4.65	3.51	5.81
75Pct	7.27	6.29	9.31
90Pct	11.02	9.10	12.79
95Pct	11.93	10.16	22
Mean	5.70	4.88	6.51
Std Dev	3.78	3.04	4.52

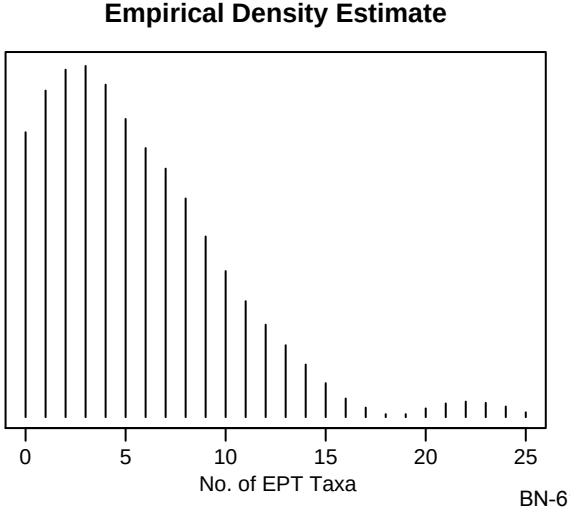
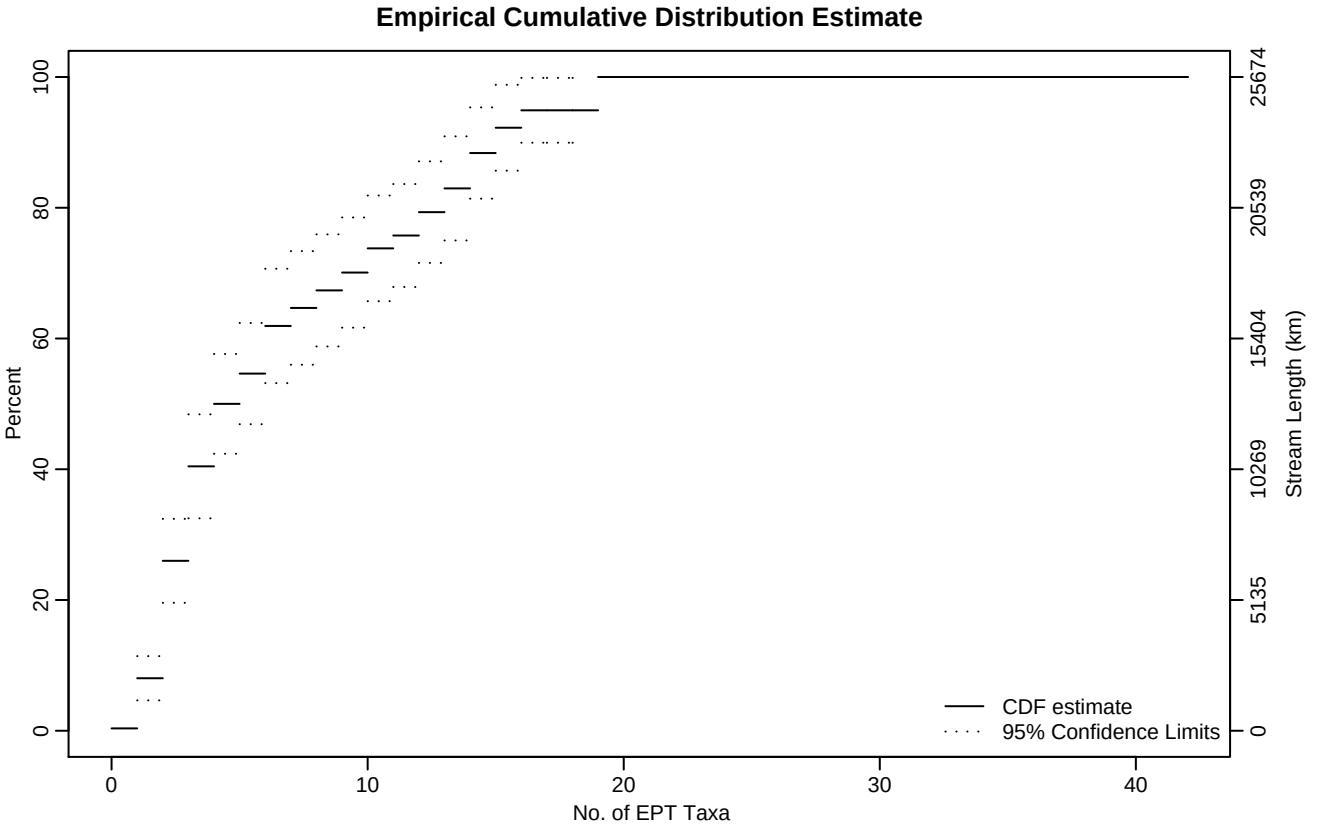


Figure BN−38 Indicator: EPT_RICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.61	0.51	0.70
10Pct	1.11	0.81	1.30
25Pct	1.94	1.74	2.19
50Pct	4	3.13	5.51
75Pct	10.62	8	12.91
90Pct	14.42	13.04	18.37
95Pct	18.02	14.46	18.97
Mean	6.79	5.85	7.73
Std Dev	4.65	4.24	5.07

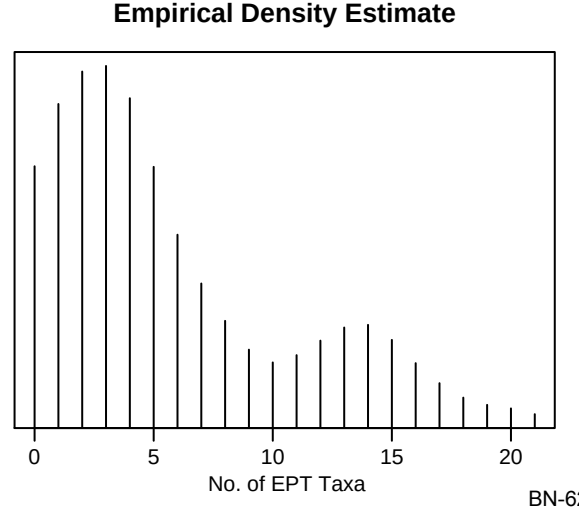
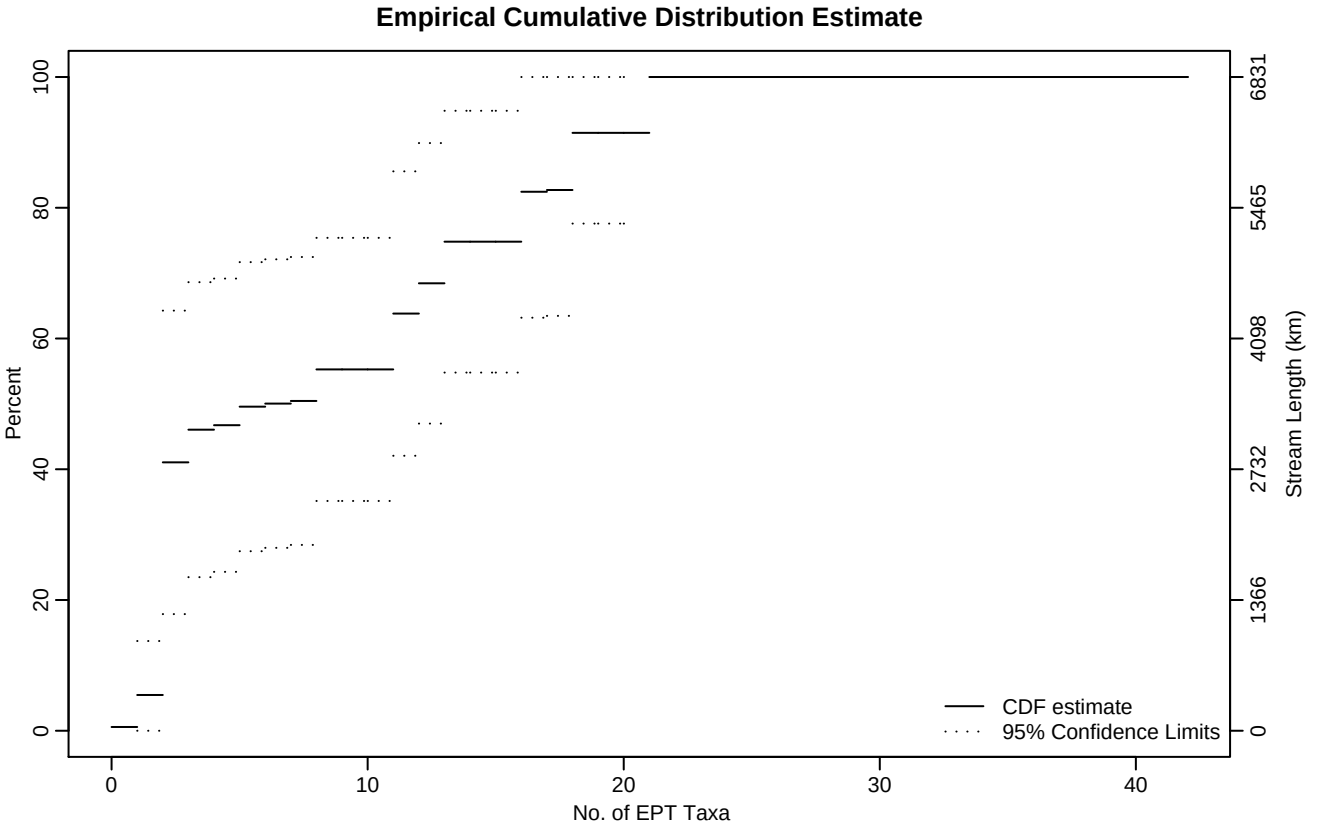


Figure BN−39 Indicator: EPT_RICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.90	0.63	1.02
10Pct	1.13	0.17	1.37
25Pct	1.55	1.26	1.84
50Pct	5.91	1.63	12.57
75Pct	15.02	7.94	20.42
90Pct	17.83	12.34	21
95Pct	20.41	15.82	21
Mean	8.48	5.23	11.73
Std Dev	6.96	5.61	8.30

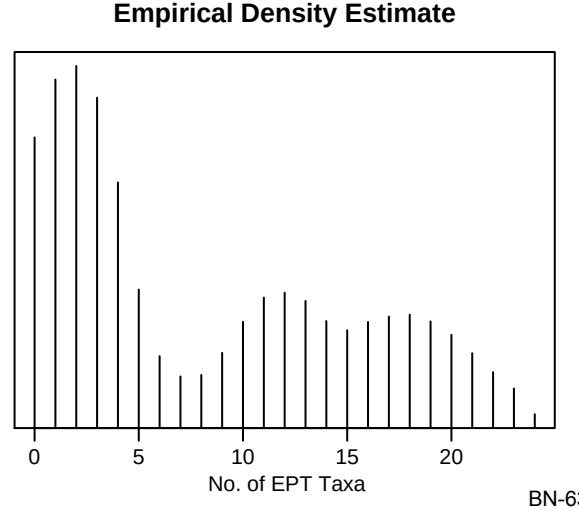
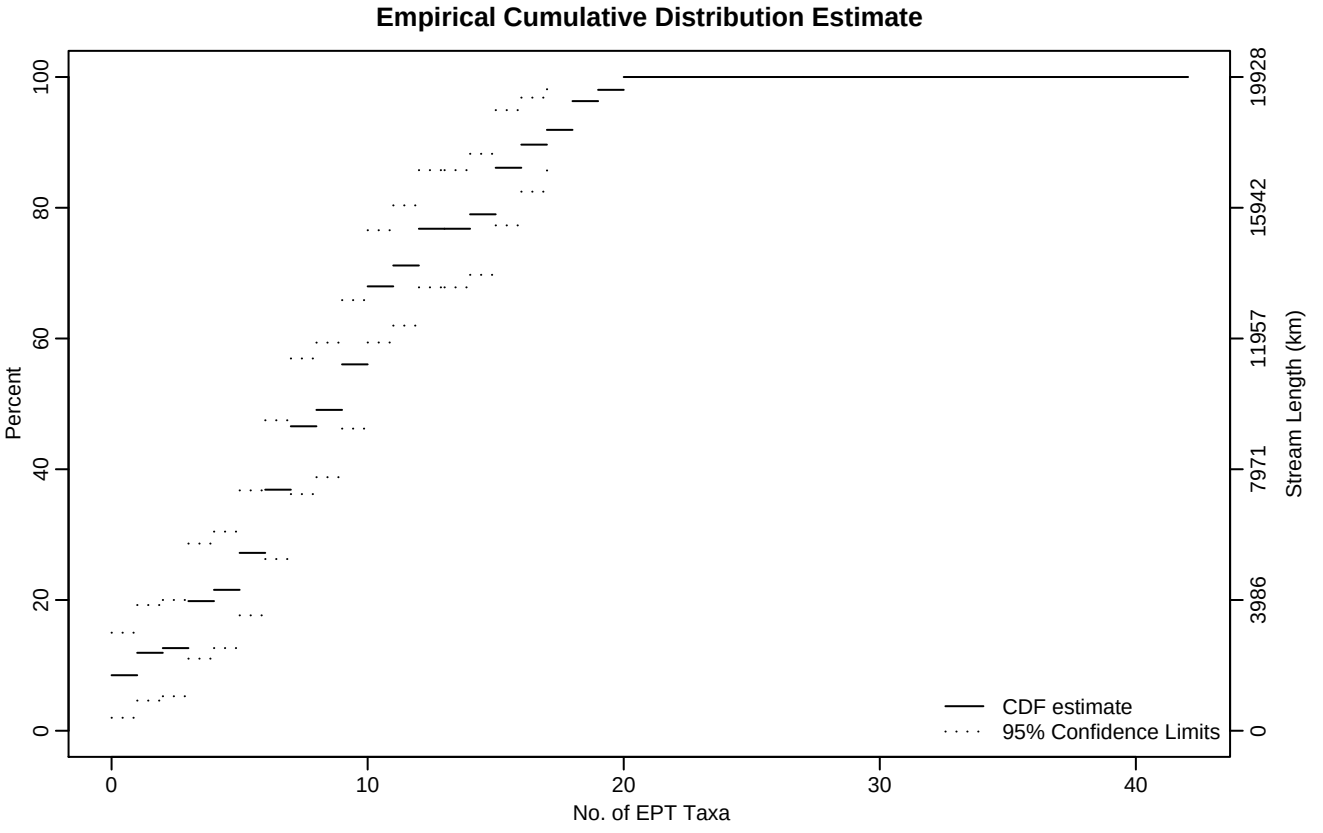


Figure BN−40 Indicator: EPT_RICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.85
10Pct	0.44	0	2.54
25Pct	4.61	2.46	5.71
50Pct	8.13	6.29	9.36
75Pct	11.68	9.75	14.84
90Pct	16.15	14.53	18.53
95Pct	17.70	15.74	20
Mean	8.76	7.68	9.84
Std Dev	4.98	4.25	5.70

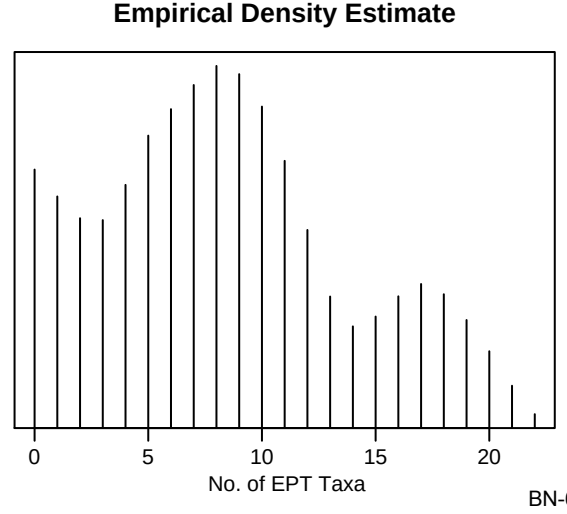
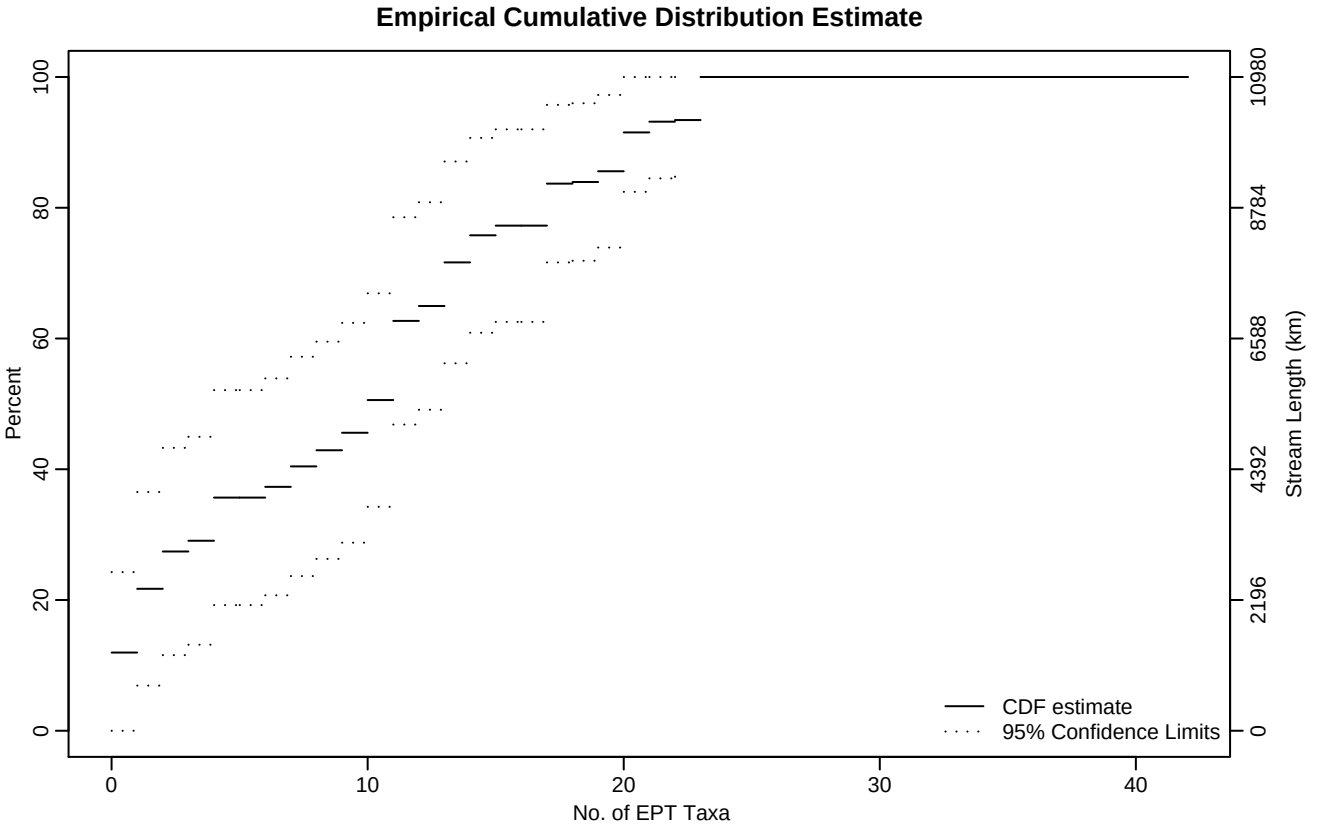


Figure BN−41 Indicator: EPT_RICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.56
10Pct	0	0	1.11
25Pct	1.58	0	6.81
50Pct	9.88	3.55	12.35
75Pct	13.81	10.71	19.89
90Pct	19.74	14.75	23
95Pct	22.24	18.12	23
Mean	9.61	6.95	12.26
Std Dev	7.02	6.08	7.95

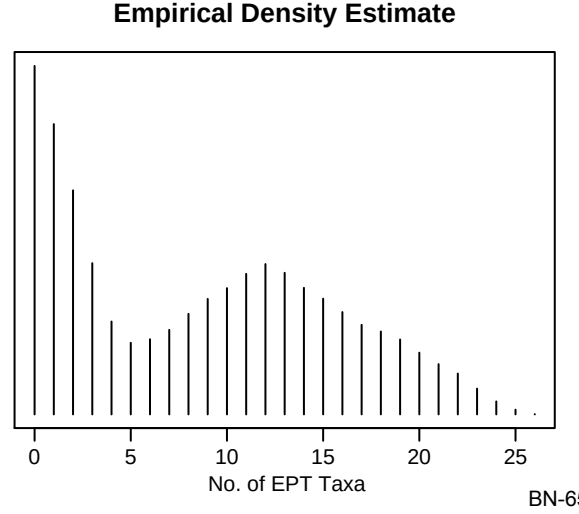
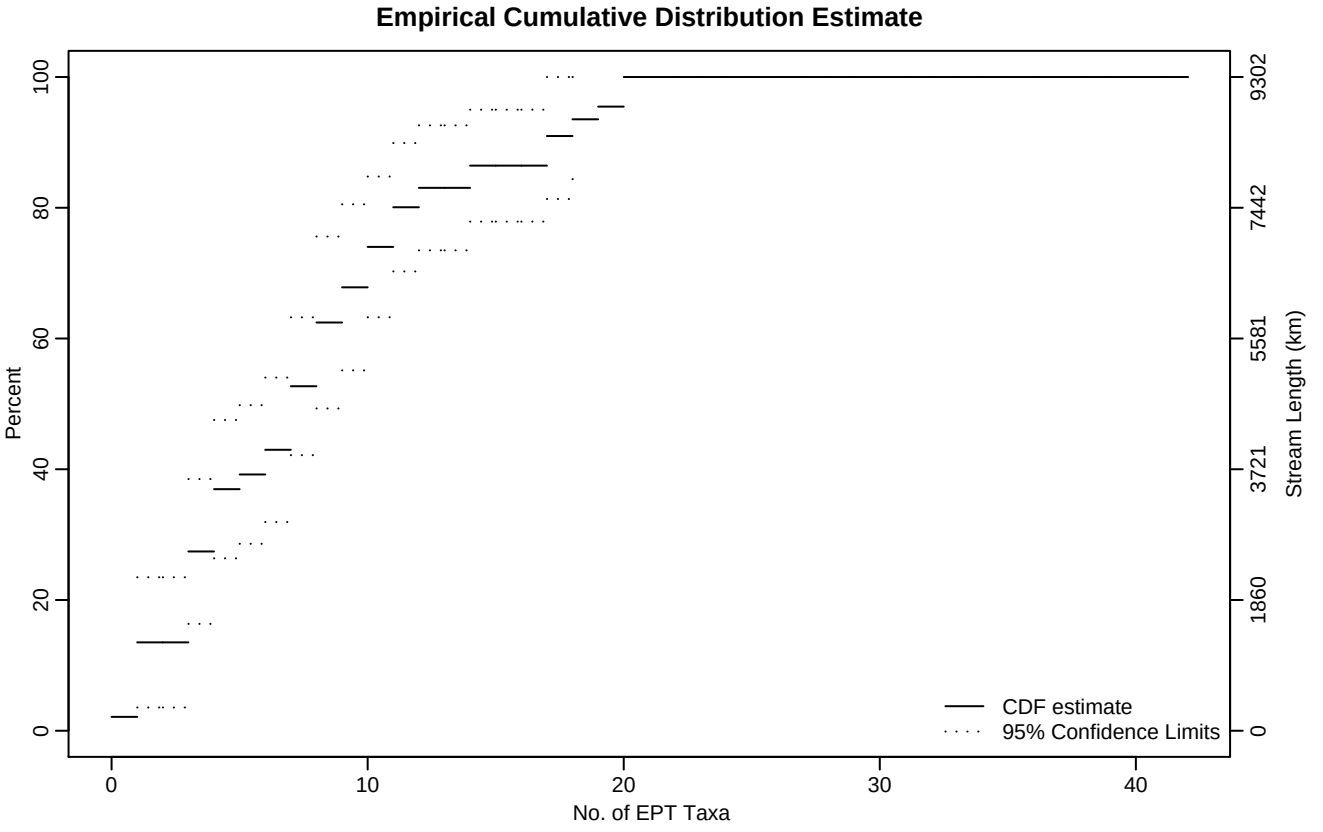


Figure BN−42 Indicator: EPT_RICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.25	0	0.56
10Pct	0.69	0.38	2
25Pct	2.83	2.12	3.77
50Pct	6.72	4.83	7.87
75Pct	10.16	8.17	16.04
90Pct	16.79	11.04	19.96
95Pct	18.76	13.74	20
Mean	7.82	6.52	9.11
Std Dev	4.56	3.73	5.38

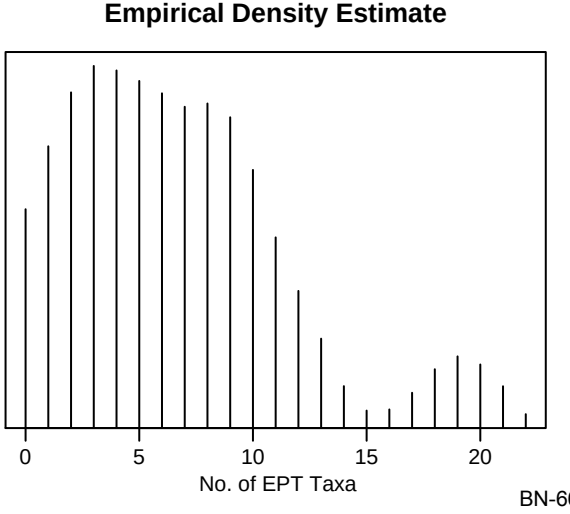
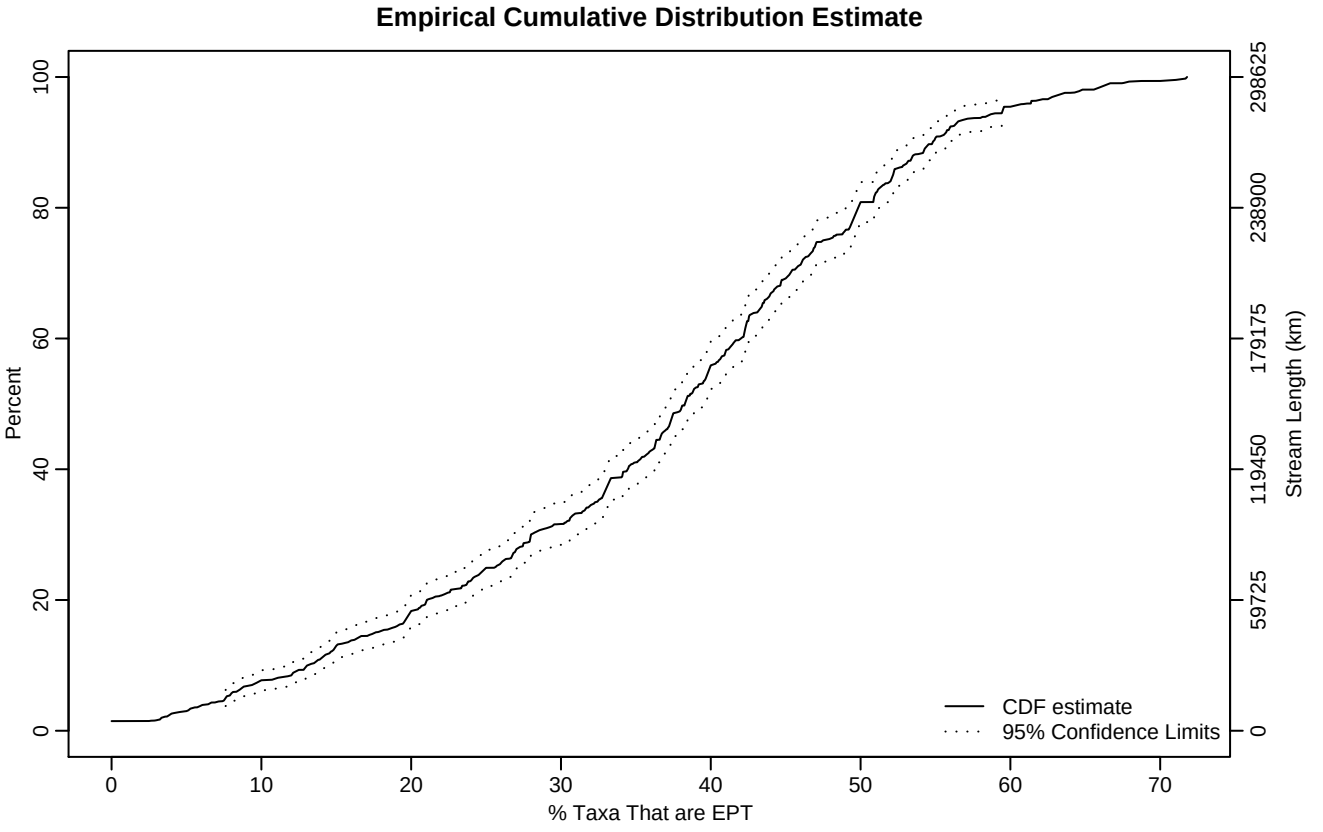


Figure BN−43 Indicator: EPT_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.61	5.94	8.49
10Pct	13.08	11.41	14.48
25Pct	25.59	23.40	27.06
50Pct	38.27	37.14	39.61
75Pct	47.49	46.06	49.55
90Pct	54.81	53.40	56.16
95Pct	59.51	56.47	62.76
Mean	36.29	35.29	37.29
Std Dev	14.20	13.47	14.94

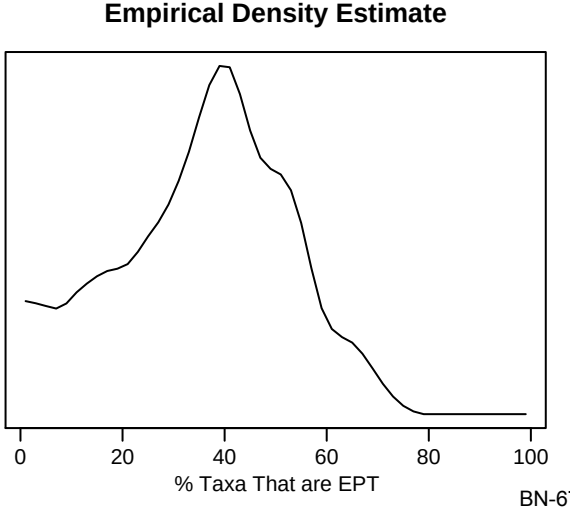
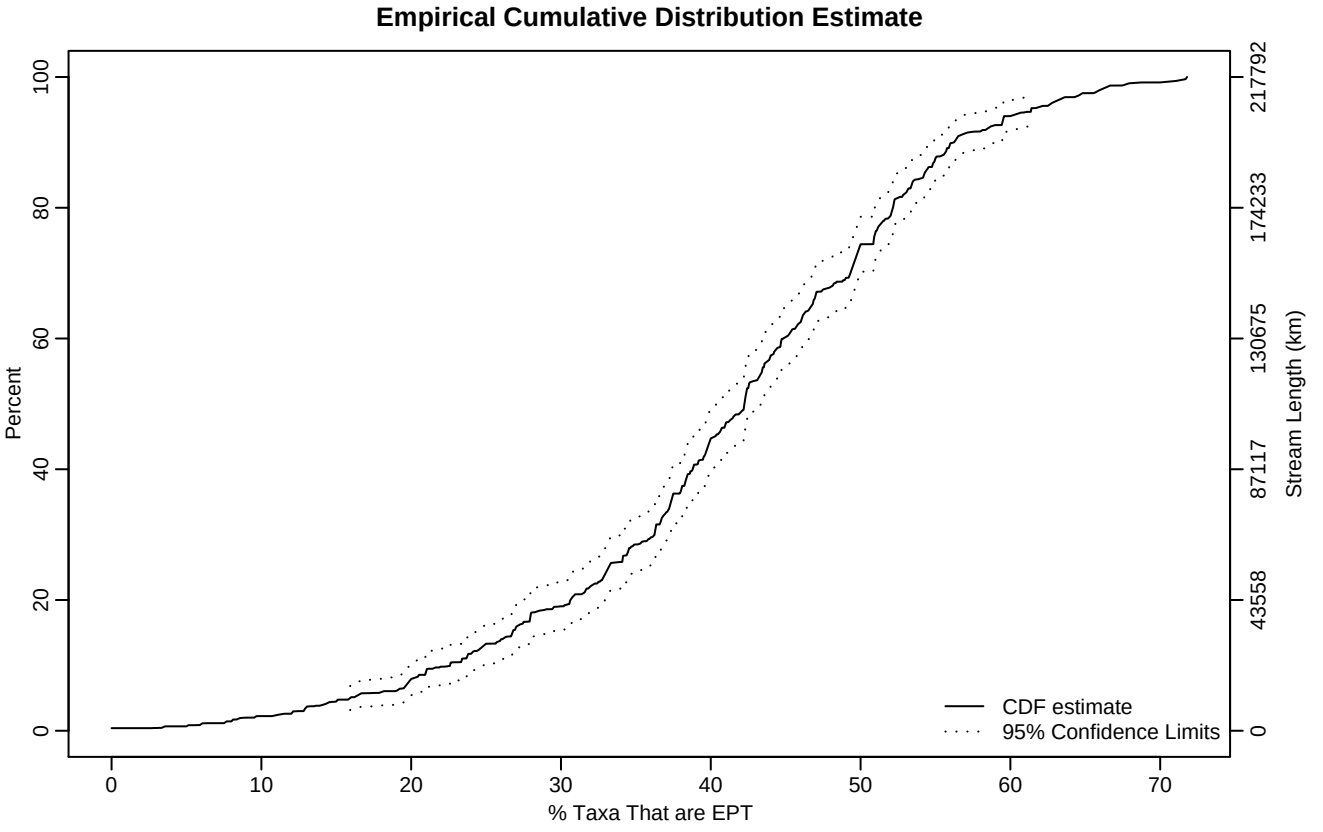


Figure BN−44 Indicator: EPT_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	15.92	12.87	19.61
10Pct	22.59	19.75	24.73
25Pct	33.18	31.53	35.41
50Pct	42.25	40.37	43.38
75Pct	50.88	49.44	52.06
90Pct	56.22	54.88	59.47
95Pct	61.39	59.43	64.63
Mean	41.06	39.88	42.25
Std Dev	12.55	11.67	13.43

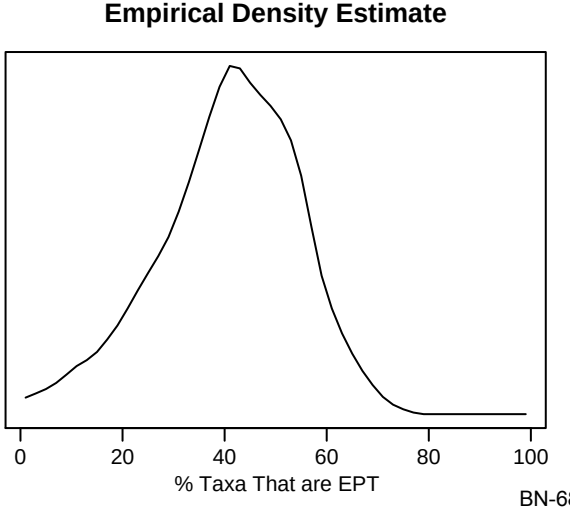
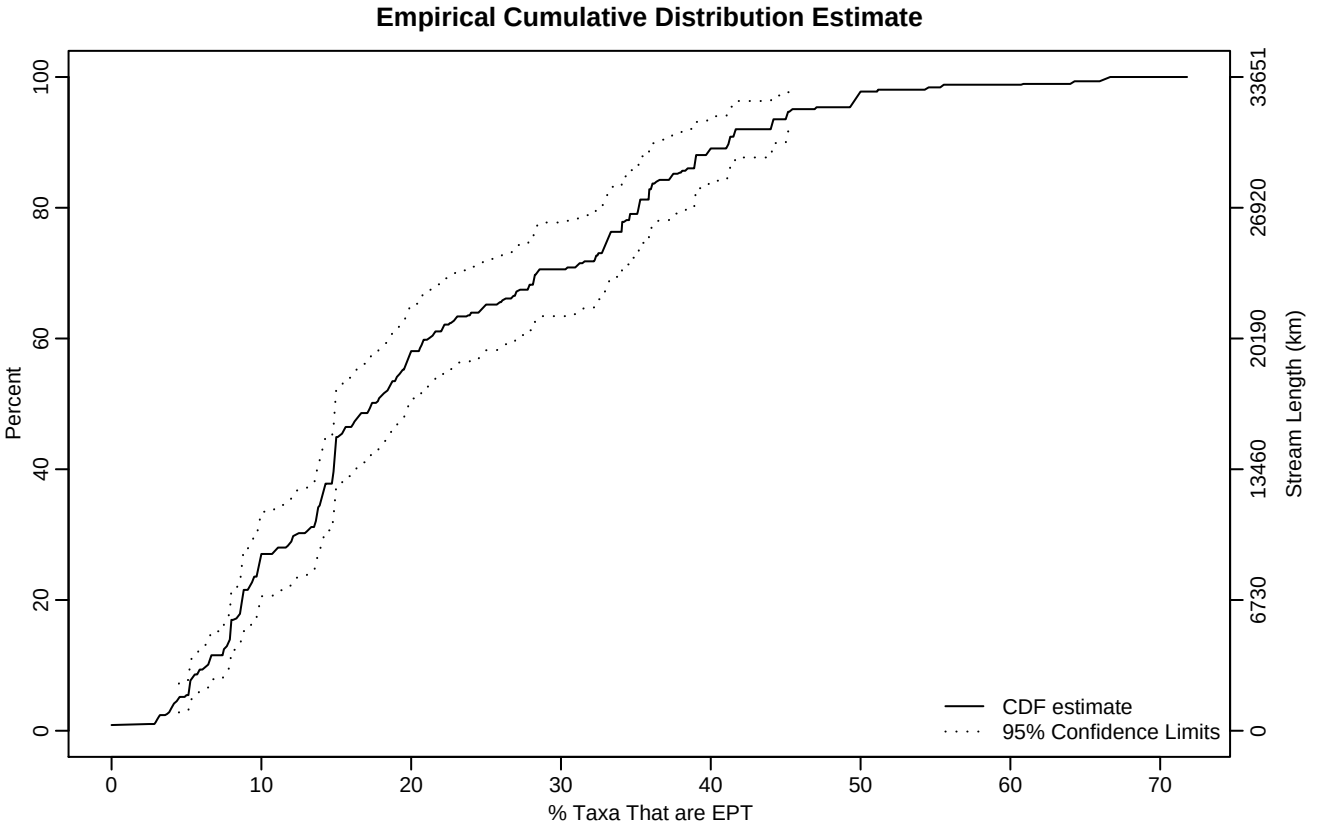


Figure BN−45 Indicator: EPT_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.49	3.89	5.22
10Pct	6.39	5.21	7.75
25Pct	9.81	8.62	13.54
50Pct	17.36	14.91	19.92
75Pct	33.09	27.89	35.87
90Pct	41.21	37.87	45.25
95Pct	45.41	41.67	51.15
Mean	21.66	19.66	23.66
Std Dev	13.36	12.26	14.46

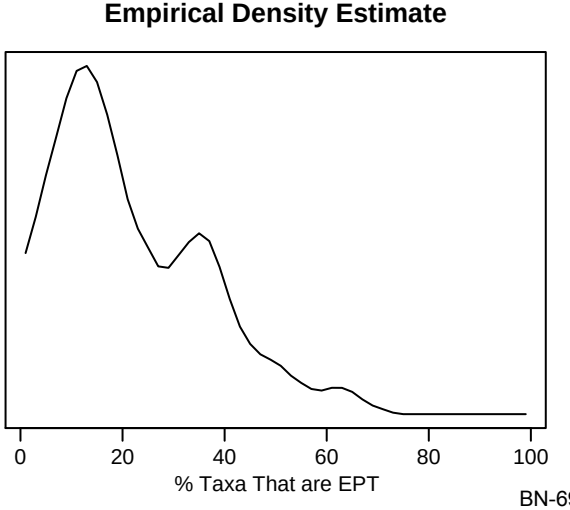
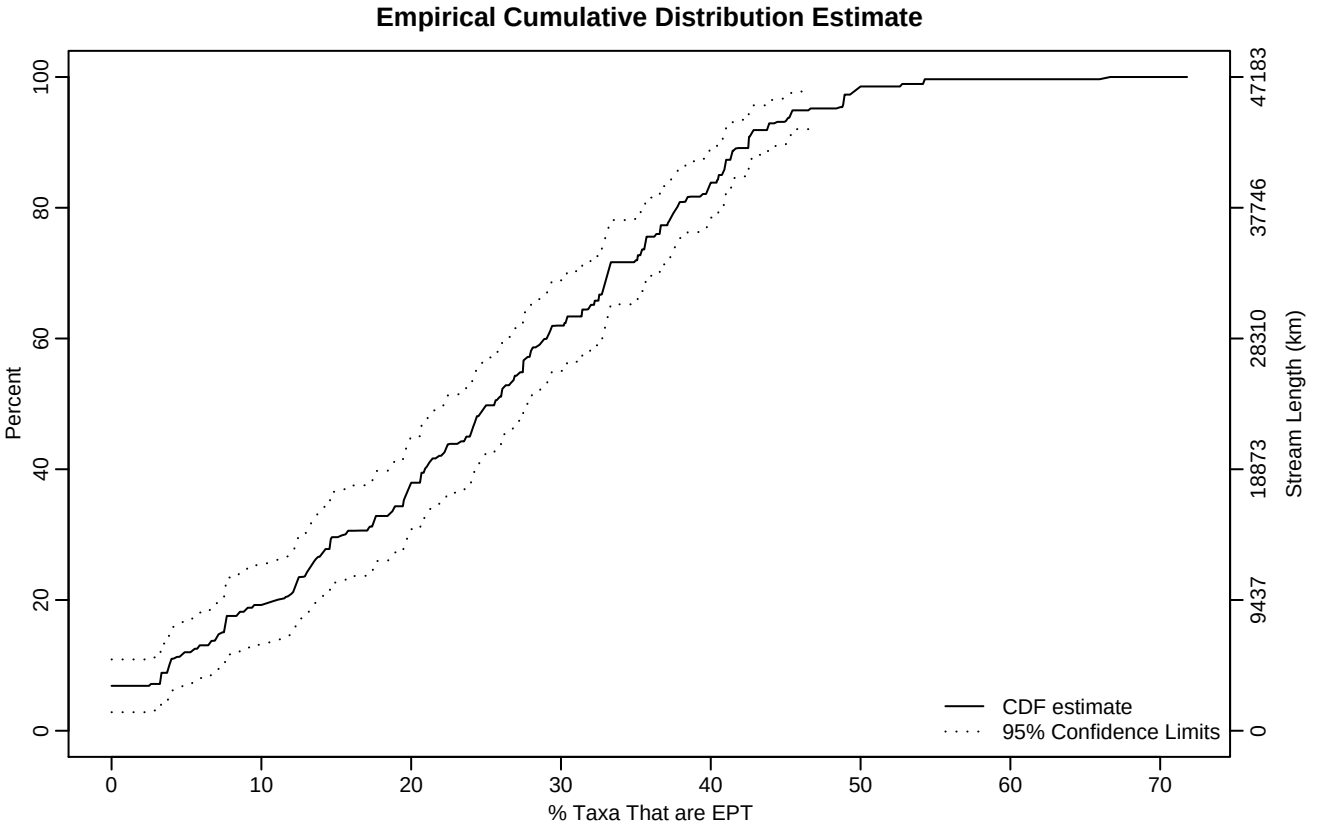


Figure BN−46 Indicator: EPT_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	3.73
10Pct	3.85	0	7.12
25Pct	13.26	8.95	17.44
50Pct	25.56	22.23	27.93
75Pct	35.67	32.93	38.45
90Pct	42.53	40.82	45.39
95Pct	46.57	42.82	49.85
Mean	24.71	22.58	26.83
Std Dev	13.77	12.72	14.82

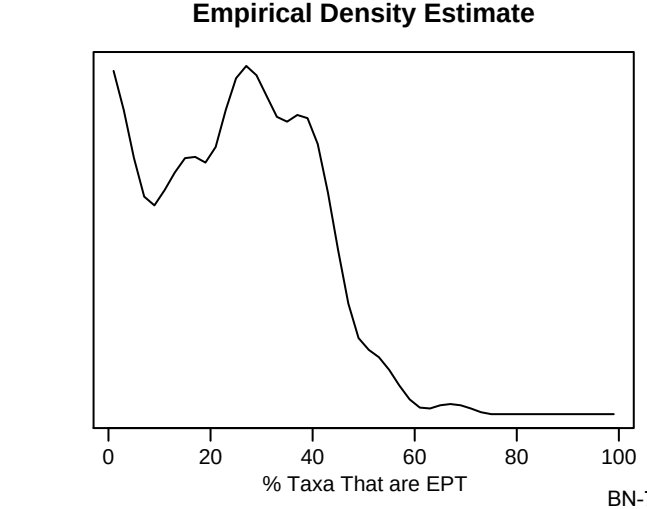
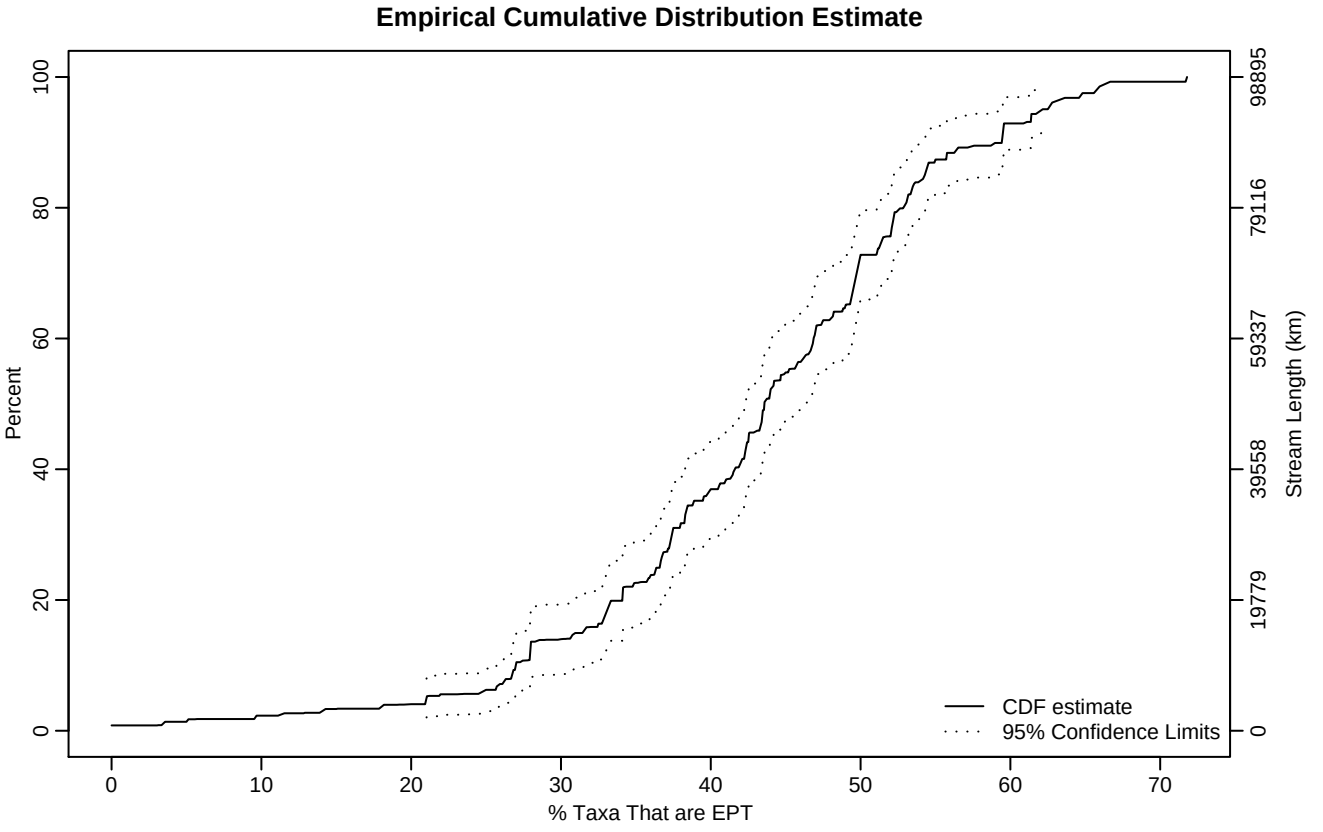


Figure BN−47 Indicator: EPT_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	21.02	11.31	26.20
10Pct	26.98	24.52	30.68
25Pct	36.59	33.07	37.99
50Pct	43.58	42.27	46.54
75Pct	51.43	49.57	53.17
90Pct	59.43	54.31	62.03
95Pct	62.12	59.50	66.01
Mean	43.08	41.26	44.89
Std Dev	11.77	10.34	13.21

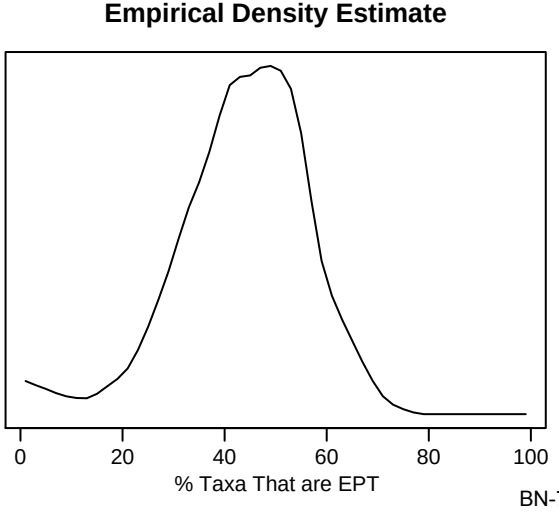
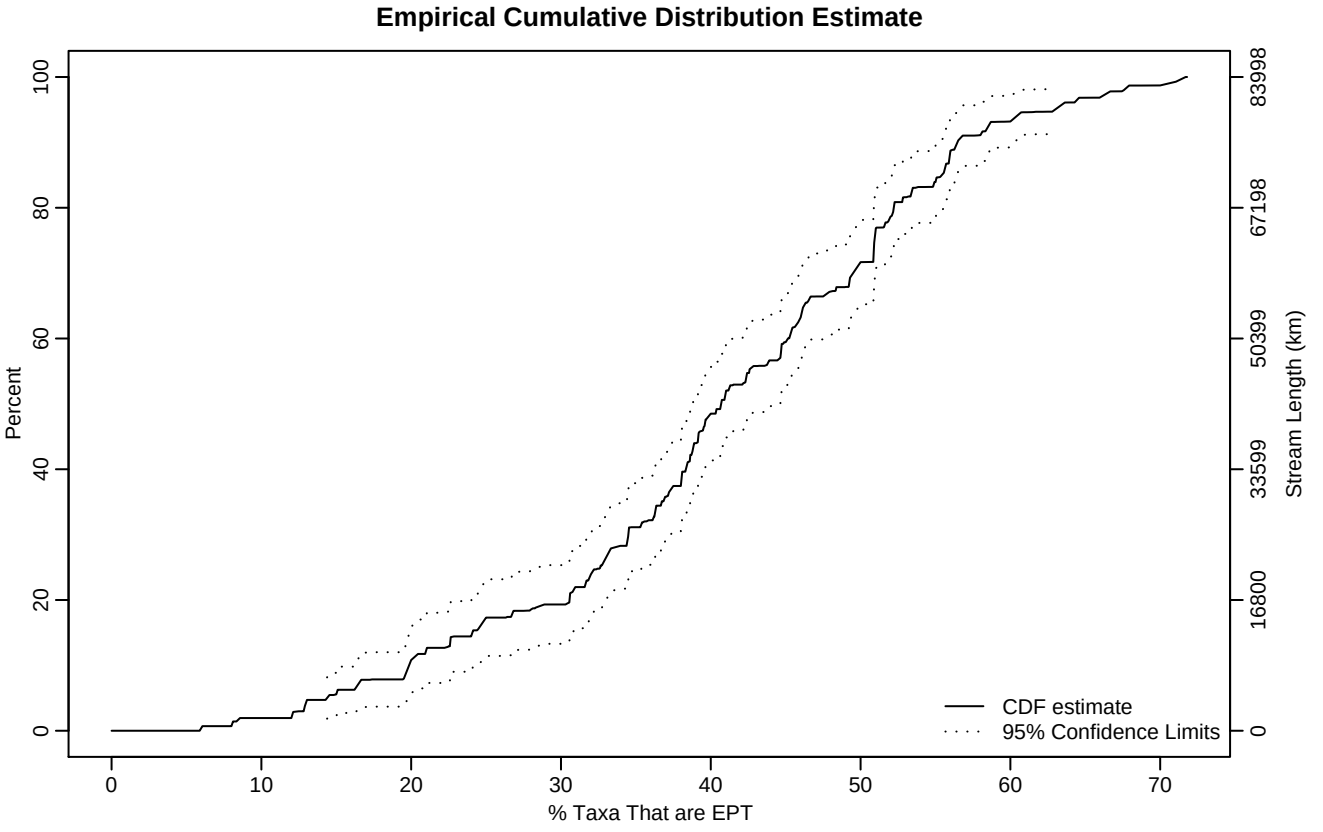


Figure BN−48 Indicator: EPT_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.38	12	19.52
10Pct	19.86	15.03	22.64
25Pct	32.62	27.99	35.35
50Pct	40.69	38.79	44.65
75Pct	50.93	49.25	52.81
90Pct	56.46	55.35	63.09
95Pct	62.97	58.11	67.80
Mean	40.63	38.68	42.58
Std Dev	13.15	11.86	14.44

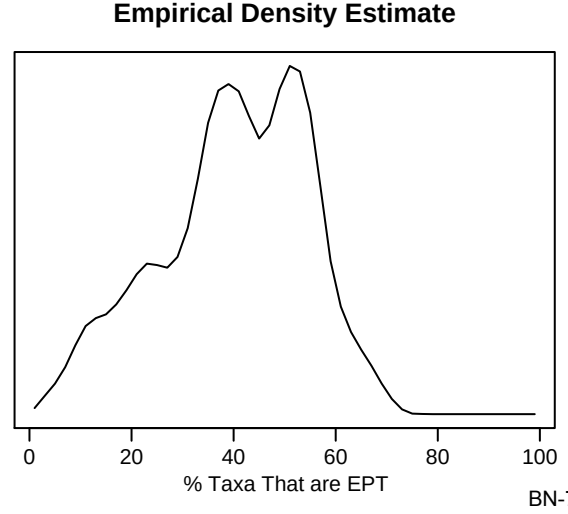
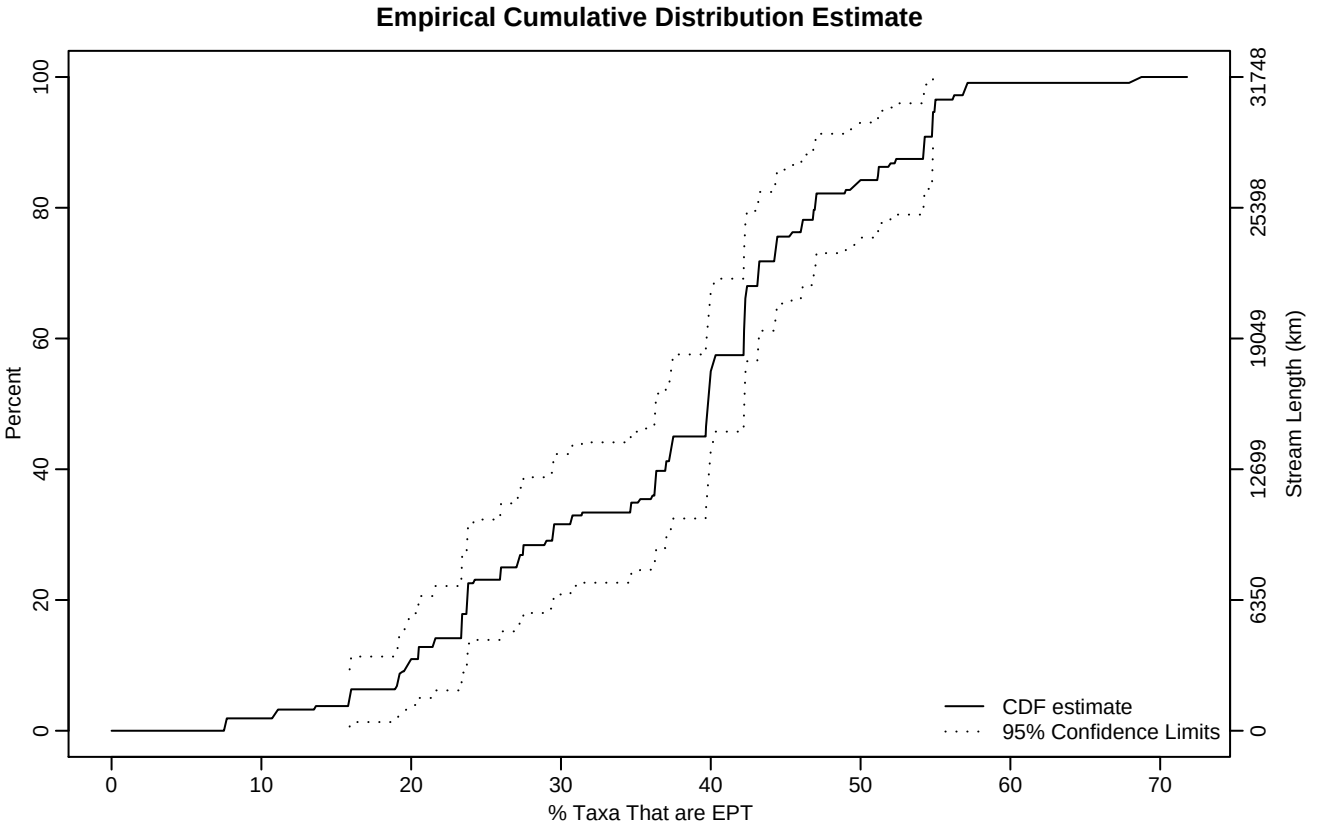


Figure BN−49 Indicator: EPT_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	15.89	7.62	19.29
10Pct	19.75	13.64	23.37
25Pct	27.03	23.34	36.01
50Pct	39.81	36.28	42.25
75Pct	44.41	42.28	51.19
90Pct	54.26	47.03	57.03
95Pct	54.94	54.25	68.75
Mean	37.20	34.48	39.92
Std Dev	11.99	10.06	13.91

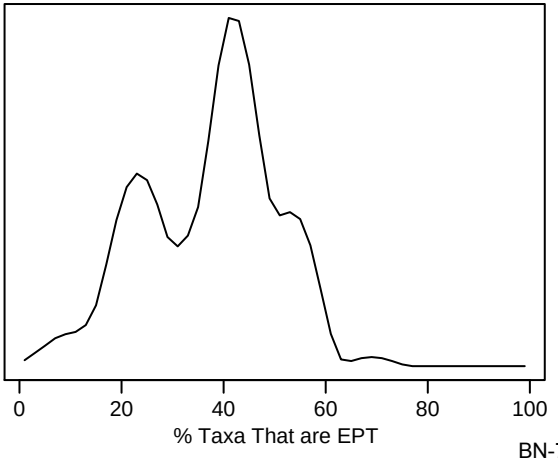
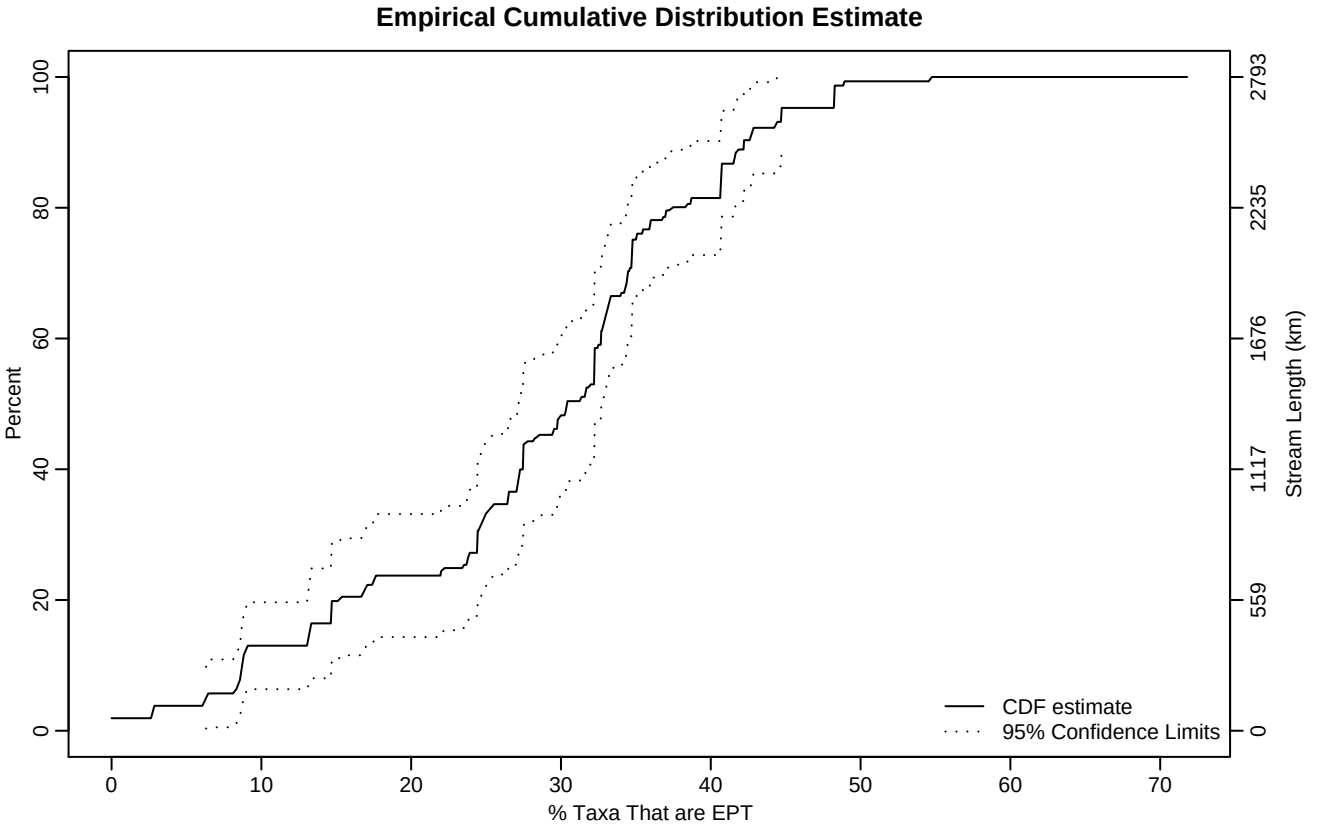


Figure BN−50 Indicator: EPT_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.31	0	8.66
10Pct	8.72	2.85	13.32
25Pct	23.43	13.25	25.48
50Pct	30.40	27.11	32.85
75Pct	34.78	33.11	40.71
90Pct	42.21	40.64	48.26
95Pct	44.73	41.64	54.76
Mean	28.25	25.60	30.90
Std Dev	11.81	10.25	13.38

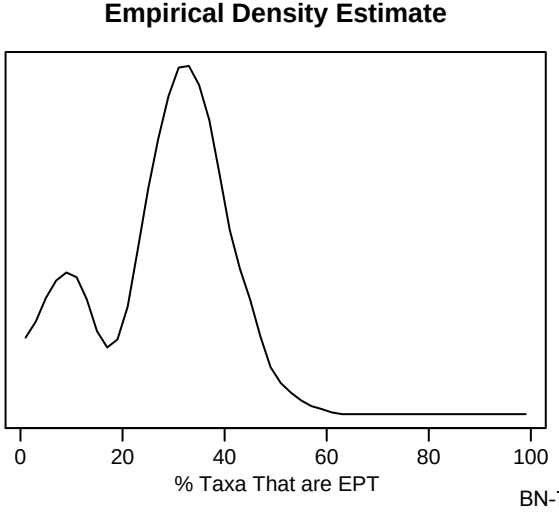
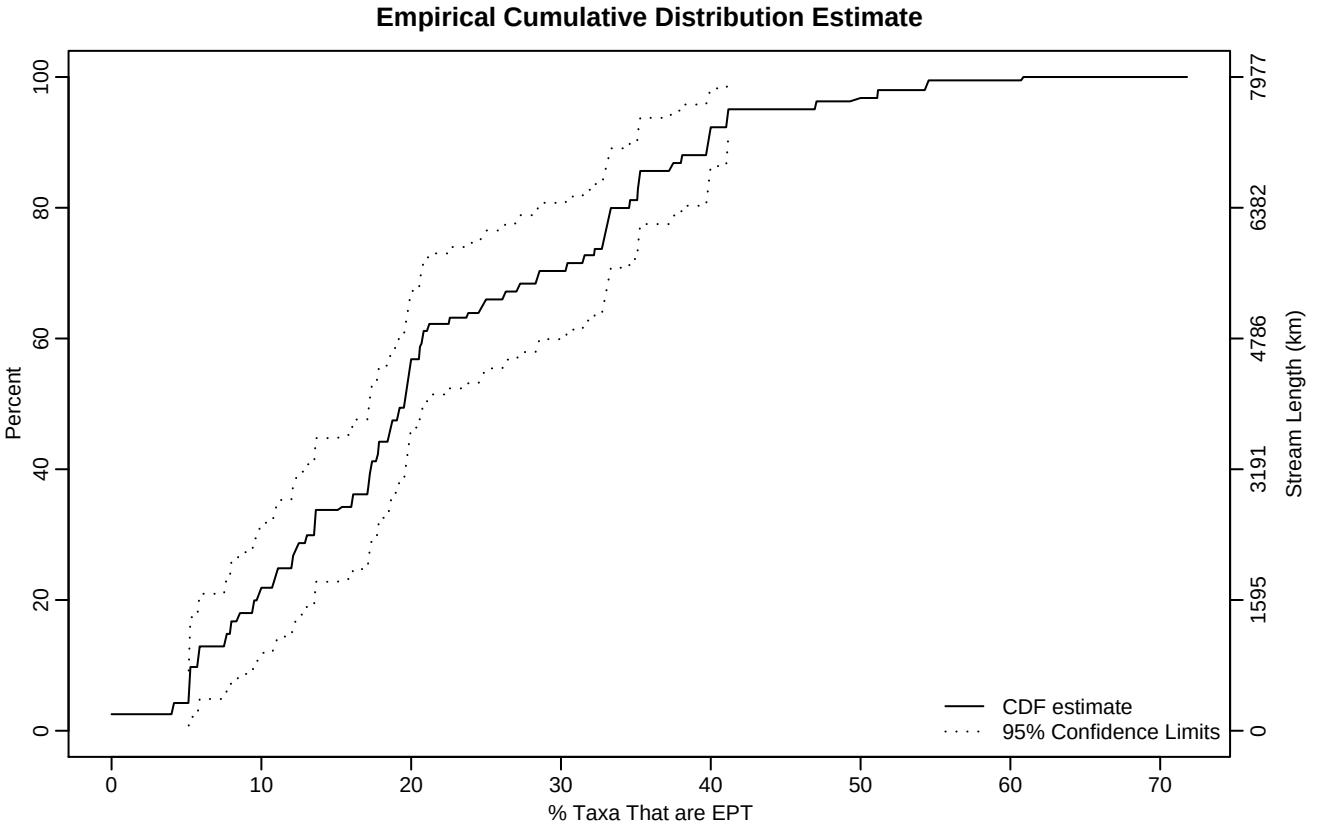


Figure BN−51 Indicator: EPT_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.15	0	5.24
10Pct	5.73	0	8.52
25Pct	12.01	7.67	16.08
50Pct	19.55	17.22	20.82
75Pct	32.85	24.79	35.25
90Pct	39.83	35.12	51.15
95Pct	41.17	39.76	60.87
Mean	21.77	18.90	24.64
Std Dev	12.72	11.06	14.38

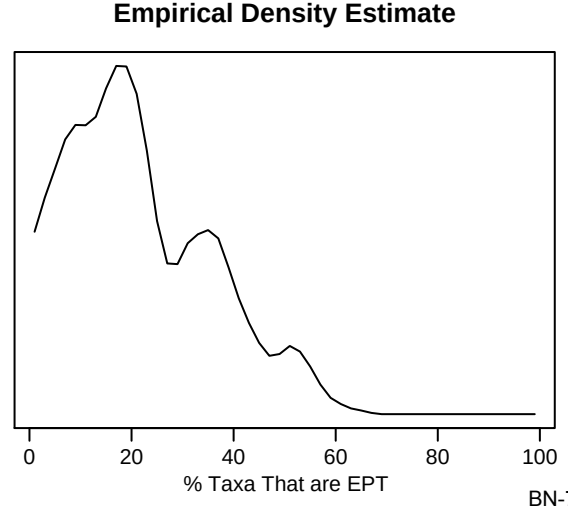
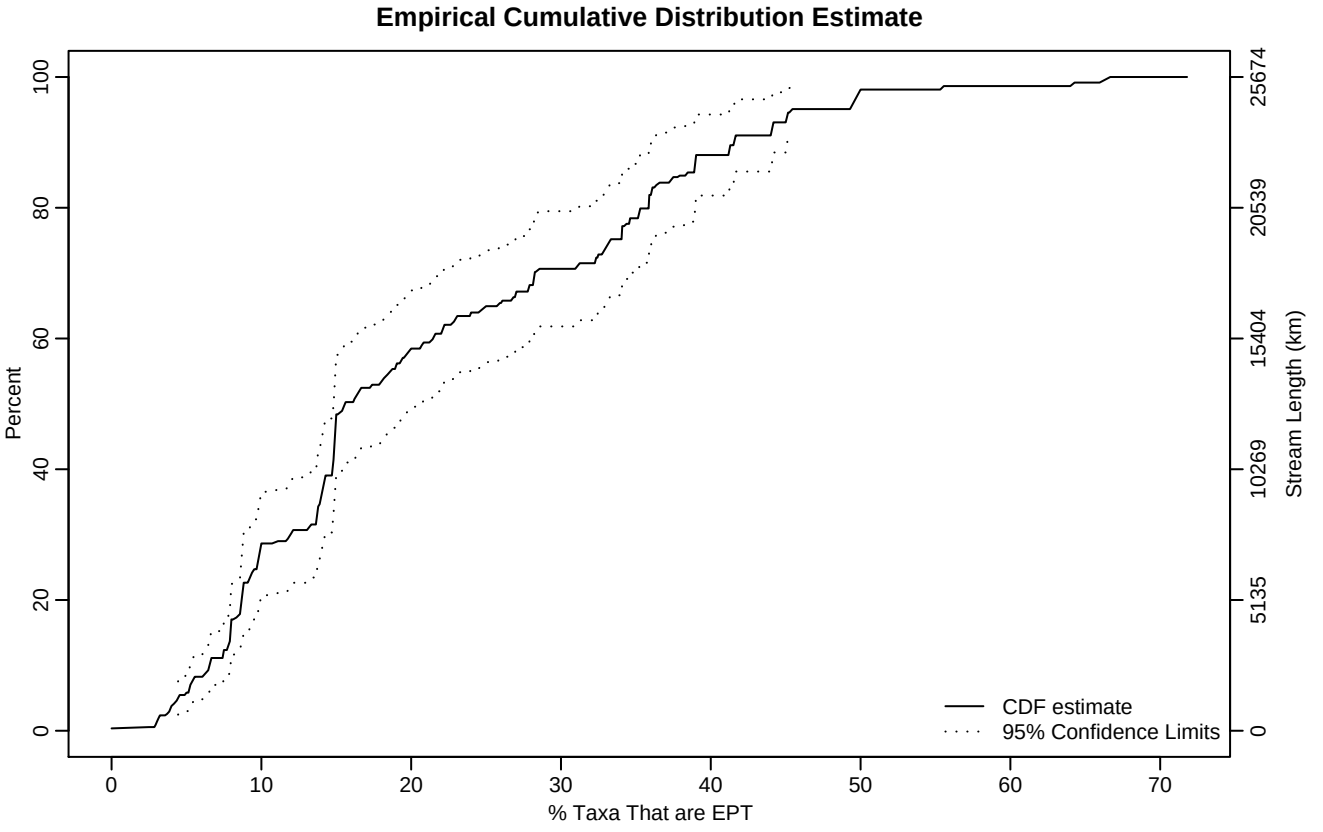


Figure BN−52 Indicator: EPT_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.44	3.74	5.34
10Pct	6.54	5.16	7.90
25Pct	9.70	8.24	13.71
50Pct	15.58	14.78	20.81
75Pct	33.29	26.95	36.38
90Pct	41.56	37.33	49.46
95Pct	45.42	44.02	64.06
Mean	21.62	19.16	24.09
Std Dev	13.37	12.10	14.65

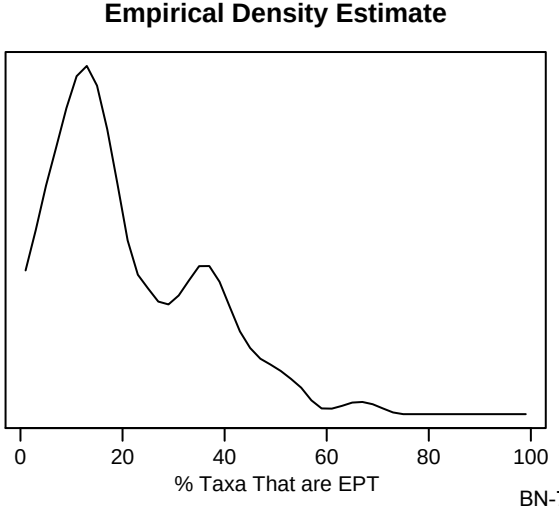
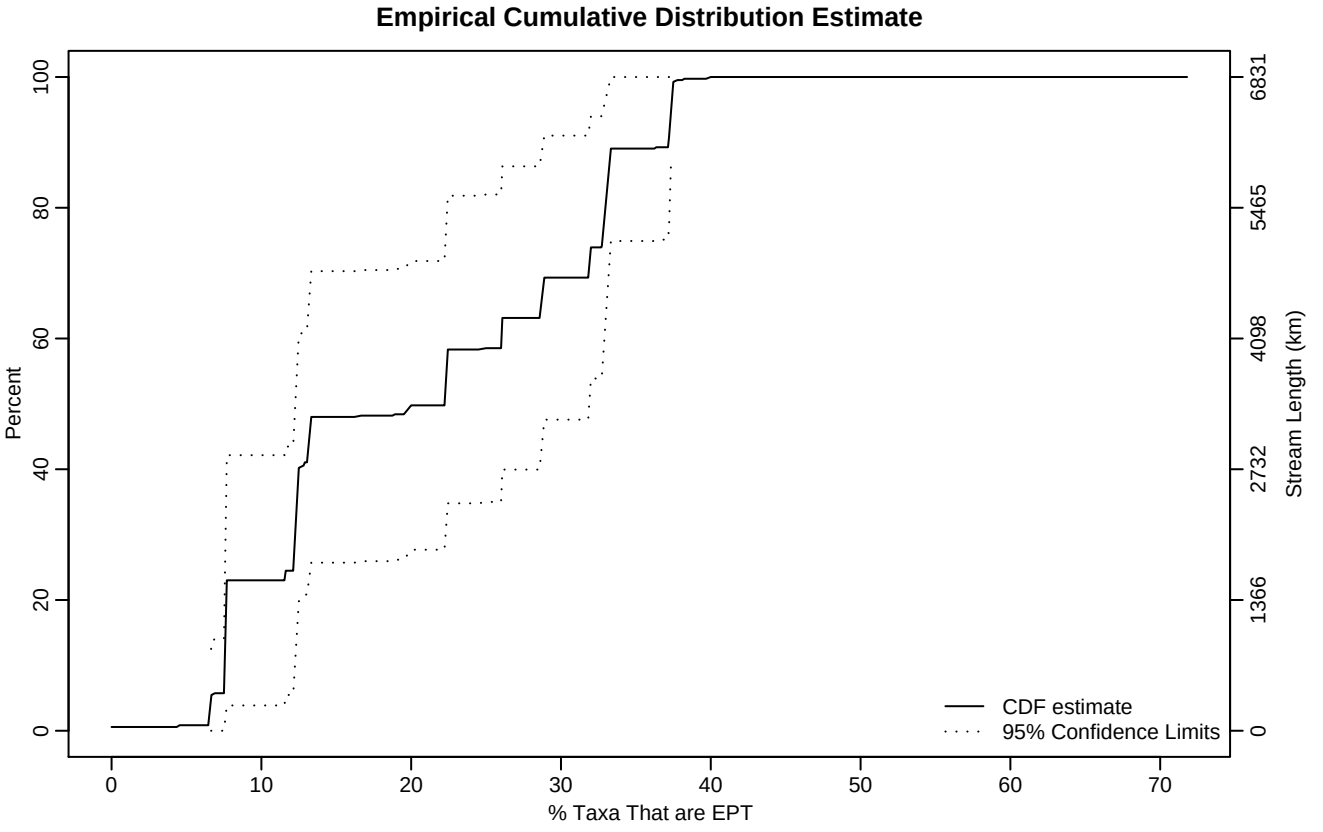


Figure BN−53 Indicator: EPT_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.64	6.58	7.51
10Pct	7.55	6.48	7.64
25Pct	12.13	7.50	13.17
50Pct	22.23	12.20	31.93
75Pct	32.76	22.36	37.36
90Pct	37.18	32.80	40
95Pct	37.35	33.01	40
Mean	20.77	15.58	25.96
Std Dev	11.18	9.74	12.62

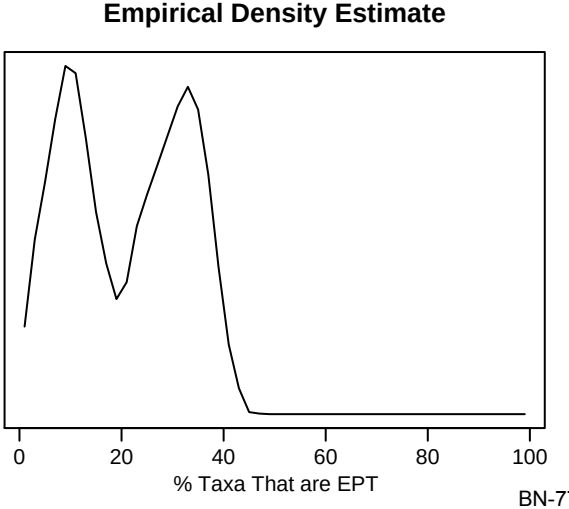
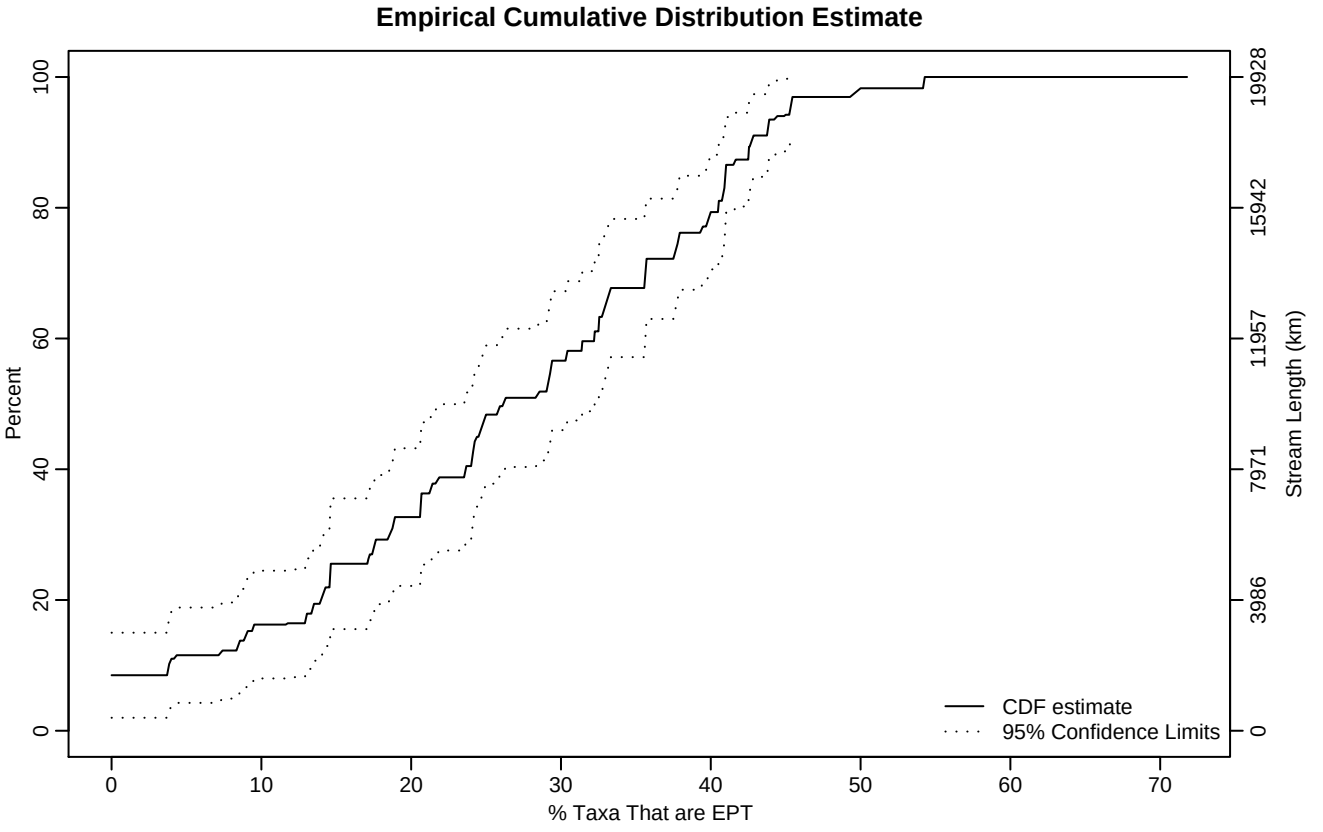


Figure BN−54 Indicator: EPT_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	4.30
10Pct	3.83	0	12.91
25Pct	14.62	9.46	20.63
50Pct	26.15	23.60	32.24
75Pct	37.83	33.10	40.94
90Pct	42.70	40.91	45.45
95Pct	45.30	42.61	54.29
Mean	26.15	23.21	29.08
Std Dev	13.55	11.76	15.35

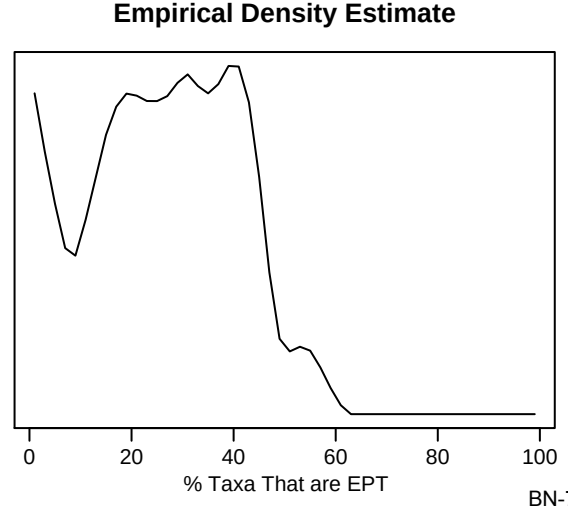
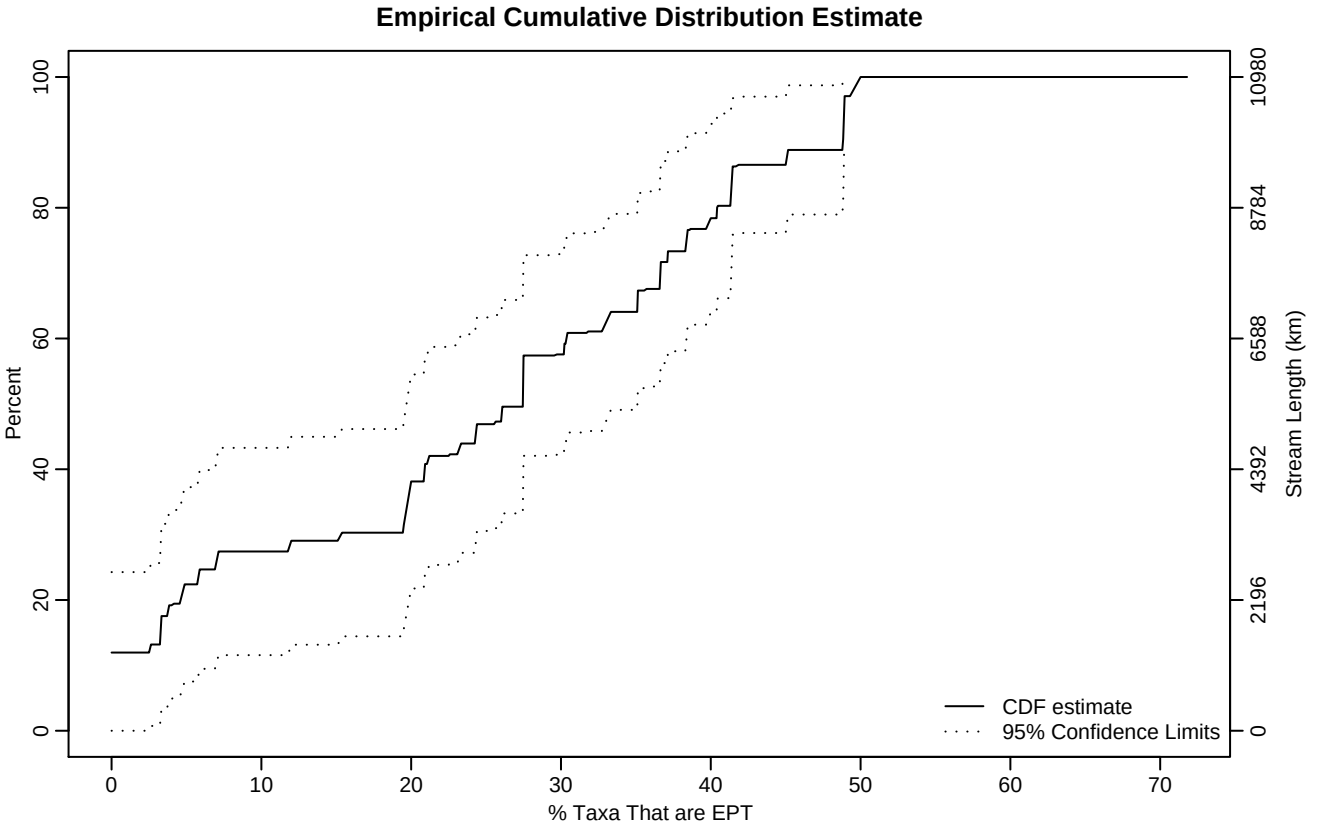


Figure BN−55 Indicator: EPT_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	3.33
10Pct	0	0	4.87
25Pct	6.93	0	20.91
50Pct	27.45	19.63	35.13
75Pct	38.38	30.31	48.84
90Pct	48.82	40.38	50
95Pct	48.90	41.39	50
Mean	24.83	18.98	30.69
Std Dev	15.90	13.78	18.03

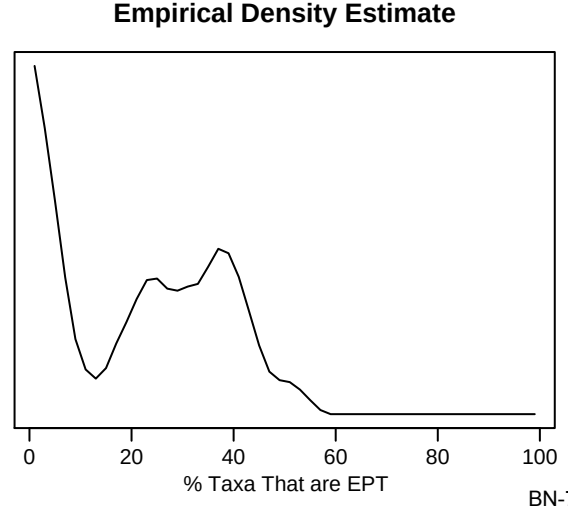
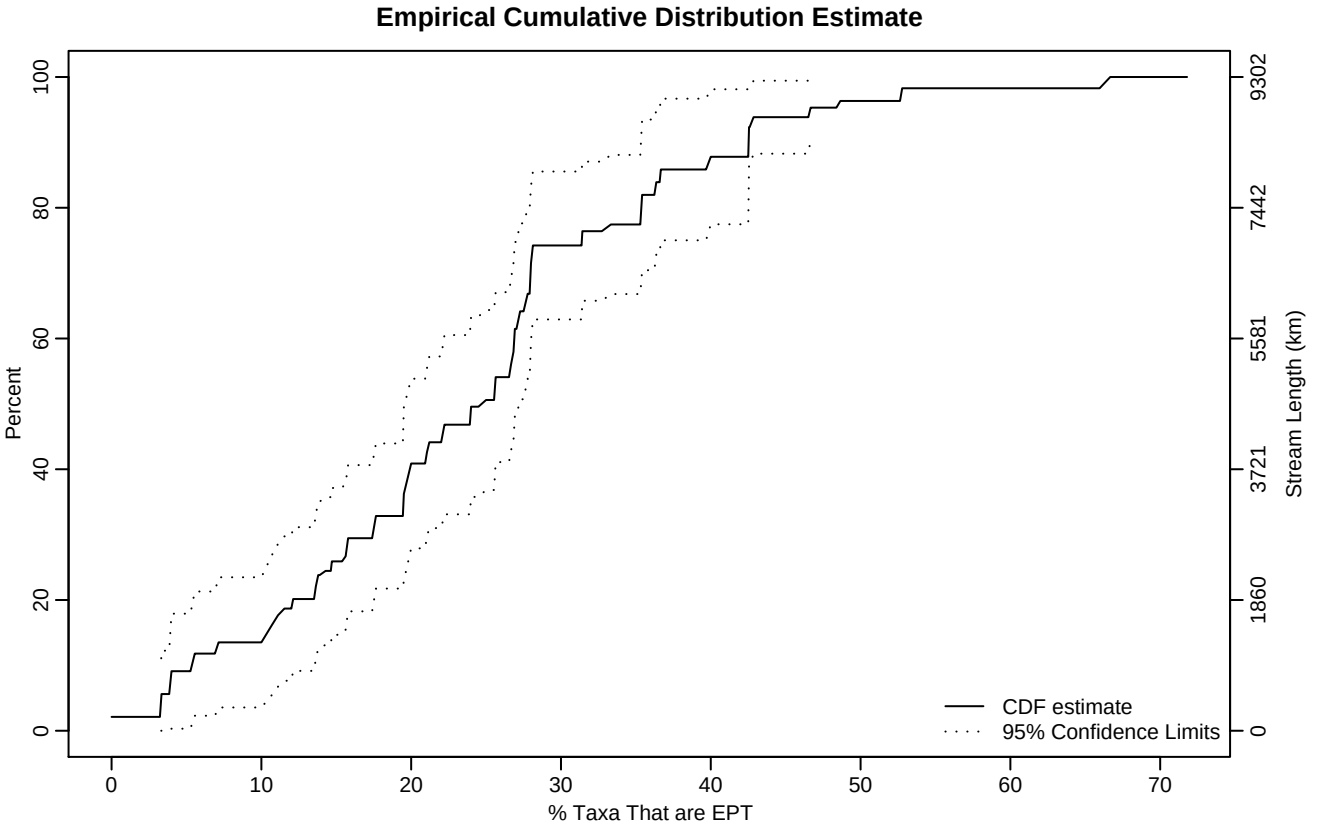


Figure BN−56 Indicator: EPT_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.31	0	3.97
10Pct	5.36	0	12.01
25Pct	14.66	10.04	19.52
50Pct	24.70	19.51	27.27
75Pct	31.39	27.15	39.90
90Pct	42.53	35.35	66.67
95Pct	46.63	42.52	66.67
Mean	24.22	20.72	27.71
Std Dev	12.74	10.26	15.22

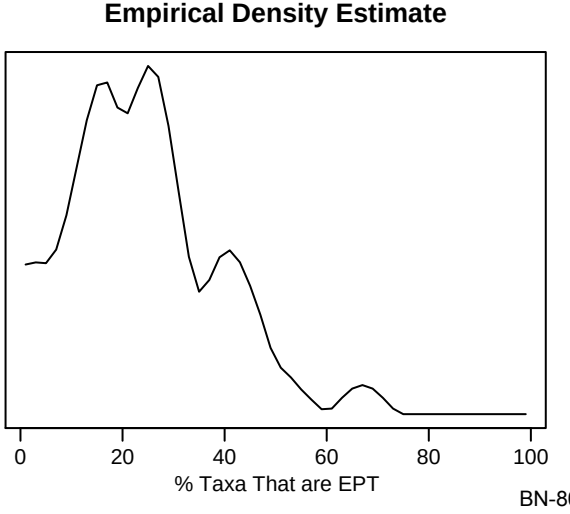
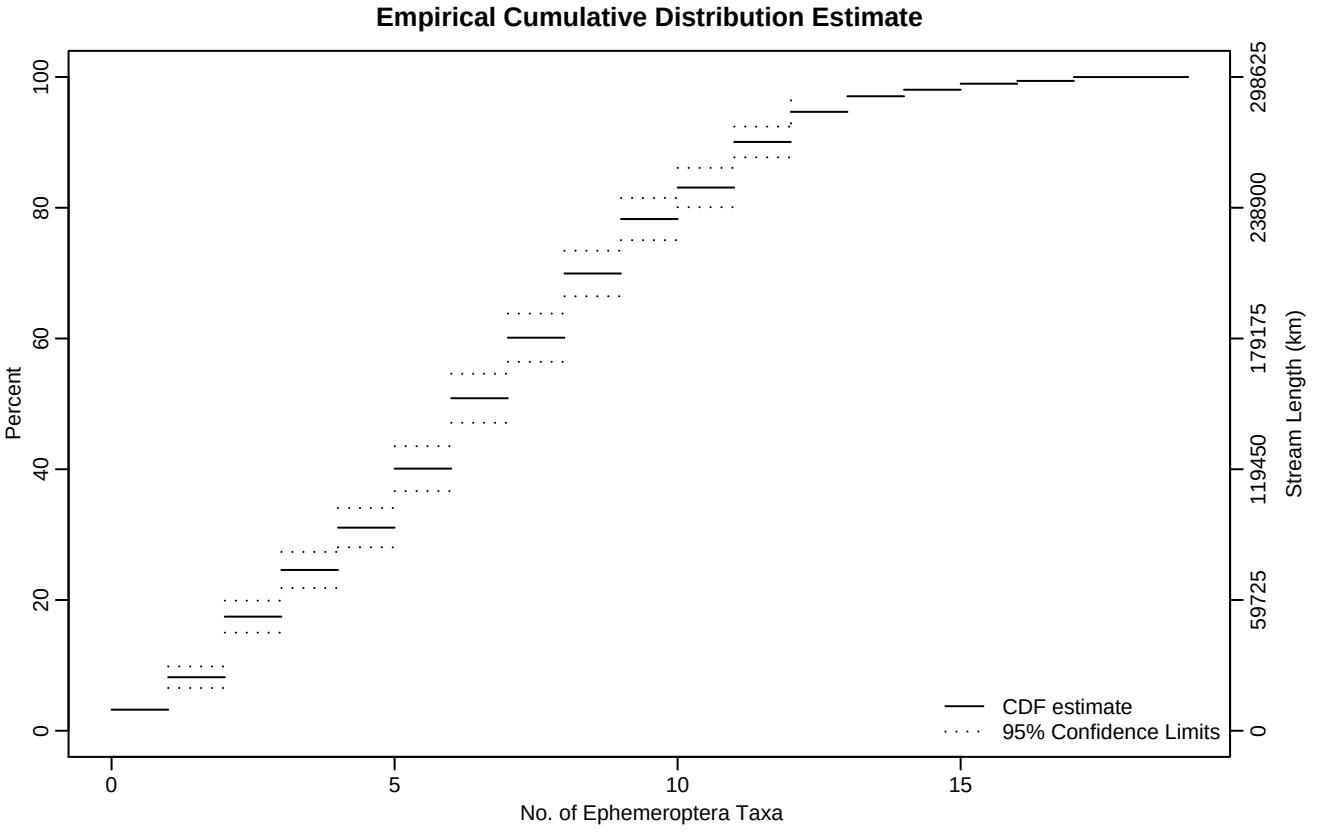


Figure BN−57 Indicator: EPHERICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.36	0.11	0.60
10Pct	1.20	1.02	1.38
25Pct	3.06	2.66	3.50
50Pct	5.92	5.59	6.29
75Pct	8.61	8.18	9.05
90Pct	10.99	10.56	11.64
95Pct	12.14	11.69	12.87
Mean	6.55	6.30	6.80
Std Dev	3.34	3.17	3.52

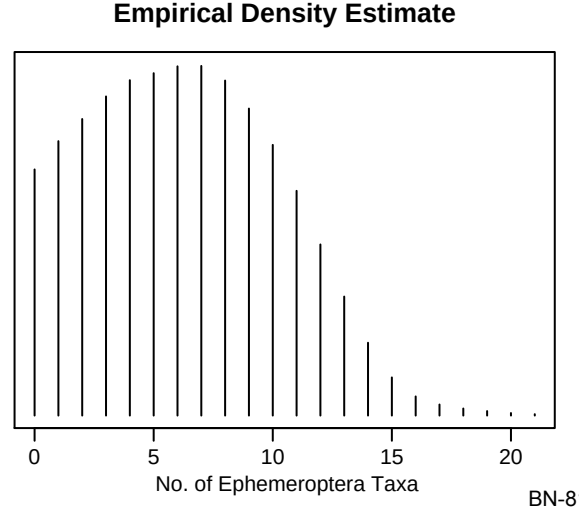
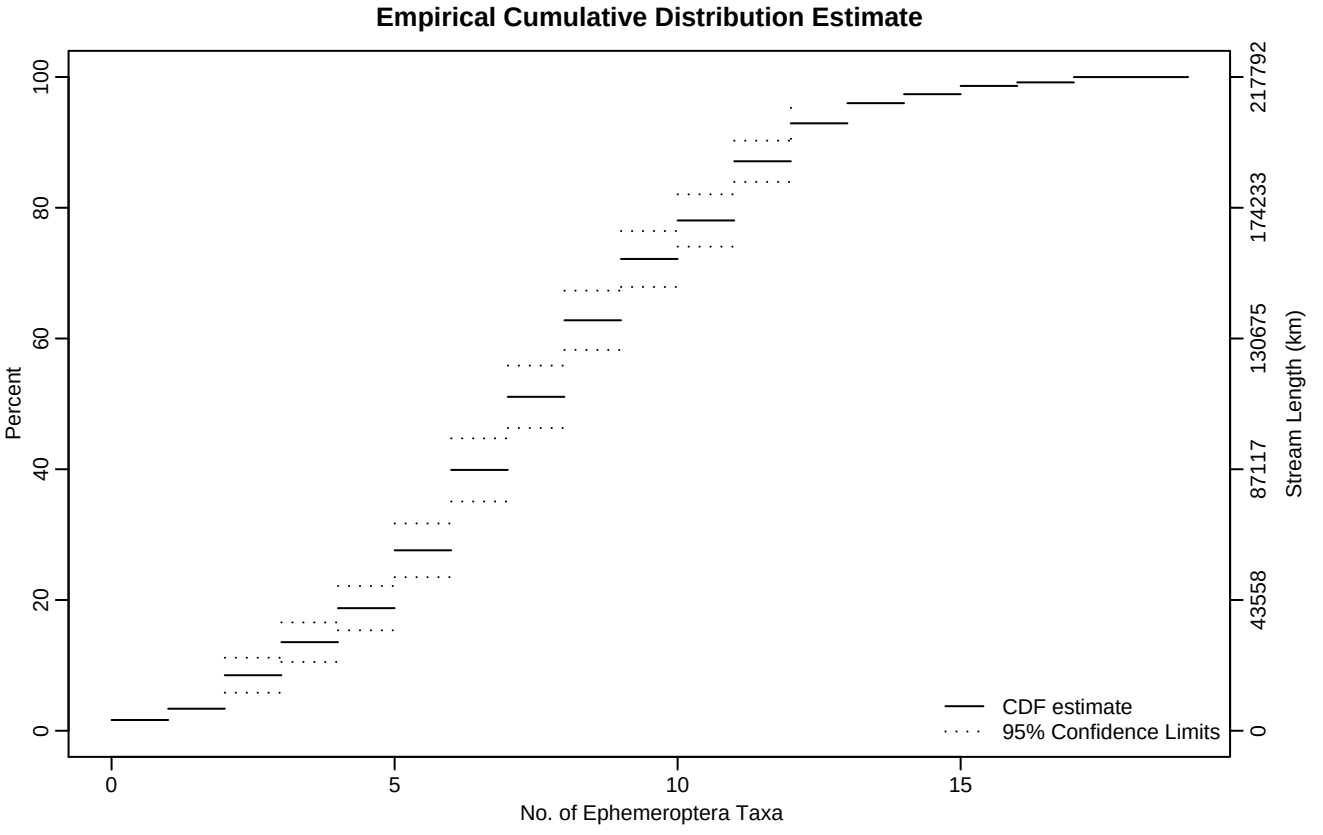


Figure BN−58 Indicator: EPHERICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.32	0.98	1.64
10Pct	2.30	1.77	2.83
25Pct	4.71	4.30	5.08
50Pct	6.90	6.47	7.32
75Pct	9.48	8.85	10.13
90Pct	11.50	10.97	12.07
95Pct	12.68	11.95	14
Mean	7.51	7.20	7.83
Std Dev	3.29	3.08	3.51

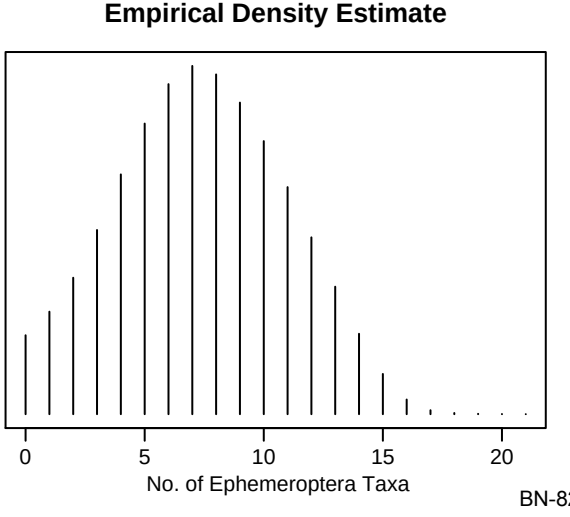
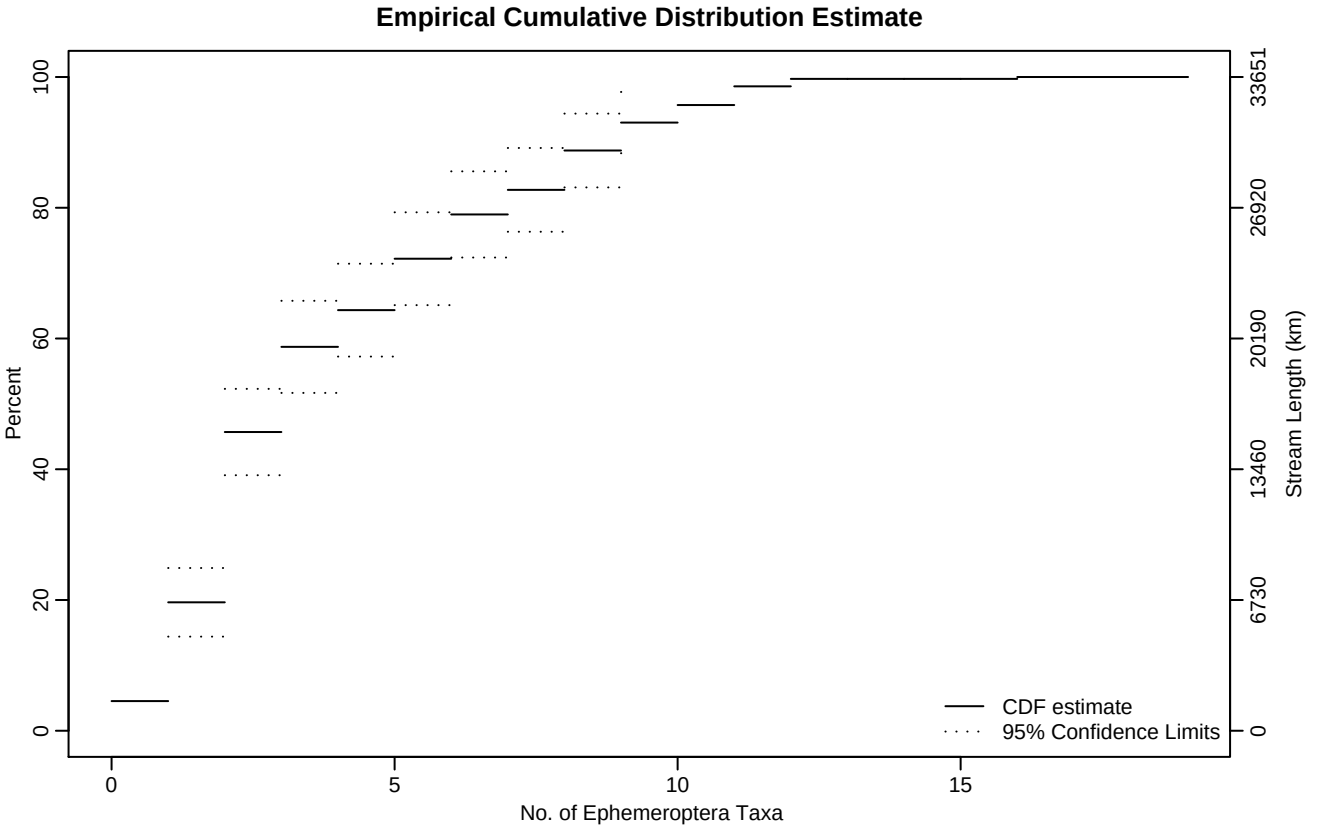


Figure BN−59 Indicator: EPHERICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0	0.21
10Pct	0.36	0.18	0.54
25Pct	1.21	1	1.41
50Pct	2.33	1.91	2.84
75Pct	5.41	4.47	6.79
90Pct	8.29	7.28	9.95
95Pct	9.74	8.37	11.96
Mean	3.98	3.52	4.45
Std Dev	2.87	2.61	3.14

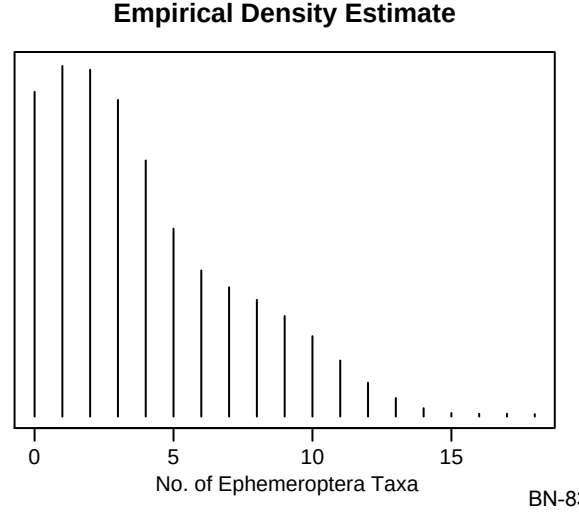
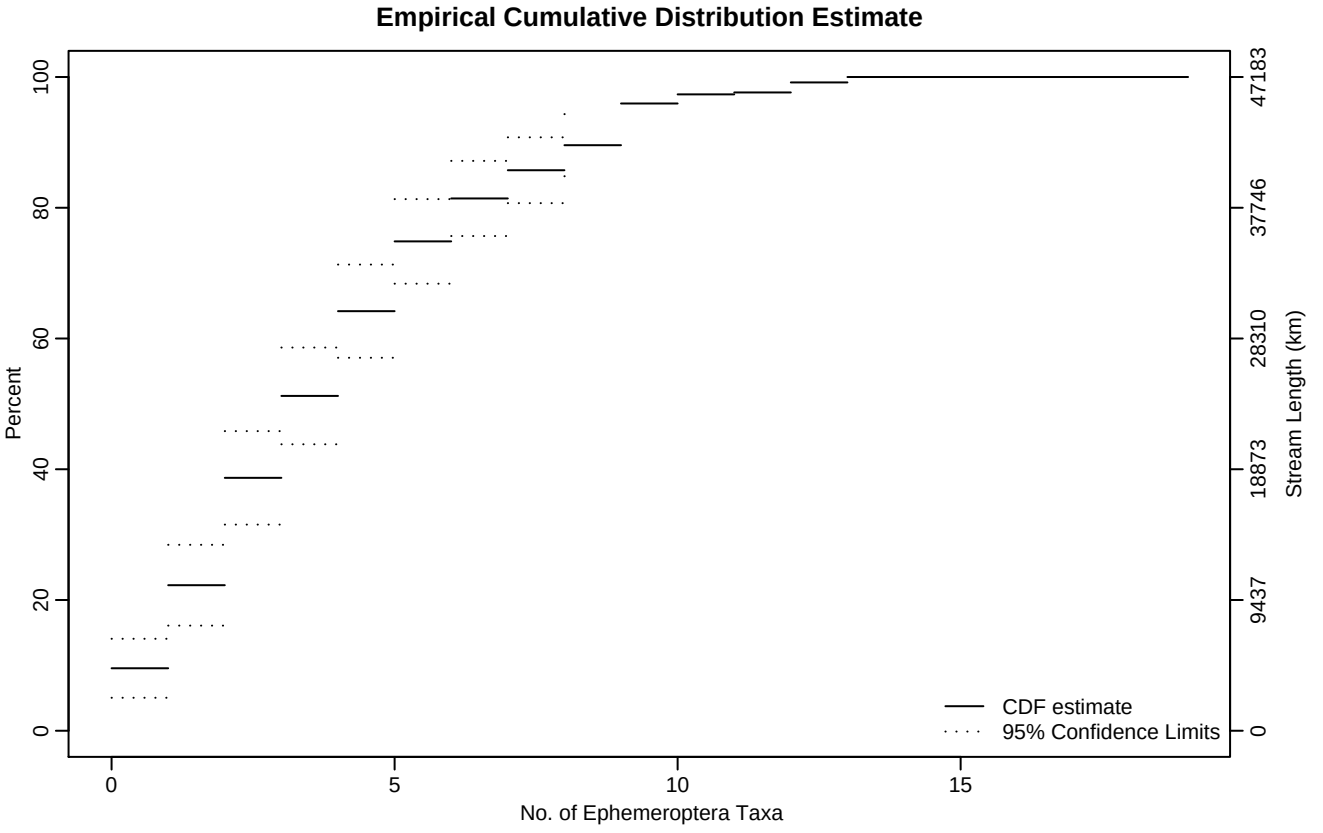


Figure BN−60 Indicator: EPHERICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.03	0	0.39
25Pct	1.17	0.73	1.54
50Pct	2.90	2.32	3.47
75Pct	5.02	4.39	6.06
90Pct	8.07	6.83	8.85
95Pct	8.85	8.06	13
Mean	3.92	3.48	4.37
Std Dev	2.75	2.49	3

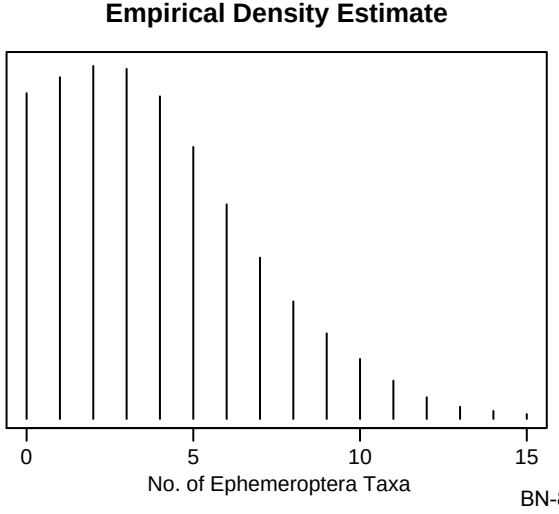
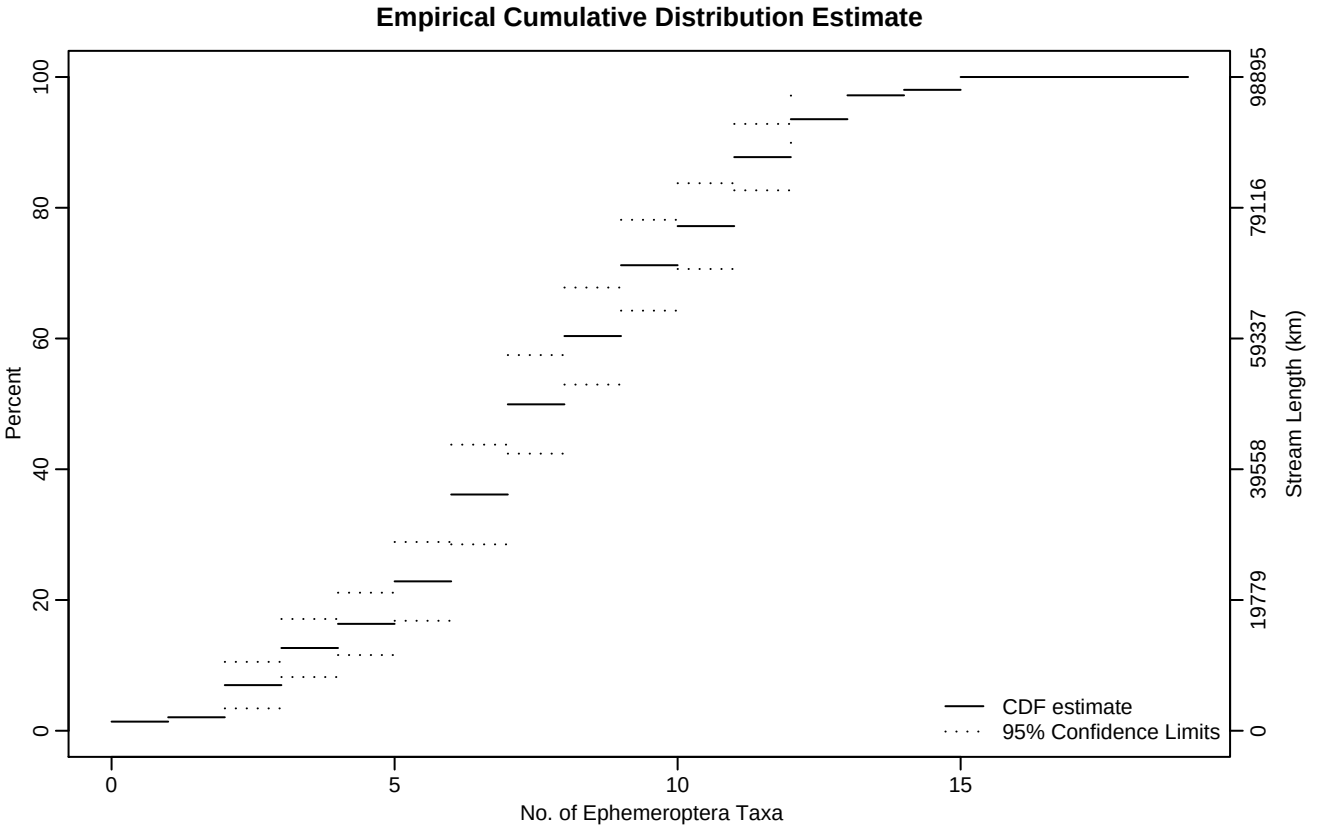


Figure BN−61 Indicator: EPHERICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.60	1.20	2
10Pct	2.53	1.87	3.27
25Pct	5.16	4.37	5.63
50Pct	7.01	6.45	7.74
75Pct	9.63	8.71	10.45
90Pct	11.39	10.74	12.41
95Pct	12.40	11.63	14.28
Mean	7.66	7.19	8.14
Std Dev	3.07	2.77	3.37

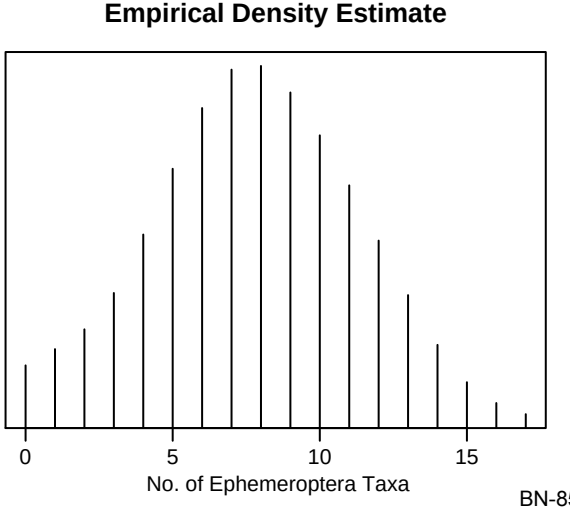
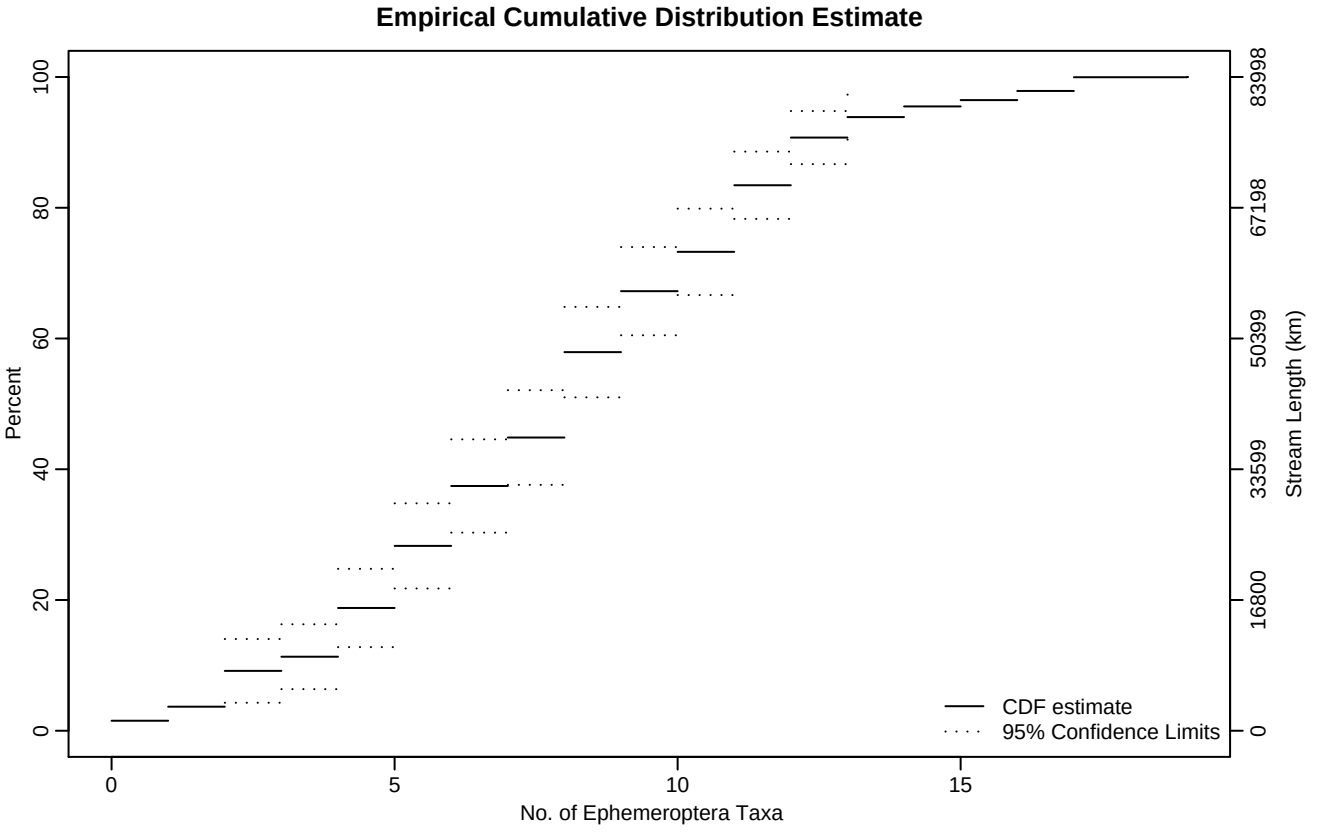


Figure BN−62 Indicator: EPHERICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.24	0.20	1.80
10Pct	2.39	1.26	3.48
25Pct	4.66	4.02	5.30
50Pct	7.39	6.72	7.95
75Pct	10.17	9.19	10.82
90Pct	11.90	11.19	13.79
95Pct	13.69	12.25	16.30
Mean	7.89	7.36	8.42
Std Dev	3.63	3.28	3.99

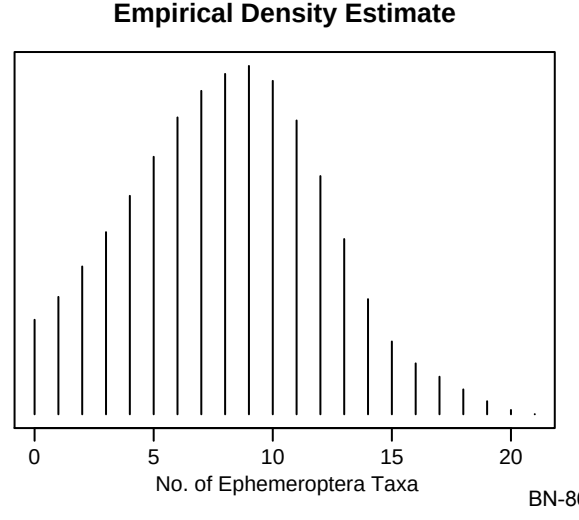
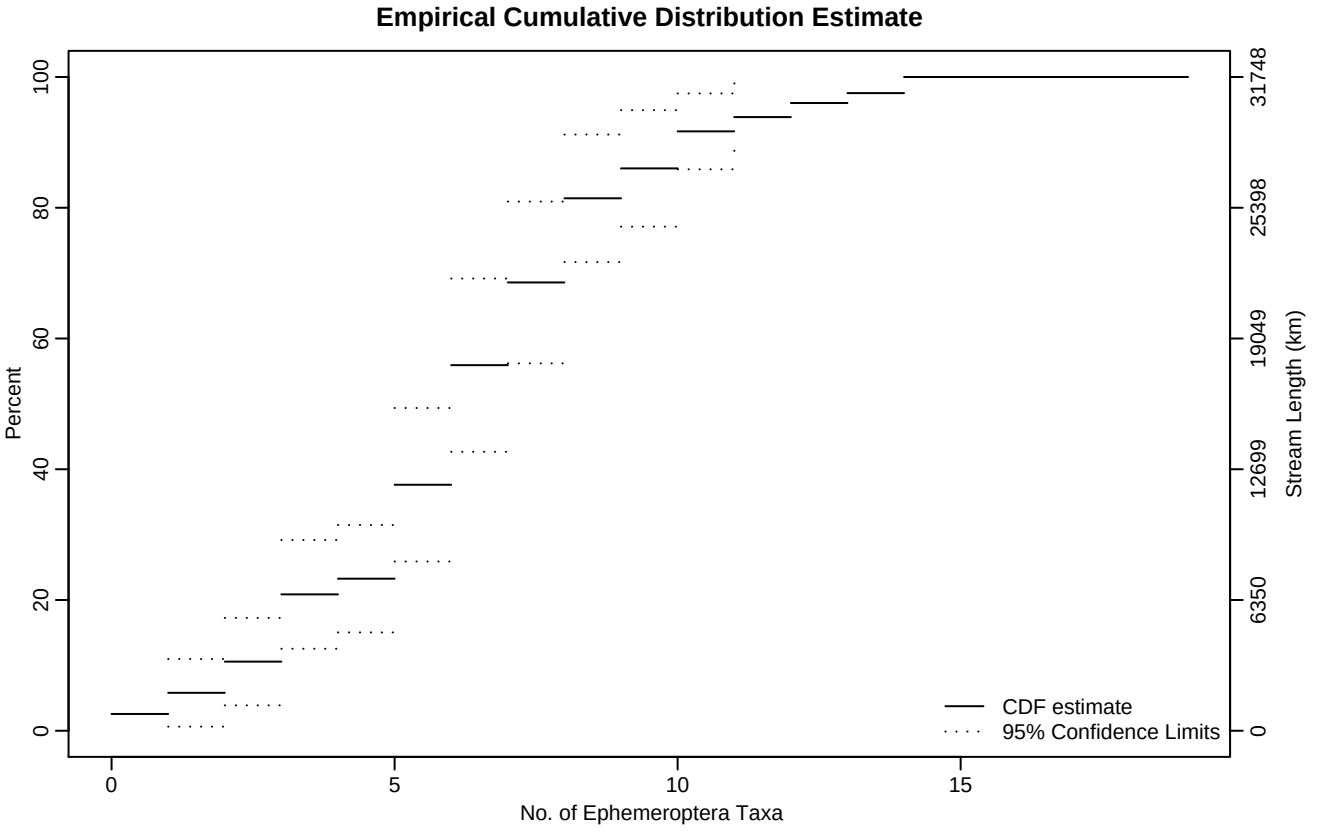


Figure BN−63 Indicator: EPHERICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.75	0	1.53
10Pct	1.88	0.66	2.46
25Pct	4.12	2.53	4.75
50Pct	5.68	5.01	6.49
75Pct	7.50	6.53	9.24
90Pct	9.70	7.98	13.53
95Pct	11.53	9.70	14
Mean	6.28	5.55	7.01
Std Dev	2.90	2.42	3.39

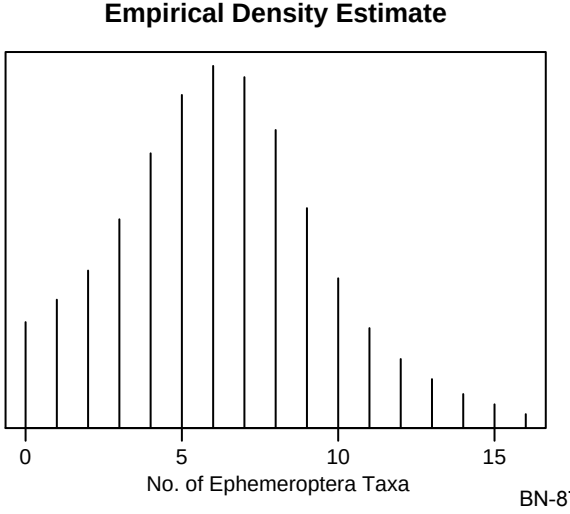
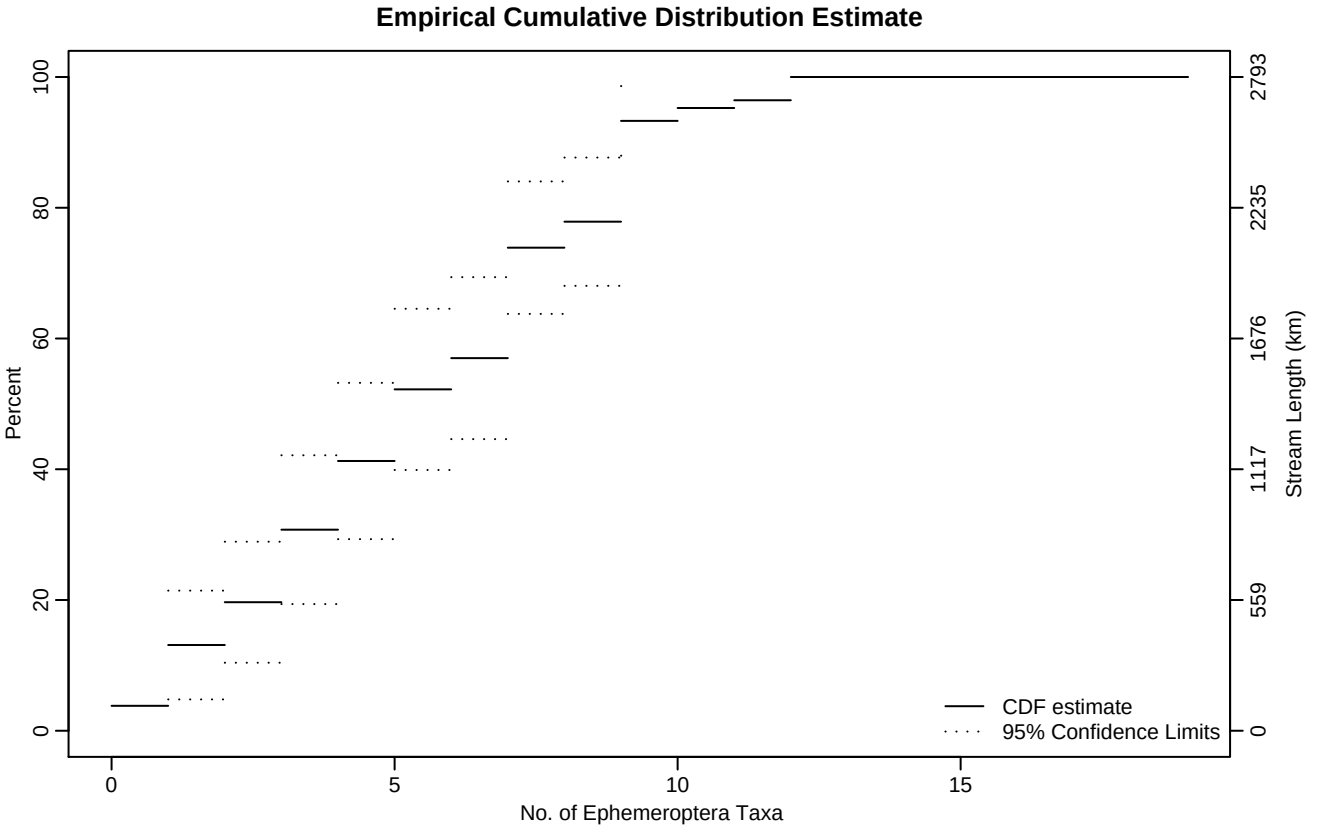


Figure BN−64 Indicator: EPHERICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.13	0	0.57
10Pct	0.67	0.21	1.17
25Pct	2.48	1.39	3.34
50Pct	4.80	3.69	6.30
75Pct	7.28	6.47	8.47
90Pct	8.79	8.16	11.93
95Pct	9.87	8.76	12
Mean	5.45	4.71	6.20
Std Dev	3.09	2.71	3.47

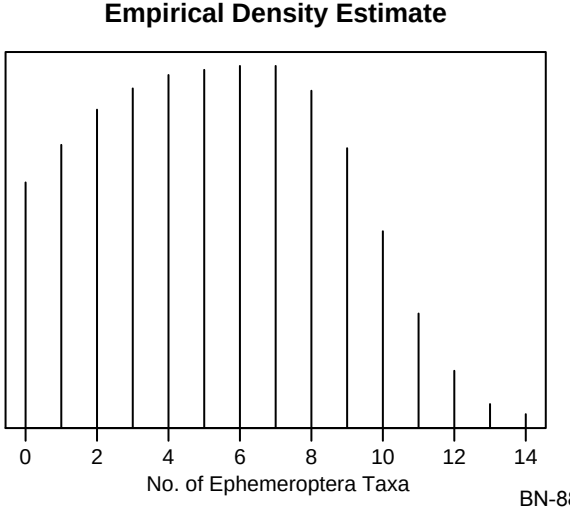
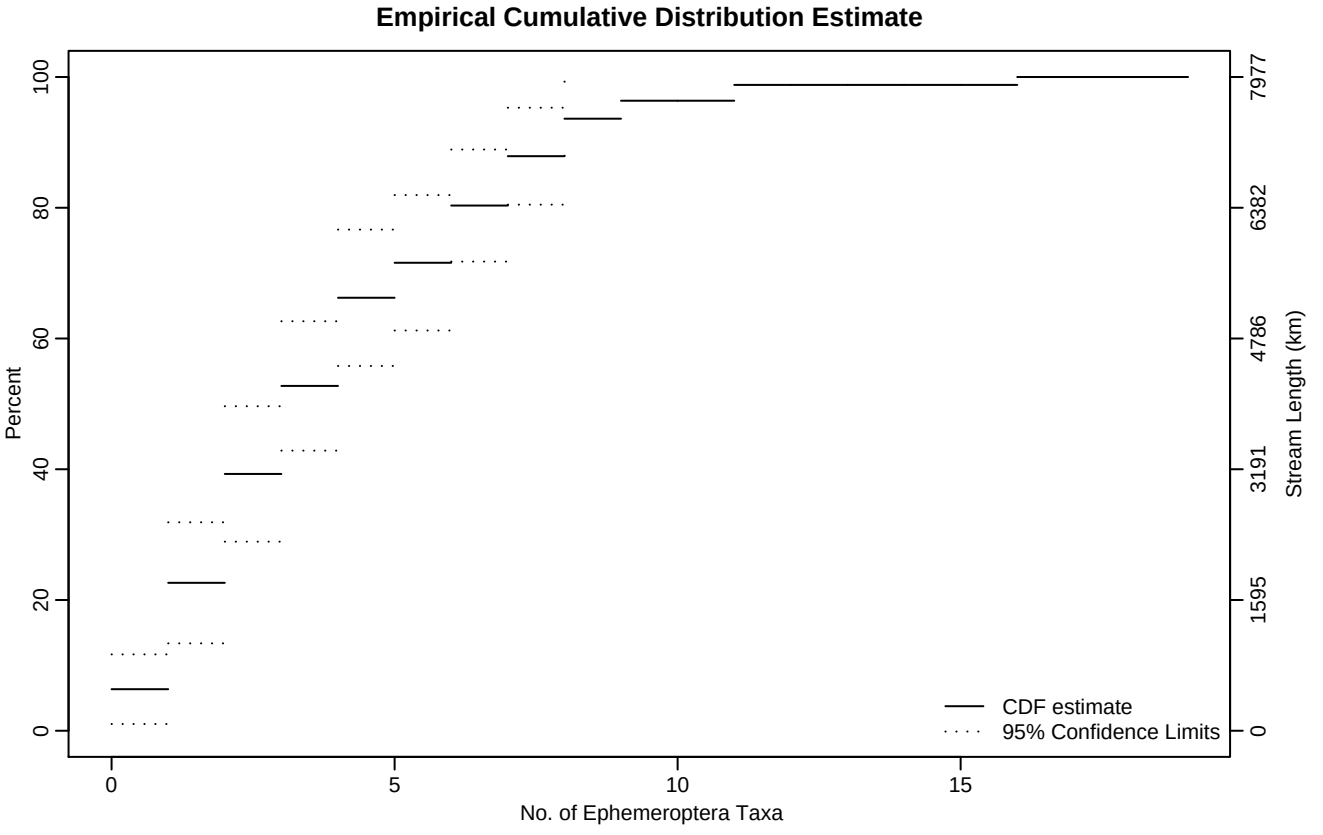


Figure BN−65 Indicator: EPHERICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.24
10Pct	0.22	0	0.55
25Pct	1.14	0.58	1.70
50Pct	2.80	2.02	3.57
75Pct	5.39	3.88	6.66
90Pct	7.37	6.29	10.44
95Pct	8.50	7.25	16
Mean	3.93	3.30	4.55
Std Dev	2.89	2.33	3.45

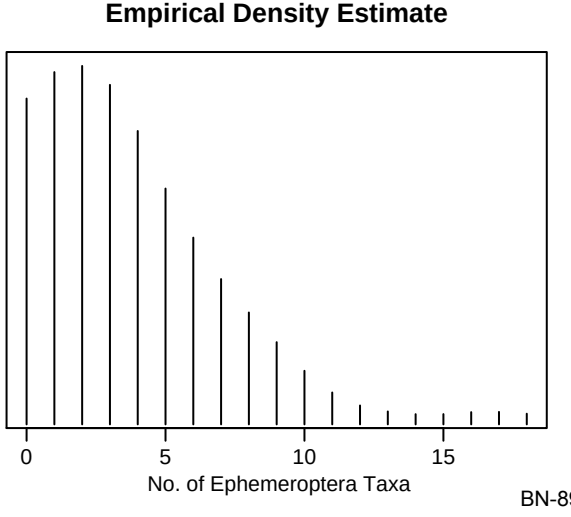
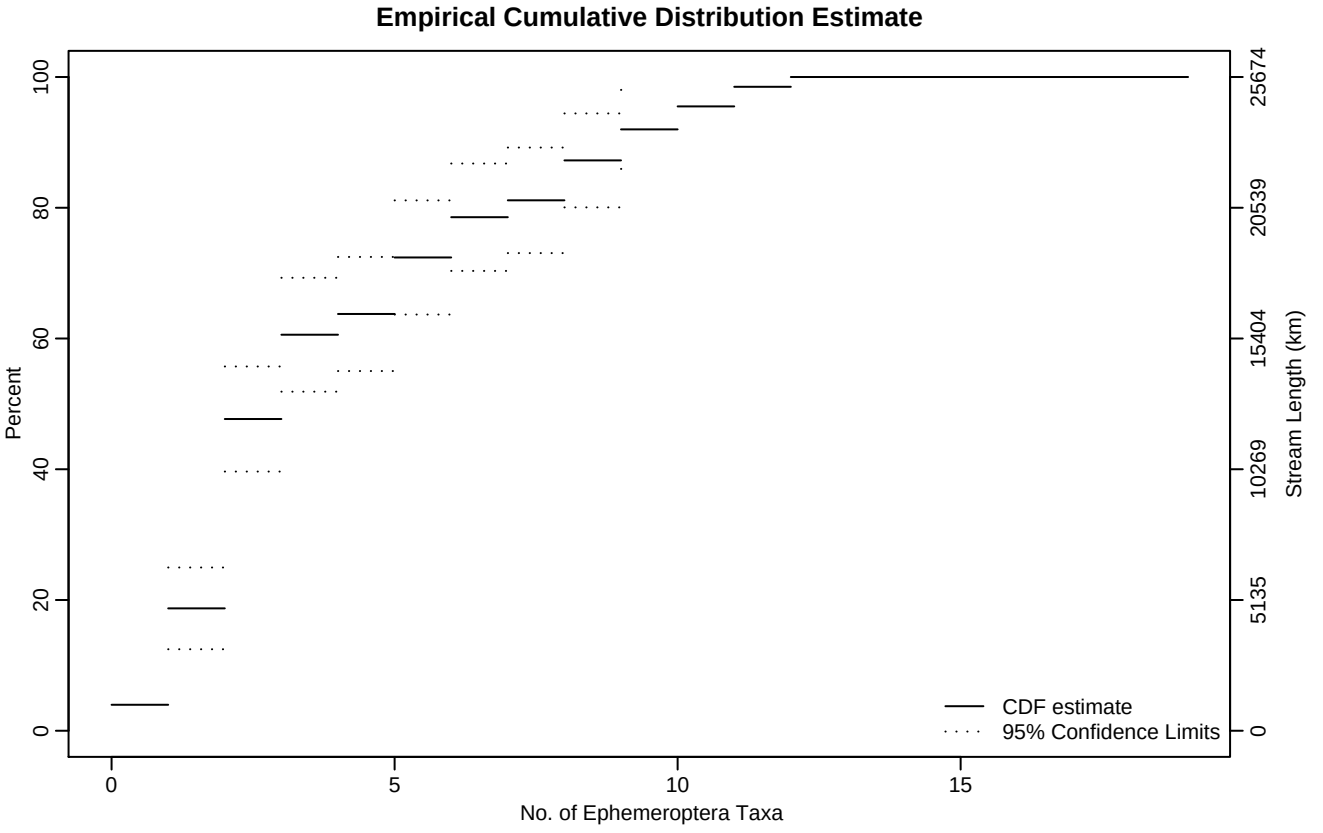


Figure BN−66 Indicator: EPHERICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.07	0	0.28
10Pct	0.41	0.20	0.62
25Pct	1.22	1	1.44
50Pct	2.18	1.80	2.81
75Pct	5.42	4.32	7.39
90Pct	8.58	7.29	10.52
95Pct	9.86	8.37	12
Mean	4	3.42	4.58
Std Dev	2.85	2.56	3.14

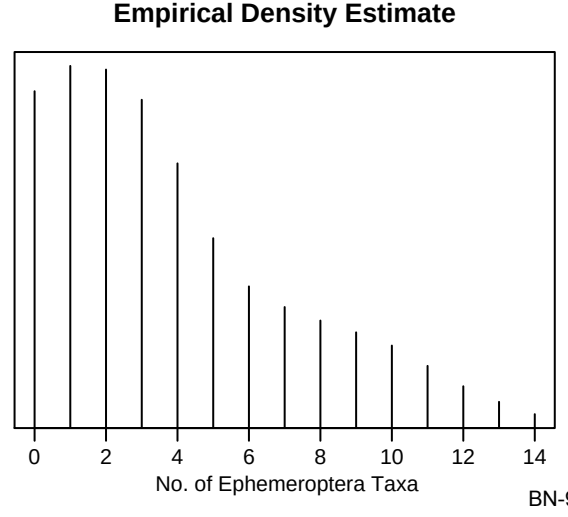
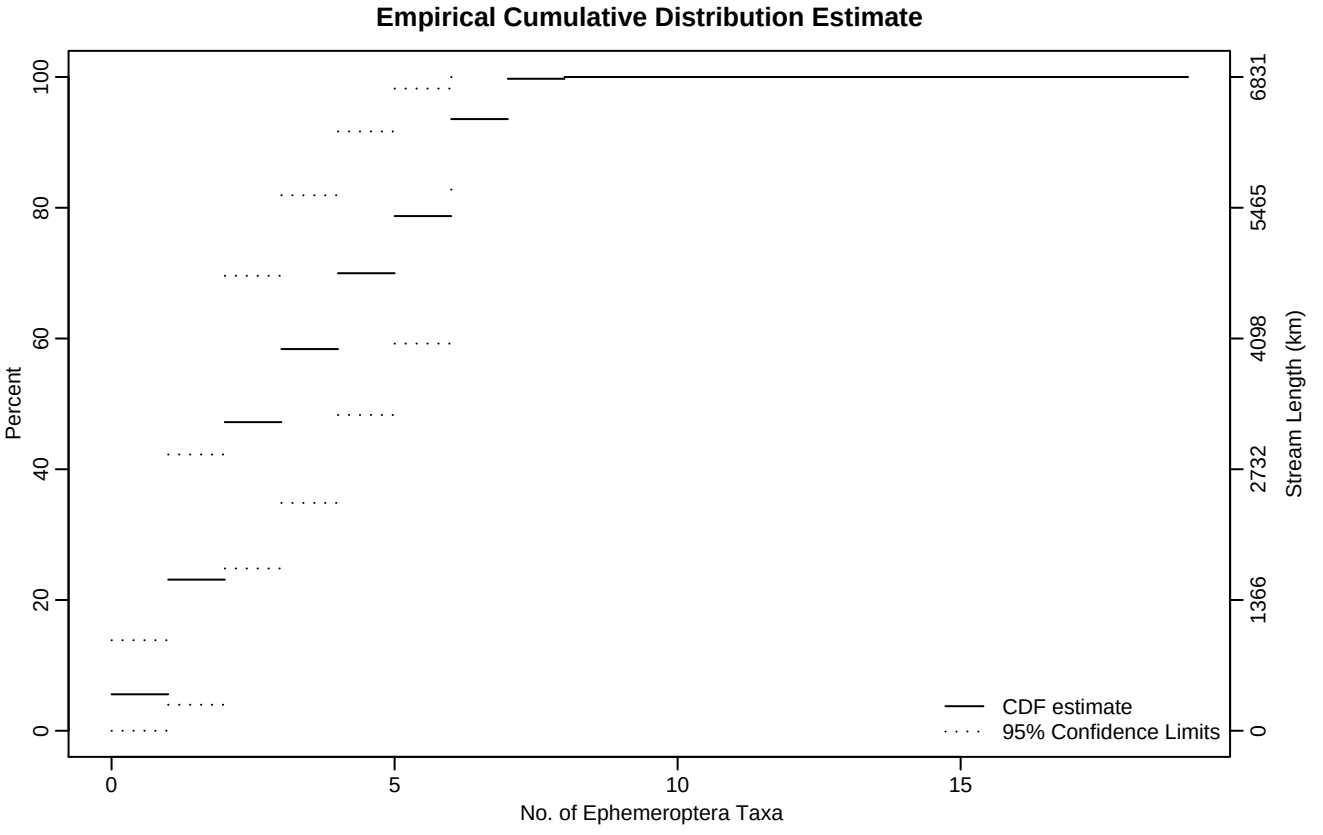


Figure BN−67 Indicator: EPHERICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.44
10Pct	0.25	0	0.74
25Pct	1.08	0.02	1.87
50Pct	2.25	1.20	4.25
75Pct	4.57	2.56	6.48
90Pct	5.76	4.12	8
95Pct	6.23	5.37	8
Mean	3.24	2.27	4.20
Std Dev	2.06	1.67	2.45

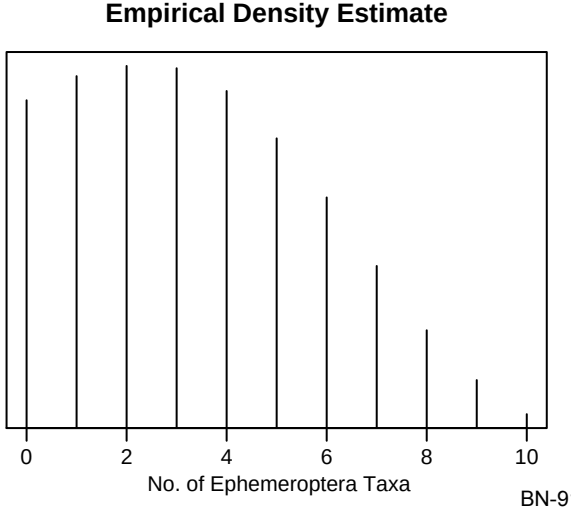
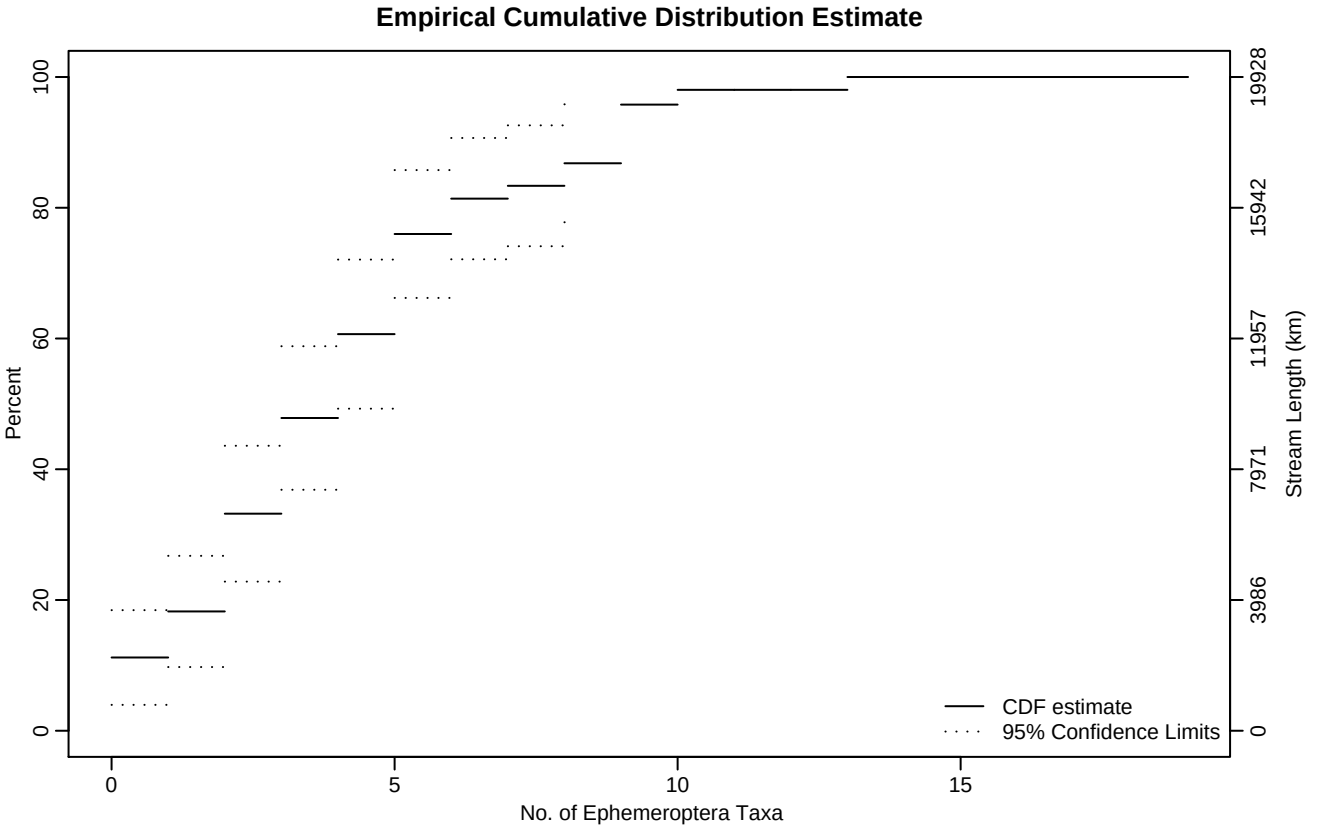


Figure BN−68 Indicator: EPHERICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.14
10Pct	0	0	0.85
25Pct	1.45	0.73	2.03
50Pct	3.17	2.39	4.03
75Pct	4.94	4.17	7.98
90Pct	8.36	5.89	12.60
95Pct	8.91	7.68	13
Mean	4.11	3.44	4.79
Std Dev	2.84	2.37	3.32

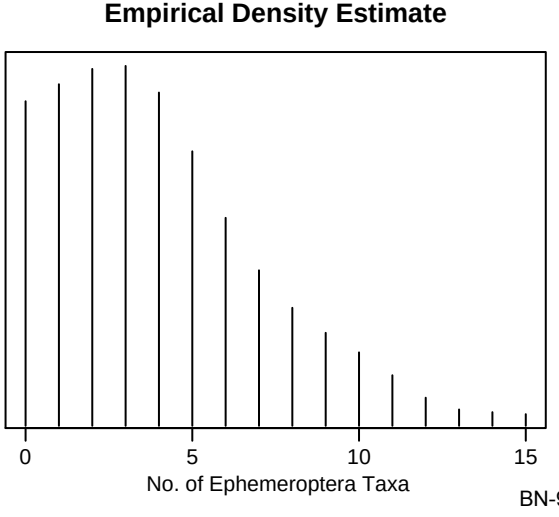
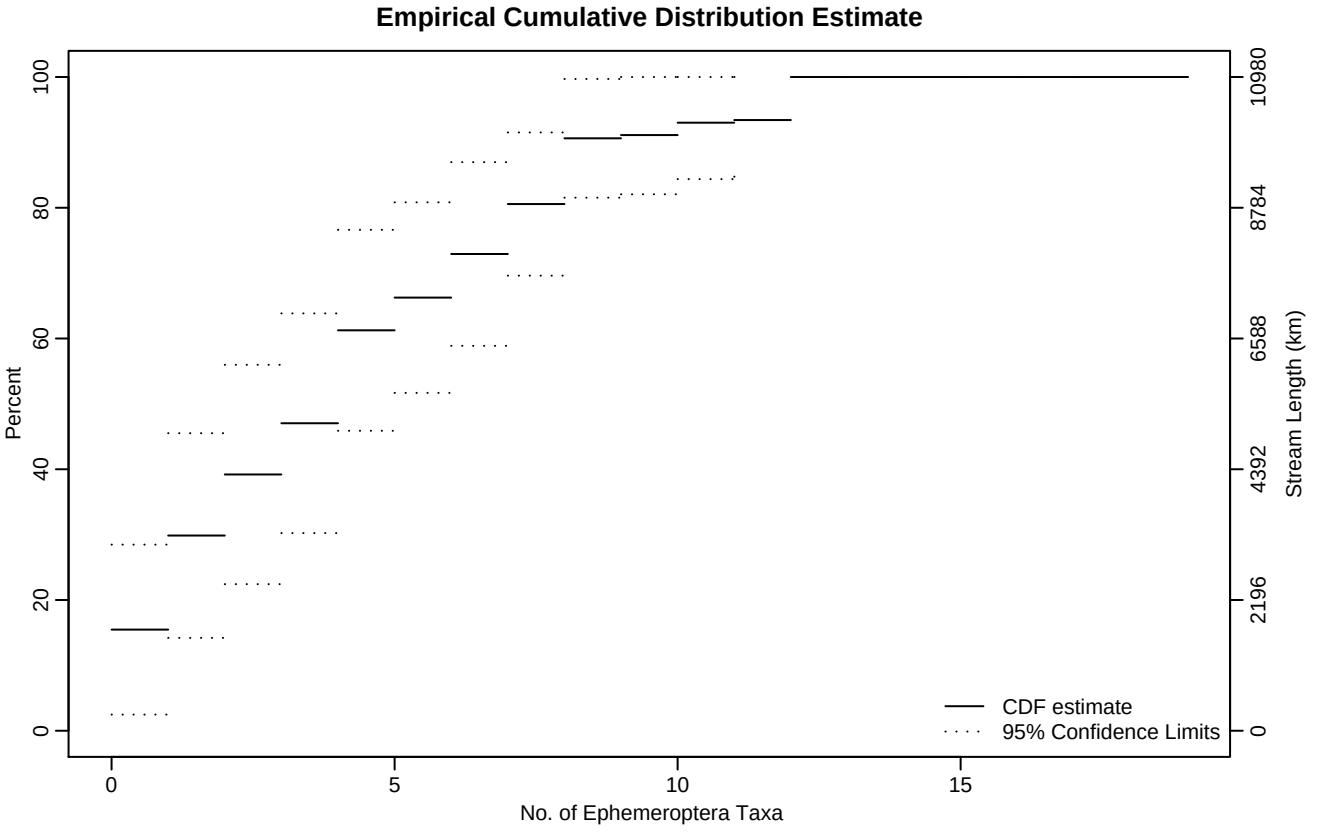


Figure BN−69 Indicator: EPHERICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.18
10Pct	0	0	0.53
25Pct	0.66	0	1.88
50Pct	3.21	1.30	5.16
75Pct	6.27	3.88	7.99
90Pct	7.94	6.43	12
95Pct	11.24	7.35	12
Mean	4.19	3.01	5.37
Std Dev	3.06	2.62	3.50

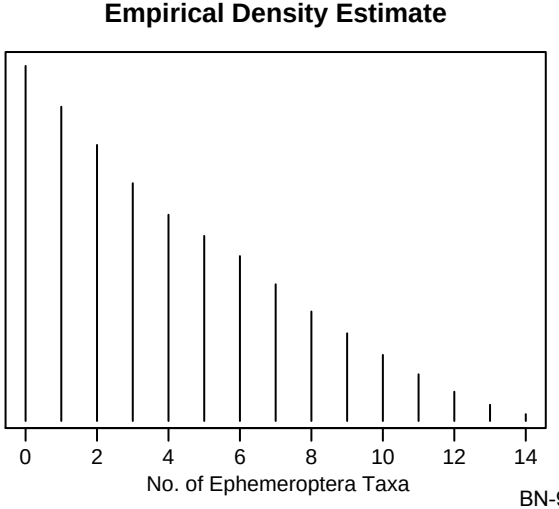
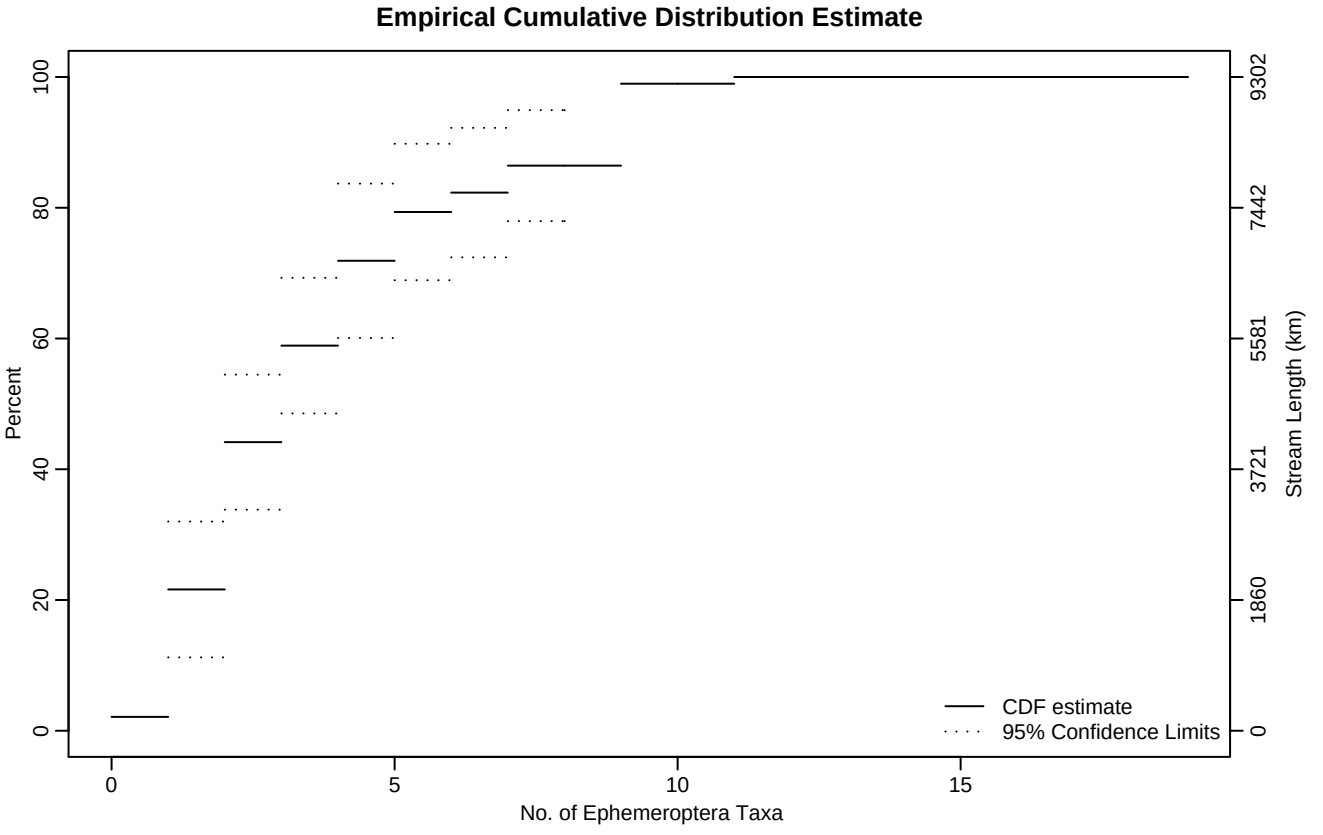


Figure BN−70 Indicator: EPHERICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.15	0	0.33
10Pct	0.40	0.22	0.59
25Pct	1.15	0.64	1.61
50Pct	2.40	1.80	3.12
75Pct	4.42	3.27	8.09
90Pct	8.28	5.30	10.77
95Pct	8.68	6.69	11
Mean	3.69	3.10	4.28
Std Dev	2.19	1.75	2.63

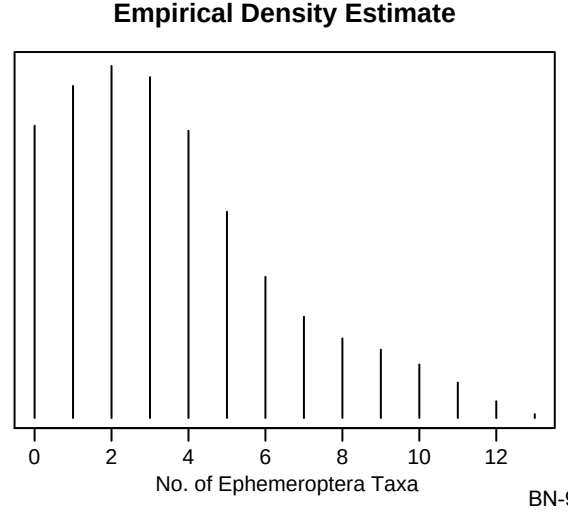
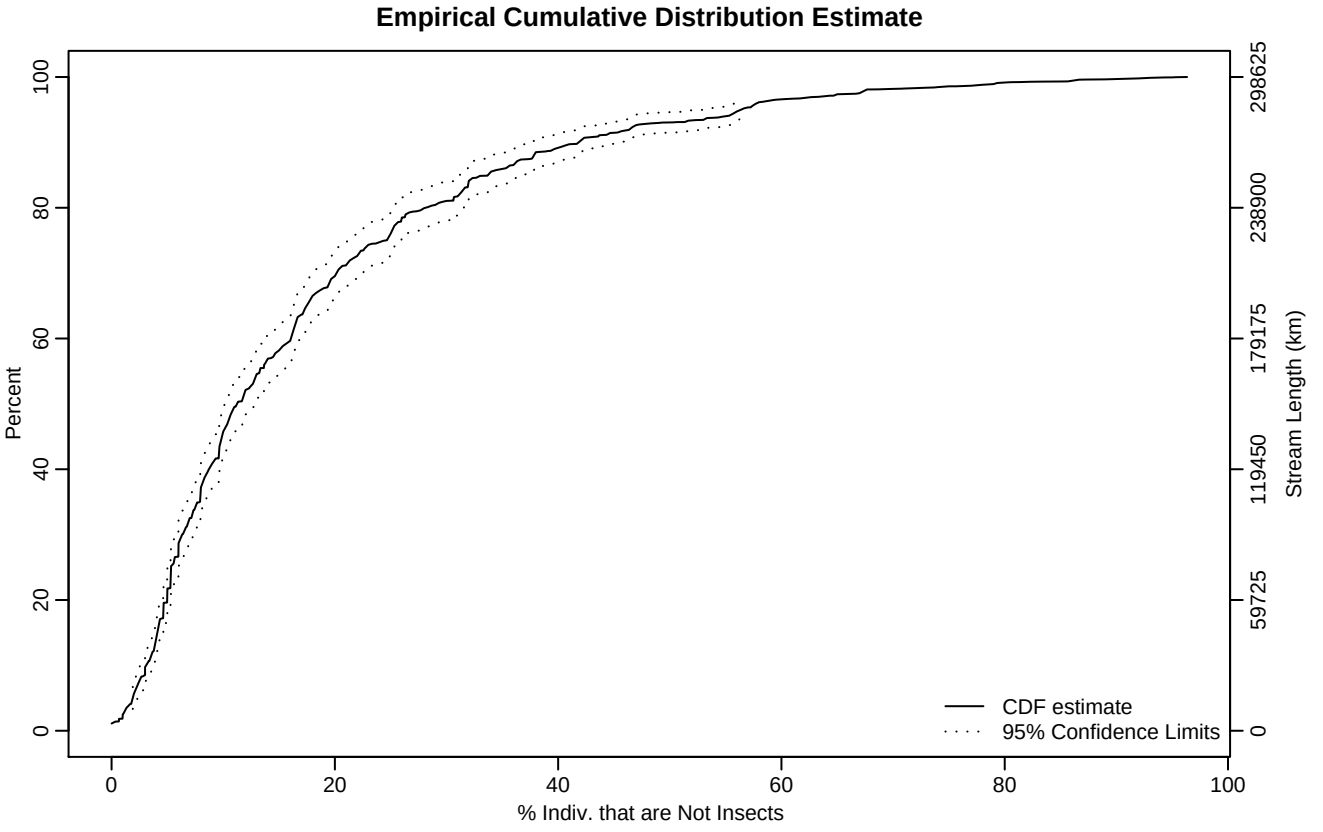


Figure BN−71 Indicator: NOINPIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.90	1.34	2.21
10Pct	3.10	2.52	3.79
25Pct	5.33	5	6
50Pct	11.24	10.15	12.82
75Pct	24.54	21.21	25.98
90Pct	41.83	37.80	46.46
95Pct	56.38	53.22	58.89
Mean	17.83	16.67	18.98
Std Dev	16.27	15.19	17.35

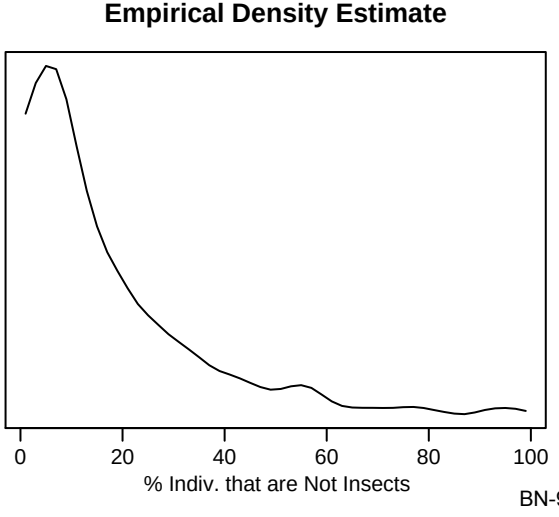
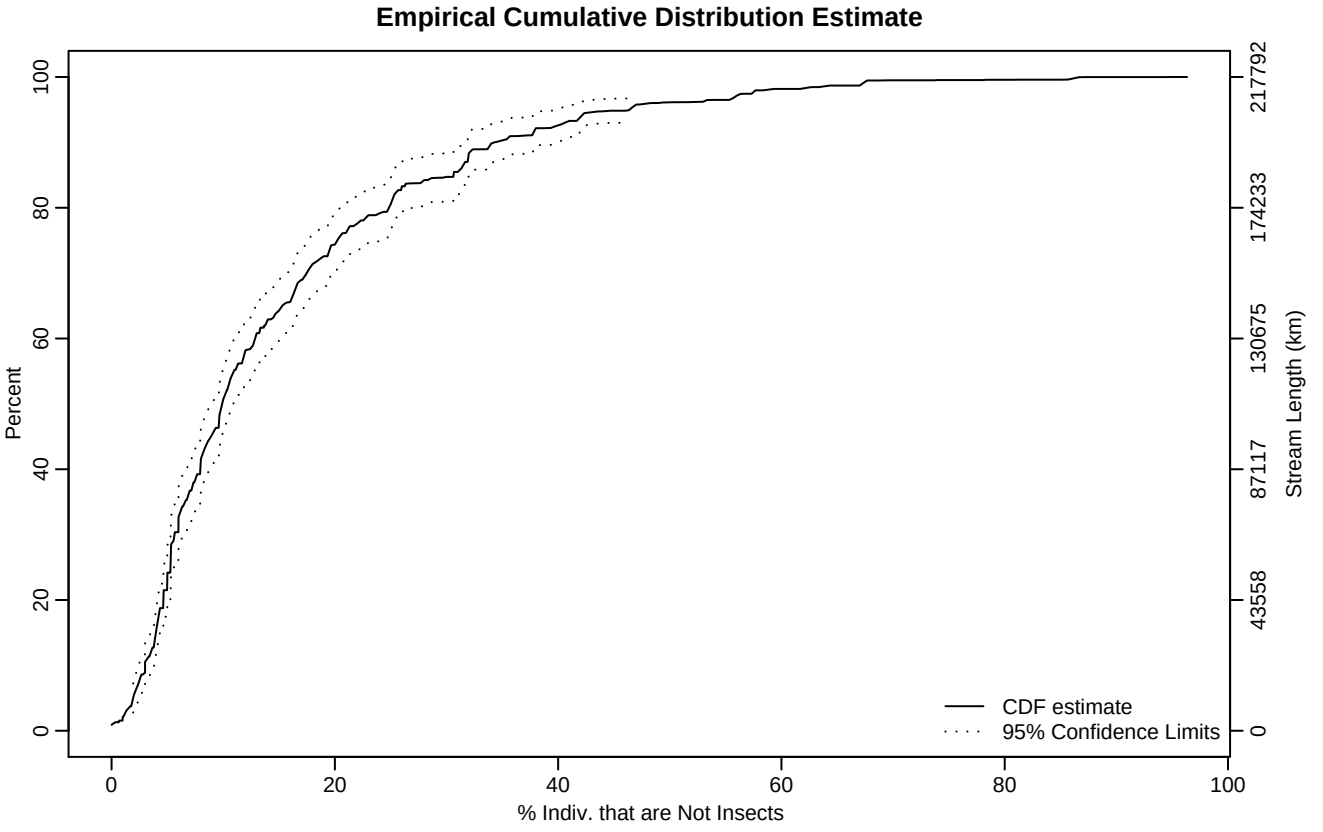


Figure BN−72 Indicator: NOINPIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.93	1.33	2.33
10Pct	3	2.39	3.78
25Pct	5.28	4.65	5.57
50Pct	9.90	8.96	10.91
75Pct	20.22	17.69	24.67
90Pct	34.28	31.90	40.53
95Pct	46.39	40.85	55.70
Mean	15.34	13.96	16.71
Std Dev	13.76	12.51	15.02

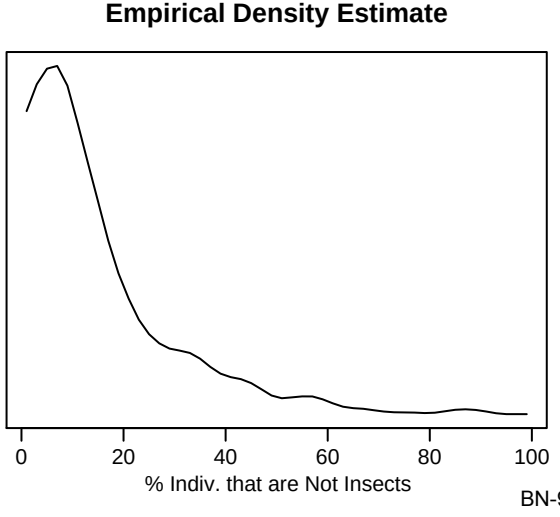
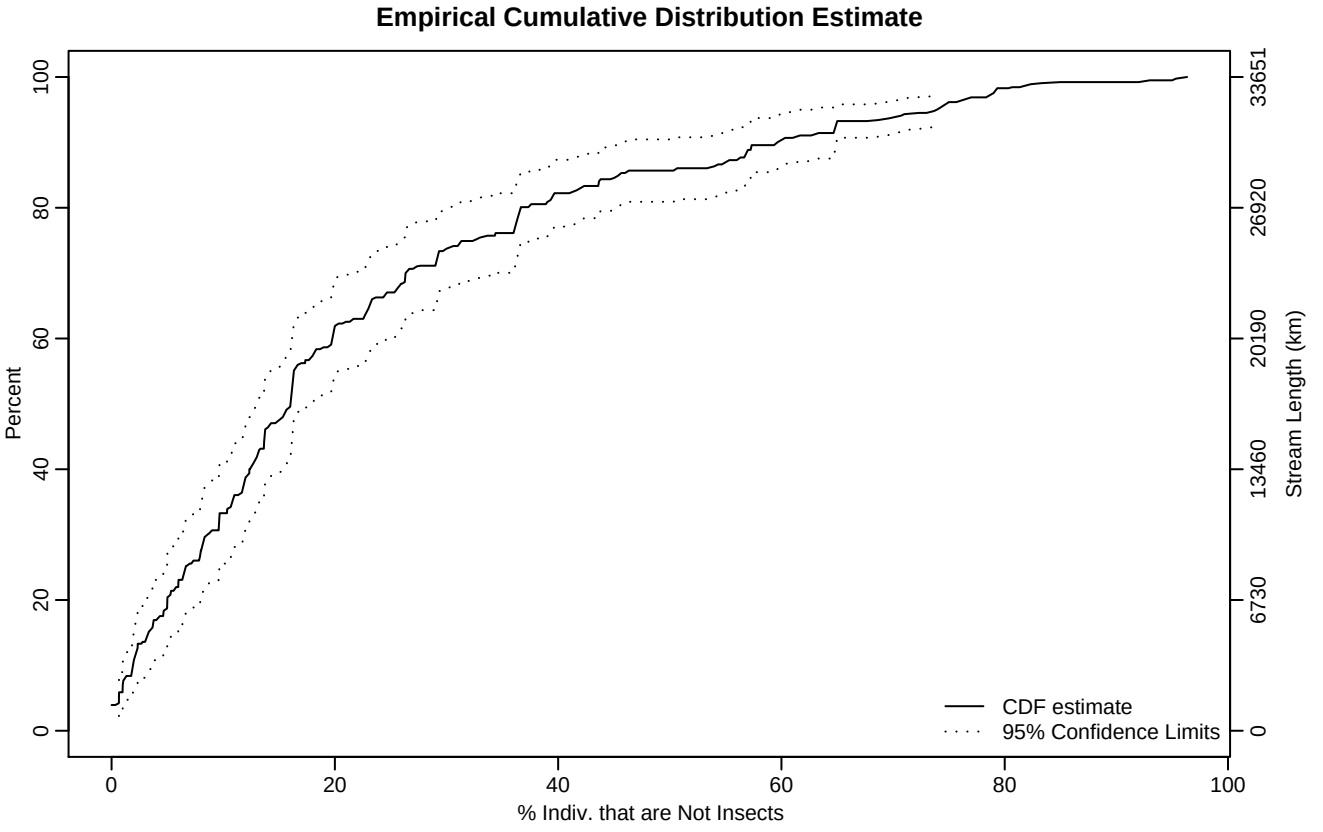


Figure BN−73 Indicator: NOINPIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.66	0	1.04
10Pct	1.92	0.99	3.02
25Pct	6.63	4.65	9.63
50Pct	16.03	13	18.27
75Pct	32.45	26.27	39.33
90Pct	59.64	50.50	70.78
95Pct	73.92	64.88	78.85
Mean	23.10	20.11	26.10
Std Dev	20.79	18.11	23.47

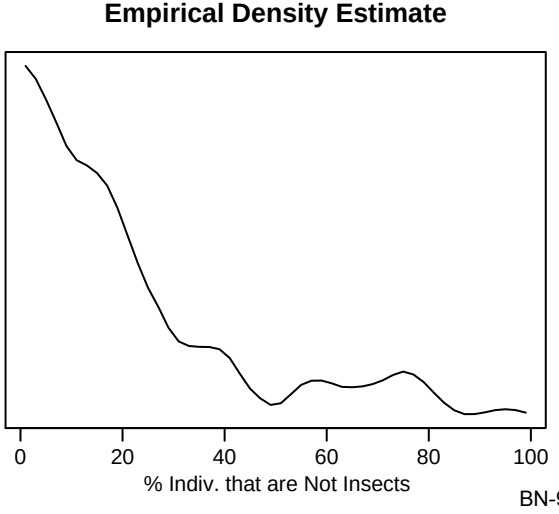
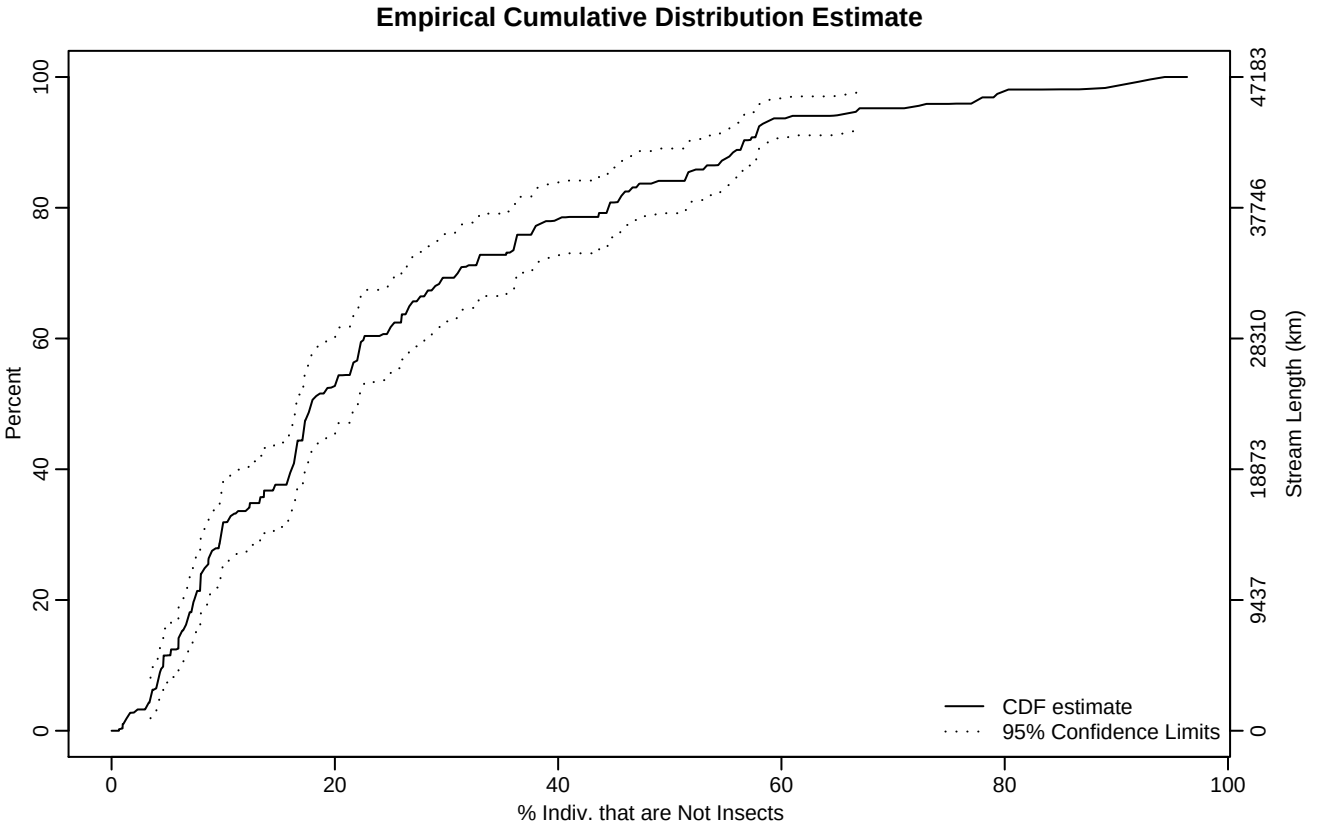


Figure BN−74 Indicator: NOINPIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.49	1.44	4.19
10Pct	4.62	3.65	6
25Pct	8.41	7.23	9.93
50Pct	17.89	16.49	22.09
75Pct	36.21	29.49	45.45
90Pct	56.59	53.01	64.90
95Pct	66.87	57.94	79.99
Mean	25.55	22.71	28.40
Std Dev	19.98	17.98	21.98

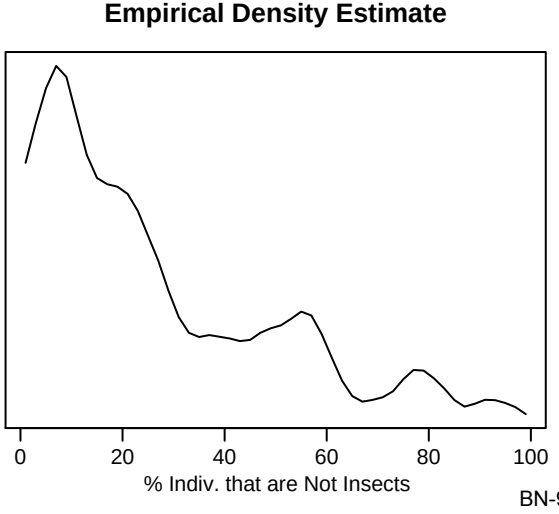
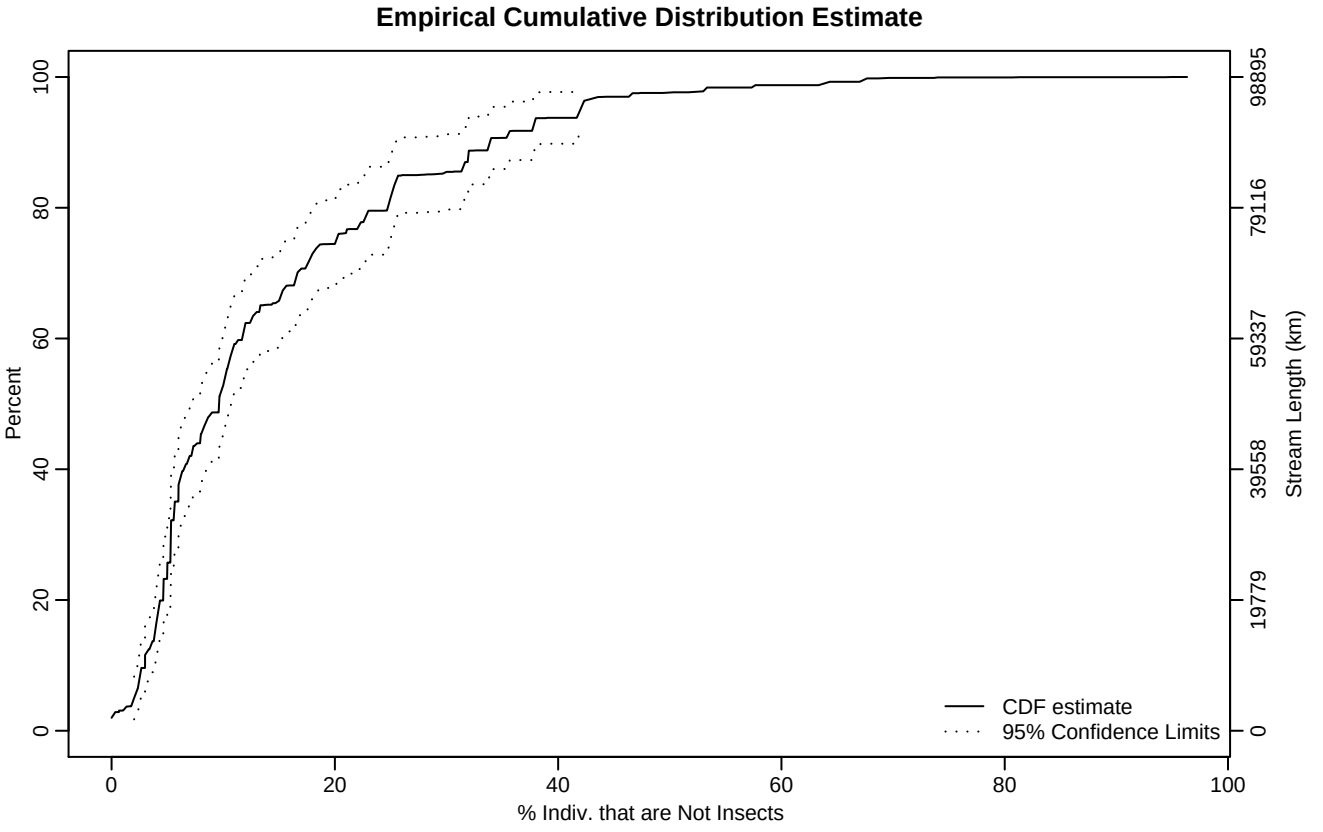


Figure BN−75 Indicator: NOINPIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.02	0	2.53
10Pct	3	2.17	3.83
25Pct	4.99	4.20	5.33
50Pct	9.63	7.20	10.69
75Pct	20.12	16.35	25.03
90Pct	33.88	25.63	42.05
95Pct	41.98	35.46	63.82
Mean	14.32	12.38	16.25
Std Dev	12.99	11.43	14.55

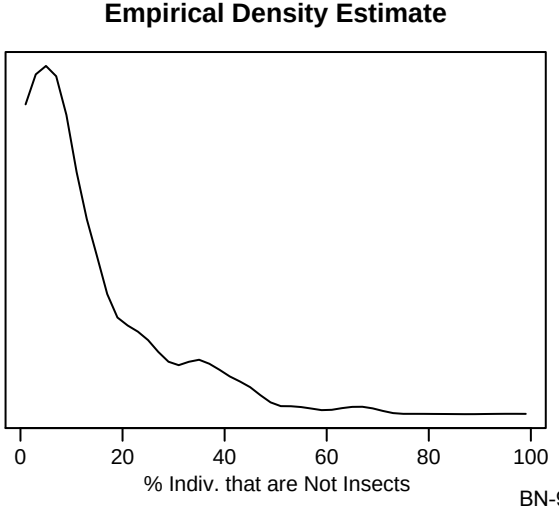
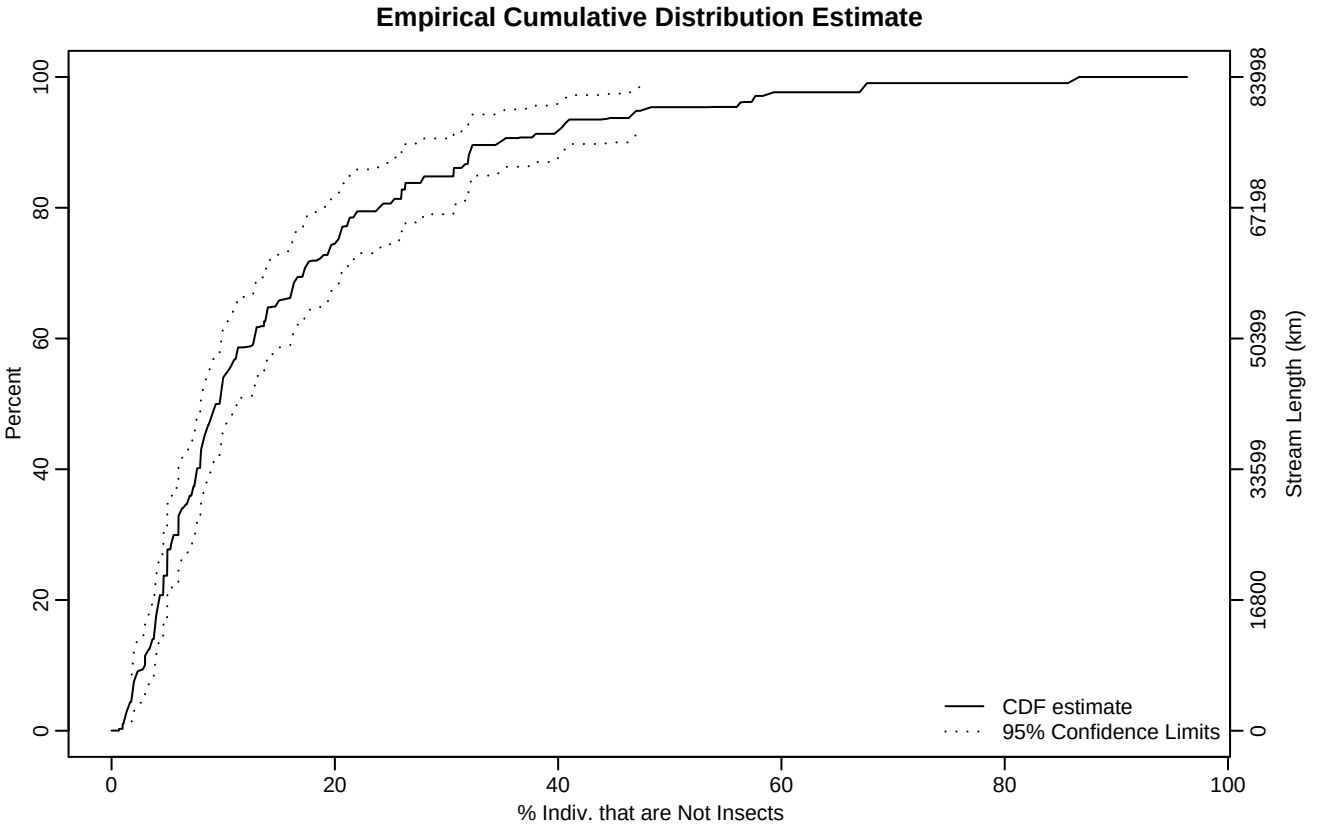


Figure BN−76 Indicator: NOINPIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.80	1.14	2.18
10Pct	2.98	1.80	3.84
25Pct	4.98	4.08	5.99
50Pct	9.62	7.99	11.22
75Pct	20.23	16.27	25.95
90Pct	34.75	30.64	46.81
95Pct	47.65	39.76	67.42
Mean	15.43	12.94	17.92
Std Dev	13.88	11.66	16.09

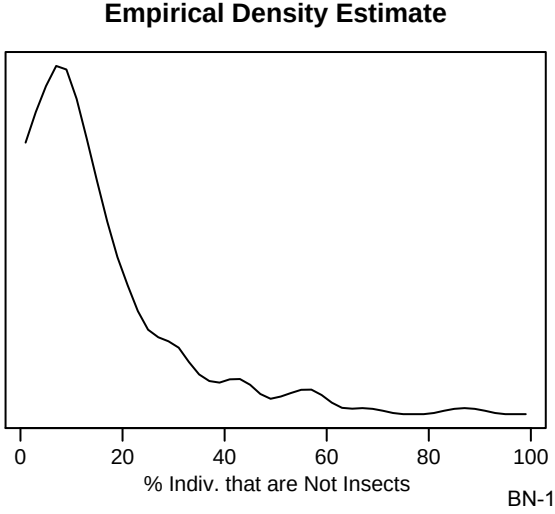
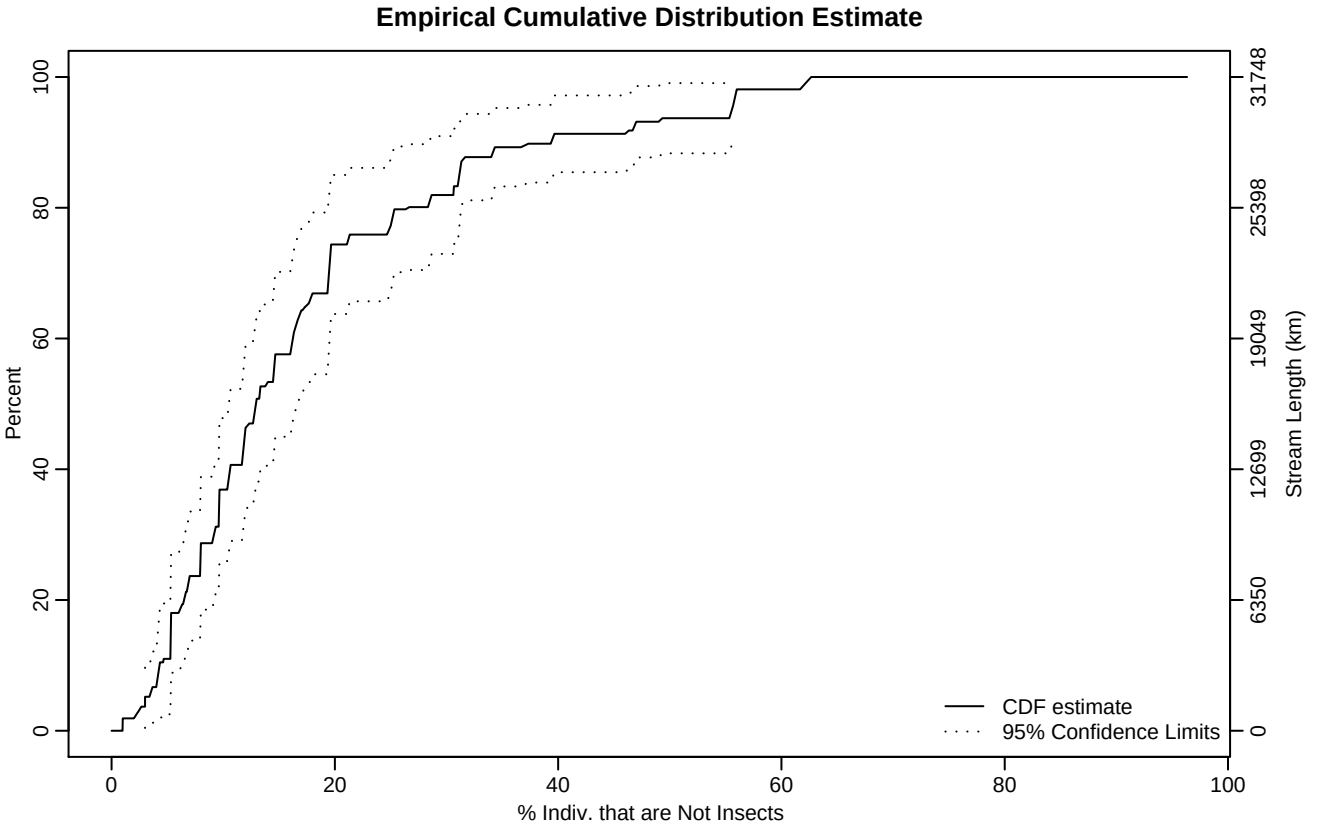


Figure BN−77 Indicator: NOINPIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3	0.99	4.20
10Pct	4.29	3	5.31
25Pct	7.94	5.30	9.64
50Pct	12.93	10.40	16.63
75Pct	21.18	16.99	31.21
90Pct	39.38	31.07	55.71
95Pct	55.56	37.15	62.67
Mean	17.79	14.58	21.01
Std Dev	14.22	11.33	17.11

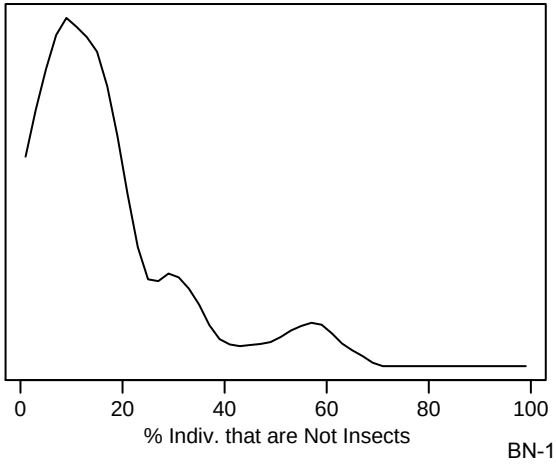
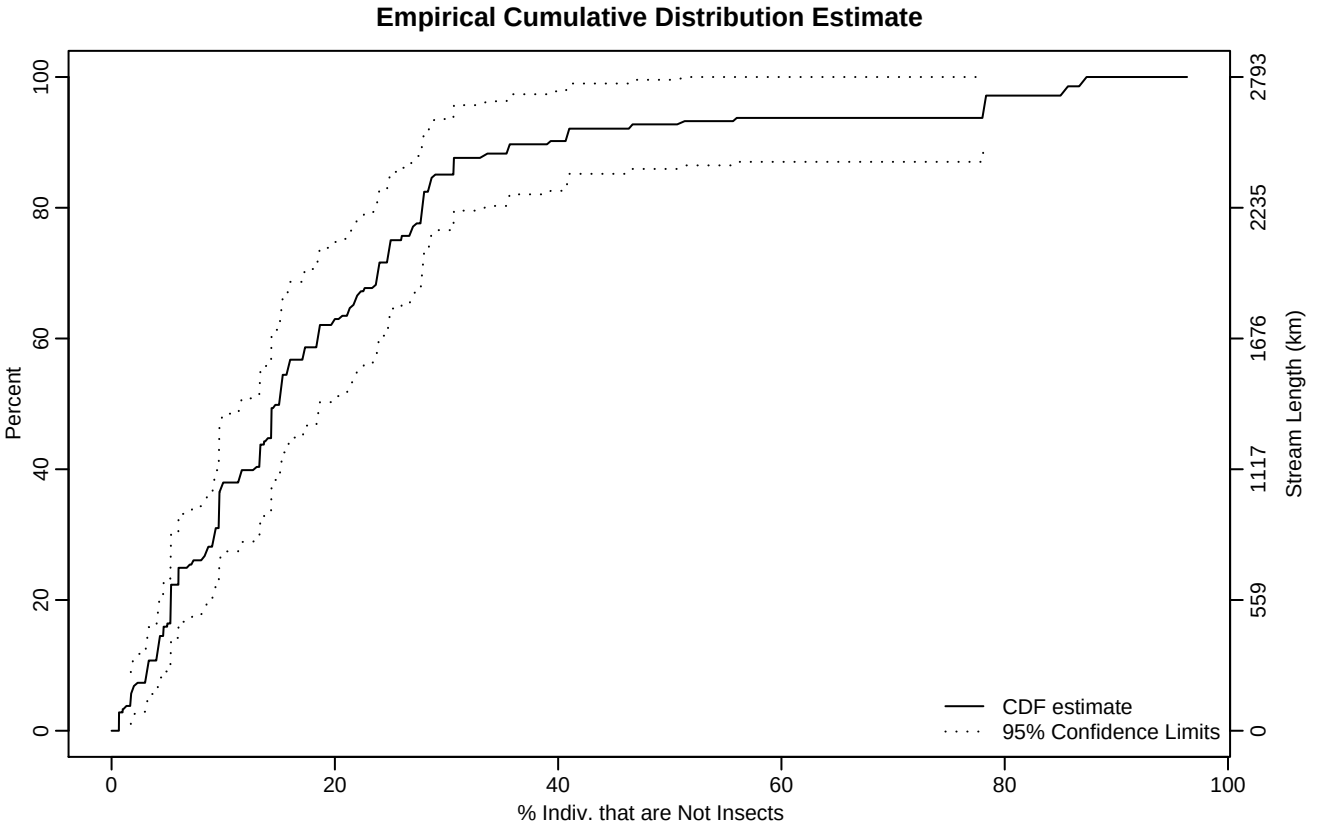


Figure BN−78 Indicator: NOINPIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.72	0.66	3.13
10Pct	3.26	1.75	4.33
25Pct	6.78	5.27	9.62
50Pct	15.01	11.42	18.62
75Pct	25	21.15	30.64
90Pct	39.20	27.99	85.23
95Pct	78.12	35.38	87.33
Mean	20.05	15.17	24.92
Std Dev	18.68	13.20	24.16

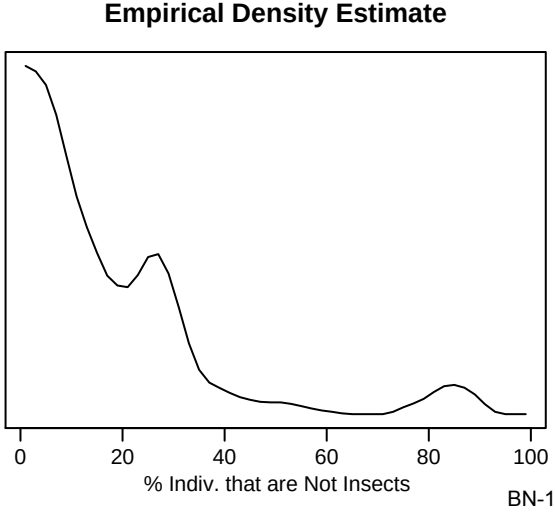
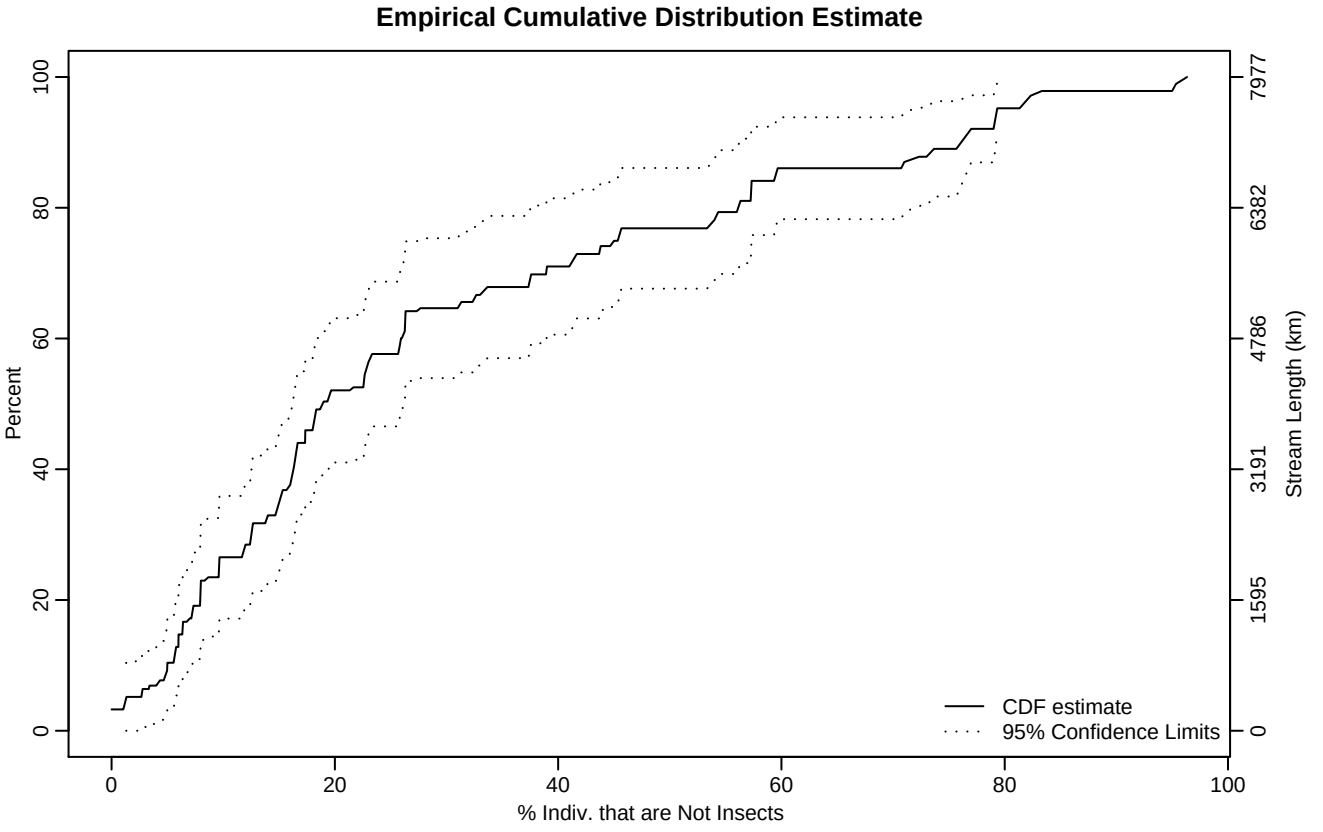


Figure BN−79 Indicator: NOINPIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.31	0	4.98
10Pct	4.99	1.08	6.40
25Pct	9.63	6.37	14.86
50Pct	18.90	16.17	26.23
75Pct	45.34	31.28	59.41
90Pct	76.10	57.29	82.37
95Pct	79.31	76.07	96.33
Mean	29.90	24.34	35.47
Std Dev	23.93	20.12	27.73

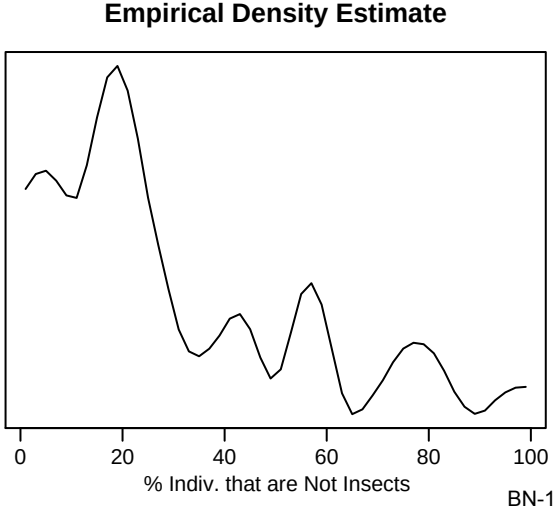
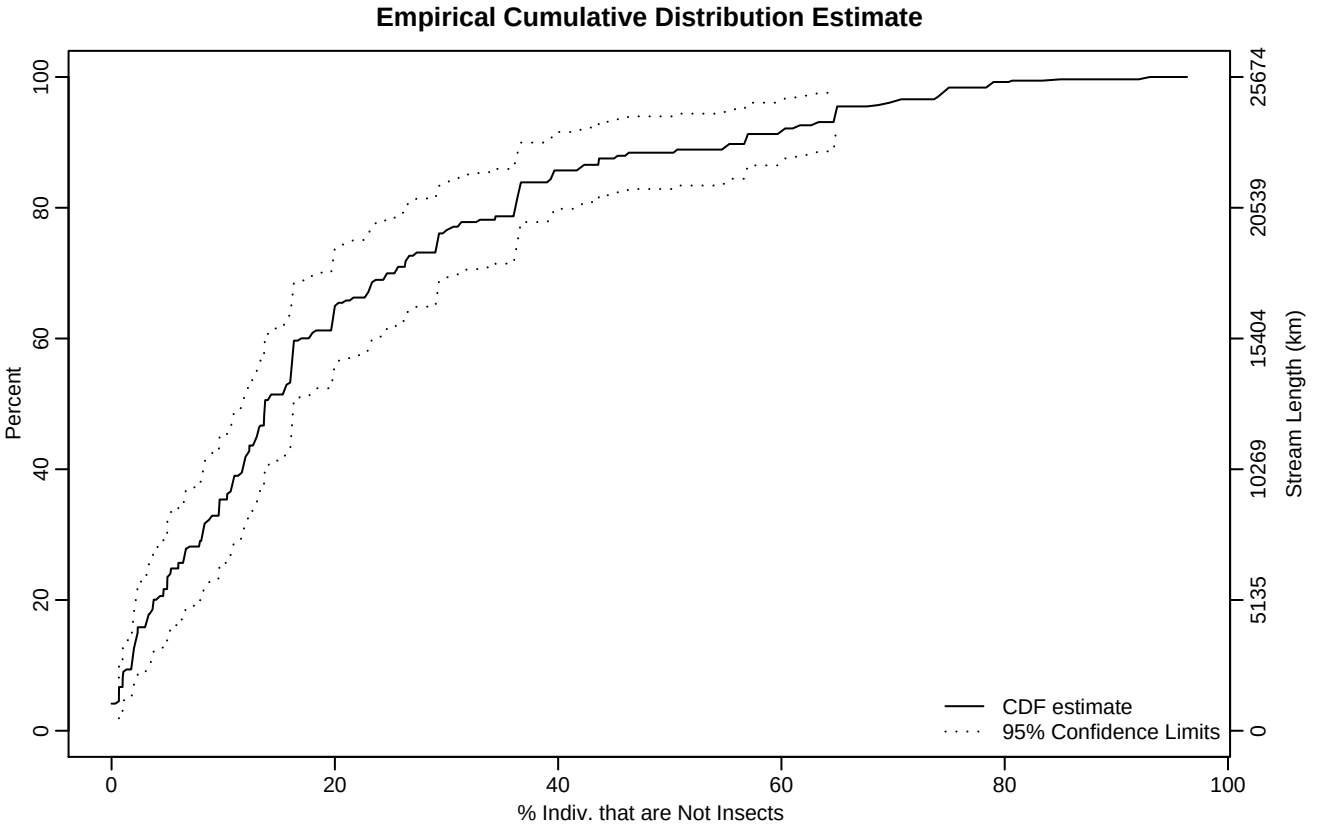


Figure BN−80 Indicator: NOINPIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.66	0	1
10Pct	1.80	0.66	2.27
25Pct	5.97	3.08	9.62
50Pct	13.74	11.77	16.76
75Pct	29.21	22.83	36.59
90Pct	56.72	39.41	64.97
95Pct	64.93	56.84	83.59
Mean	20.99	17.46	24.52
Std Dev	19.28	15.98	22.58

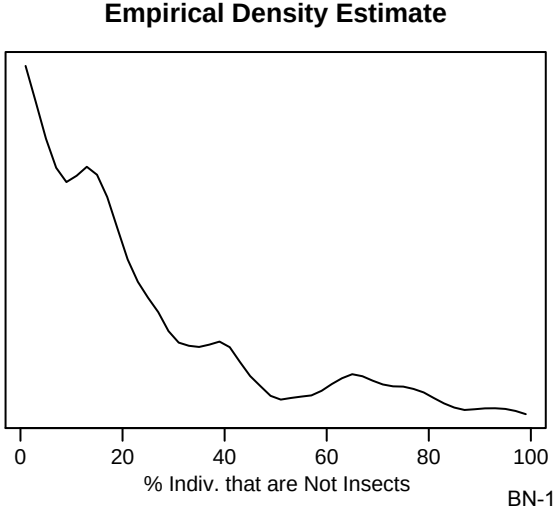
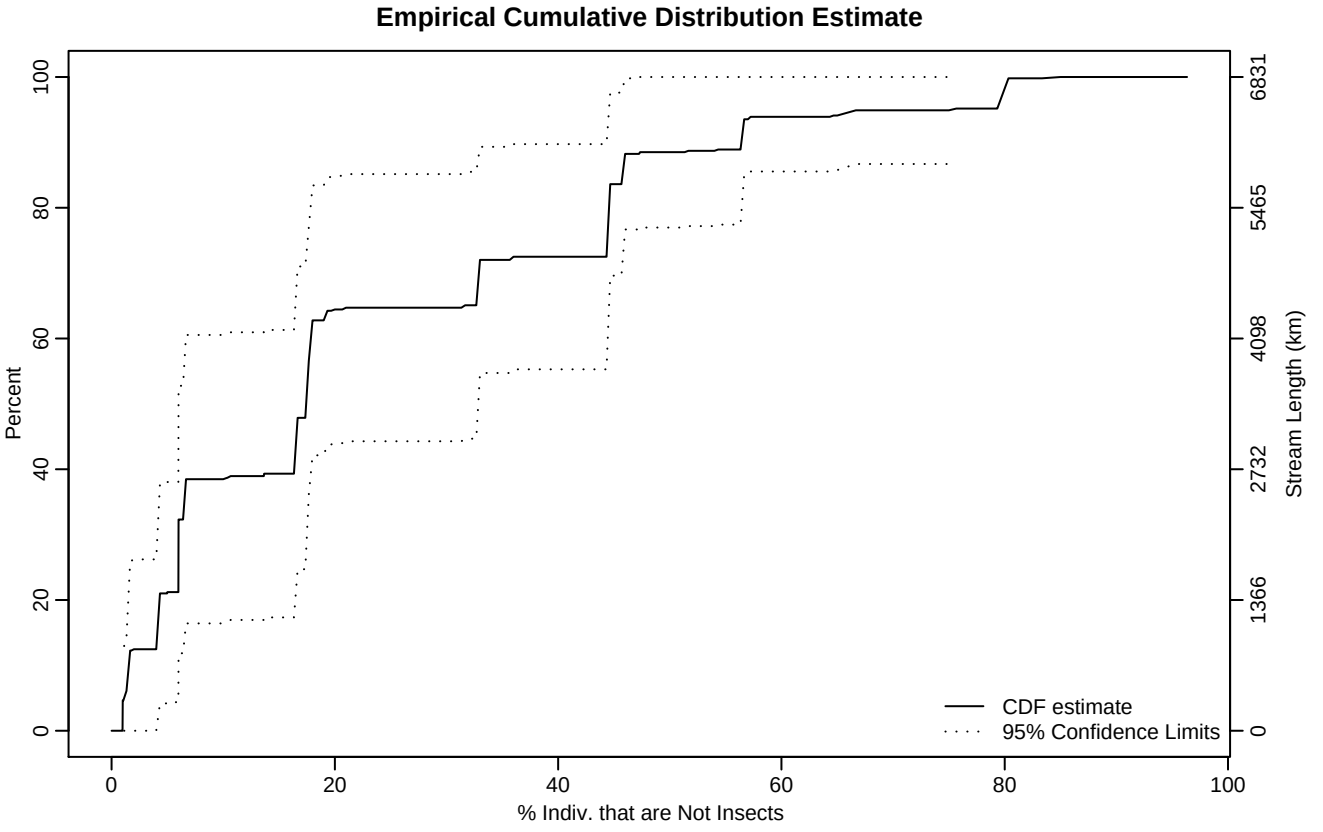


Figure BN−81 Indicator: NOINPIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.12	0	4.02
10Pct	1.54	0.99	4.23
25Pct	5.99	1.44	16.44
50Pct	17.43	5.99	44.35
75Pct	44.41	17.73	56.57
90Pct	56.41	44.52	85
95Pct	75.24	45.90	85
Mean	23.79	14.96	32.61
Std Dev	21.86	16.27	27.46

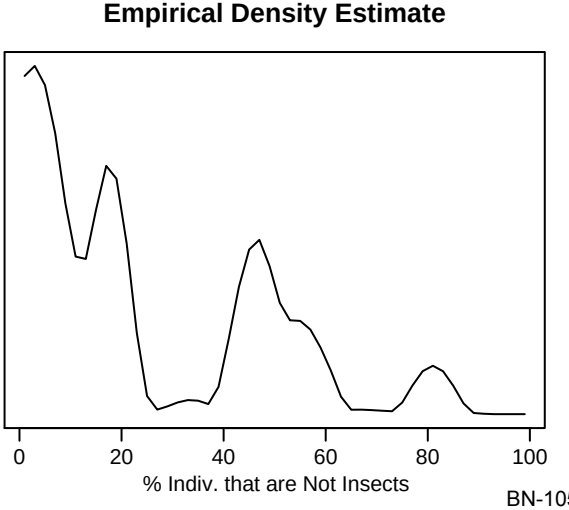
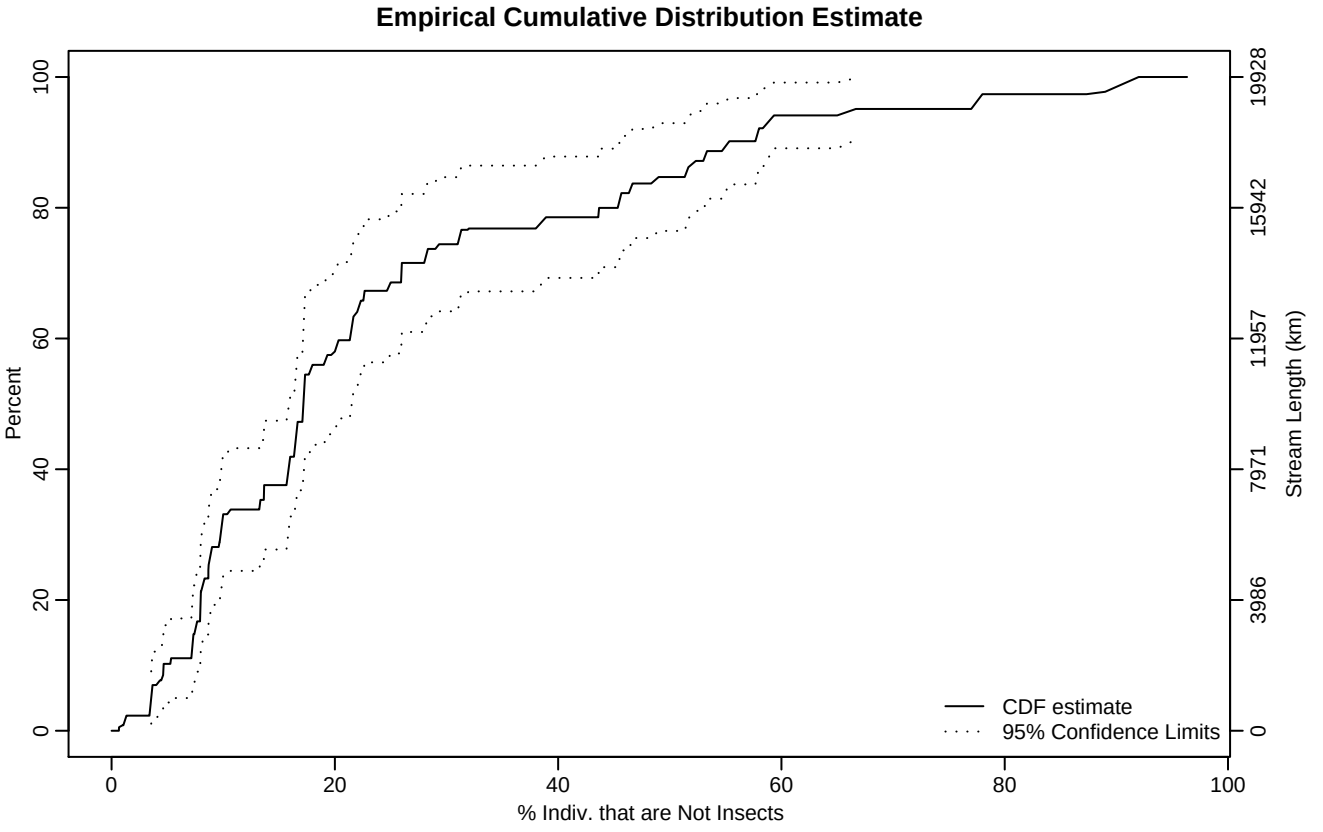


Figure BN−82 Indicator: NOINPIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.55	1.33	4.45
10Pct	4.66	3.54	7.46
25Pct	8.68	7.59	10.66
50Pct	17.18	15.81	21.40
75Pct	31.09	22.20	51.38
90Pct	55.26	46.49	77.86
95Pct	66.48	55.30	91.88
Mean	24.60	19.99	29.21
Std Dev	18.80	15.45	22.14

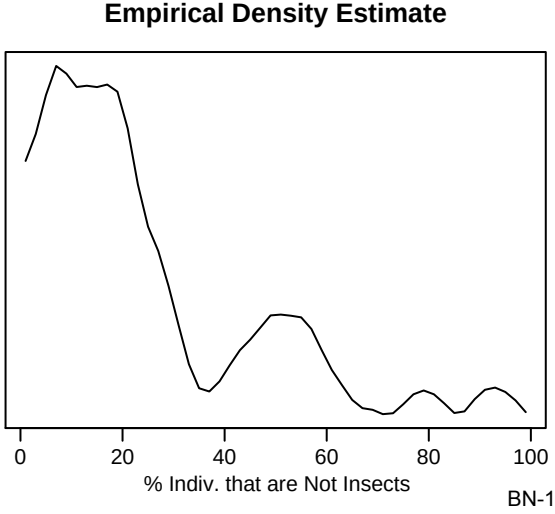
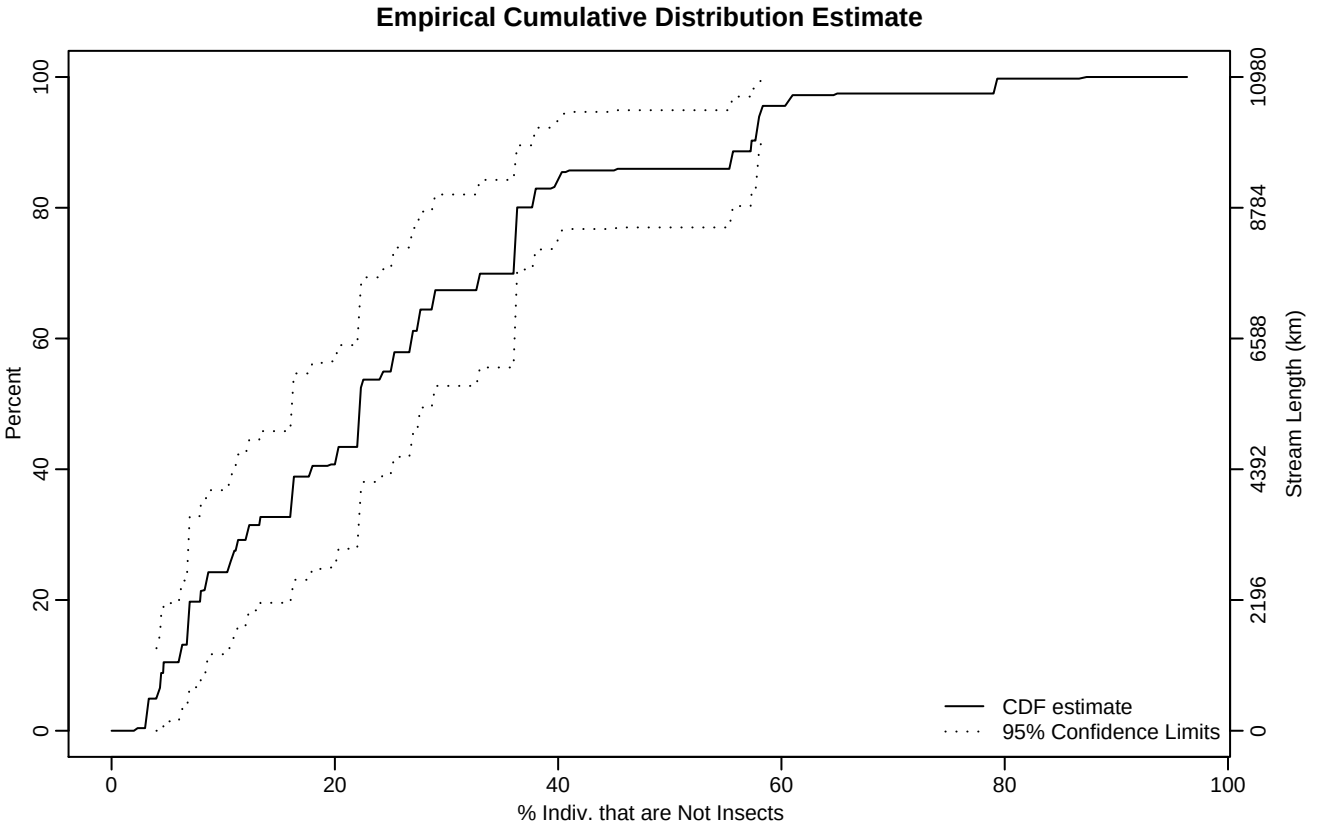


Figure BN−83 Indicator: NOINPIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.02	0	6.23
10Pct	4.65	3.05	6.97
25Pct	10.50	6.11	16.32
50Pct	22.24	16.08	28.82
75Pct	36.17	26.96	57.27
90Pct	57.32	37.85	79.13
95Pct	58.22	57.31	87.33
Mean	25.84	20.60	31.08
Std Dev	17.58	14.37	20.80

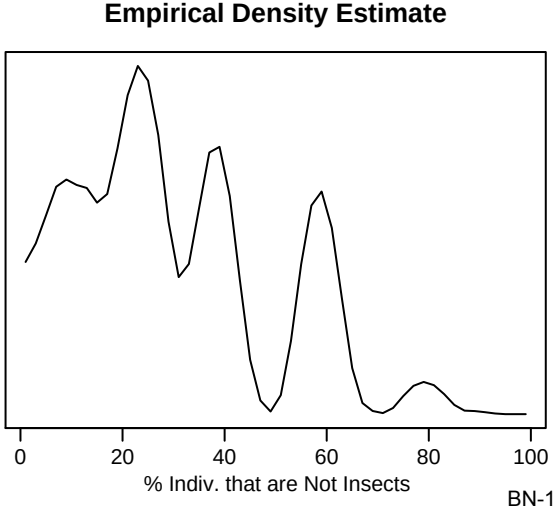
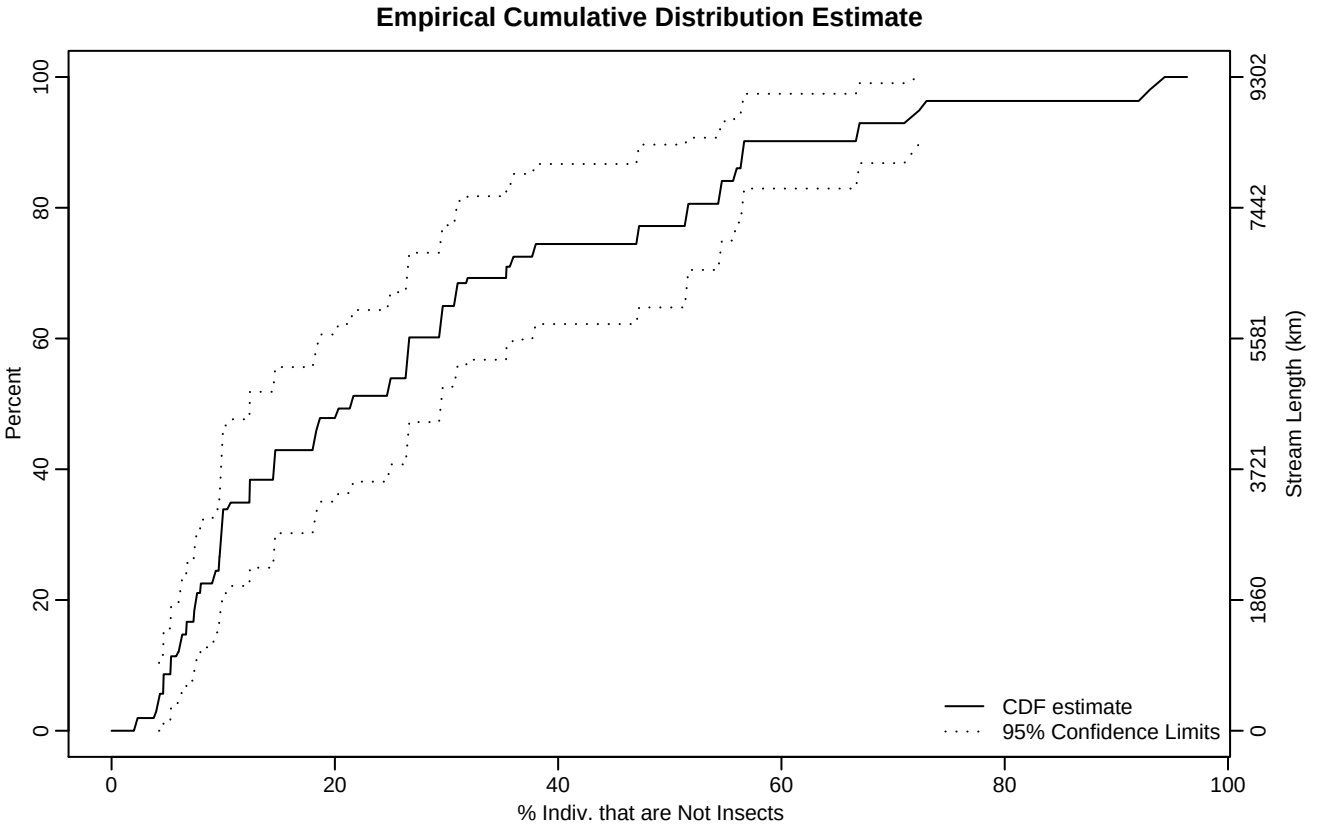


Figure BN−84 Indicator: NOINPIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.25	2.24	4.67
10Pct	5.30	4	7.35
25Pct	9.61	6.70	10.53
50Pct	21.46	12.37	29.55
75Pct	47.05	29.51	56.43
90Pct	56.65	54.44	93.12
95Pct	72.39	56.64	94.33
Mean	28.37	22.63	34.11
Std Dev	22.43	18.29	26.58

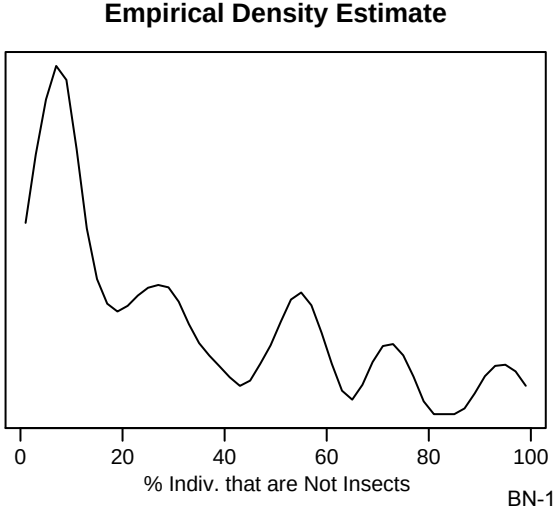
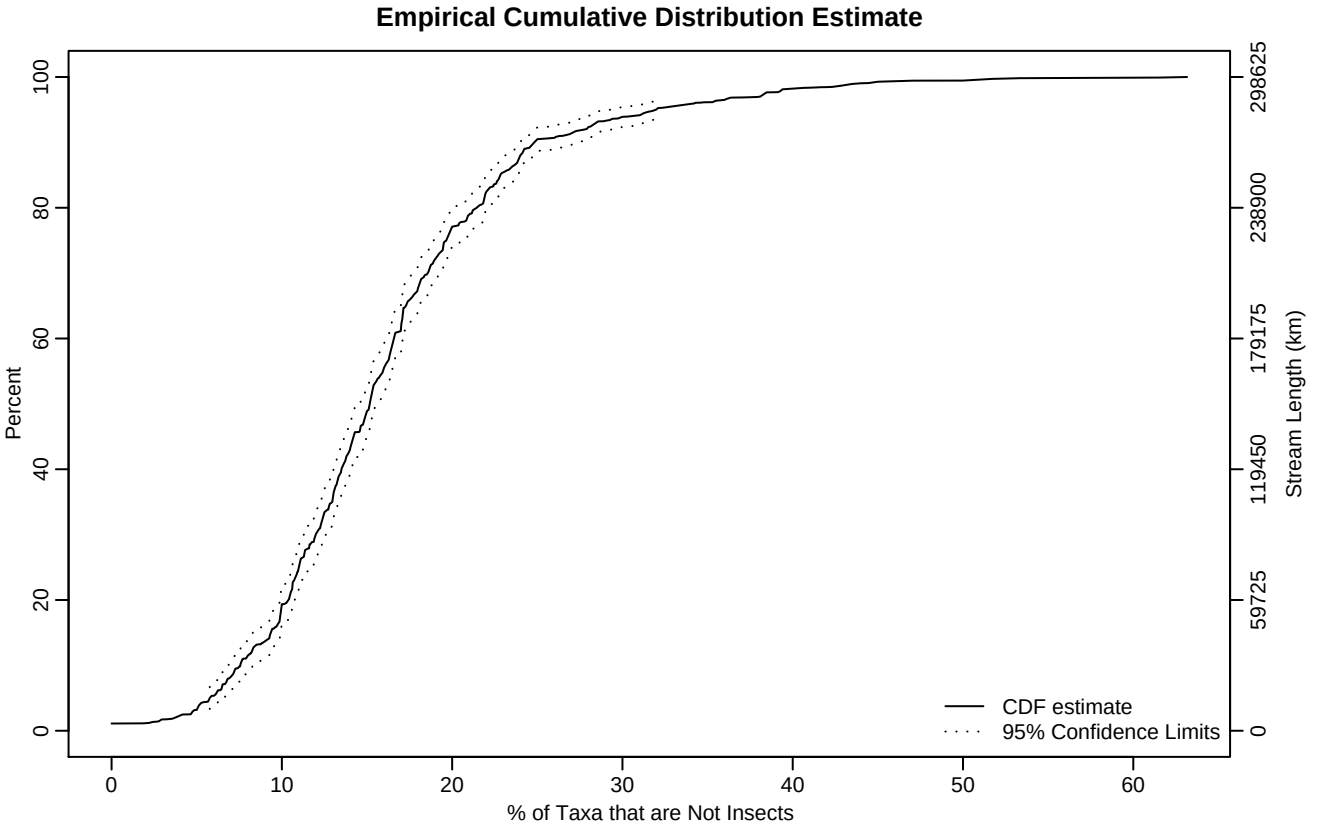


Figure BN−85 Indicator: NOINPTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.76	5.04	6.48
10Pct	7.56	6.77	8.27
25Pct	11	10.61	11.62
50Pct	15.16	14.60	15.62
75Pct	19.65	18.94	20.84
90Pct	24.83	24.01	27.77
95Pct	31.96	29.40	35.61
Mean	16.34	15.80	16.89
Std Dev	7.70	7.08	8.32

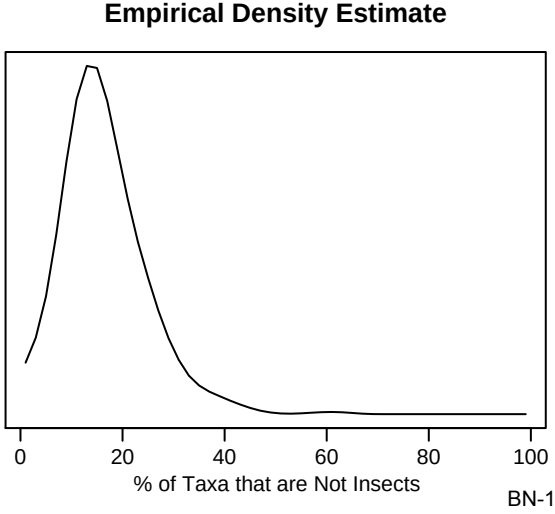
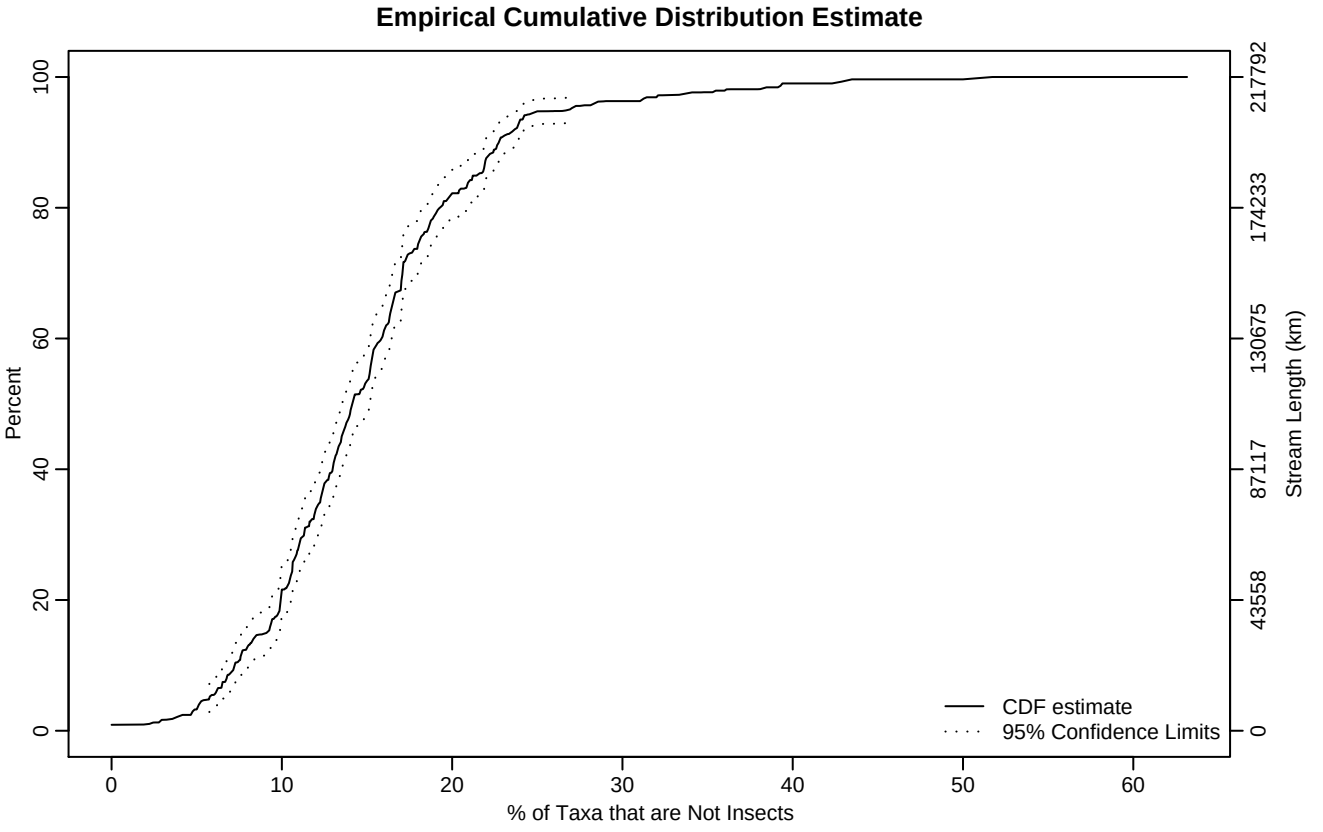


Figure BN−86 Indicator: NOINPTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.74	4.75	6.49
10Pct	7.22	6.50	7.98
25Pct	10.62	9.97	11.07
50Pct	14.14	13.52	15.17
75Pct	18.09	17.11	19.04
90Pct	22.74	21.95	23.91
95Pct	26.85	23.94	32.01
Mean	15.12	14.48	15.76
Std Dev	6.55	5.88	7.23

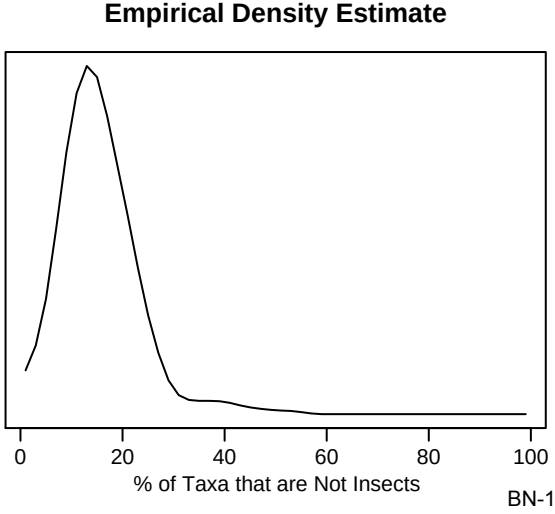
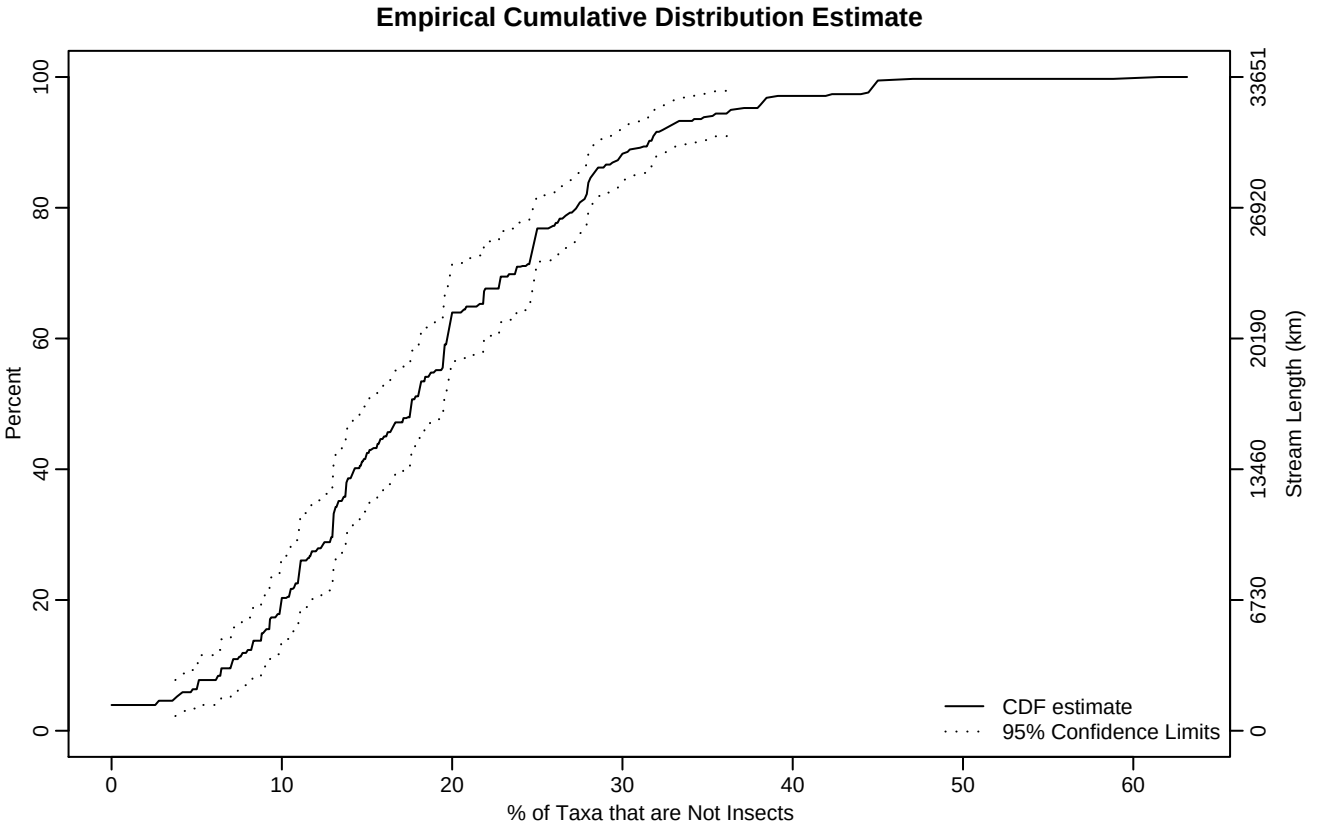


Figure BN−87 Indicator: NOINPTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.75	0	5.12
10Pct	7.03	3.99	8.80
25Pct	11.06	9.89	13.01
50Pct	17.61	14.95	19.52
75Pct	24.84	22.77	27.84
90Pct	31.54	28.52	35.29
95Pct	36.45	31.99	44.68
Mean	18.58	17.10	20.06
Std Dev	9.74	8.38	11.09

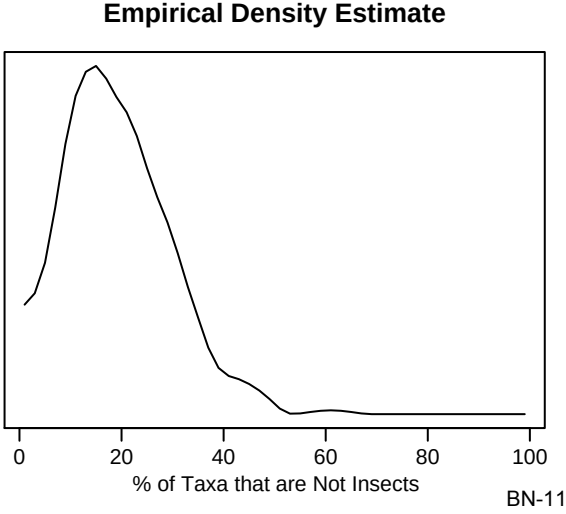
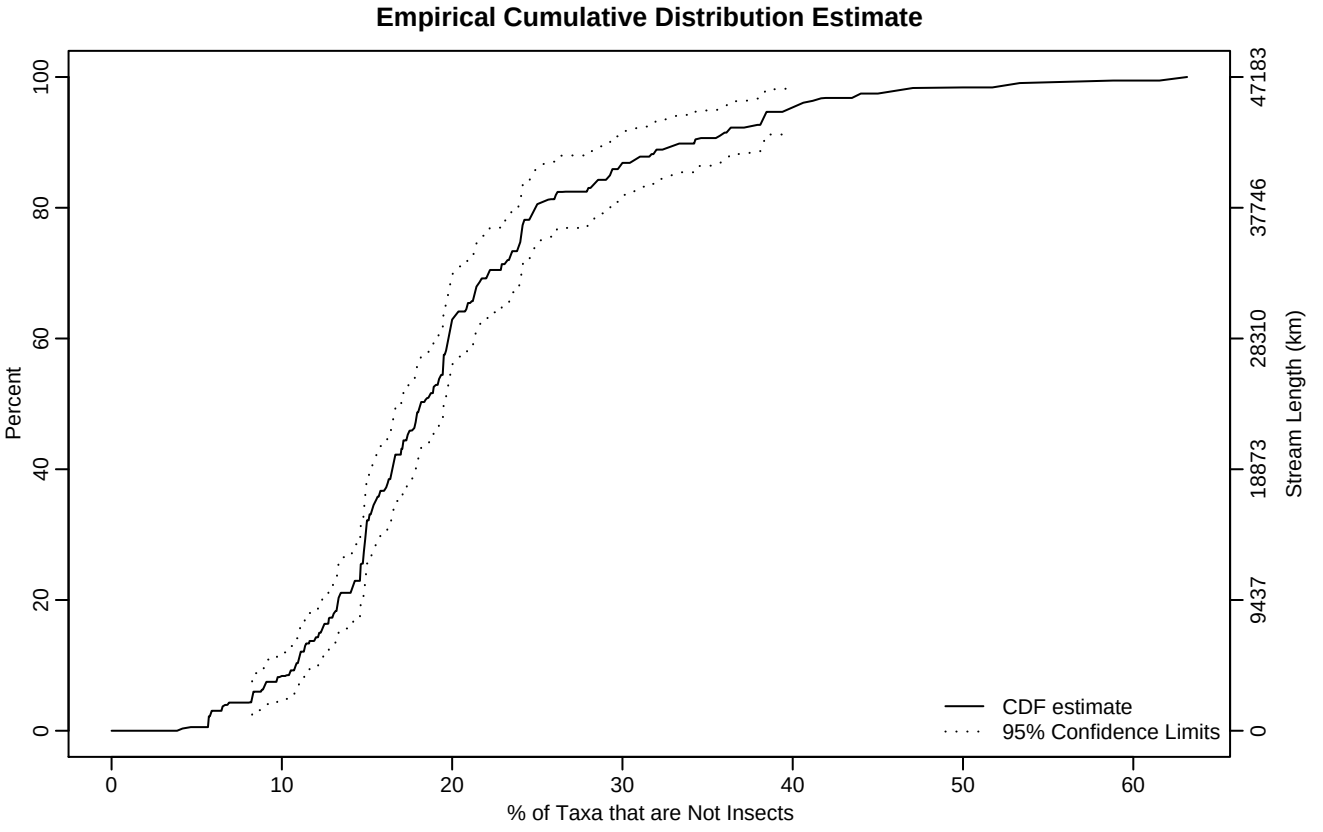


Figure BN−88 Indicator: NOINPTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.25	5.83	9.06
10Pct	10.82	8.82	11.90
25Pct	14.62	13.27	14.94
50Pct	18.15	17	19.51
75Pct	24.01	21.65	25.62
90Pct	34.23	29.36	38.42
95Pct	39.69	36.12	51.88
Mean	20.38	19.05	21.71
Std Dev	8.96	7.81	10.12

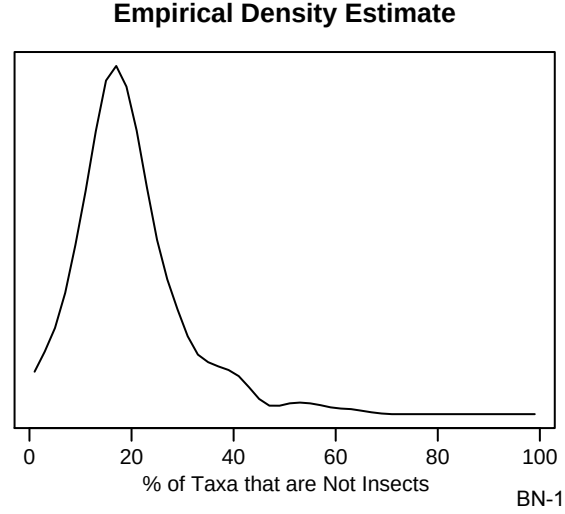
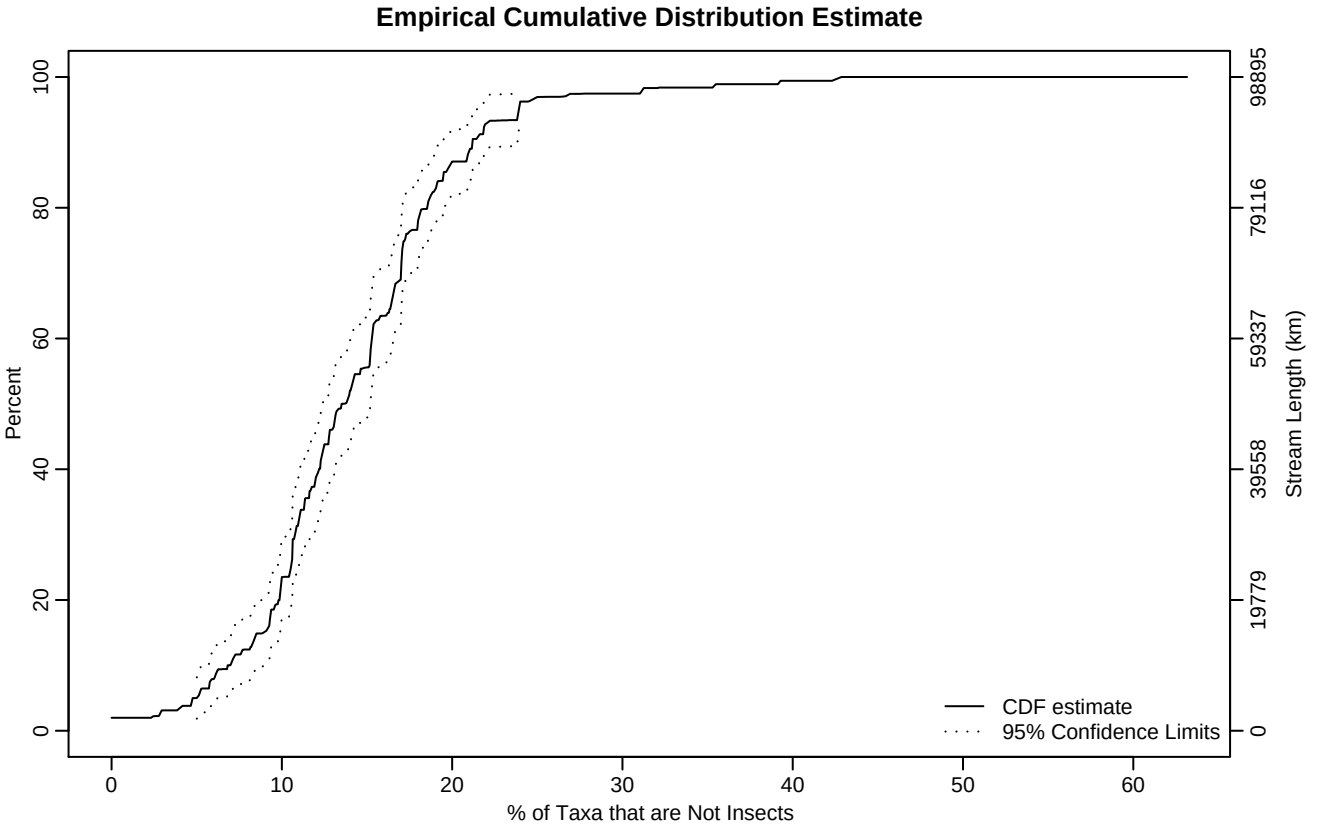


Figure BN−89 Indicator: NOINPTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5	0	6.07
10Pct	6.82	5.17	8.43
25Pct	10.53	9.55	10.86
50Pct	13.51	12.35	15.20
75Pct	17.21	16.71	18.69
90Pct	21.19	19.50	23.90
95Pct	23.92	21.56	39.16
Mean	14.23	13.34	15.13
Std Dev	6.21	5.29	7.13

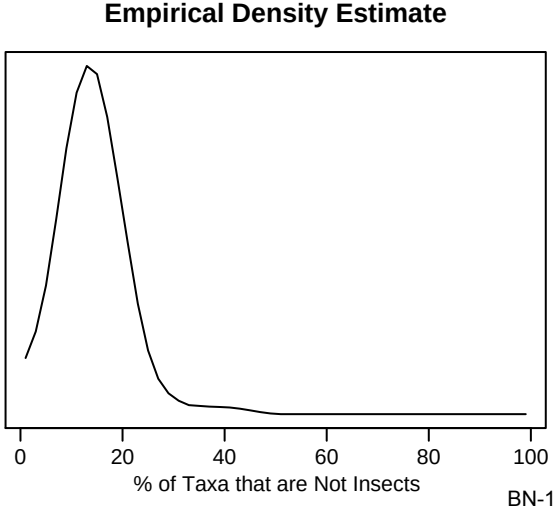
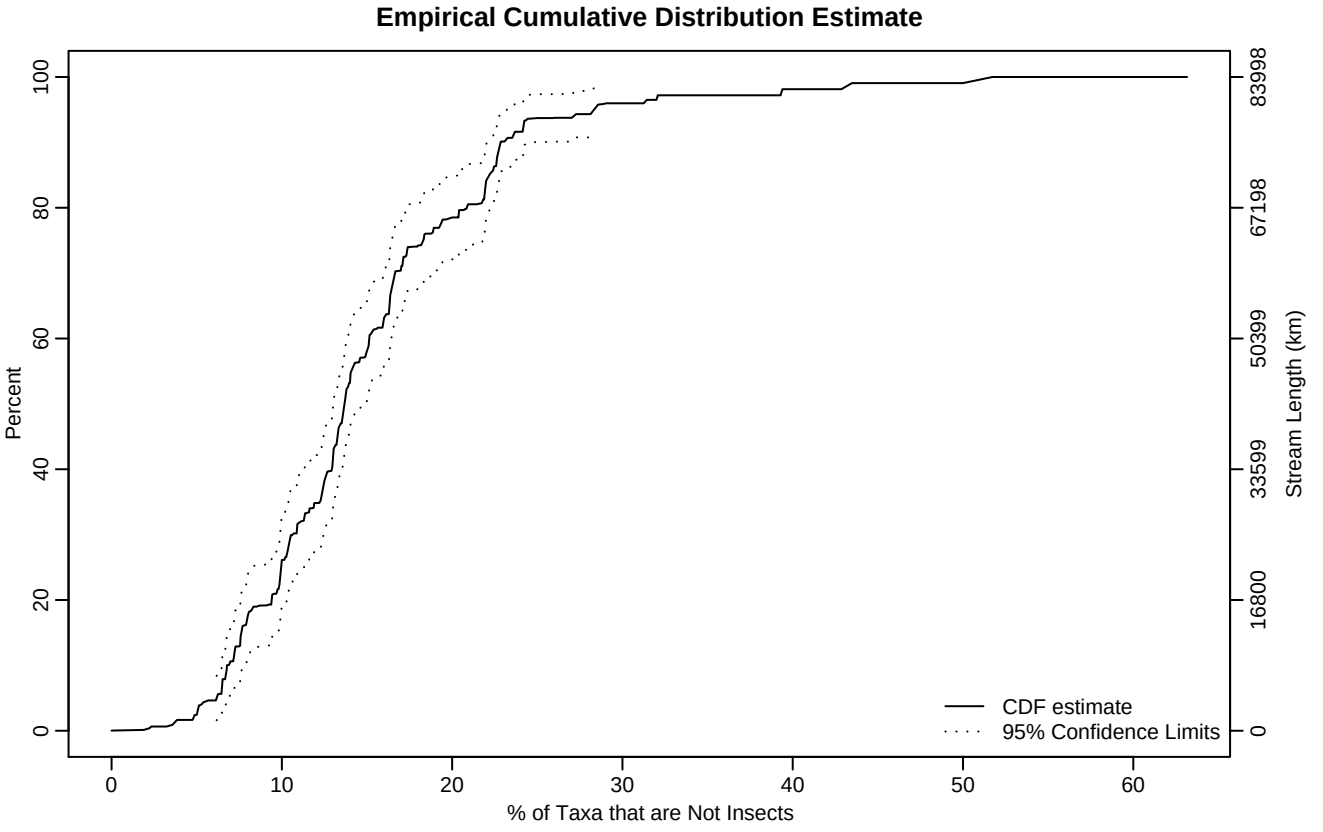


Figure BN−90 Indicator: NOINPTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.17	4.77	6.69
10Pct	6.78	6.20	7.60
25Pct	9.96	8.24	10.90
50Pct	13.68	13.02	14.94
75Pct	18.30	16.53	21.88
90Pct	22.85	22.20	28.30
95Pct	28.33	23.66	43.10
Mean	15.18	13.98	16.37
Std Dev	6.93	5.80	8.05

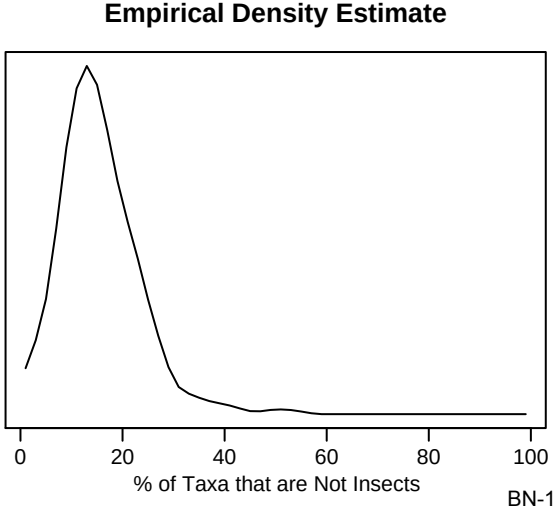
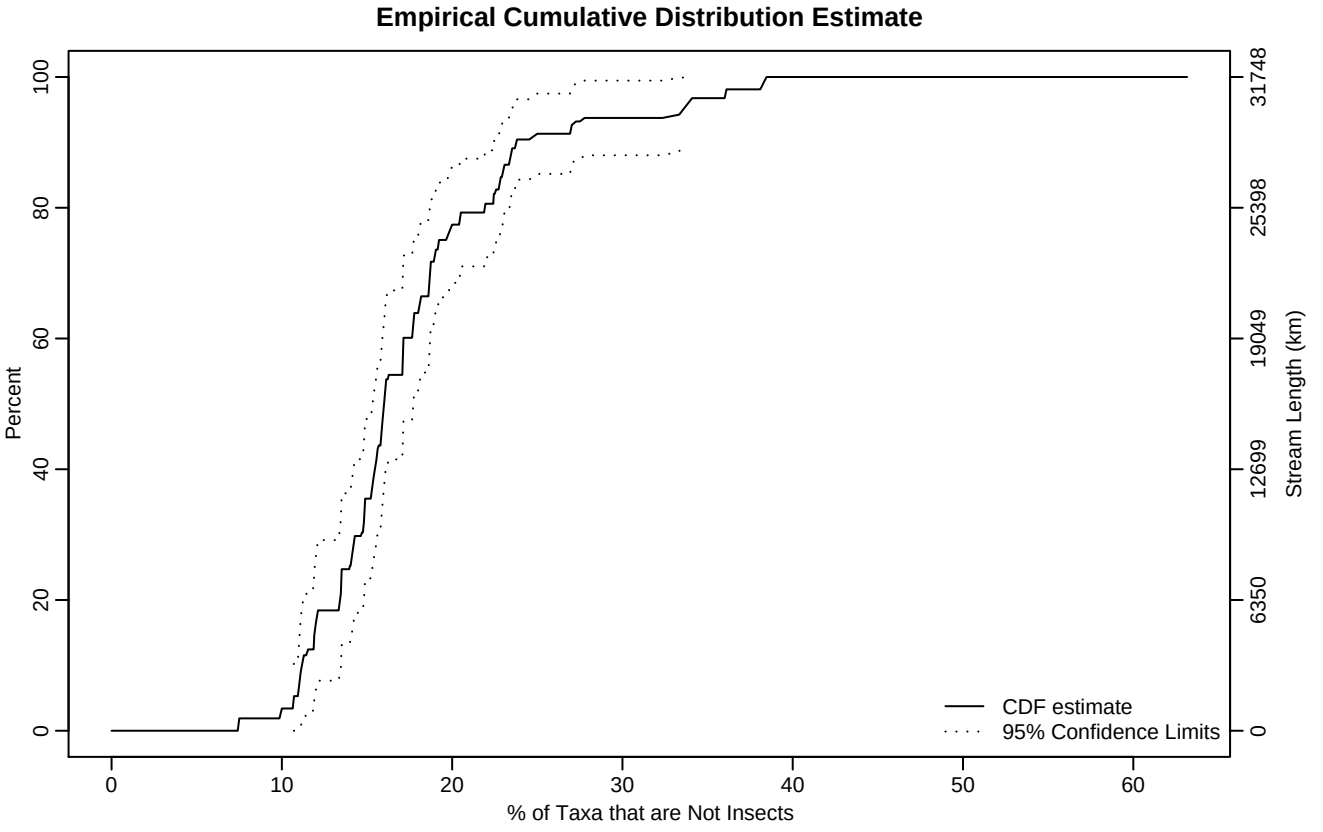


Figure BN−91 Indicator: NOINPTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.70	7.44	11.12
10Pct	11.18	7.49	12.12
25Pct	13.98	11.88	15.27
50Pct	16	15.31	17.74
75Pct	19.23	18.13	22.83
90Pct	23.77	22.78	33.98
95Pct	33.56	23.71	38.46
Mean	17.71	16.29	19.12
Std Dev	5.93	4.40	7.45

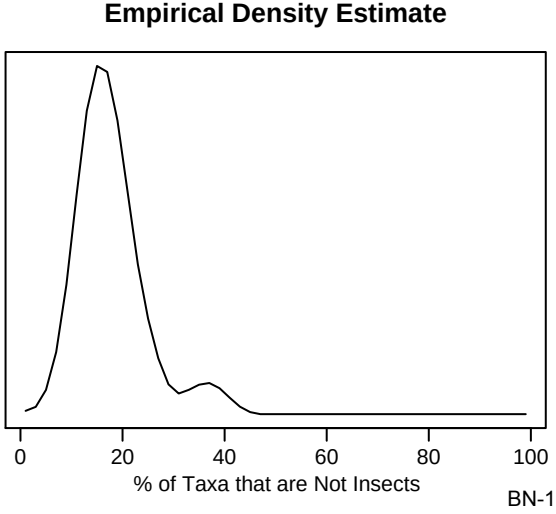
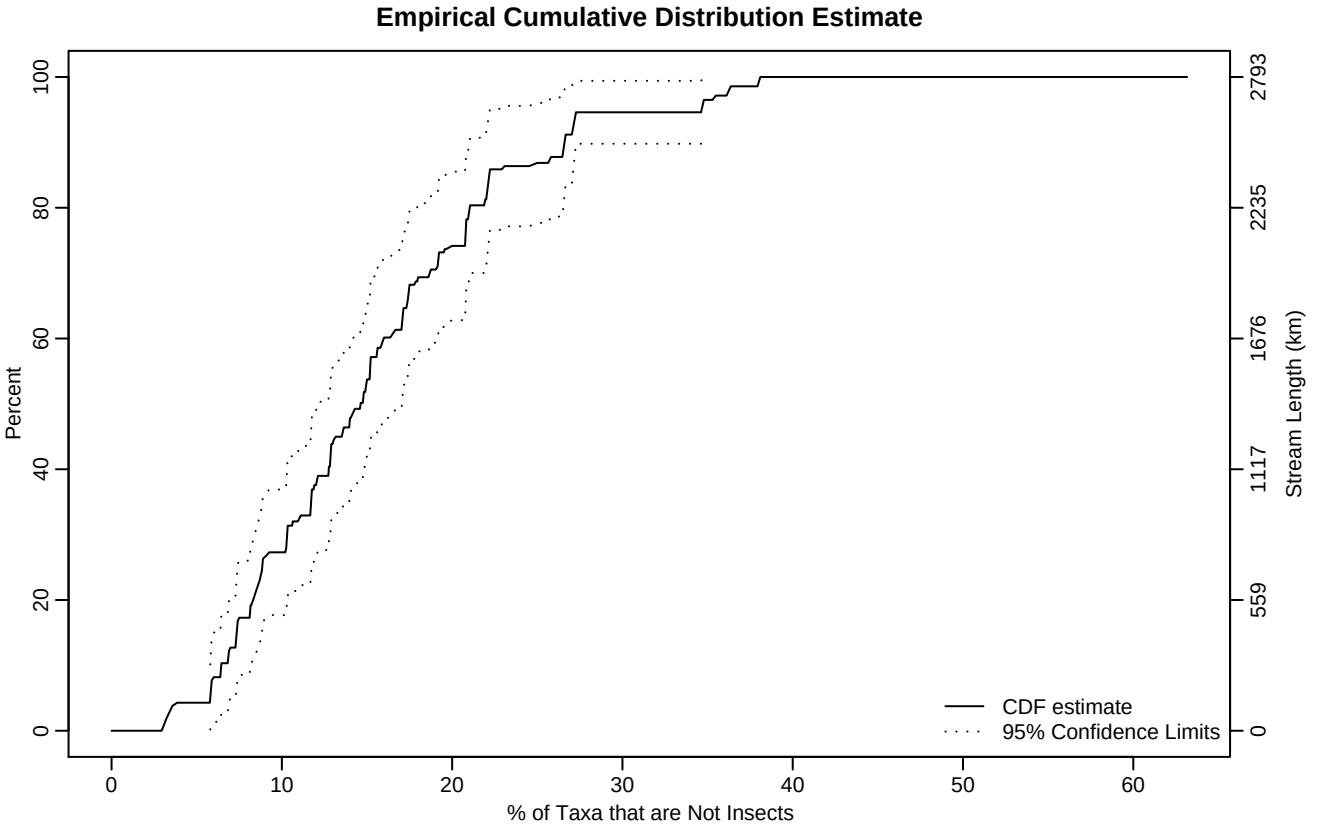


Figure BN−92 Indicator: NOINPTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.79	2.99	6.43
10Pct	6.44	3.46	7.42
25Pct	8.84	7.36	11.71
50Pct	14.63	12.09	17.02
75Pct	20.77	17.10	24.58
90Pct	26.60	21.91	38
95Pct	34.65	26.61	38.07
Mean	15.52	13.56	17.49
Std Dev	7.86	6.62	9.09

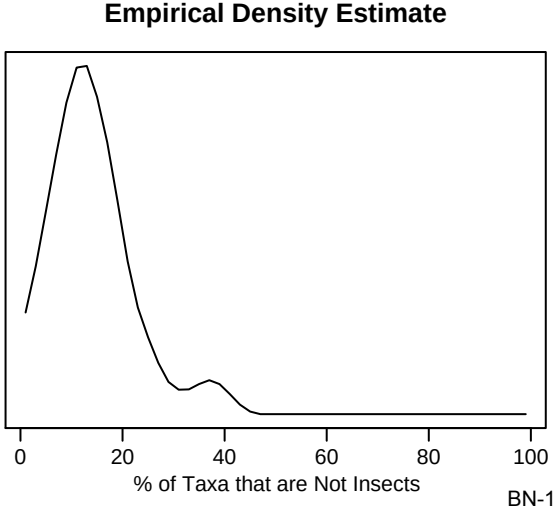
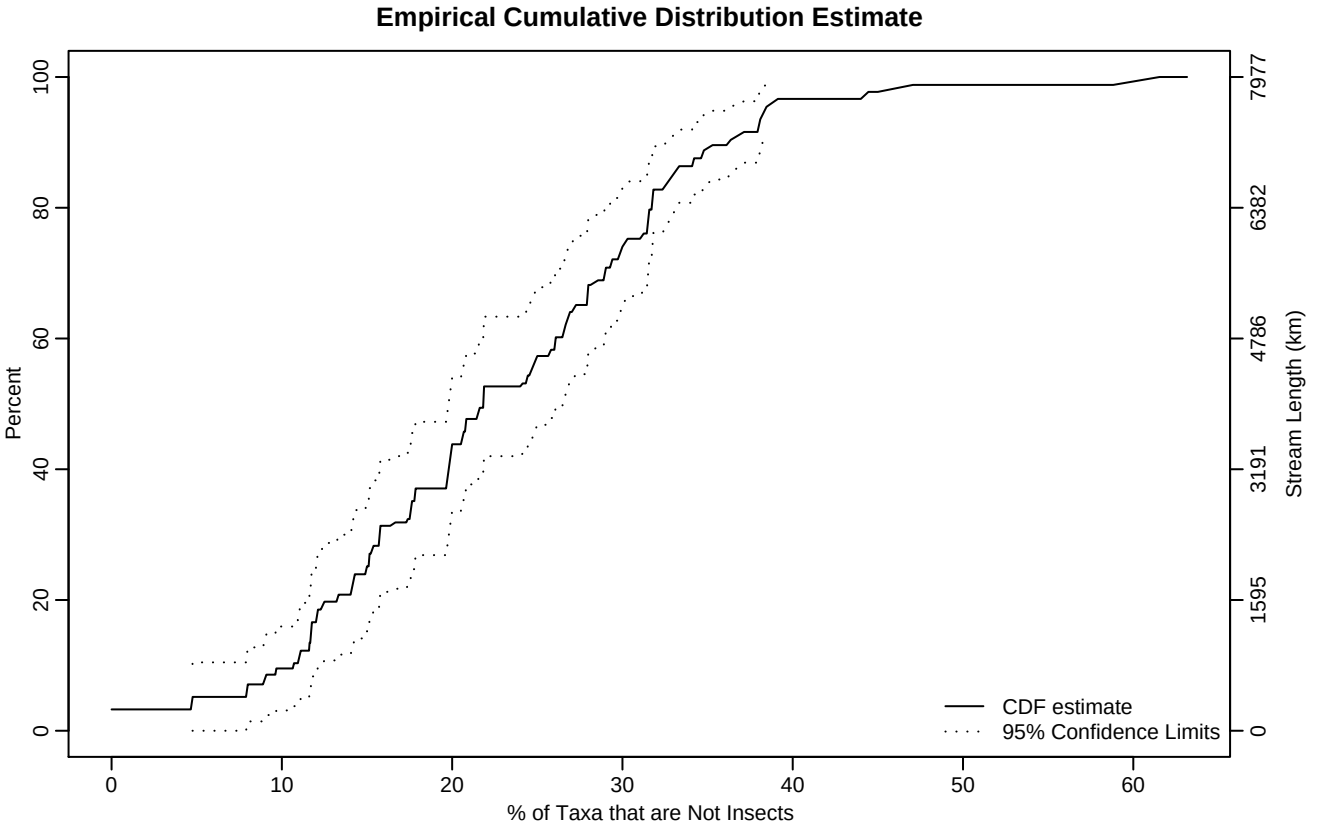


Figure BN−93 Indicator: NOINPTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.75	0	9.67
10Pct	10.68	4.67	11.76
25Pct	14.99	11.72	17.63
50Pct	21.83	19.79	26.47
75Pct	30.24	27.94	32.66
90Pct	36.24	32.89	38.43
95Pct	38.38	36.34	60.86
Mean	22.92	20.92	24.91
Std Dev	10.70	9.03	12.36

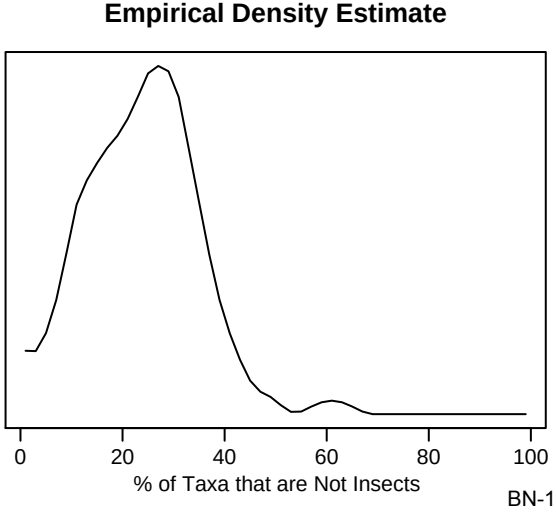
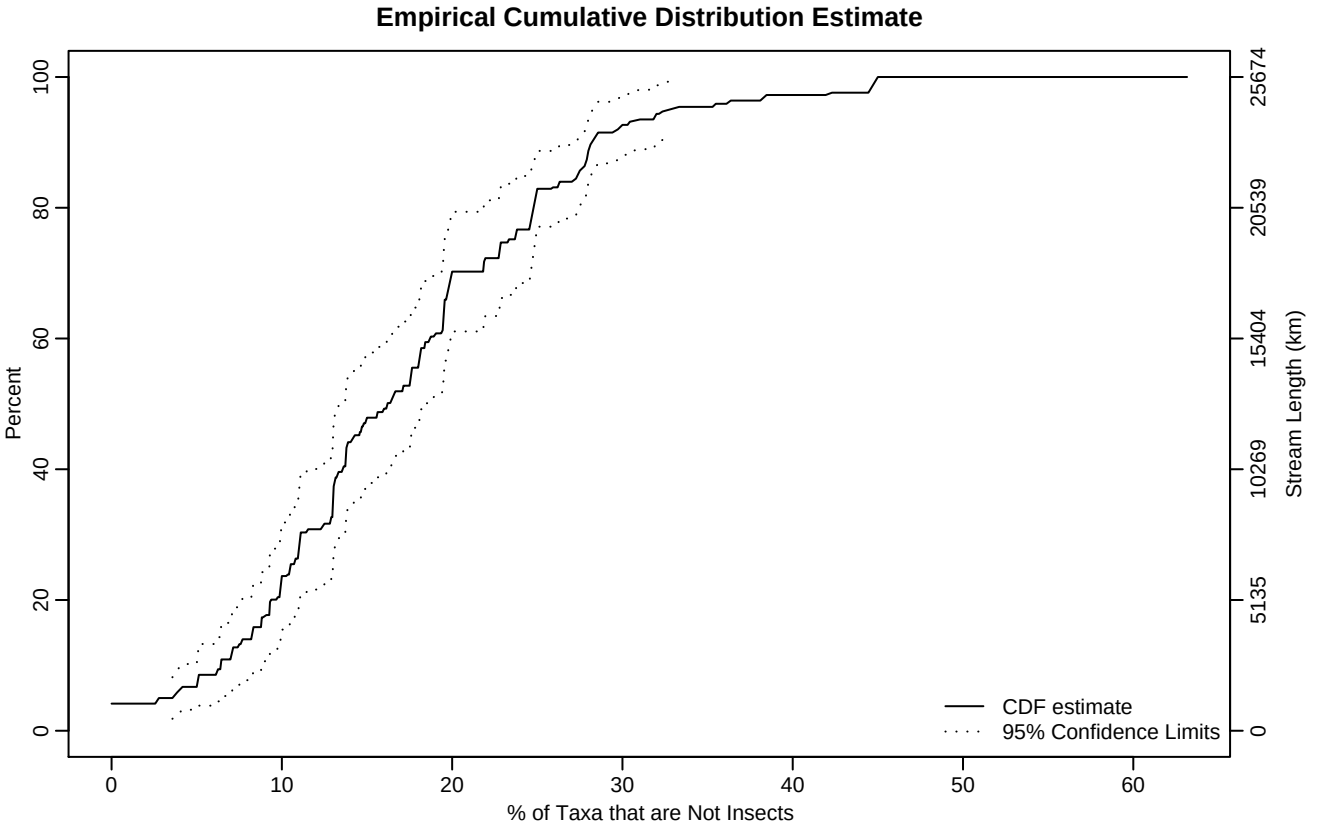


Figure BN−94 Indicator: NOINPTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.57	0	5.10
10Pct	6.41	3.60	8.27
25Pct	10.49	8.80	12.97
50Pct	16.20	13.58	18.70
75Pct	23.31	19.69	26.24
90Pct	28.20	27.41	32.49
95Pct	32.74	28.37	44.85
Mean	17.23	15.40	19.07
Std Dev	9.09	7.41	10.76

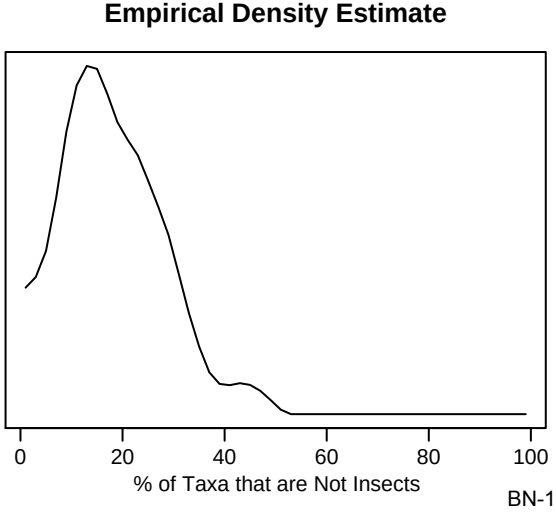
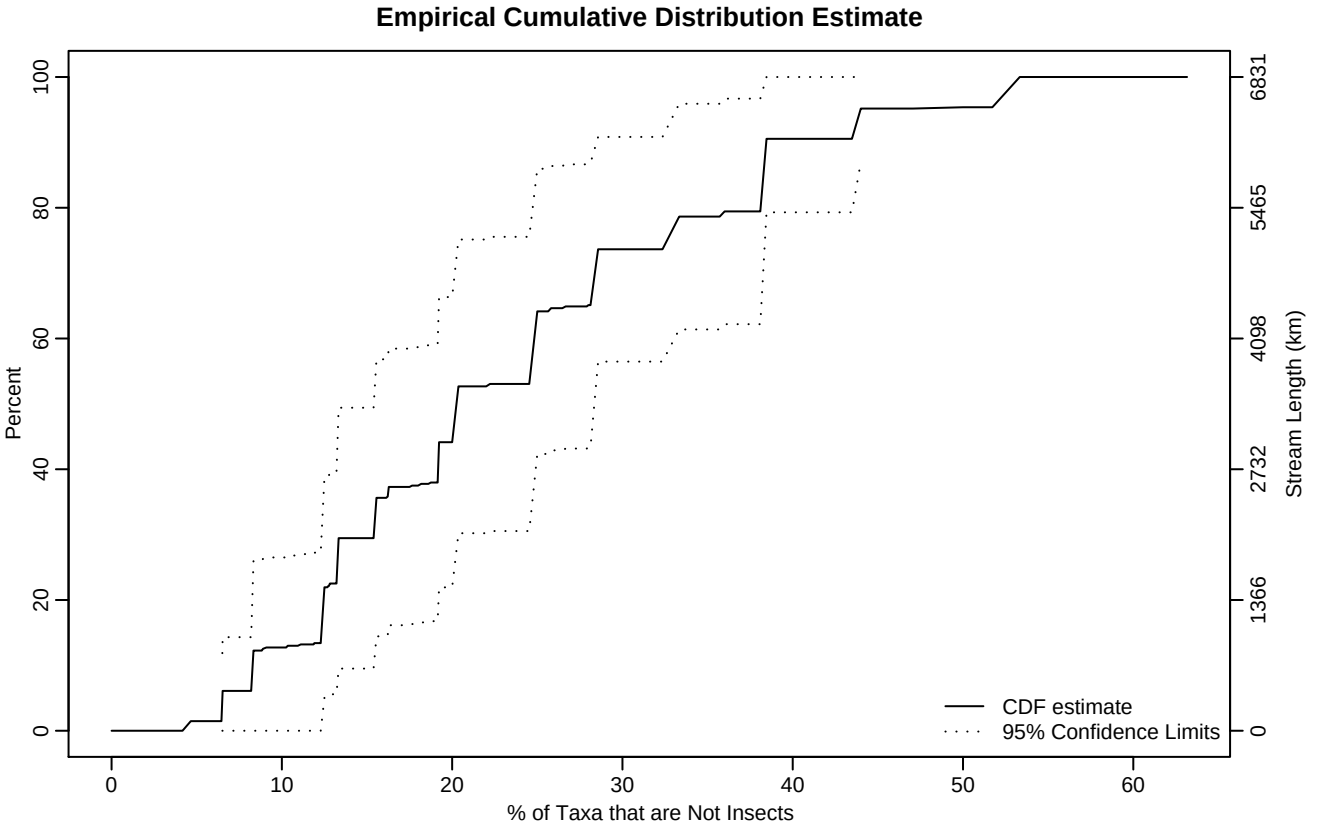


Figure BN−95 Indicator: NOINPTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.51	6.46	8.23
10Pct	8.28	6.45	12.41
25Pct	13.25	8.24	19.20
50Pct	20.25	13.30	28.52
75Pct	32.62	24.73	43.66
90Pct	38.44	28.51	53.33
95Pct	43.98	38.25	53.33
Mean	23.72	18.74	28.71
Std Dev	12.46	9.48	15.44

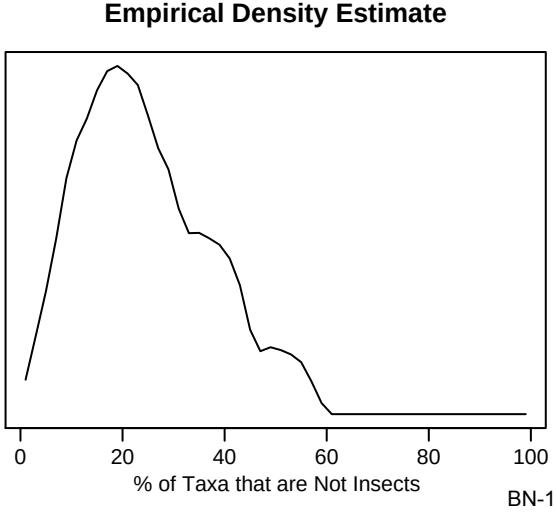
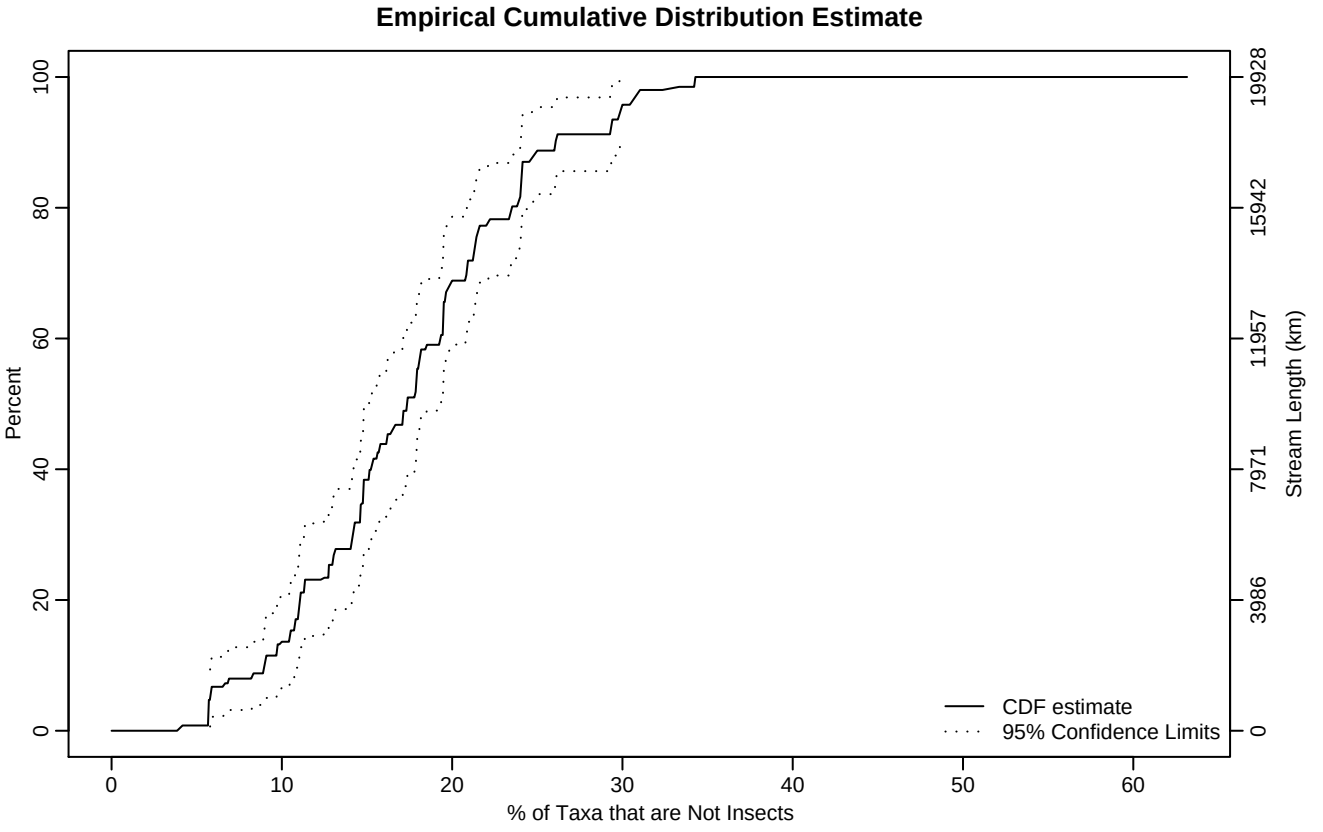


Figure BN−96 Indicator: NOINPTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.79	4.13	8.93
10Pct	8.98	5.80	10.49
25Pct	12.76	10.77	14.62
50Pct	17.35	15.10	19.46
75Pct	21.40	19.51	24.07
90Pct	26.07	24.06	30.51
95Pct	29.91	26.06	34.29
Mean	17.52	16.27	18.77
Std Dev	5.99	5.29	6.70

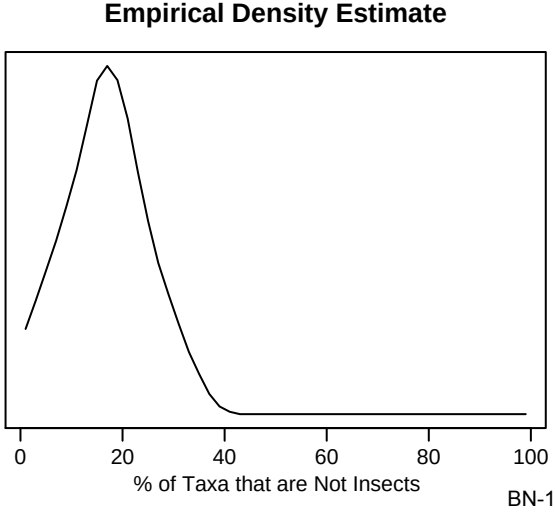
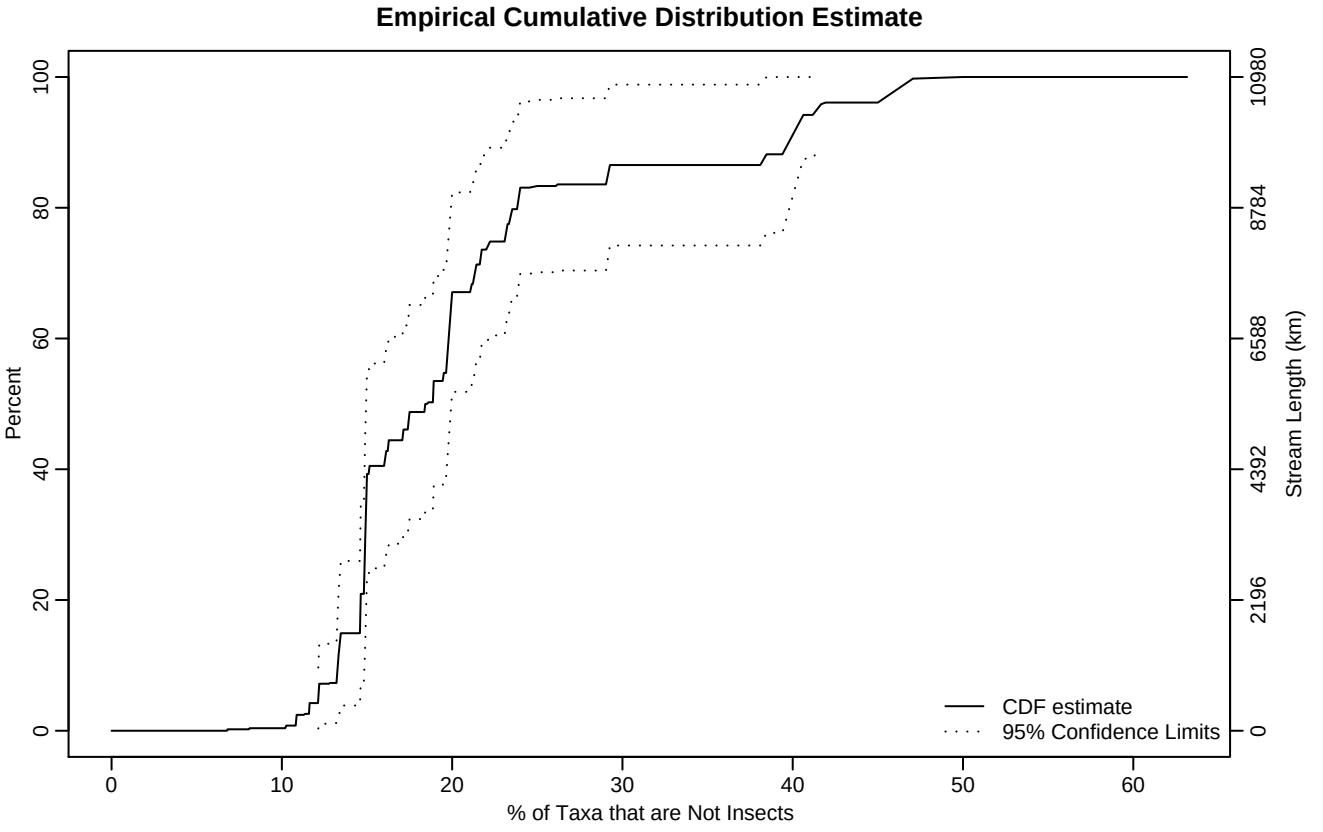


Figure BN−97 Indicator: NOINPTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	12.14	10.81	13.26
10Pct	13.29	11.62	14.60
25Pct	14.85	13.33	14.99
50Pct	18.52	14.94	19.98
75Pct	23.09	19.81	39.64
90Pct	39.77	23.37	50
95Pct	41.42	39.43	50
Mean	20.98	17.54	24.41
Std Dev	9.11	6.61	11.61

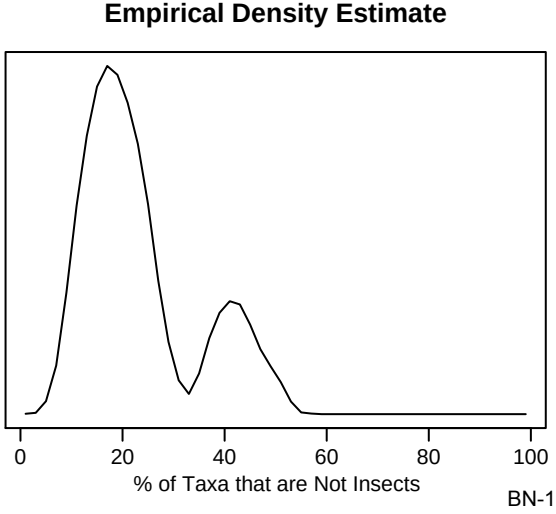
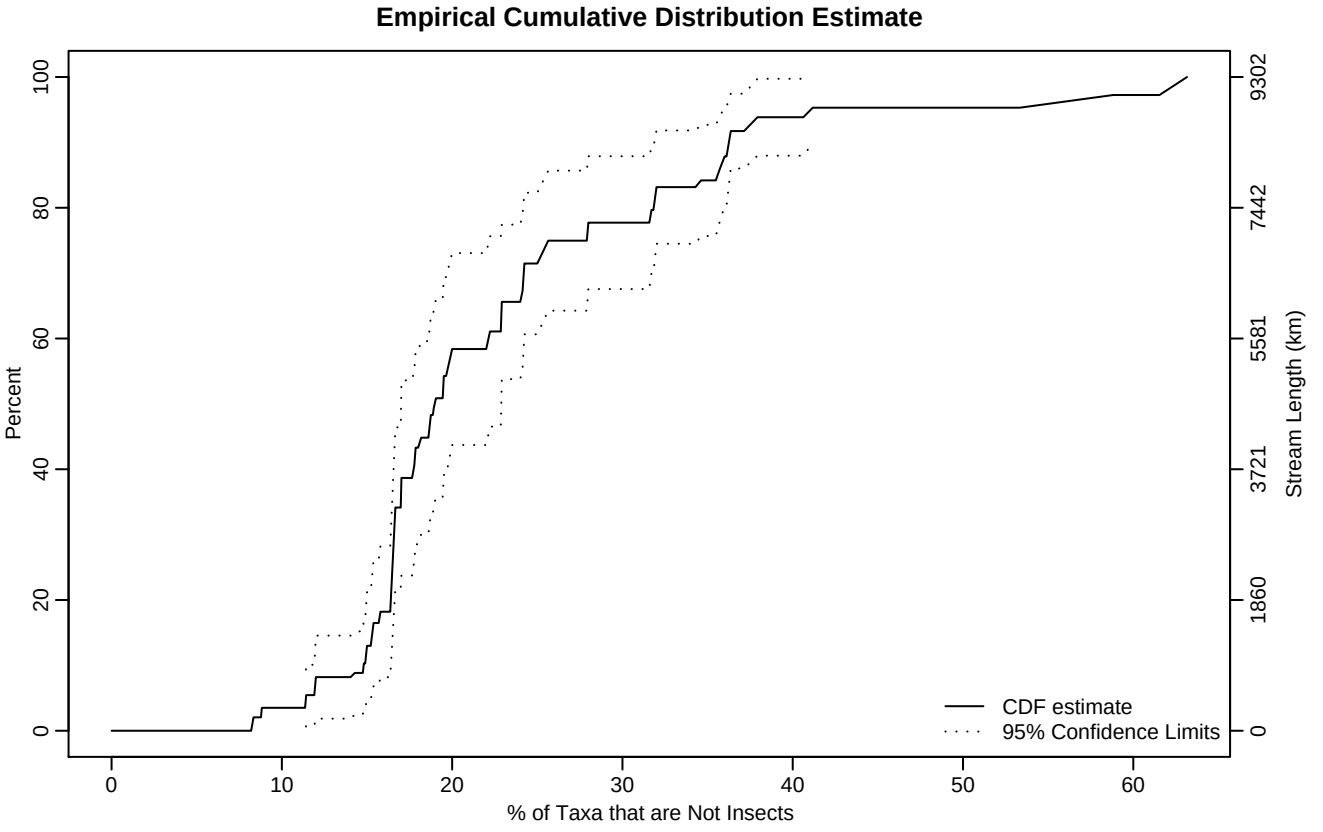


Figure BN−98 Indicator: NOINPTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	11.41	8.30	14.16
10Pct	14.80	11.37	15.38
25Pct	16.49	15.31	16.99
50Pct	18.98	16.99	22.91
75Pct	27.91	22.90	35.71
90Pct	36.25	31.96	61.77
95Pct	41.06	36.19	63.16
Mean	23.35	20.64	26.07
Std Dev	10.30	7.69	12.90

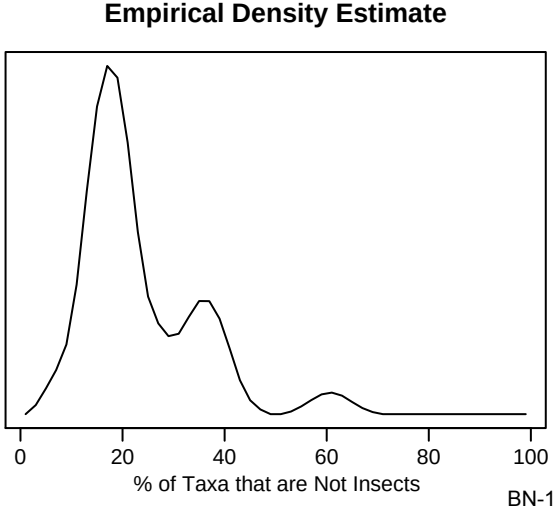
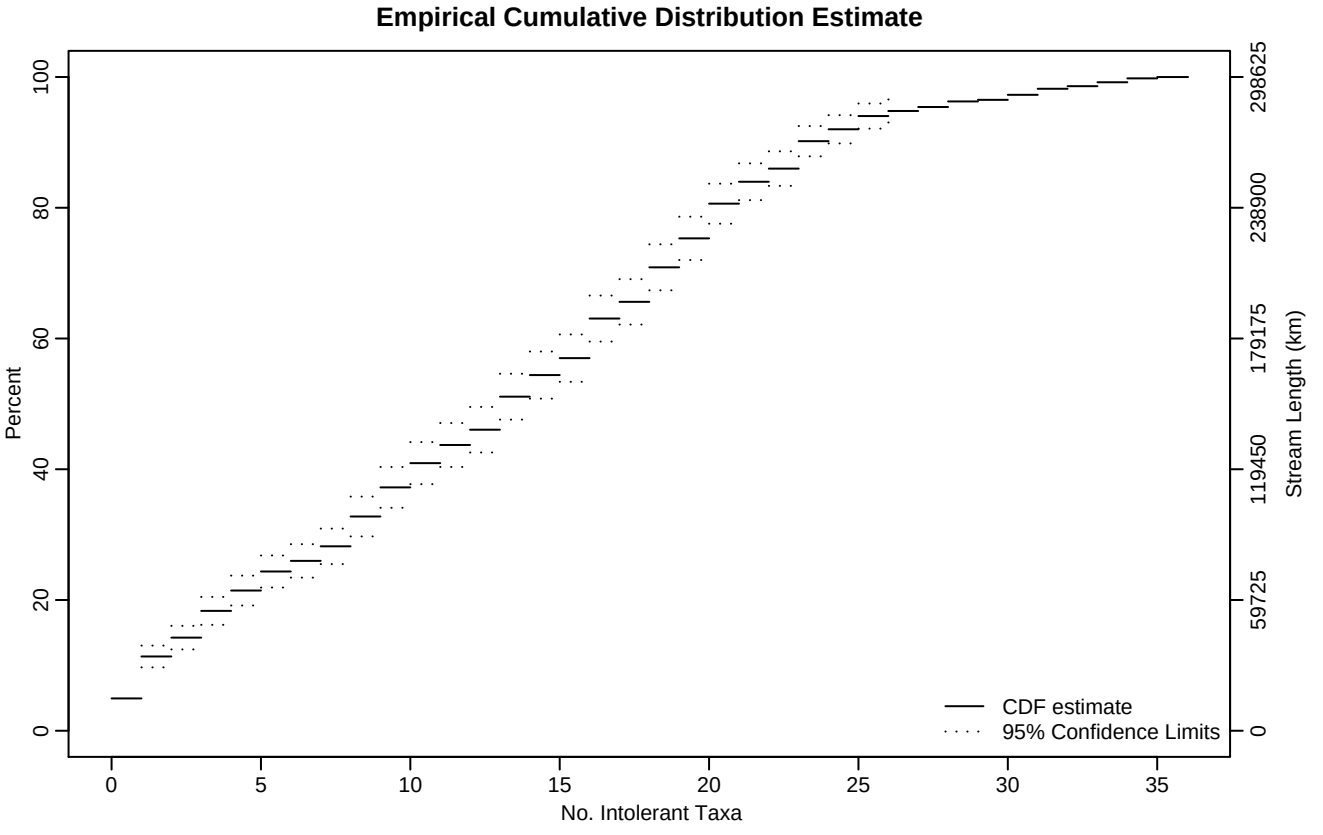


Figure BN−99 Indicator: INTLRICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.19
10Pct	0.79	0.60	0.97
25Pct	5.40	4.35	6.70
50Pct	12.78	12.07	13.75
75Pct	18.93	18.11	19.62
90Pct	22.96	22.29	24.39
95Pct	26.32	24.59	29.39
Mean	13.10	12.58	13.63
Std Dev	6.89	6.57	7.21

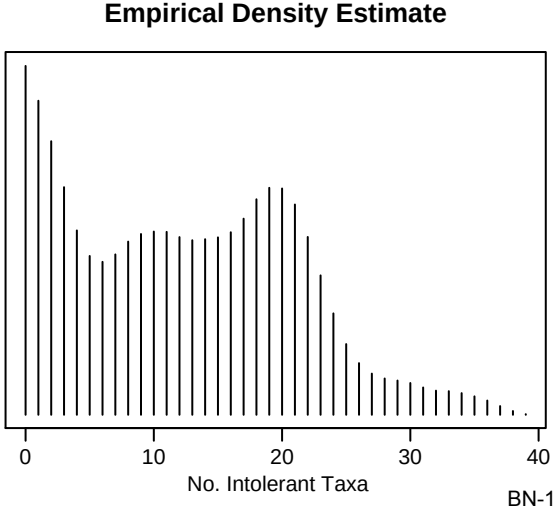
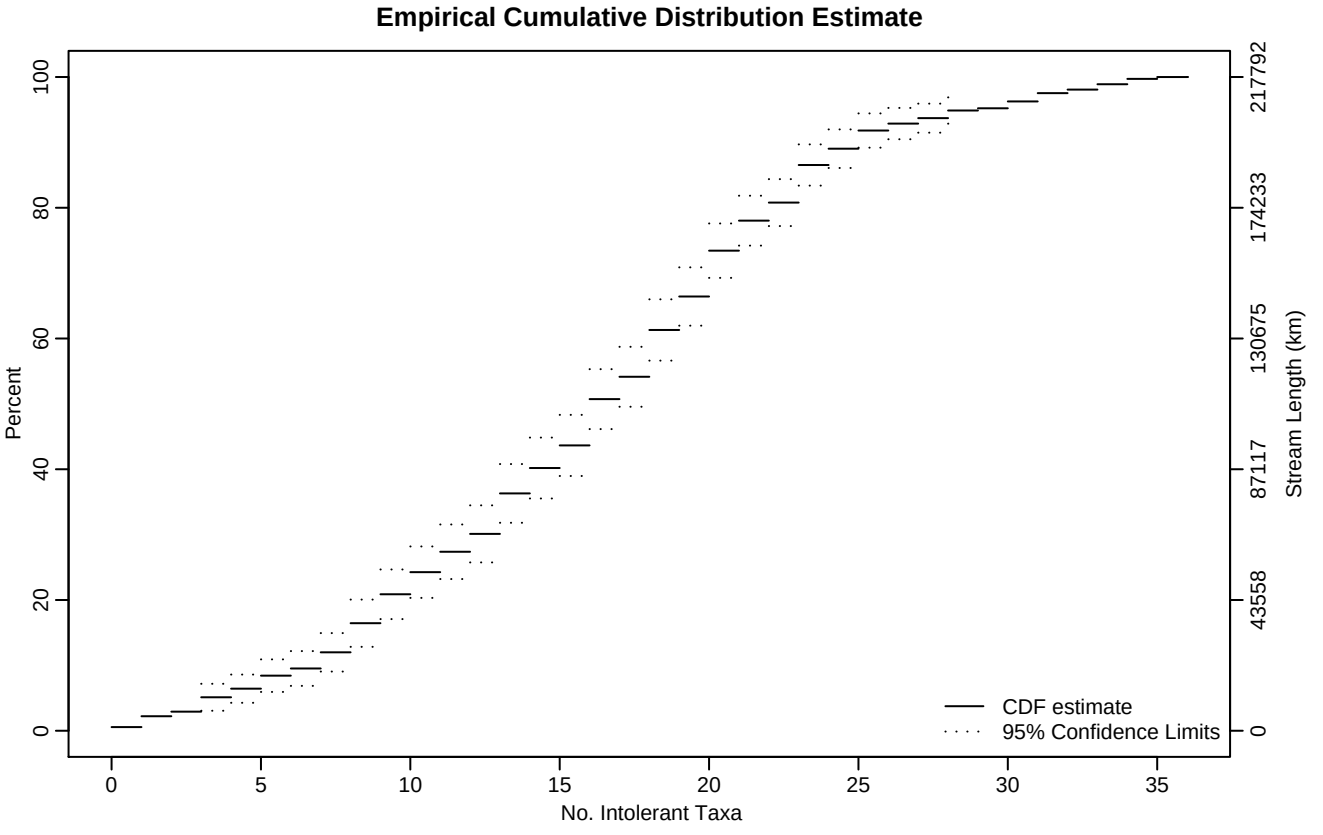


Figure BN−100 Indicator: INTLRICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.95	2.27	4.03
10Pct	6.19	4.45	7.15
25Pct	10.24	9.02	11.61
50Pct	15.90	15.22	17.09
75Pct	20.34	19.62	21.43
90Pct	24.35	23.18	26.18
95Pct	28.37	26.08	30.63
Mean	16.14	15.49	16.79
Std Dev	6.68	6.28	7.08

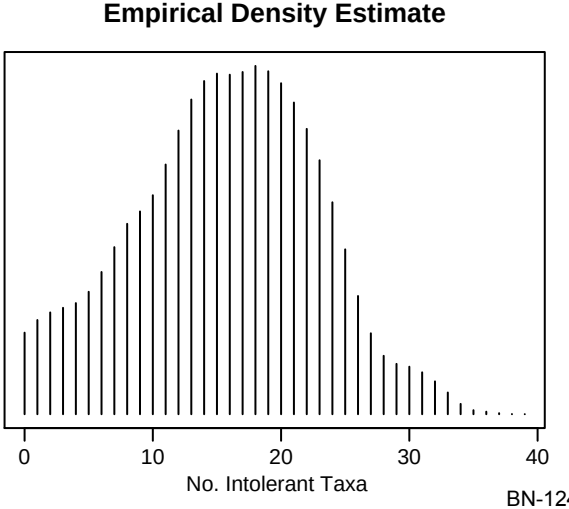
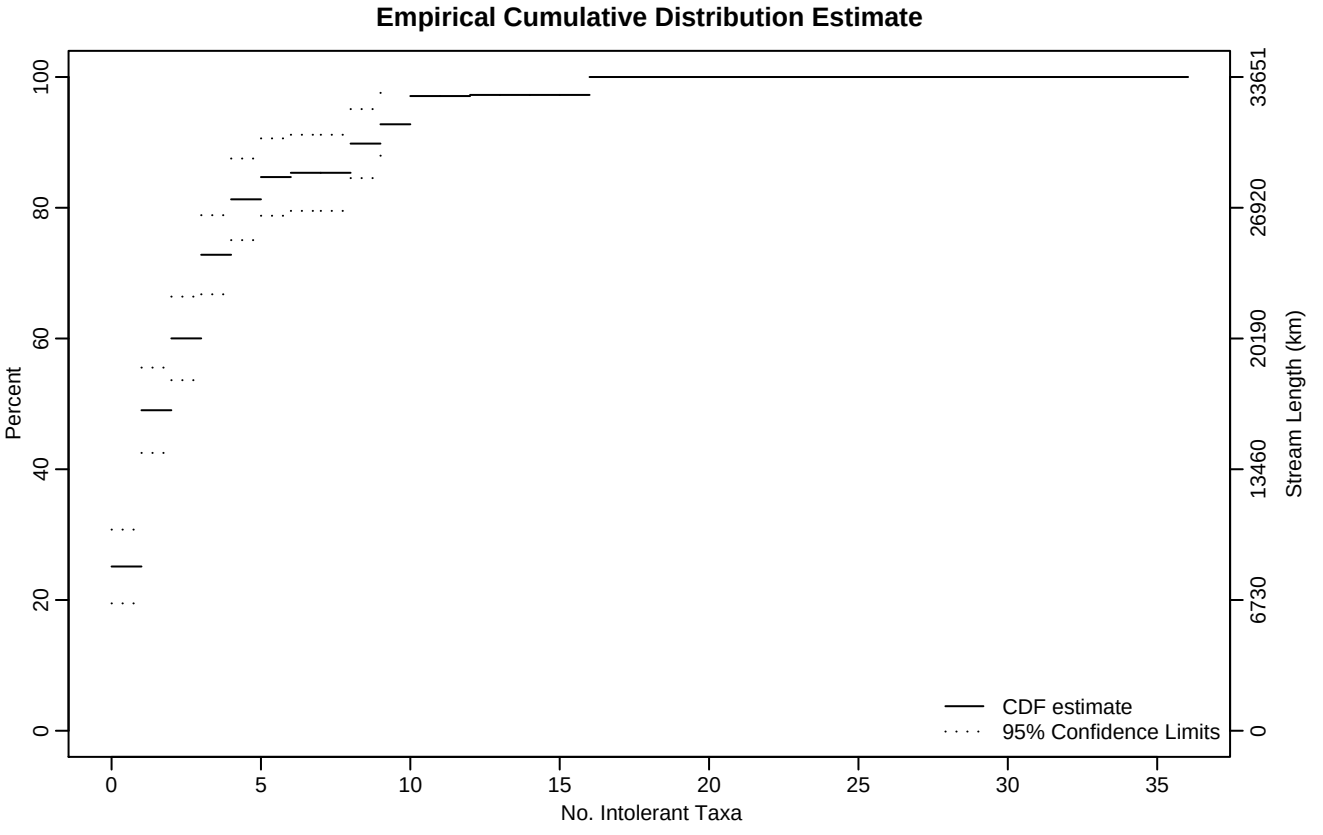


Figure BN−101 Indicator: INTLRICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.23
50Pct	1.09	0.76	1.69
75Pct	3.26	2.69	3.98
90Pct	8.06	5.45	9.52
95Pct	9.52	8.18	15.88
Mean	2.91	2.39	3.42
Std Dev	2.75	2.34	3.15

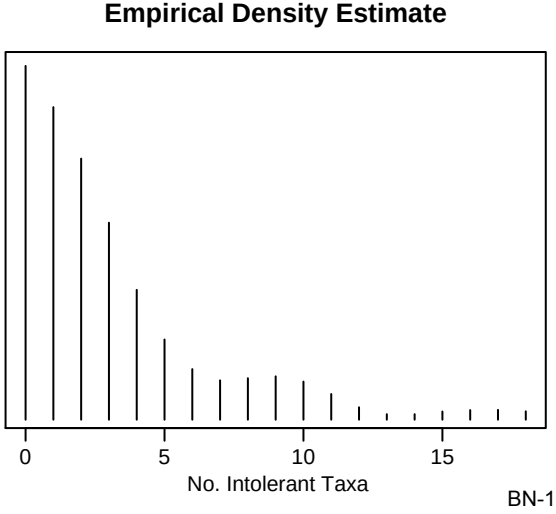
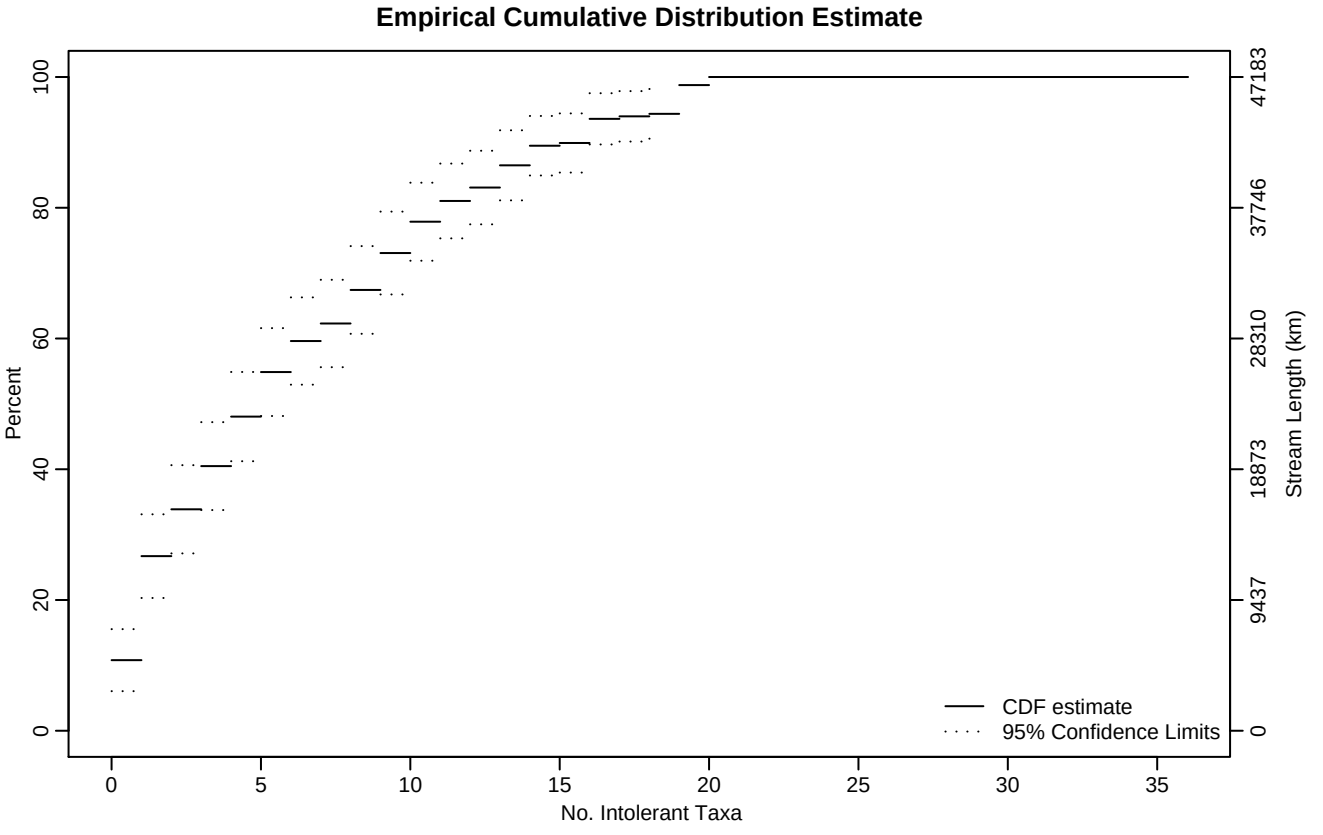


Figure BN−102 Indicator: INTLRICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.25
25Pct	0.89	0.59	1.44
50Pct	4.29	3.34	5.44
75Pct	9.40	8.19	11.23
90Pct	15.03	12.64	18.09
95Pct	18.14	15.27	19.26
Mean	6.34	5.52	7.16
Std Dev	5.09	4.67	5.52

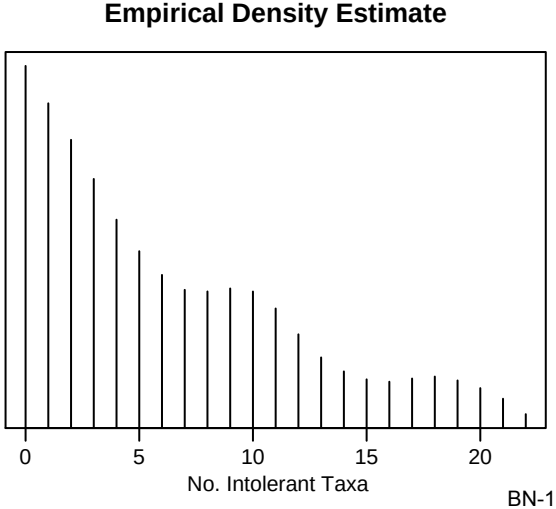
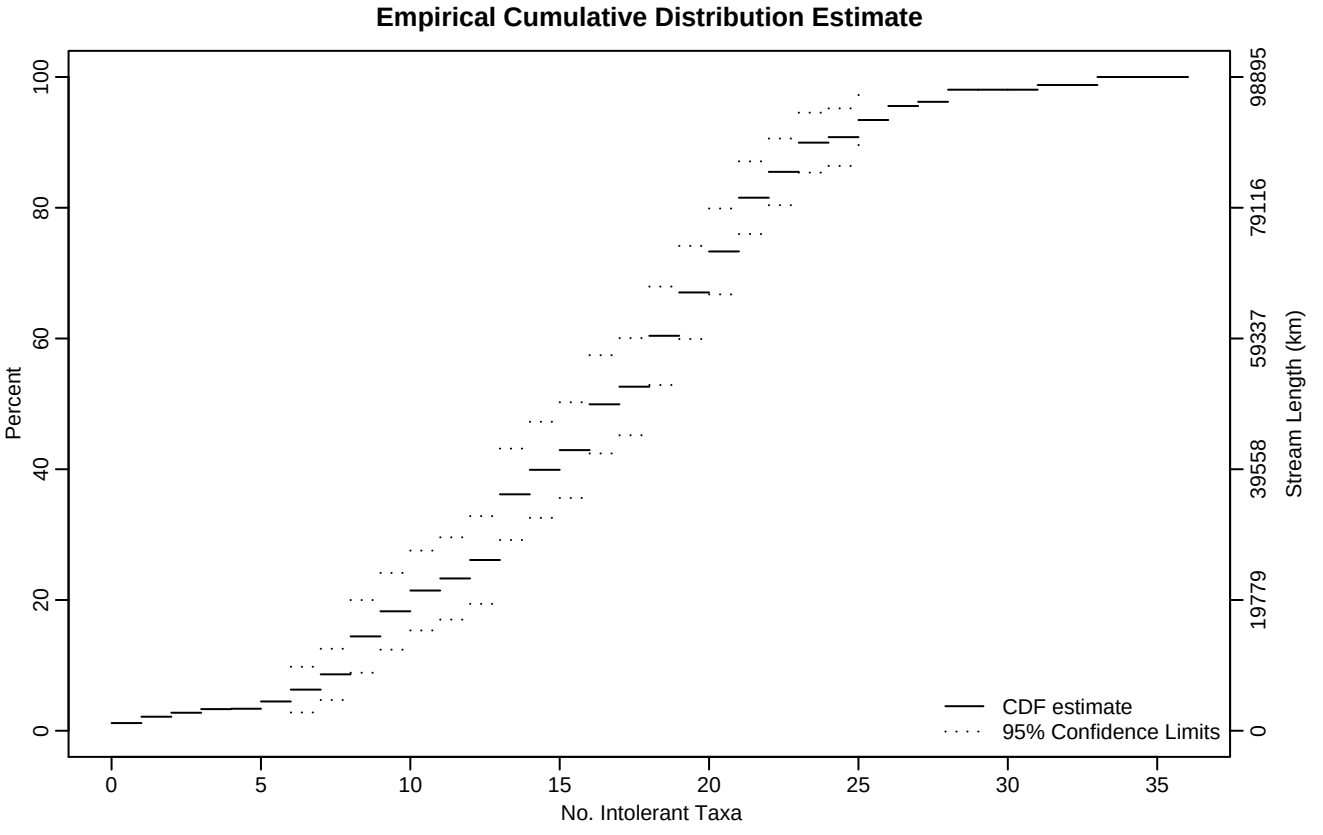


Figure BN−103 Indicator: INTLRICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.29	1	6.67
10Pct	7.24	5.85	7.92
25Pct	11.60	9.05	12.54
50Pct	16.03	14.83	17.64
75Pct	20.20	19.21	21.02
90Pct	23.05	21.97	25.57
95Pct	25.74	24.11	32.11
Mean	16.17	15.25	17.10
Std Dev	5.93	5.37	6.49

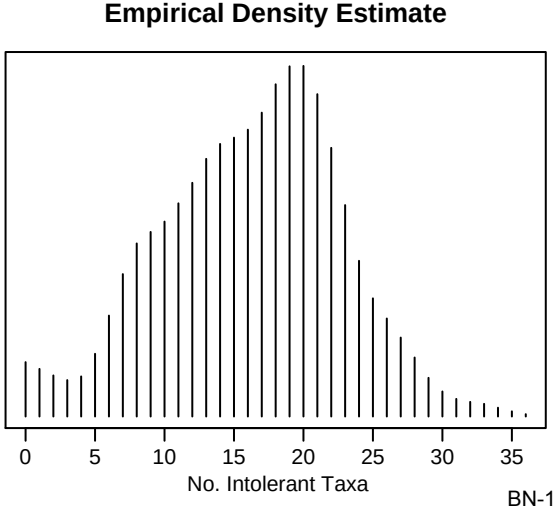
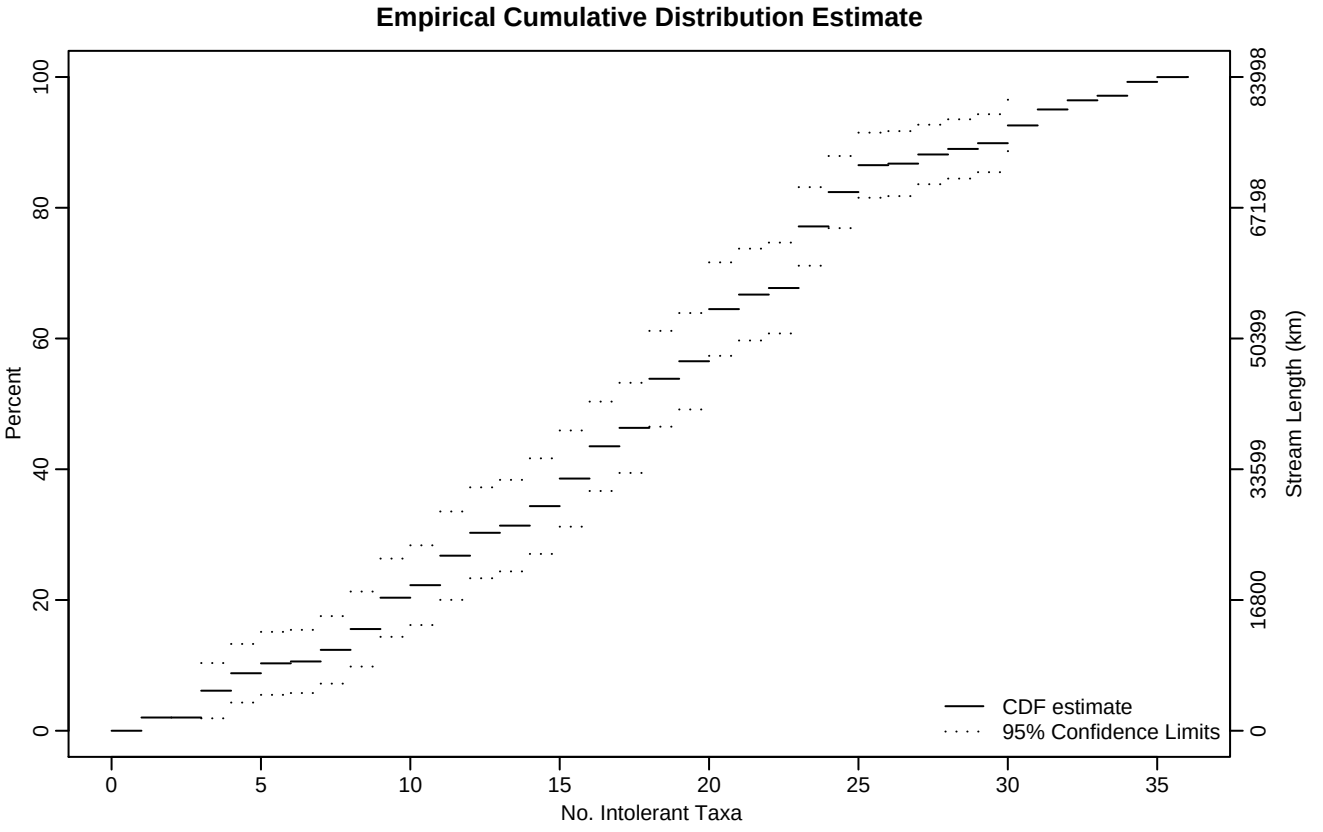


Figure BN−104 Indicator: INTLRICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.73	2.11	3.52
10Pct	4.80	2.85	7.67
25Pct	10.61	8.69	12.78
50Pct	17.49	15.92	19.05
75Pct	22.77	22.01	23.96
90Pct	29.05	24.75	30.79
95Pct	30.99	29.40	33.89
Mean	17.49	16.28	18.69
Std Dev	7.98	7.29	8.67

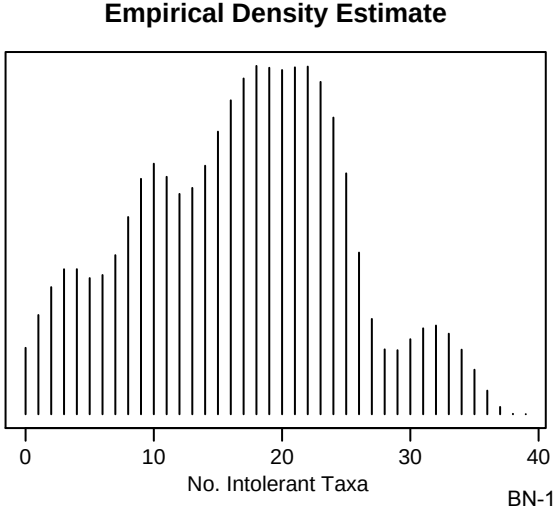
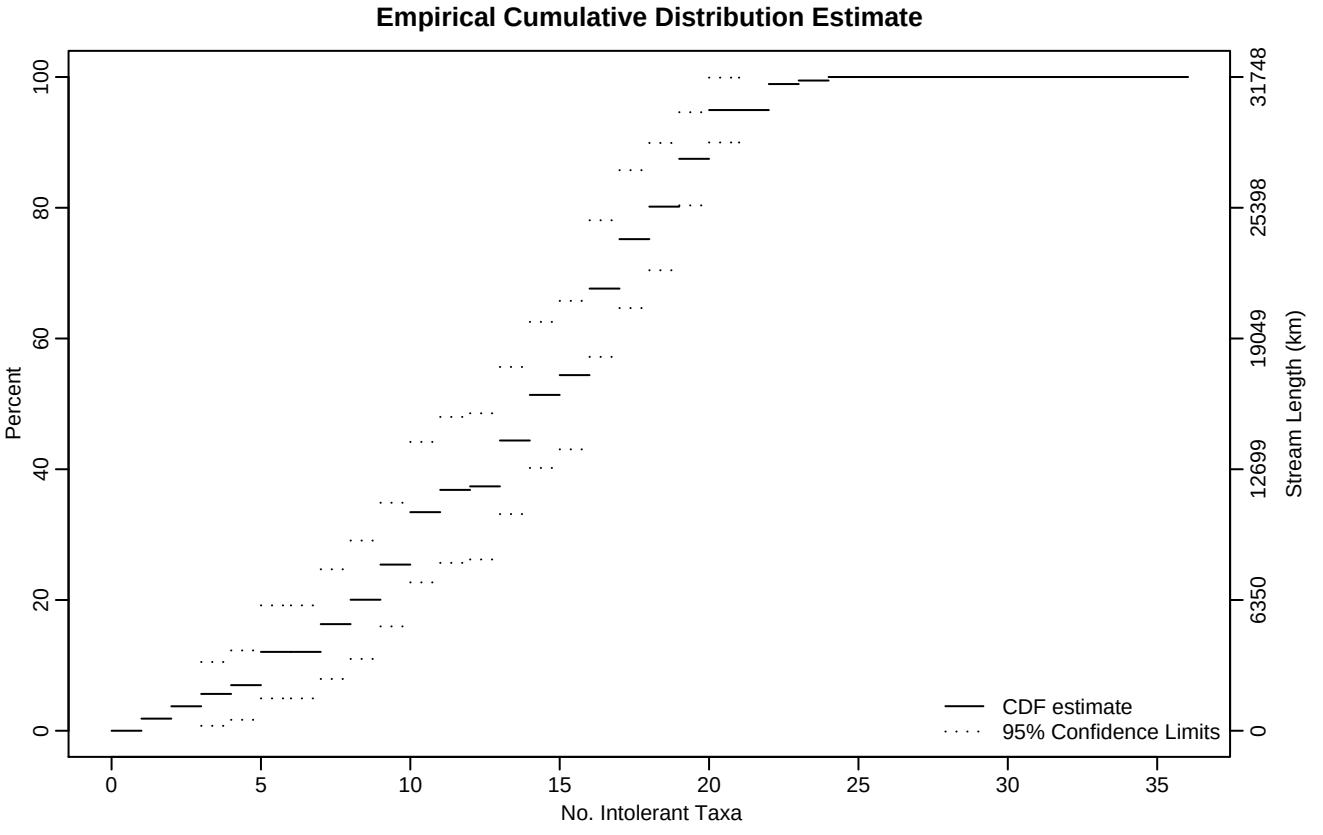


Figure BN−105 Indicator: INTLRICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.67	0.64	4.36
10Pct	4.59	2.44	6.79
25Pct	8.92	6.85	10.27
50Pct	13.80	12.16	15.53
75Pct	16.97	15.77	18.72
90Pct	19.34	18.38	21.53
95Pct	21.01	19.33	24
Mean	13.39	12.21	14.57
Std Dev	5.34	4.57	6.11

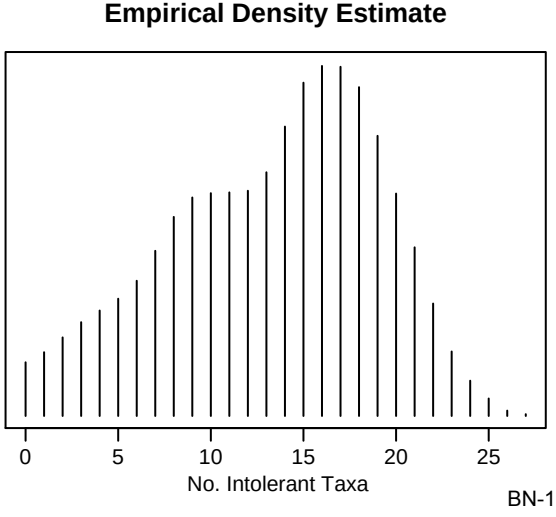
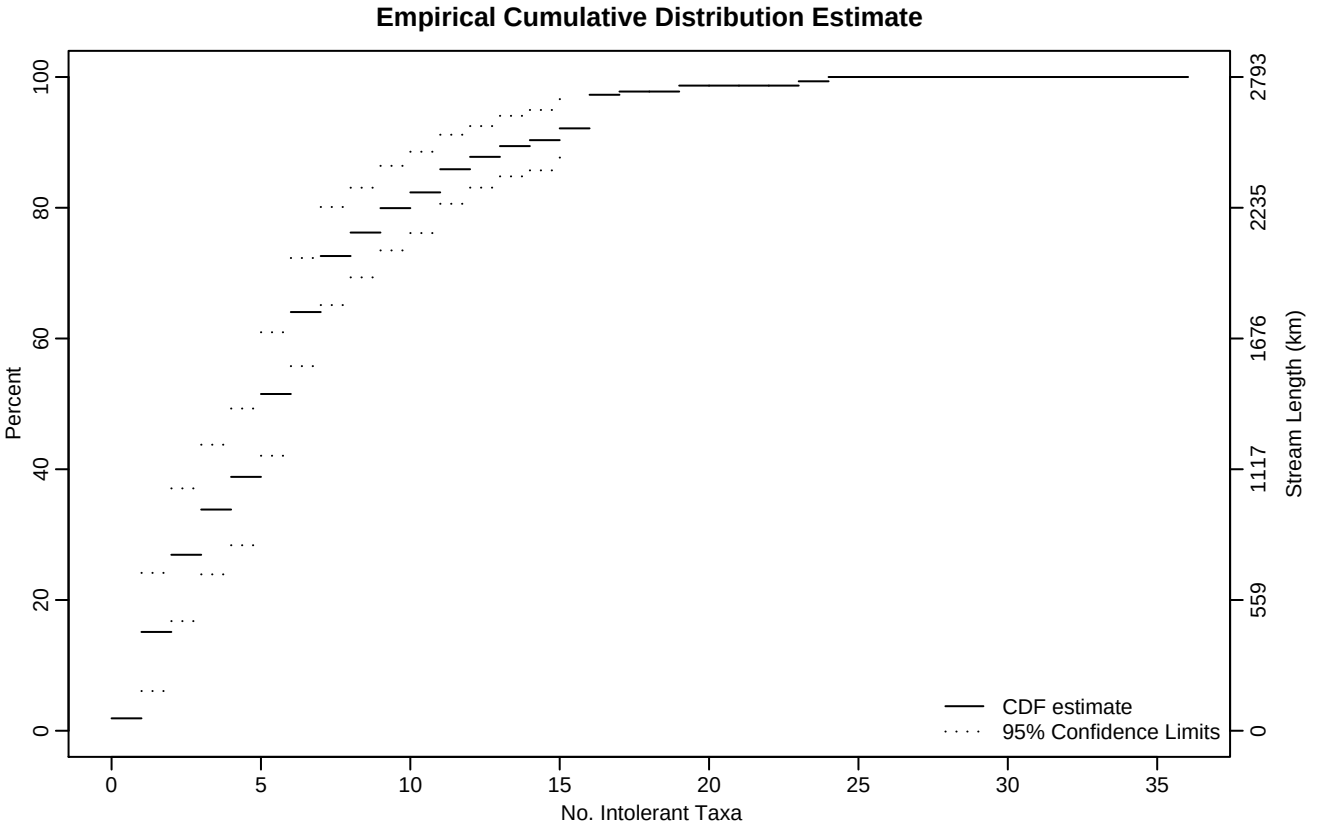


Figure BN−106 Indicator: INTLRICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.23	0	0.47
10Pct	0.61	0.37	0.86
25Pct	1.84	1.07	3.04
50Pct	4.88	4.06	5.71
75Pct	7.66	6.36	10.15
90Pct	13.63	10.83	15.50
95Pct	15.56	14.08	23.27
Mean	6.24	5.53	6.95
Std Dev	4.05	3.37	4.72

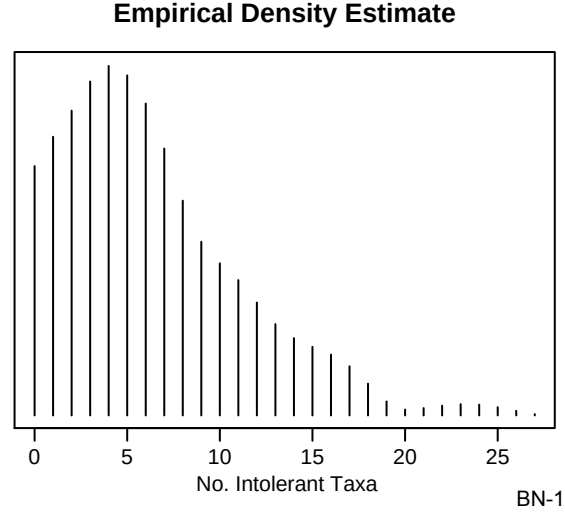
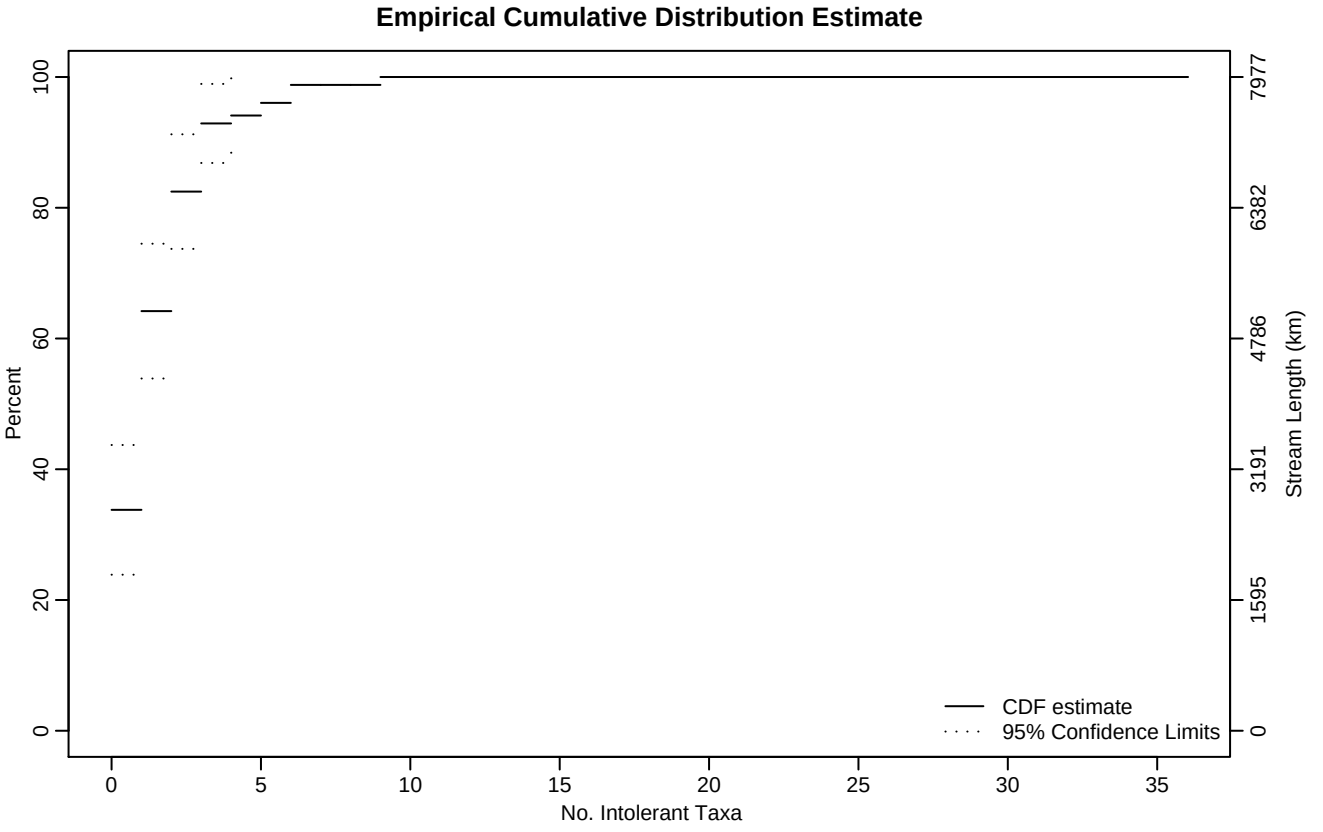


Figure BN−107 Indicator: INTLRICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.04
50Pct	0.53	0.20	0.86
75Pct	1.59	1.02	2.28
90Pct	2.72	1.93	8
95Pct	4.46	2.65	9
Mean	1.40	1.06	1.75
Std Dev	1.59	1.13	2.05

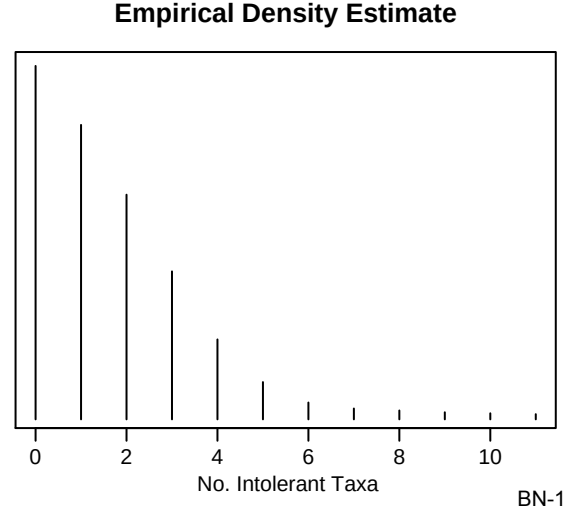
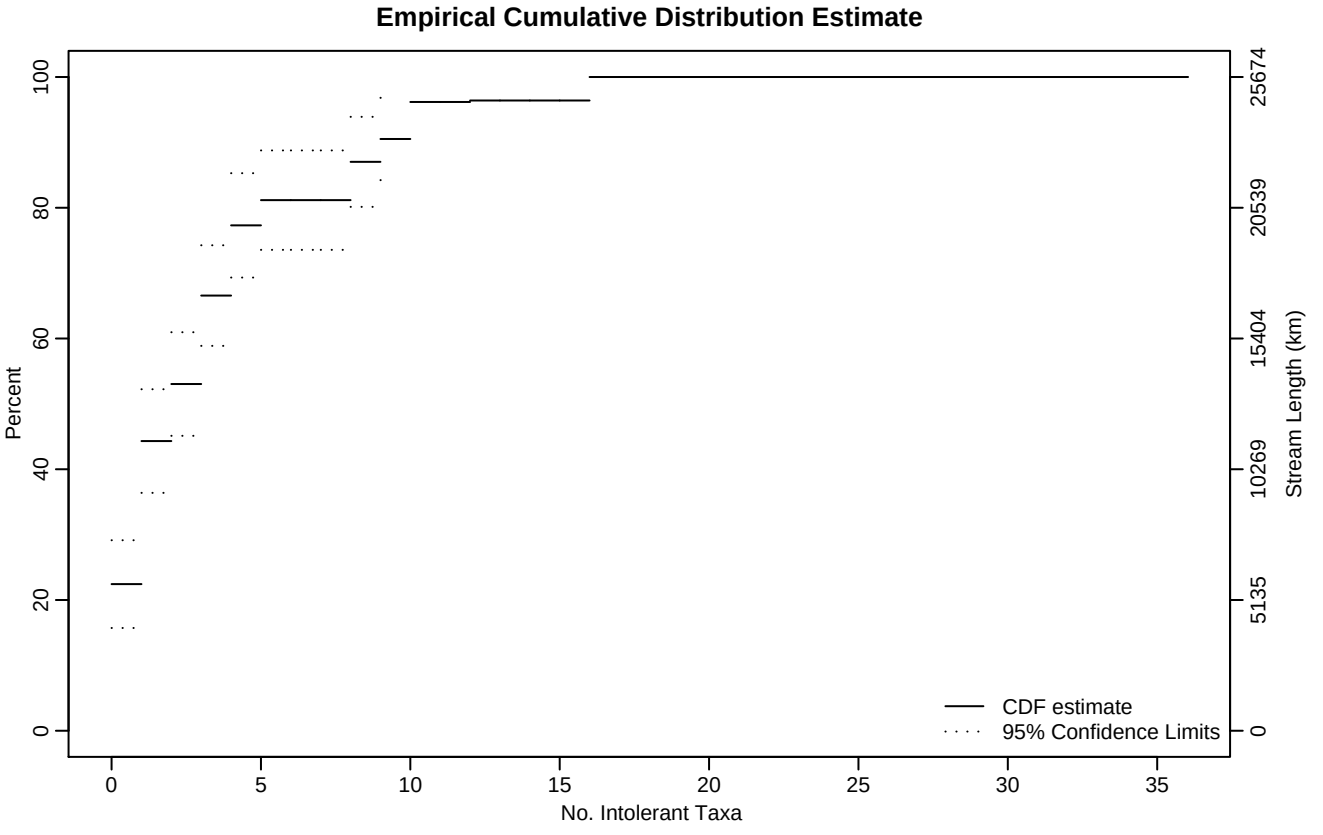


Figure BN−108 Indicator: INTLRICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.12	0	0.43
50Pct	1.65	0.89	2.37
75Pct	3.79	3.06	7.28
90Pct	8.85	7.39	15.04
95Pct	9.79	8.53	16
Mean	3.37	2.71	4.04
Std Dev	3.07	2.56	3.59

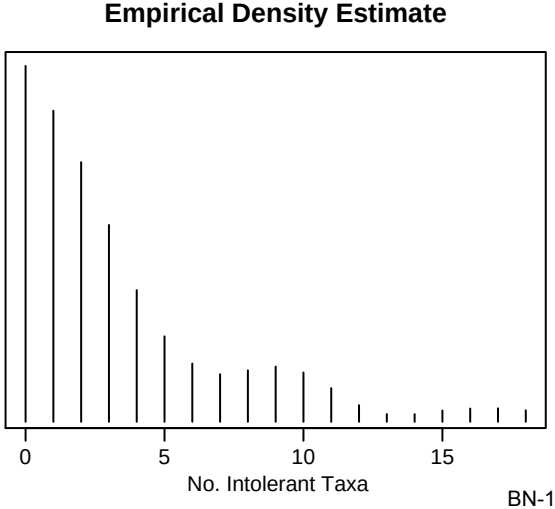
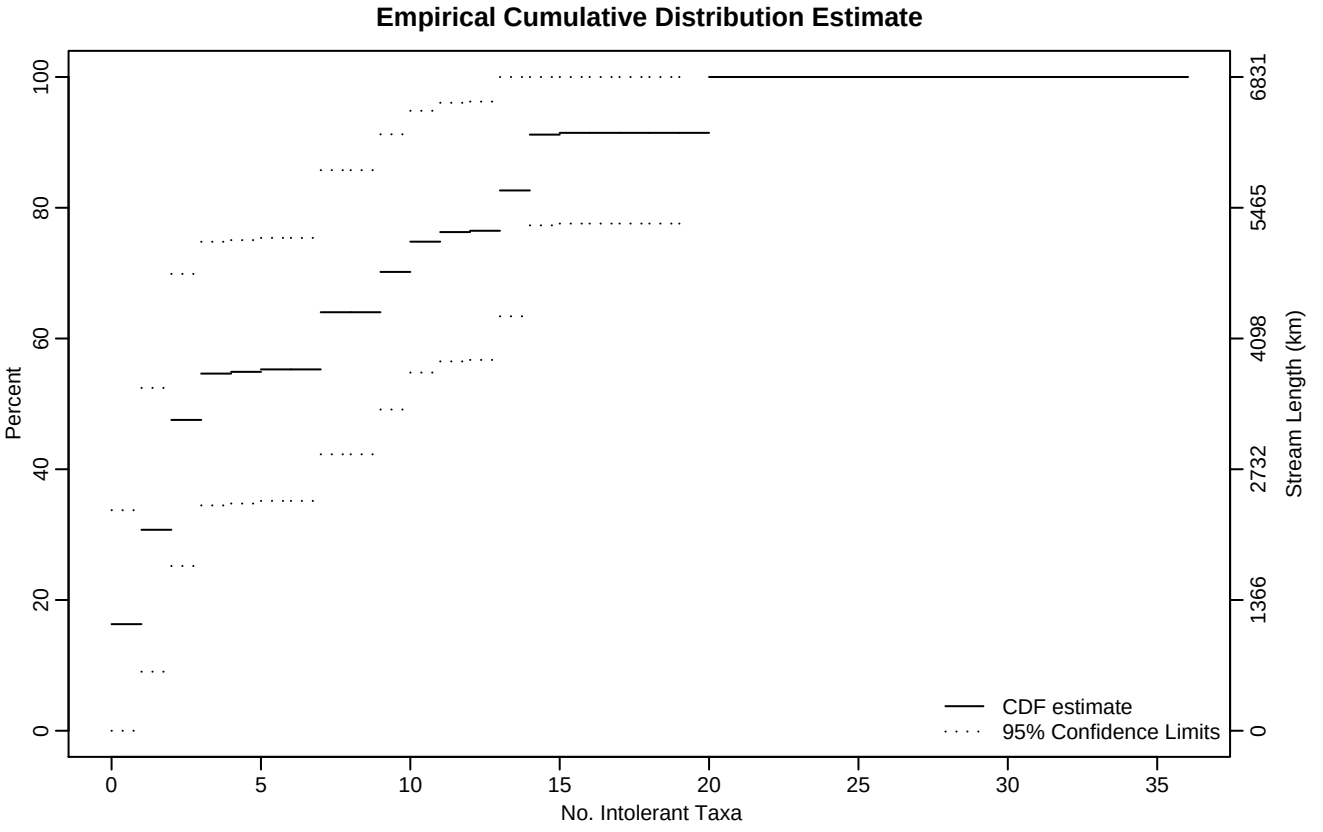


Figure BN−109 Indicator: INTLRICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.52
10Pct	0	0	0.82
25Pct	0.60	0	1.65
50Pct	2.35	0.80	9.42
75Pct	10.13	4.22	19.42
90Pct	13.86	9.09	20
95Pct	19.41	12.74	20
Mean	6.28	3.31	9.26
Std Dev	6.33	4.52	8.13

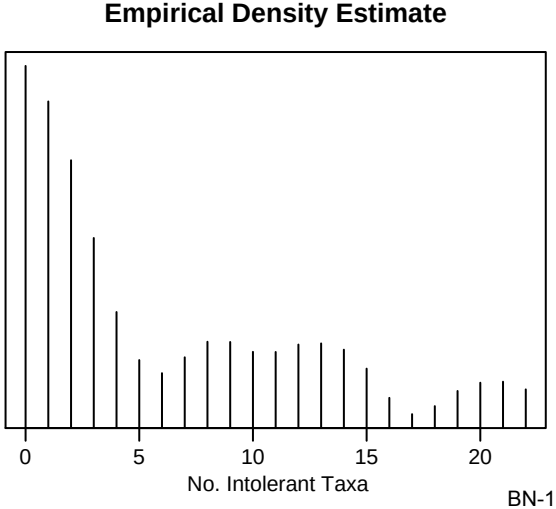
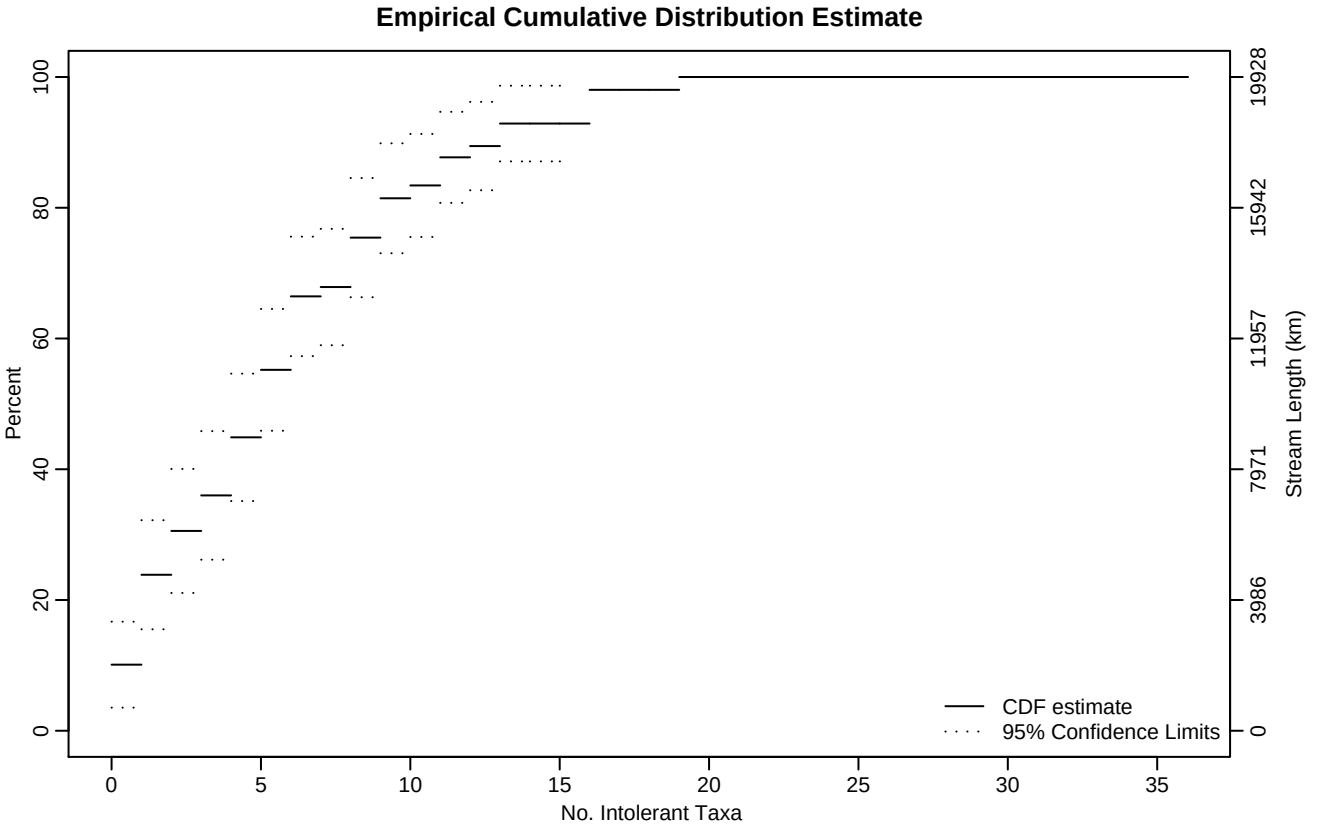


Figure BN−110 Indicator: INTLRICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.10
10Pct	0	0	0.47
25Pct	1.17	0.48	2.50
50Pct	4.50	3.43	5.45
75Pct	7.94	5.89	10.31
90Pct	12.16	9.86	15.77
95Pct	15.41	11.83	19
Mean	5.75	4.91	6.59
Std Dev	4.14	3.49	4.80

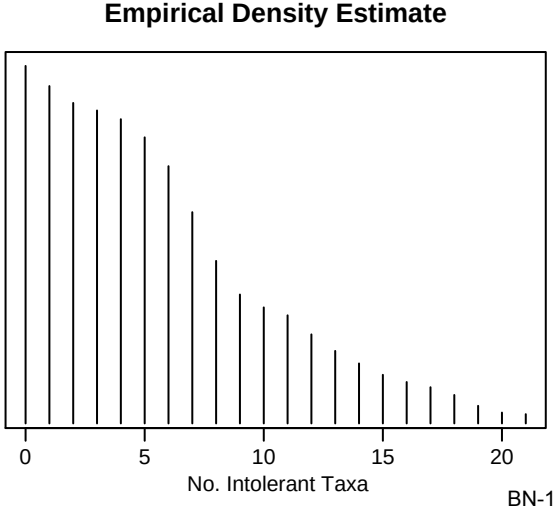
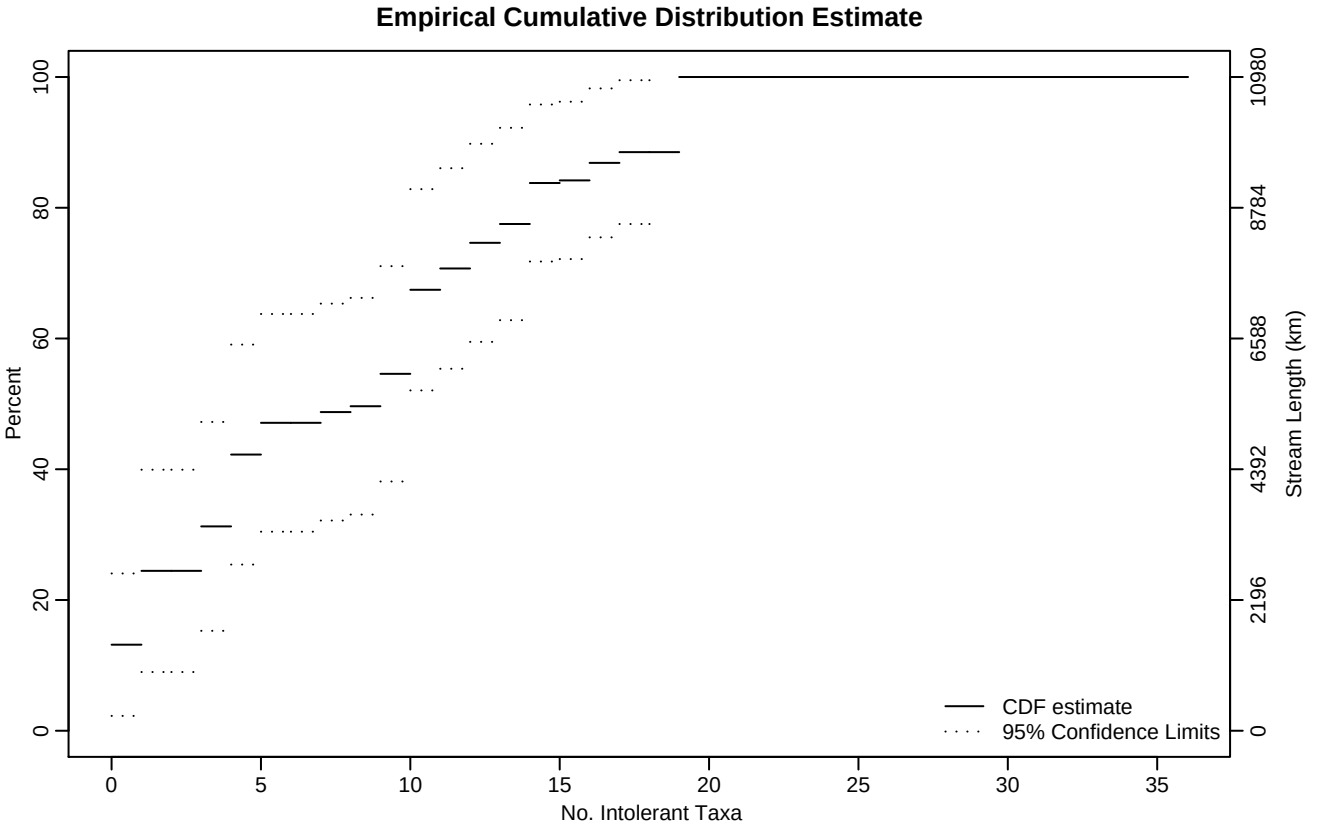


Figure BN−111 Indicator: INTLRICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.22
10Pct	0	0	0.67
25Pct	2.08	0	3.82
50Pct	8.07	3.20	9.93
75Pct	12.13	9.37	18.18
90Pct	18.13	13	19
95Pct	18.56	13.76	19
Mean	7.95	5.68	10.22
Std Dev	6.09	5.21	6.97

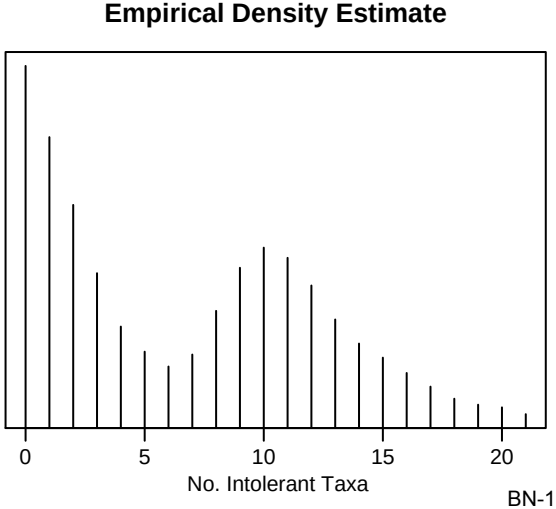
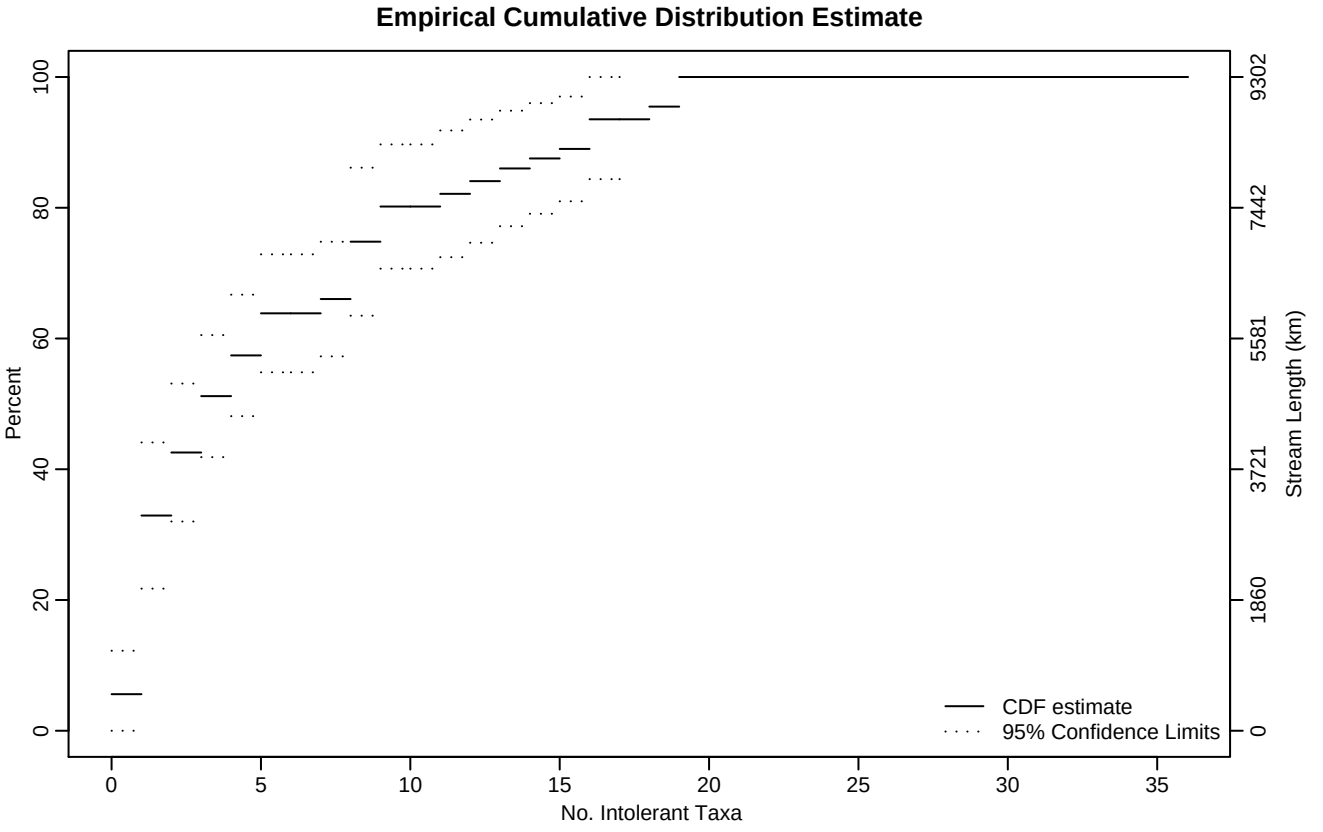


Figure BN−112 Indicator: INTLRICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.22
10Pct	0.16	0	0.40
25Pct	0.71	0.47	0.95
50Pct	2.86	1.67	4.51
75Pct	8.04	4.86	13.70
90Pct	15.22	10.25	18.85
95Pct	17.76	12.76	19
Mean	5.70	4.55	6.85
Std Dev	4.20	3.34	5.07

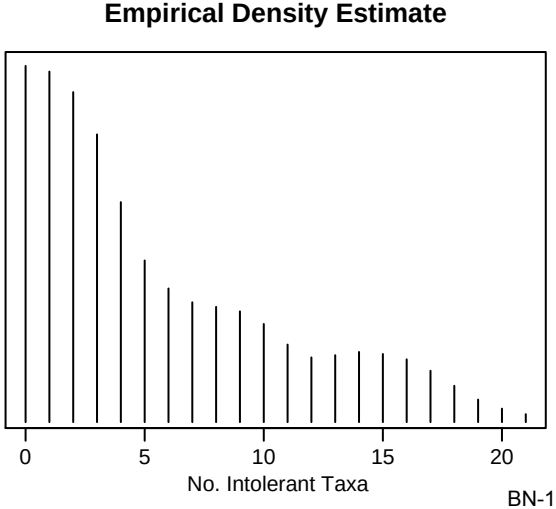
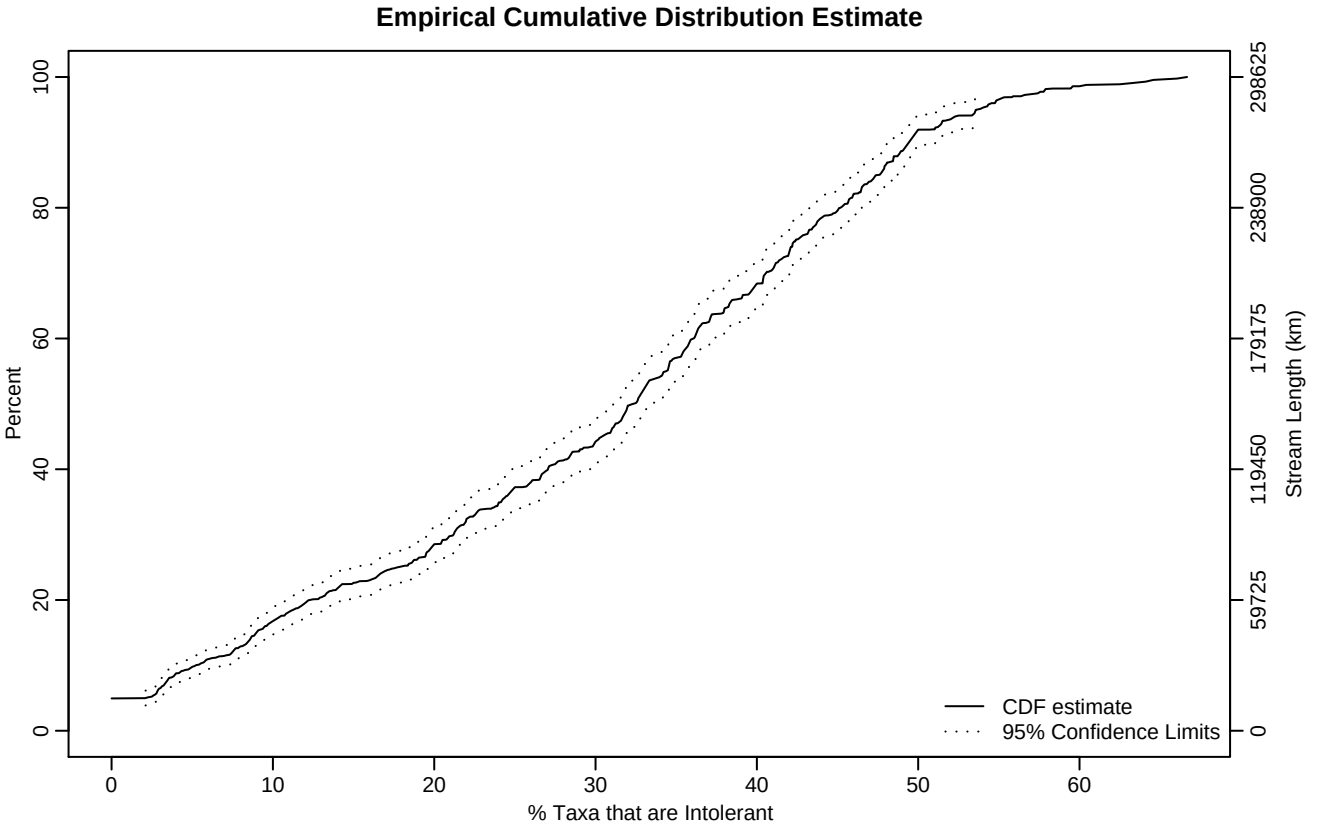


Figure BN−113 Indicator: INTLPTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.10	0	2.86
10Pct	5.22	3.90	7.09
25Pct	17.73	14.91	19.66
50Pct	32.33	31.05	33.48
75Pct	42.40	41.27	43.95
90Pct	49.42	48.45	51.40
95Pct	53.61	51.48	55.29
Mean	30.05	29.06	31.03
Std Dev	13.80	13.13	14.47

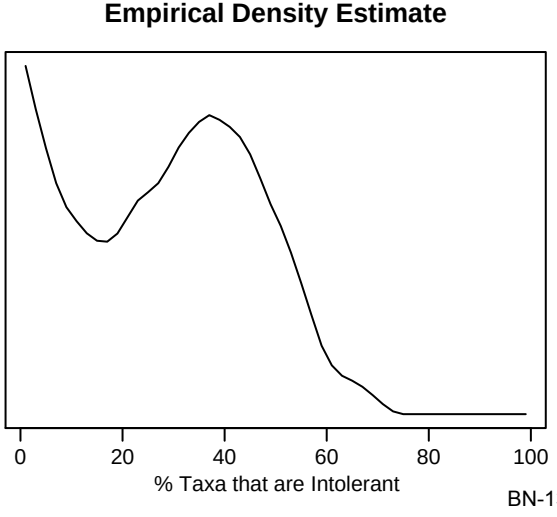
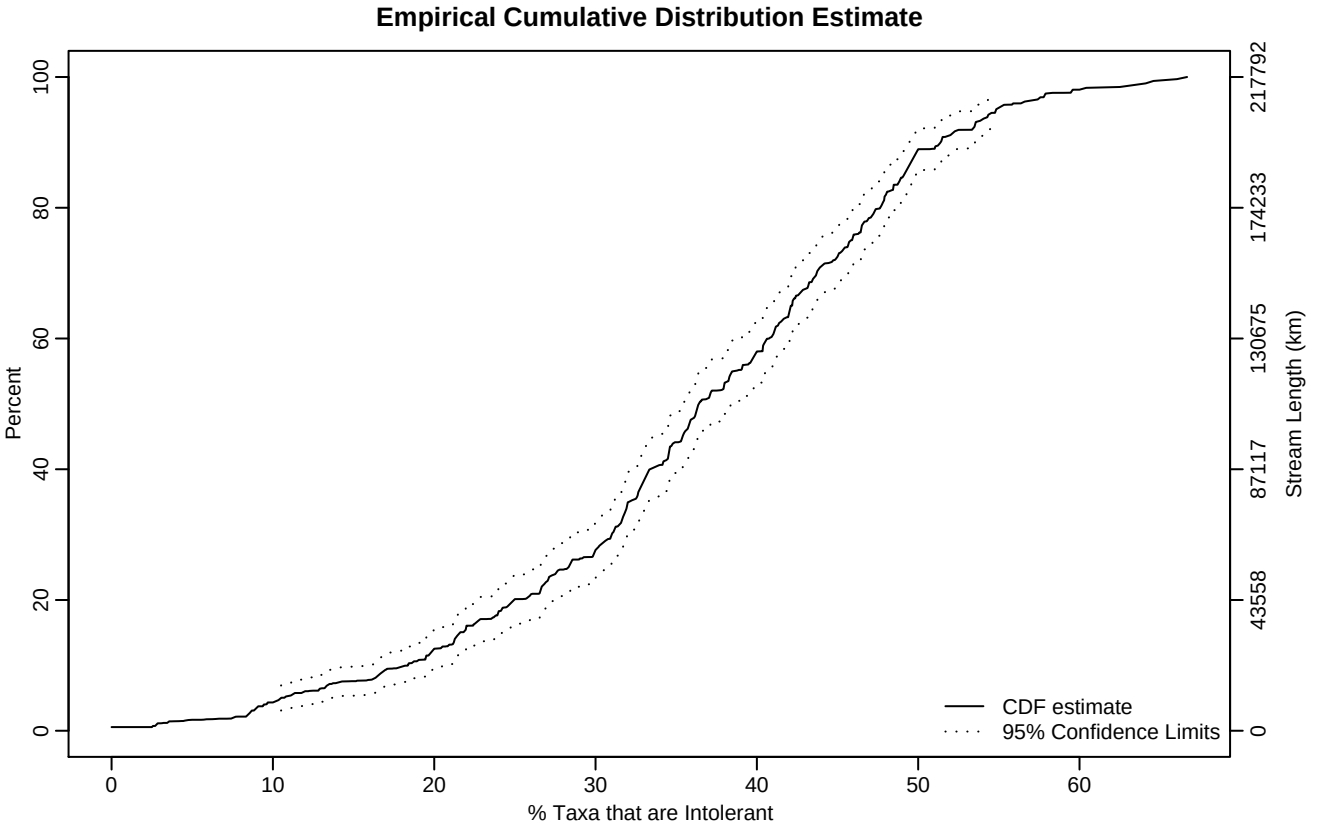


Figure BN−114 Indicator: INTLPTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.50	8.84	13.33
10Pct	18.37	14.21	19.99
25Pct	28.32	26.03	30.63
50Pct	36.40	35.42	38.43
75Pct	45.82	43.85	47.27
90Pct	51.38	49.54	53.57
95Pct	54.83	53.52	57.87
Mean	36.15	34.98	37.32
Std Dev	12.22	11.40	13.04

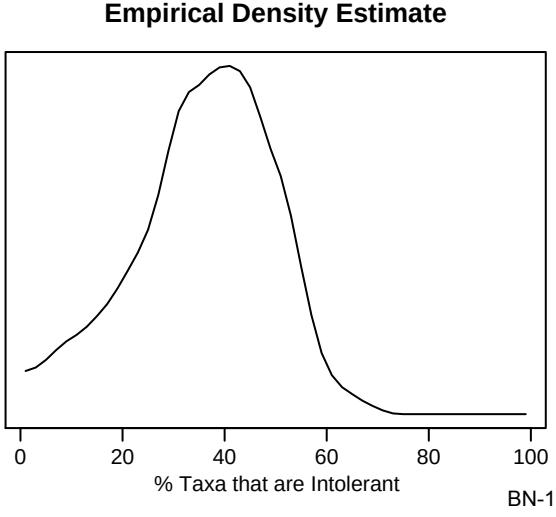
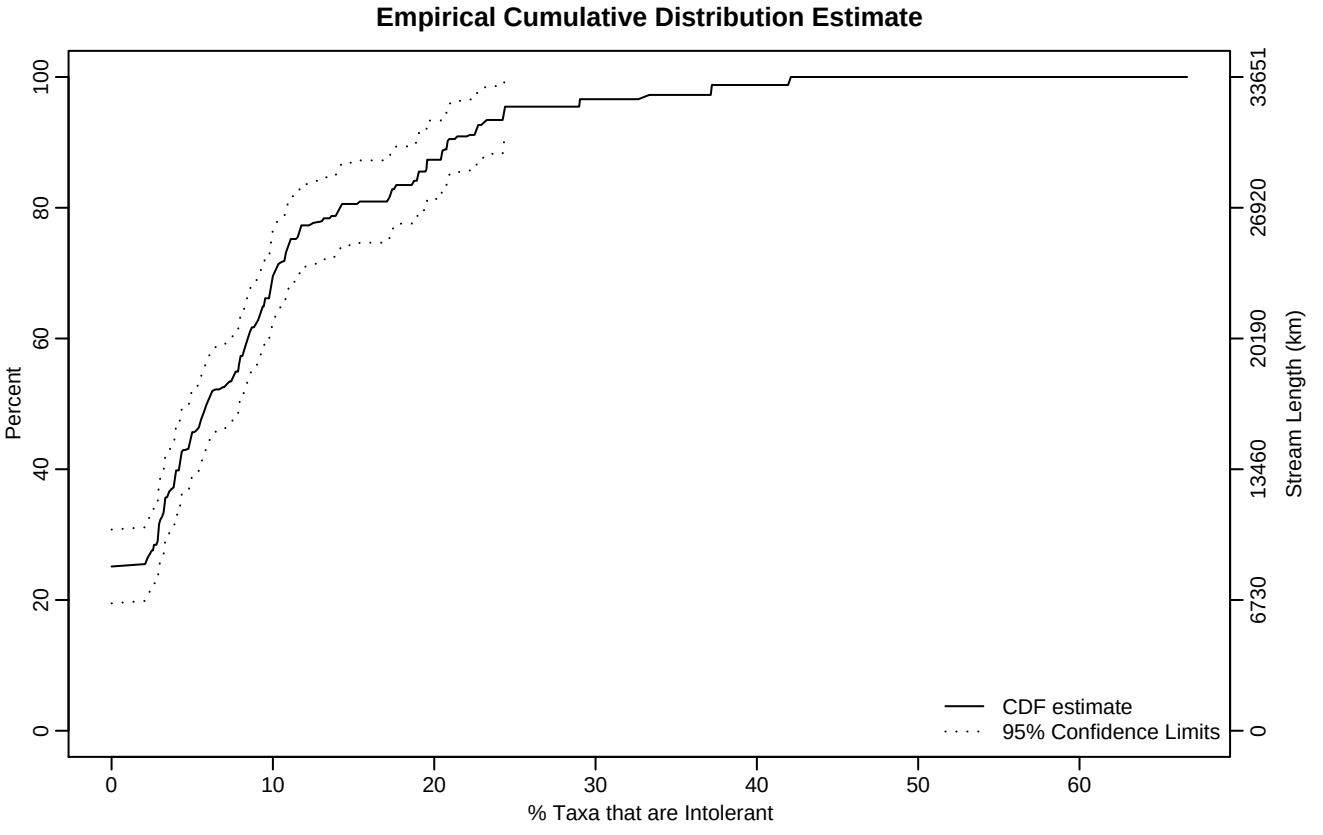


Figure BN−115 Indicator: INTLPTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	2.91
50Pct	5.90	4.78	7.95
75Pct	11.08	9.93	17.17
90Pct	20.82	18.96	24.39
95Pct	24.36	20.81	
Mean	8.63	7.28	9.97
Std Dev	7.86	6.71	9.01

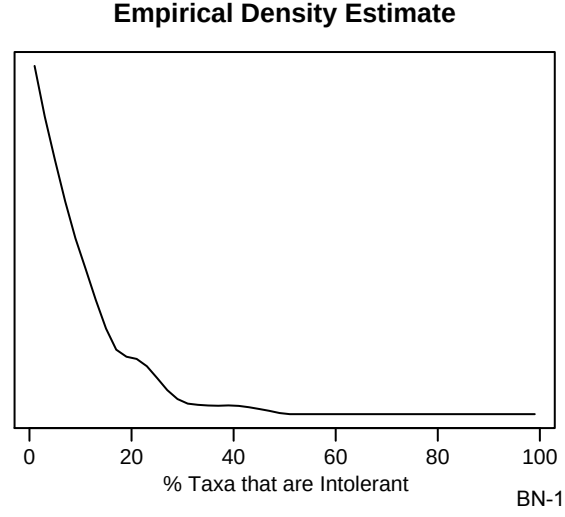
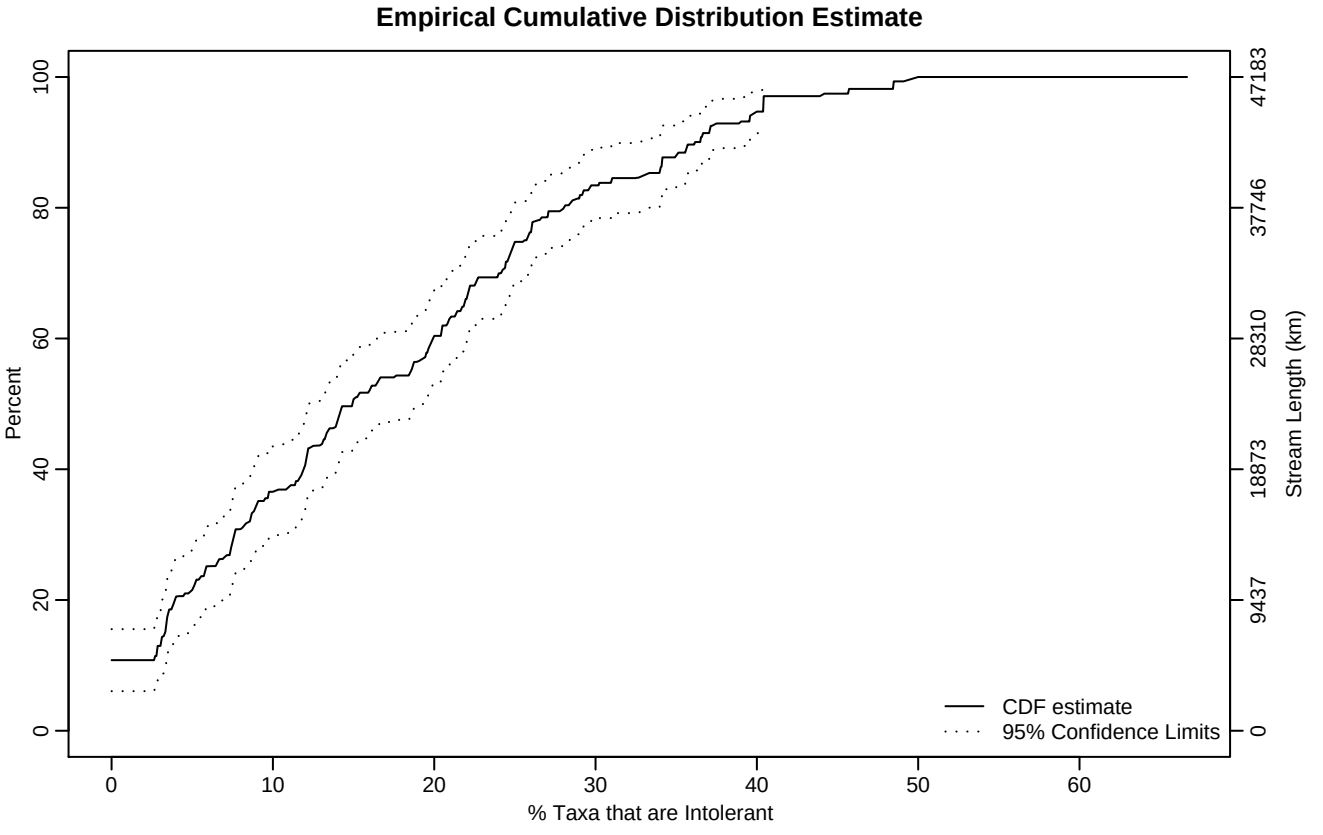


Figure BN−116 Indicator: INTLPTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	3.27
25Pct	5.87	3.76	8.13
50Pct	14.93	12.17	19.45
75Pct	25.59	22.65	28.55
90Pct	36.16	33.97	39.96
95Pct	40.39	36.66	48.46
Mean	17.13	15.30	18.95
Std Dev	11.95	10.99	12.92

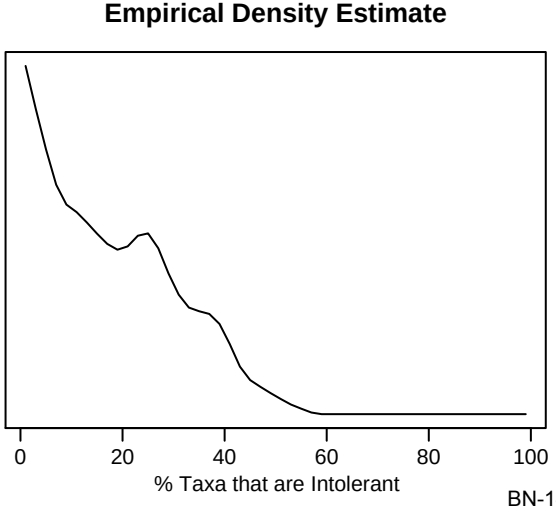
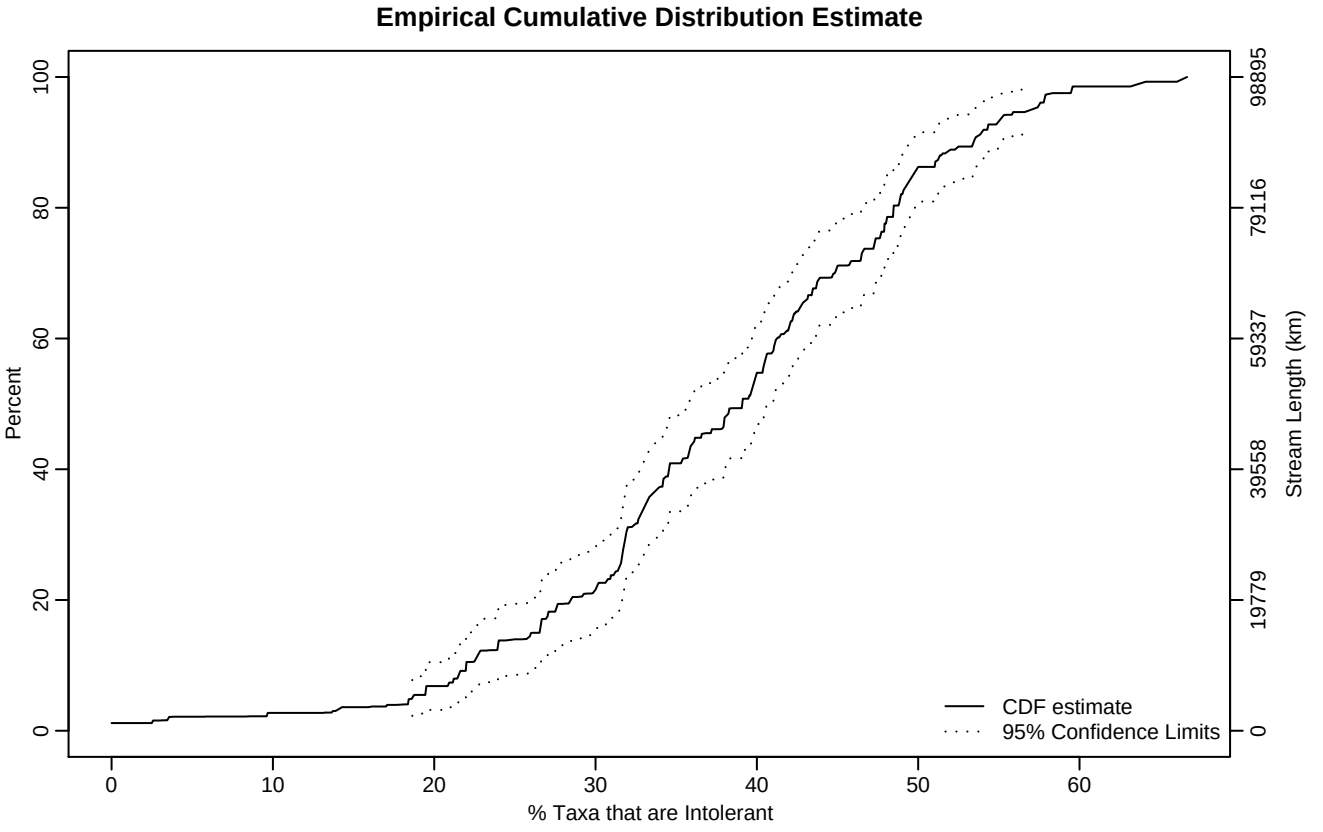


Figure BN−117 Indicator: INTLPTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	18.64	9.63	21.18
10Pct	21.98	19.46	25.85
25Pct	31.47	27.52	32.47
50Pct	39.09	35.76	40.93
75Pct	47.34	43.69	48.93
90Pct	53.43	49.69	56.95
95Pct	57.01	53.93	59.57
Mean	38.02	36.22	39.82
Std Dev	11.56	10.28	12.83

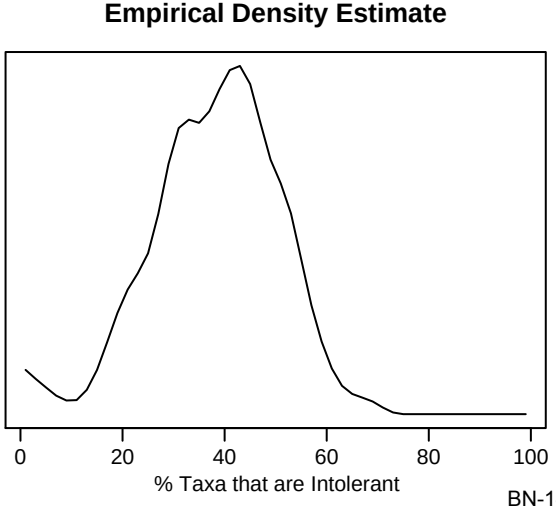
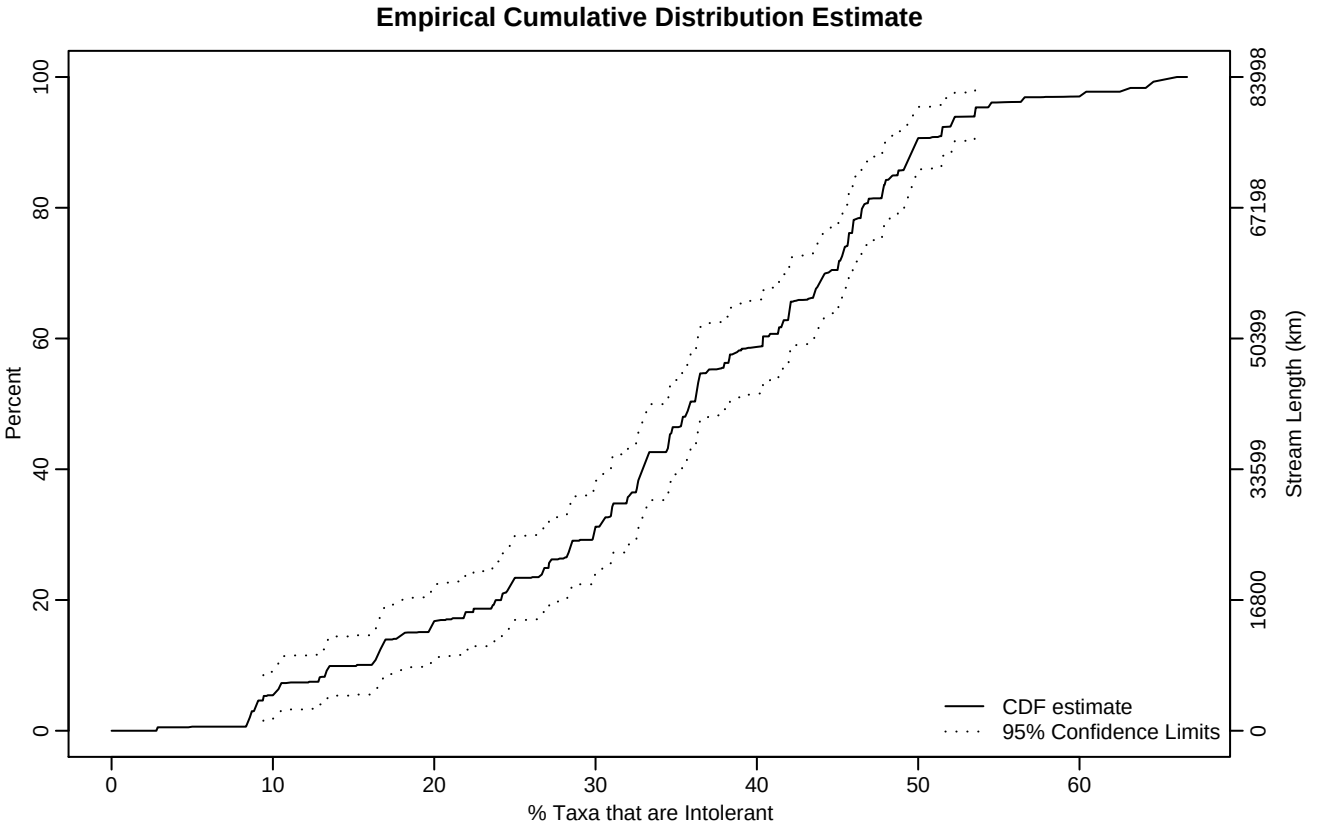


Figure BN−118 Indicator: INTLPTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	9.41	8.51	13.22
10Pct	15.19	10.05	17.87
25Pct	27.09	22.44	30.31
50Pct	35.85	34.43	38.30
75Pct	45.66	43.92	46.94
90Pct	49.88	47.97	54.52
95Pct	53.55	51.45	64.28
Mean	35.34	33.41	37.27
Std Dev	12.70	11.44	13.95

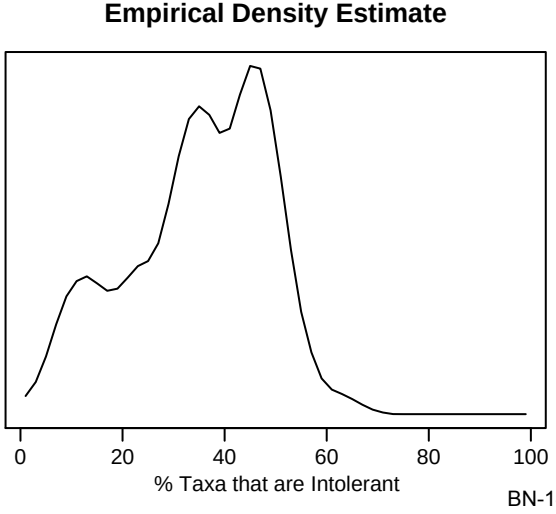
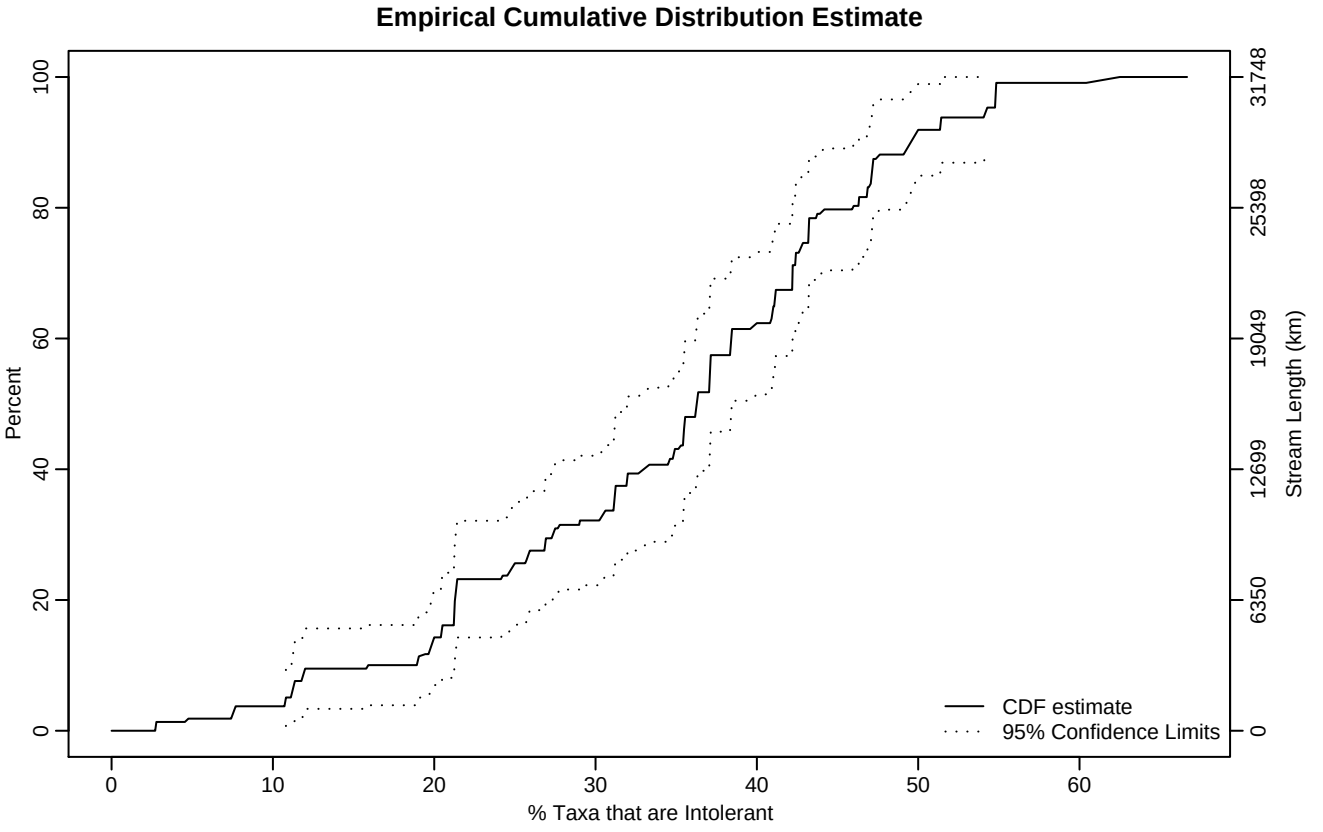


Figure BN−119 Indicator: INTLPTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.80	2.77	11.92
10Pct	15.90	10.72	21.21
25Pct	24.85	20.47	31.14
50Pct	36.27	31.93	39.97
75Pct	43.19	41	47.14
90Pct	49.54	46.81	54.82
95Pct	54.24	47.60	62.50
Mean	34.32	31.68	36.96
Std Dev	12.01	10.11	13.92

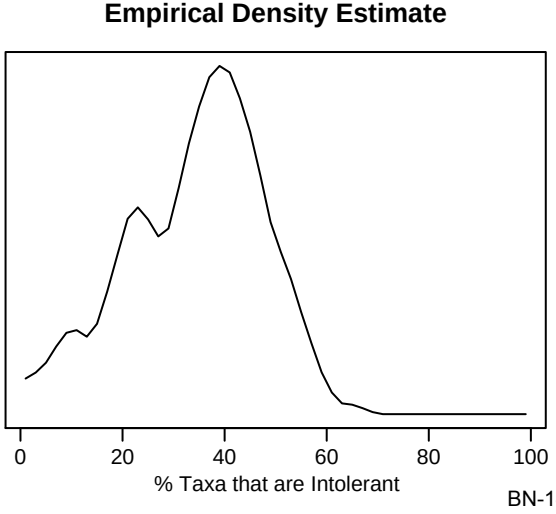
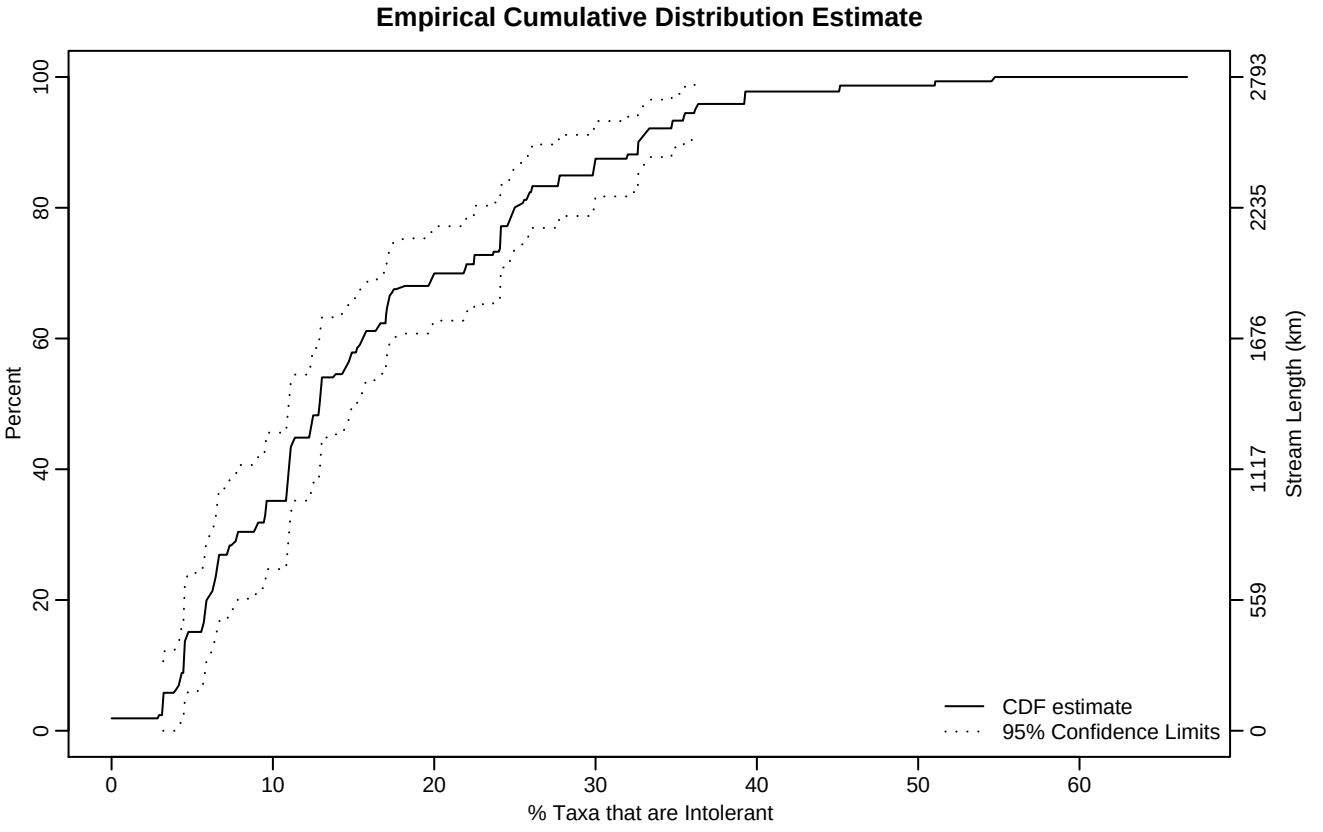


Figure BN−120 Indicator: INTLPTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.20	0	4.29
10Pct	4.47	3.14	5.74
25Pct	6.55	5.63	9.58
50Pct	12.90	10.96	15.70
75Pct	24.10	17.44	26.03
90Pct	32.65	27.72	39.22
95Pct	36.18	32.94	51.05
Mean	16.06	14.37	17.76
Std Dev	9.37	7.66	11.09

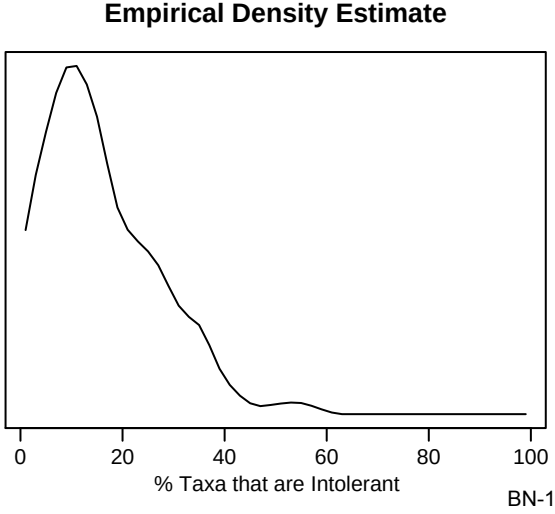
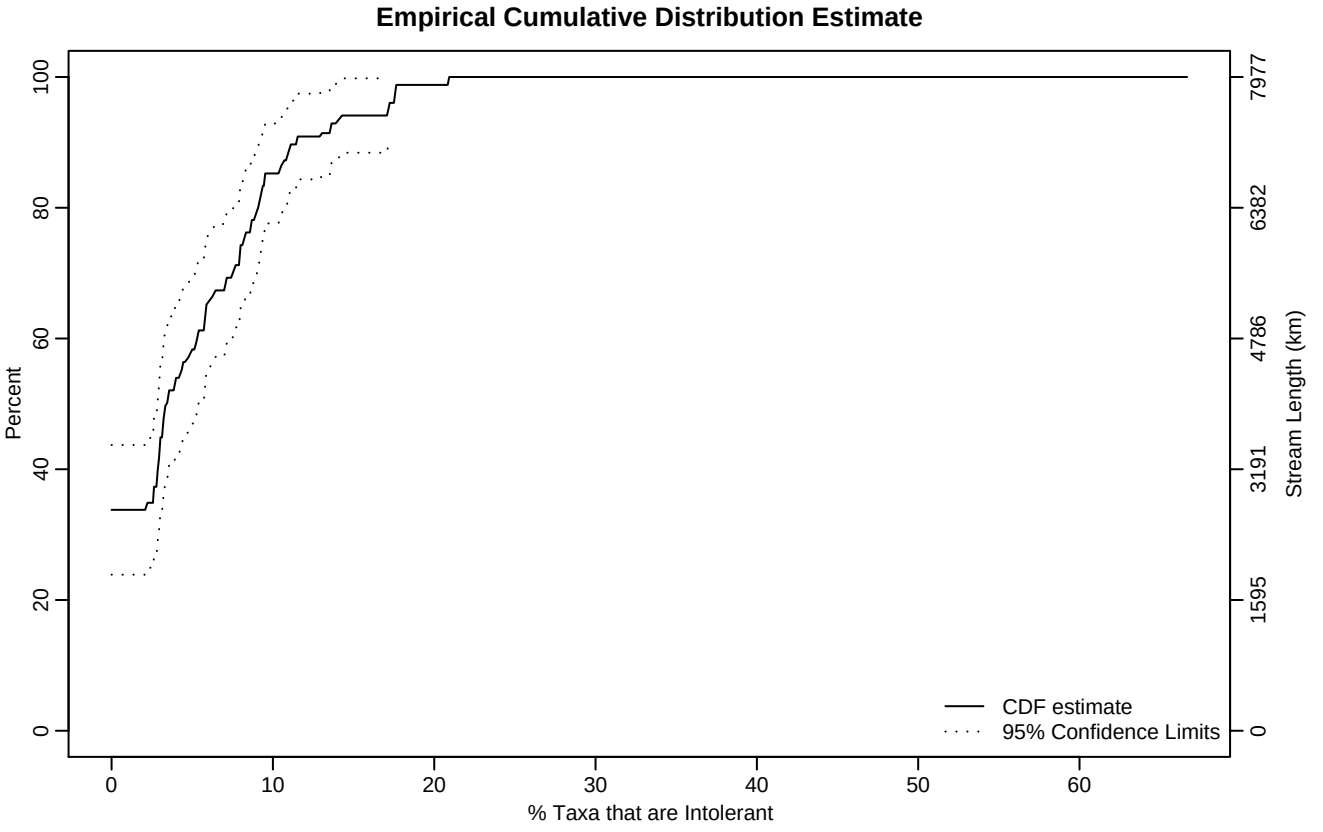


Figure BN−121 Indicator: INTLPTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	2.57
50Pct	3.41	2.81	5.74
75Pct	8.19	5.94	9.49
90Pct	11.46	9.37	17.53
95Pct	17.15	11.06	20.93
Mean	5.02	3.92	6.12
Std Dev	5.03	4.13	5.93

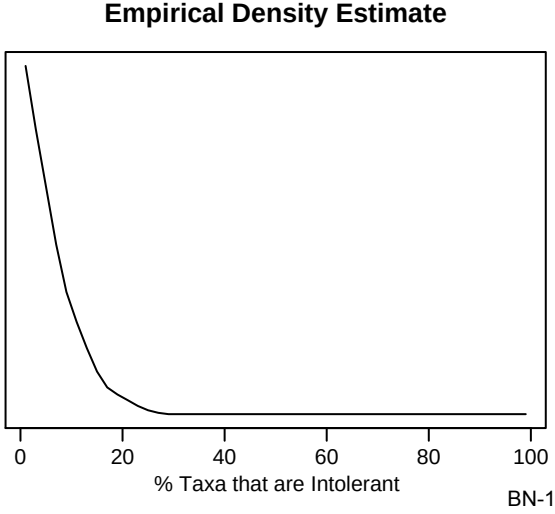
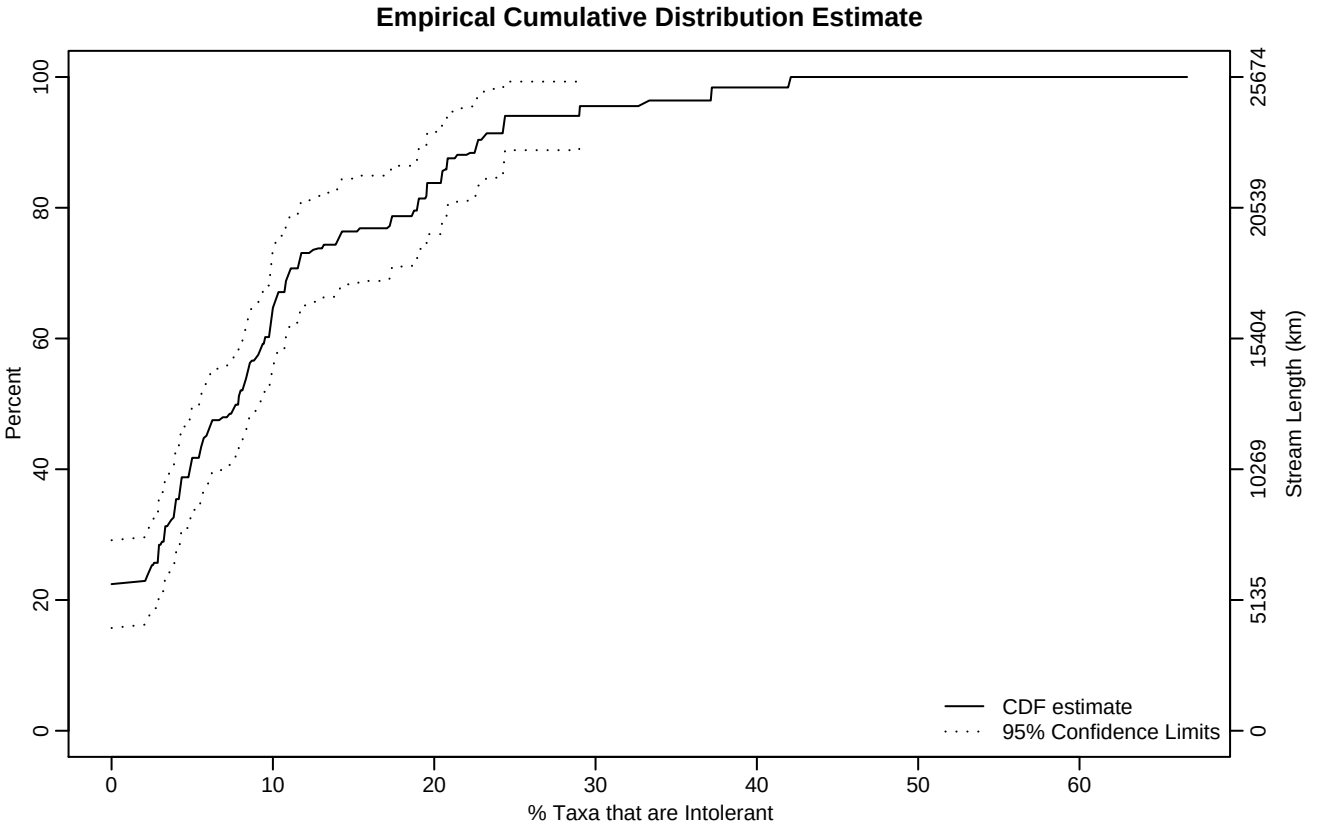


Figure BN−122 Indicator: INTLPTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	2.44	0	3.60
50Pct	7.85	5.42	9.19
75Pct	14.02	10.73	19.53
90Pct	22.68	19.55	37.16
95Pct	29.02	22.67	42.11
Mean	9.75	8.02	11.48
Std Dev	8.60	7.16	10.04

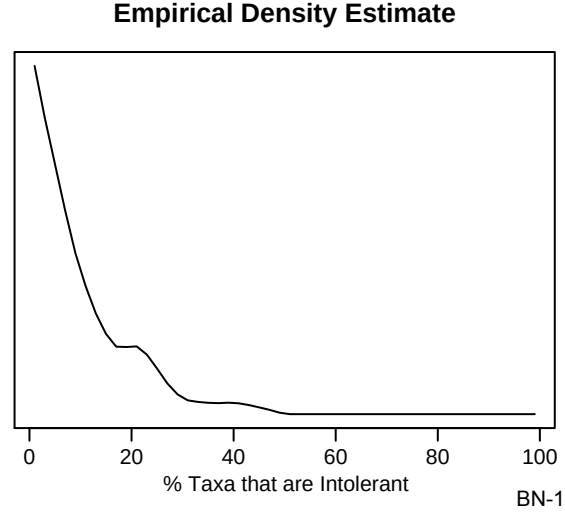
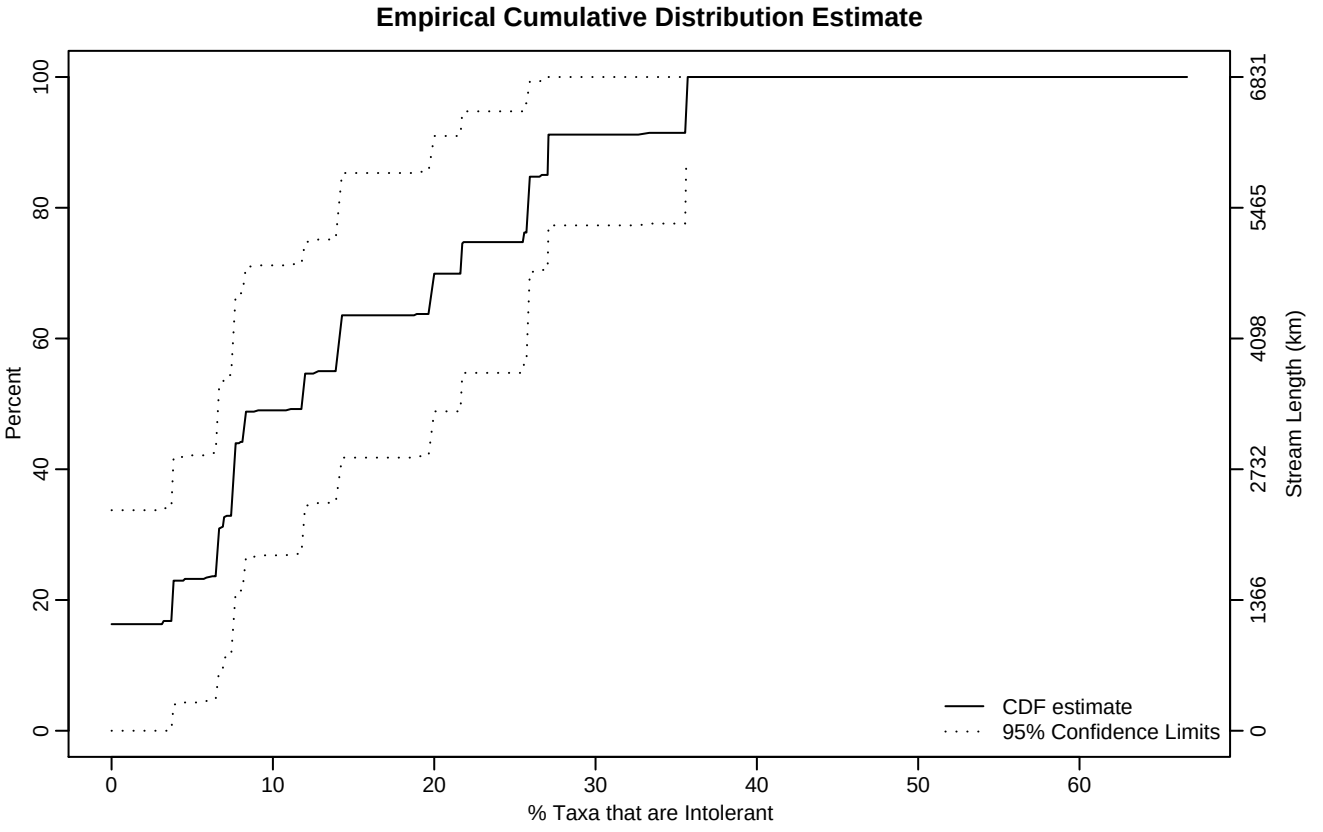


Figure BN−123 Indicator: INTLPTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	6.45
10Pct	0	0	6.58
25Pct	6.49	0	7.69
50Pct	11.80	6.58	21.68
75Pct	25.51	12.82	35.62
90Pct	27.07	25.53	35.71
95Pct	35.62	25.83	35.71
Mean	13.92	8.74	19.11
Std Dev	11.05	8.49	13.61

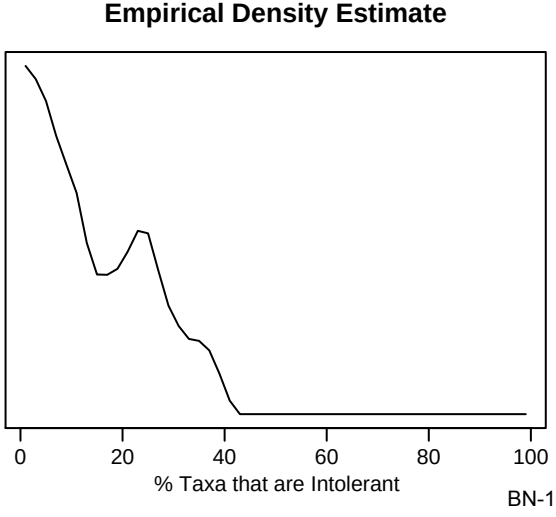
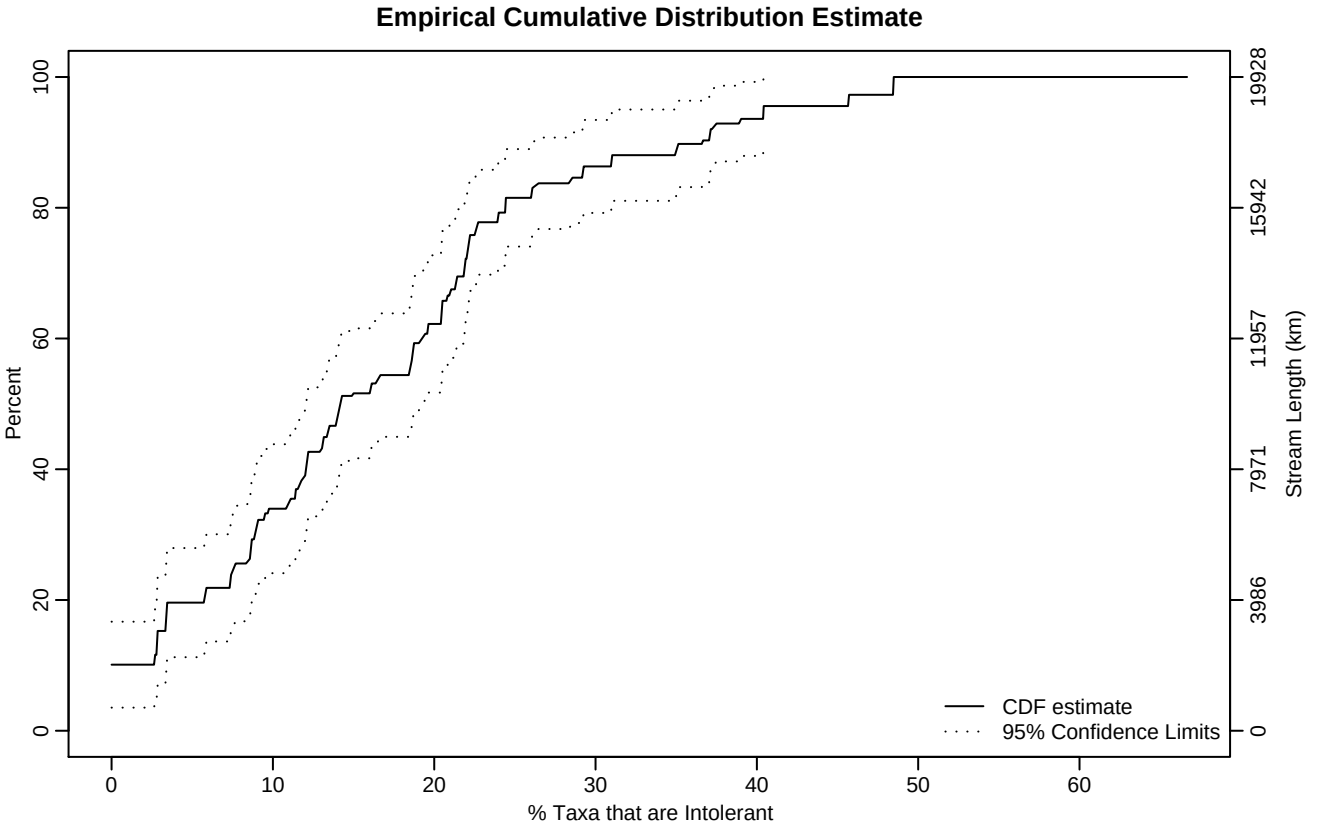


Figure BN−124 Indicator: INTLPTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	2.70
10Pct	0	0	3.37
25Pct	7.60	3.37	9.69
50Pct	14.18	12.02	19.42
75Pct	22.17	20.51	28.54
90Pct	36.62	26.25	45.69
95Pct	40.41	35.07	48.48
Mean	16.75	14.46	19.04
Std Dev	11.08	9.42	12.73

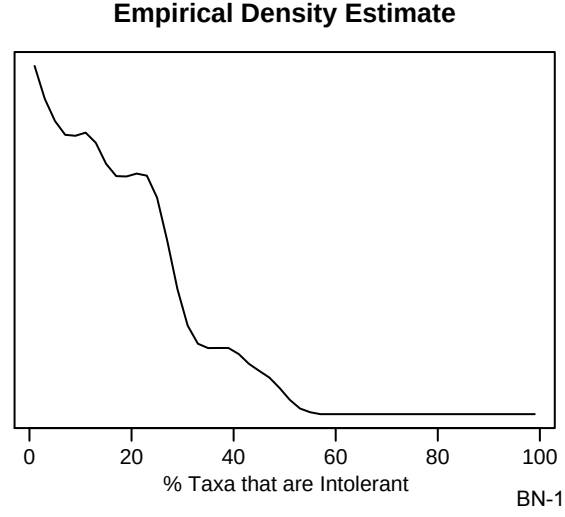
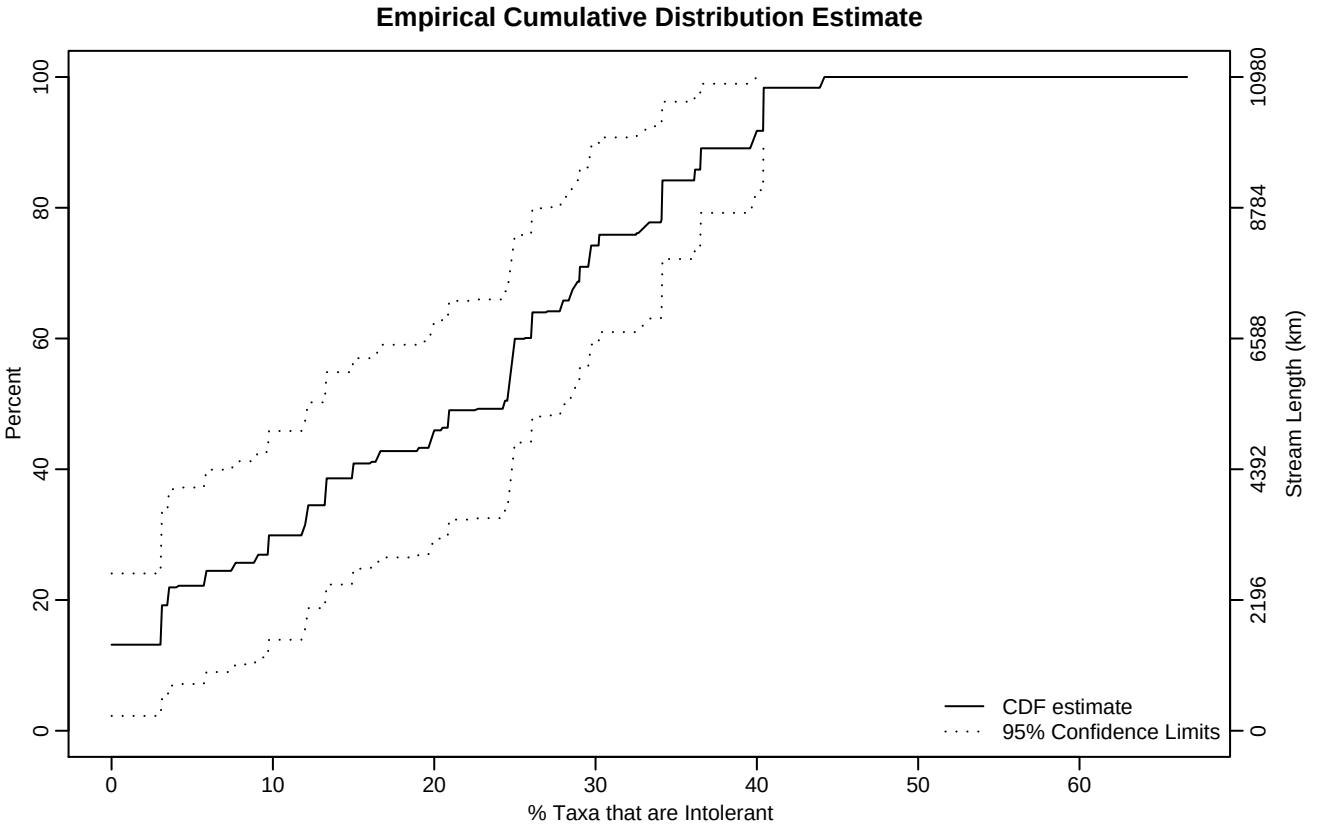


Figure BN−125 Indicator: INTLPTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	3.07
10Pct	0	0	3.52
25Pct	7.53	0	14.97
50Pct	24.33	12.11	28.47
75Pct	30.21	24.97	39.82
90Pct	39.72	34.09	44.19
95Pct	40.40	34.14	44.19
Mean	20.26	15.34	25.19
Std Dev	13.28	11.52	15.05

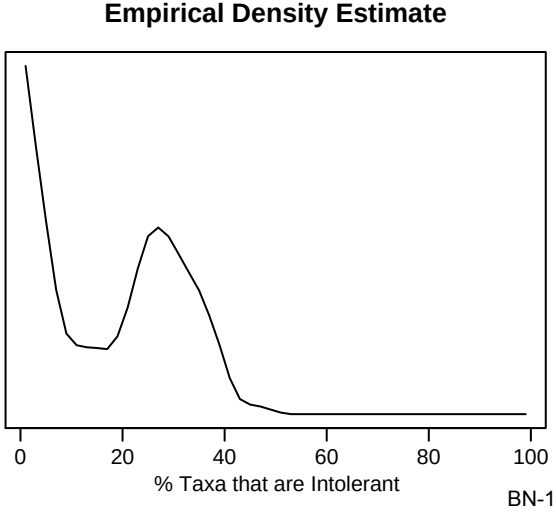
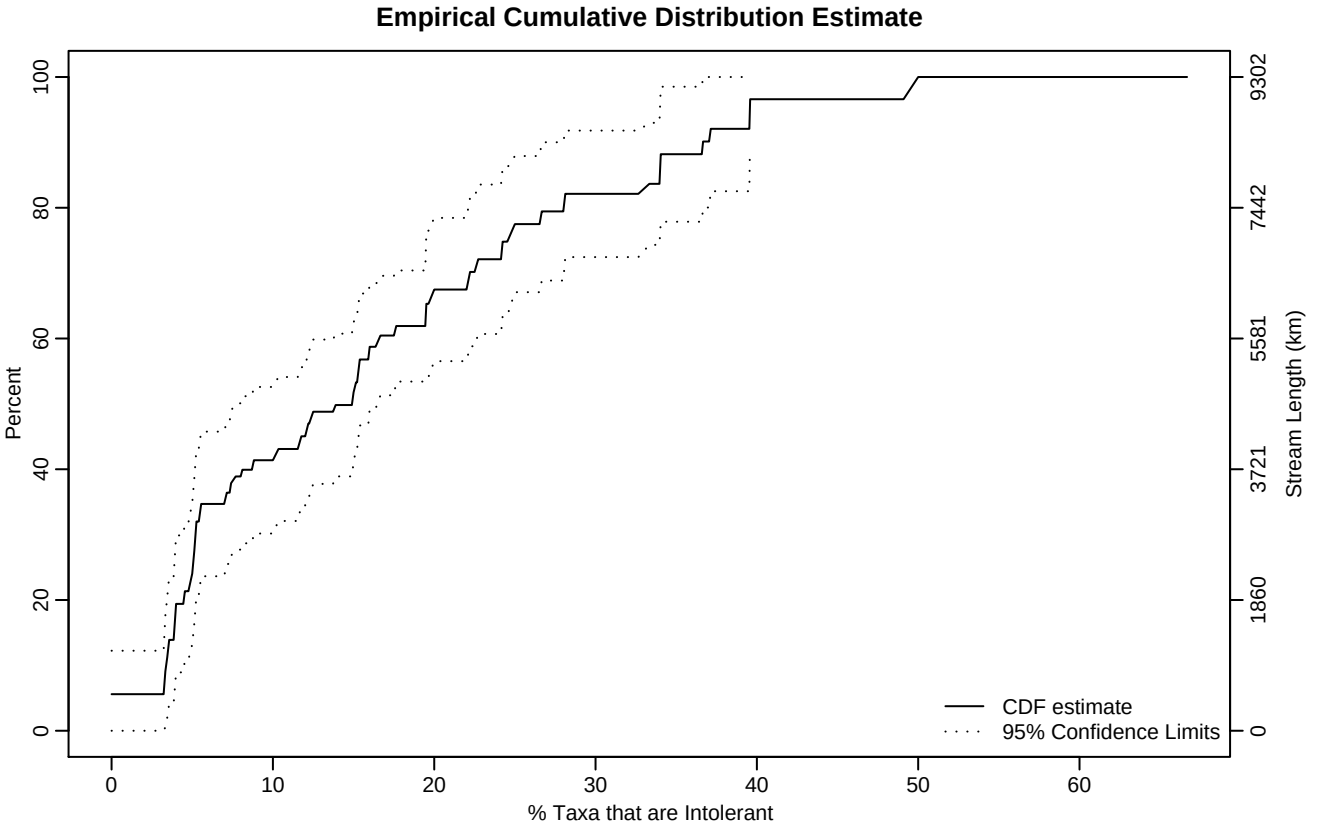


Figure BN−126 Indicator: INTLPTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	3.47
10Pct	3.38	0	3.98
25Pct	5.04	3.85	7.09
50Pct	14.90	7.68	17.57
75Pct	24.56	19.46	34.02
90Pct	36.66	28	50
95Pct	39.57	33.99	50
Mean	16.46	13.60	19.31
Std Dev	10.99	8.84	13.14

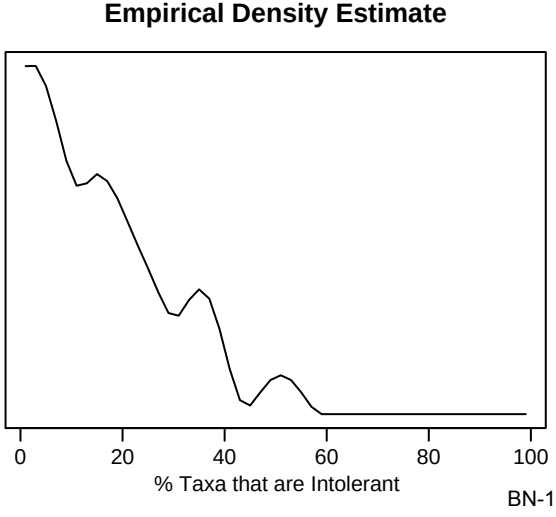
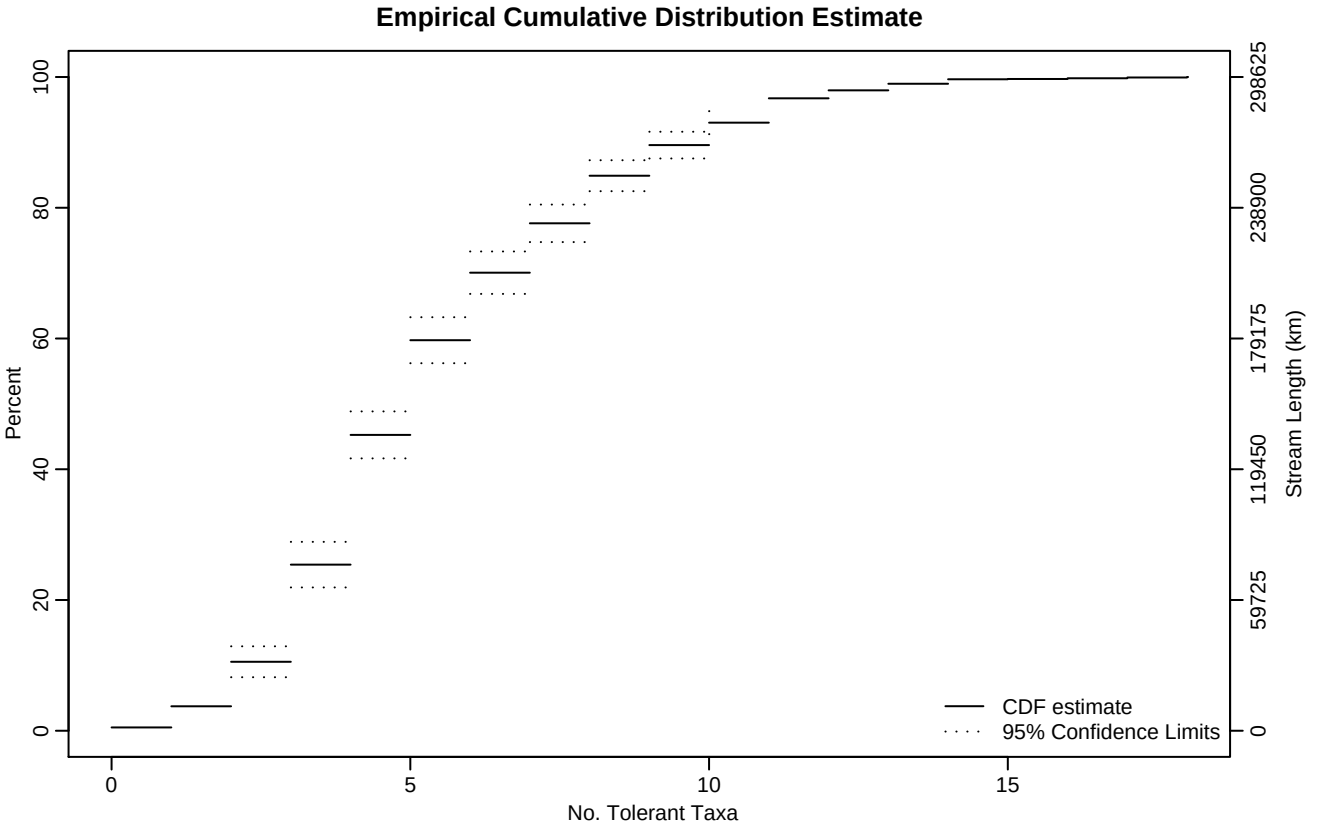


Figure BN−127 Indicator: TOLRRICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.19	0.93	1.40
10Pct	1.92	1.70	2.06
25Pct	2.97	2.81	3.10
50Pct	4.33	4.08	4.58
75Pct	6.65	6.22	7.09
90Pct	9.12	8.65	9.72
95Pct	10.53	10.06	11.01
Mean	5.47	5.28	5.65
Std Dev	2.68	2.54	2.81

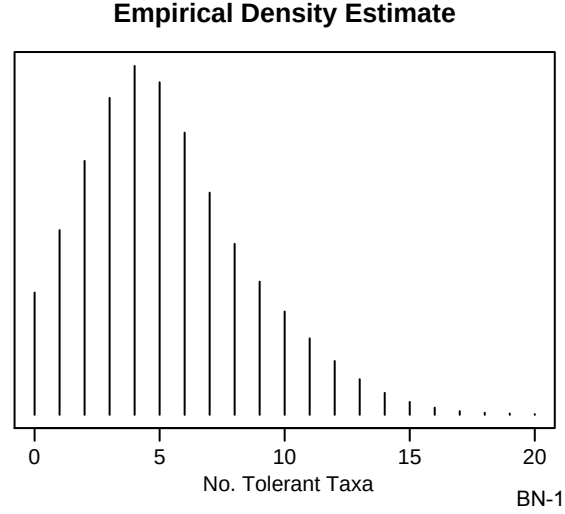
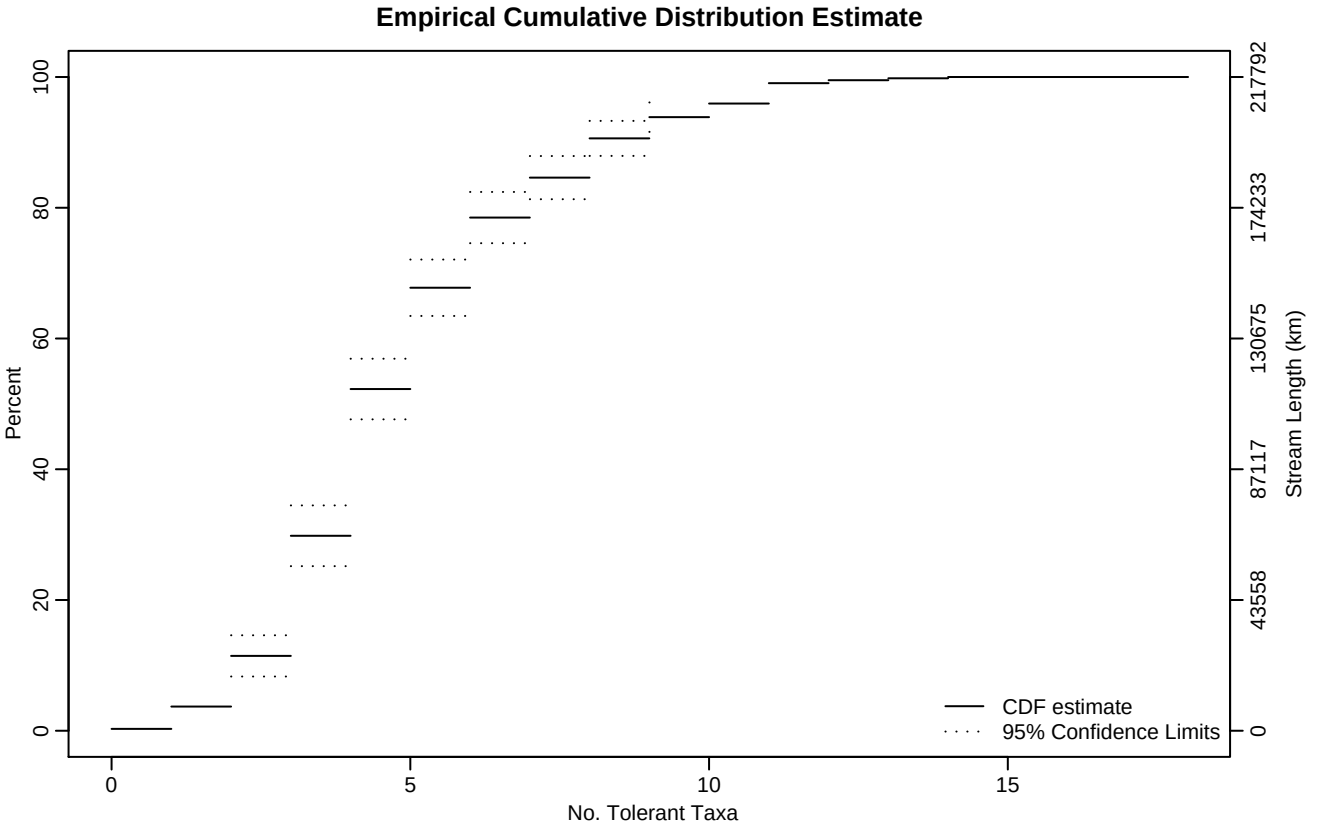


Figure BN−128 Indicator: TOLRRICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.17	0.82	1.41
10Pct	1.81	1.57	2.02
25Pct	2.74	2.56	2.91
50Pct	3.90	3.69	4.16
75Pct	5.67	5.27	6.13
90Pct	7.90	7.35	8.82
95Pct	9.55	8.65	10.43
Mean	4.93	4.71	5.15
Std Dev	2.33	2.17	2.49

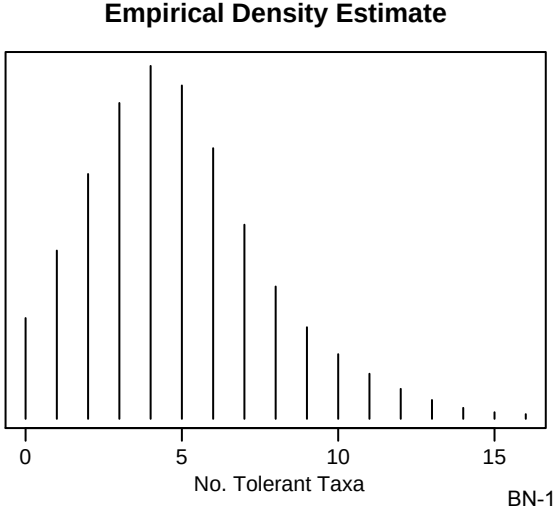
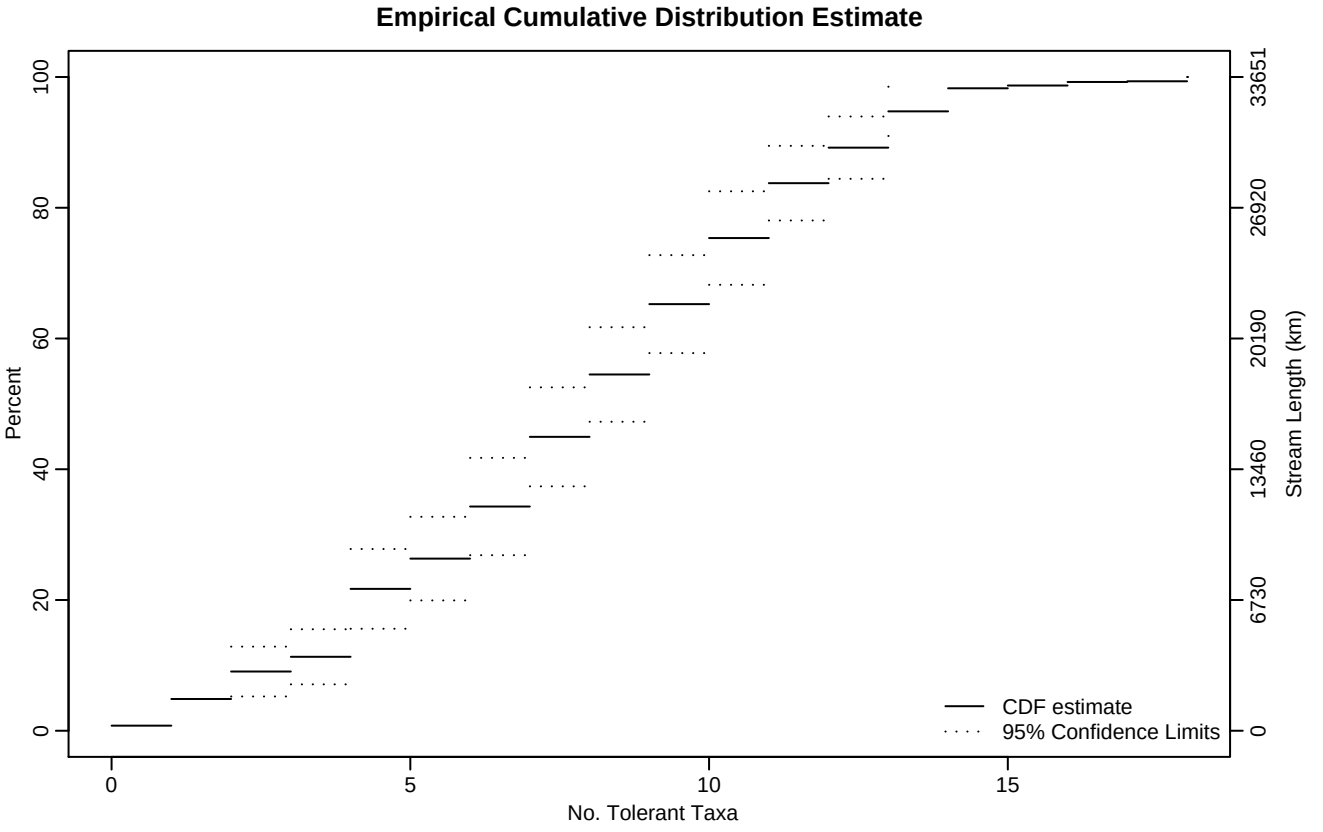


Figure BN−129 Indicator: TOLRRICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.03	0.25	1.80
10Pct	2.42	1.31	3.24
25Pct	4.71	3.72	5.61
50Pct	7.53	6.77	8.28
75Pct	9.96	9.22	10.86
90Pct	12.15	11.27	13.01
95Pct	13.07	12.37	15.14
Mean	7.88	7.37	8.40
Std Dev	3.58	3.23	3.93

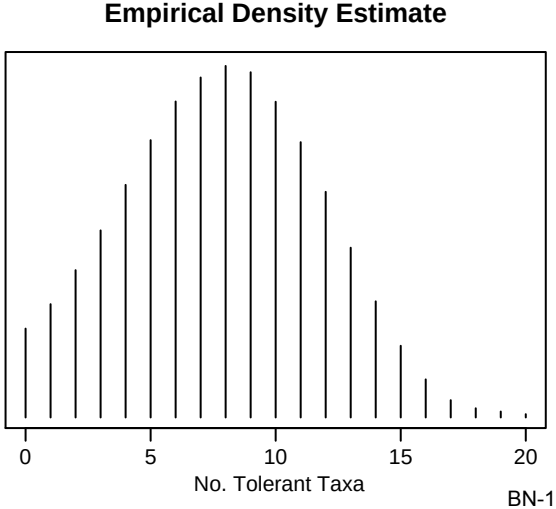
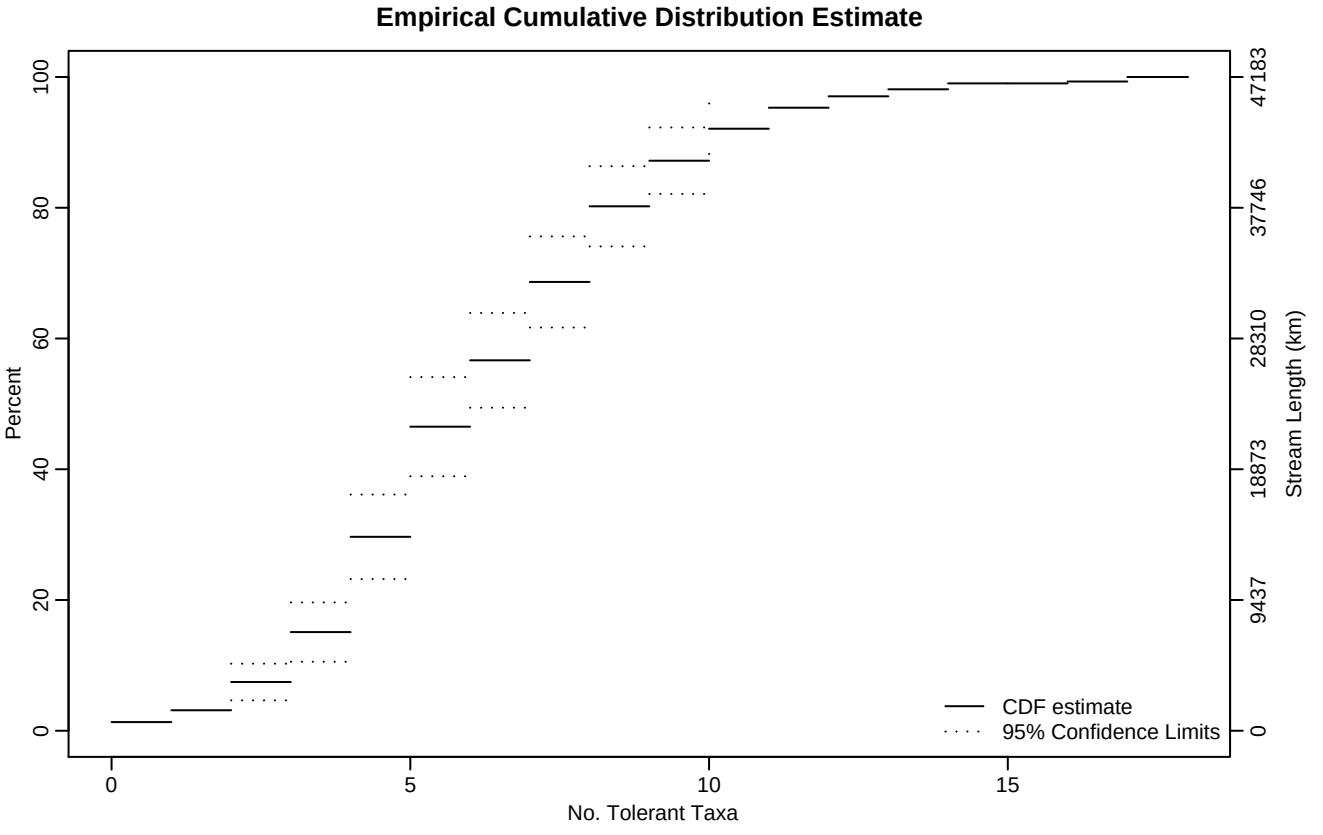


Figure BN−130 Indicator: TOLRRICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.43	1.01	1.85
10Pct	2.33	1.93	2.70
25Pct	3.68	3.35	4.01
50Pct	5.34	4.75	6.09
75Pct	7.55	6.93	8.28
90Pct	9.57	8.67	10.93
95Pct	10.91	9.81	13.82
Mean	6.24	5.82	6.66
Std Dev	2.77	2.50	3.04

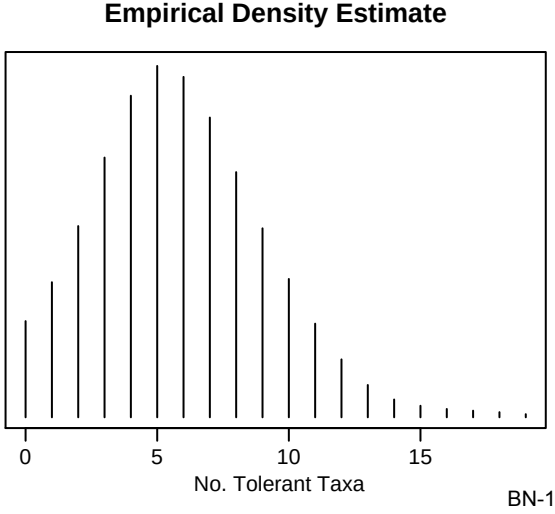
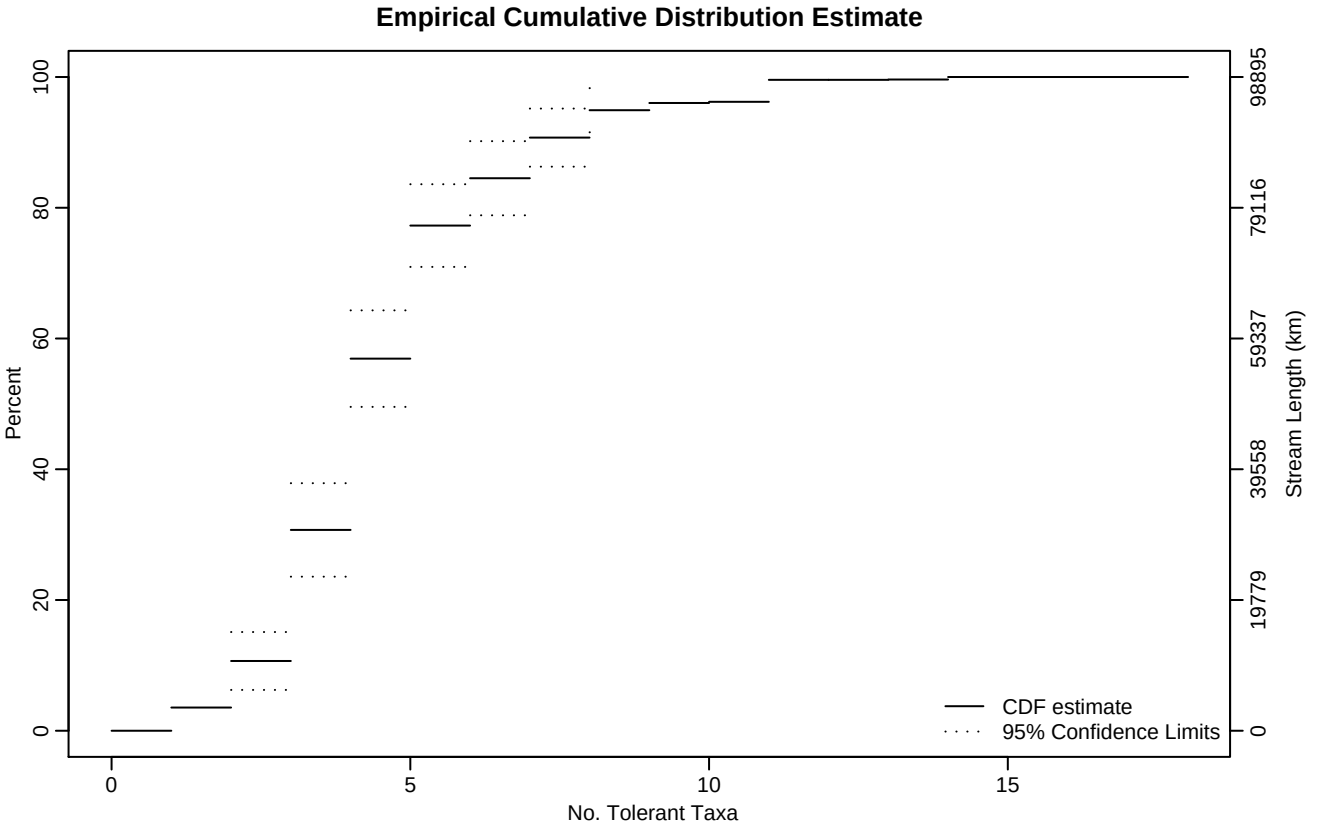


Figure BN−131 Indicator: TOLRRICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.20	0.67	1.57
10Pct	1.91	1.53	2.10
25Pct	2.71	2.48	2.95
50Pct	3.74	3.45	4.03
75Pct	4.89	4.50	5.78
90Pct	6.88	5.96	8.78
95Pct	8.07	7.21	10.65
Mean	4.60	4.29	4.91
Std Dev	1.99	1.71	2.26

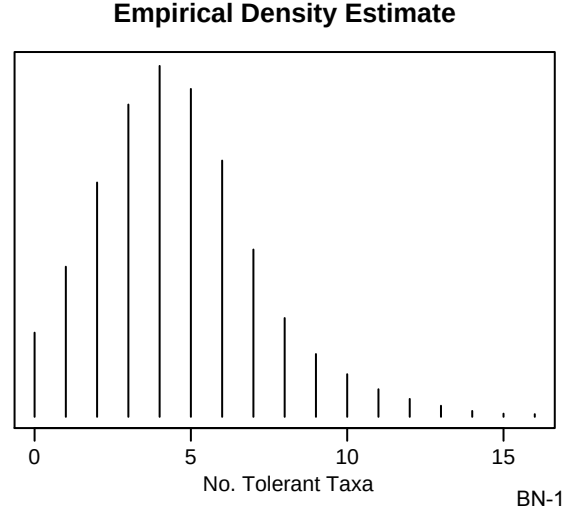
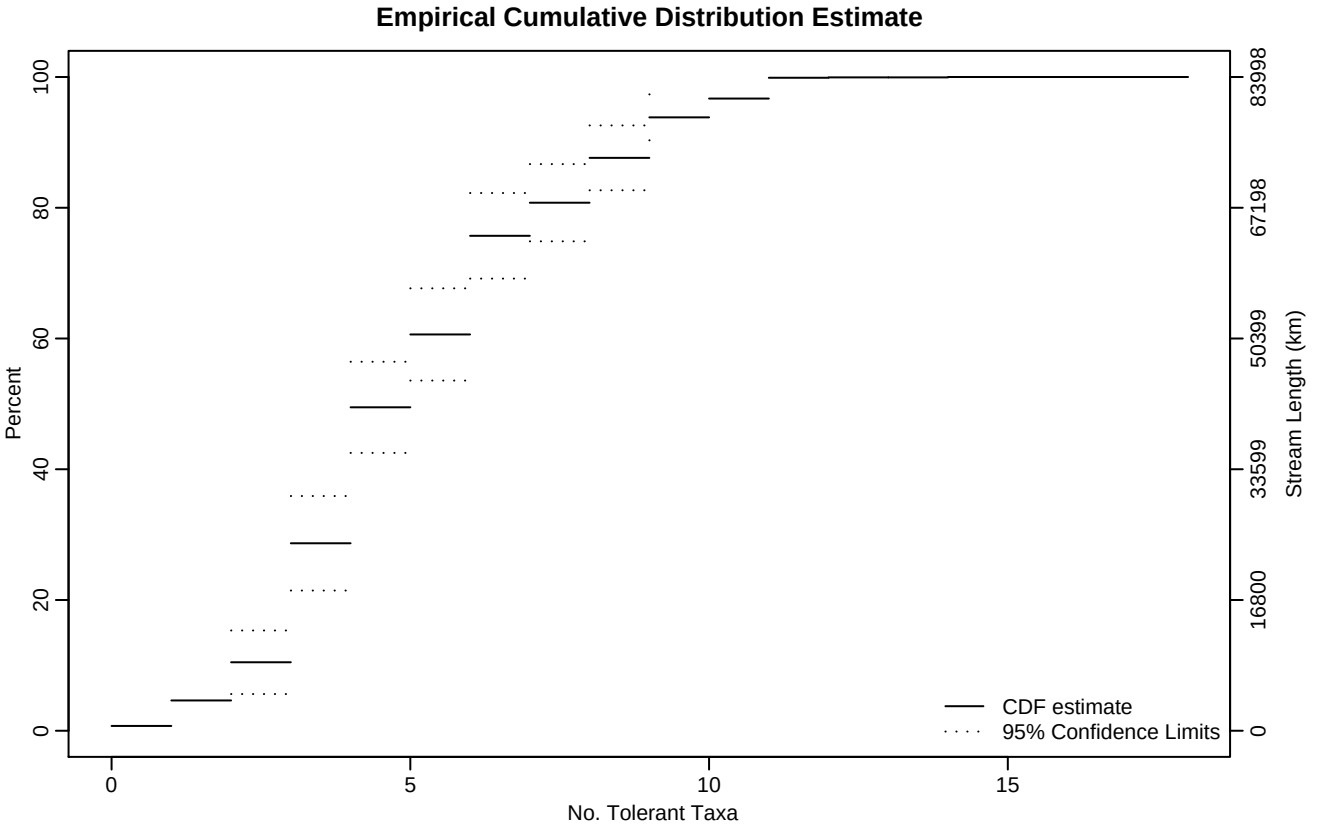


Figure BN−132 Indicator: TOLRRICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.06	0.14	1.70
10Pct	1.92	1.30	2.17
25Pct	2.80	2.53	3.05
50Pct	4.05	3.69	4.67
75Pct	5.95	5.51	7.14
90Pct	8.38	7.63	9.38
95Pct	9.41	8.63	10.55
Mean	5.11	4.75	5.47
Std Dev	2.44	2.20	2.67

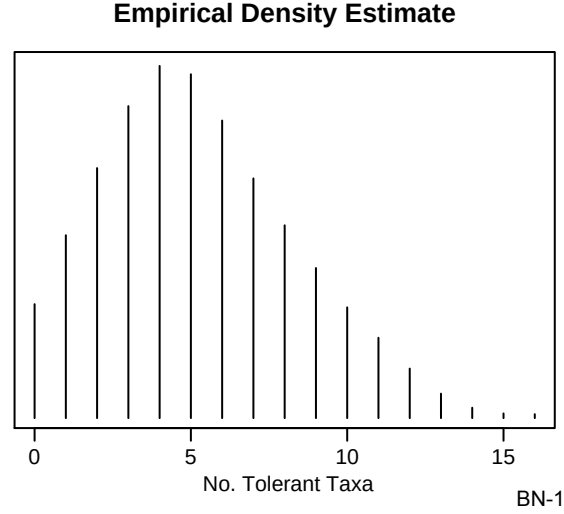
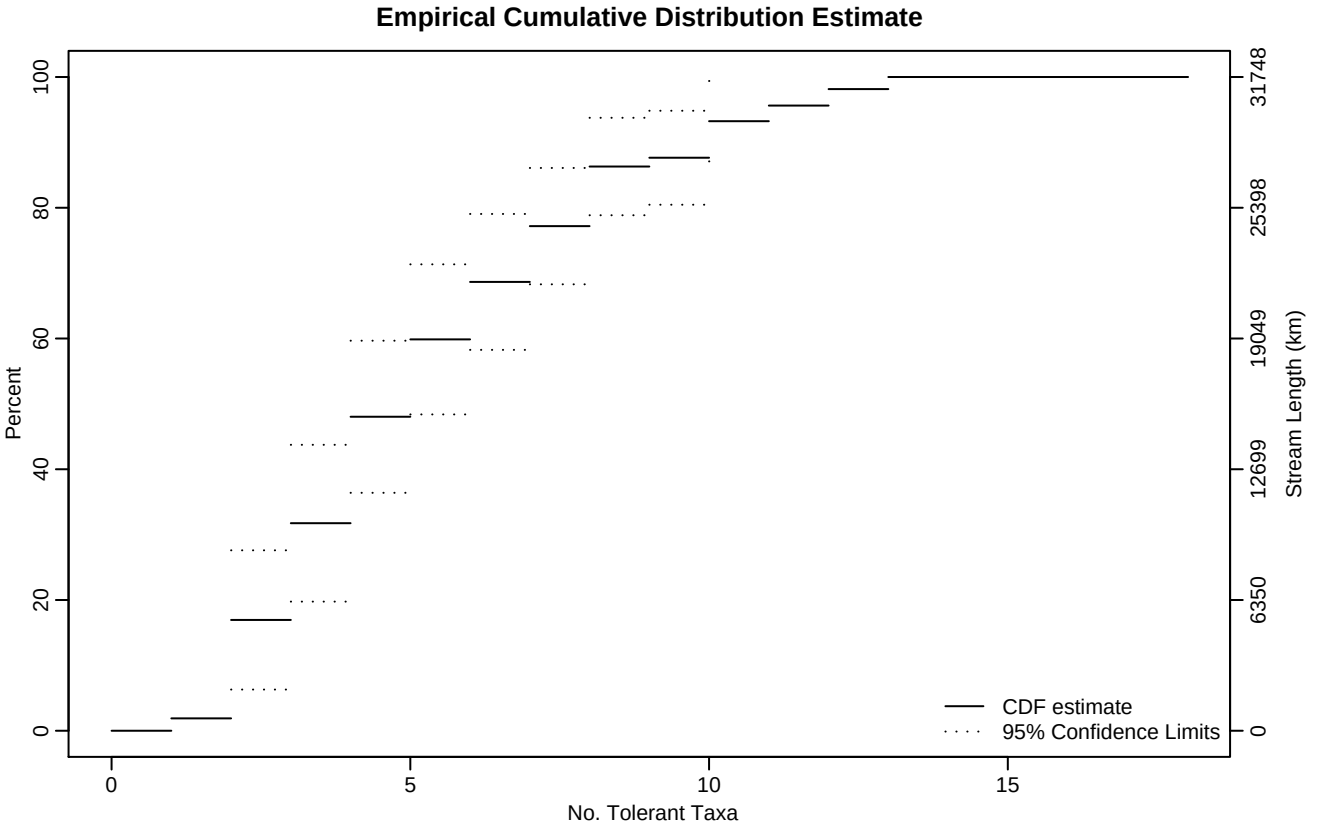


Figure BN−133 Indicator: TOLRRICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.21	1	1.41
10Pct	1.54	1.32	1.75
25Pct	2.54	1.83	3.24
50Pct	4.17	3.40	5.21
75Pct	6.74	5.50	7.94
90Pct	9.42	7.53	11.94
95Pct	10.74	9.26	13
Mean	5.35	4.70	5.99
Std Dev	2.66	2.20	3.12

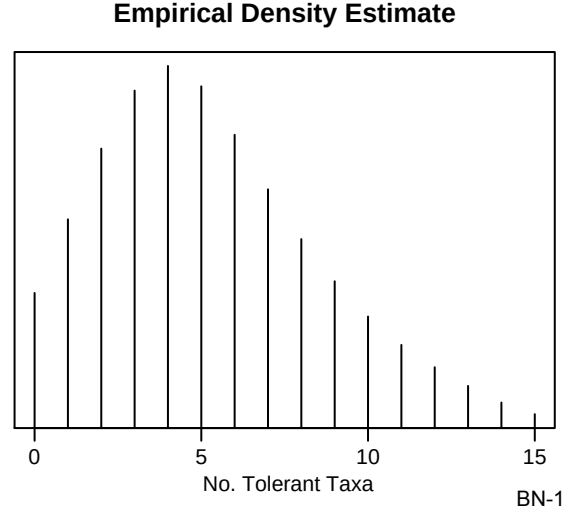
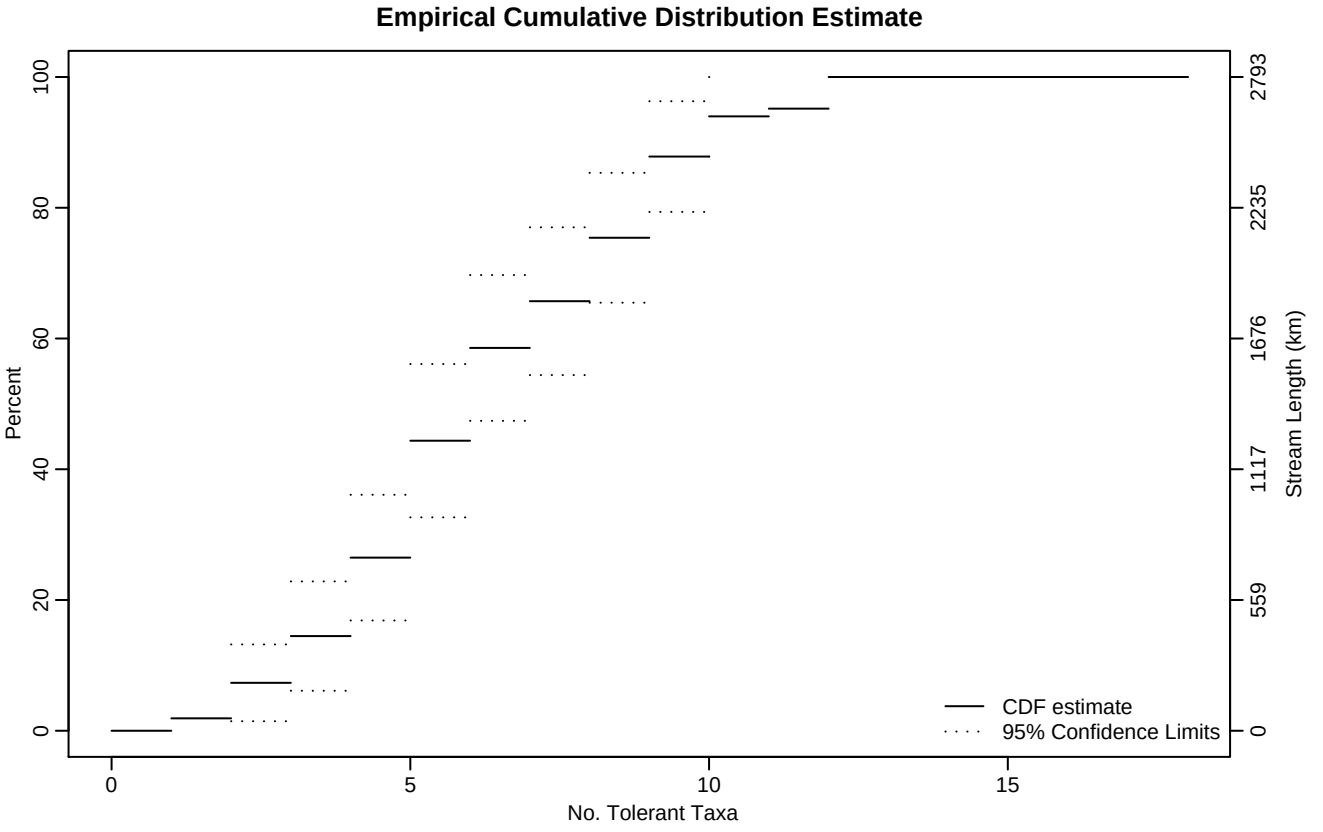


Figure BN−134 Indicator: TOLRRICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.57	0.88	2.14
10Pct	2.37	1.41	3.12
25Pct	3.88	3.18	4.38
50Pct	5.40	4.66	6.44
75Pct	7.96	6.76	8.85
90Pct	9.35	8.49	11.68
95Pct	10.86	9.17	12
Mean	6.29	5.67	6.91
Std Dev	2.67	2.26	3.08

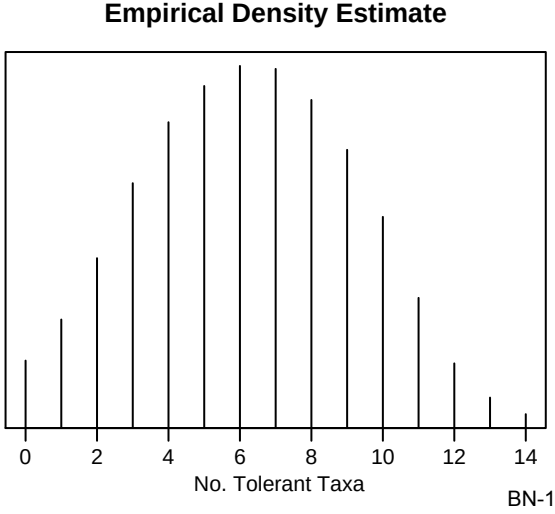
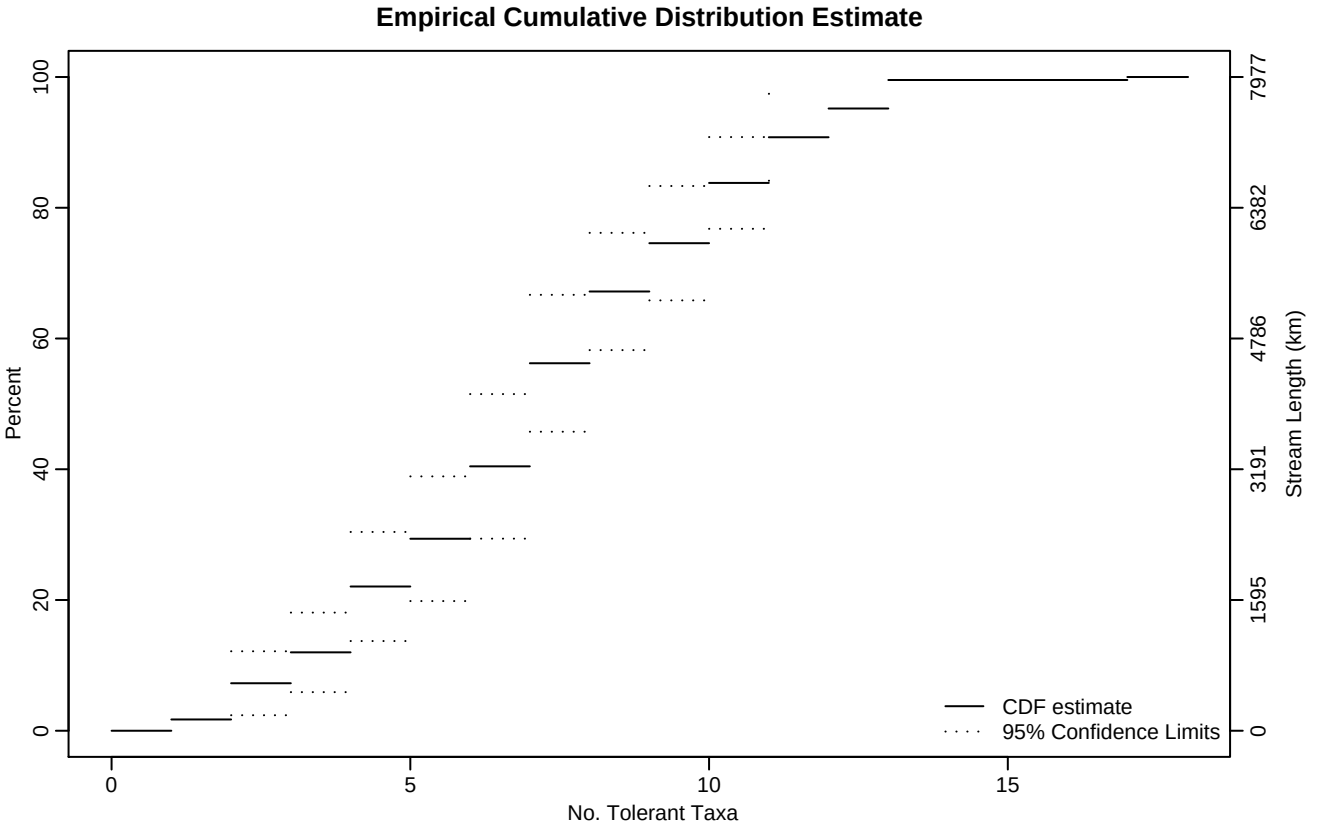


Figure BN−135 Indicator: TOLRRICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.59	1.18	2
10Pct	2.58	1.61	3.29
25Pct	4.40	3.46	5.36
50Pct	6.61	5.86	7.45
75Pct	9.05	7.92	9.99
90Pct	10.89	9.92	12.40
95Pct	11.96	10.68	17
Mean	7.21	6.63	7.80
Std Dev	2.99	2.65	3.34

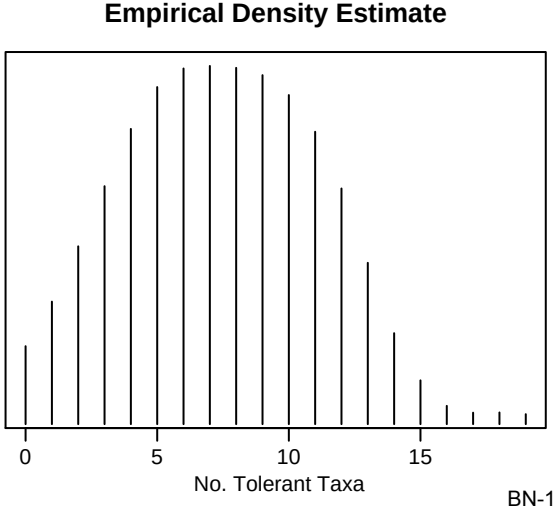
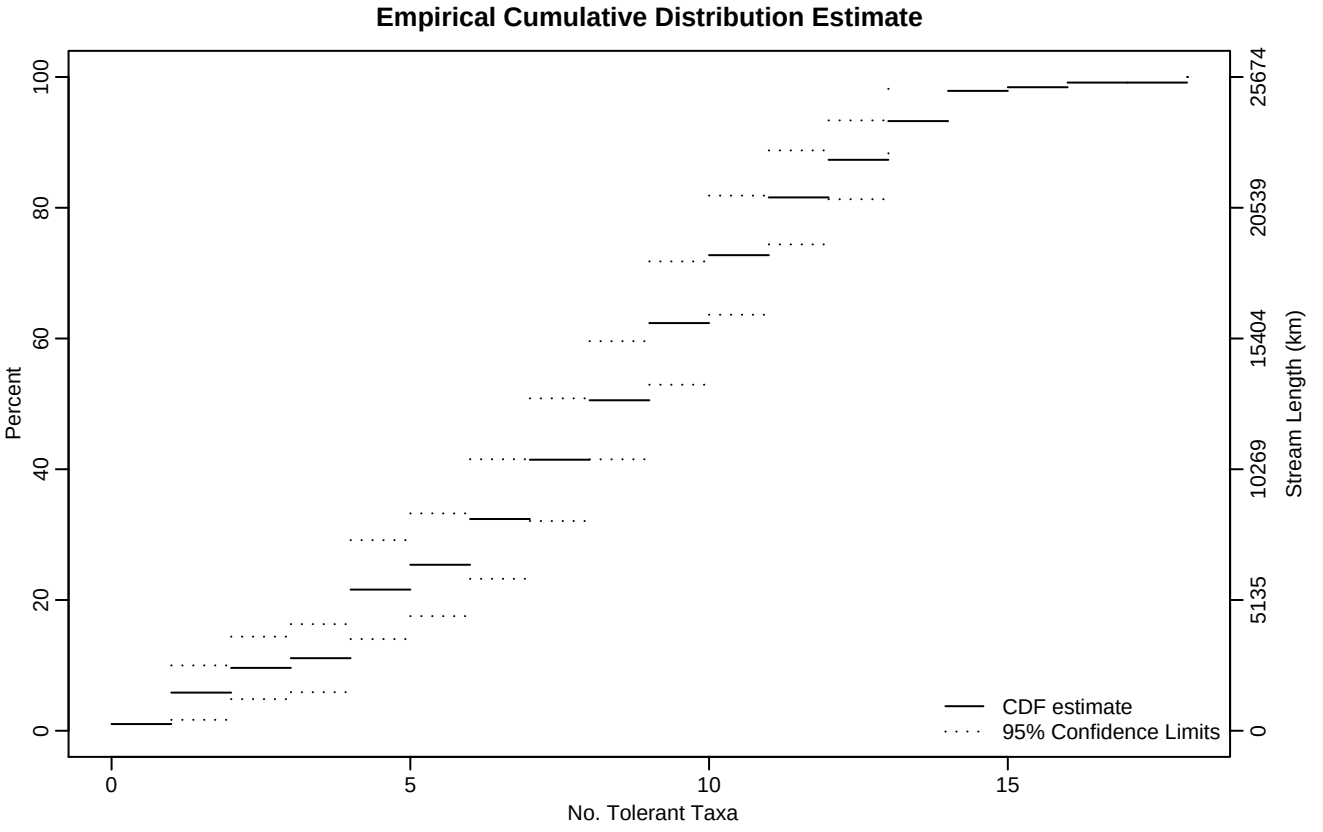


Figure BN−136 Indicator: TOLRRICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.83	0.56	1.12
10Pct	2.26	0.86	3.36
25Pct	4.90	3.59	6.04
50Pct	7.94	6.91	8.74
75Pct	10.26	9.34	11.44
90Pct	12.45	11.41	13.60
95Pct	13.38	12.46	17.93
Mean	8.09	7.44	8.74
Std Dev	3.71	3.27	4.15

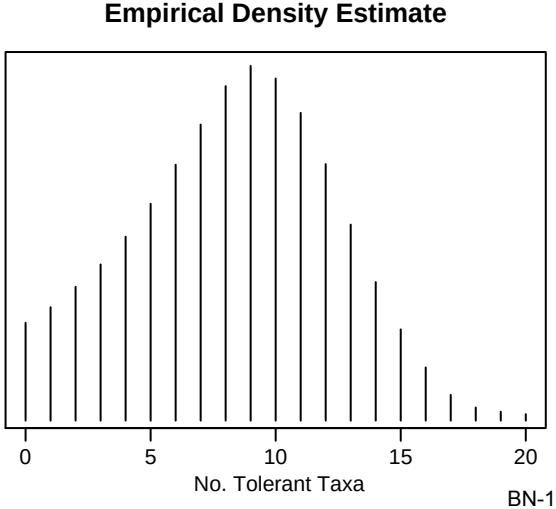
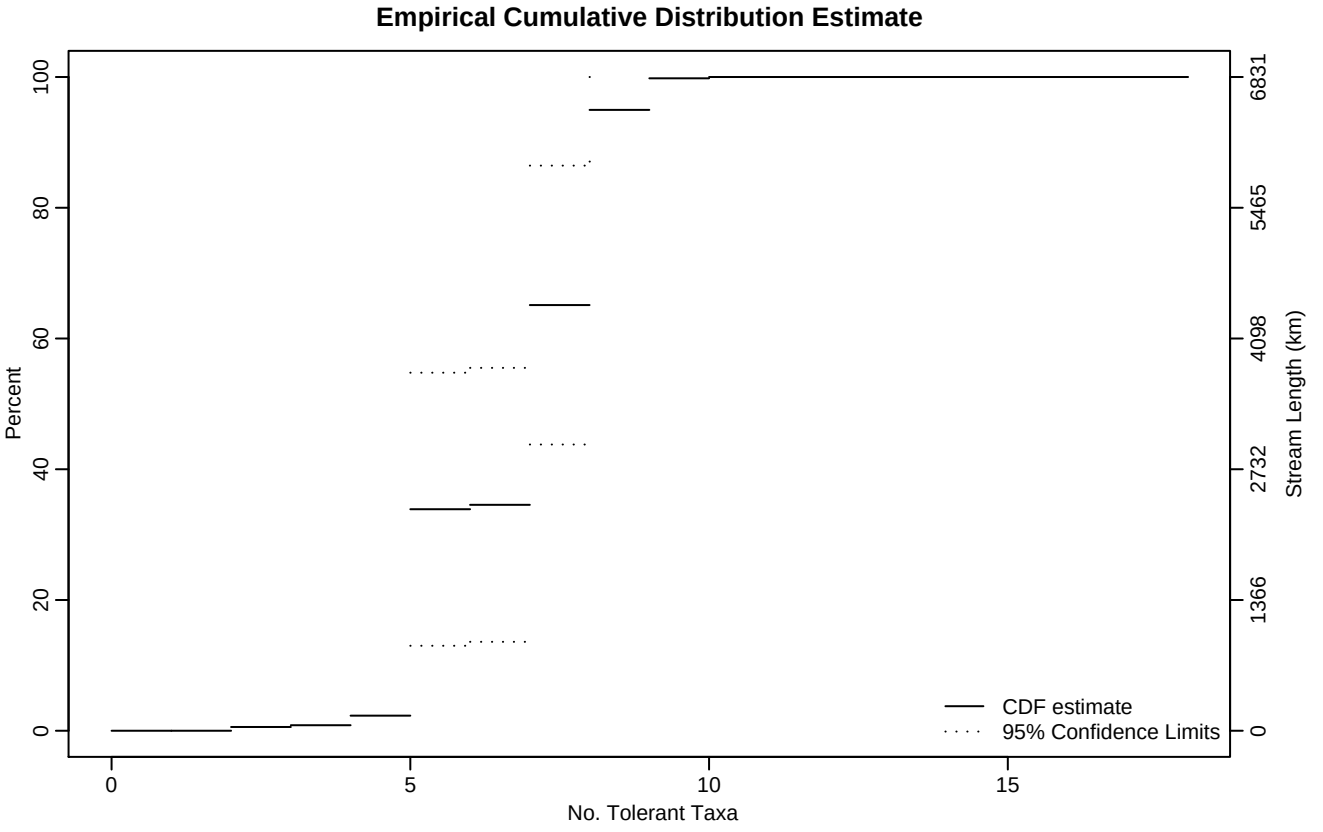


Figure BN−137 Indicator: TOLRRICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.09	3.86	4.18
10Pct	4.24	4.13	4.36
25Pct	4.72	4.52	4.92
50Pct	6.51	4.80	7.24
75Pct	7.33	6.60	8.44
90Pct	7.83	7.04	10
95Pct	8.01	7.74	10
Mean	6.68	6.09	7.27
Std Dev	1.41	1.18	1.64

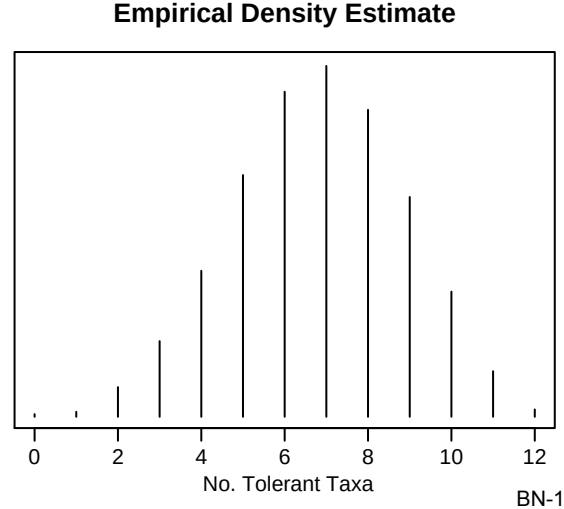
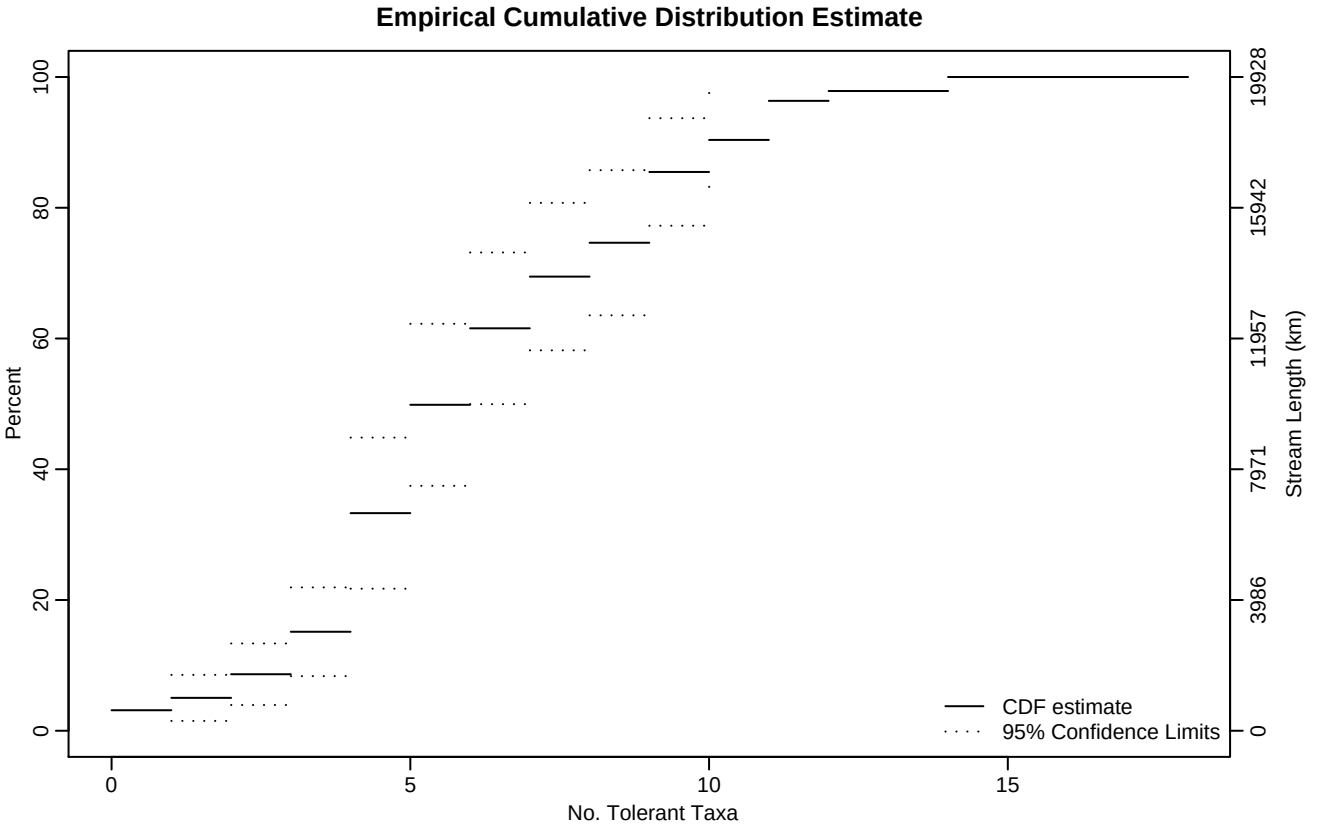


Figure BN−138 Indicator: TOLRRICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.99	0	1.83
10Pct	2.21	1.07	2.94
25Pct	3.54	3.15	3.94
50Pct	5.01	4.25	6.13
75Pct	8.03	6.29	9.13
90Pct	9.92	8.66	13.15
95Pct	10.77	9.51	14
Mean	6.11	5.41	6.81
Std Dev	2.93	2.52	3.33

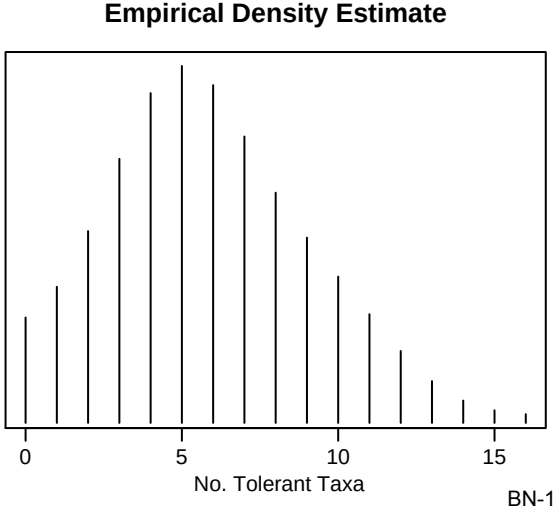
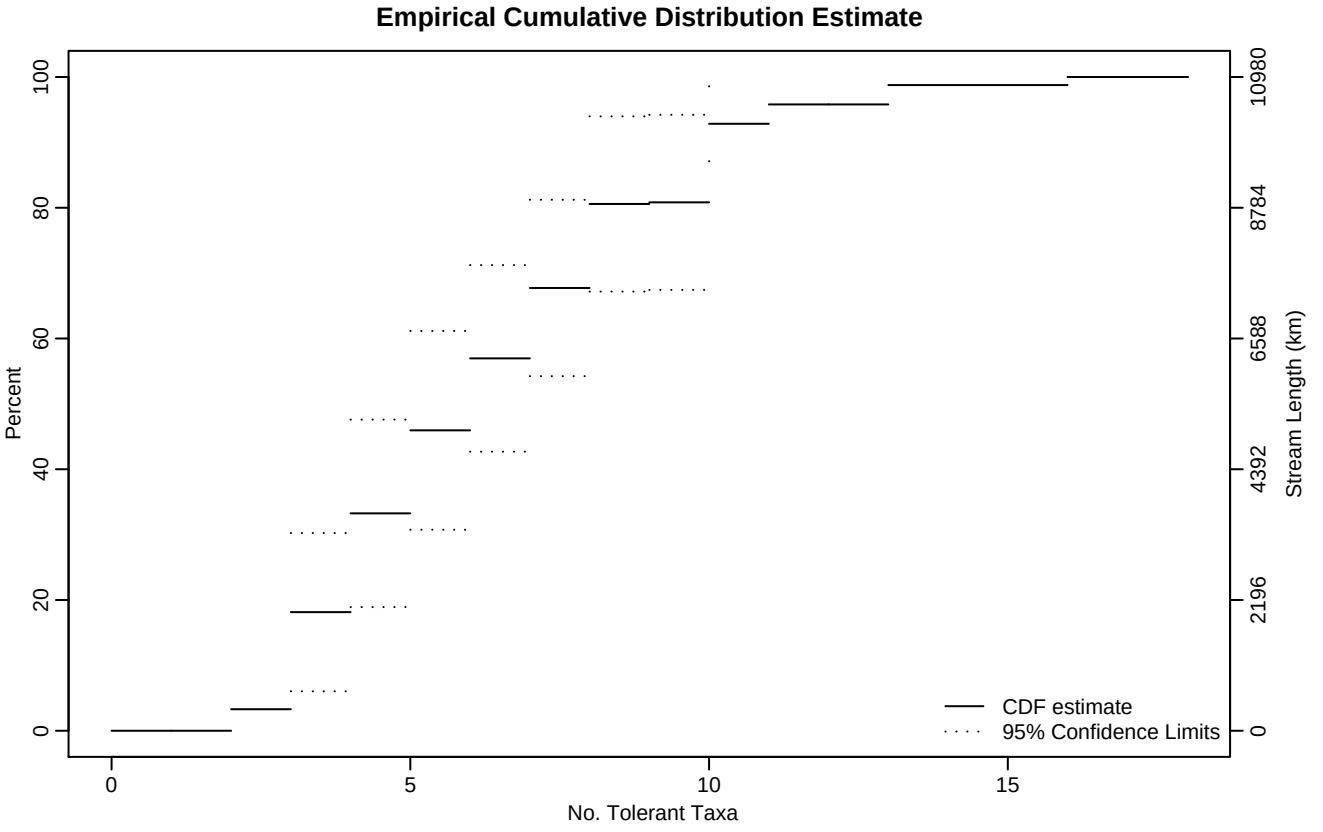


Figure BN−139 Indicator: TOLRRICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.12	1.30	2.38
10Pct	2.45	2.17	2.74
25Pct	3.45	2.62	4.33
50Pct	5.37	4.10	6.79
75Pct	7.57	6.29	9.75
90Pct	9.76	7.69	16
95Pct	10.73	9.68	16
Mean	6.33	5.47	7.18
Std Dev	2.72	2.27	3.18

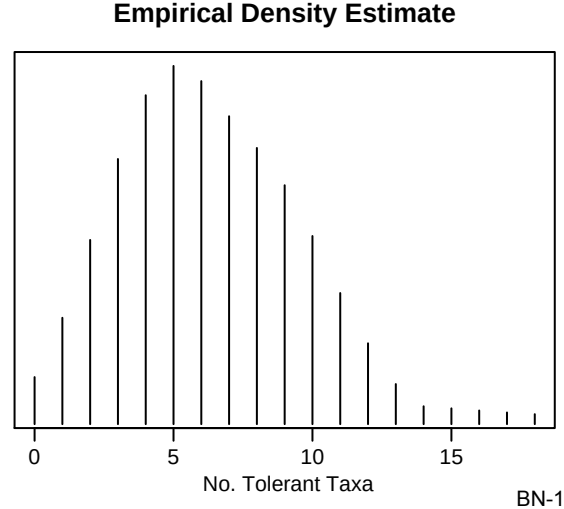
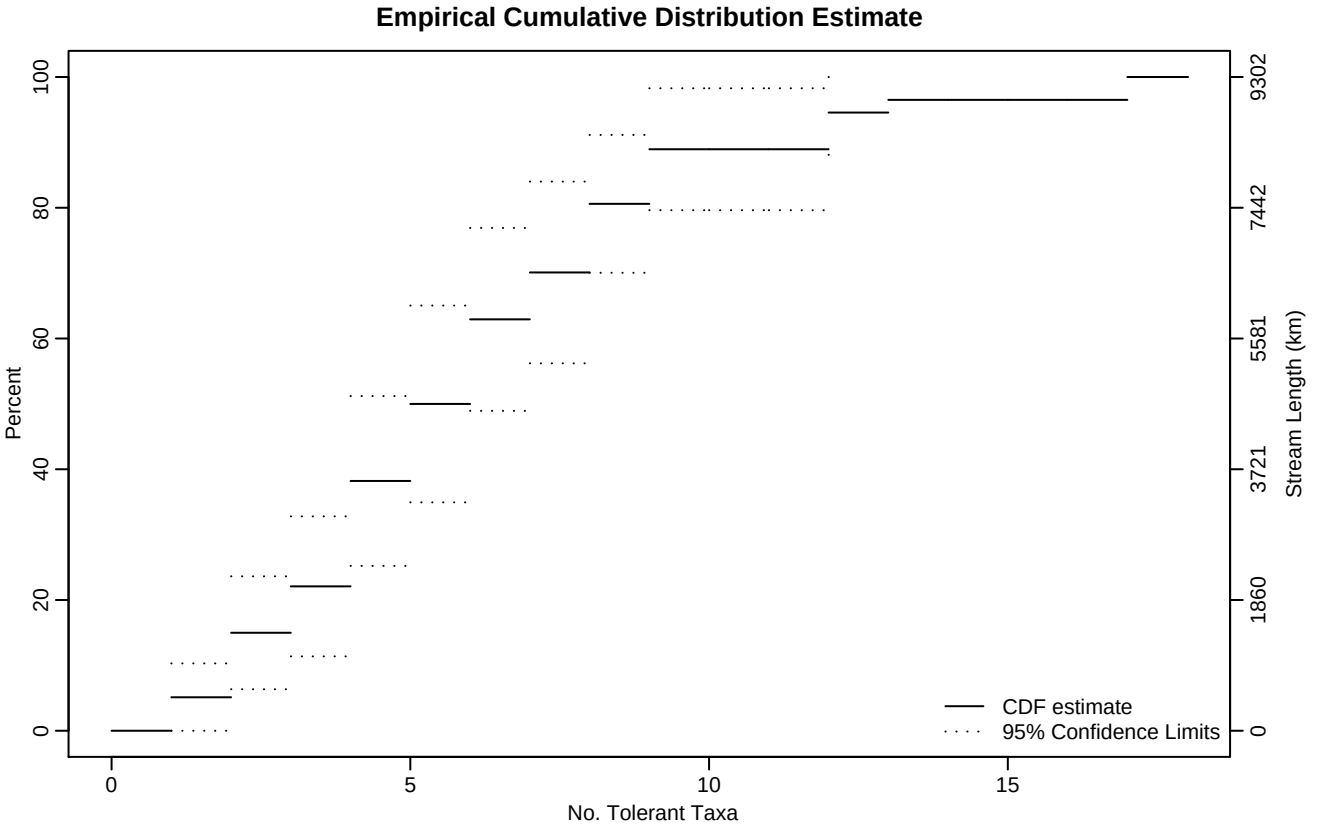


Figure BN−140 Indicator: TOLRRICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.98	0.91	1.02
10Pct	1.49	0.93	2.04
25Pct	3.18	1.93	3.84
50Pct	5	3.80	6.28
75Pct	7.47	5.84	11.03
90Pct	11.19	8	16.83
95Pct	12.23	8.94	17
Mean	6.09	5.06	7.11
Std Dev	3.37	2.57	4.18

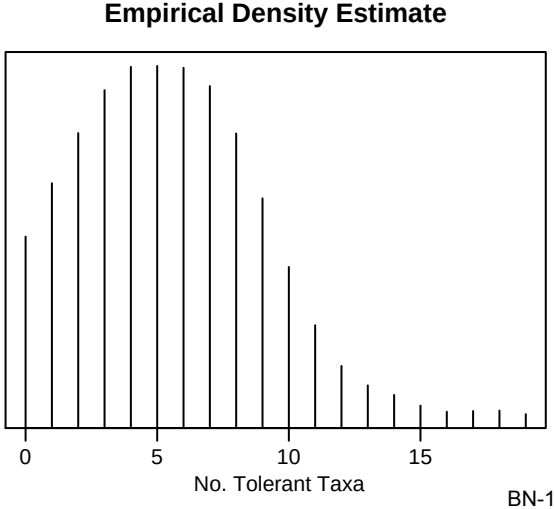
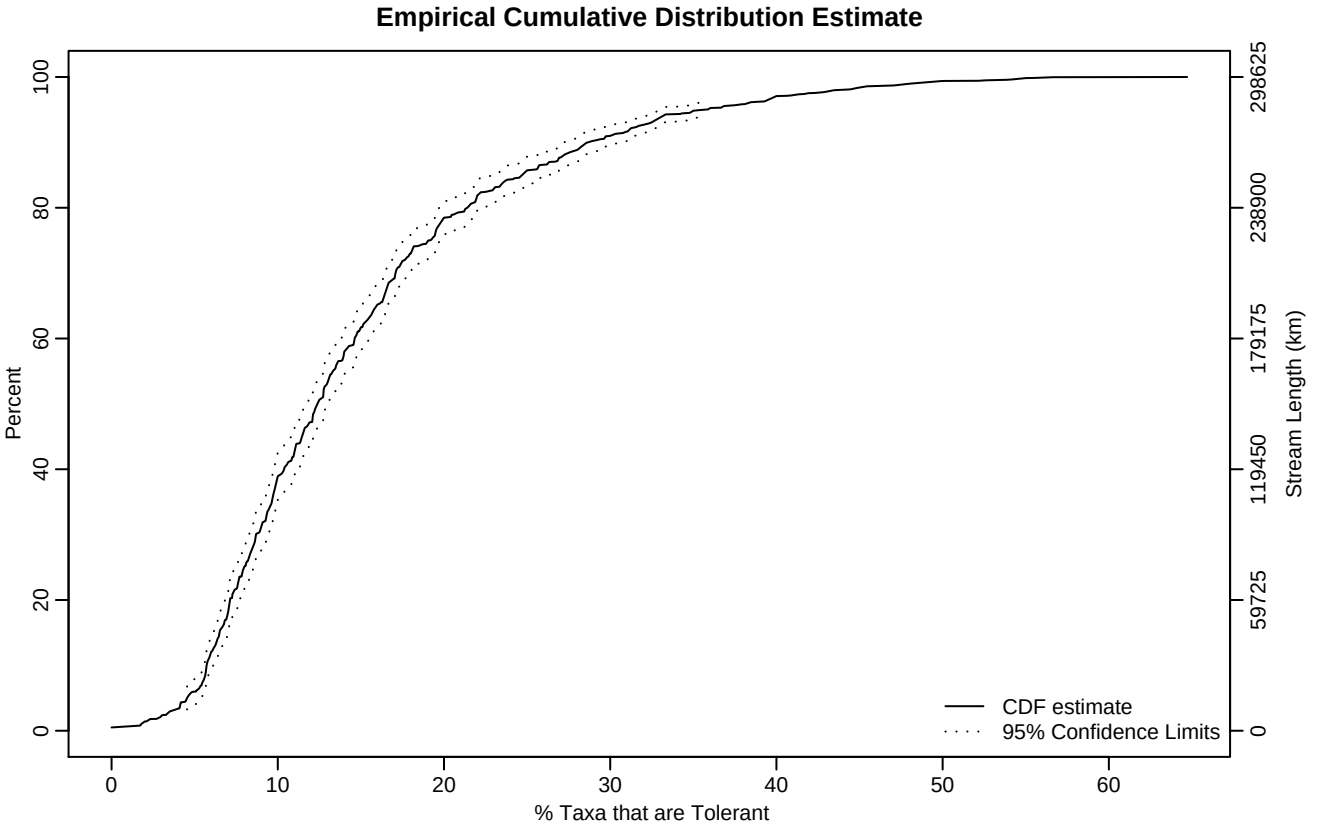


Figure BN−141 Indicator: TOLRPTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.54	3.98	5.30
10Pct	5.72	5.52	6.09
25Pct	7.97	7.40	8.55
50Pct	12.38	11.62	13.06
75Pct	19.07	17.70	19.82
90Pct	28.65	27.34	31.09
95Pct	35.67	33.05	38.45
Mean	15.11	14.55	15.66
Std Dev	8.50	7.94	9.06

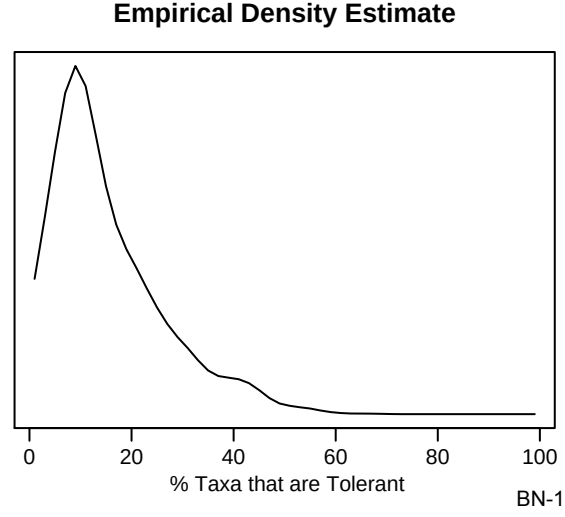
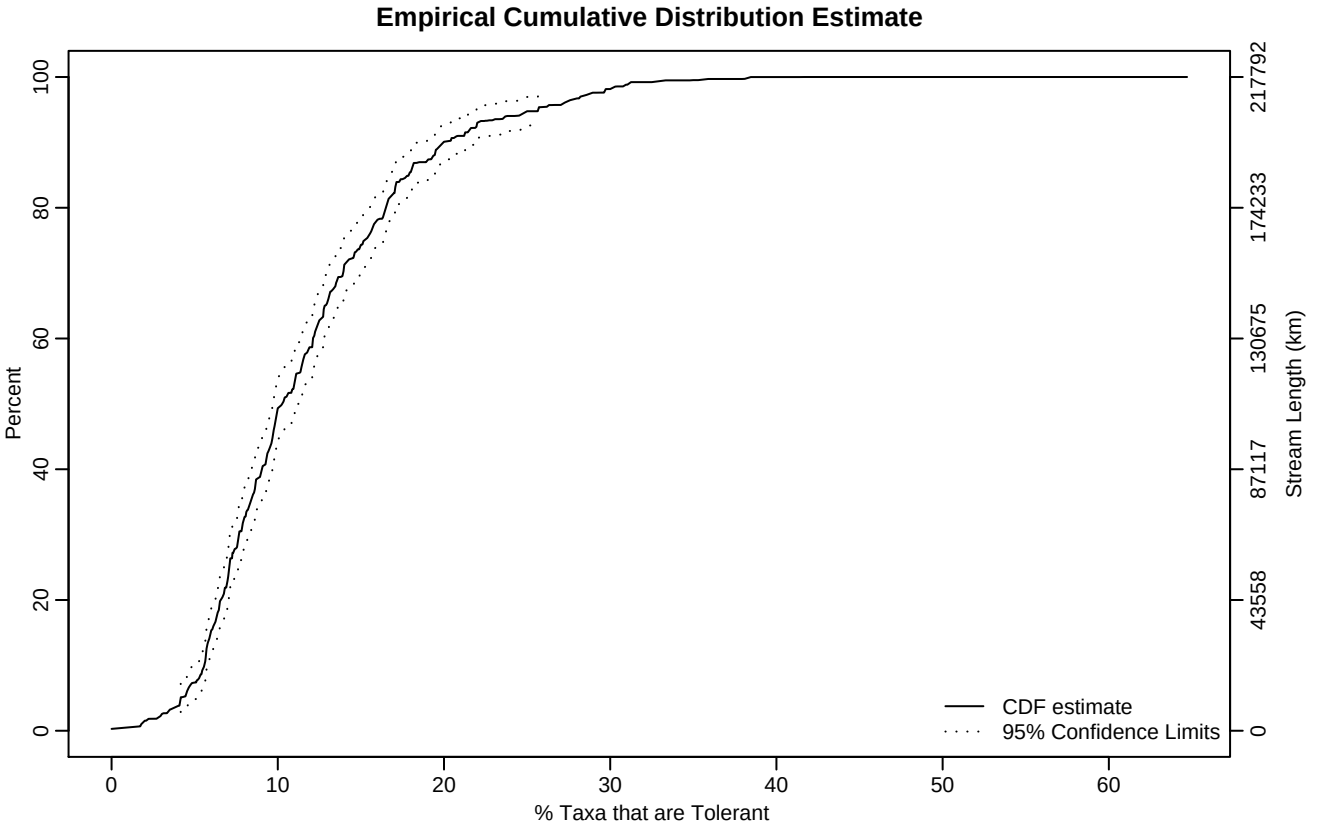


Figure BN−142 Indicator: TOLRPTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.16	3.46	4.72
10Pct	5.58	4.77	5.74
25Pct	7.08	6.74	7.61
50Pct	10.26	9.70	11.36
75Pct	15.20	13.98	16.41
90Pct	19.96	18.95	21.99
95Pct	25.67	21.99	28.47
Mean	11.91	11.33	12.48
Std Dev	6.03	5.53	6.54

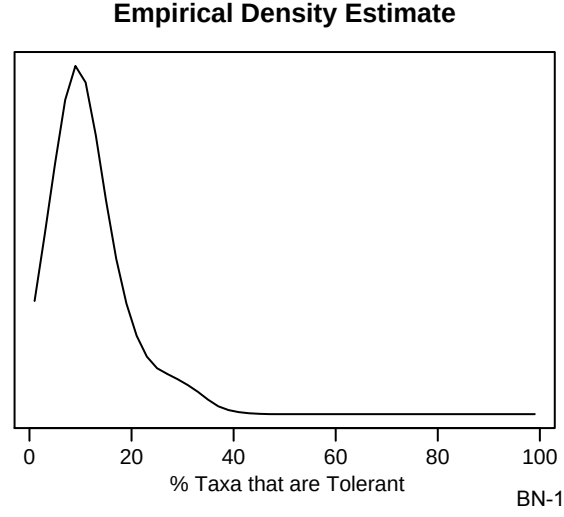
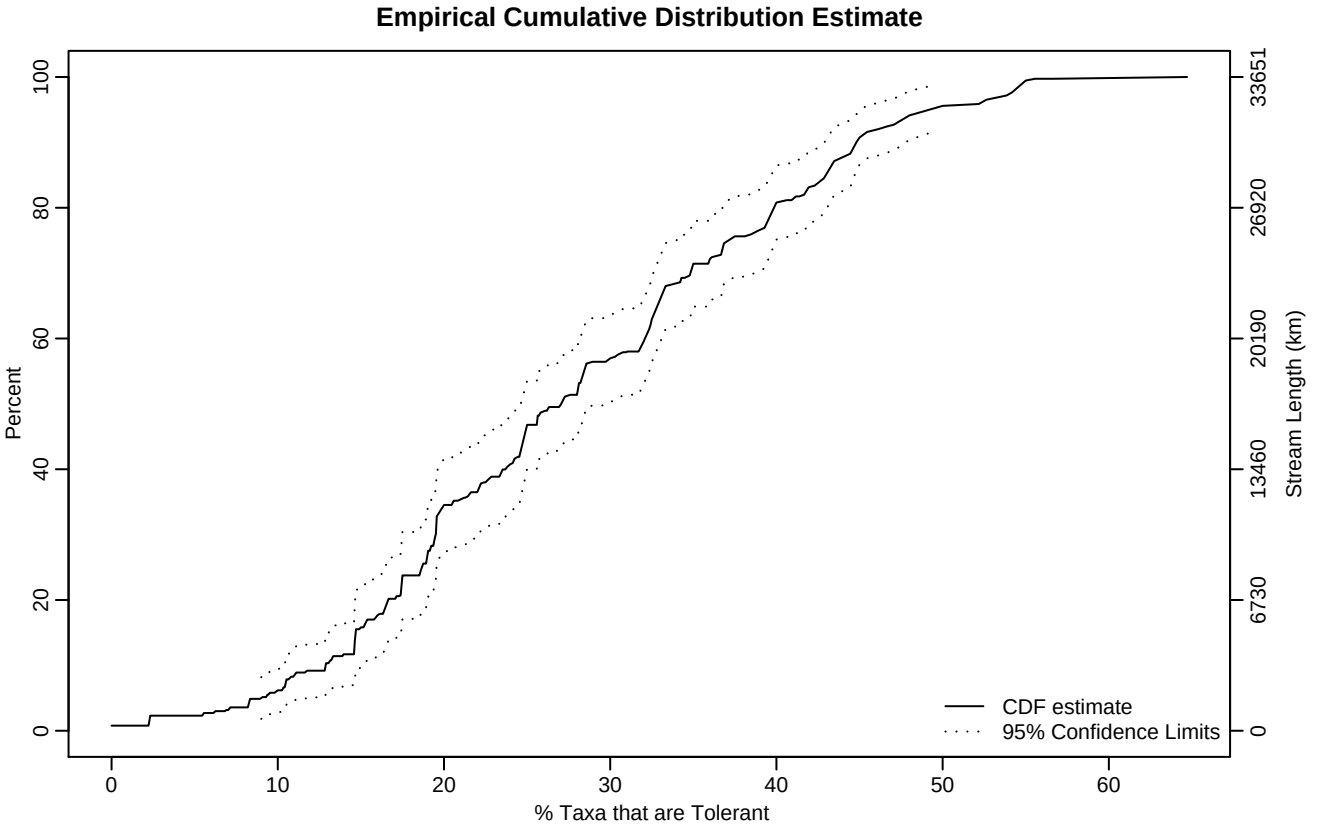


Figure BN−143 Indicator: TOLRPTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	9	2.29	10.78
10Pct	12.88	9.85	14.65
25Pct	18.67	16.39	19.54
50Pct	27.05	24.66	29.88
75Pct	37.11	34.23	40.93
90Pct	44.81	42.94	49.41
95Pct	49.20	45.27	54.67
Mean	28.16	26.44	29.89
Std Dev	12.47	11.30	13.63

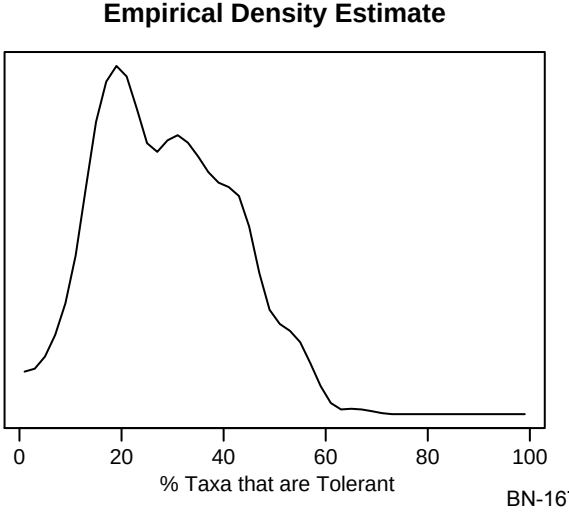
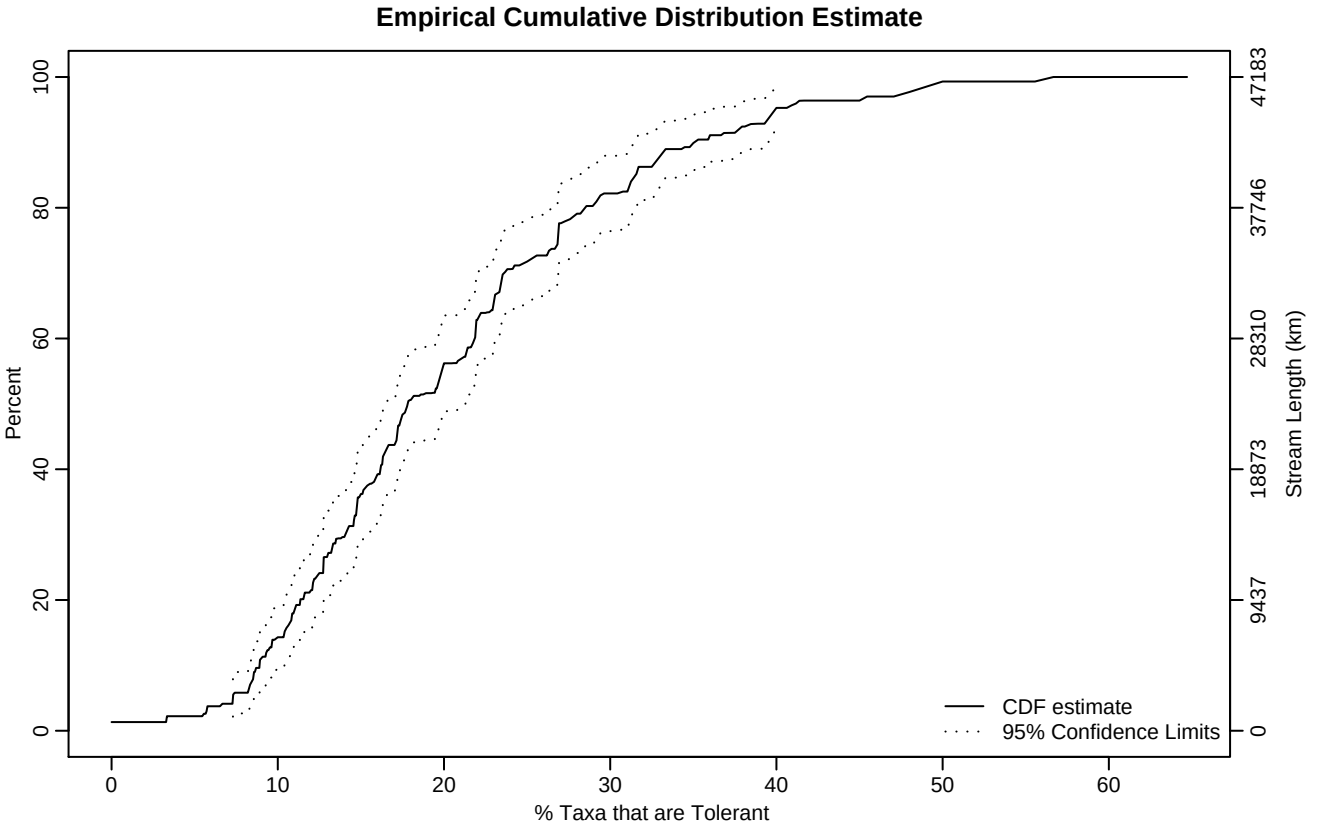


Figure BN−144 Indicator: TOLRPTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.30	5.66	8.41
10Pct	8.90	8.21	9.88
25Pct	12.74	11.08	14.23
50Pct	17.81	16.49	21.28
75Pct	26.85	23.45	29.26
90Pct	35.06	31.64	39.72
95Pct	39.92	36	49.51
Mean	20.56	19.02	22.11
Std Dev	10.35	9.21	11.48

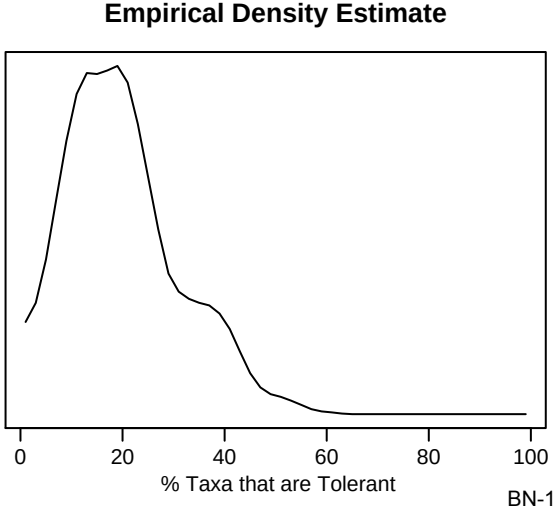
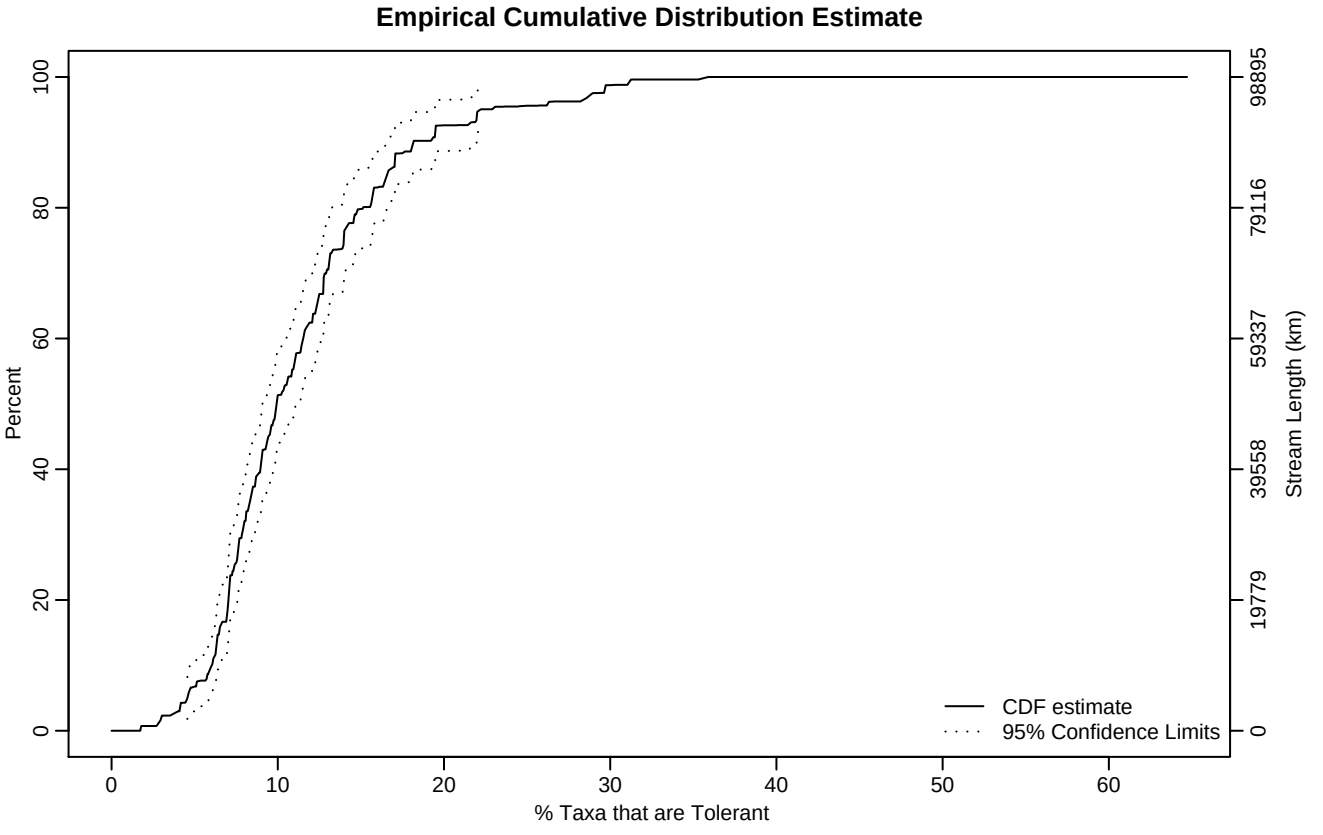


Figure BN−145 Indicator: TOLRPTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.56	2.98	5.73
10Pct	6.03	4.64	6.36
25Pct	7.37	6.97	7.97
50Pct	9.93	9.05	11.36
75Pct	13.97	12.75	15.71
90Pct	18.16	16.61	22.01
95Pct	22.18	19.48	29.69
Mean	11.49	10.68	12.31
Std Dev	5.17	4.49	5.85

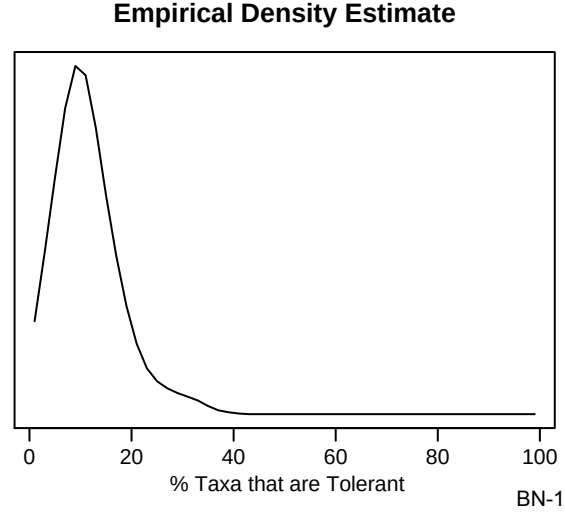
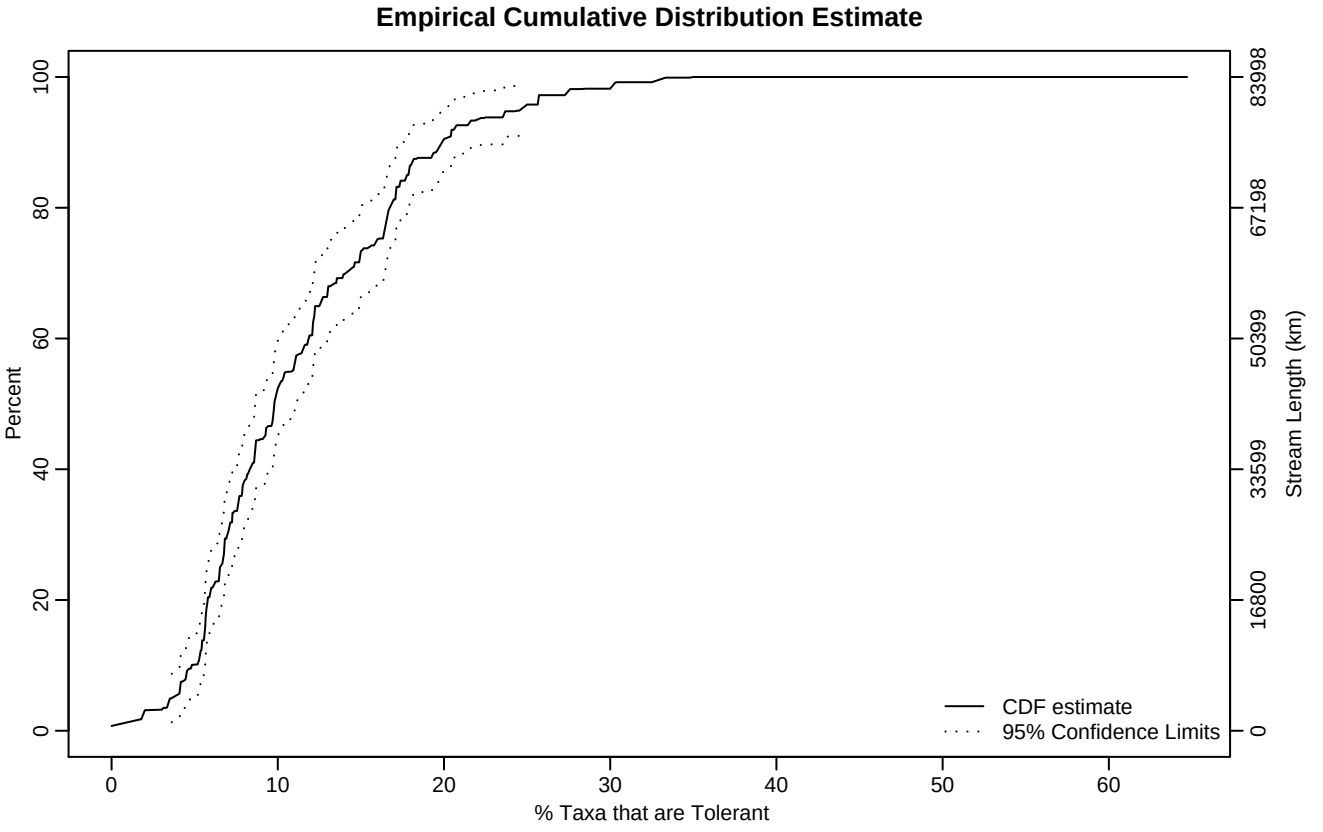


Figure BN−146 Indicator: TOLRPTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.61	0.93	4.51
10Pct	4.83	3.81	5.59
25Pct	6.53	5.71	7.09
50Pct	9.79	8.64	11.09
75Pct	15.96	13.22	17.09
90Pct	19.88	17.75	24.68
95Pct	24.60	20.42	30.20
Mean	11.44	10.48	12.40
Std Dev	6.31	5.50	7.11

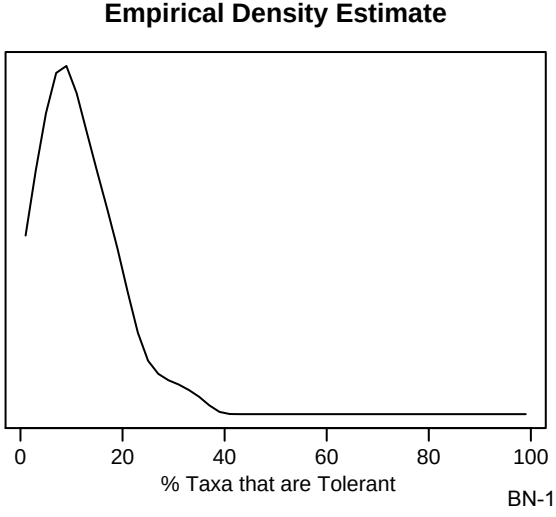
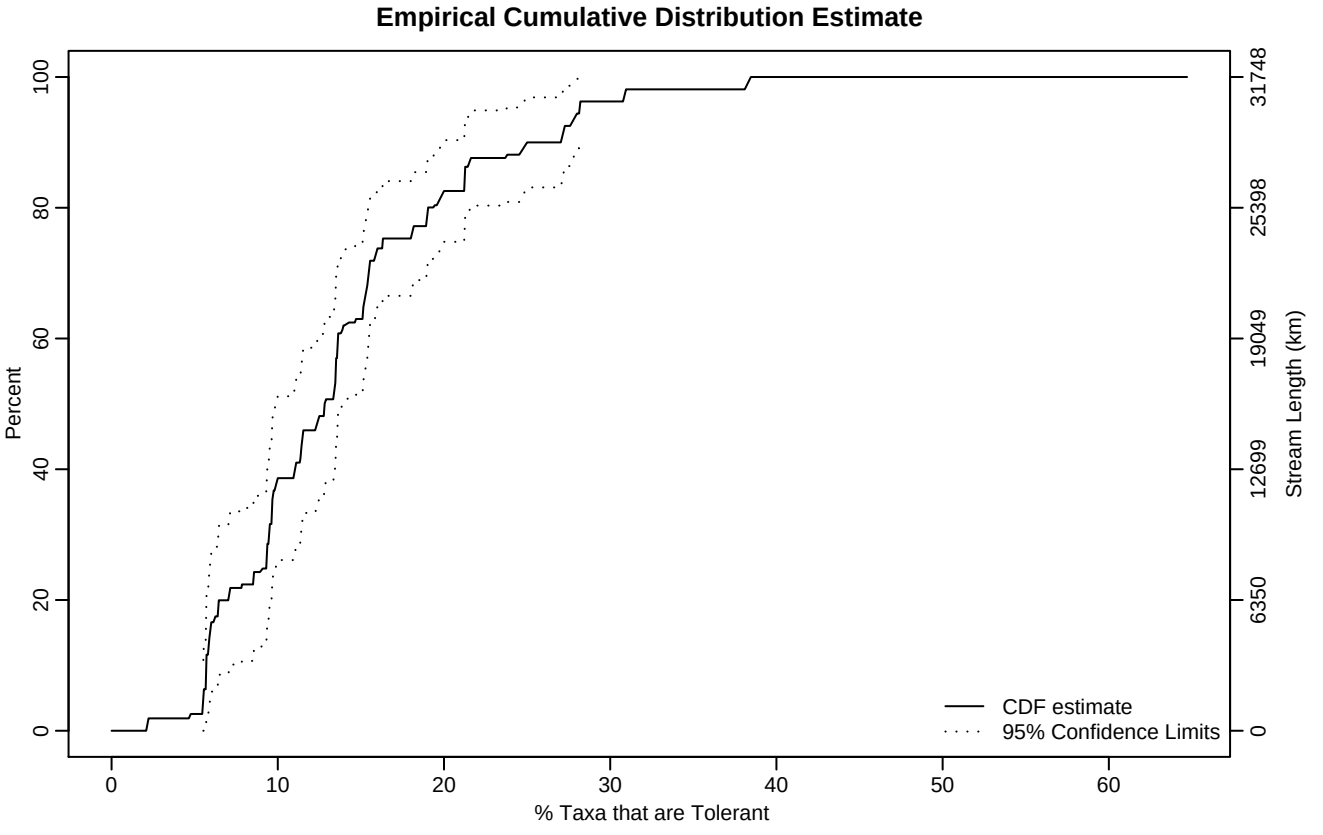


Figure BN−147 Indicator: TOLRPTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.52	2.21	5.68
10Pct	5.70	5.46	6.21
25Pct	9.31	5.85	9.76
50Pct	12.82	9.87	14.66
75Pct	16.32	15.20	21.24
90Pct	27.03	21.22	30.82
95Pct	28.15	24.99	38.46
Mean	13.94	12.27	15.62
Std Dev	7.20	5.63	8.78

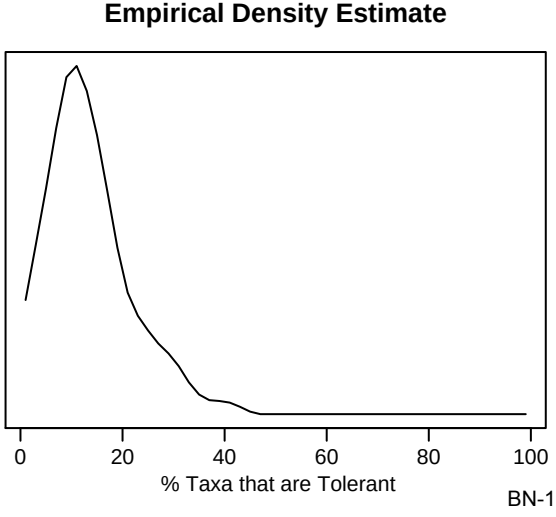
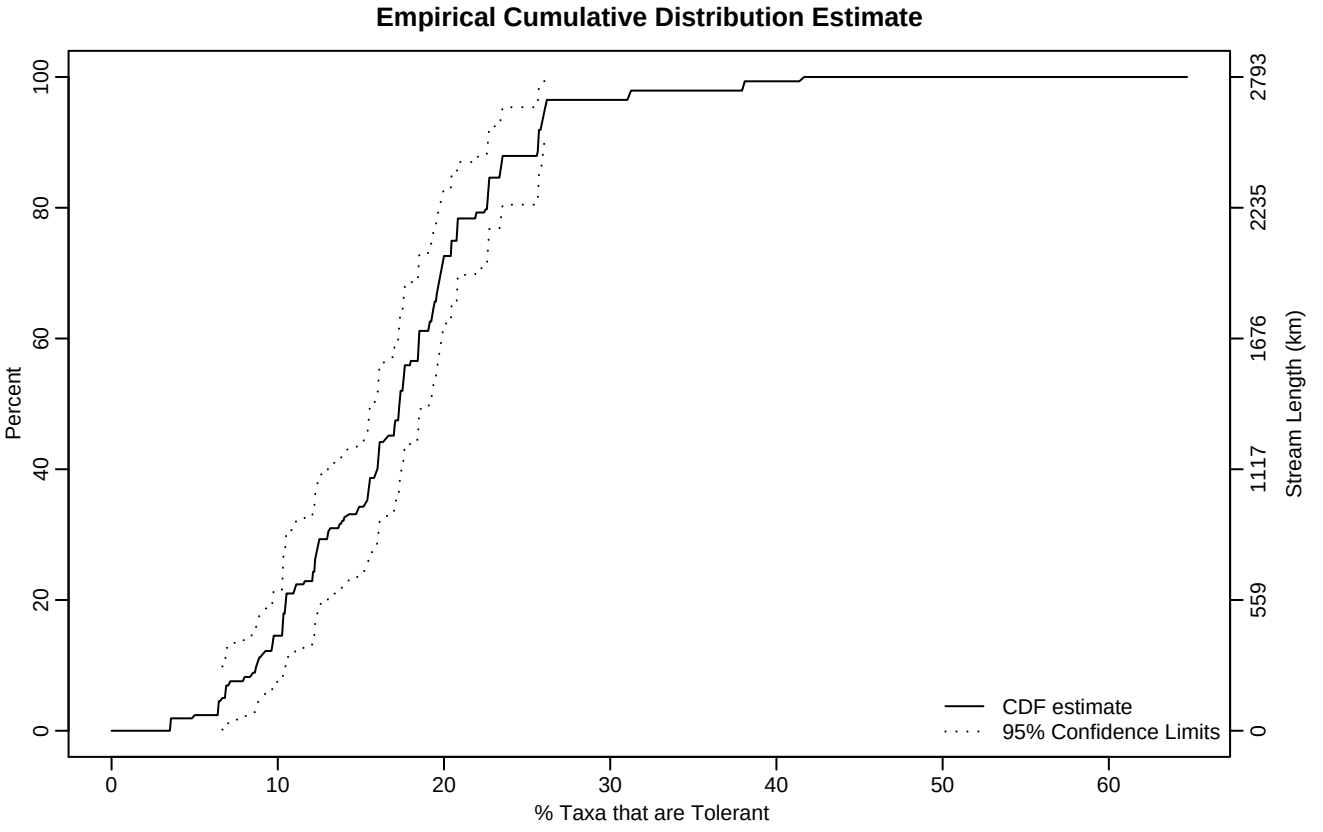


Figure BN−148 Indicator: TOLRPTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.66	3.52	8.69
10Pct	8.72	6.43	10.30
25Pct	12.21	10.27	15.27
50Pct	17.32	15.50	19.14
75Pct	20.76	19.41	23.35
90Pct	25.67	22.67	31.17
95Pct	26.06	25.60	41.67
Mean	17.13	15.75	18.51
Std Dev	6.61	5.37	7.86

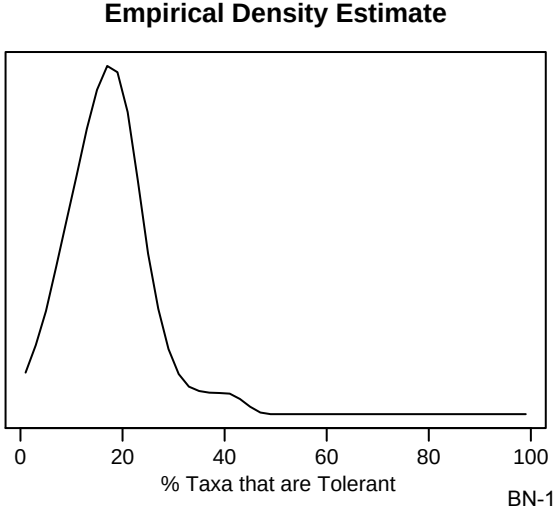
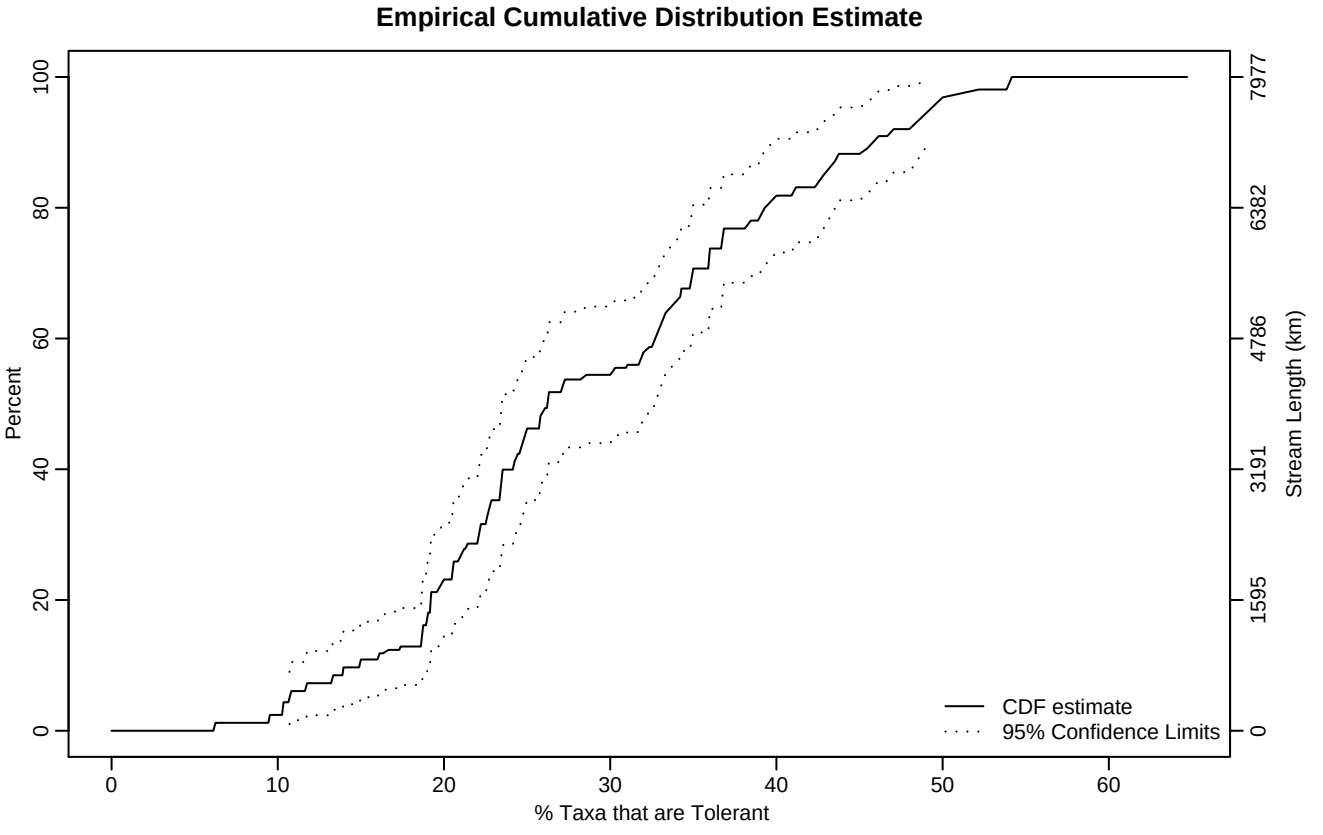


Figure BN−149 Indicator: TOLRPTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.70	9.44	13.90
10Pct	14.92	10.34	18.73
25Pct	20.55	18.93	22.69
50Pct	26.22	23.50	32.82
75Pct	36.74	34	42.61
90Pct	45.80	41.15	50.18
95Pct	49.23	45.06	54.17
Mean	29.23	26.97	31.48
Std Dev	10.53	9.14	11.91

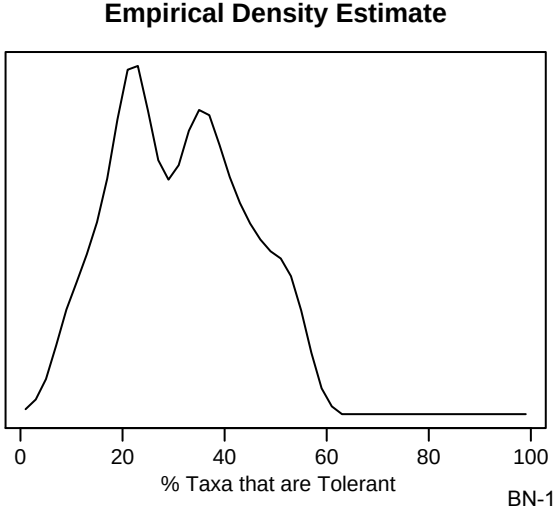
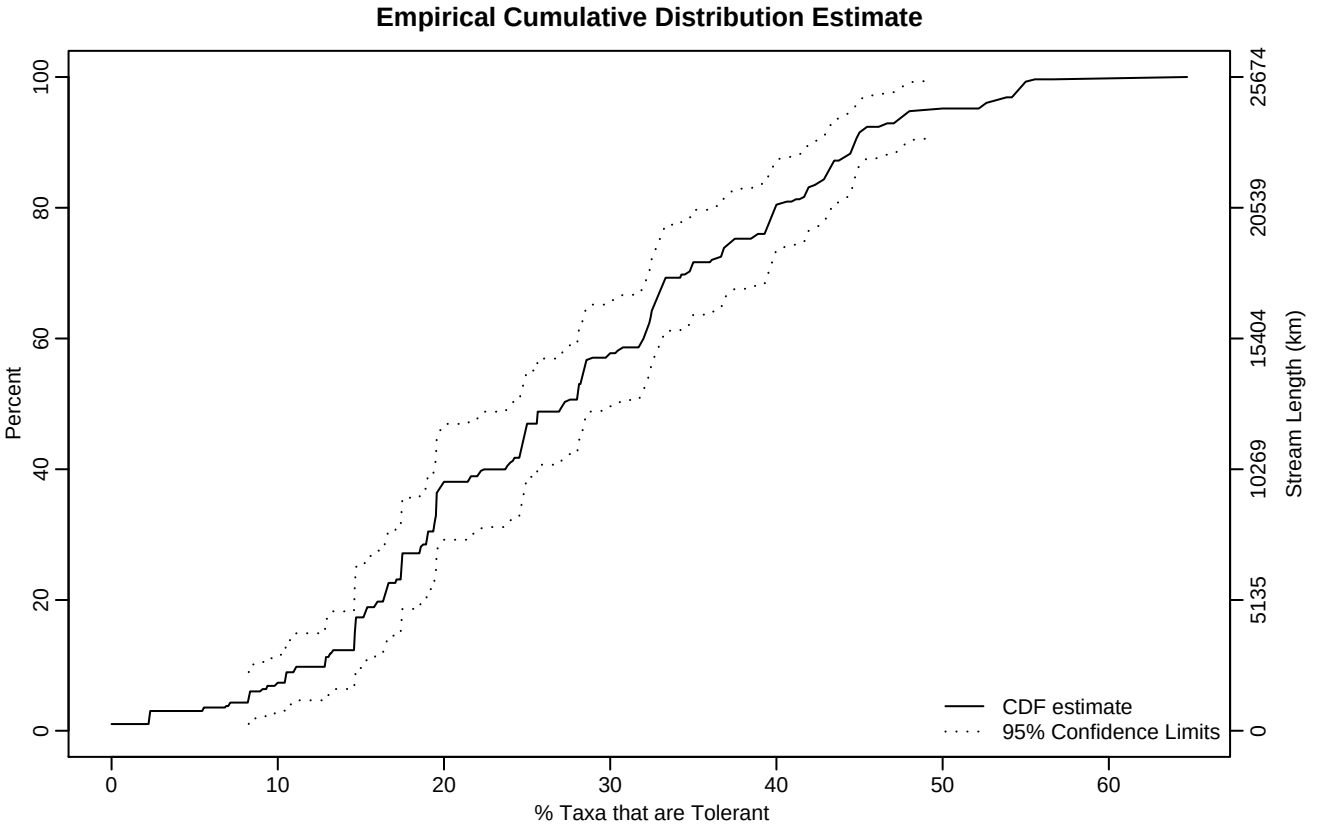


Figure BN−150 Indicator: TOLRPTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.25	2.23	10.52
10Pct	12.83	8.24	14.64
25Pct	17.44	14.69	19.52
50Pct	27.20	24.54	30.46
75Pct	37.38	33.01	41.85
90Pct	44.72	42.40	53.10
95Pct	49.11	44.81	55.22
Mean	27.83	25.68	29.98
Std Dev	12.93	11.47	14.38

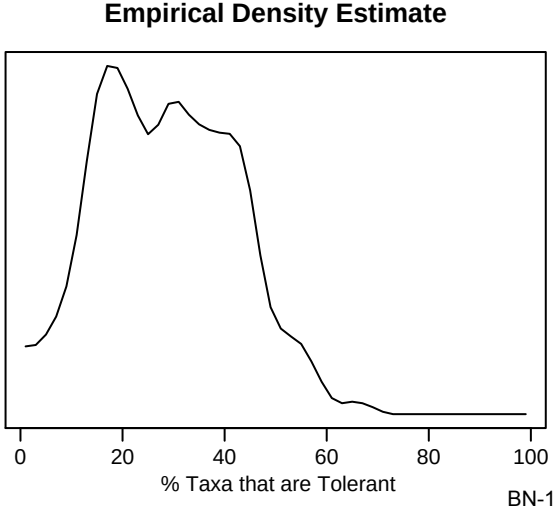
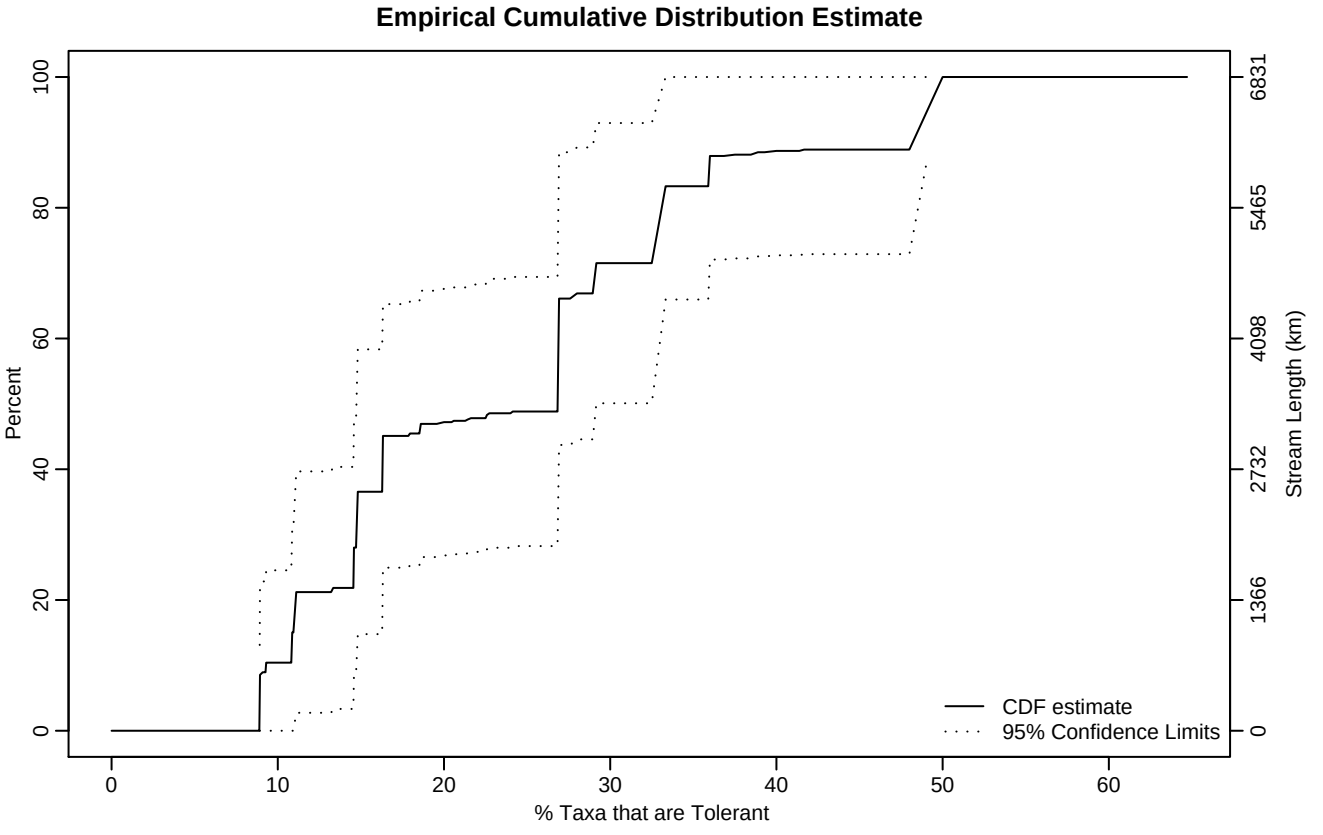


Figure BN−151 Indicator: TOLRPTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.91	8.91	8.92
10Pct	9.29	0	14.56
25Pct	14.56	8.92	16.32
50Pct	26.84	14.72	29.13
75Pct	32.75	26.85	49.39
90Pct	48.20	32.66	50
95Pct	49.10	32.96	50
Mean	24.27	18.45	30.10
Std Dev	12.57	8.69	16.44

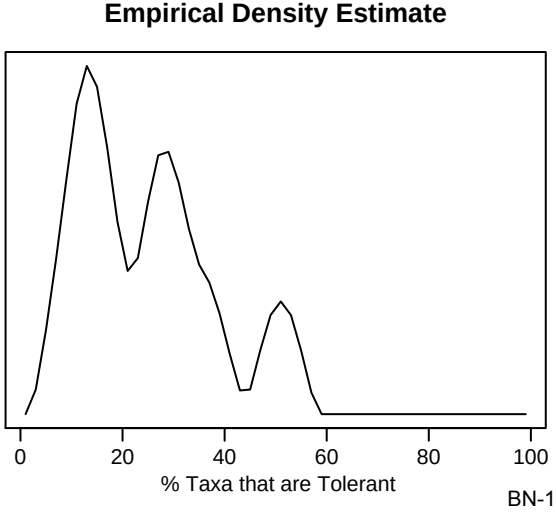
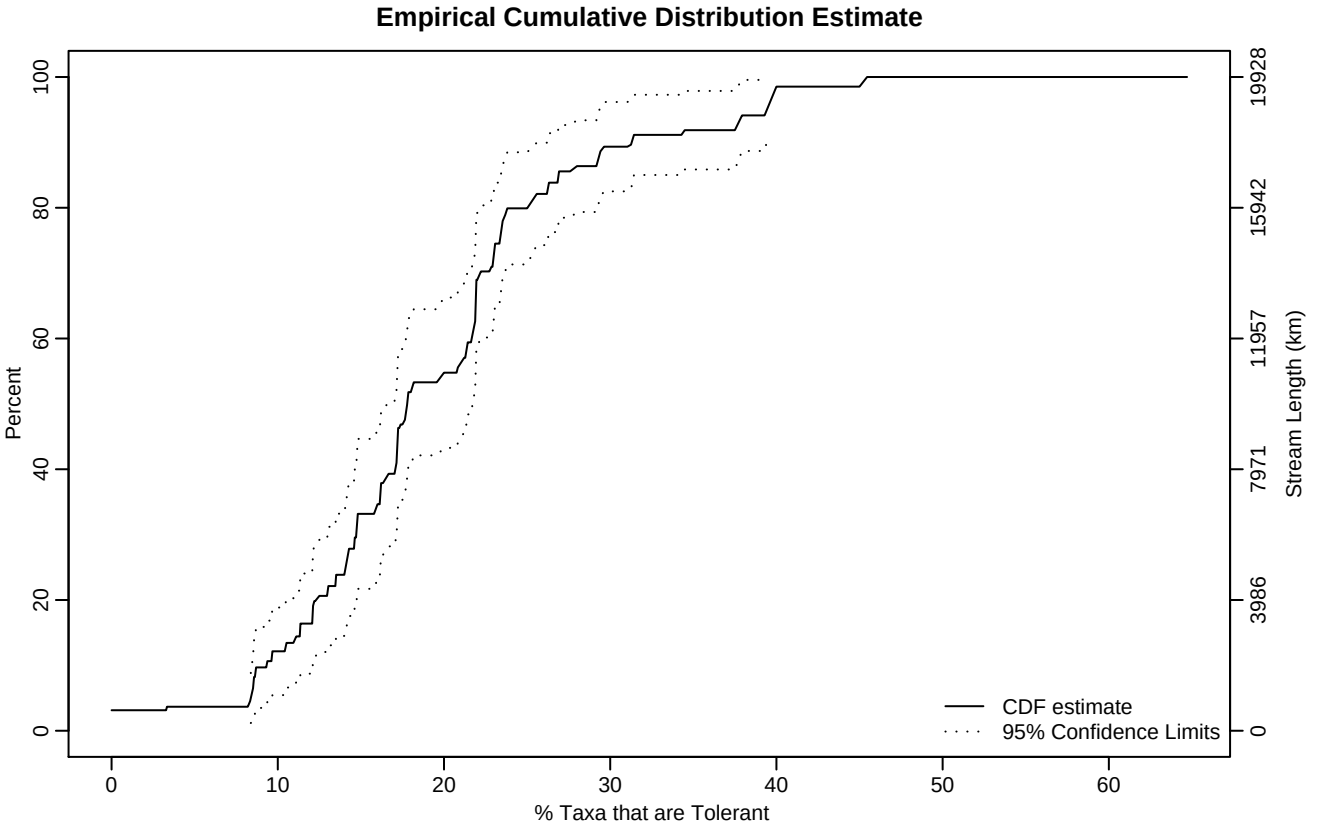


Figure BN−152 Indicator: TOLRPTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.38	0	8.63
10Pct	9.33	8.22	11.36
25Pct	14.08	11.34	15.98
50Pct	17.78	16.52	21.77
75Pct	23.36	21.91	26.86
90Pct	31.29	26.28	39.70
95Pct	39.43	31.14	45.45
Mean	19.59	17.74	21.44
Std Dev	8.84	7.26	10.43

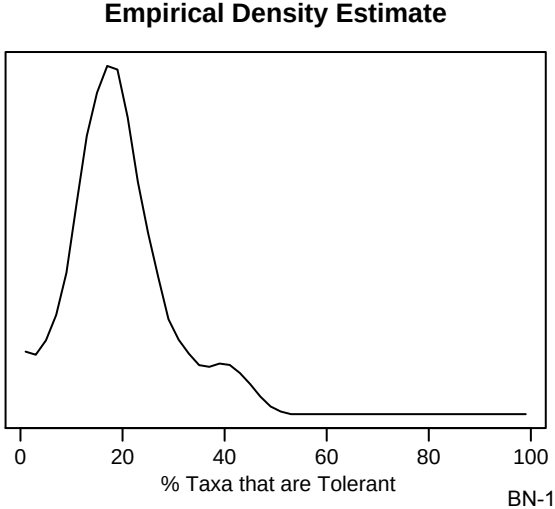
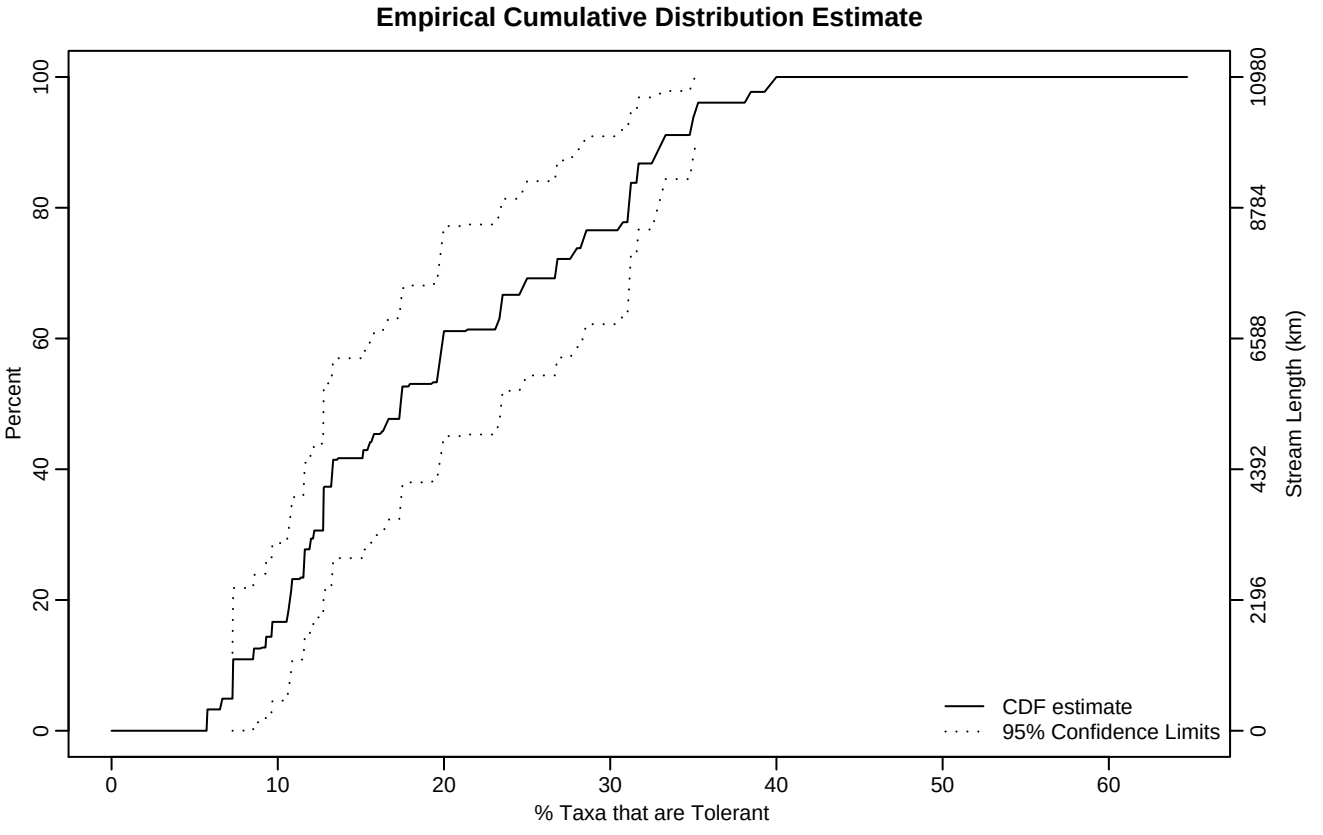


Figure BN−153 Indicator: TOLRPTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.27	0	8.54
10Pct	7.31	5.77	10.55
25Pct	11.57	8.57	13.21
50Pct	17.39	12.75	23.48
75Pct	28.36	19.92	33.16
90Pct	33.12	31.11	40
95Pct	35.16	32.93	40
Mean	19.70	16.62	22.78
Std Dev	9.59	8.33	10.86

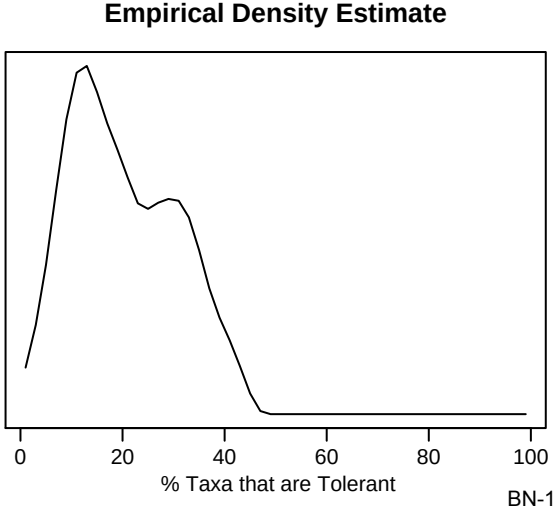
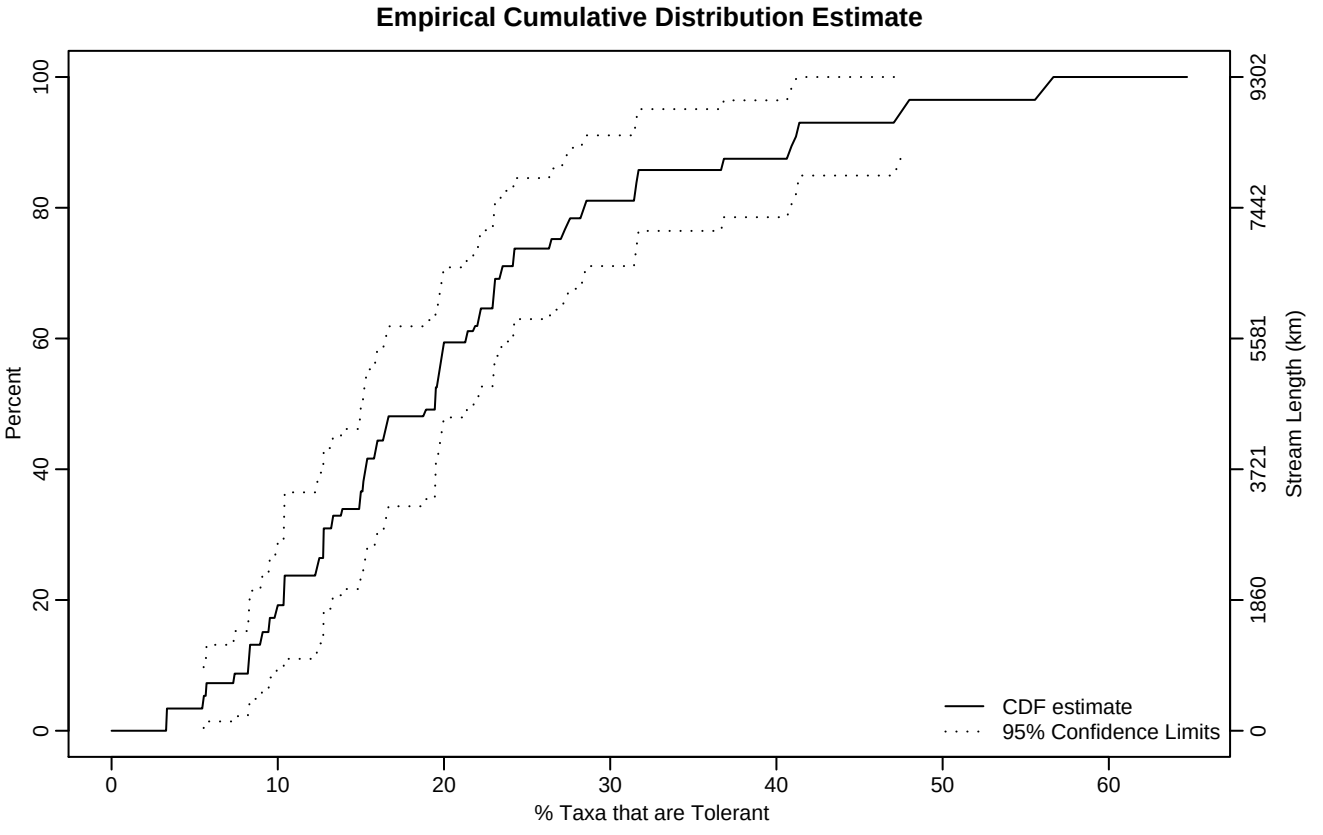


Figure BN−154 Indicator: TOLRPTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.54	3.29	8.21
10Pct	8.24	5.46	9.49
25Pct	12.37	8.30	15.14
50Pct	19.46	14.97	22.17
75Pct	26.45	22.18	36.68
90Pct	41.01	28.57	56.34
95Pct	47.59	36.76	56.67
Mean	21	17.62	24.38
Std Dev	11.62	9.04	14.20

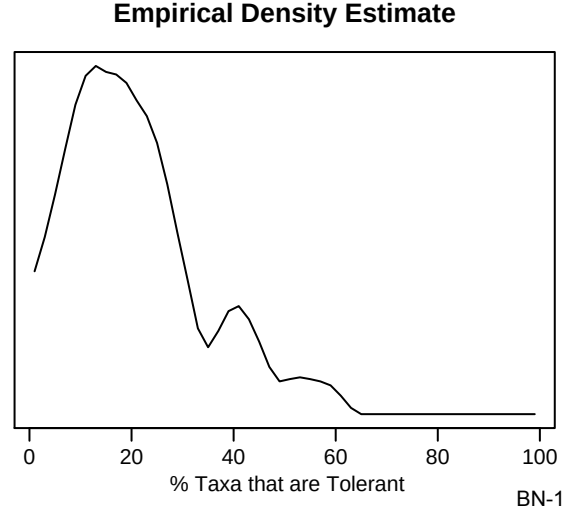
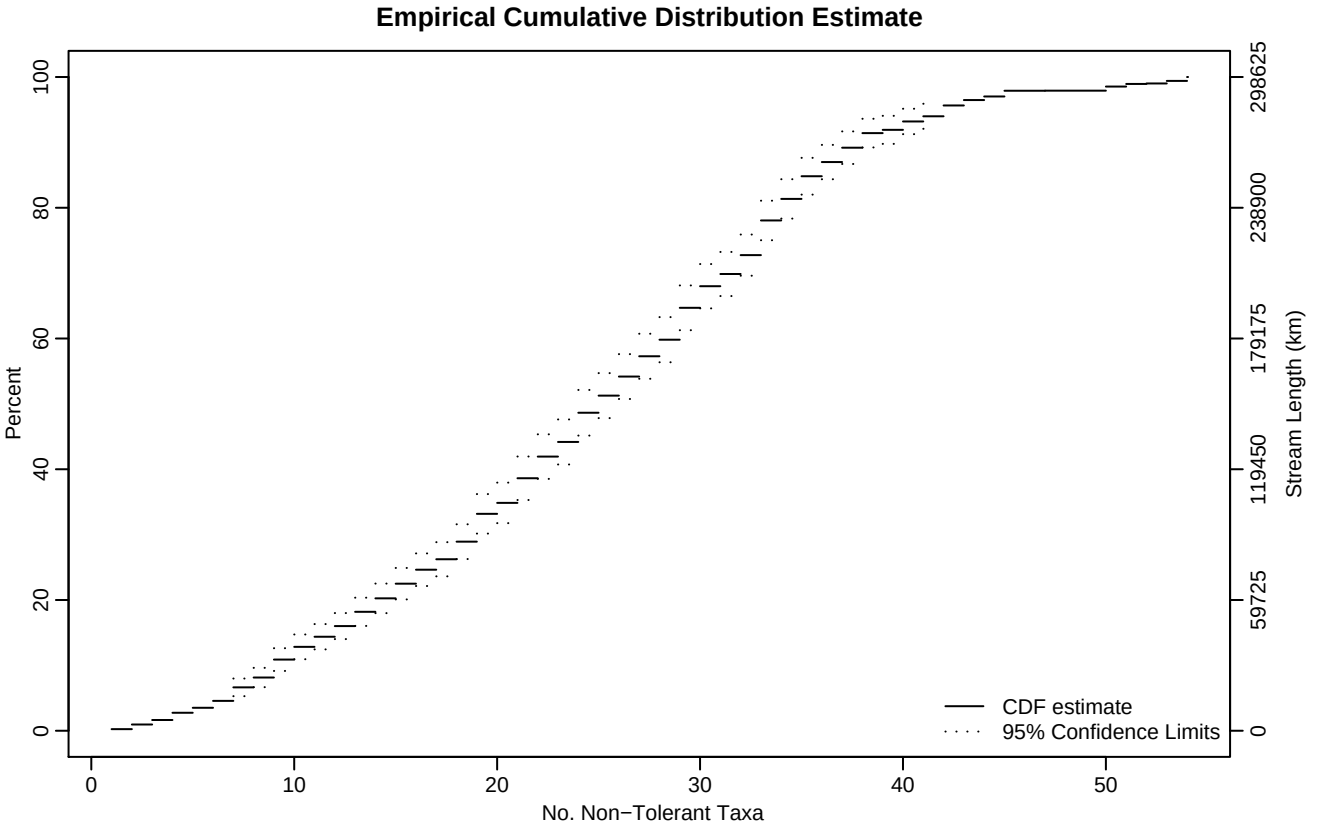


Figure BN−155 Indicator: NTOLRICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.21	5.24	6.81
10Pct	8.68	8.13	9.31
25Pct	16.23	14.96	17.50
50Pct	24.52	23.50	25.80
75Pct	32.42	31.62	33.09
90Pct	37.36	36.21	39.49
95Pct	41.61	39.87	43.89
Mean	24.72	24.04	25.40
Std Dev	8.92	8.42	9.42

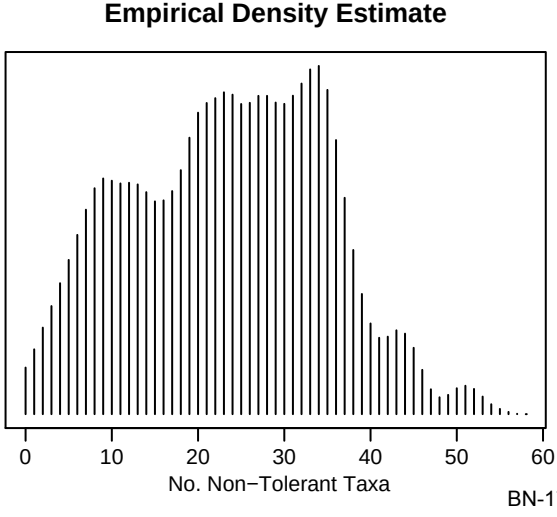
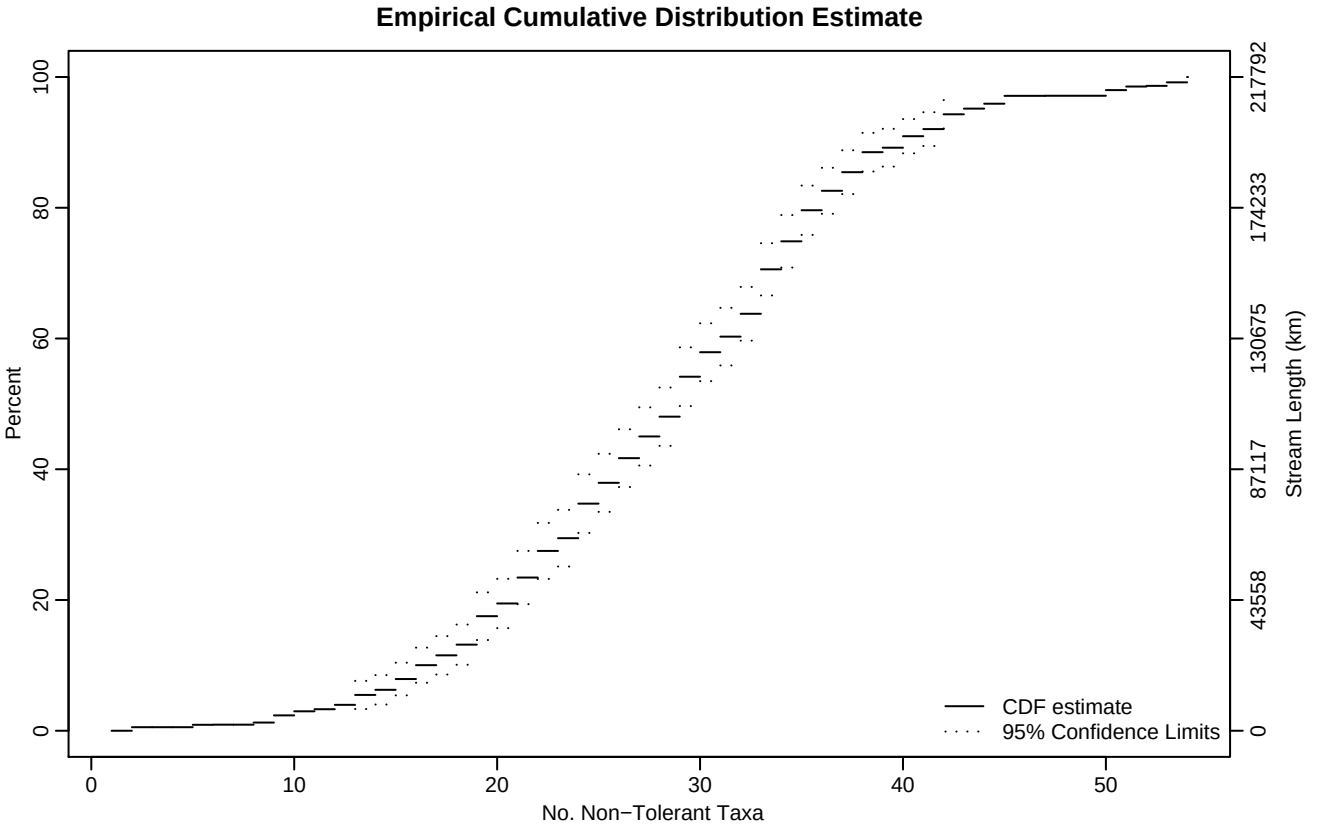


Figure BN−156 Indicator: NTOLRICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	12.69	10.58	14.35
10Pct	15.99	14.73	17.61
25Pct	21.38	20.35	22.84
50Pct	28.32	27.13	29.12
75Pct	34.03	33.07	34.89
90Pct	39.46	37.53	41.41
95Pct	42.81	41.34	47.26
Mean	28.47	27.65	29.30
Std Dev	8.33	7.72	8.94

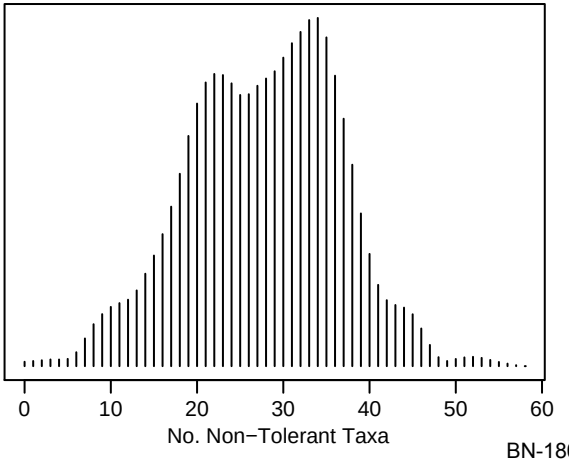
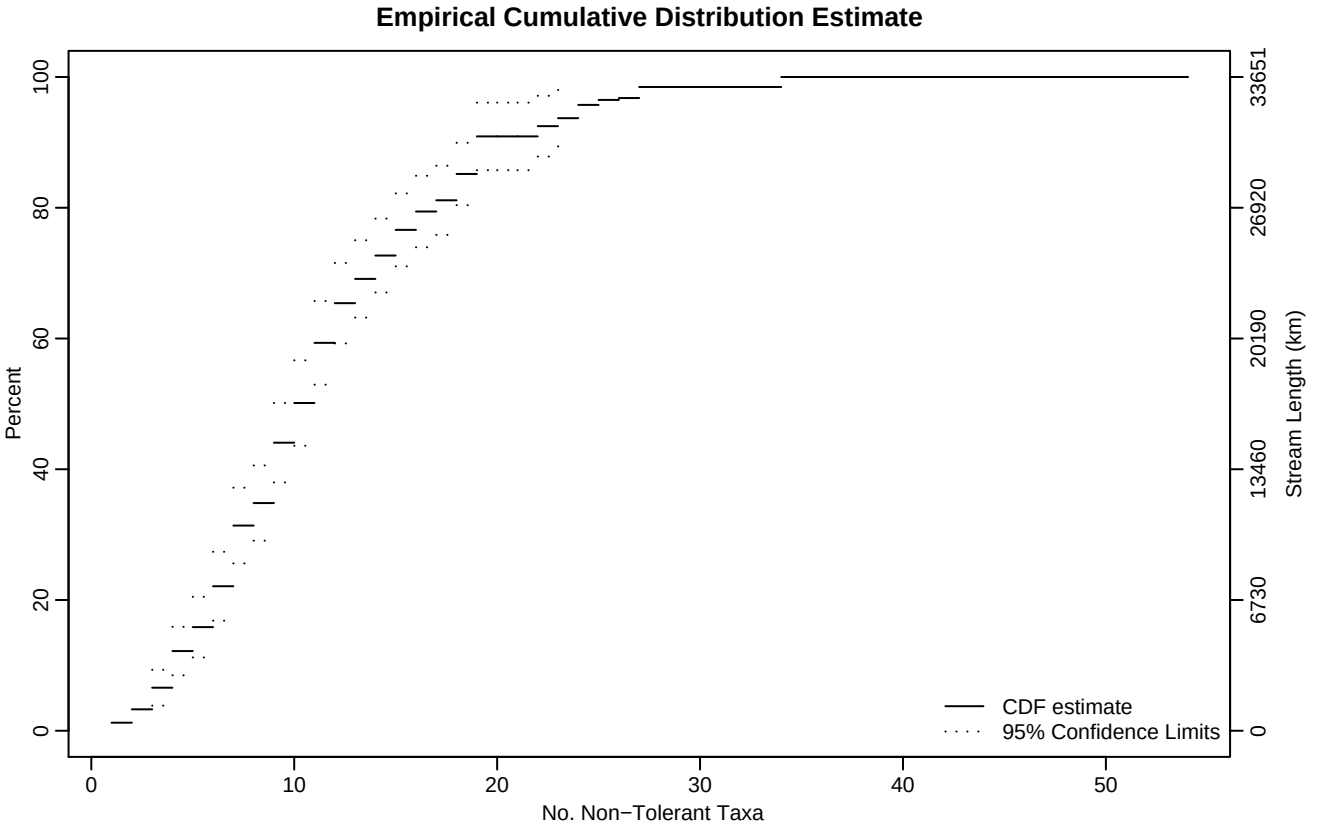


Figure BN−157 Indicator: NTOLRICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.52	1.94	3.05
10Pct	3.61	3.11	4.17
25Pct	6.31	5.60	6.90
50Pct	9.98	8.96	10.67
75Pct	14.59	13.03	16.78
90Pct	18.84	17.96	23.64
95Pct	23.64	18.97	33.52
Mean	11.52	10.73	12.32
Std Dev	5.56	4.87	6.26

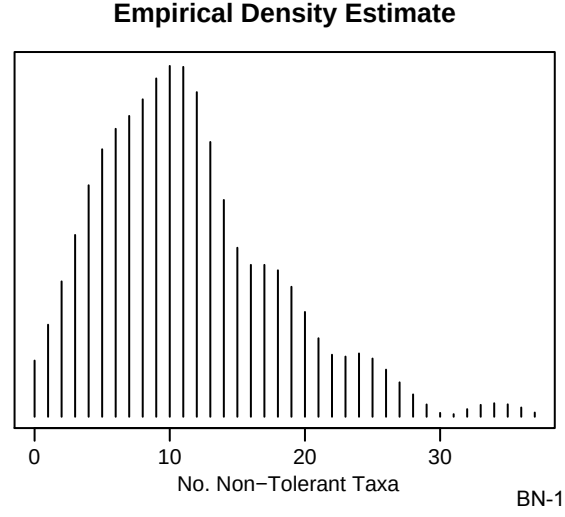
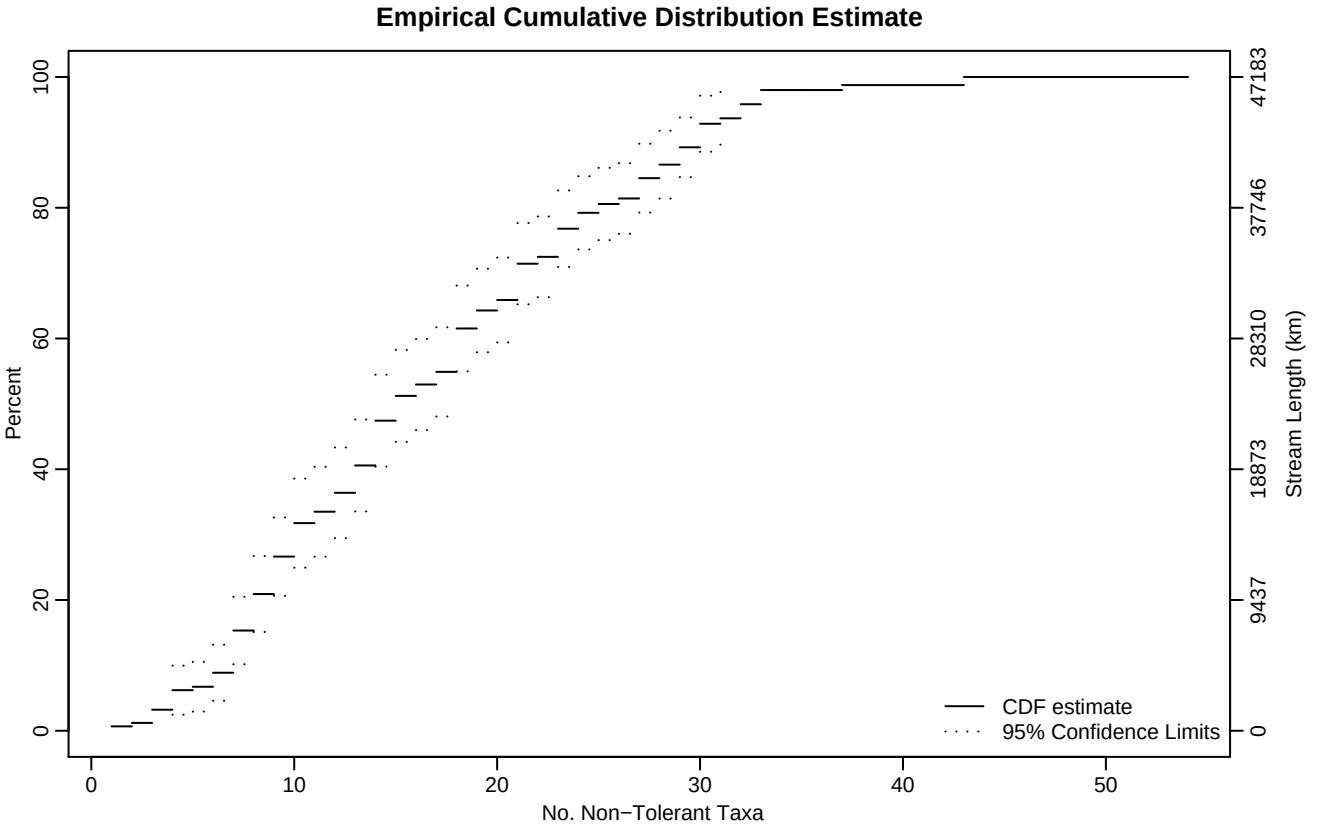


Figure BN−158 Indicator: NTOLRICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.60	2.49	5.50
10Pct	6.17	3.81	6.85
25Pct	8.71	7.69	9.82
50Pct	14.68	13.34	17.33
75Pct	22.58	20.53	25.72
90Pct	29.21	27.36	31.48
95Pct	31.61	29.40	42.44
Mean	16.81	15.47	18.14
Std Dev	8.02	7.43	8.62

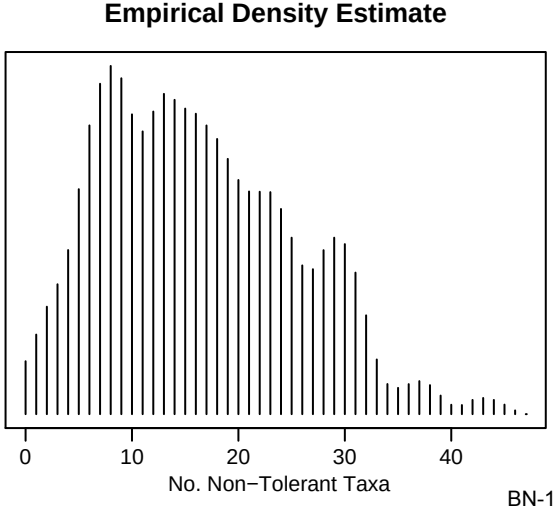
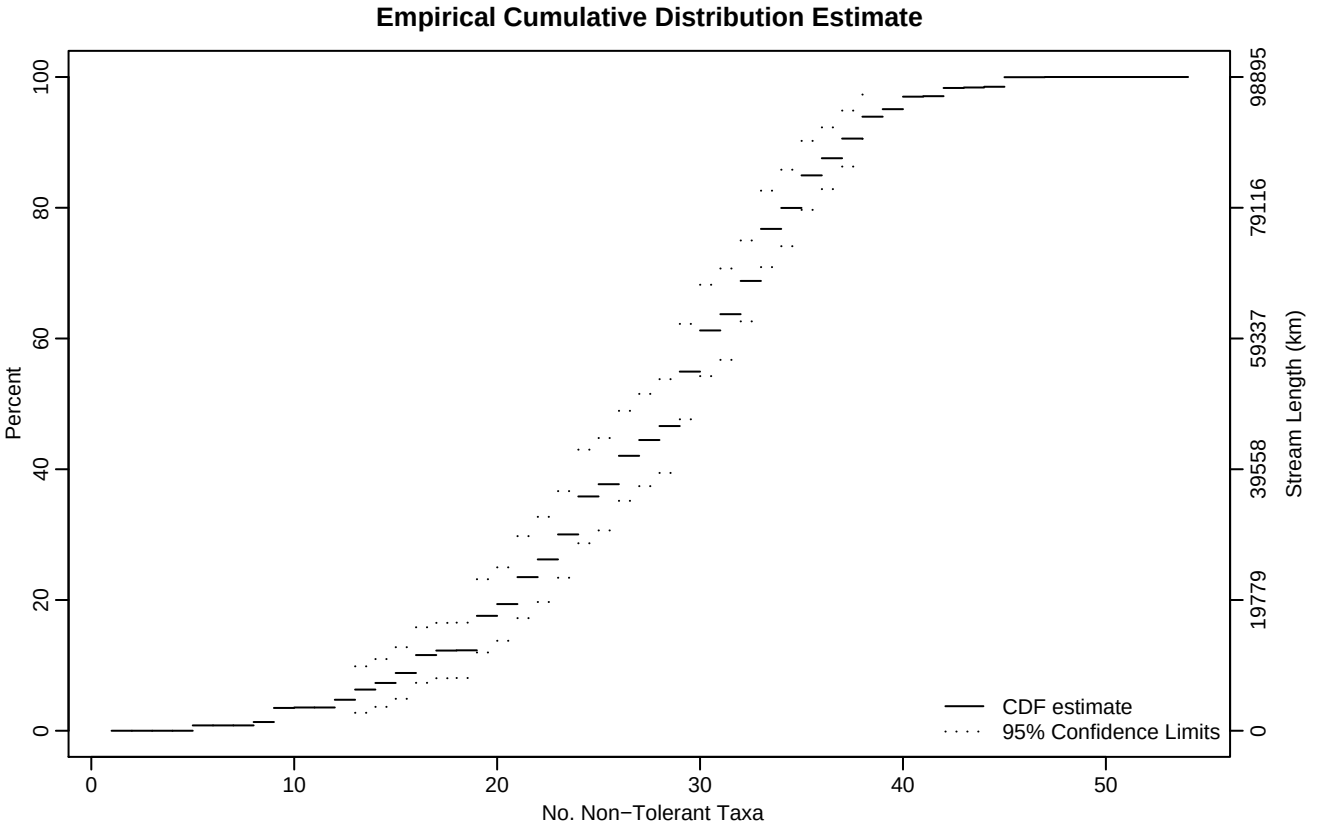


Figure BN−159 Indicator: NTOLRICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	12.17	8.27	14.51
10Pct	15.43	12.79	18.33
25Pct	21.55	19.49	23.26
50Pct	28.41	26.23	29.39
75Pct	32.78	31.91	34.33
90Pct	36.81	35.11	38.72
95Pct	38.93	37.29	43.52
Mean	27.52	26.43	28.61
Std Dev	7.32	6.54	8.09

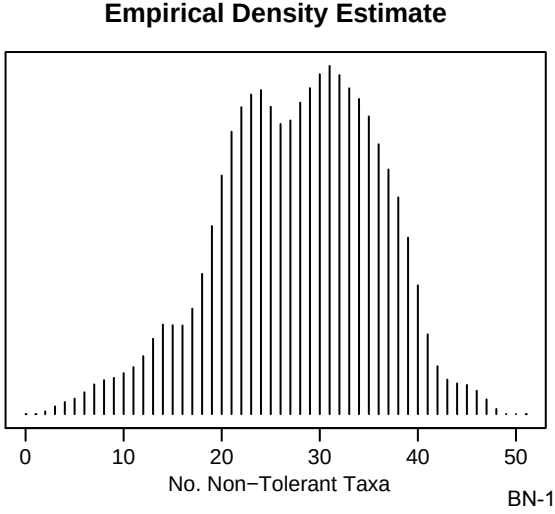
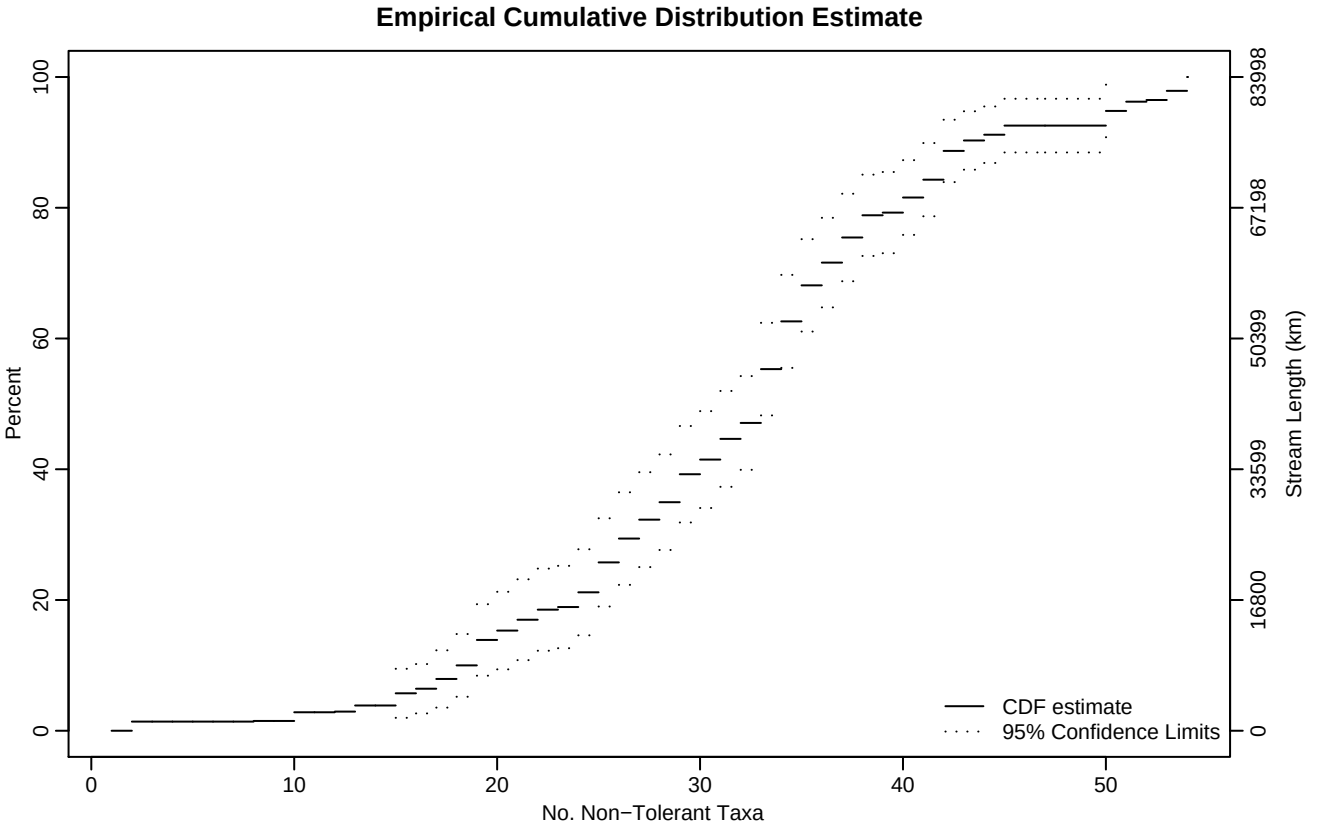


Figure BN−160 Indicator: NTOLRICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.61	9.18	17.16
10Pct	18	14.72	19.64
25Pct	24.84	21.94	26.75
50Pct	32.35	30.41	33.26
75Pct	36.88	34.98	40.16
90Pct	42.82	41.19	50.04
95Pct	50.13	43.68	53.58
Mean	31.67	30.06	33.28
Std Dev	9.87	8.78	10.97

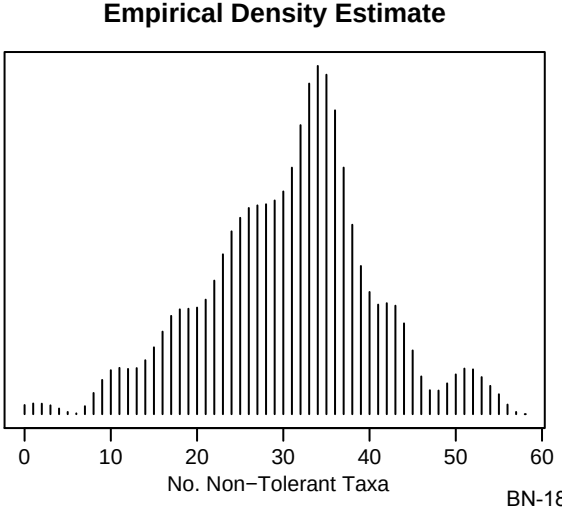
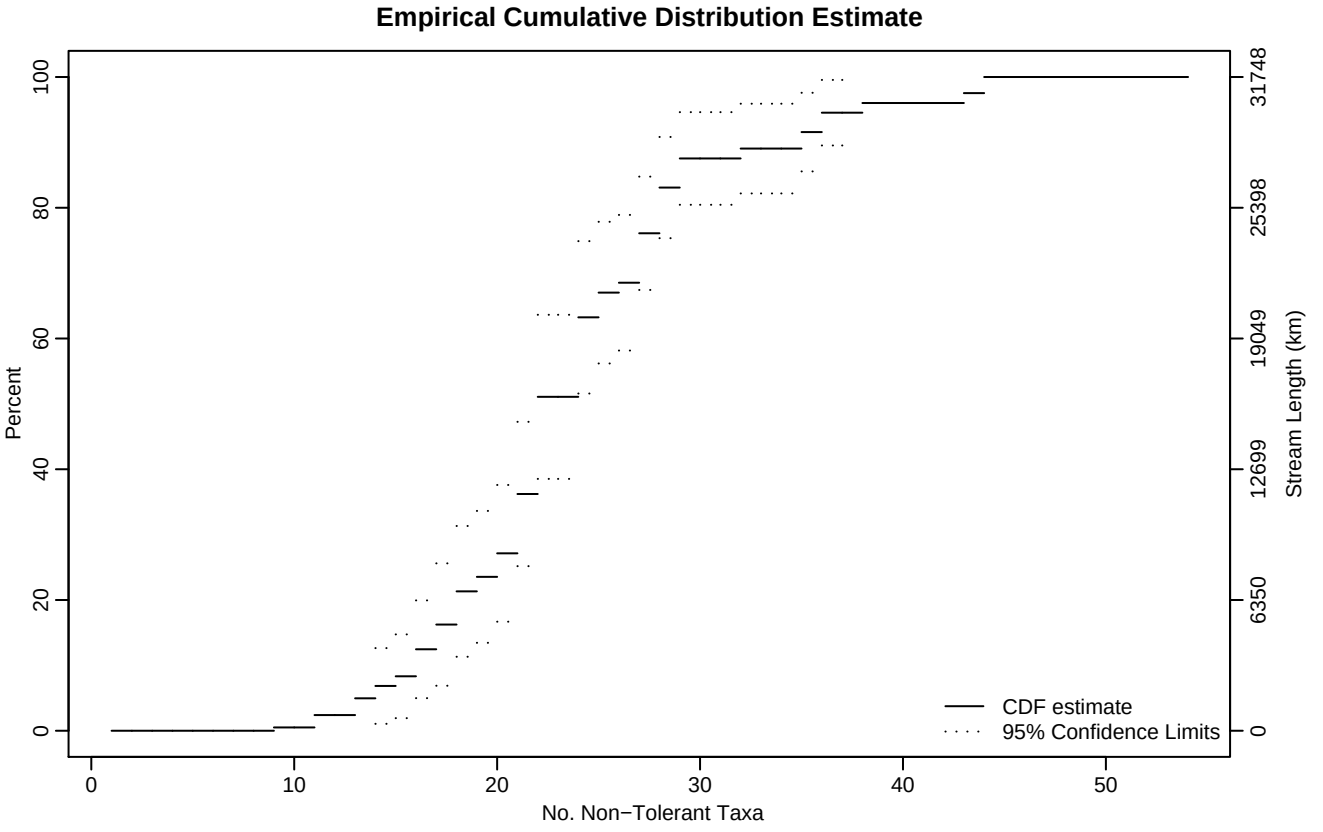


Figure BN−161 Indicator: NTOLRICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	13.02	8.87	15.30
10Pct	15.40	12.45	17.04
25Pct	19.41	16.60	20.90
50Pct	21.93	21.16	23.84
75Pct	26.86	24.36	28.52
90Pct	34.38	28.03	42.51
95Pct	37.31	34.42	43.96
Mean	23.89	22.43	25.35
Std Dev	6.70	5.51	7.88

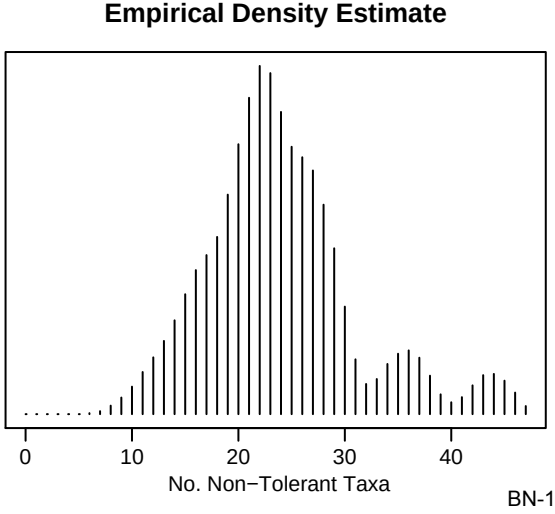
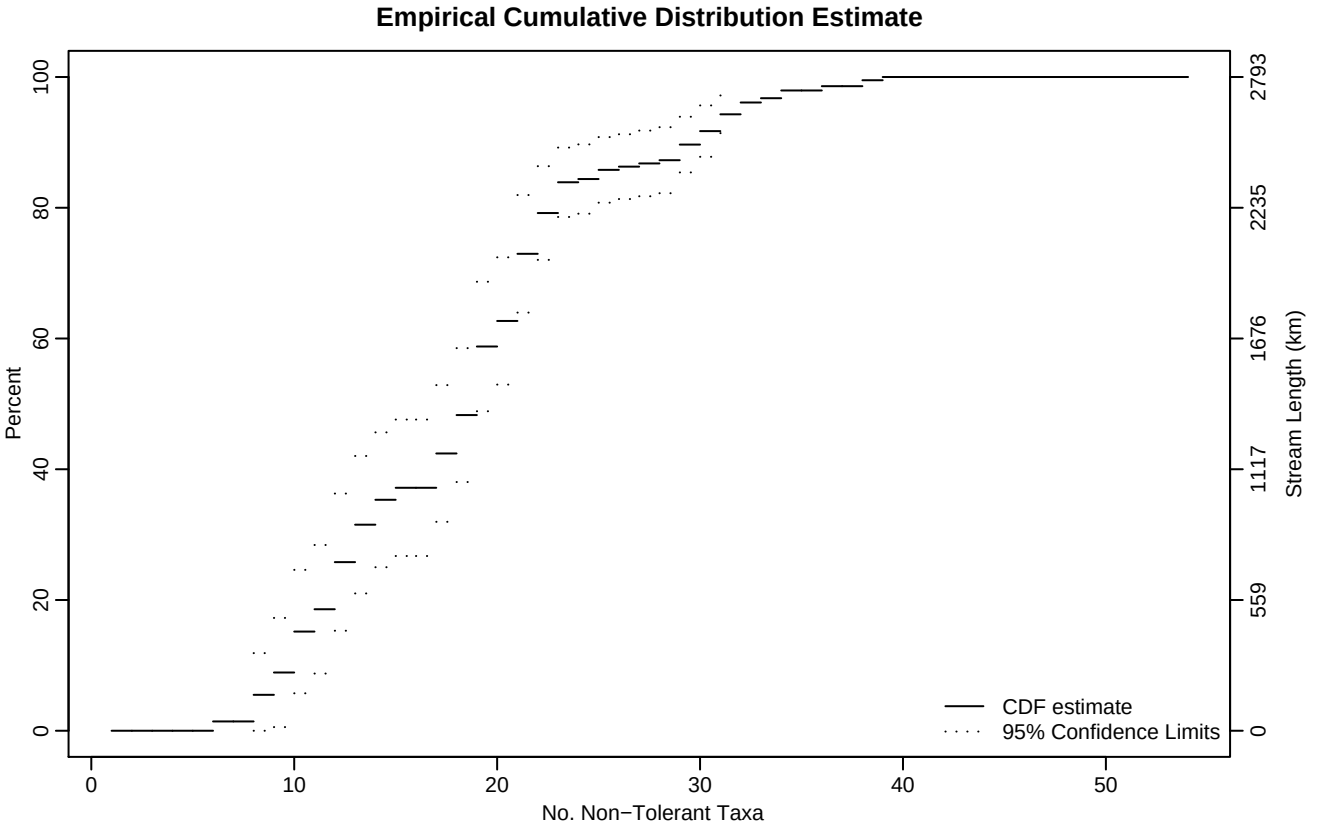


Figure BN−162 Indicator: NTOLRICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.88	7.27	8.59
10Pct	9.17	7.05	10.94
25Pct	11.89	10	13.88
50Pct	18.16	16.49	19.38
75Pct	21.33	20.32	23.32
90Pct	29.16	24.90	31.03
95Pct	31.39	30.14	33.99
Mean	18.42	17.13	19.71
Std Dev	6.41	5.66	7.16

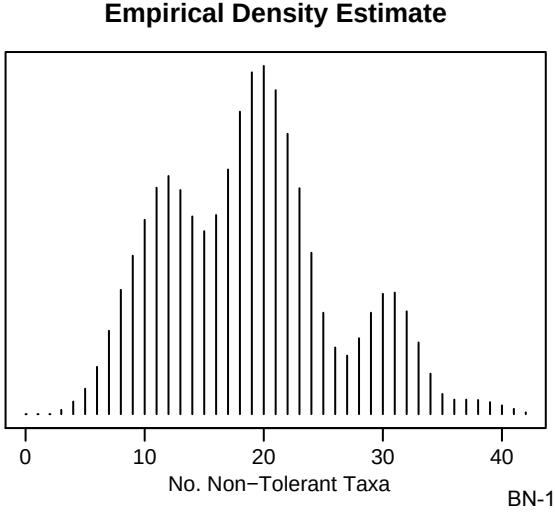
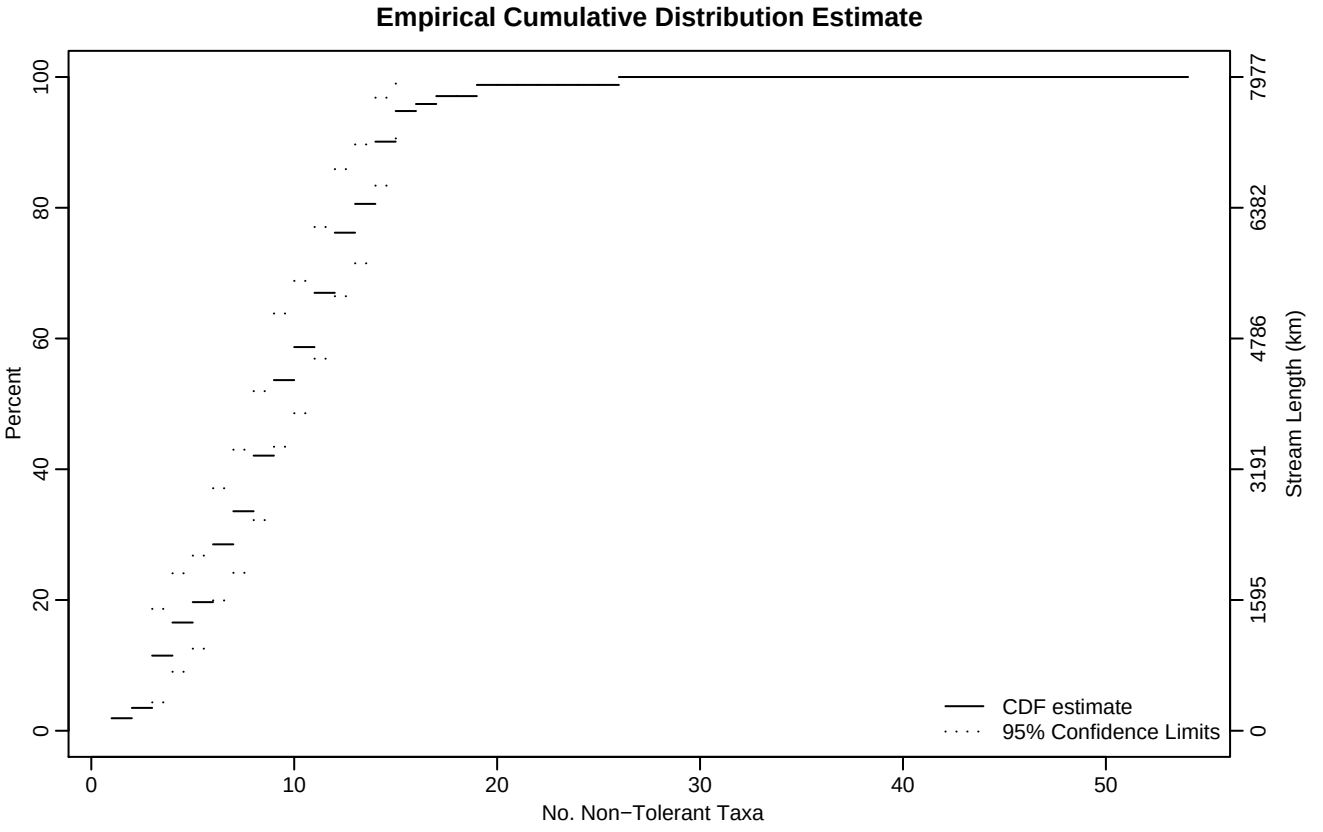


Figure BN−163 Indicator: NTOLRICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.19	1	2.65
10Pct	2.81	2.34	3.45
25Pct	5.60	4.41	6.72
50Pct	8.69	7.76	10.16
75Pct	11.87	10.75	13.47
90Pct	13.99	13.02	25.33
95Pct	15.19	14.13	25.41
Mean	9.40	8.57	10.23
Std Dev	4.23	3.50	4.96

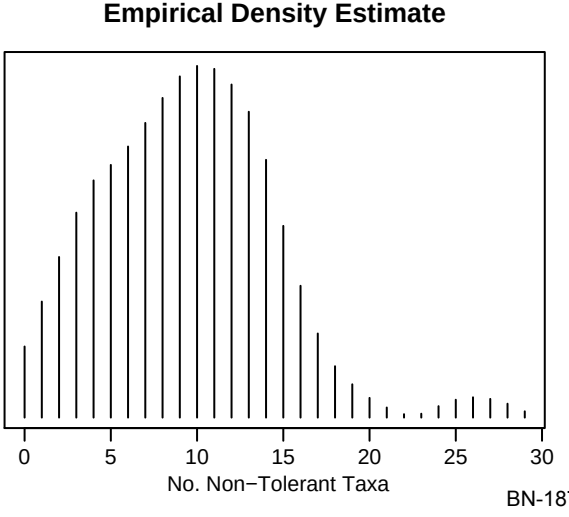
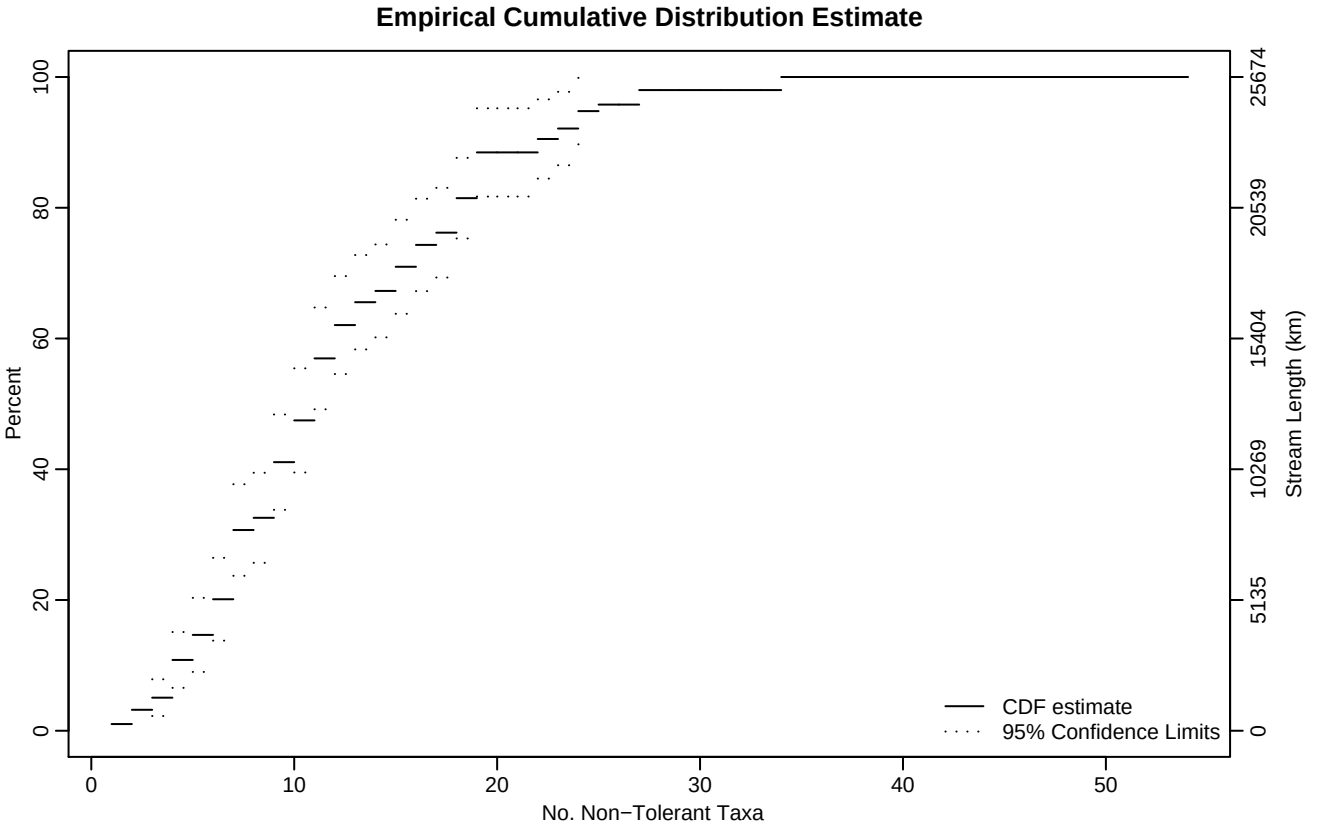


Figure BN−164 Indicator: NTOLRICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.97	1.83	3.37
10Pct	3.86	3.35	4.55
25Pct	6.46	5.70	7.44
50Pct	10.27	9.12	11.23
75Pct	16.37	14.16	18.10
90Pct	21.75	18.28	26.35
95Pct	24.22	21.75	33.99
Mean	12.18	11.17	13.19
Std Dev	5.96	5.08	6.84

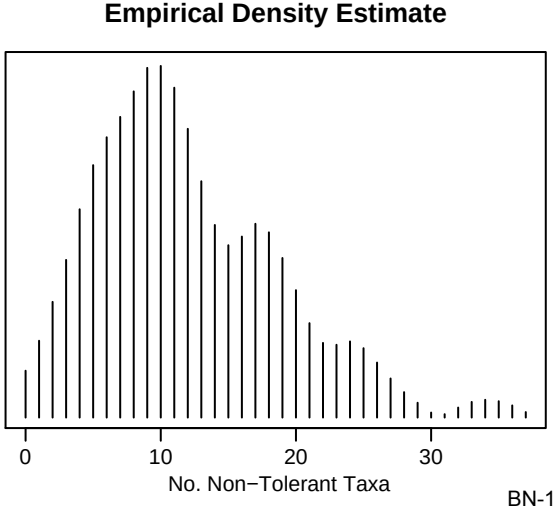
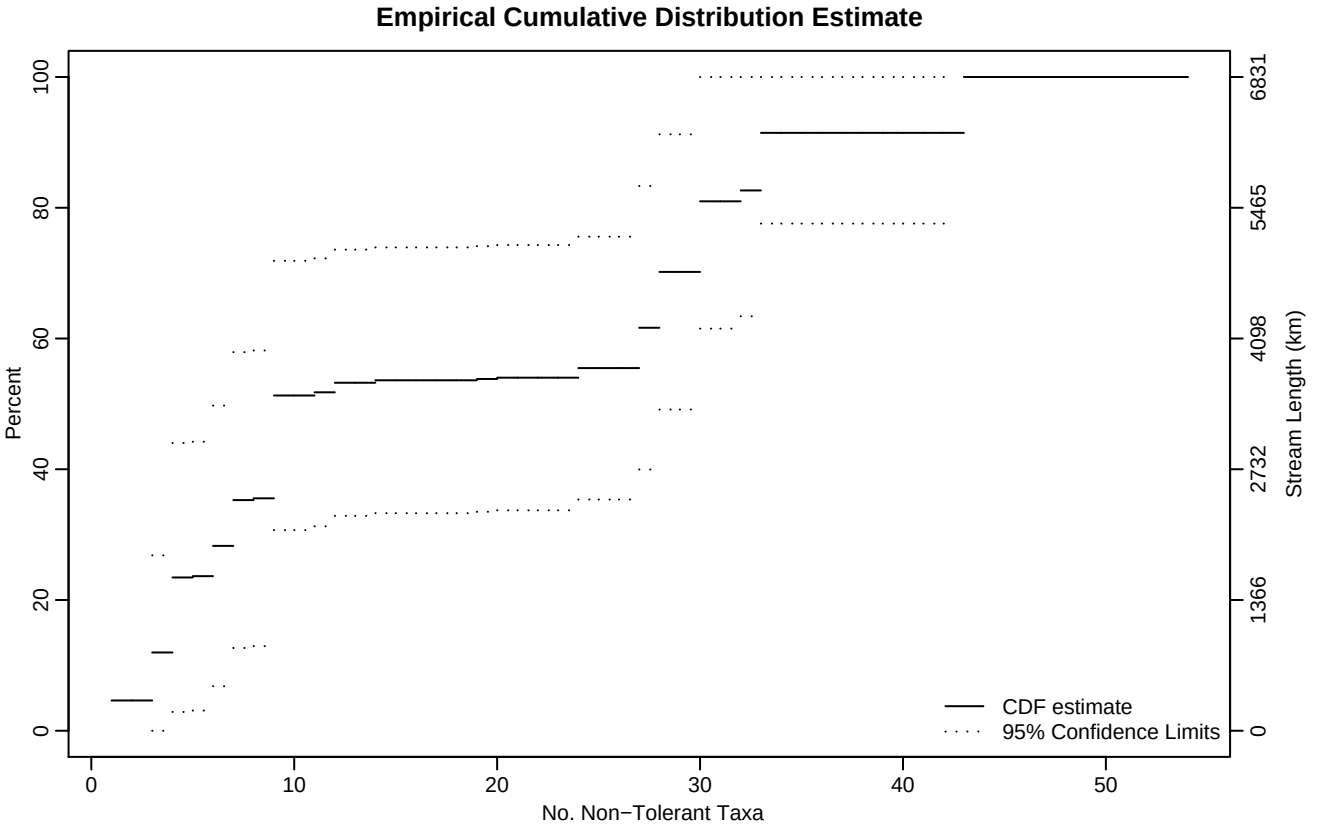


Figure BN−165 Indicator: NTOLRICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.05	1	3.11
10Pct	2.73	1	3.57
25Pct	5.29	1	8.63
50Pct	8.92	5.88	29.20
75Pct	29.45	23.04	42.52
90Pct	32.83	29.04	43
95Pct	42.41	31.03	43
Mean	18.06	11.81	24.32
Std Dev	13.71	11.18	16.23

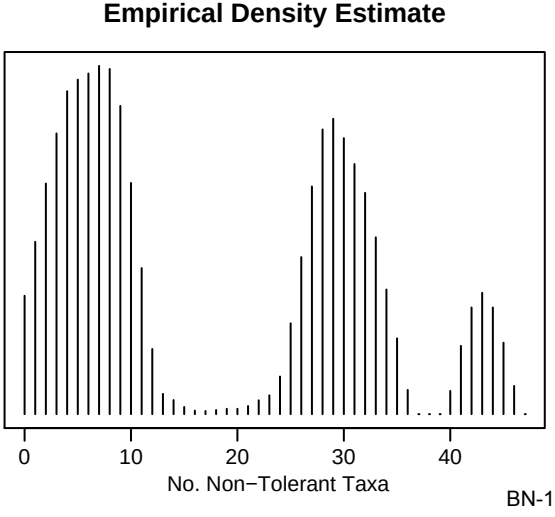
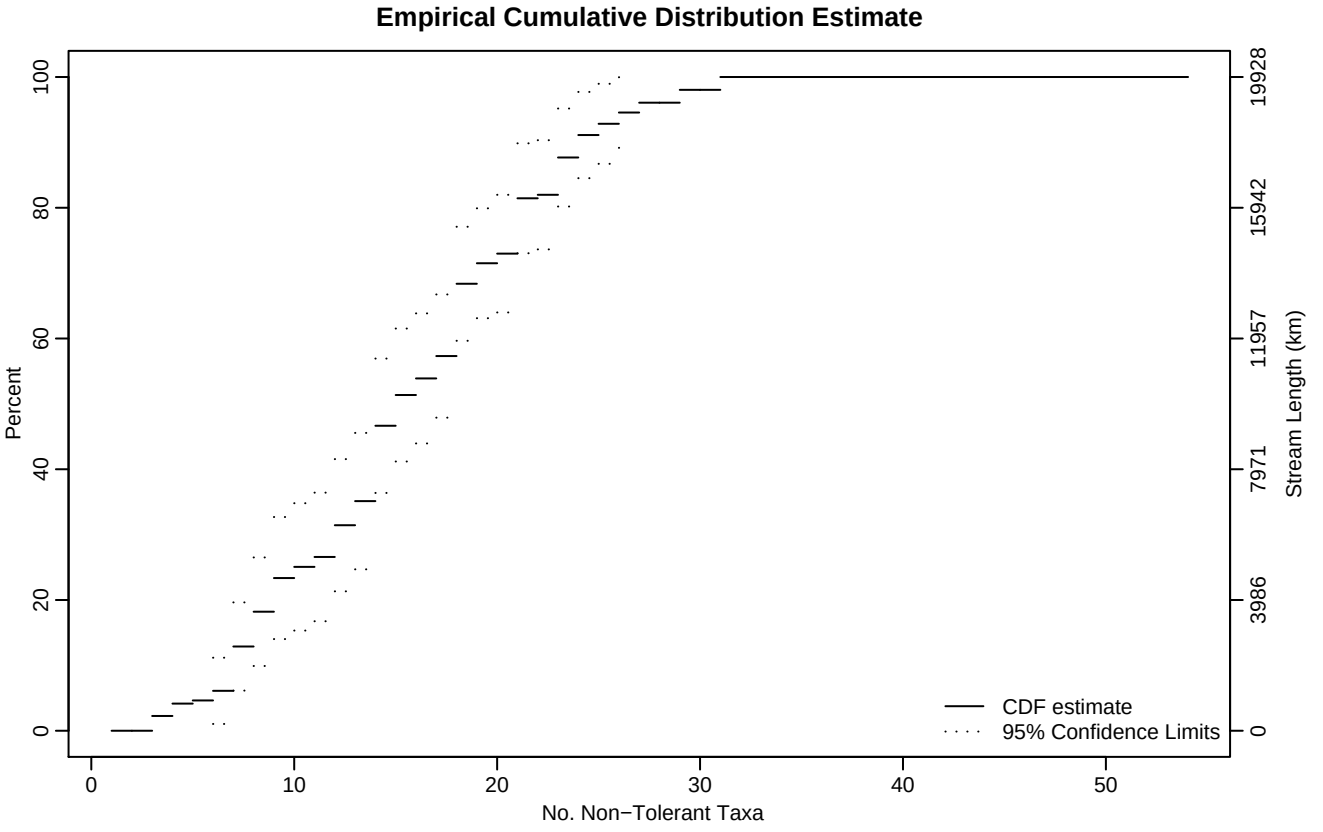


Figure BN−166 Indicator: NTOLRICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.25	2.28	6.48
10Pct	6.57	5.15	7.42
25Pct	9.96	7.51	12.80
50Pct	14.71	13.37	17.30
75Pct	20.24	17.72	22.49
90Pct	23.67	22.07	28.80
95Pct	26.29	23.56	31
Mean	15.70	14.46	16.95
Std Dev	5.88	5	6.75

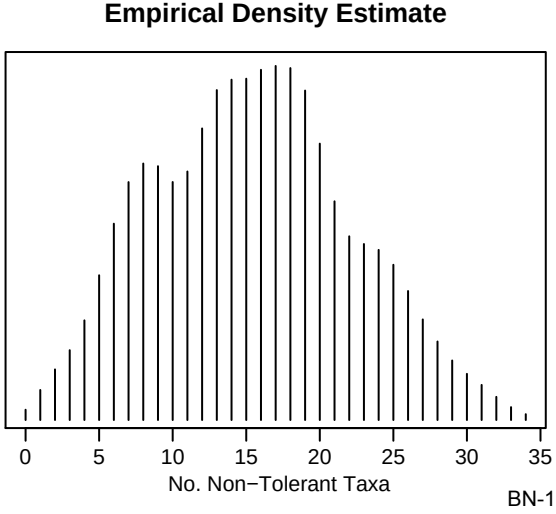
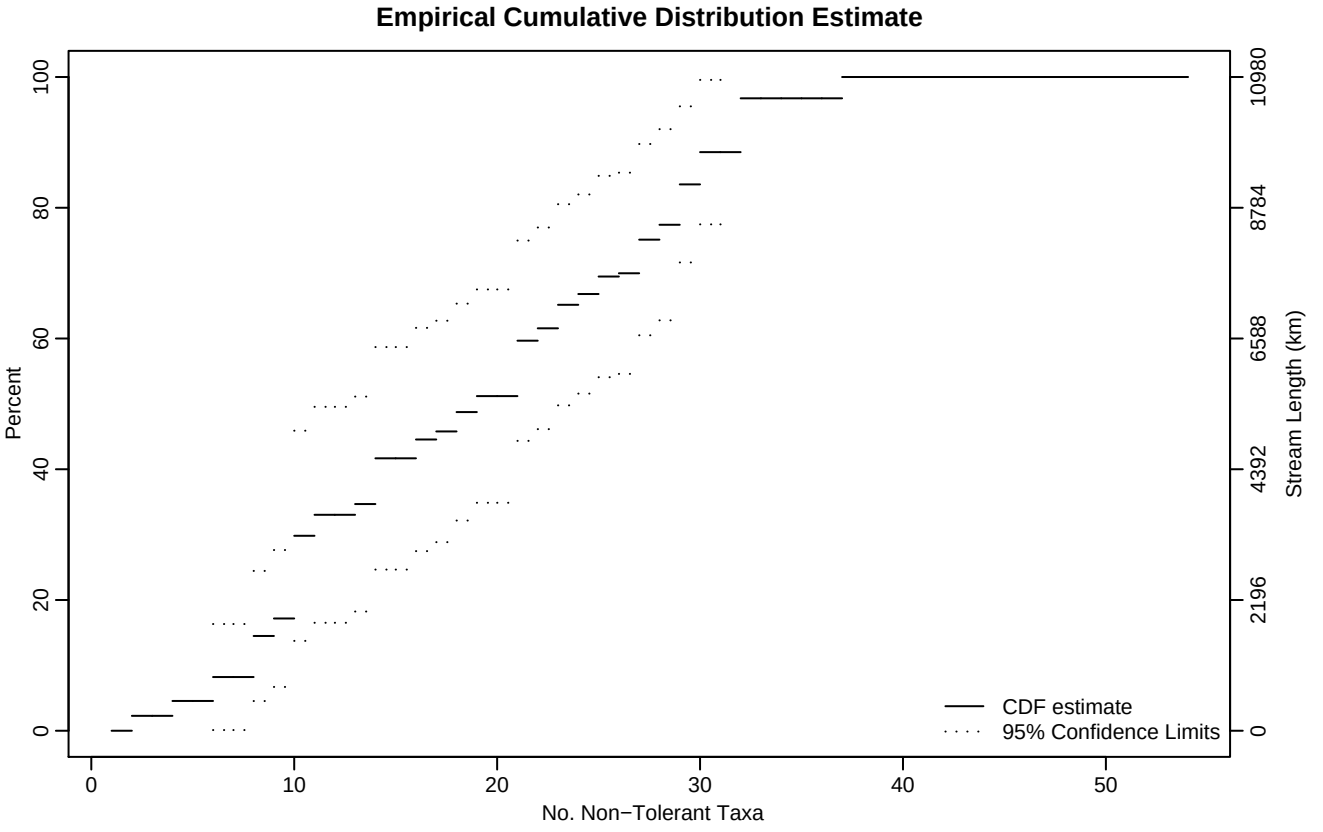


Figure BN−167 Indicator: NTOLRICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.12	1	7.35
10Pct	7.28	1.84	9.07
25Pct	9.62	8.06	13.10
50Pct	18.51	12.25	23.86
75Pct	26.98	20.95	31.28
90Pct	31.18	28.01	37
95Pct	31.79	28.79	37
Mean	18.93	15.70	22.17
Std Dev	9.19	7.93	10.46

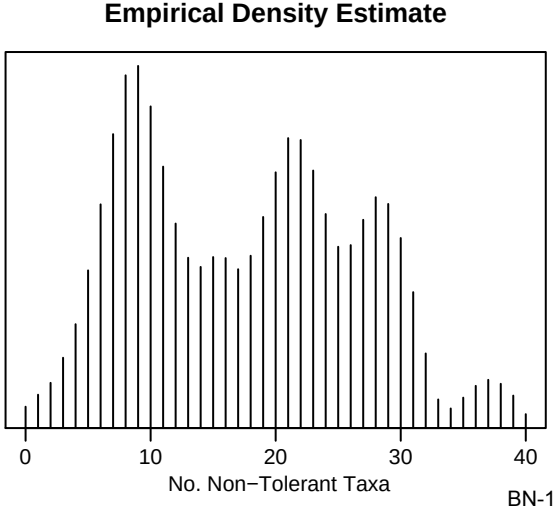
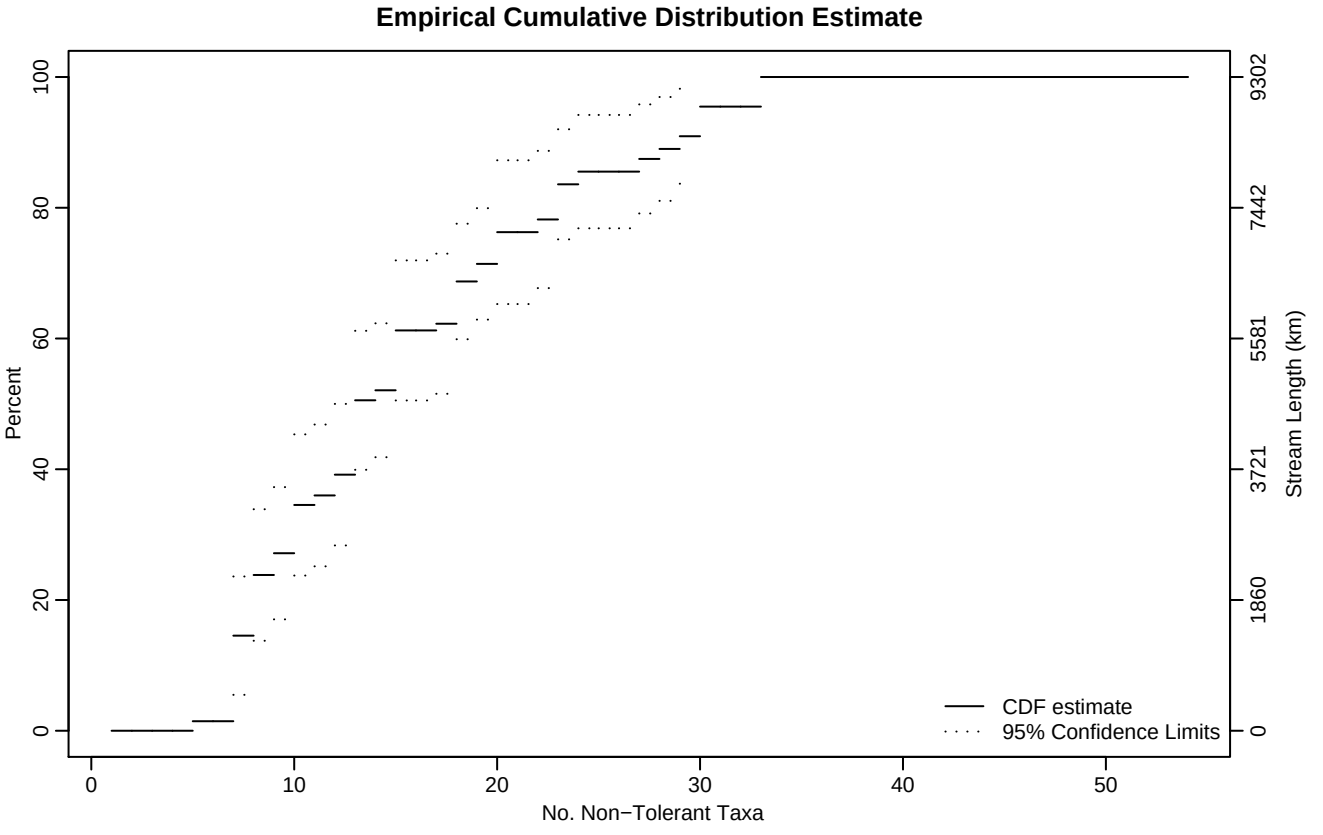


Figure BN−168 Indicator: NTOLRICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.27	6.07	6.47
10Pct	6.65	6.44	6.86
25Pct	8.35	7.04	10.39
50Pct	12.95	11.92	14.98
75Pct	19.74	17.62	23.09
90Pct	28.52	22.47	32.84
95Pct	29.90	26.36	33
Mean	15.70	14.13	17.26
Std Dev	5.86	4.89	6.82

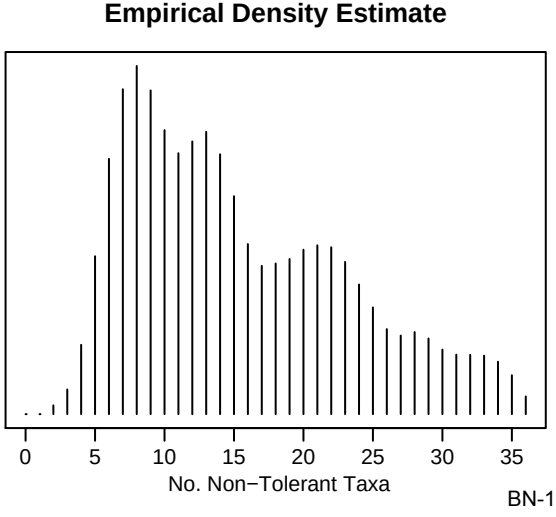
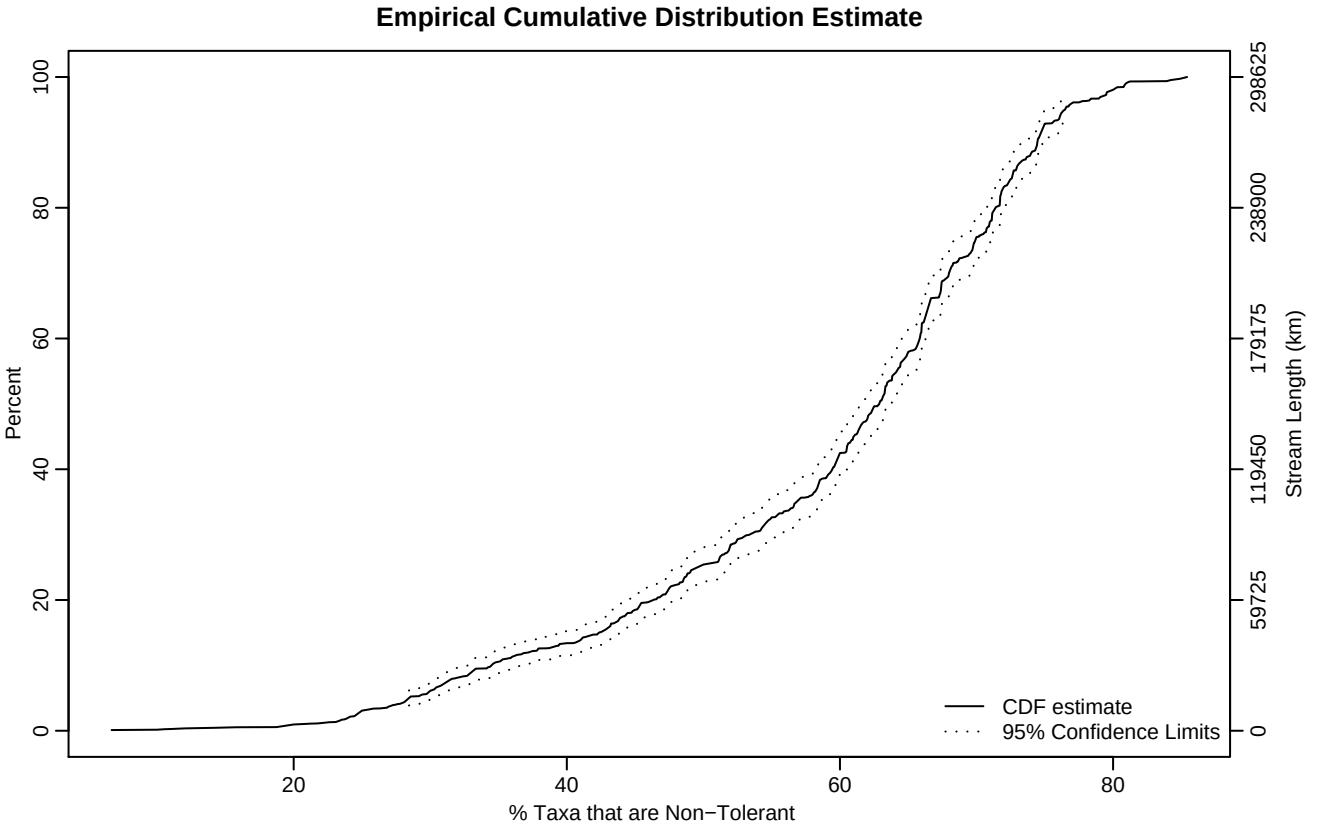


Figure BN−169 Indicator: NTOLPTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	28.44	27.38	29.97
10Pct	34.48	32.33	36.69
25Pct	49.57	48.04	51.87
50Pct	62.87	61.44	63.80
75Pct	69.91	68.56	71.12
90Pct	74.45	73.60	74.94
95Pct	76.47	75.66	78.99
Mean	58.85	58	59.69
Std Dev	12.57	11.86	13.28

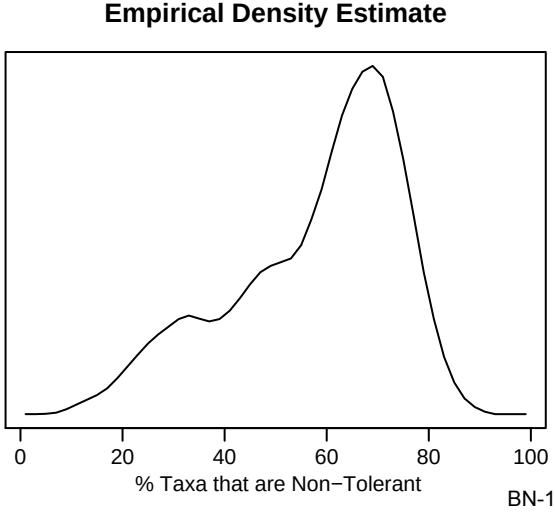
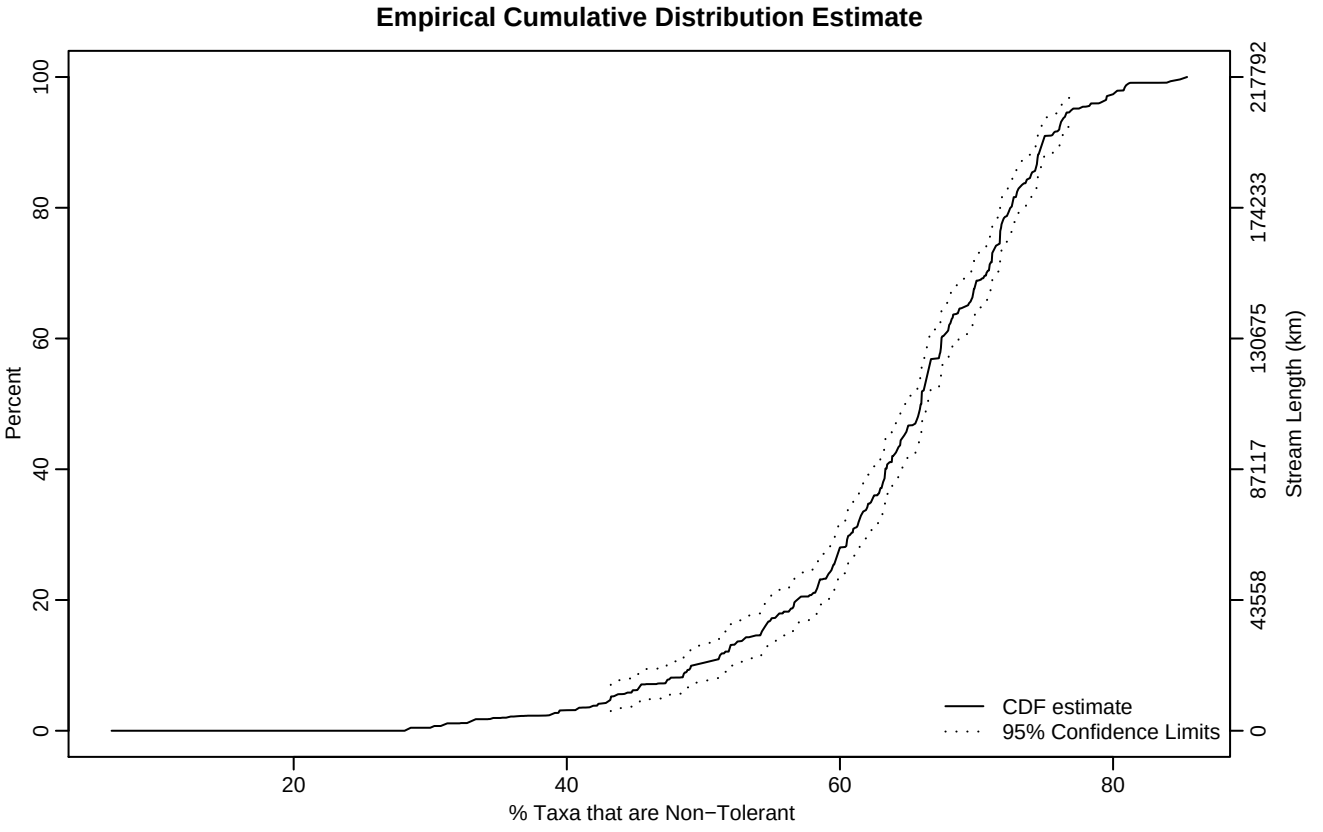


Figure BN−170 Indicator: NTOLPTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	43.22	39.47	45.39
10Pct	49.23	46.66	51.95
25Pct	59.45	58.01	60.51
50Pct	65.96	64.78	66.41
75Pct	71.71	70.93	72.32
90Pct	74.84	74.43	76.20
95Pct	76.99	76.15	79.67
Mean	64.19	63.28	65.10
Std Dev	9.38	8.61	10.15

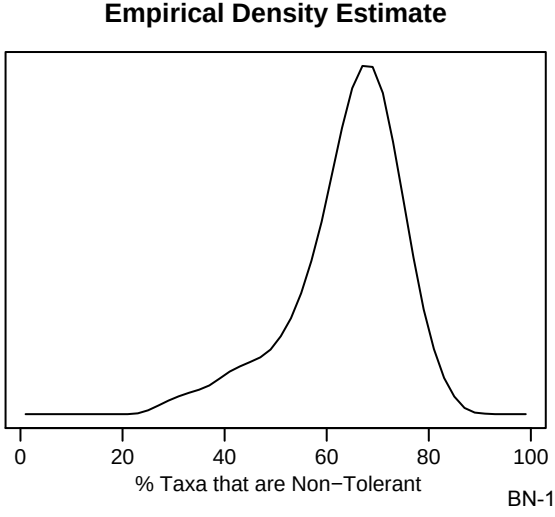
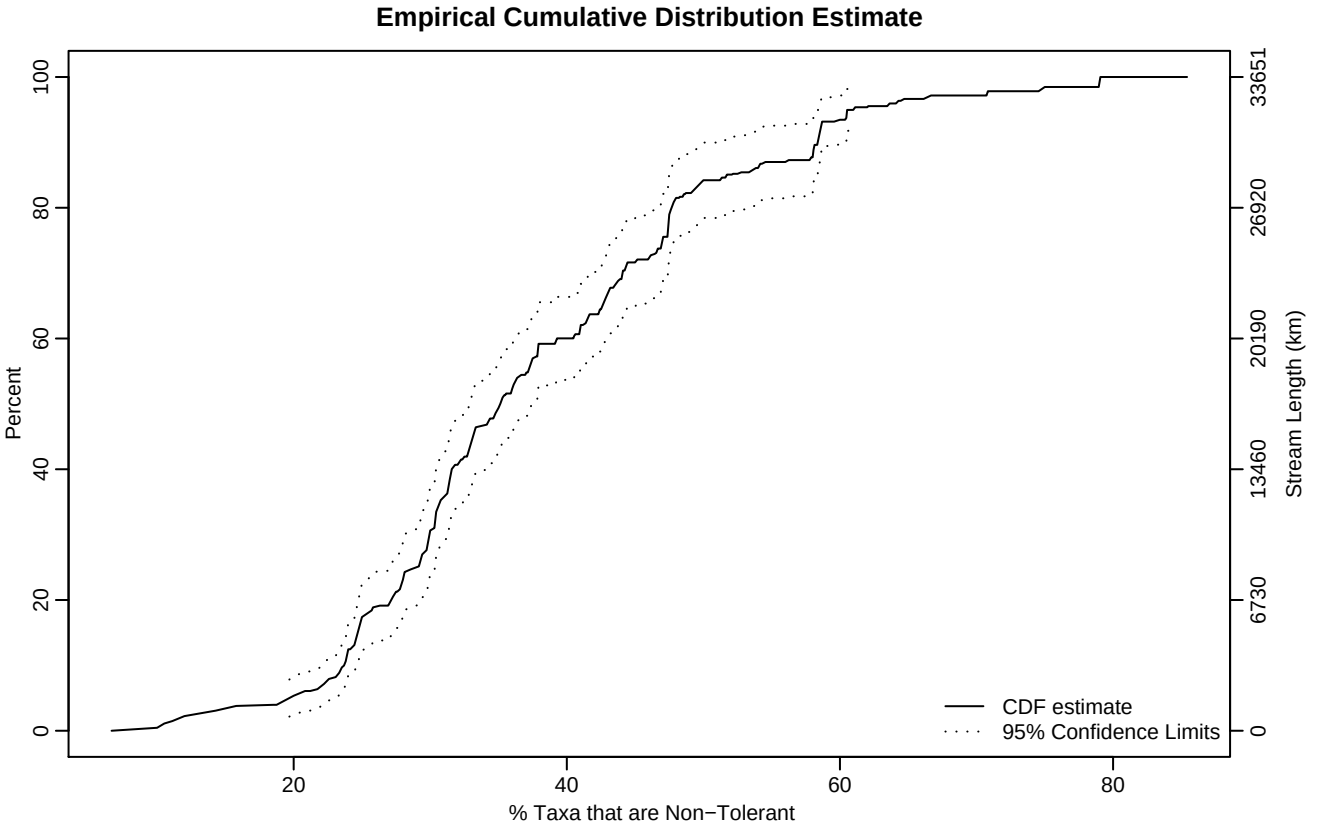


Figure BN−171 Indicator: NTOLPTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	19.68	12.54	22.41
10Pct	23.69	21.79	24.50
25Pct	28.98	26.10	30.27
50Pct	35.13	32.87	37.48
75Pct	47	43.54	48.51
90Pct	58.37	52.17	60.52
95Pct	60.99	58.55	74.81
Mean	38.09	36.28	39.90
Std Dev	13.11	11.47	14.75

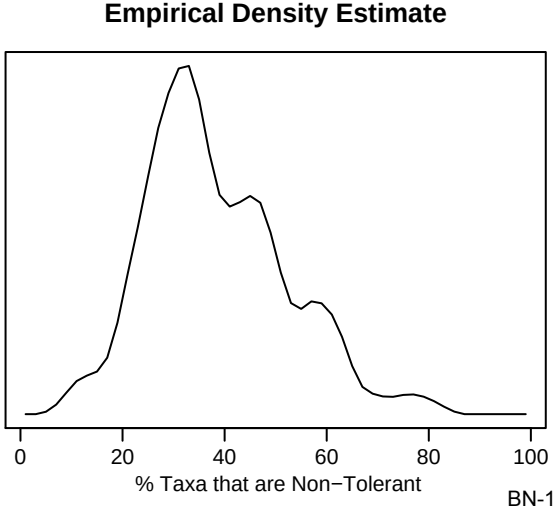
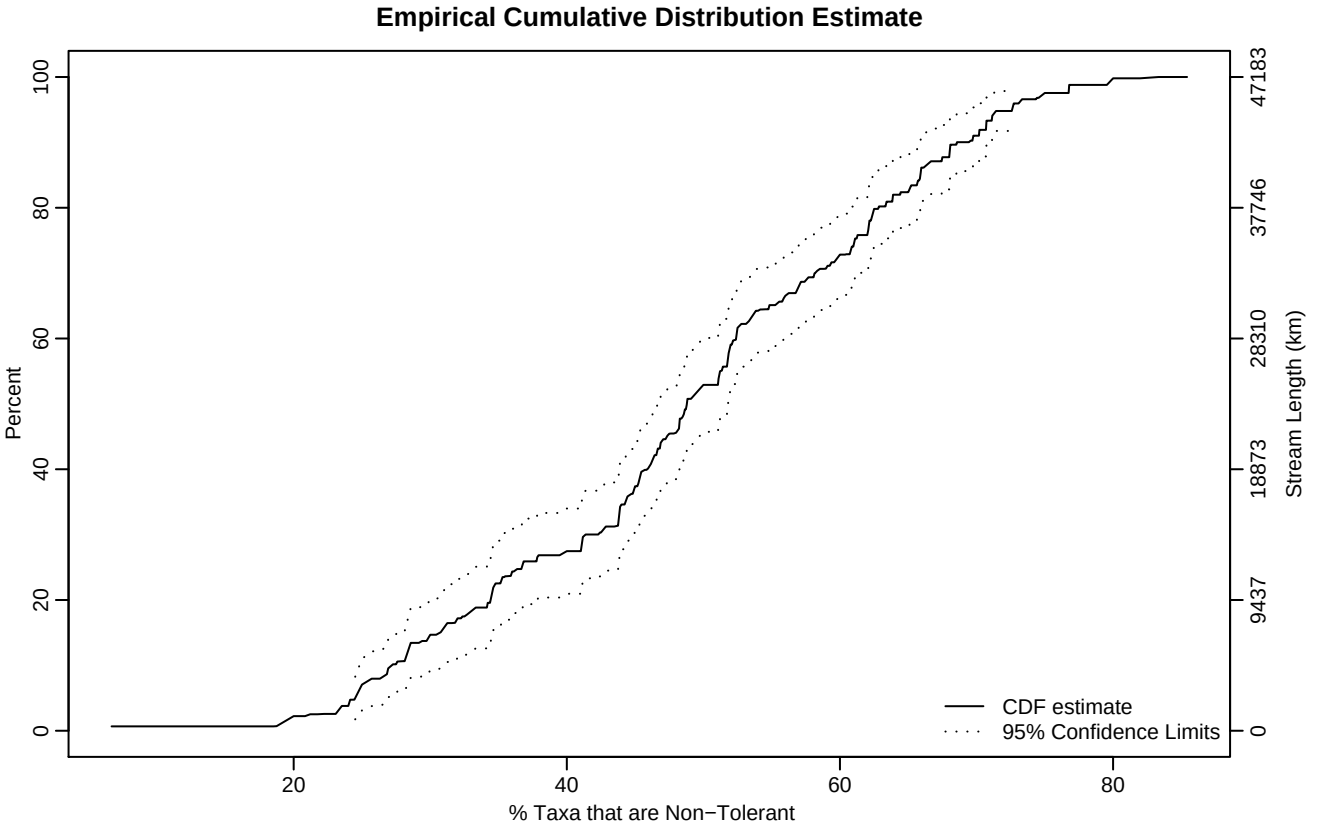


Figure BN−172 Indicator: NTOLPTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	24.51	19.68	26.47
10Pct	27.18	24.61	29.97
25Pct	36.71	33.07	43.76
50Pct	48.79	46.64	51.81
75Pct	61.08	57.48	63.84
90Pct	68.57	65.92	71.31
95Pct	72.61	70.69	76.76
Mean	48.99	46.75	51.22
Std Dev	14.26	13.23	15.29

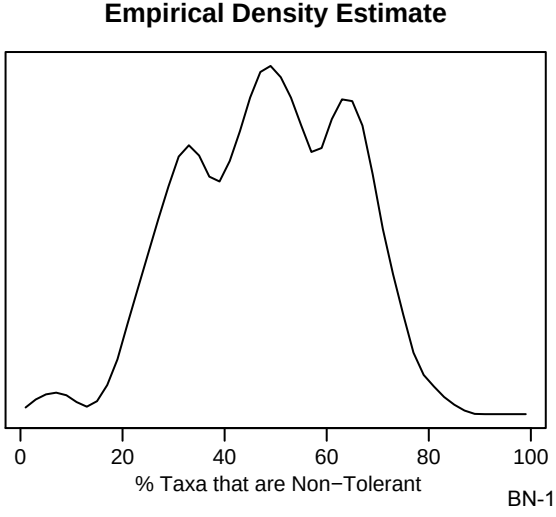
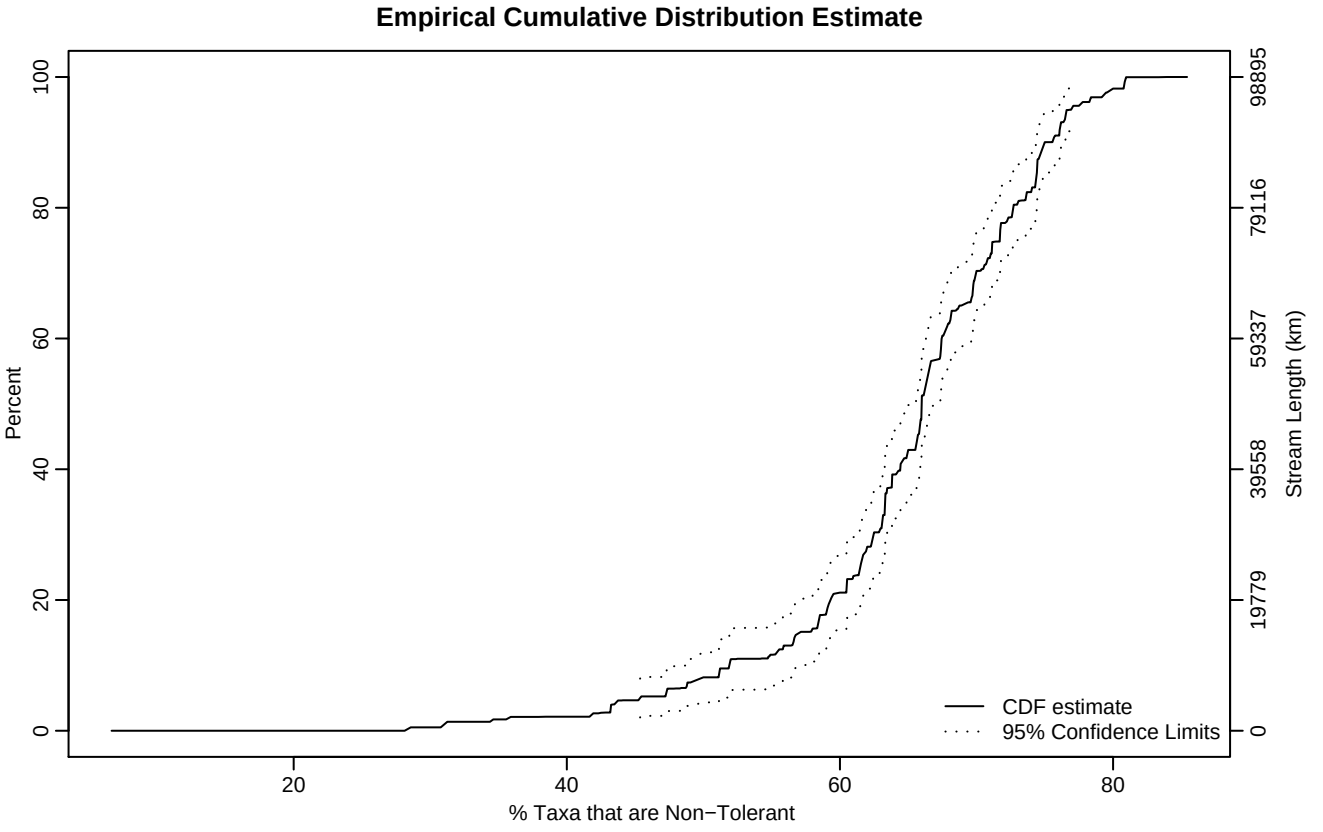


Figure BN−173 Indicator: NTOLPTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	45.36	35.78	49.82
10Pct	51.90	47.25	56.74
25Pct	61.48	59.10	63.05
50Pct	65.99	65	67.33
75Pct	71.70	69.81	73.59
90Pct	74.99	74.40	76.93
95Pct	76.93	76.08	80.77
Mean	65.06	63.80	66.33
Std Dev	8.46	7.23	9.69

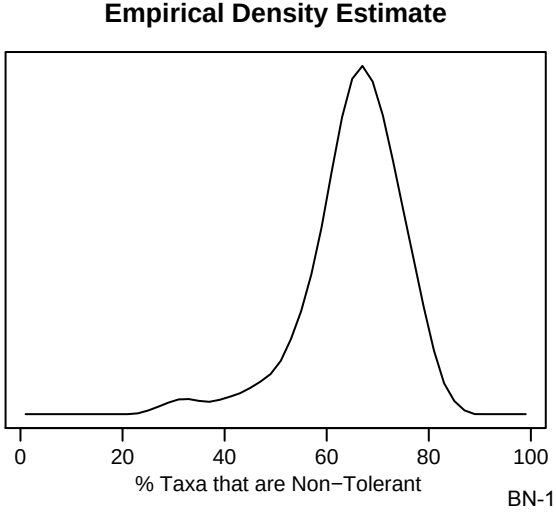
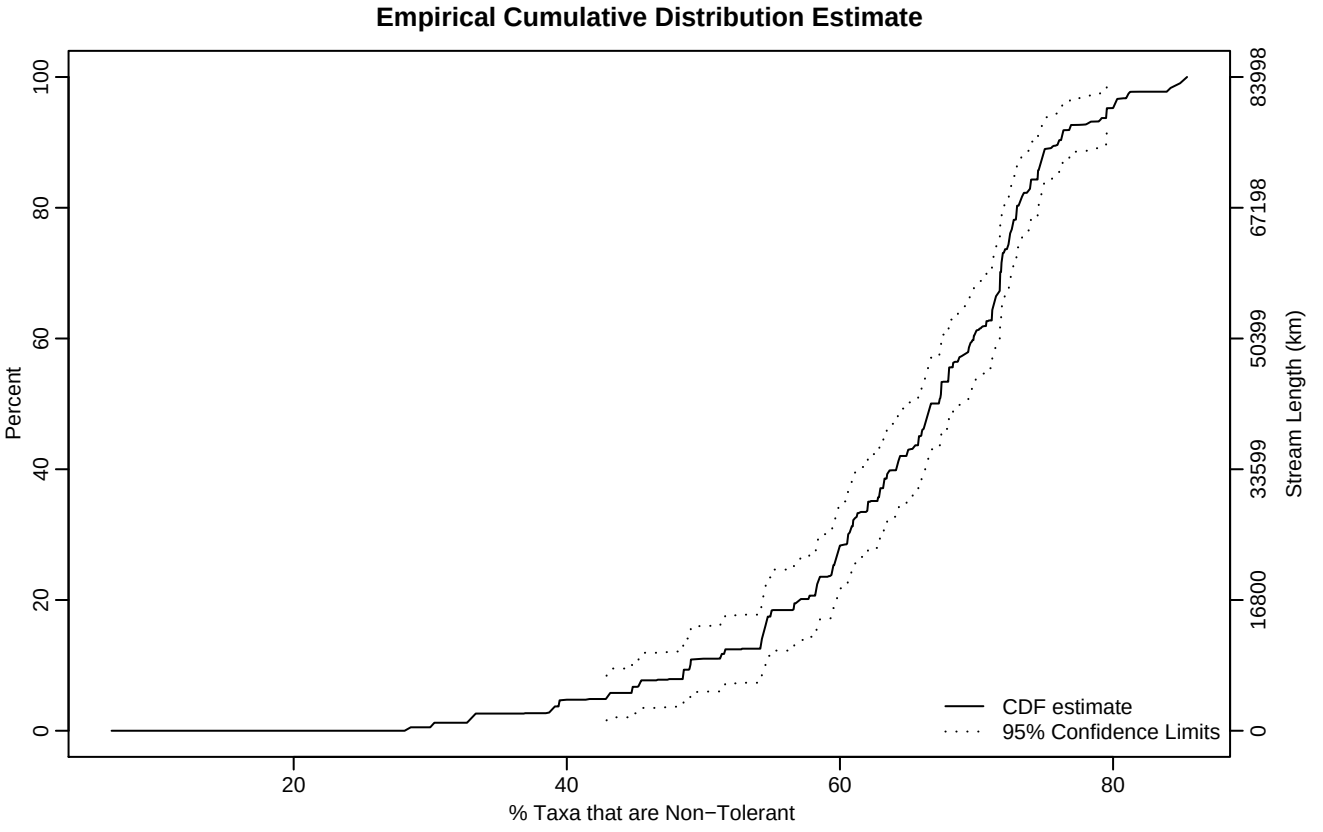


Figure BN−174 Indicator: NTOLPTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	42.91	32.87	48.51
10Pct	49.04	42.98	54.38
25Pct	59.49	55.04	60.95
50Pct	66.66	65.20	68.71
75Pct	72.39	71.71	73.39
90Pct	76	74.49	79.53
95Pct	79.54	76.25	84.94
Mean	64.87	63.20	66.53
Std Dev	10.33	9.17	11.49

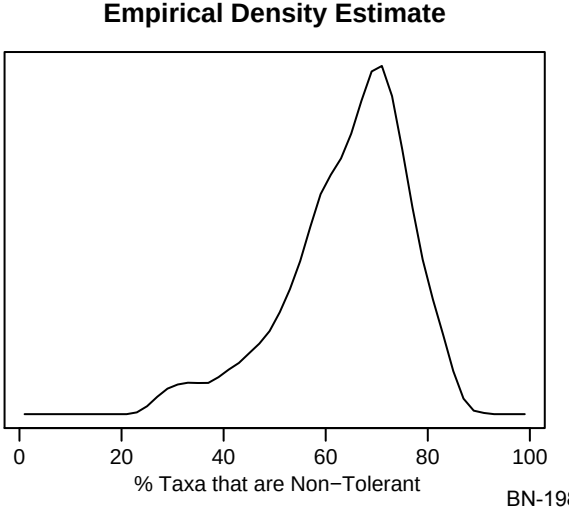
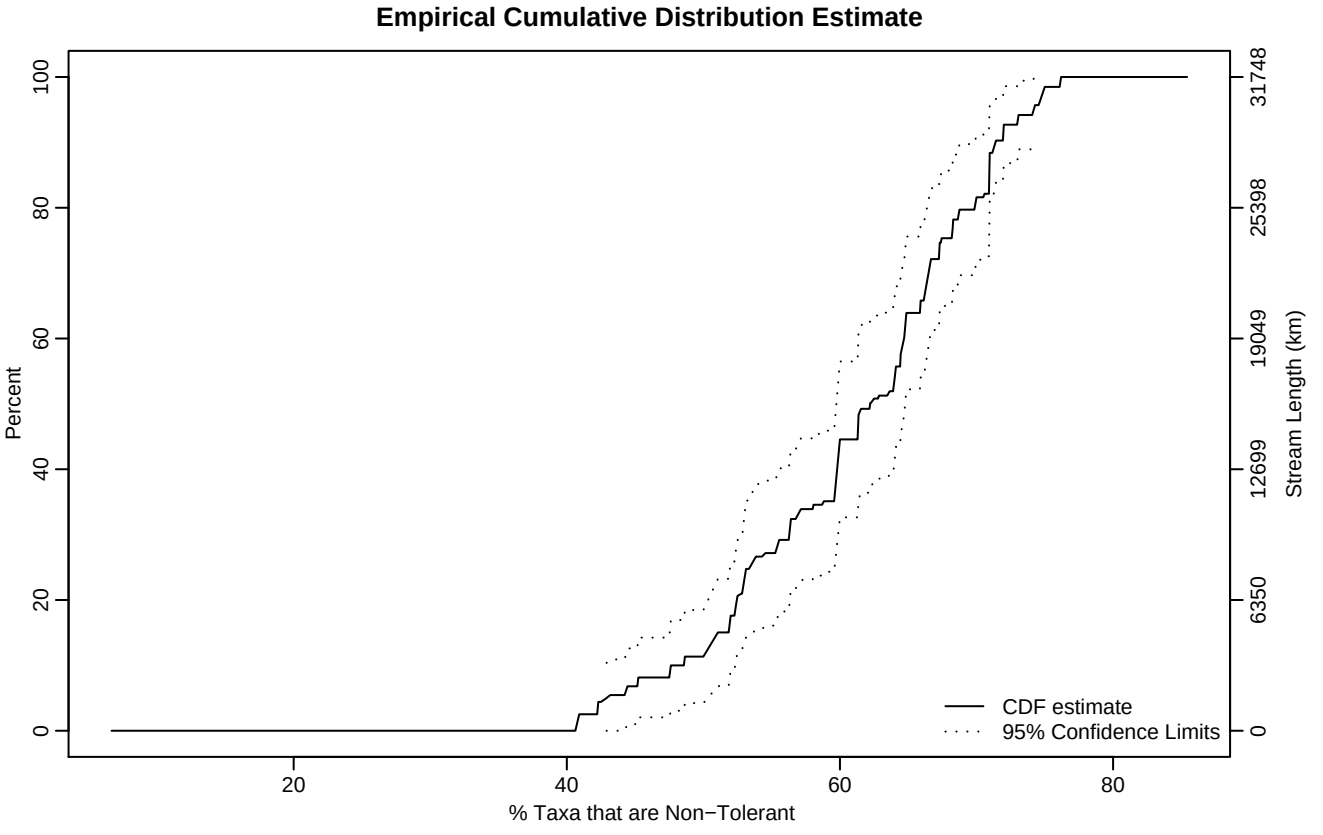


Figure BN−175 Indicator: NTOLPTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	42.91	6.67	48.59
10Pct	48.57	42.25	51.96
25Pct	53.40	50.84	59.60
50Pct	62.21	59.67	64.82
75Pct	67.42	65.87	70.94
90Pct	71.39	70.92	74.79
95Pct	74.19	71.36	76.19
Mean	61.09	59.10	63.07
Std Dev	8.73	7.23	10.23

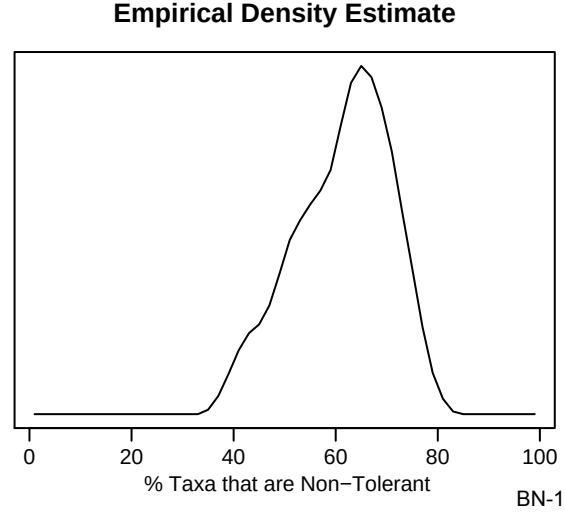
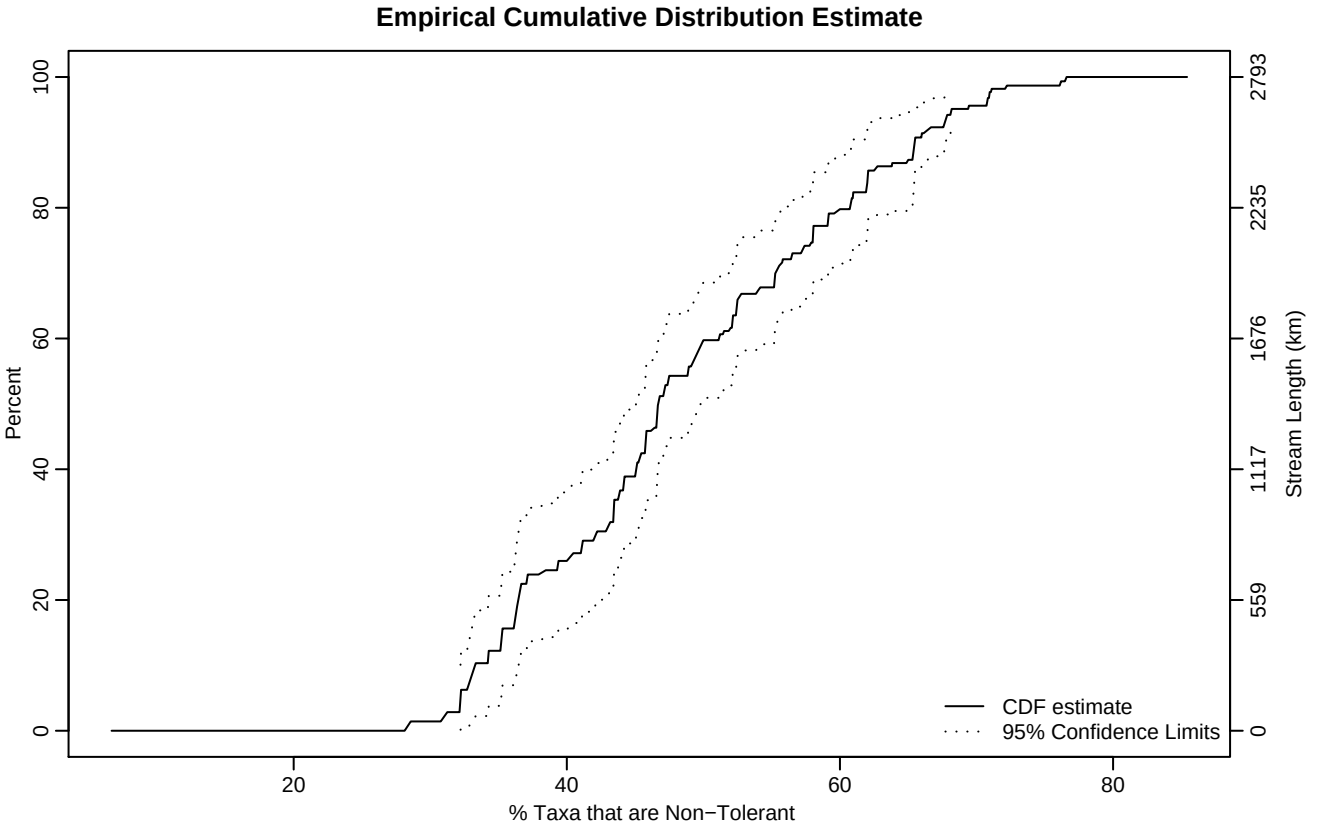


Figure BN−176 Indicator: NTOLPTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	32.22	30.79	33.05
10Pct	33.28	32.18	36.14
25Pct	39.32	35.24	43.77
50Pct	46.69	45.07	51.17
75Pct	58.01	53.86	61.95
90Pct	65.47	61.93	70.94
95Pct	68.17	66.46	71.09
Mean	48.86	46.66	51.05
Std Dev	10.26	8.85	11.66

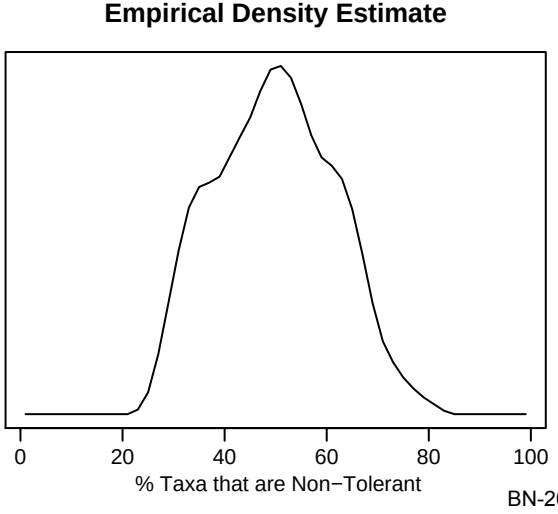
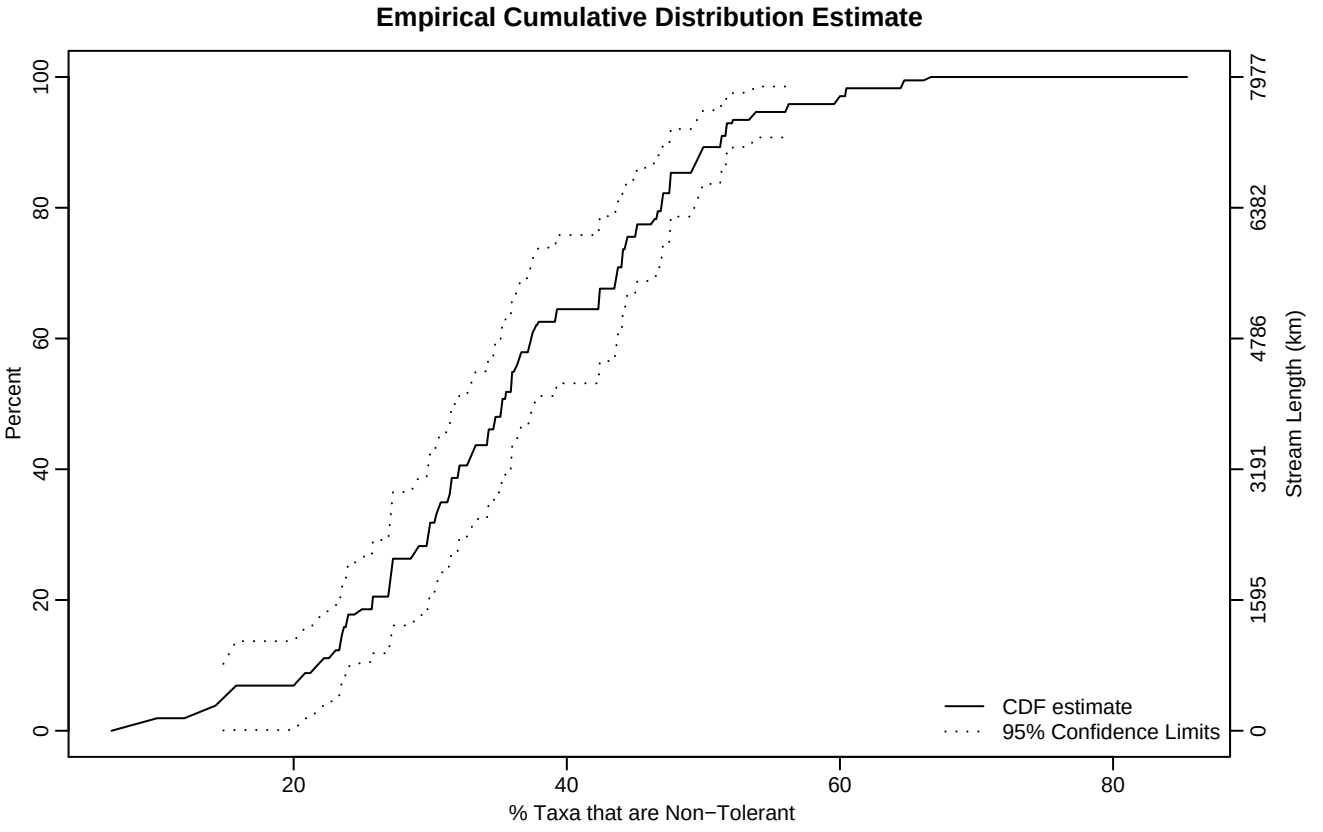


Figure BN−177 Indicator: NTOLPTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.85	7.93	21.41
10Pct	21.73	13.34	23.92
25Pct	27.19	23.86	30.55
50Pct	35.25	31.57	37.65
75Pct	44.38	42.35	47.58
90Pct	51.27	47.58	56.21
95Pct	56.07	51.62	64.56
Mean	36.11	33.60	38.62
Std Dev	11.38	10.05	12.71

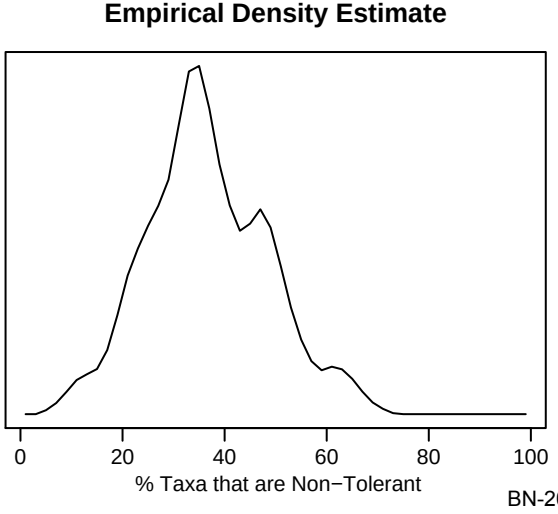
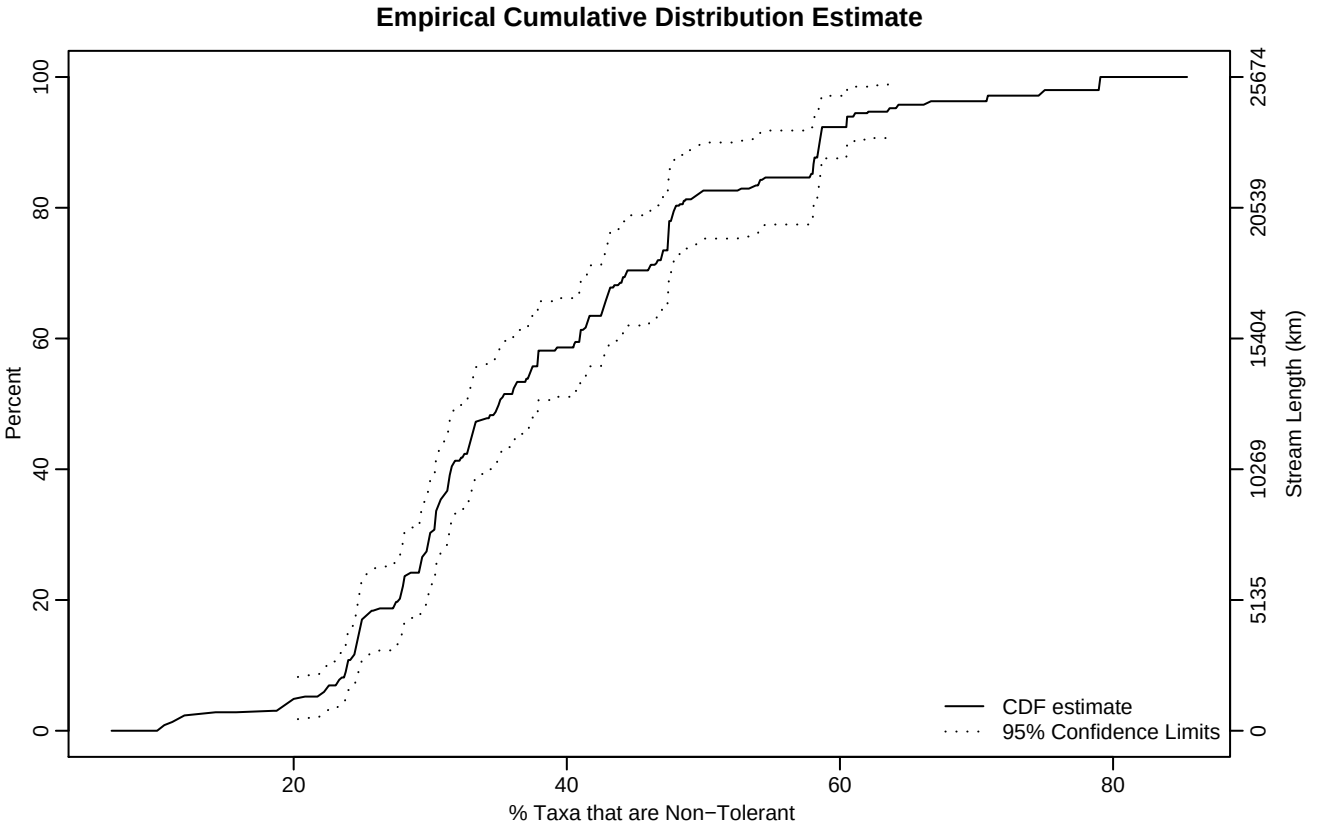


Figure BN−178 Indicator: NTOLPTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	20.31	11.50	23.70
10Pct	23.91	22.13	24.71
25Pct	29.25	25.46	30.37
50Pct	35.03	32.36	39.15
75Pct	47.41	42.99	53.82
90Pct	58.51	54.07	66.59
95Pct	63.56	58.59	79.01
Mean	38.71	36.46	40.95
Std Dev	13.50	11.45	15.56

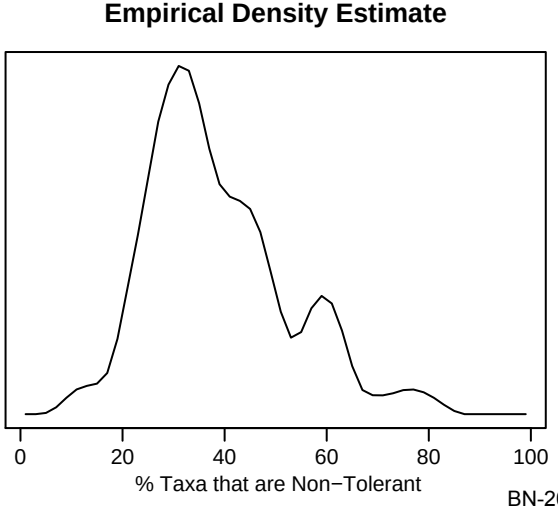
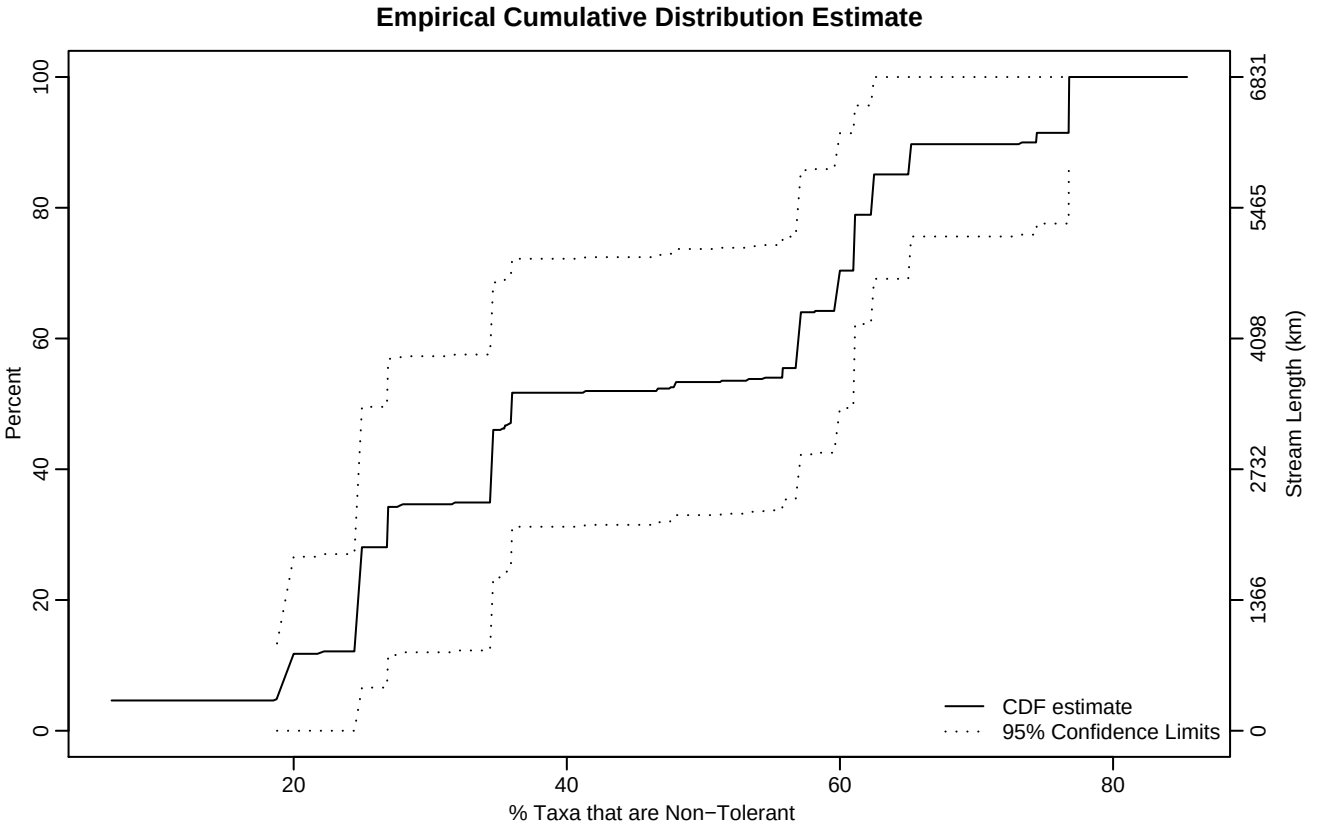


Figure BN−179 Indicator: NTOLPTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	18.78	6.67	24.48
10Pct	19.68	6.67	24.67
25Pct	24.89	19.54	34.50
50Pct	35.96	24.99	61
75Pct	61.05	55.77	76.77
90Pct	74.36	61.06	76.79
95Pct	76.76	62.34	76.79
Mean	44.12	35.03	53.21
Std Dev	20.16	16.72	23.60

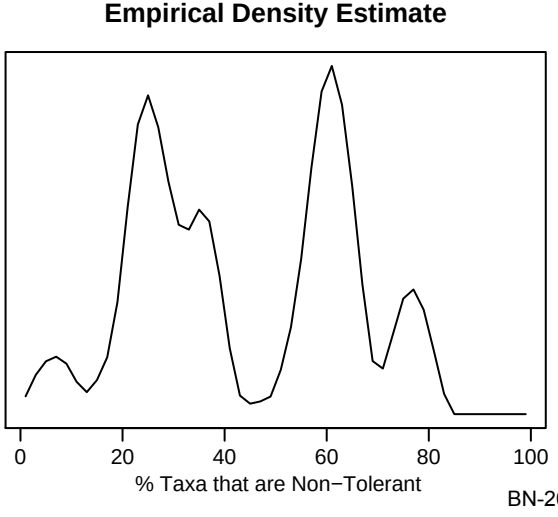
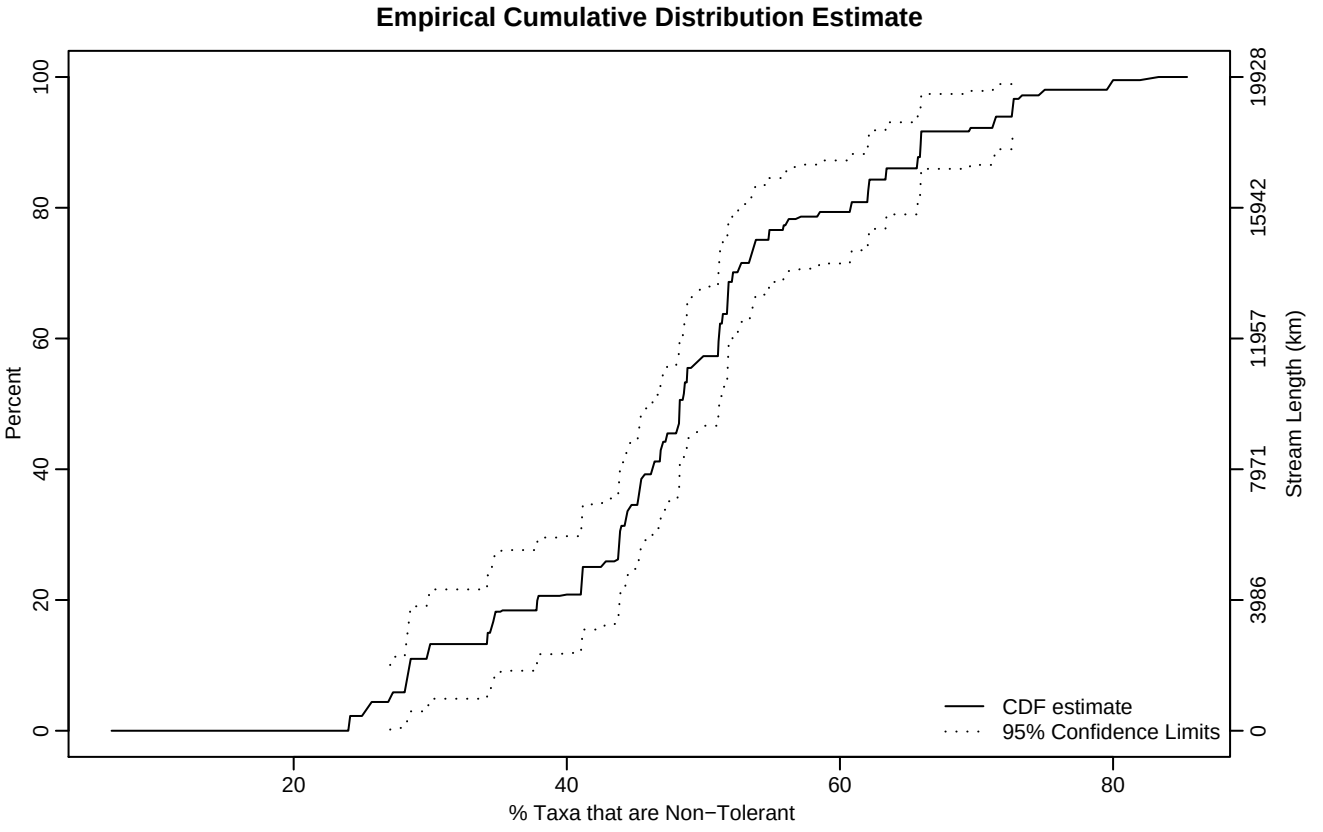


Figure BN−180 Indicator: NTOLPTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	27.06	24.01	28.47
10Pct	28.48	26.94	34.45
25Pct	41.17	34.56	44.49
50Pct	48.27	45.71	51.16
75Pct	53.83	51.77	63.35
90Pct	65.92	62.16	72.68
95Pct	72.64	65.92	83.32
Mean	48.81	46.30	51.31
Std Dev	11.72	10.14	13.30

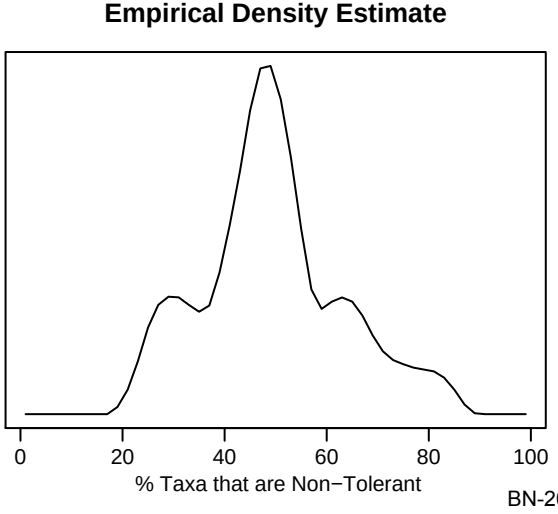
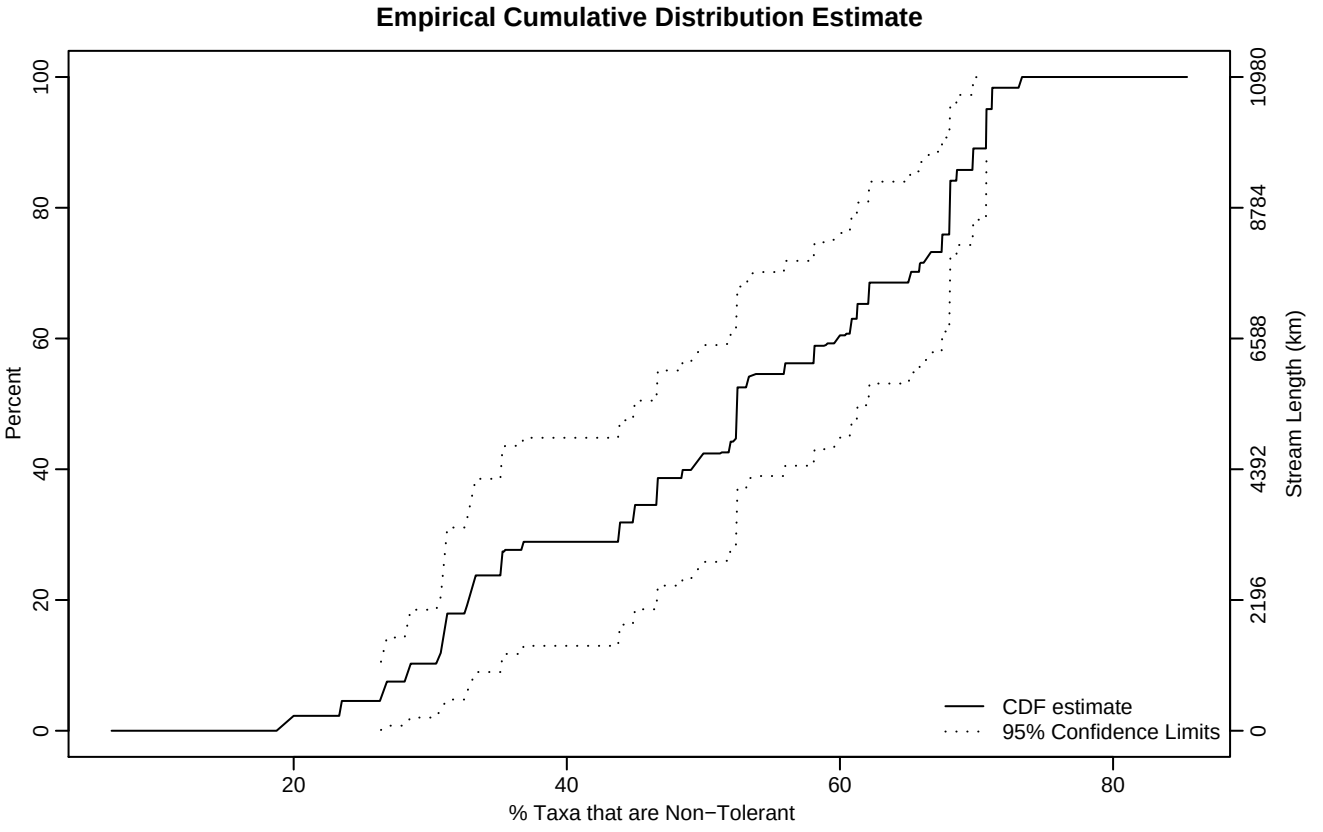


Figure BN−181 Indicator: NTOLPTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	26.39	6.67	30.47
10Pct	28.53	23.39	31.18
25Pct	35.19	28.54	49.11
50Pct	52.46	44.94	62.10
75Pct	67.48	59.08	70.70
90Pct	70.70	68.03	73.33
95Pct	70.73	68.52	73.33
Mean	51.50	46.14	56.86
Std Dev	15.59	13.57	17.60

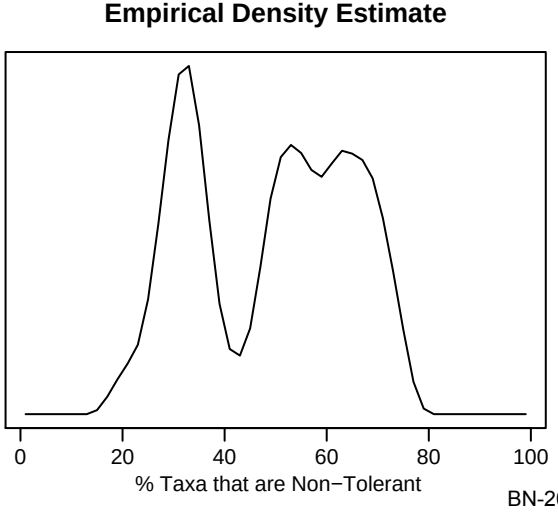
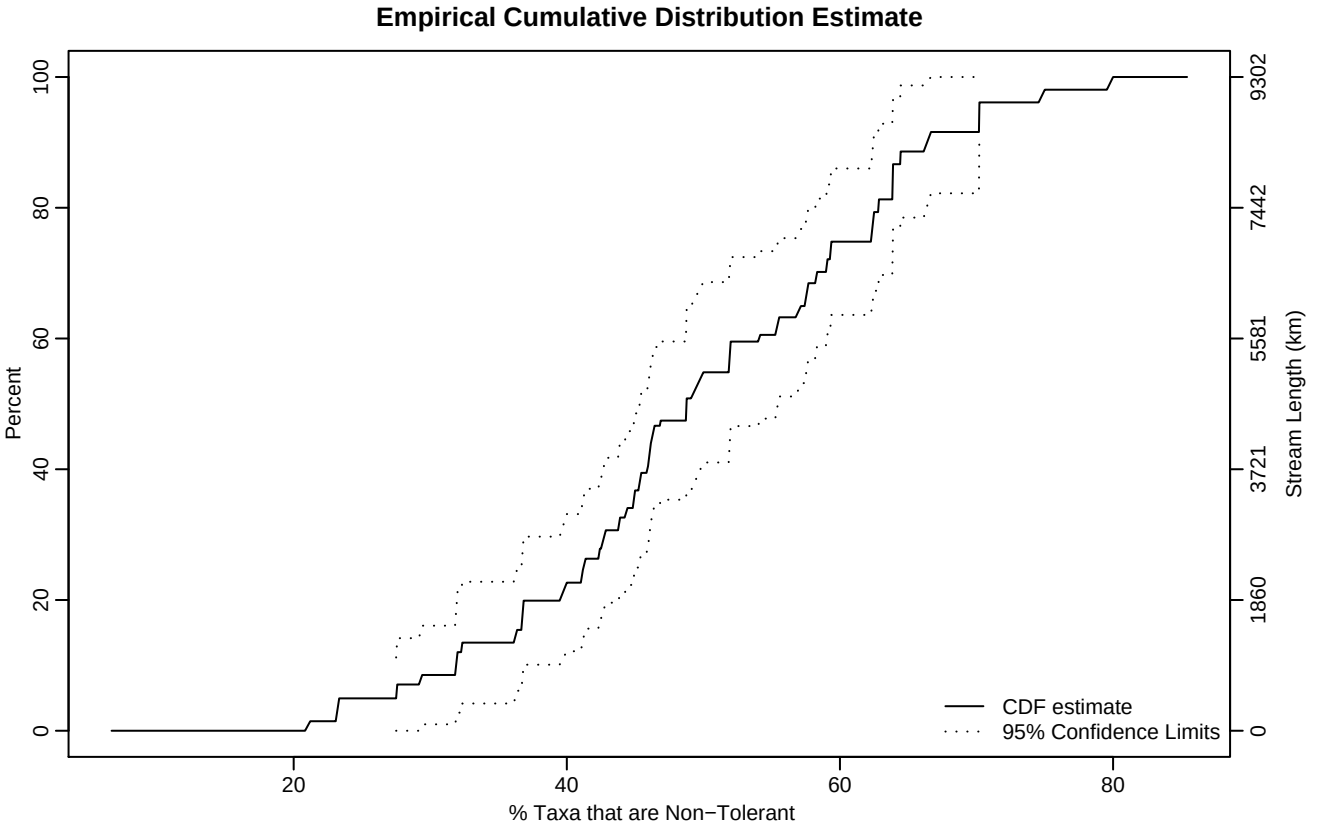


Figure BN−182 Indicator: NTOLPTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	27.50	6.67	31.96
10Pct	31.89	23.15	36.75
25Pct	41.22	36.19	44.95
50Pct	48.77	45.32	55.44
75Pct	62.27	55.53	64.41
90Pct	66.38	62.80	80
95Pct	70.20	63.87	80
Mean	50	46.66	53.34
Std Dev	12.32	10.52	14.11

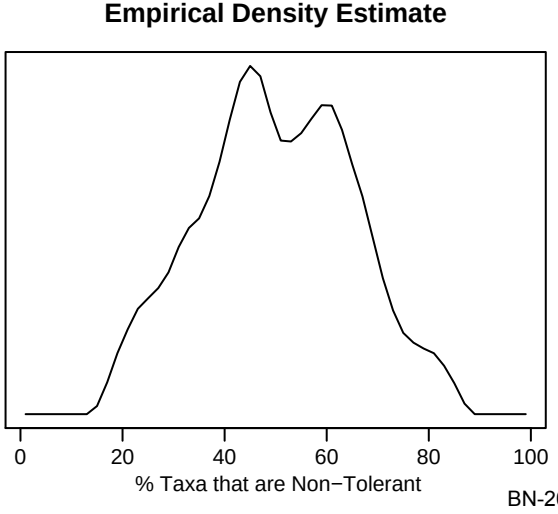
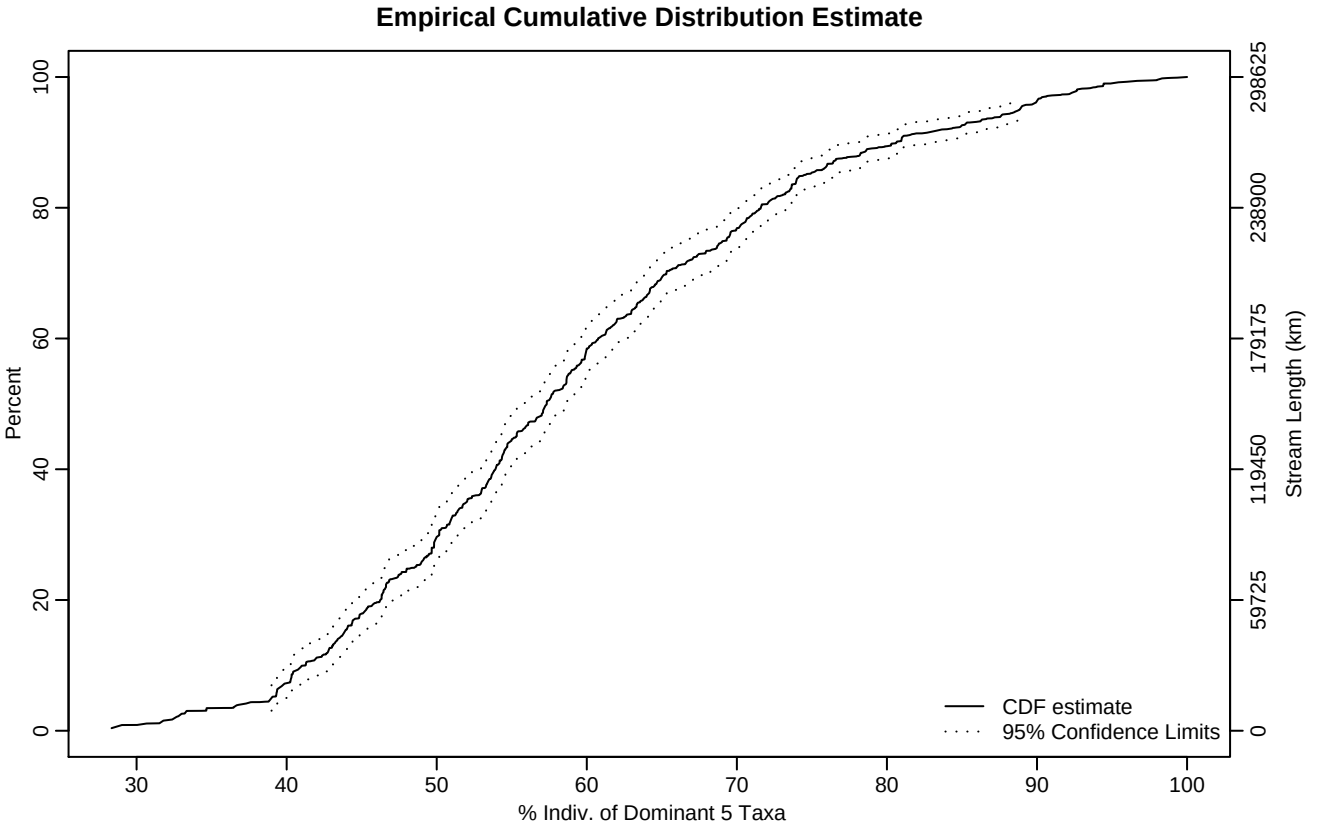


Figure BN−183 Indicator: DOM5PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	38.99	33.33	39.75
10Pct	41.26	40.06	43.01
25Pct	48.54	46.48	49.82
50Pct	57.33	55.77	58.66
75Pct	69.31	66.72	70.64
90Pct	80.63	78.21	83.46
95Pct	88.85	86.40	90.04
Mean	59.16	58.12	60.20
Std Dev	13.66	12.94	14.37

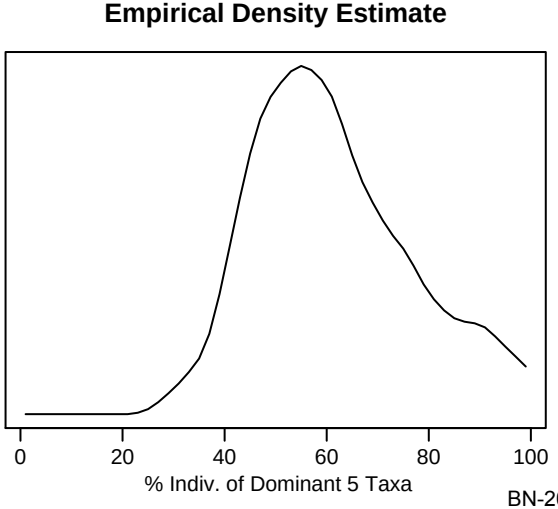
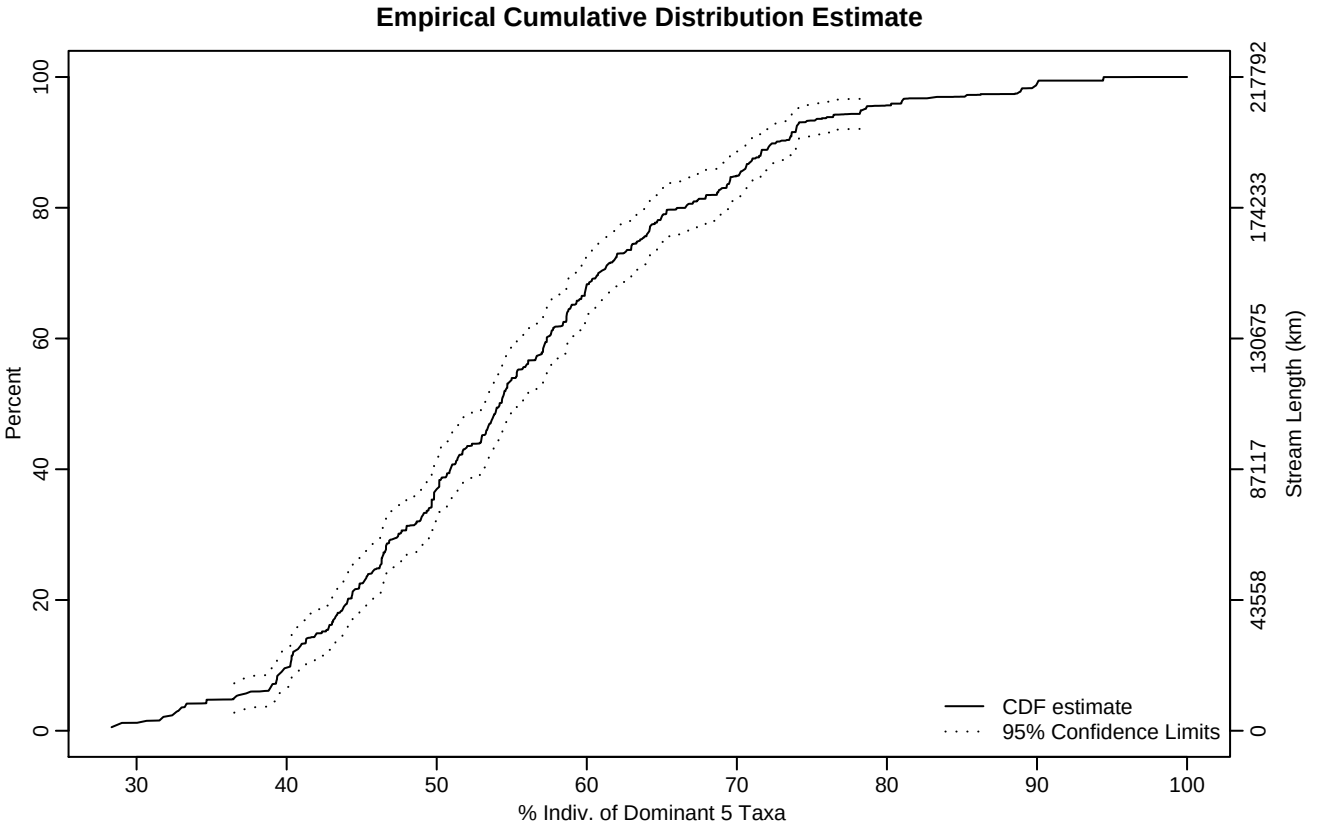


Figure BN−184 Indicator: DOM5PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	36.50	32.56	39.29
10Pct	40.25	39.01	40.95
25Pct	46.20	44.36	47.04
50Pct	54.19	53	55.38
75Pct	63.55	61.23	65.31
90Pct	72.62	70.89	74.15
95Pct	78.42	74.11	85.26
Mean	55.44	54.16	56.72
Std Dev	12.47	11.56	13.38

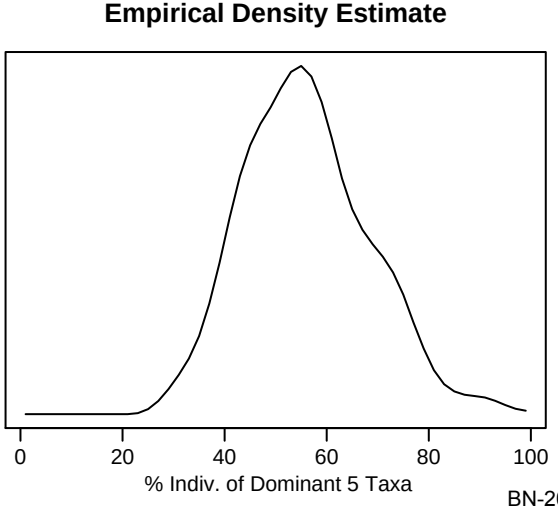
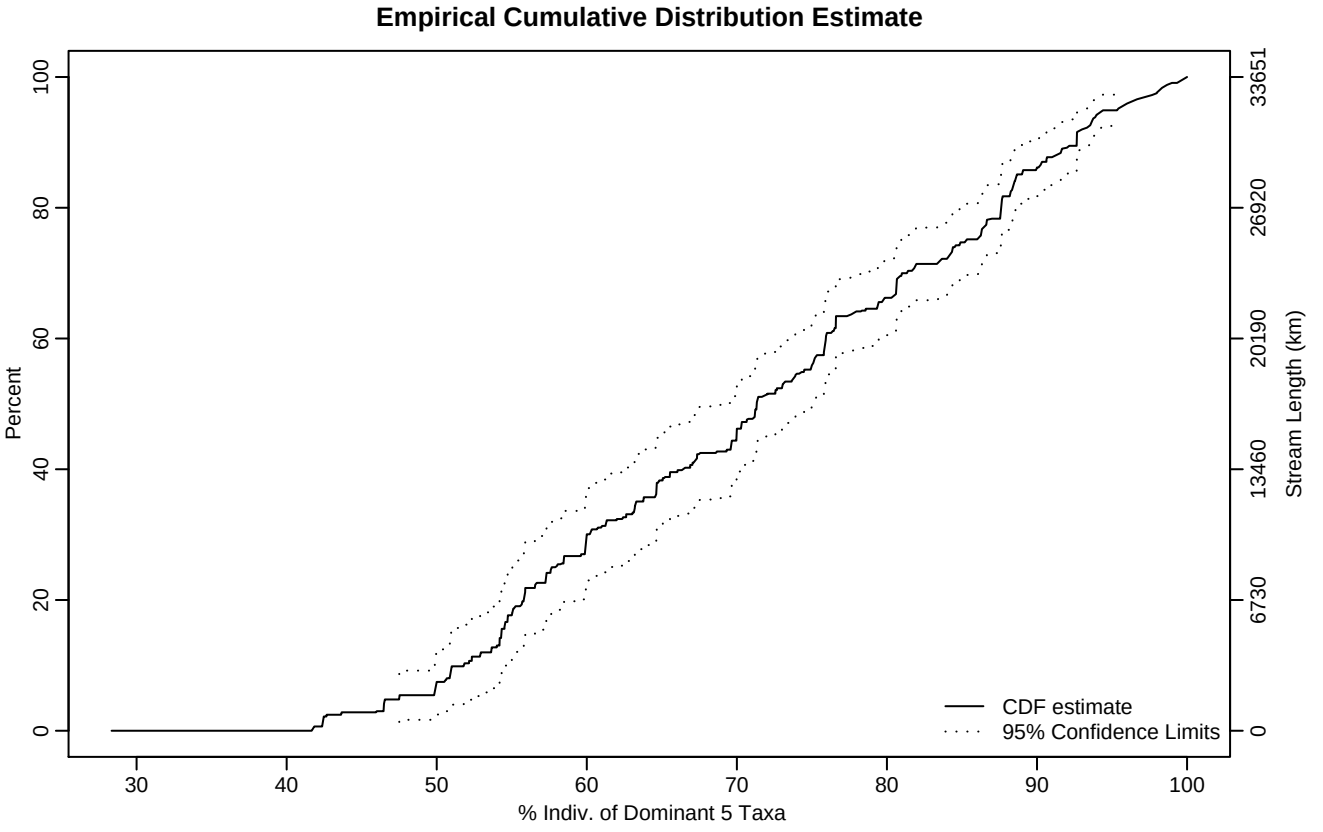


Figure BN−185 Indicator: DOM5PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	47.50	42.42	50.90
10Pct	51.81	46.49	54.52
25Pct	57.66	55.05	61.29
50Pct	71.33	69.60	75.15
75Pct	85.28	80.85	87.63
90Pct	92.65	89.96	93.93
95Pct	95.36	93.53	97.86
Mean	71.59	69.60	73.59
Std Dev	14.49	13.38	15.61

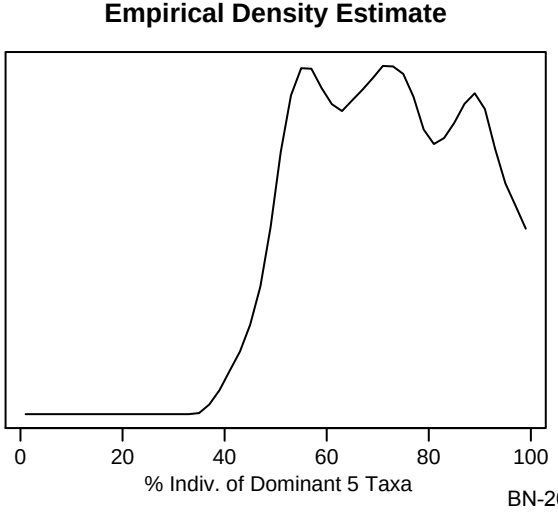
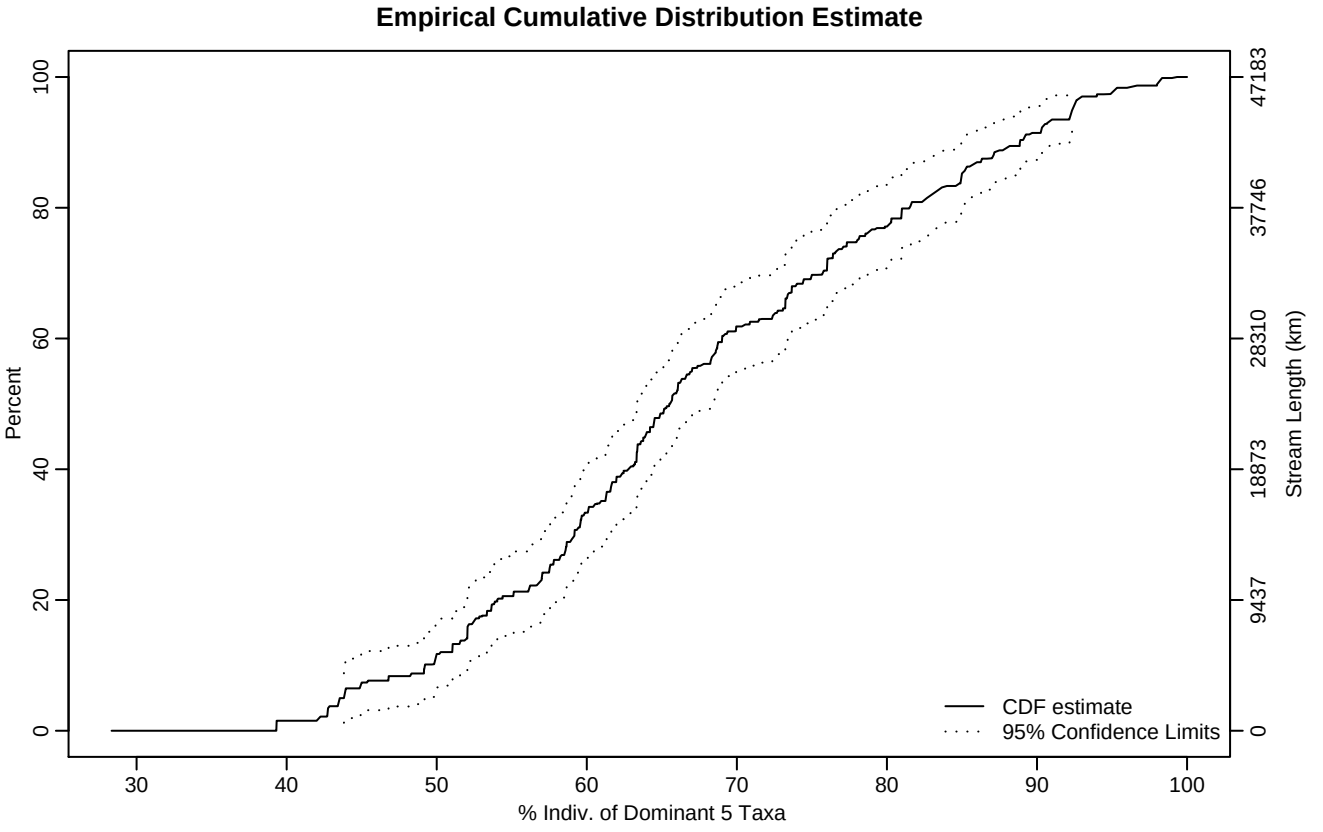


Figure BN−186 Indicator: DOM5PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	43.81	39.33	49.15
10Pct	49.21	43.83	52.04
25Pct	57.54	53.63	59.55
50Pct	65.50	63.36	68.33
75Pct	78.02	74.39	82.73
90Pct	88.86	85.11	92.28
95Pct	92.36	90.27	95.31
Mean	67.44	65.19	69.68
Std Dev	13.72	12.59	14.85

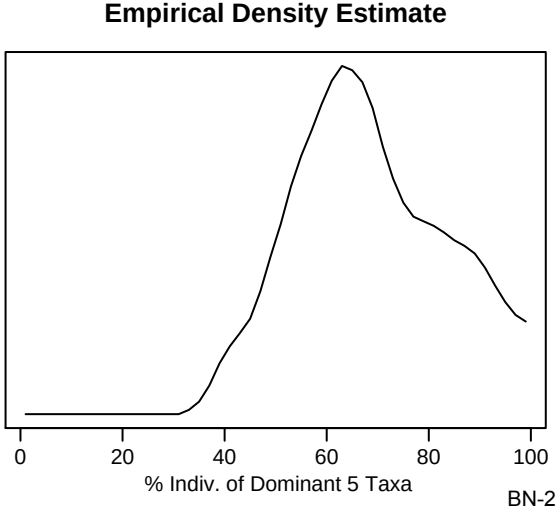
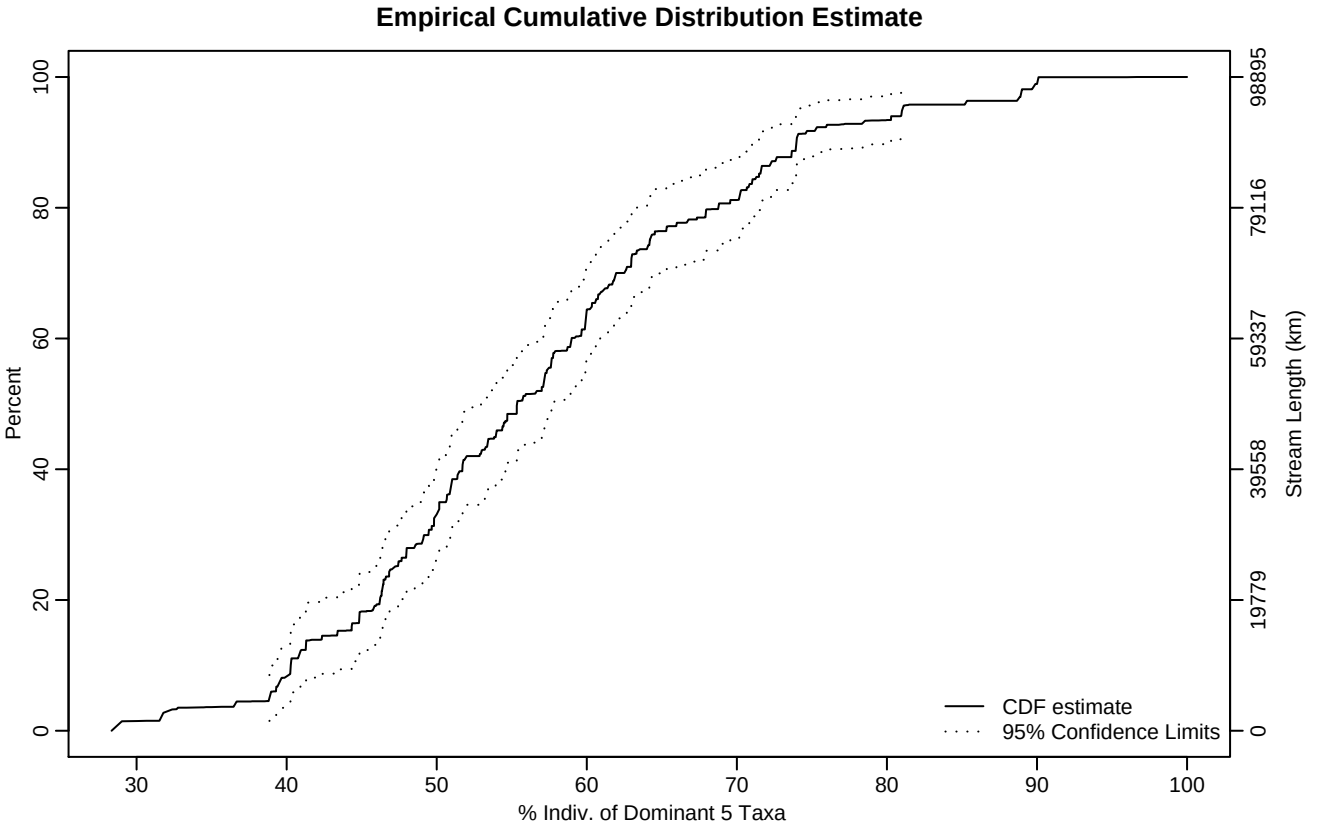


Figure BN−187 Indicator: DOM5PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	38.85	31.55	40.02
10Pct	40.27	38.89	43.37
25Pct	47.17	45.78	49.82
50Pct	55.35	52.87	57.83
75Pct	64.20	61.71	70.17
90Pct	73.97	71.48	81.03
95Pct	81.02	74.63	89.75
Mean	56.78	54.88	58.68
Std Dev	12.42	11.08	13.75

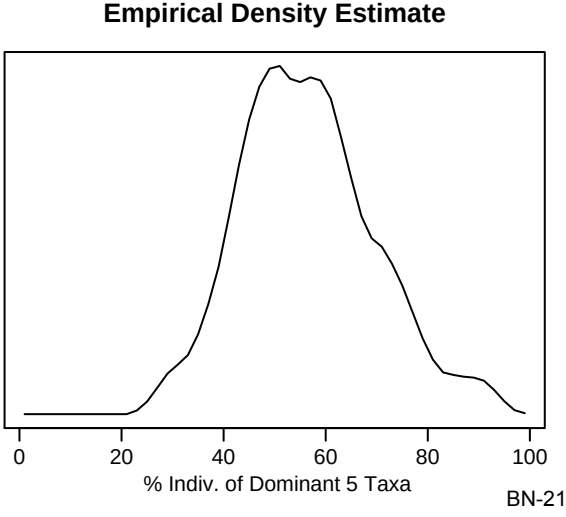
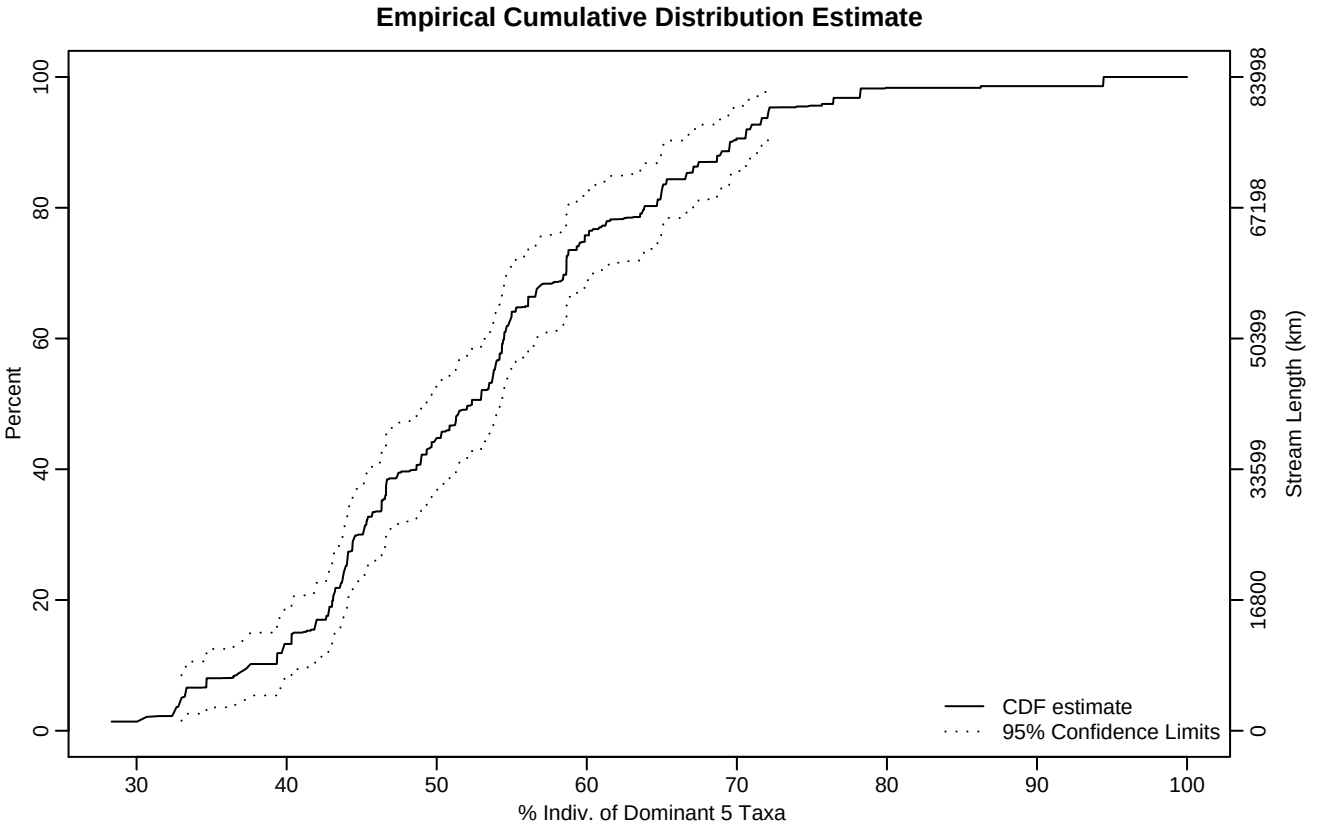


Figure BN−188 Indicator: DOM5PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	32.99	31.20	34.66
10Pct	37.51	33.15	40.38
25Pct	43.91	42.81	45.31
50Pct	52.34	49	54.33
75Pct	59.86	56.84	64.96
90Pct	69.55	66.57	74.70
95Pct	72.14	70.60	94.41
Mean	52.83	50.74	54.92
Std Dev	12.25	10.66	13.83

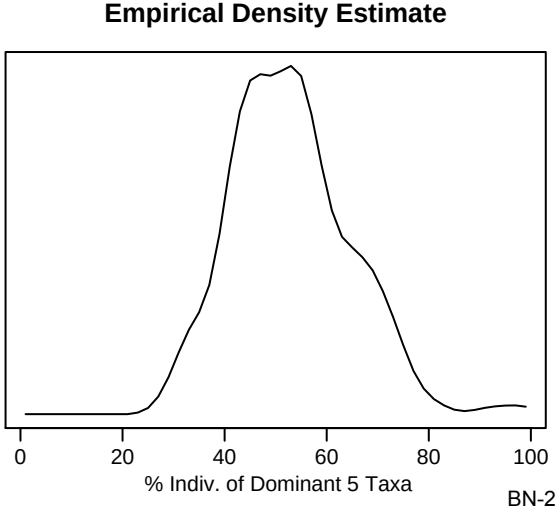
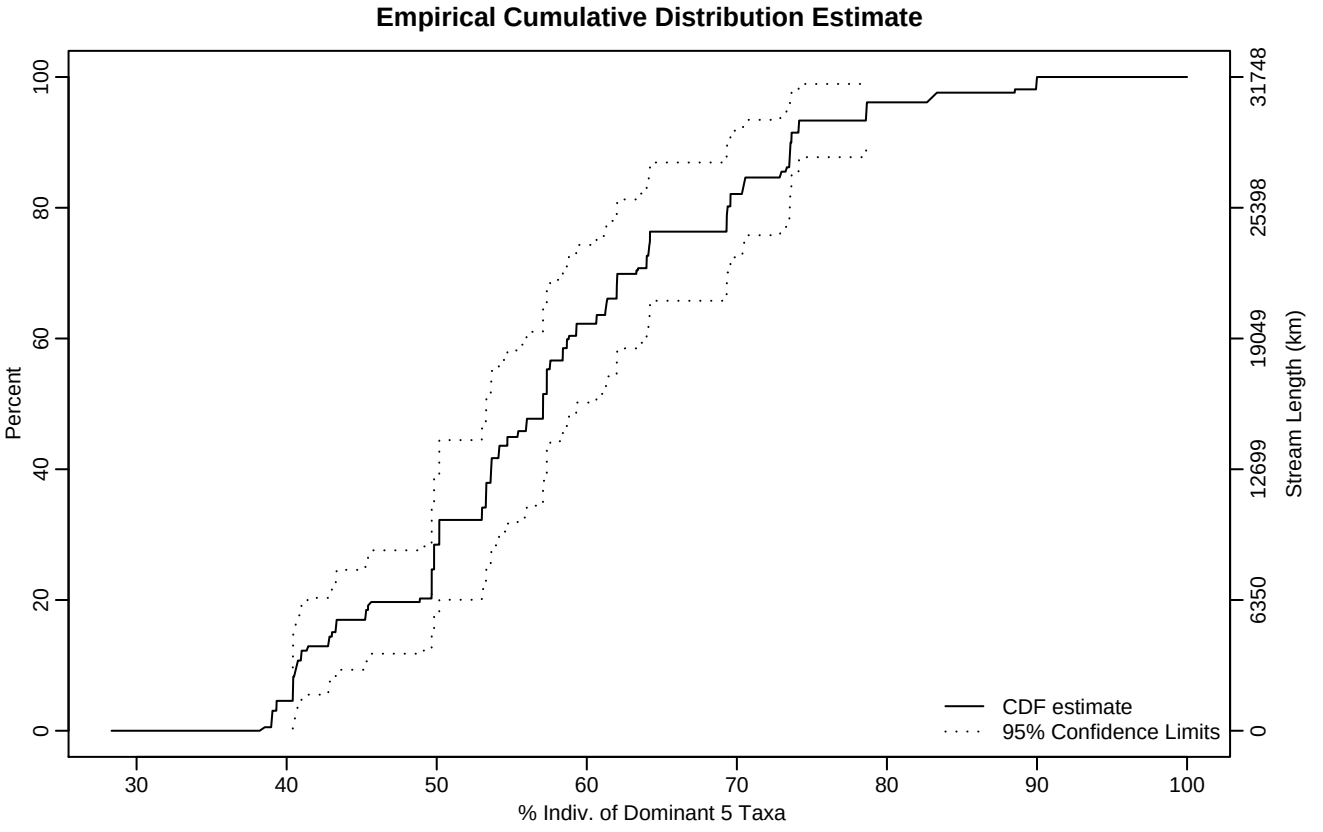


Figure BN−189 Indicator: DOM5PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	40.41	38.97	40.61
10Pct	40.68	39.04	45.25
25Pct	49.82	43.01	53.28
50Pct	57.09	53.29	60.66
75Pct	64.21	61.24	73.31
90Pct	73.63	70.44	82.97
95Pct	78.64	73.57	90
Mean	57.80	54.90	60.69
Std Dev	11.89	10.08	13.70

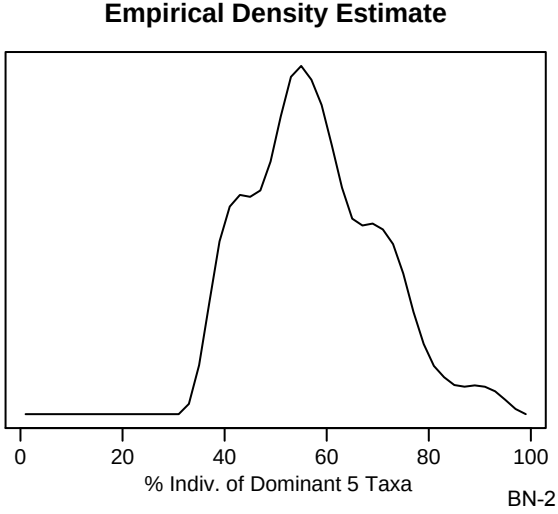
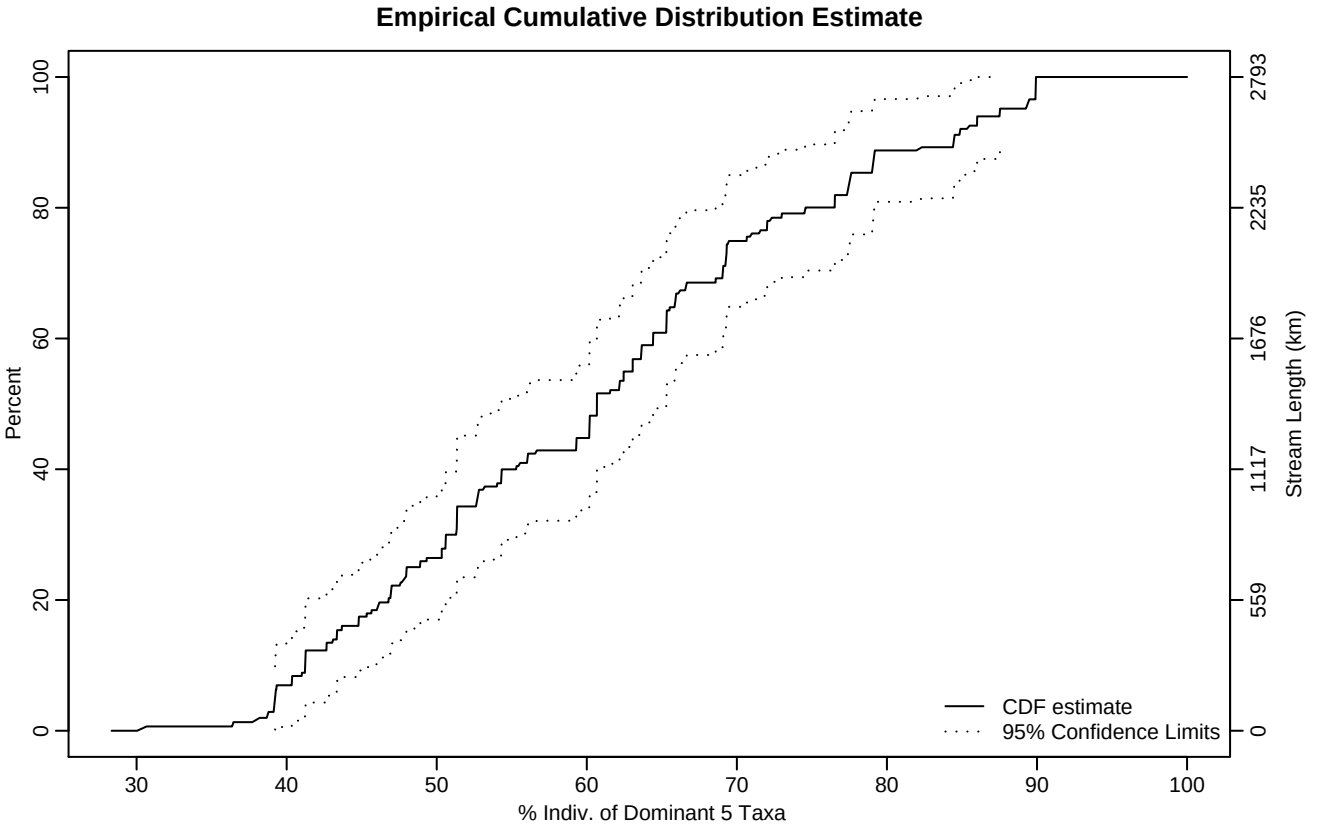


Figure BN−190 Indicator: DOM5PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	39.23	38.76	40.34
10Pct	41.23	39.14	44.80
25Pct	48	43.68	51.36
50Pct	60.67	54.29	65.30
75Pct	70.65	65.85	77.60
90Pct	84.44	77.36	89.91
95Pct	87.54	79.18	89.93
Mean	60.89	57.24	64.53
Std Dev	14.67	12.93	16.40

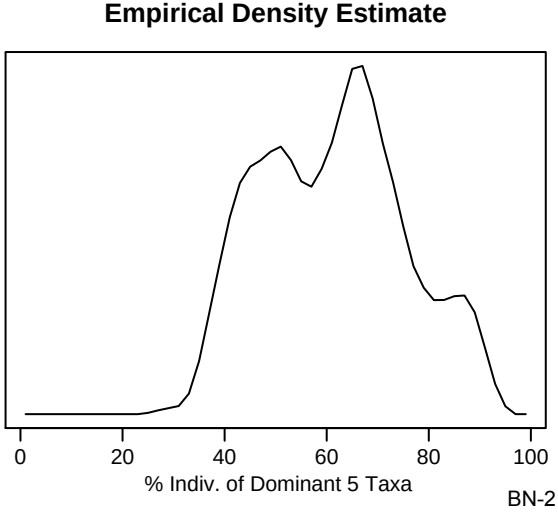
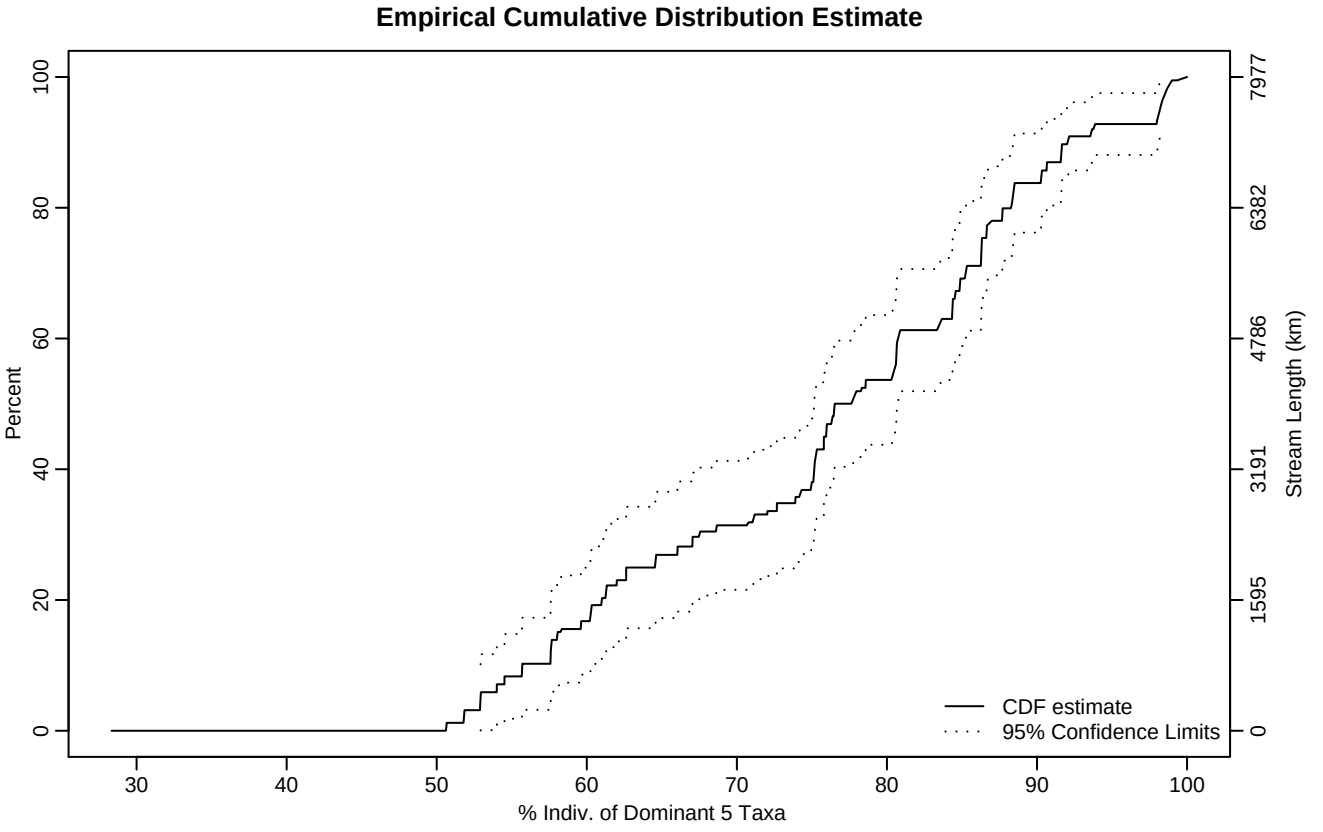


Figure BN−191 Indicator: DOM5PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	52.92	50.67	55.68
10Pct	55.70	52.89	59.62
25Pct	64.54	59.60	72.67
50Pct	76.52	75.16	80.72
75Pct	86.33	84.38	90.29
90Pct	92.03	90.28	98.24
95Pct	98.19	92.09	99.44
Mean	76.23	73.59	78.87
Std Dev	12.32	10.40	14.24

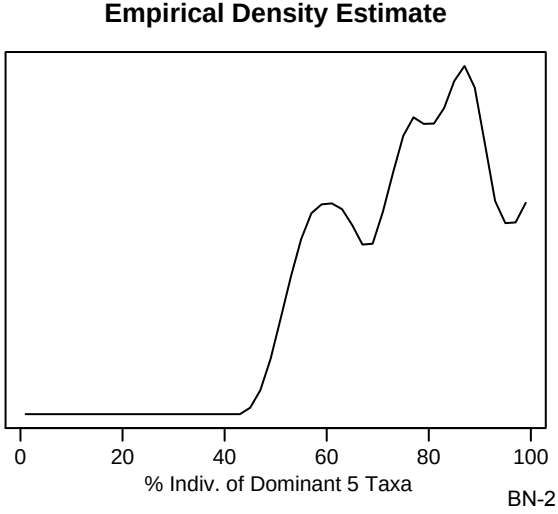
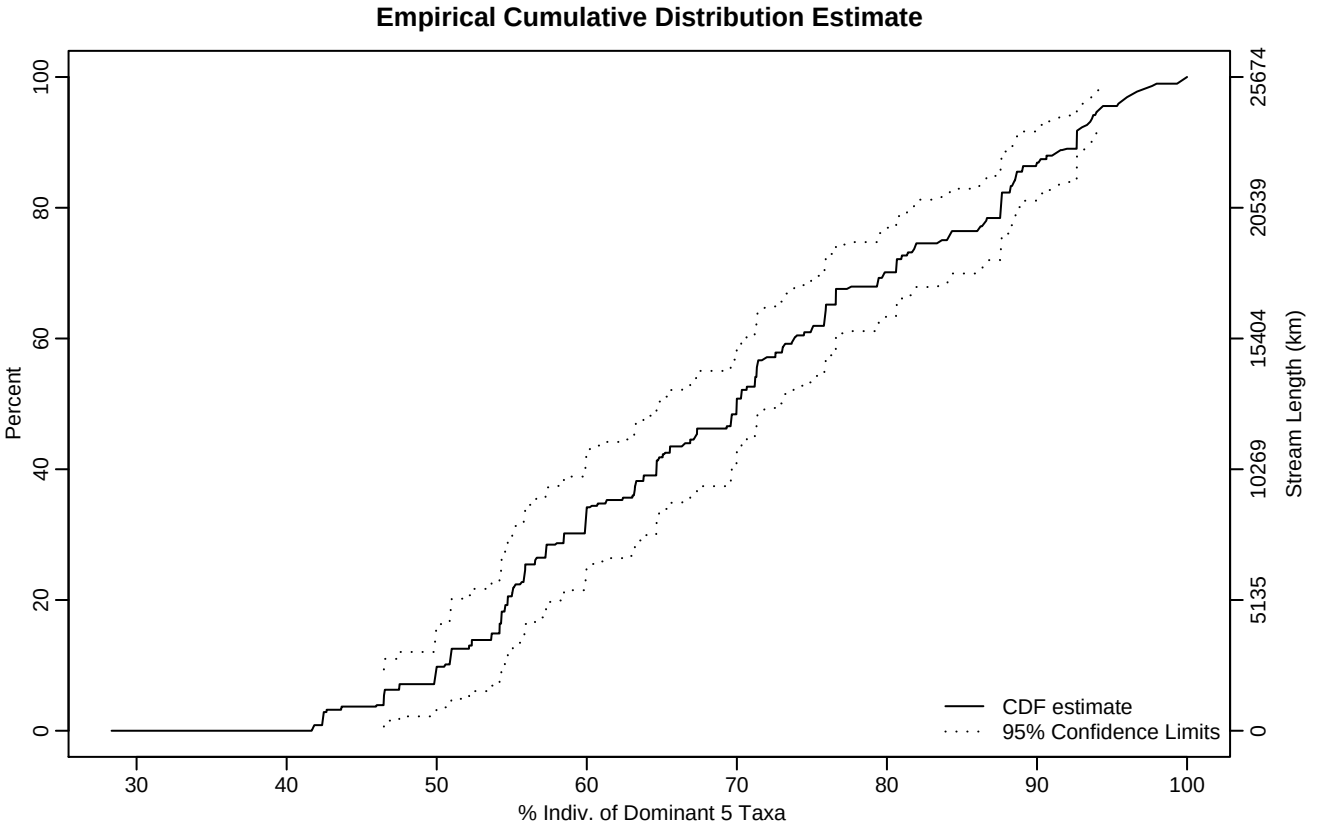


Figure BN−192 Indicator: DOM5PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	46.48	42.38	49.94
10Pct	50.55	43.65	54.29
25Pct	55.90	54.19	59.99
50Pct	69.99	64.78	73.04
75Pct	83.64	79.36	87.65
90Pct	92.65	88.60	94.19
95Pct	94.14	92.68	97.18
Mean	70.15	67.67	72.64
Std Dev	14.87	13.52	16.22

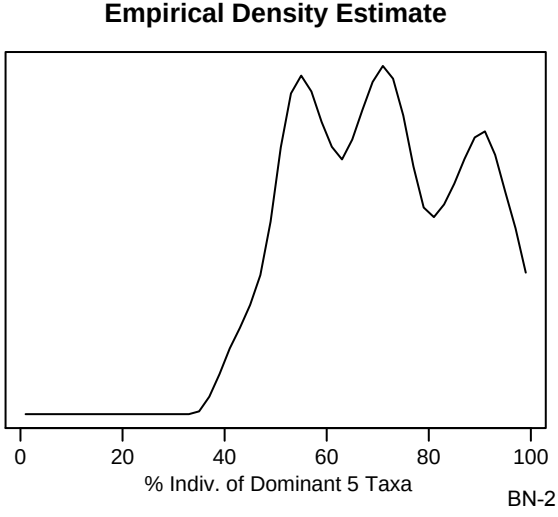
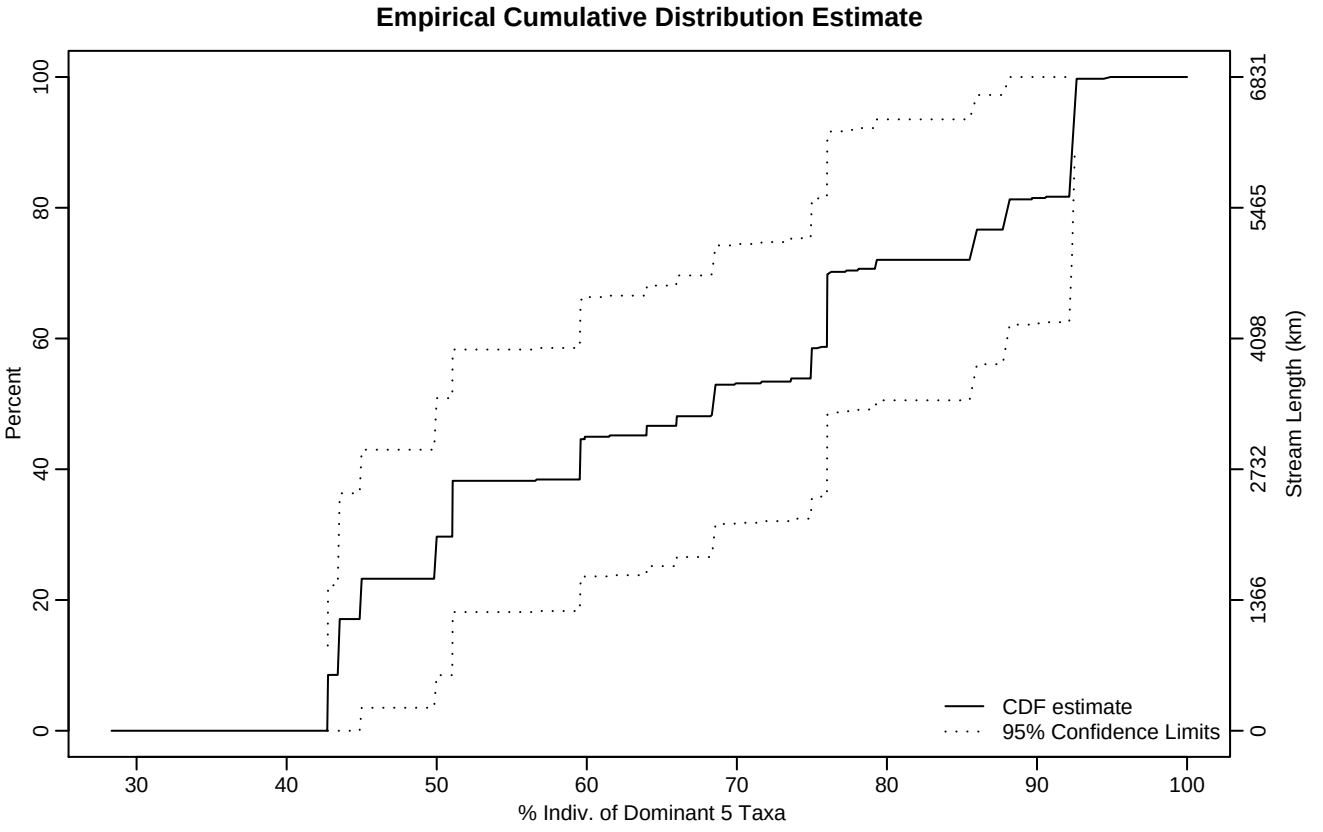


Figure BN−193 Indicator: DOM5PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	42.74	42.73	42.74
10Pct	43.43	28.33	49.84
25Pct	49.87	42.74	59.86
50Pct	68.42	49.96	79.29
75Pct	85.82	71.66	92.56
90Pct	92.37	85.70	94.90
95Pct	92.51	87.86	94.90
Mean	66.94	58.27	75.62
Std Dev	18.61	15.79	21.43

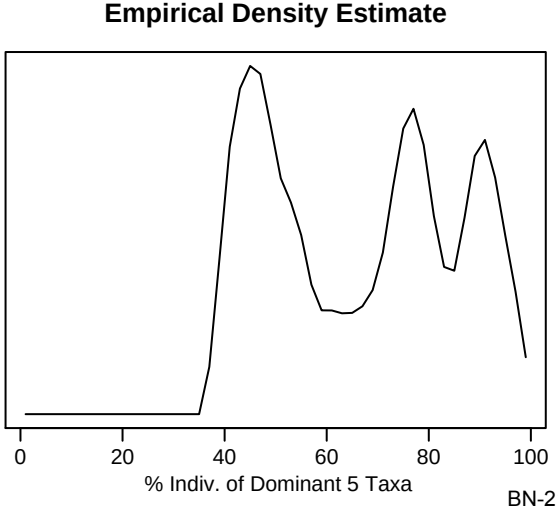
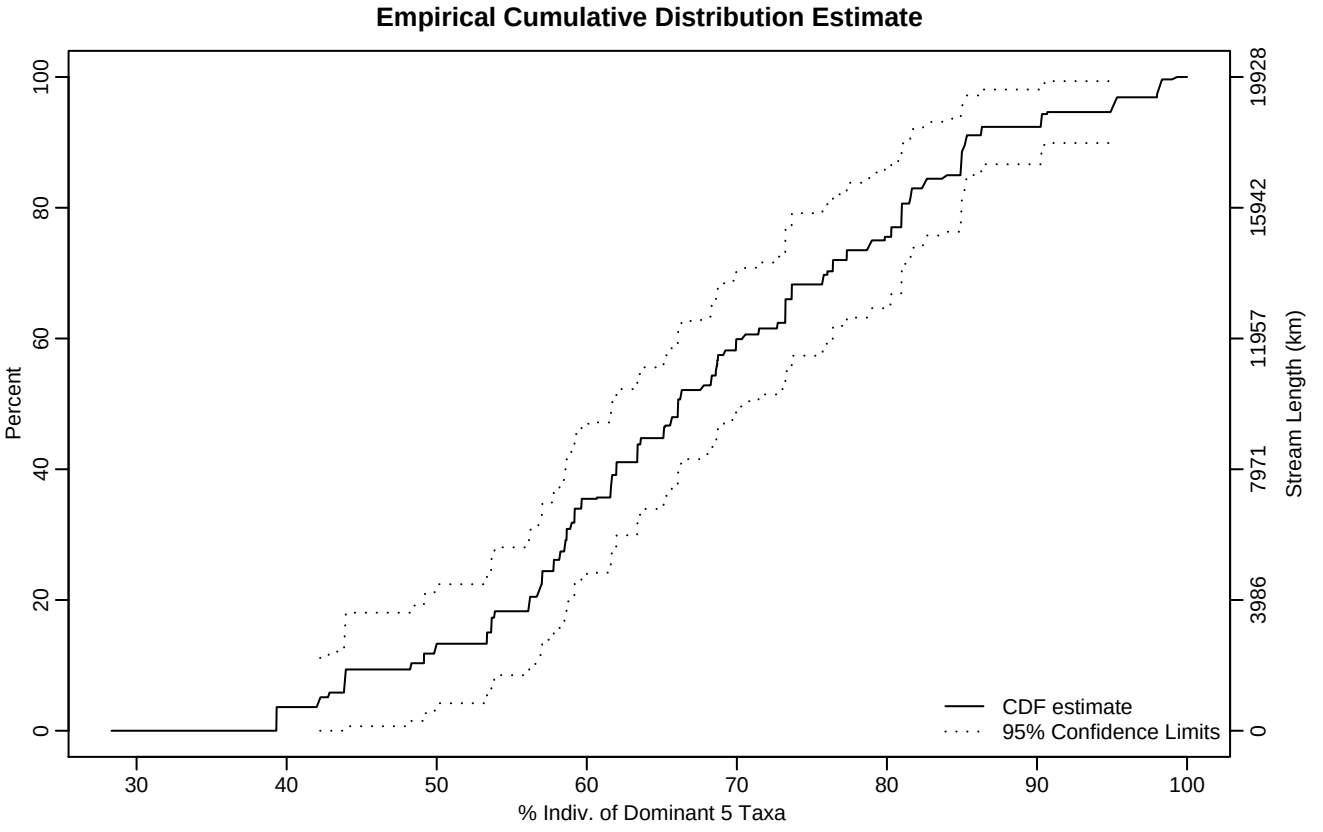


Figure BN−194 Indicator: DOM5PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	42.23	28.33	49.15
10Pct	48.28	39.32	56.12
25Pct	57.78	53.35	60.67
50Pct	66.09	61.68	71.47
75Pct	79	73.23	84.92
90Pct	85.23	82.41	95.29
95Pct	94.97	85.26	99
Mean	67.47	63.78	71.15
Std Dev	13.63	11.67	15.60

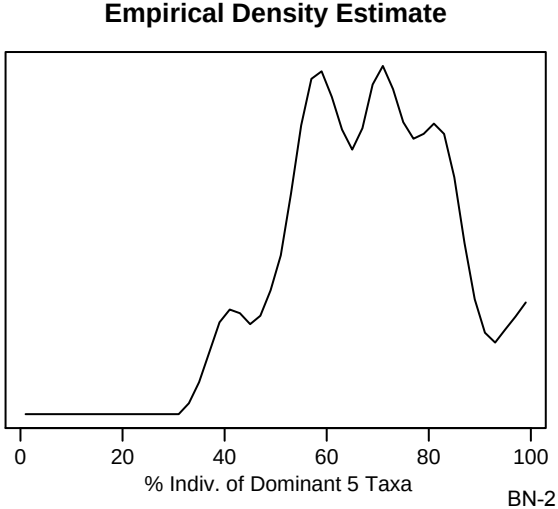
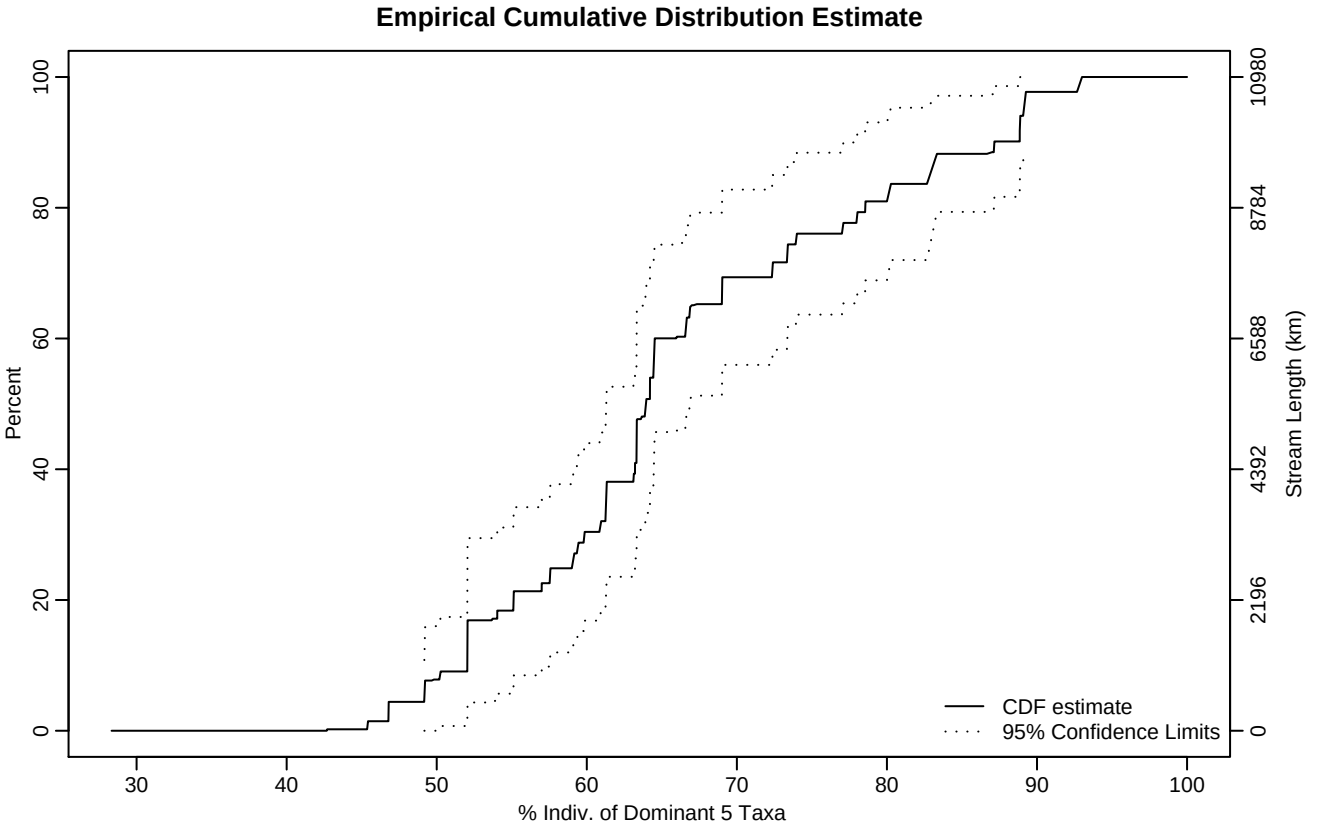


Figure BN−195 Indicator: DOM5PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	49.17	28.33	52.04
10Pct	52.04	46.78	55.10
25Pct	59.01	52.04	63.11
50Pct	63.94	61.25	69.01
75Pct	73.95	66.63	83.28
90Pct	87.16	80.02	92.84
95Pct	89.12	83.28	93
Mean	66.44	62.70	70.19
Std Dev	11.71	9.64	13.77

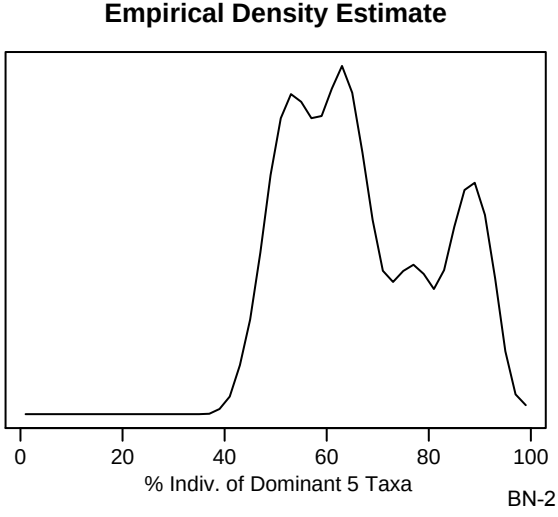
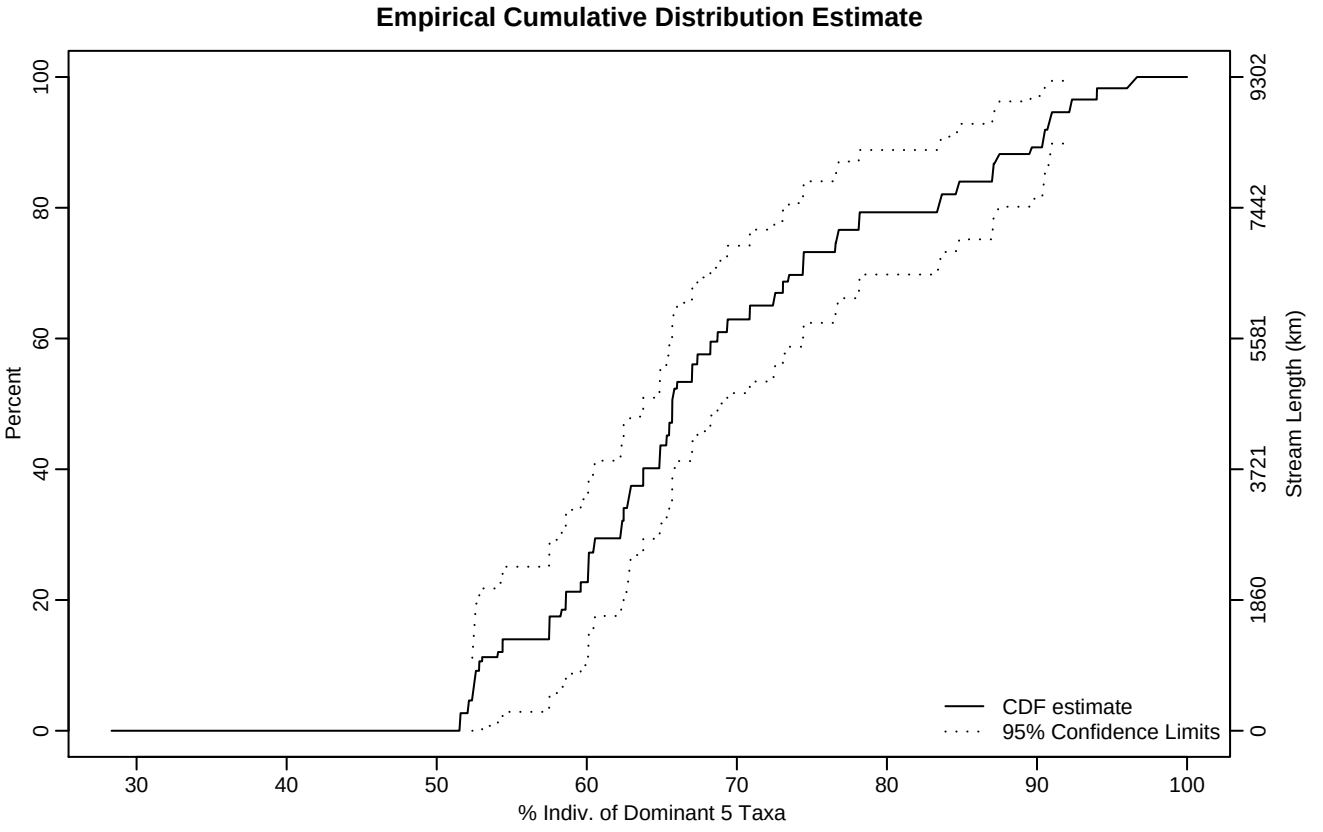


Figure BN−196 Indicator: DOM5PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	52.37	28.33	53.03
10Pct	52.83	28.33	58.61
25Pct	60.11	54.39	63.76
50Pct	65.70	63.76	69.37
75Pct	76.64	70.87	87.07
90Pct	90.39	84.60	93.99
95Pct	92.19	90.41	96.58
Mean	69.14	66.34	71.95
Std Dev	11.01	9.41	12.61

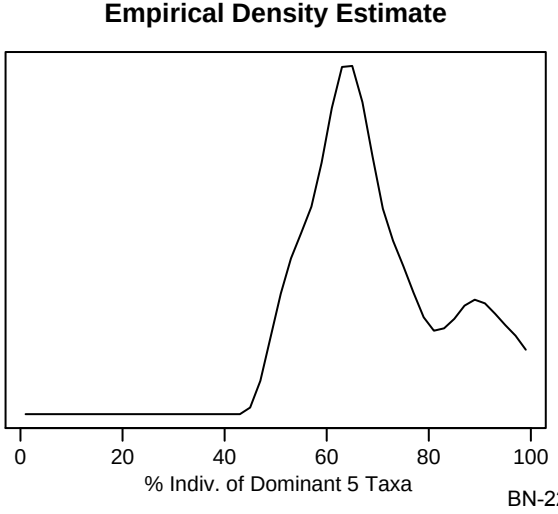
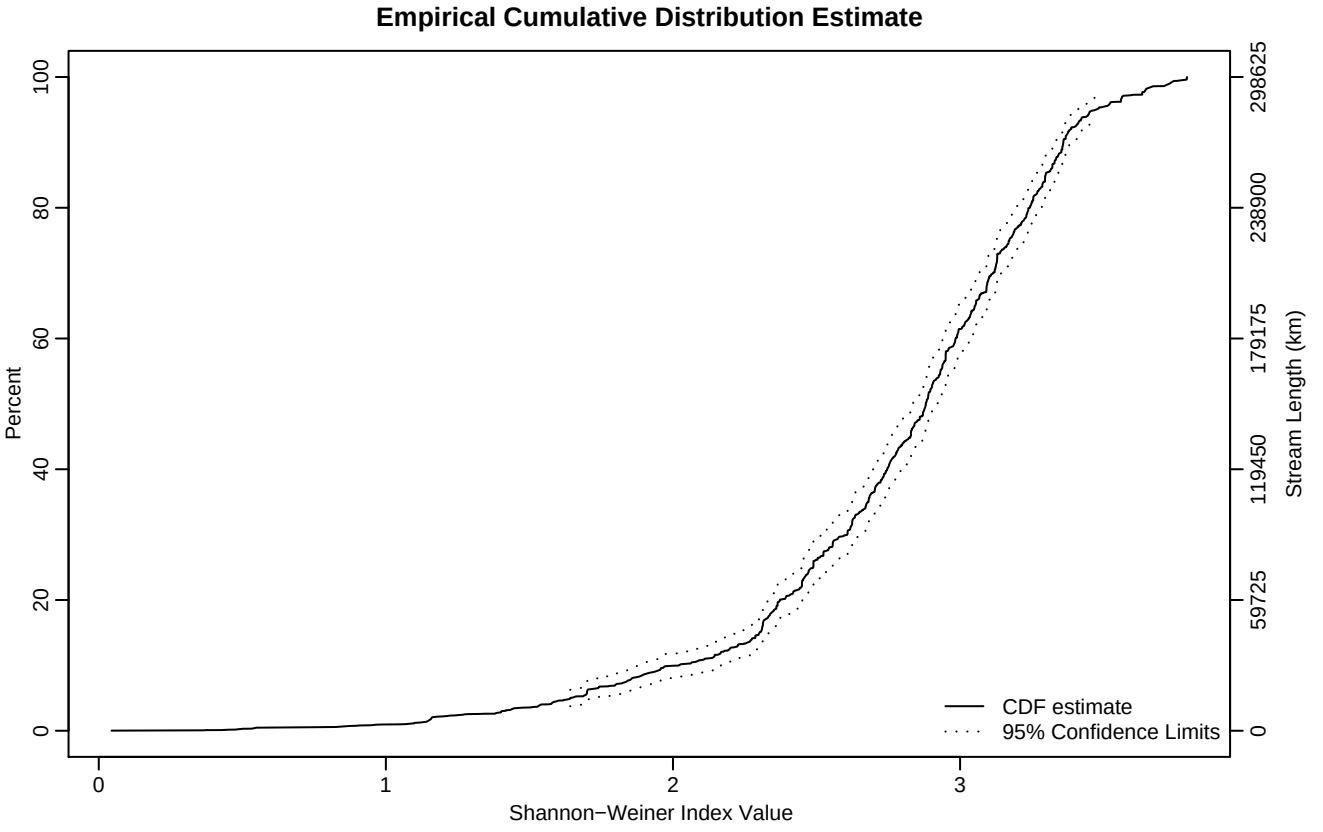


Figure BN−197 Indicator: HPRIME Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.64	1.53	1.70
10Pct	2.02	1.86	2.17
25Pct	2.49	2.45	2.55
50Pct	2.88	2.83	2.92
75Pct	3.17	3.13	3.23
90Pct	3.36	3.33	3.40
95Pct	3.47	3.41	3.56
Mean	2.78	2.74	2.81
Std Dev	0.50	0.47	0.54

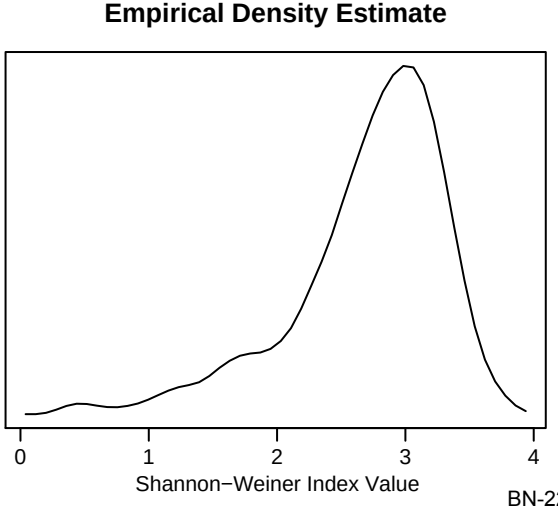
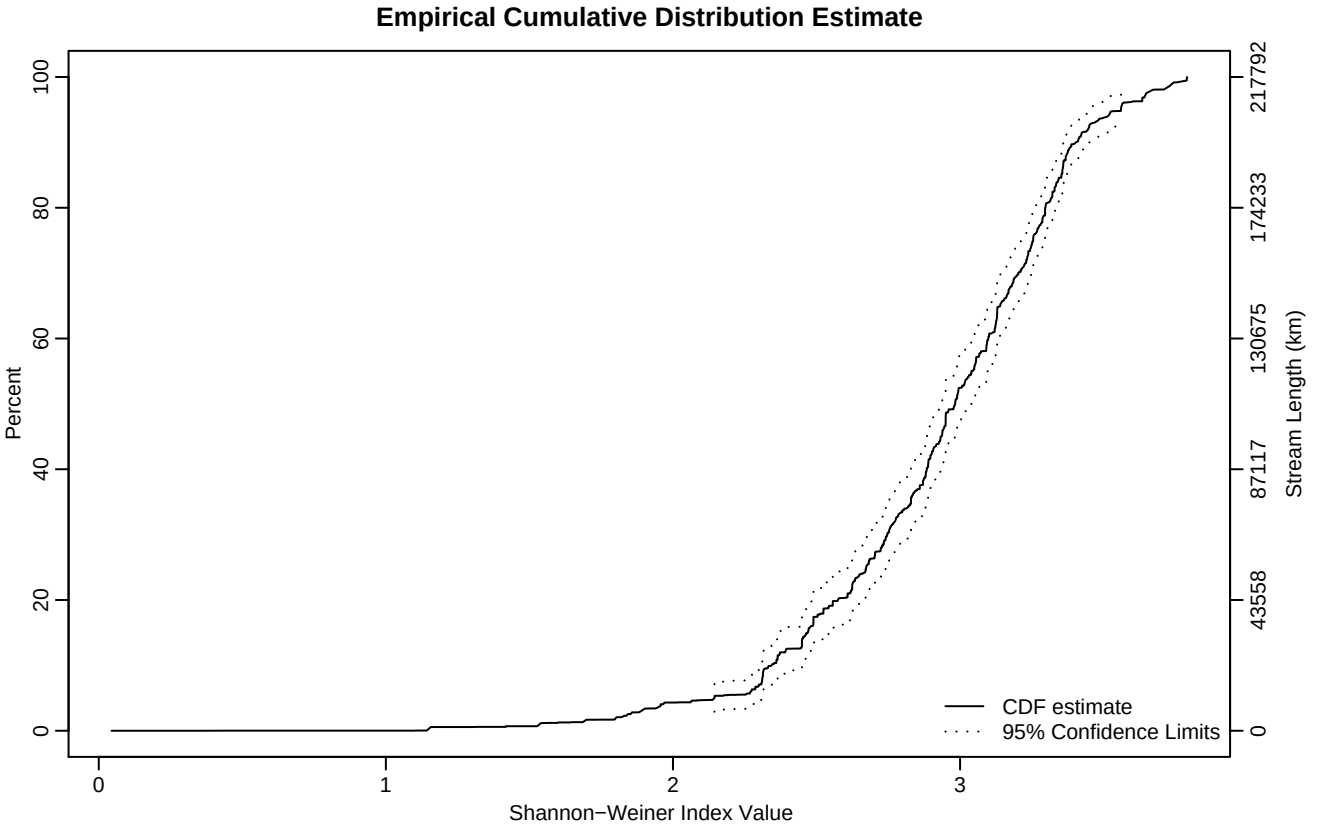


Figure BN−198 Indicator: HPRIME Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.14	1.88	2.31
10Pct	2.34	2.30	2.45
25Pct	2.67	2.61	2.74
50Pct	2.98	2.94	3.04
75Pct	3.25	3.21	3.30
90Pct	3.40	3.36	3.46
95Pct	3.56	3.45	3.65
Mean	2.93	2.88	2.97
Std Dev	0.42	0.38	0.46

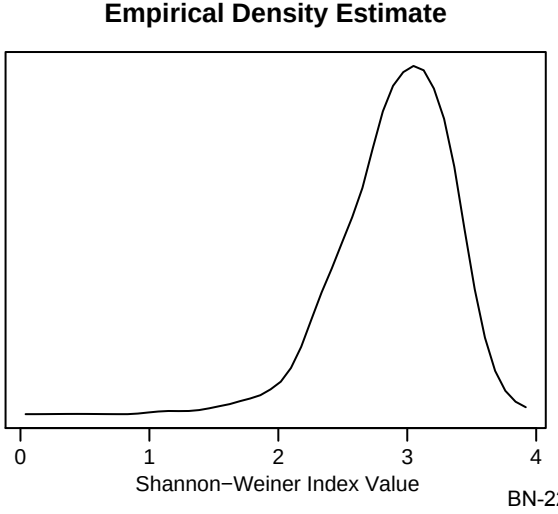
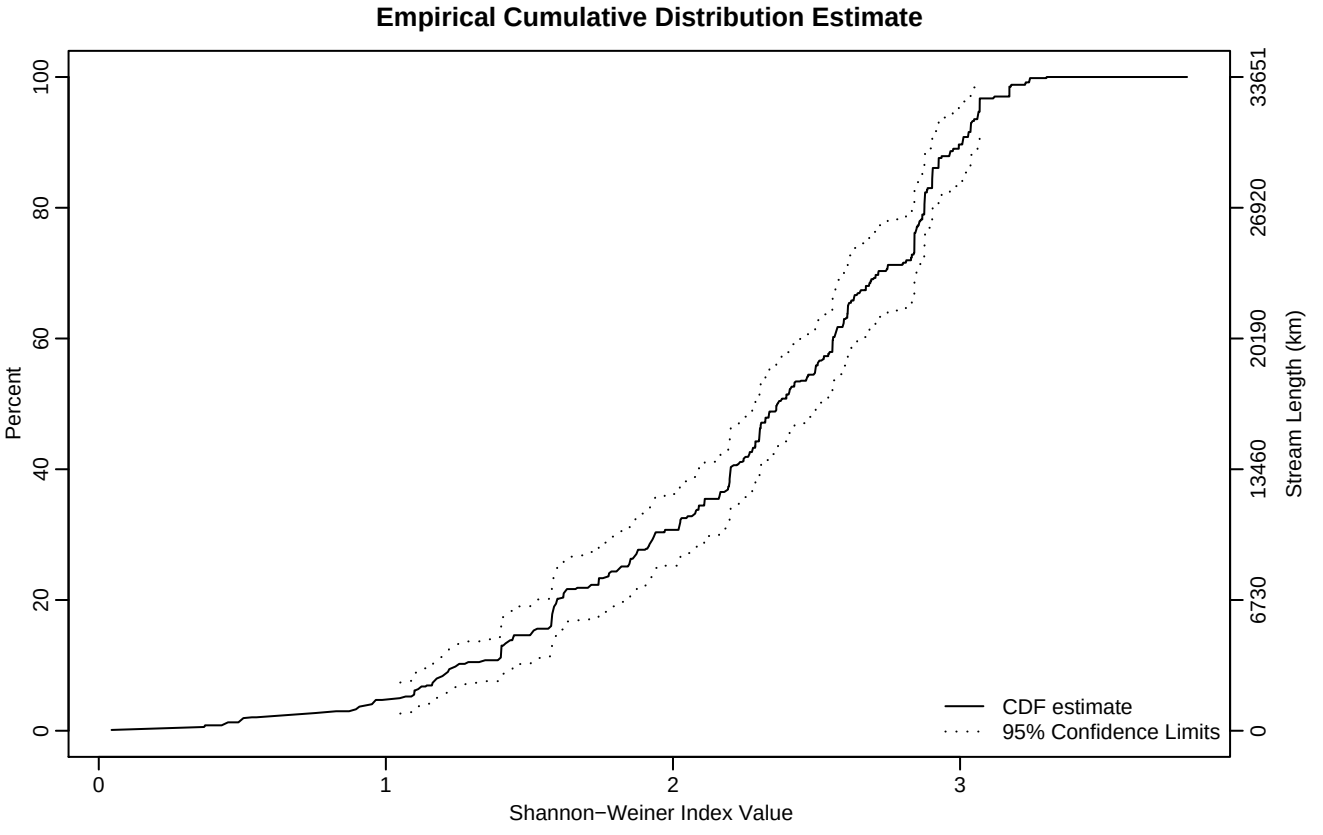


Figure BN−199 Indicator: HPRIME Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.05	0.73	1.16
10Pct	1.25	1.14	1.41
25Pct	1.82	1.59	1.94
50Pct	2.36	2.29	2.52
75Pct	2.84	2.67	2.88
90Pct	3.01	2.90	3.07
95Pct	3.07	3.01	3.24
Mean	2.26	2.18	2.34
Std Dev	0.61	0.56	0.66

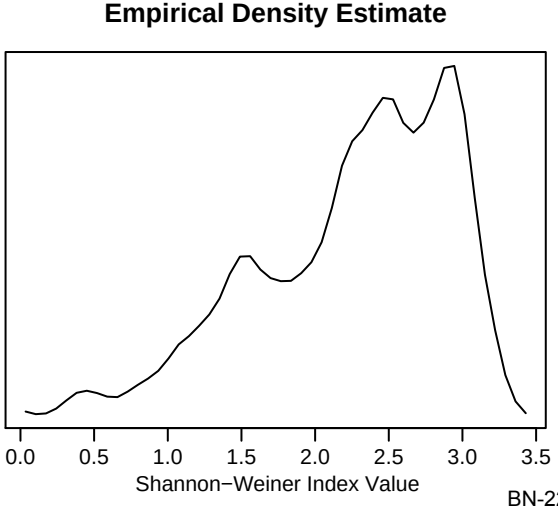
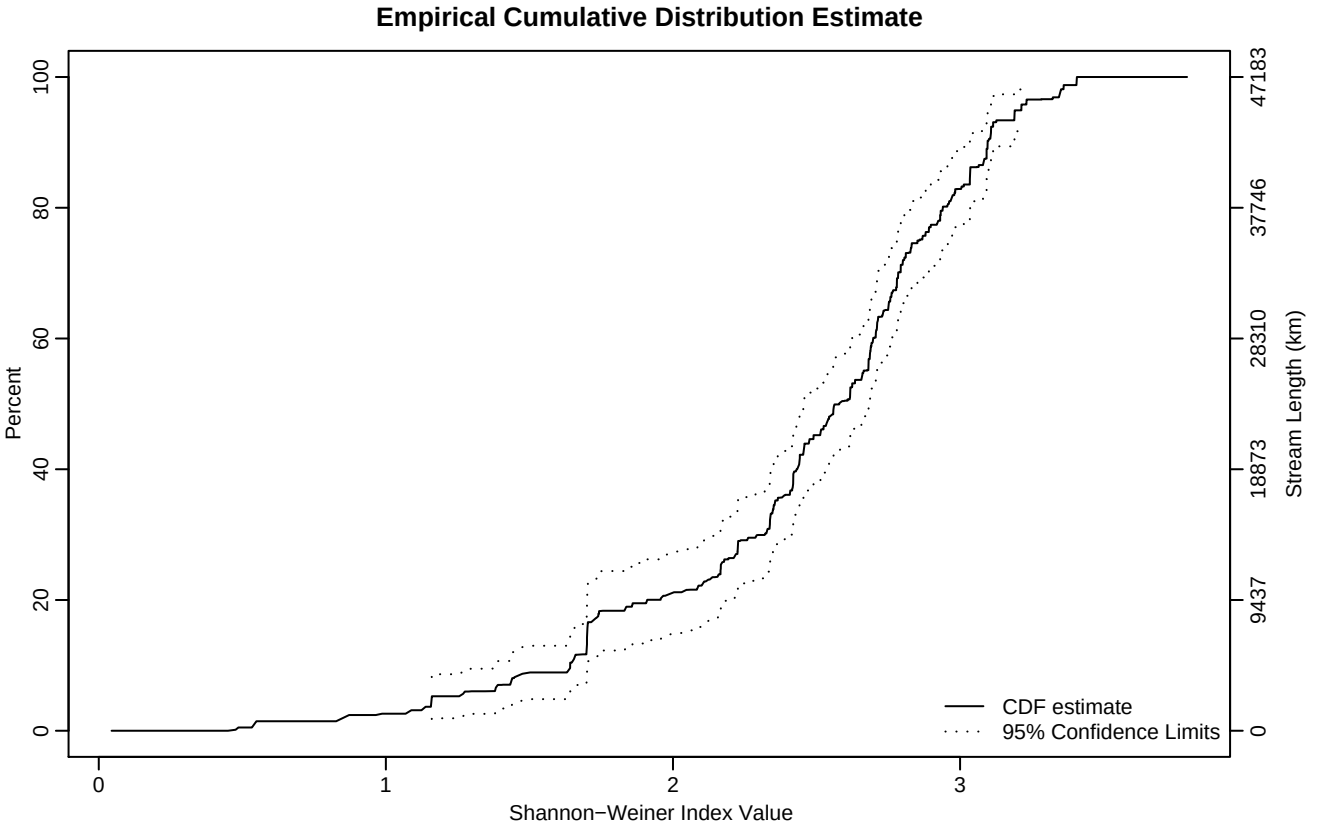


Figure BN−200 Indicator: HPRIME Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.16	1.07	1.44
10Pct	1.64	1.27	1.70
25Pct	2.17	1.83	2.34
50Pct	2.58	2.45	2.69
75Pct	2.86	2.78	2.97
90Pct	3.10	3.03	3.19
95Pct	3.21	3.11	3.36
Mean	2.45	2.35	2.54
Std Dev	0.56	0.50	0.61

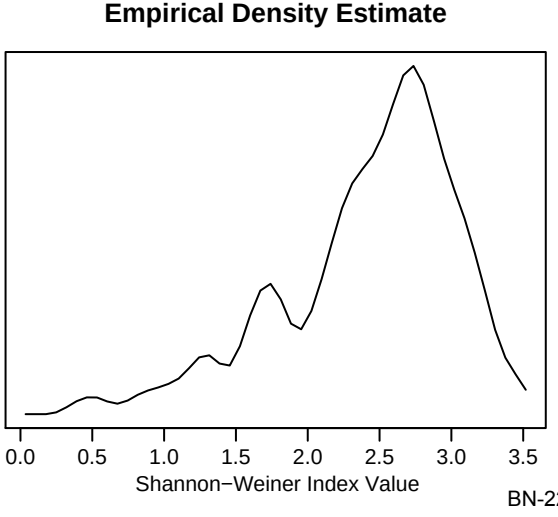
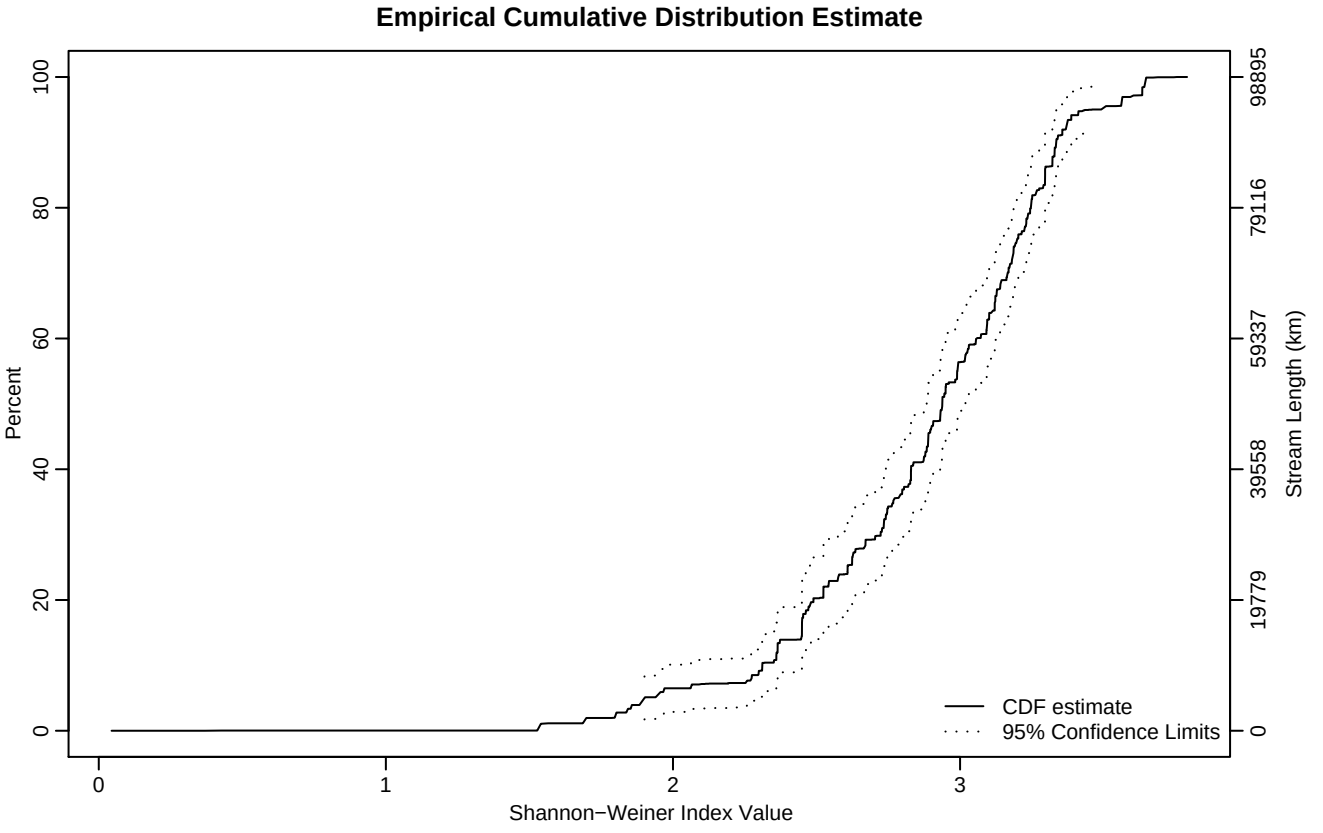


Figure BN−201 Indicator: HPRIME Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.90	1.80	2.27
10Pct	2.31	1.96	2.45
25Pct	2.61	2.46	2.73
50Pct	2.94	2.88	3.03
75Pct	3.20	3.14	3.25
90Pct	3.33	3.30	3.49
95Pct	3.46	3.36	3.64
Mean	2.87	2.81	2.94
Std Dev	0.41	0.36	0.46

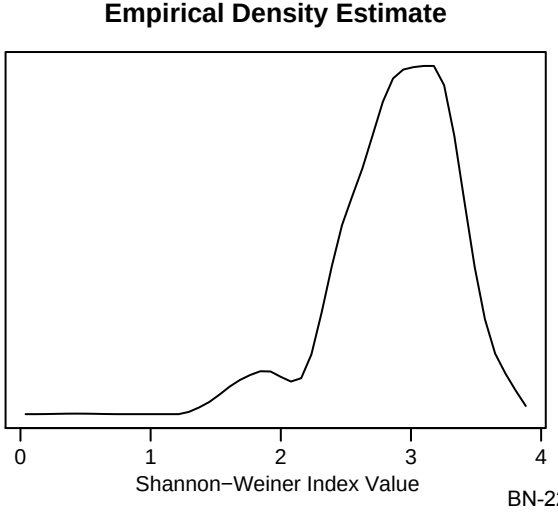
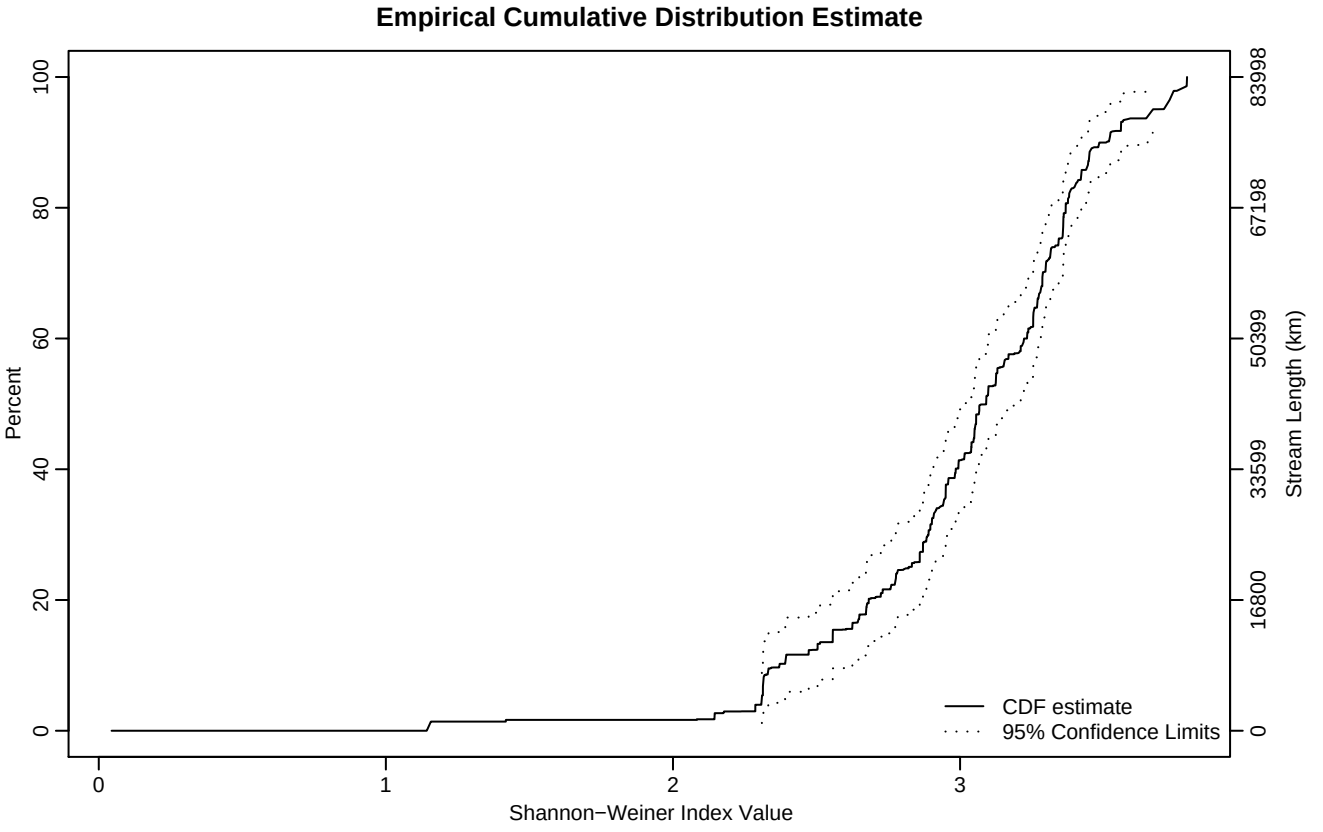


Figure BN−202 Indicator: HPRIME Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.31	2.08	2.32
10Pct	2.37	2.31	2.56
25Pct	2.82	2.67	2.90
50Pct	3.09	3.02	3.19
75Pct	3.34	3.29	3.38
90Pct	3.51	3.42	3.67
95Pct	3.67	3.52	3.79
Mean	3.03	2.95	3.11
Std Dev	0.44	0.36	0.51

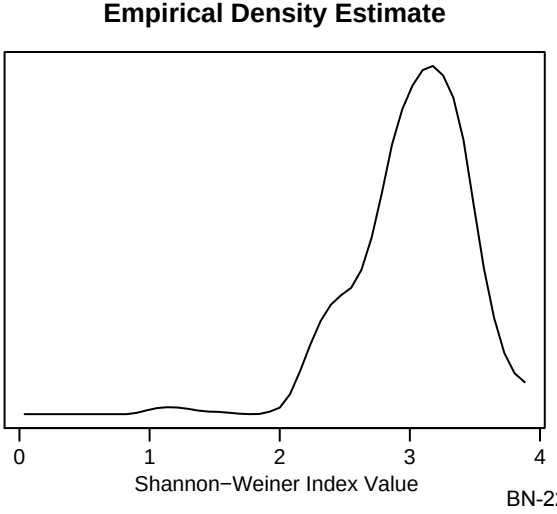
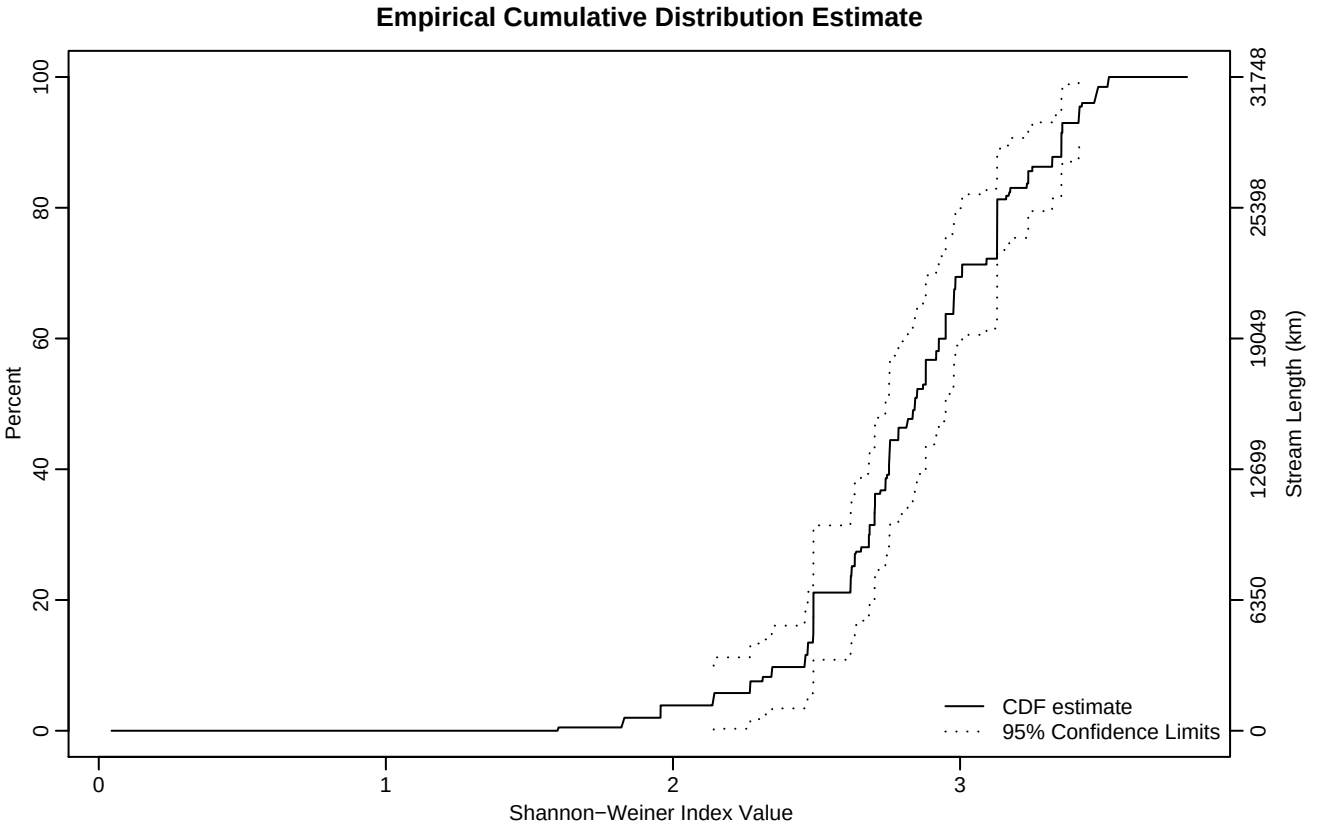


Figure BN−203 Indicator: HPRIME Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.14	1.82	2.34
10Pct	2.46	1.96	2.49
25Pct	2.62	2.49	2.70
50Pct	2.84	2.72	2.95
75Pct	3.13	2.98	3.25
90Pct	3.35	3.17	3.48
95Pct	3.42	3.35	3.52
Mean	2.84	2.75	2.92
Std Dev	0.36	0.30	0.42

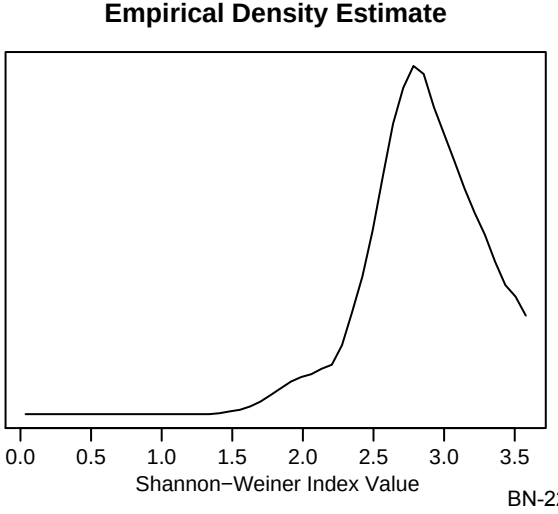
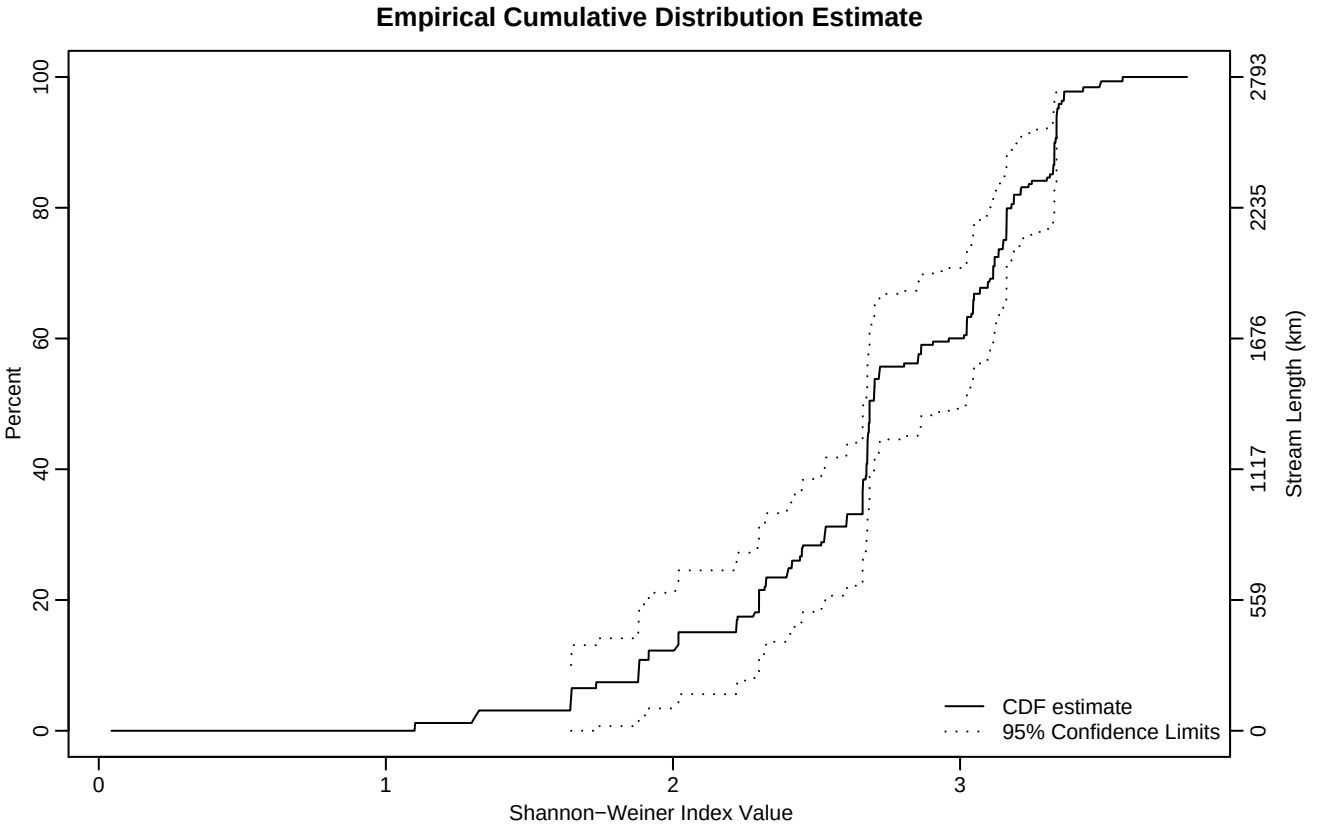


Figure BN−204 Indicator: HPRIME Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.65	1.31	1.88
10Pct	1.88	1.64	2.22
25Pct	2.41	2.02	2.66
50Pct	2.68	2.66	3.02
75Pct	3.15	3.05	3.31
90Pct	3.33	3.21	3.36
95Pct	3.34	3.34	3.49
Mean	2.71	2.58	2.84
Std Dev	0.54	0.45	0.62

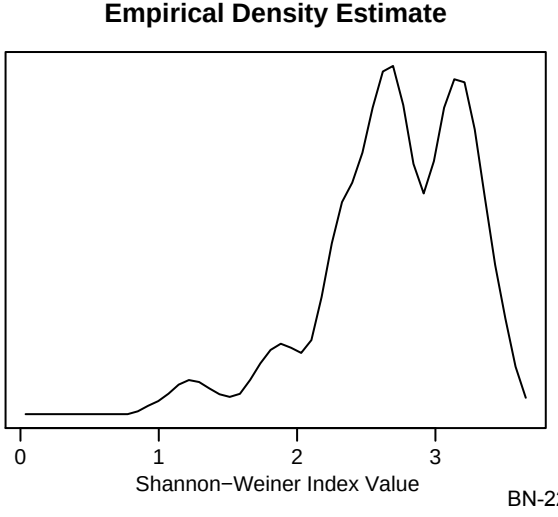
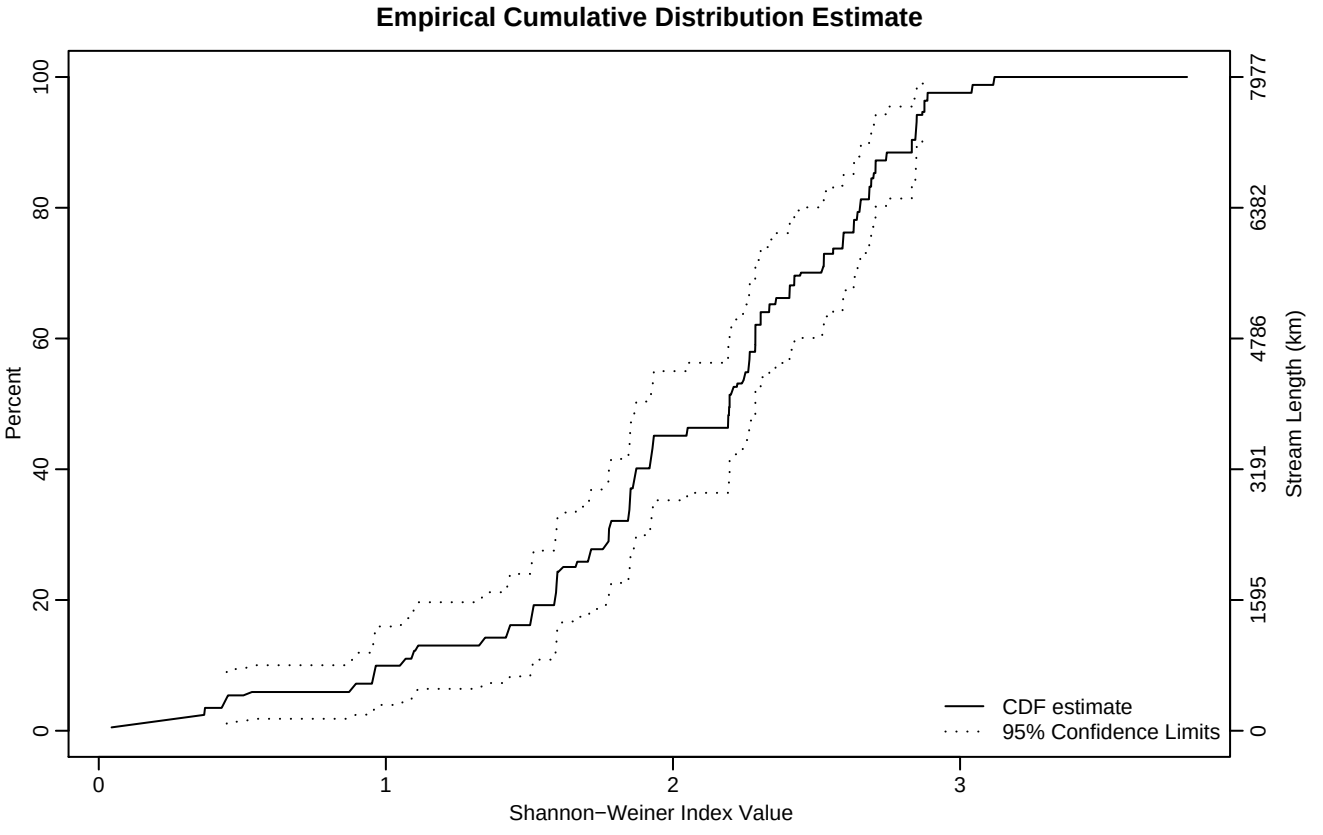


Figure BN−205 Indicator: HPRIME Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.45	0.17	0.96
10Pct	1.05	0.43	1.43
25Pct	1.62	1.50	1.85
50Pct	2.20	1.87	2.29
75Pct	2.59	2.36	2.70
90Pct	2.83	2.68	2.89
95Pct	2.88	2.84	3.12
Mean	2.03	1.91	2.15
Std Dev	0.62	0.53	0.71

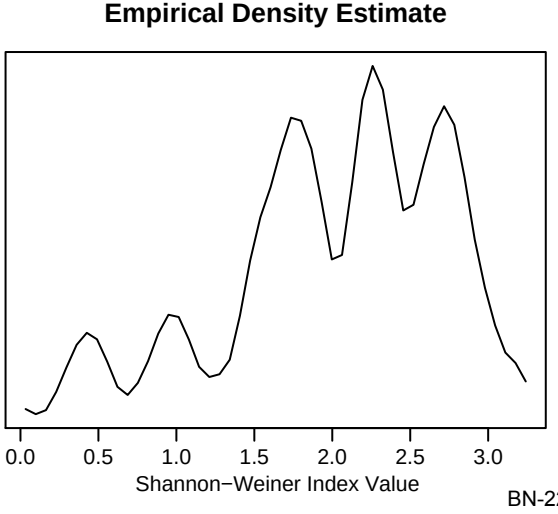
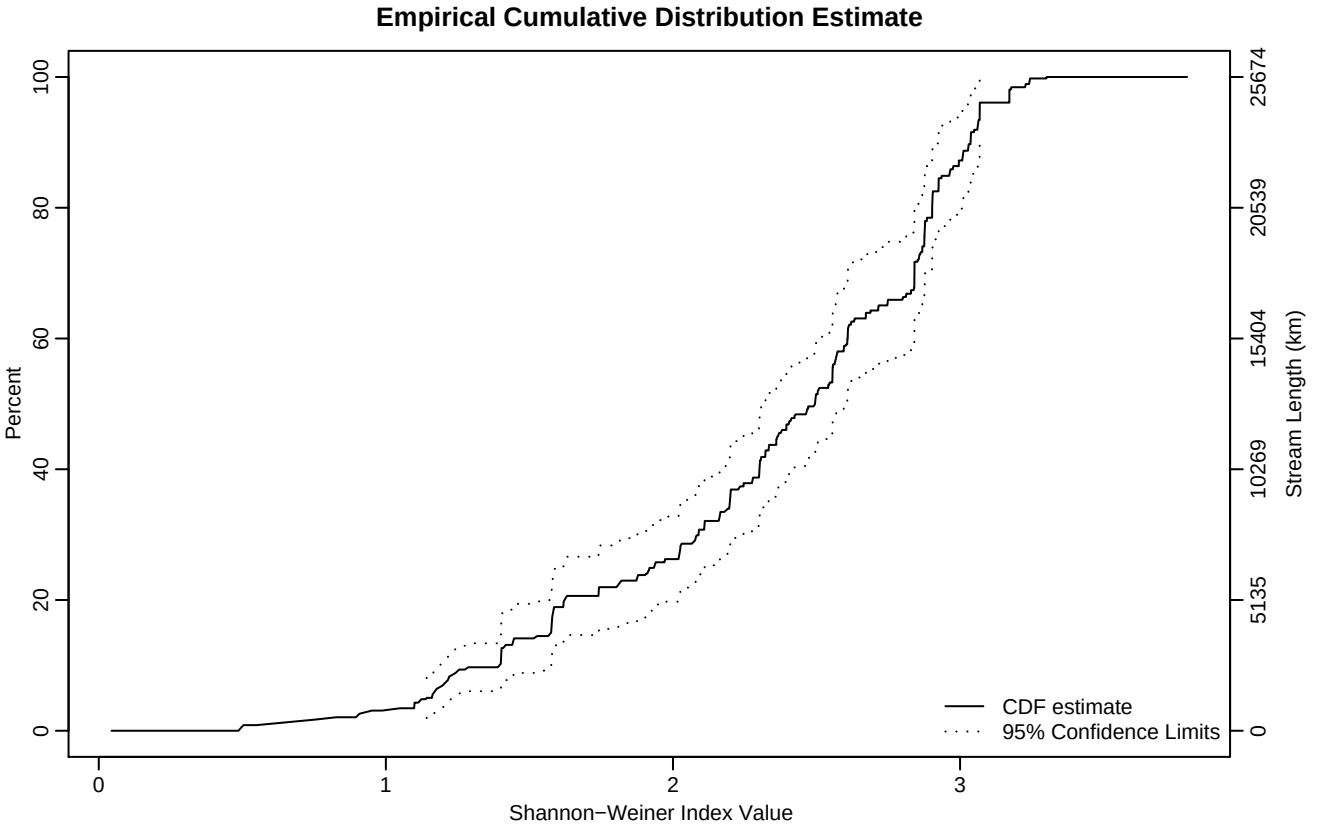


Figure BN−206 Indicator: HPRIME Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.14	0.80	1.22
10Pct	1.40	1.17	1.44
25Pct	1.93	1.58	2.11
50Pct	2.49	2.32	2.59
75Pct	2.88	2.81	2.93
90Pct	3.04	2.93	3.17
95Pct	3.07	3.03	3.30
Mean	2.33	2.23	2.42
Std Dev	0.60	0.54	0.66

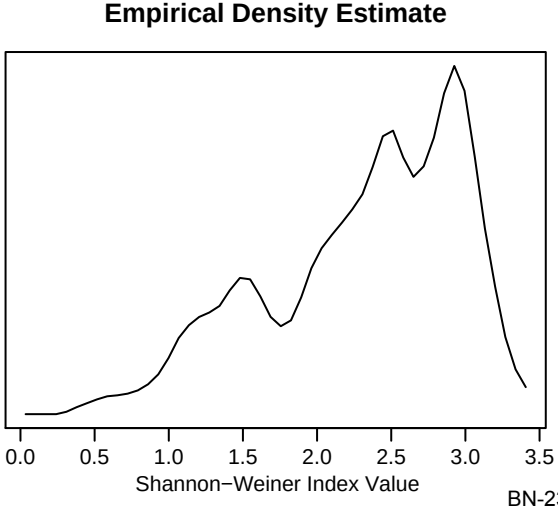
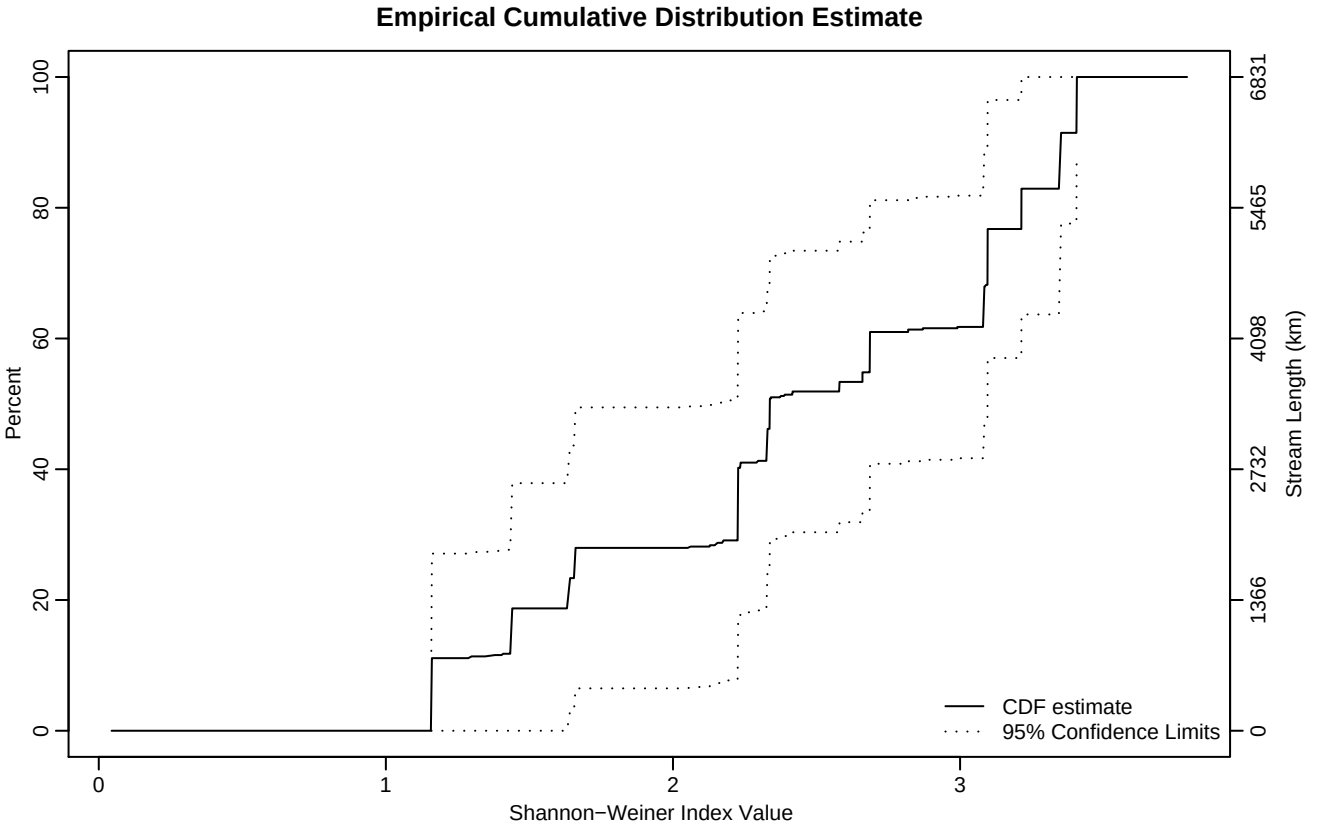


Figure BN−207 Indicator: HPRIME Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.16	1.16	1.16
10Pct	1.16	1.16	1.43
25Pct	1.66	1.16	2.33
50Pct	2.34	2.17	3.10
75Pct	3.10	2.66	3.41
90Pct	3.35	3.10	3.41
95Pct	3.41	3.21	3.41
Mean	2.44	2.07	2.80
Std Dev	0.76	0.61	0.92

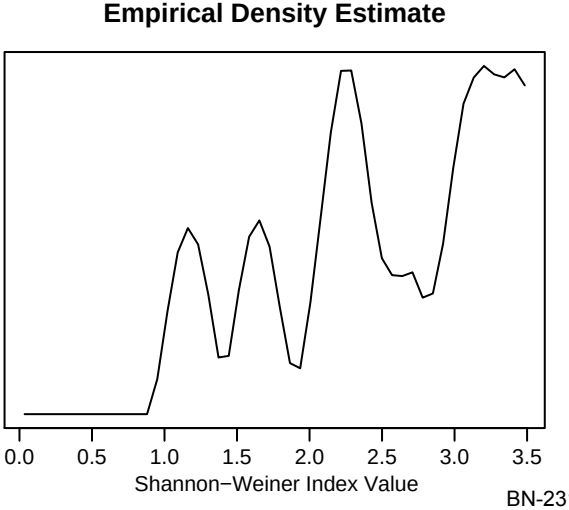
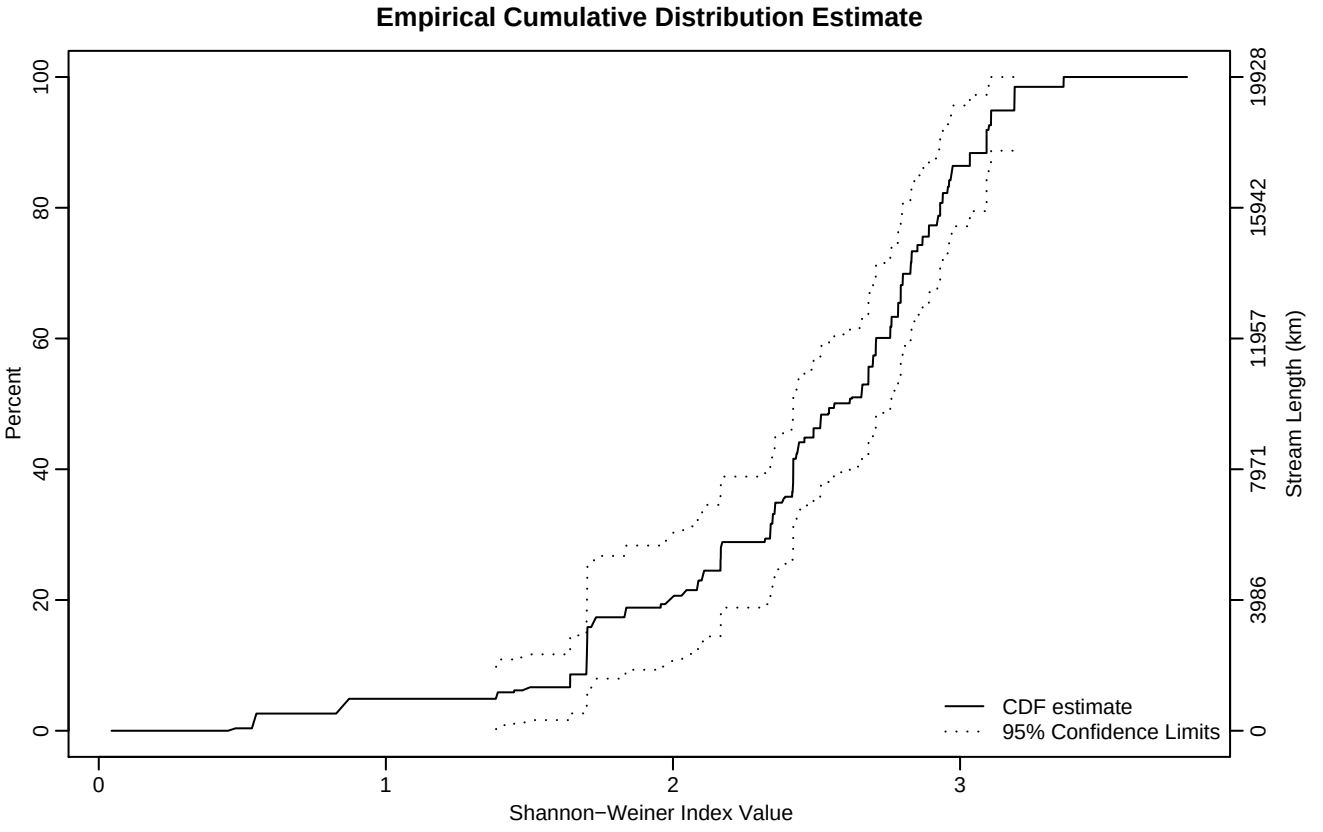


Figure BN−208 Indicator: HPRIME Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.38	0.53	1.70
10Pct	1.70	0.85	1.72
25Pct	2.17	1.70	2.39
50Pct	2.56	2.42	2.76
75Pct	2.87	2.78	2.97
90Pct	3.09	2.94	3.36
95Pct	3.19	3.09	3.36
Mean	2.44	2.30	2.58
Std Dev	0.52	0.44	0.60

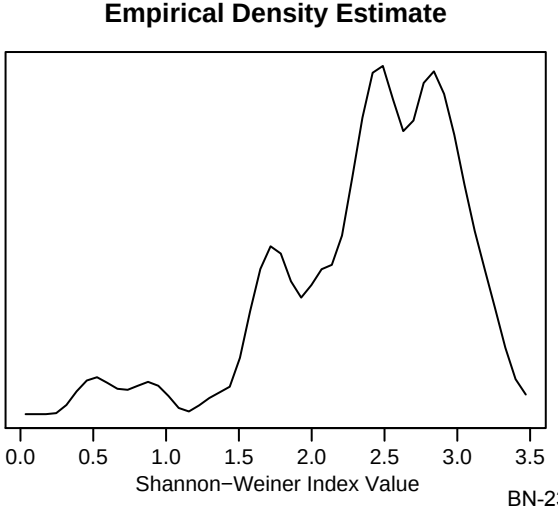
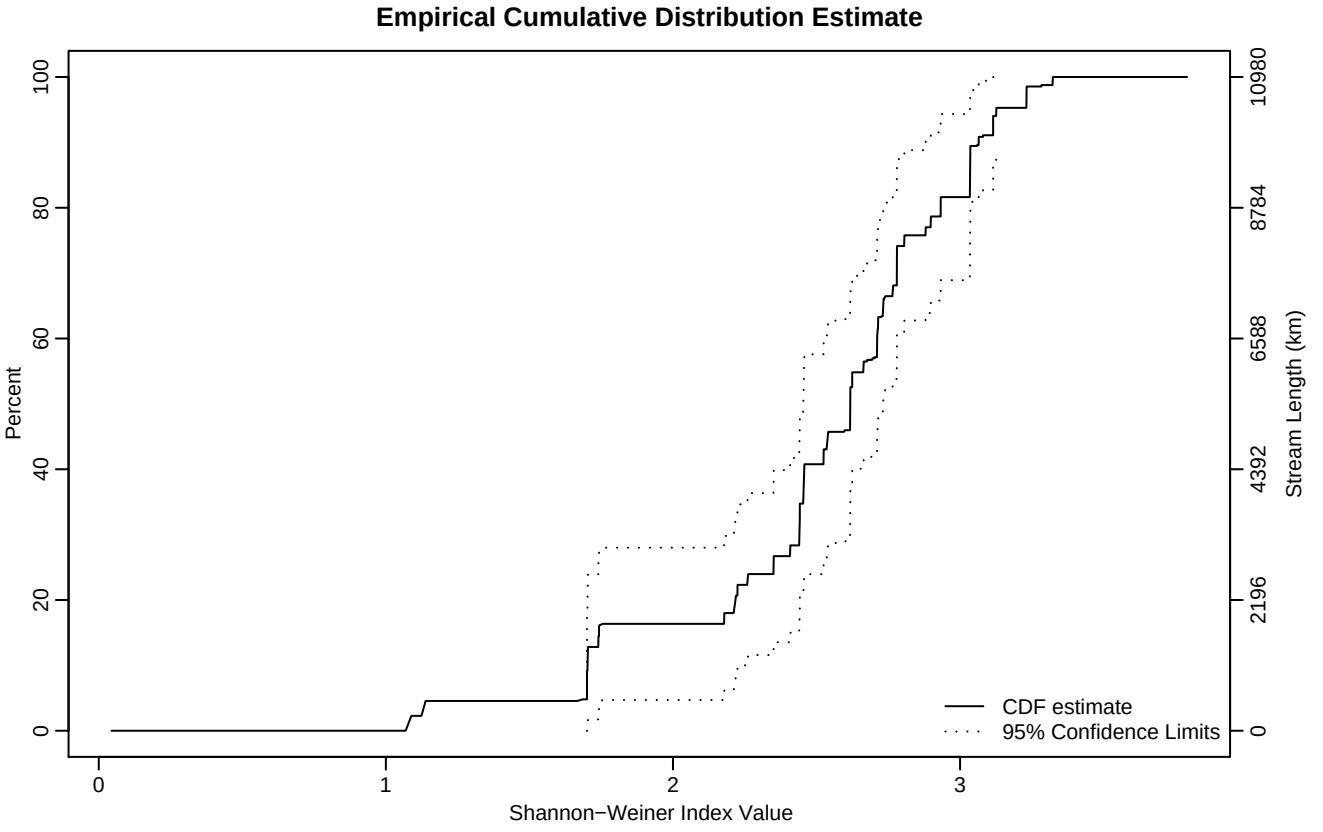


Figure BN−209 Indicator: HPRIME Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.70	0.04	1.70
10Pct	1.70	1.08	2.22
25Pct	2.35	1.70	2.46
50Pct	2.62	2.44	2.76
75Pct	2.81	2.71	3.04
90Pct	3.06	2.93	3.28
95Pct	3.13	3.04	3.32
Mean	2.51	2.35	2.67
Std Dev	0.49	0.38	0.59

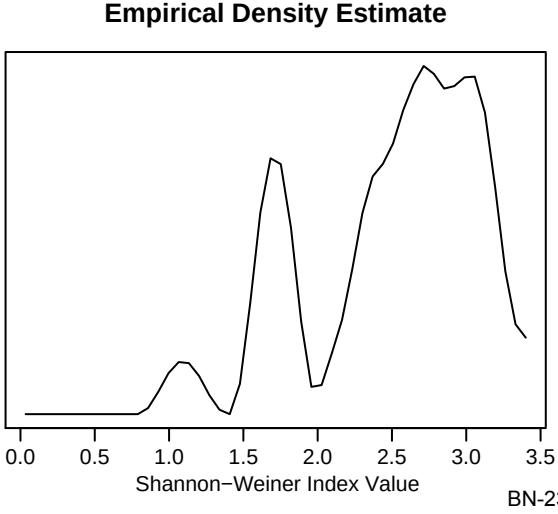
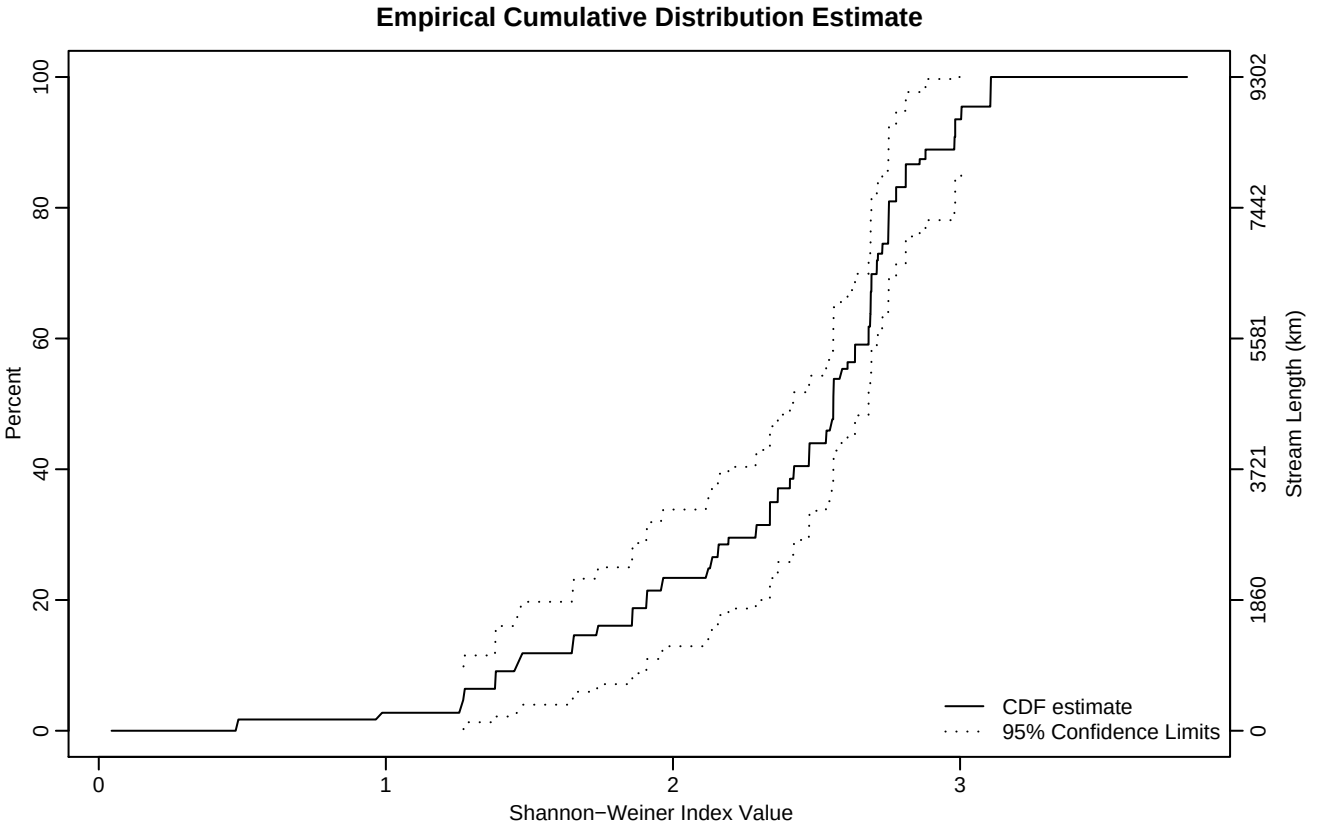


Figure BN−210 Indicator: HPRIME Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.27	0.48	1.45
10Pct	1.46	1.26	1.86
25Pct	2.13	1.65	2.37
50Pct	2.56	2.42	2.68
75Pct	2.75	2.69	2.86
90Pct	2.98	2.75	3.11
95Pct	3	2.81	3.11
Mean	2.37	2.25	2.50
Std Dev	0.48	0.39	0.56

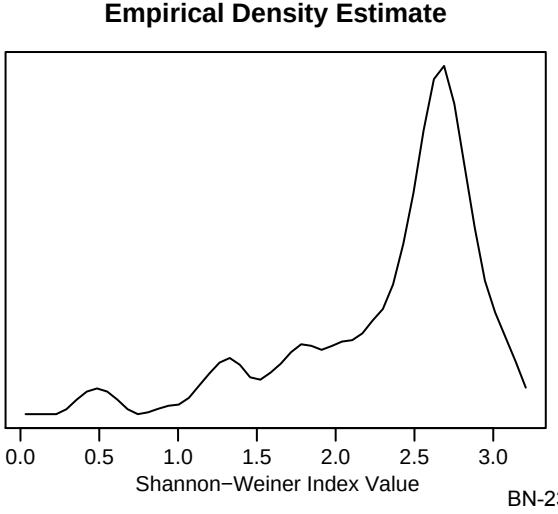
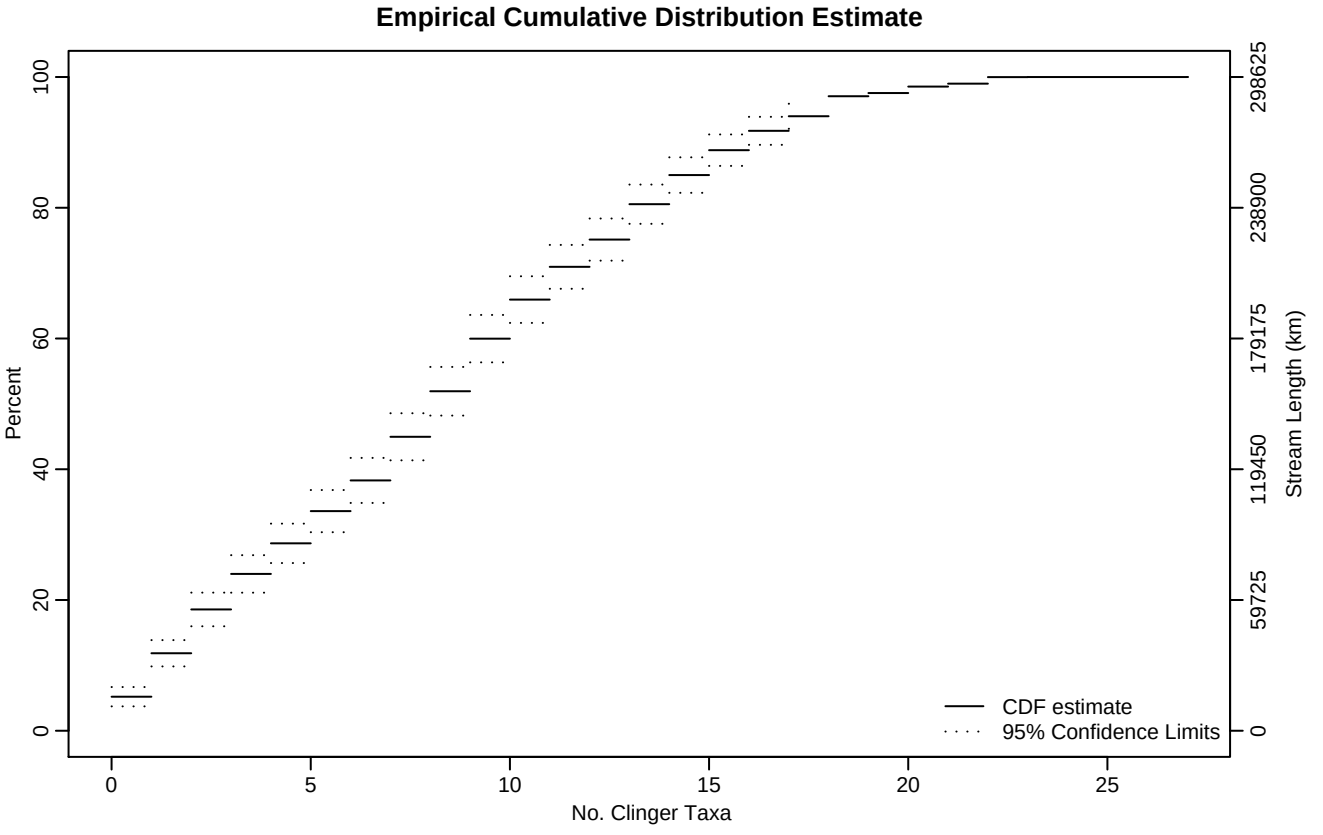


Figure BN−211 Indicator: CLNGRICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.19
10Pct	0.72	0.50	0.95
25Pct	3.22	2.64	3.85
50Pct	7.72	7.20	8.22
75Pct	11.97	11.15	12.61
90Pct	15.40	14.67	16.30
95Pct	17.33	16.57	17.97
Mean	8.39	8.02	8.75
Std Dev	4.63	4.42	4.85

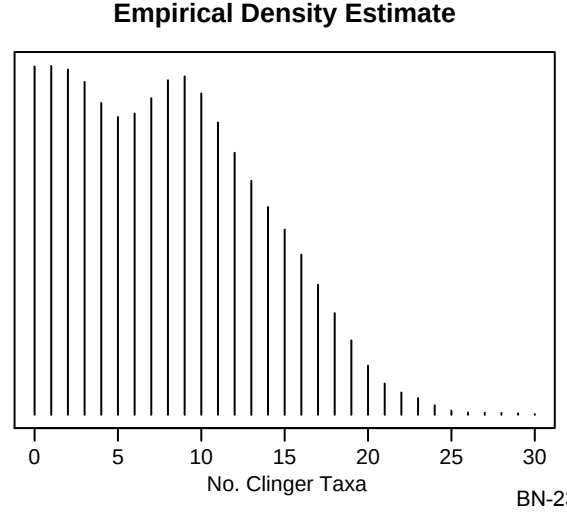
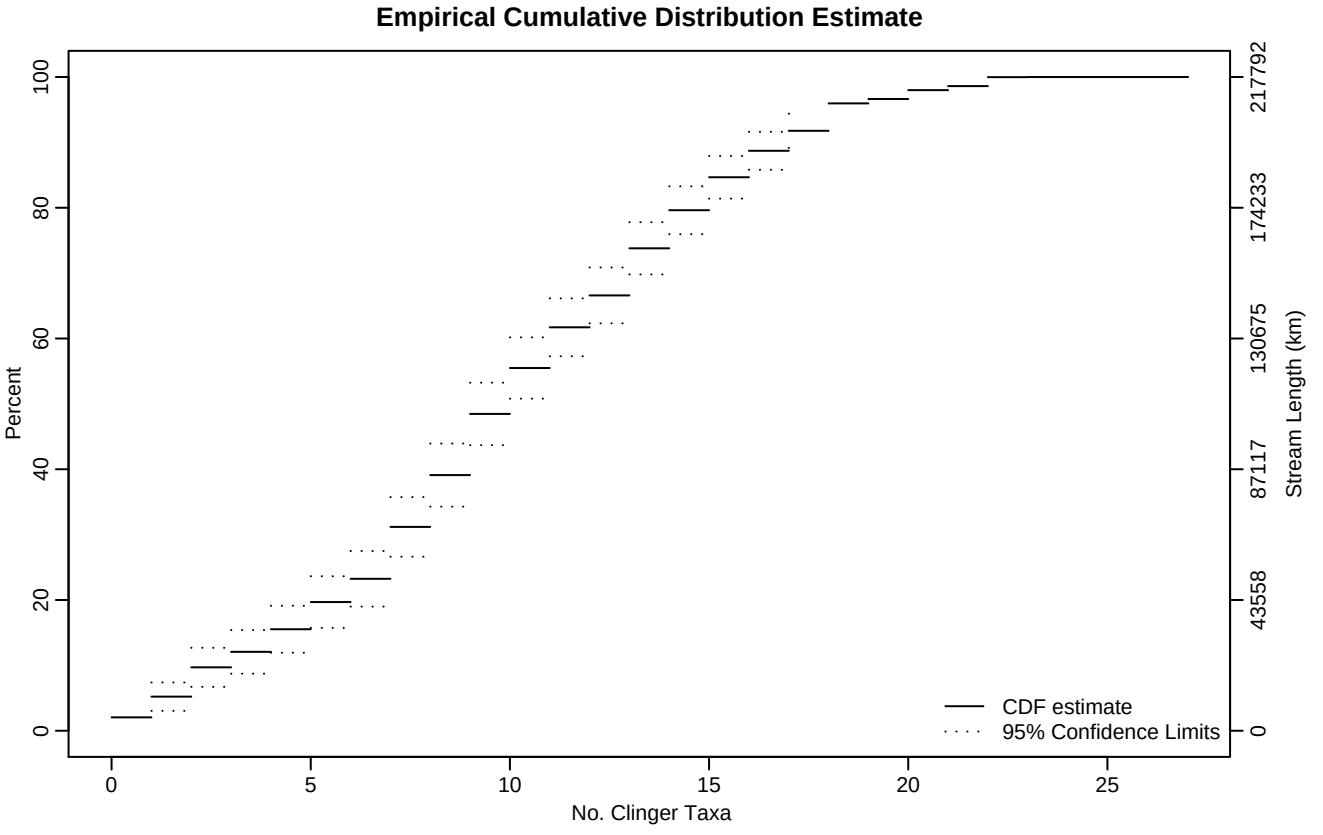


Figure BN−212 Indicator: CLNGRICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.93	0.45	1.29
10Pct	2.13	1.39	3.28
25Pct	6.22	5.28	6.76
50Pct	9.22	8.65	9.91
75Pct	13.21	12.60	13.90
90Pct	16.42	15.59	17.28
95Pct	17.77	17.13	19.78
Mean	10.02	9.56	10.49
Std Dev	4.75	4.48	5.02

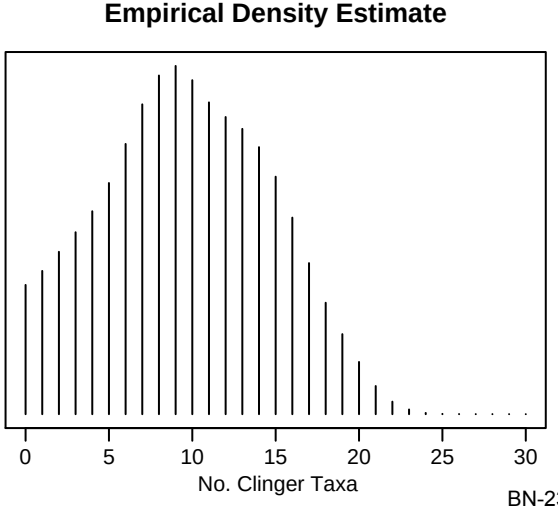
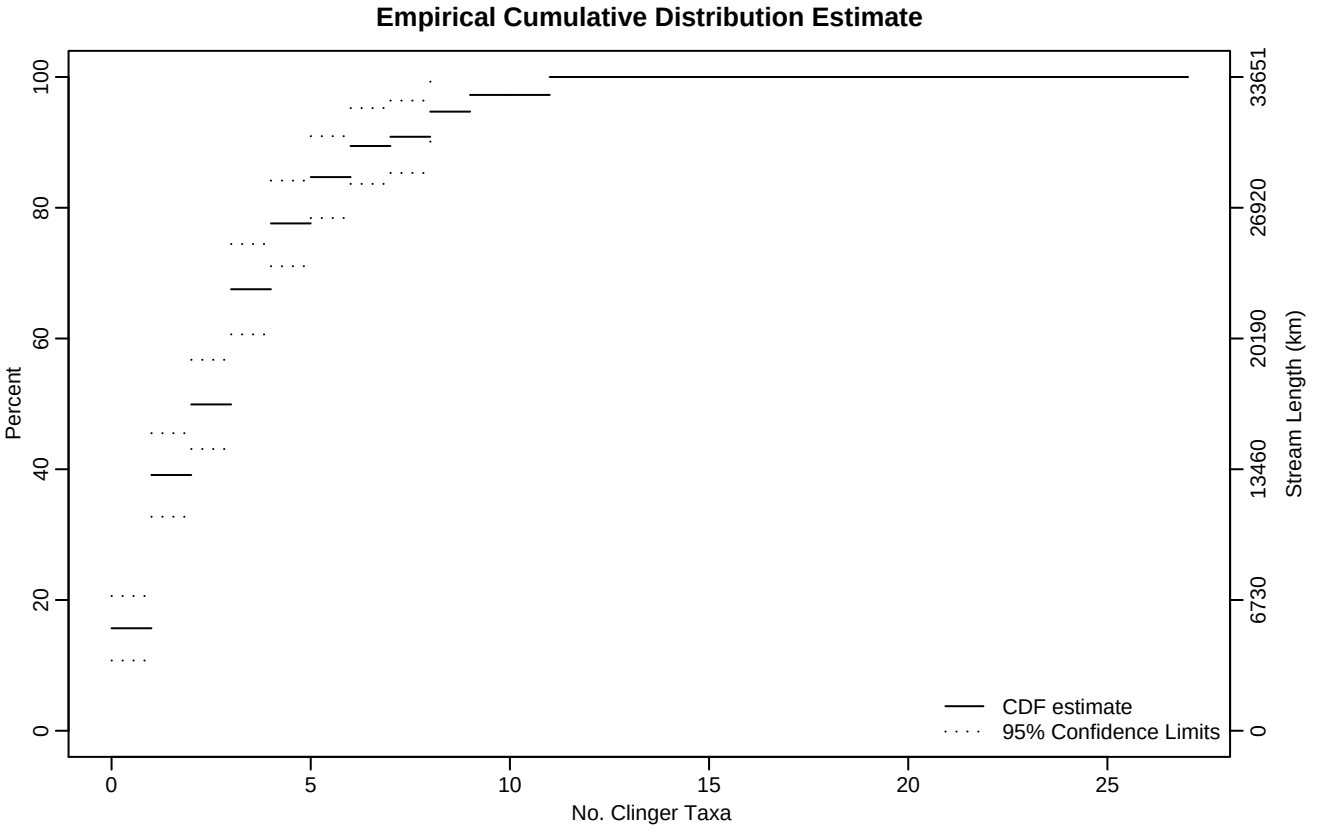


Figure BN−213 Indicator: CLNGRICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.40	0.18	0.61
50Pct	2	1.37	2.39
75Pct	3.74	3.07	4.58
90Pct	6.39	4.95	8.39
95Pct	8.12	6.78	10.80
Mean	2.96	2.53	3.39
Std Dev	2.38	2.10	2.65

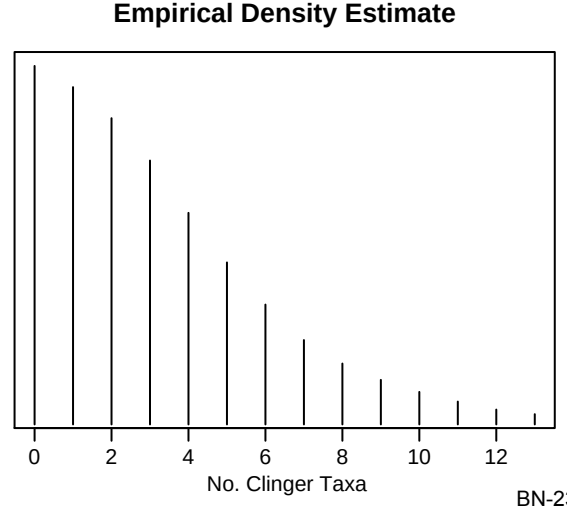
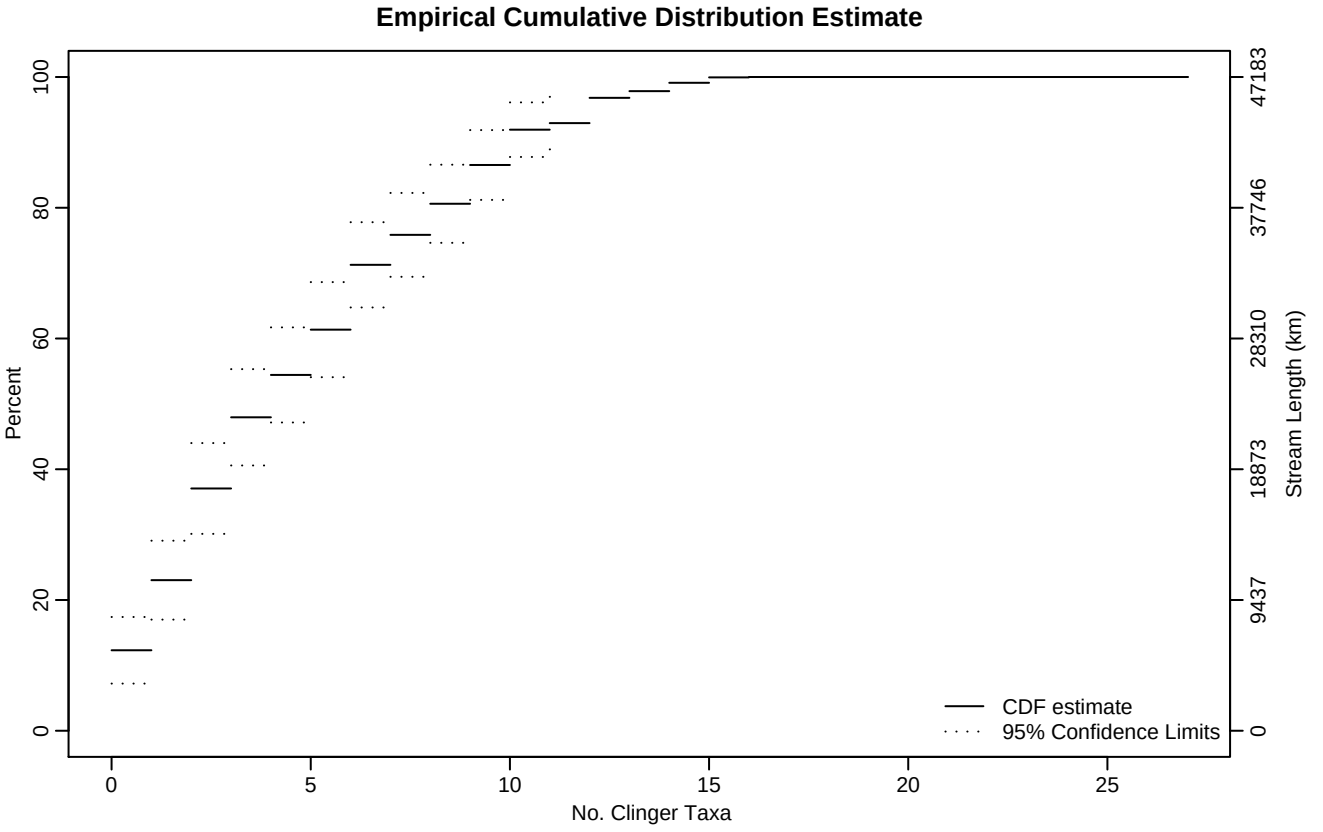


Figure BN−214 Indicator: CLNGRICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.27
25Pct	1.14	0.61	1.58
50Pct	3.32	2.50	4.44
75Pct	6.81	5.70	8.19
90Pct	9.64	8.64	11.68
95Pct	11.53	9.77	14.20
Mean	4.71	4.14	5.28
Std Dev	3.52	3.20	3.84

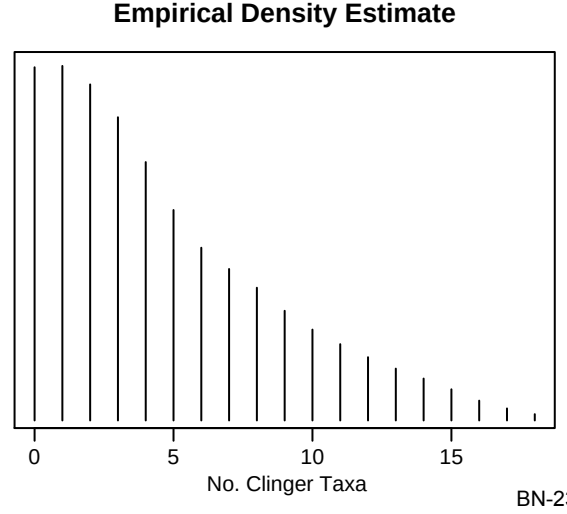
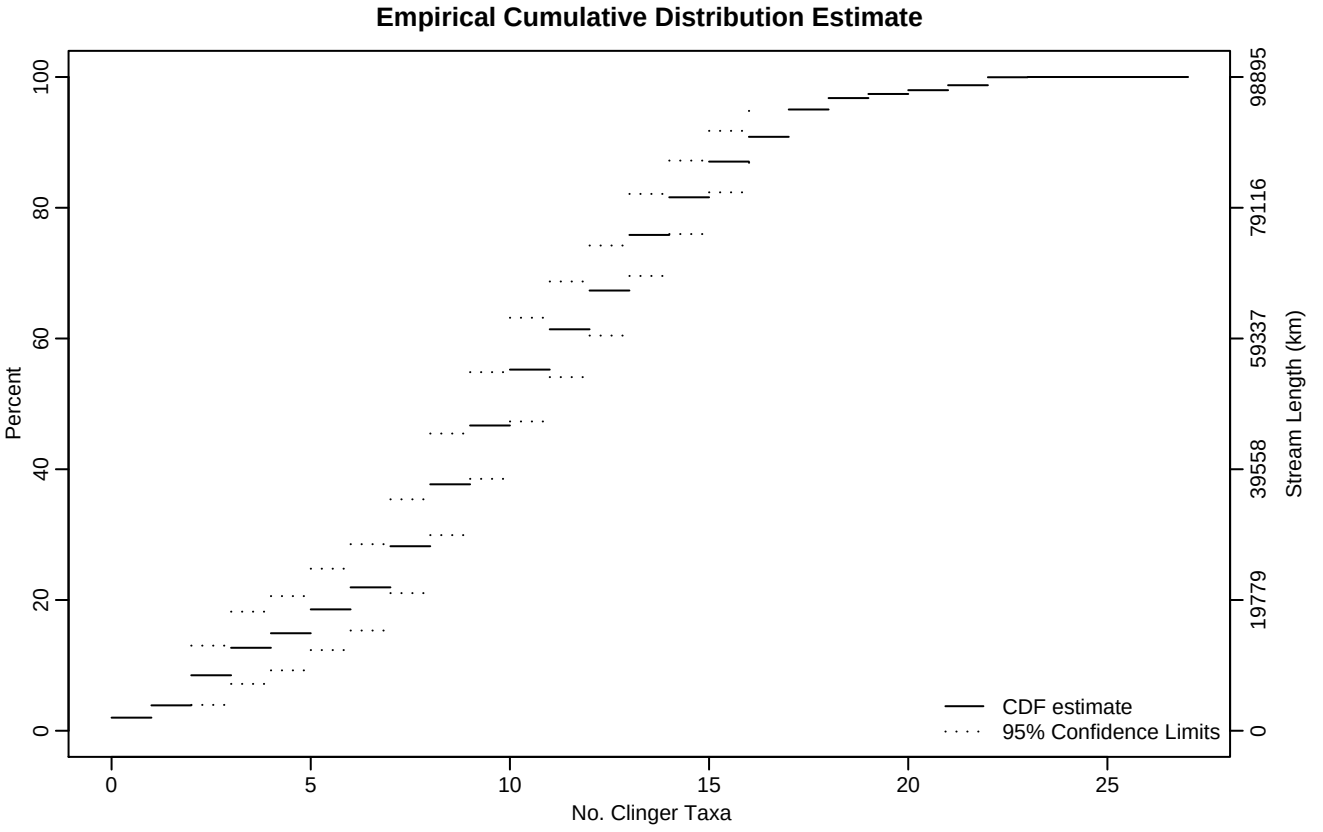


Figure BN−215 Indicator: CLNGRICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.24	0.08	1.86
10Pct	2.36	1.32	3.88
25Pct	6.49	4.90	7.38
50Pct	9.39	8.46	10.47
75Pct	12.90	12.10	14.04
90Pct	15.78	14.69	16.91
95Pct	16.99	16.04	21.21
Mean	10	9.27	10.73
Std Dev	4.44	4.10	4.78

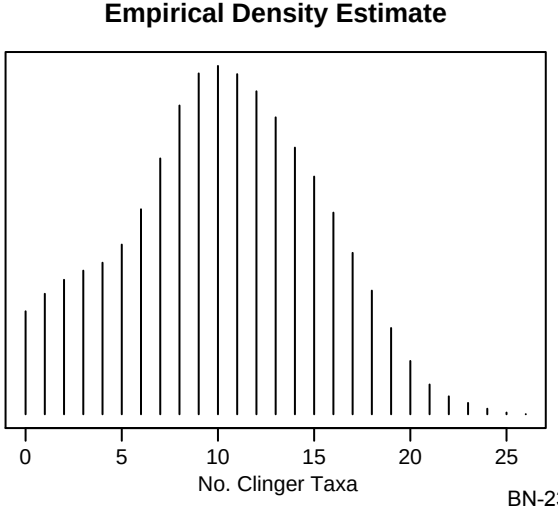
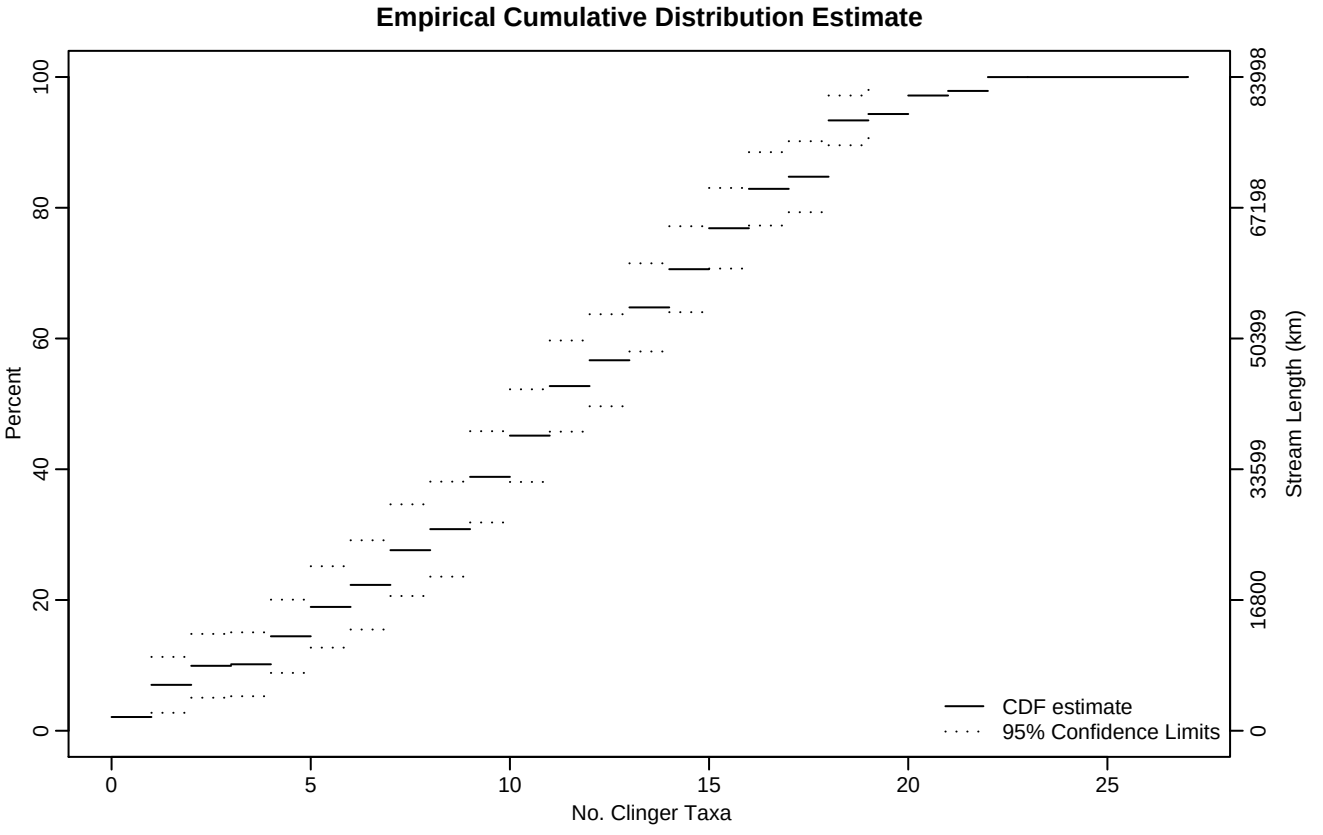


Figure BN−216 Indicator: CLNGRICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.59	0.06	1.19
10Pct	2.29	0.61	4.10
25Pct	6.51	4.83	8.12
50Pct	10.64	9.64	12.06
75Pct	14.70	13.61	15.79
90Pct	17.61	16.82	19.44
95Pct	19.23	17.76	21.40
Mean	11.01	10.22	11.80
Std Dev	5.40	4.93	5.86

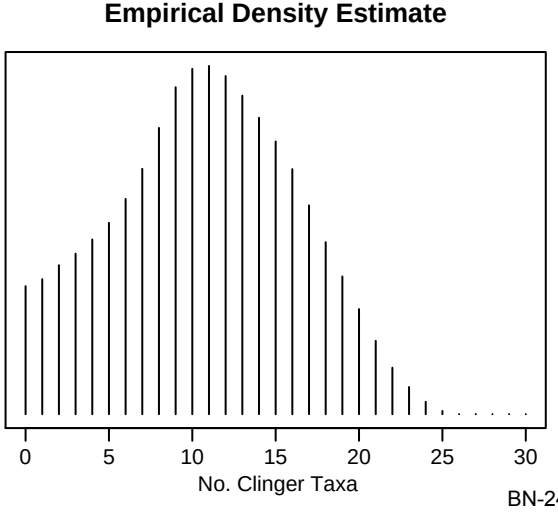
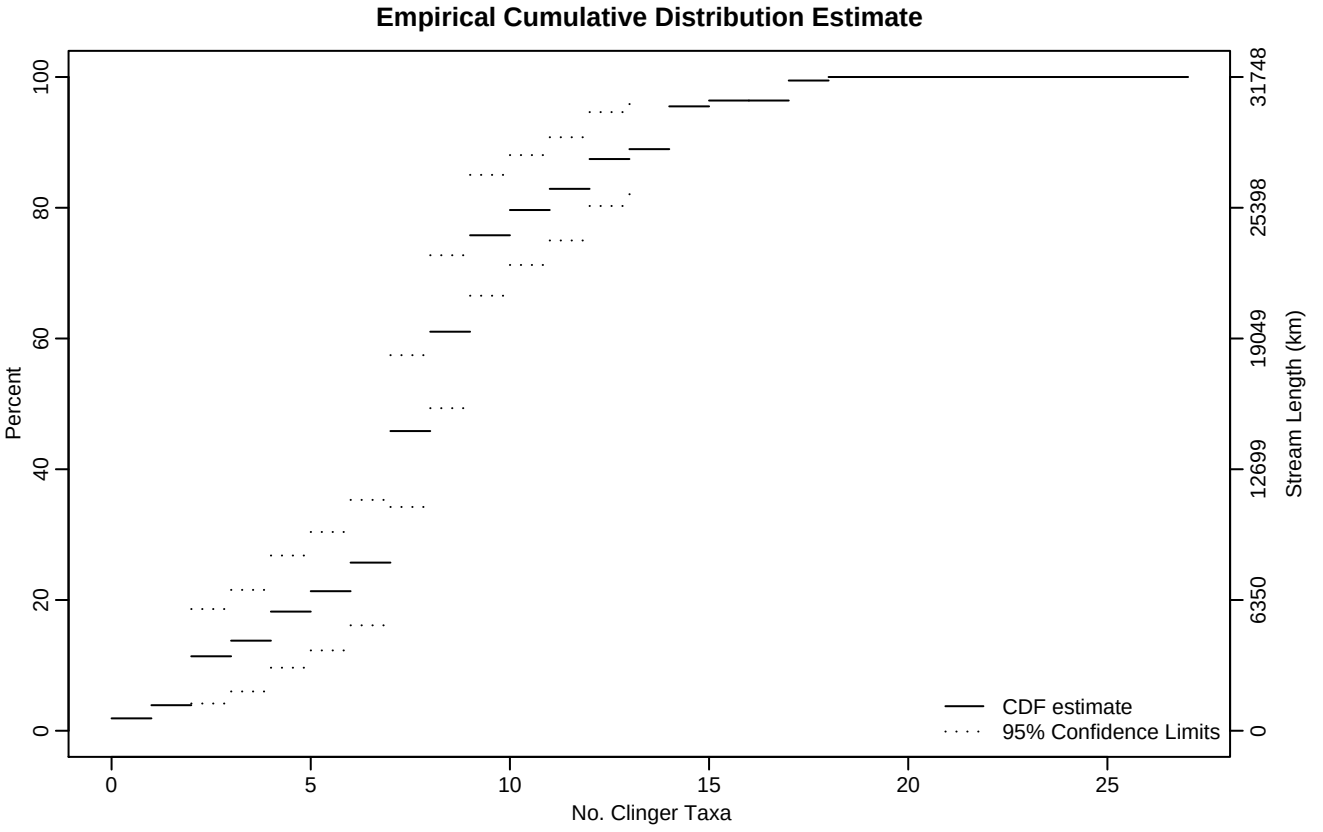


Figure BN−217 Indicator: CLNGRICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.15	0	1.66
10Pct	1.81	1.29	3.03
25Pct	5.84	3.40	6.43
50Pct	7.27	6.62	8.06
75Pct	8.95	8.15	11.84
90Pct	13.16	11.04	16.17
95Pct	13.92	12.43	18
Mean	7.94	7.17	8.71
Std Dev	3.72	3.03	4.41

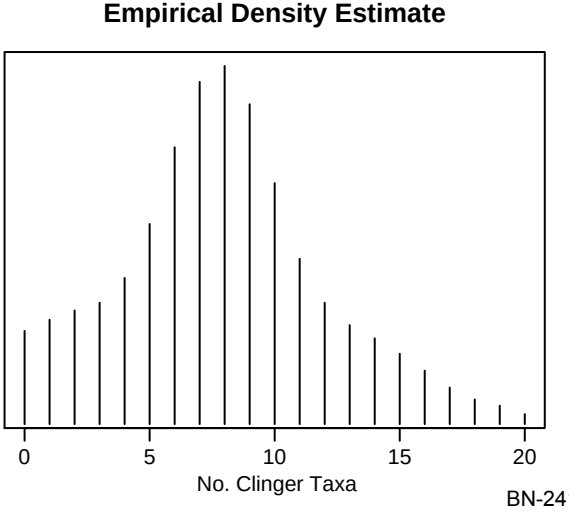
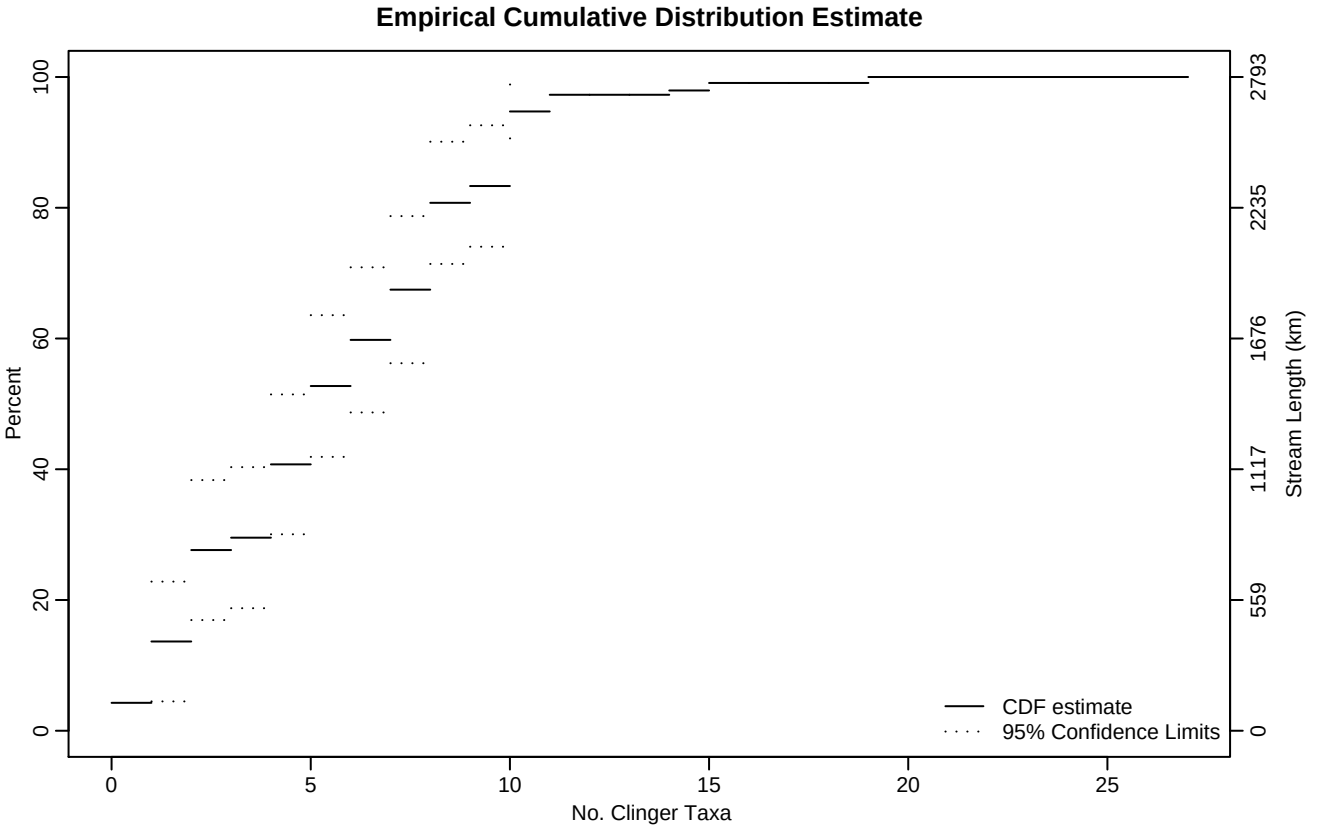


Figure BN−218 Indicator: CLNGRICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.08	0	0.51
10Pct	0.61	0.16	1.04
25Pct	1.81	1.15	3.42
50Pct	4.77	3.89	6.09
75Pct	7.57	6.52	9.25
90Pct	9.59	7.99	18.29
95Pct	10.11	9.66	18.04
Mean	5.59	4.83	6.35
Std Dev	3.51	3.05	3.96

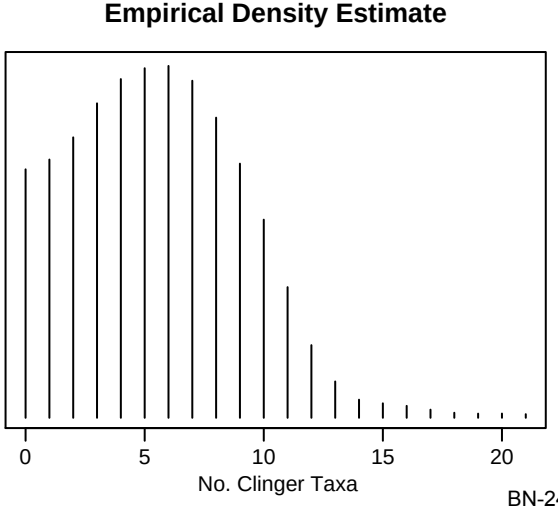
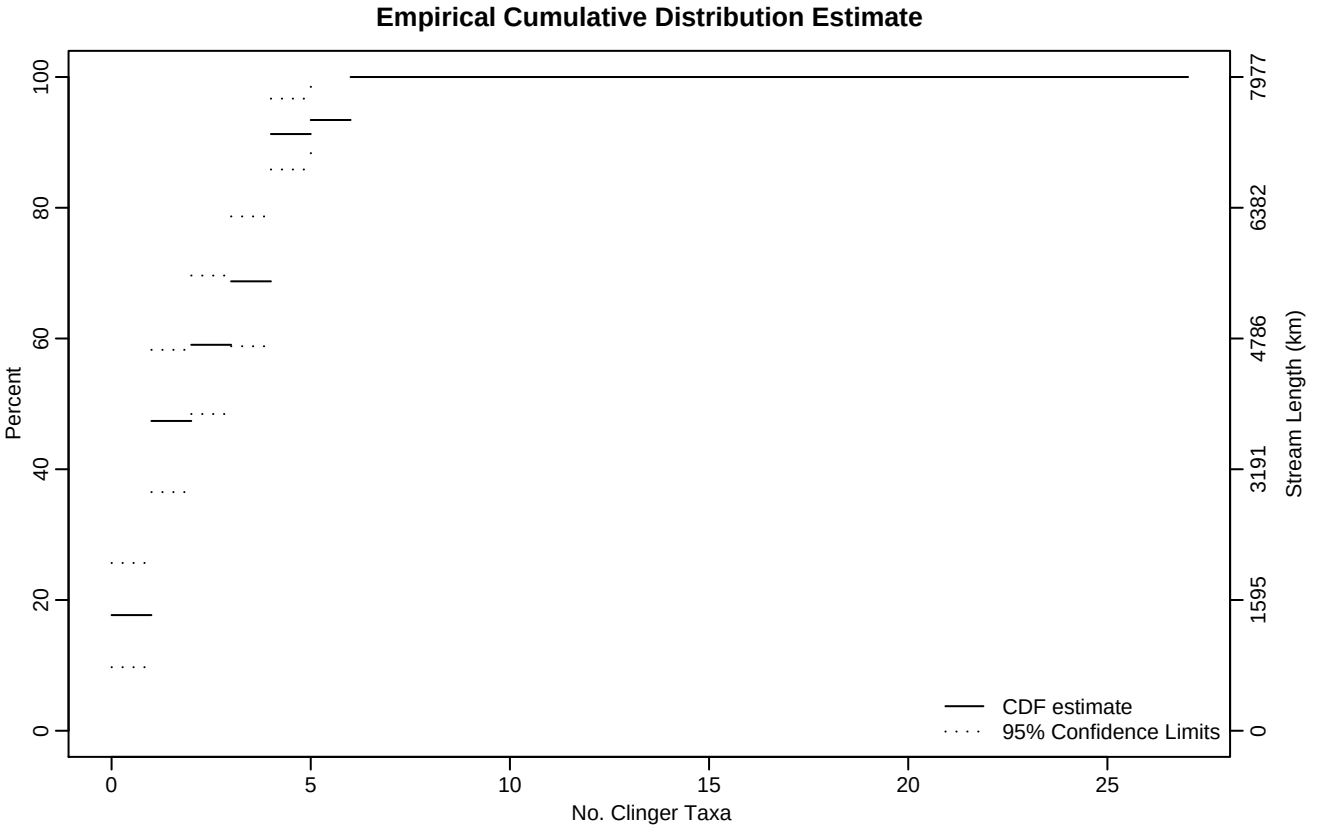


Figure BN−219 Indicator: CLNGRICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.25	0	0.52
50Pct	1.22	0.72	2.20
75Pct	3.28	2.63	3.71
90Pct	3.94	3.50	5.99
95Pct	5.24	3.94	6
Mean	2.22	1.86	2.59
Std Dev	1.68	1.49	1.87

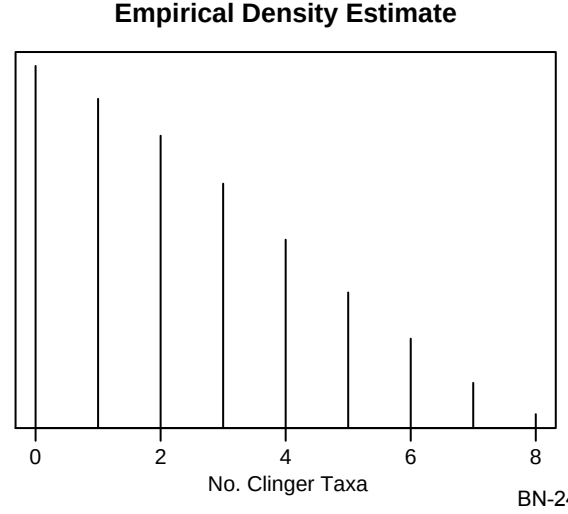
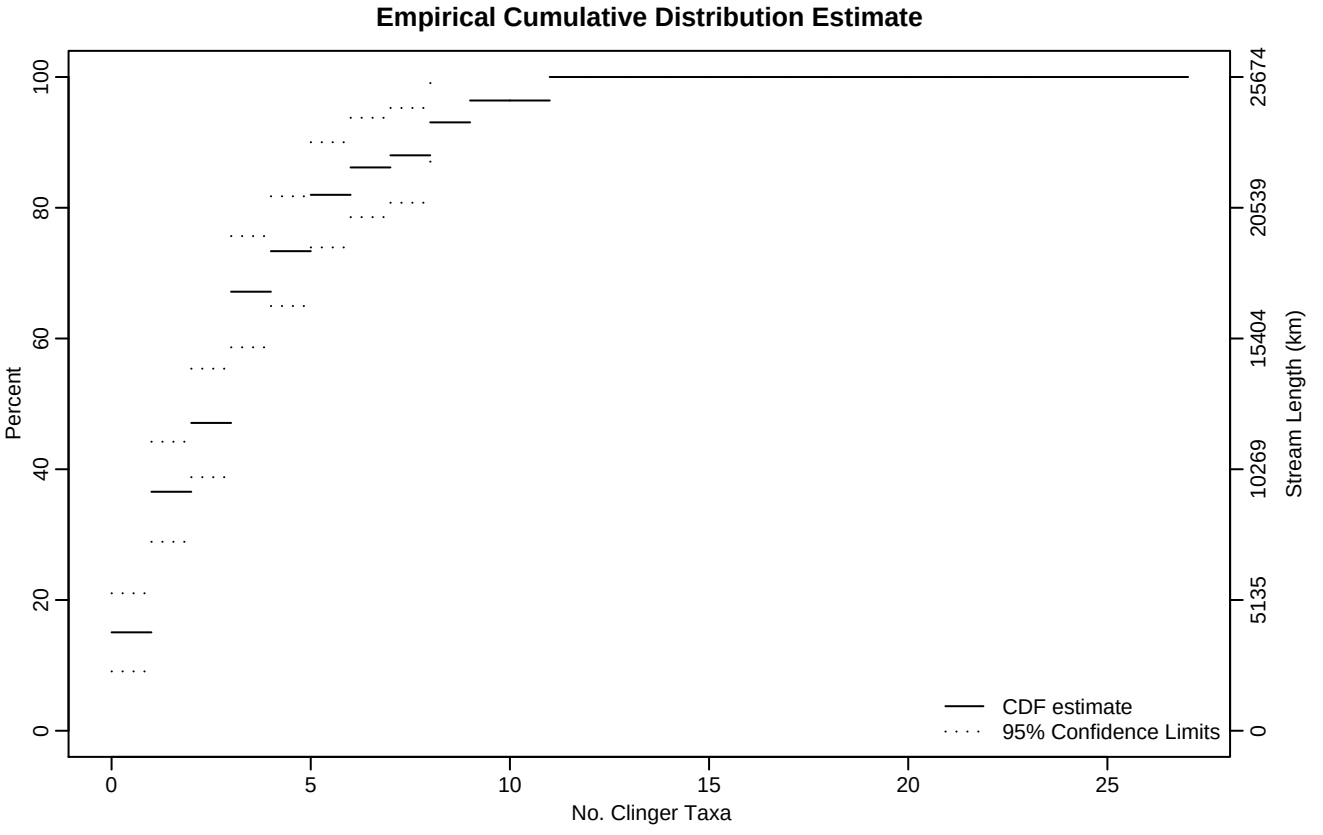


Figure BN−220 Indicator: CLNGRICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.04
25Pct	0.46	0.18	0.75
50Pct	2.15	1.48	2.56
75Pct	4.19	2.98	5.30
90Pct	7.39	5.20	10.21
95Pct	8.58	7.23	11
Mean	3.19	2.64	3.73
Std Dev	2.57	2.22	2.92

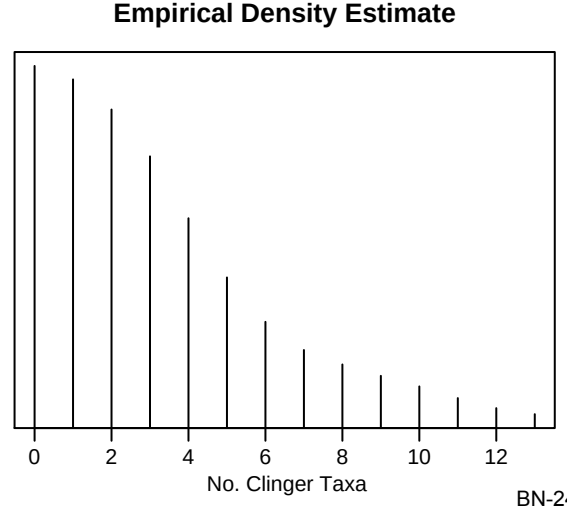
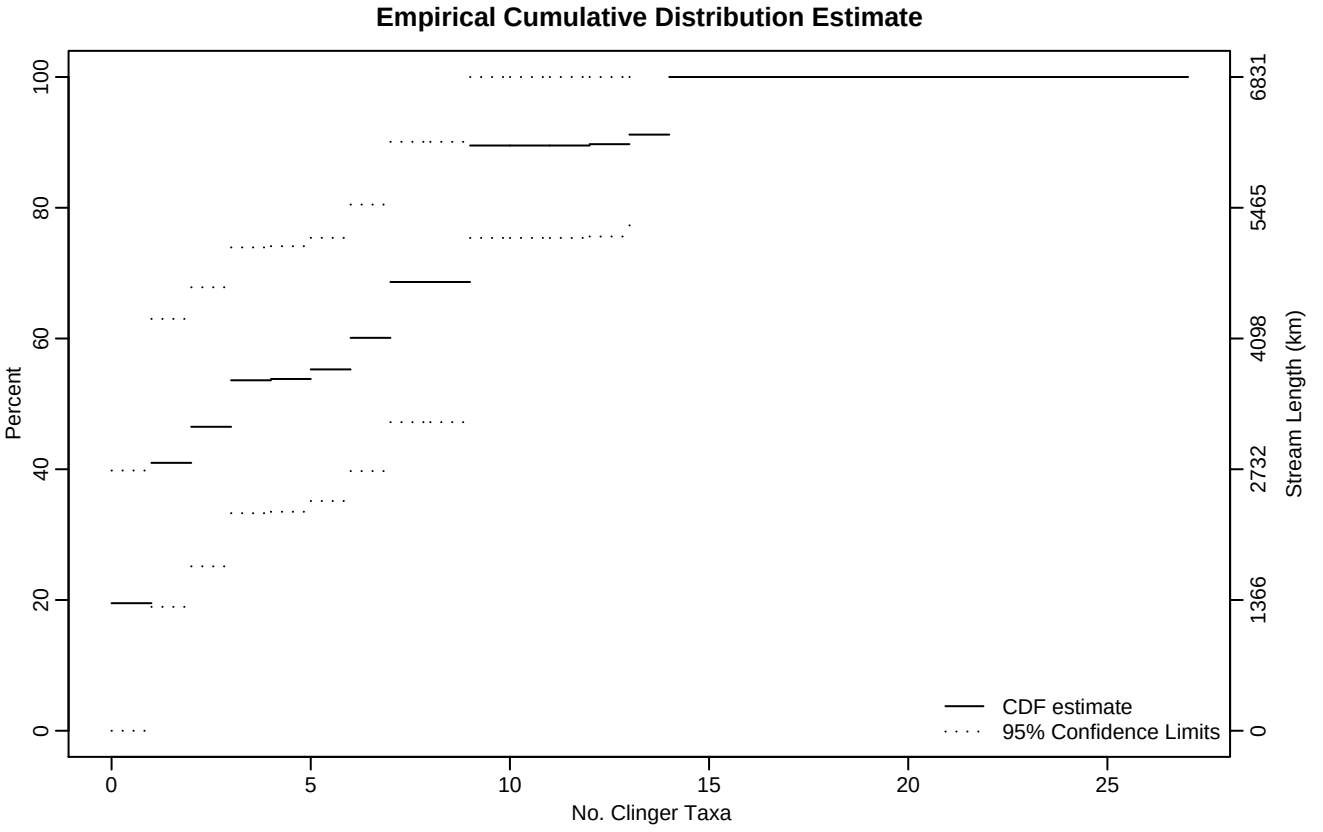


Figure BN−221 Indicator: CLNGRICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.31
10Pct	0	0	0.53
25Pct	0.26	0	1.75
50Pct	2.49	0.44	8.12
75Pct	8.30	3.72	13.57
90Pct	12.19	8.35	14
95Pct	13.43	8.59	14
Mean	4.83	2.77	6.90
Std Dev	4.58	3.46	5.70

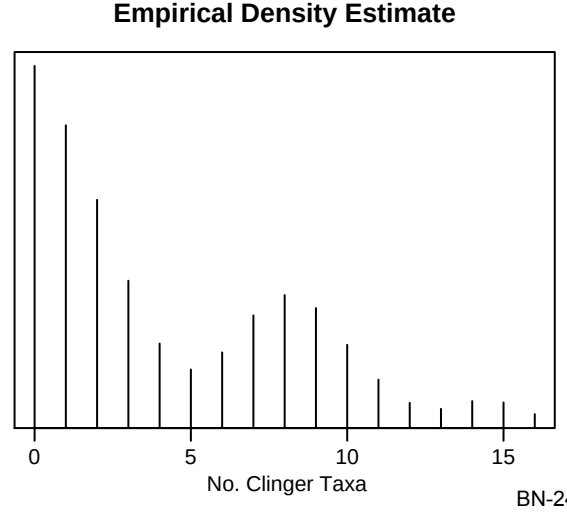
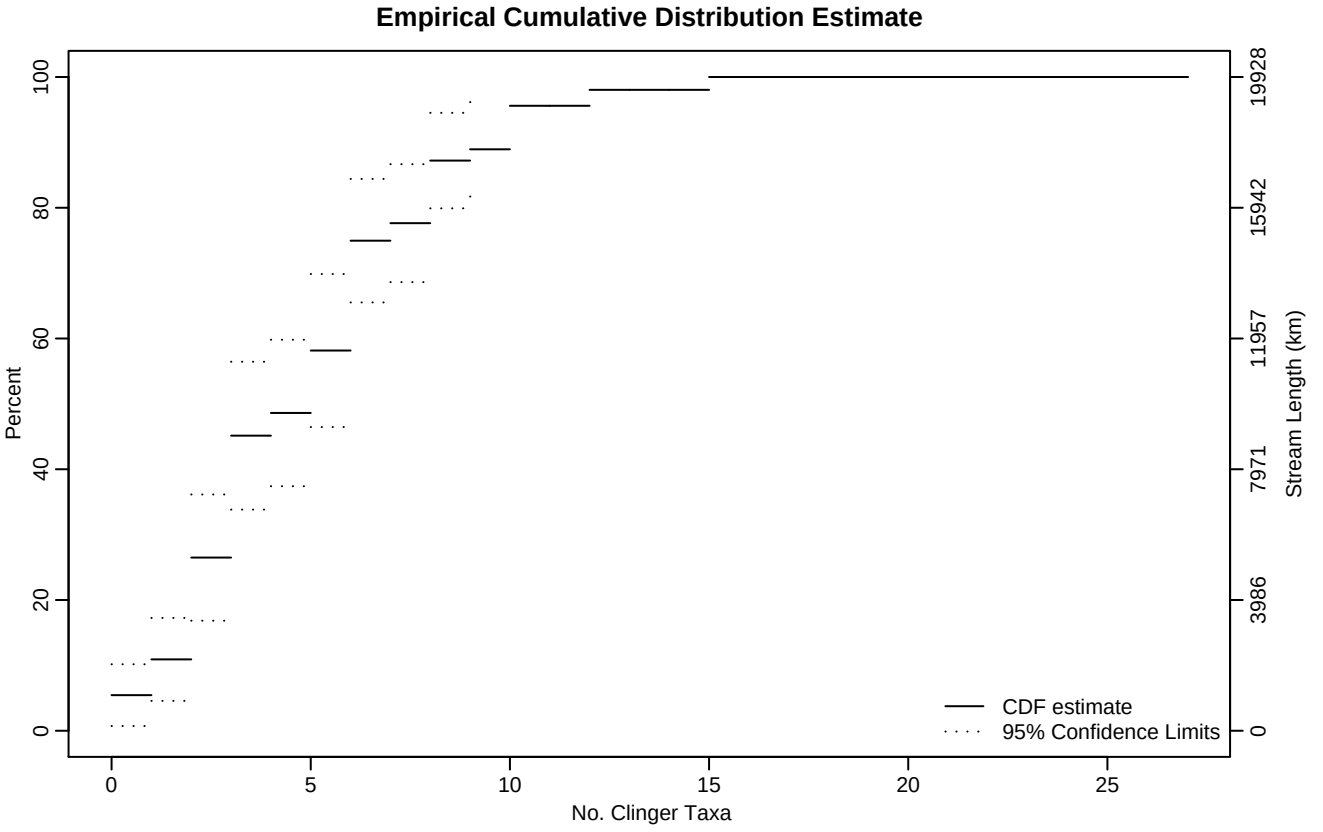


Figure BN−222 Indicator: CLNGRICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.78
10Pct	0.83	0	1.25
25Pct	1.90	1.47	2.28
50Pct	4.15	2.66	5.18
75Pct	6.01	5.41	7.76
90Pct	9.16	7.54	11.67
95Pct	9.91	8.34	15
Mean	4.91	4.23	5.60
Std Dev	3.08	2.56	3.61

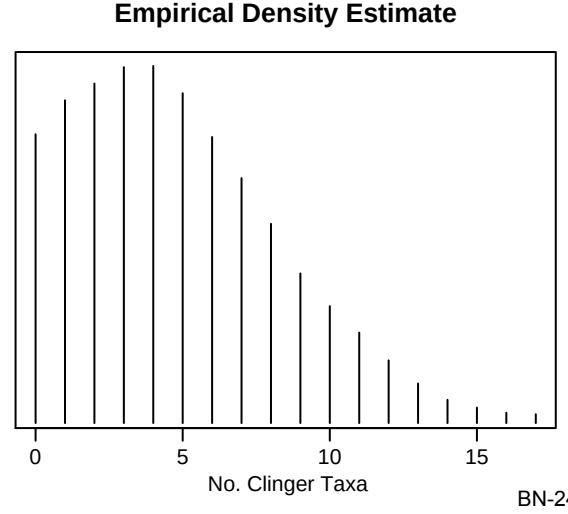
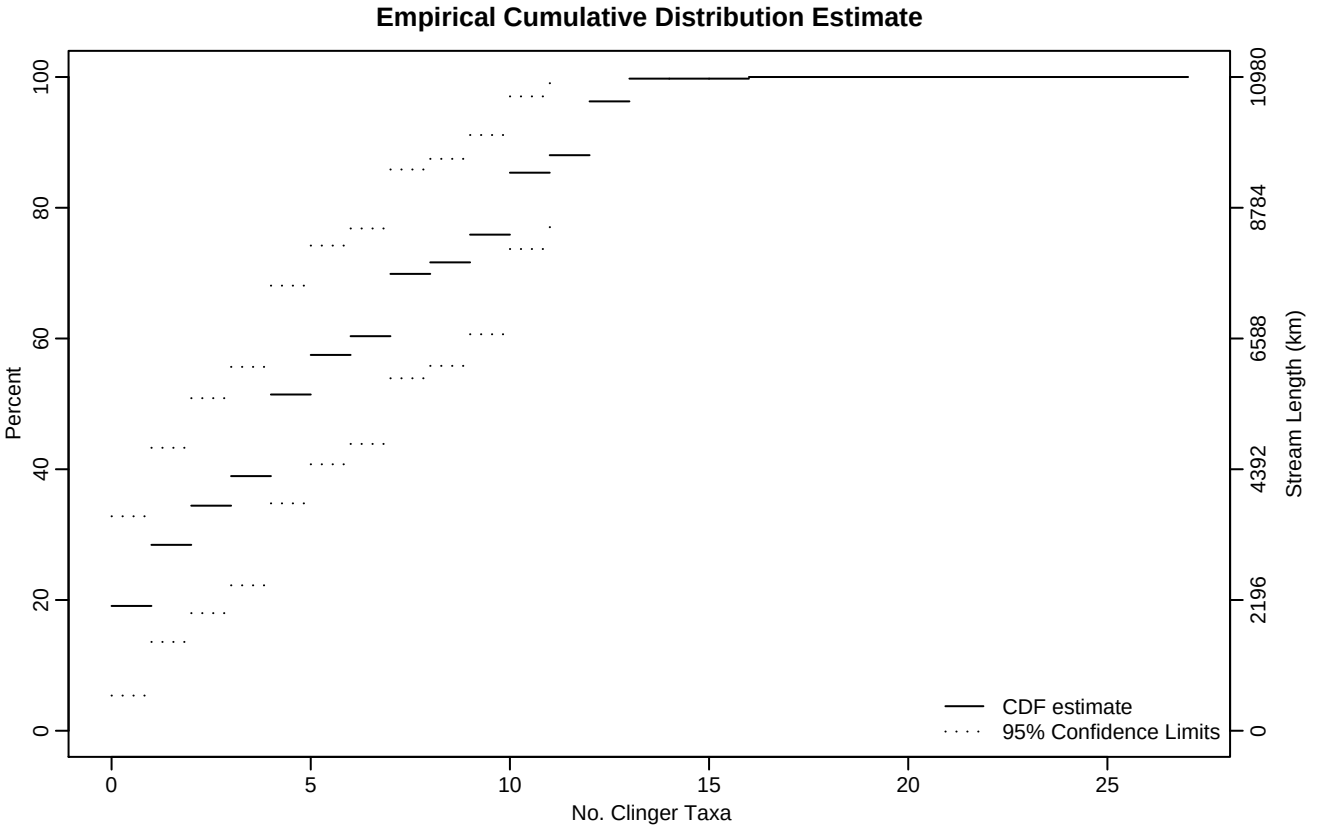


Figure BN−223 Indicator: CLNGRICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.51
25Pct	0.63	0	2.96
50Pct	3.89	1.74	6.71
75Pct	8.79	5.37	11.42
90Pct	11.24	9.17	16
95Pct	11.85	9.68	16
Mean	5.23	3.70	6.77
Std Dev	4.09	3.49	4.70

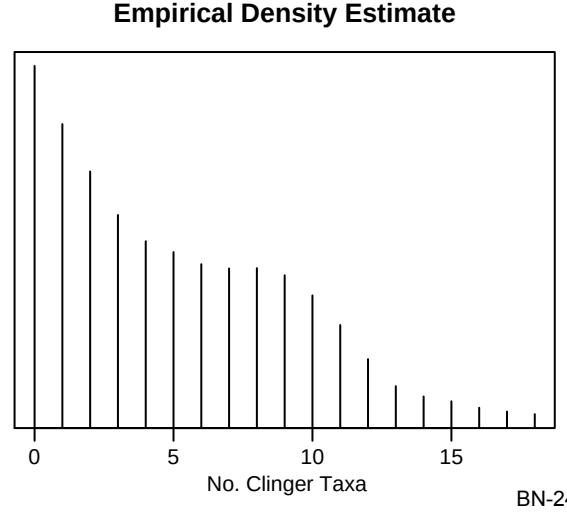
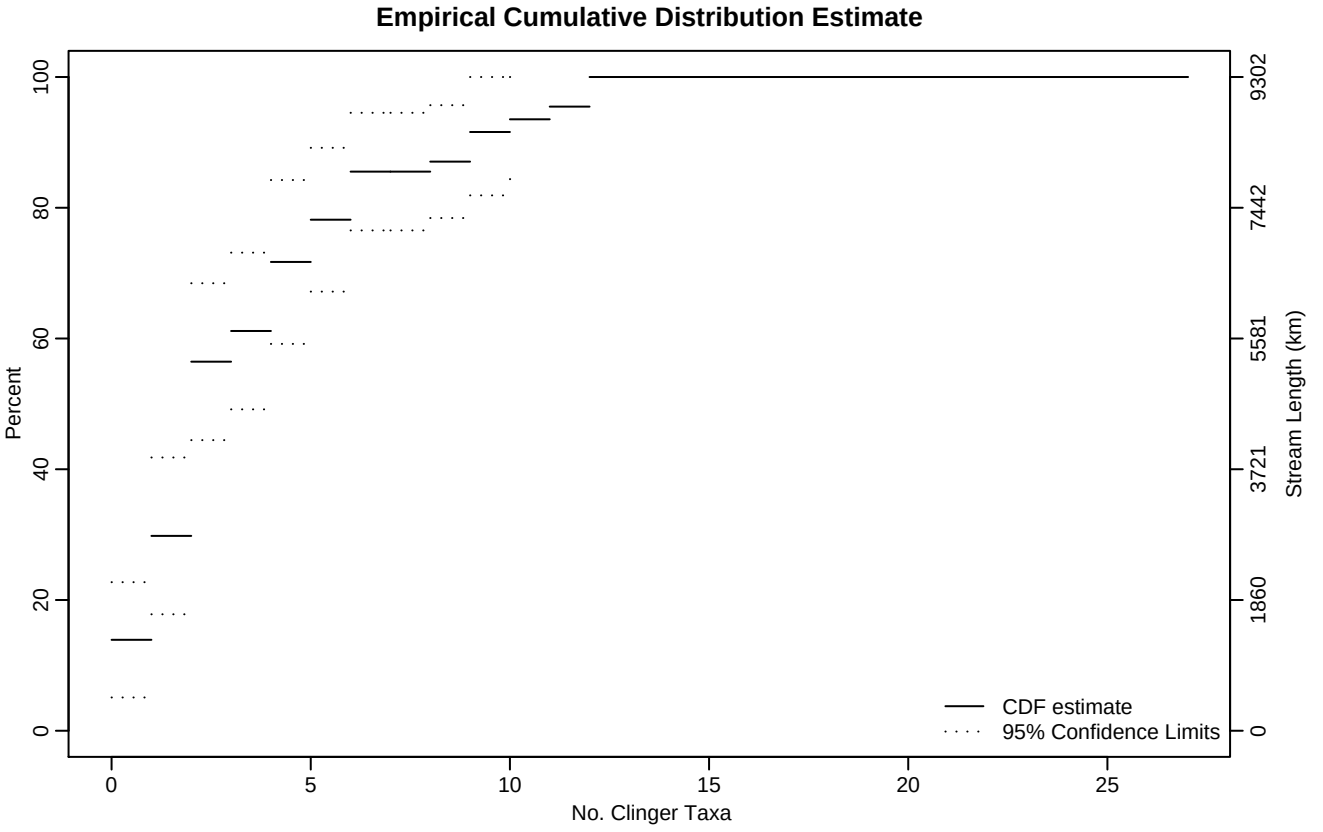


Figure BN−224 Indicator: CLNGRICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.31
25Pct	0.70	0.14	1.15
50Pct	1.76	1.32	3.06
75Pct	4.51	3.06	8.26
90Pct	8.65	5.27	11.97
95Pct	10.76	7.01	12
Mean	3.50	2.68	4.32
Std Dev	2.60	2.03	3.18

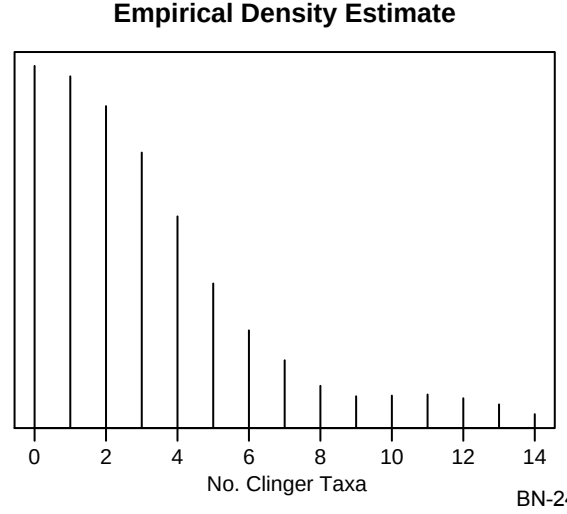
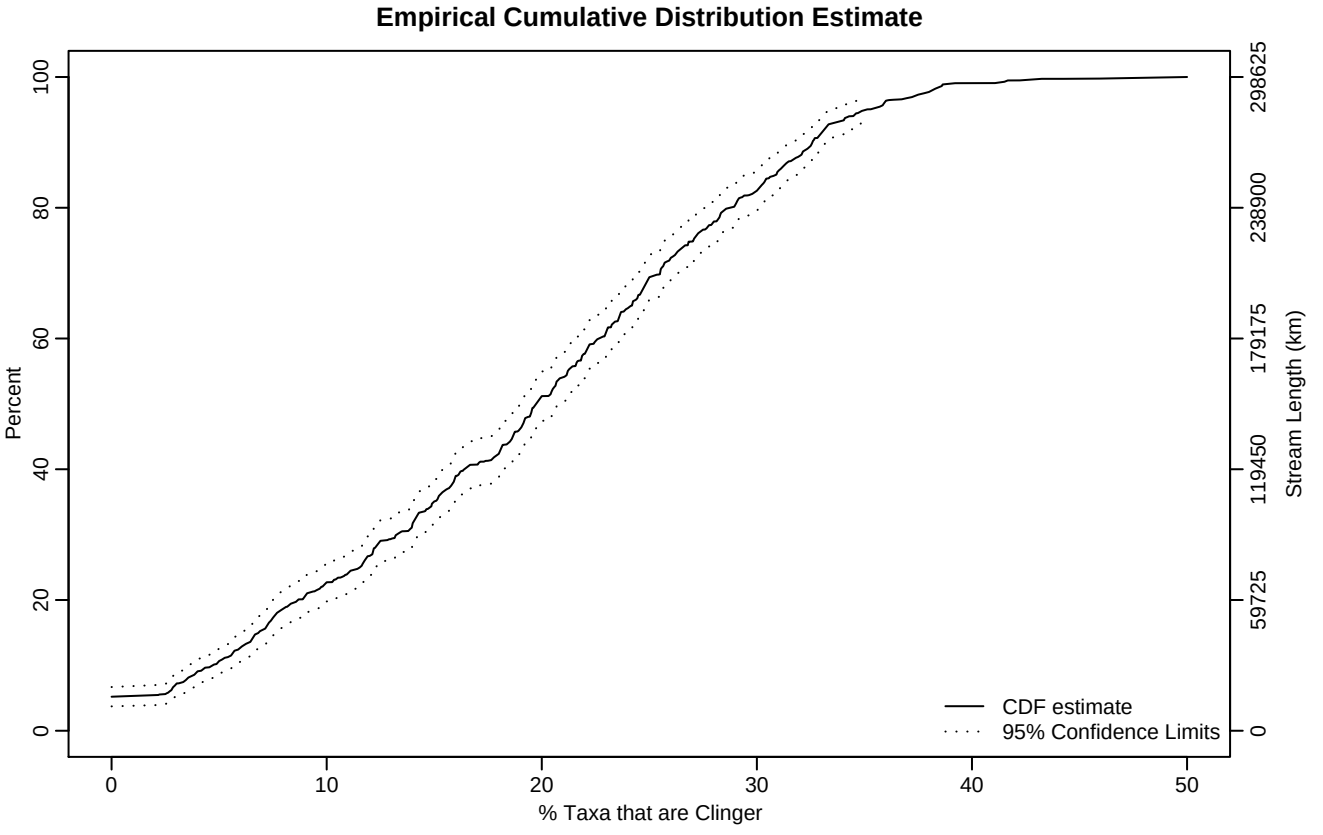


Figure BN−225 Indicator: CLNGPTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	2.83
10Pct	4.70	3.55	5.65
25Pct	11.55	9.74	12.27
50Pct	19.74	19.01	20.79
75Pct	27.05	25.76	28.21
90Pct	32.58	31.74	33.27
95Pct	35.08	33.83	37.03
Mean	19.28	18.55	20
Std Dev	9.38	8.94	9.82

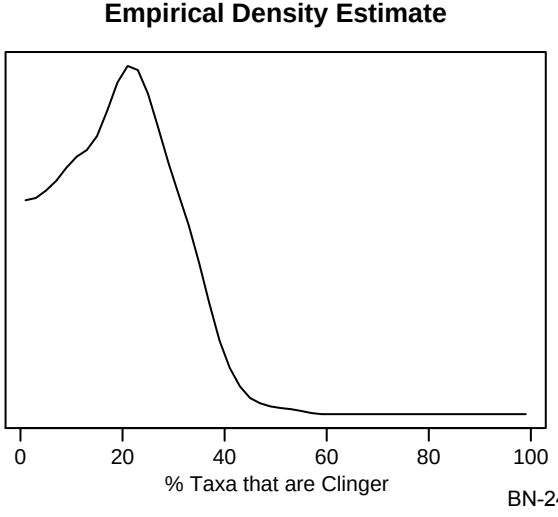
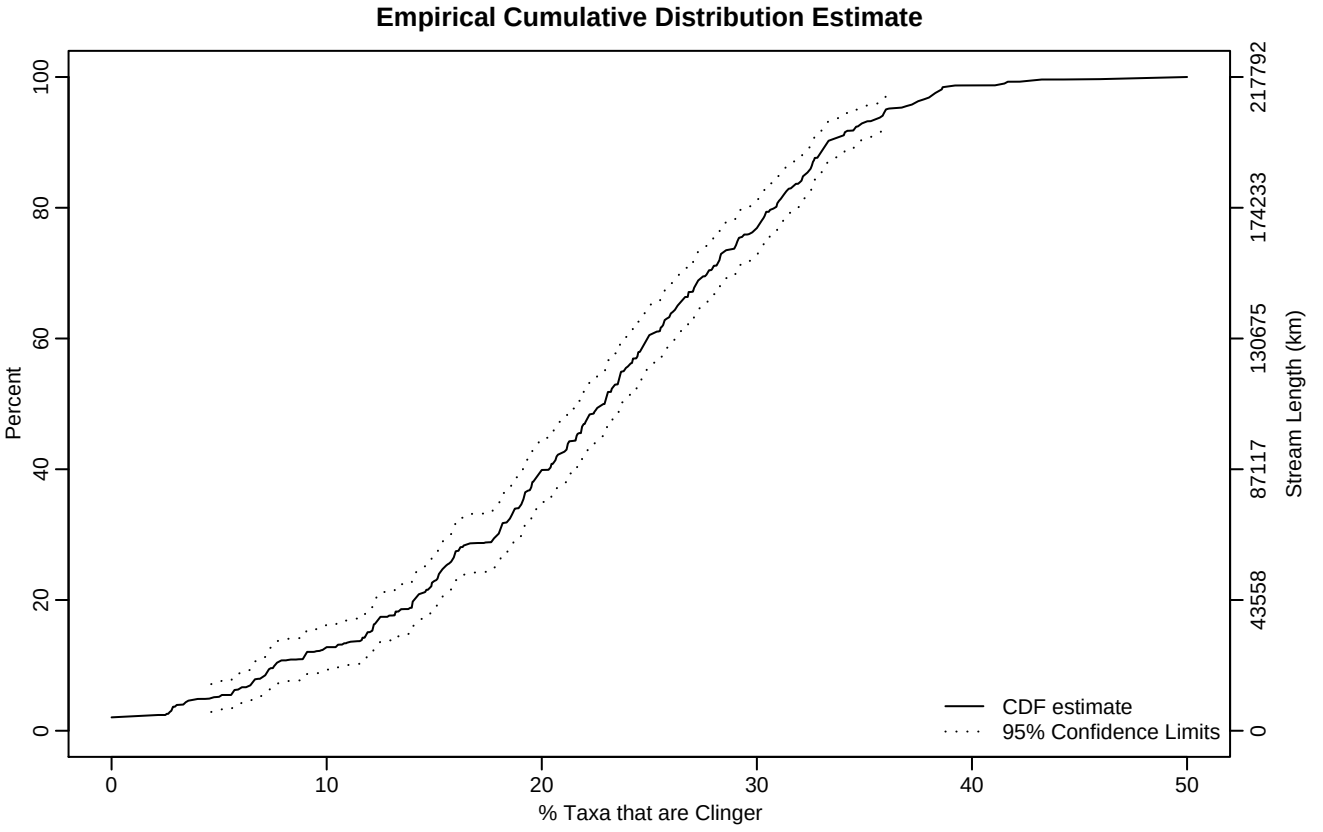


Figure BN−226 Indicator: CLNGPTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.63	2.70	6.50
10Pct	7.59	6.31	10.75
25Pct	15.47	14.25	17.74
50Pct	22.92	21.62	23.69
75Pct	29.11	27.96	30.41
90Pct	33.28	32.58	35.33
95Pct	35.99	34.86	38.13
Mean	22.12	21.20	23.04
Std Dev	9.07	8.52	9.63

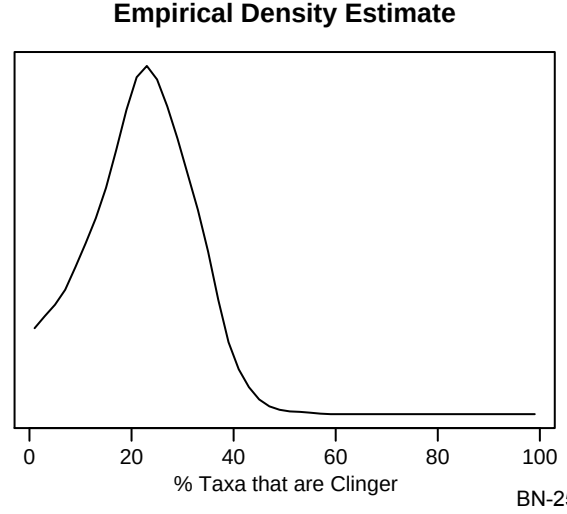
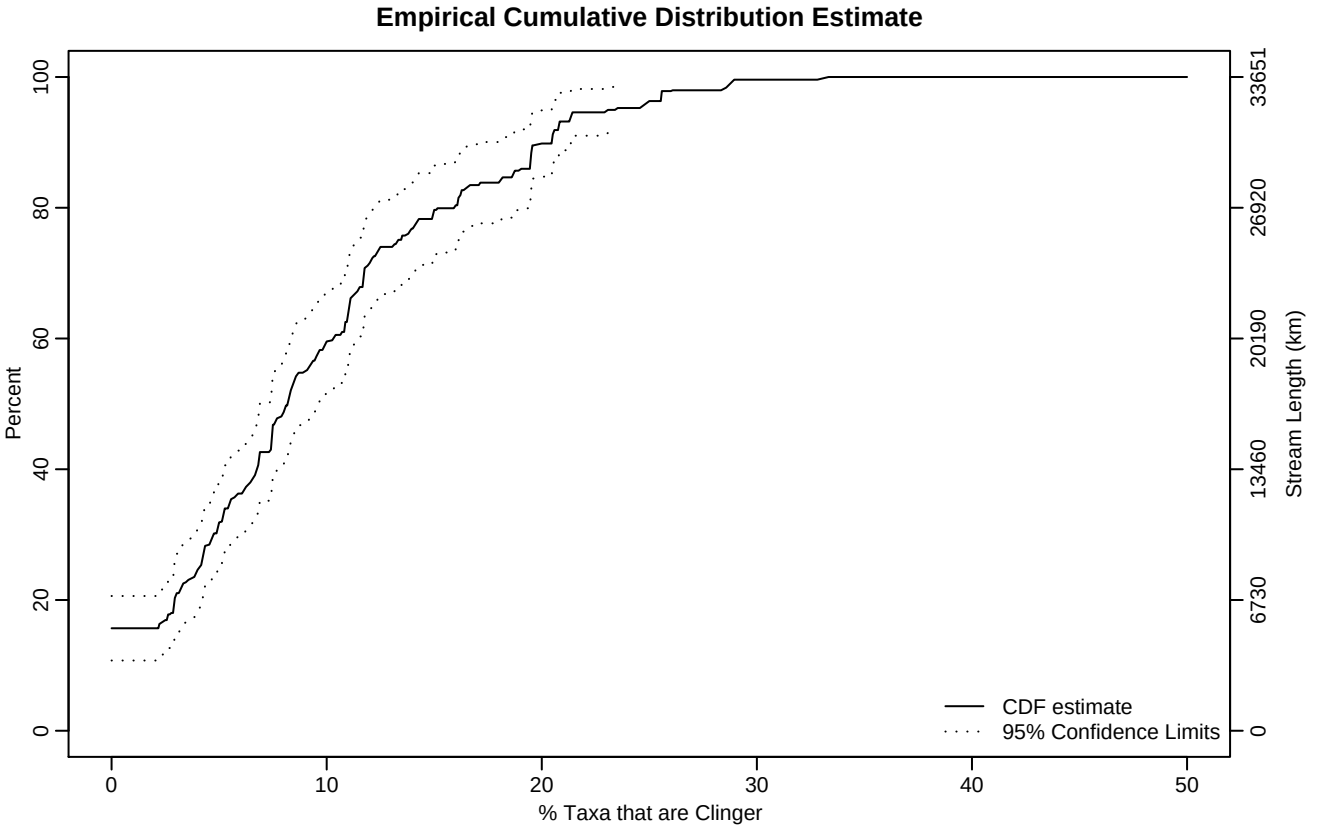


Figure BN−227 Indicator: CLNGPTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	4.09	2.88	4.95
50Pct	8.18	6.88	9.63
75Pct	13.32	11.67	16.23
90Pct	20.46	18.65	23.43
95Pct	23.42	20.55	28.61
Mean	9.43	8.29	10.57
Std Dev	7.06	6.32	7.80

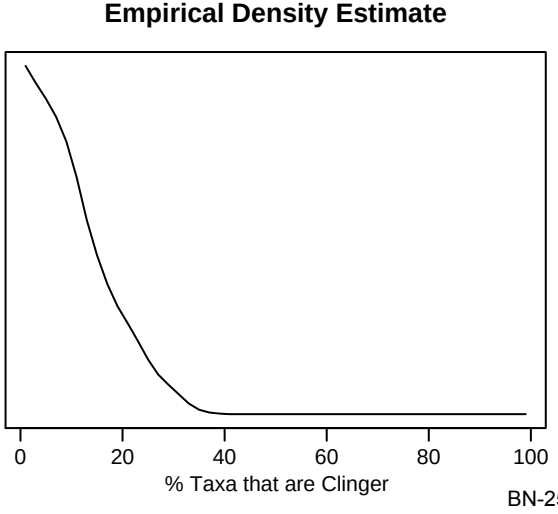
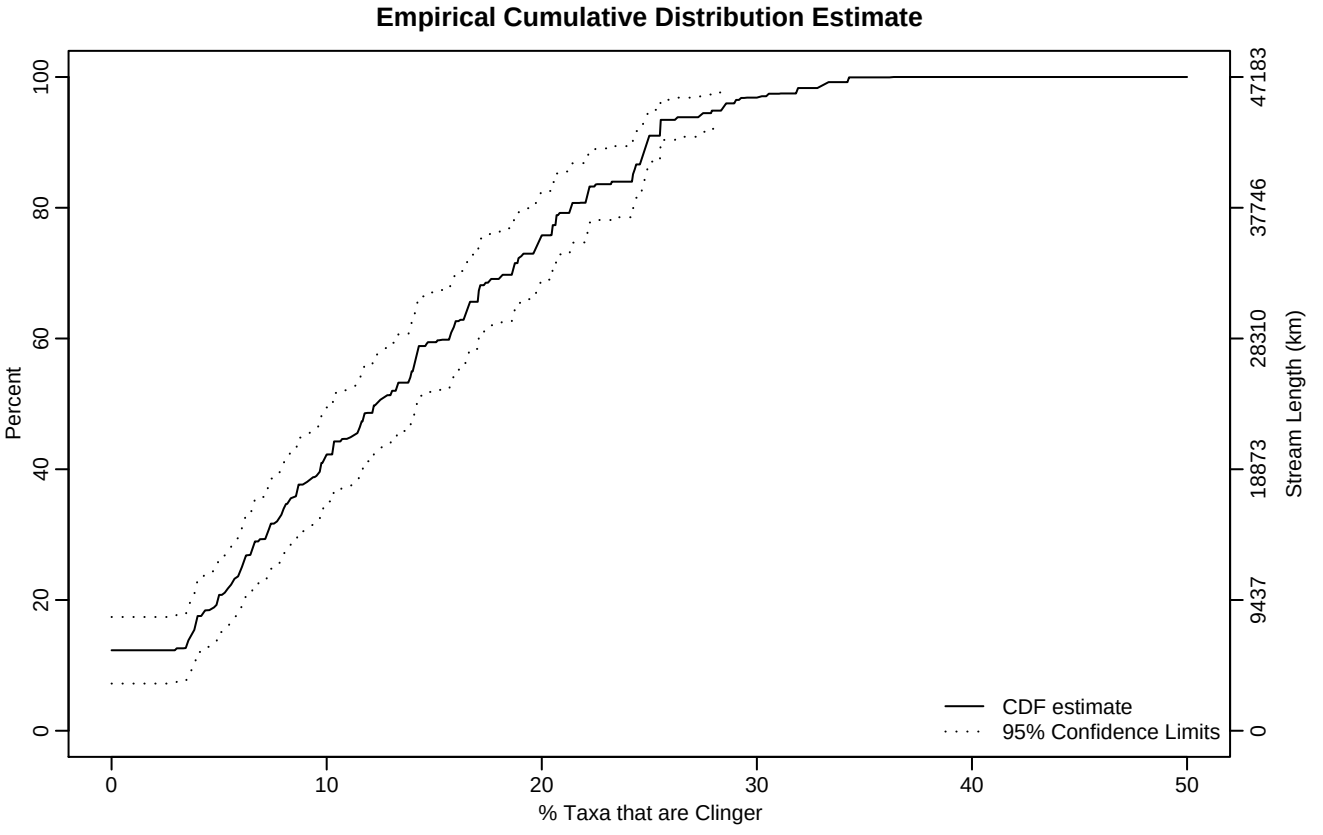


Figure BN−228 Indicator: CLNGPTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	3.80
25Pct	6.05	4.82	7.33
50Pct	12.31	10.26	14.19
75Pct	19.89	17.11	22.15
90Pct	24.90	24.22	28.44
95Pct	28.36	25.51	31.85
Mean	13.17	11.85	14.48
Std Dev	8.48	7.80	9.15

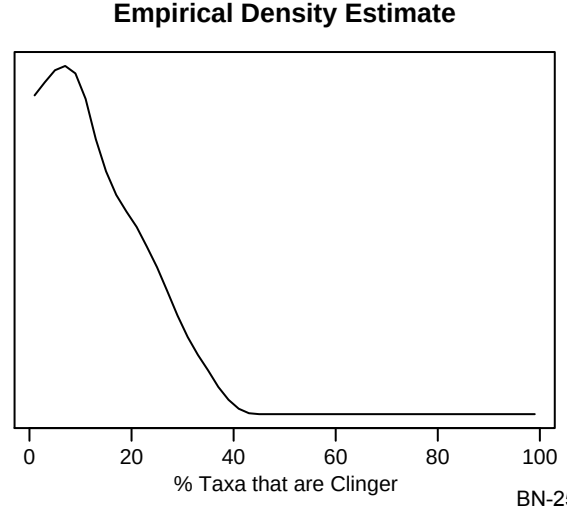
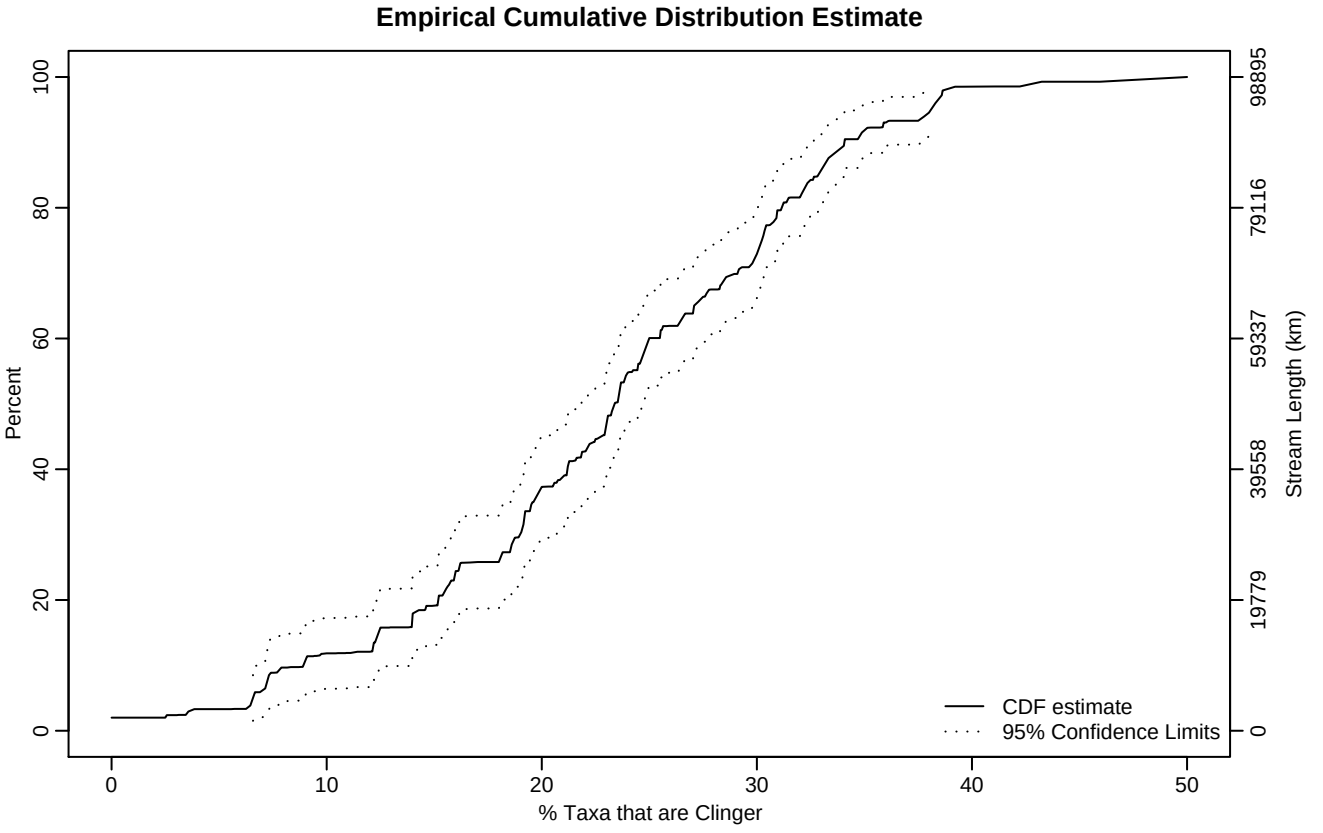


Figure BN−229 Indicator: CLNGPTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.57	2.54	7.25
10Pct	8.92	6.54	12.45
25Pct	16.17	14	19.17
50Pct	23.39	21.83	24.78
75Pct	30.23	28.36	32.02
90Pct	34.07	32.90	38.04
95Pct	38.09	34.85	42.39
Mean	23.05	21.55	24.55
Std Dev	8.84	8.05	9.64

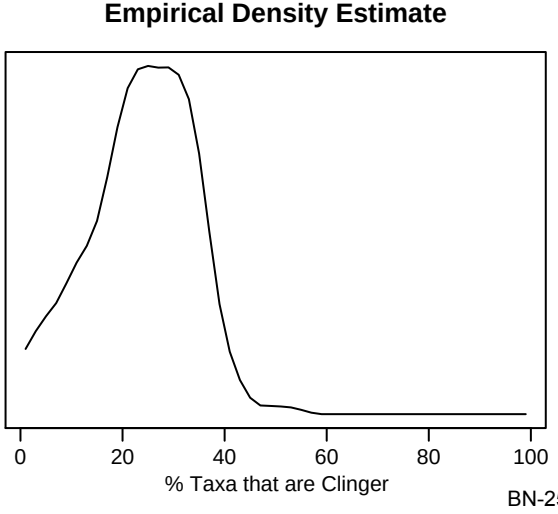
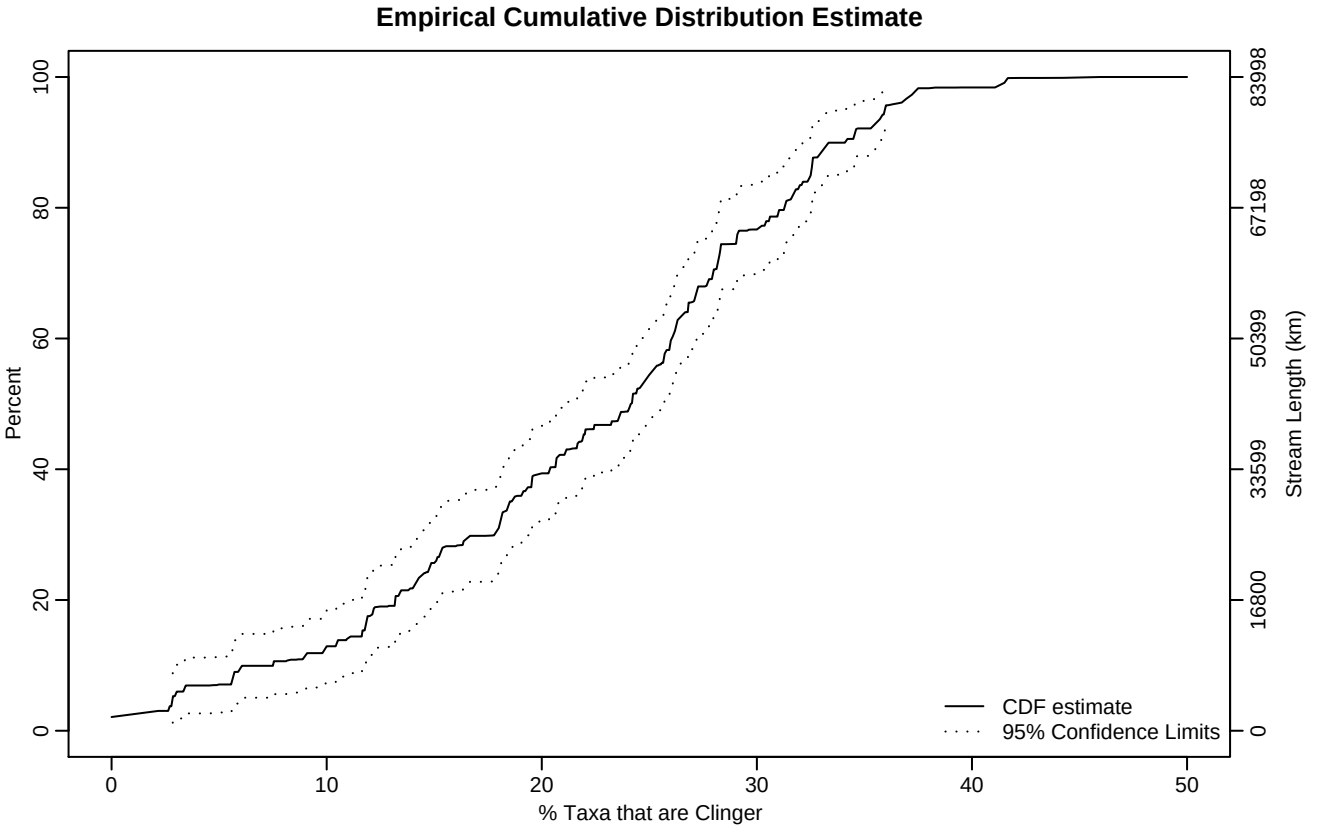


Figure BN−230 Indicator: CLNGPTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.84	0	5.65
10Pct	7.50	2.85	11.65
25Pct	14.79	12.16	18.05
50Pct	24.14	21.15	25.68
75Pct	29.05	27.66	31.67
90Pct	34.10	32.51	35.94
95Pct	35.95	34.57	41.11
Mean	22.10	20.64	23.55
Std Dev	9.43	8.54	10.32

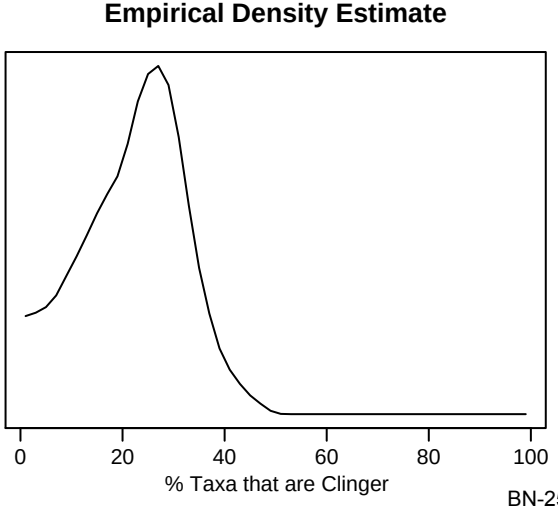
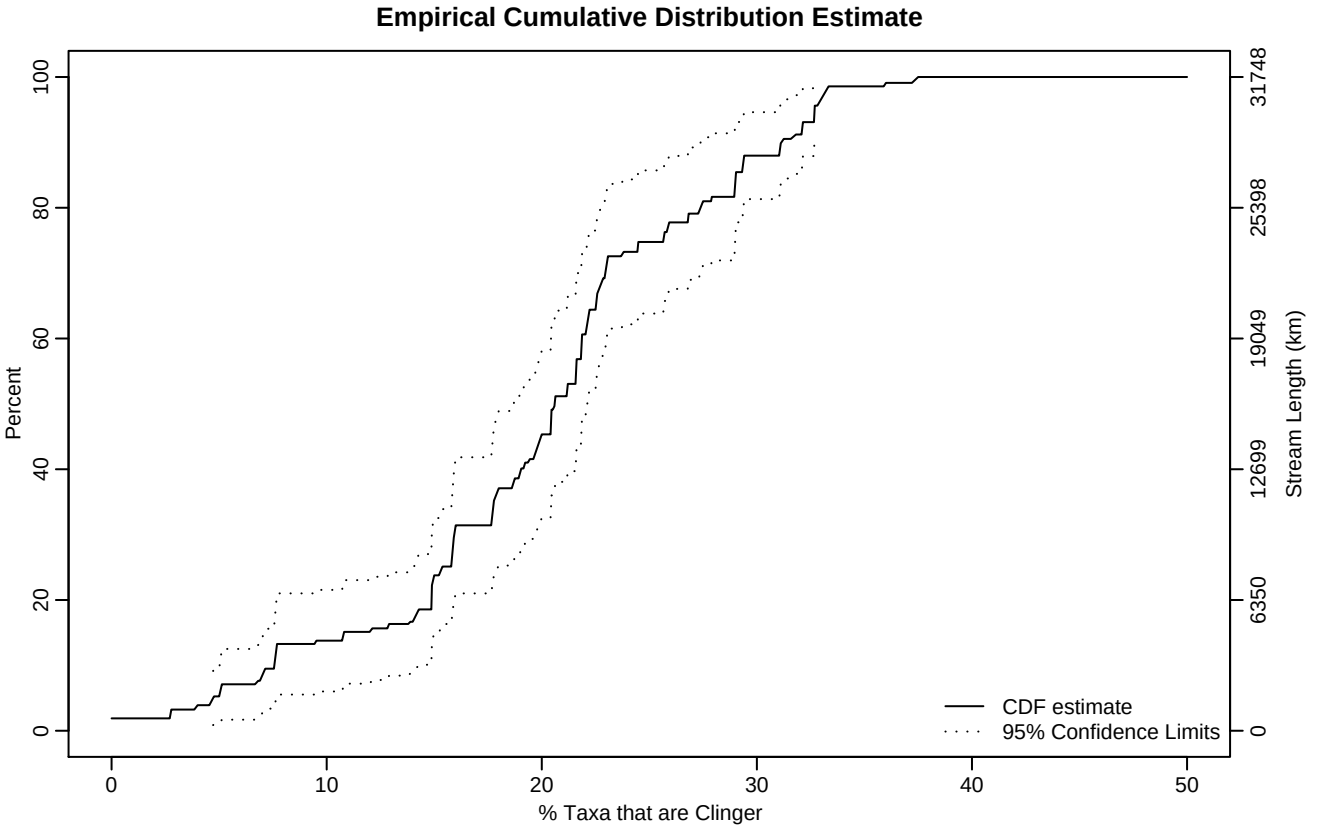


Figure BN−231 Indicator: CLNGPTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.72	0	7.06
10Pct	7.57	4.55	12.87
25Pct	15.37	12.08	17.75
50Pct	20.60	17.97	22.16
75Pct	25.65	22.20	29.33
90Pct	31.14	29	32.91
95Pct	32.68	31.11	37.50
Mean	20.07	18.33	21.82
Std Dev	7.83	6.50	9.15

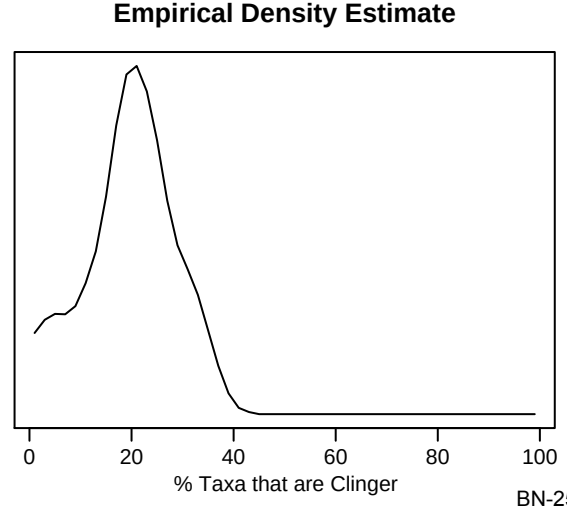
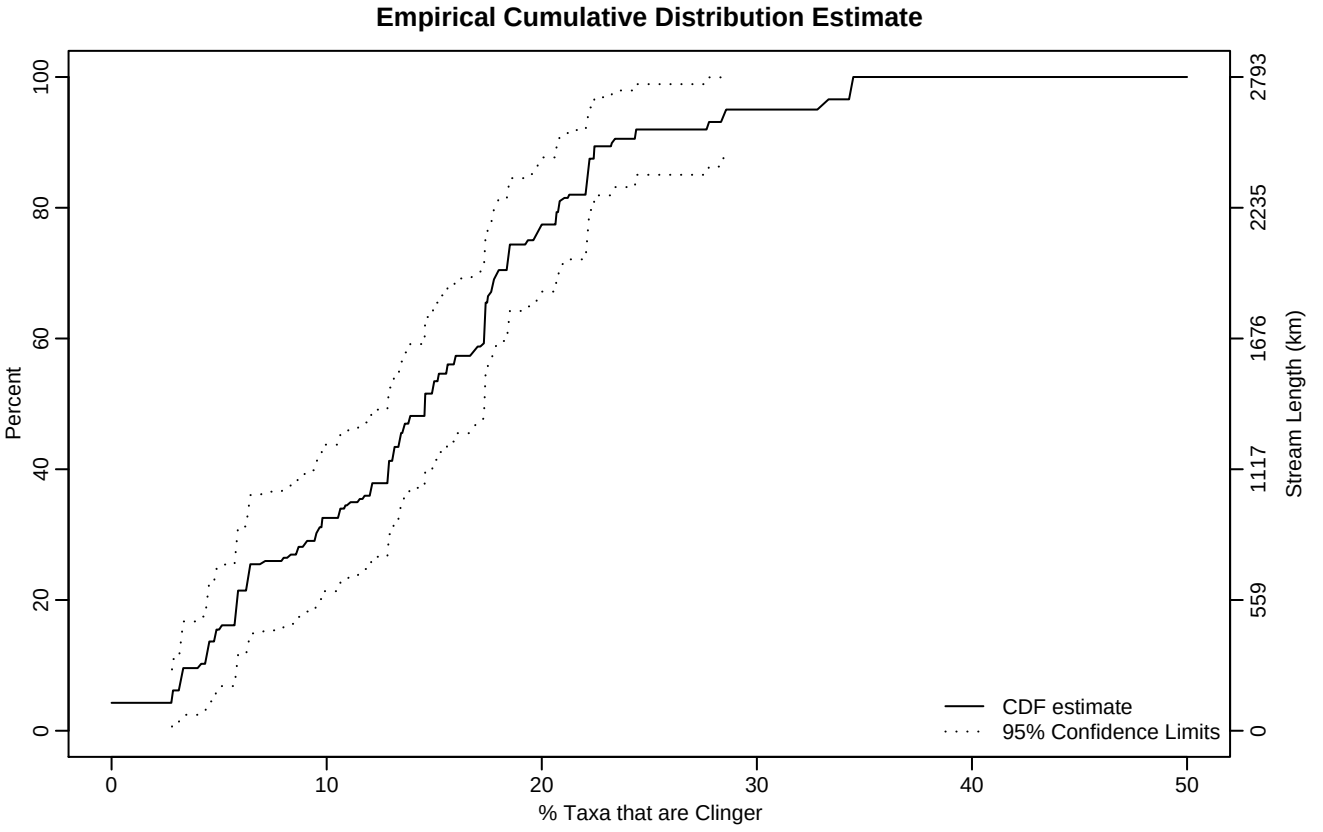


Figure BN−232 Indicator: CLNGPTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.81	0	3.30
10Pct	4.11	0	5.75
25Pct	6.43	4.86	11.06
50Pct	14.57	12.85	17.33
75Pct	19.35	17.38	22.14
90Pct	23.28	22.05	34.34
95Pct	28.57	22.43	34.48
Mean	14.45	12.49	16.41
Std Dev	8.17	6.62	9.73

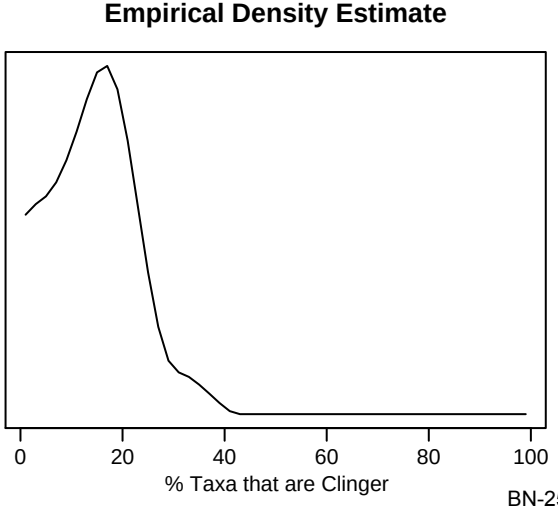
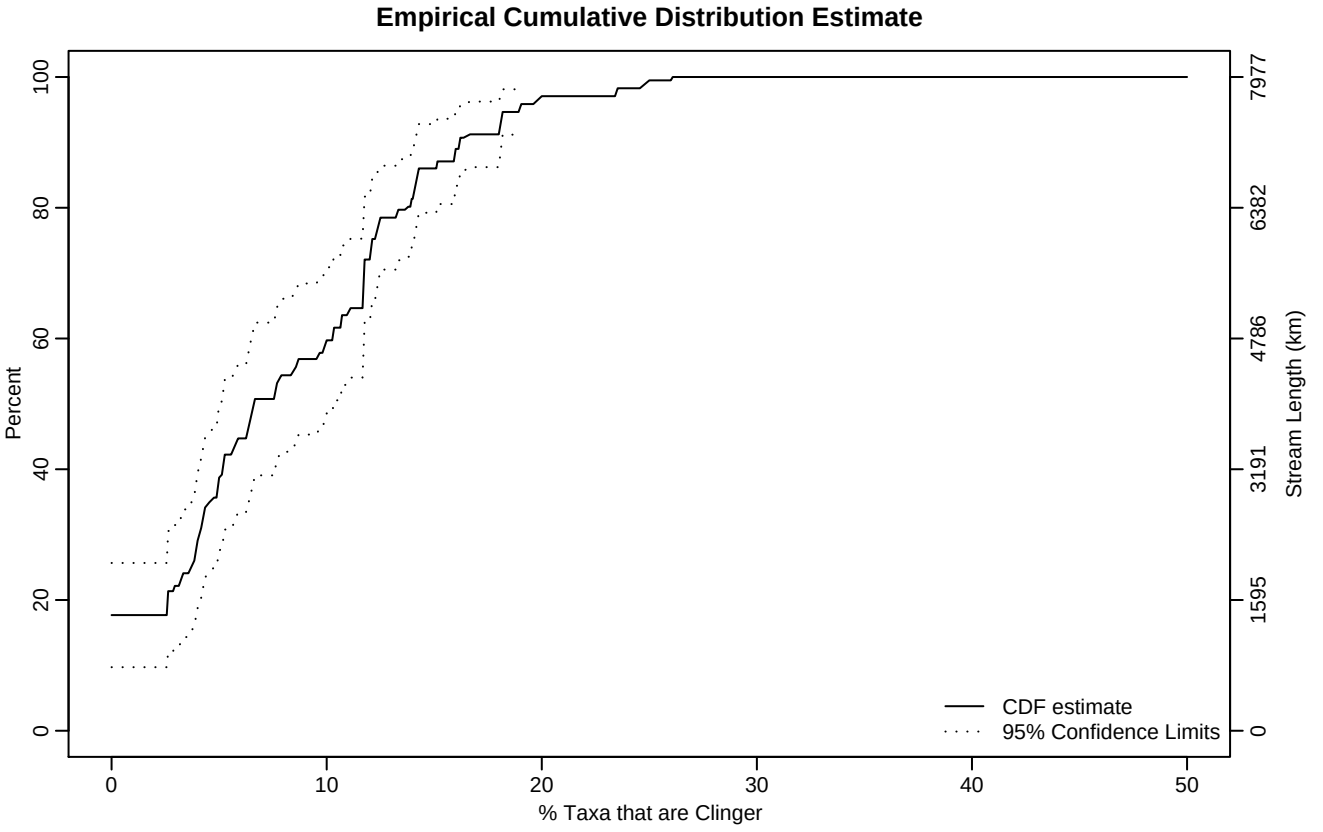


Figure BN−233 Indicator: CLNGPTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	2.57
25Pct	3.70	0	4.51
50Pct	6.62	4.98	10.64
75Pct	12.11	11.68	14.20
90Pct	16.18	14.19	19.02
95Pct	18.96	18.02	24.59
Mean	8.22	6.95	9.49
Std Dev	5.94	5.30	6.58

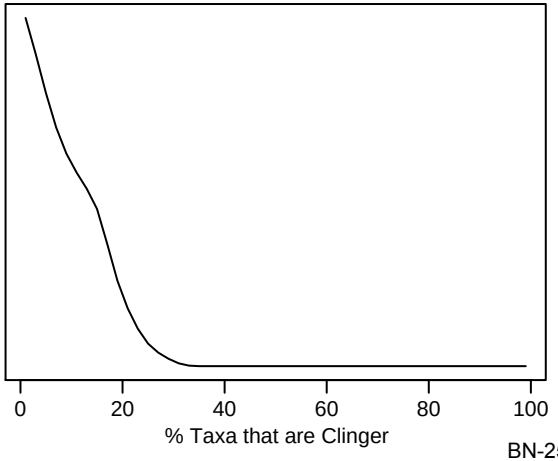
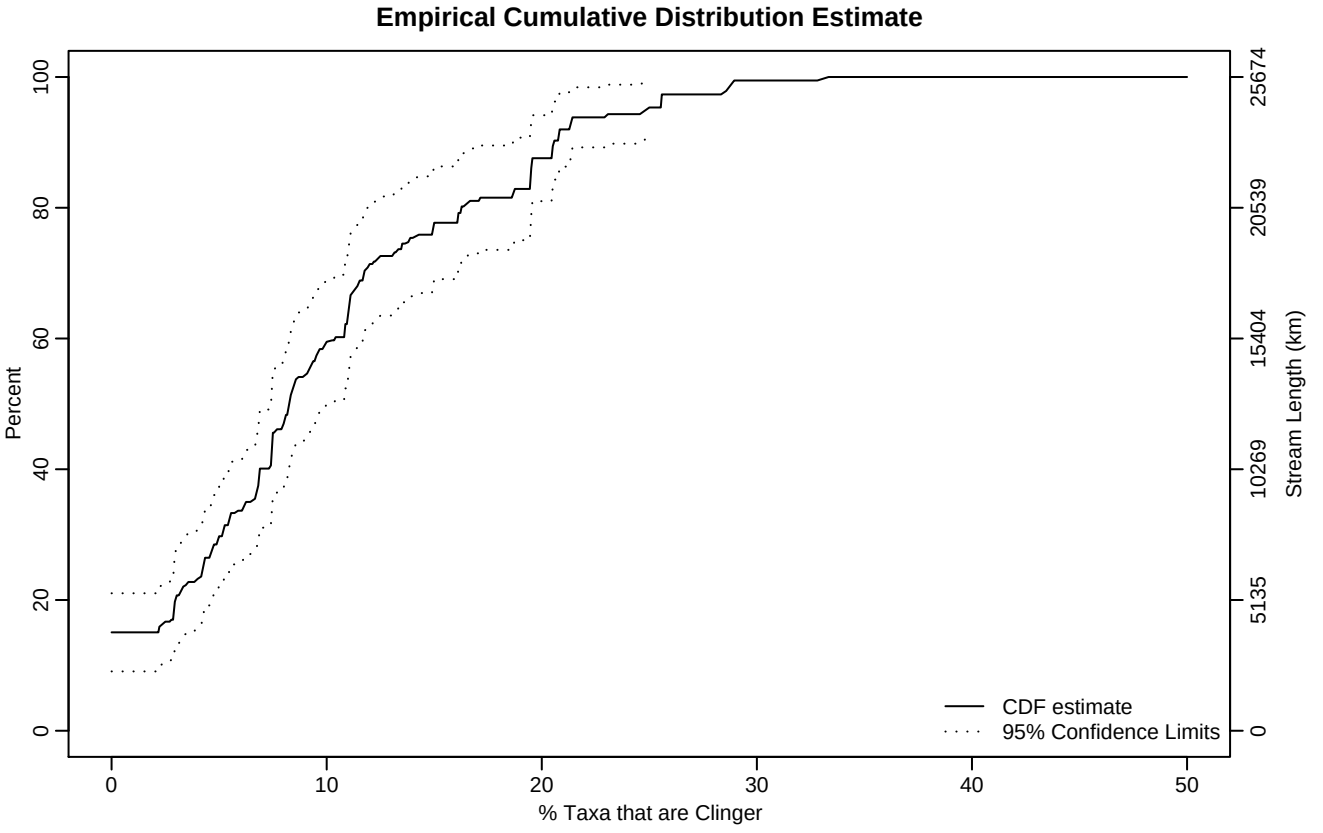


Figure BN−234 Indicator: CLNGPTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	2.26
25Pct	4.26	2.87	5.49
50Pct	8.26	7.35	10.25
75Pct	13.83	11.09	19.47
90Pct	20.56	19.47	25.55
95Pct	24.86	20.77	32.82
Mean	9.81	8.37	11.25
Std Dev	7.32	6.40	8.23

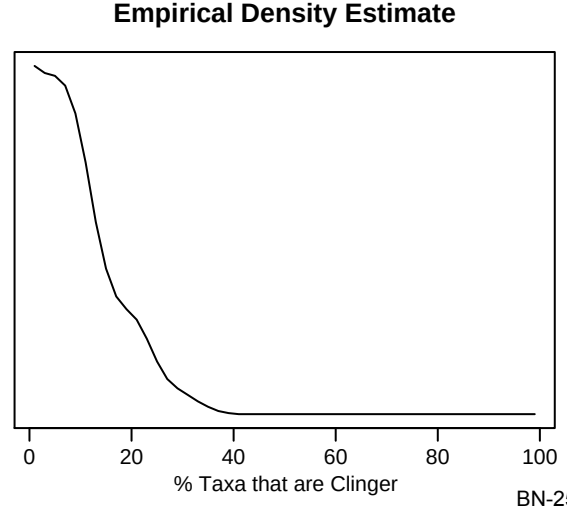
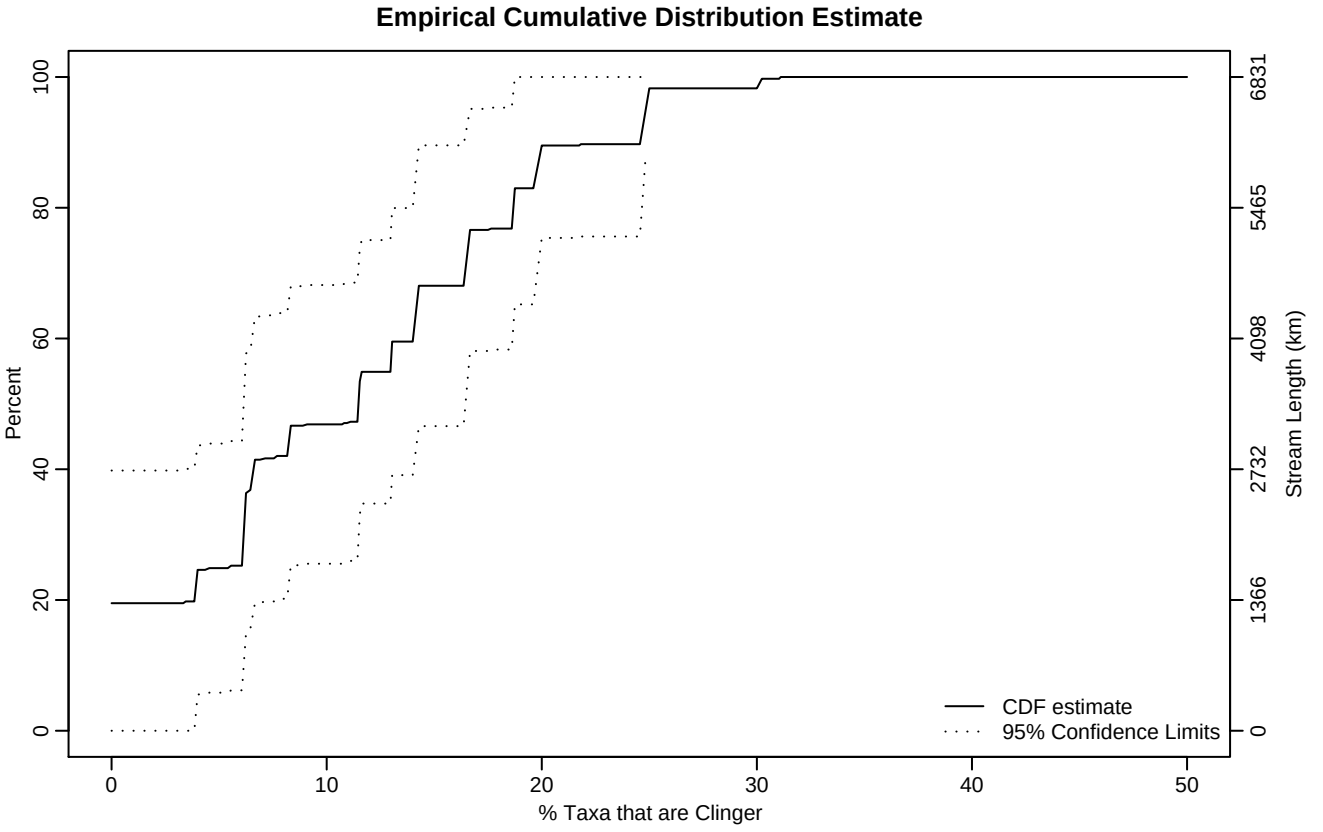


Figure BN−235 Indicator: CLNGPTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	6.08
10Pct	0	0	6.16
25Pct	5.46	0	8.24
50Pct	11.48	6.12	16.47
75Pct	16.61	11.56	24.90
90Pct	24.58	16.64	31.11
95Pct	24.83	18.70	31.11
Mean	11.10	7.49	14.70
Std Dev	8.17	6.27	10.06

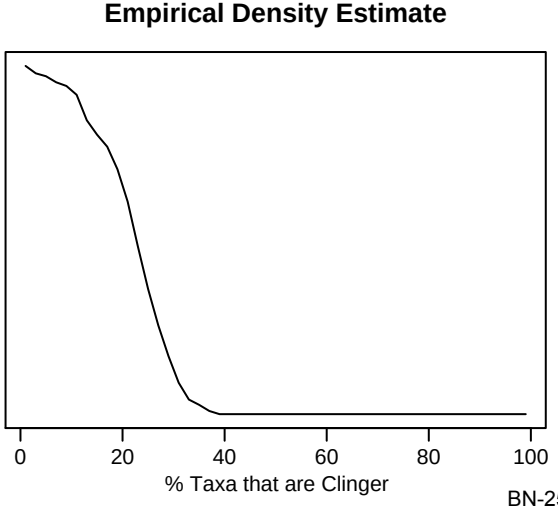
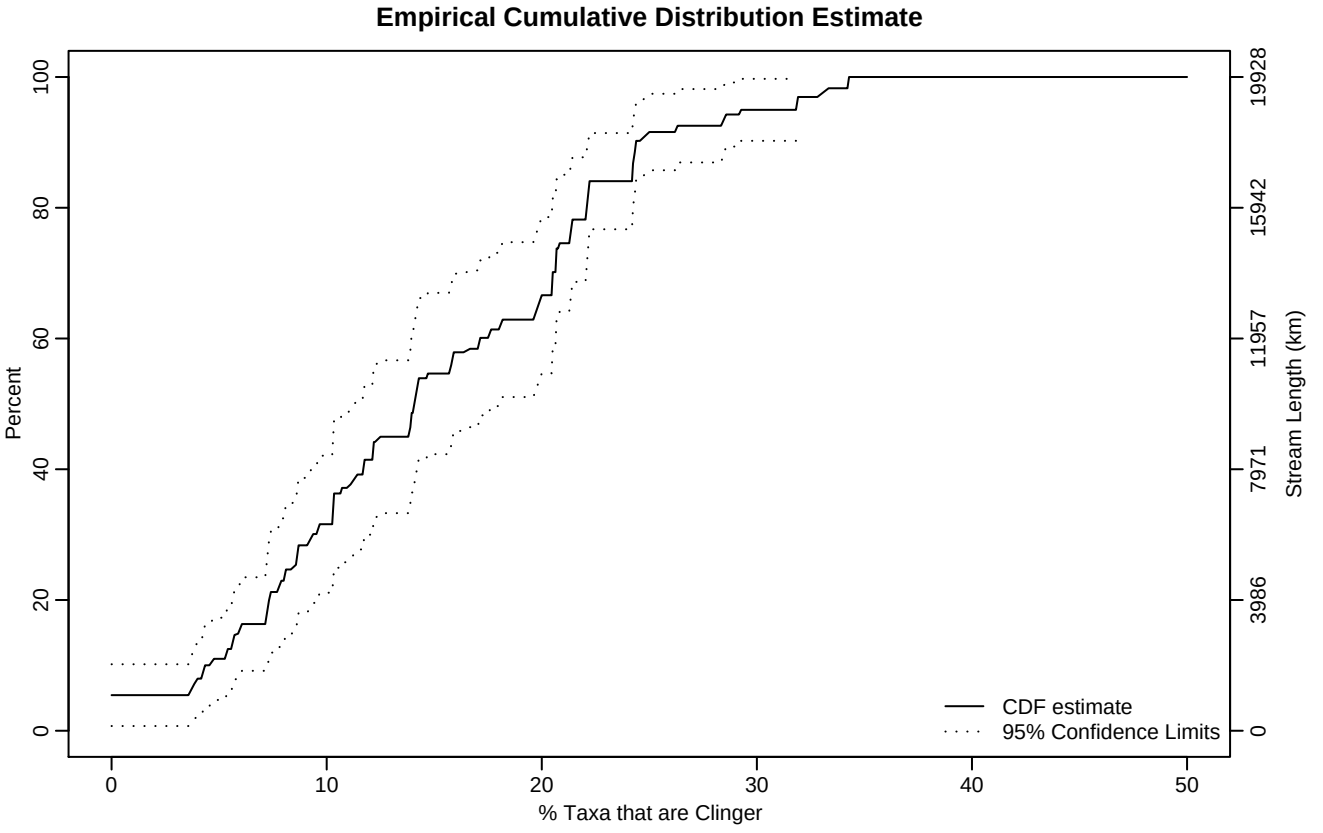


Figure BN−236 Indicator: CLNGPTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	4.32
10Pct	4.35	0	5.98
25Pct	8.44	5.90	10.32
50Pct	14.07	11.12	18.11
75Pct	21.29	19.77	24.22
90Pct	24.38	22.21	31.89
95Pct	31.82	24.57	34.28
Mean	14.99	13.16	16.83
Std Dev	8.14	7.14	9.15

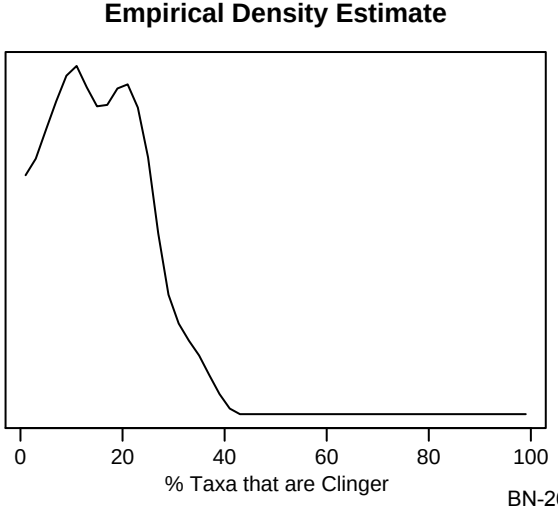
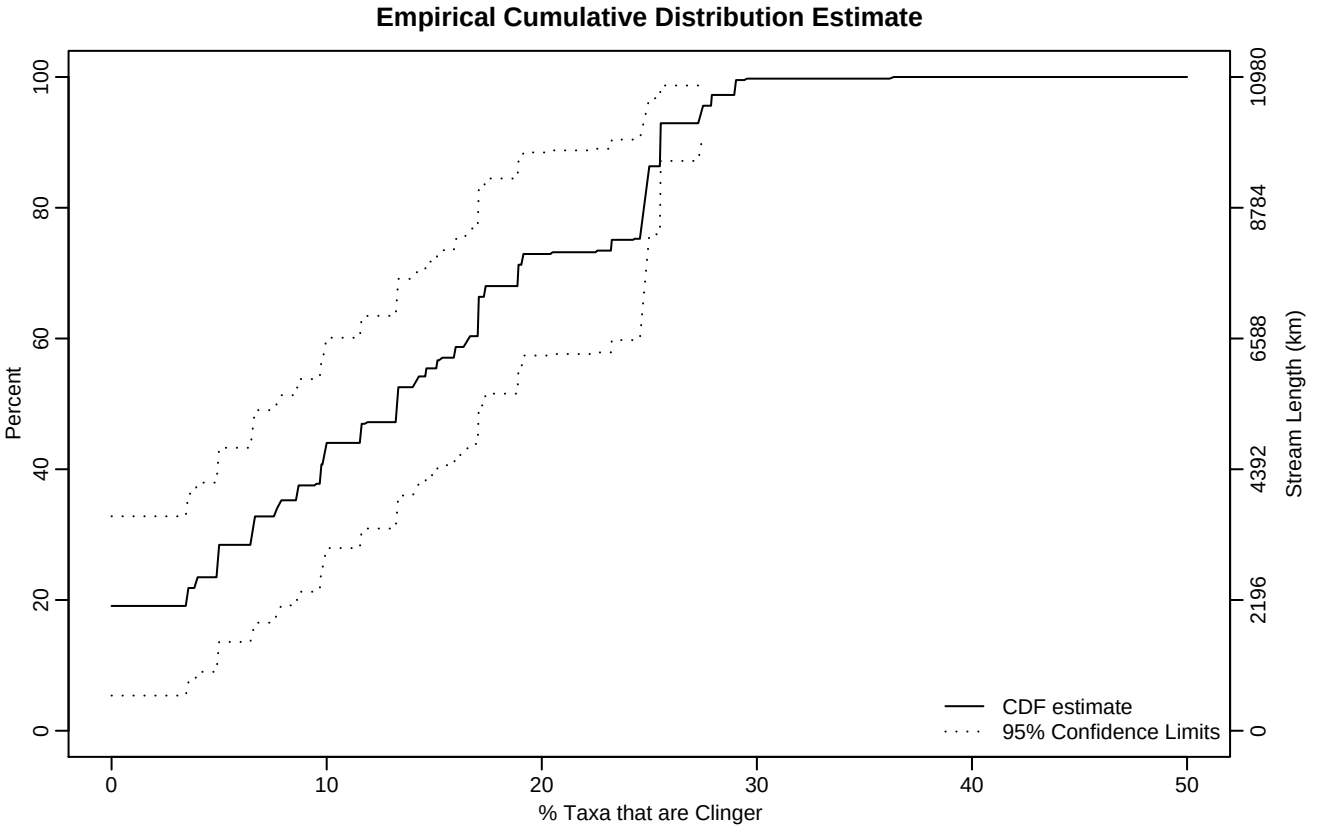


Figure BN−237 Indicator: CLNGPTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	4.89
25Pct	4.92	0	9.72
50Pct	13.27	7.59	17.33
75Pct	23.25	16.38	25.52
90Pct	25.51	24.67	36.36
95Pct	27.45	25.51	36.36
Mean	13.26	9.87	16.66
Std Dev	9.37	7.94	10.80

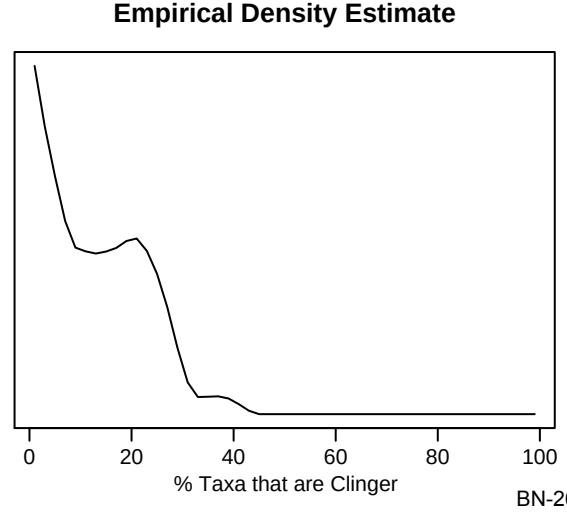
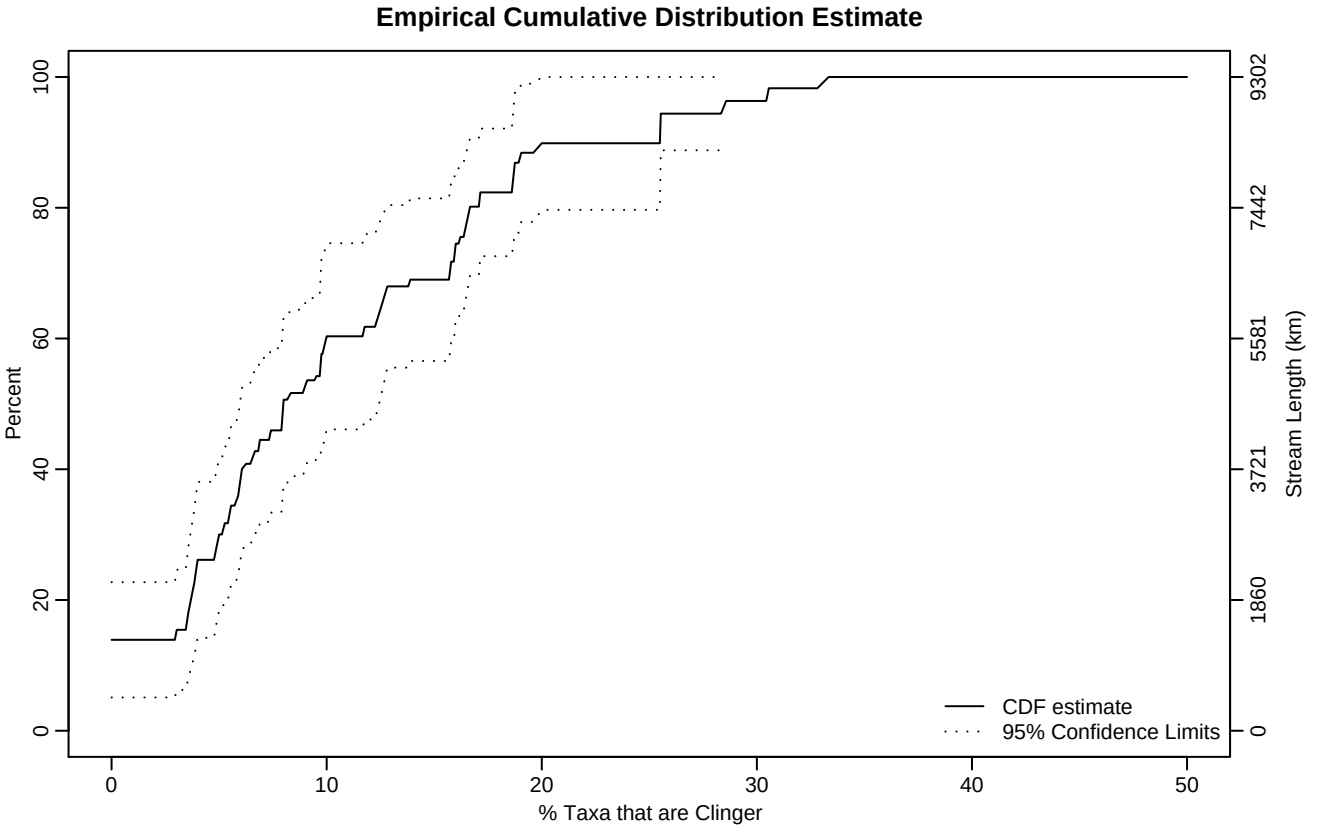


Figure BN−238 Indicator: CLNGPTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	3.62
25Pct	3.95	0	5.90
50Pct	7.99	5.94	12.34
75Pct	16.17	12.33	18.95
90Pct	25.49	16.63	33.33
95Pct	28.41	19.88	33.33
Mean	10.53	8.32	12.73
Std Dev	7.61	6.05	9.16

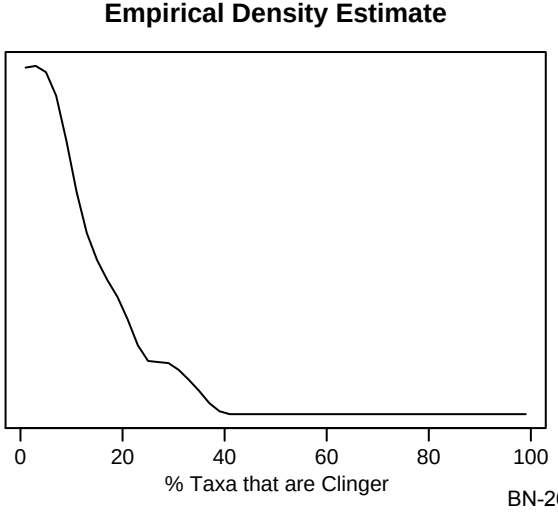
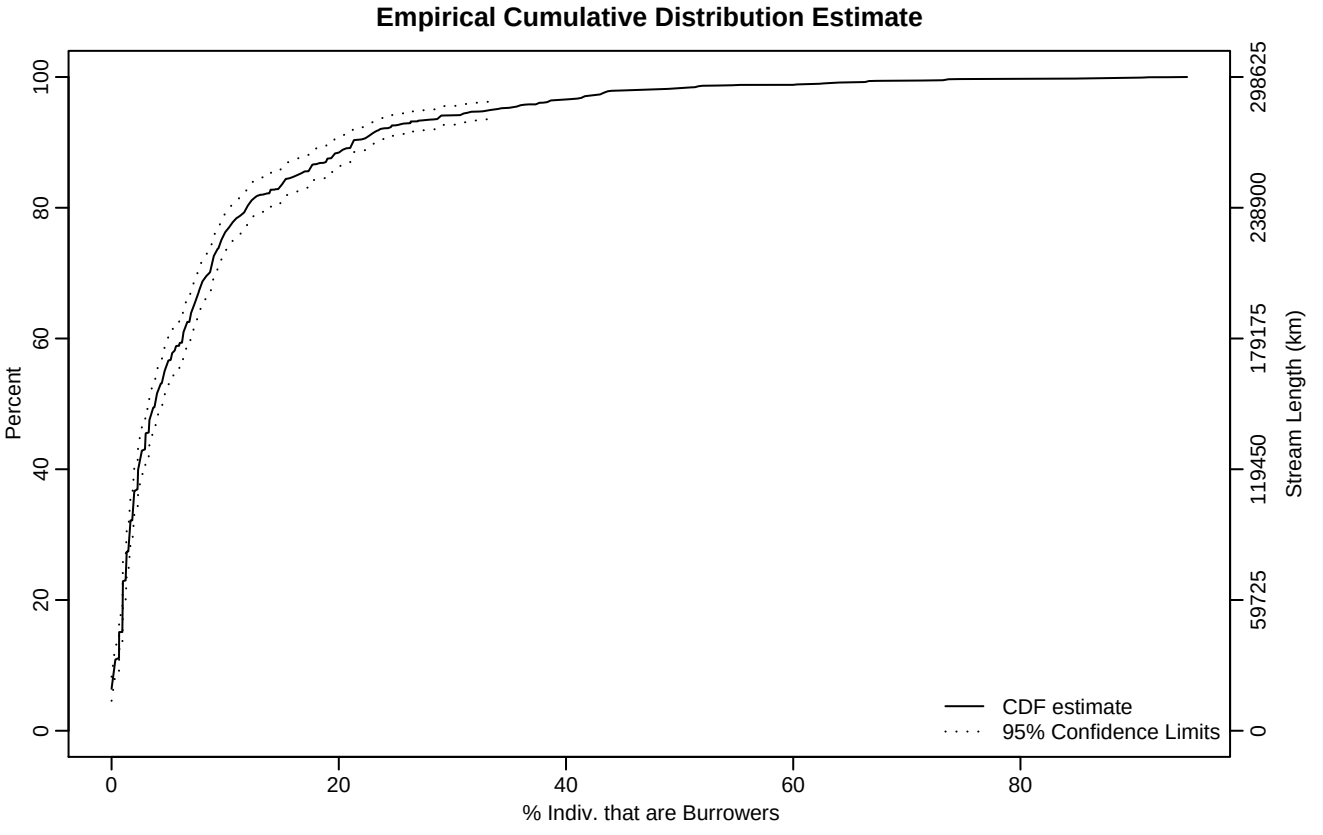


Figure BN−239 Indicator: BURRPIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.03
10Pct	0.27	0.13	0.66
25Pct	1.28	0.99	1.50
50Pct	3.83	3.29	4.50
75Pct	9.65	8.90	10.85
90Pct	21.24	19.43	24.37
95Pct	33.55	28.75	38.54
Mean	8.42	7.69	9.14
Std Dev	10.92	9.89	11.95

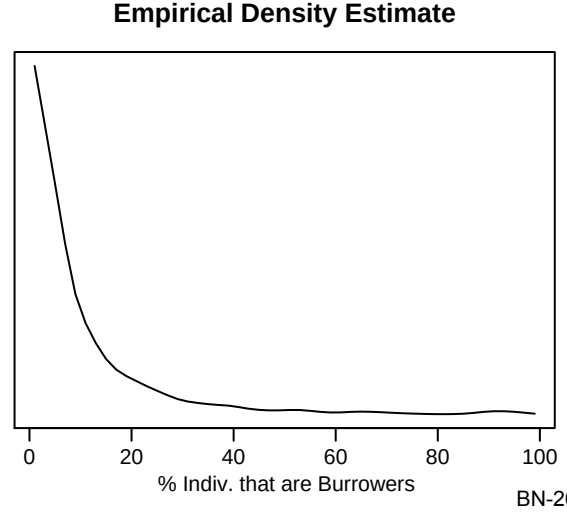
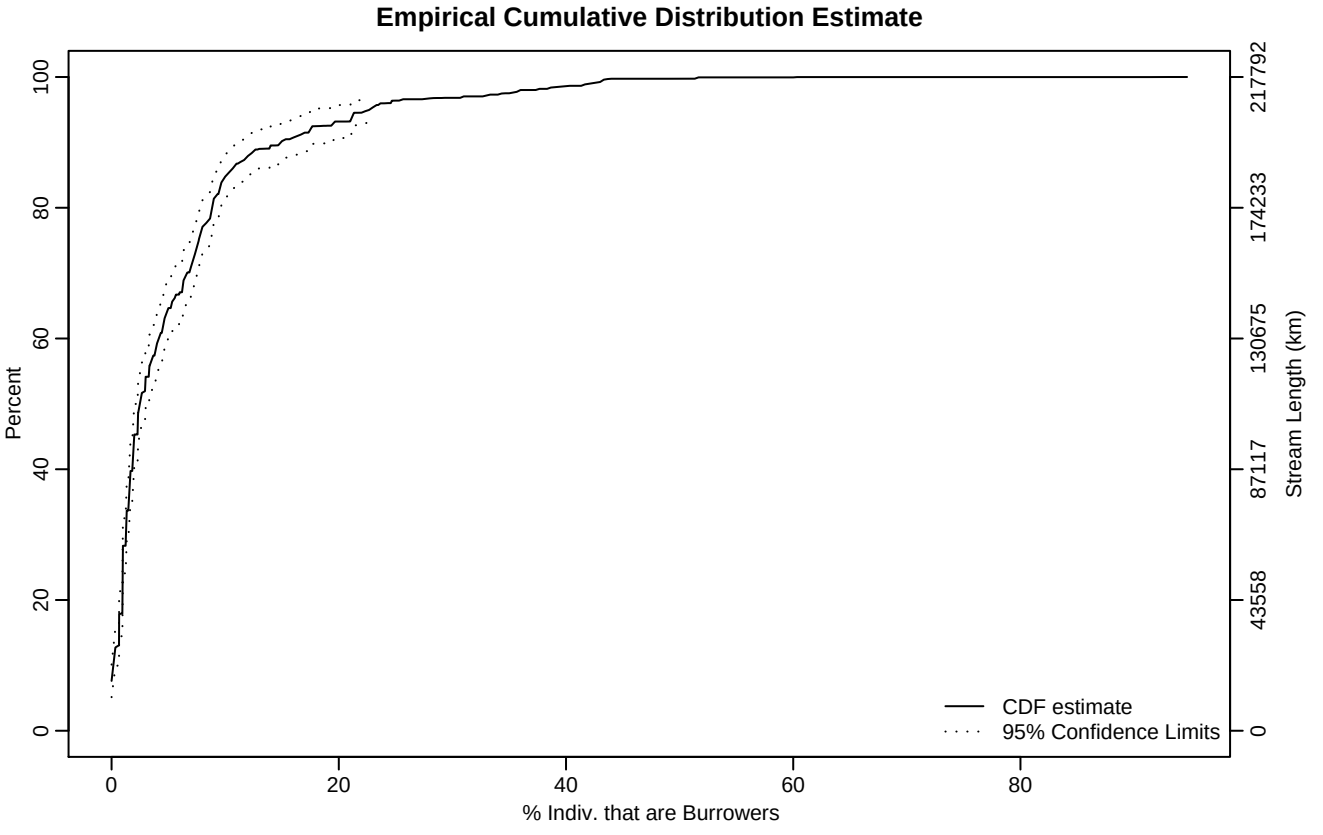


Figure BN−240 Indicator: BURRPIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.16	0	0.32
25Pct	0.98	0.97	1.24
50Pct	2.49	2.28	3.29
75Pct	7.67	6.96	8.76
90Pct	14.90	11.37	19.55
95Pct	22.70	19.65	30.73
Mean	5.97	5.24	6.70
Std Dev	7.95	6.88	9.03

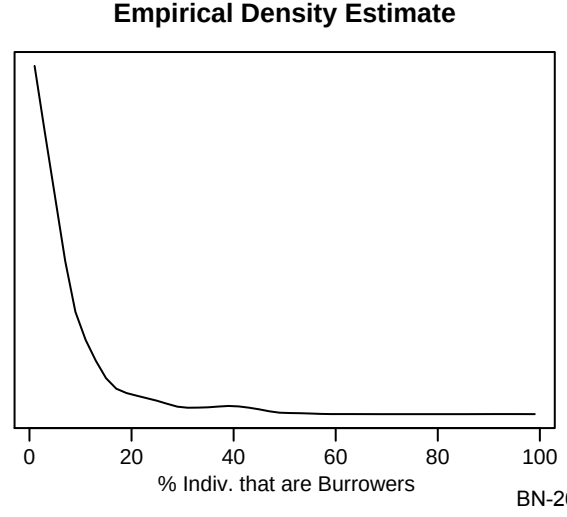
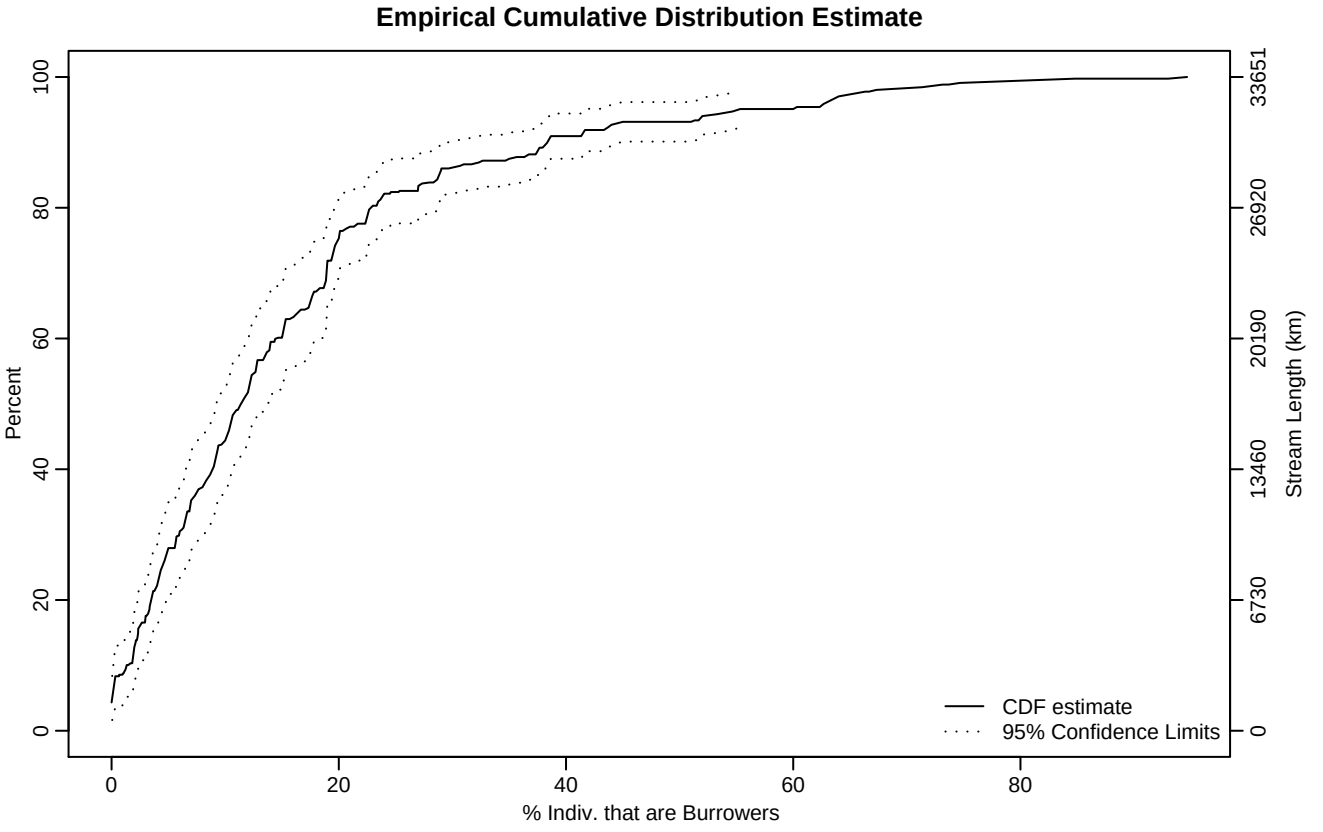


Figure BN−241 Indicator: BURRPIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0	0.31
10Pct	1.33	0.07	2.32
25Pct	4.43	3.26	6.44
50Pct	11.39	9.20	13.77
75Pct	19.91	18.86	23.62
90Pct	38.35	30.35	51.85
95Pct	55.16	43.54	66.95
Mean	16.38	14.20	18.56
Std Dev	14.94	12.94	16.94

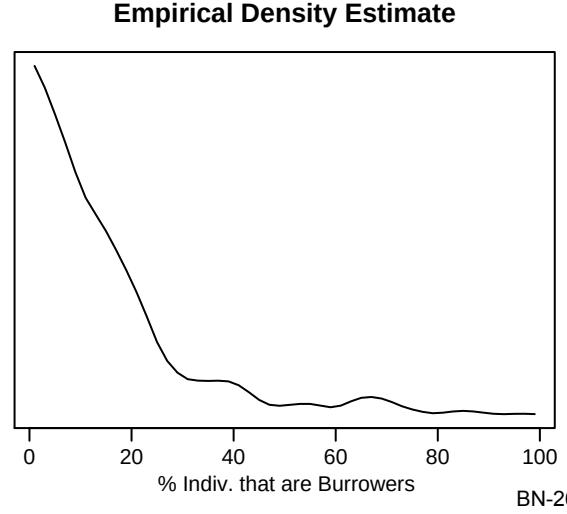
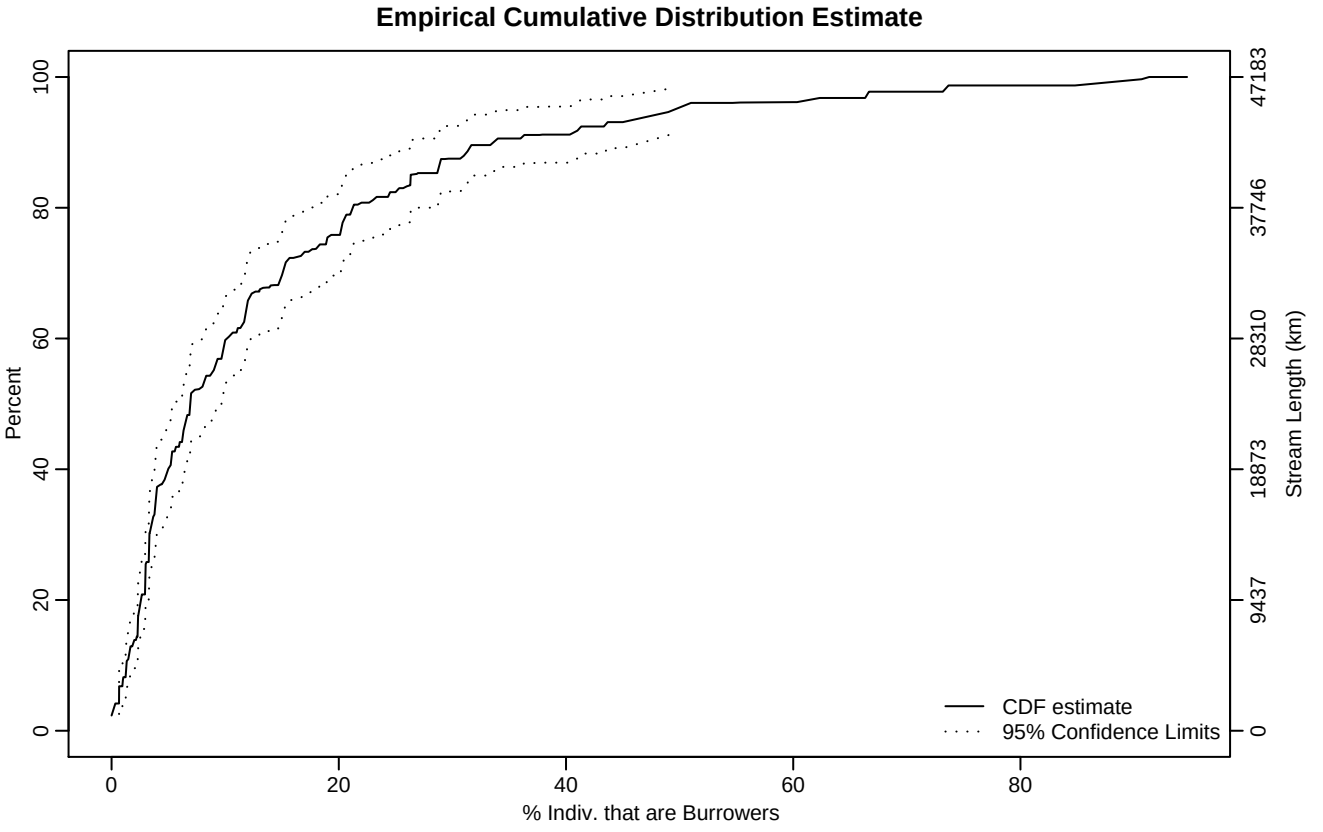


Figure BN−242 Indicator: BURRPIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.66	0.10	0.97
10Pct	1.31	0.67	1.90
25Pct	2.99	2.54	3.38
50Pct	6.93	5.60	9.68
75Pct	18.94	14.75	23.18
90Pct	33.61	28.68	49
95Pct	49.52	40.68	73.56
Mean	14.03	11.60	16.46
Std Dev	13.70	11.92	15.48

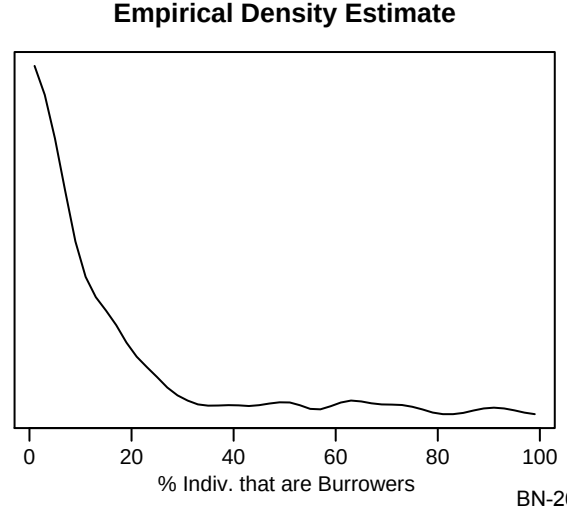
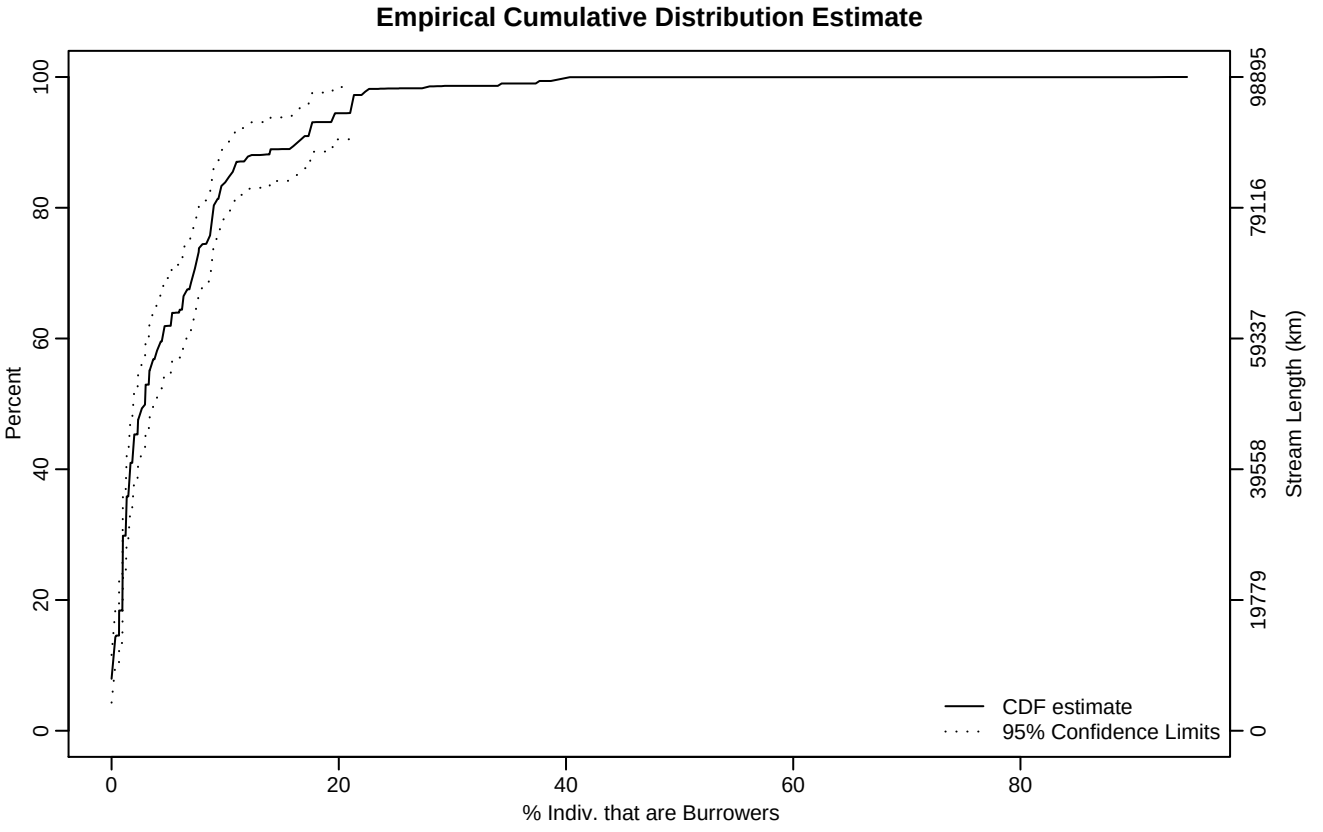


Figure BN−243 Indicator: BURRPIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.04
10Pct	0.11	0	0.30
25Pct	0.98	0.95	1.24
50Pct	2.94	1.90	3.81
75Pct	8.47	6.96	9.45
90Pct	16.38	10.47	21.06
95Pct	21.06	16.99	37.38
Mean	5.73	4.75	6.71
Std Dev	6.85	5.70	7.99

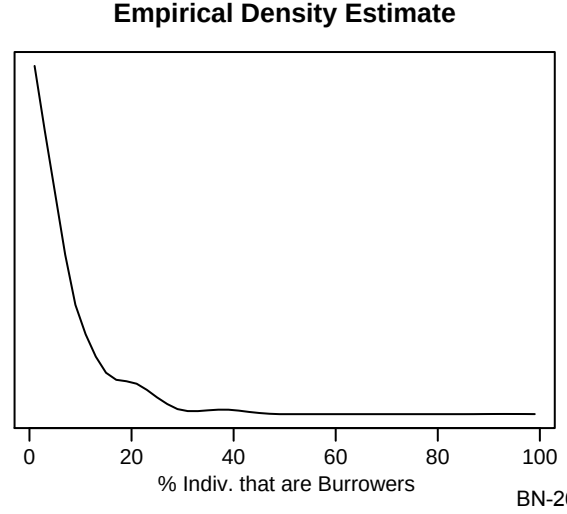
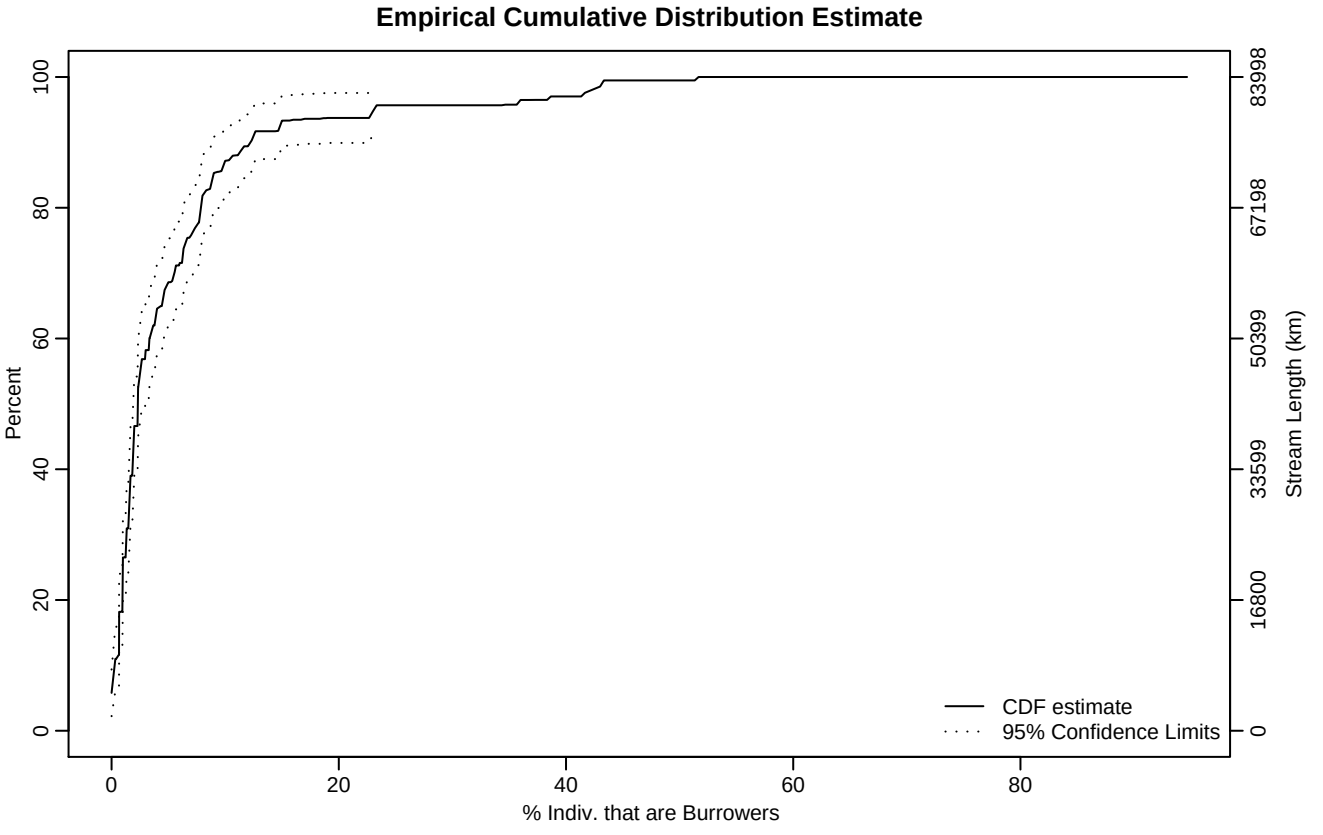


Figure BN−244 Indicator: BURRPIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.18
10Pct	0.27	0.04	0.66
25Pct	0.99	0.95	1.33
50Pct	2.31	1.90	2.98
75Pct	6.59	4.93	7.99
90Pct	12.22	8.97	23.04
95Pct	23.09	12.63	42.86
Mean	5.74	4.39	7.09
Std Dev	8.53	6.38	10.67

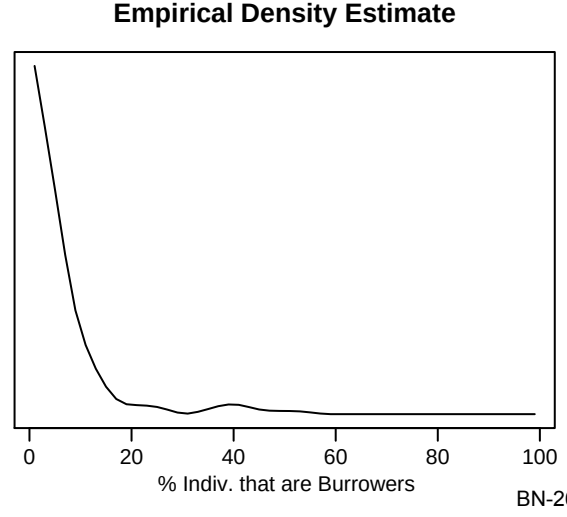
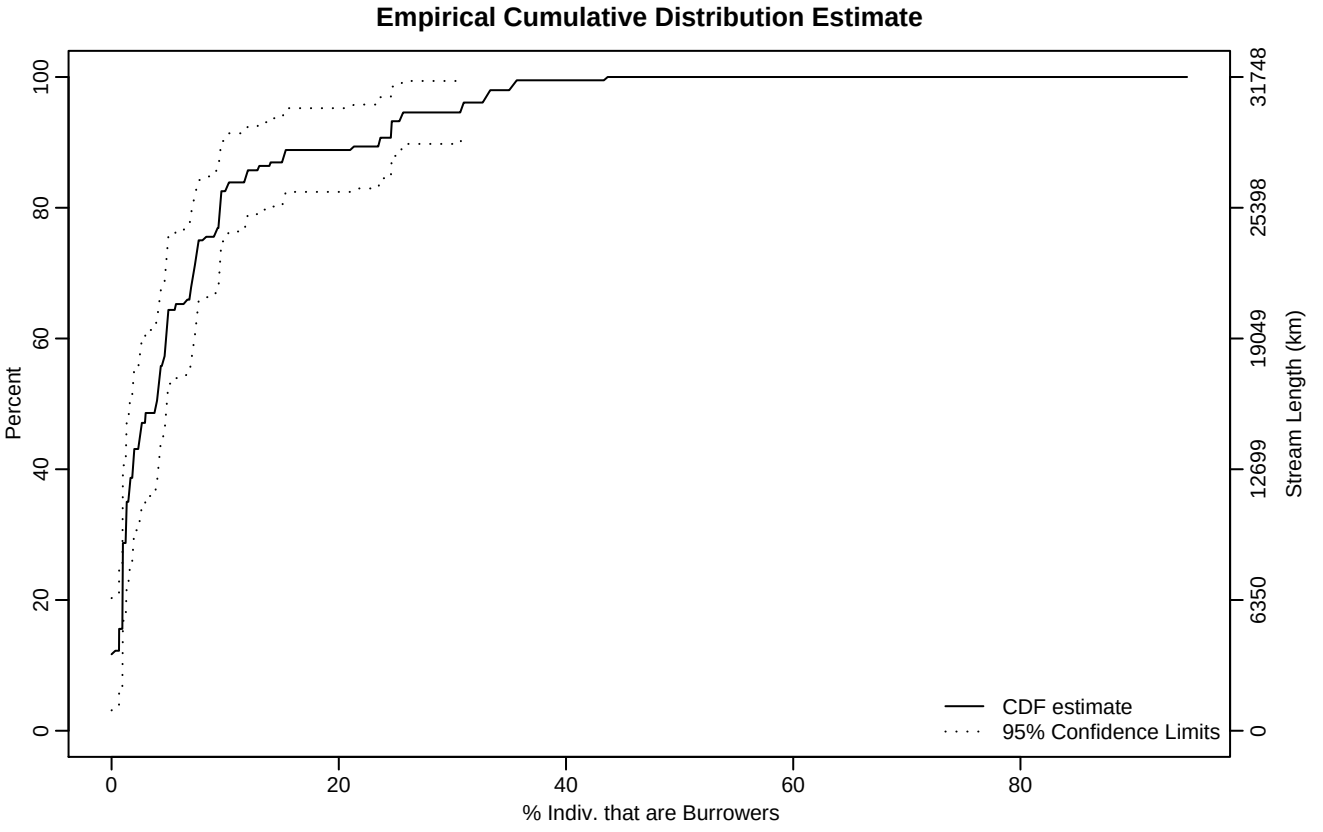


Figure BN−245 Indicator: BURRPIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.66
10Pct	0	0	0.96
25Pct	0.99	0.95	1.32
50Pct	3.94	1.59	4.93
75Pct	7.66	4.99	12.86
90Pct	23.56	10.25	32.80
95Pct	30.77	23.60	43.51
Mean	6.83	5.11	8.54
Std Dev	8.63	6.68	10.58

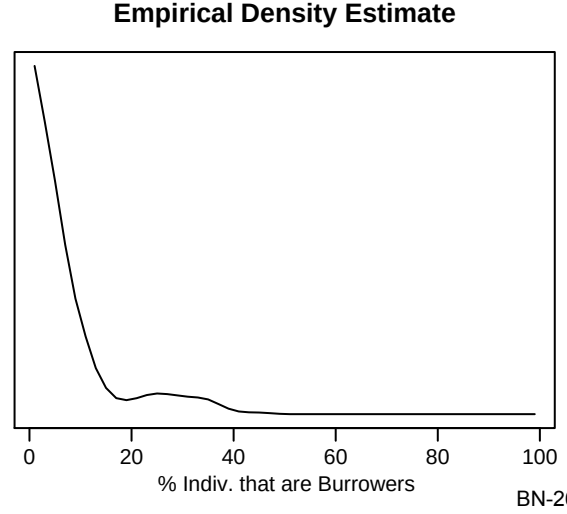
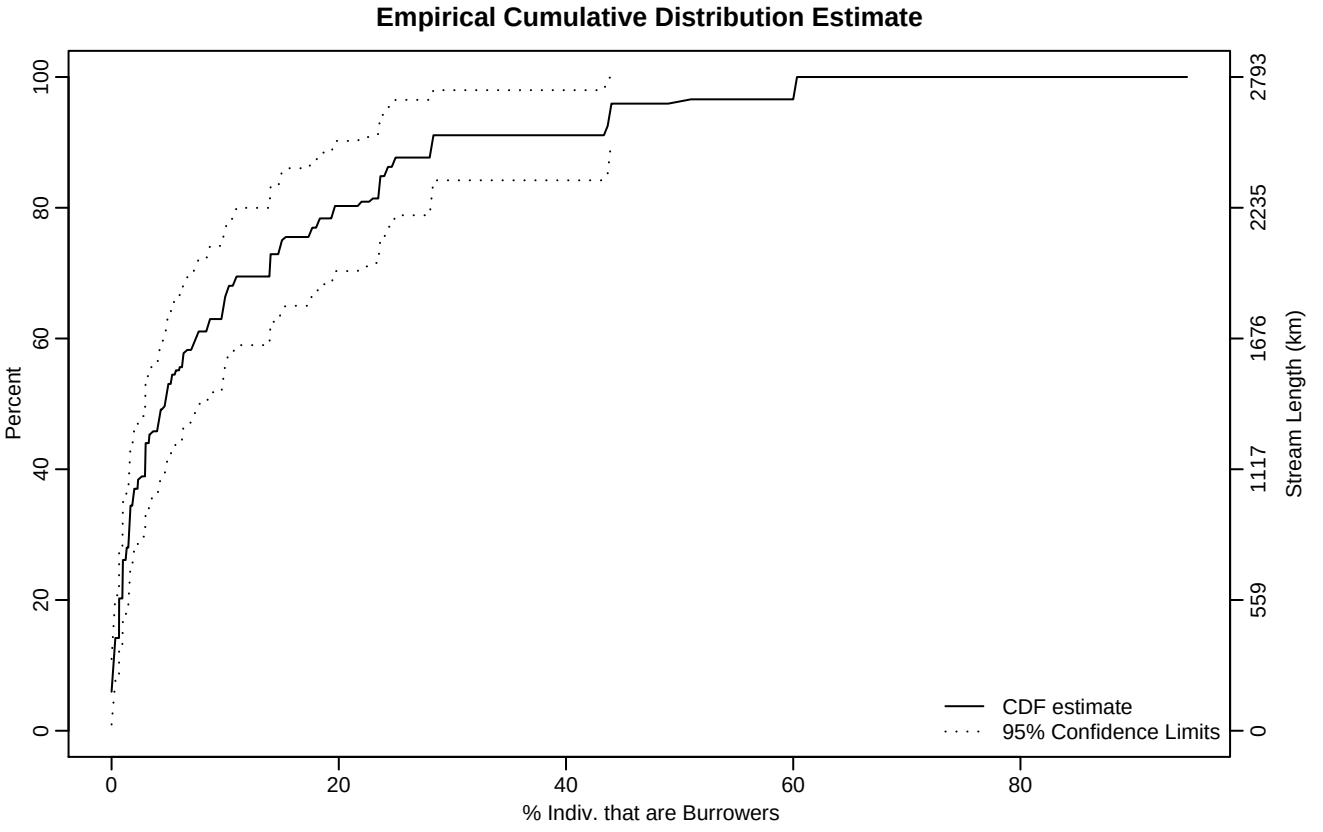


Figure BN−246 Indicator: BURRPIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.16
10Pct	0.16	0	0.66
25Pct	0.99	0.66	1.60
50Pct	4.70	2.95	7.56
75Pct	14.99	9.82	24.16
90Pct	28.23	22.73	60.23
95Pct	43.91	24.98	60.33
Mean	11.28	7.72	14.84
Std Dev	13.85	10	17.70

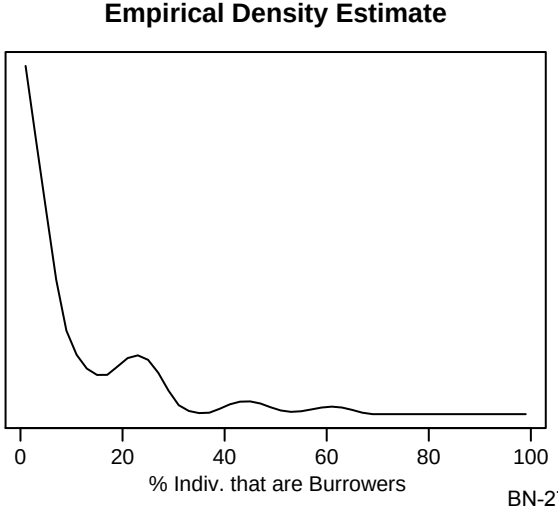
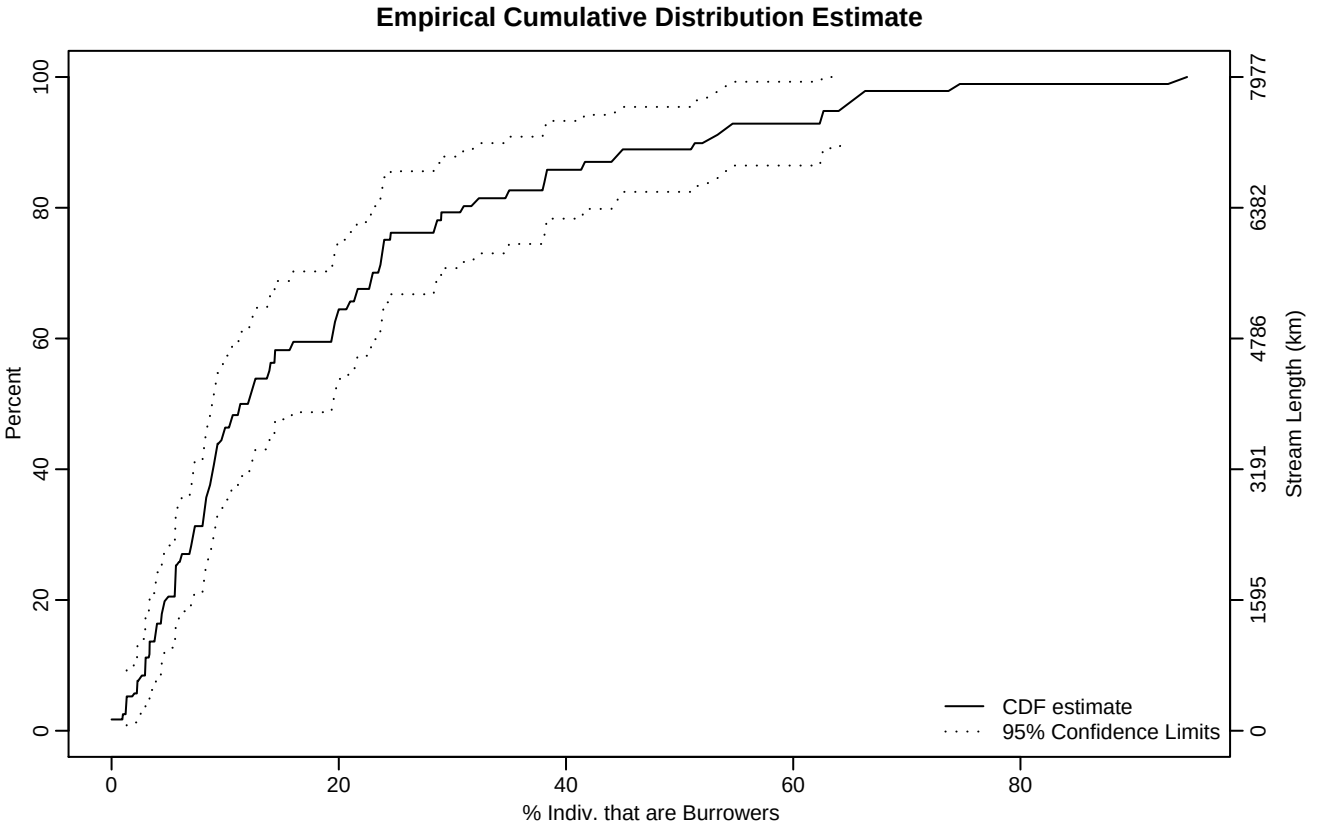


Figure BN−247 Indicator: BURRPIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.32	0.98	2.38
10Pct	2.97	1.30	3.93
25Pct	5.66	4.38	8.12
50Pct	12	8.81	19.50
75Pct	23.99	20.78	38.25
90Pct	52.13	38.03	65.40
95Pct	64.15	51.13	94.67
Mean	19.75	15.58	23.92
Std Dev	17.37	13.60	21.13

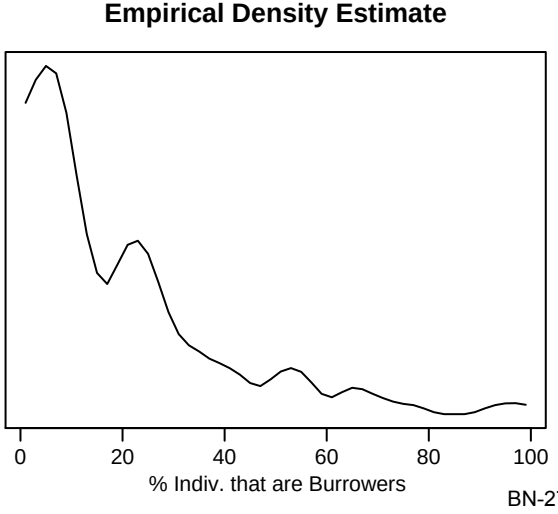
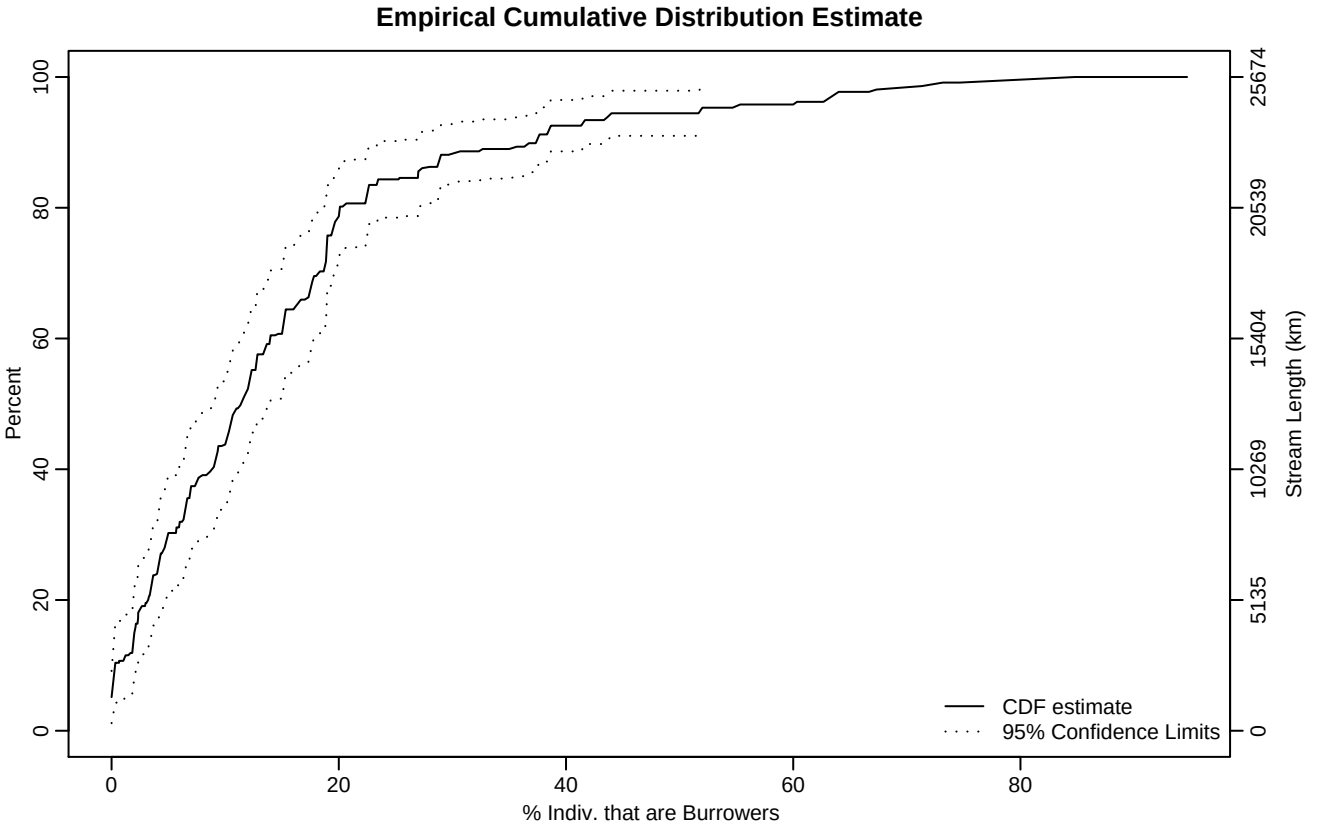


Figure BN−248 Indicator: BURRPIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.24
10Pct	0.31	0.05	1.95
25Pct	4.11	2.33	6.38
50Pct	11.39	8.85	13.96
75Pct	18.97	16.47	25.31
90Pct	37.36	26.99	51.72
95Pct	51.88	38.40	70.53
Mean	15.33	12.77	17.90
Std Dev	14.02	11.63	16.40

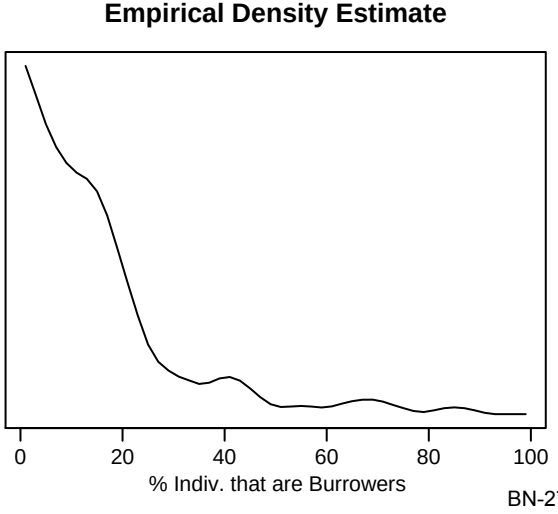
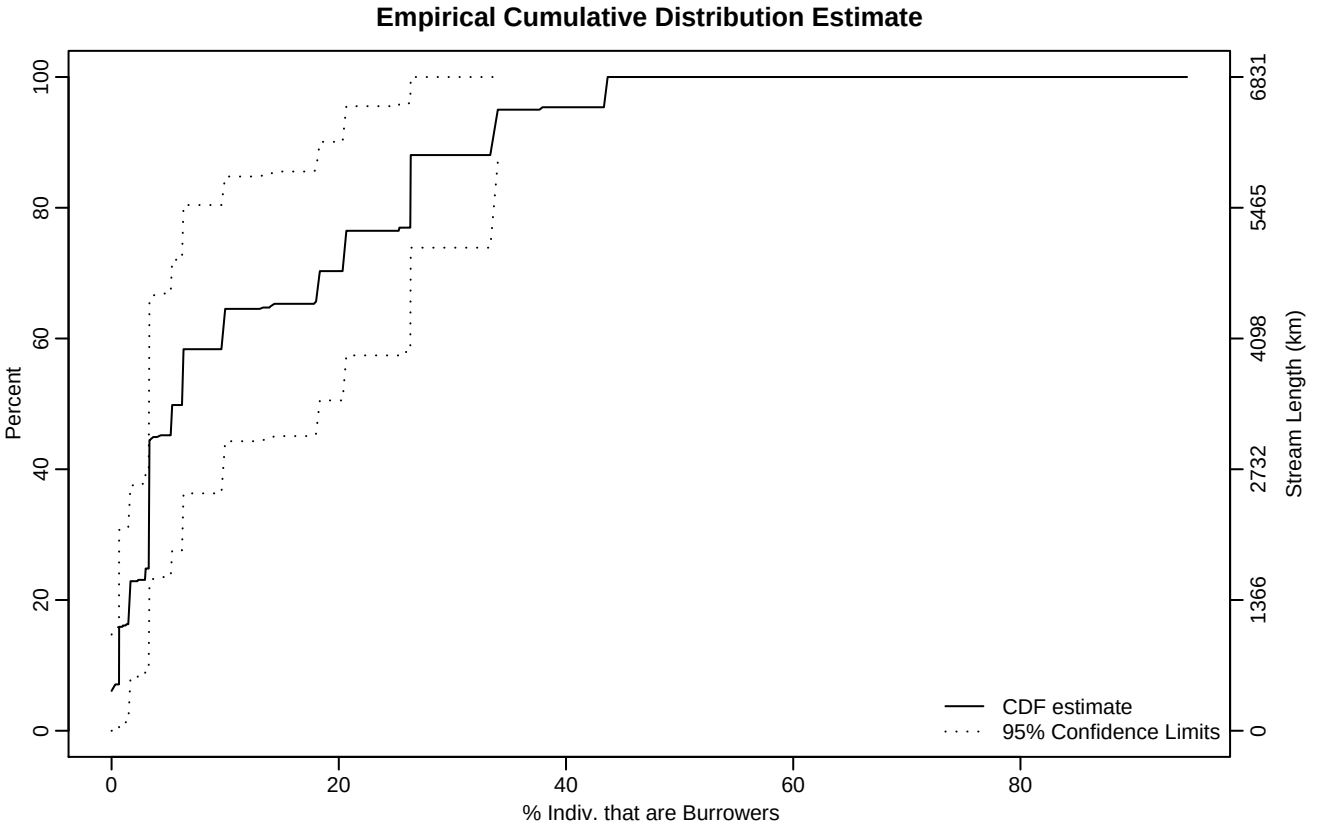


Figure BN−249 Indicator: BURRPIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.66
10Pct	0.66	0	1.55
25Pct	3.27	0.66	3.32
50Pct	6.20	3.28	20.44
75Pct	20.59	6.28	33.99
90Pct	33.52	20.64	43.67
95Pct	34	26.31	43.67
Mean	12.19	7.07	17.30
Std Dev	12.79	9.57	16.01

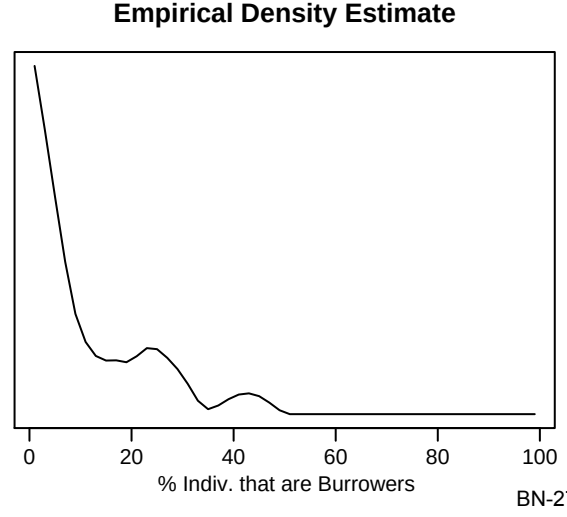
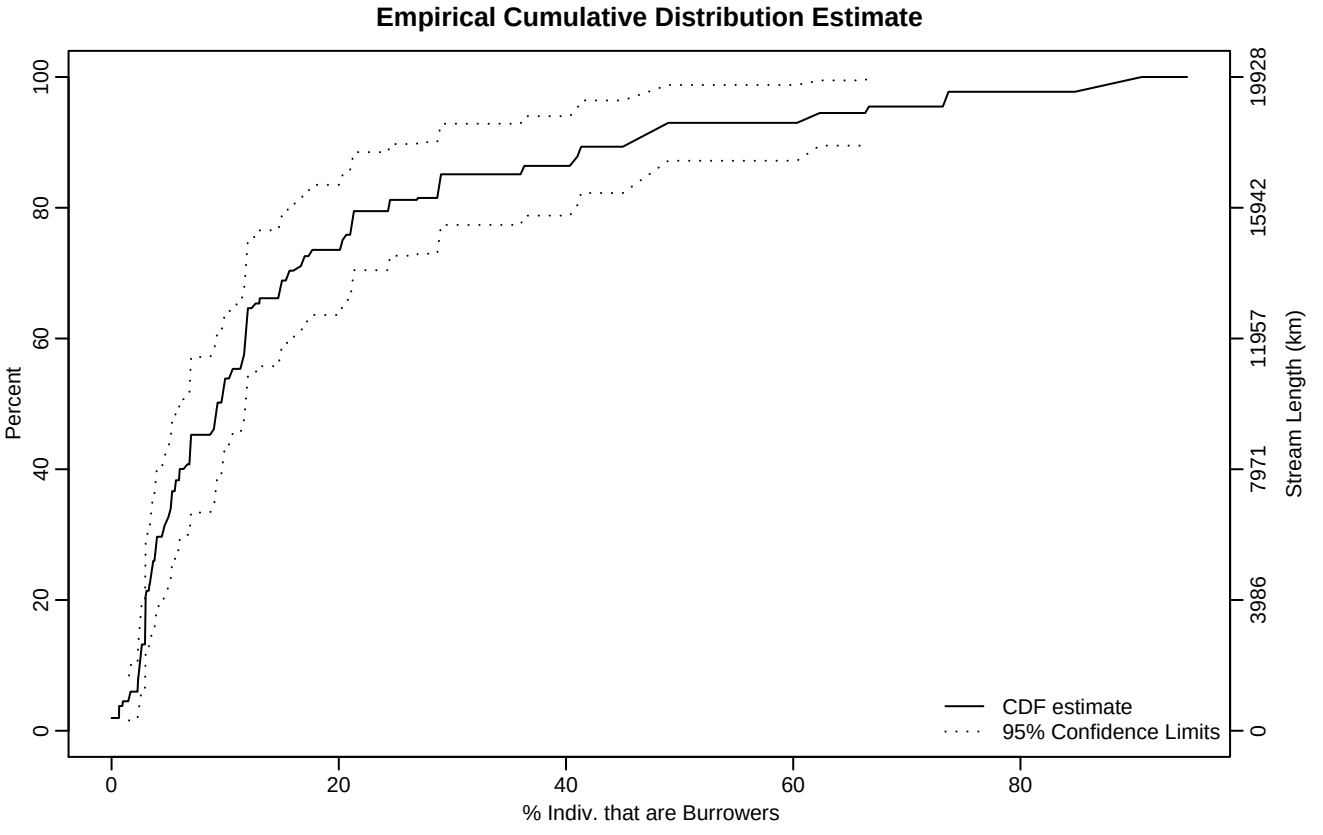


Figure BN−250 Indicator: BURRPIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.54	0	2.36
10Pct	2.47	1.50	2.96
25Pct	3.58	2.96	5.20
50Pct	9.32	5.66	11.87
75Pct	20.32	12.43	36.01
90Pct	45.73	28.82	73.48
95Pct	66.50	45.87	90.33
Mean	16.75	12.39	21.11
Std Dev	14.91	11.81	18.01

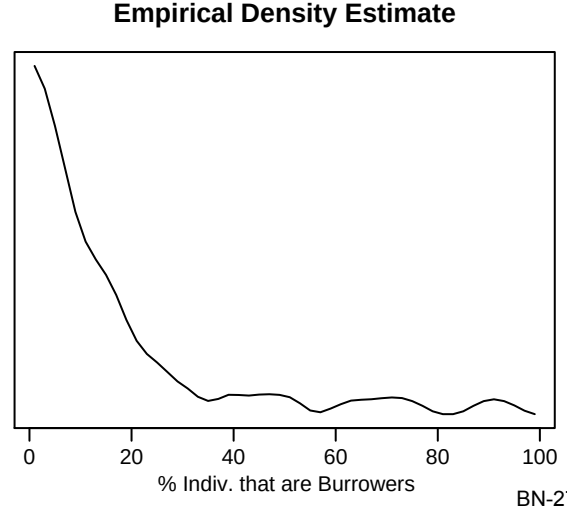
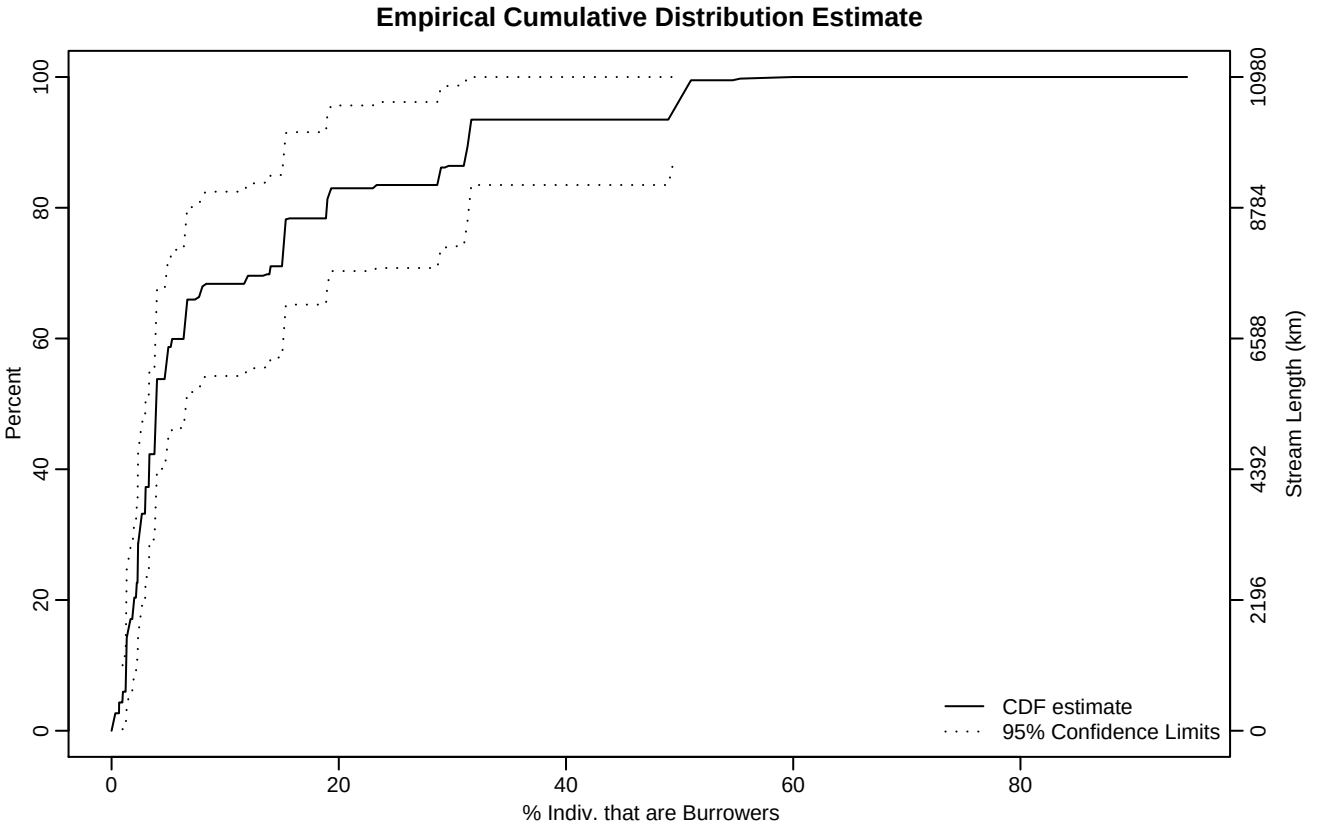


Figure BN−251 Indicator: BURRPIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.97	0.01	1.28
10Pct	1.28	0.67	1.50
25Pct	2.30	1.31	3.27
50Pct	3.93	2.98	6.56
75Pct	15.18	6.38	31.31
90Pct	31.38	18.87	60
95Pct	49.50	28.83	60
Mean	11.13	6.09	16.18
Std Dev	12.89	9.11	16.67

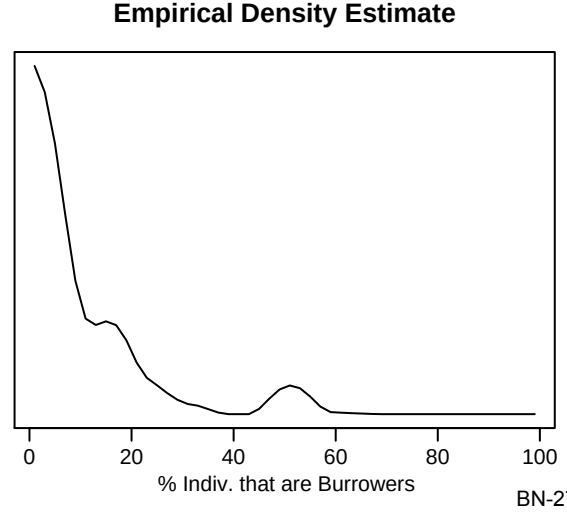
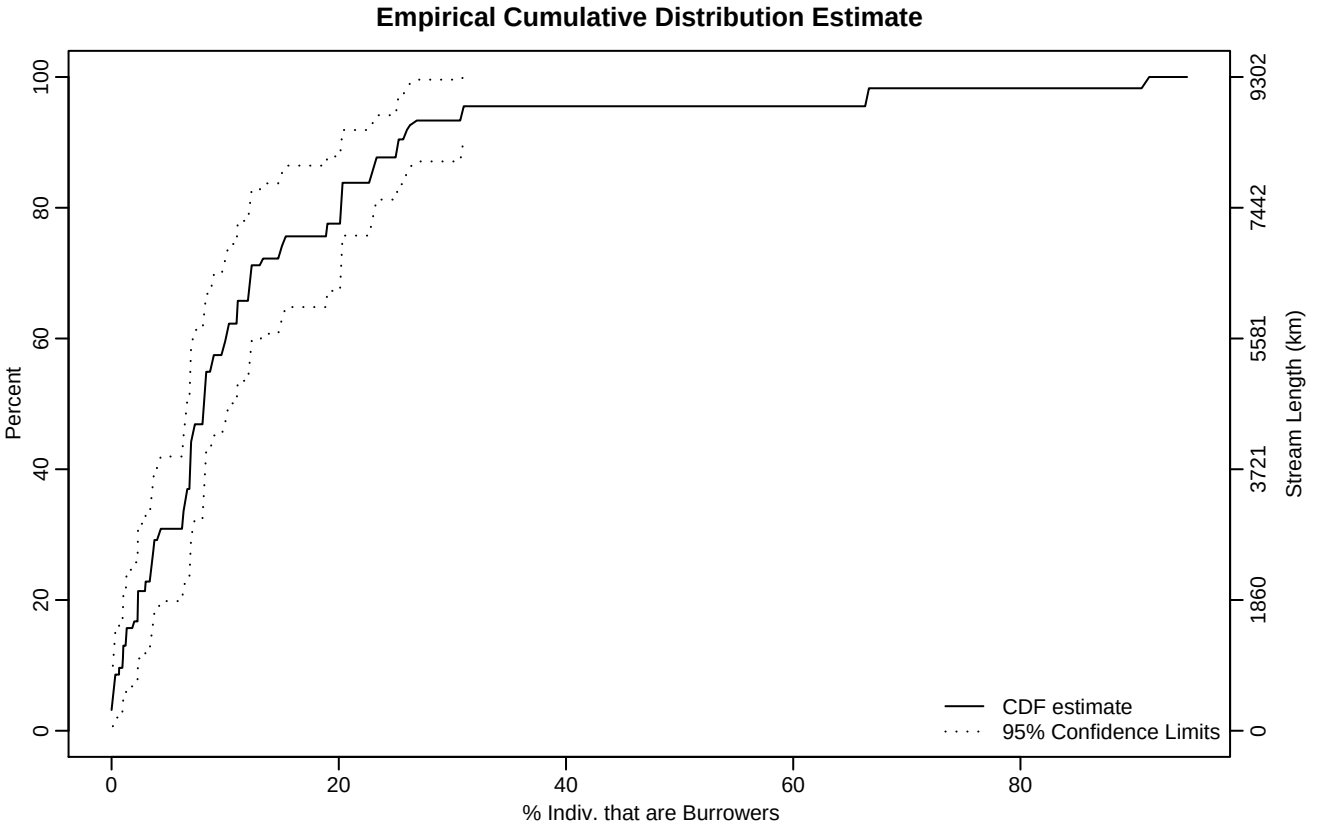


Figure BN−252 Indicator: BURRPIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.11	0	0.66
10Pct	0.96	0	2.28
25Pct	3.50	1.30	6.50
50Pct	8.13	6.53	11.07
75Pct	15.19	11.04	23.12
90Pct	25.23	20.31	66.48
95Pct	30.93	25.10	91.33
Mean	12.85	9.25	16.46
Std Dev	11.62	8.97	14.26

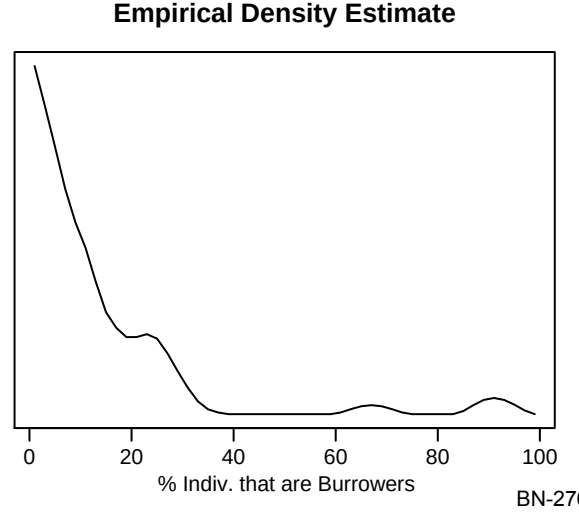
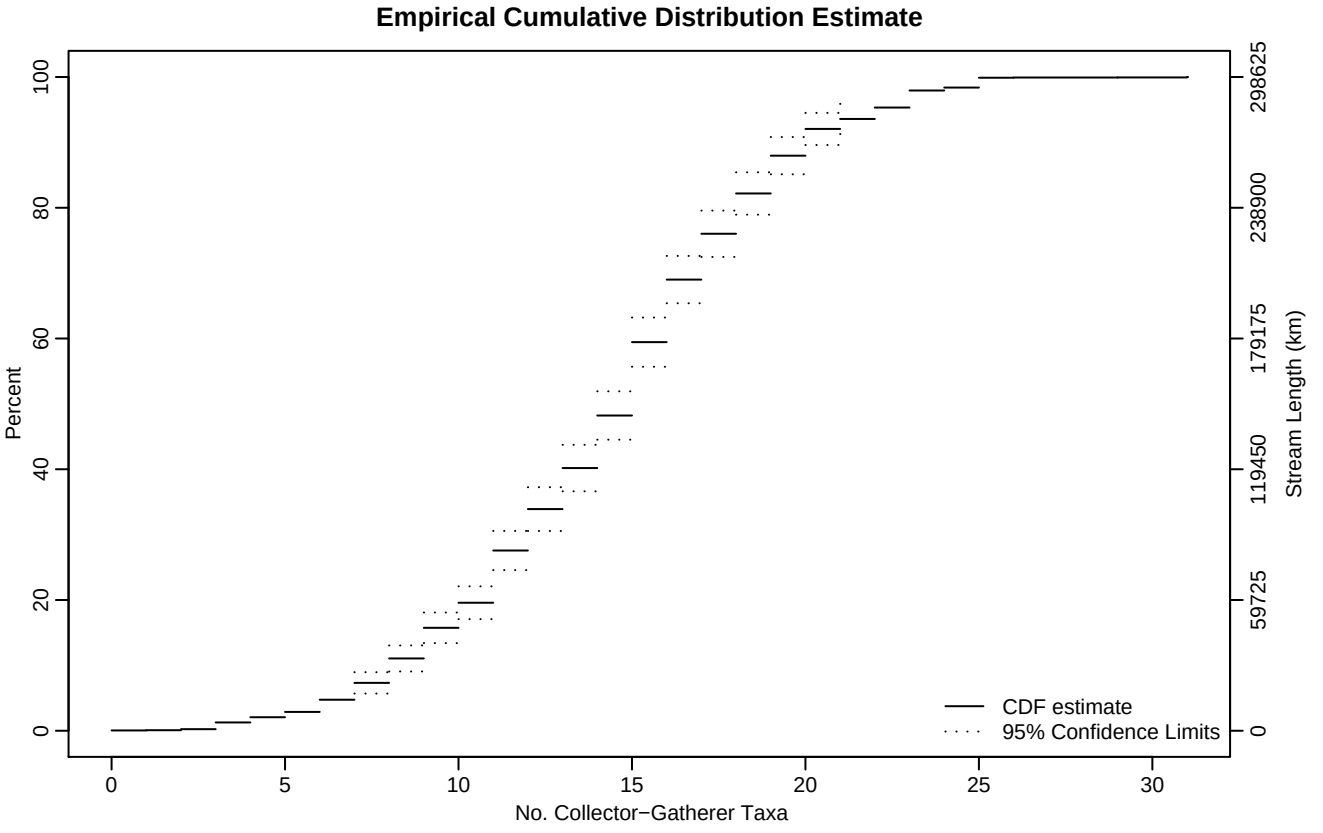


Figure BN−253 Indicator: COGARICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.10	5.45	6.59
10Pct	7.72	7.28	8.12
25Pct	10.68	10.36	11
50Pct	14.16	13.76	14.49
75Pct	16.85	16.34	17.42
90Pct	19.50	18.85	20.54
95Pct	21.81	20.38	22.78
Mean	14.34	14.01	14.66
Std Dev	4.26	4.02	4.50

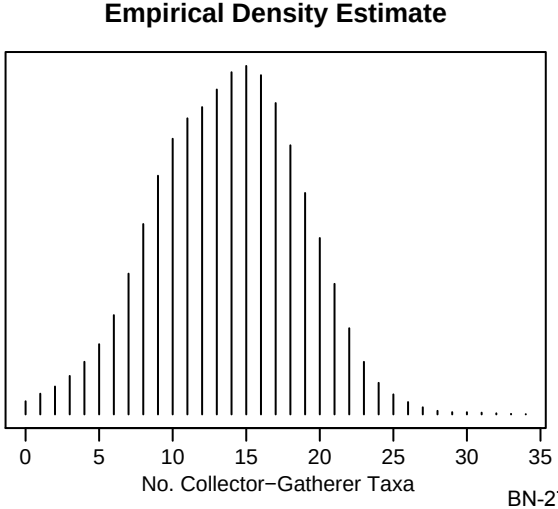
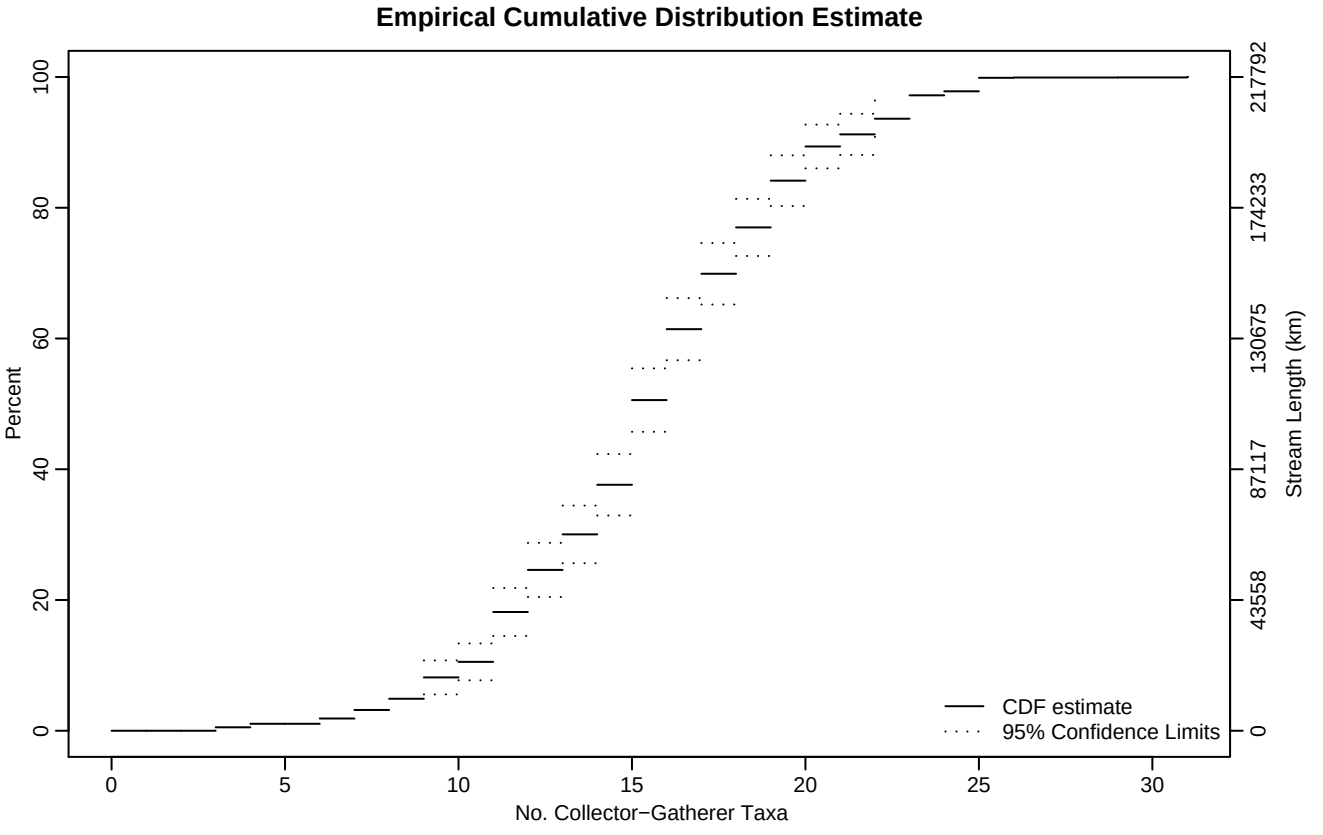


Figure BN−254 Indicator: COGARICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.03	6.74	8.70
10Pct	9.77	8.76	10.27
25Pct	12.07	11.42	12.84
50Pct	14.96	14.59	15.38
75Pct	17.72	17.05	18.38
90Pct	20.34	19.47	21.90
95Pct	22.39	21.40	24.01
Mean	15.47	15.05	15.88
Std Dev	4.12	3.82	4.41

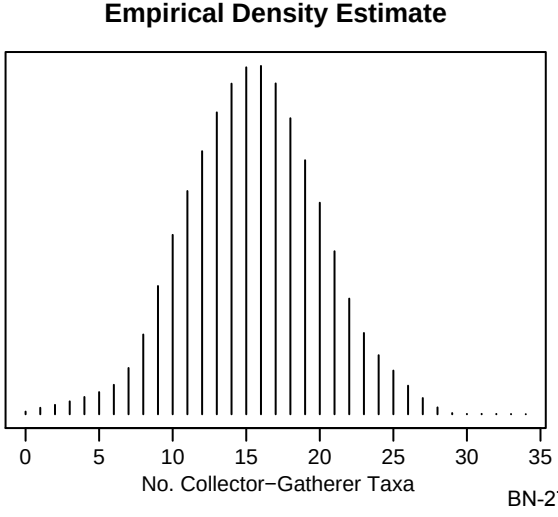
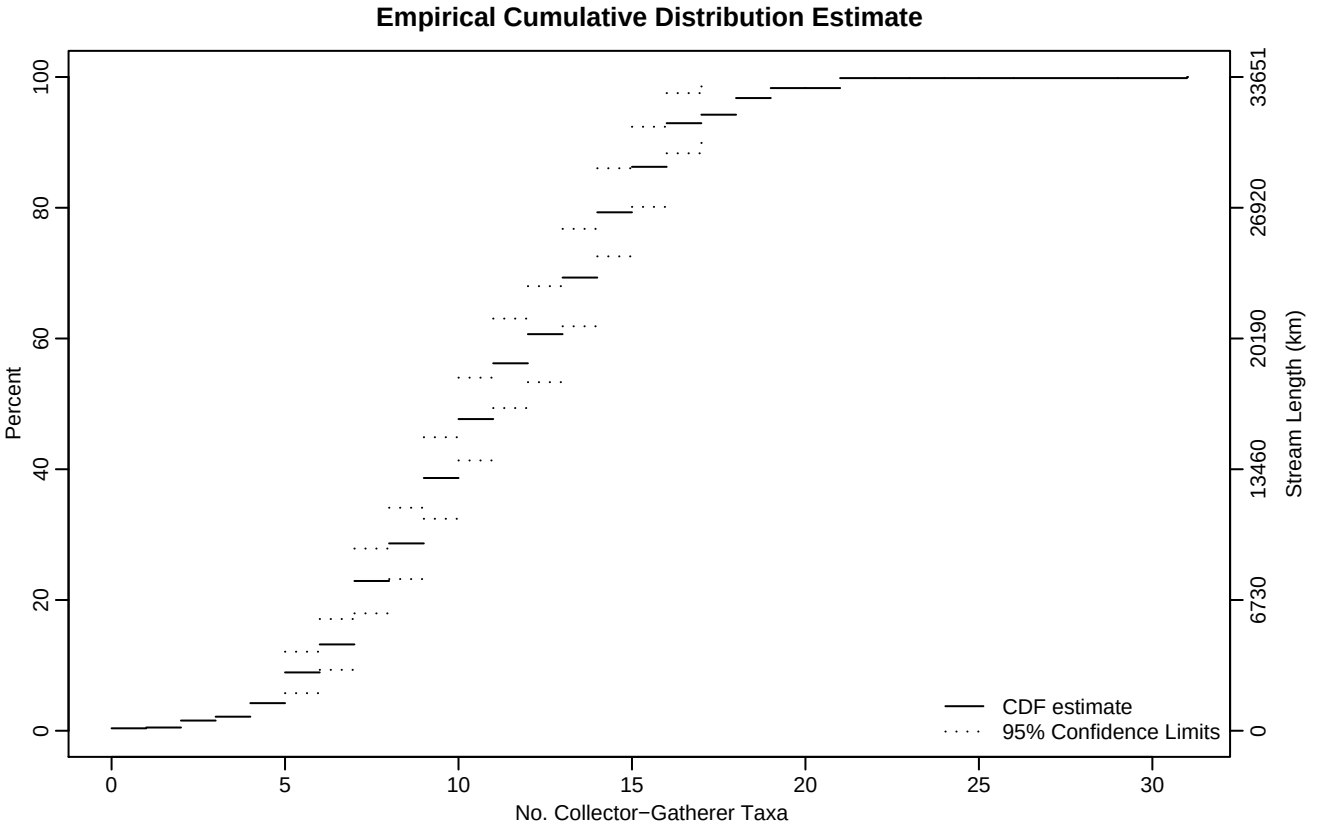


Figure BN−255 Indicator: COGARICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.17	3.43	4.59
10Pct	5.25	4.55	6
25Pct	7.36	6.70	8.13
50Pct	10.27	9.53	11.07
75Pct	13.57	12.77	14.49
90Pct	15.56	14.64	17.79
95Pct	17.30	15.68	20.61
Mean	11.01	10.48	11.53
Std Dev	3.79	3.44	4.14

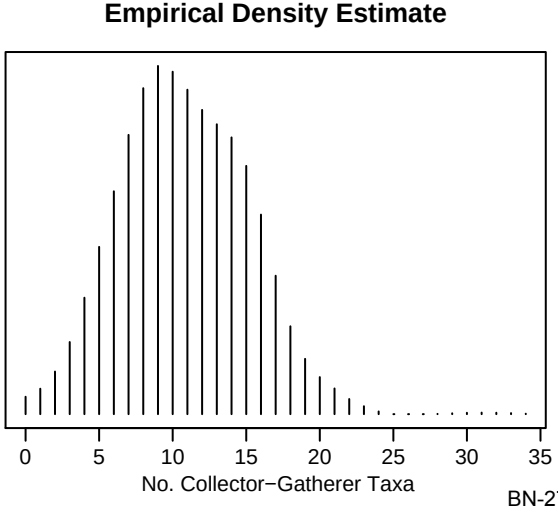
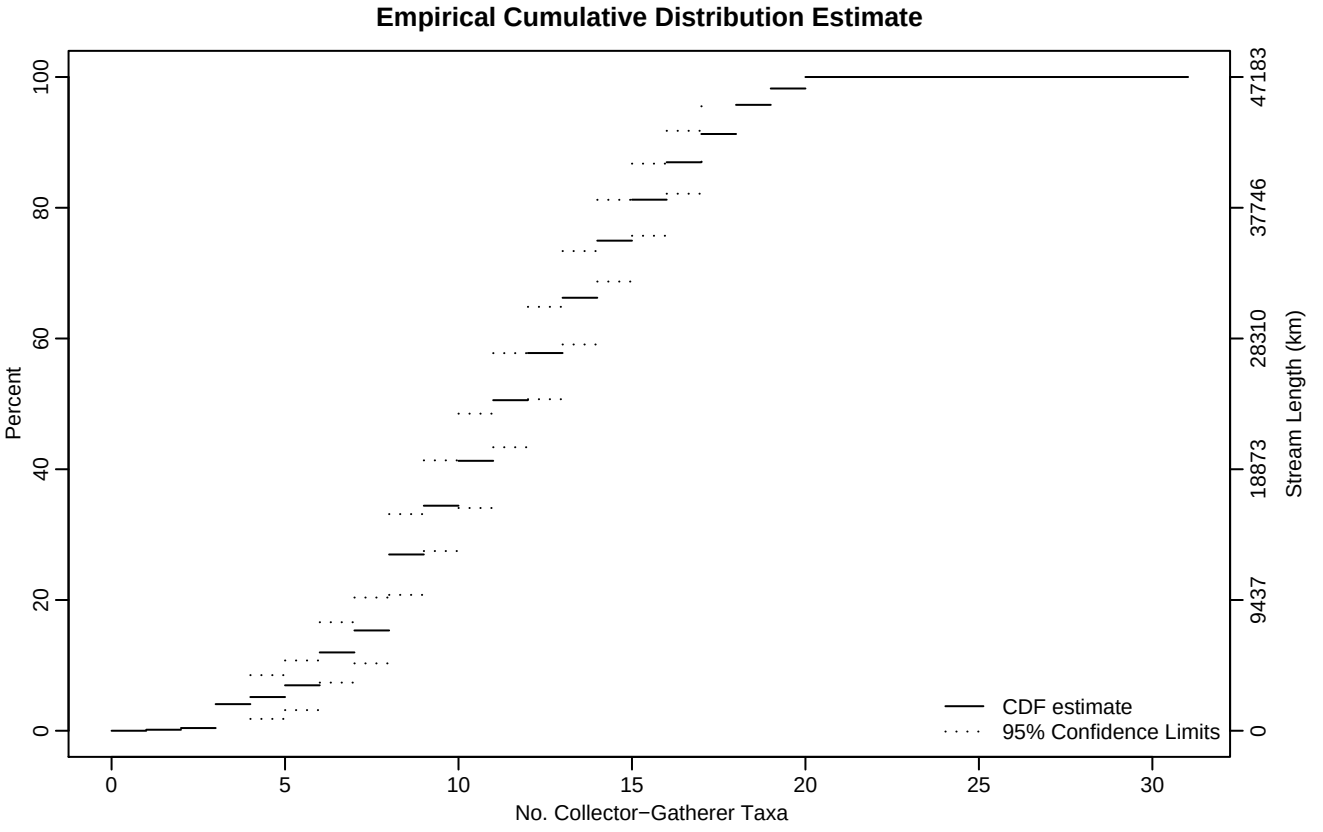


Figure BN−256 Indicator: COGARICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.86	2.39	5.24
10Pct	5.61	4.56	6.55
25Pct	7.83	7.39	8.42
50Pct	10.94	10.16	11.93
75Pct	14.01	13.27	15.03
90Pct	16.70	15.66	17.84
95Pct	17.83	16.82	19.71
Mean	11.50	10.90	12.11
Std Dev	3.94	3.59	4.28

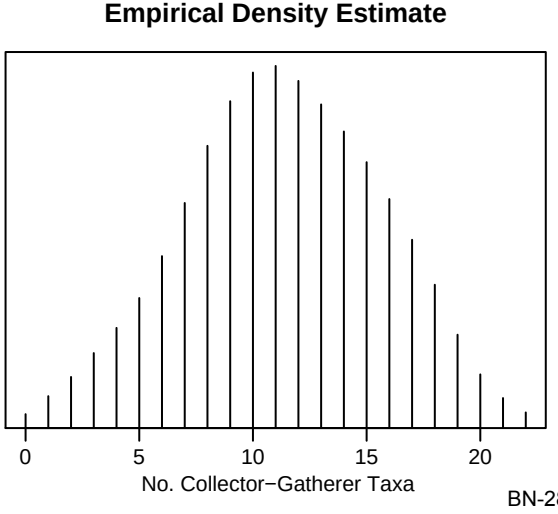
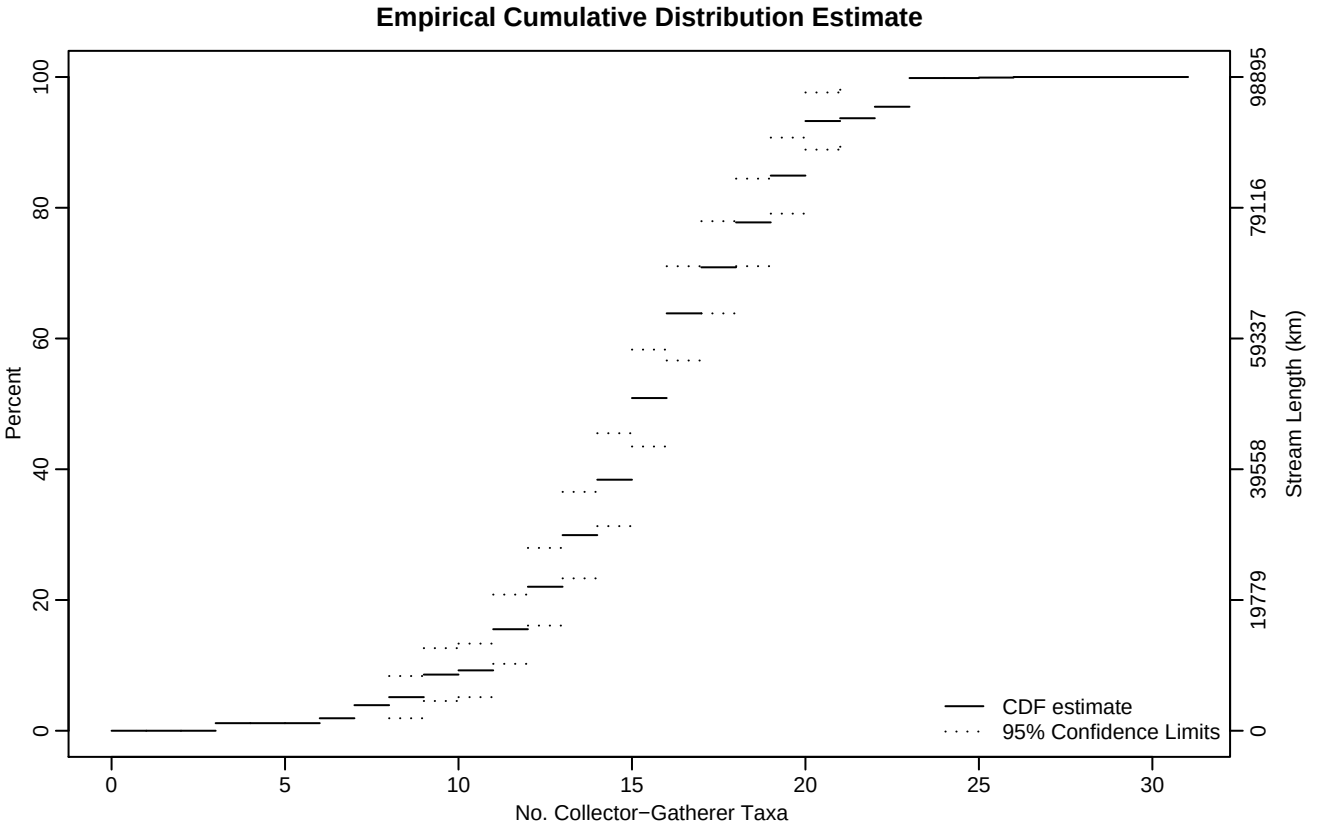


Figure BN−257 Indicator: COGARICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.89	6.04	8.83
10Pct	10.12	8.20	10.79
25Pct	12.38	11.53	13.13
50Pct	14.93	14.34	15.50
75Pct	17.60	16.58	18.61
90Pct	19.61	18.89	22.10
95Pct	21.74	19.67	22.92
Mean	15.32	14.74	15.89
Std Dev	3.74	3.32	4.15

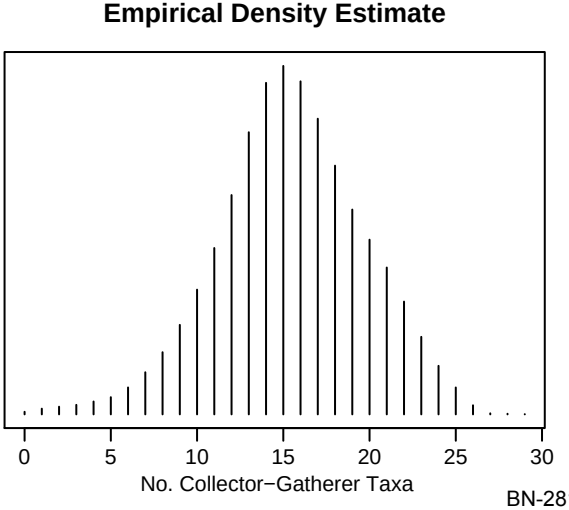
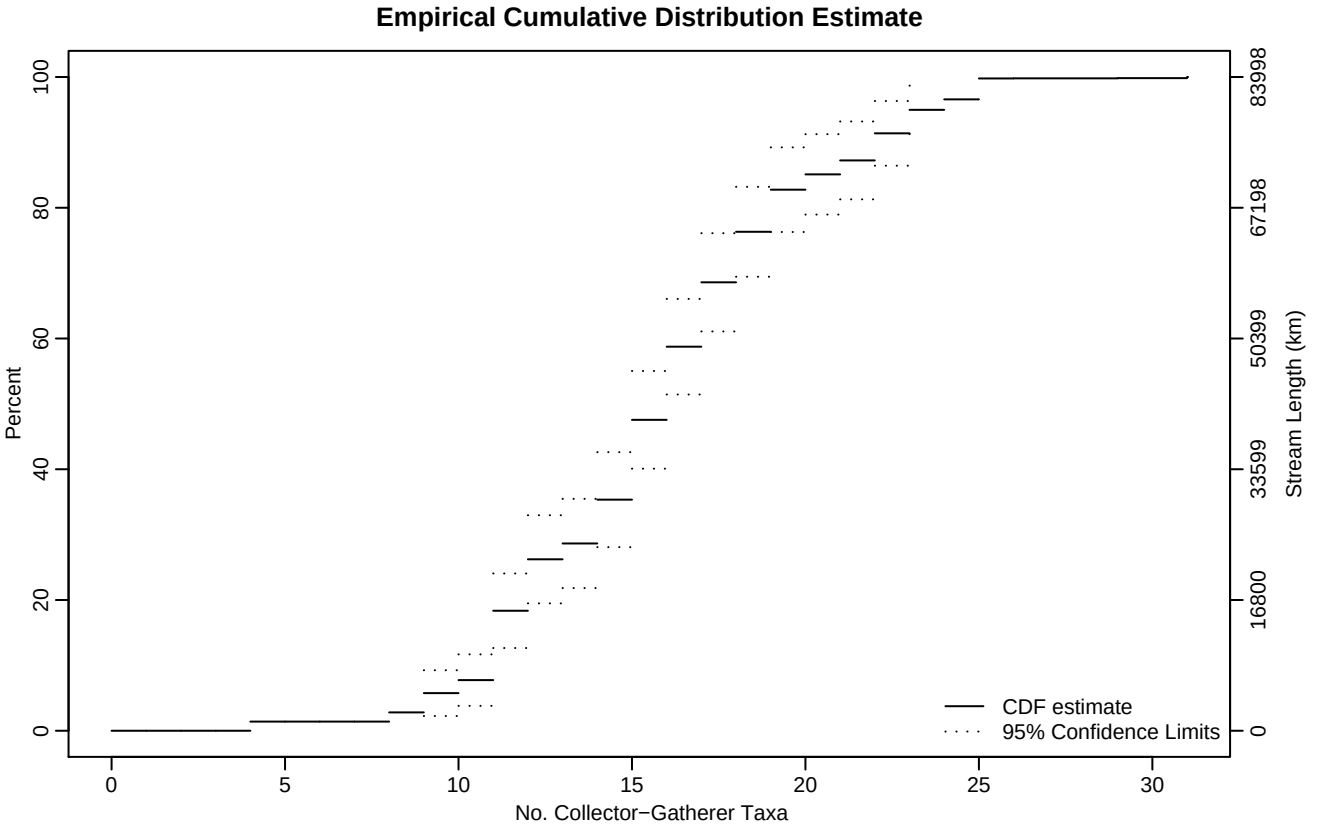


Figure BN−258 Indicator: COGARICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.74	7.57	10.01
10Pct	10.21	9.16	10.58
25Pct	11.84	11.12	13.31
50Pct	15.22	14.58	15.89
75Pct	17.83	16.89	18.96
90Pct	21.67	19.50	23.68
95Pct	23.01	21.96	24.68
Mean	15.81	15.12	16.51
Std Dev	4.29	3.79	4.80

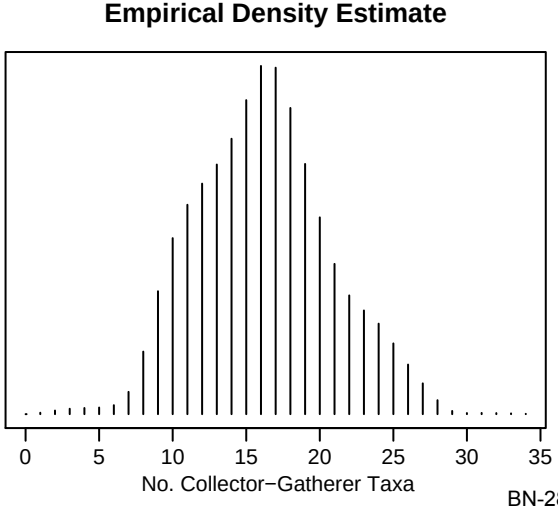
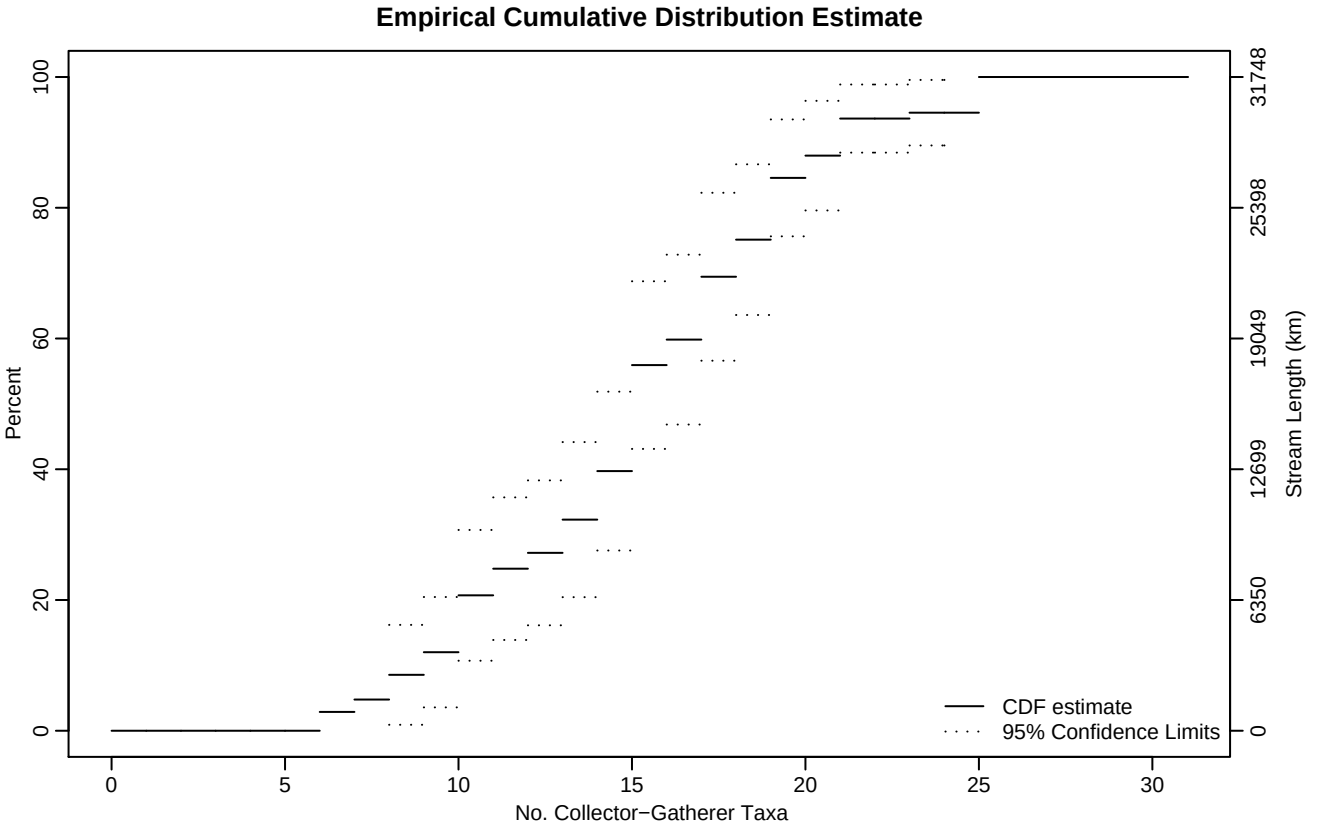


Figure BN−259 Indicator: COGARICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.06	5.20	8.26
10Pct	8.42	5.83	9.64
25Pct	11.09	9.24	13.48
50Pct	14.63	13.69	16.28
75Pct	17.98	16.23	20
90Pct	20.36	18.70	24.69
95Pct	24.08	20.38	24.98
Mean	15.18	14.04	16.32
Std Dev	4.49	3.85	5.12

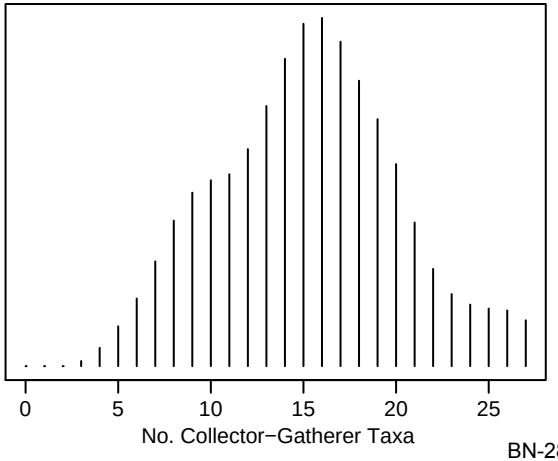
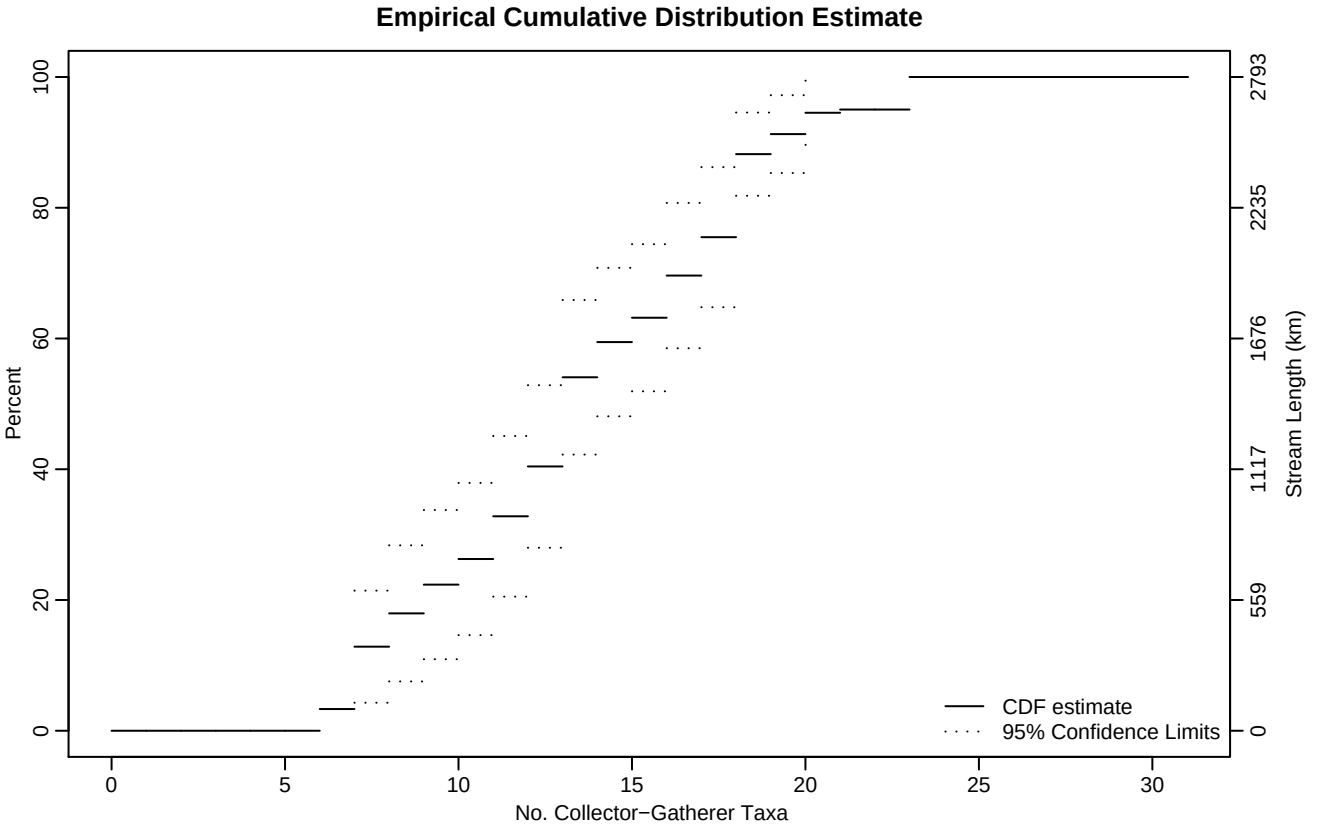


Figure BN−260 Indicator: COGARICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.18	5.29	6.60
10Pct	6.70	6.27	7.25
25Pct	9.68	7.14	11.47
50Pct	12.70	11.64	14.77
75Pct	16.92	15.13	17.83
90Pct	18.59	17.64	22.26
95Pct	20.96	18.63	22.97
Mean	13.58	12.45	14.71
Std Dev	4.46	3.87	5.05

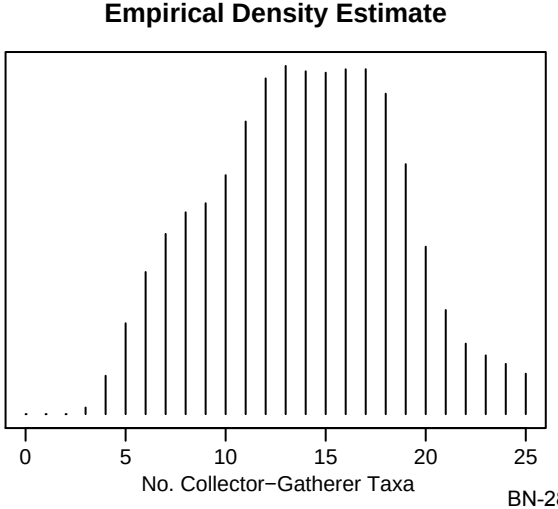
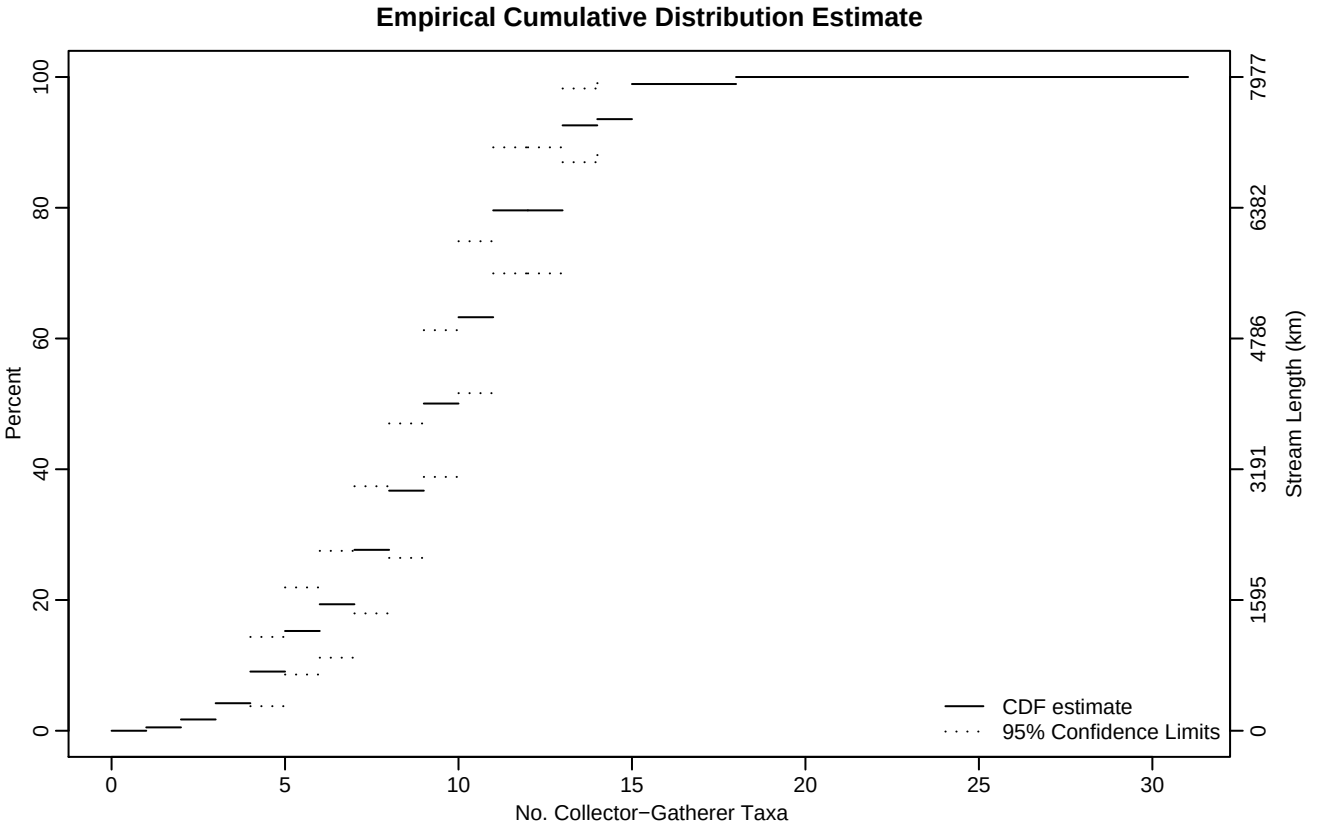


Figure BN−261 Indicator: COGARICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.16	1.56	3.95
10Pct	4.15	3.10	5.01
25Pct	6.68	5.36	7.62
50Pct	9	8.20	9.80
75Pct	10.72	9.98	12.57
90Pct	12.80	12.05	17.79
95Pct	14.27	12.76	18
Mean	9.30	8.63	9.97
Std Dev	3.22	2.77	3.67

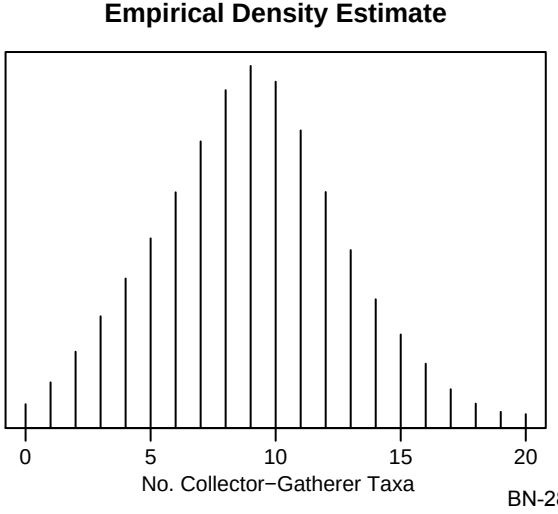
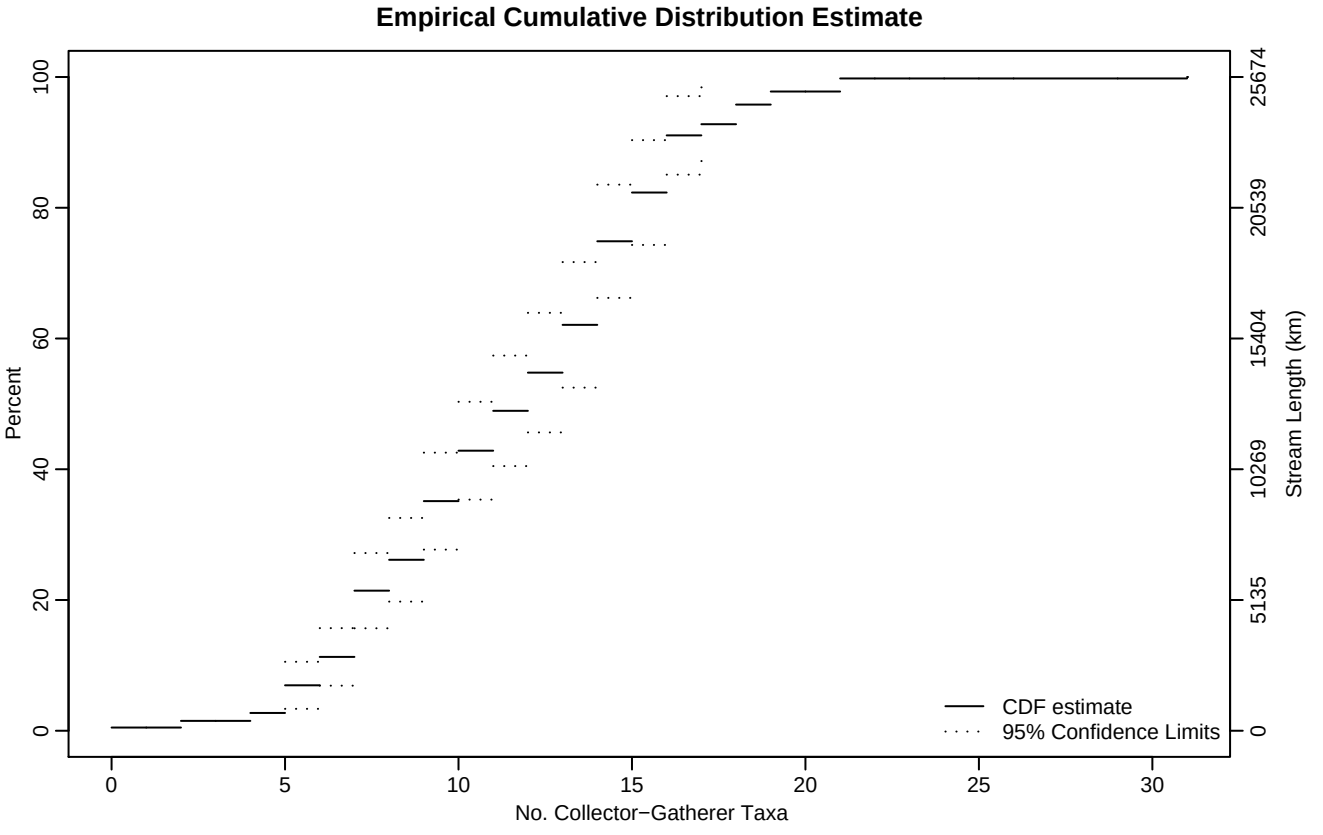


Figure BN−262 Indicator: COGARICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.54	4.05	5.02
10Pct	5.70	4.86	6.23
25Pct	7.76	6.78	8.52
50Pct	11.18	9.82	12.52
75Pct	14.02	13.32	15.17
90Pct	15.88	14.93	20.19
95Pct	17.74	15.82	31
Mean	11.54	10.88	12.19
Std Dev	3.92	3.50	4.35

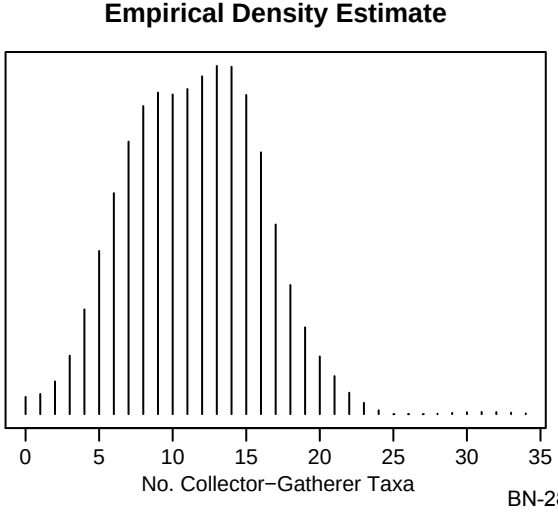
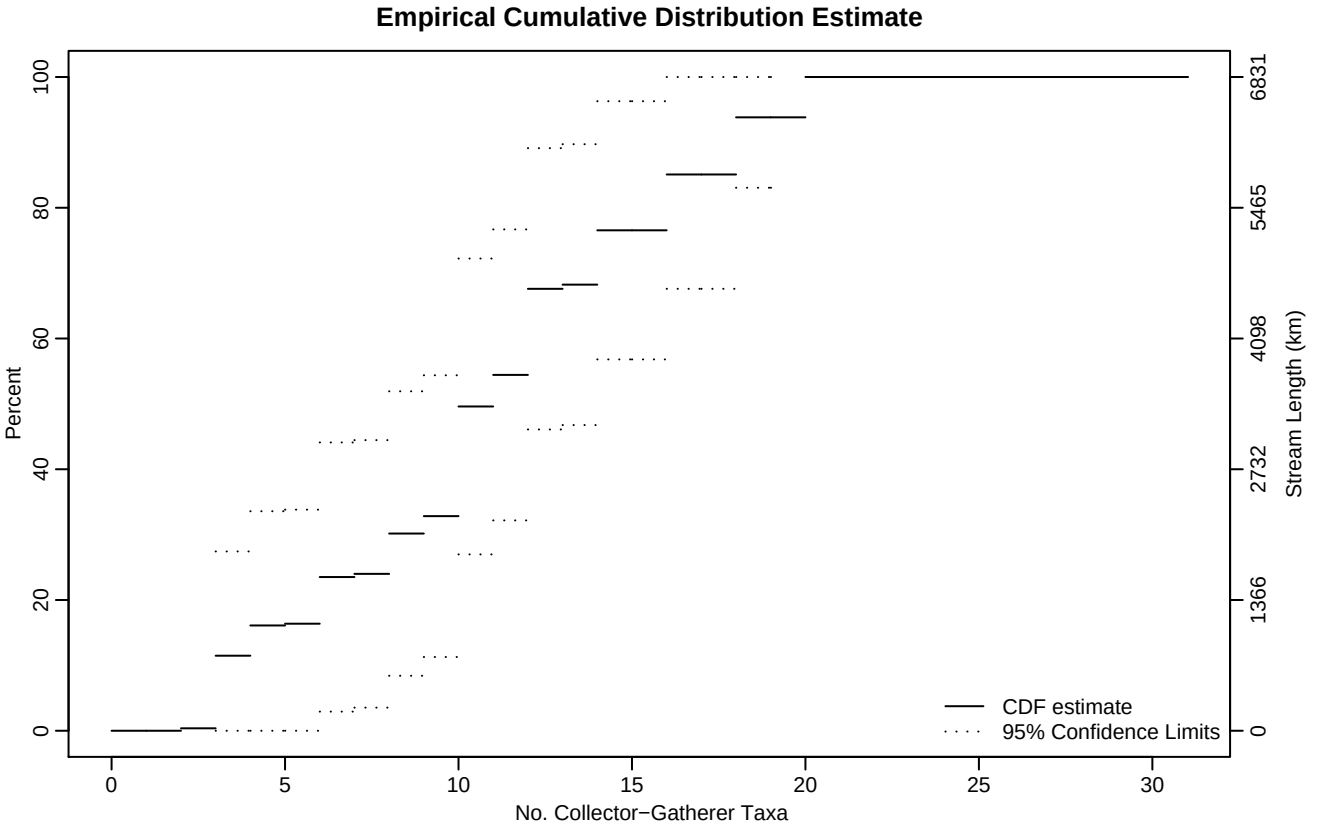


Figure BN−263 Indicator: COGARICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.42	2.30	2.53
10Pct	2.87	2.66	3.18
25Pct	7.16	2.38	9.75
50Pct	10.08	7.55	13.52
75Pct	13.81	10.85	19.40
90Pct	17.56	13.52	20
95Pct	19.19	15.90	20
Mean	10.94	8.58	13.31
Std Dev	4.98	3.76	6.20

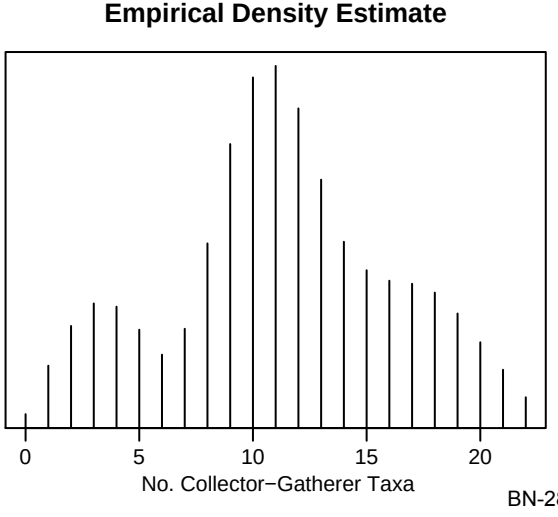
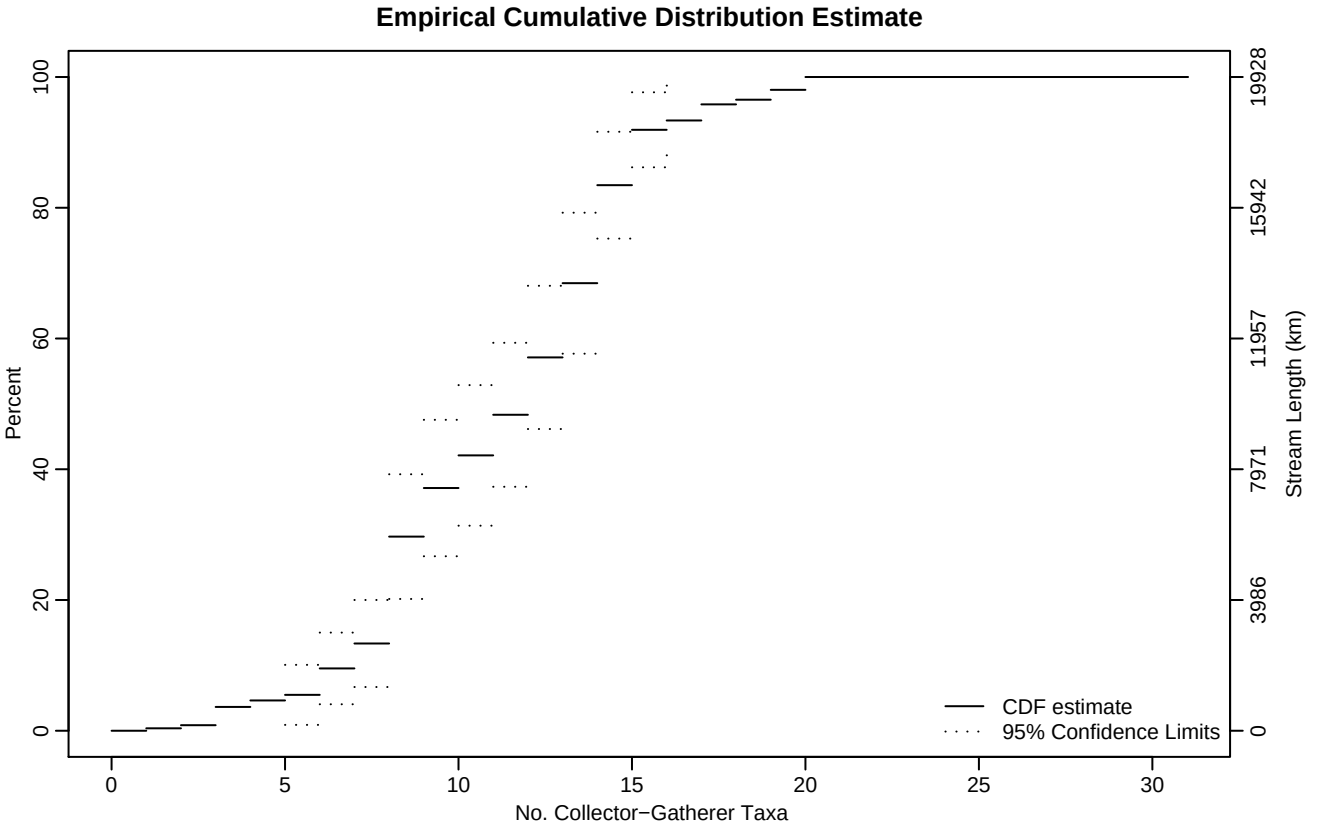


Figure BN−264 Indicator: COGARICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.43	1.56	5.96
10Pct	6.12	3.89	7.13
25Pct	7.71	7.30	8.28
50Pct	11.19	9.30	12.38
75Pct	13.44	12.60	14.31
90Pct	14.77	13.91	18.88
95Pct	16.67	14.74	20
Mean	11.20	10.45	11.95
Std Dev	3.50	2.98	4.02

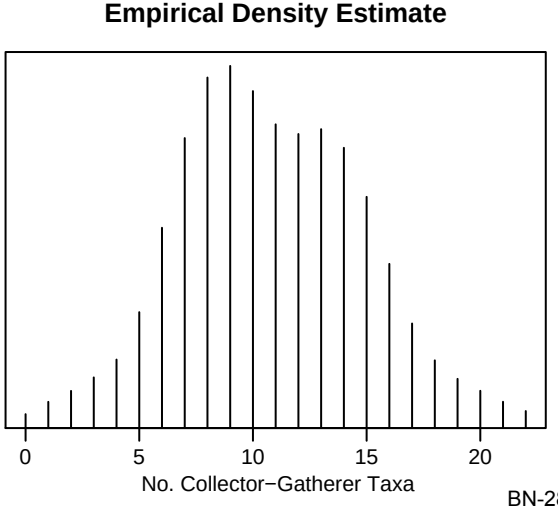
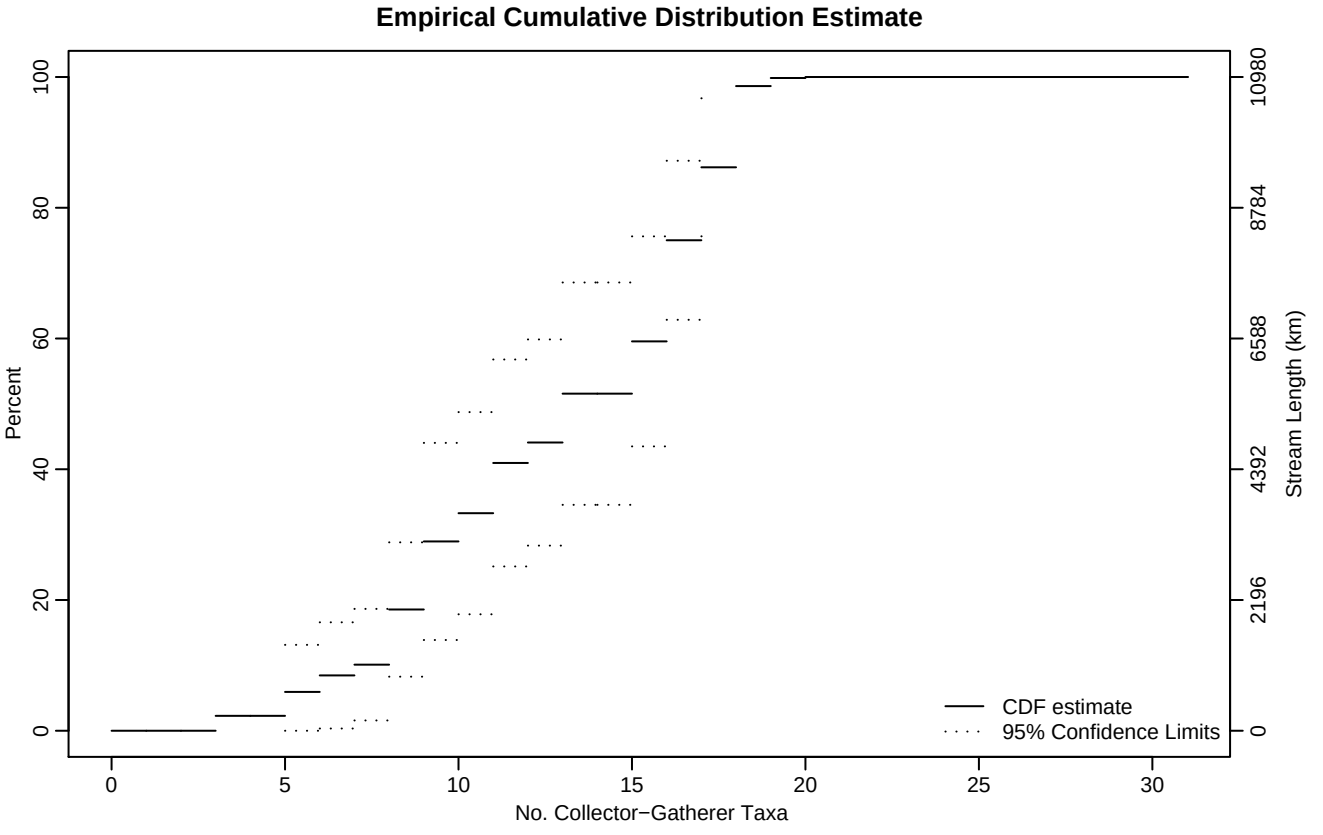


Figure BN−265 Indicator: COGARICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.74	2.49	6.25
10Pct	6.93	2.84	7.95
25Pct	8.62	7.55	10.26
50Pct	12.79	10.15	15.39
75Pct	16	14.90	17.40
90Pct	17.31	16.26	20
95Pct	17.71	16.68	20
Mean	12.83	11.41	14.25
Std Dev	4.03	3.41	4.65

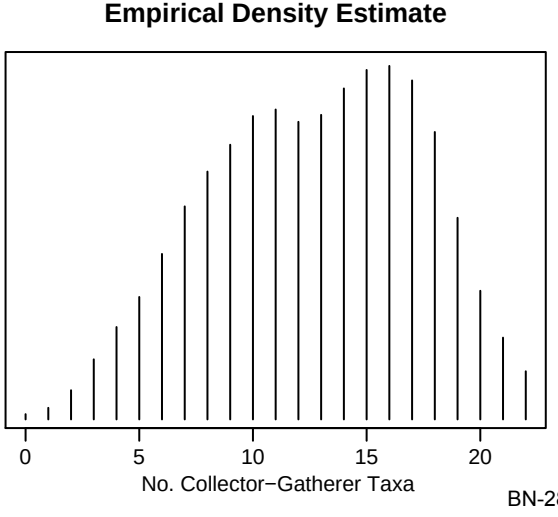
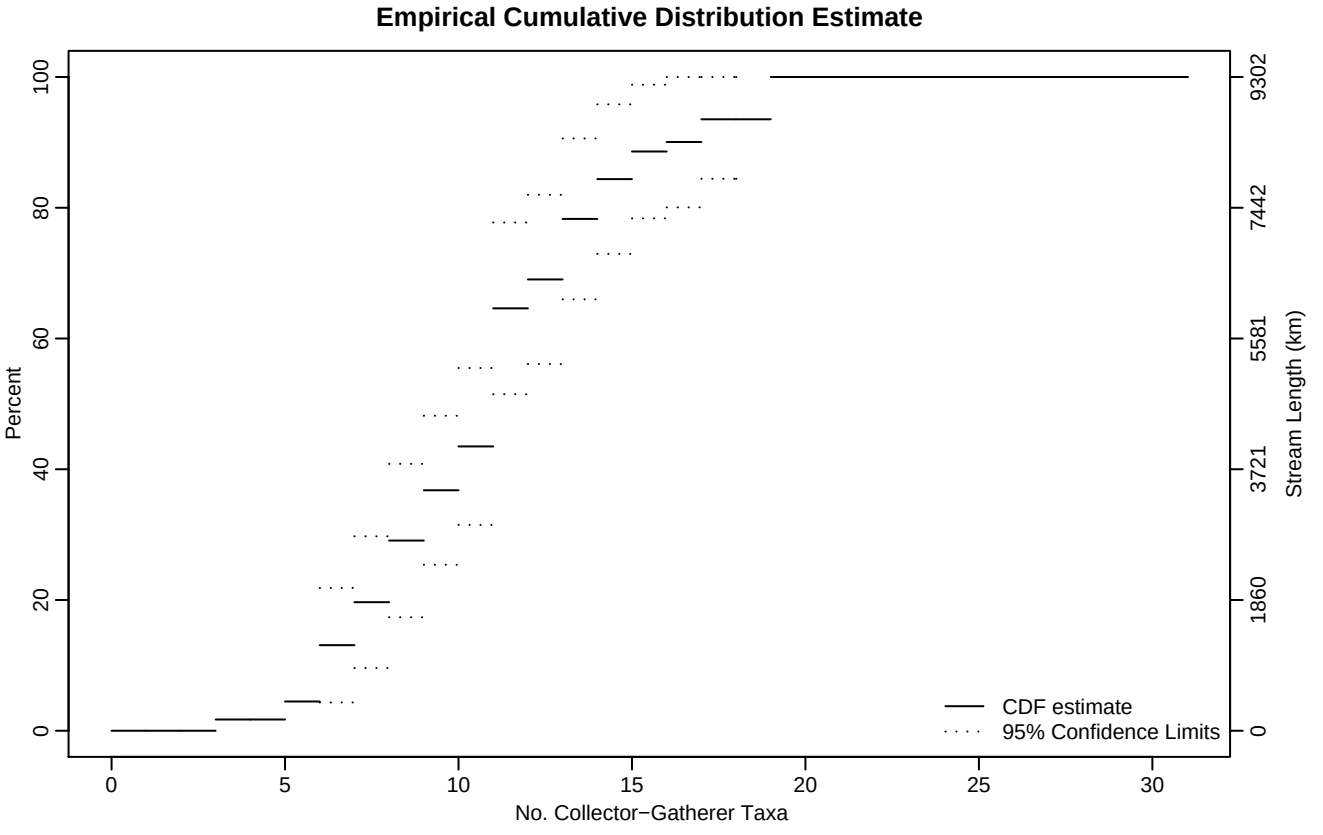


Figure BN−266 Indicator: COGARICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.06	2.07	5.63
10Pct	5.64	5.08	6.27
25Pct	7.57	6.27	8.78
50Pct	10.31	9.18	10.88
75Pct	12.64	10.89	14.80
90Pct	15.96	13.20	19
95Pct	18.23	14.29	19
Mean	10.88	9.90	11.86
Std Dev	3.37	2.84	3.90

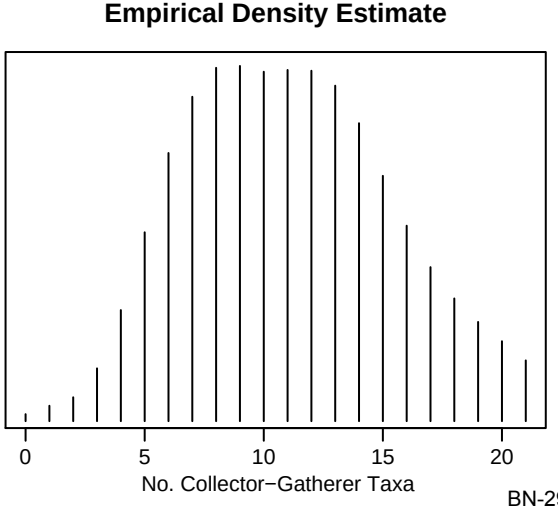
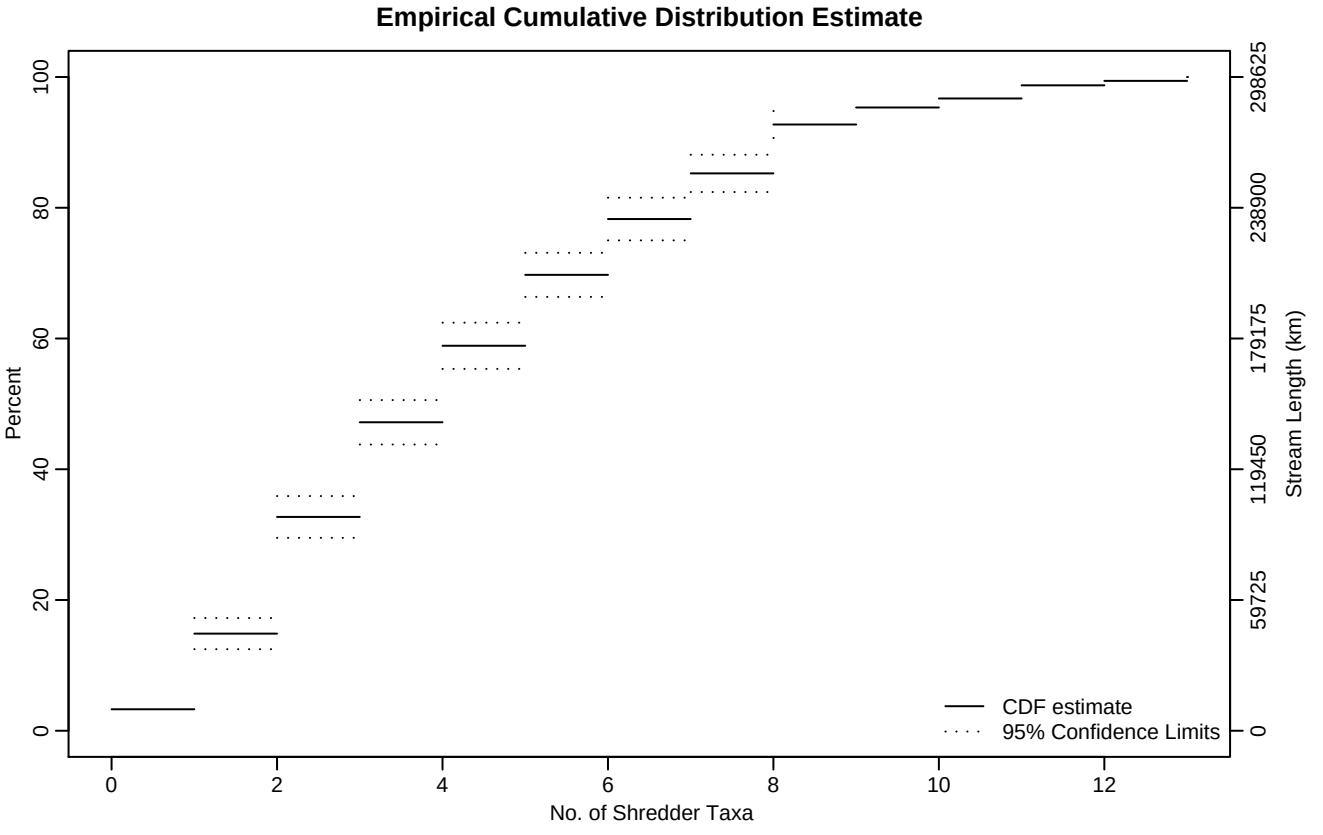


Figure BN−267 Indicator: SHRDRICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.15	0.05	0.24
10Pct	0.58	0.48	0.68
25Pct	1.57	1.43	1.71
50Pct	3.24	2.95	3.55
75Pct	5.62	5.18	6.06
90Pct	7.63	7.22	8.13
95Pct	8.87	8.05	10.22
Mean	4.27	4.08	4.46
Std Dev	2.28	2.15	2.41

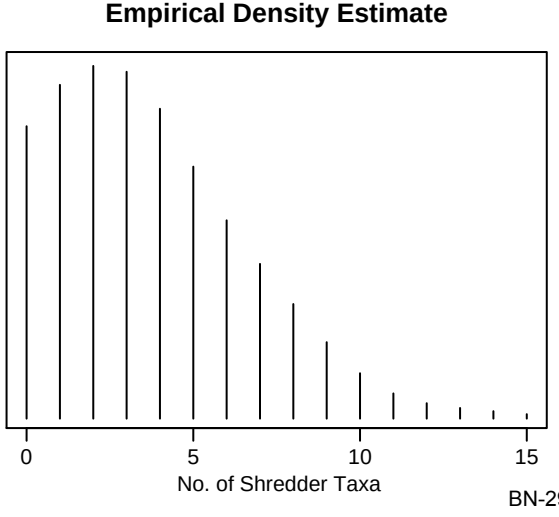
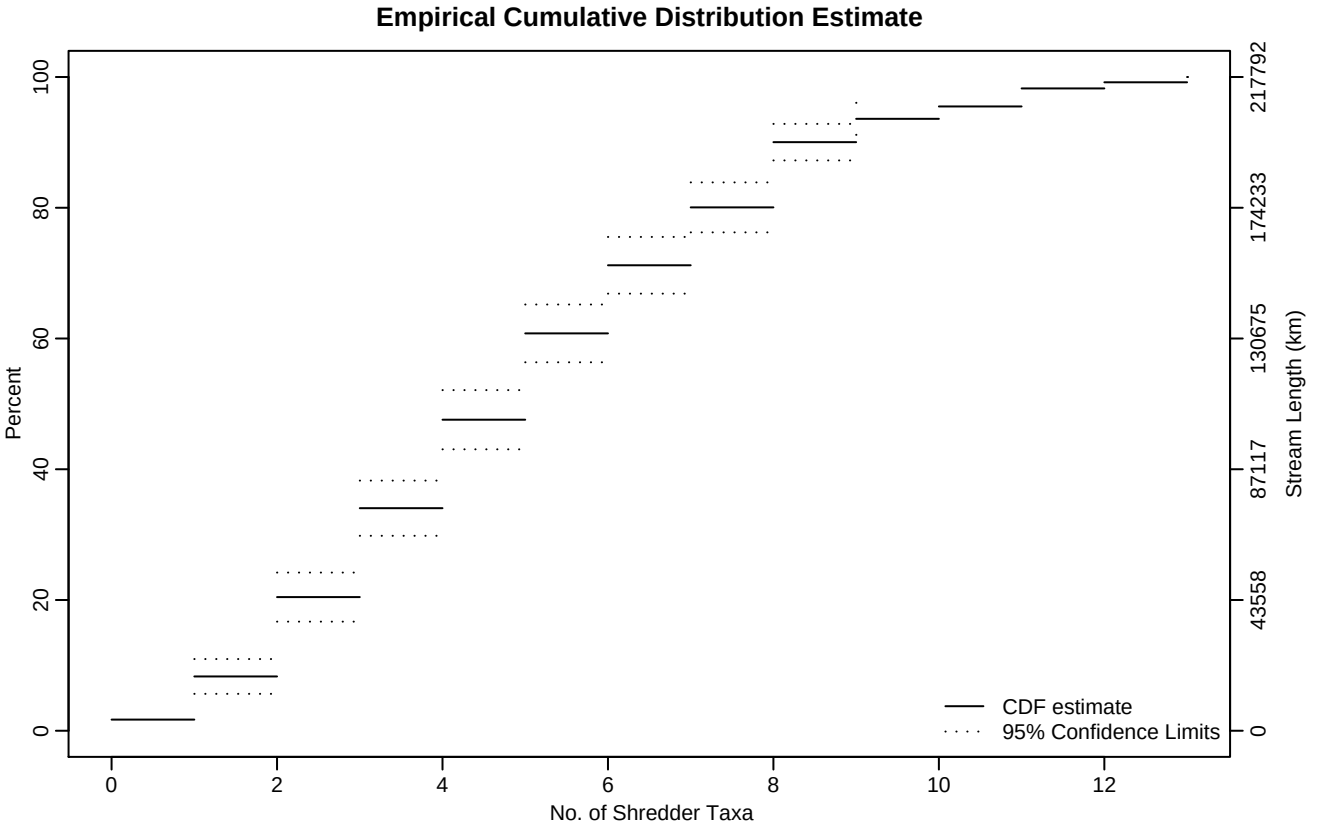


Figure BN−268 Indicator: SHRDRICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.32	0.68
10Pct	1.14	0.85	1.36
25Pct	2.34	2.06	2.61
50Pct	4.18	3.83	4.55
75Pct	6.43	5.92	6.95
90Pct	8	7.58	9.28
95Pct	9.74	8.68	10.73
Mean	4.99	4.75	5.23
Std Dev	2.41	2.25	2.57

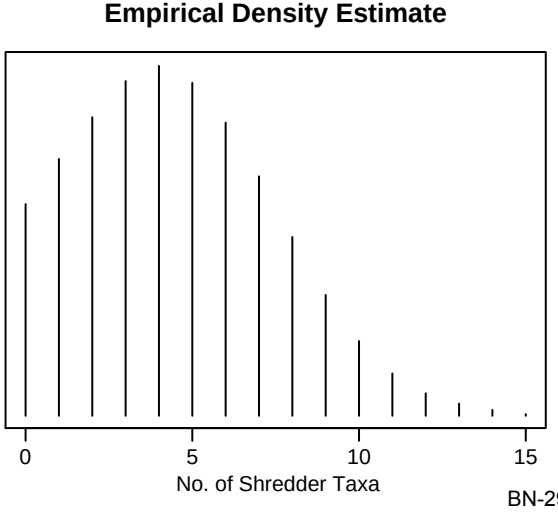
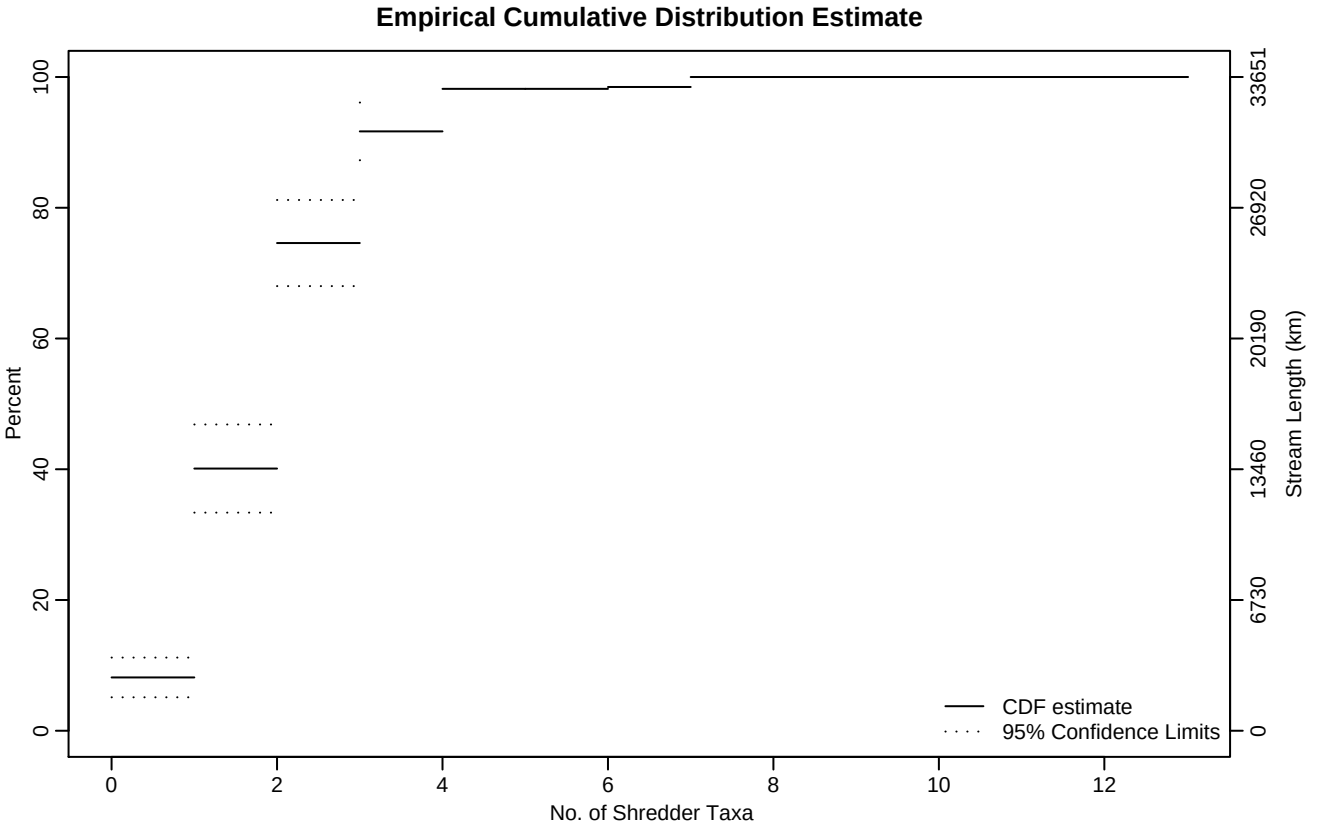


Figure BN−269 Indicator: SHRDRICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.06	0	0.16
25Pct	0.53	0.42	0.63
50Pct	1.29	1.09	1.49
75Pct	2.02	1.82	2.41
90Pct	2.90	2.51	3.77
95Pct	3.51	2.92	6.75
Mean	1.91	1.73	2.08
Std Dev	1.15	0.96	1.33

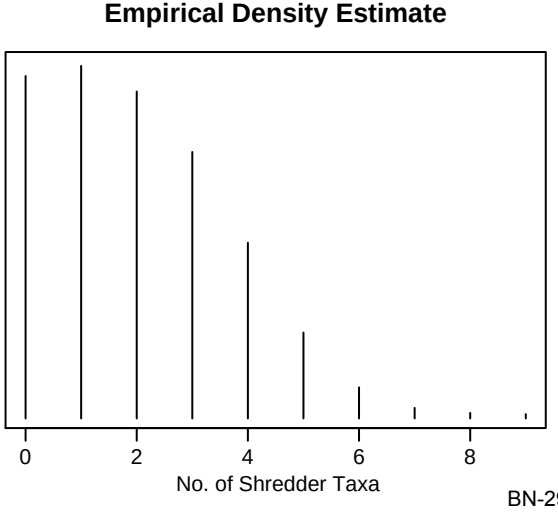
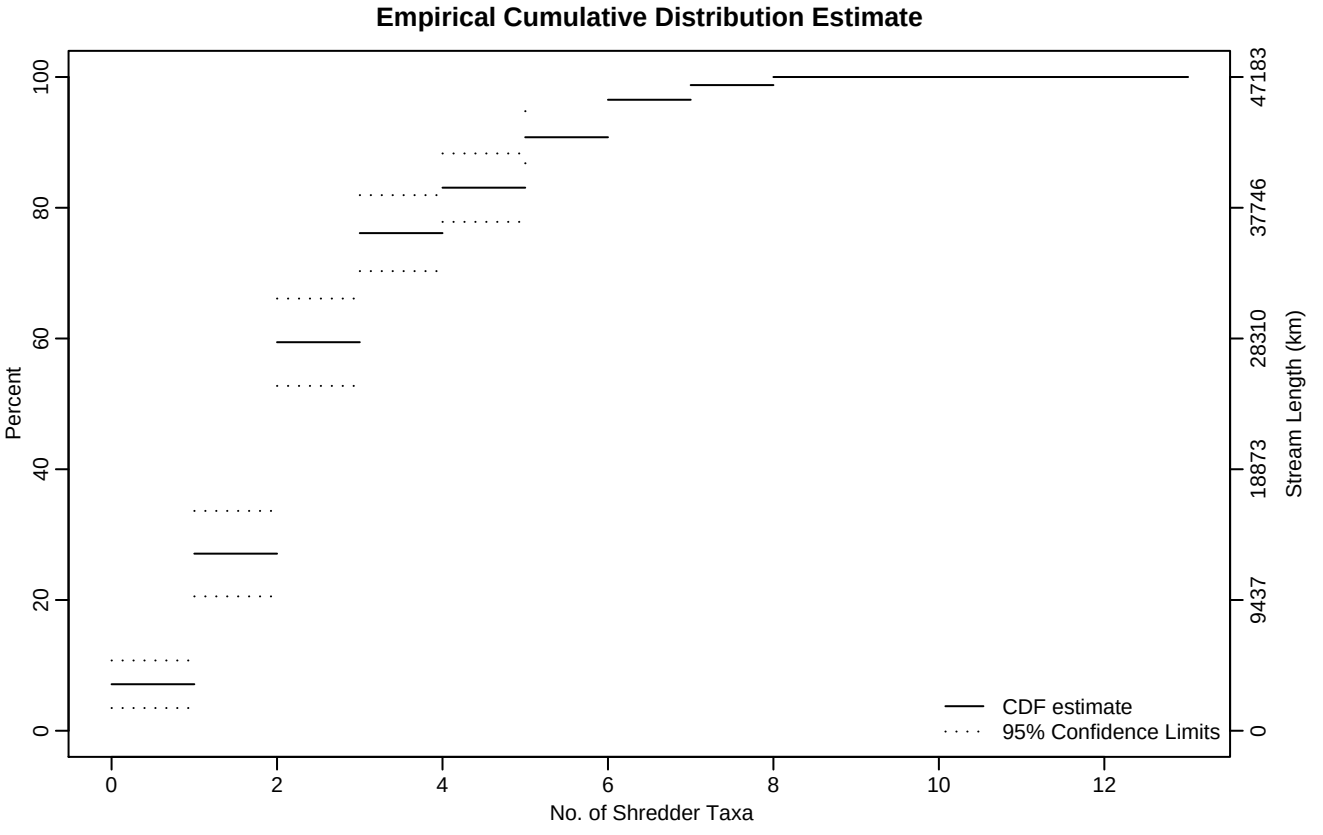


Figure BN−270 Indicator: SHRDRICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.08
10Pct	0.14	0	0.33
25Pct	0.90	0.71	1.05
50Pct	1.71	1.51	1.91
75Pct	2.93	2.53	3.81
90Pct	4.90	4.23	5.76
95Pct	5.73	5.04	7.17
Mean	2.61	2.35	2.87
Std Dev	1.53	1.40	1.66

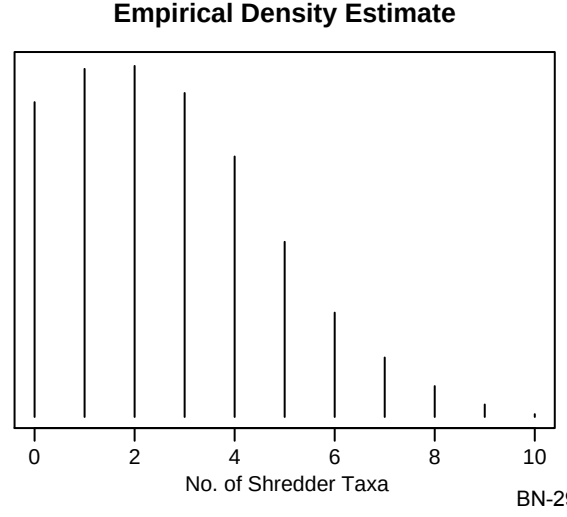
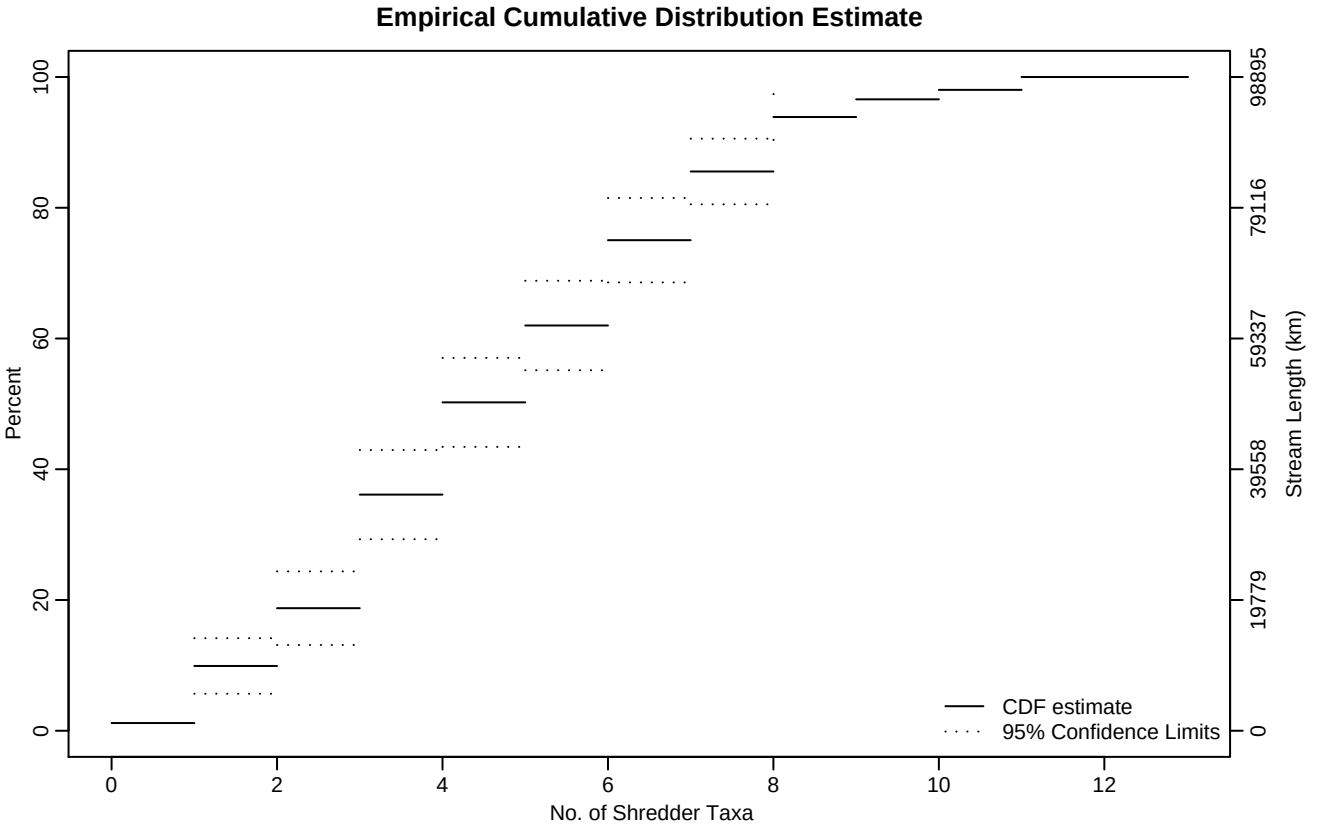


Figure BN−271 Indicator: SHRDRICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.44	0.29	0.59
10Pct	1.01	0.52	1.49
25Pct	2.36	2.03	2.69
50Pct	3.98	3.47	4.60
75Pct	6	5.43	6.70
90Pct	7.53	6.91	8.57
95Pct	8.41	7.70	10.28
Mean	4.73	4.40	5.05
Std Dev	2.18	1.92	2.43

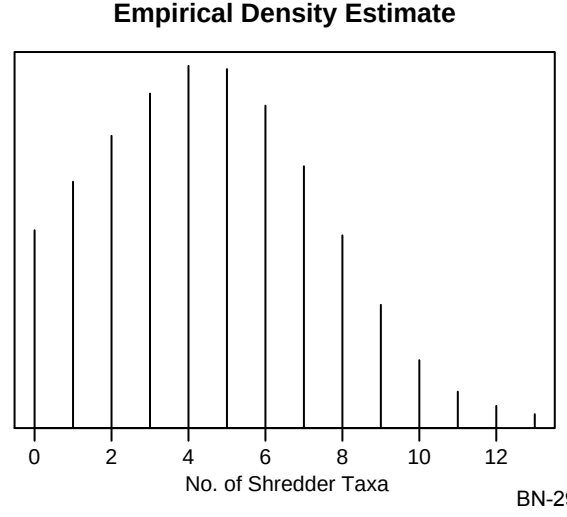
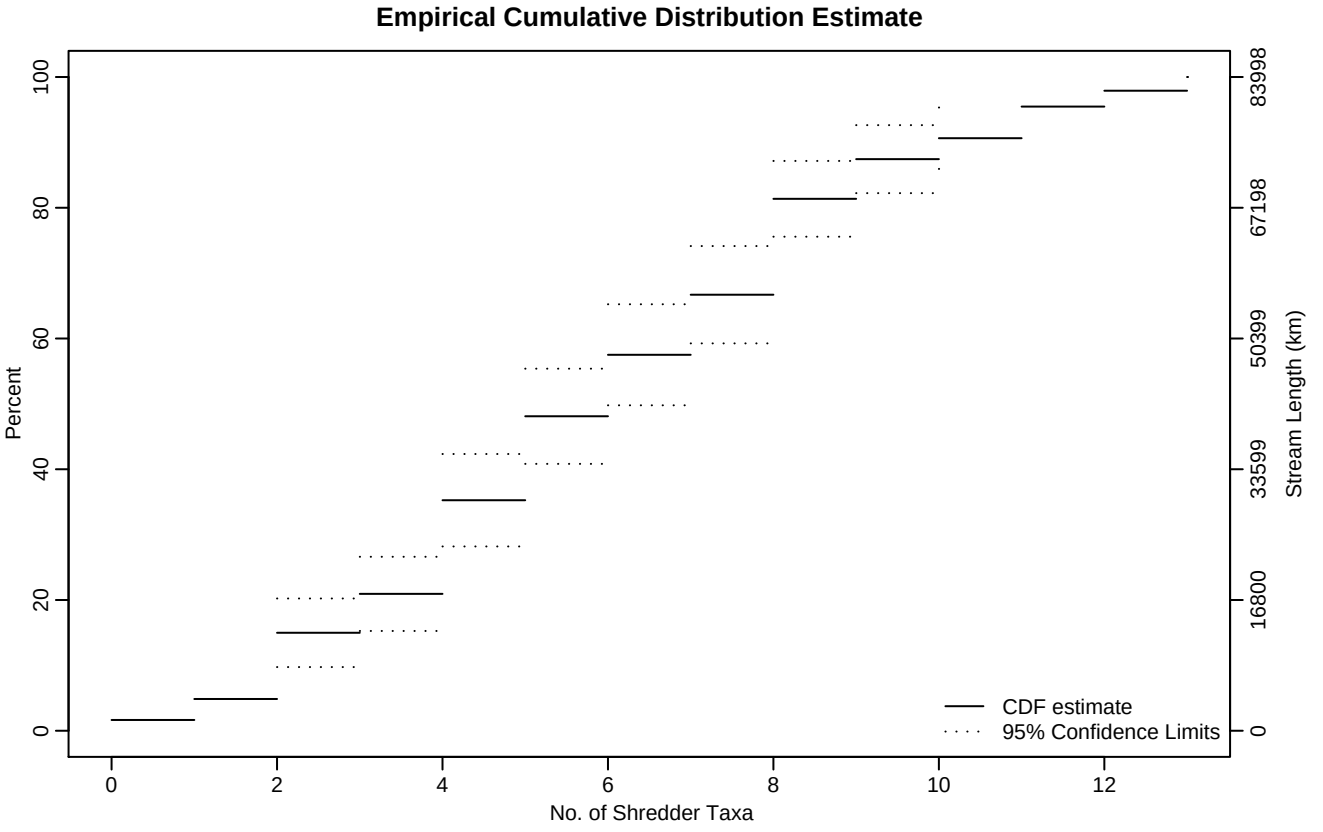


Figure BN−272 Indicator: SHRDRICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.01	0	1.38
10Pct	1.51	1.14	1.88
25Pct	3.28	2.71	3.69
50Pct	5.20	4.57	5.99
75Pct	7.57	7.03	8.24
90Pct	9.80	8.53	10.99
95Pct	10.90	9.84	12.94
Mean	5.97	5.52	6.43
Std Dev	2.88	2.62	3.13

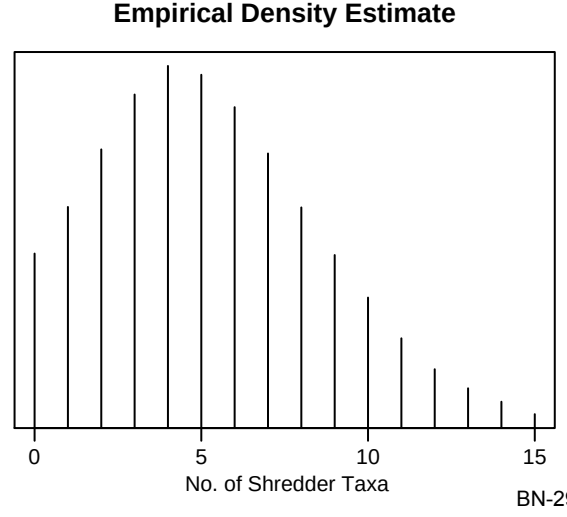
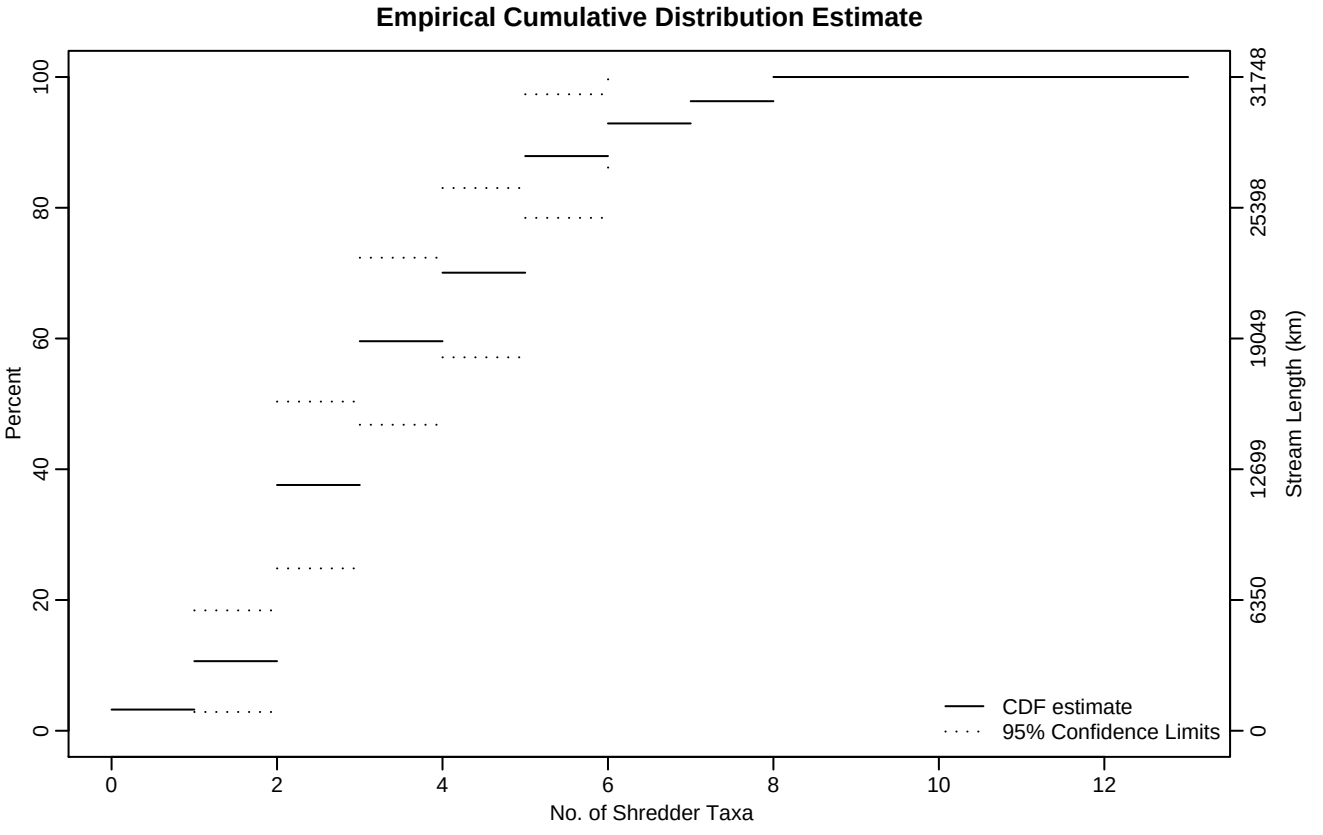


Figure BN−273 Indicator: SHRDRICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.24	0	0.78
10Pct	0.91	0.36	1.13
25Pct	1.53	1.23	1.84
50Pct	2.56	1.97	3.34
75Pct	4.28	3.22	5.04
90Pct	5.42	4.57	7.95
95Pct	6.62	4.98	8
Mean	3.42	2.90	3.93
Std Dev	1.81	1.54	2.08

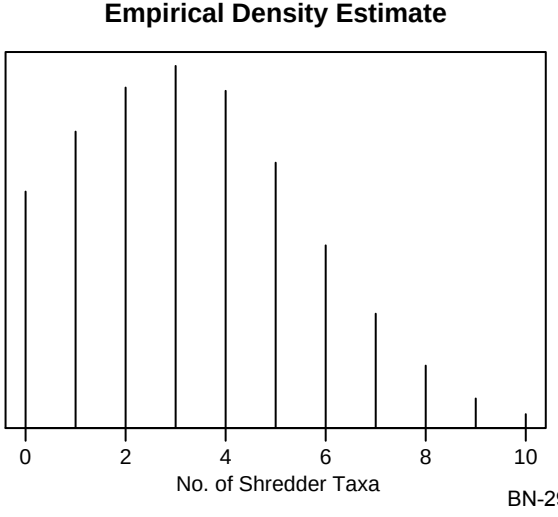
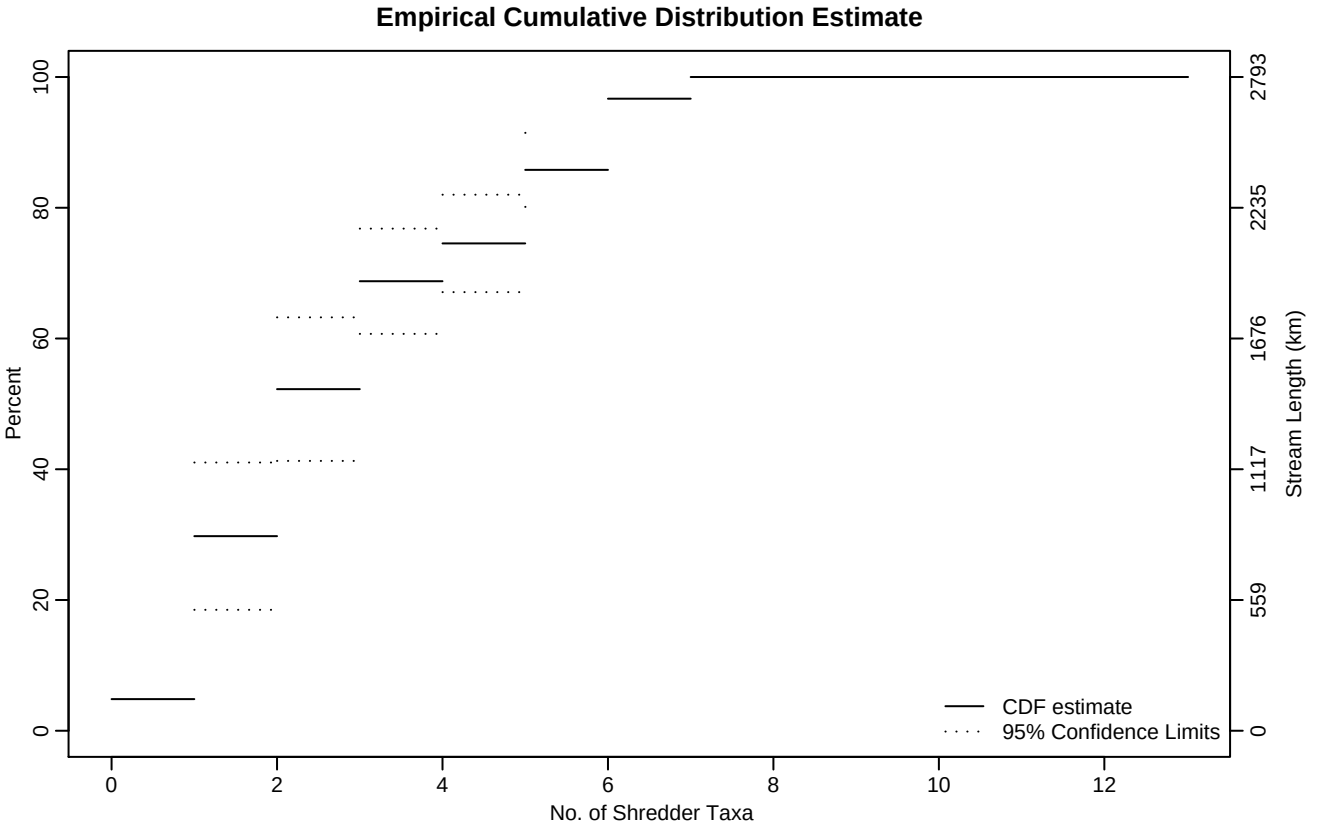


Figure BN−274 Indicator: SHRDRICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.26
10Pct	0.21	0	0.46
25Pct	0.81	0.55	1.07
50Pct	1.90	1.40	2.54
75Pct	4.04	2.91	4.73
90Pct	5.39	4.87	5.90
95Pct	5.85	5.34	7
Mean	2.87	2.53	3.22
Std Dev	1.70	1.46	1.94

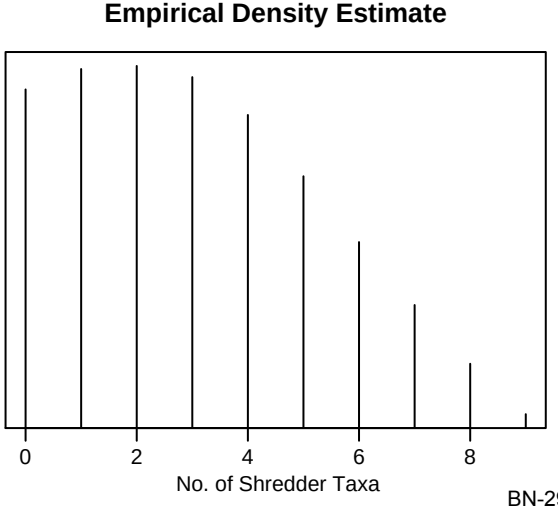
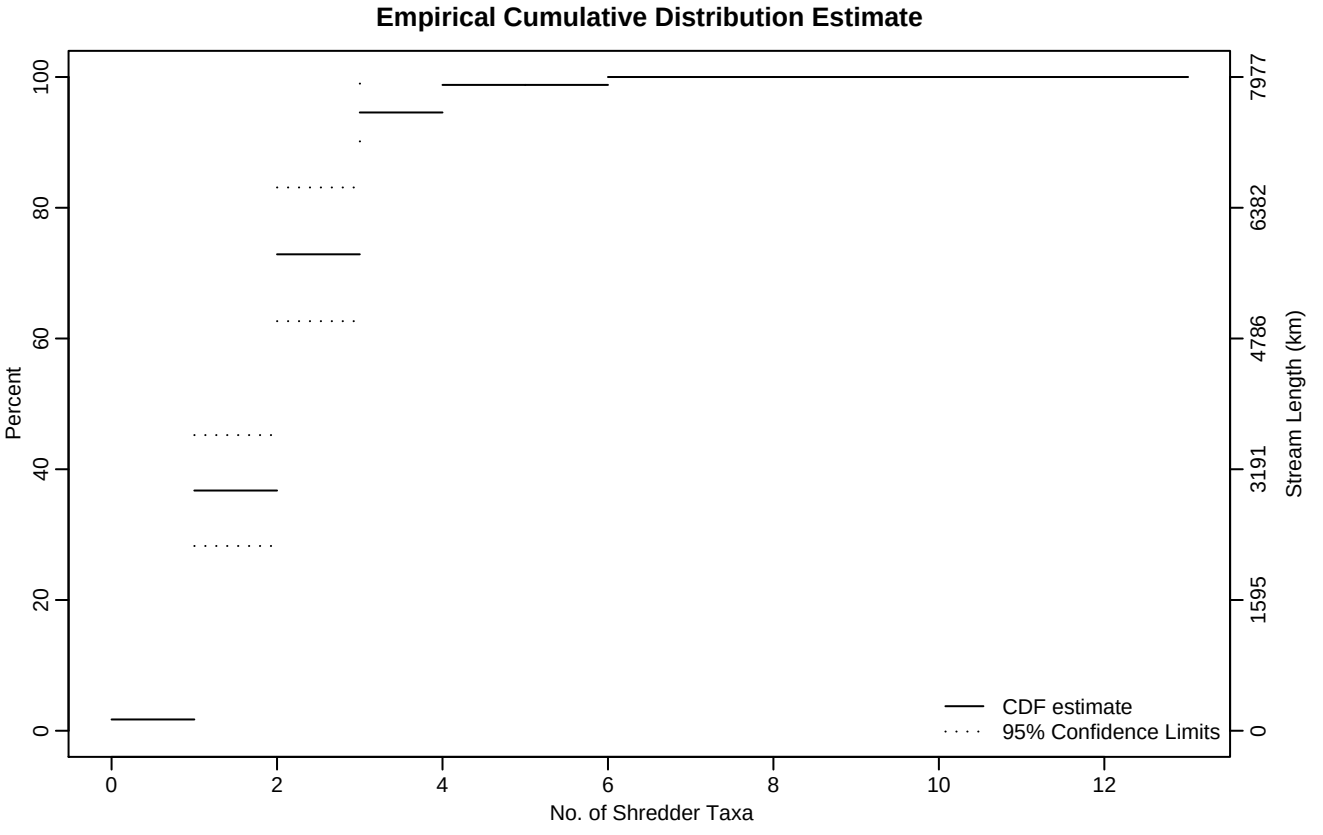


Figure BN−275 Indicator: SHRDRICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.03	0.16
10Pct	0.24	0.17	0.30
25Pct	0.66	0.58	0.75
50Pct	1.37	1.13	1.60
75Pct	2.10	1.78	2.57
90Pct	2.79	2.31	6
95Pct	3.10	2.81	5.56
Mean	1.97	1.77	2.16
Std Dev	0.95	0.80	1.11

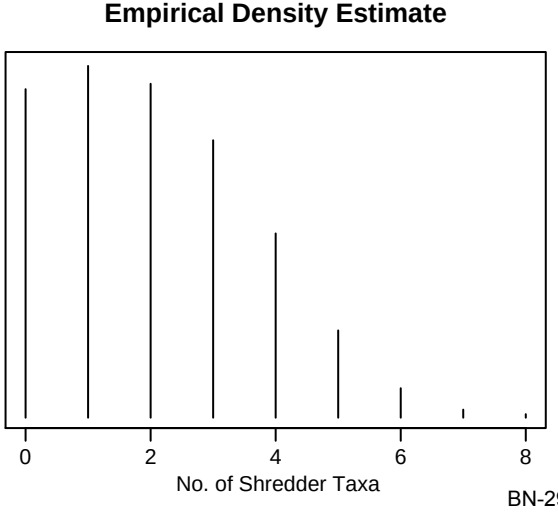
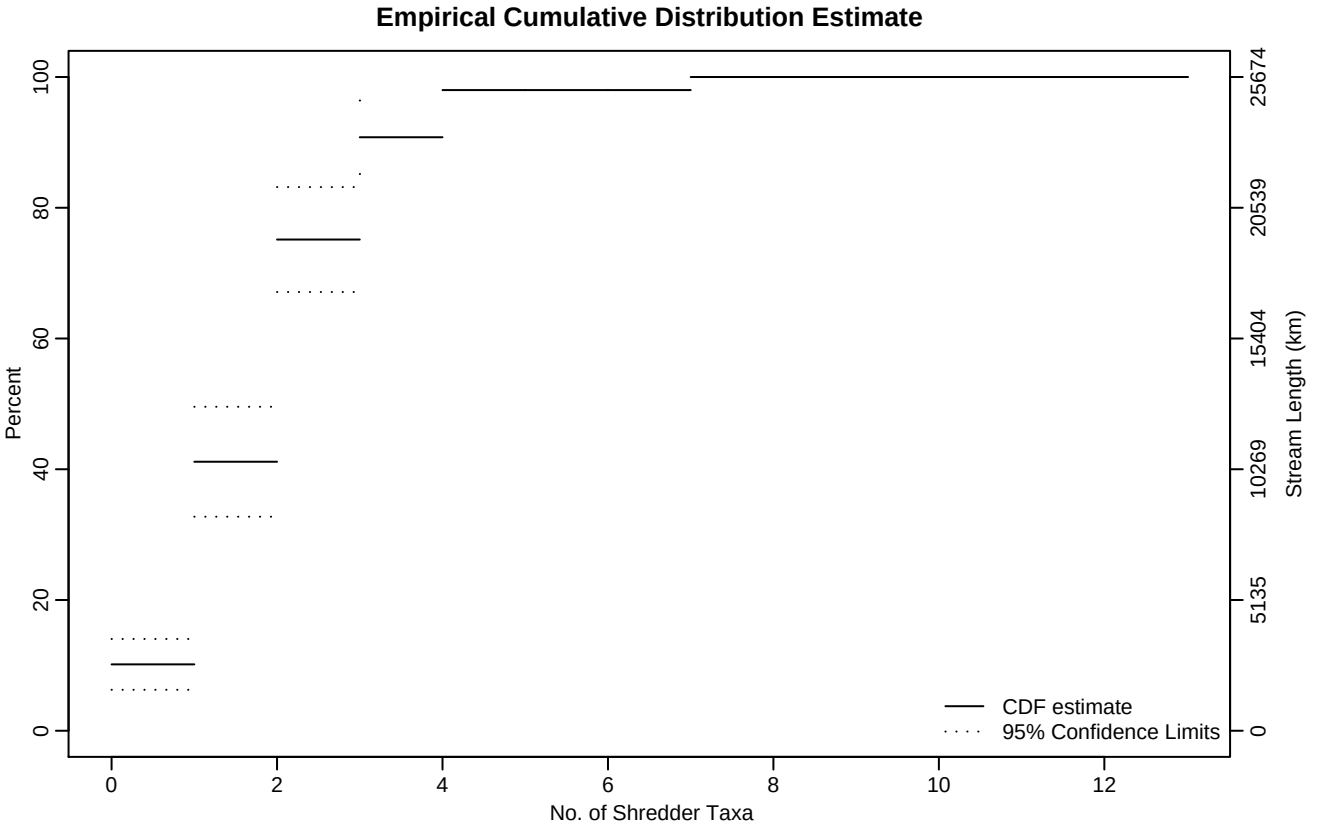


Figure BN−276 Indicator: SHRDRICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.12
25Pct	0.48	0.34	0.62
50Pct	1.26	1.01	1.51
75Pct	2	1.73	2.57
90Pct	2.95	2.43	6.08
95Pct	3.58	2.89	7
Mean	1.89	1.66	2.11
Std Dev	1.18	0.94	1.43

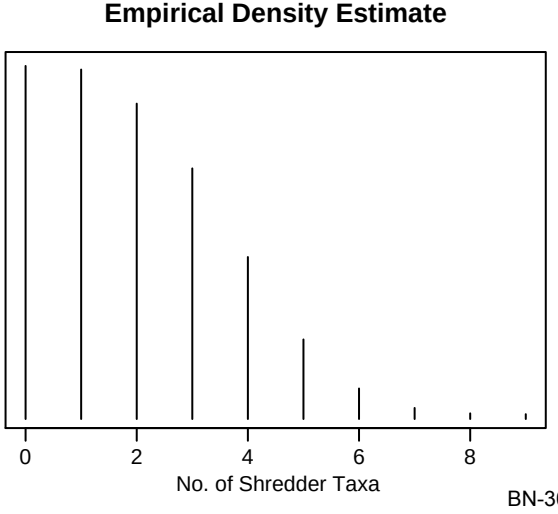
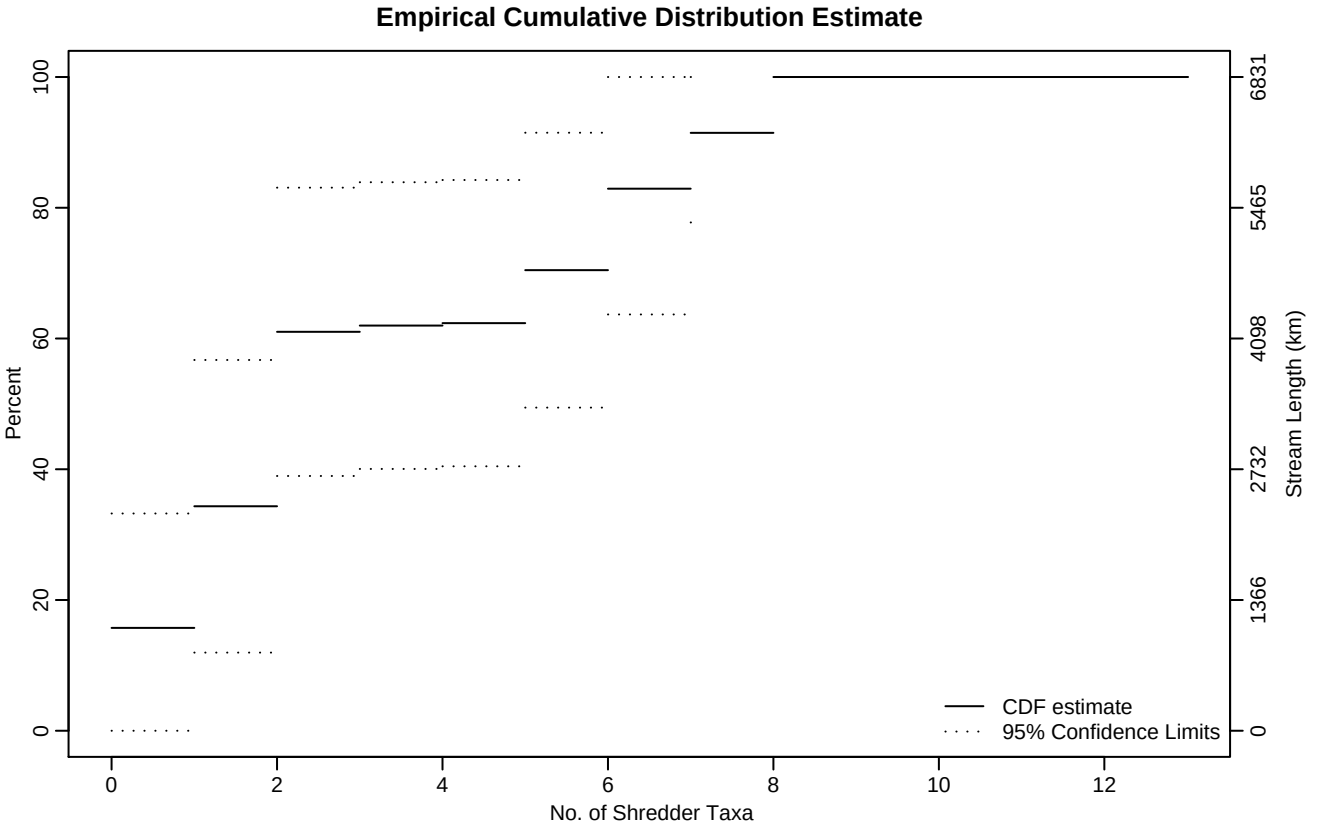


Figure BN−277 Indicator: SHRDRICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.43
10Pct	0	0	0.67
25Pct	0.50	0	1.27
50Pct	1.59	0.63	5.17
75Pct	5.36	1.74	7.52
90Pct	6.83	5.01	8
95Pct	7.41	5.87	8
Mean	3.20	1.91	4.48
Std Dev	2.71	2.12	3.30

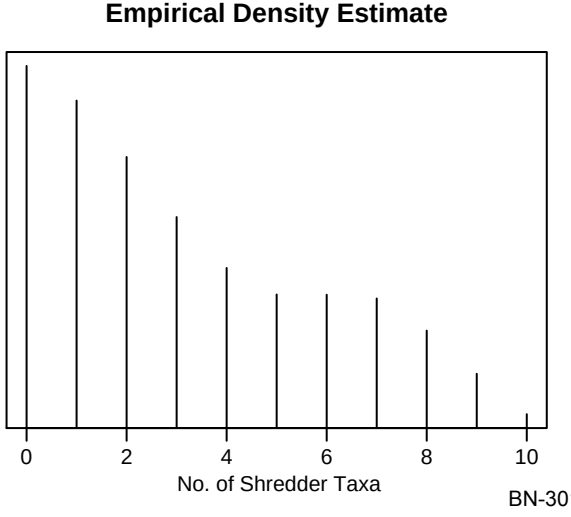
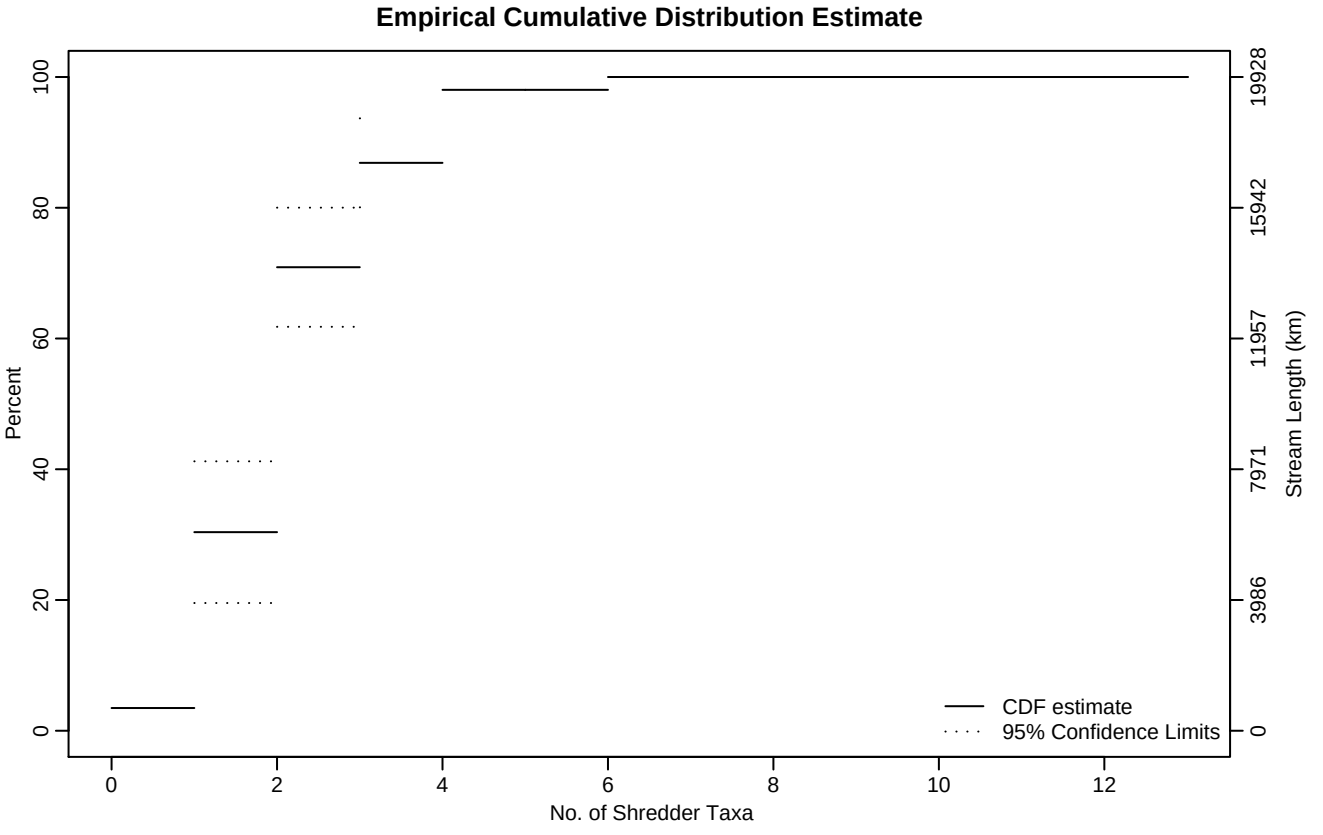


Figure BN−278 Indicator: SHRDRICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0	0.15
10Pct	0.24	0.15	0.34
25Pct	0.80	0.68	0.92
50Pct	1.48	1.23	1.73
75Pct	2.26	1.87	2.84
90Pct	3.28	2.77	3.89
95Pct	3.73	3.12	6
Mean	2.12	1.88	2.36
Std Dev	0.99	0.81	1.17

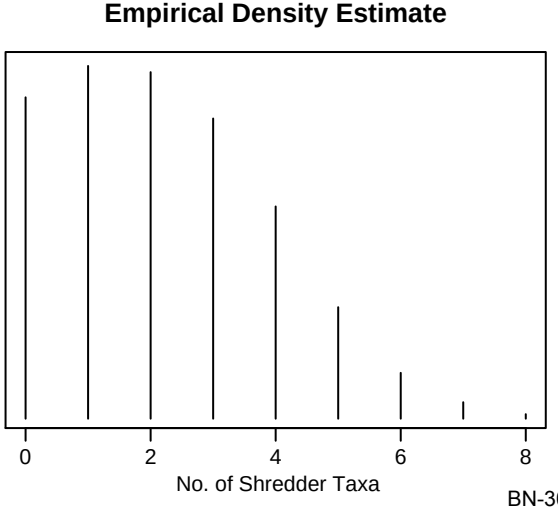
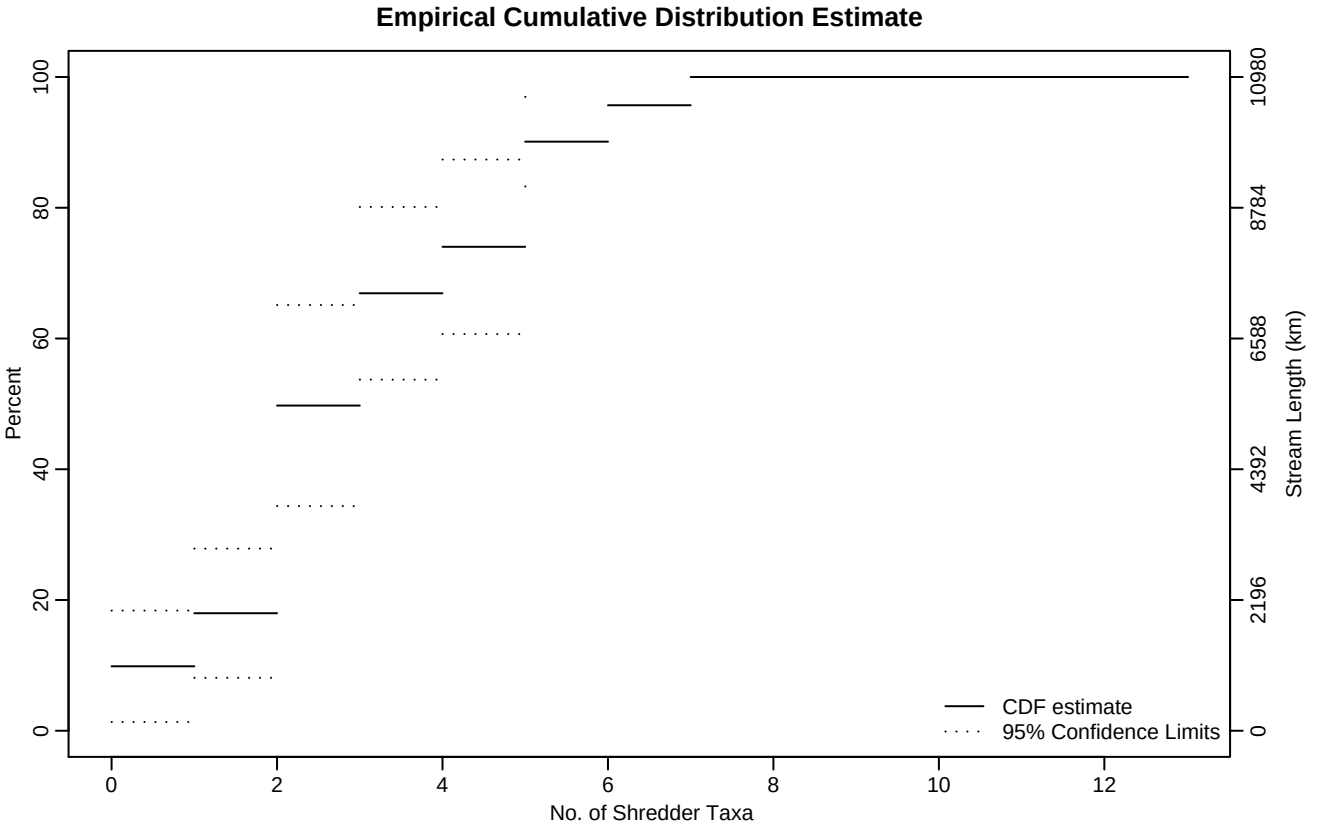


Figure BN−279 Indicator: SHRDRICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.45
10Pct	0.02	0	1.02
25Pct	1.22	0.60	1.55
50Pct	2.02	1.52	2.92
75Pct	4.06	2.68	4.90
90Pct	4.99	4.17	7
95Pct	5.88	4.87	7
Mean	2.96	2.44	3.47
Std Dev	1.71	1.50	1.93

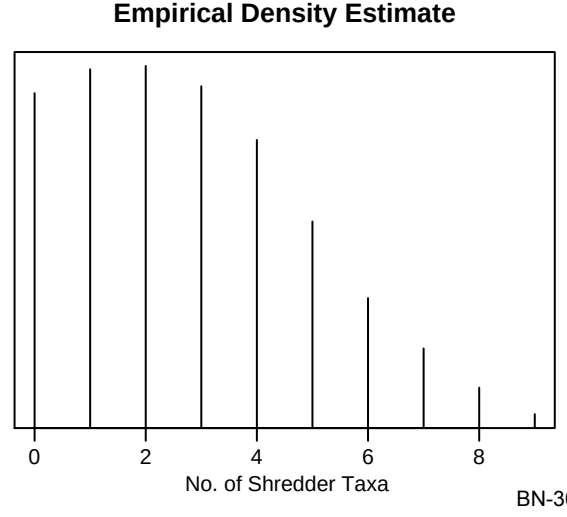
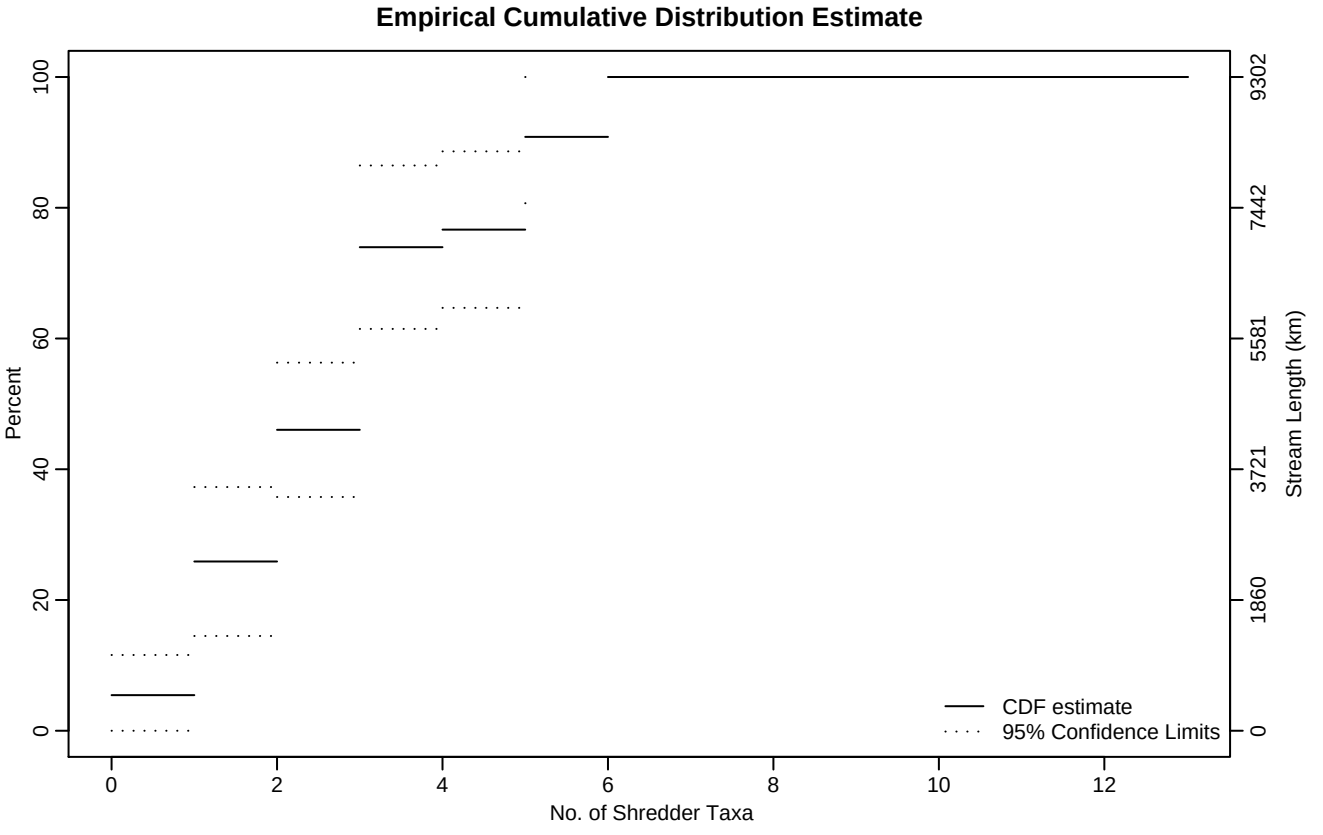


Figure BN−280 Indicator: SHRDRICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.28
10Pct	0.22	0	0.53
25Pct	0.96	0.65	1.26
50Pct	2.14	1.67	2.52
75Pct	3.38	2.57	4.81
90Pct	4.94	4.03	6
95Pct	5.45	4.56	6
Mean	2.81	2.39	3.24
Std Dev	1.43	1.18	1.67

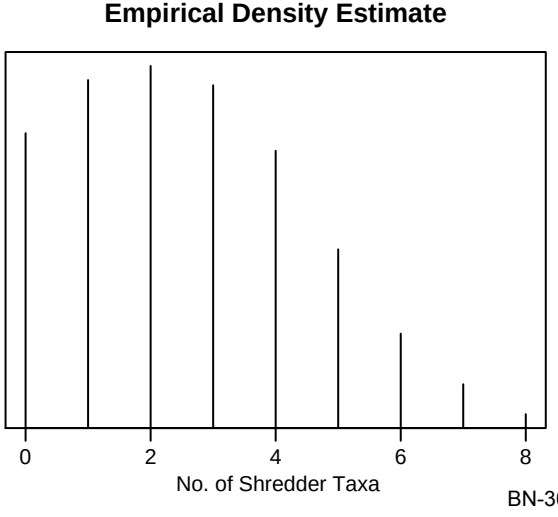
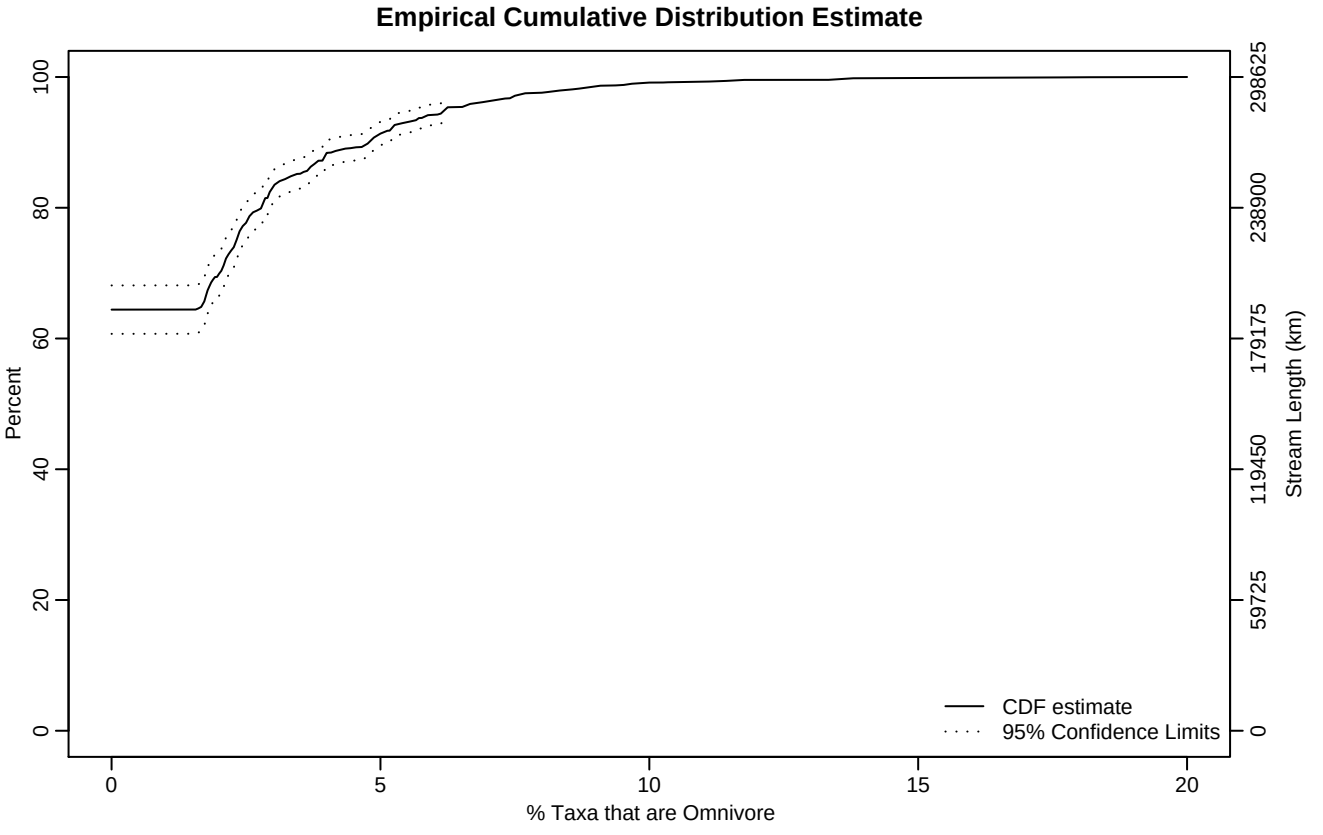


Figure BN−281 Indicator: OMNIPTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	2.32	2.11	2.53
90Pct	4.79	3.97	5.19
95Pct	6.20	5.67	7.22
Mean	1.40	1.24	1.56
Std Dev	2.17	1.99	2.34

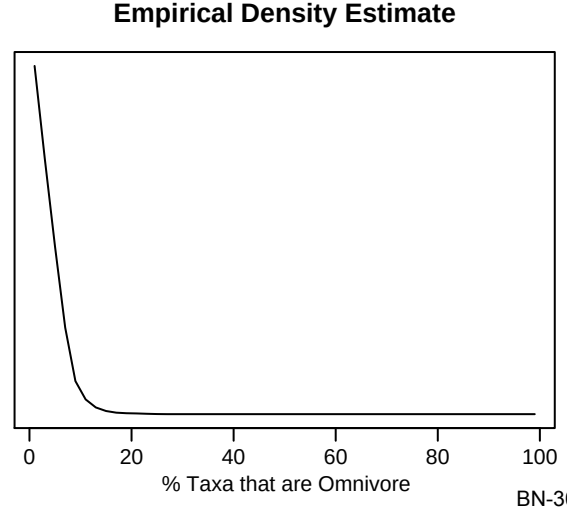
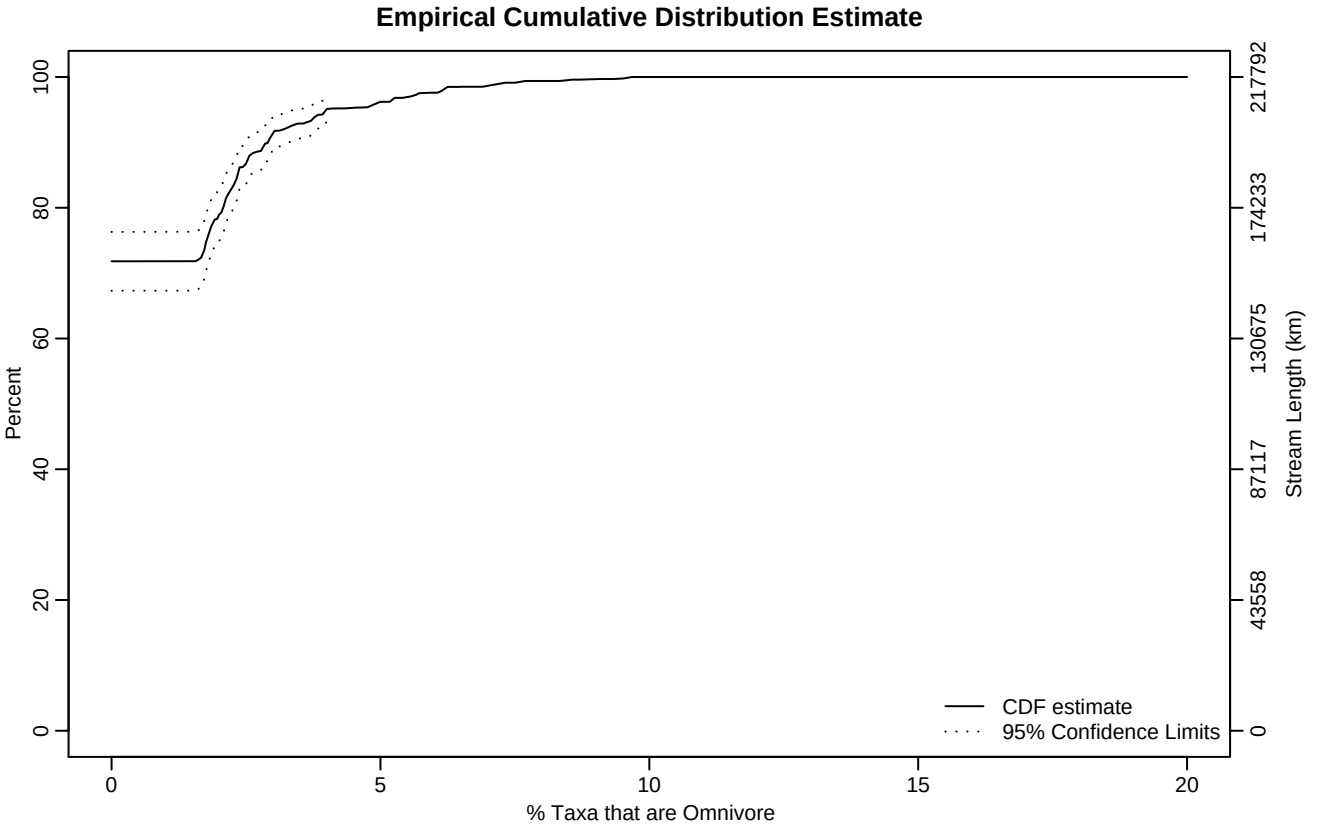


Figure BN−282 Indicator: OMNIPTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	1.77	0	2.04
90Pct	2.91	2.52	3.42
95Pct	3.99	3.58	5.59
Mean	0.88	0.72	1.03
Std Dev	1.51	1.35	1.67

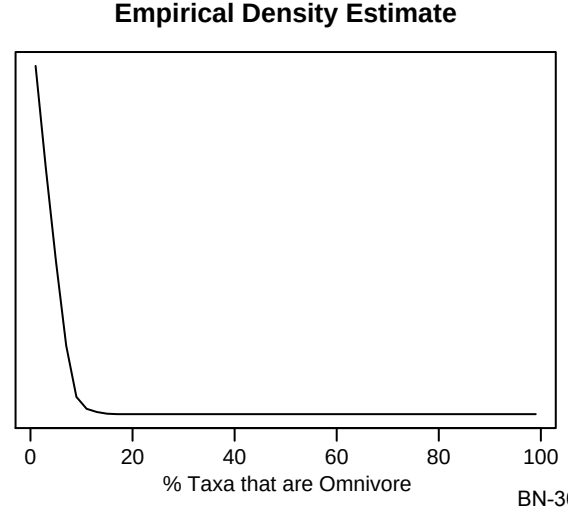
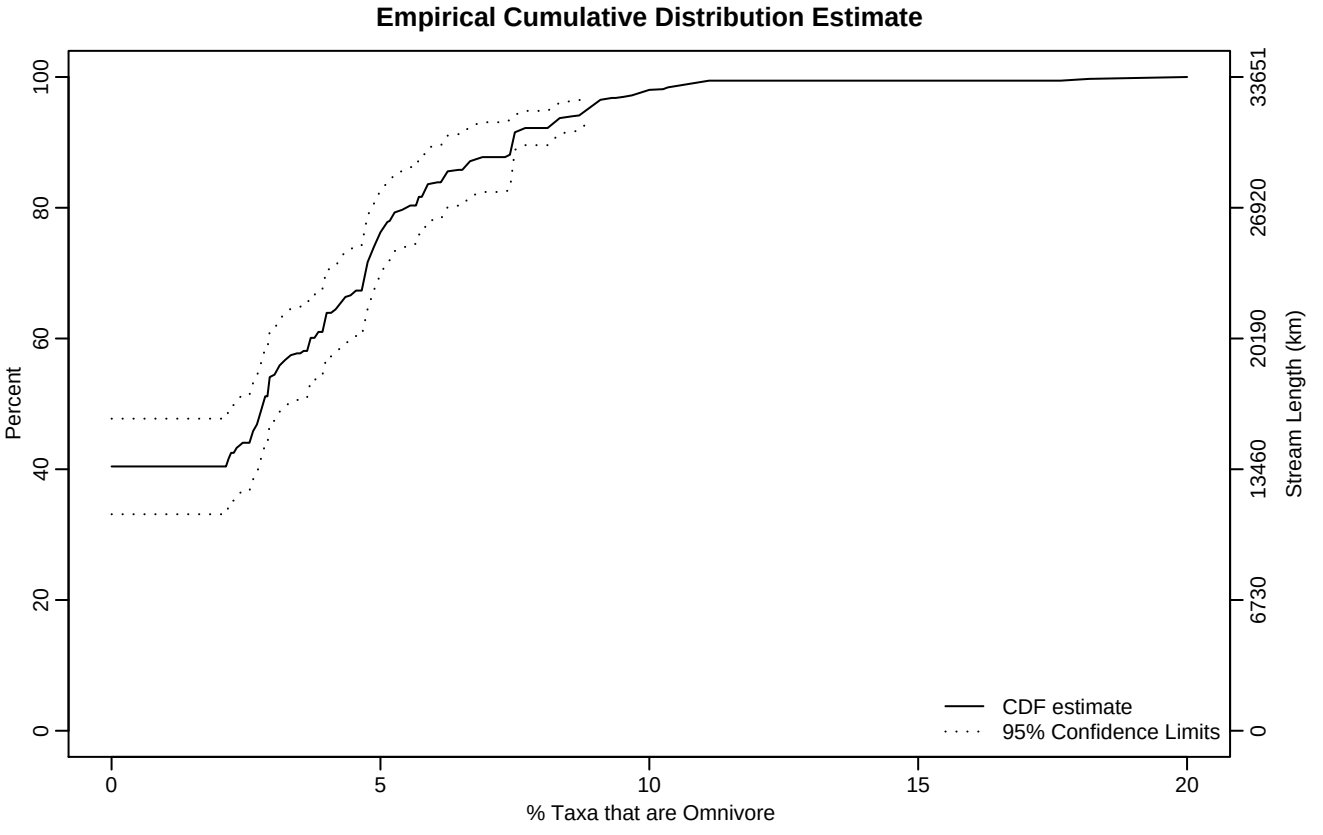


Figure BN−283 Indicator: OMNIPTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	2.82	2.28	3.32
75Pct	4.93	4.68	5.71
90Pct	7.46	6.18	8.90
95Pct	8.84	8.17	9.74
Mean	3.10	2.66	3.54
Std Dev	2.95	2.63	3.28

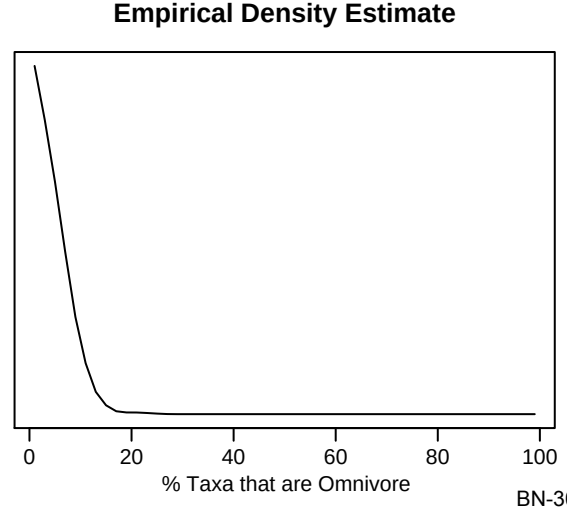
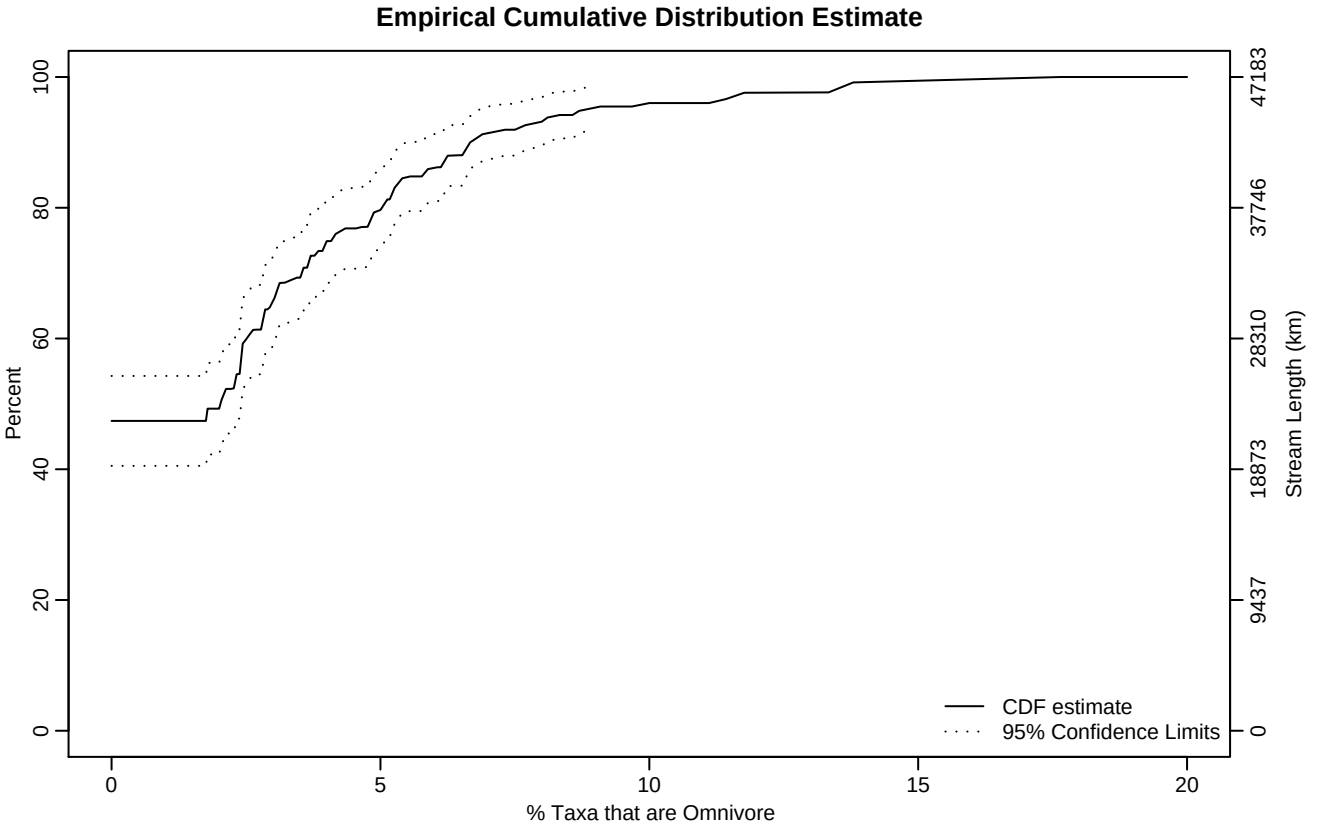


Figure BN−284 Indicator: OMNIPTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	2.02	0	2.41
75Pct	4.09	3.18	5.18
90Pct	6.67	5.95	8.22
95Pct	8.80	7.10	13.57
Mean	2.62	2.15	3.09
Std Dev	2.92	2.50	3.34

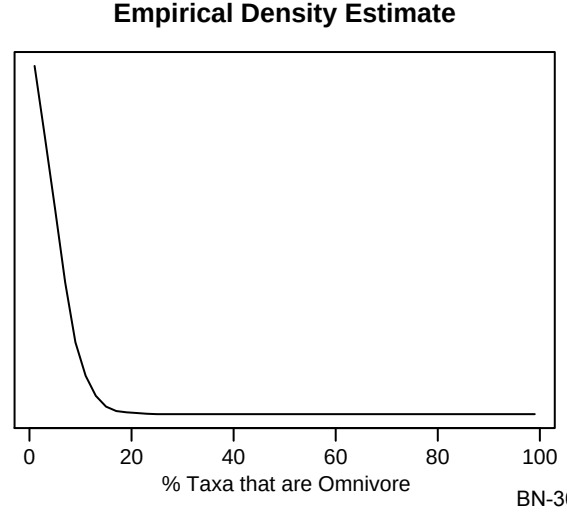
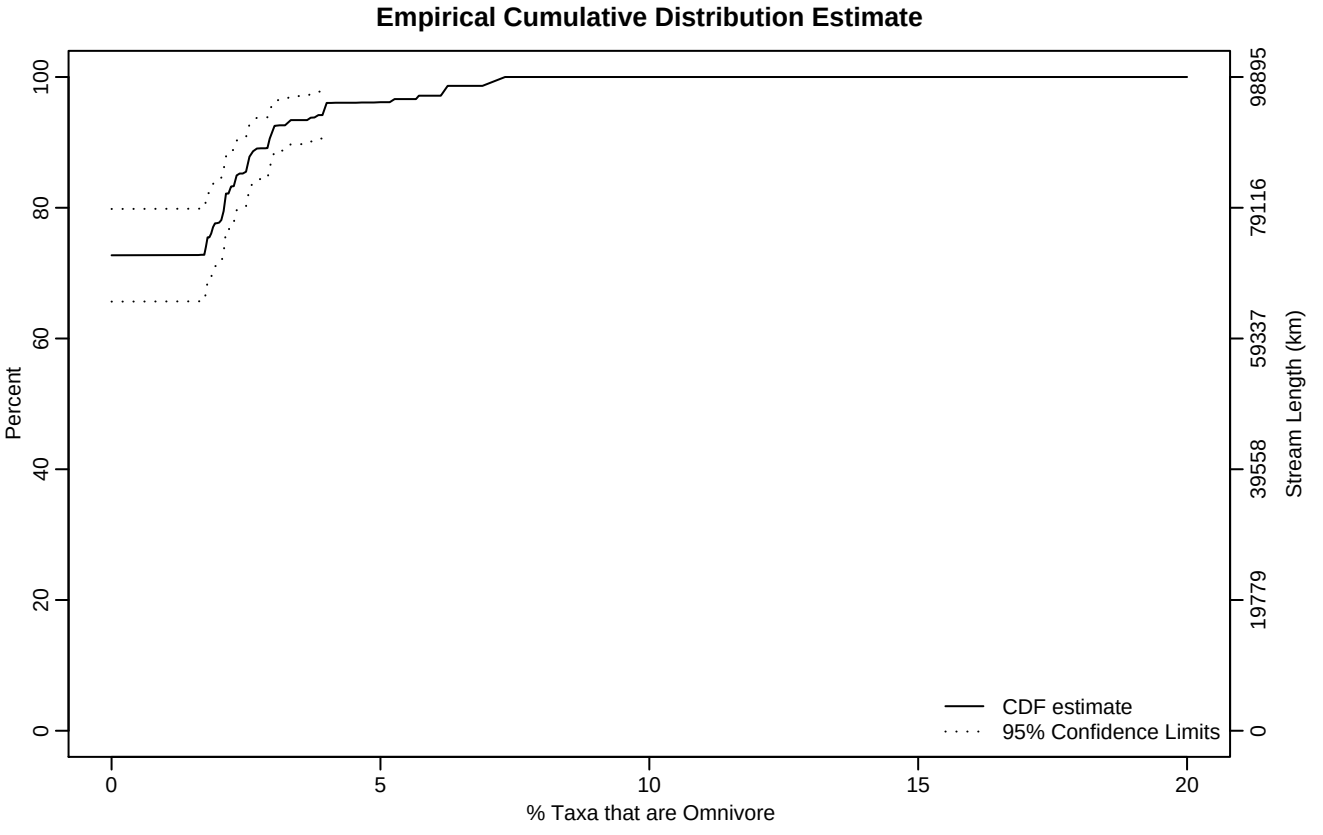


Figure BN−285 Indicator: OMNIPTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	1.78	0	2.13
90Pct	2.92	2.45	3.95
95Pct	3.96	2.98	6.25
Mean	0.84	0.59	1.10
Std Dev	1.47	1.23	1.70

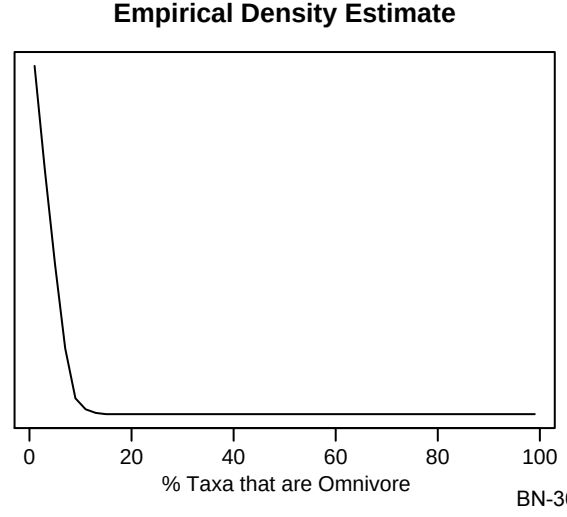
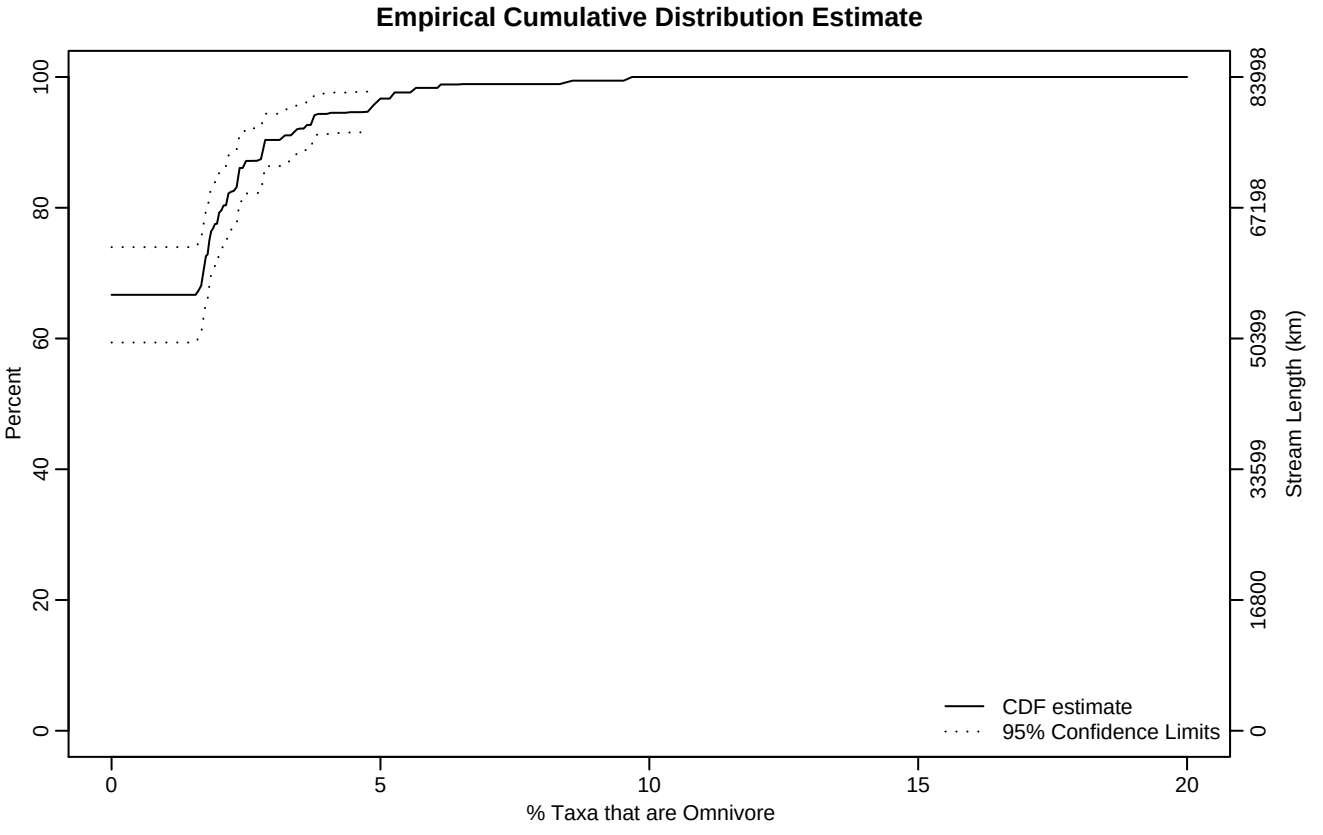


Figure BN−286 Indicator: OMNIPTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	1.82	1.67	2.17
90Pct	2.85	2.36	4.78
95Pct	4.80	3.45	5.61
Mean	0.98	0.75	1.21
Std Dev	1.54	1.31	1.78

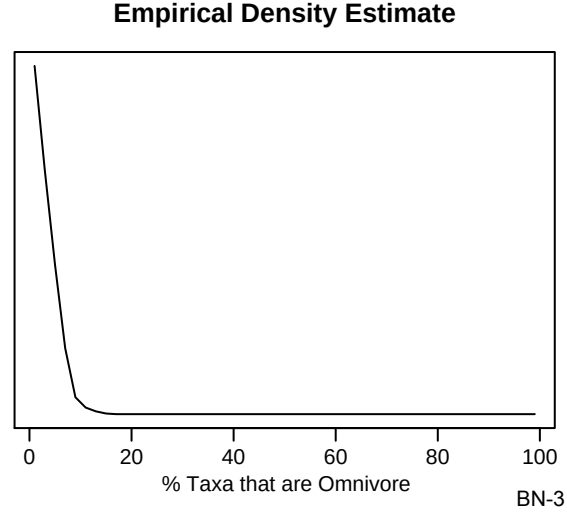
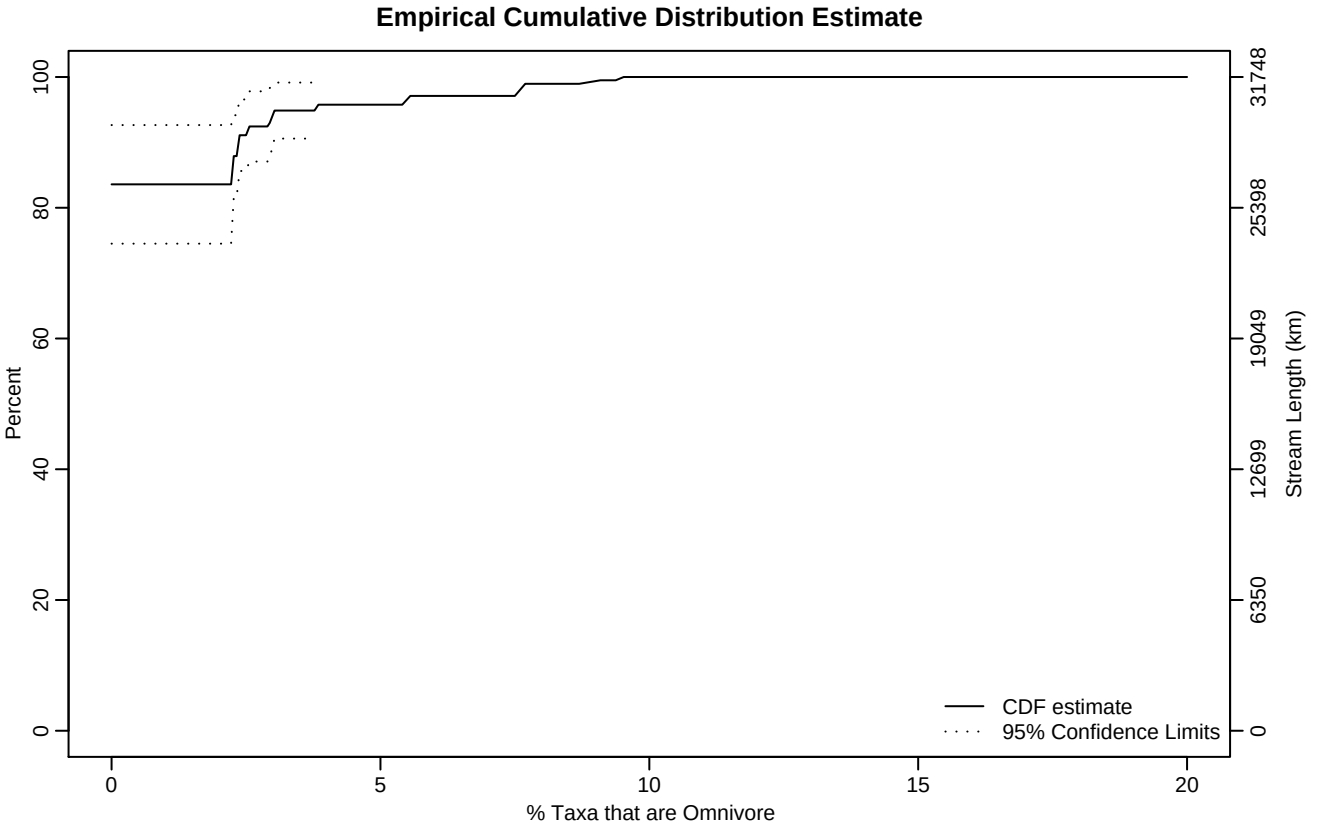


Figure BN−287 Indicator: OMNIPTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	2.23
90Pct	2.36	2.22	5.47
95Pct	3.78	2.37	8.92
Mean	0.63	0.28	0.98
Std Dev	1.29	0.91	1.68

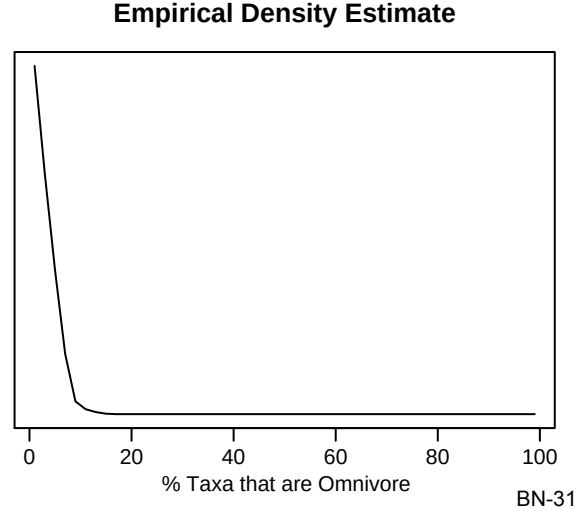
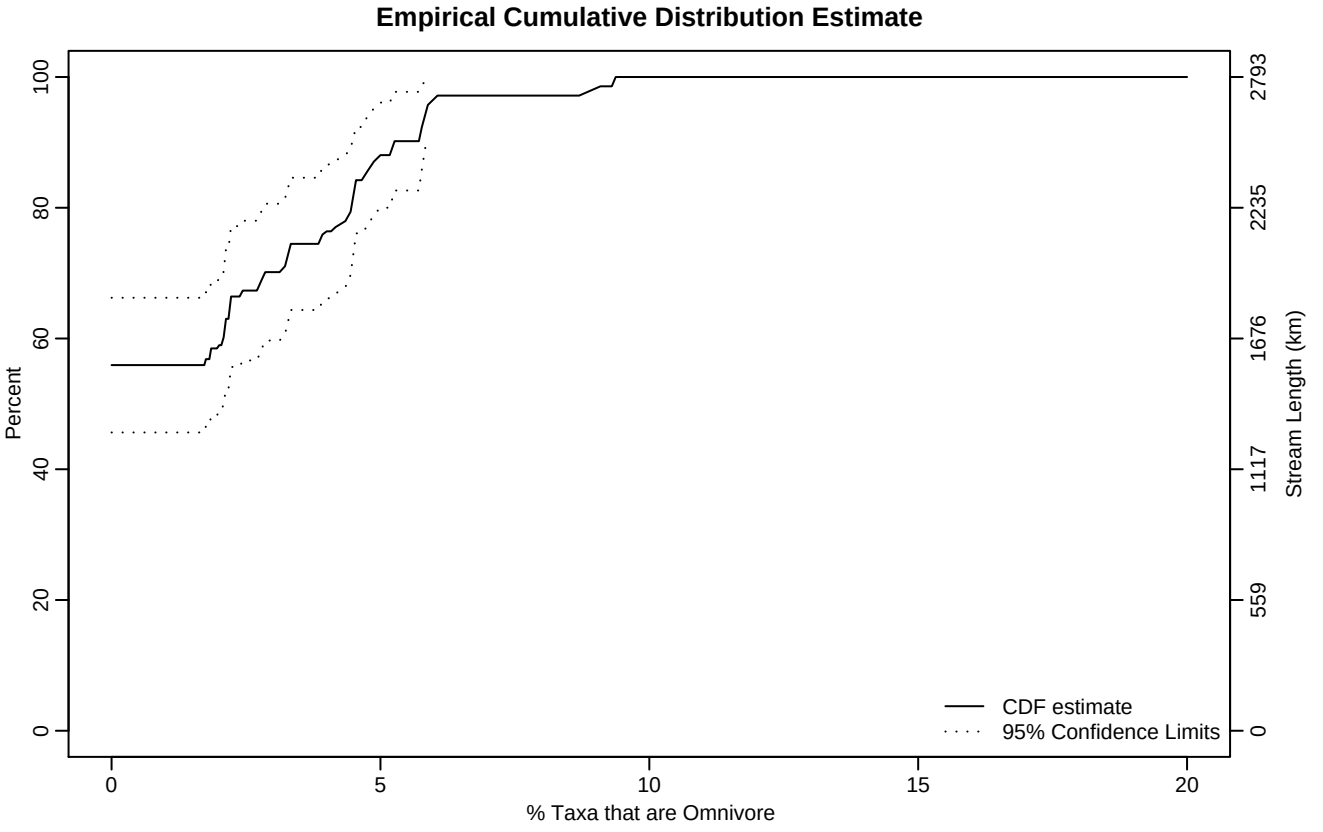


Figure BN−288 Indicator: OMNIPTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	2.09
75Pct	3.87	2.20	4.71
90Pct	5.26	4.50	8.94
95Pct	5.86	5.19	9.38
Mean	1.86	1.33	2.39
Std Dev	2.33	2.01	2.66

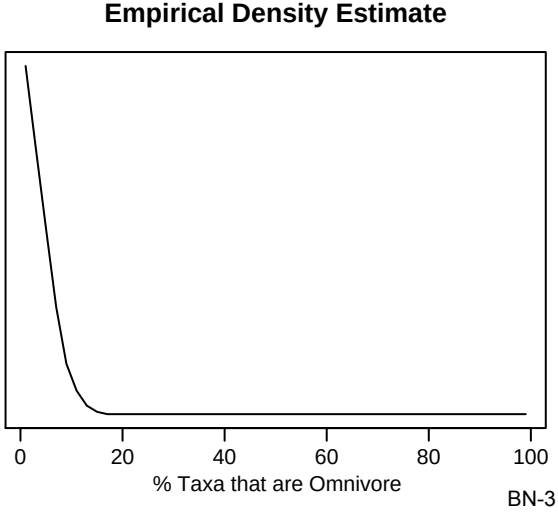
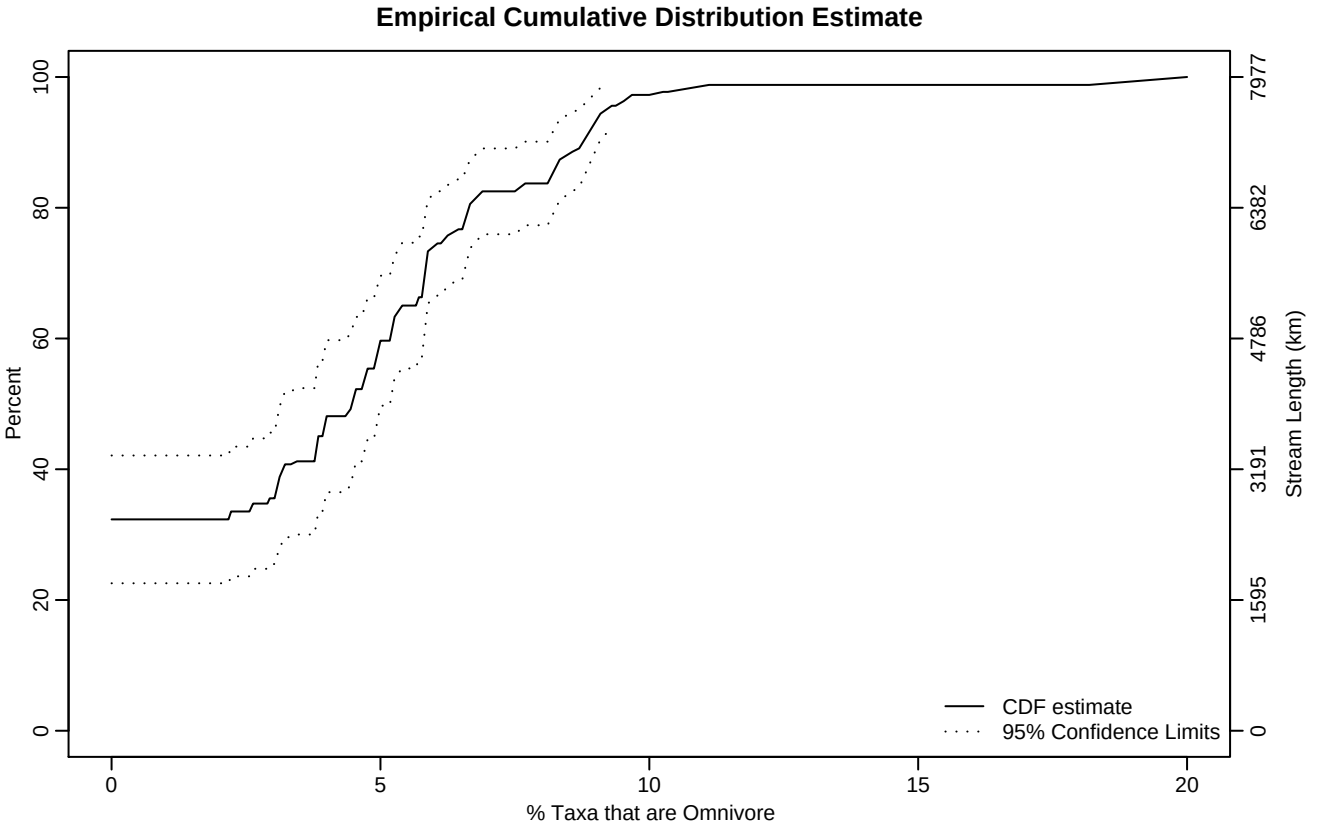


Figure BN−289 Indicator: OMNIPTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	2.62
50Pct	4.47	3.11	5.22
75Pct	6.17	5.78	7.60
90Pct	8.76	8.13	9.43
95Pct	9.20	8.86	11.09
Mean	4.16	3.47	4.85
Std Dev	3.18	2.62	3.74

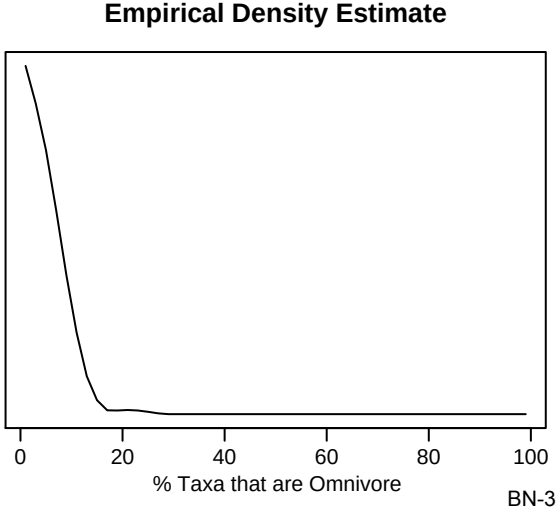
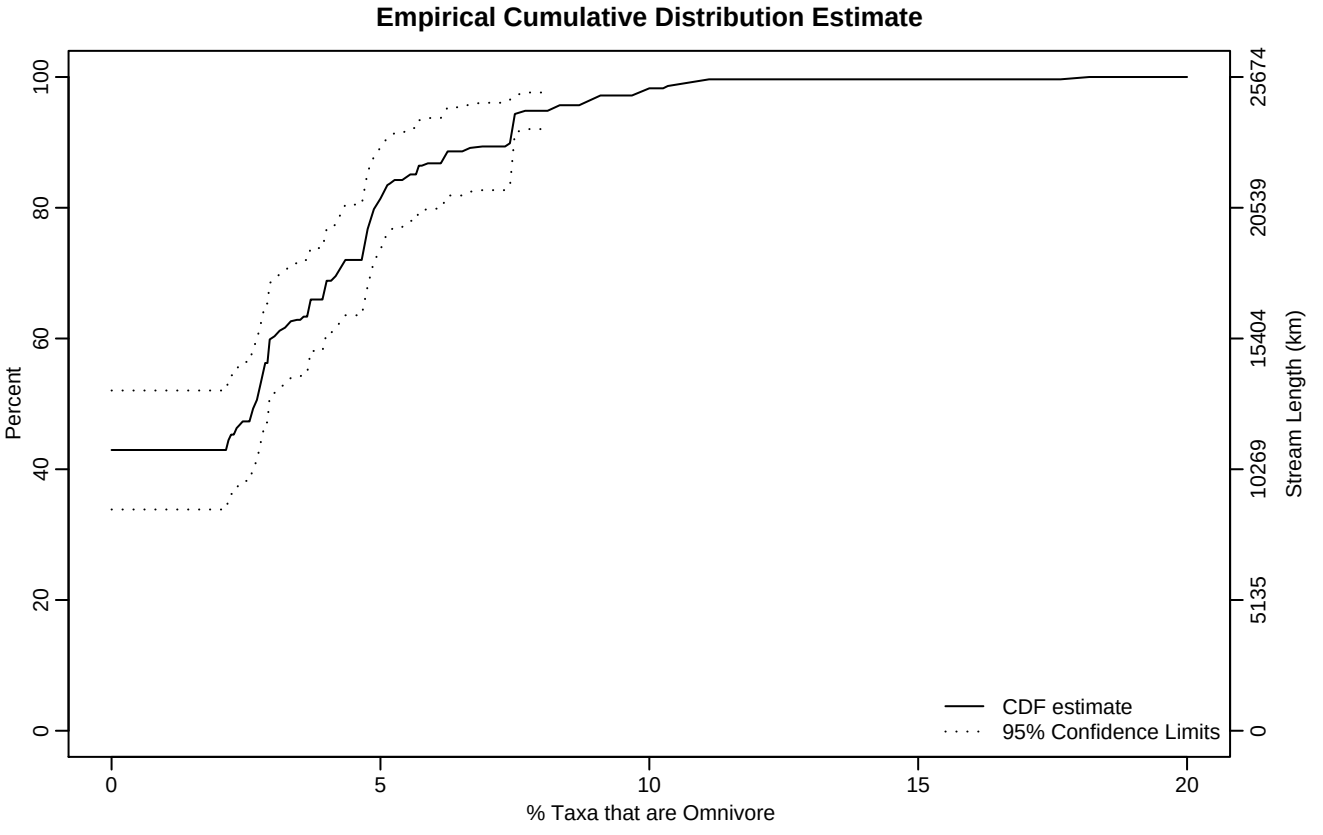


Figure BN−290 Indicator: OMNIPTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	2.67	0	2.93
75Pct	4.72	3.93	5.15
90Pct	7.41	5.12	8.96
95Pct	8.15	7.45	9.88
Mean	2.77	2.23	3.30
Std Dev	2.83	2.45	3.20

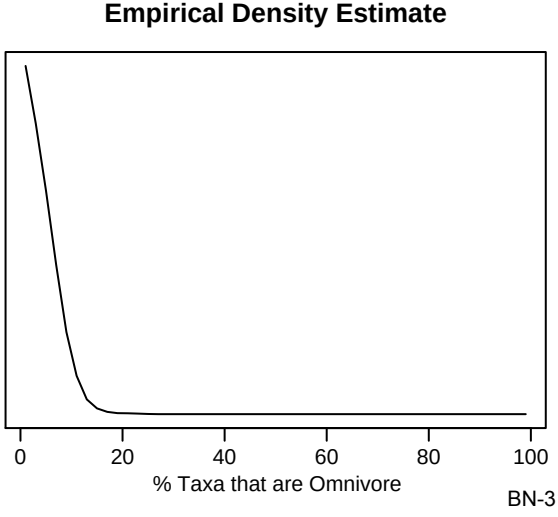
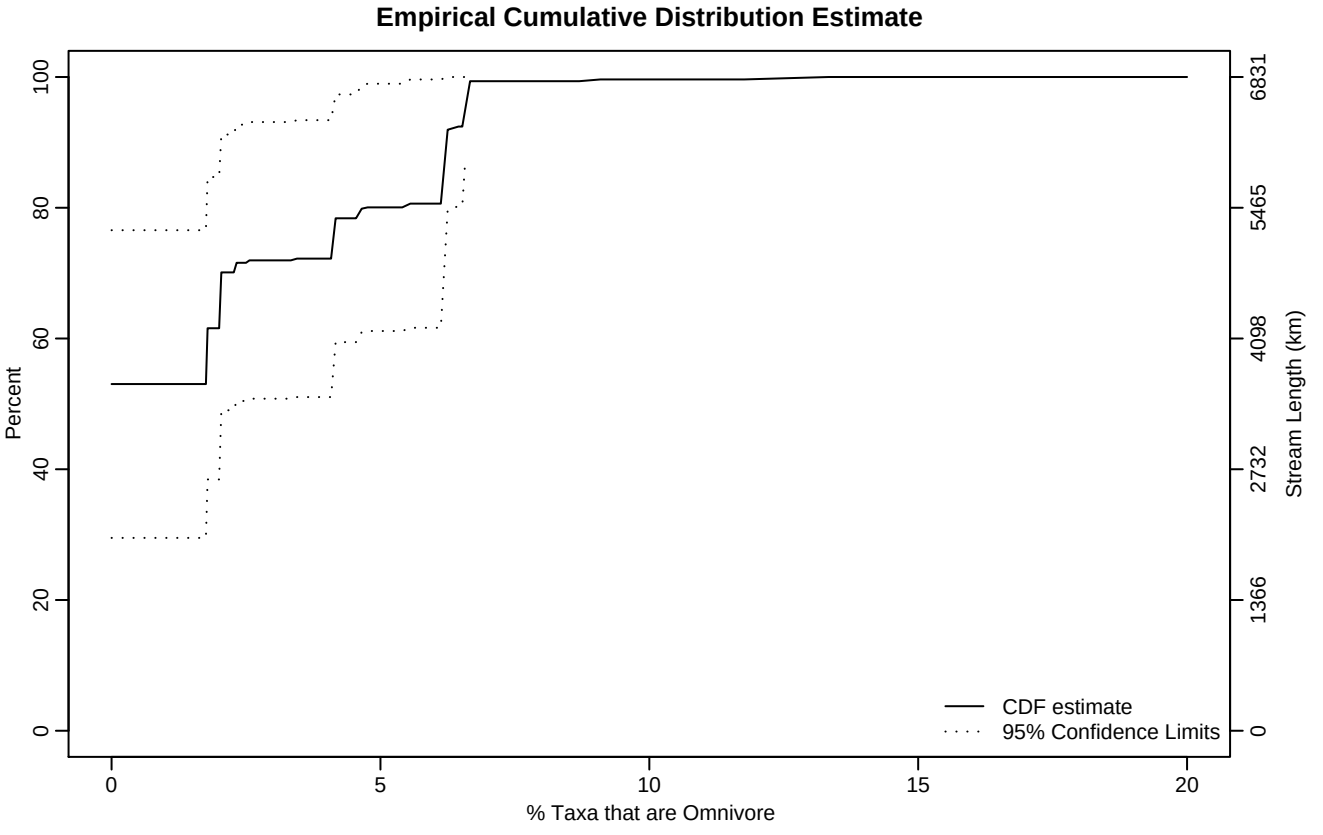


Figure BN−291 Indicator: OMNIPTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	4.10
75Pct	4.12	1.76	6.60
90Pct	6.23	2.04	13.33
95Pct	6.58	6.15	13.33
Mean	2.02	0.82	3.22
Std Dev	2.62	2.01	3.24

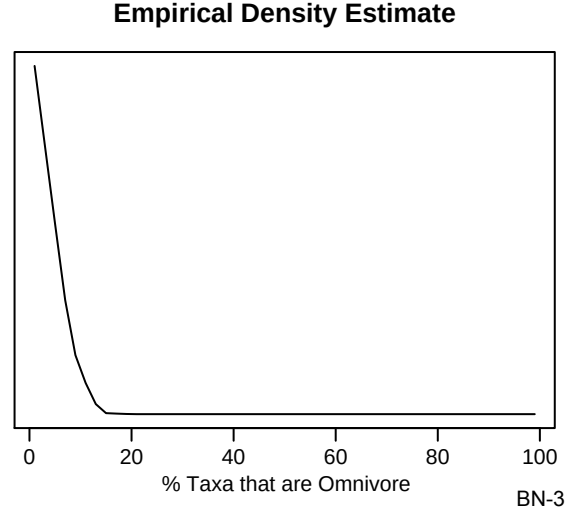
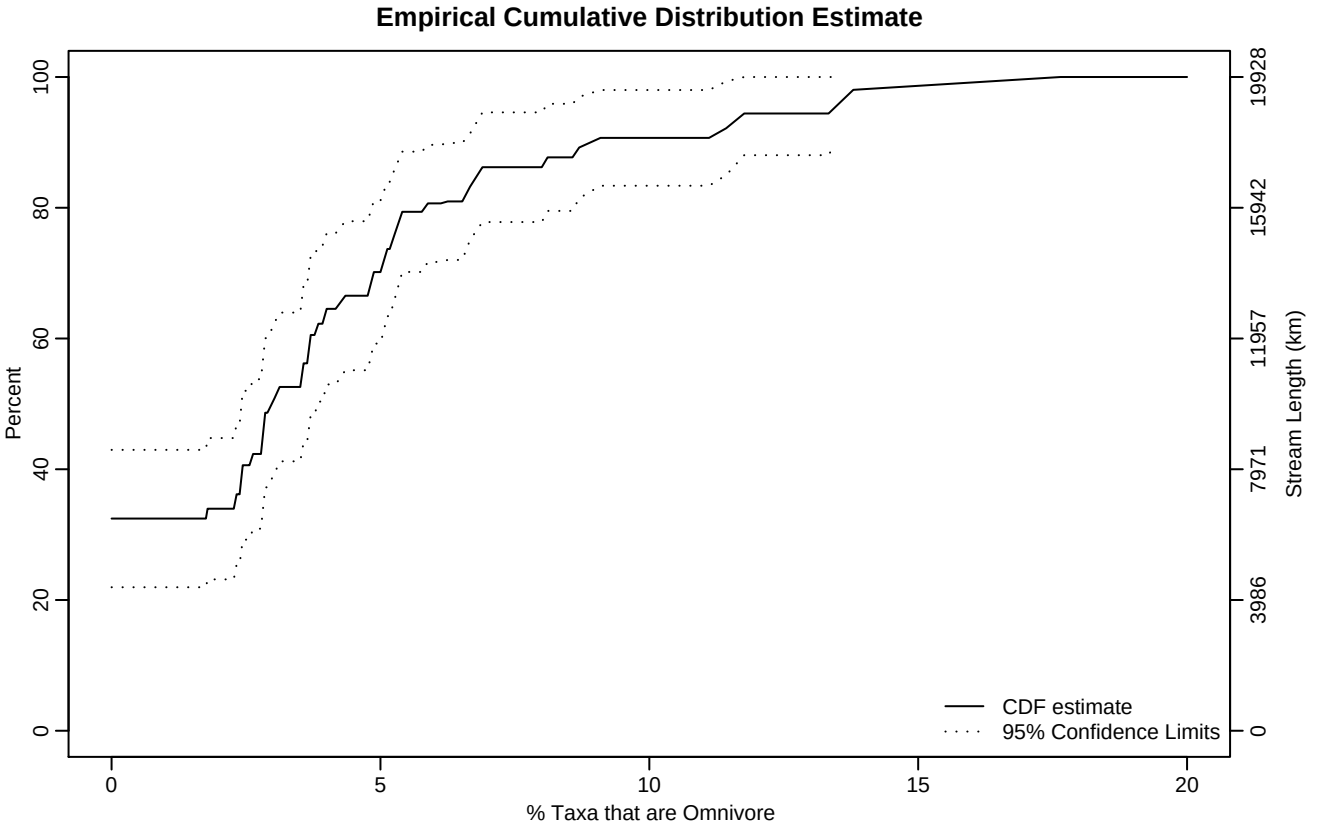


Figure BN−292 Indicator: OMNIPTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	2.31
50Pct	2.98	2.40	3.84
75Pct	5.23	4.19	6.82
90Pct	8.91	6.60	13.77
95Pct	13.41	8.64	17.65
Mean	3.85	2.92	4.78
Std Dev	3.76	2.86	4.65

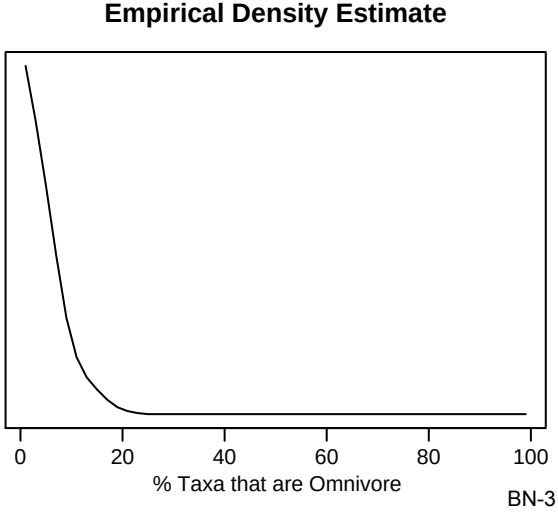
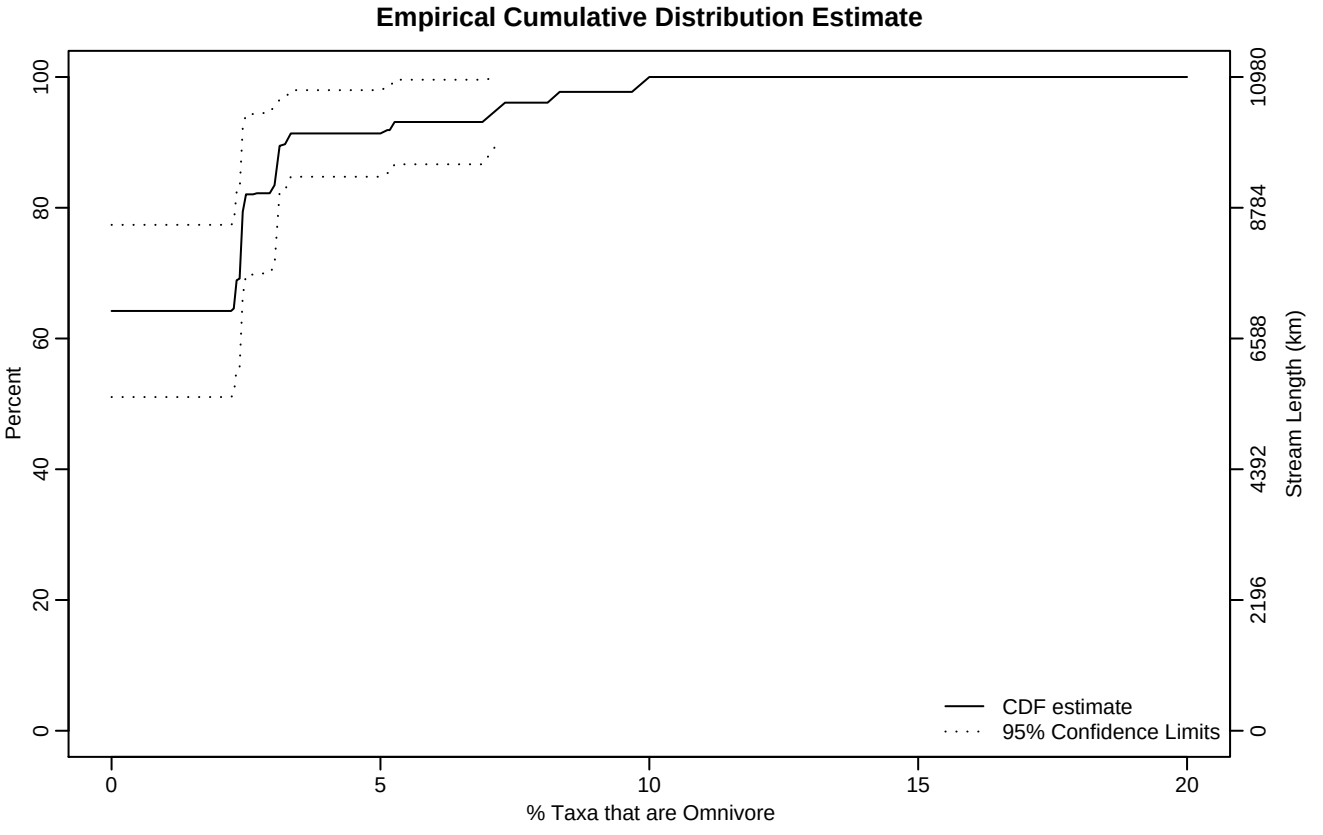


Figure BN−293 Indicator: OMNIPTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	2.41	0	3.12
90Pct	3.24	2.98	8.27
95Pct	7.16	3.11	10
Mean	1.40	0.80	1.99
Std Dev	1.95	1.51	2.39

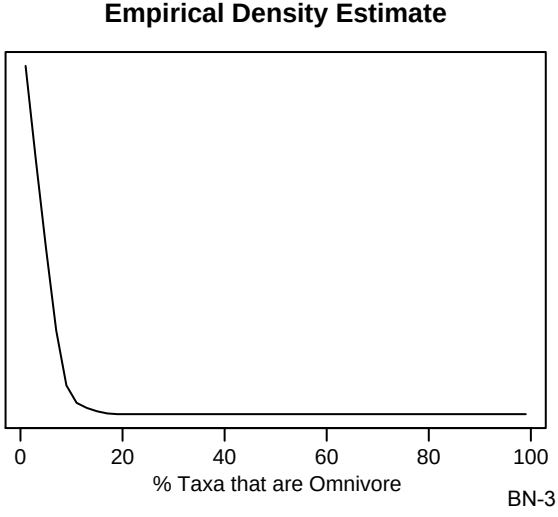
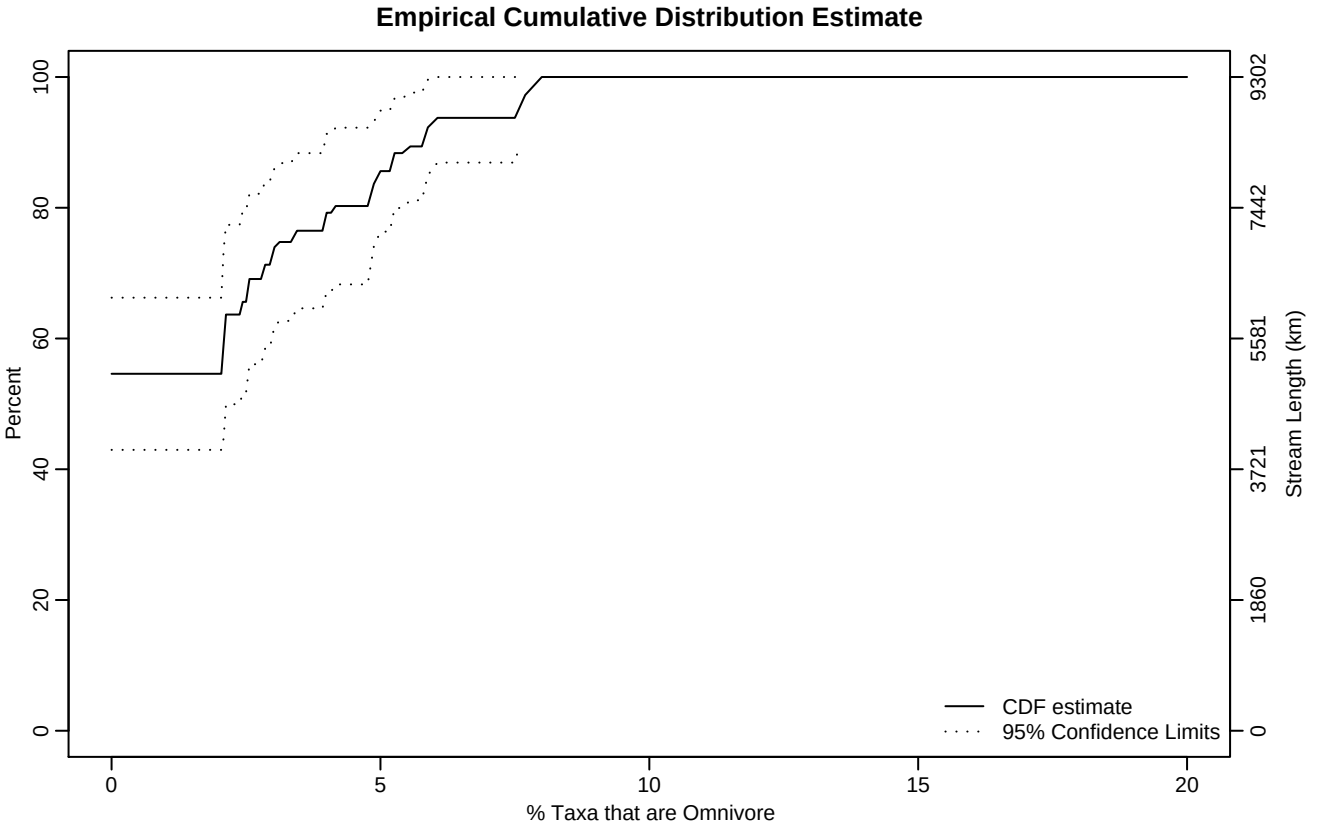
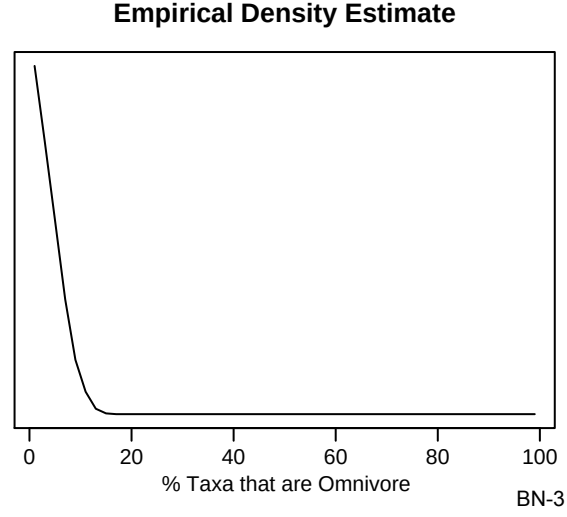


Figure BN−294 Indicator: OMNIPTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	2.11
75Pct	3.35	2.12	5.23
90Pct	5.79	4.81	7.80
95Pct	7.57	5.25	8
Mean	1.92	1.28	2.57
Std Dev	2.36	1.86	2.85



Aquatic Vertebrates

Introduction & Rationale

Aquatic vertebrates (fish and amphibians) are key components of the designated aquatic life uses of the water quality standards of most states. Both classes of vertebrates are important to humans for recreational and aesthetic purposes. Nonetheless, in the 12 conterminous western USA states, the American Fisheries Society lists 78 fish taxa as endangered, threatened, or vulnerable (Nehlsen et al. 1991; Williams et al. 1989). These range from local endemics such as pupfish to widespread species such as Chinook salmon. Aquatic amphibians are less commonly occurring, but several are also federally or state listed. Aquatic vertebrates are excellent indicators of multi-year and large-scale habitat conditions because many species are relatively long-lived and occupy different stream reaches in different seasons. Fish and aquatic amphibians include a range of species representing different trophic and habitat guilds, life histories, and ranges. Therefore, their relative abundances indicate conditions in the energy base, physical habitat complexity, flow, connectivity, and water quality. Both groups are relatively easily identified to species at the sampling site by professionals, meaning that data are relatively quickly available.

Biological integrity is an objective of the Clean Water Act (1972) and has been defined as a balanced, integrated, adaptive assemblage of organisms having a composition, diversity and functional organization comparable with that of the natural habitats of the region (Frey 1977; Karr and Dudley 1981). Karr (1981) and Karr et al. (1986) proposed a widely used indicator of vertebrate assemblage condition called the index of biotic integrity (IBI). The IBI is a multi-metric index (MMI)—the total score is the sum of scores for a variety of individual metrics that reflect important components of assemblage structure or function, including taxonomic richness, habitat and trophic guild composition, and sensitivity to human disturbance. Originally developed for midwestern streams, the IBI has been modified numerous times for other regions and ecosystems (Simon and Lyons 1995; Hughes and Oberdorff 1998), including coldwater streams and rivers in the western USA that support few fish species (Mebane et al. 2003; Hughes et al. 2004), as well as Great Plains streams supporting a relatively tolerant fish fauna (Lydy et al. 2000; Shearer and Berry 2002; Bramblett et al. 2005). The following is an overview of the process used to develop and evaluate an MMI for aquatic vertebrates in flowing waters of the western USA.

Sampling Methods

Aquatic vertebrates were sampled by EMAP cooperators and contractors via backpack or raft electrofishing (Peck et al. 2005a; Peck et al. 2005b). Backpacks were used in small wadeable streams, while rafts were used in rivers where wading was unsafe or difficult, typically fourth to fifth order and larger rivers. In wadeable streams, fish were sampled in a reach 40 times the average wetted stream width to adequately represent 90% of potential species richness (Reynolds et al. 2003). Raft electrofishing was

employed near shore for a distance equal to 100 times the average wetted width to collect 95% of the species expected (Hughes et al. 2002). Fish samples were processed continuously and all but voucher and fish tissue contaminant specimens were returned alive to the streams. Voucher specimens were confirmed by, and are cataloged and archived at, the National Museum of Natural History (Smithsonian).

The aquatic vertebrate collection data are stored in a data base containing each species' full taxonomy, its status as native or non-native, abundance, size range, and number of individuals with external anomalies for each site visit. This file also includes information used to evaluate sampling sufficiency. A second file lists the guilds (life history, trophic, tolerance, habitat, thermal, reproductive) and threatened/endangered status of all vertebrate species collected. A third file contains calculated values for 237 candidate metrics at each site visit, plus an assessment of sampling sufficiency.

Multi-Metric Index Development

Our goal was to produce three coordinated MMIs for EMAP-W: one for each of the three aggregated ecoregions presented in Figures 1 and DE-6. Because metric values varied widely across the geography of the West (as did expected metric values), we recognized that metrics would need to be selected and scored separately in the regions shown (Mountains, Plains and Xeric), but that the same process would need to be used for metric evaluation and scoring, so that the three MMIs could be combined in a single assessment without introducing regional bias. The process we used to assure comparability between the regions is described in this section.

A total of 237 metrics were initially calculated from the aquatic vertebrate data collected for EMAP-West. Each metric represented one of nine metric classes, each of which is intended to capture a separate dimension of biotic integrity (Karr et al. 1986, Karr 1993, Barbour et al. 1999):

- **Habitat –** preferred habitat for each vertebrate species (e.g., benthic, water column, hider)
- **Tolerance –** each vertebrate species was classified into one of four classes, to represent their general tolerance to physical and chemical stressors (sensitive, intermediate, tolerant, super tolerant)
- **Trophic groups –** primary source of nutrition for each vertebrate species (herbivore, invertivore, piscivore, omnivore)
- **Reproductive –** reproductive habit for each vertebrate species
- **Composition –** the relative abundance of different kinds of taxa
- **Richness –** the number of different kinds of taxa
- **Life History –** the general life history strategy for each taxon (migrating [vagile], long-lived, etc.)
- **Alien Species –** whether each species is native or introduced in the region where it was collected

- **Abundance –** the number of individuals of an assemblage, taxonomic group, or guild collected.

Following the suggestion of Hughes et al. (1998), we screened the pool of candidate metrics using a series of tests (below), with the goal of finding the one metric in each metric class with the best behavior (in terms of the tests described below). The tests were applied sequentially, and by aggregated ecoregion. For each ecoregion, metrics that failed a test were not considered for further evaluation and were not subjected to subsequent tests.

- Range: If the range (difference between the maximum and minimum values) of a metric is small, or if most of the values are identical, then the metric is unlikely to provide information that helps differentiate sites from one another. We eliminated richness metrics if their range was less than 4, and eliminated any metric if more than 75% of the values were the same. A total of 77 metrics were eliminated from further consideration by the range test (Table AV-1).
- Signal to noise (S:N): Signal to noise is the ratio of variance among sites and the variance of repeated visits to the same site, and is a measure of how repeatable metric values are. A low value indicates that a metric has nearly as much variability within a site (over time) as it does across different sites, and thus indicates a metric that does not distinguish well among sites. We calculated S:N ratios for all samples (west-wide; Table AV-2), and failed metrics with S:N values less than 2; eight metrics that passed the range test were failed based on their S:N ratios.
- Correlation with natural gradients: Before evaluating metrics on their responsiveness to anthropogenic stressors, we evaluated whether strong relationships between metrics and natural gradients (stream size, stream gradient, catchment size) might obscure potential stressor relationships. We regressed the reference site values for each metric against these natural gradients, and corrected those that showed a strong dependence on stream size (estimated by the wetted cross sectional area). The relationship between each metric and stream size was calculated for the reference site data, and this relationship was applied to data from all sites. The residual value (between each measured metric value, and its predicted value based on stream size) was then used as a size-corrected metric. A total of 18 metrics (all richness metrics) were corrected (i.e., those labeled as “corrected for stream size” in Table AV-1).
- Responsiveness: We examined whether the metrics that passed the range and signal to noise tests were responsive to key stressor indicators by conducting F tests of the ability of metrics to distinguish between least-disturbed (a.k.a. reference) sites and most-disturbed (a.k.a., trashed) sites (see Reference Condition section [above]; Whittier et al. in press). Both analyses were conducted separately for the 3 aggregated ecoregions. Results of the F tests for the metrics that passed the range test are shown in Table AV-2. The list of metrics included in each aggregated ecoregion’s MMI was built by first taking the

metric with the highest F score, then taking the metric with the next highest F score that represented a different metric class, and continuing until all of the metric classes were represented, provided that the selected metrics were not redundant.

- Redundancy: Only metrics that did not contain redundant information were included in the final MMIs. We estimated redundancy by creating a correlation matrix of metric values at reference sites (to avoid eliminating metrics that are correlated only because of their relationship to stressors that co-vary). Inclusion of redundant metrics adds little information to the MMI. We considered metrics redundant if their Spearman correlation coefficients were > 0.71 (corresponding to an r^2 value of 0.5). Metrics selected for inclusion first (i.e., those with higher F scores) were retained, and its redundant metric replaced with the next non-redundant metric in the same metric class. Spearman correlation coefficients for the metrics included in the final MMIs are shown in Table AV-3.

The results of the sequential inclusion of metrics in the final MMIs are shown in Table AV-4. Within each aggregated ecoregion, the order in which metrics were included (i.e., highest F score first, next highest F score in a "new" metric class next, and so on) is also shown (in parentheses). Each MMI (for each ecoregion) has one metric representing each metric class, except in the case of richness metrics. Neither the Mountains nor the Xeric aggregate regions had a sufficiently informative richness metric to warrant inclusion (inclusion of poor richness metrics actually decreased the ability of the final MMI to distinguish least-disturbed from most-disturbed sites). The failure of richness metrics in these two regions may simply be indicative of the lower taxonomic richness of aquatic vertebrates in these areas. None of the abundance metrics were selected for inclusion in any MMI. Seven of 13 of these metrics failed one of the first two tests, and the remainder showed low responsiveness (low F-test scores). In general, the first metrics chosen for inclusion (highest F scores) were Habitat, Tolerance or Trophic metrics. The least responsive metrics were always Life History and Alien Species metrics; however we did not expect Alien Species metrics to be responsive to physical and chemical habitat alterations because of the widespread introduction of non-native salmonids to high quality habitats.

Before being combined into an MMI, each raw metric must be translated to the same scale—a process we call 'scoring'. We chose to score the metrics continuously on a scale from 0 to 10 (Hughes et al. 1998). Metrics were scored separately by ecoregion, using a scheme intended to maximize differences in final IBI scores (Blocksom 2003): ceiling and floor values for each metric were defined as the 5^{th} and 95^{th} percentile values observed in all sites. For positive metrics (e.g., those that are highest in reference sites), values less than the 5^{th} percentile were given a score of 0, those with values greater than the 95^{th} percentile were given scores of 10, and all metric values in between were interpolated linearly. Negative metrics were scored similarly, with the floor (95^{th} percentile) and ceiling (5^{th} percentile) values reversed. Ceiling and floor values for each metric are listed in Table AV-4. Scored metrics were summed (for a maximum combined score of either 70 or 80, depending on the number of metrics) and the summed score was scaled to 100 by multiplying each sum by the appropriate

scalar.

Validation of the Multi-Metric Index

There is always some concern that using the same set of sites to build indices and then to assess biotic integrity amounts to circular reasoning. To alleviate this difficulty as much as possible, we set aside the data from a random set of sites in each ecoregion before model development. These sites could then be used to validate the models by comparing the behavior of the indices in sites present in the calibration and validation datasets (as was done for the macroinvertebrate indices, above)

For the MMI model construction, 25 least-disturbed (Mountains only), 25 moderately-disturbed and 25 most-disturbed sites (where disturbance class was based on chemical and physical habitat [non-biological] data, as described in the Reference Condition section; Whittier et al. in press) were chosen at random in each of the three aggregate ecoregions and their data set aside for validation purposes. No least-disturbed sites were set aside in the Plains or Xeric regions due to small sample sizes in these groups. The MMI was developed using data from all non-validation (calibration) sites; scores were then calculated for both the calibration and validation datasets. Comparisons of the distribution of MMI scores in calibration and validation datasets are shown in Figures AV-3, AV-4 and AV-5 (for the Mountains, Plains and Xeric regions, respectively). The validity of the MMI model is indicated by the lack of significant differences between the two datasets within each of the disturbance classes. In addition, all three regions show a general decrease in scores as one moves from the least-disturbed to the most-disturbed end of the gradient.

One further test of the validity of the MMI is its performance in the types of statistical tests used to evaluate the metrics described earlier. Table AV-5 shows the signal:noise ratio and F test results (for discriminating least-disturbed from most-disturbed sites) for the final MMI. All of these tests suggest that the aquatic vertebrate MMI has excellent properties, and can be used to describe the ecological condition of streams and rivers across the West.

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Tables

Table AV-1. Alphabetic List of Candidate Aquatic Vertebrate Metrics and Metric Class, with results of the Range Test

Metric Name	Description	Metric Class	Range Test
ACIP_PIND	Proportion of Vertebrate Abundance in the Family Acipenseridae	COMPOSITION	FAIL
AIR_PIND	Proportion of Individuals that are Airbreather	TOLERANCE	PASS
AIR_PTAX	Proportion of All Species that are Airbreather	TOLERANCE	PASS
AIR_RICH	Air Breathing Species Richness	TOLERANCE	FAIL
ALIEN_FISH_NIND	Abundance of Alien Fish	ALIEN	PASS
ALIEN_FISH_PIND	Proportion of Individual Fish that are Alien	ALIEN	PASS
ALIEN_FISH_PTAX	Proportion of Fish Species that are Alien	ALIEN	PASS
ALIEN_LOTC_PIND	Proportion of Individuals that are Alien Lotic	ALIEN	PASS
ALIEN_LOTC_PTAX	Proportion of All Species that are Alien Lotic	ALIEN	PASS
ALIEN_LOTC_RICH	Alien Lotic Species Richness	ALIEN	PASS
ALIEN_VERT_NIND	Abundance of Alien Vertebrates	ALIEN	PASS
ALIEN_VERT_PIND	Proportion of All Individuals that are Alien	ALIEN	PASS
ALIEN_VERT_PTAX	Proportion of All Species that are Alien	ALIEN	PASS
ALIEN_VERT_RICH	Alien Vertebrate Species Richness	ALIEN	PASS
AMBY_PIND	Proportion of Vertebrate Abundance in the Family Ambystomatidae	COMPOSITION	FAIL
AQUA_NAT_PIND	Proportion of Individuals that are Native Aquatic	ALIEN	PASS
AQUA_NAT_PTAX	Proportion of All Species that are Native Aquatic	ALIEN	PASS
AQUA_NAT_RICH	Native Aquatic Species Richness	RICHNESS	PASS
AQUA_NAT_RICH_CORR	Native Aquatic Species Richness Corrected for Stream Size	RICHNESS	PASS
BENT_NAT_PIND	Proportion of Individuals that are Native Benthic	HABITAT	PASS
BENT_NAT_PTAX	Proportion of All Species that are Native Benthic	HABITAT	PASS
BENT_NAT_RICH	Native Benthic Species Richness	HABITAT	PASS
BENT_NAT_RICH_CORR	Native Benthic Species Richness Corrected for Stream Size	HABITAT	PASS
BENT_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Benthic	HABITAT	PASS
BENT_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Benthic	HABITAT	PASS
BENT_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Benthic	HABITAT	PASS
BENT_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Benthic	HABITAT	PASS
BINV_NAT_NIND	Abundance of Native Benthic Invertivore Individuals	TROPHIC	PASS
BINV_NAT_PIND	Proportion of Individuals that are Native Benthic Invertivores	TROPHIC	PASS
BINV_NAT_PTAX	Proportion of All Species that are Native Benthic Invertivores	TROPHIC	PASS

BINV_NAT_RICH	Native Benthic Invertivore Species Richness	TROPHIC	PASS
BUFO_PIND	Proportion of Vertebrate Abundance in the Family Bufonidae	COMPOSITION	FAIL
CATO_PIND	Proportion of Vertebrate Abundance in the Family Catostomidae	COMPOSITION	PASS
CATOICT_NAT_NIND	Abundance of Native Catostomids and Native Ictalurids	COMPOSITION	PASS
CATOICT_NAT_RICH	Native Catostomid and Ictalurid Species Richness	COMPOSITION	PASS
CATOICT_NAT_RICH_CORR	Native Catostomid and Ictalurid Species Richness Corrected for Stream Size	COMPOSITION	PASS
CAUD_PIND	Proportion of Vertebrate Abundance in the Order Caudata	COMPOSITION	FAIL
CENT_PIND	Proportion of Vertebrate Abundance in the Family Centrarchidae	COMPOSITION	FAIL
CHELY_PIND	Proportion of Vertebrate Abundance in the Family Chelydridae	COMPOSITION	FAIL
CLUP_PIND	Proportion of Vertebrate Abundance in the Family Clupeidae	COMPOSITION	FAIL
COLD_NAT_NIND	Abundance of Native Coldwater Individuals	ABUNDANCE	PASS
COLD_NAT_PIND	Proportion of Individuals that are Native Coldwater	HABITAT	PASS
COLD_NAT_PTAX	Proportion of All Species that are Native Coldwater	HABITAT	PASS
COLD_NAT_RICH	Native Coldwater Species Richness	HABITAT	PASS
COLD_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Coldwater	HABITAT	PASS
COLD_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Coldwater	HABITAT	PASS
COLD_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Coldwater	HABITAT	PASS
COLD_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Coldwater	HABITAT	PASS
COLUB_PIND	Proportion of Vertebrate Abundance in the Family Colubridae	COMPOSITION	FAIL
COOL_NAT_PIND	Proportion of Individuals that are Native Coolwater	HABITAT	PASS
COOL_NAT_PTAX	Proportion of All Species that are Native Coolwater	HABITAT	PASS
COOL_NAT_RICH	Native Coolwater Species Richness	HABITAT	PASS
COOL_NAT_RICH_CORR	Native Coolwater Species Richness Corrected for Stream Size	HABITAT	PASS
COOL_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Coolwater	HABITAT	PASS
COOL_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Coolwater	HABITAT	PASS
COOL_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Coolwater	HABITAT	FAIL
COOL_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Coolwater	HABITAT	FAIL
COTT_PIND	Proportion of Vertebrate Abundance in the Family Cottidae	COMPOSITION	FAIL
CWRHEO_NAT_RICH	Native Coldwater Rheophilic Species Richness	HABITAT	PASS
CYPR_PIND	Proportion of Vertebrate Abundance in the Family Cyprinidae	COMPOSITION	PASS
DICAMP_PIND	Proportion of Vertebrate Abundance in the Family Dicamptodontidae	COMPOSITION	FAIL
EMYDID_PIND	Proportion of Vertebrate Abundance in the Family Emydidae	COMPOSITION	FAIL
ESOC_PIND	Proportion of Vertebrate Abundance in the Family Esocidae	COMPOSITION	FAIL
FAM_NAT_RICH	Native Vertebrate Family Richness	RICHNESS	PASS
FAM_RICH	Vertebrate Family Richness	RICHNESS	PASS
FAM_RICH_CORR	Vertebrate Family Richness Corrected for Stream Size	RICHNESS	PASS
FISH_NAT_RICH	Native Fish Species Richness	RICHNESS	PASS

FISH_NAT_RICH_CORR	Native Fish Species Richness Corrected for Stream Size	RICHNESS	PASS
FISH_NIND	Abundance of Fish	ABUNDANCE	PASS
FISH_RICH	Fish Species Richness	RICHNESS	PASS
FISH_RICH_CORR	Fish Species Richness Corrected for Stream Size	RICHNESS	PASS
FUND_PIND	Proportion of Vertebrate Abundance in the Family Fundulidae	COMPOSITION	FAIL
GADID_PIND	Proportion of Vertebrate Abundance in the Family Gadidae	COMPOSITION	FAIL
GAST_PIND	Proportion of Vertebrate Abundance in the Family Gasterosteidae	COMPOSITION	FAIL
HERB_NAT_PIND	Proportion of Individuals that are Native Herbivore	TROPHIC	FAIL
HERB_NAT_PTAX	Proportion of All Species that are Native Herbivore	TROPHIC	FAIL
HERB_NAT_RICH	Native Herbivore Species Richness	TROPHIC	FAIL
HERB_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Herbivore	TROPHIC	FAIL
HERB_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Herbivore	TROPHIC	FAIL
HERB_NT_PIND	Proportion of Individuals that are Nontolerant Herbivore	TROPHIC	FAIL
HERB_NT_PTAX	Proportion of All Species that are Nontolerant Herbivore	TROPHIC	FAIL
HERB_PIND	Proportion of Individuals that are Herbivore	TROPHIC	FAIL
HERB_PTAX	Proportion of All Species that are Herbivore	TROPHIC	FAIL
HERB_RICH	Herbivore Species Richness	TROPHIC	FAIL
HERB_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Herbivore	TROPHIC	FAIL
HERB_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Herbivore	TROPHIC	FAIL
HERB_SEN_PIND	Proportion of Individuals that are Sensitive Herbivore	TROPHIC	FAIL
HERB_SEN_PTAX	Proportion of All Species that are Sensitive Herbivore	TROPHIC	FAIL
HIDE_NAT_PIND	Proportion of Individuals that are Native Hider	HABITAT	PASS
HIDE_NAT_PTAX	Proportion of All Species that are Native Hider	HABITAT	PASS
HIDE_NAT_RICH	Native Hider Species Richness	HABITAT	PASS
HIDE_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Hider	HABITAT	PASS
HIDE_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Hider	HABITAT	PASS
HIDE_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Hider	HABITAT	PASS
HIDE_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Hider	HABITAT	PASS
HIOD_PIND	Proportion of Vertebrate Abundance in the Family Hiodontidae	COMPOSITION	FAIL
HYLI_PIND	Proportion of Vertebrate Abundance in the Family Hylidae	COMPOSITION	FAIL
ICTA_PIND	Proportion of Vertebrate Abundance in the Family Ictaluridae	COMPOSITION	FAIL
INV_NAT_PIND	Proportion of Individuals that are Native Invertivore	TROPHIC	PASS
INV_NAT_PTAX	Proportion of All Species that are Native Invertivore	TROPHIC	PASS
INV_NAT_RICH	Native Invertivore Species Richness	TROPHIC	PASS
INV_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Invertivore	TROPHIC	PASS
INV_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Invertivore	TROPHIC	PASS
INV_NT_PIND	Proportion of Individuals that are Nontolerant Invertivore	TROPHIC	PASS
INV_NT_PTAX	Proportion of All Species that are Nontolerant Invertivore	TROPHIC	PASS

INV_PIND	Proportion of Individuals that are Invertivore	TROPHIC	PASS
INV_PTAX	Proportion of All Species that are Invertivore	TROPHIC	PASS
INV_RICH	Invertivore Species Richness	TROPHIC	PASS
INV_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Invertivore	TROPHIC	PASS
INV_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Invertivore	TROPHIC	PASS
INV_SEN_PIND	Proportion of Individuals that are Sensitive Invertivore	TROPHIC	PASS
INV_SEN_PTAX	Proportion of All Species that are Sensitive Invertivore	TROPHIC	PASS
INVCYPR_NIND	Abundance of Cyprinid Invertivores	TROPHIC	FAIL
INVCYPR_PIND	Proportion of Individuals that are Cyprinid Invertivores	TROPHIC	PASS
INVCYPR_PTAX	Proportion of All Species that are Cyprinid Invertivores	TROPHIC	PASS
INVCYPR_RICH	Cyprinid Invertivore Species Richness	TROPHIC	FAIL
INVPISC_NAT_PIND	Proportion of Individuals that are Native Invertivore/Piscivore	TROPHIC	PASS
INVPISC_NAT_PTAX	Proportion of All Species that are Native Invertivore/Piscivore	TROPHIC	PASS
INVPISC_NAT_RICH	Native Invertivore/Piscivore Species Richness	TROPHIC	PASS
INVPISC_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Invertivore/Piscivore	TROPHIC	PASS
INVPISC_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Invertivore/Piscivore	TROPHIC	PASS
INVPISC_NT_PIND	Proportion of Individuals that are Nontolerant Invertivore/Piscivore	TROPHIC	PASS
INVPISC_NT_PTAX	Proportion of All Species that are Nontolerant Invertivore/Piscivore	TROPHIC	PASS
INVPISC_PIND	Proportion of Individuals that are Invertivore/Piscivore	TROPHIC	PASS
INVPISC_PTAX	Proportion of All Species that are Invertivore/Piscivore	TROPHIC	PASS
INVPISC_RICH	Invertivore/Piscivore Species Richness	TROPHIC	PASS
INVPISC_RICH_CORR	Invertivore/Piscivore Species Richness Corrected for Stream Size	TROPHIC	PASS
INVPISC_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Invertivore/Piscivore	TROPHIC	PASS
INVPISC_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Invertivore/Piscivore	TROPHIC	PASS
INVPISC_SEN_PIND	Proportion of Individuals that are Sensitive Invertivore/Piscivore	TROPHIC	PASS
INVPISC_SEN_PTAX	Proportion of All Species that are Sensitive Invertivore/Piscivore	TROPHIC	PASS
KINO_PIND	Proportion of Vertebrate Abundance in the Family Kinosternidae	COMPOSITION	FAIL
LEIO_PIND	Proportion of Vertebrate Abundance in the Family Leiopelmatidae	COMPOSITION	FAIL
LEPISO_PIND	Proportion of Vertebrate Abundance in the Family Lepisosteidae	COMPOSITION	FAIL
LITH_NAT_NIND	Abundance of Native Lithophilic Individuals	REPRODUCTIVE	PASS
LITH_NAT_PIND	Proportion of Individuals that are Native Lithophil	REPRODUCTIVE	PASS
LITH_NAT_PTAX	Proportion of All Species that are Native Lithophil	REPRODUCTIVE	PASS
LITH_NAT_RICH	Native Lithophilic Species Richness	REPRODUCTIVE	PASS
LITH_NAT_RICH_CORR	Native Lithophilic Species Richness Corrected for Stream Size	REPRODUCTIVE	PASS
LITH_NIND	Abundance of Lithophilic Individuals	REPRODUCTIVE	PASS
LITH_PIND	Proportion of Individuals that are Lithophil	REPRODUCTIVE	PASS
LITH_PTAX	Proportion of All Species that are Lithophil	REPRODUCTIVE	PASS
LITH_RICH	Lithophilic Species Richness	REPRODUCTIVE	PASS

LITH_RICH_CORR	Lithophilic Species Richness Corrected for Stream Size	REPRODUCTIVE	PASS
LONG_NAT_PIND	Proportion of Individuals that are Native Long-lived	LIFE HISTORY	PASS
LONG_NAT_PTAX	Proportion of All Species that are Native Long-lived	LIFE HISTORY	PASS
LONG_NAT_RICH	Native Long-lived Species Richness	LIFE HISTORY	PASS
LONG_NAT_RICH_CORR	Native Long-lived Species Richness Corrected for Stream Size	LIFE HISTORY	PASS
LONG_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Long-lived	LIFE HISTORY	PASS
LONG_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Long-lived	LIFE HISTORY	PASS
LONG_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Long-lived	LIFE HISTORY	PASS
LONG_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Long-lived	LIFE HISTORY	PASS
LOTC_NAT_PIND	Proportion of Individuals that are Native Lotic	HABITAT	PASS
LOTC_NAT_PTAX	Proportion of All Species that are Native Lotic	HABITAT	PASS
LOTC_NAT_RICH	Native Lotic Species Richness	HABITAT	PASS
LOTC_NAT_RICH_CORR	Native Lotic Species Richness Corrected for Stream Size	HABITAT	PASS
LOTC_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Lotic	HABITAT	PASS
LOTC_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Lotic	HABITAT	PASS
LOTC_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Lotic	HABITAT	PASS
LOTC_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Lotic	HABITAT	PASS
NEST_NIND	Abundance of Non-Lithophilic Nest Guarding Individuals	REPRODUCTIVE	PASS
NEST_PIND	Proportion of Individuals that are Non-Lithophilic Nest Guarders	REPRODUCTIVE	PASS
NEST_PTAX	Proportion of All Species that are Non-Lithophilic Nest Guarders	REPRODUCTIVE	PASS
NEST_RICH	Non-Lithophilic Nest Guarding Species Richness	REPRODUCTIVE	PASS
NT_RICH	Non-Tolerant Species Richness	RICHNESS	PASS
NT_RICH_CORR	Non-Tolerant Species Richness Corrected for Stream Size	RICHNESS	PASS
OMNI_PIND	Proportion of Individuals that are Omnivore	TROPHIC	PASS
OMNI_PTAX	Proportion of All Species that are Omnivore	TROPHIC	PASS
OMNI_RICH	Omnivore Species Richness	TROPHIC	PASS
PERC_PIND	Proportion of Vertebrate Abundance in the Family Percidae	COMPOSITION	FAIL
PERCICH_PIND	Proportion of Vertebrate Abundance in the Family Percichthyidae	COMPOSITION	FAIL
PERCOP_PIND	Proportion of Vertebrate Abundance in the Family Percopsidae	COMPOSITION	FAIL
PETRO_PIND	Proportion of Vertebrate Abundance in the Family Petromyzontidae	COMPOSITION	FAIL
PIPI_PIND	Proportion of Vertebrate Abundance in the Family Pipidae	COMPOSITION	FAIL
PISC_NAT_PIND	Proportion of Individuals that are Native Piscivore	TROPHIC	FAIL
PISC_NAT_PTAX	Proportion of All Species that are Native Piscivore	TROPHIC	FAIL
PISC_NAT_RICH	Native Piscivore Species Richness	TROPHIC	FAIL
PISC_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Piscivore	TROPHIC	FAIL
PISC_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Piscivore	TROPHIC	FAIL
PISC_NT_PIND	Proportion of Individuals that are Nontolerant Piscivore	TROPHIC	FAIL
PISC_NT_PTAX	Proportion of All Species that are Nontolerant Piscivore	TROPHIC	FAIL

PISC_PIND	Proportion of Individuals that are Piscivore	TROPHIC	FAIL
PISC_PTAX	Proportion of All Species that are Piscivore	TROPHIC	FAIL
PISC_RICH	Piscivore Species Richness	TROPHIC	FAIL
PISC_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Piscivore	TROPHIC	FAIL
PISC_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Piscivore	TROPHIC	FAIL
PISC_SEN_PIND	Proportion of Individuals that are Sensitive Piscivore	TROPHIC	FAIL
PISC_SEN_PTAX	Proportion of All Species that are Sensitive Piscivore	TROPHIC	FAIL
POECIL_PIND	Proportion of Vertebrate Abundance in the Family Poeciliidae	COMPOSITION	FAIL
RANI_PIND	Proportion of Vertebrate Abundance in the Family Ranidae	COMPOSITION	FAIL
RHEO_NAT_PIND	Proportion of Individuals that are Native Rheophilic	HABITAT	PASS
RHEO_NAT_PTAX	Proportion of All Species that are Native Rheophilic	HABITAT	PASS
RHEO_NAT_RICH	Native Rheophilic Species Richness	HABITAT	PASS
RHEO_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Rheophilic	HABITAT	PASS
RHEO_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Rheophilic	HABITAT	PASS
RHEO_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Rheophilic	HABITAT	PASS
RHEO_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Rheophilic	HABITAT	PASS
RHEO_SEN_PIND	Proportion of Individuals that are Sensitive Rheophilic	HABITAT	PASS
RHEO_SEN_PTAX	Proportion of All Species that are Sensitive Rheophilic	HABITAT	PASS
RHYACO_PIND	Proportion of Vertebrate Abundance in the Family Rhyacotritonidae	COMPOSITION	FAIL
RIVR_NAT_PIND	Proportion of Individuals that are Native Large River	HABITAT	FAIL
RIVR_NAT_PTAX	Proportion of All Species that are Native Large River	HABITAT	FAIL
RIVR_NAT_RICH	Native Large River Species Richness	HABITAT	FAIL
RIVR_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Large River	HABITAT	FAIL
RIVR_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Large River	HABITAT	FAIL
RIVR_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Large River	HABITAT	FAIL
RIVR_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Large River	HABITAT	FAIL
SALAM_PIND	Proportion of Vertebrate Abundance in the Family Salamandridae	COMPOSITION	FAIL
SALMON_PIND	Proportion of Vertebrate Abundance in the Family Salmonidae	COMPOSITION	PASS
SCIAEN_PIND	Proportion of Vertebrate Abundance in the Family Sciaenidae	COMPOSITION	FAIL
SENS_NAT_PIND	Proportion of Individuals that are Native Sensitive	TOLERANCE	PASS
SENS_NAT_PTAX	Proportion of All Species that are Native Sensitive	TOLERANCE	PASS
SENS_NAT_RICH	Native Sensitive Species Richness	TOLERANCE	PASS
SPAWN_GEN_NIND	Abundance of Generalist Spawner Individuals	REPRODUCTIVE	PASS
SPAWN_GEN_PIND	Proportion of Individuals that are Generalist Spawner	REPRODUCTIVE	PASS
SPAWN_GEN_PTAX	Proportion of All Species that are Generalist Spawner	REPRODUCTIVE	PASS
SPAWN_GEN_RICH	Generalist Spawner Species Richness	REPRODUCTIVE	PASS
SPAWN_SEN_NIND	Abundance of Sensitive Spawner Individuals	REPRODUCTIVE	PASS
SPAWN_SEN_PIND	Proportion of Individuals that are Sensitive Spawner	REPRODUCTIVE	PASS

SPAWN_SEN_PTAX	Proportion of All Species that are Sensitive Spawner	REPRODUCTIVE	PASS
SPAWN_SEN_RICH	Sensitive Spawner Species Richness	REPRODUCTIVE	PASS
SUP_TOL_PIND	Proportion of Individuals that are Super Tolerant	TOLERANCE	PASS
SUP_TOL_PTAX	Proportion of All Species that are Super Tolerant	TOLERANCE	PASS
SUP_TOL_RICH	Super Tolerant Species Richness	TOLERANCE	PASS
SUP_TOL_RICH_CORR	Super Tolerant Species Richness Corrected for Stream Size	TOLERANCE	PASS
TE_PIND	Proportion of Individuals that are Threatened & Endangered	TOLERANCE	PASS
TE_RICH	Threatened & Endangered Species Richness	TOLERANCE	FAIL
TERR_NAT_PIND	Proportion of Individuals that are Native Terrestrial	HABITAT	FAIL
TERR_NAT_PTAX	Proportion of All Species that are Native Terrestrial	HABITAT	FAIL
TESTUD_PIND	Proportion of Vertebrate Abundance in the Order Testudines	COMPOSITION	FAIL
TOL_PIND	Proportion of Individuals that are Tolerant	TOLERANCE	PASS
TOL_PTAX	Proportion of All Species that are Tolerant	TOLERANCE	PASS
TOL_RICH	Tolerant Species Richness	TOLERANCE	PASS
UMBRID_PIND	Proportion of Vertebrate Abundance in the Family Umbridae	COMPOSITION	FAIL
VAGIL_NAT_PIND	Proportion of Individuals that are Native Migrating	LIFE HISTORY	PASS
VAGIL_NAT_PTAX	Proportion of All Species that are Native Migrating	LIFE HISTORY	PASS
VAGIL_NAT_RICH	Native Migrating Species Richness	LIFE HISTORY	PASS
VAGIL_NAT_RICH_CORR	Native Migrating Species Richness Corrected for Stream Size	LIFE HISTORY	PASS
VAGIL_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Migrating	LIFE HISTORY	PASS
VAGIL_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Migrating	LIFE HISTORY	PASS
VAGIL_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Migrating	LIFE HISTORY	PASS
VAGIL_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Mirgrating	LIFE HISTORY	PASS
VERT_NAT_RICH	Native Vertebrate Species Richness	RICHNESS	PASS
VERT_NAT_RICH_CORR	Native Vertebrate Species Richness Corrected for Stream Size	RICHNESS	PASS
VERT_NIND	Abundance of all Vertebrates	ABUNDANCE	PASS
VERT_RICH	Vertebrate Species Richness	RICHNESS	PASS
VERT_RICH_CORR	Vertebrate Species Richness Corrected for Stream Size	RICHNESS	PASS
VIPER_PIND	Proportion of Vertebrate Abundance in the Family Viperidae	COMPOSITION	FAIL
WCOL_NAT_PIND	Proportion of Individuals that are Native Water Column	HABITAT	PASS
WCOL_NAT_PTAX	Proportion of All Species that are Native Water Column	HABITAT	PASS
WCOL_NAT_RICH	Native Water Column Species Richness	HABITAT	PASS
WCOL_NAT_RICH_CORR	Native Water Column Species Richness Corrected for Stream Size	HABITAT	PASS
WCOL_NT_NAT_PIND	Proportion of Individuals that are Native Nontolerant Water Column	HABITAT	PASS
WCOL_NT_NAT_PTAX	Proportion of All Species that are Native Nontolerant Water Column	HABITAT	PASS
WCOL_SEN_NAT_PIND	Proportion of Individuals that are Native Sensitive Water Column	HABITAT	PASS
WCOL_SEN_NAT_PTAX	Proportion of All Species that are Native Sensitive Water Column	HABITAT	PASS

Table AV-2. Signal:Noise Ratios and F-Test Results for Candidate Aquatic Vertebrate Metrics that passed the Range Test

			F Scores (least- vs. most-disturbed)		
Metric Name	**Metric Class**	**S:N**	**Mountains**	**Plains**	**Xeric**
AIR_PIND	TOLERANCE	3.85	0.65	1.66	0.43
AIR_PTAX	TOLERANCE	7.69	2.18	0.18	1.26
ALIEN_FISH_NIND	ALIEN	1.62	7.06	1.6	0.01
ALIEN_FISH_PIND	ALIEN	40.62	6.65	0	0.01
ALIEN_FISH_PTAX	ALIEN	17.26	5.5	0	0
ALIEN_LOTC_PIND	ALIEN	21.66	0.42	3.97	14.7
ALIEN_LOTC_PTAX	ALIEN	15.99	0	3.77	13.39
ALIEN_LOTC_RICH	ALIEN	3.63	0.7	0.75	2.72
ALIEN_VERT_NIND	ALIEN	1.46	6.37	1.6	0.01
ALIEN_VERT_PIND	ALIEN	24.86	4.44	0.01	0.12
ALIEN_VERT_PTAX	ALIEN	15.28	4.04	0	0.01
ALIEN_VERT_RICH	ALIEN	5.83	13.32	1.1	6.28
AQUA_NAT_PIND	ALIEN	27.74	13.75	0.02	1.13
AQUA_NAT_PTAX	ALIEN	9.22	12.09	0.05	0.25
AQUA_NAT_RICH	RICHNESS	11.37	0.26	0.15	0.27
AQUA_NAT_RICH_CORR	RICHNESS	4.89	0.01	2.21	0.48
BENT_NAT_PIND	HABITAT	10.58	0.29	0.24	5.12
BENT_NAT_PTAX	HABITAT	6.72	0	0.01	4.53
BENT_NAT_RICH	HABITAT	10.24	1.02	0.95	0.43
BENT_NAT_RICH_CORR	HABITAT	5.53	2.36	7.29	0.57
BENT_NT_NAT_PIND	HABITAT	6.49	0.28	3.31	2.16
BENT_NT_NAT_PTAX	HABITAT	4.52	0.06	0.38	3.54
BENT_SEN_NAT_PIND	HABITAT	18.25	1.65	2.96	0.01
BENT_SEN_NAT_PTAX	HABITAT	18.13	5.98	2.1	0.05
BINV_NAT_NIND	TROPHIC	16.98	0.77	0.13	5.94
BINV_NAT_PIND	TROPHIC	7.92	0	0.1	6.46
BINV_NAT_PTAX	TROPHIC	4.67	0.03	0.03	5.96
BINV_NAT_RICH	TROPHIC	5.96	1.77	0.52	4.3
CATO_PIND	COMPOSITION	1.9	8.29	2.76	2.36
CATOICT_NAT_NIND	COMPOSITION	5.6	0.96	0.71	0.21
CATOICT_NAT_RICH	COMPOSITION	8.65	9.72	0	1.85
CATOICT_NAT_RICH_CORR	COMPOSITION	2.67	12.24	5.59	0.19
COLD_NAT_NIND	ABUNDANCE	1.43	3.85	5.47	4.3
COLD_NAT_PIND	HABITAT	22.41	32.55	0.67	10.29
COLD_NAT_PTAX	HABITAT	17.67	34.28	5.9	12.32
COLD_NAT_RICH	HABITAT	7.9	19.76	7.09	6.65
COLD_NT_NAT_PIND	HABITAT	22.41	32.55	0.67	10.29
COLD_NT_NAT_PTAX	HABITAT	17.67	34.28	5.9	12.32
COLD_SEN_NAT_PIND	HABITAT	49.14	34.57	0.67	9.15
COLD_SEN_NAT_PTAX	HABITAT	22.19	34.57	5.9	9.97
COOL_NAT_PIND	HABITAT	5.14	11.66	3.15	5.04
COOL_NAT_PTAX	HABITAT	6.55	17.76	2.14	6.96
COOL_NAT_RICH	HABITAT	5.67	7.99	2.86	2.98
COOL_NAT_RICH_CORR	HABITAT	3.51	12.84	6.65	0.65

COOL_NT_NAT_PIND	HABITAT	4.89	11.65	3.15	2.12
COOL_NT_NAT_PTAX	HABITAT	6.3	15.33	2.14	5.23
CWRHEO_NAT_RICH	HABITAT	8.6	22.09	1.08	7.85
CYPR_PIND	COMPOSITION	6.55	13.13	2.08	17.94
FAM_NAT_RICH	RICHNESS	6.93	1.07	0.01	0
FAM_RICH	RICHNESS	6.27	0.93	0	1.31
FAM_RICH_CORR	RICHNESS	2.42	2.84	1	0.03
FISH_NAT_RICH	RICHNESS	11.62	1.06	0.07	0.5
FISH_NAT_RICH_CORR	RICHNESS	4.64	4.27	2	0.33
FISH_NIND	ABUNDANCE	4.17	0.93	0.04	0.04
FISH_RICH	RICHNESS	12.09	7.19	0	3.94
FISH_RICH_CORR	RICHNESS	4.51	17.64	2.18	1.75
HIDE_NAT_PIND	HABITAT	11.41	18.68	0.01	0.4
HIDE_NAT_PTAX	HABITAT	14.75	12.92	0.33	1.31
HIDE_NAT_RICH	HABITAT	5.56	5.67	0.54	2.56
HIDE_NT_NAT_PIND	HABITAT	34.34	18	4.64	0.36
HIDE_NT_NAT_PTAX	HABITAT	27.24	13.67	1.62	0.91
HIDE_SEN_NAT_PIND	HABITAT	48.57	39.83	1.44	8.86
HIDE_SEN_NAT_PTAX	HABITAT	25.24	32.25	0.58	8.41
INV_NAT_PIND	TROPHIC	6.93	0	0.01	0.01
INV_NAT_PTAX	TROPHIC	7.08	0.41	0.3	3.62
INV_NAT_RICH	TROPHIC	5.48	0.48	1.32	1.51
INV_NT_NAT_PIND	TROPHIC	8	0	0.02	0.46
INV_NT_NAT_PTAX	TROPHIC	8.62	0.93	0	2.85
INV_NT_PIND	TROPHIC	8.83	0.12	0.01	0.84
INV_NT_PTAX	TROPHIC	9.34	0.31	0.02	3.06
INV_PIND	TROPHIC	7.96	0.43	0.04	0.24
INV_PTAX	TROPHIC	7.66	0.01	0.11	2.28
INV_RICH	TROPHIC	5.17	1.19	0.9	0.27
INV_SEN_NAT_PIND	TROPHIC	12	4.65	0.1	1.66
INV_SEN_NAT_PTAX	TROPHIC	9.01	10.55	0.5	2
INV_SEN_PIND	TROPHIC	14.23	3.52	0.1	2.61
INV_SEN_PTAX	TROPHIC	7.58	9.32	0.5	1.76
INVCYPR_PIND	TROPHIC	2.9	2.92	2.31	0.12
INVCYPR_PTAX	TROPHIC	4.43	5.72	3.79	0.05
INVPISC_NAT_PIND	TROPHIC	11.91	17.53	3.68	8.13
INVPISC_NAT_PTAX	TROPHIC	18.36	13.65	1.55	8.58
INVPISC_NAT_RICH	TROPHIC	4.76	14.35	1.67	4.01
INVPISC_NT_NAT_PIND	TROPHIC	36.73	17.53	1.88	8.13
INVPISC_NT_NAT_PTAX	TROPHIC	24.28	13.65	0.49	8.58
INVPISC_NT_PIND	TROPHIC	43.63	16.04	9.32	40.82
INVPISC_NT_PTAX	TROPHIC	25.58	15.89	4.59	44.41
INVPISC_PIND	TROPHIC	10.04	15.38	0	32.45
INVPISC_PTAX	TROPHIC	14.28	11.39	0.28	27.26
INVPISC_RICH	TROPHIC	3.25	2.72	0.09	0.36
INVPISC_RICH_CORR	TROPHIC	1.65	1.93	1.08	1.05
INVPISC_SEN_NAT_PIND	TROPHIC	49.43	17.78	0	8.21
INVPISC_SEN_NAT_PTAX	TROPHIC	28.4	13.93	0	9.04
INVPISC_SEN_PIND	TROPHIC	42.79	29.02	5.53	22.23
INVPISC_SEN_PTAX	TROPHIC	28.48	24.28	5.82	27.07
LITH_NAT_NIND	REPRODUCTIVE	0.16	1.82	1.45	0.84

LITH_NAT_PIND	REPRODUCTIVE	11.65	18.95	1.05	1.31
LITH_NAT_PTAX	REPRODUCTIVE	9.9	18.74	0.07	2.75
LITH_NAT_RICH	REPRODUCTIVE	5.61	5.23	0.43	0.07
LITH_NAT_RICH_CORR	REPRODUCTIVE	4.09	4.04	1.29	0.87
LITH_NIND	REPRODUCTIVE	0.41	0.54	1.36	4.24
LITH_PIND	REPRODUCTIVE	13.86	21.89	4.87	24.77
LITH_PTAX	REPRODUCTIVE	14.87	27.18	3.03	40.9
LITH_RICH	REPRODUCTIVE	7.68	5.89	1.39	3.22
LITH_RICH_CORR	REPRODUCTIVE	4.78	4.83	2.9	11.3
LONG_NAT_PIND	LIFE HISTORY	8.06	7.48	0.79	1.23
LONG_NAT_PTAX	LIFE HISTORY	9.96	4.9	0.13	4.39
LONG_NAT_RICH	LIFE HISTORY	7.03	0.73	0	0.03
LONG_NAT_RICH_CORR	LIFE HISTORY	3.19	0.01	4.24	0.86
LONG_NT_NAT_PIND	LIFE HISTORY	7.89	7.5	4.6	6.69
LONG_NT_NAT_PTAX	LIFE HISTORY	7.63	5.86	3.08	7.47
LONG_SEN_NAT_PIND	LIFE HISTORY	22.64	14.34	0.79	10.76
LONG_SEN_NAT_PTAX	LIFE HISTORY	41.77	12.1	5.26	7.92
LOTC_NAT_PIND	HABITAT	18	15.58	0.08	0.41
LOTC_NAT_PTAX	HABITAT	7.43	13.65	0.43	0.33
LOTC_NAT_RICH	HABITAT	11.3	0.62	0.06	0.15
LOTC_NAT_RICH_CORR	HABITAT	5.73	0.07	2.59	0.96
LOTC_NT_NAT_PIND	HABITAT	14.82	15.99	0.15	0.11
LOTC_NT_NAT_PTAX	HABITAT	6.44	15.57	0.01	0.05
LOTC_SEN_NAT_PIND	HABITAT	38.32	27.34	0.74	6.12
LOTC_SEN_NAT_PTAX	HABITAT	20.81	26.4	1.14	5.85
NEST_NIND	REPRODUCTIVE	3.74	0.18	0.35	0.45
NEST_PIND	REPRODUCTIVE	4.19	9.13	0.37	1.53
NEST_PTAX	REPRODUCTIVE	9.94	26.44	0.1	14.36
NEST_RICH	REPRODUCTIVE	6.71	21.26	0.01	10.57
NT_RICH	RICHNESS	7.27	0	8.4	0.34
NT_RICH_CORR	RICHNESS	4.59	0.41	12.2	4.59
OMNI_PIND	TROPHIC	5.88	8.17	0	20.23
OMNI_PTAX	TROPHIC	6.11	13.47	0.16	40.52
OMNI_RICH	TROPHIC	8.74	11.57	0	13.74
RHEO_NAT_PIND	HABITAT	55.23	27.57	5.85	14.89
RHEO_NAT_PTAX	HABITAT	16.55	26.4	2.08	15.3
RHEO_NAT_RICH	HABITAT	12.94	11.9	8.88	9.21
RHEO_NT_NAT_PIND	HABITAT	55.22	27.57	5.85	14.89
RHEO_NT_NAT_PTAX	HABITAT	16.56	26.4	2.08	15.3
RHEO_SEN_NAT_PIND	HABITAT	48.08	32.72	2.9	9.6
RHEO_SEN_NAT_PTAX	HABITAT	23.42	29.35	1.27	10.19
RHEO_SEN_PIND	HABITAT	41.68	52.26	6.77	28.47
RHEO_SEN_PTAX	HABITAT	21.02	48.5	5.85	28.25
SALMON_PIND	COMPOSITION	18.33	11.16	5.53	42.26
SENS_NAT_PIND	TOLERANCE	39.63	30.18	1.12	5.69
SENS_NAT_PTAX	TOLERANCE	22.02	30.73	0.81	5.59
SENS_NAT_RICH	TOLERANCE	11.73	12.14	5.13	2.44
SPAWN_GEN_NIND	REPRODUCTIVE	5.99	1.12	0.6	0.05
SPAWN_GEN_PIND	REPRODUCTIVE	7.27	2.92	0	3.2
SPAWN_GEN_PTAX	REPRODUCTIVE	11.16	11.15	0.01	11.19
SPAWN_GEN_RICH	REPRODUCTIVE	9.02	14.91	0.23	9

SPAWN_SEN_NIND	REPRODUCTIVE	1.23	0.85	1.57	1.81
SPAWN_SEN_PIND	REPRODUCTIVE	8.29	25.84	6.21	13.88
SPAWN_SEN_PTAX	REPRODUCTIVE	3.94	19.86	6.01	13.15
SPAWN_SEN_RICH	REPRODUCTIVE	2.86	12.93	11.23	9.59
SUP_TOL_PIND	TOLERANCE	3.37	22.01	18.13	18.43
SUP_TOL_PTAX	TOLERANCE	5.08	27.97	13.2	20.46
SUP_TOL_RICH	TOLERANCE	3.45	26.53	10.38	19.27
SUP_TOL_RICH_CORR	TOLERANCE	2.35	26.53	5.96	18.01
TE_PIND	TOLERANCE	27.54	15.72	1.54	12.66
TOL_PIND	TOLERANCE	5.04	22.6	17.73	33.72
TOL_PTAX	TOLERANCE	3.67	27.76	15.28	24.34
TOL_RICH	TOLERANCE	3.04	20.59	7.52	16.32
VAGIL_NAT_PIND	LIFE HISTORY	8.3	8.54	0.48	12
VAGIL_NAT_PTAX	LIFE HISTORY	6.1	3.77	0.37	7.11
VAGIL_NAT_RICH	LIFE HISTORY	7.45	0.89	0.03	1.34
VAGIL_NAT_RICH_CORR	LIFE HISTORY	4.11	0.04	5.47	4.71
VAGIL_NT_NAT_PIND	LIFE HISTORY	8.37	8.54	3.6	12
VAGIL_NT_NAT_PTAX	LIFE HISTORY	6.32	3.77	3.01	7.11
VAGIL_SEN_NAT_PIND	LIFE HISTORY	22.41	10.63	0.65	10.69
VAGIL_SEN_NAT_PTAX	LIFE HISTORY	36.32	4.6	5.68	6.34
VERT_NAT_RICH	RICHNESS	10.68	0.07	0.22	0.19
VERT_NAT_RICH_CORR	RICHNESS	4.38	0.07	2.27	0.53
VERT_NIND	ABUNDANCE	4.21	0.77	0.05	0
VERT_RICH	RICHNESS	10.23	3.09	0.04	3.49
VERT_RICH_CORR	RICHNESS	3.87	8.36	2.47	1.18
WCOL_NAT_PIND	HABITAT	9.82	10.06	0.91	3.41
WCOL_NAT_PTAX	HABITAT	7.34	3.71	0.98	3.83
WCOL_NAT_RICH	HABITAT	7.01	1.5	0.39	0.05
WCOL_NAT_RICH_CORR	HABITAT	3.79	0.56	0.17	0.12
WCOL_NT_NAT_PIND	HABITAT	11.37	11.72	0.51	5.68
WCOL_NT_NAT_PTAX	HABITAT	12.85	4.17	0.45	5.04
WCOL_SEN_NAT_PIND	HABITAT	22.31	13.02	0.28	8.46
WCOL_SEN_NAT_PTAX	HABITAT	21.94	6.5	0.44	8.9

Table AV-3. Spearman Correlation Coefficients for Final Metrics at Reference Sites

Mountains							
	ALIEN_VERT_PIND	CYPR_PIND	INVPISC_SEN_PIND	LITH_PTAX	LONG_SEN_NAT_PTAX	RHEO_SEN_PIND	SUP_TOL_PTAX
ALIEN_VERT_PIND	1.00	-0.04	-0.02	0.23	-0.50	-0.18	0.20
CYPR_PIND	-0.04	1.00	-0.34	-0.54	-0.27	-0.54	0.18
INVPISC_SEN_PIND	-0.02	-0.34	1.00	0.44	0.58	0.59	-0.04
LITH_PTAX	0.23	-0.54	0.44	1.00	0.24	0.52	-0.21
LONG_SEN_NAT_PTAX	-0.50	-0.27	0.58	0.24	1.00	0.35	-0.06
RHEO_SEN_PIND	-0.18	-0.54	0.59	0.52	0.35	1.00	-0.15
SUP_TOL_PTAX	0.20	0.18	-0.04	-0.21	-0.06	-0.15	1.00

Plains								
	ALIEN_VERT_PIND	CATOICT_NAT_RICH_CORR	INVPISC_NT_PIND	NT_RICH_CORR	RHEO_NAT_RICH	SPAWN_SEN_RICH	SUP_TOL_PIND	VAGIL_SEN_NAT_PTAX
ALIEN_VERT_PIND	1.00	-0.07	0.49	-0.27	0.10	0.34	0.11	0.26
CATOICT_NAT_RICH_CORR	-0.07	1.00	-0.20	0.45	0.17	0.23	0.26	0.12
INVPISC_NT_PIND	0.49	-0.20	1.00	-0.18	0.10	0.06	-0.16	0.08
NT_RICH_CORR	-0.27	0.45	-0.18	1.00	0.43	0.30	-0.20	0.26
RHEO_NAT_RICH	0.10	0.17	0.10	0.43	1.00	0.25	0.05	0.35
SPAWN_SEN_RICH	0.34	0.23	0.06	0.30	0.25	1.00	-0.02	0.52
SUP_TOL_PIND	0.11	0.26	-0.16	-0.20	0.05	-0.02	1.00	-0.19
VAGIL_SEN_NAT_PTAX	0.26	0.12	0.08	0.26	0.35	0.52	-0.19	1.00

Xeric							
	ALIEN_VERT_RICH	CYPR_PIND	INVPISC_NT_PTAX	RHEO_SEN_PIND	SPAWN_SEN_PIND	TOL_PIND	VAGIL_NAT_PIND
ALIEN_VERT_RICH	1.00	0.24	-0.06	-0.26	-0.25	0.56	-0.68
CYPR_PIND	0.24	1.00	-0.67	-0.54	-0.31	0.25	0.00
INVPISC_NT_PTAX	-0.06	-0.67	1.00	0.63	0.29	-0.43	-0.14
RHEO_SEN_PIND	-0.26	-0.54	0.63	1.00	0.66	-0.32	0.20
SPAWN_SEN_PIND	-0.25	-0.31	0.29	0.66	1.00	-0.21	0.21
TOL_PIND	0.56	0.25	-0.43	-0.32	-0.21	1.00	-0.21
VAGIL_NAT_PIND	-0.68	0.00	-0.14	0.20	0.21	-0.21	1.00

Table AV-4. Final Metrics, Order of Inclusion in MMI, and Ceiling/Floor Values

Metric Class	*Mountains*			*Plains*			*Xeric*		
	Metric	**Ceiling**	**Floor**	**Metric**	**Ceiling**	**Floor**	**Metric**	**Ceiling**	**Floor**
Habitat	RHEO_SEN_PIND (1)	1	0	RHEO_NAT_RICH (5)	1.9	0	RHEO_SEN_PIND (3)	1	0
Tolerance	SUP_TOL_PTAX (3)	0	0.2	SUP_TOL_PIND (1)	0	0.06	TOL_PIND (2)	0	0.01
Trophic	INVPISC_SEN_ PIND (2)	1	0	INVPISC_NT_PIND (4)	0.43	0	INVPISC_NT_PTAX (1)	1	0
Reproductive	LITHO_ PTAX (4)	1	0.3	SPAWN_SEN_RICH (3)	1.9	0	SPAWN_SEN_PIND (5)	1	0
Composition	CYPR_PIND (5)	0	0.5	CATOICT_NAT_RICH_CORR (7)	1.5	-1.2	CYPR_PIND (4)	0	0.5
Richness	*			NT_RICH_CORR (2)	3.5	-3.8	*		
Life History	LONG_SEN_NAT_PTAX (6)	1	0	VAGIL_SEN_NAT_PTAX (6)	0.11	0	VAGIL_NAT_PIND (6)	0.94	0
Alien Species	ALIEN_VERT_PIND (7)	0	1	ALIEN_VERT_PIND (8)	0	0.4	ALIEN_VERT_RICH (7)	0	2.9

Table AV-5. Performance of Aquatic Vertebrate MMI

	Signal:Noise Ratio	**F test**
Multi-Metric Index		
West-wide	17.9	176.2
Mountains	29.3	63.3
Plains	4.3	51.6
Xeric	5.3	45.6

Figures

[Boxes in box-and-whisker plots indicate interquartile range and median (center line); whiskers show 10th and 90th percentiles; dots indicate 5th and 95th percentile values)

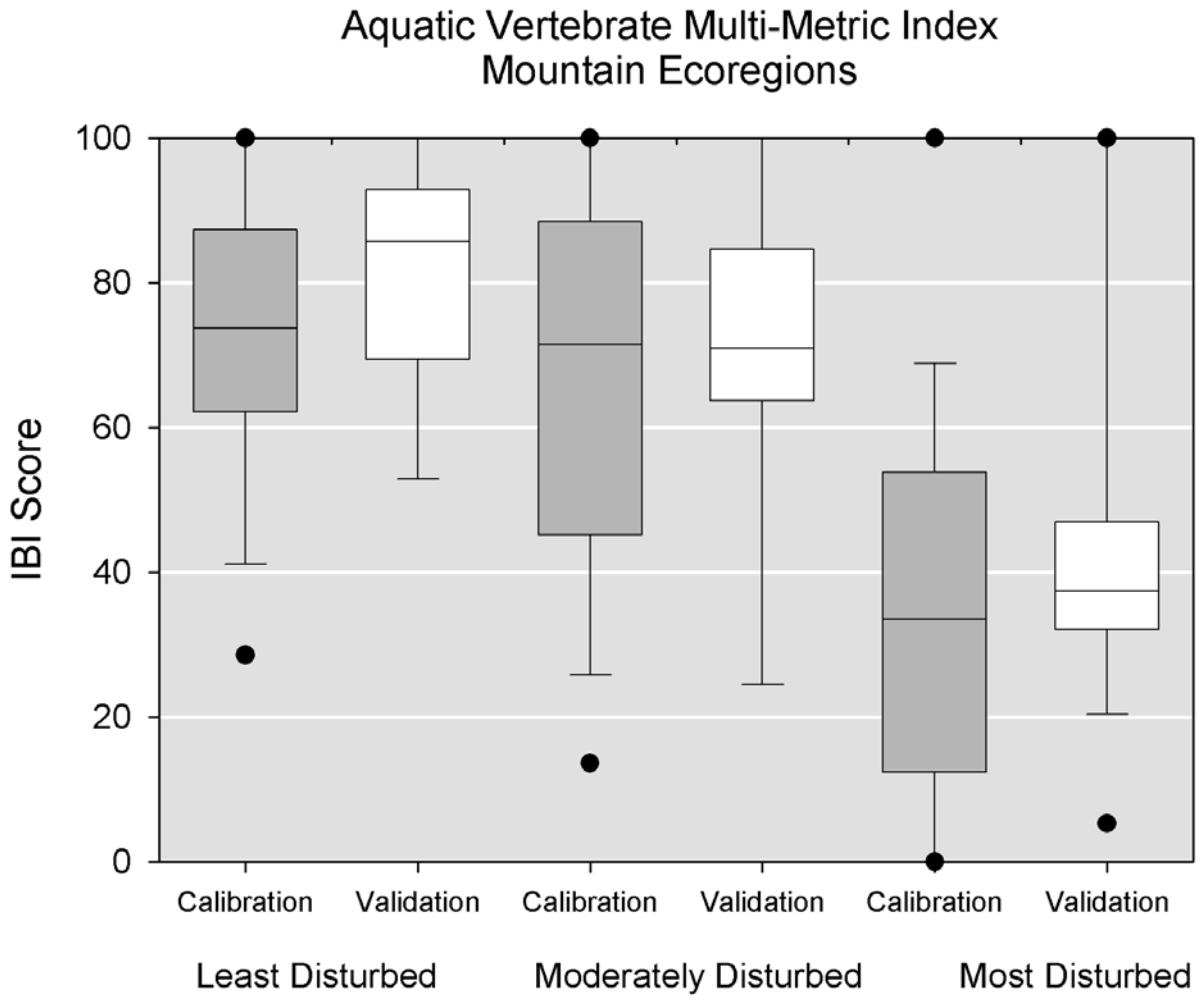


Figure AV-1. MMI Results for Calibration and Validation Datasets – Mountain Ecoregions

[Boxes in box-and-whisker plots indicate interquartile range and median (center line); whiskers show 10th and 90th percentiles; dots indicate 5th and 95th percentile values]. The number of least-disturbed sites in this region was not sufficient to allow us to set aside least-disturbed sites for validation.

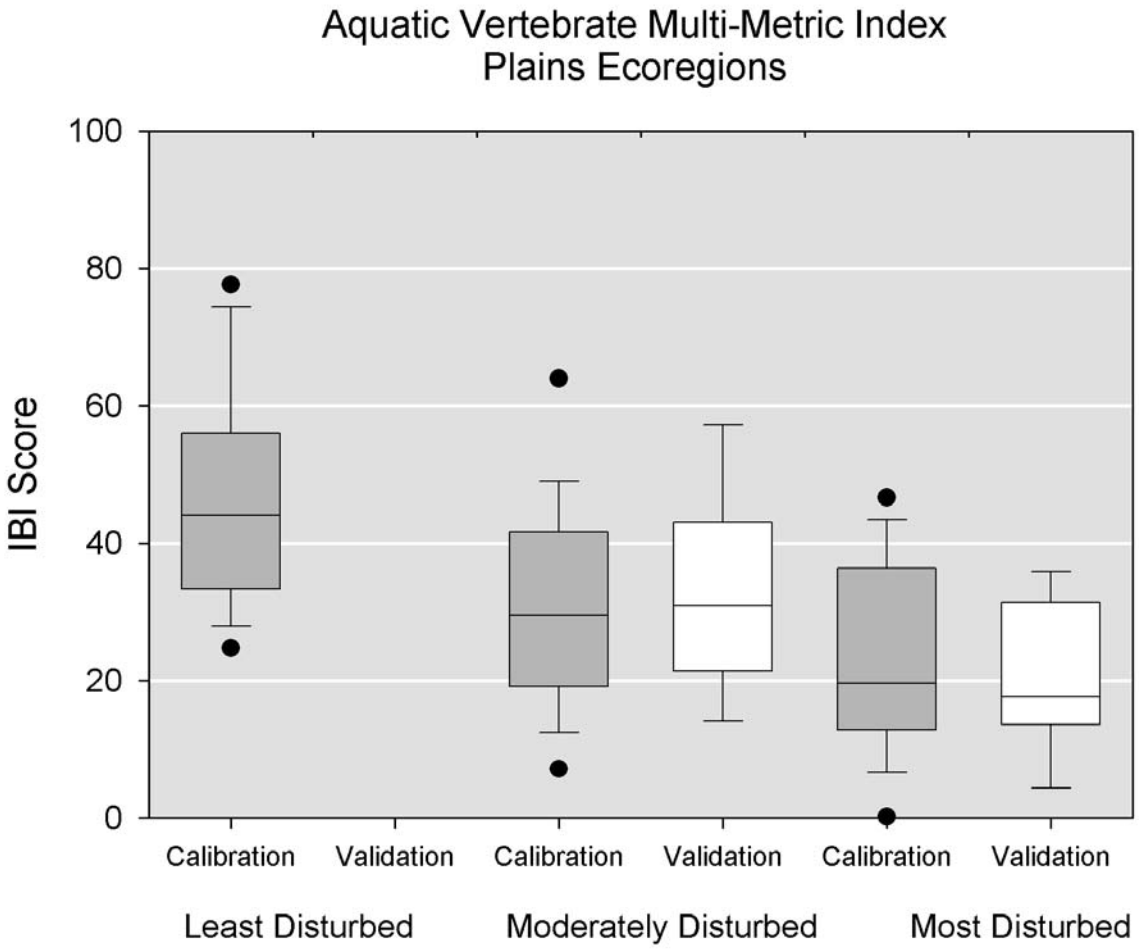


Figure AV-2. MMI Results for Calibration and Validation Datasets – Plains Ecoregions

[Boxes in box-and-whisker plots indicate interquartile range and median (center line); whiskers show 10th and 90th percentiles; dots indicate 5th and 95th percentile values]. The number of least-disturbed sites in this region was not sufficient to allow us to set aside least-disturbed sites for validation.

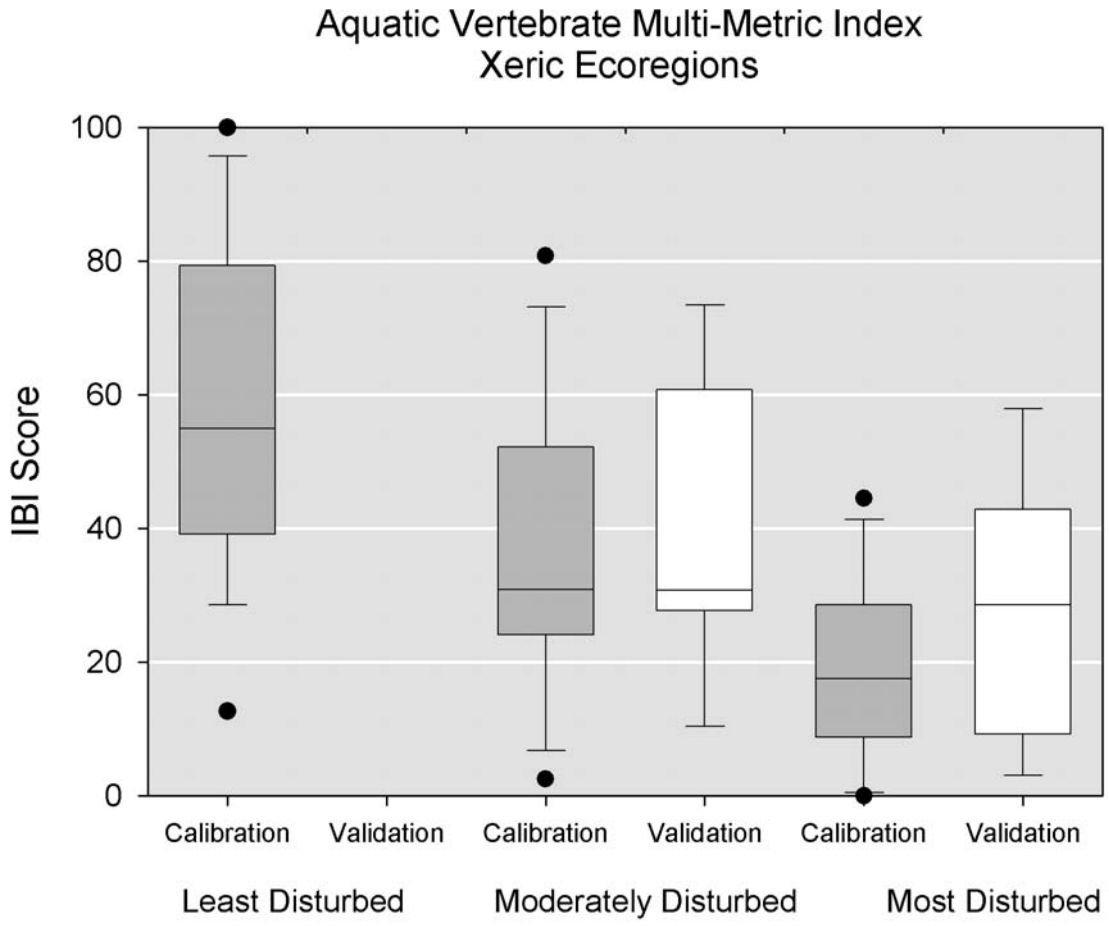


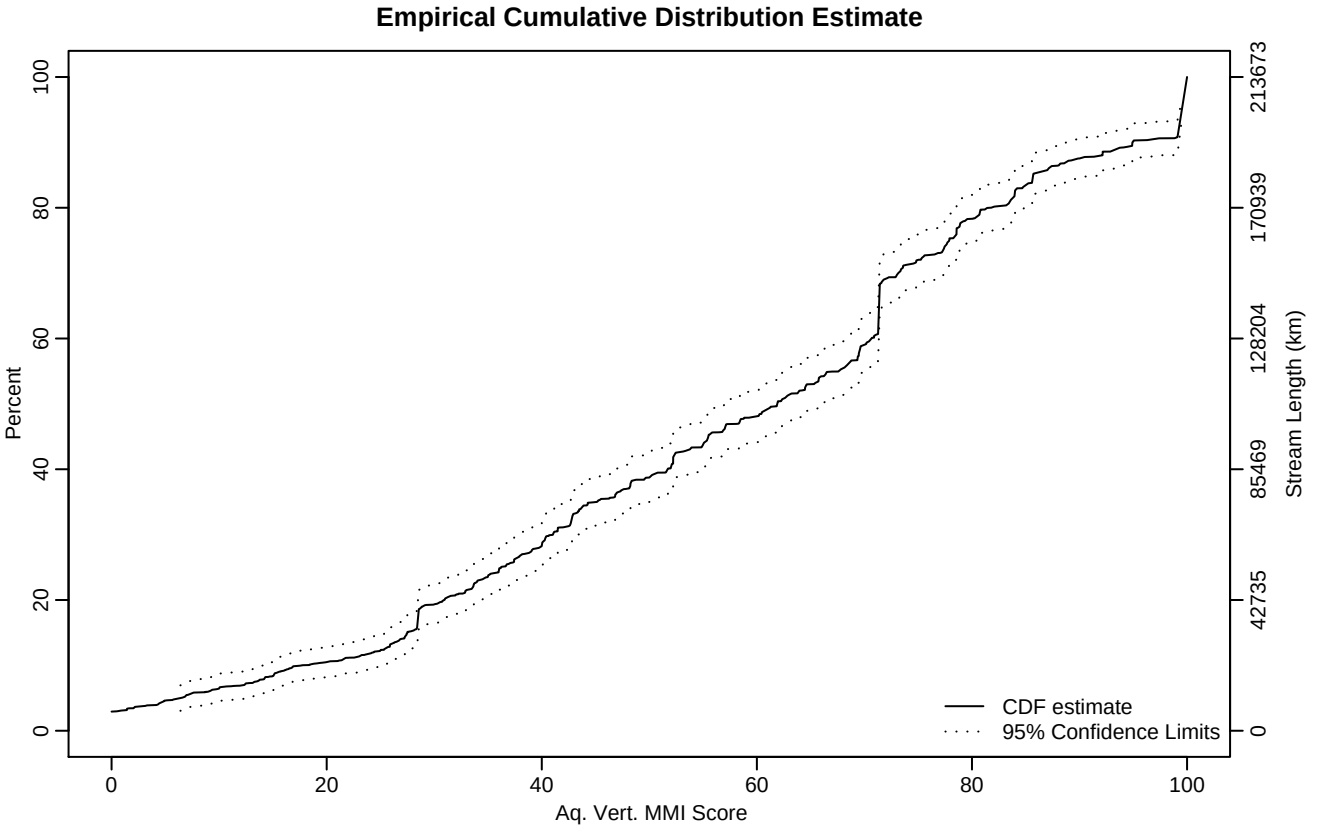
Figure AV-3. MMI Results for Calibration and Validation Datasets – Xeric Ecoregions

Presentation of Results for Aquatic Vertebrate MMI

The following pages present empirical cumulative distribution (CDF) plots for the Aquatic Vertebrate Multi-Metric Index and its component metrics, as well as a small number of special interest metrics. Please refer to Table AV-1 to decipher the somewhat cryptic metric names used in plots. The distributions for each variable are presented West-wide, for each of the three aggregate regions, and for 10 aggregate ecoregions (see Figures 1 and DE-6 for the locations of ecological regions), along with a summary of each distribution's statistical parameters. For an explanation of how to interpret CDFs, please see the section "How to Use this Report" earlier.

Some metrics are of interest, regardless of whether they are included in an MMI. These metrics address particular aspects of the vertebrate assemblages that provide additional information about the condition of the streams and rivers in the West. The occurrence of non-native species, and threatened, endangered and vulnerable species both address issues of potential loss of native species biodiversity. Assemblages dominated by omnivores or species tolerant of human caused disturbance can indicate stressed ecosystems, while assemblages dominated by sensitive species can indicate minimally stressed systems. The presence of migratory fish species (vagile species) can indicate unimpeded physical connections among waterways (i.e., relatively natural hydrologic regimes). Flowing waters in the mountainous West, including large portions of the xeric lands, are naturally coldwater ecosystems. Thus, the proportion of native coldwater species can indicate the health of those systems.

Figure VERT−1 Indicator: MMI_VERT Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.40	0.89	12.02
10Pct	17.70	13.71	25
25Pct	36.21	33.48	40
50Pct	61.90	56.83	65.93
75Pct	77.88	73.59	80.69
90Pct	94.92	89.12	99.30
95Pct	99.52	99.26	99.77
Mean	57.52	55.38	59.65
Std Dev	23.32	21.78	24.86

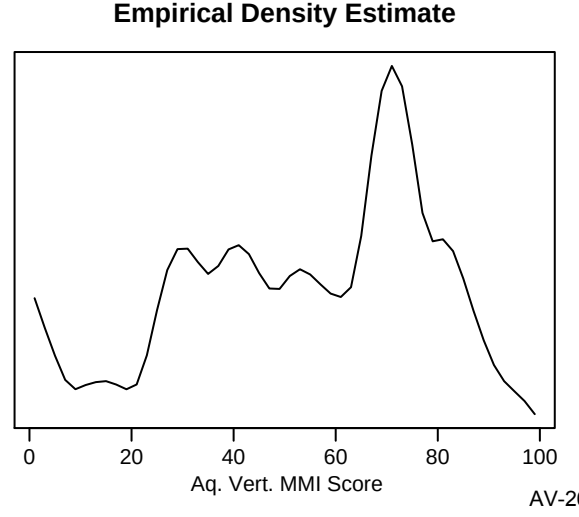
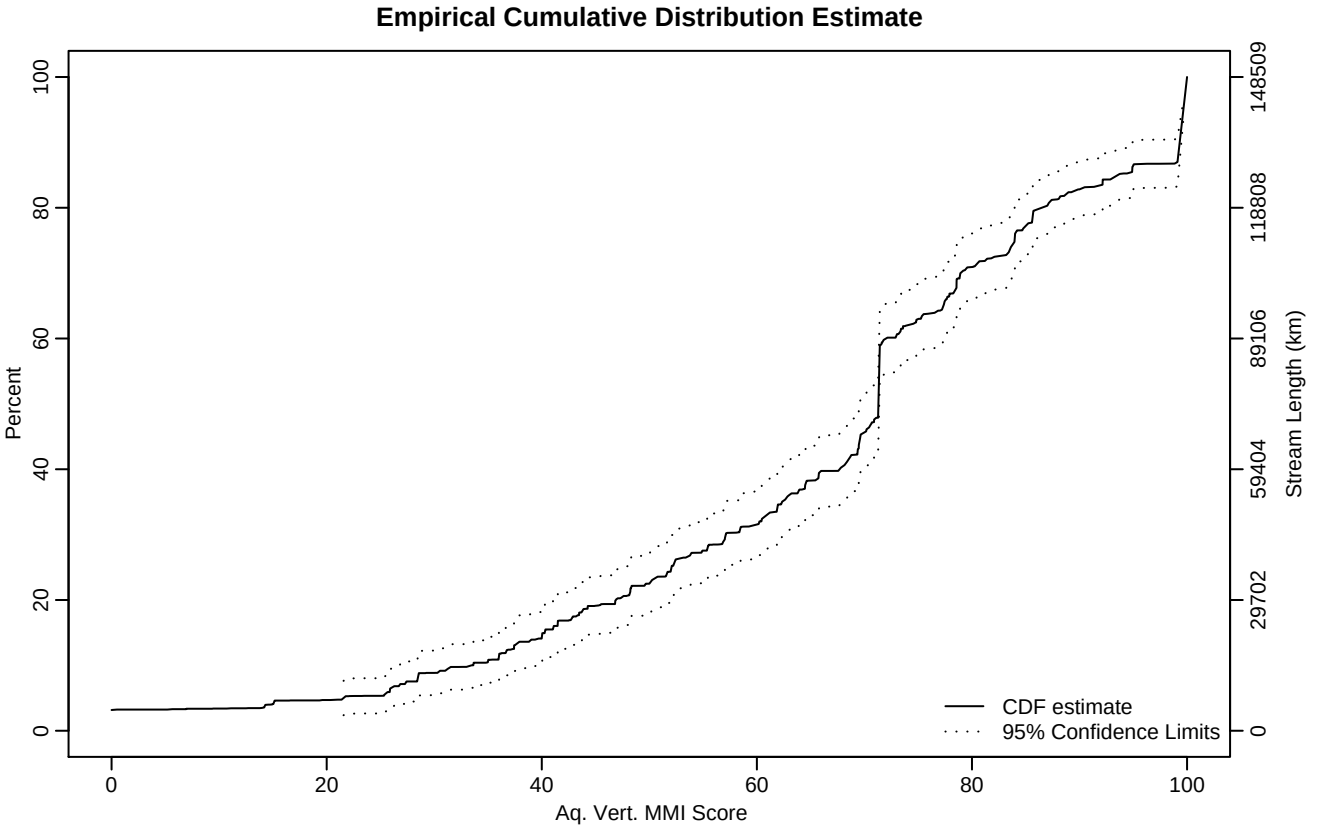


Figure VERT−2 Indicator: MMI_VERT Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	21.57	0	28.42
10Pct	33.46	25.92	37.85
25Pct	52.06	47.05	57.07
50Pct	71.30	69.54	71.38
75Pct	83.96	78.92	86.59
90Pct	99.32	94.94	99.57
95Pct	99.66	99.40	99.91
Mean	66.74	64	69.47
Std Dev	22.12	20.11	24.12

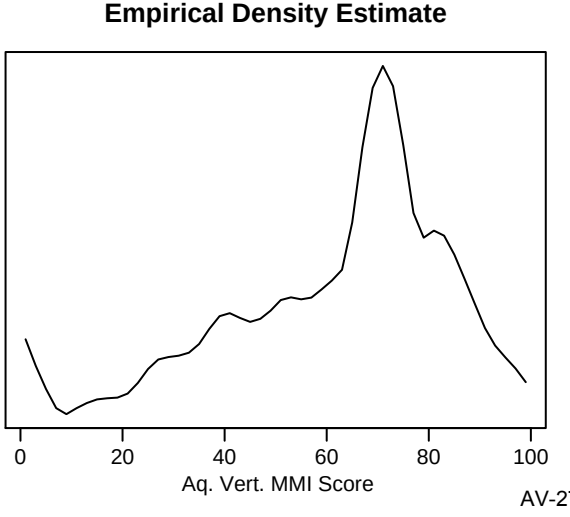
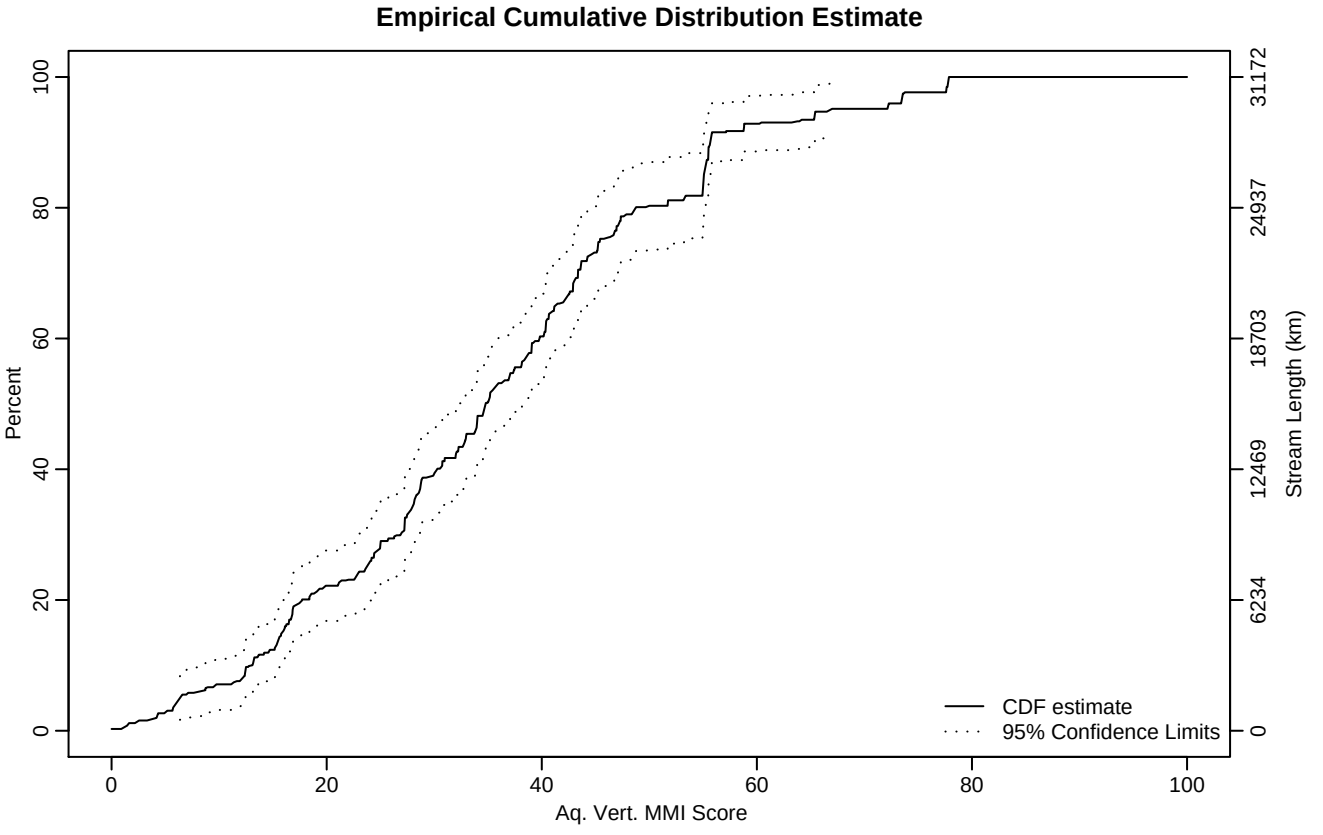


Figure VERT−3 Indicator: MMI_VERT Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.35	5.03	11.16
10Pct	13.04	7.11	15.58
25Pct	23.70	16.95	27.23
50Pct	34.78	32.23	38.54
75Pct	45.40	42.62	54.98
90Pct	55.67	55.06	72.18
95Pct	66.85	55.77	77.77
Mean	35.49	33.04	37.94
Std Dev	15.19	13.62	16.76

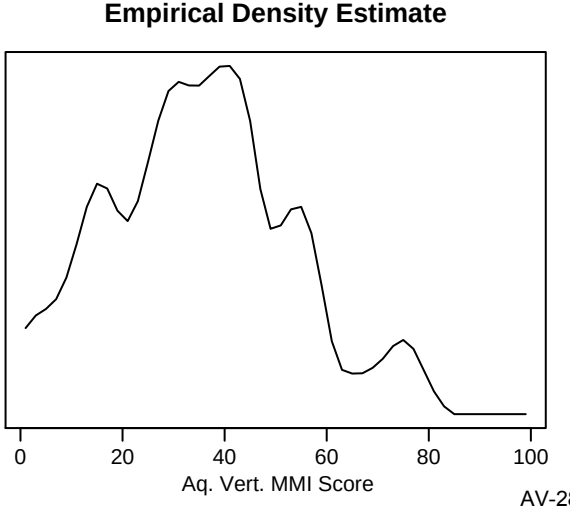
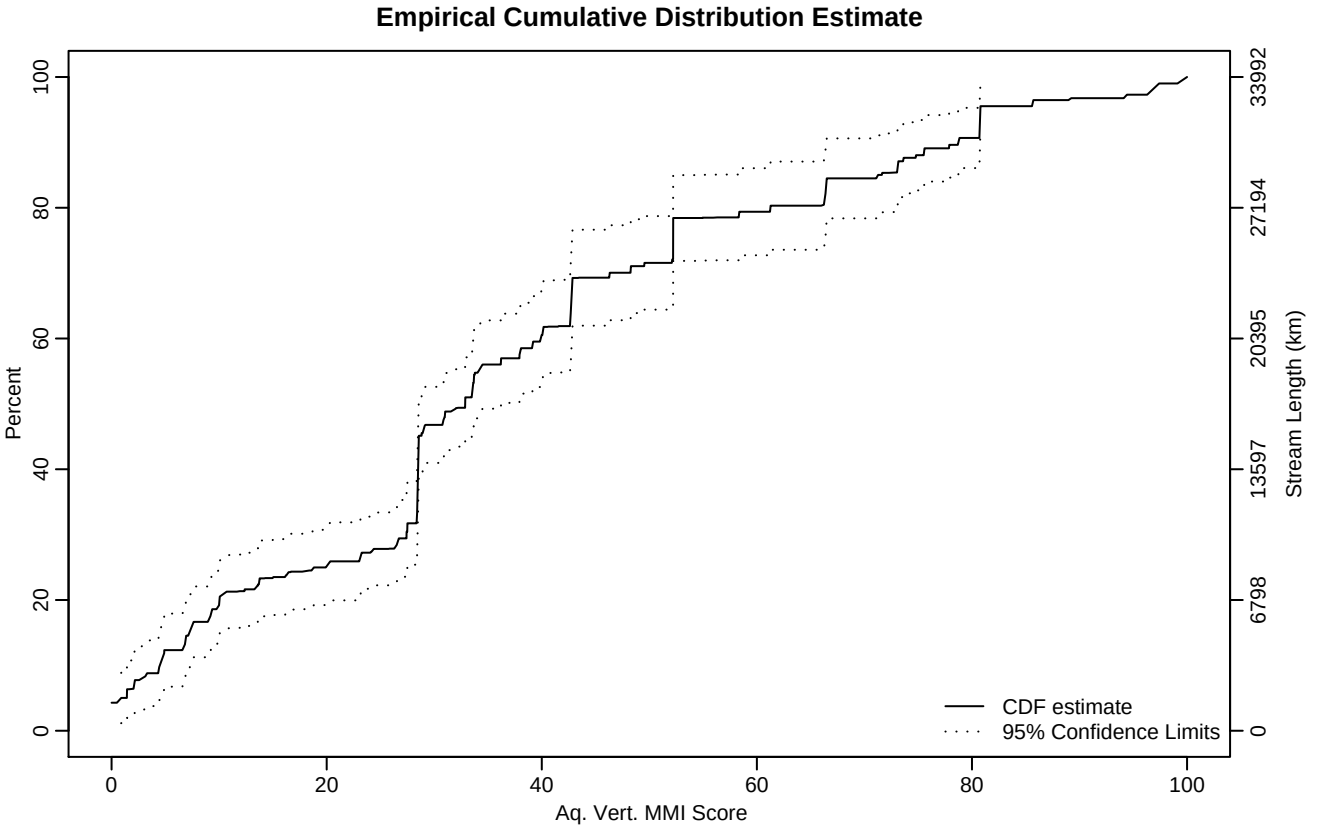


Figure VERT−4 Indicator: MMI_VERT Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.89	0	3.30
10Pct	4.49	0.75	7.29
25Pct	19.93	9.32	27.51
50Pct	32.88	28.54	36.22
75Pct	52.21	42.81	66.39
90Pct	78.74	71.23	80.78
95Pct	80.78	78.78	99.77
Mean	37.43	33.93	40.93
Std Dev	19.57	17.71	21.43

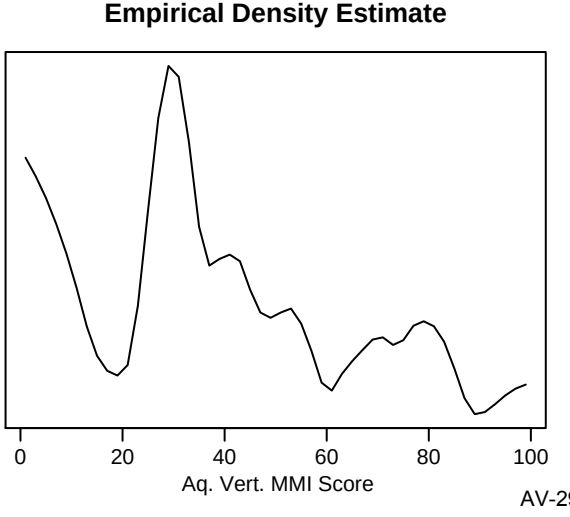
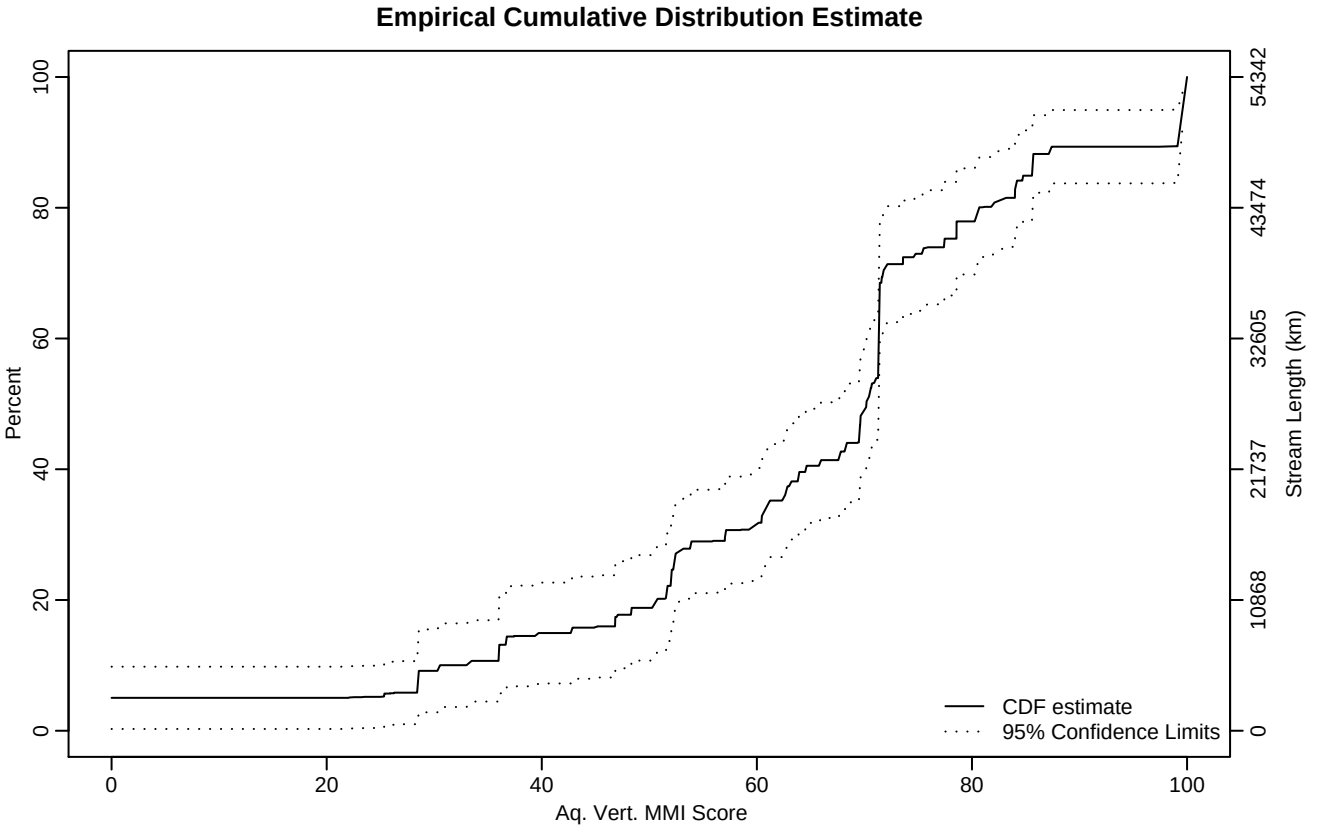


Figure VERT−5 Indicator: MMI_VERT Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	30.49
10Pct	30.53	0	46.82
25Pct	52.25	46.82	60.63
50Pct	70.18	64.59	71.33
75Pct	77.45	71.41	84.13
90Pct	99.16	84.72	99.62
95Pct	99.58	99.12	
Mean	64.47	59.89	69.04
Std Dev	22.27	18.20	26.35

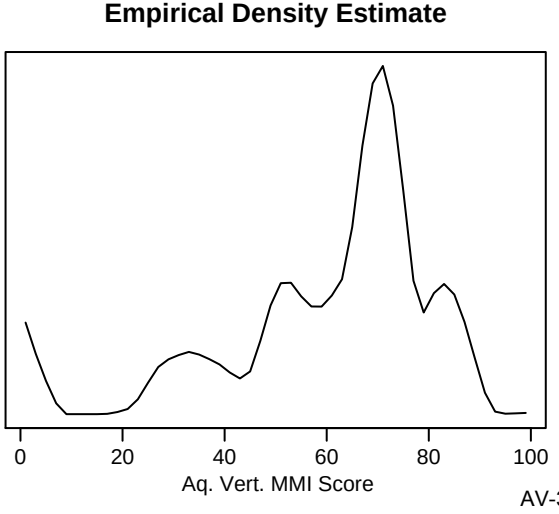
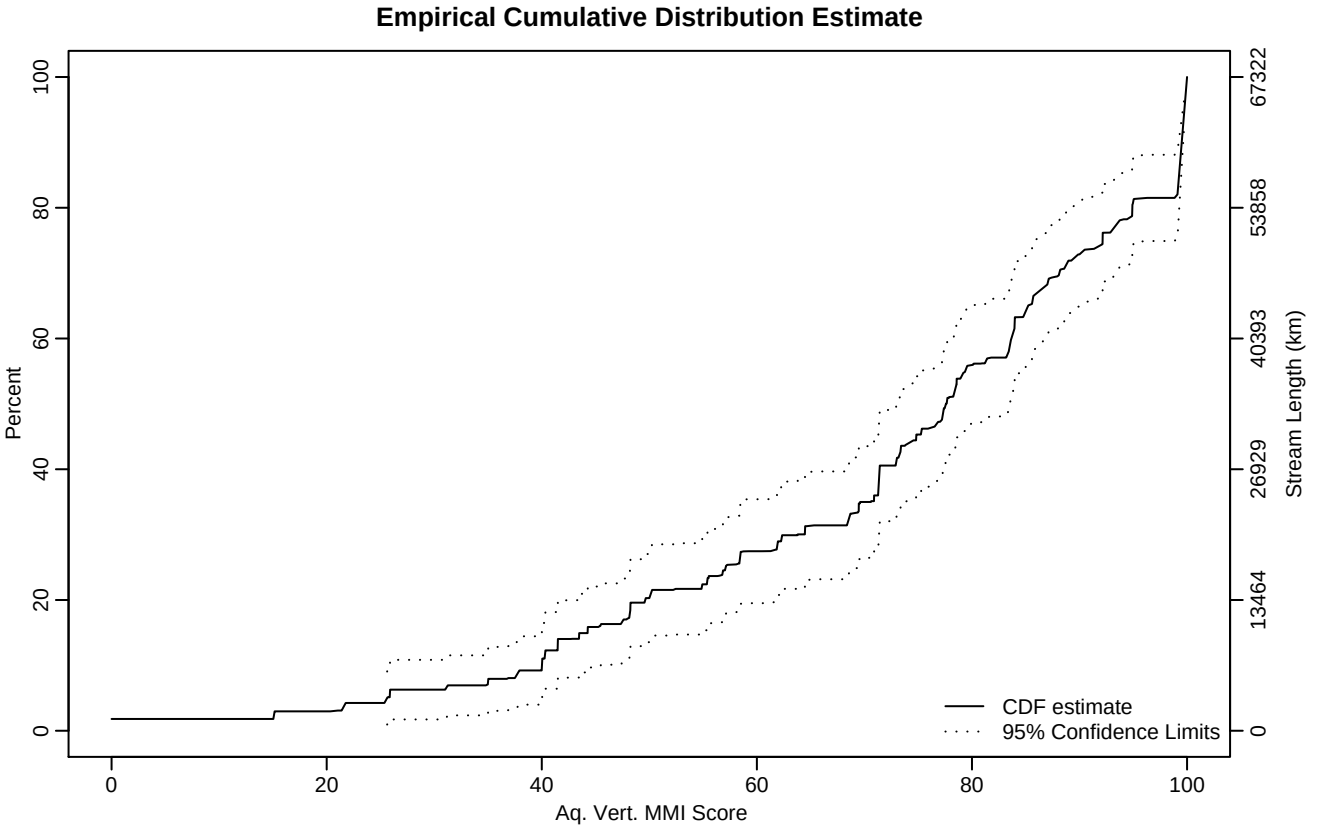


Figure VERT−6 Indicator: MMI_VERT Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	25.62	0	37.78
10Pct	40.02	25.56	44.27
25Pct	57.10	48.19	68.48
50Pct	77.58	72.97	83.51
75Pct	92.15	86.12	99.15
90Pct	99.50	99.18	99.83
95Pct	99.75	99.42	100
Mean	72.66	68.29	77.04
Std Dev	21.85	19.54	24.16

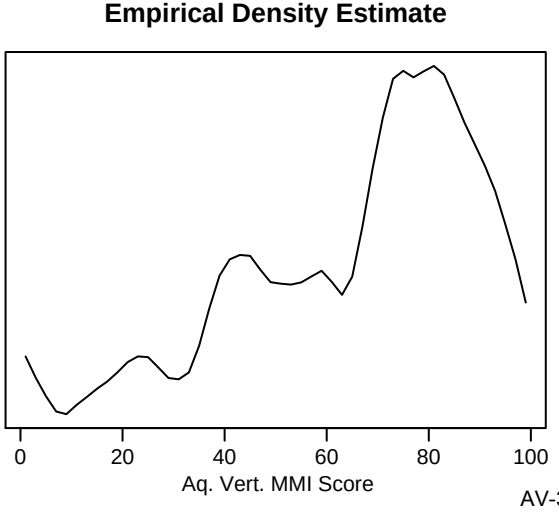
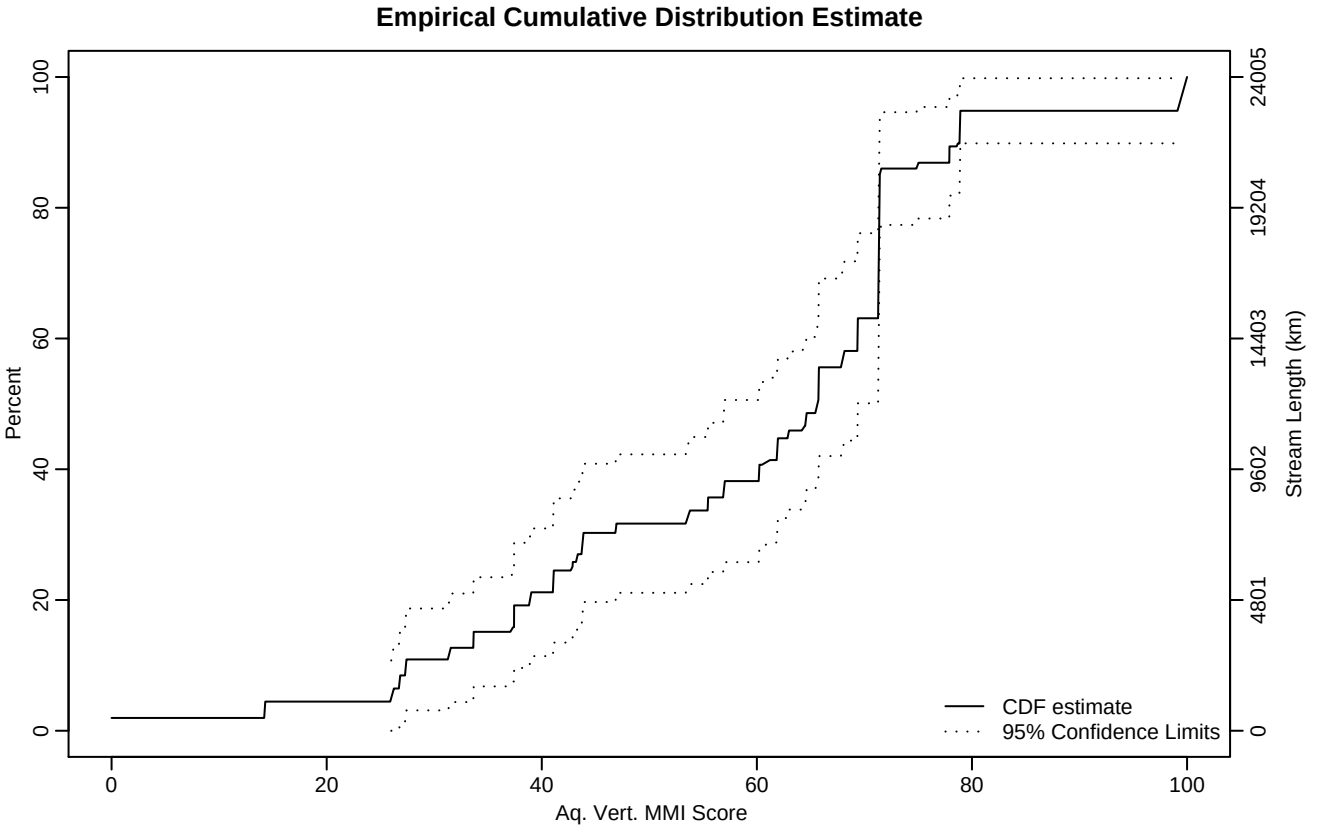


Figure VERT−7 Indicator: MMI_VERT Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	26	0	27.39
10Pct	27.37	14.23	37.42
25Pct	42.83	33.65	56.88
50Pct	65.63	57	69.38
75Pct	71.36	69.38	77.90
90Pct	78.84	71.41	99.59
95Pct	99.14	78.84	
Mean	58.62	53.85	63.39
Std Dev	18.79	15.20	22.39

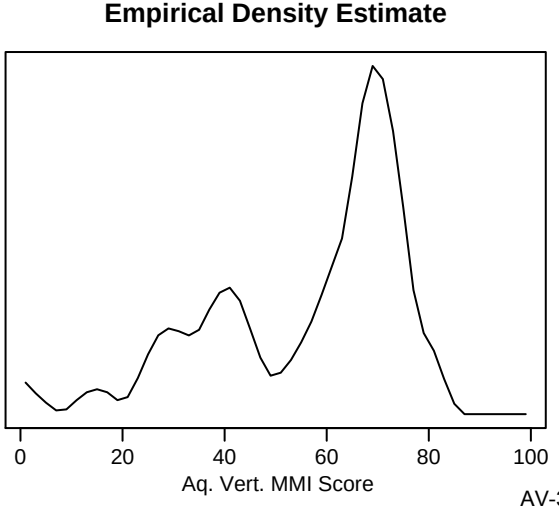
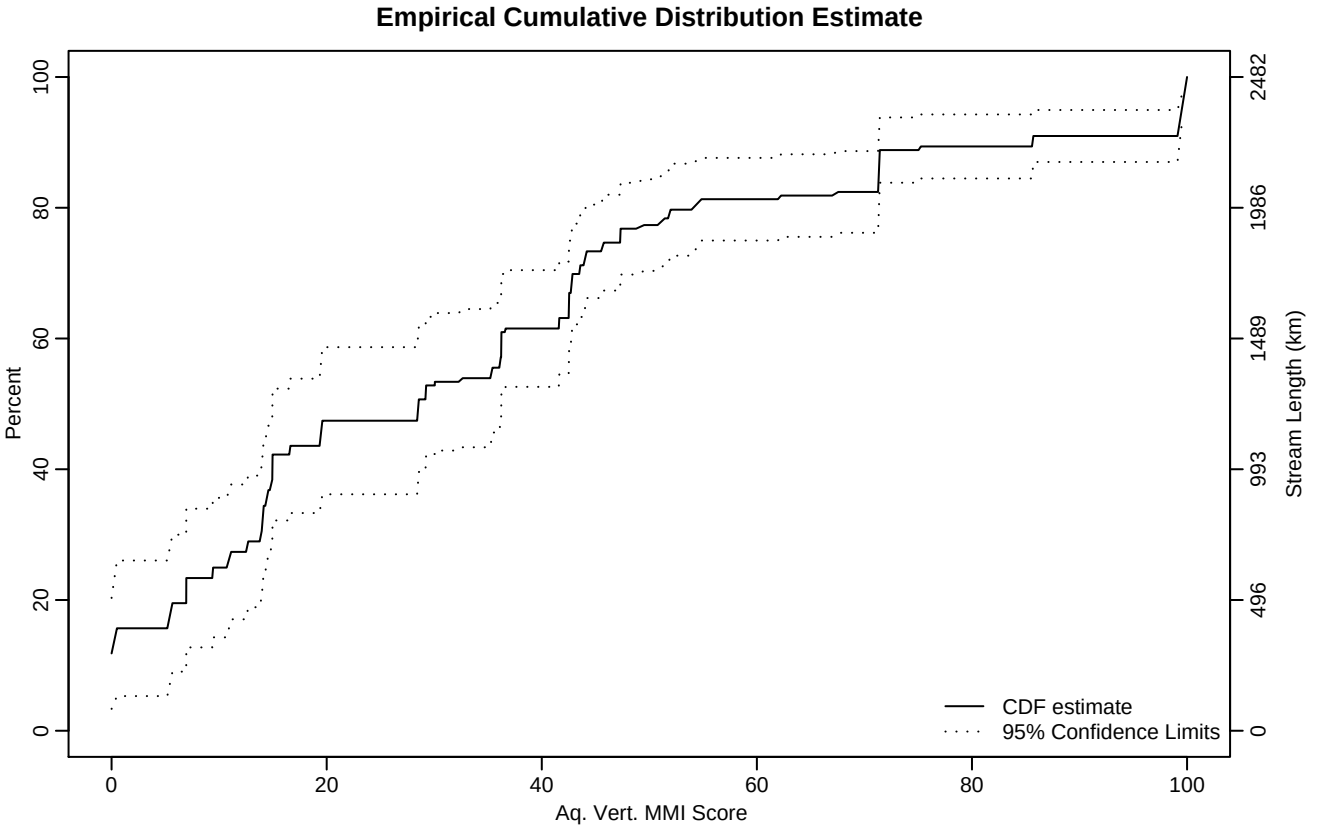


Figure VERT−8 Indicator: MMI_VERT Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.22
10Pct	0	0	5.53
25Pct	10.71	0.30	14.47
50Pct	28.54	14.94	41.58
75Pct	47.29	42.71	71.28
90Pct	85.63	71.33	99.51
95Pct	99.51	85.71	99.91
Mean	33.84	28.94	38.74
Std Dev	25.61	22.95	28.26

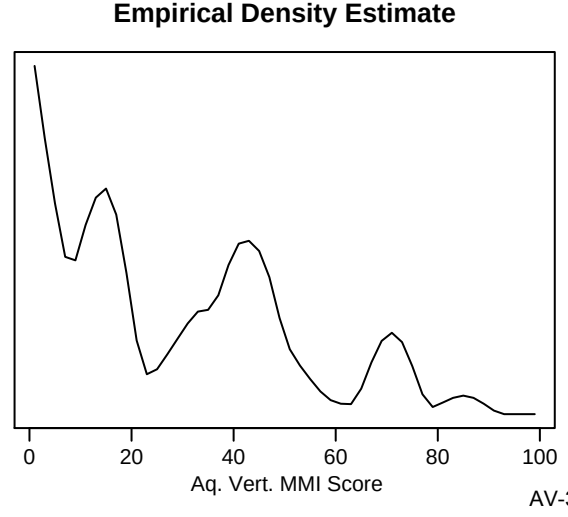
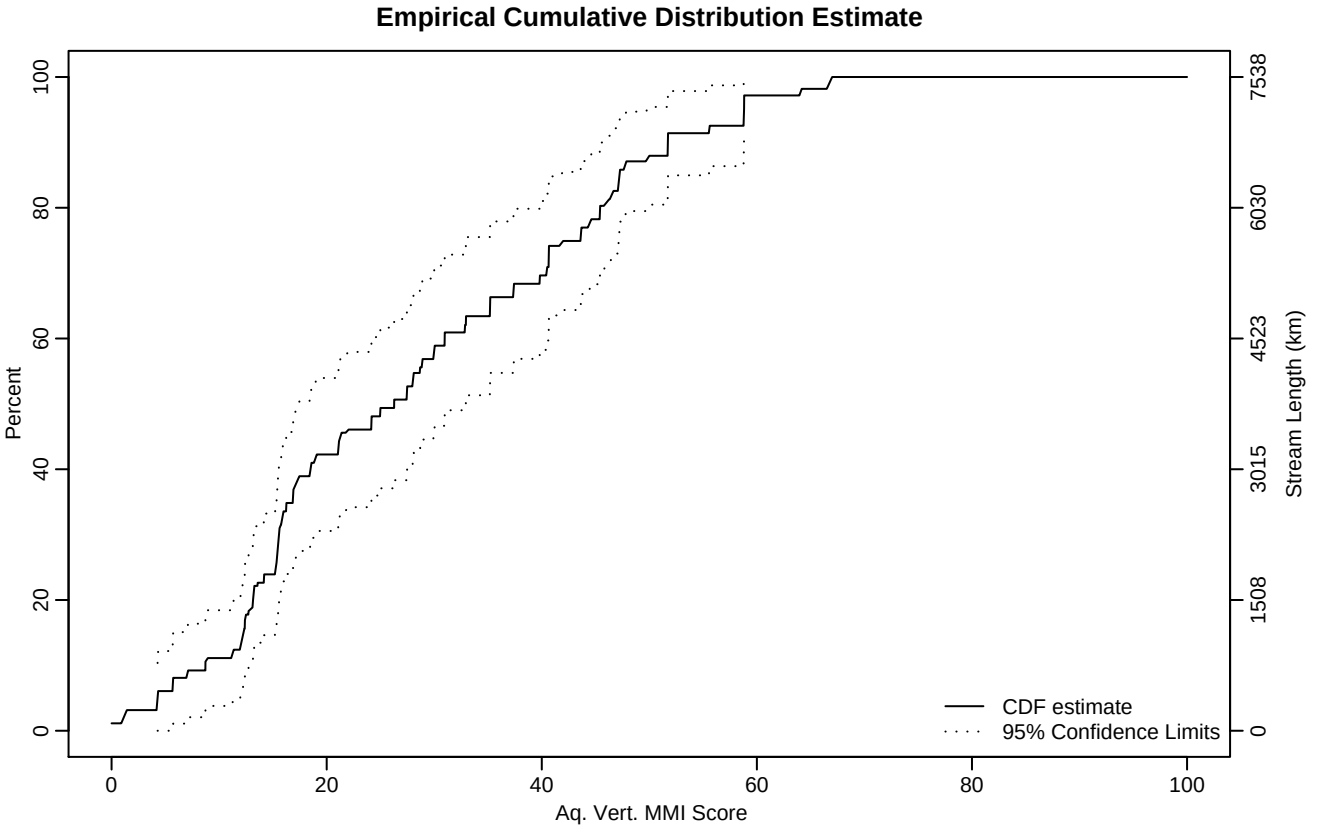


Figure VERT−9 Indicator: MMI_VERT Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.28	0	7.09
10Pct	8.73	1.35	12.42
25Pct	15.28	12.35	16.25
50Pct	26.27	17.14	32.94
75Pct	43.59	35.18	47.26
90Pct	51.72	46.64	64.03
95Pct	58.81	51.71	67
Mean	28.45	24.33	32.57
Std Dev	16.50	14.69	18.30

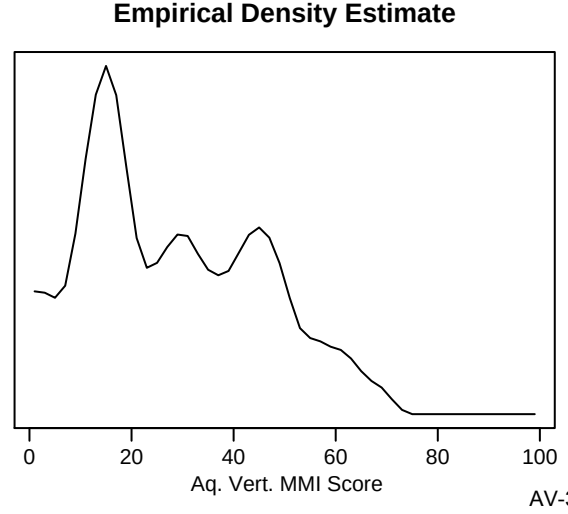
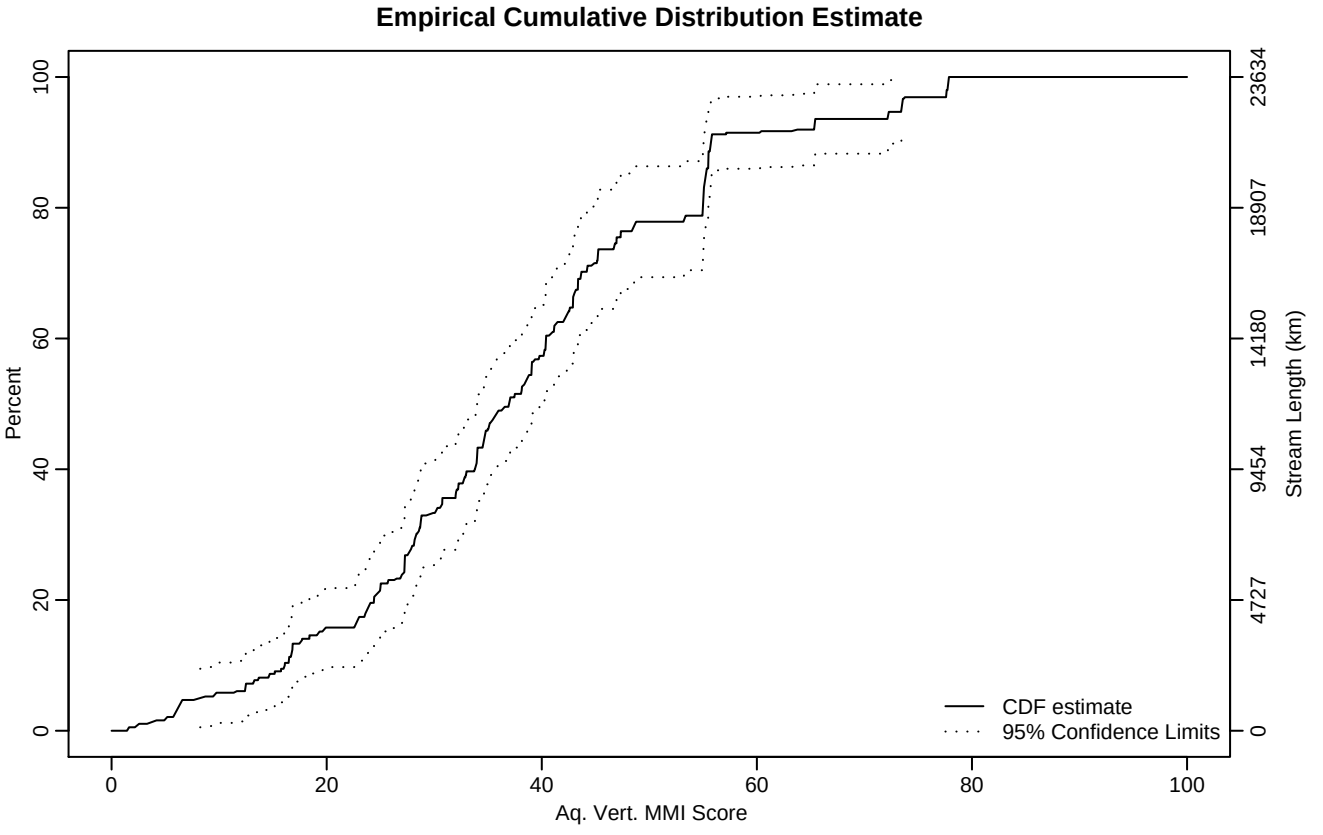


Figure VERT−10 Indicator: MMI_VERT Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.23	2.19	15.76
10Pct	16.10	7.95	19.32
25Pct	27.24	23.51	28.79
50Pct	36.96	33.96	40.35
75Pct	46.95	42.90	55.23
90Pct	55.73	55.09	73.71
95Pct	73.44	55.75	77.85
Mean	37.74	34.79	40.68
Std Dev	14.36	12.39	16.33

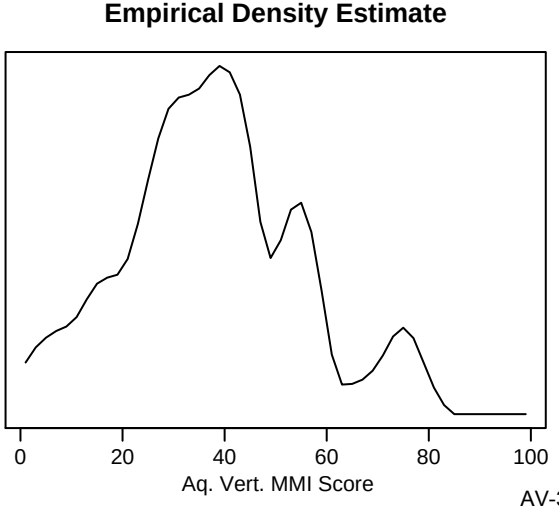
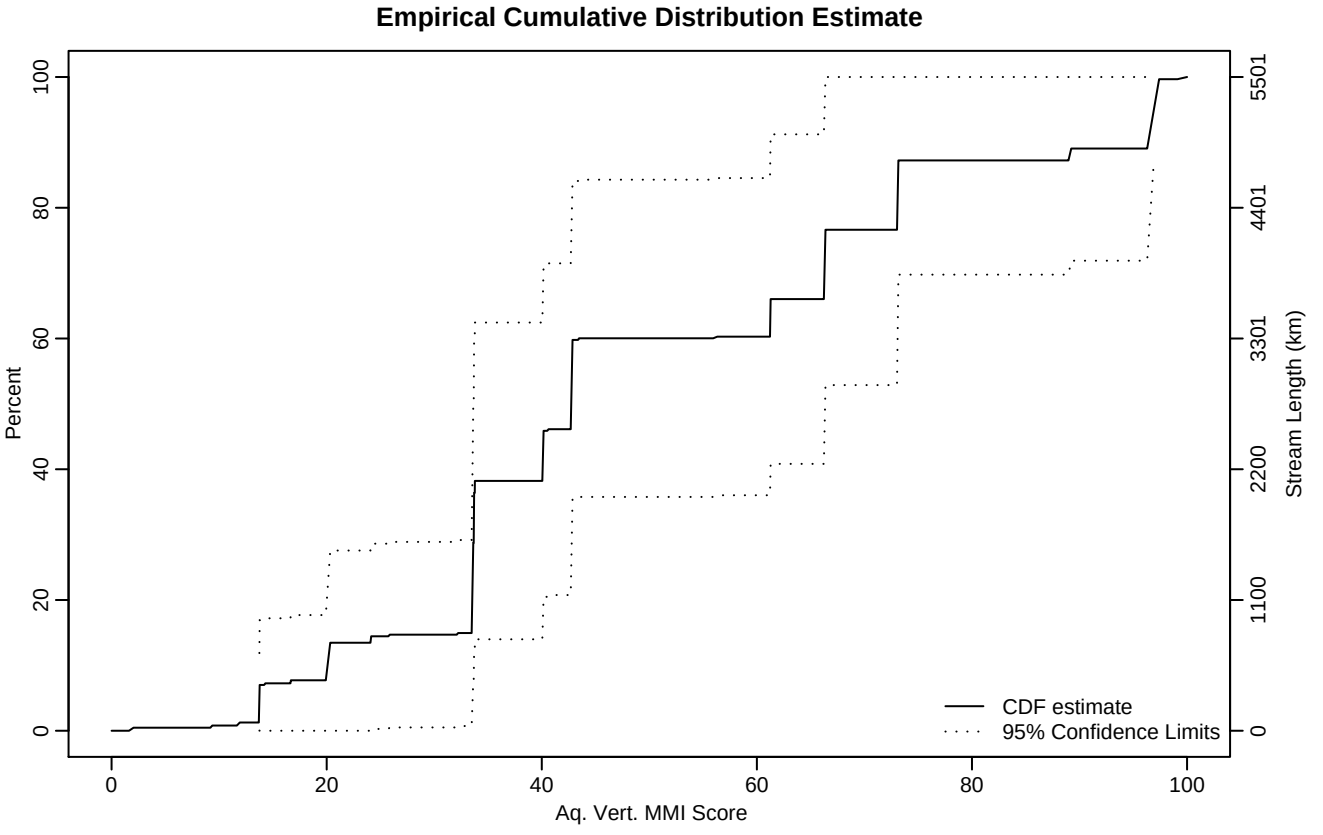


Figure VERT−11 Indicator: MMI_VERT Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	13.74	13.72	13.77
10Pct	20.08	0	33.54
25Pct	33.59	20.05	40.09
50Pct	42.74	33.59	66.36
75Pct	66.36	42.73	100
90Pct	96.39	66.33	100
95Pct	96.91	73.04	100
Mean	50.28	37.54	63.02
Std Dev	24.70	17.61	31.79

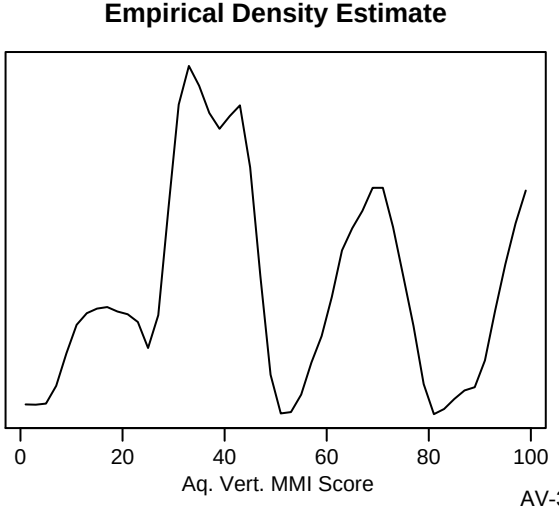
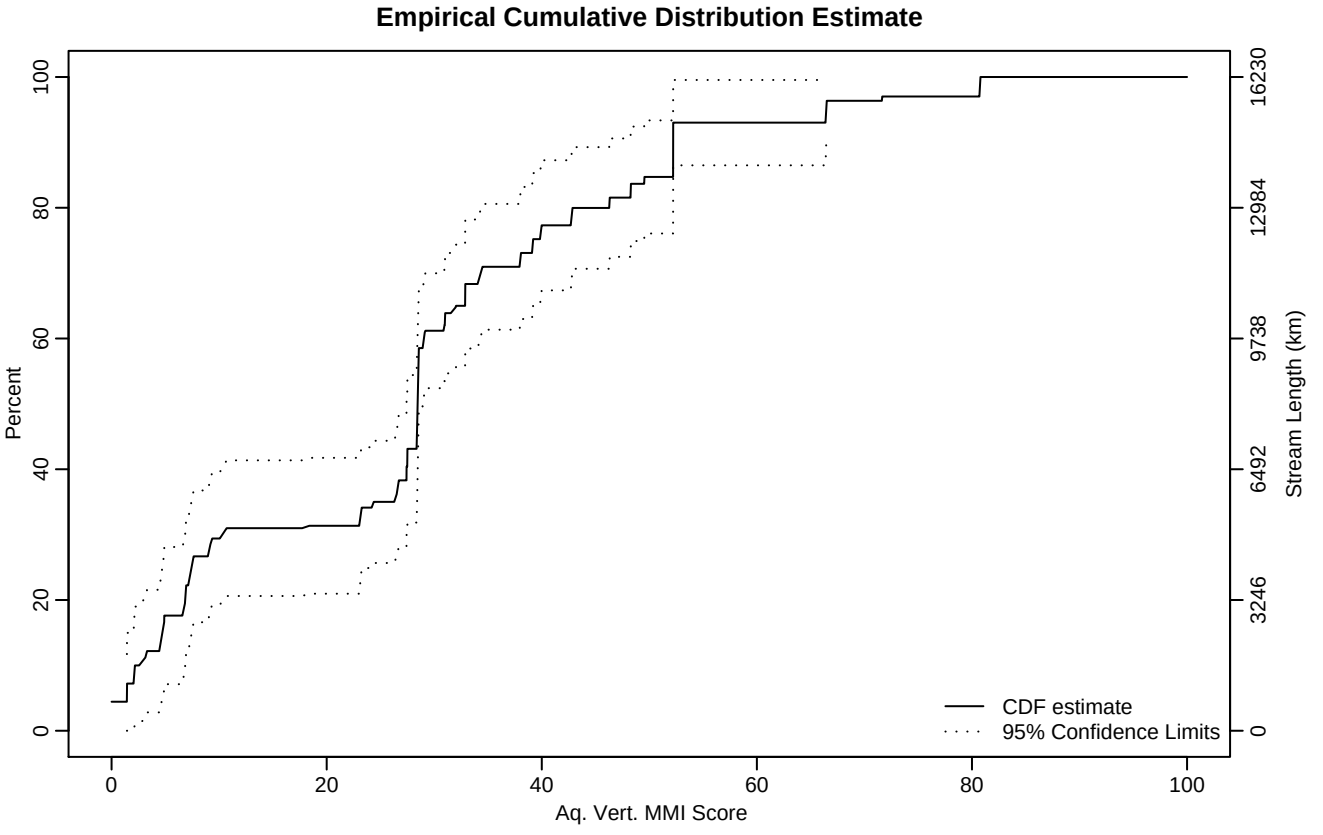


Figure VERT−12 Indicator: MMI_VERT Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.42	0	3.22
10Pct	2.57	0	6.80
25Pct	7.44	4.65	26.42
50Pct	28.46	26.70	30.93
75Pct	39.19	31.86	52.21
90Pct	52.22	46.31	80.75
95Pct	66.45	52.21	80.79
Mean	28.34	24.42	32.27
Std Dev	15.55	12.77	18.33

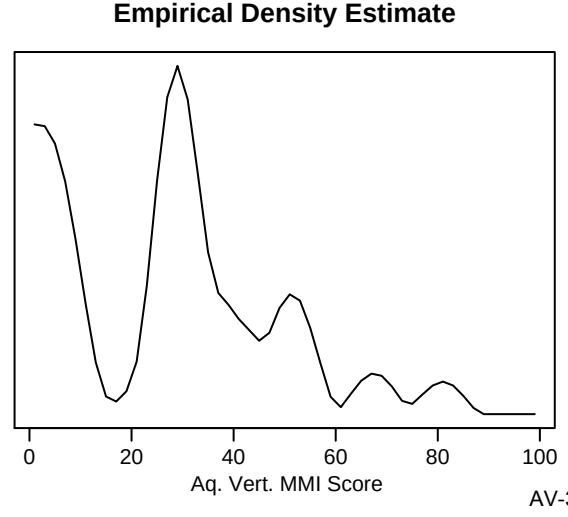
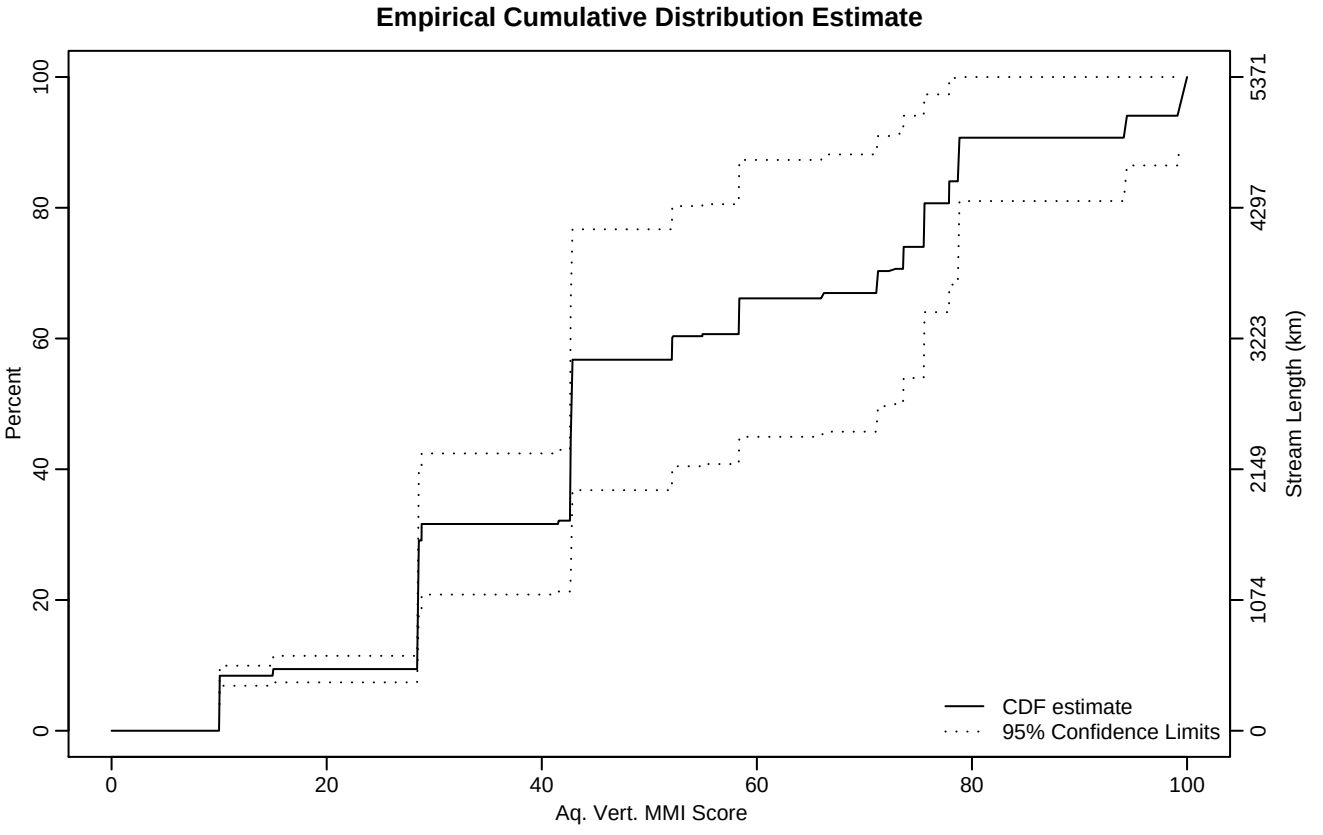


Figure VERT−13 Indicator: MMI_VERT Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.03	10.02	10.04
10Pct	28.41	0	28.54
25Pct	28.54	28.43	42.65
50Pct	42.77	28.56	73.63
75Pct	75.52	42.84	99.22
90Pct	78.82	73.65	
95Pct	99.25	78.73	
Mean	51.01	42.45	59.56
Std Dev	20.26	16.89	23.62

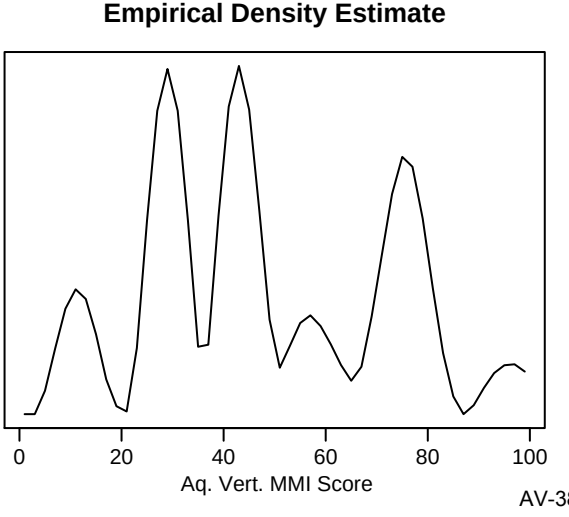
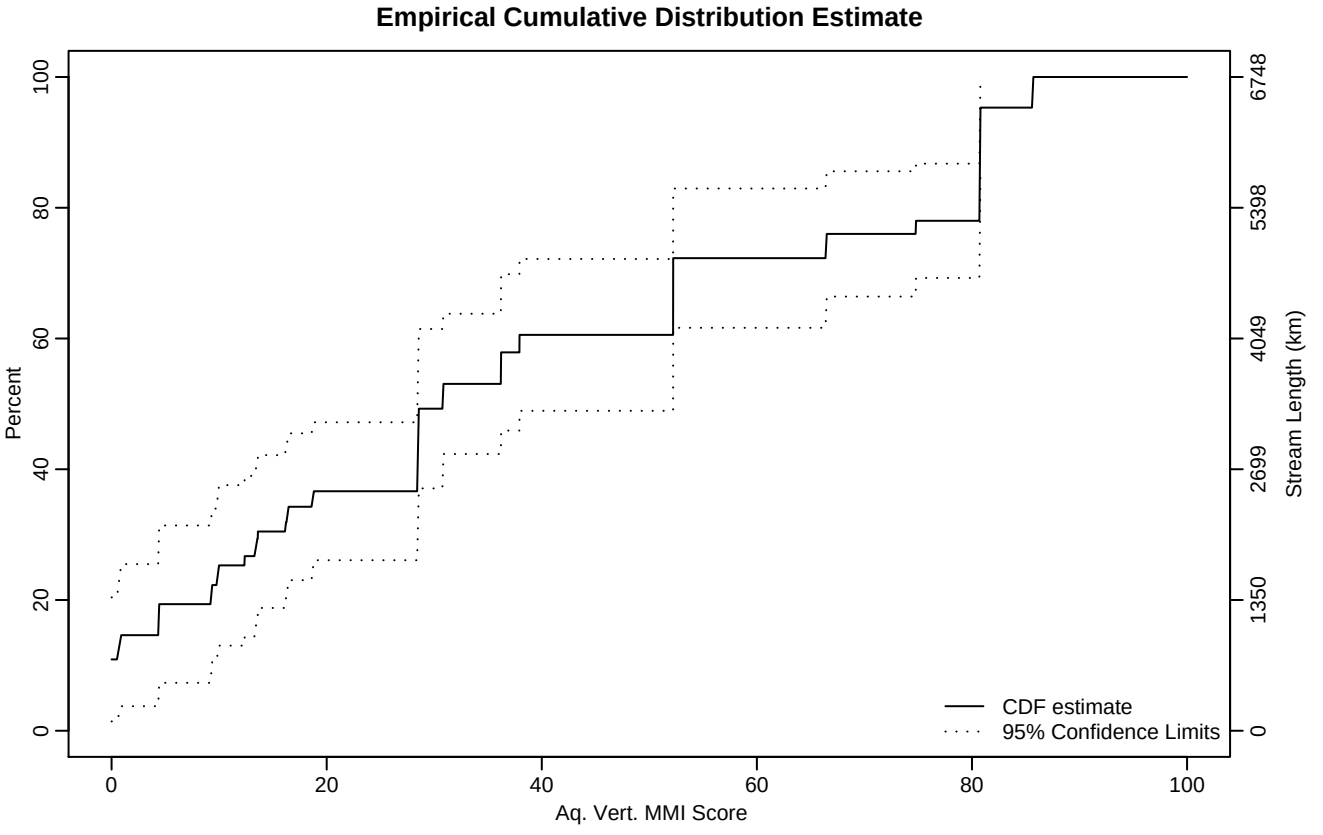


Figure VERT−14 Indicator: MMI_VERT Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	4.33
10Pct	0	0	9.20
25Pct	9.97	0.78	18.79
50Pct	30.78	28.43	52.21
75Pct	66.47	52.21	80.74
90Pct	80.76	80.71	85.68
95Pct	80.79	80.74	85.71
Mean	38.21	31.74	44.67
Std Dev	19.58	16.70	22.46

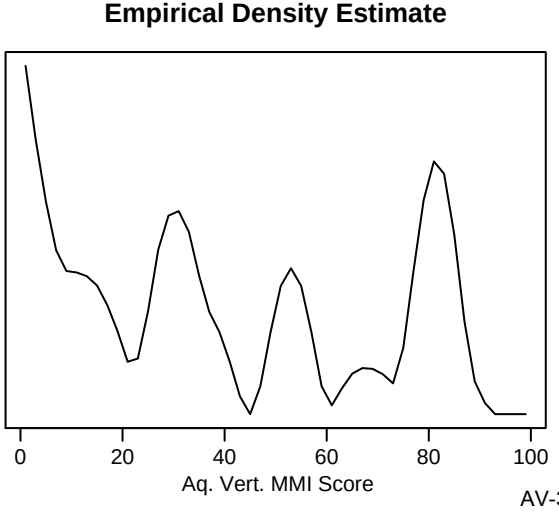
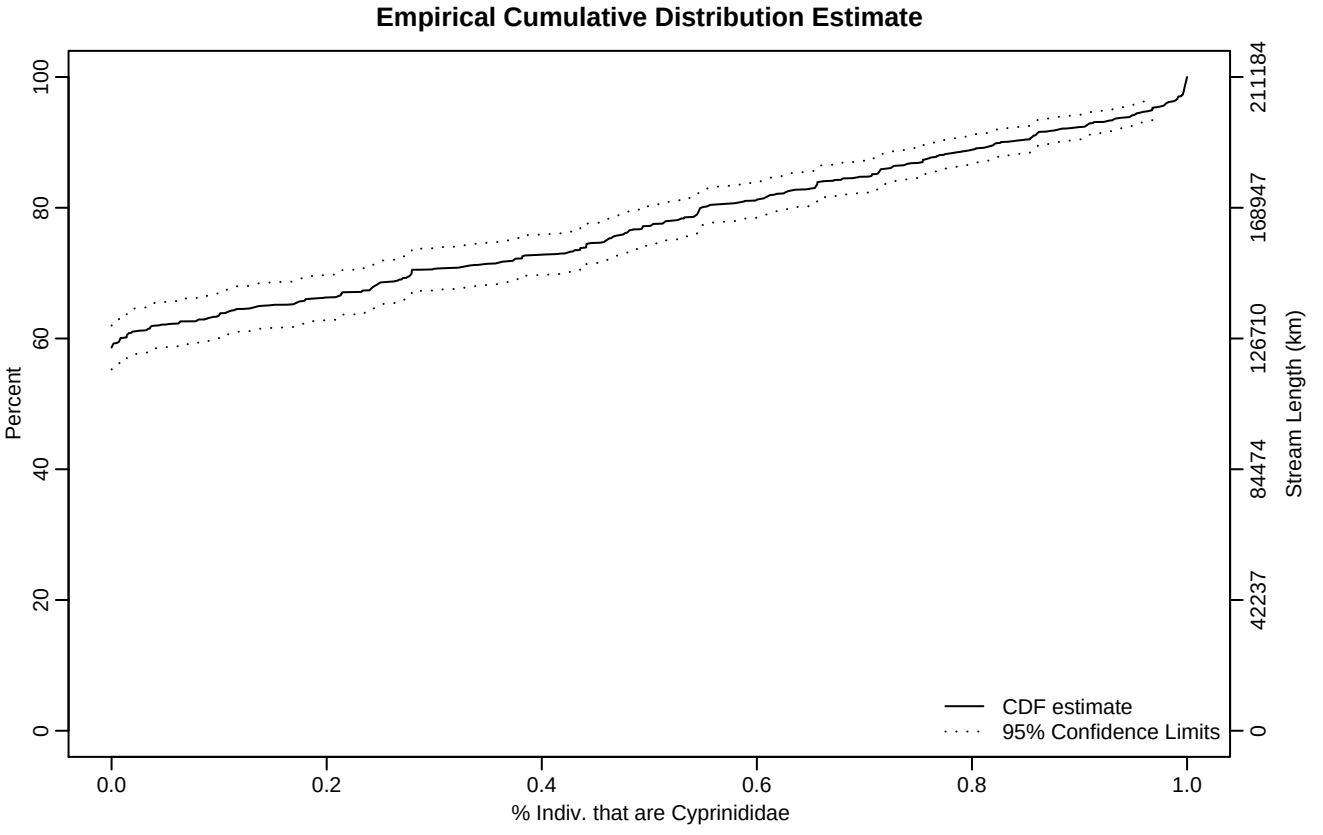


Figure VERT−15 Indicator: CYPR_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.46	0.37	0.53
90Pct	0.83	0.77	0.89
95Pct	0.97	0.93	0.99
Mean	0.22	0.20	0.25
Std Dev	0.28	0.26	0.30

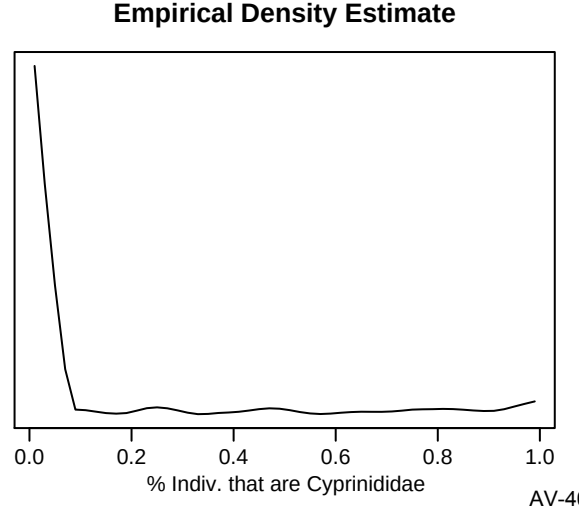
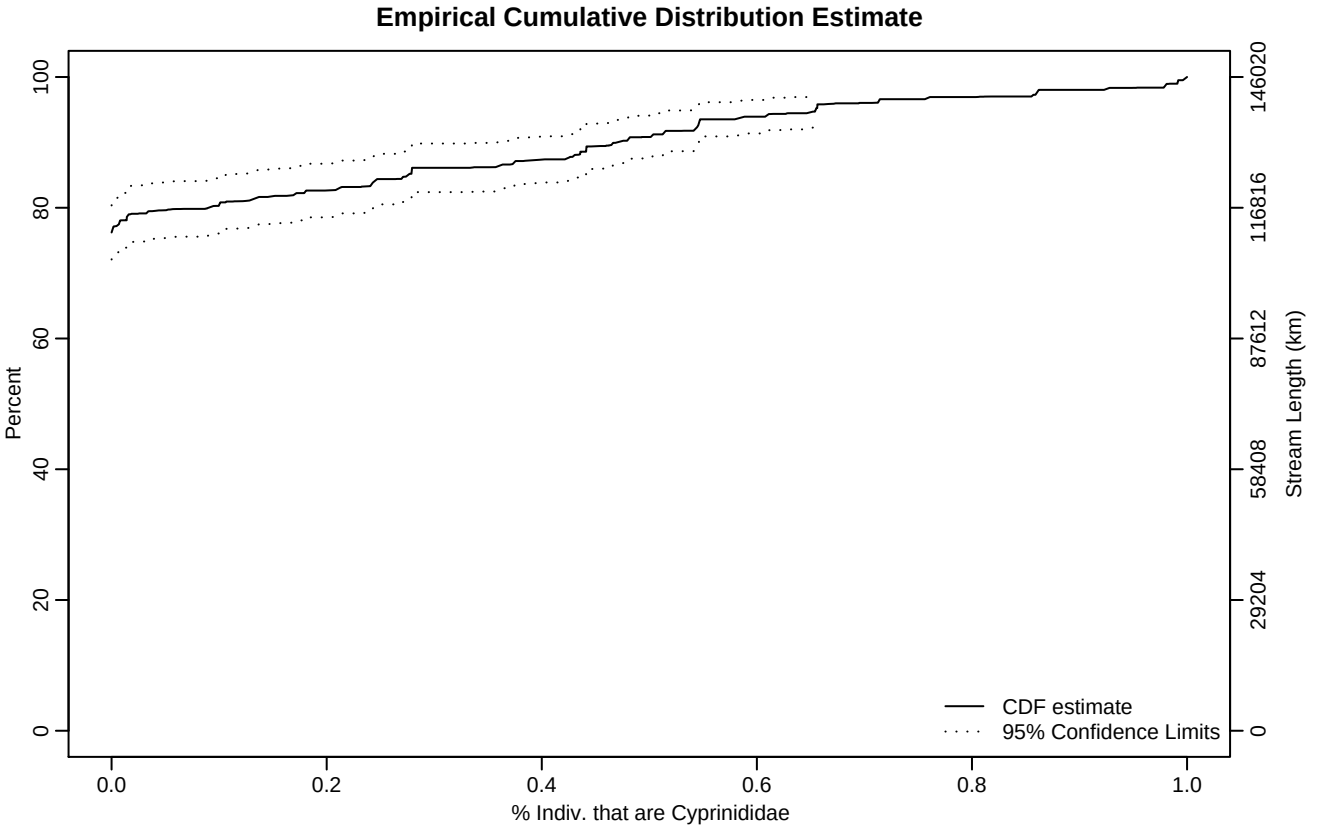


Figure VERT−16 Indicator: CYPR_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.03
90Pct	0.47	0.37	0.55
95Pct	0.65	0.55	0.86
Mean	0.10	0.07	0.12
Std Dev	0.20	0.17	0.23

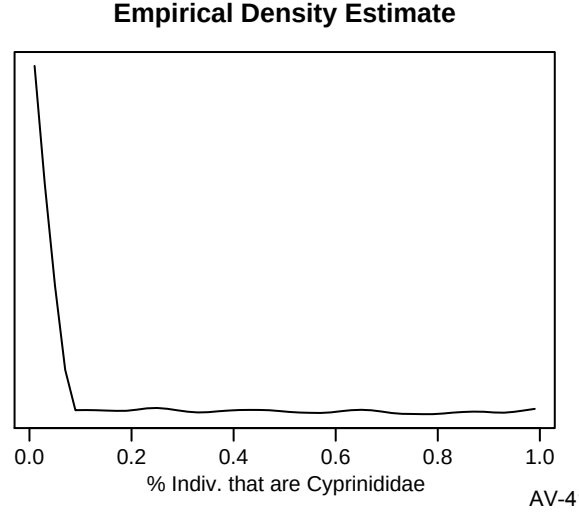
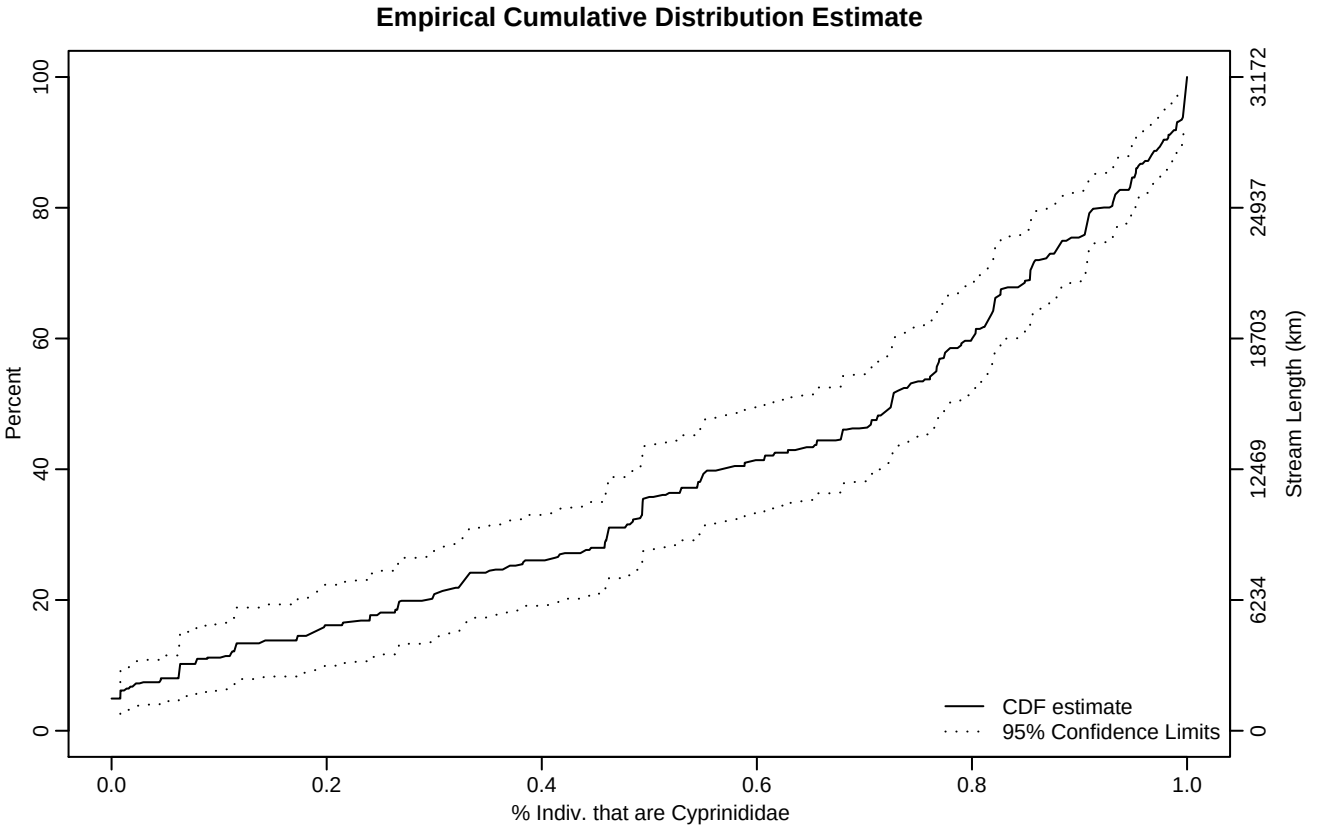


Figure VERT−17 Indicator: CYPR_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.03
10Pct	0.06	0.02	0.14
25Pct	0.37	0.26	0.48
50Pct	0.73	0.61	0.78
75Pct	0.89	0.85	0.93
90Pct	0.98	0.95	1
95Pct	1	0.98	1
Mean	0.62	0.57	0.67
Std Dev	0.30	0.28	0.33

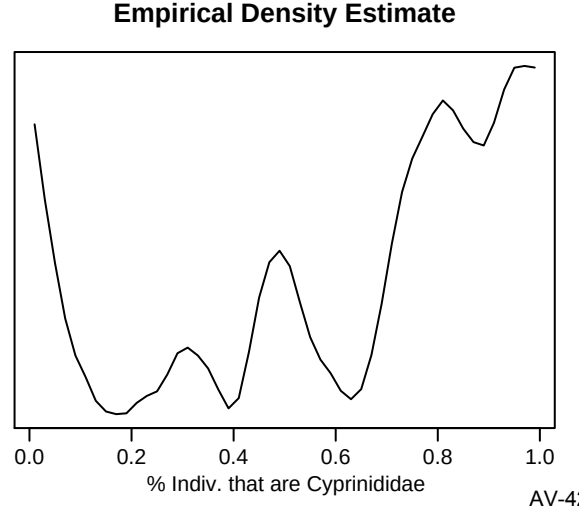
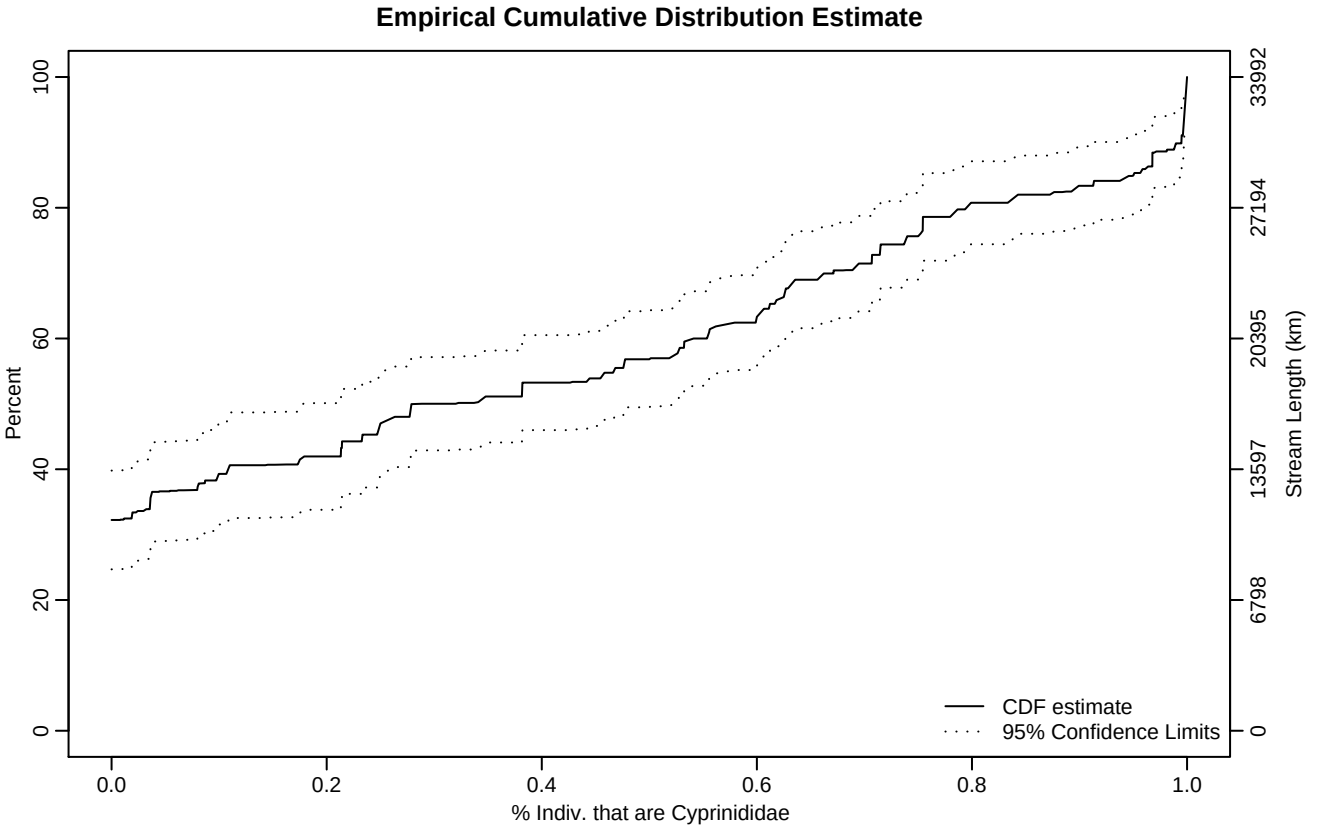


Figure VERT−18 Indicator: CYPR_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.29	0.21	0.53
75Pct	0.74	0.63	0.87
90Pct	0.99	0.94	1
95Pct	1	0.99	1
Mean	0.40	0.34	0.45
Std Dev	0.33	0.30	0.36

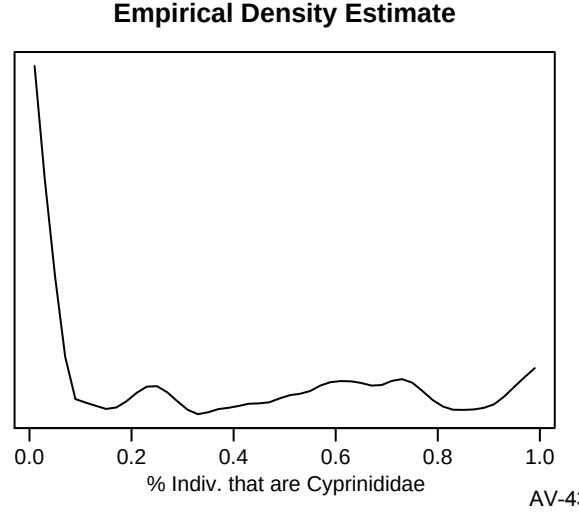
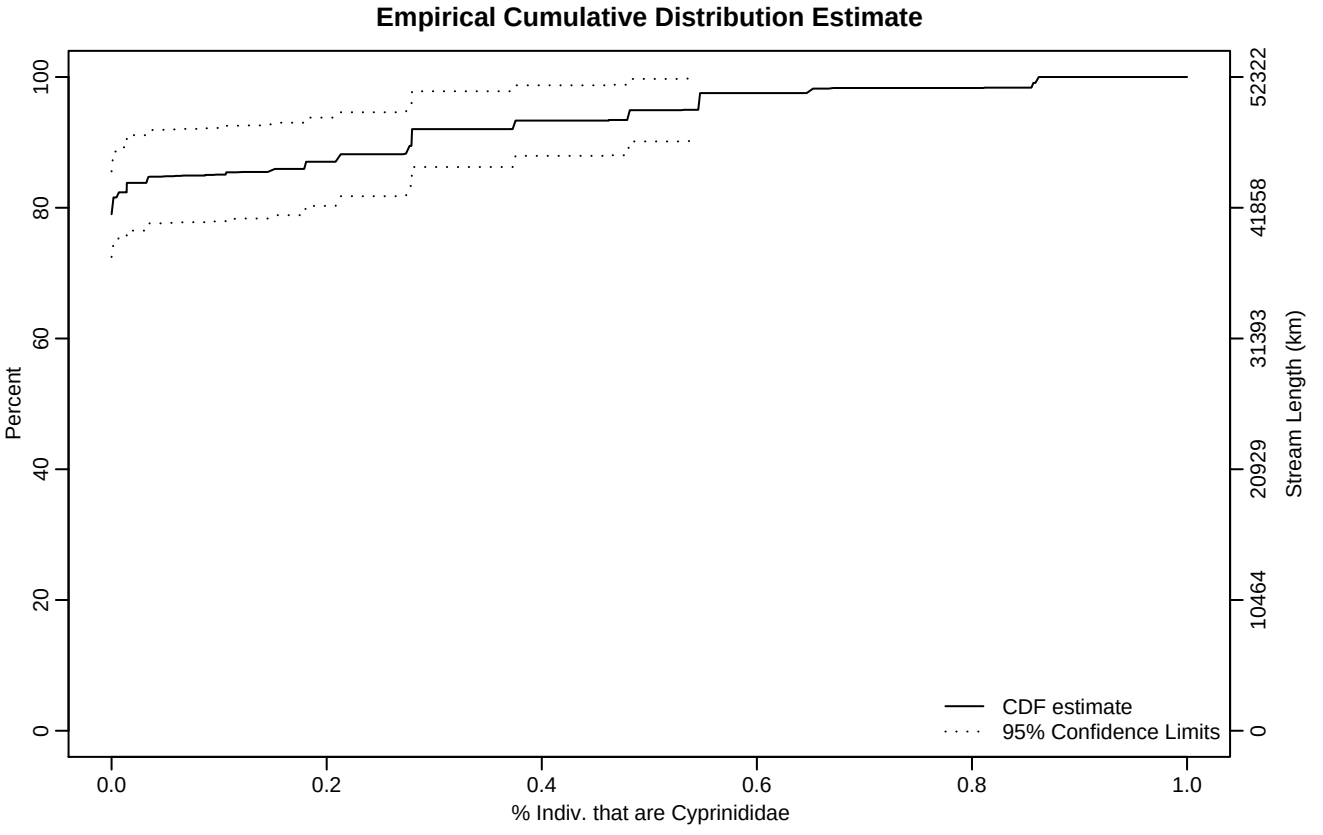


Figure VERT−19 Indicator: CYPR_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.01
90Pct	0.28	0.01	0.55
95Pct	0.55	0.28	0.86
Mean	0.06	0.03	0.10
Std Dev	0.16	0.12	0.20

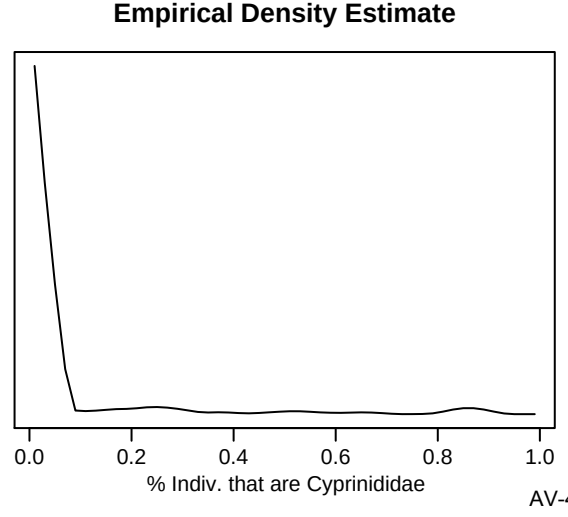
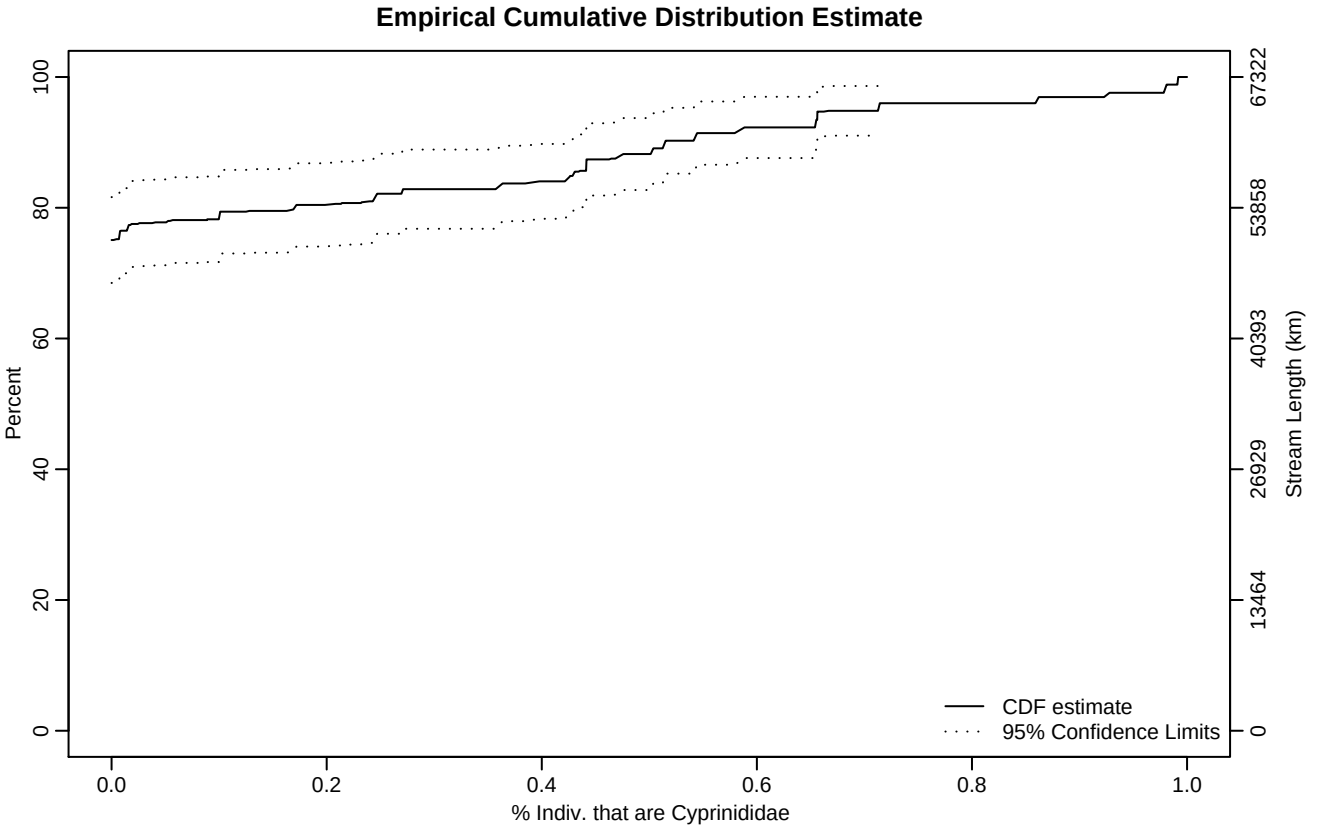


Figure VERT−20 Indicator: CYPR_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.24
90Pct	0.51	0.43	0.71
95Pct	0.71	0.54	0.98
Mean	0.12	0.08	0.16
Std Dev	0.21	0.17	0.25

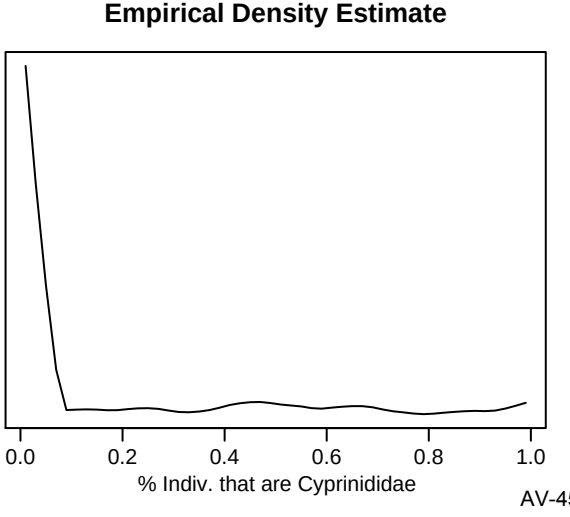
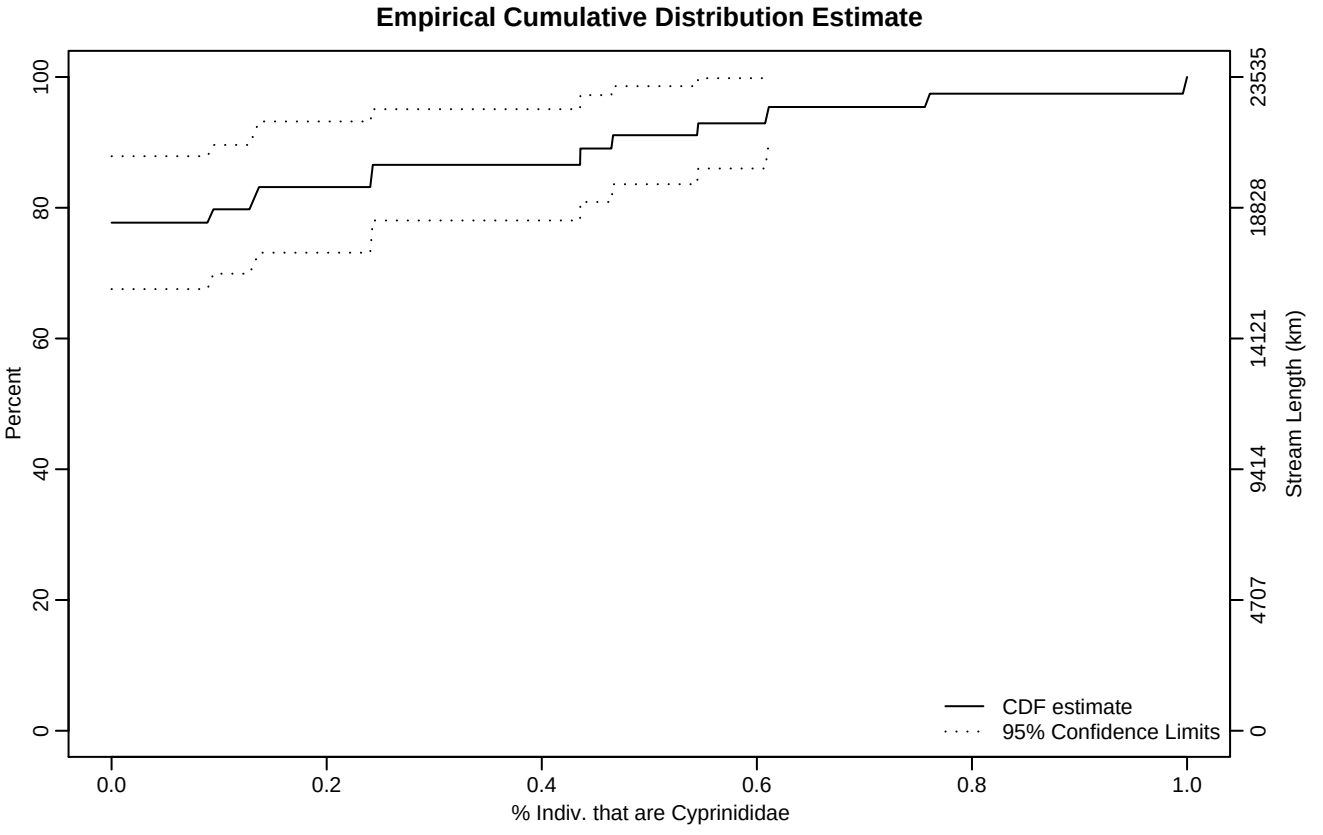


Figure VERT−21 Indicator: CYPR_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.24
90Pct	0.47	0.13	1
95Pct	0.61	0.44	
Mean	0.10	0.04	0.16
Std Dev	0.22	0.14	0.31

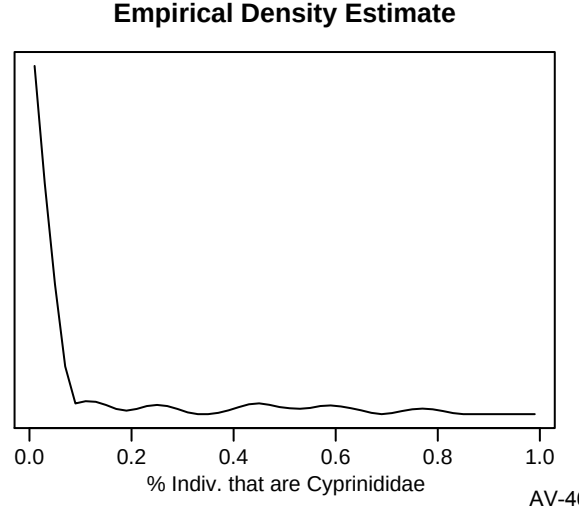
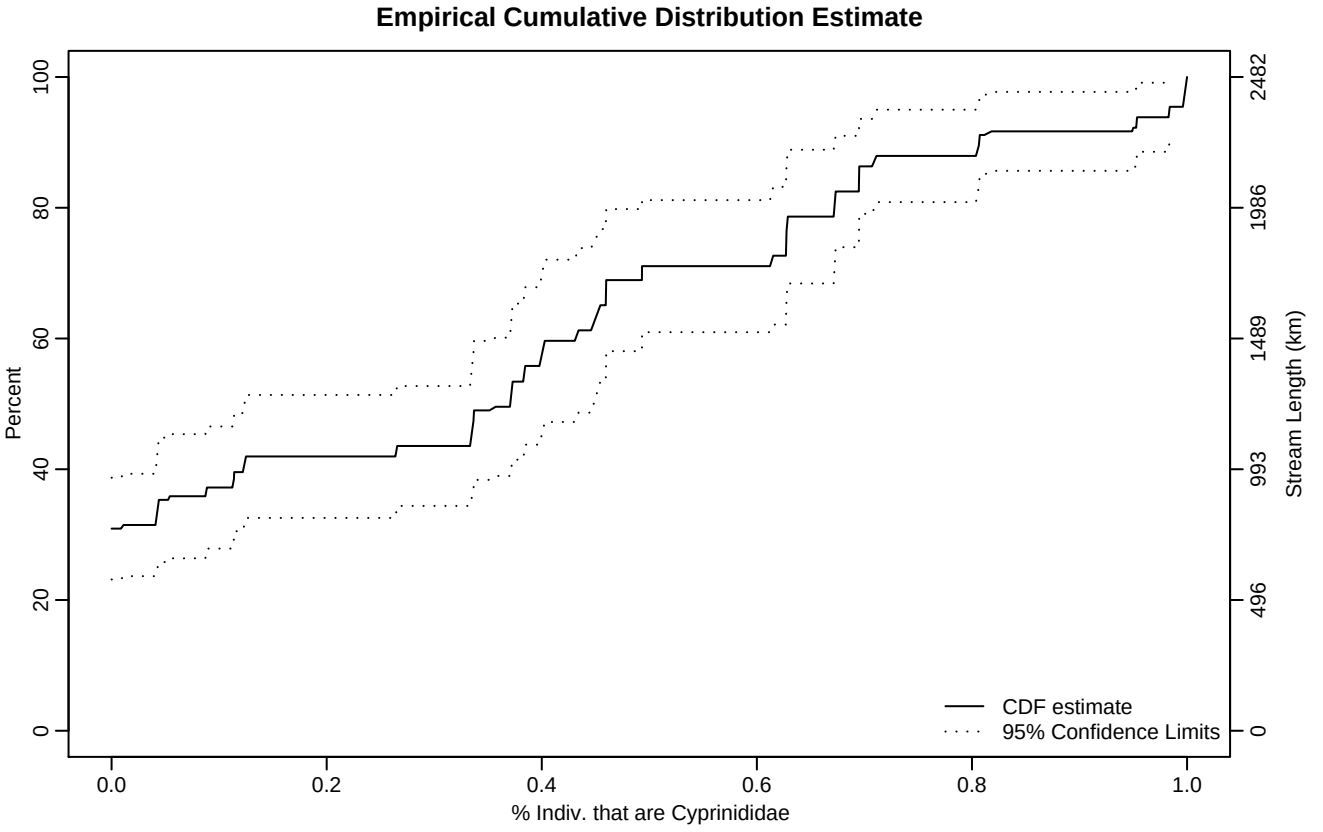


Figure VERT−22 Indicator: CYPR_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.04
50Pct	0.37	0.11	0.43
75Pct	0.63	0.45	0.70
90Pct	0.81	0.69	1
95Pct	0.98	0.81	1
Mean	0.35	0.29	0.41
Std Dev	0.29	0.25	0.33

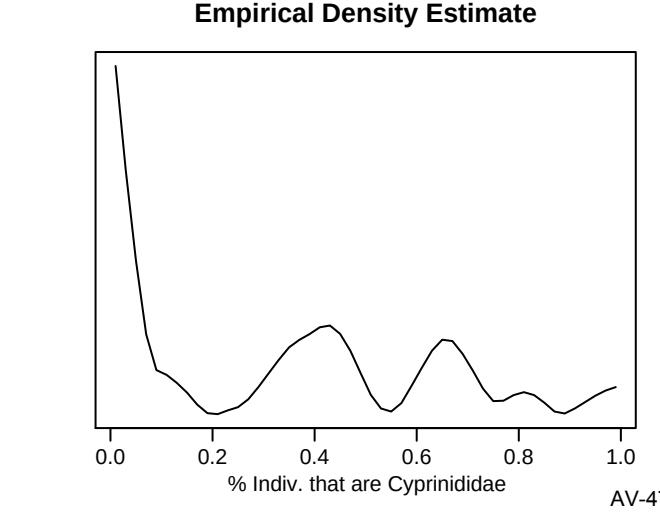
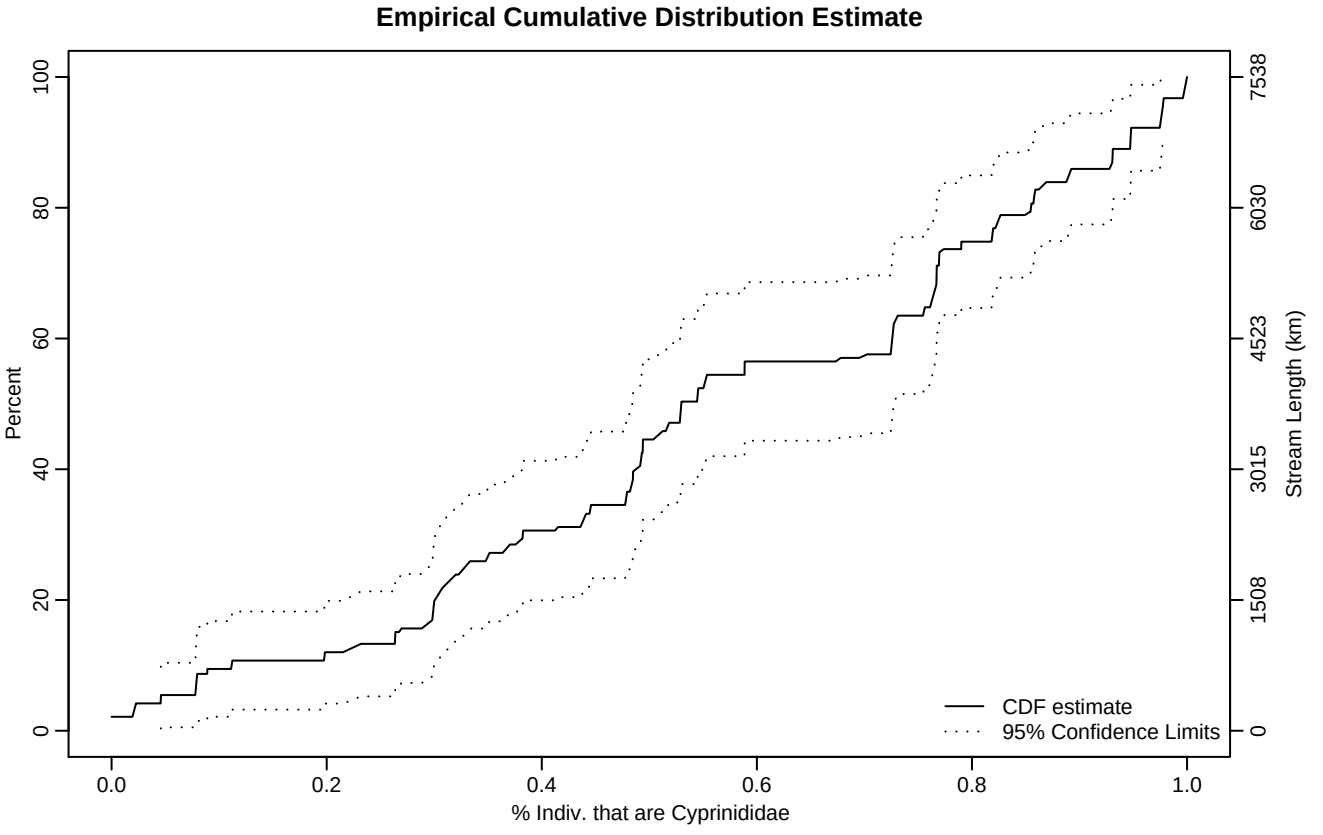


Figure VERT−23 Indicator: CYPR_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0	0.11
10Pct	0.11	0.02	0.30
25Pct	0.33	0.26	0.48
50Pct	0.53	0.48	0.73
75Pct	0.82	0.76	0.89
90Pct	0.95	0.86	1
95Pct	0.98	0.93	1
Mean	0.57	0.50	0.64
Std Dev	0.28	0.25	0.31

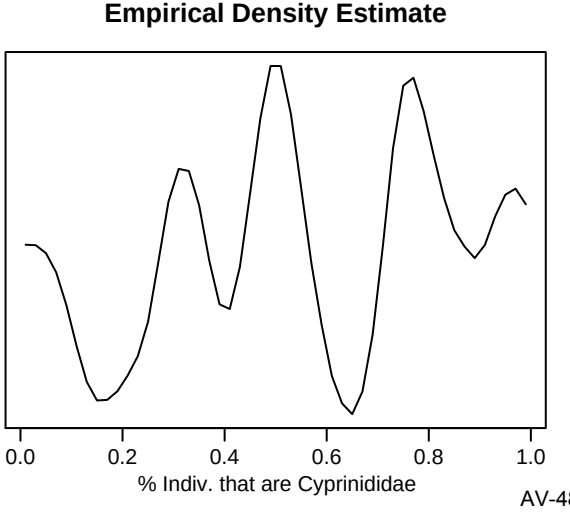
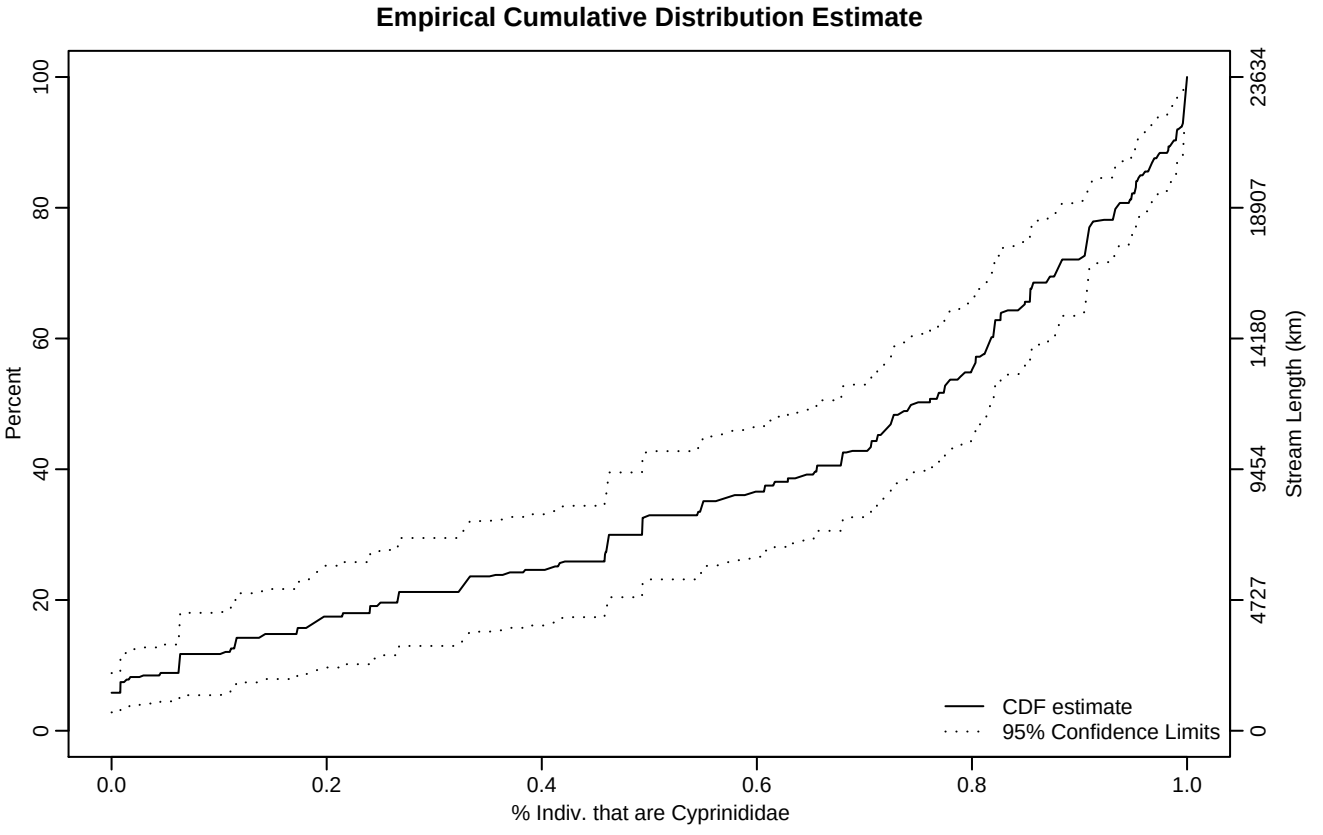


Figure VERT−24 Indicator: CYPR_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.02
10Pct	0.06	0	0.14
25Pct	0.41	0.19	0.55
50Pct	0.75	0.65	0.82
75Pct	0.91	0.85	0.95
90Pct	0.99	0.95	1
95Pct	1	0.99	1
Mean	0.63	0.57	0.70
Std Dev	0.31	0.28	0.34

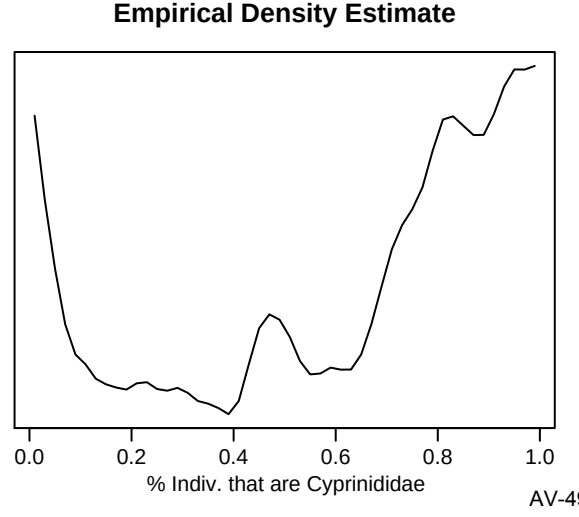
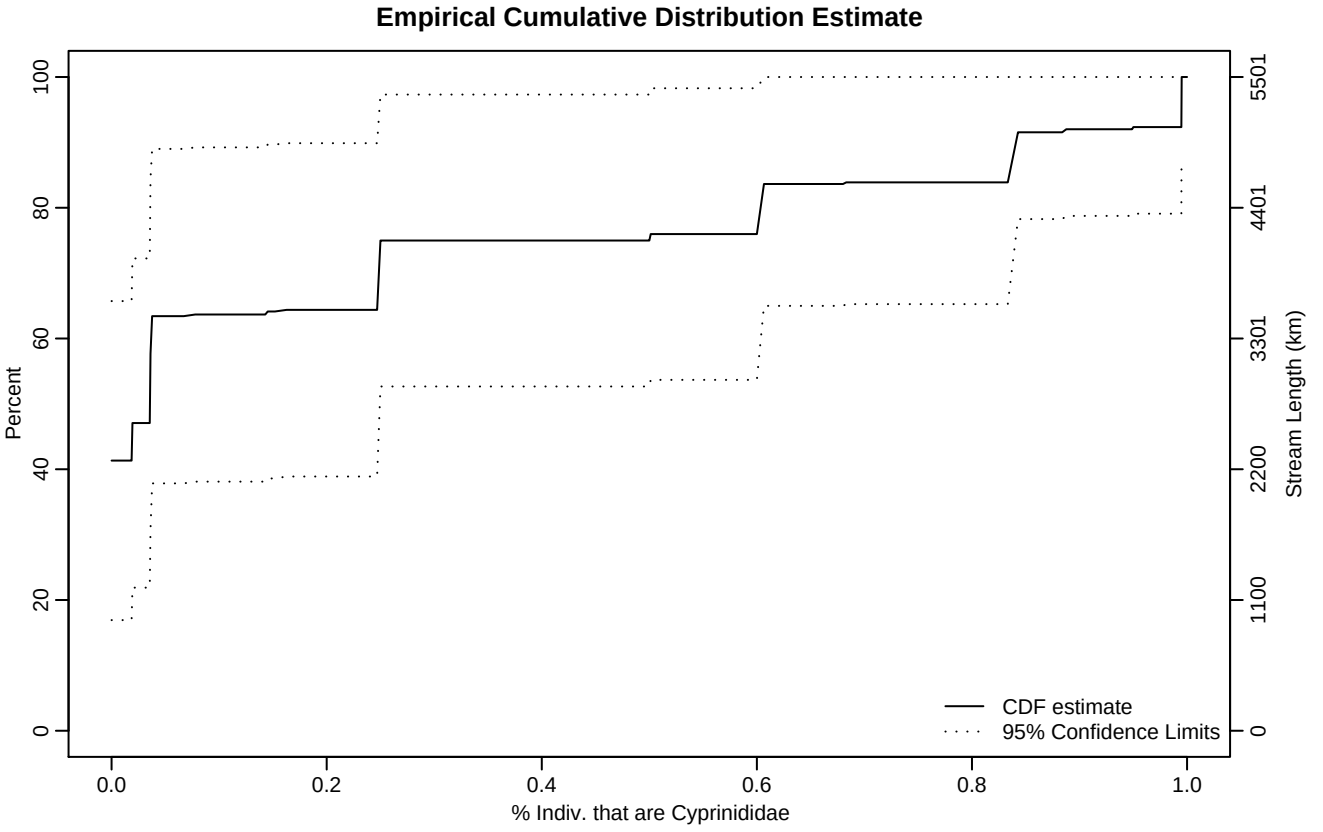


Figure VERT−25 Indicator: CYPR_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.04
50Pct	0.04	0	0.25
75Pct	0.50	0.04	0.99
90Pct	0.84	0.25	0.99
95Pct	0.99	0.60	0.99
Mean	0.24	0.06	0.41
Std Dev	0.35	0.23	0.47

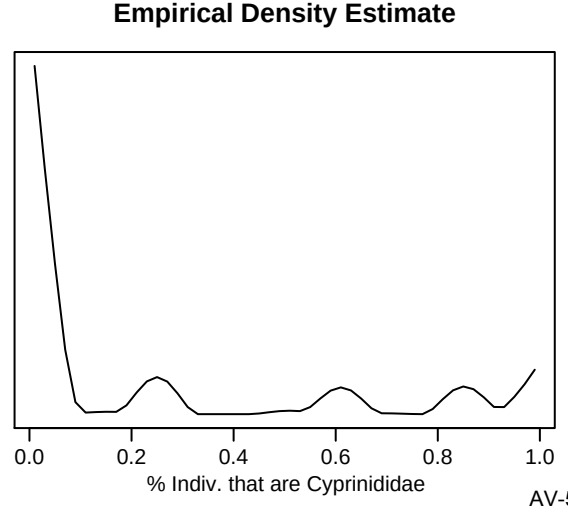
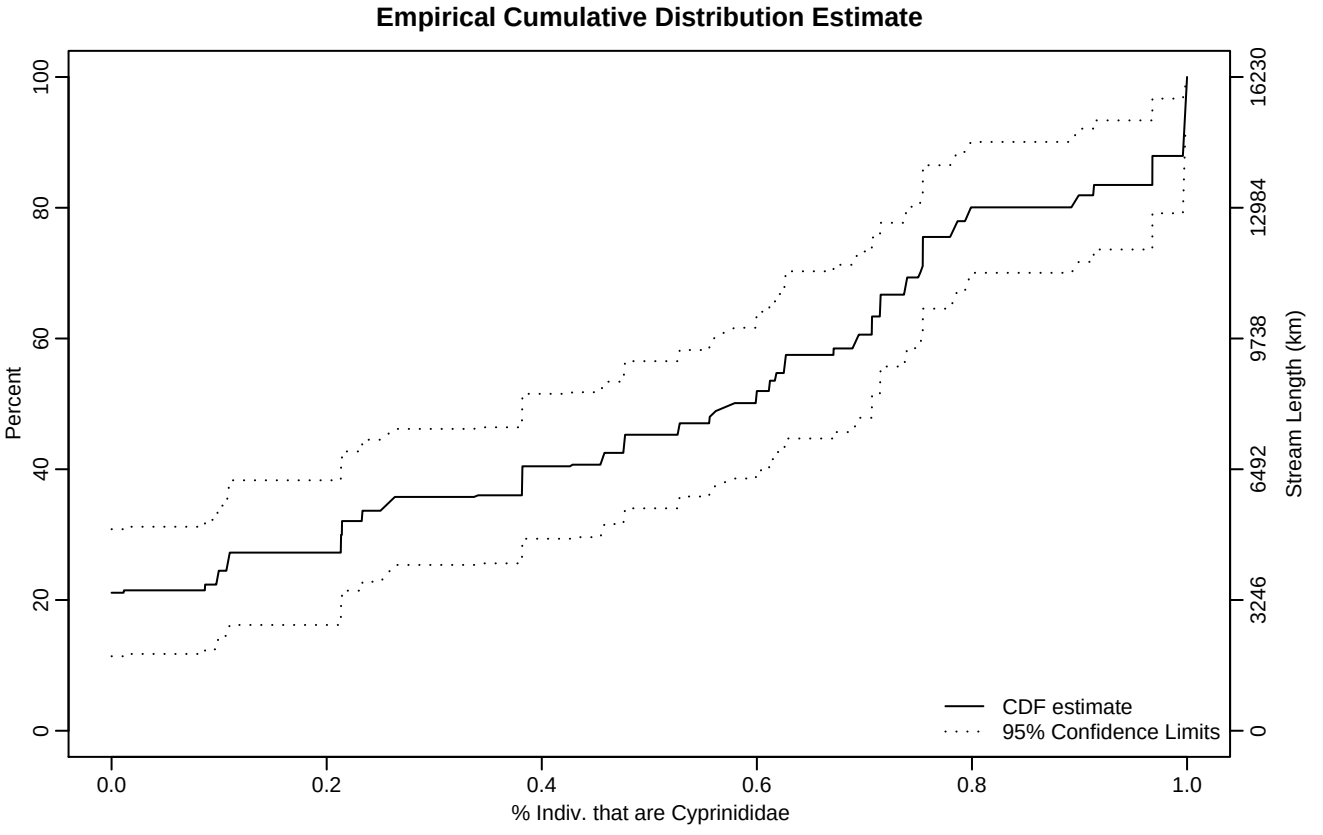


Figure VERT−26 Indicator: CYPR_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.11	0	0.26
50Pct	0.58	0.38	0.71
75Pct	0.75	0.71	0.97
90Pct	1	0.90	1
95Pct	1	0.97	1
Mean	0.50	0.42	0.58
Std Dev	0.33	0.29	0.37

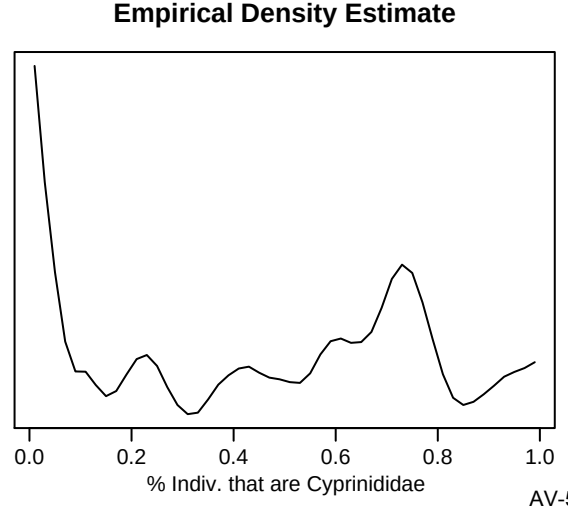
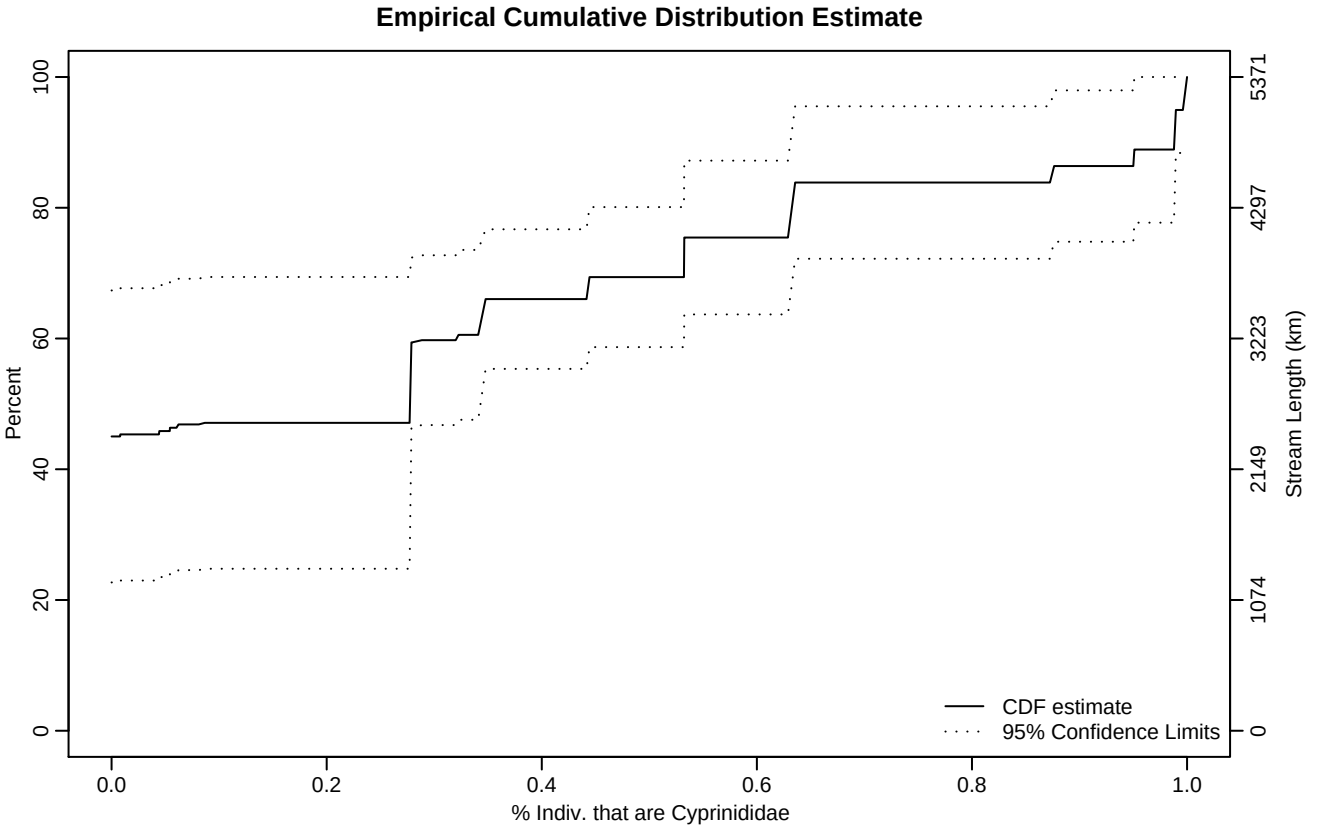


Figure VERT−27 Indicator: CYPR_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.06
50Pct	0.28	0	0.53
75Pct	0.53	0.28	0.99
90Pct	0.99	0.63	
95Pct	1	0.95	
Mean	0.32	0.20	0.43
Std Dev	0.25	0.21	0.29

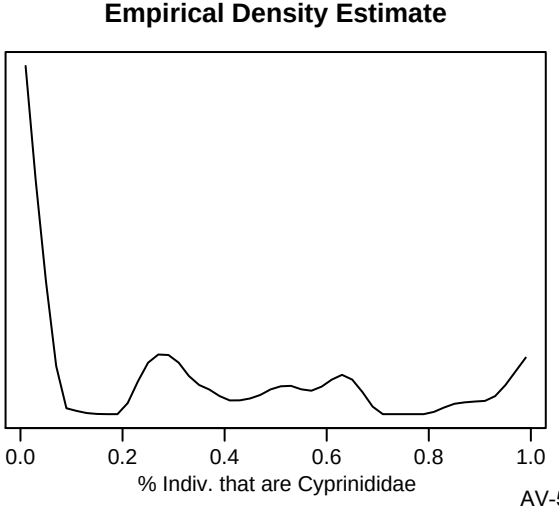
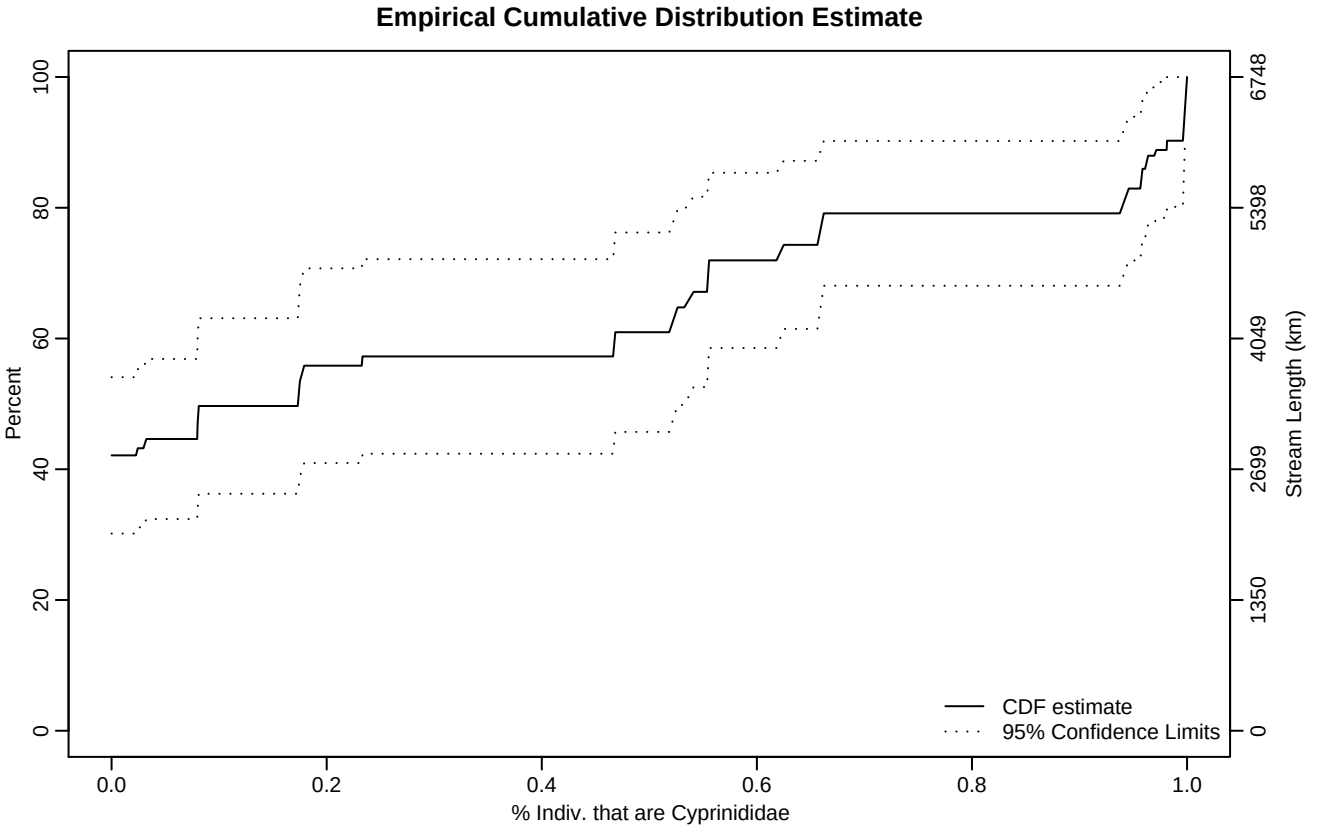


Figure VERT−28 Indicator: CYPR_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.17	0	0.52
75Pct	0.66	0.52	0.97
90Pct	0.98	0.94	1
95Pct	1	0.96	1
Mean	0.35	0.24	0.46
Std Dev	0.34	0.30	0.39

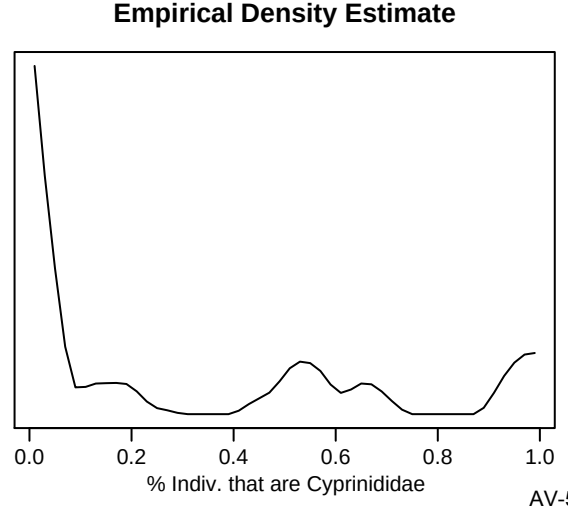
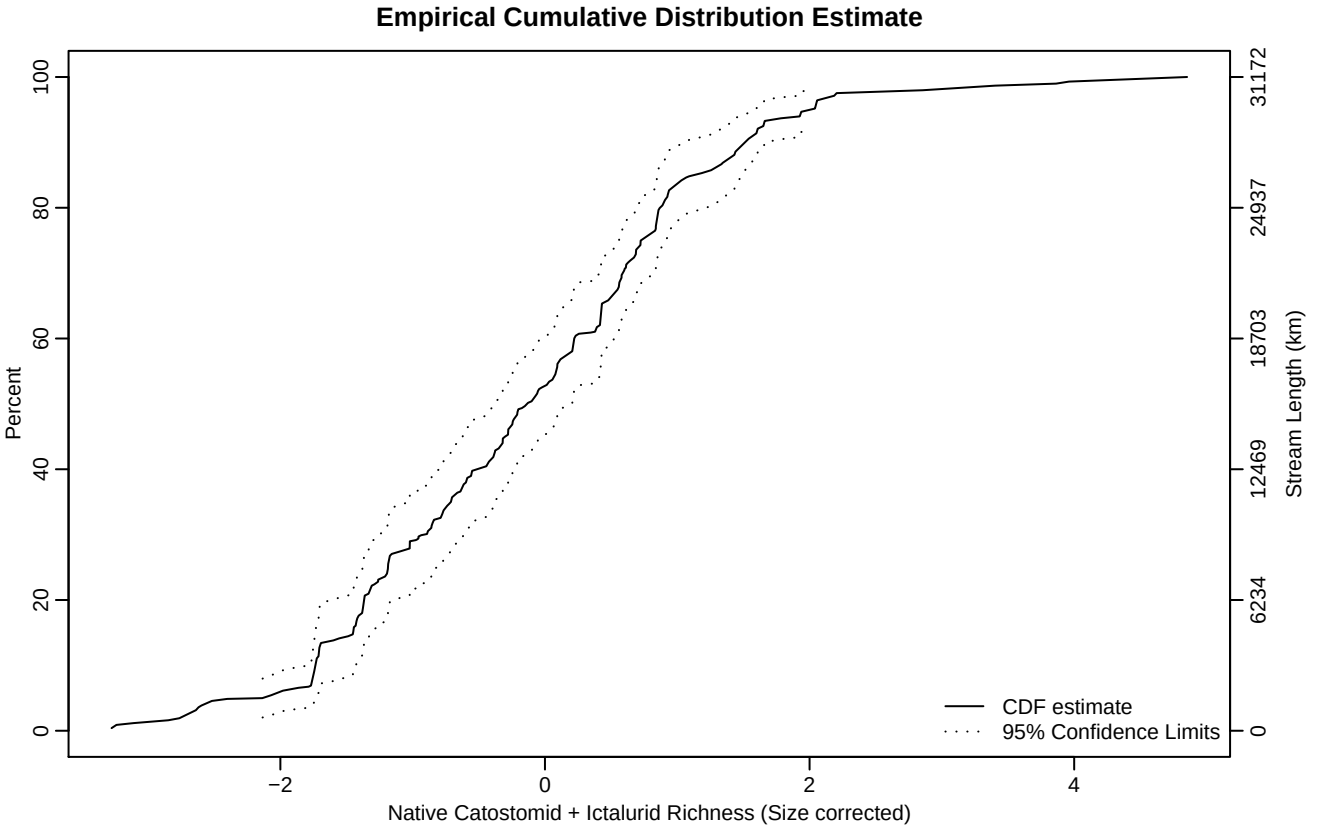


Figure VERT−29 Indicator: CATOICT_RICH_C Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.13	−2.75	−1.76
10Pct	−1.74	−2.10	−1.45
25Pct	−1.19	−1.38	−0.84
50Pct	−0.14	−0.38	0.17
75Pct	0.73	0.56	0.92
90Pct	1.51	1.09	2.04
95Pct	2	1.61	2.98
Mean	−0.11	−0.32	0.09
Std Dev	1.32	1.18	1.46

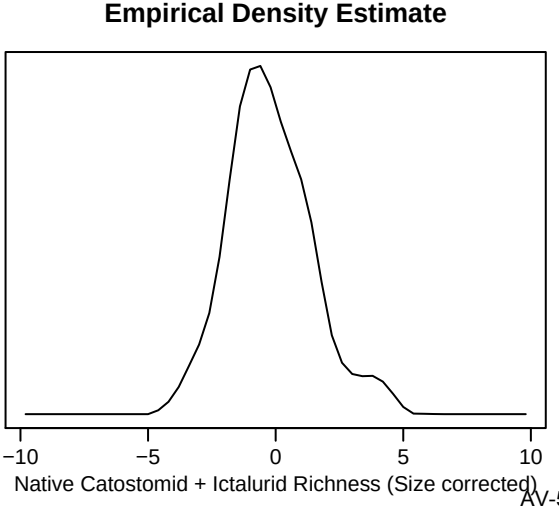
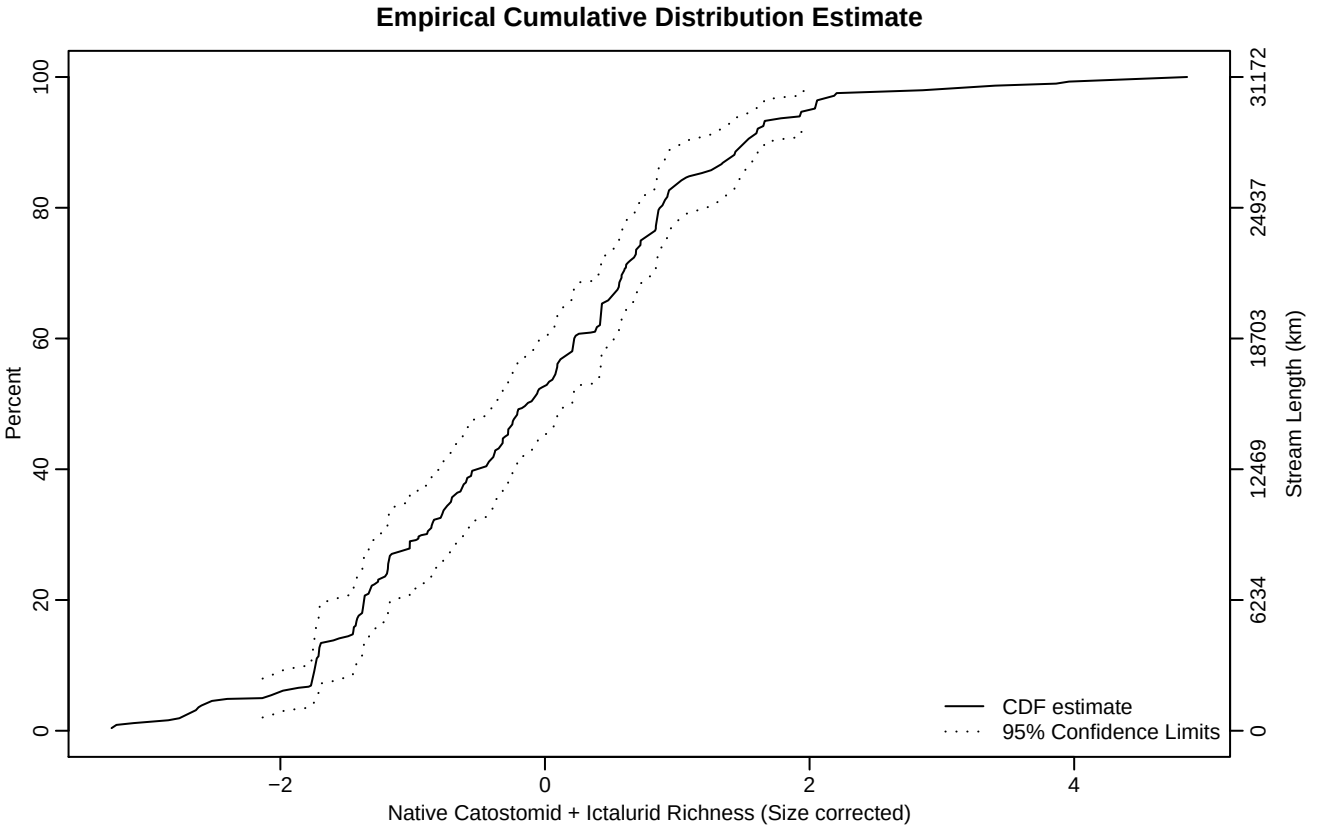


Figure VERT−30 Indicator: CATOICT_RICH_C Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.13	−2.75	−1.76
10Pct	−1.74	−2.10	−1.45
25Pct	−1.19	−1.38	−0.84
50Pct	−0.14	−0.38	0.17
75Pct	0.73	0.56	0.92
90Pct	1.51	1.09	2.04
95Pct	2	1.61	2.98
Mean	−0.11	−0.32	0.09
Std Dev	1.32	1.18	1.46

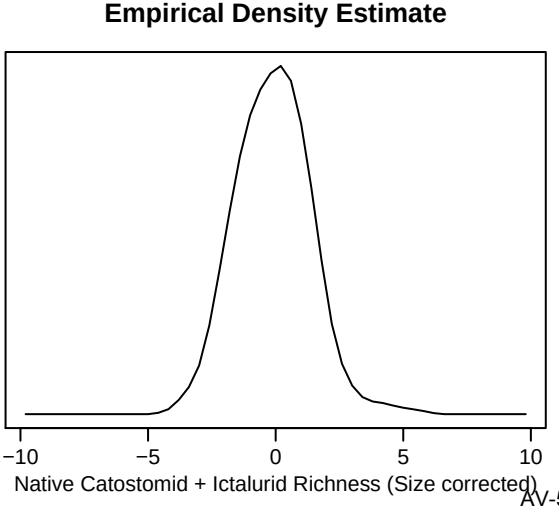
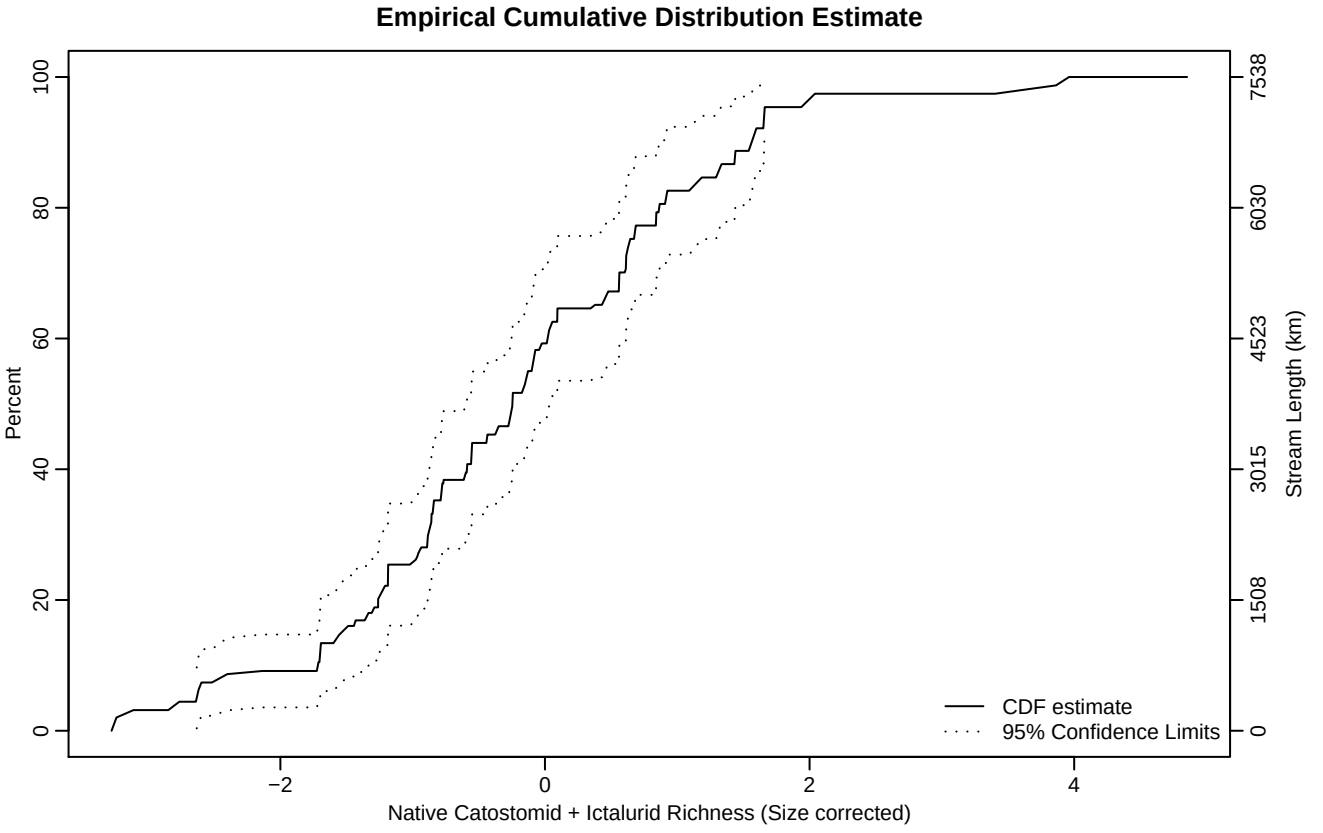


Figure VERT−31 Indicator: CATOICT_RICH_C Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.63	−3.27	−1.72
10Pct	−1.72	−2.78	−1.50
25Pct	−1.19	−1.50	−0.84
50Pct	−0.25	−0.61	0.03
75Pct	0.64	0.09	1.32
90Pct	1.56	0.92	3.75
95Pct	1.66	1.44	3.96
Mean	−0.20	−0.49	0.09
Std Dev	1.34	1.13	1.54

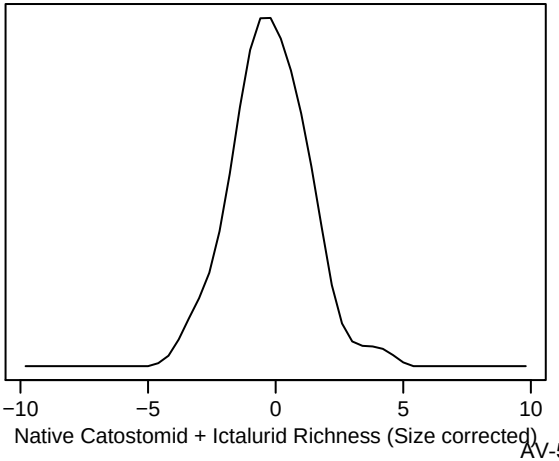
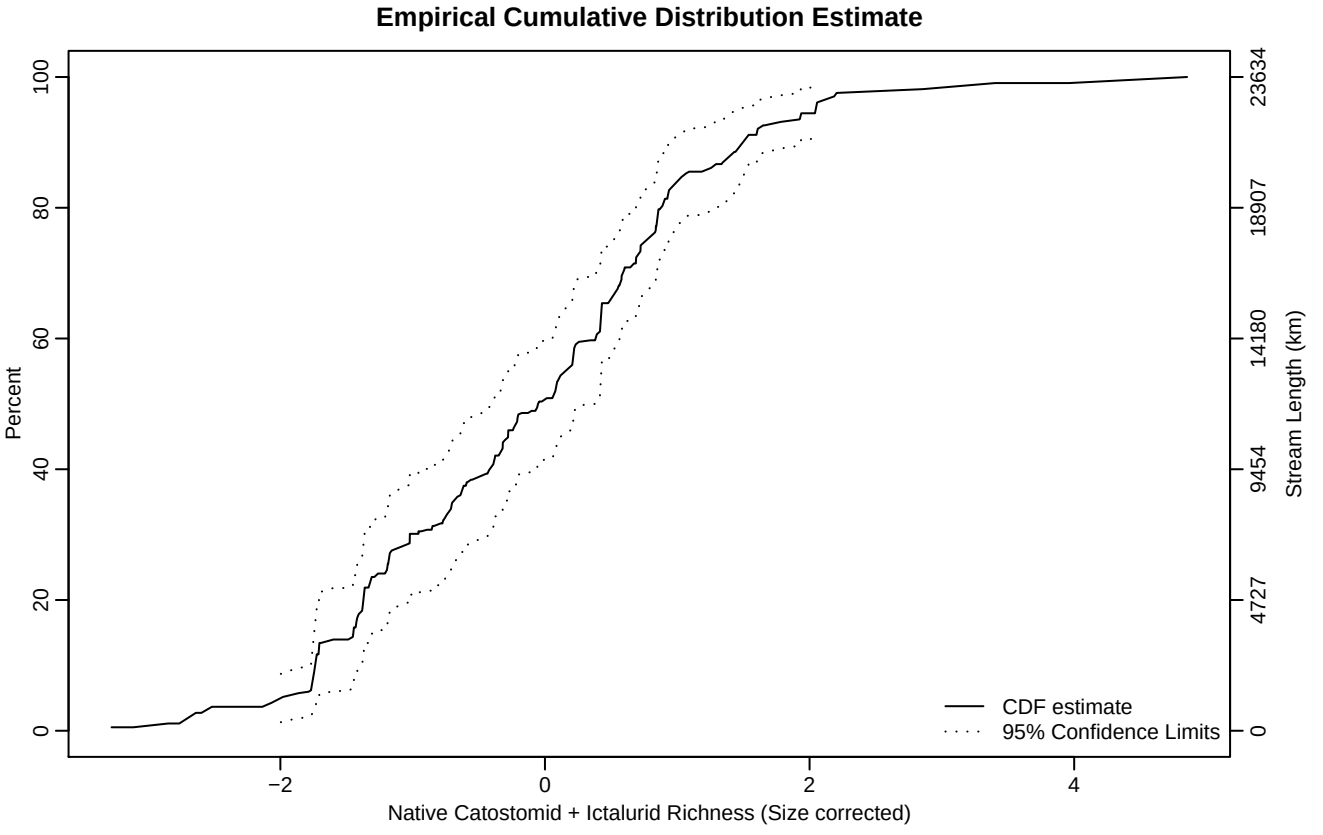


Figure VERT−32 Indicator: CATOICT_RICH_C Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2	−2.74	−1.75
10Pct	−1.74	−2.10	−1.43
25Pct	−1.19	−1.43	−0.72
50Pct	−0.05	−0.39	0.24
75Pct	0.76	0.53	0.95
90Pct	1.50	0.98	2.09
95Pct	2.05	1.53	3.36
Mean	−0.08	−0.34	0.17
Std Dev	1.31	1.14	1.47

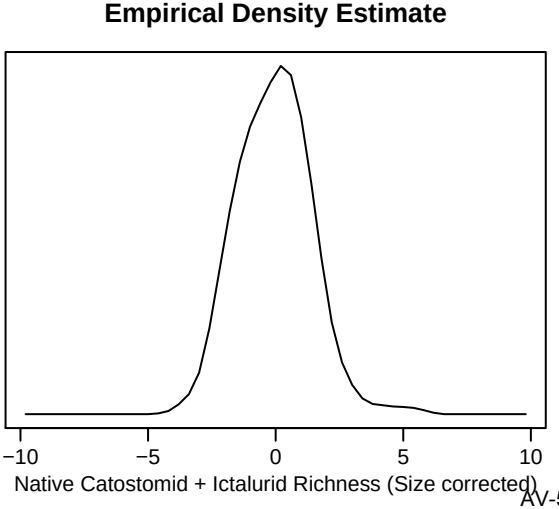
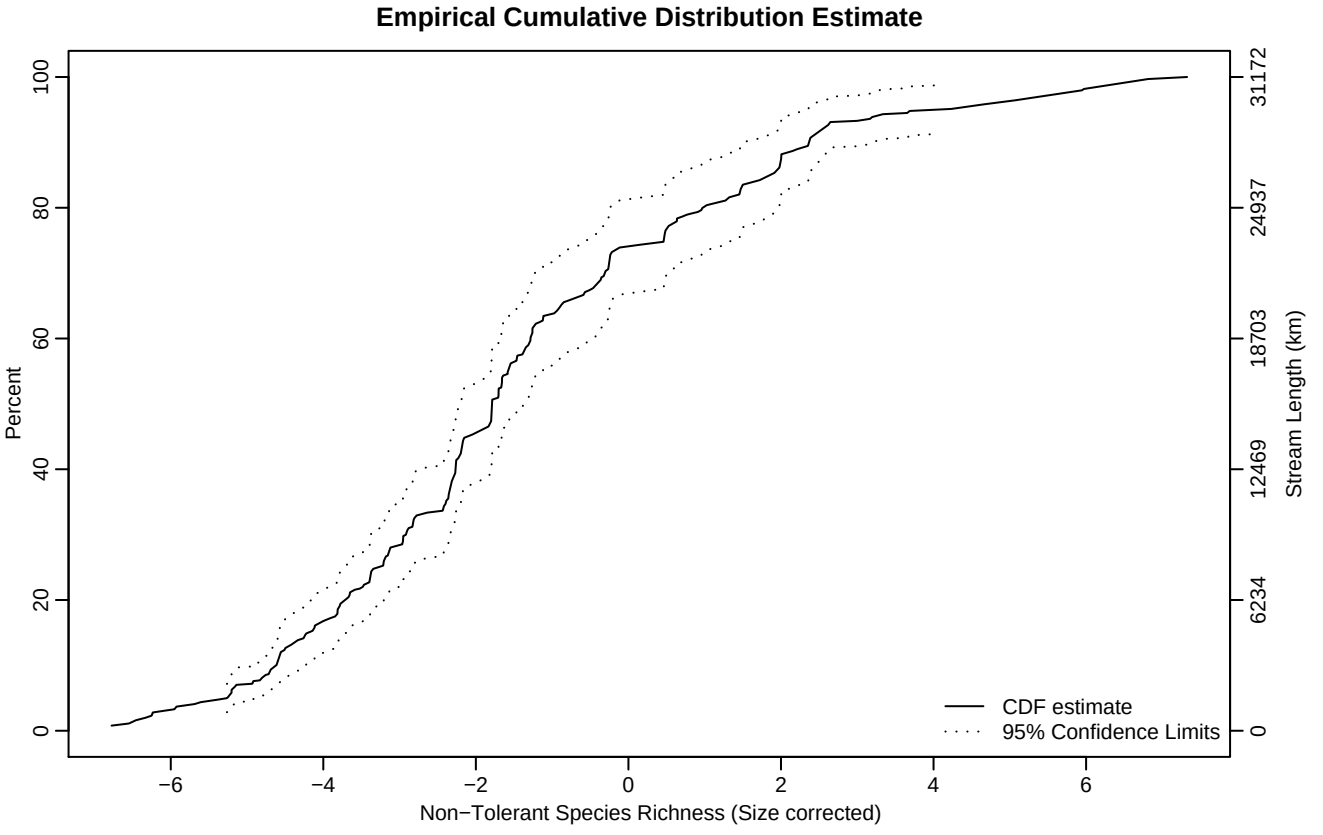


Figure VERT−33 Indicator: NT_RICH_C Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−5.26	−6.21	−4.96
10Pct	−4.62	−5.15	−4.42
25Pct	−3.28	−3.79	−2.88
50Pct	−1.79	−2.21	−1.38
75Pct	0.46	−0.45	1.46
90Pct	2.37	1.76	4.49
95Pct	4.03	2.45	6.29
Mean	−1.33	−1.77	−0.89
Std Dev	2.78	2.45	3.12

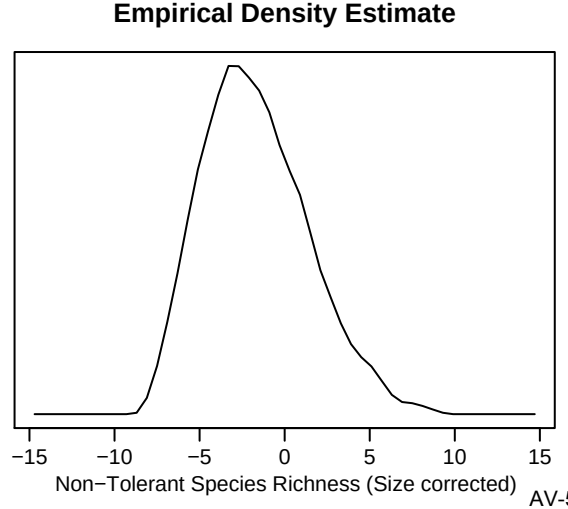
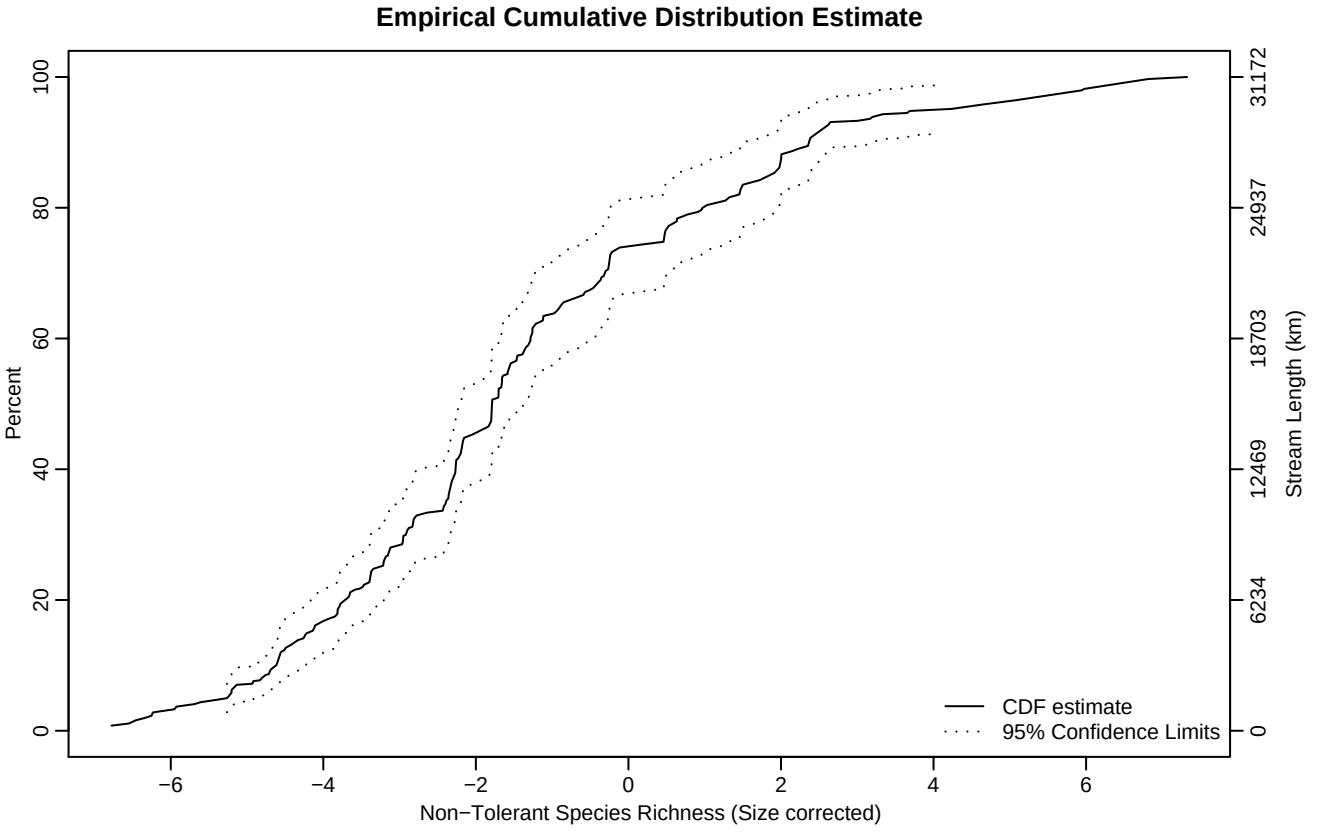


Figure VERT−34 Indicator: NT_RICH_C Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−5.26	−6.21	−4.96
10Pct	−4.62	−5.15	−4.42
25Pct	−3.28	−3.79	−2.88
50Pct	−1.79	−2.21	−1.38
75Pct	0.46	−0.45	1.46
90Pct	2.37	1.76	4.49
95Pct	4.03	2.45	6.29
Mean	−1.33	−1.77	−0.89
Std Dev	2.78	2.45	3.12

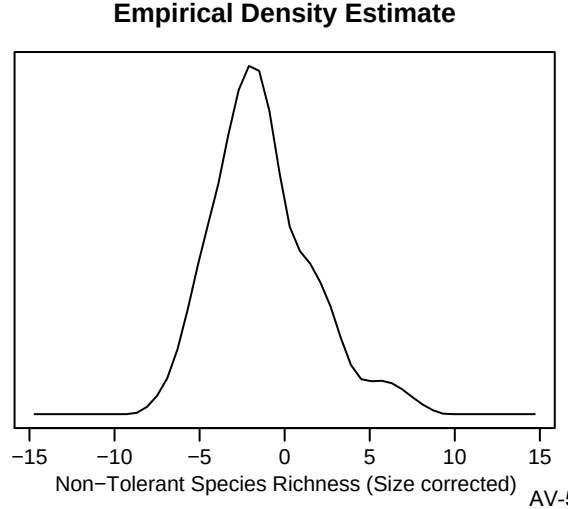
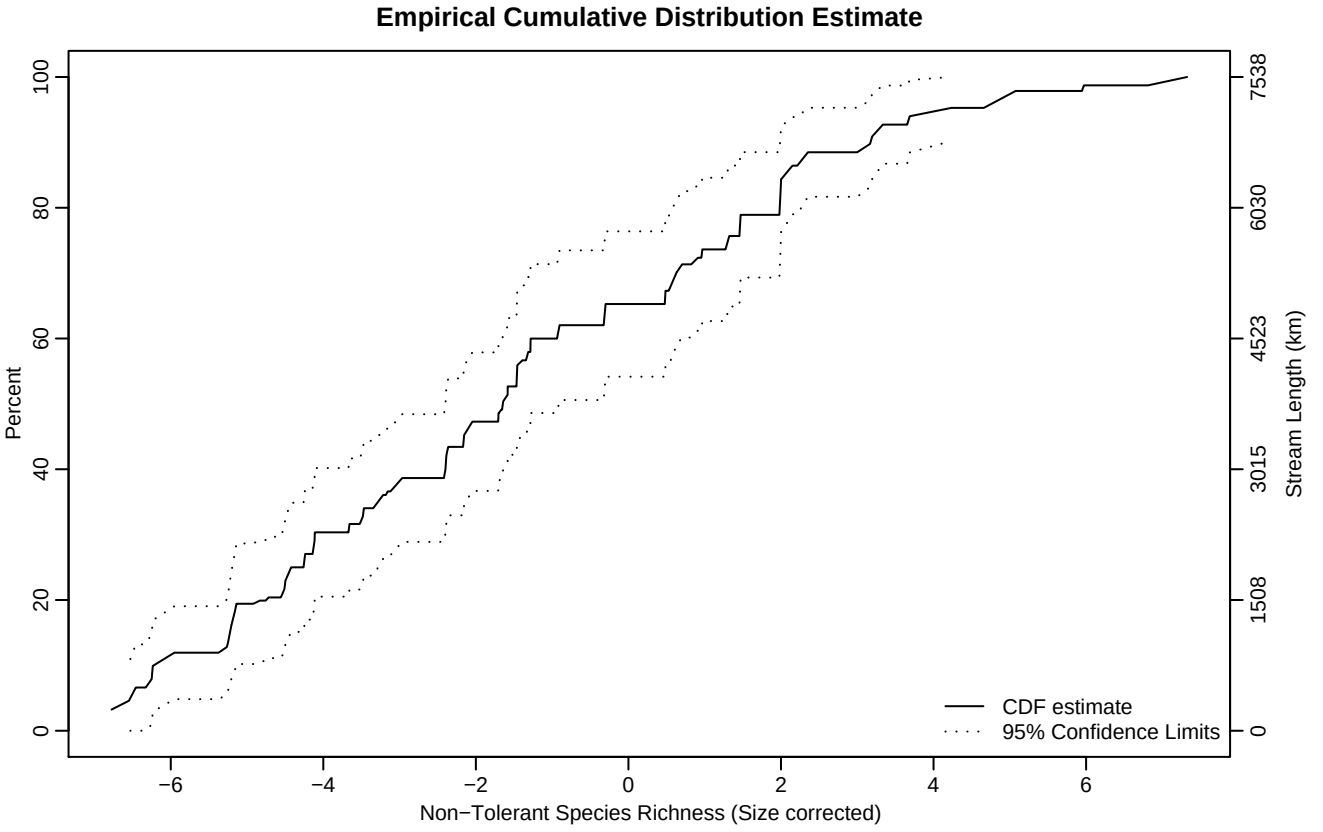


Figure VERT−35 Indicator: NT_RICH_C Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6.53	−6.78	−6.11
10Pct	−6.22	−6.78	−5.19
25Pct	−4.26	−5.22	−3.29
50Pct	−1.65	−2.41	−0.93
75Pct	1.31	−0.31	2.12
90Pct	3.17	2	4.88
95Pct	4.12	3.13	7.32
Mean	−1.46	−2.19	−0.74
Std Dev	3.38	2.95	3.82

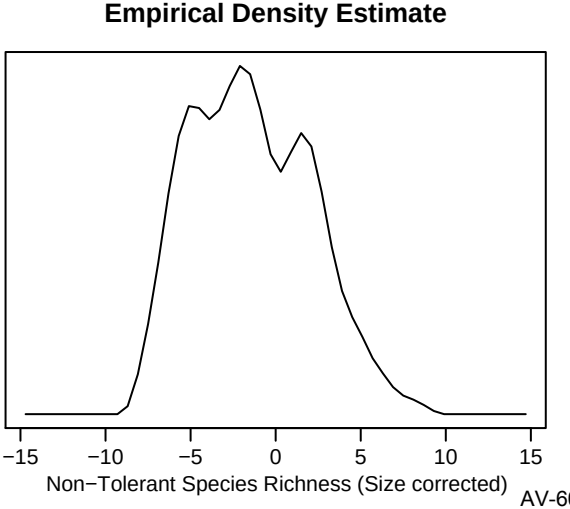
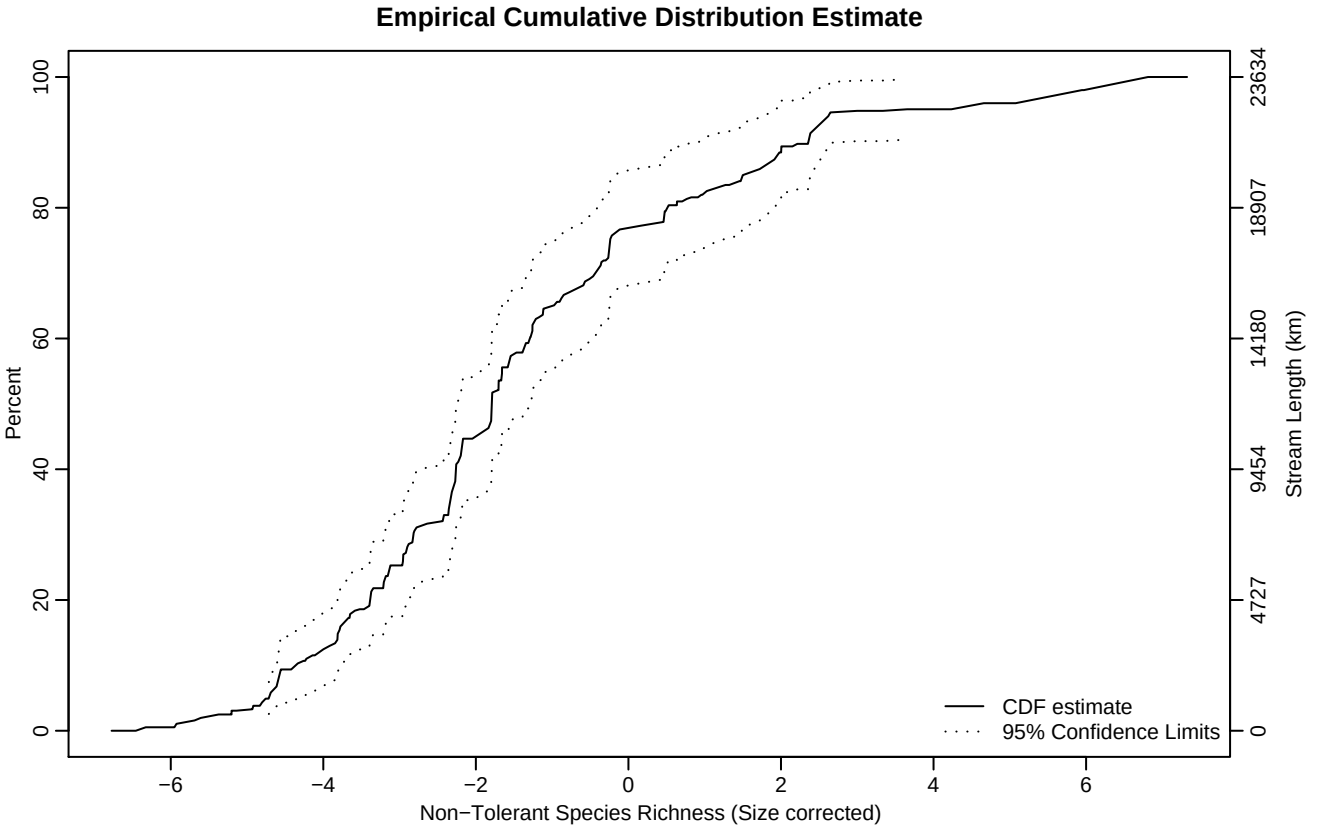


Figure VERT−36 Indicator: NT_RICH_C Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−4.71	−5.20	−4.60
10Pct	−4.36	−4.72	−3.80
25Pct	−3.13	−3.65	−2.43
50Pct	−1.79	−2.26	−1.30
75Pct	−0.24	−0.90	1.48
90Pct	2.36	1.15	5.51
95Pct	3.57	2.37	6.66
Mean	−1.29	−1.82	−0.75
Std Dev	2.51	2.10	2.92

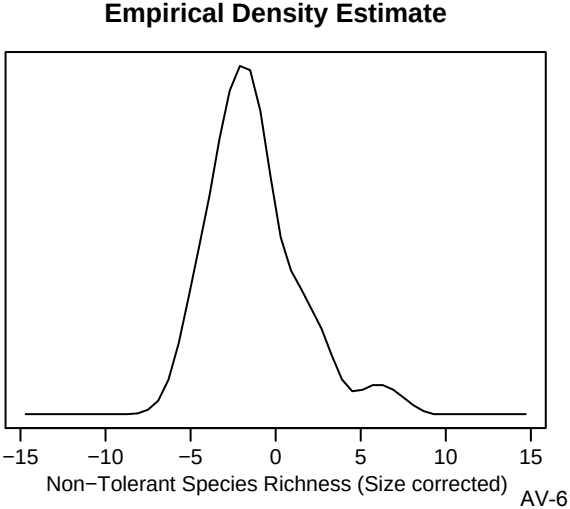
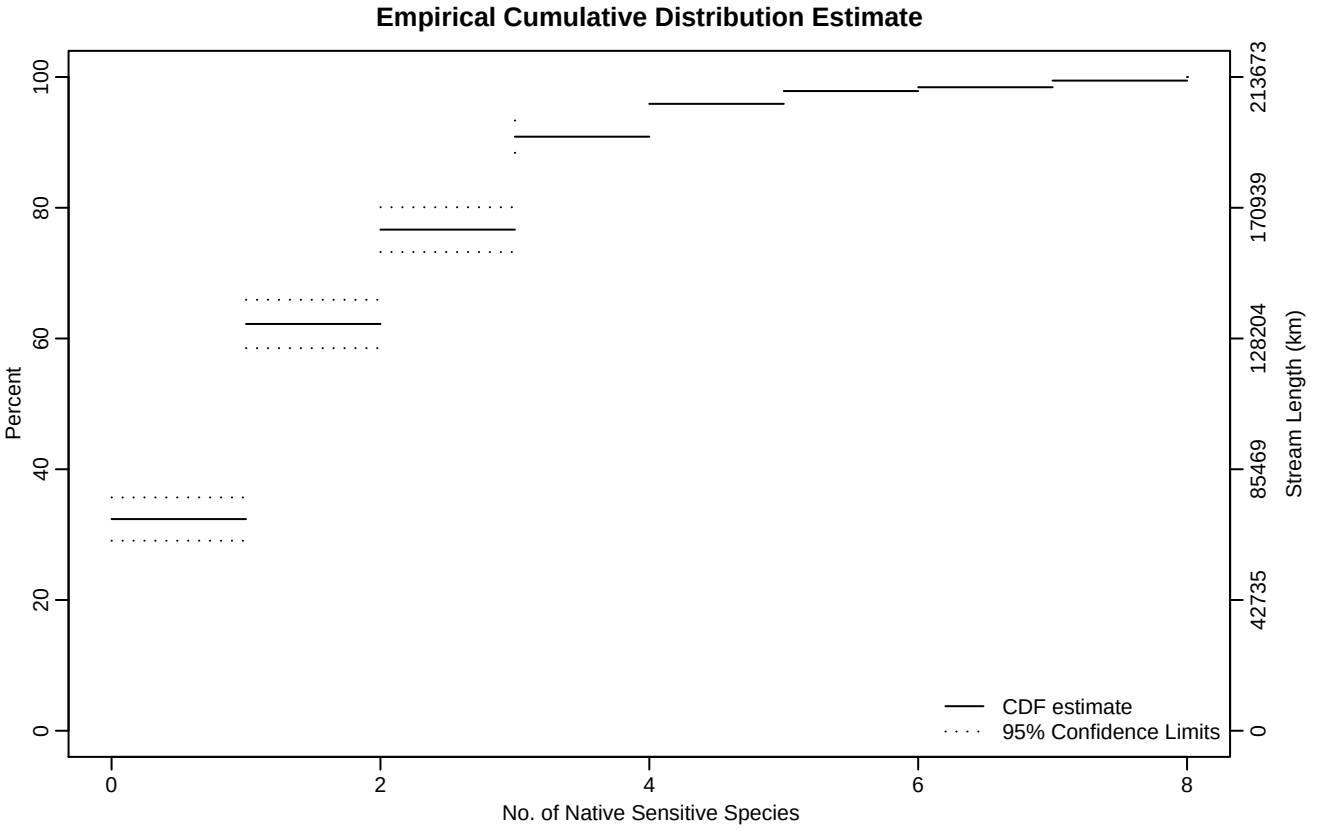


Figure VERT−37 Indicator: SENS_NAT_RICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.59	0.47	0.71
75Pct	1.89	1.62	2.16
90Pct	2.94	2.68	3.55
95Pct	3.82	3.31	4.87
Mean	1.46	1.35	1.57
Std Dev	1.13	1.04	1.23

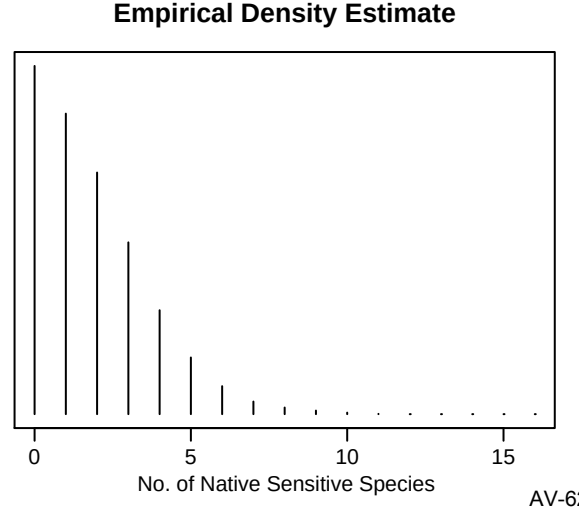
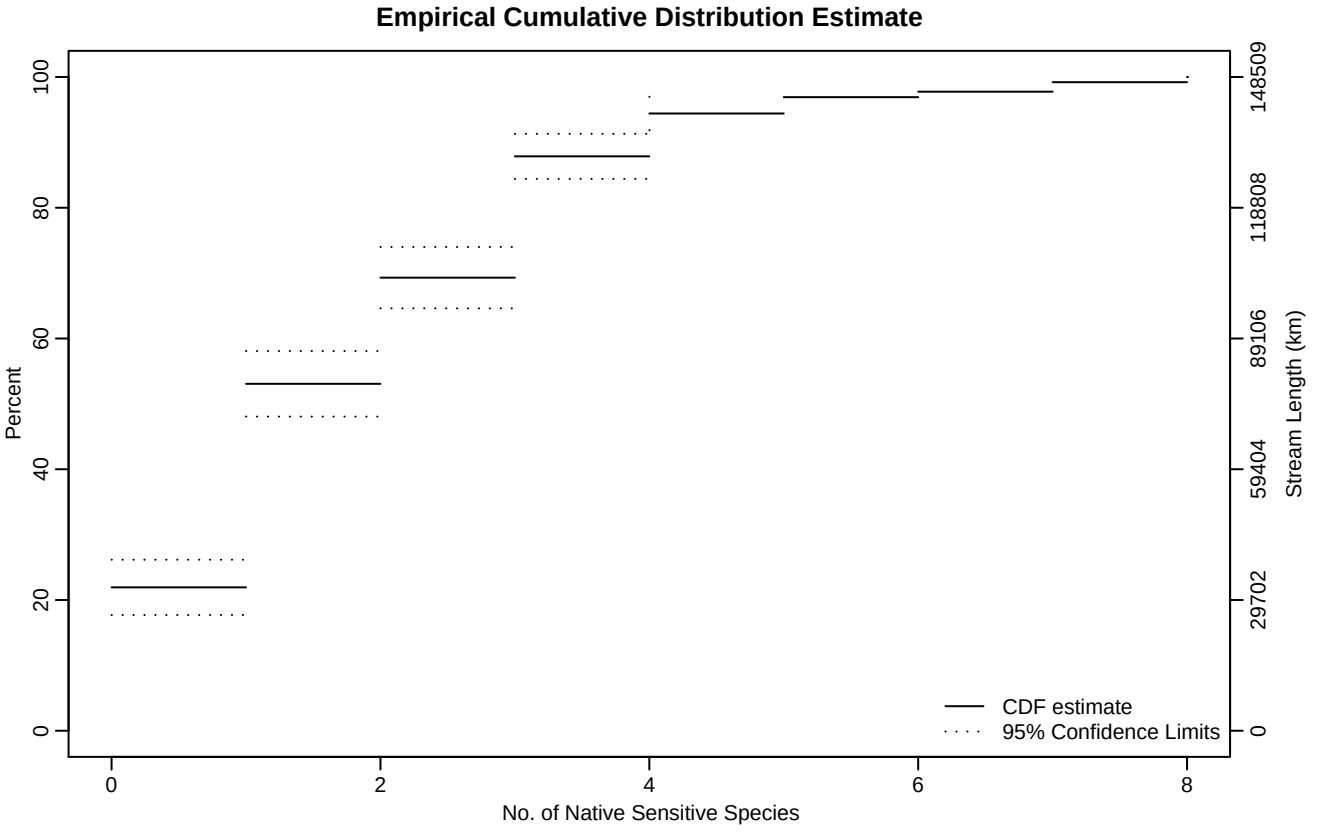


Figure VERT−38 Indicator: SENS_NAT_RICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.10	0	0.24
50Pct	0.90	0.76	1.09
75Pct	2.31	2.05	2.57
90Pct	3.33	2.92	3.87
95Pct	4.23	3.70	5.77
Mean	1.80	1.64	1.95
Std Dev	1.28	1.15	1.41

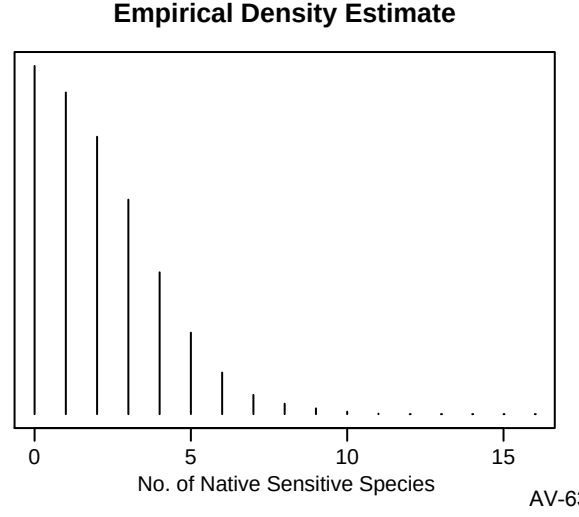
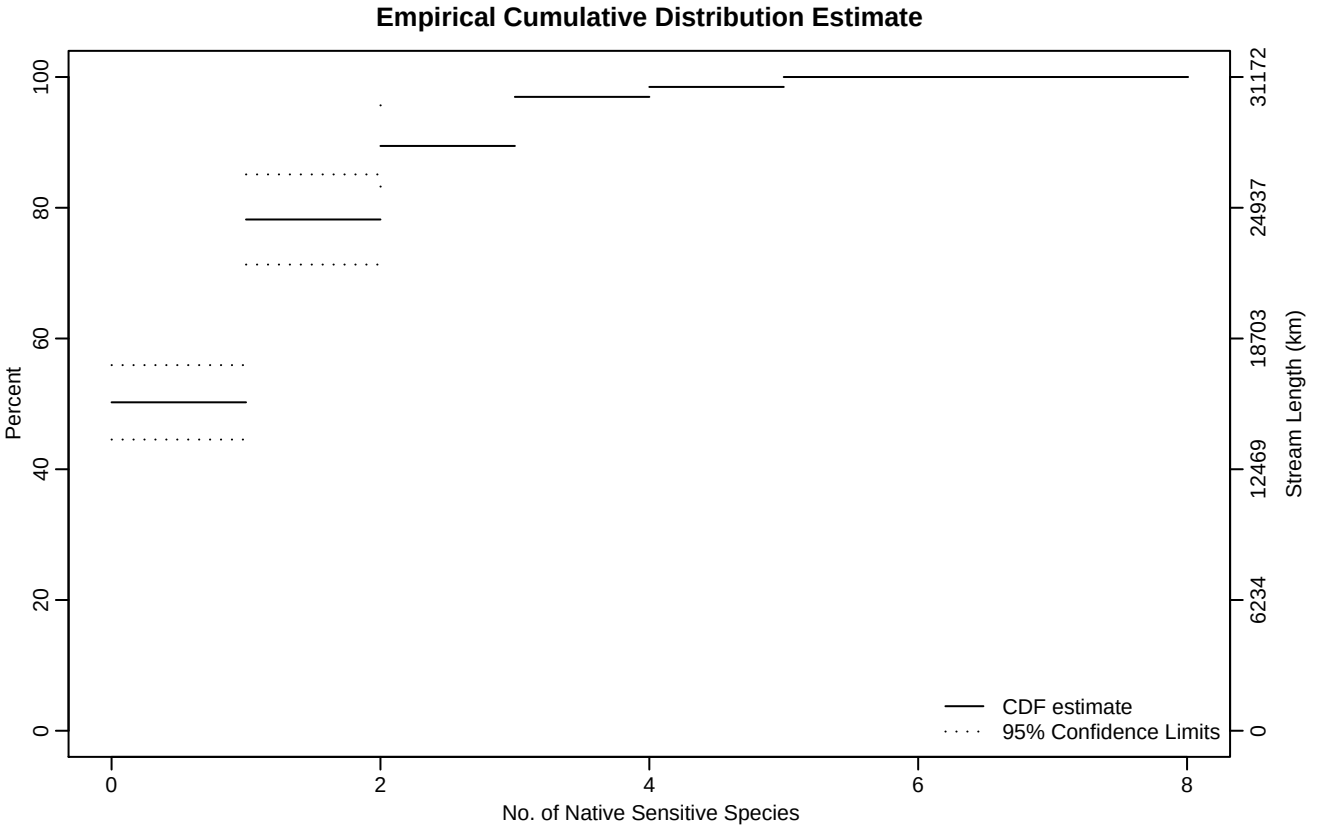


Figure VERT−39 Indicator: SENS_NAT_RICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.22
75Pct	0.89	0.63	1.34
90Pct	2.07	1.49	2.90
95Pct	2.74	1.94	
Mean	0.87	0.70	1.03
Std Dev	0.82	0.71	0.94

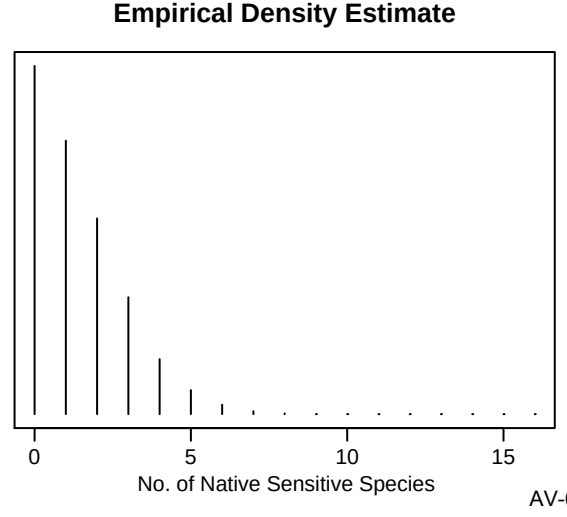
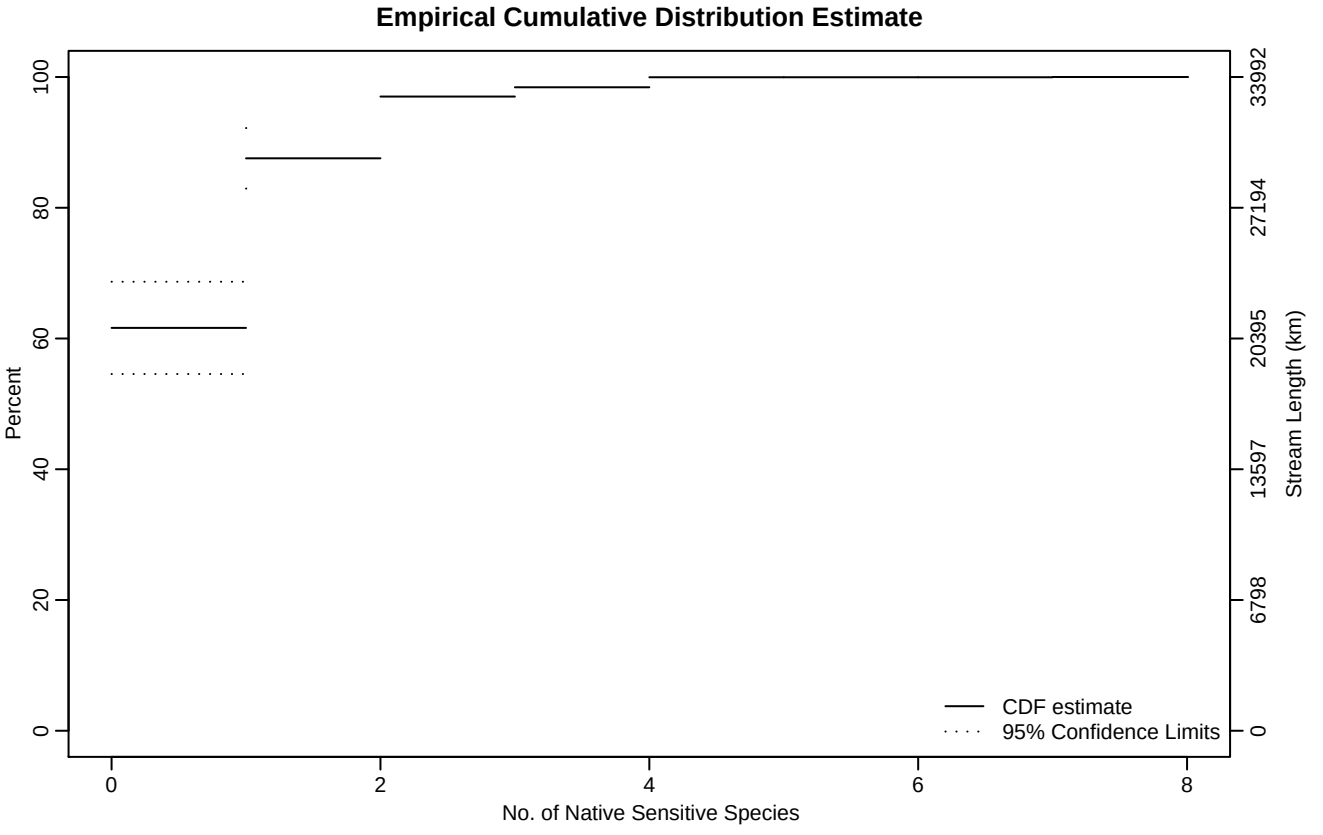


Figure VERT−40 Indicator: SENS_NAT_RICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.52	0.20	0.83
90Pct	1.26	0.89	1.82
95Pct	1.79	1.22	
Mean	0.55	0.45	0.66
Std Dev	0.56	0.47	0.65

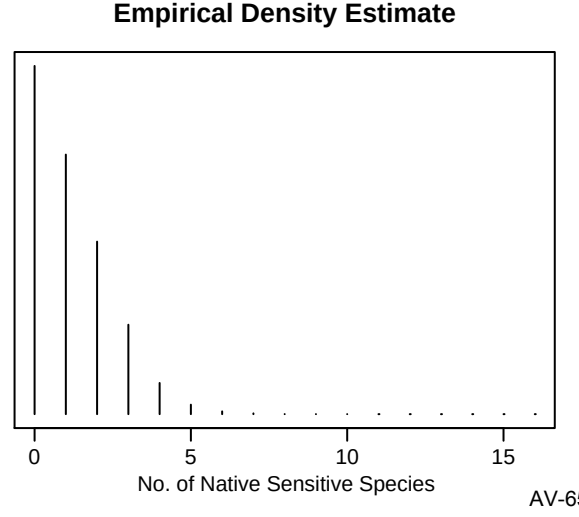
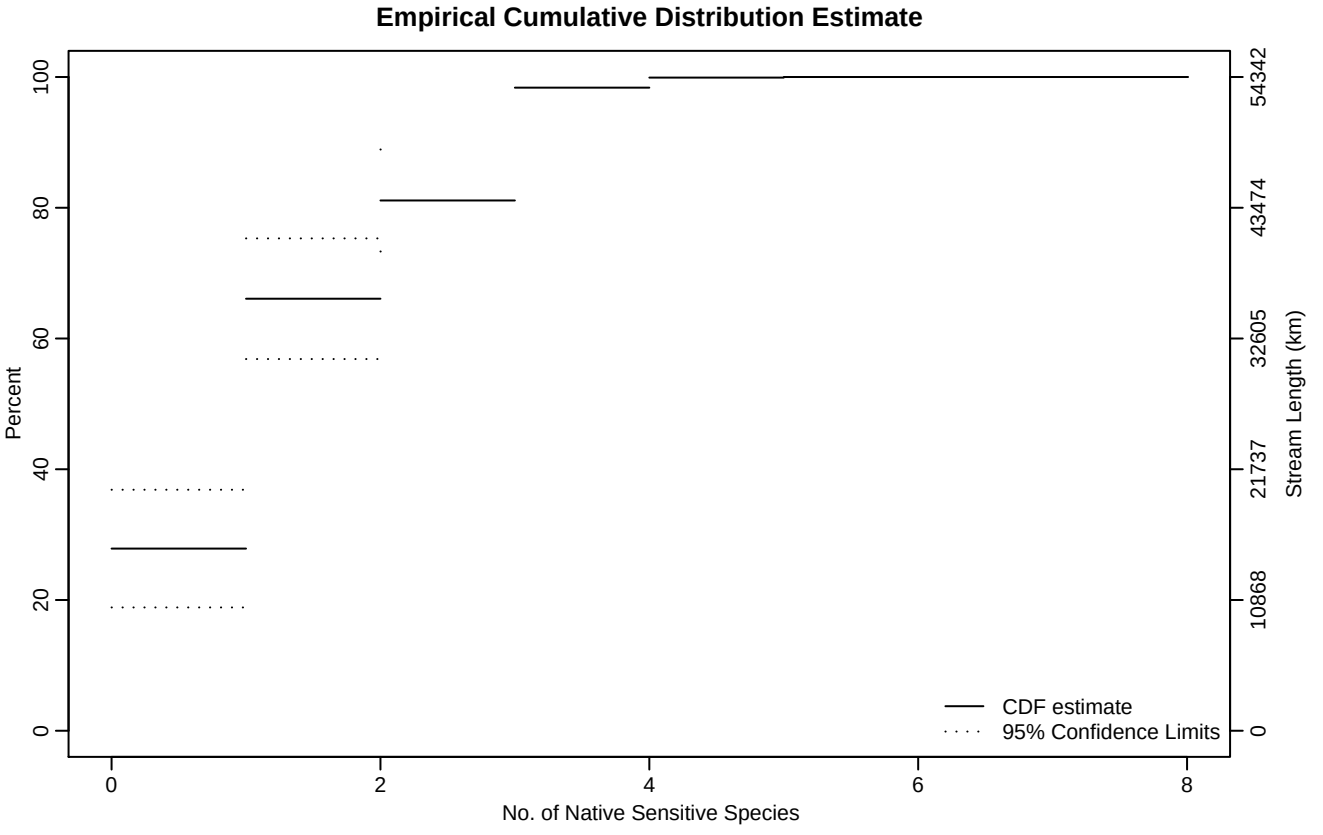


Figure VERT−41 Indicator: SENS_NAT_RICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.16
50Pct	0.58	0.35	0.81
75Pct	1.59	1	2.17
90Pct	2.52	2.08	2.95
95Pct	2.80	2.37	
Mean	1.27	1.05	1.48
Std Dev	0.99	0.88	1.11

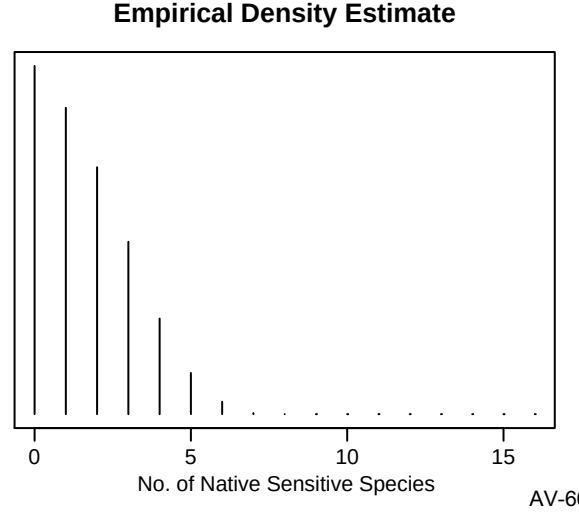
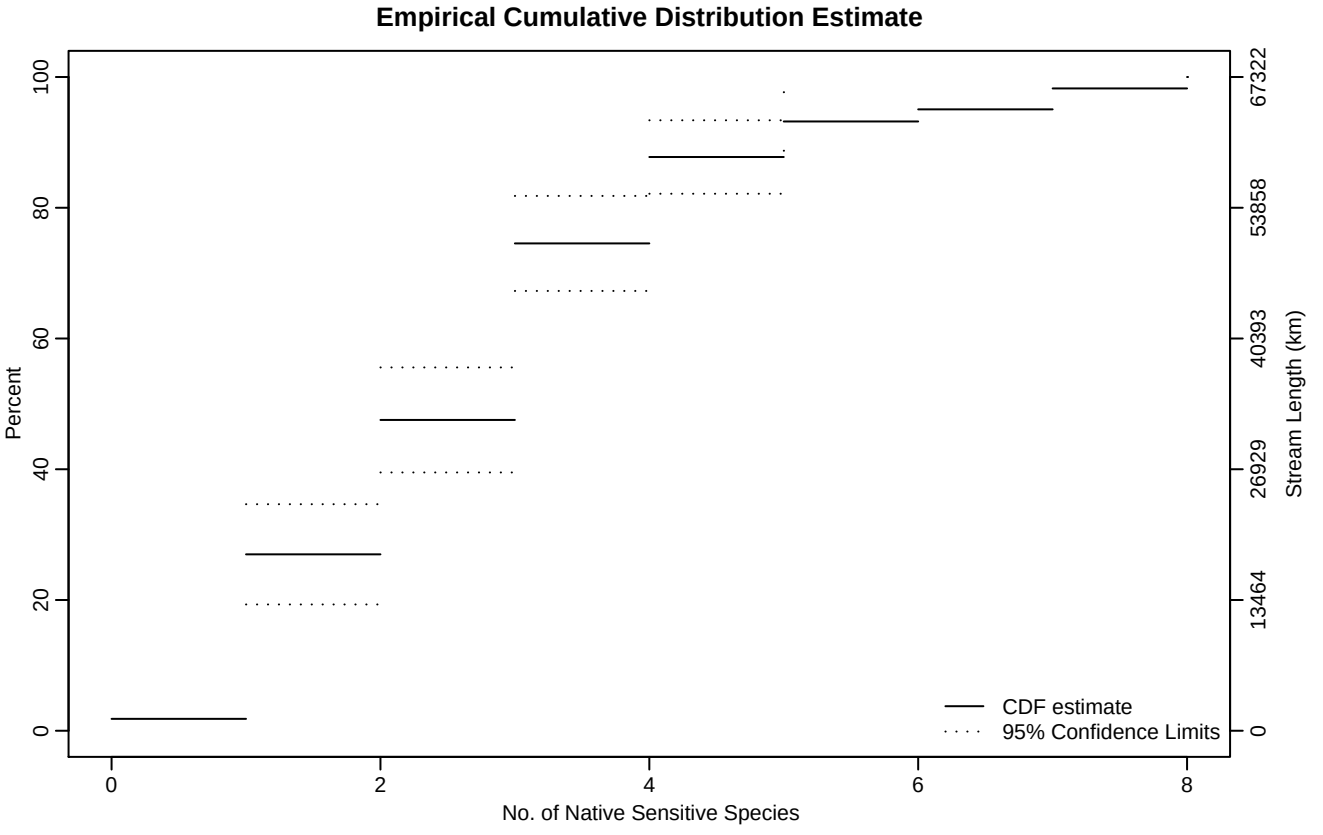


Figure VERT−42 Indicator: SENS_NAT_RICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.13	0.01	0.24
10Pct	0.33	0.21	0.44
25Pct	0.92	0.78	1.07
50Pct	2.09	1.72	2.39
75Pct	3.03	2.74	3.60
90Pct	4.41	3.74	6.18
95Pct	5.97	4.51	7.70
Mean	2.75	2.47	3.03
Std Dev	1.59	1.34	1.83

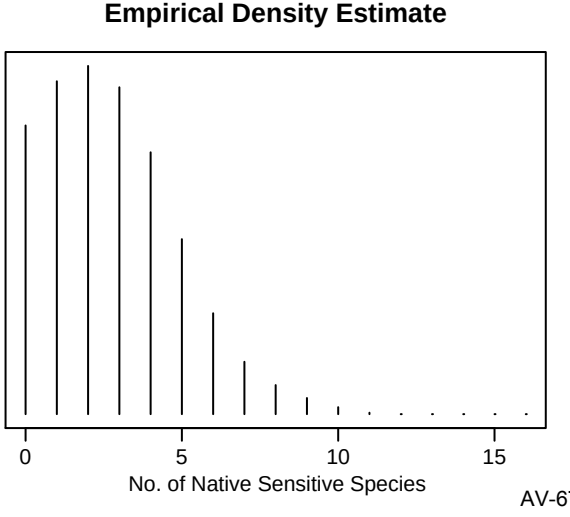
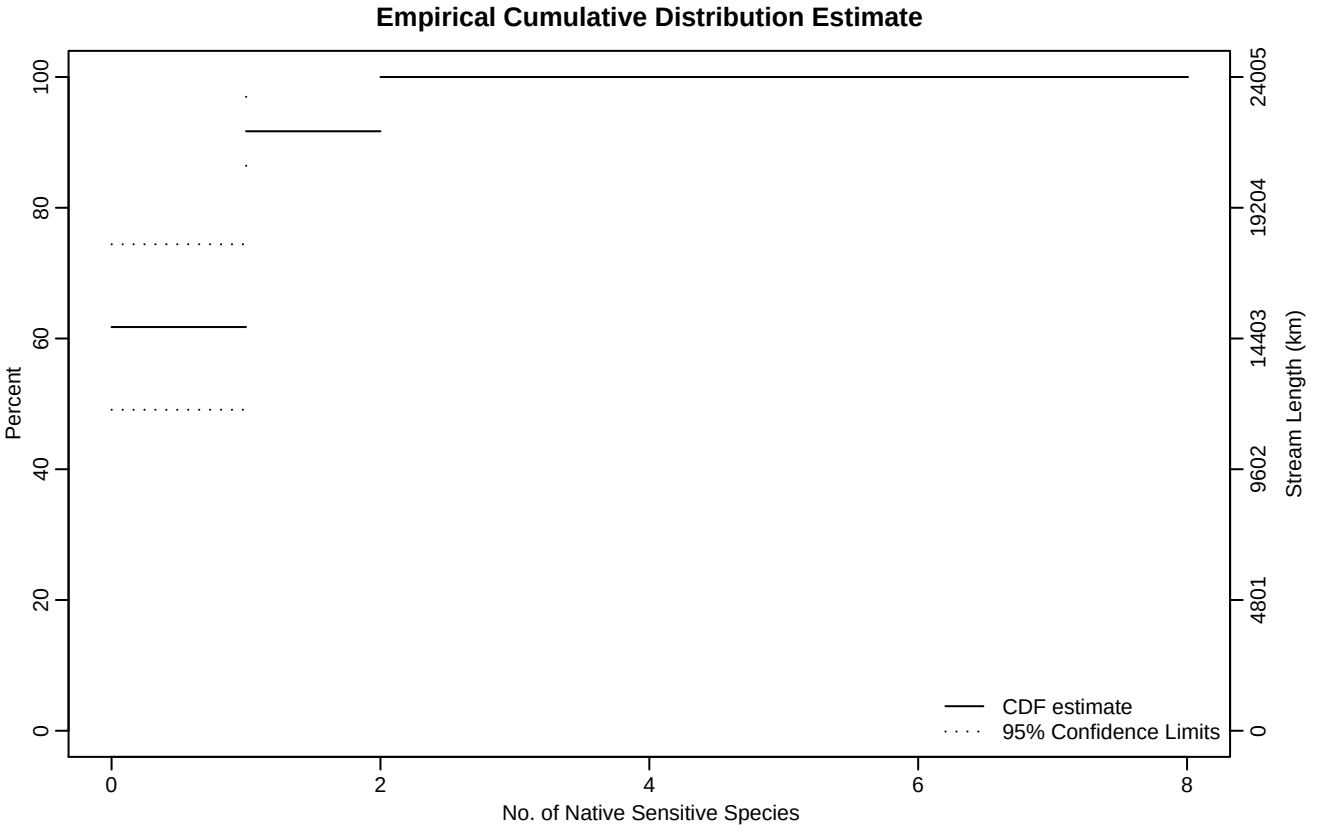


Figure VERT−43 Indicator: SENS_NAT_RICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.05
75Pct	0.44	0.03	0.85
90Pct	0.94	0.55	
95Pct	1.40	0.93	
Mean	0.47	0.32	0.61
Std Dev	0.57	0.49	0.65

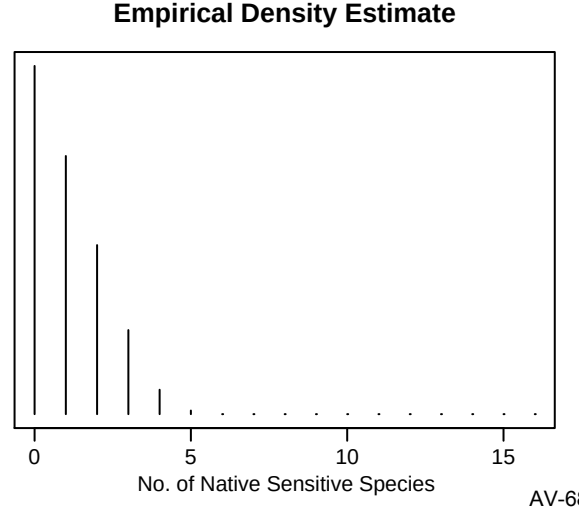
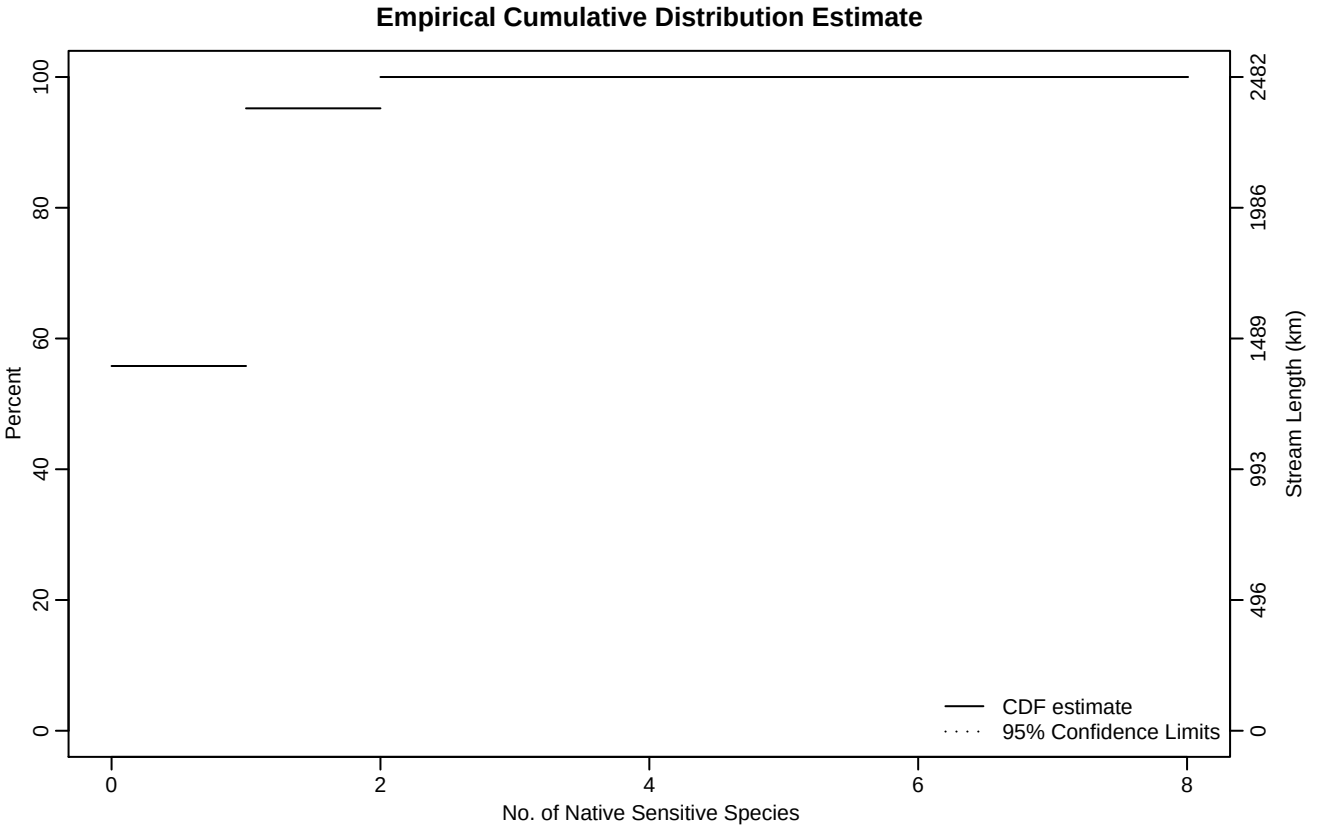


Figure VERT−44 Indicator: SENS_NAT_RICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.14
75Pct	0.49	0.19	0.78
90Pct	0.87	0.56	2
95Pct	0.99	0.68	2
Mean	0.49	0.37	0.61
Std Dev	0.52	0.47	0.56

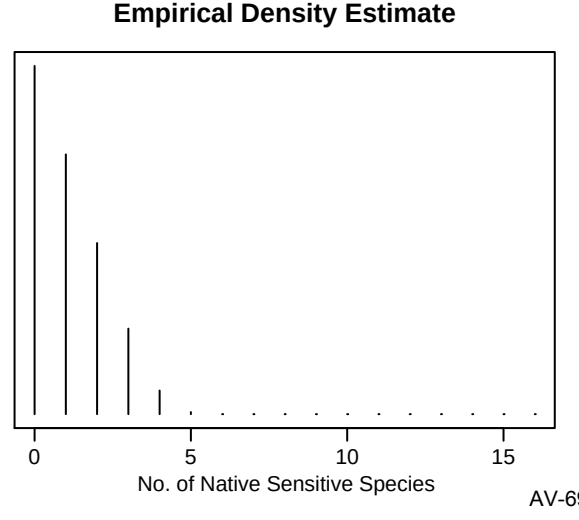
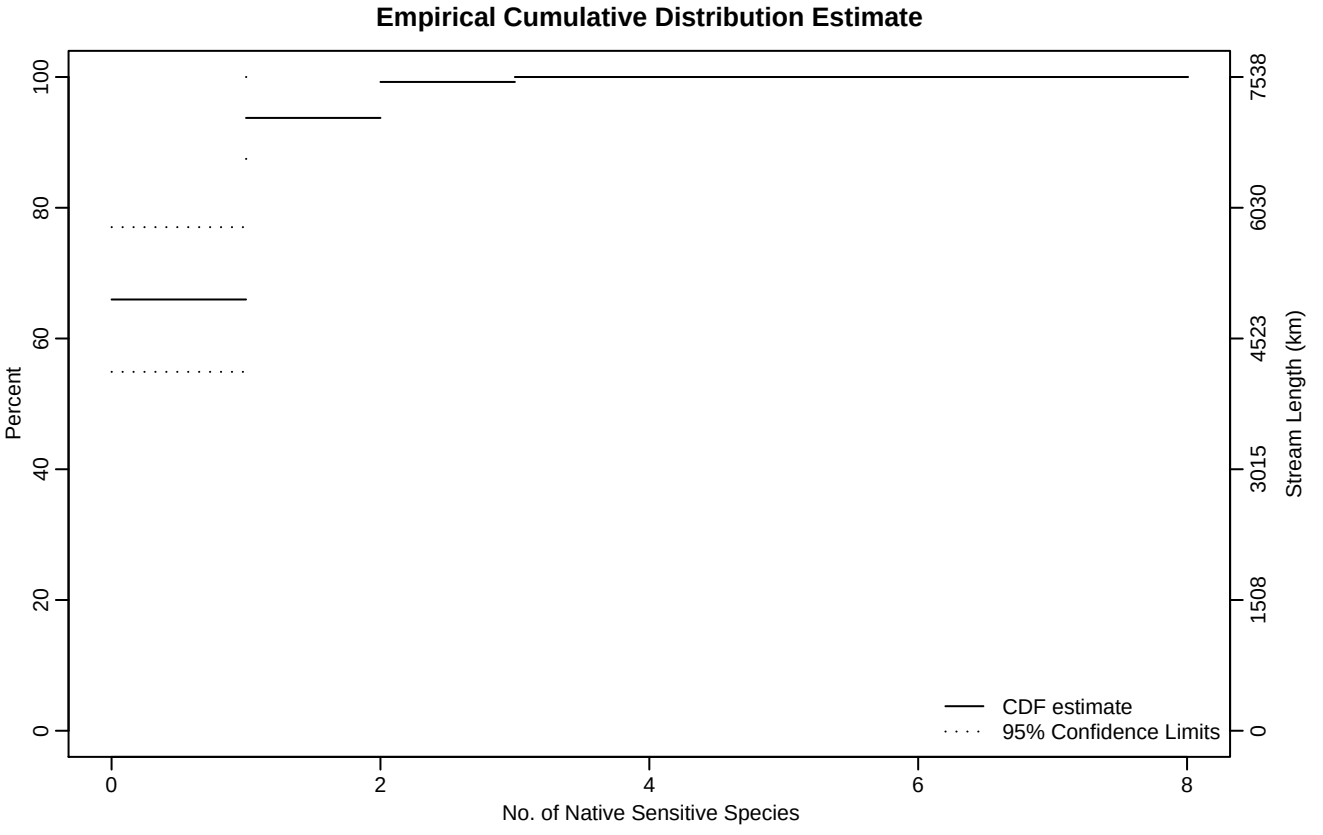


Figure VERT−45 Indicator: SENS_NAT_RICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.33	0	0.73
90Pct	0.87	0.45	3
95Pct	1.23	0.82	3
Mean	0.41	0.26	0.56
Std Dev	0.59	0.49	0.69

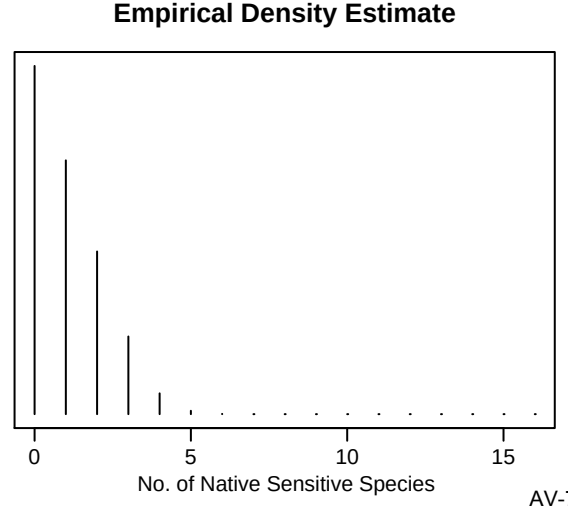
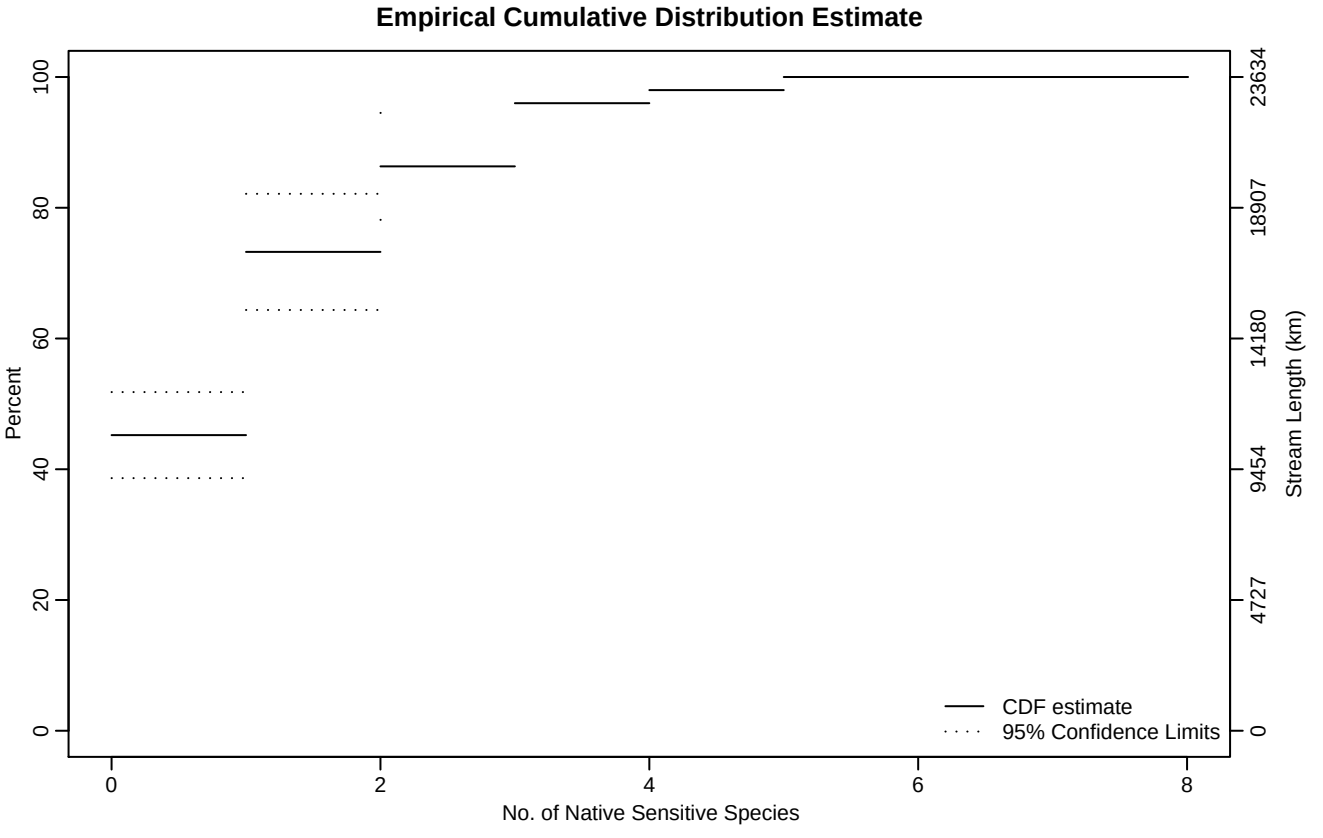


Figure VERT−46 Indicator: SENS_NAT_RICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.17	0	0.45
75Pct	1.13	0.73	1.85
90Pct	2.38	1.65	4.11
95Pct	2.90	2.04	5
Mean	1.01	0.80	1.23
Std Dev	0.88	0.74	1.03

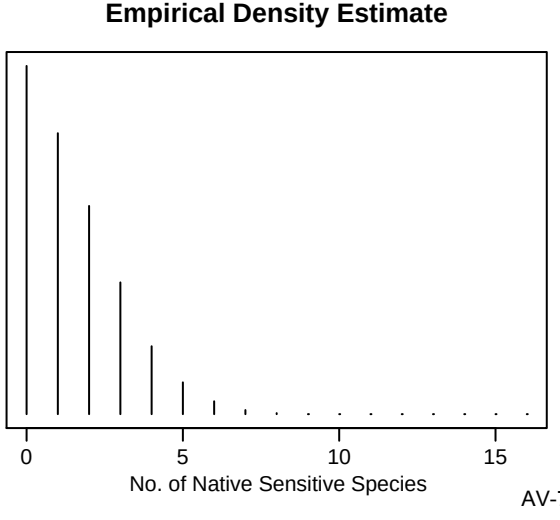
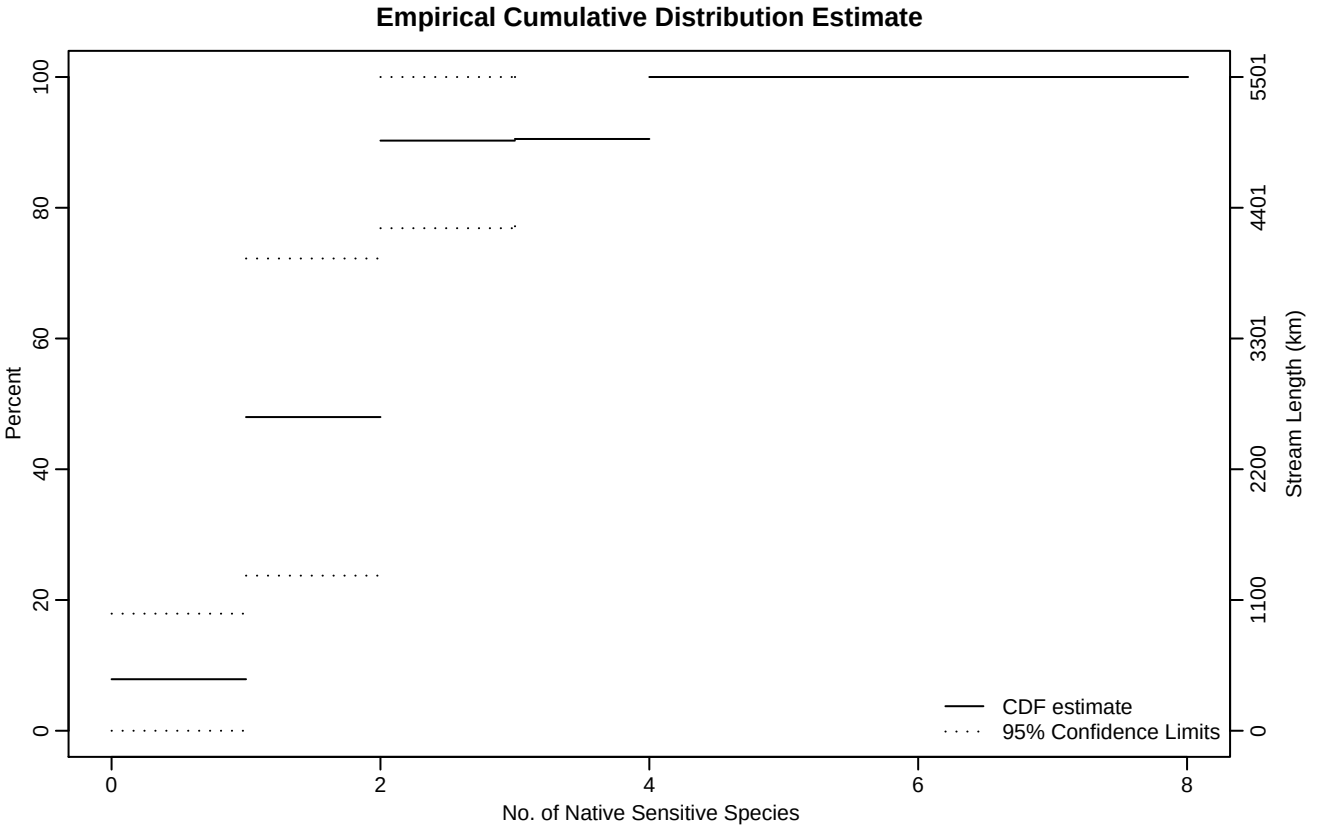


Figure VERT−47 Indicator: SENS_NAT_RICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.17
10Pct	0.05	0	0.31
25Pct	0.43	0.12	0.73
50Pct	1.05	0.45	1.62
75Pct	1.64	1.05	3.98
90Pct	1.99	1.38	4
95Pct	3.47	1.80	4
Mean	1.63	1.23	2.04
Std Dev	0.98	0.58	1.38

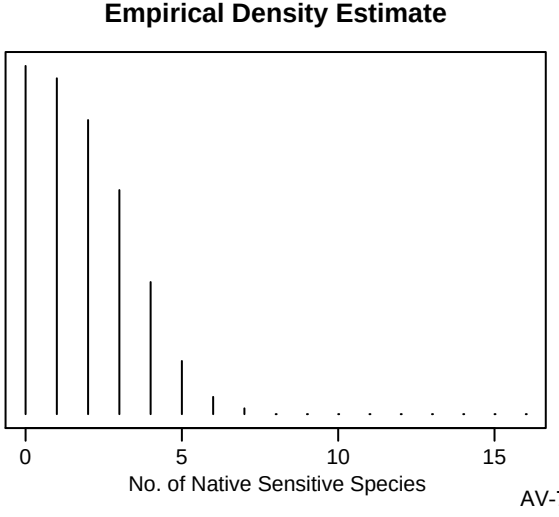
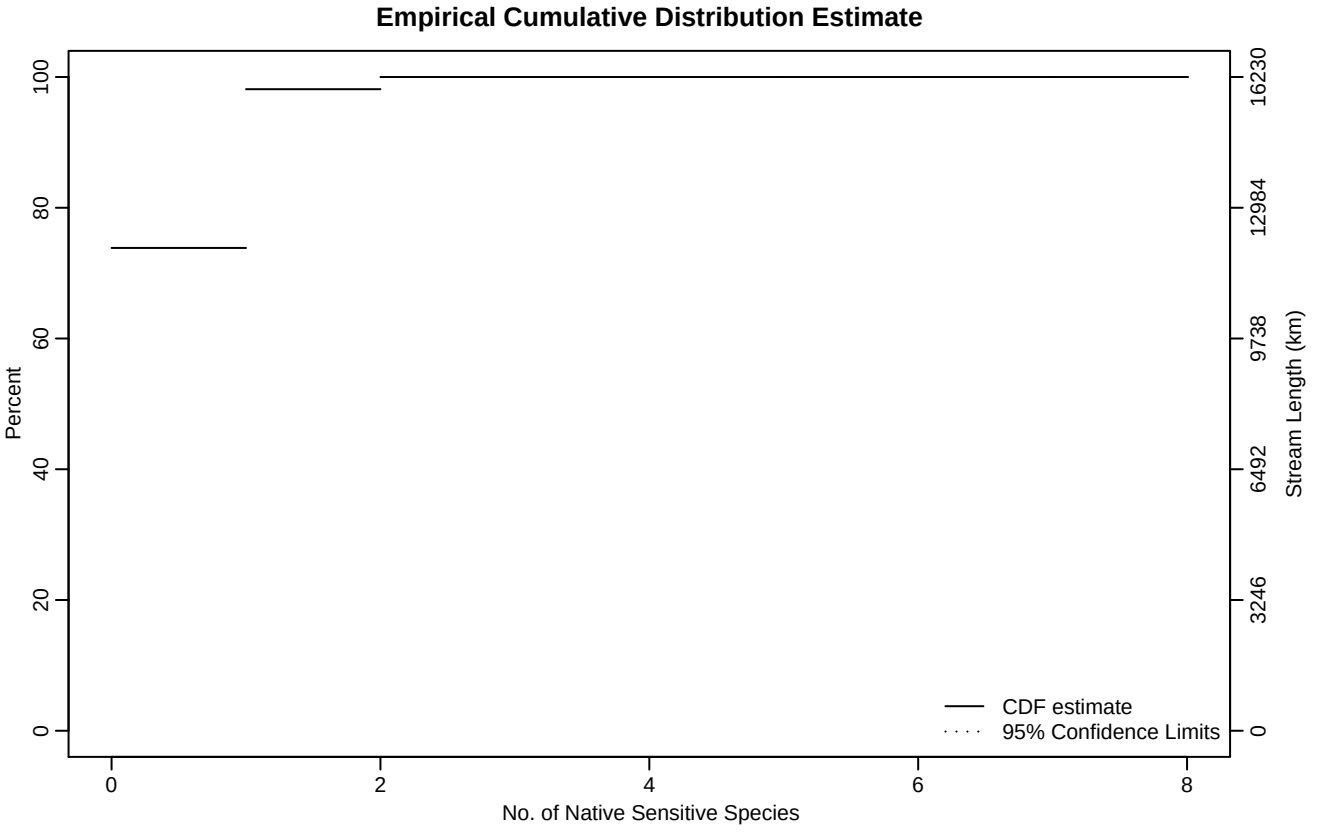


Figure VERT−48 Indicator: SENS_NAT_RICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.05	0	0.53
90Pct	0.66	0.16	2
95Pct	0.87	0.36	2
Mean	0.28	0.16	0.40
Std Dev	0.44	0.36	0.53

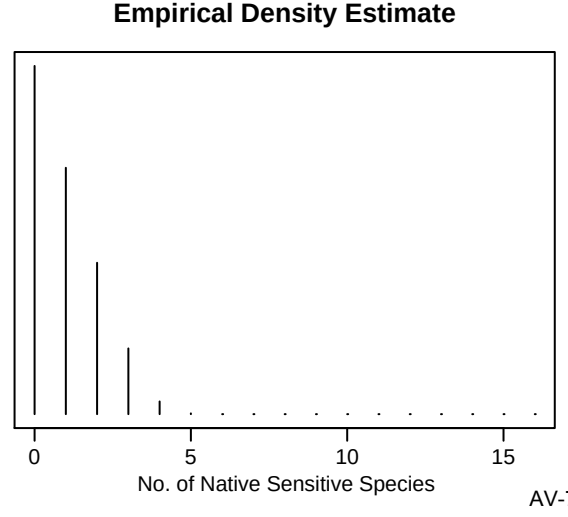
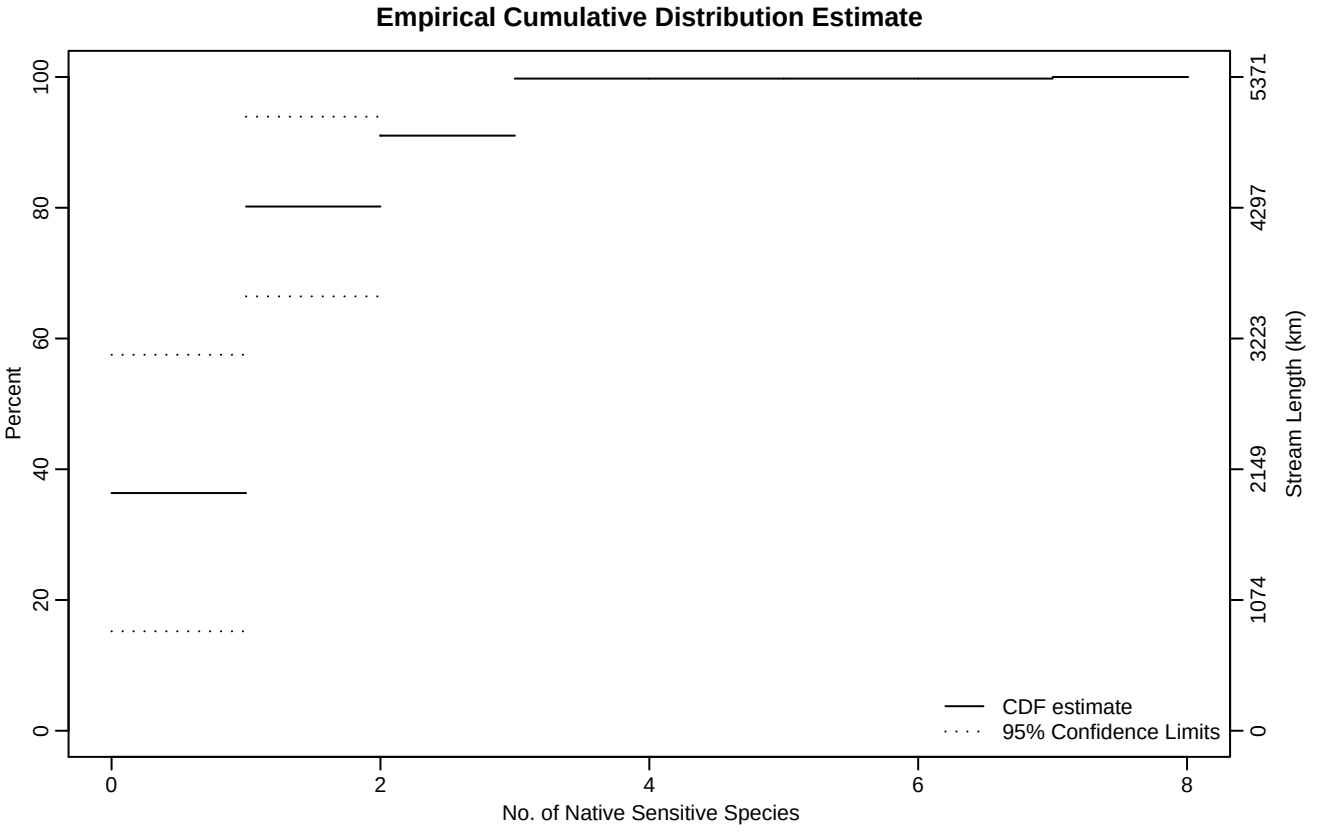


Figure VERT−49 Indicator: SENS_NAT_RICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.26
50Pct	0.31	0	0.82
75Pct	0.88	0.34	2.89
90Pct	1.90	0.78	
95Pct	2.45	0.99	
Mean	0.93	0.65	1.22
Std Dev	0.62	0.44	0.81

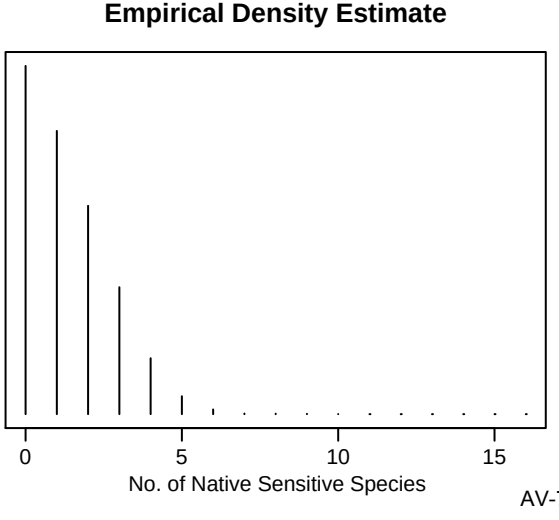
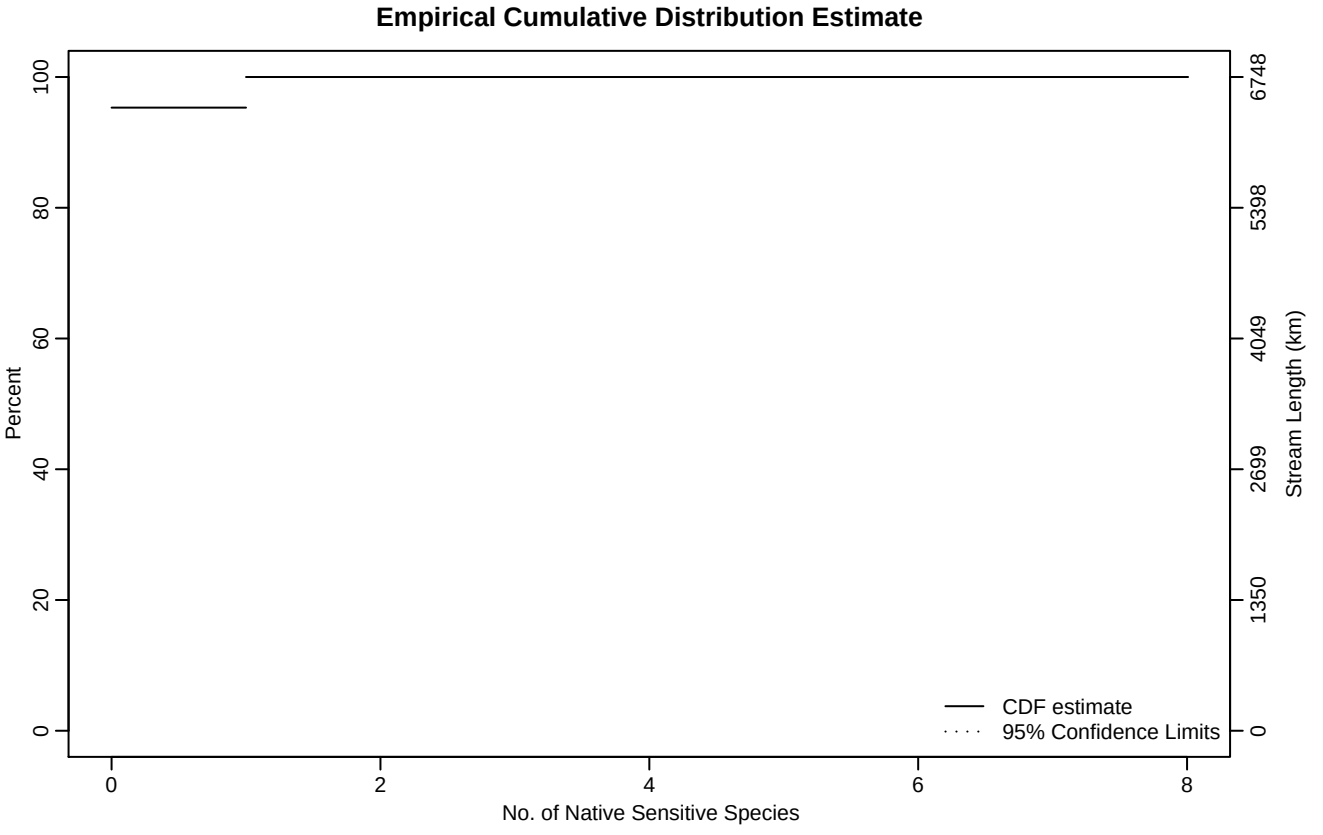


Figure VERT−50 Indicator: SENS_NAT_RICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.90
95Pct	0	0	1
Mean	0.05	−0.06	0.15
Std Dev	0.05	0.04	0.07

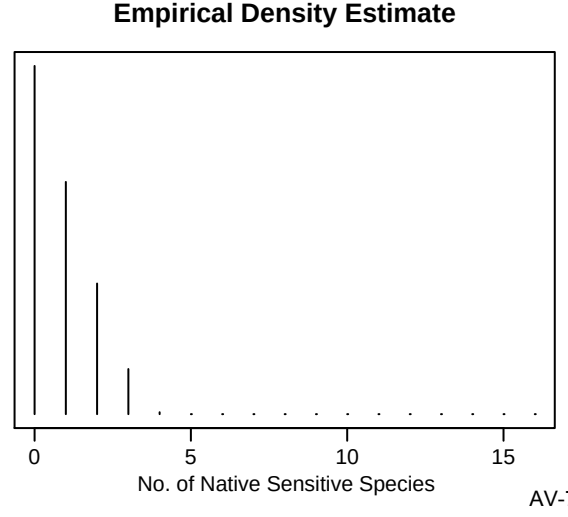
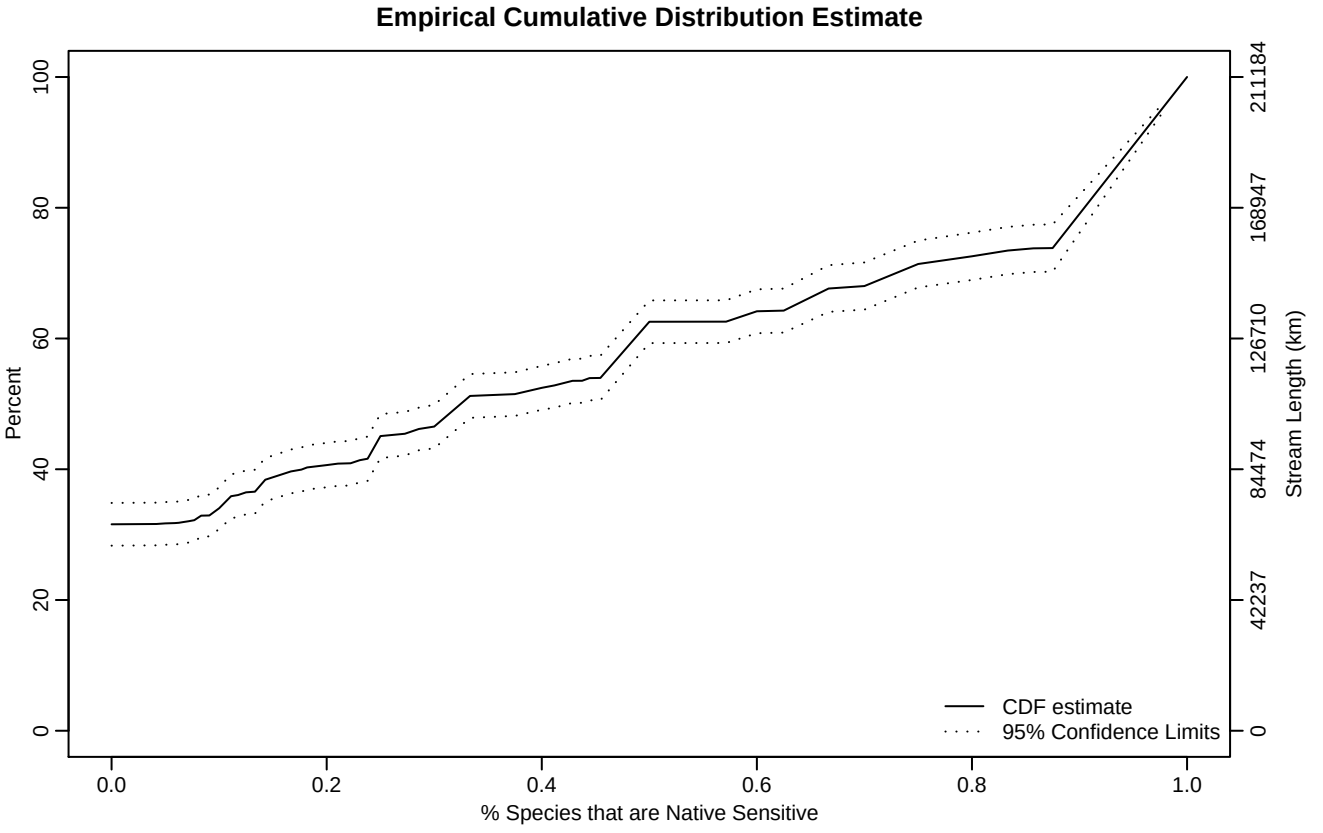


Figure VERT−51 Indicator: SENS_NAT_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.32	0.30	0.44
75Pct	0.88	0.75	0.90
90Pct	0.95	0.93	0.97
95Pct	0.98	0.96	1
Mean	0.44	0.41	0.47
Std Dev	0.27	0.25	0.29

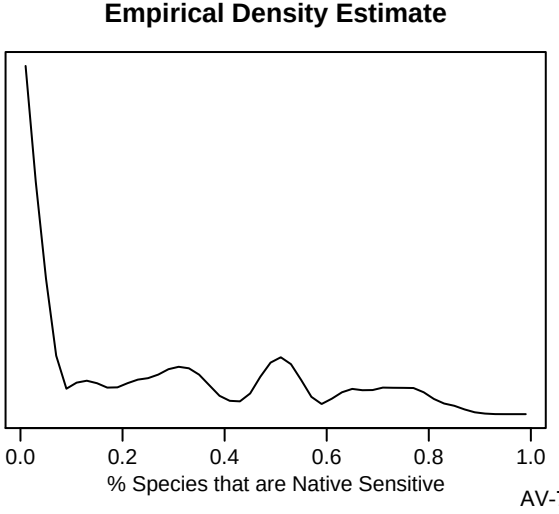
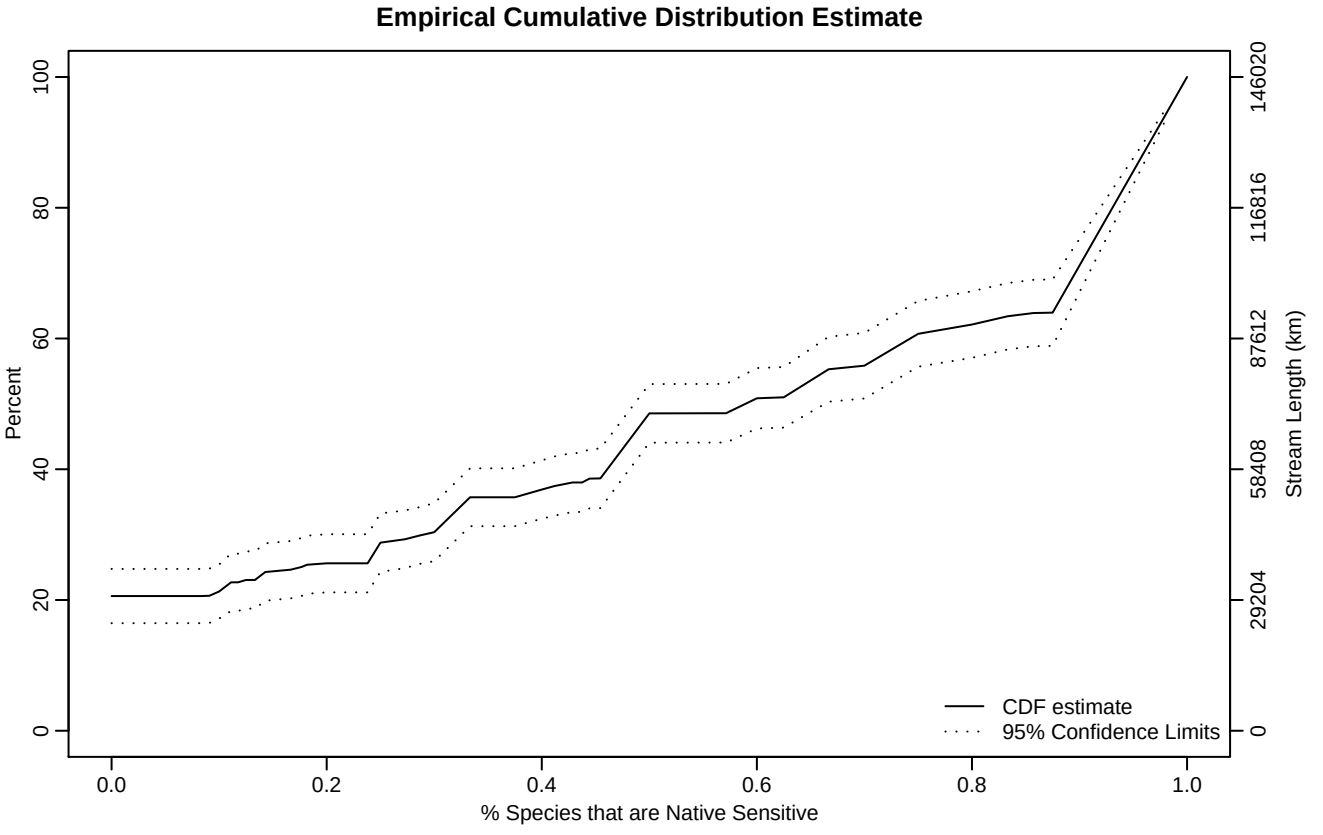


Figure VERT−52 Indicator: SENS_NAT_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.18	0	0.28
50Pct	0.59	0.48	0.66
75Pct	0.91	0.89	0.93
90Pct	0.97	0.95	0.99
95Pct	0.98	0.96	1
Mean	0.57	0.53	0.61
Std Dev	0.30	0.28	0.33

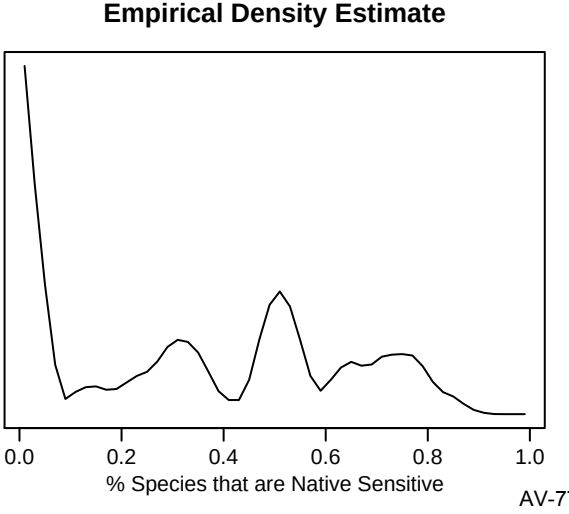
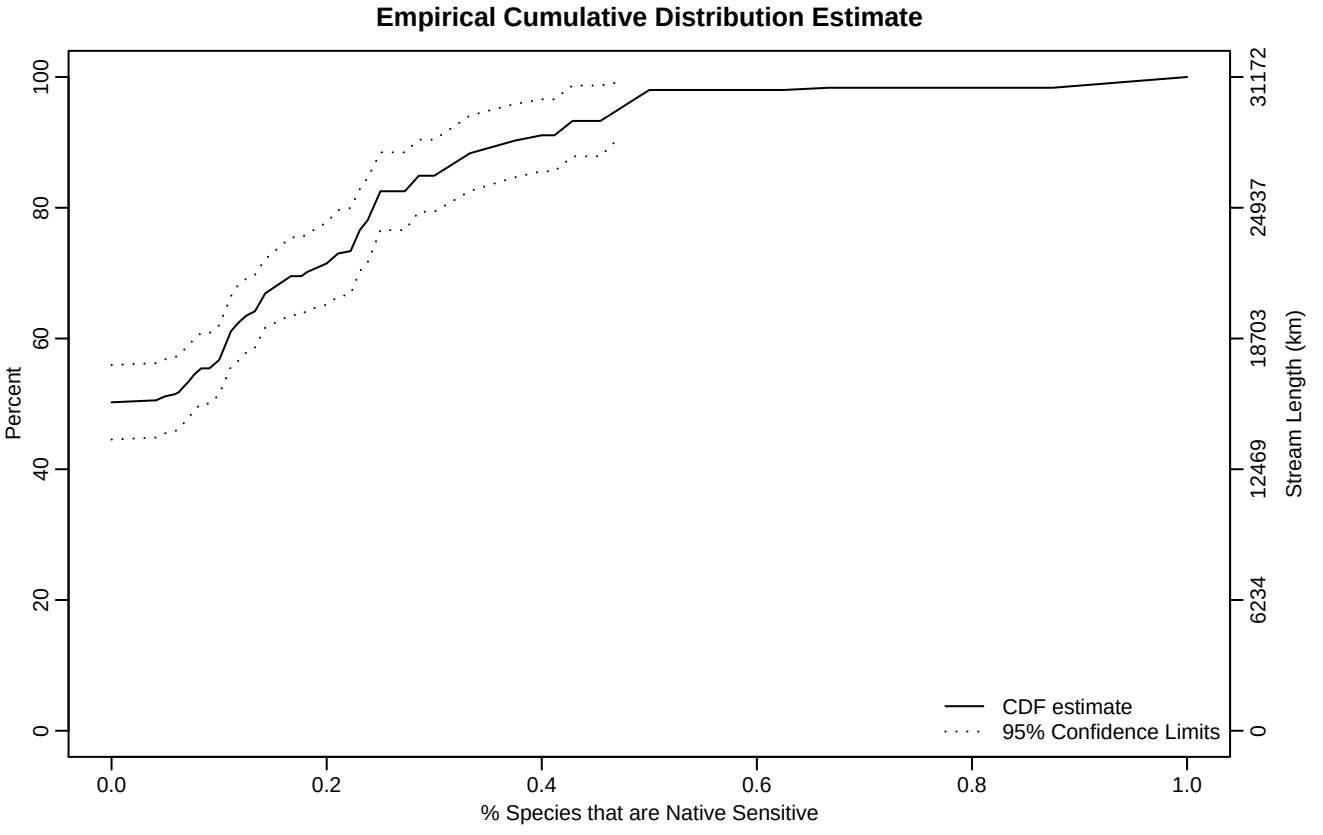


Figure VERT−53 Indicator: SENS_NAT_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.10
75Pct	0.23	0.15	0.25
90Pct	0.37	0.28	0.48
95Pct	0.47	0.35	
Mean	0.13	0.11	0.16
Std Dev	0.13	0.10	0.16

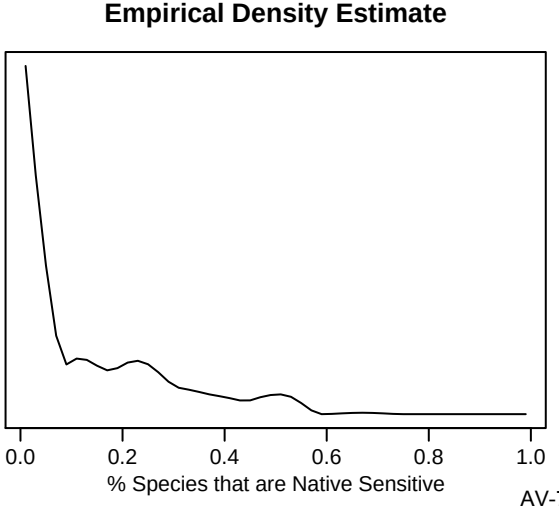
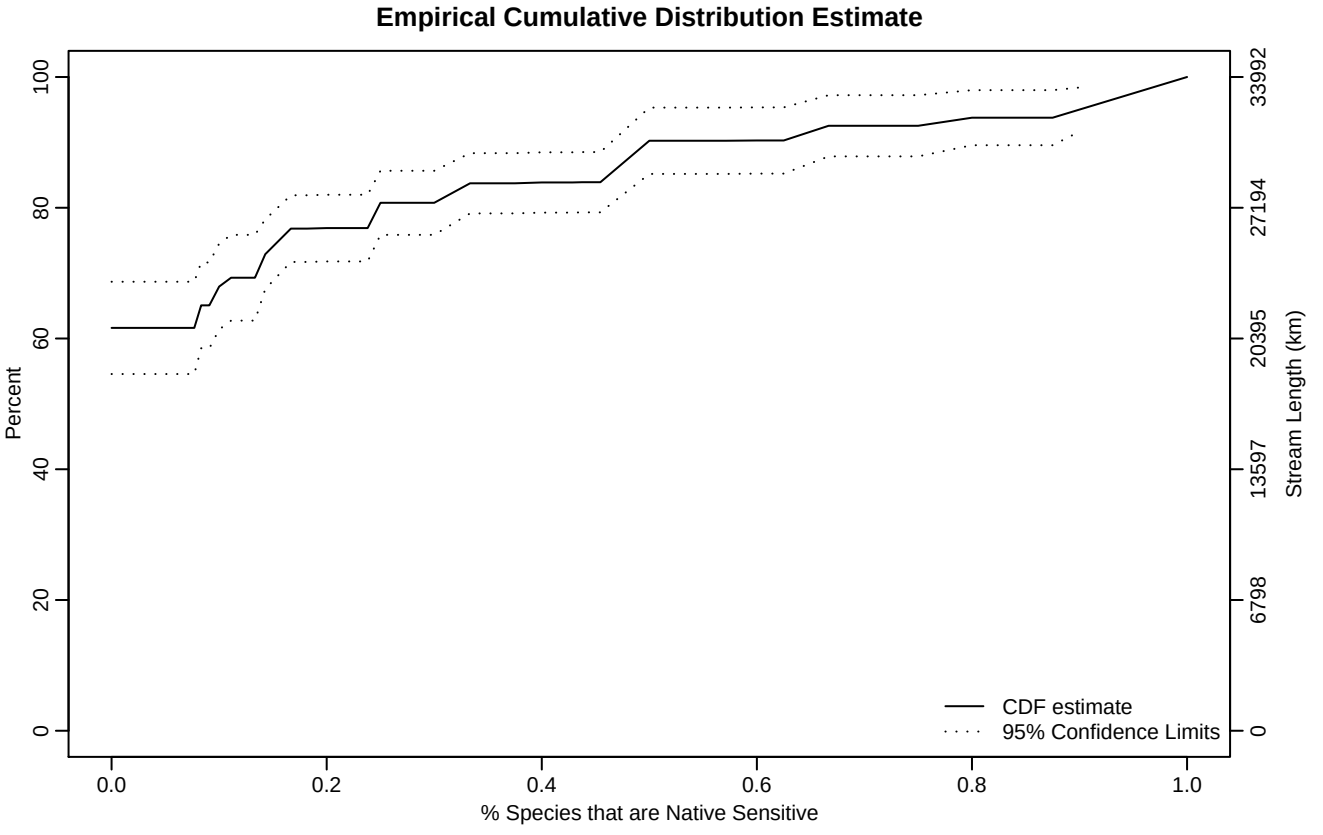


Figure VERT−54 Indicator: SENS_NAT_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.16	0.10	0.31
90Pct	0.50	0.46	0.90
95Pct	0.90	0.63	0.99
Mean	0.16	0.12	0.20
Std Dev	0.17	0.14	0.19

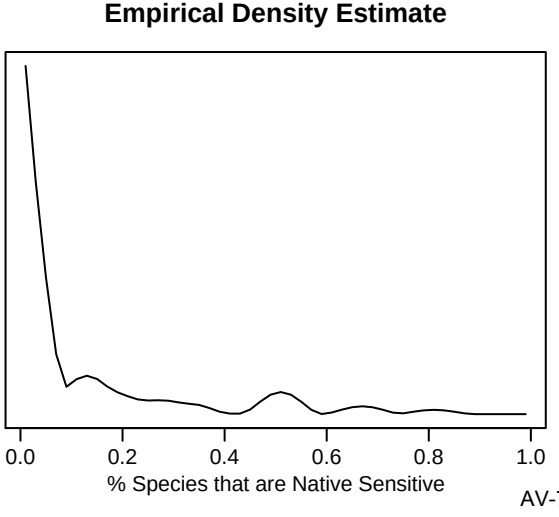
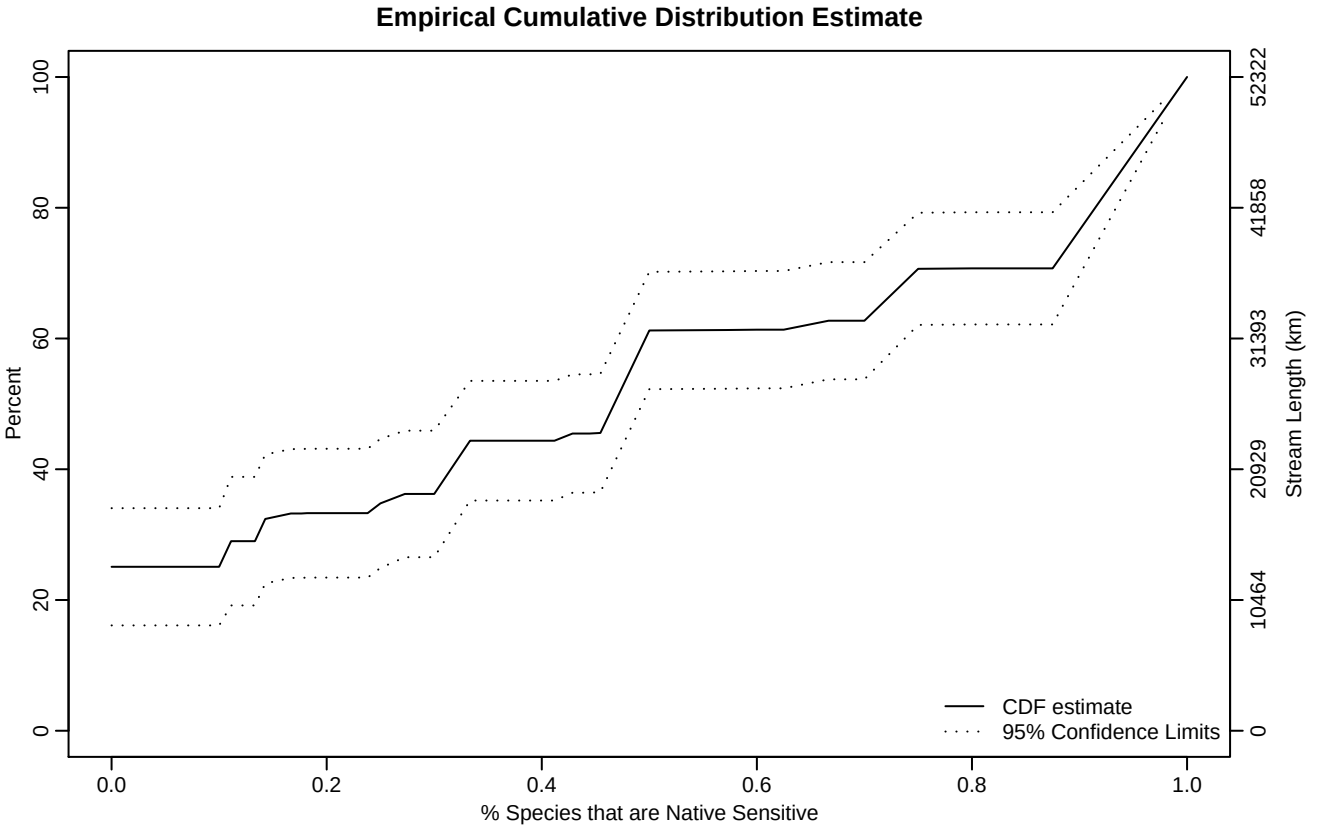


Figure VERT−55 Indicator: SENS_NAT_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.24
50Pct	0.47	0.32	0.49
75Pct	0.89	0.72	0.93
90Pct	0.96	0.92	1
95Pct	0.98	0.94	1
Mean	0.49	0.42	0.57
Std Dev	0.33	0.29	0.38

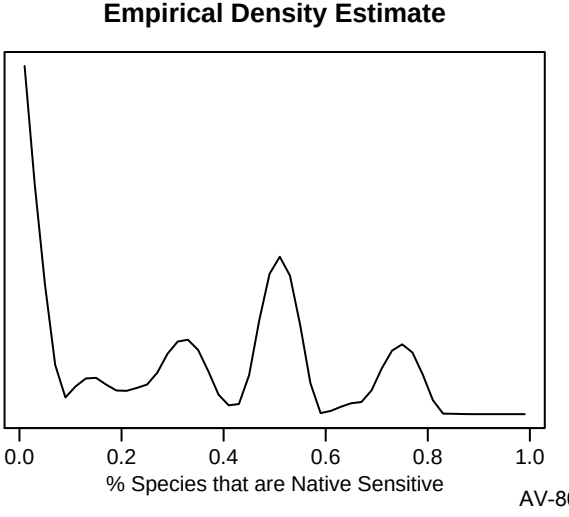
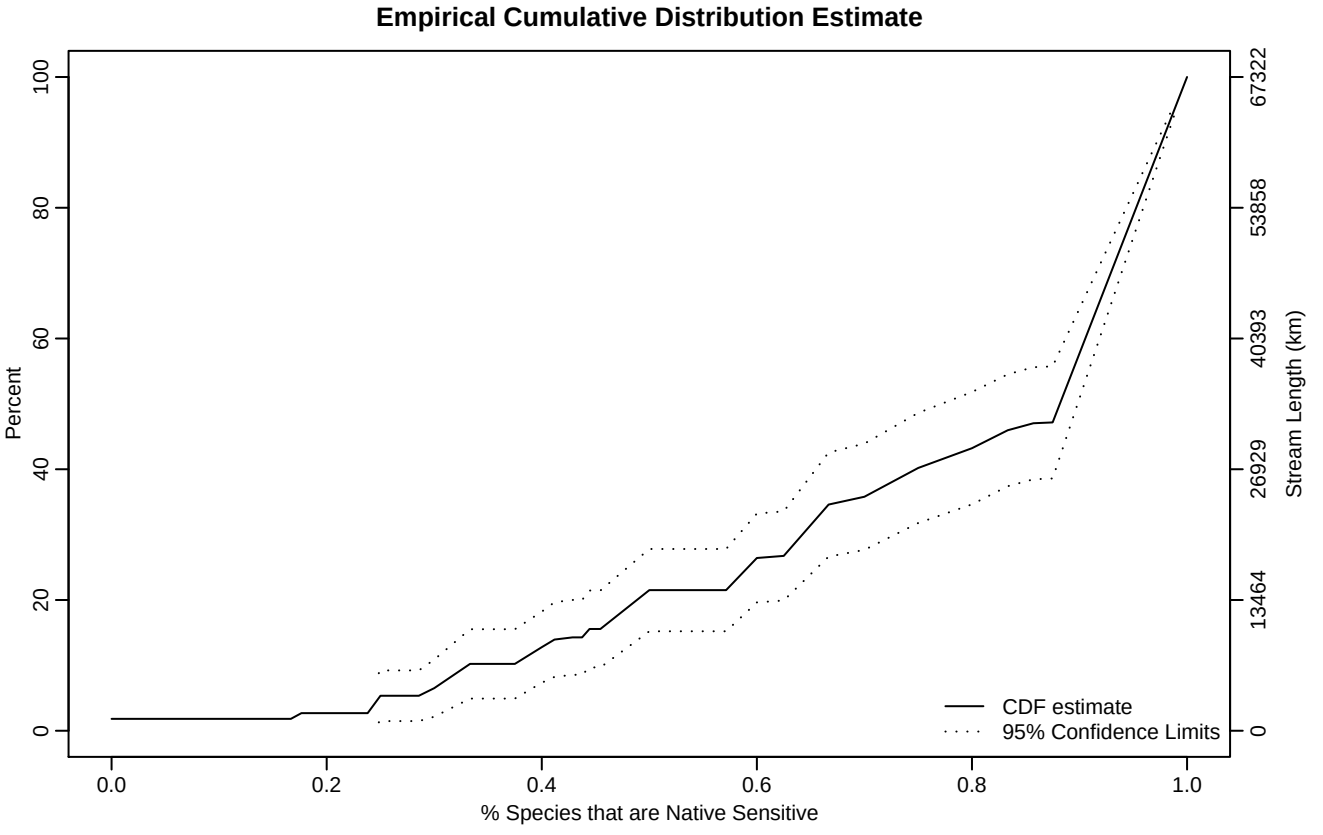


Figure VERT−56 Indicator: SENS_NAT_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.25	0	0.32
10Pct	0.33	0.29	0.44
25Pct	0.59	0.48	0.65
50Pct	0.88	0.77	0.90
75Pct	0.94	0.92	0.96
90Pct	0.98	0.95	1
95Pct	0.99	0.96	1
Mean	0.79	0.74	0.83
Std Dev	0.25	0.22	0.27

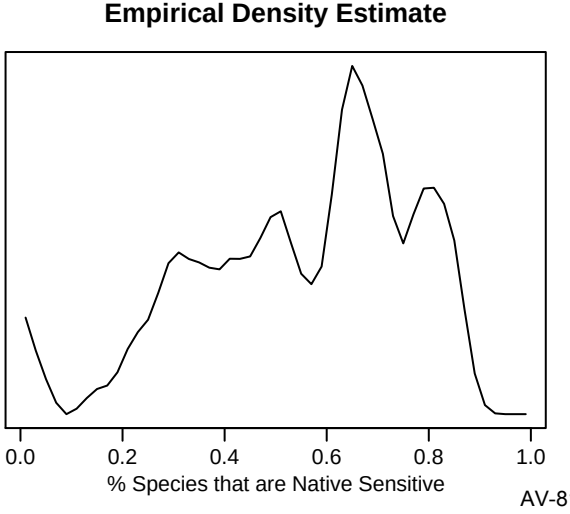
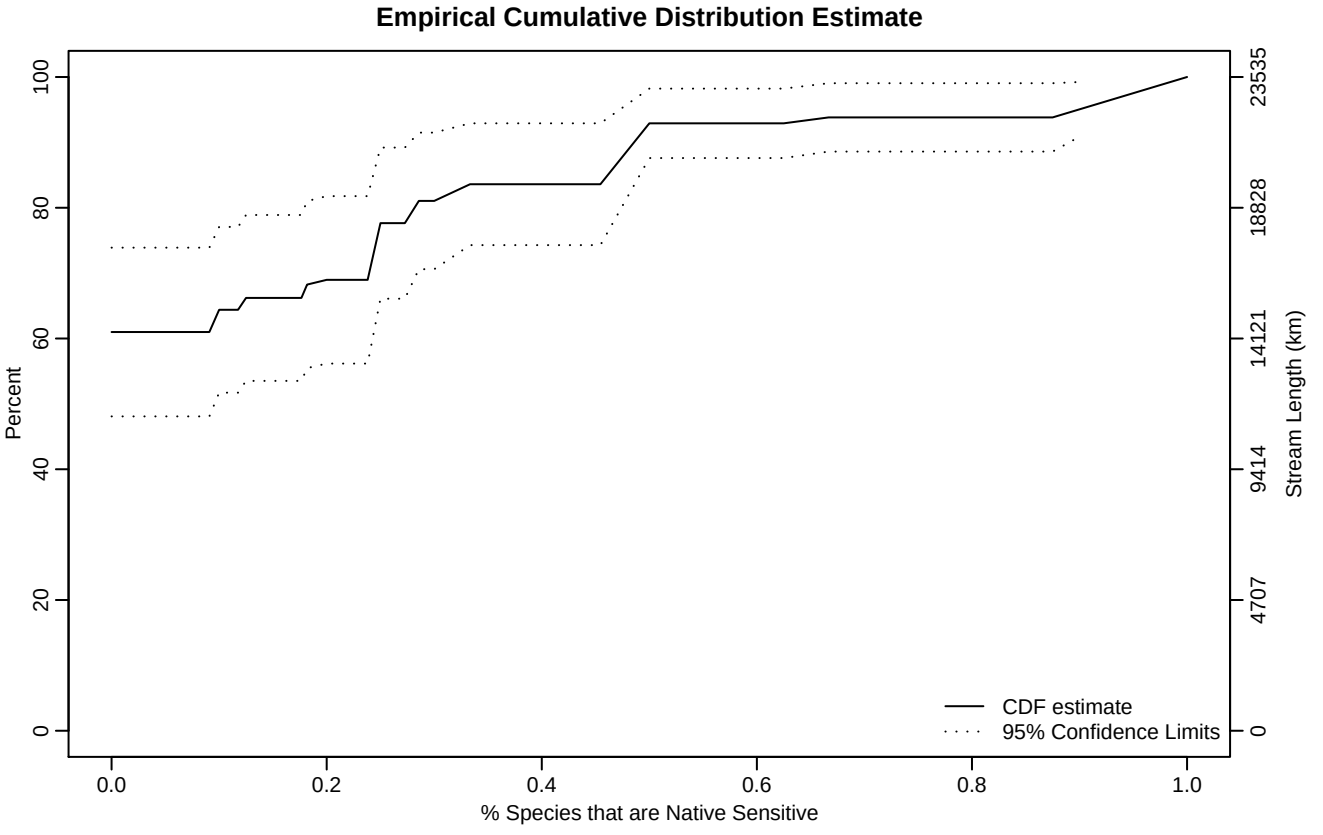


Figure VERT−57 Indicator: SENS_NAT_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.10
75Pct	0.25	0.09	0.47
90Pct	0.49	0.28	0.99
95Pct	0.90	0.48	
Mean	0.17	0.10	0.23
Std Dev	0.23	0.16	0.30

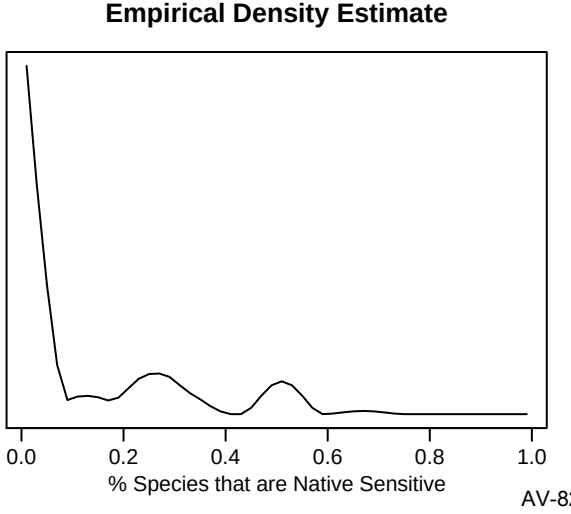
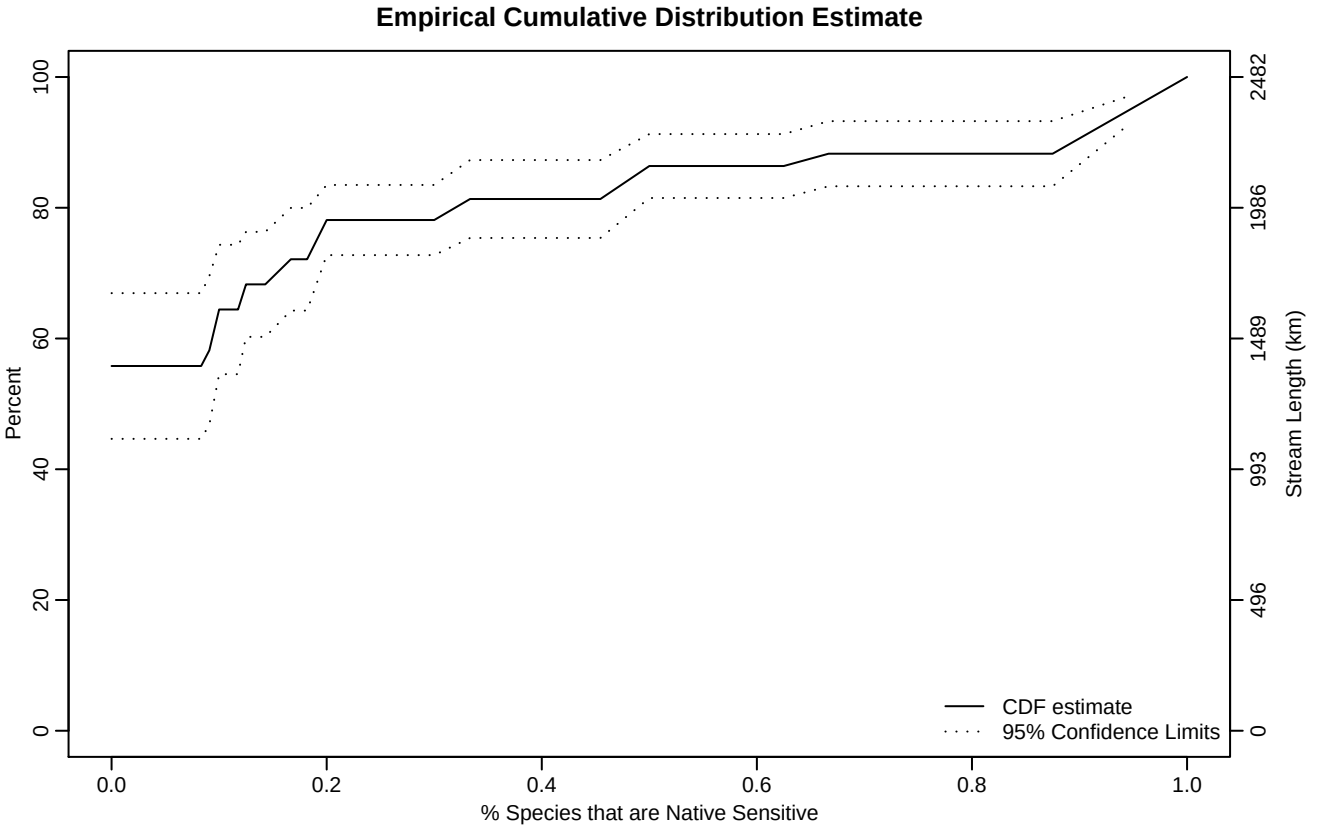


Figure VERT−58 Indicator: SENS_NAT_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.10
75Pct	0.19	0.12	0.47
90Pct	0.89	0.49	0.95
95Pct	0.95	0.89	1
Mean	0.20	0.15	0.24
Std Dev	0.23	0.15	0.30

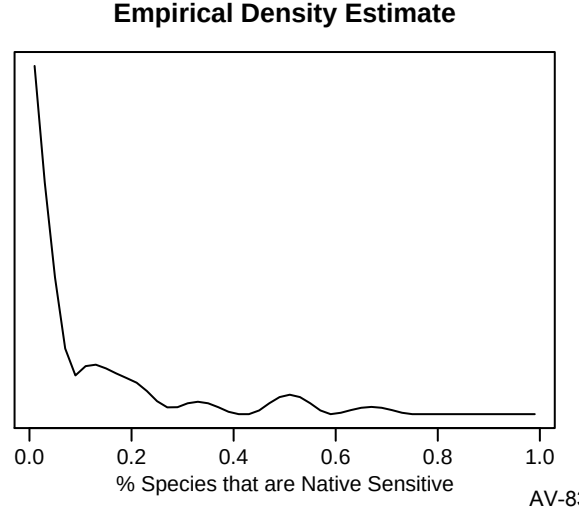
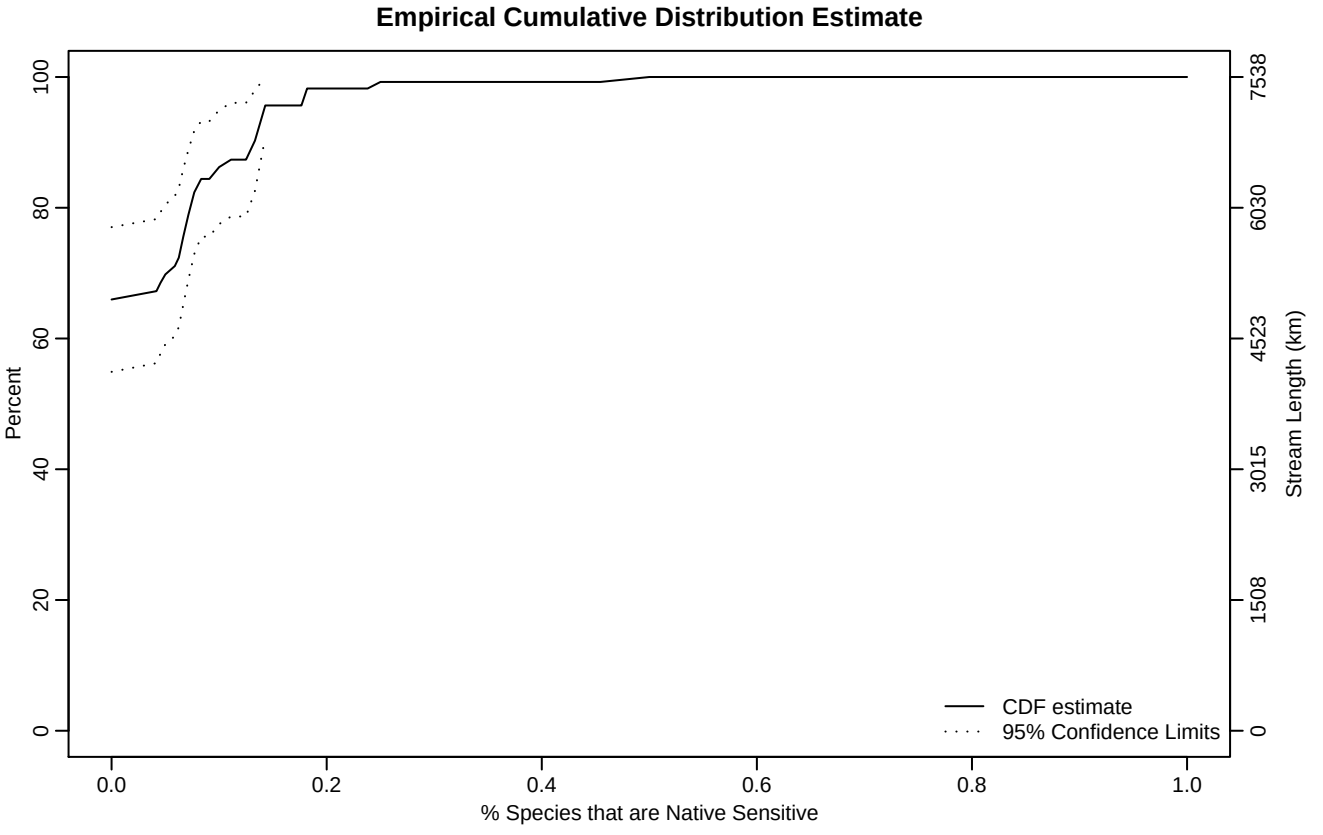


Figure VERT−59 Indicator: SENS_NAT_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.07	0	0.10
90Pct	0.13	0.08	0.24
95Pct	0.14	0.13	0.50
Mean	0.04	0.02	0.05
Std Dev	0.06	0.05	0.07

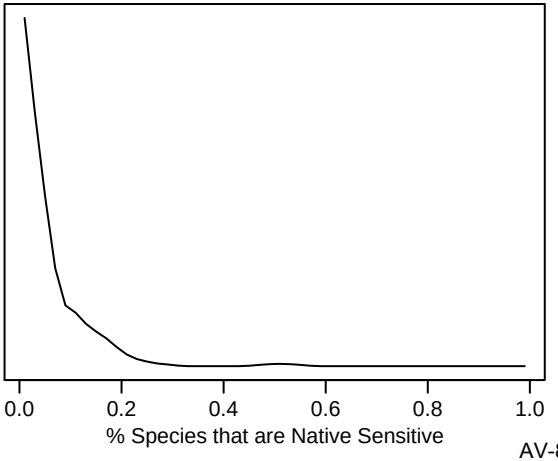
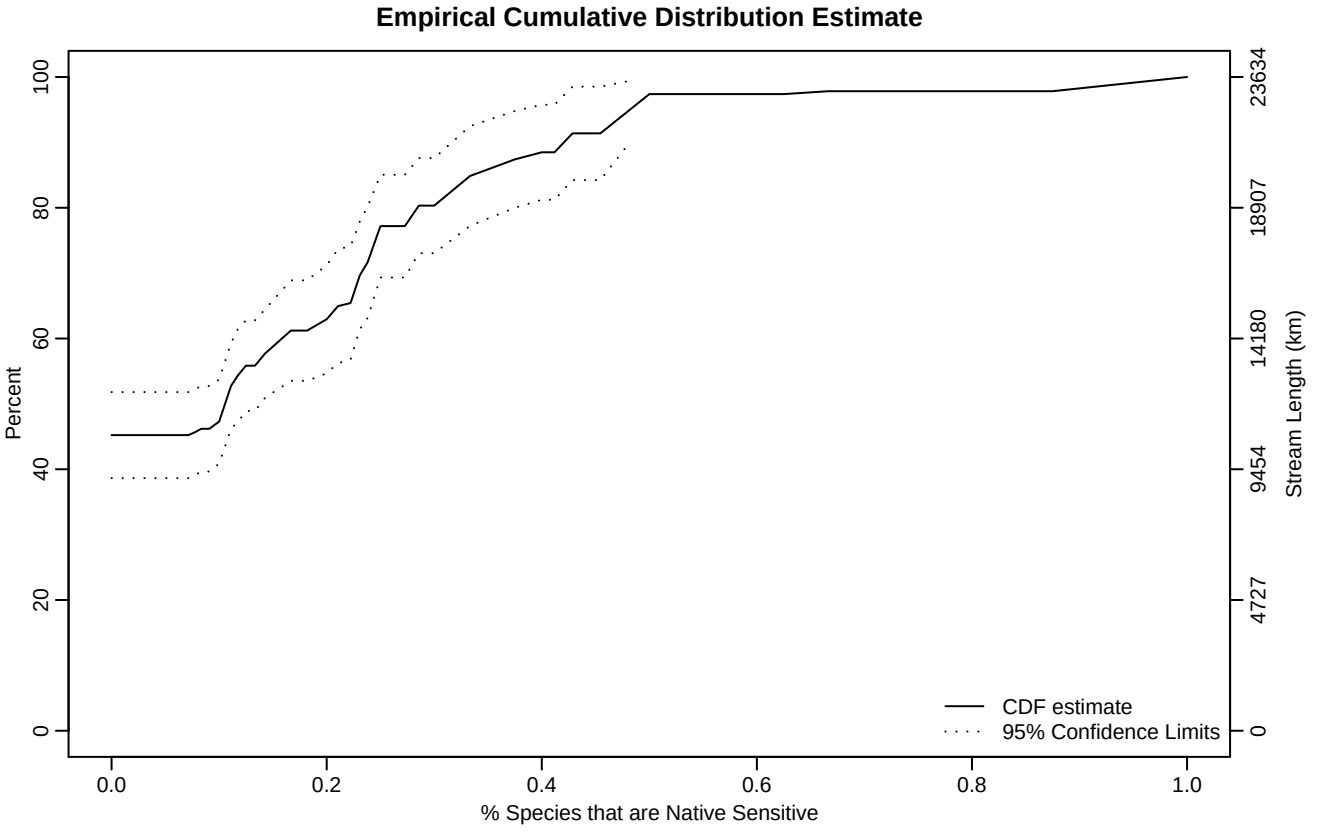


Figure VERT−60 Indicator: SENS_NAT_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.11	0	0.14
75Pct	0.25	0.22	0.33
90Pct	0.42	0.31	0.66
95Pct	0.48	0.38	1
Mean	0.16	0.13	0.19
Std Dev	0.15	0.11	0.19

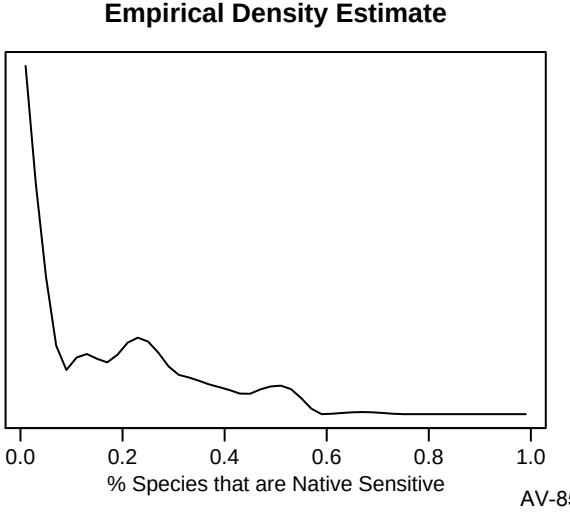
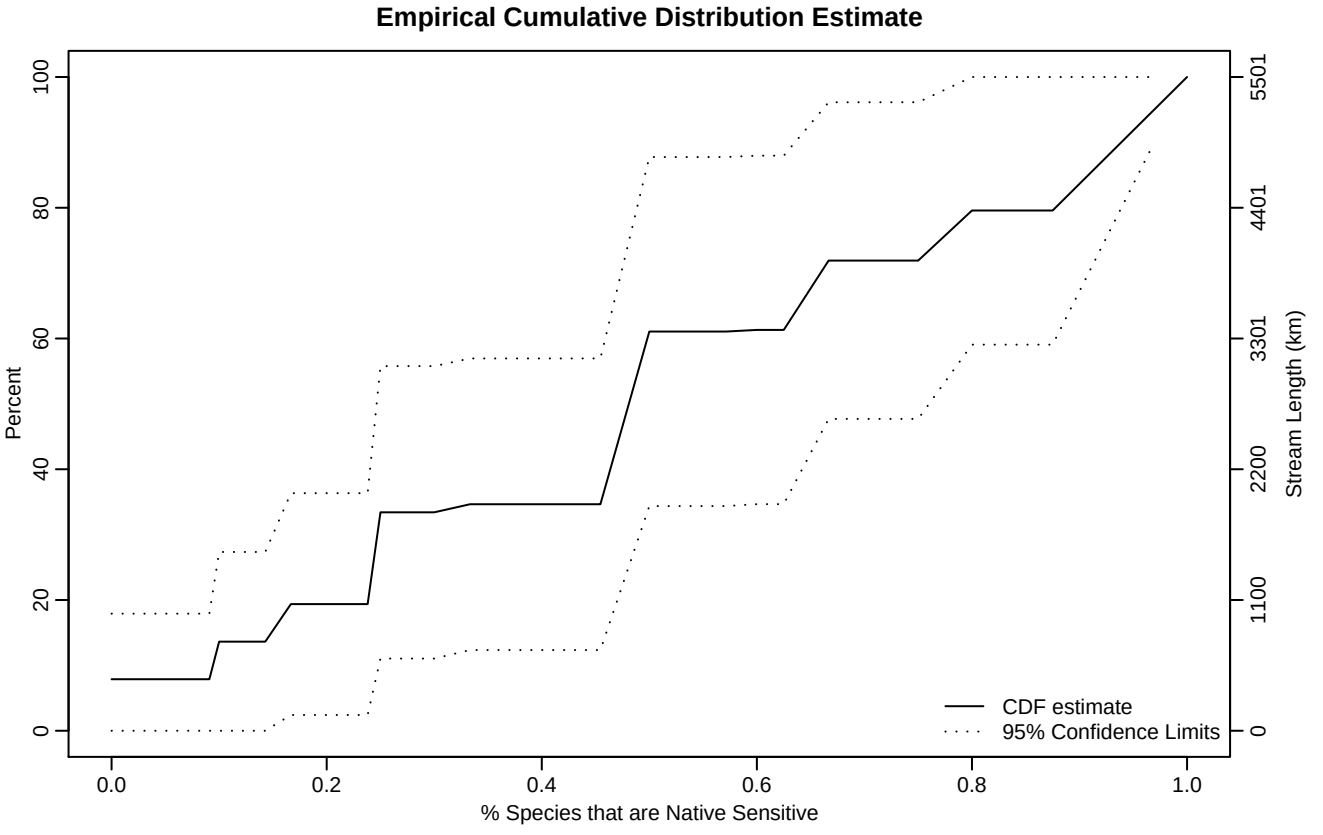


Figure VERT−61 Indicator: SENS_NAT_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.15
10Pct	0.09	0	0.24
25Pct	0.24	0	0.47
50Pct	0.48	0.25	0.67
75Pct	0.77	0.48	1
90Pct	0.94	0.66	1
95Pct	0.97	0.76	1
Mean	0.52	0.36	0.69
Std Dev	0.32	0.26	0.39

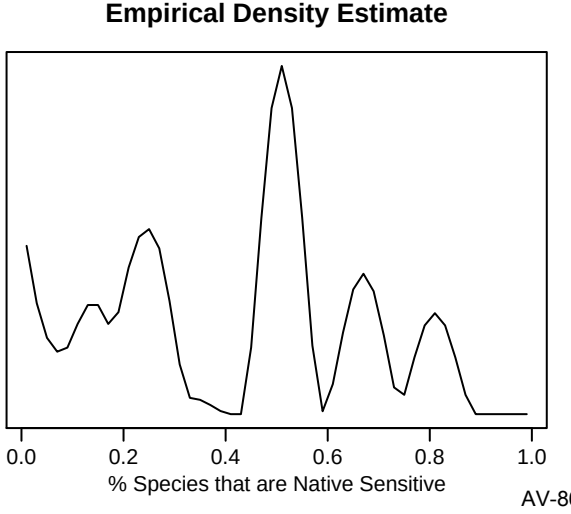
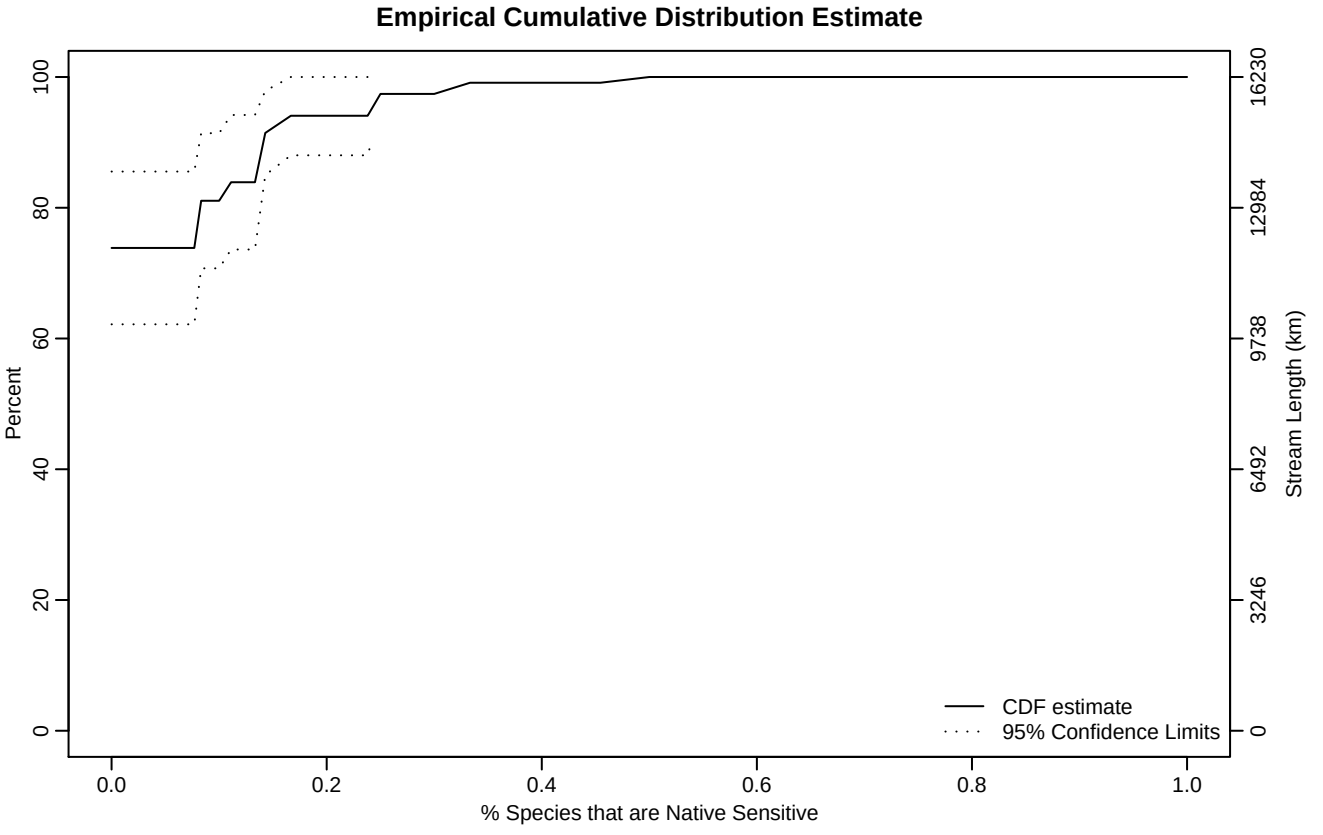


Figure VERT−62 Indicator: SENS_NAT_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.08	0	0.14
90Pct	0.14	0.08	0.50
95Pct	0.24	0.14	0.50
Mean	0.04	0.02	0.06
Std Dev	0.08	0.05	0.10

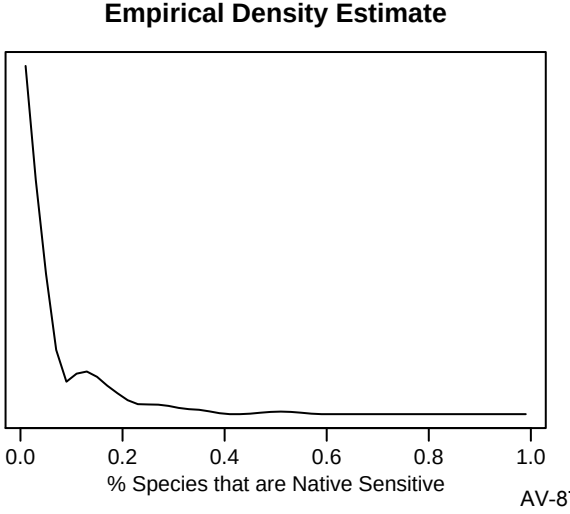
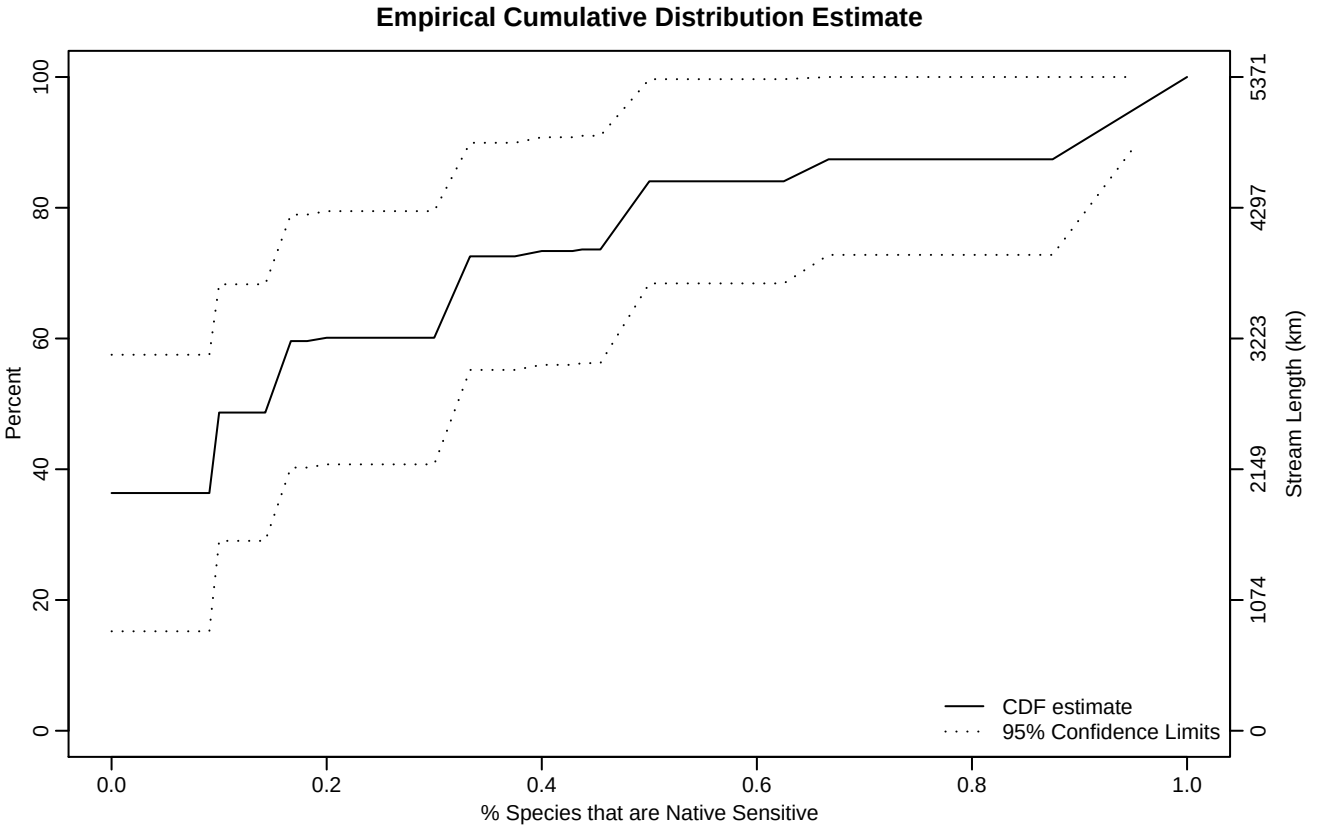


Figure VERT−63 Indicator: SENS_NAT_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.10
50Pct	0.15	0	0.39
75Pct	0.46	0.16	0.93
90Pct	0.90	0.46	
95Pct	0.95	0.48	
Mean	0.28	0.14	0.42
Std Dev	0.29	0.20	0.38

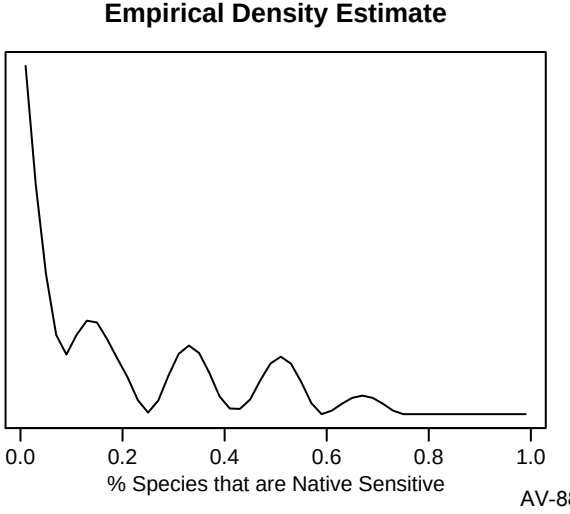
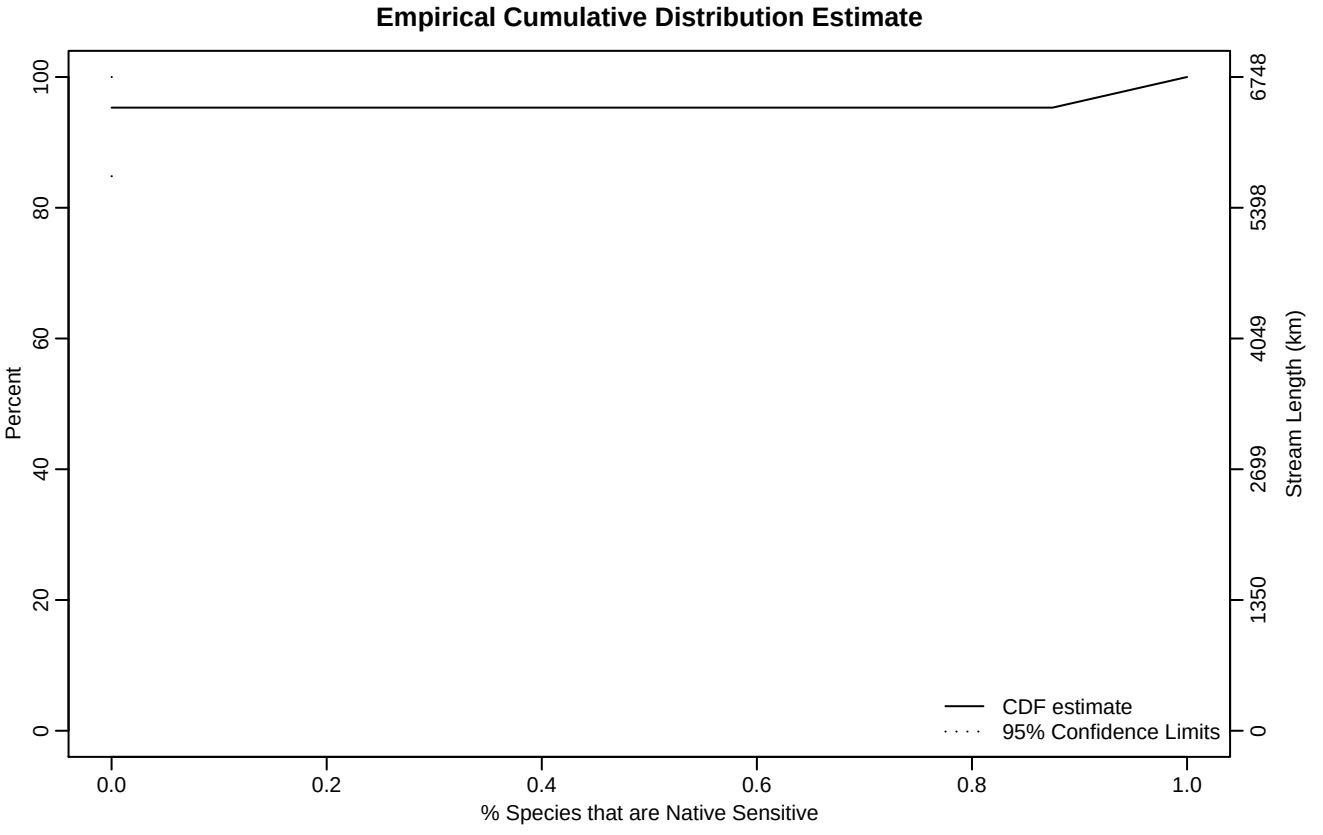


Figure VERT−64 Indicator: SENS_NAT_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.99
95Pct	0	0	1
Mean	0.05	−0.06	0.15
Std Dev	0.05	0.04	0.07

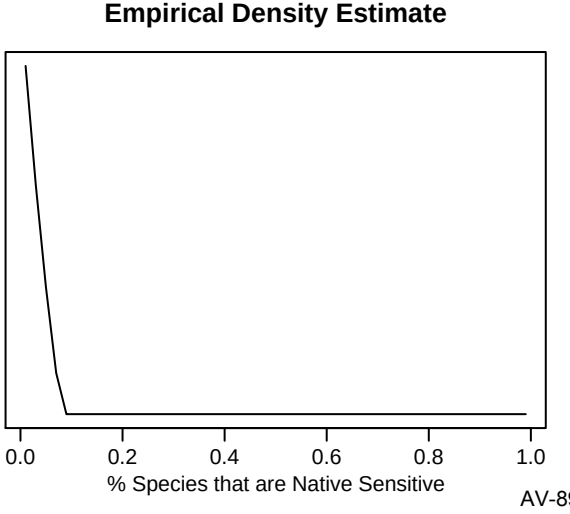
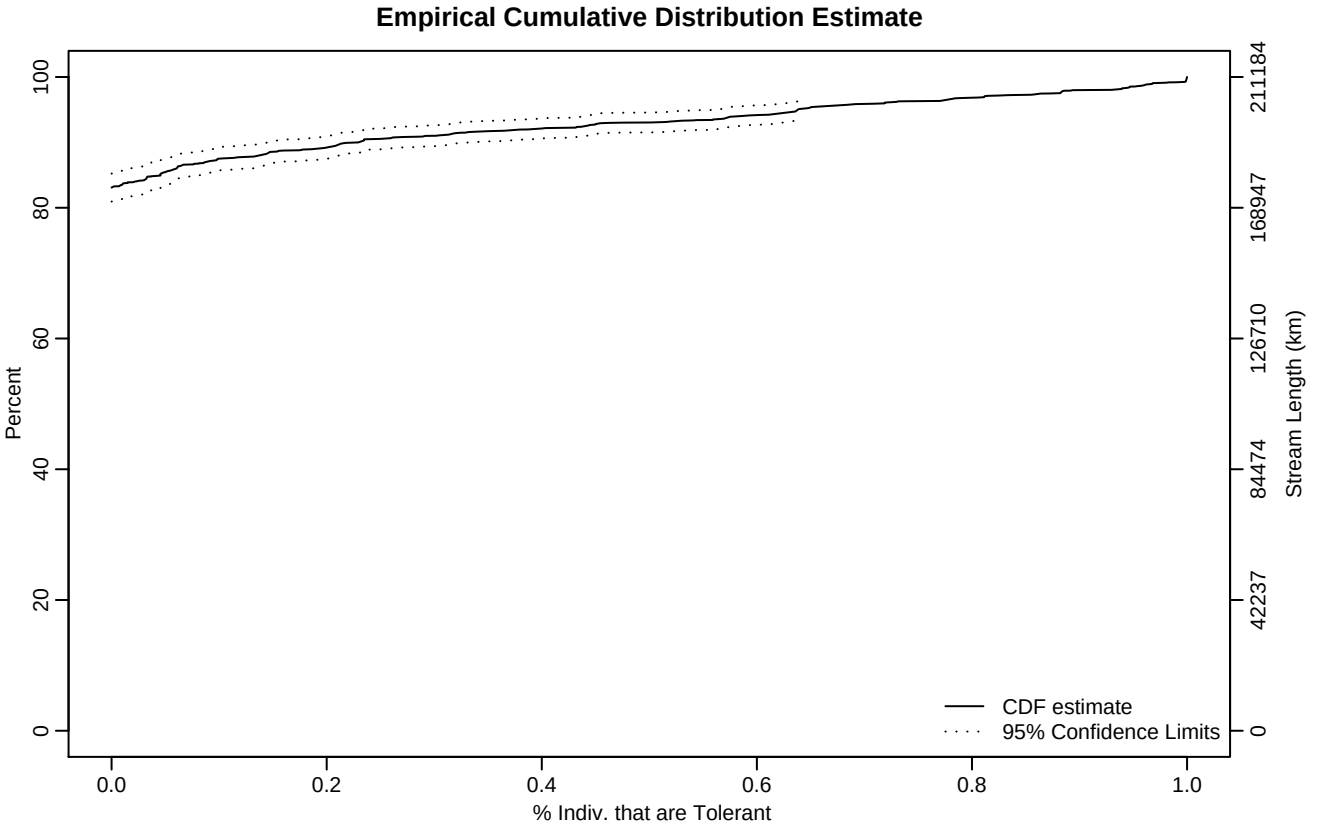


Figure VERT−65 Indicator: TOL_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.23	0.15	0.35
95Pct	0.64	0.57	0.77
Mean	0.07	0.06	0.08
Std Dev	0.15	0.13	0.17

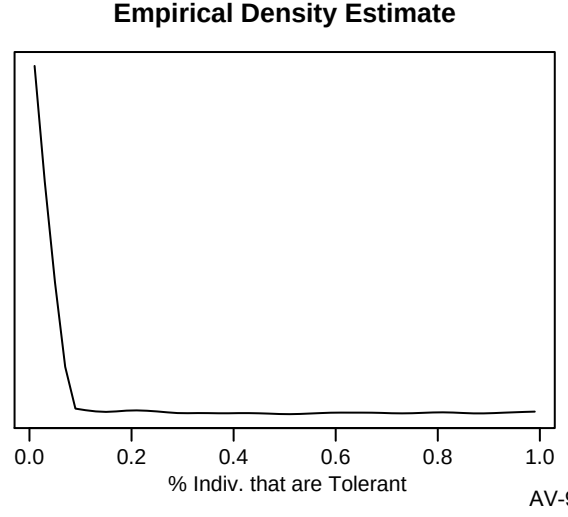
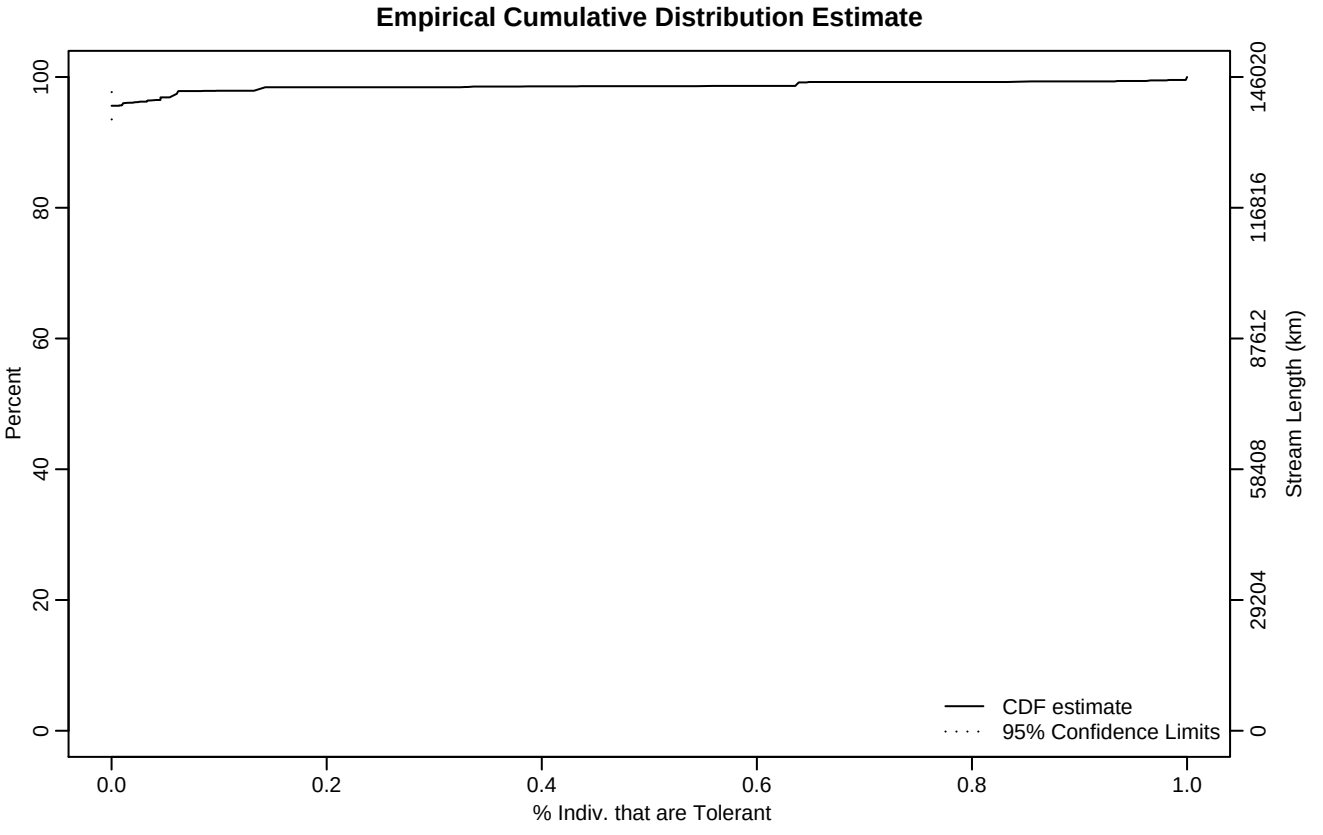


Figure VERT−66 Indicator: TOL_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.06
Mean	0.01	0	0.02
Std Dev	0.06	0.03	0.08

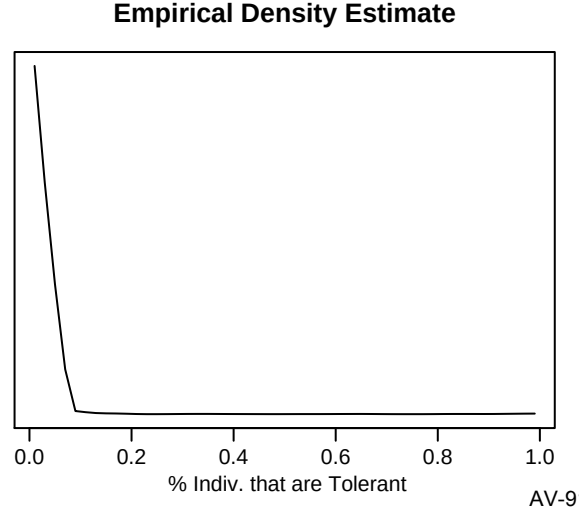
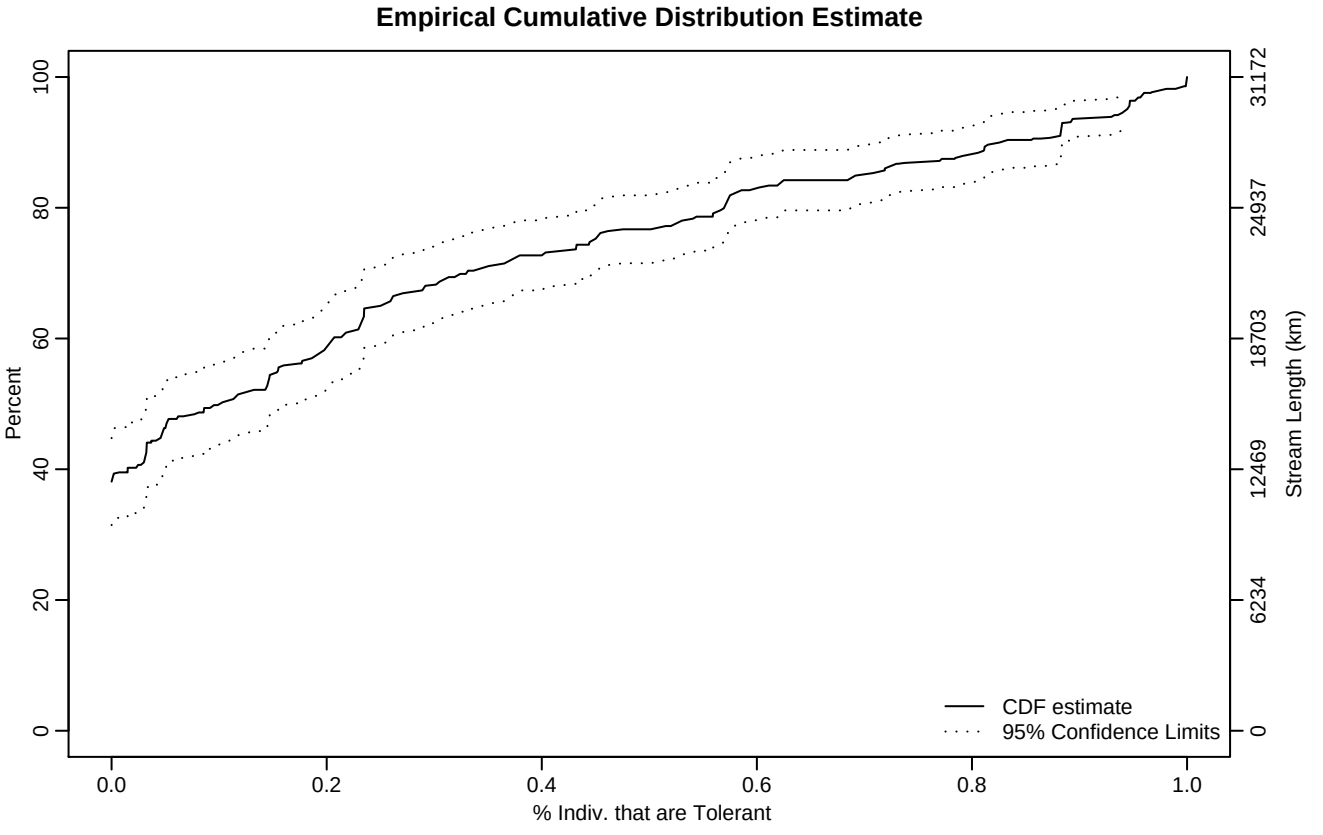


Figure VERT−67 Indicator: TOL_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.10	0.03	0.18
75Pct	0.45	0.32	0.57
90Pct	0.83	0.72	0.94
95Pct	0.94	0.88	0.96
Mean	0.26	0.22	0.29
Std Dev	0.29	0.26	0.32

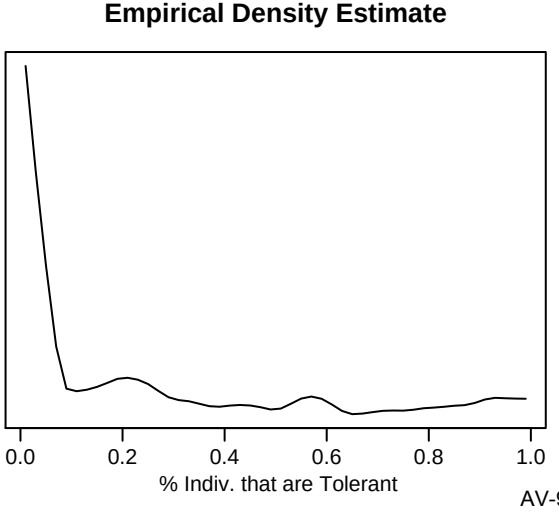
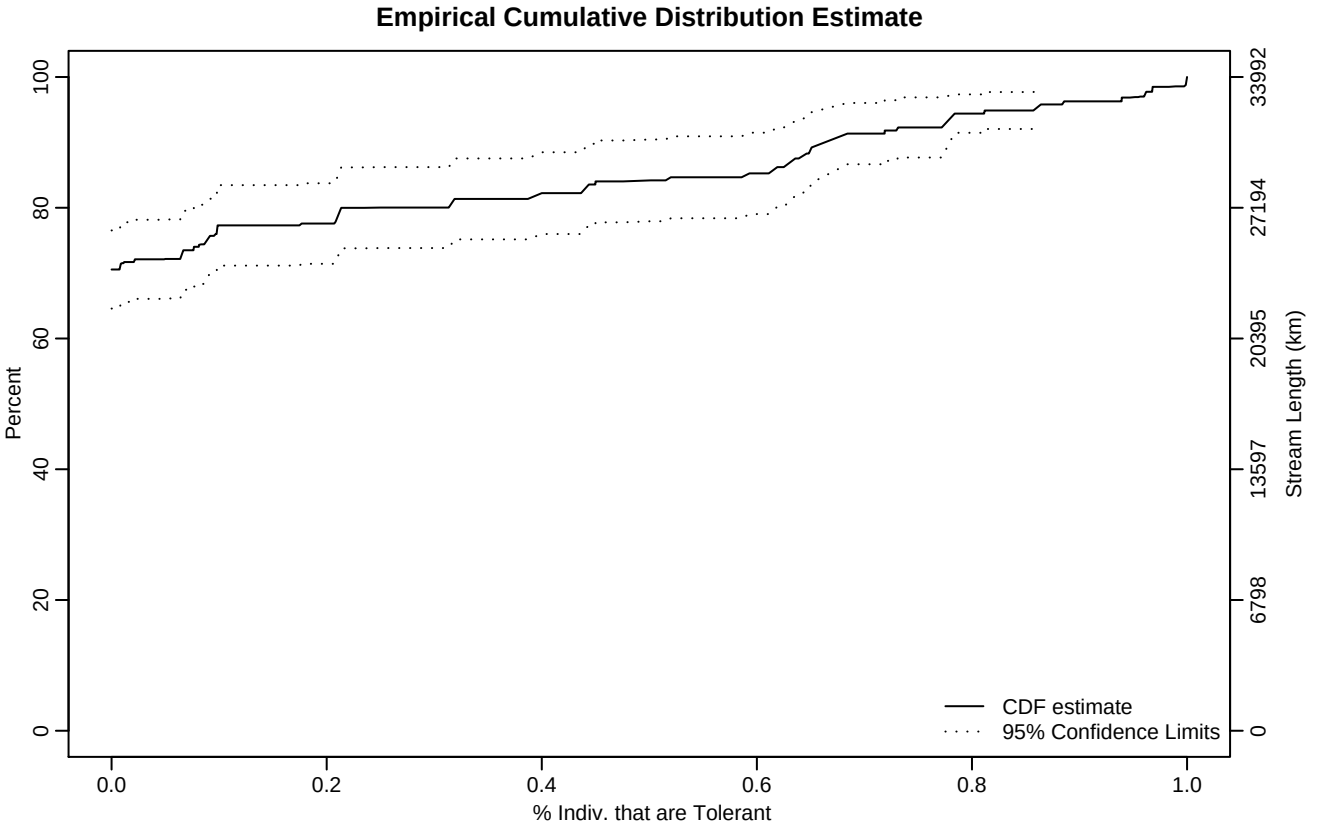


Figure VERT−68 Indicator: TOL_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.09	0	0.39
90Pct	0.66	0.52	0.86
95Pct	0.86	0.73	0.97
Mean	0.15	0.10	0.19
Std Dev	0.24	0.20	0.28

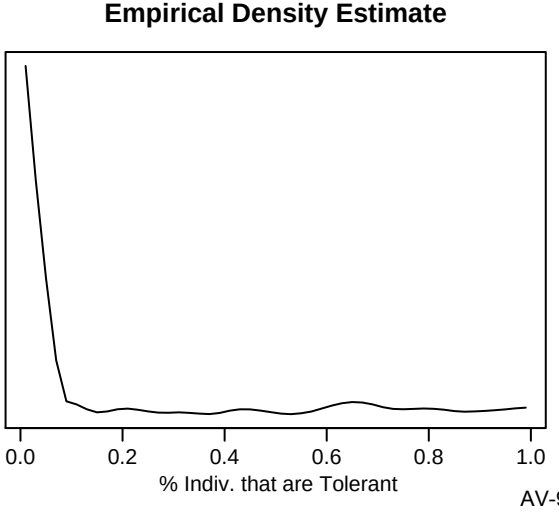
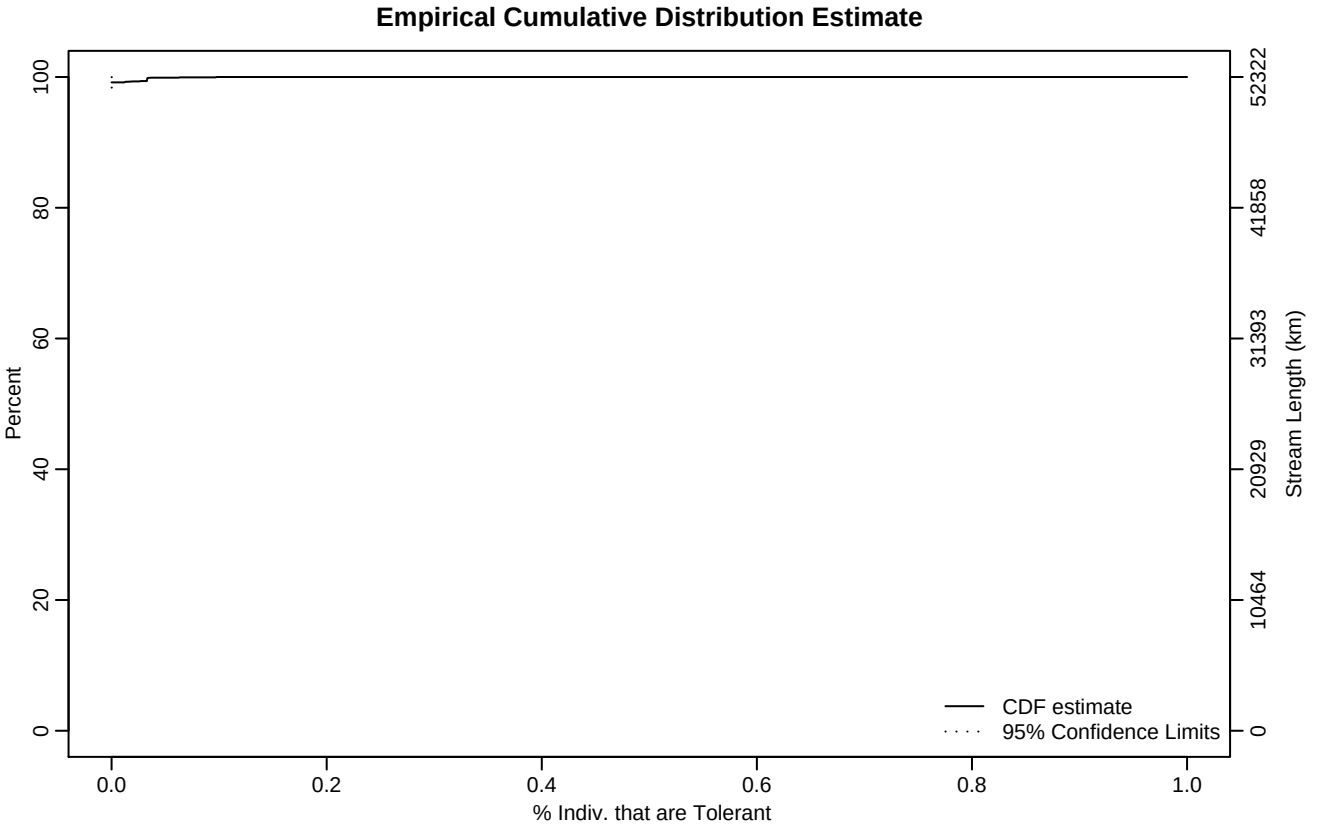


Figure VERT−69 Indicator: TOL_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0
Mean	0	0	0
Std Dev	0	0	0

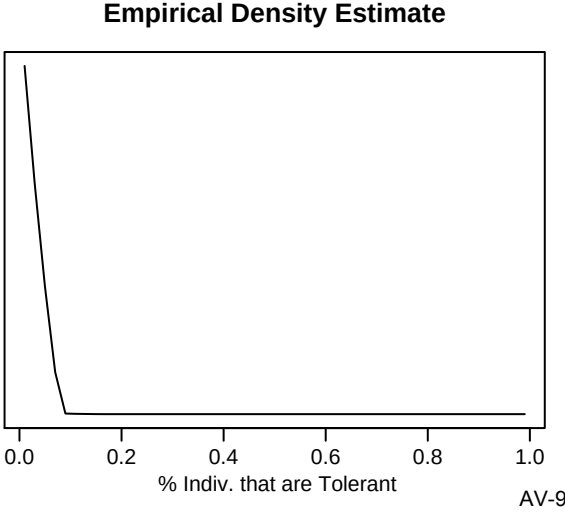
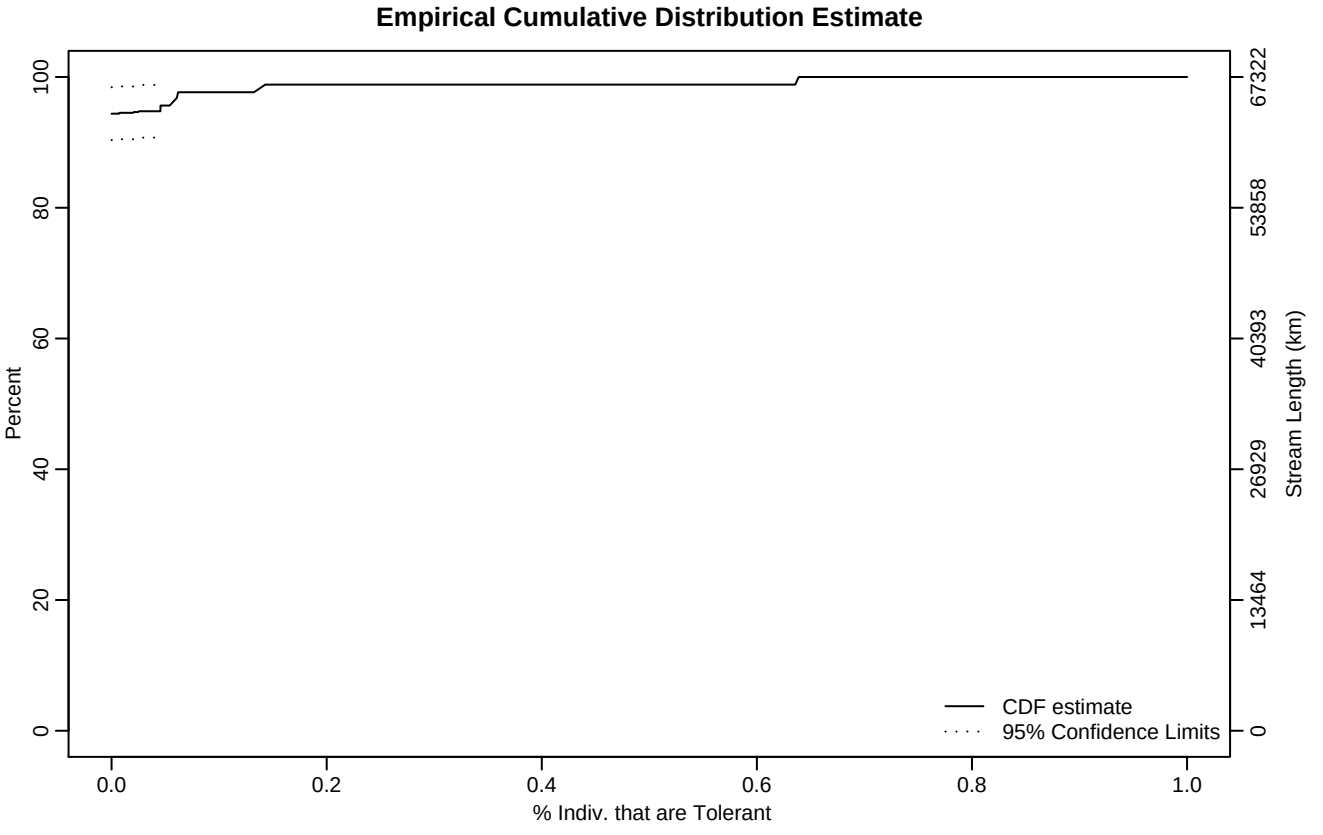


Figure VERT−70 Indicator: TOL_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0.05	0	0.64
Mean	0.01	0	0.02
Std Dev	0.05	0.01	0.08

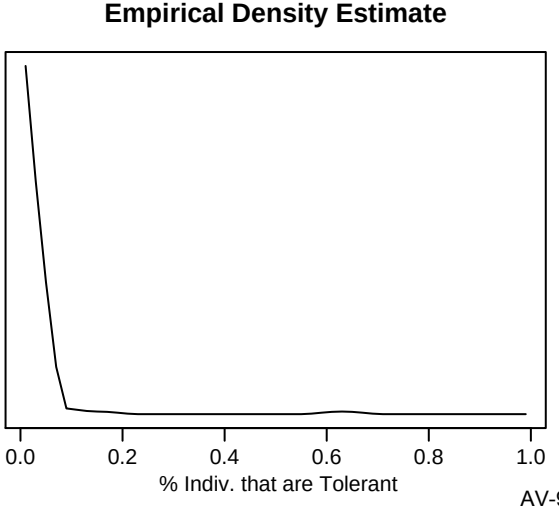
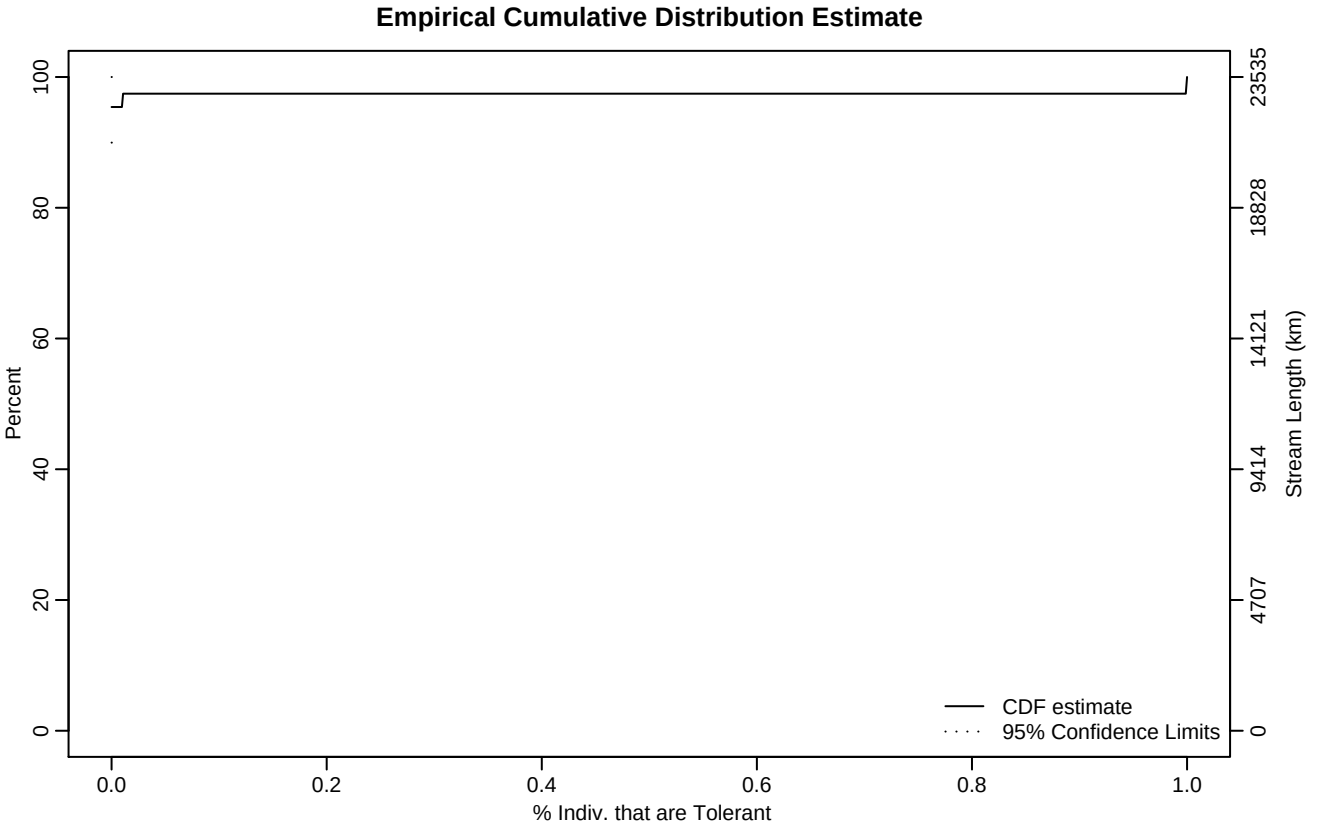


Figure VERT−71 Indicator: TOL_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.01
95Pct	0	0	
Mean	0.03	−0.02	0.07
Std Dev	0.14	0.03	0.24

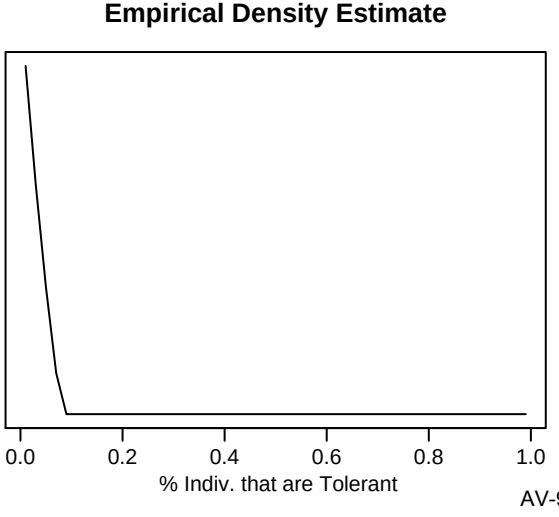
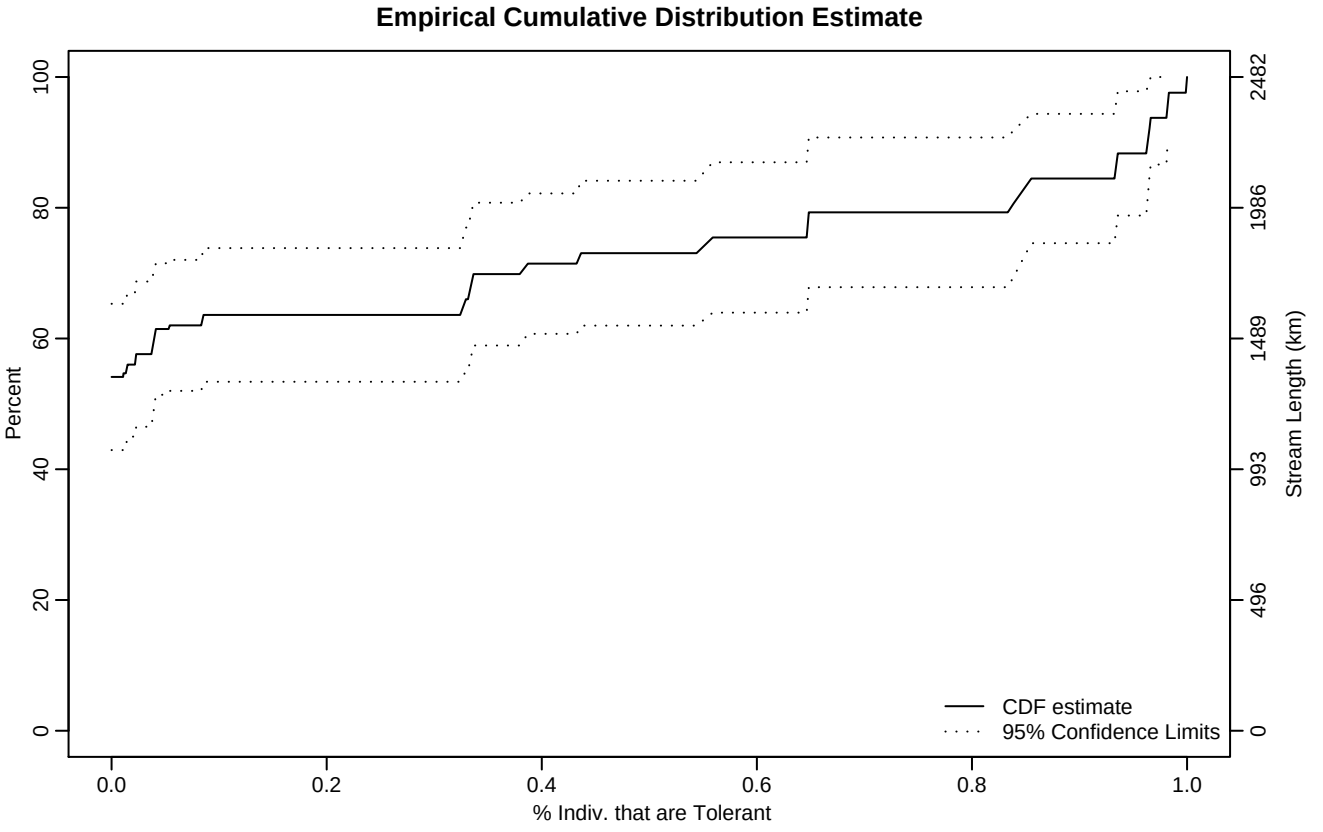


Figure VERT−72 Indicator: TOL_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.04
75Pct	0.56	0.09	0.93
90Pct	0.96	0.84	1
95Pct	0.98	0.94	1
Mean	0.27	0.18	0.36
Std Dev	0.35	0.29	0.41

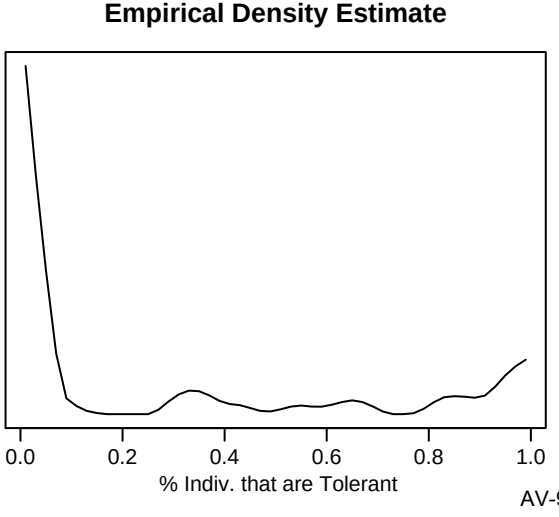
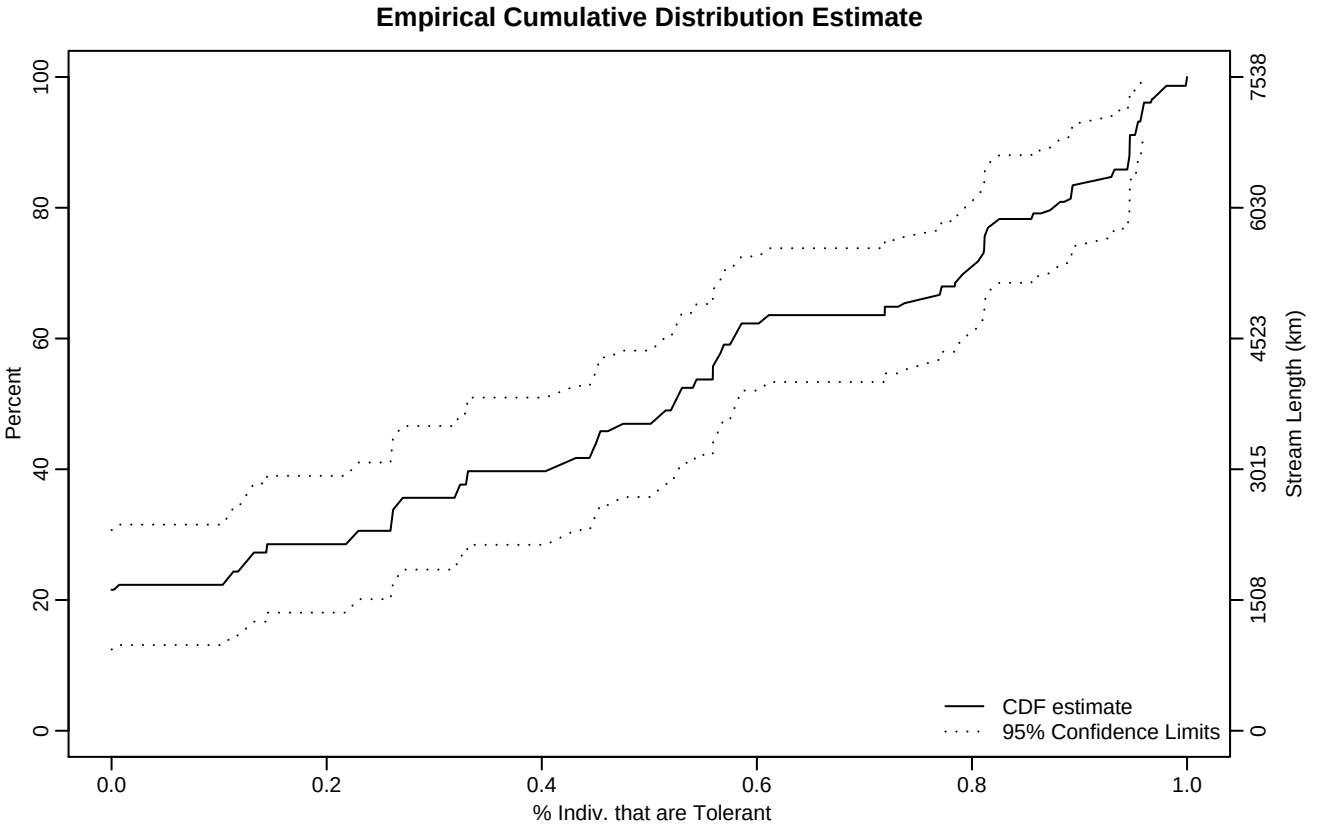


Figure VERT−73 Indicator: TOL_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.12	0	0.27
50Pct	0.52	0.33	0.58
75Pct	0.81	0.73	0.93
90Pct	0.95	0.89	0.98
95Pct	0.96	0.95	1
Mean	0.49	0.41	0.56
Std Dev	0.35	0.31	0.38

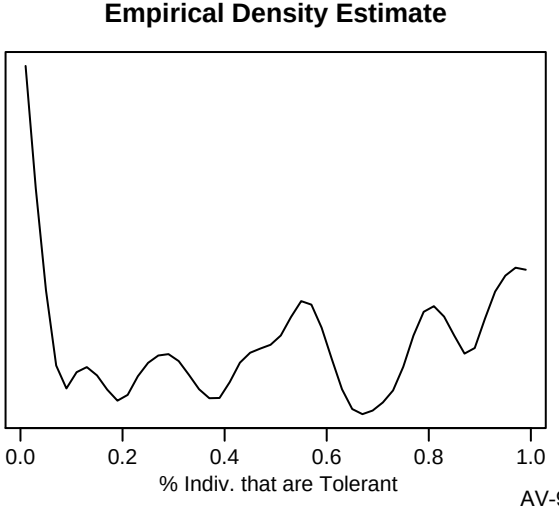
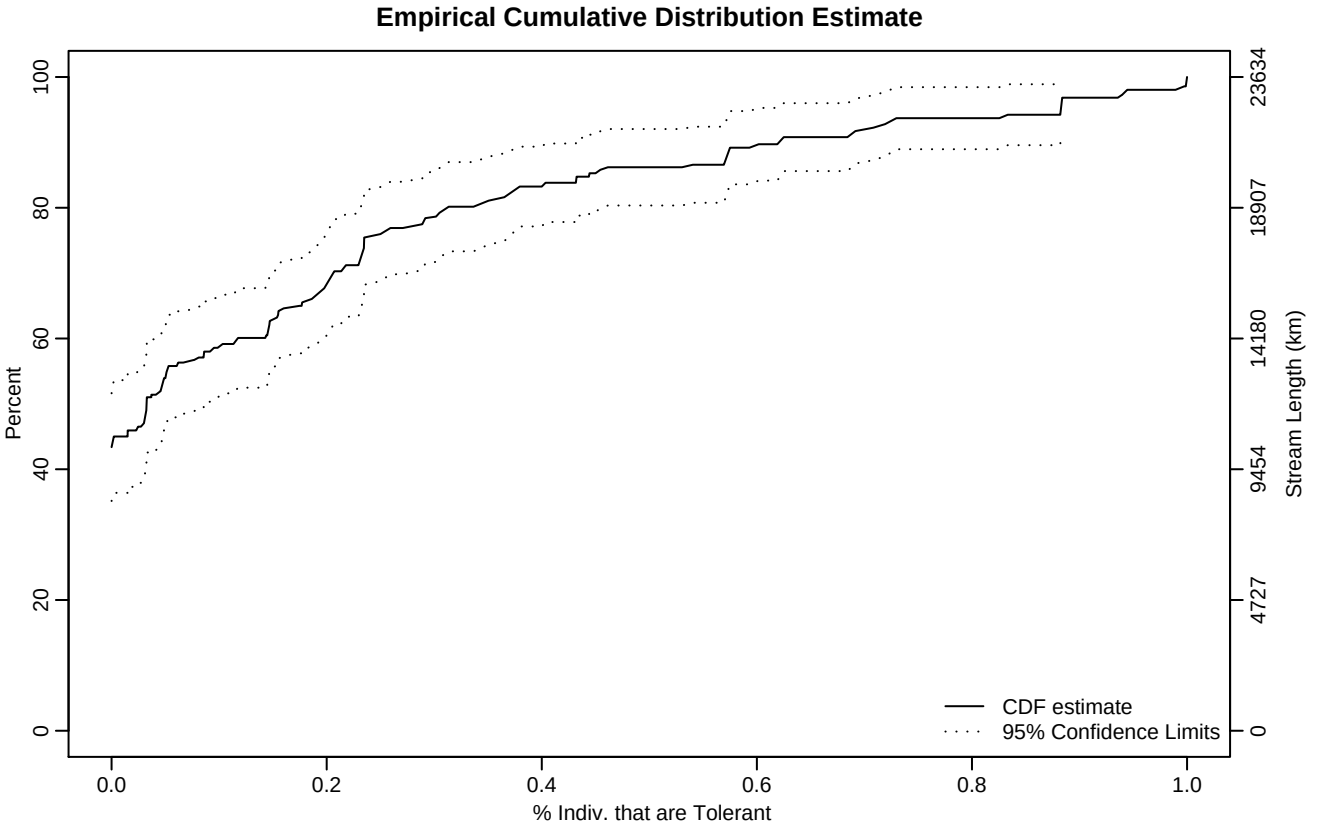


Figure VERT−74 Indicator: TOL_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.03	0	0.10
75Pct	0.23	0.20	0.37
90Pct	0.62	0.43	0.88
95Pct	0.88	0.62	1
Mean	0.18	0.14	0.22
Std Dev	0.25	0.21	0.29

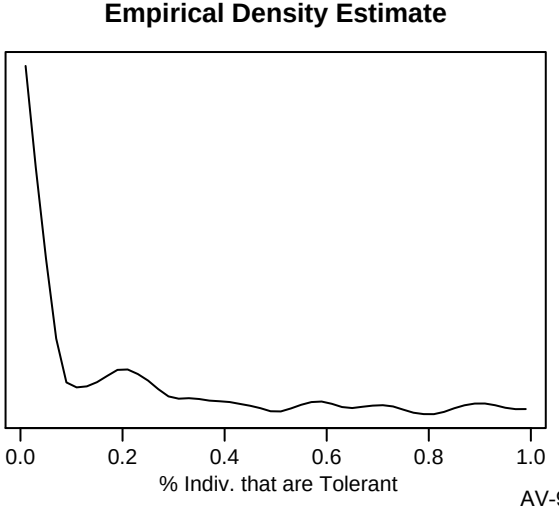
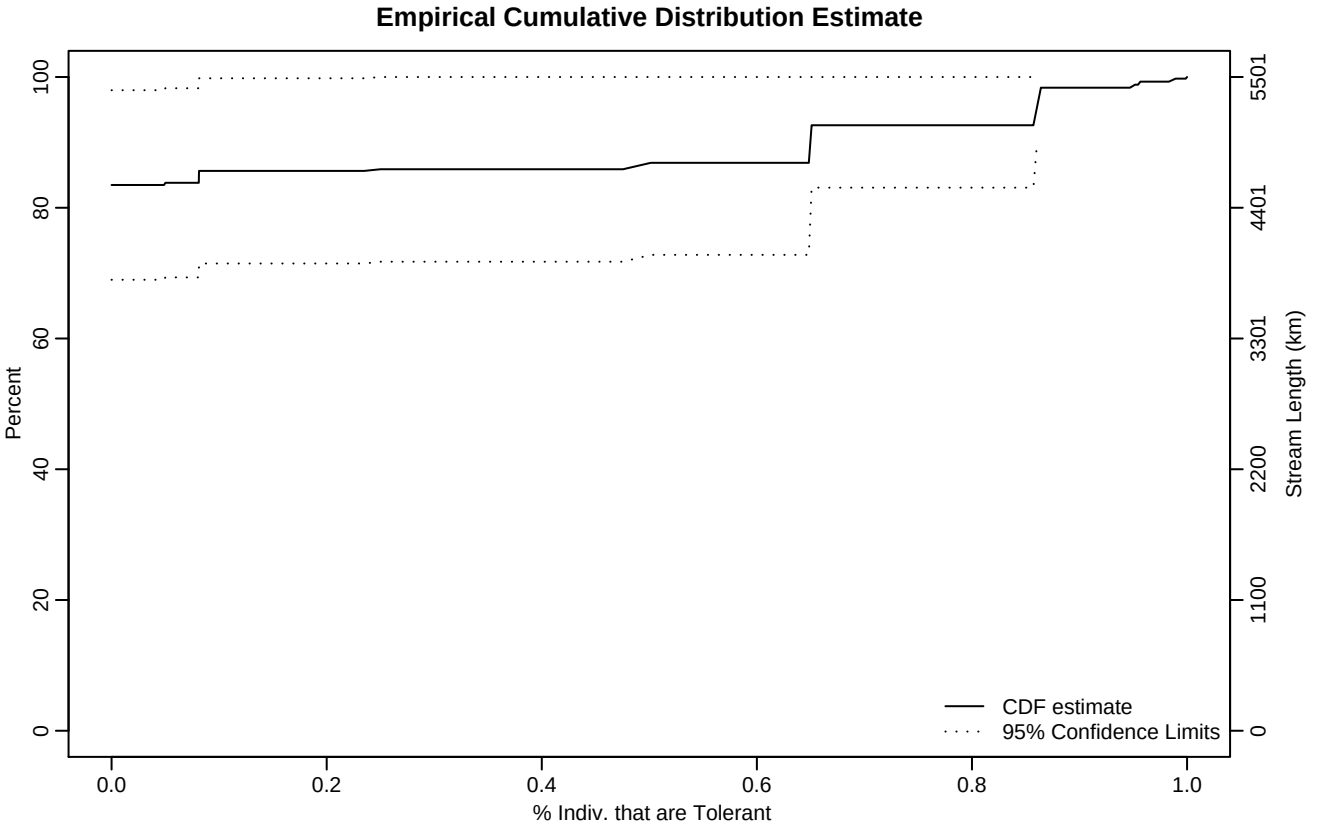


Figure VERT−75 Indicator: TOL_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.65
90Pct	0.65	0	1
95Pct	0.86	0.08	1
Mean	0.11	0	0.22
Std Dev	0.27	0.16	0.38

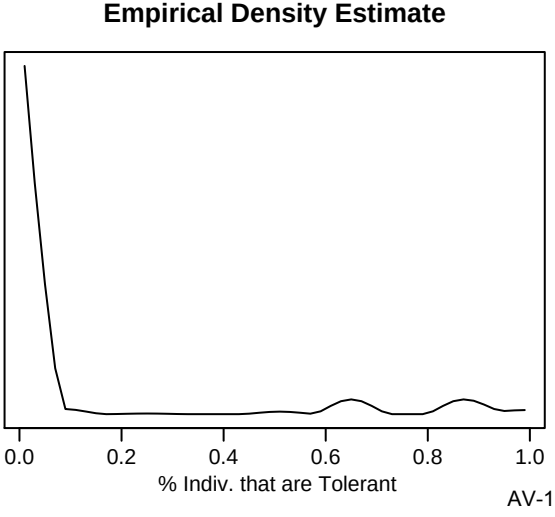
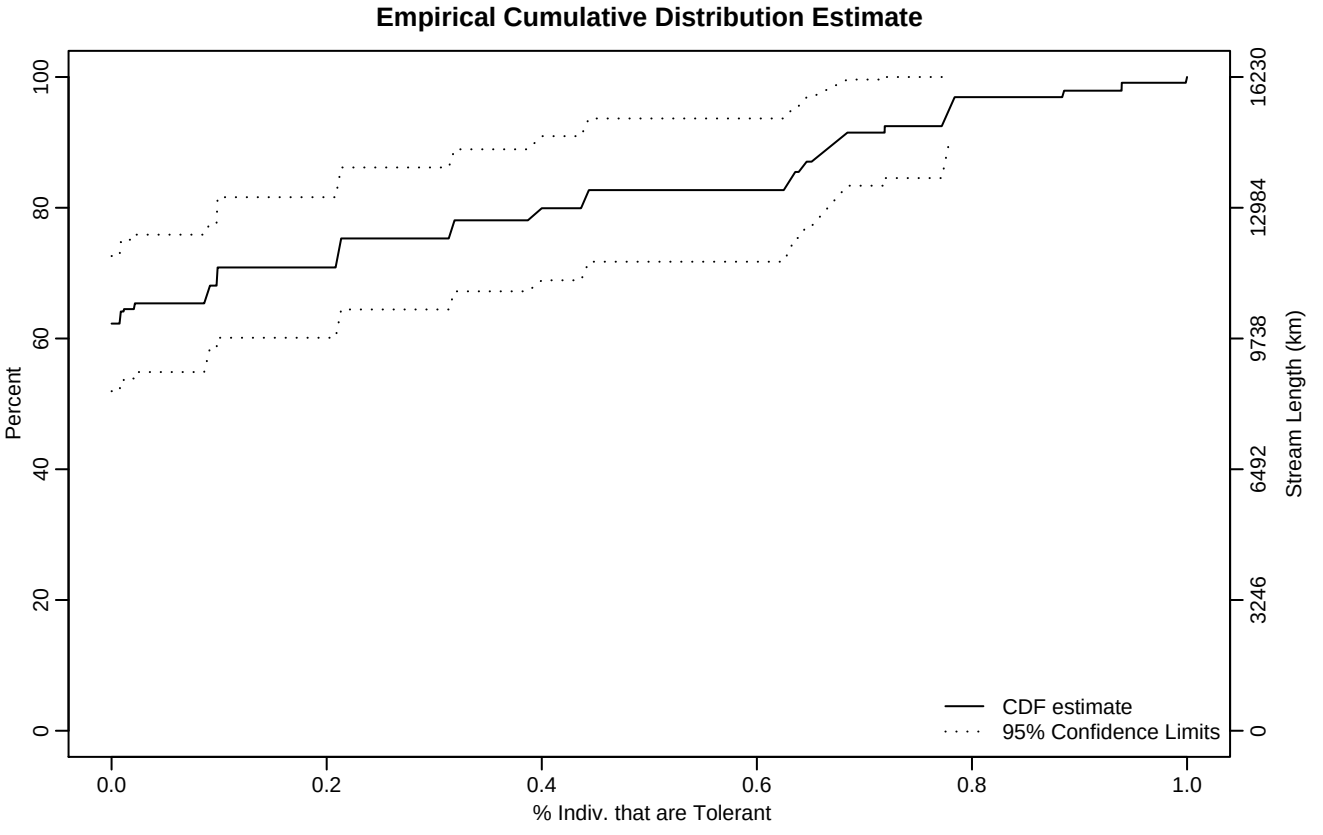


Figure VERT−76 Indicator: TOL_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.21	0.01	0.65
90Pct	0.67	0.40	1
95Pct	0.78	0.65	1
Mean	0.17	0.10	0.24
Std Dev	0.23	0.18	0.29

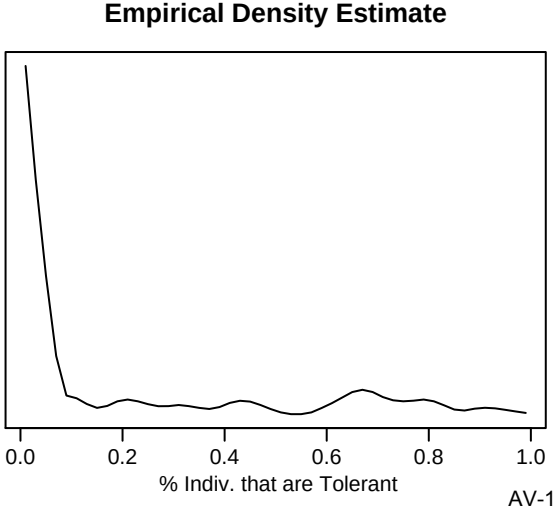
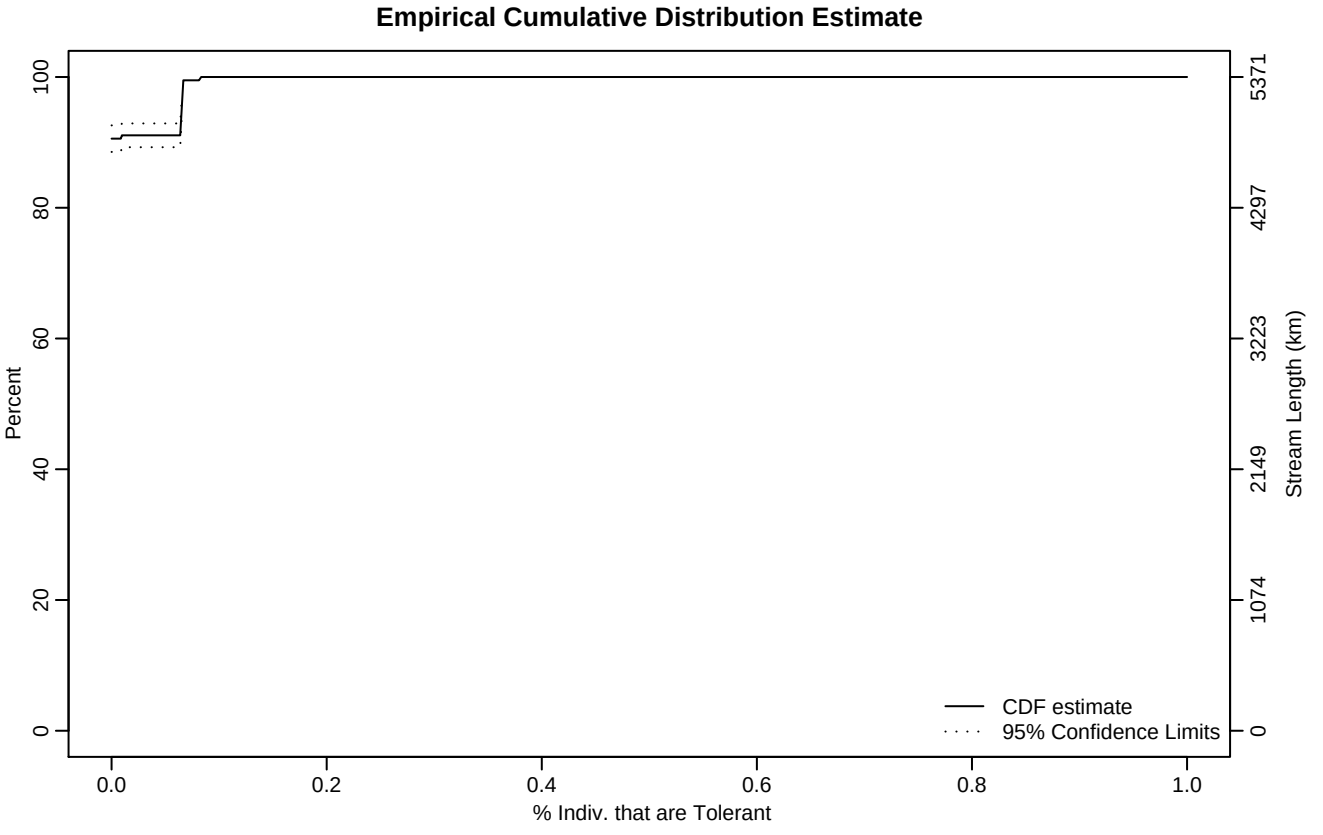


Figure VERT−77 Indicator: TOL_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	
95Pct	0.07	0	
Mean	0.01	0	0.01
Std Dev	0	0	0.01

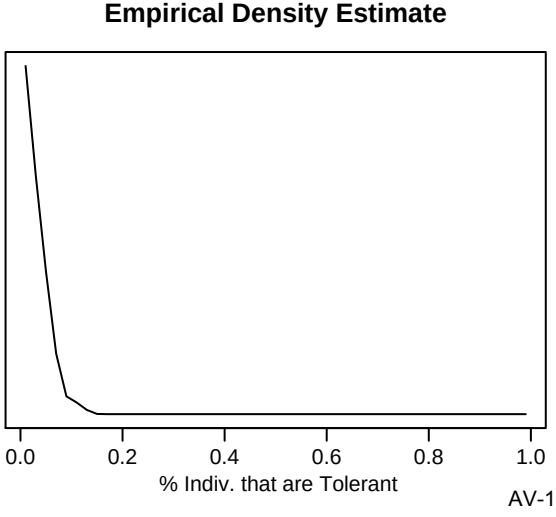
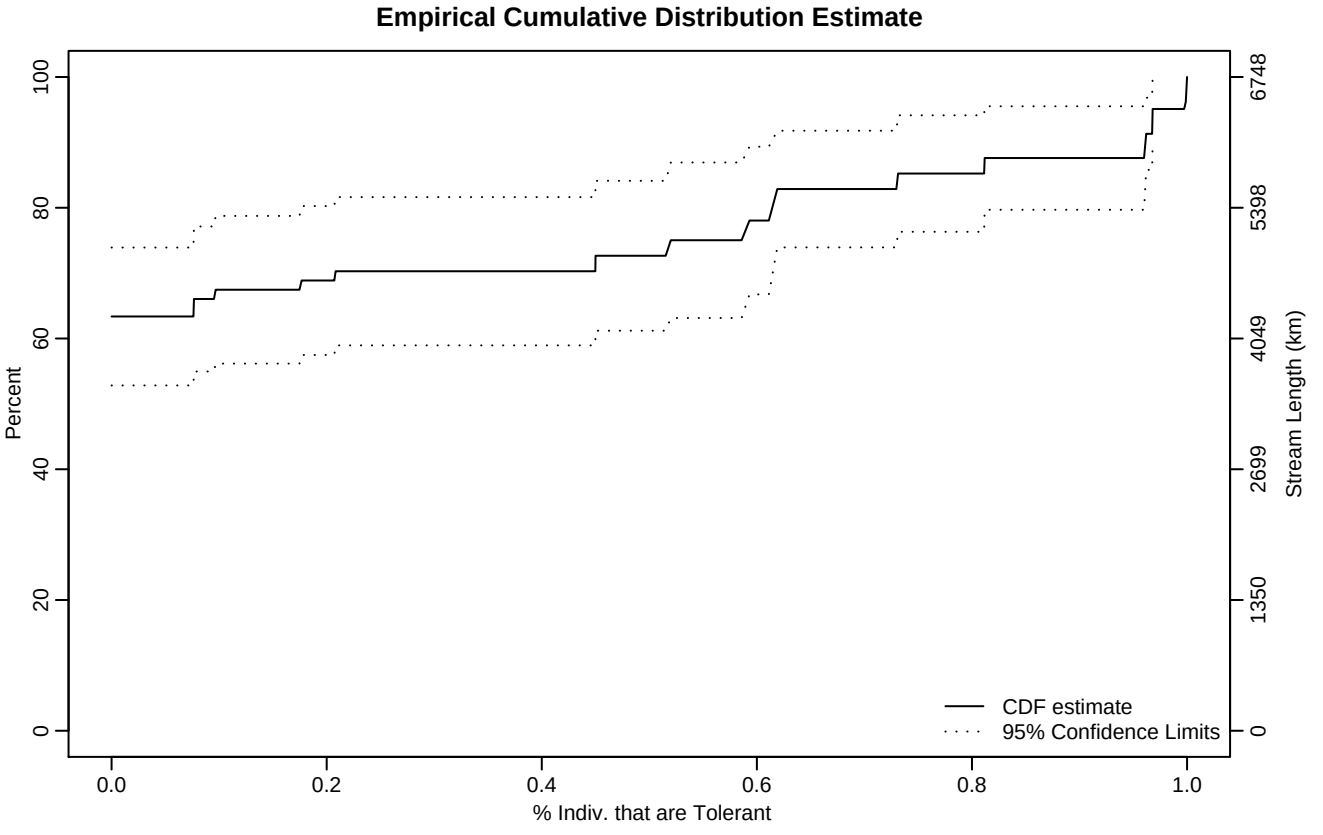


Figure VERT−78 Indicator: TOL_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.52	0.08	0.81
90Pct	0.96	0.62	1
95Pct	0.97	0.96	1
Mean	0.24	0.15	0.32
Std Dev	0.29	0.23	0.36

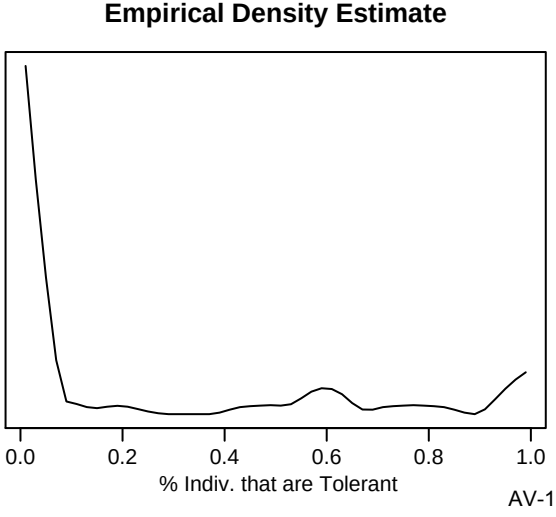
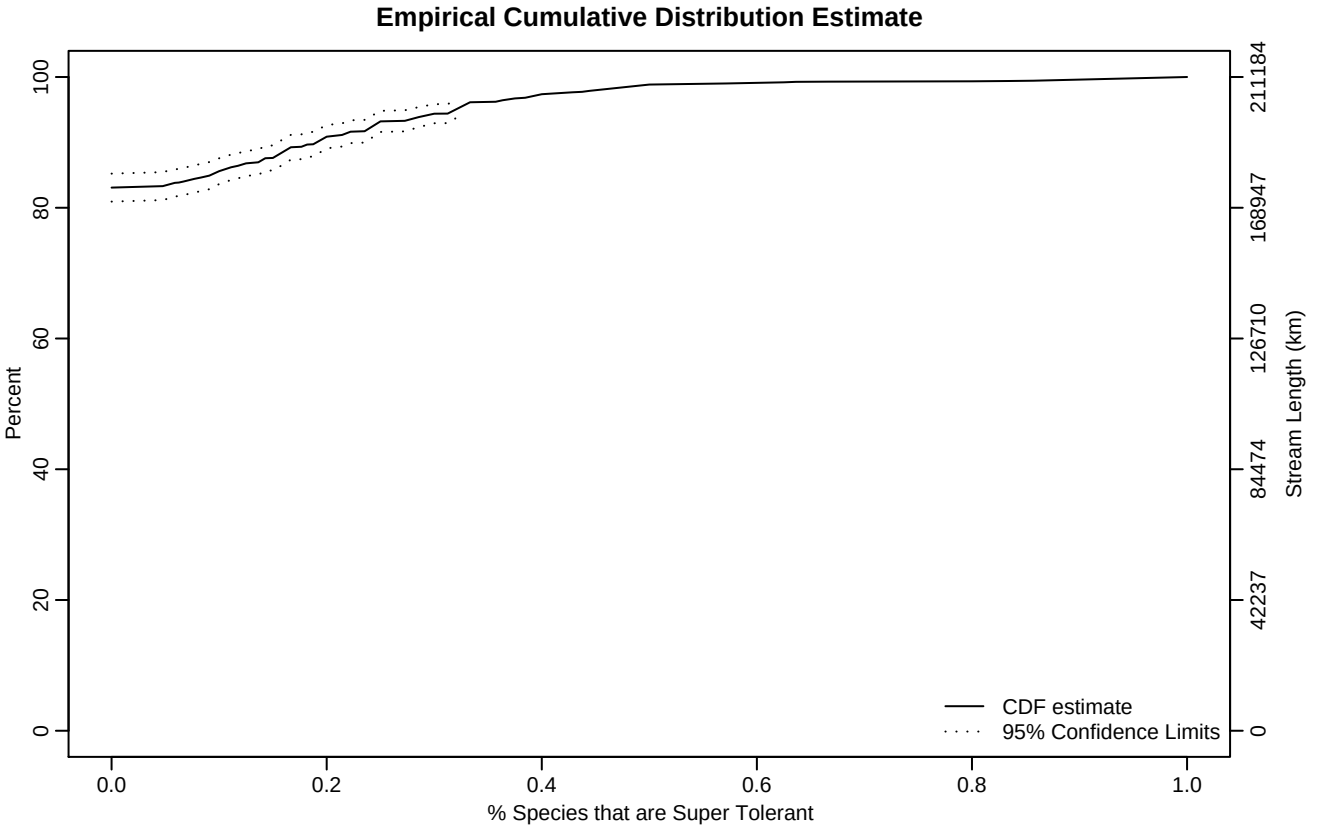


Figure VERT−79 Indicator: SUP_TOL_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.19	0.15	0.24
95Pct	0.32	0.28	0.36
Mean	0.05	0.04	0.05
Std Dev	0.10	0.08	0.11

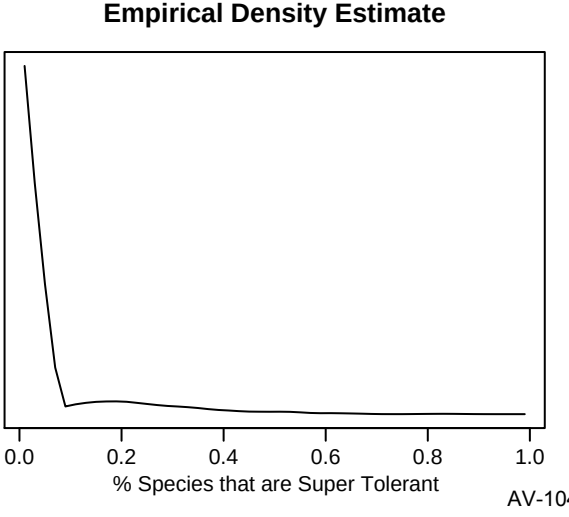
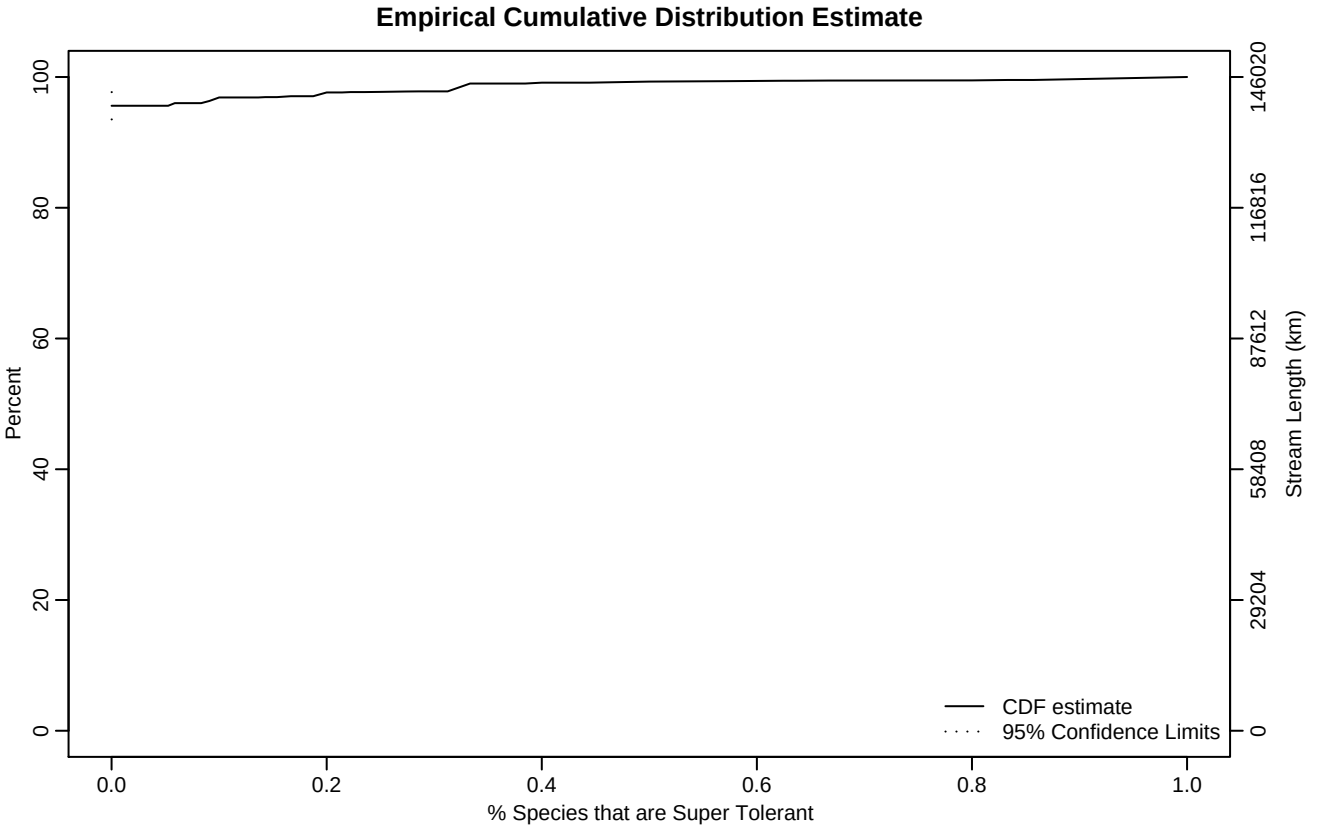


Figure VERT−80 Indicator: SUP_TOL_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.19
Mean	0.01	0.01	0.02
Std Dev	0.05	0.03	0.07

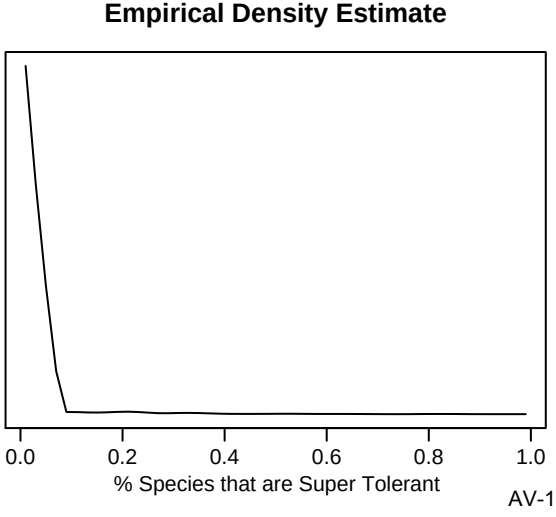
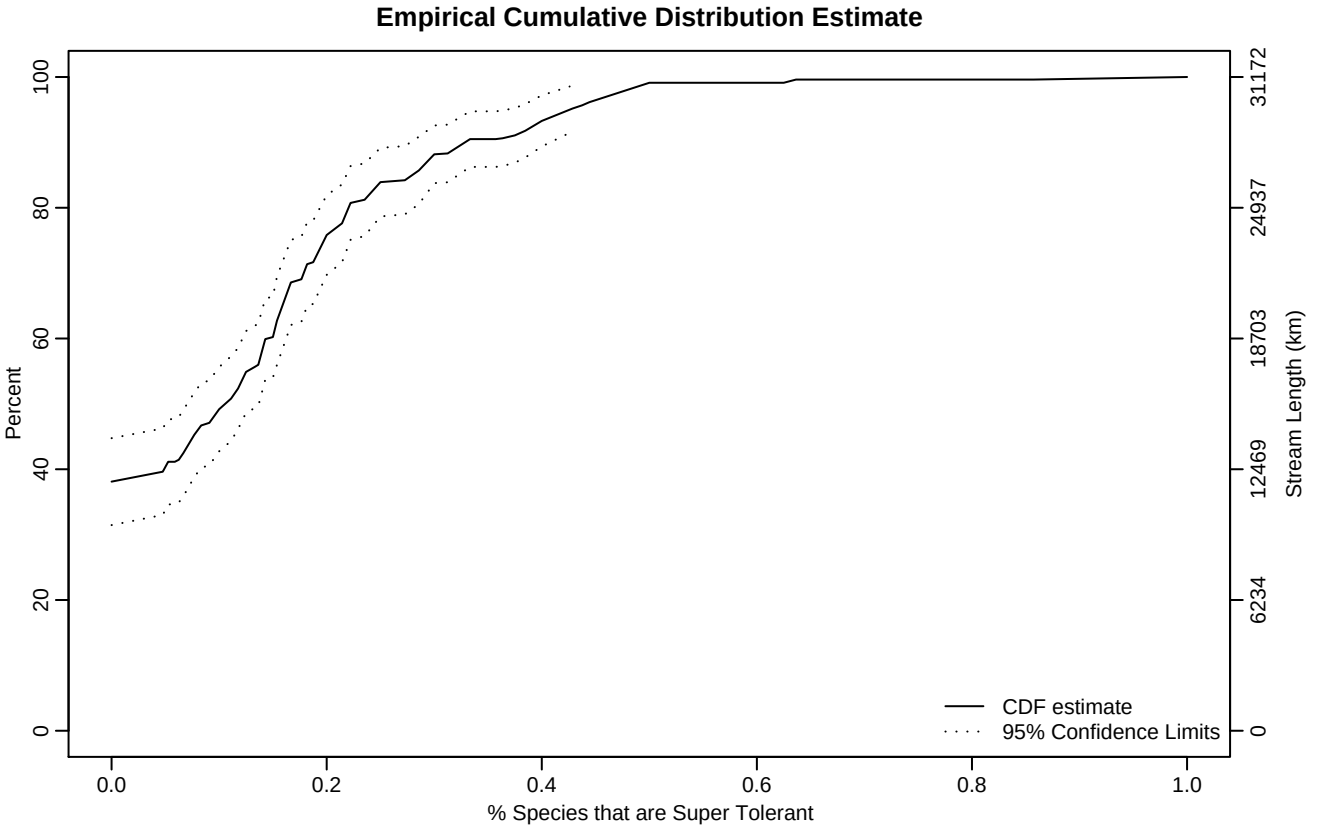


Figure VERT−81 Indicator: SUP_TOL_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.11	0.07	0.14
75Pct	0.20	0.17	0.24
90Pct	0.33	0.28	0.42
95Pct	0.43	0.38	0.50
Mean	0.13	0.11	0.15
Std Dev	0.14	0.12	0.16

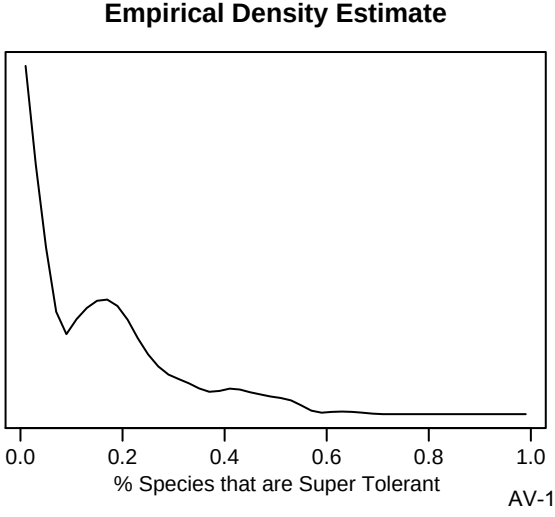
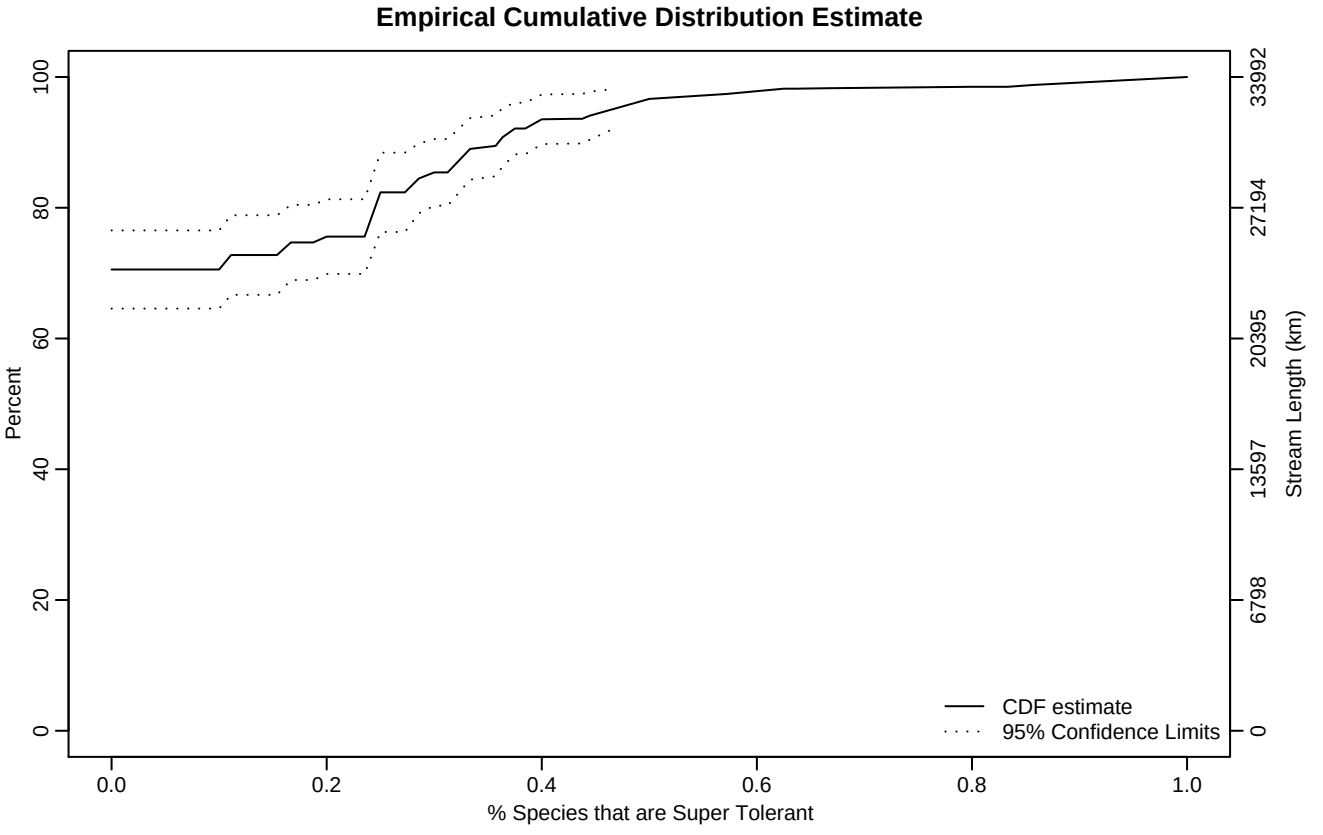


Figure VERT−82 Indicator: SUP_TOL_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.19	0	0.25
90Pct	0.36	0.30	0.46
95Pct	0.46	0.37	0.86
Mean	0.10	0.08	0.13
Std Dev	0.16	0.12	0.19

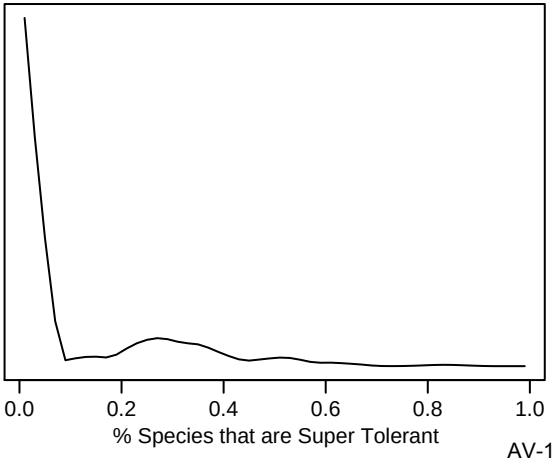
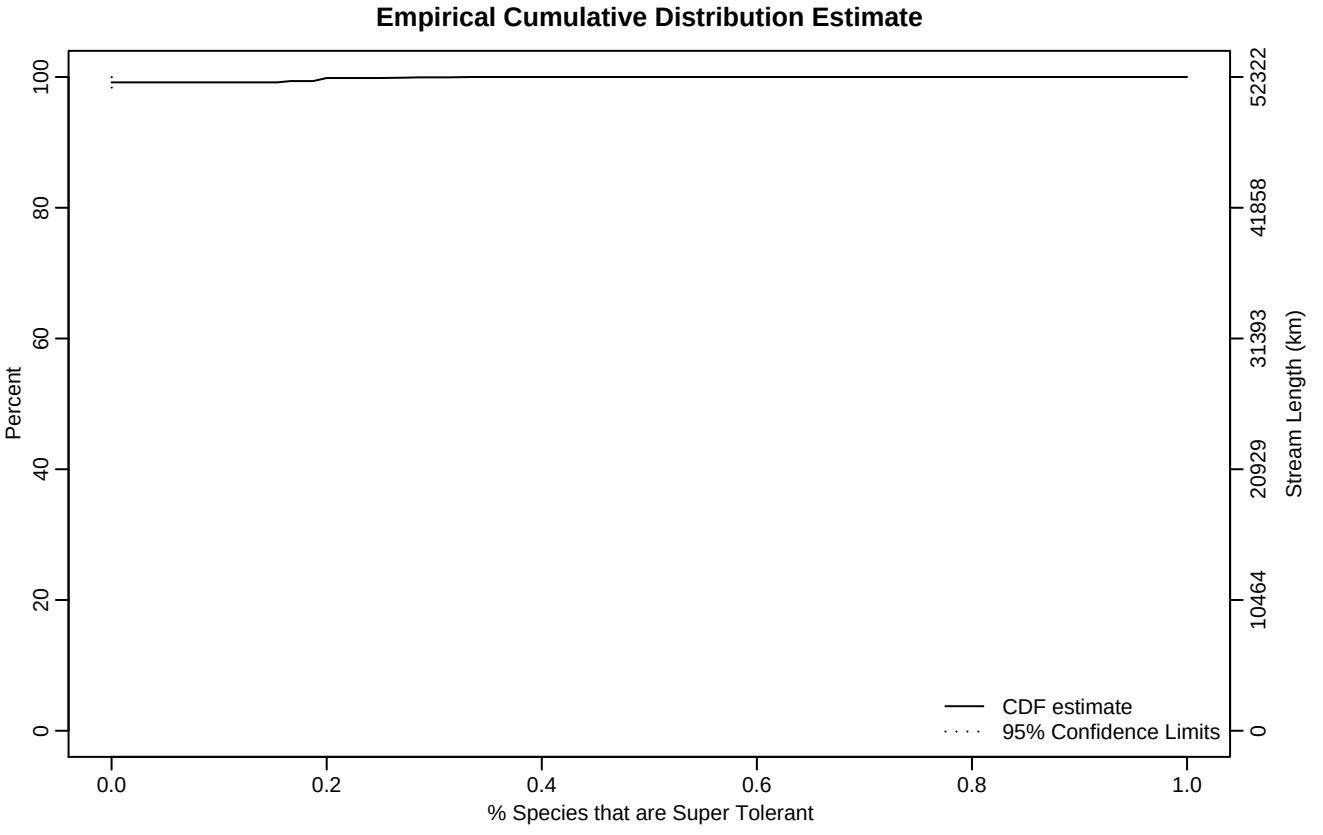


Figure VERT−83 Indicator: SUP_TOL_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0
Mean	0	0	0
Std Dev	0.01	0	0.01

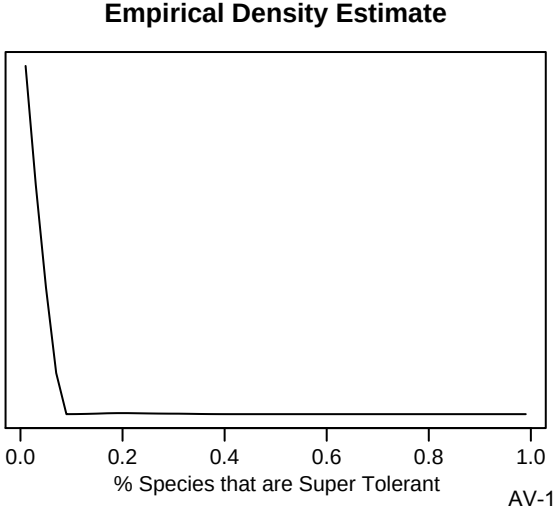
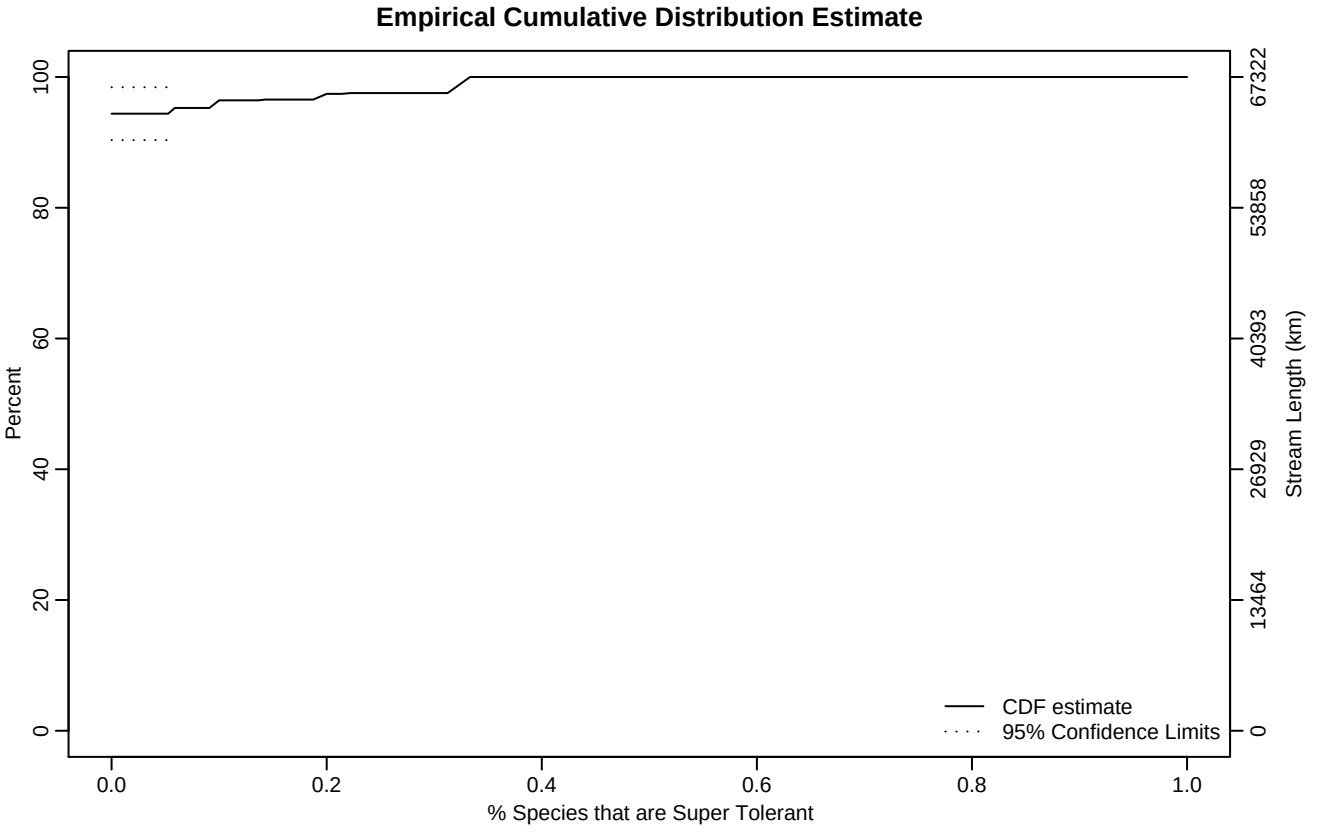


Figure VERT−84 Indicator: SUP_TOL_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0.06	0	0.32
Mean	0.01	0	0.02
Std Dev	0.04	0.03	0.06

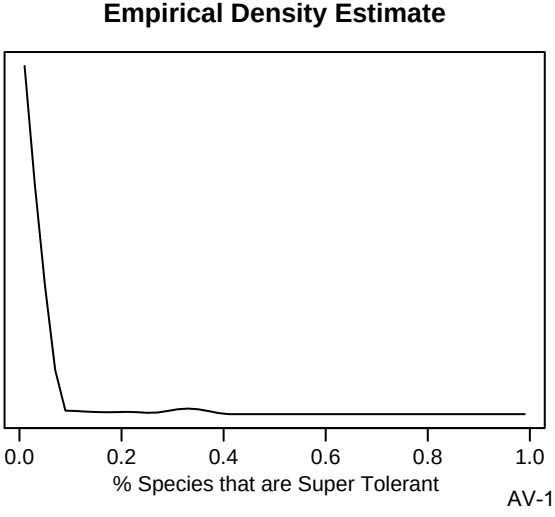
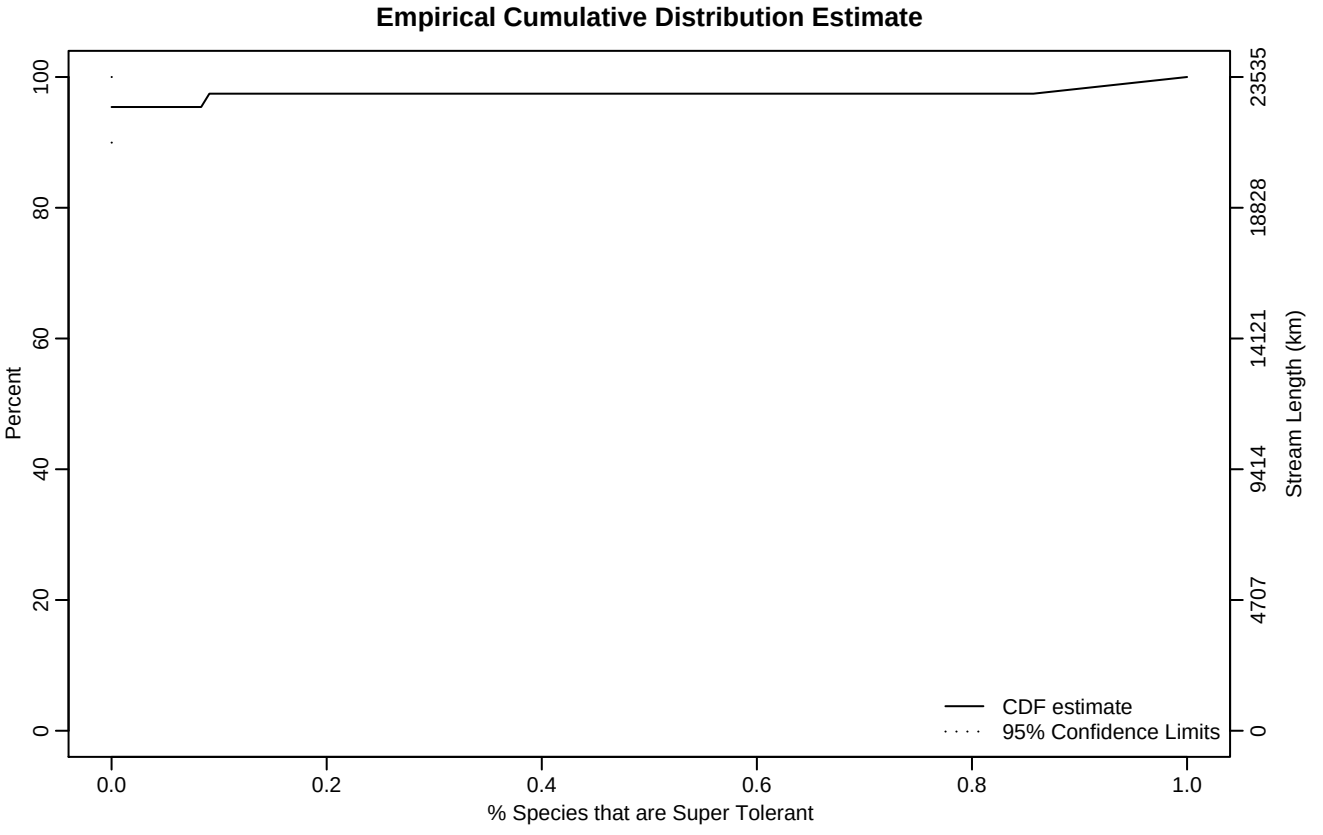


Figure VERT−85 Indicator: SUP_TOL_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.08
95Pct	0	0	
Mean	0.03	−0.01	0.07
Std Dev	0.14	0.03	0.24

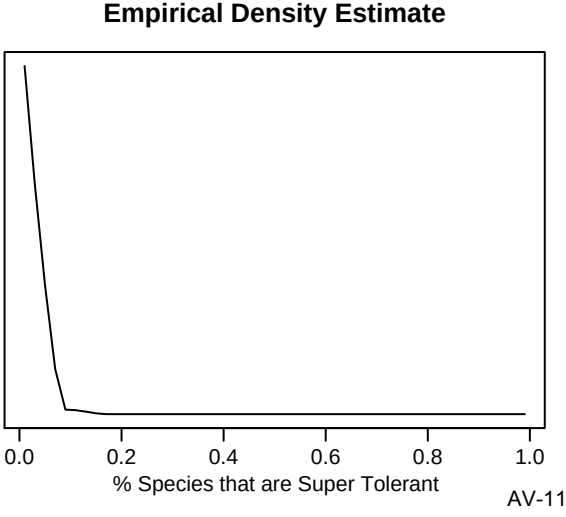
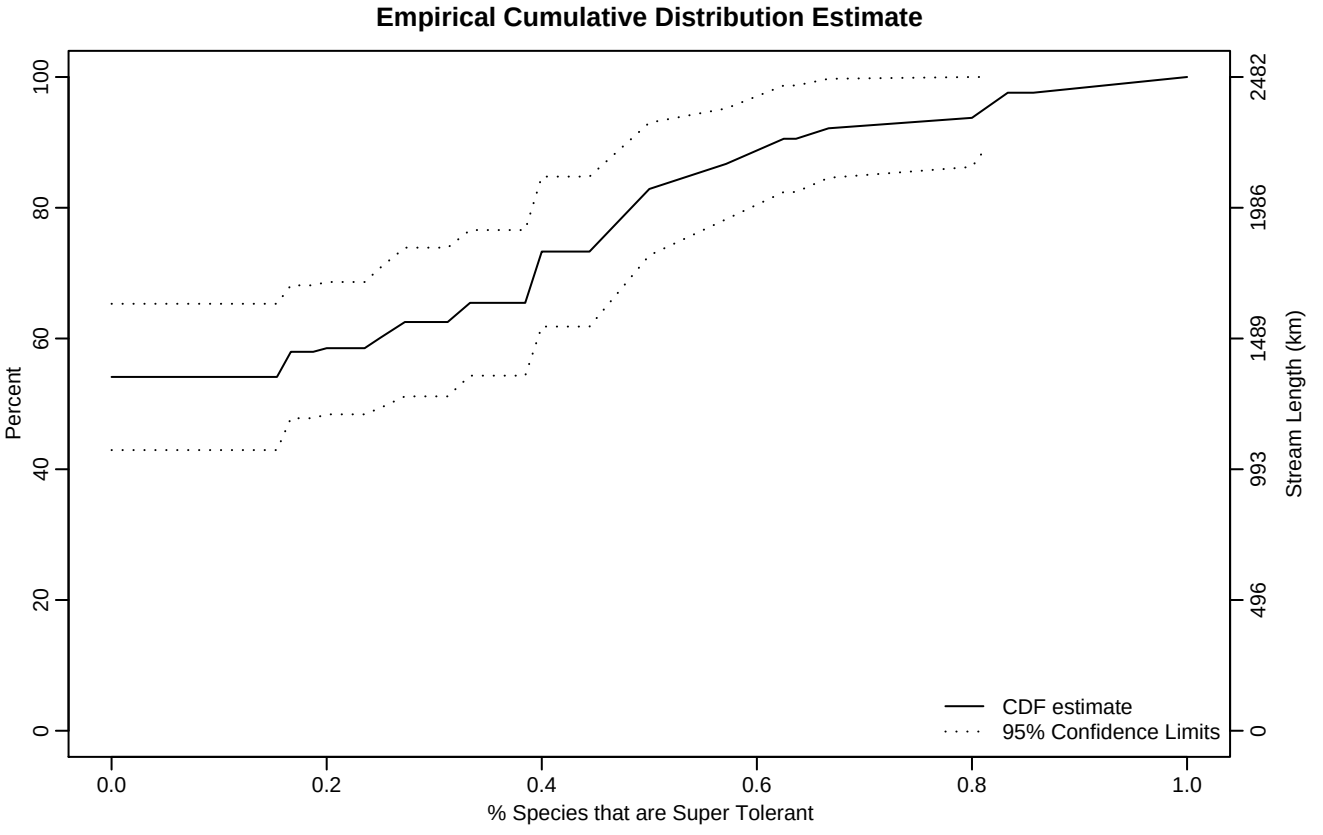


Figure VERT−86 Indicator: SUP_TOL_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.26
75Pct	0.45	0.32	0.57
90Pct	0.62	0.49	0.91
95Pct	0.81	0.58	1
Mean	0.23	0.17	0.30
Std Dev	0.27	0.23	0.31

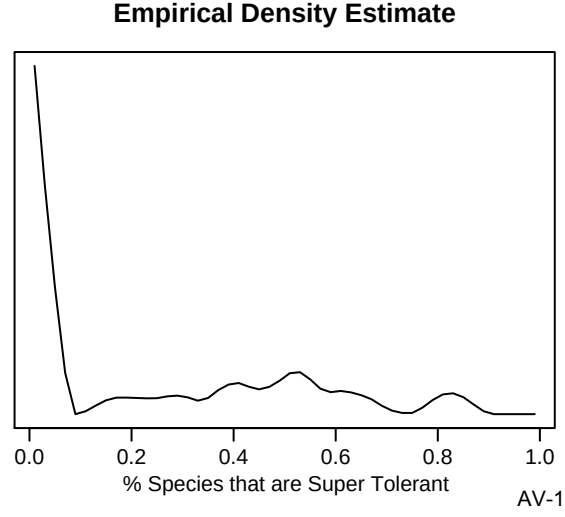
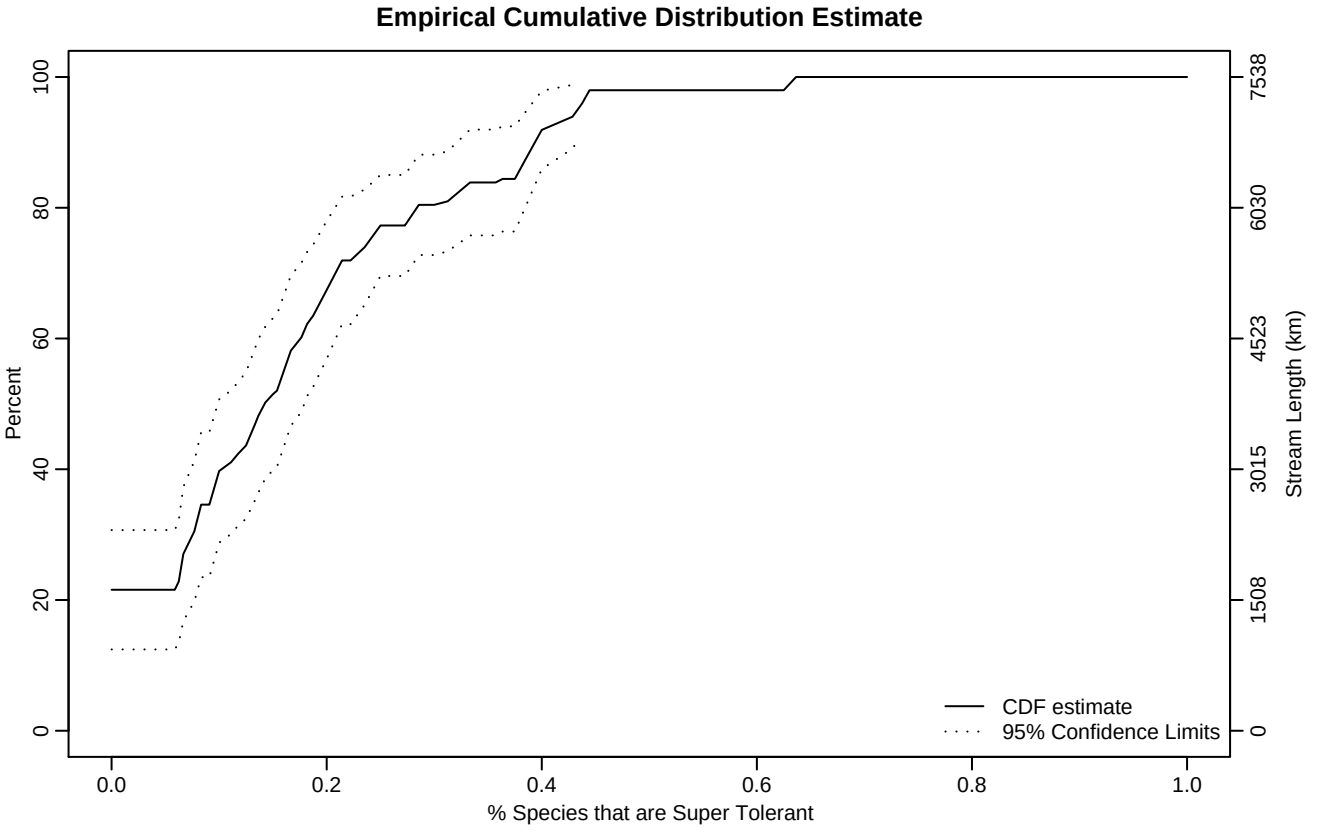


Figure VERT−87 Indicator: SUP_TOL_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.06	0	0.08
50Pct	0.14	0.10	0.18
75Pct	0.24	0.20	0.33
90Pct	0.39	0.33	0.44
95Pct	0.43	0.39	0.64
Mean	0.17	0.14	0.20
Std Dev	0.13	0.11	0.15

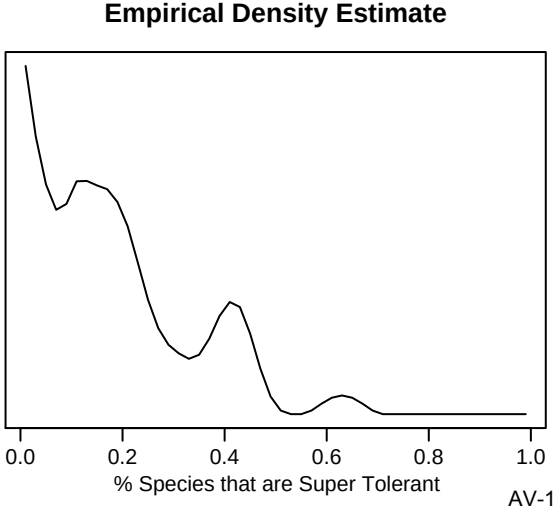
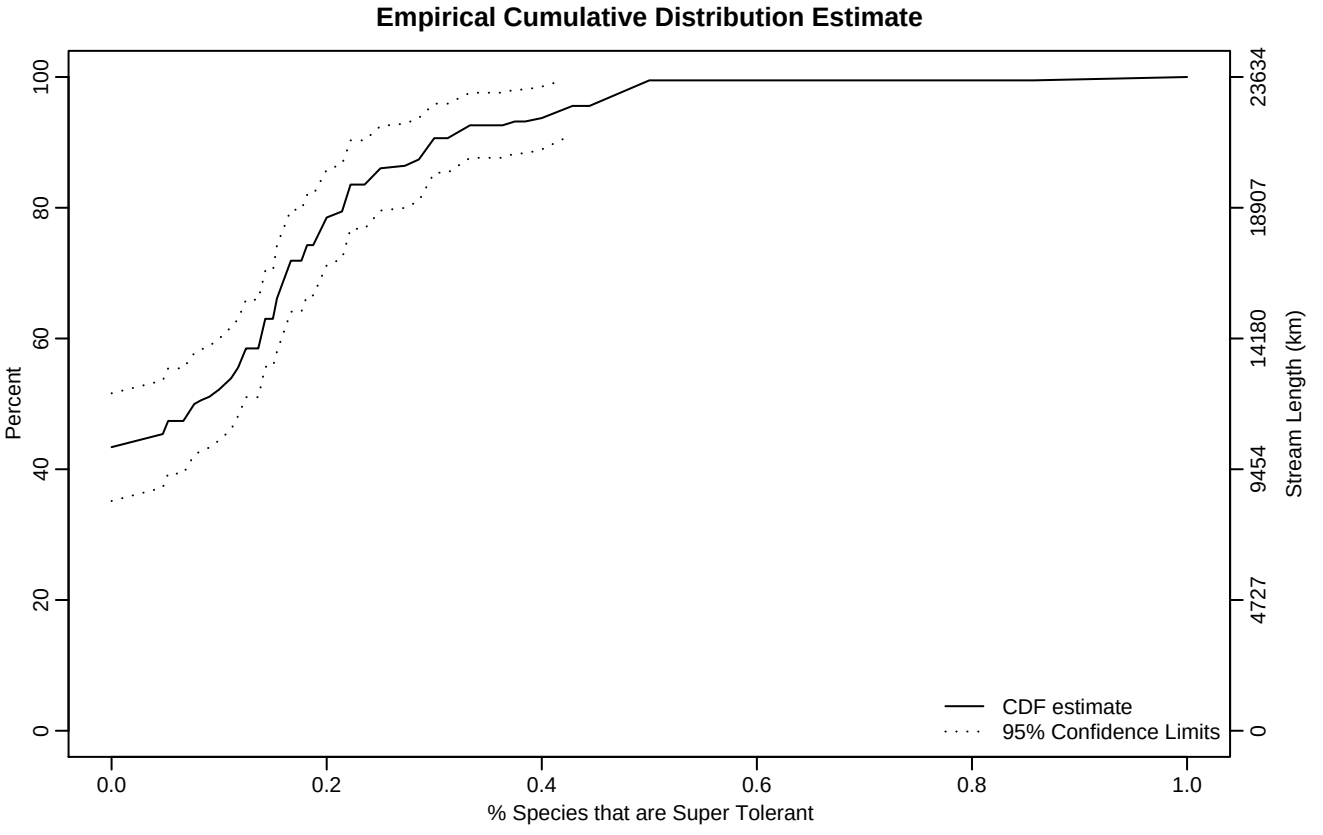


Figure VERT−88 Indicator: SUP_TOL_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.08	0	0.12
75Pct	0.19	0.16	0.22
90Pct	0.30	0.24	0.45
95Pct	0.42	0.30	0.95
Mean	0.12	0.10	0.15
Std Dev	0.14	0.12	0.17

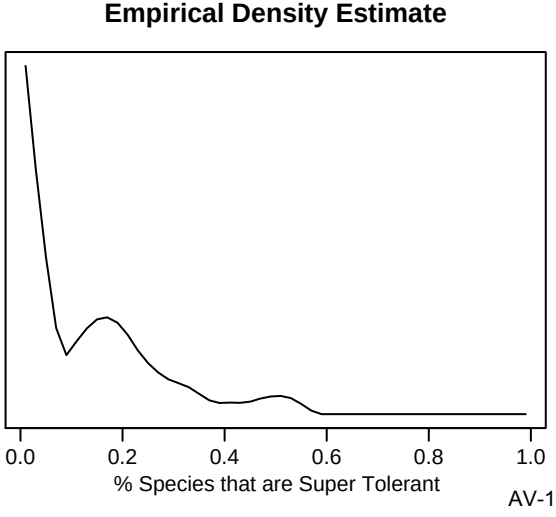
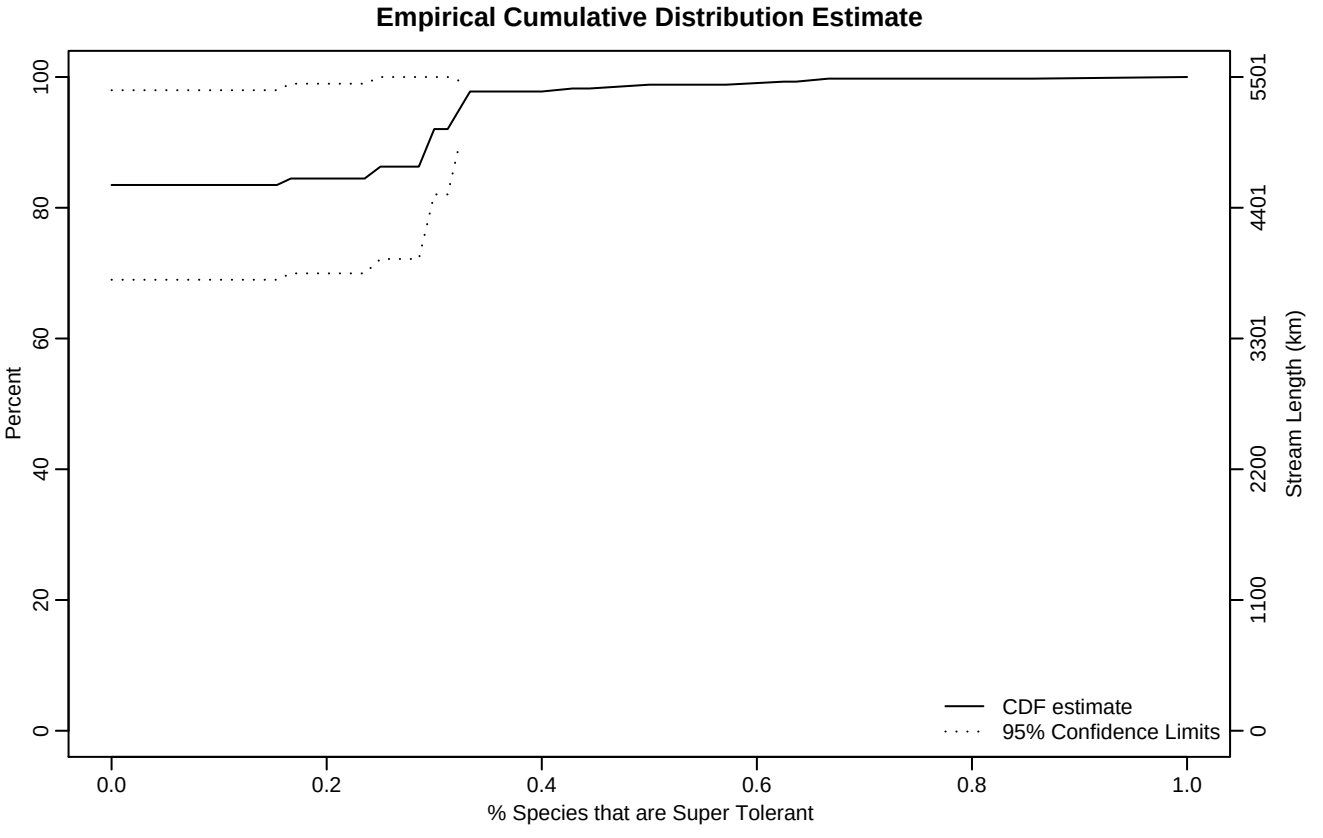


Figure VERT−89 Indicator: SUP_TOL_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.30
90Pct	0.29	0	1
95Pct	0.32	0.24	1
Mean	0.06	0.01	0.10
Std Dev	0.14	0.10	0.18

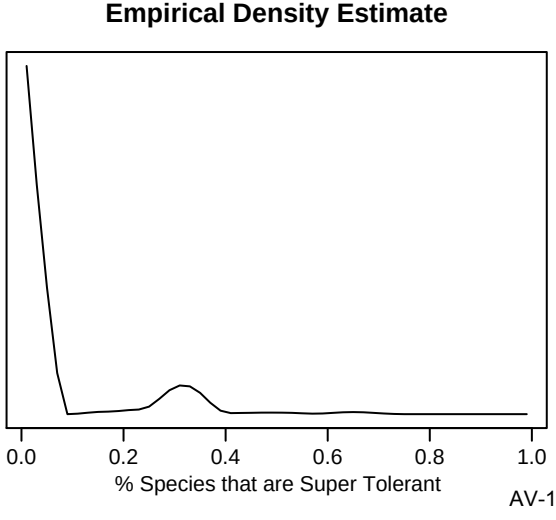
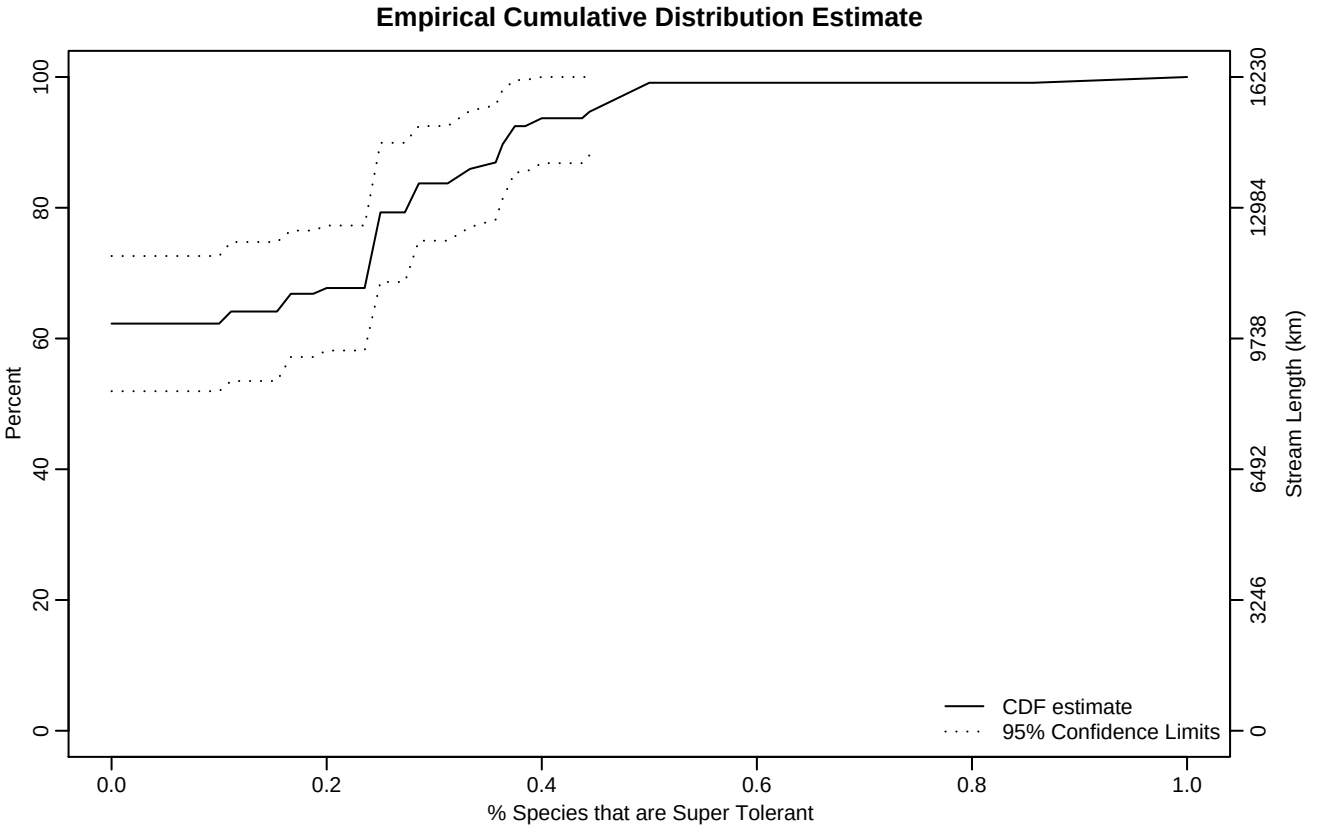


Figure VERT−90 Indicator: SUP_TOL_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.24	0.11	0.33
90Pct	0.36	0.28	0.49
95Pct	0.45	0.36	1
Mean	0.12	0.08	0.16
Std Dev	0.16	0.10	0.21

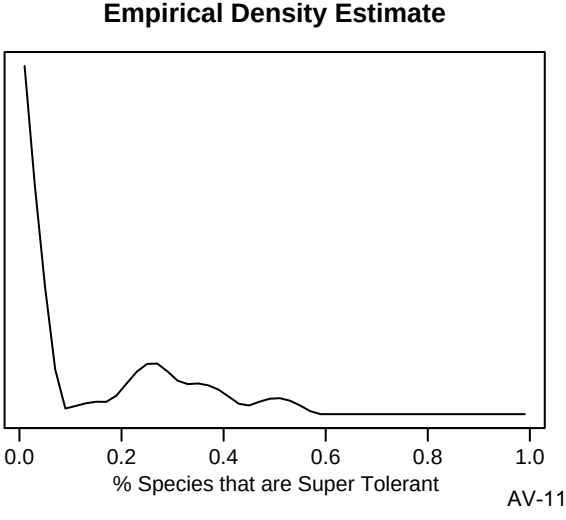
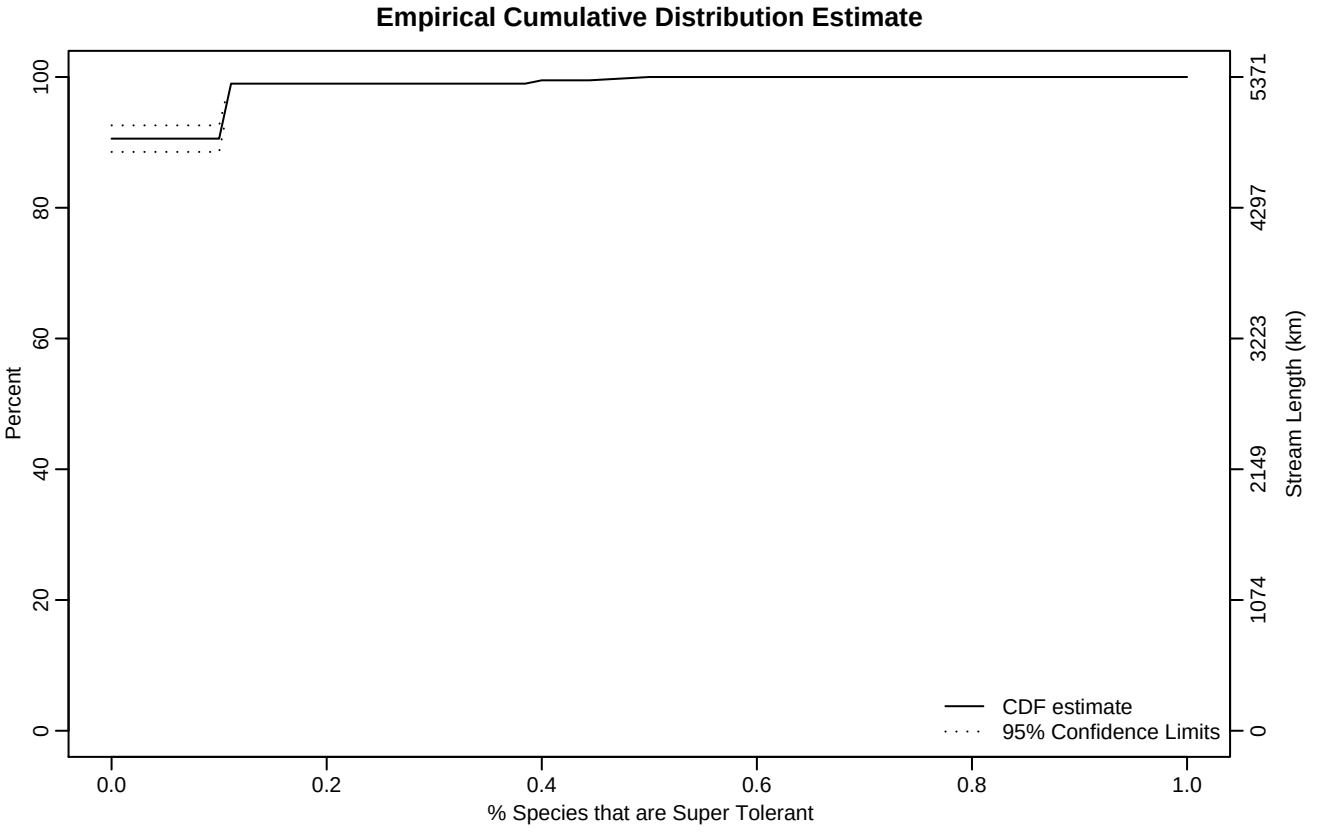


Figure VERT−91 Indicator: SUP_TOL_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	
95Pct	0.11	0	
Mean	0.01	0.01	0.02
Std Dev	0.02	0.01	0.03

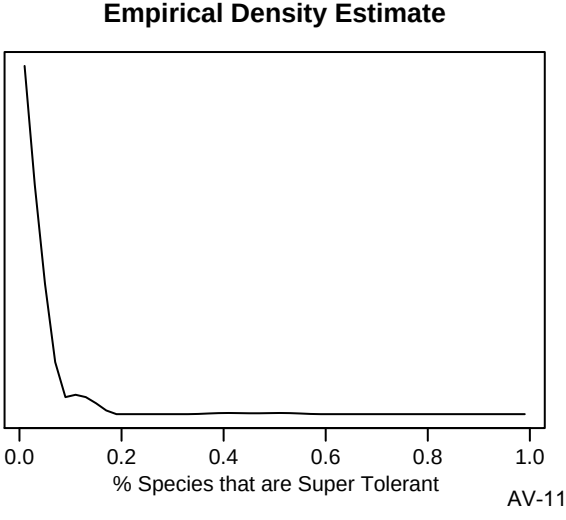
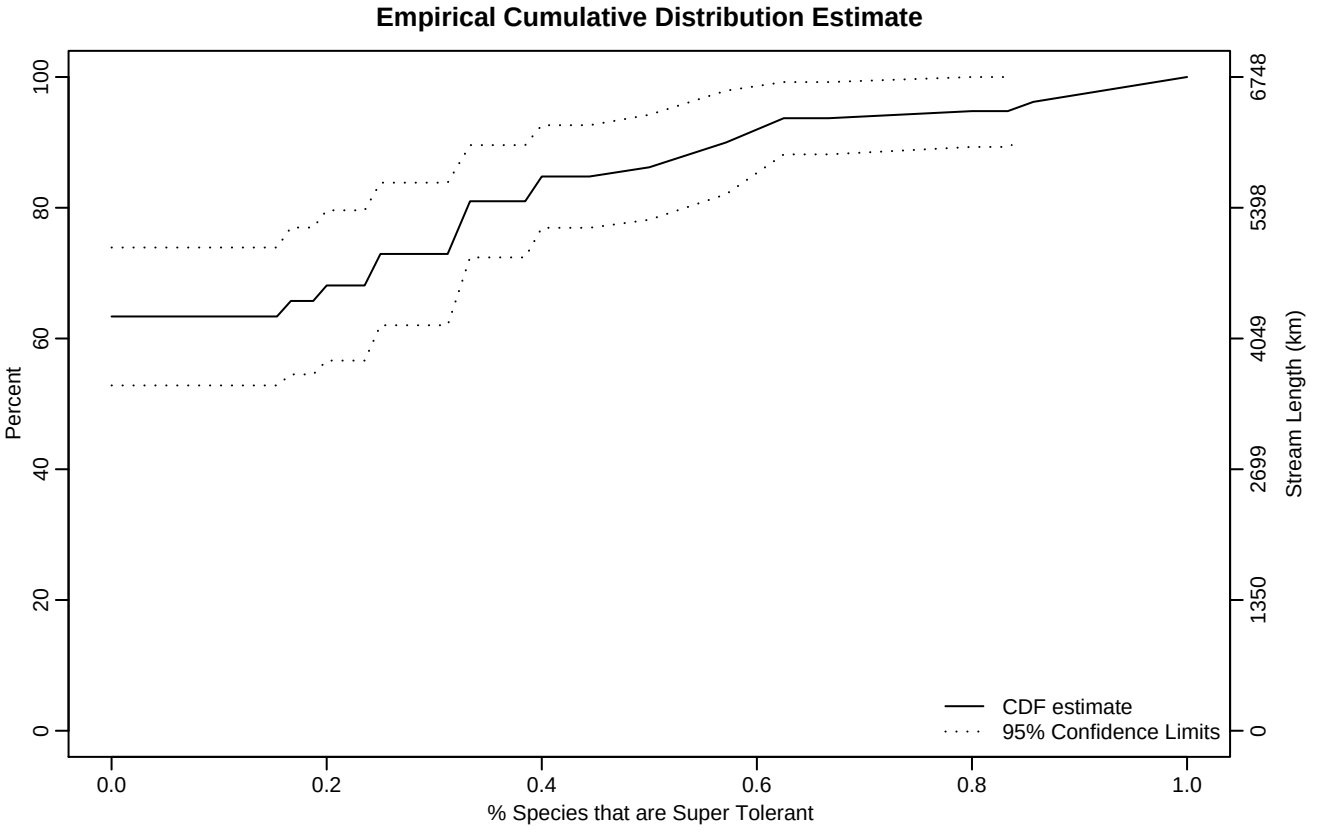


Figure VERT−92 Indicator: SUP_TOL_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.32	0.16	0.49
90Pct	0.57	0.39	0.92
95Pct	0.84	0.56	1
Mean	0.17	0.12	0.23
Std Dev	0.20	0.14	0.25

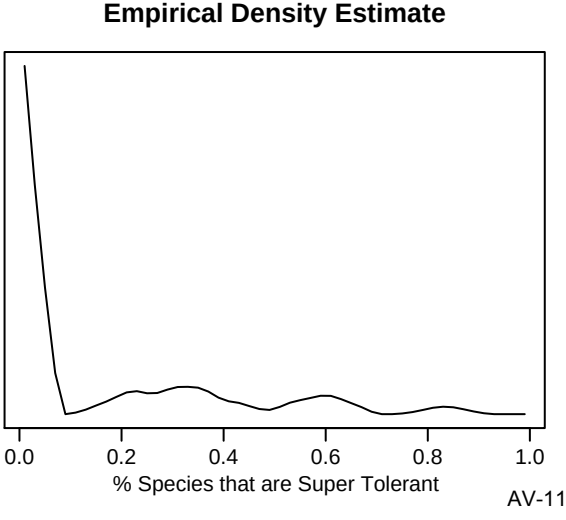
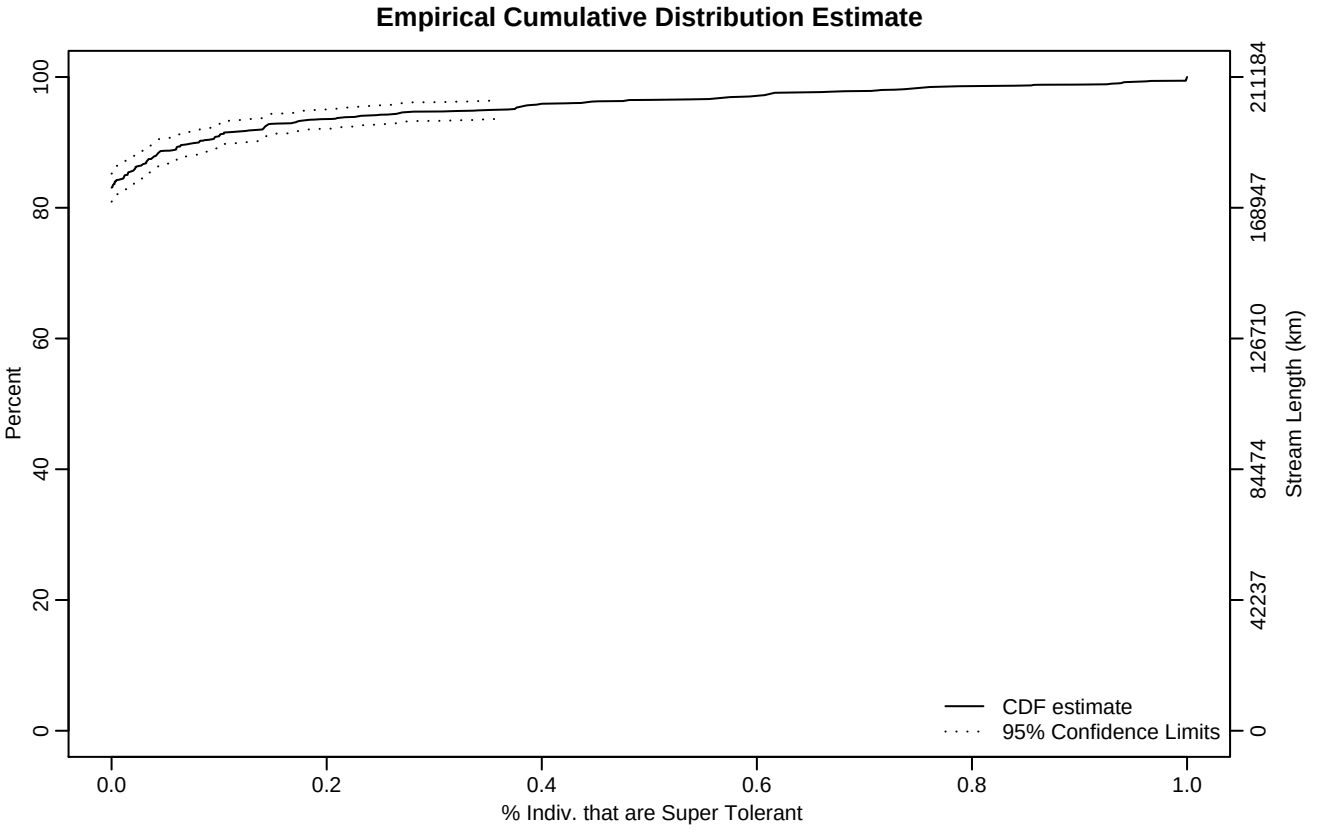


Figure VERT−93 Indicator: SUP_TOL_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.08	0.04	0.13
95Pct	0.36	0.20	0.48
Mean	0.04	0.03	0.05
Std Dev	0.12	0.10	0.14

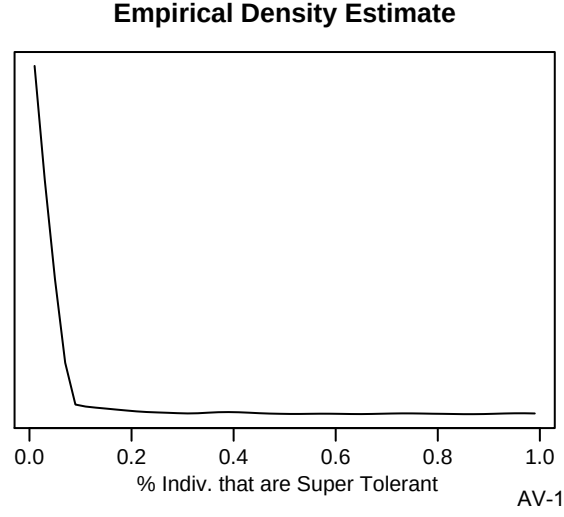
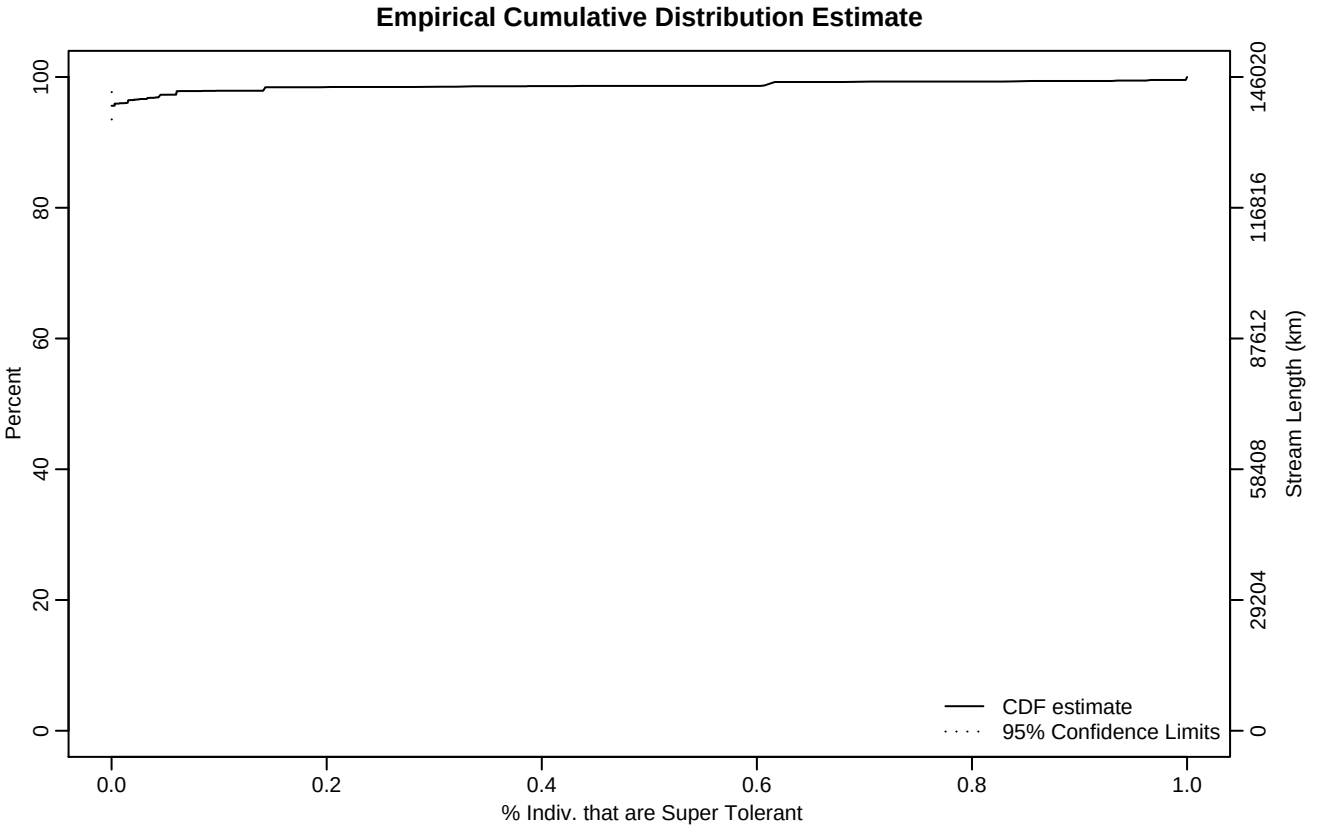


Figure VERT−94 Indicator: SUP_TOL_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.04
Mean	0.01	0	0.02
Std Dev	0.05	0.03	0.08

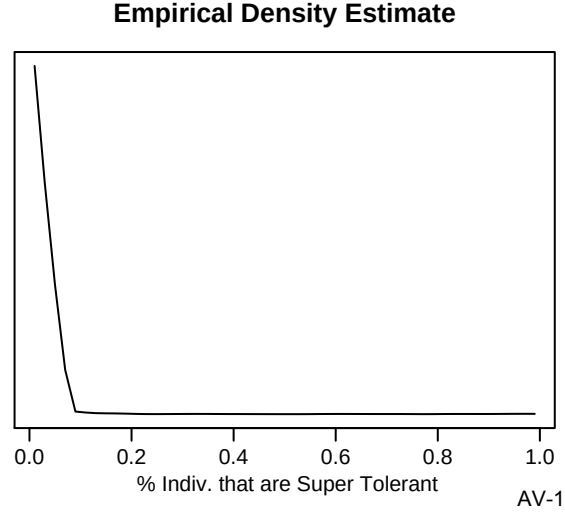
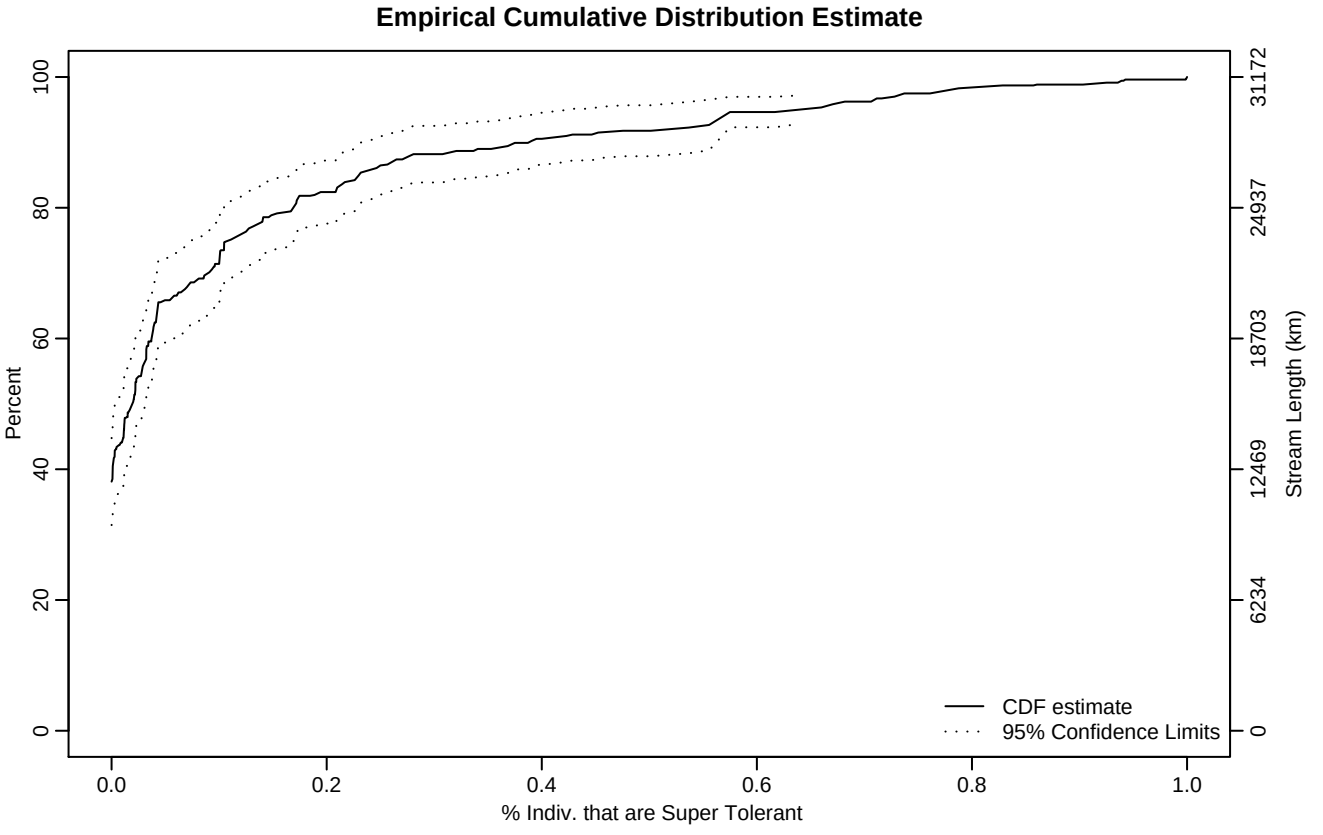


Figure VERT−95 Indicator: SUP_TOL_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.02	0	0.03
75Pct	0.11	0.08	0.17
90Pct	0.39	0.24	0.57
95Pct	0.64	0.56	0.73
Mean	0.11	0.09	0.14
Std Dev	0.19	0.15	0.22

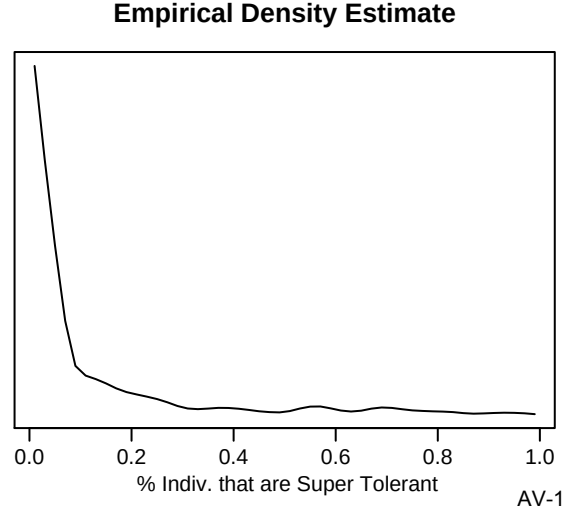
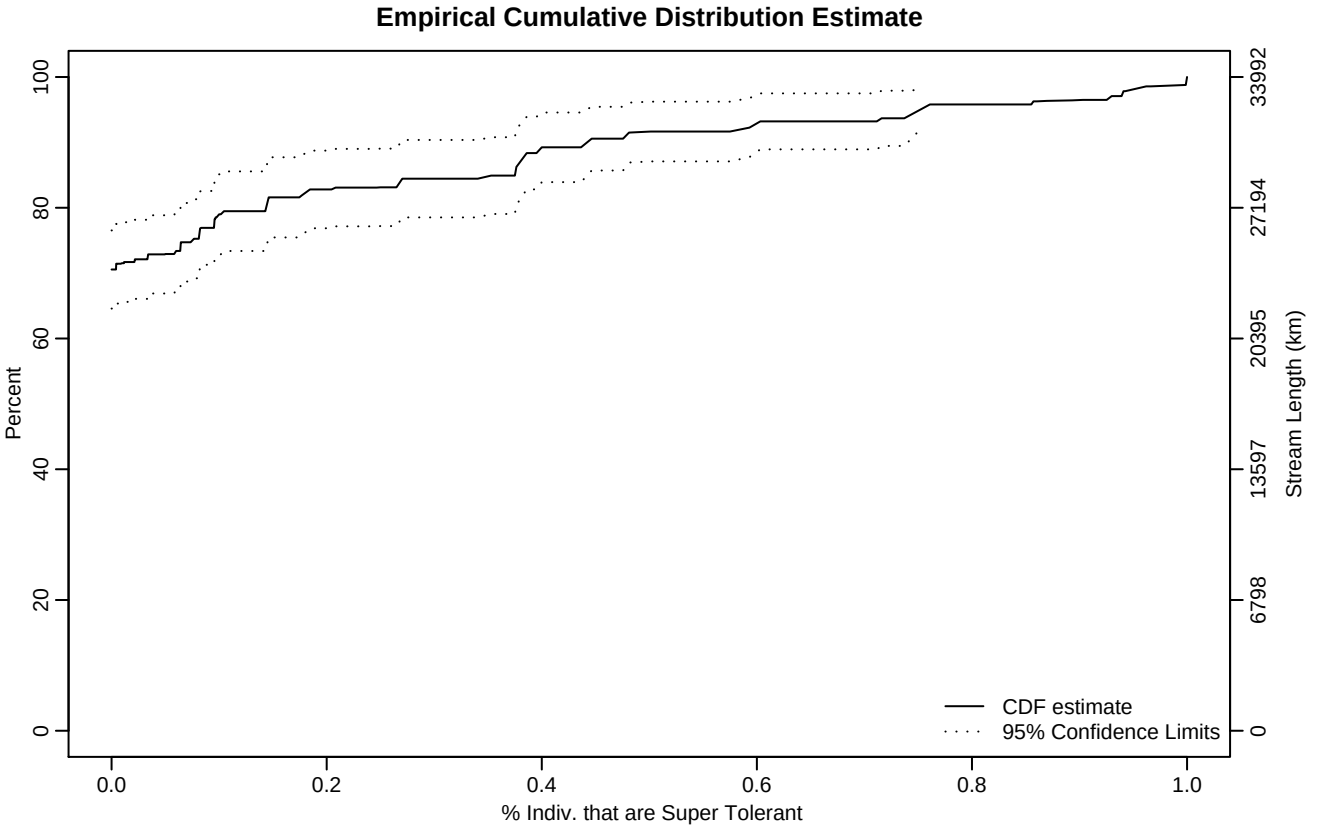


Figure VERT−96 Indicator: SUP_TOL_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.08	0	0.17
90Pct	0.44	0.34	0.76
95Pct	0.75	0.48	1
Mean	0.11	0.08	0.15
Std Dev	0.20	0.16	0.24

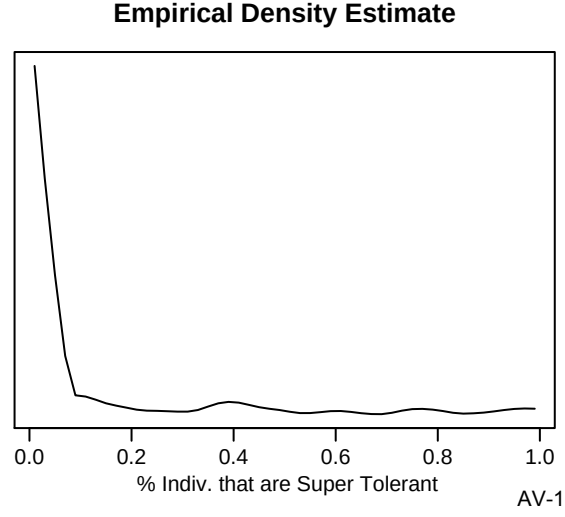
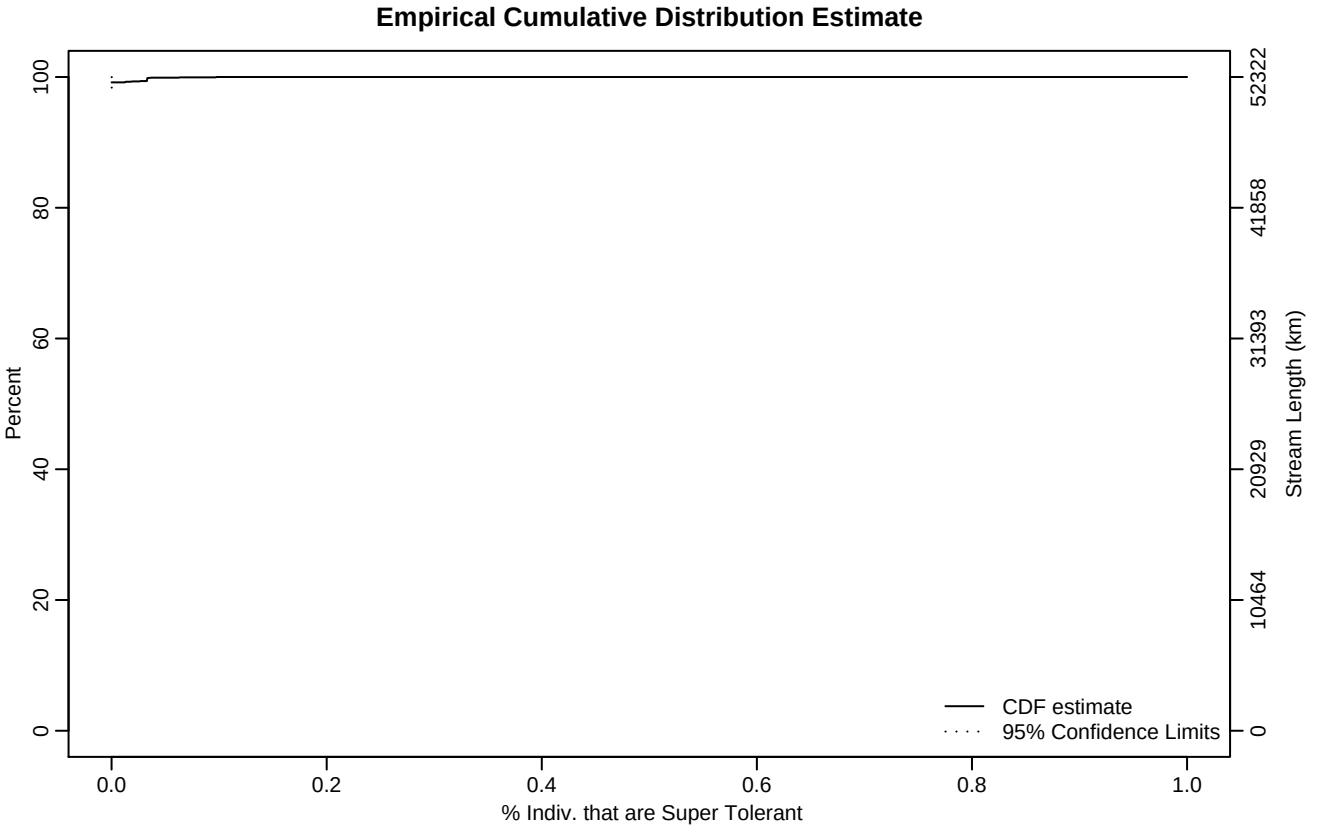


Figure VERT−97 Indicator: SUP_TOL_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0
Mean	0	0	0
Std Dev	0	0	0

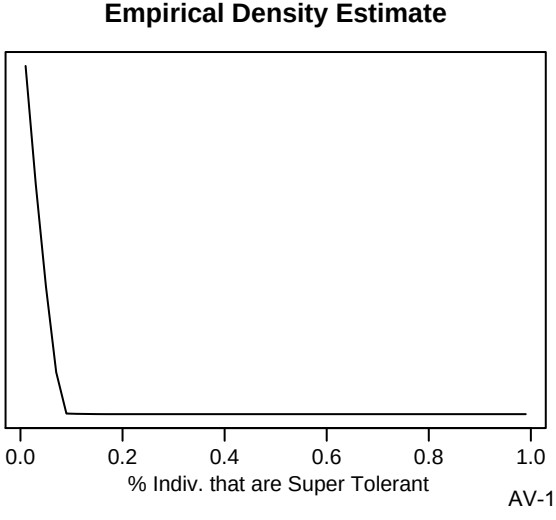
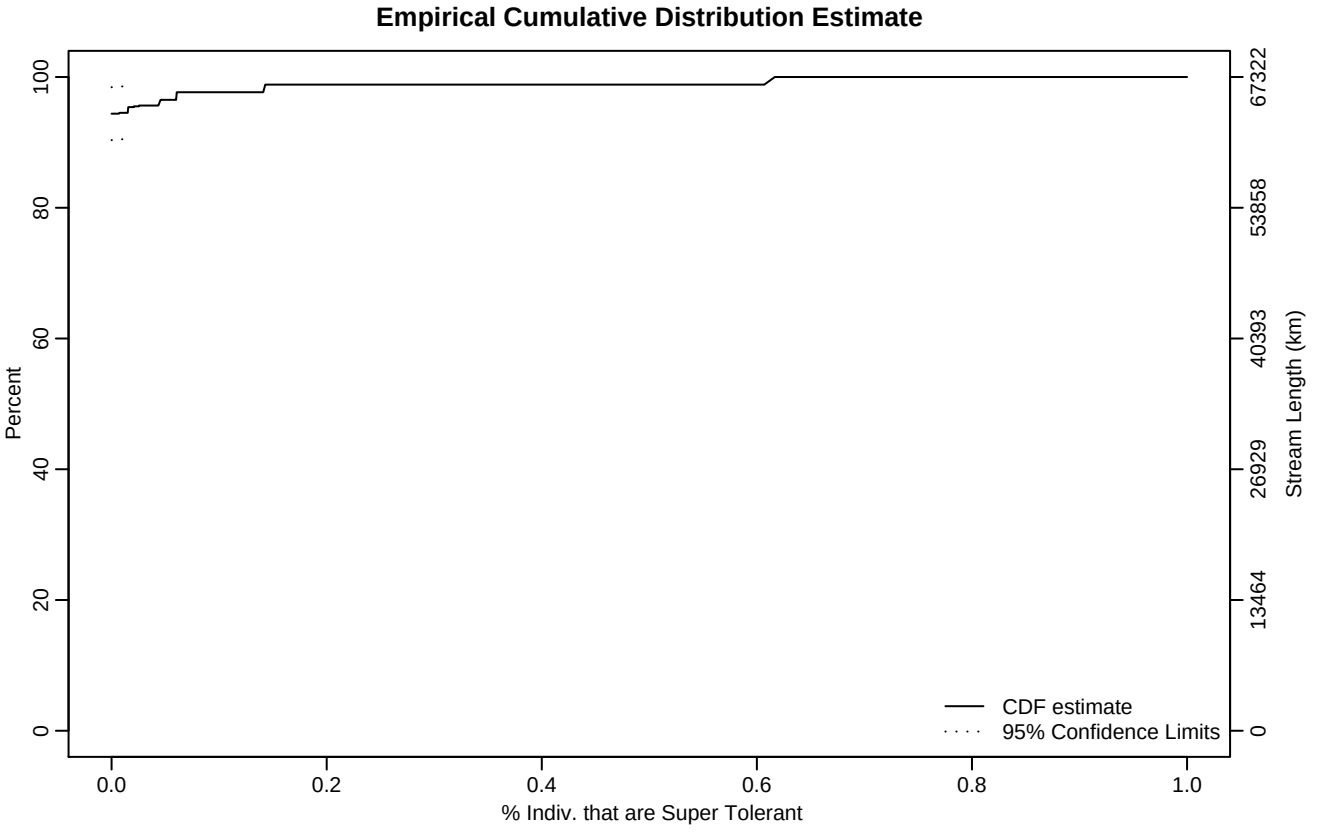


Figure VERT−98 Indicator: SUP_TOL_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0.02	0	0.61
Mean	0.01	0	0.02
Std Dev	0.04	0.01	0.08

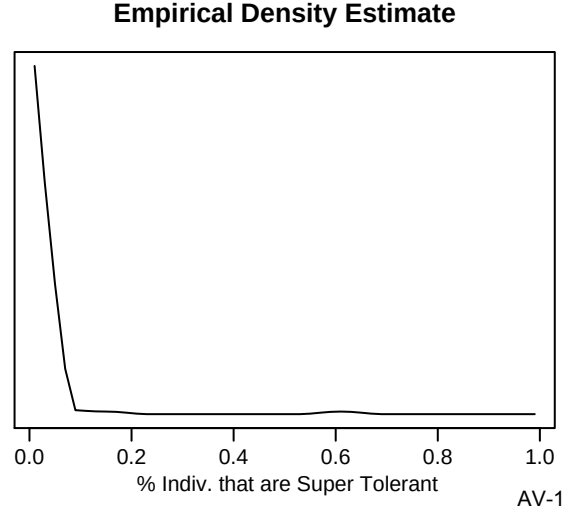
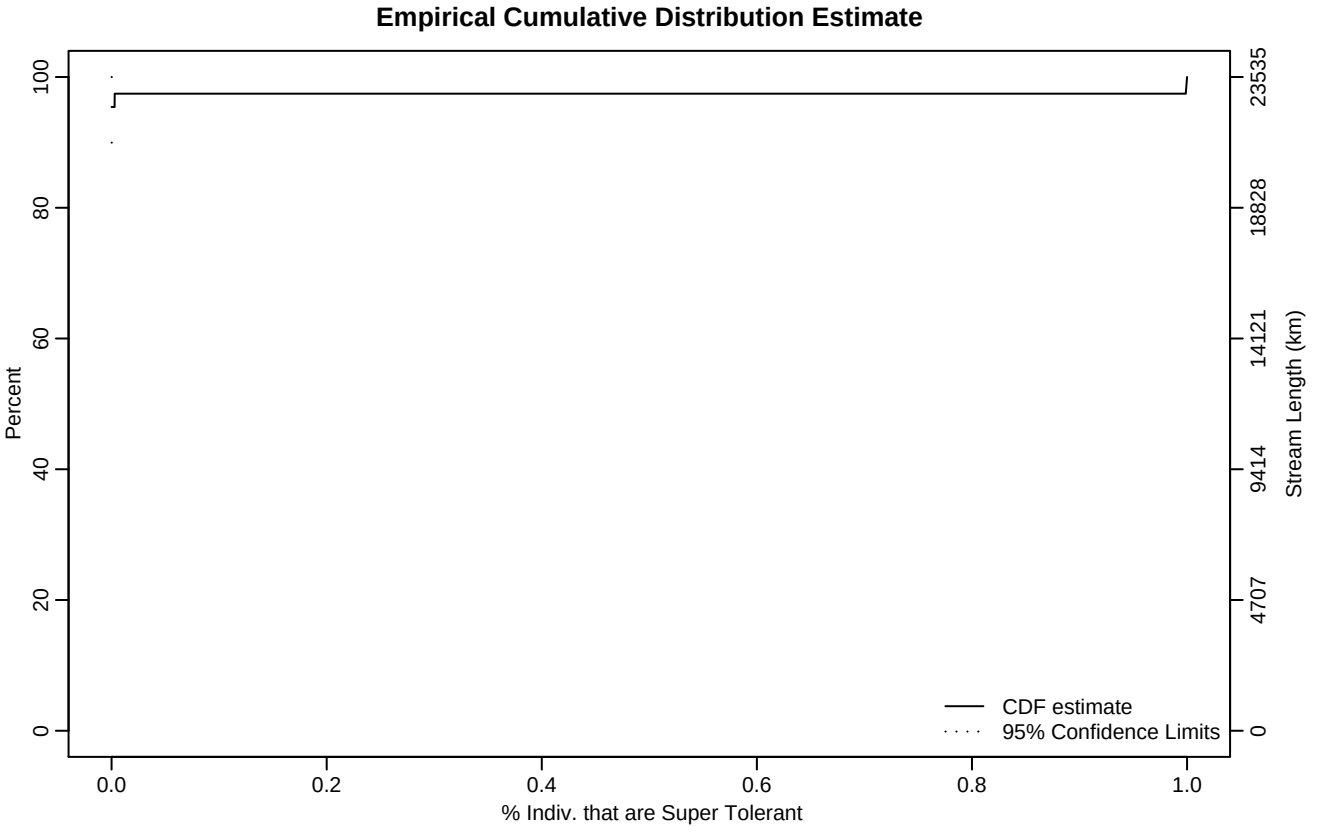


Figure VERT−99 Indicator: SUP_TOL_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	
Mean	0.03	−0.02	0.07
Std Dev	0.14	0.03	0.24

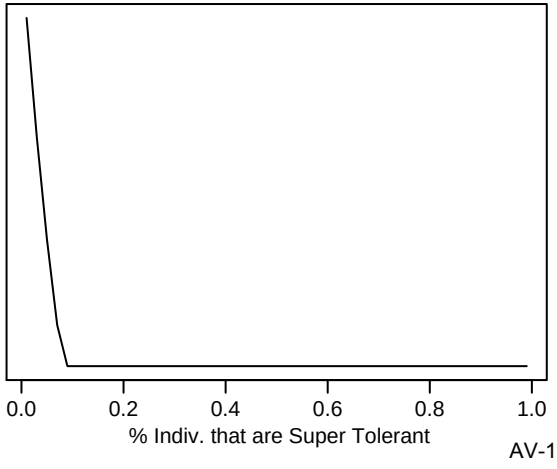
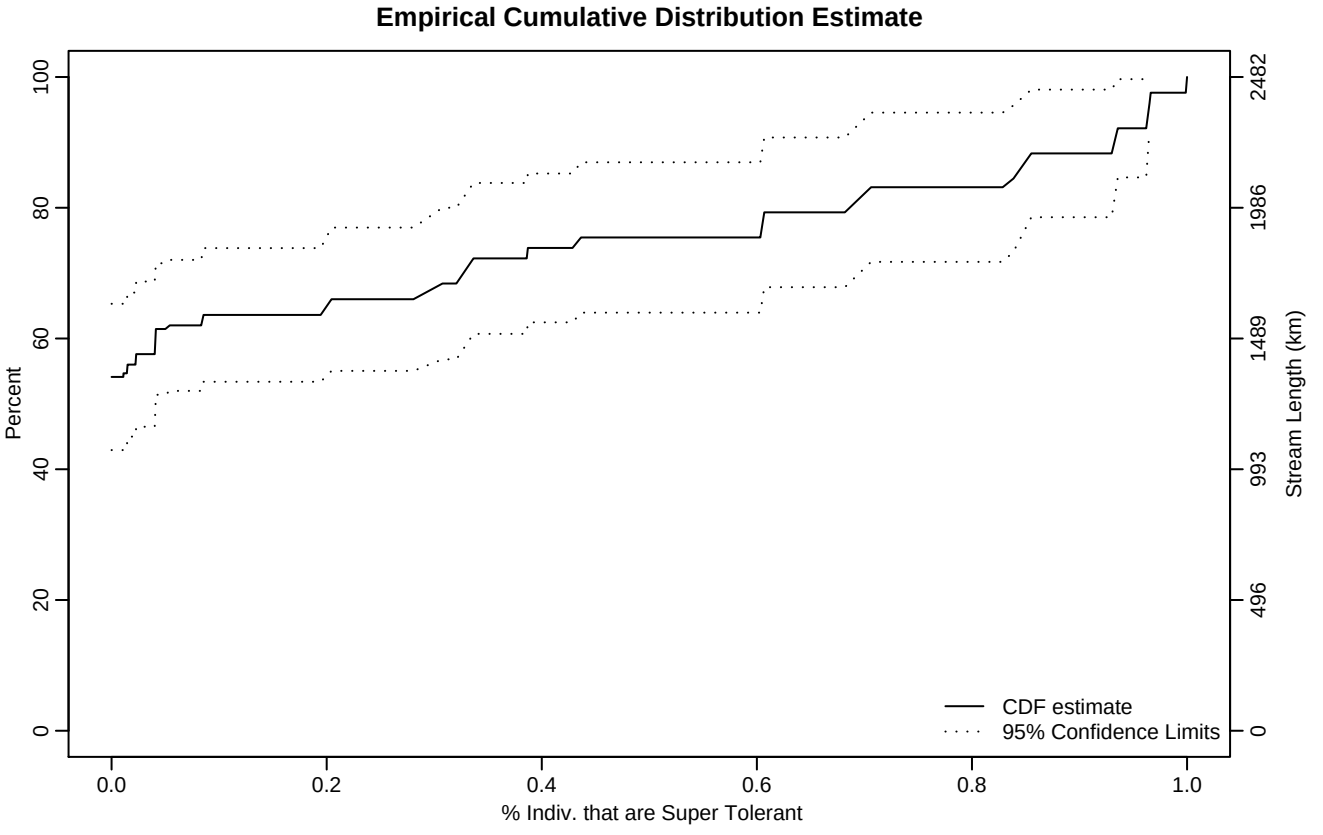


Figure VERT−100 Indicator: SUP_TOL_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.04
75Pct	0.43	0.09	0.85
90Pct	0.93	0.69	1
95Pct	0.96	0.85	1
Mean	0.25	0.16	0.34
Std Dev	0.33	0.27	0.39

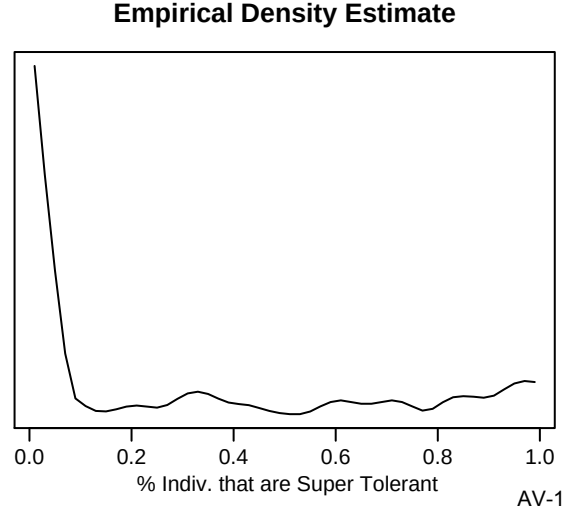
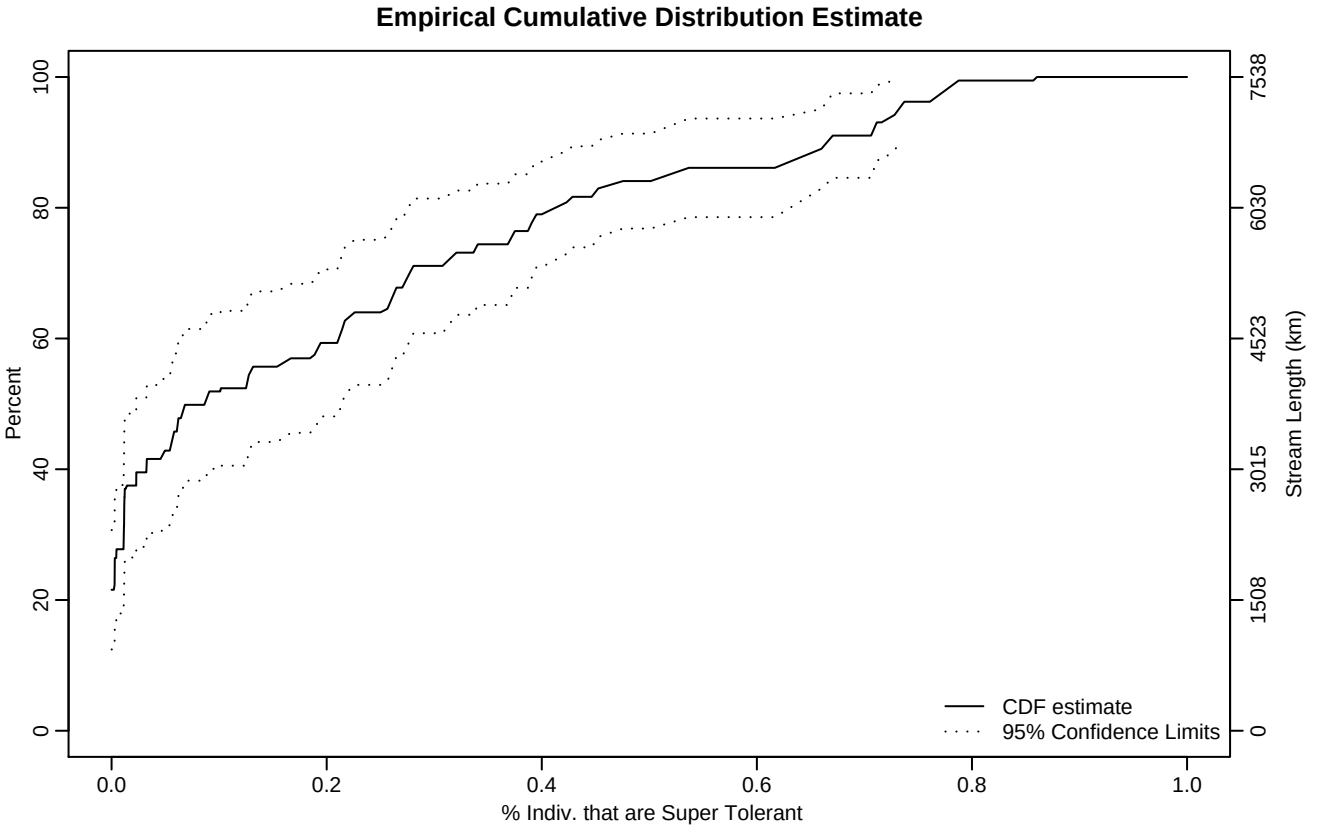


Figure VERT−101 Indicator: SUP_TOL_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.09	0.02	0.21
75Pct	0.37	0.26	0.51
90Pct	0.67	0.47	0.74
95Pct	0.73	0.66	0.86
Mean	0.21	0.16	0.27
Std Dev	0.23	0.21	0.26

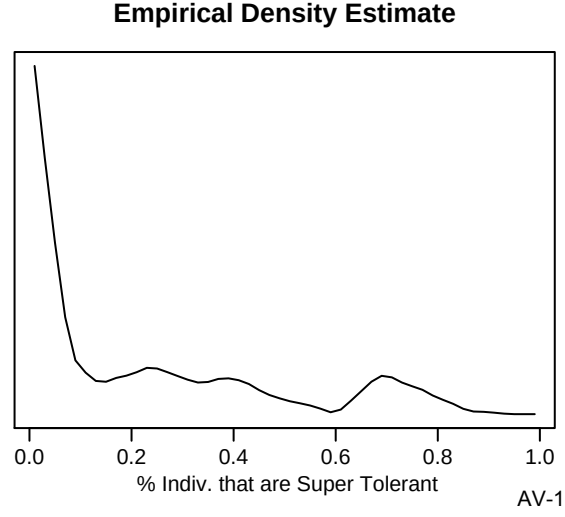
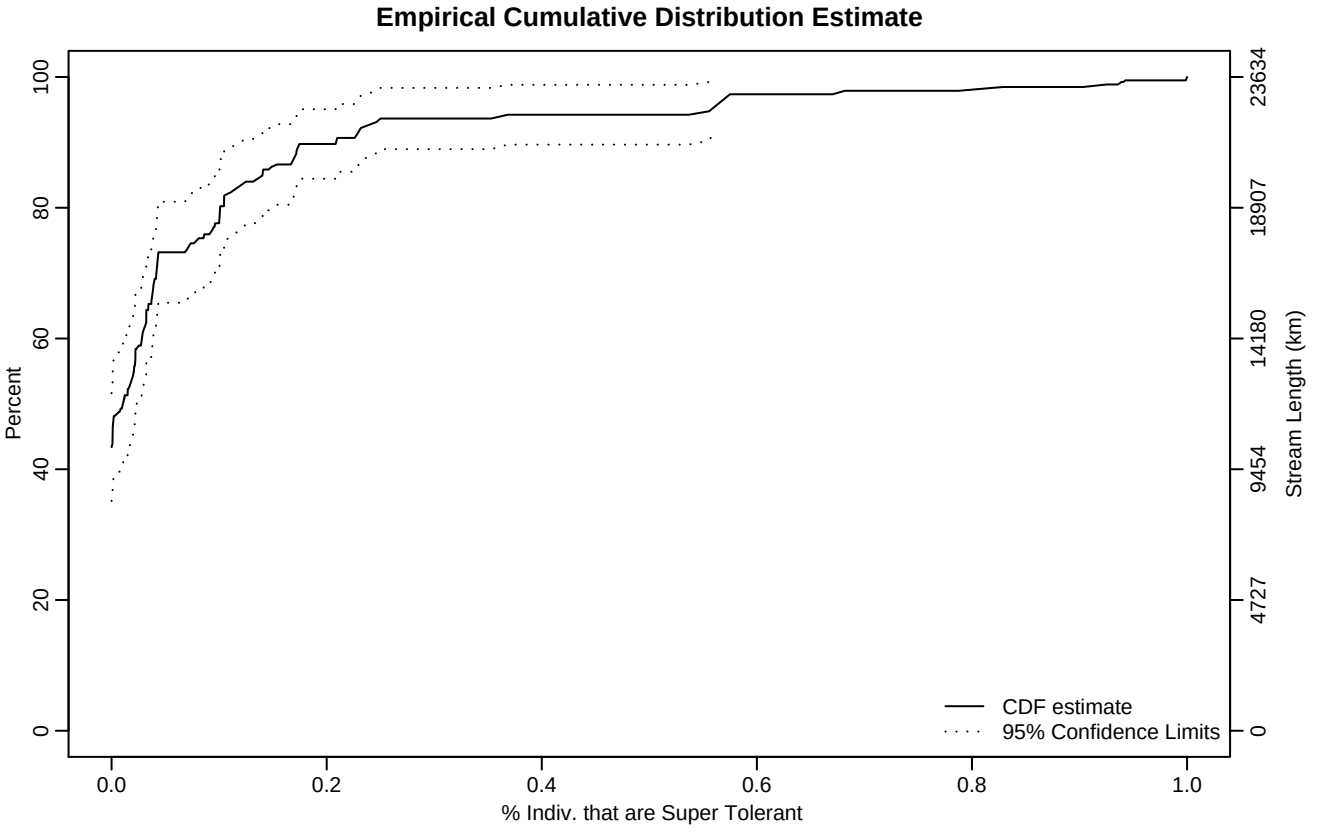


Figure VERT−102 Indicator: SUP_TOL_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.03
75Pct	0.08	0.04	0.11
90Pct	0.21	0.14	0.56
95Pct	0.56	0.21	1
Mean	0.08	0.05	0.11
Std Dev	0.16	0.12	0.21

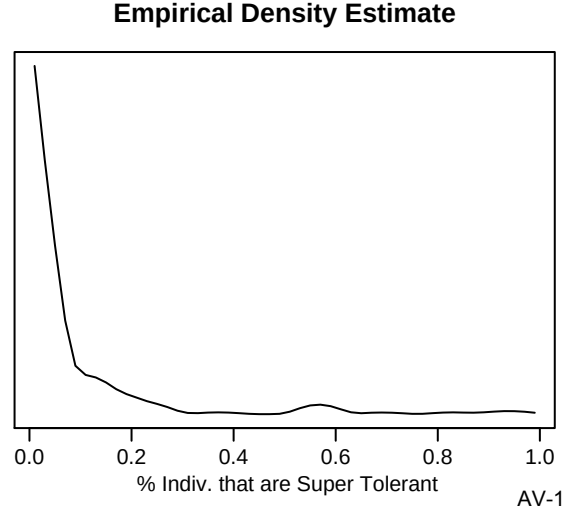
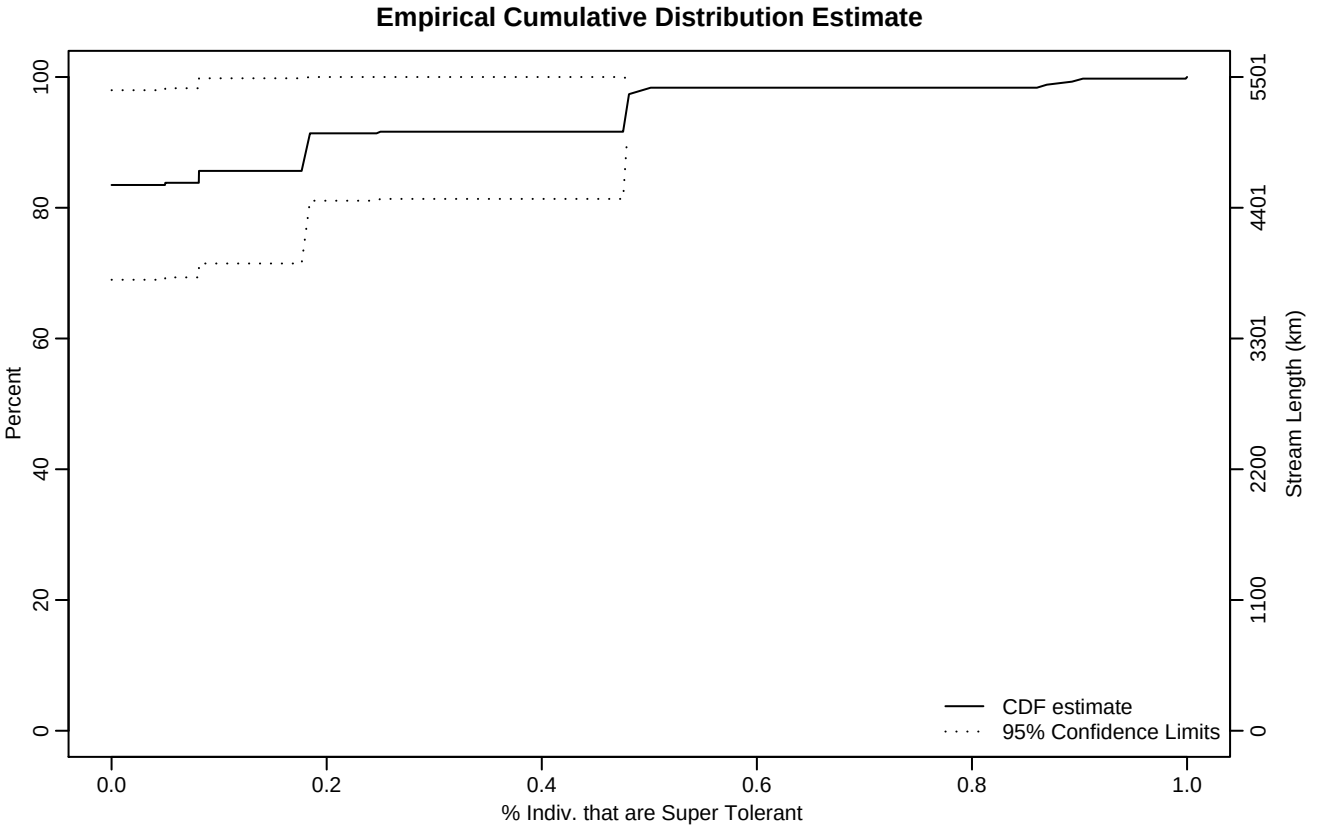


Figure VERT−103 Indicator: SUP_TOL_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.18
90Pct	0.18	0	1
95Pct	0.48	0.08	1
Mean	0.06	0.01	0.11
Std Dev	0.17	0.11	0.23

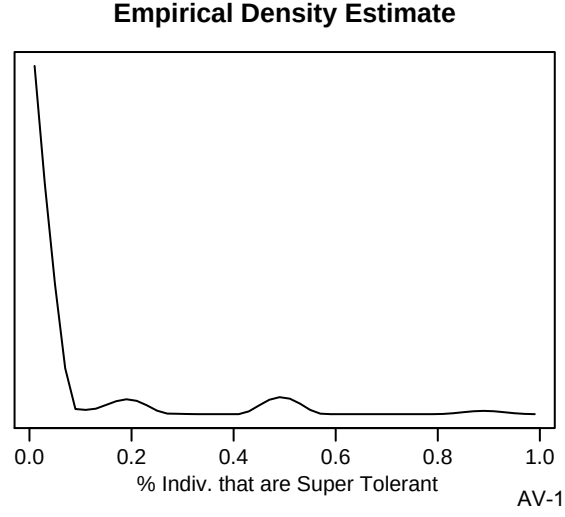
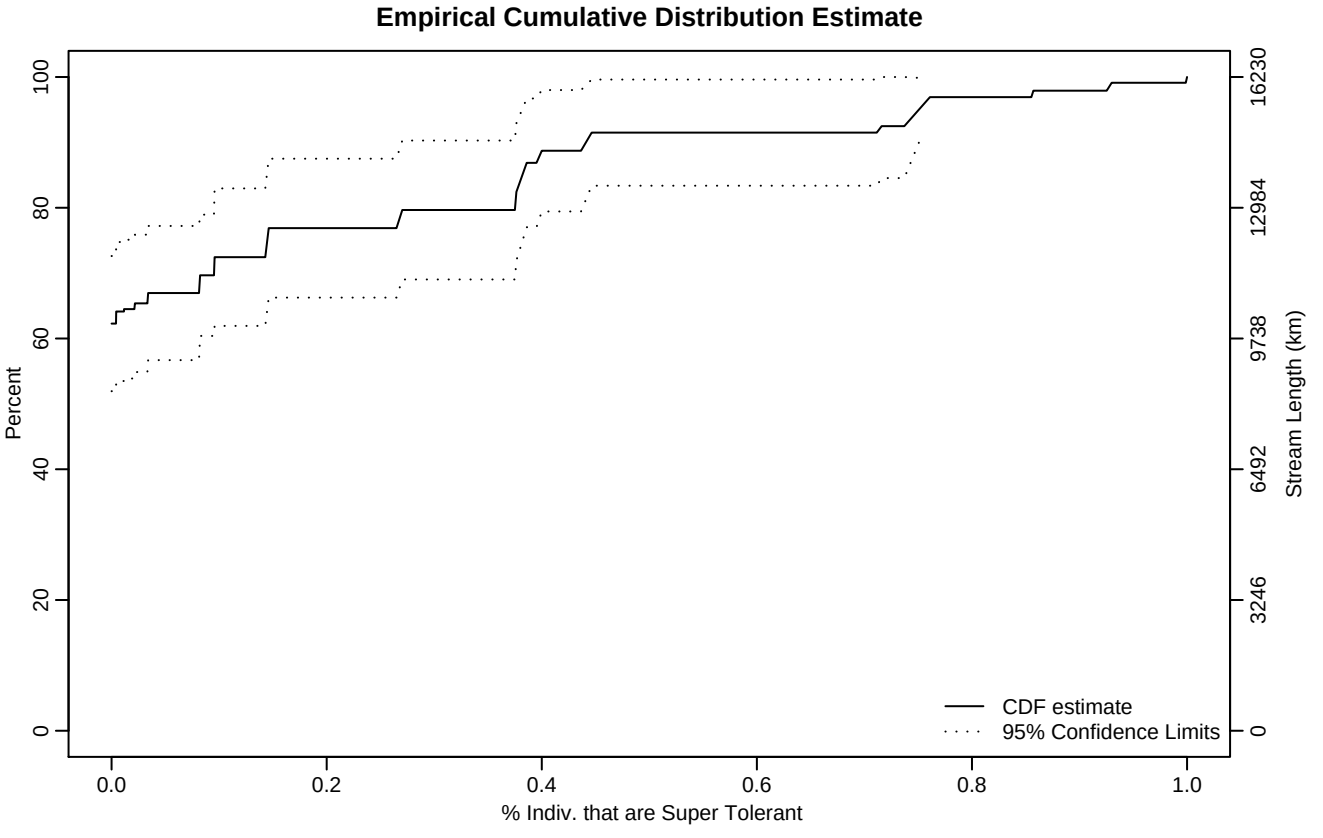


Figure VERT−104 Indicator: SUP_TOL_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.14	0	0.39
90Pct	0.44	0.38	1
95Pct	0.75	0.40	1
Mean	0.14	0.07	0.20
Std Dev	0.21	0.15	0.28

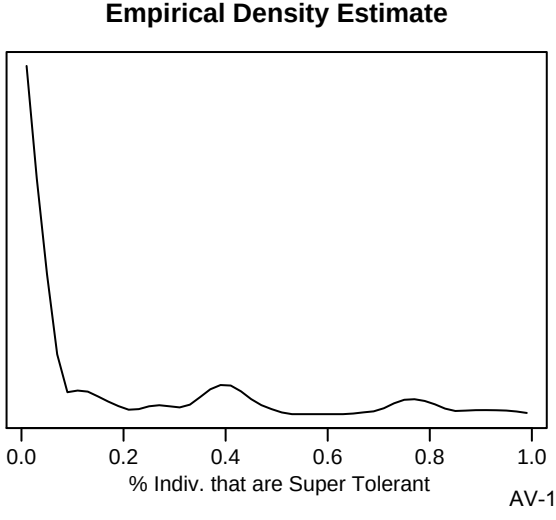
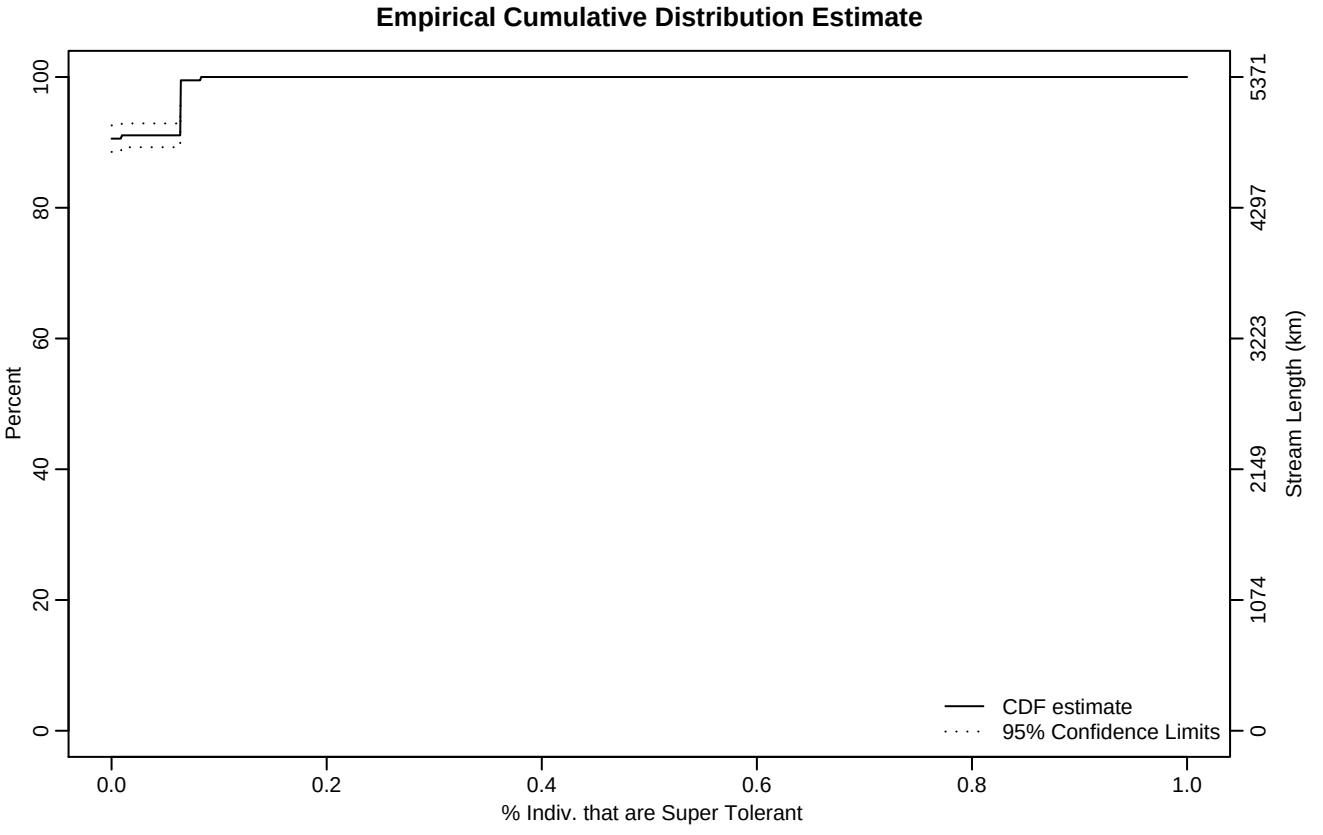


Figure VERT−105 Indicator: SUP_TOL_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	
95Pct	0.06	0	
Mean	0.01	0	0.01
Std Dev	0	0	0.01

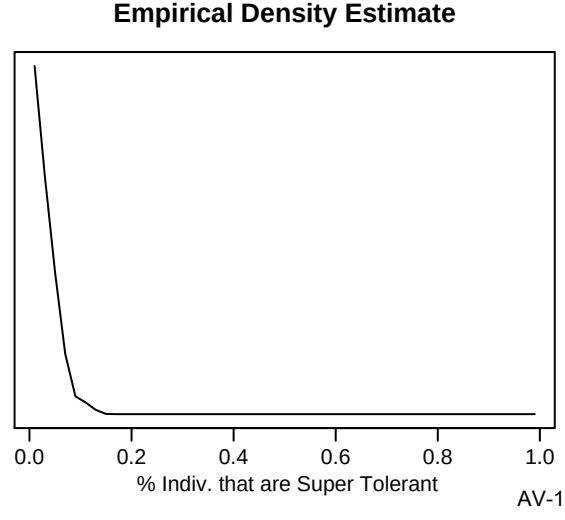
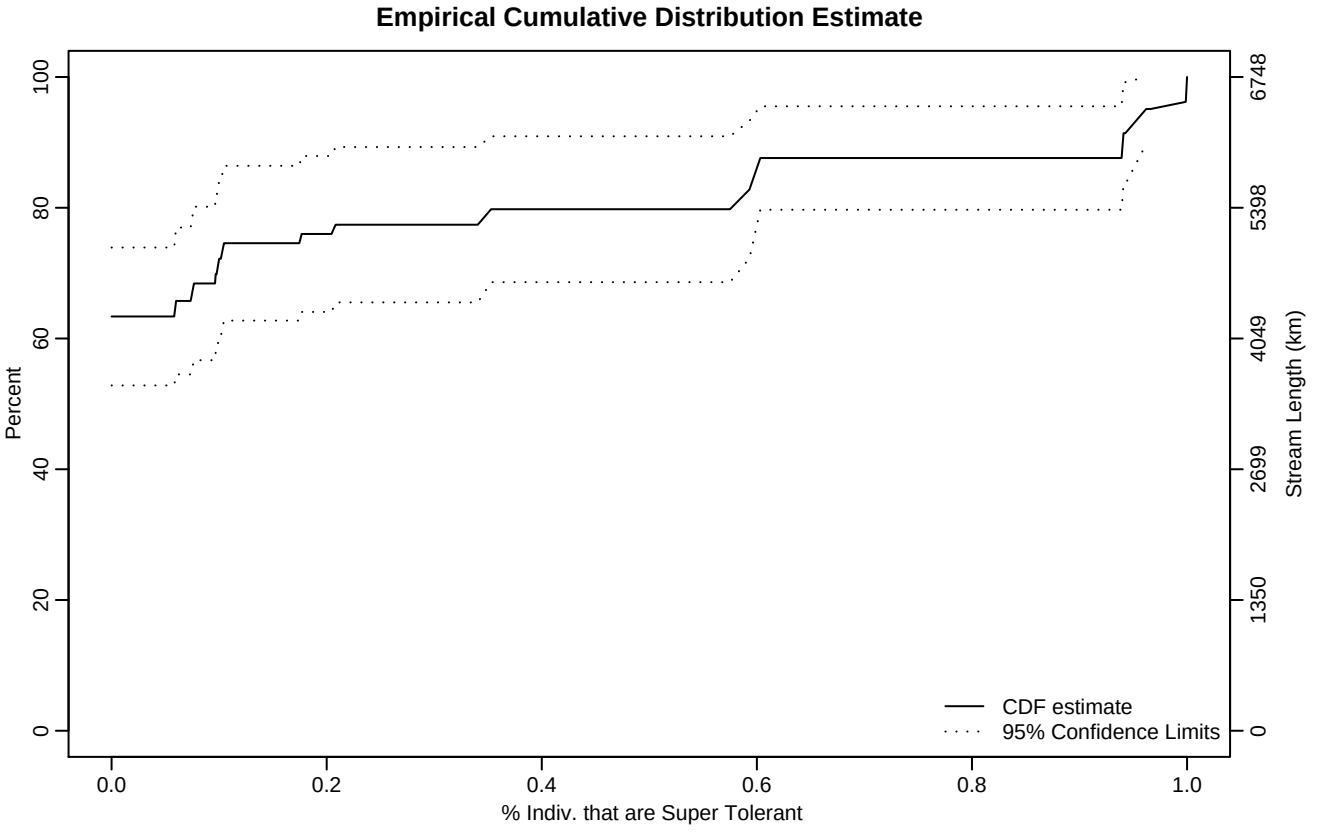


Figure VERT−106 Indicator: SUP_TOL_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.18	0	0.60
90Pct	0.94	0.59	1
95Pct	0.96	0.60	1
Mean	0.19	0.11	0.28
Std Dev	0.29	0.23	0.36

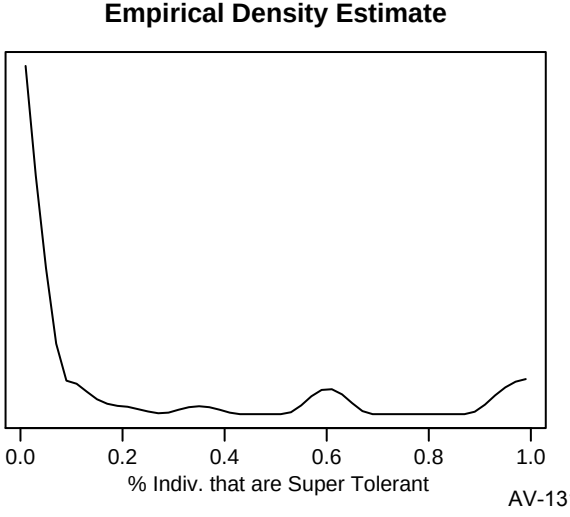
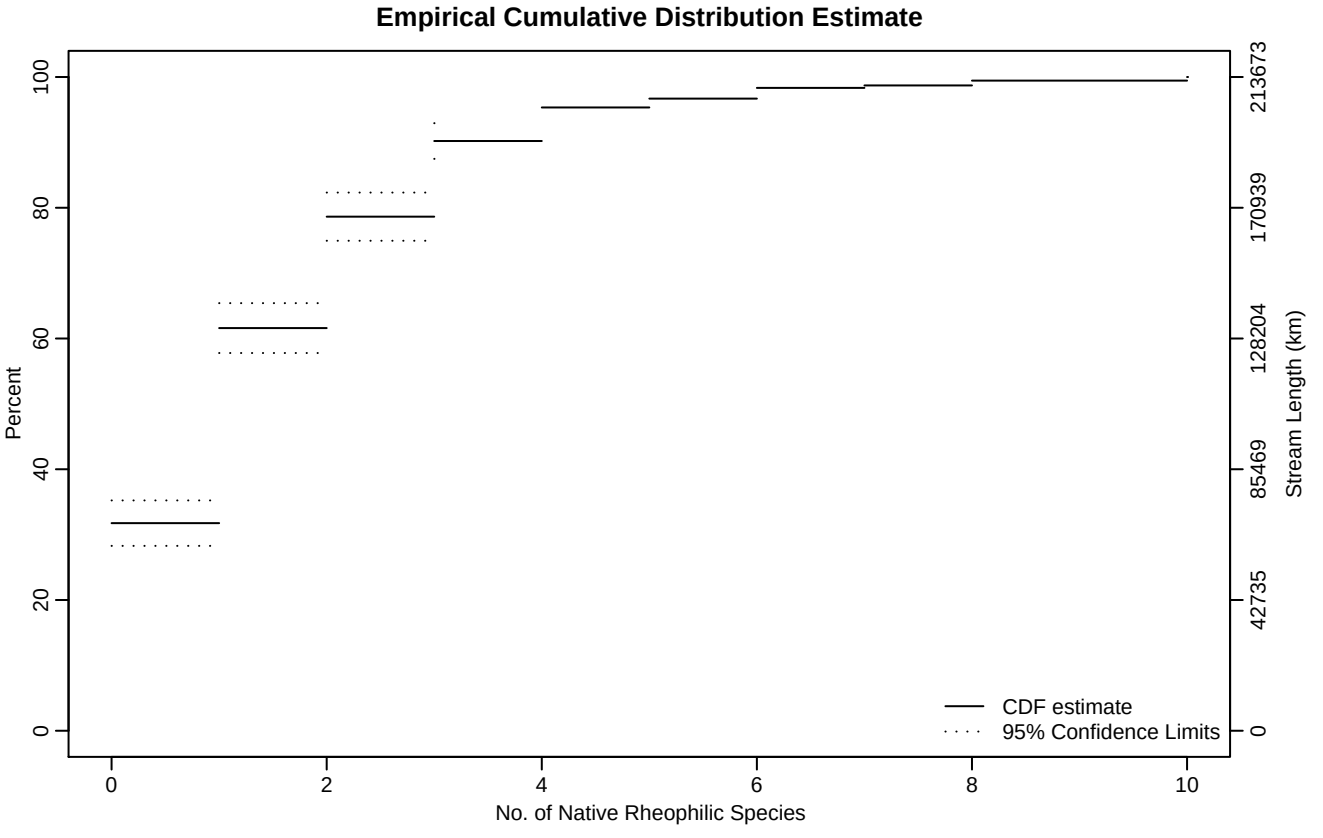


Figure VERT−107 Indicator: RHEO_NAT_RICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.61	0.49	0.73
75Pct	1.79	1.56	2.02
90Pct	2.98	2.66	3.69
95Pct	3.93	3.40	5.63
Mean	1.50	1.36	1.63
Std Dev	1.29	1.16	1.43

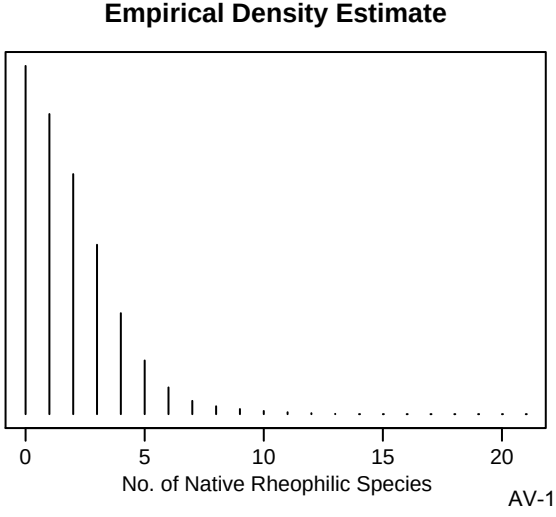
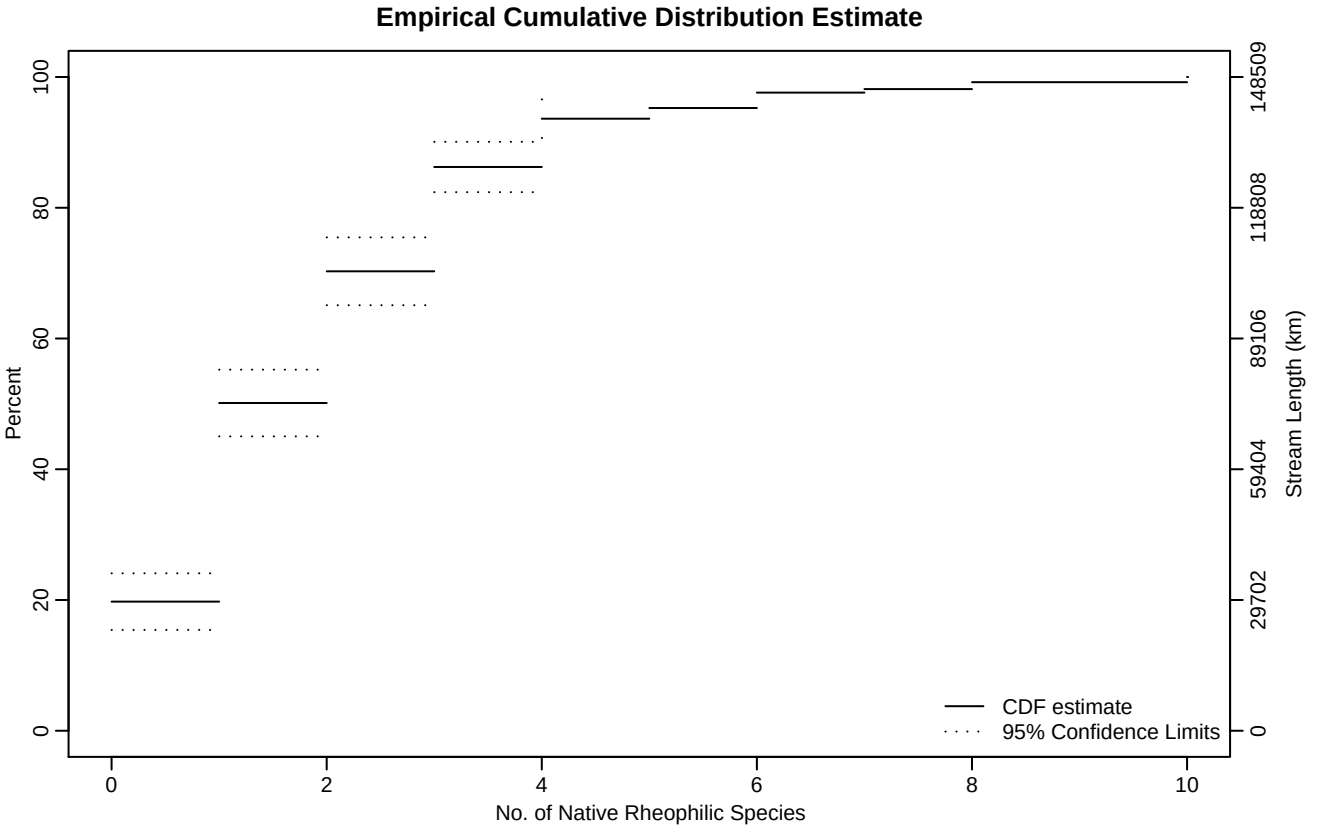


Figure VERT−108 Indicator: RHEO_NAT_RICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.17	0.02	0.32
50Pct	1	0.84	1.22
75Pct	2.30	1.98	2.62
90Pct	3.51	2.99	4.14
95Pct	4.84	3.79	6.63
Mean	1.91	1.72	2.09
Std Dev	1.49	1.31	1.67

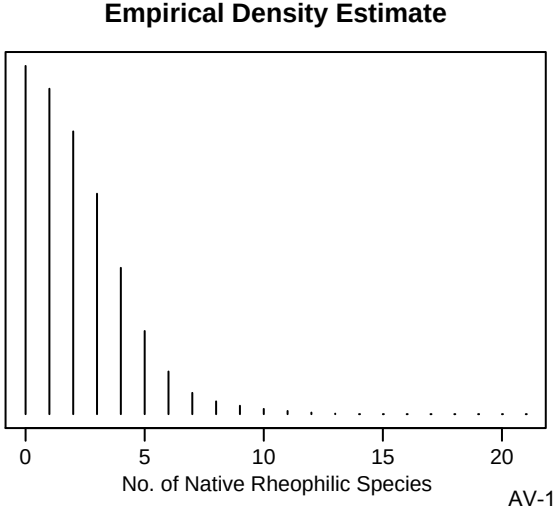
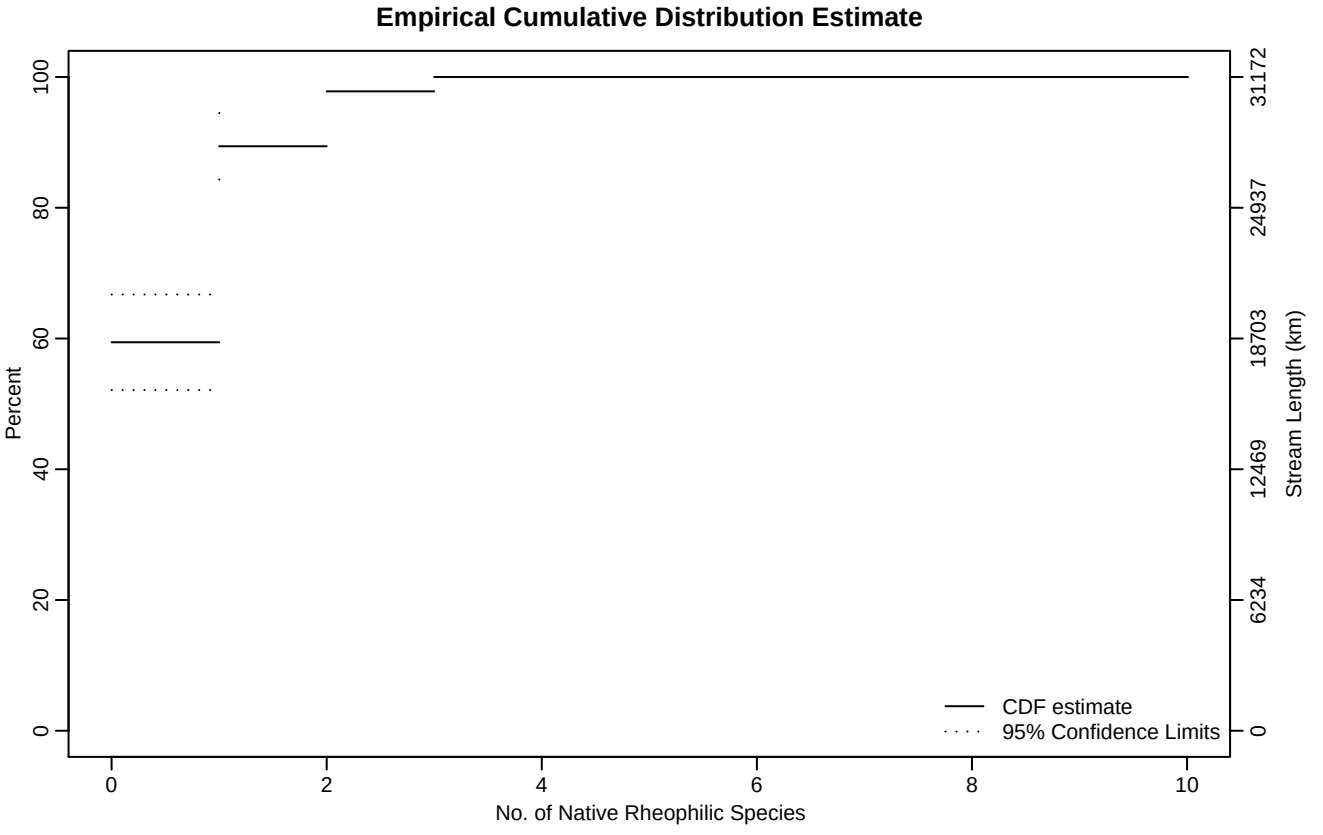


Figure VERT−109 Indicator: RHEO_NAT_RICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.52	0.26	0.77
90Pct	1.07	0.85	1.67
95Pct	1.67	1.07	
Mean	0.53	0.41	0.66
Std Dev	0.67	0.58	0.75

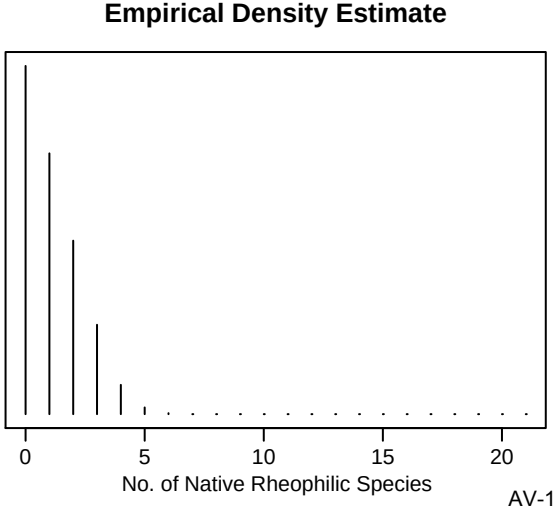
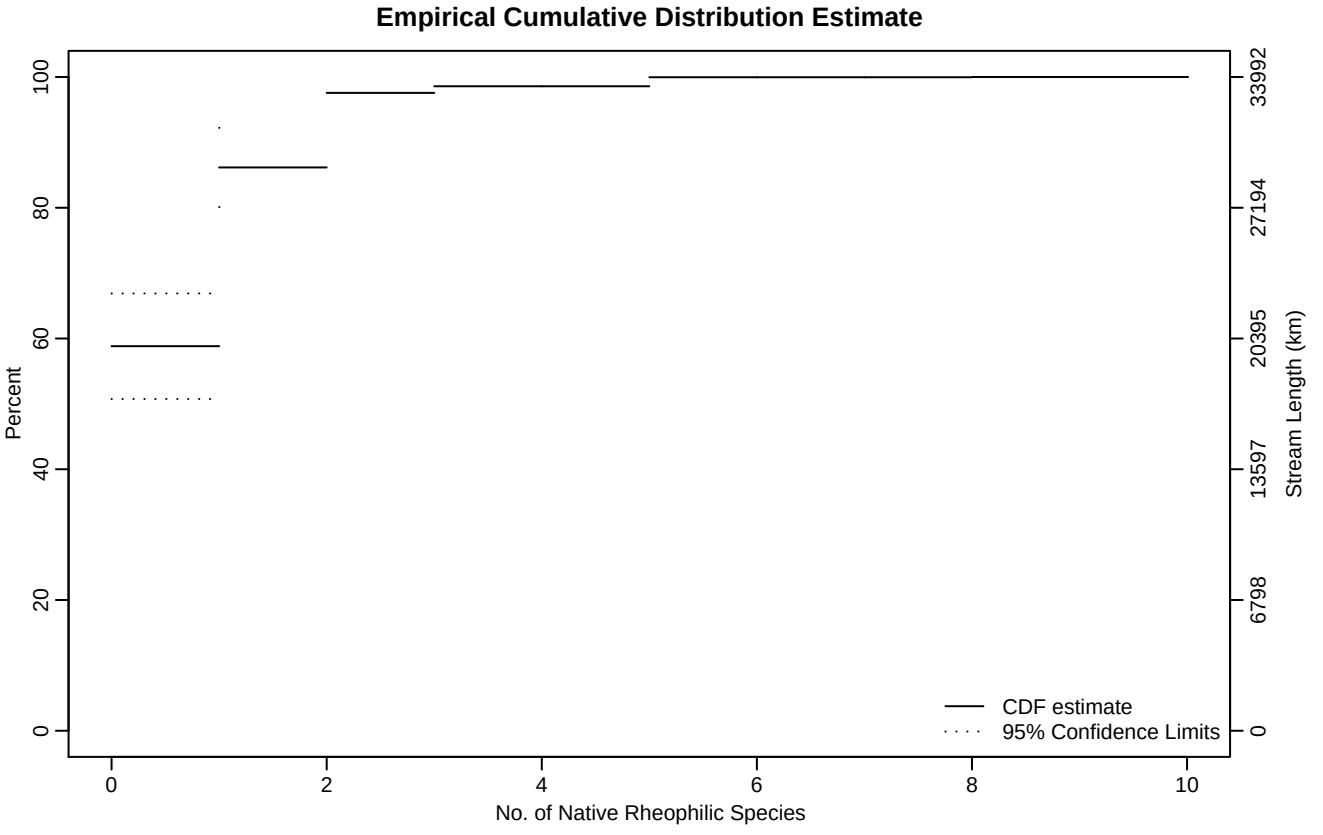


Figure VERT−110 Indicator: RHEO_NAT_RICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.59	0.29	0.90
90Pct	1.34	0.90	1.91
95Pct	1.77	1.19	
Mean	0.60	0.48	0.73
Std Dev	0.65	0.56	0.74

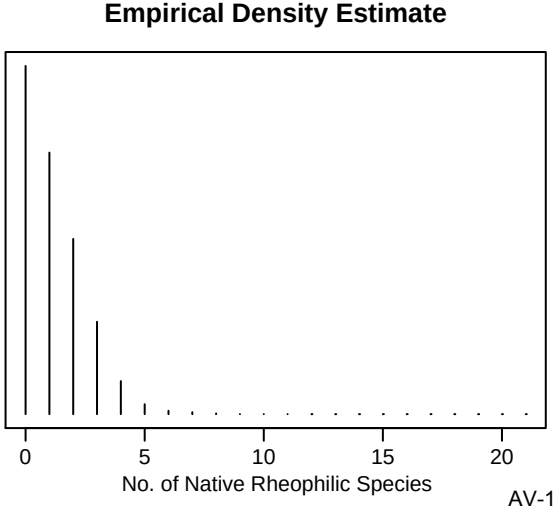
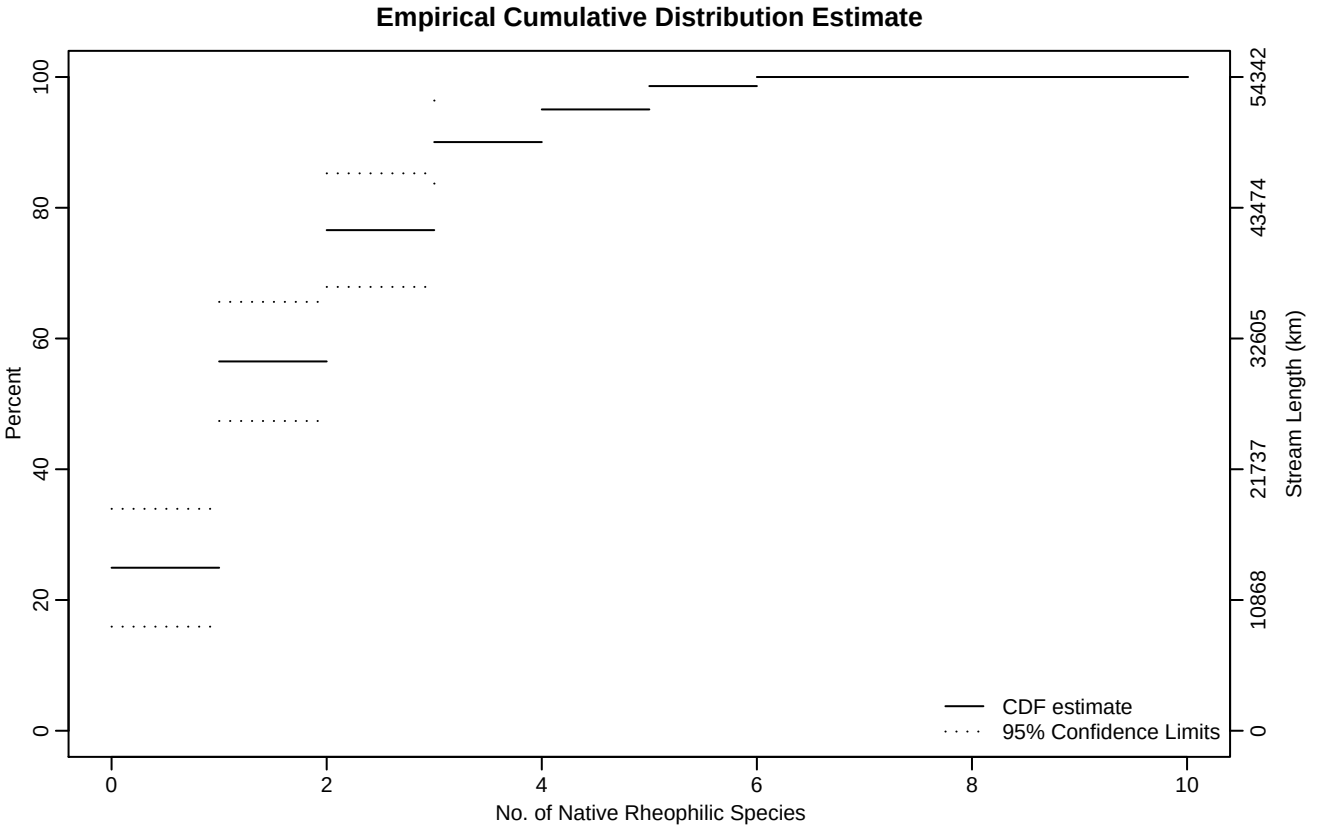


Figure VERT−111 Indicator: RHEO_NAT_RICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.29
50Pct	0.79	0.52	1.11
75Pct	1.92	1.48	2.54
90Pct	3	2.38	4.93
95Pct	3.99	2.90	
Mean	1.58	1.30	1.87
Std Dev	1.33	1.15	1.51

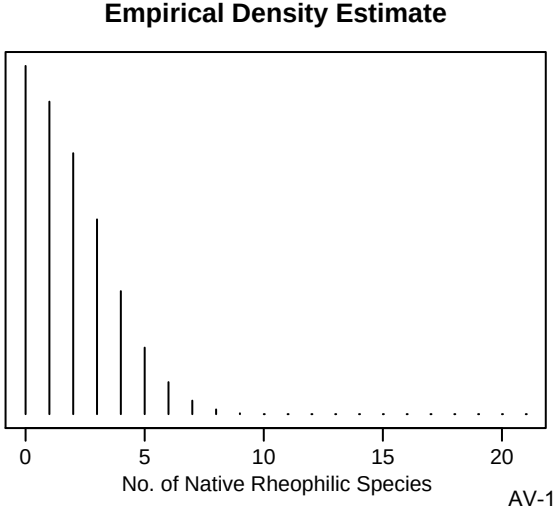
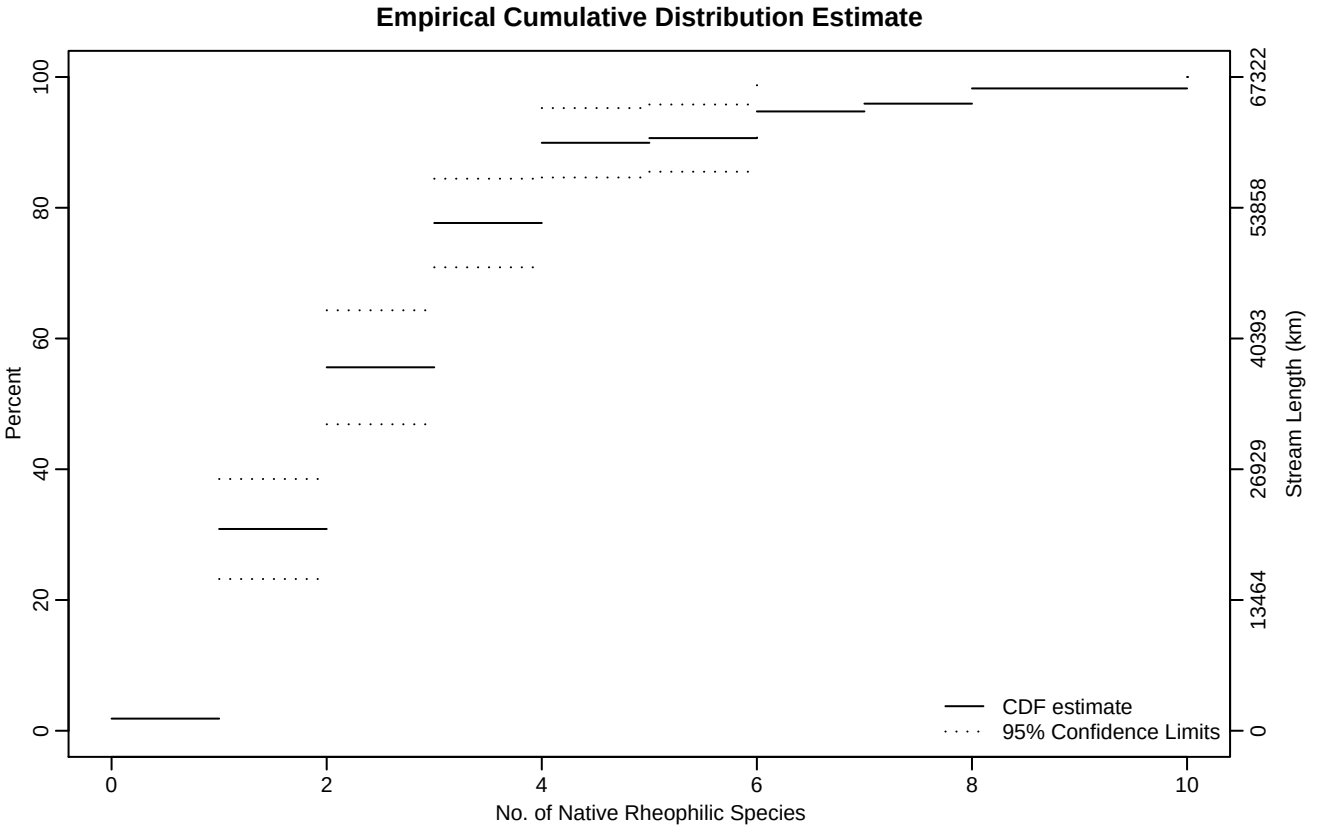


Figure VERT−112 Indicator: RHEO_NAT_RICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.11	0.01	0.21
10Pct	0.28	0.18	0.38
25Pct	0.80	0.68	0.92
50Pct	1.77	1.46	2.10
75Pct	2.88	2.48	3.50
90Pct	4.09	3.57	6.50
95Pct	6.22	5.08	8.90
Mean	2.66	2.34	2.99
Std Dev	1.73	1.41	2.04

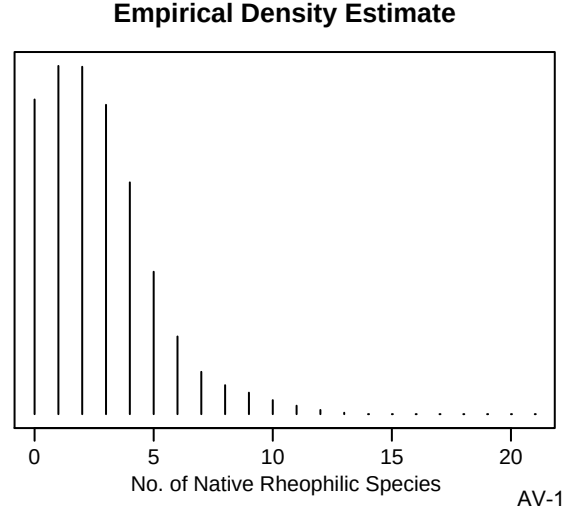
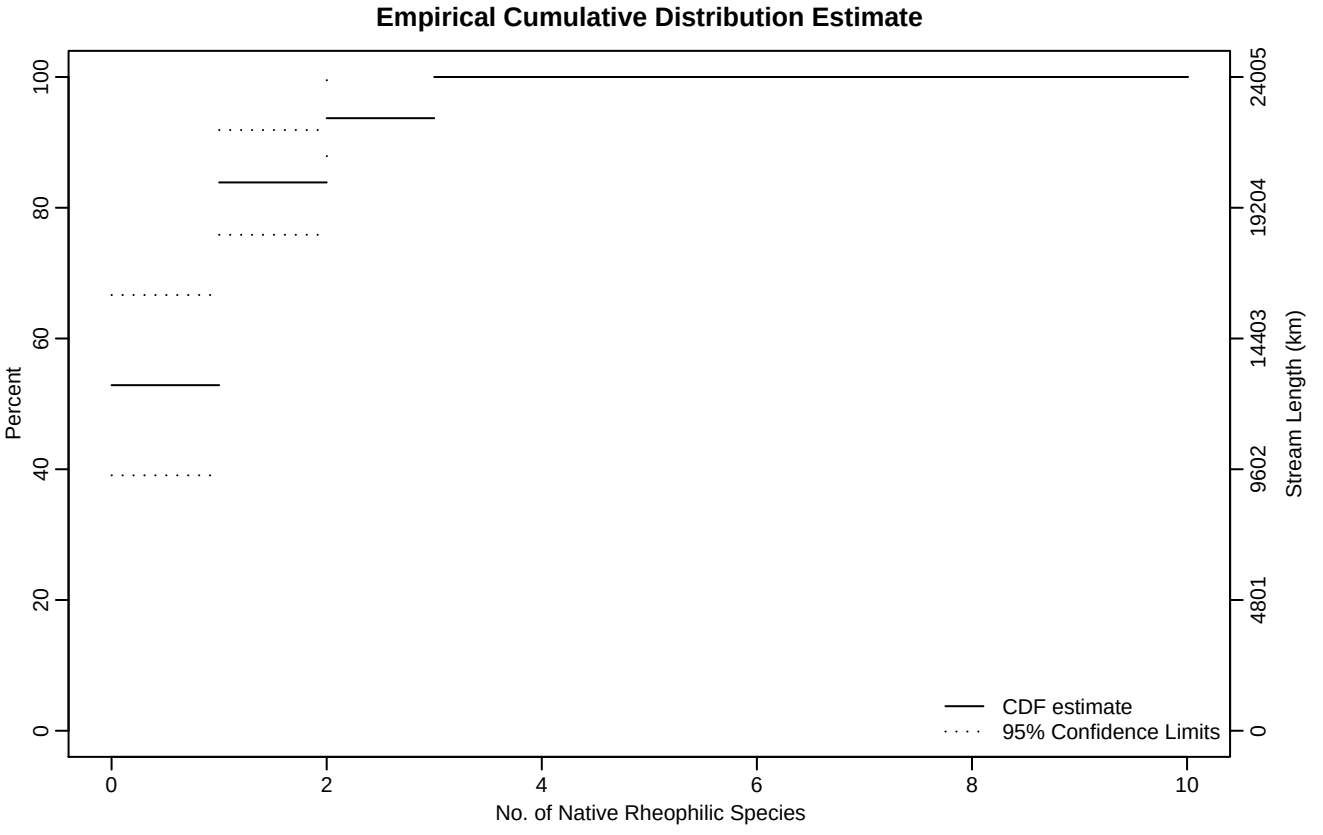


Figure VERT−113 Indicator: RHEO_NAT_RICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.36
75Pct	0.71	0.29	1.43
90Pct	1.62	0.93	2.71
95Pct	2.21	1.53	
Mean	0.70	0.48	0.91
Std Dev	0.84	0.68	1

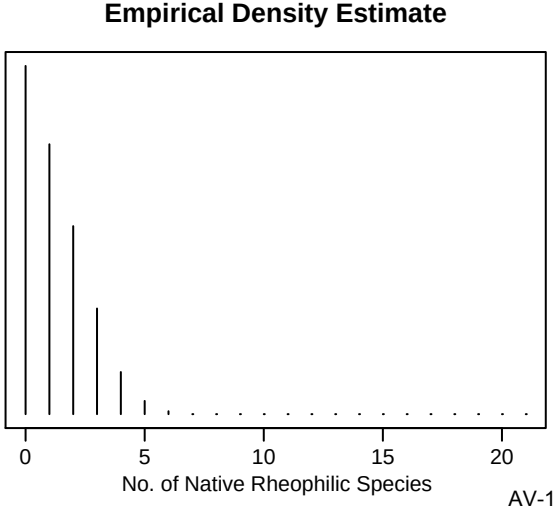
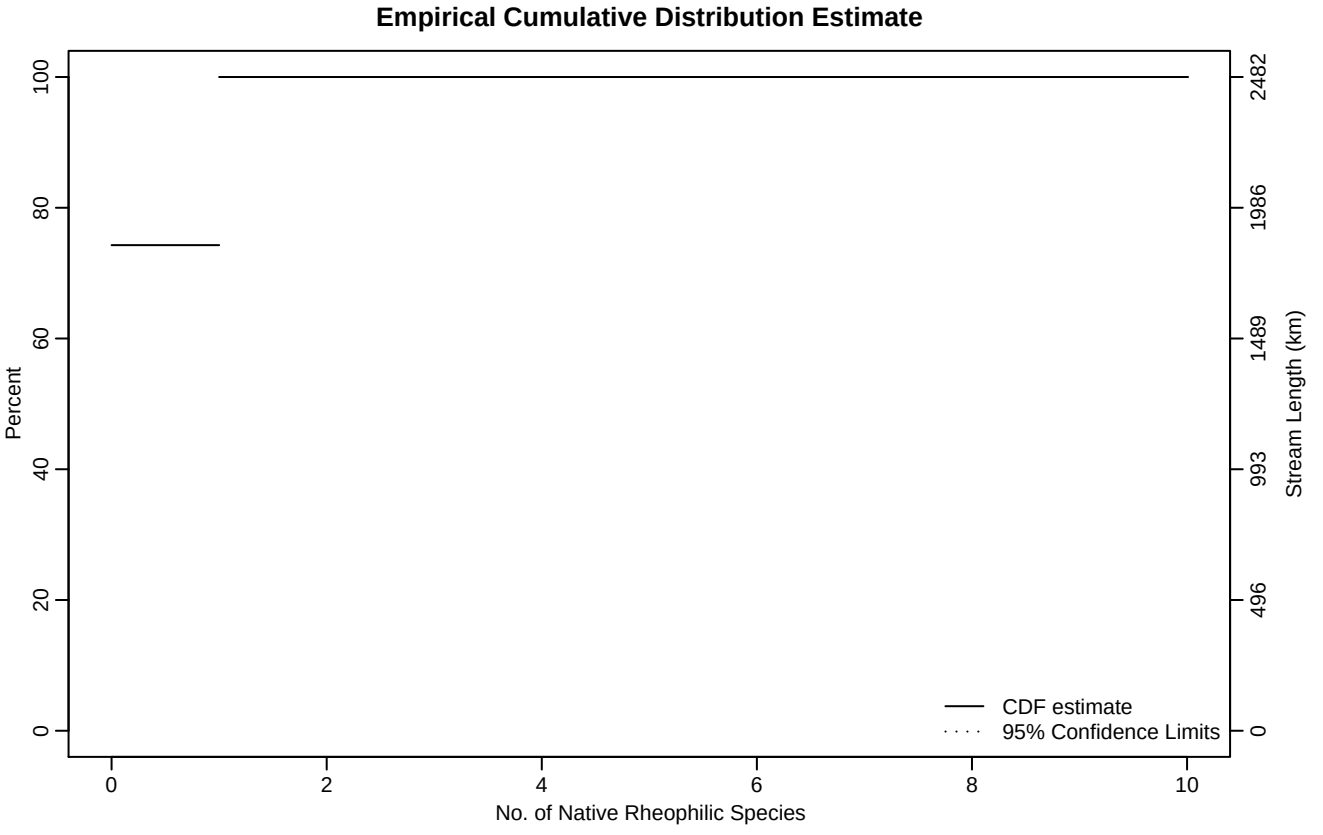


Figure VERT−114 Indicator: RHEO_NAT_RICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.03	0	0.34
90Pct	0.61	0.29	0.93
95Pct	0.81	0.49	1
Mean	0.26	0.18	0.33
Std Dev	0.33	0.24	0.43

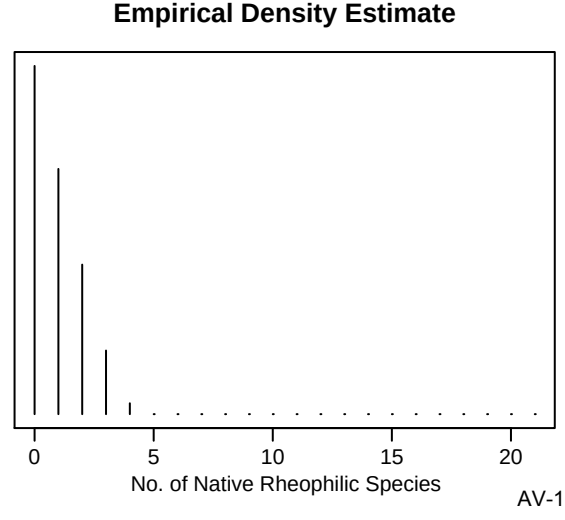
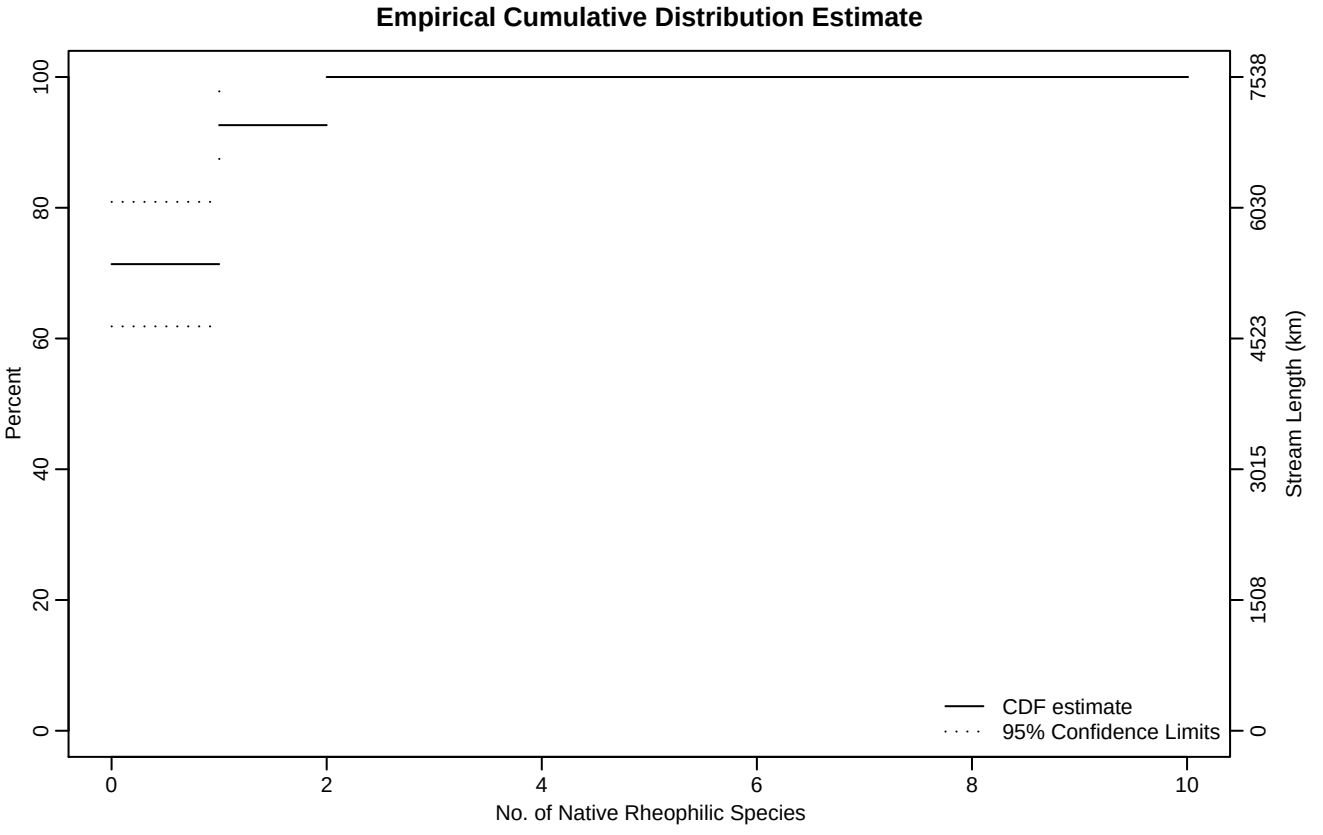


Figure VERT−115 Indicator: RHEO_NAT_RICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.17	0	0.63
90Pct	0.88	0.41	1.98
95Pct	1.32	0.87	2
Mean	0.36	0.23	0.49
Std Dev	0.54	0.45	0.64

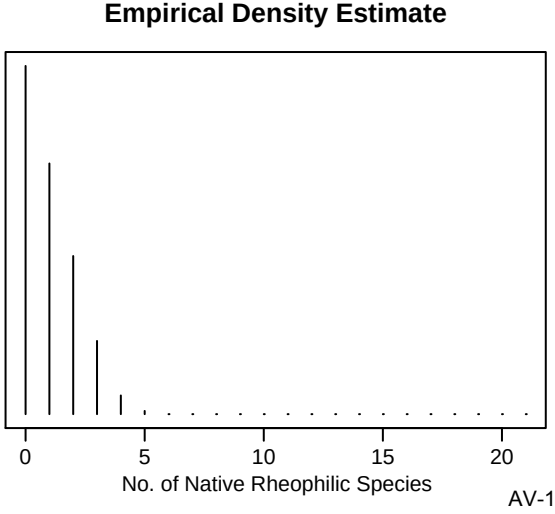
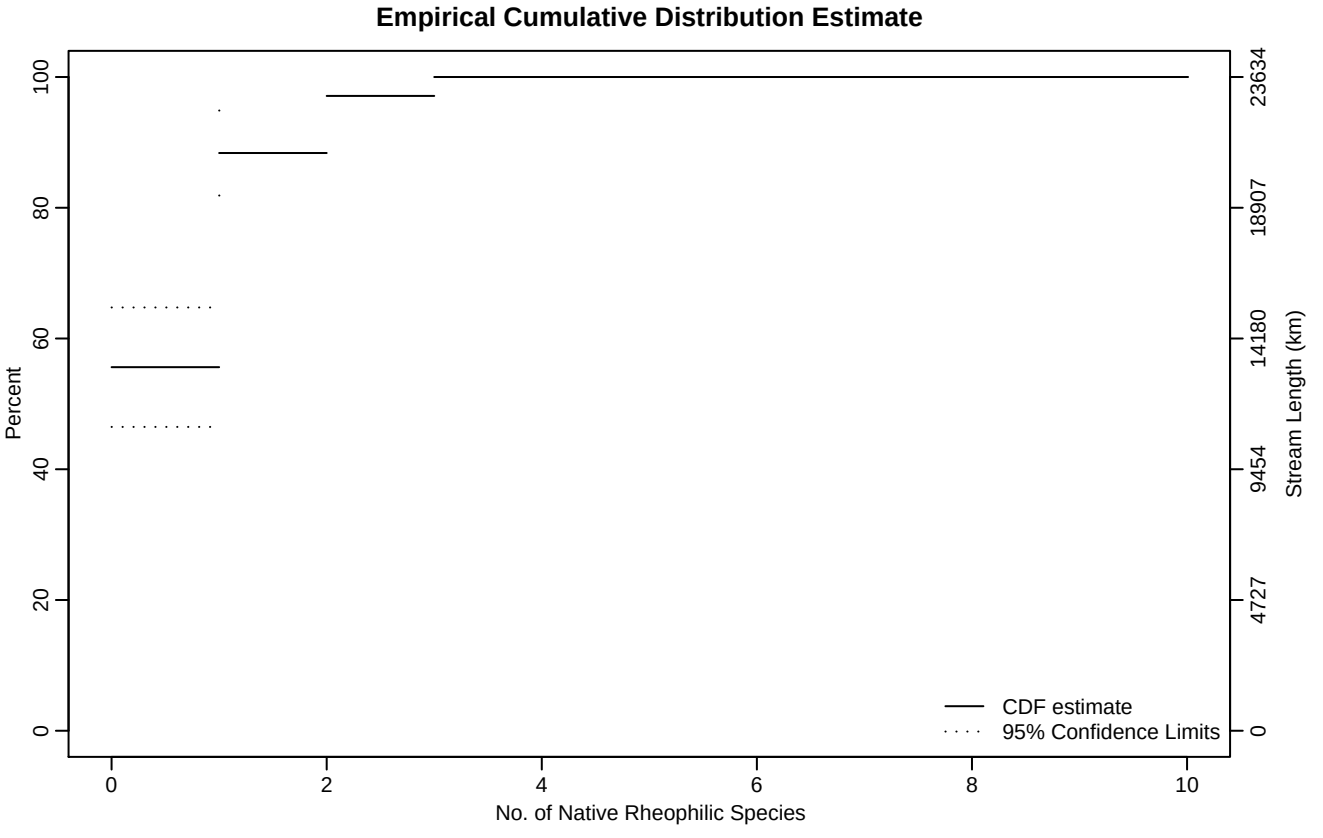


Figure VERT−116 Indicator: RHEO_NAT_RICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.11
75Pct	0.59	0.30	0.88
90Pct	1.19	0.85	1.92
95Pct	1.76	1.03	3
Mean	0.59	0.43	0.75
Std Dev	0.68	0.57	0.79

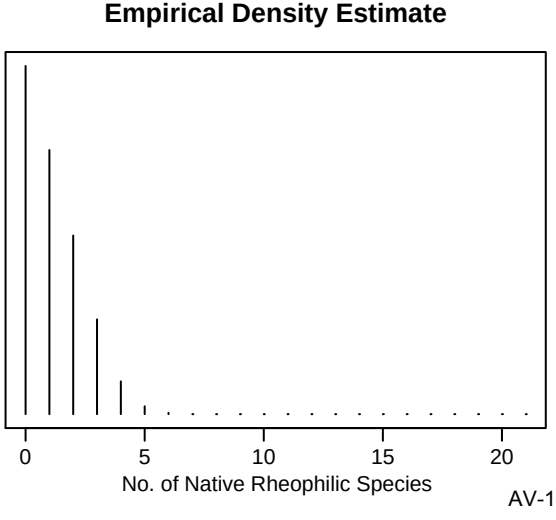
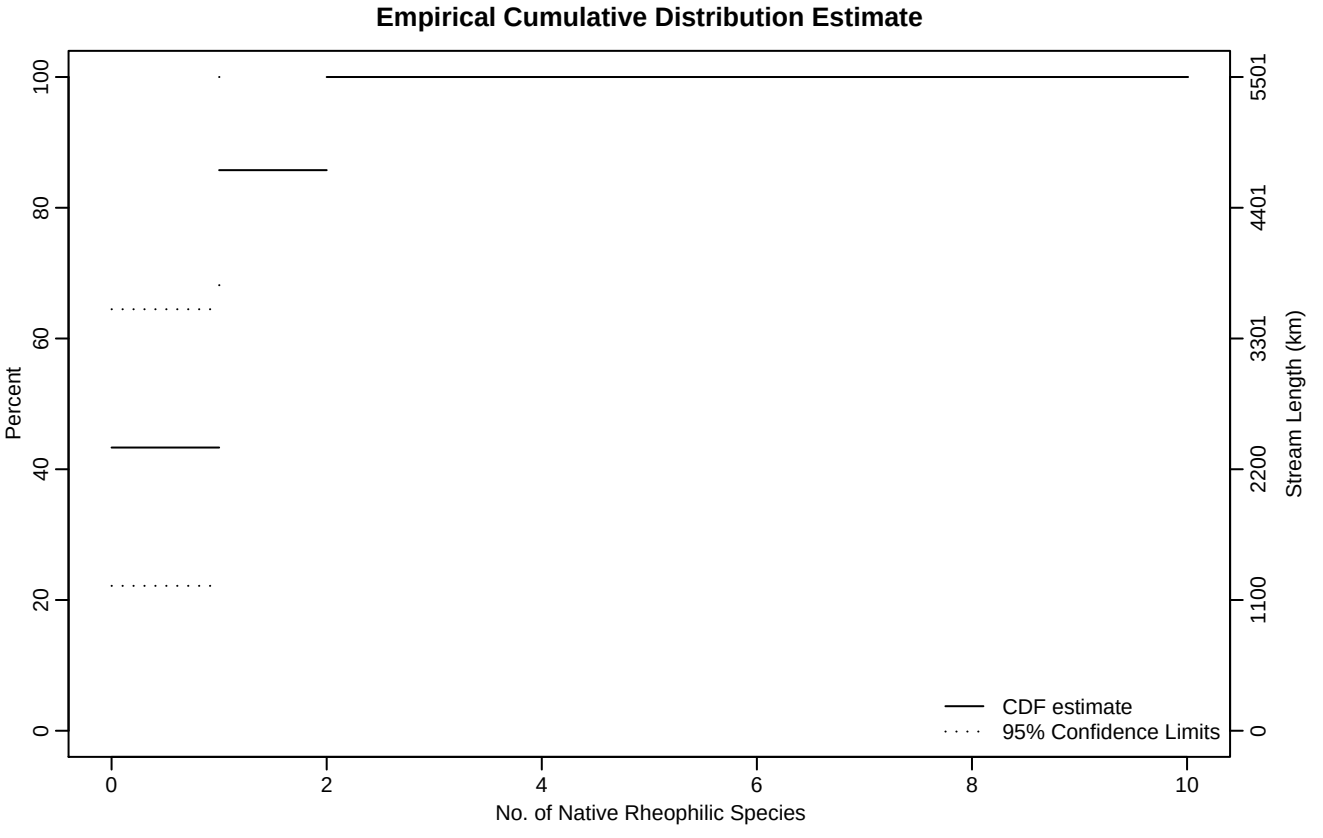


Figure VERT−117 Indicator: RHEO_NAT_RICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.11
50Pct	0.16	0	0.65
75Pct	0.75	0.27	1.67
90Pct	1.30	0.68	2
95Pct	1.65	0.80	2
Mean	0.71	0.35	1.07
Std Dev	0.70	0.54	0.86

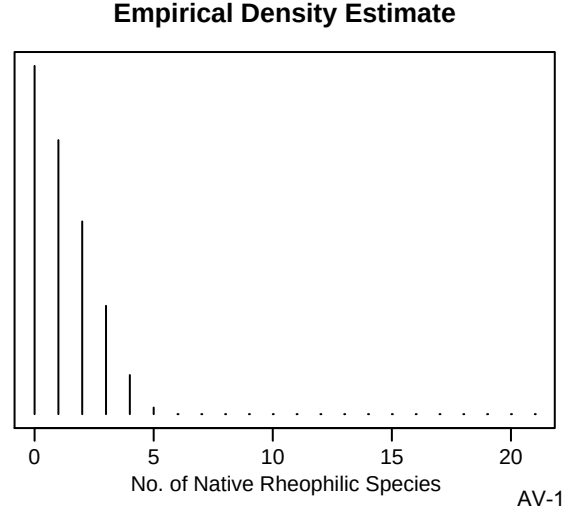
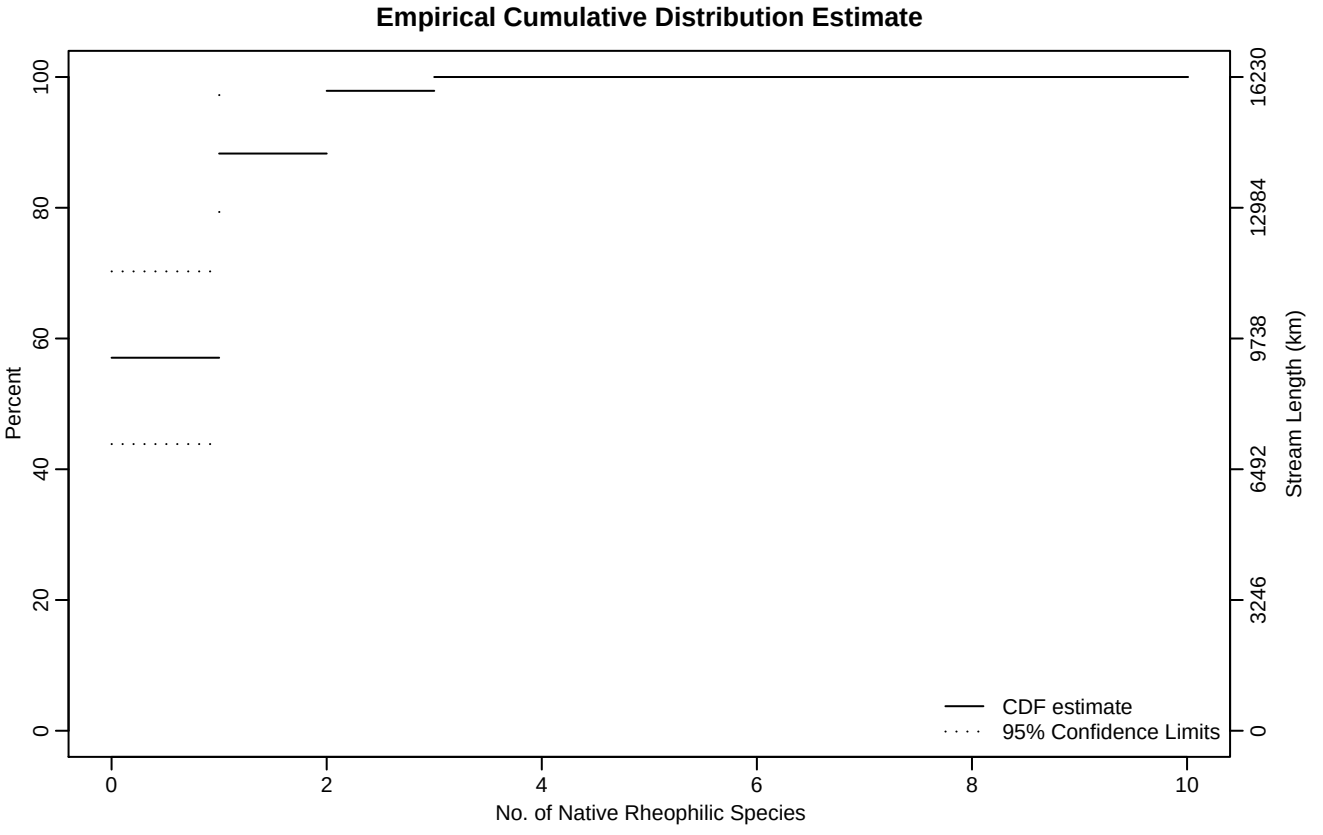


Figure VERT−118 Indicator: RHEO_NAT_RICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.19
75Pct	0.57	0.14	1.01
90Pct	1.18	0.77	2.51
95Pct	1.70	0.92	3
Mean	0.57	0.37	0.77
Std Dev	0.73	0.58	0.89

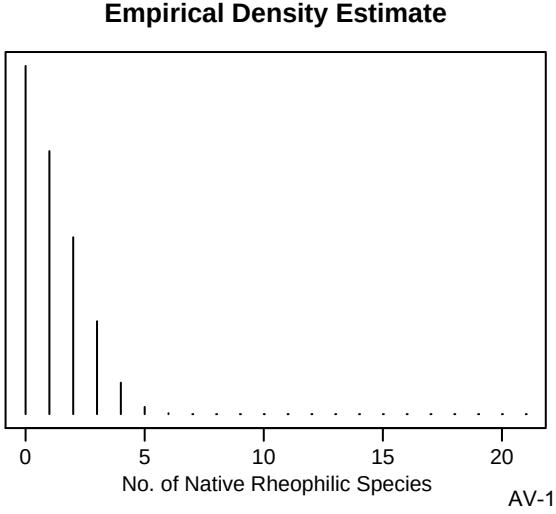
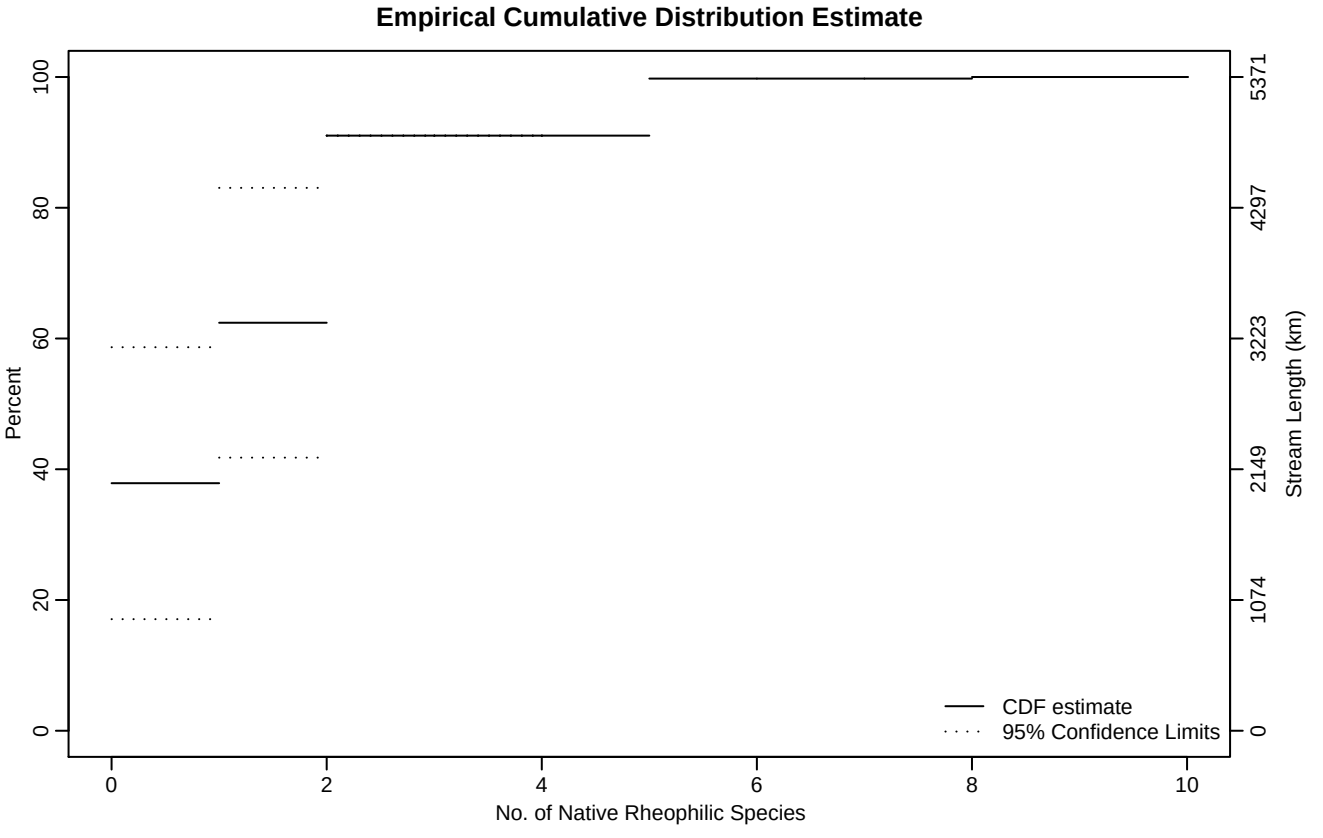


Figure VERT−119 Indicator: RHEO_NAT_RICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.38
50Pct	0.49	0	1.34
75Pct	1.44	0.53	4.92
90Pct	1.96	1.07	
95Pct	4.45	1.61	
Mean	1.27	0.90	1.65
Std Dev	0.70	0.55	0.86

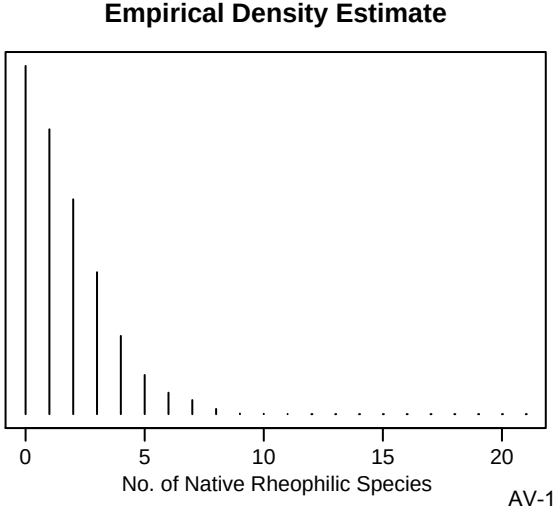
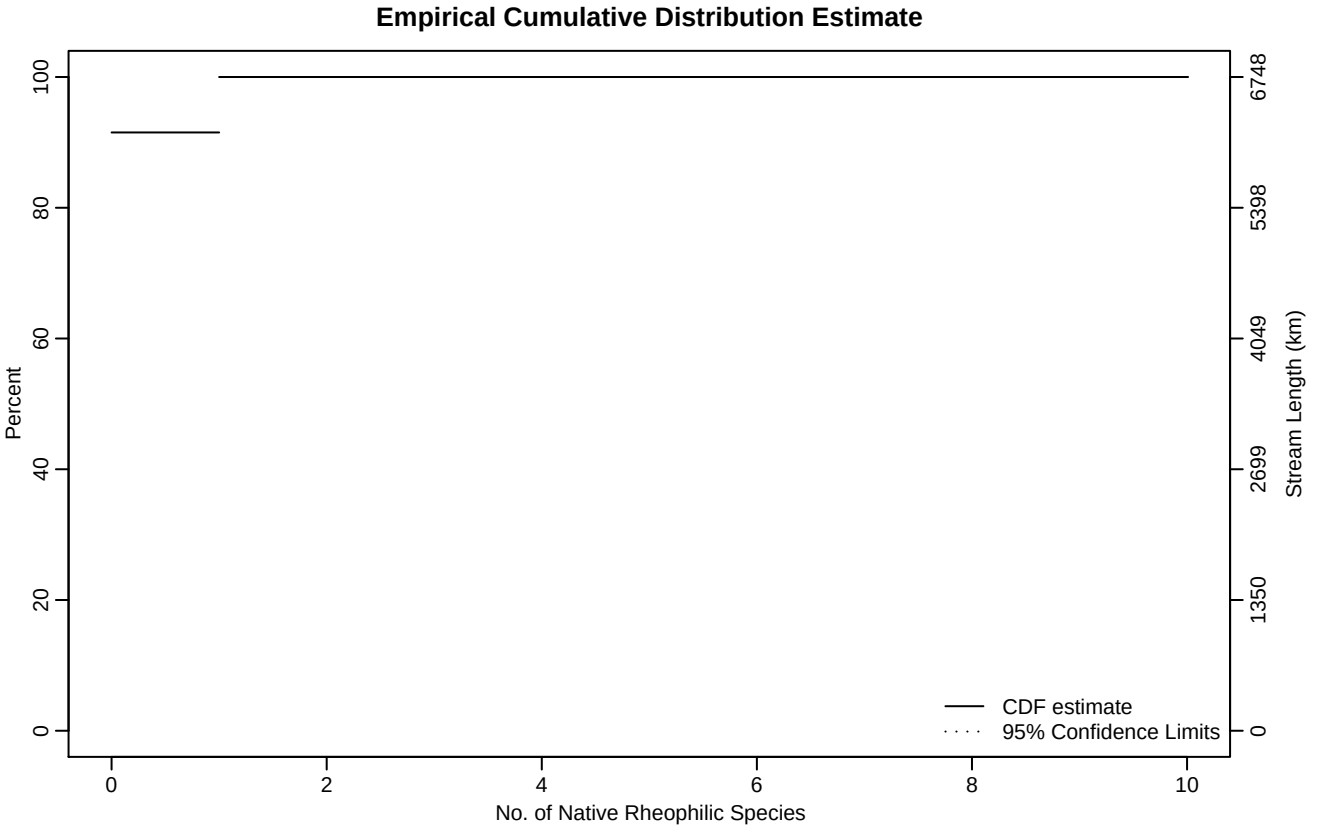


Figure VERT−120 Indicator: RHEO_NAT_RICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	1
95Pct	0.41	0	1
Mean	0.08	−0.03	0.20
Std Dev	0.14	0.09	0.20

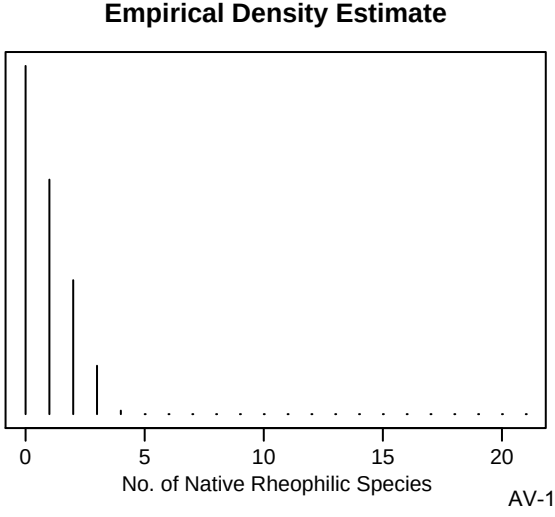
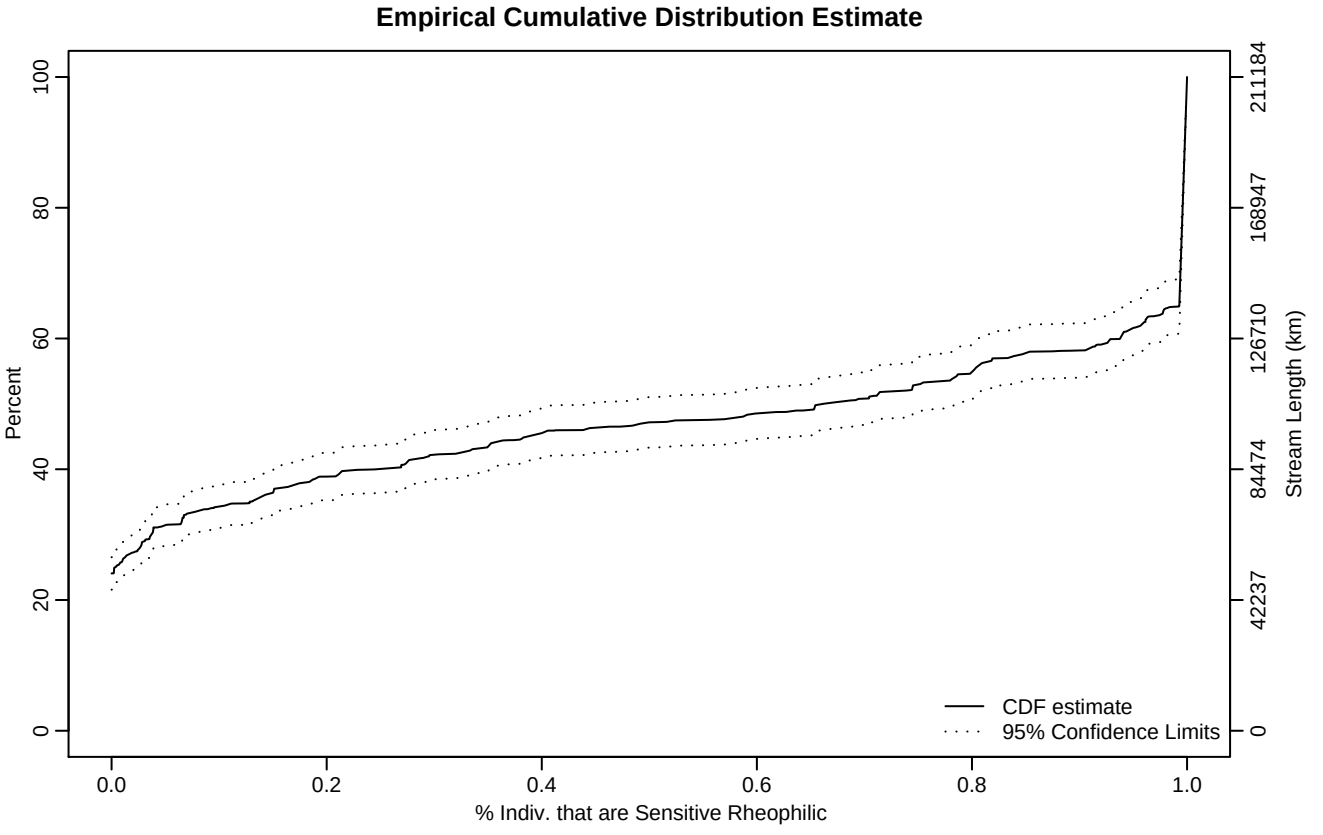


Figure VERT−121 Indicator: RHEO_SEN_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.66	0.41	0.78
75Pct	0.99	0.99	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.53	0.50	0.57
Std Dev	0.36	0.34	0.38

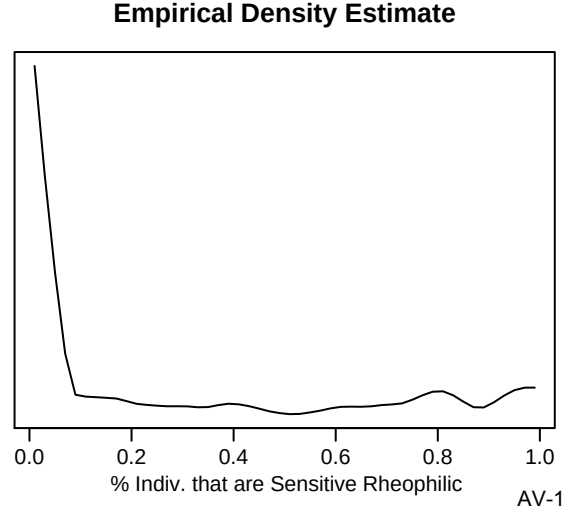
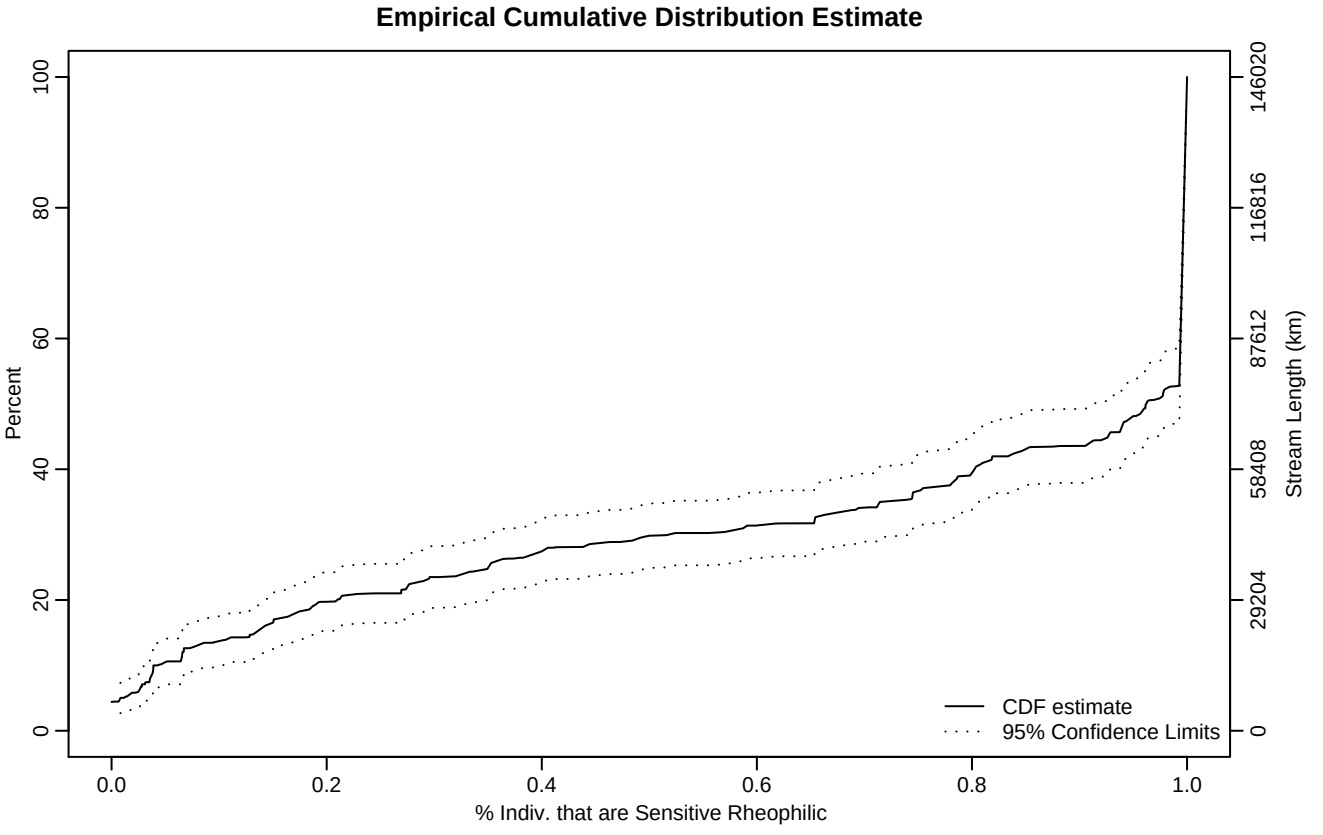


Figure VERT−122 Indicator: RHEO_SEN_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.03
10Pct	0.04	0.03	0.09
25Pct	0.35	0.21	0.50
50Pct	0.96	0.91	0.99
75Pct	1	1	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.71	0.67	0.75
Std Dev	0.34	0.32	0.37

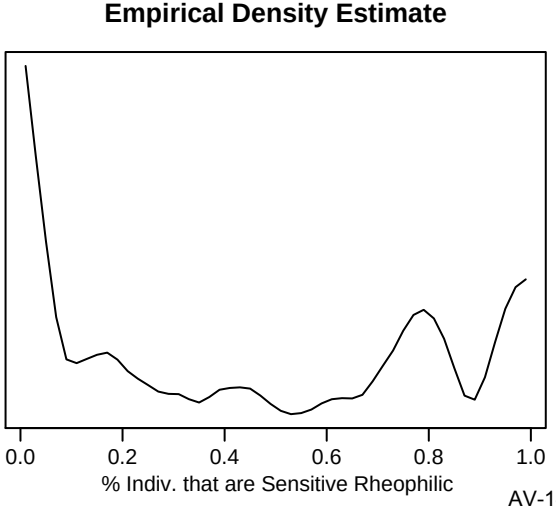
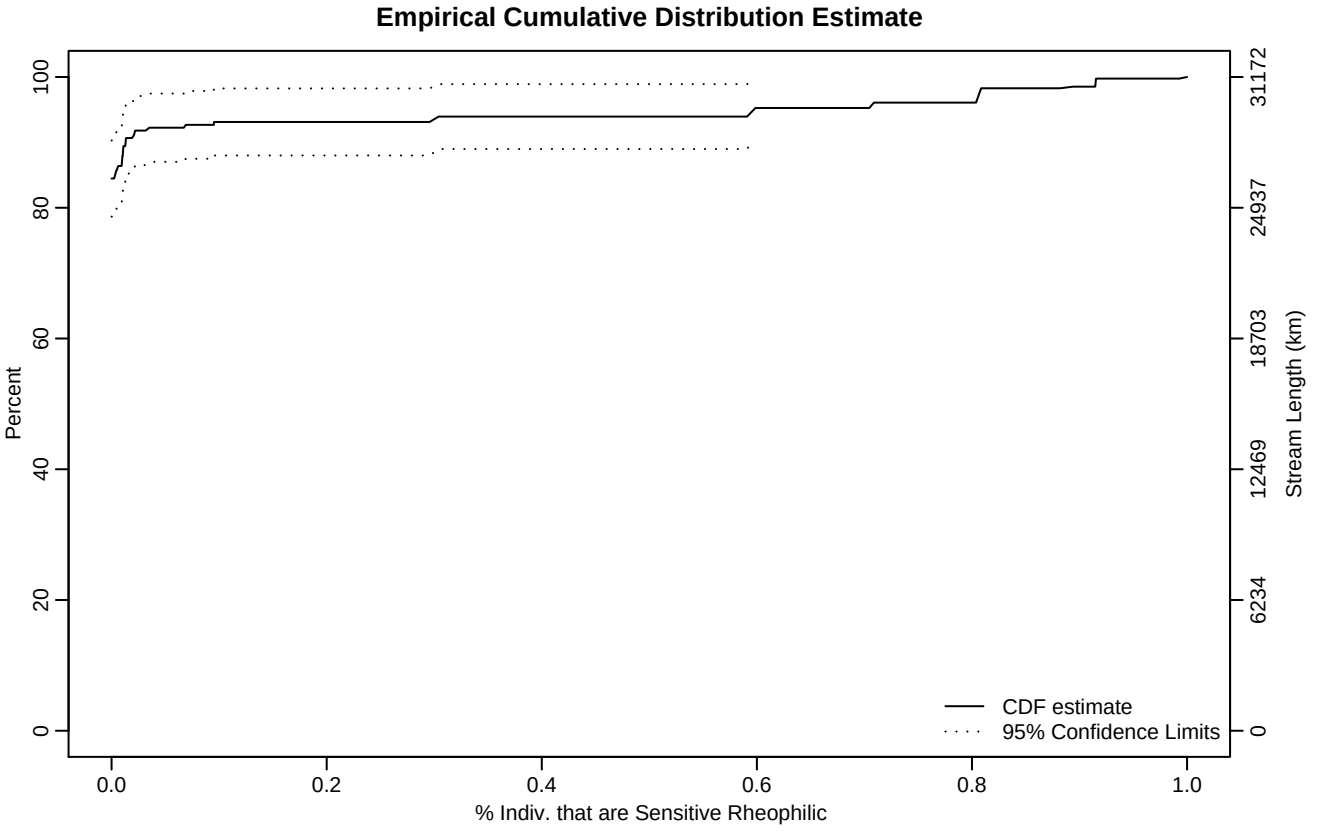


Figure VERT−123 Indicator: RHEO_SEN_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.01	0	0.71
95Pct	0.60	0.01	1
Mean	0.05	0.01	0.09
Std Dev	0.11	0.08	0.15

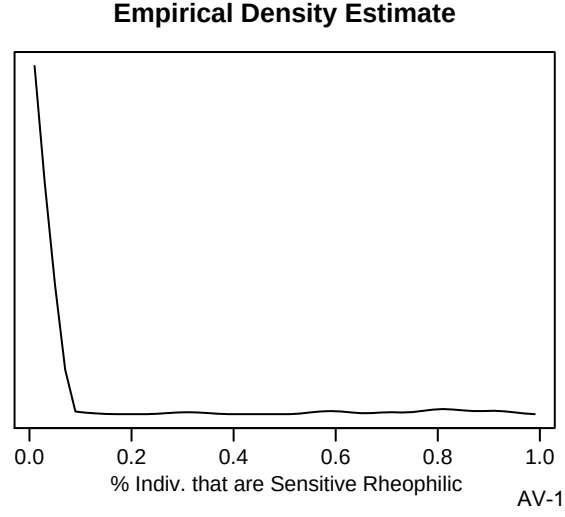
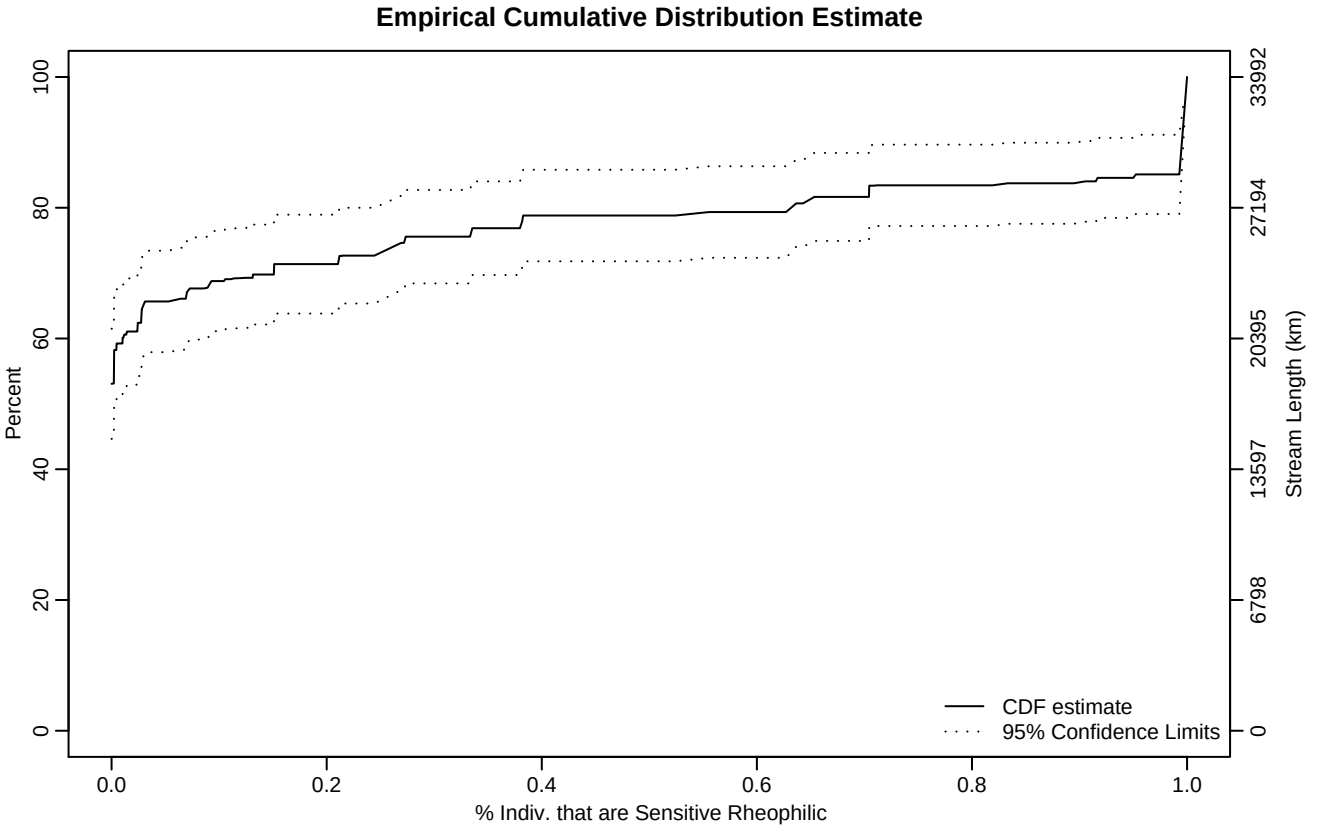


Figure VERT−124 Indicator: RHEO_SEN_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.27	0.07	0.70
90Pct	1	0.92	1
95Pct	1	0.99	
Mean	0.22	0.16	0.29
Std Dev	0.32	0.28	0.37

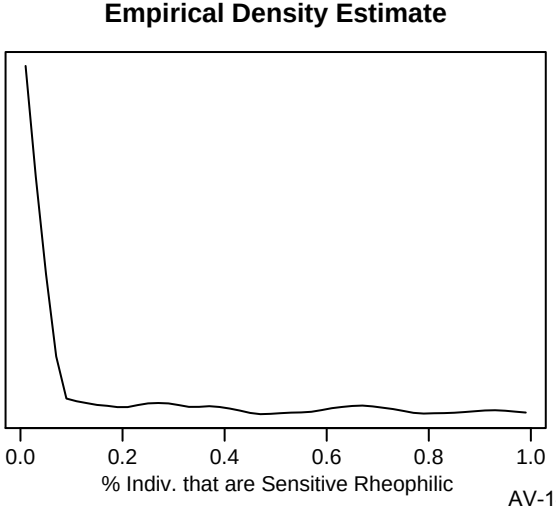
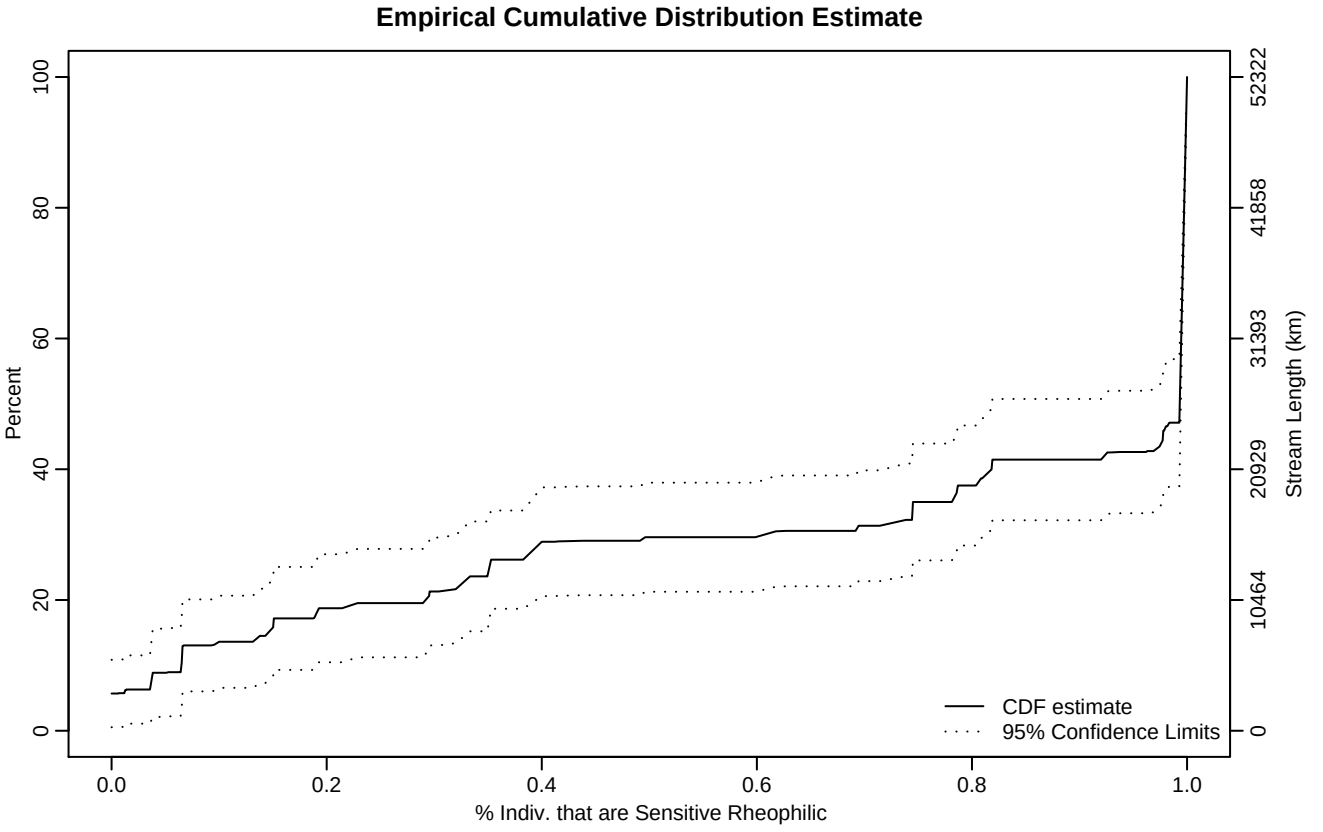


Figure VERT−125 Indicator: RHEO_SEN_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.07
10Pct	0.06	0	0.15
25Pct	0.35	0.15	0.74
50Pct	0.99	0.82	0.99
75Pct	1	1	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.72	0.65	0.79
Std Dev	0.33	0.29	0.38

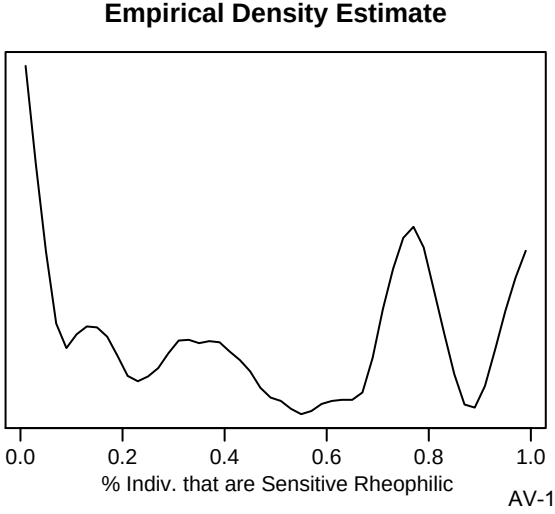
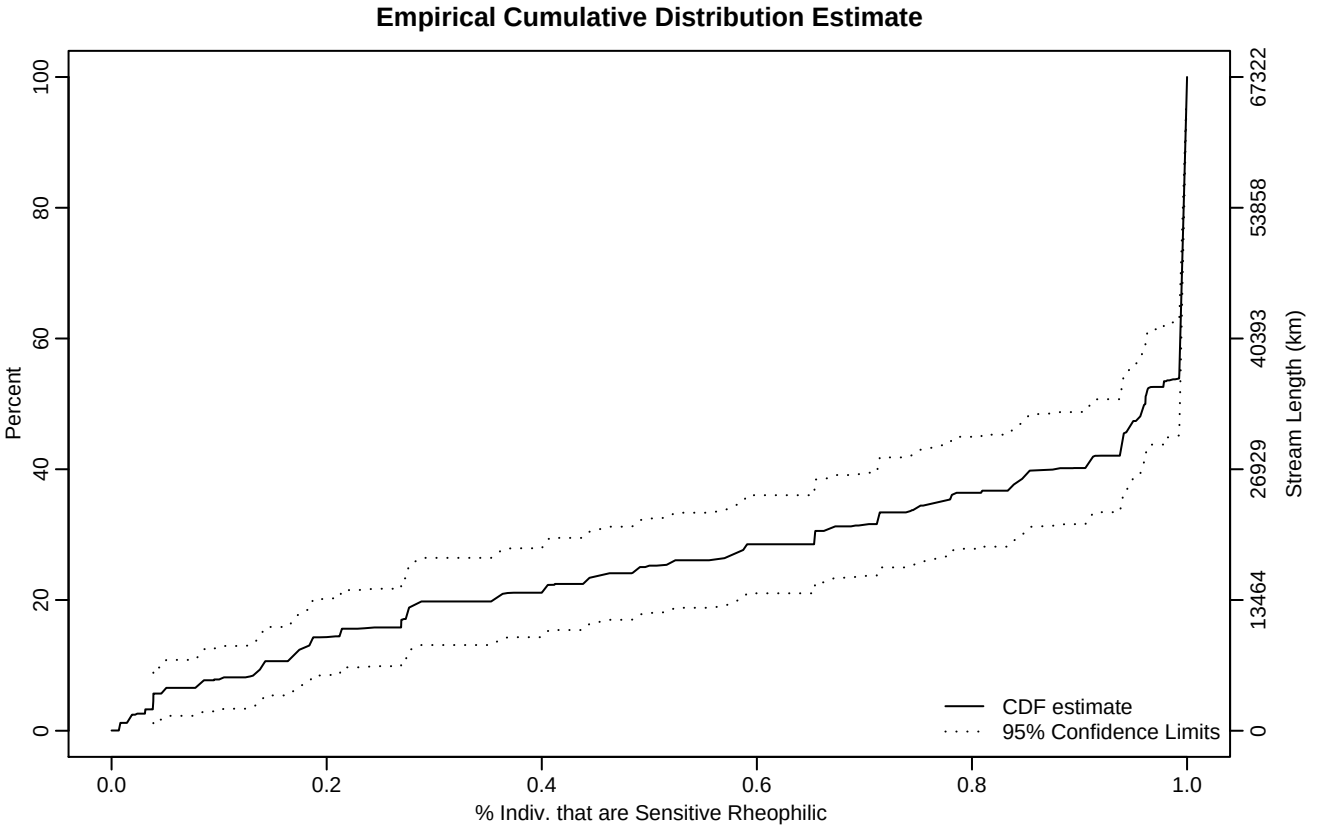


Figure VERT−126 Indicator: RHEO_SEN_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.01	0.13
10Pct	0.14	0.04	0.21
25Pct	0.49	0.27	0.71
50Pct	0.96	0.91	0.99
75Pct	1	0.99	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.75	0.69	0.81
Std Dev	0.31	0.28	0.35

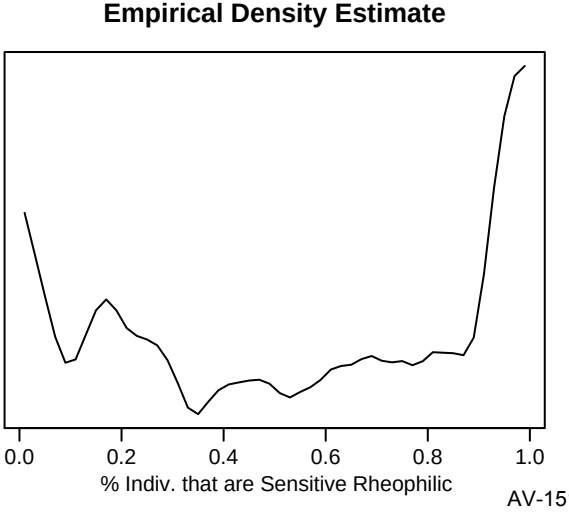
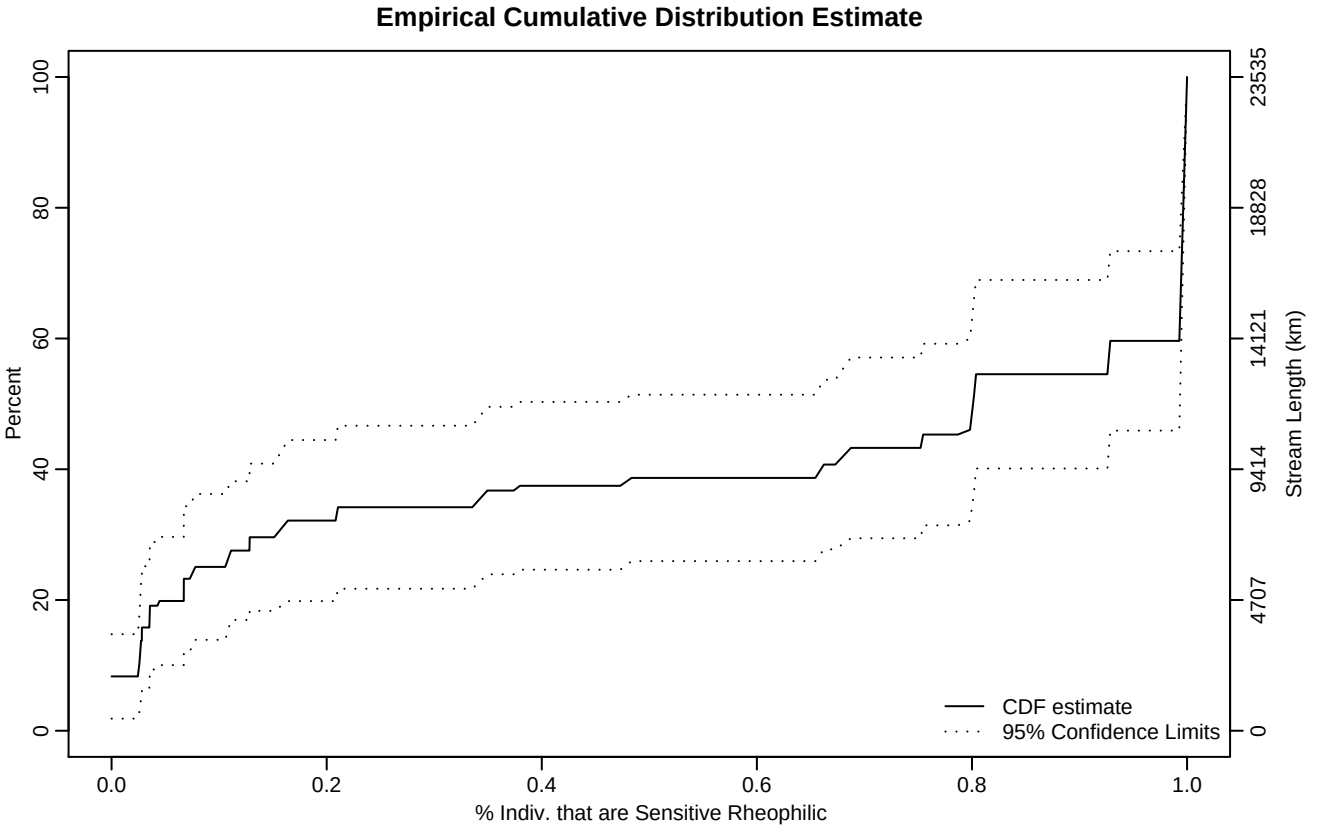


Figure VERT−127 Indicator: RHEO_SEN_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.03
10Pct	0.03	0	0.04
25Pct	0.08	0.03	0.35
50Pct	0.80	0.34	0.99
75Pct	1	0.99	1
90Pct	1	1	
95Pct	1	1	
Mean	0.61	0.50	0.72
Std Dev	0.40	0.34	0.45

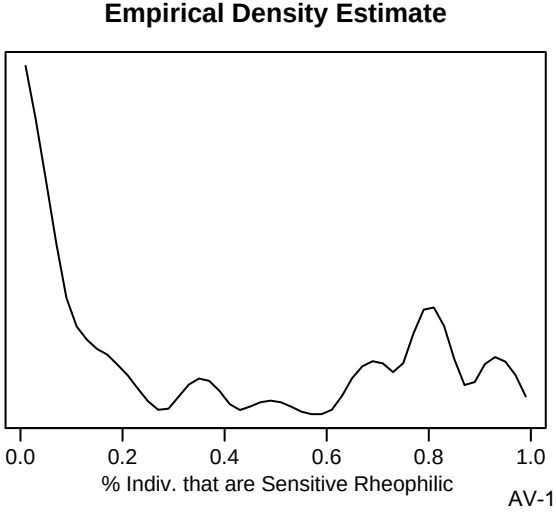
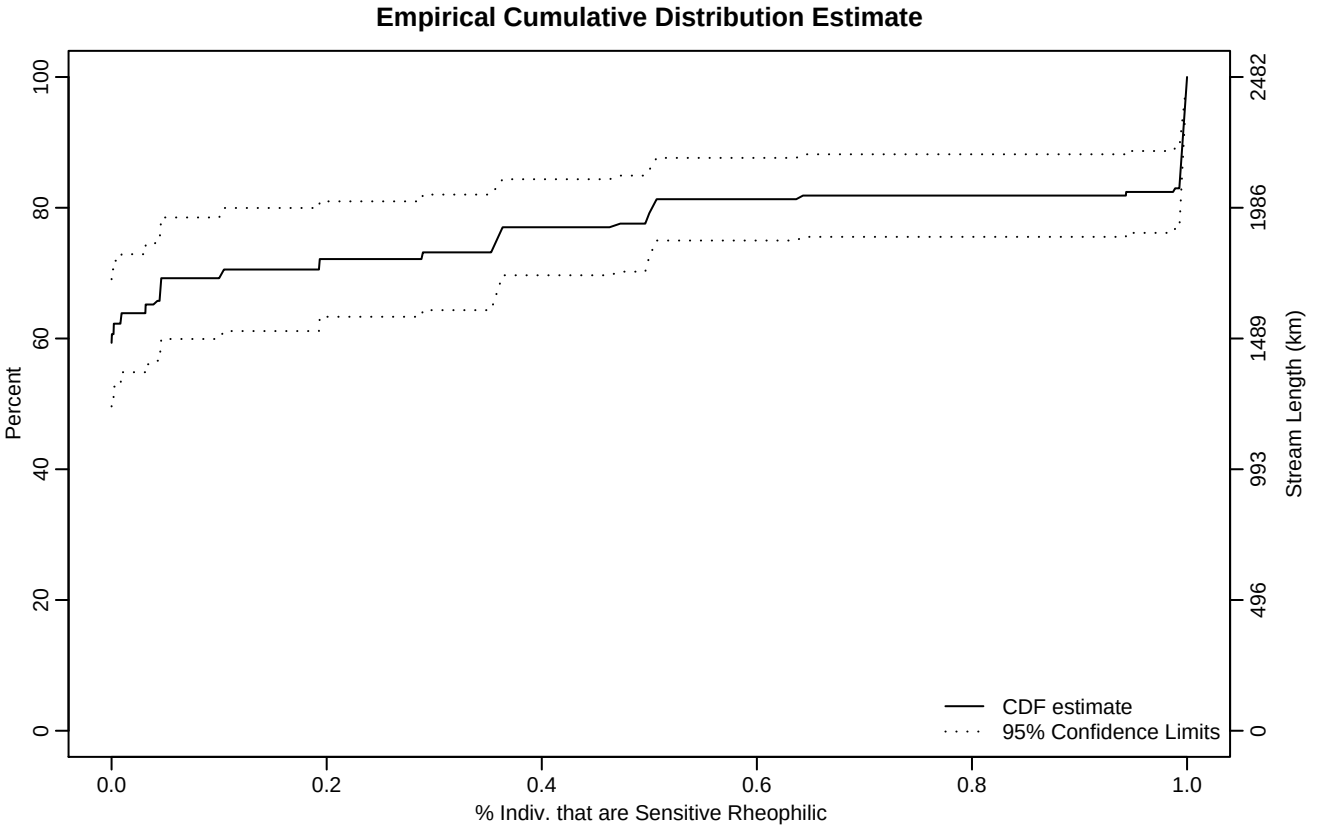


Figure VERT−128 Indicator: RHEO_SEN_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.36	0.04	0.99
90Pct	1	0.99	1
95Pct	1	1	1
Mean	0.23	0.17	0.29
Std Dev	0.35	0.30	0.41

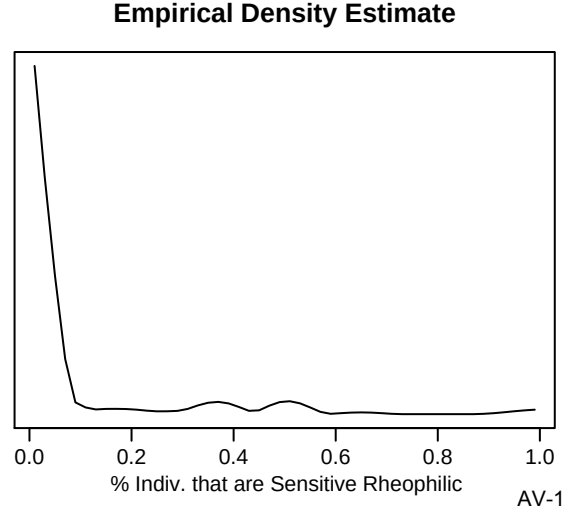
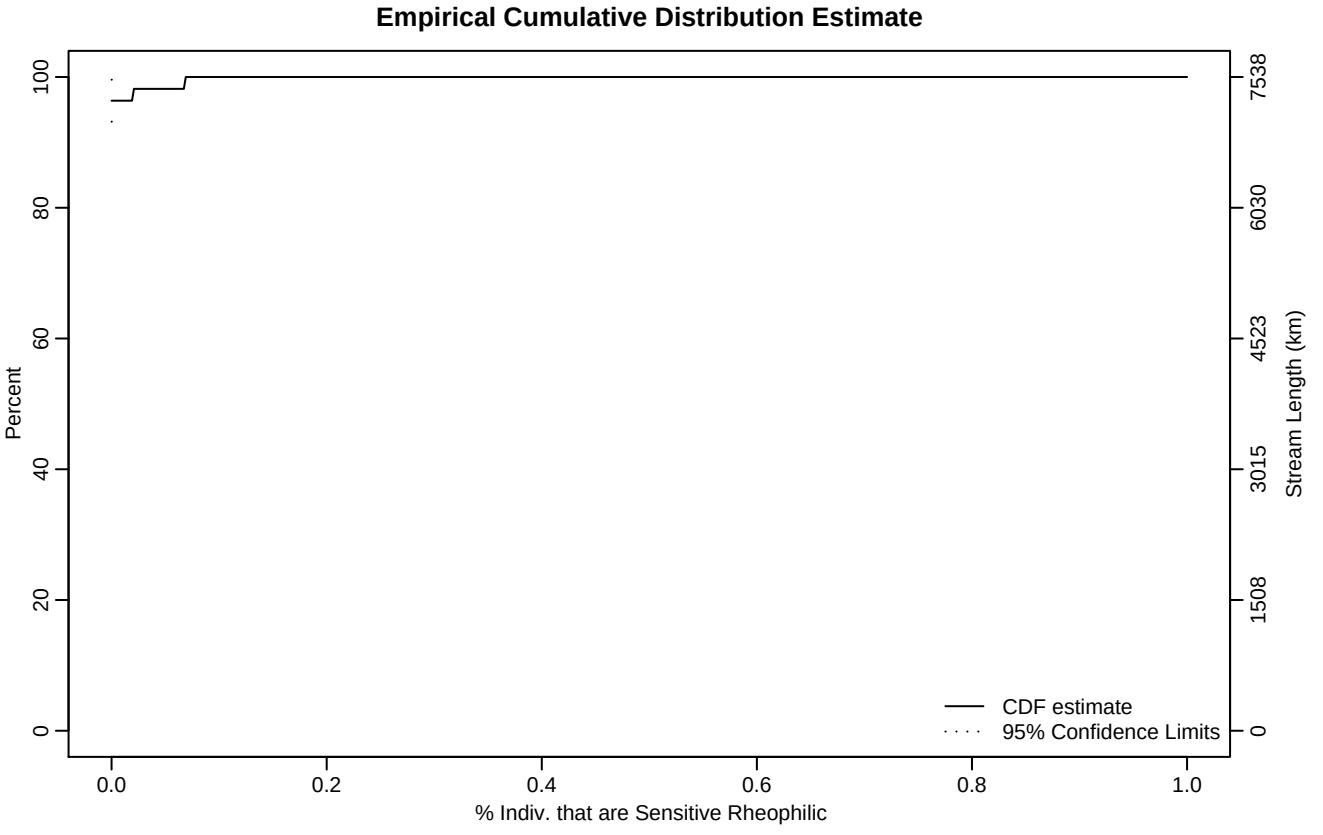


Figure VERT−129 Indicator: RHEO_SEN_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.07
Mean	0	0	0
Std Dev	0	0	0

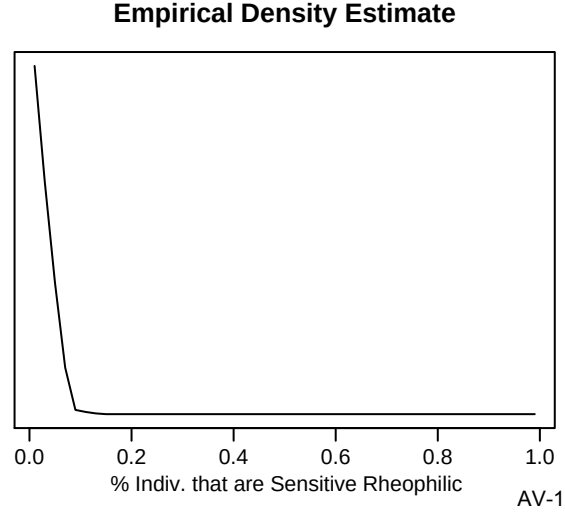
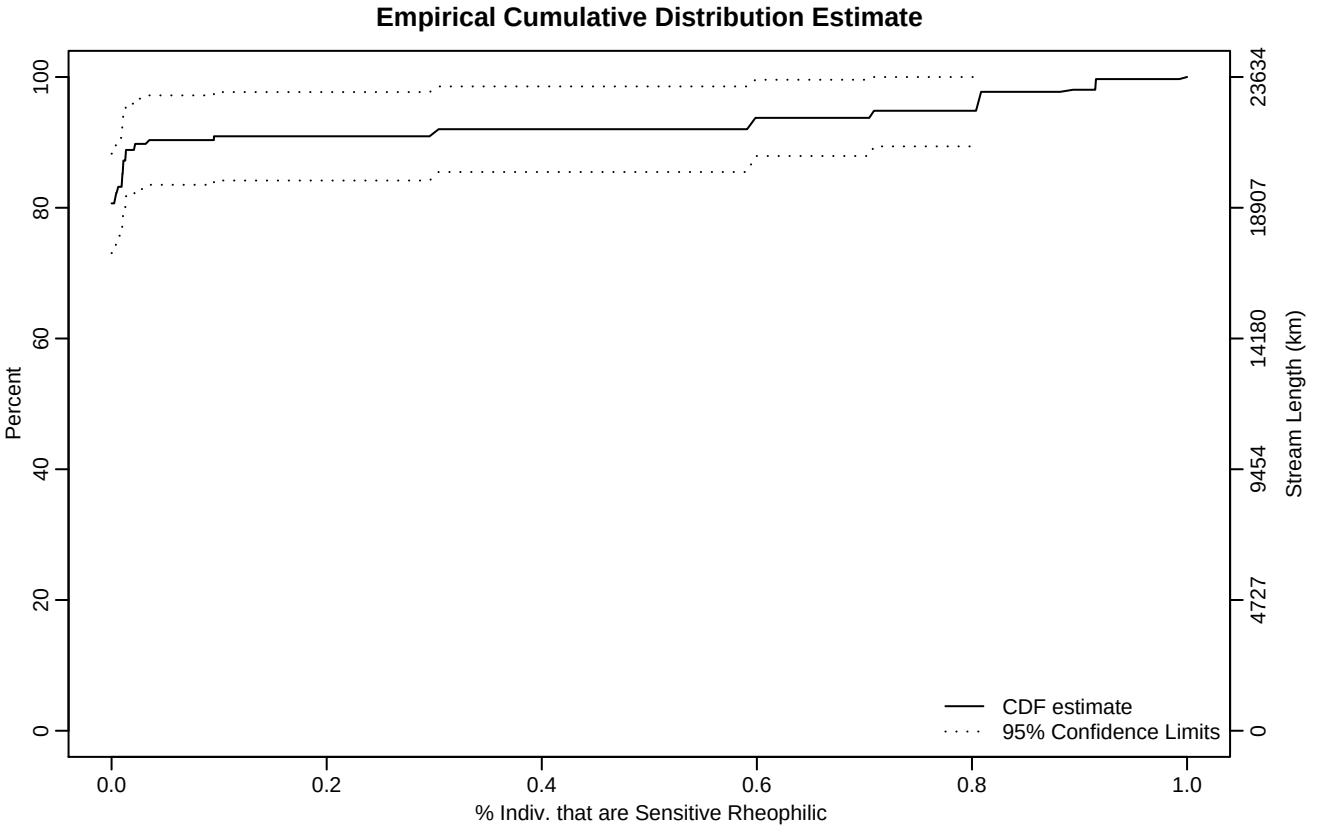


Figure VERT−130 Indicator: RHEO_SEN_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.03	0.01	0.81
95Pct	0.80	0.02	1
Mean	0.07	0.02	0.12
Std Dev	0.14	0.10	0.19

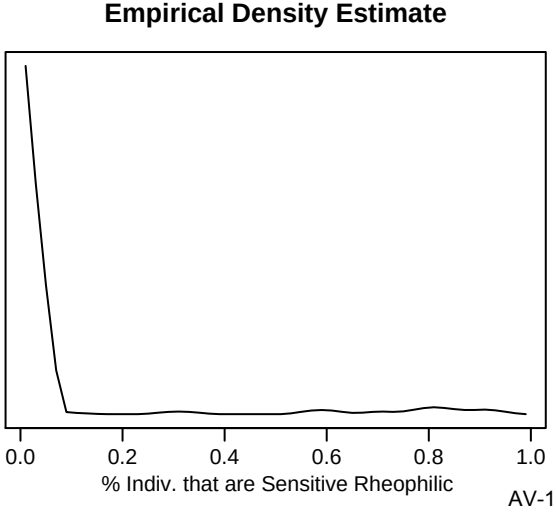
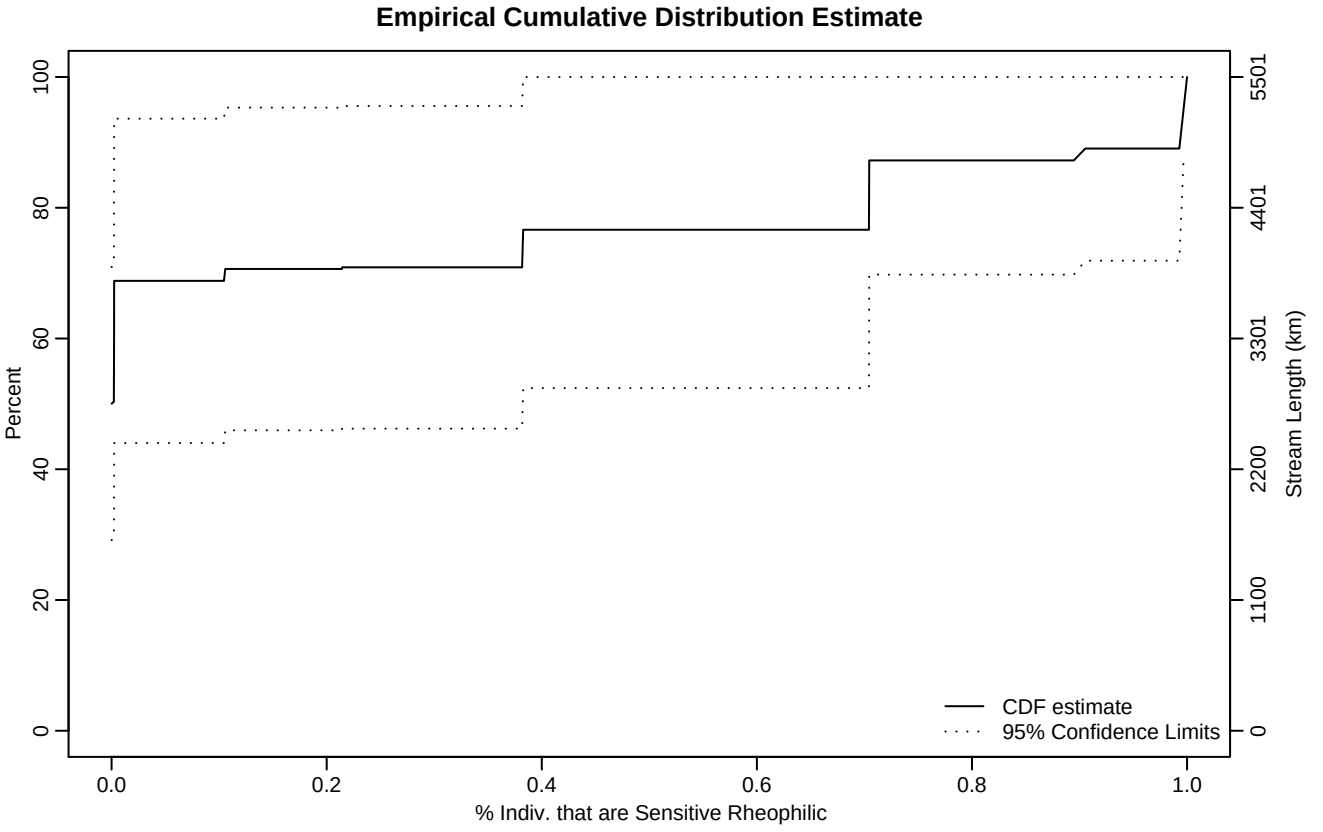


Figure VERT−131 Indicator: RHEO_SEN_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.38
75Pct	0.38	0	1
90Pct	0.99	0.38	1
95Pct	1	0.70	1
Mean	0.23	0.02	0.43
Std Dev	0.37	0.23	0.50

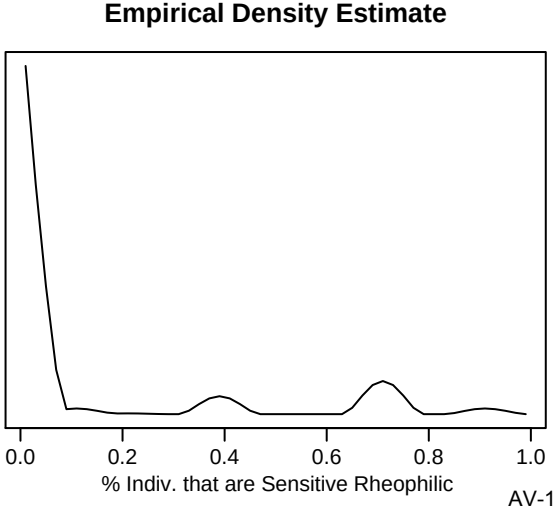
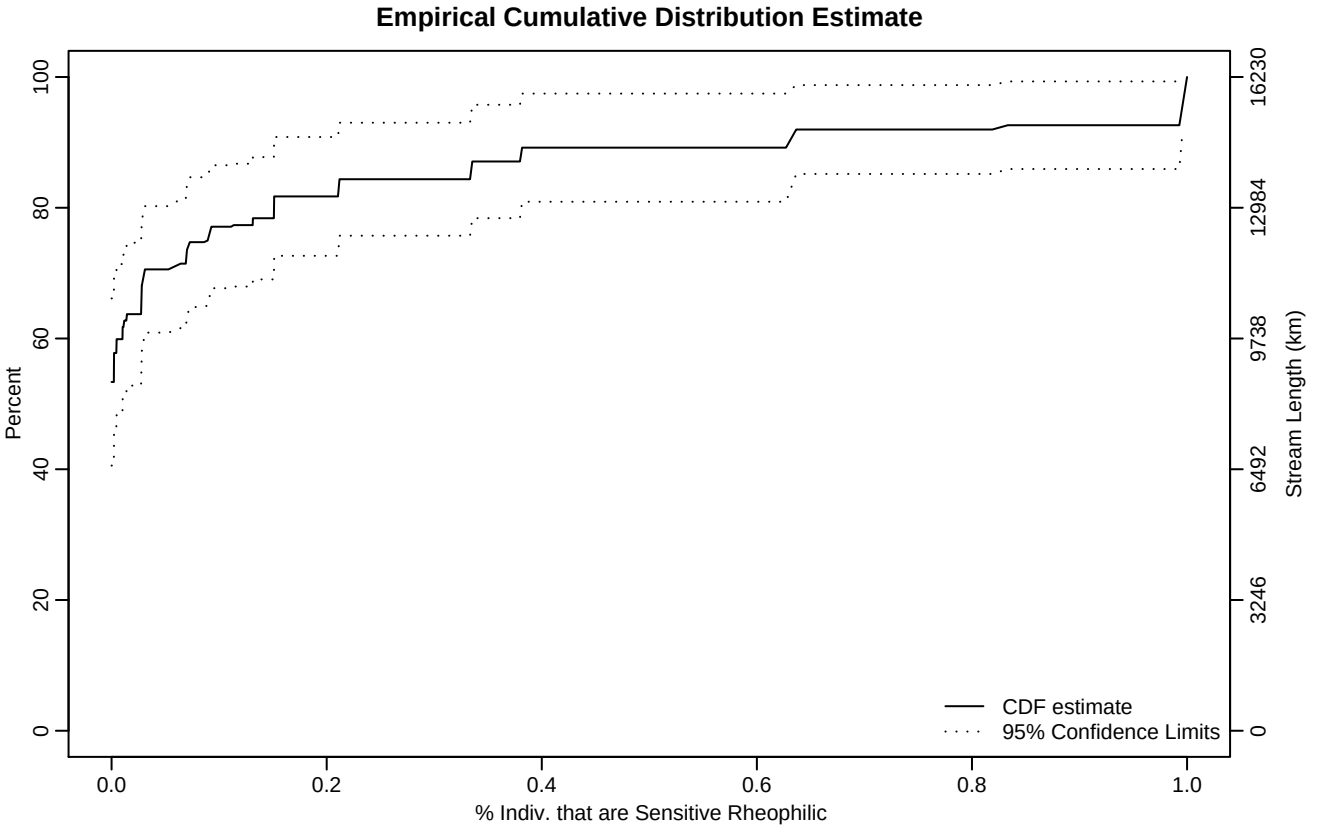


Figure VERT−132 Indicator: RHEO_SEN_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.01
75Pct	0.09	0.03	0.33
90Pct	0.63	0.15	1
95Pct	1	0.38	1
Mean	0.13	0.07	0.20
Std Dev	0.26	0.18	0.34

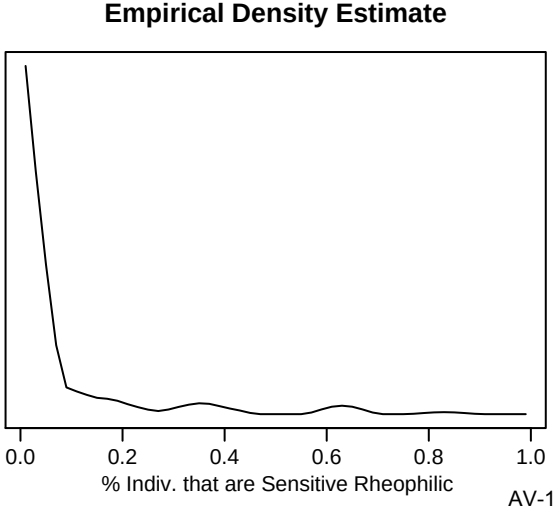
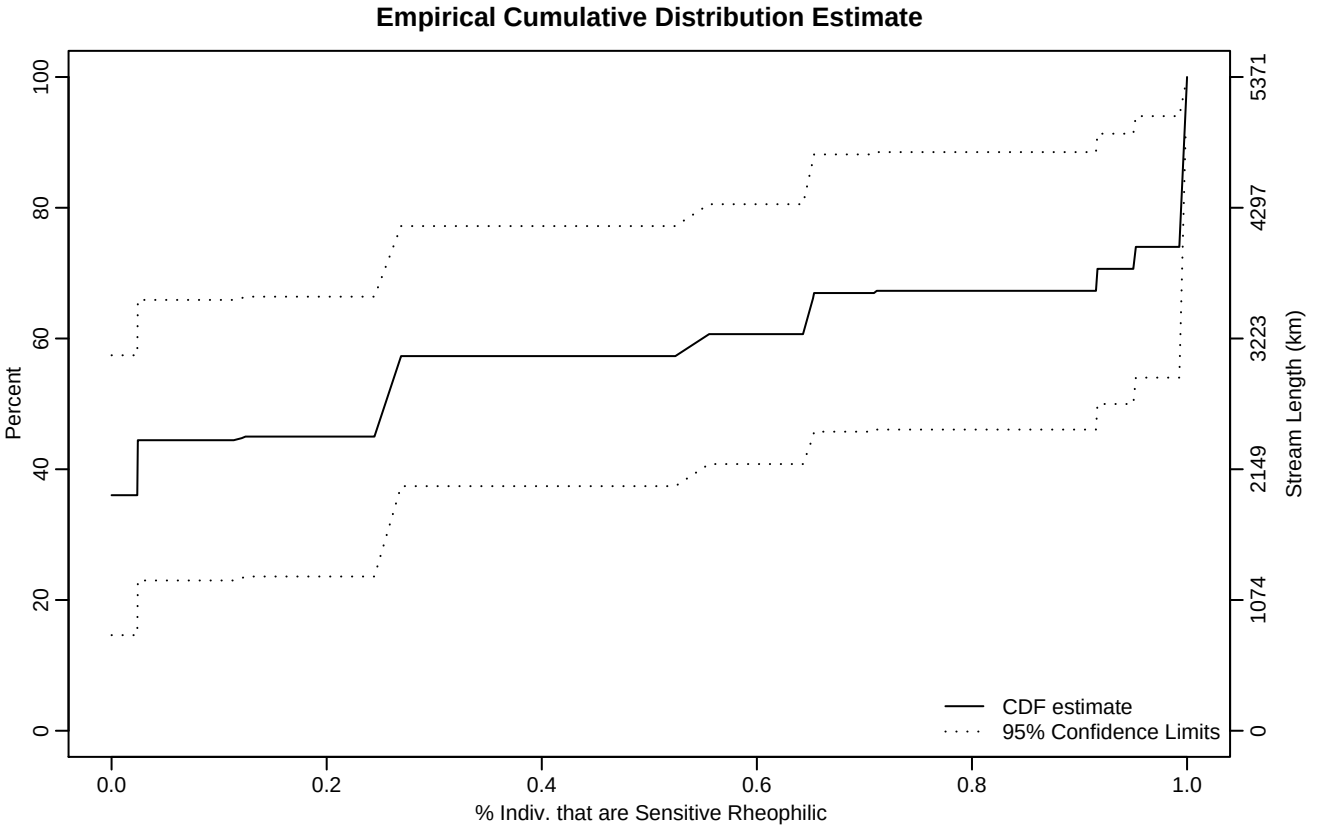


Figure VERT−133 Indicator: RHEO_SEN_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.25
50Pct	0.25	0	0.95
75Pct	0.99	0.27	1
90Pct	1	0.95	
95Pct	1	0.99	
Mean	0.42	0.24	0.61
Std Dev	0.38	0.32	0.44

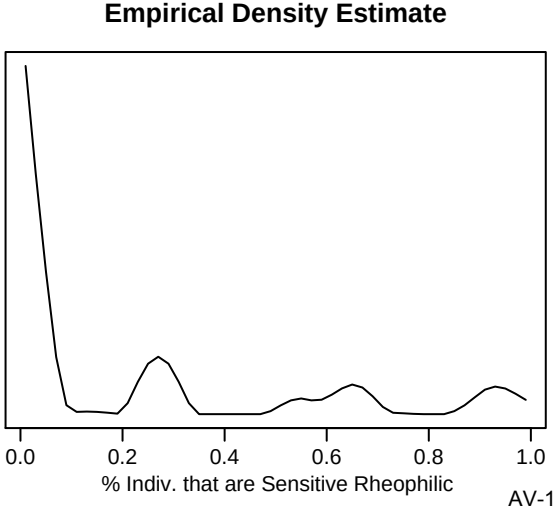
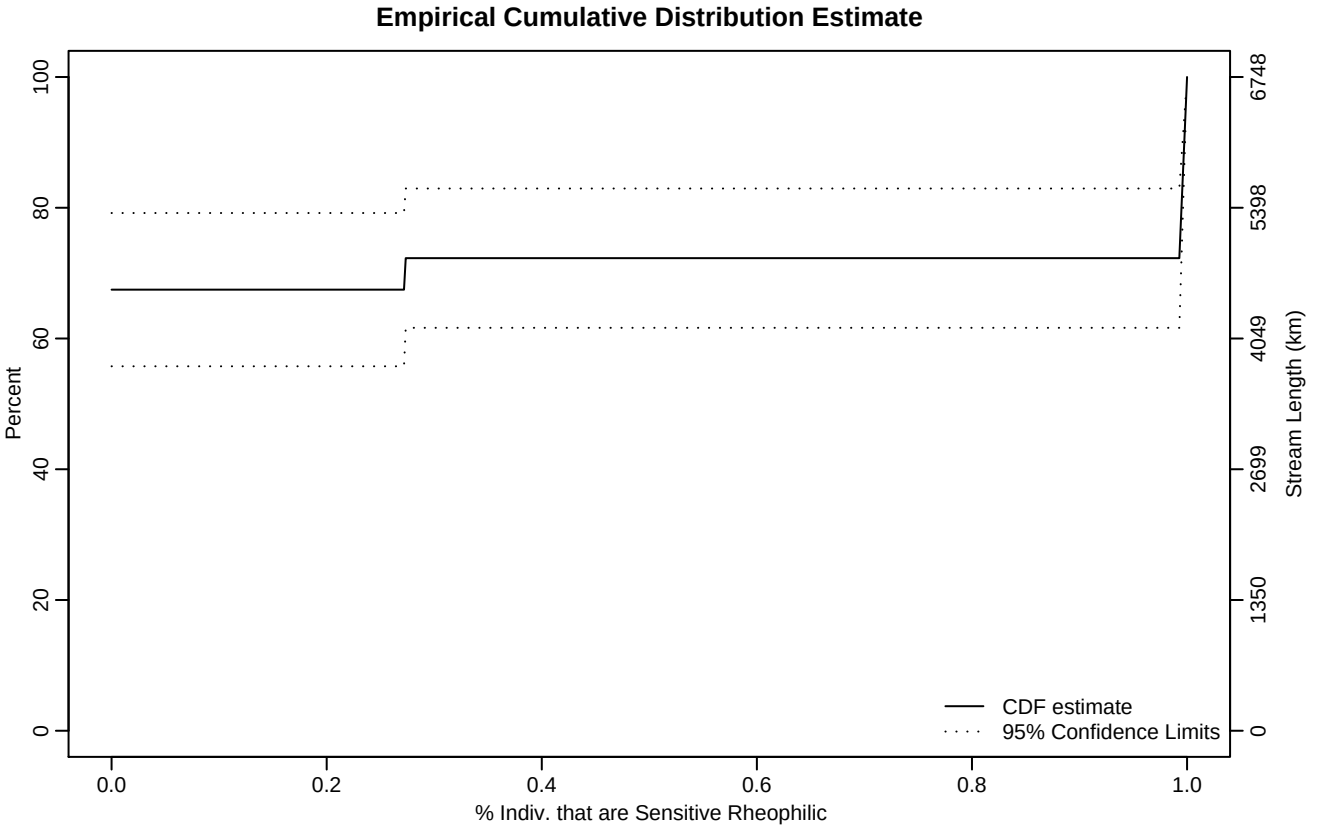


Figure VERT−134 Indicator: RHEO_SEN_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.99	0	1
90Pct	1	0.99	1
95Pct	1	1	1
Mean	0.29	0.19	0.39
Std Dev	0.26	0.21	0.31

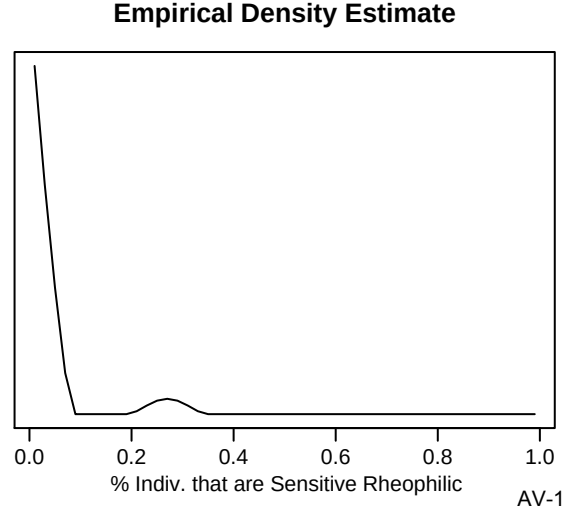
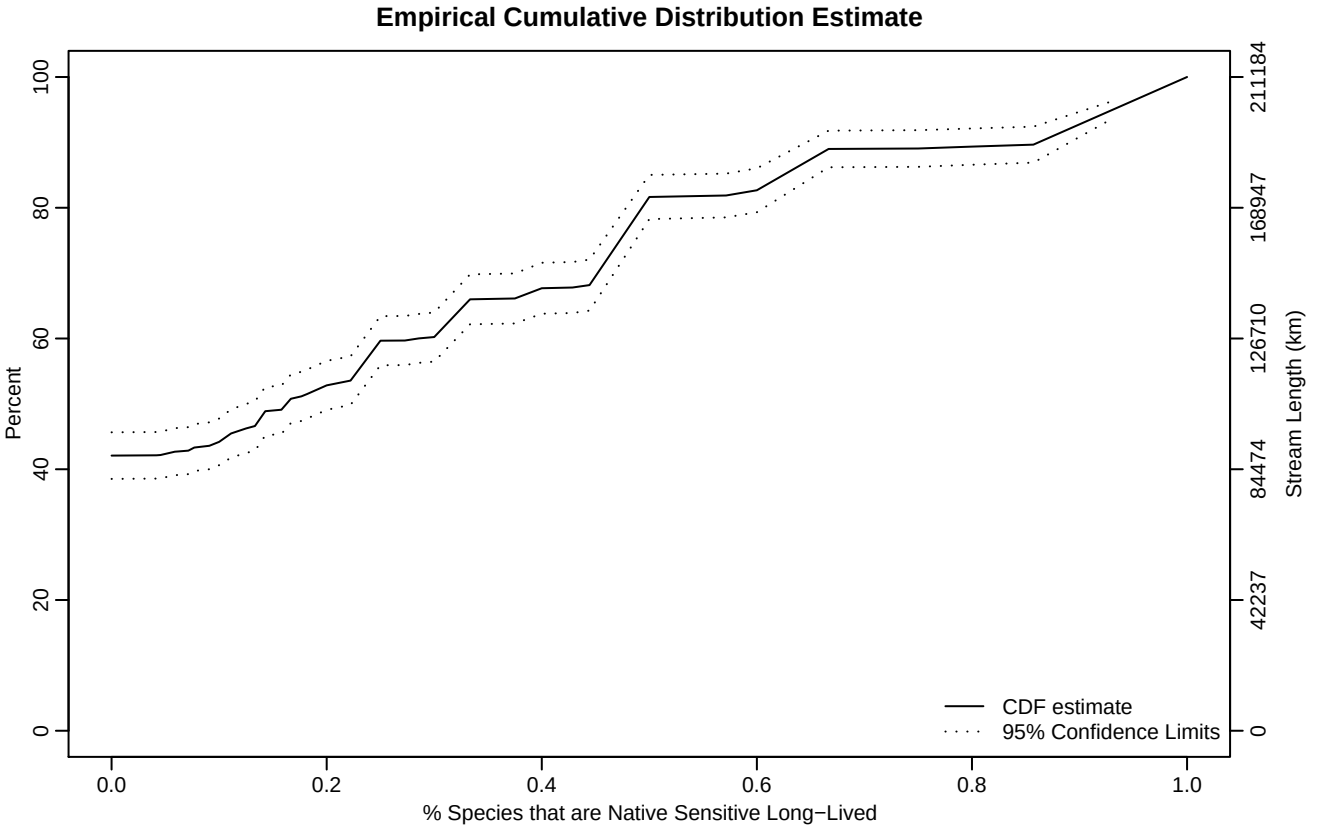


Figure VERT−135 Indicator: LONG_SEN_NAT_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.16	0.12	0.22
75Pct	0.47	0.46	0.49
90Pct	0.86	0.65	0.90
95Pct	0.93	0.89	0.97
Mean	0.29	0.26	0.31
Std Dev	0.25	0.23	0.27

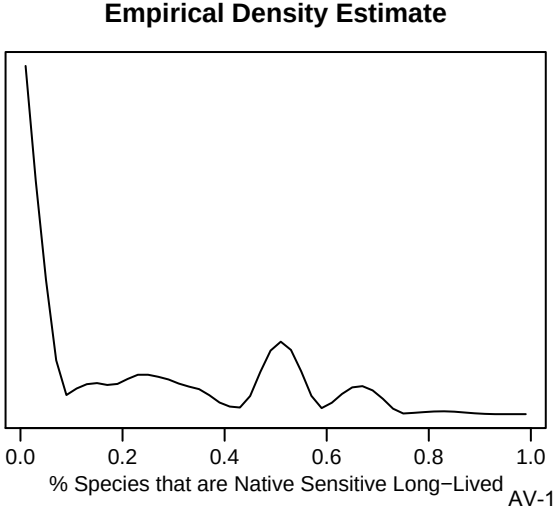
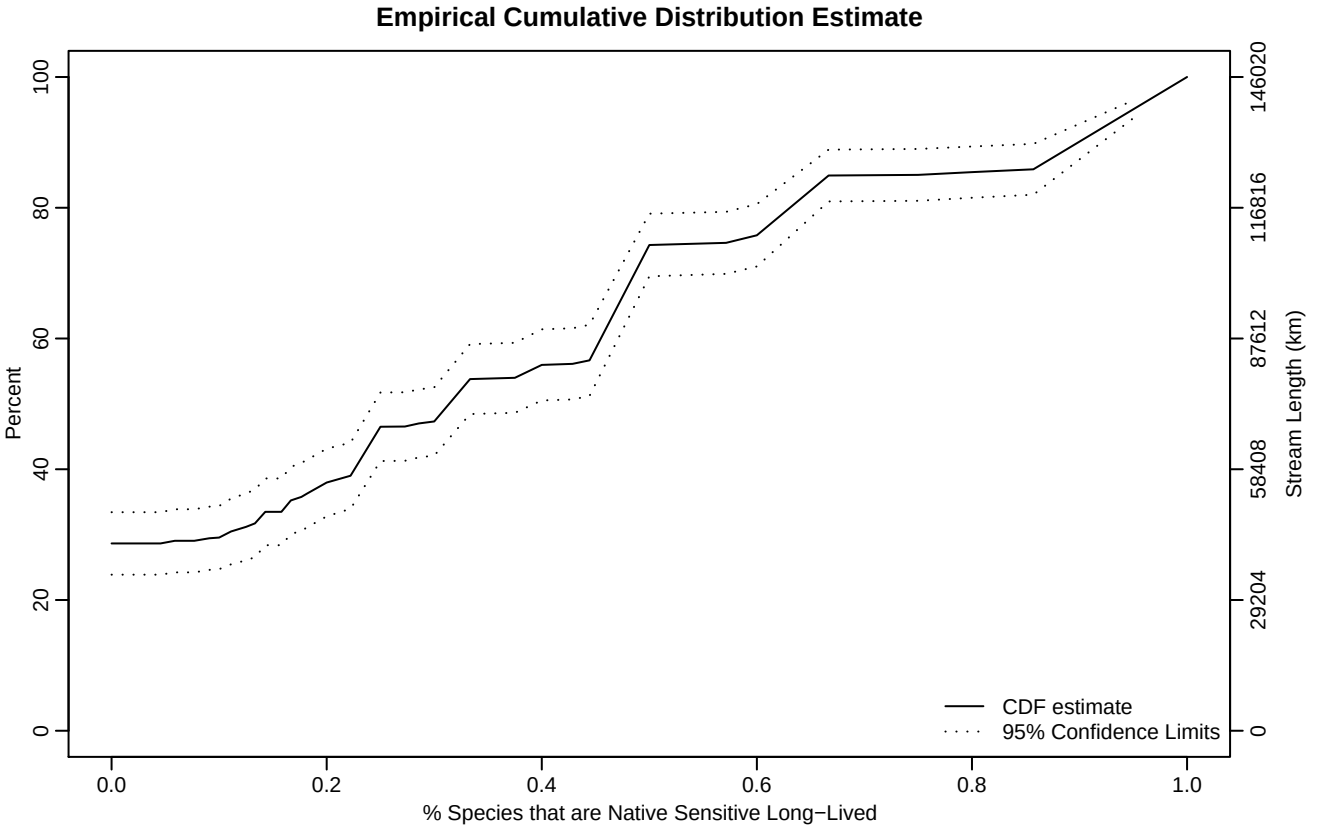


Figure VERT−136 Indicator: LONG_SEN_NAT_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.10
50Pct	0.31	0.24	0.39
75Pct	0.58	0.49	0.63
90Pct	0.90	0.86	0.94
95Pct	0.95	0.91	0.99
Mean	0.38	0.34	0.41
Std Dev	0.29	0.27	0.32

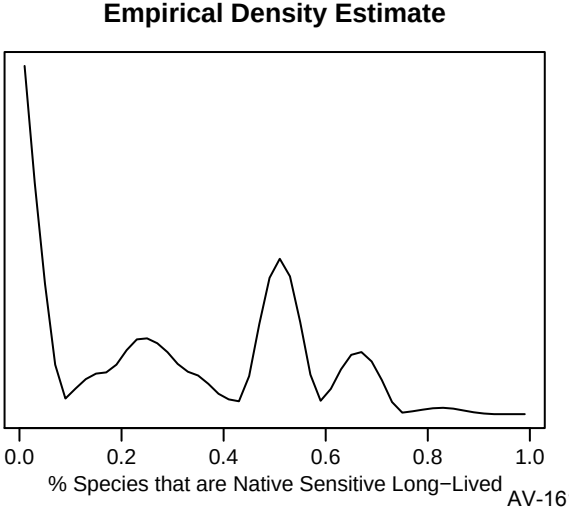
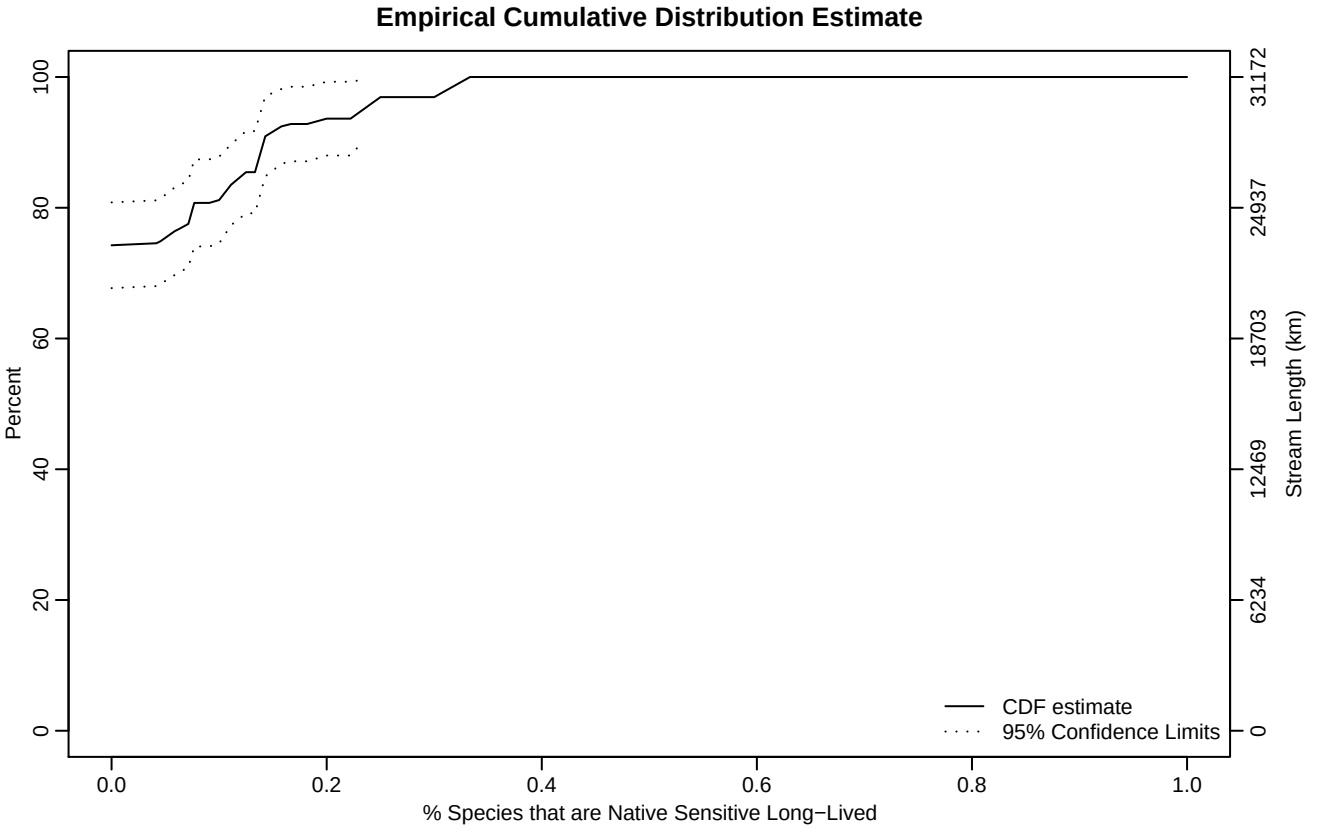


Figure VERT−137 Indicator: LONG_SEN_NAT_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.05	0	0.11
90Pct	0.14	0.11	0.30
95Pct	0.23	0.14	
Mean	0.04	0.03	0.06
Std Dev	0.05	0.04	0.06

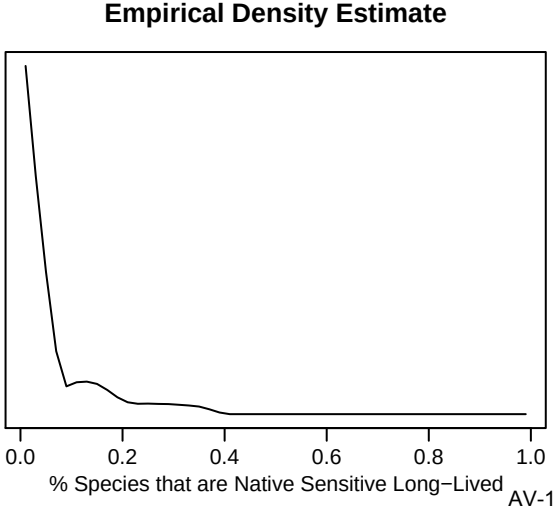
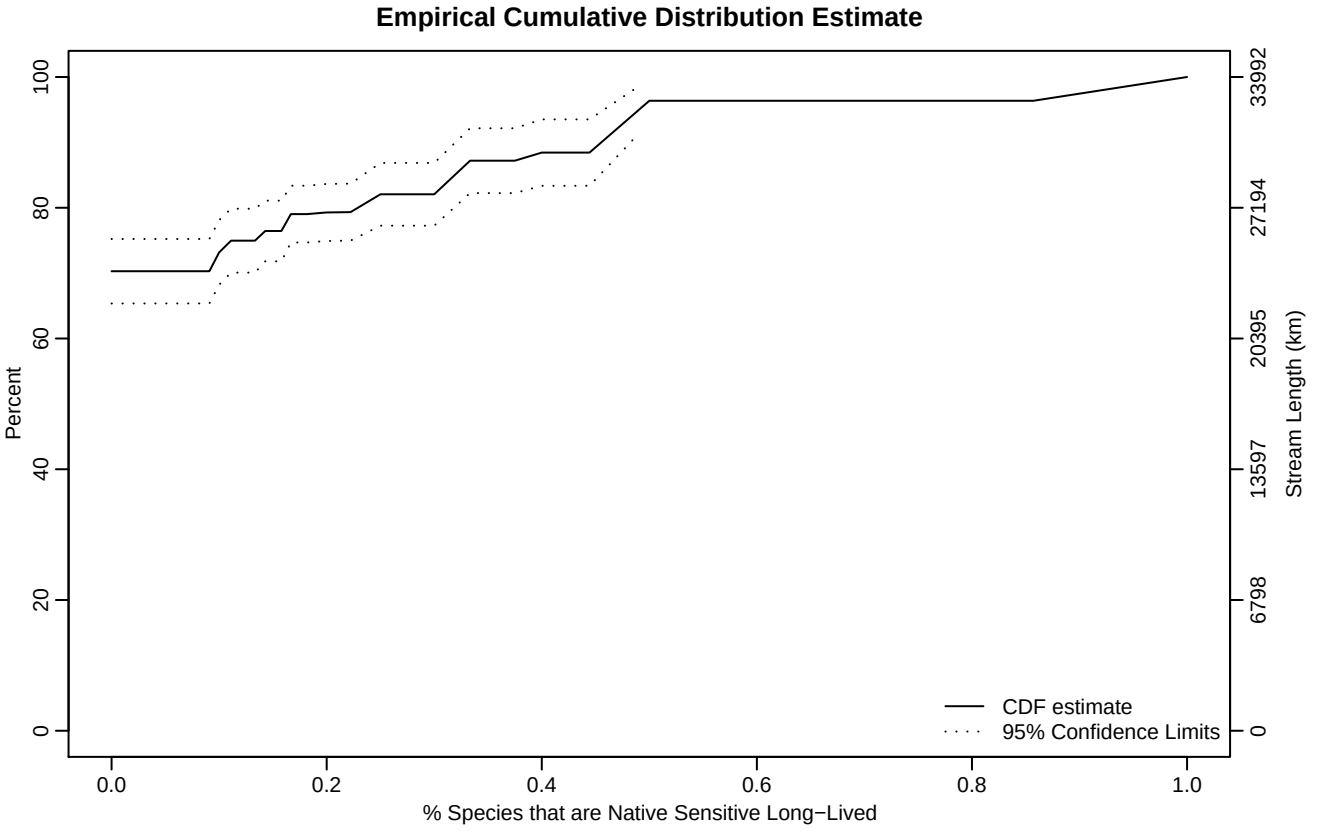


Figure VERT−138 Indicator: LONG_SEN_NAT_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.13	0	0.24
90Pct	0.46	0.32	0.49
95Pct	0.49	0.45	
Mean	0.12	0.09	0.15
Std Dev	0.12	0.10	0.14

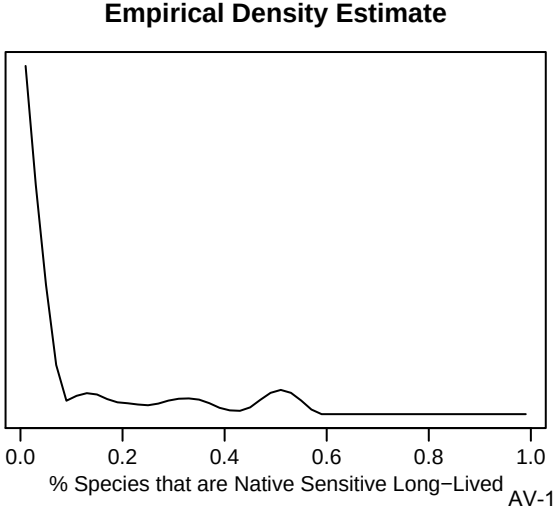
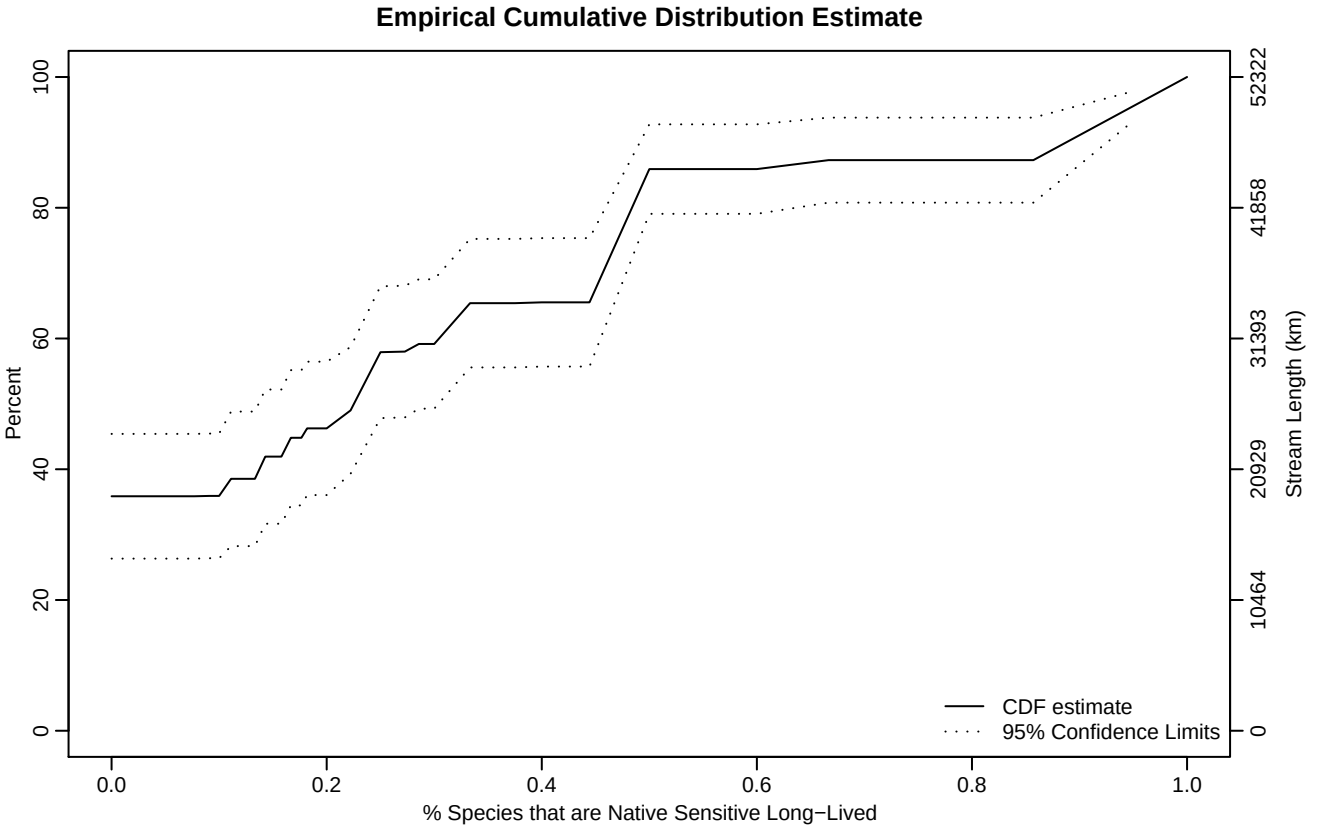


Figure VERT−139 Indicator: LONG_SEN_NAT_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.23	0.14	0.30
75Pct	0.47	0.33	0.50
90Pct	0.89	0.49	0.96
95Pct	0.94	0.87	1
Mean	0.31	0.24	0.37
Std Dev	0.31	0.26	0.36

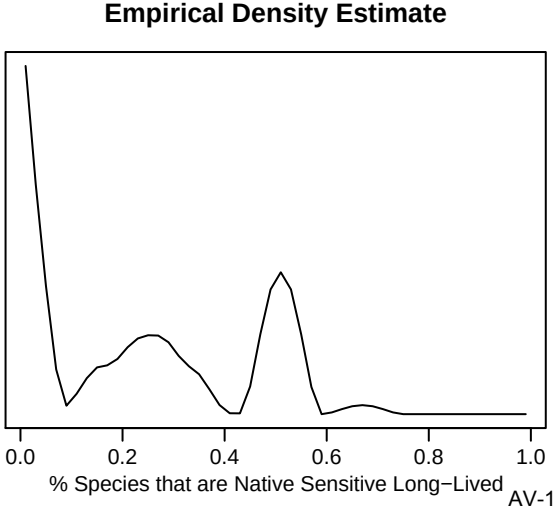
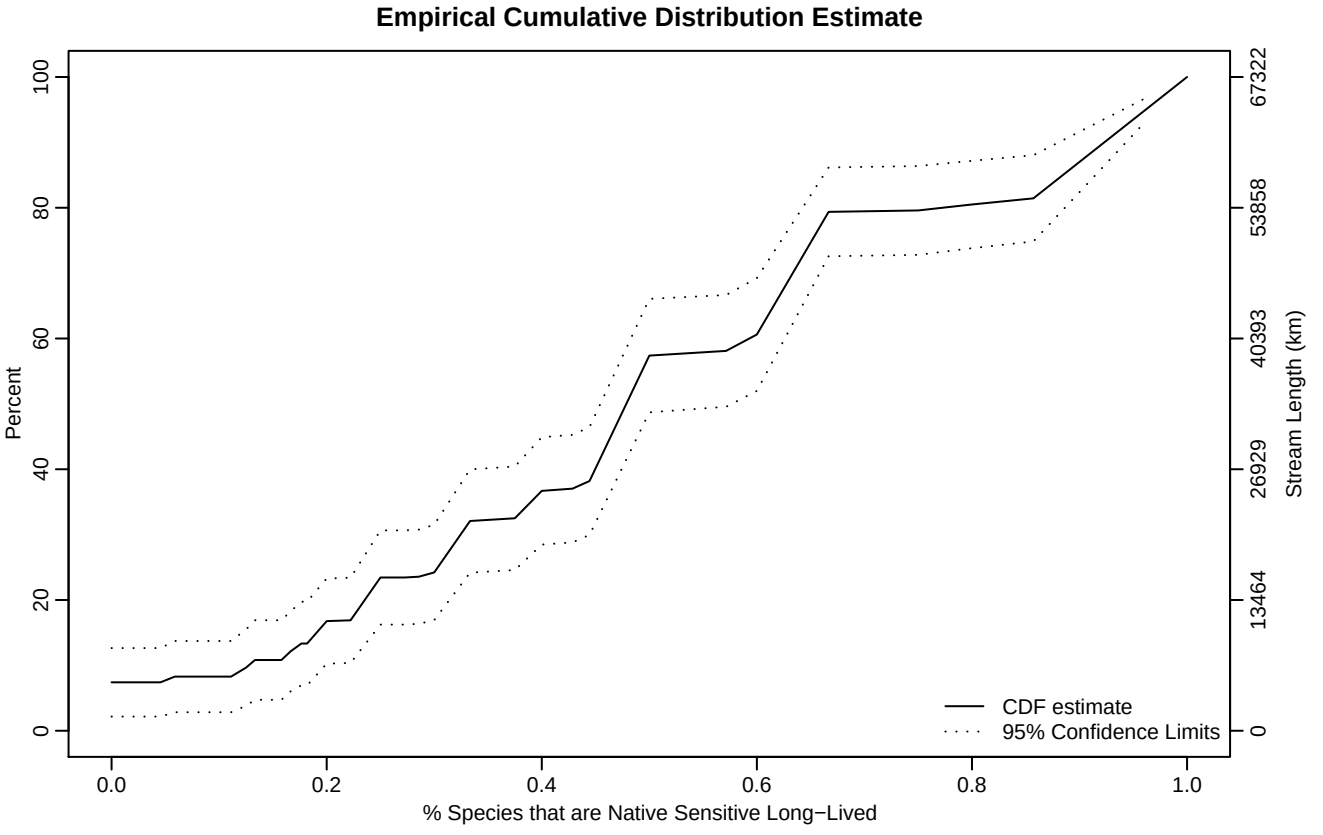


Figure VERT−140 Indicator: LONG_SEN_NAT_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.13
10Pct	0.13	0	0.20
25Pct	0.30	0.23	0.36
50Pct	0.48	0.45	0.58
75Pct	0.65	0.62	0.88
90Pct	0.92	0.87	0.97
95Pct	0.96	0.91	1
Mean	0.53	0.48	0.58
Std Dev	0.29	0.26	0.32

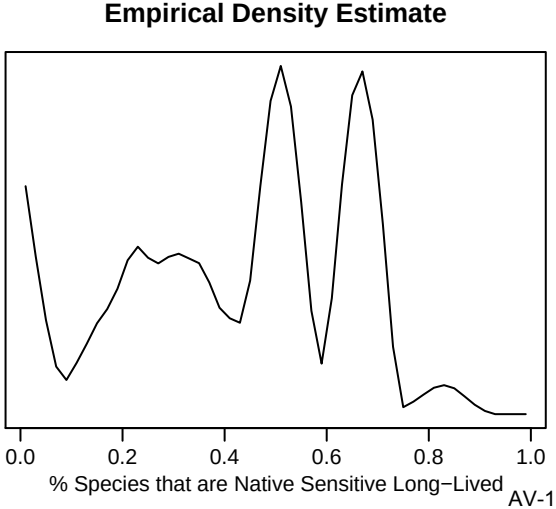
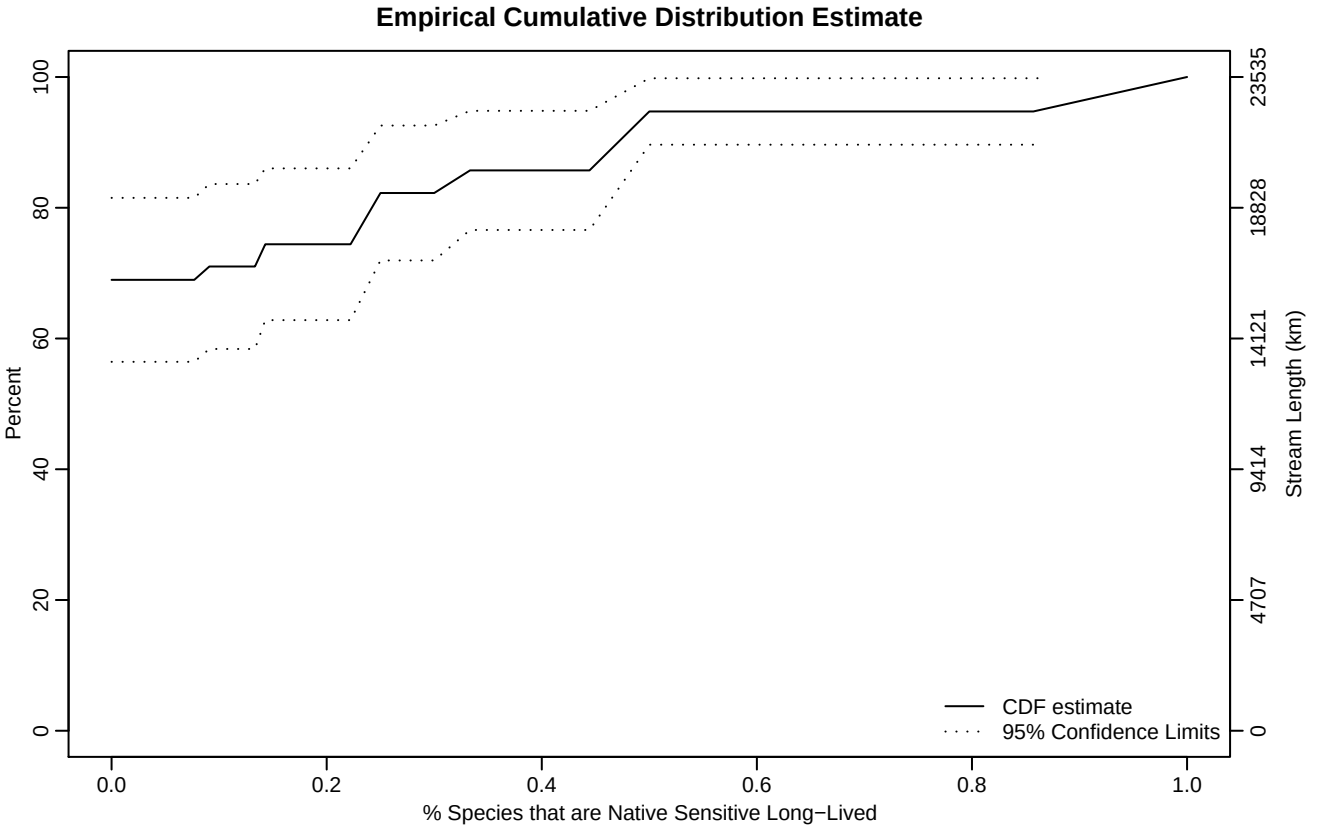


Figure VERT−141 Indicator: LONG_SEN_NAT_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.22	0	0.45
90Pct	0.47	0.25	0.98
95Pct	0.86	0.47	
Mean	0.14	0.07	0.20
Std Dev	0.23	0.15	0.30

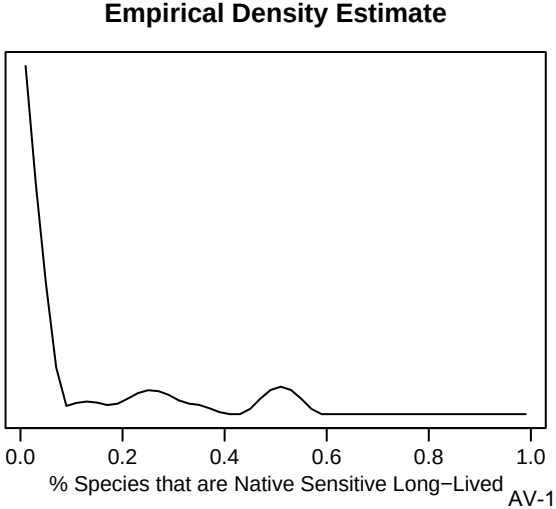
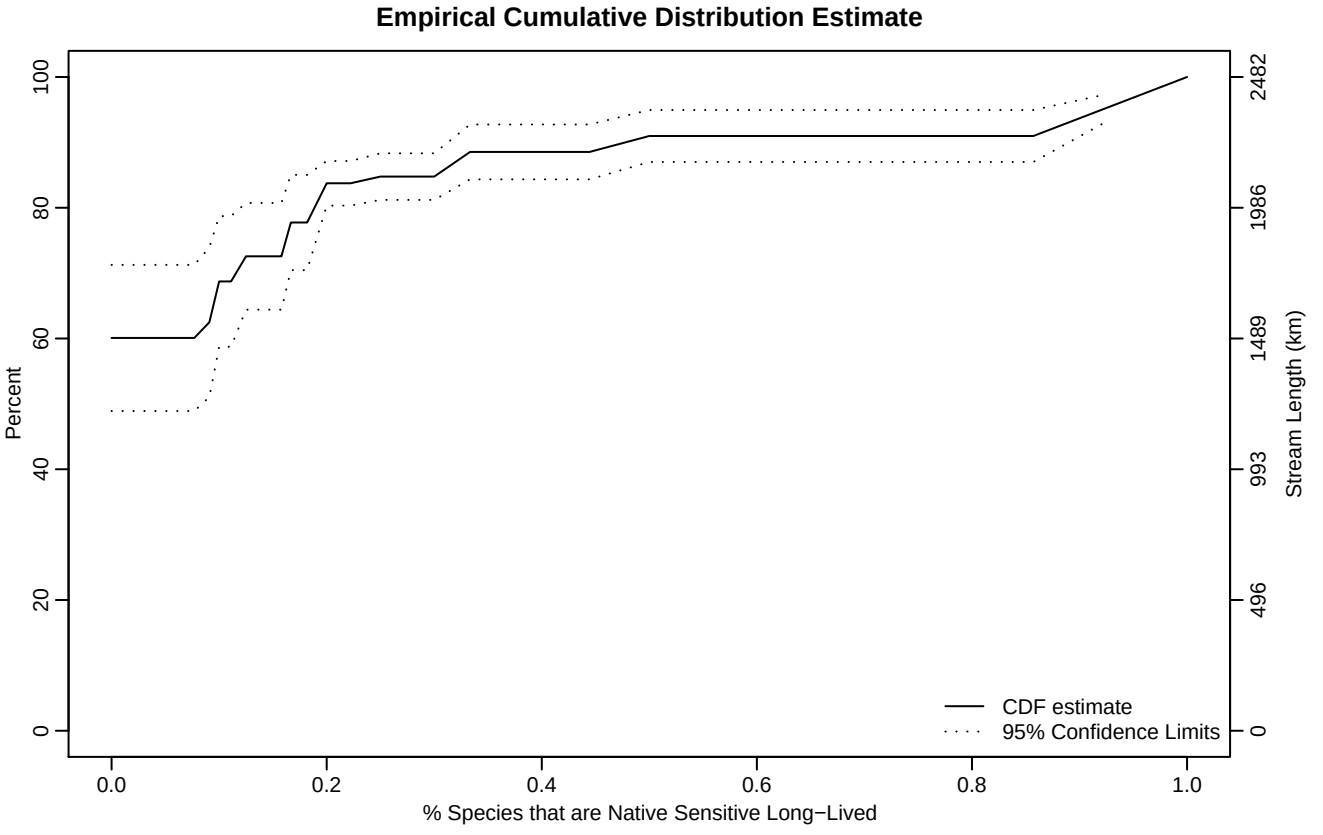


Figure VERT−142 Indicator: LONG_SEN_NAT_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.08
75Pct	0.16	0.10	0.20
90Pct	0.48	0.31	0.91
95Pct	0.92	0.50	0.99
Mean	0.15	0.12	0.19
Std Dev	0.15	0.14	0.17

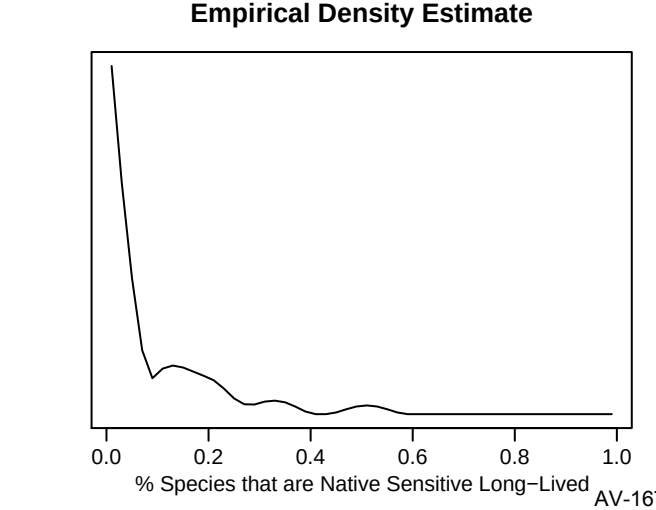
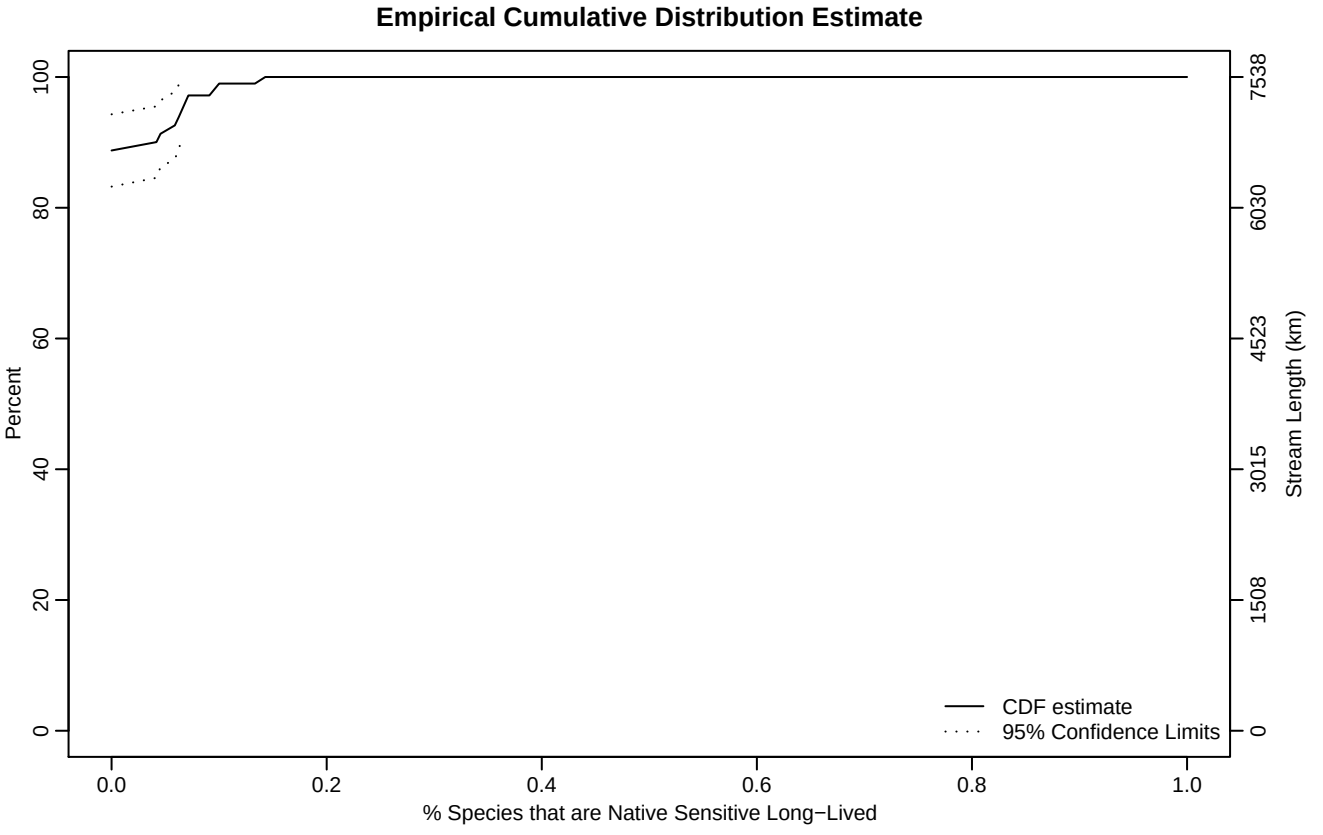


Figure VERT−143 Indicator: LONG_SEN_NAT_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.04	0	0.07
95Pct	0.07	0.04	0.14
Mean	0.01	0	0.01
Std Dev	0.02	0.01	0.03

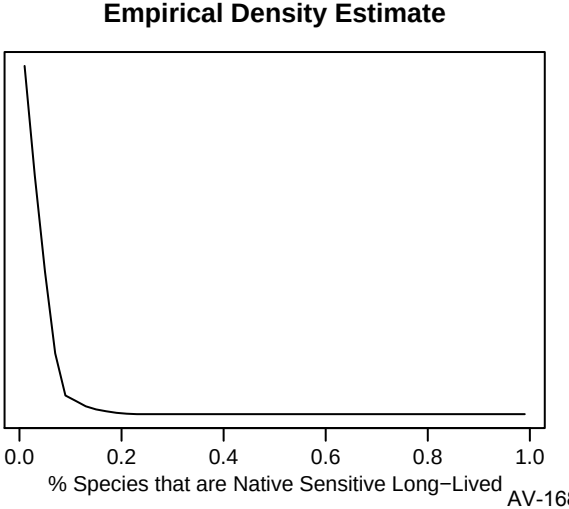
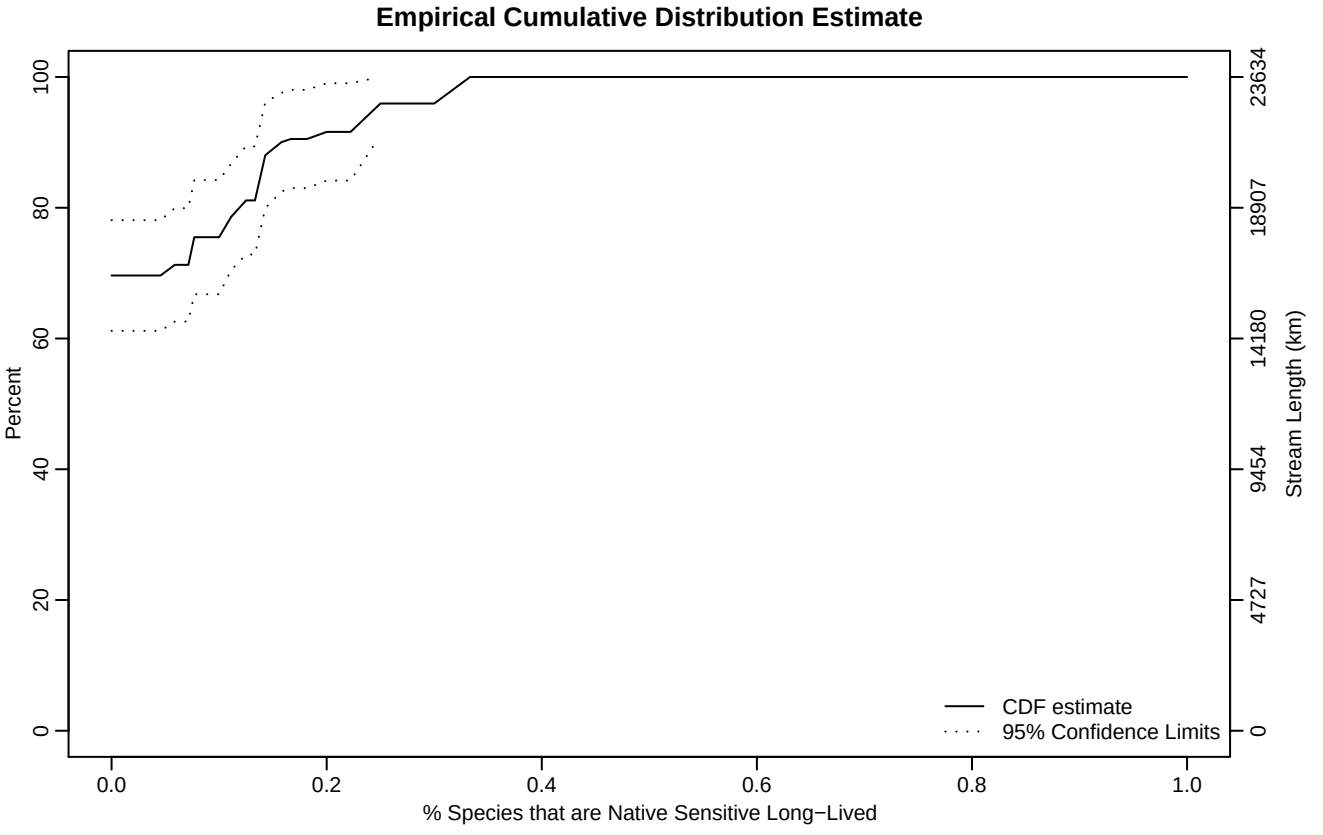


Figure VERT−144 Indicator: LONG_SEN_NAT_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.08	0	0.14
90Pct	0.16	0.13	0.32
95Pct	0.24	0.14	0.33
Mean	0.05	0.03	0.07
Std Dev	0.06	0.05	0.07

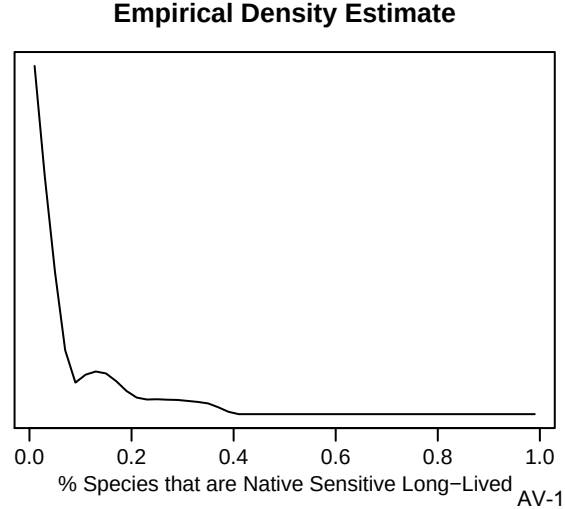
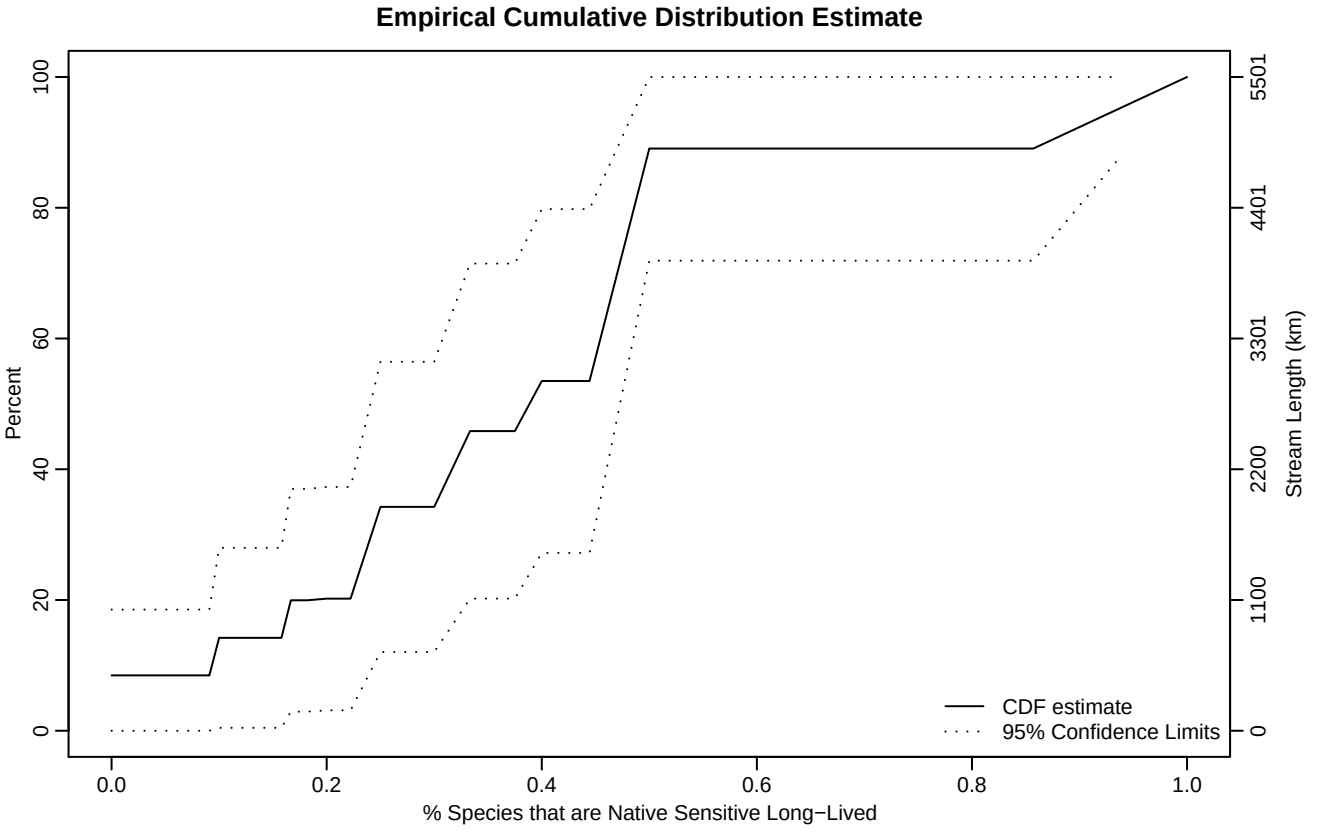


Figure VERT−145 Indicator: LONG_SEN_NAT_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.16
10Pct	0.09	0	0.22
25Pct	0.23	0	0.32
50Pct	0.39	0.23	0.48
75Pct	0.48	0.38	1
90Pct	0.87	0.47	1
95Pct	0.93	0.48	1
Mean	0.41	0.27	0.55
Std Dev	0.26	0.16	0.37

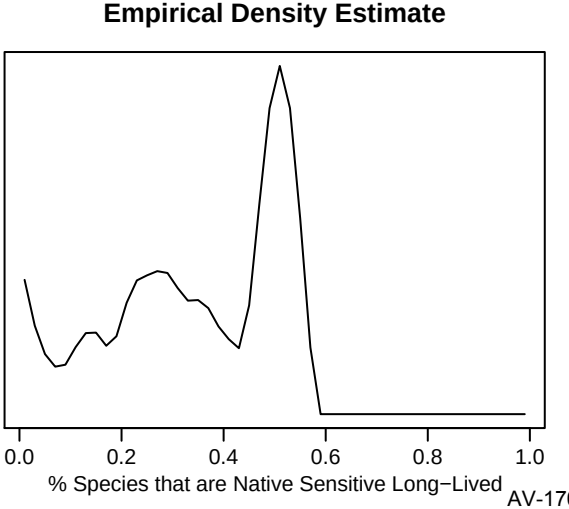
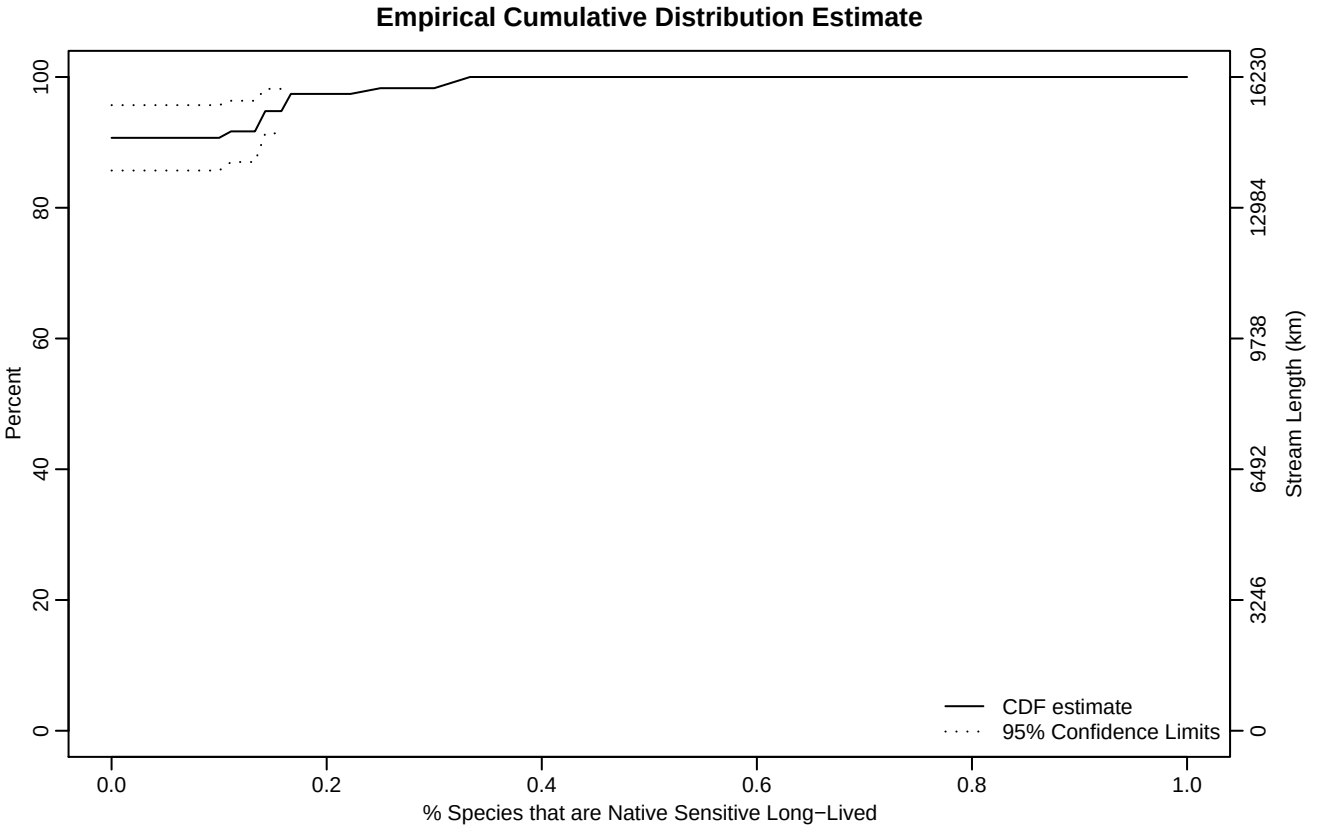


Figure VERT−146 Indicator: LONG_SEN_NAT_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.16
95Pct	0.16	0.11	0.31
Mean	0.02	0.01	0.03
Std Dev	0.03	0.02	0.04

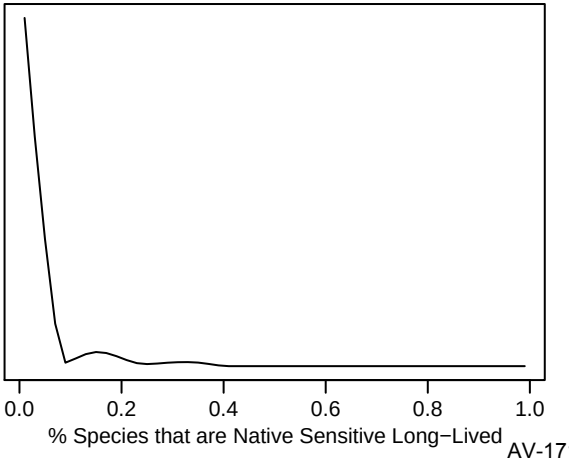
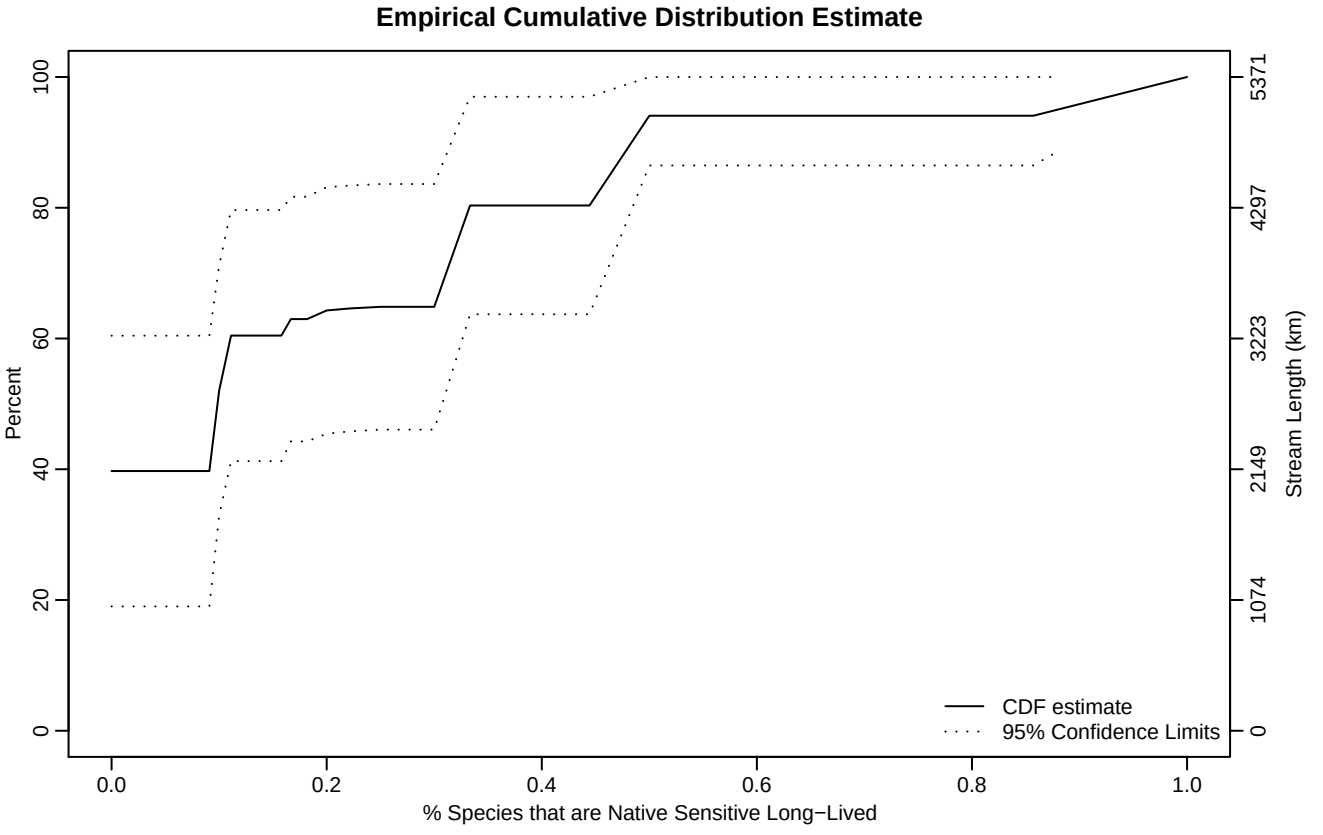


Figure VERT−147 Indicator: LONG_SEN_NAT_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.10
50Pct	0.10	0	0.32
75Pct	0.32	0.10	0.87
90Pct	0.48	0.32	
95Pct	0.88	0.47	
Mean	0.21	0.12	0.30
Std Dev	0.20	0.16	0.24

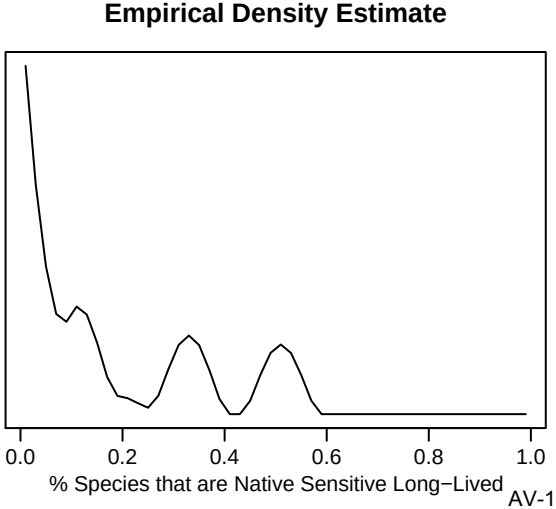
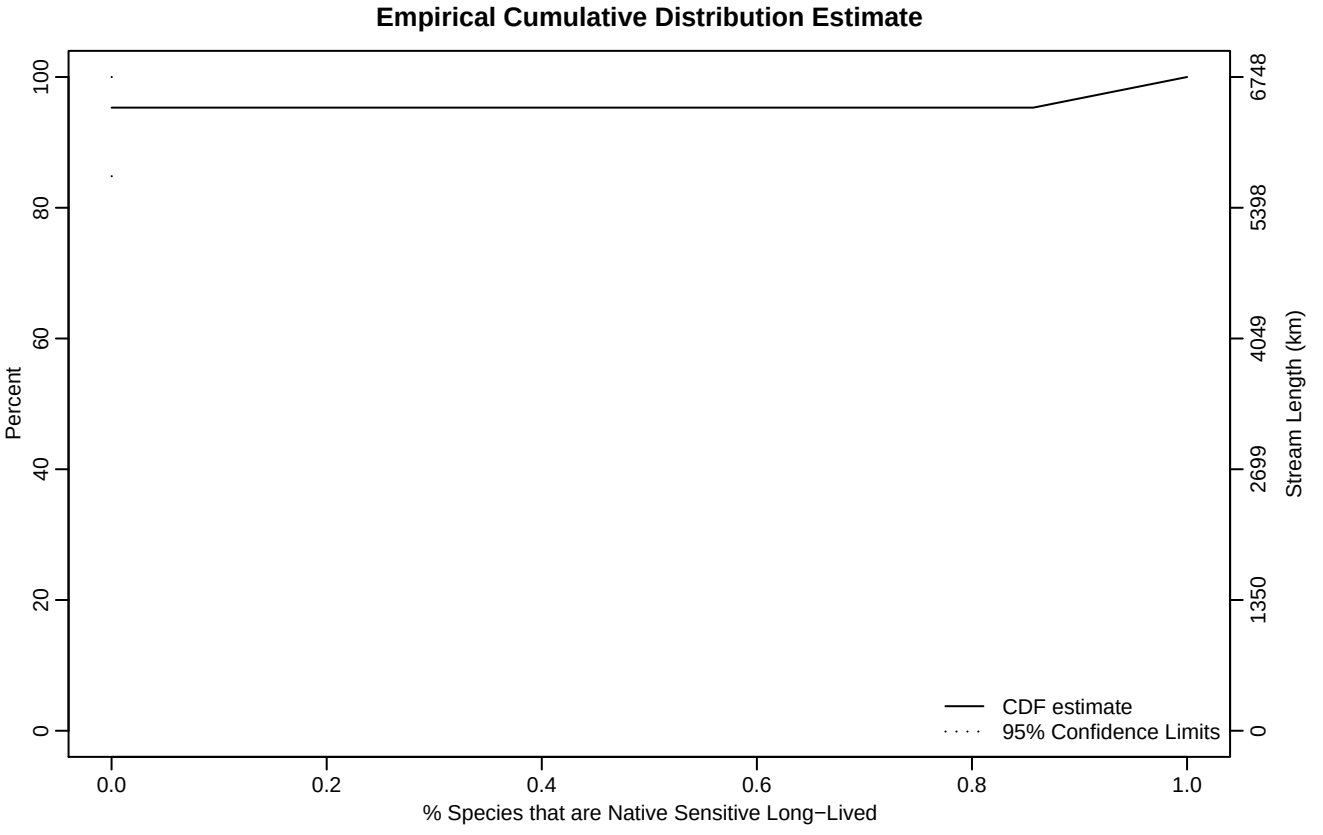


Figure VERT−148 Indicator: LONG_SEN_NAT_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.99
95Pct	0	0	1
Mean	0.05	−0.06	0.15
Std Dev	0.05	0.04	0.07

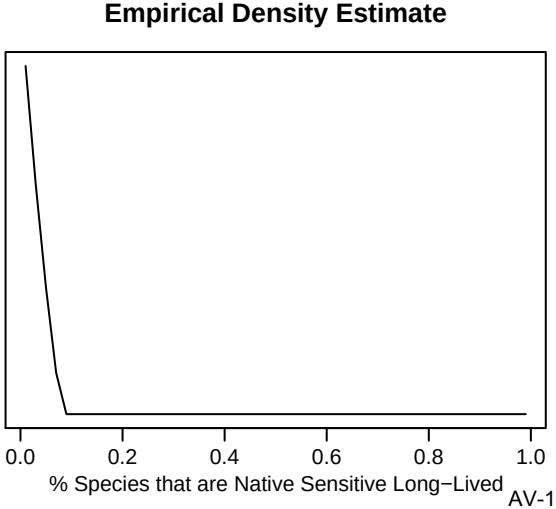
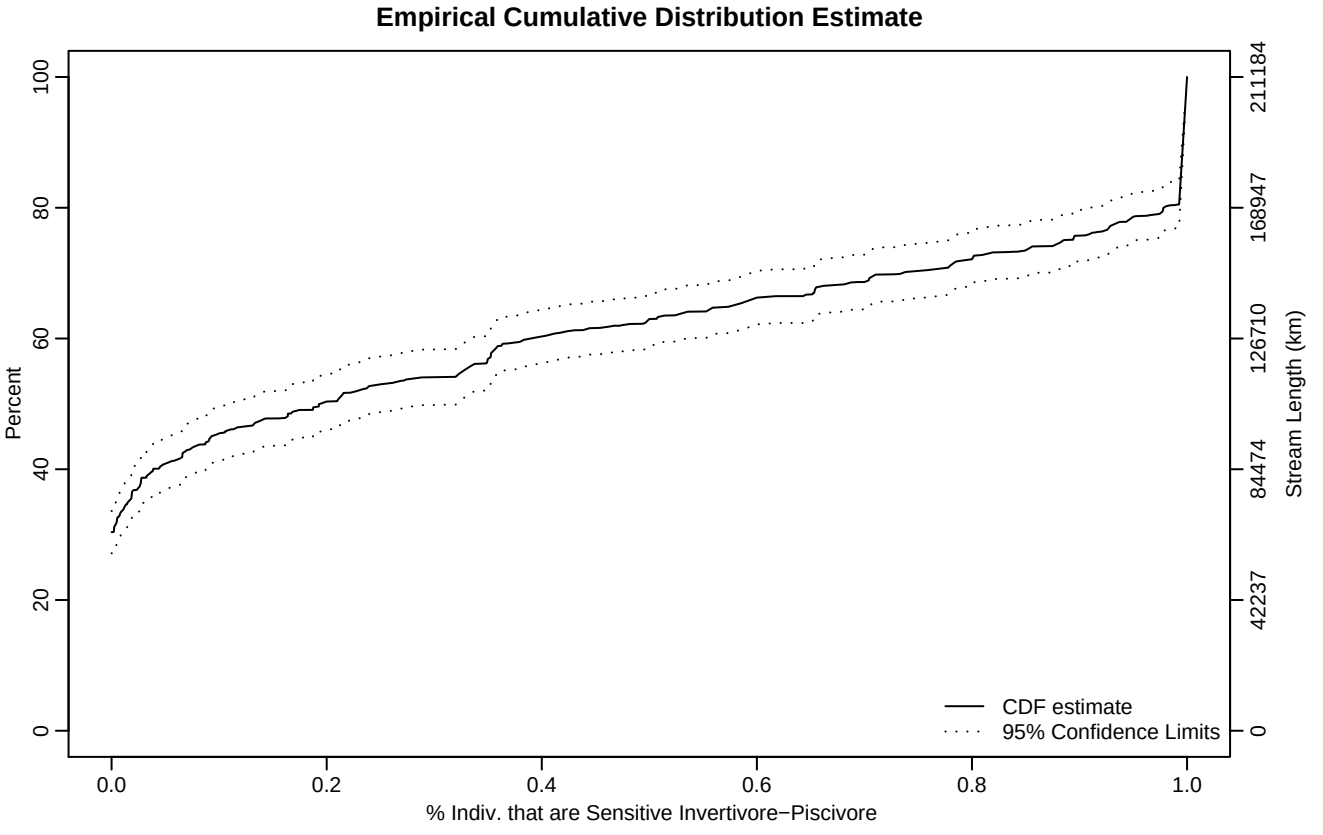


Figure VERT−149 Indicator: INVPISC_SEN_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.19	0.11	0.32
75Pct	0.88	0.78	0.97
90Pct	1	0.99	1
95Pct	1	1	1
Mean	0.39	0.35	0.42
Std Dev	0.37	0.35	0.38

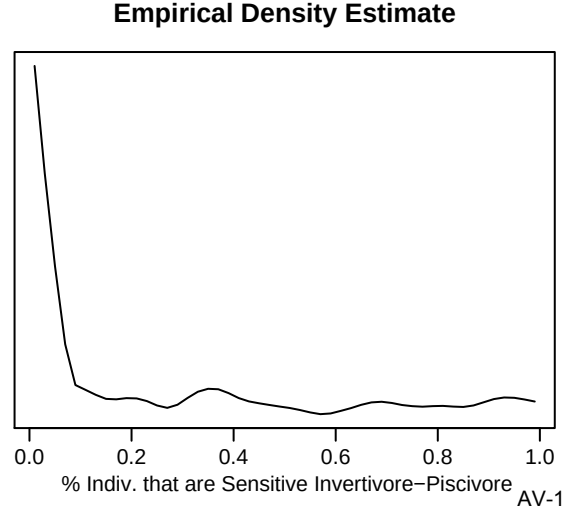
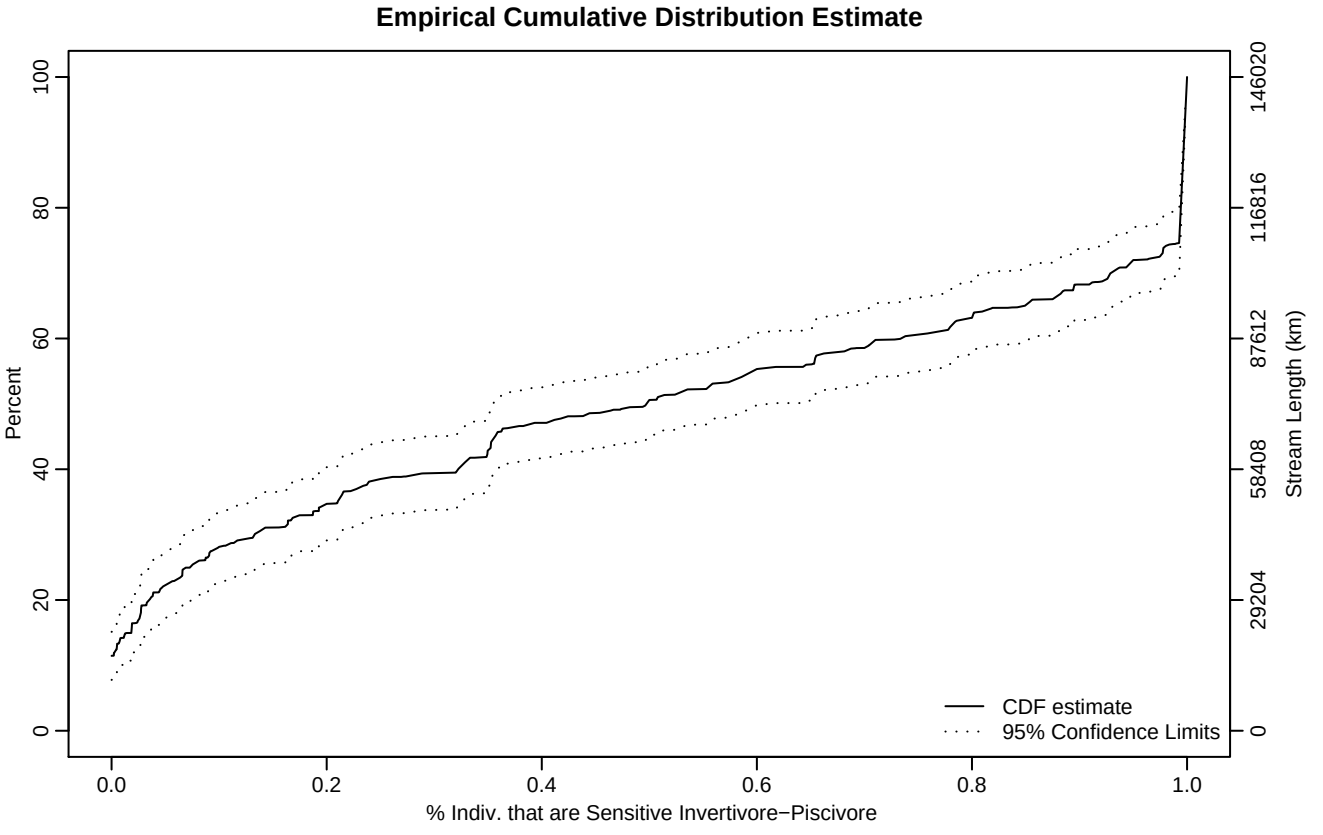


Figure VERT−150 Indicator: INVPISC_SEN_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.07	0.03	0.13
50Pct	0.50	0.35	0.61
75Pct	0.99	0.93	0.99
90Pct	1	1	1
95Pct	1	1	1
Mean	0.51	0.47	0.56
Std Dev	0.38	0.37	0.40

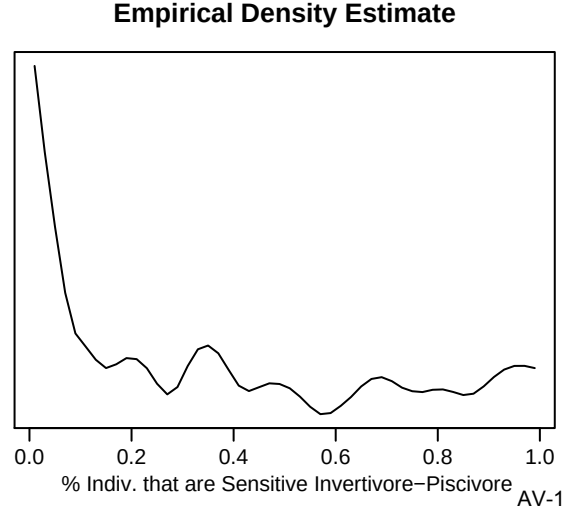
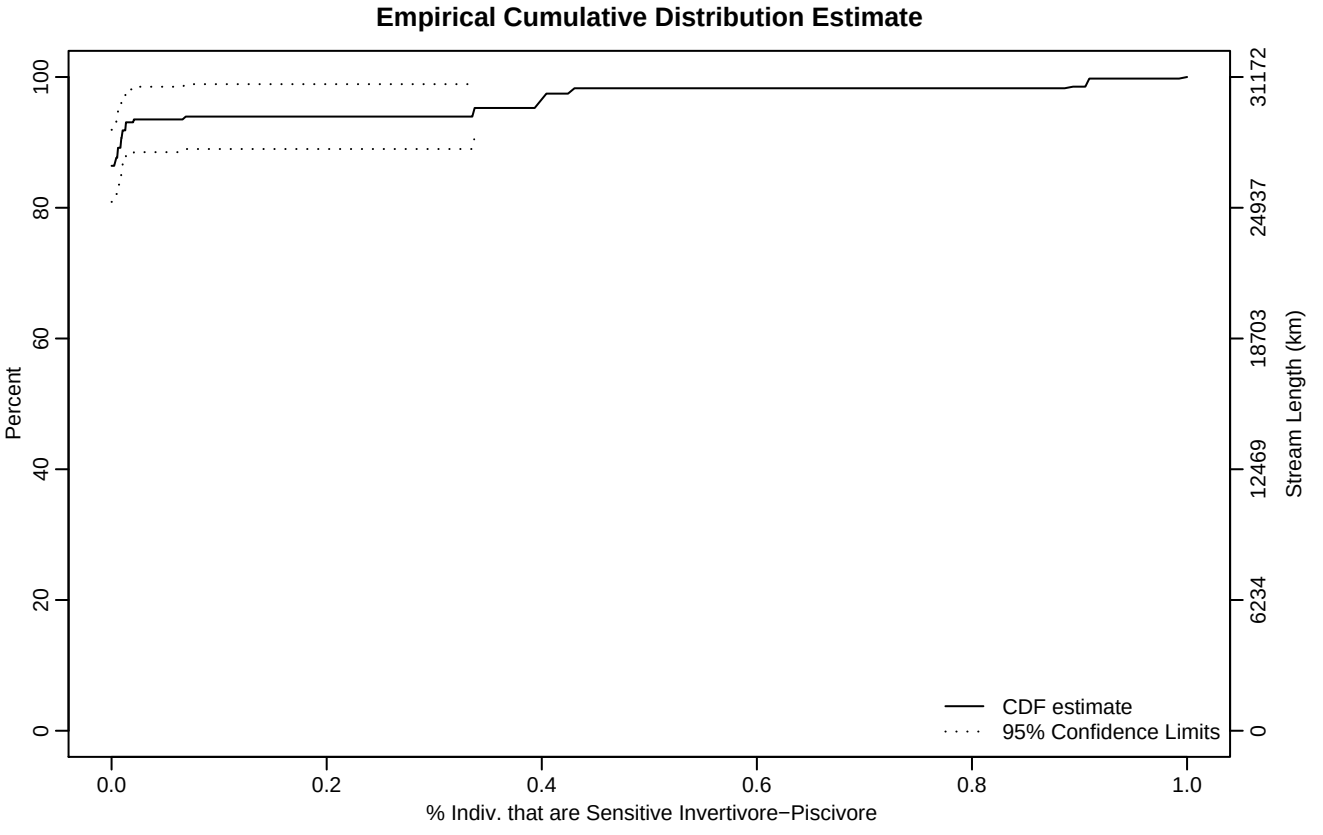


Figure VERT−151 Indicator: INVPISC_SEN_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.01	0	0.39
95Pct	0.34	0.01	1
Mean	0.03	0.01	0.06
Std Dev	0.08	0.05	0.12

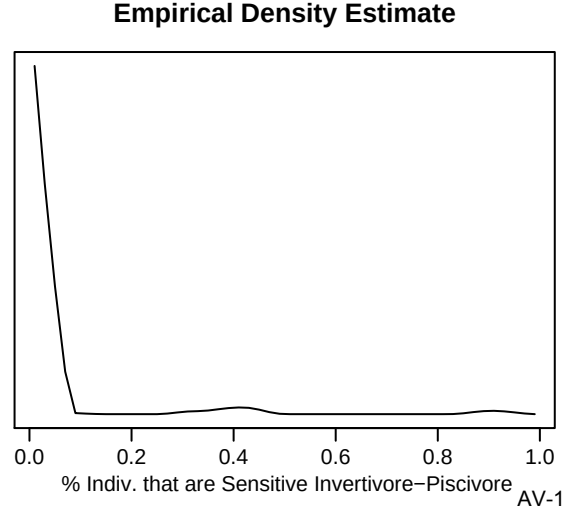
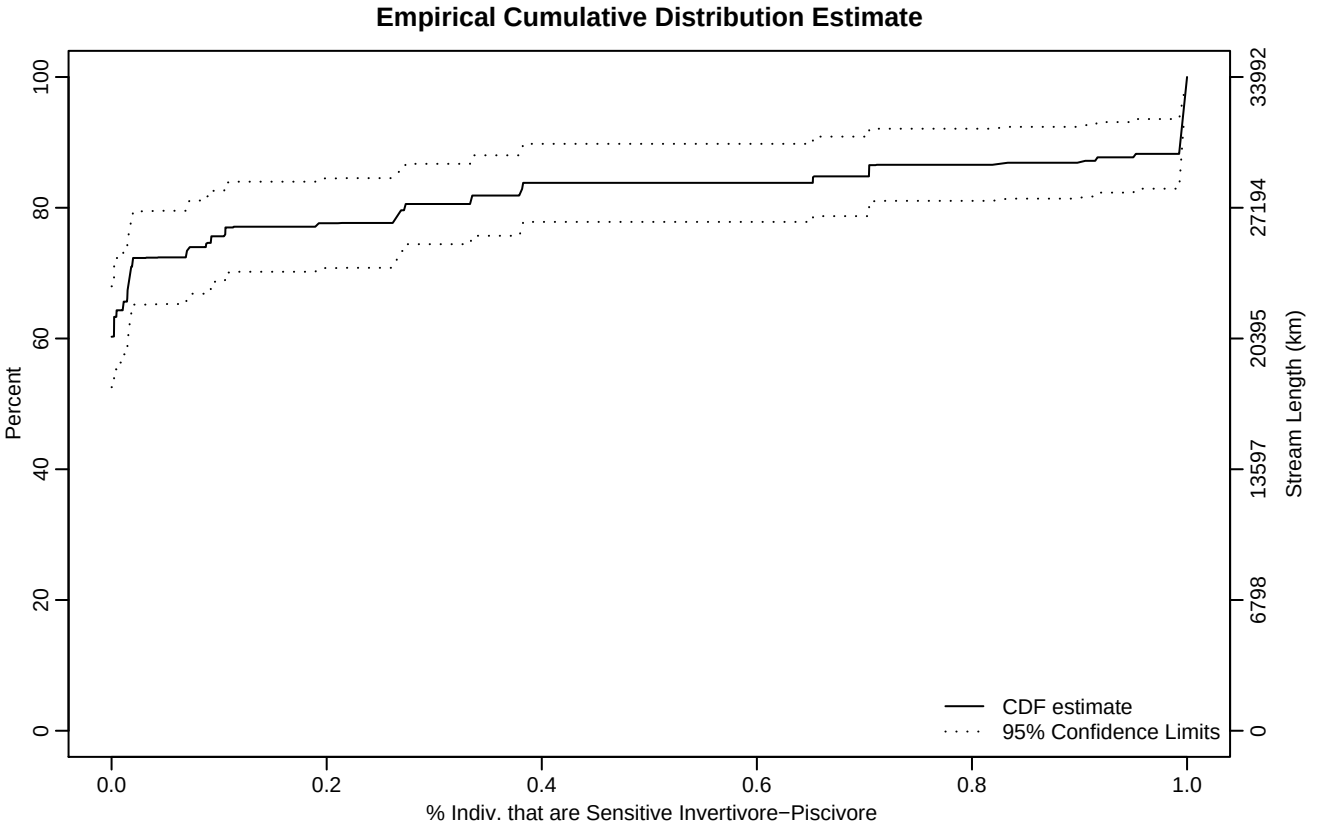


Figure VERT−152 Indicator: INVPISC_SEN_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.09	0.02	0.38
90Pct	0.99	0.65	1
95Pct	1	0.99	
Mean	0.18	0.12	0.23
Std Dev	0.26	0.22	0.30

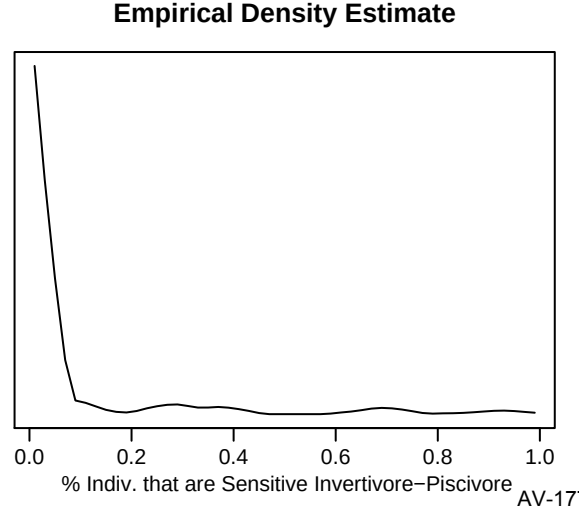
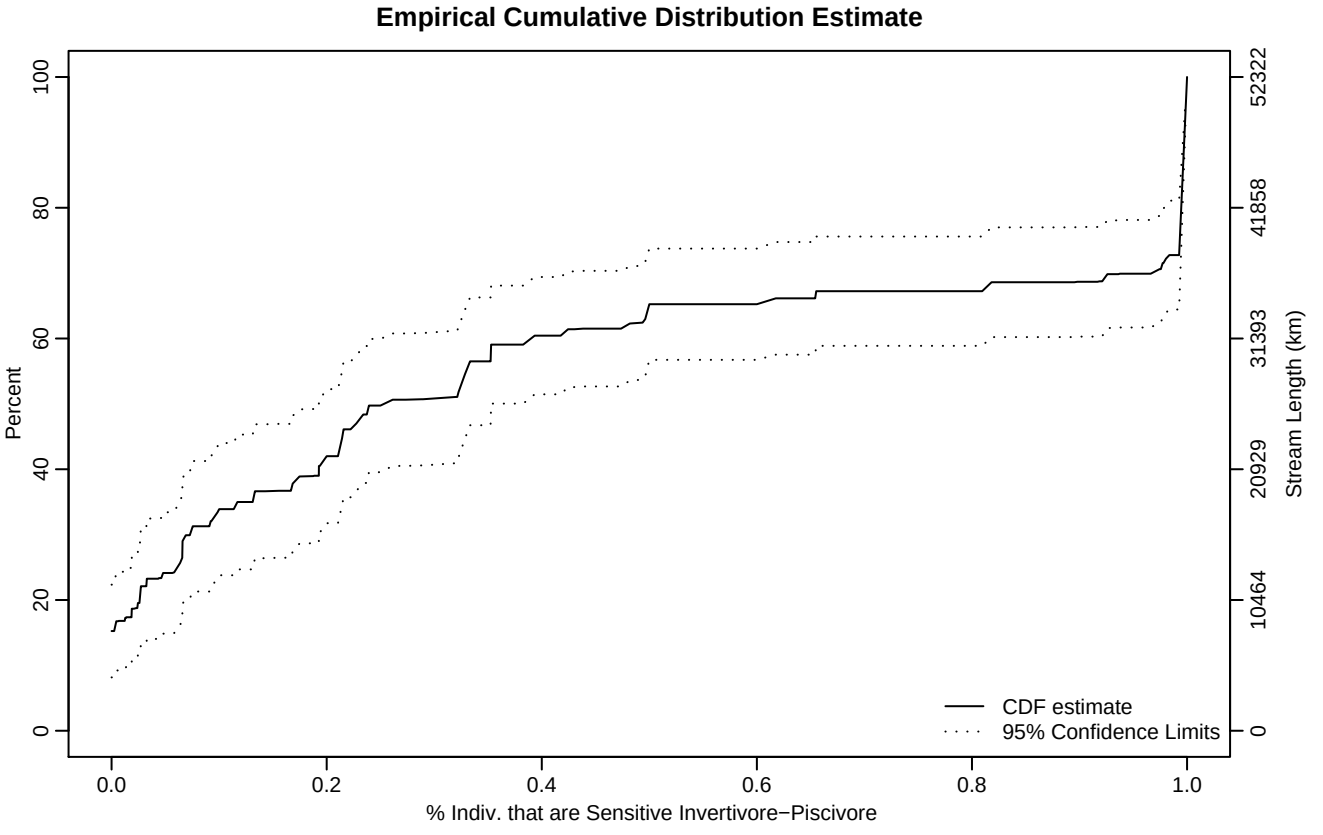


Figure VERT−153 Indicator: INVPISC_SEN_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.02
25Pct	0.06	0	0.12
50Pct	0.25	0.19	0.39
75Pct	0.99	0.65	1
90Pct	1	0.99	1
95Pct	1	1	1
Mean	0.44	0.36	0.51
Std Dev	0.38	0.34	0.42

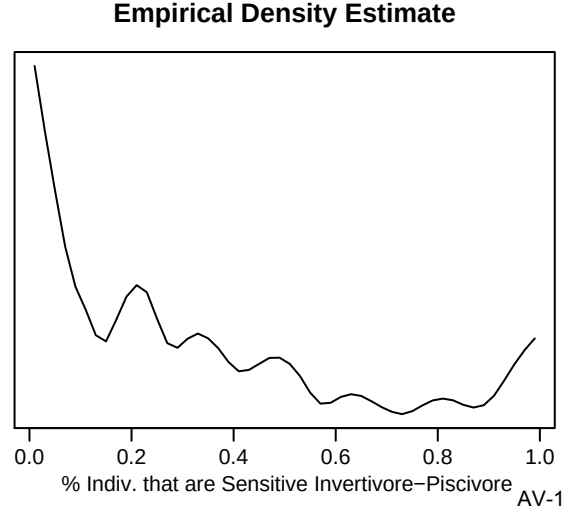
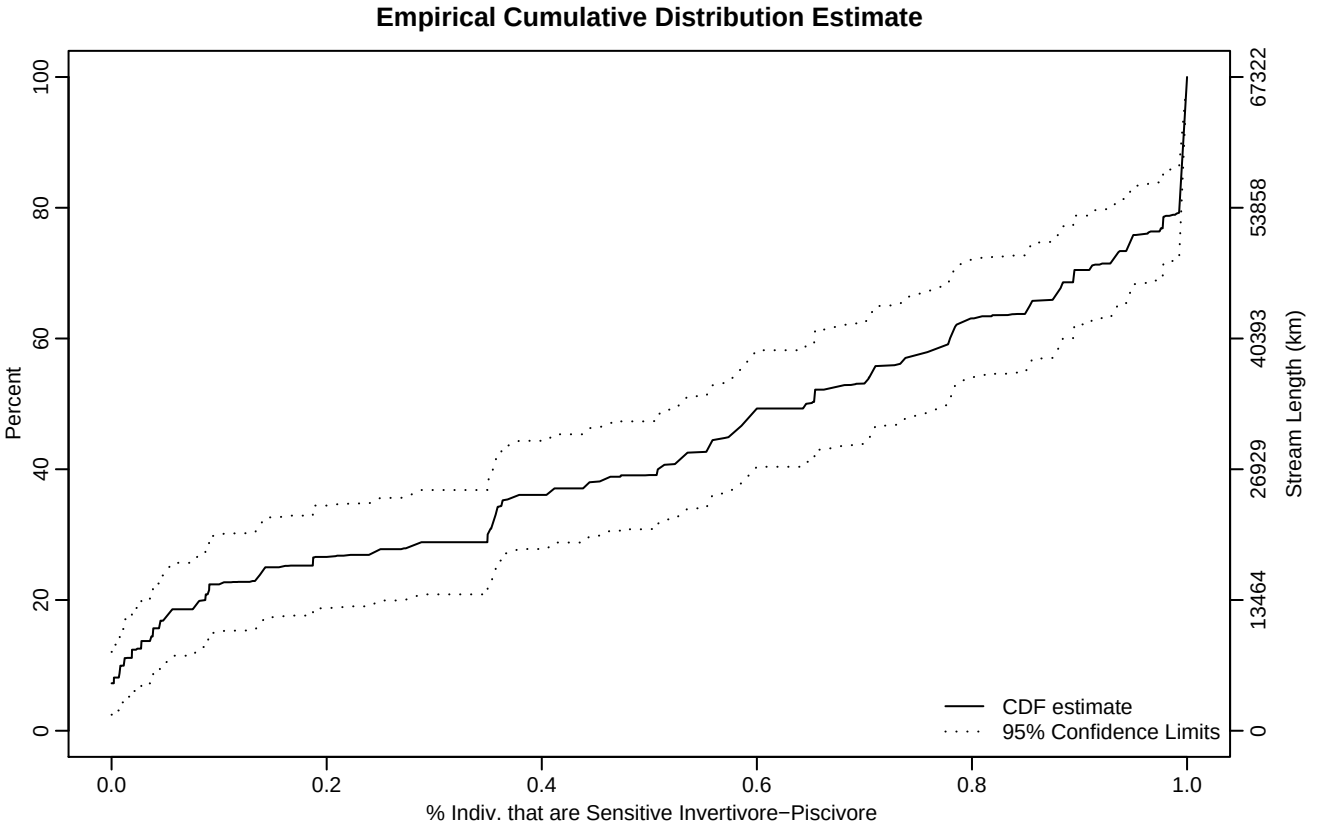


Figure VERT−154 Indicator: INVPISC_SEN_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0.01	0	0.04
25Pct	0.14	0.05	0.36
50Pct	0.65	0.53	0.77
75Pct	0.95	0.88	0.99
90Pct	1	0.99	1
95Pct	1	1	1
Mean	0.57	0.50	0.64
Std Dev	0.36	0.34	0.39

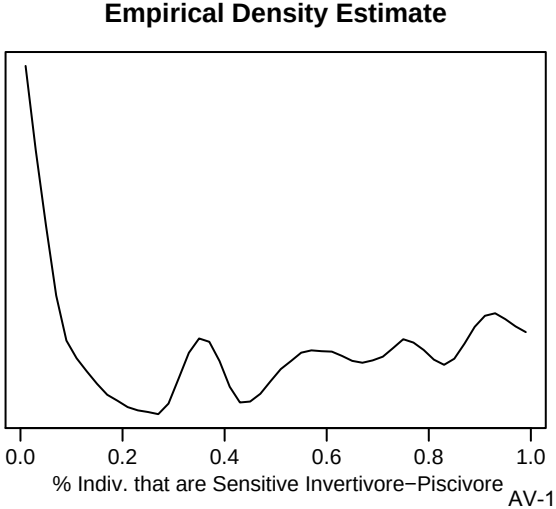
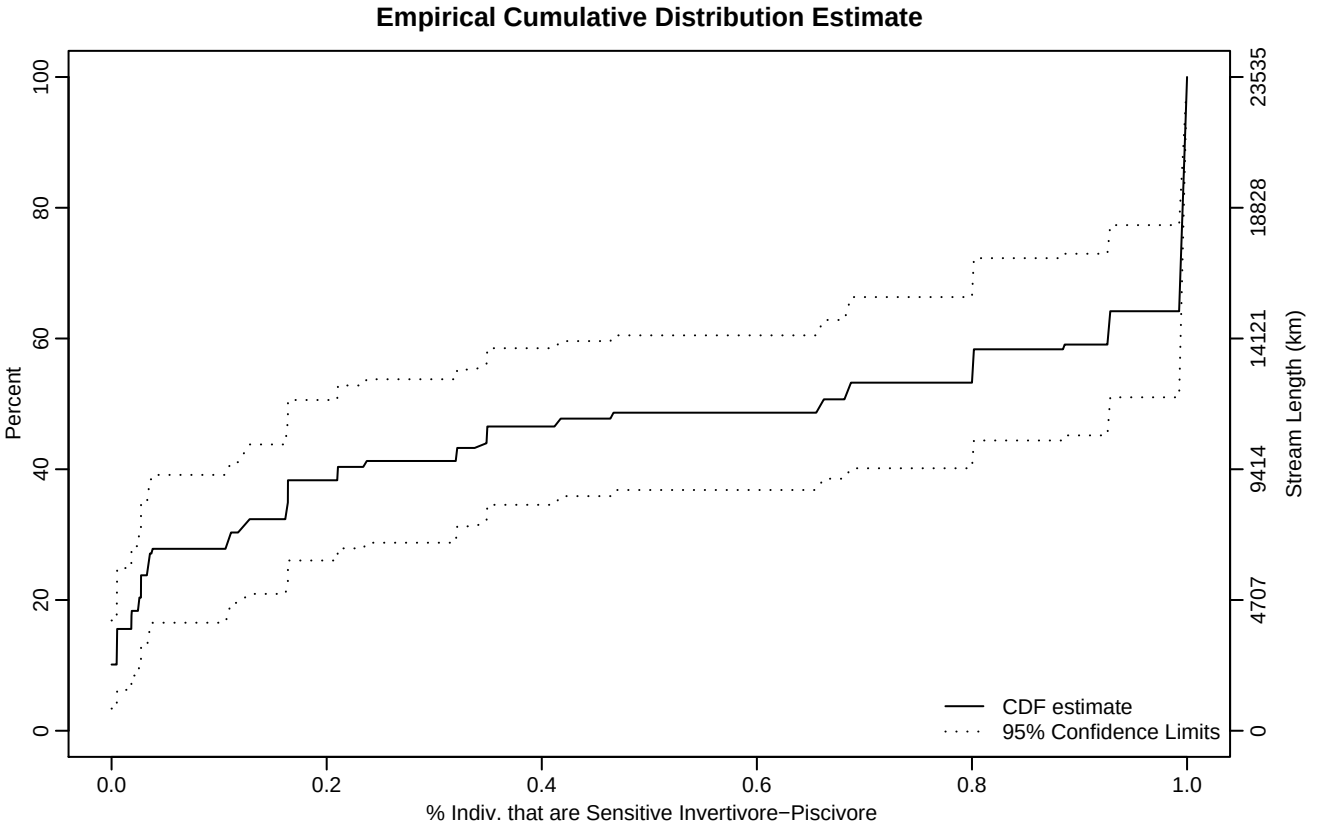


Figure VERT−155 Indicator: INVPISC_SEN_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.02
25Pct	0.03	0.01	0.16
50Pct	0.66	0.16	0.93
75Pct	0.99	0.93	1
90Pct	1	1	
95Pct	1	1	
Mean	0.54	0.43	0.64
Std Dev	0.39	0.35	0.42

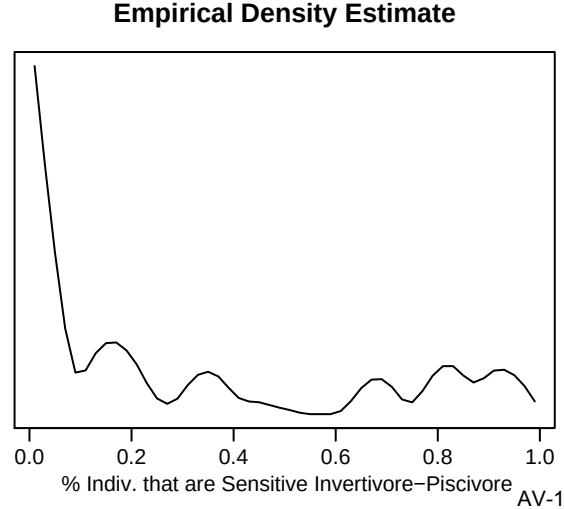
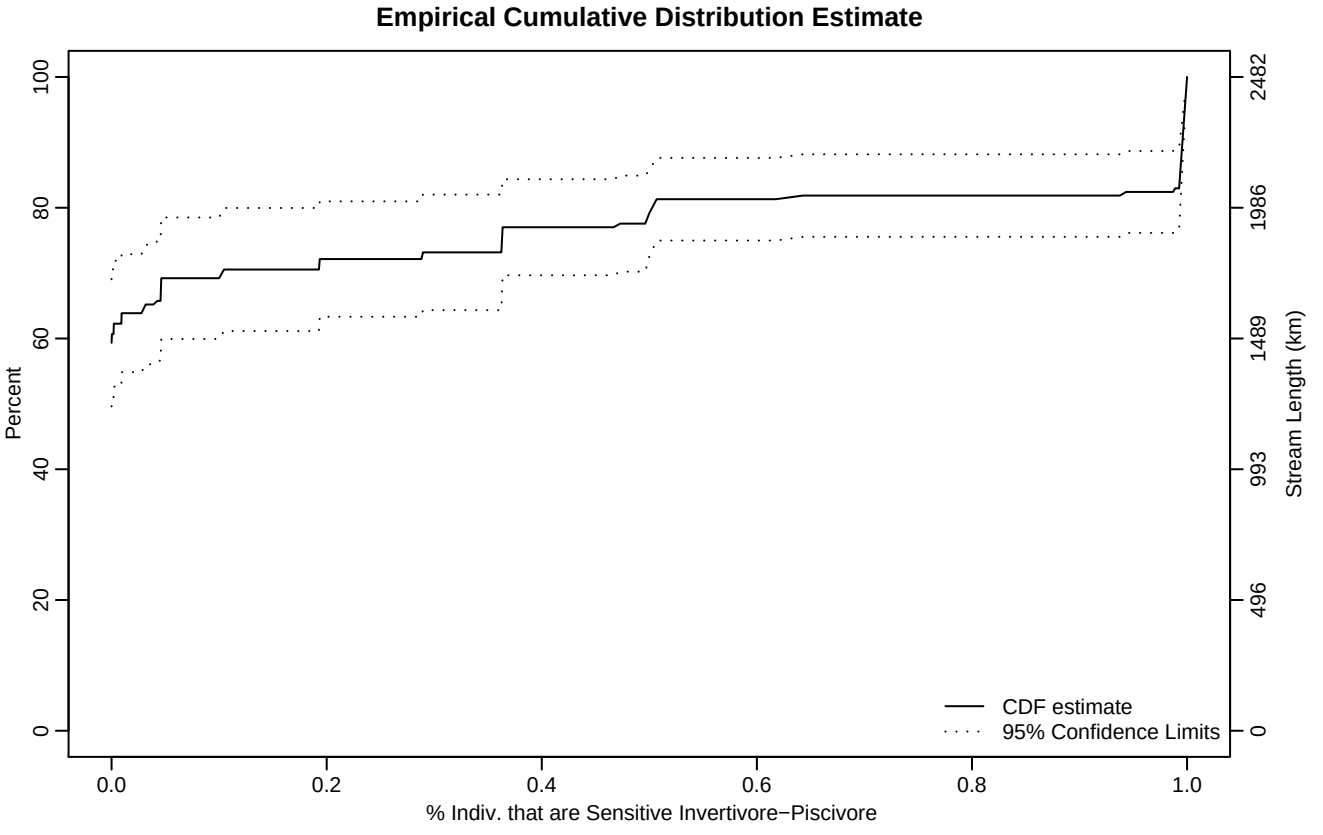


Figure VERT−156 Indicator: INVPISC_SEN_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.36	0.05	0.99
90Pct	1	0.99	1
95Pct	1	1	1
Mean	0.23	0.17	0.29
Std Dev	0.35	0.30	0.41

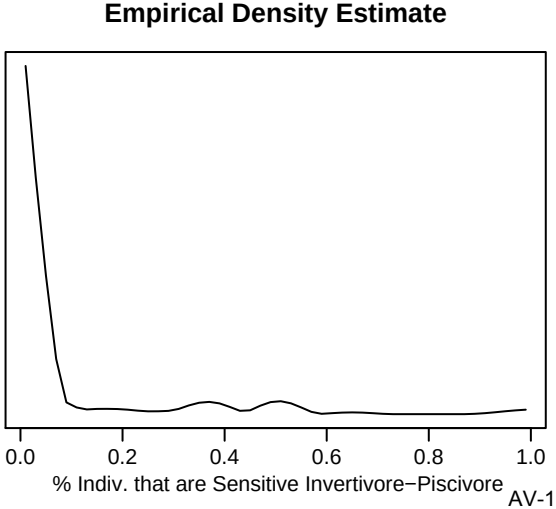
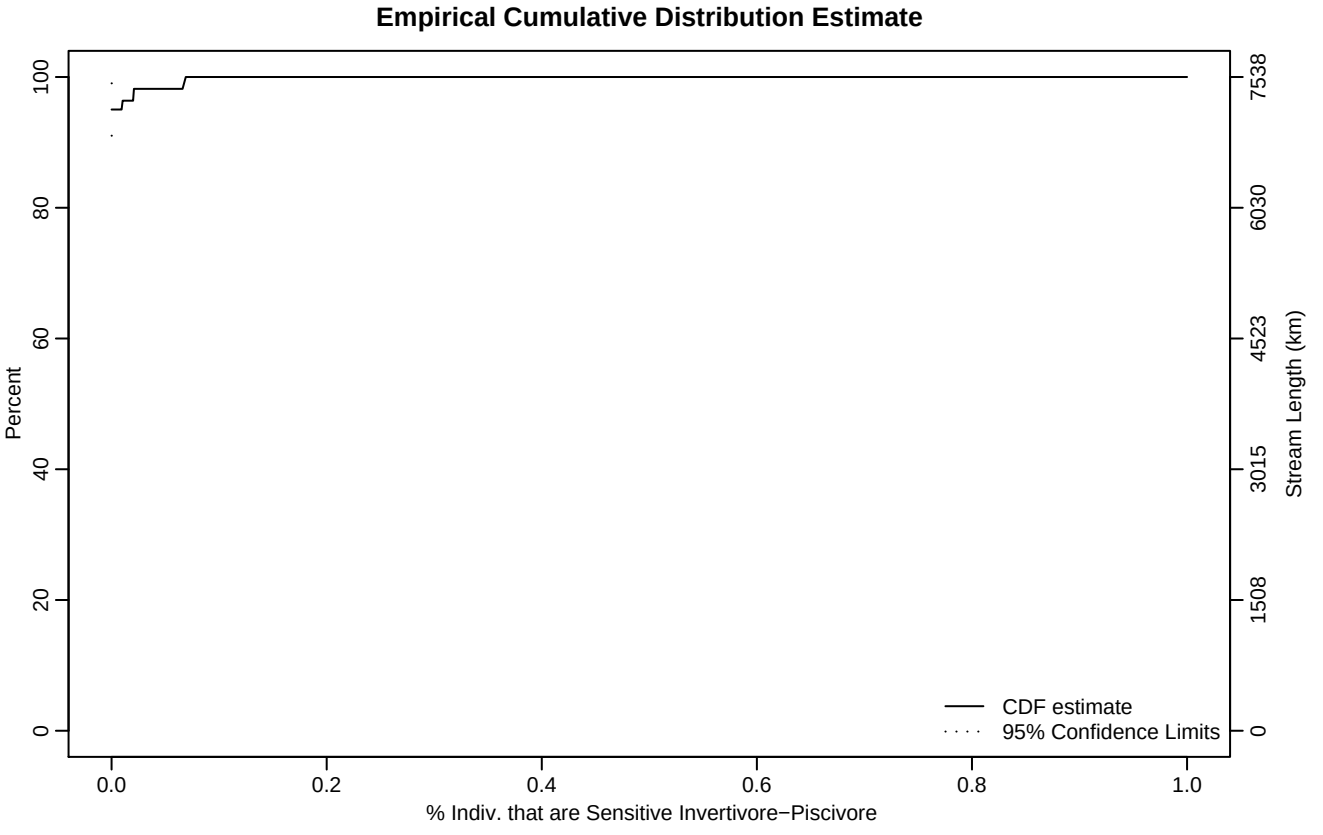


Figure VERT−157 Indicator: INVPISC_SEN_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.07
Mean	0	0	0
Std Dev	0	0	0

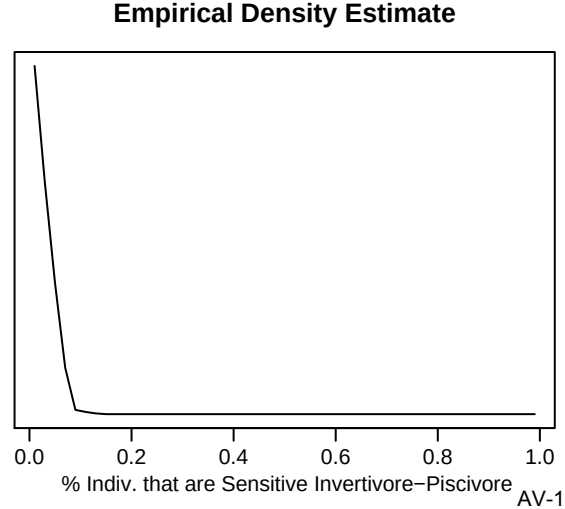
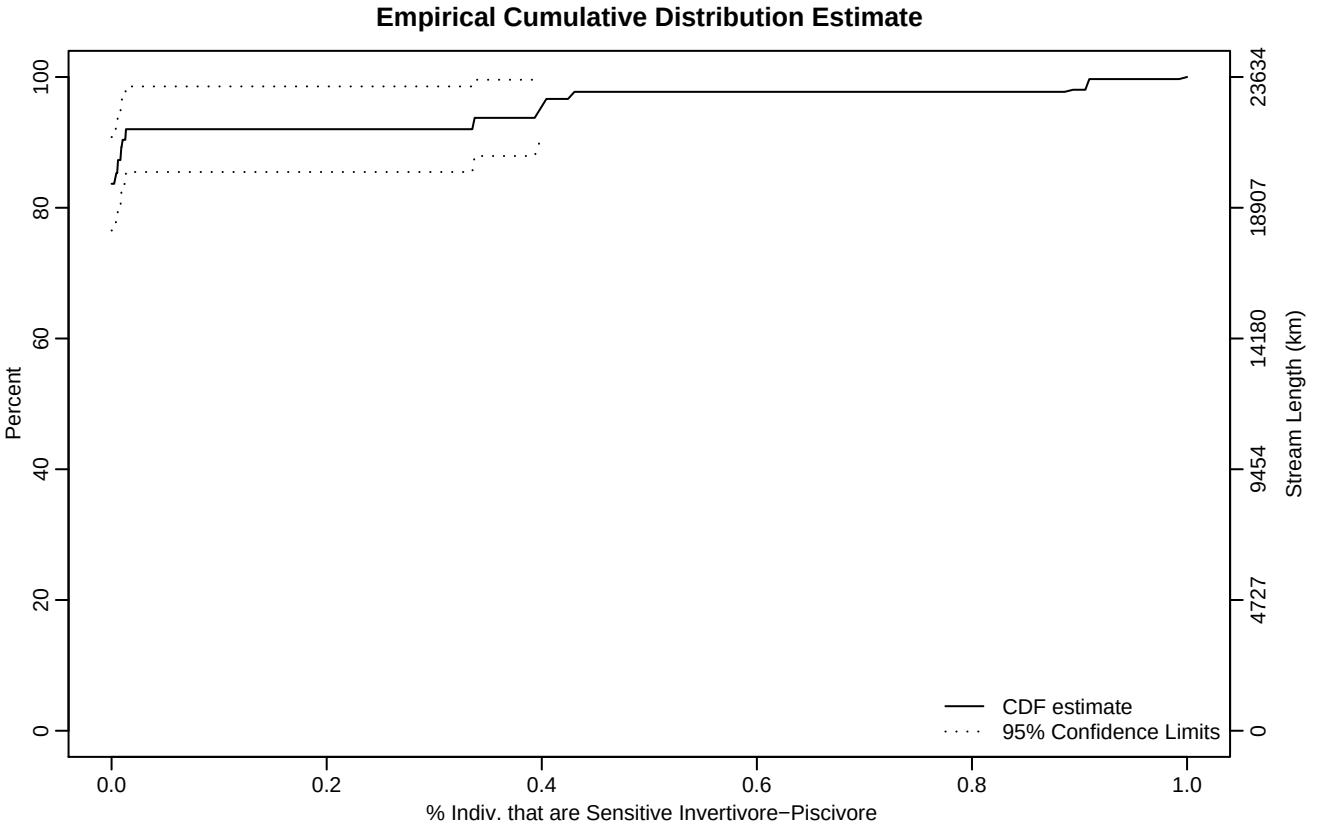


Figure VERT−158 Indicator: INVPISC_SEN_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.01	0	0.43
95Pct	0.40	0.01	1
Mean	0.04	0.01	0.08
Std Dev	0.11	0.06	0.15

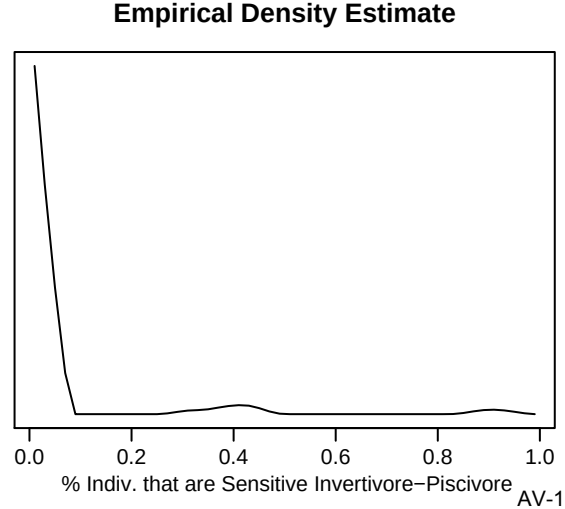
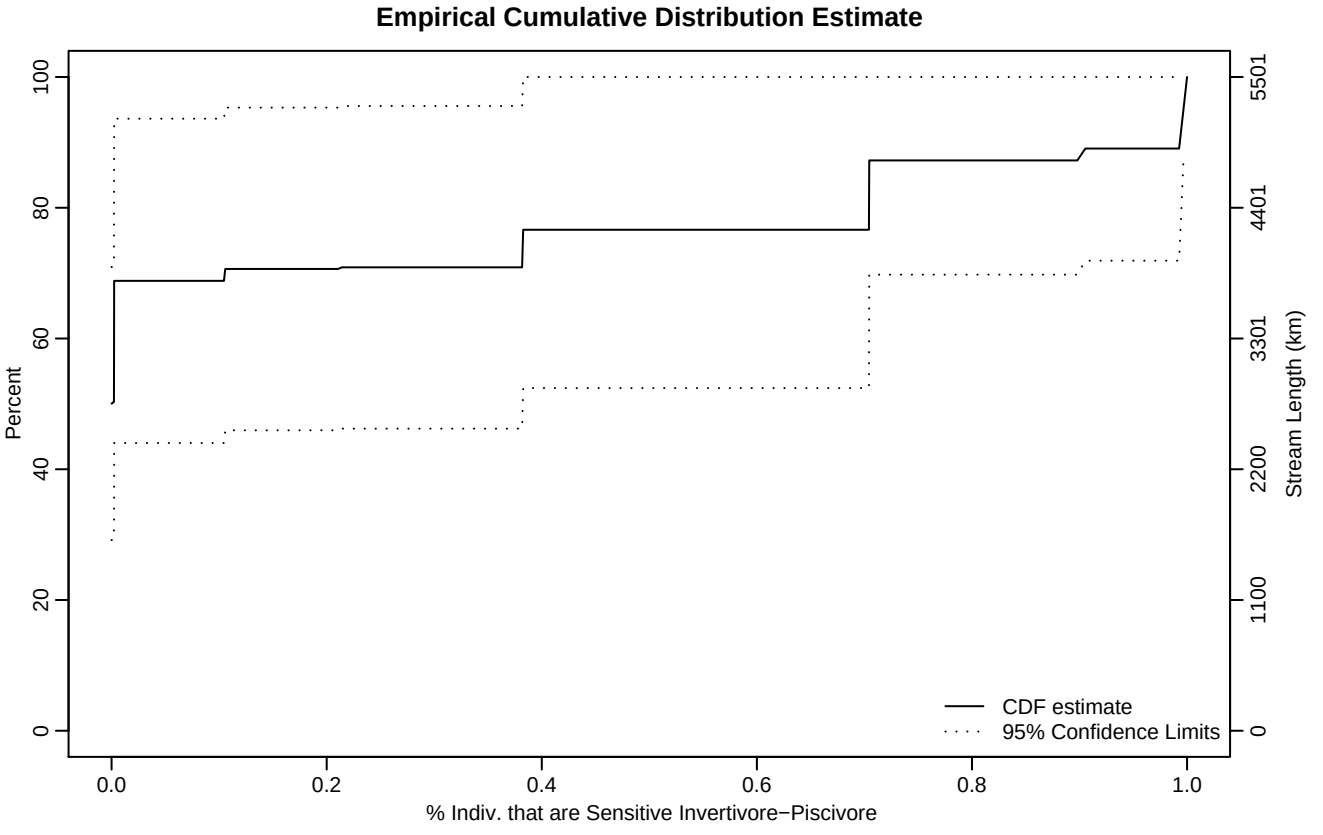


Figure VERT−159 Indicator: INVPISC_SEN_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.38
75Pct	0.38	0	1
90Pct	0.99	0.38	1
95Pct	1	0.70	1
Mean	0.23	0.02	0.43
Std Dev	0.37	0.23	0.50

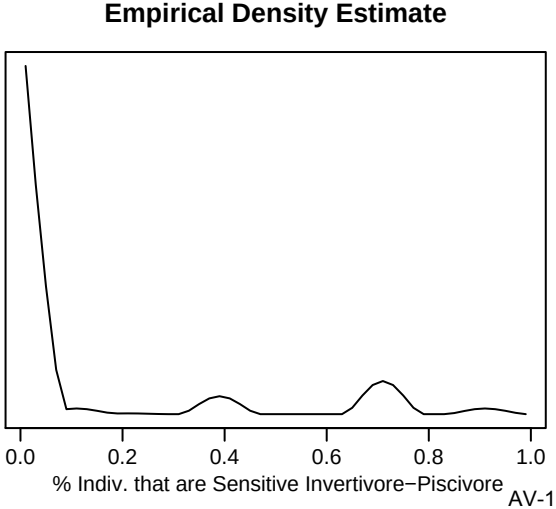
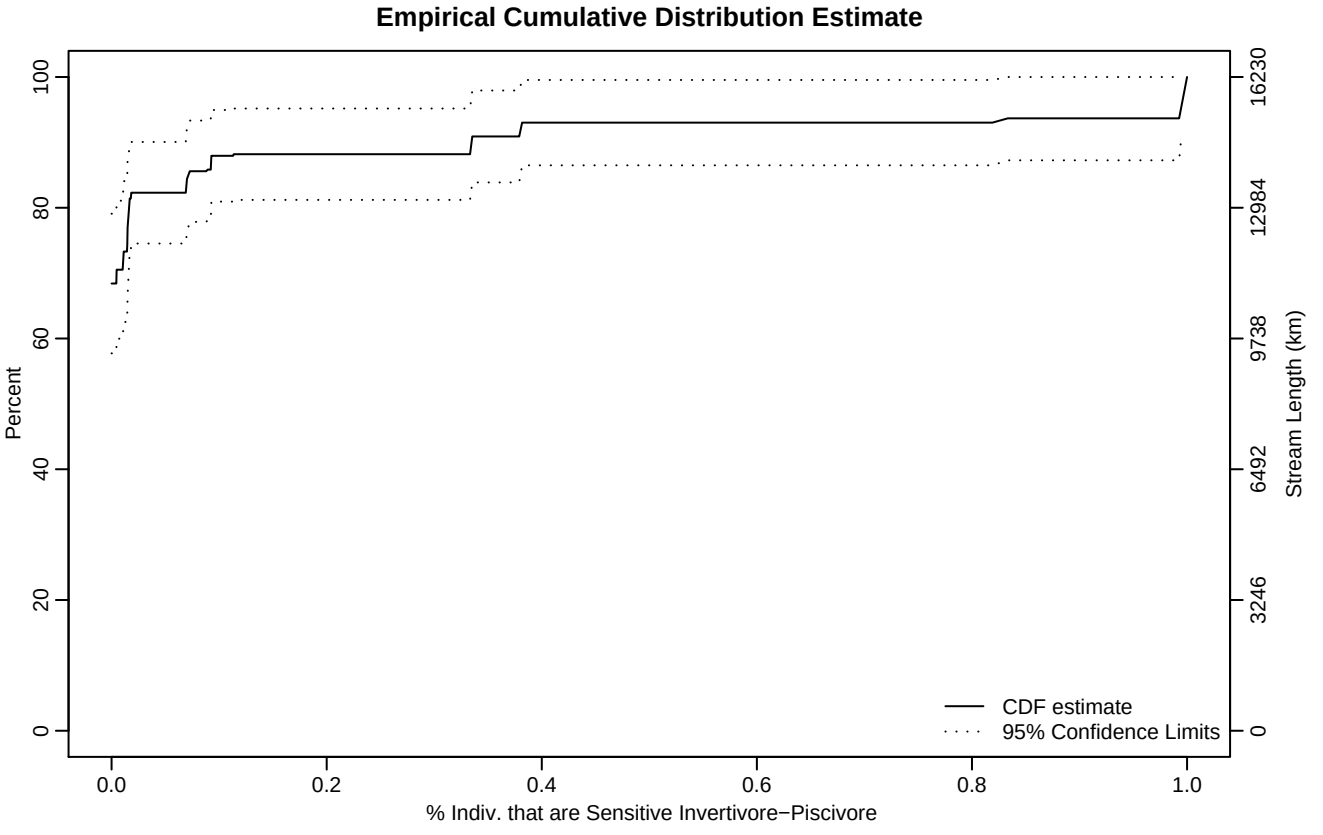


Figure VERT−160 Indicator: INVPISC_SEN_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.01	0	0.07
90Pct	0.33	0.07	1
95Pct	0.99	0.33	1
Mean	0.09	0.03	0.15
Std Dev	0.18	0.12	0.24

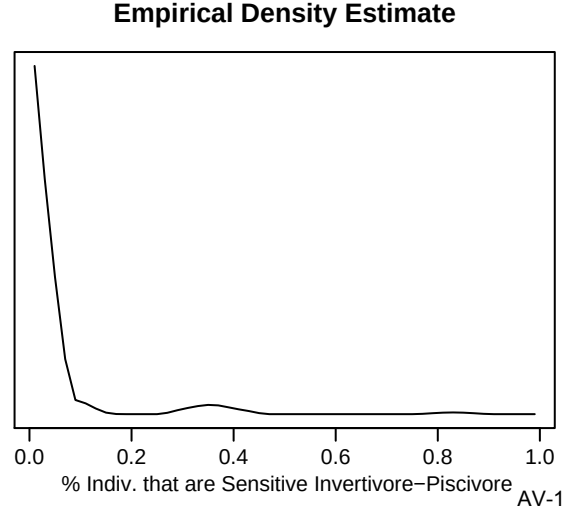
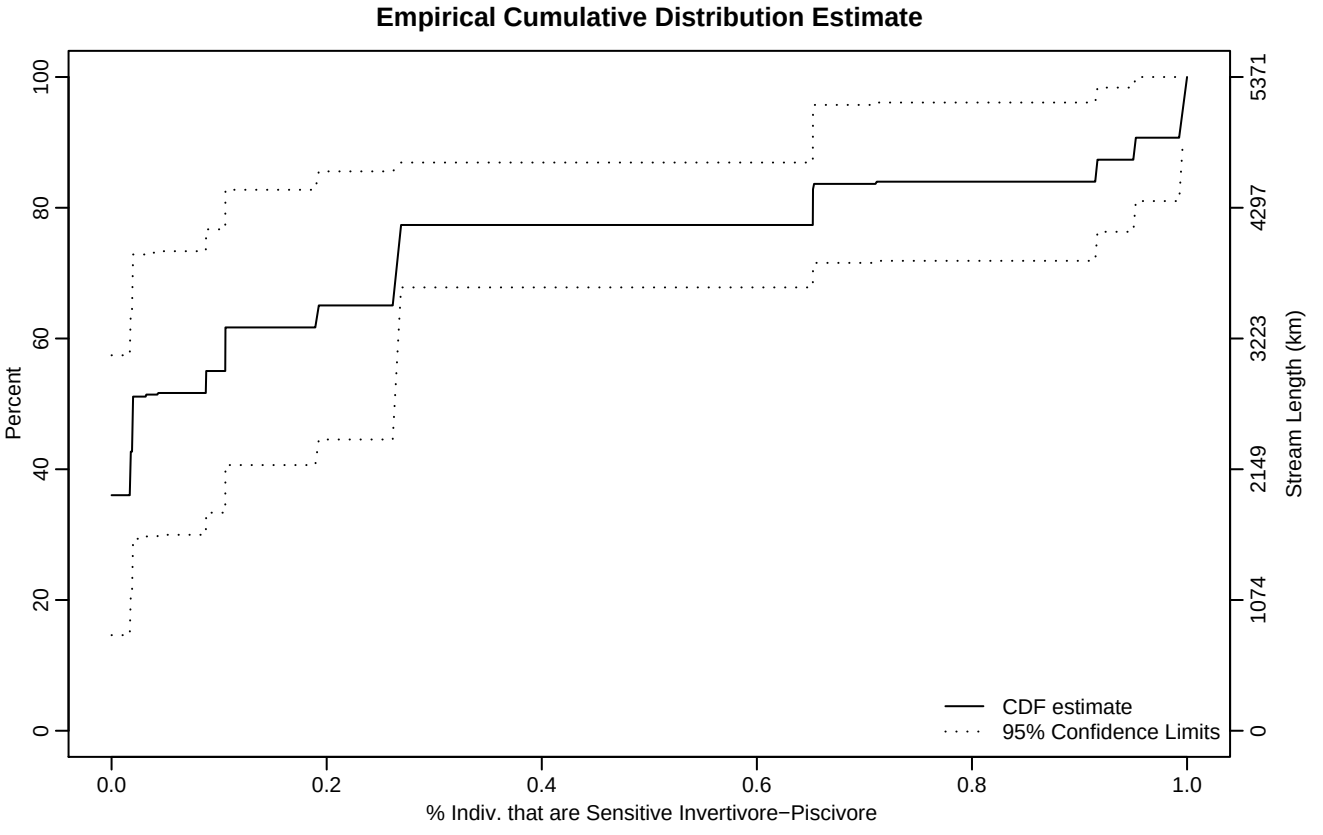


Figure VERT−161 Indicator: INVPISC_SEN_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.02	0	0.27
75Pct	0.27	0.09	1
90Pct	0.95	0.65	
95Pct	1	0.91	
Mean	0.25	0.15	0.36
Std Dev	0.25	0.19	0.30

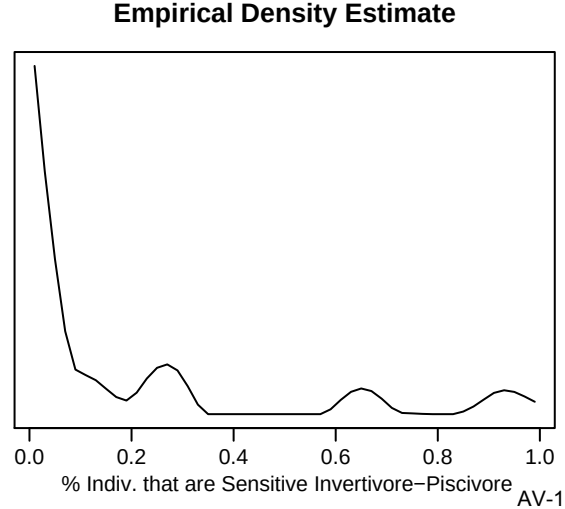
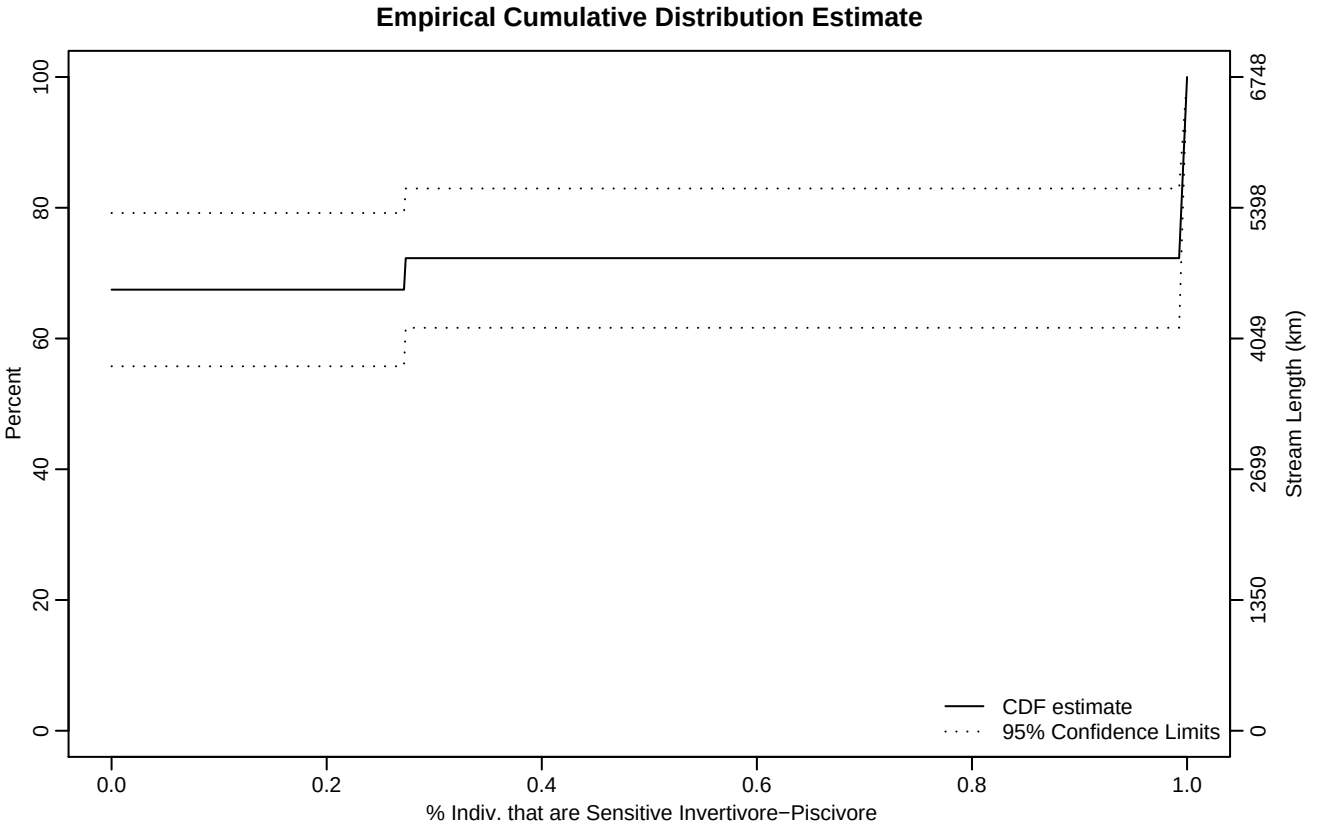


Figure VERT−162 Indicator: INVPISC_SEN_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.99	0	1
90Pct	1	0.99	1
95Pct	1	1	1
Mean	0.29	0.19	0.39
Std Dev	0.26	0.21	0.31

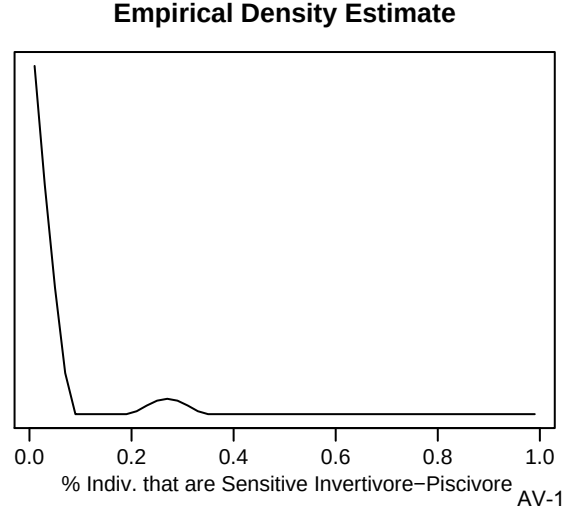
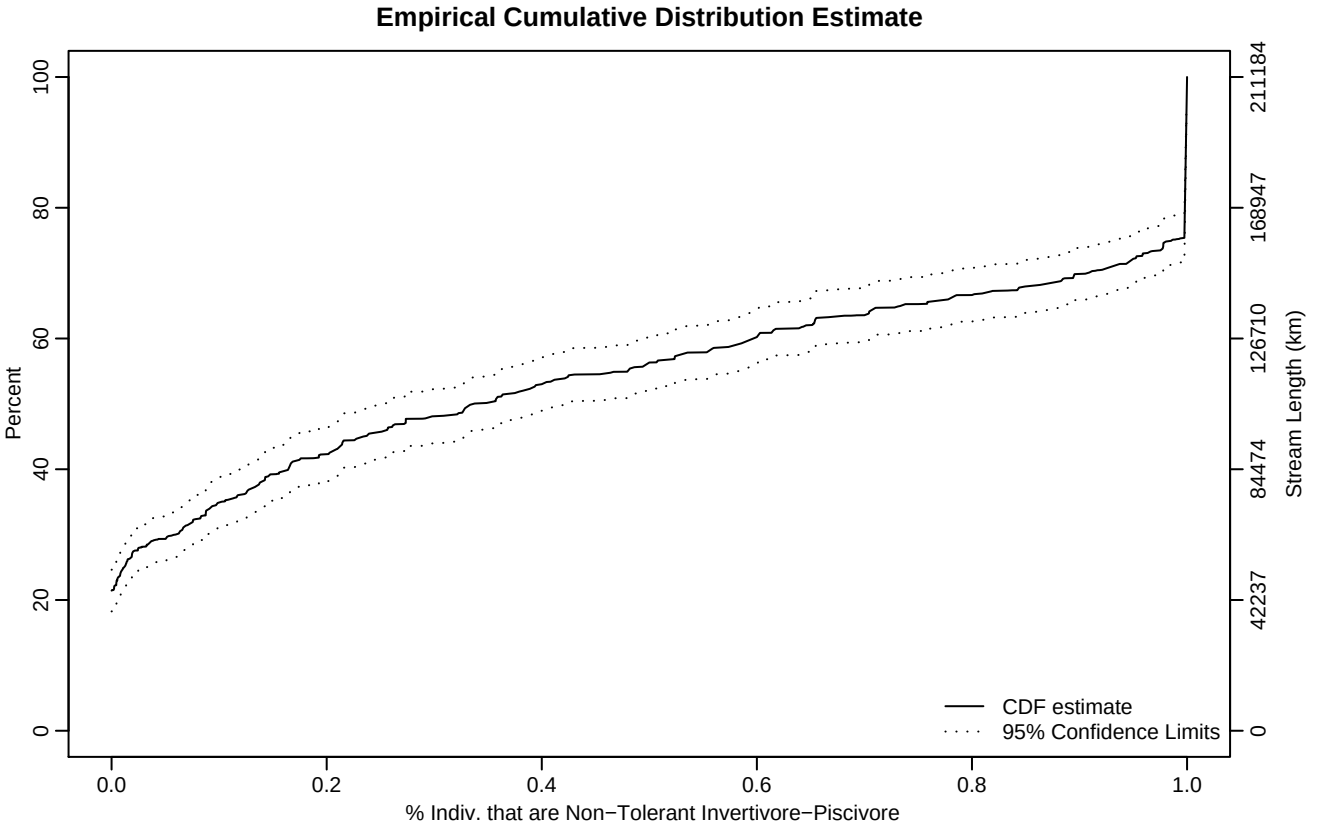


Figure VERT−163 Indicator: INVPISC_NT_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.03
50Pct	0.34	0.25	0.42
75Pct	0.99	0.93	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.46	0.42	0.49
Std Dev	0.38	0.36	0.39

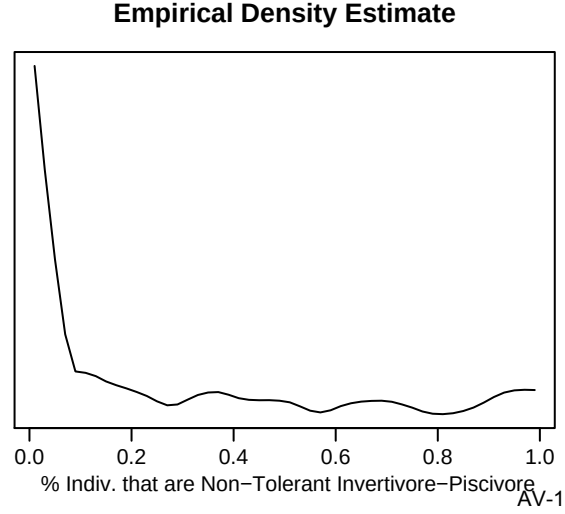
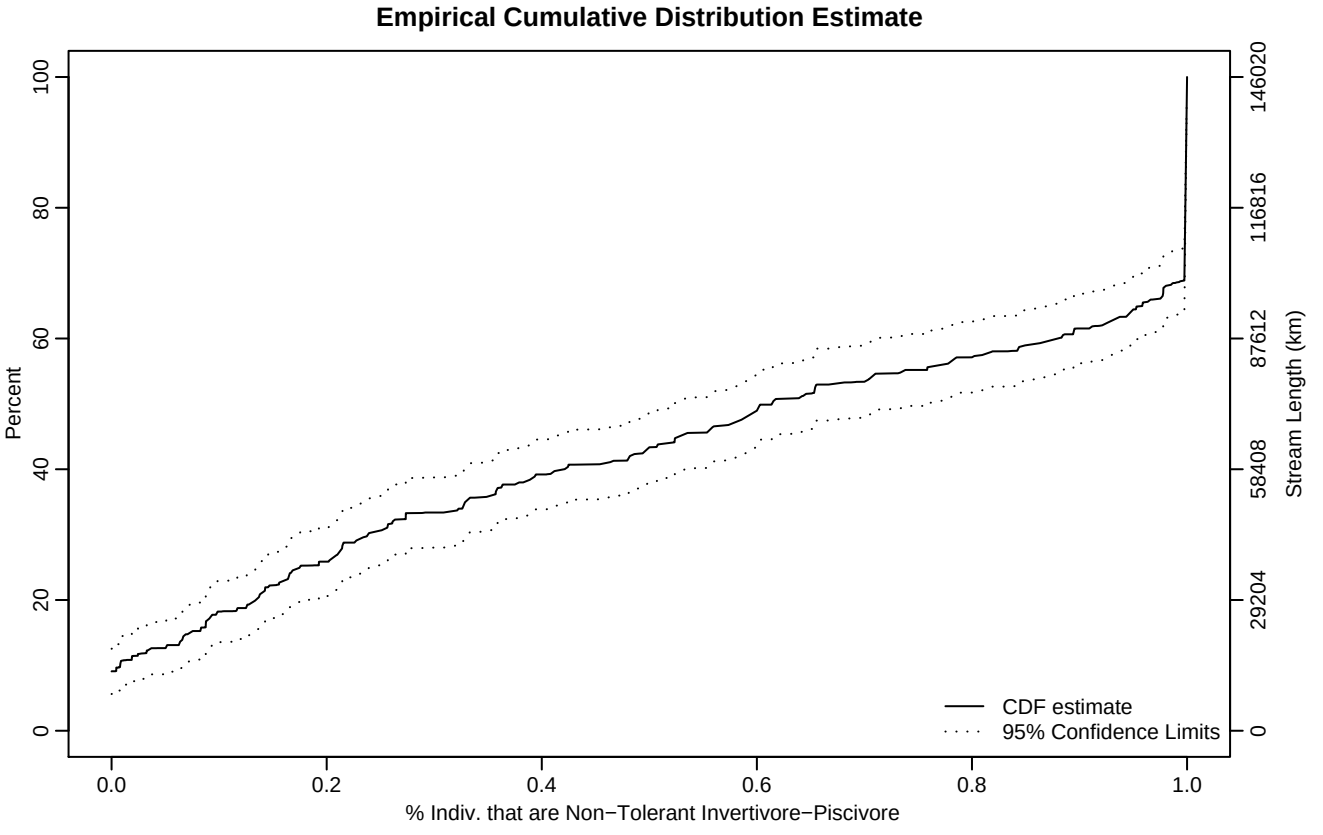


Figure VERT−164 Indicator: INVPISC_NT_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.01	0	0.06
25Pct	0.17	0.13	0.24
50Pct	0.61	0.52	0.76
75Pct	1	1	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.58	0.54	0.62
Std Dev	0.36	0.34	0.38

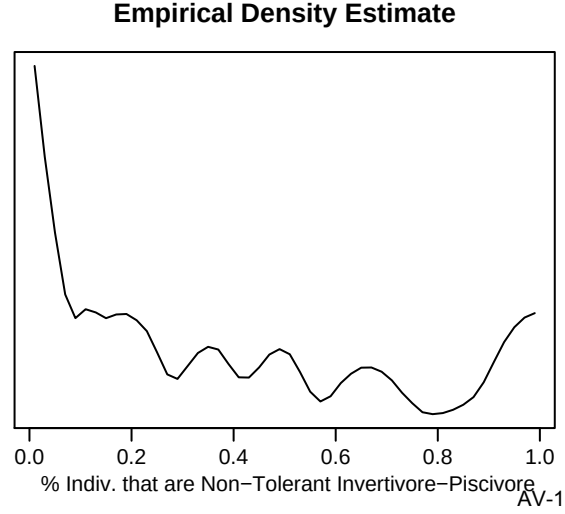
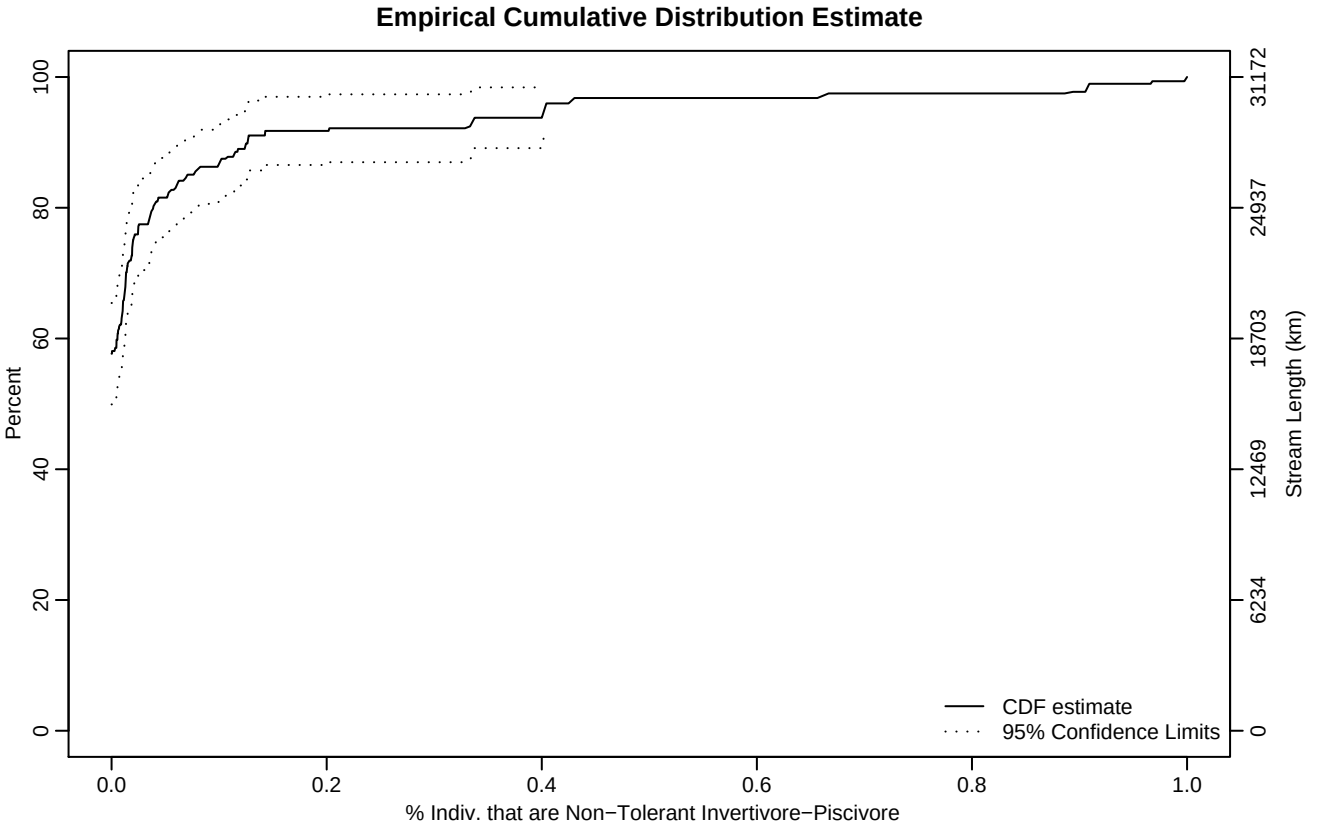


Figure VERT−165 Indicator: INVPISC_NT_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.02	0.01	0.05
90Pct	0.13	0.07	0.40
95Pct	0.40	0.13	1
Mean	0.06	0.03	0.09
Std Dev	0.16	0.11	0.21

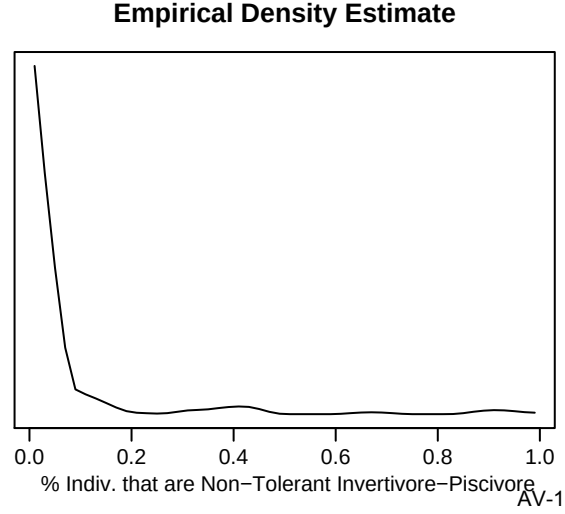
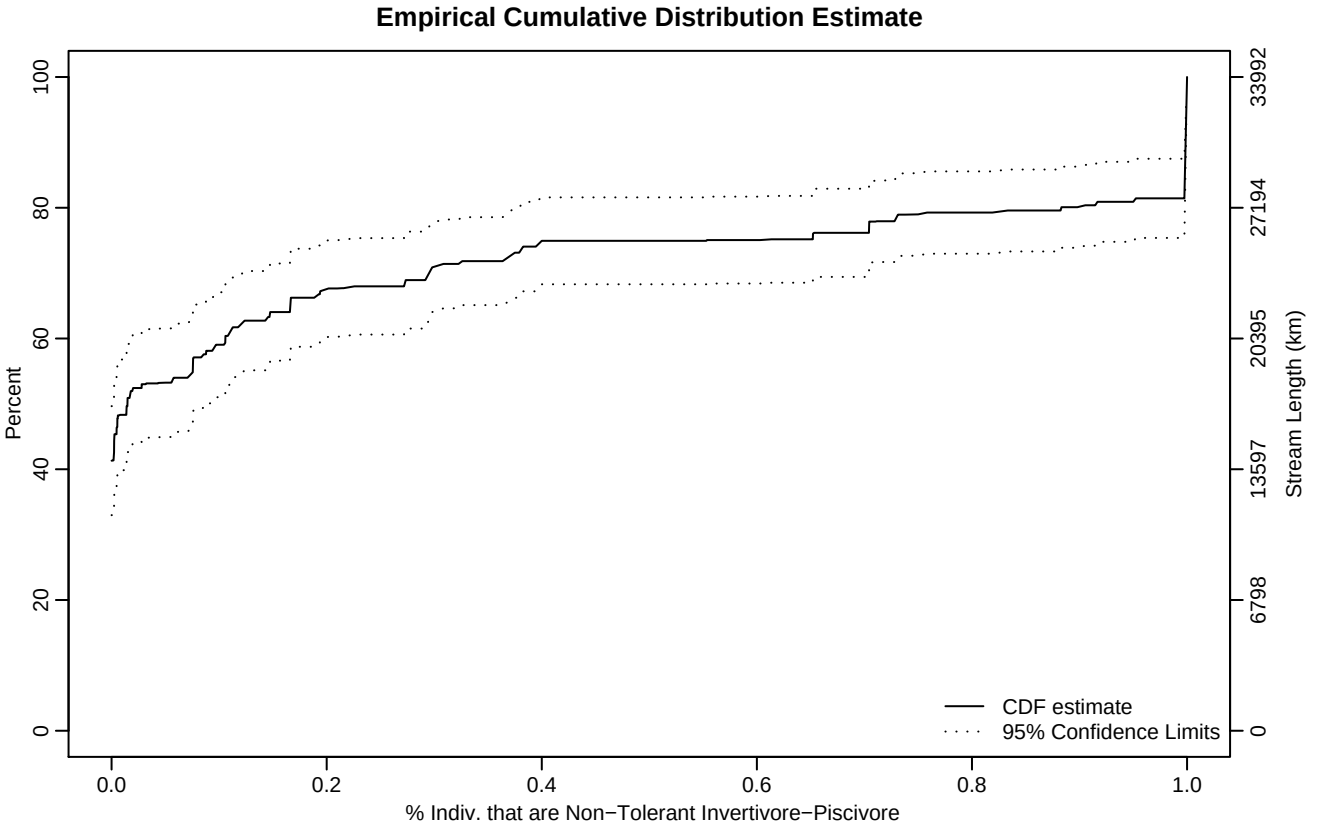


Figure VERT−166 Indicator: INVPISC_NT_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.10
75Pct	0.55	0.27	1
90Pct	1	1	1
95Pct	1	1	
Mean	0.28	0.22	0.34
Std Dev	0.35	0.31	0.39

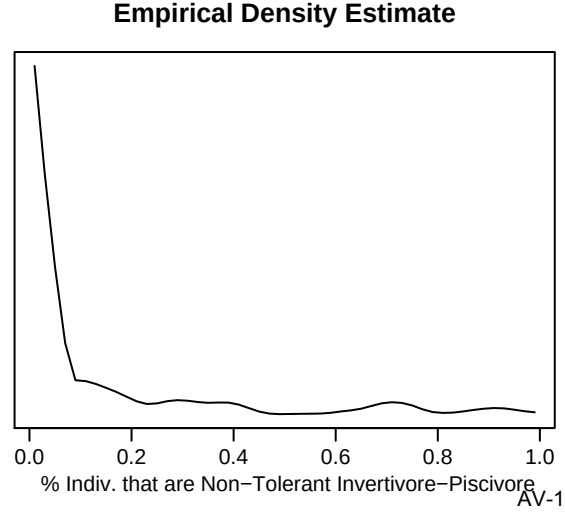
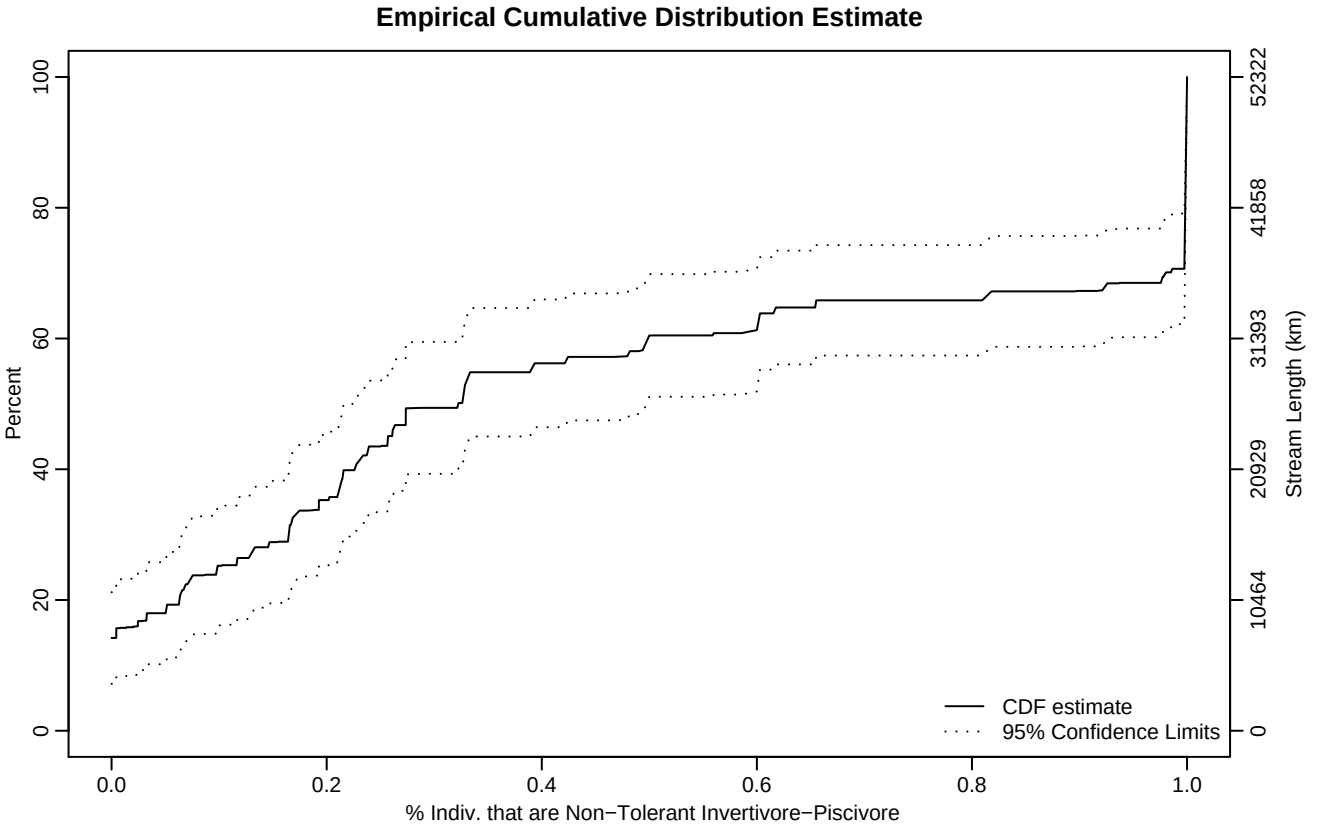


Figure VERT−167 Indicator: INVPISC_NT_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.03
25Pct	0.10	0.01	0.19
50Pct	0.32	0.22	0.50
75Pct	1	0.81	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.47	0.39	0.55
Std Dev	0.38	0.34	0.42

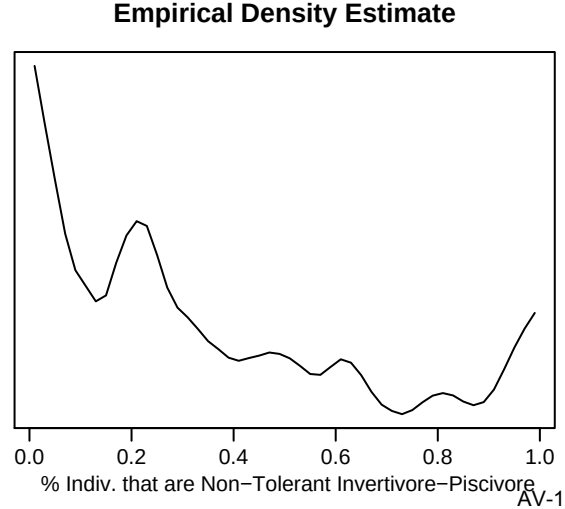
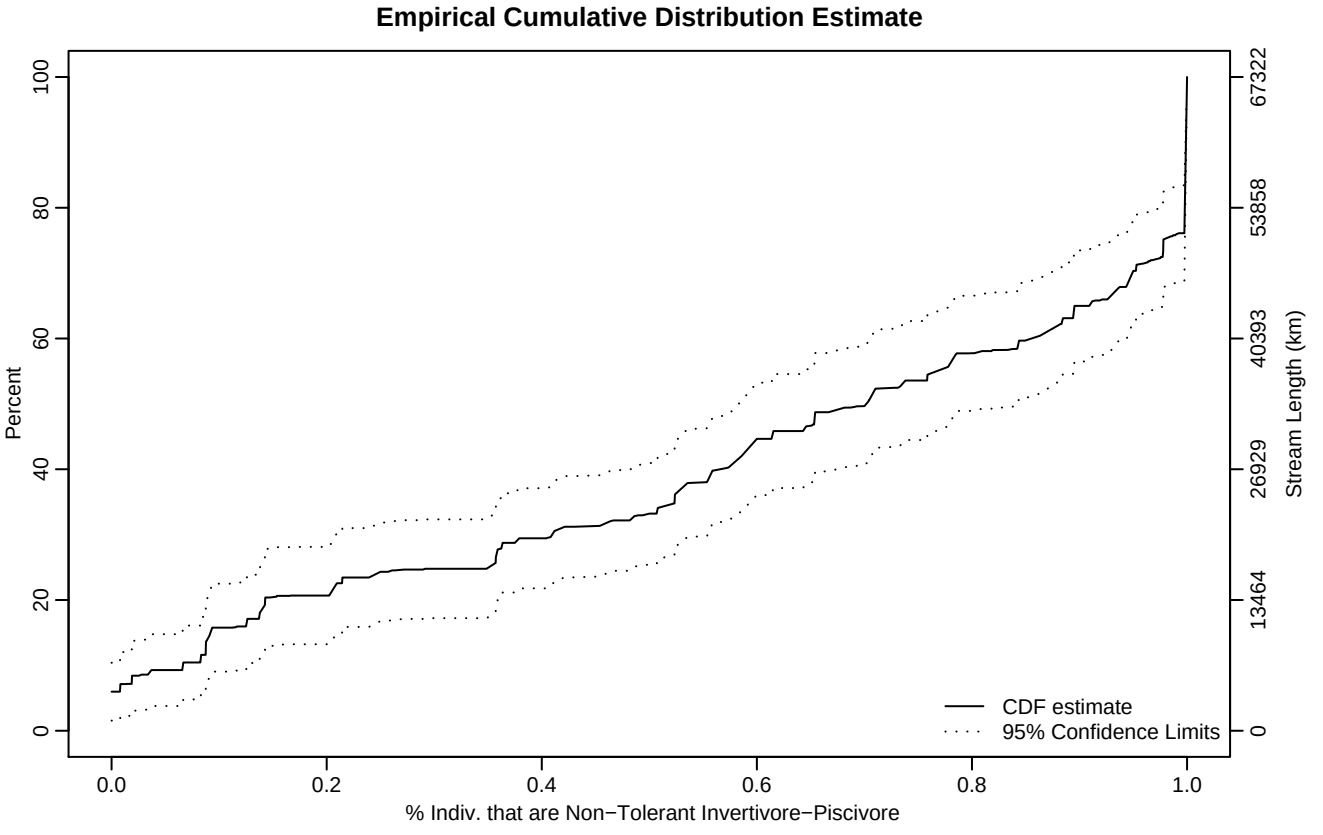


Figure VERT−168 Indicator: INVPISC_NT_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.07
10Pct	0.07	0	0.09
25Pct	0.35	0.14	0.48
50Pct	0.70	0.58	0.84
75Pct	0.98	0.93	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.62	0.56	0.68
Std Dev	0.34	0.31	0.37

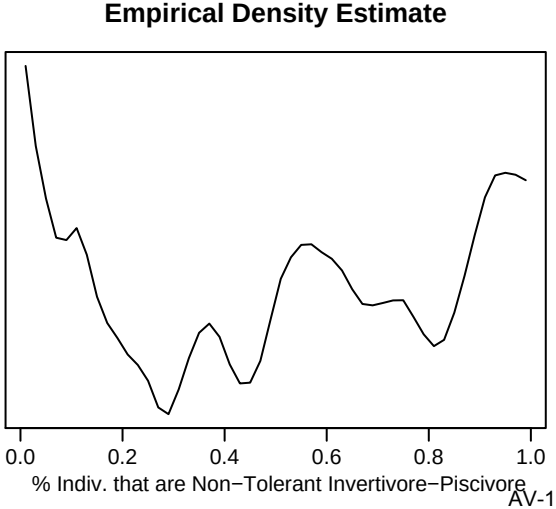
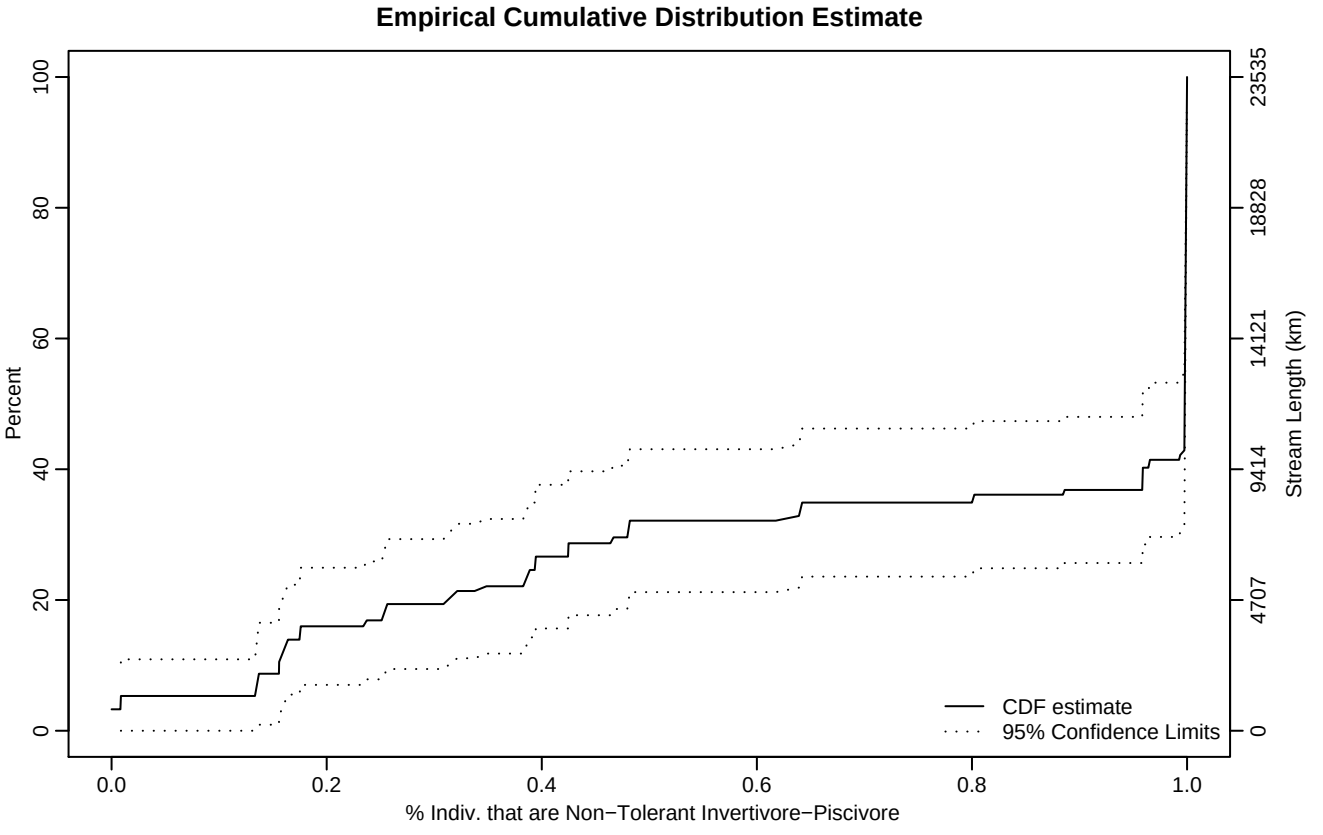


Figure VERT−169 Indicator: INVPISC_NT_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.16
10Pct	0.16	0	0.25
25Pct	0.39	0.18	0.80
50Pct	1	0.96	1
75Pct	1	1	1
90Pct	1	1	
95Pct	1	1	
Mean	0.74	0.66	0.83
Std Dev	0.35	0.30	0.40

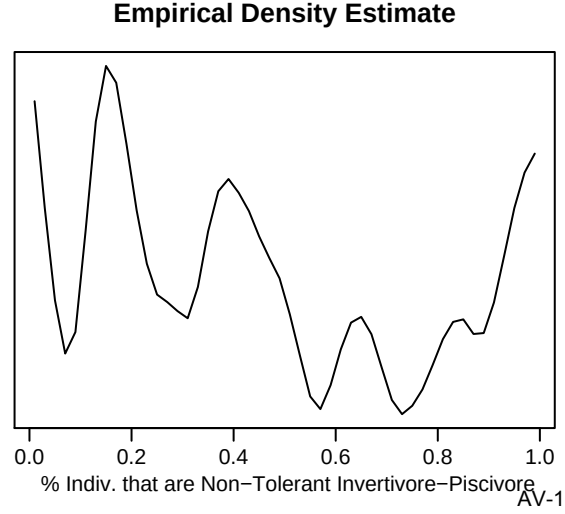
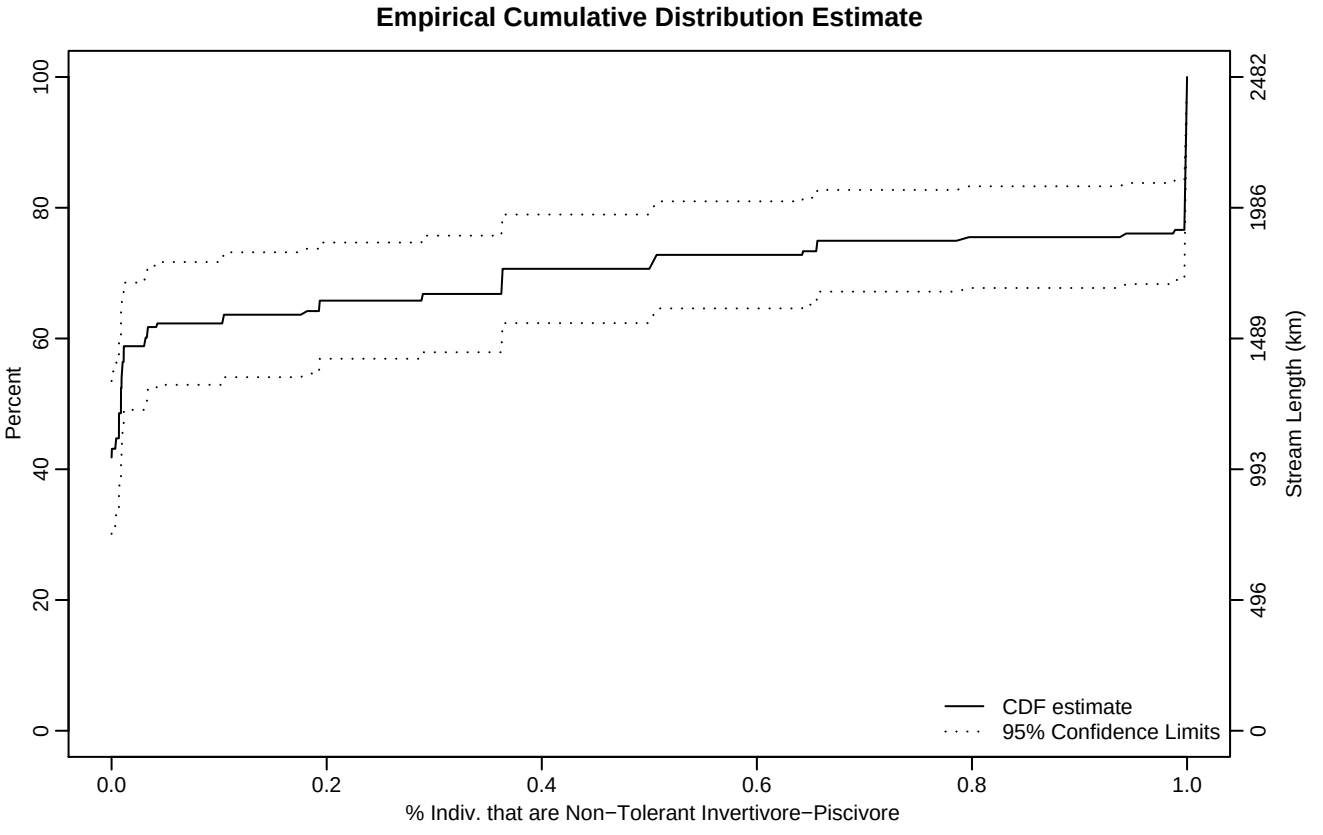


Figure VERT−170 Indicator: INVPISC_NT_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.03
75Pct	0.79	0.36	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.30	0.22	0.37
Std Dev	0.39	0.34	0.44

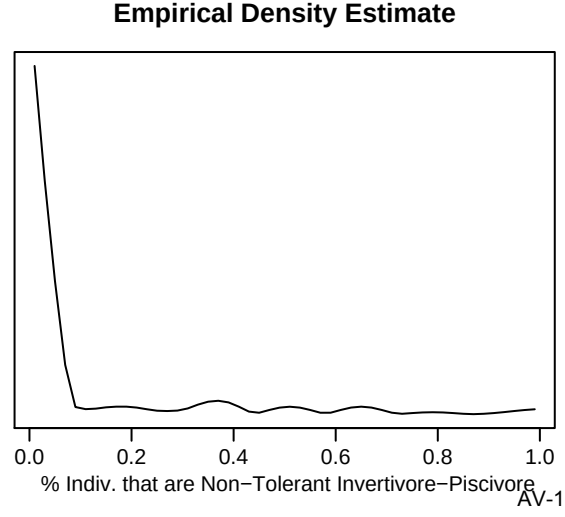
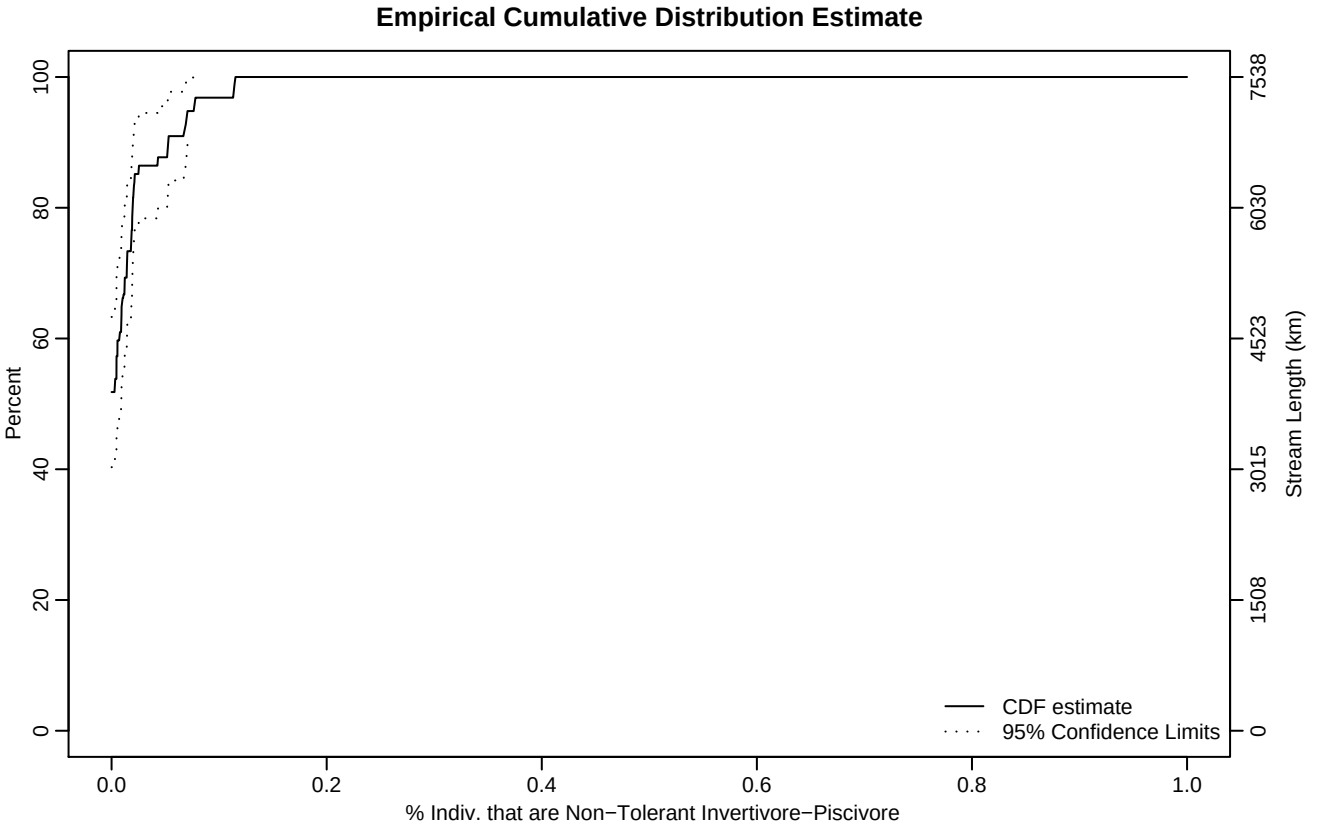


Figure VERT−171 Indicator: INVPISC_NT_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.01
75Pct	0.02	0.01	0.03
90Pct	0.05	0.02	0.11
95Pct	0.08	0.05	0.12
Mean	0.01	0.01	0.02
Std Dev	0.03	0.02	0.03

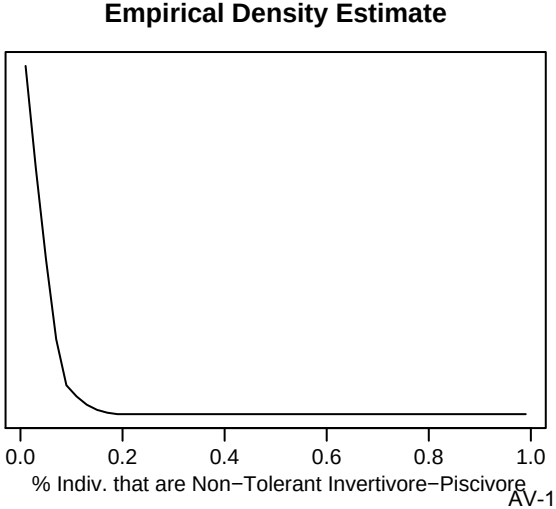
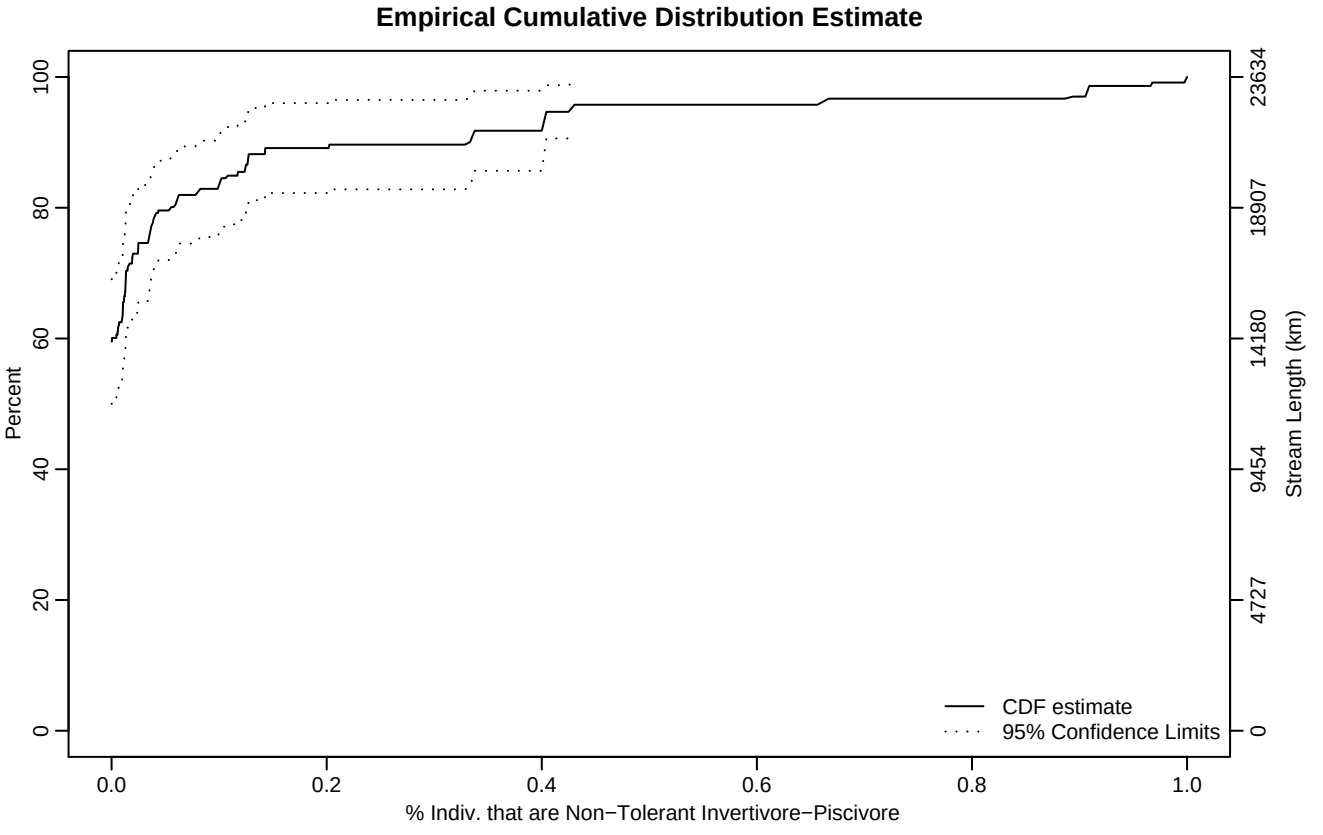


Figure VERT−172 Indicator: INVPISC_NT_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.03	0.01	0.10
90Pct	0.33	0.10	0.89
95Pct	0.43	0.34	0.97
Mean	0.08	0.04	0.11
Std Dev	0.18	0.13	0.24

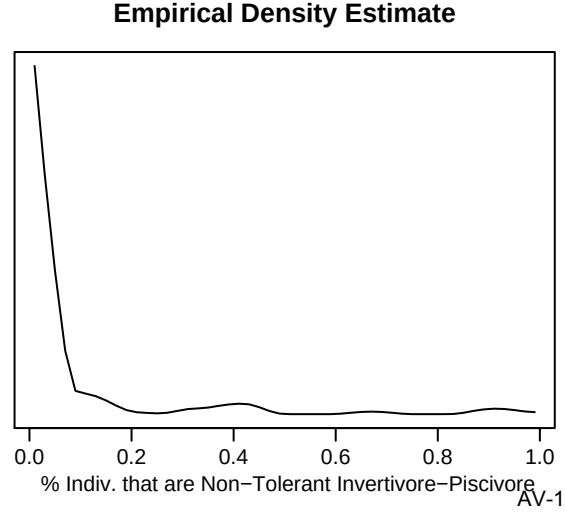
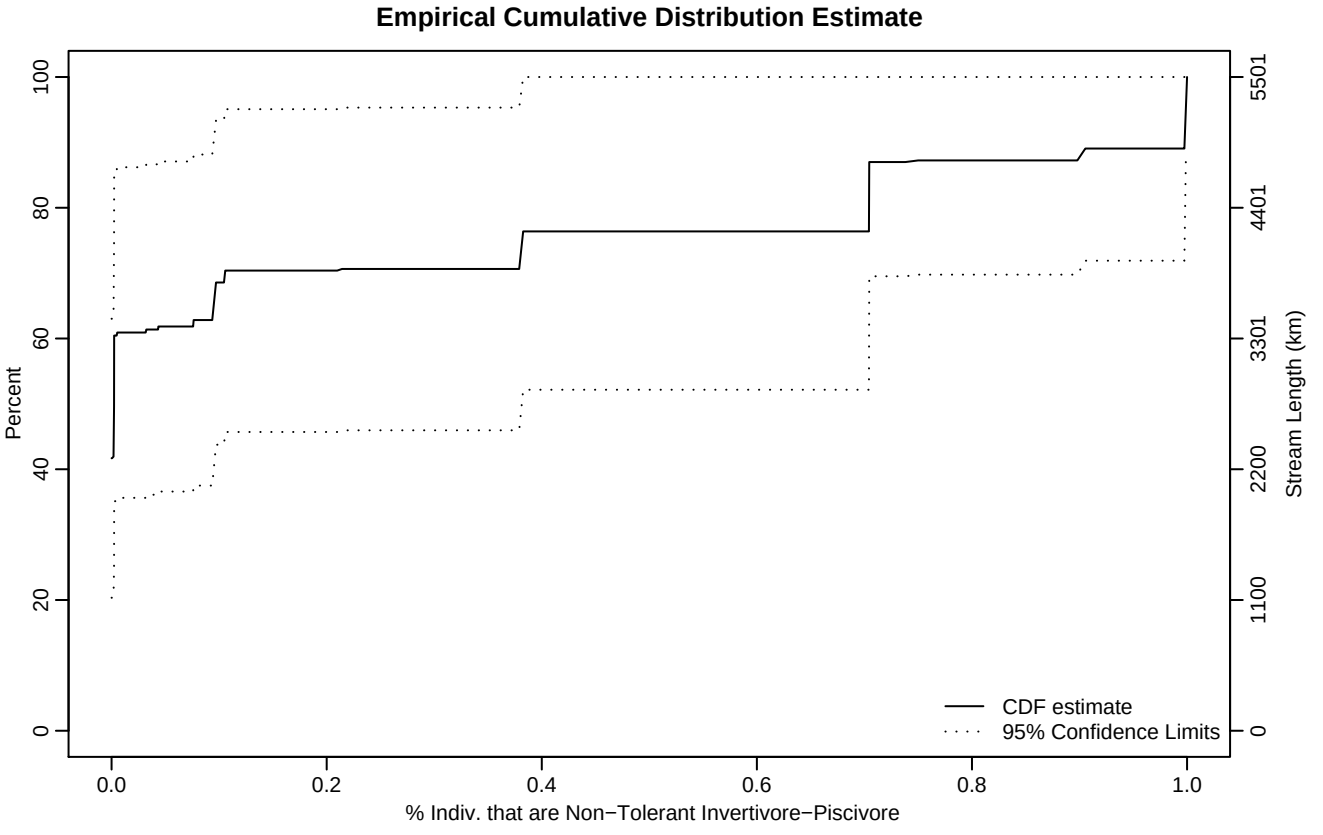


Figure VERT−173 Indicator: INVPISC_NT_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.38
75Pct	0.38	0	1
90Pct	1	0.38	1
95Pct	1	0.70	1
Mean	0.23	0.03	0.44
Std Dev	0.36	0.23	0.50

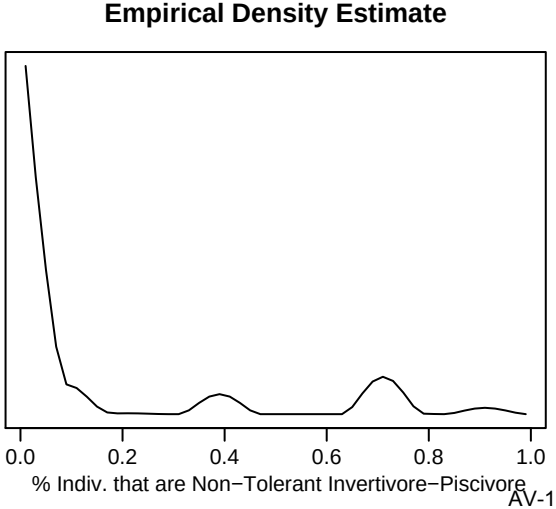
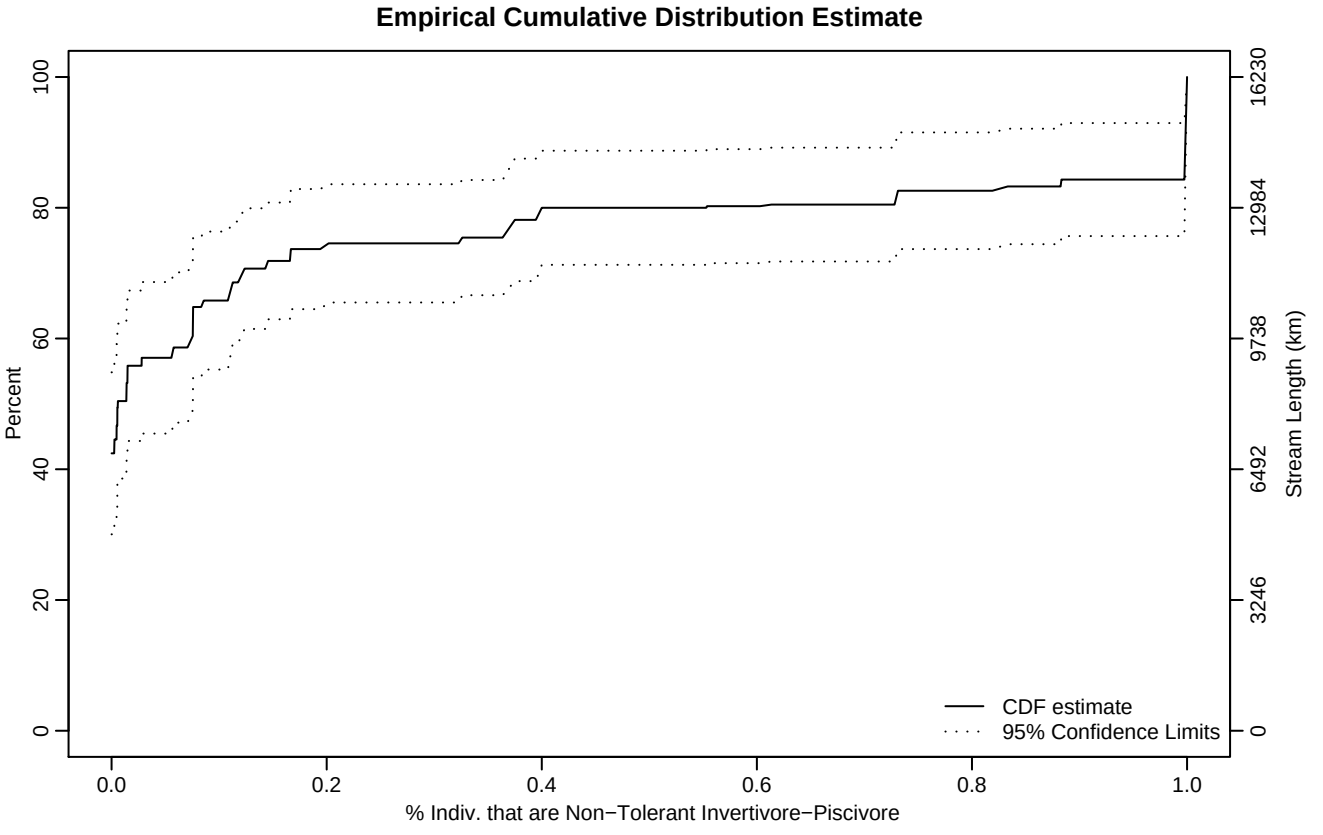


Figure VERT−174 Indicator: INVPISC_NT_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.08
75Pct	0.32	0.09	1
90Pct	1	0.73	1
95Pct	1	1	1
Mean	0.23	0.15	0.31
Std Dev	0.33	0.26	0.41

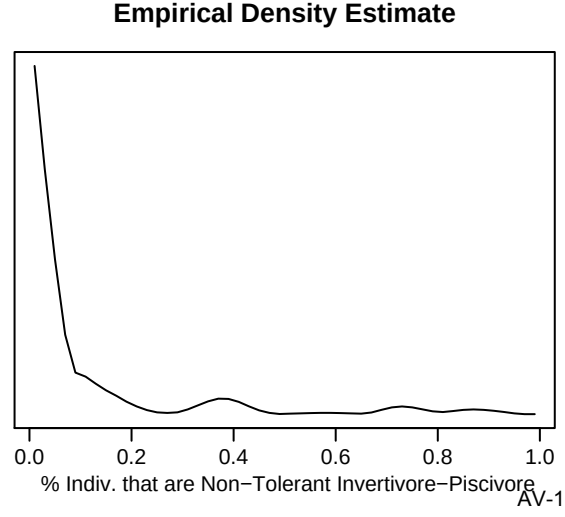
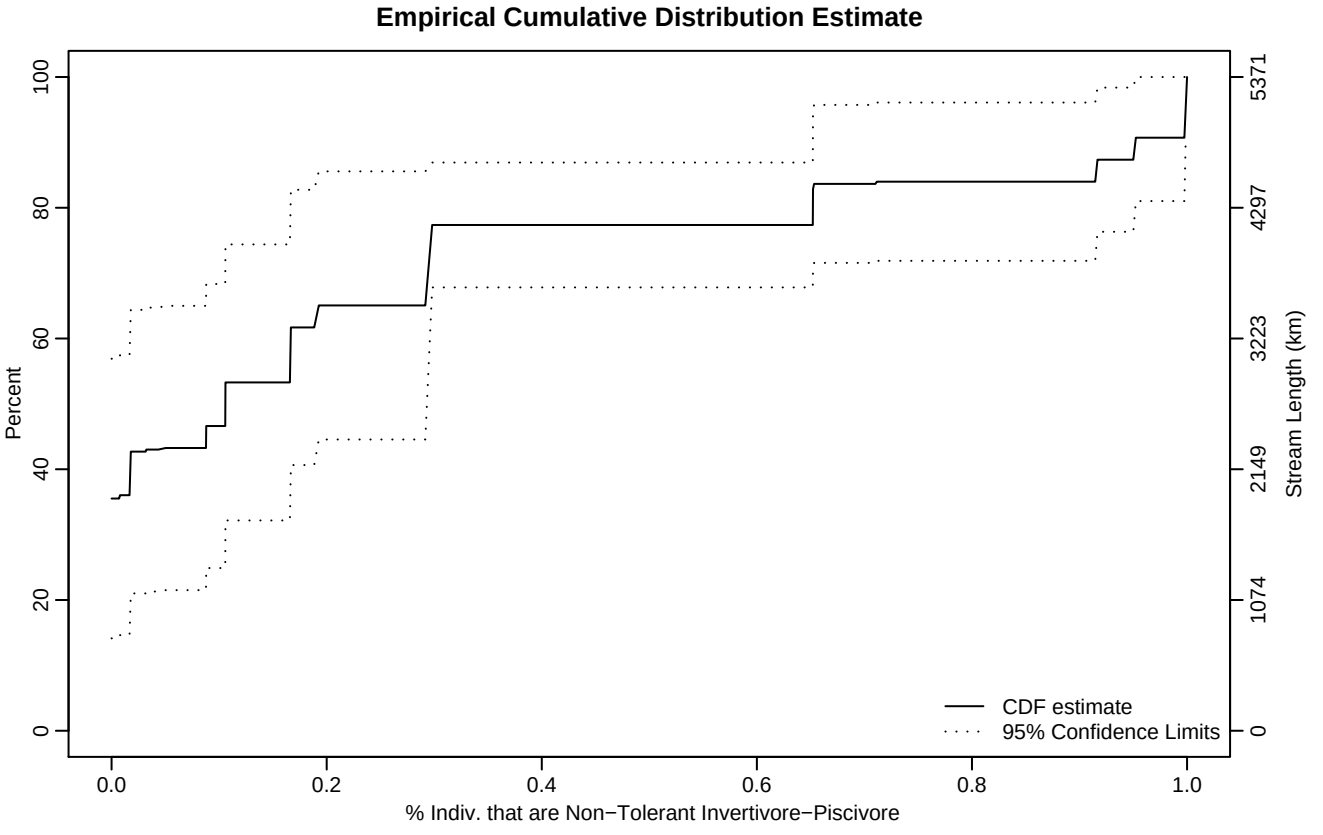


Figure VERT−175 Indicator: INVPISC_NT_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.11
50Pct	0.11	0	0.30
75Pct	0.30	0.11	1
90Pct	0.95	0.65	
95Pct	1	0.91	
Mean	0.27	0.16	0.37
Std Dev	0.25	0.20	0.31

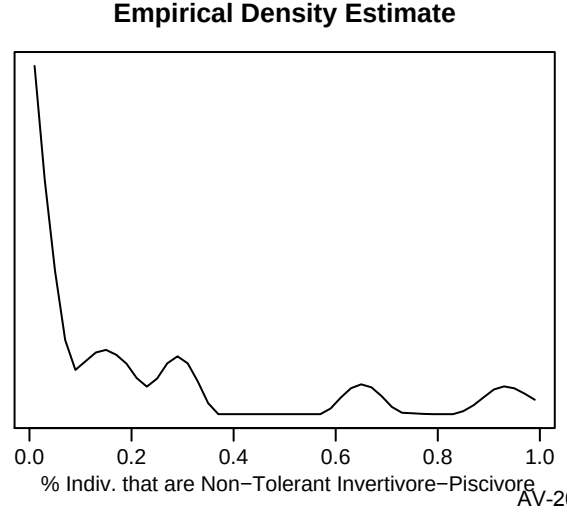
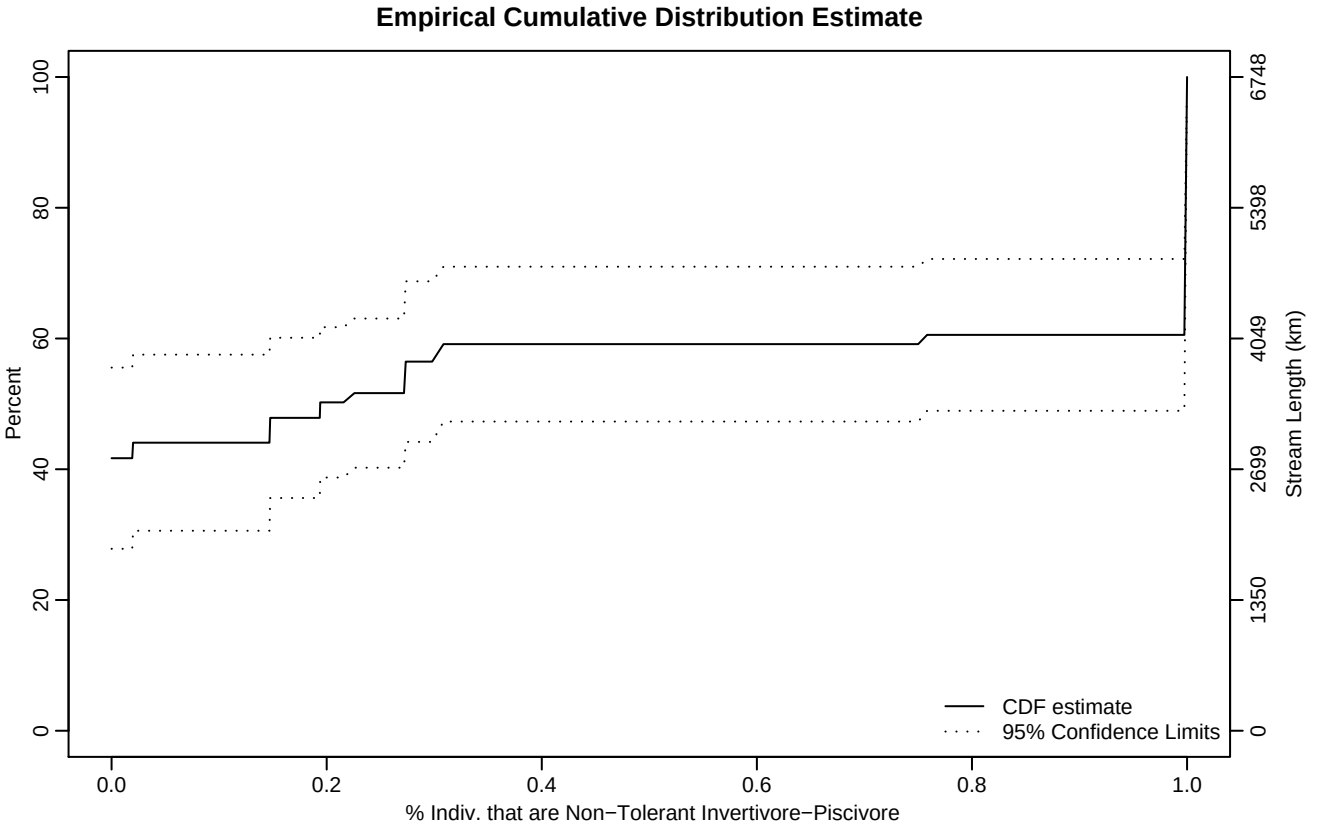


Figure VERT−176 Indicator: INVPISC_NT_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.19	0	1
75Pct	1	1	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.44	0.33	0.55
Std Dev	0.32	0.29	0.34

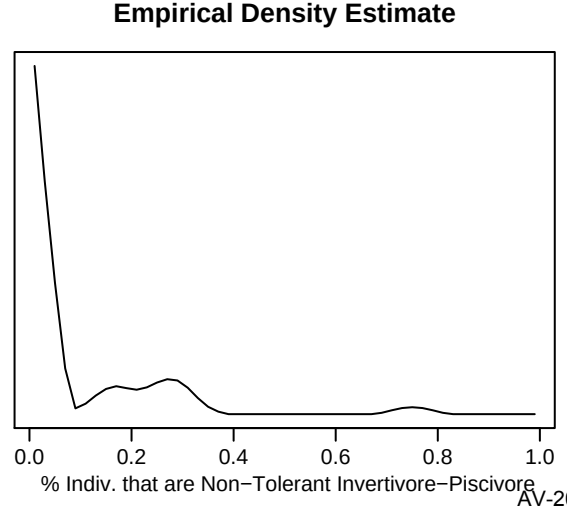
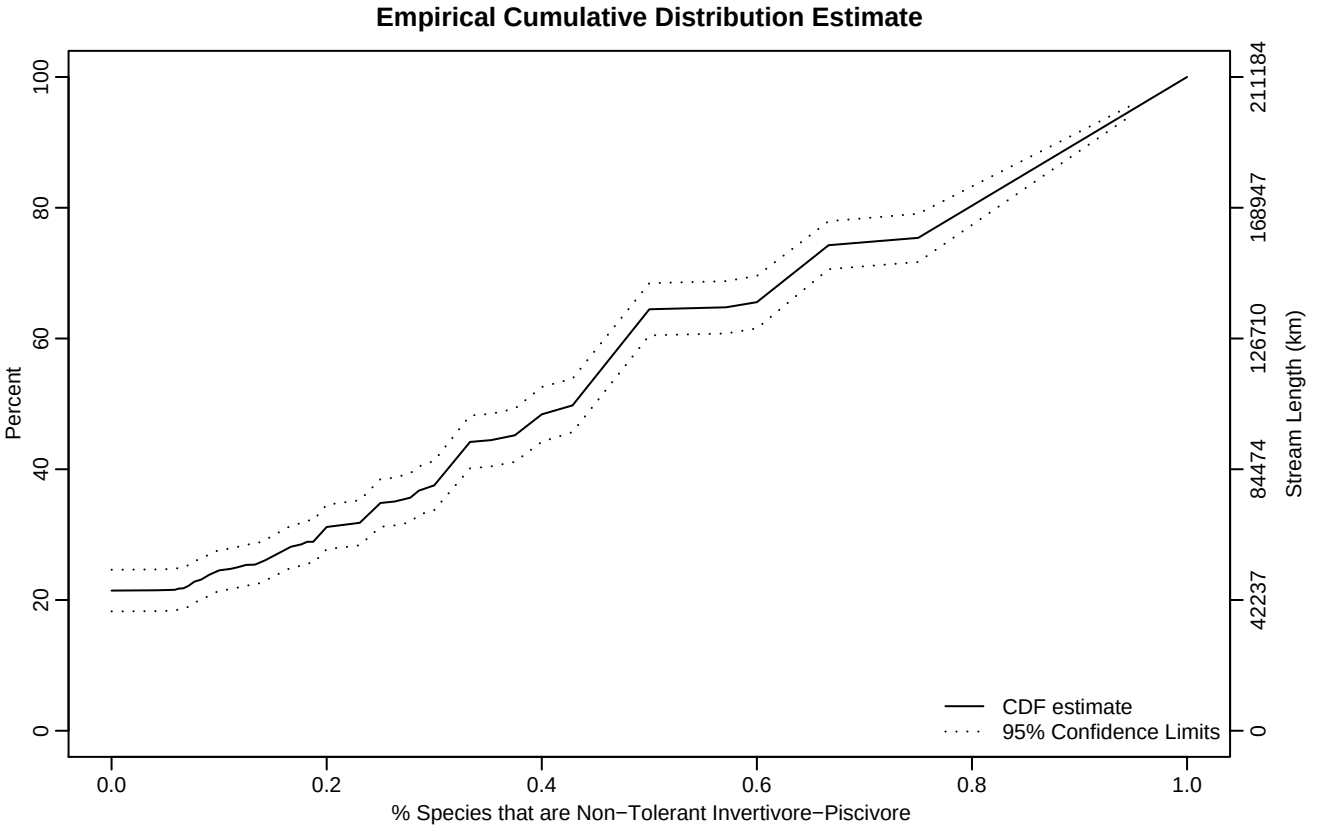


Figure VERT−177 Indicator: INVPISC_NT_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.12	0.07	0.17
50Pct	0.43	0.38	0.45
75Pct	0.72	0.64	0.78
90Pct	0.90	0.86	0.94
95Pct	0.95	0.91	0.99
Mean	0.47	0.44	0.50
Std Dev	0.33	0.32	0.35

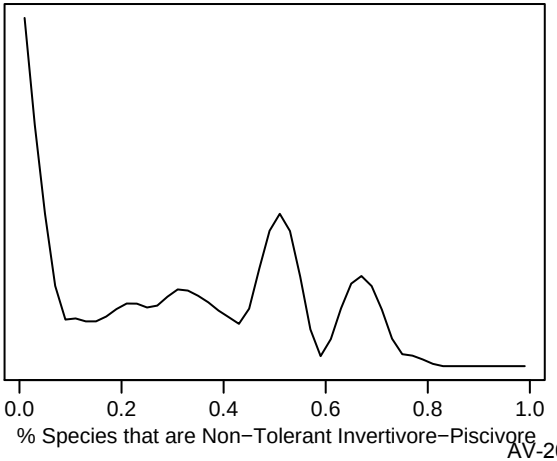
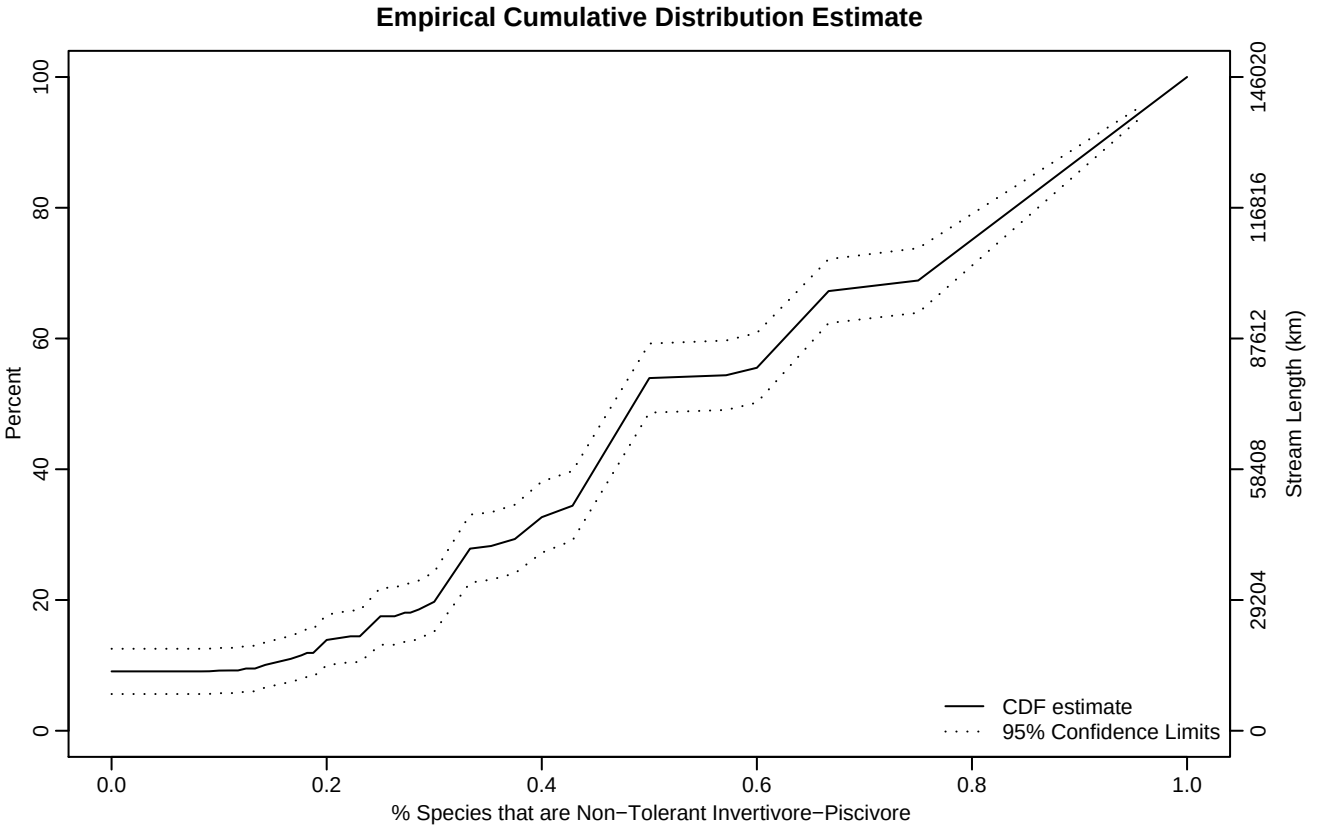


Figure VERT−178 Indicator: INVPISC_NT_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.14	0	0.20
25Pct	0.32	0.30	0.38
50Pct	0.49	0.47	0.60
75Pct	0.80	0.76	0.84
90Pct	0.92	0.88	0.96
95Pct	0.96	0.92	1
Mean	0.59	0.55	0.62
Std Dev	0.30	0.28	0.32

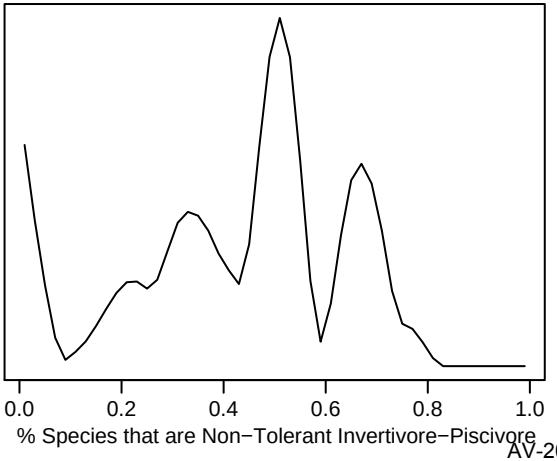
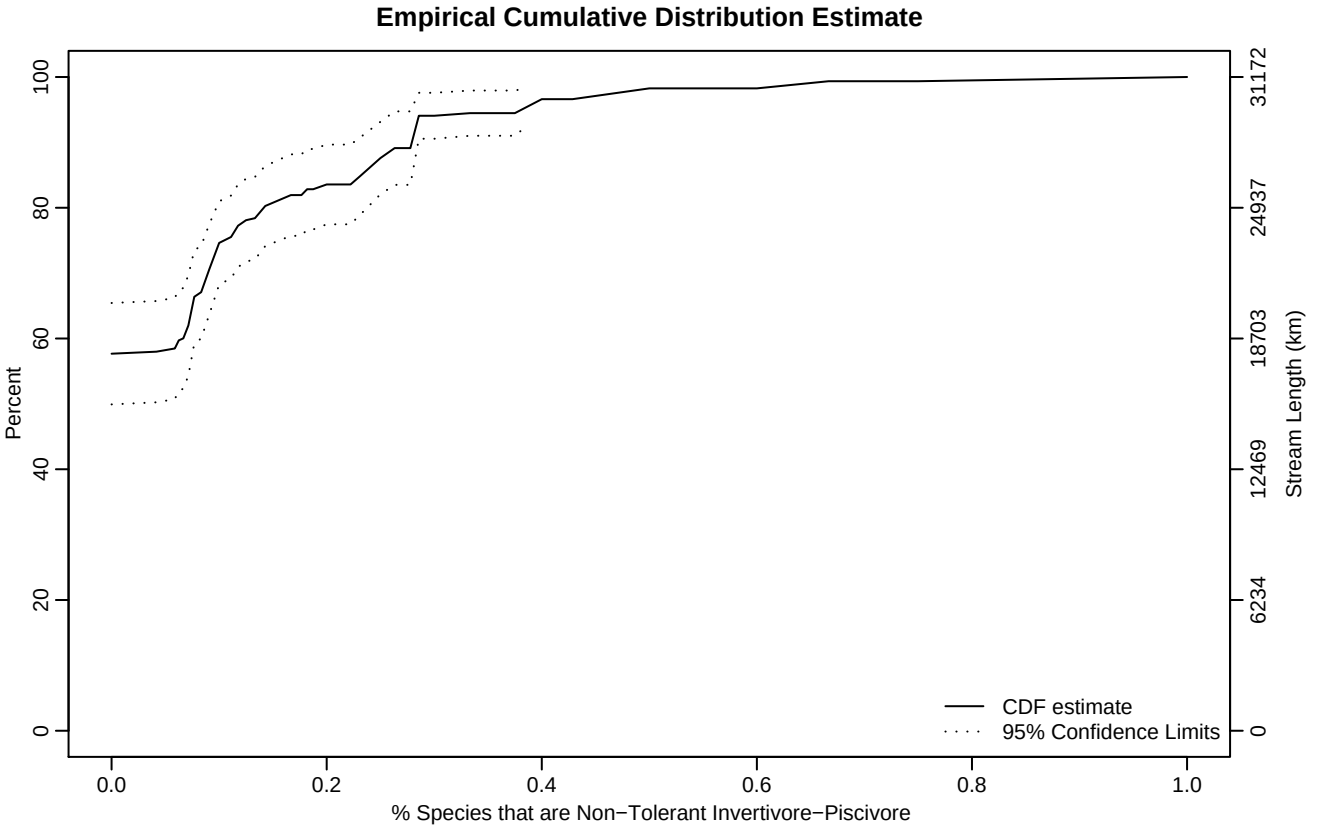


Figure VERT−179 Indicator: INVPISC_NT_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.01
75Pct	0.10	0.09	0.16
90Pct	0.28	0.23	0.39
95Pct	0.38	0.28	0.61
Mean	0.09	0.07	0.11
Std Dev	0.14	0.11	0.17

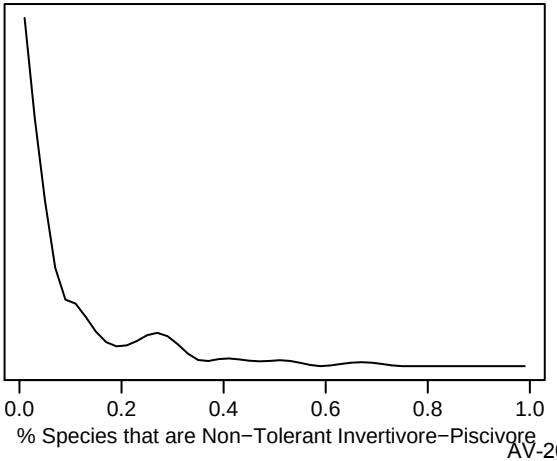
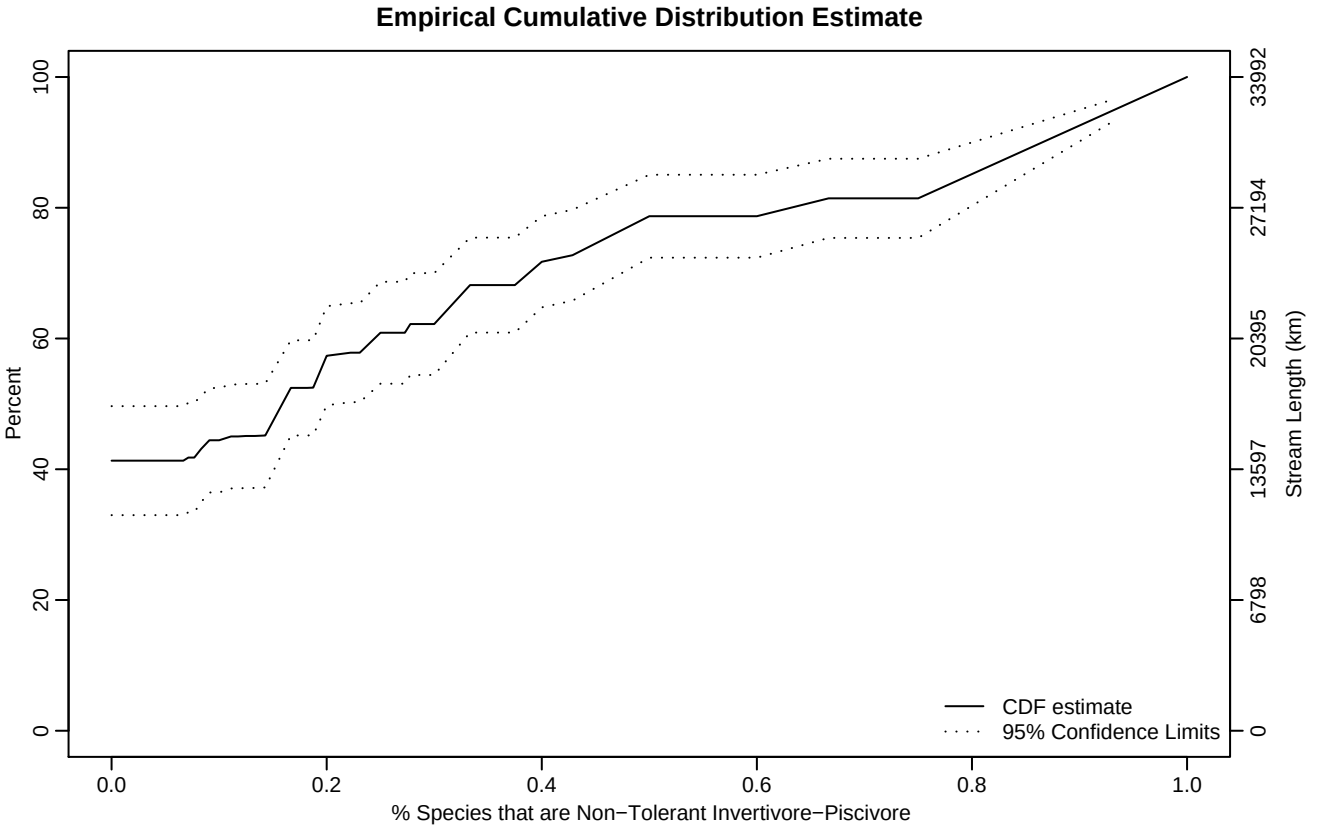


Figure VERT−180 Indicator: INVPISC_NT_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.16	0.08	0.23
75Pct	0.46	0.33	0.76
90Pct	0.87	0.78	0.95
95Pct	0.93	0.85	
Mean	0.31	0.25	0.37
Std Dev	0.33	0.29	0.37

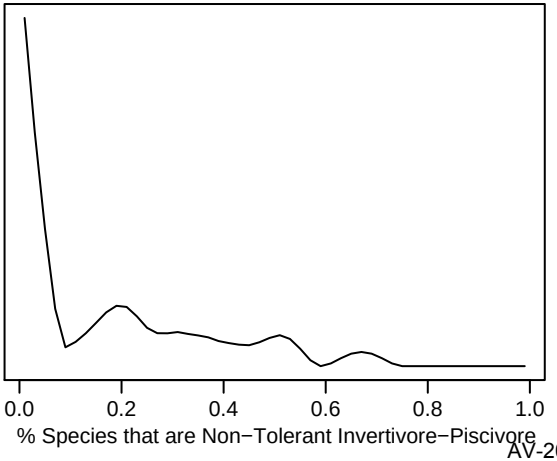
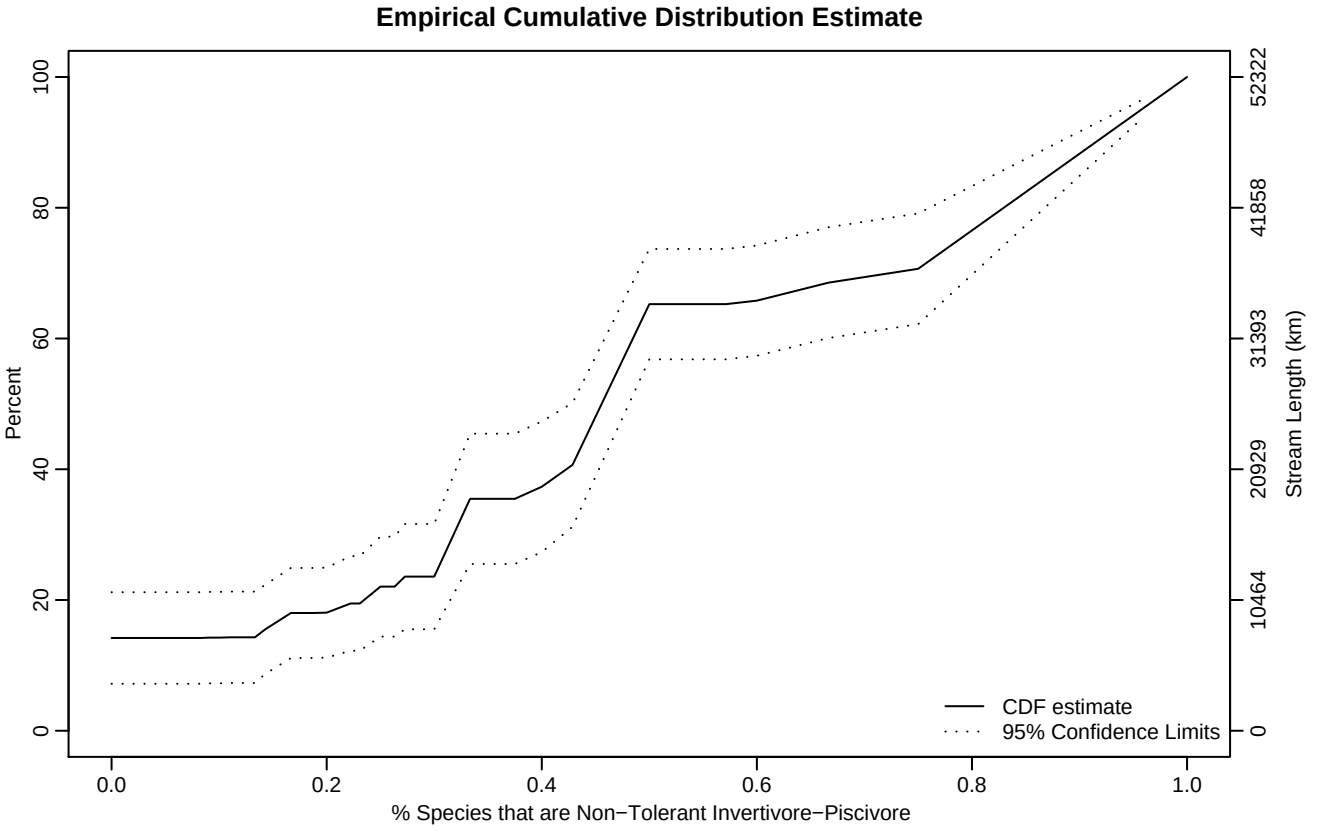


Figure VERT−181 Indicator: INVPISC_NT_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.16
25Pct	0.30	0.15	0.33
50Pct	0.46	0.43	0.48
75Pct	0.79	0.61	0.86
90Pct	0.91	0.84	0.99
95Pct	0.96	0.88	1
Mean	0.54	0.47	0.60
Std Dev	0.32	0.29	0.36

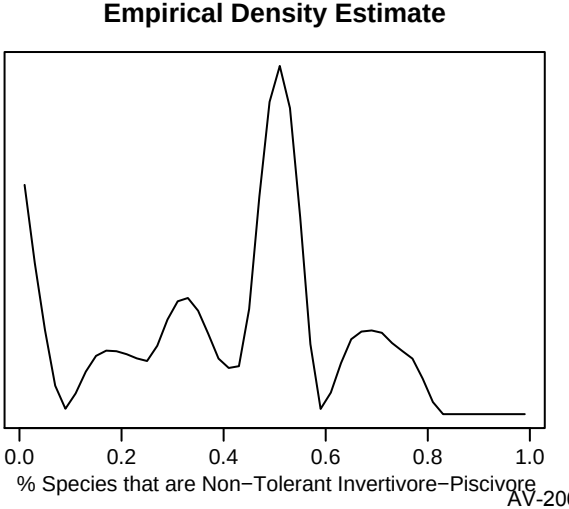
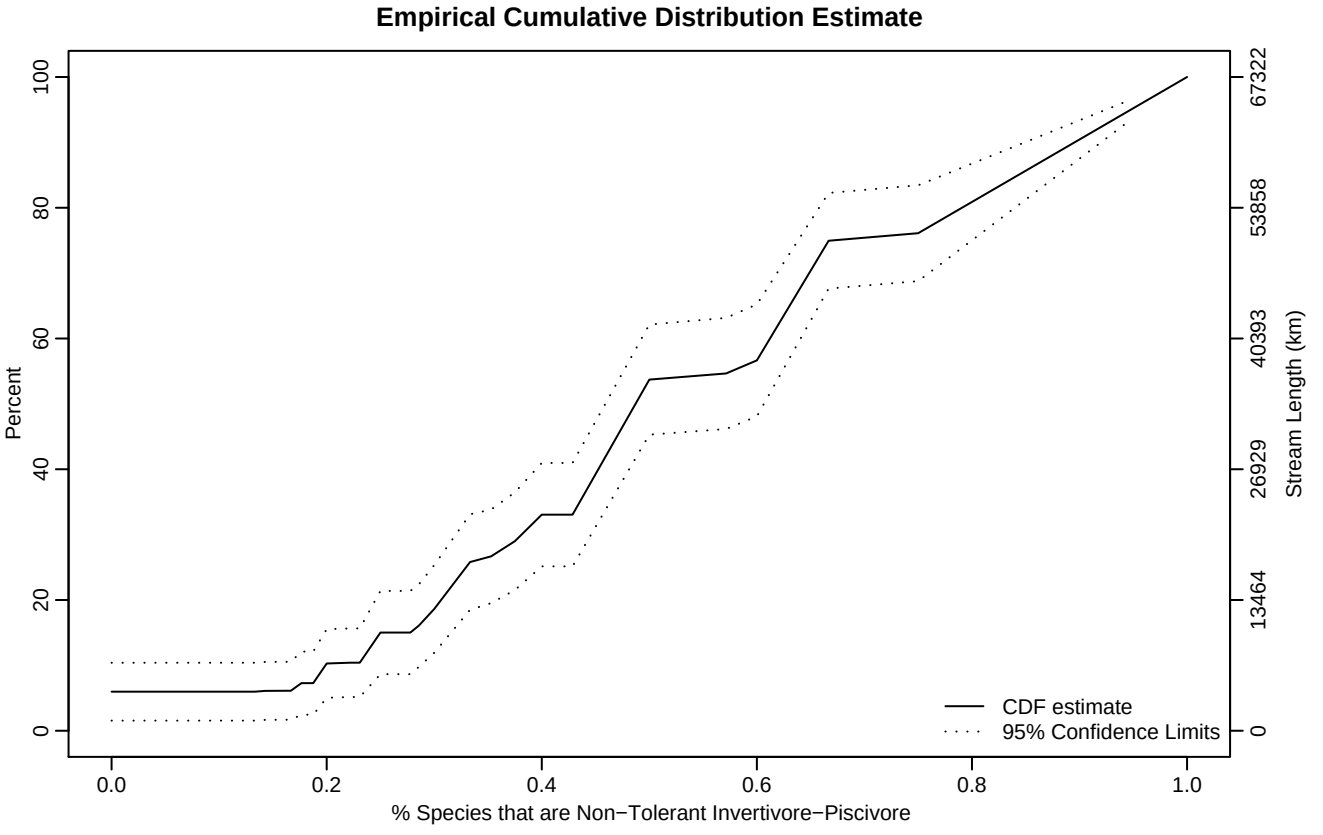


Figure VERT−182 Indicator: INVPISC_NT_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.20
10Pct	0.20	0	0.25
25Pct	0.33	0.30	0.39
50Pct	0.49	0.46	0.61
75Pct	0.67	0.64	0.81
90Pct	0.90	0.82	0.97
95Pct	0.95	0.87	1
Mean	0.57	0.52	0.62
Std Dev	0.27	0.25	0.30

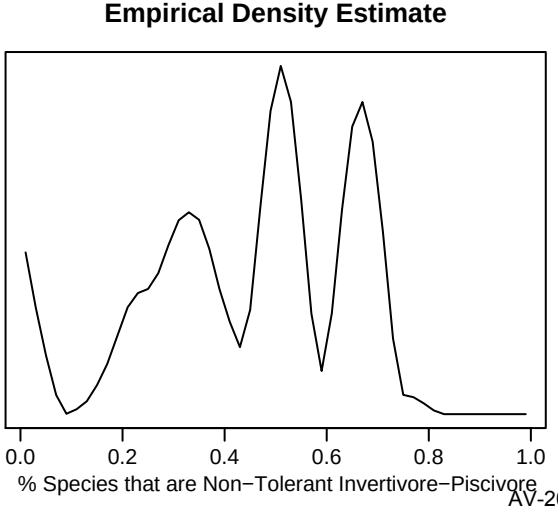
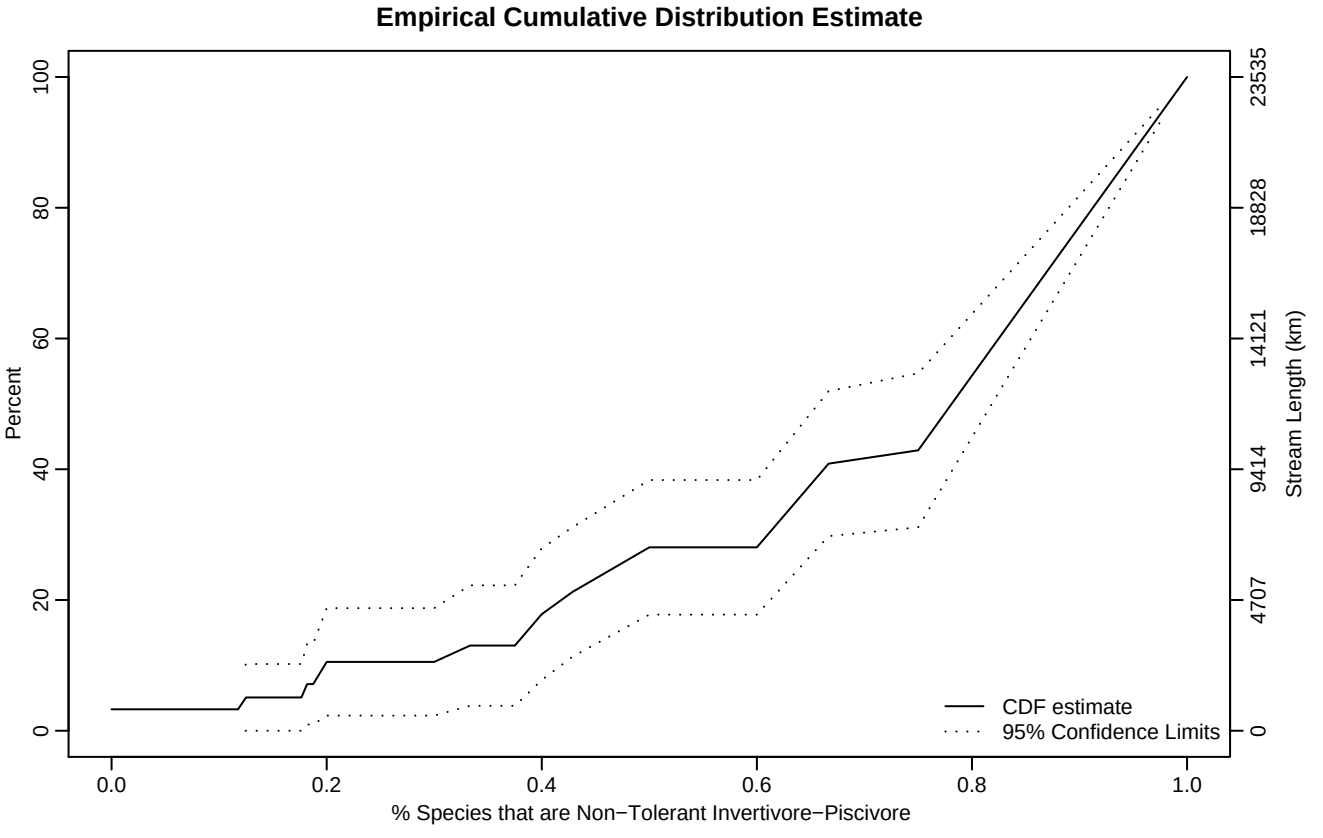


Figure VERT−183 Indicator: INVPISC_NT_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.12	0	0.20
10Pct	0.20	0.12	0.39
25Pct	0.47	0.39	0.64
50Pct	0.78	0.65	0.83
75Pct	0.89	0.83	0.95
90Pct	0.96	0.90	
95Pct	0.98	0.92	
Mean	0.76	0.69	0.83
Std Dev	0.30	0.25	0.35

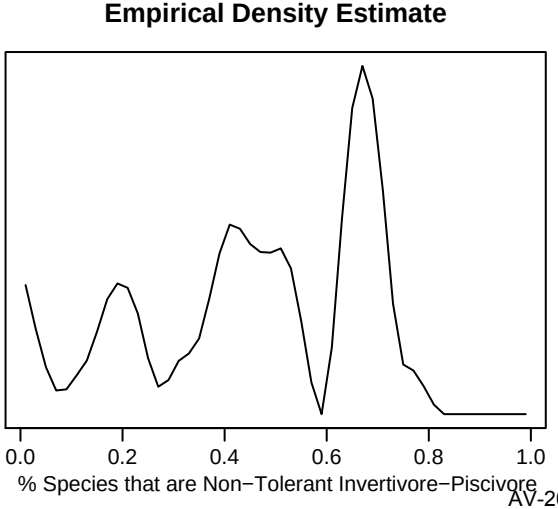
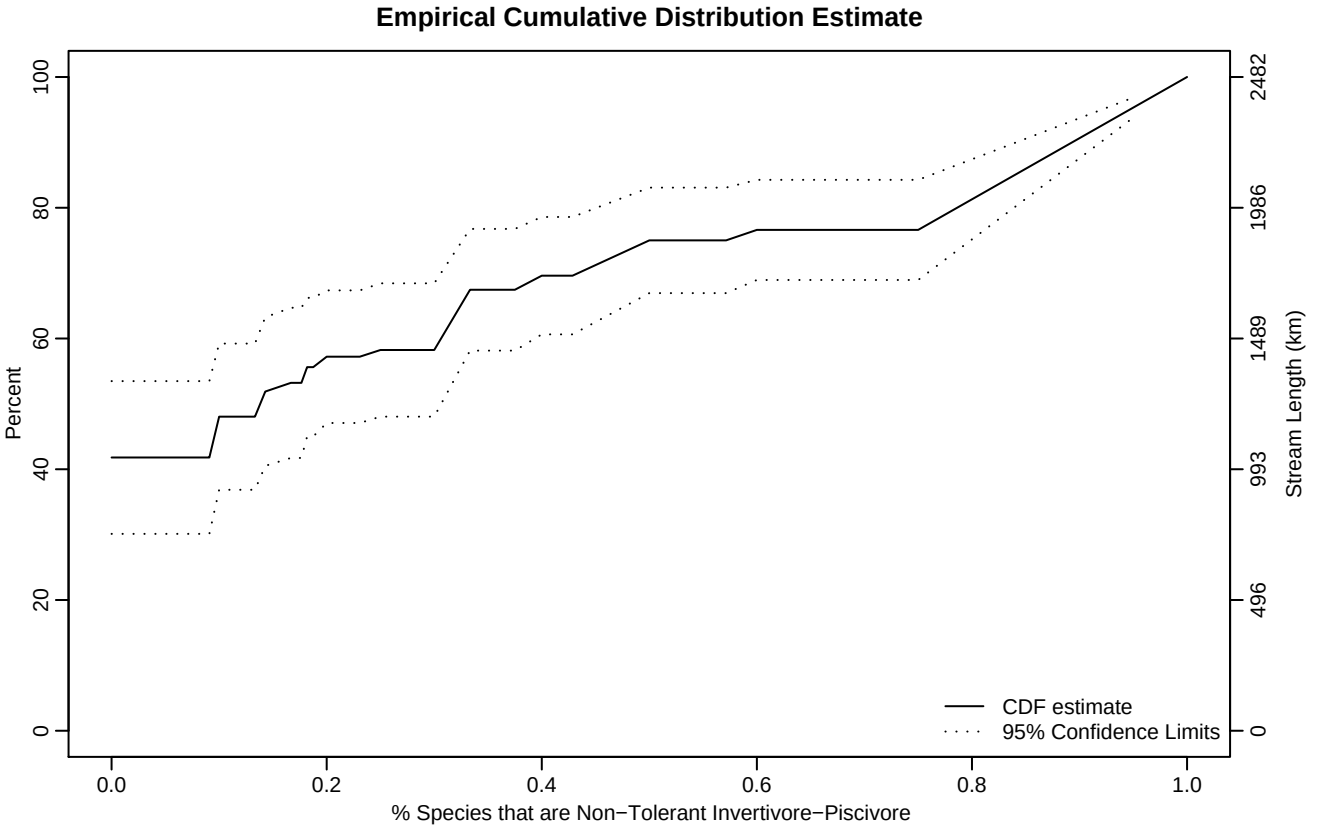


Figure VERT−184 Indicator: INVPISC_NT_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.14	0	0.31
75Pct	0.50	0.33	0.83
90Pct	0.89	0.81	0.97
95Pct	0.95	0.87	1
Mean	0.33	0.26	0.41
Std Dev	0.37	0.32	0.42

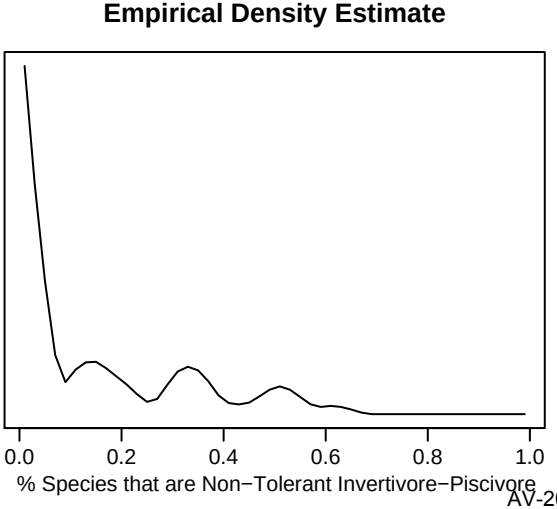
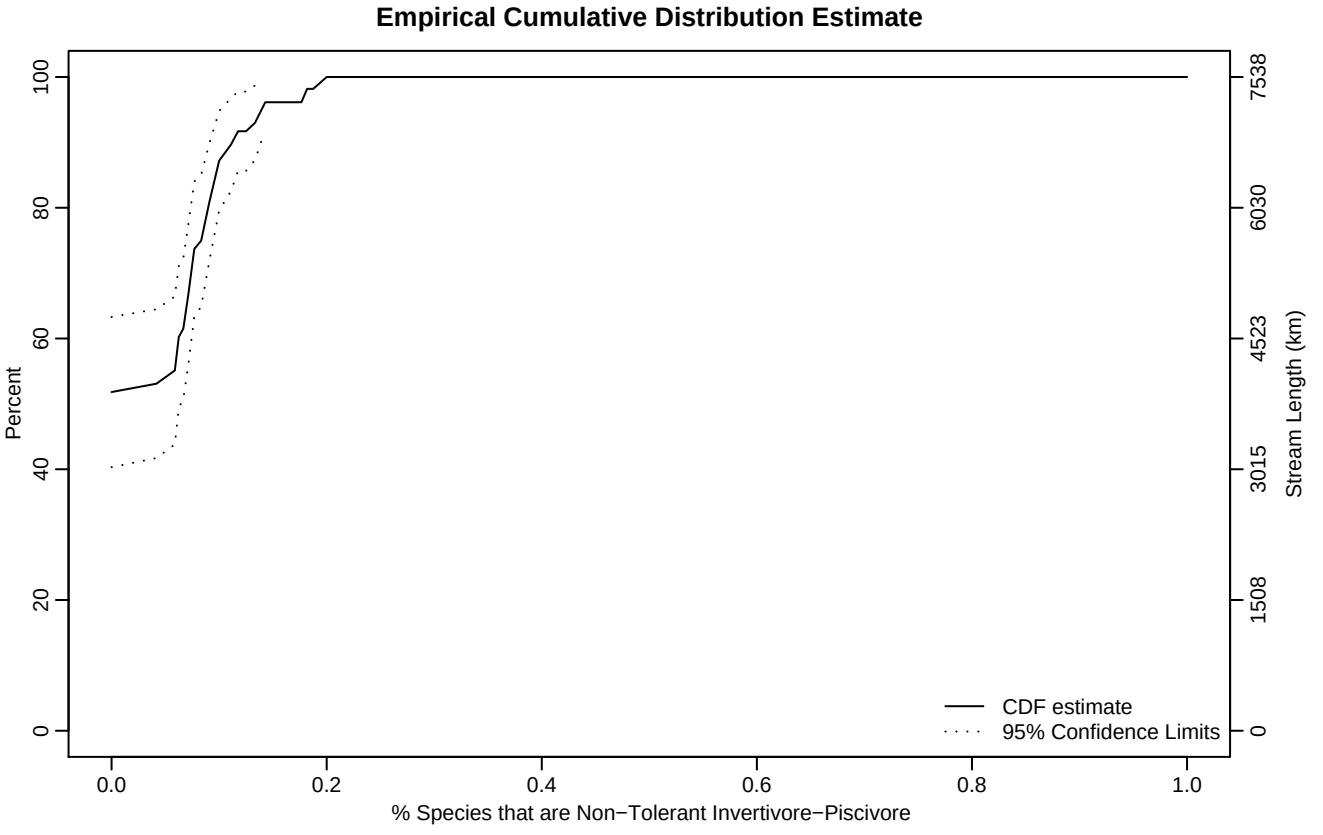


Figure VERT−185 Indicator: INVPISC_NT_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.07
75Pct	0.08	0.07	0.10
90Pct	0.11	0.09	0.18
95Pct	0.14	0.11	0.20
Mean	0.05	0.03	0.06
Std Dev	0.05	0.04	0.06

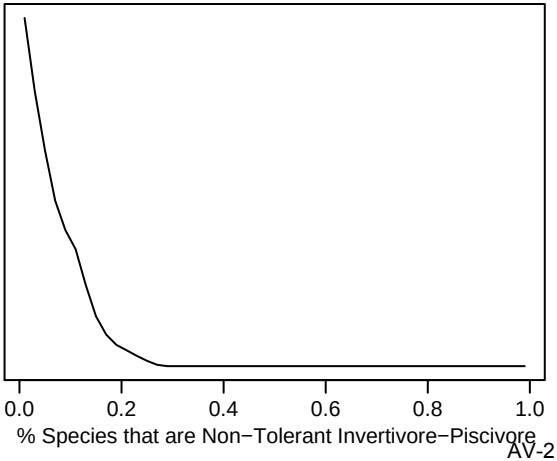
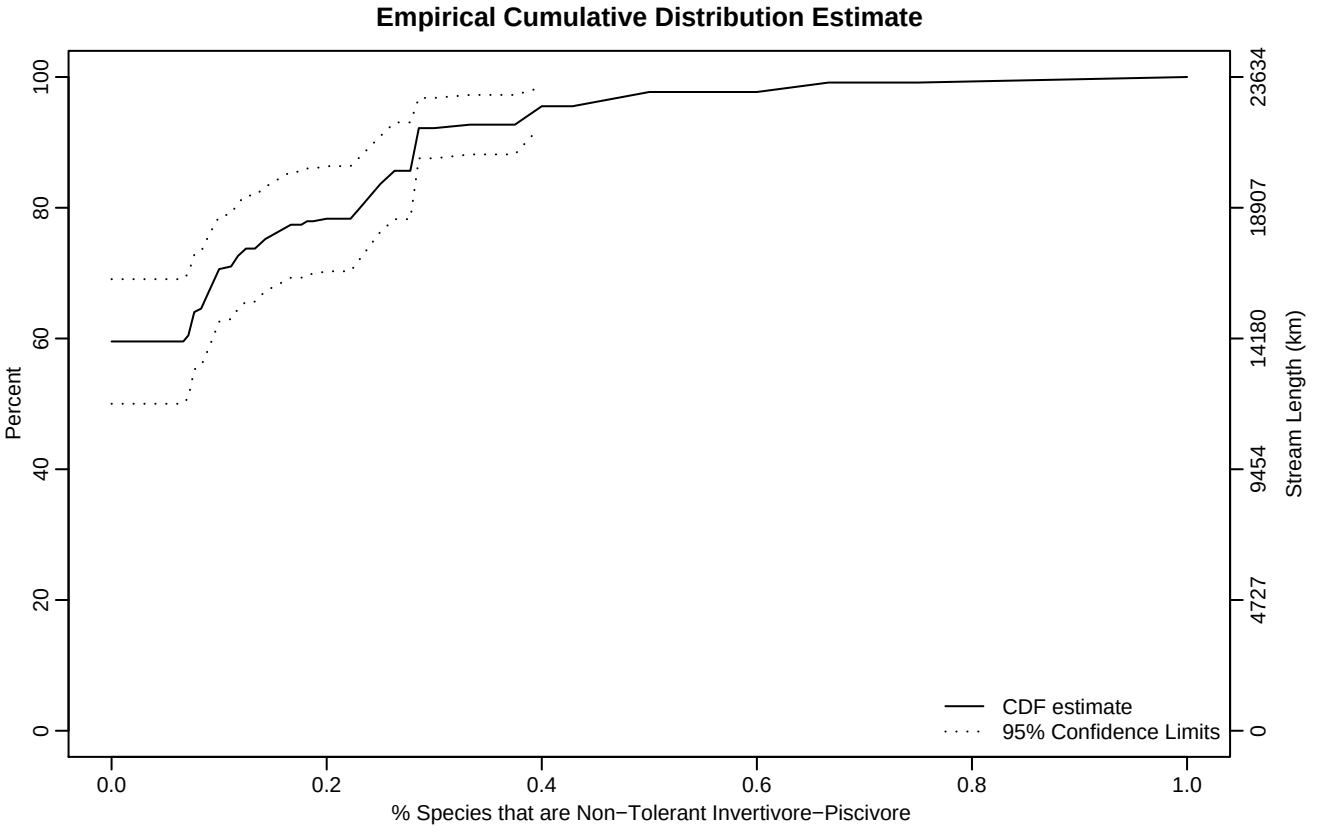


Figure VERT−186 Indicator: INVPISC_NT_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.07
75Pct	0.14	0.09	0.25
90Pct	0.28	0.24	0.49
95Pct	0.40	0.28	0.86
Mean	0.10	0.07	0.13
Std Dev	0.15	0.13	0.18

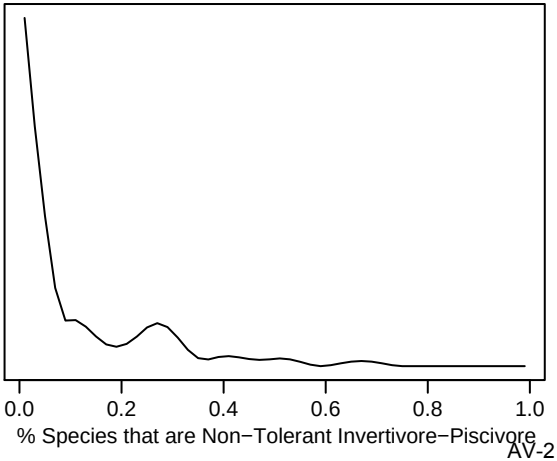
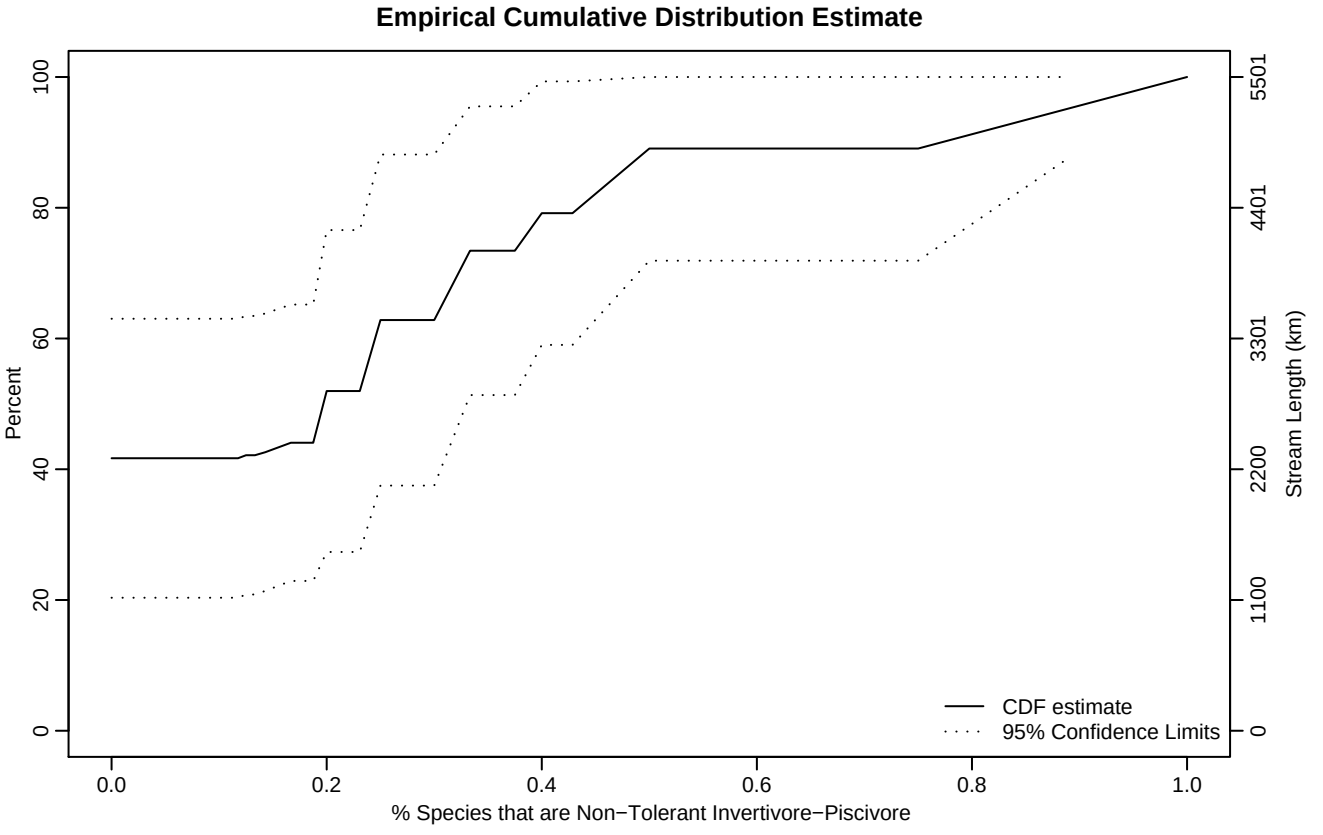


Figure VERT−187 Indicator: INVPISC_NT_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.19
50Pct	0.20	0	0.33
75Pct	0.38	0.23	0.93
90Pct	0.77	0.33	1
95Pct	0.89	0.39	1
Mean	0.26	0.09	0.44
Std Dev	0.31	0.18	0.44

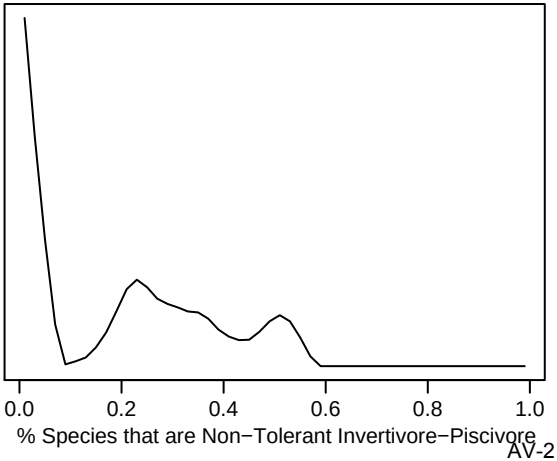
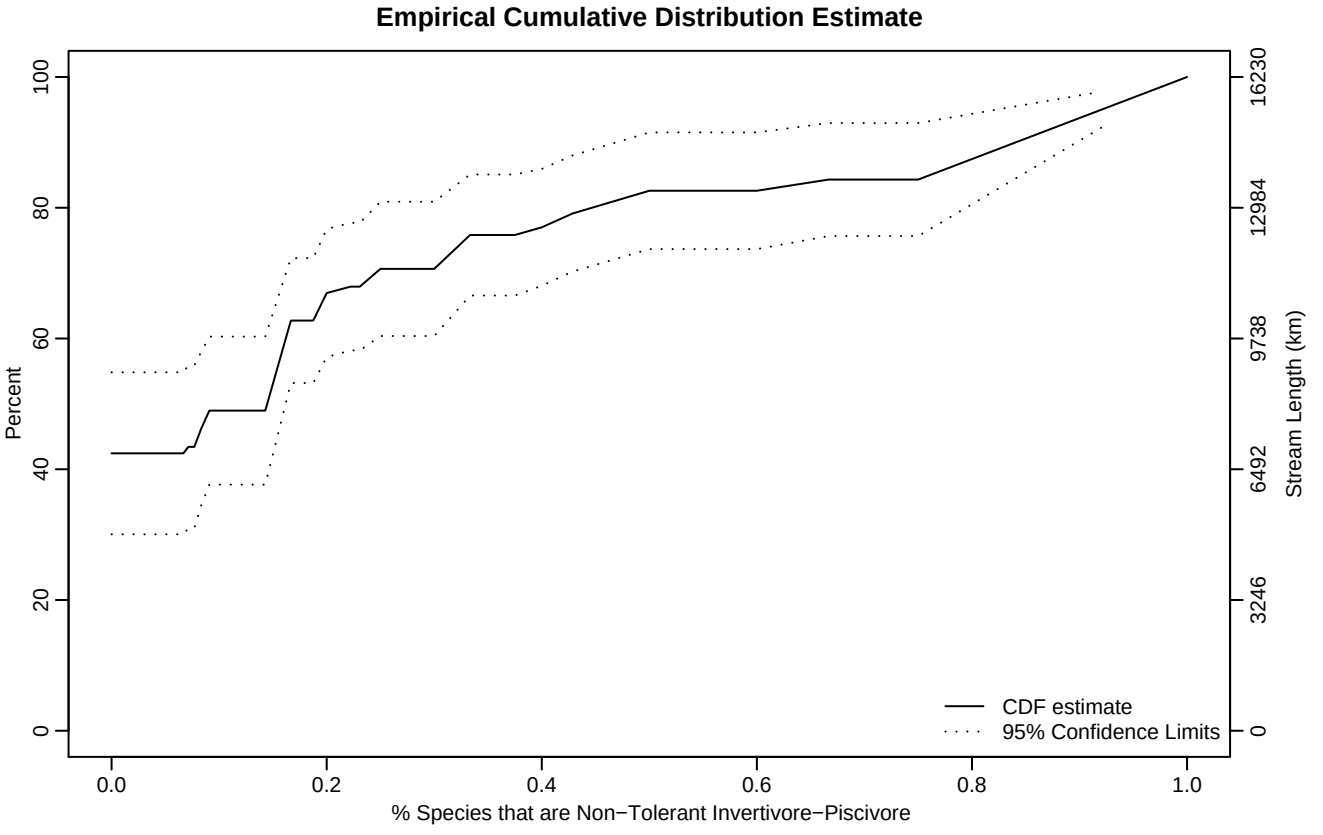


Figure VERT−188 Indicator: INVPISC_NT_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.14	0	0.16
75Pct	0.33	0.19	0.77
90Pct	0.84	0.47	0.98
95Pct	0.92	0.78	1
Mean	0.26	0.18	0.34
Std Dev	0.31	0.24	0.38

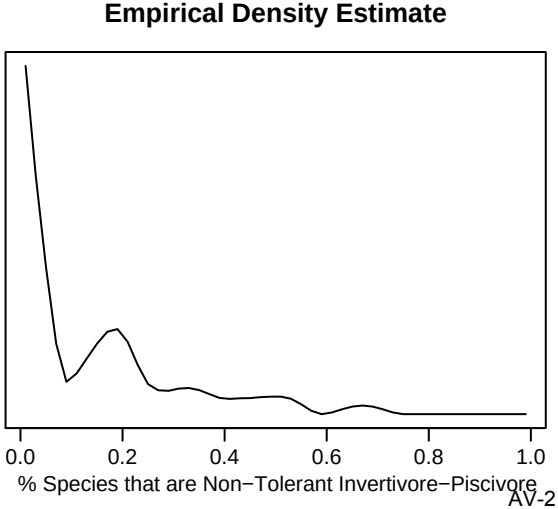
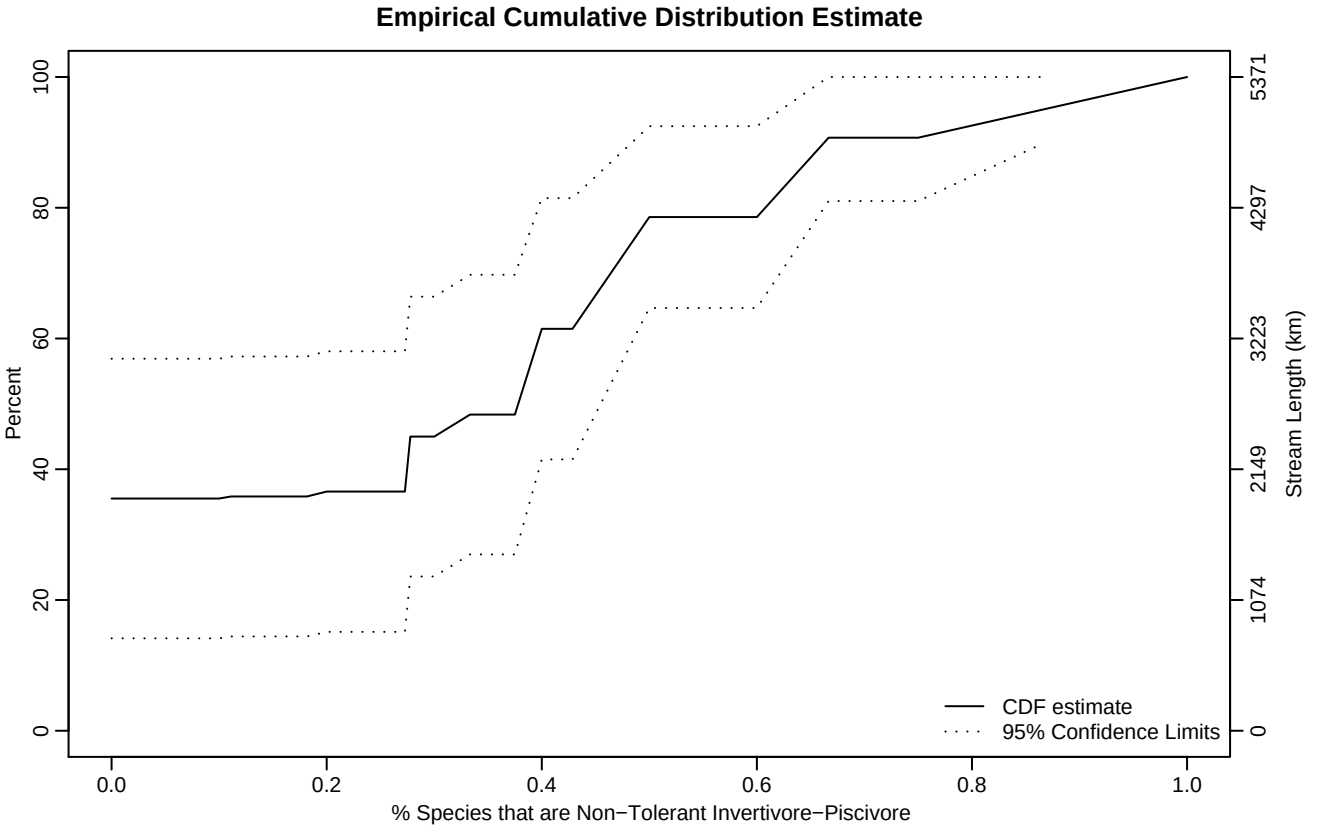


Figure VERT−189 Indicator: INVPISC_NT_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.33
50Pct	0.38	0	0.48
75Pct	0.49	0.39	0.88
90Pct	0.66	0.48	
95Pct	0.87	0.63	
Mean	0.35	0.23	0.47
Std Dev	0.26	0.20	0.33

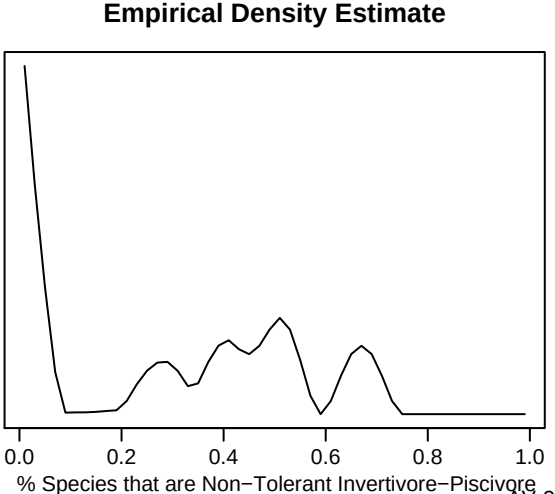
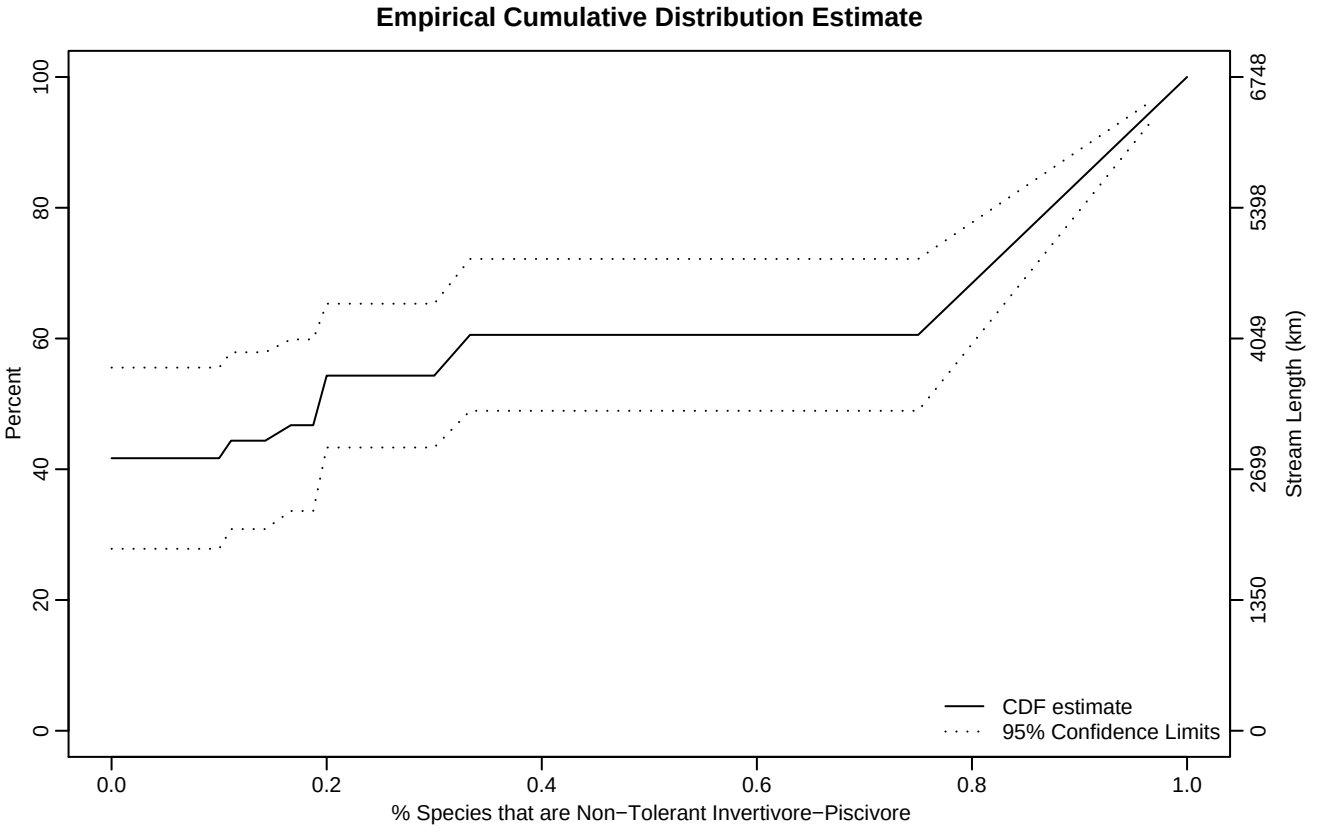


Figure VERT−190 Indicator: INVPISC_NT_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.19	0	0.77
75Pct	0.84	0.77	0.91
90Pct	0.94	0.87	1
95Pct	0.97	0.90	1
Mean	0.44	0.33	0.55
Std Dev	0.31	0.29	0.33

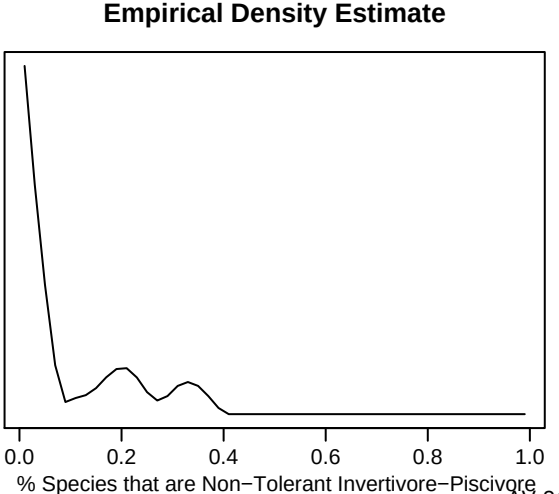
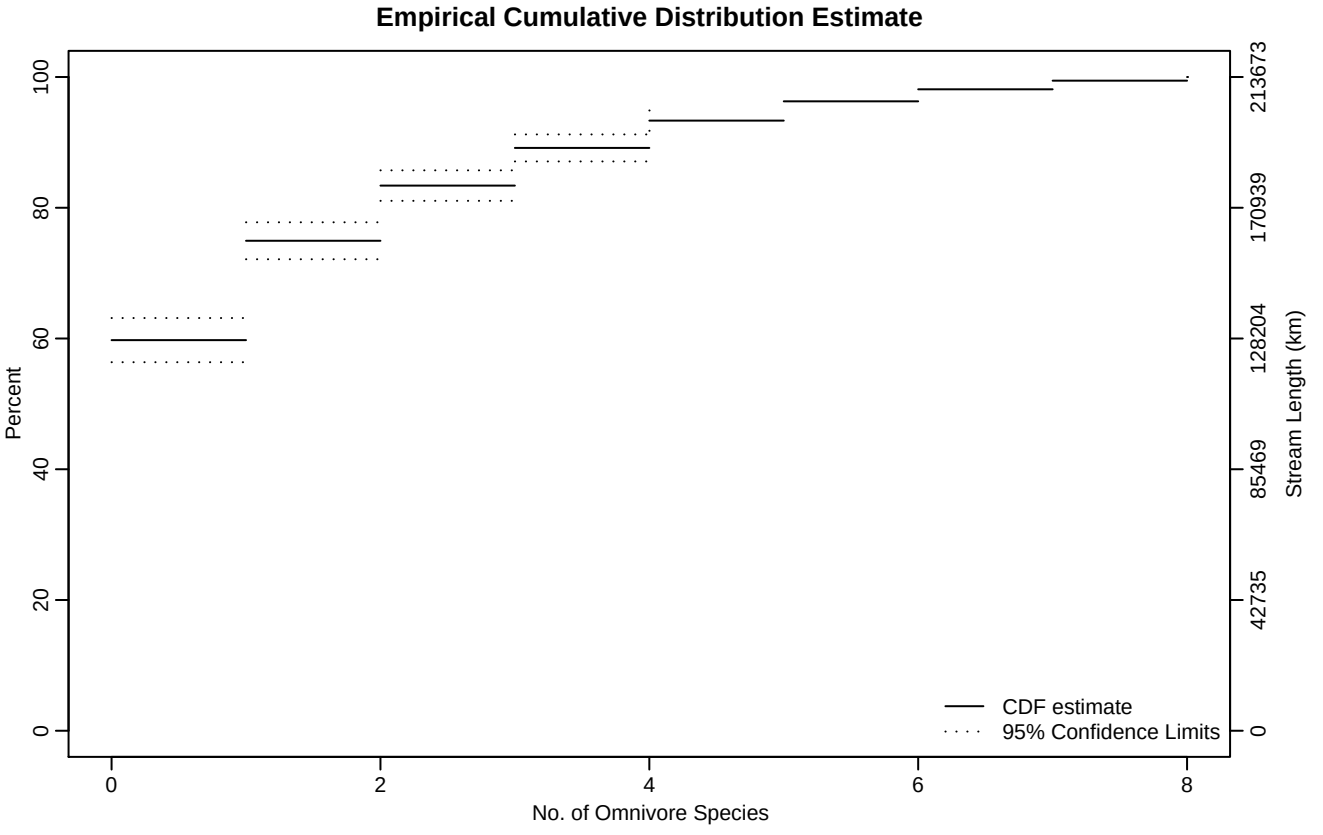


Figure VERT−191 Indicator: OMNI_RICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	1.01	0.81	1.35
90Pct	3.20	2.79	3.70
95Pct	4.57	4.04	5.15
Mean	1.06	0.95	1.16
Std Dev	1.34	1.22	1.45

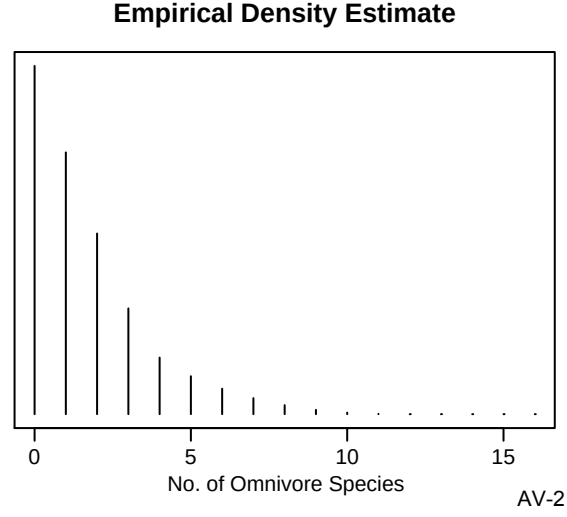
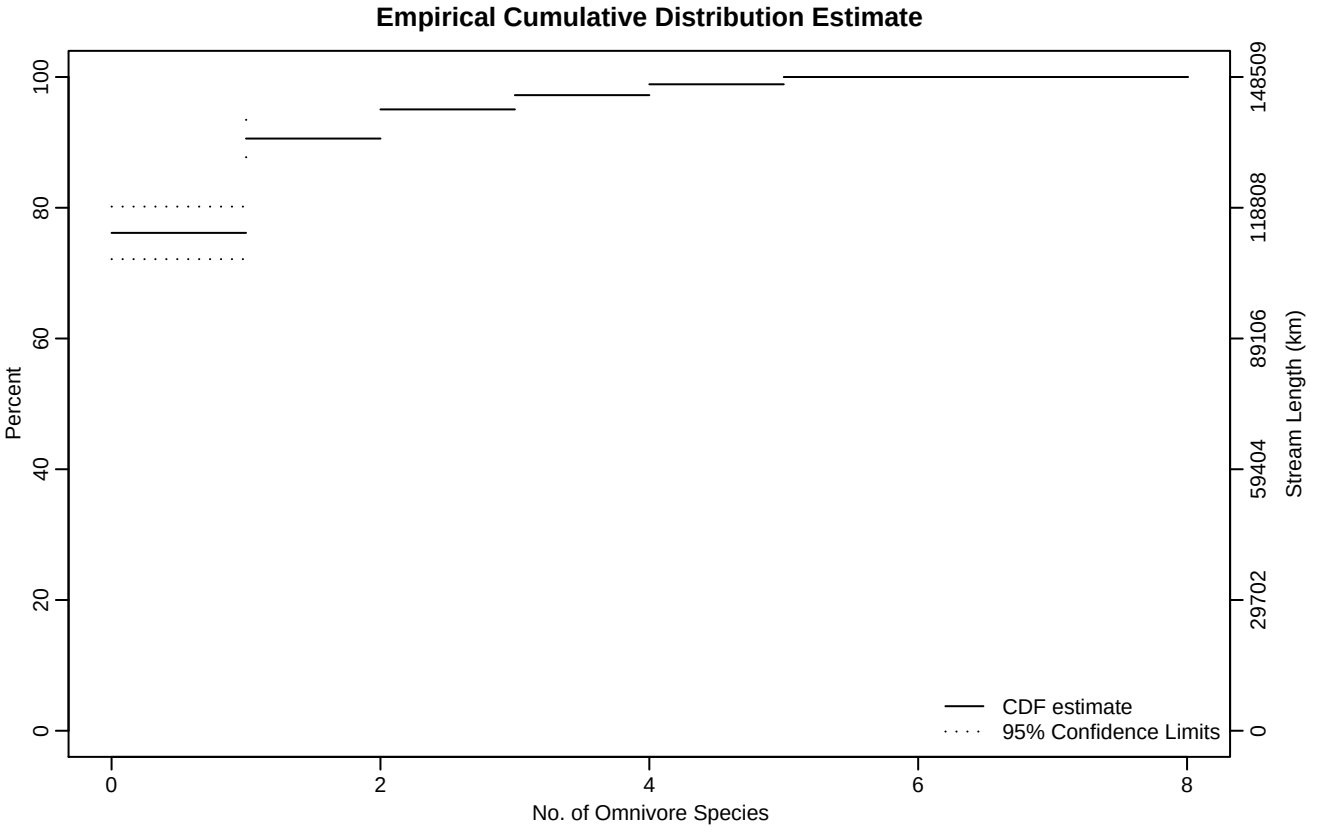


Figure VERT−192 Indicator: OMNI_RICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.20
90Pct	0.96	0.69	1.75
95Pct	1.99	1.35	3.37
Mean	0.42	0.32	0.52
Std Dev	0.78	0.65	0.90

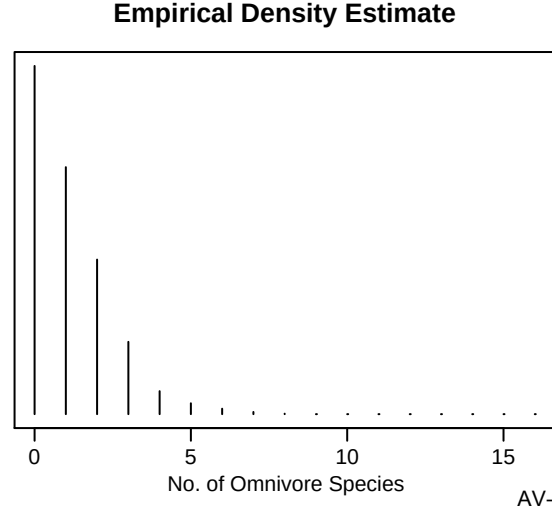
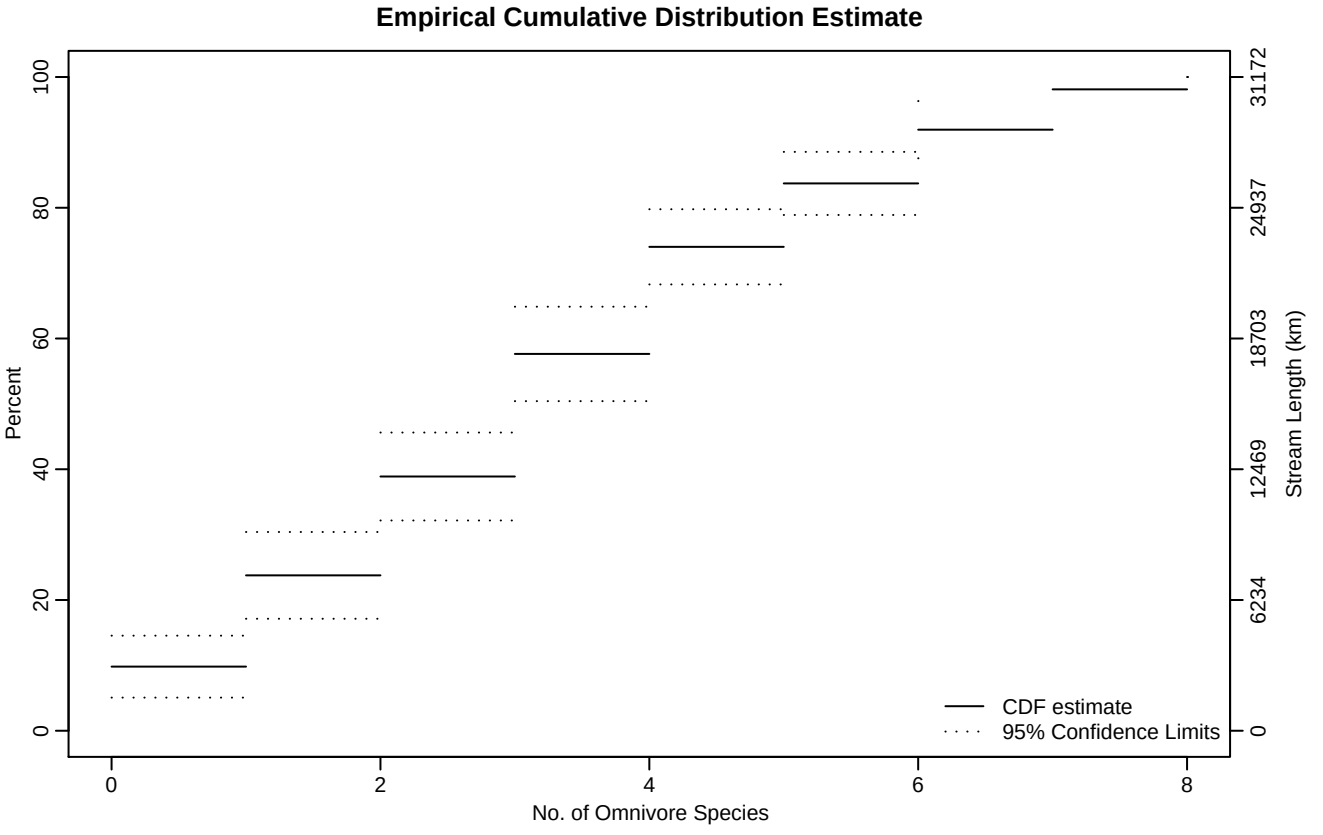


Figure VERT−193 Indicator: OMNI_RICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.01	0	0.35
25Pct	1.08	0.60	1.53
50Pct	2.59	2.23	2.96
75Pct	4.10	3.70	4.70
90Pct	5.76	5.17	6.48
95Pct	6.50	5.84	7.68
Mean	3.22	2.95	3.50
Std Dev	1.96	1.73	2.18

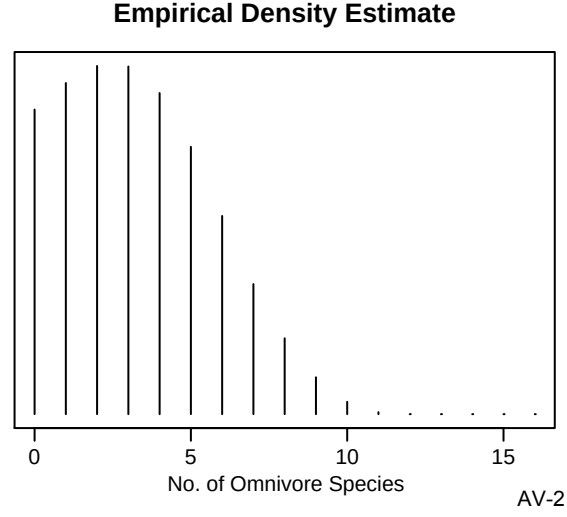
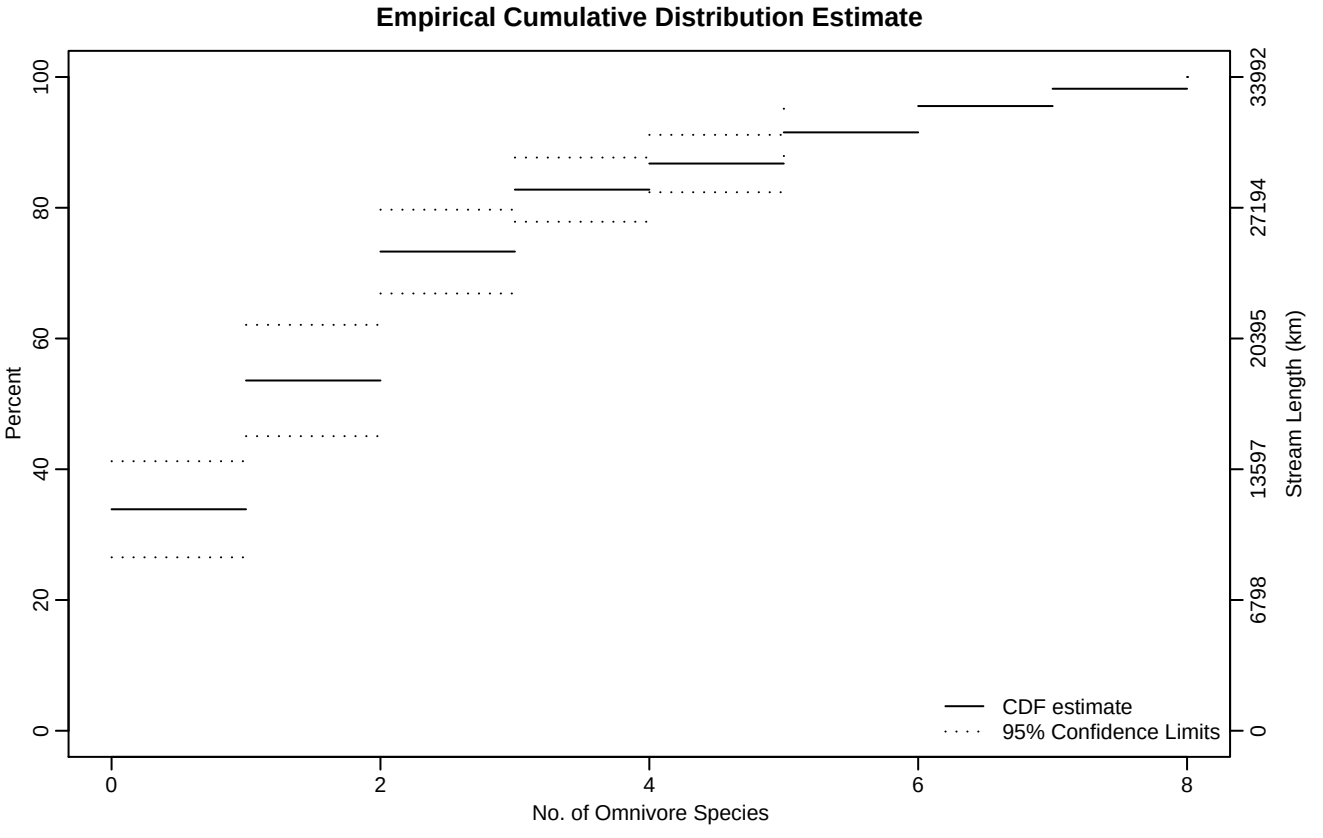


Figure VERT−194 Indicator: OMNI_RICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.82	0.42	1.22
75Pct	2.18	1.72	2.94
90Pct	4.68	3.67	5.75
95Pct	5.86	4.99	7.16
Mean	1.84	1.57	2.12
Std Dev	1.51	1.33	1.69

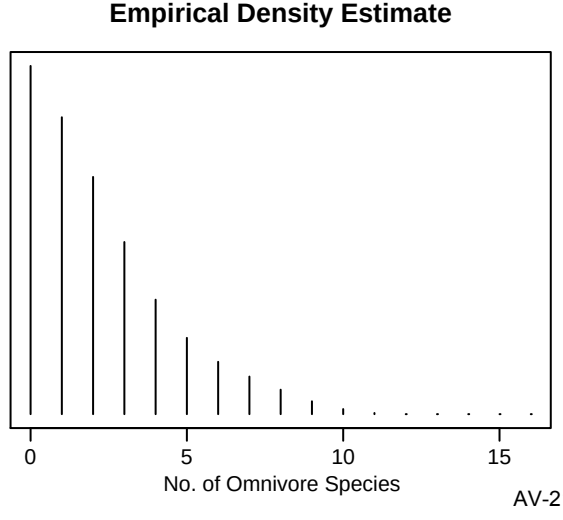
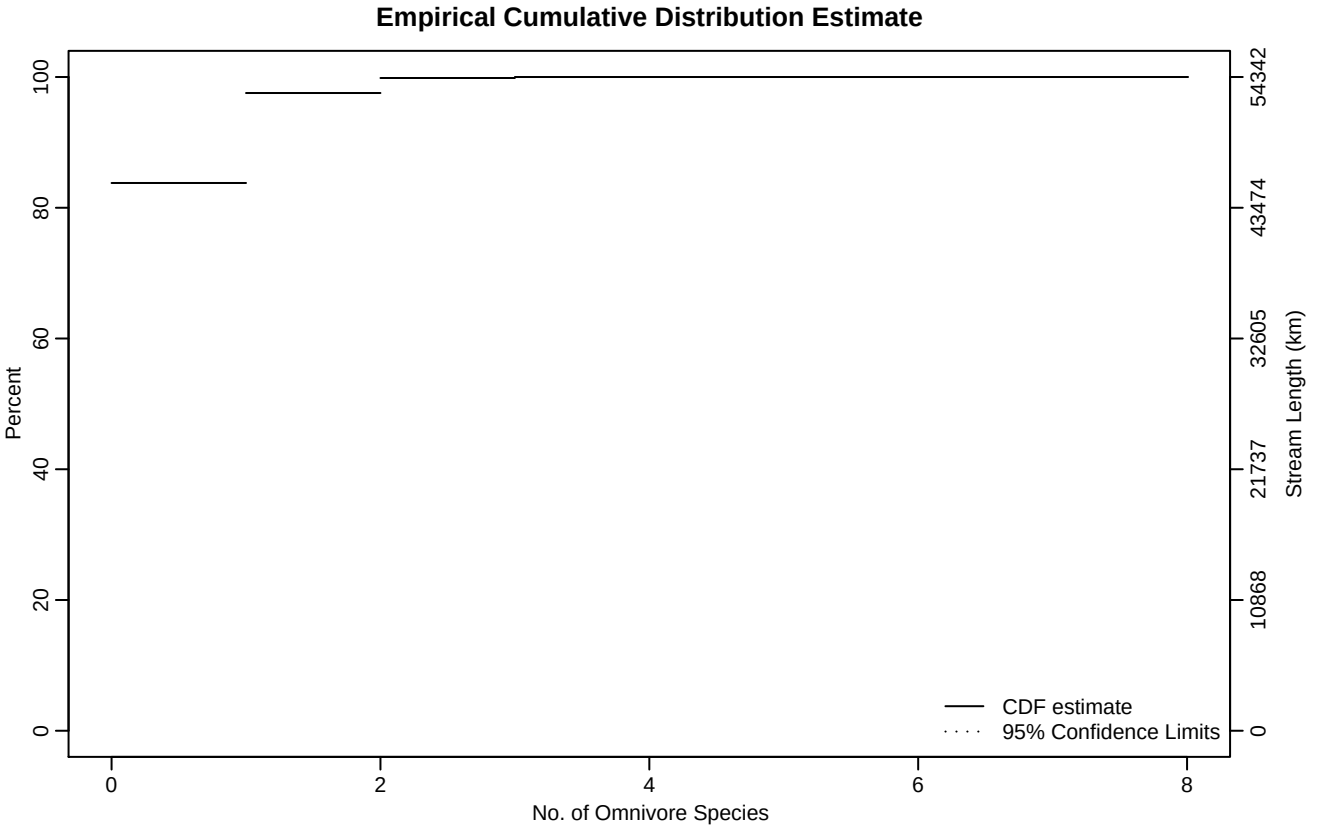


Figure VERT−195 Indicator: OMNI_RICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.45	0.05	0.86
95Pct	0.81	0.41	
Mean	0.19	0.12	0.26
Std Dev	0.33	0.26	0.40

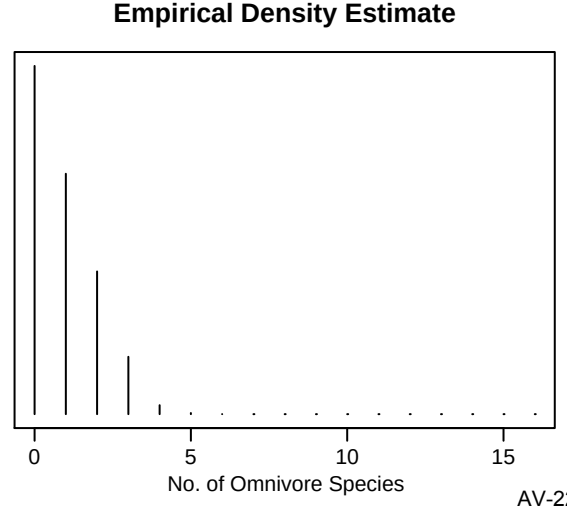
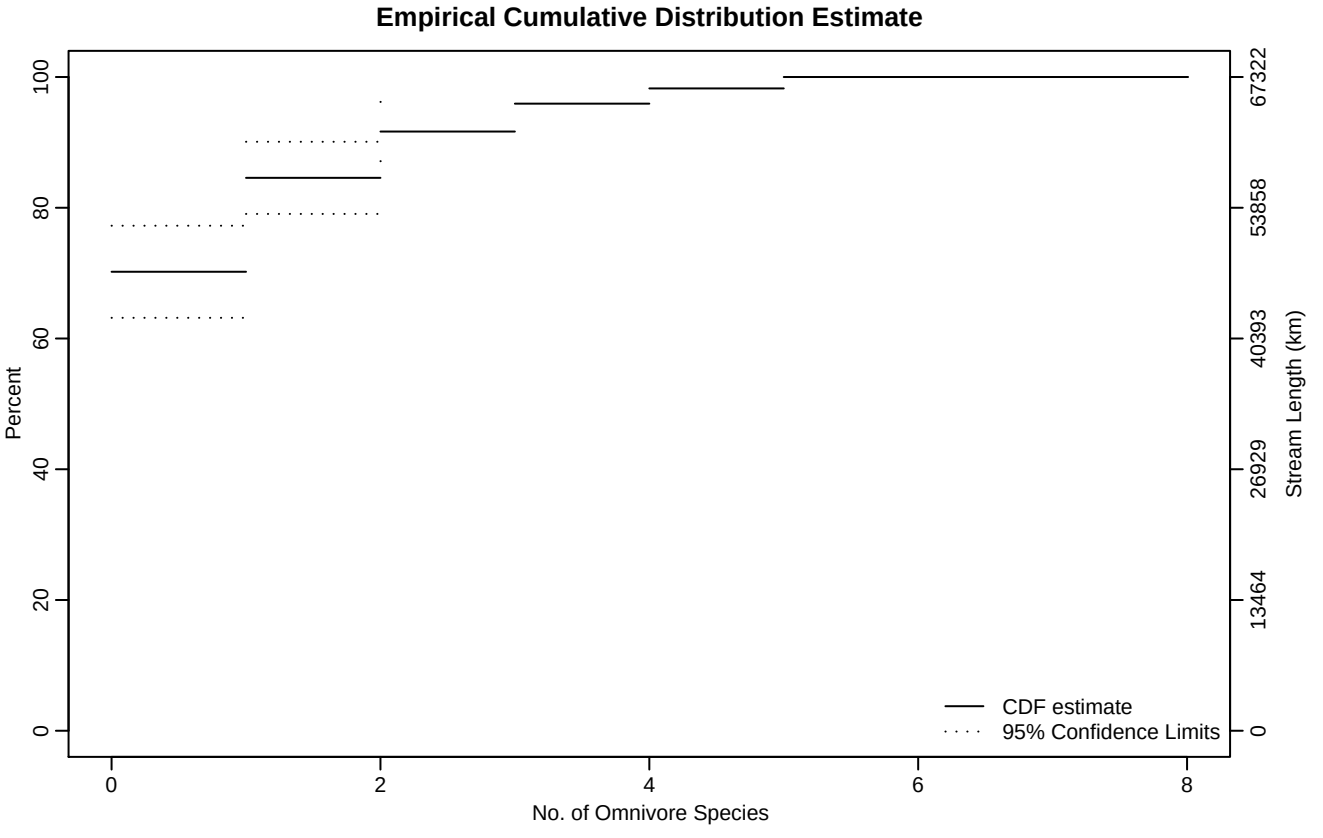


Figure VERT−196 Indicator: OMNI_RICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.33	0	0.81
90Pct	1.77	1	2.89
95Pct	2.78	1.83	4.74
Mean	0.59	0.41	0.78
Std Dev	1.04	0.83	1.25

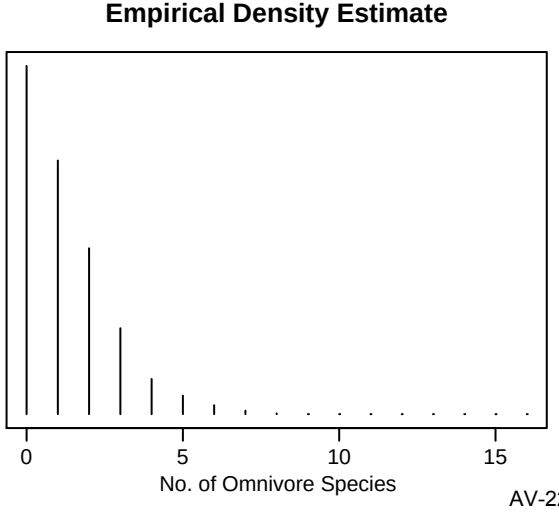
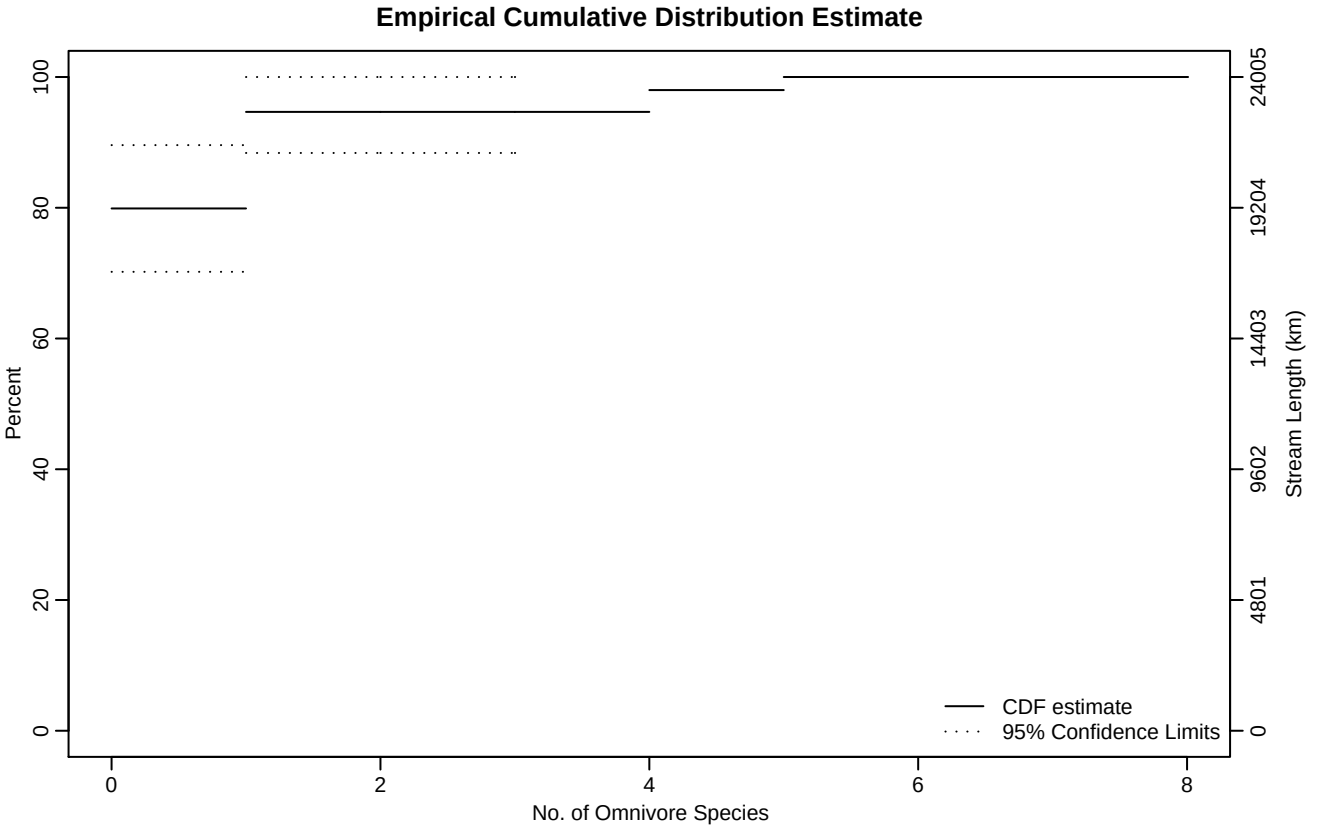


Figure VERT−197 Indicator: OMNI_RICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.33
90Pct	0.68	0.03	4.80
95Pct	3.10	0.60	
Mean	0.38	0.12	0.64
Std Dev	0.96	0.55	1.36

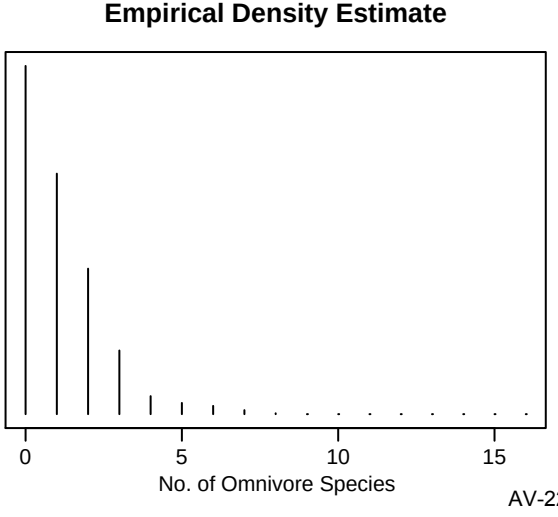
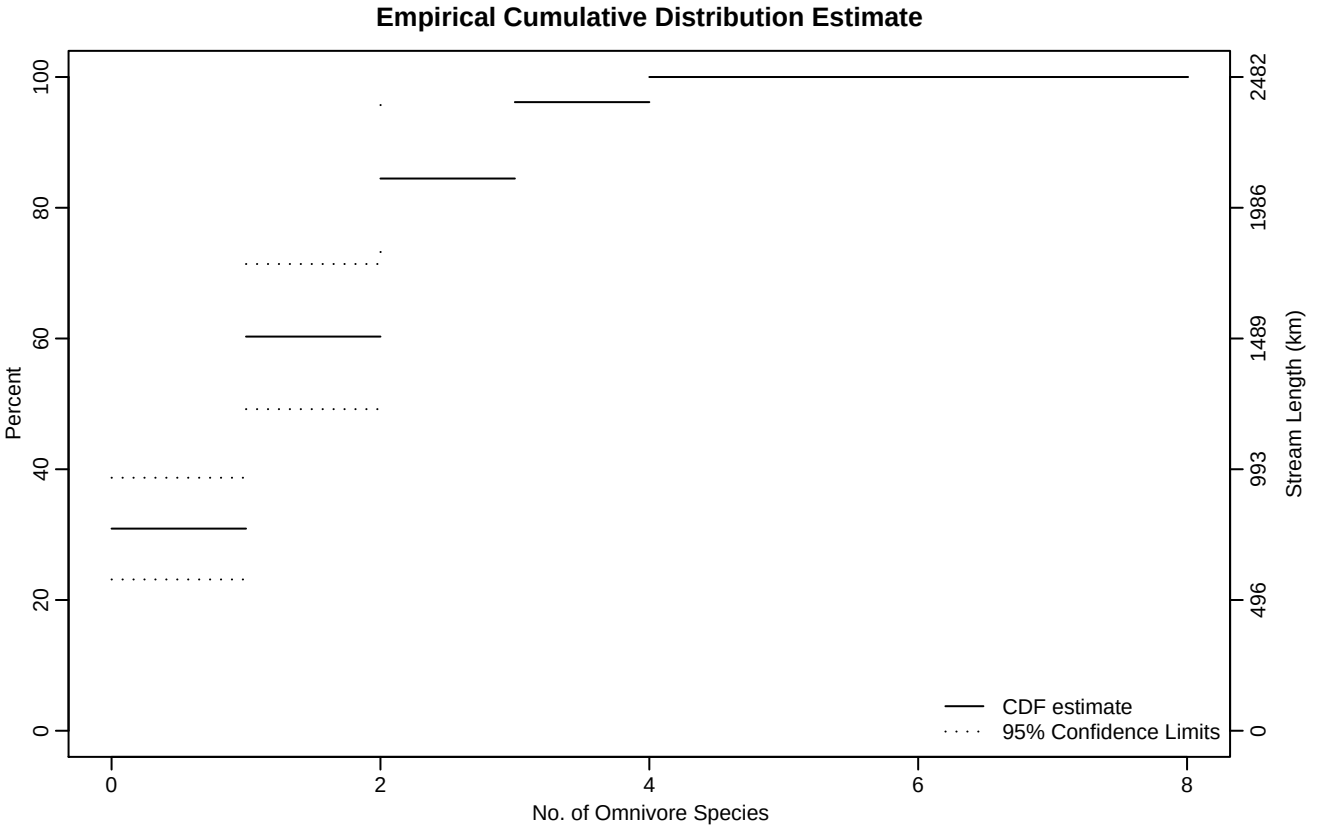


Figure VERT−198 Indicator: OMNI_RICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.07
50Pct	0.65	0.34	0.96
75Pct	1.61	1.10	2.24
90Pct	2.47	1.75	4
95Pct	2.90	1.95	4
Mean	1.28	1.03	1.54
Std Dev	0.95	0.76	1.13

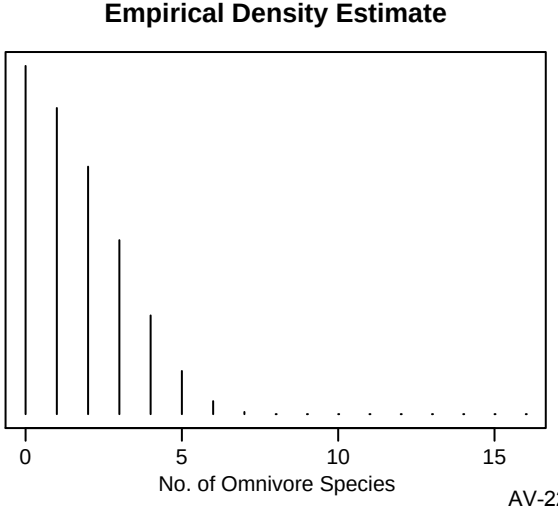
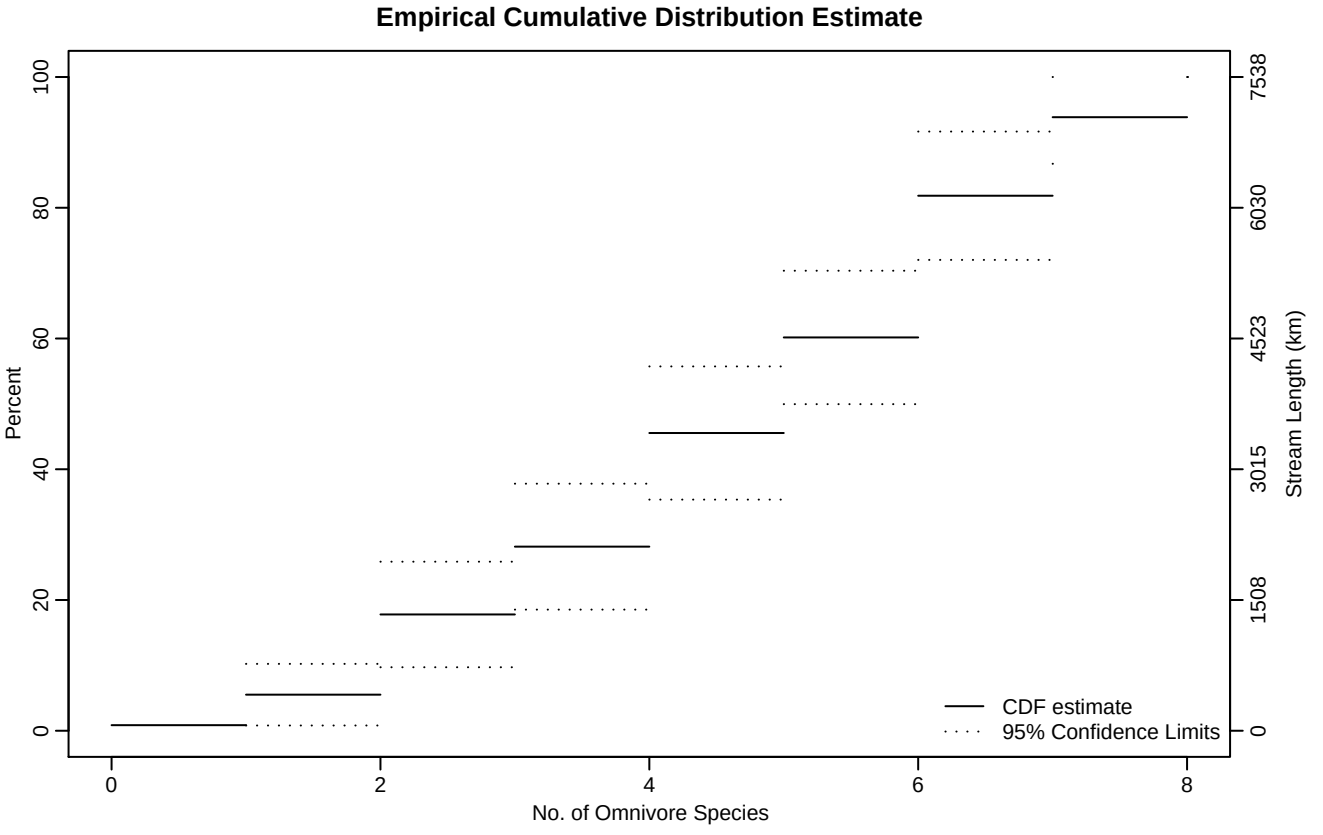


Figure VERT−199 Indicator: OMNI_RICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.89	0.56	1.08
10Pct	1.37	0.95	1.75
25Pct	2.70	1.91	3.30
50Pct	4.30	3.66	5.01
75Pct	5.68	5.20	6.31
90Pct	6.68	5.92	7.99
95Pct	7.19	6.49	8
Mean	4.66	4.25	5.07
Std Dev	1.82	1.60	2.04

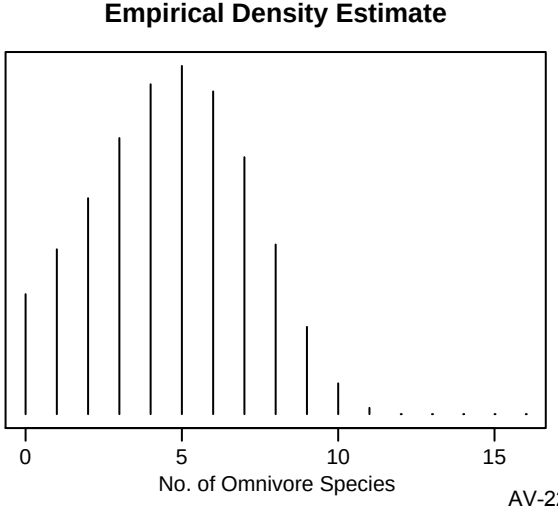
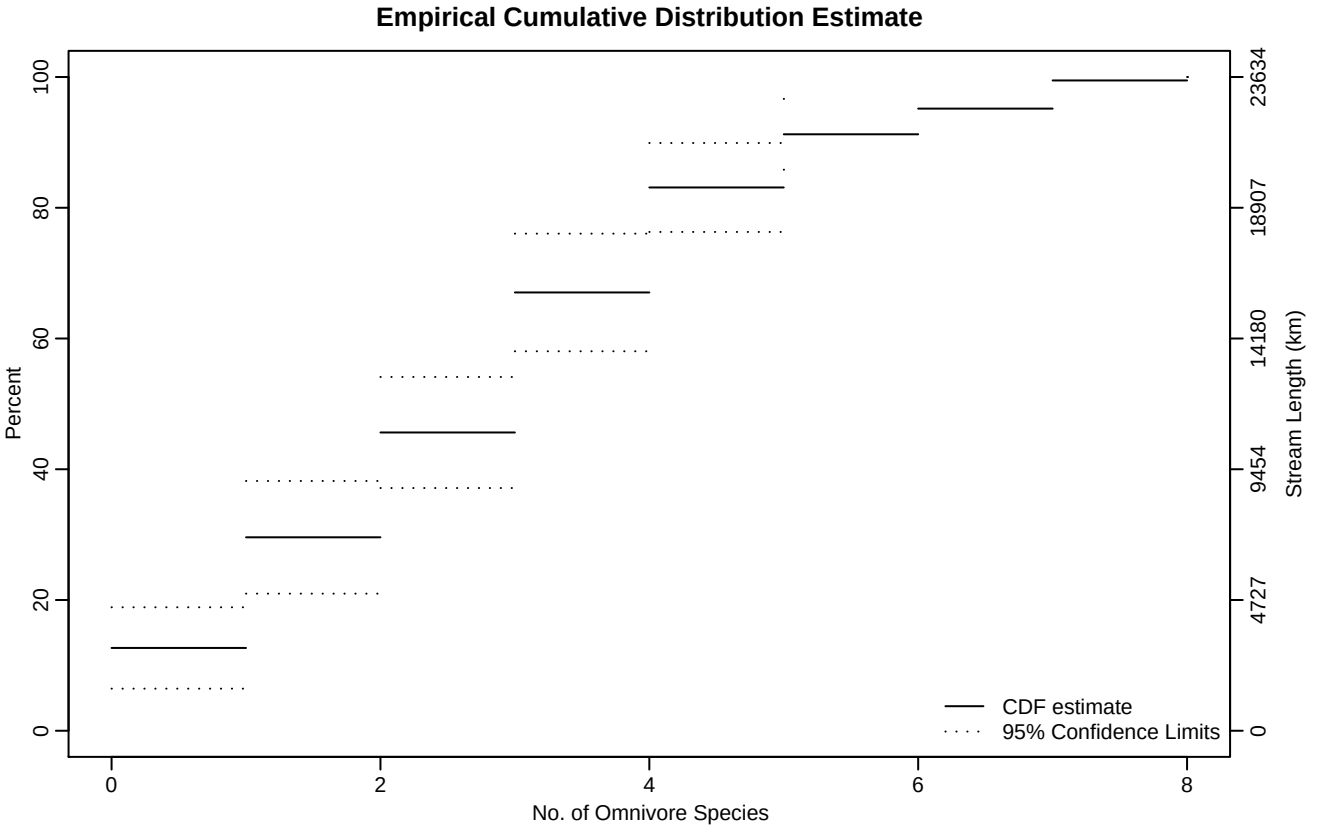


Figure VERT−200 Indicator: OMNI_RICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.21
25Pct	0.73	0.34	1.12
50Pct	2.20	1.74	2.61
75Pct	3.50	2.95	4.12
90Pct	4.85	4	6.39
95Pct	5.96	4.79	8
Mean	2.76	2.42	3.10
Std Dev	1.85	1.57	2.13

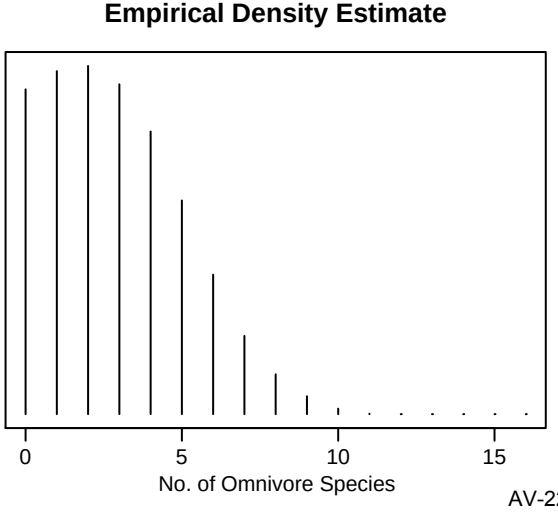
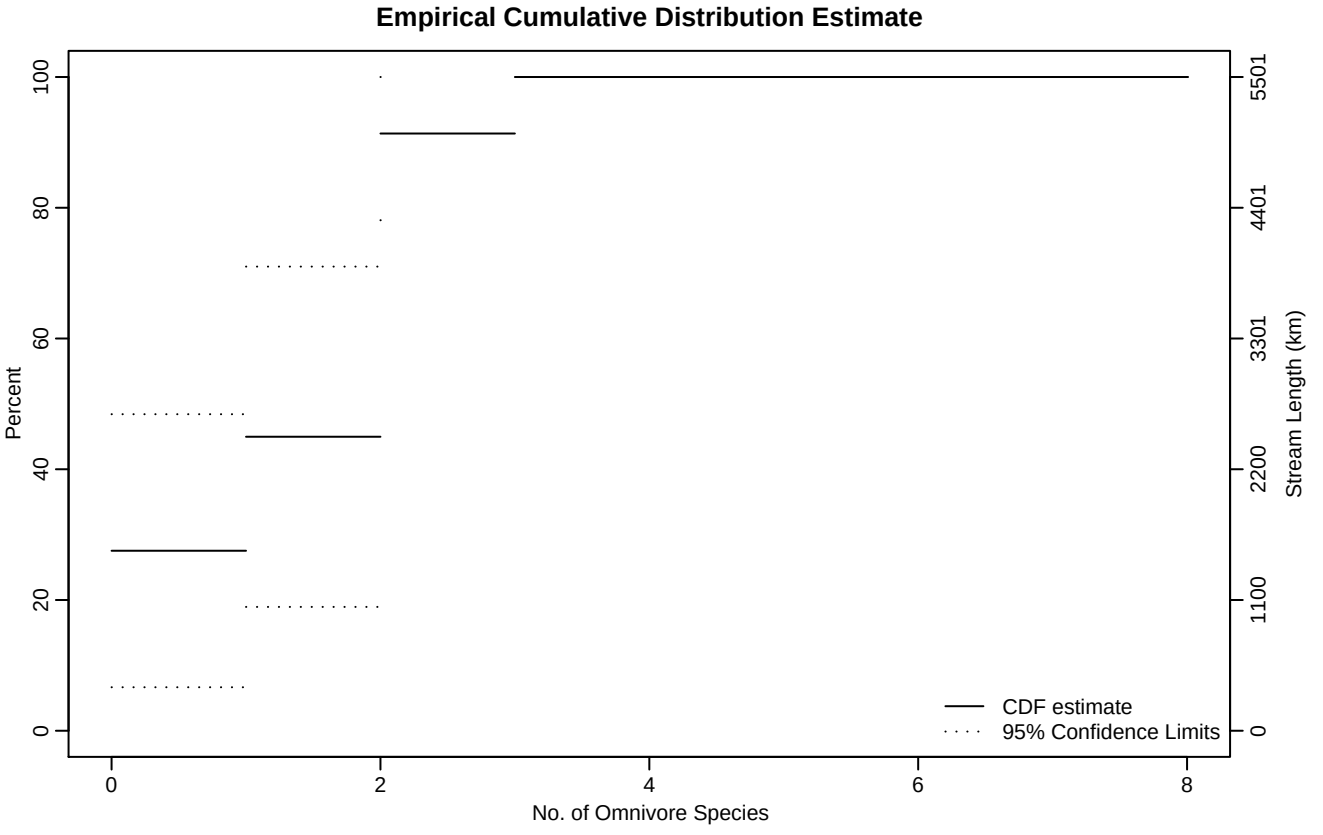


Figure VERT−201 Indicator: OMNI_RICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.15
25Pct	0	0	1.02
50Pct	1.11	0	1.68
75Pct	1.65	1.03	3
90Pct	1.97	1.31	3
95Pct	2.42	1.80	3
Mean	1.36	0.89	1.84
Std Dev	0.98	0.76	1.20

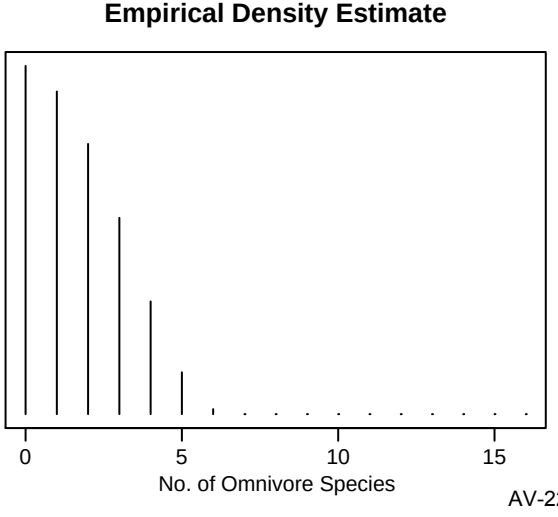
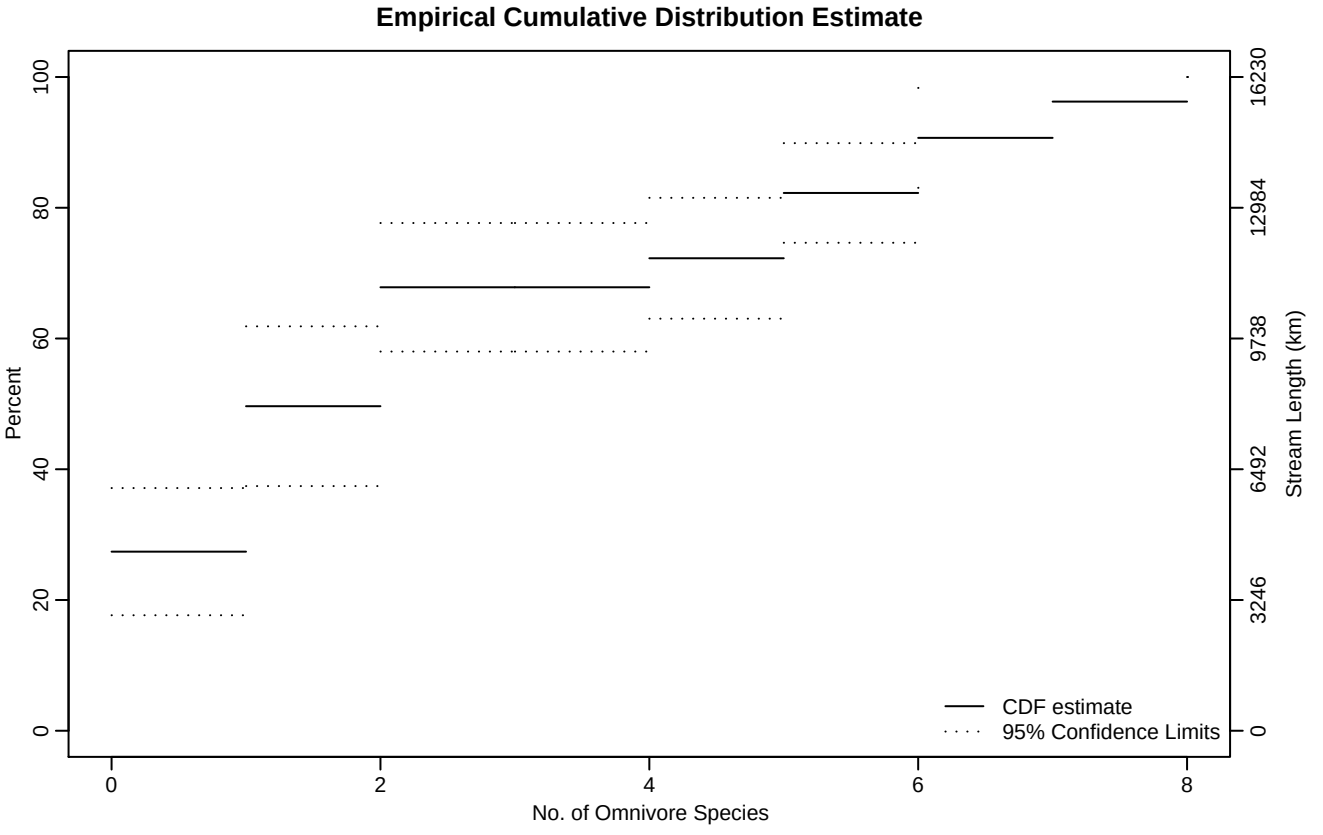


Figure VERT−202 Indicator: OMNI_RICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.34
50Pct	1.02	0.46	1.70
75Pct	4.27	1.88	5.25
90Pct	5.92	5.05	7.29
95Pct	6.78	5.65	8
Mean	2.46	1.96	2.95
Std Dev	1.90	1.54	2.26

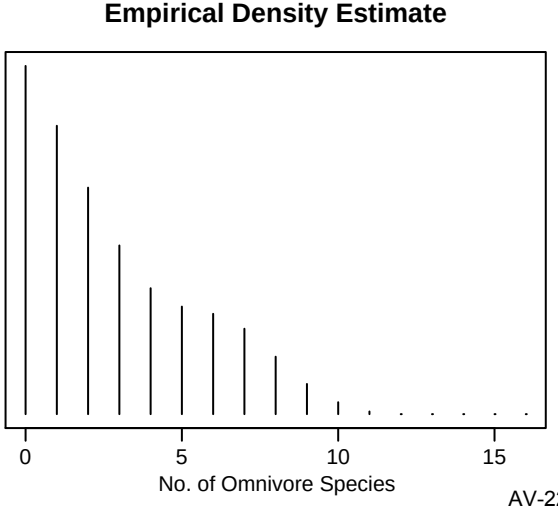
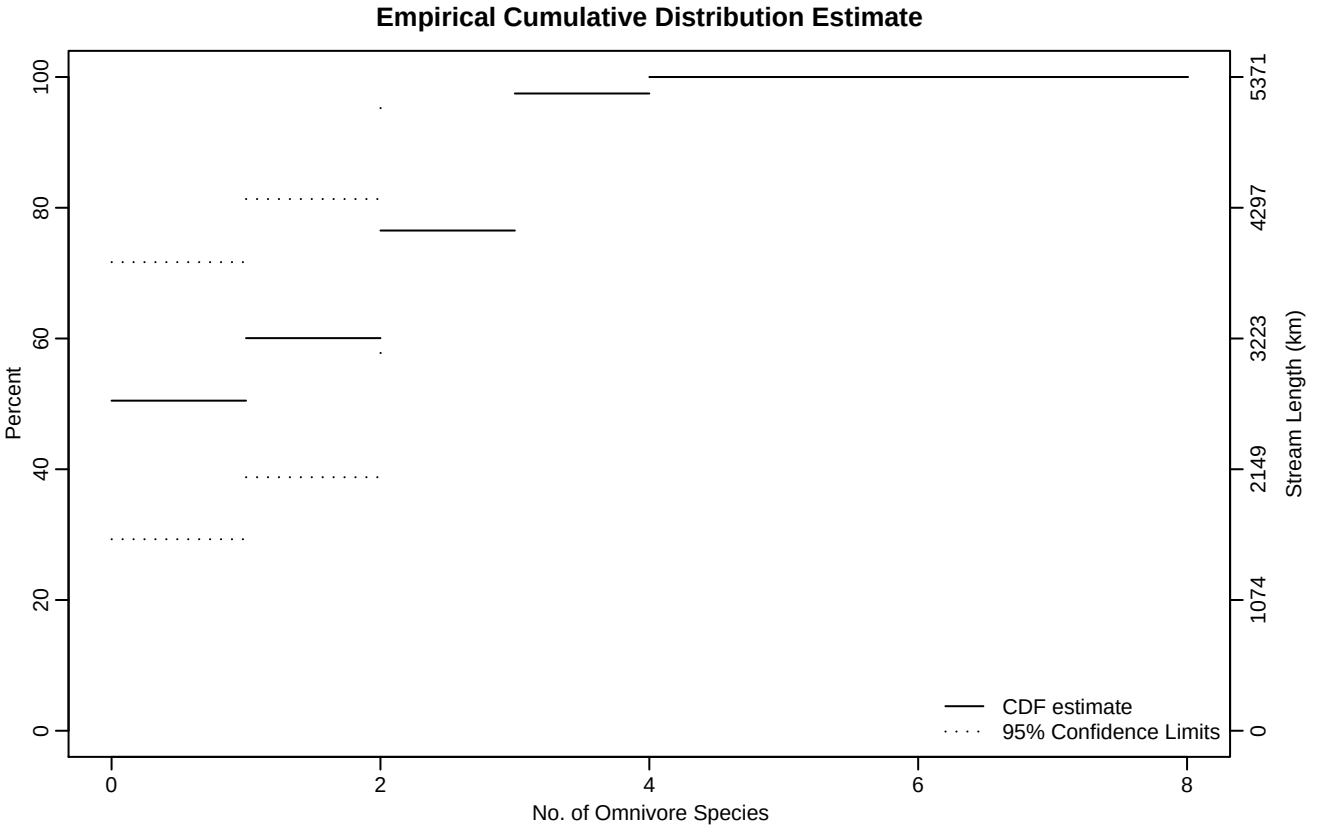


Figure VERT−203 Indicator: OMNI_RICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	1.77
75Pct	1.91	0	
90Pct	2.64	1.32	
95Pct	2.88	1.58	
Mean	1.15	0.56	1.75
Std Dev	1.10	0.84	1.36

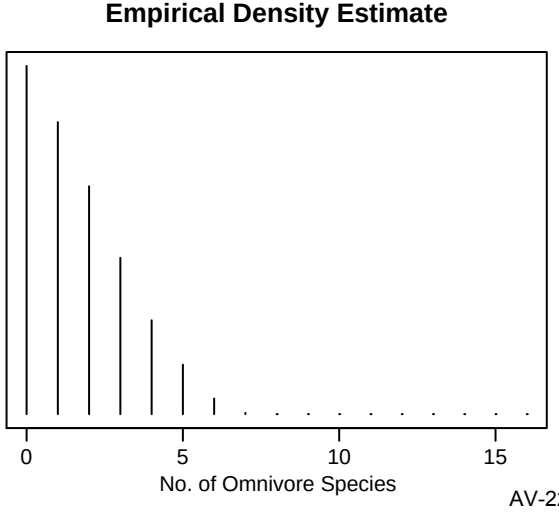
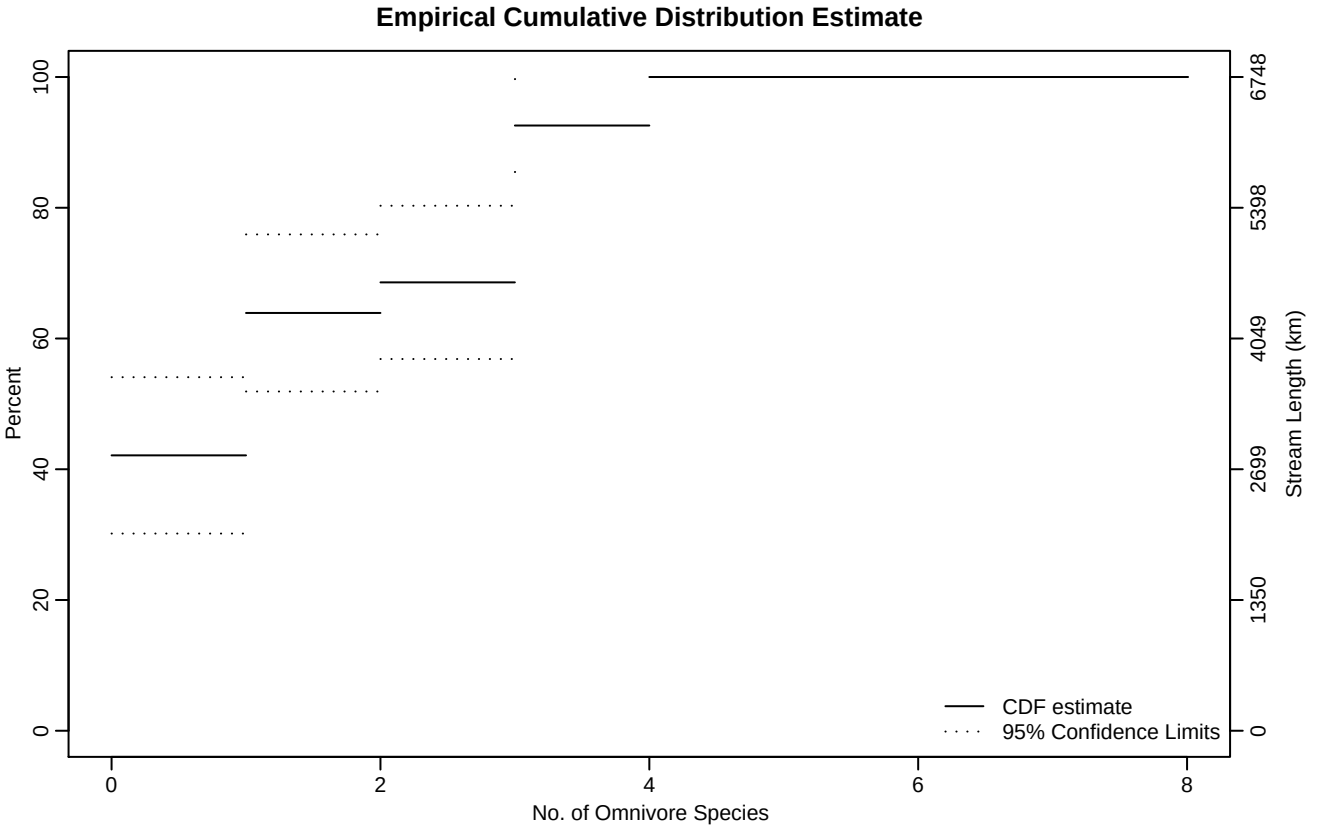


Figure VERT−204 Indicator: OMNI_RICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.36	0	0.91
75Pct	2.27	0.98	2.75
90Pct	2.89	2.41	4
95Pct	3.33	2.81	4
Mean	1.33	1.01	1.64
Std Dev	1.09	0.91	1.26

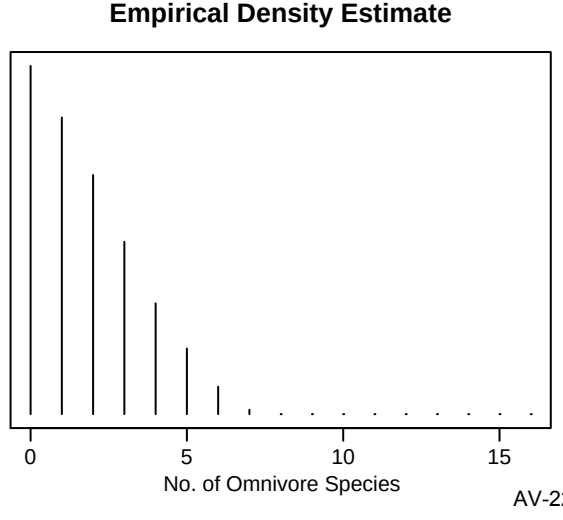
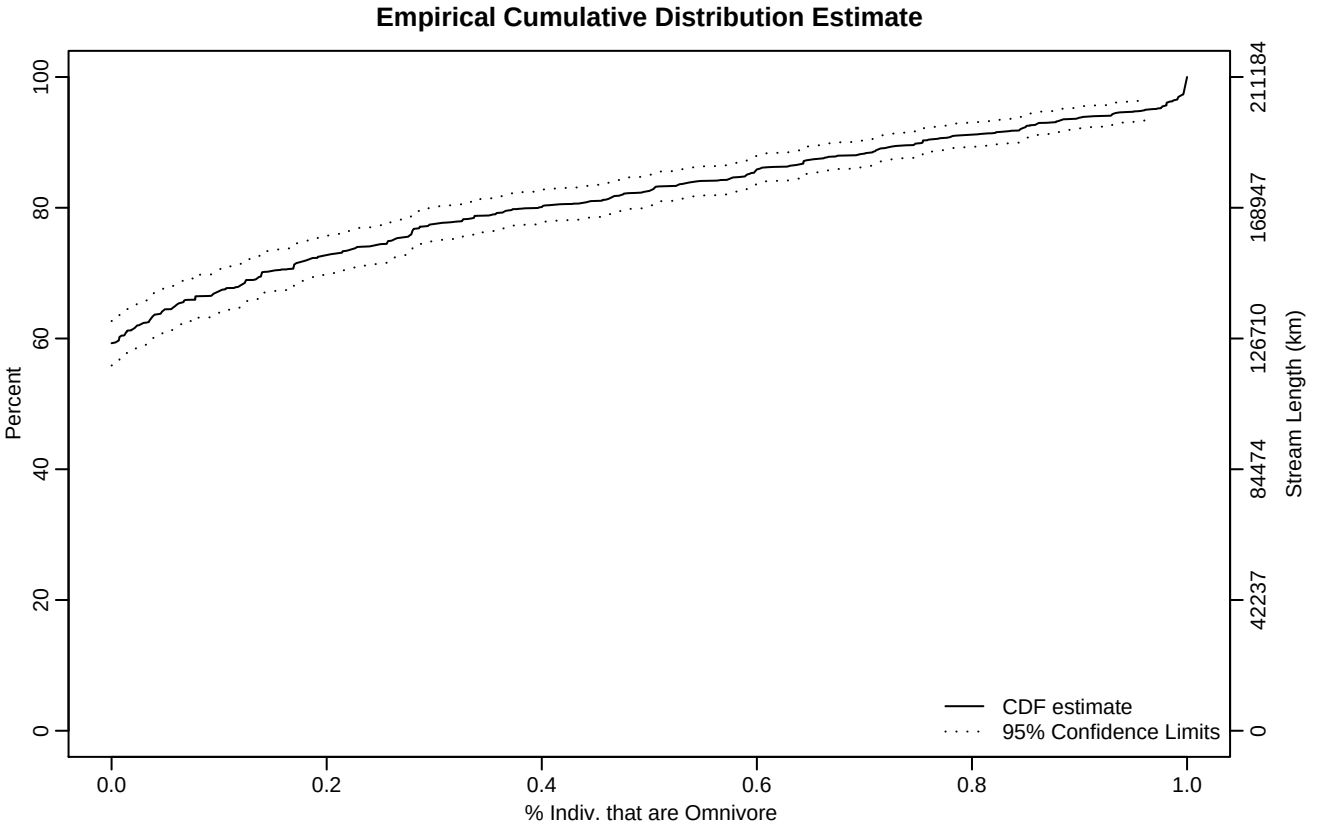


Figure VERT−205 Indicator: OMNI_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.26	0.18	0.32
90Pct	0.75	0.69	0.84
95Pct	0.96	0.88	0.99
Mean	0.18	0.16	0.20
Std Dev	0.25	0.23	0.27

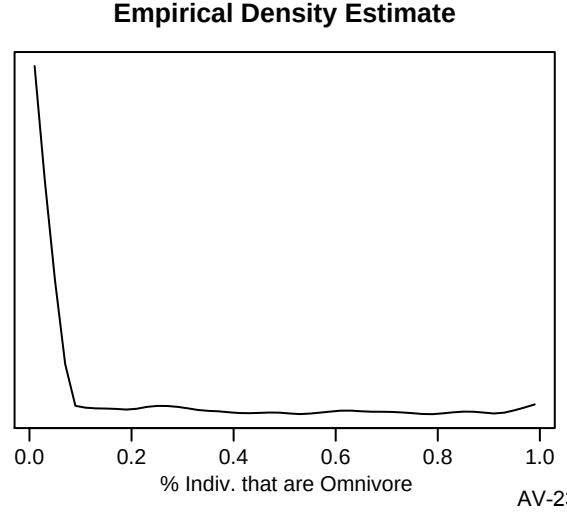
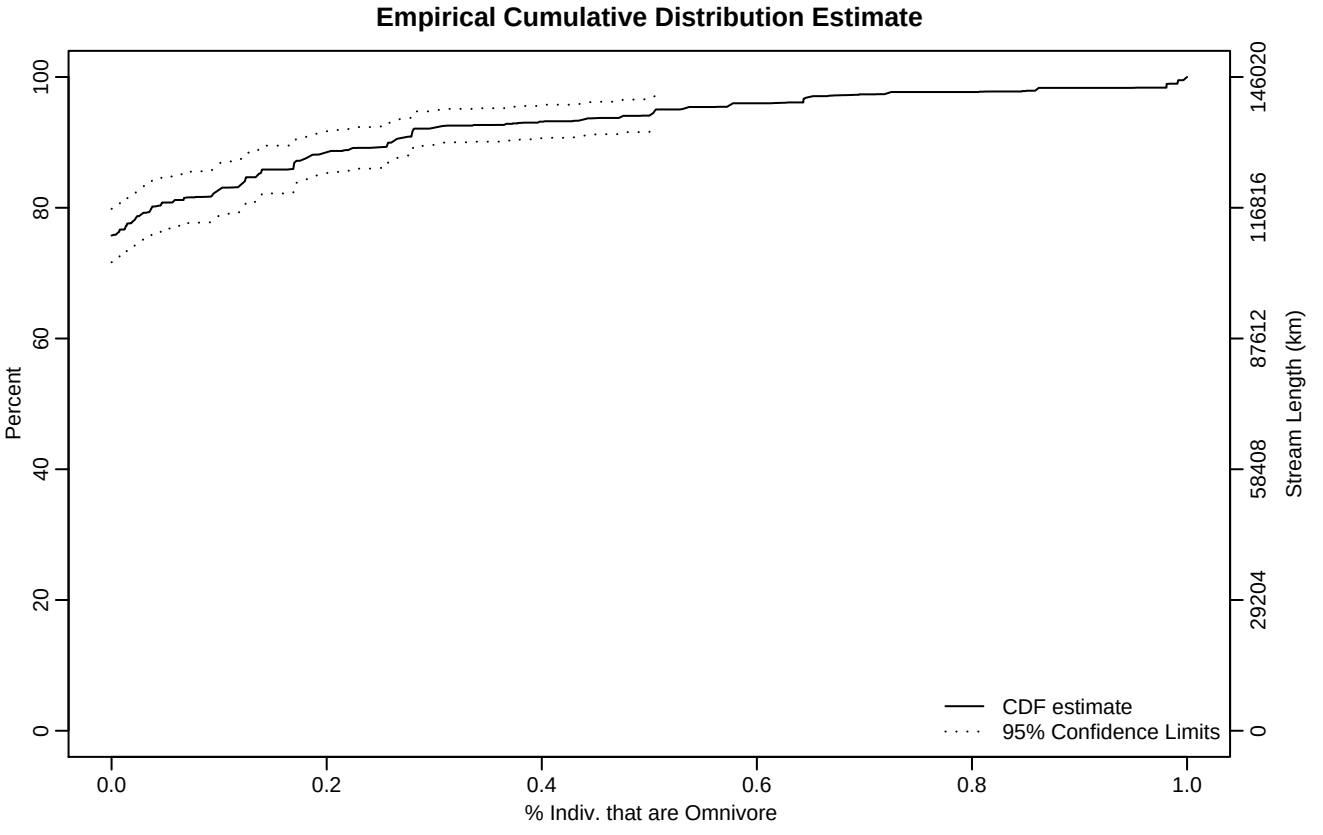


Figure VERT−206 Indicator: OMNI_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.03
90Pct	0.26	0.17	0.40
95Pct	0.51	0.34	0.71
Mean	0.07	0.05	0.09
Std Dev	0.16	0.13	0.19

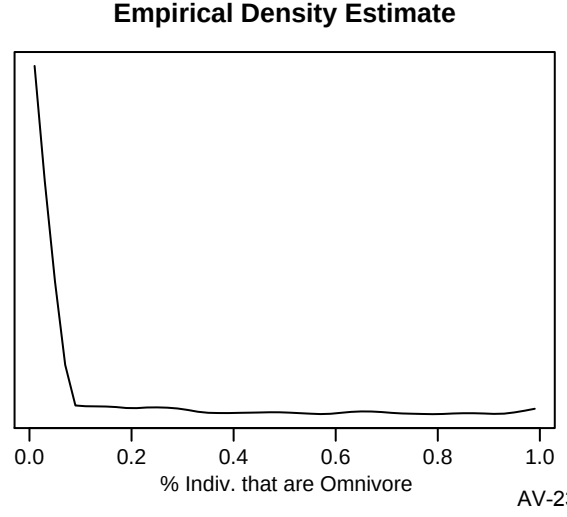
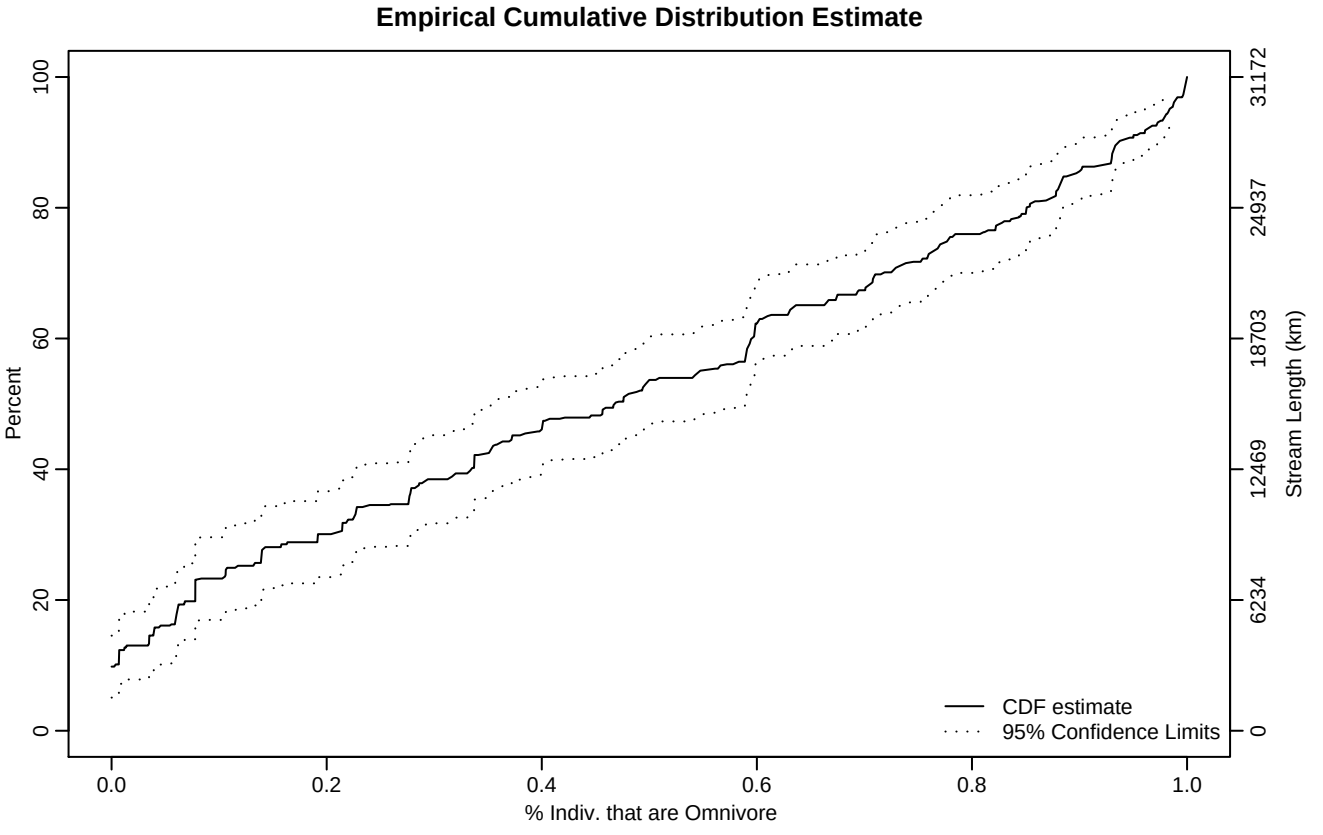


Figure VERT−207 Indicator: OMNI_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.04
25Pct	0.12	0.06	0.21
50Pct	0.47	0.35	0.59
75Pct	0.78	0.71	0.86
90Pct	0.94	0.90	0.98
95Pct	0.98	0.96	1
Mean	0.47	0.42	0.51
Std Dev	0.31	0.28	0.33

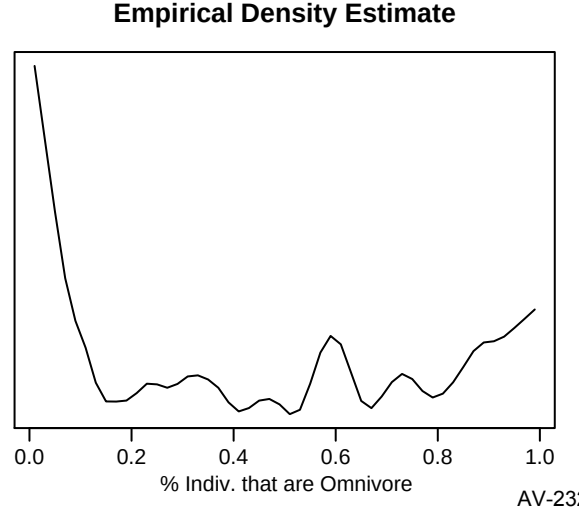
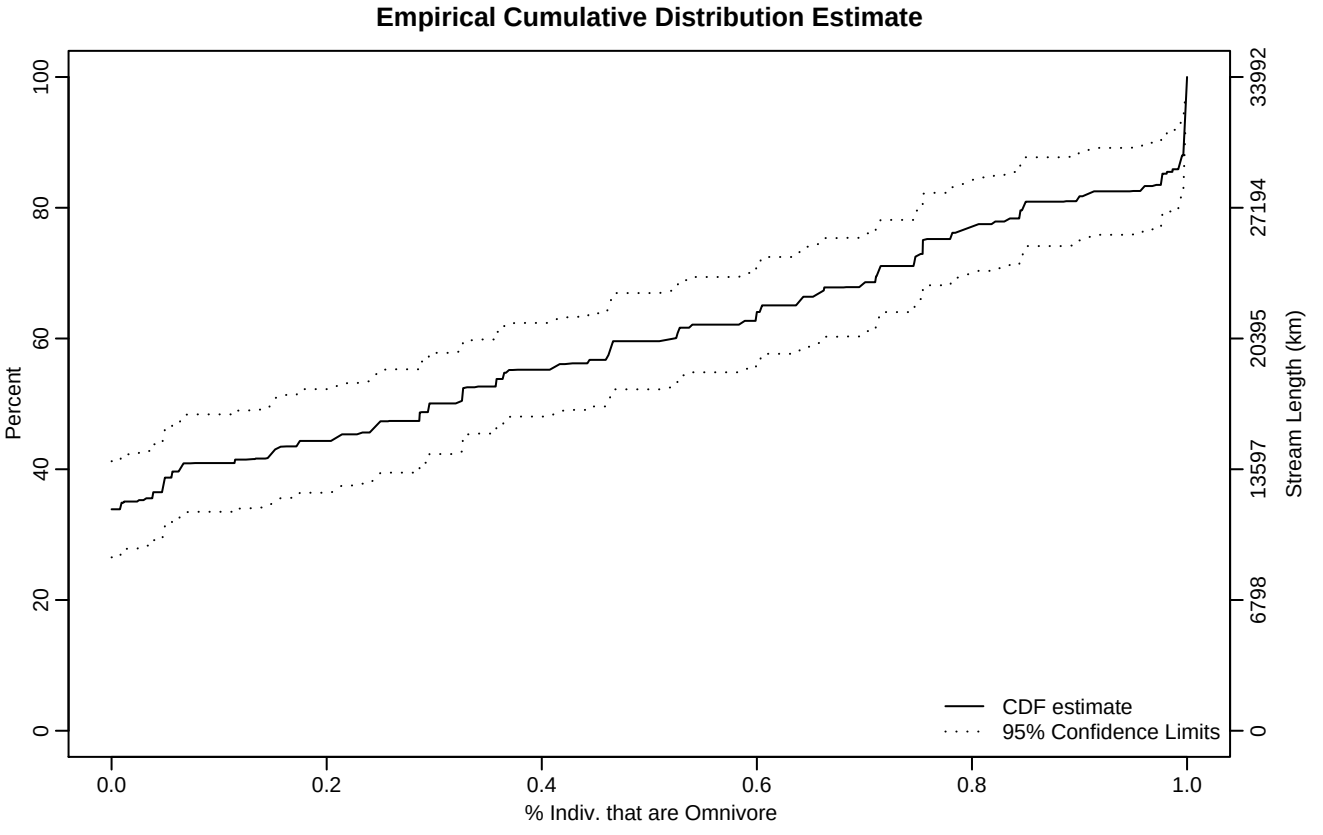


Figure VERT−208 Indicator: OMNI_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.30	0.15	0.46
75Pct	0.75	0.66	0.91
90Pct	1	0.98	1
95Pct	1	1	
Mean	0.40	0.34	0.46
Std Dev	0.33	0.30	0.36

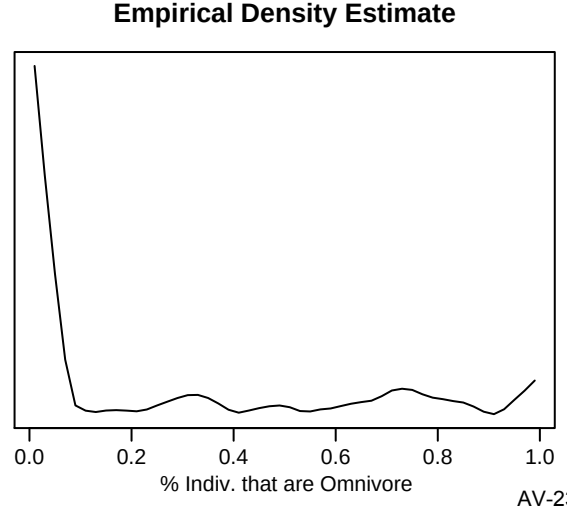
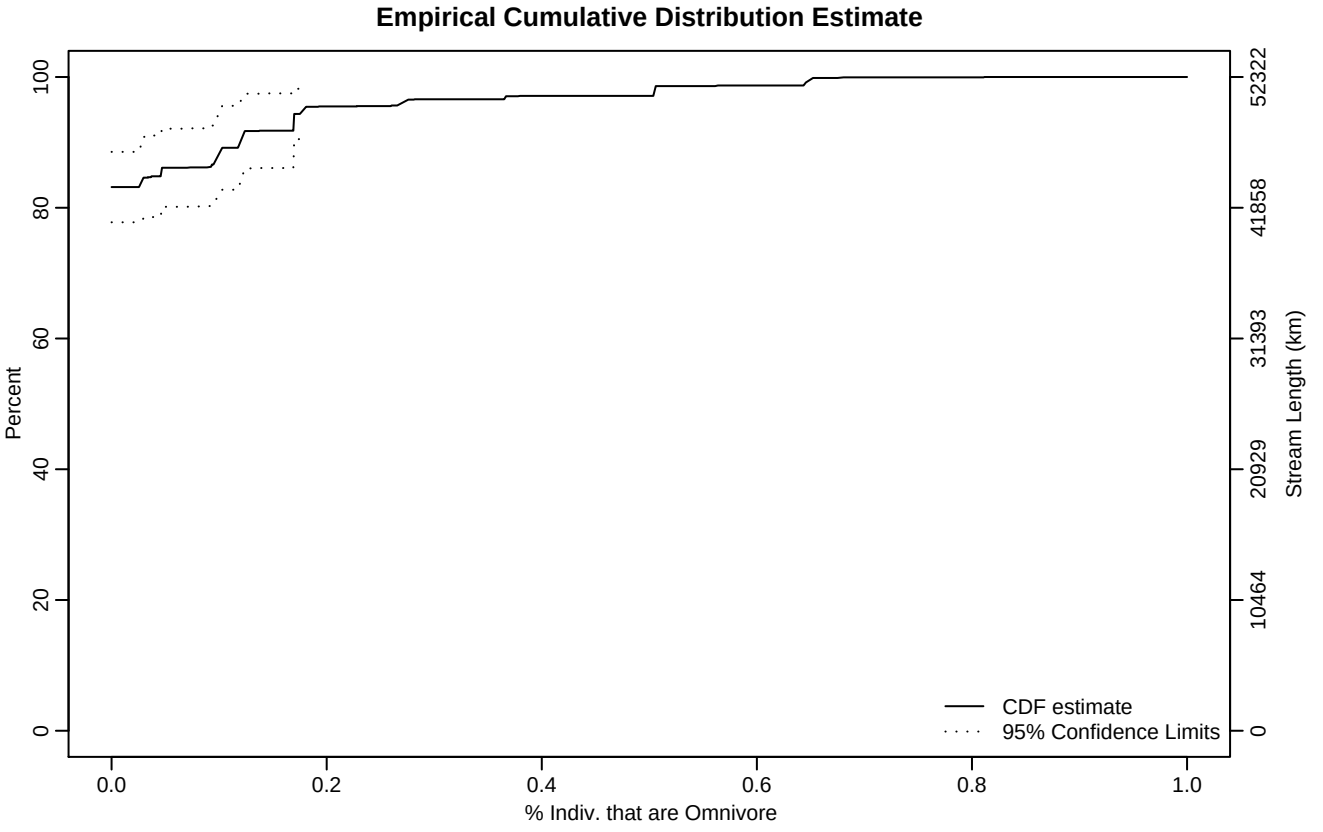


Figure VERT−209 Indicator: OMNI_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.12	0.03	0.28
95Pct	0.18	0.12	0.64
Mean	0.04	0.02	0.05
Std Dev	0.09	0.06	0.12

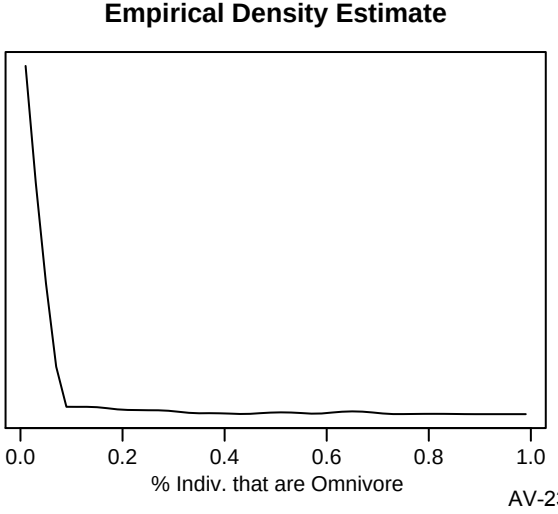
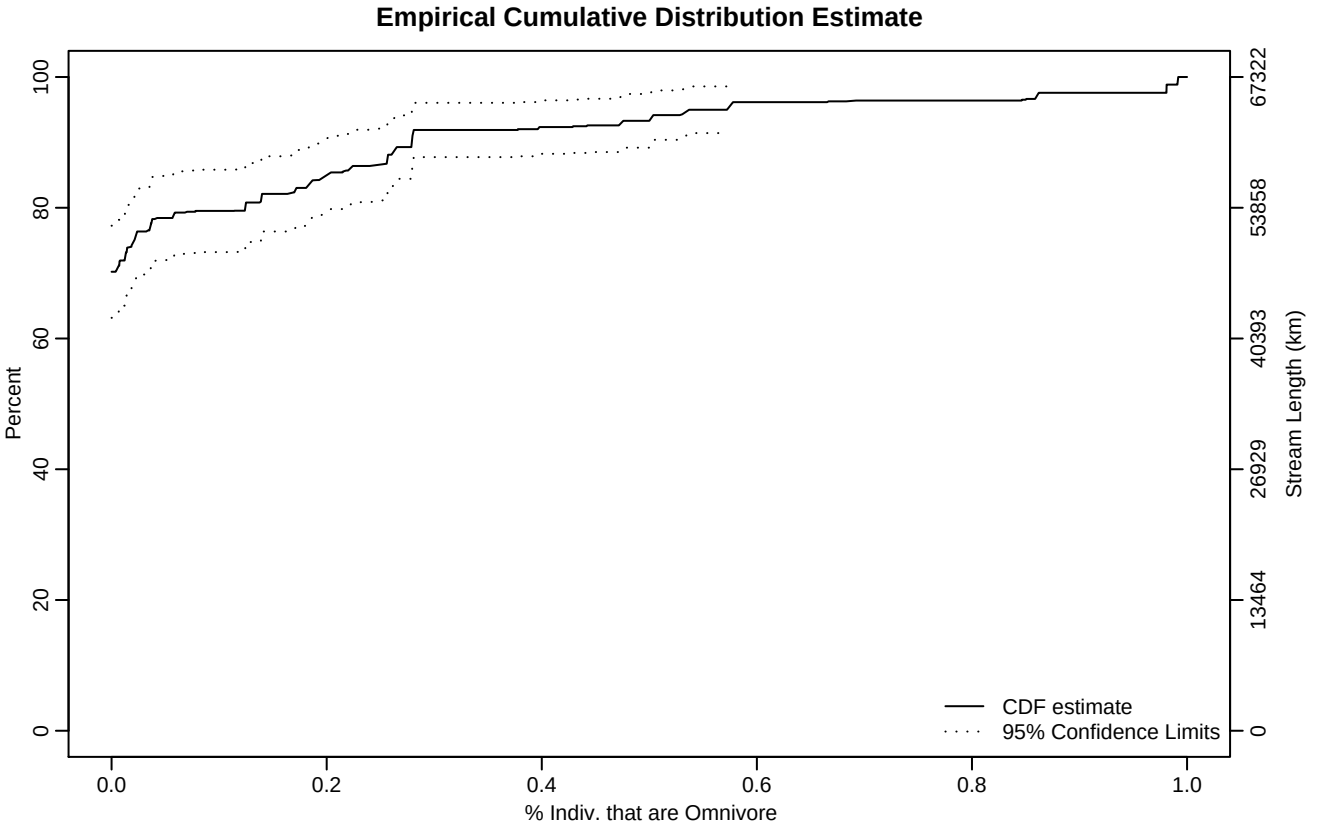


Figure VERT−210 Indicator: OMNI_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.02	0	0.14
90Pct	0.28	0.20	0.54
95Pct	0.57	0.28	0.98
Mean	0.09	0.05	0.12
Std Dev	0.19	0.13	0.24

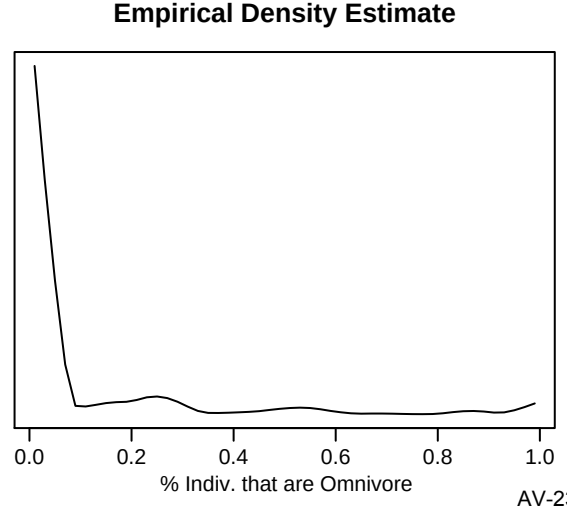
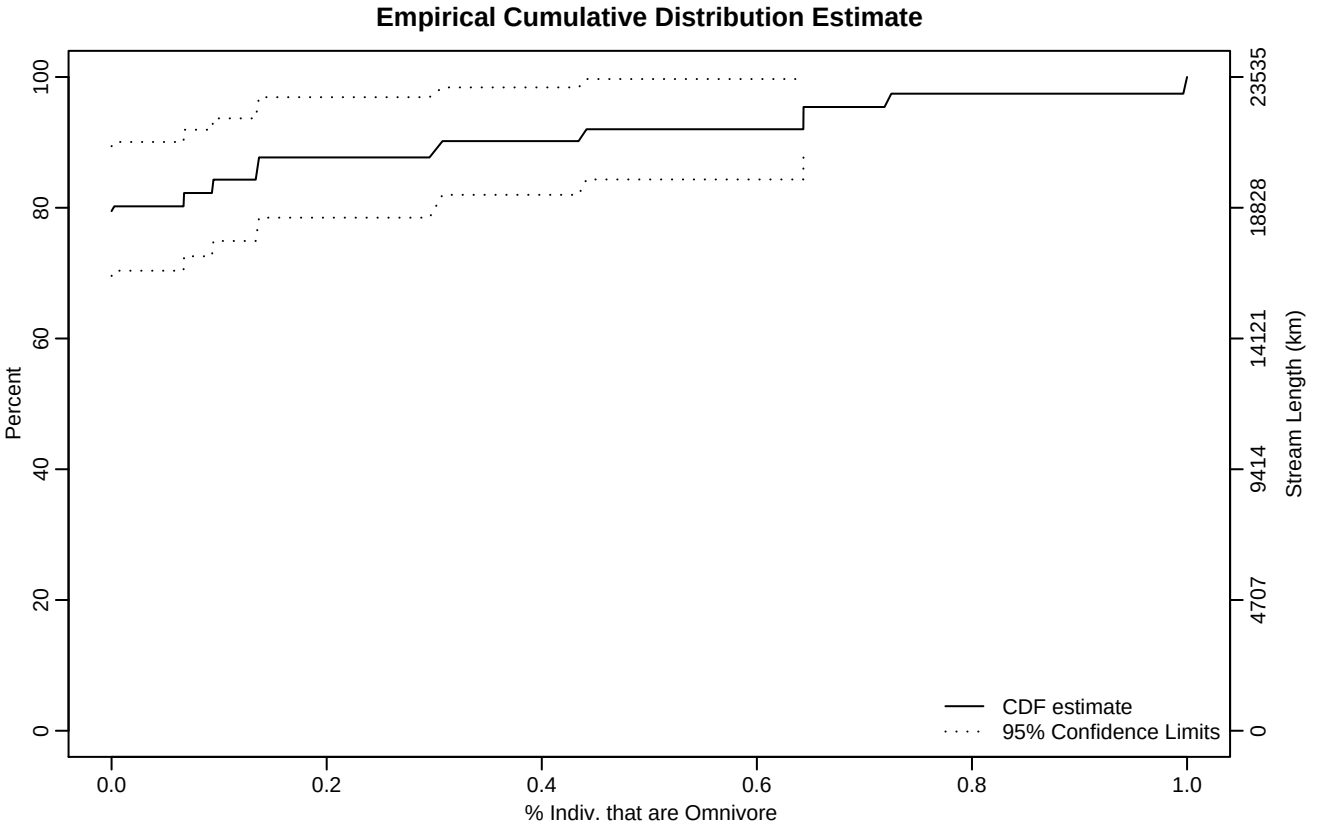


Figure VERT−211 Indicator: OMNI_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.13
90Pct	0.31	0.07	1
95Pct	0.64	0.14	
Mean	0.09	0.03	0.15
Std Dev	0.22	0.13	0.30

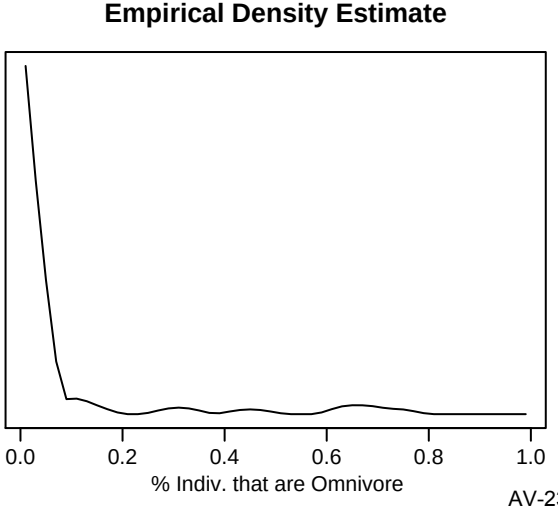
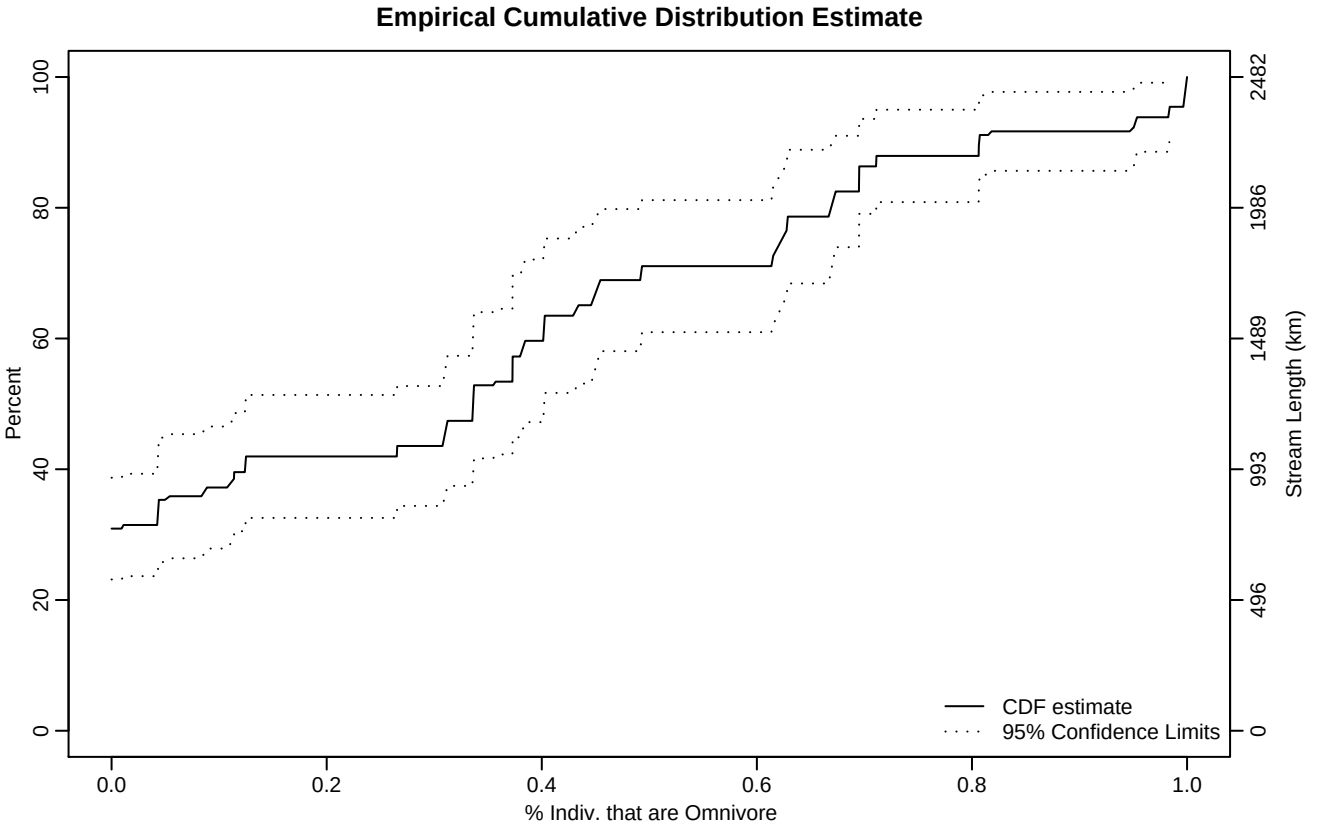


Figure VERT−212 Indicator: OMNI_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.04
50Pct	0.34	0.12	0.40
75Pct	0.62	0.43	0.70
90Pct	0.81	0.69	1
95Pct	0.98	0.81	1
Mean	0.34	0.28	0.40
Std Dev	0.29	0.25	0.33

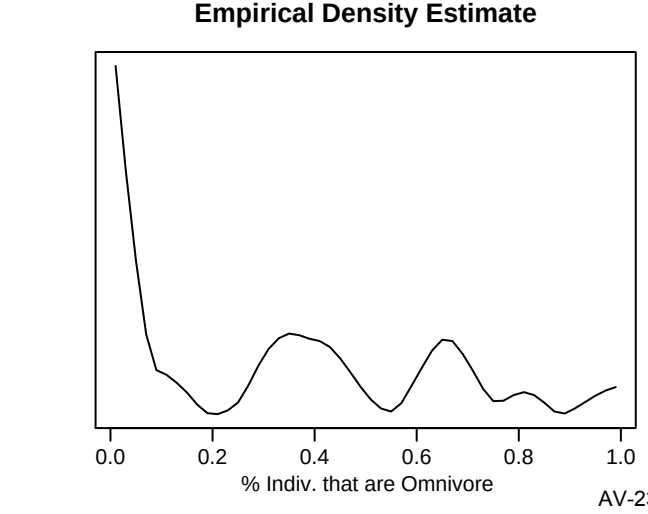
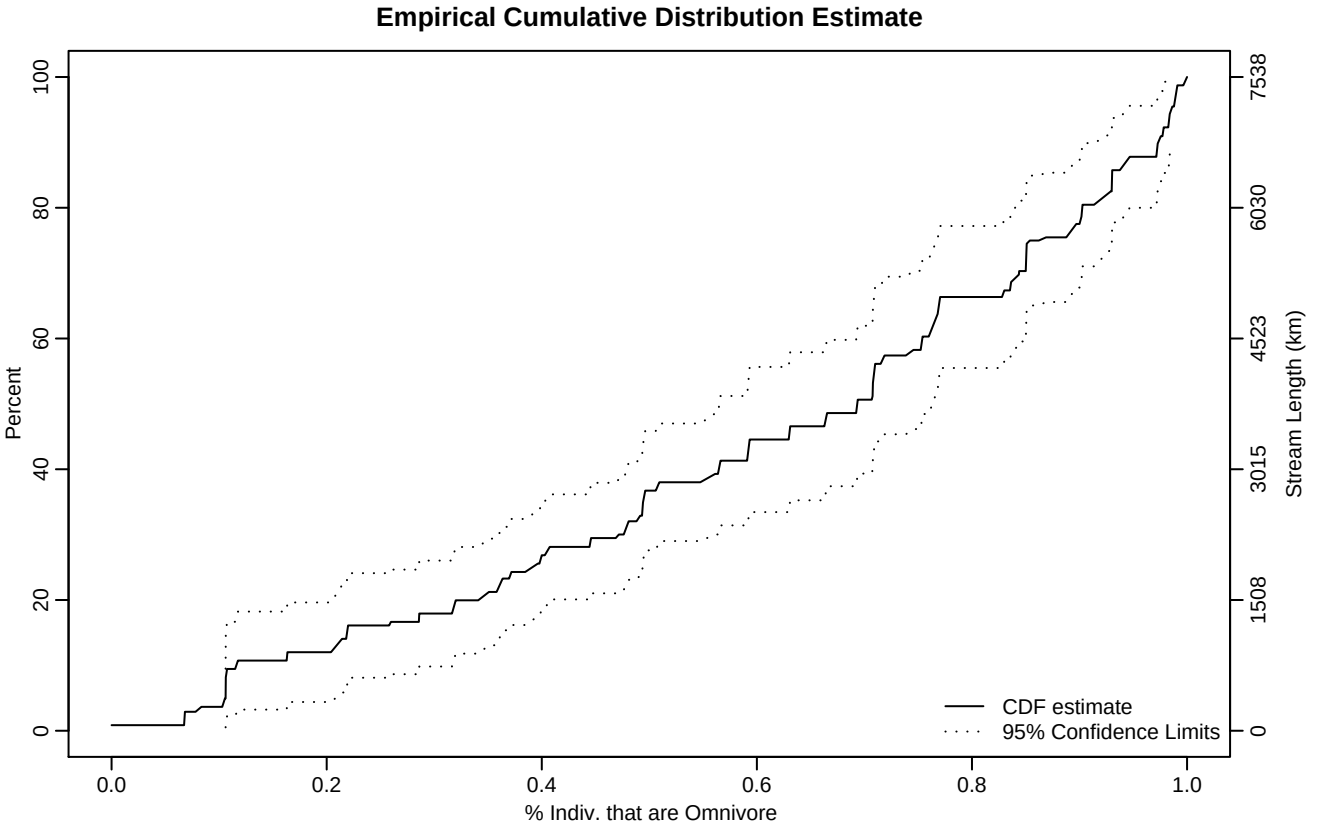


Figure VERT−213 Indicator: OMNI_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.11	0	0.11
10Pct	0.12	0.07	0.29
25Pct	0.39	0.29	0.49
50Pct	0.69	0.56	0.76
75Pct	0.86	0.77	0.93
90Pct	0.97	0.93	0.99
95Pct	0.99	0.97	1
Mean	0.62	0.56	0.68
Std Dev	0.28	0.25	0.32

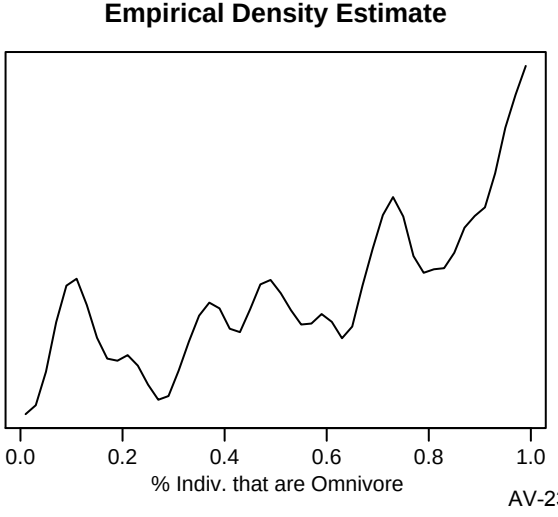
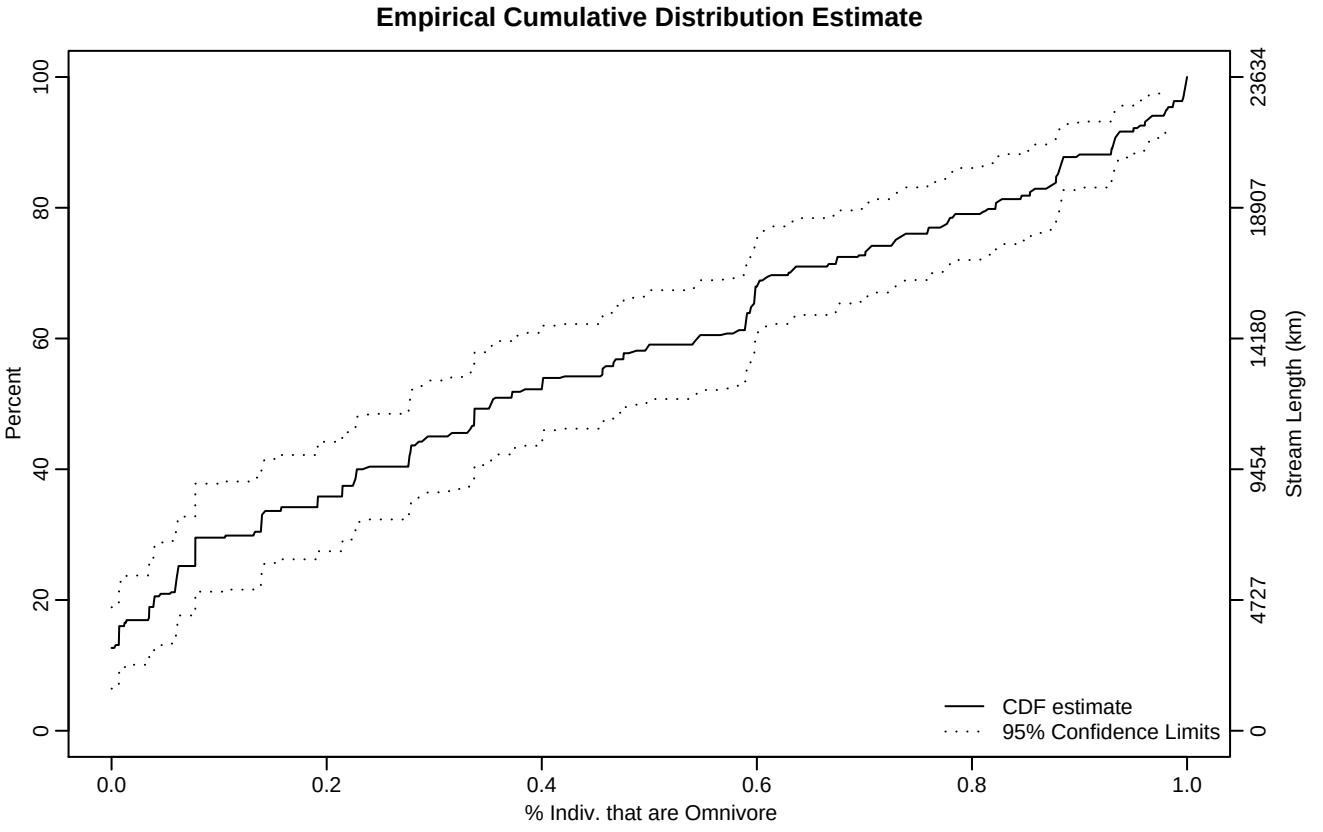


Figure VERT−214 Indicator: OMNI_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.06	0.03	0.14
50Pct	0.35	0.28	0.50
75Pct	0.73	0.60	0.85
90Pct	0.93	0.88	0.98
95Pct	0.98	0.94	1
Mean	0.42	0.37	0.47
Std Dev	0.31	0.27	0.34

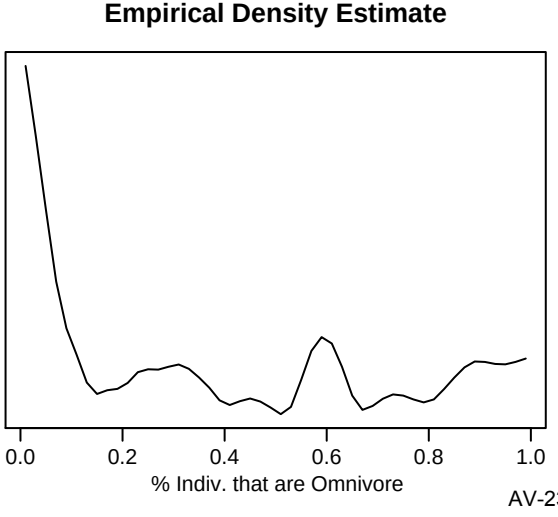
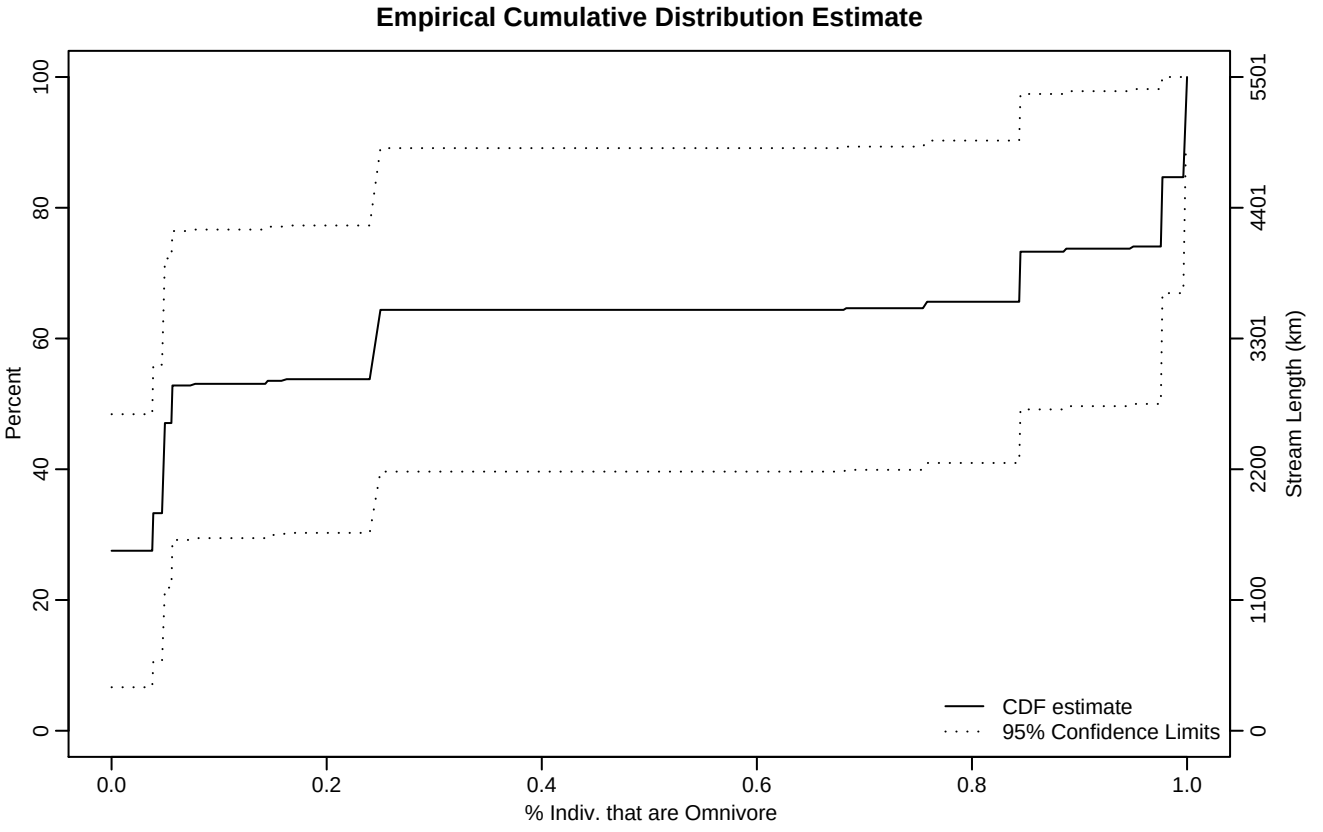


Figure VERT−215 Indicator: OMNI_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.04
25Pct	0	0	0.05
50Pct	0.06	0	0.98
75Pct	0.98	0.06	1
90Pct	1	0.84	1
95Pct	1	0.98	1
Mean	0.38	0.16	0.60
Std Dev	0.43	0.35	0.51

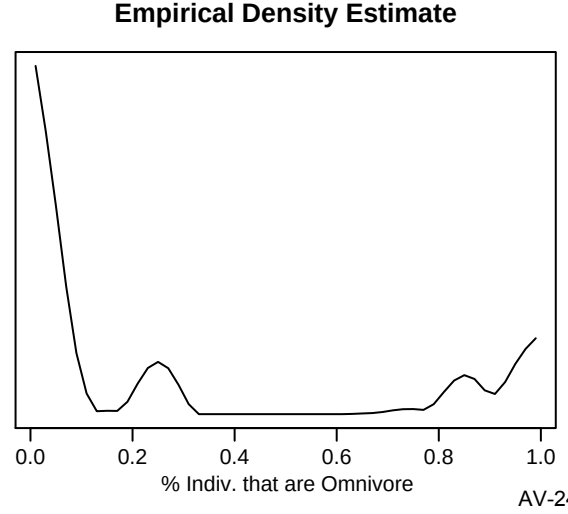
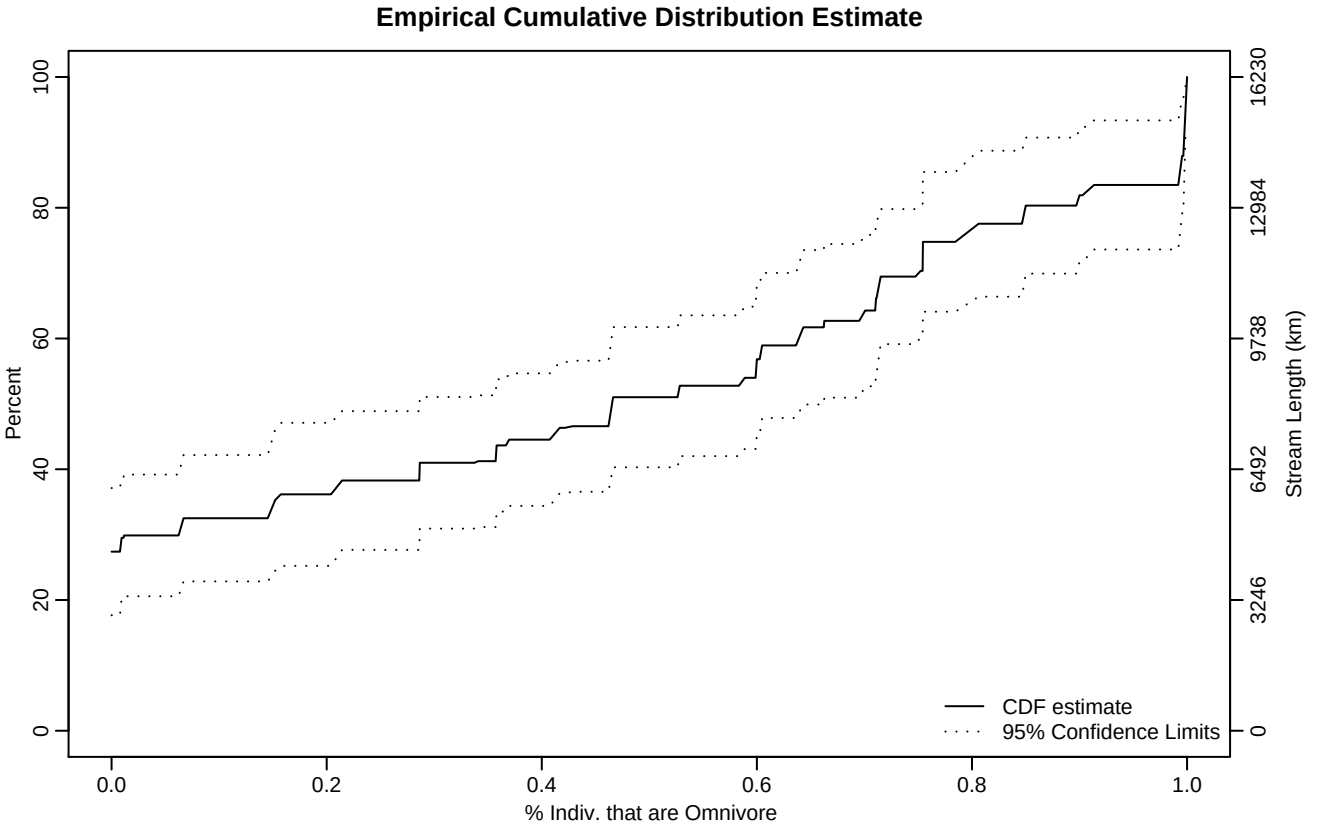


Figure VERT−216 Indicator: OMNI_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.15
50Pct	0.47	0.29	0.64
75Pct	0.79	0.70	0.99
90Pct	1	0.90	1
95Pct	1	0.99	1
Mean	0.46	0.38	0.54
Std Dev	0.31	0.26	0.36

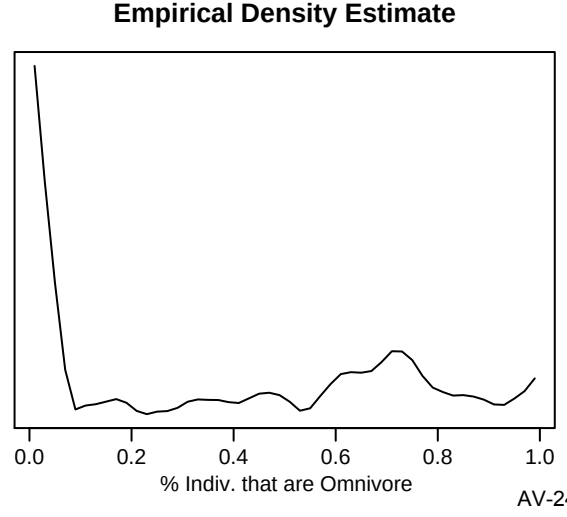
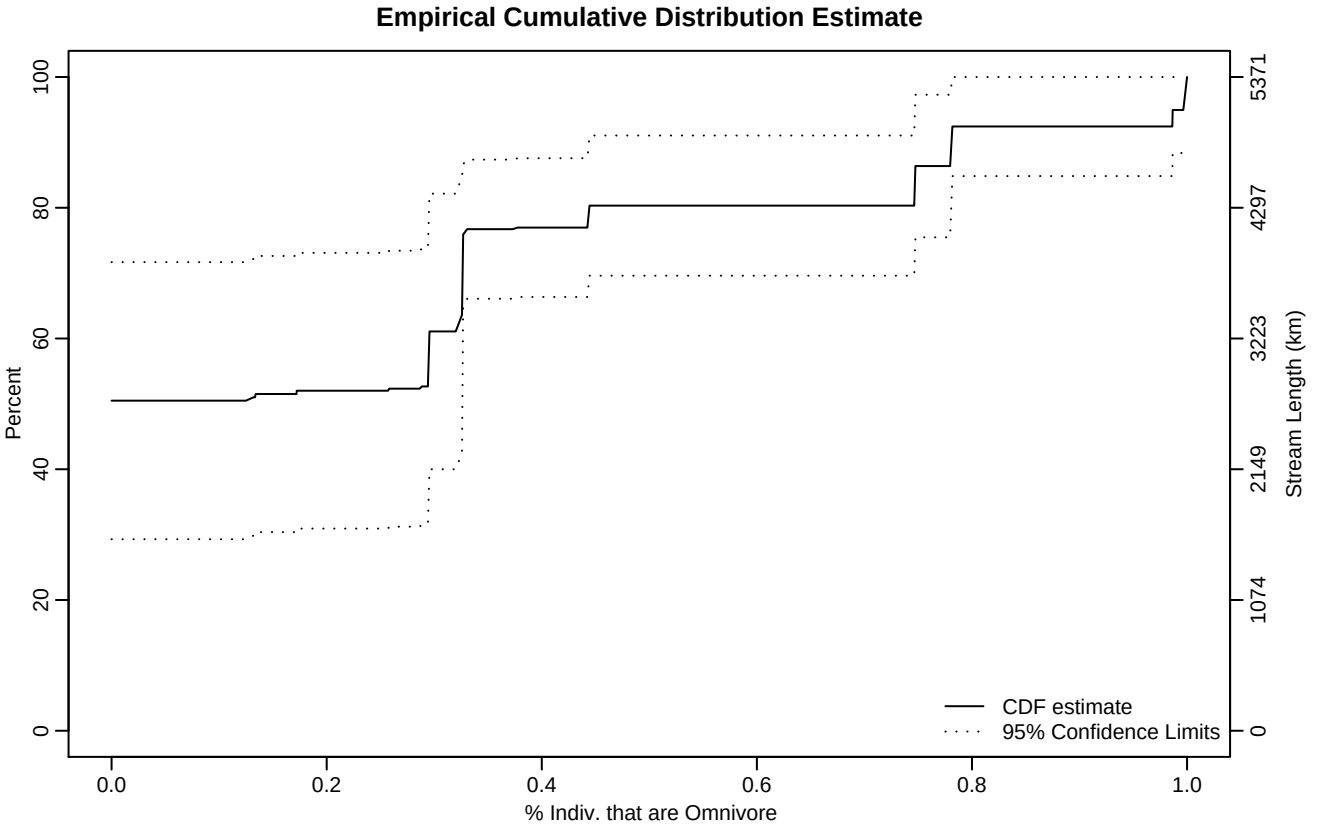


Figure VERT−217 Indicator: OMNI_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.33
75Pct	0.33	0.29	1
90Pct	0.78	0.44	
95Pct	1	0.78	
Mean	0.26	0.16	0.37
Std Dev	0.23	0.19	0.26

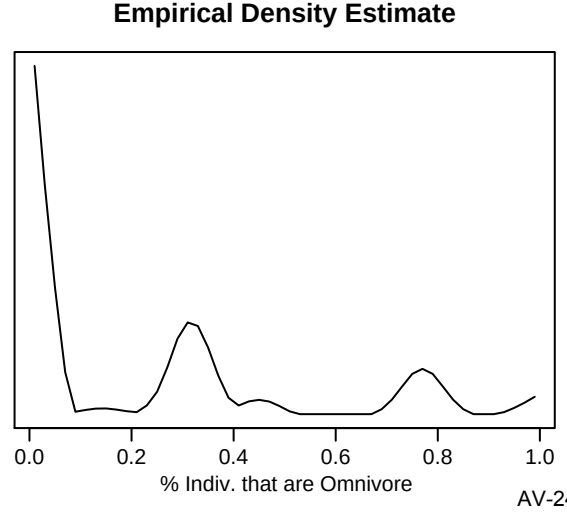
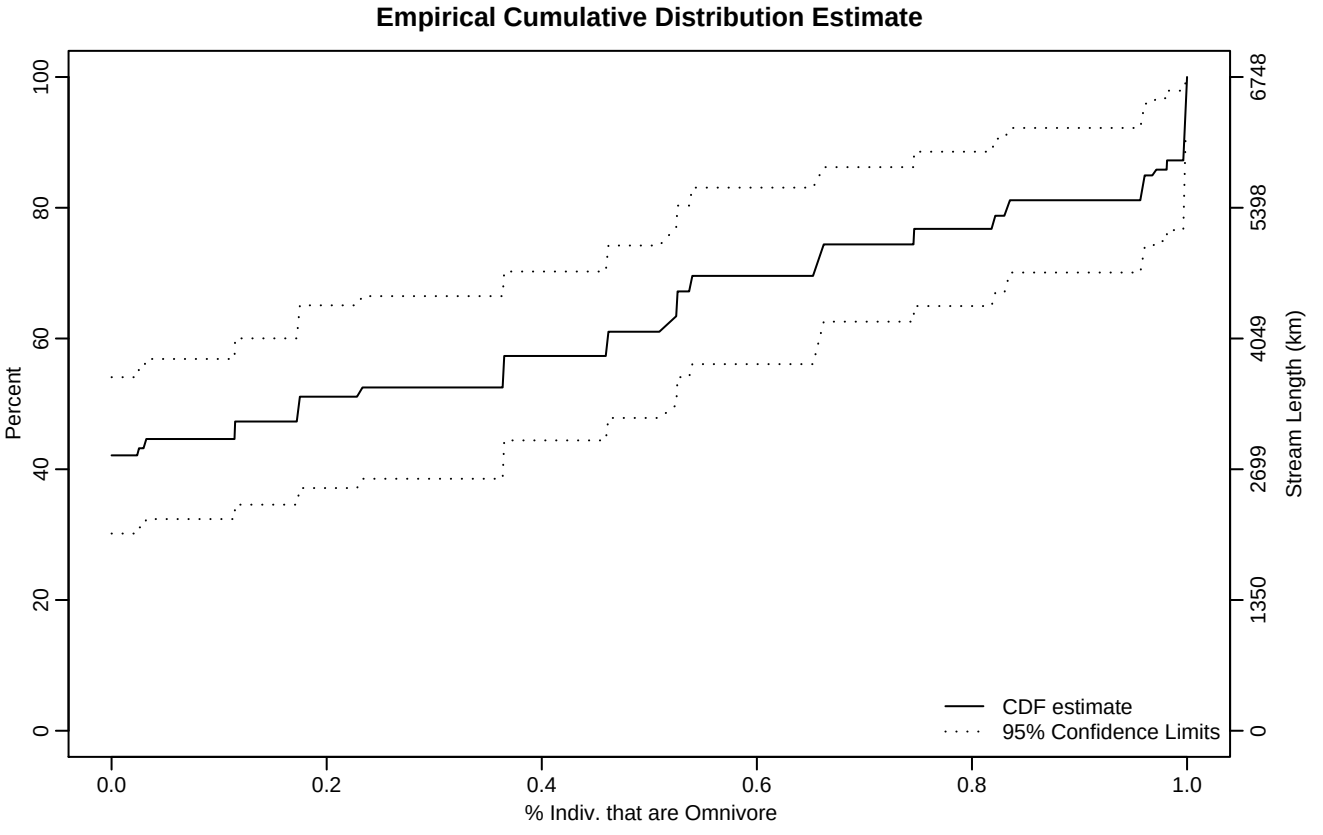


Figure VERT−218 Indicator: OMNI_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.17	0	0.52
75Pct	0.75	0.52	0.98
90Pct	1	0.83	1
95Pct	1	0.96	1
Mean	0.37	0.26	0.47
Std Dev	0.32	0.27	0.38

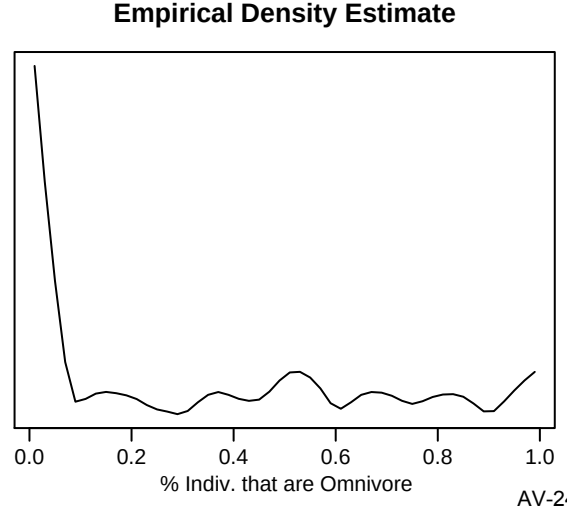
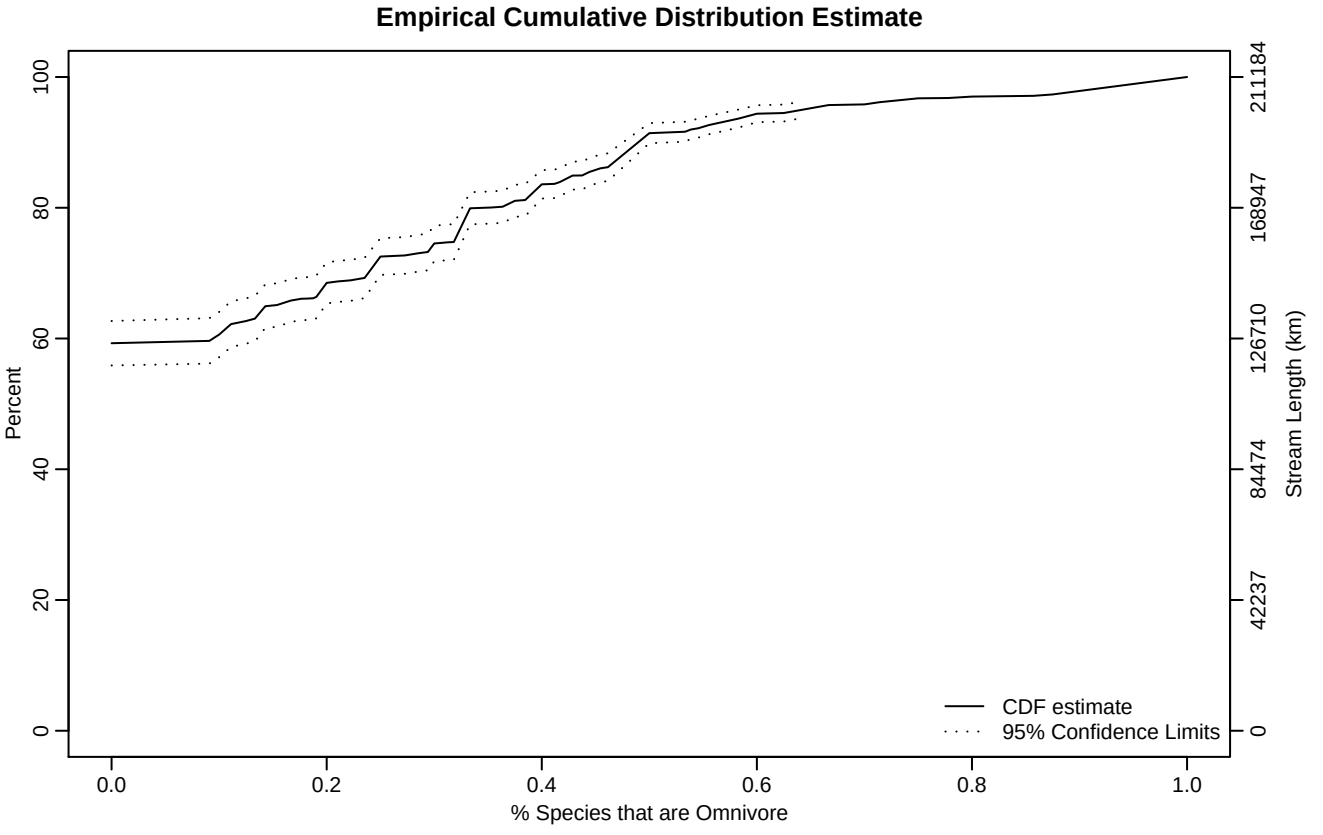


Figure VERT−219 Indicator: OMNI_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.32	0.25	0.33
90Pct	0.49	0.47	0.54
95Pct	0.64	0.58	0.72
Mean	0.16	0.15	0.18
Std Dev	0.20	0.18	0.21

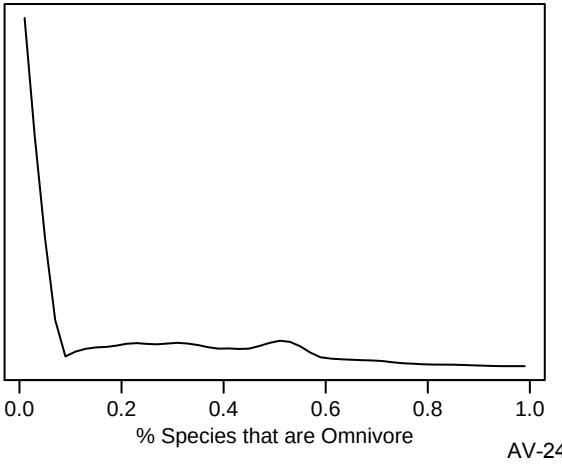
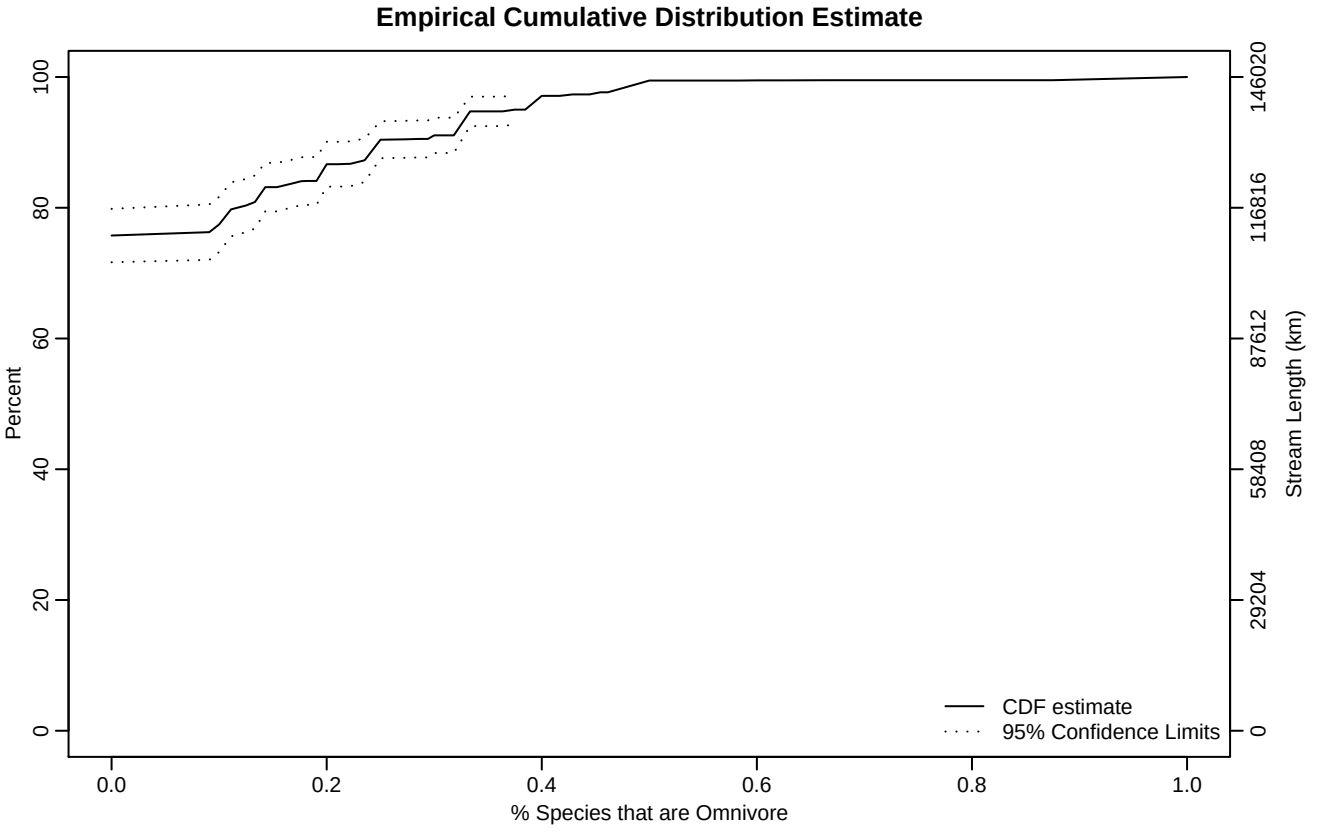


Figure VERT−220 Indicator: OMNI_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.11
90Pct	0.25	0.22	0.33
95Pct	0.37	0.33	0.42
Mean	0.07	0.05	0.08
Std Dev	0.12	0.10	0.14

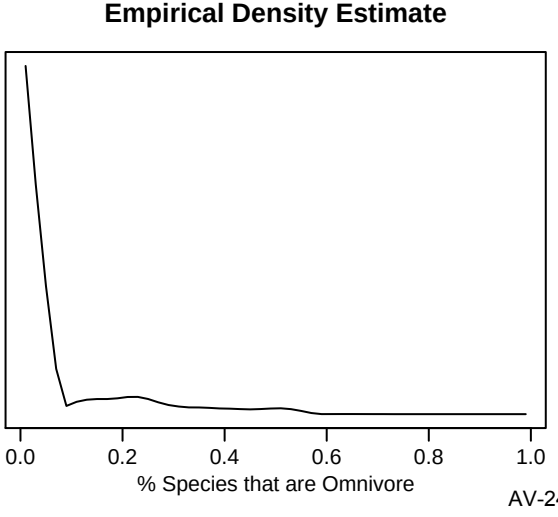
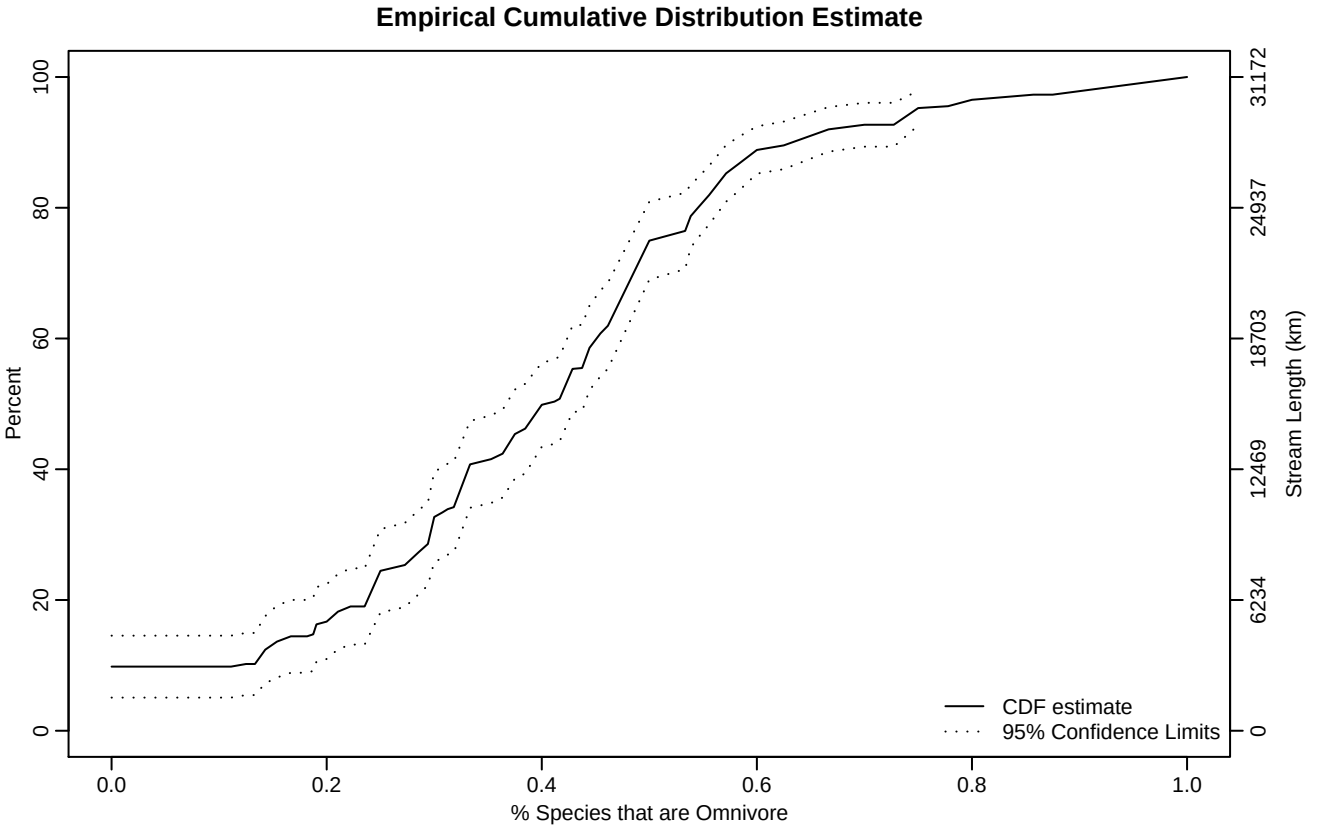


Figure VERT−221 Indicator: OMNI_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.12	0	0.19
25Pct	0.26	0.21	0.30
50Pct	0.40	0.37	0.44
75Pct	0.50	0.48	0.55
90Pct	0.63	0.58	0.74
95Pct	0.75	0.66	0.93
Mean	0.40	0.37	0.43
Std Dev	0.20	0.18	0.22

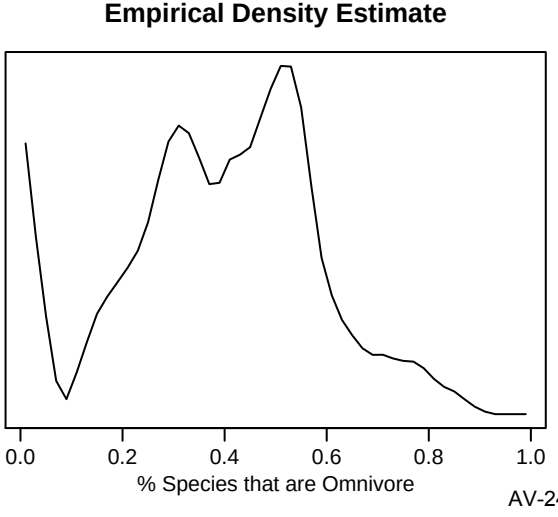
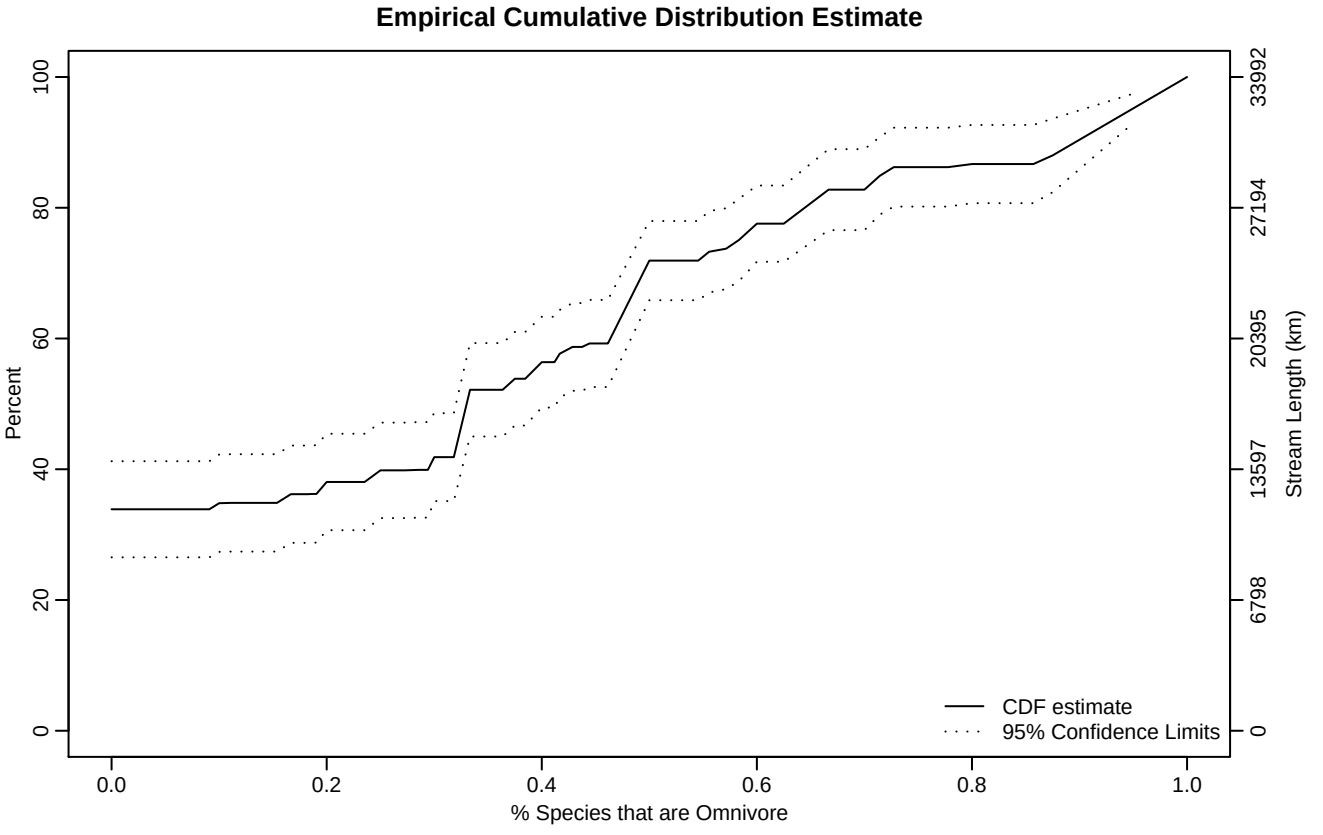


Figure VERT−222 Indicator: OMNI_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.33	0.32	0.42
75Pct	0.58	0.49	0.66
90Pct	0.90	0.71	0.95
95Pct	0.95	0.89	
Mean	0.37	0.32	0.42
Std Dev	0.28	0.24	0.31

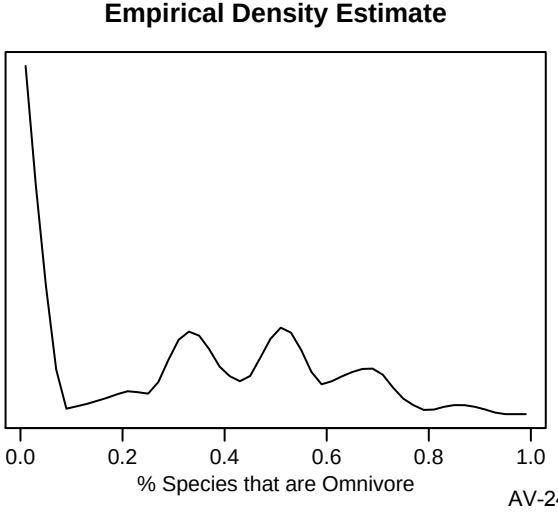
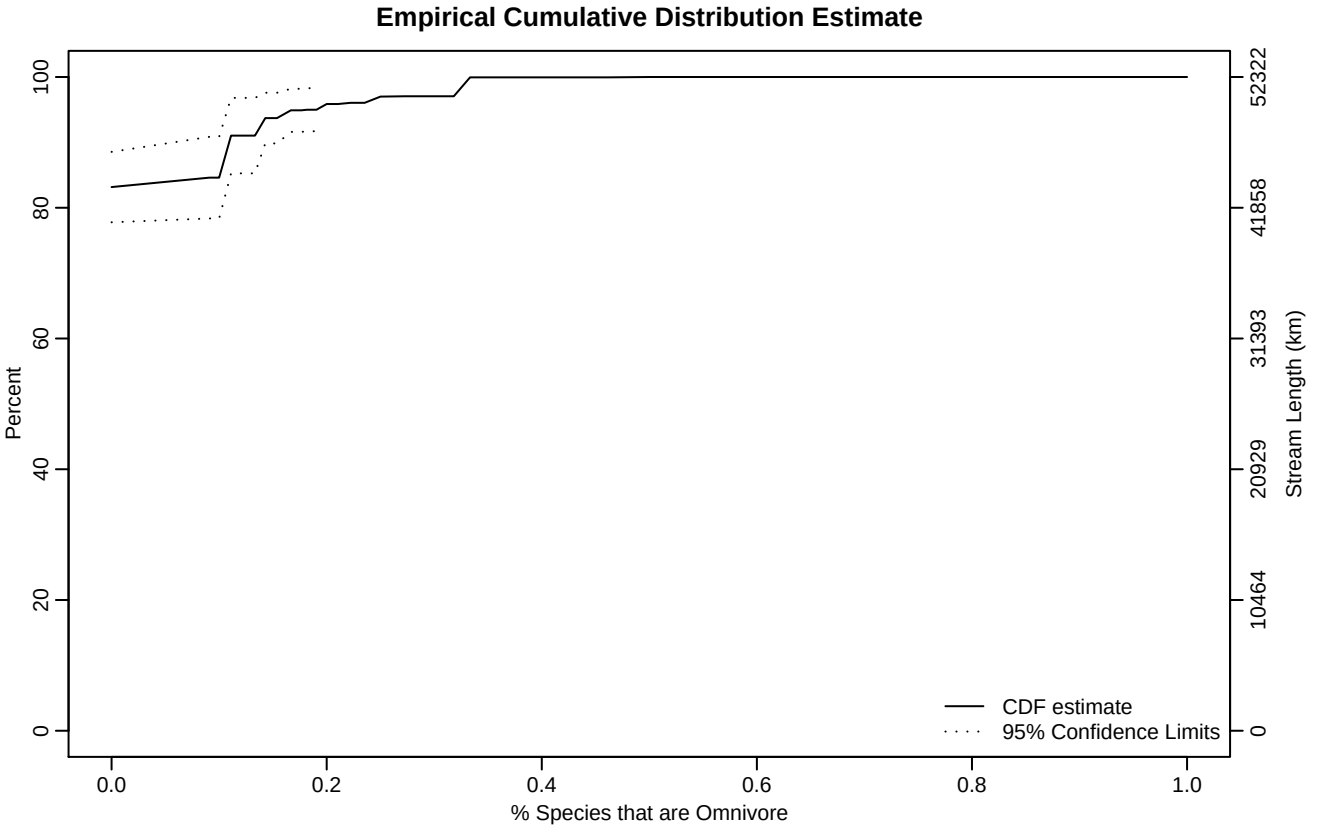


Figure VERT−223 Indicator: OMNI_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.11	0.01	0.25
95Pct	0.19	0.14	0.32
Mean	0.03	0.02	0.04
Std Dev	0.06	0.04	0.08

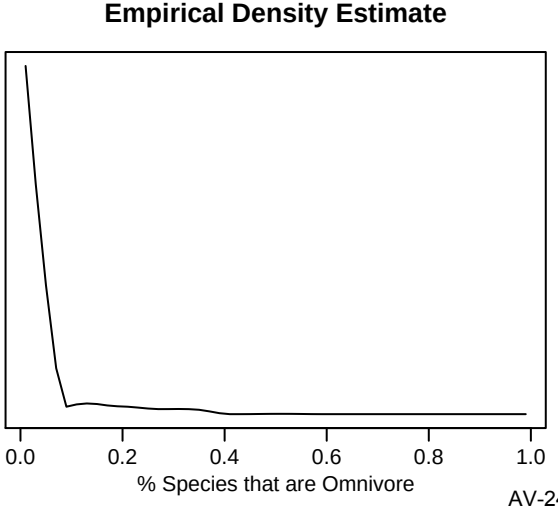
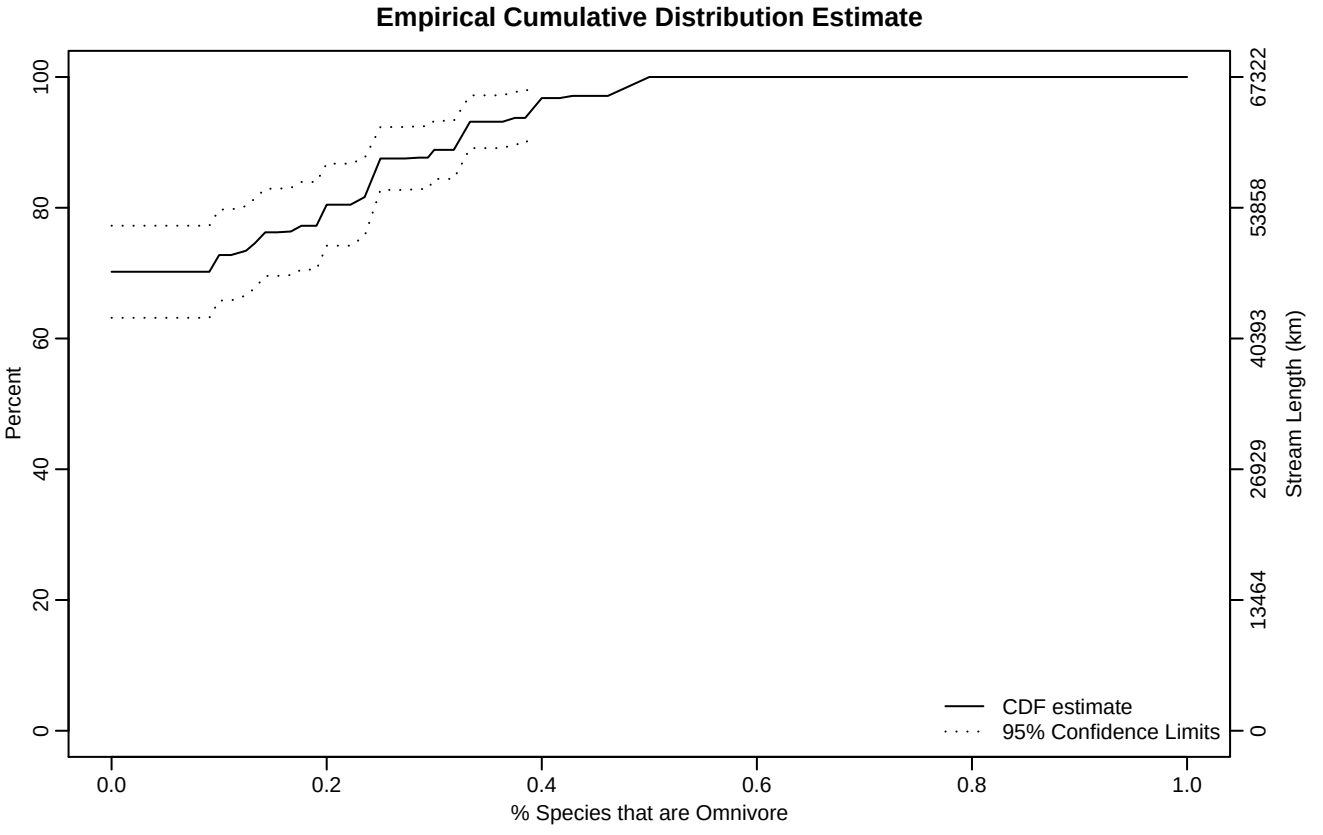


Figure VERT−224 Indicator: OMNI_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.14	0	0.24
90Pct	0.32	0.25	0.39
95Pct	0.39	0.33	0.49
Mean	0.08	0.06	0.10
Std Dev	0.13	0.11	0.15

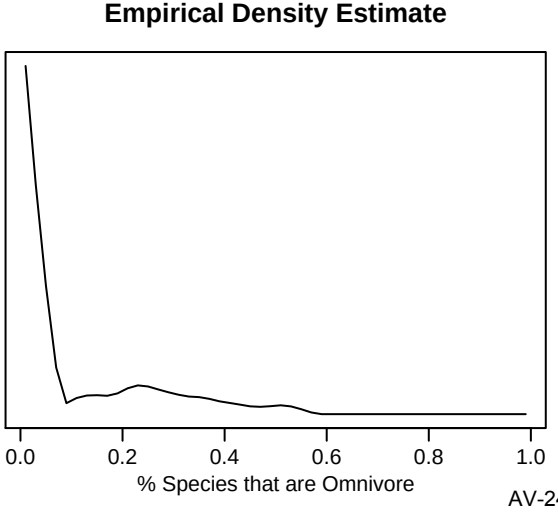
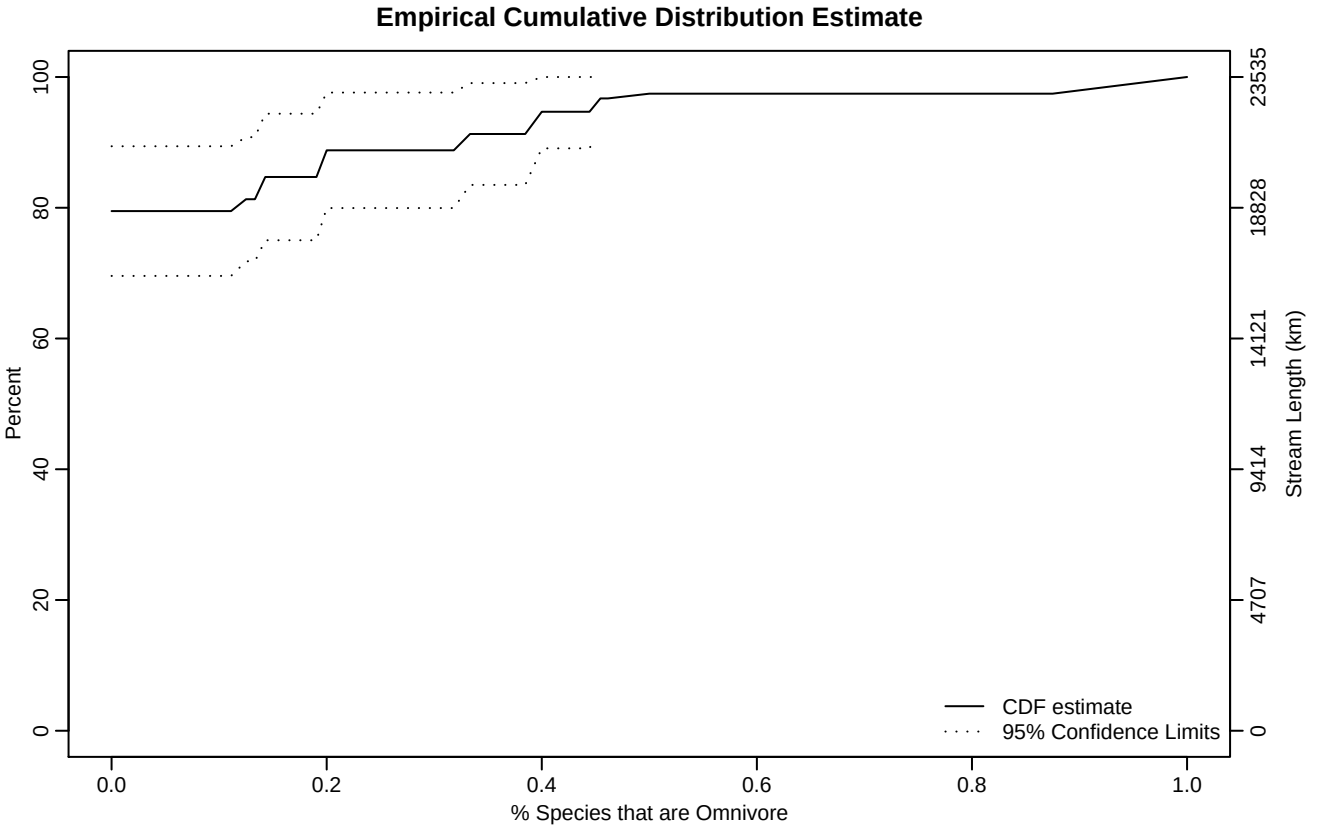


Figure VERT−225 Indicator: OMNI_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.19
90Pct	0.33	0.12	0.94
95Pct	0.45	0.32	
Mean	0.08	0.03	0.13
Std Dev	0.19	0.10	0.27

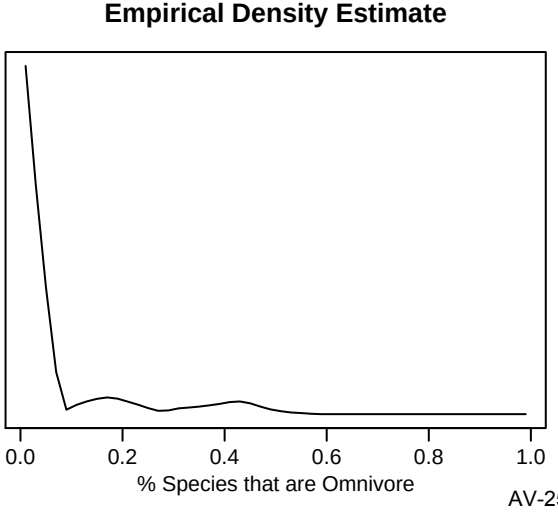
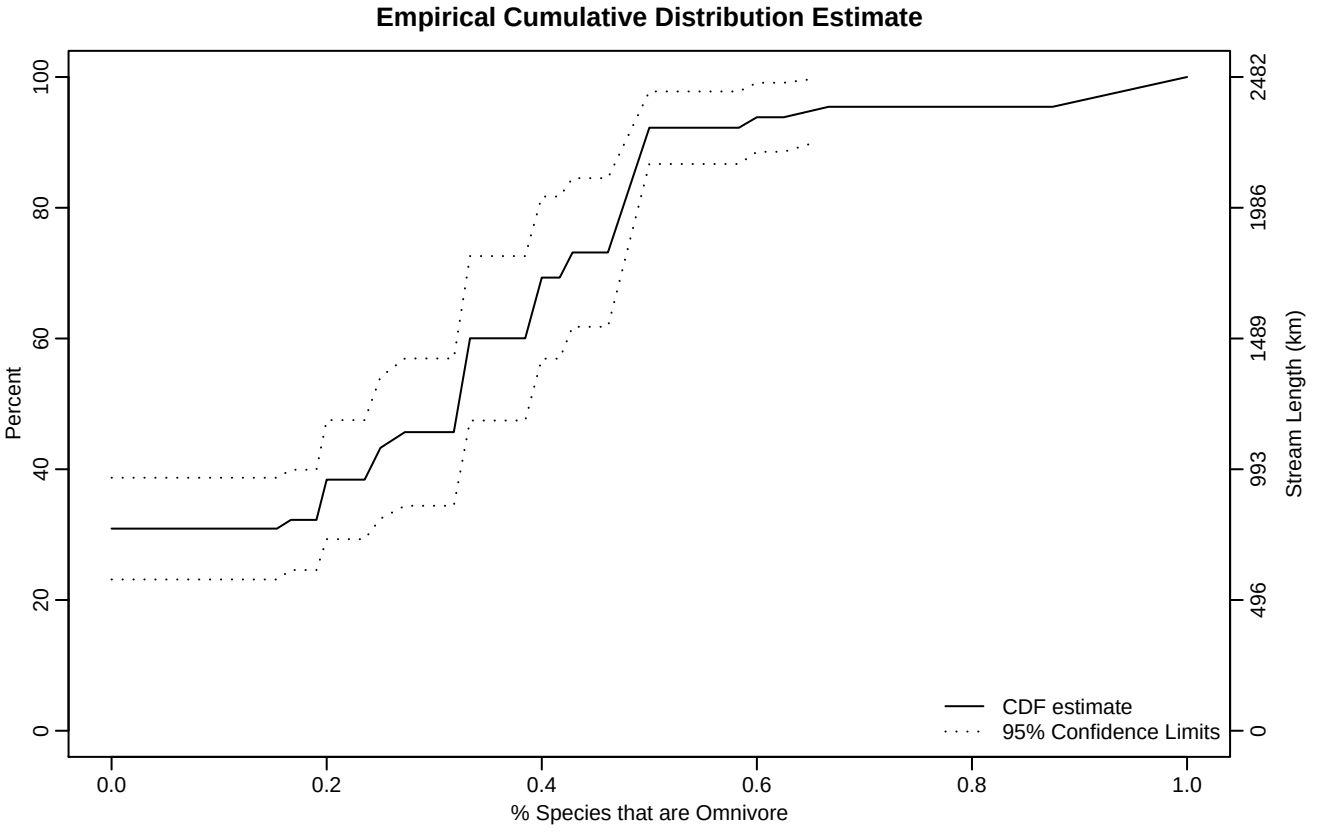


Figure VERT−226 Indicator: OMNI_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.19
50Pct	0.32	0.20	0.39
75Pct	0.47	0.39	0.49
90Pct	0.50	0.47	1
95Pct	0.66	0.49	1
Mean	0.30	0.25	0.35
Std Dev	0.23	0.18	0.28

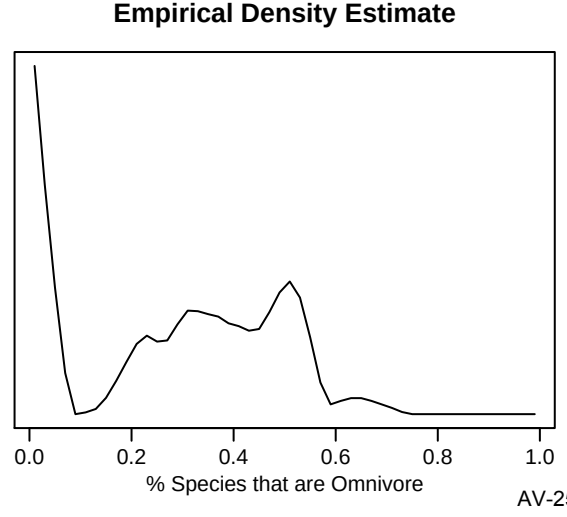
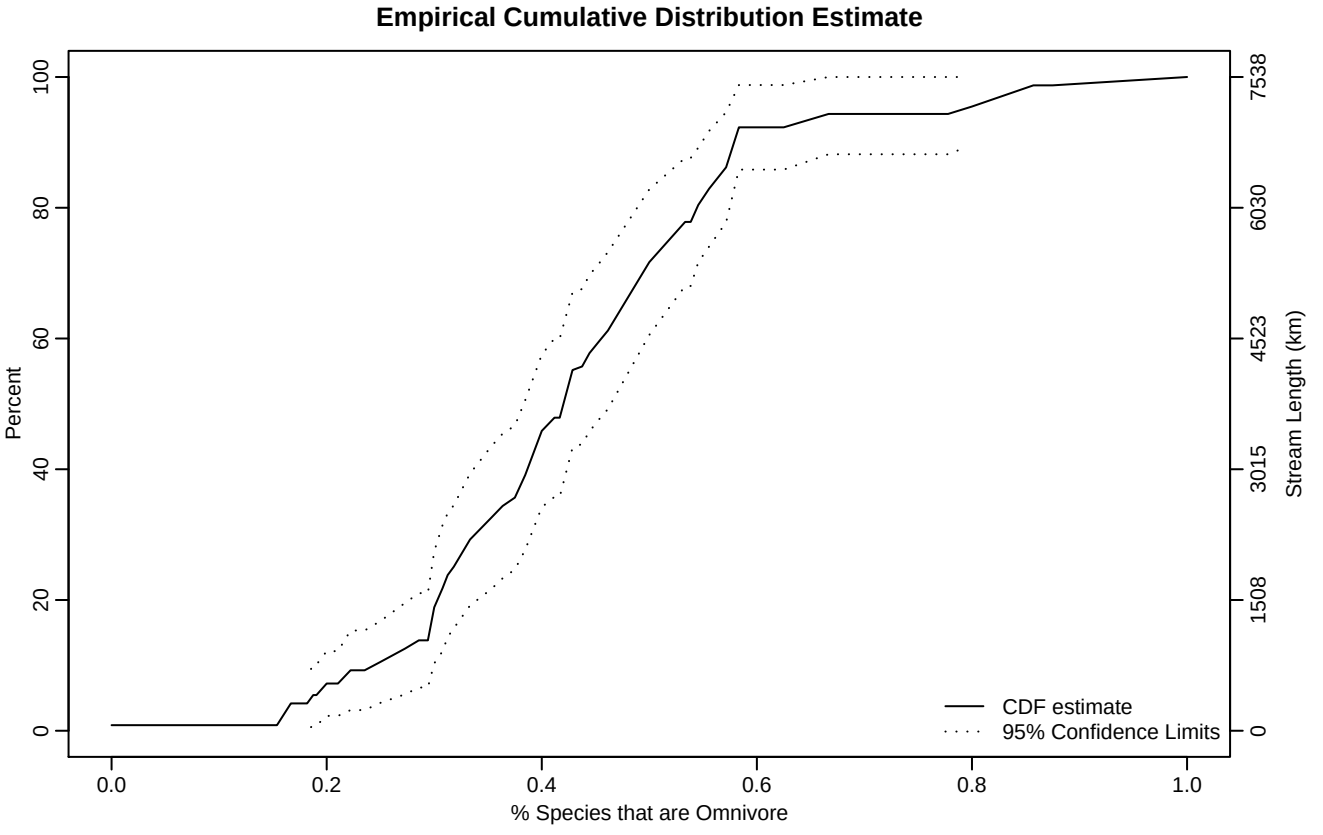


Figure VERT−227 Indicator: OMNI_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.19	0.15	0.22
10Pct	0.24	0.17	0.30
25Pct	0.32	0.30	0.36
50Pct	0.42	0.38	0.46
75Pct	0.52	0.47	0.57
90Pct	0.58	0.55	0.85
95Pct	0.79	0.58	1
Mean	0.44	0.40	0.48
Std Dev	0.16	0.13	0.20

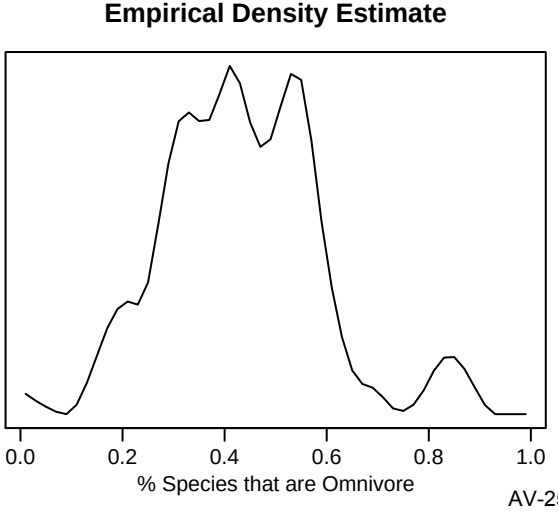
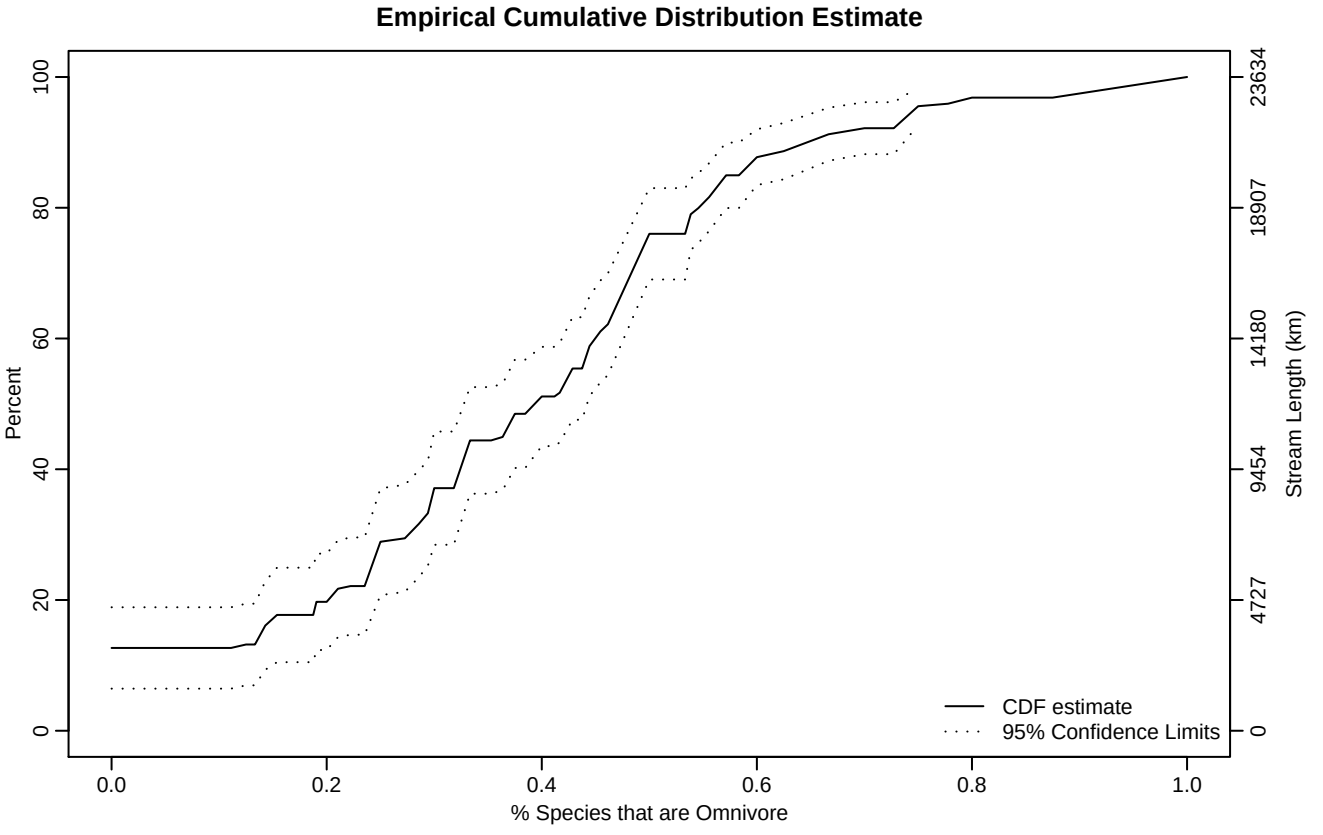


Figure VERT−228 Indicator: OMNI_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.14
25Pct	0.24	0.15	0.29
50Pct	0.39	0.33	0.44
75Pct	0.50	0.48	0.56
90Pct	0.65	0.59	0.74
95Pct	0.75	0.66	0.96
Mean	0.39	0.35	0.42
Std Dev	0.21	0.19	0.24

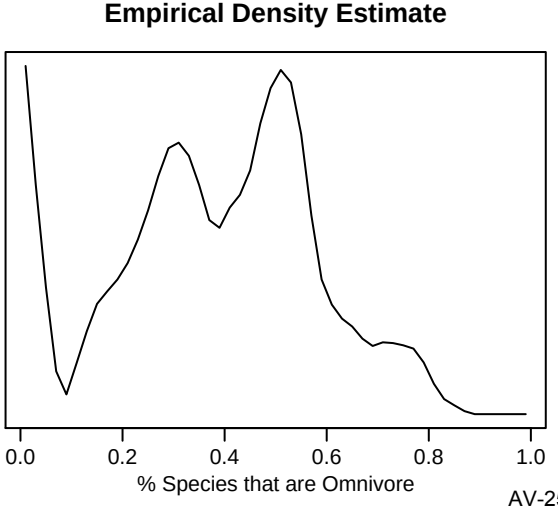
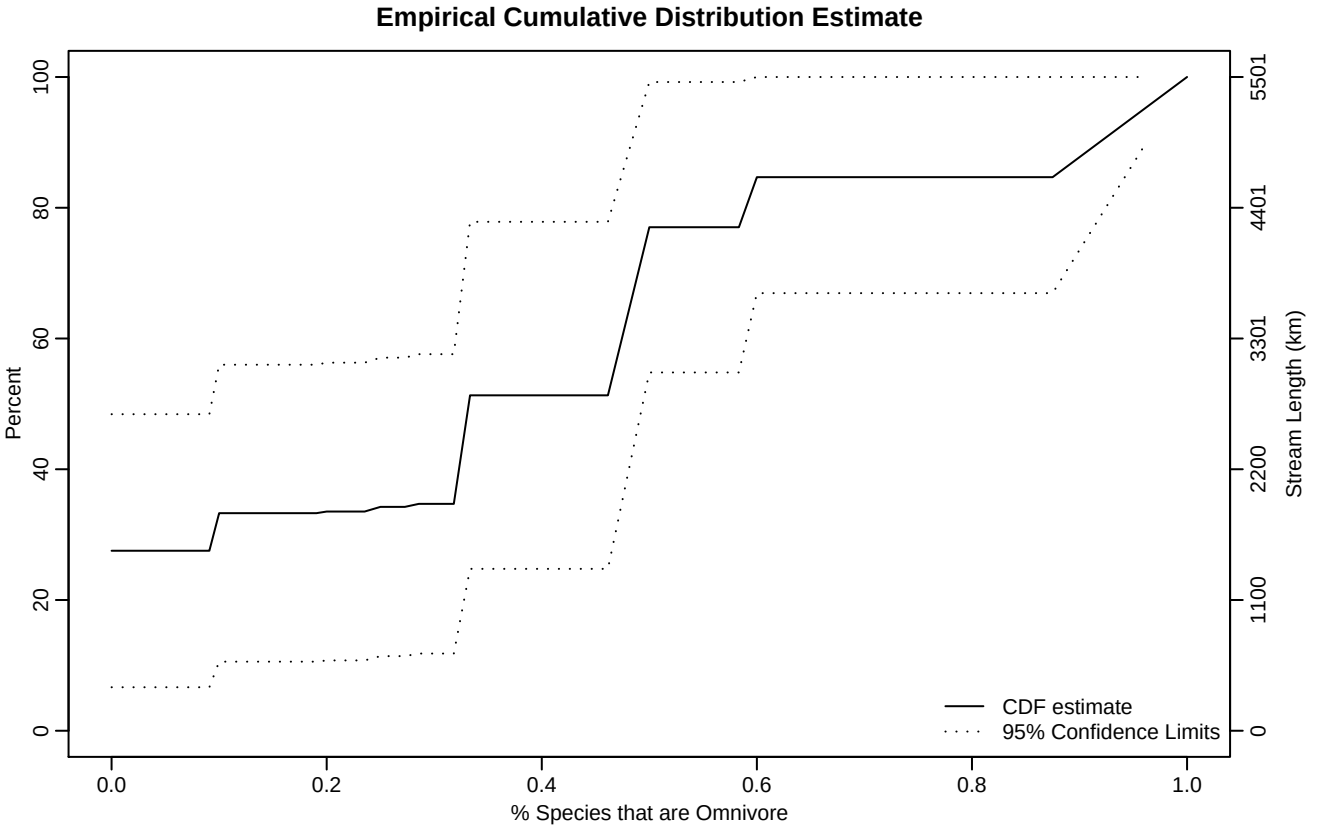


Figure VERT−229 Indicator: OMNI_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.10
25Pct	0	0	0.33
50Pct	0.33	0	0.50
75Pct	0.50	0.33	1
90Pct	0.92	0.49	1
95Pct	0.96	0.58	1
Mean	0.39	0.22	0.56
Std Dev	0.33	0.25	0.42

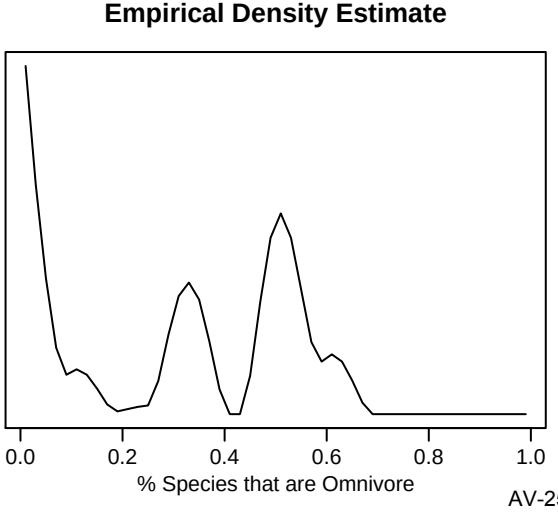
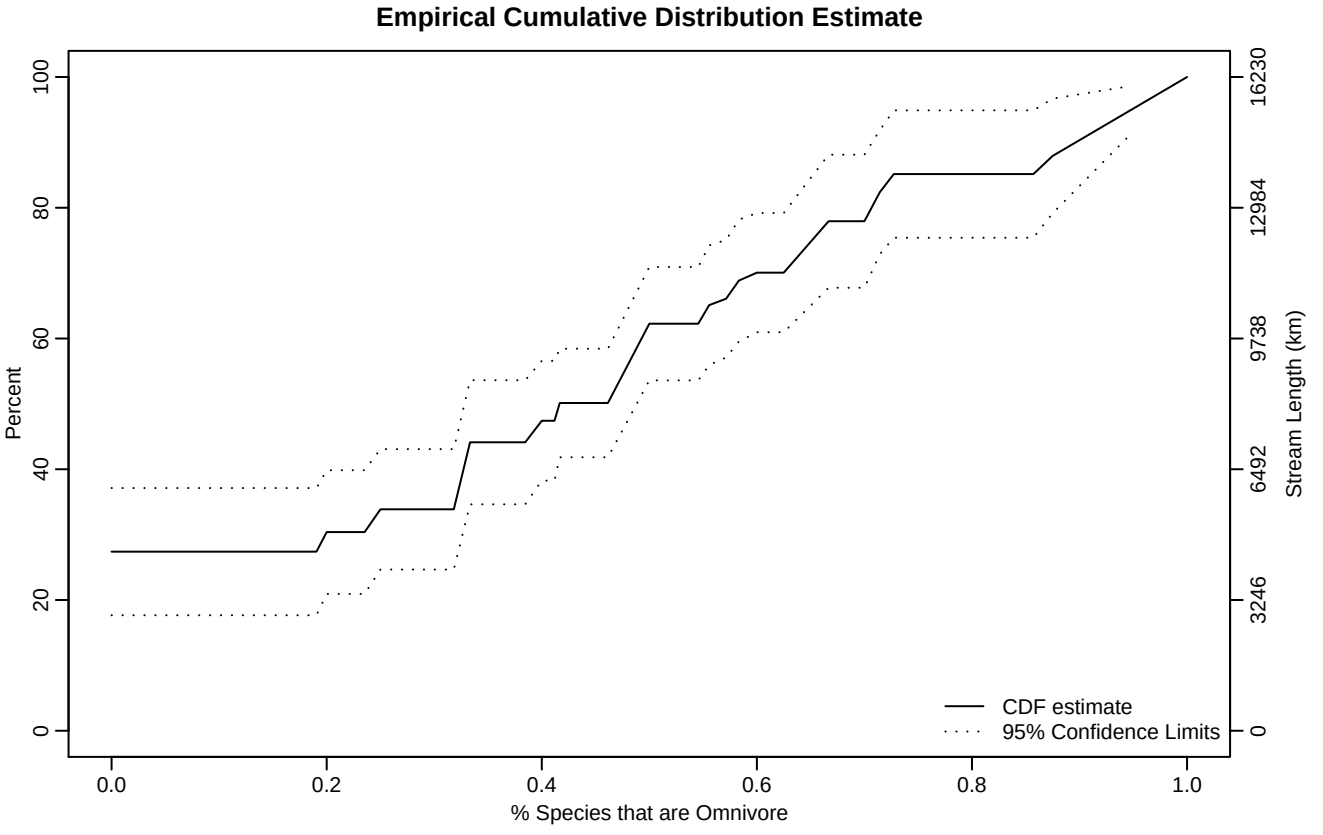


Figure VERT−230 Indicator: OMNI_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.32
50Pct	0.42	0.33	0.49
75Pct	0.65	0.55	0.86
90Pct	0.90	0.71	0.99
95Pct	0.95	0.86	1
Mean	0.43	0.37	0.49
Std Dev	0.26	0.20	0.31

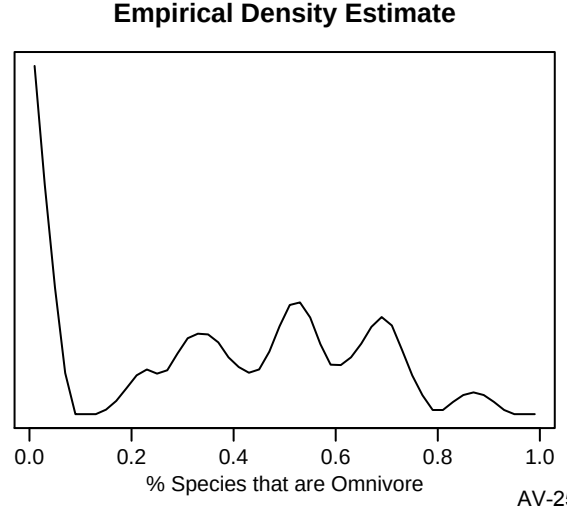
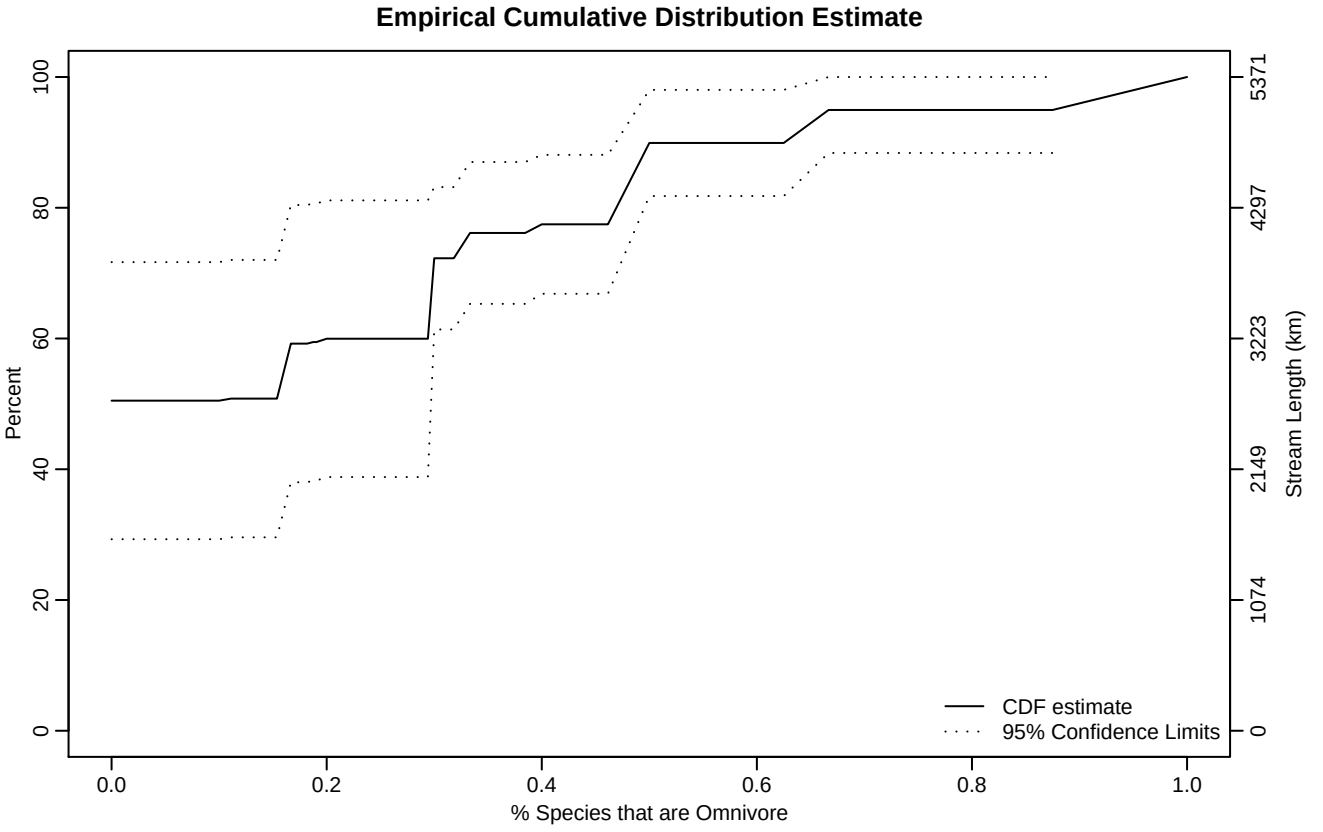


Figure VERT−231 Indicator: OMNI_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.32
75Pct	0.33	0.30	0.49
90Pct	0.63	0.48	0.94
95Pct	0.88	0.50	
Mean	0.22	0.13	0.31
Std Dev	0.21	0.17	0.25

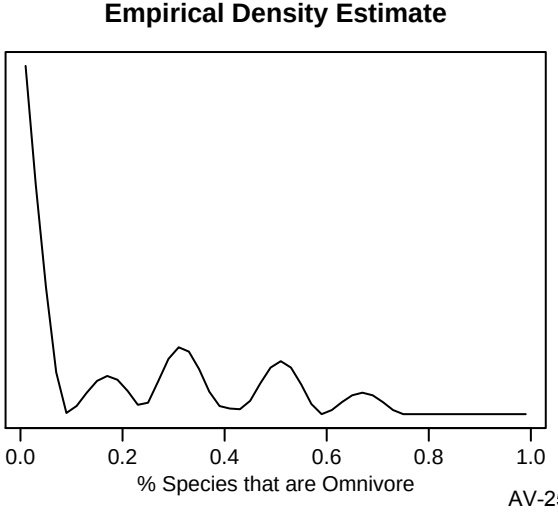
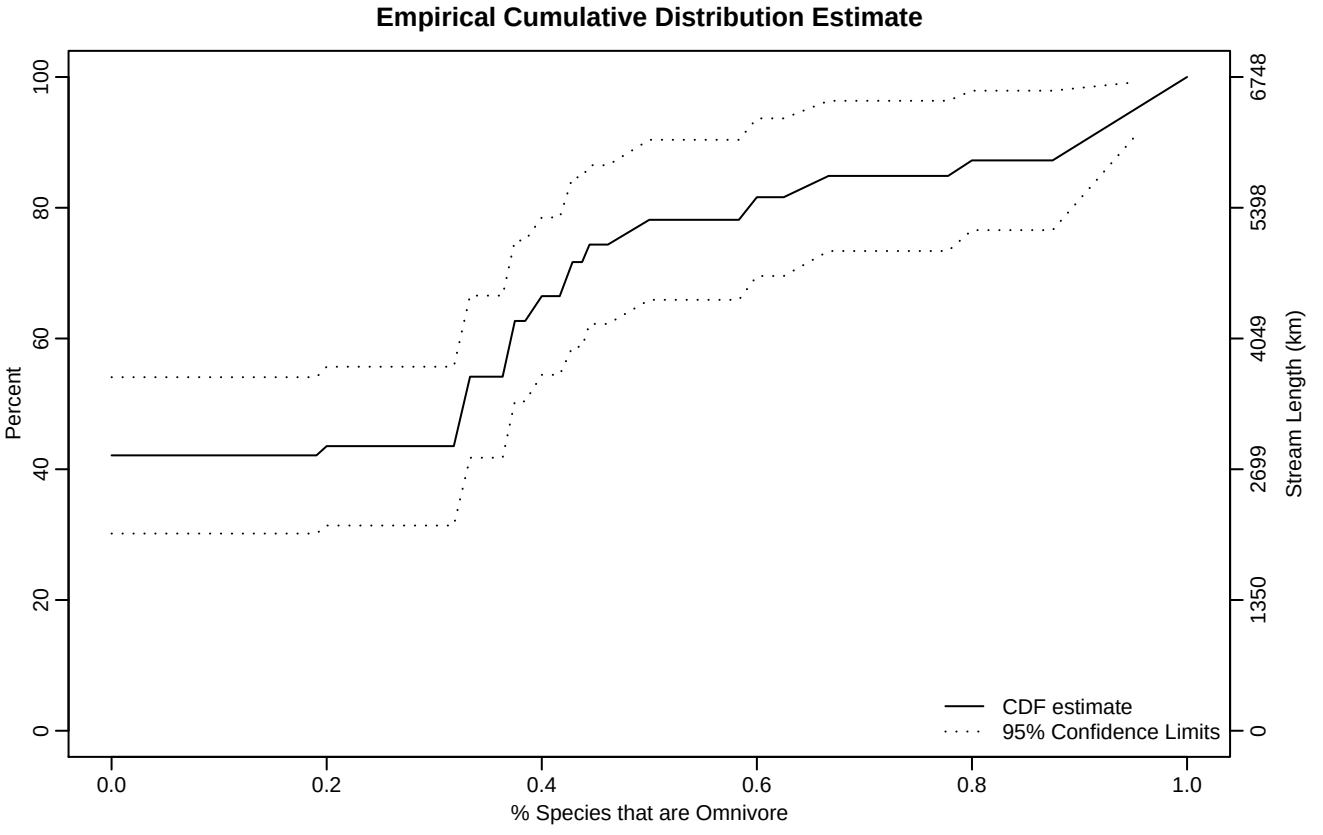


Figure VERT−232 Indicator: OMNI_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.33	0	0.37
75Pct	0.47	0.39	0.79
90Pct	0.90	0.59	1
95Pct	0.95	0.66	1
Mean	0.33	0.23	0.42
Std Dev	0.27	0.21	0.34

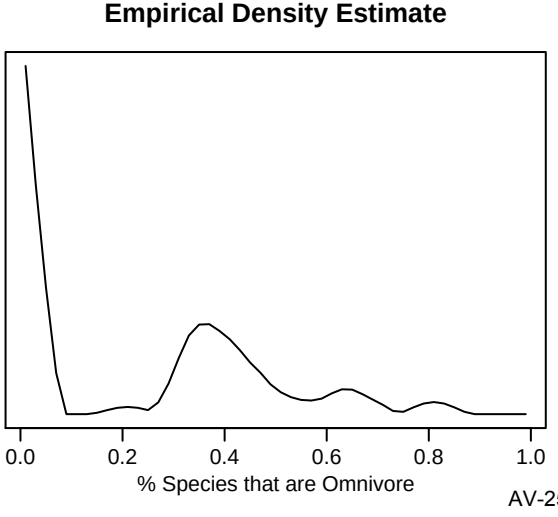
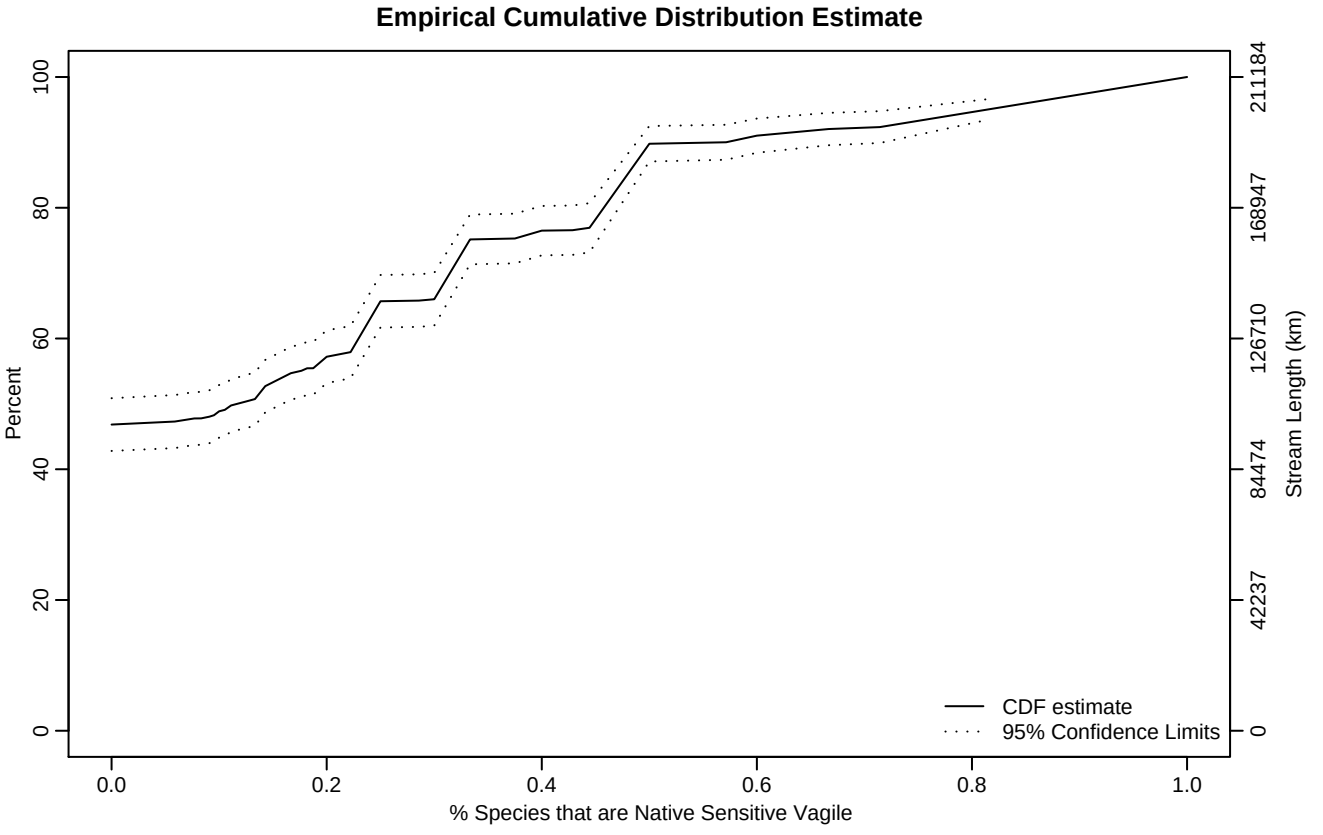


Figure VERT−233 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.12	0	0.16
75Pct	0.33	0.32	0.45
90Pct	0.57	0.49	0.73
95Pct	0.81	0.72	0.90
Mean	0.23	0.21	0.26
Std Dev	0.24	0.22	0.27

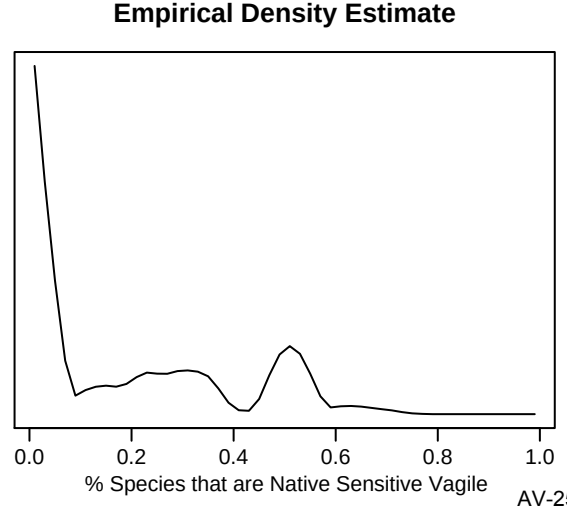
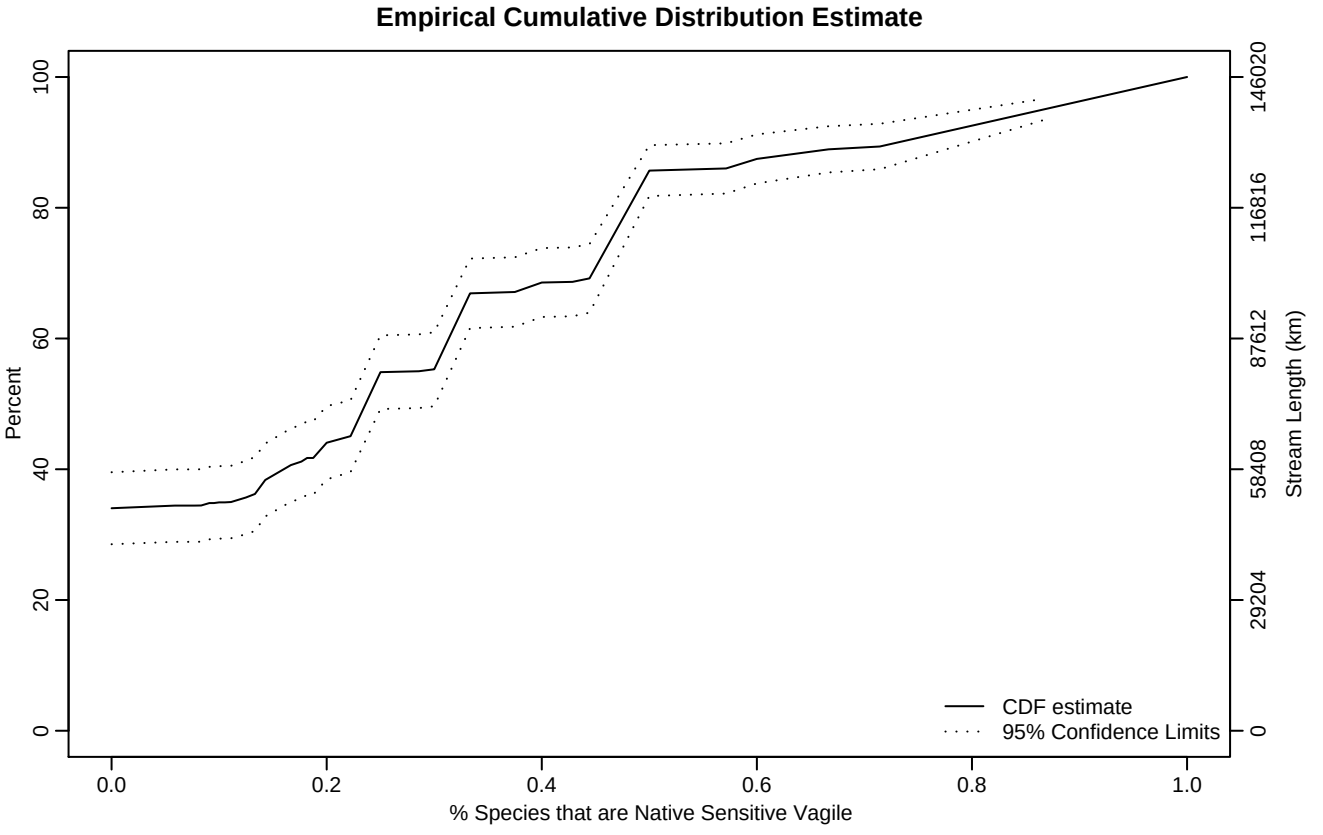


Figure VERT−234 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.24	0.21	0.30
75Pct	0.46	0.45	0.48
90Pct	0.73	0.58	0.82
95Pct	0.87	0.77	0.96
Mean	0.30	0.27	0.34
Std Dev	0.29	0.26	0.32

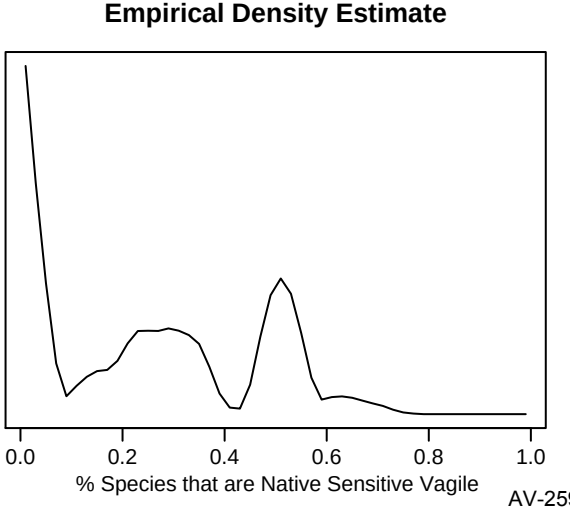
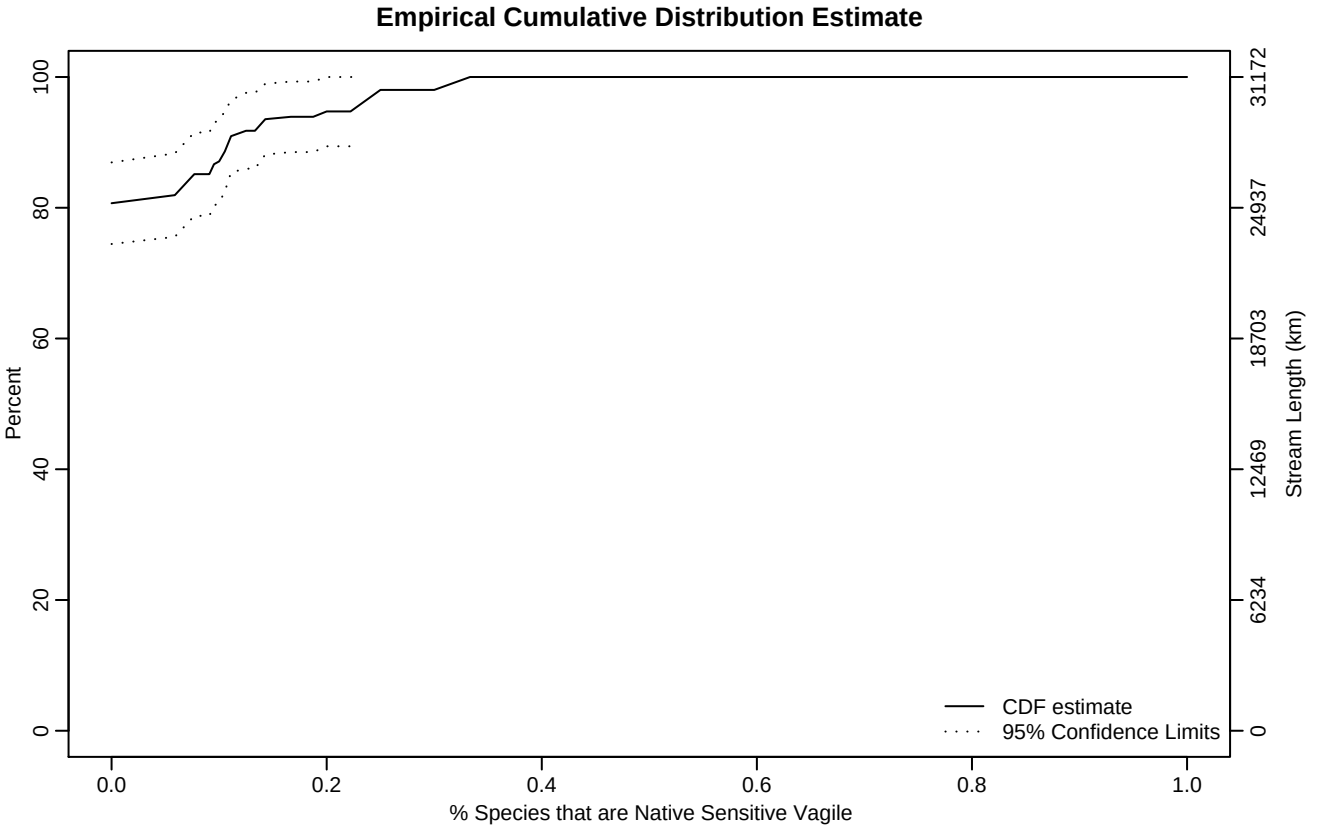


Figure VERT−235 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.06
90Pct	0.11	0.07	0.24
95Pct	0.22	0.11	
Mean	0.03	0.02	0.04
Std Dev	0.04	0.03	0.05

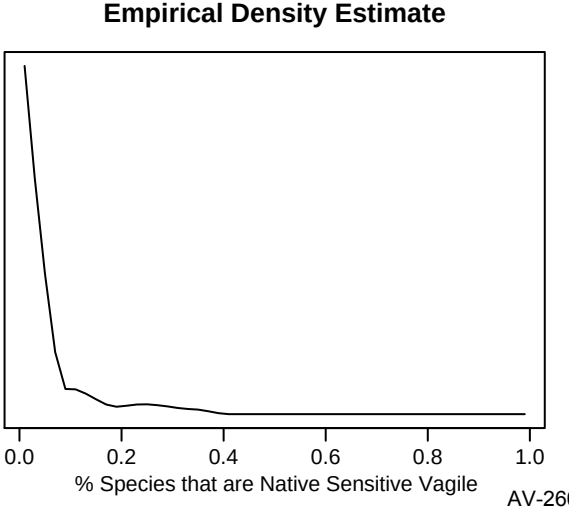
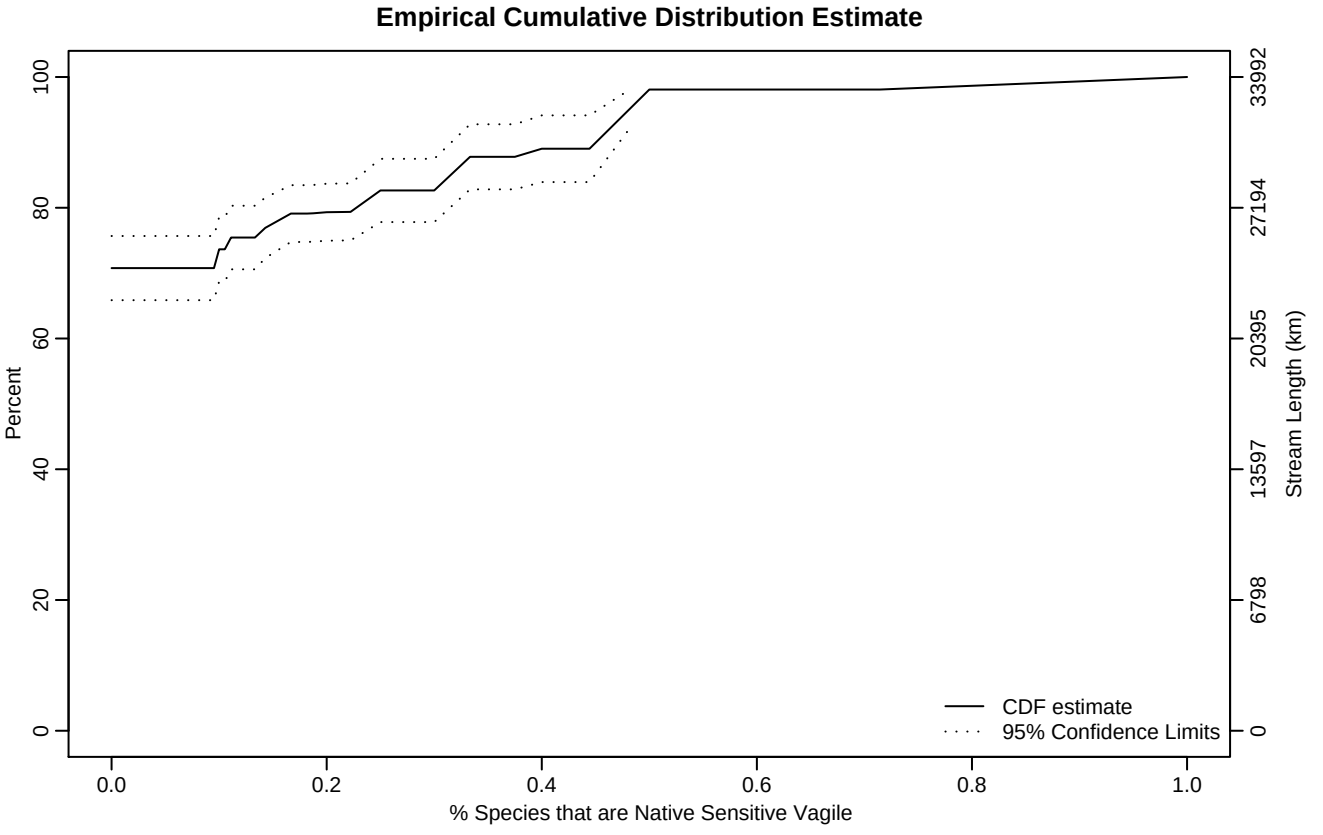


Figure VERT−236 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.11	0	0.24
90Pct	0.45	0.31	0.48
95Pct	0.48	0.45	
Mean	0.11	0.08	0.13
Std Dev	0.11	0.09	0.12

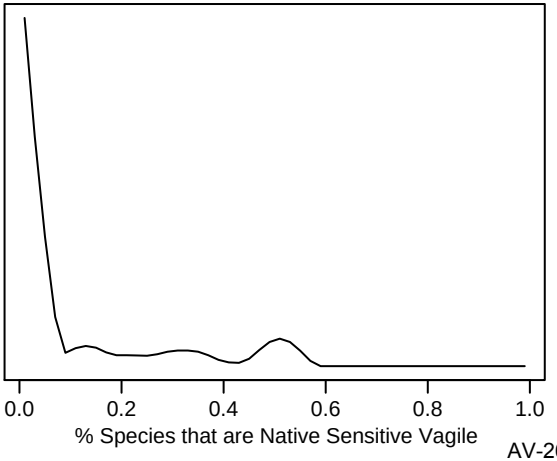
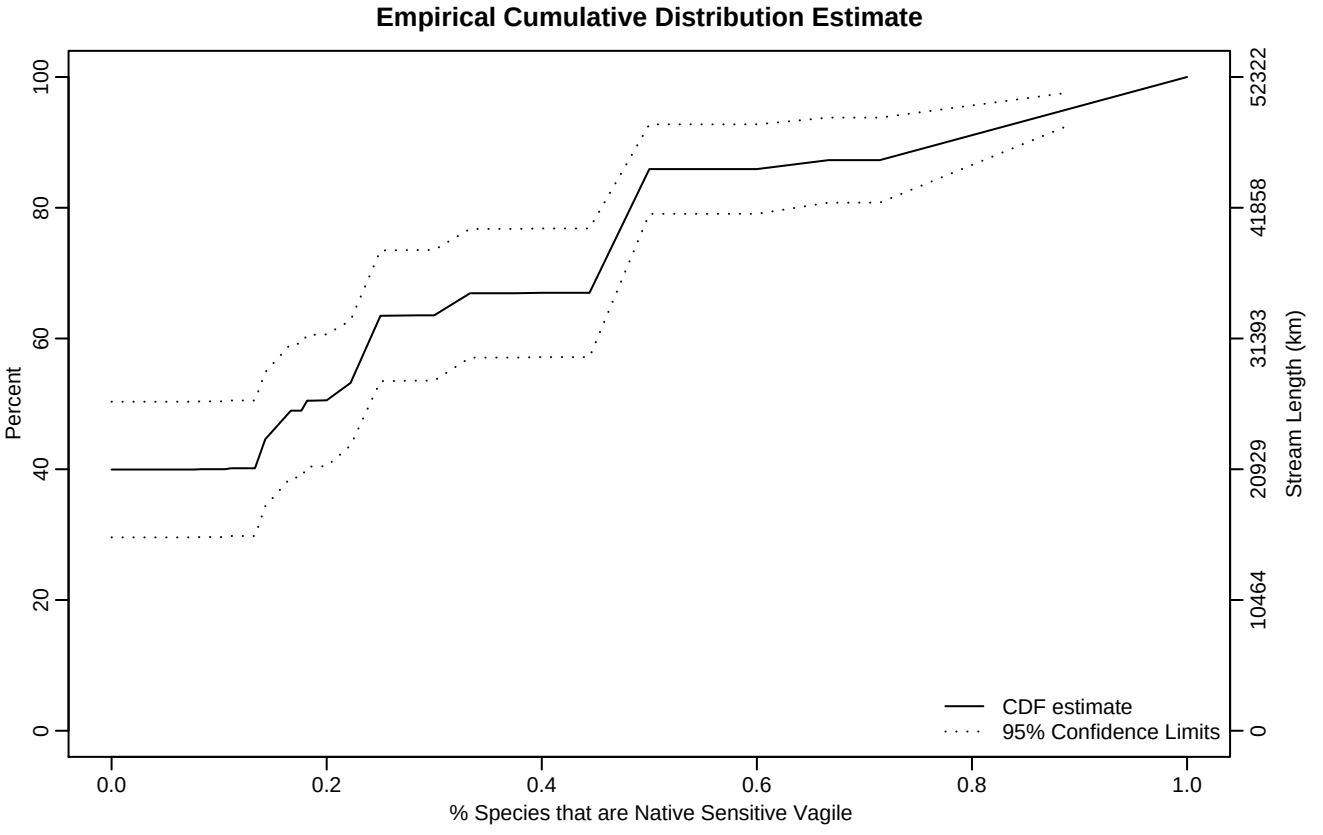


Figure VERT−237 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.18	0	0.24
75Pct	0.47	0.31	0.50
90Pct	0.78	0.49	0.92
95Pct	0.89	0.74	1
Mean	0.29	0.22	0.36
Std Dev	0.32	0.27	0.36

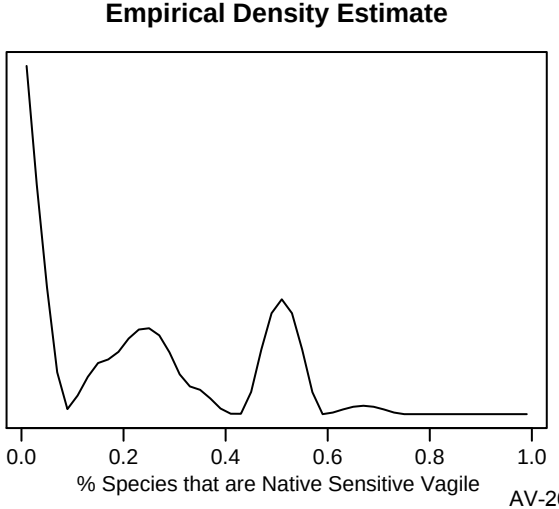
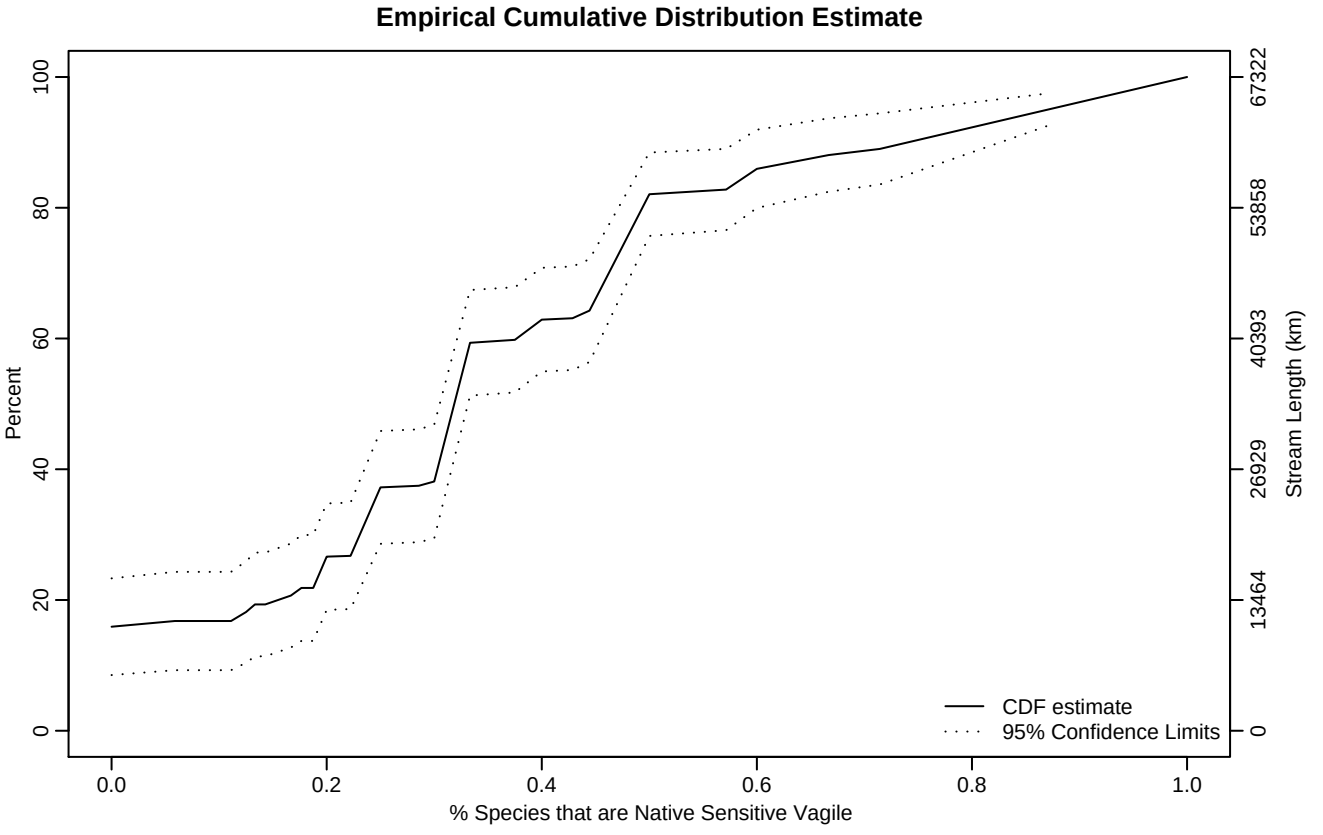


Figure VERT−238 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.12
25Pct	0.20	0.11	0.24
50Pct	0.32	0.31	0.33
75Pct	0.48	0.45	0.55
90Pct	0.74	0.59	0.88
95Pct	0.87	0.73	1
Mean	0.38	0.33	0.43
Std Dev	0.28	0.24	0.32

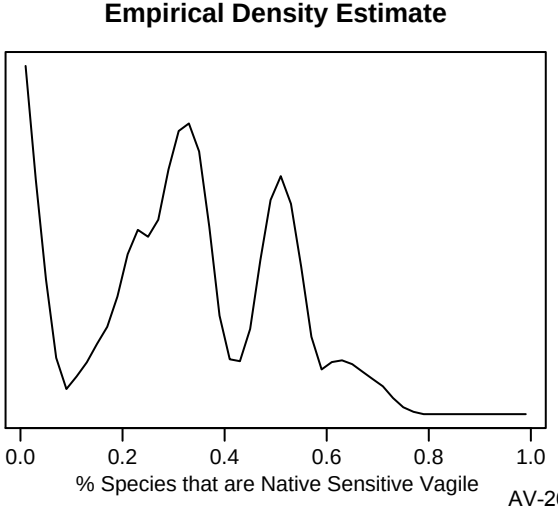
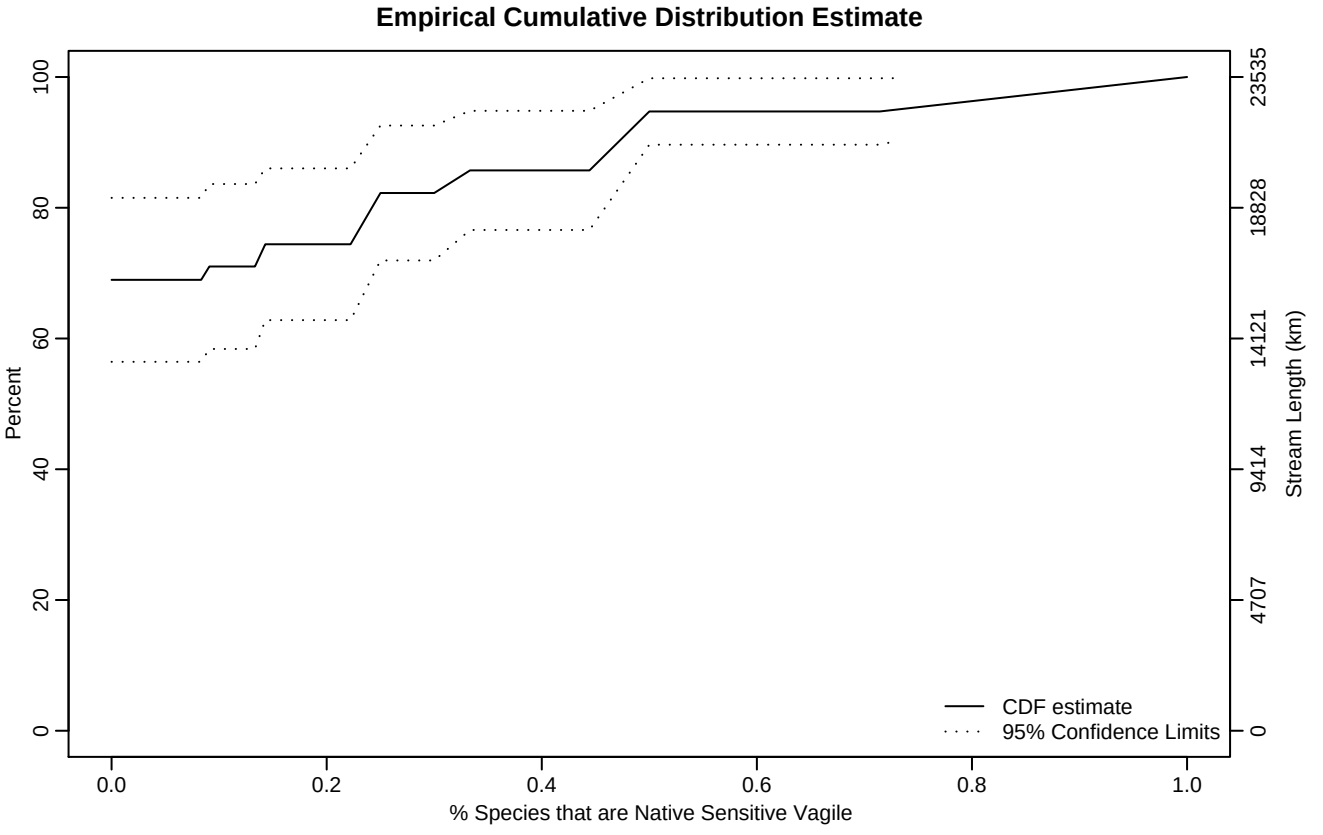


Figure VERT−239 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.22	0	0.45
90Pct	0.47	0.25	0.95
95Pct	0.73	0.47	
Mean	0.14	0.07	0.20
Std Dev	0.23	0.15	0.30

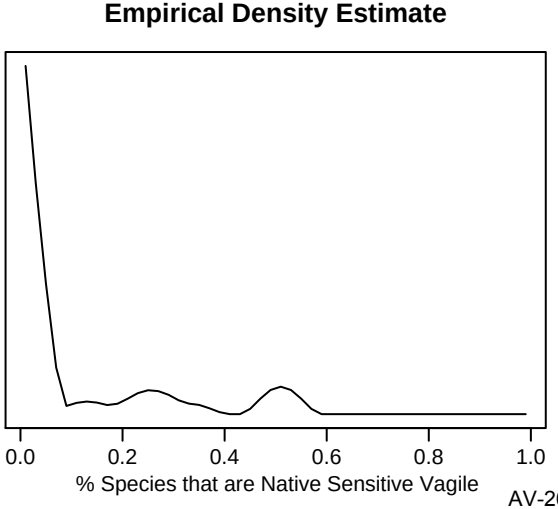
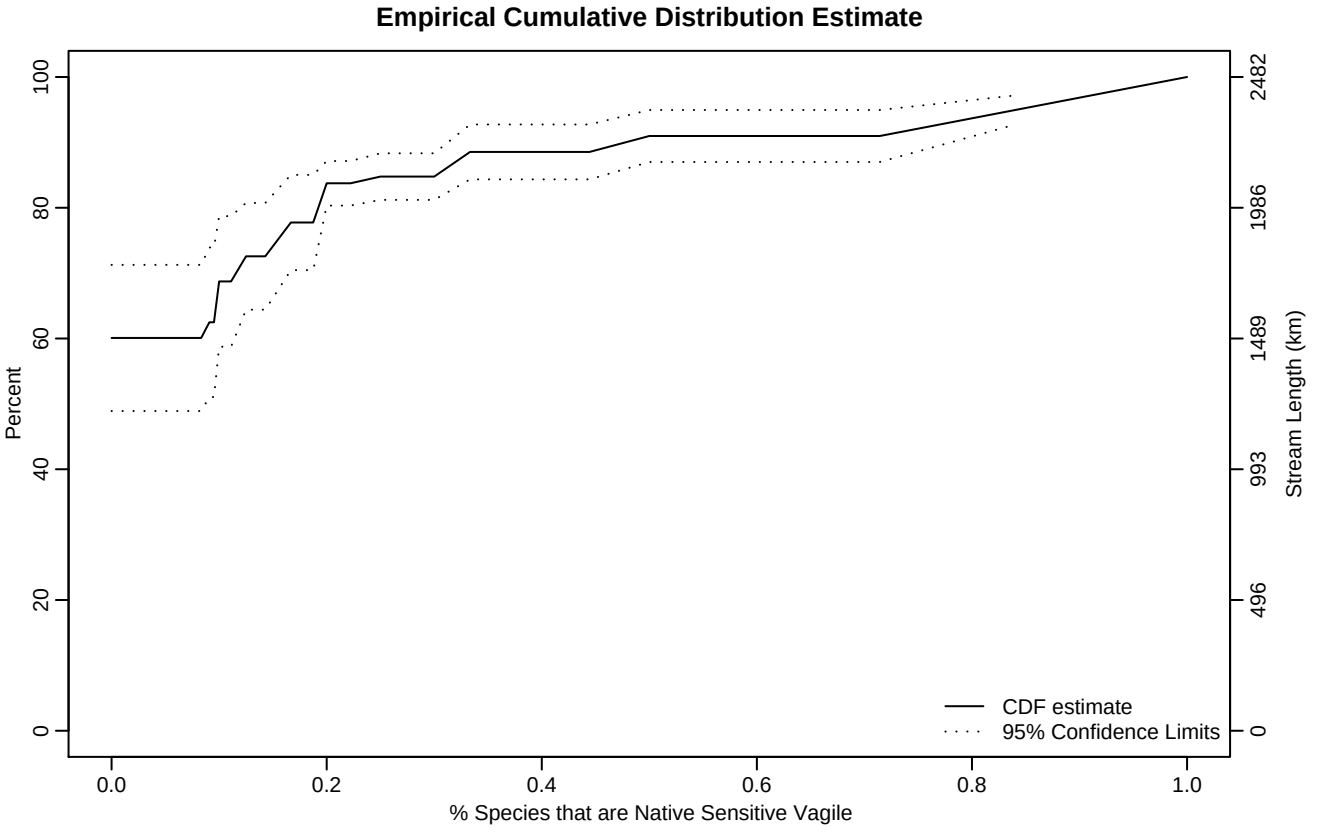


Figure VERT−240 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.09
75Pct	0.15	0.10	0.20
90Pct	0.48	0.31	0.82
95Pct	0.84	0.50	0.97
Mean	0.15	0.12	0.19
Std Dev	0.15	0.14	0.17

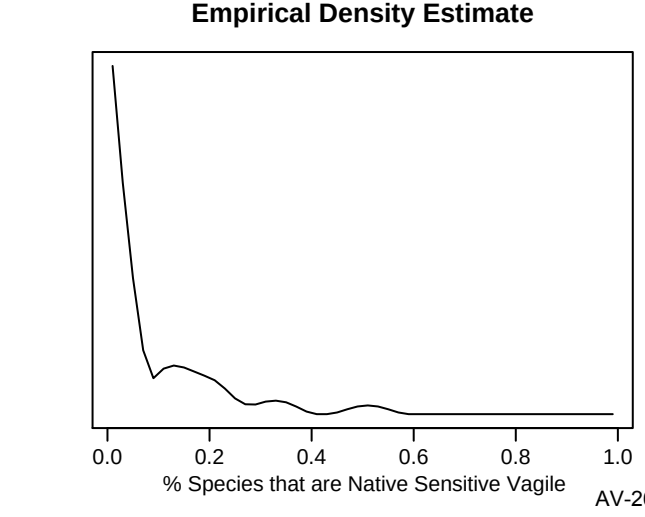
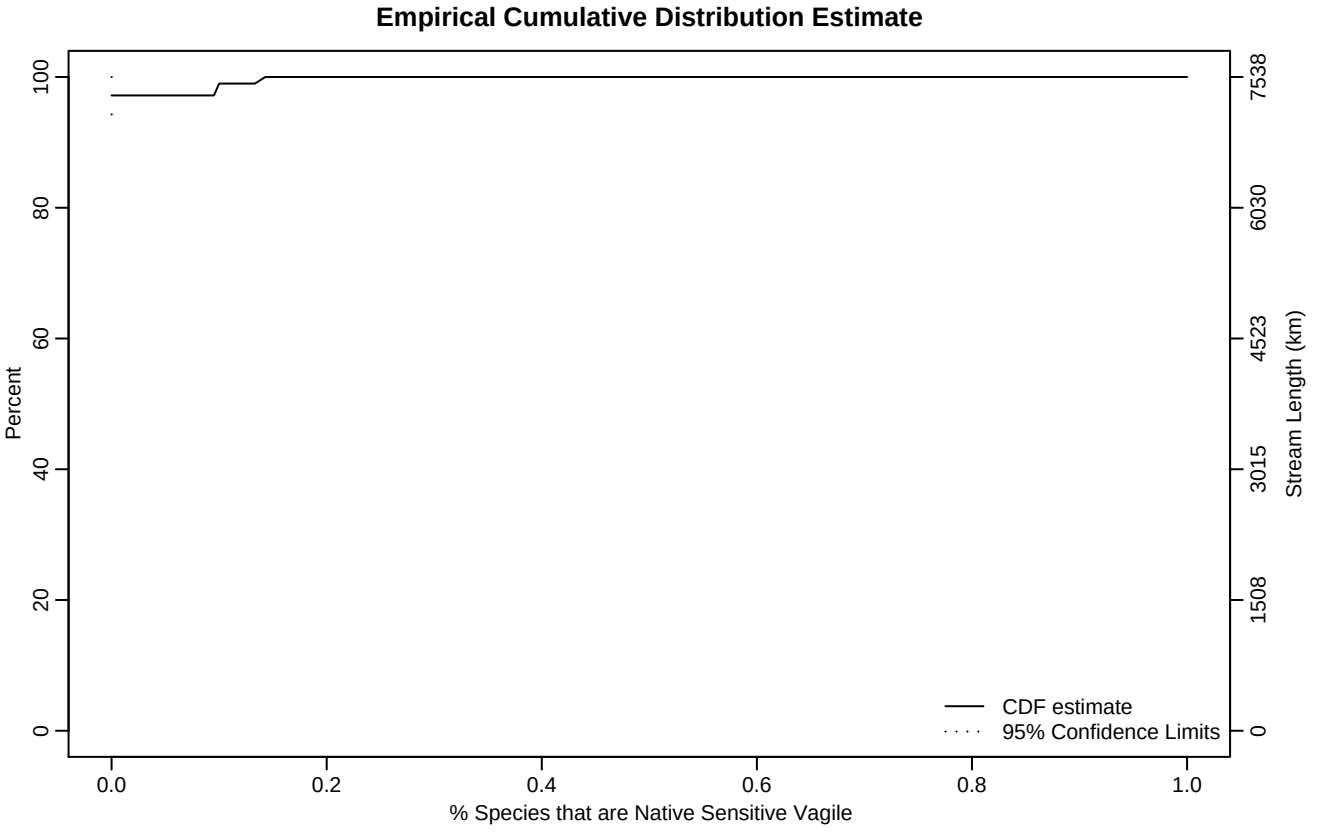


Figure VERT−241 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.10
Mean	0	0	0.01
Std Dev	0	0	0.01

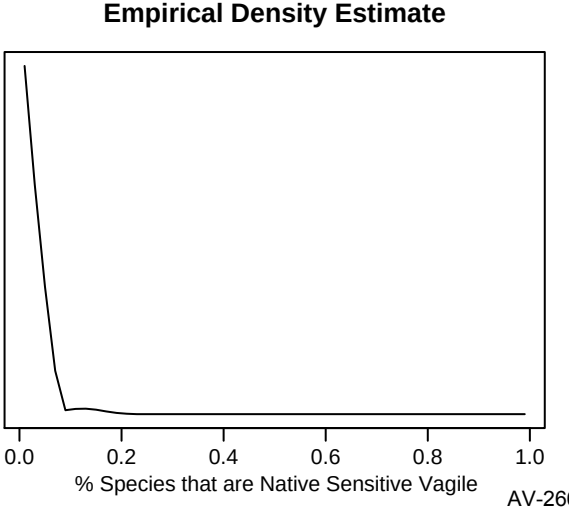
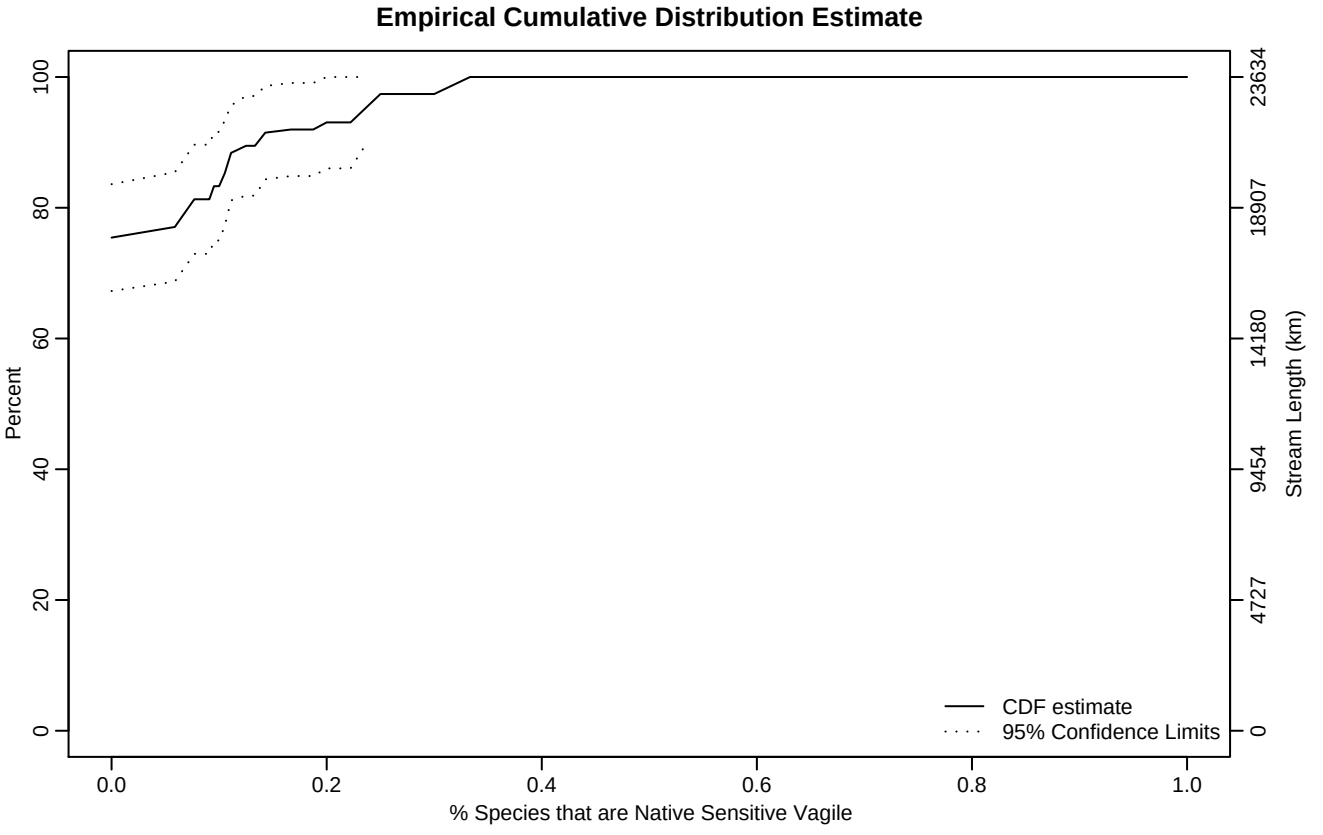


Figure VERT−242 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.10
90Pct	0.14	0.09	0.31
95Pct	0.23	0.11	0.33
Mean	0.04	0.02	0.06
Std Dev	0.05	0.04	0.06

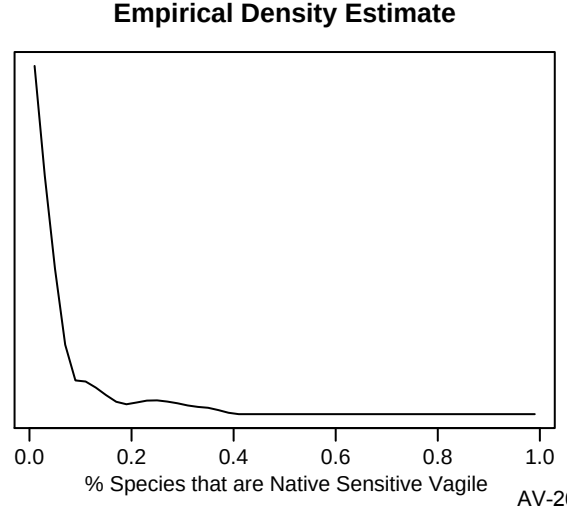
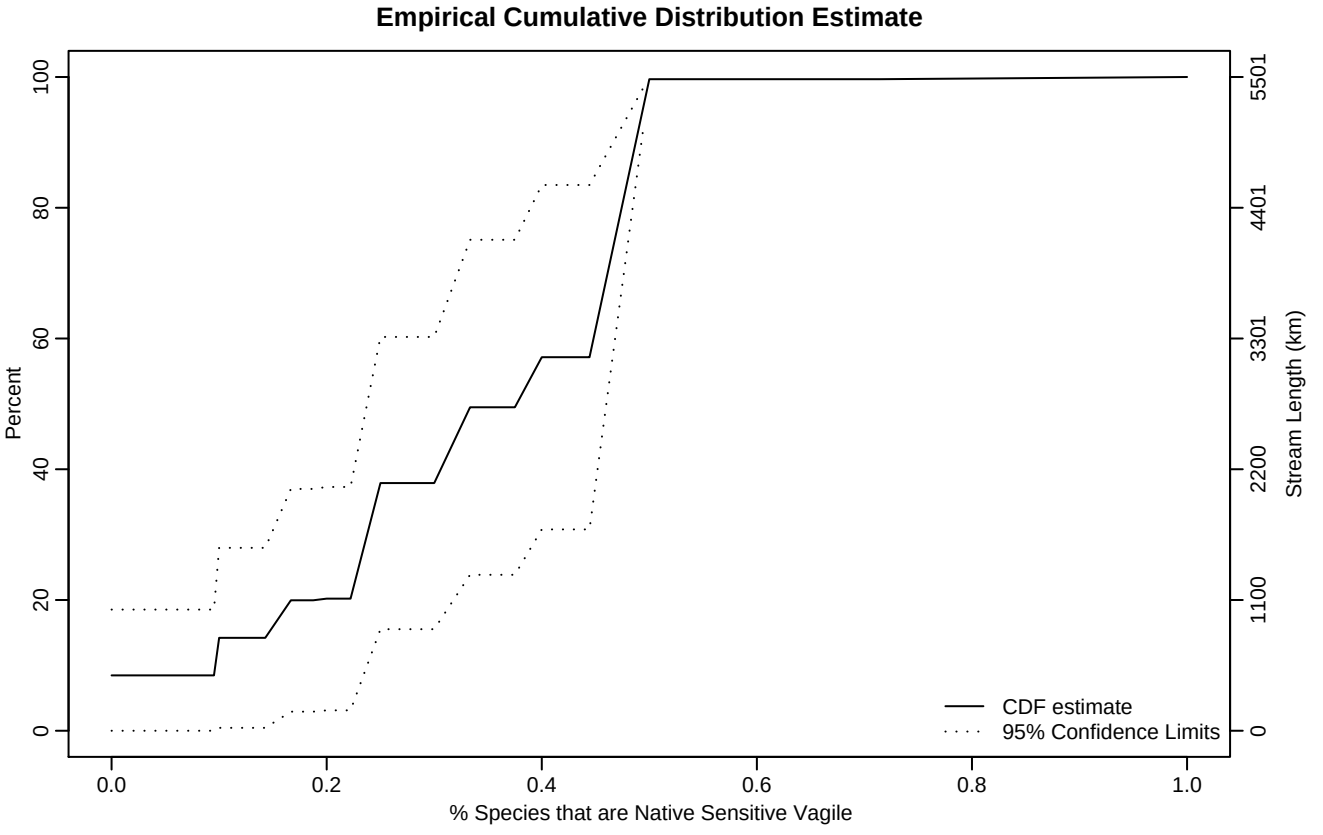


Figure VERT−243 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.15
10Pct	0.10	0	0.22
25Pct	0.23	0	0.31
50Pct	0.38	0.23	0.47
75Pct	0.47	0.33	1
90Pct	0.49	0.45	1
95Pct	0.49	0.46	1
Mean	0.35	0.27	0.42
Std Dev	0.17	0.13	0.21

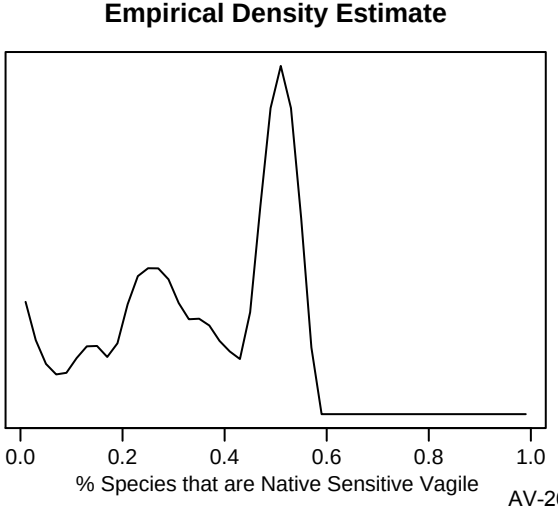
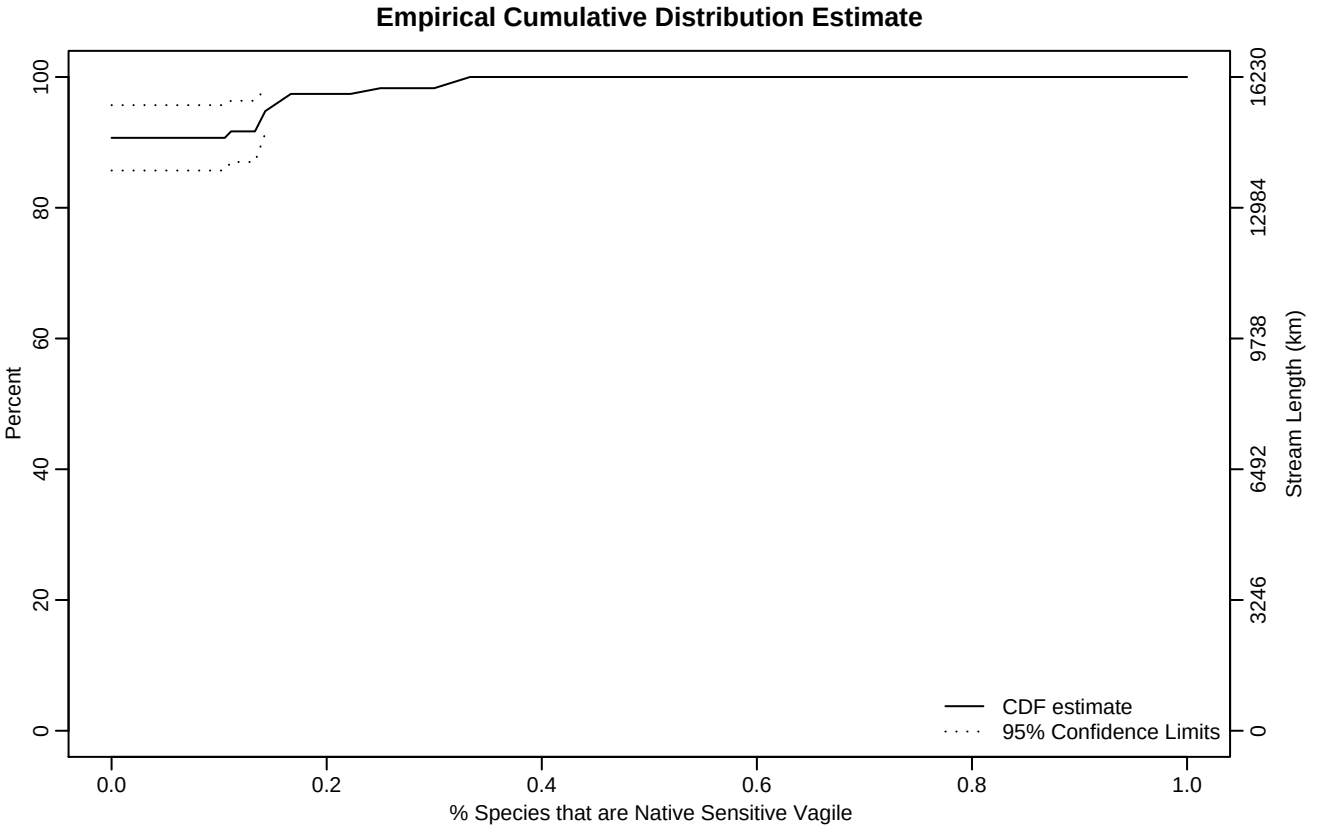


Figure VERT−244 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.15
95Pct	0.14	0.11	0.31
Mean	0.02	0.01	0.03
Std Dev	0.03	0.02	0.04

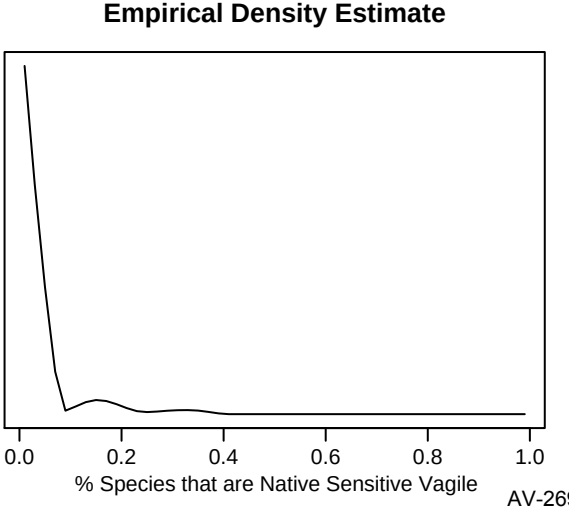
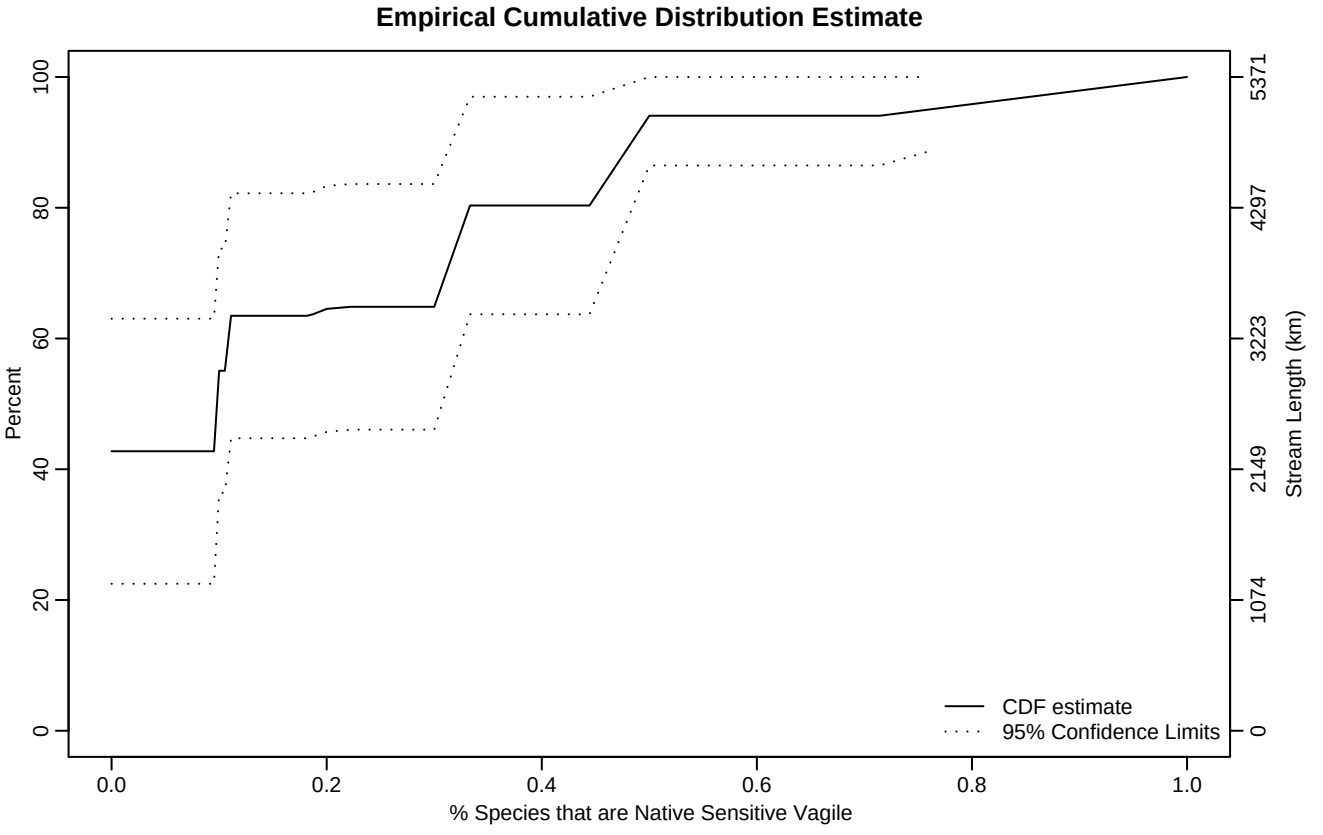


Figure VERT−245 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.10
50Pct	0.10	0	0.31
75Pct	0.32	0.11	0.74
90Pct	0.48	0.32	
95Pct	0.76	0.47	
Mean	0.20	0.11	0.30
Std Dev	0.20	0.16	0.25

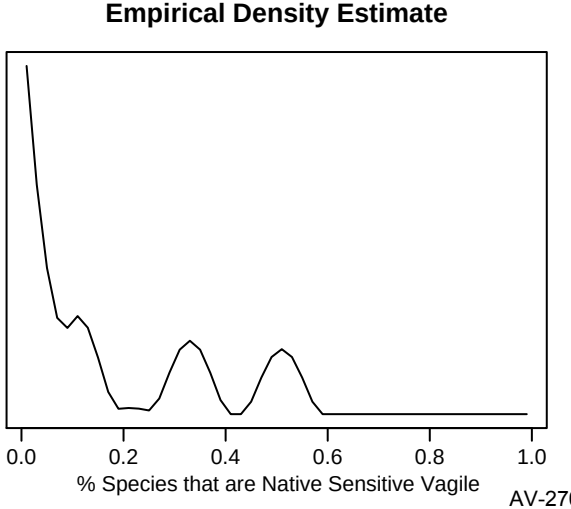
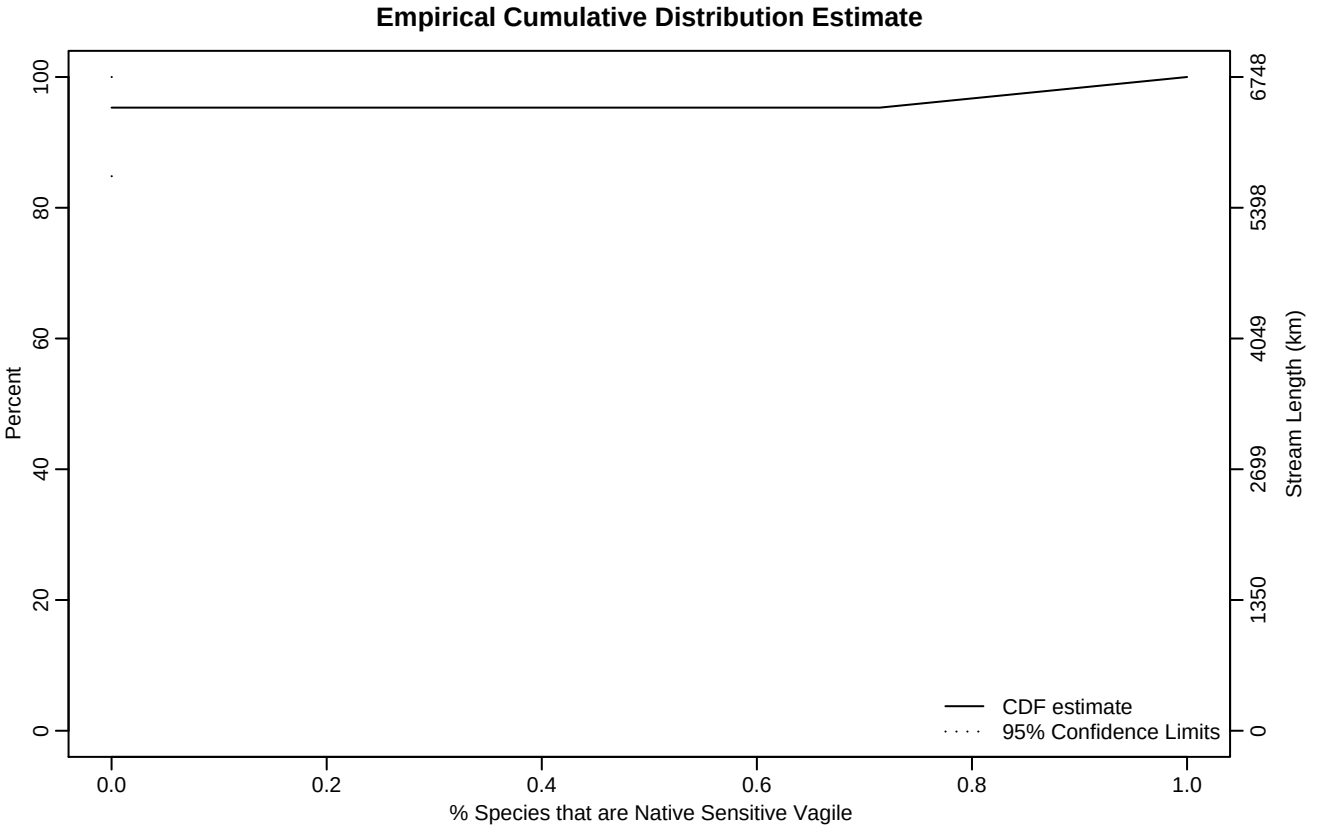


Figure VERT−246 Indicator: VAGIL_SEN_NAT_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.97
95Pct	0	0	1
Mean	0.05	−0.06	0.15
Std Dev	0.05	0.04	0.07

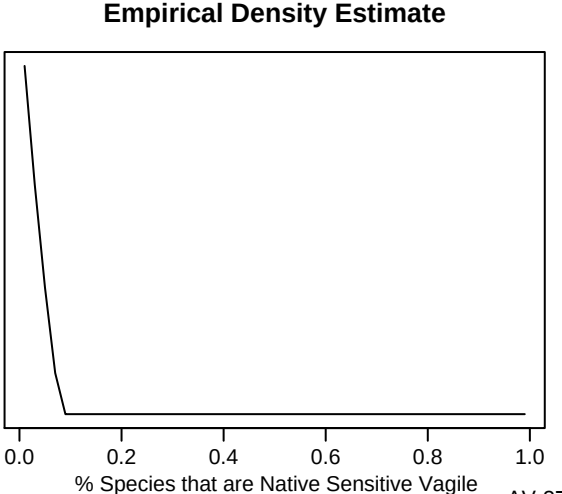
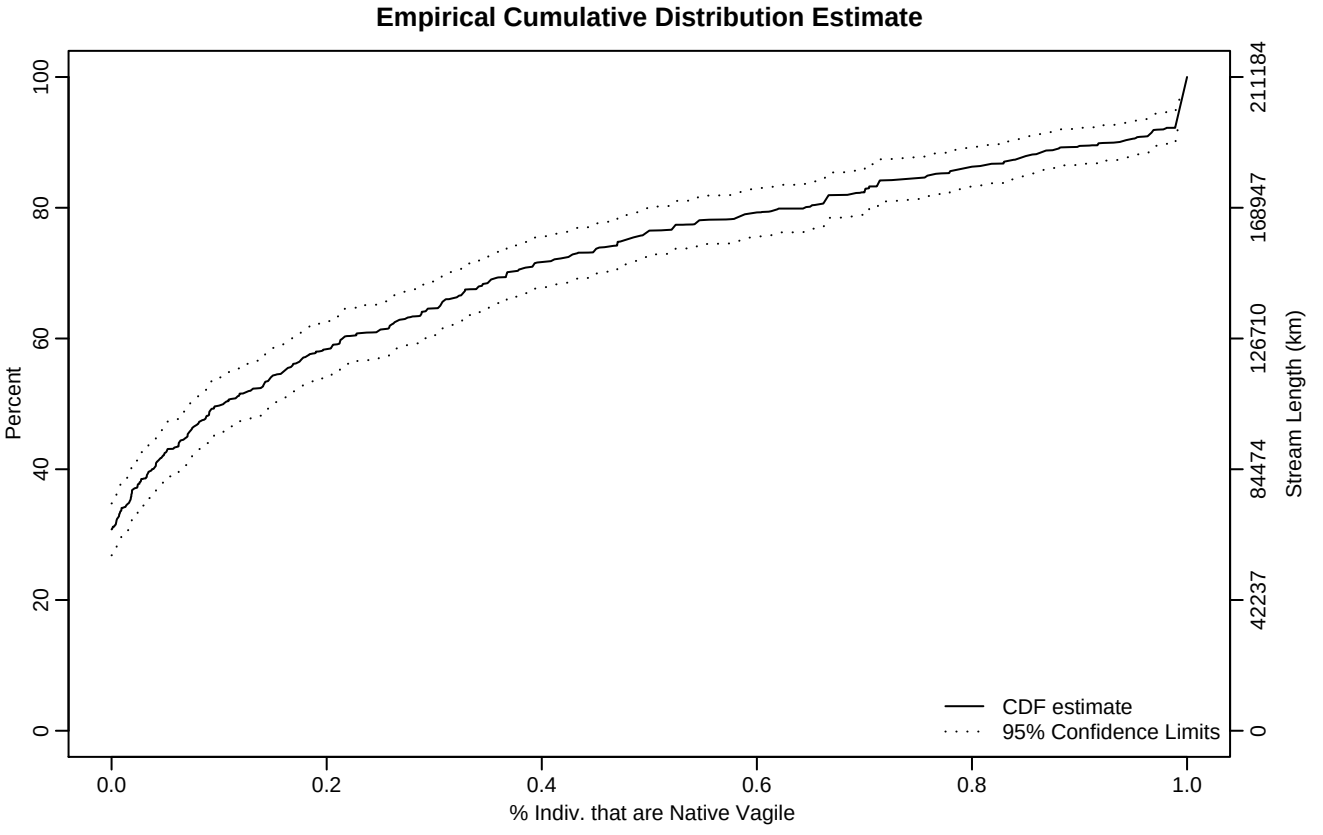


Figure VERT−247 Indicator: VAGIL_NAT_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.10	0.07	0.15
75Pct	0.48	0.39	0.59
90Pct	0.93	0.84	0.99
95Pct	0.99	0.99	1
Mean	0.28	0.25	0.31
Std Dev	0.30	0.28	0.32

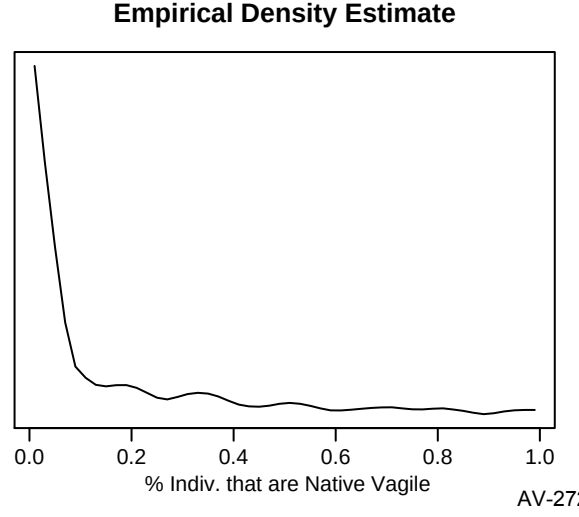
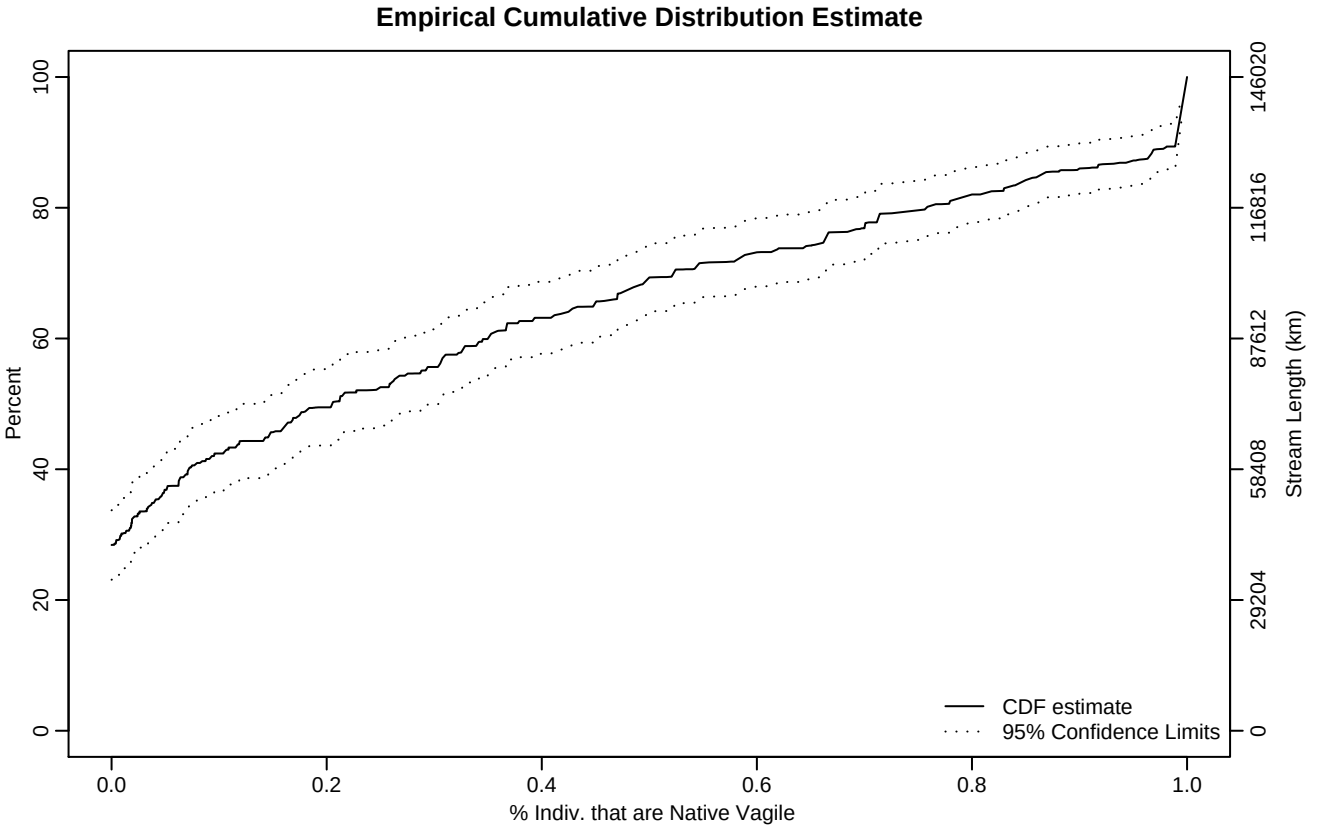


Figure VERT−248 Indicator: VAGIL_NAT_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.21	0.12	0.30
75Pct	0.66	0.52	0.76
90Pct	0.99	0.92	0.99
95Pct	0.99	0.99	1
Mean	0.34	0.30	0.38
Std Dev	0.33	0.31	0.36

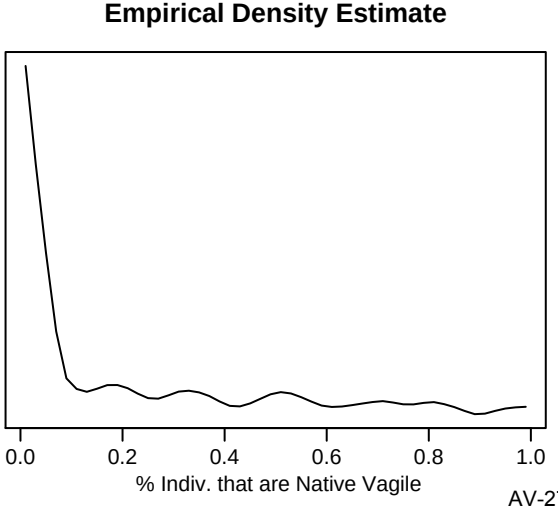
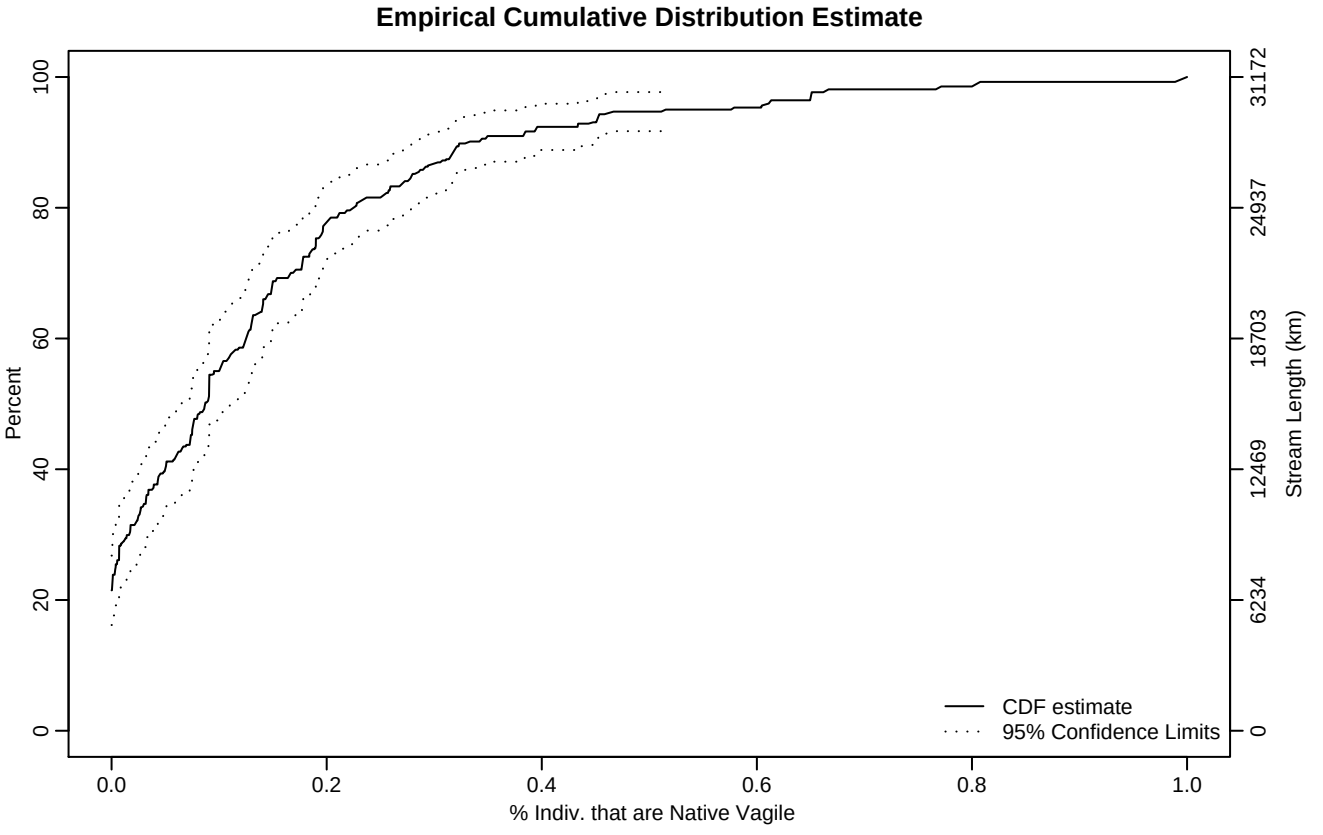


Figure VERT−249 Indicator: VAGIL_NAT_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.09	0.06	0.11
75Pct	0.19	0.15	0.23
90Pct	0.33	0.29	0.45
95Pct	0.52	0.39	0.67
Mean	0.14	0.12	0.16
Std Dev	0.17	0.14	0.20

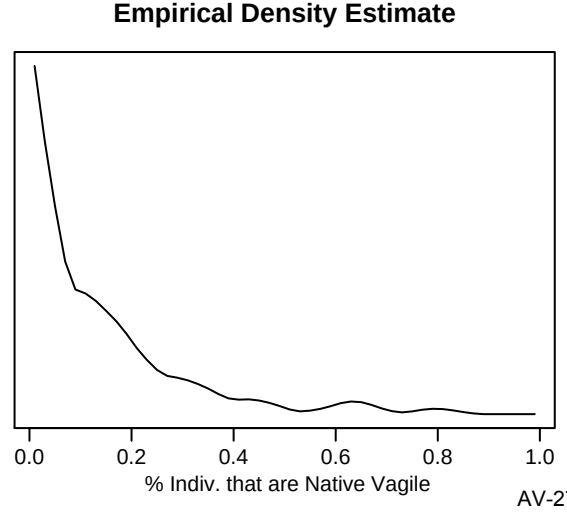
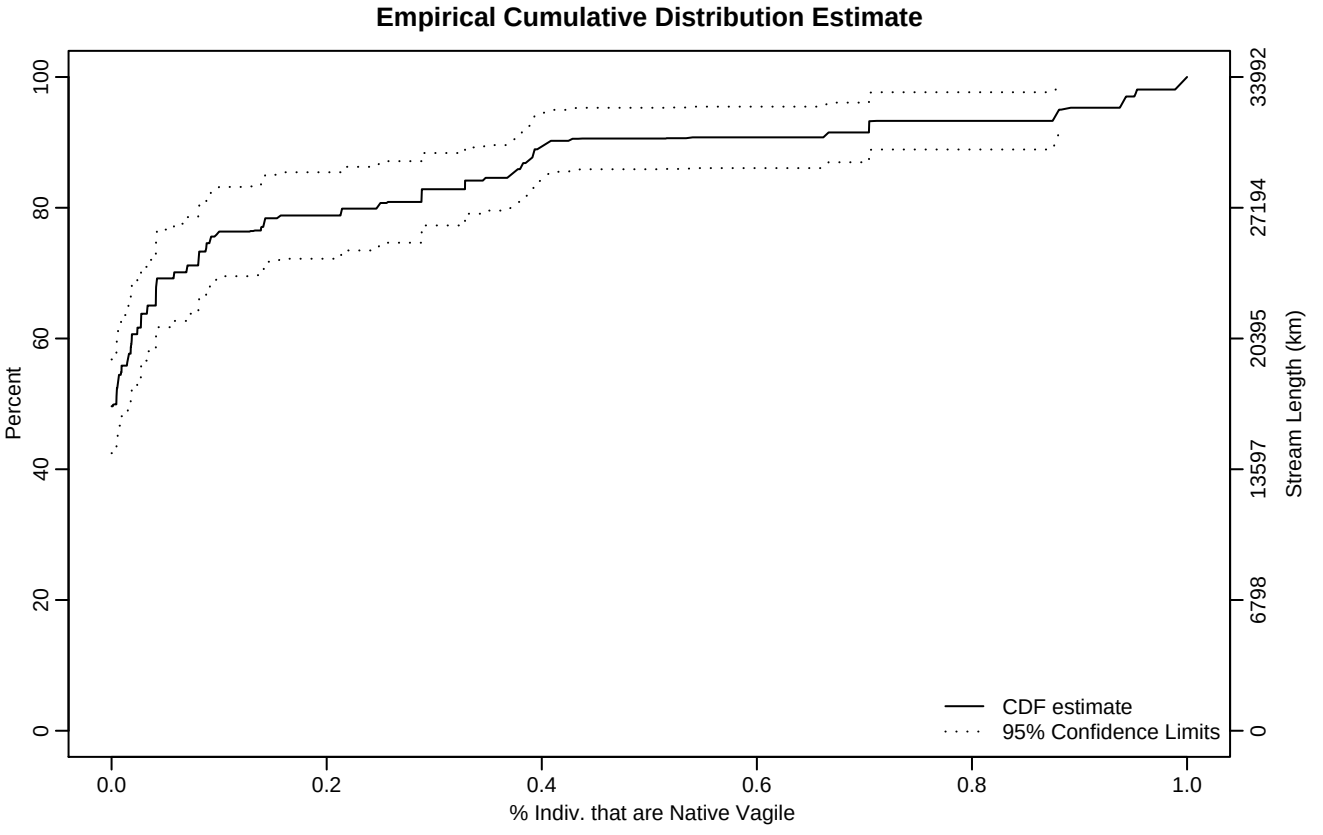


Figure VERT−250 Indicator: VAGIL_NAT_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.02
75Pct	0.09	0.04	0.29
90Pct	0.41	0.35	0.94
95Pct	0.88	0.43	1
Mean	0.14	0.10	0.18
Std Dev	0.19	0.16	0.22

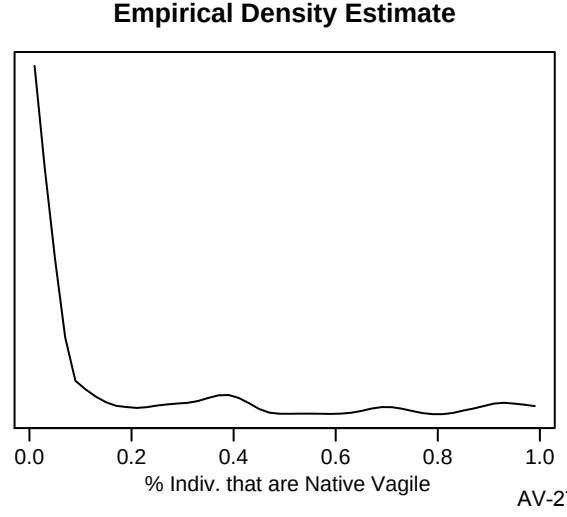
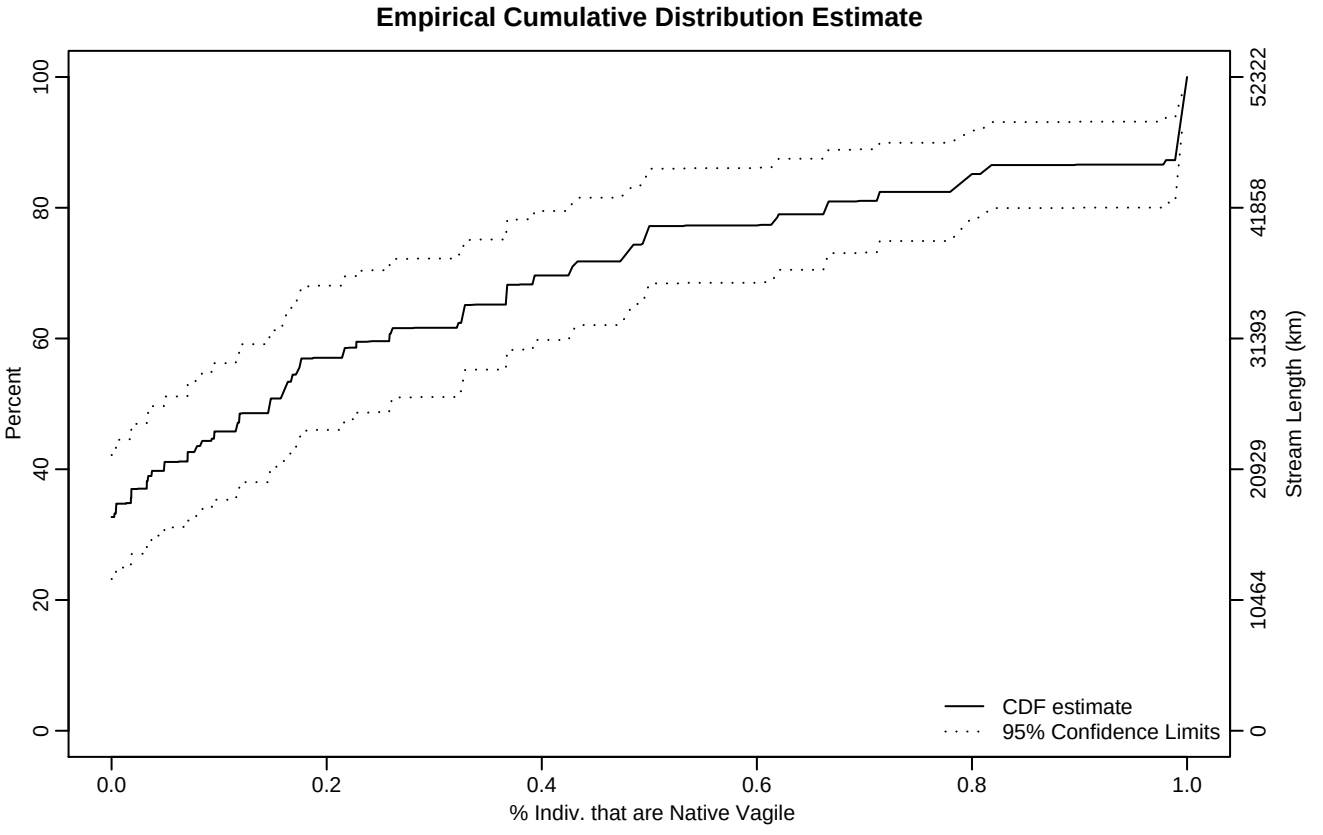


Figure VERT−251 Indicator: VAGIL_NAT_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.15	0.04	0.26
75Pct	0.49	0.37	0.79
90Pct	0.99	0.79	1
95Pct	1	0.99	1
Mean	0.30	0.23	0.37
Std Dev	0.35	0.31	0.39

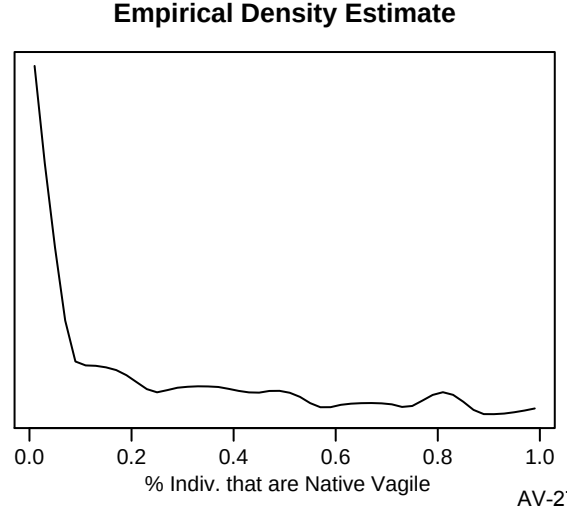
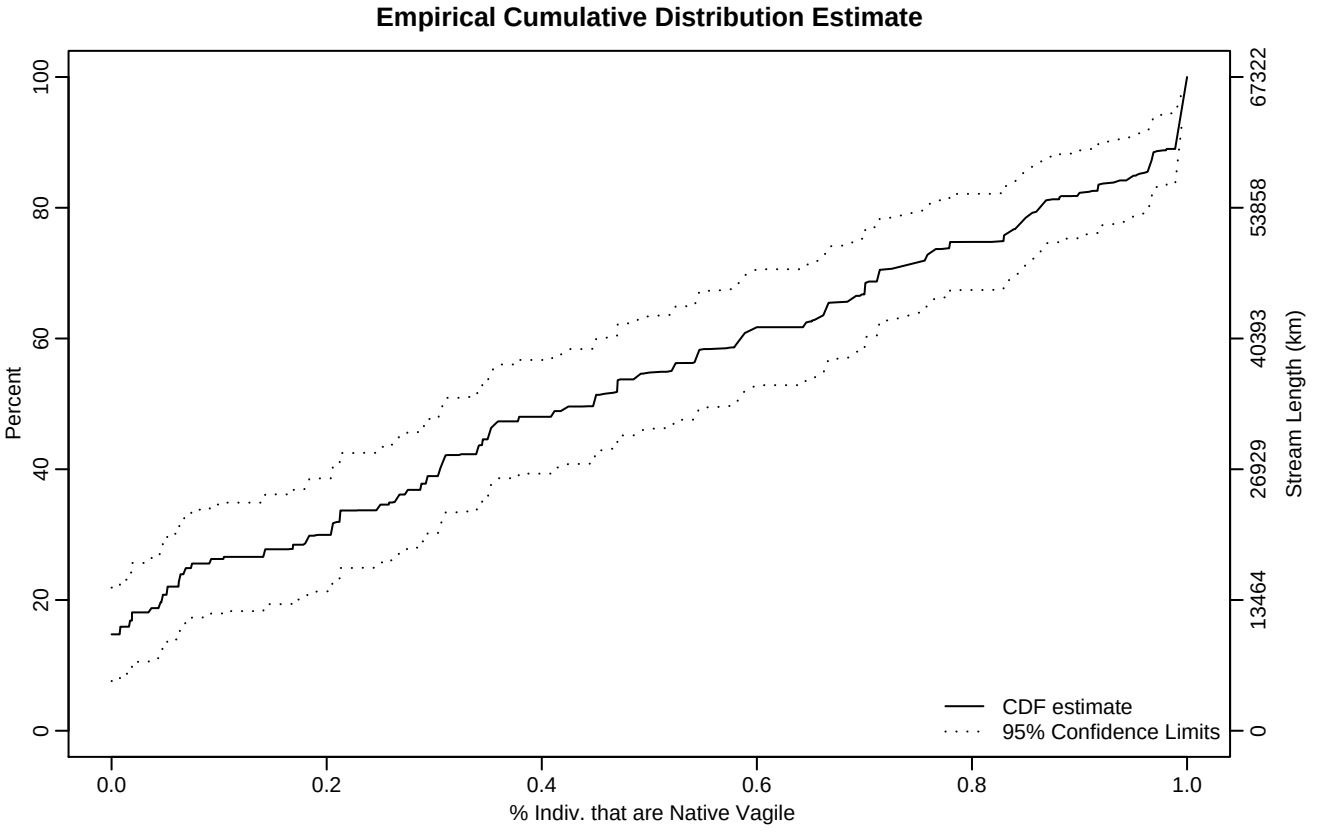


Figure VERT−252 Indicator: VAGIL_NAT_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.02
25Pct	0.07	0.02	0.21
50Pct	0.45	0.31	0.58
75Pct	0.83	0.70	0.90
90Pct	0.99	0.95	1
95Pct	0.99	0.99	1
Mean	0.47	0.40	0.53
Std Dev	0.35	0.32	0.38

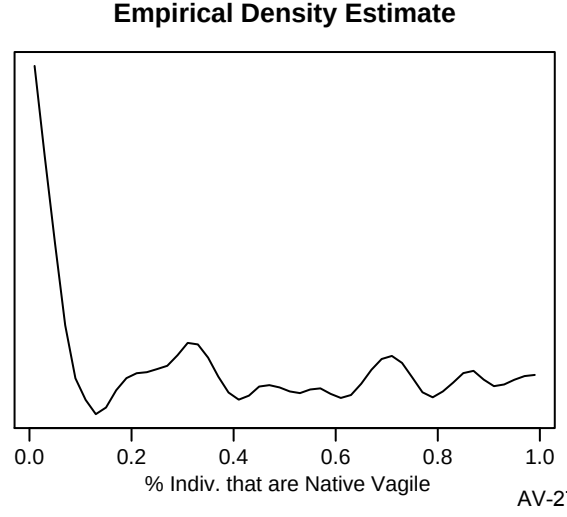
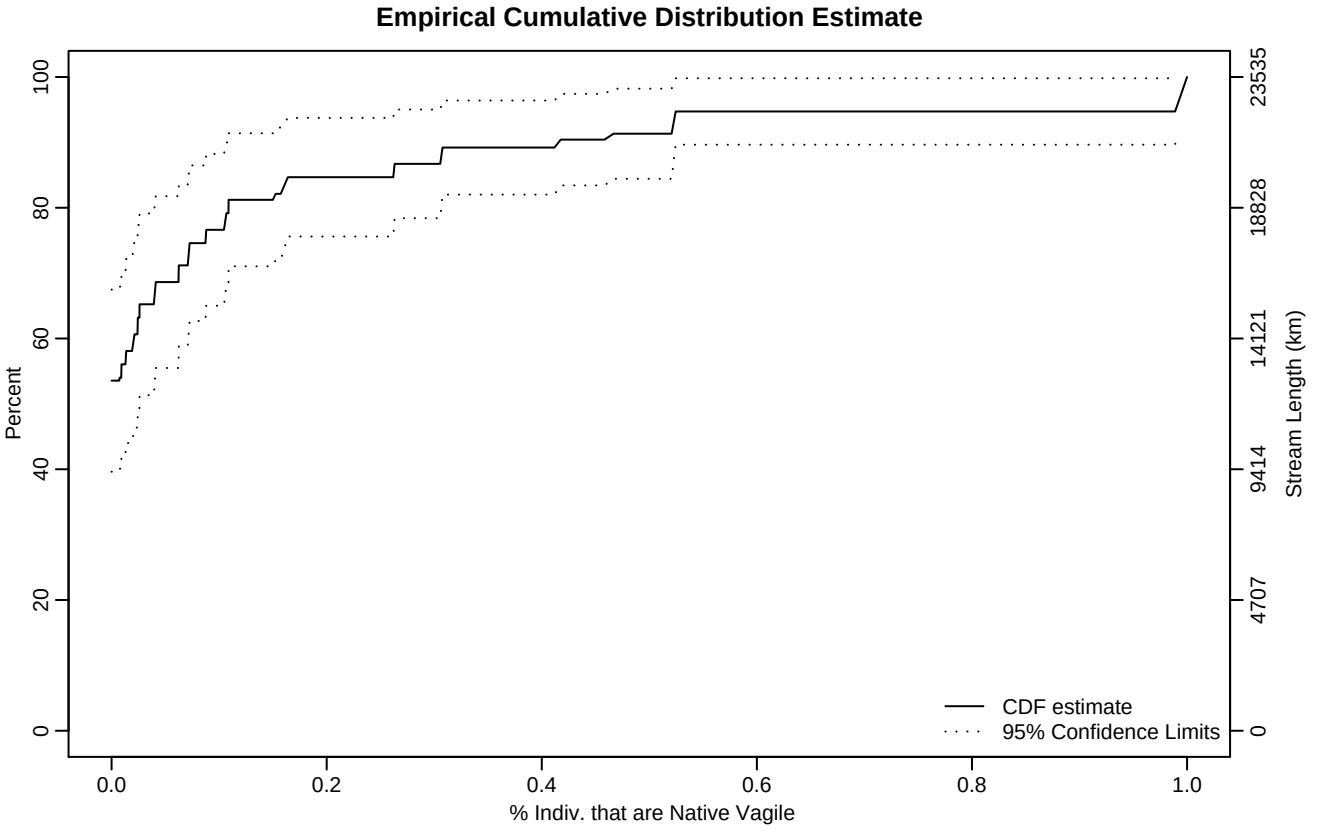


Figure VERT−253 Indicator: VAGIL_NAT_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.03
75Pct	0.09	0.02	0.31
90Pct	0.42	0.16	0.99
95Pct	0.99	0.41	
Mean	0.11	0.06	0.17
Std Dev	0.22	0.14	0.31

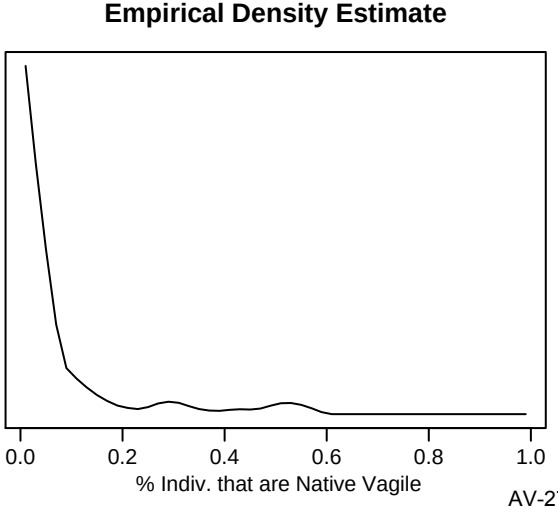
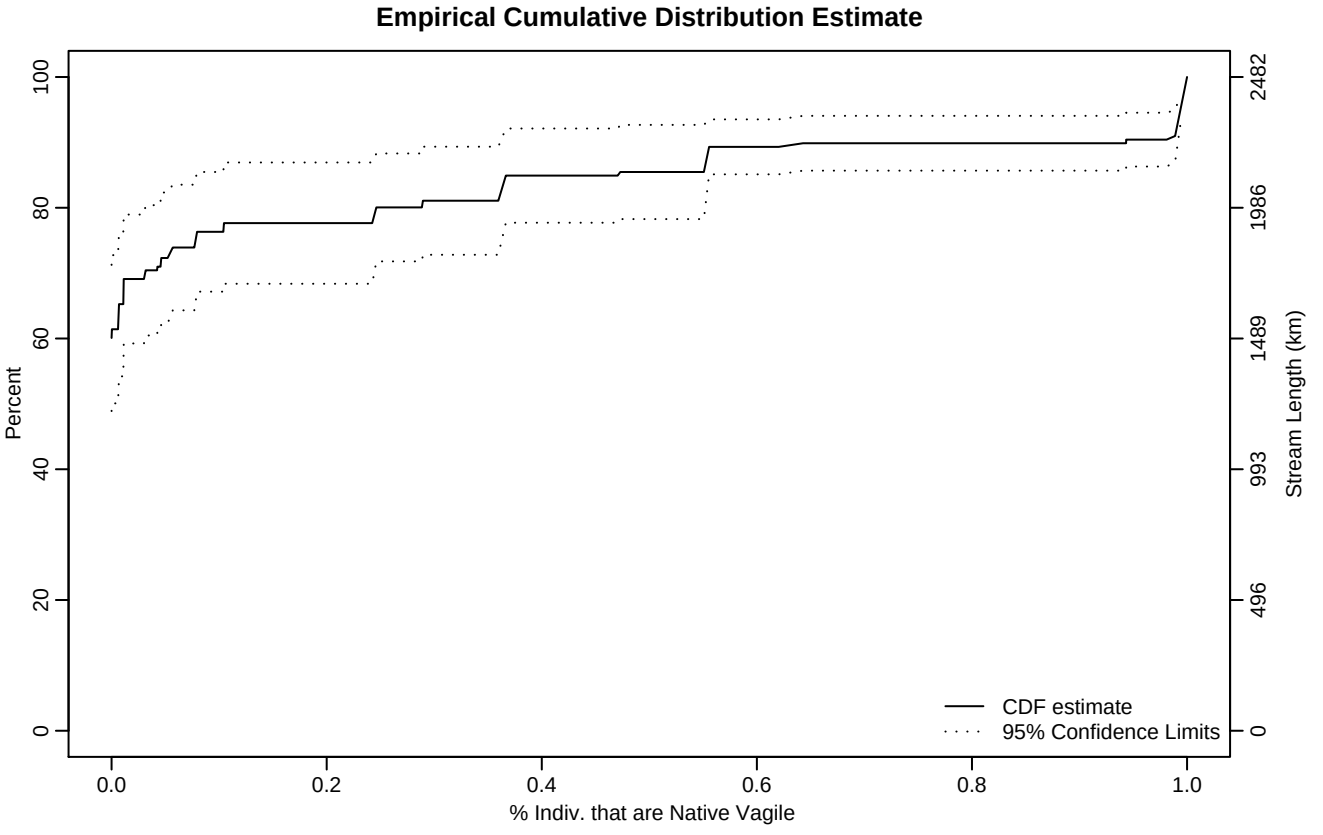


Figure VERT−254 Indicator: VAGIL_NAT_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.08	0.01	0.37
90Pct	0.94	0.55	0.99
95Pct	0.99	0.99	1
Mean	0.16	0.11	0.21
Std Dev	0.22	0.18	0.27

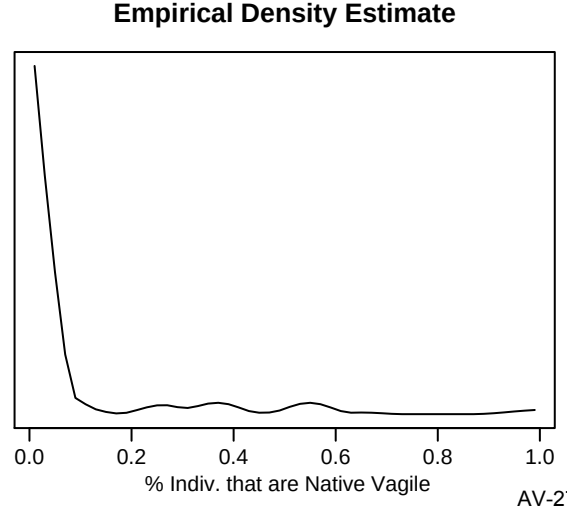
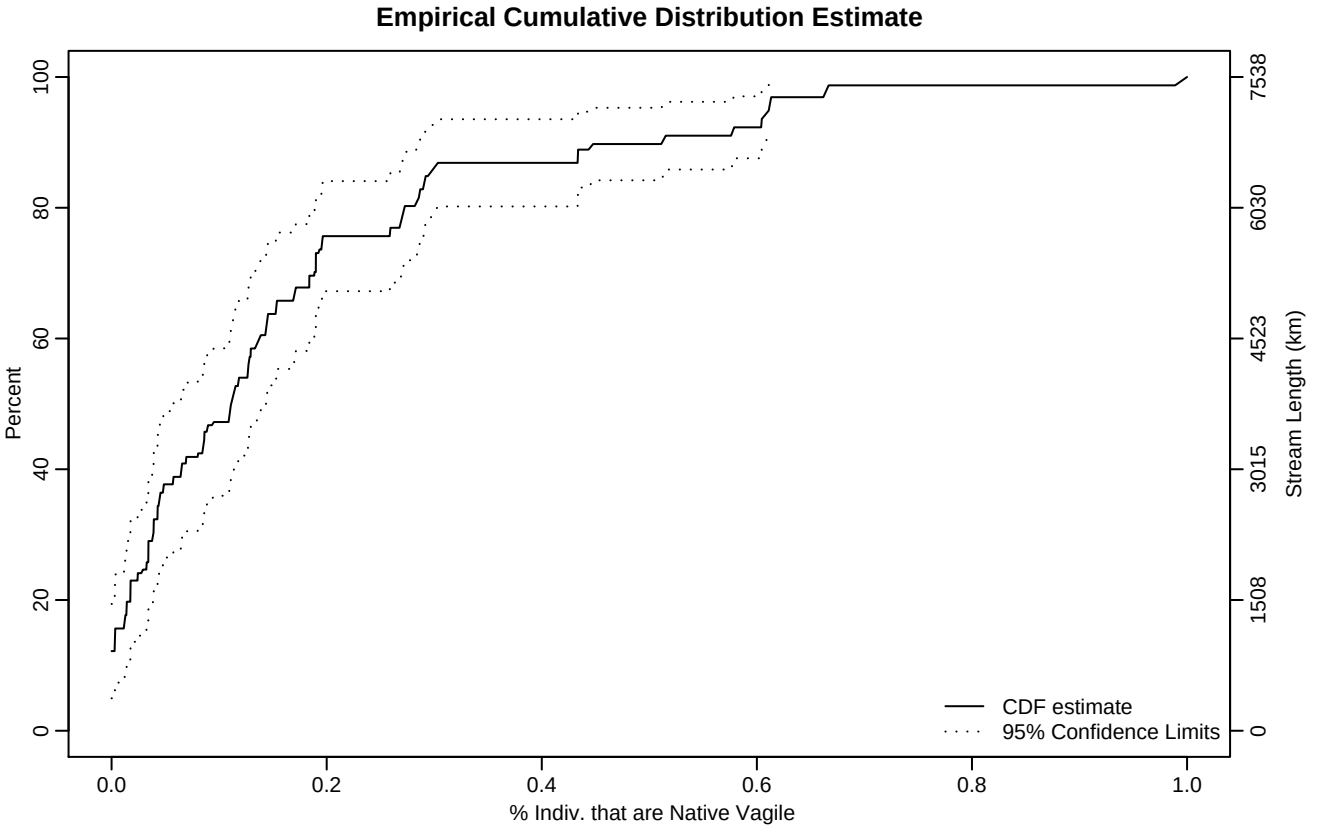


Figure VERT−255 Indicator: VAGIL_NAT_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.03	0	0.04
50Pct	0.11	0.06	0.14
75Pct	0.20	0.17	0.29
90Pct	0.51	0.29	0.61
95Pct	0.61	0.52	0.99
Mean	0.17	0.13	0.21
Std Dev	0.18	0.15	0.21

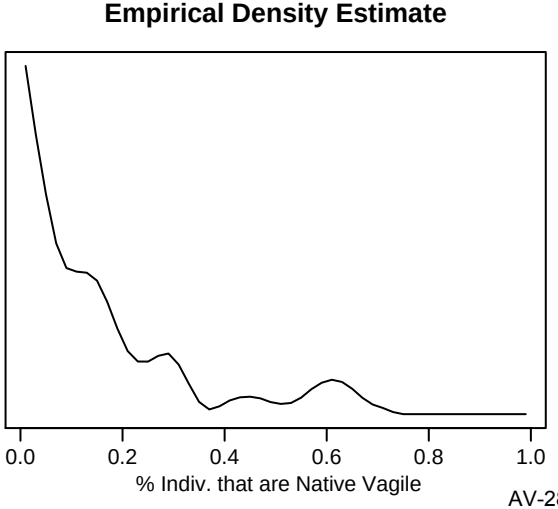
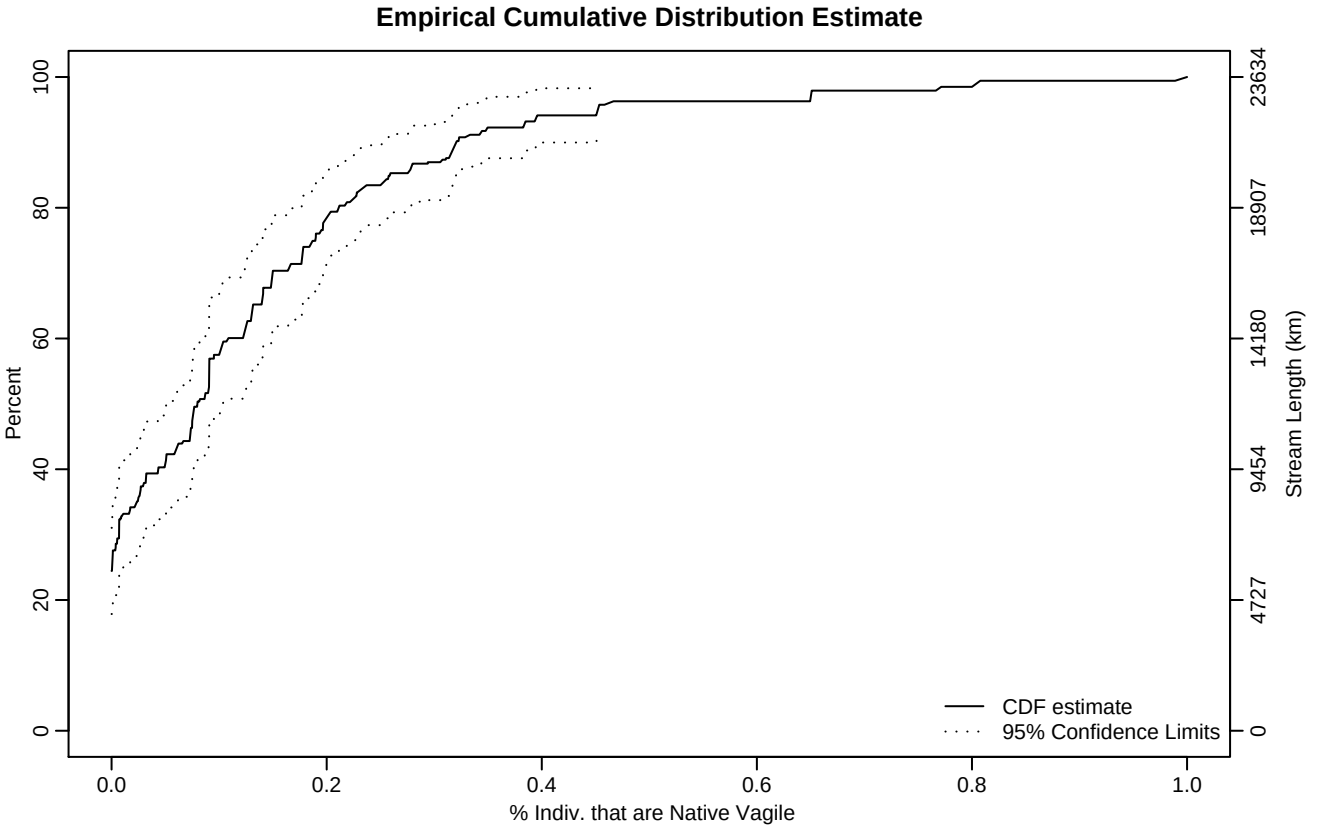


Figure VERT−256 Indicator: VAGIL_NAT_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.08	0.05	0.10
75Pct	0.19	0.14	0.23
90Pct	0.32	0.25	0.45
95Pct	0.45	0.33	0.81
Mean	0.13	0.10	0.16
Std Dev	0.16	0.12	0.19

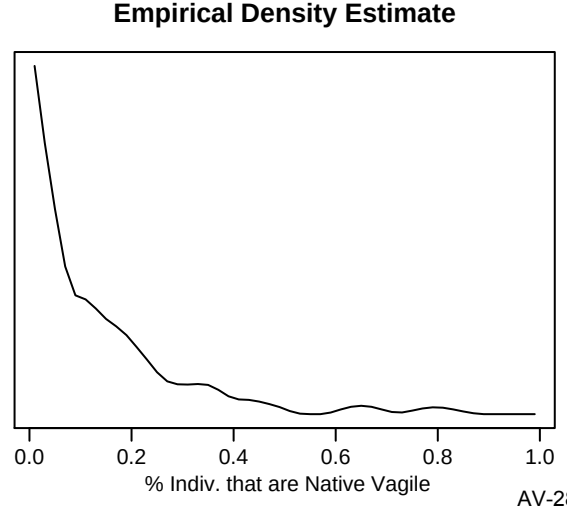
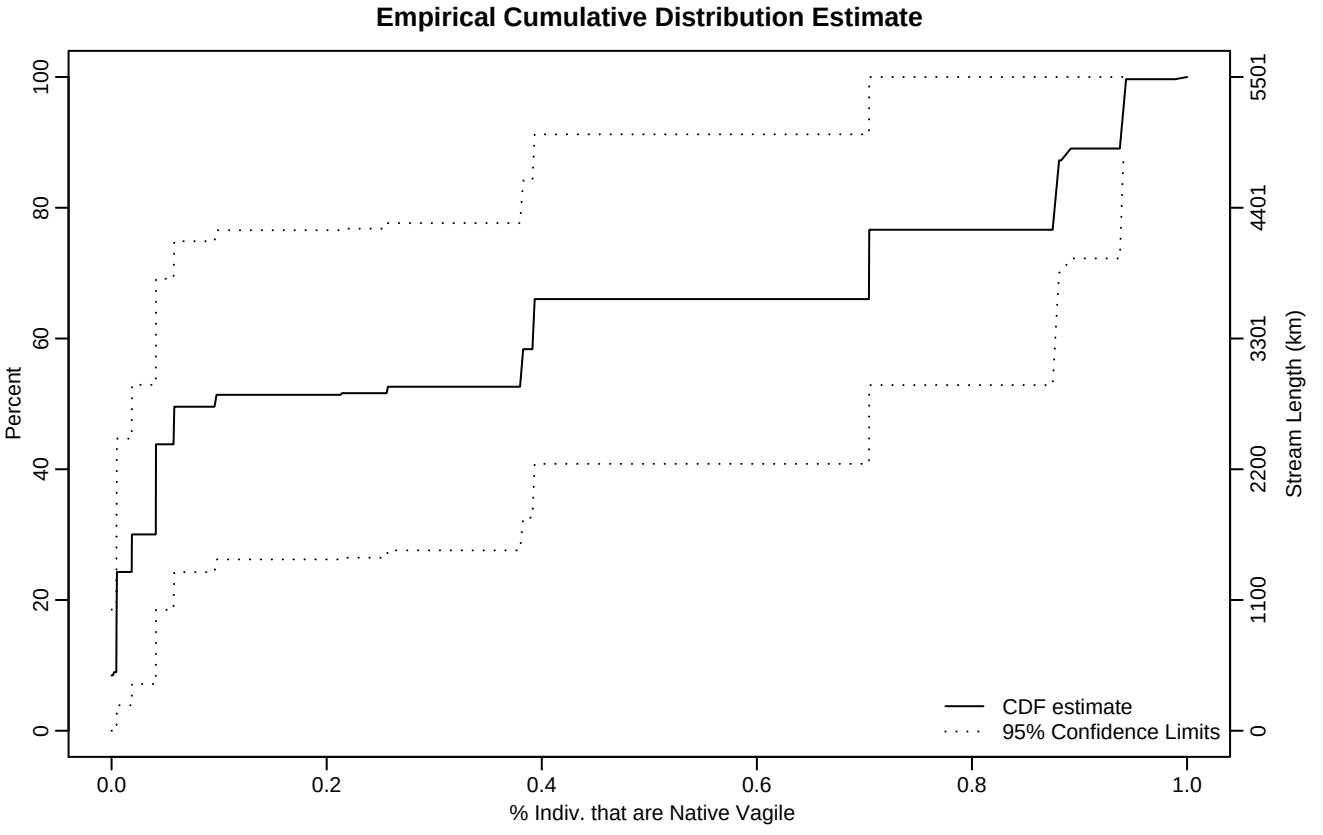


Figure VERT−257 Indicator: VAGIL_NAT_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.02	0	0.06
50Pct	0.10	0.02	0.70
75Pct	0.70	0.06	1
90Pct	0.94	0.70	1
95Pct	0.94	0.88	1
Mean	0.36	0.16	0.55
Std Dev	0.38	0.30	0.45

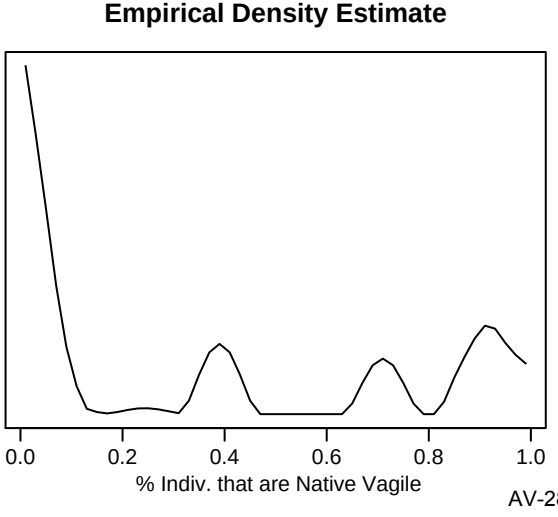
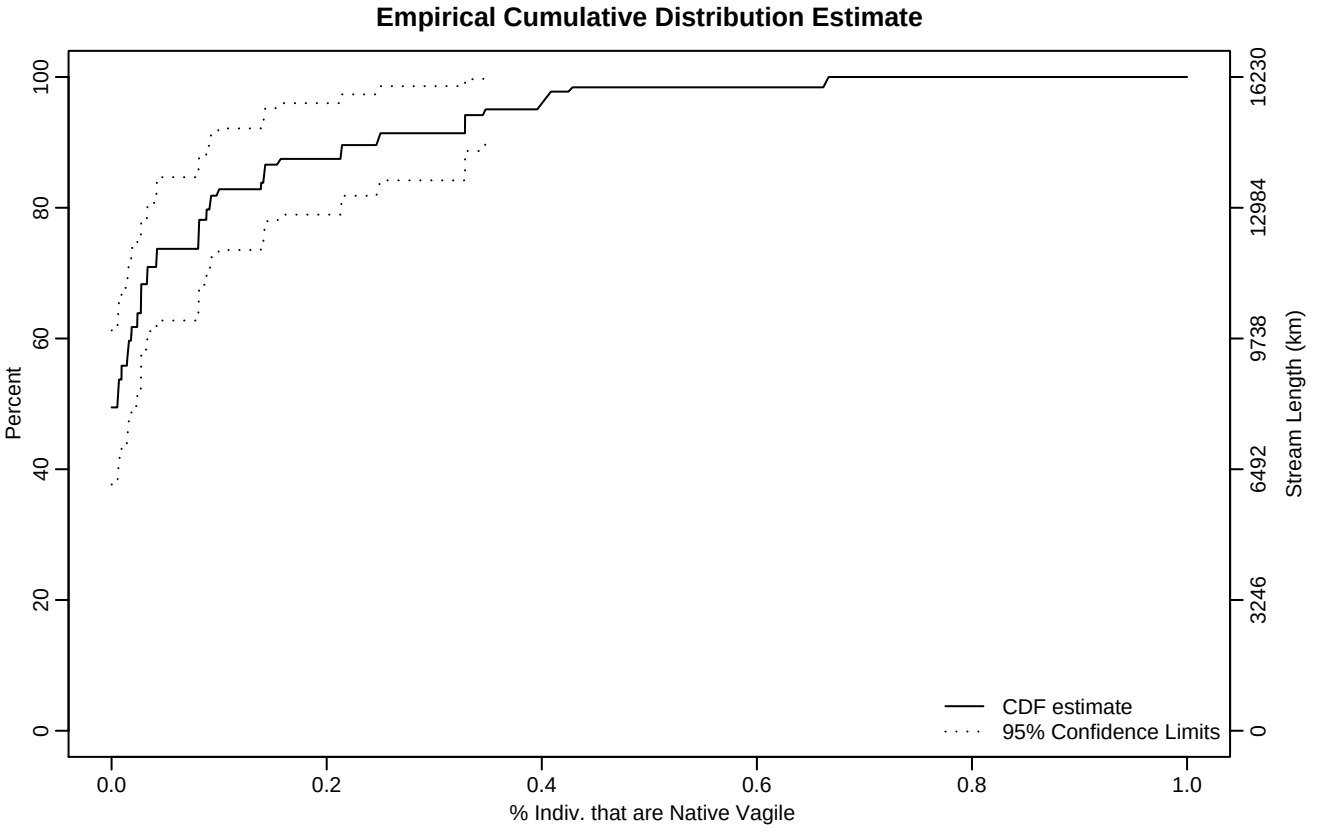


Figure VERT−258 Indicator: VAGIL_NAT_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.02
75Pct	0.08	0.03	0.14
90Pct	0.25	0.10	0.41
95Pct	0.35	0.21	0.67
Mean	0.07	0.03	0.10
Std Dev	0.12	0.08	0.16

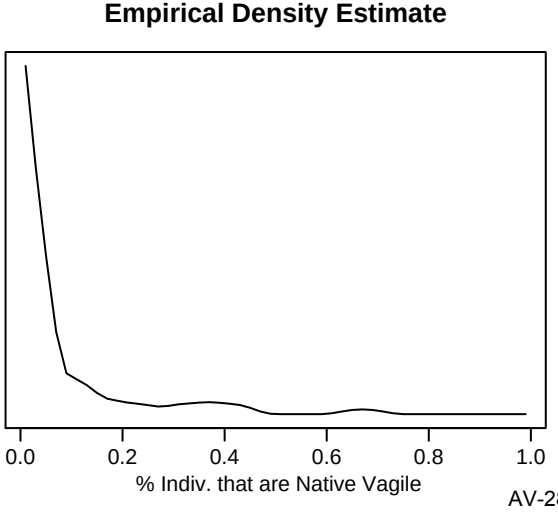
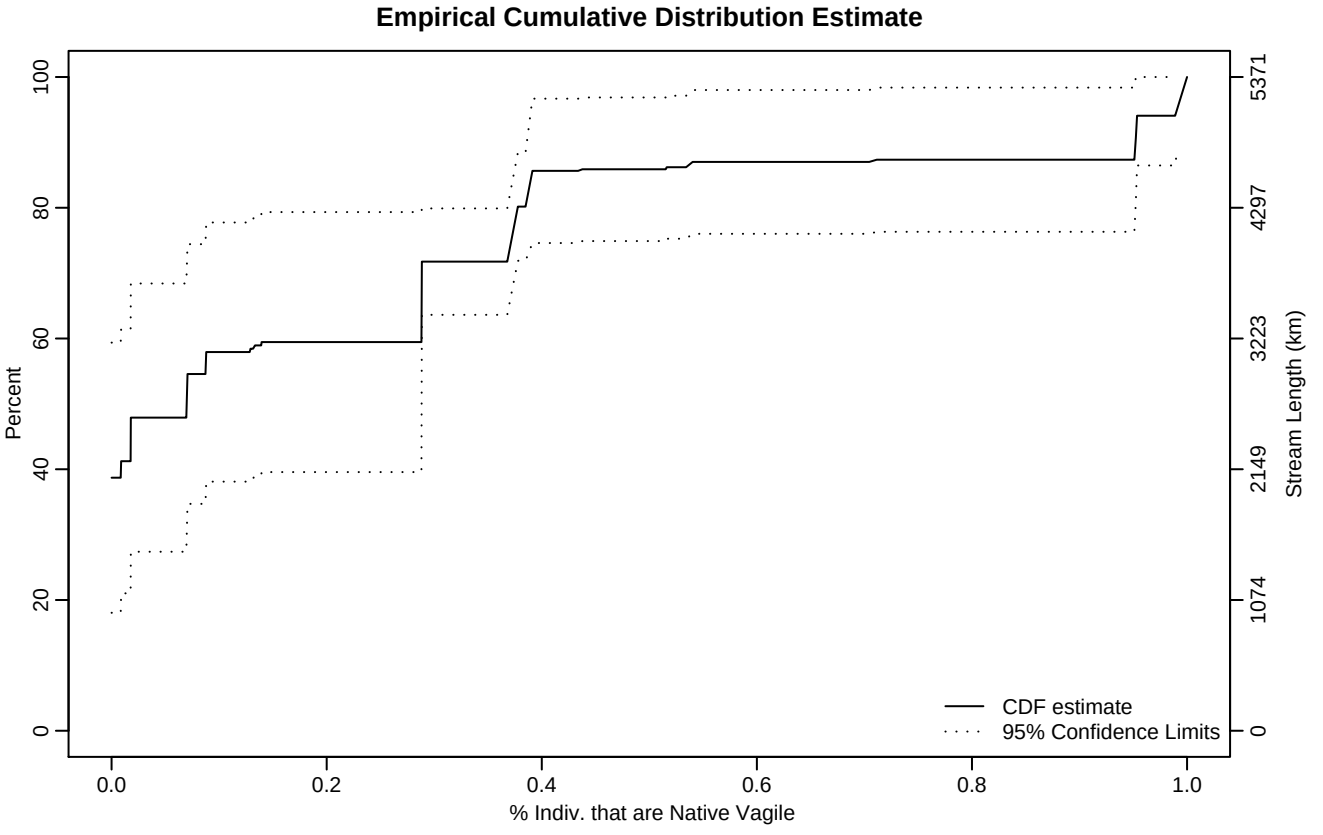


Figure VERT−259 Indicator: VAGIL_NAT_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.07	0	0.37
75Pct	0.37	0.13	0.95
90Pct	0.95	0.38	
95Pct	0.99	0.52	
Mean	0.23	0.13	0.33
Std Dev	0.24	0.17	0.30

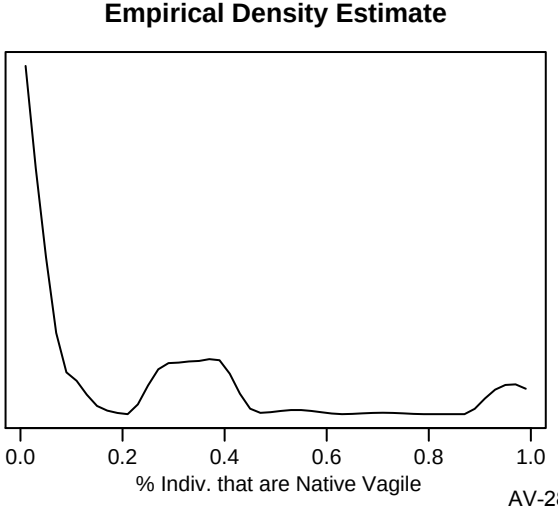
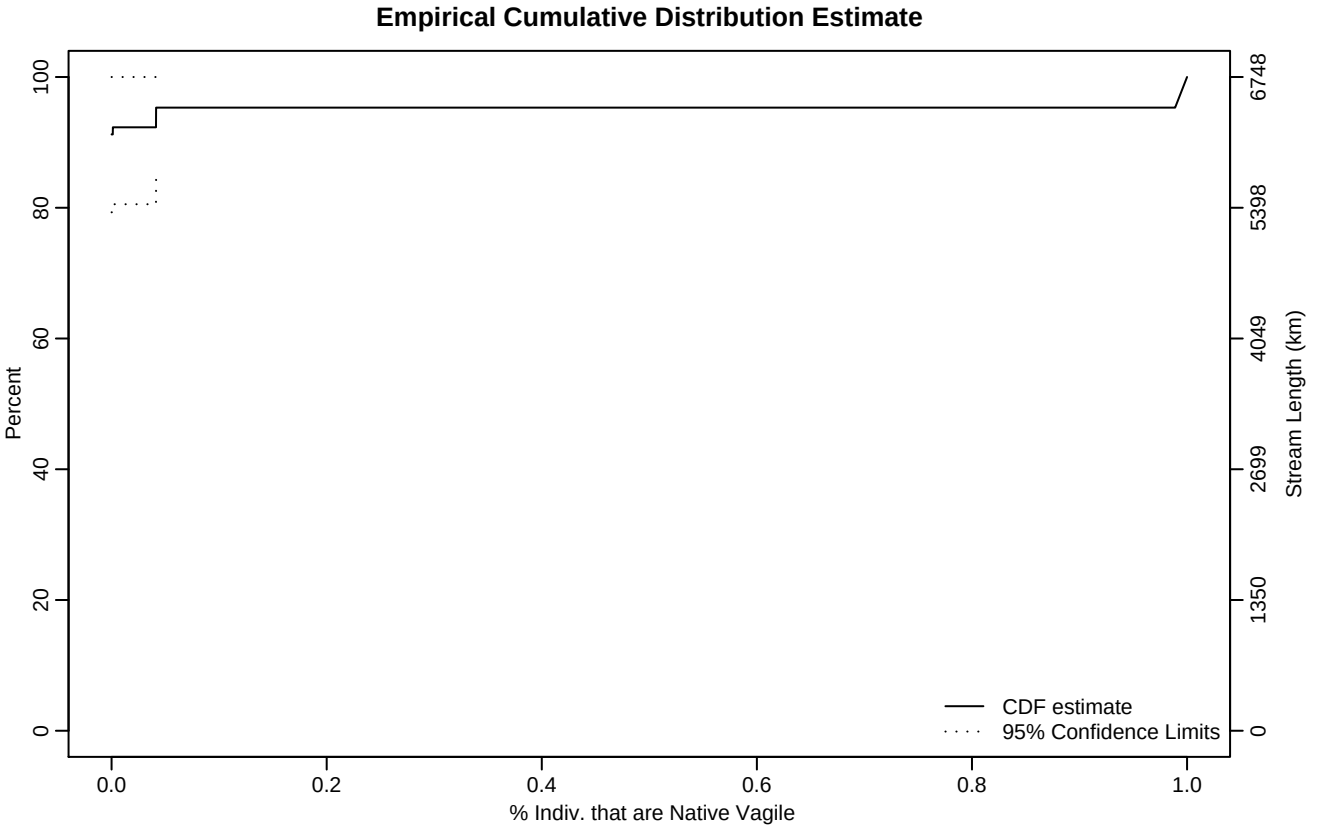


Figure VERT−260 Indicator: VAGIL_NAT_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	1
95Pct	0.04	0	1
Mean	0.05	−0.06	0.15
Std Dev	0.06	0.04	0.08

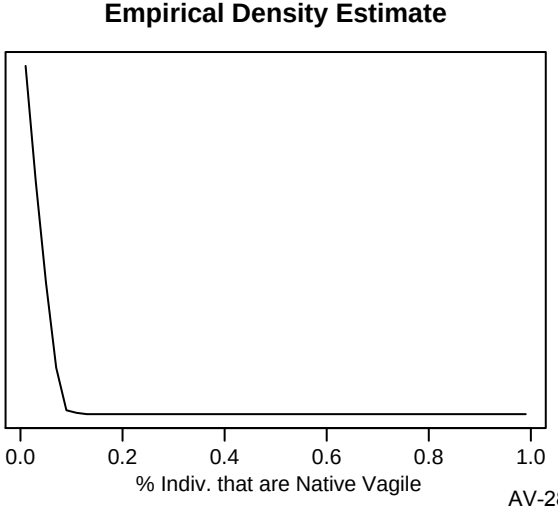
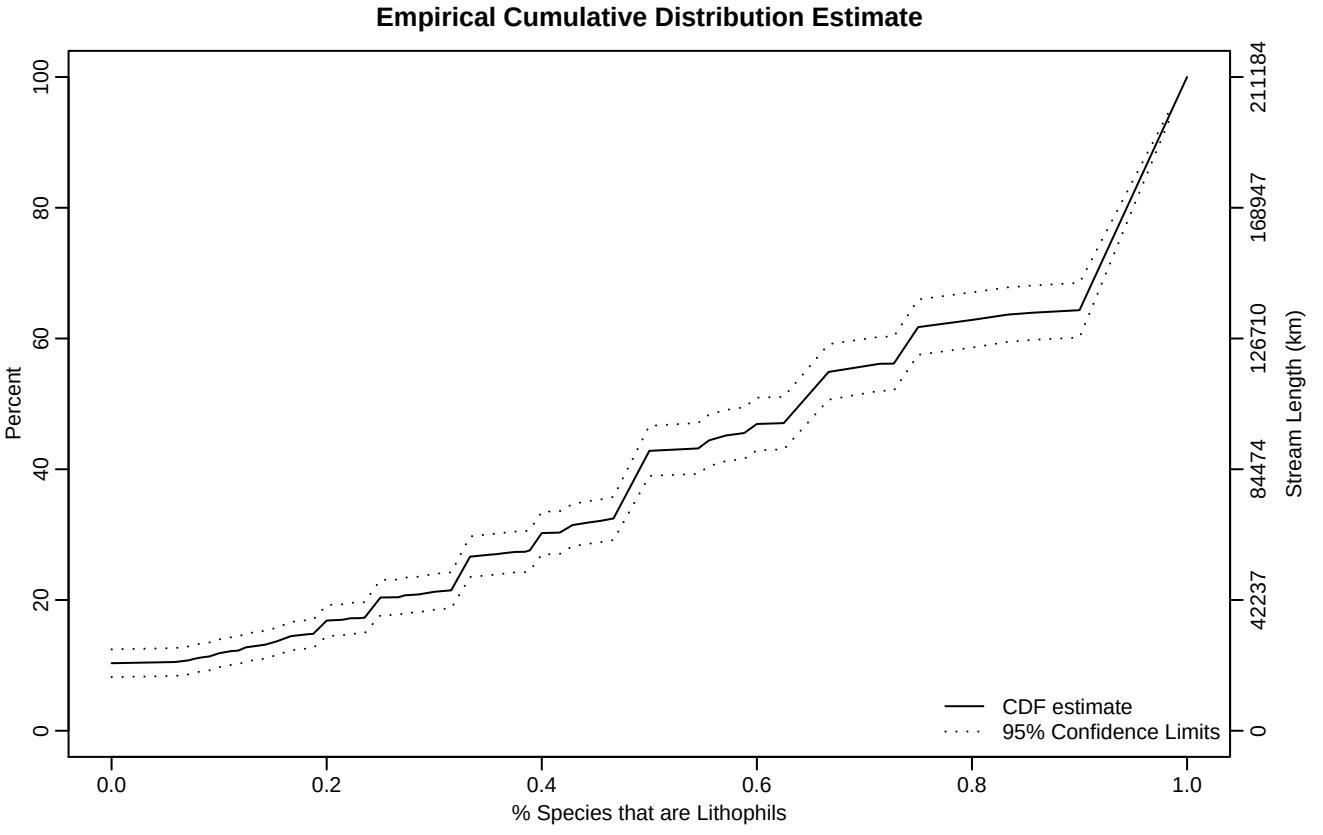


Figure VERT−261 Indicator: LITH_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.11
25Pct	0.33	0.32	0.39
50Pct	0.64	0.59	0.66
75Pct	0.93	0.92	0.94
90Pct	0.97	0.96	0.98
95Pct	0.99	0.97	1
Mean	0.62	0.60	0.65
Std Dev	0.30	0.29	0.32

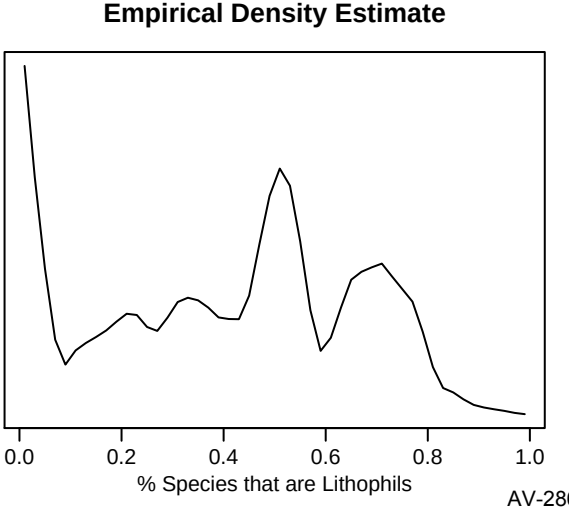
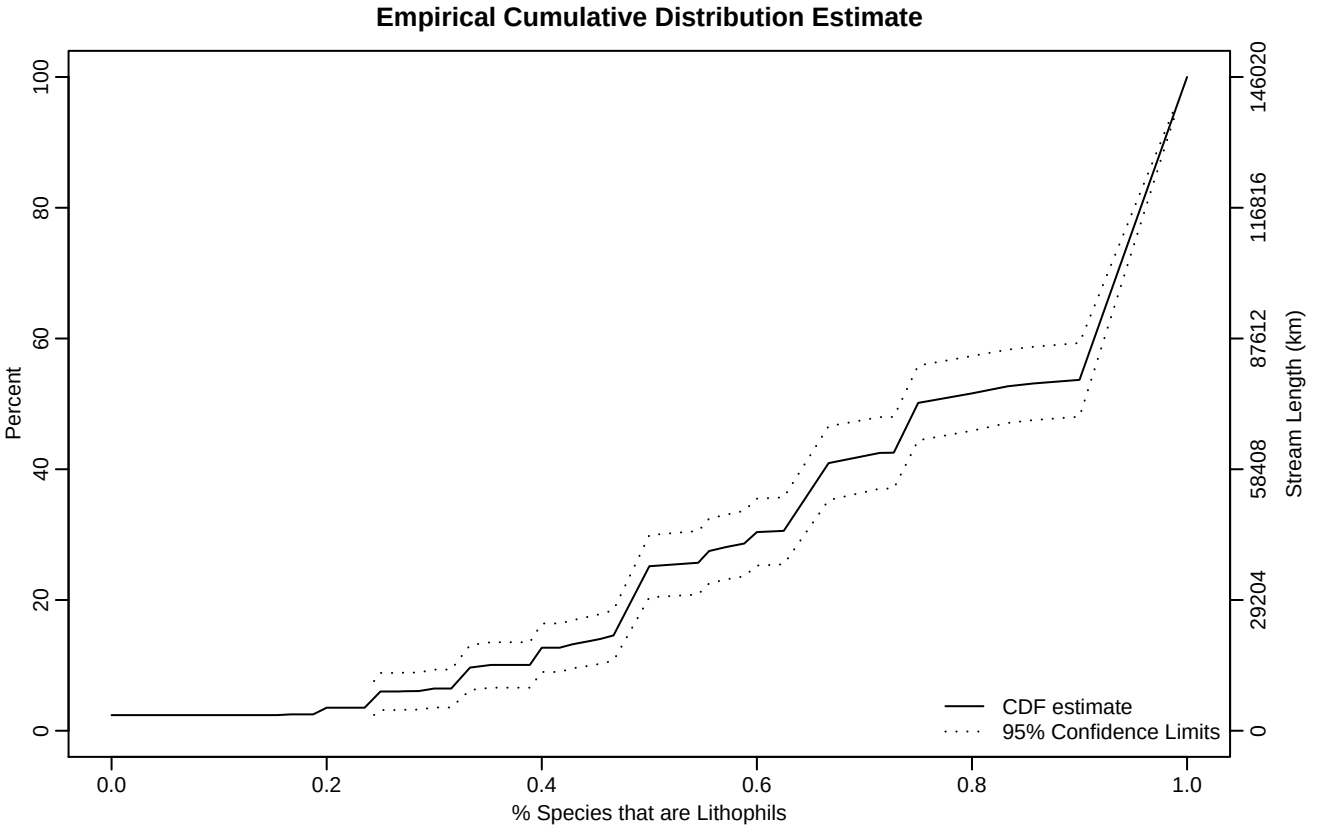


Figure VERT−262 Indicator: LITH_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.24	0.19	0.32
10Pct	0.35	0.32	0.44
25Pct	0.50	0.49	0.59
50Pct	0.75	0.73	0.90
75Pct	0.95	0.93	0.96
90Pct	0.98	0.96	0.99
95Pct	0.99	0.98	1
Mean	0.76	0.72	0.79
Std Dev	0.26	0.24	0.28

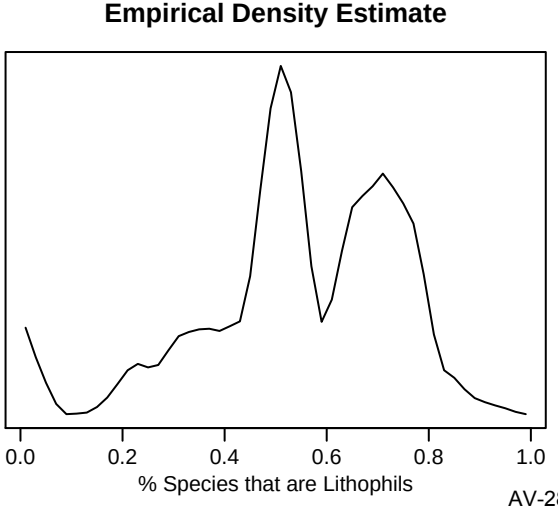
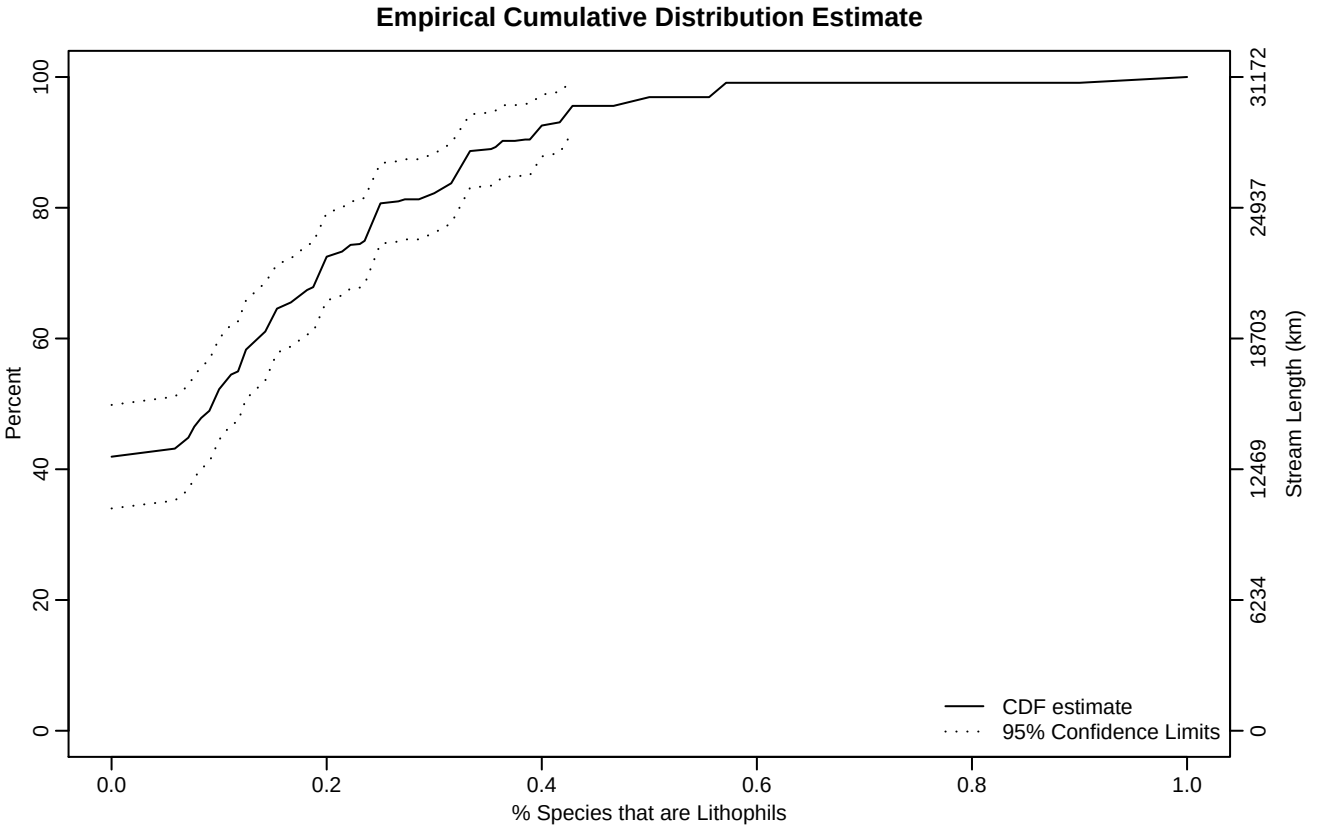


Figure VERT−263 Indicator: LITH_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.09	0.01	0.12
75Pct	0.24	0.19	0.29
90Pct	0.36	0.32	0.43
95Pct	0.43	0.38	0.97
Mean	0.14	0.11	0.17
Std Dev	0.16	0.14	0.19

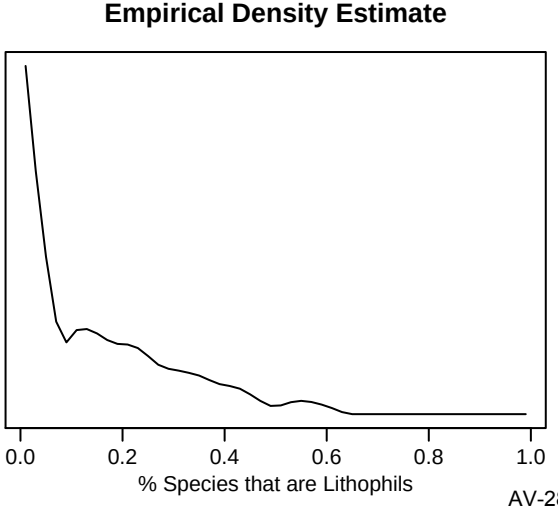
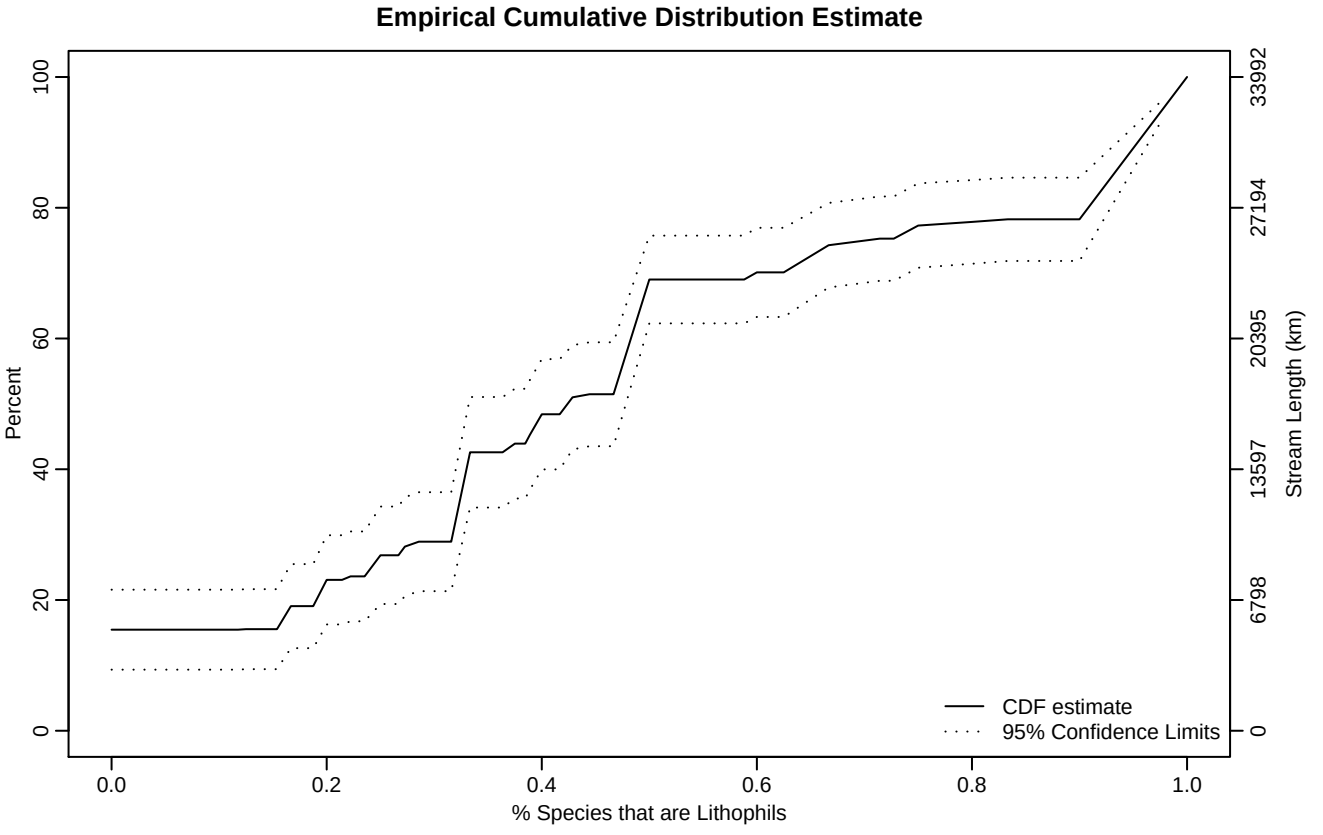


Figure VERT−264 Indicator: LITH_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.16
25Pct	0.24	0.16	0.32
50Pct	0.42	0.33	0.48
75Pct	0.70	0.50	0.92
90Pct	0.95	0.92	0.98
95Pct	0.98	0.95	
Mean	0.48	0.43	0.53
Std Dev	0.30	0.28	0.33

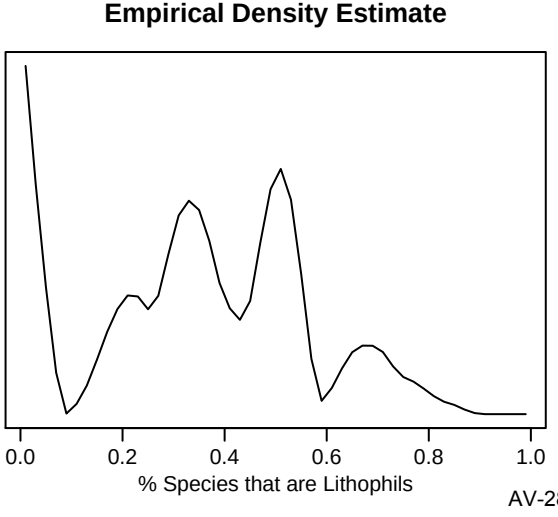
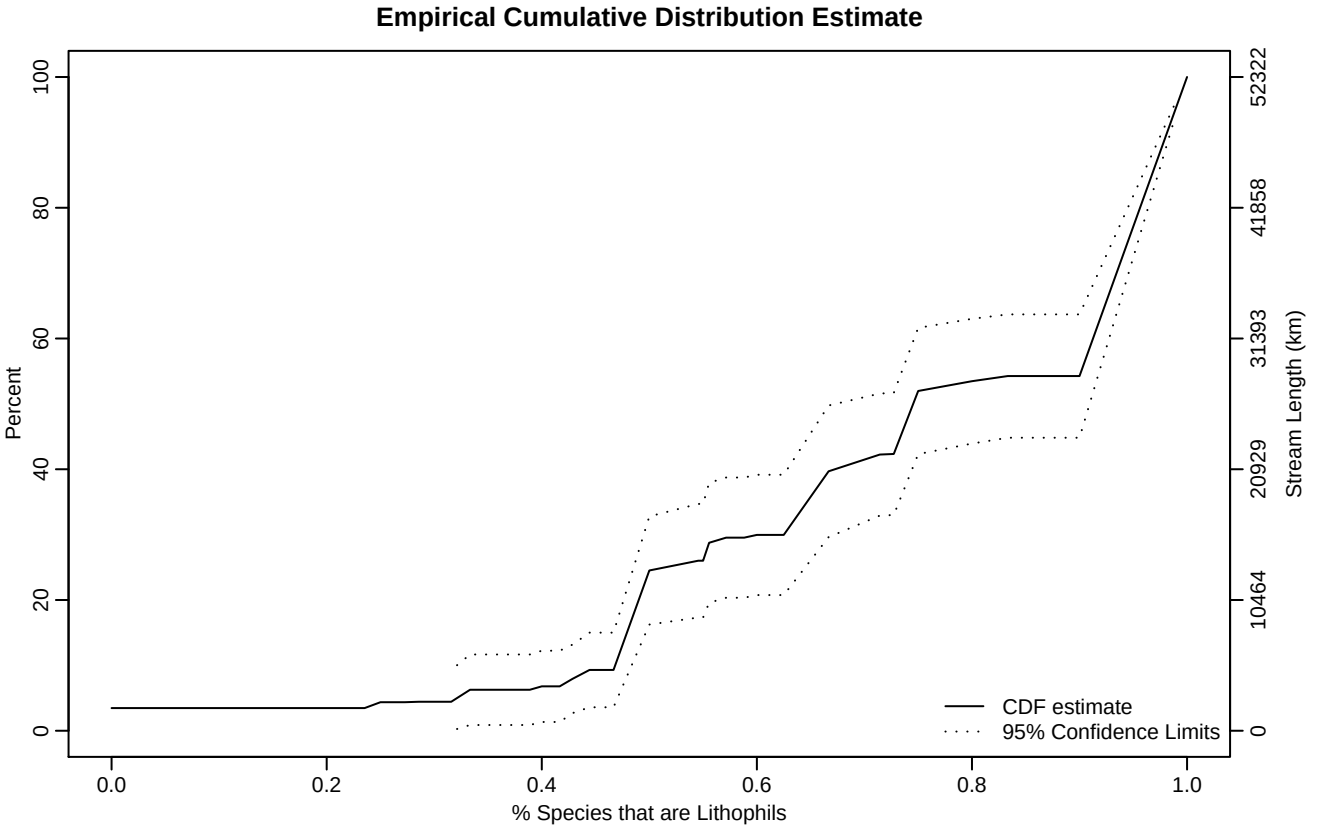


Figure VERT−265 Indicator: LITH_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.32	0	0.47
10Pct	0.47	0.25	0.48
25Pct	0.51	0.48	0.64
50Pct	0.75	0.68	0.91
75Pct	0.95	0.92	0.97
90Pct	0.98	0.96	1
95Pct	0.99	0.97	1
Mean	0.76	0.71	0.81
Std Dev	0.25	0.21	0.29

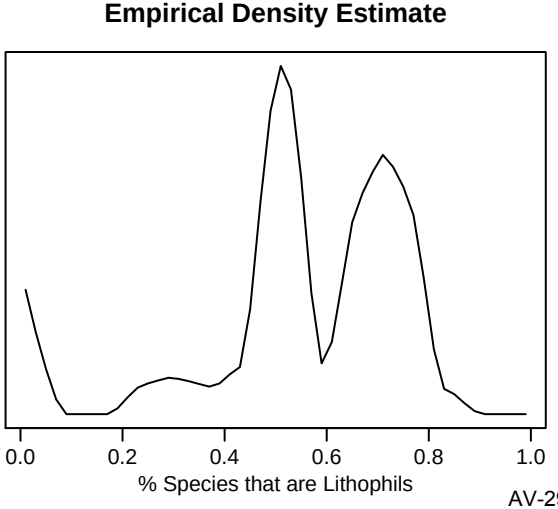
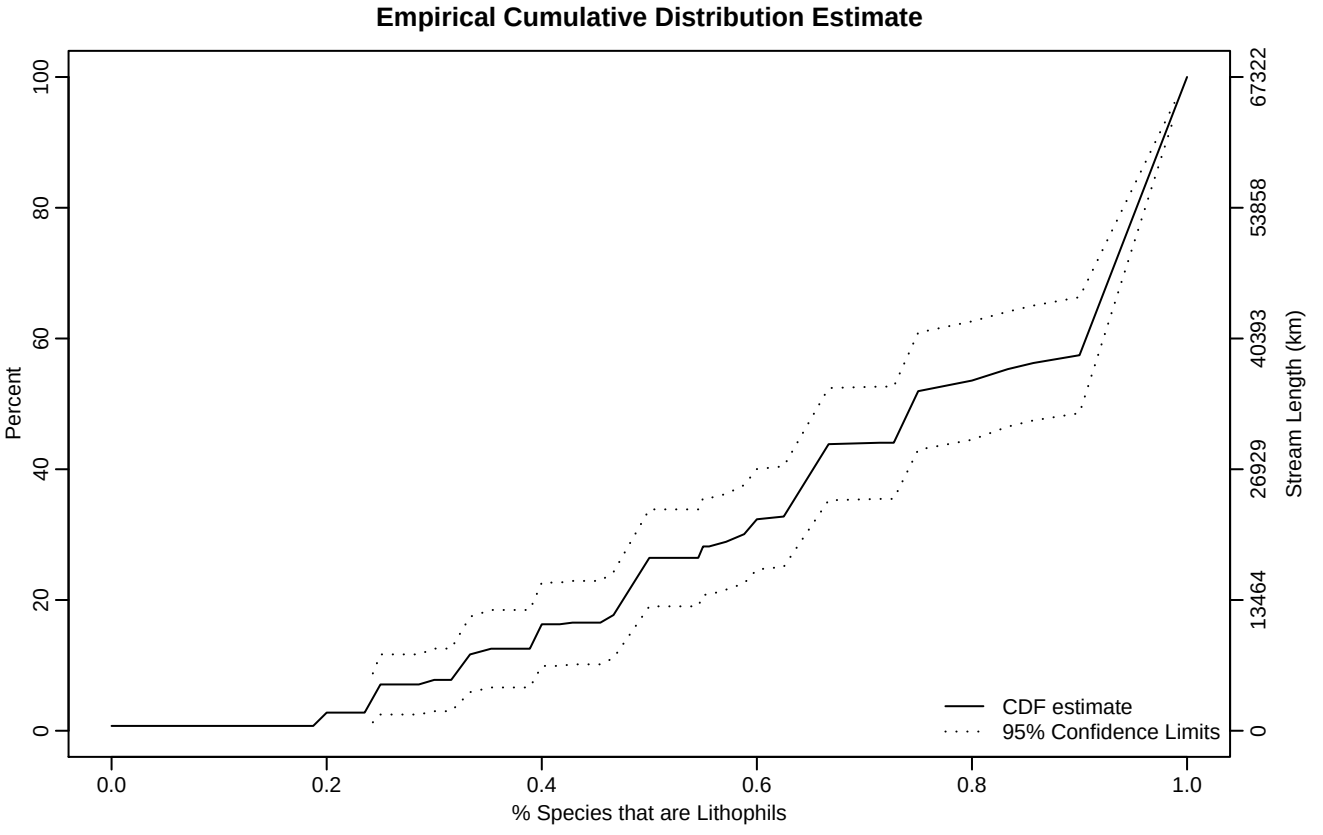


Figure VERT−266 Indicator: LITH_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.24	0.20	0.32
10Pct	0.33	0.24	0.40
25Pct	0.49	0.47	0.60
50Pct	0.74	0.66	0.90
75Pct	0.94	0.92	0.96
90Pct	0.98	0.95	1
95Pct	0.99	0.97	1
Mean	0.74	0.70	0.79
Std Dev	0.26	0.24	0.28

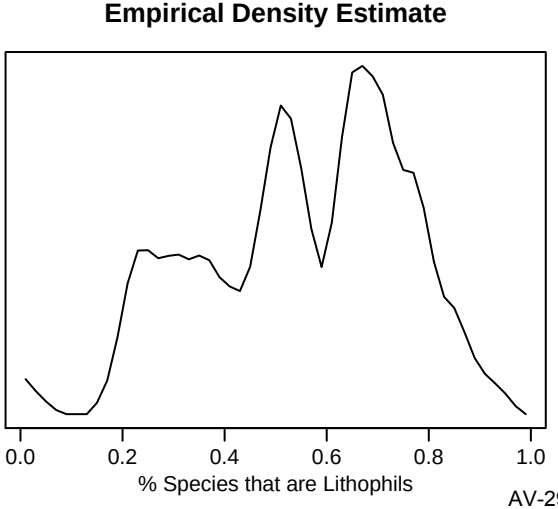
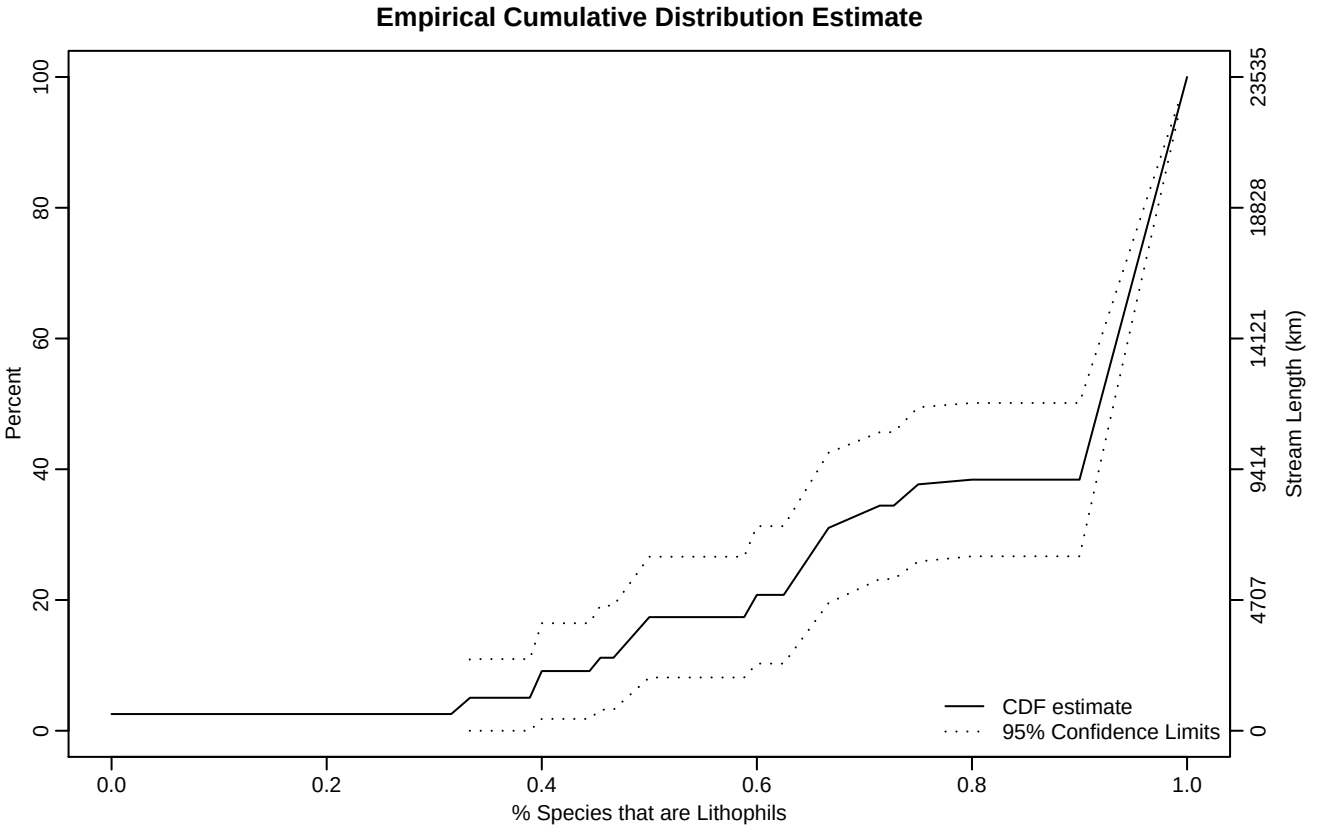


Figure VERT−267 Indicator: LITH_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.33	0	0.44
10Pct	0.45	0.32	0.50
25Pct	0.64	0.48	0.74
50Pct	0.92	0.77	0.94
75Pct	0.96	0.94	0.98
90Pct	0.98	0.96	
95Pct	0.99	0.97	
Mean	0.82	0.76	0.89
Std Dev	0.25	0.19	0.31

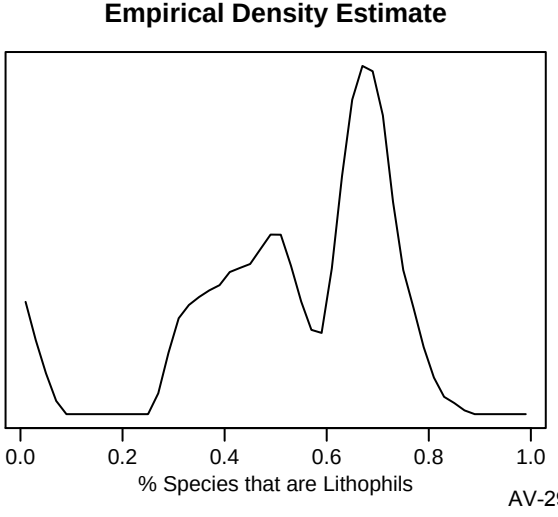
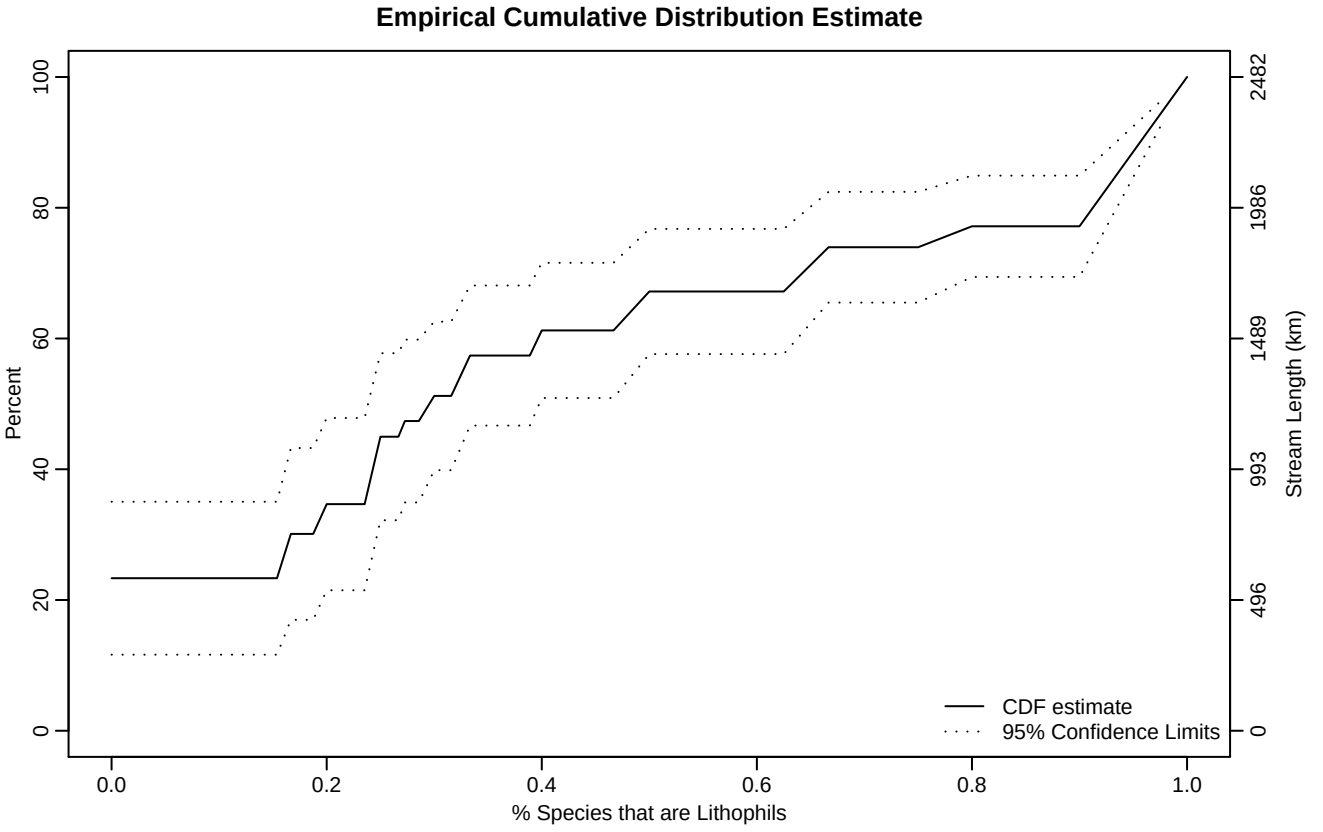


Figure VERT−268 Indicator: LITH_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.16	0	0.24
50Pct	0.30	0.24	0.47
75Pct	0.77	0.49	0.93
90Pct	0.96	0.92	0.99
95Pct	0.98	0.94	1
Mean	0.43	0.35	0.51
Std Dev	0.36	0.32	0.40

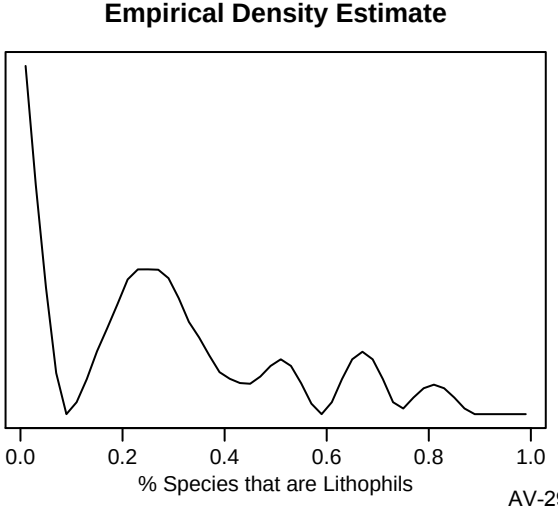
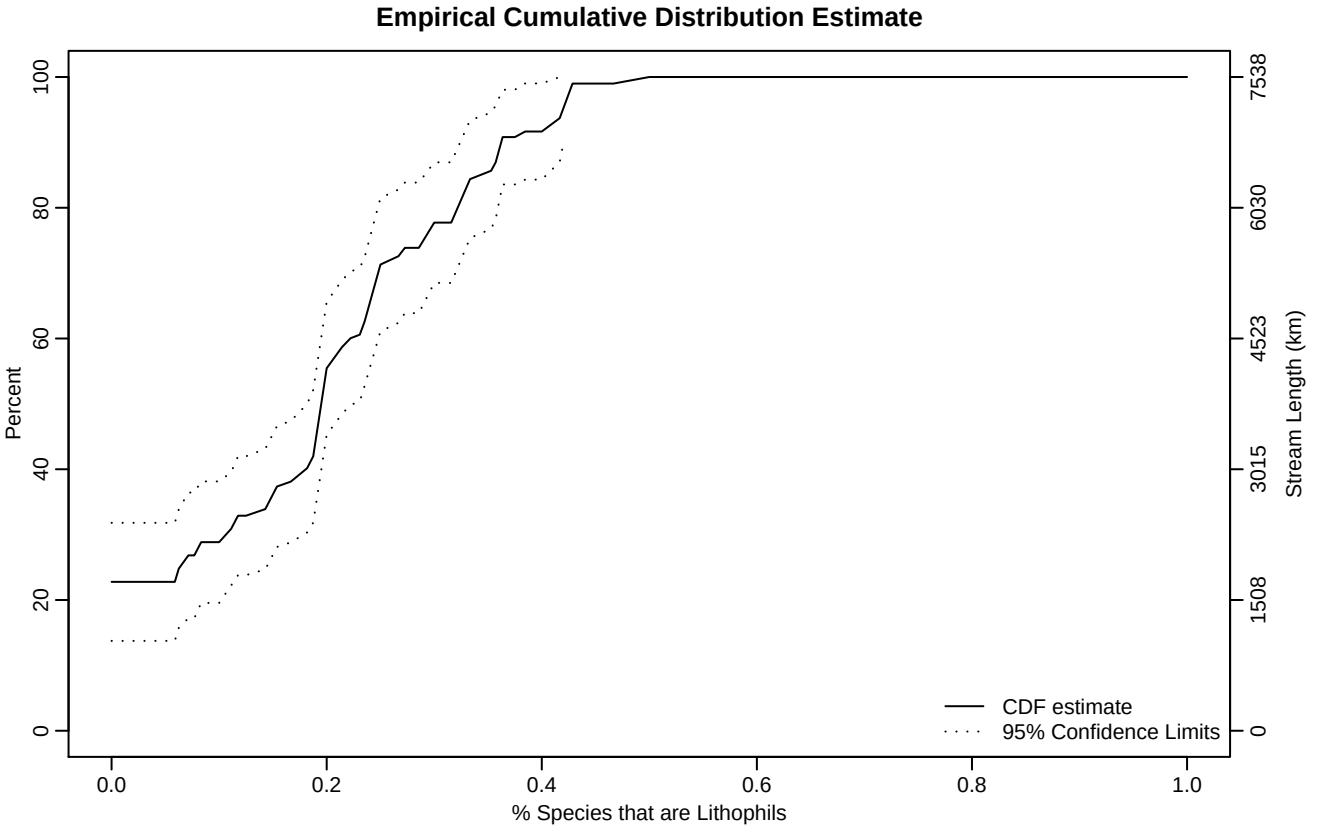


Figure VERT−269 Indicator: LITH_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.06	0	0.14
50Pct	0.19	0.18	0.23
75Pct	0.29	0.24	0.34
90Pct	0.36	0.33	0.43
95Pct	0.42	0.36	0.50
Mean	0.19	0.16	0.22
Std Dev	0.13	0.11	0.15

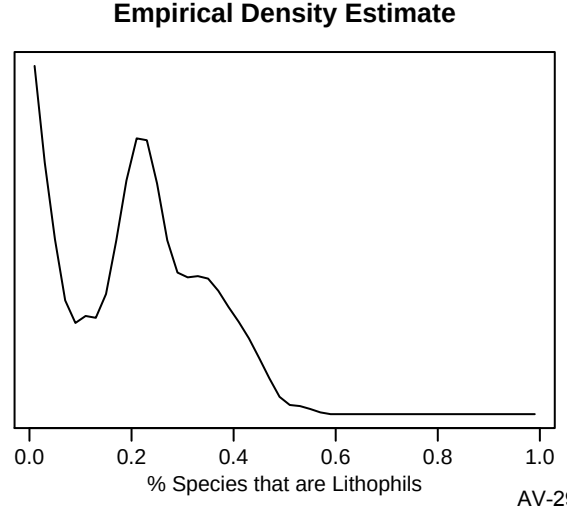
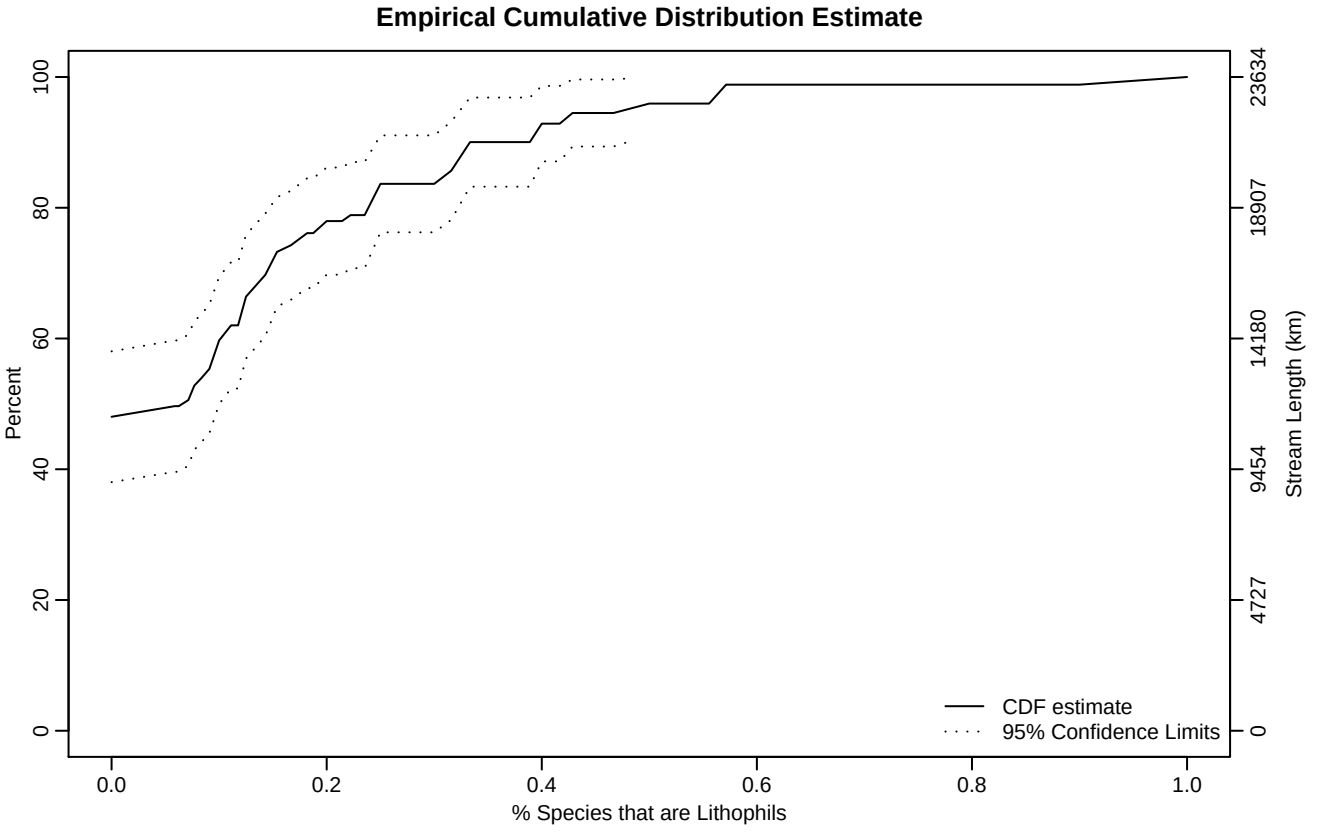


Figure VERT−270 Indicator: LITH_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.07	0	0.10
75Pct	0.17	0.13	0.25
90Pct	0.33	0.25	0.56
95Pct	0.48	0.33	1
Mean	0.13	0.09	0.16
Std Dev	0.17	0.14	0.20

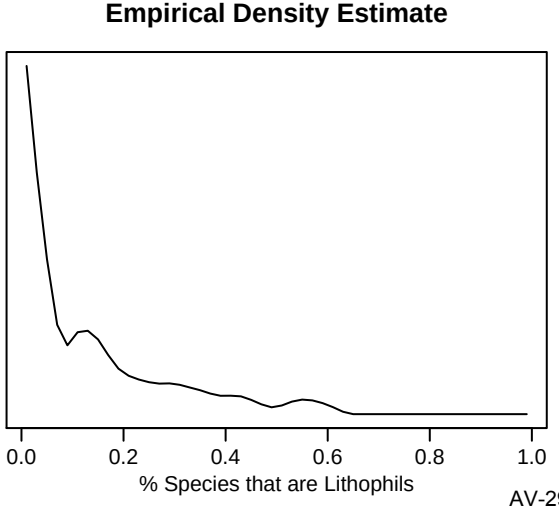
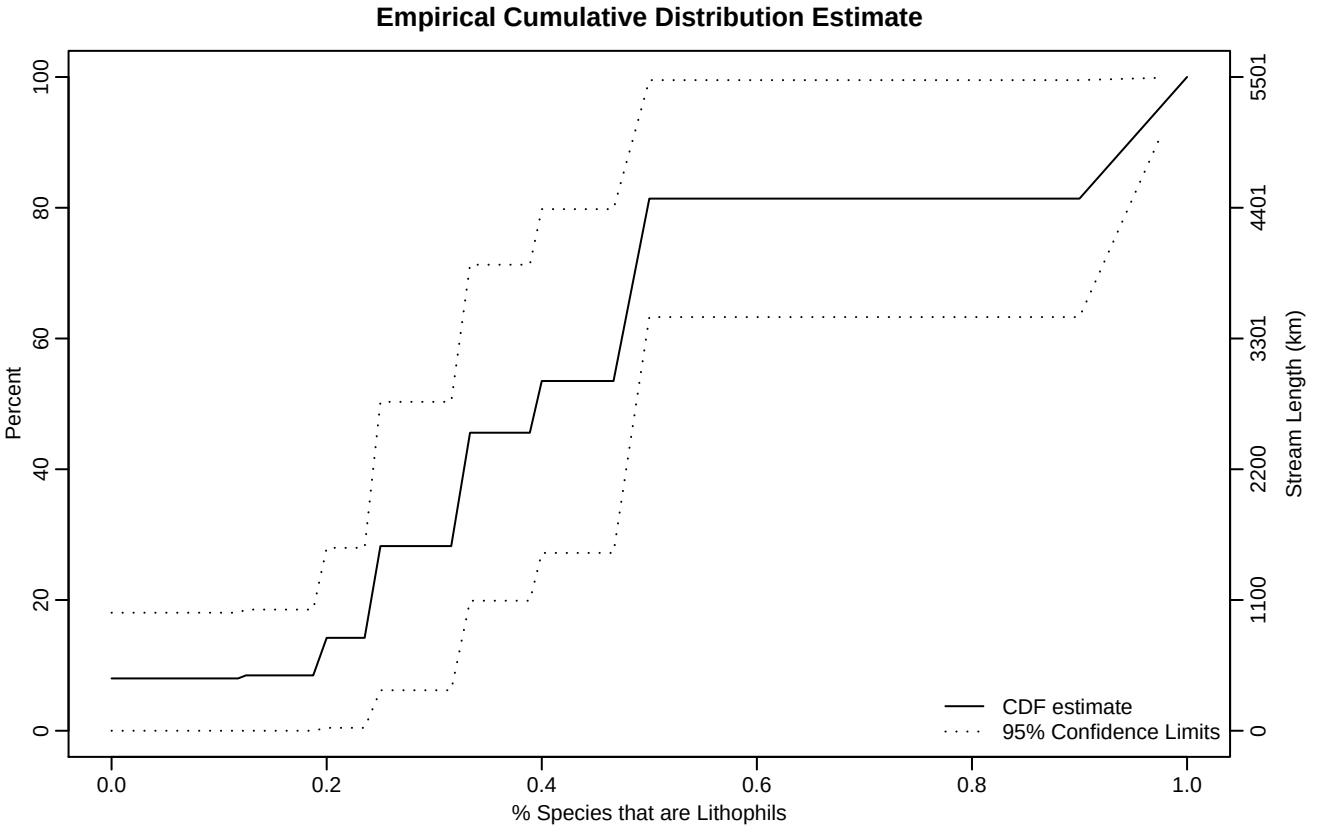


Figure VERT−271 Indicator: LITH_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.24
10Pct	0.19	0	0.24
25Pct	0.25	0.19	0.33
50Pct	0.40	0.25	0.49
75Pct	0.49	0.39	1
90Pct	0.95	0.49	1
95Pct	0.97	0.49	1
Mean	0.46	0.32	0.61
Std Dev	0.29	0.22	0.37

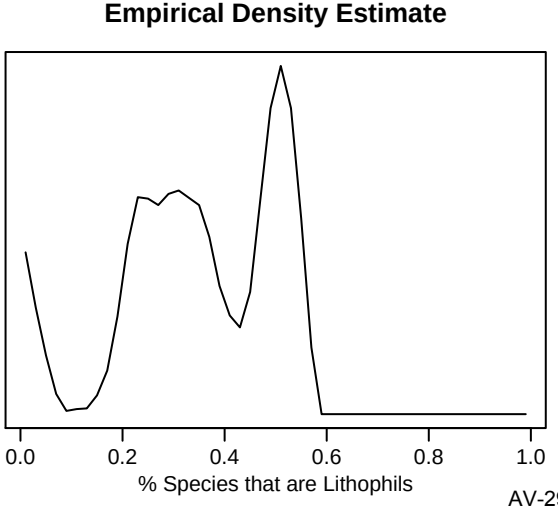
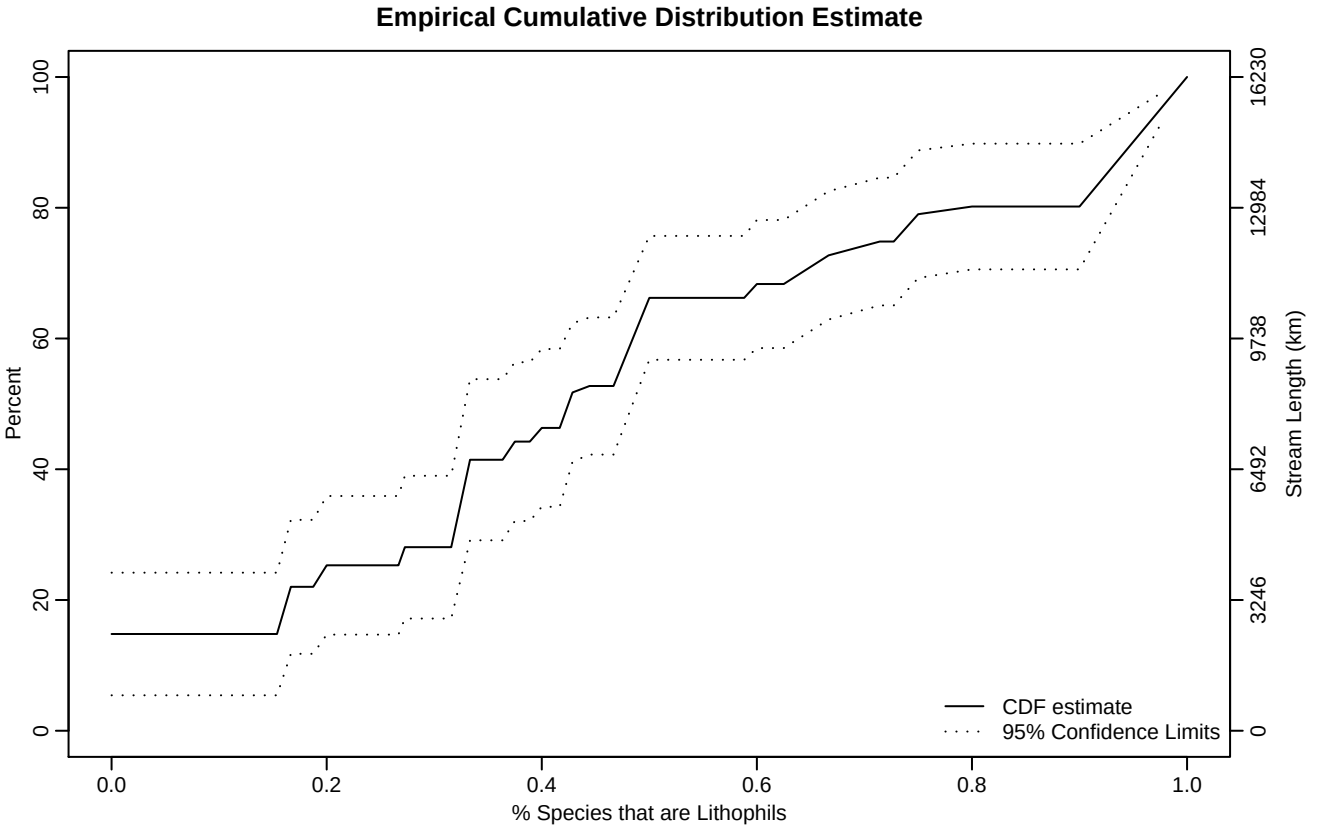


Figure VERT−272 Indicator: LITH_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.16
25Pct	0.20	0	0.33
50Pct	0.42	0.33	0.49
75Pct	0.73	0.50	0.92
90Pct	0.95	0.90	1
95Pct	0.97	0.93	1
Mean	0.48	0.41	0.55
Std Dev	0.29	0.24	0.33

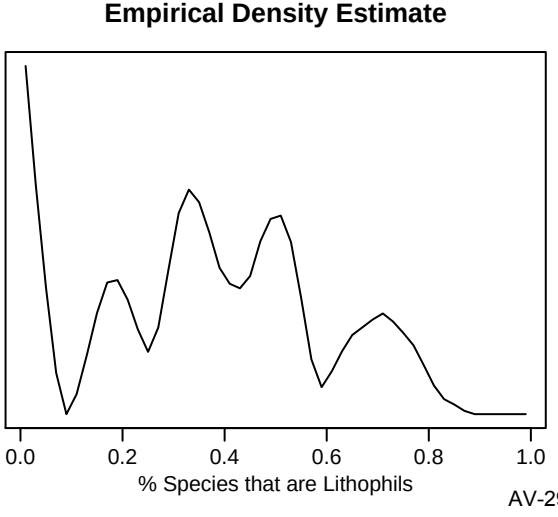
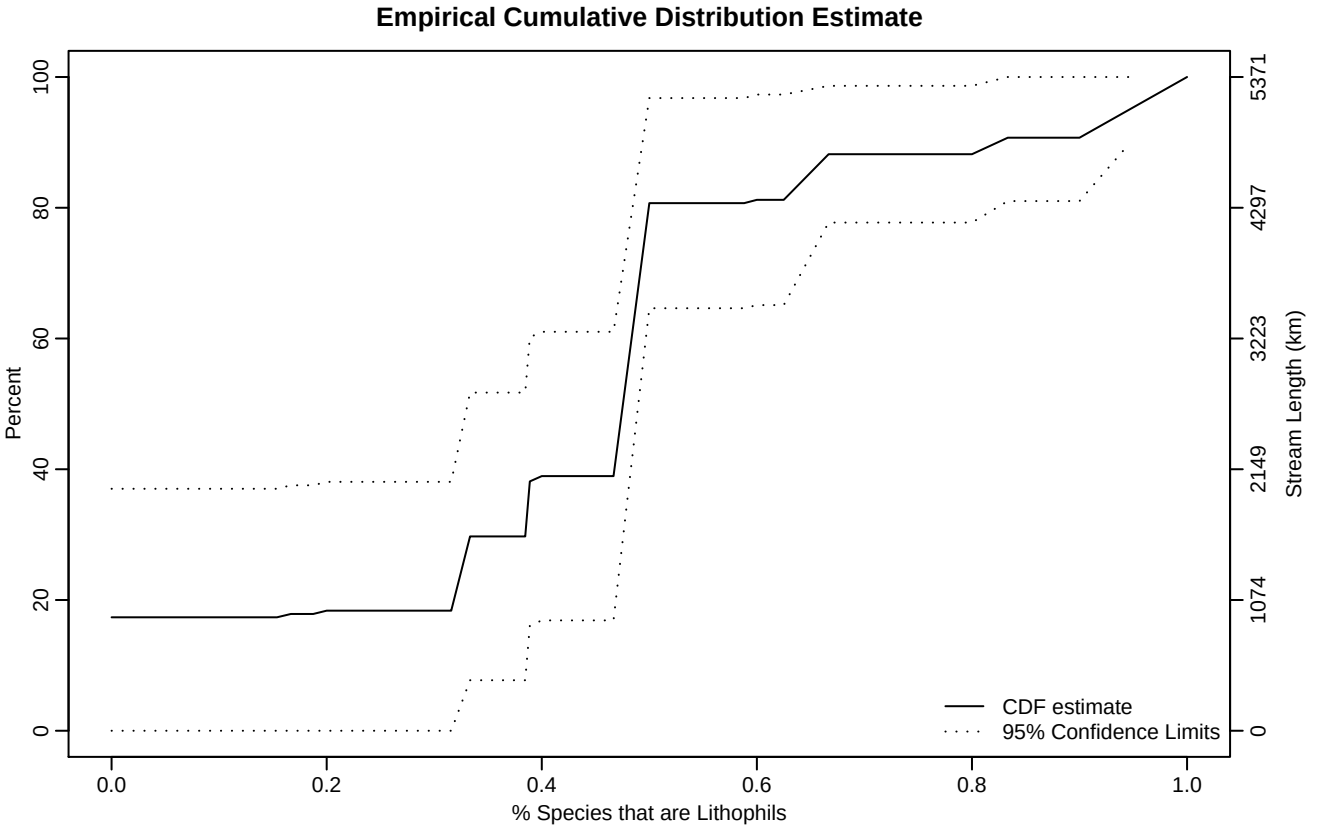


Figure VERT−273 Indicator: LITH_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.33
10Pct	0	0	0.39
25Pct	0.33	0	0.47
50Pct	0.48	0.33	0.49
75Pct	0.50	0.48	0.97
90Pct	0.82	0.50	
95Pct	0.95	0.64	
Mean	0.45	0.32	0.57
Std Dev	0.25	0.19	0.31

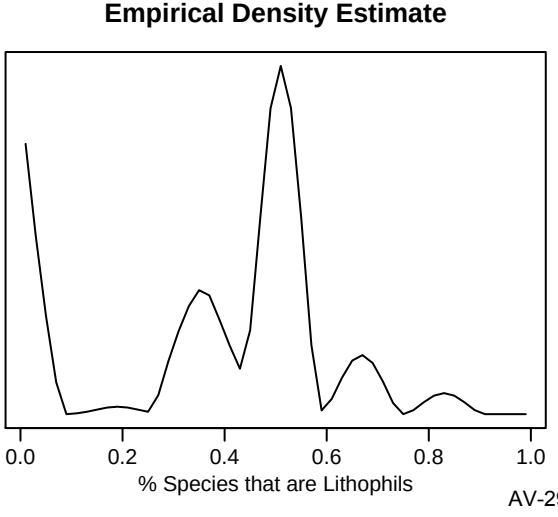
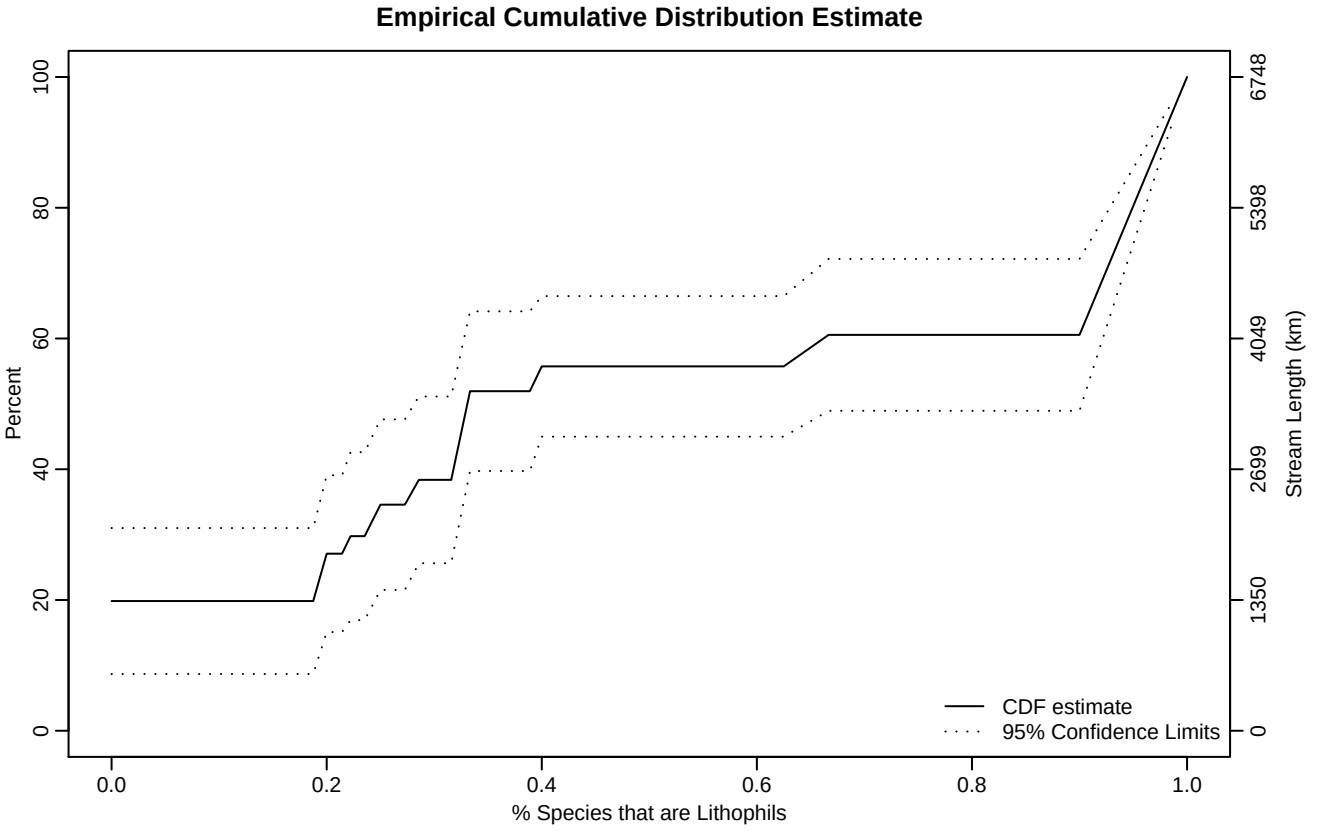


Figure VERT−274 Indicator: LITH_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.19
25Pct	0.20	0	0.28
50Pct	0.33	0.28	0.91
75Pct	0.94	0.91	0.96
90Pct	0.97	0.95	1
95Pct	0.99	0.96	1
Mean	0.53	0.43	0.63
Std Dev	0.29	0.25	0.32

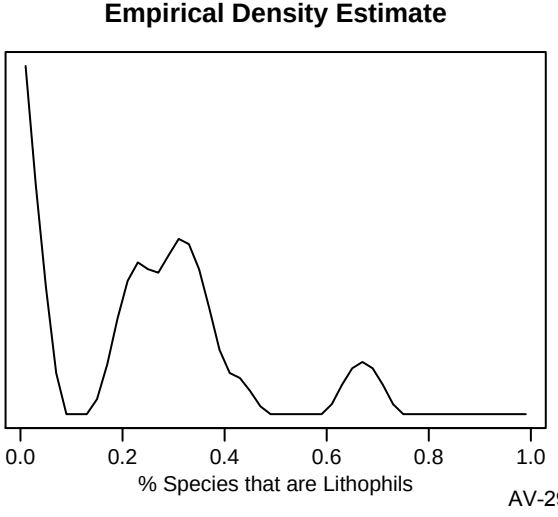
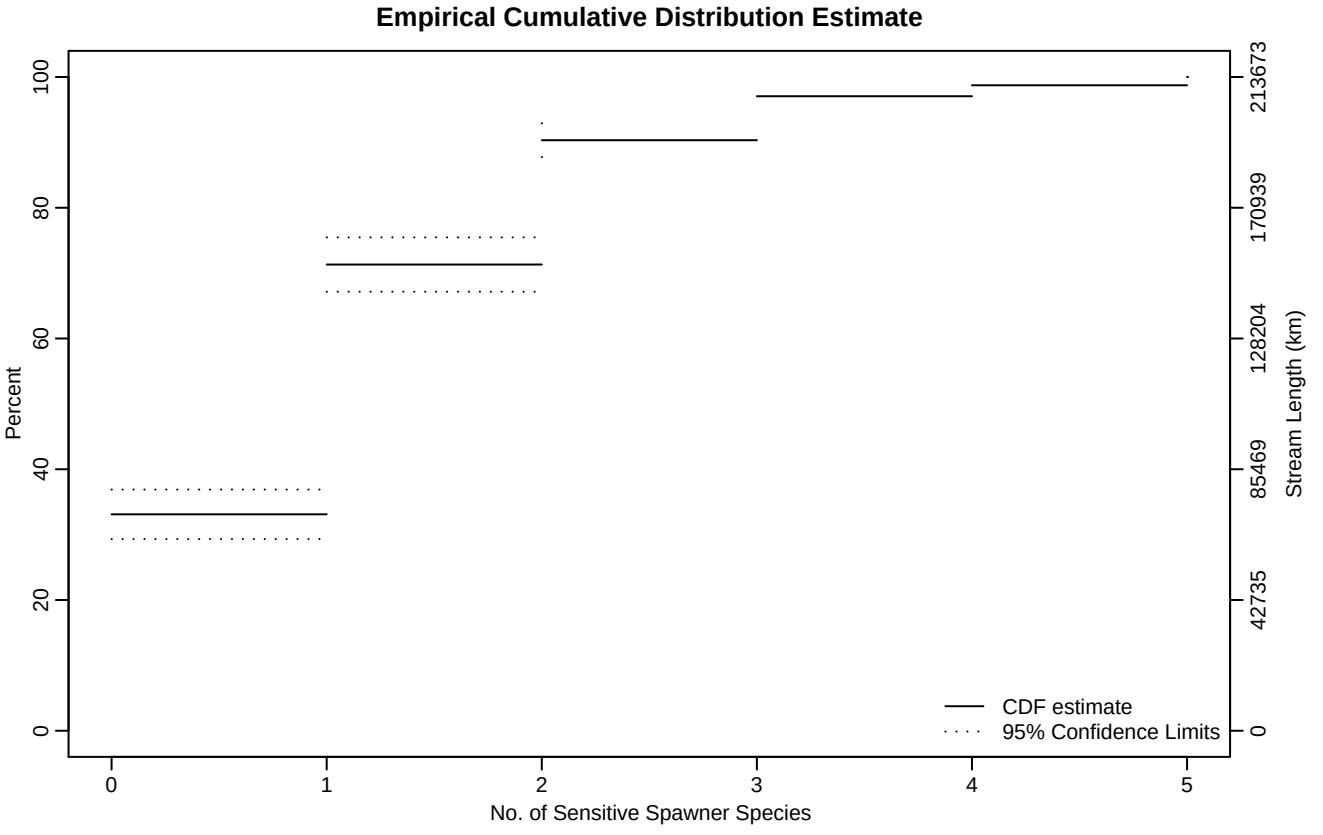


Figure VERT−275 Indicator: SPAWN_SEN_RICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.44	0.34	0.54
75Pct	1.19	0.99	1.41
90Pct	1.98	1.76	2.58
95Pct	2.69	2.30	3.36
Mean	1.09	1.01	1.18
Std Dev	0.93	0.85	1

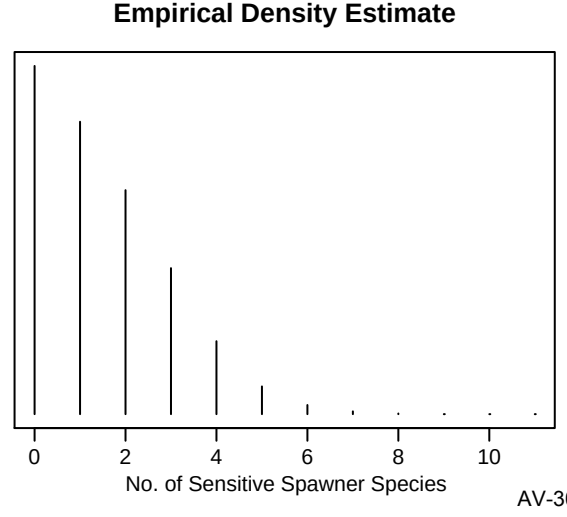
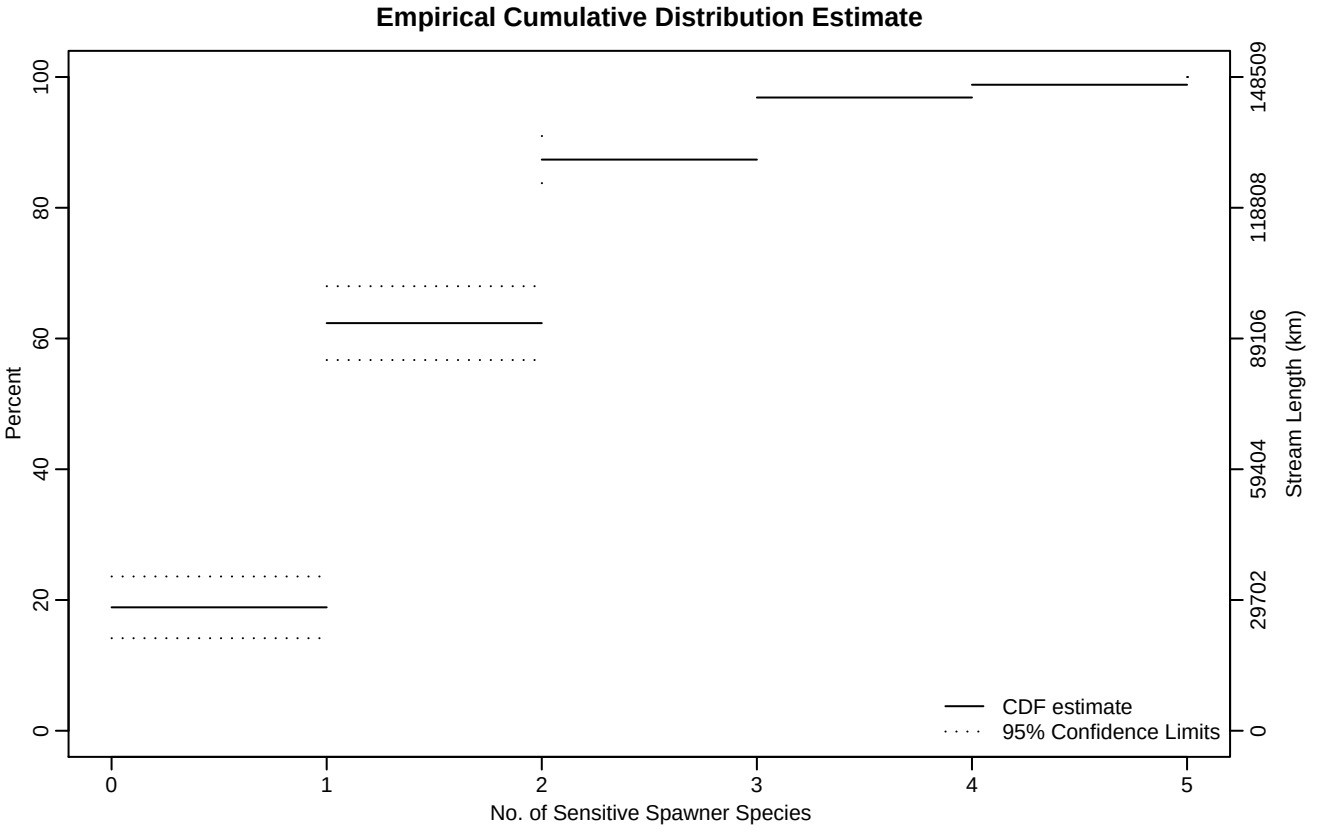


Figure VERT−276 Indicator: SPAWN_SEN_RICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.14	0.03	0.25
50Pct	0.72	0.61	0.82
75Pct	1.51	1.28	1.73
90Pct	2.28	1.96	2.67
95Pct	2.80	2.41	3.94
Mean	1.36	1.24	1.47
Std Dev	0.98	0.89	1.07

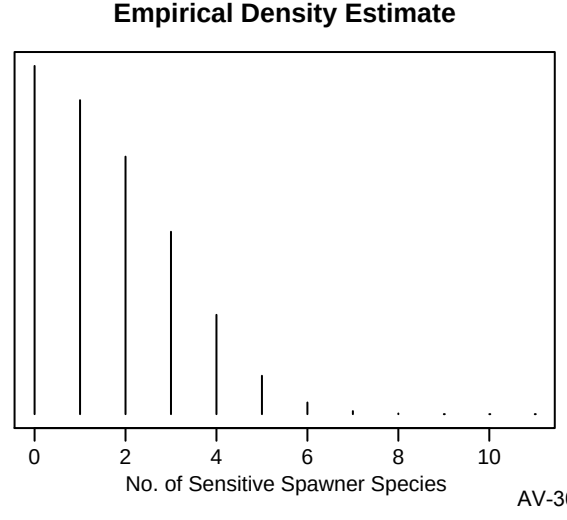
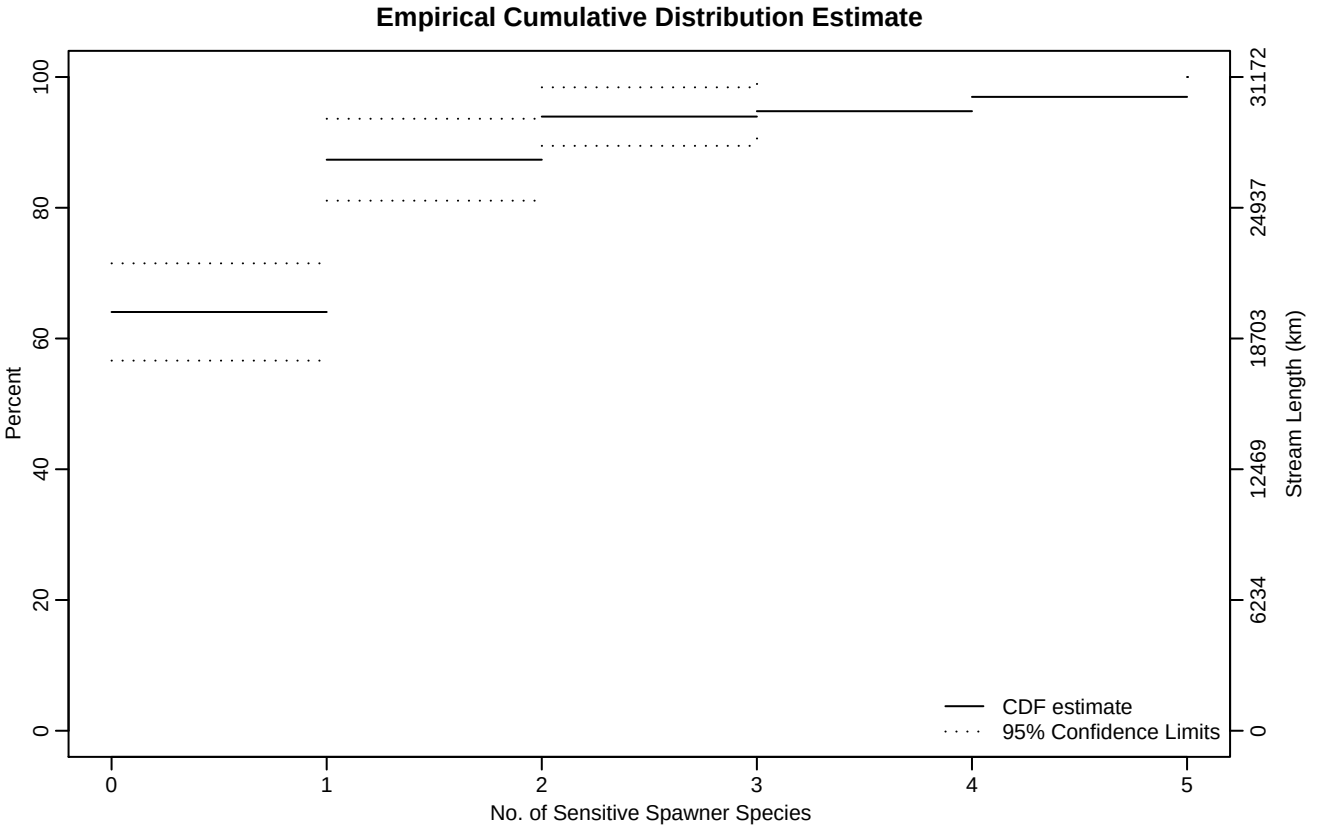


Figure VERT−277 Indicator: SPAWN_SEN_RICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.47	0.17	0.77
90Pct	1.40	0.85	3.63
95Pct	3.11	1.51	4.76
Mean	0.63	0.44	0.82
Std Dev	0.77	0.64	0.91

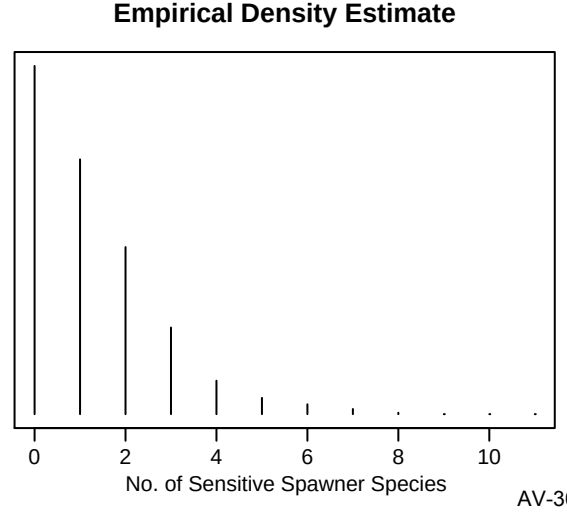
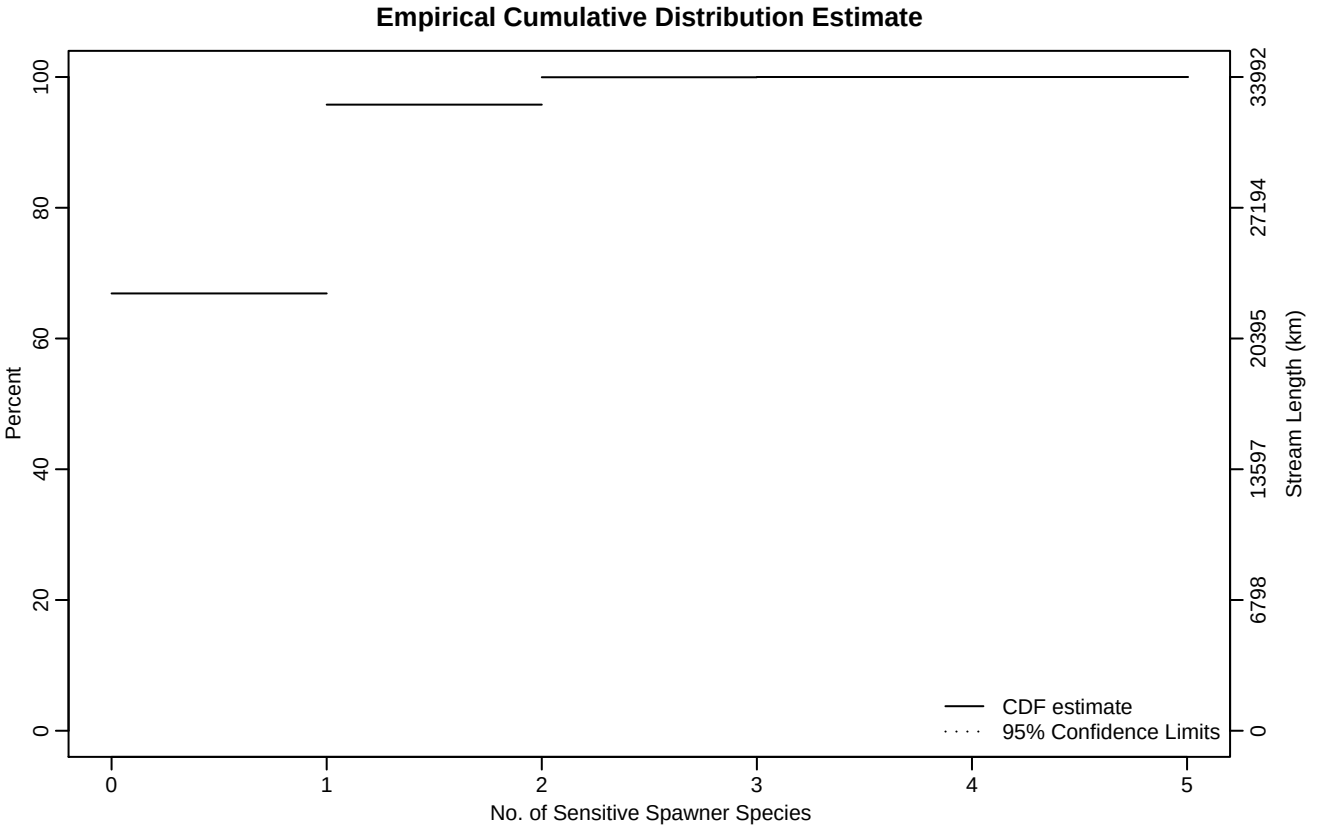


Figure VERT−278 Indicator: SPAWN_SEN_RICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.28	0.01	0.55
90Pct	0.80	0.53	1.48
95Pct	0.97	0.70	
Mean	0.37	0.28	0.47
Std Dev	0.44	0.39	0.50

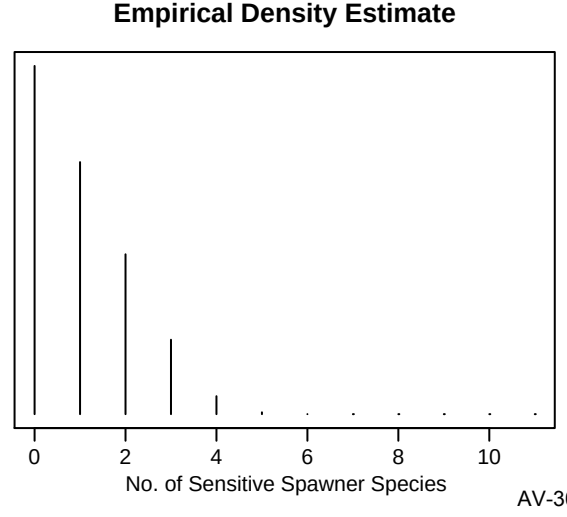
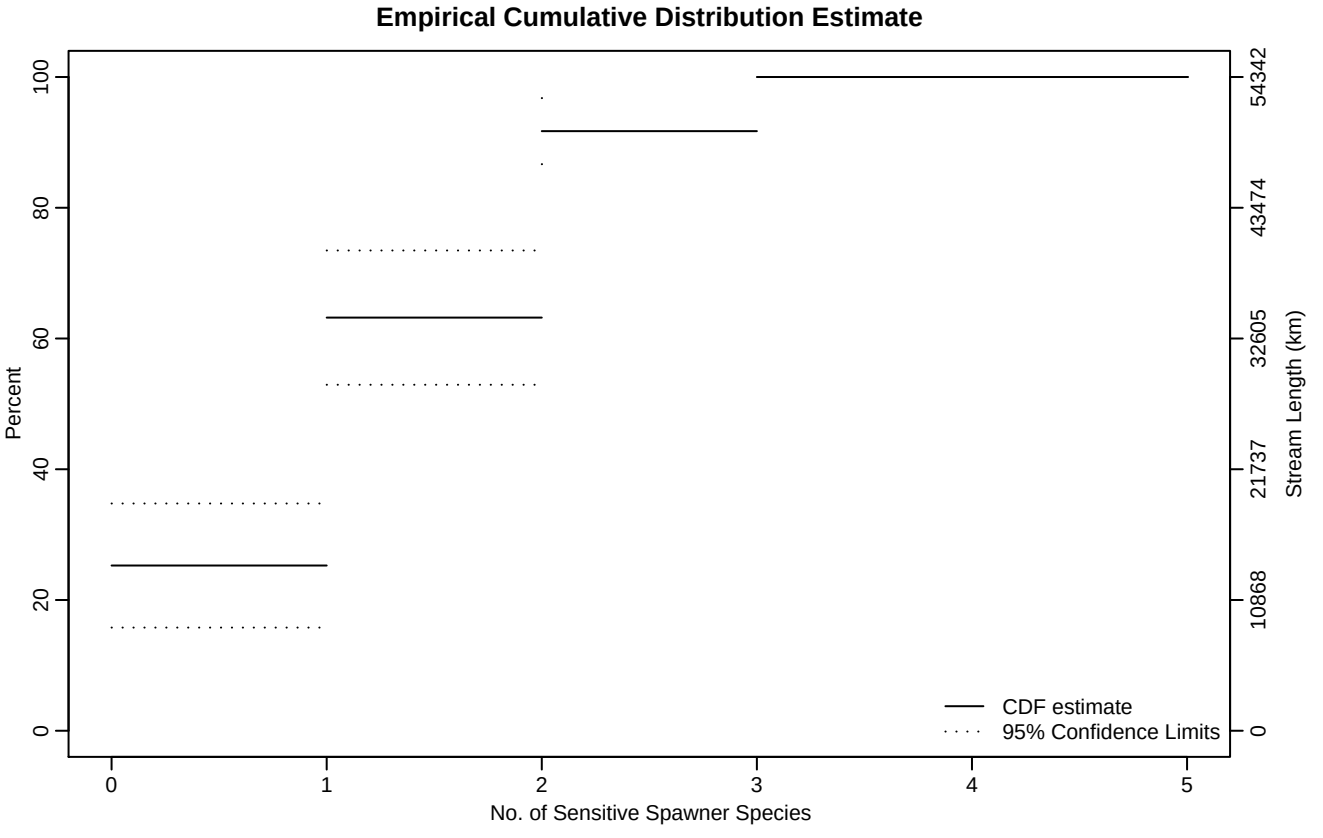


Figure VERT−279 Indicator: SPAWN_SEN_RICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.25
50Pct	0.65	0.41	0.89
75Pct	1.41	1.06	1.77
90Pct	1.94	1.59	
95Pct	2.40	1.94	2.99
Mean	1.20	1	1.39
Std Dev	0.88	0.79	0.97

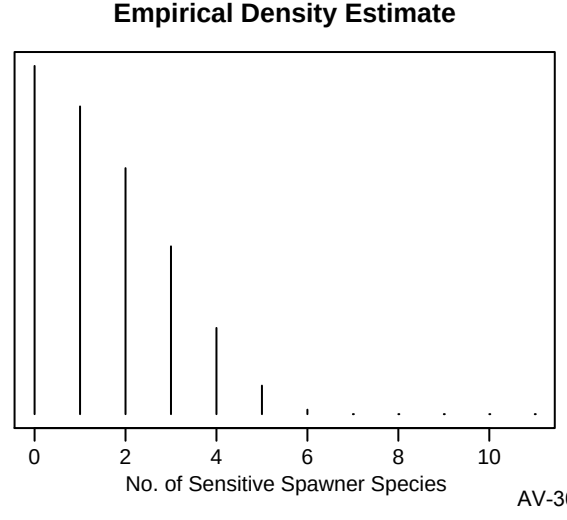
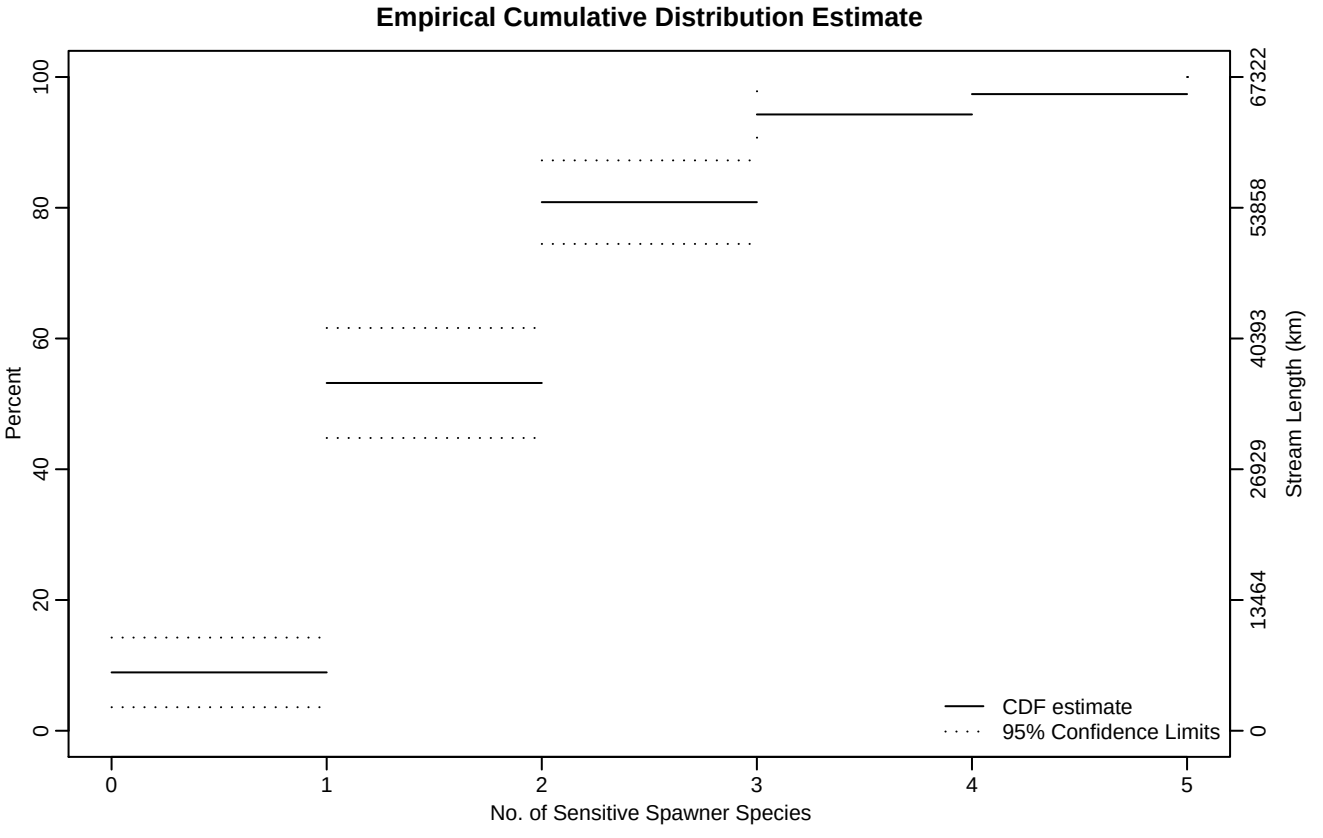


Figure VERT−280 Indicator: SPAWN_SEN_RICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.03
10Pct	0.02	0	0.14
25Pct	0.36	0.24	0.48
50Pct	0.93	0.79	1.11
75Pct	1.79	1.47	2.23
90Pct	2.68	2.18	3.78
95Pct	3.23	2.79	4.45
Mean	1.65	1.48	1.83
Std Dev	1.06	0.91	1.20

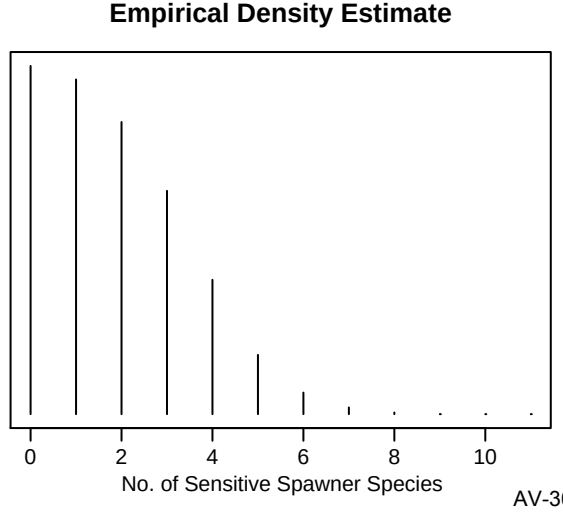
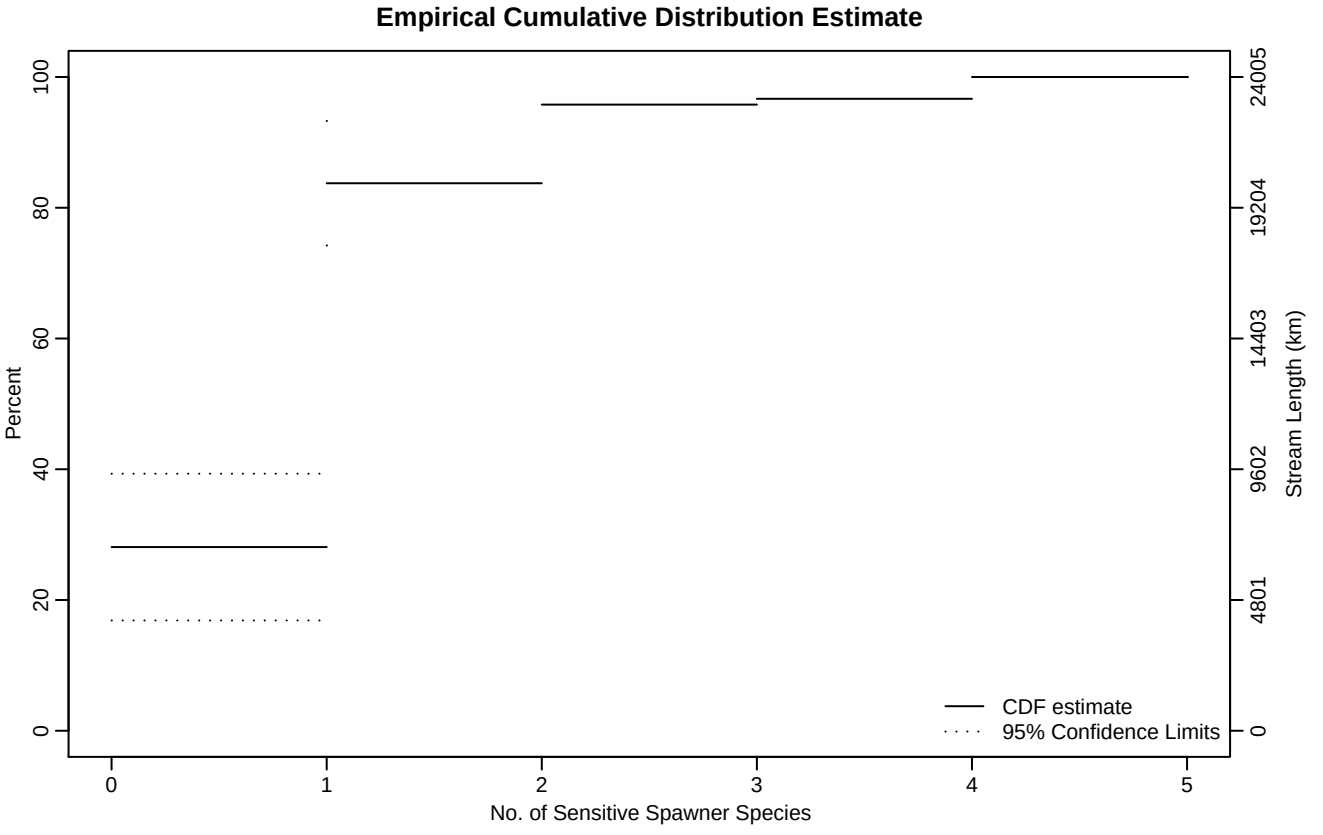


Figure VERT−281 Indicator: SPAWN_SEN_RICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.15
50Pct	0.39	0.18	0.60
75Pct	0.84	0.62	1.29
90Pct	1.52	0.94	3.80
95Pct	1.94	1.17	
Mean	0.96	0.74	1.18
Std Dev	0.82	0.55	1.08

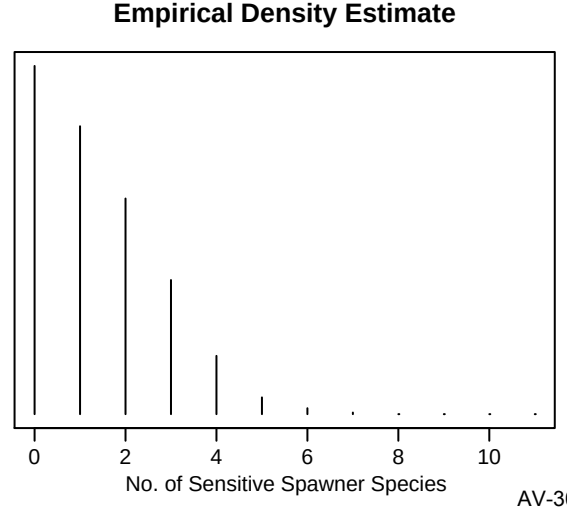
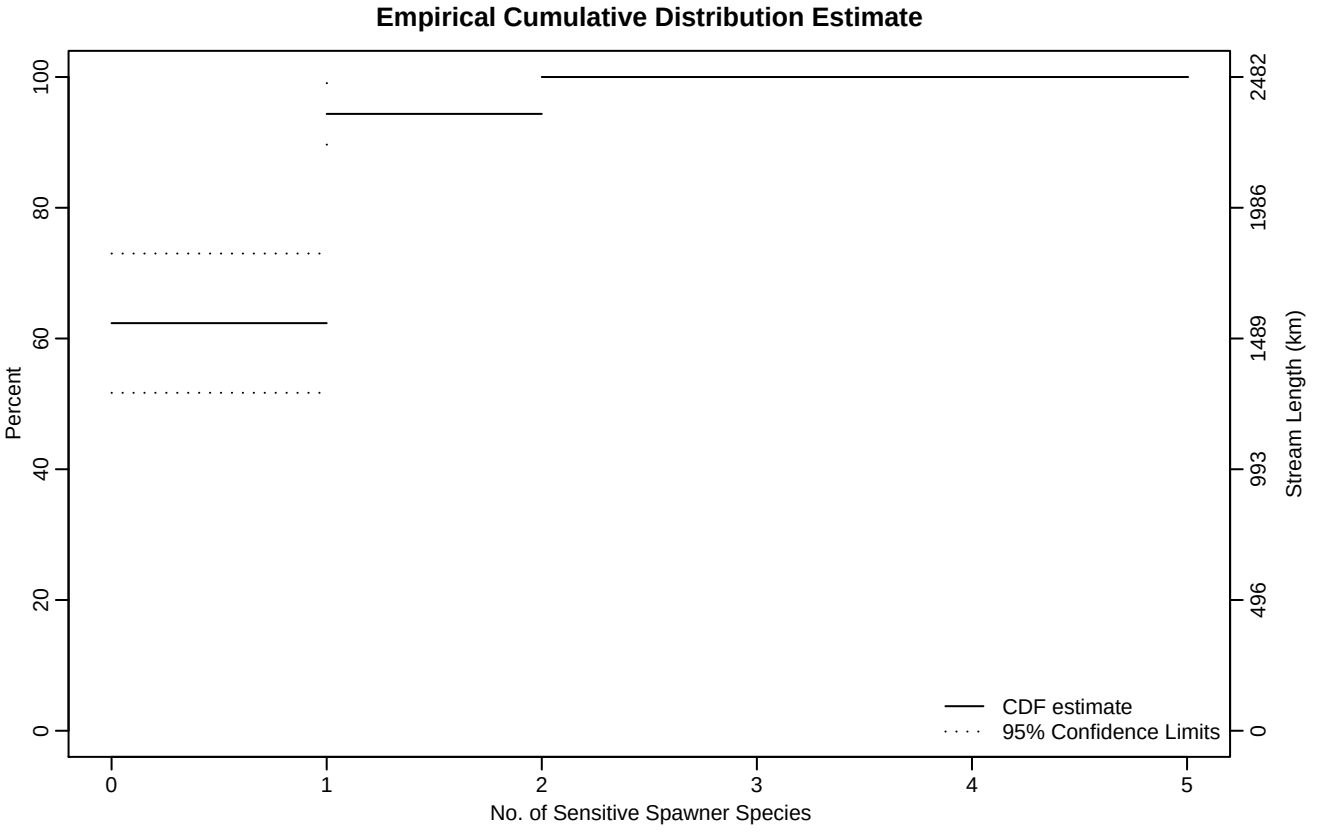


Figure VERT−282 Indicator: SPAWN_SEN_RICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.40	0.06	0.73
90Pct	0.86	0.53	2
95Pct	1.11	0.87	1.95
Mean	0.43	0.30	0.56
Std Dev	0.58	0.48	0.68

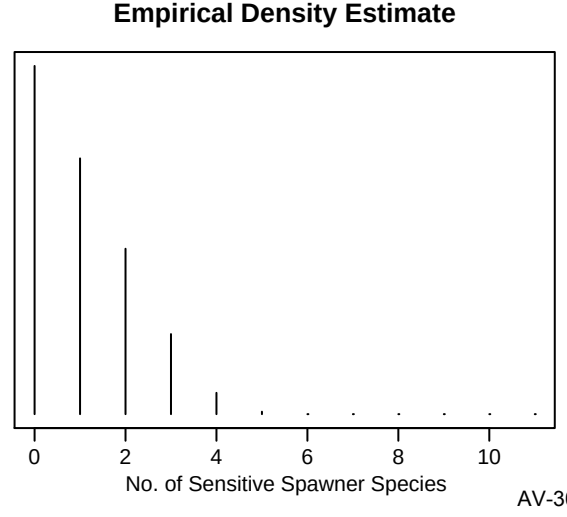
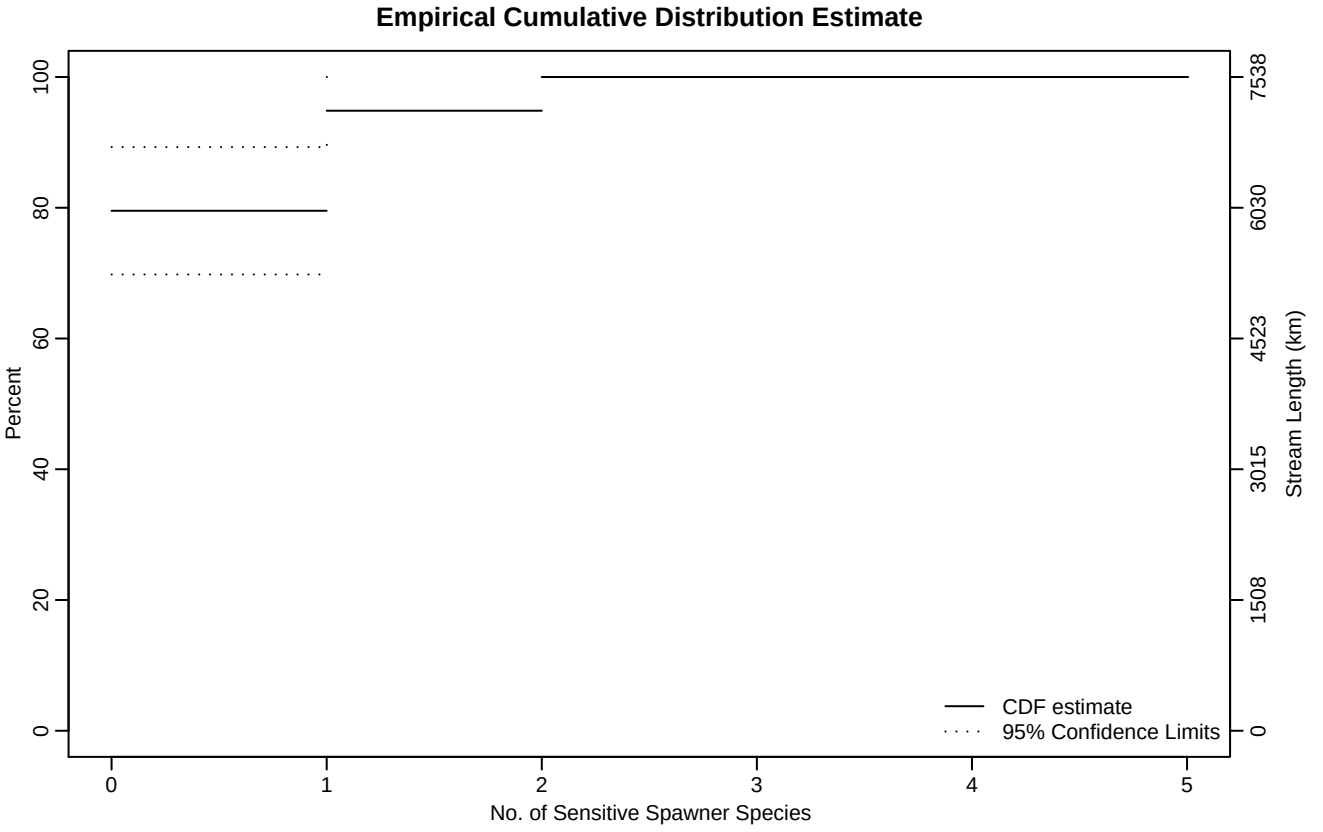


Figure VERT−283 Indicator: SPAWN_SEN_RICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.35
90Pct	0.68	0.03	2
95Pct	1.03	0.67	2
Mean	0.26	0.13	0.39
Std Dev	0.44	0.33	0.55

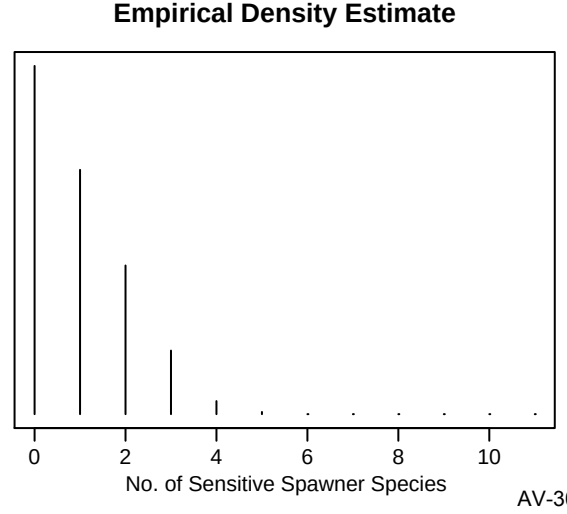
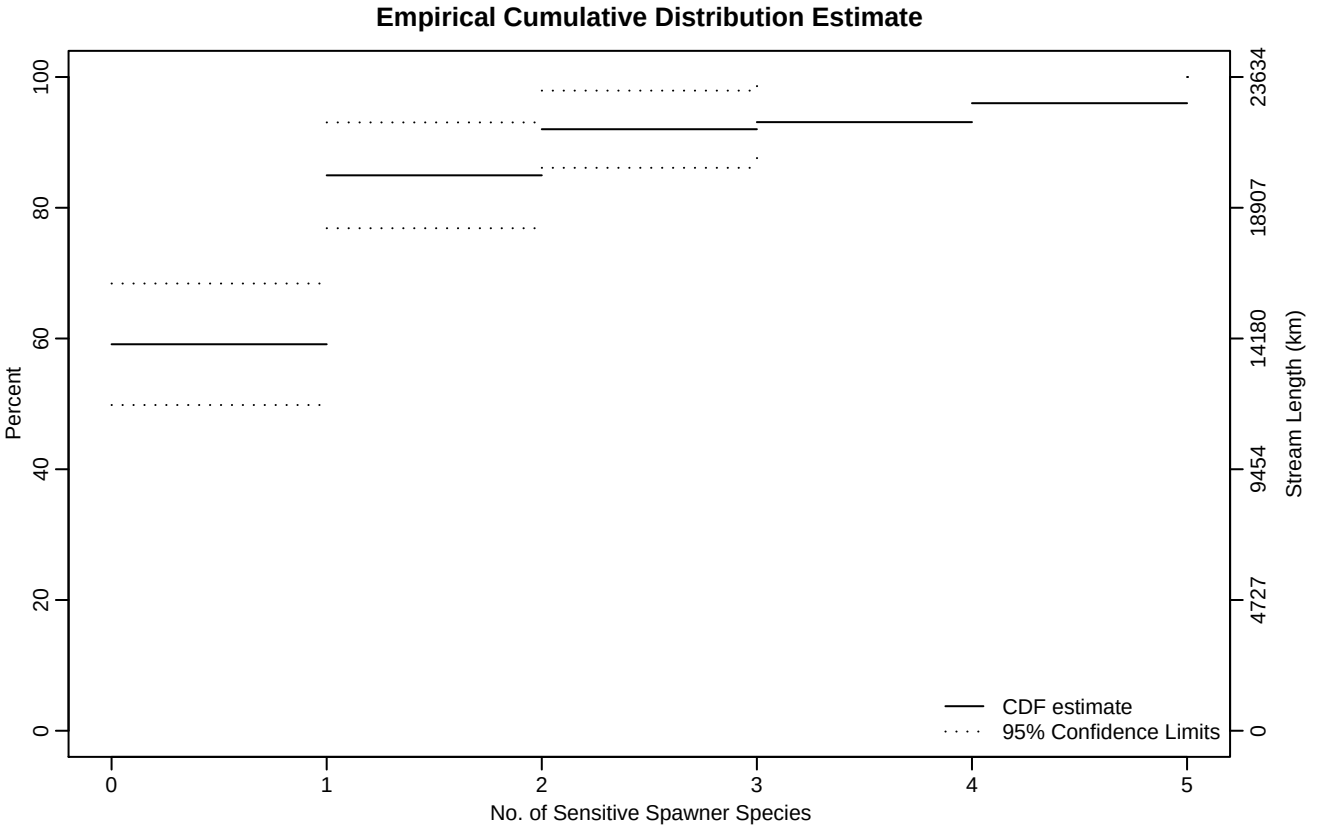


Figure VERT−284 Indicator: SPAWN_SEN_RICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.61	0.28	0.95
90Pct	1.71	0.89	4.48
95Pct	3.66	1.63	5
Mean	0.75	0.50	0.99
Std Dev	0.86	0.69	1.03

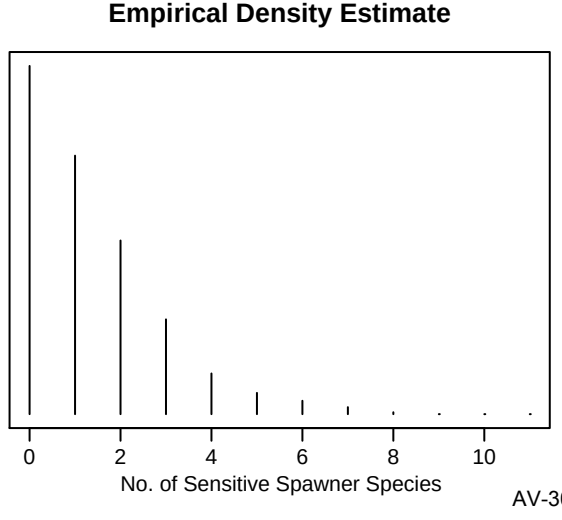
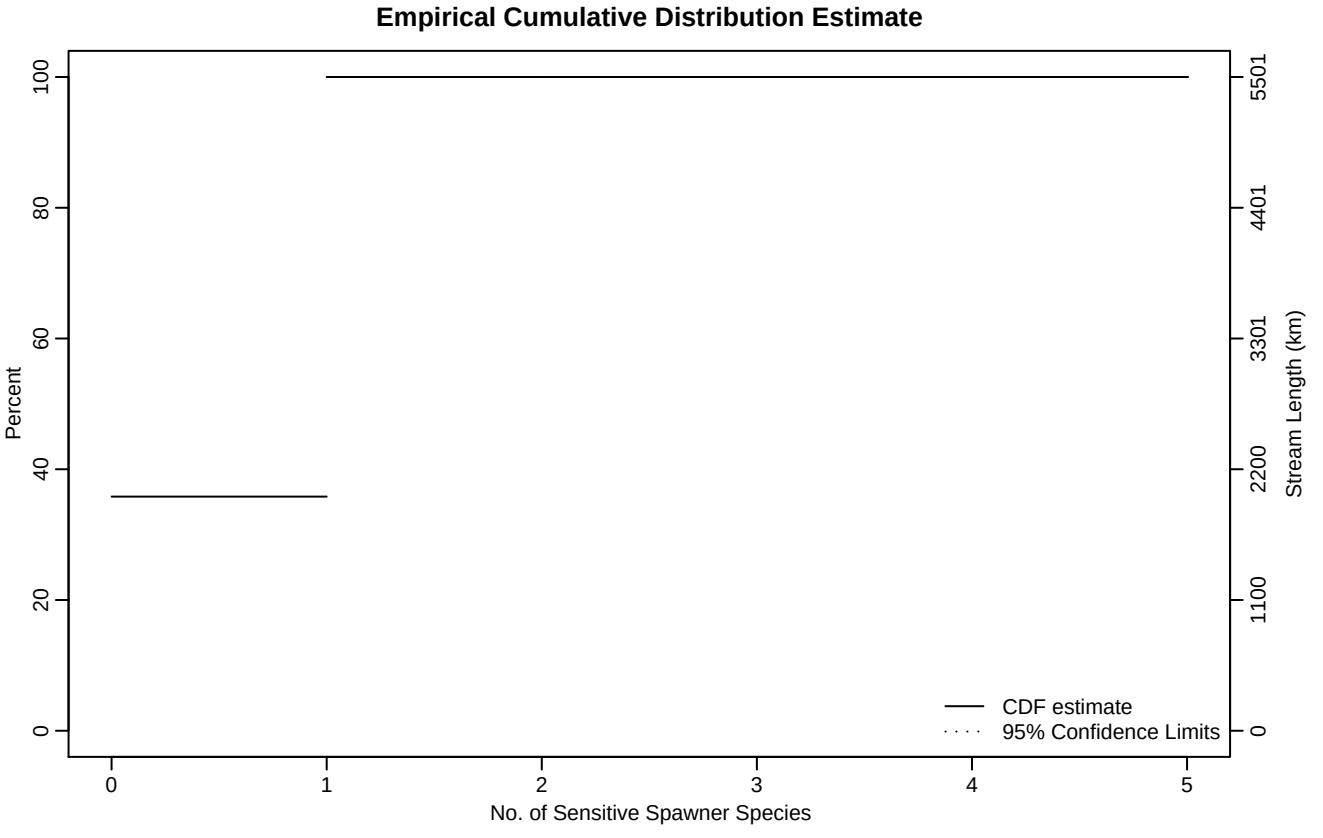


Figure VERT−285 Indicator: SPAWN_SEN_RICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0	0	0.22
50Pct	0.22	0	0.58
75Pct	0.61	0.24	0.98
90Pct	0.84	0.46	1
95Pct	0.92	0.53	1
Mean	0.64	0.40	0.88
Std Dev	0.48	0.41	0.55

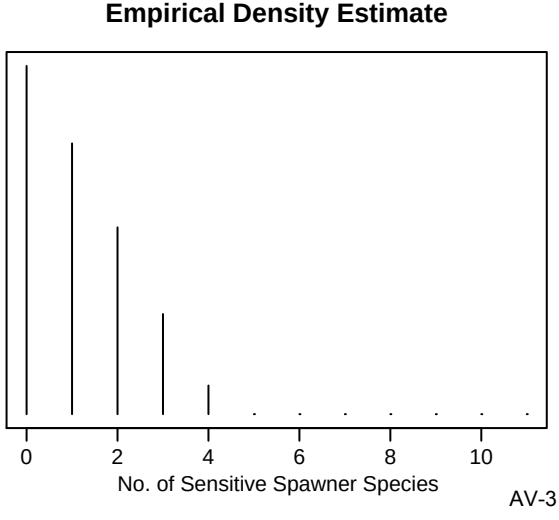
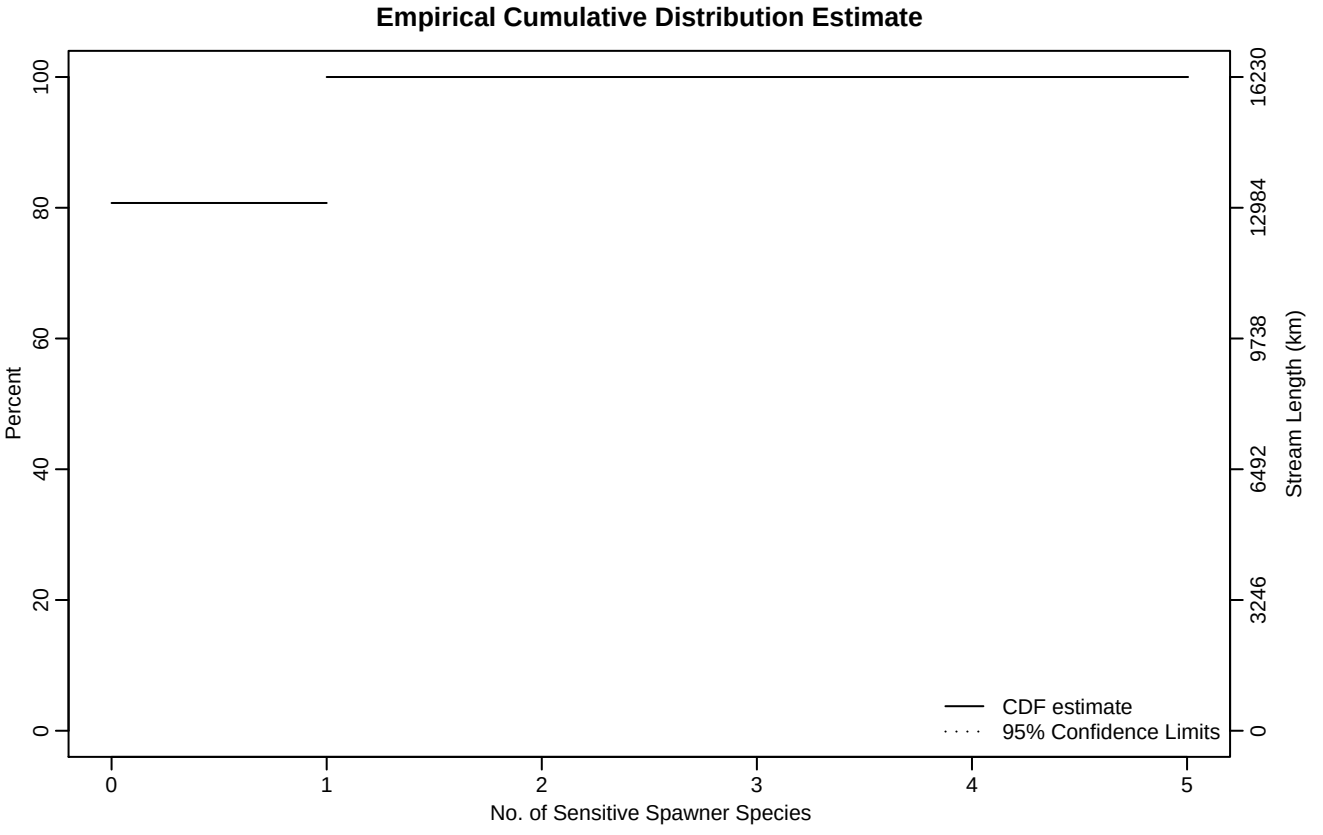


Figure VERT−286 Indicator: SPAWN_SEN_RICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.27
90Pct	0.48	0	1
95Pct	0.74	0.17	1
Mean	0.19	0.08	0.30
Std Dev	0.37	0.29	0.45

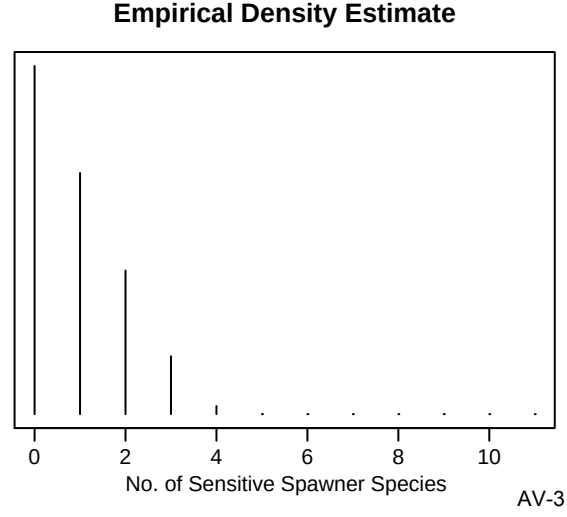
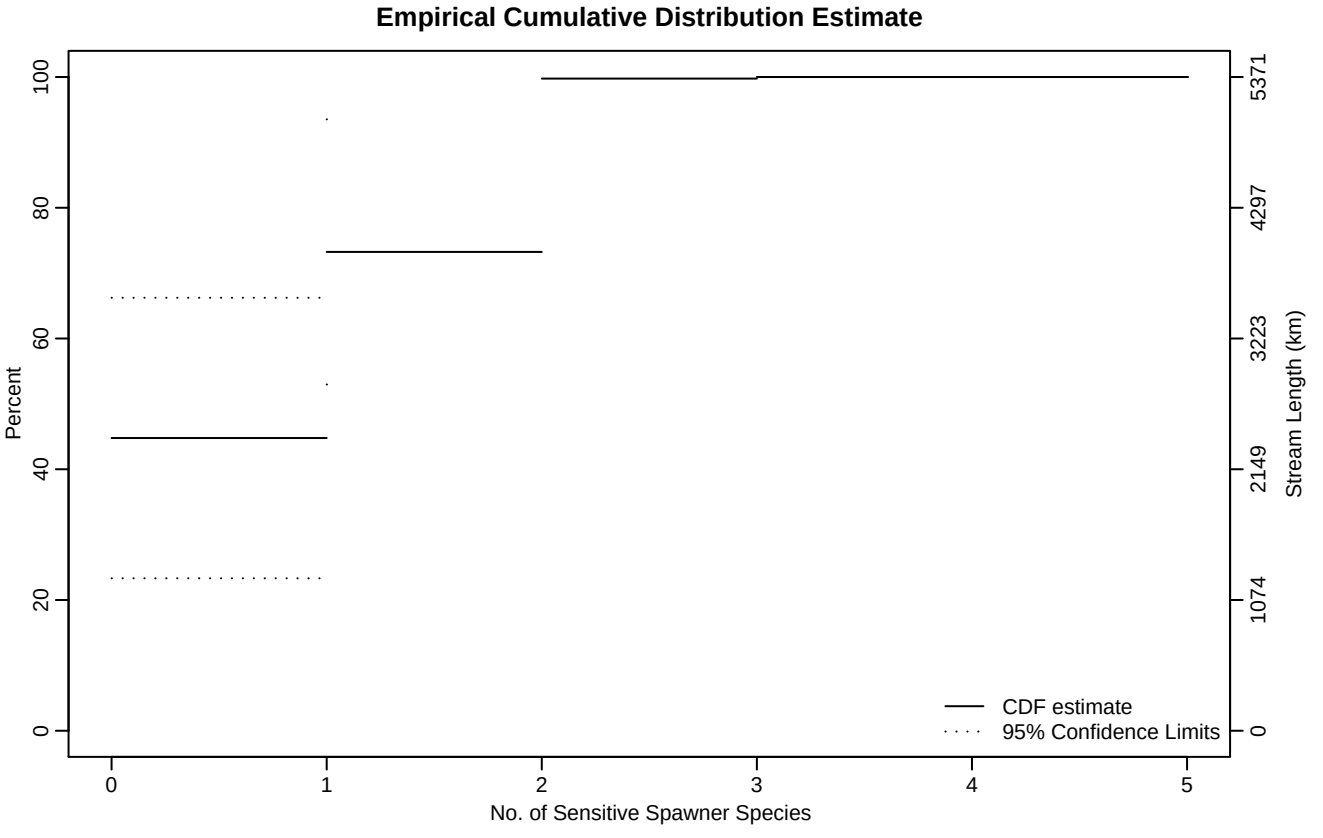


Figure VERT−287 Indicator: SPAWN_SEN_RICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.20
50Pct	0.18	0	0.99
75Pct	1.07	0.32	1.86
90Pct	1.63	0.86	
95Pct	1.82	1.04	
Mean	0.82	0.43	1.21
Std Dev	0.73	0.58	0.89

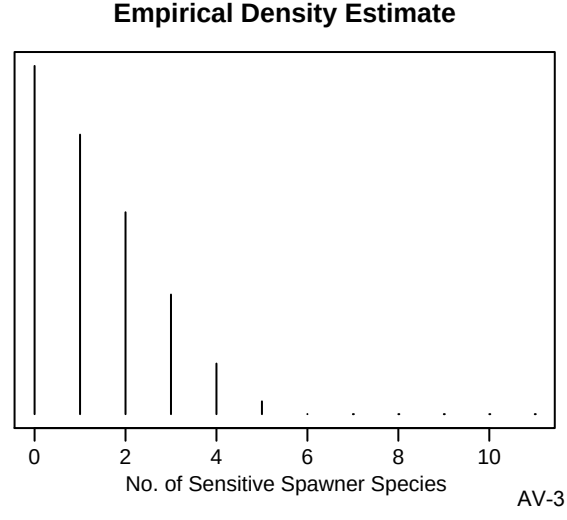
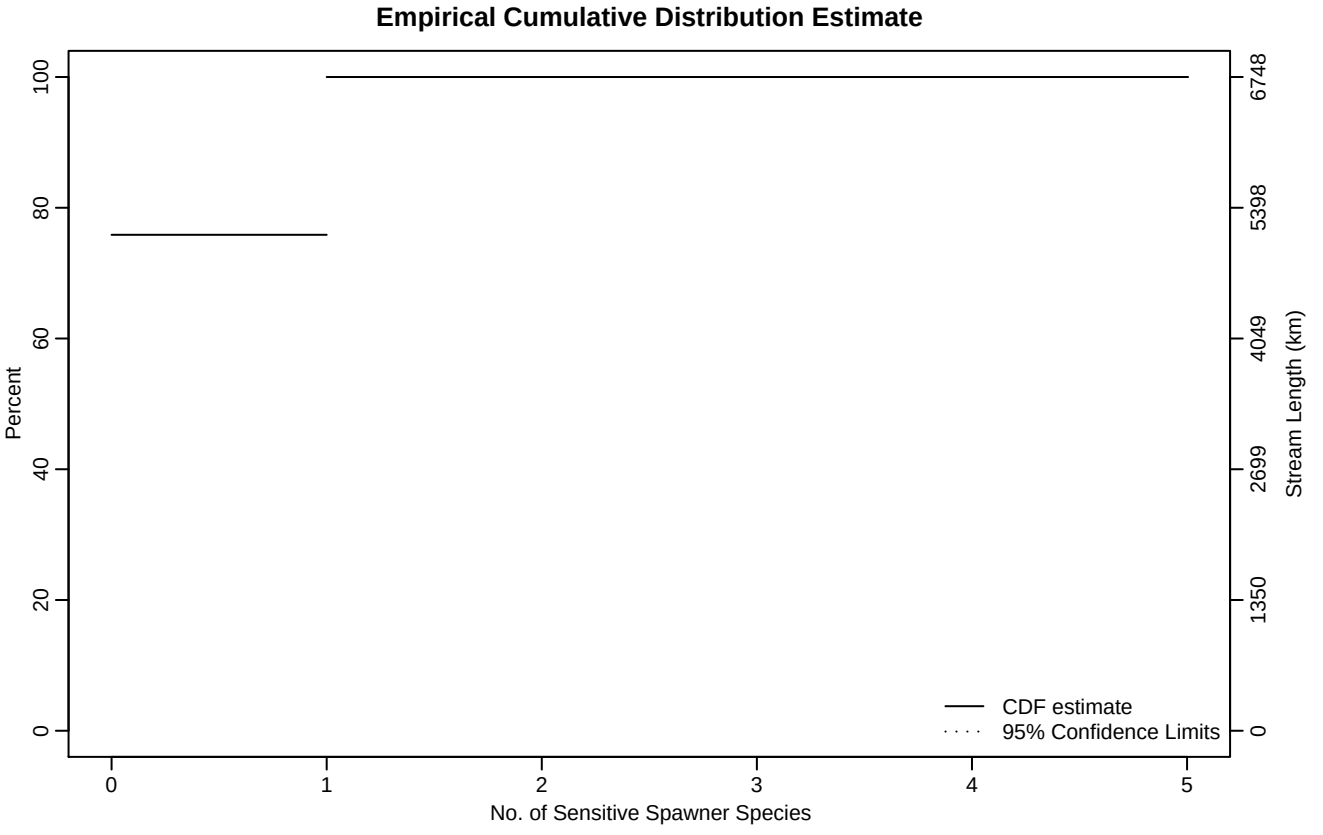


Figure VERT−288 Indicator: SPAWN_SEN_RICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.62
90Pct	0.59	0	1
95Pct	0.79	0.11	1
Mean	0.24	0.09	0.39
Std Dev	0.33	0.28	0.37

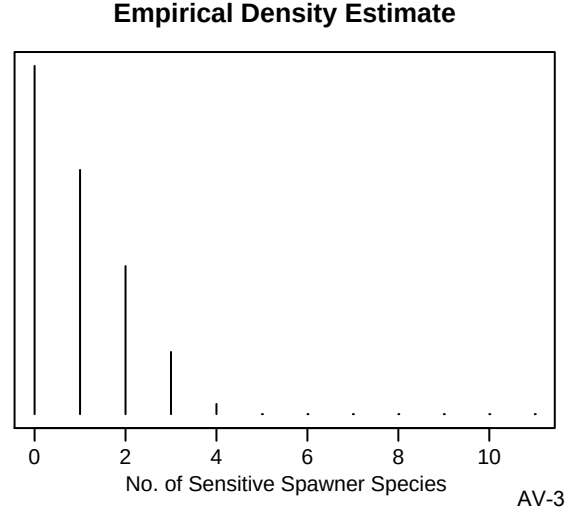
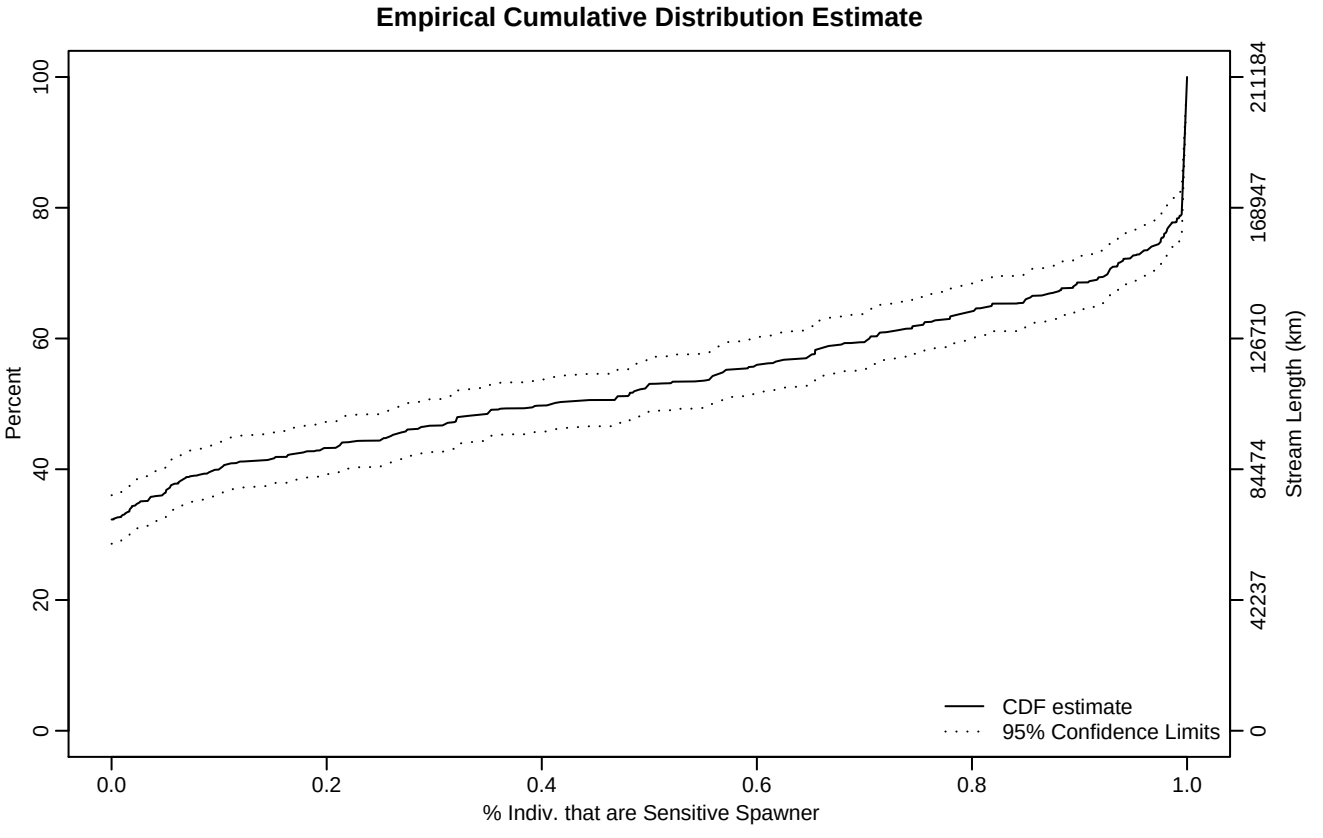


Figure VERT−289 Indicator: SPAWN_SEN_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.41	0.27	0.56
75Pct	0.98	0.94	0.99
90Pct	1	1	1
95Pct	1	1	1
Mean	0.47	0.43	0.50
Std Dev	0.38	0.36	0.39

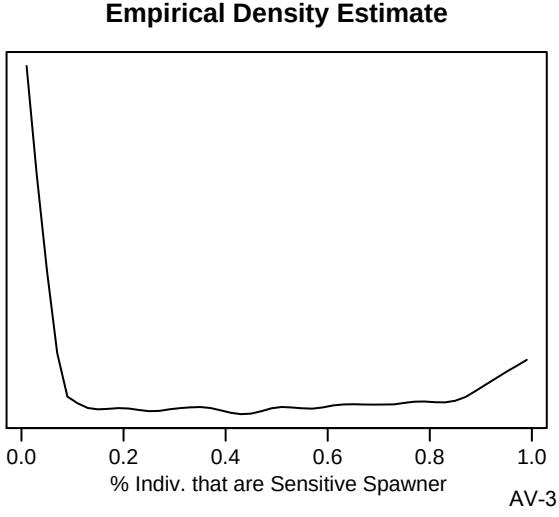
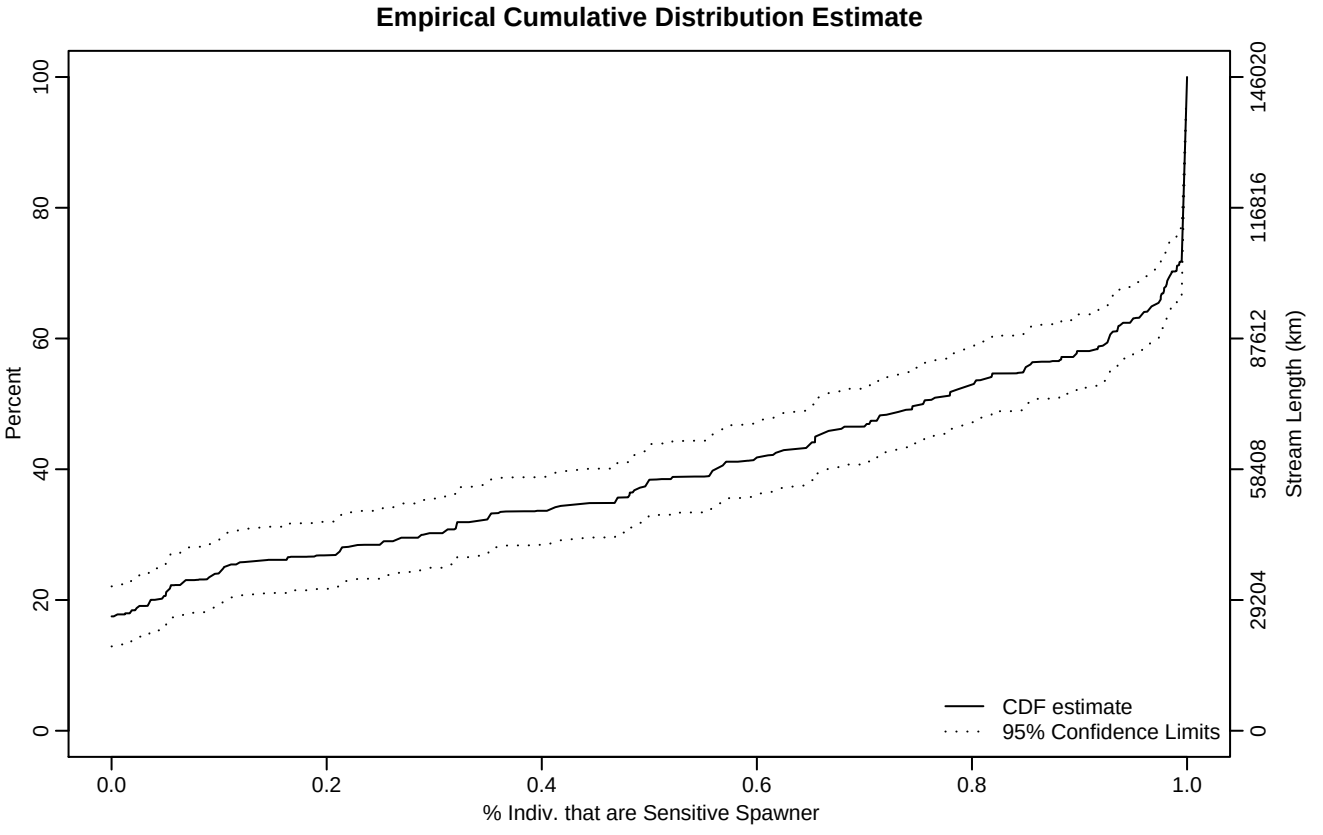


Figure VERT−290 Indicator: SPAWN_SEN_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.10	0.04	0.29
50Pct	0.75	0.65	0.85
75Pct	1	0.99	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.60	0.56	0.65
Std Dev	0.39	0.37	0.41

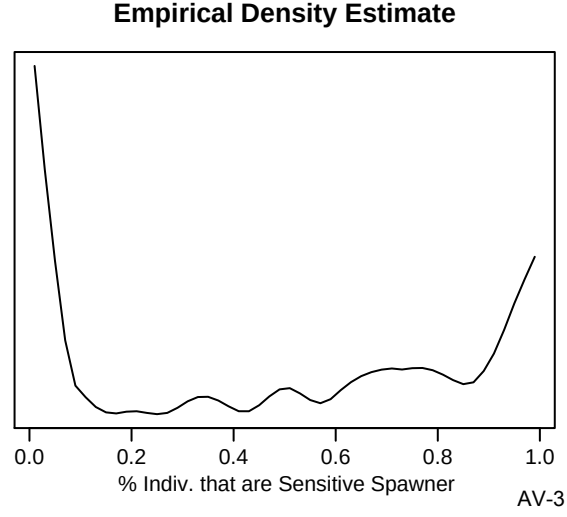
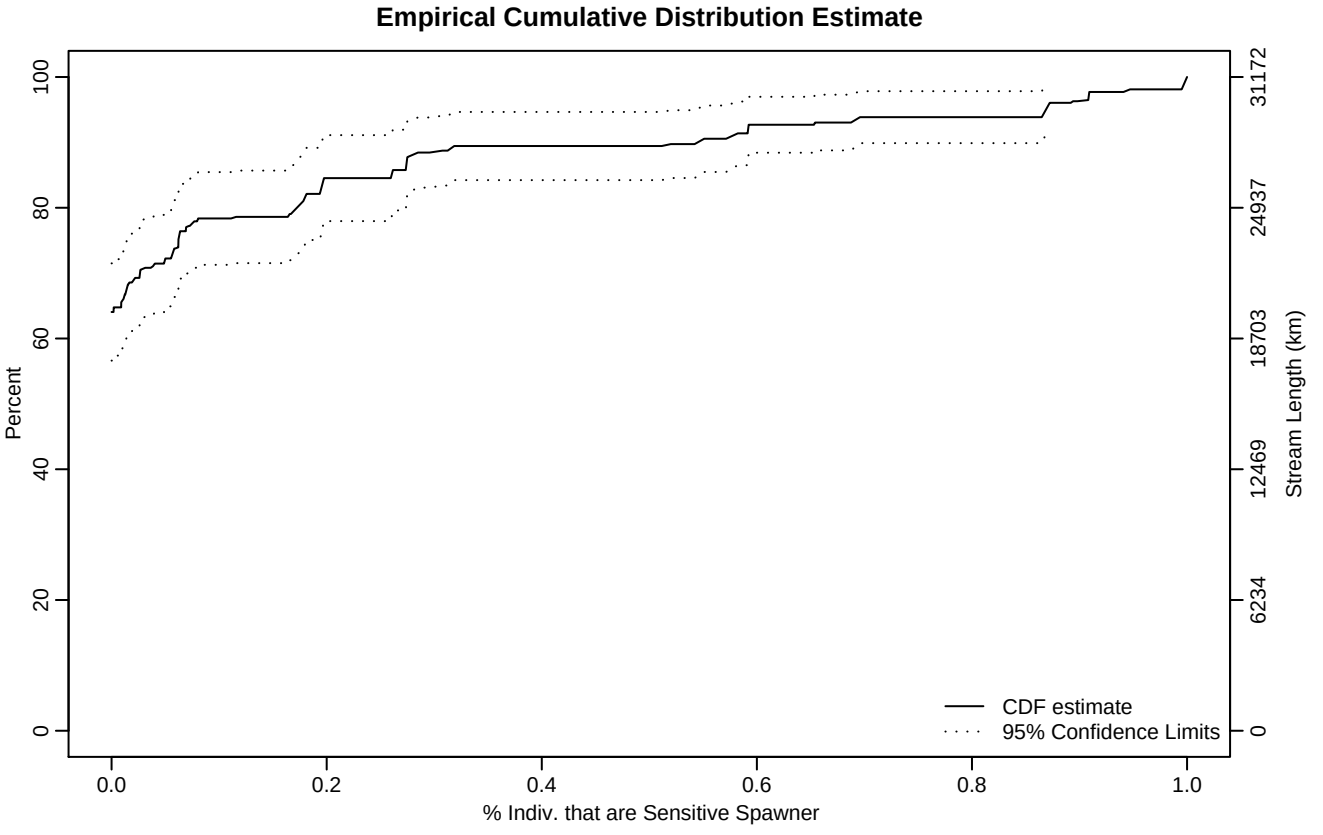


Figure VERT−291 Indicator: SPAWN_SEN_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.06	0.01	0.19
90Pct	0.54	0.26	0.87
95Pct	0.87	0.58	1
Mean	0.11	0.07	0.16
Std Dev	0.19	0.15	0.22

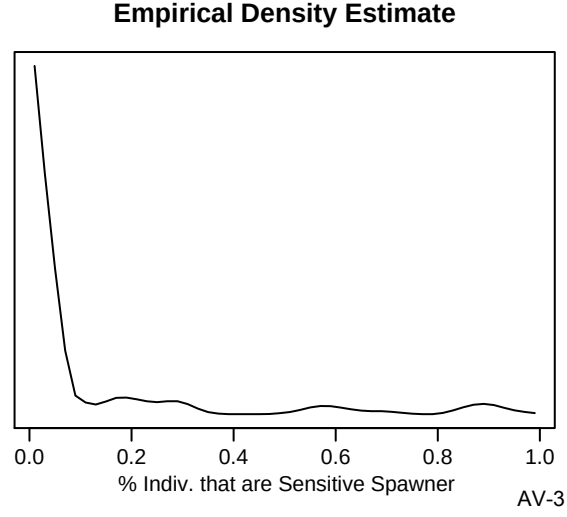
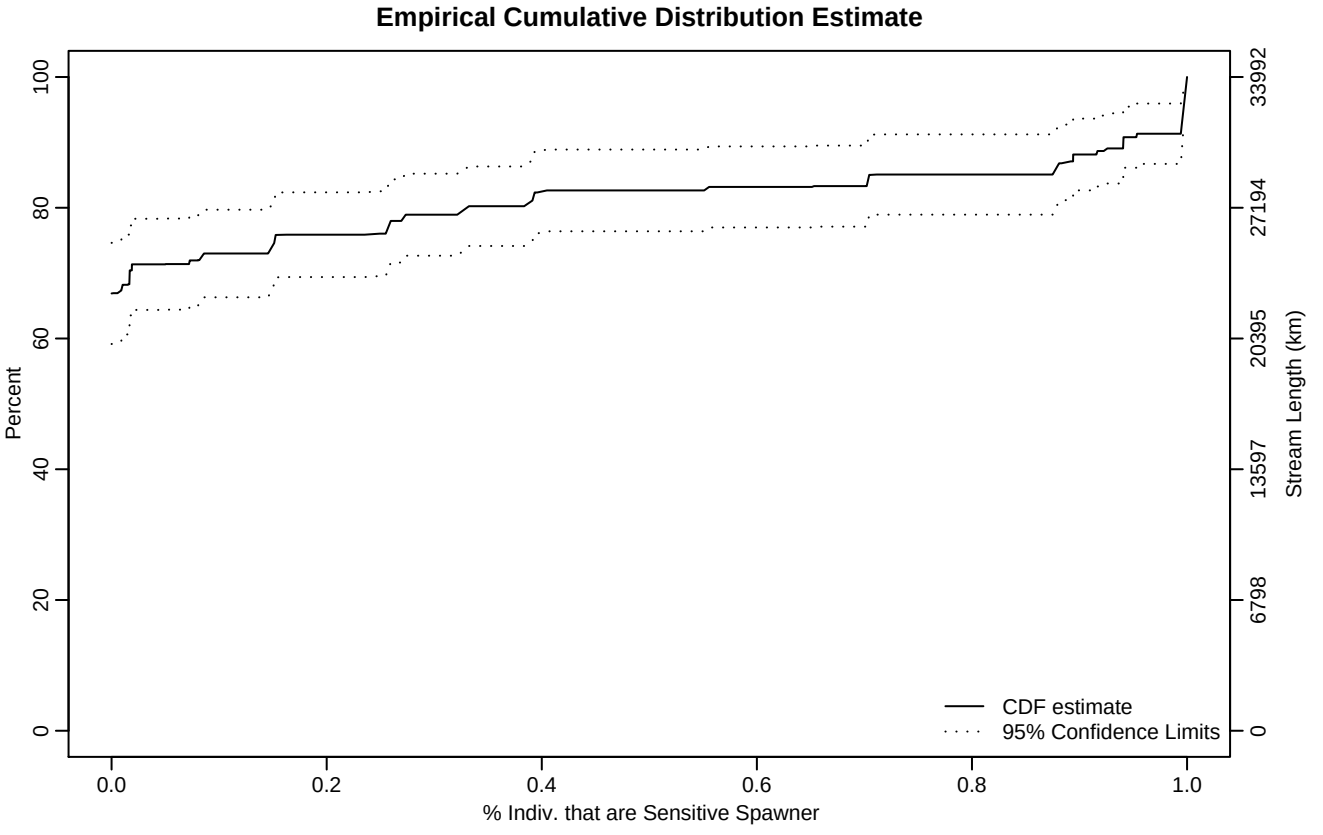


Figure VERT−292 Indicator: SPAWN_SEN_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.15	0.02	0.39
90Pct	0.94	0.70	1
95Pct	1	0.95	1
Mean	0.19	0.13	0.24
Std Dev	0.25	0.21	0.28

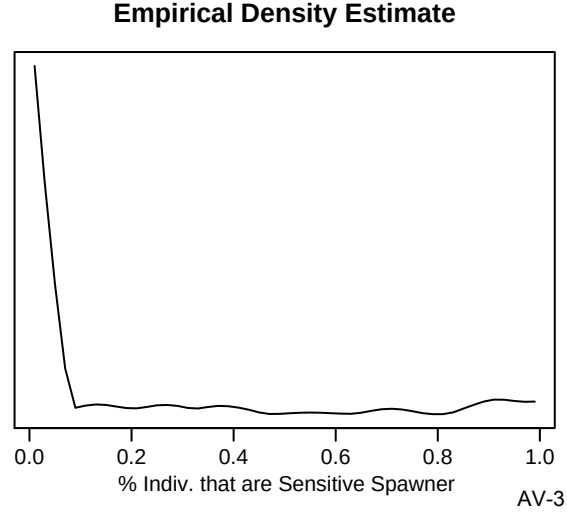
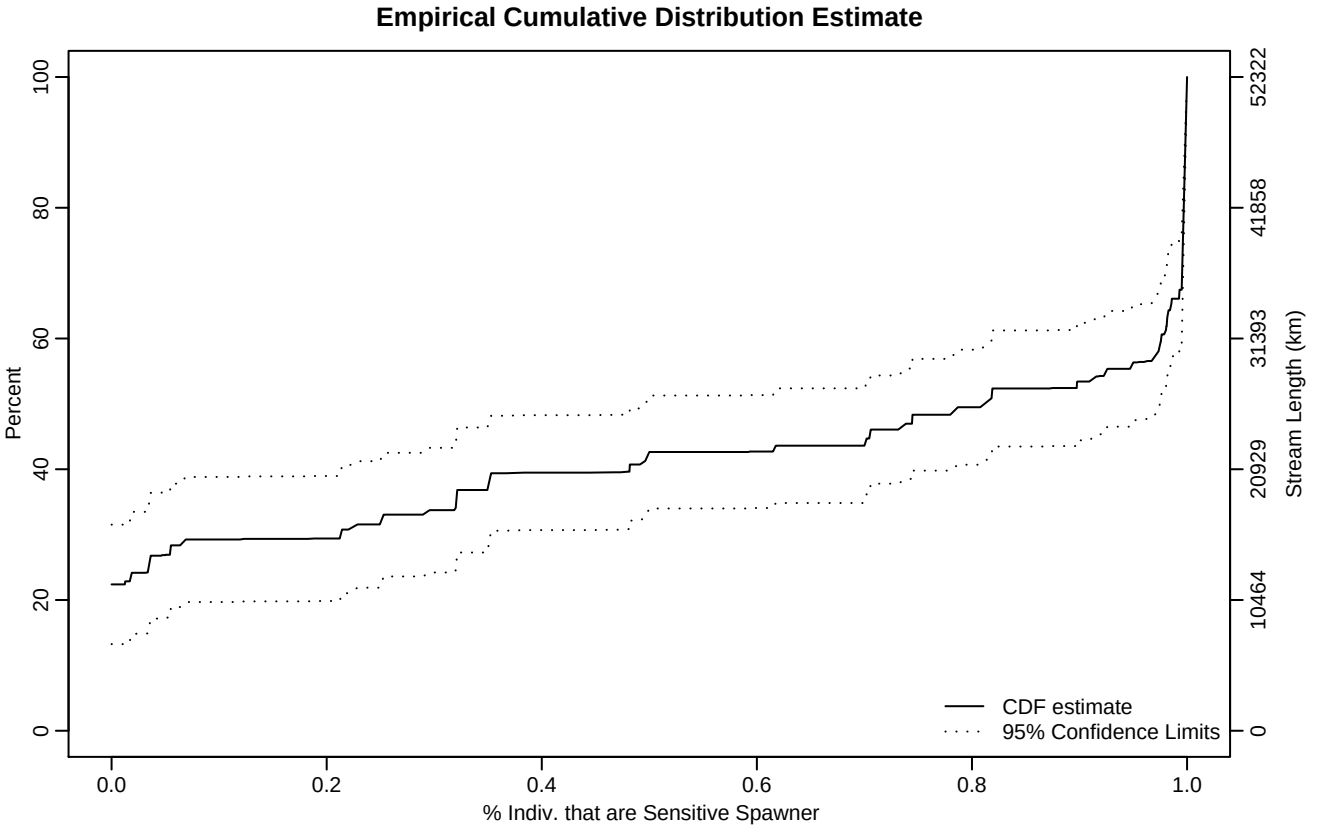


Figure VERT−293 Indicator: SPAWN_SEN_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.03	0	0.32
50Pct	0.81	0.49	0.98
75Pct	1	0.99	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.59	0.51	0.67
Std Dev	0.38	0.35	0.42

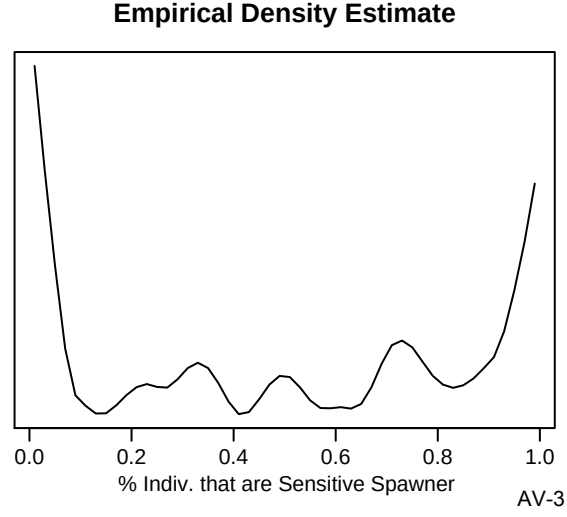
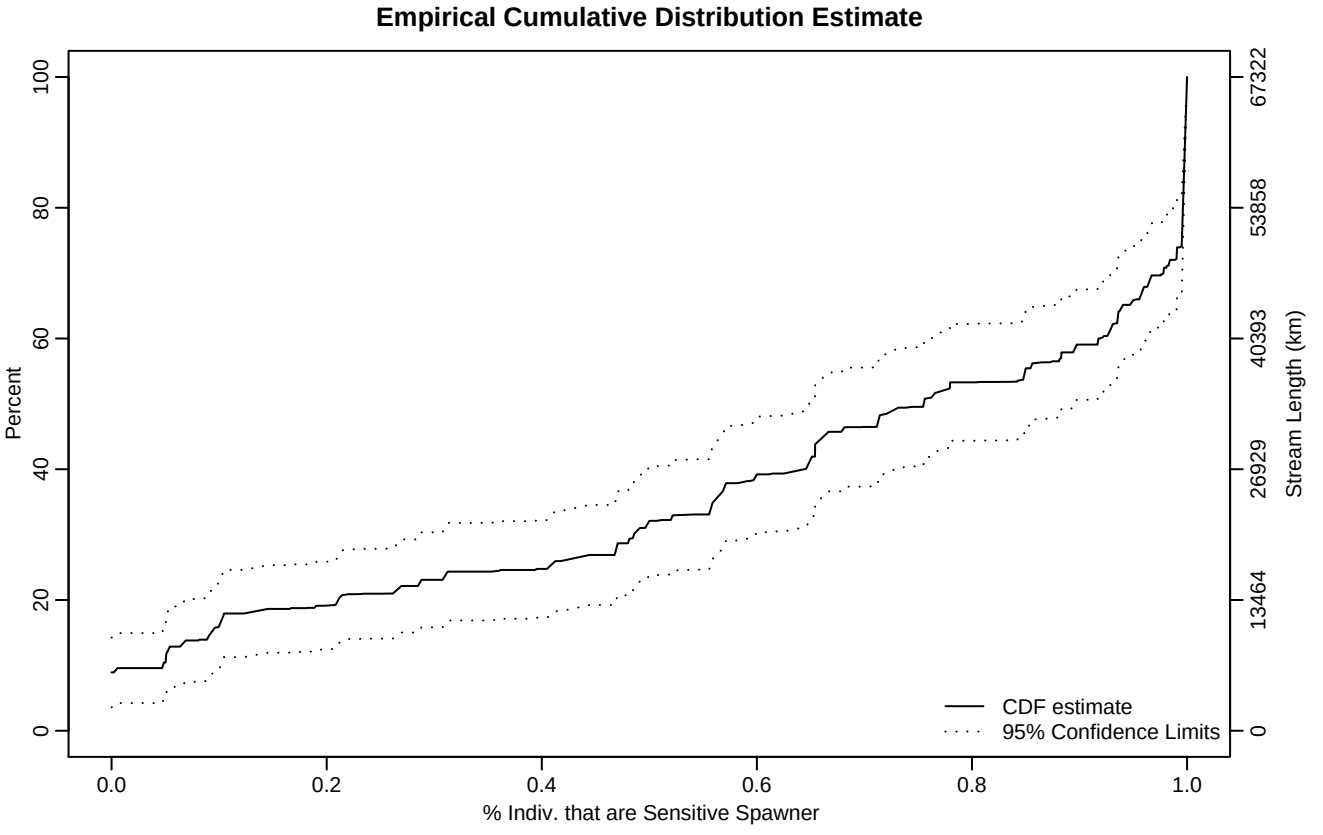


Figure VERT−294 Indicator: SPAWN_SEN_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.05
10Pct	0.05	0	0.09
25Pct	0.41	0.10	0.52
50Pct	0.76	0.65	0.92
75Pct	1	0.96	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.65	0.58	0.72
Std Dev	0.36	0.33	0.39

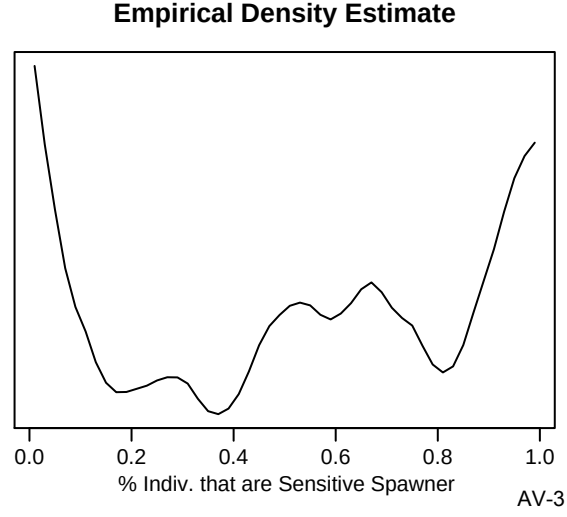
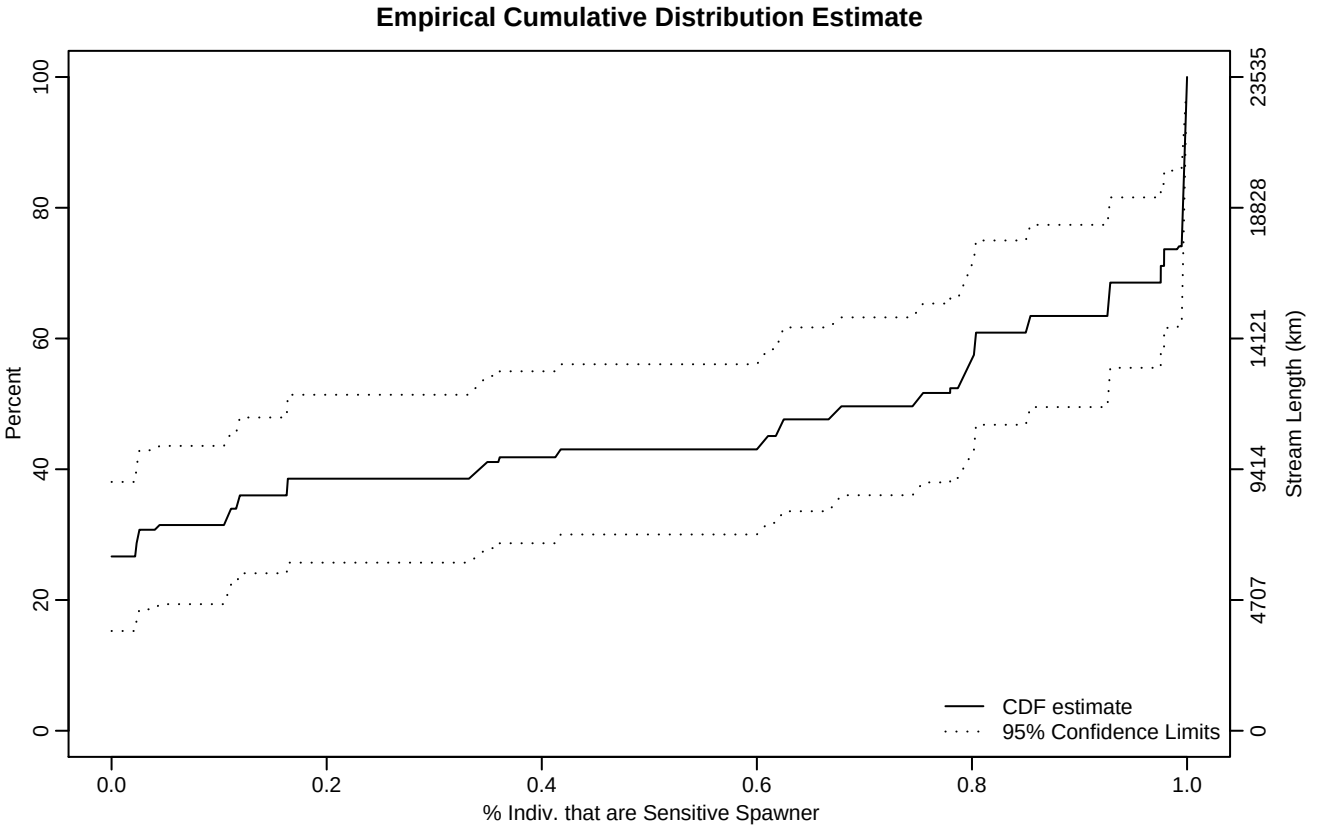


Figure VERT−295 Indicator: SPAWN_SEN_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.16
50Pct	0.75	0.12	0.93
75Pct	1	0.85	1
90Pct	1	1	
95Pct	1	1	
Mean	0.54	0.43	0.66
Std Dev	0.40	0.36	0.44

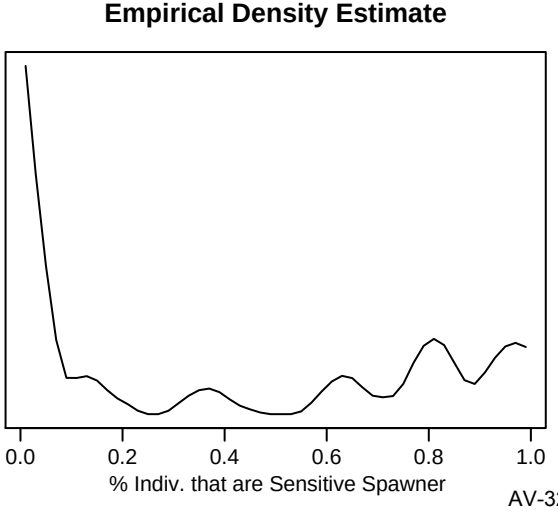
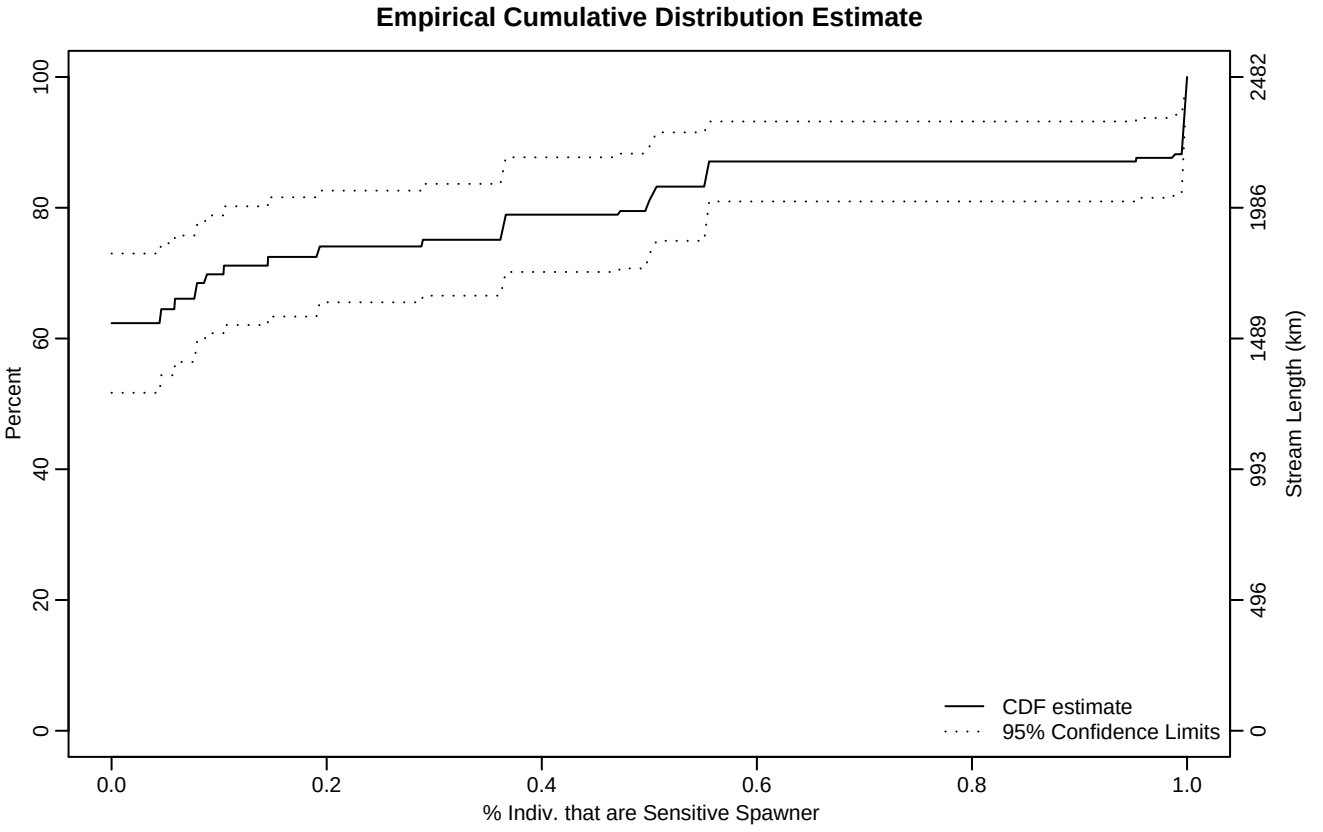


Figure VERT−296 Indicator: SPAWN_SEN_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.29	0.08	0.55
90Pct	1	0.55	1
95Pct	1	1	1
Mean	0.20	0.14	0.26
Std Dev	0.32	0.25	0.38

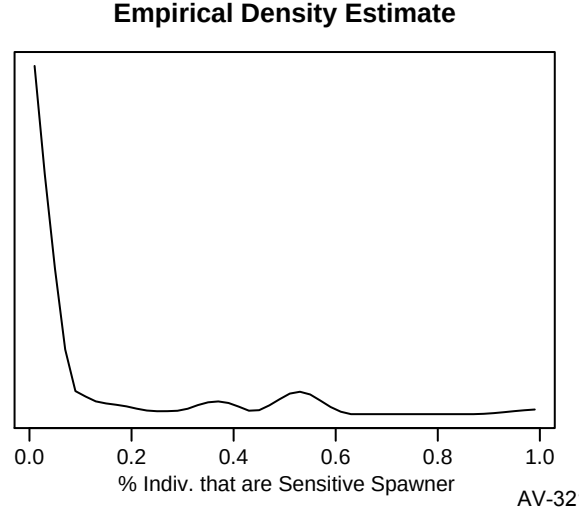
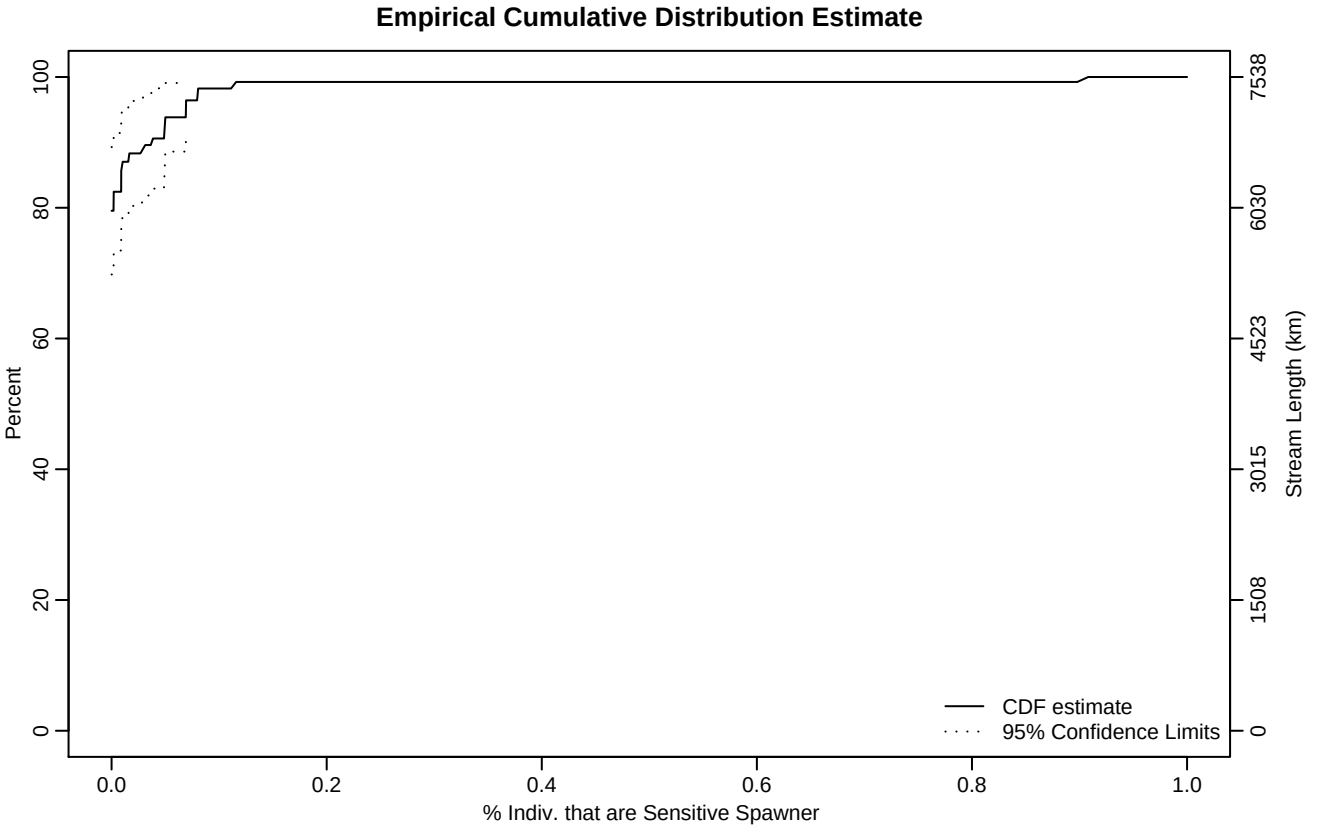


Figure VERT−297 Indicator: SPAWN_SEN_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.01
90Pct	0.04	0	0.08
95Pct	0.07	0.04	0.91
Mean	0.01	0	0.03
Std Dev	0.03	0.02	0.05

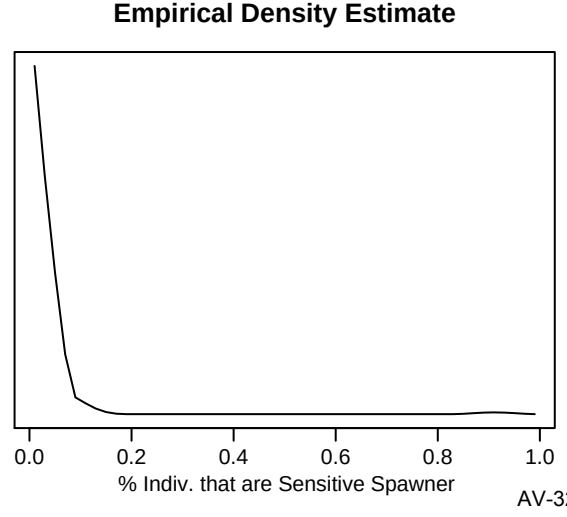
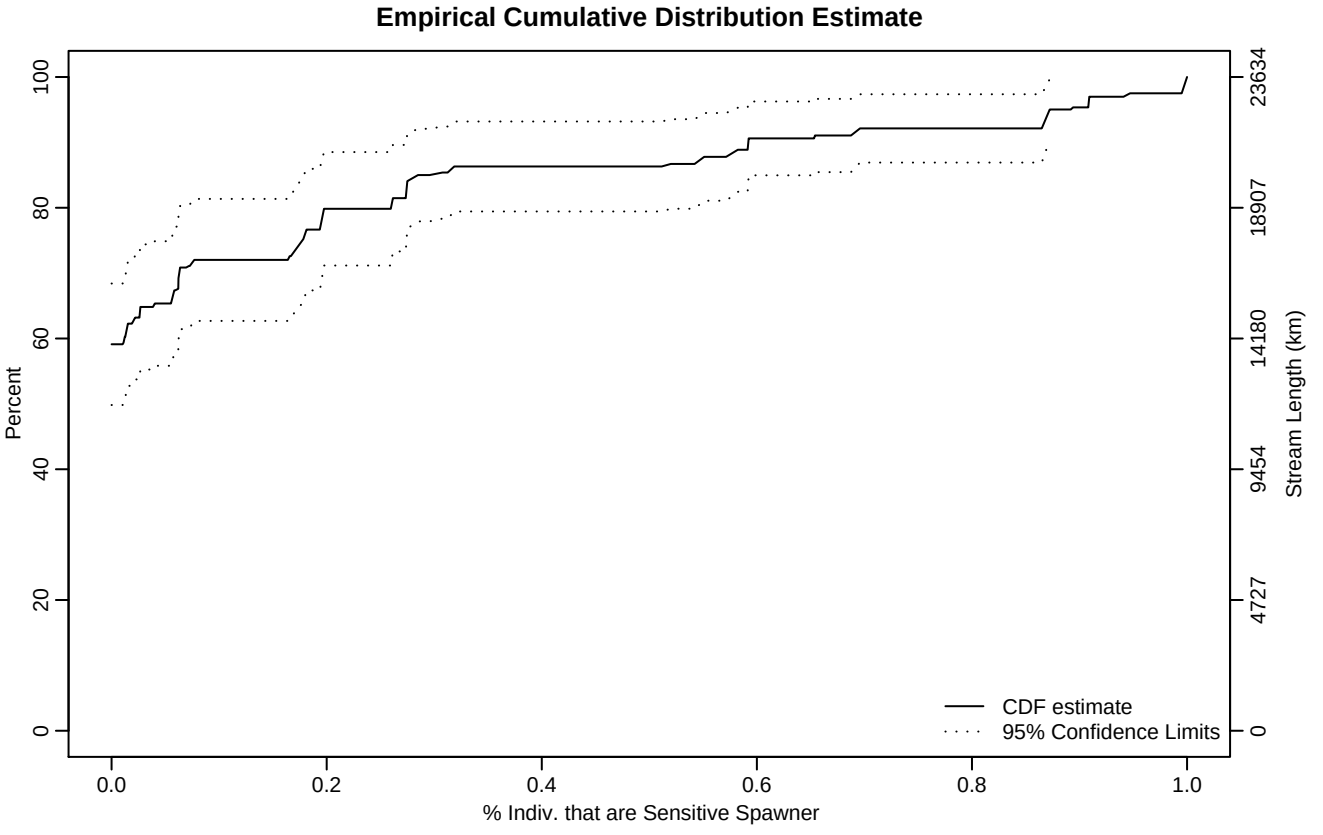


Figure VERT−298 Indicator: SPAWN_SEN_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.18	0.06	0.28
90Pct	0.59	0.27	0.91
95Pct	0.87	0.59	1
Mean	0.15	0.09	0.20
Std Dev	0.22	0.18	0.25

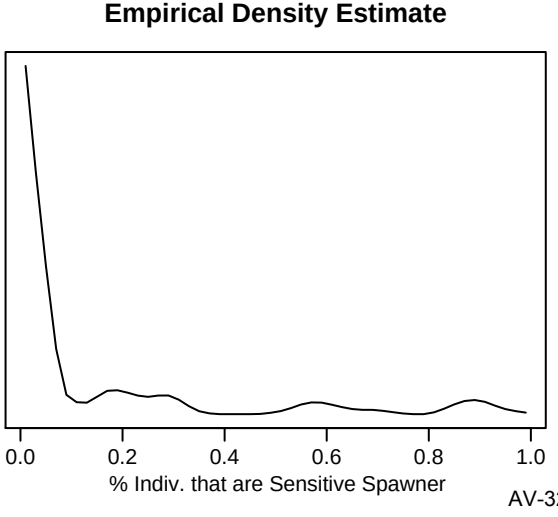
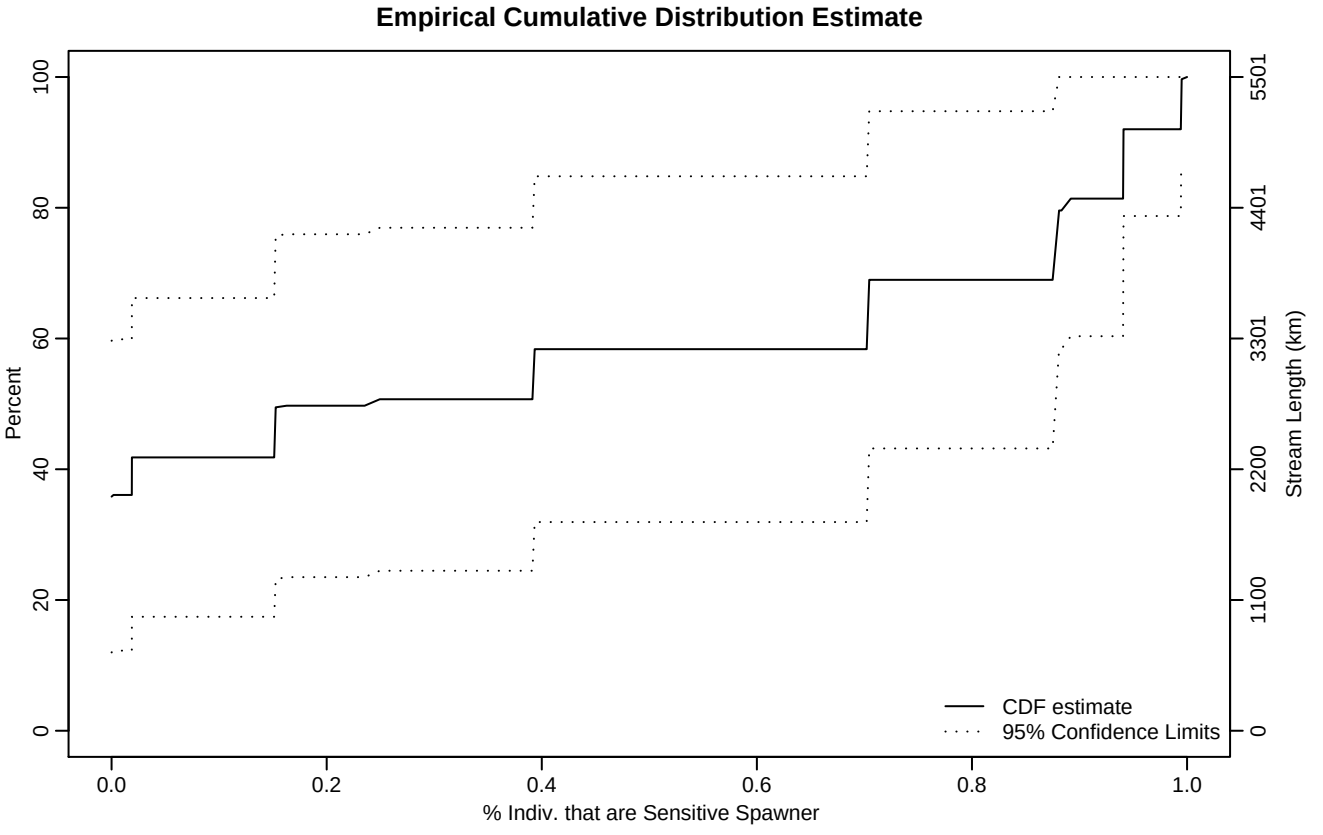


Figure VERT−299 Indicator: SPAWN_SEN_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.02
25Pct	0	0	0.16
50Pct	0.24	0	0.88
75Pct	0.88	0.15	1
90Pct	0.94	0.70	1
95Pct	0.99	0.94	1
Mean	0.41	0.19	0.63
Std Dev	0.41	0.35	0.47

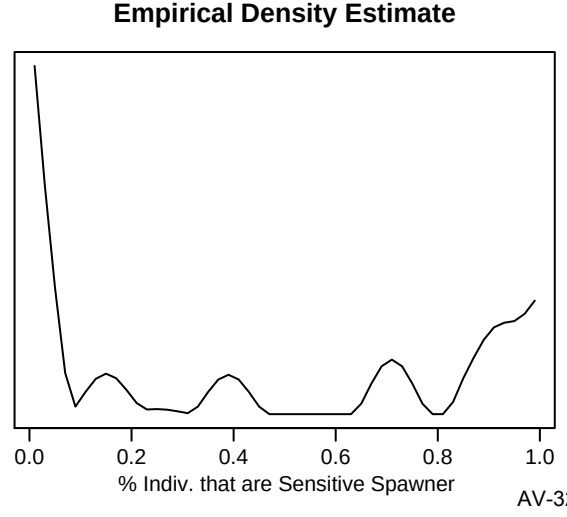
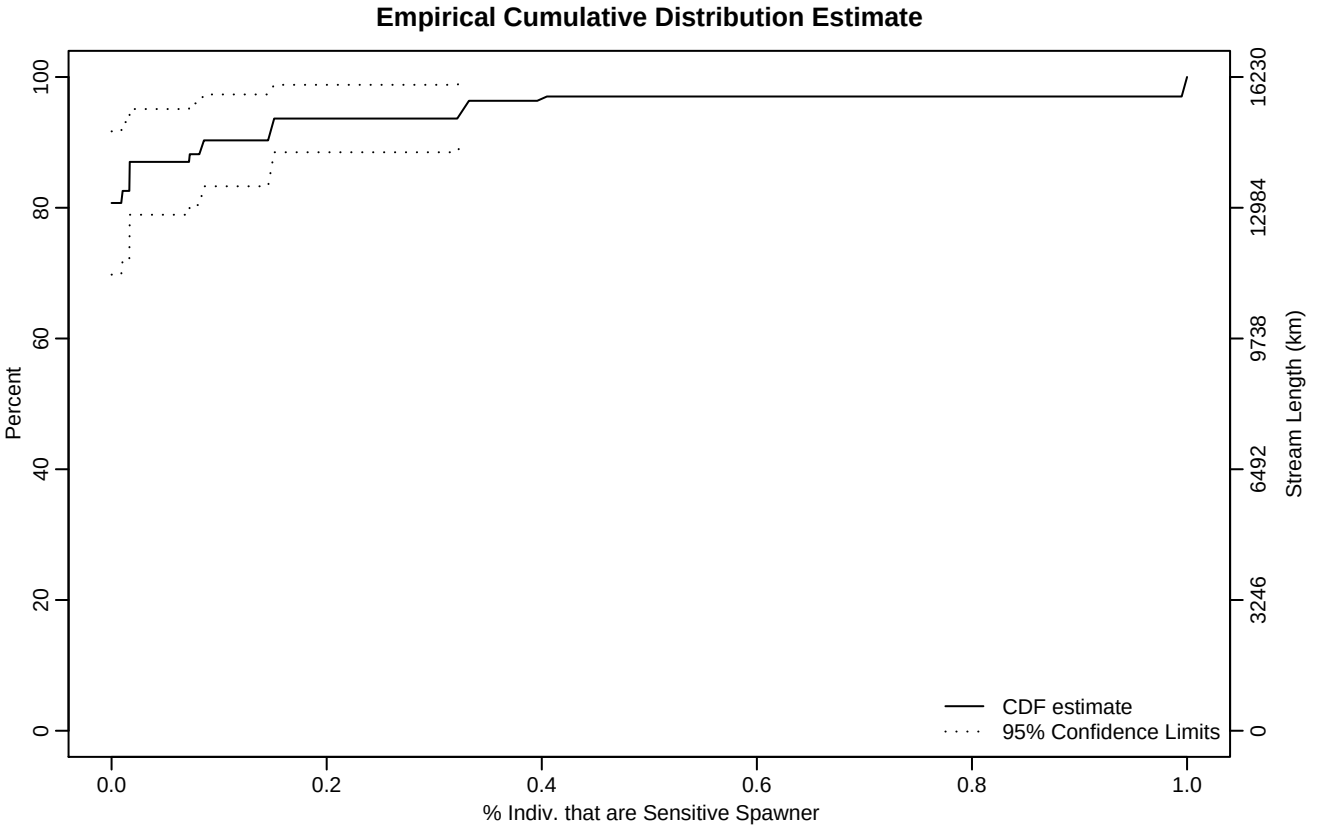


Figure VERT−300 Indicator: SPAWN_SEN_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.02
90Pct	0.09	0.01	1
95Pct	0.33	0.09	1
Mean	0.05	0.01	0.09
Std Dev	0.13	0.07	0.18

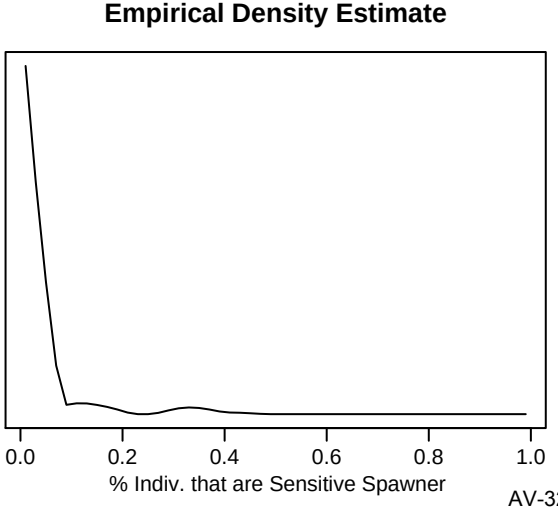
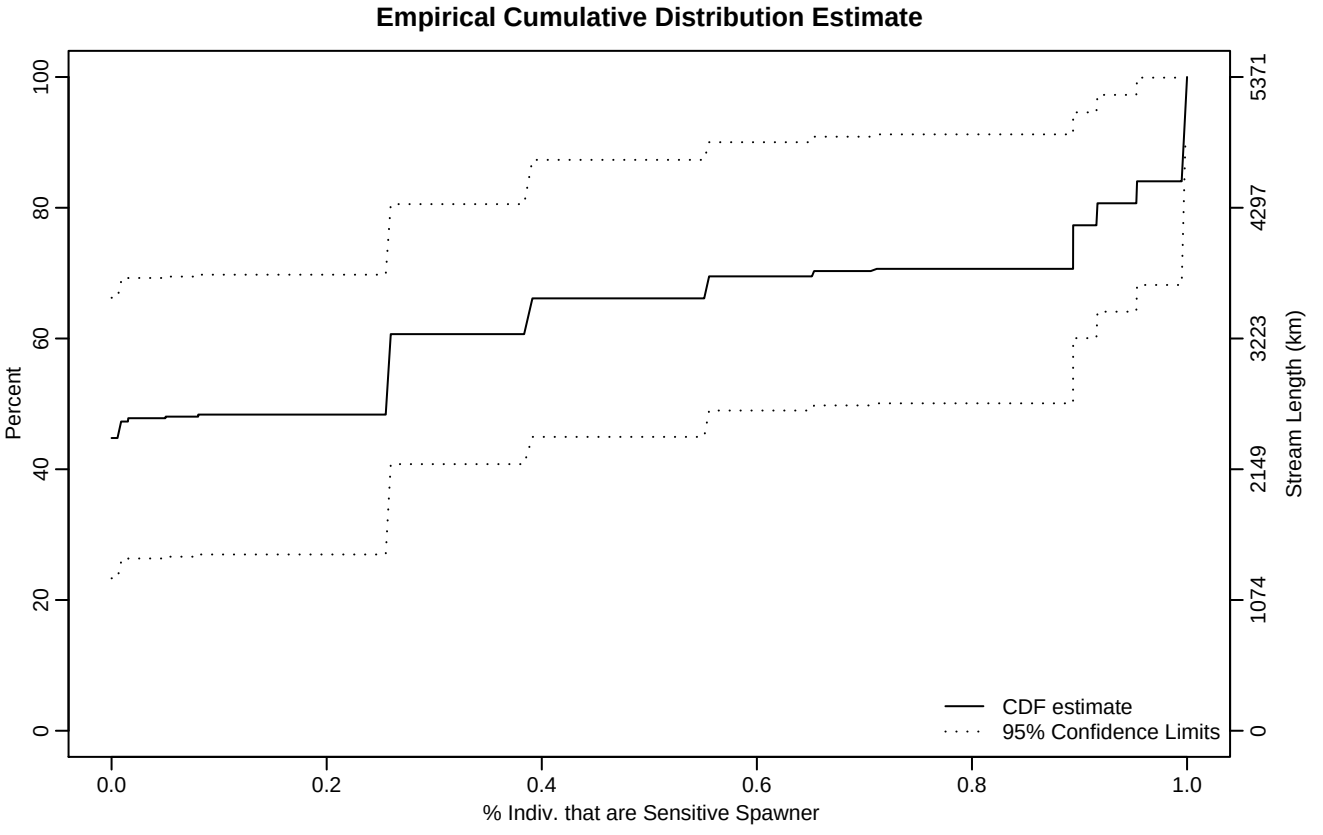


Figure VERT−301 Indicator: SPAWN_SEN_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.26
50Pct	0.26	0	0.89
75Pct	0.89	0.26	1
90Pct	1	0.89	
95Pct	1	0.92	
Mean	0.36	0.18	0.54
Std Dev	0.37	0.30	0.43

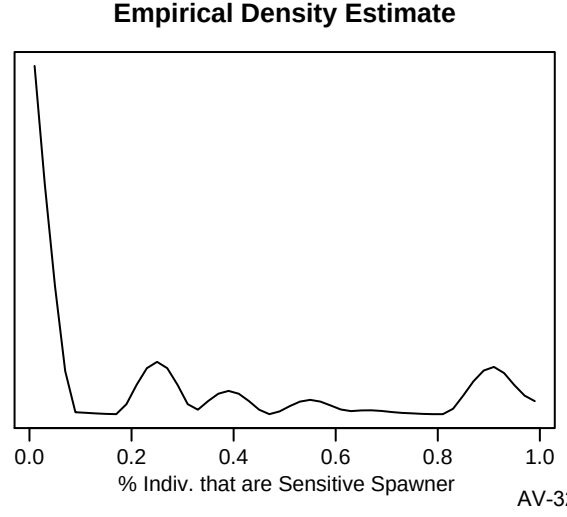
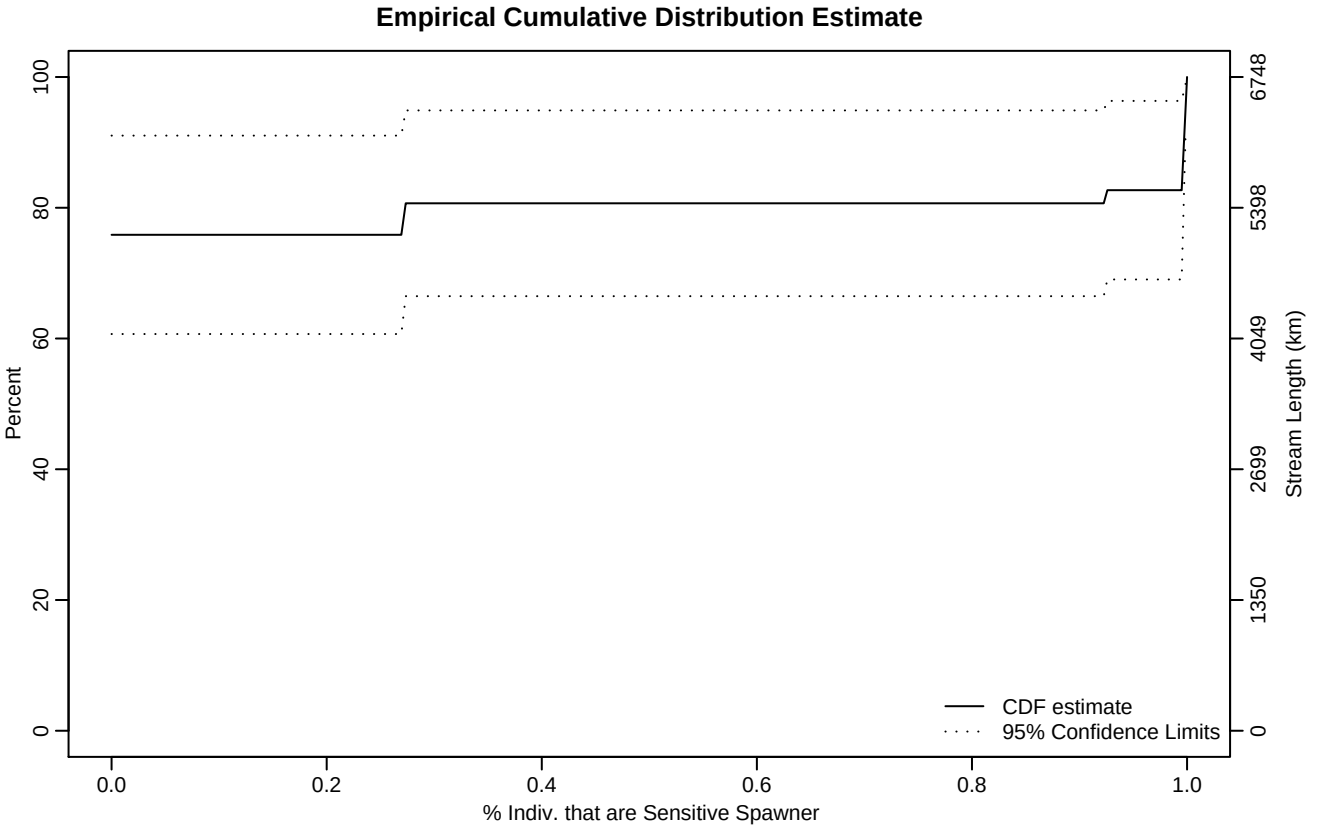


Figure VERT−302 Indicator: SPAWN_SEN_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	1
90Pct	1	0	1
95Pct	1	0.27	1
Mean	0.20	0.06	0.34
Std Dev	0.29	0.23	0.36

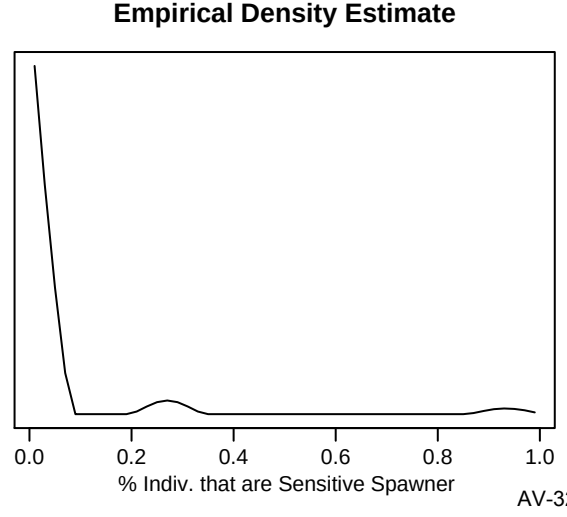
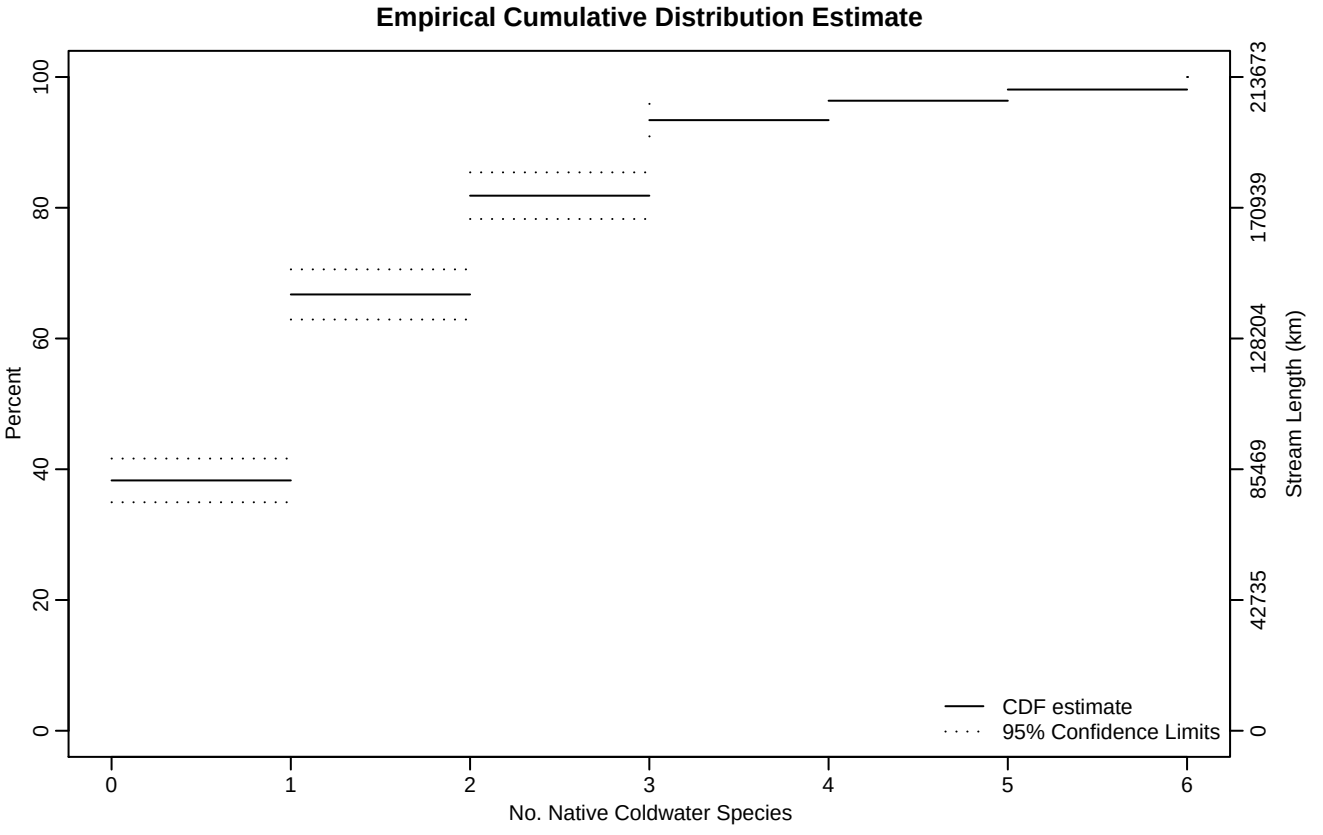


Figure VERT−303 Indicator: COLD_NAT_RICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.41	0.29	0.54
75Pct	1.55	1.28	1.81
90Pct	2.71	2.39	3.10
95Pct	3.54	2.92	4.70
Mean	1.25	1.14	1.37
Std Dev	1.05	0.95	1.14

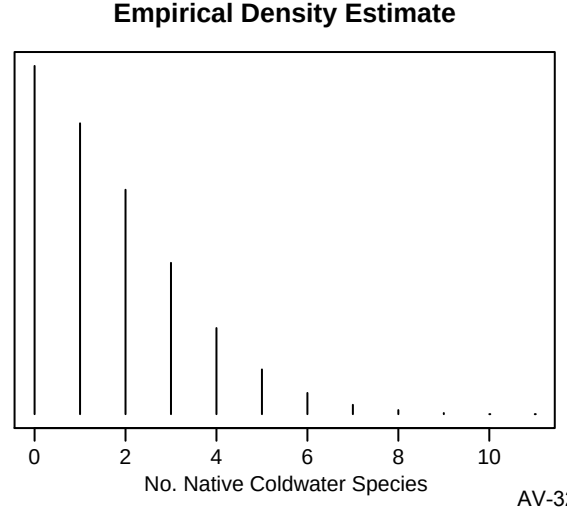
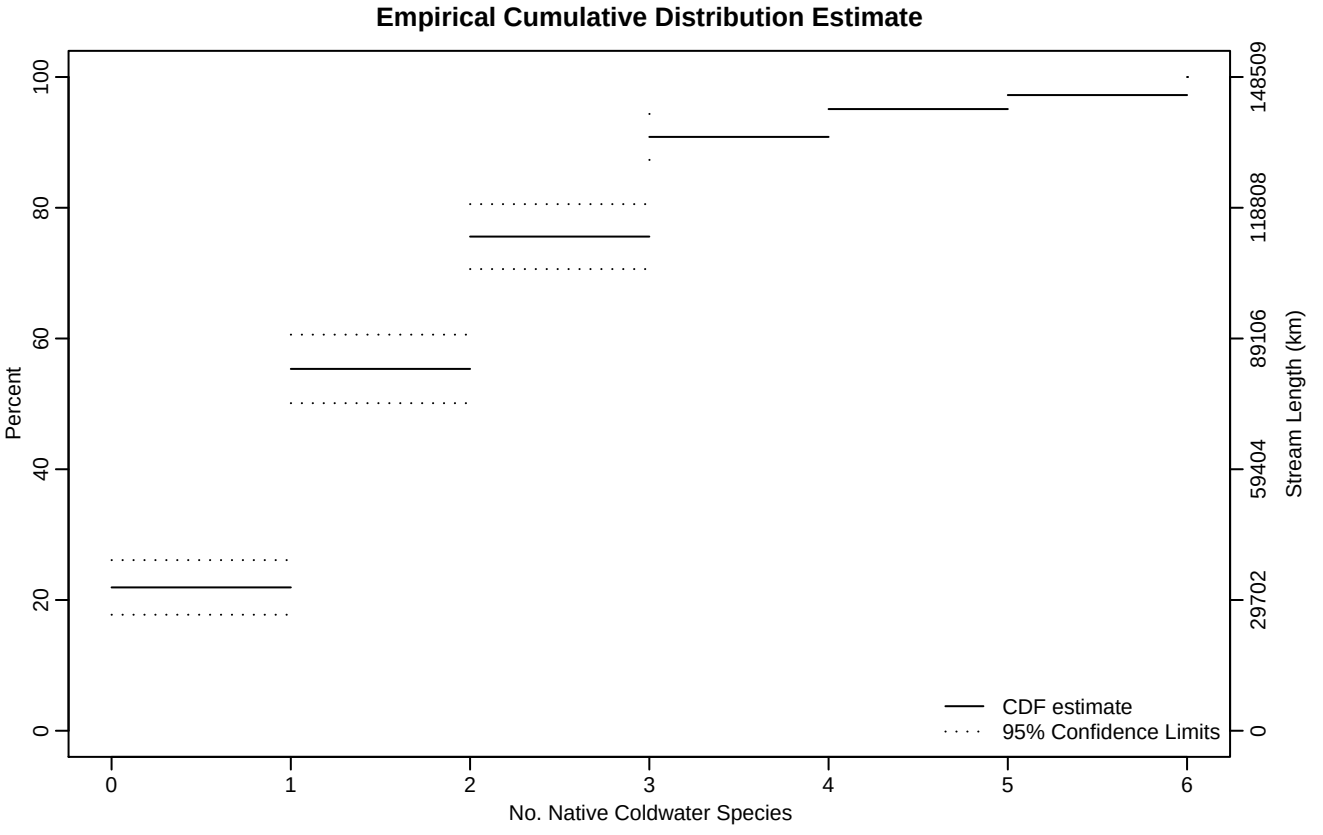


Figure VERT−304 Indicator: COLD_NAT_RICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.09	0	0.22
50Pct	0.84	0.71	0.97
75Pct	1.97	1.70	2.32
90Pct	2.95	2.61	4.03
95Pct	3.98	3.13	5.50
Mean	1.64	1.48	1.80
Std Dev	1.21	1.10	1.33

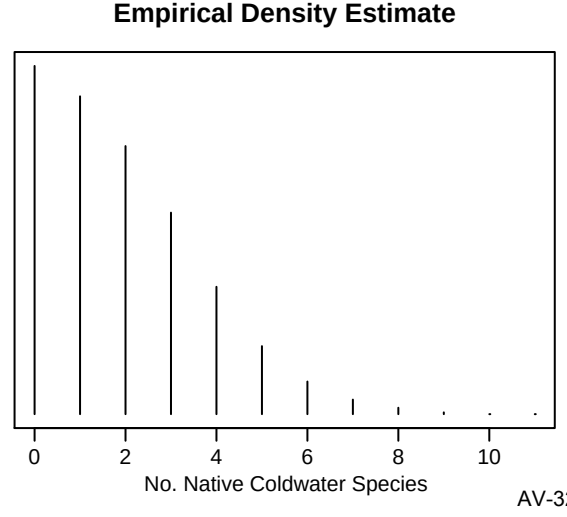
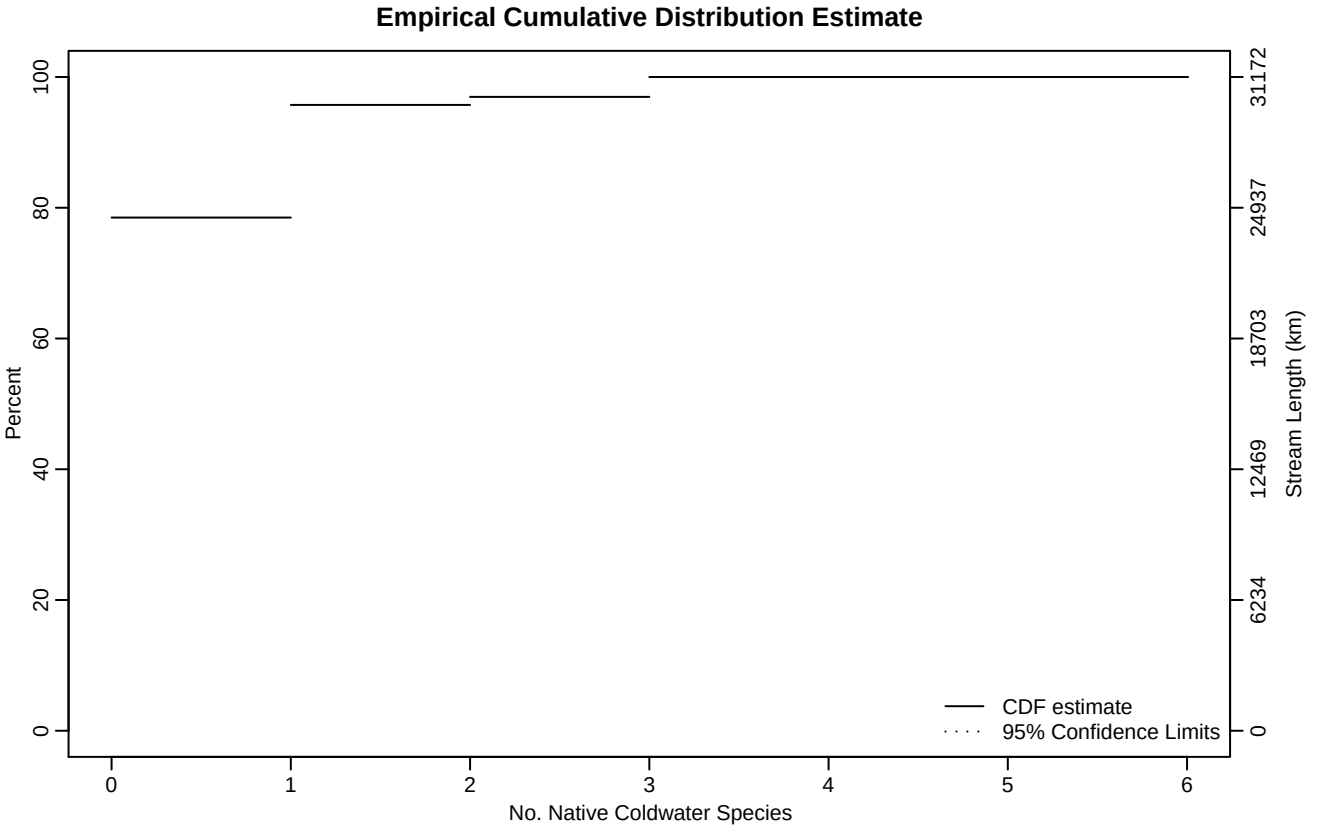


Figure VERT−305 Indicator: COLD_NAT_RICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.21
90Pct	0.67	0.23	2.18
95Pct	0.96	0.51	
Mean	0.29	0.19	0.39
Std Dev	0.34	0.25	0.42

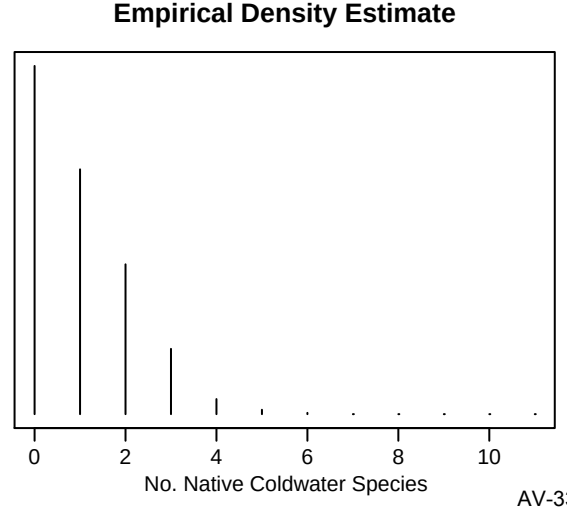
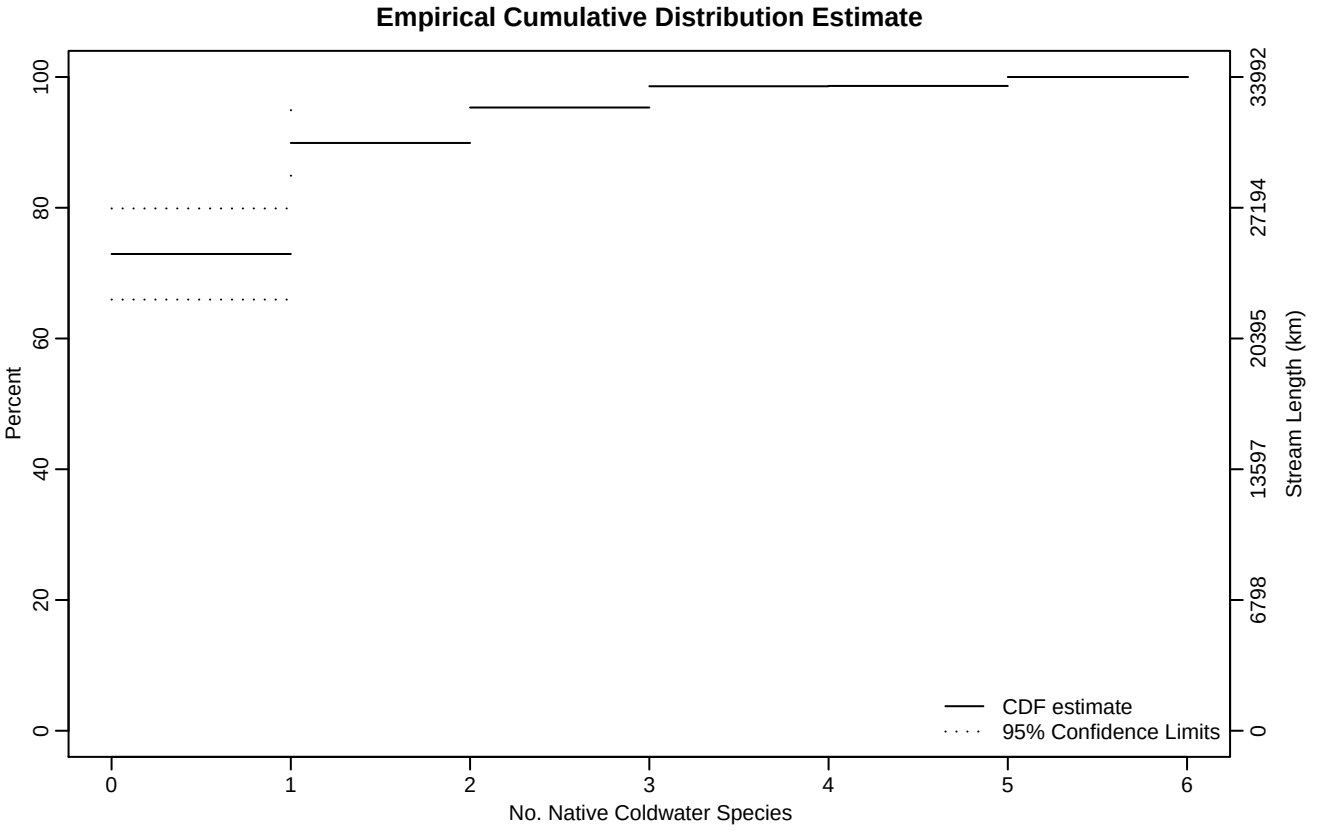


Figure VERT−306 Indicator: COLD_NAT_RICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.12	0	0.54
90Pct	1.02	0.68	2.06
95Pct	1.94	0.97	
Mean	0.45	0.32	0.57
Std Dev	0.58	0.47	0.69

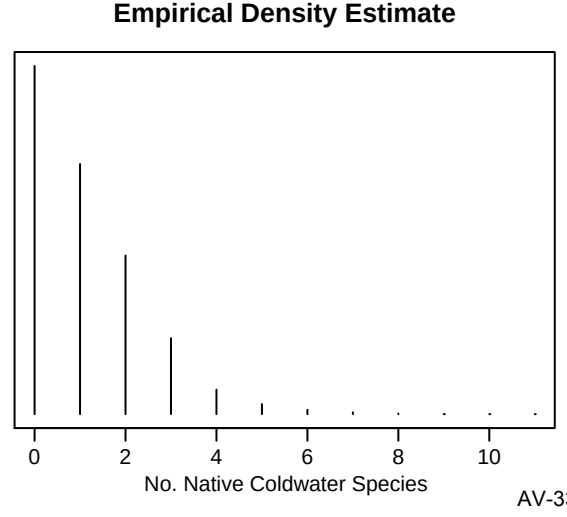
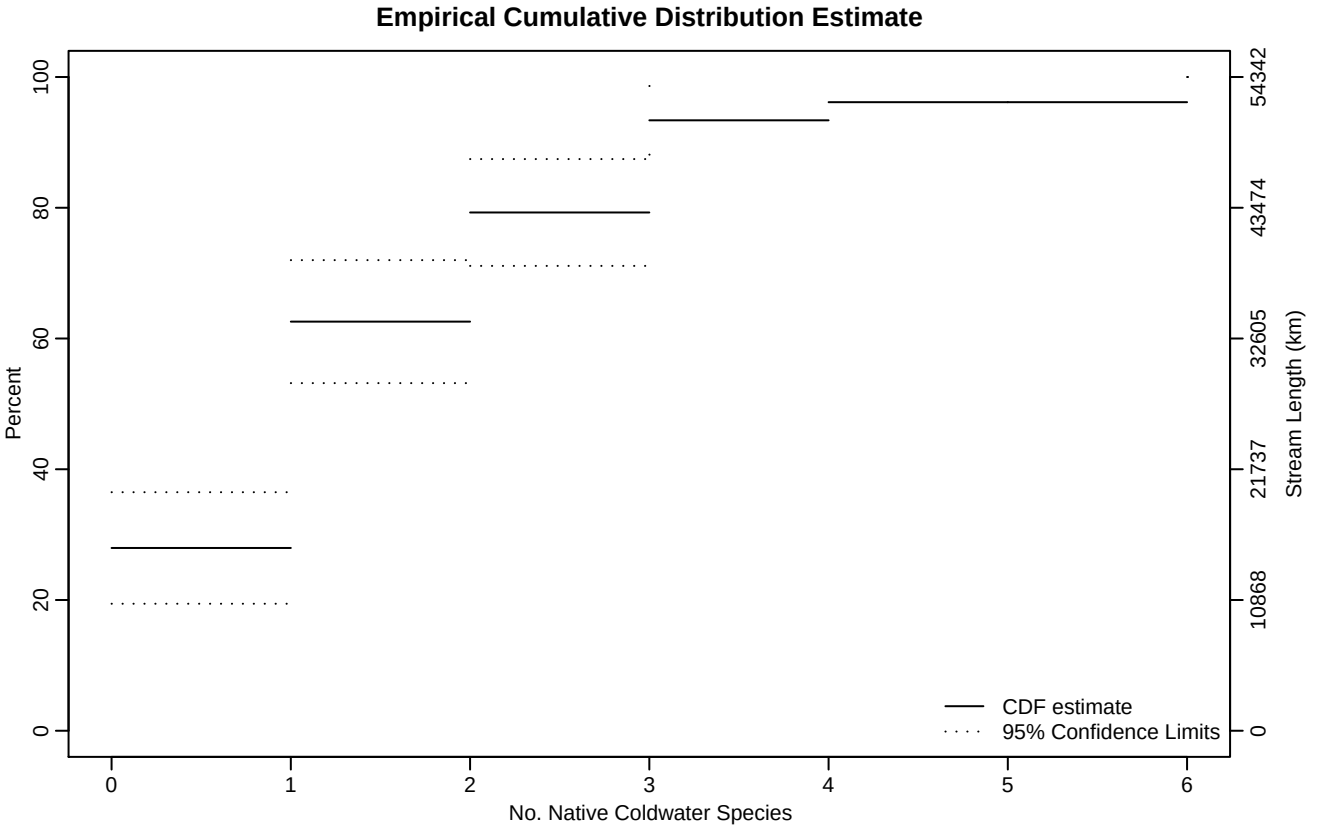


Figure VERT−307 Indicator: COLD_NAT_RICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.17
50Pct	0.64	0.39	0.88
75Pct	1.74	1.19	2.36
90Pct	2.76	2.21	5.44
95Pct	3.59	2.75	
Mean	1.45	1.16	1.73
Std Dev	1.26	1.06	1.45

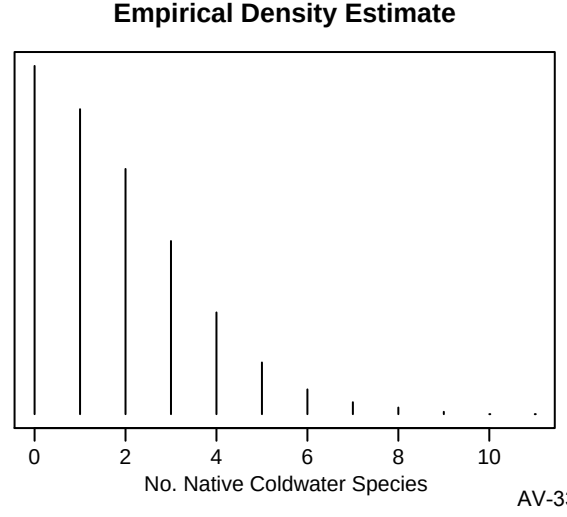
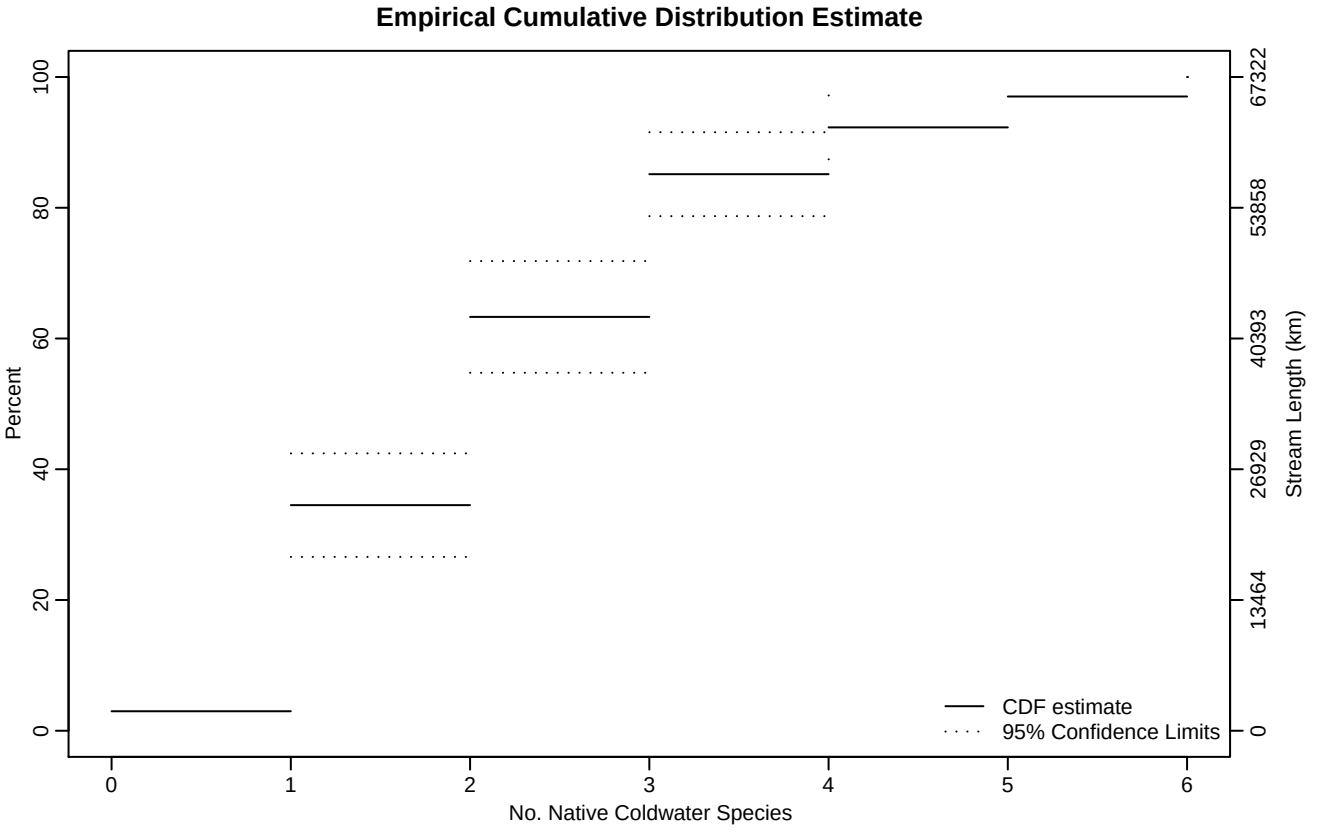


Figure VERT−308 Indicator: COLD_NAT_RICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0	0.18
10Pct	0.22	0.11	0.34
25Pct	0.70	0.57	0.82
50Pct	1.54	1.25	1.82
75Pct	2.54	2.13	2.94
90Pct	3.68	2.92	4.92
95Pct	4.57	3.69	5.97
Mean	2.25	2.01	2.48
Std Dev	1.28	1.11	1.46

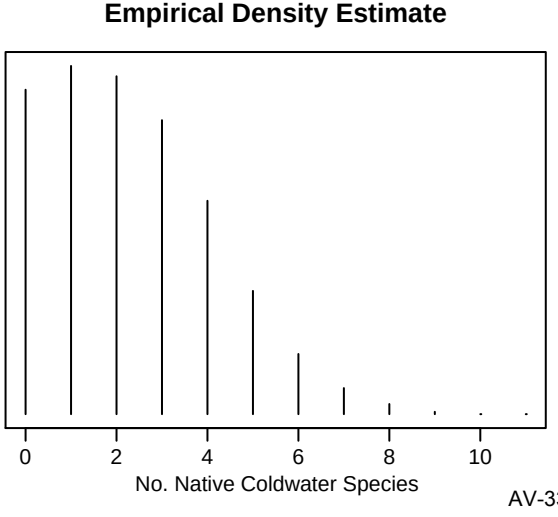
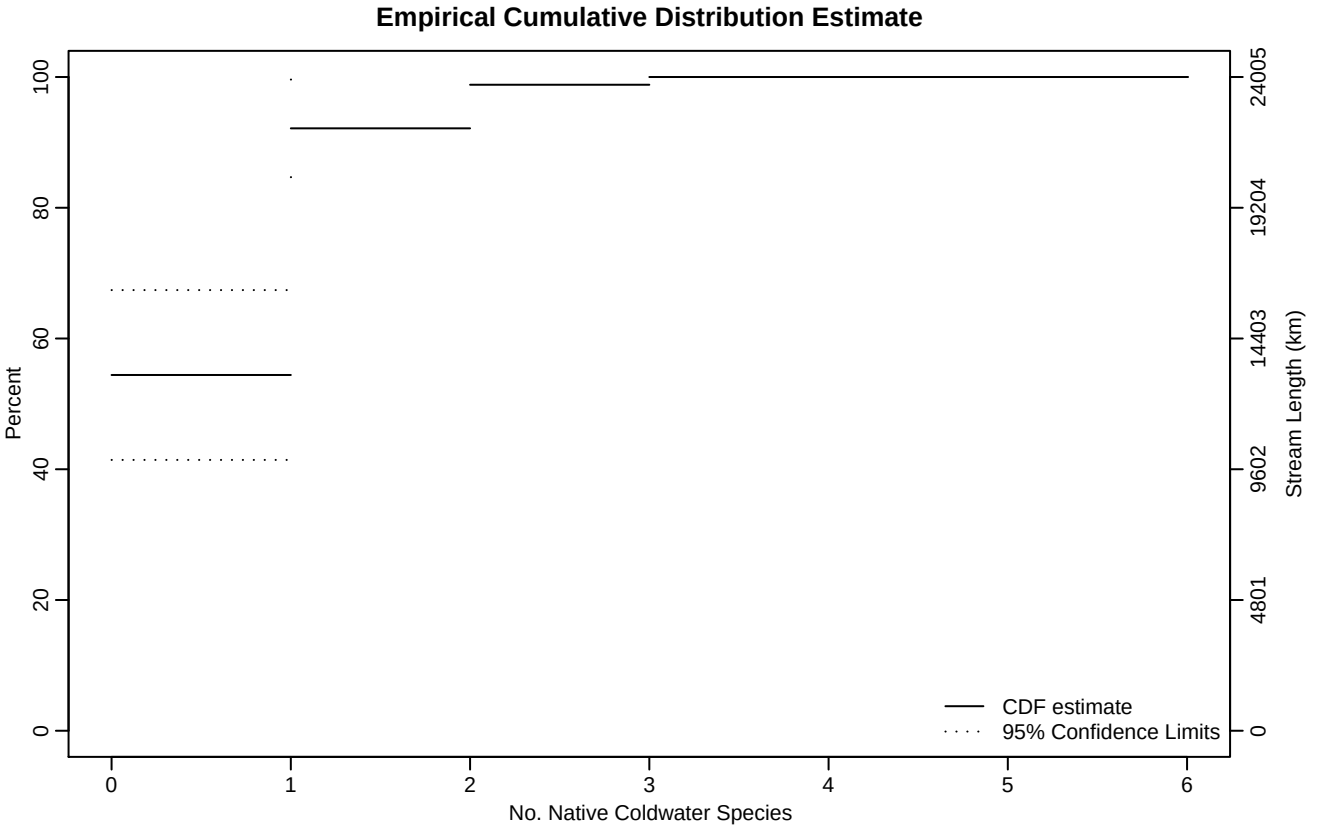


Figure VERT−309 Indicator: COLD_NAT_RICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.23
75Pct	0.55	0.22	0.87
90Pct	0.94	0.63	
95Pct	1.43	0.88	
Mean	0.55	0.37	0.72
Std Dev	0.60	0.48	0.71

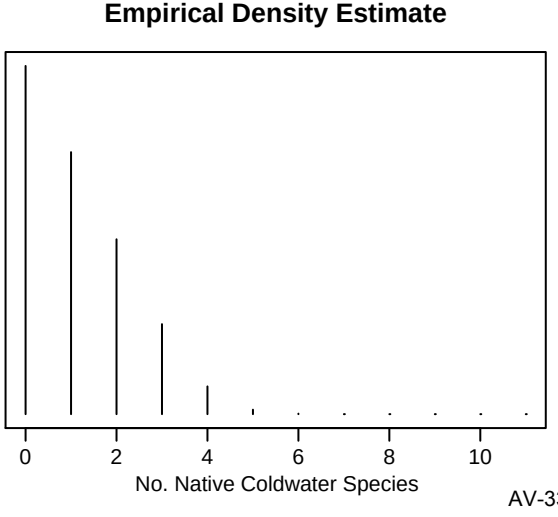
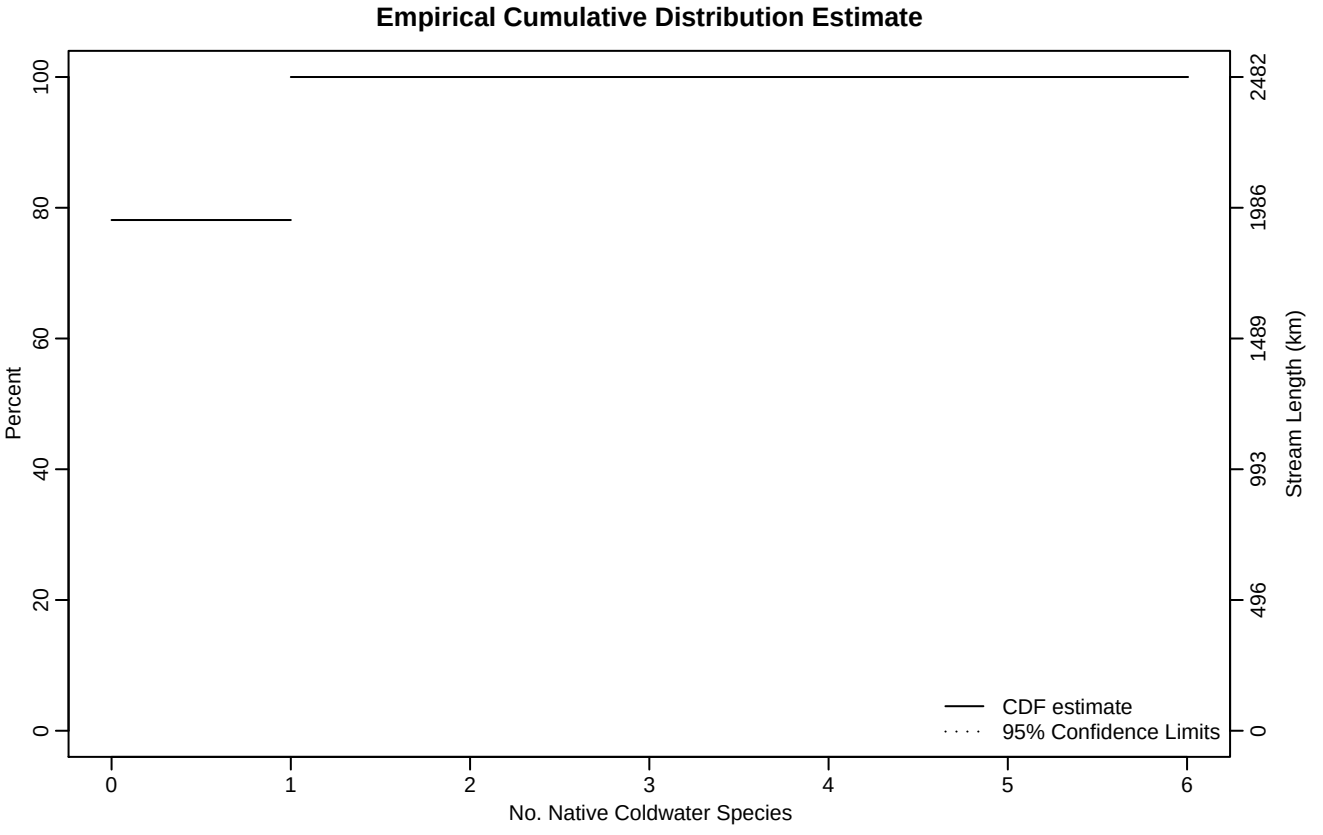


Figure VERT−310 Indicator: COLD_NAT_RICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.16
90Pct	0.54	0.25	0.83
95Pct	0.77	0.48	1
Mean	0.22	0.17	0.27
Std Dev	0.27	0.17	0.36

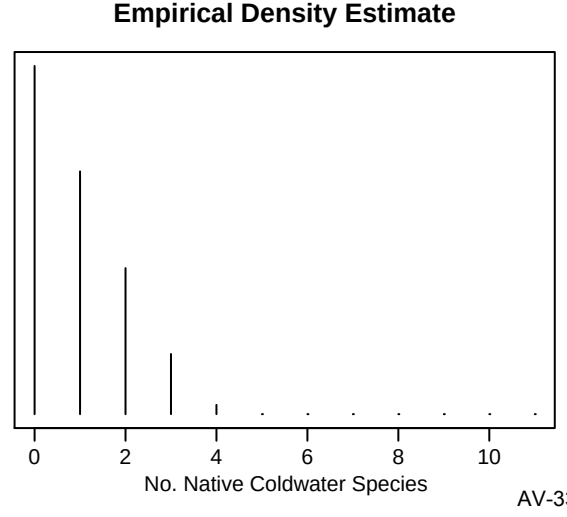
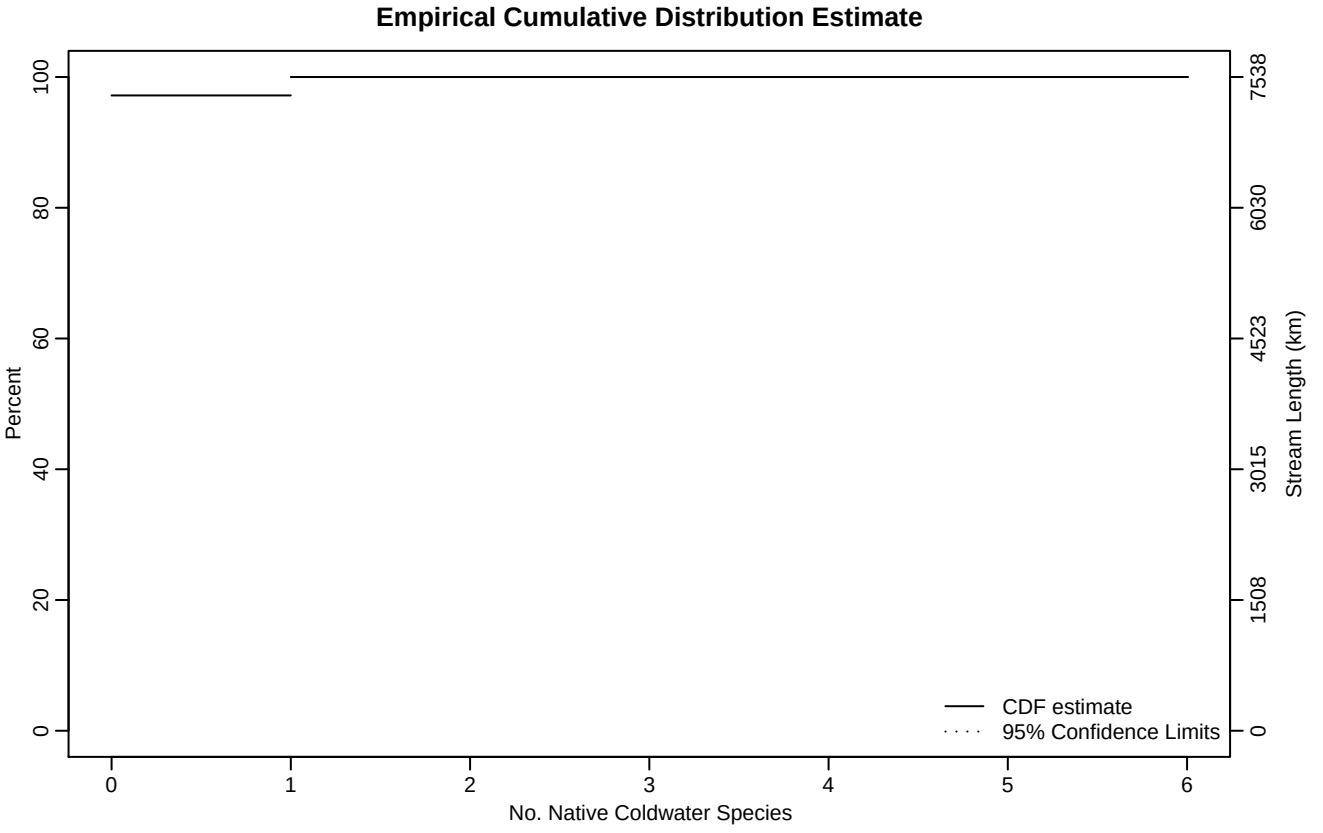


Figure VERT−311 Indicator: COLD_NAT_RICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.32
Mean	0.03	0	0.06
Std Dev	0.04	0.03	0.05

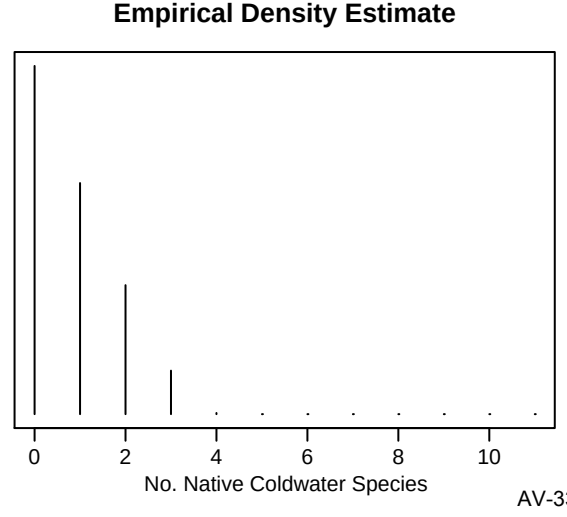
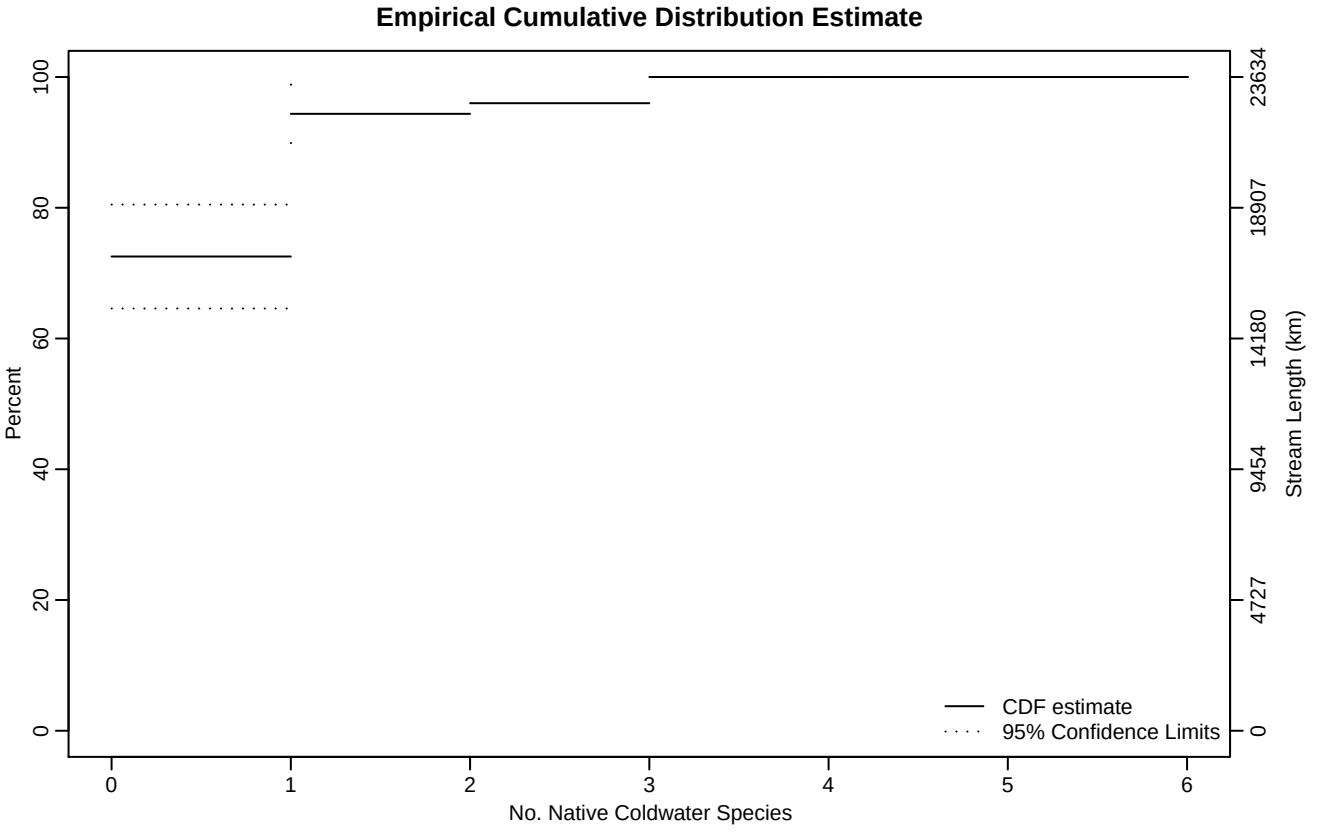


Figure VERT−312 Indicator: COLD_NAT_RICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.11	0	0.54
90Pct	0.80	0.35	2.96
95Pct	1.39	0.83	2.86
Mean	0.37	0.24	0.50
Std Dev	0.43	0.31	0.54

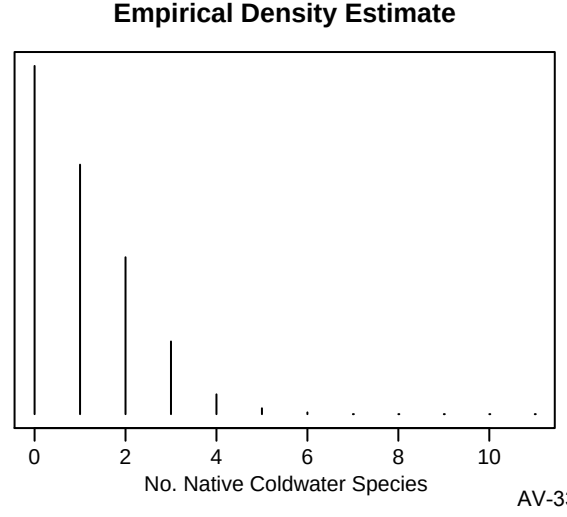
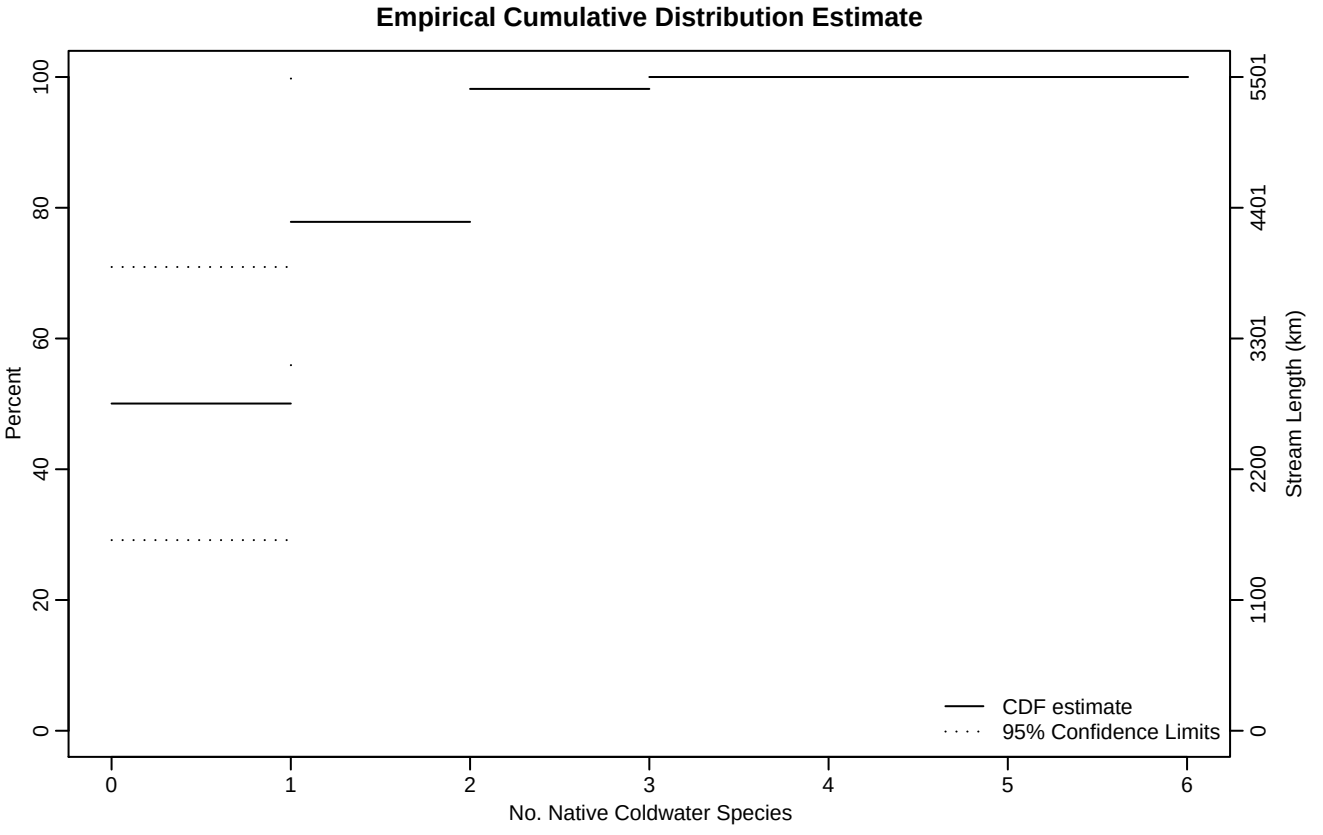


Figure VERT−313 Indicator: COLD_NAT_RICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.75
75Pct	0.90	0.16	1.87
90Pct	1.60	0.65	3
95Pct	1.84	0.83	3
Mean	0.74	0.35	1.13
Std Dev	0.84	0.65	1.03

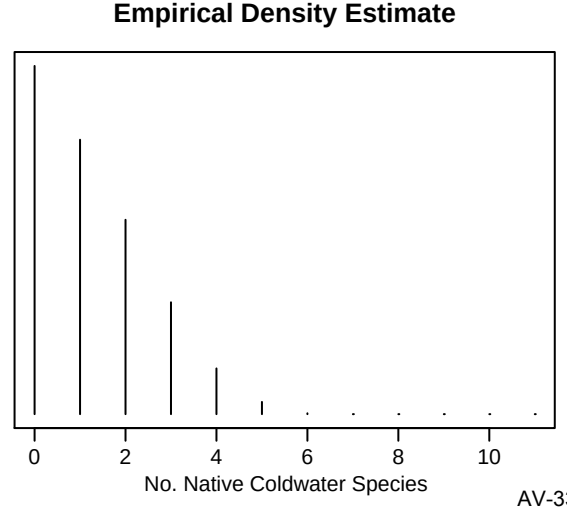
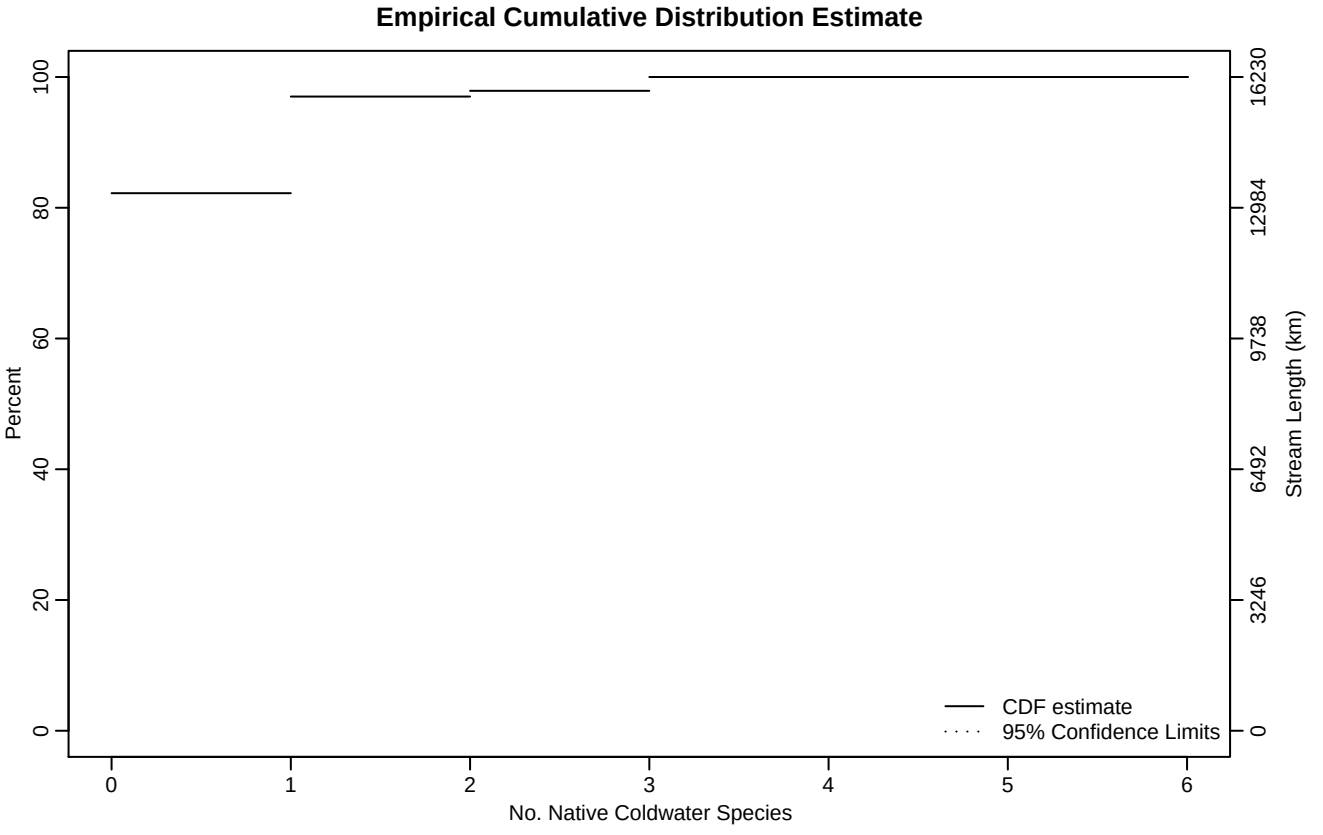


Figure VERT−314 Indicator: COLD_NAT_RICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.19
90Pct	0.53	0	3
95Pct	0.86	0.15	3
Mean	0.23	0.09	0.36
Std Dev	0.53	0.33	0.72

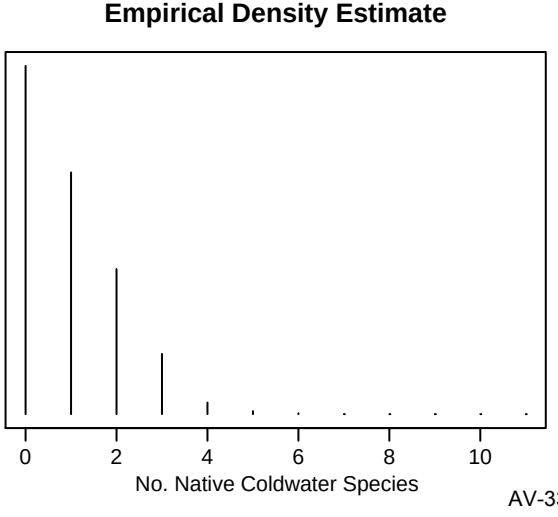
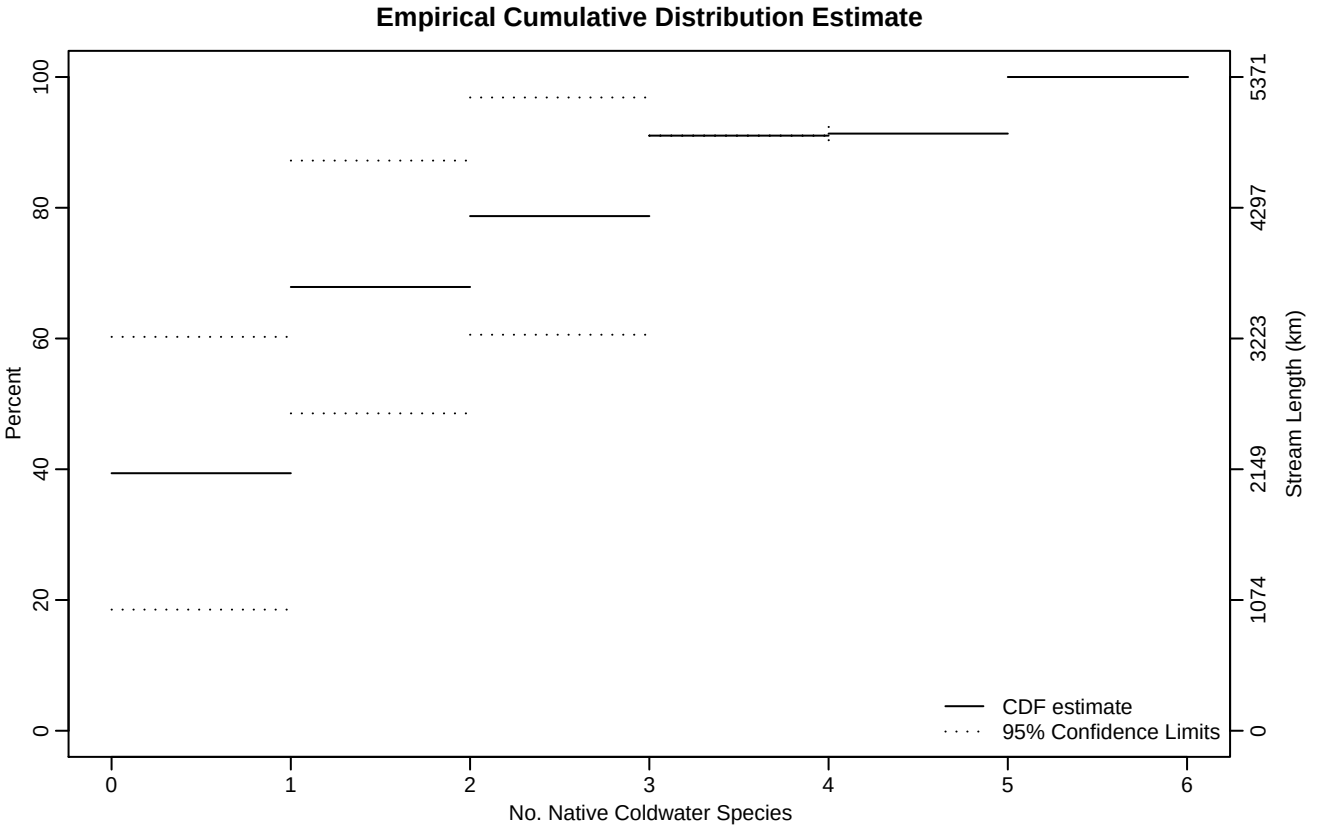


Figure VERT−315 Indicator: COLD_NAT_RICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.28
50Pct	0.37	0	1.41
75Pct	1.66	0.44	4.77
90Pct	2.92	0.93	
95Pct	4.42	2.06	
Mean	1.32	0.81	1.83
Std Dev	0.80	0.63	0.97

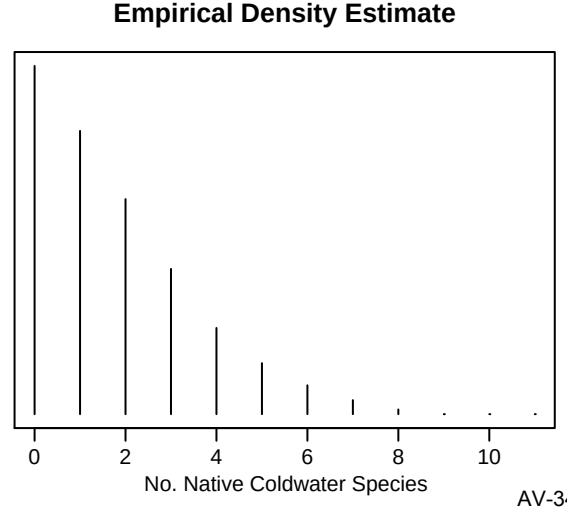
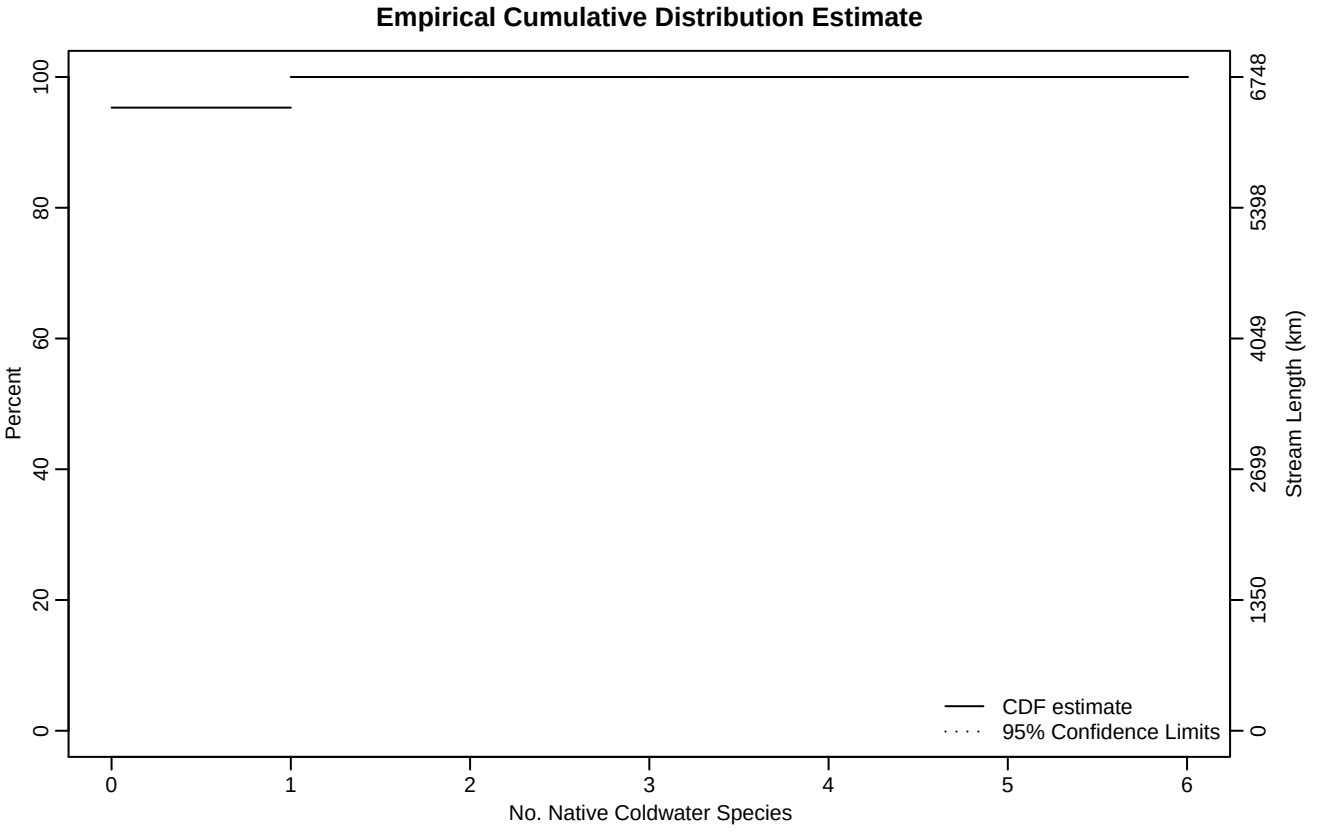


Figure VERT−316 Indicator: COLD_NAT_RICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.90
95Pct	0	0	1
Mean	0.05	−0.06	0.15
Std Dev	0.05	0.04	0.07

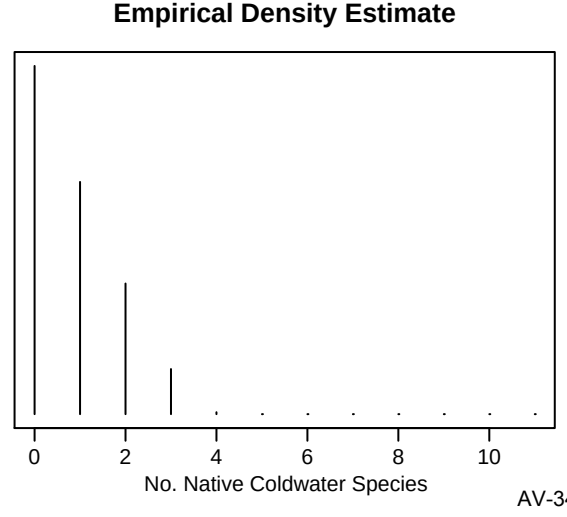
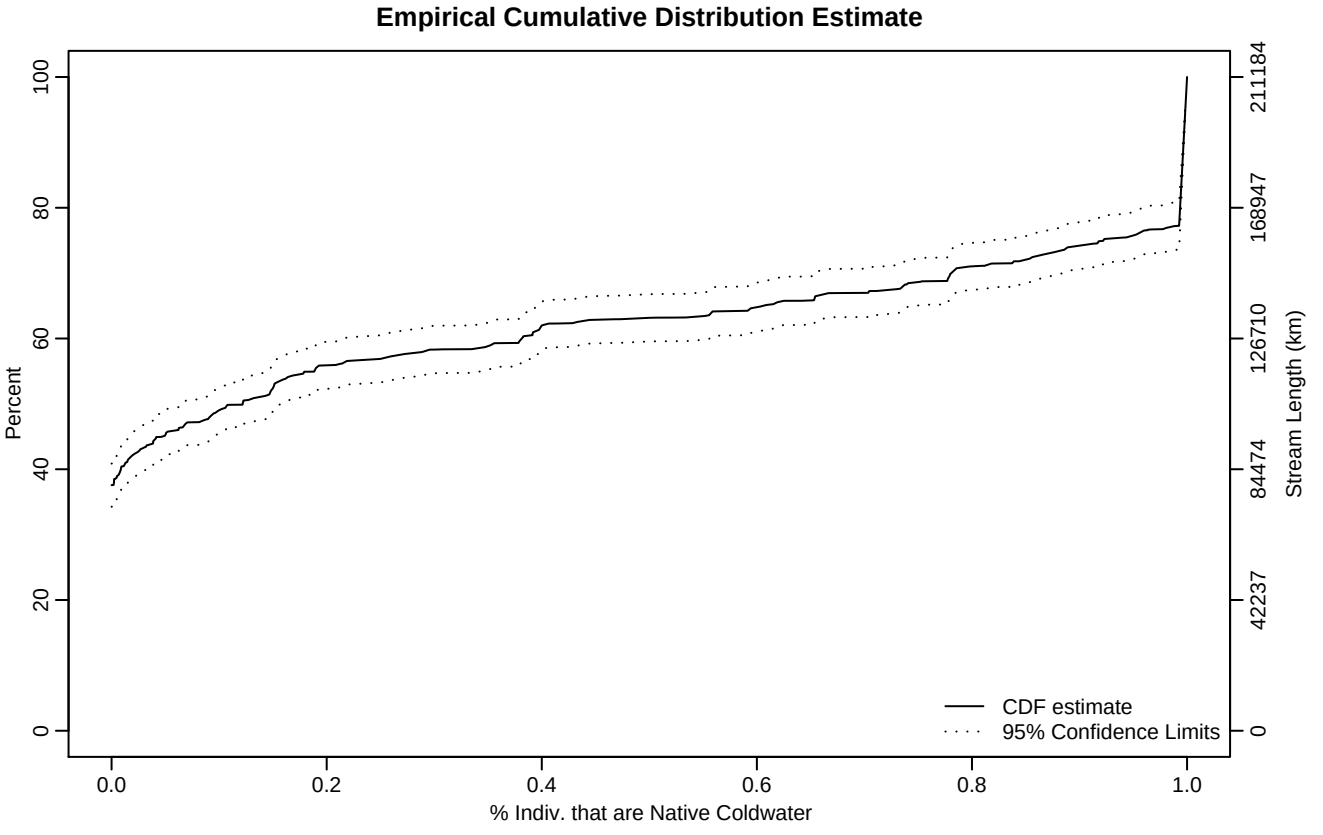


Figure VERT−317 Indicator: COLD_NAT_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.12	0.06	0.16
75Pct	0.92	0.81	0.99
90Pct	1	1	1
95Pct	1	1	1
Mean	0.38	0.35	0.41
Std Dev	0.31	0.29	0.33

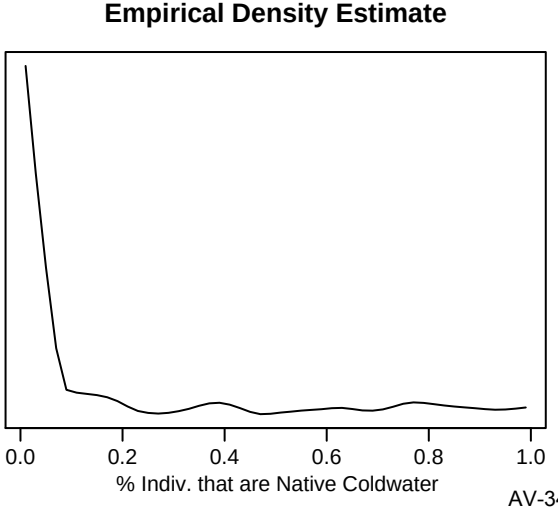
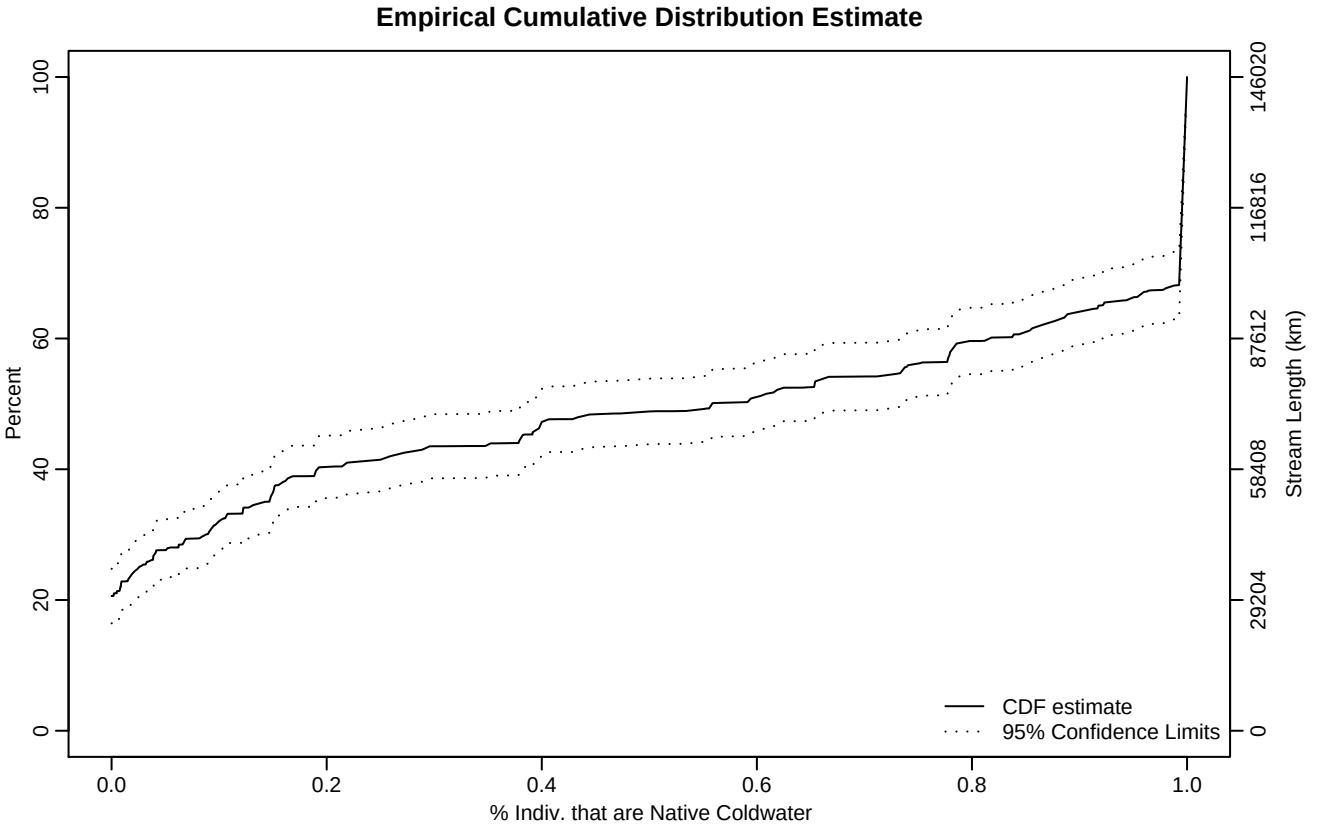


Figure VERT−318 Indicator: COLD_NAT_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.03	0	0.08
50Pct	0.56	0.38	0.74
75Pct	0.99	0.99	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.52	0.48	0.56
Std Dev	0.35	0.33	0.38

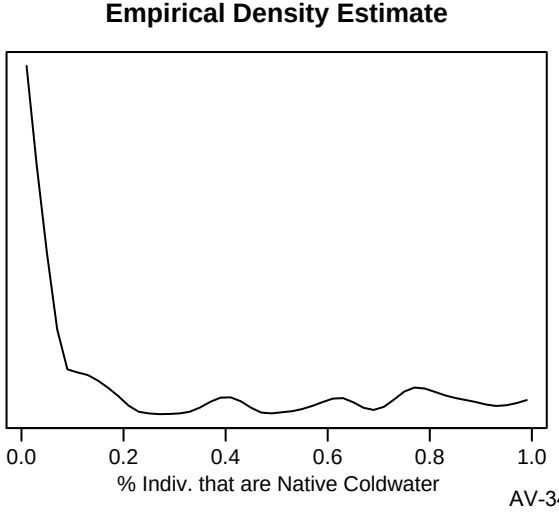
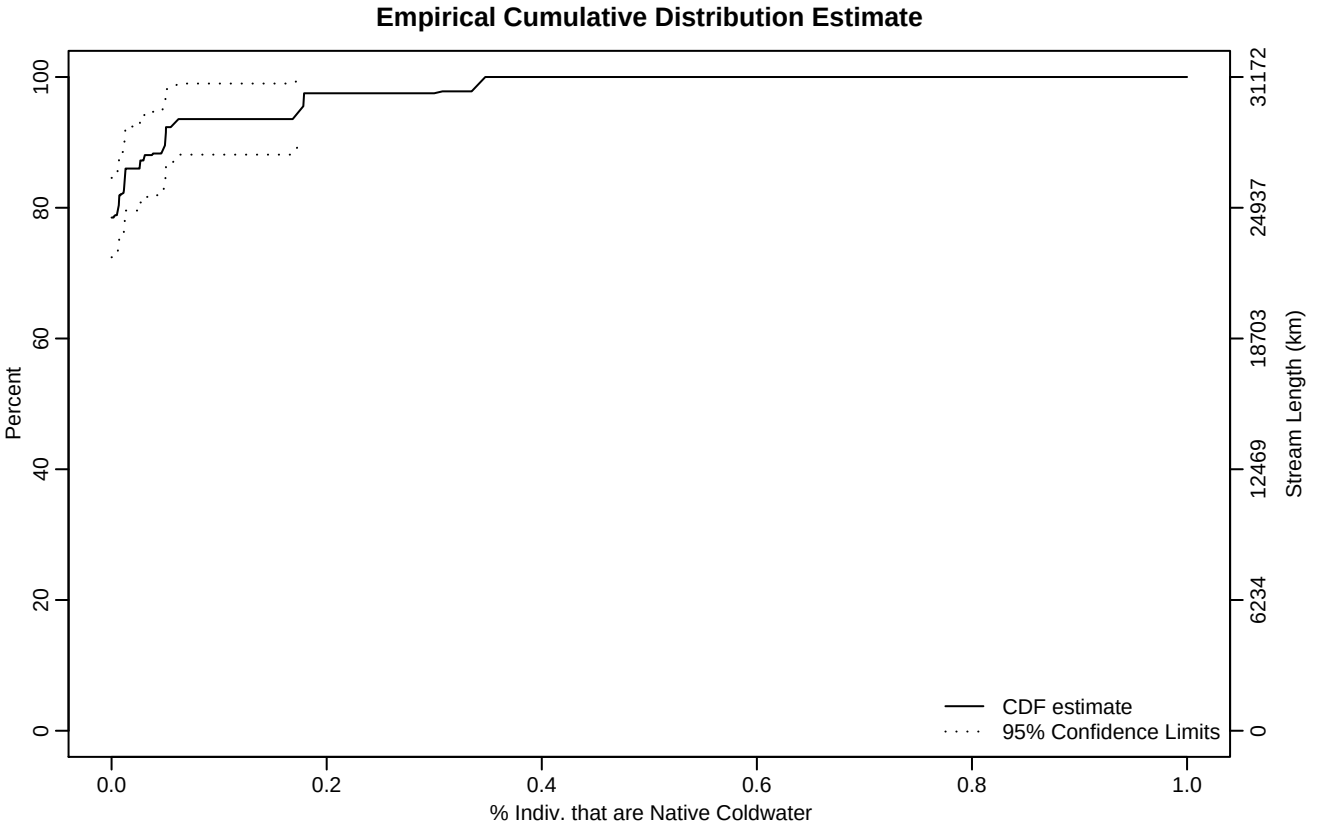


Figure VERT−319 Indicator: COLD_NAT_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.01
90Pct	0.05	0.01	0.18
95Pct	0.18	0.05	
Mean	0.02	0.01	0.03
Std Dev	0.04	0.02	0.06

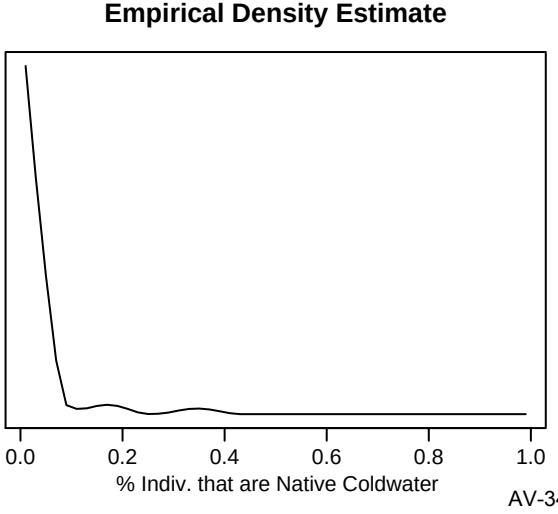
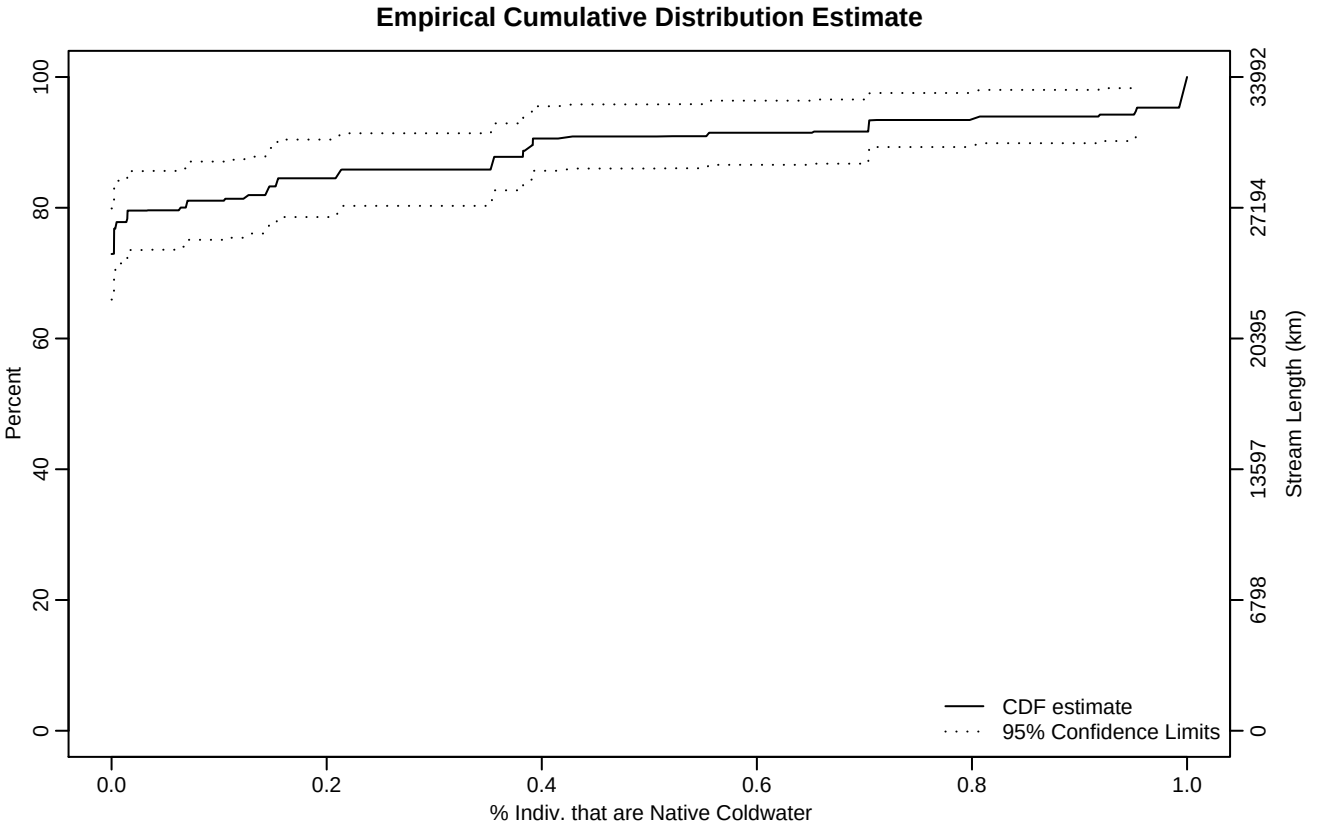


Figure VERT−320 Indicator: COLD_NAT_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.14
90Pct	0.39	0.21	0.99
95Pct	0.95	0.55	1
Mean	0.11	0.07	0.15
Std Dev	0.18	0.15	0.21

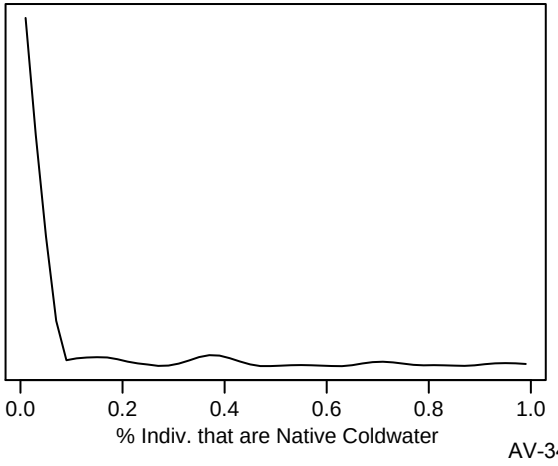
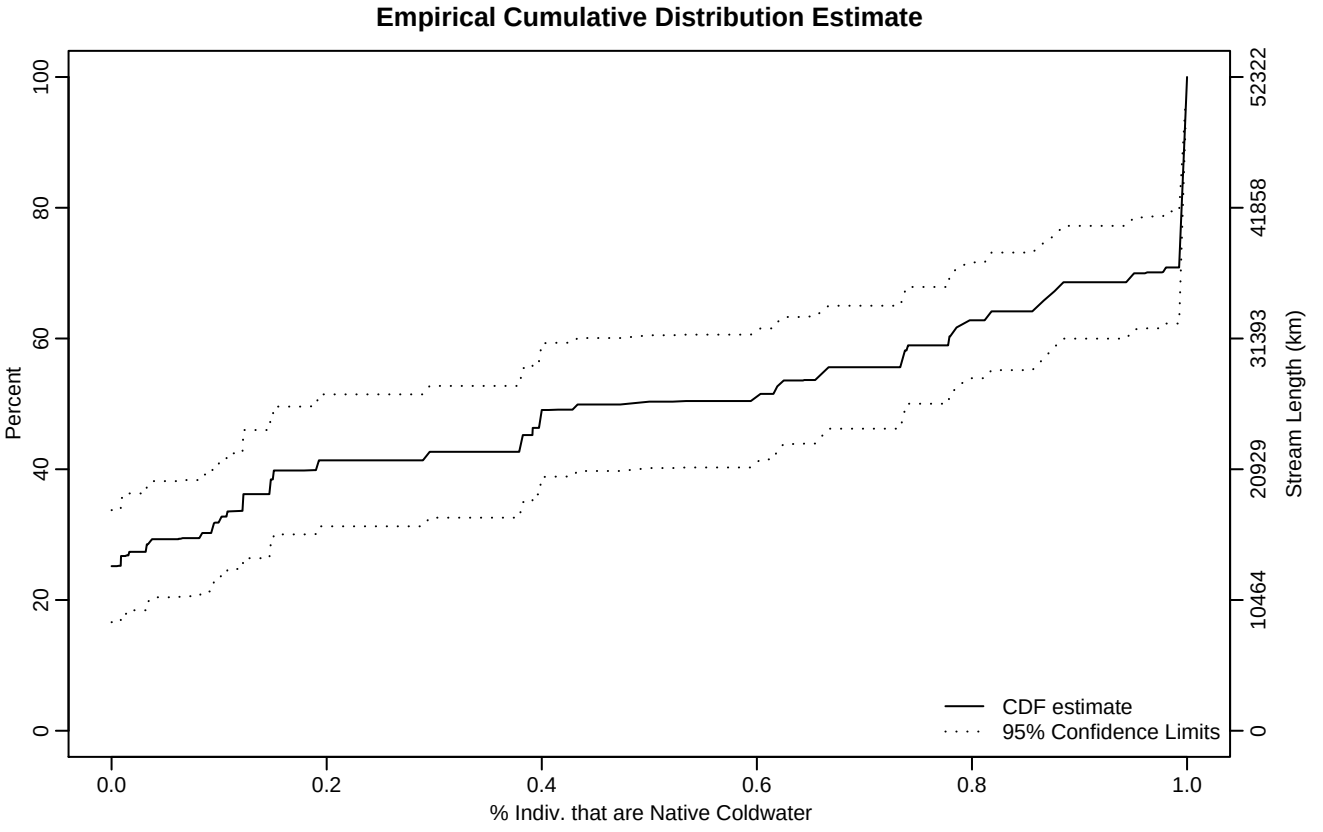


Figure VERT−321 Indicator: COLD_NAT_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.12
50Pct	0.48	0.18	0.78
75Pct	0.99	0.87	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.50	0.42	0.58
Std Dev	0.37	0.34	0.41

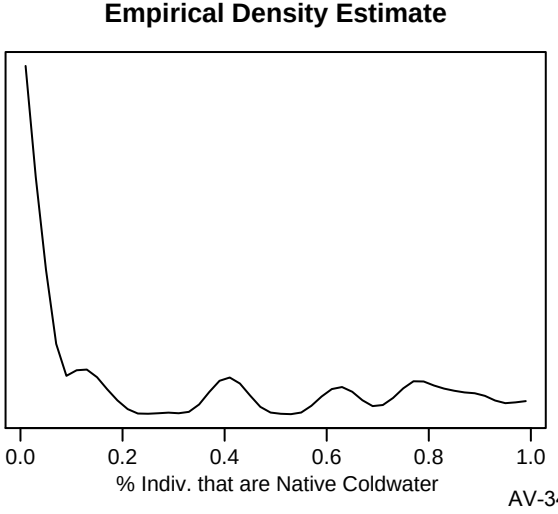
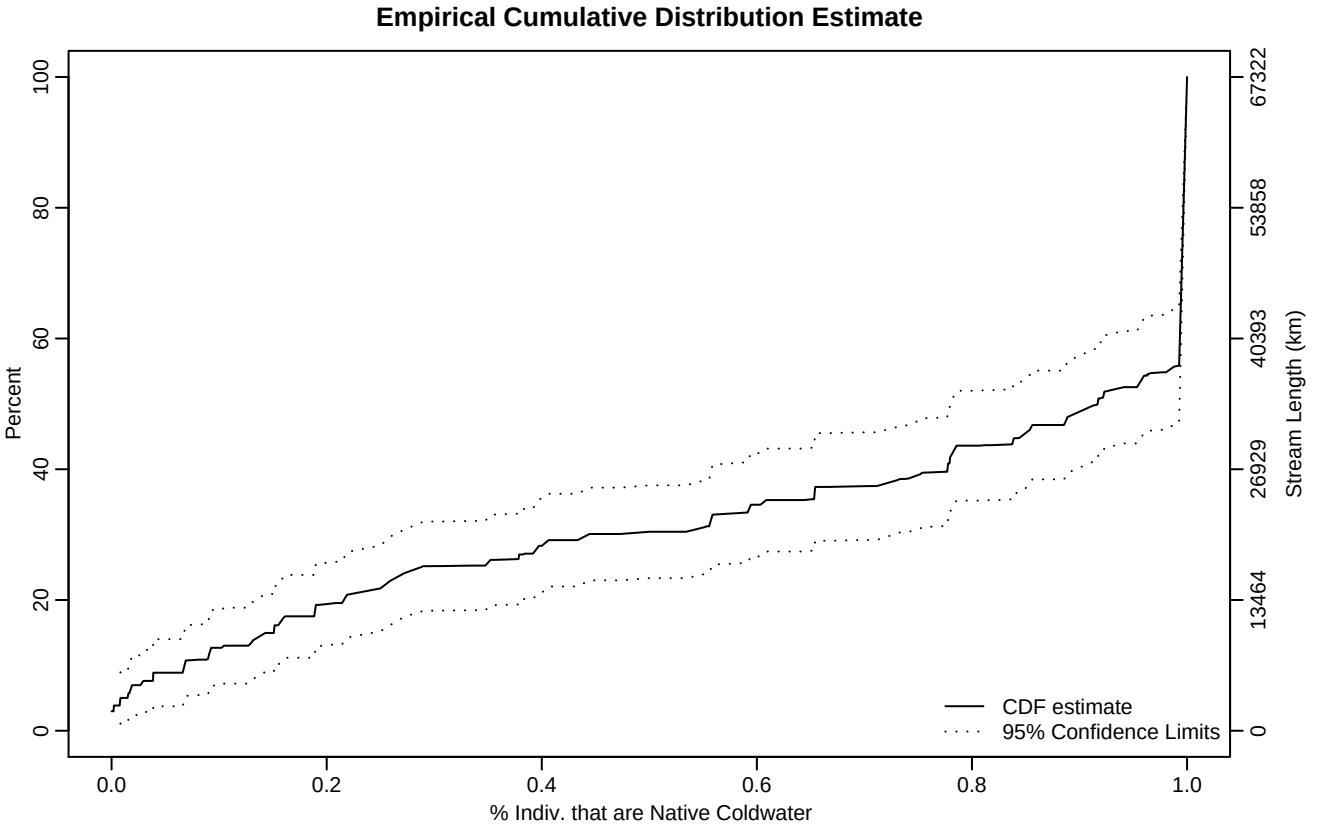


Figure VERT−322 Indicator: COLD_NAT_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.04
10Pct	0.07	0.01	0.15
25Pct	0.29	0.19	0.56
50Pct	0.92	0.78	0.99
75Pct	1	0.99	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.69	0.63	0.75
Std Dev	0.35	0.32	0.37

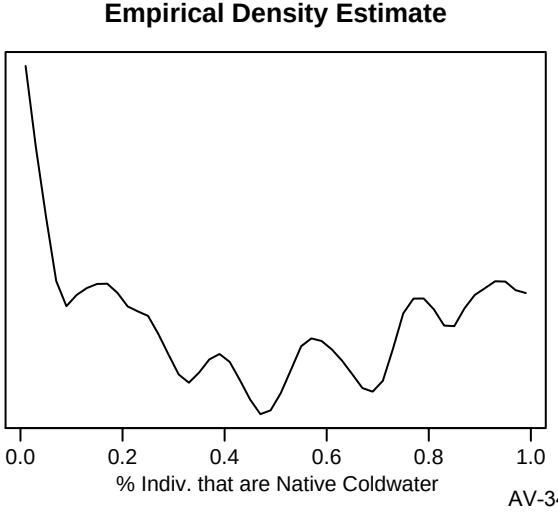
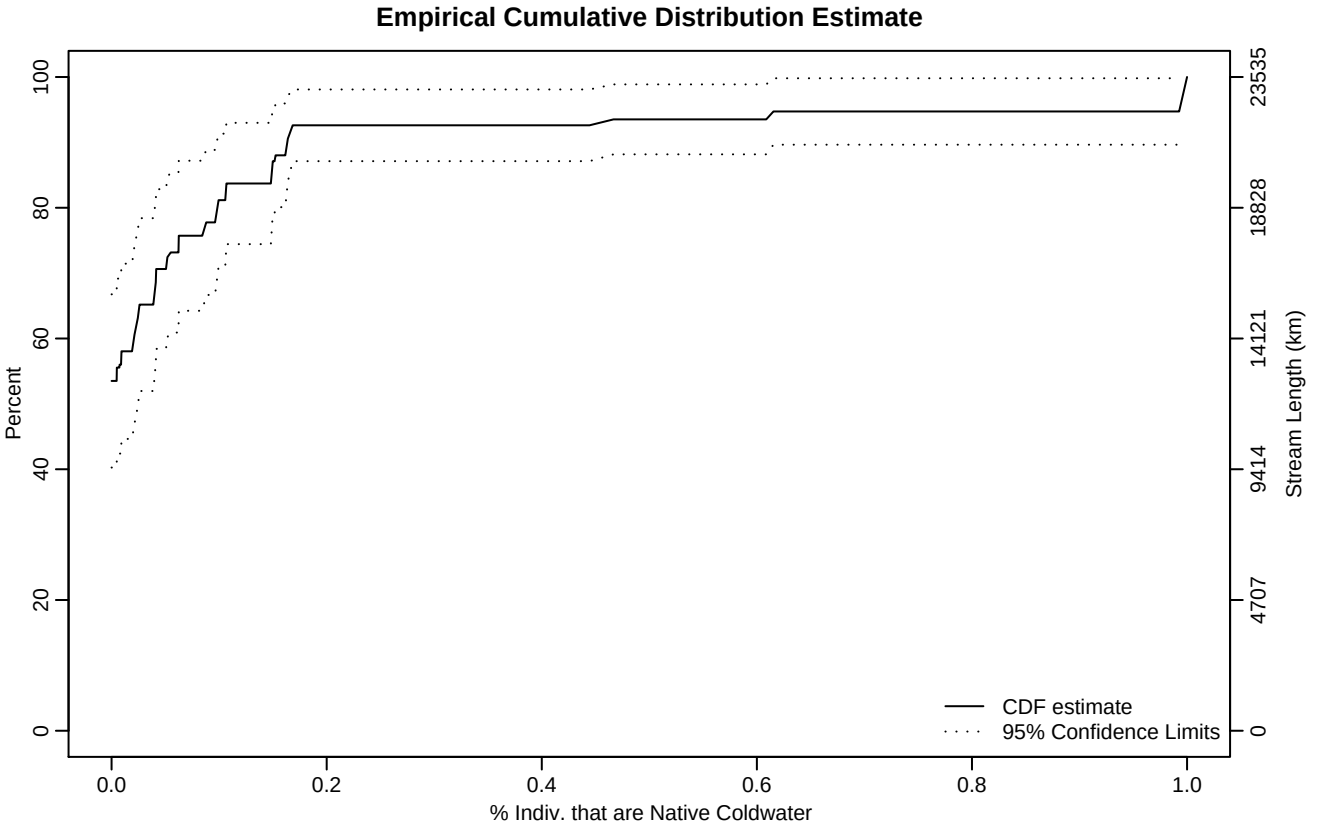


Figure VERT−323 Indicator: COLD_NAT_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.02
75Pct	0.06	0.02	0.15
90Pct	0.16	0.11	1
95Pct	0.99	0.16	
Mean	0.09	0.04	0.15
Std Dev	0.19	0.09	0.30

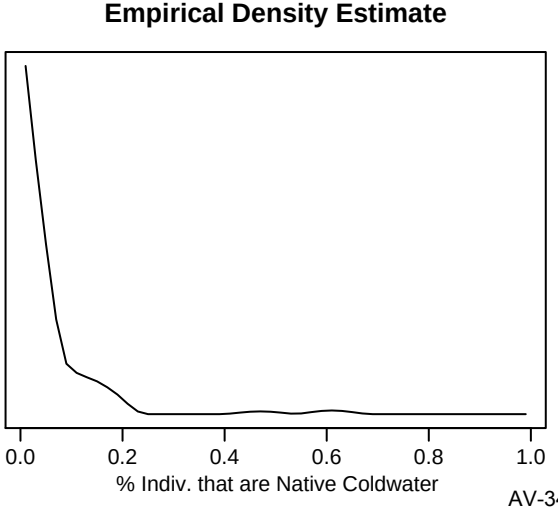
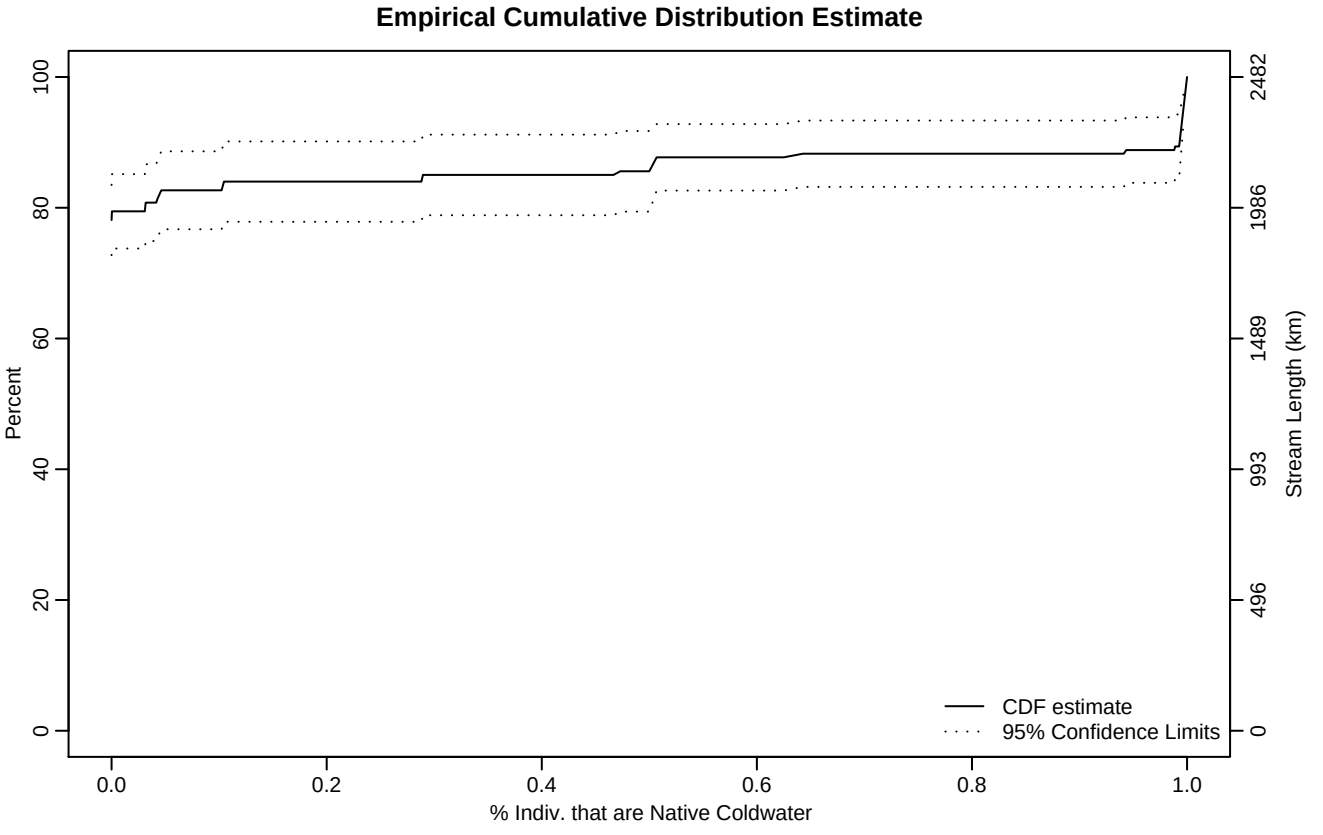


Figure VERT−324 Indicator: COLD_NAT_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.04
90Pct	0.99	0.29	1
95Pct	1	0.99	1
Mean	0.14	0.09	0.19
Std Dev	0.24	0.15	0.32

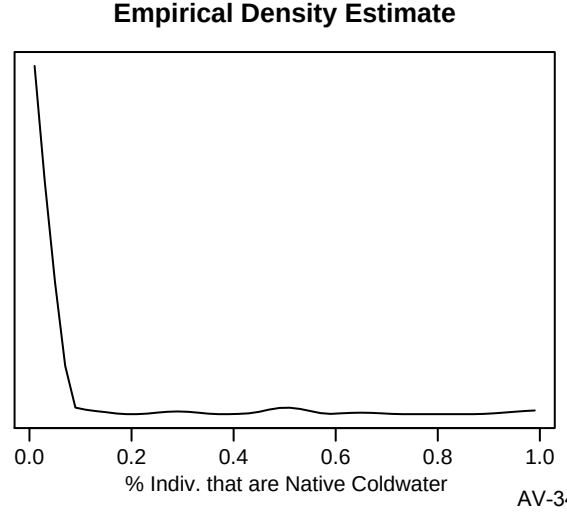
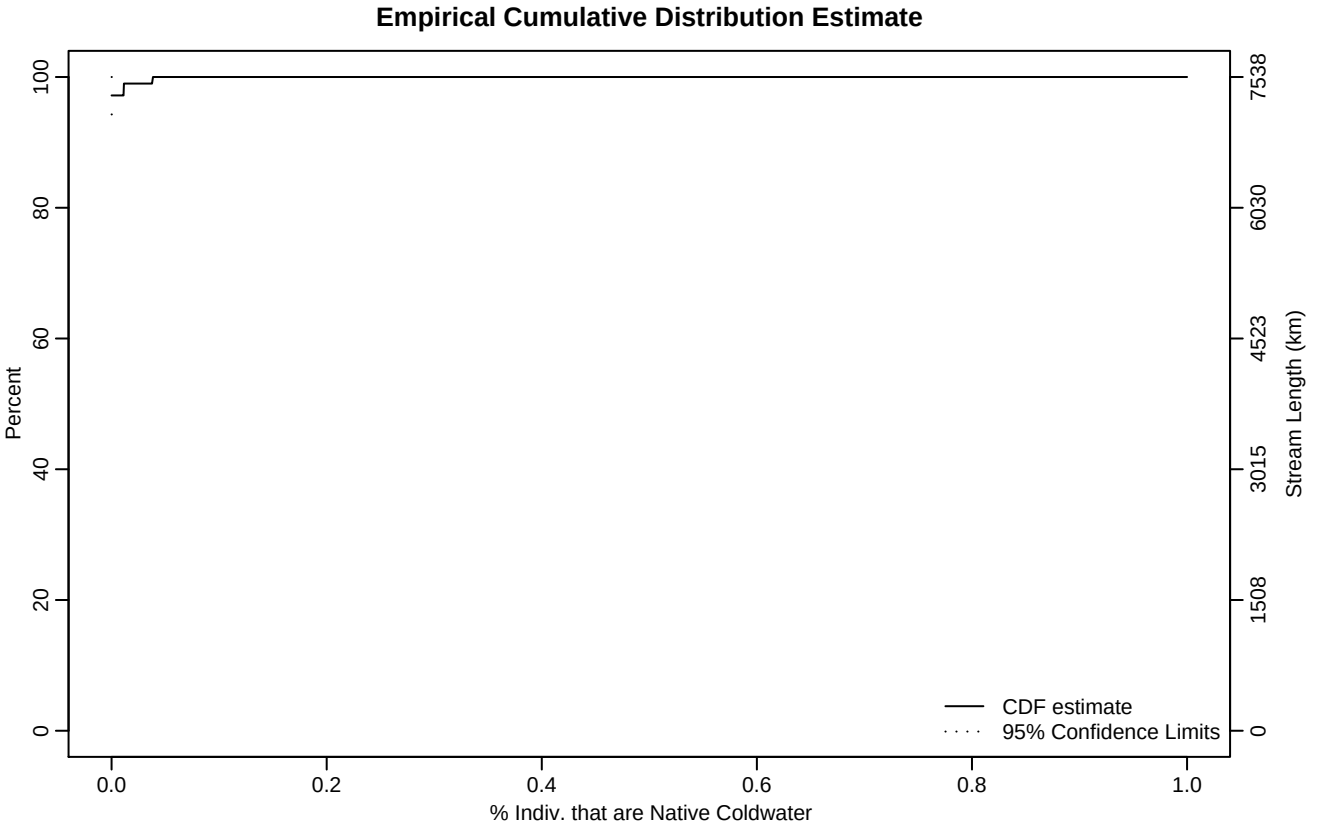


Figure VERT−325 Indicator: COLD_NAT_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.01
Mean	0	0	0
Std Dev	0	0	0

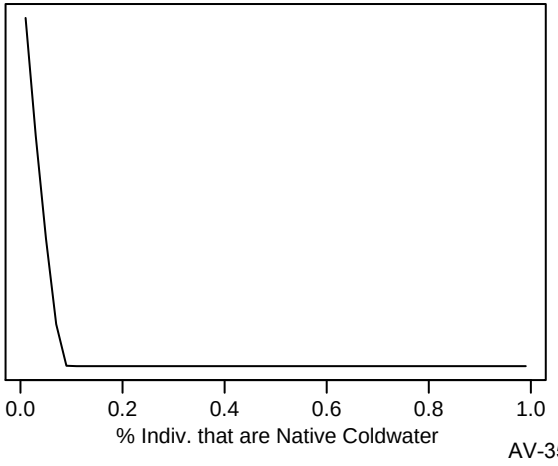
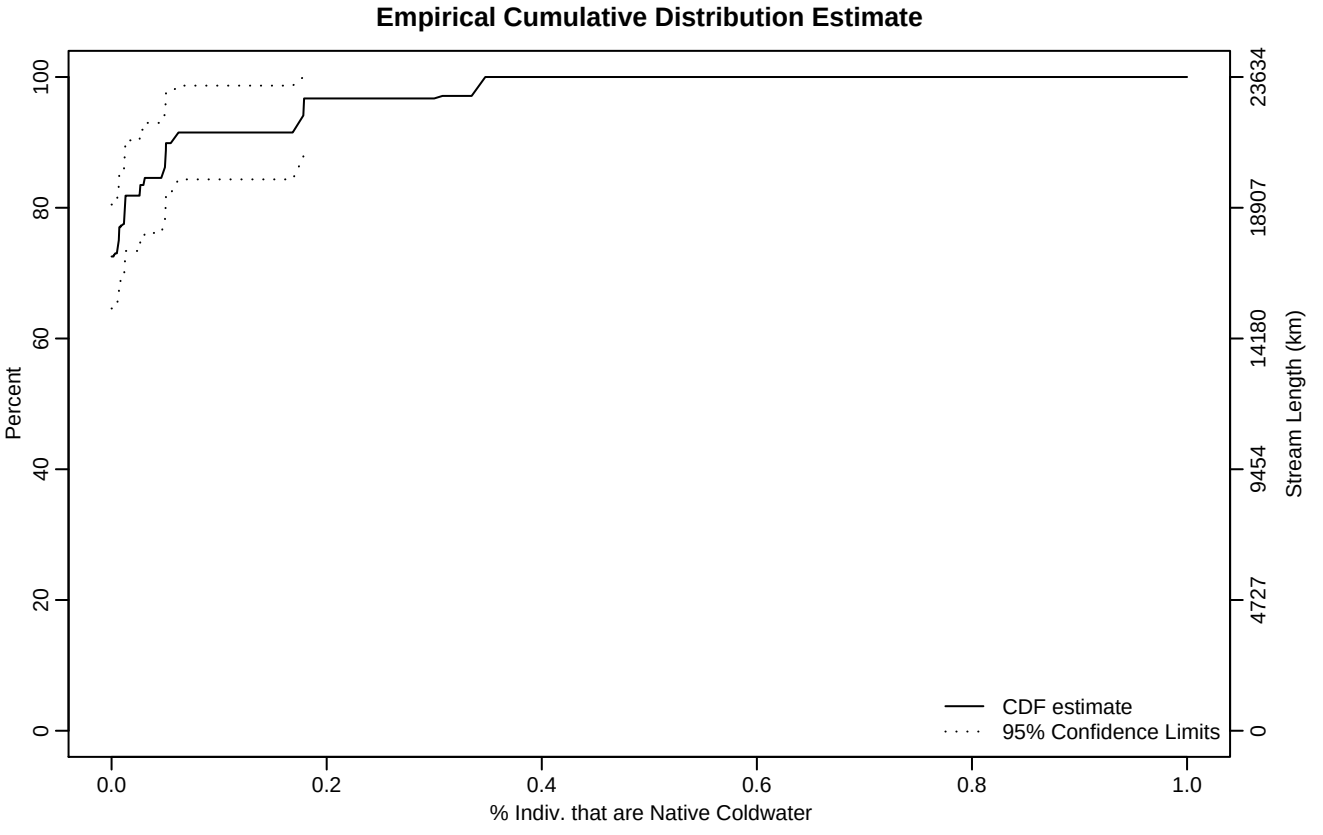


Figure VERT−326 Indicator: COLD_NAT_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.01	0	0.03
90Pct	0.06	0.03	0.34
95Pct	0.18	0.05	0.35
Mean	0.03	0.01	0.04
Std Dev	0.05	0.03	0.07

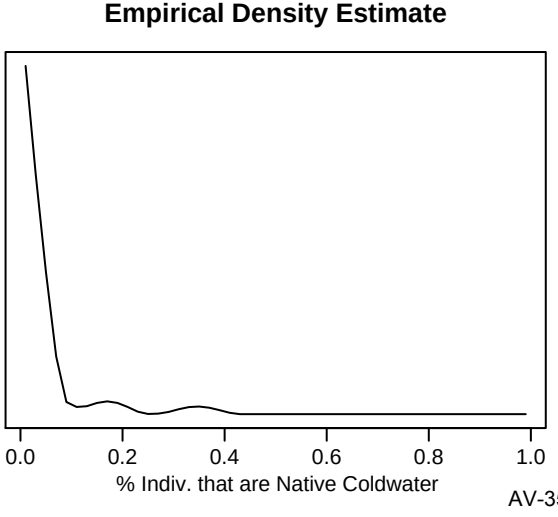
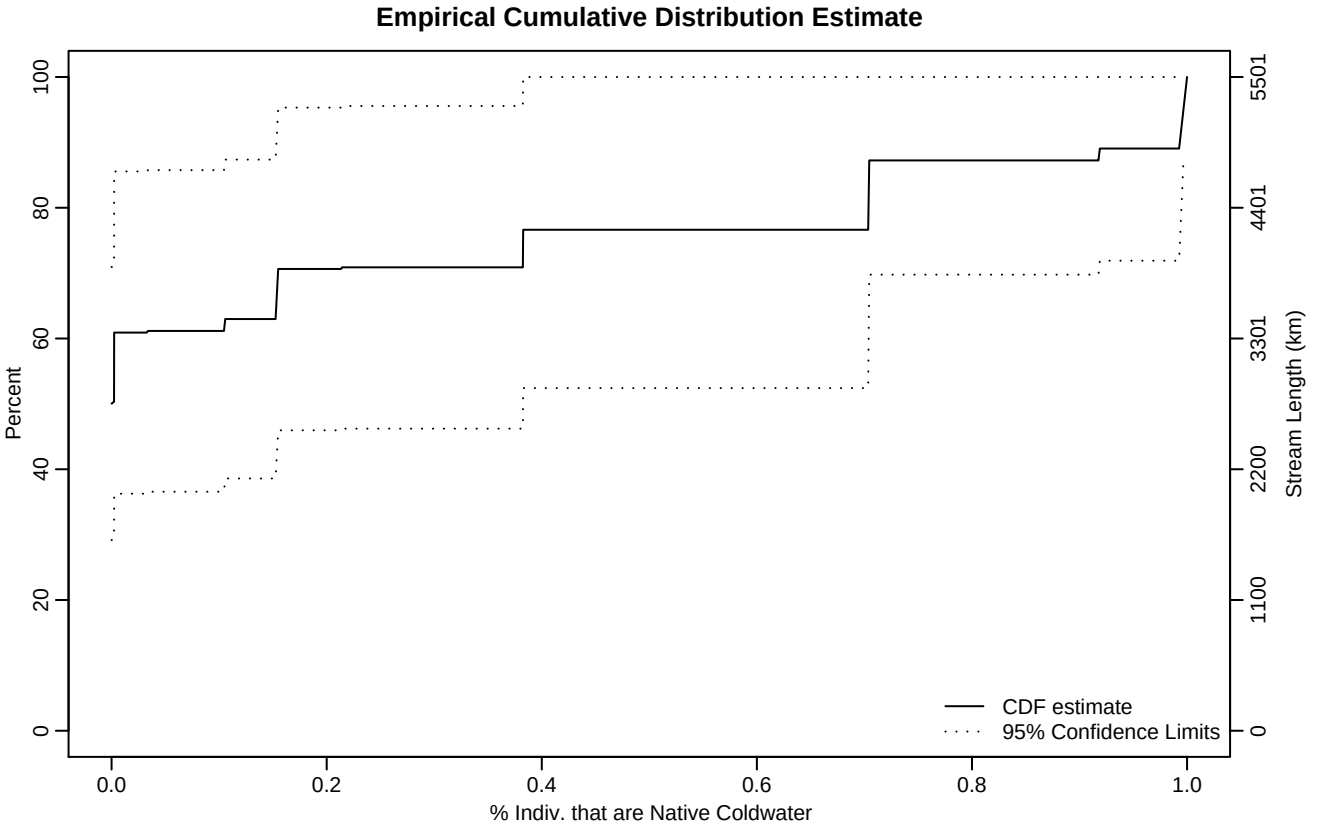


Figure VERT−327 Indicator: COLD_NAT_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.38
75Pct	0.38	0	1
90Pct	0.99	0.38	1
95Pct	1	0.70	1
Mean	0.24	0.03	0.44
Std Dev	0.36	0.23	0.49

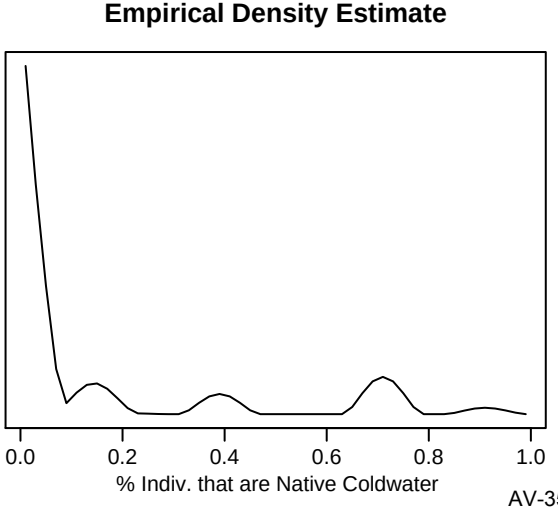
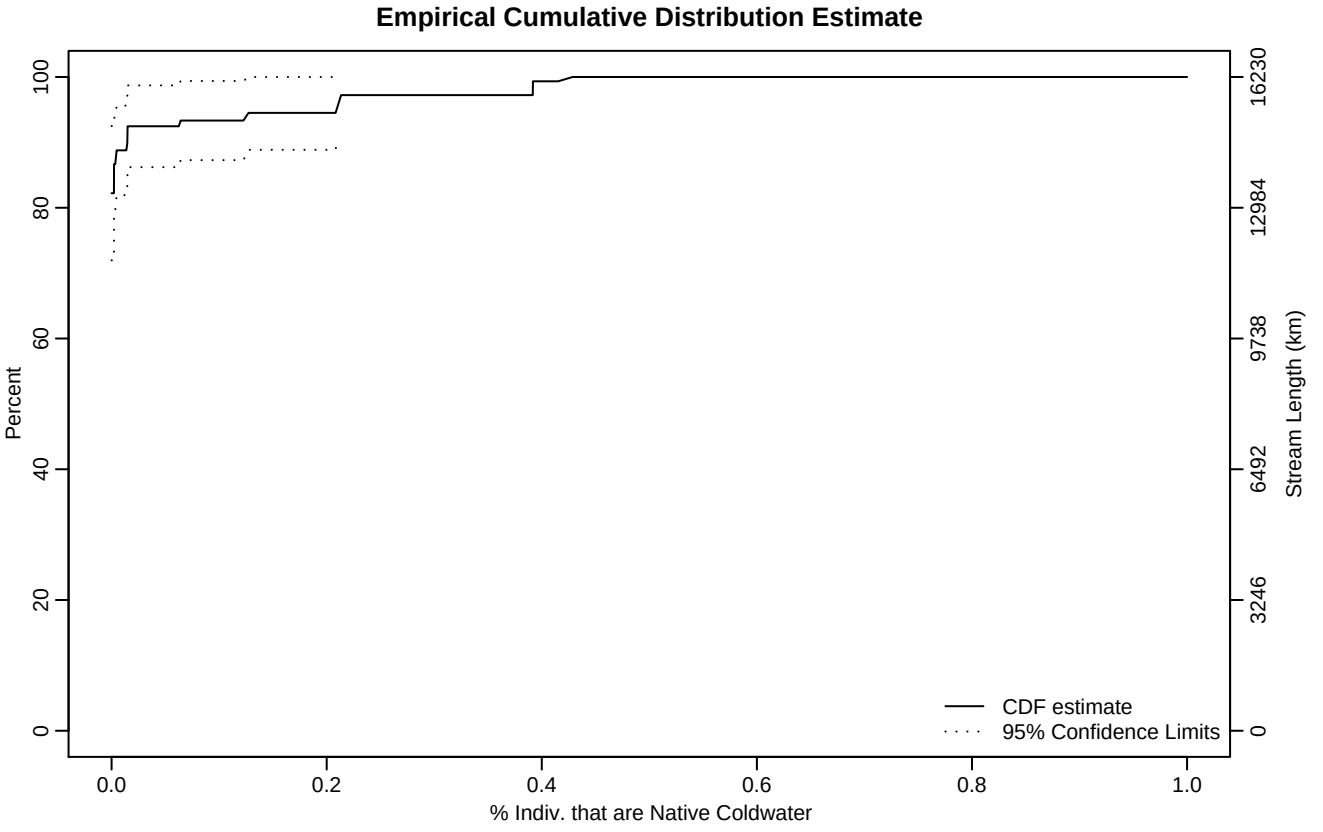


Figure VERT−328 Indicator: COLD_NAT_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.01	0	0.21
95Pct	0.21	0.01	0.43
Mean	0.02	0	0.04
Std Dev	0.06	0.03	0.08

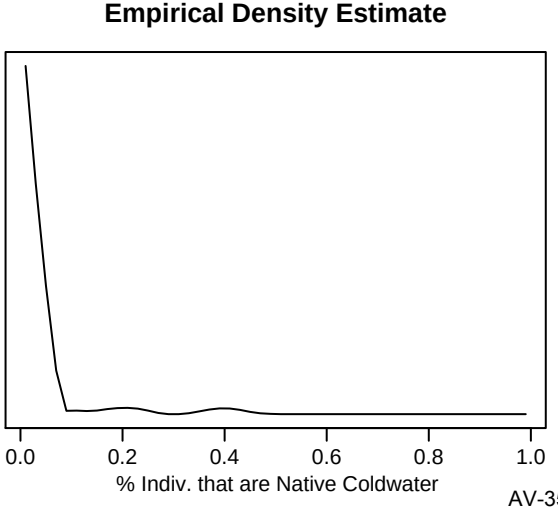
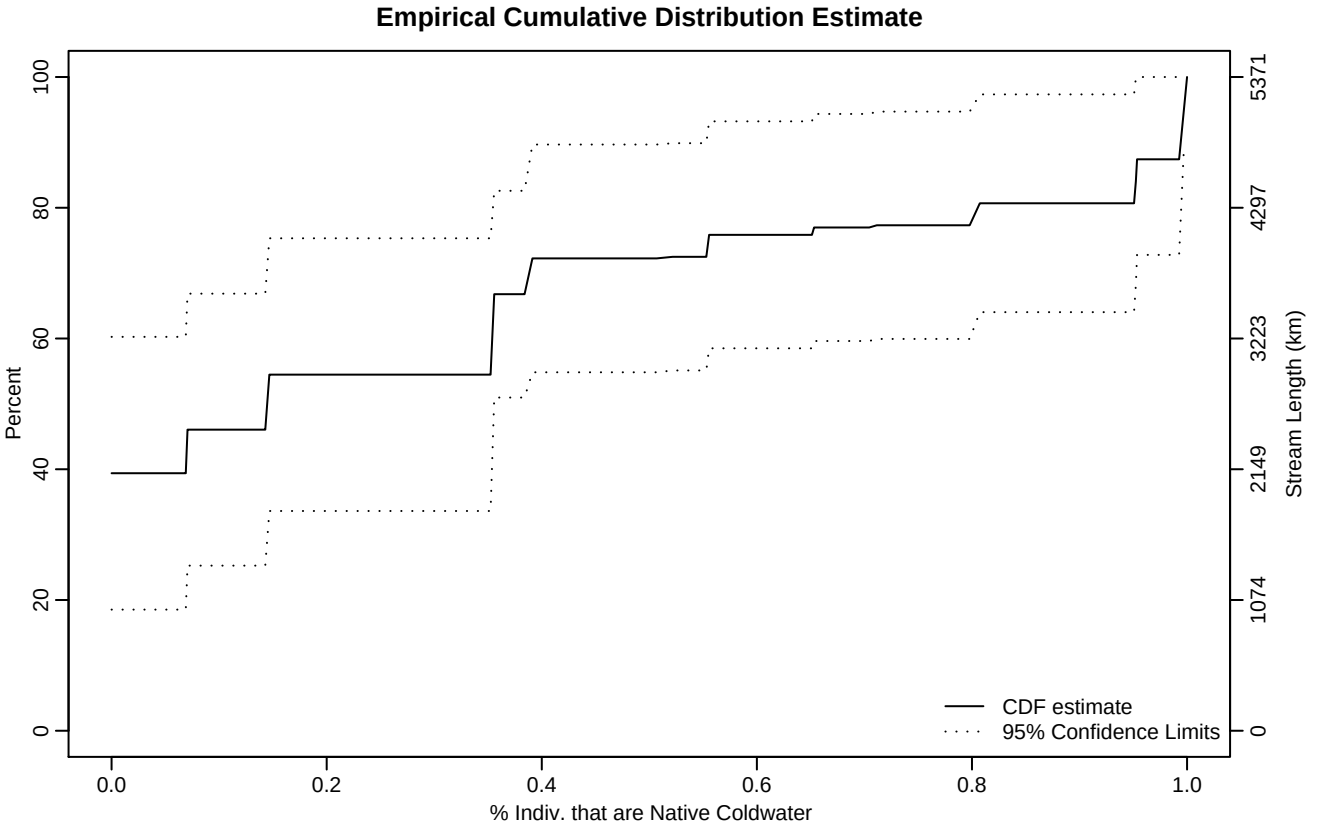


Figure VERT−329 Indicator: COLD_NAT_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.14
50Pct	0.14	0	0.55
75Pct	0.55	0.35	1
90Pct	0.99	0.56	
95Pct	1	0.81	
Mean	0.33	0.18	0.48
Std Dev	0.35	0.26	0.44

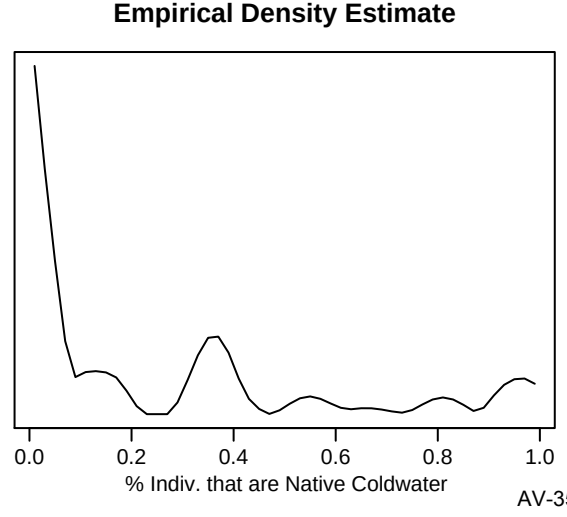
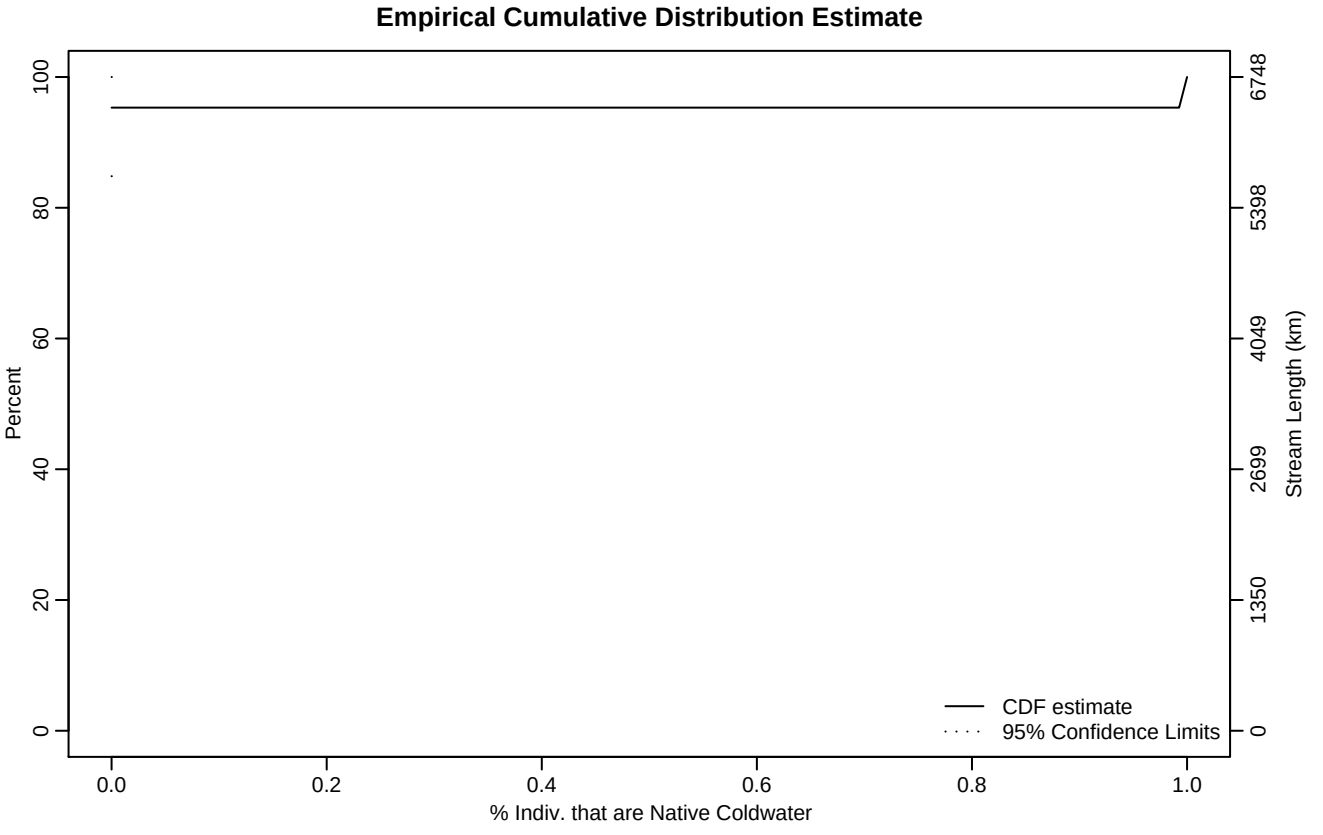


Figure VERT−330 Indicator: COLD_NAT_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	1
95Pct	0	0	1
Mean	0.05	−0.06	0.15
Std Dev	0.05	0.04	0.07

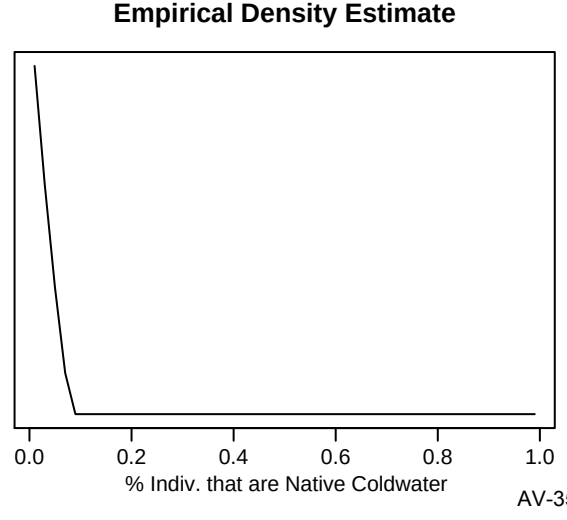
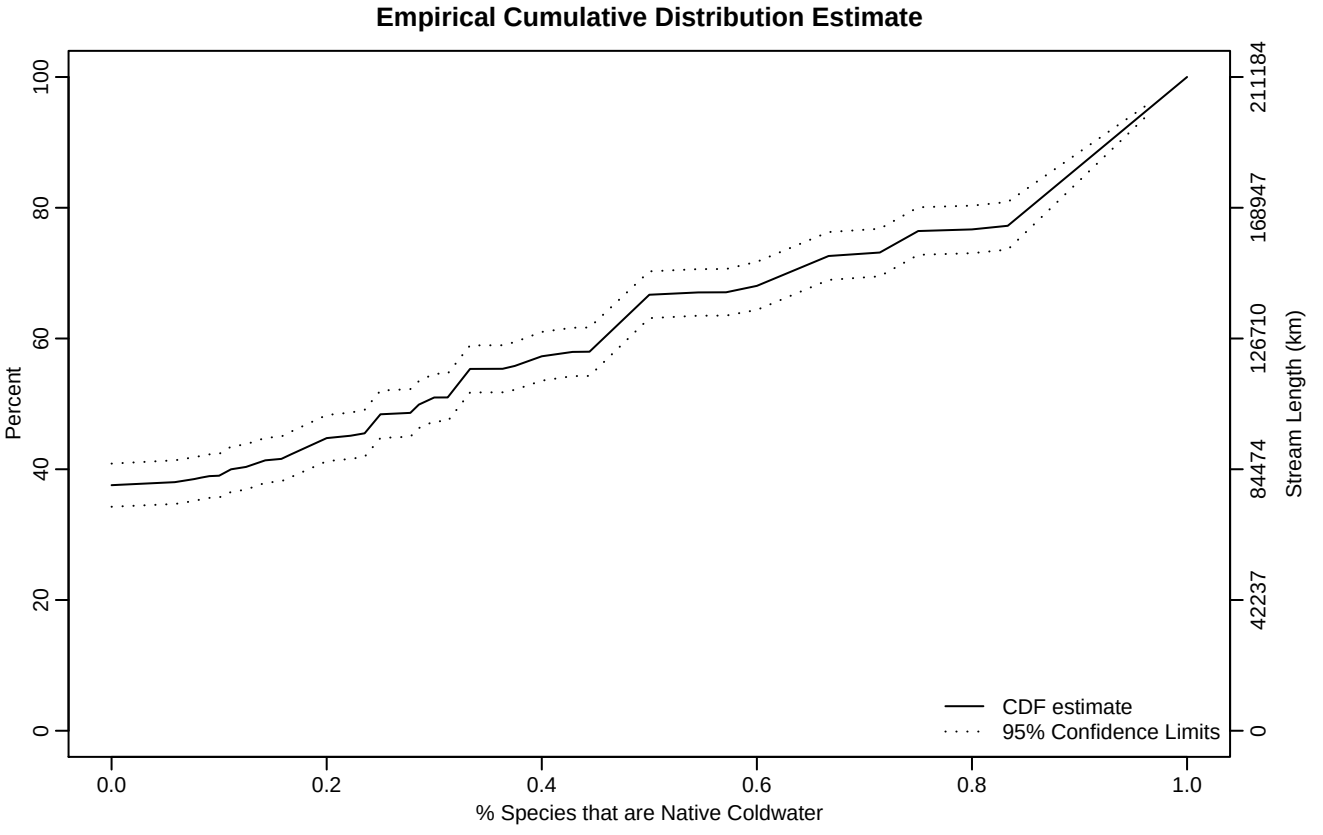


Figure VERT−331 Indicator: COLD_NAT_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.29	0.24	0.33
75Pct	0.73	0.64	0.85
90Pct	0.93	0.90	0.96
95Pct	0.96	0.93	0.99
Mean	0.40	0.37	0.42
Std Dev	0.28	0.26	0.30

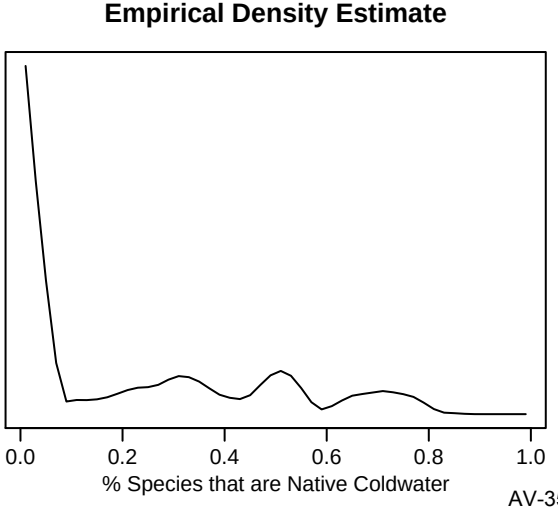
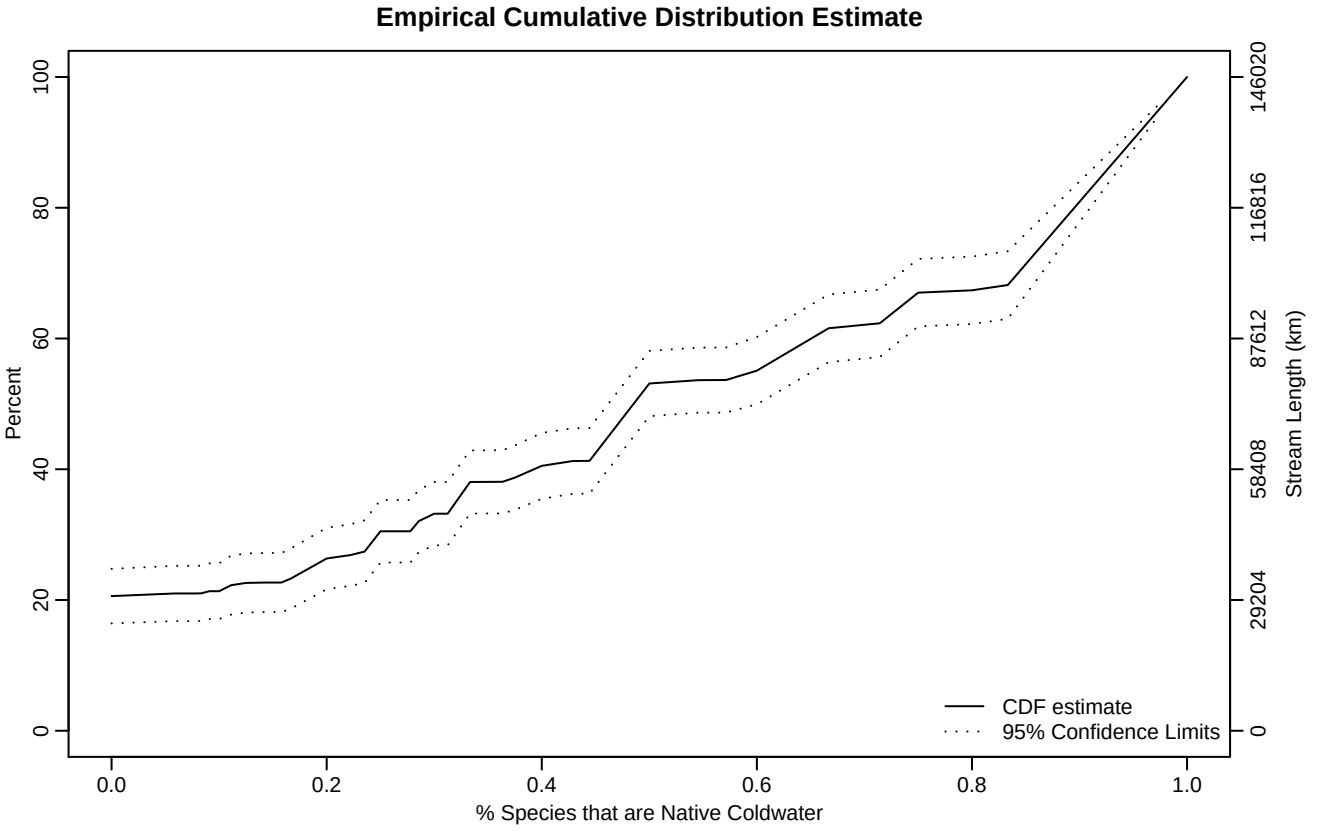


Figure VERT−332 Indicator: COLD_NAT_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.19	0	0.25
50Pct	0.49	0.46	0.60
75Pct	0.87	0.84	0.90
90Pct	0.95	0.92	0.98
95Pct	0.97	0.94	1
Mean	0.54	0.50	0.58
Std Dev	0.32	0.30	0.34

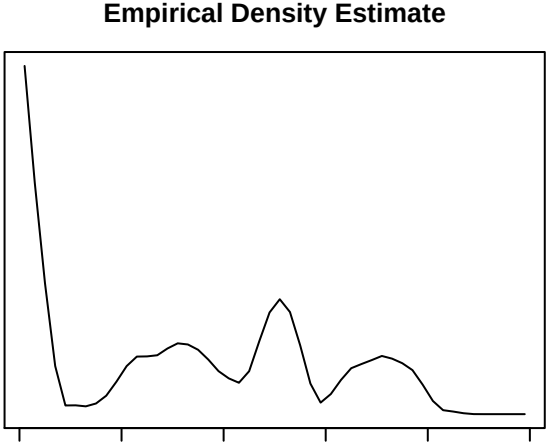
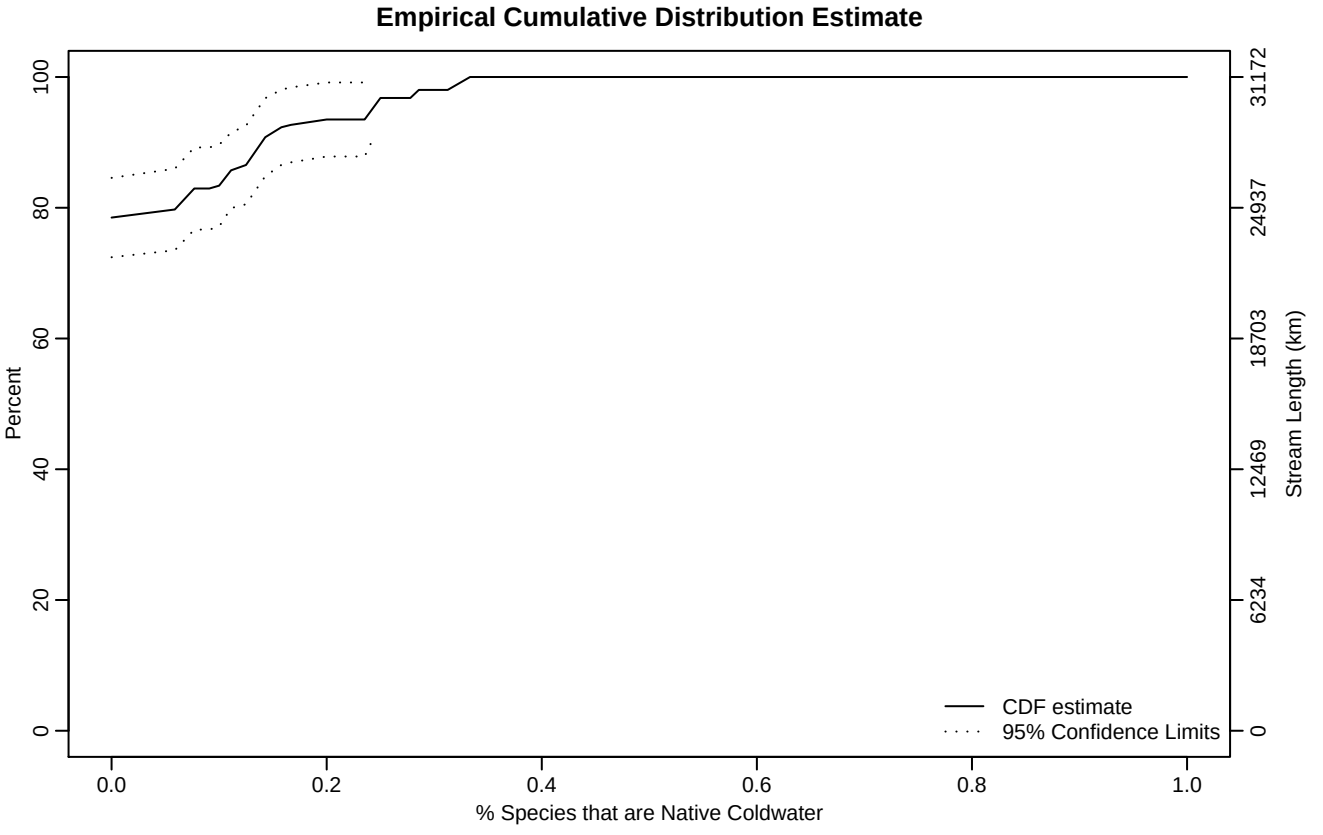


Figure VERT−333 Indicator: COLD_NAT_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.07
90Pct	0.14	0.09	0.28
95Pct	0.24	0.13	
Mean	0.04	0.02	0.05
Std Dev	0.04	0.03	0.05

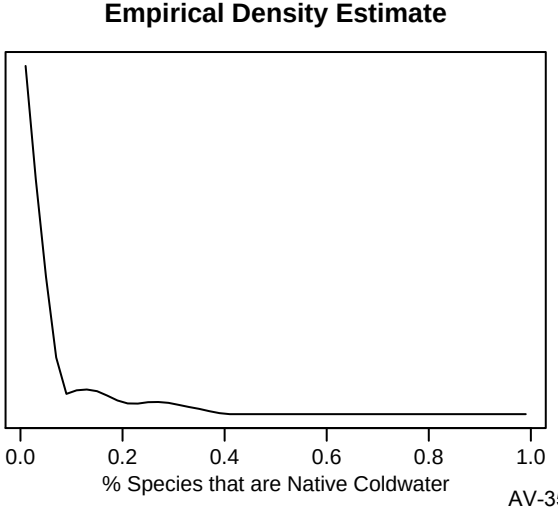
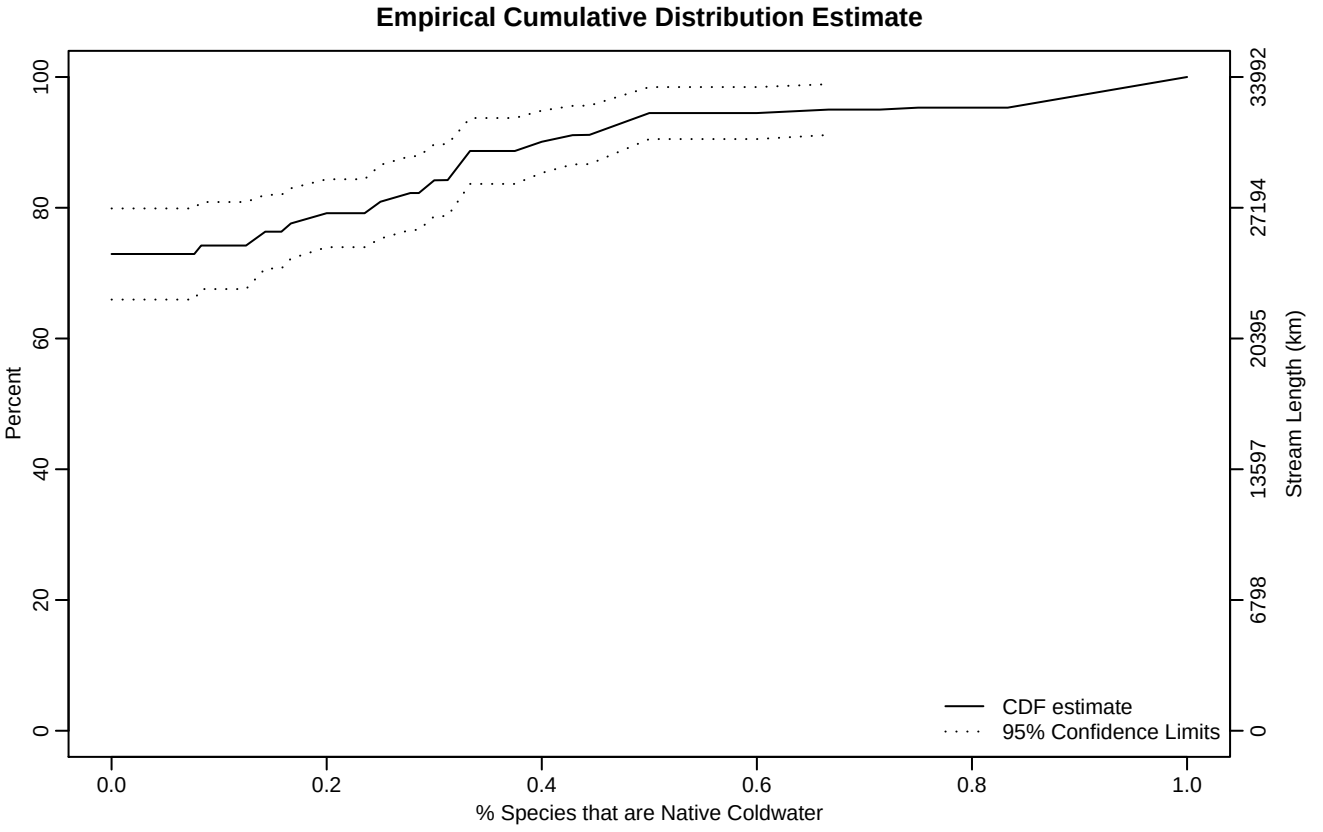


Figure VERT−334 Indicator: COLD_NAT_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.13	0	0.27
90Pct	0.40	0.32	0.72
95Pct	0.66	0.42	0.97
Mean	0.12	0.08	0.16
Std Dev	0.17	0.14	0.20

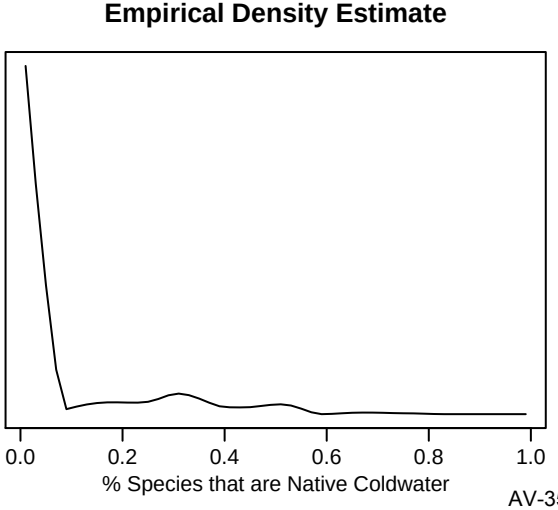
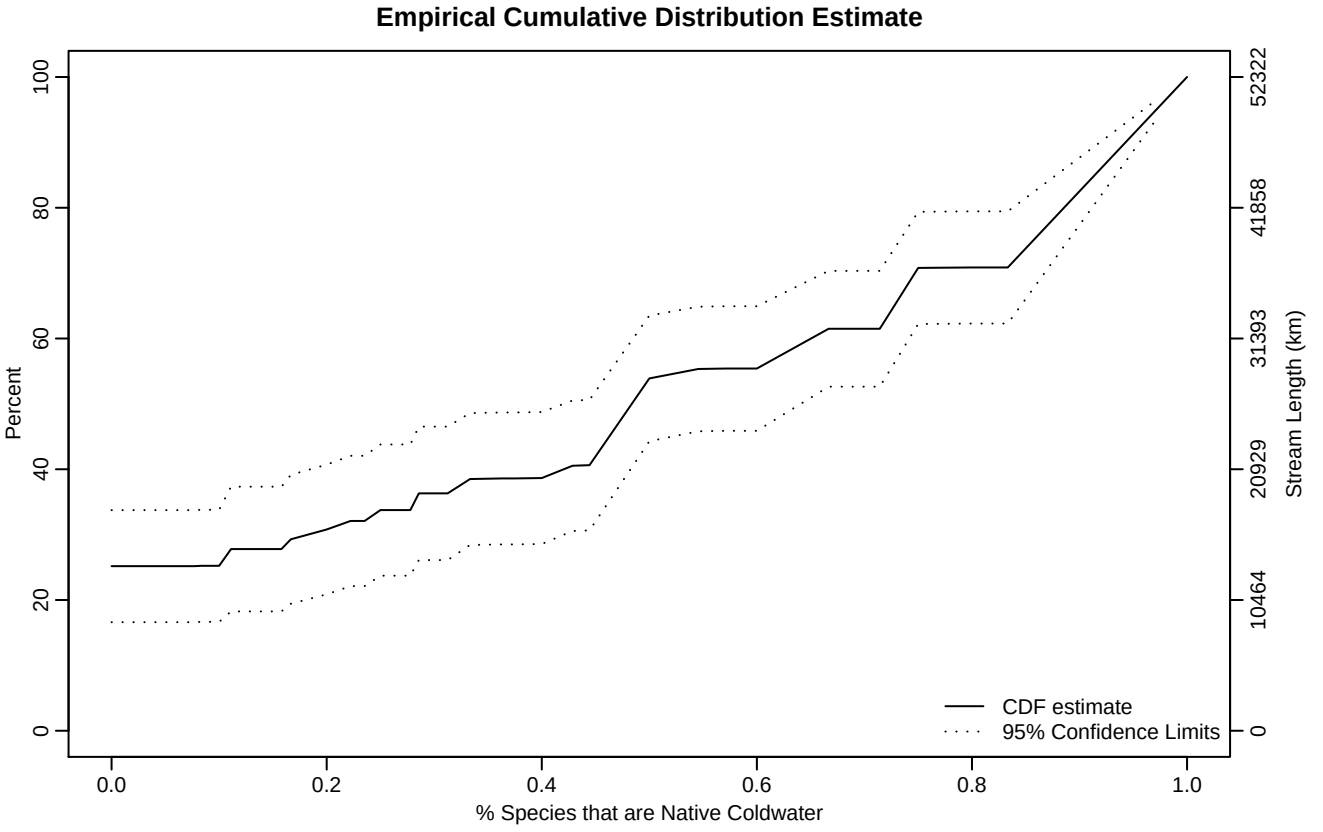


Figure VERT−335 Indicator: COLD_NAT_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.25
50Pct	0.48	0.42	0.65
75Pct	0.86	0.73	0.91
90Pct	0.94	0.89	0.99
95Pct	0.97	0.92	1
Mean	0.52	0.44	0.59
Std Dev	0.35	0.30	0.39

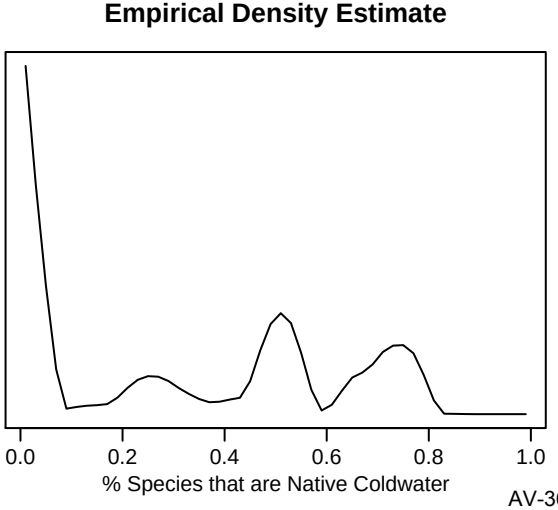
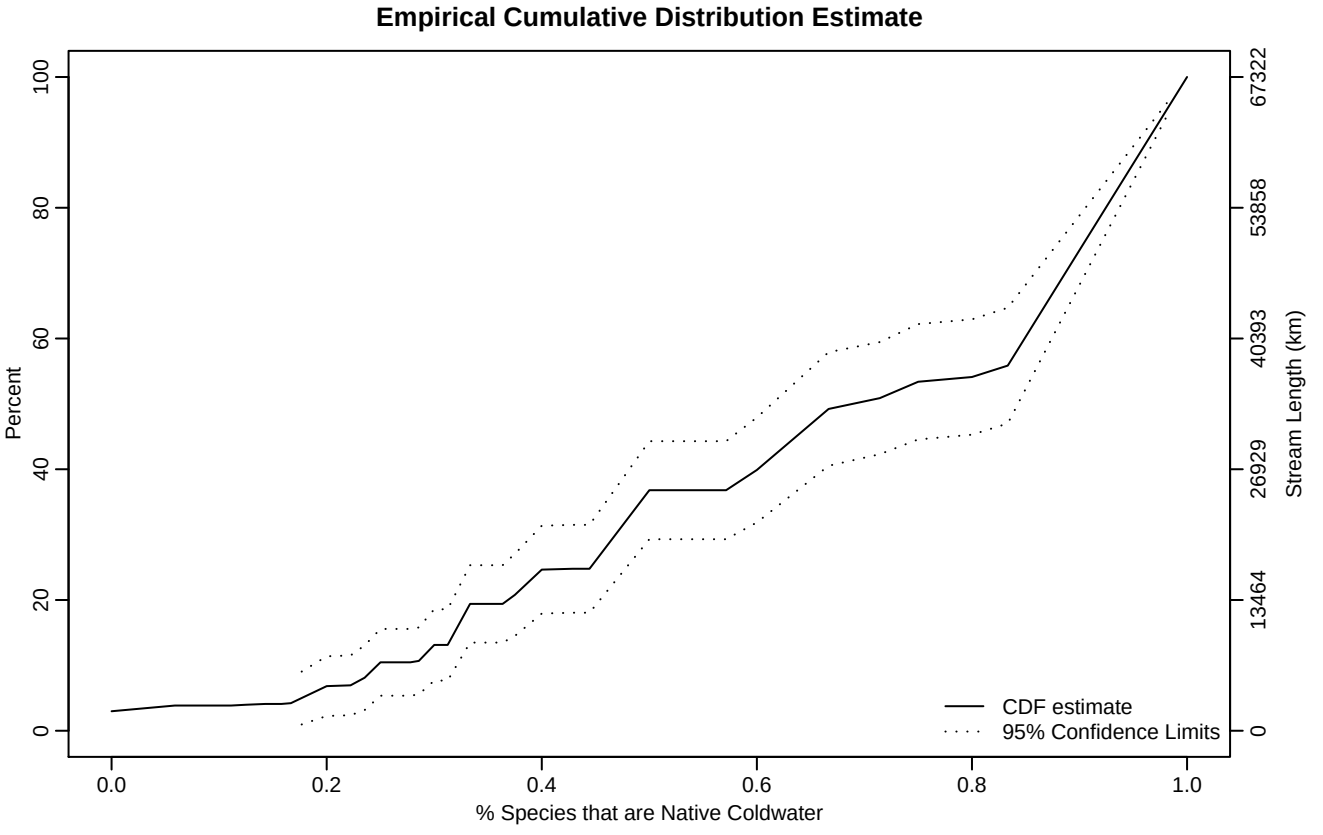


Figure VERT−336 Indicator: COLD_NAT_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0	0.24
10Pct	0.25	0.18	0.32
25Pct	0.45	0.33	0.48
50Pct	0.69	0.61	0.84
75Pct	0.91	0.87	0.94
90Pct	0.96	0.92	1
95Pct	0.98	0.94	1
Mean	0.70	0.65	0.75
Std Dev	0.29	0.27	0.31

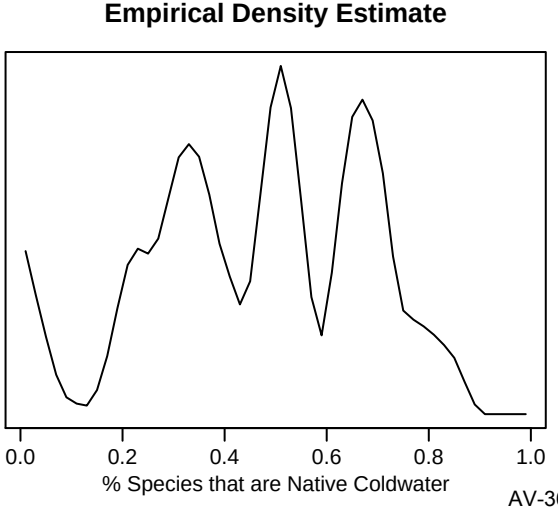
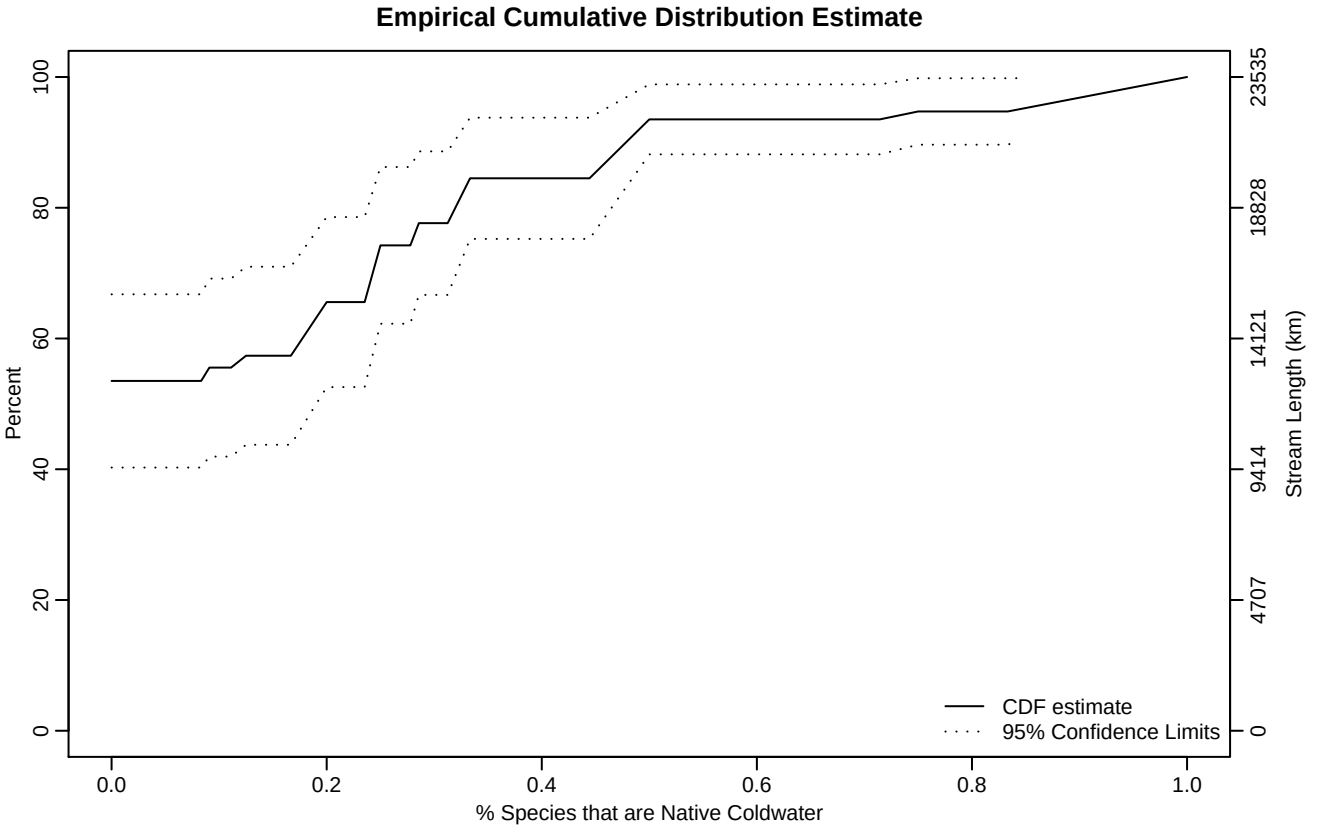


Figure VERT−337 Indicator: COLD_NAT_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.19
75Pct	0.28	0.19	0.46
90Pct	0.48	0.32	0.98
95Pct	0.84	0.48	
Mean	0.18	0.12	0.25
Std Dev	0.23	0.16	0.29

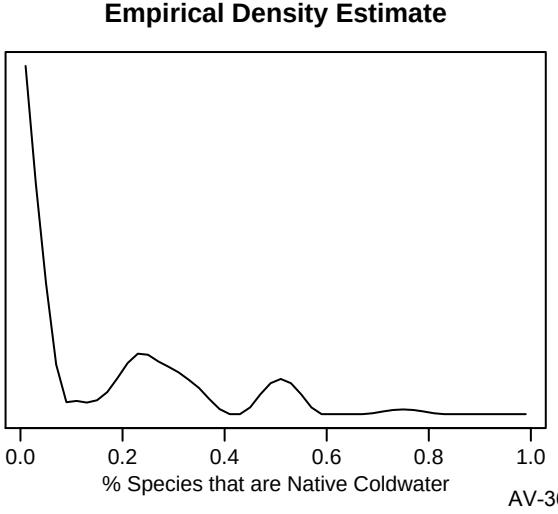
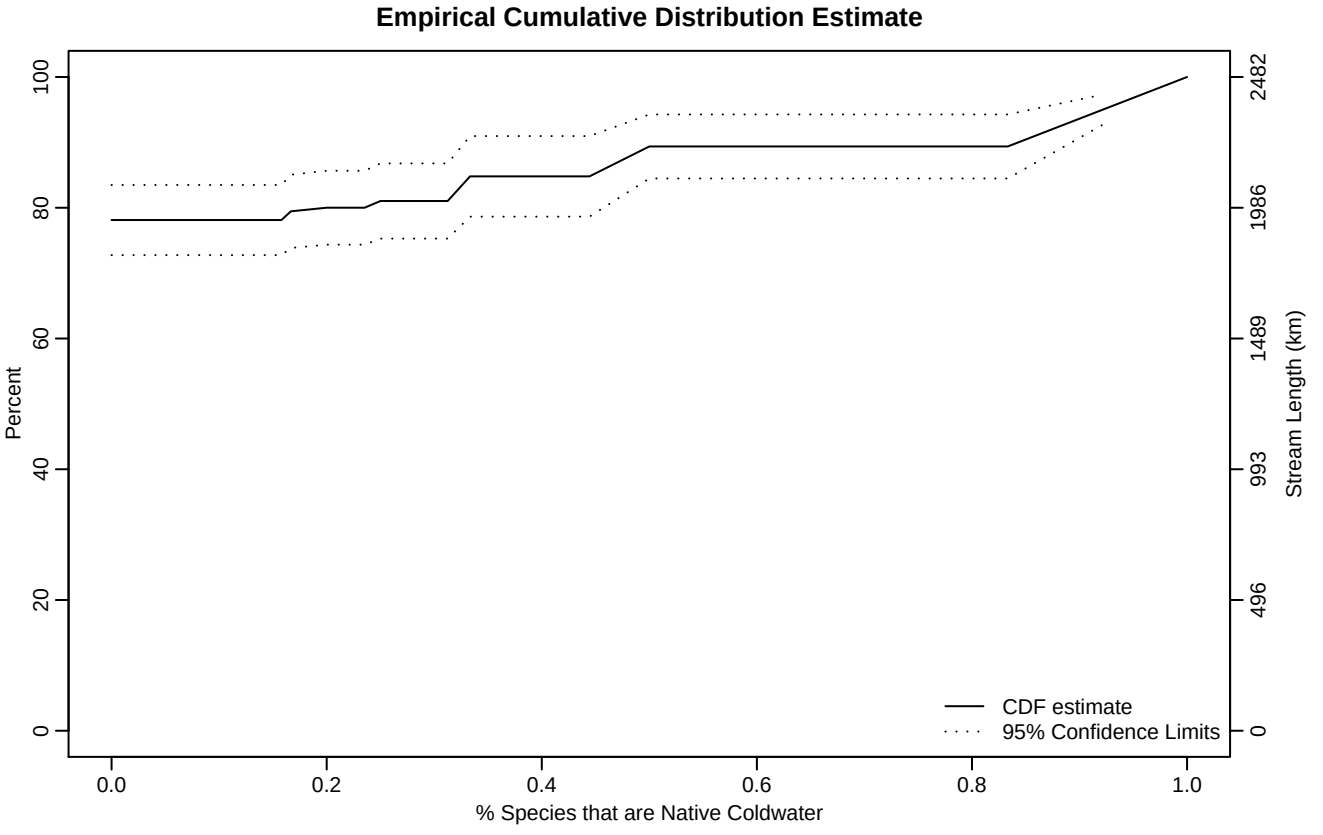


Figure VERT−338 Indicator: COLD_NAT_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.32
90Pct	0.84	0.45	0.92
95Pct	0.92	0.84	1
Mean	0.15	0.10	0.19
Std Dev	0.22	0.14	0.31

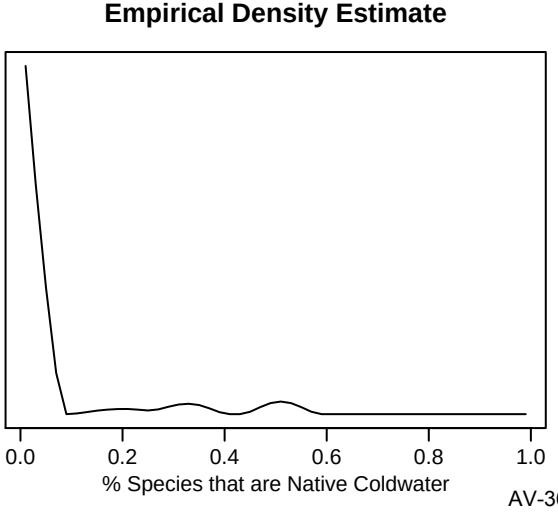
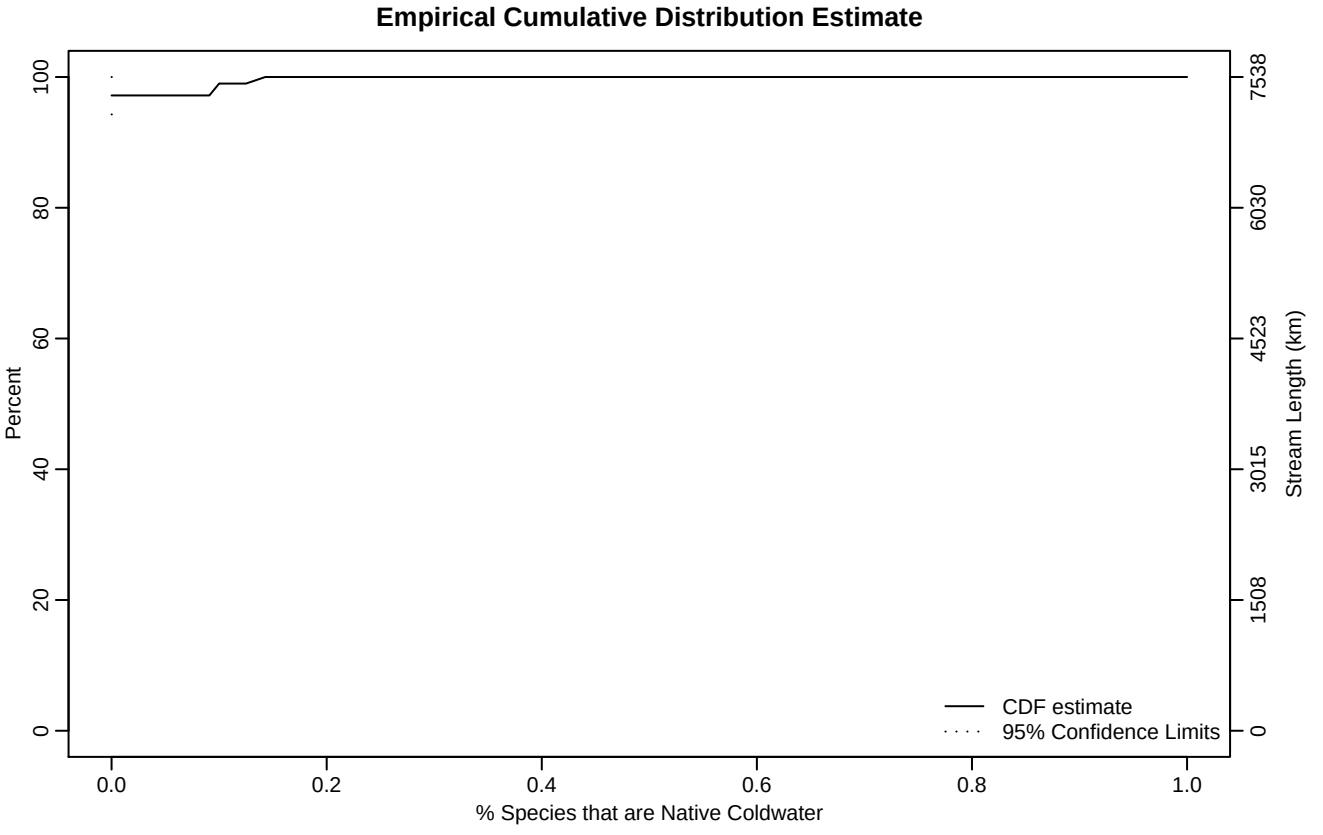


Figure VERT−339 Indicator: COLD_NAT_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.10
Mean	0	0	0.01
Std Dev	0	0	0.01

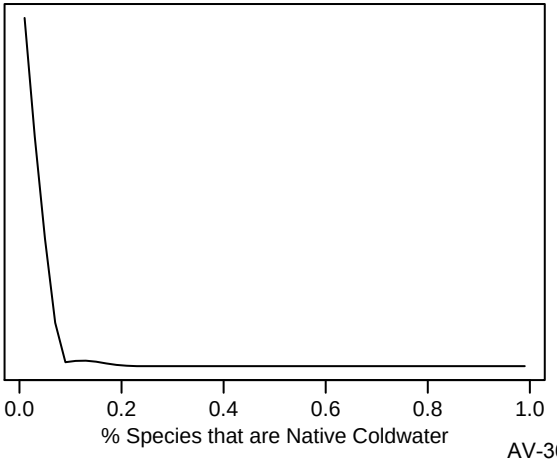
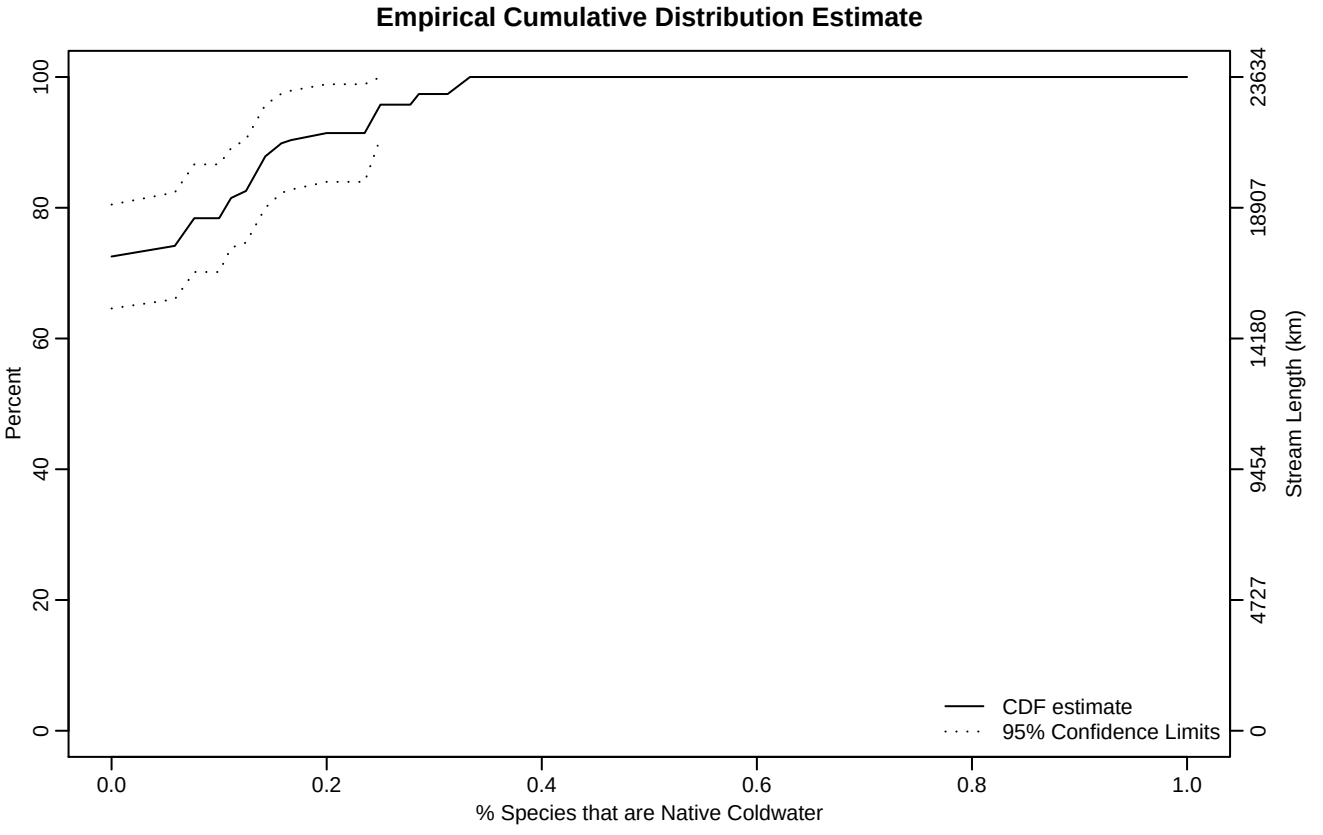


Figure VERT−340 Indicator: COLD_NAT_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.06	0	0.13
90Pct	0.16	0.12	0.32
95Pct	0.25	0.14	0.33
Mean	0.05	0.03	0.07
Std Dev	0.05	0.04	0.06

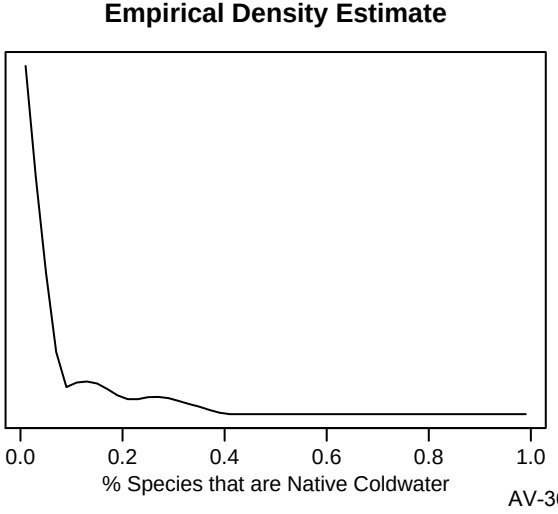
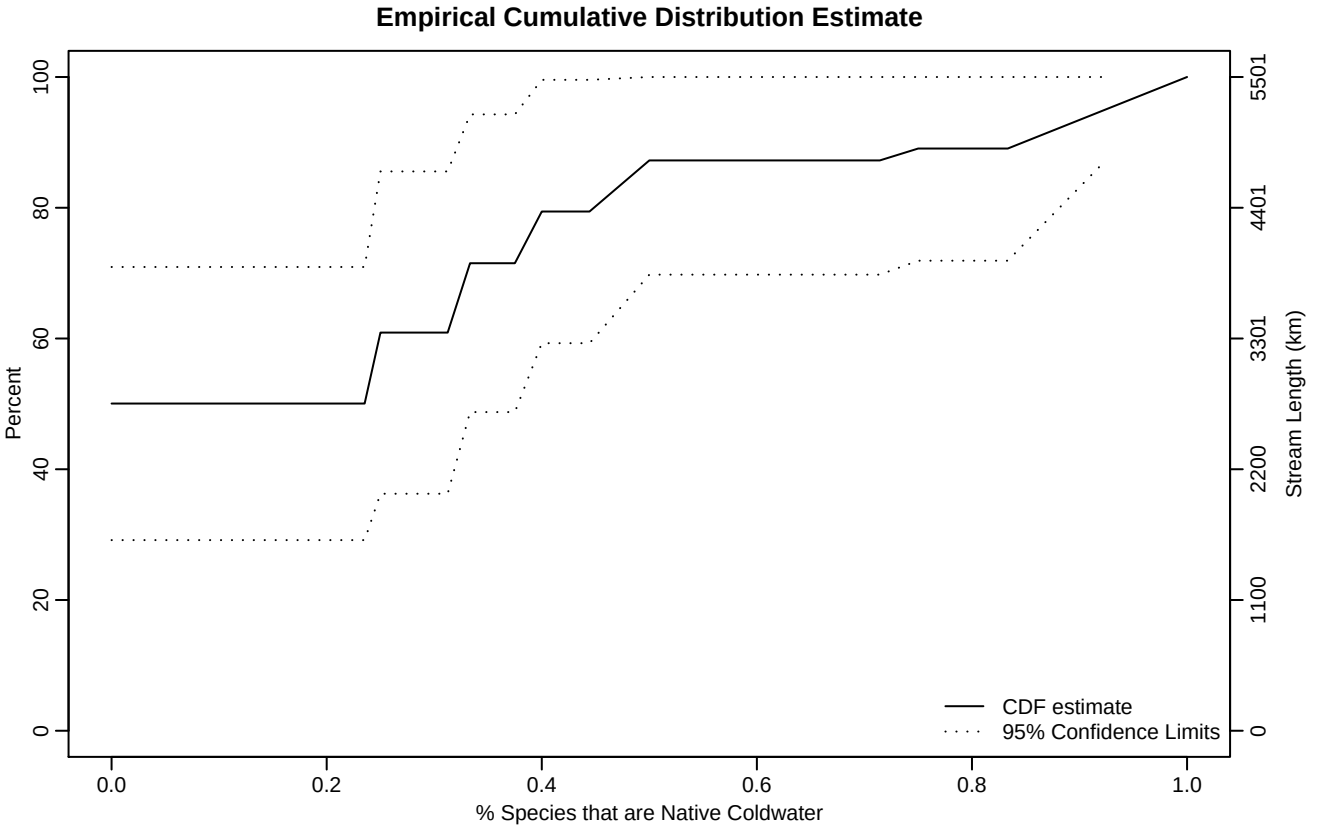


Figure VERT−341 Indicator: COLD_NAT_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.33
75Pct	0.39	0.24	0.96
90Pct	0.85	0.38	1
95Pct	0.92	0.39	1
Mean	0.26	0.08	0.43
Std Dev	0.32	0.19	0.46

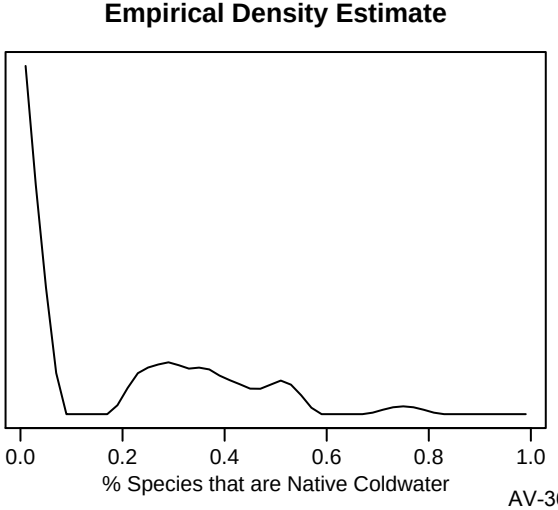
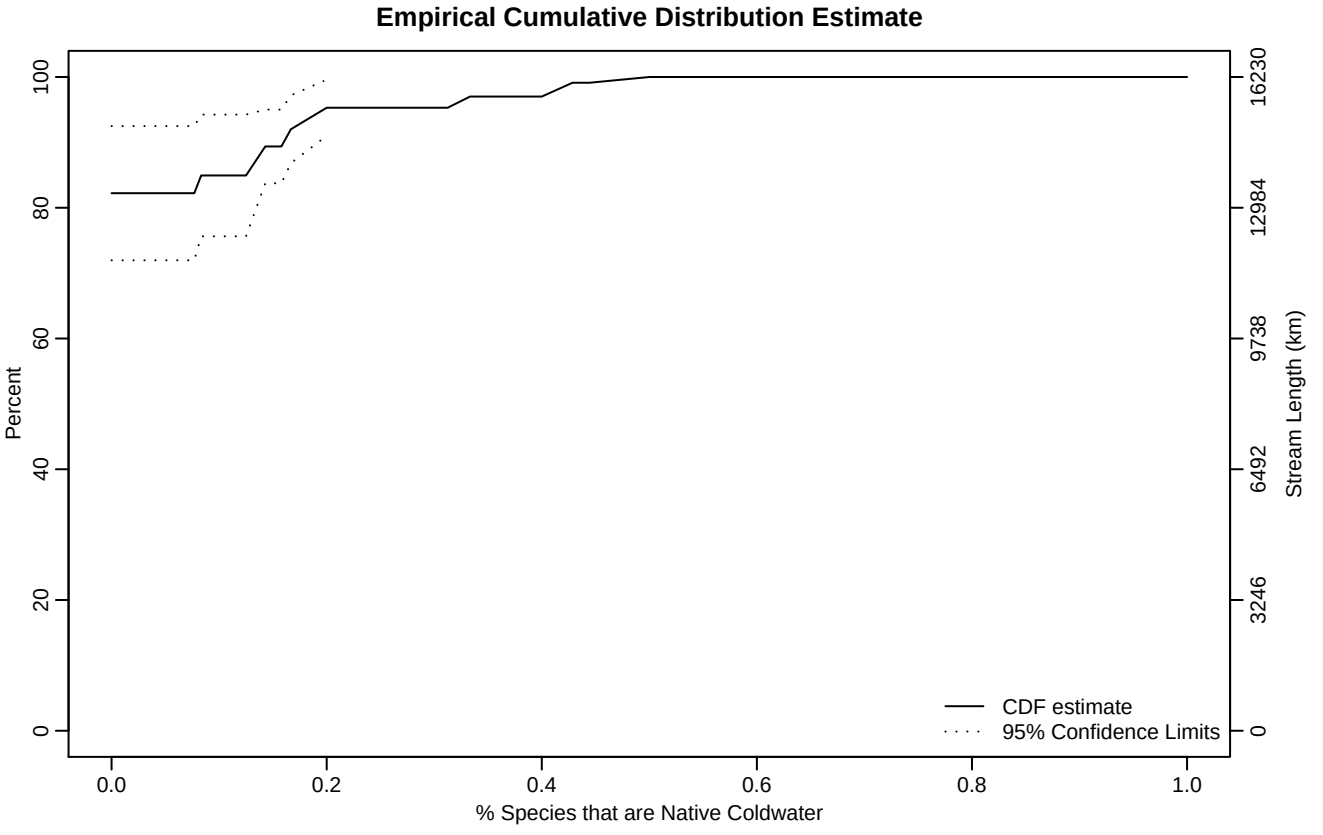


Figure VERT−342 Indicator: COLD_NAT_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.13
90Pct	0.16	0.08	0.32
95Pct	0.20	0.16	0.50
Mean	0.04	0.02	0.06
Std Dev	0.09	0.06	0.12

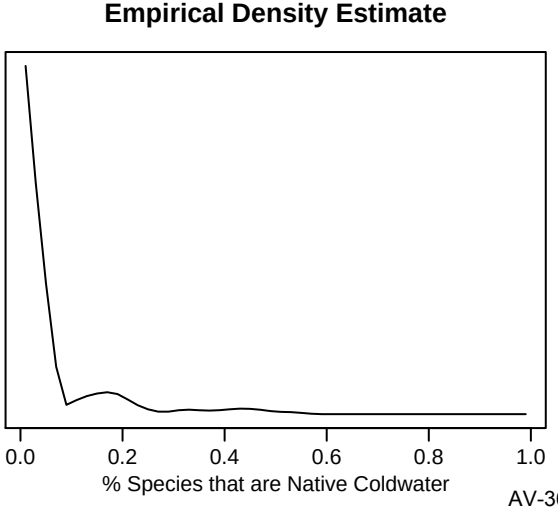
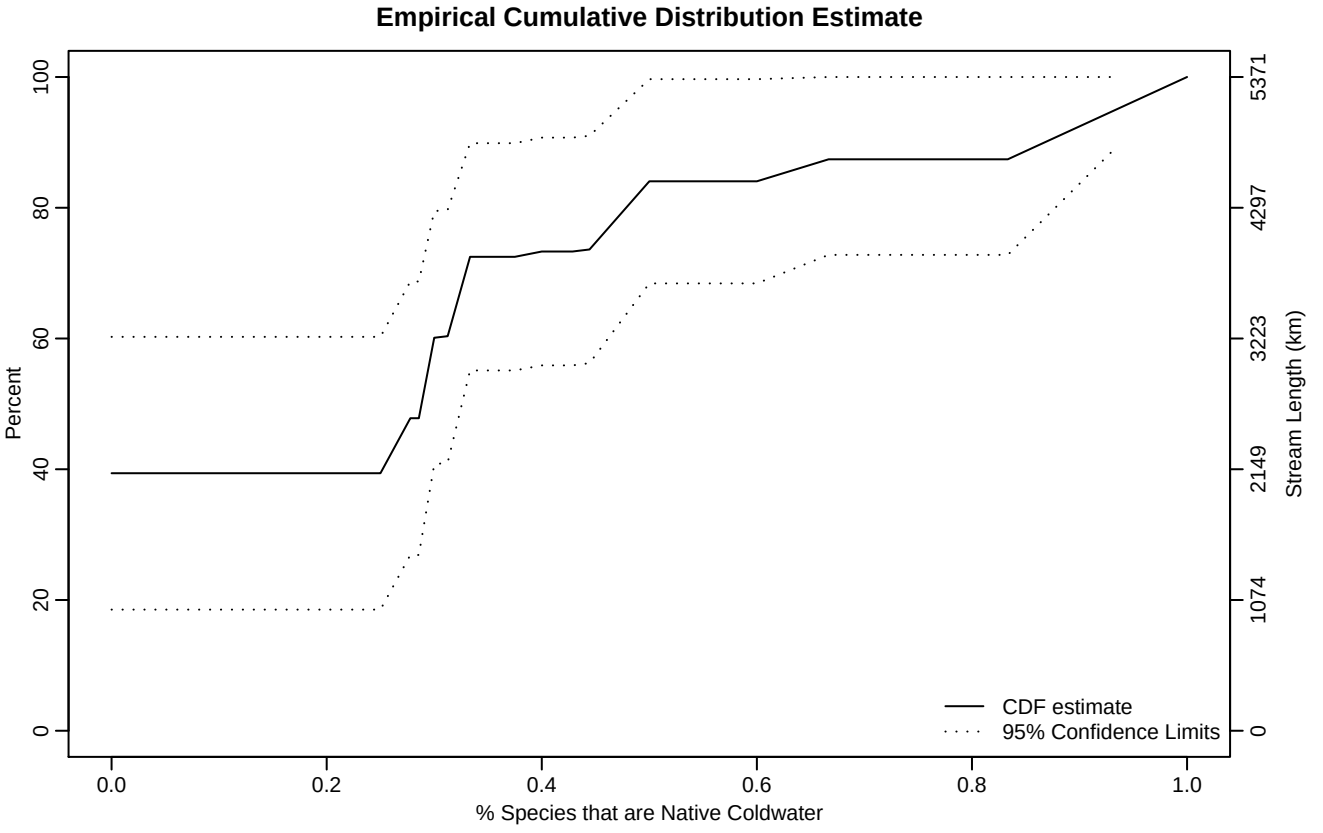


Figure VERT−343 Indicator: COLD_NAT_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.28
50Pct	0.29	0	0.38
75Pct	0.45	0.30	0.91
90Pct	0.87	0.45	
95Pct	0.93	0.48	
Mean	0.31	0.17	0.44
Std Dev	0.29	0.20	0.37

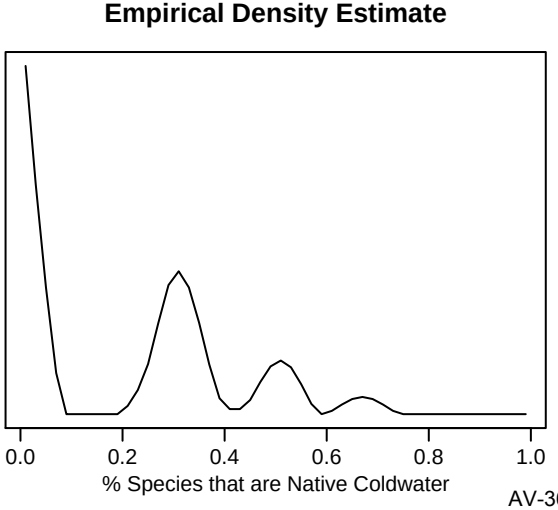
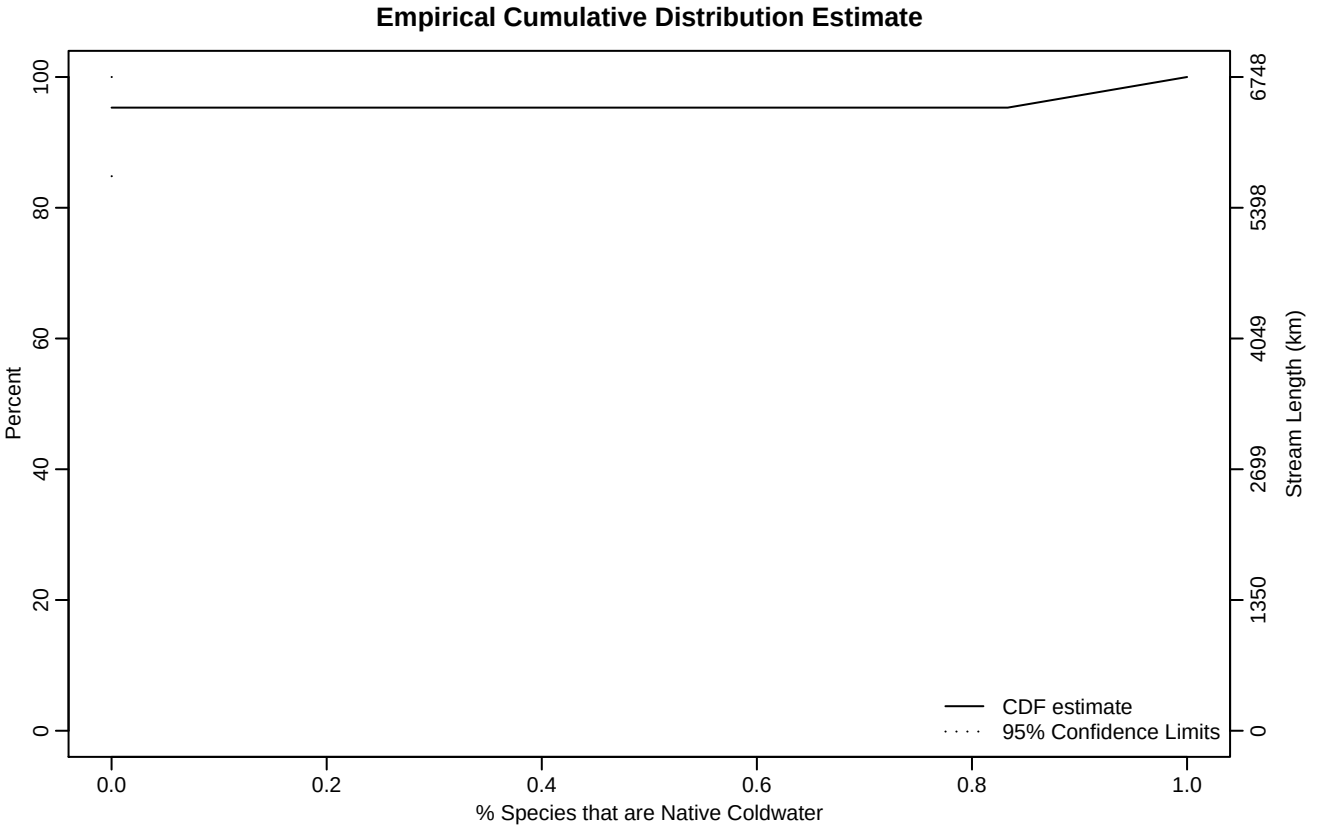


Figure VERT−344 Indicator: COLD_NAT_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.98
95Pct	0	0	1
Mean	0.05	−0.06	0.15
Std Dev	0.05	0.04	0.07

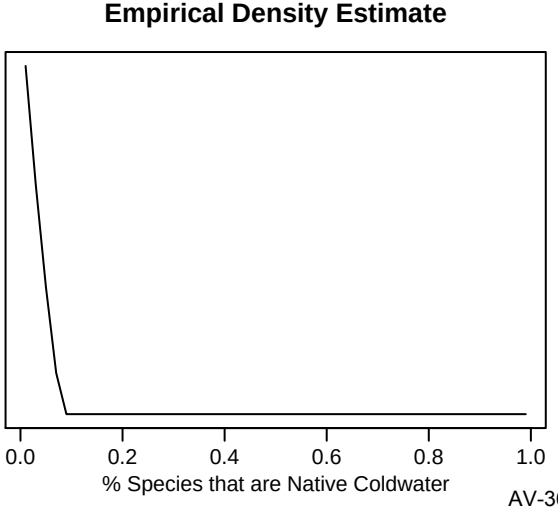
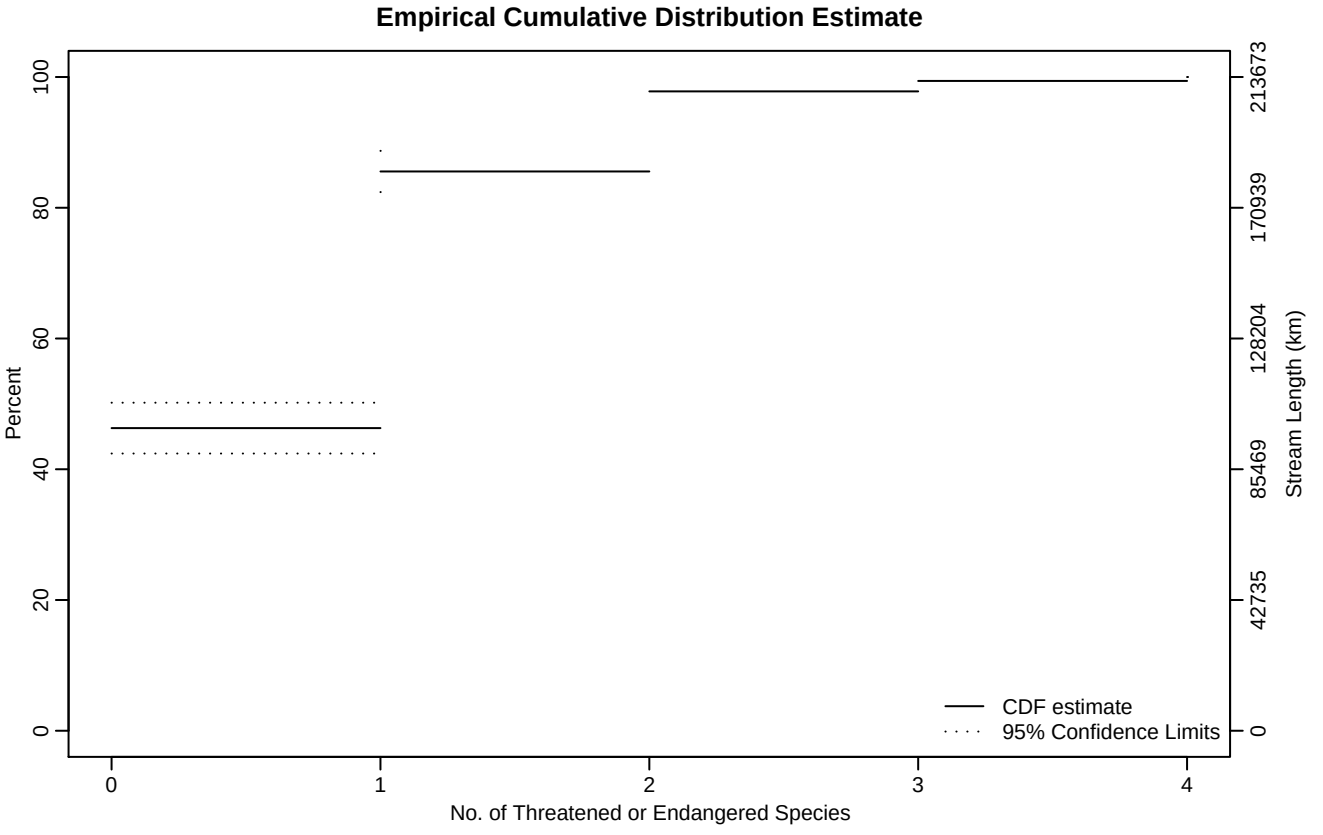


Figure VERT−345 Indicator: TE_RICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.09	0	0.20
75Pct	0.73	0.63	0.84
90Pct	1.36	1.10	1.62
95Pct	1.77	1.51	2.25
Mean	0.71	0.65	0.77
Std Dev	0.64	0.59	0.69

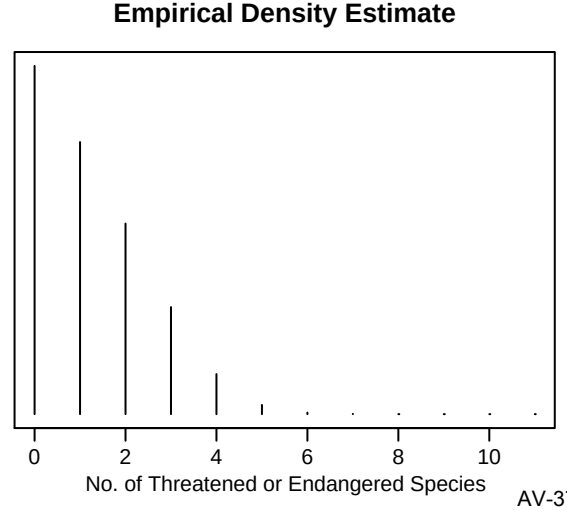
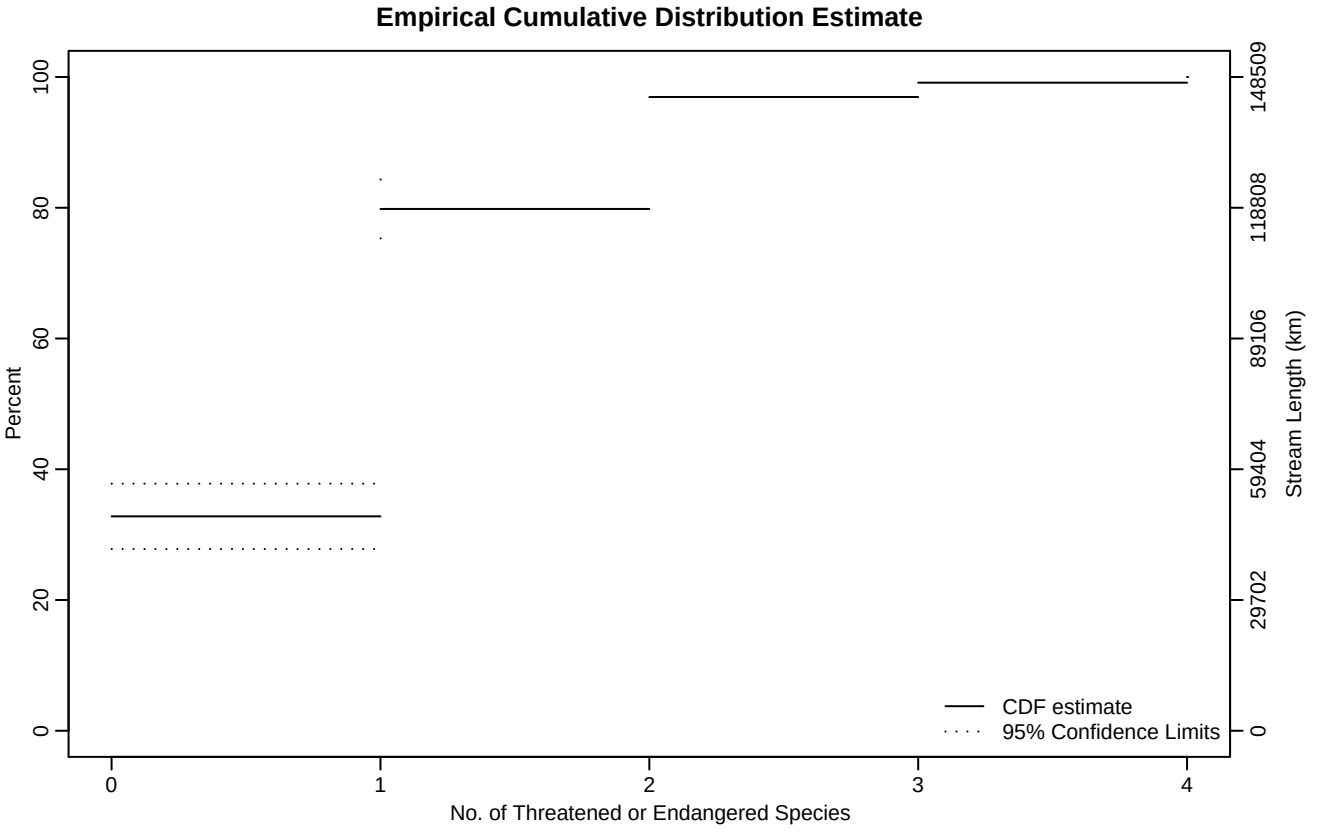


Figure VERT−346 Indicator: TE_RICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.37	0.26	0.47
75Pct	0.90	0.78	1.03
90Pct	1.59	1.33	1.86
95Pct	1.89	1.62	3.50
Mean	0.91	0.82	1
Std Dev	0.71	0.64	0.77

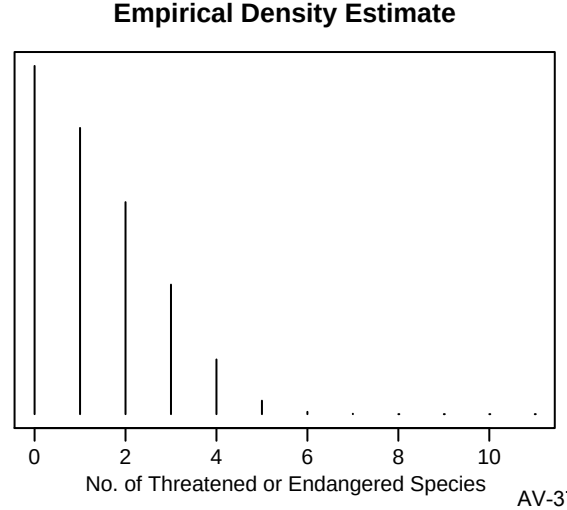
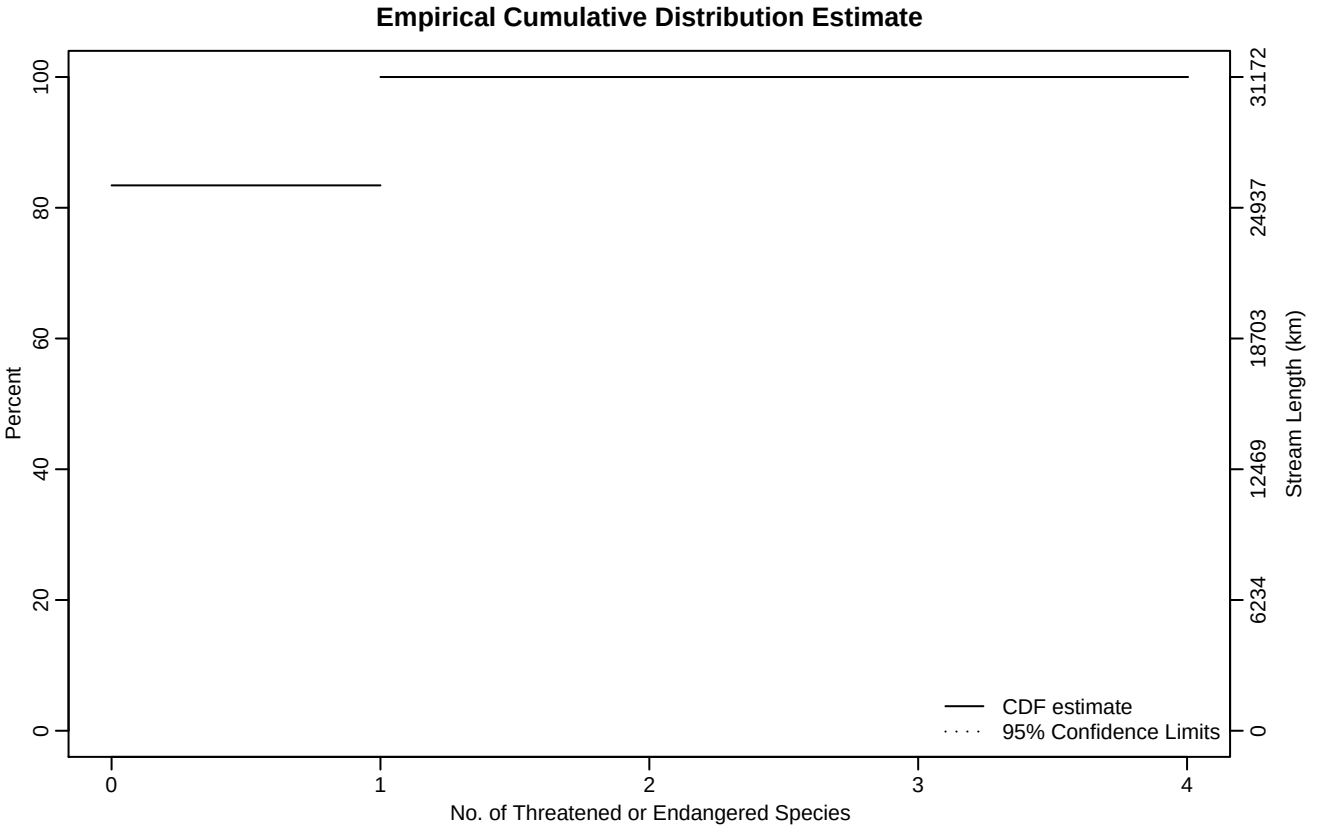


Figure VERT−347 Indicator: TE_RICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.40	0.06	0.74
95Pct	0.70	0.36	
Mean	0.17	0.11	0.22
Std Dev	0.34	0.29	0.38

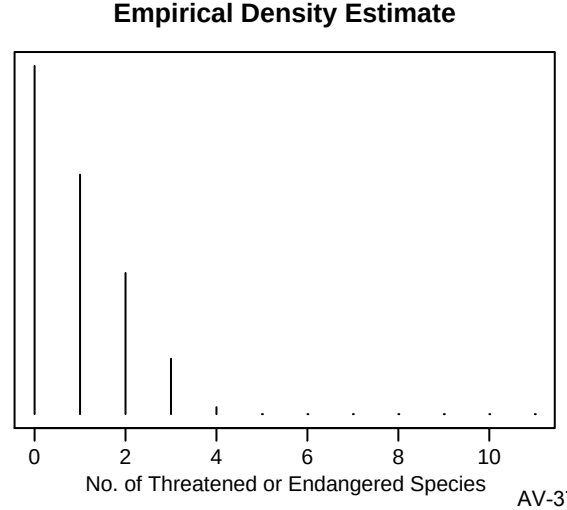
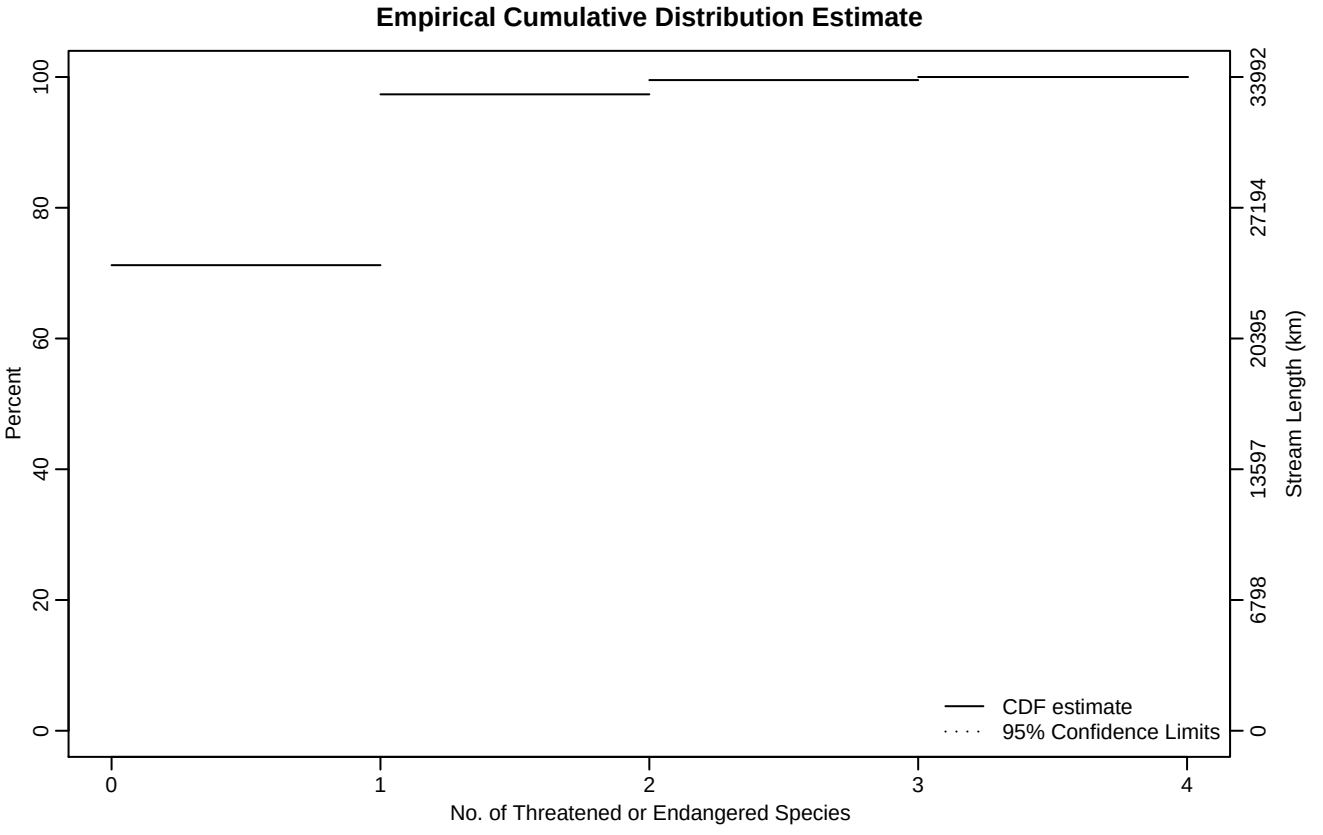


Figure VERT−348 Indicator: TE_RICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.14	0	0.43
90Pct	0.72	0.43	1.12
95Pct	0.91	0.61	
Mean	0.32	0.24	0.39
Std Dev	0.47	0.41	0.52

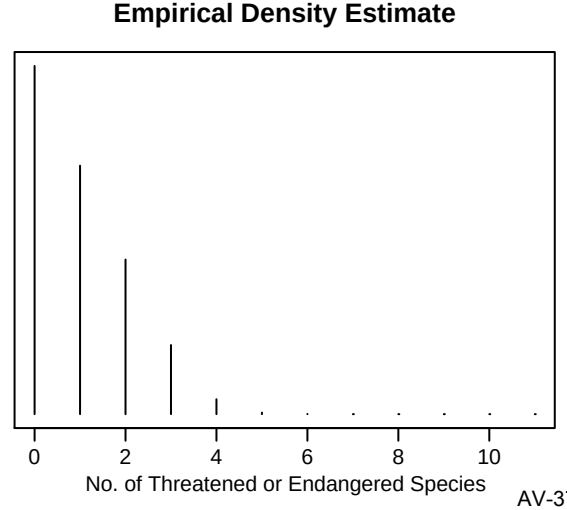
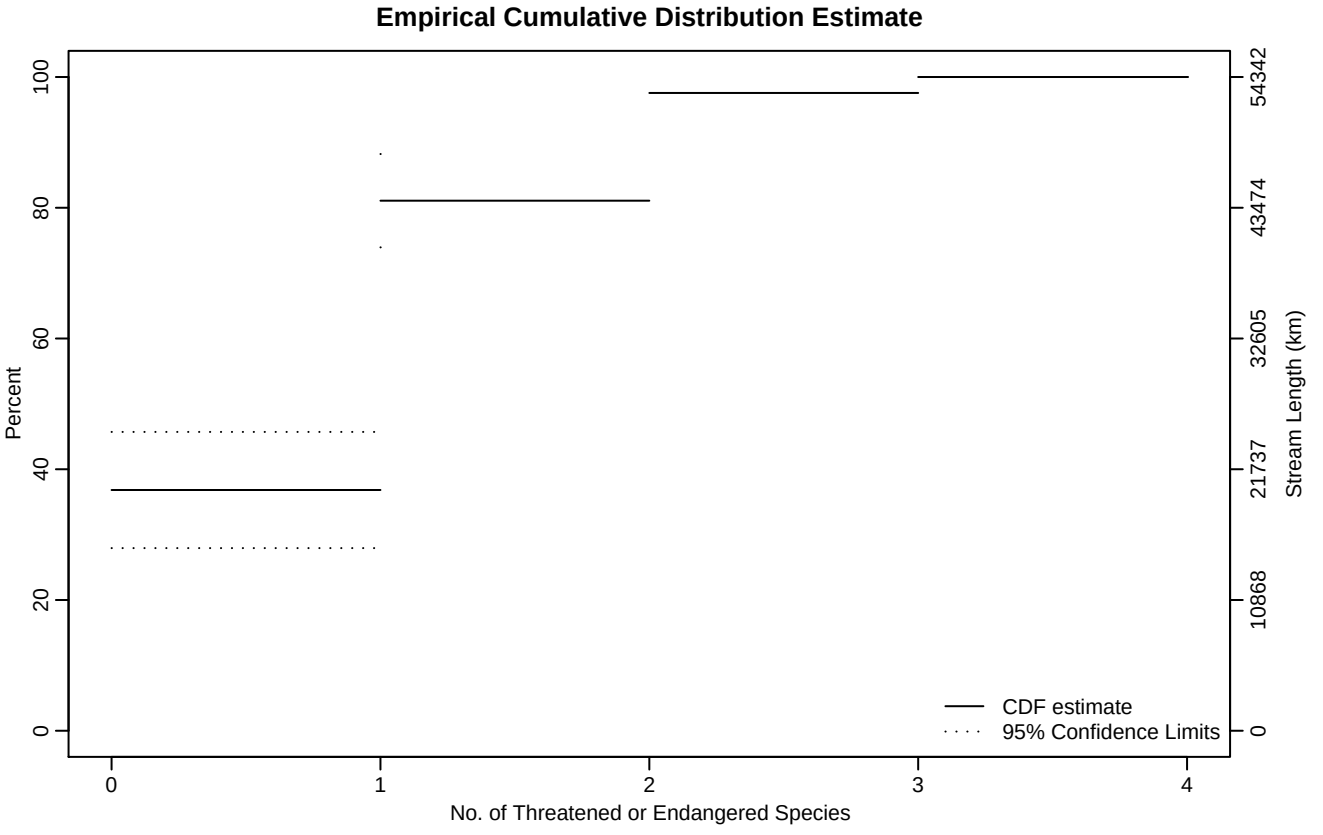


Figure VERT−349 Indicator: TE_RICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.30	0.09	0.50
75Pct	0.86	0.66	1.17
90Pct	1.54	1.10	1.98
95Pct	1.84	1.41	
Mean	0.85	0.70	0.99
Std Dev	0.67	0.57	0.76

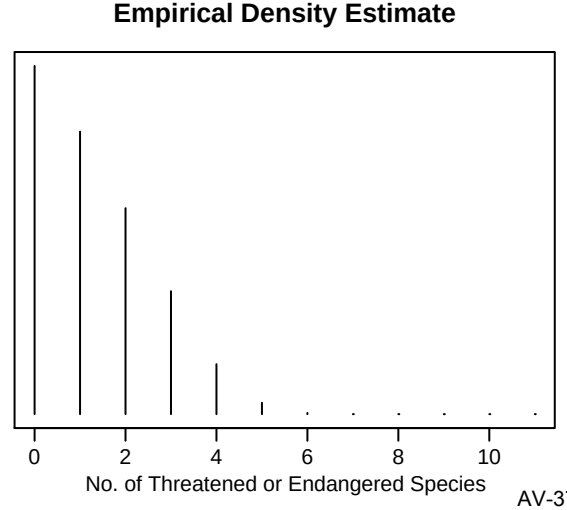
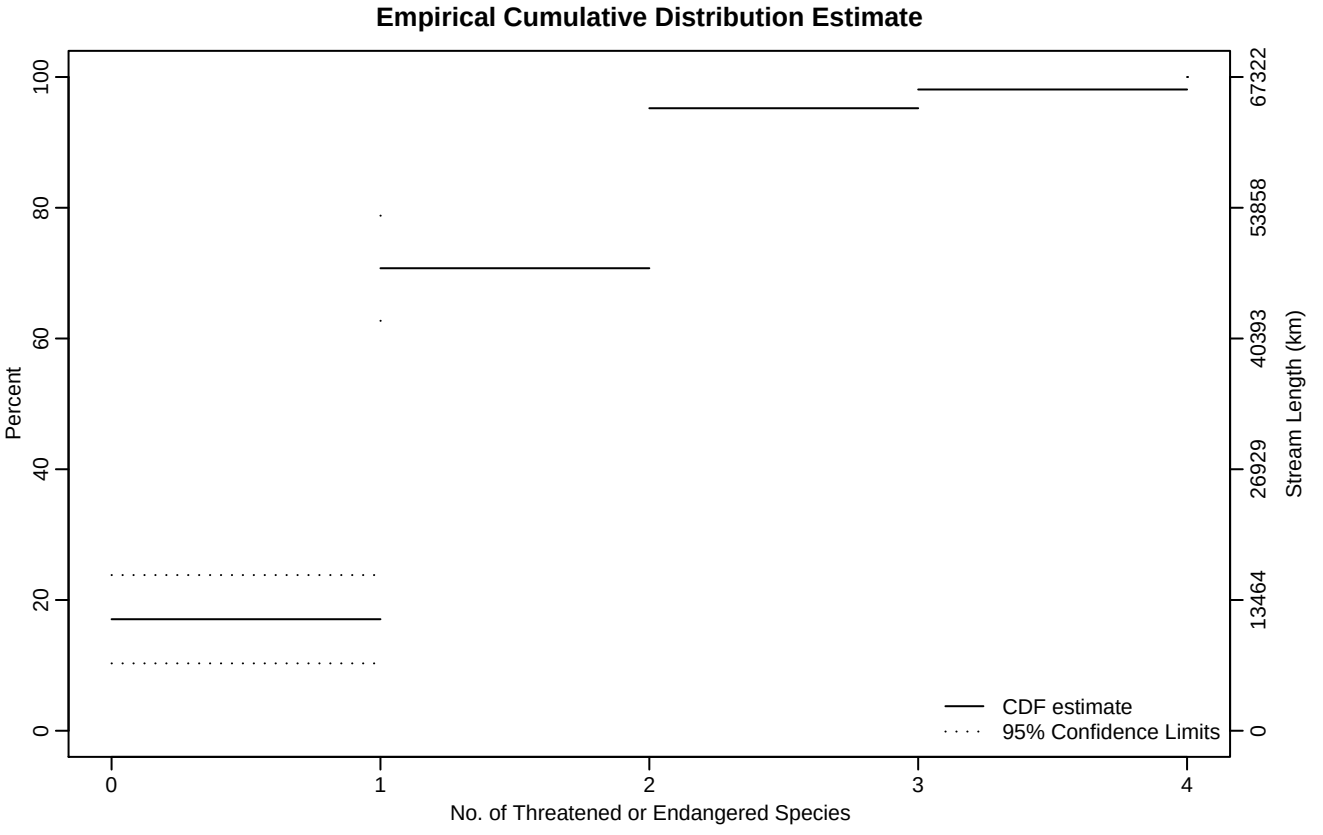


Figure VERT−350 Indicator: TE_RICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.15	0.02	0.27
50Pct	0.61	0.48	0.75
75Pct	1.17	0.93	1.50
90Pct	1.79	1.45	3.02
95Pct	1.99	1.65	4
Mean	1.19	1.04	1.33
Std Dev	0.80	0.69	0.91

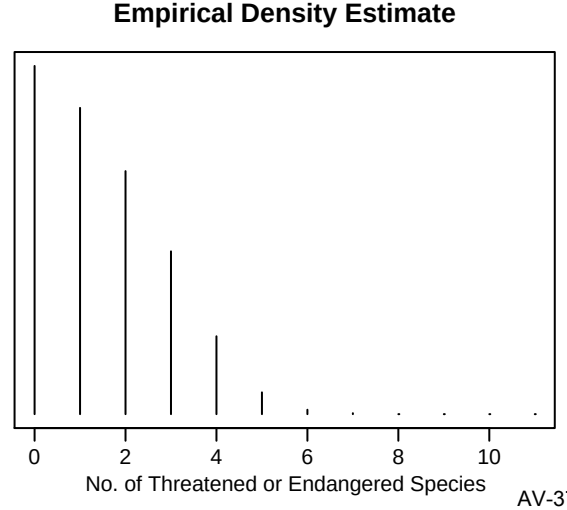
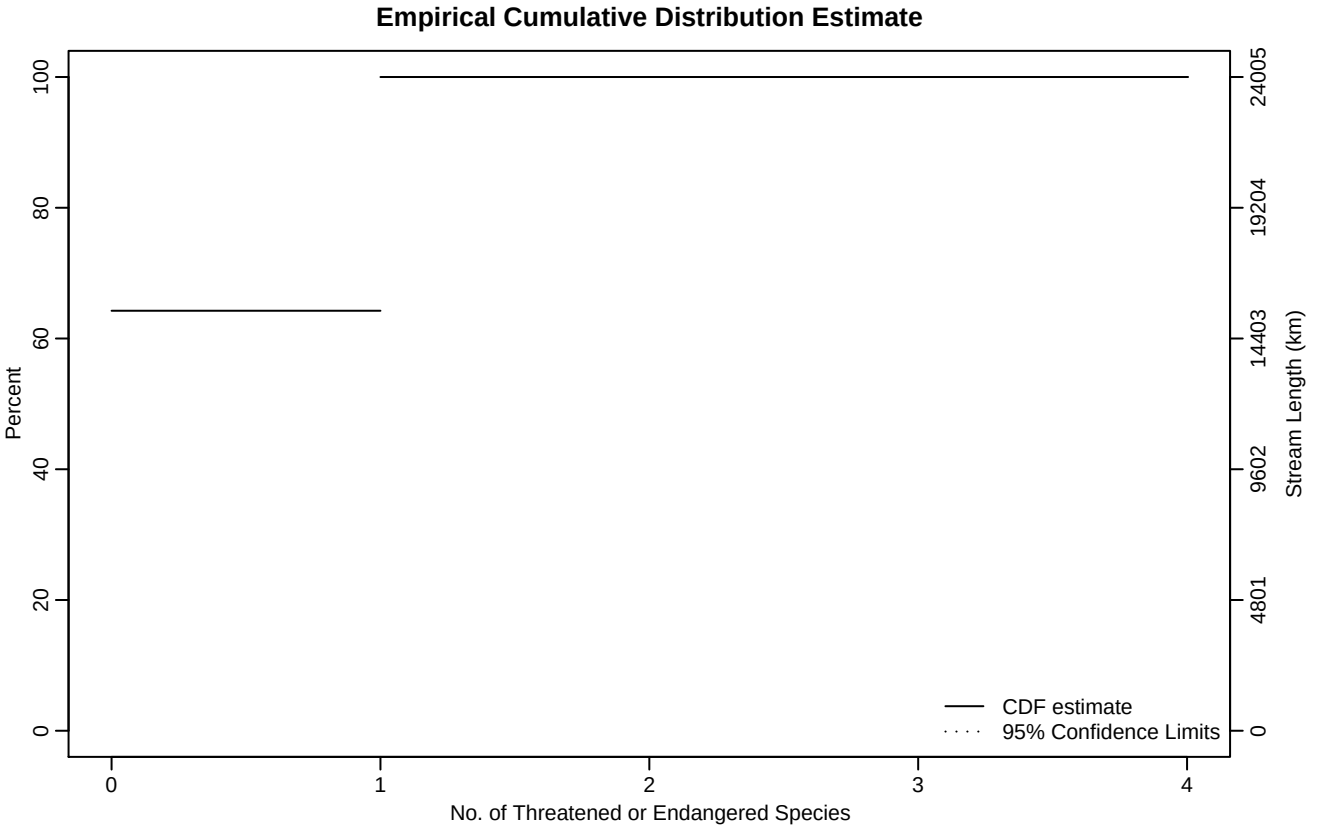


Figure VERT−351 Indicator: TE_RICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.30	0	0.67
90Pct	0.72	0.36	
95Pct	0.86	0.50	
Mean	0.36	0.23	0.49
Std Dev	0.46	0.42	0.51

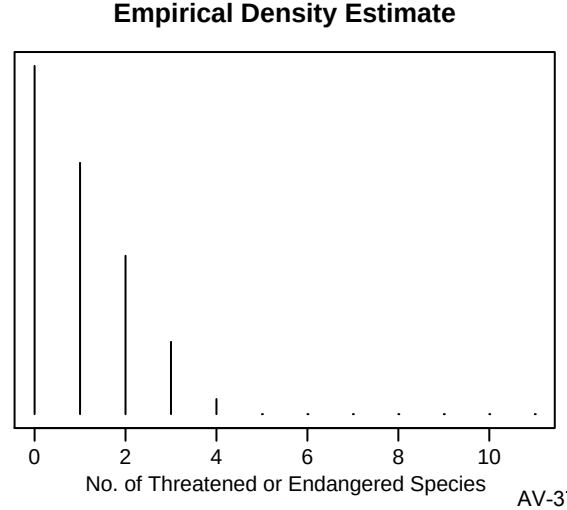
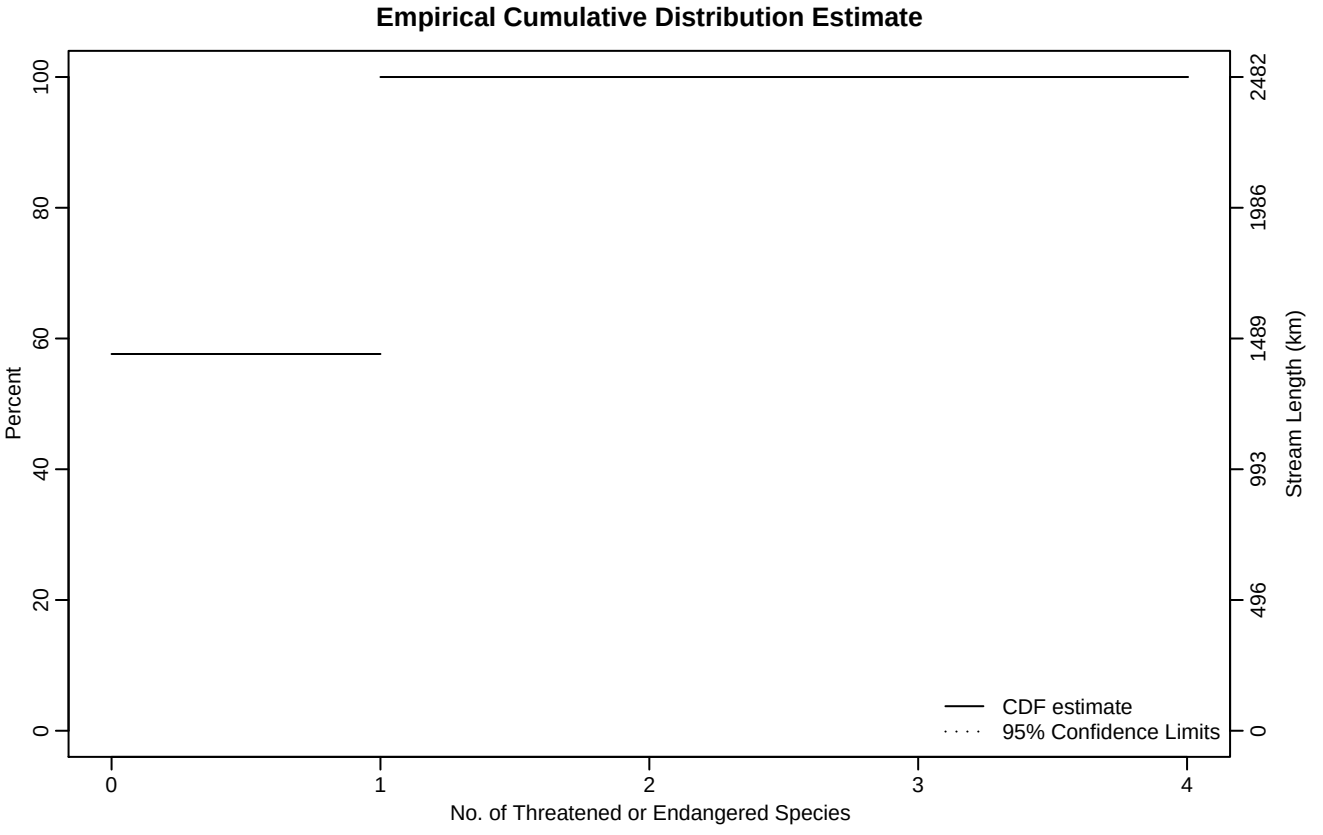


Figure VERT−352 Indicator: TE_RICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.09
75Pct	0.41	0.15	0.67
90Pct	0.76	0.50	1
95Pct	0.88	0.62	1
Mean	0.42	0.31	0.53
Std Dev	0.46	0.41	0.50

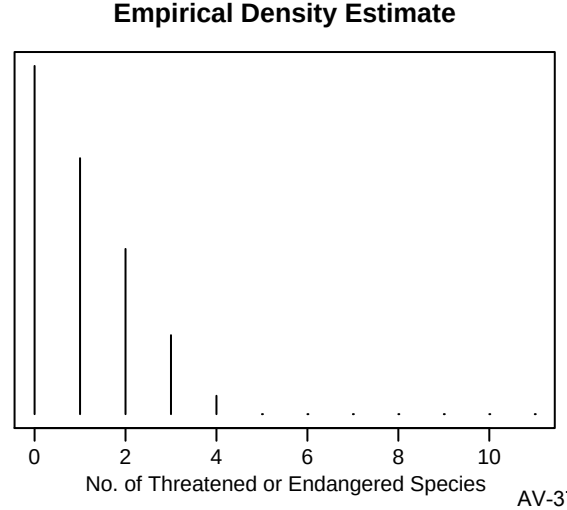
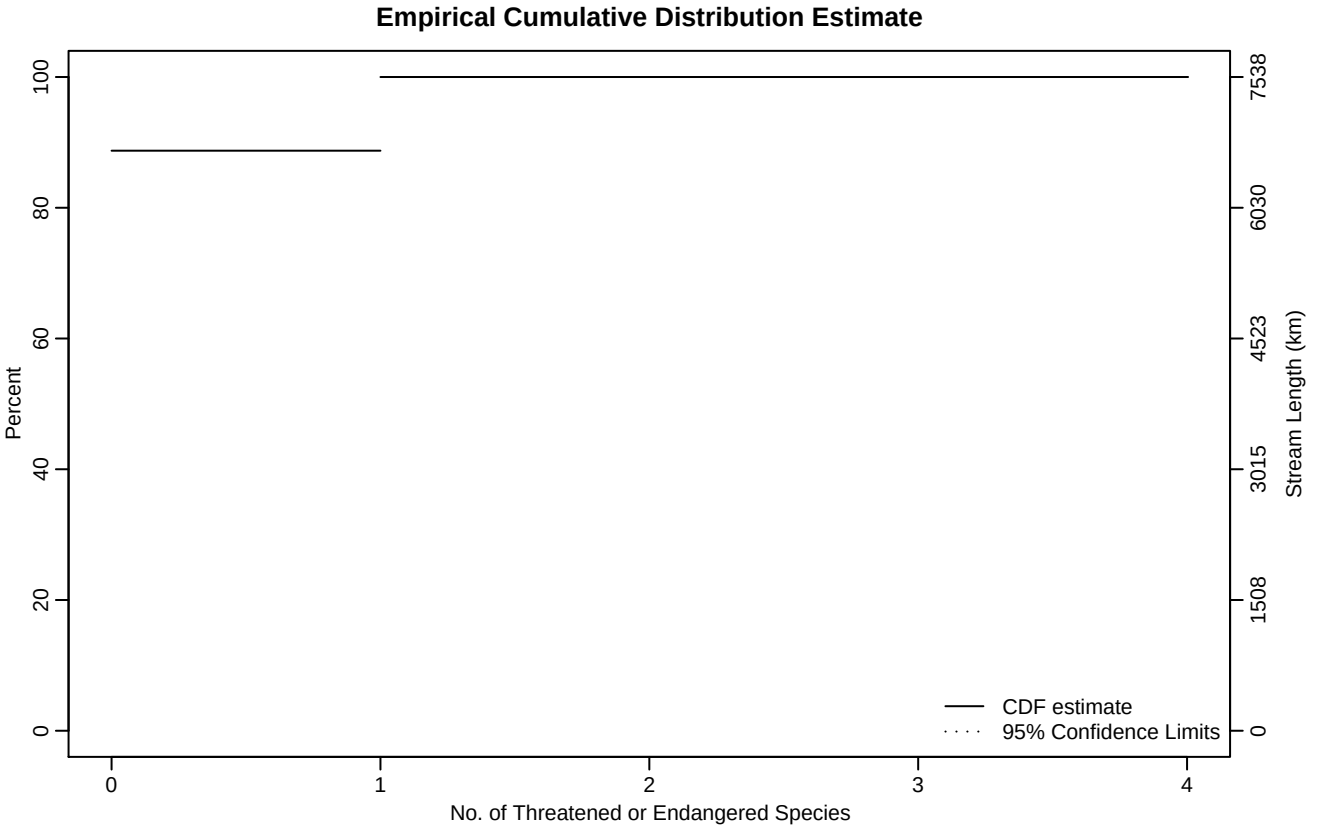


Figure VERT−353 Indicator: TE_RICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.11	0	0.83
95Pct	0.56	0	1
Mean	0.11	0.03	0.19
Std Dev	0.30	0.21	0.39

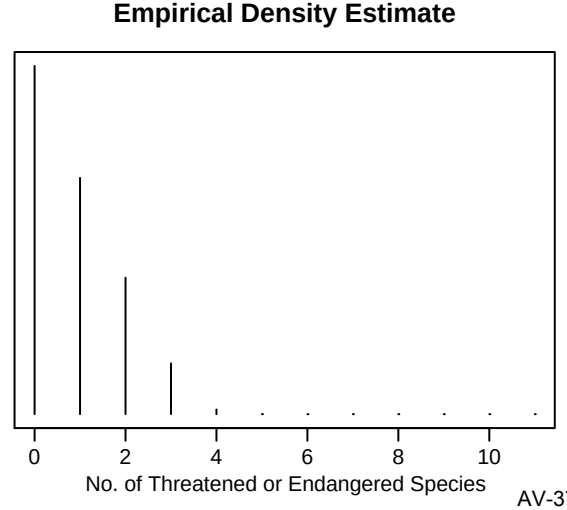
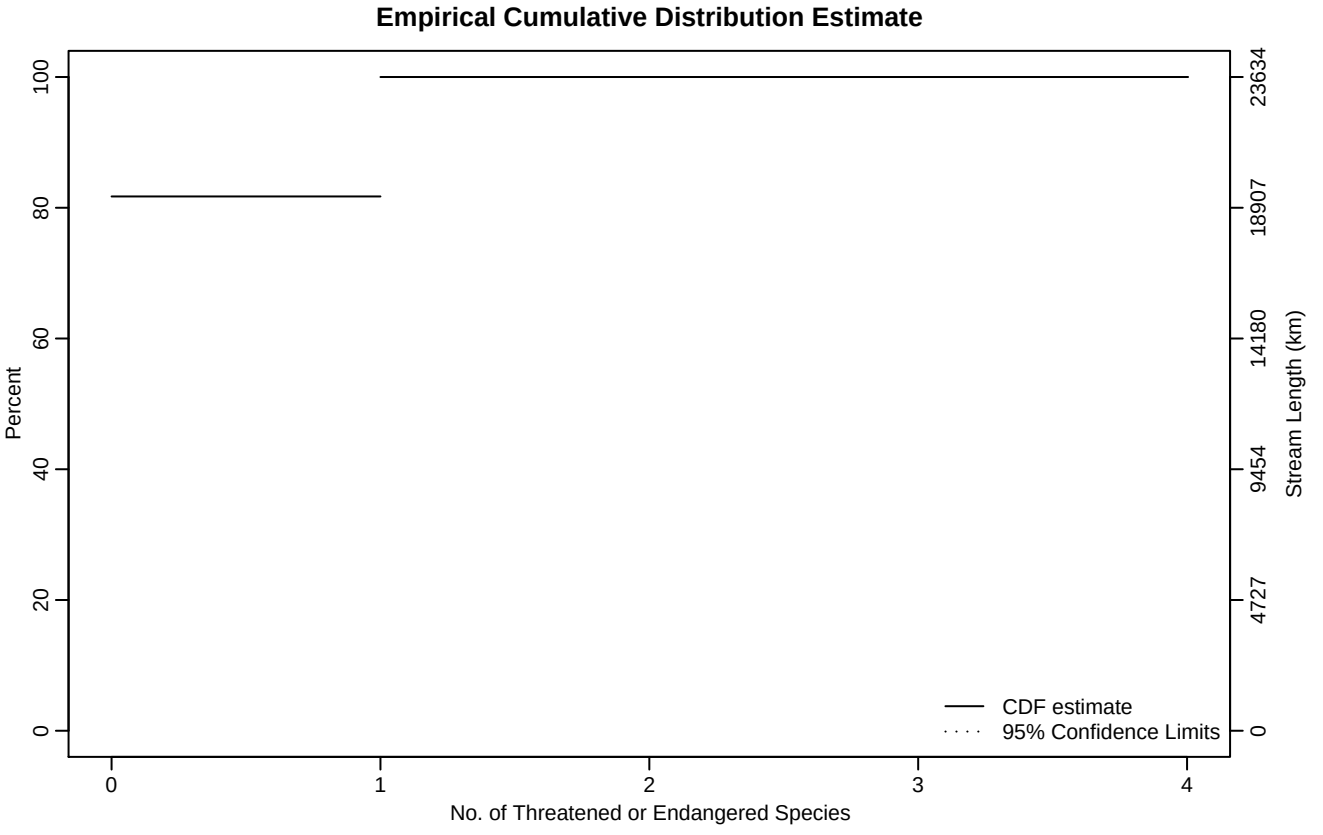


Figure VERT−354 Indicator: TE_RICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.02
90Pct	0.45	0.07	0.83
95Pct	0.73	0.35	1
Mean	0.18	0.11	0.25
Std Dev	0.35	0.29	0.40

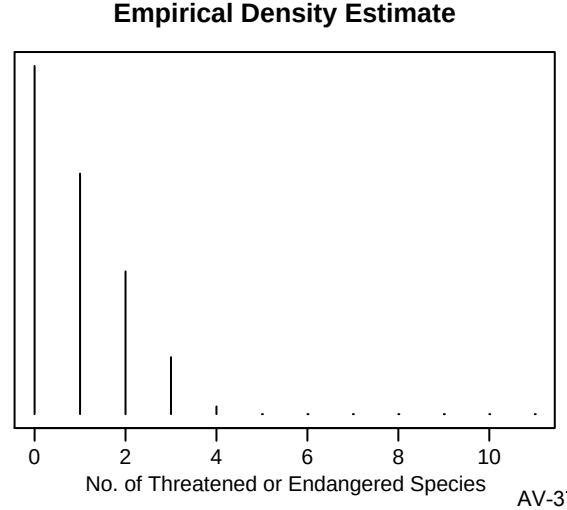
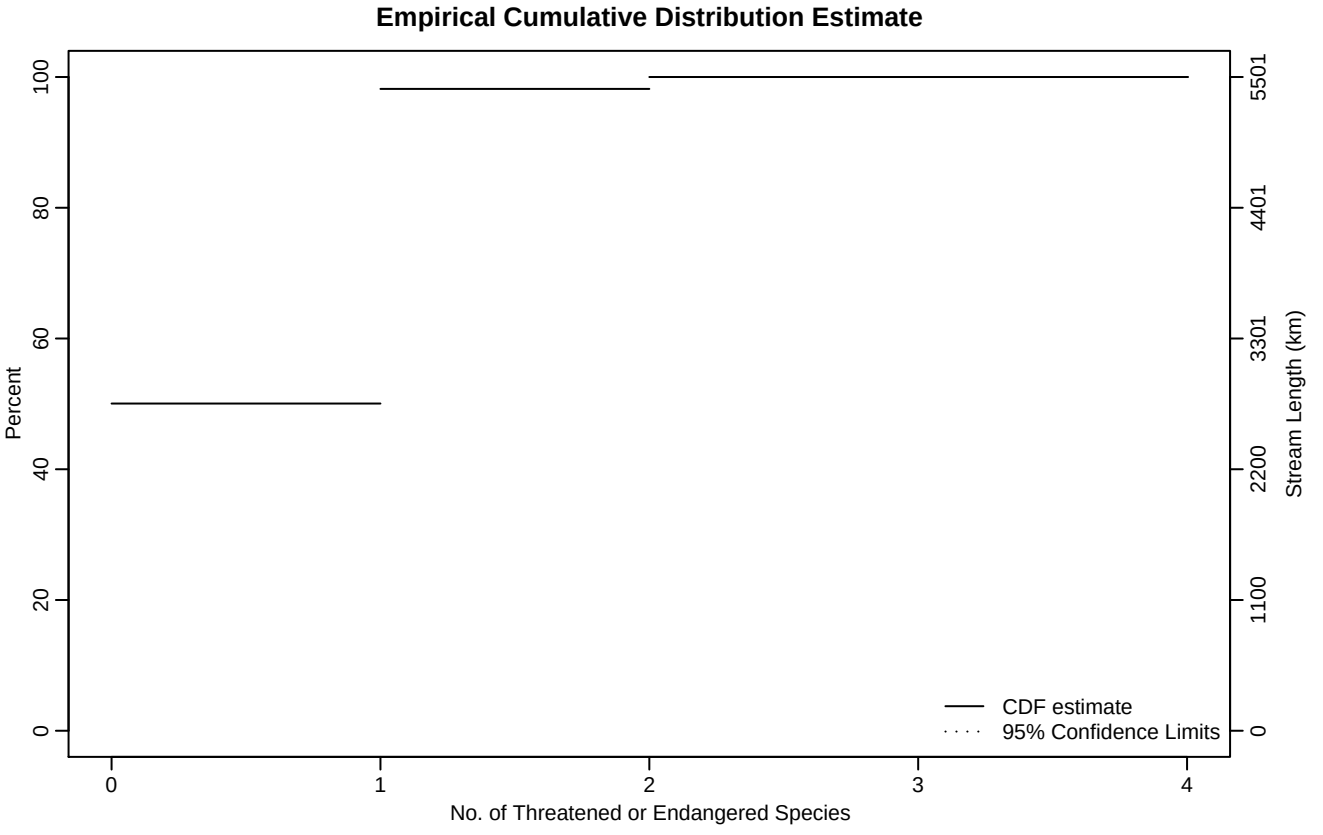


Figure VERT−355 Indicator: TE_RICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.43
75Pct	0.52	0.09	0.95
90Pct	0.83	0.39	2
95Pct	0.93	0.48	2
Mean	0.52	0.31	0.73
Std Dev	0.53	0.48	0.59

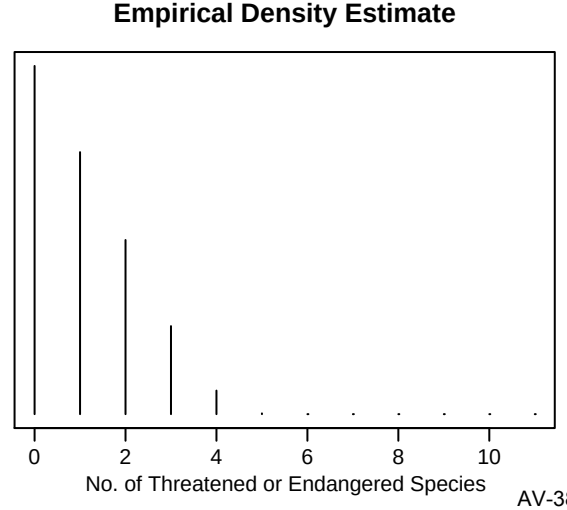
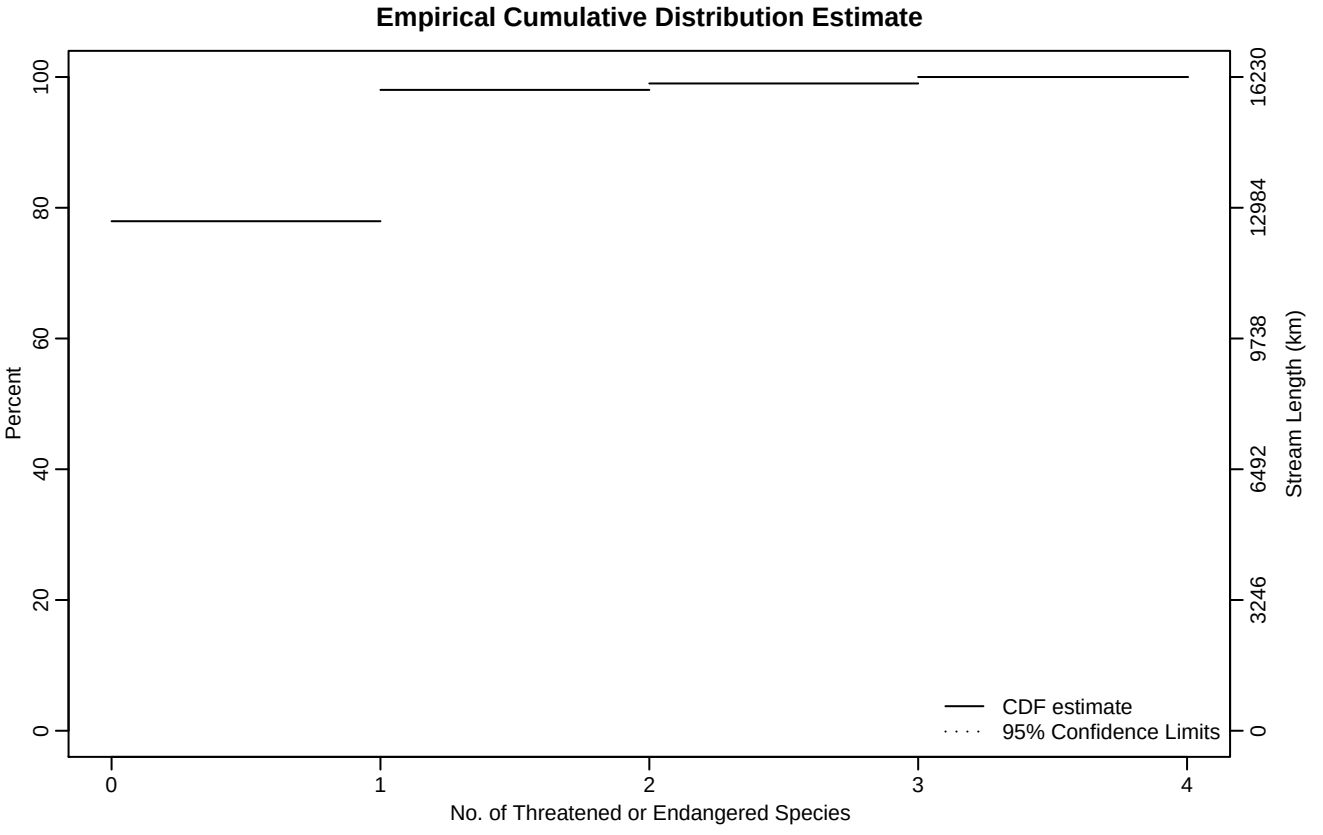


Figure VERT−356 Indicator: TE_RICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.34
90Pct	0.60	0.11	2.86
95Pct	0.85	0.35	3
Mean	0.25	0.14	0.36
Std Dev	0.49	0.39	0.59

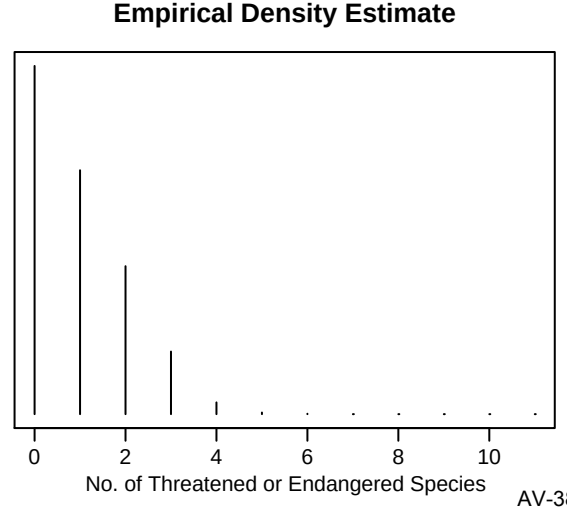
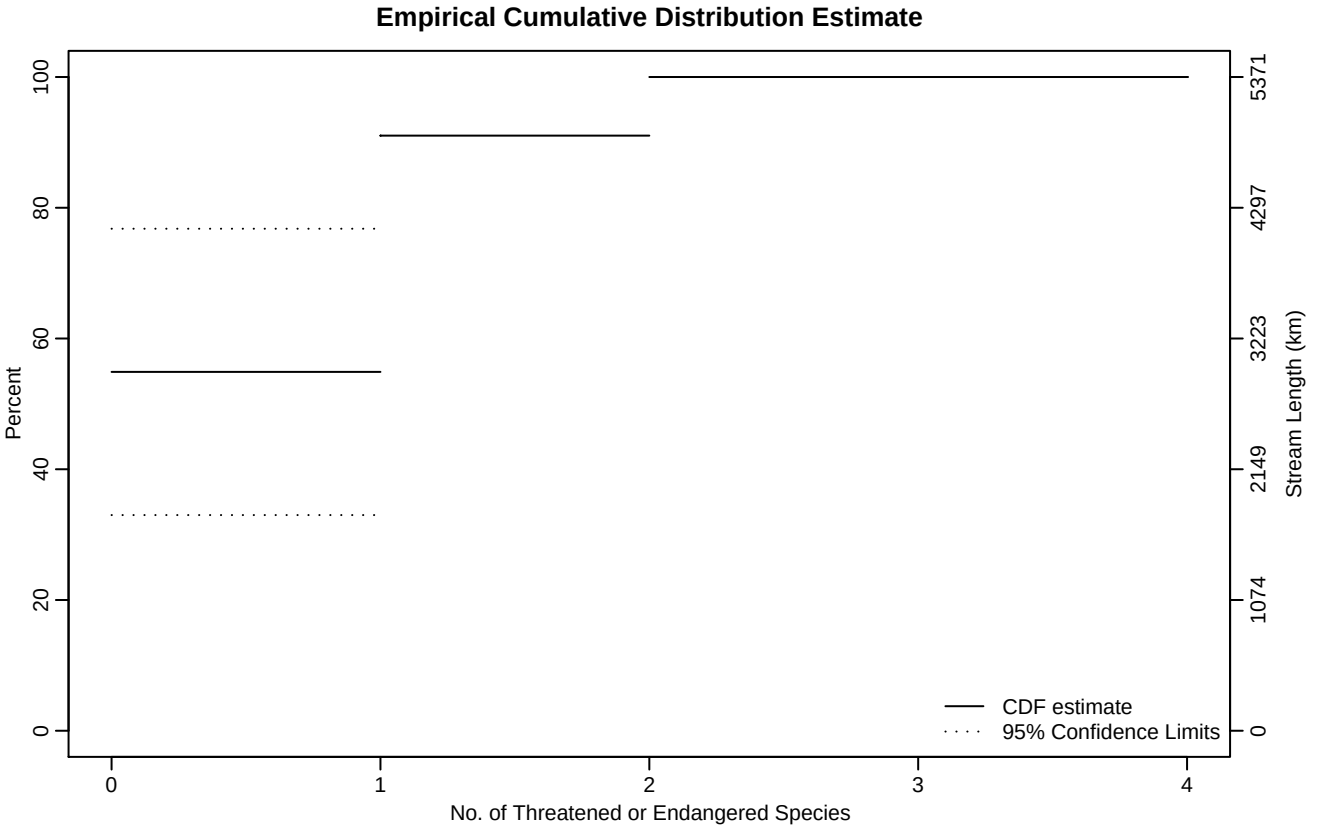


Figure VERT−357 Indicator: TE_RICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.52
75Pct	0.56	0	
90Pct	0.97	0.24	
95Pct	1.44	0.69	
Mean	0.54	0.32	0.76
Std Dev	0.43	0.39	0.48

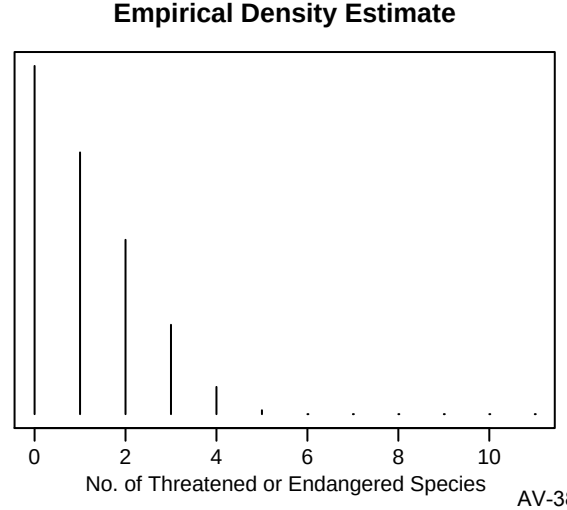
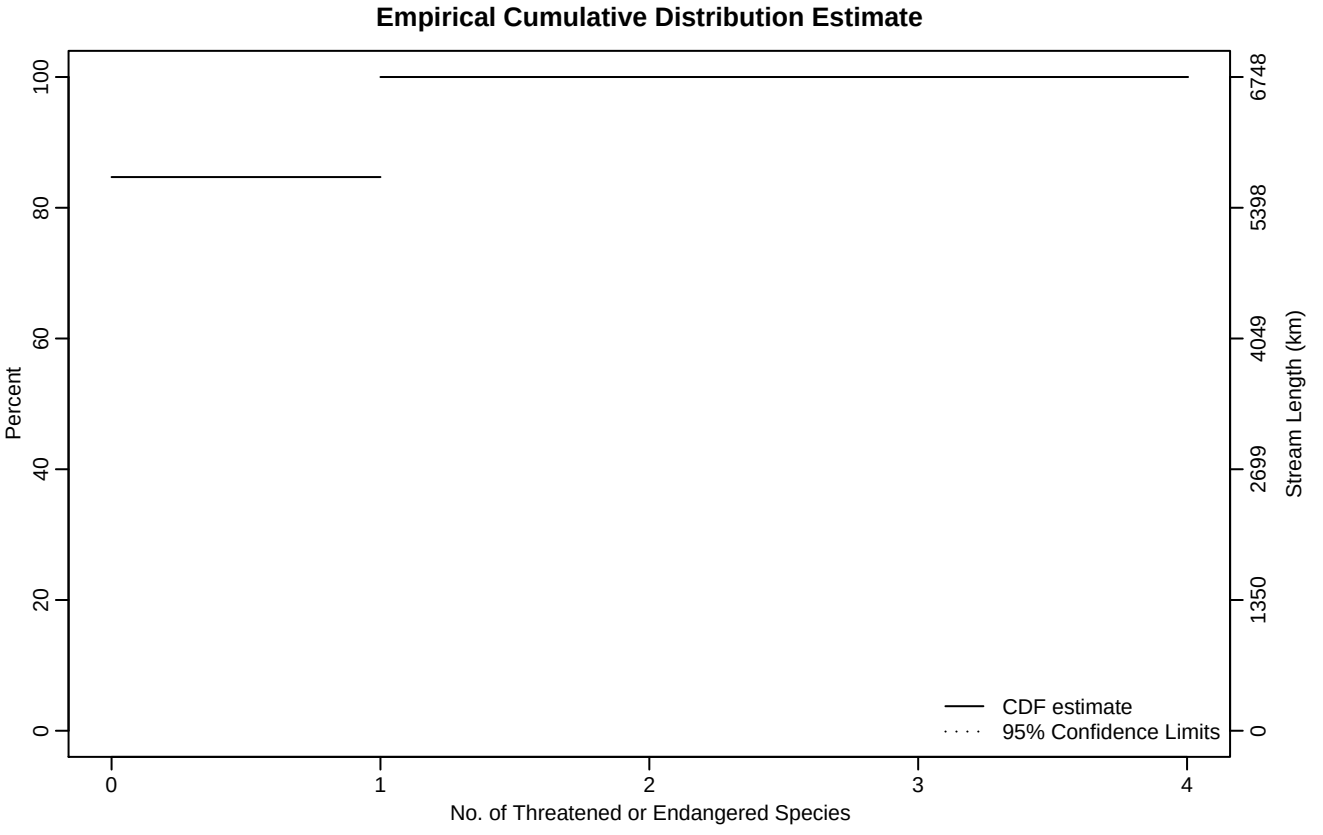


Figure VERT−358 Indicator: TE_RICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.29
90Pct	0.35	0	1
95Pct	0.67	0	1
Mean	0.15	0.01	0.30
Std Dev	0.33	0.22	0.45

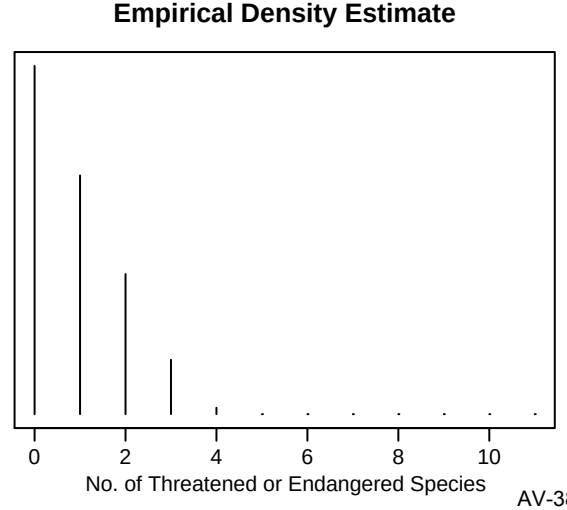
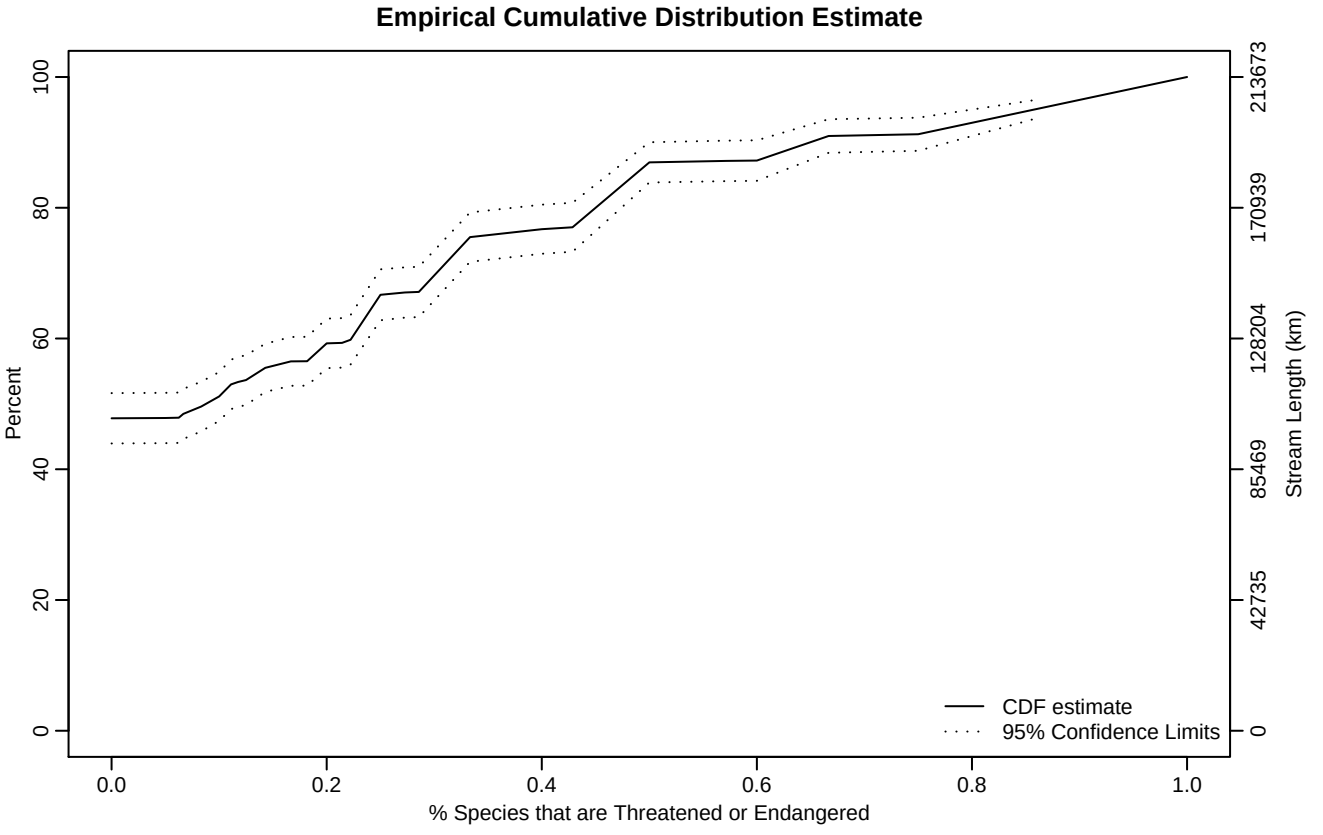


Figure VERT−359 Indicator: TE_PTAX Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.09	0	0.13
75Pct	0.33	0.31	0.44
90Pct	0.65	0.50	0.80
95Pct	0.86	0.78	0.93
Mean	0.24	0.21	0.26
Std Dev	0.24	0.22	0.26

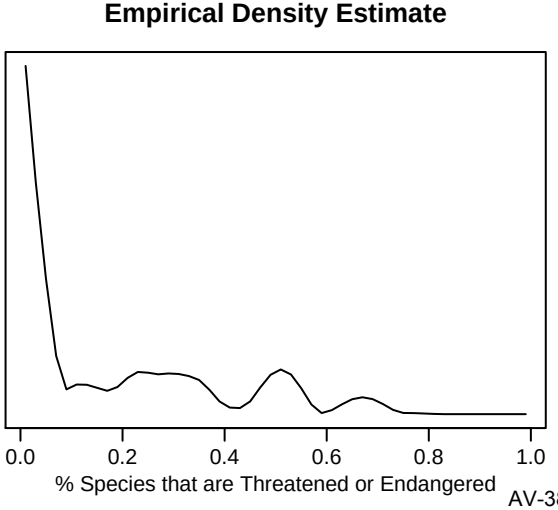
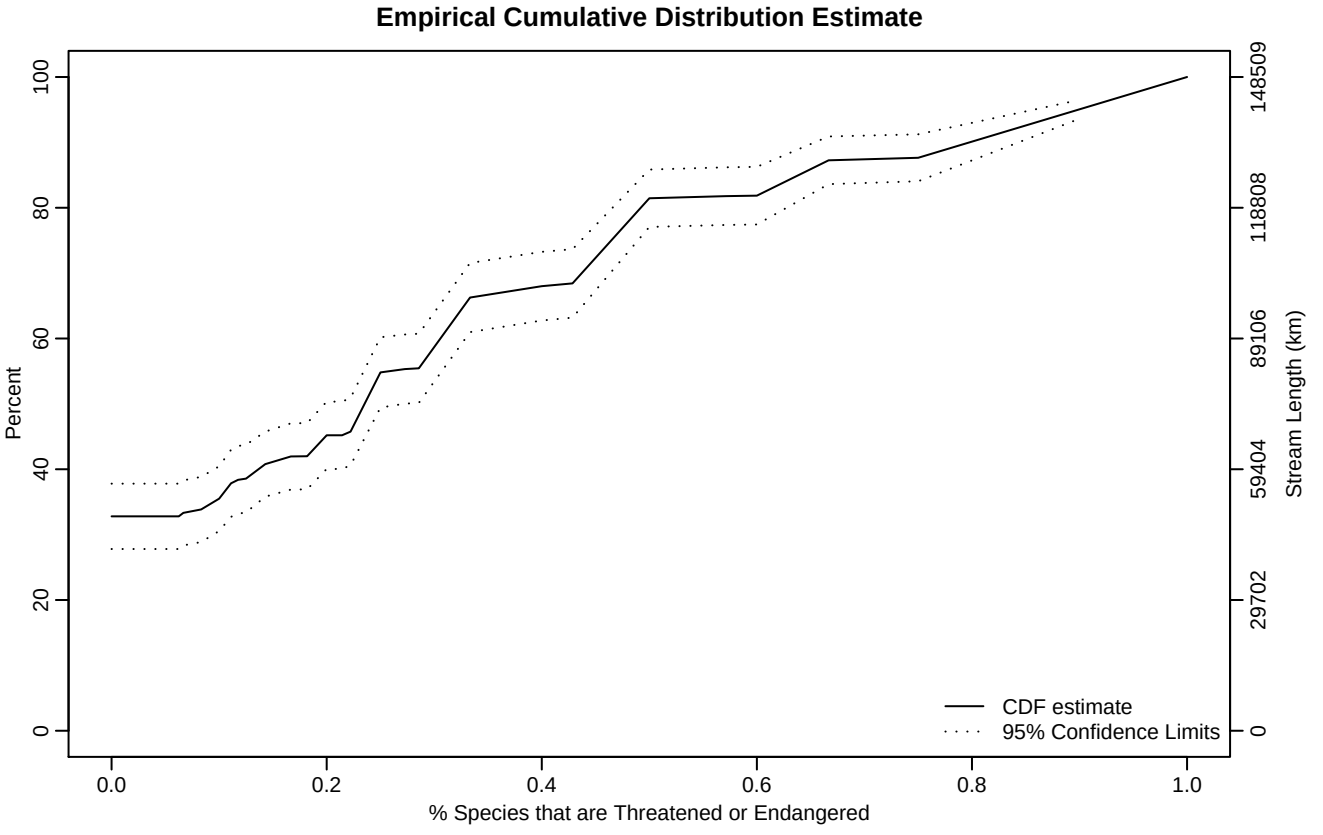


Figure VERT−360 Indicator: TE_PTAX Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.24	0.20	0.27
75Pct	0.46	0.44	0.49
90Pct	0.80	0.66	0.87
95Pct	0.90	0.83	0.97
Mean	0.32	0.28	0.35
Std Dev	0.29	0.27	0.31

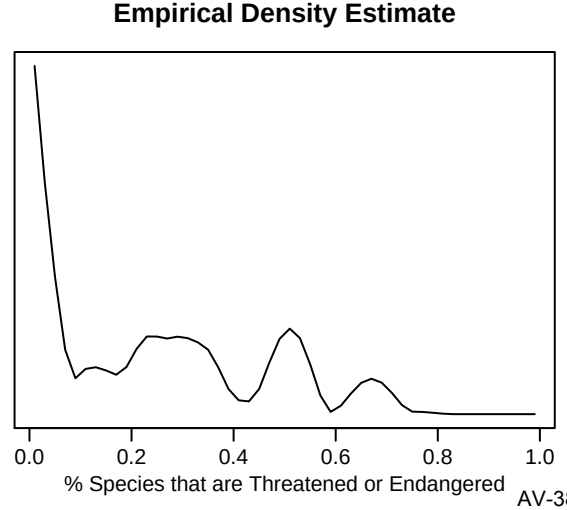
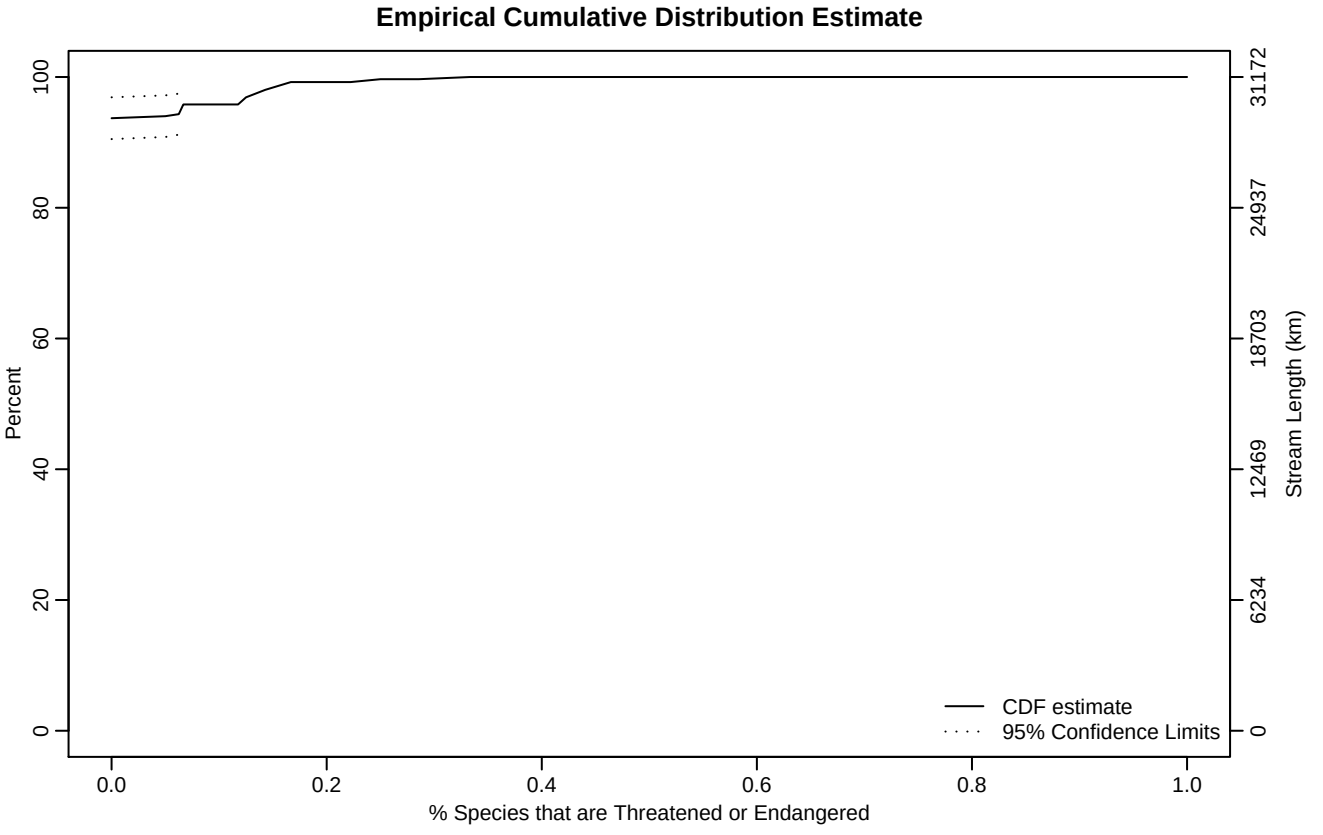


Figure VERT−361 Indicator: TE_PTAX Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0.06	0	0.15
Mean	0.01	0	0.01
Std Dev	0.03	0.02	0.04

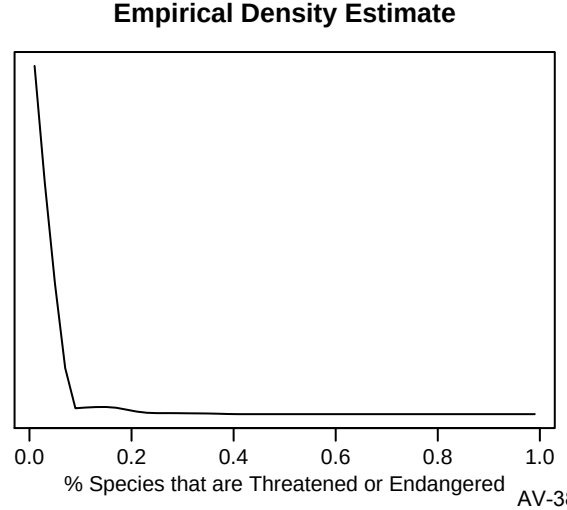
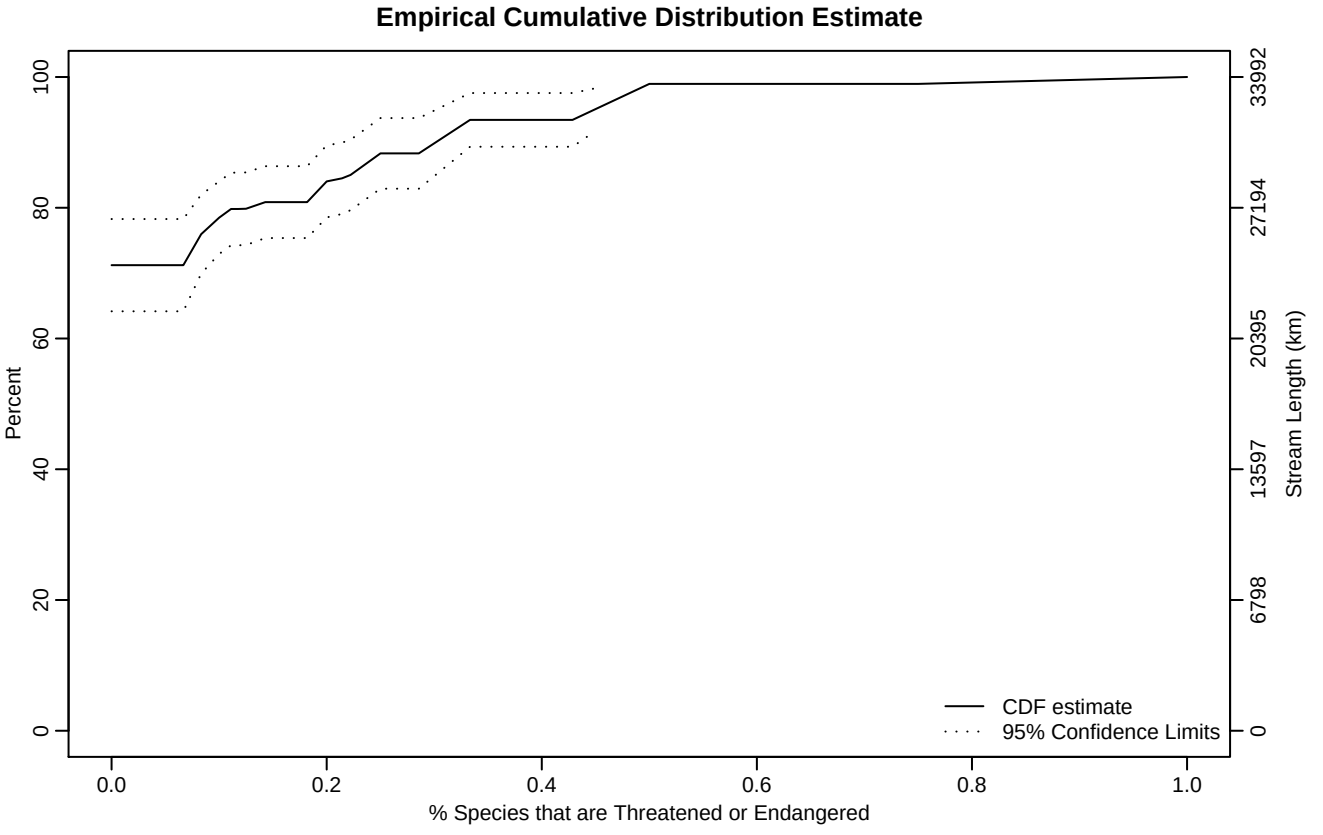


Figure VERT−362 Indicator: TE_PTAX Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.08	0	0.19
90Pct	0.30	0.21	0.46
95Pct	0.45	0.31	0.80
Mean	0.08	0.06	0.11
Std Dev	0.13	0.11	0.16

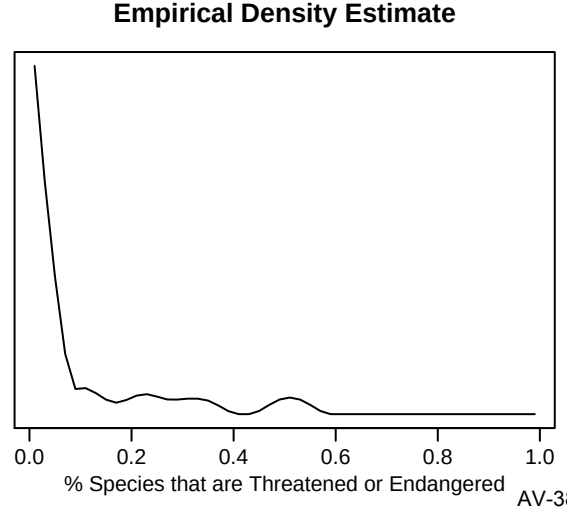
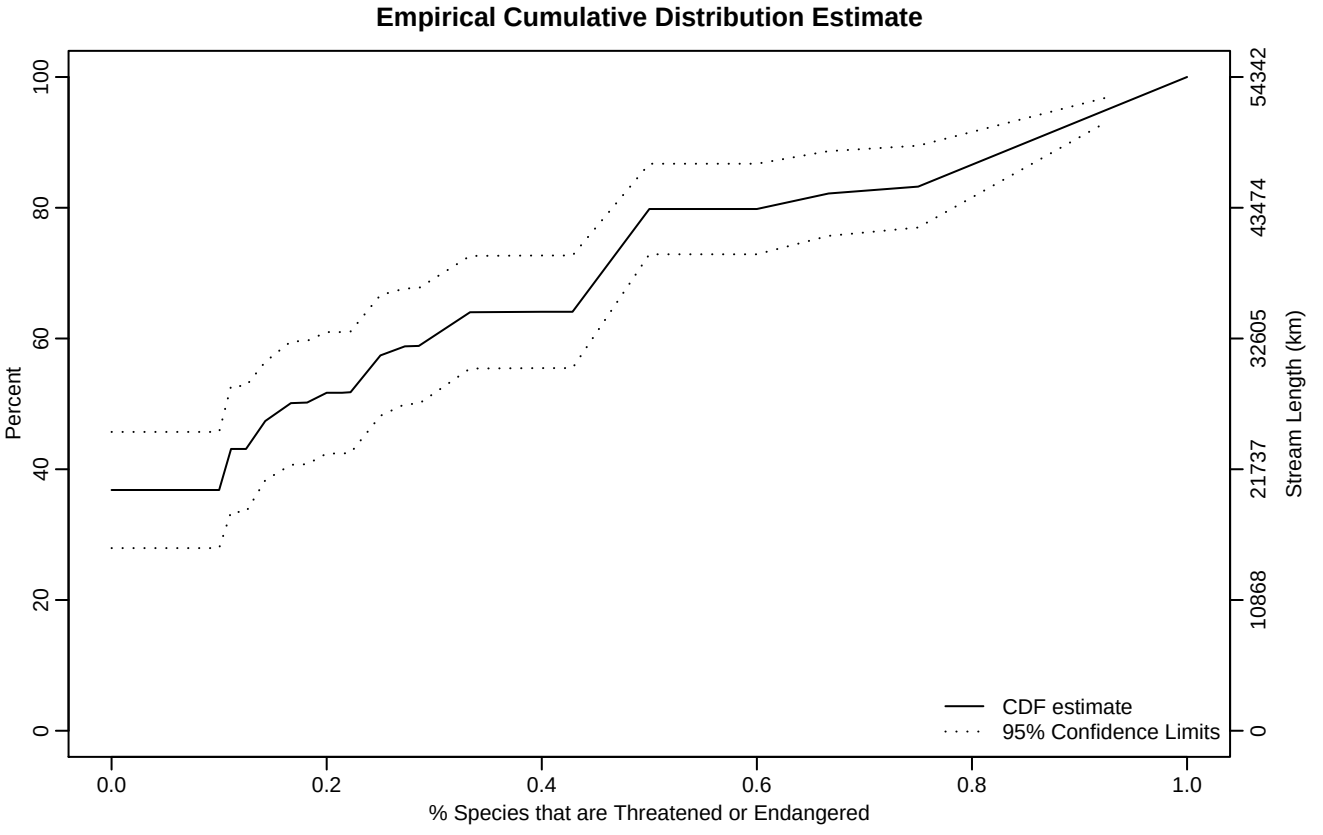


Figure VERT−363 Indicator: TE_PTAX Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.17	0.11	0.29
75Pct	0.48	0.44	0.76
90Pct	0.85	0.75	0.95
95Pct	0.93	0.82	
Mean	0.33	0.27	0.39
Std Dev	0.27	0.24	0.31

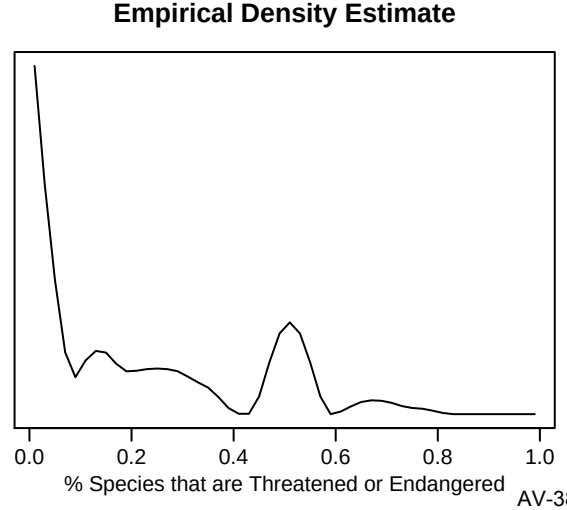
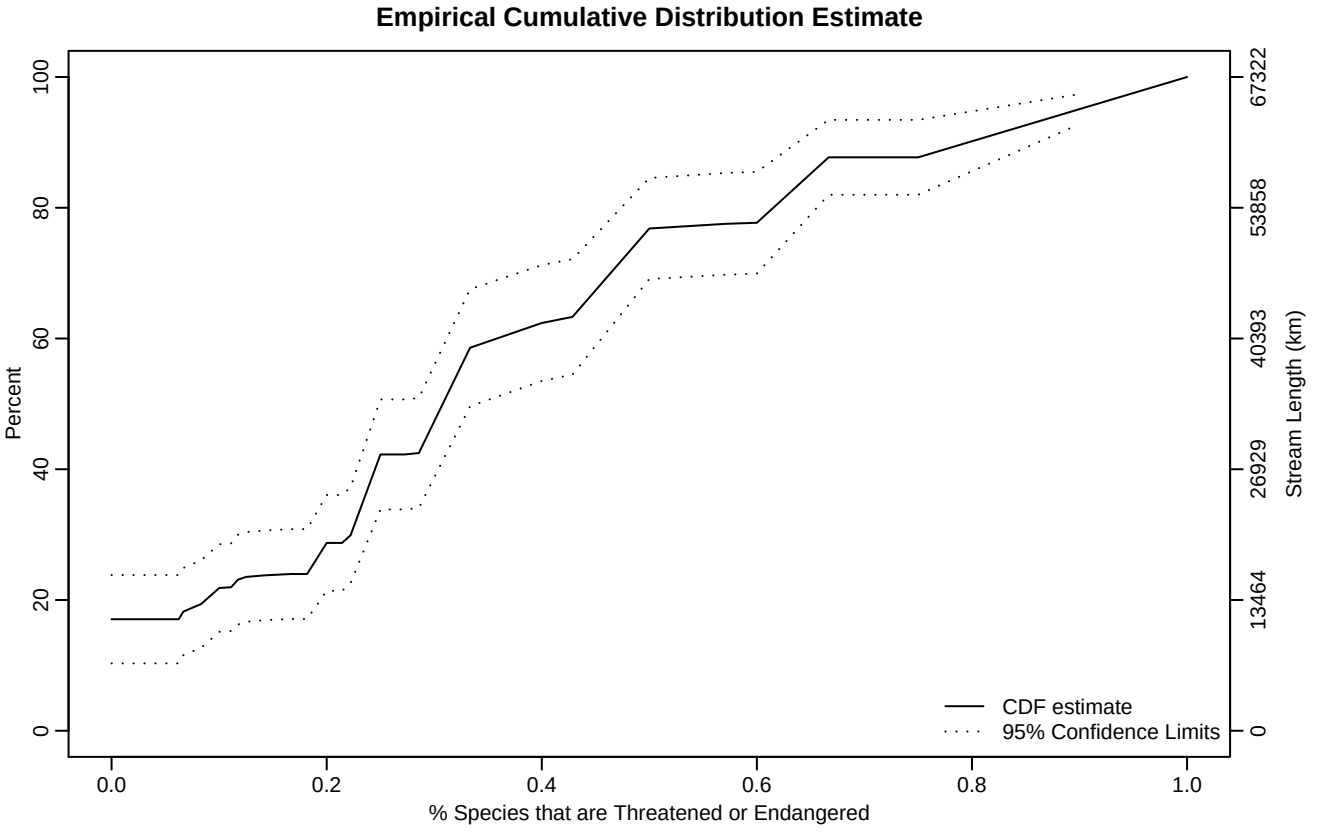


Figure VERT−364 Indicator: TE_PTAX Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.19	0.07	0.23
50Pct	0.31	0.25	0.33
75Pct	0.49	0.44	0.64
90Pct	0.80	0.64	0.91
95Pct	0.90	0.78	1
Mean	0.39	0.33	0.44
Std Dev	0.30	0.26	0.33

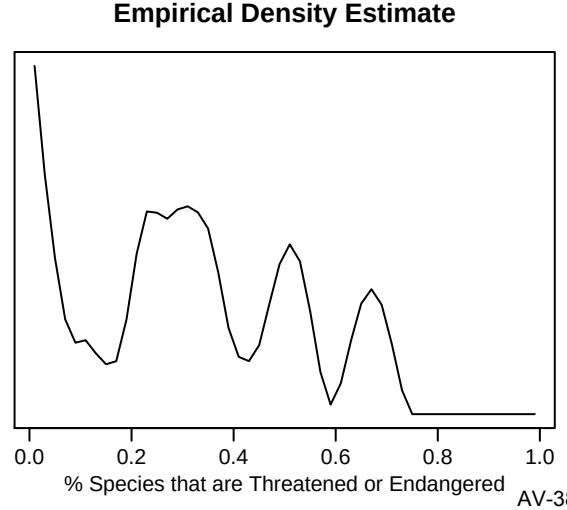
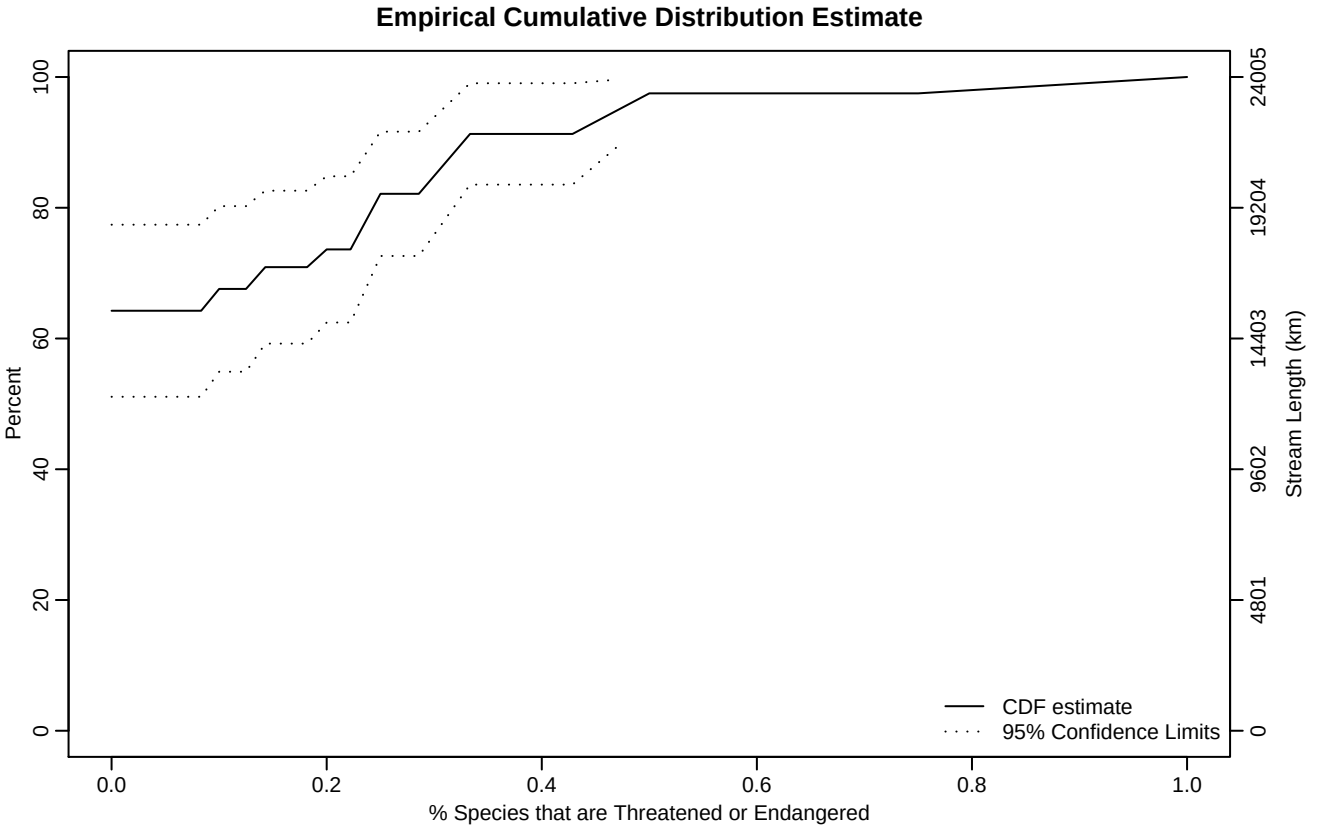


Figure VERT−365 Indicator: TE_PTAX Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.23	0	0.31
90Pct	0.33	0.24	0.98
95Pct	0.47	0.31	
Mean	0.12	0.07	0.18
Std Dev	0.20	0.12	0.28

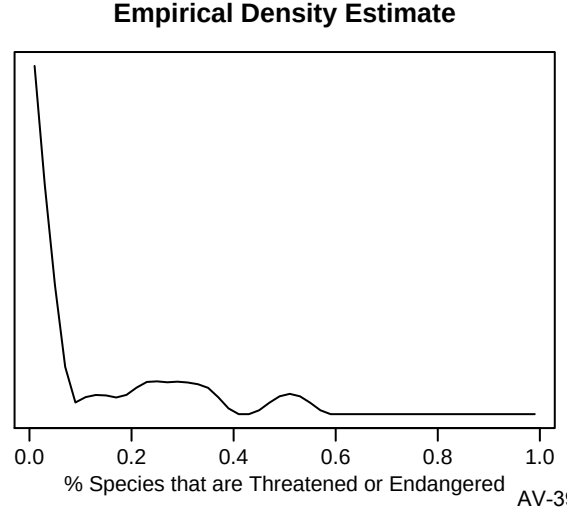
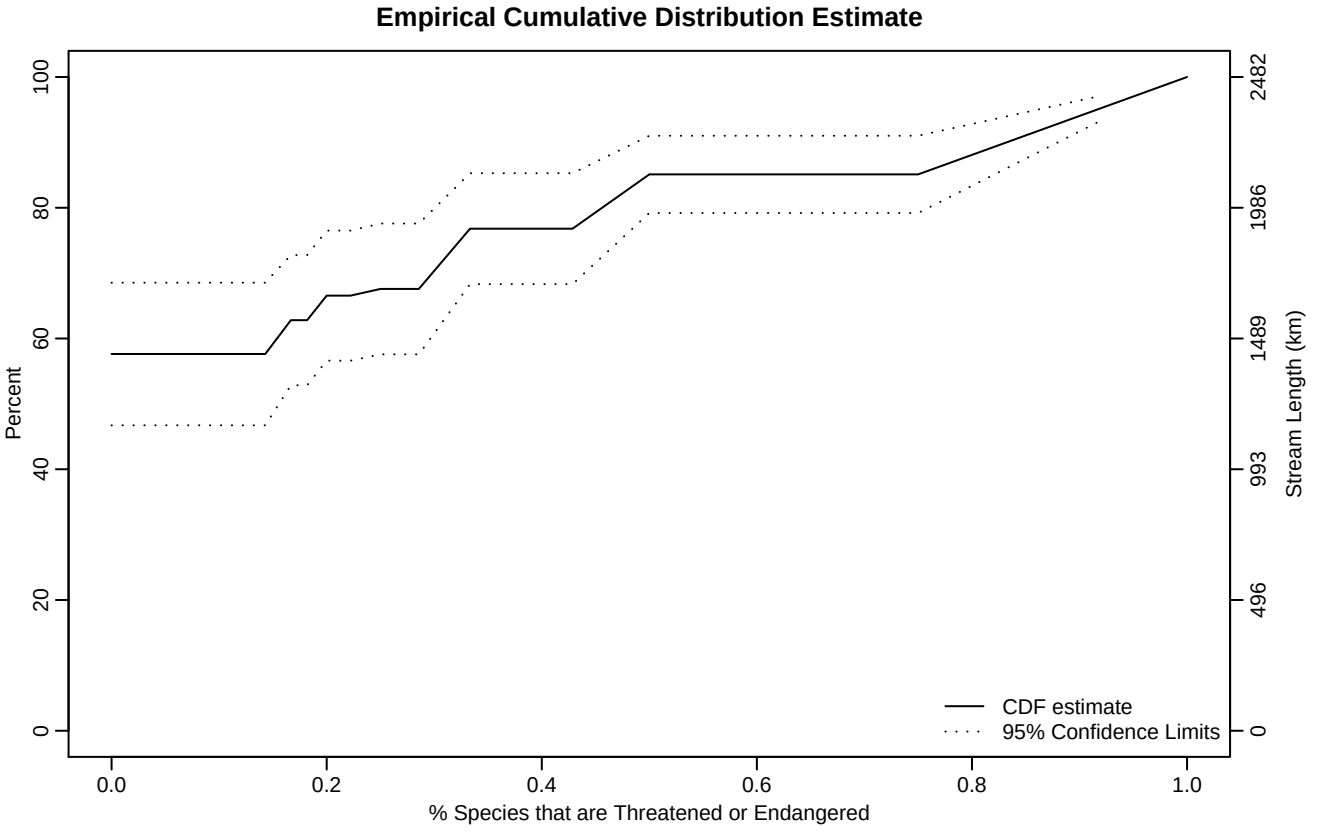


Figure VERT−366 Indicator: TE_PTAX Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.16
75Pct	0.32	0.19	0.75
90Pct	0.83	0.49	0.93
95Pct	0.92	0.82	1
Mean	0.24	0.18	0.30
Std Dev	0.32	0.26	0.37

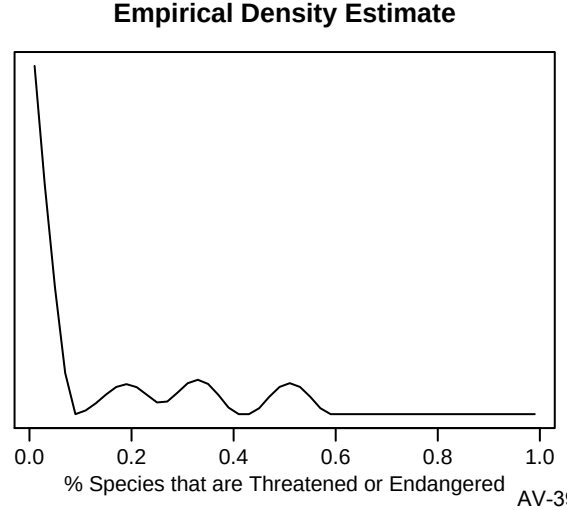
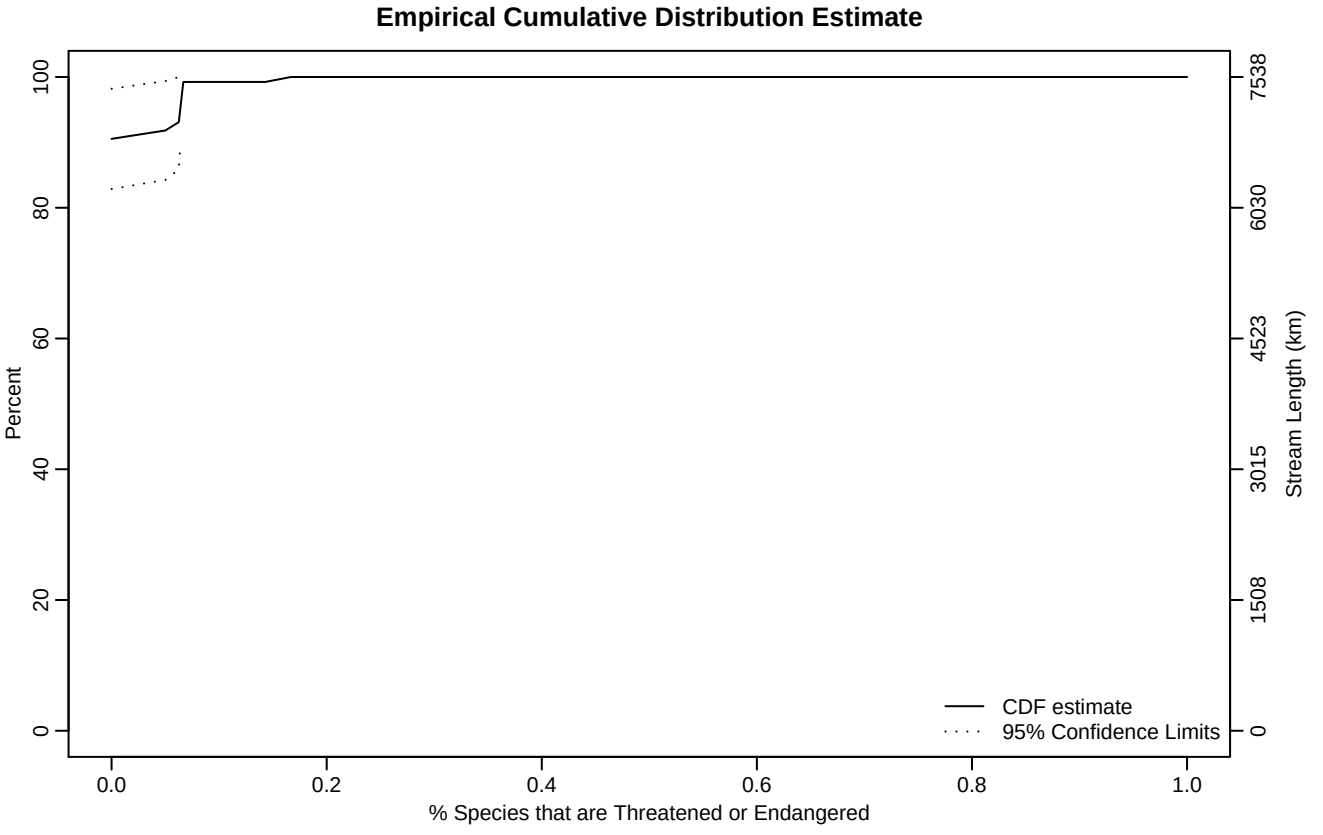


Figure VERT−367 Indicator: TE_PTAX Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.07
95Pct	0.06	0	0.17
Mean	0.01	0	0.01
Std Dev	0.02	0.01	0.03

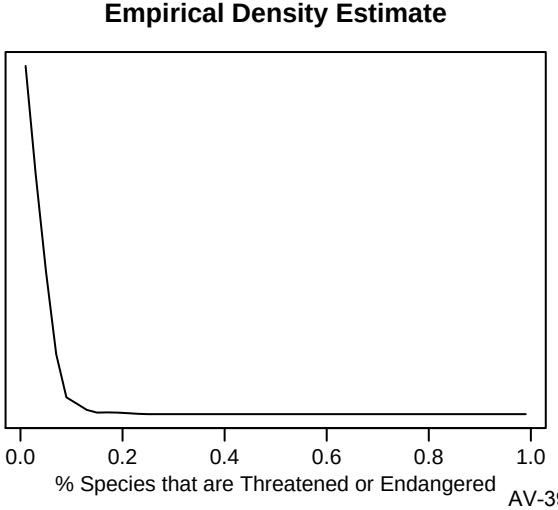
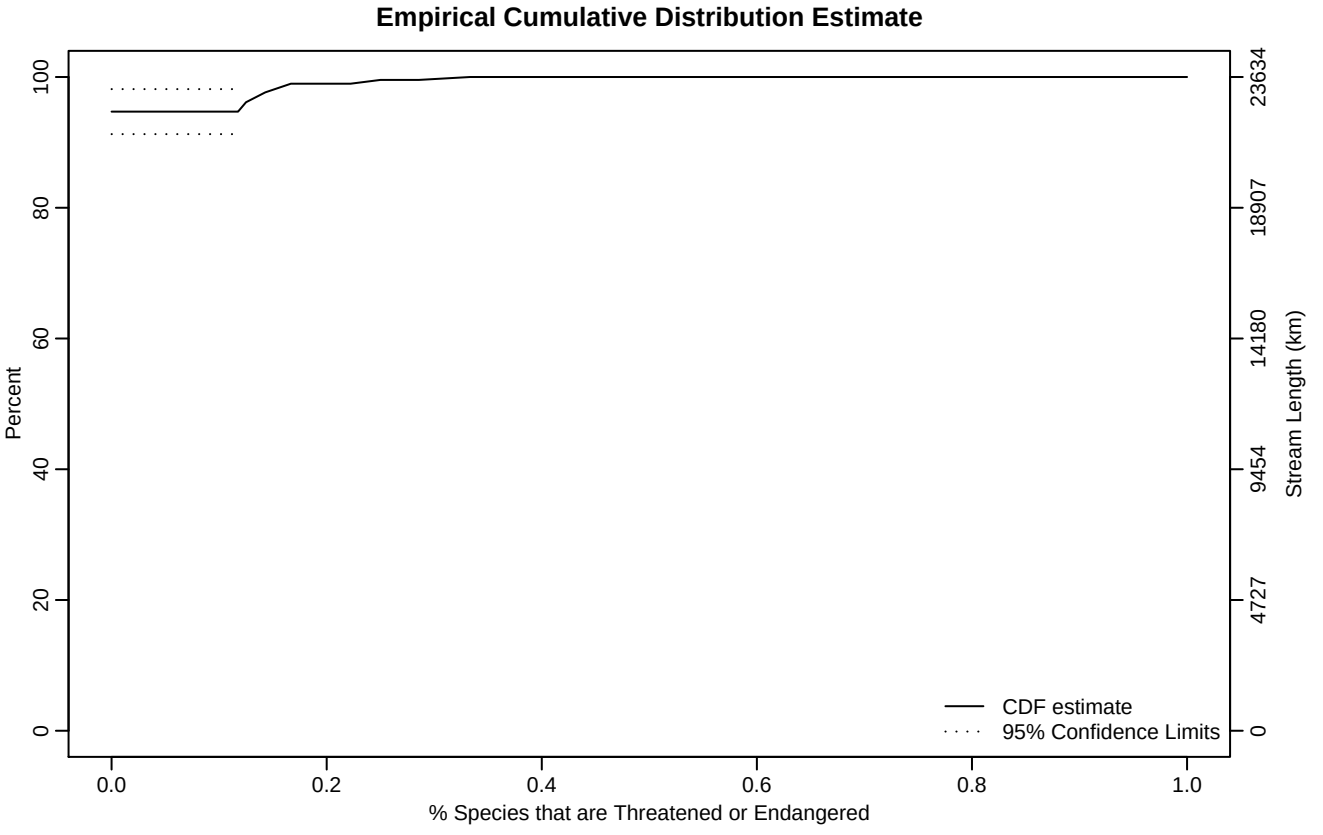


Figure VERT−368 Indicator: TE_PTAX Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0.12	0	0.16
Mean	0.01	0	0.01
Std Dev	0.04	0.02	0.05

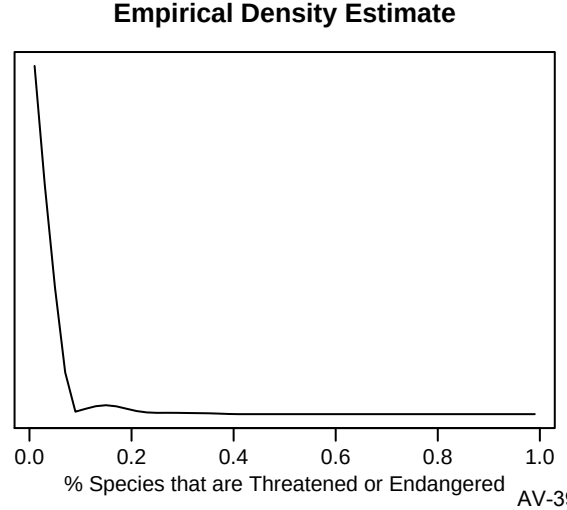
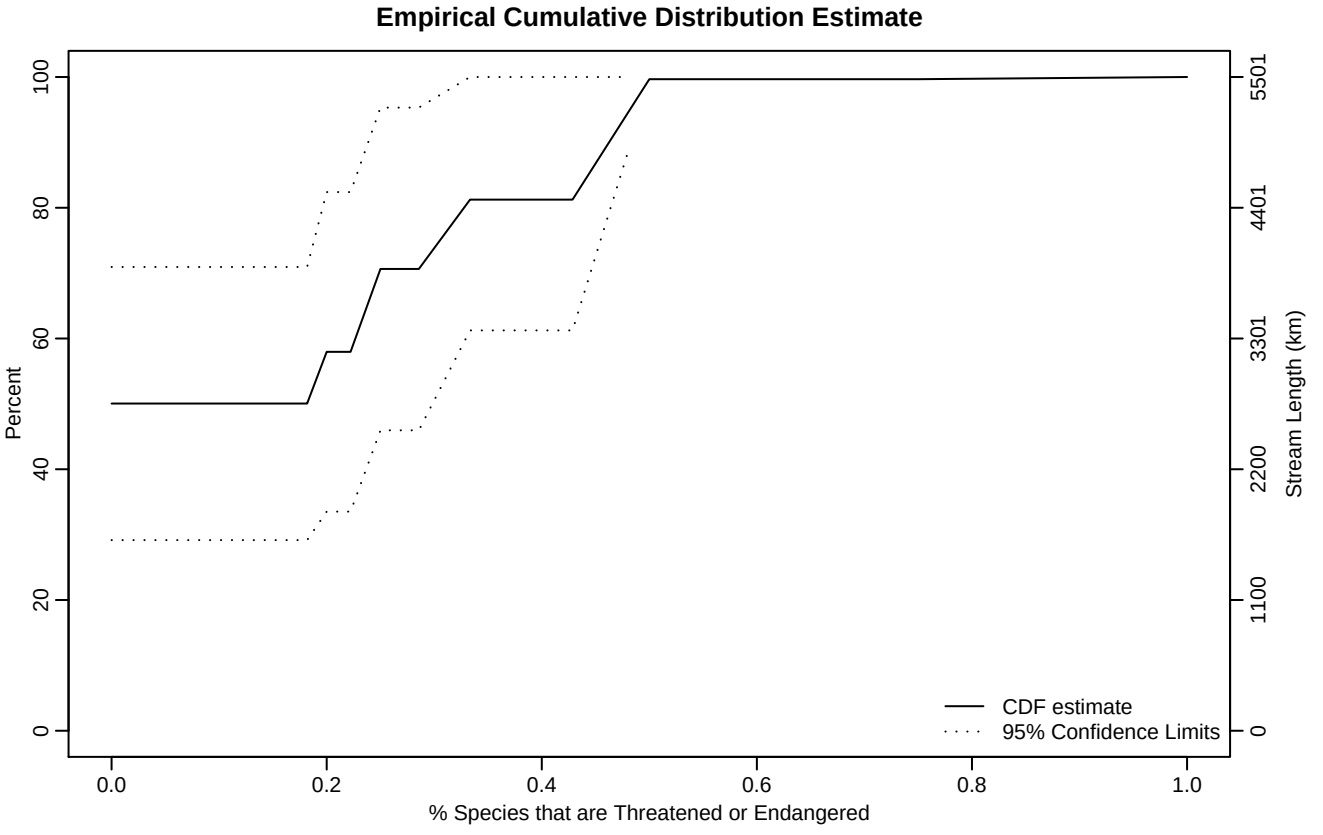


Figure VERT−369 Indicator: TE_PTAX Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.29
75Pct	0.31	0.18	0.76
90Pct	0.46	0.25	1
95Pct	0.48	0.31	1
Mean	0.18	0.08	0.27
Std Dev	0.20	0.16	0.24

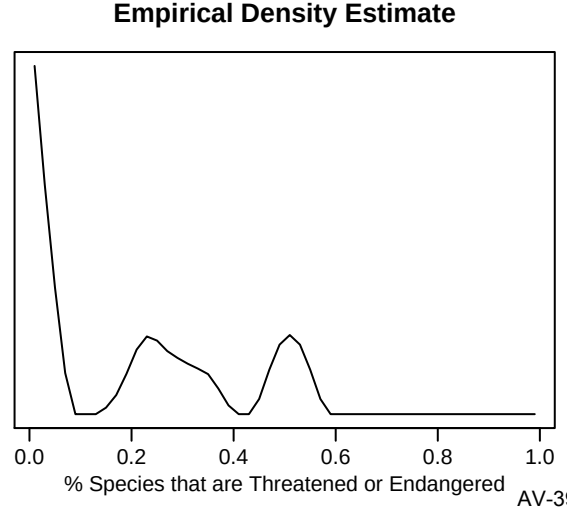
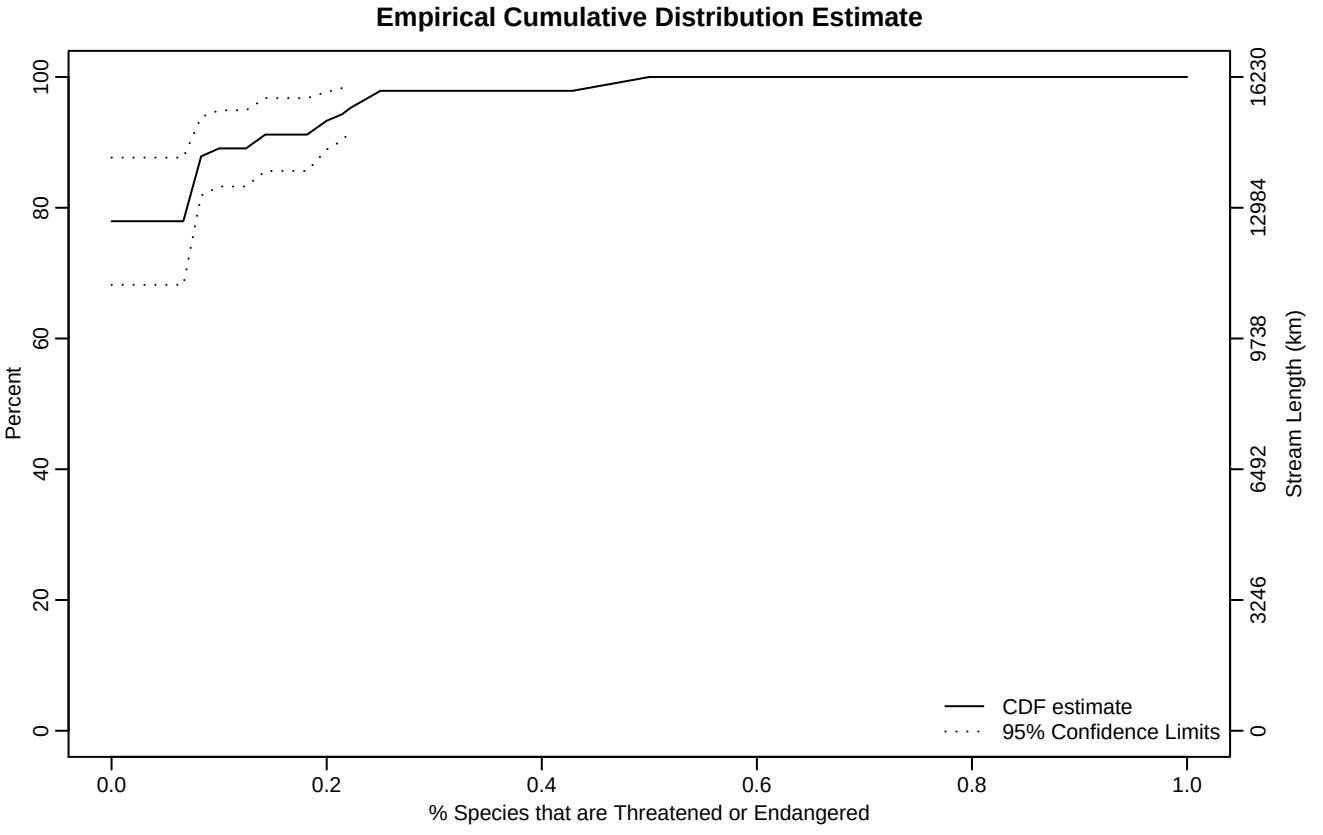


Figure VERT−370 Indicator: TE_PTAX Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.08
90Pct	0.13	0.08	0.23
95Pct	0.22	0.14	0.47
Mean	0.04	0.02	0.06
Std Dev	0.08	0.05	0.10

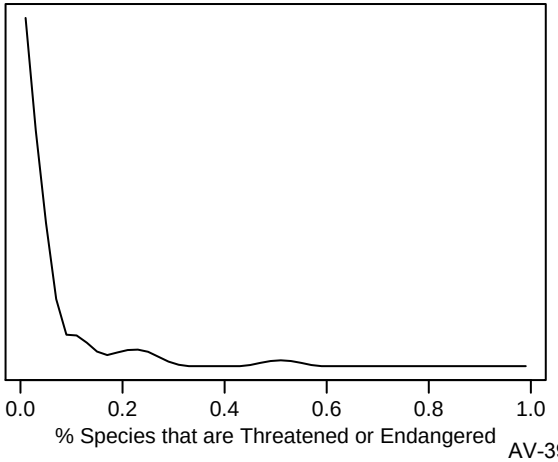
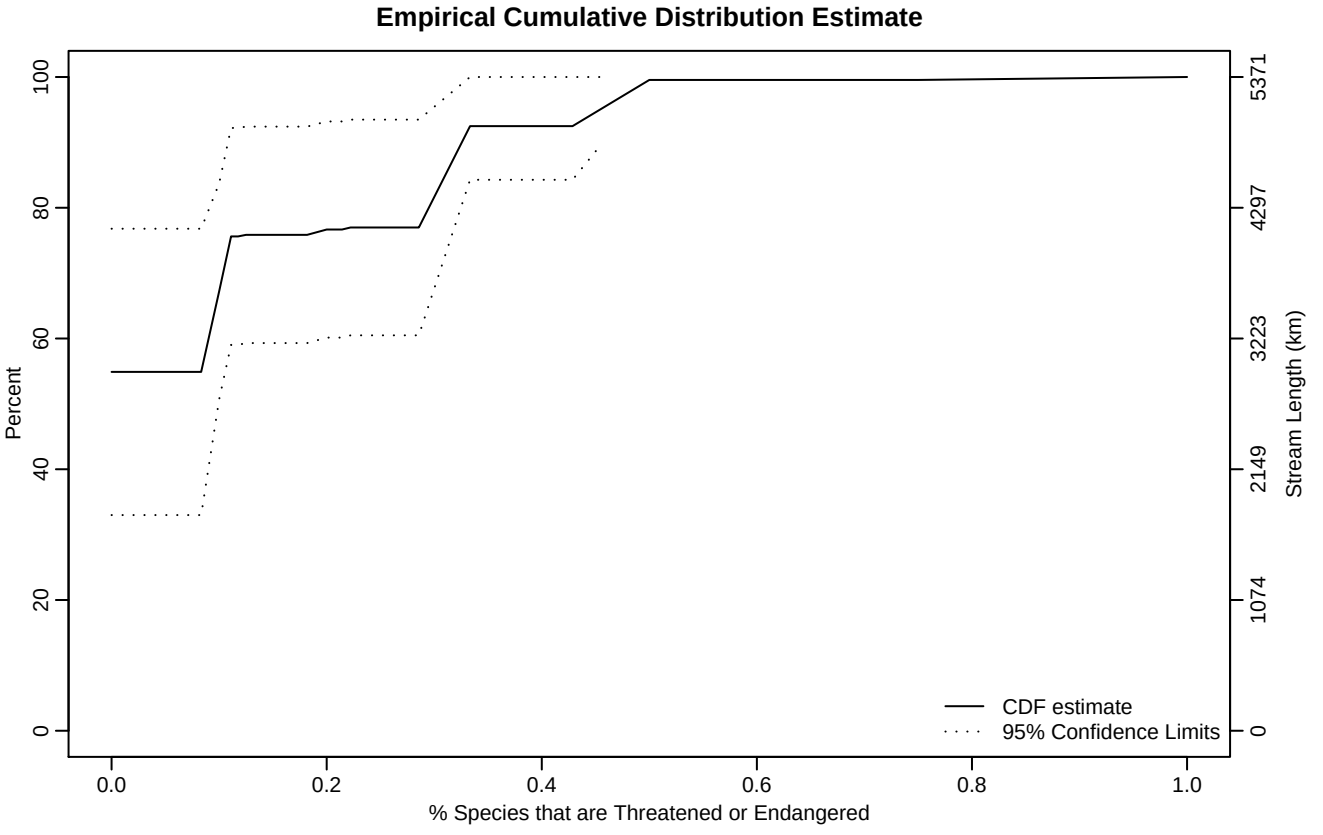


Figure VERT−371 Indicator: TE_PTAX Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.11
75Pct	0.11	0	0.46
90Pct	0.33	0.11	
95Pct	0.45	0.32	
Mean	0.12	0.05	0.18
Std Dev	0.16	0.12	0.20

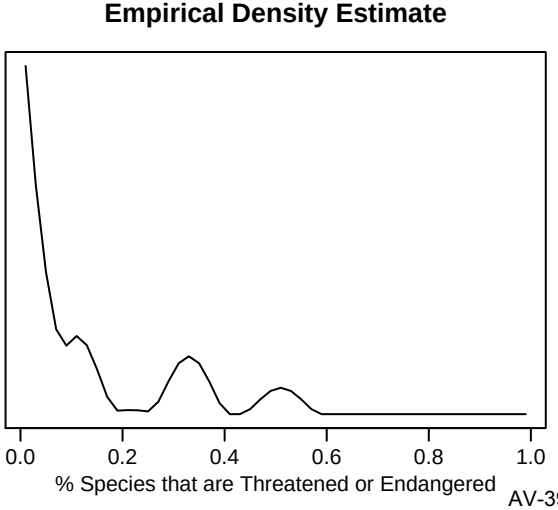
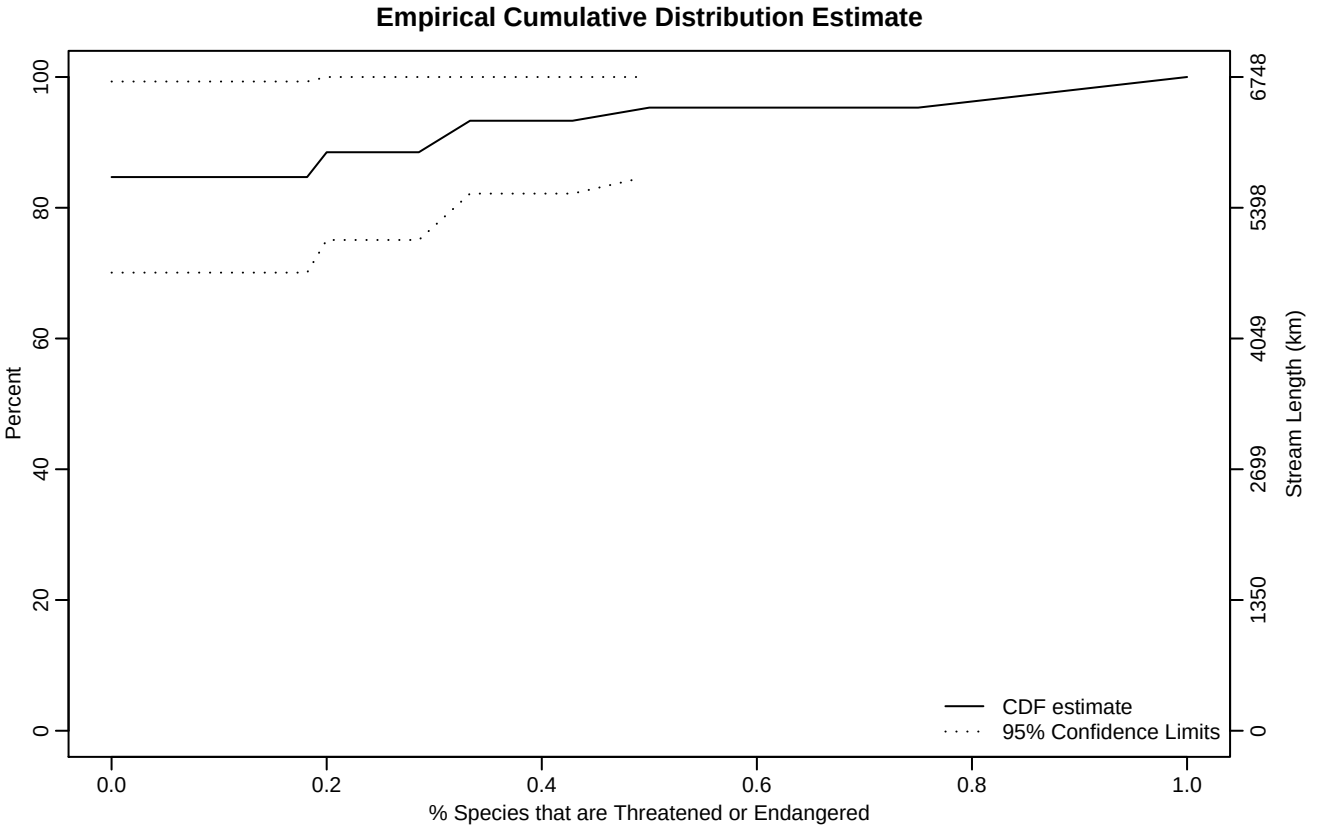


Figure VERT−372 Indicator: TE_PTAX Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.29
90Pct	0.30	0	1
95Pct	0.49	0.18	1
Mean	0.08	−0.03	0.19
Std Dev	0.15	0.10	0.19

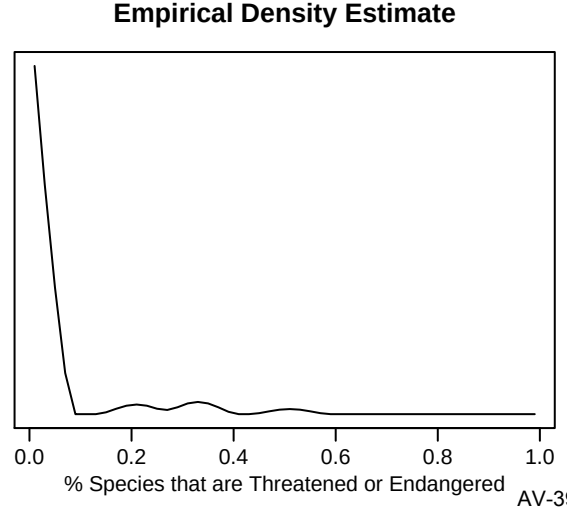
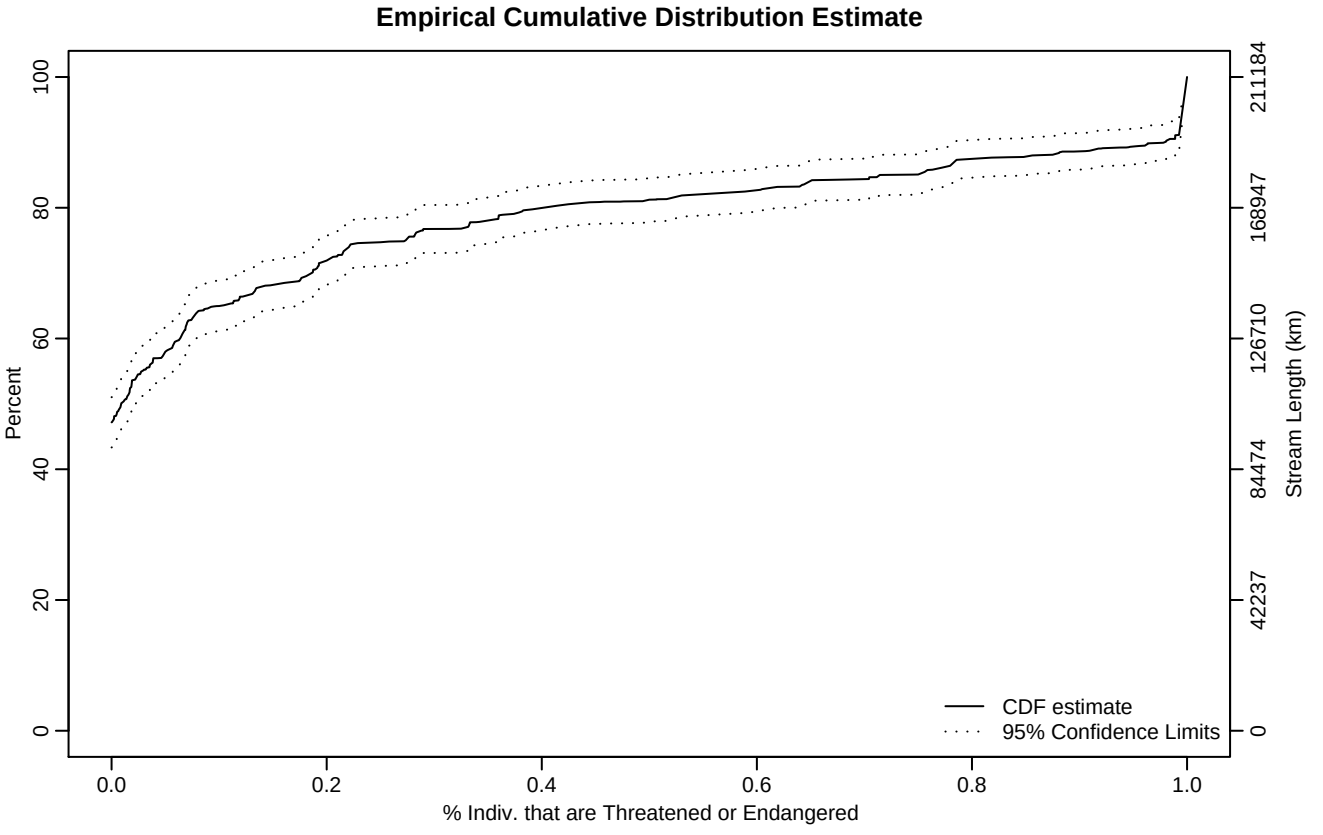


Figure VERT−373 Indicator: TE_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.02
75Pct	0.27	0.19	0.36
90Pct	0.98	0.79	0.99
95Pct	1	0.99	1
Mean	0.21	0.18	0.24
Std Dev	0.26	0.24	0.28

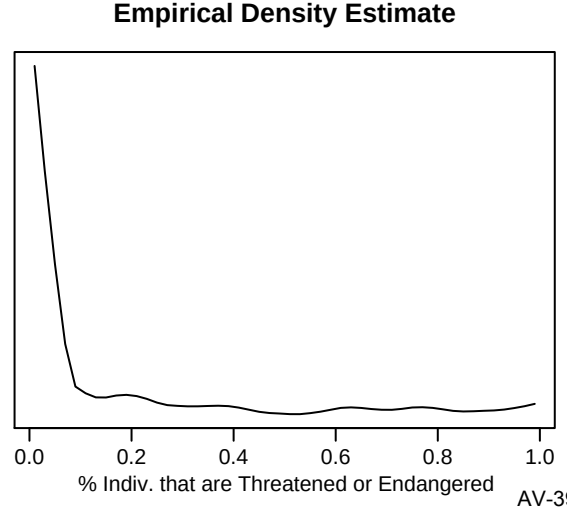
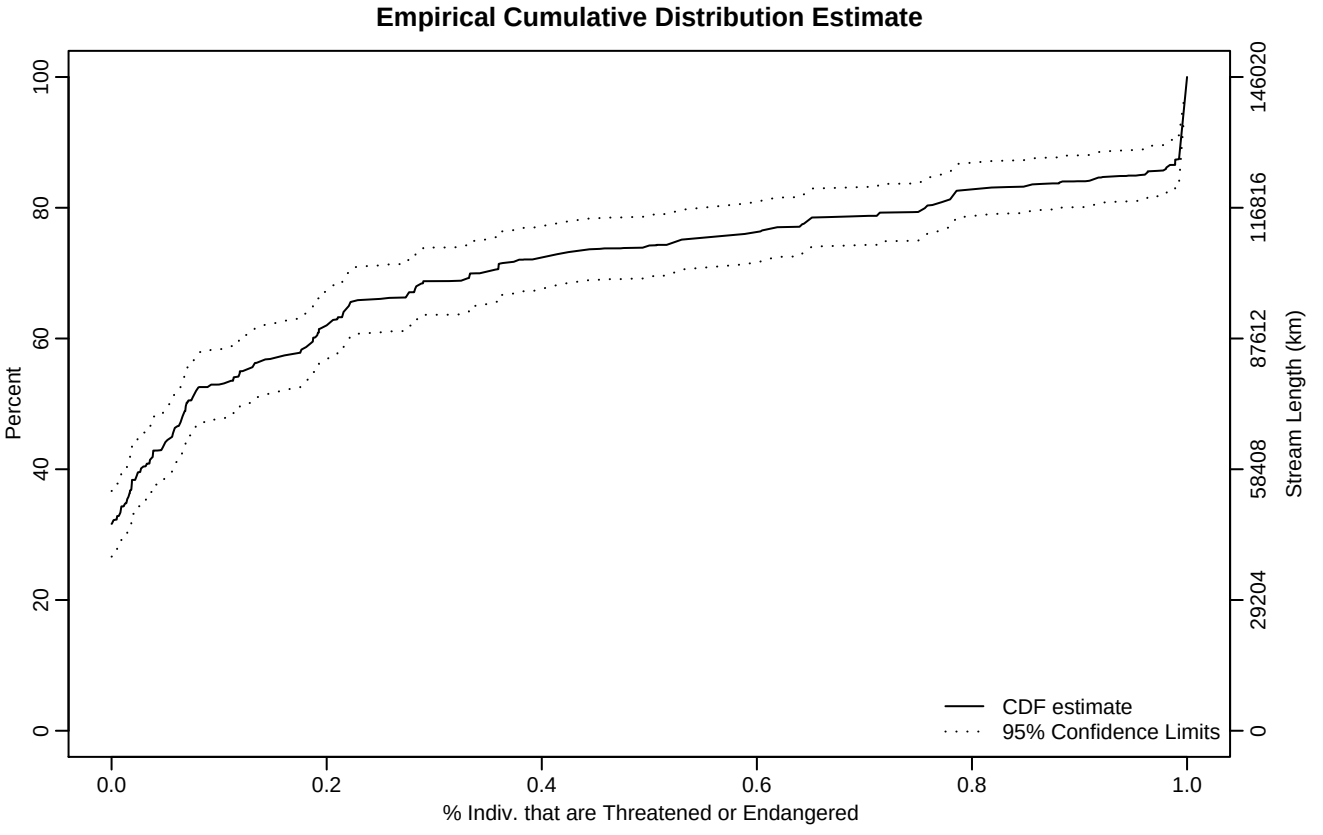


Figure VERT−374 Indicator: TE_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.07	0.05	0.13
75Pct	0.53	0.35	0.75
90Pct	0.99	0.98	1
95Pct	1	0.99	1
Mean	0.29	0.25	0.33
Std Dev	0.32	0.29	0.34

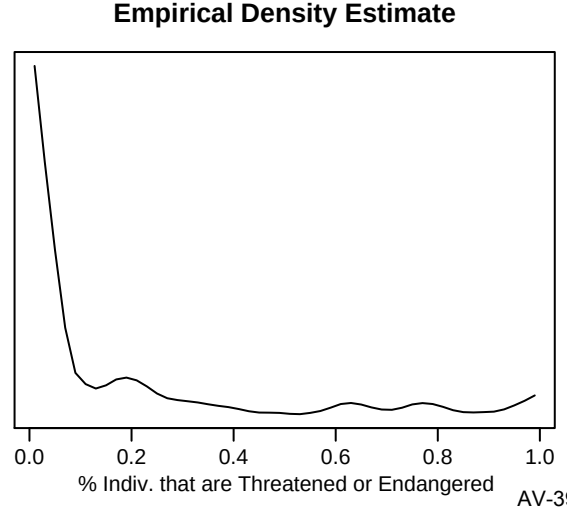
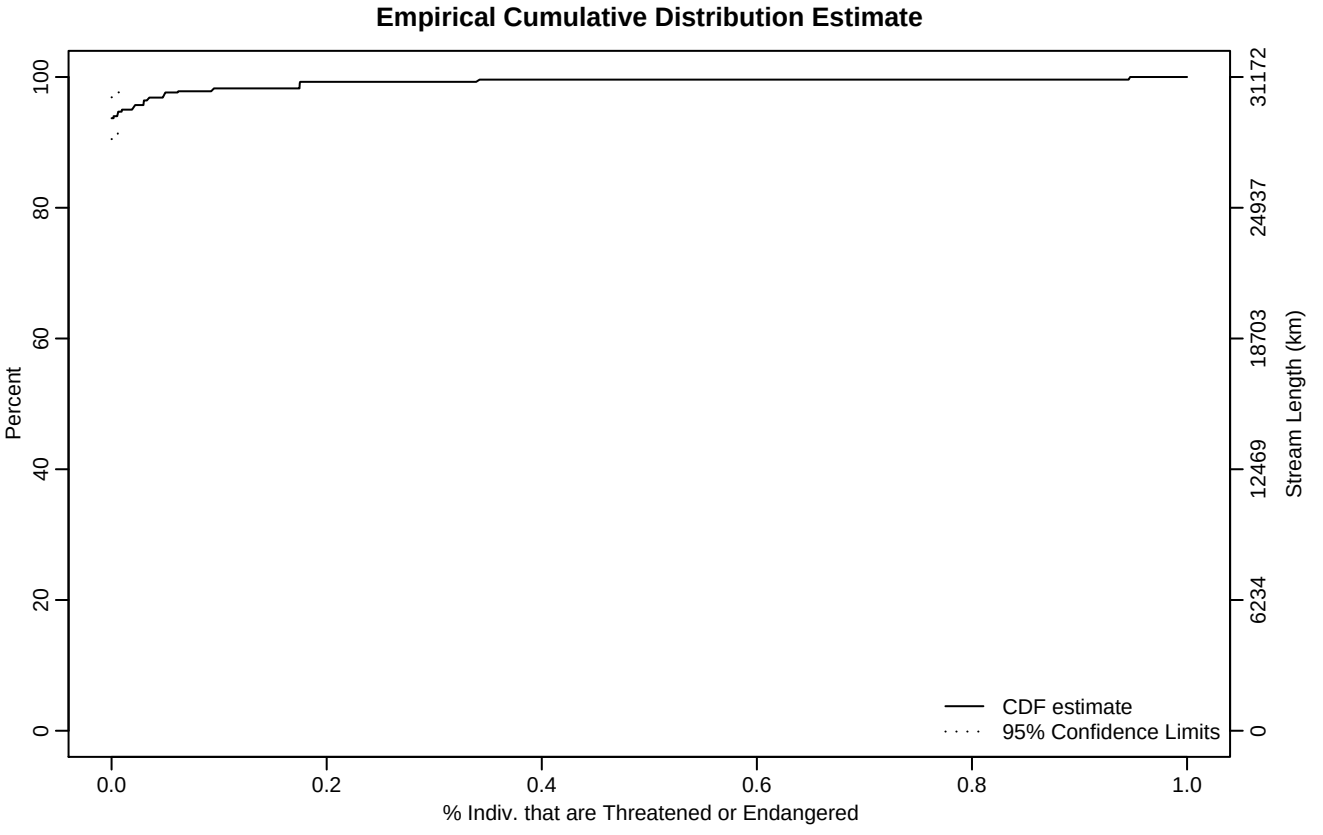


Figure VERT−375 Indicator: TE_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0.01	0	0.09
Mean	0.01	0	0.02
Std Dev	0.05	0.02	0.07

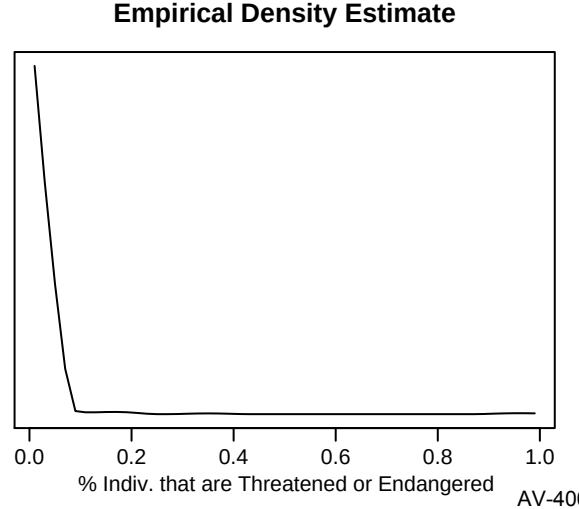
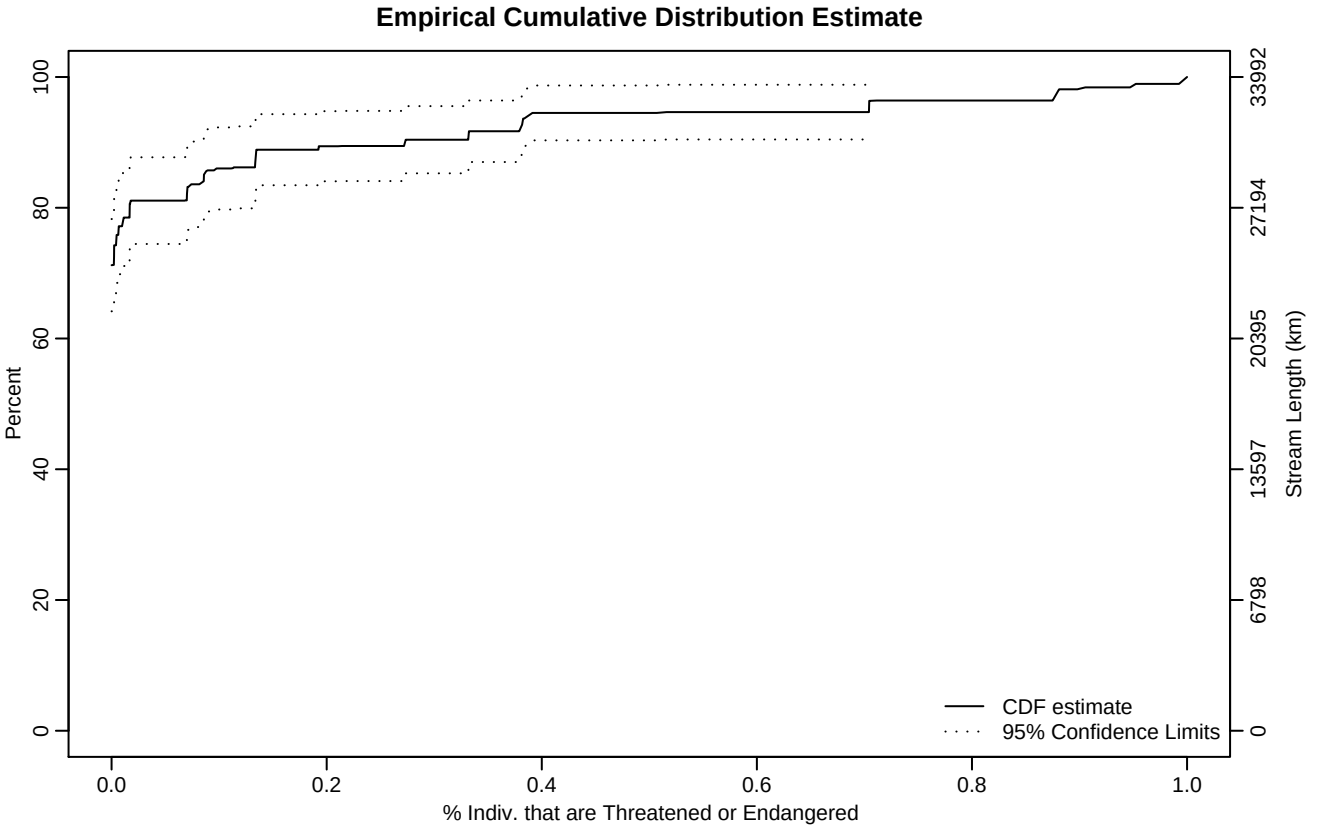


Figure VERT−376 Indicator: TE_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.07
90Pct	0.27	0.09	0.70
95Pct	0.70	0.33	1
Mean	0.07	0.04	0.11
Std Dev	0.14	0.11	0.17

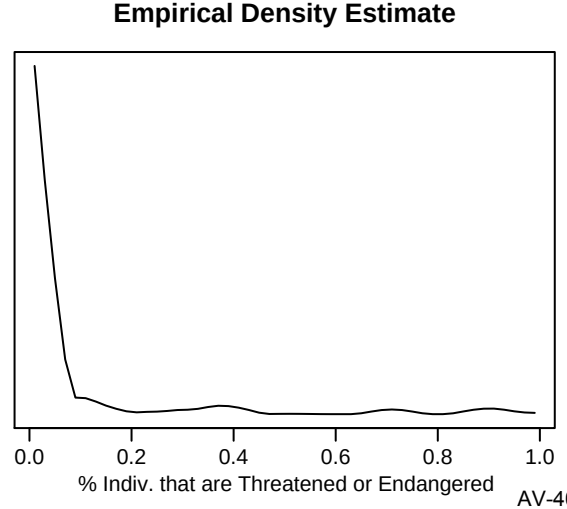
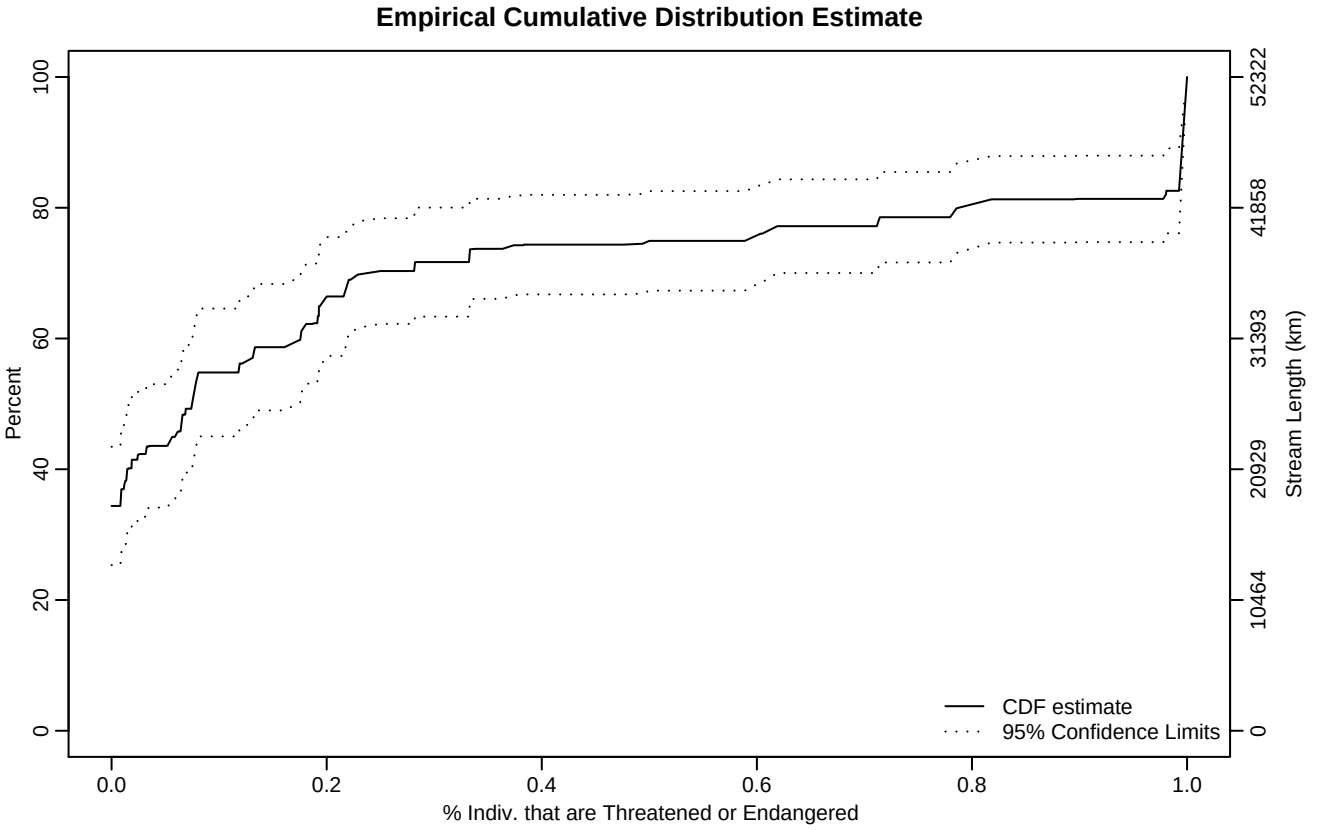


Figure VERT−377 Indicator: TE_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.07	0.02	0.18
75Pct	0.59	0.22	0.99
90Pct	1	0.99	1
95Pct	1	0.99	1
Mean	0.29	0.22	0.35
Std Dev	0.29	0.25	0.32

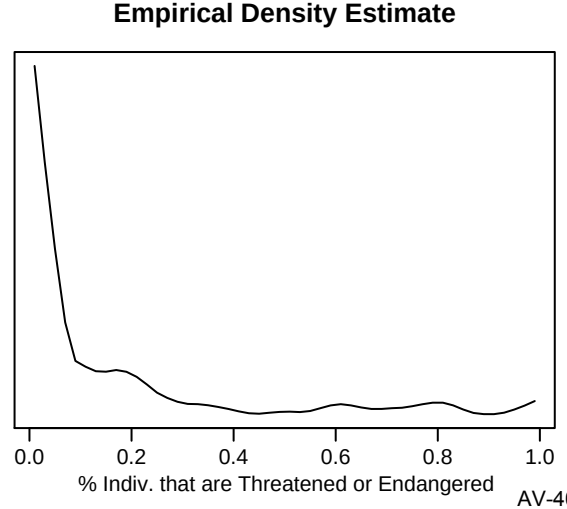
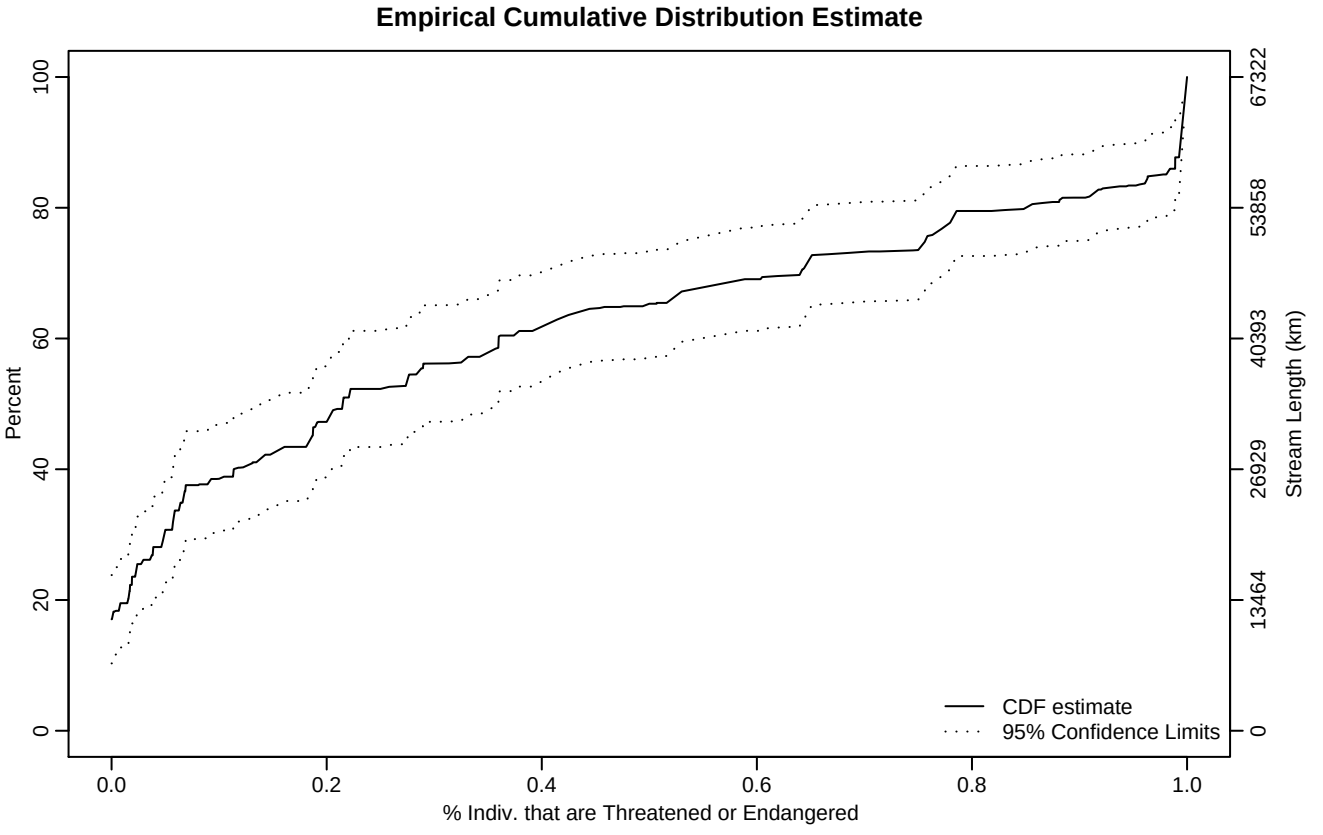


Figure VERT−378 Indicator: TE_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.02	0	0.06
50Pct	0.21	0.14	0.36
75Pct	0.76	0.55	0.91
90Pct	0.99	0.96	1
95Pct	1	0.99	1
Mean	0.38	0.31	0.44
Std Dev	0.36	0.32	0.40

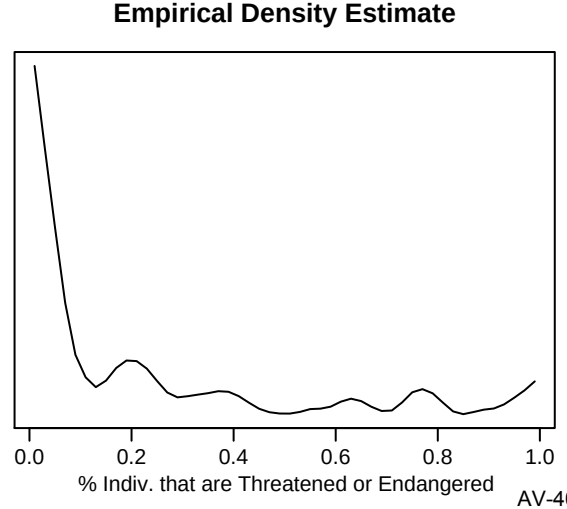
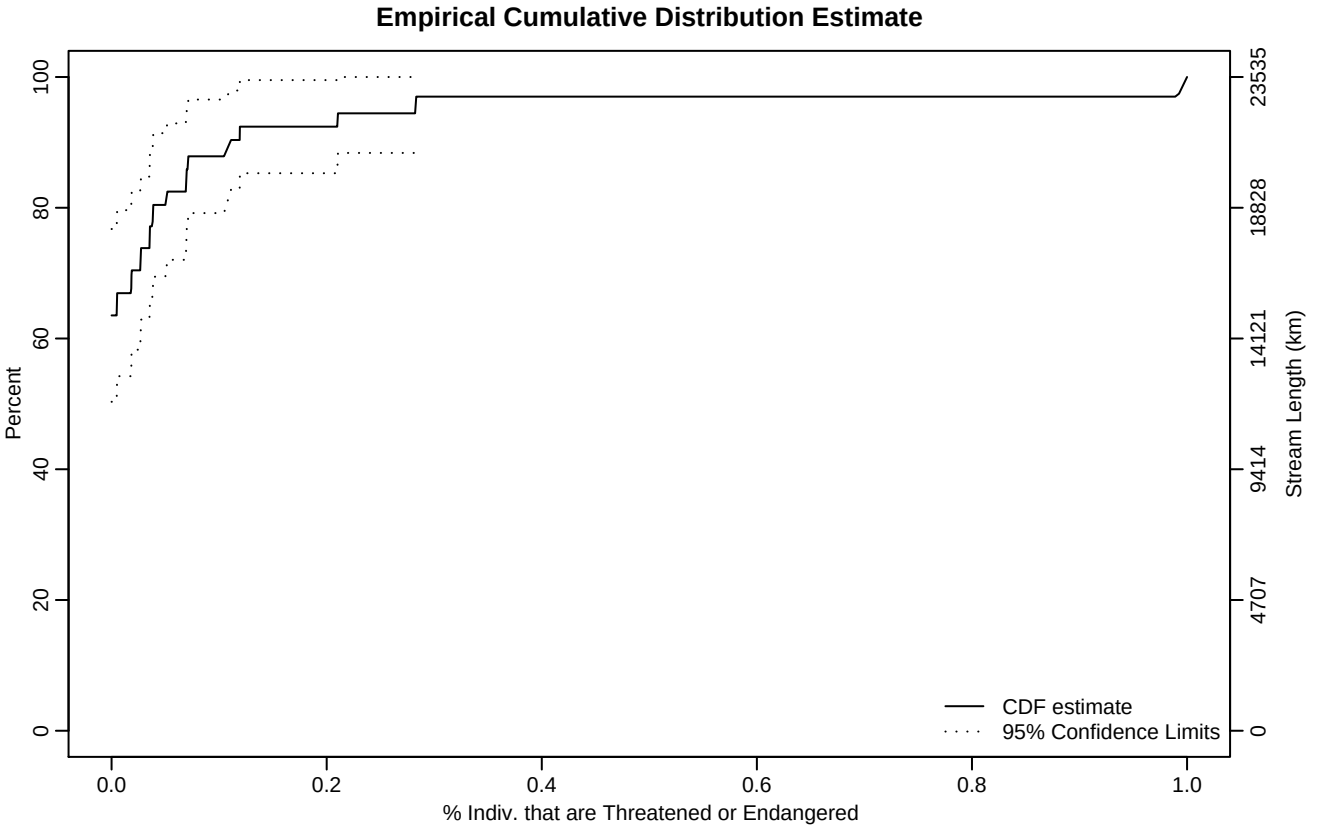


Figure VERT−379 Indicator: TE_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.04	0	0.07
90Pct	0.11	0.05	1
95Pct	0.28	0.11	
Mean	0.06	0.01	0.10
Std Dev	0.17	0.07	0.27

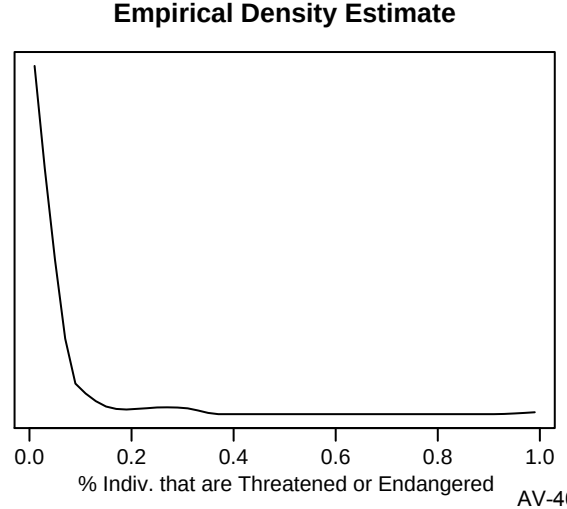
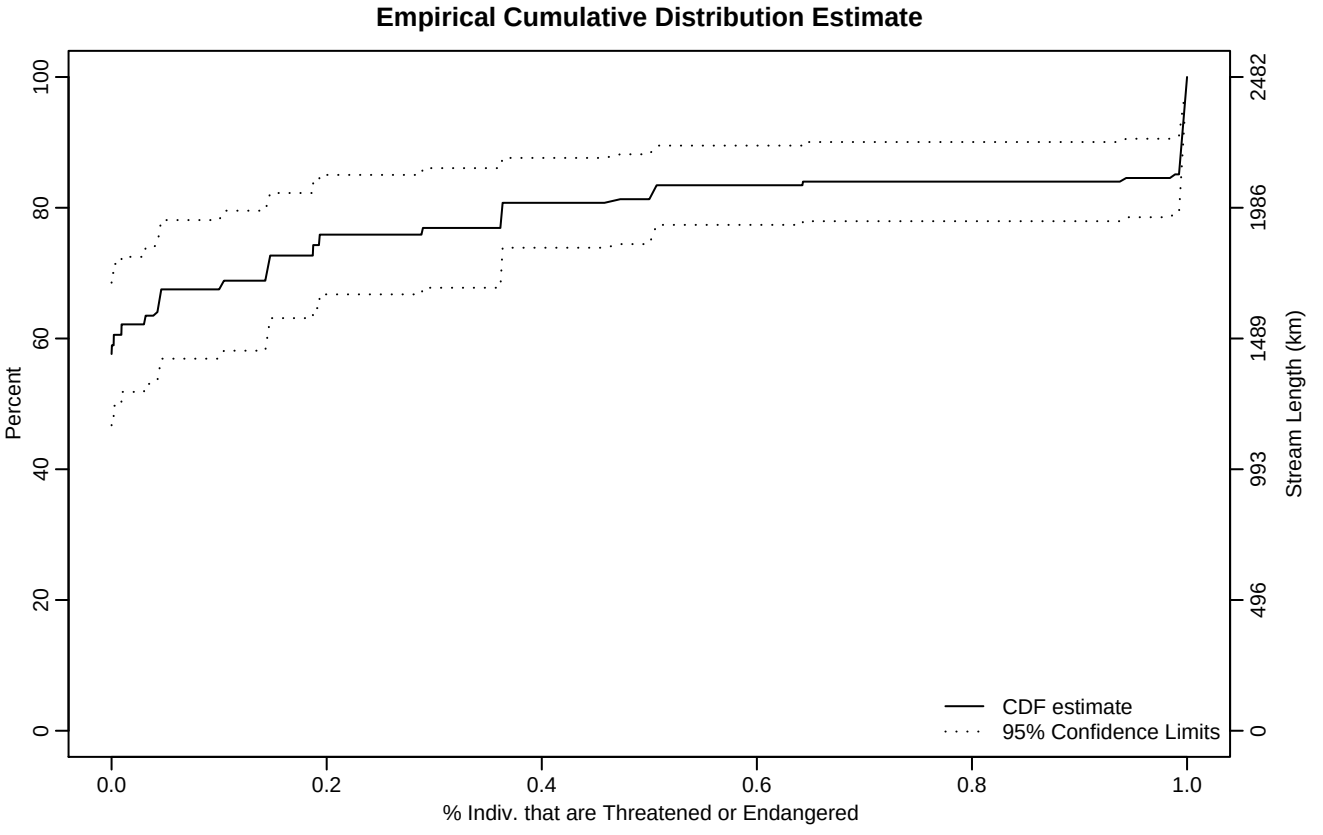


Figure VERT−380 Indicator: TE_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.01
75Pct	0.19	0.04	0.99
90Pct	0.99	0.94	1
95Pct	1	0.99	1
Mean	0.21	0.15	0.27
Std Dev	0.32	0.27	0.38

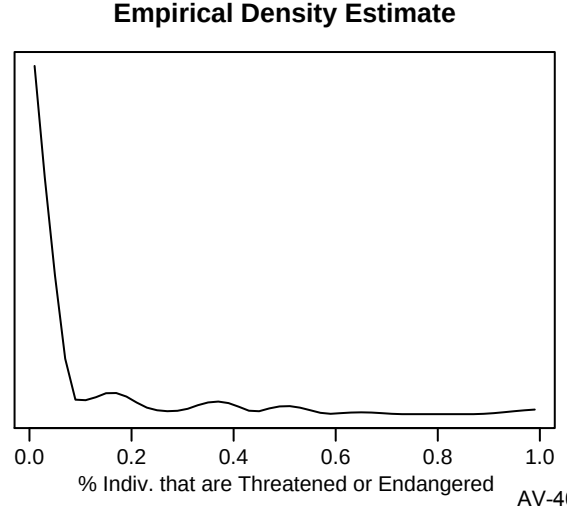
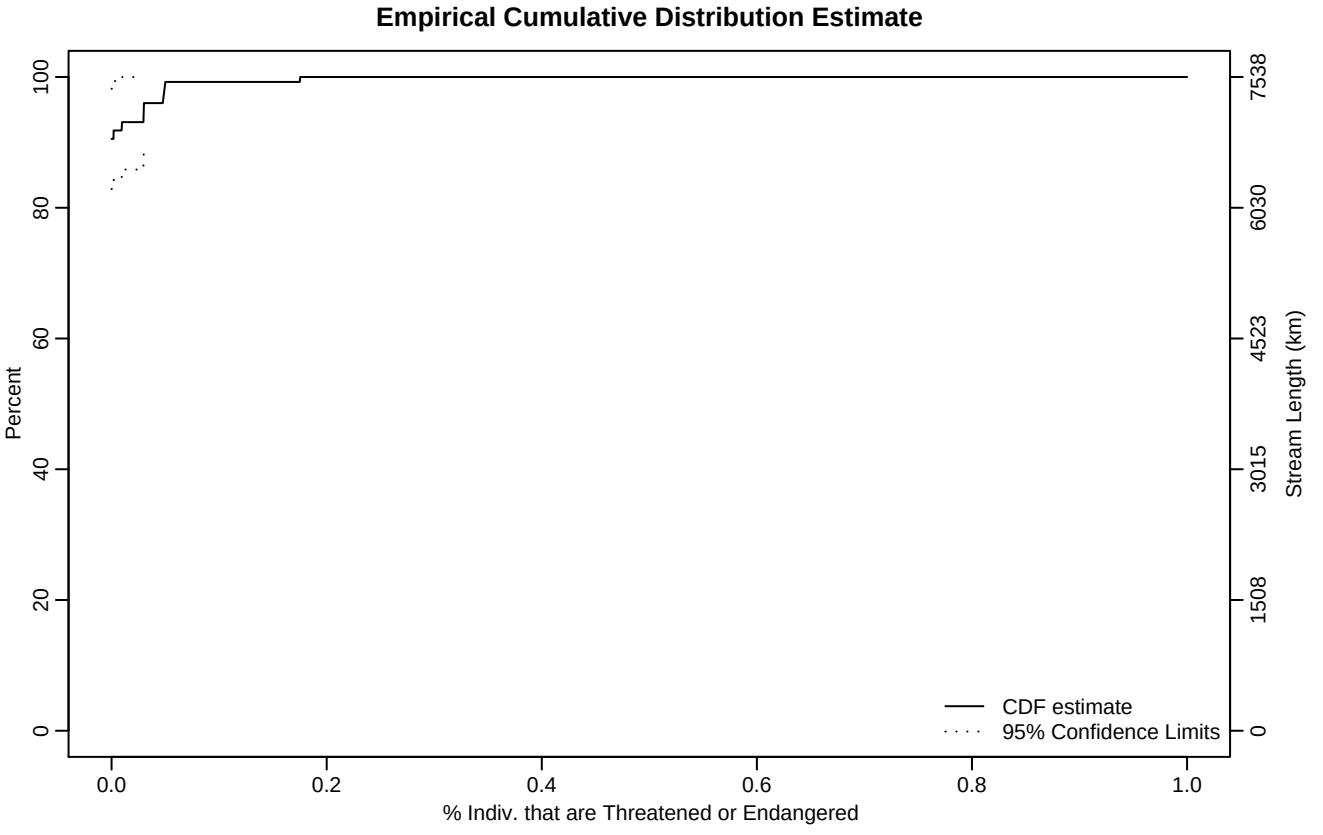


Figure VERT−381 Indicator: TE_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.05
95Pct	0.03	0	0.18
Mean	0	0	0.01
Std Dev	0.01	0.01	0.02

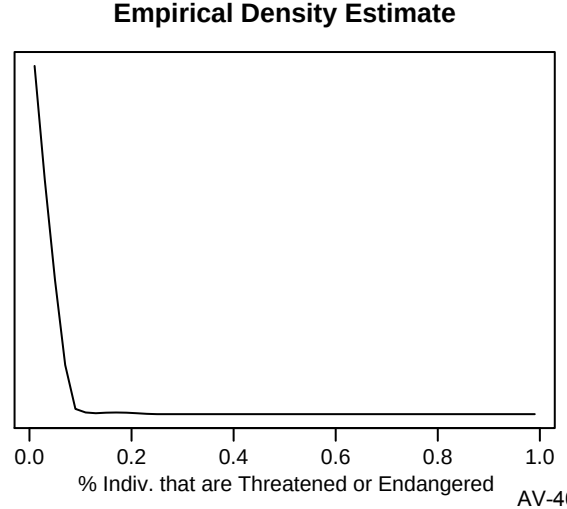
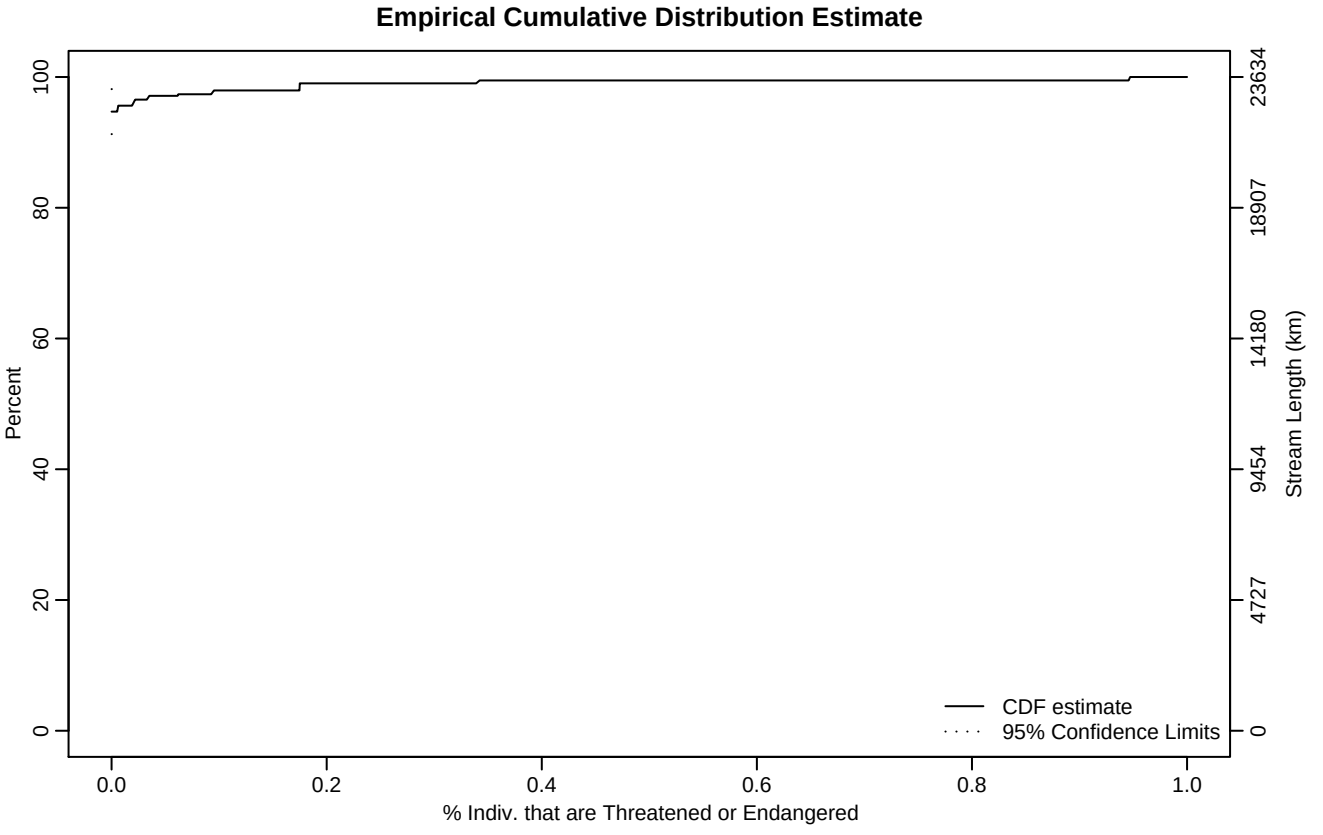


Figure VERT−382 Indicator: TE_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0.01	0	0.17
Mean	0.01	0	0.02
Std Dev	0.04	0.02	0.06

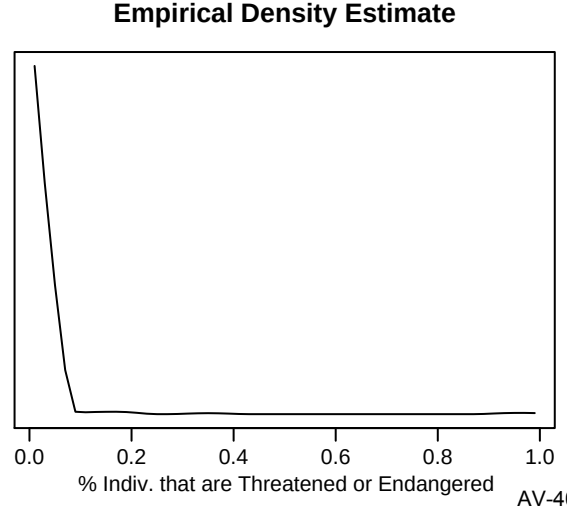
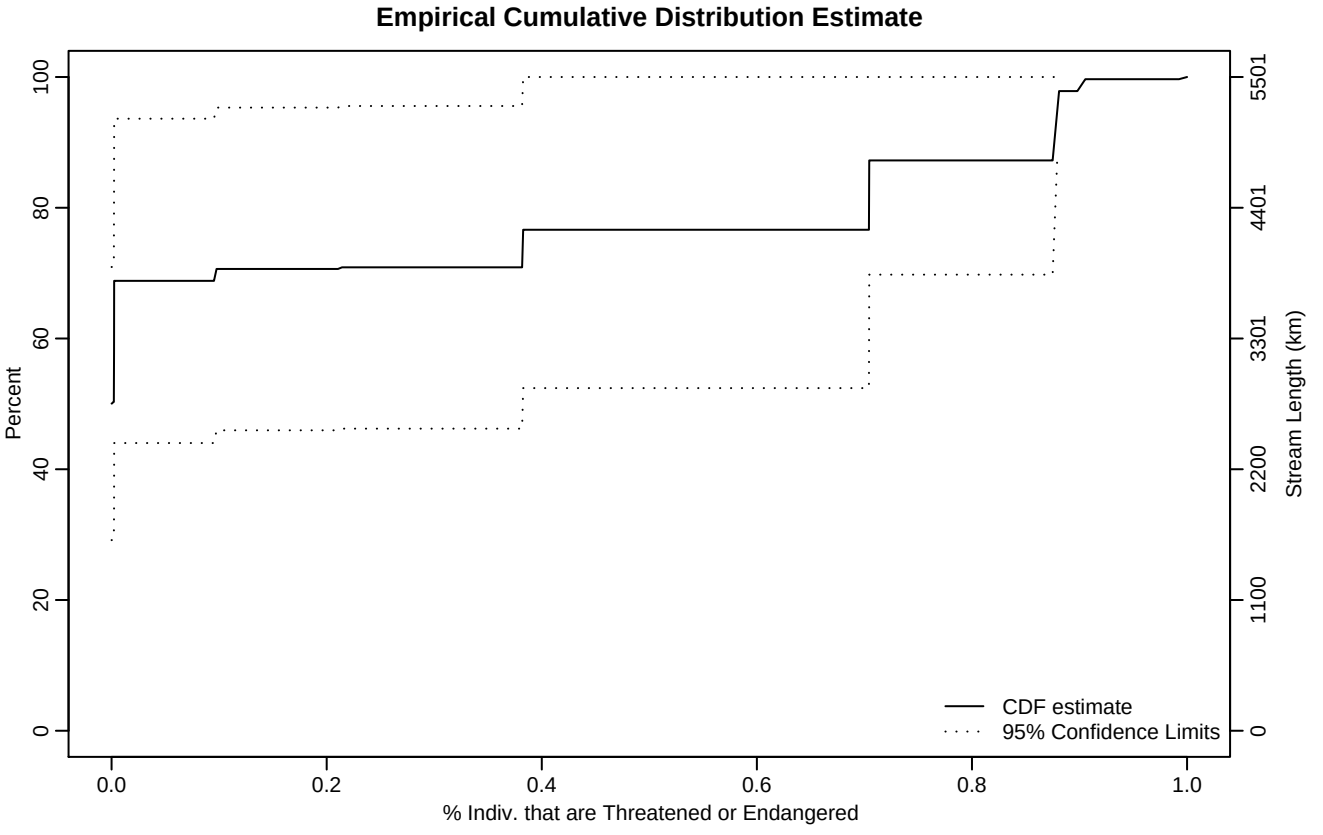


Figure VERT−383 Indicator: TE_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.38
75Pct	0.38	0	0.99
90Pct	0.88	0.38	1
95Pct	0.88	0.70	1
Mean	0.21	0.02	0.40
Std Dev	0.34	0.23	0.45

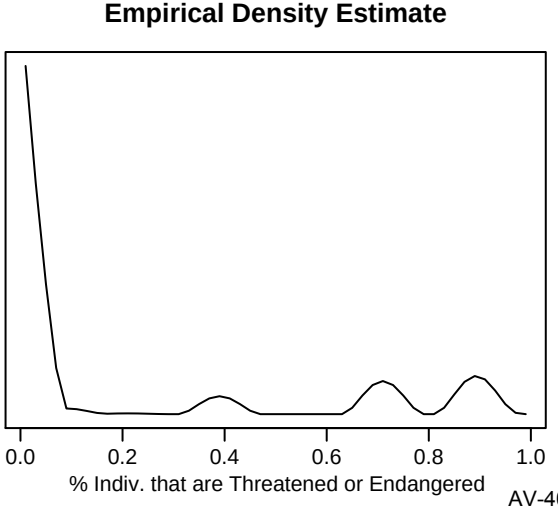
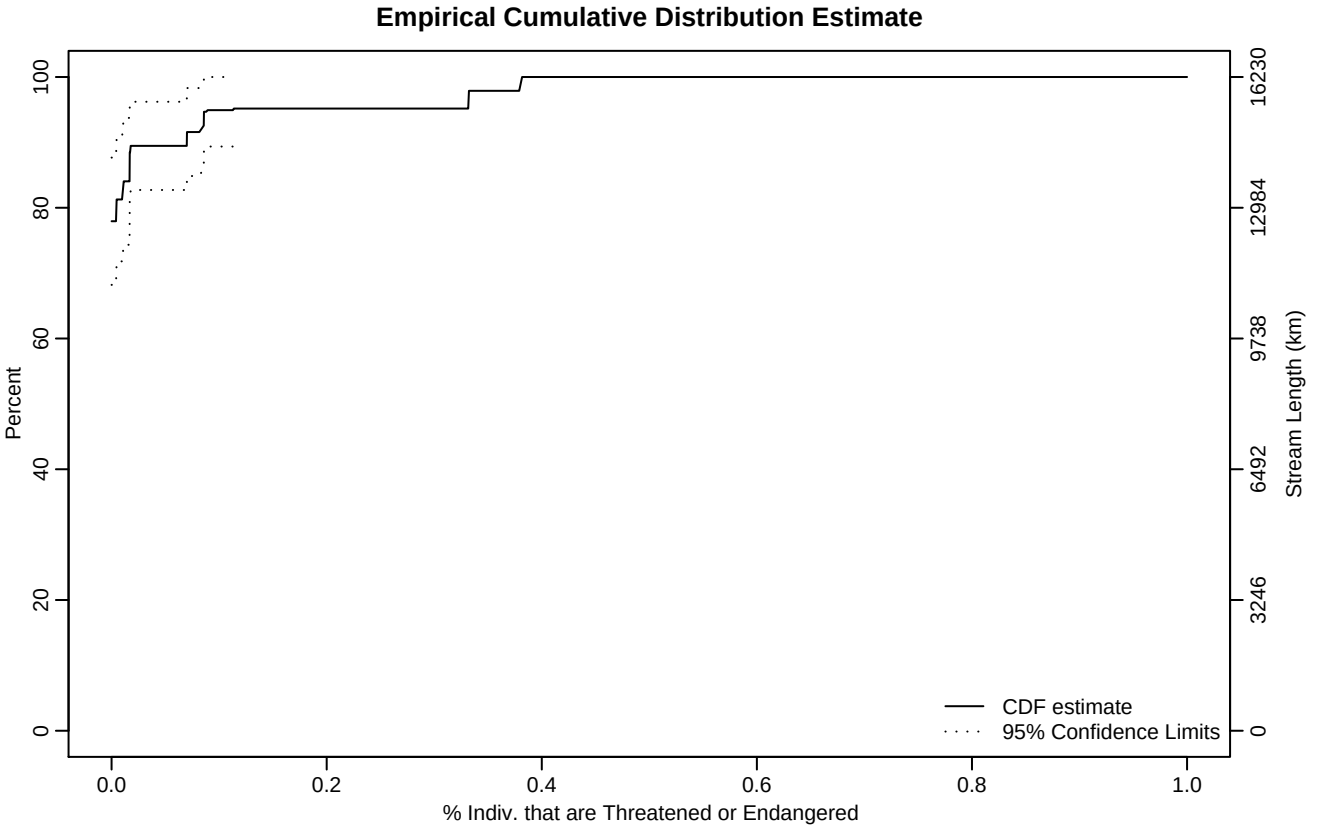


Figure VERT−384 Indicator: TE_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.02
90Pct	0.07	0.01	0.33
95Pct	0.11	0.02	0.38
Mean	0.02	0	0.04
Std Dev	0.05	0.03	0.08

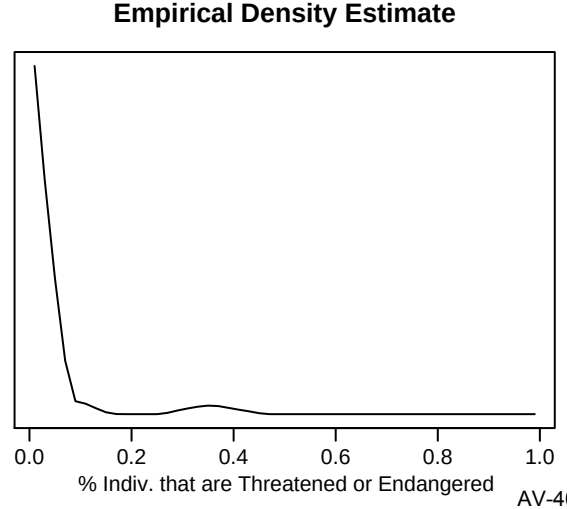
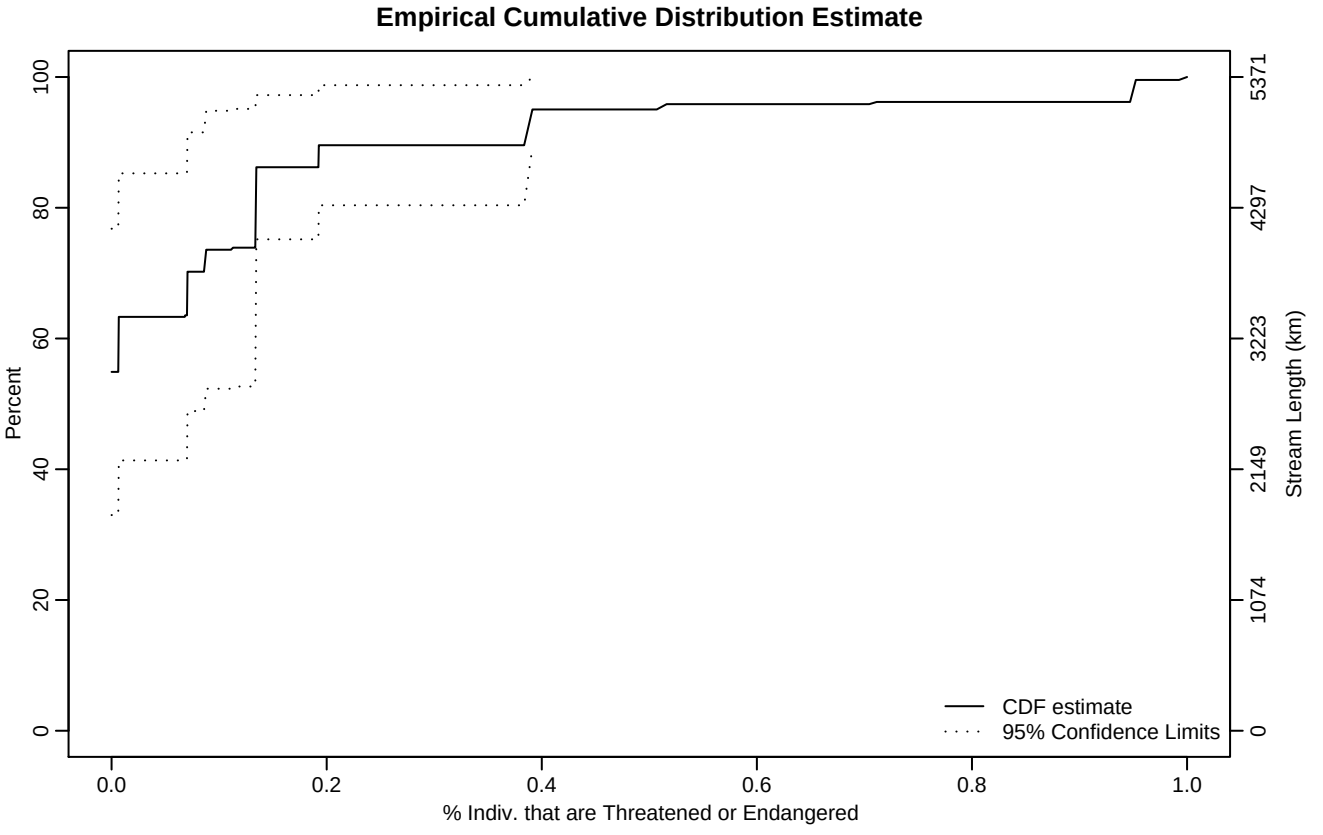


Figure VERT−385 Indicator: TE_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.09
75Pct	0.13	0	0.95
90Pct	0.38	0.13	1
95Pct	0.39	0.13	
Mean	0.10	0.03	0.16
Std Dev	0.16	0.09	0.24

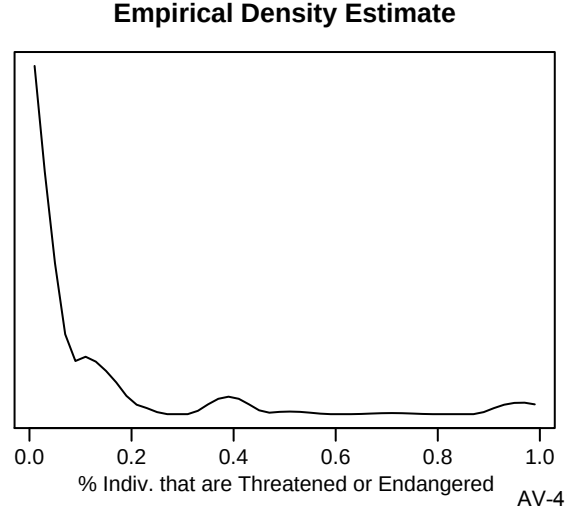
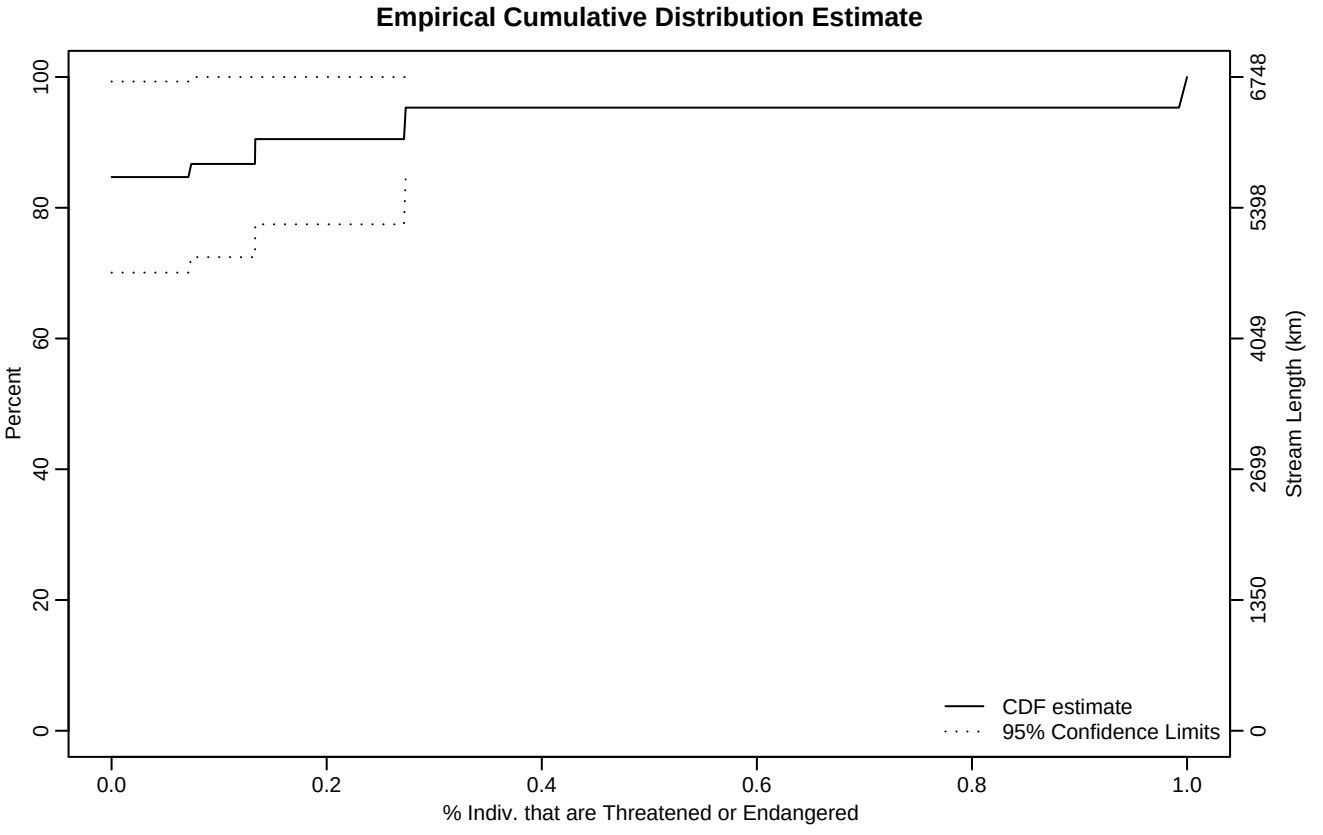


Figure VERT−386 Indicator: TE_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.13
90Pct	0.13	0	1
95Pct	0.27	0	1
Mean	0.07	−0.04	0.17
Std Dev	0.11	0.07	0.15

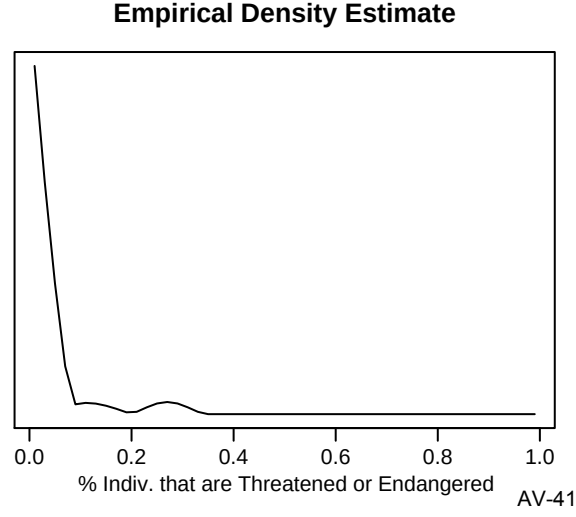
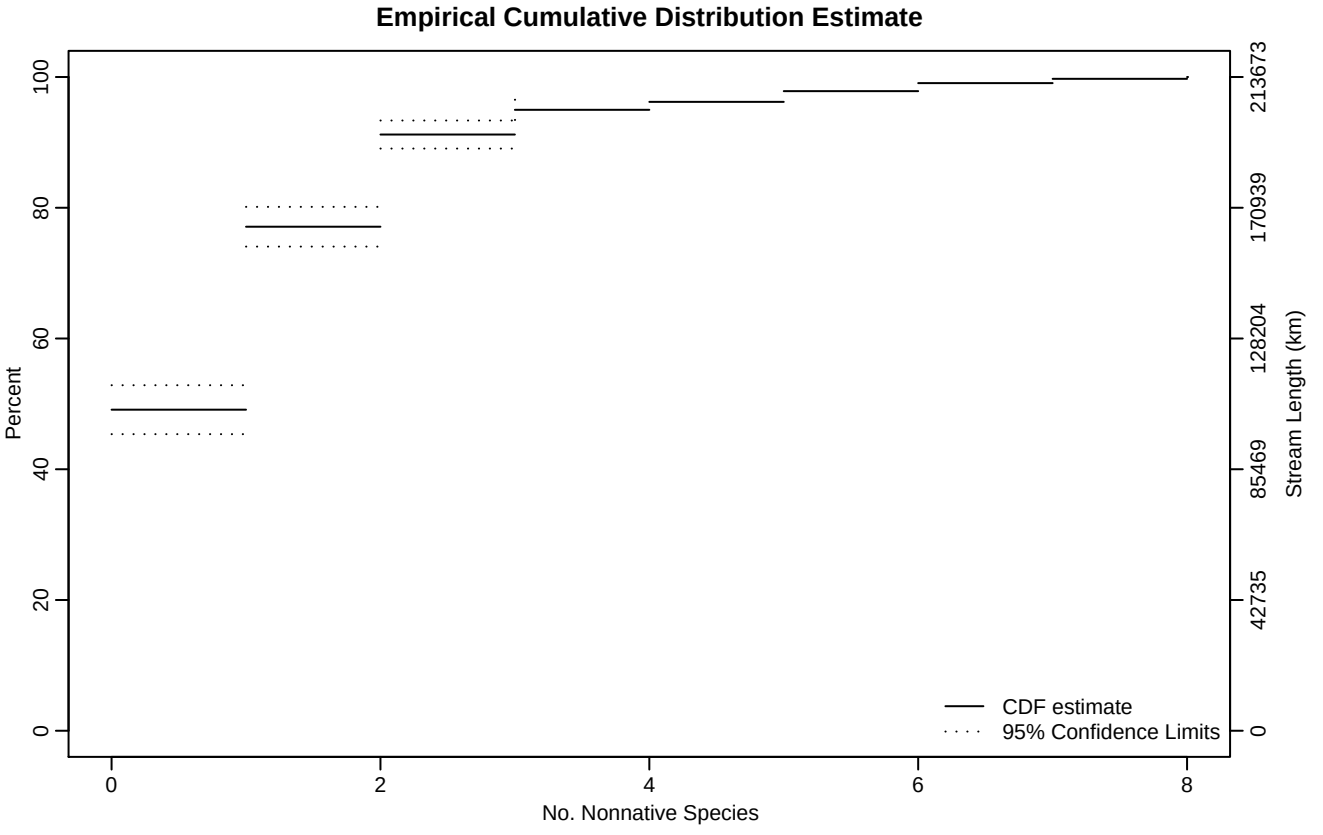


Figure VERT−387 Indicator: ALIEN_VERT_RICH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.03	0	0.17
75Pct	0.93	0.78	1.13
90Pct	1.91	1.70	2.50
95Pct	3.02	2.60	4.21
Mean	0.95	0.86	1.04
Std Dev	1.14	1	1.27

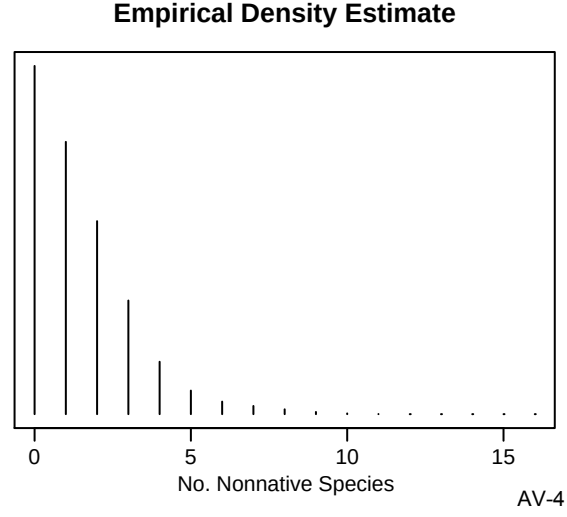
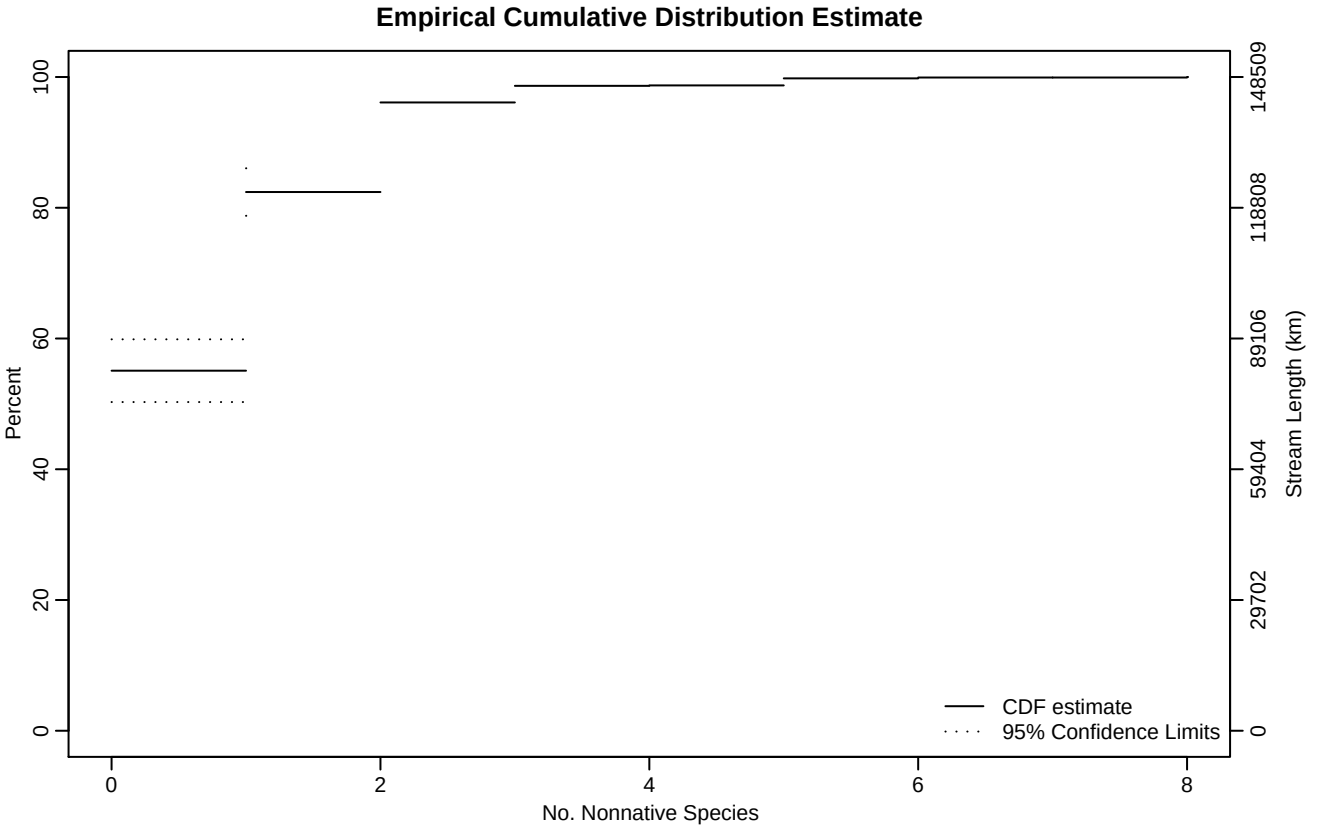


Figure VERT−388 Indicator: ALIEN_VERT_RICH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.73	0.54	0.91
90Pct	1.55	1.29	1.82
95Pct	1.92	1.65	3.21
Mean	0.69	0.61	0.78
Std Dev	0.74	0.63	0.86

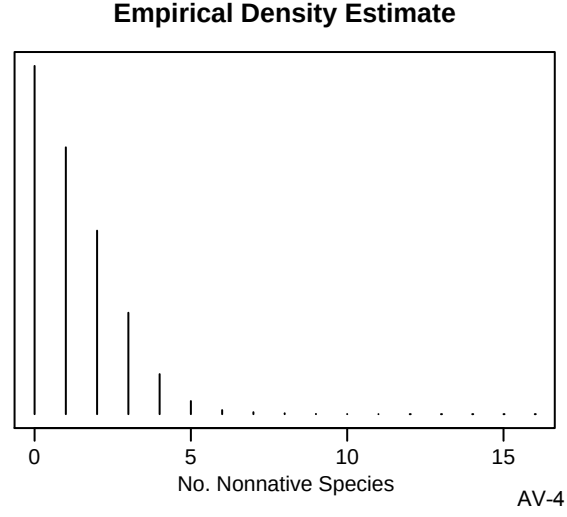
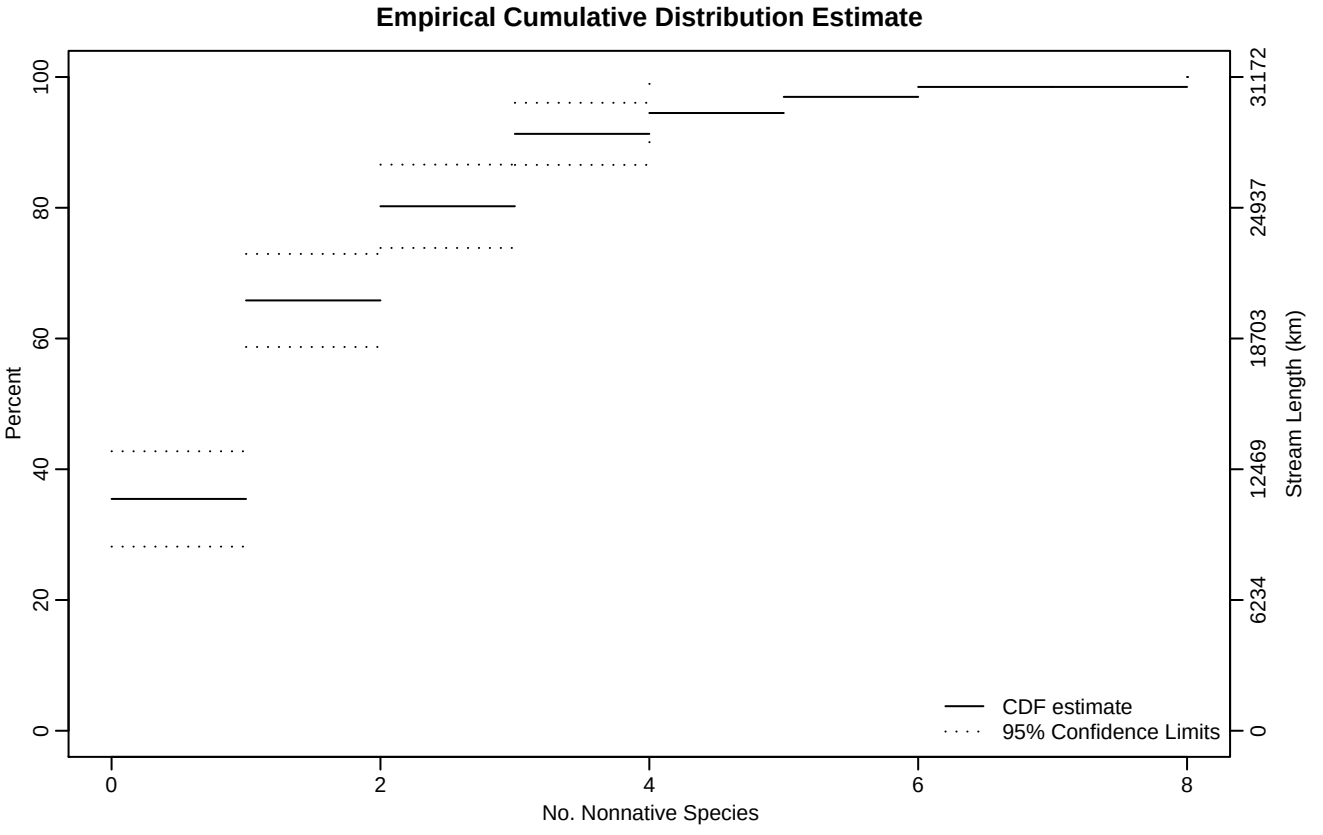


Figure VERT−389 Indicator: ALIEN_VERT_RICH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.48	0.24	0.71
75Pct	1.64	1.17	2.13
90Pct	2.88	2.36	4.50
95Pct	4.21	2.94	7.60
Mean	1.39	1.13	1.65
Std Dev	1.29	1.09	1.50

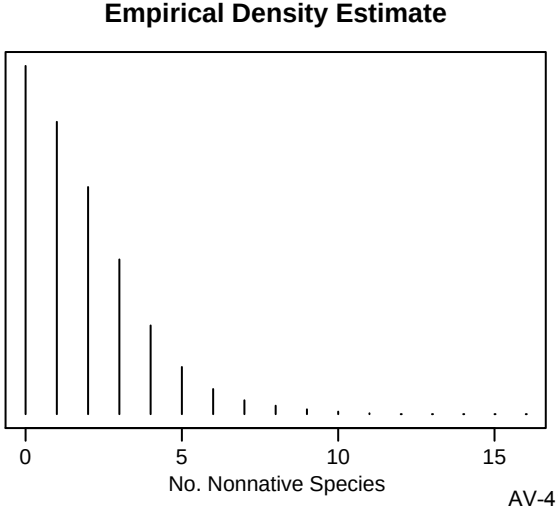
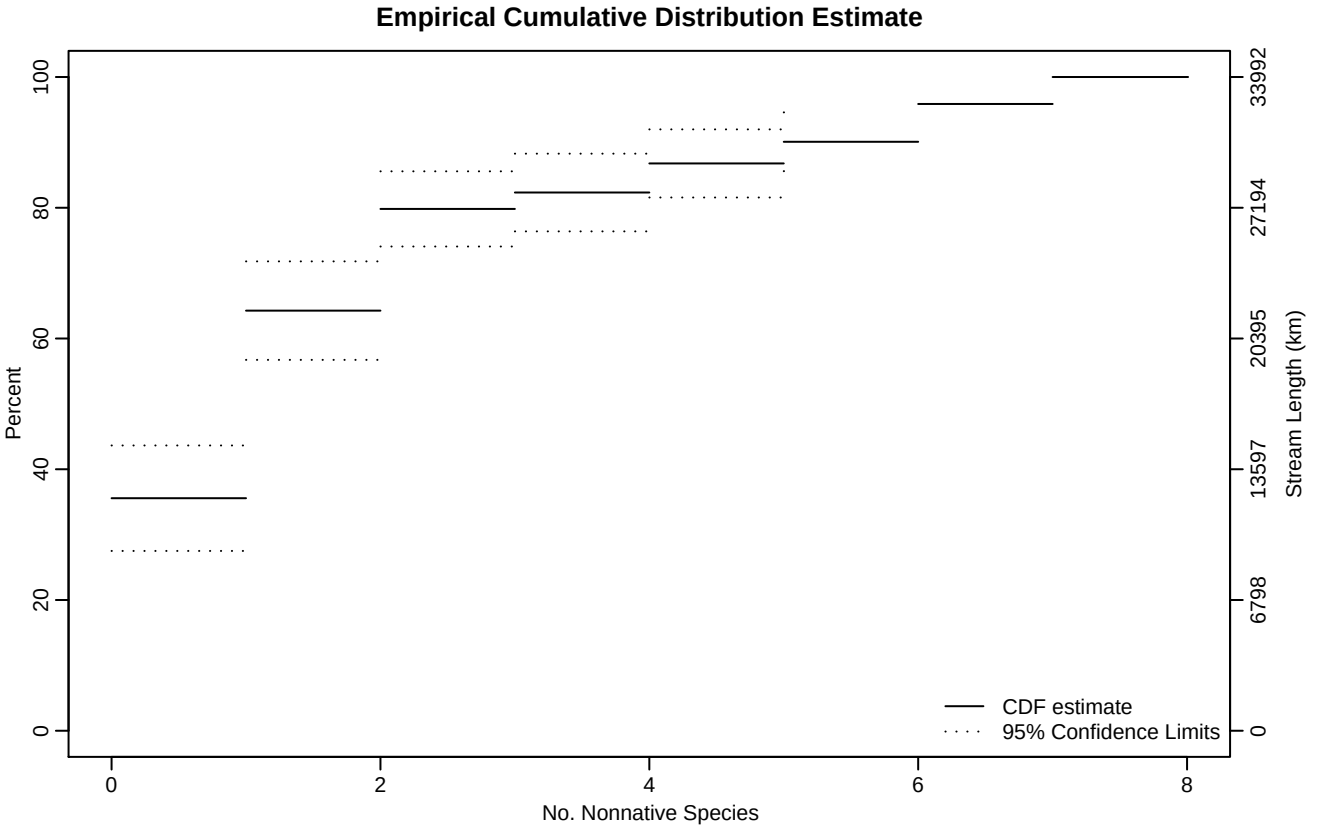


Figure VERT−390 Indicator: ALIEN_VERT_RICH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.50	0.22	0.78
75Pct	1.69	1.17	3.17
90Pct	4.97	3.44	5.97
95Pct	5.85	4.93	
Mean	1.65	1.36	1.95
Std Dev	1.67	1.42	1.92

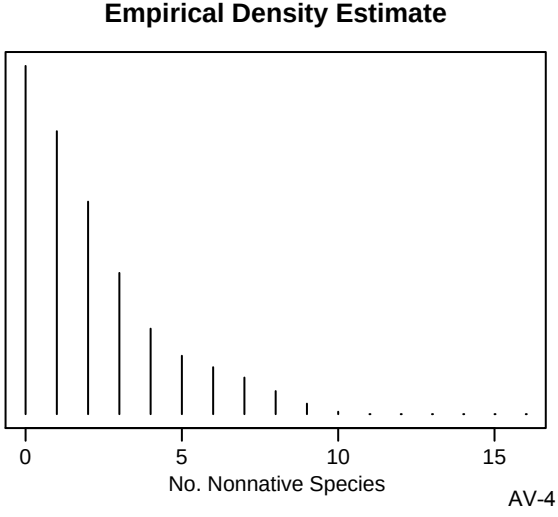
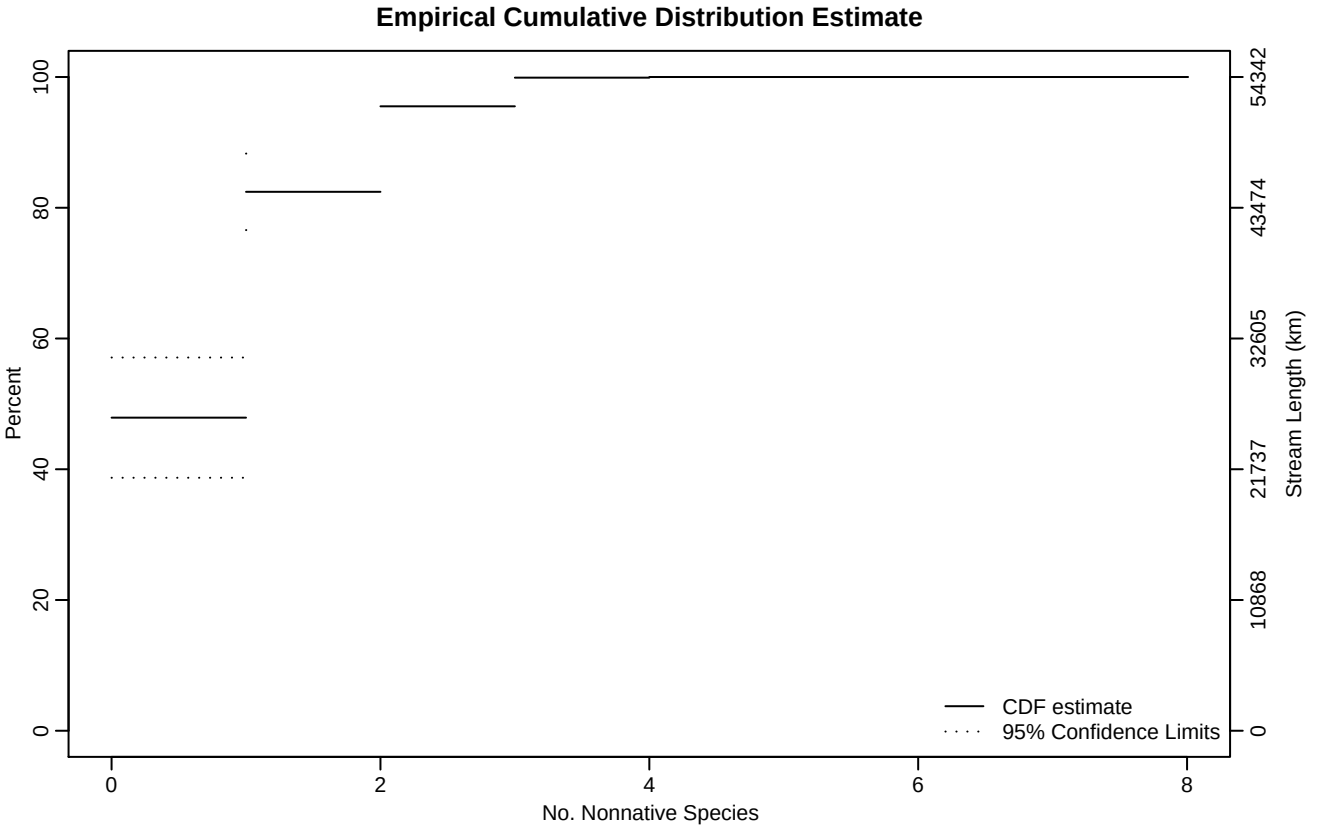


Figure VERT−391 Indicator: ALIEN_VERT_RICH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.06	0	0.33
75Pct	0.78	0.50	1.18
90Pct	1.58	1.15	2.03
95Pct	1.96	1.53	
Mean	0.74	0.61	0.88
Std Dev	0.62	0.55	0.70

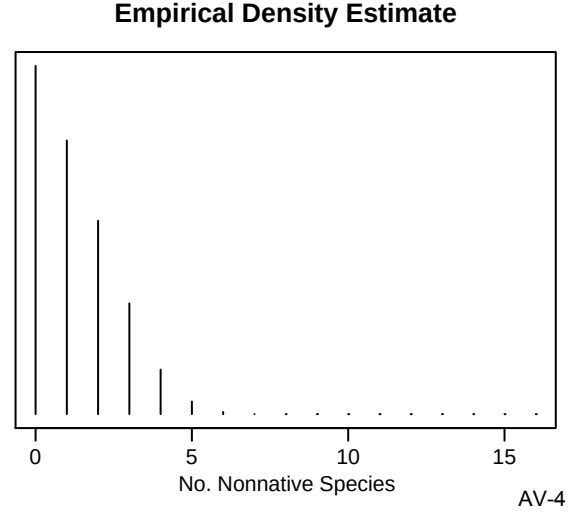
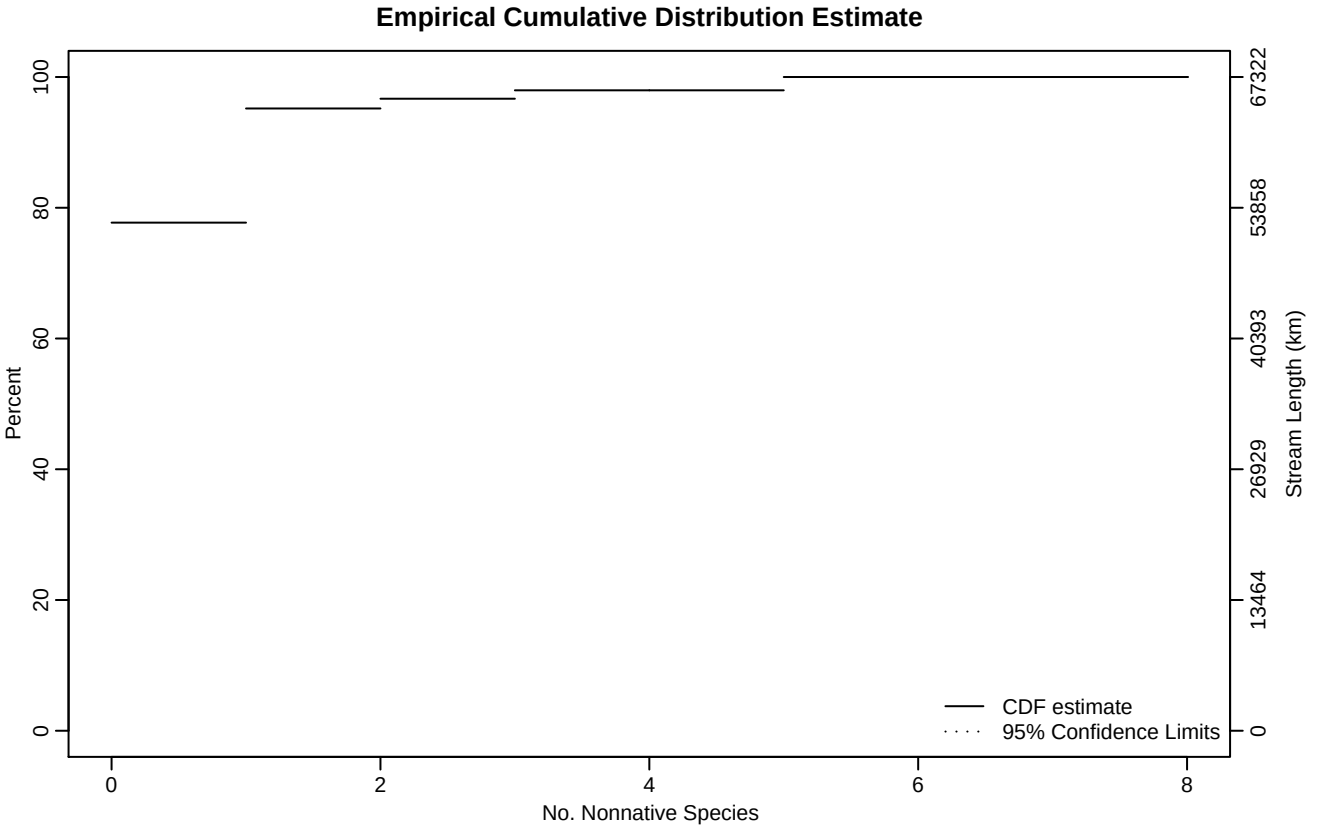


Figure VERT−392 Indicator: ALIEN_VERT_RICH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.24
90Pct	0.70	0.32	1.95
95Pct	0.99	0.61	5
Mean	0.34	0.20	0.49
Std Dev	0.77	0.54	0.99

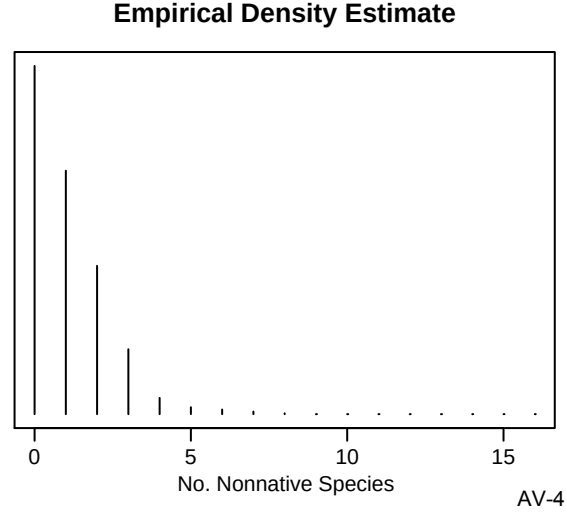
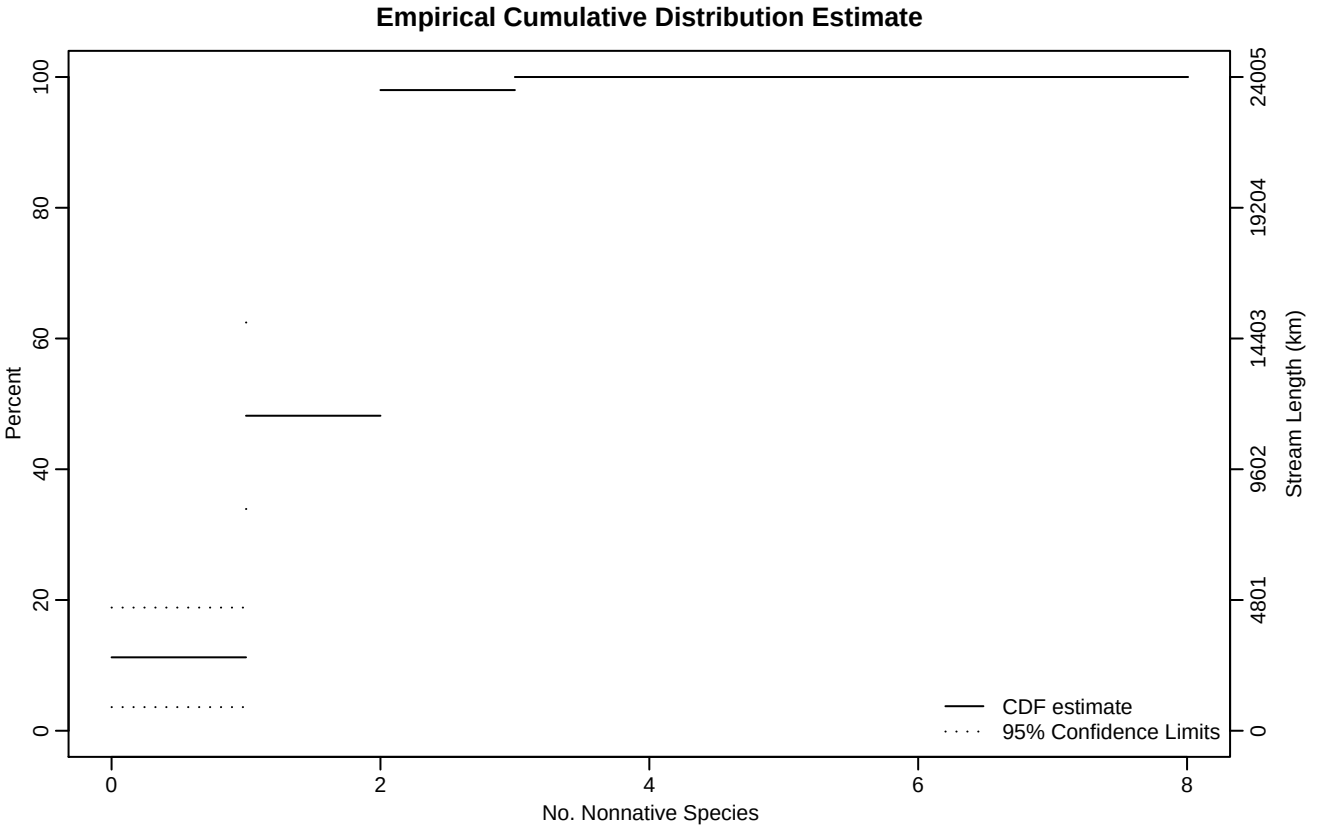


Figure VERT−393 Indicator: ALIEN_VERT_RICH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.04
10Pct	0	0	0.18
25Pct	0.37	0.16	0.59
50Pct	1.04	0.66	1.33
75Pct	1.54	1.24	1.83
90Pct	1.84	1.54	
95Pct	1.94	1.64	
Mean	1.43	1.24	1.61
Std Dev	0.67	0.56	0.79

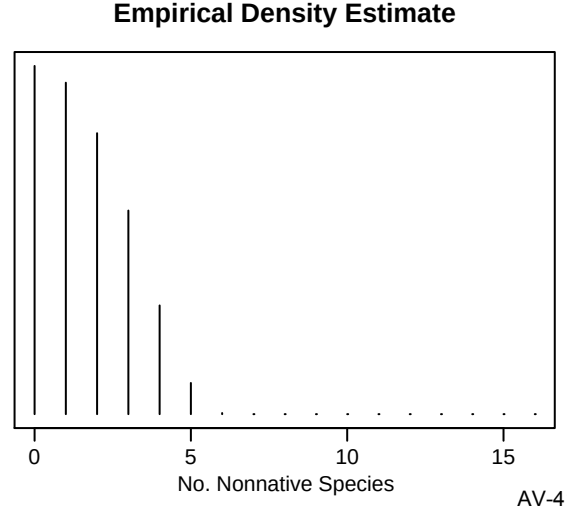
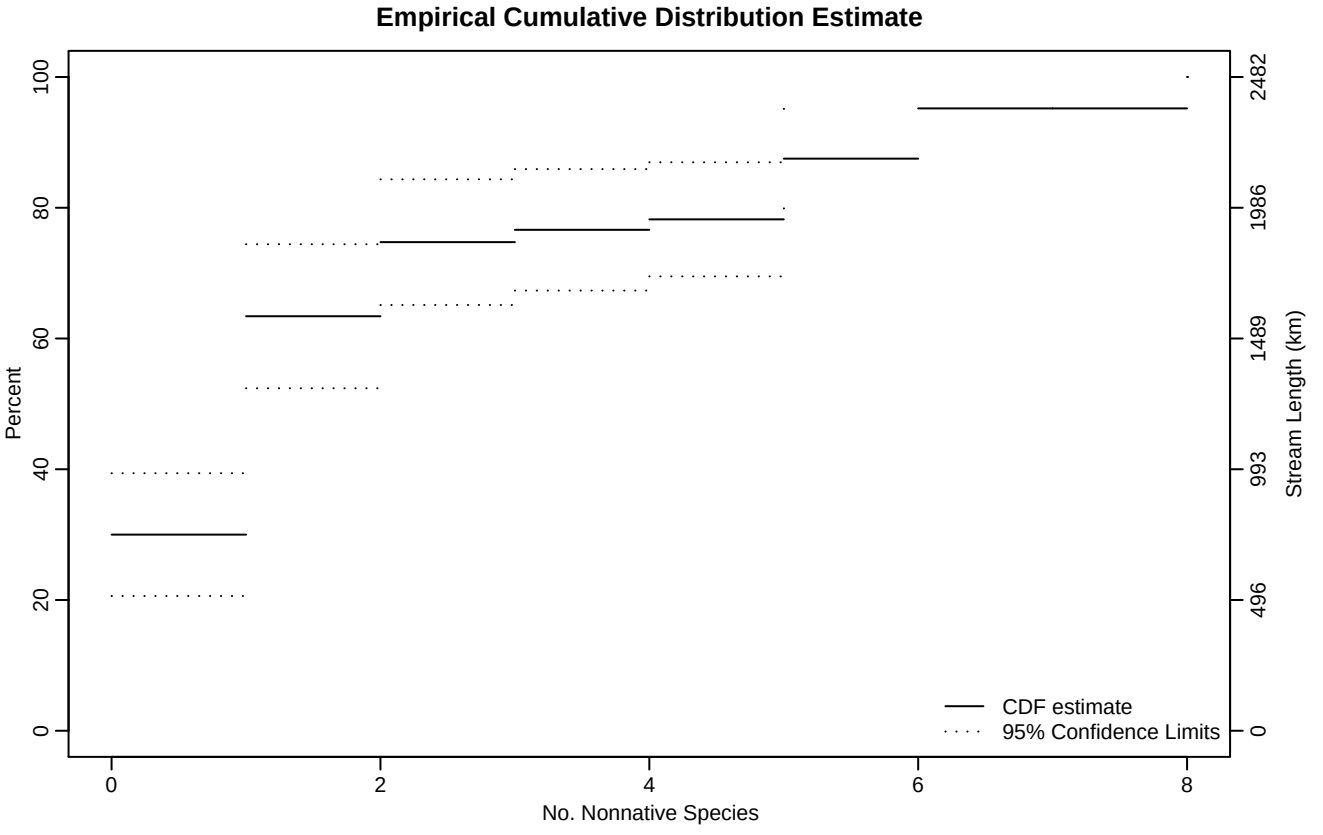


Figure VERT−394 Indicator: ALIEN_VERT_RICH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.13
50Pct	0.60	0.30	0.89
75Pct	2.14	1.17	4.70
90Pct	5.32	4.44	7.51
95Pct	5.97	4.98	8
Mean	1.99	1.54	2.44
Std Dev	2.06	1.75	2.37

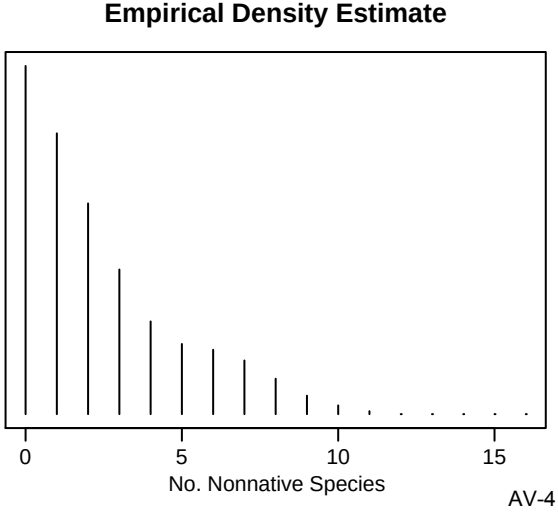
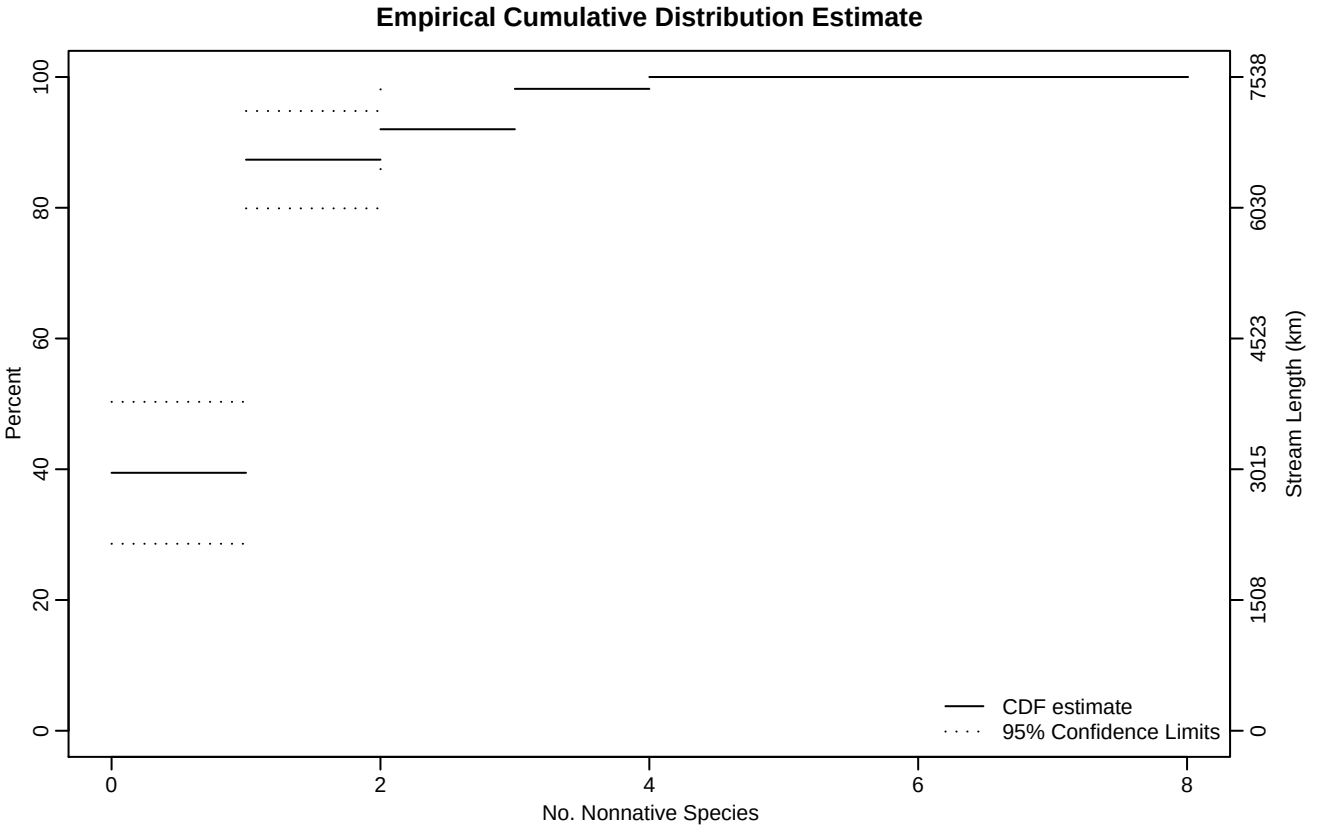


Figure VERT−395 Indicator: ALIEN_VERT_RICH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.22	0	0.44
75Pct	0.74	0.52	0.96
90Pct	1.57	0.89	2.94
95Pct	2.48	1.23	4
Mean	0.83	0.64	1.02
Std Dev	0.75	0.60	0.89

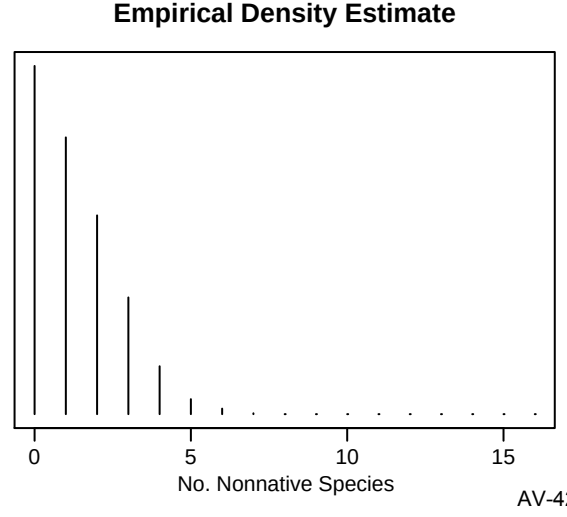
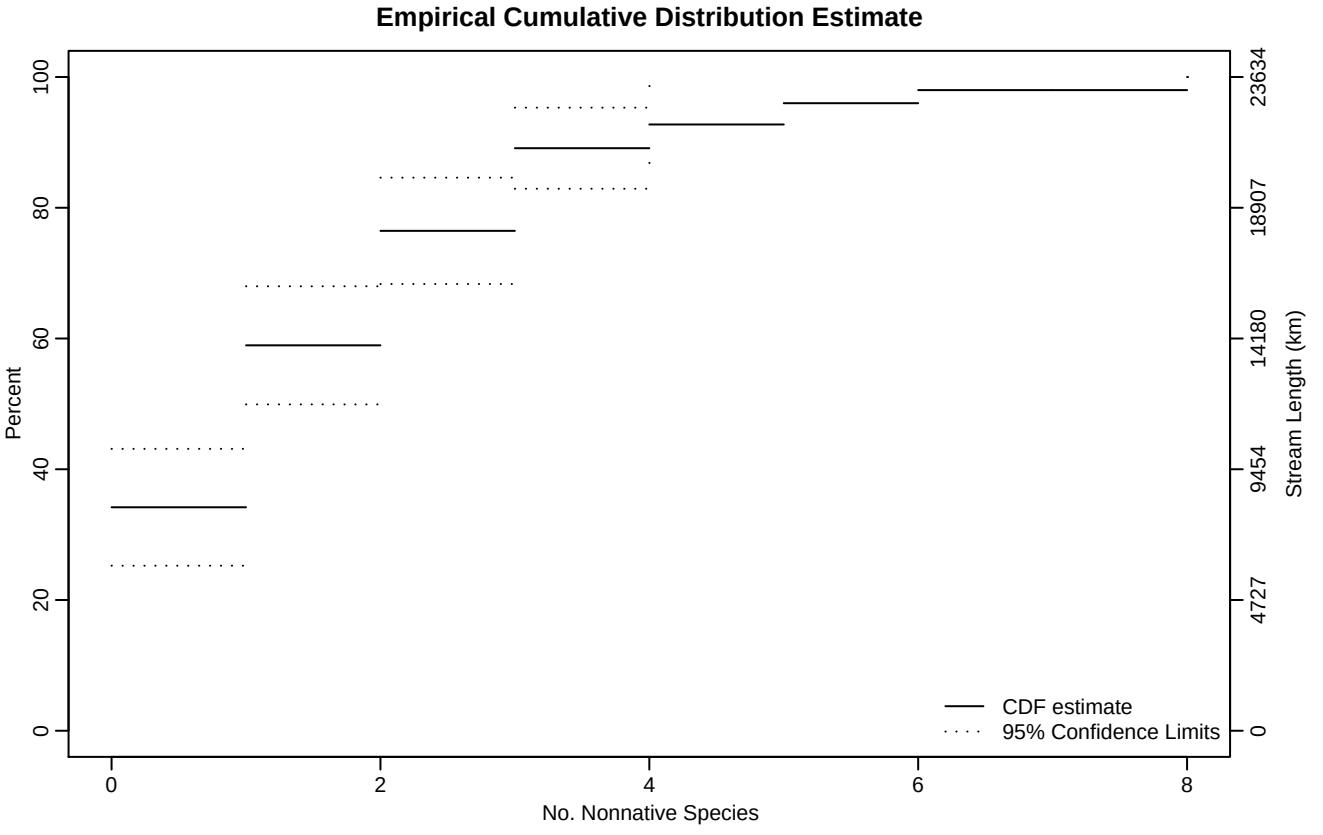


Figure VERT−396 Indicator: ALIEN_VERT_RICH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.64	0.29	0.99
75Pct	1.92	1.43	2.56
90Pct	3.25	2.60	4.99
95Pct	4.70	3.03	8
Mean	1.57	1.23	1.90
Std Dev	1.37	1.11	1.64

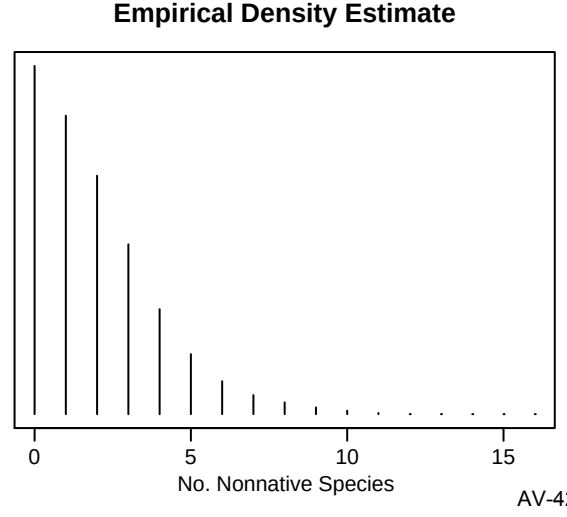
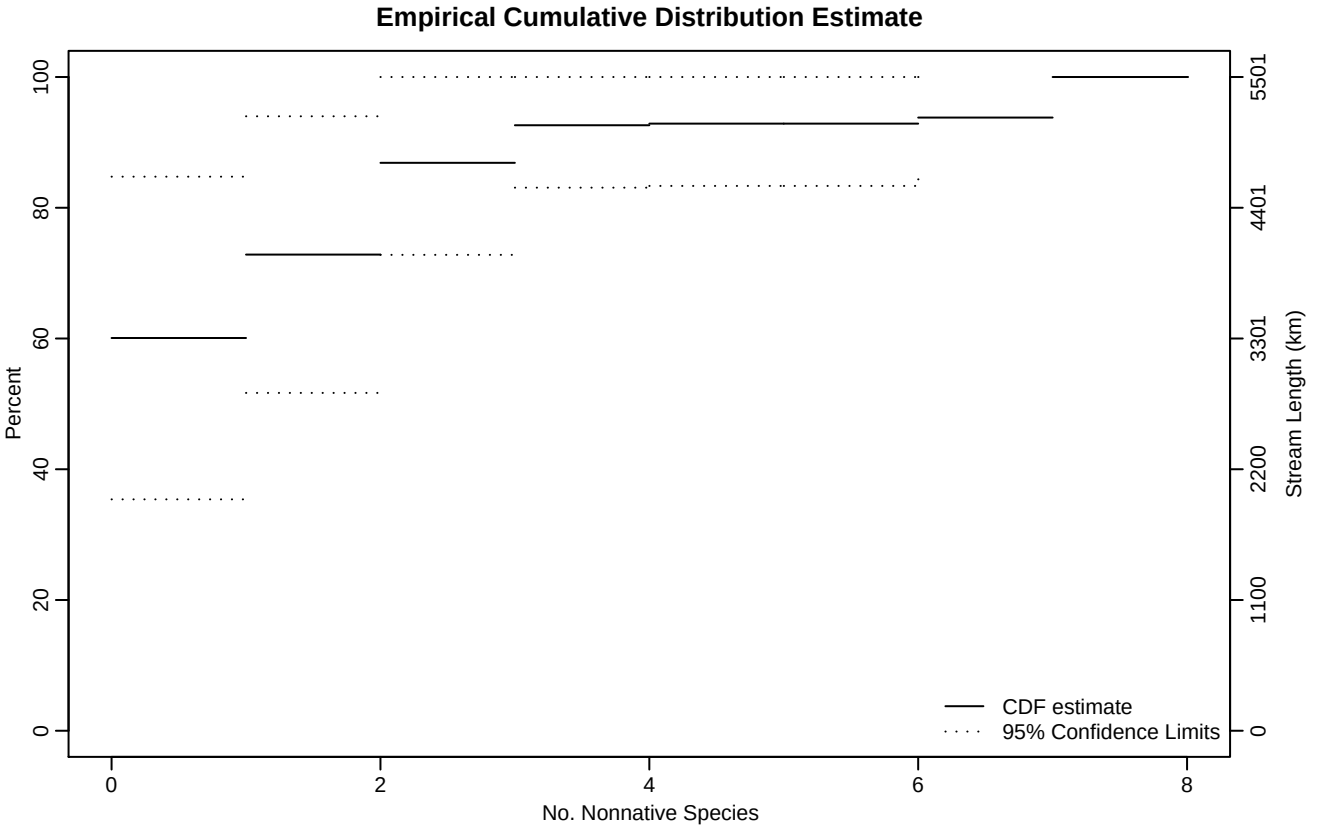


Figure VERT−397 Indicator: ALIEN_VERT_RICH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	1.07
75Pct	1.15	0	6.42
90Pct	2.54	1.24	7
95Pct	6.19	1.91	7
Mean	1.08	0.34	1.82
Std Dev	1.86	0.97	2.74

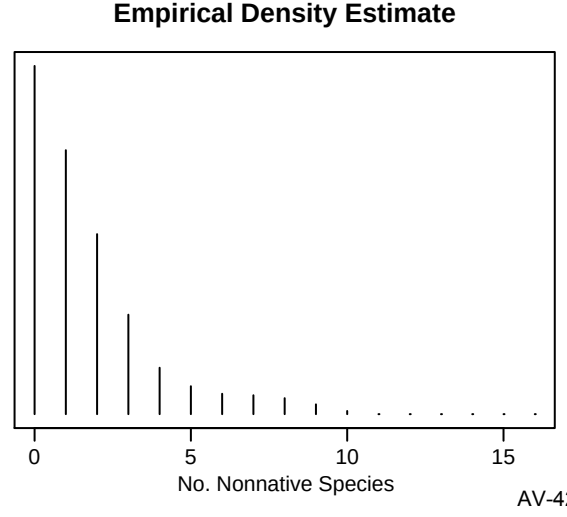
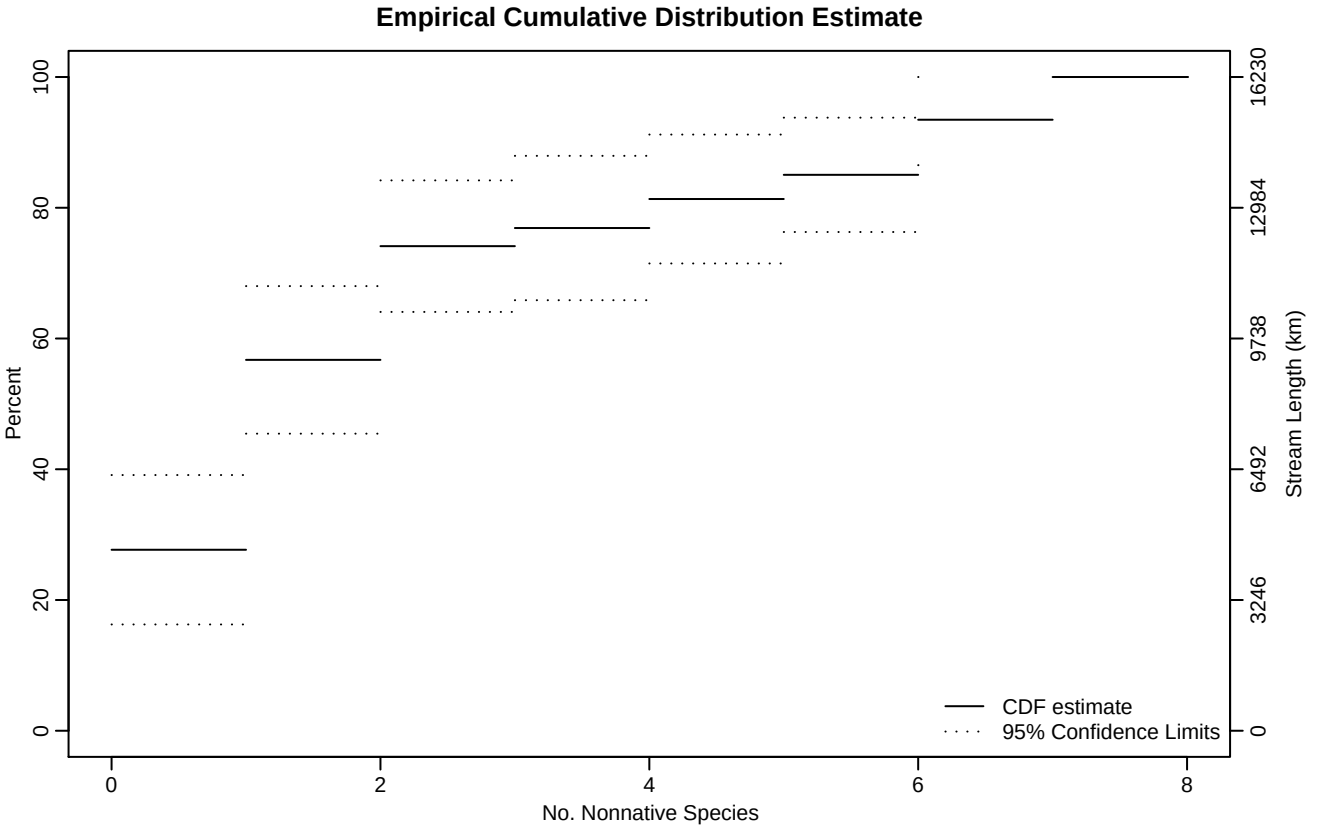


Figure VERT−398 Indicator: ALIEN_VERT_RICH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.30
50Pct	0.77	0.38	1.27
75Pct	2.32	1.45	5.05
90Pct	5.59	3.99	6.80
95Pct	6.23	5.37	7
Mean	2.05	1.53	2.56
Std Dev	1.88	1.52	2.24

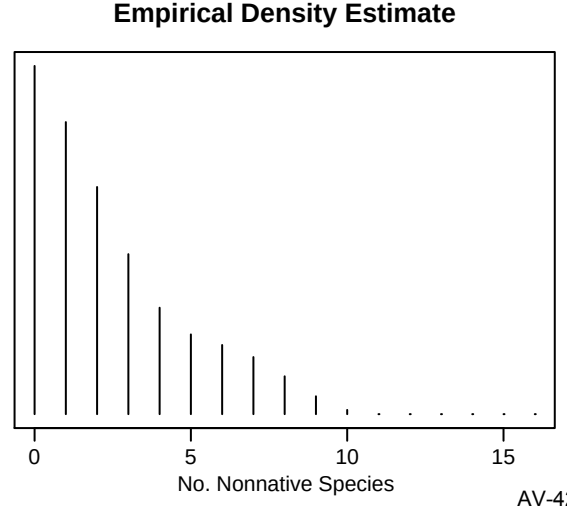
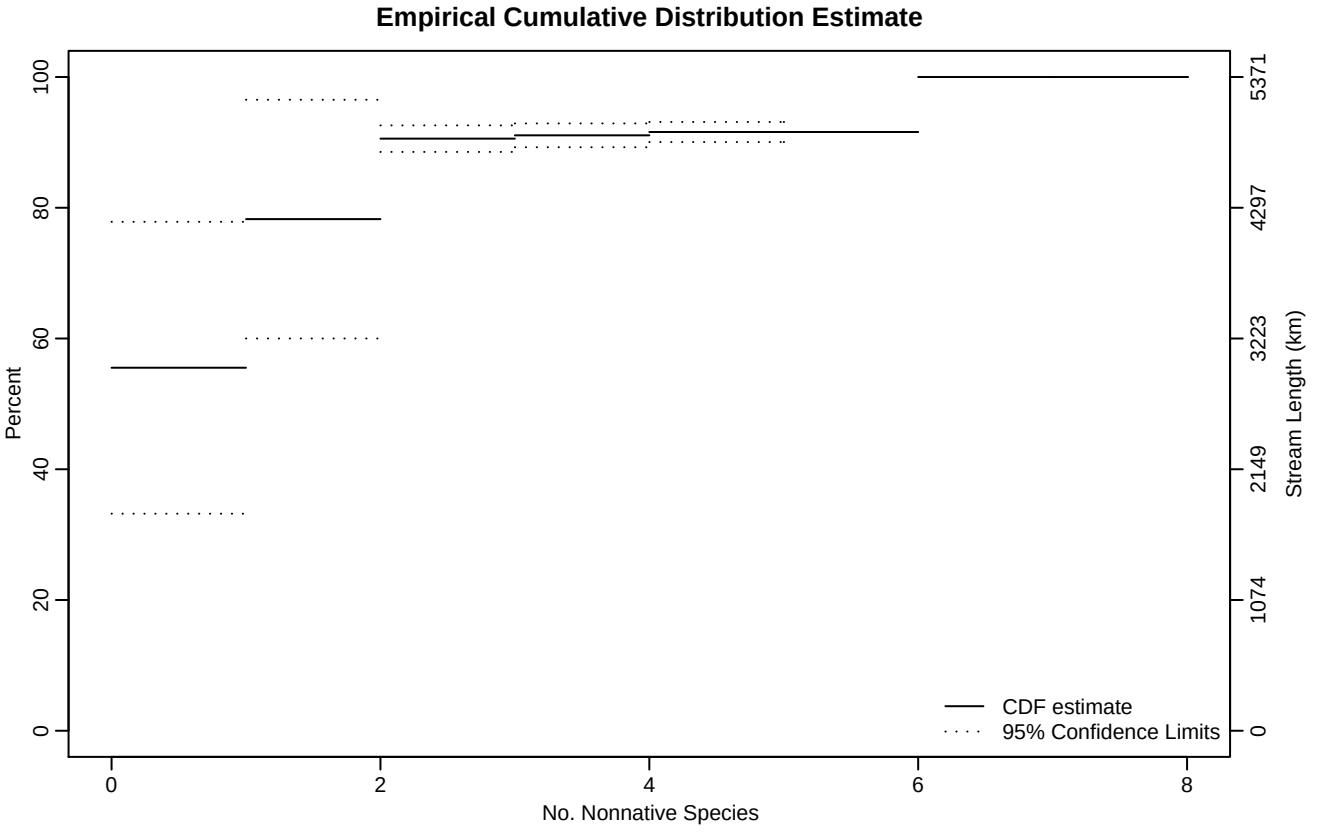


Figure VERT−399 Indicator: ALIEN_VERT_RICH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.81
75Pct	0.86	0	
90Pct	1.95	0.44	
95Pct	5.41	1.08	
Mean	1.01	0.63	1.40
Std Dev	0.77	0.56	0.98

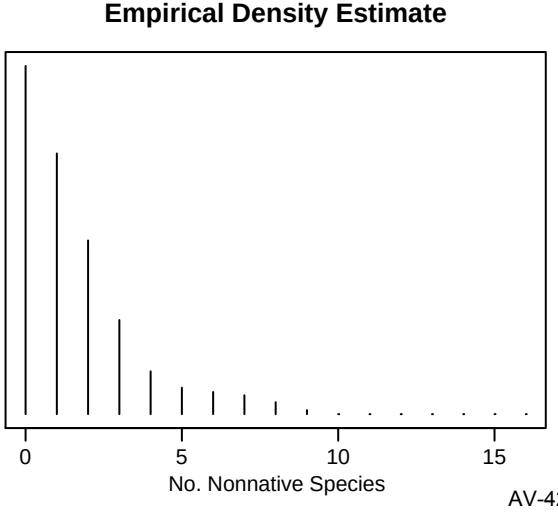
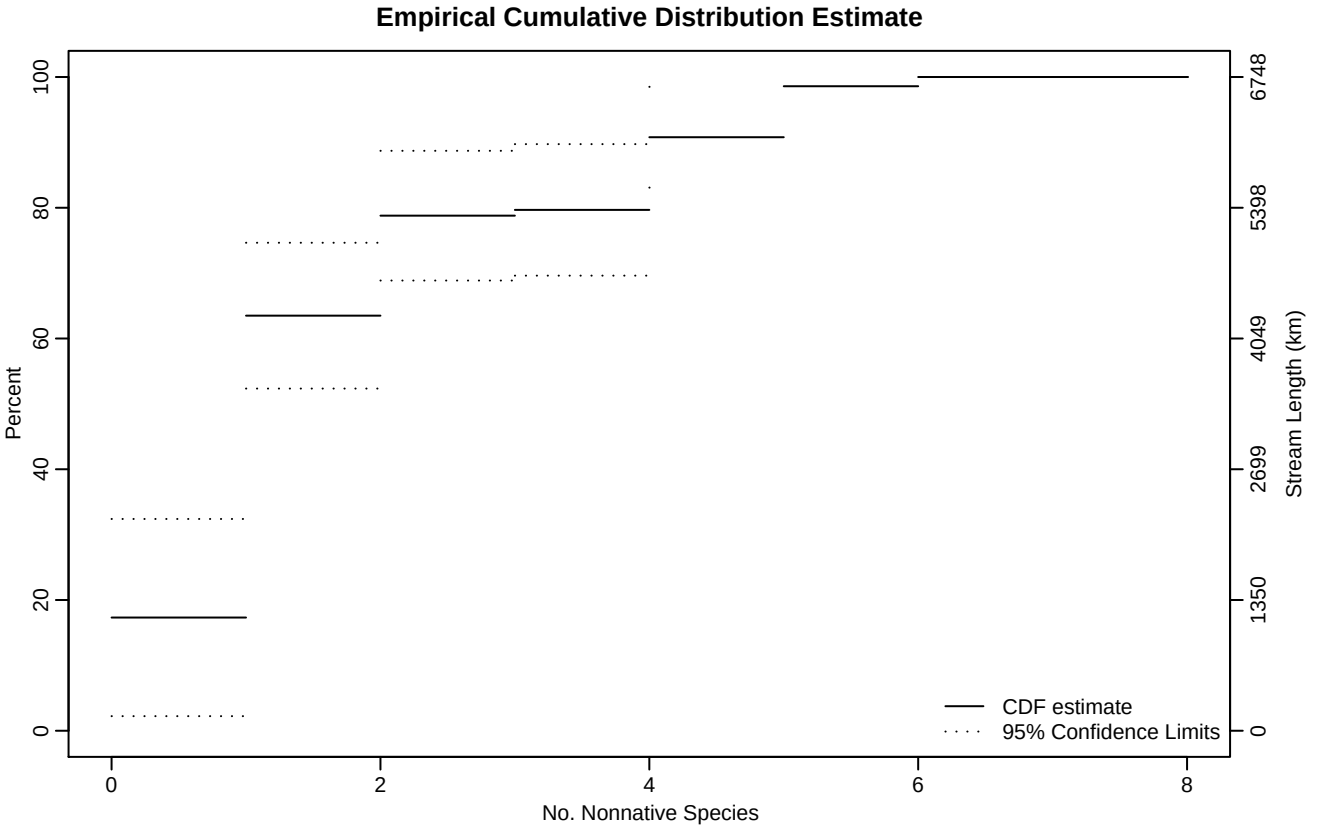


Figure VERT−400 Indicator: ALIEN_VERT_RICH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.05
10Pct	0	0	0.15
25Pct	0.17	0	0.48
50Pct	0.71	0.38	1.11
75Pct	1.75	1.03	3.58
90Pct	3.93	2.91	6
95Pct	4.54	3.68	6
Mean	1.71	1.32	2.10
Std Dev	1.30	1.01	1.58

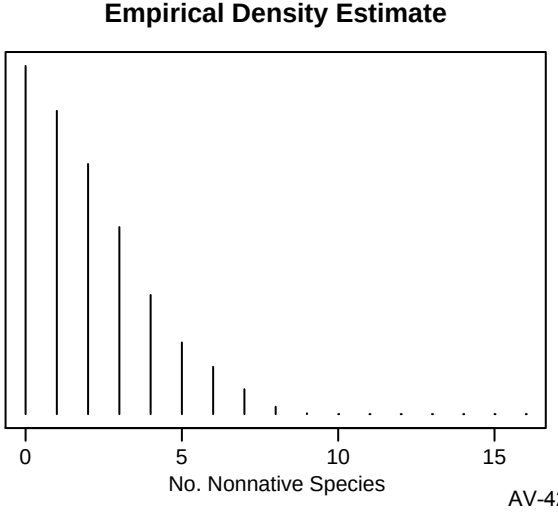
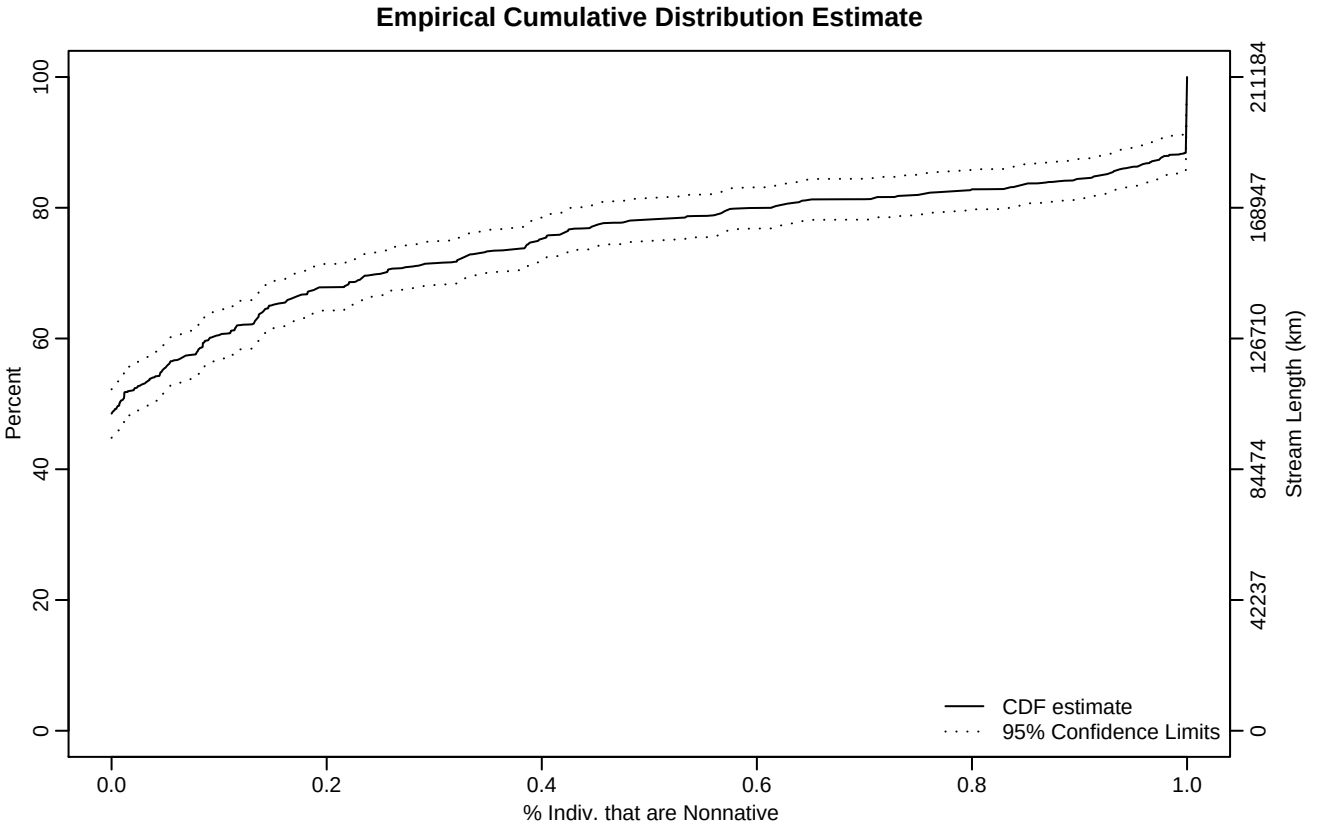


Figure VERT−401 Indicator: ALIEN_VERT_PIND Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.04
75Pct	0.40	0.30	0.53
90Pct	1	0.97	1
95Pct	1	1	1
Mean	0.25	0.22	0.28
Std Dev	0.31	0.28	0.34

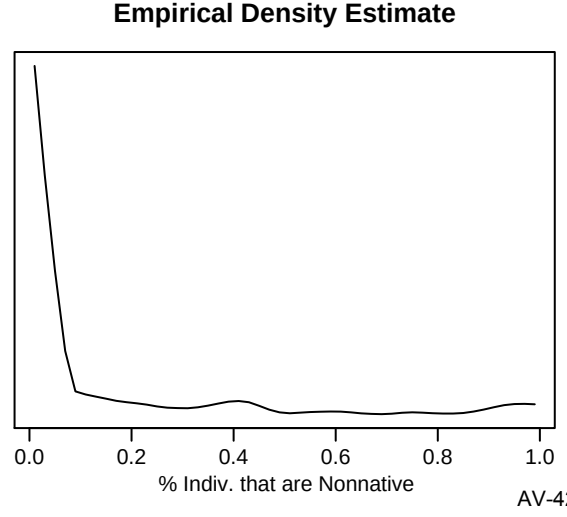
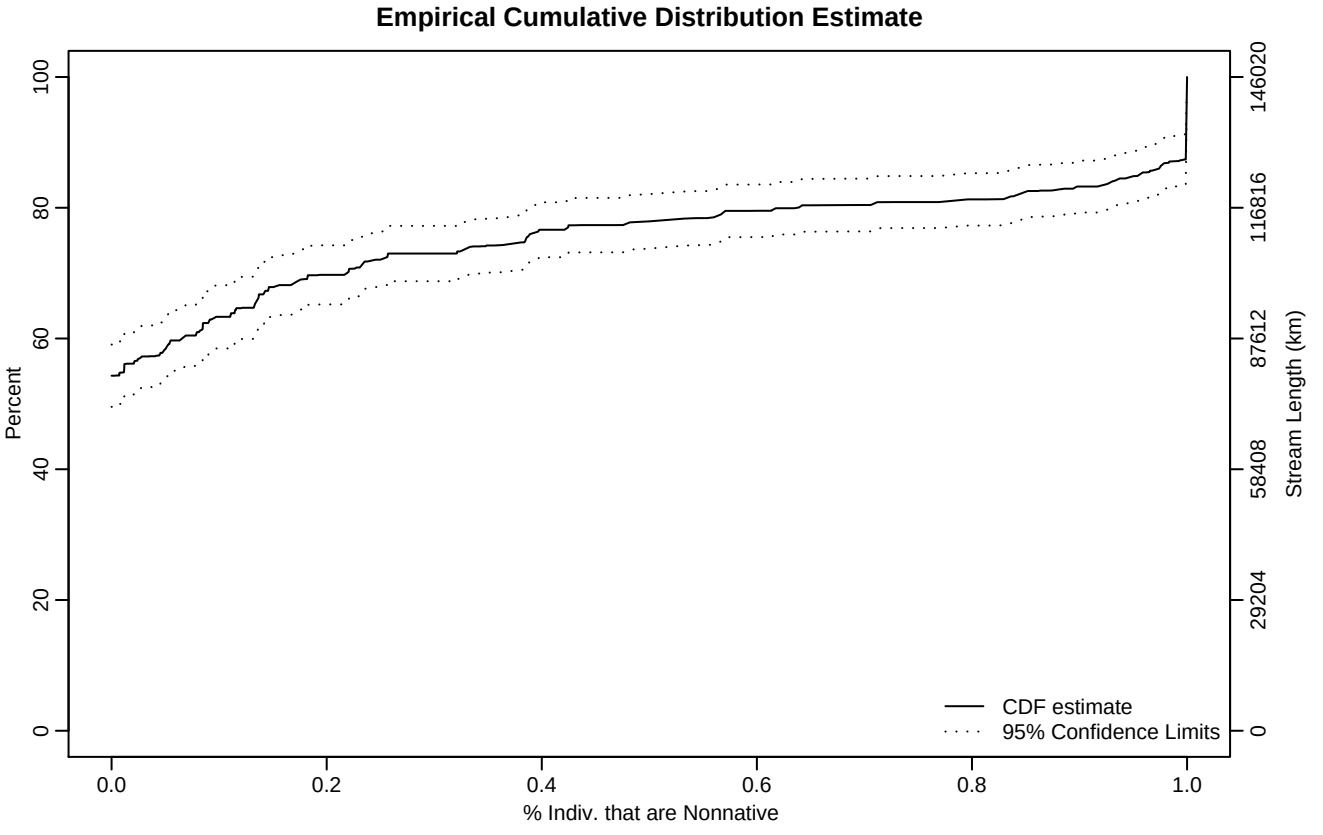


Figure VERT−402 Indicator: ALIEN_VERT_PIND Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.01
75Pct	0.38	0.22	0.57
90Pct	1	0.97	1
95Pct	1	1	1
Mean	0.24	0.21	0.28
Std Dev	0.30	0.26	0.34

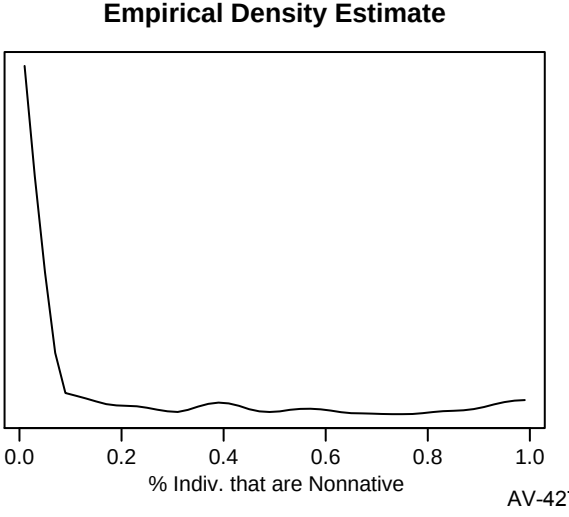
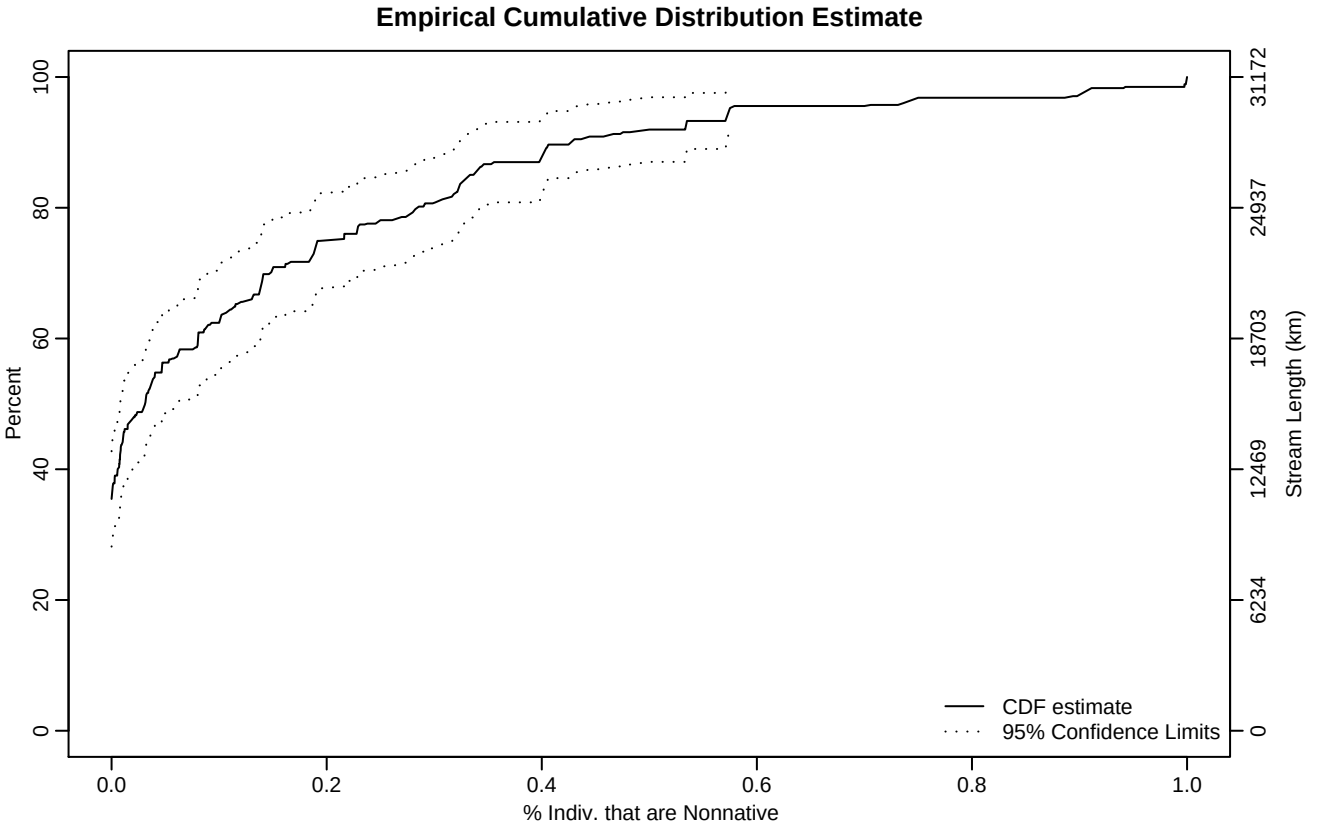


Figure VERT−403 Indicator: ALIEN_VERT_PIND Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.03	0.01	0.06
75Pct	0.20	0.14	0.32
90Pct	0.43	0.33	0.57
95Pct	0.57	0.44	1
Mean	0.14	0.11	0.18
Std Dev	0.20	0.17	0.24

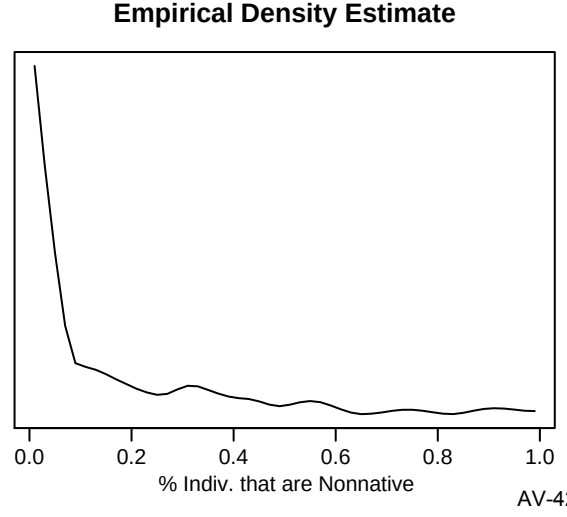
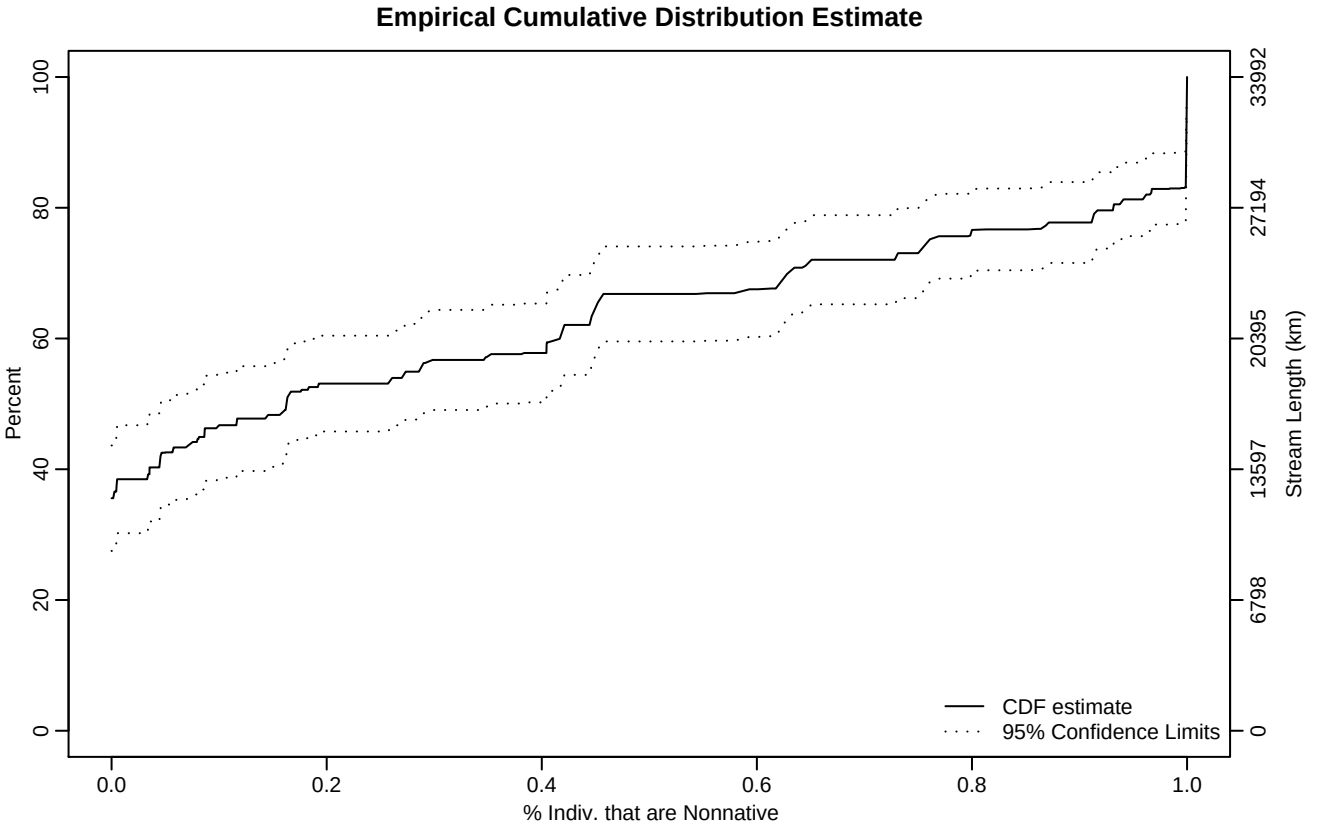


Figure VERT−404 Indicator: ALIEN_VERT_PIND Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.16	0.05	0.40
75Pct	0.76	0.62	0.96
90Pct	1	1	1
95Pct	1	1	
Mean	0.37	0.31	0.43
Std Dev	0.37	0.35	0.39

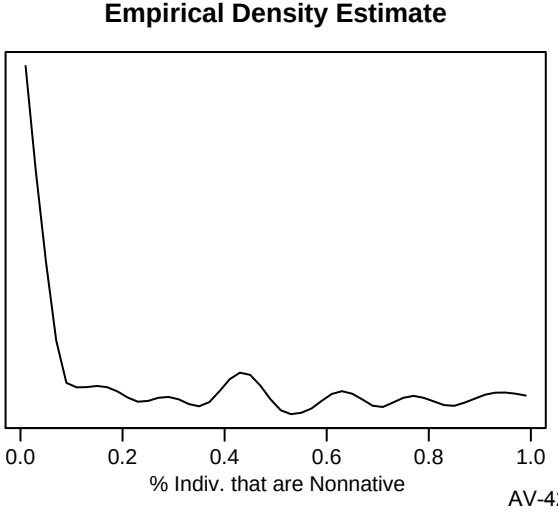
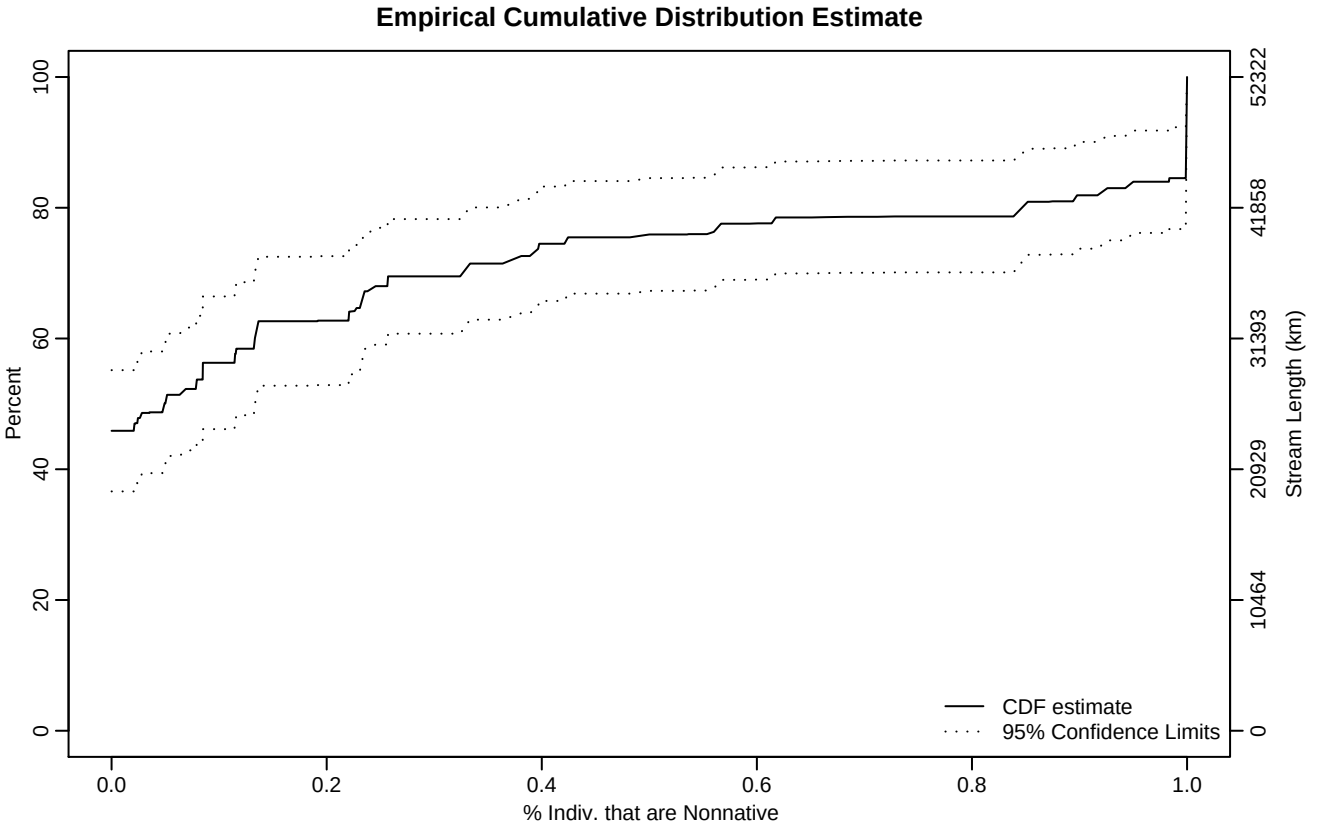


Figure VERT−405 Indicator: ALIEN_VERT_PIND Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.05	0	0.13
75Pct	0.42	0.23	0.95
90Pct	1	0.90	1
95Pct	1	1	1
Mean	0.28	0.20	0.36
Std Dev	0.35	0.29	0.40

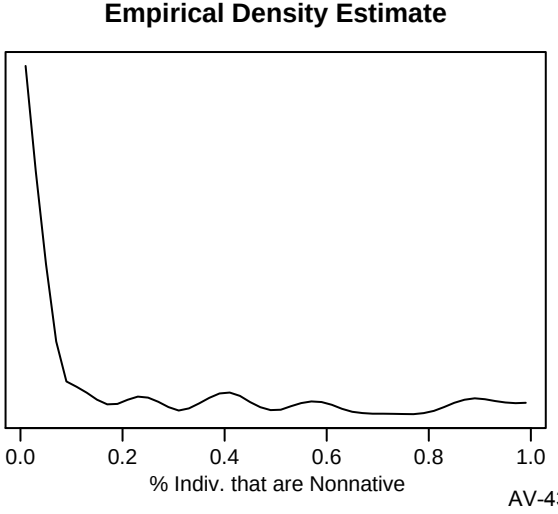
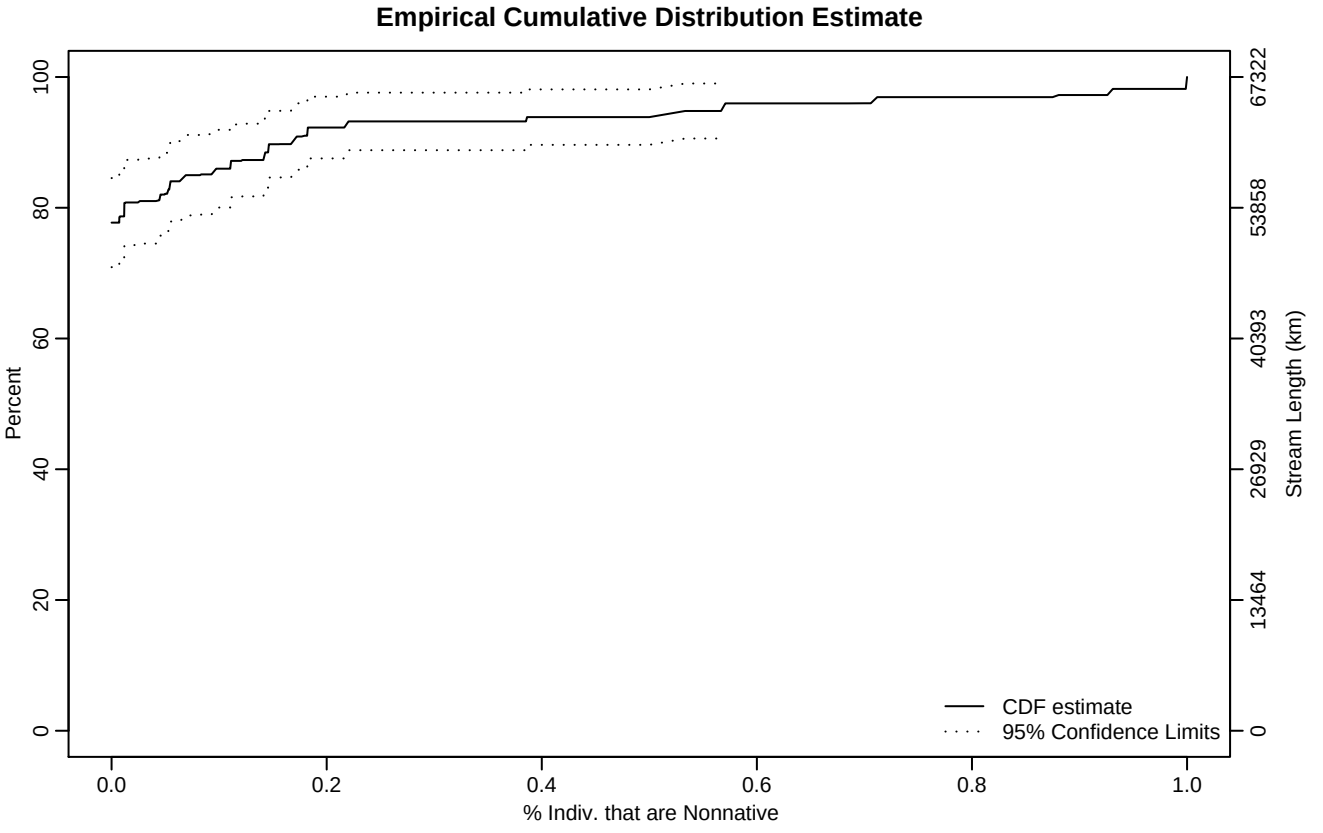


Figure VERT−406 Indicator: ALIEN_VERT_PIND Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.05
90Pct	0.17	0.07	0.57
95Pct	0.57	0.17	1
Mean	0.07	0.03	0.10
Std Dev	0.18	0.11	0.24

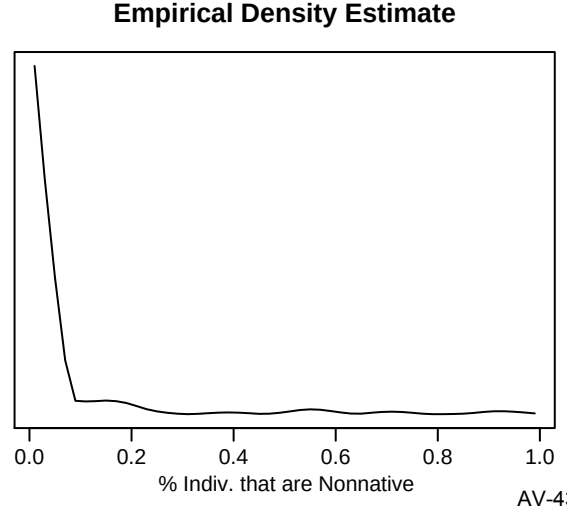
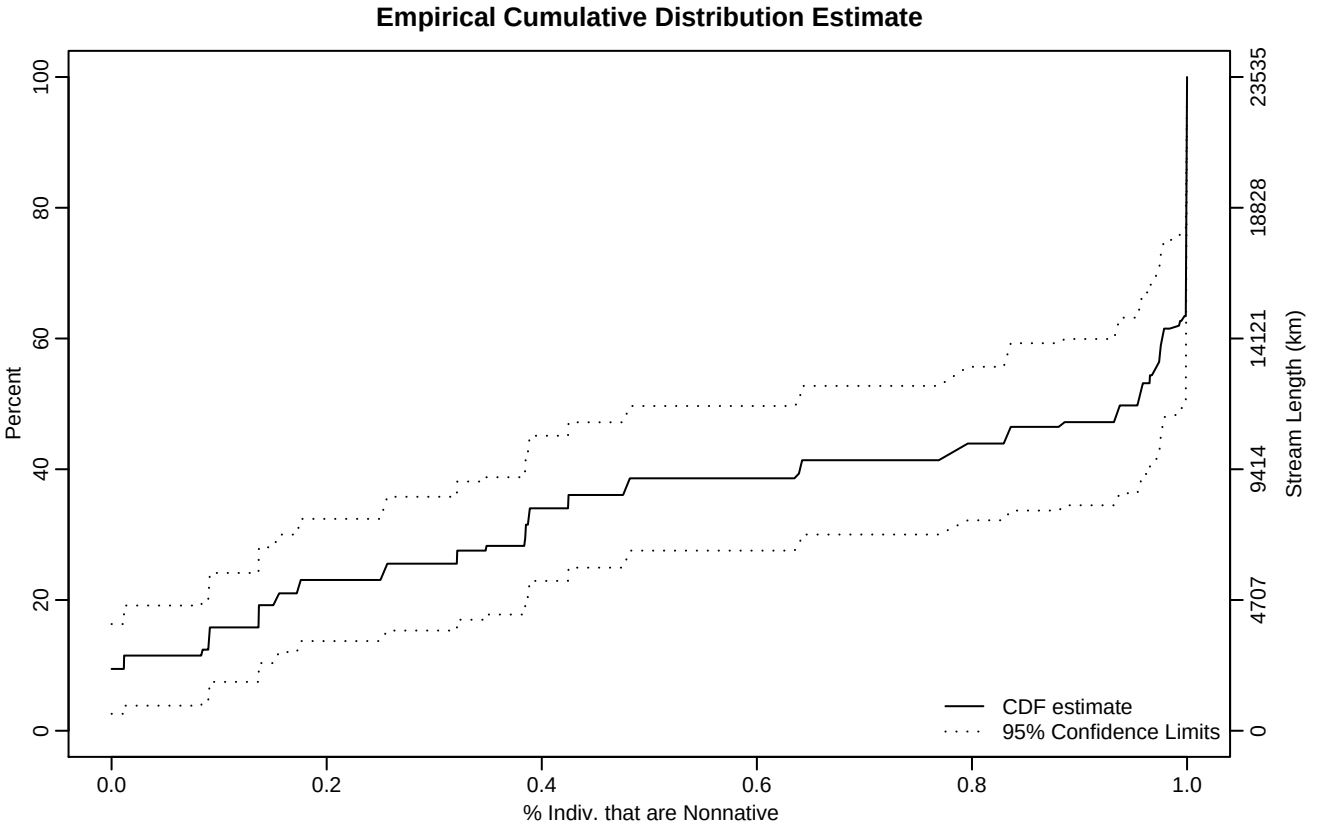


Figure VERT−407 Indicator: ALIEN_VERT_PIND Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.08
10Pct	0.01	0	0.14
25Pct	0.25	0.09	0.42
50Pct	0.95	0.48	1
75Pct	1	0.98	1
90Pct	1	1	
95Pct	1	1	
Mean	0.66	0.57	0.75
Std Dev	0.38	0.33	0.42

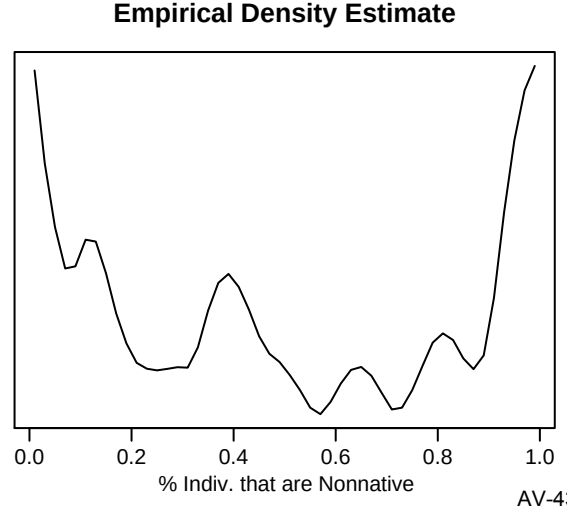
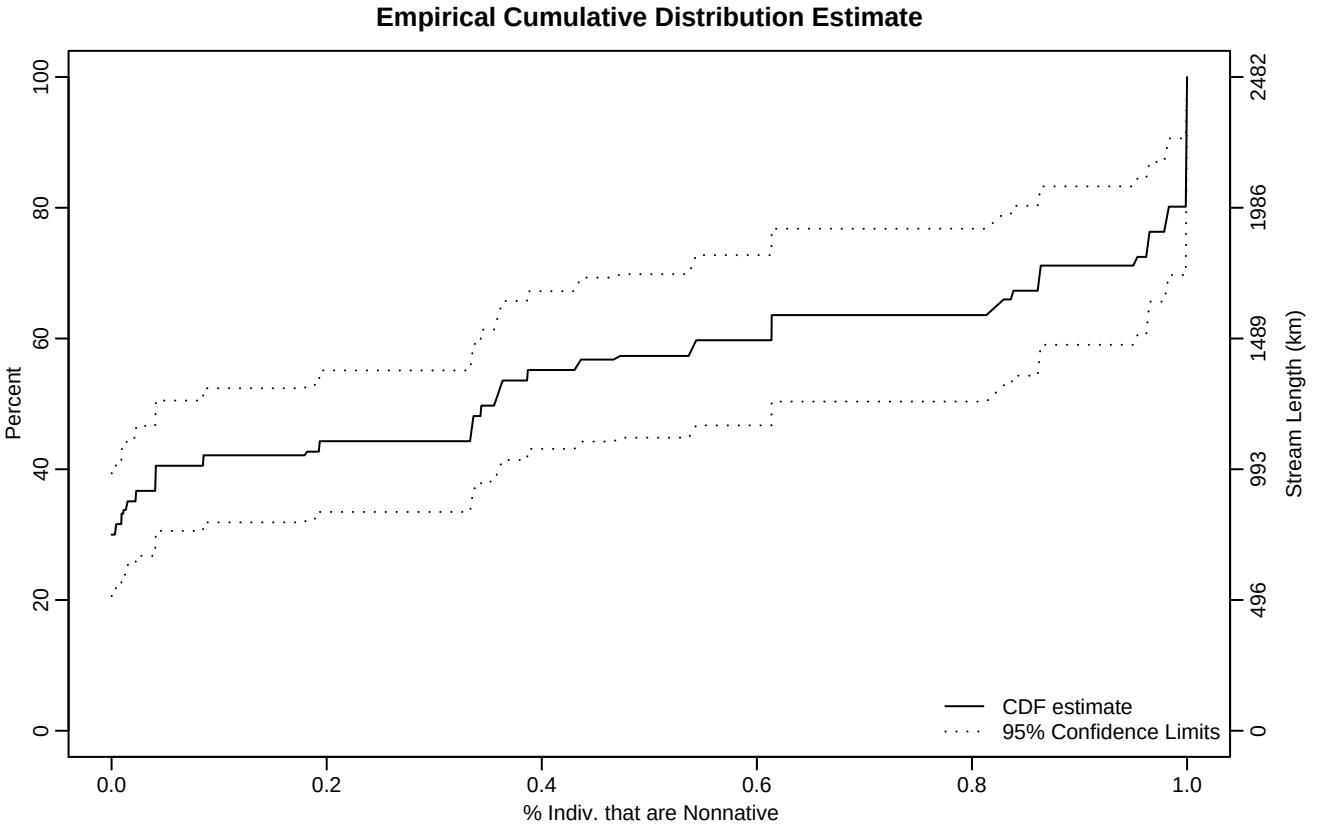


Figure VERT−408 Indicator: ALIEN_VERT_PIND Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.36	0.04	0.61
75Pct	0.96	0.61	1
90Pct	1	0.98	1
95Pct	1	1	1
Mean	0.44	0.34	0.55
Std Dev	0.40	0.37	0.44

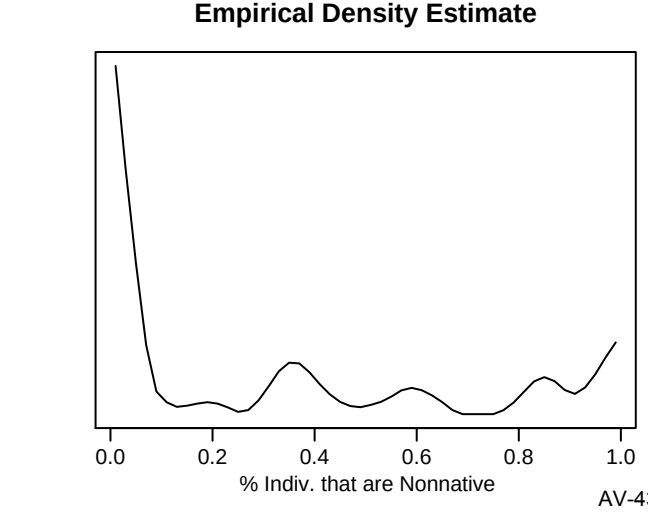
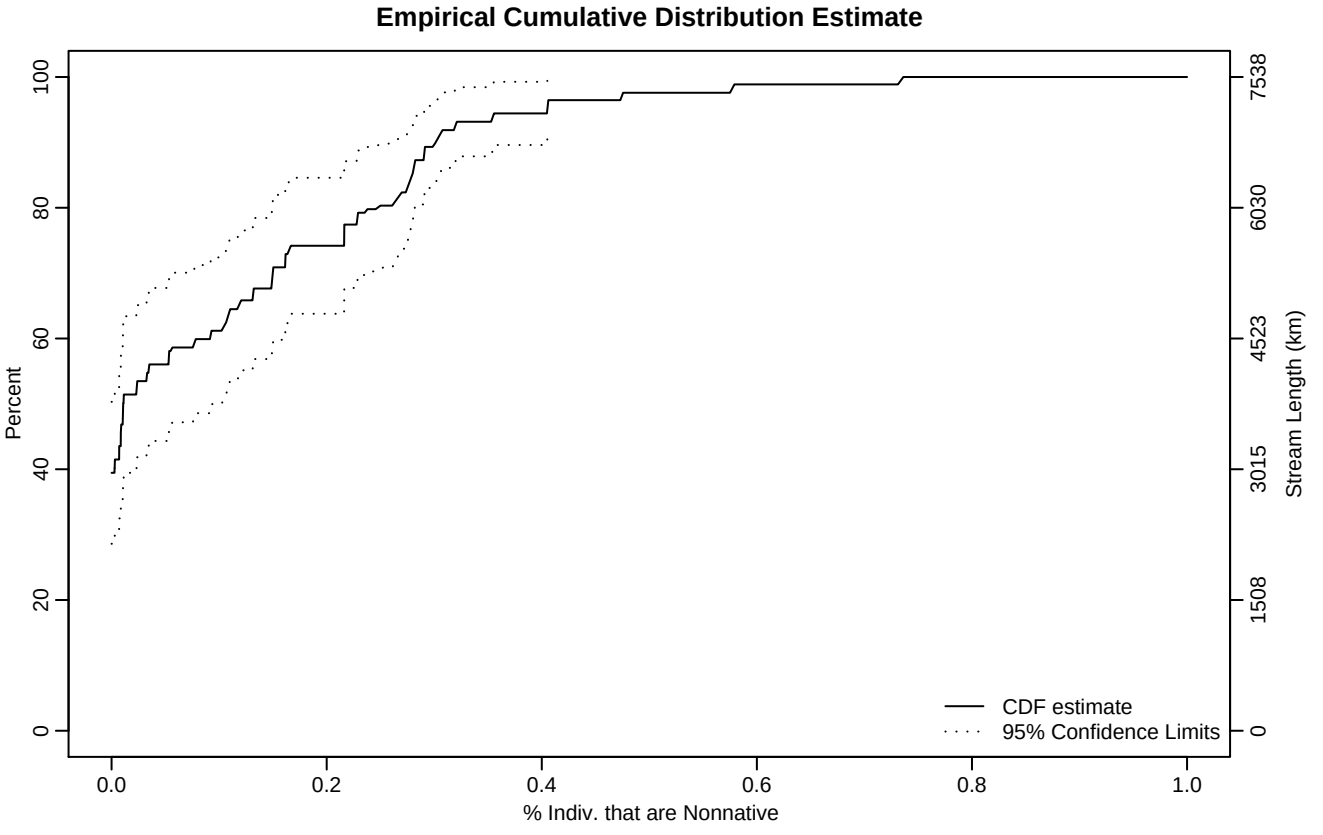


Figure VERT−409 Indicator: ALIEN_VERT_PIND Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.10
75Pct	0.22	0.12	0.28
90Pct	0.30	0.28	0.41
95Pct	0.41	0.30	0.74
Mean	0.11	0.08	0.14
Std Dev	0.14	0.11	0.17

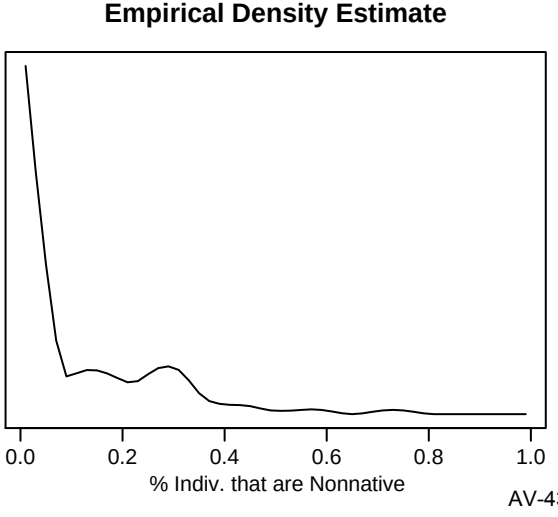
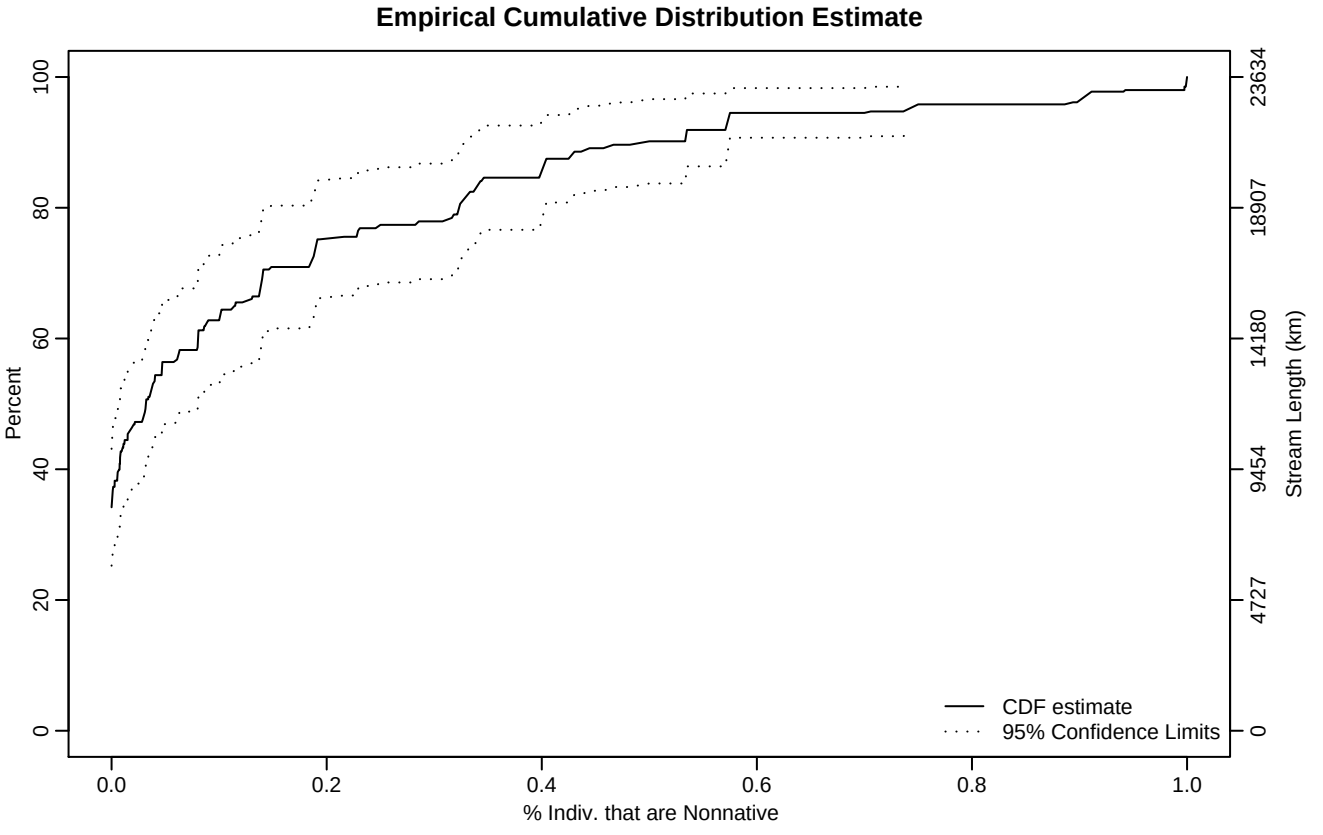


Figure VERT−410 Indicator: ALIEN_VERT_PIND Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.03	0.01	0.08
75Pct	0.19	0.13	0.34
90Pct	0.49	0.34	0.90
95Pct	0.74	0.53	1
Mean	0.15	0.11	0.20
Std Dev	0.21	0.17	0.26

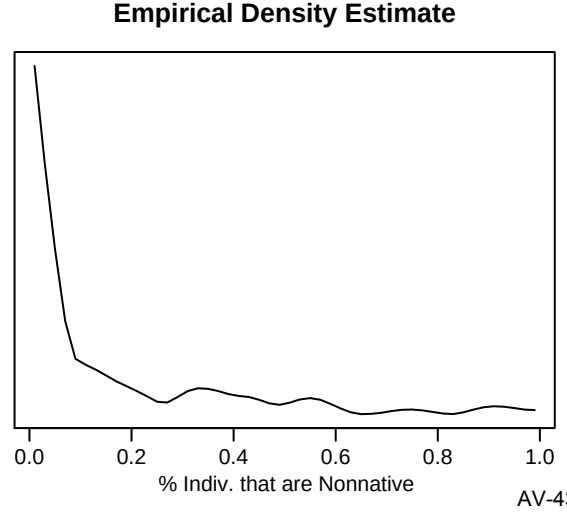
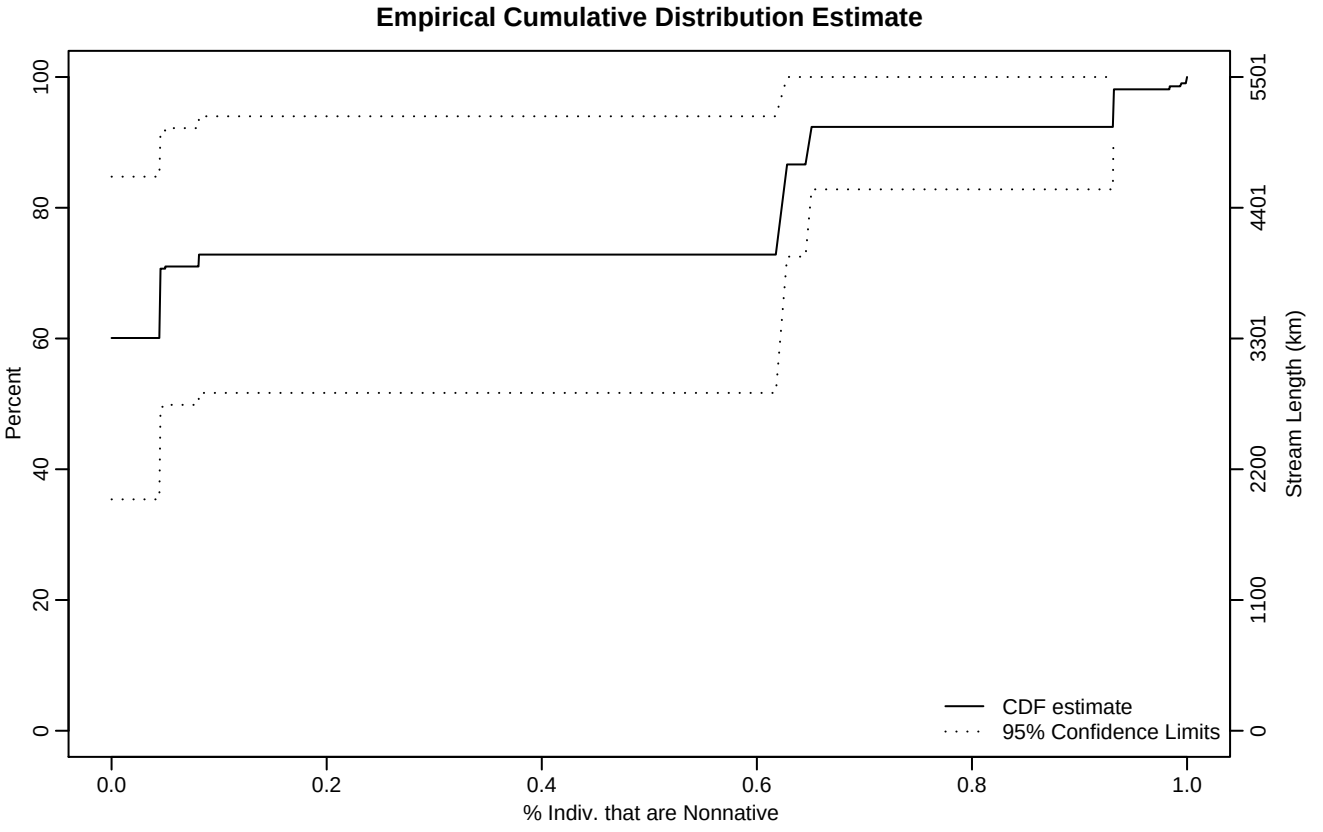


Figure VERT−411 Indicator: ALIEN_VERT_PIND Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.62
75Pct	0.62	0	0.93
90Pct	0.65	0.62	1
95Pct	0.93	0.63	1
Mean	0.20	0.06	0.35
Std Dev	0.33	0.25	0.41

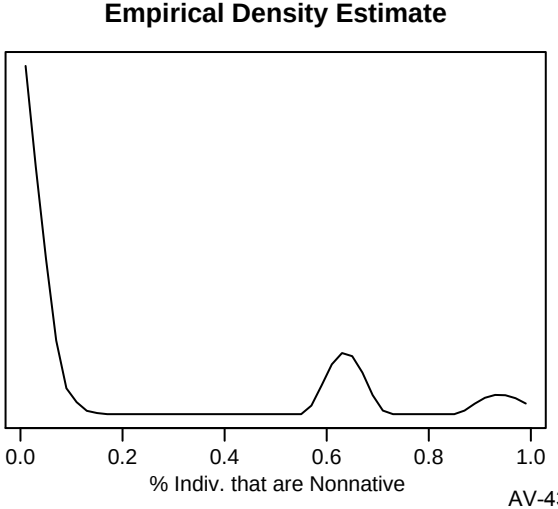
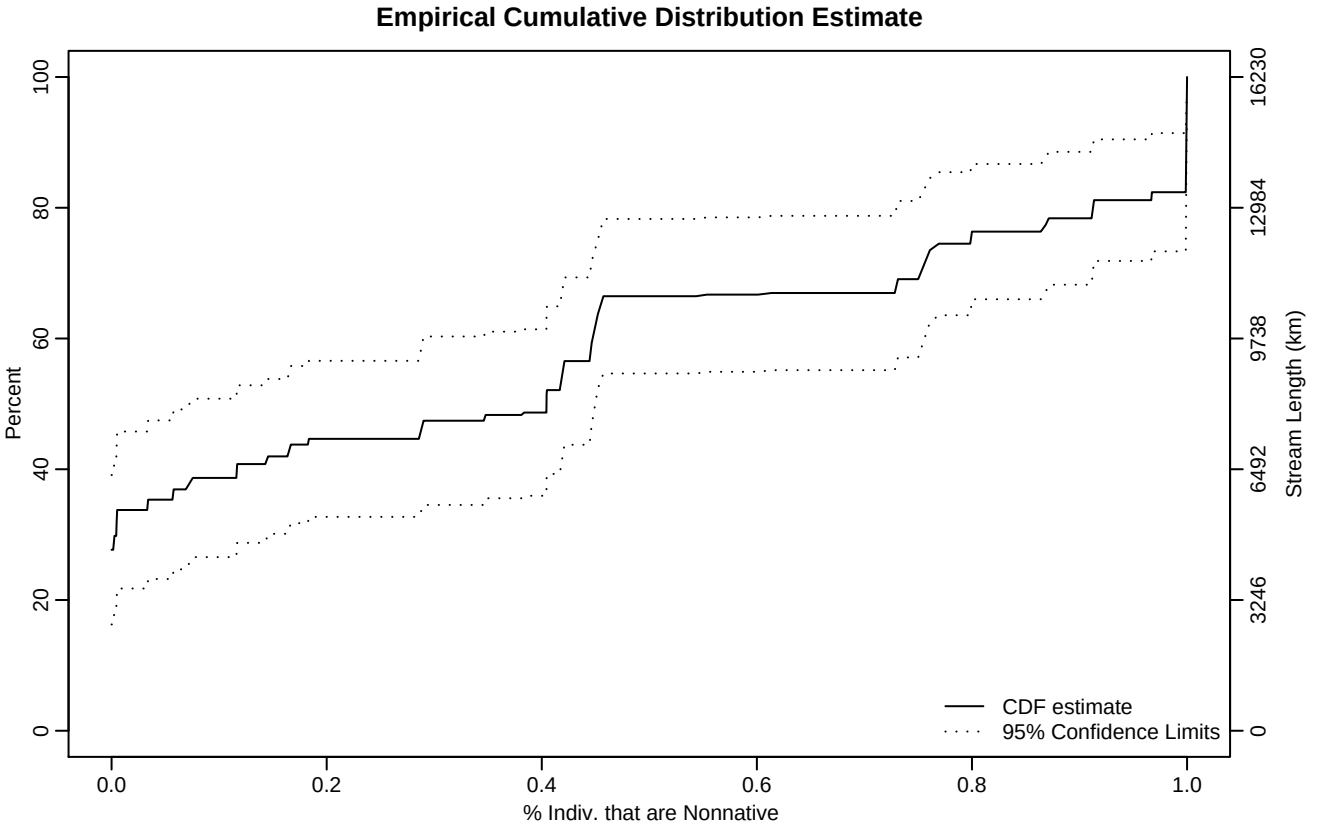


Figure VERT−412 Indicator: ALIEN_VERT_PIND Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.06
50Pct	0.40	0.06	0.45
75Pct	0.80	0.45	1
90Pct	1	0.91	1
95Pct	1	1	1
Mean	0.41	0.31	0.51
Std Dev	0.39	0.35	0.42

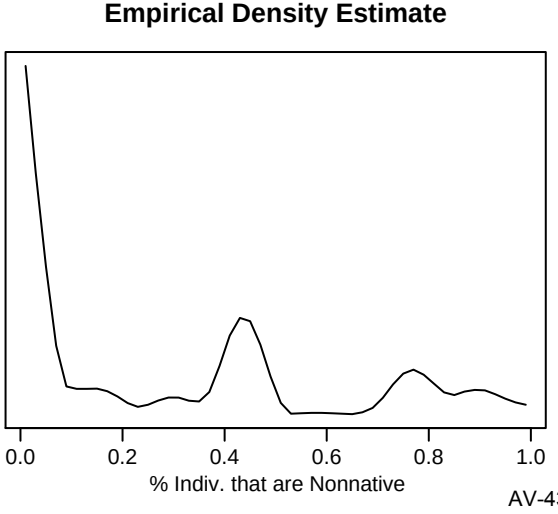
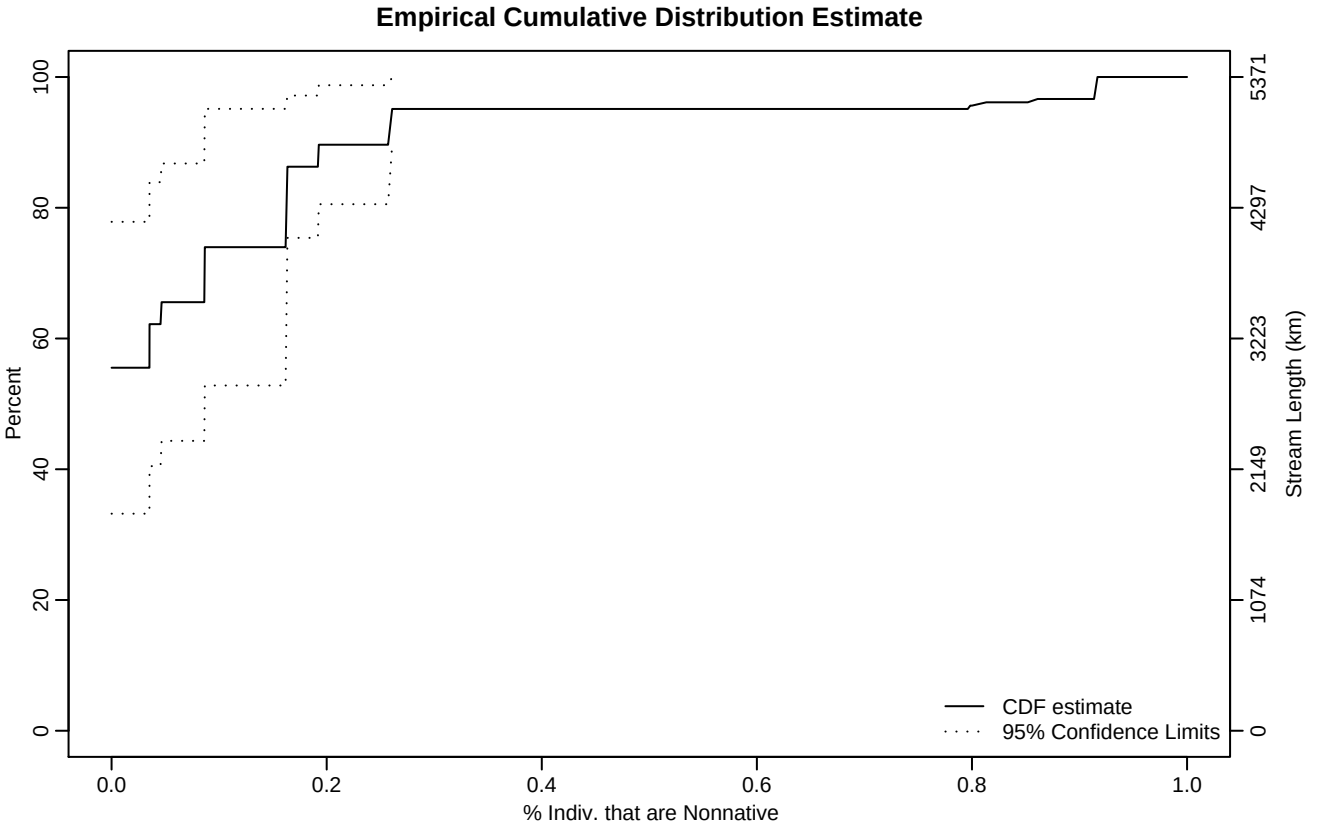


Figure VERT−413 Indicator: ALIEN_VERT_PIND Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.16
75Pct	0.16	0	0.91
90Pct	0.26	0.16	0.92
95Pct	0.26	0.16	
Mean	0.10	0.03	0.16
Std Dev	0.17	0.10	0.23

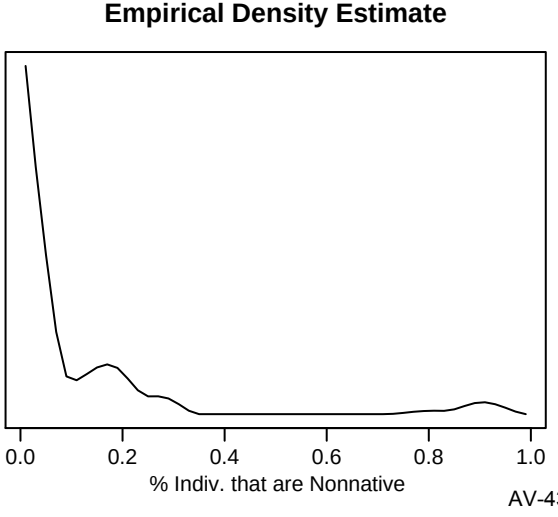
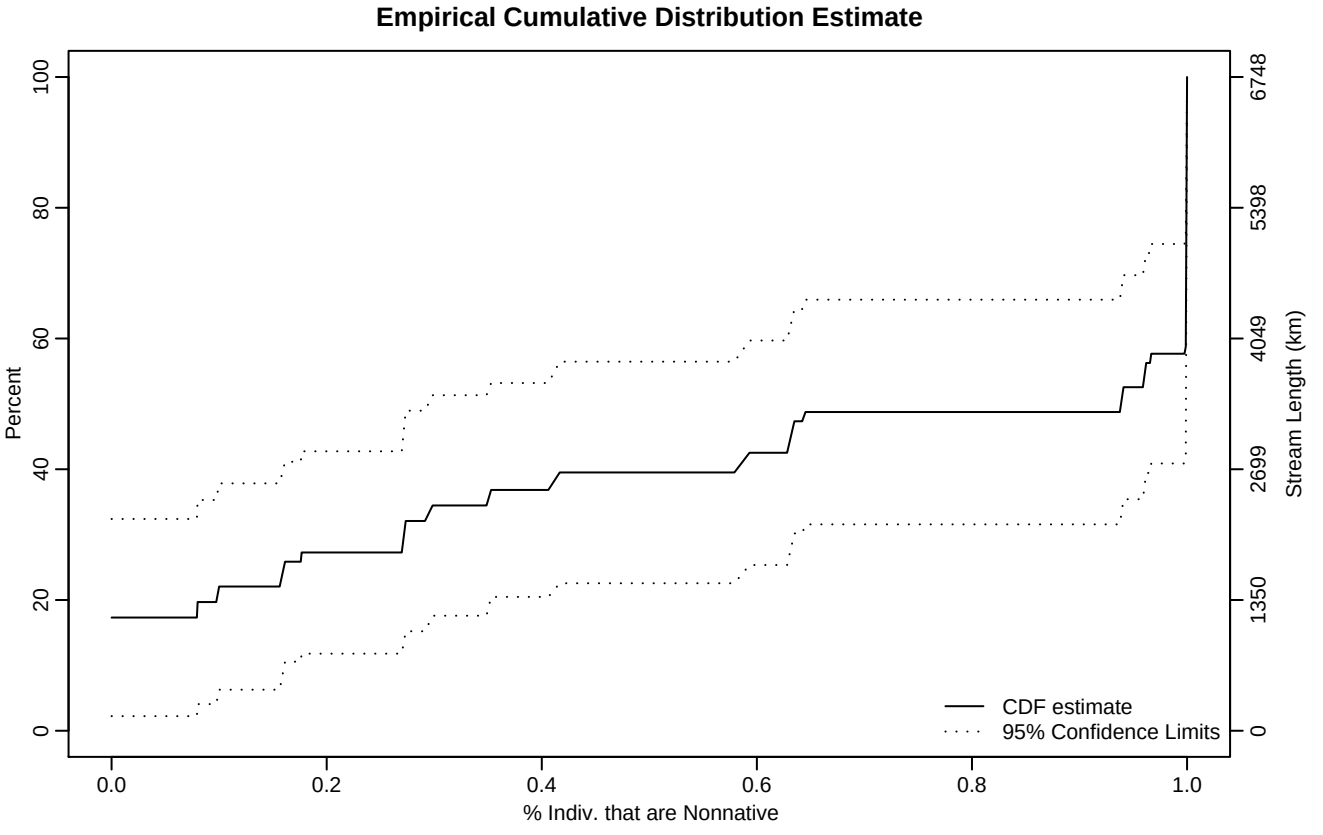
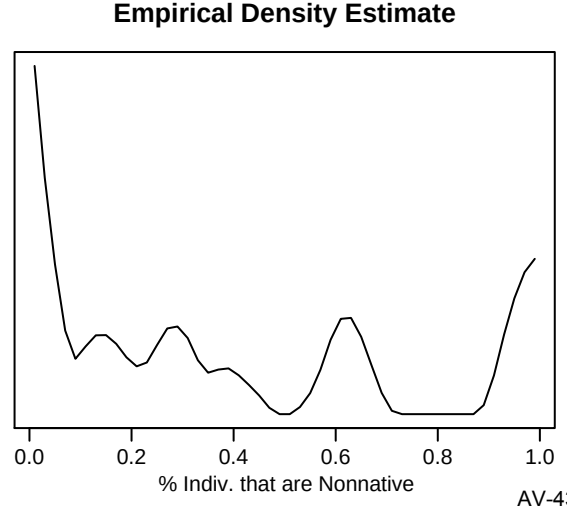


Figure VERT−414 Indicator: ALIEN_VERT_PIND Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.08
10Pct	0	0	0.16
25Pct	0.16	0	0.58
50Pct	0.94	0.29	1
75Pct	1	1	1
90Pct	1	1	1
95Pct	1	1	1
Mean	0.62	0.47	0.77
Std Dev	0.39	0.33	0.45



Water Chemistry

Water chemistry is a major factor controlling the distribution and condition of stream biota across the western United States. Measurements of streamwater chemistry were made at all EMAP-West sample sites. In our assessments, the water chemistry data have three major uses,

- Status estimates for chemical criteria values
    - Acid-base status (pH and acid neutralizing capacity)
    - Trophic condition (nutrient enrichment)
    - Metals (toxicity)
    - Water Clarity
- Indicators of chemical stress to stream biota
- Classification of streamwater chemistry type.

Field Methods and Laboratory Analyses

A 4 liter cubitainer and two 60 milliliter syringes of stream water were collected in the middle of the channel at each site (Peck et al. 2005a, Peck et al. 2005b). The syringes were sealed with a Luer-lock valve to prevent gas exchange. All samples were placed in a cooler on ice for overnight transport to the analytical laboratory. Upon receipt at the laboratory, the syringe samples were analyzed for pH and dissolved inorganic carbon (DIC), and the cubitainer samples were split into aliquots and preserved (filtration and/or acidification) — usually within 48 to 72 hours of collection. Streamwater from the cubitainers is used to measure the major cations and anions, nutrients, turbidity and color. The syringe samples are analyzed for pH, and dissolved inorganic carbon (DIC). Syringes are used to seal off the samples from the atmosphere because the pH and DIC concentrations will change if the streamwater equilibrates with atmospheric CO_2

Detailed information on the analytical and sample processing procedures can be found in EPA's acid deposition lab methods manual (U.S. Environmental Protection Agency 1987). In brief, base cations, selenium (Se), and zinc (Zn) concentrations were determined by atomic absorption spectrophotometry, sulfate (SO_4^{2-}), nitrate (NO_3^-,), and chloride (Cl^-) concentrations by ion chromatography, dissolved organic carbon (DOC) concentrations by persulfate oxidation and a carbon analyzer, turbidity by nephelometer, dissolved silicon (SiO2) and ammonium (NH_4^+) concentrations by colorimetry, and total nitrogen (N) and phosphorus (P) concentrations by persulfate oxidation and colorimetry.

Quality Assurance

Based on multiple measurements of audit samples, analytical precision was typically less than 5% (coefficient of variation) or 5 µeq/L (standard deviation) for all analytes. In all of the results presented here, values below the detection limit are presented as one-half the detection limit (rather than as zero).

In addition, the EMAP lab has participated in 11 cross-laboratory audit studies conducted by the National Water Research Institute (Environment Canada). Each study consists of 20 samples for each analyte, except total phosphorus (10 samples), and each sample has a different "target" value (the mean value of all labs participating in that study). A summary of overall laboratory performance based on the these studies is as follows: for analytes other than total phosphorus, with two sets of ratings per study (one for major ions, one for soft waters), the lab received 15 "Good" ratings (no flags), 6 "Satisfactory" ratings, and 1 "moderate" rating. This last rating was responsible for the lab identifying and rectifying a problem with the atomic absorption spectrophotometer used for cations analysis—all samples were re-run after the problem was fixed. For total phosphorus samples, the lab had 5 "Good" ratings (no flags), 4 "Satisfactory" ratings (1-2 flags), and 2 "Moderate" ratings (3+ flags).

References

Peck, D. V., D. K. Averill, A. T. Herlihy, R. M. Hughes, P. R. Kaufmann, D. J. Klemm, J. M. Lazorchak, F. H. McCormick, S. A. Peterson, M. R. Cappaert, T. Magee, and P. A. Monaco. 2005a. Environmental Monitoring and Assessment Program - Surface Waters Western Pilot Study: Field Operations Manual for Non-Wadeable Rivers and Streams. EPA 600/R-05/xxx, U.S. Environmental Protection Agency, Washington, DC.

Peck, D. V., A. T. Herlihy, B. H. Hill, R. M. Hughes, P. R. Kaufmann, D. J. Klemm, J. M. Lazorchak, F. H. McCormick, S. A. Peterson, P. L. Ringold, T. Magee, and M. R. Cappaert. 2005b. Environmental Monitoring and Assessment Program - Surface Waters Western Pilot Study: Field Operations Manual for Wadeable Streams. EPA 600/R-05/xxx, U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC.

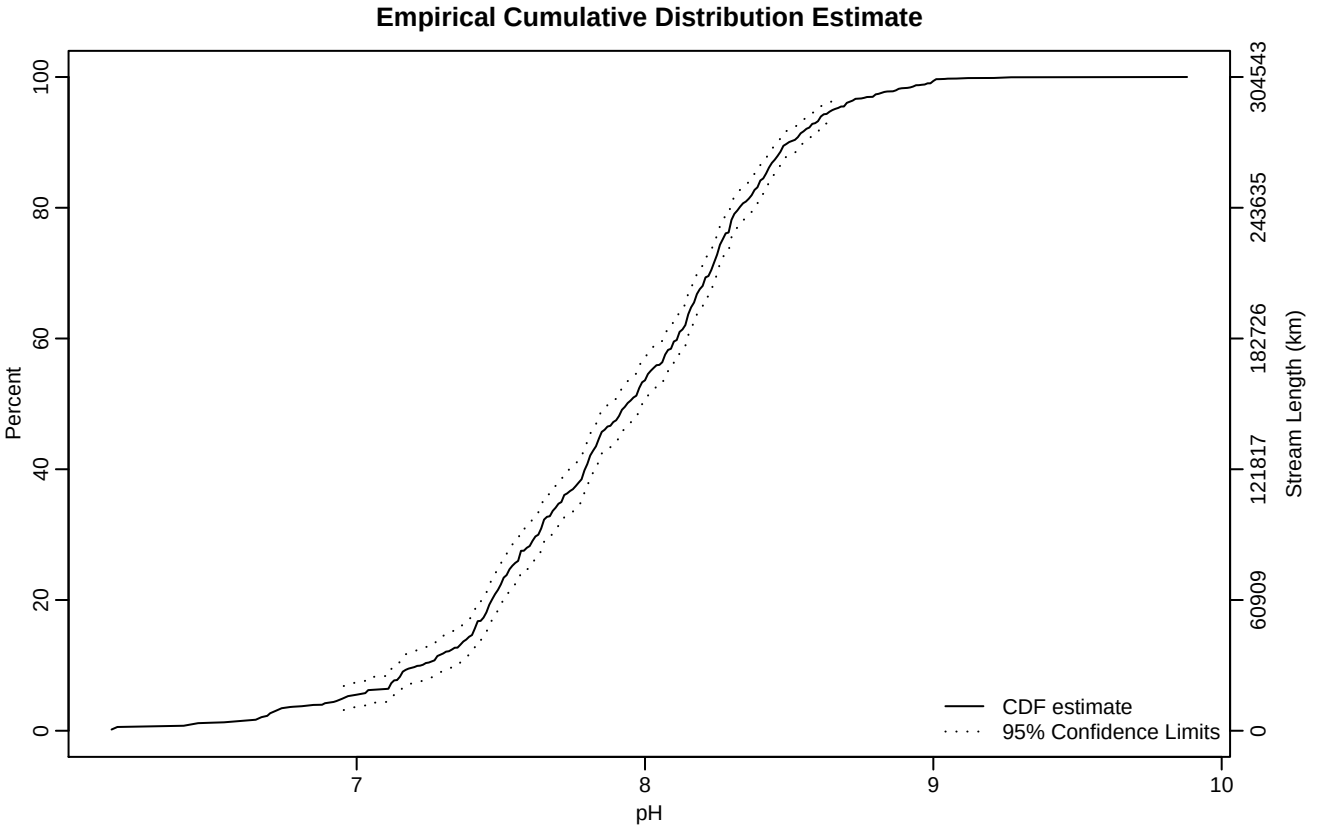
U.S. Environmental Protection Agency. 1987. Handbook of Methods for Acid Deposition Studies: Laboratory Analysis for Surface Water Chemistry. EPA 600/4-87/026, U.S. Environmental Protection Agency, Washington, D.C.

Presentation of Results

We present in this report empirical cumulative distribution (CDF) estimates for 20 indicators of water chemical condition at three geographic scales: (1) all of the EMAP-West study area; (2) three climatic/topographic regions; and (3) ten aggregated ecological regions. These chemical variables are organized in to five major categories. The following table lists the variables, their units, and the somewhat cryptic codes that are used in the subsequent CDFs.

Class of Indicator	**Variable (units)**	**Code used in CDFs**
Acid-Base Status	pH	pH
	Acid Neutralizing Capacity (µeq/L)	ANC_ueq.L
Water Body Character	Specific Conductivity (µS/cm)	Conductivity_uS.cm
	Dissolved Organic Carbon (mg/L)	DOC_mg.L
	Color (PCU)	Color_PCU
	Turbidity (NTU)	Turbidity_NTU
	Total Suspended Solids (mg/L)	TSS_mg.L
	Silicon (mg/L)	SiO2_mg.L
Major Anions and Cations	Sulfate (µeq/L)	SO4_ueq.L
	Chloride (µeq/L)	Cl_ueq.L
	Calcium (µeq/L)	Ca_ueq.L
	Magnesium (µeq/L)	Mg_ueq.L
	Sodium (µeq/L)	Na_ueq.L
	Potassium (µeq/L)	K_ueq.L
Nutrients	Total Phosphorus (µg/L)	Total.P_ug.L
	Total Nitrogen (µg/L)	Total.P_ug.L
	Nitrate (µeq/L)	NO3_ueq.L
	Ammonium (µeq/L)	HN4_ueq.L
Trace Metals	Selenium (µg/L)	Se_ug.L
	Zinc (µg/L)	Zn_ug.L

Figure CHEM−1 Indicator: pH Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.96	6.72	7.12
10Pct	7.22	7.13	7.33
25Pct	7.54	7.49	7.60
50Pct	7.94	7.87	8
75Pct	8.27	8.24	8.30
90Pct	8.50	8.46	8.56
95Pct	8.65	8.61	8.72
Mean	7.90	7.87	7.94
Std Dev	0.46	0.43	0.48

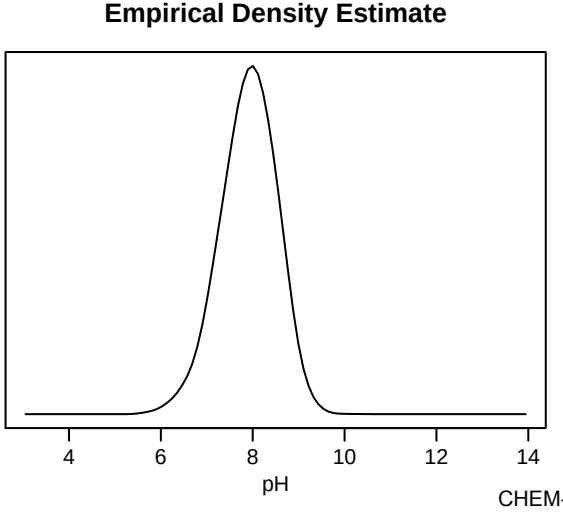
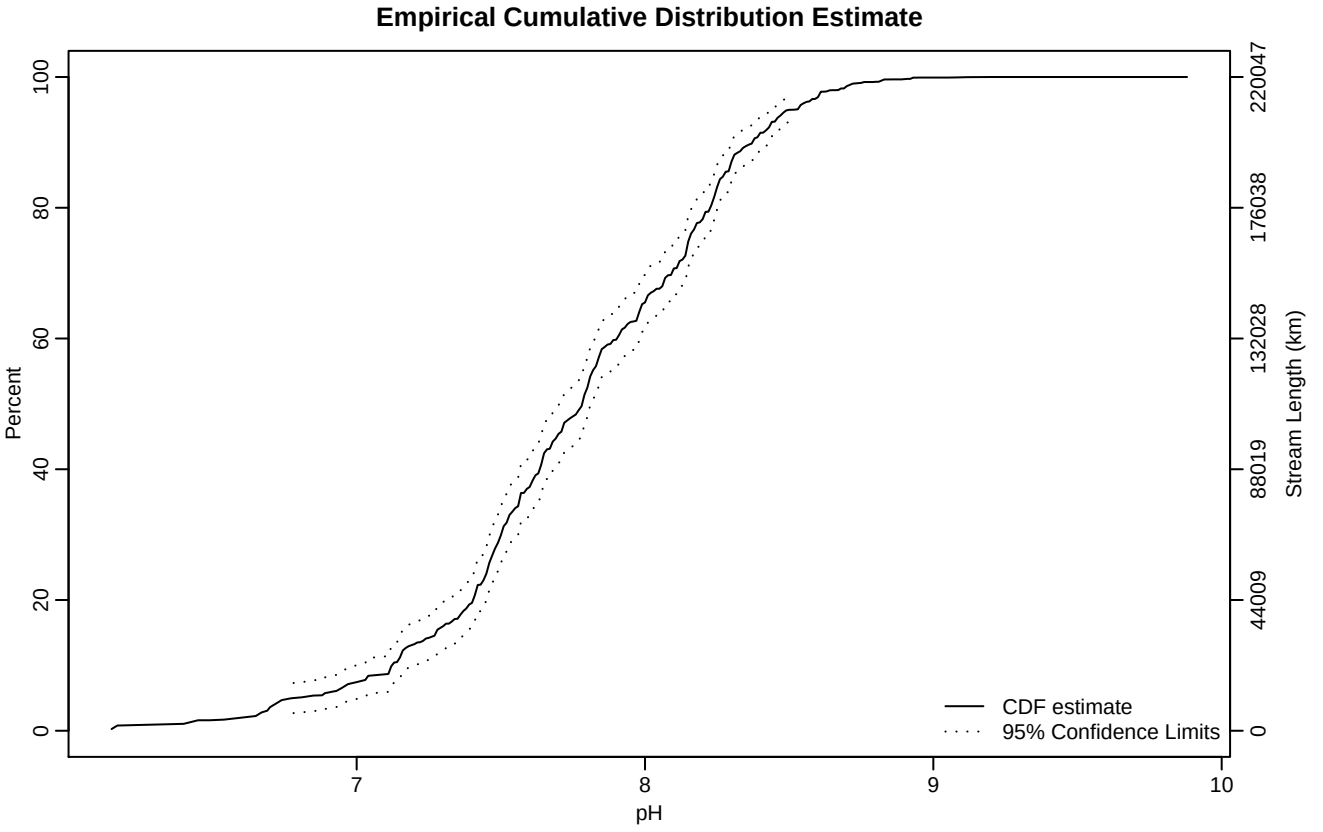


Figure CHEM−2 Indicator: pH Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.78	6.66	6.99
10Pct	7.12	6.96	7.19
25Pct	7.46	7.41	7.49
50Pct	7.78	7.70	7.81
75Pct	8.15	8.11	8.21
90Pct	8.37	8.30	8.44
95Pct	8.52	8.44	8.60
Mean	7.76	7.72	7.81
Std Dev	0.46	0.42	0.49

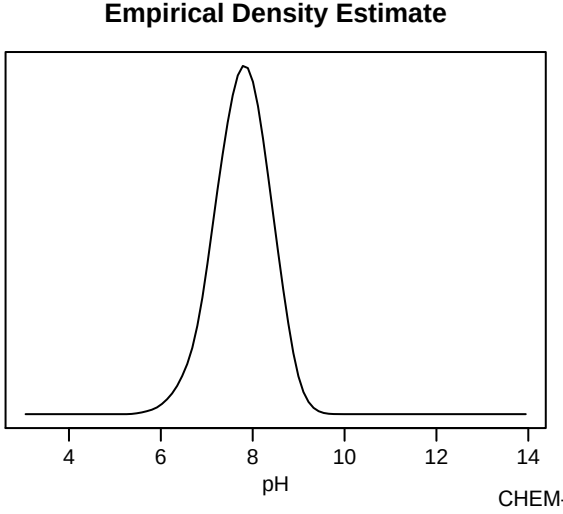
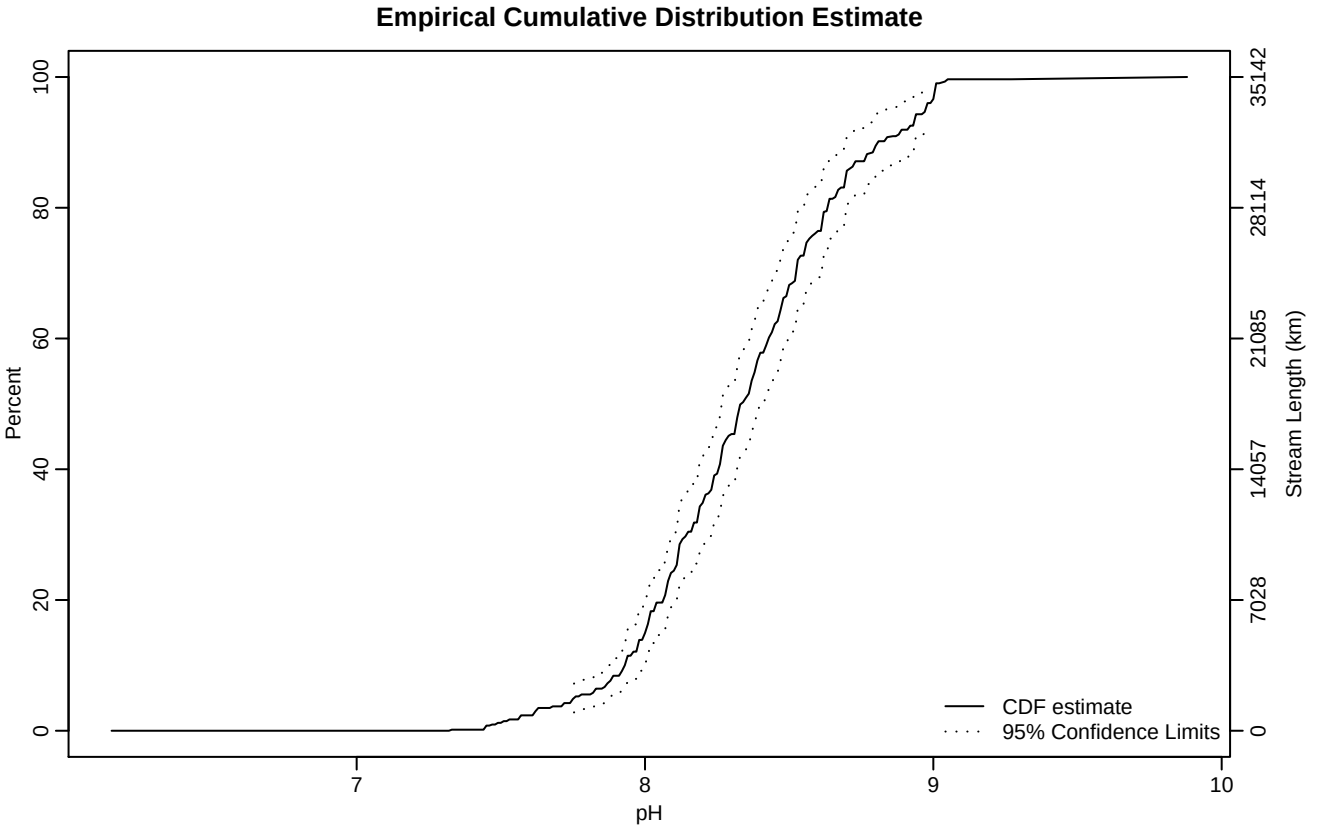


Figure CHEM−3 Indicator: pH Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.75	7.62	7.87
10Pct	7.93	7.86	7.98
25Pct	8.11	8.04	8.16
50Pct	8.33	8.26	8.41
75Pct	8.57	8.50	8.67
90Pct	8.81	8.70	8.97
95Pct	8.97	8.89	9.01
Mean	8.35	8.30	8.40
Std Dev	0.33	0.30	0.36

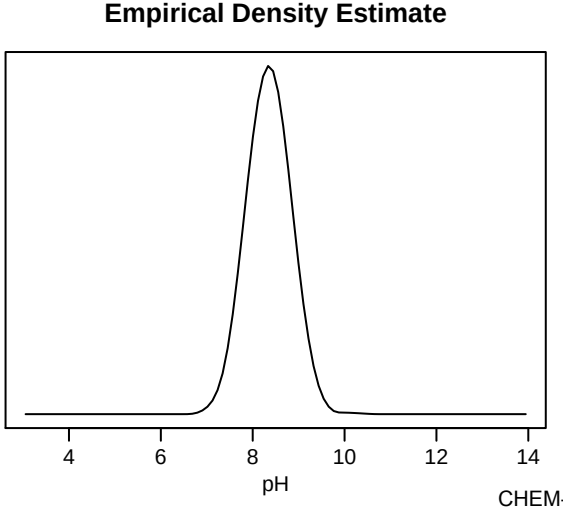
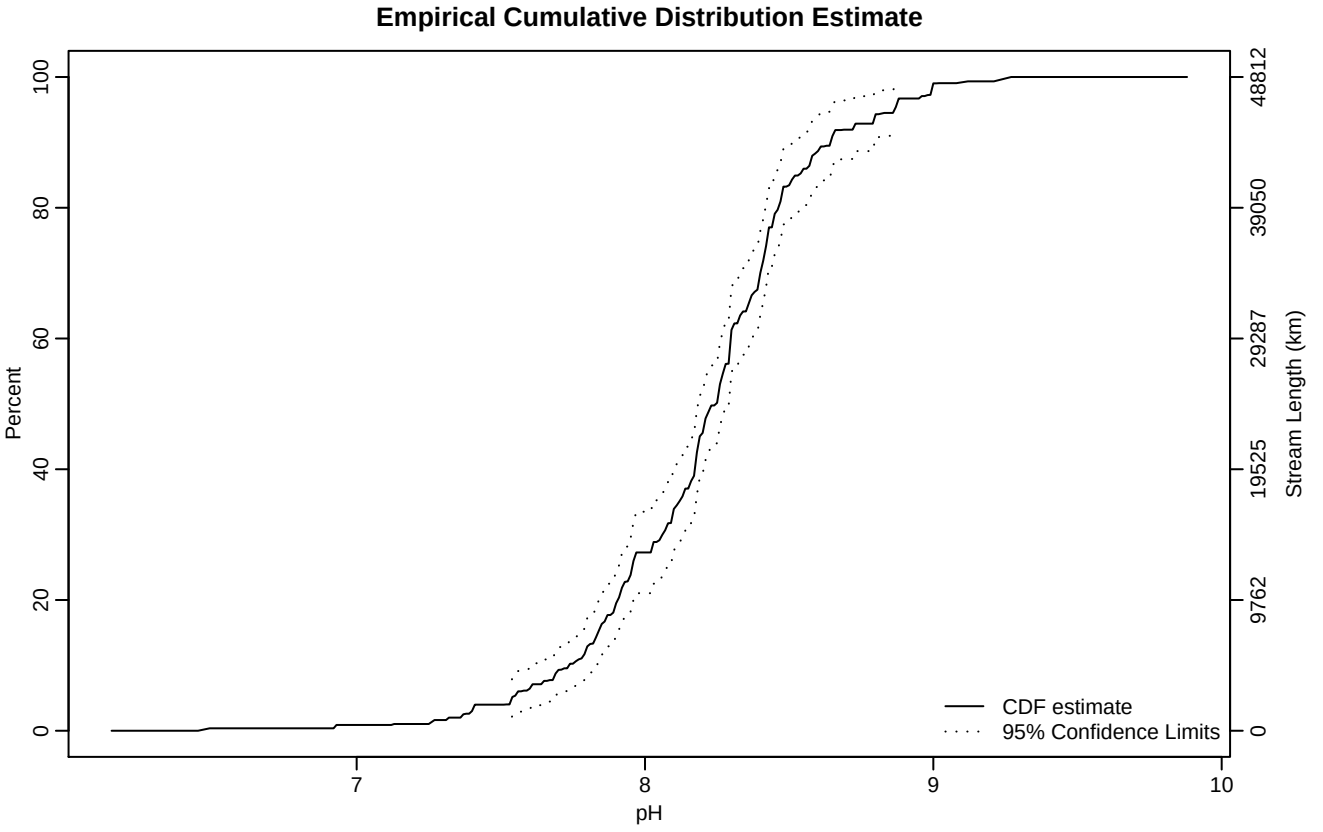


Figure CHEM−4 Indicator: pH Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.54	7.37	7.65
10Pct	7.74	7.60	7.82
25Pct	7.96	7.90	8.07
50Pct	8.25	8.18	8.29
75Pct	8.42	8.39	8.47
90Pct	8.64	8.52	8.87
95Pct	8.87	8.65	9
Mean	8.21	8.16	8.26
Std Dev	0.34	0.30	0.37

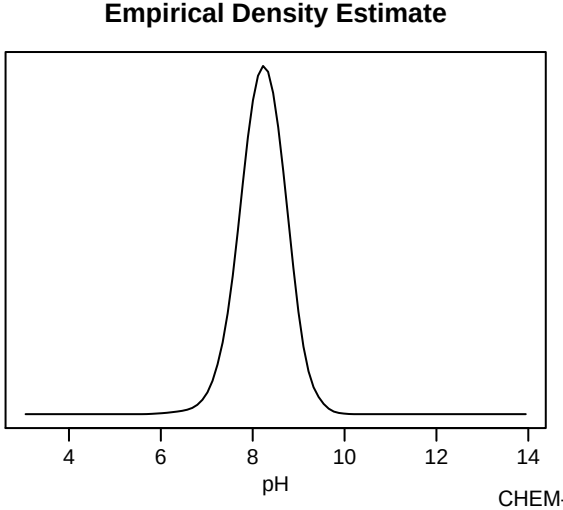
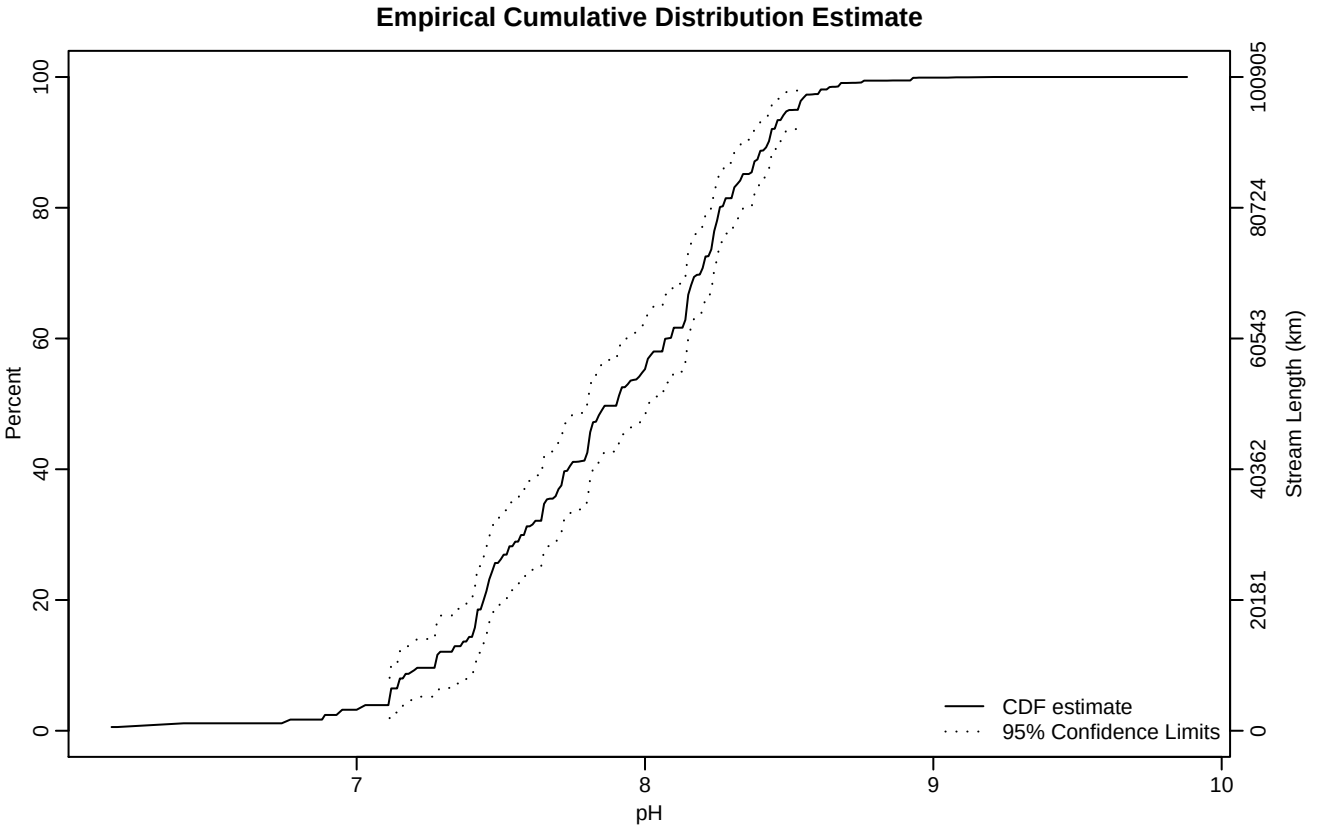


Figure CHEM−5 Indicator: pH Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.11	6.89	7.15
10Pct	7.27	7.12	7.40
25Pct	7.47	7.42	7.61
50Pct	7.90	7.80	8.01
75Pct	8.23	8.16	8.28
90Pct	8.43	8.37	8.48
95Pct	8.53	8.44	8.61
Mean	7.86	7.80	7.93
Std Dev	0.42	0.37	0.47

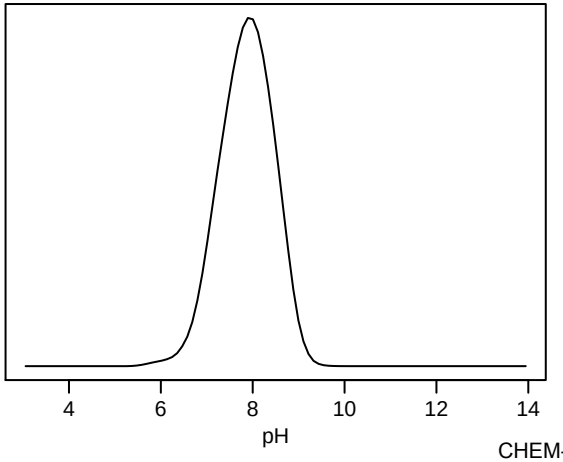
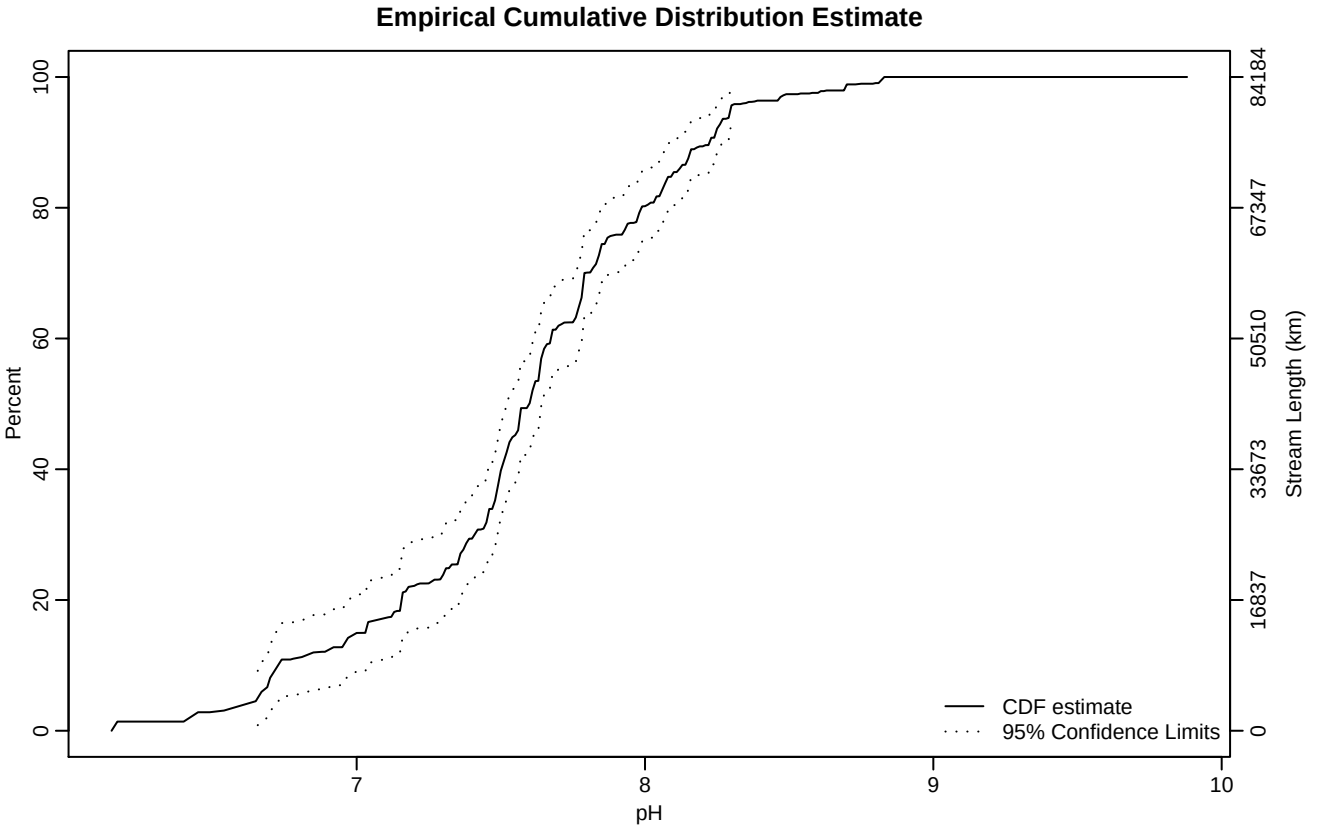


Figure CHEM−6 Indicator: pH Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.66	6.16	6.71
10Pct	6.73	6.64	7.03
25Pct	7.32	7.13	7.45
50Pct	7.60	7.52	7.64
75Pct	7.87	7.79	8.03
90Pct	8.22	8.11	8.29
95Pct	8.30	8.25	8.70
Mean	7.57	7.50	7.65
Std Dev	0.49	0.43	0.54

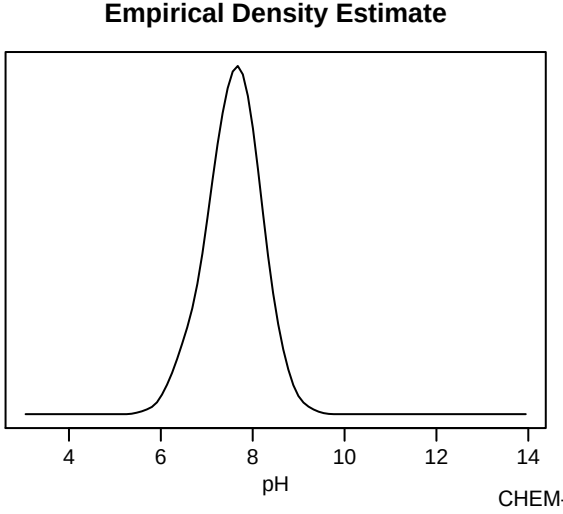
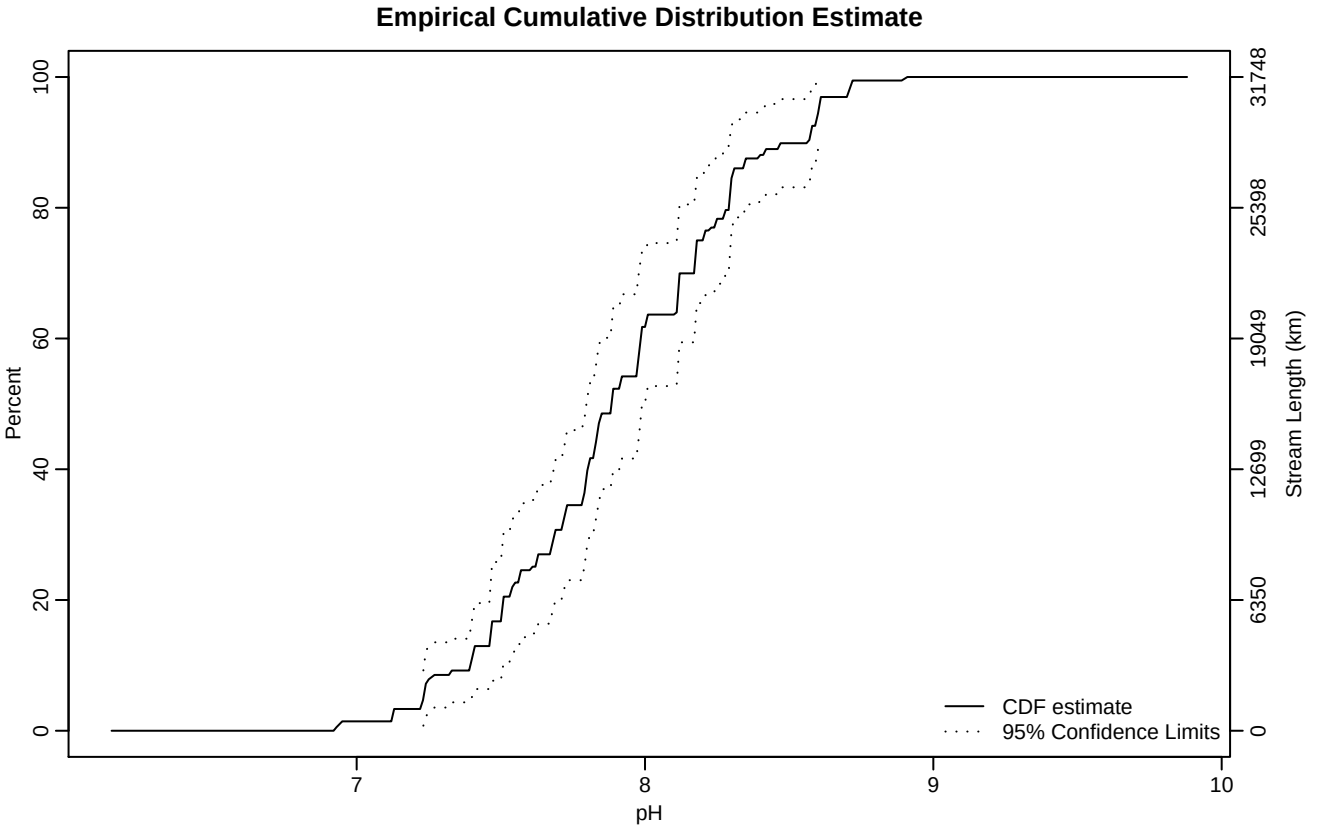


Figure CHEM−7 Indicator: pH Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.23	6.94	7.33
10Pct	7.39	7.23	7.47
25Pct	7.61	7.46	7.78
50Pct	7.88	7.80	7.99
75Pct	8.18	8.11	8.31
90Pct	8.56	8.30	8.61
95Pct	8.60	8.47	8.91
Mean	7.91	7.82	8
Std Dev	0.41	0.36	0.46

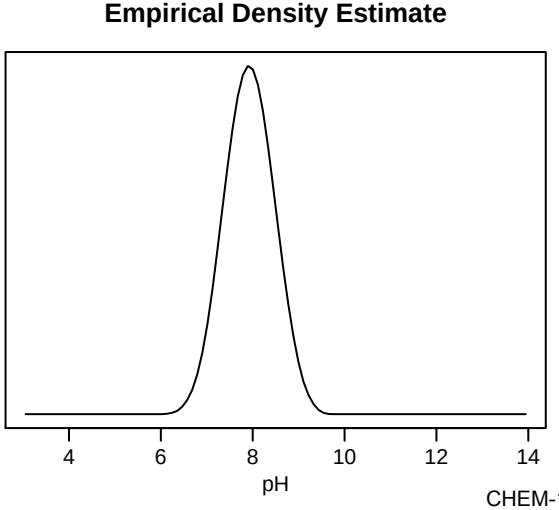
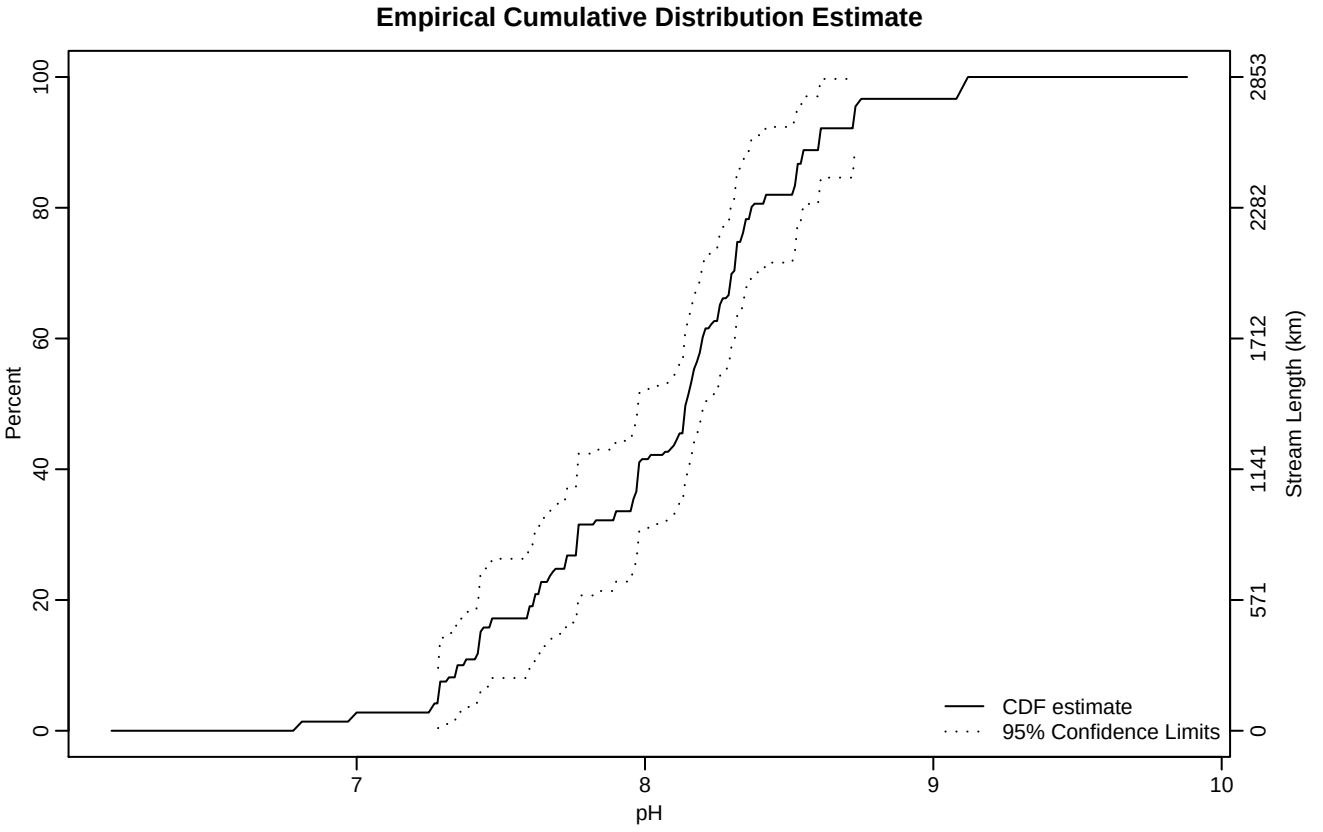


Figure CHEM−8 Indicator: pH Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.28	6.80	7.34
10Pct	7.35	7.26	7.47
25Pct	7.72	7.43	7.96
50Pct	8.14	7.97	8.21
75Pct	8.33	8.25	8.53
90Pct	8.60	8.42	9.10
95Pct	8.73	8.54	9.12
Mean	8.05	7.94	8.17
Std Dev	0.47	0.40	0.54

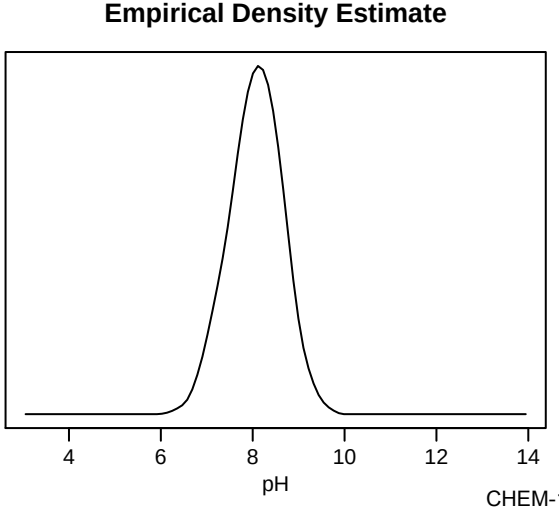
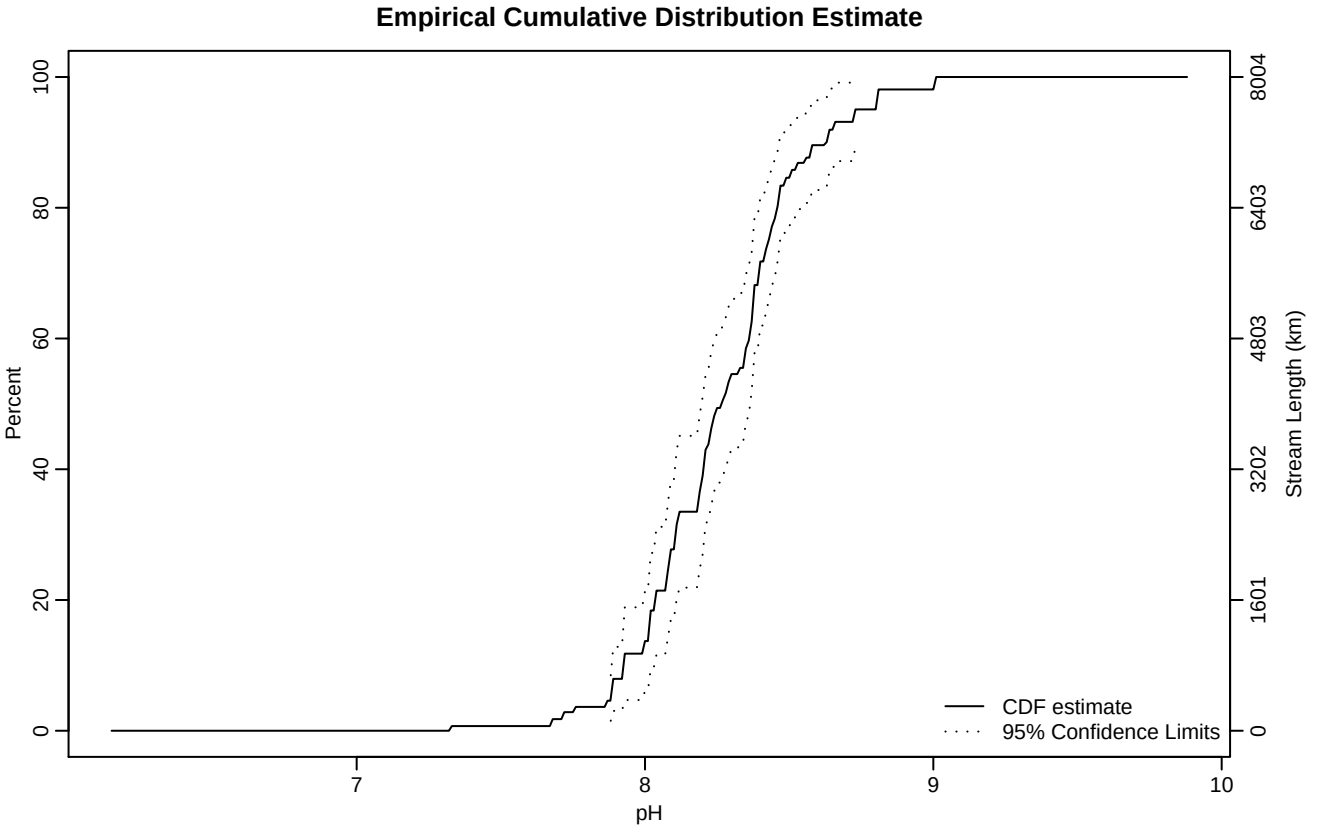


Figure CHEM−9 Indicator: pH Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.88	7.71	7.89
10Pct	7.93	7.88	8.01
25Pct	8.08	8.01	8.19
50Pct	8.27	8.20	8.37
75Pct	8.43	8.38	8.50
90Pct	8.63	8.47	8.81
95Pct	8.73	8.58	9.01
Mean	8.27	8.21	8.33
Std Dev	0.25	0.22	0.29

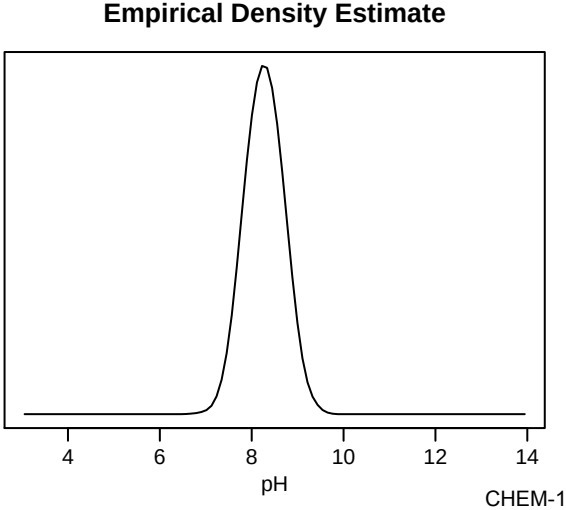
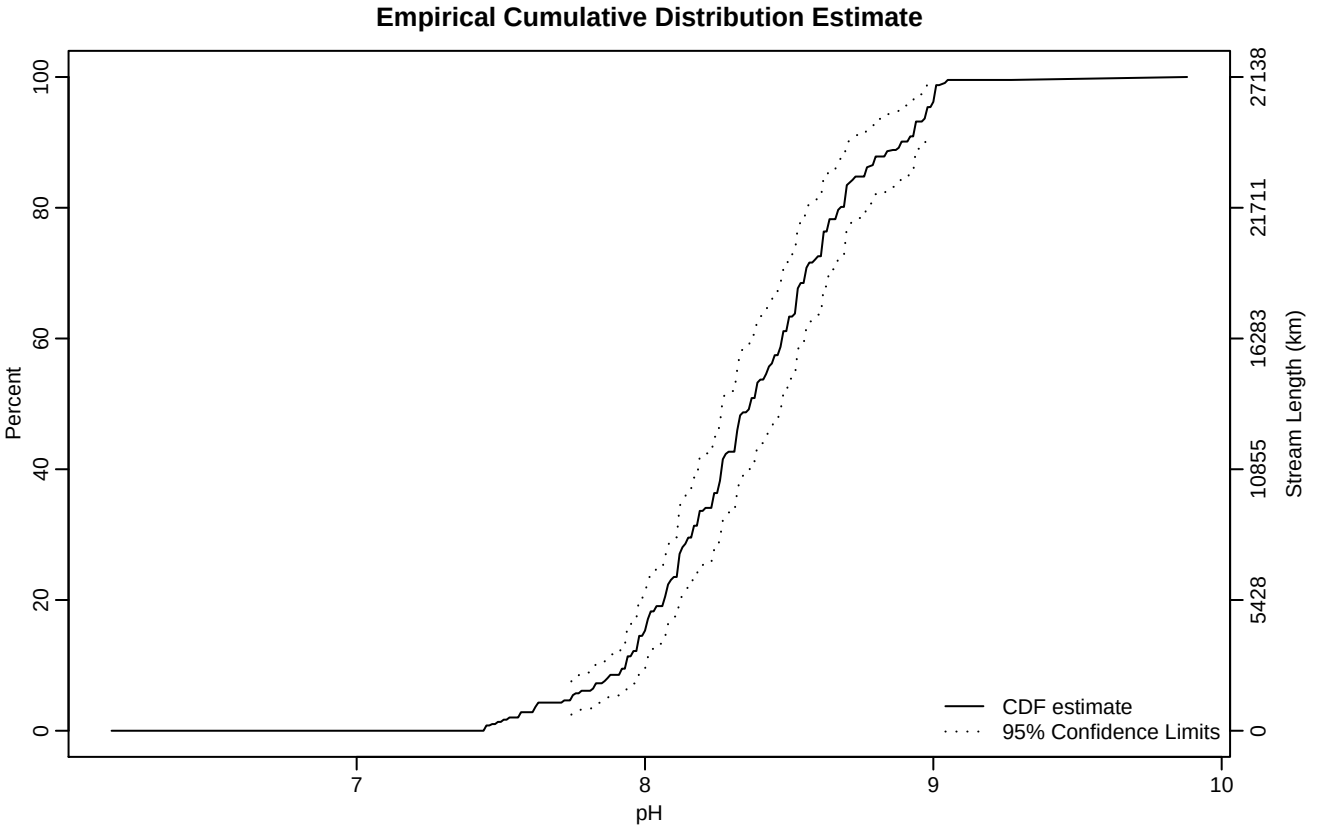


Figure CHEM−10 Indicator: pH Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.74	7.57	7.85
10Pct	7.93	7.82	7.98
25Pct	8.11	8.03	8.18
50Pct	8.36	8.27	8.47
75Pct	8.62	8.53	8.72
90Pct	8.89	8.72	8.99
95Pct	8.98	8.92	9.04
Mean	8.37	8.31	8.43
Std Dev	0.34	0.30	0.37

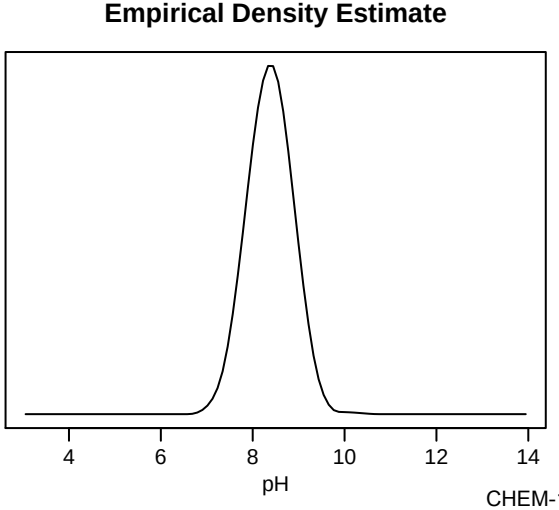
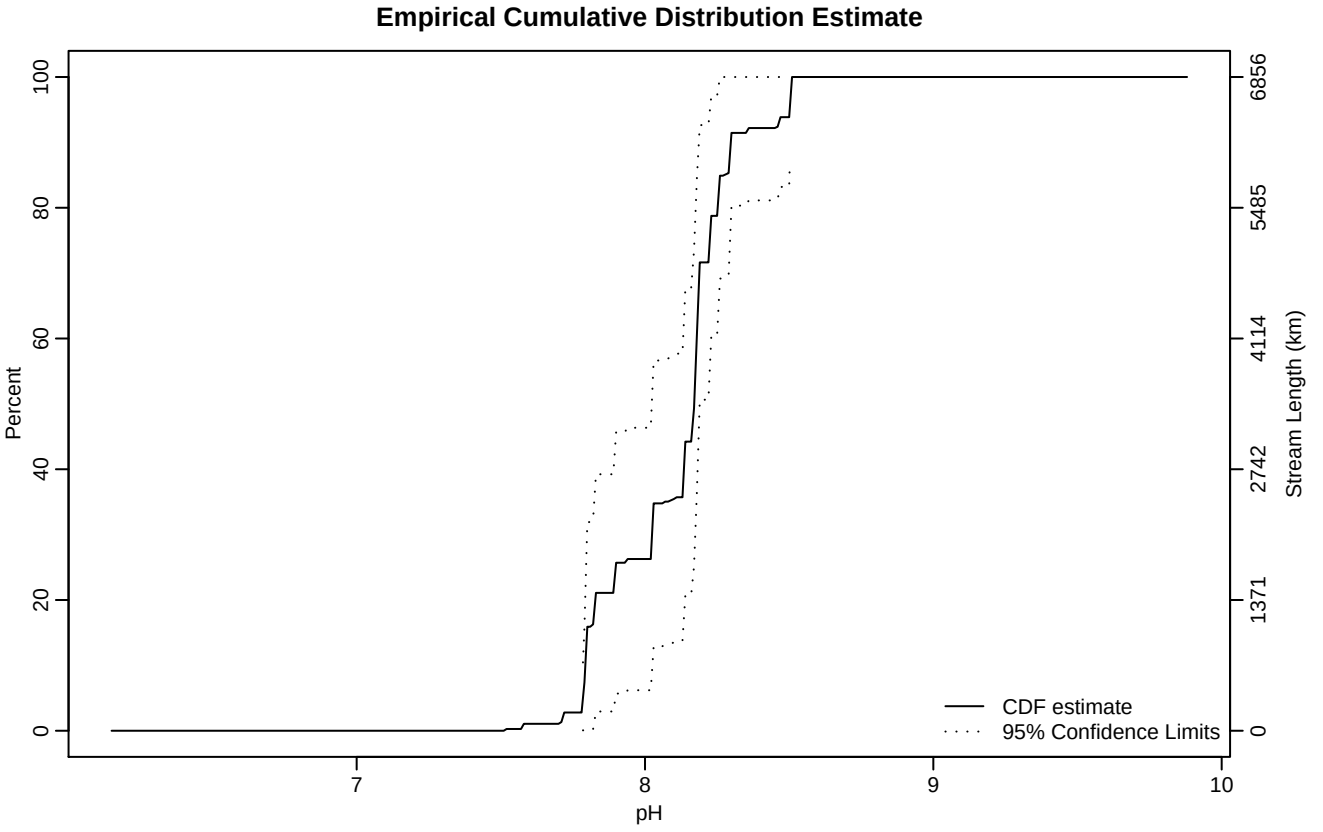


Figure CHEM−11 Indicator: pH Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.78	7.72	7.79
10Pct	7.79	7.71	7.83
25Pct	7.90	7.79	8.14
50Pct	8.17	7.93	8.22
75Pct	8.22	8.17	8.50
90Pct	8.30	8.22	8.51
95Pct	8.50	8.26	8.51
Mean	8.11	8.02	8.20
Std Dev	0.21	0.16	0.26

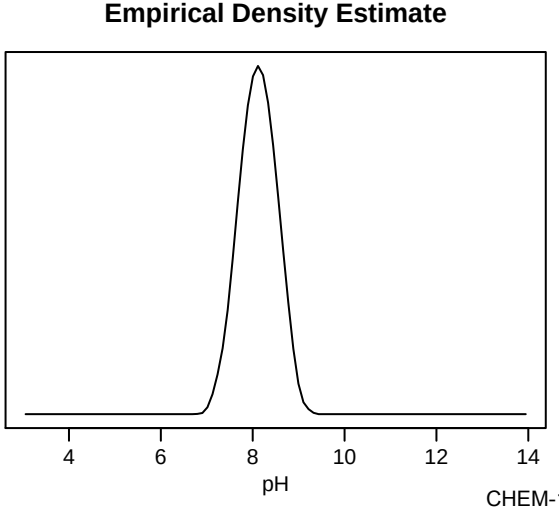
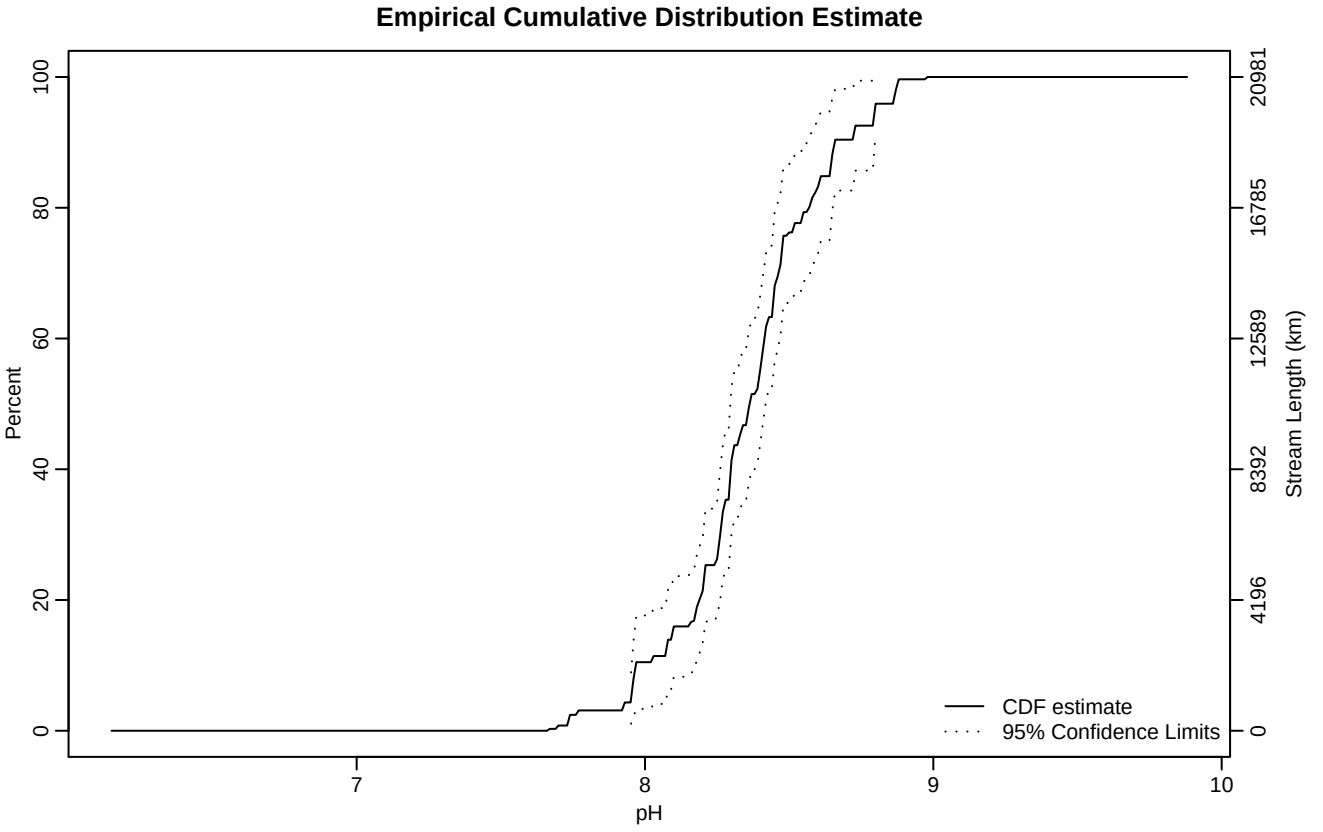


Figure CHEM−12 Indicator: pH Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.95	7.73	7.96
10Pct	7.97	7.93	8.10
25Pct	8.21	8.17	8.27
50Pct	8.36	8.30	8.42
75Pct	8.48	8.44	8.64
90Pct	8.66	8.58	8.87
95Pct	8.80	8.65	8.98
Mean	8.36	8.30	8.42
Std Dev	0.24	0.21	0.28

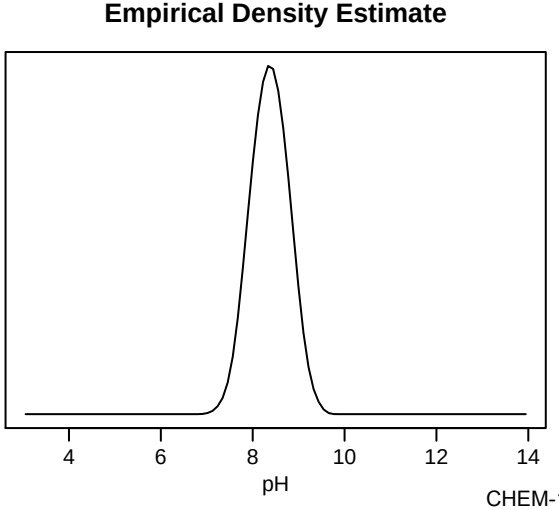
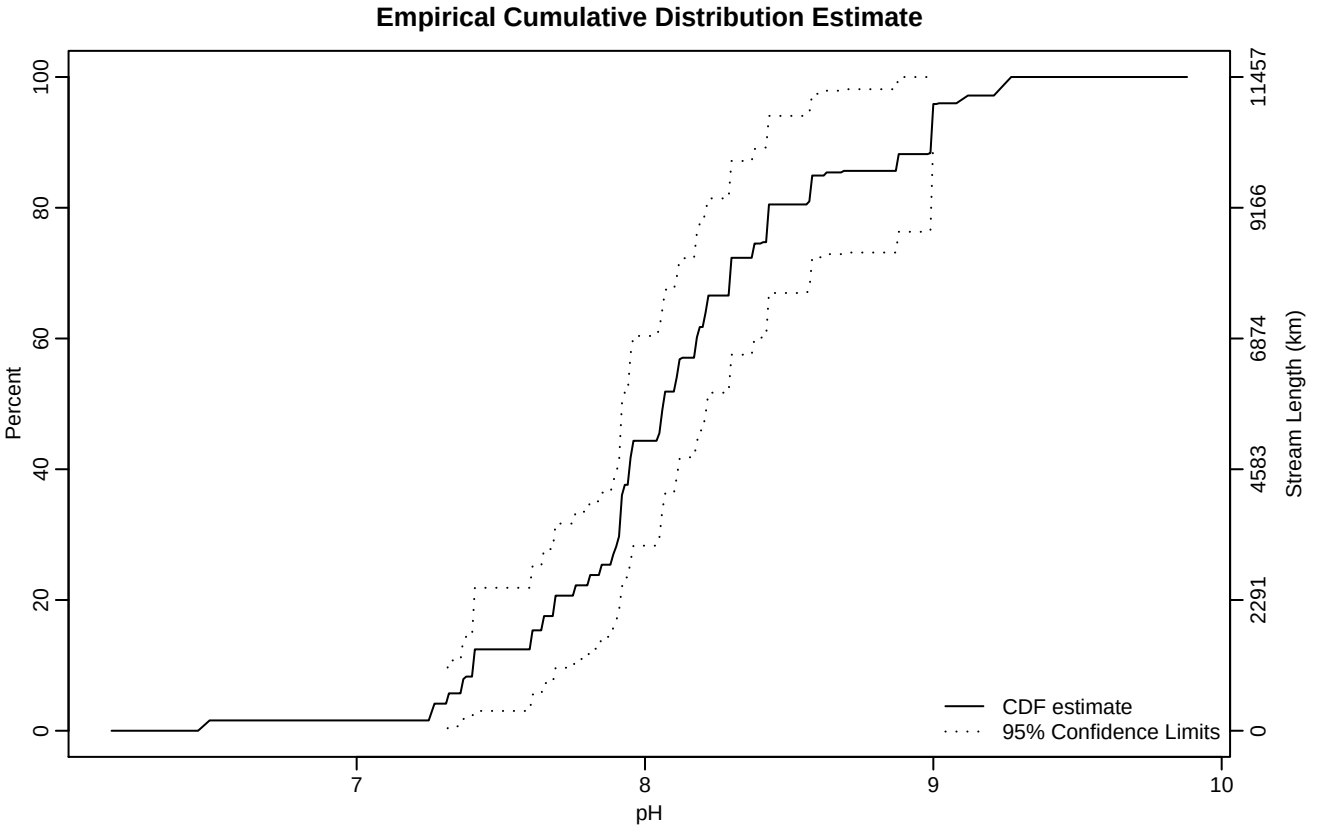


Figure CHEM−13 Indicator: pH Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.32	6.46	7.40
10Pct	7.40	7.27	7.64
25Pct	7.85	7.60	7.92
50Pct	8.06	7.92	8.22
75Pct	8.42	8.18	8.99
90Pct	8.99	8.42	9.27
95Pct	9	8.57	9.27
Mean	8.12	7.95	8.28
Std Dev	0.50	0.40	0.61

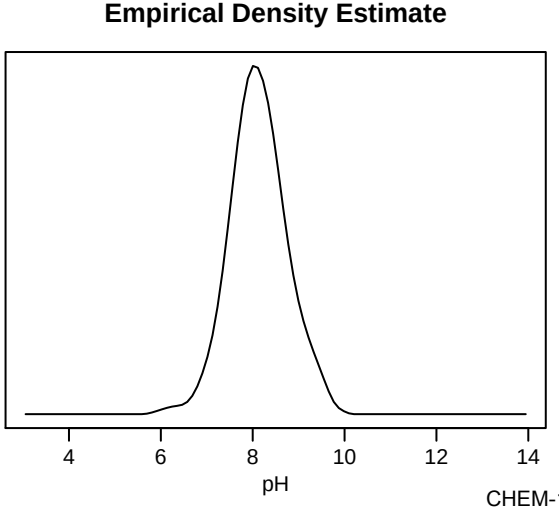
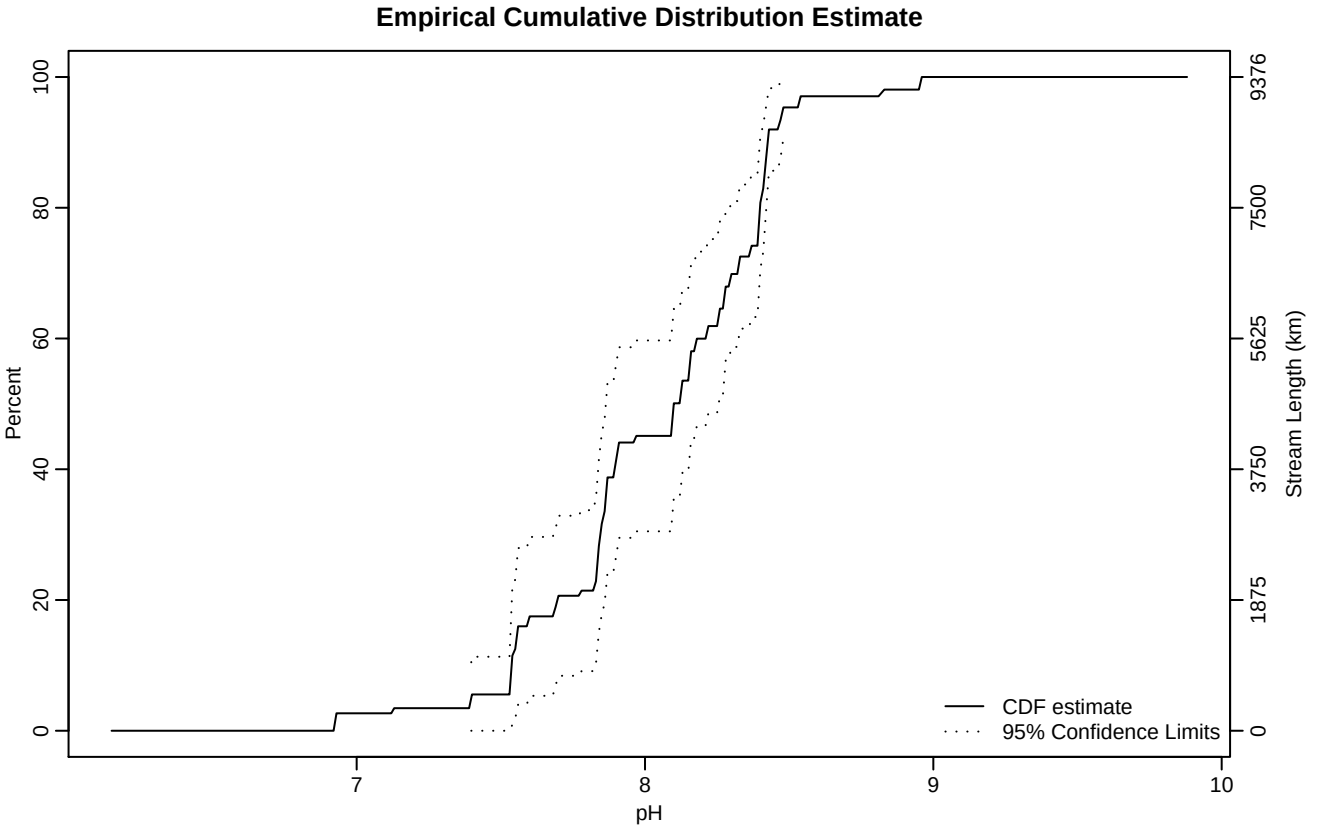


Figure CHEM−14 Indicator: pH Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.40	6.92	7.54
10Pct	7.54	7.39	7.56
25Pct	7.83	7.55	7.87
50Pct	8.10	7.86	8.26
75Pct	8.39	8.26	8.42
90Pct	8.43	8.41	8.83
95Pct	8.48	8.42	8.96
Mean	8.04	7.94	8.15
Std Dev	0.39	0.31	0.47

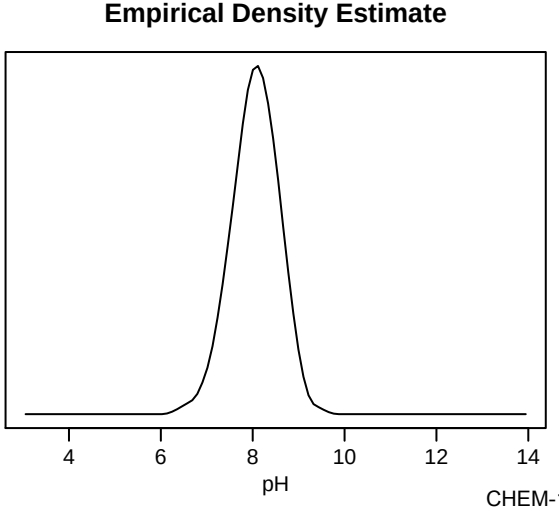
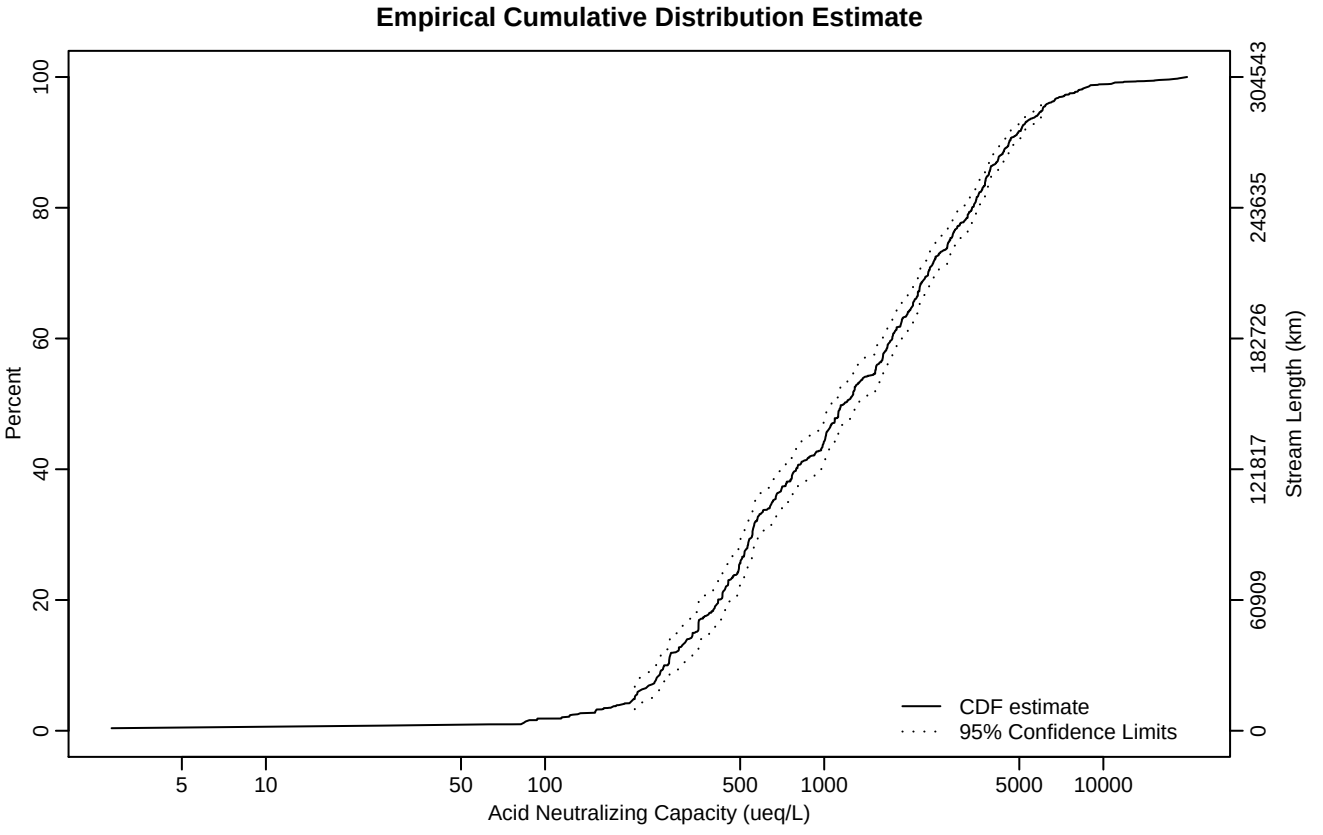


Figure CHEM−15 Indicator: ANC Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	209.61	162.03	231.58
10Pct	267.07	248.15	301.53
25Pct	495.16	441.03	533.51
50Pct	1178.66	1061.37	1324.08
75Pct	2811	2530.65	3061.58
90Pct	4595.73	4388	4941.65
95Pct	6058.20	5802.16	6295.18
Mean	2012.11	1912.26	2111.96
Std Dev	1718.68	1540.58	1896.78

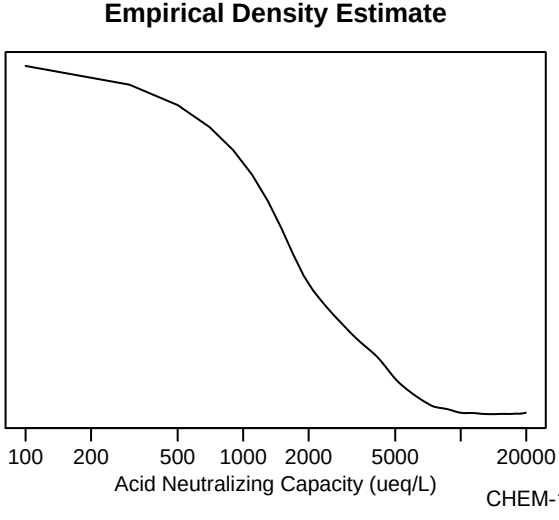
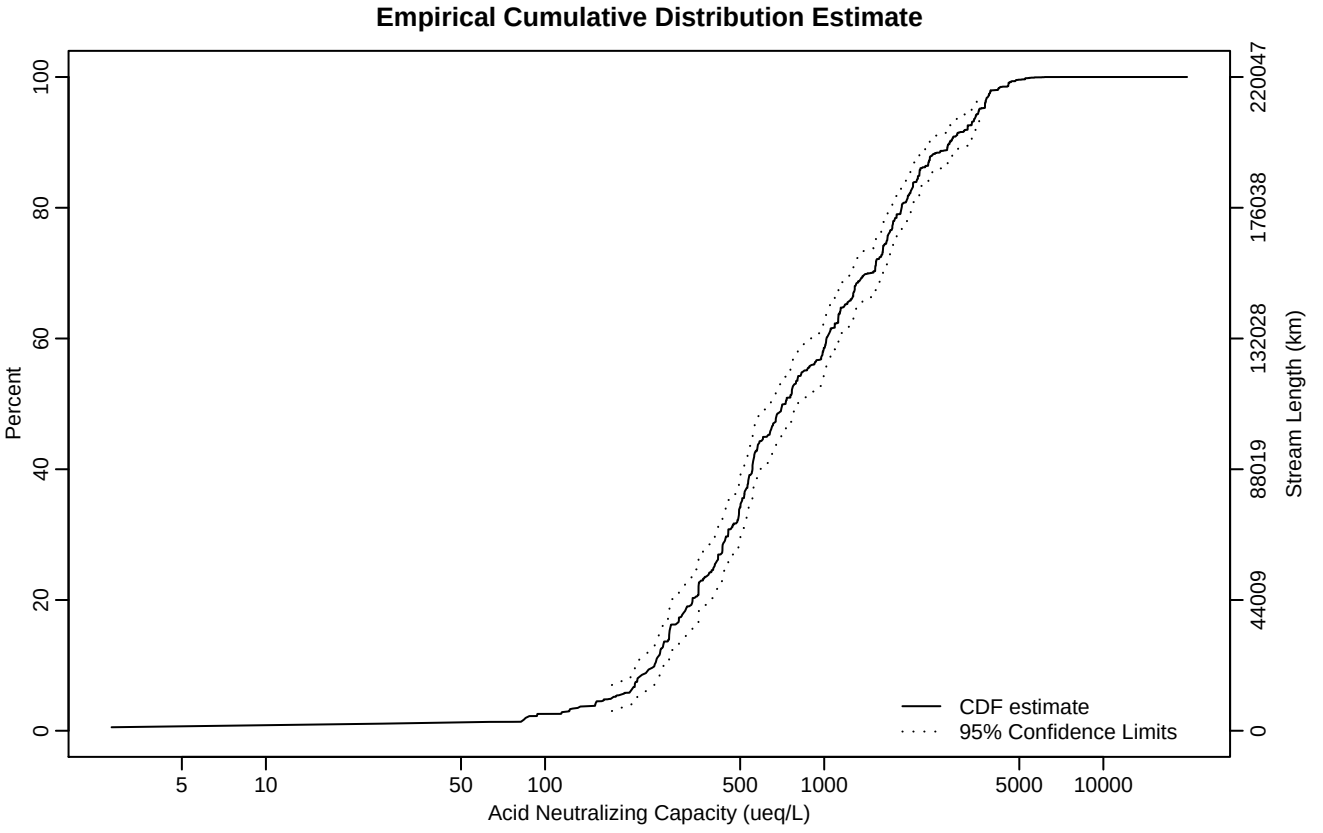


Figure CHEM−16 Indicator: ANC Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	173.55	122.27	209.65
10Pct	246.63	209.78	264.66
25Pct	402.38	352.43	442.34
50Pct	727.09	639.95	823.91
75Pct	1680.91	1531.19	1816.69
90Pct	2811.49	2388.96	3266.81
95Pct	3592.08	3436.19	3816.51
Mean	1168.92	1088.14	1249.69
Std Dev	939.22	856.61	1021.83

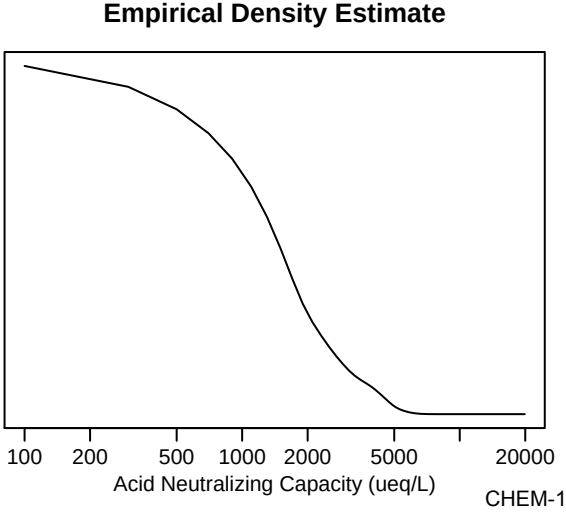
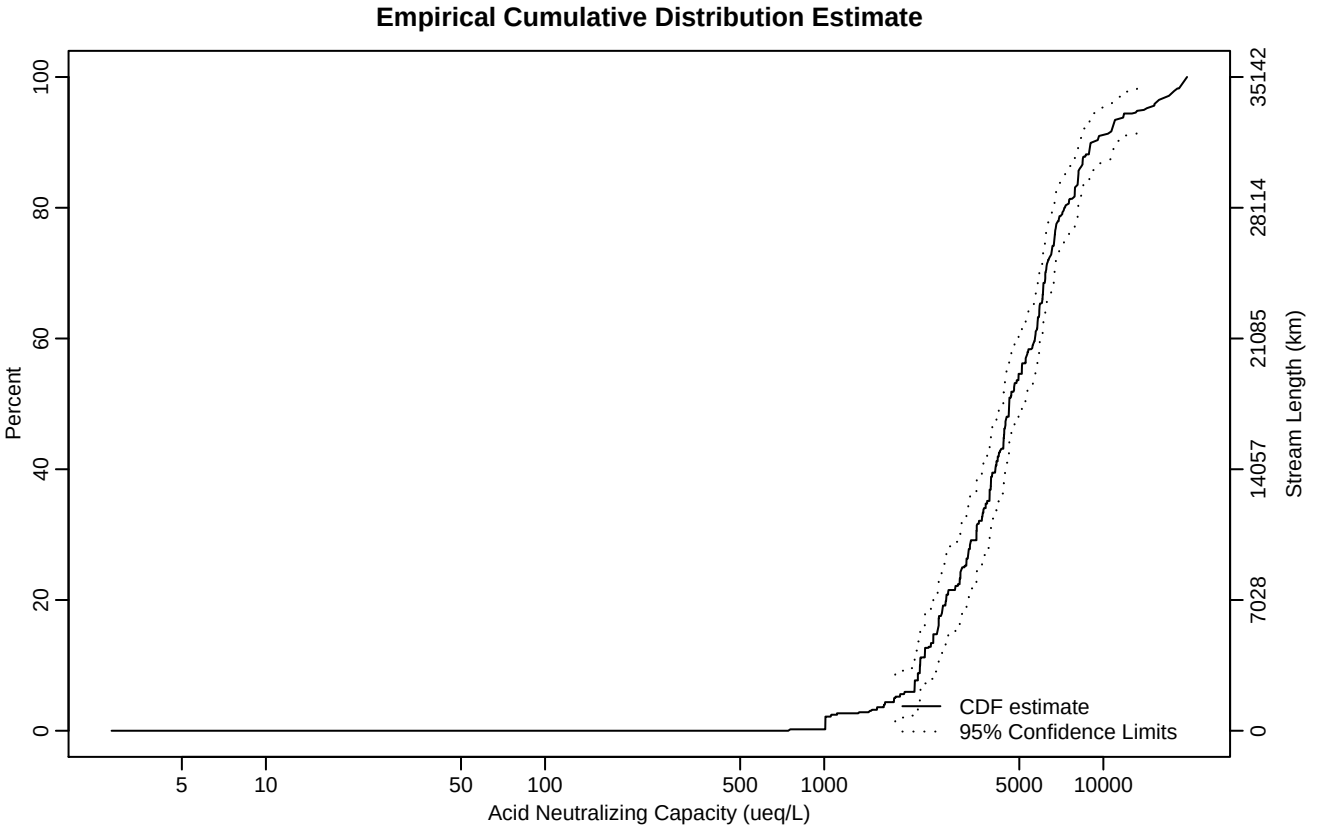


Figure CHEM−17 Indicator: ANC Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1796.10	1009.75	2165.46
10Pct	2206.65	1800.11	2534.50
25Pct	3179.65	2640.89	3584.31
50Pct	4599.68	4302.75	5270.55
75Pct	6670.82	6193.94	7522.31
90Pct	9103.79	8149.94	11853.64
95Pct	14020.36	10642.76	18745.92
Mean	5595.52	5073.68	6117.35
Std Dev	3382.32	2712.61	4052.03

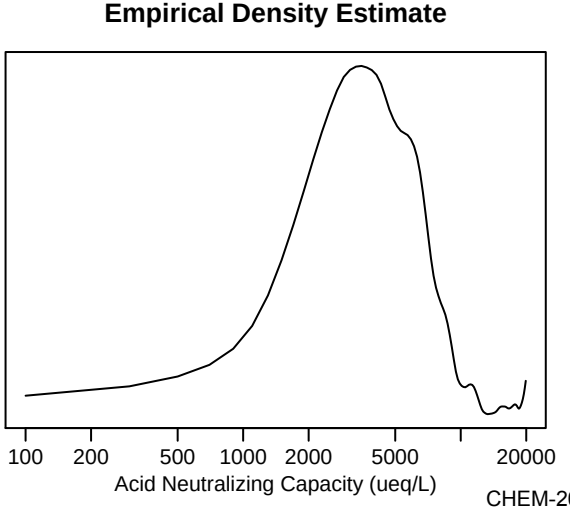
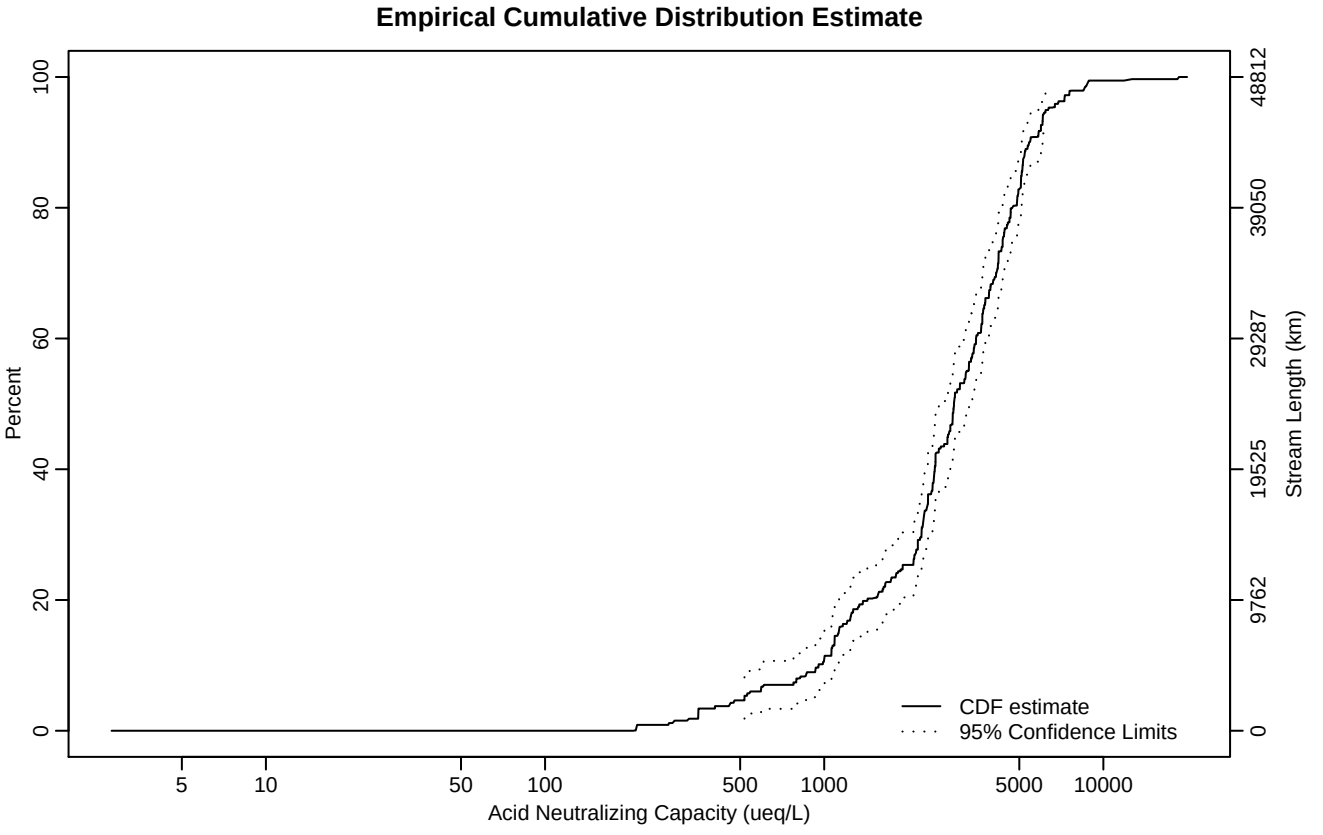


Figure CHEM−18 Indicator: ANC Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	518.10	353.62	820.53
10Pct	954.54	593.02	1089.80
25Pct	1910.41	1376.57	2232.58
50Pct	2916.66	2610.39	3356.49
75Pct	4358.49	4066.80	4907.56
90Pct	5422.38	5130.56	6071.18
95Pct	6347.07	5976.74	7562.64
Mean	3250.69	3011.84	3489.54
Std Dev	1818.80	1574.11	2063.49

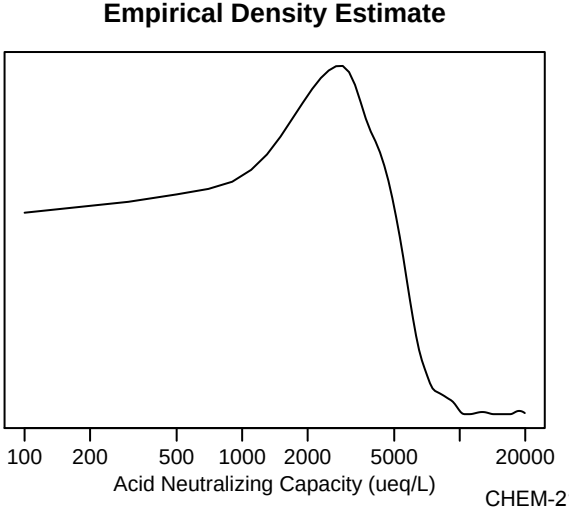
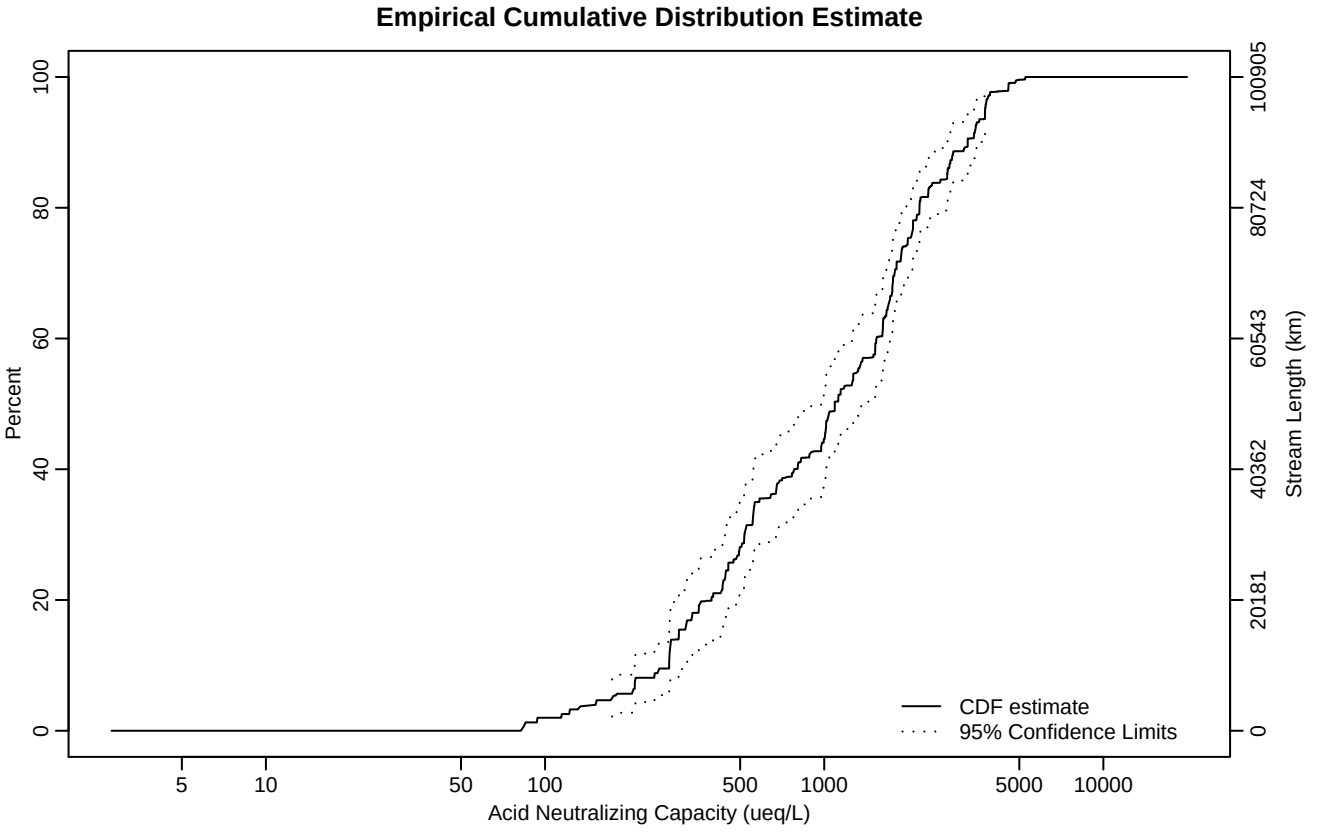


Figure CHEM−19 Indicator: ANC Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	173.82	114.56	210.33
10Pct	278.30	206.10	300.76
25Pct	453.33	354.83	554.45
50Pct	1090.95	975.15	1372.72
75Pct	1993.32	1765.11	2198.64
90Pct	3265.95	2766.63	3767.34
95Pct	3768.40	3460.85	4571.66
Mean	1412.94	1268.25	1557.62
Std Dev	1042.34	923.01	1161.68

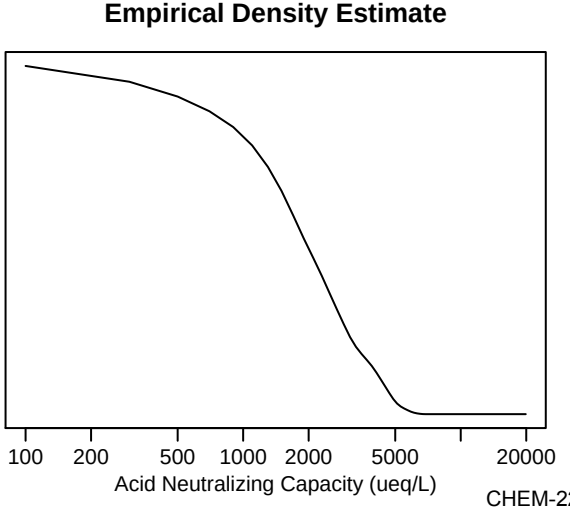
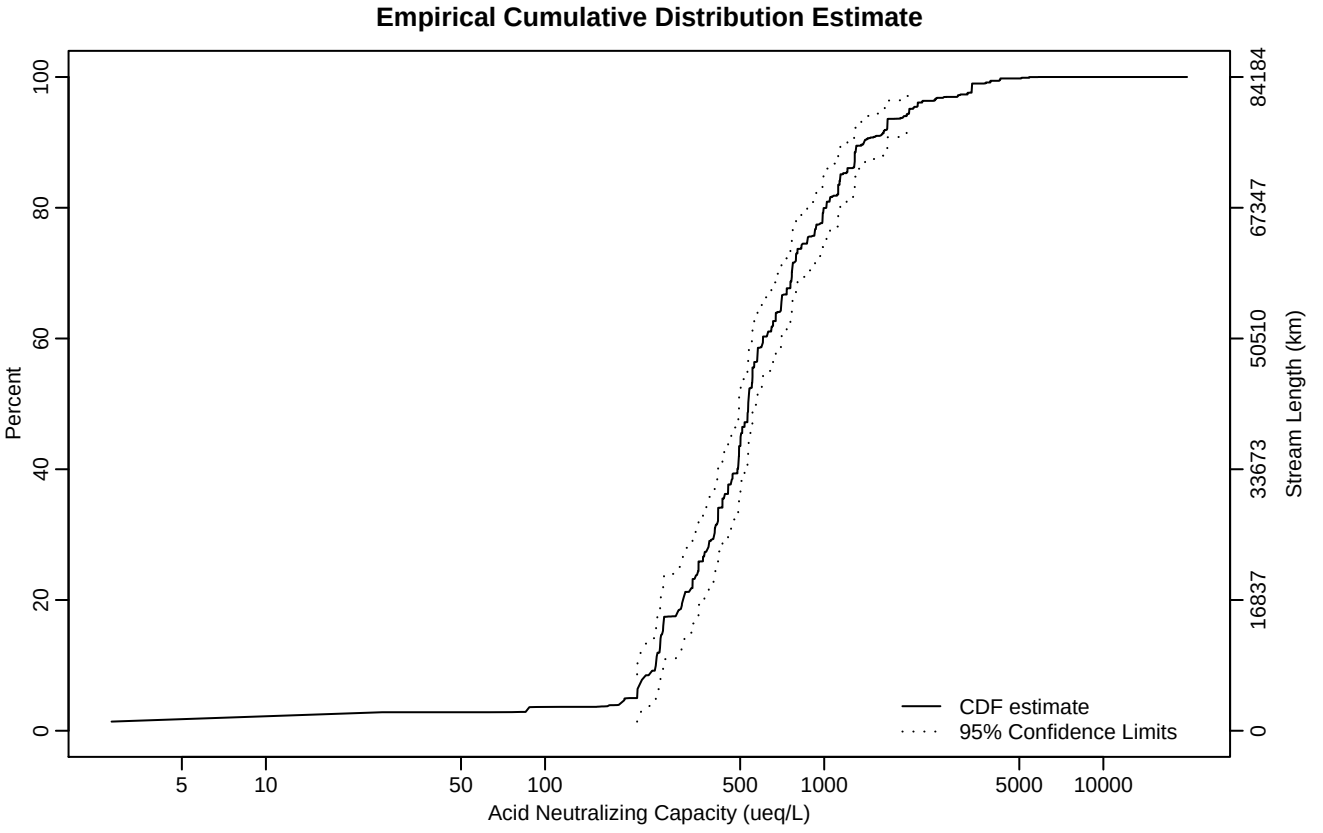


Figure CHEM−20 Indicator: ANC Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	213.70	2.80	236.60
10Pct	249.29	192.49	264.05
25Pct	354.64	298.31	415.10
50Pct	534.46	495.41	576.33
75Pct	870.93	765.61	1020.32
90Pct	1388.54	1280.68	1877.97
95Pct	2017.95	1682.61	3373.35
Mean	746.47	672.23	820.70
Std Dev	588.17	455.58	720.76

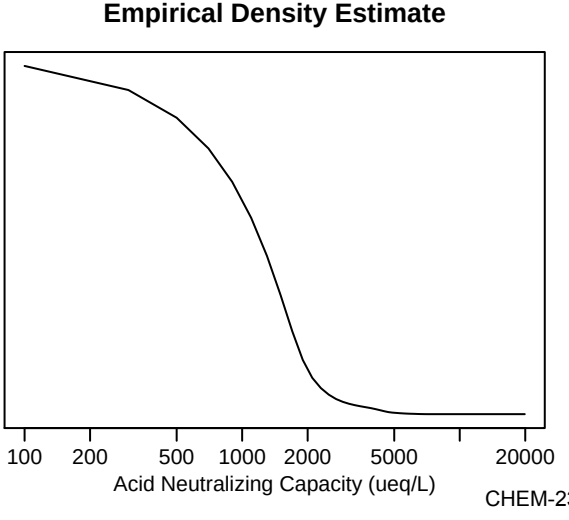
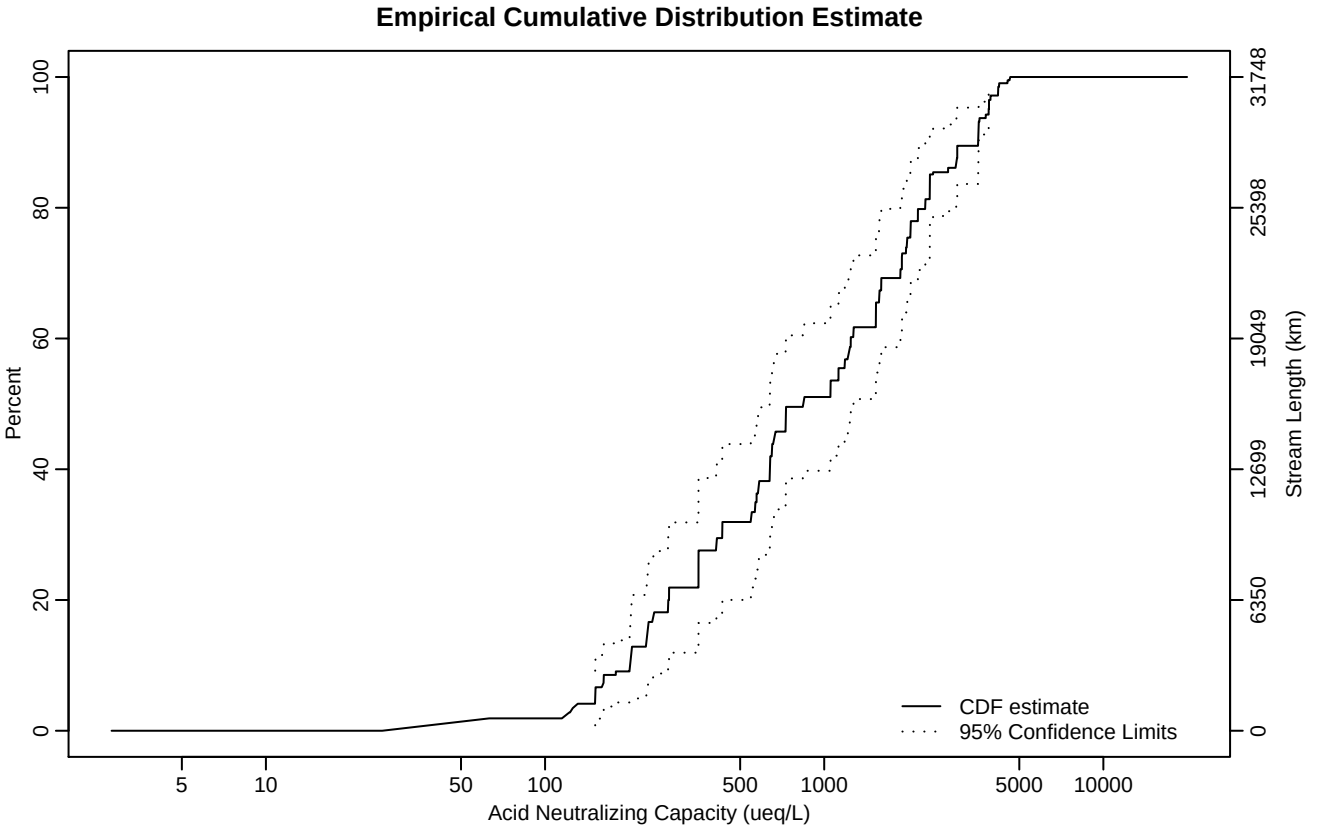


Figure CHEM−21 Indicator: ANC Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	151.24	48.44	179.26
10Pct	201.65	151.33	232.24
25Pct	354.58	232.69	572.41
50Pct	841.53	637.89	1273.74
75Pct	1982.05	1532.92	2454.58
90Pct	3560.15	2390.21	3893.79
95Pct	3883.59	3573.28	4198.68
Mean	1322.24	1095.52	1548.97
Std Dev	992.68	869.93	1115.43

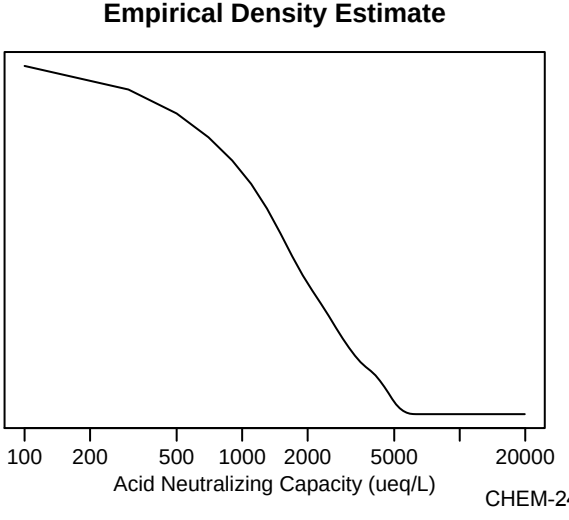
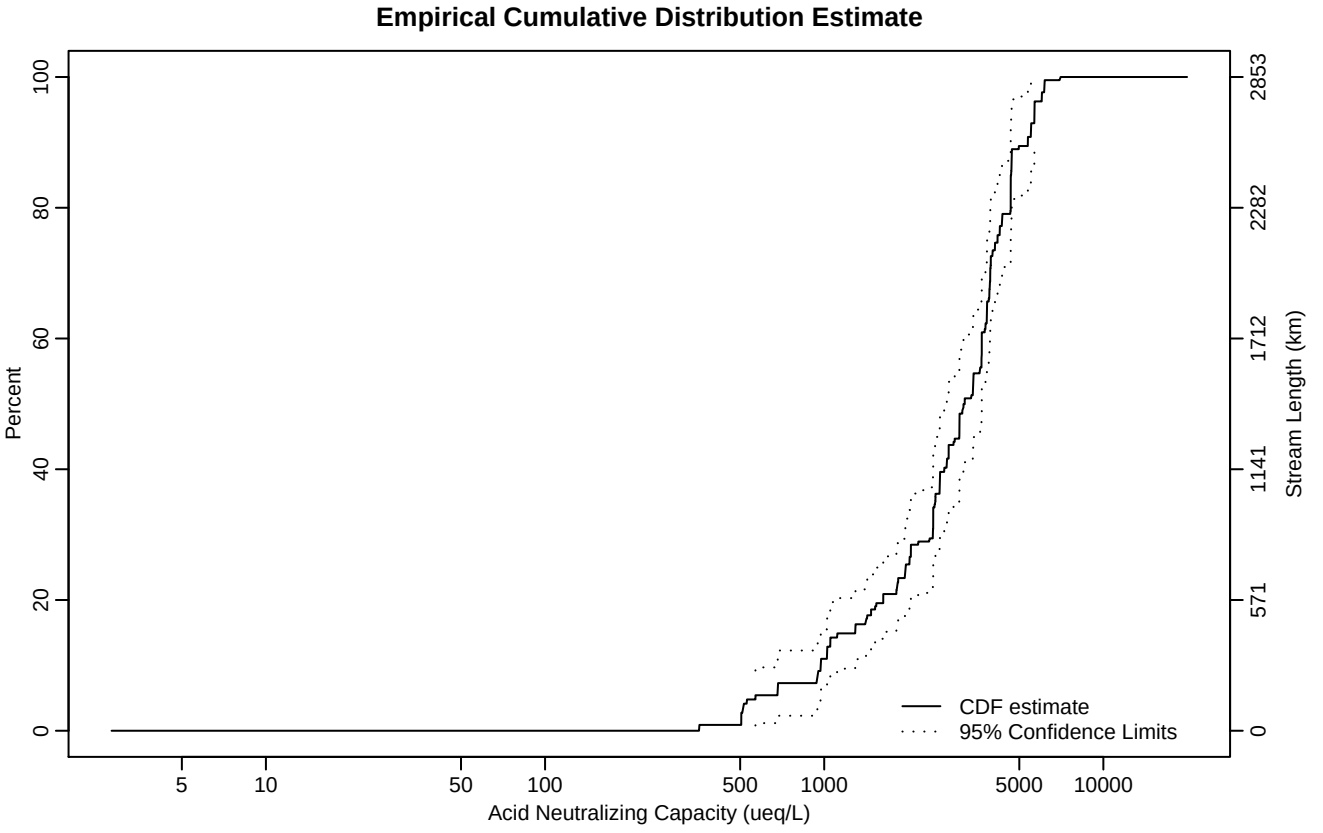


Figure CHEM−22 Indicator: ANC Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	567.17	357.19	969.42
10Pct	971.84	567.23	1114.71
25Pct	1958.26	1522.05	2456.94
50Pct	3186.84	2694	3668.30
75Pct	4177.88	3903.74	4658.82
90Pct	5364.35	4657.60	6025.89
95Pct	5667.55	4698.13	7028.50
Mean	3146.03	2899.40	3392.65
Std Dev	1513.75	1348.30	1679.19

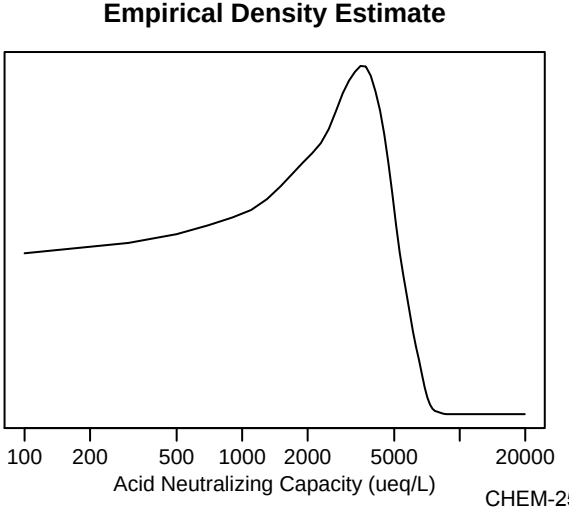
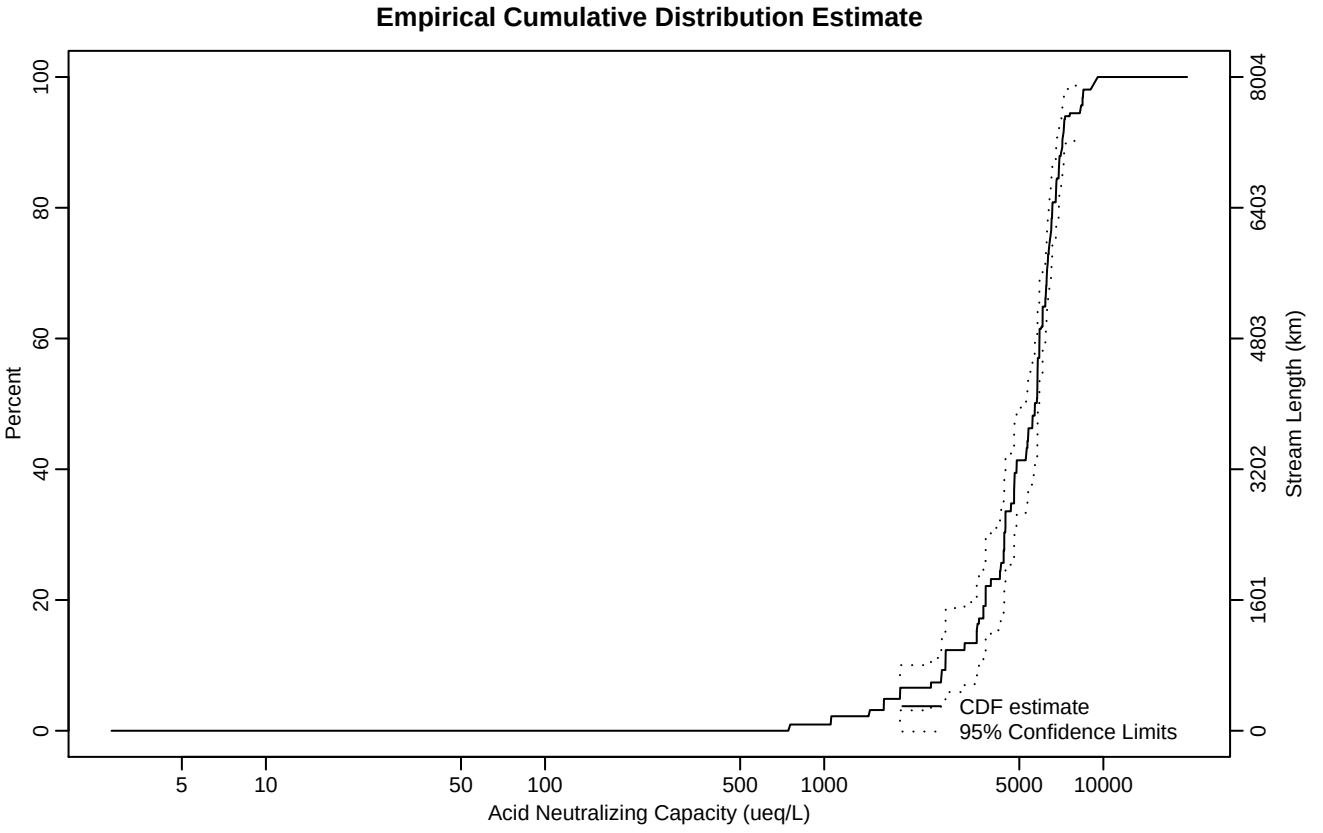


Figure CHEM−23 Indicator: ANC Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1867.90	1056.80	2632.70
10Pct	2718.91	1637	3520.87
25Pct	4291.58	3583.81	4461.13
50Pct	5687.22	4893.93	5899.76
75Pct	6434.45	6255.99	6761.49
90Pct	7132.16	6919.63	8279.10
95Pct	8278.33	7152.86	9347.48
Mean	5290.22	5051.92	5528.52
Std Dev	1375.80	1178.38	1573.21

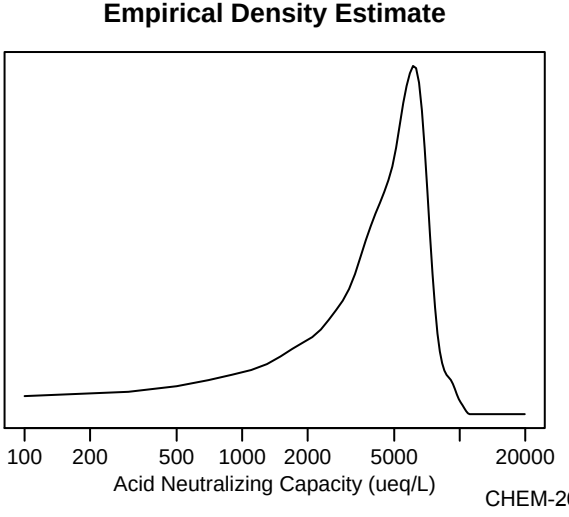
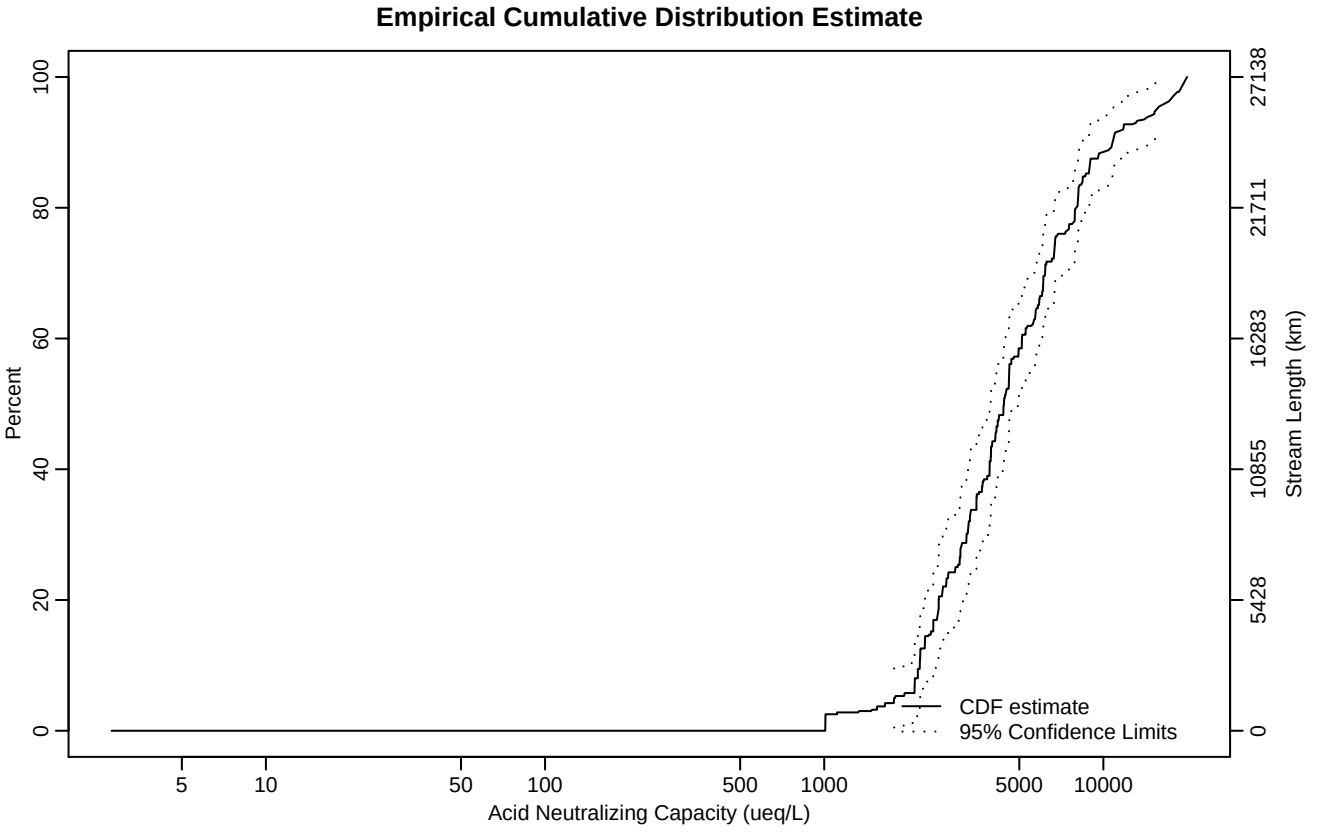


Figure CHEM−24 Indicator: ANC Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1780.69	1009.17	2165.48
10Pct	2200.32	1648.80	2459.60
25Pct	2954.25	2460.04	3345.48
50Pct	4404.51	3949.34	4972.52
75Pct	6718.25	6089.45	8118.94
90Pct	10792	8440.83	15766.66
95Pct	15489.91	10902.44	19516.79
Mean	5685.56	5012.44	6358.68
Std Dev	3806.46	2959.62	4653.30

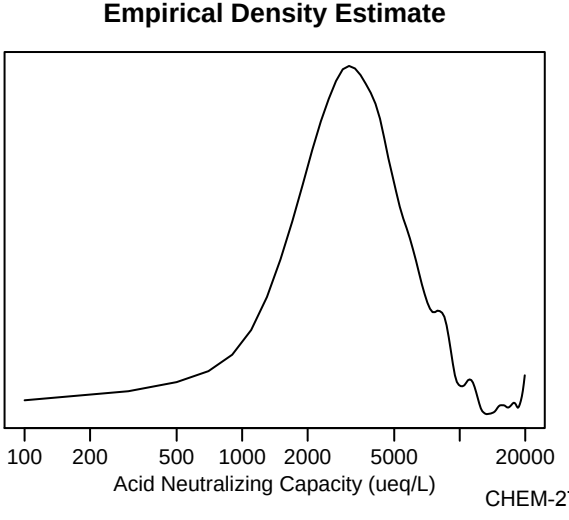
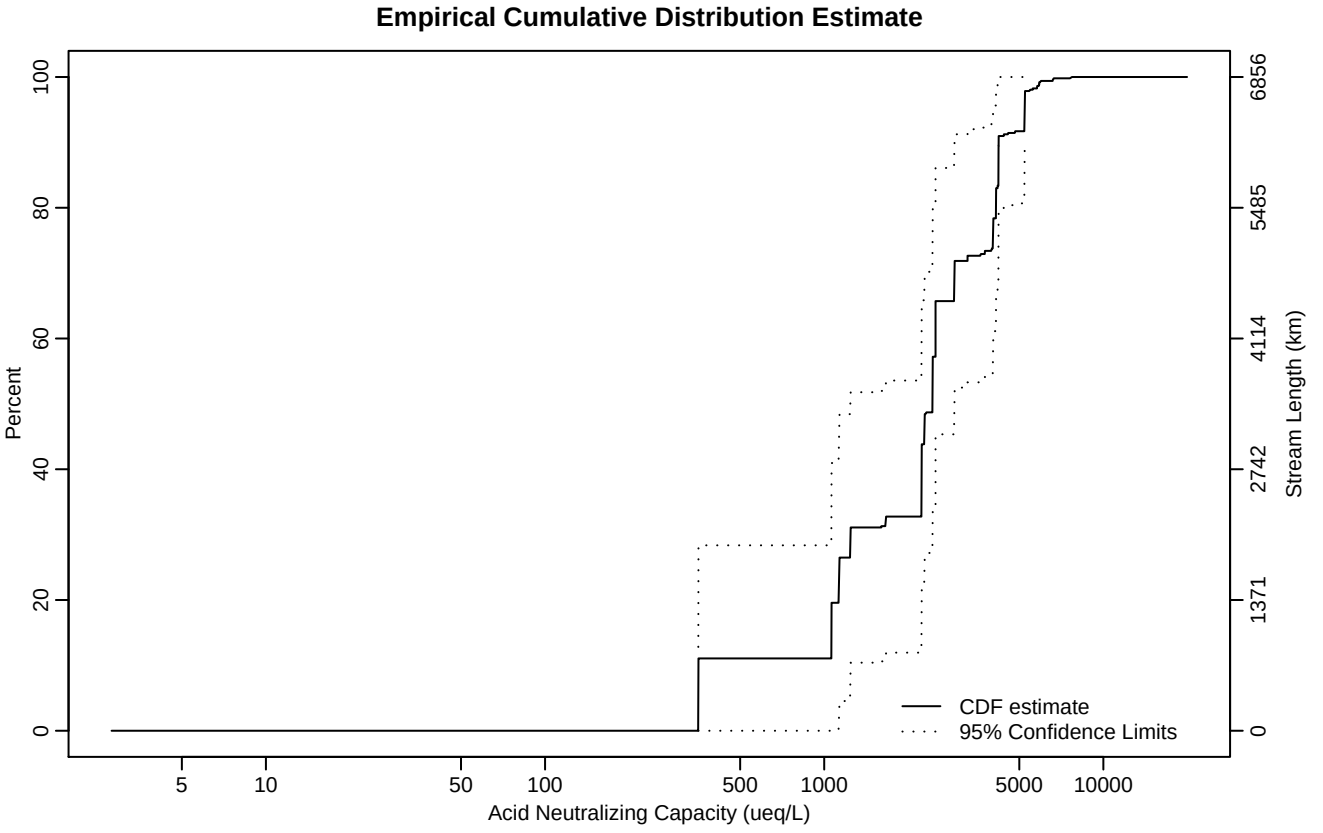


Figure CHEM−25 Indicator: ANC Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	354.01	353.92	354.10
10Pct	354.41	354.23	1060.82
25Pct	1132.90	353.92	2285.97
50Pct	2441.65	1240.56	2932.66
75Pct	4020.97	2447.34	5222.40
90Pct	4215.84	4122.69	7721.80
95Pct	5227.10	4207.38	7721.80
Mean	2522.69	1880.18	3165.20
Std Dev	1481.11	1144.42	1817.80

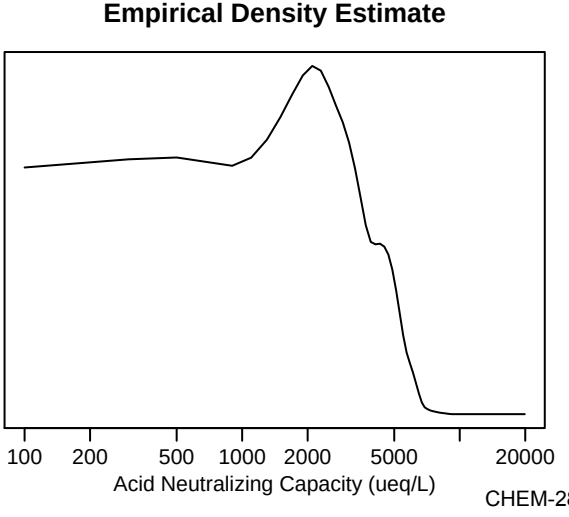
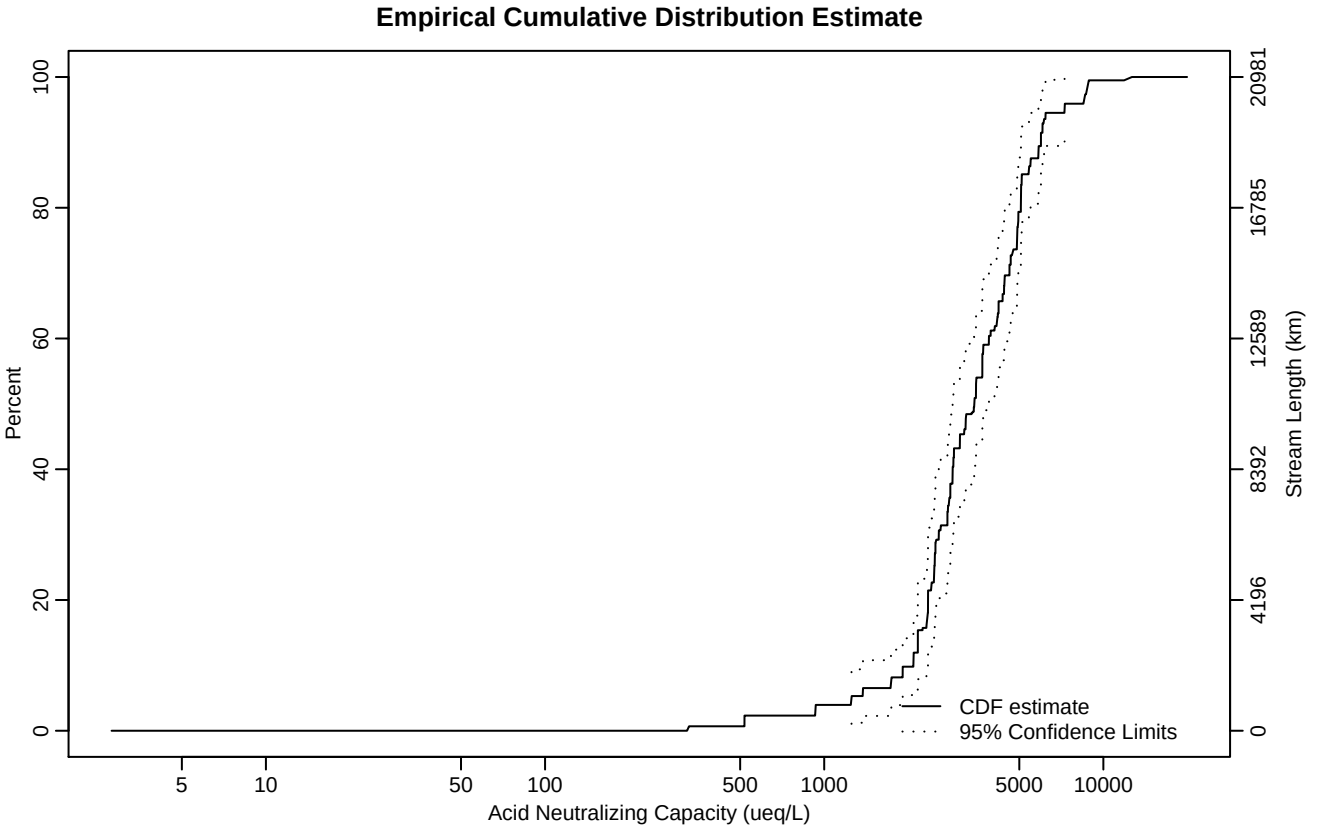


Figure CHEM−26 Indicator: ANC Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1252.58	518.10	1909.99
10Pct	2086.49	1374.53	2165.21
25Pct	2481.08	2165.29	2797.05
50Pct	3449.82	2883.49	3947.49
75Pct	4907.34	4214.71	5099.95
90Pct	5976.57	5076.18	8539.15
95Pct	7263.26	5976.58	12615.64
Mean	3749.72	3391.77	4107.67
Std Dev	1754.51	1445.69	2063.34

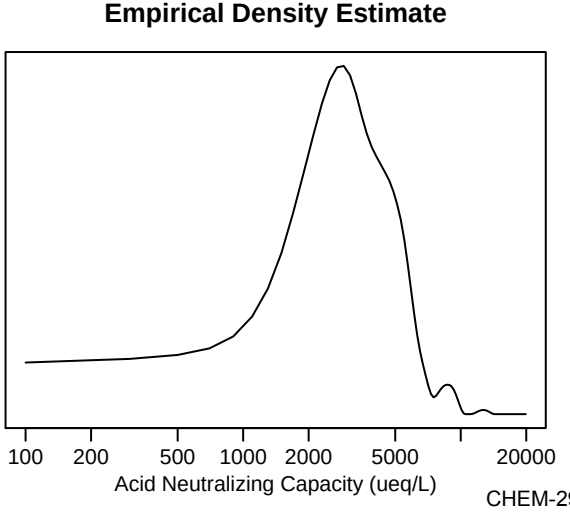
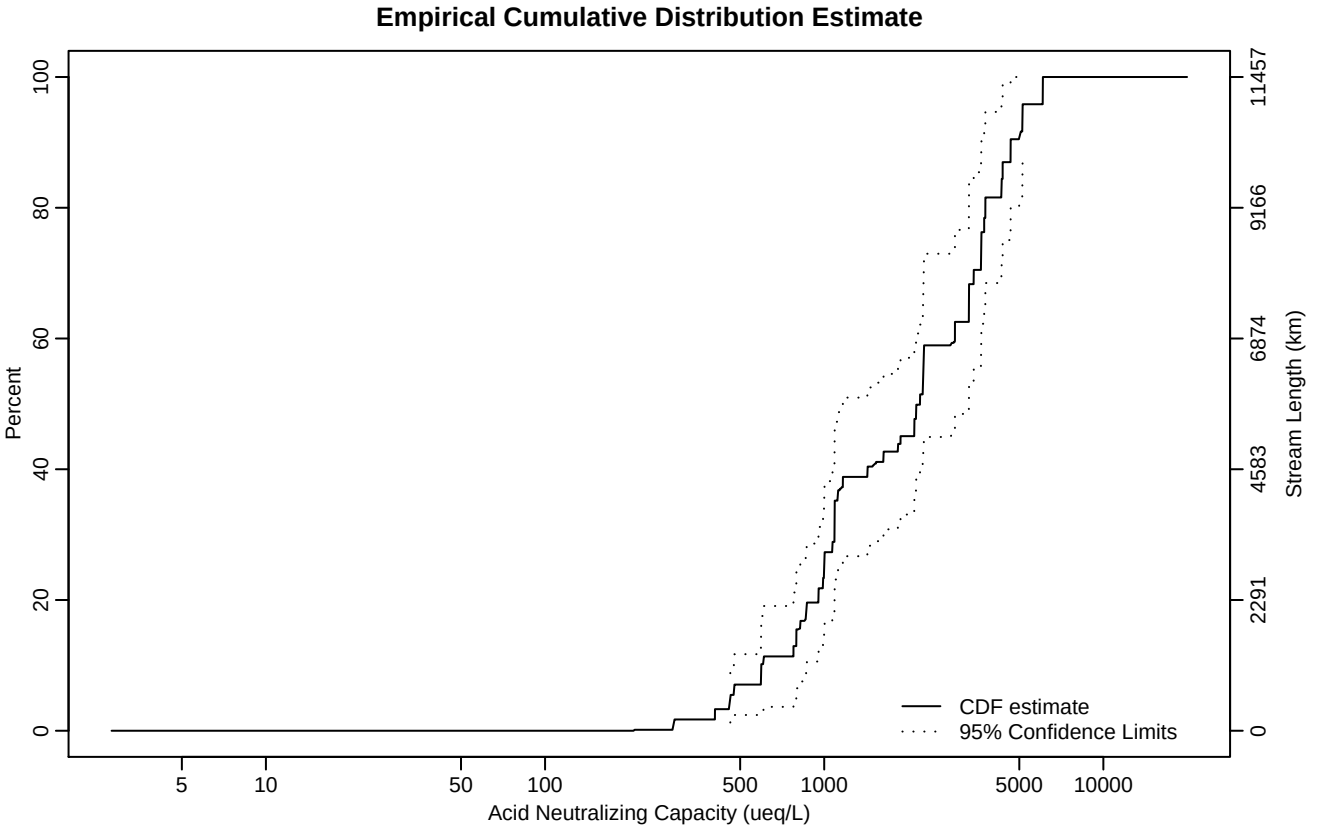


Figure CHEM−27 Indicator: ANC Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	460.85	290.01	594.13
10Pct	595.16	461.29	795.02
25Pct	999.86	794.86	1116.63
50Pct	2203.10	1165.90	3296.71
75Pct	3655.64	2940.05	4654.68
90Pct	4655.99	3777.01	6074.10
95Pct	5136.70	4357.60	6074.10
Mean	2443.57	1994.56	2892.58
Std Dev	1432.76	1160.41	1705.10

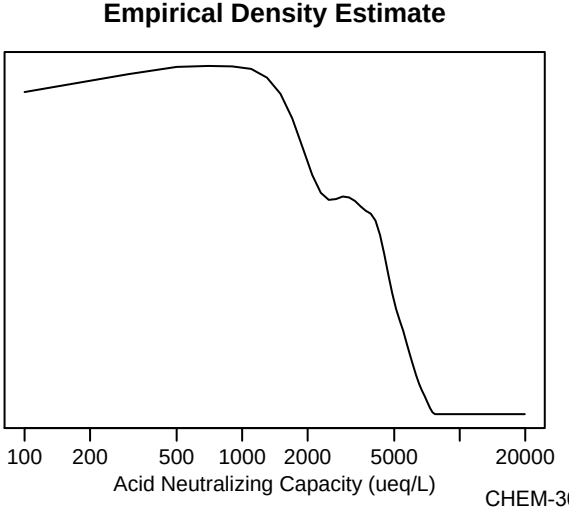
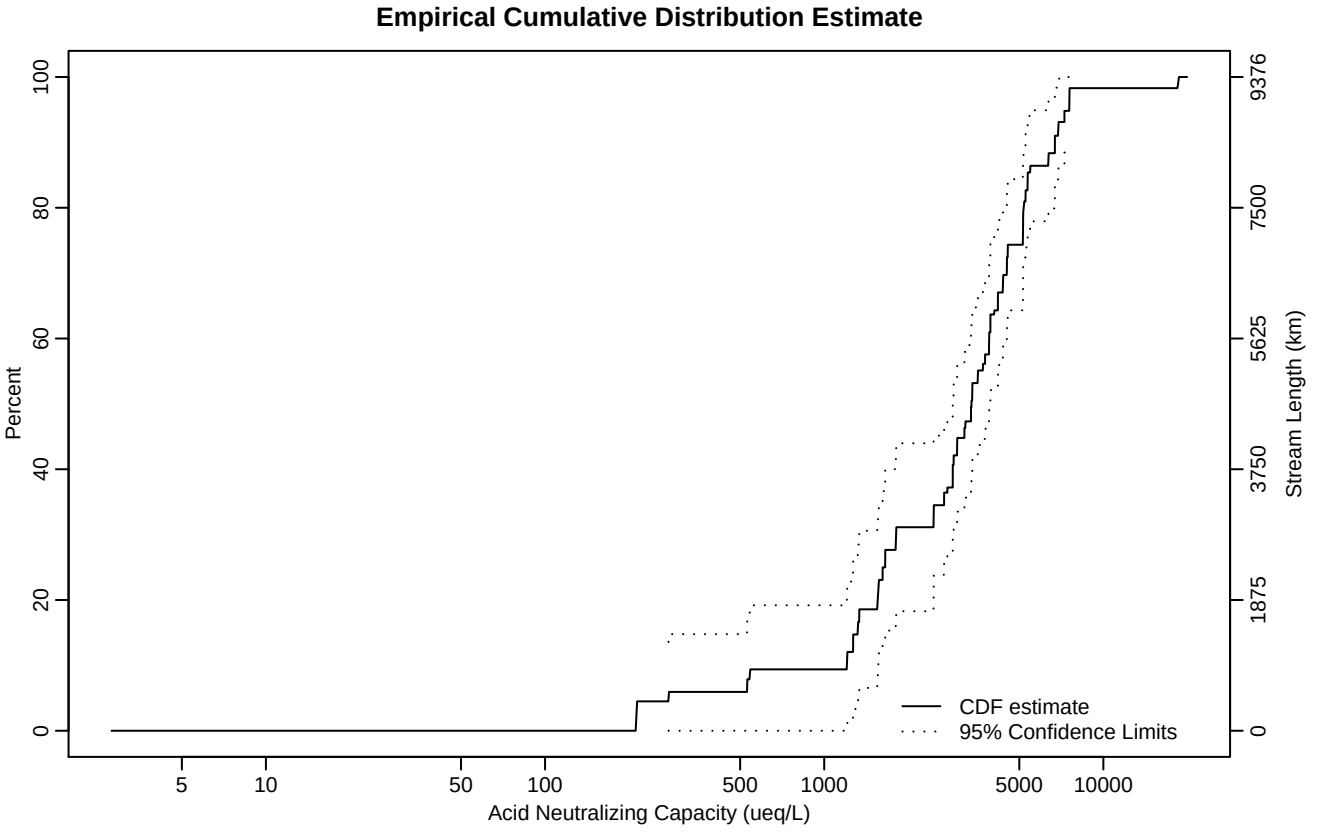


Figure CHEM−28 Indicator: ANC Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	276.96	2.80	1269.63
10Pct	1205.69	2.80	1555.47
25Pct	1653.10	1269.07	2886.80
50Pct	3369.55	2887.02	3938.74
75Pct	5148.91	4189.89	5359.40
90Pct	6705.43	5263.09	18442.16
95Pct	7547.24	6704.65	18662
Mean	3669.63	3037.75	4301.51
Std Dev	2197.04	1556.47	2837.60

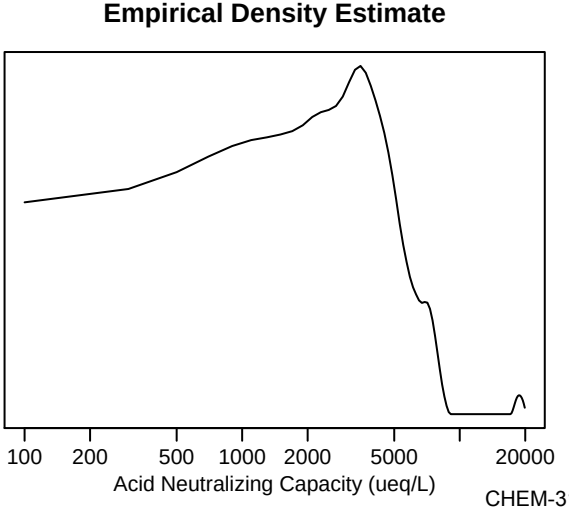
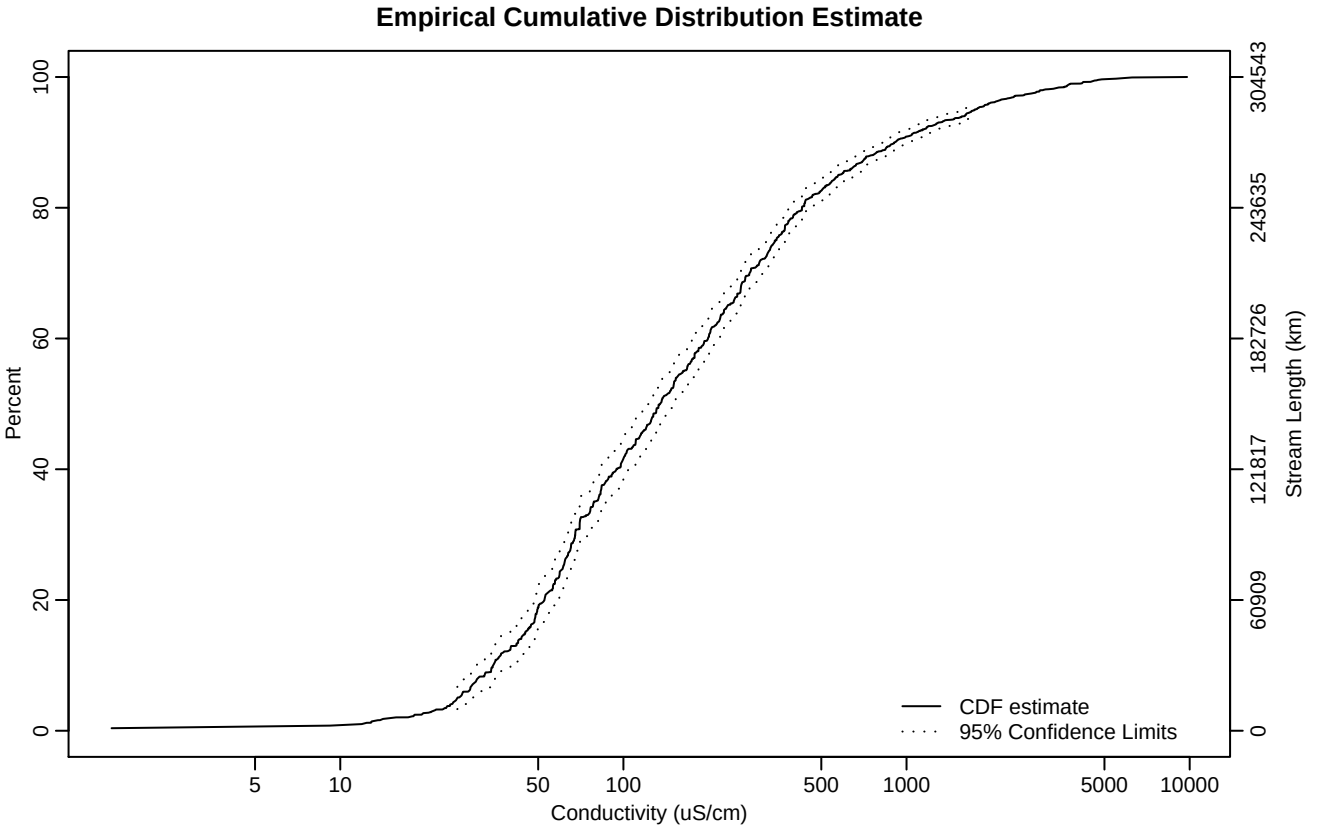


Figure CHEM−29 Indicator: Conductivity Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	25.90	23.33	28.81
10Pct	34.67	29.93	39.94
25Pct	61.20	56.07	65.35
50Pct	134.83	121.19	150.95
75Pct	343.56	321.24	372.25
90Pct	906.01	835.85	1044.14
95Pct	1738.56	1608.43	1944.47
Mean	388.64	358.85	418.44
Std Dev	507.65	449.35	565.95

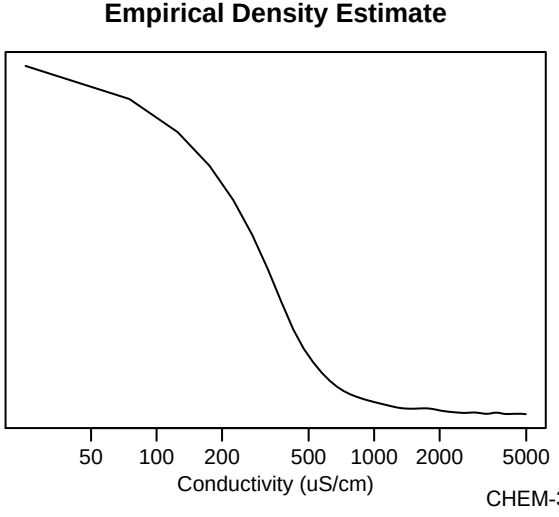
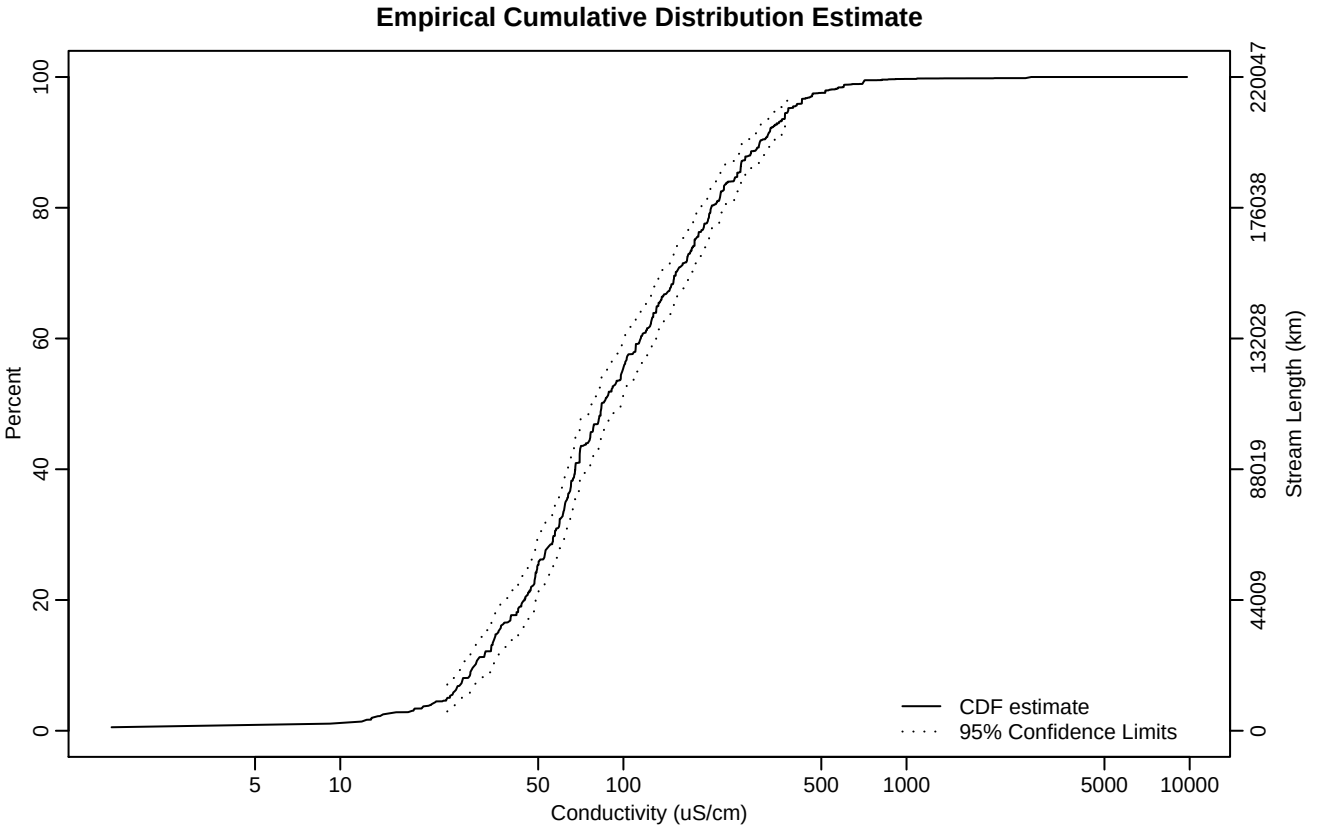


Figure CHEM−30 Indicator: Conductivity Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	23.86	17.95	26.44
10Pct	29.85	26.76	34.15
25Pct	49.61	45.57	56.39
50Pct	83.80	76.61	98.04
75Pct	178.39	161.01	200.70
90Pct	303.03	268.94	342.52
95Pct	382.24	354.60	449.29
Mean	139.54	127.44	151.64
Std Dev	129.25	105.16	153.35

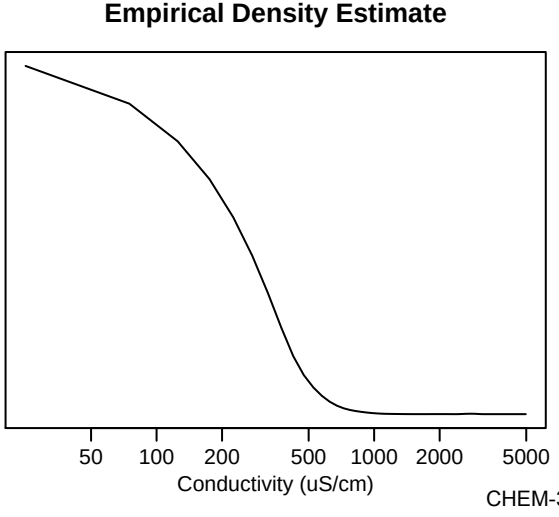
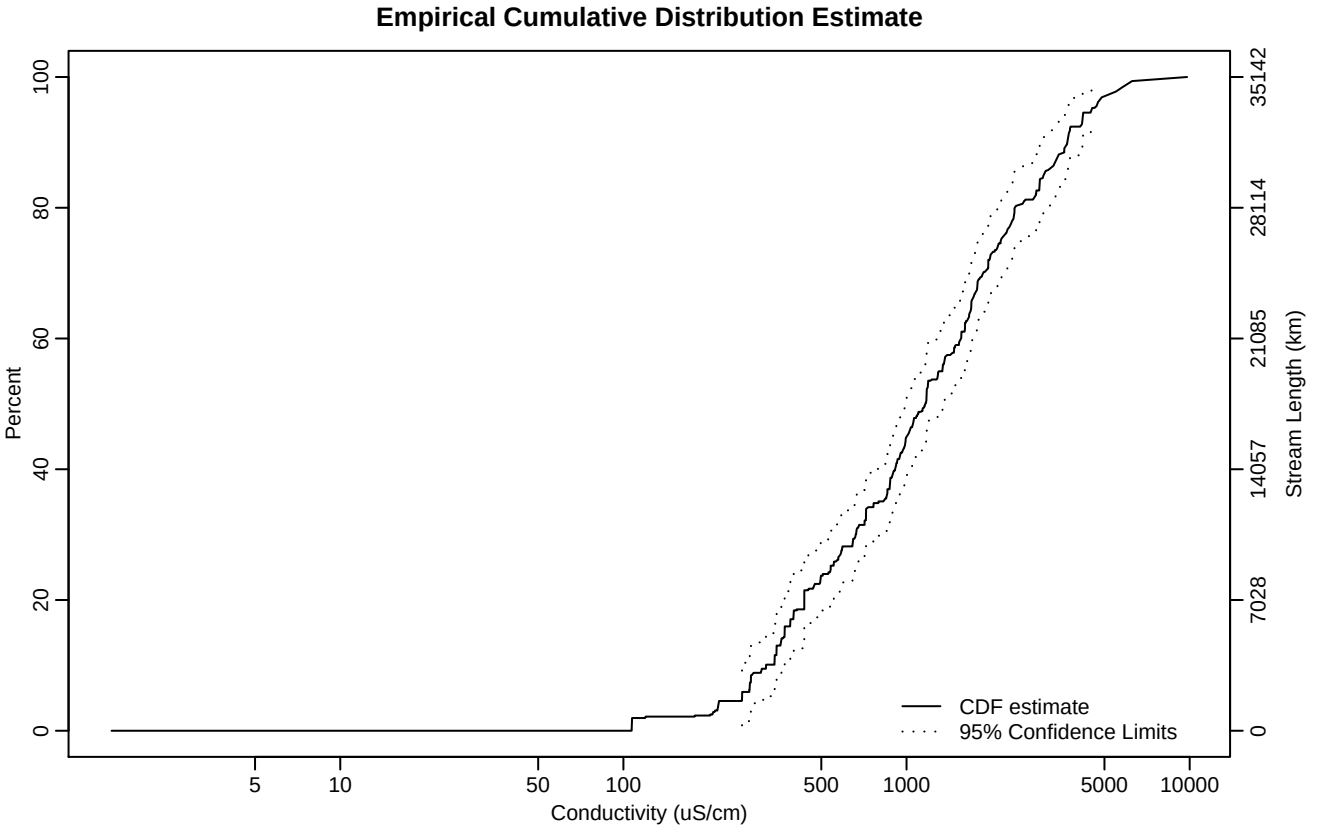


Figure CHEM−31 Indicator: Conductivity Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	262.46	107.08	306.82
10Pct	319.10	262.52	370.95
25Pct	539.56	435.37	665.12
50Pct	1164.99	988.64	1354.79
75Pct	2153.38	1808.62	2593.22
90Pct	3696.32	3055.94	4497.48
95Pct	4504.04	3777.12	5661.28
Mean	1626.84	1422.35	1831.33
Std Dev	1395.19	1162.88	1627.49

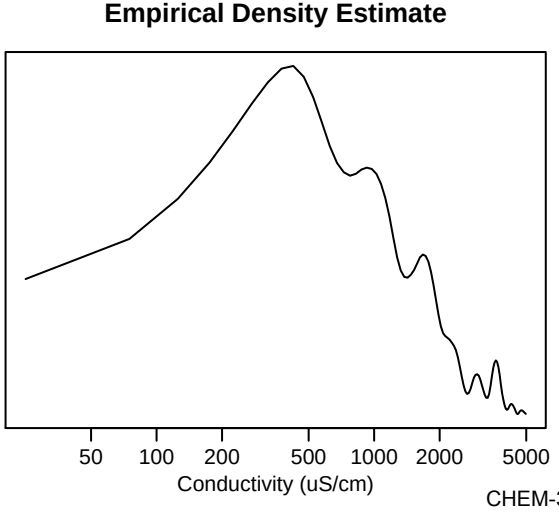
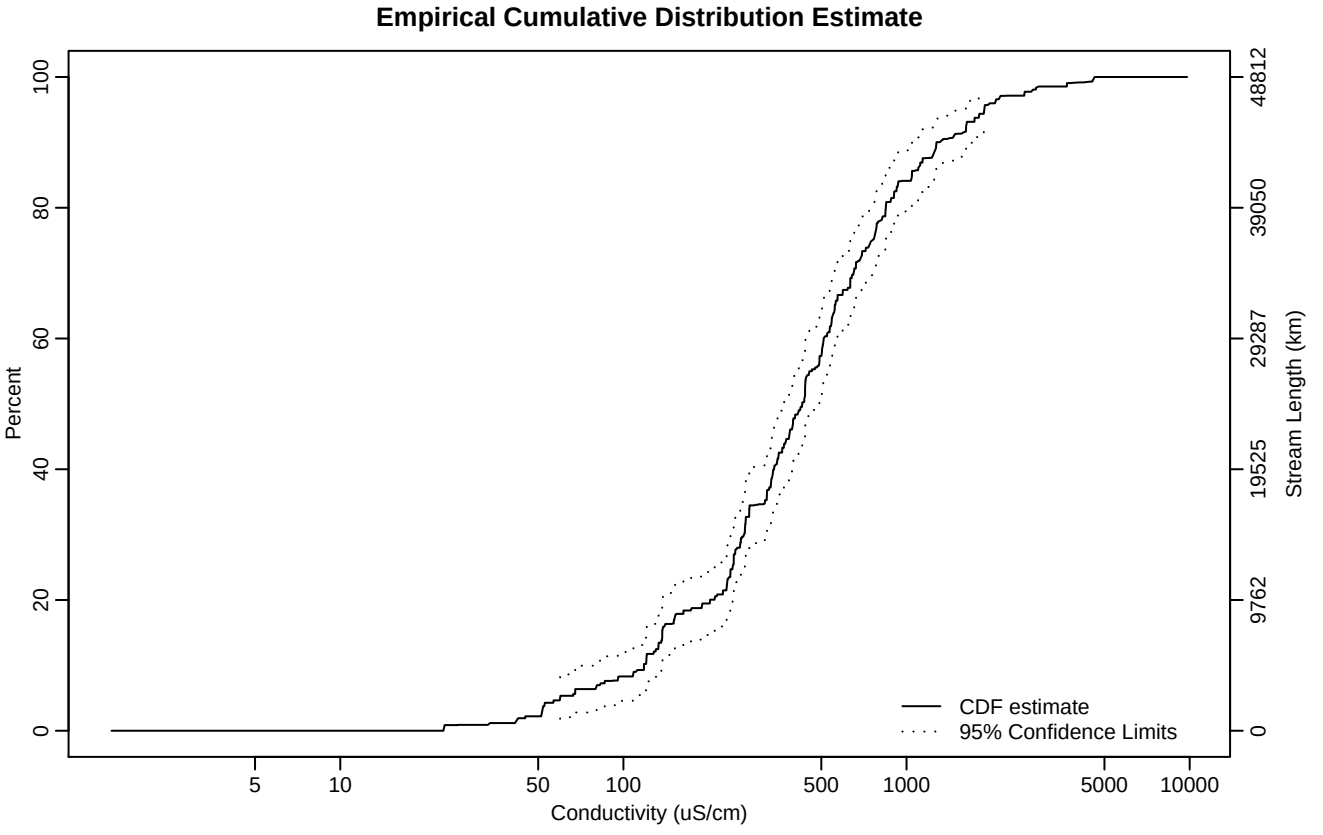


Figure CHEM−32 Indicator: Conductivity Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	59.75	42.39	95.81
10Pct	118.18	67.58	136.81
25Pct	243.01	189.93	268.52
50Pct	428	363.81	492.65
75Pct	756.18	640.87	846.85
90Pct	1275.79	1100.81	1800.87
95Pct	1881.79	1622.15	2772.67
Mean	623.95	544.57	703.32
Std Dev	554.55	448.83	660.28

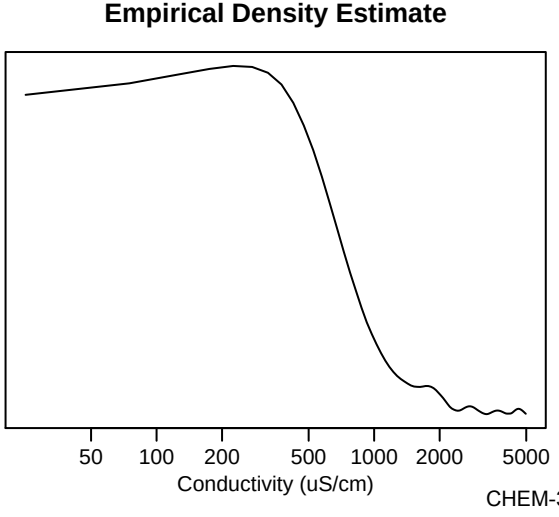
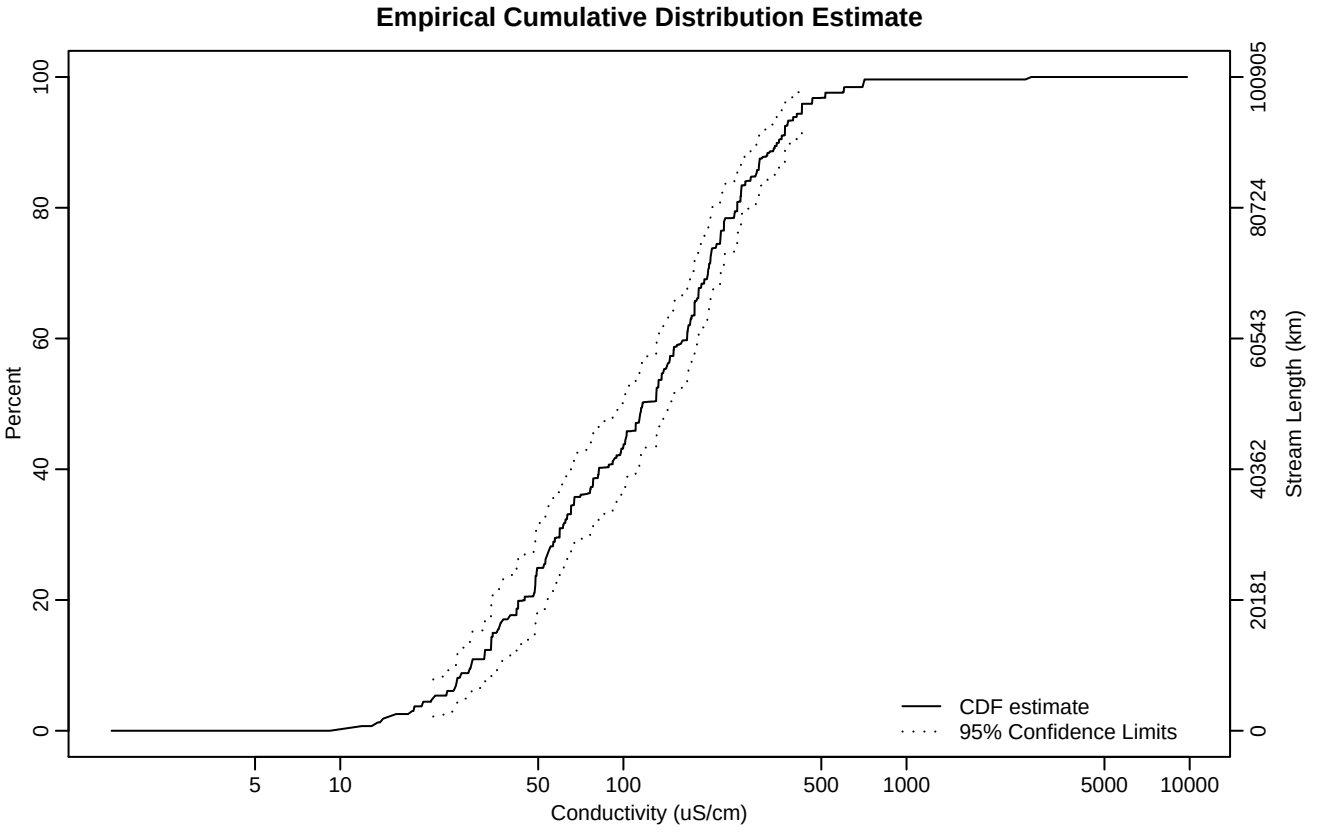


Figure CHEM−33 Indicator: Conductivity Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	21.29	15.13	25.84
10Pct	29	23.86	34.17
25Pct	52.15	41.93	62.31
50Pct	116.81	99.75	145.85
75Pct	219.85	192.97	259.11
90Pct	354.16	296.06	426.82
95Pct	427.04	371.96	605.35
Mean	166.78	142.86	190.69
Std Dev	158.01	112.49	203.53

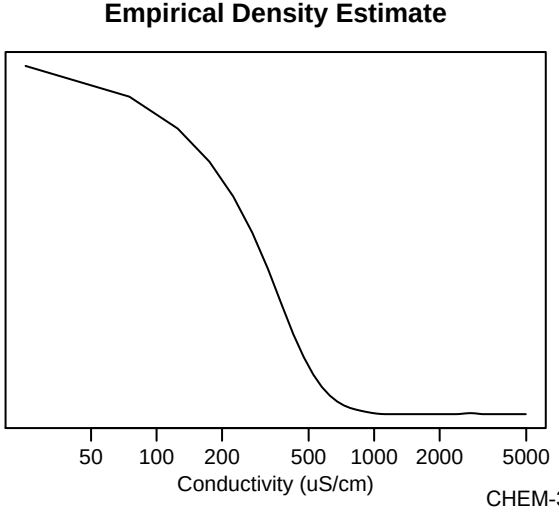
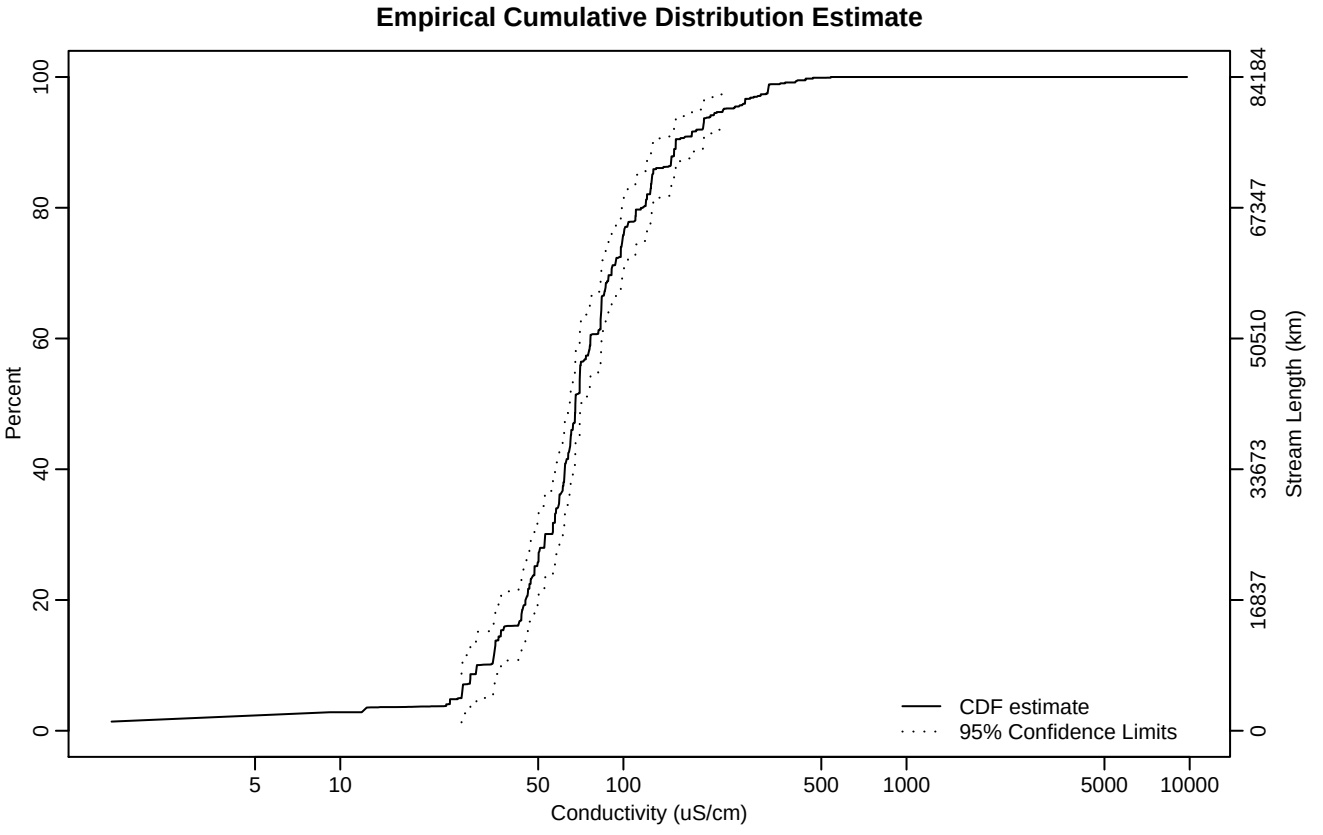


Figure CHEM−34 Indicator: Conductivity Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	26.80	1.56	30.11
10Pct	30.38	26.85	36.91
25Pct	48.55	44.27	56.38
50Pct	67.66	64.33	73.72
75Pct	99.19	88.43	120.13
90Pct	153.10	130.50	202.94
95Pct	225.44	191.34	323.34
Mean	87.85	80.31	95.39
Std Dev	57.73	45.56	69.91

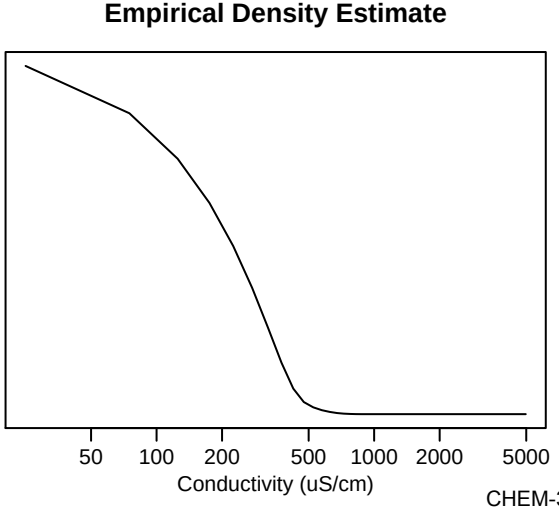
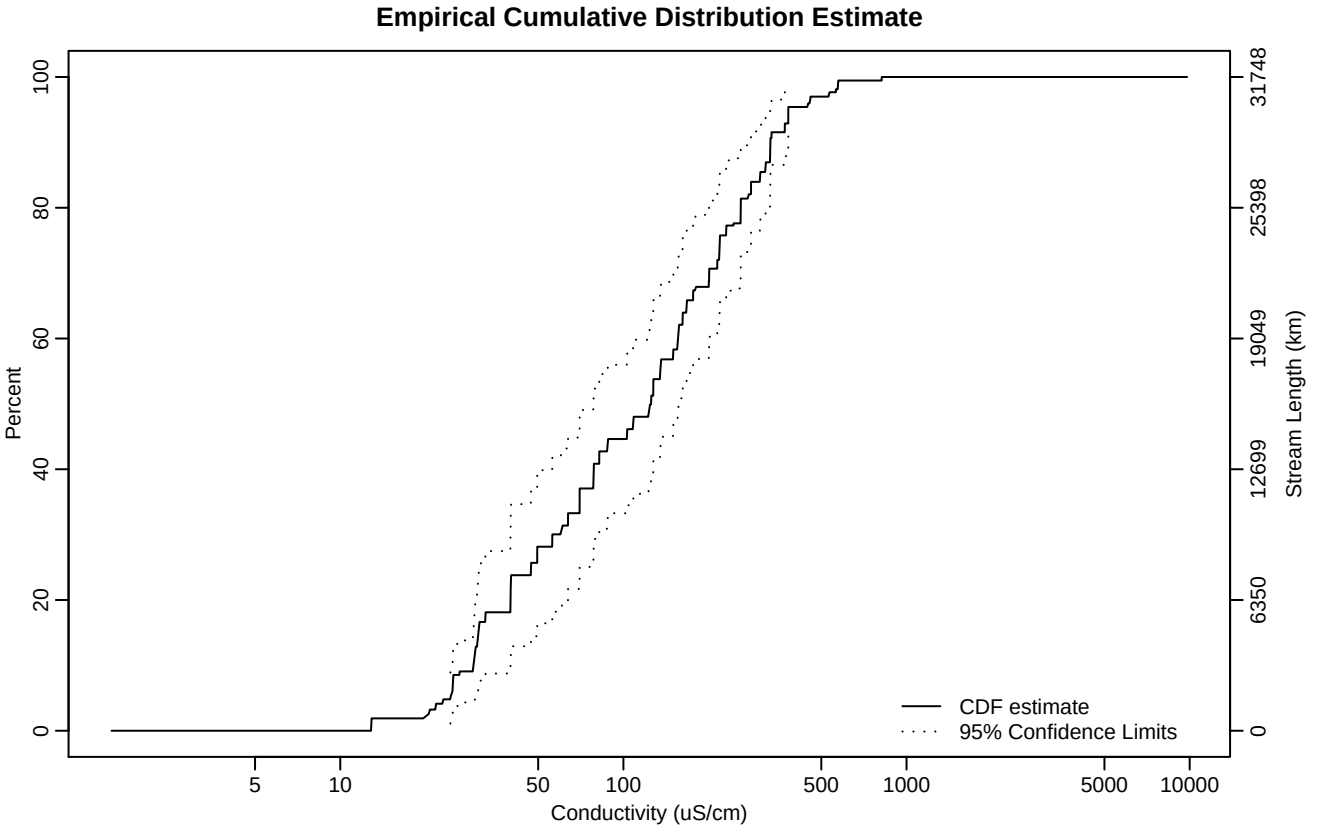


Figure CHEM−35 Indicator: Conductivity Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	24.48	12.88	26.38
10Pct	29.54	24.59	30.70
25Pct	47.17	30.59	70.04
50Pct	125.22	78.34	161.70
75Pct	219.05	166.83	316.92
90Pct	330.54	282.22	562.82
95Pct	382.28	330.56	817.60
Mean	156.72	131.08	182.37
Std Dev	118.28	100.37	136.18

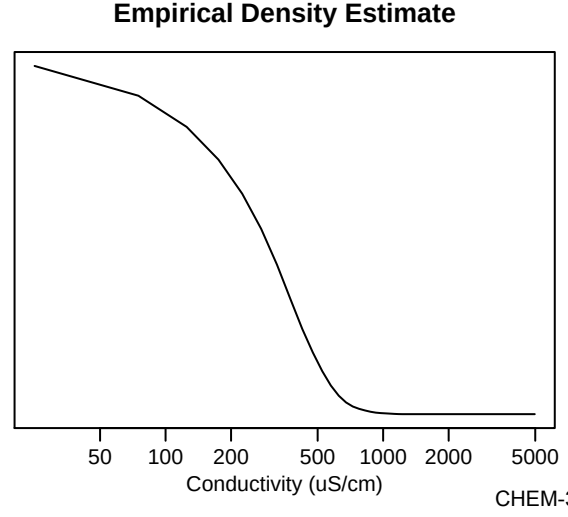
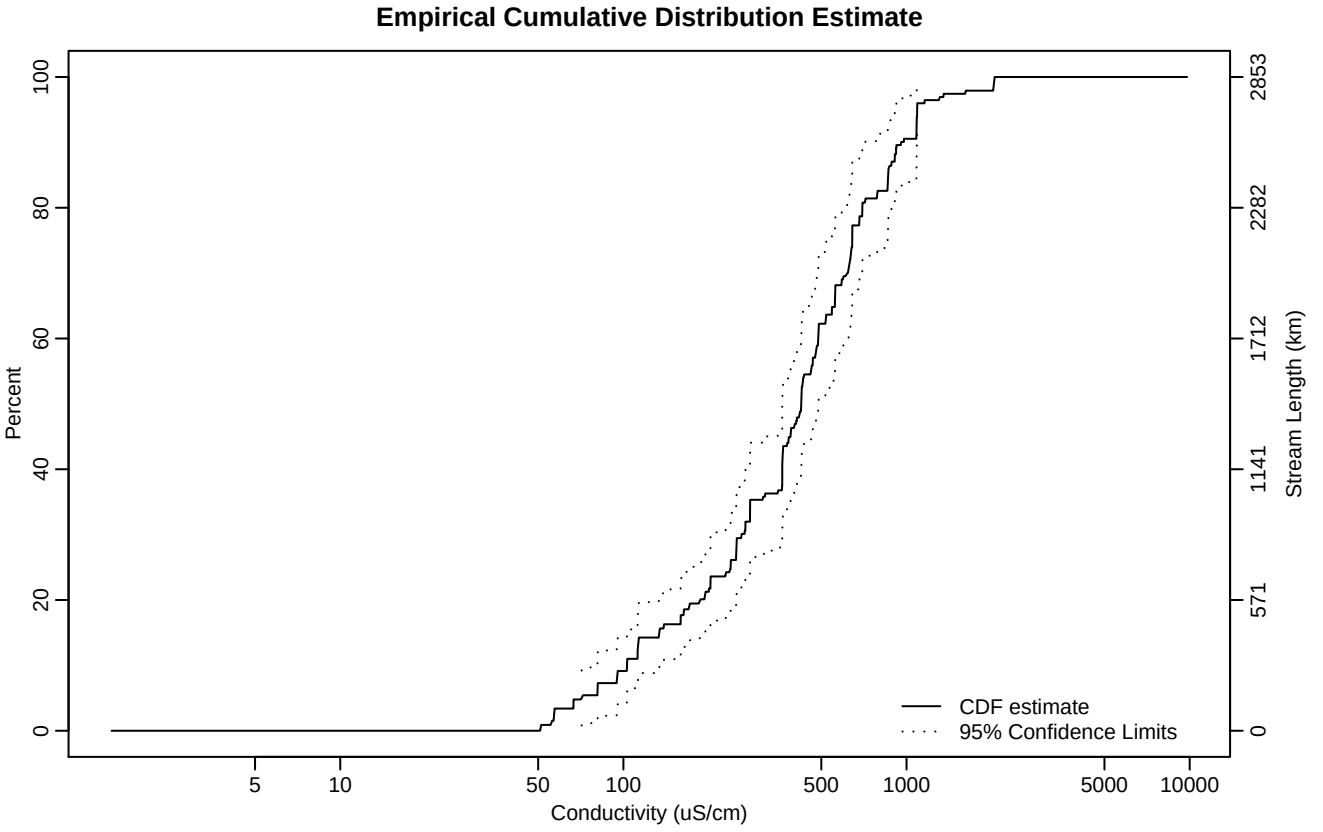


Figure CHEM−36 Indicator: Conductivity Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	71.19	51.19	102.81
10Pct	102.98	71.07	133.96
25Pct	239.14	163.39	269.78
50Pct	424.67	363.98	487.75
75Pct	642.88	558.13	861.60
90Pct	957.22	857.49	1306.68
95Pct	1090.06	1083.32	2037.86
Mean	498.24	423.96	572.51
Std Dev	379.84	278.32	481.37

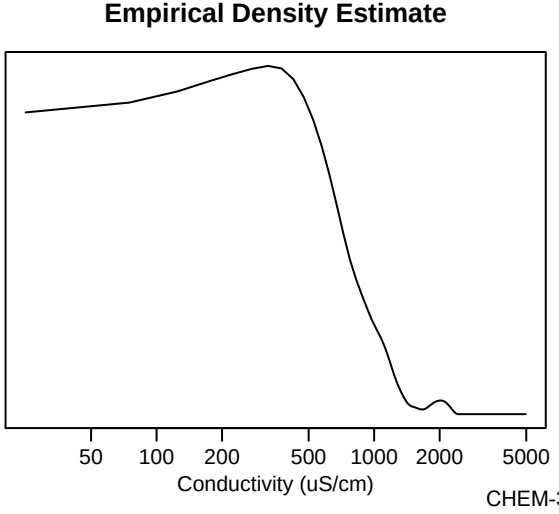
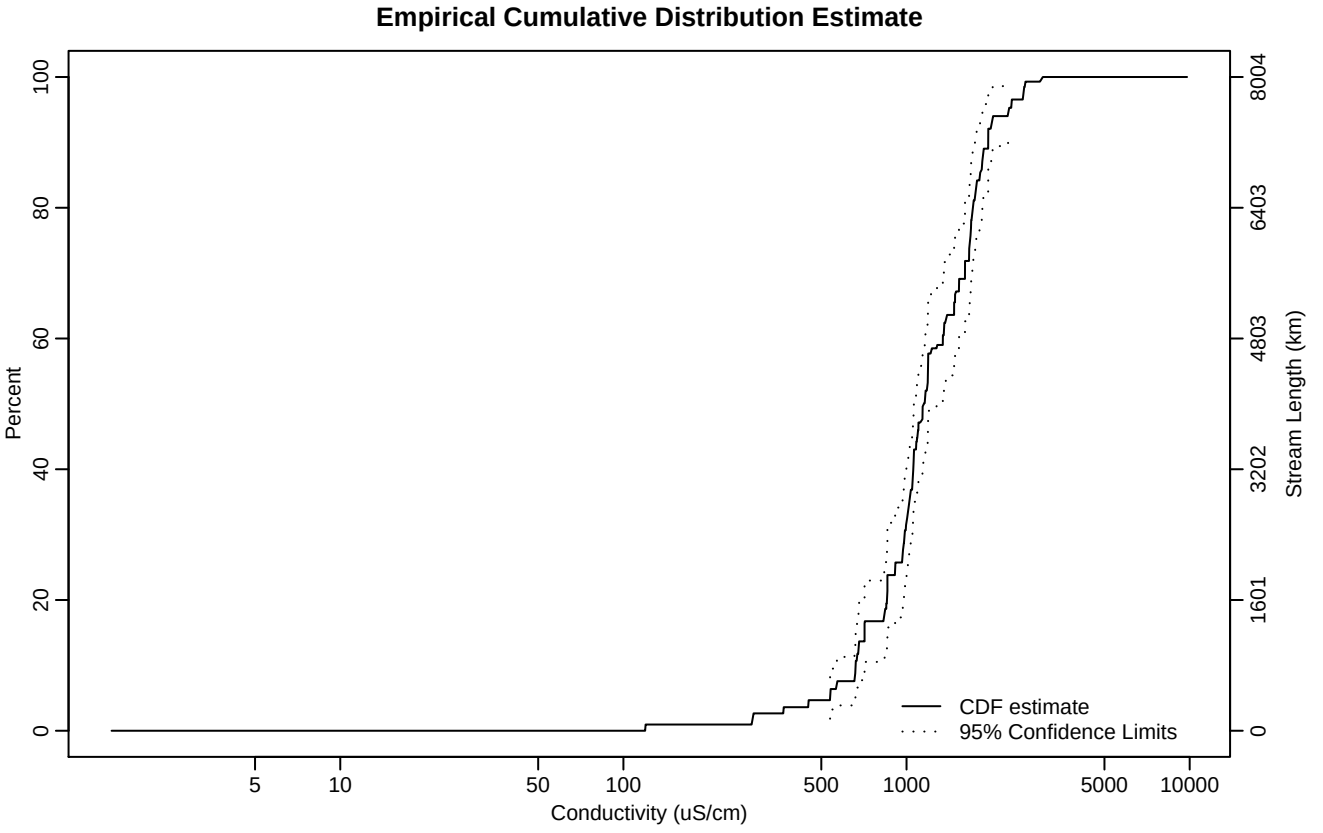


Figure CHEM−37 Indicator: Conductivity Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	537	285.80	656.92
10Pct	660.97	538.03	710.73
25Pct	912.10	828.68	1009.94
50Pct	1151.16	1058.53	1343.04
75Pct	1675.99	1483.11	1809.71
90Pct	1942.63	1762.59	2577.08
95Pct	2298.20	1942.92	2985.25
Mean	1273.73	1186.04	1361.42
Std Dev	510.09	431.80	588.39

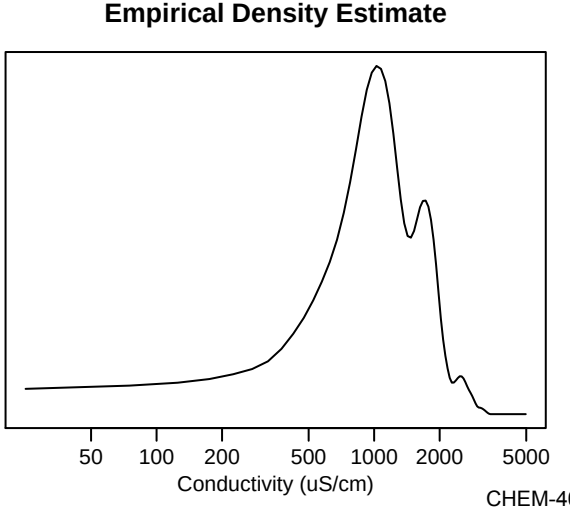
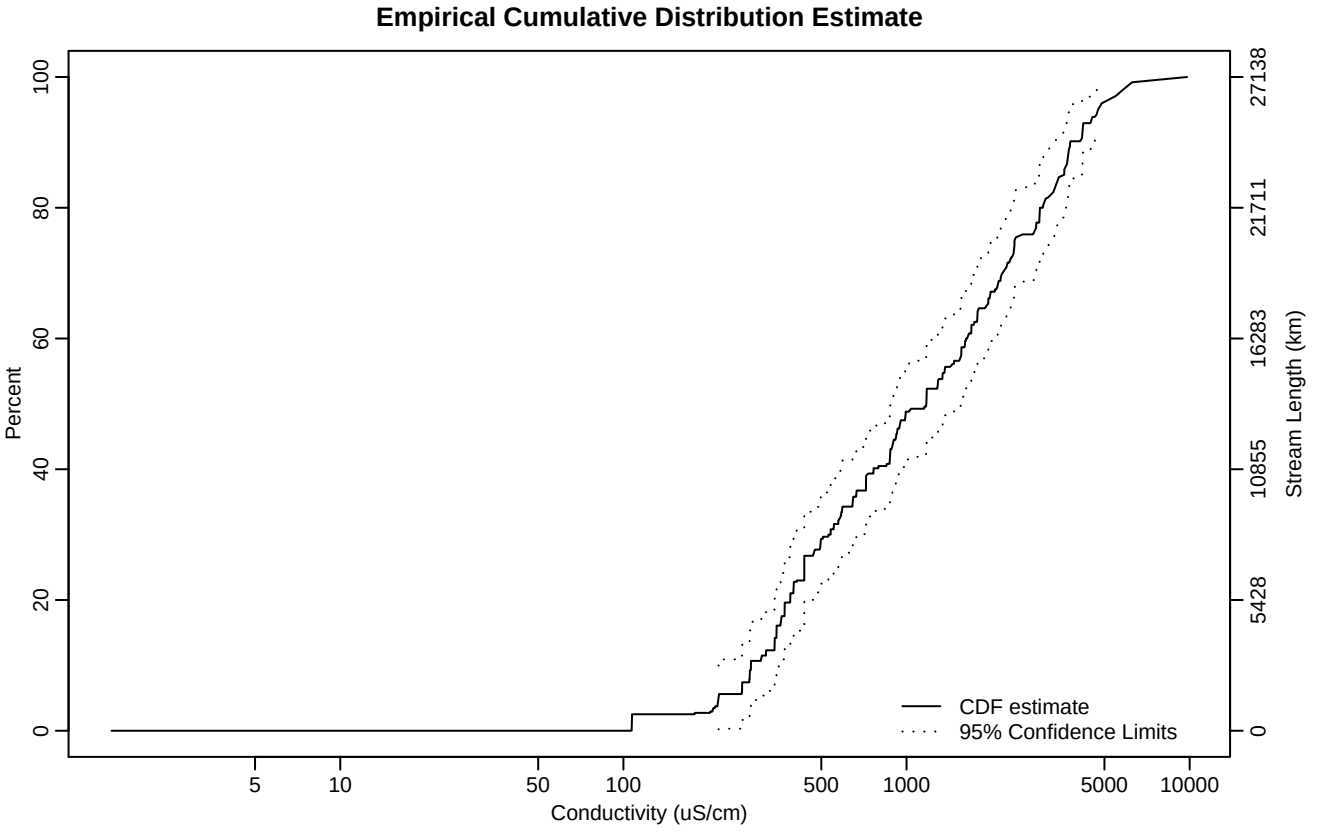


Figure CHEM−38 Indicator: Conductivity Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	216.73	107.02	279.88
10Pct	282.05	215.03	347.70
25Pct	435.41	361.93	581.93
50Pct	1174.55	875.59	1560.29
75Pct	2405.98	2080.79	3290.54
90Pct	3786.50	3424.49	4853.96
95Pct	4745.74	4177.56	6063.64
Mean	1730.98	1467.83	1994.14
Std Dev	1550.54	1287.69	1813.38

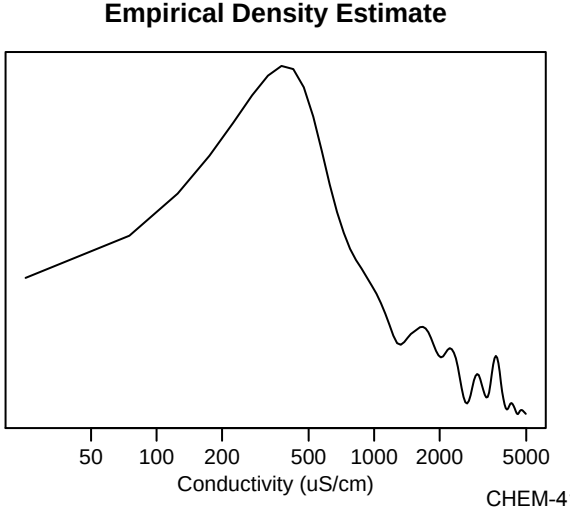
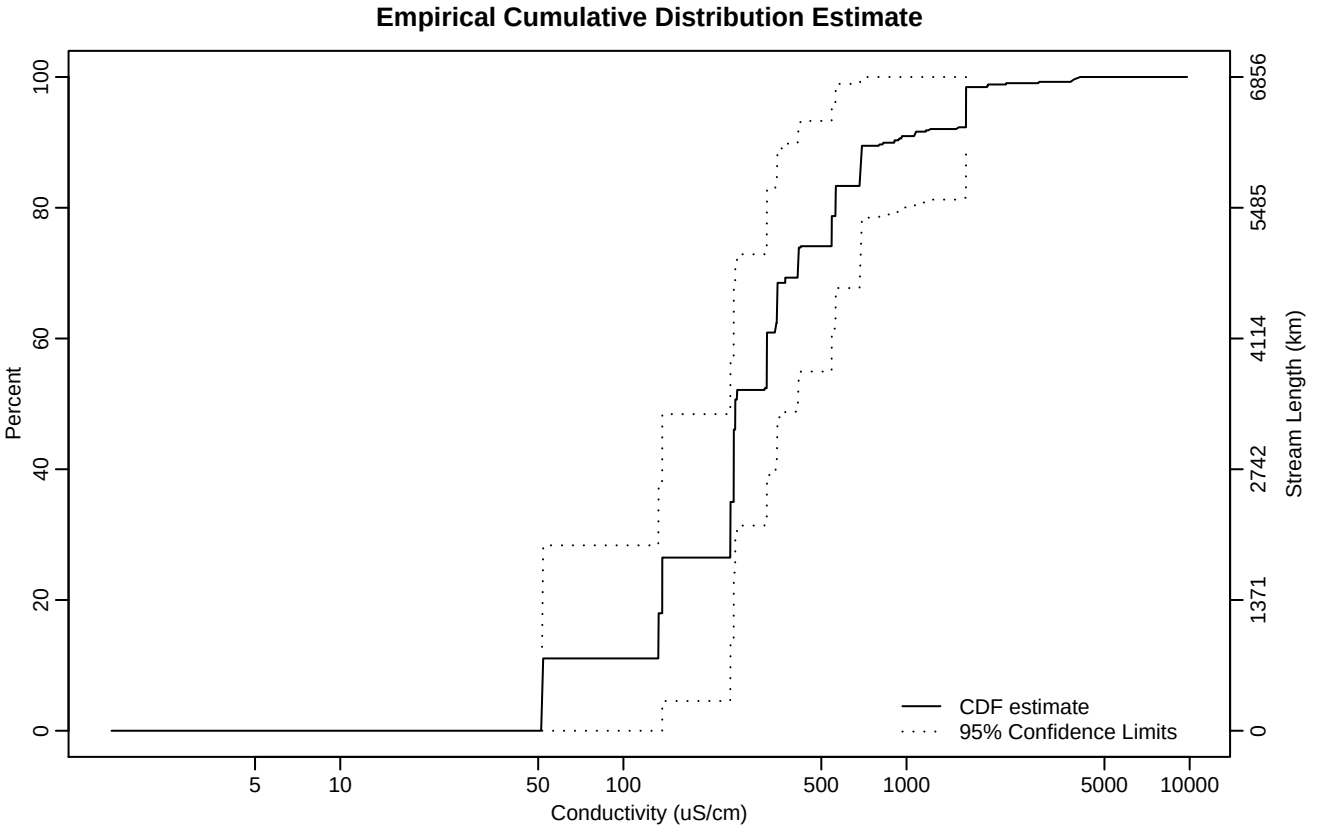


Figure CHEM−39 Indicator: Conductivity Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	51.61	51.53	51.70
10Pct	52	51.83	132.87
25Pct	137.18	51.62	245.46
50Pct	248.44	238.56	414.17
75Pct	543.81	321.03	1621.58
90Pct	904.79	560.75	4105
95Pct	1621.88	684.44	4105
Mean	438.06	256.11	620.01
Std Dev	517.42	347.25	687.60

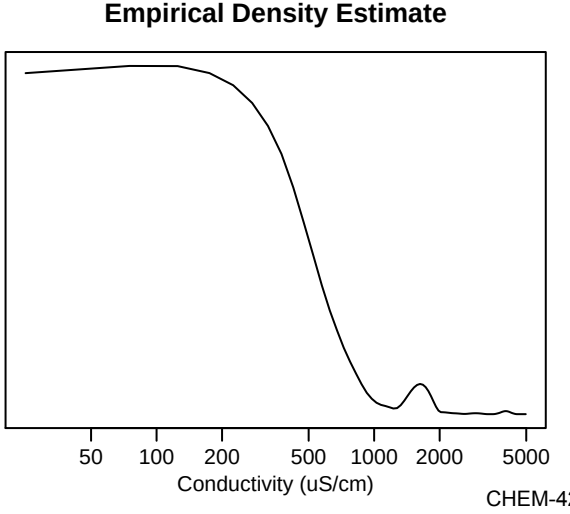
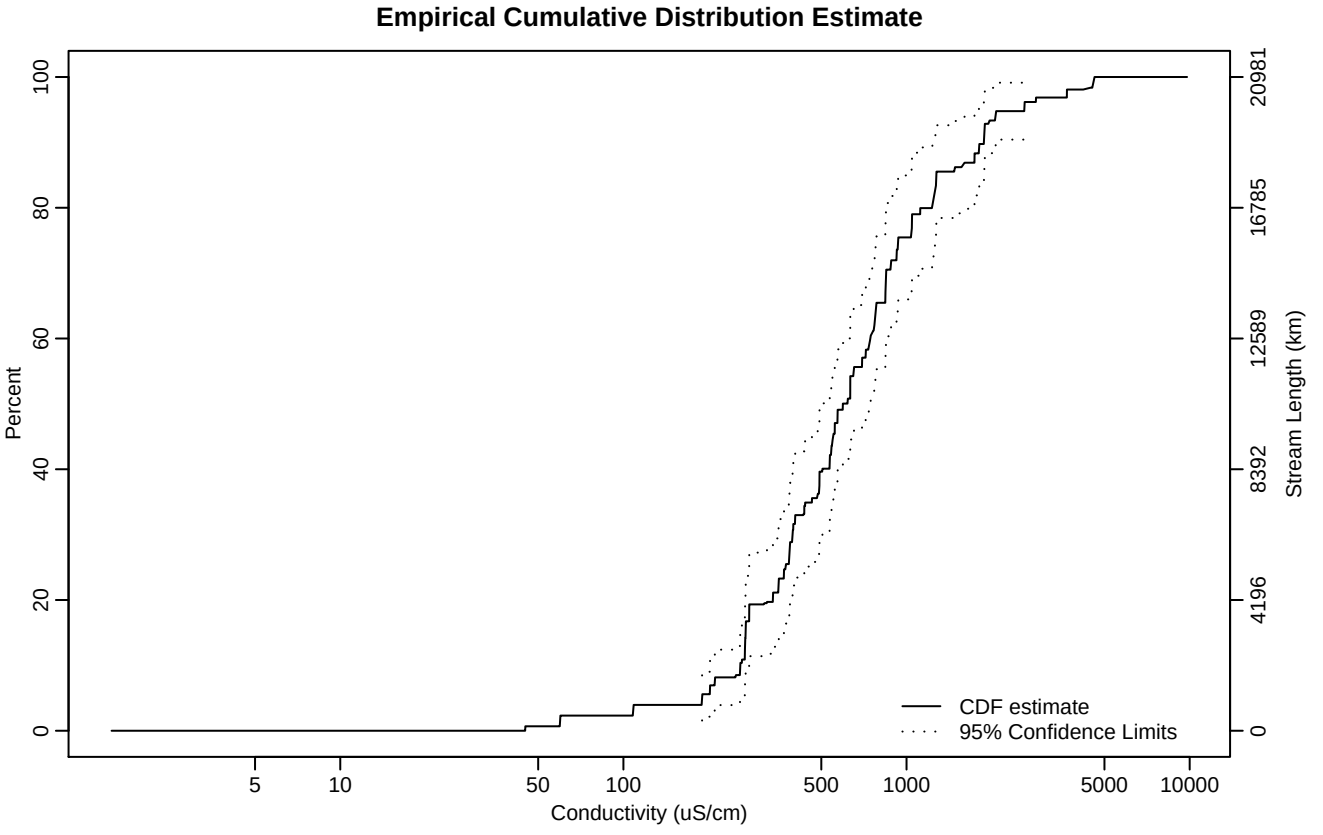


Figure CHEM−40 Indicator: Conductivity Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	189.61	59.76	249.66
10Pct	258.76	201.94	269.85
25Pct	373.90	270.42	435.47
50Pct	595.87	504.57	745.01
75Pct	934.21	841.22	1273.16
90Pct	1875.33	1270.96	2862.71
95Pct	2605.58	1878.71	4580.87
Mean	857.07	692.23	1021.91
Std Dev	782.80	544.38	1021.21

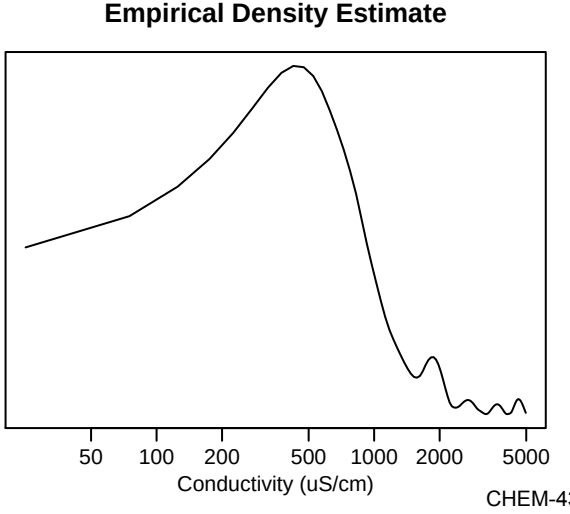
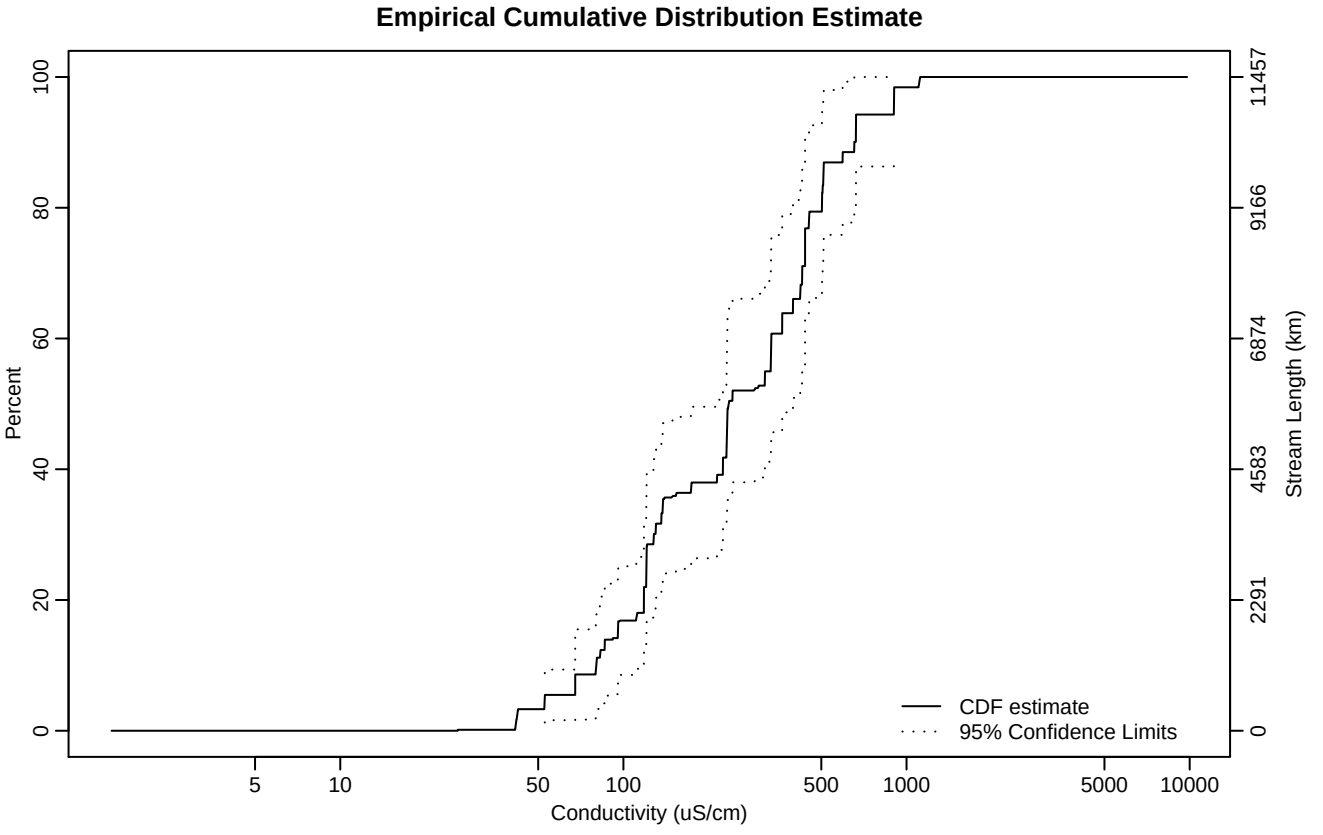


Figure CHEM−41 Indicator: Conductivity Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	52.75	41.81	67.58
10Pct	80.22	42.35	110.91
25Pct	120.59	95.53	139.60
50Pct	235.52	148.04	397
75Pct	438.17	332.89	662.12
90Pct	654.23	502.26	1117
95Pct	902.33	594.40	1117
Mean	319.24	252.48	385.99
Std Dev	219.90	165.89	273.90

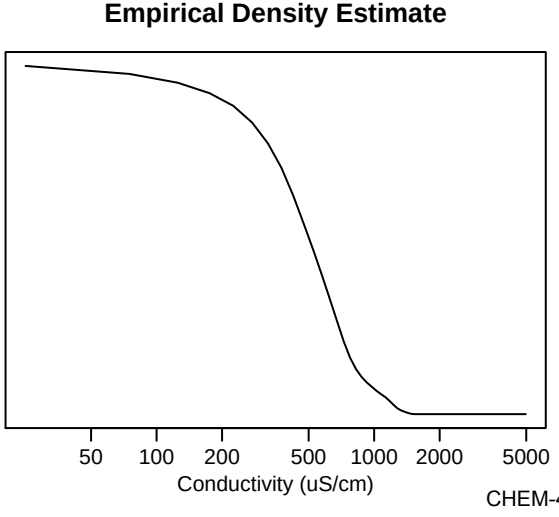
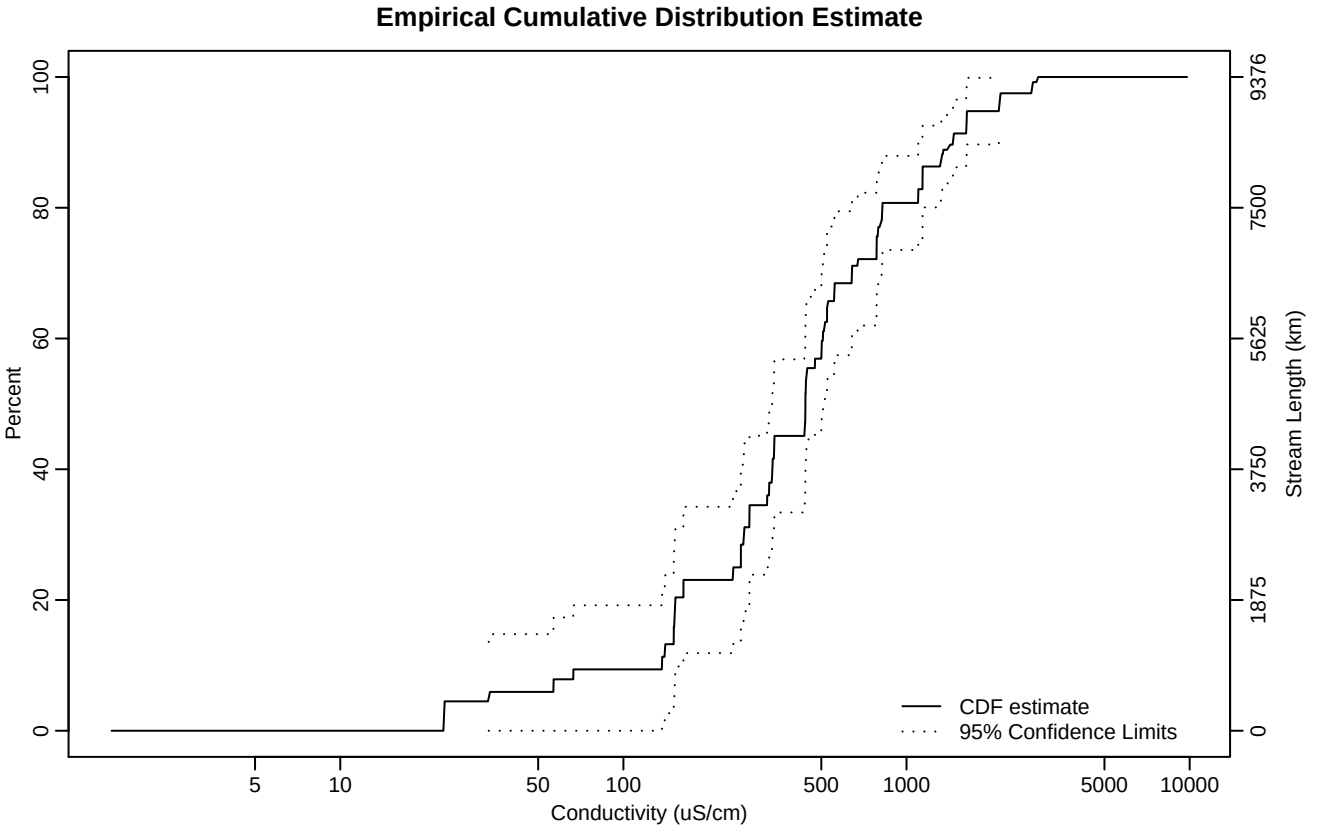


Figure CHEM−42 Indicator: Conductivity Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	33.43	1.56	150.54
10Pct	136.83	1.56	152.59
25Pct	259.90	140.31	327.20
50Pct	439.32	334.79	511.01
75Pct	784.62	524.88	1139.30
90Pct	1458.04	1139.09	2122.66
95Pct	2119.53	1455.62	2918
Mean	614.31	506.69	721.93
Std Dev	416.41	345.60	487.21

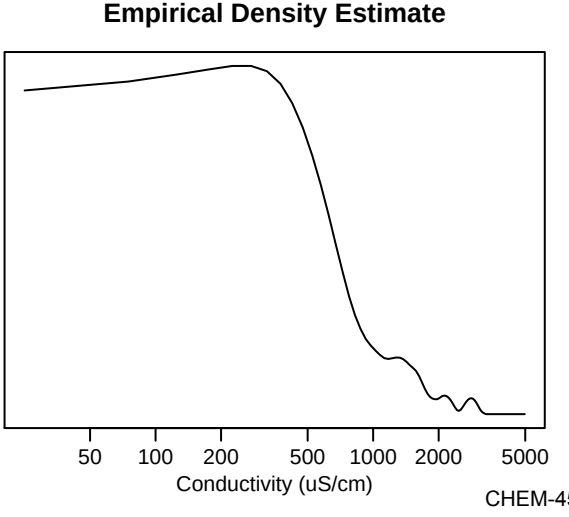
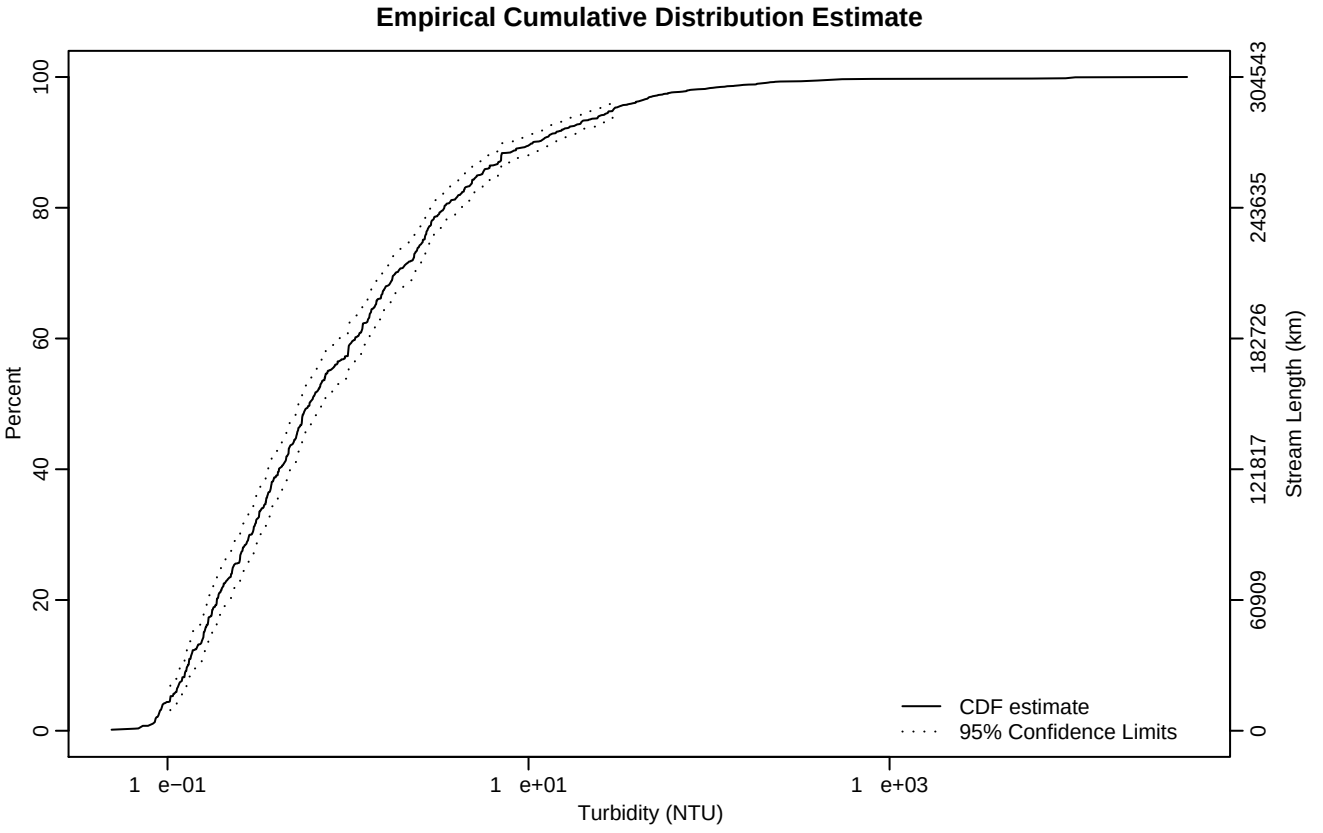


Figure CHEM−43 Indicator: Turbidity Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.10	0.09	0.11
10Pct	0.13	0.12	0.15
25Pct	0.23	0.20	0.27
50Pct	0.61	0.53	0.74
75Pct	2.60	2.30	2.90
90Pct	10.59	7.99	14.20
95Pct	29.49	24.28	39.24
Mean	50.83	6.87	94.80
Std Dev	372.93	179.39	566.47

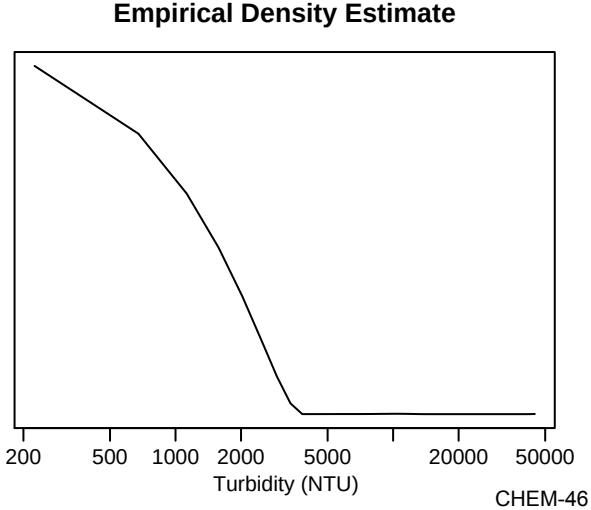
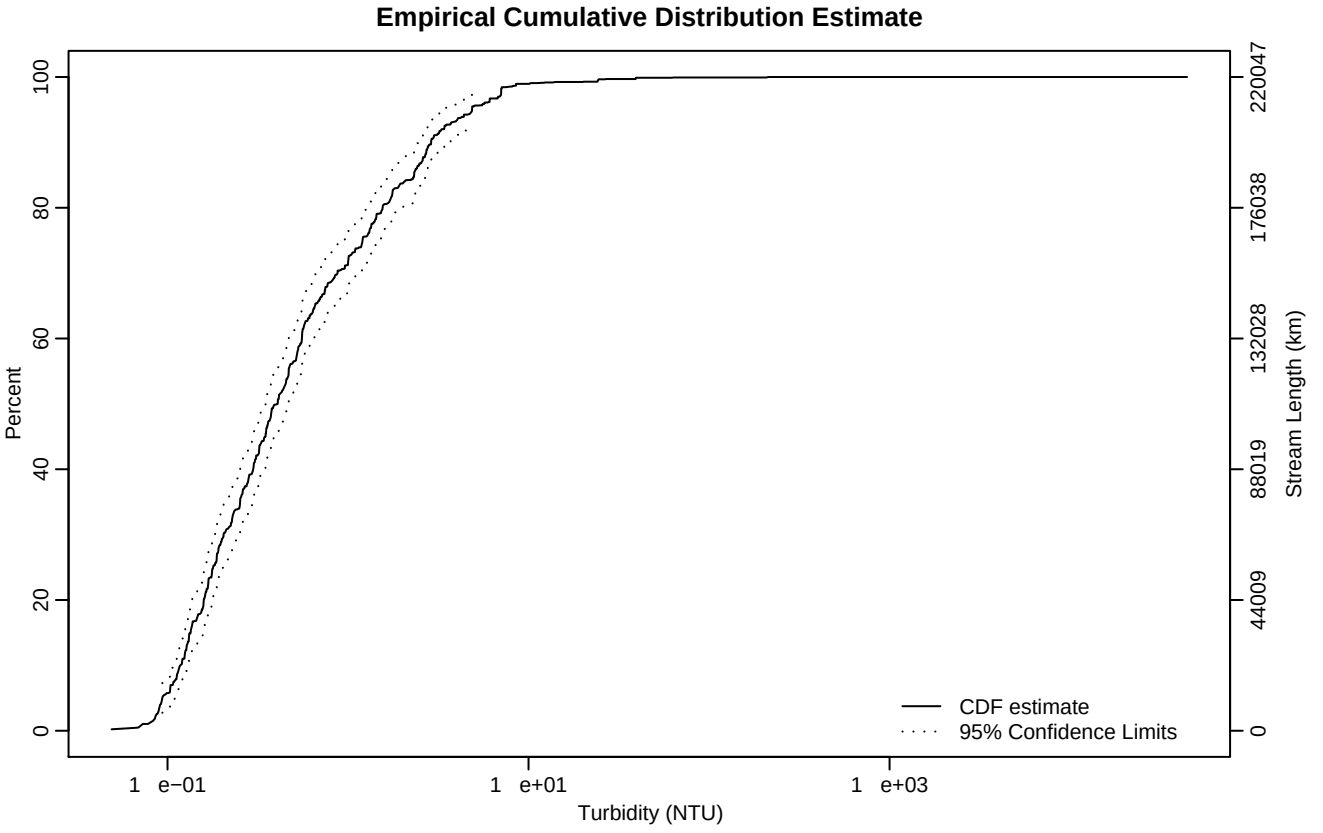


Figure CHEM−44 Indicator: Turbidity Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.09	0.11
10Pct	0.12	0.10	0.13
25Pct	0.18	0.16	0.20
50Pct	0.41	0.35	0.47
75Pct	1.20	0.96	1.49
90Pct	2.89	2.55	3.87
95Pct	4.86	3.50	7.04
Mean	1.41	1.04	1.77
Std Dev	2.73	1.89	3.58

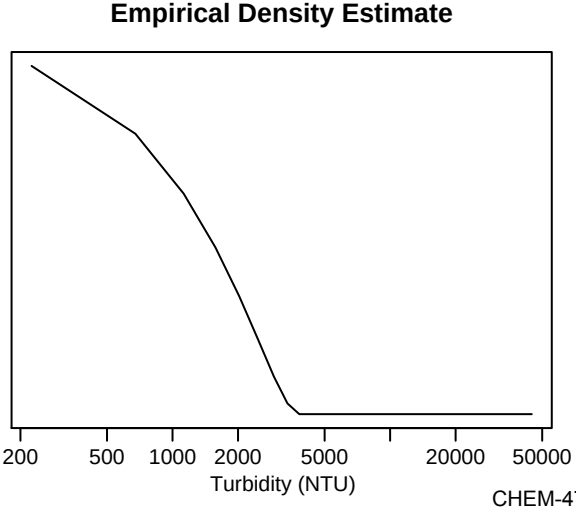
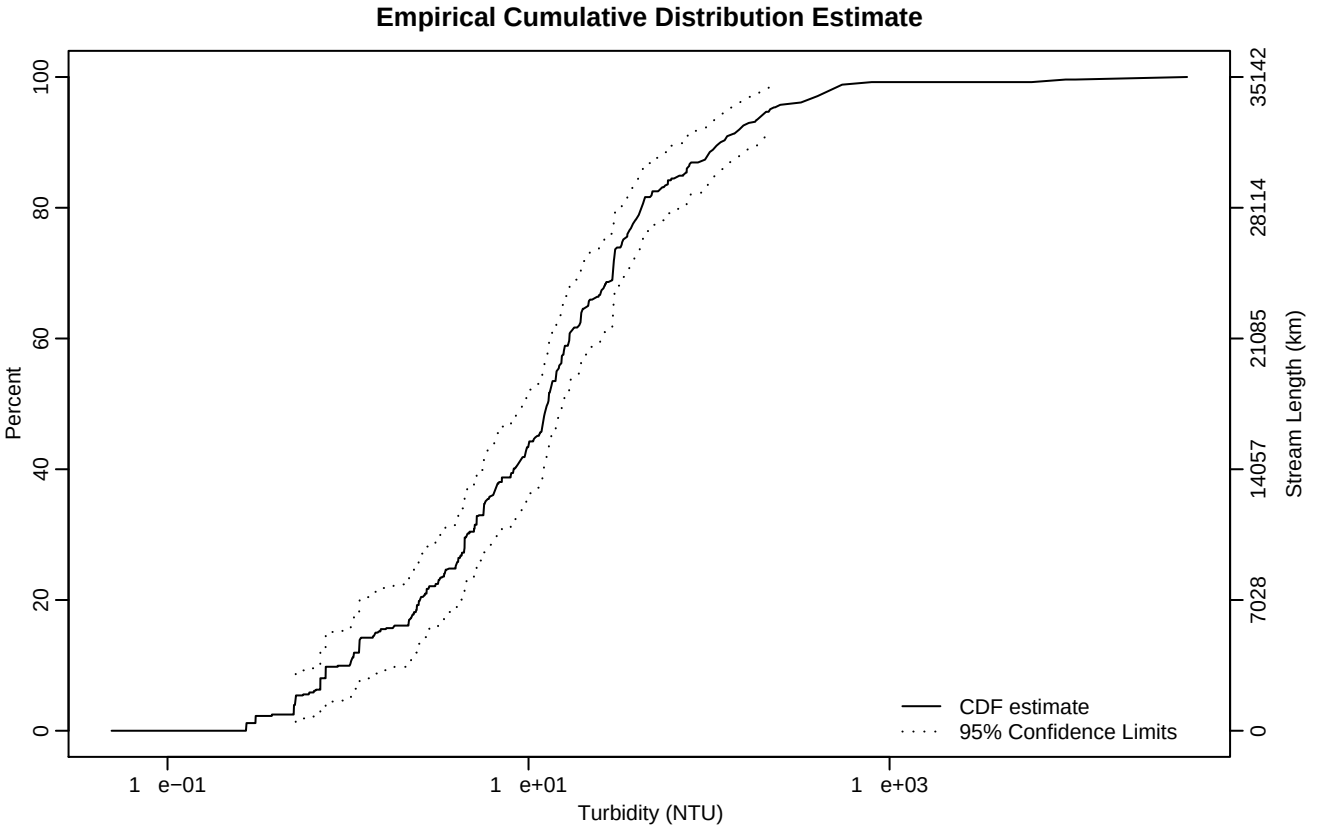


Figure CHEM−45 Indicator: Turbidity Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.51	0.31	0.75
10Pct	1.02	0.51	1.51
25Pct	3.94	2.38	5.15
50Pct	12.75	9.58	15.64
75Pct	33.33	29.14	43.34
90Pct	115.64	75.21	199.57
95Pct	217.30	135.96	535.28
Mean	254.93	−49.54	559.39
Std Dev	1709.76	373.78	3045.73

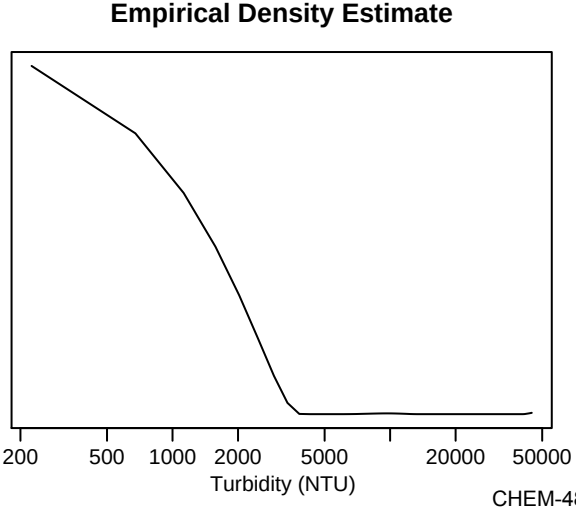
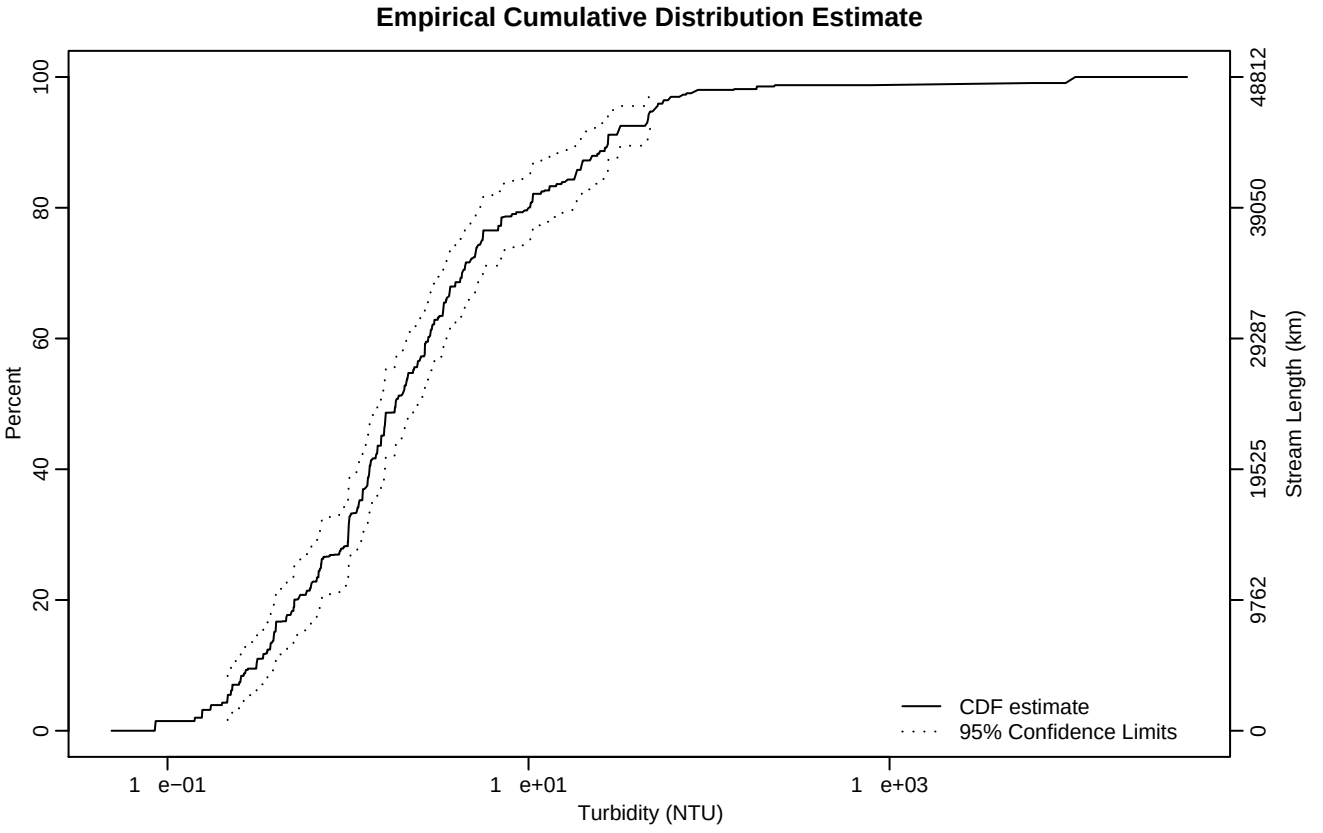


Figure CHEM−46 Indicator: Turbidity Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.14	0.26
10Pct	0.31	0.22	0.39
25Pct	0.71	0.50	1.01
50Pct	1.84	1.45	2.53
75Pct	5.51	4.20	10.30
90Pct	27.54	18.56	46.36
95Pct	49.67	32.03	82.54
Mean	127.27	−46.09	300.62
Std Dev	500.61	186.60	814.62

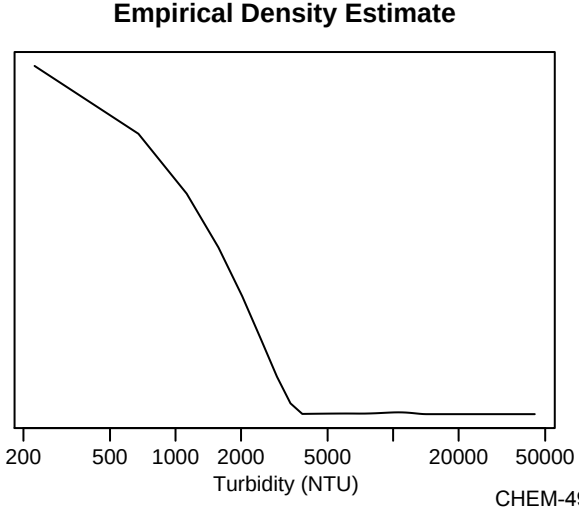
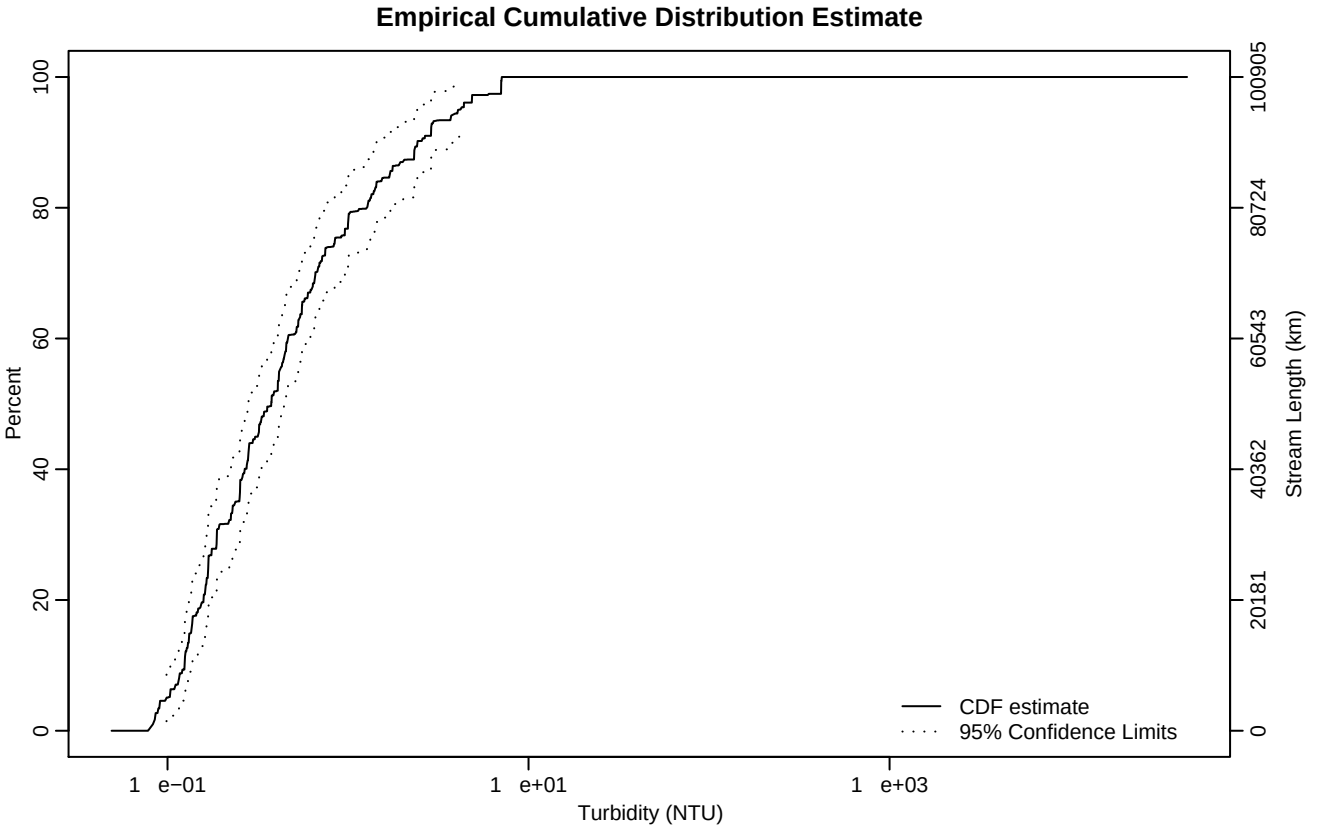


Figure CHEM−47 Indicator: Turbidity Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.10	0.08	0.12
10Pct	0.12	0.10	0.13
25Pct	0.17	0.14	0.22
50Pct	0.38	0.28	0.45
75Pct	0.85	0.64	1.35
90Pct	2.43	1.57	4.38
95Pct	4.13	2.67	7.06
Mean	0.91	0.64	1.19
Std Dev	1.32	0.92	1.72

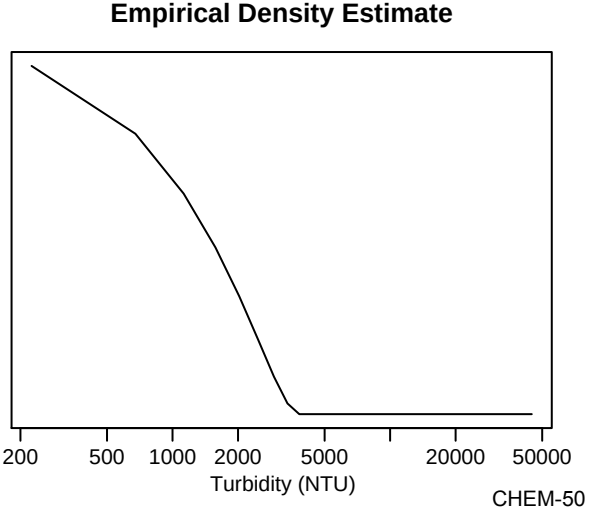
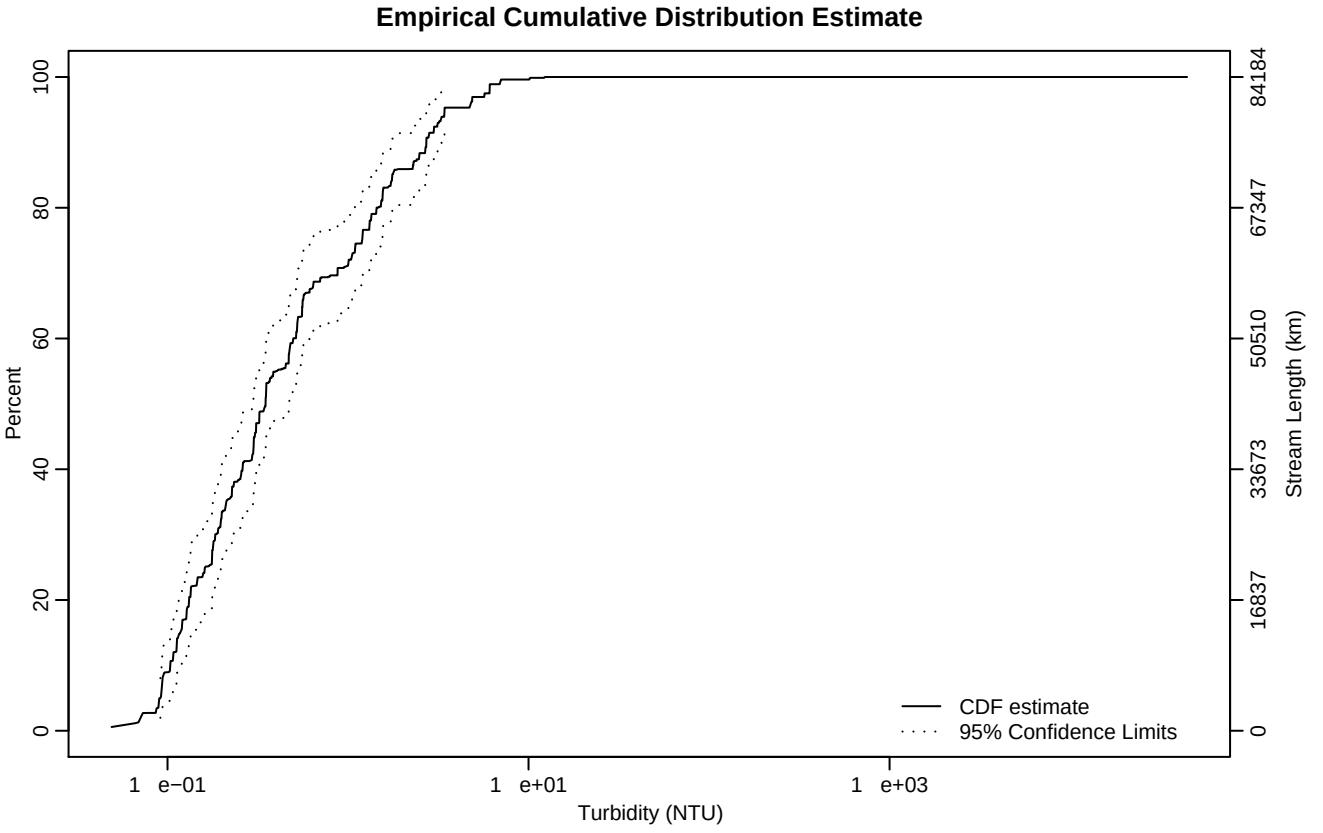


Figure CHEM−48 Indicator: Turbidity Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.07	0.09
10Pct	0.10	0.09	0.12
25Pct	0.16	0.13	0.20
50Pct	0.35	0.30	0.47
75Pct	1.20	0.64	1.55
90Pct	2.71	1.76	3.43
95Pct	3.43	2.80	6.94
Mean	0.96	0.75	1.18
Std Dev	1.41	1.08	1.74

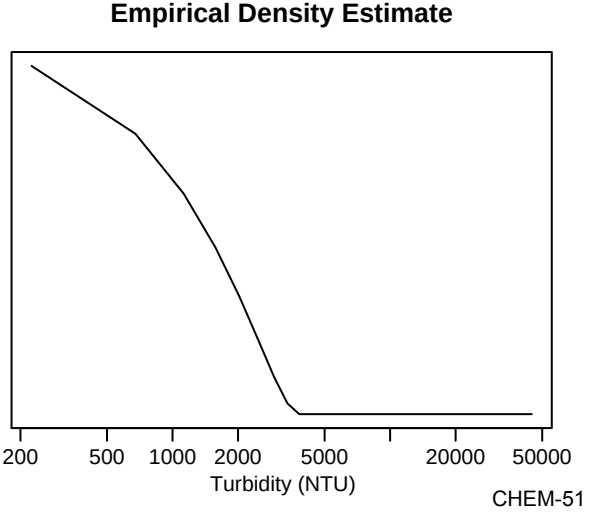
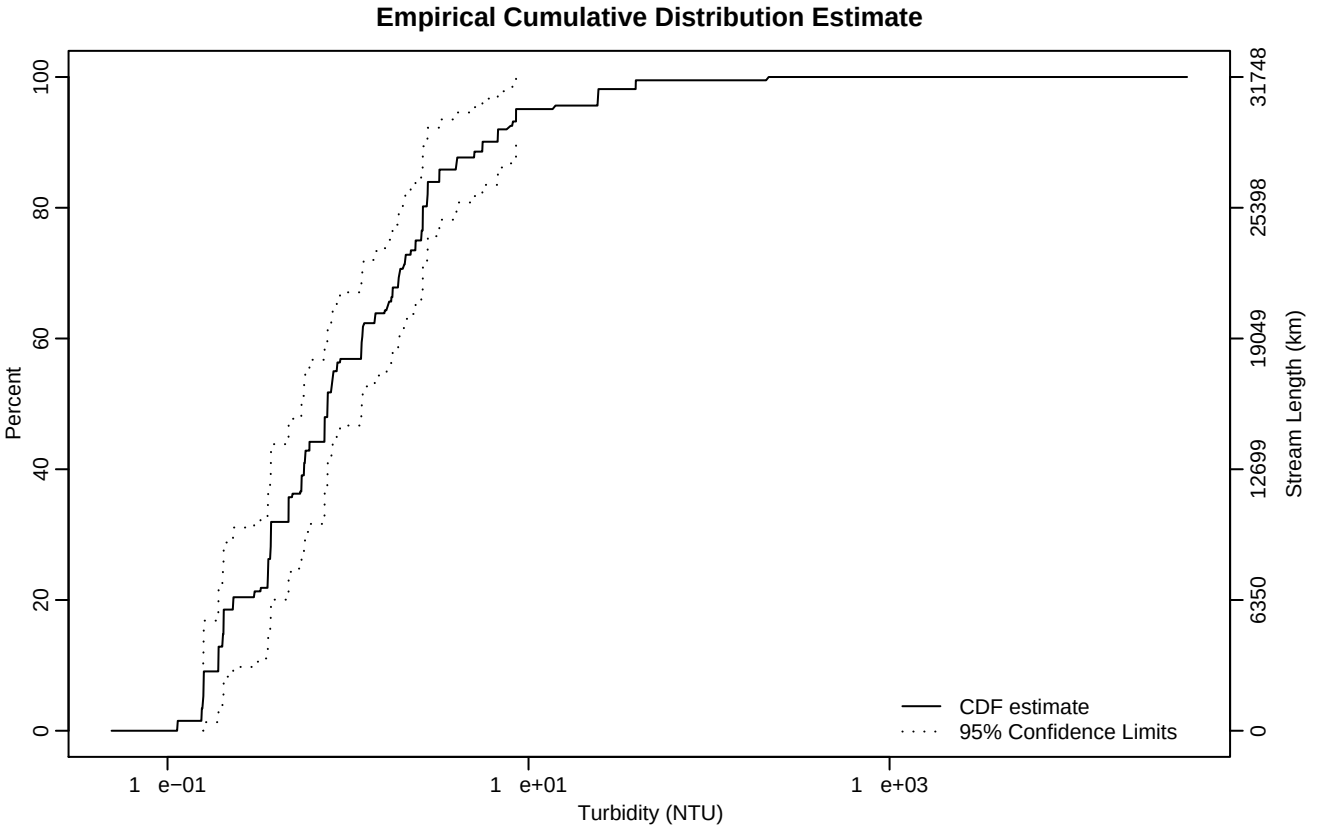


Figure CHEM−49 Indicator: Turbidity Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.16	0.11	0.19
10Pct	0.19	0.15	0.20
25Pct	0.36	0.20	0.49
50Pct	0.77	0.55	1.21
75Pct	2.54	1.66	3.21
90Pct	5.57	2.77	24.24
95Pct	8.53	5.55	214
Mean	3.74	1.45	6.03
Std Dev	9.86	4.22	15.49

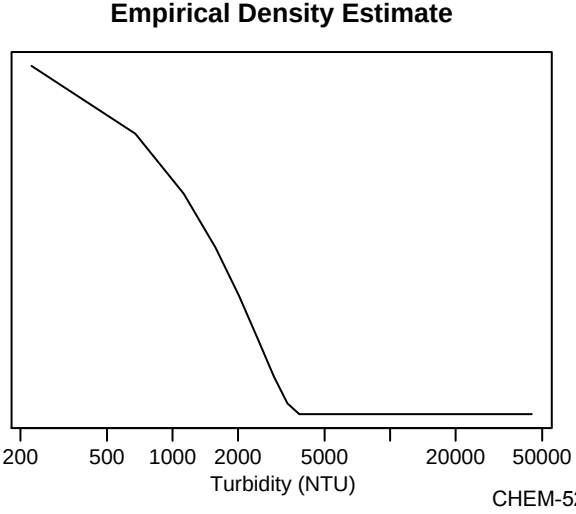
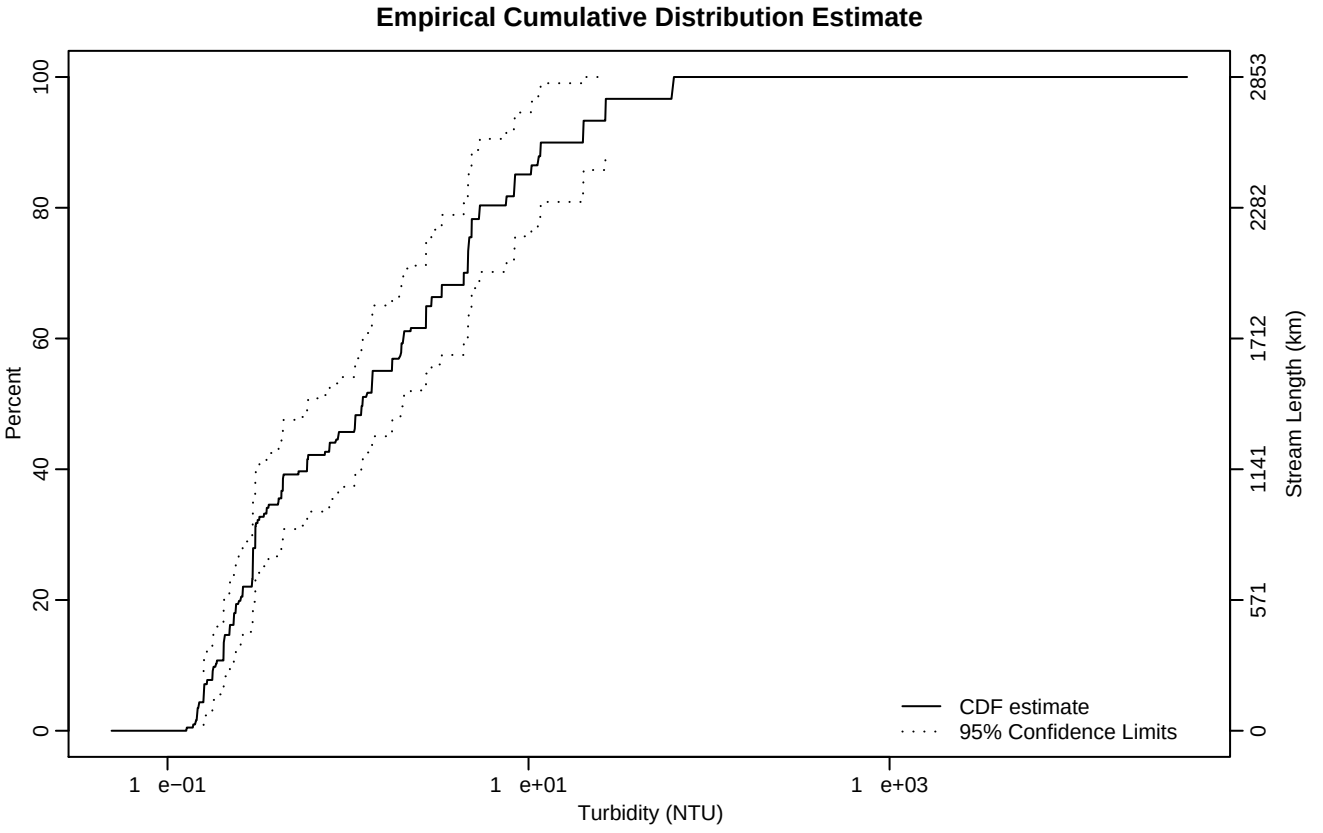


Figure CHEM−50 Indicator: Turbidity Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.16	0.14	0.18
10Pct	0.18	0.16	0.22
25Pct	0.30	0.23	0.32
50Pct	1.20	0.59	2.02
75Pct	4.68	2.71	10.37
90Pct	20	7.50	63.43
95Pct	26.70	11.32	63.90
Mean	5.81	2.28	9.34
Std Dev	10.20	4.37	16.03

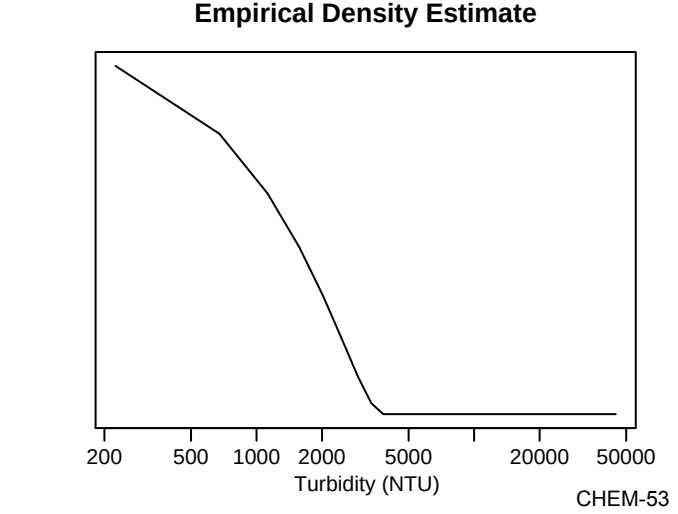
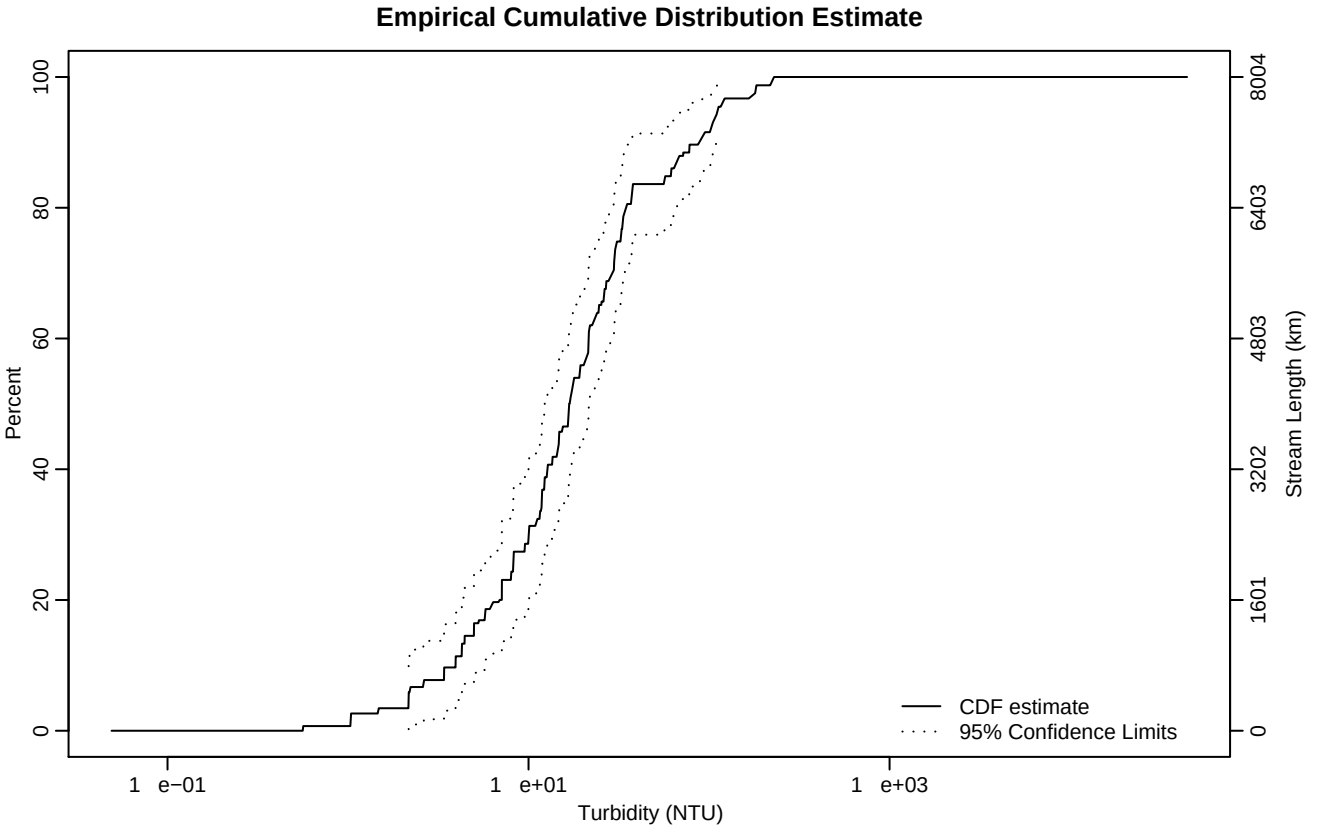


Figure CHEM−51 Indicator: Turbidity Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.17	1.03	3.40
10Pct	3.94	1.48	5.28
25Pct	8.22	4.99	11.81
50Pct	16.80	12.27	21.80
75Pct	32.34	25.36	56.98
90Pct	88.30	56.11	120.34
95Pct	111.88	91.78	221.99
Mean	31.48	22.94	40.02
Std Dev	40.03	28	52.07

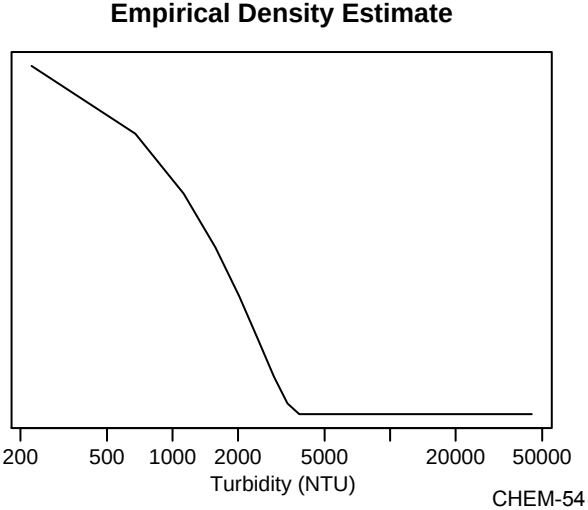
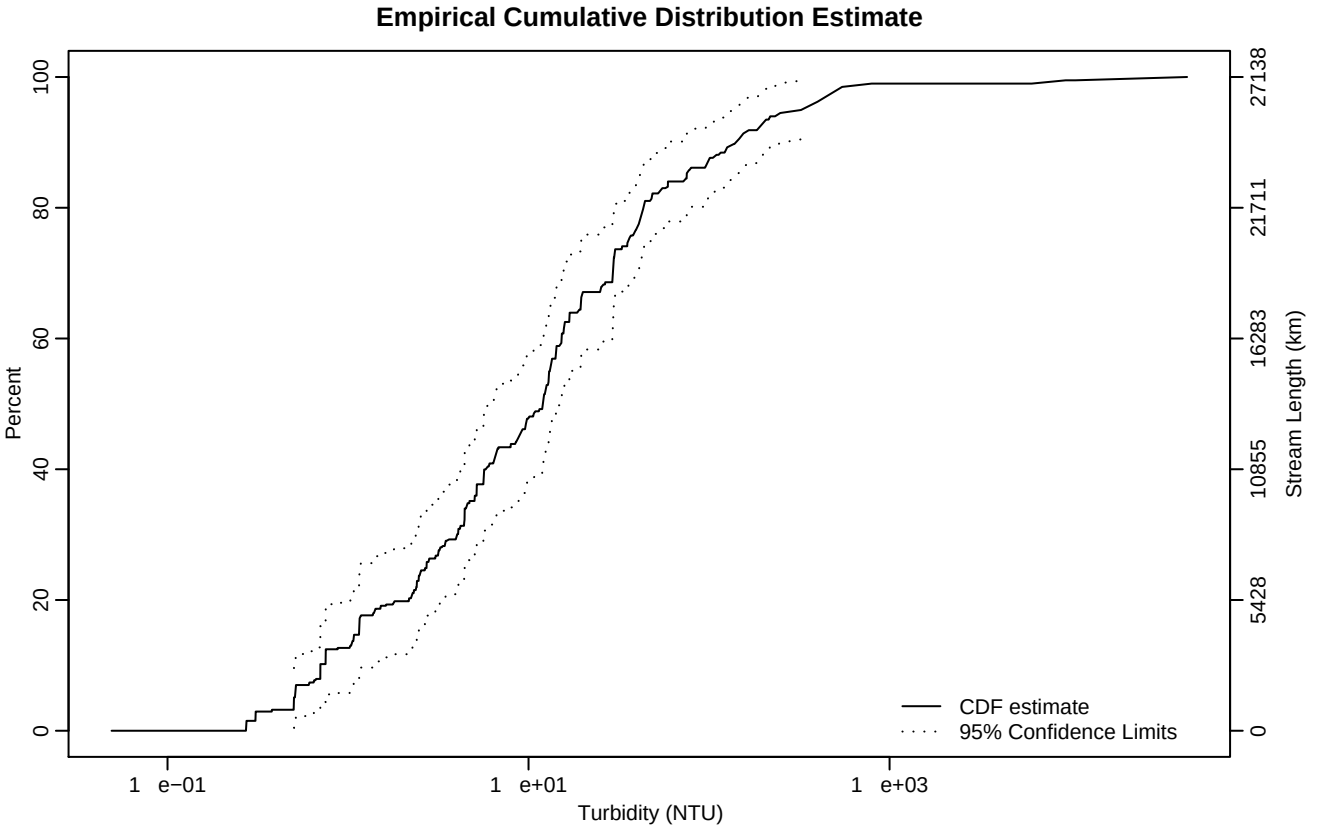


Figure CHEM−52 Indicator: Turbidity Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.27	0.70
10Pct	0.70	0.51	1.15
25Pct	2.72	1.16	4.43
50Pct	12.01	5.86	15.24
75Pct	35.78	25.43	48.51
90Pct	140.83	75.17	340.30
95Pct	325.88	146.02	13276.01
Mean	320.83	−73.15	714.82
Std Dev	1874.80	422.99	3326.60

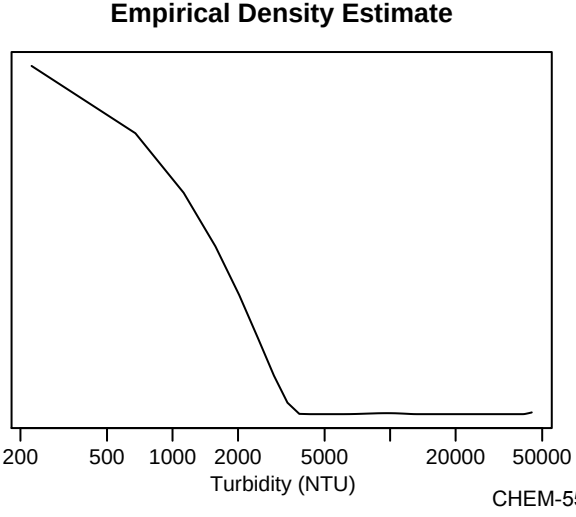
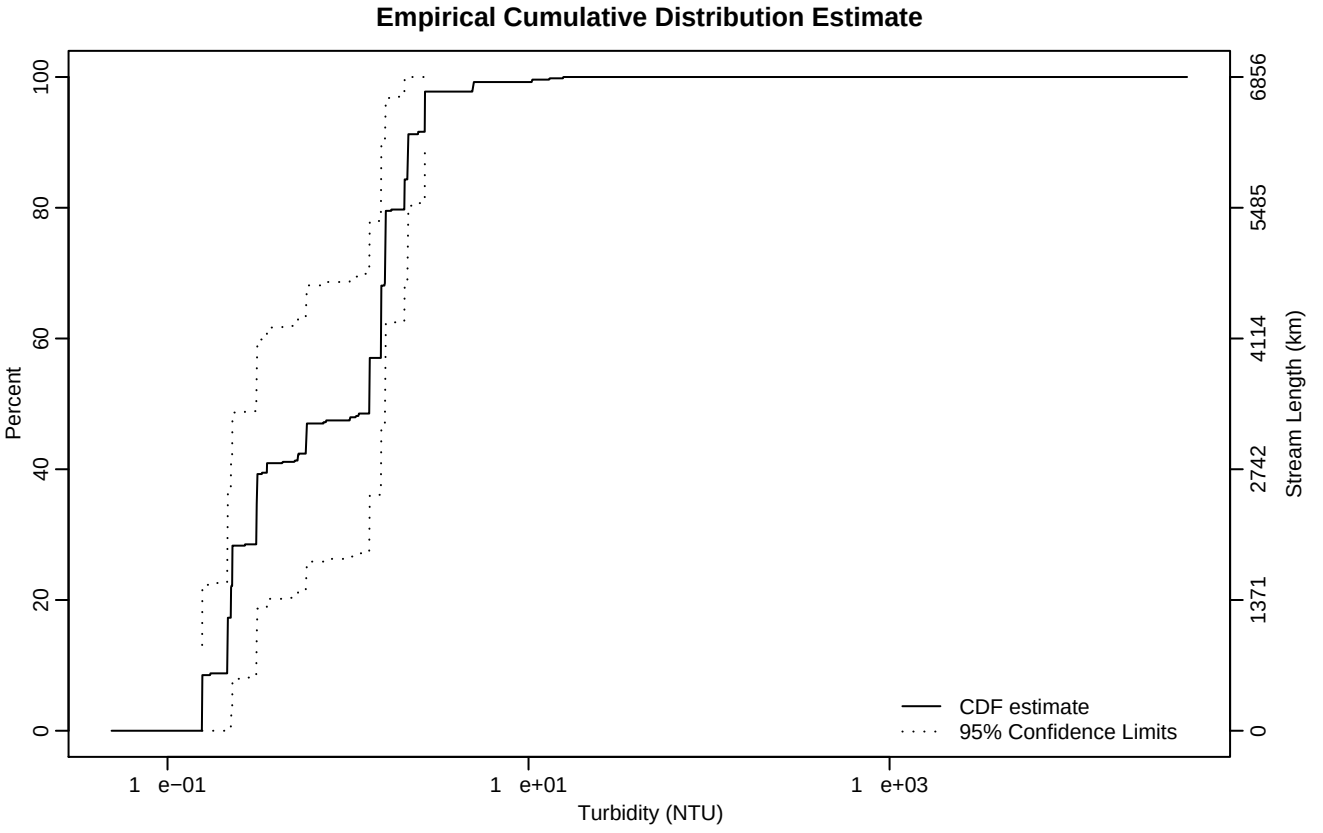


Figure CHEM−53 Indicator: Turbidity Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.16	0.16	0.16
10Pct	0.21	0.05	0.23
25Pct	0.23	0.16	0.59
50Pct	1.31	0.27	1.61
75Pct	1.61	1.32	2.67
90Pct	2.15	1.61	15.60
95Pct	2.67	2.06	15.60
Mean	1.20	0.85	1.56
Std Dev	1.38	1.03	1.73

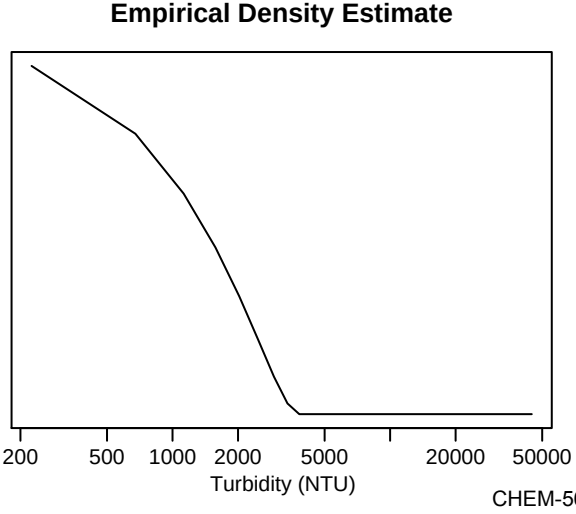
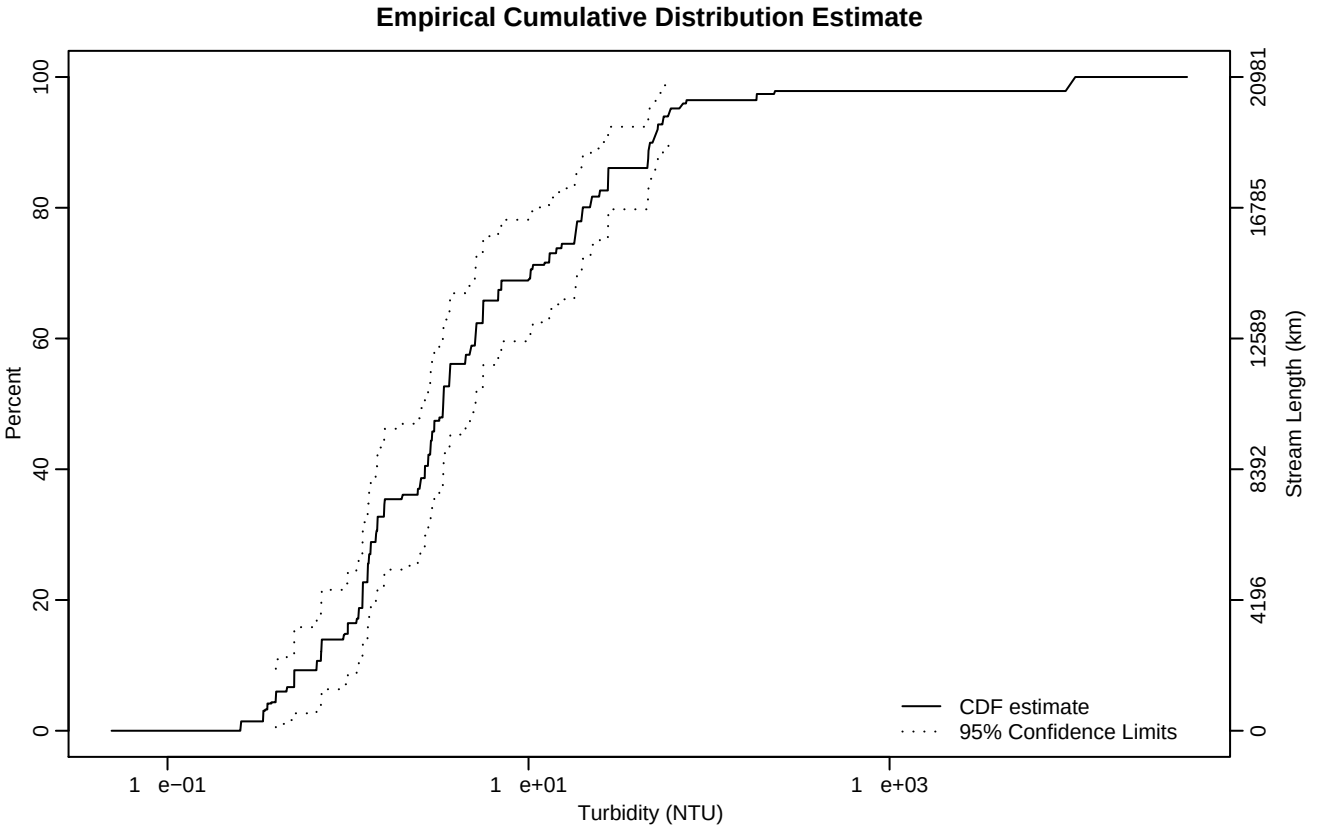


Figure CHEM−54 Indicator: Turbidity Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.40	0.25	0.50
10Pct	0.67	0.36	1.11
25Pct	1.29	1	1.59
50Pct	3.37	2.53	5.13
75Pct	18	6.79	27.57
90Pct	48.68	27.60	70.78
95Pct	61.06	49.10	10537.58
Mean	242.74	−152.57	638.04
Std Dev	871.54	182.42	1560.65

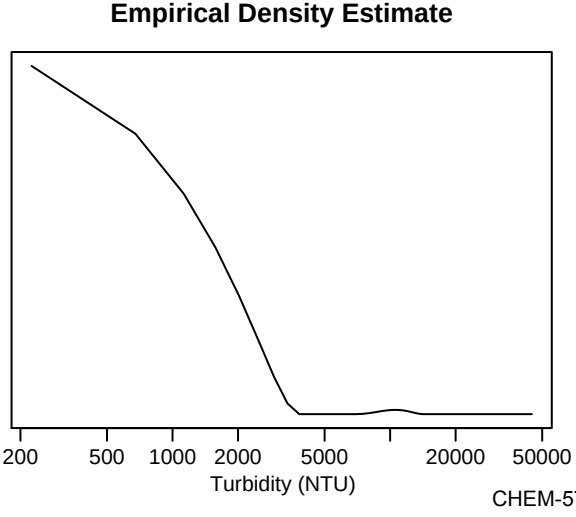
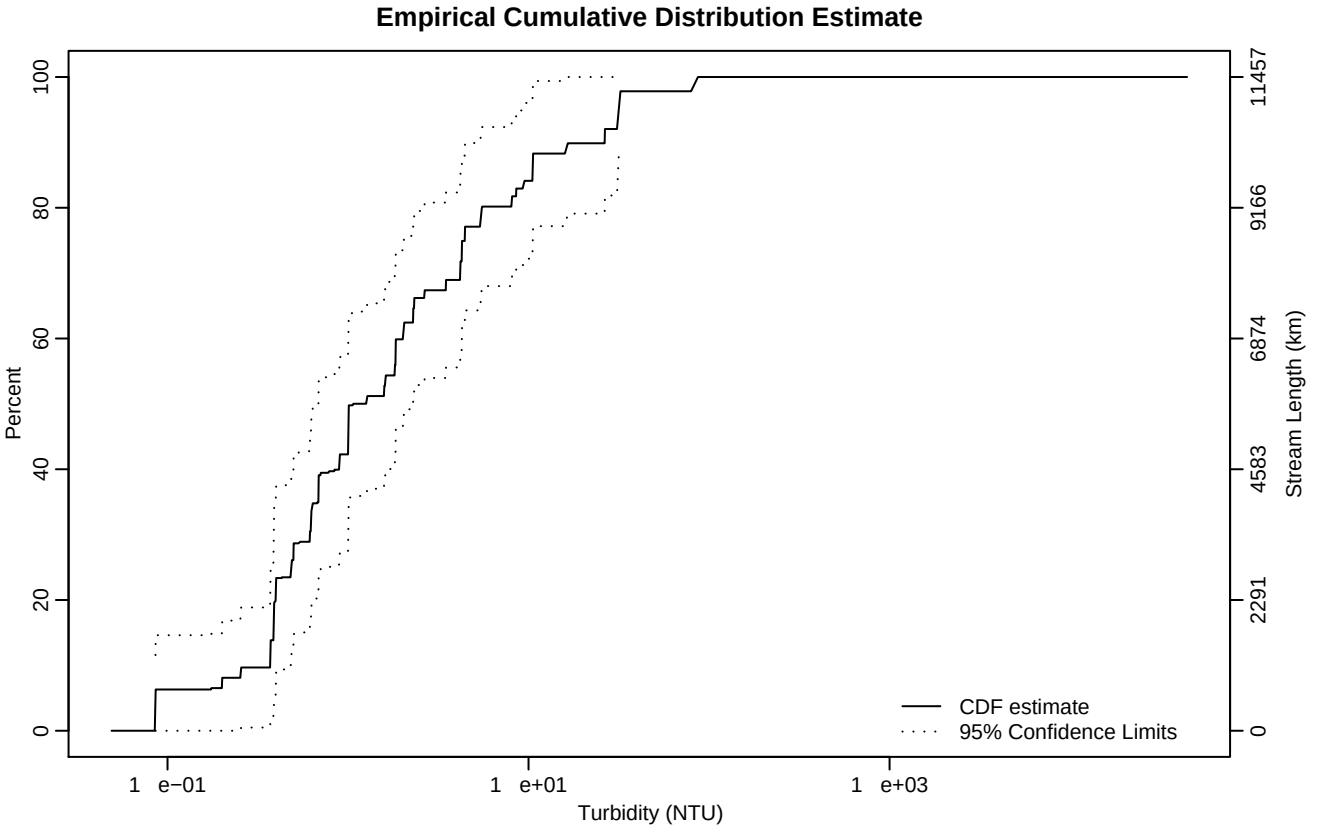


Figure CHEM−55 Indicator: Turbidity Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.09	0.09
10Pct	0.37	0.05	0.40
25Pct	0.49	0.37	0.89
50Pct	1.07	0.69	2.32
75Pct	4.43	2.04	15.96
90Pct	26.41	5.47	86.80
95Pct	31.62	10.51	86.80
Mean	6.56	2.27	10.85
Std Dev	11.97	6	17.93

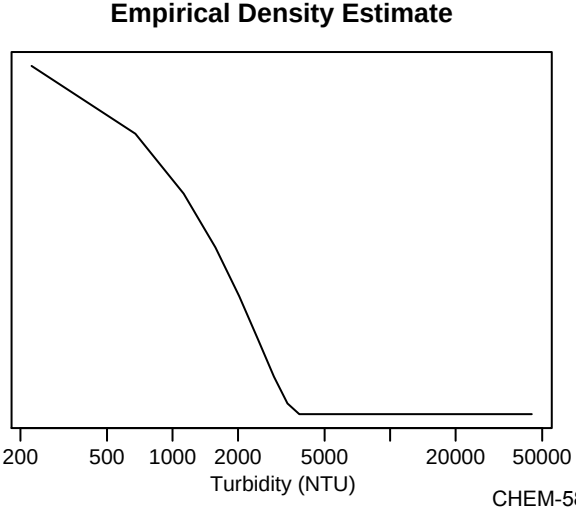
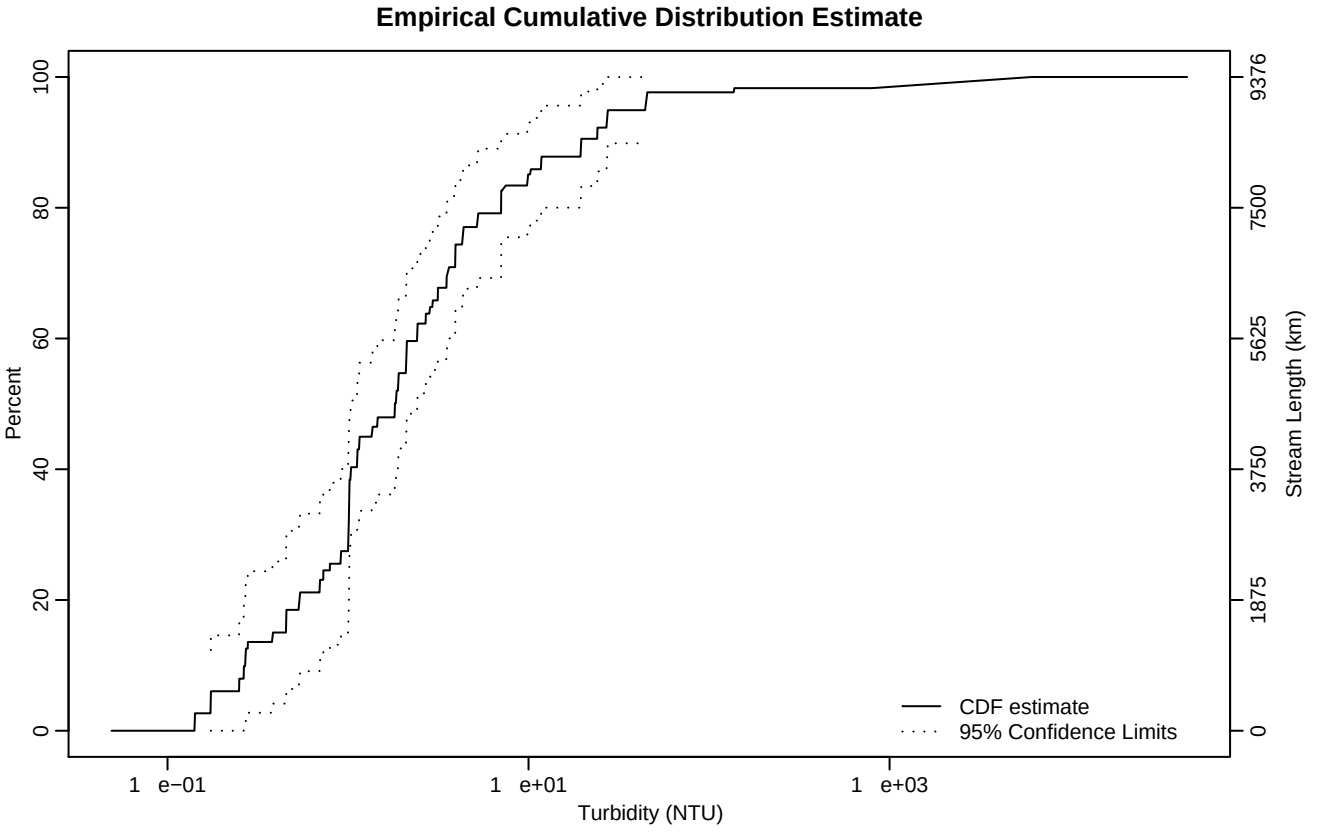


Figure CHEM−56 Indicator: Turbidity Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	0.14	0.26
10Pct	0.27	0.14	0.54
25Pct	0.79	0.28	1.02
50Pct	1.82	1.02	2.43
75Pct	4.30	2.93	9.94
90Pct	19.56	7.06	137.67
95Pct	44.24	19.55	6126
Mean	110.47	−75.74	296.69
Std Dev	349.34	71.48	627.20

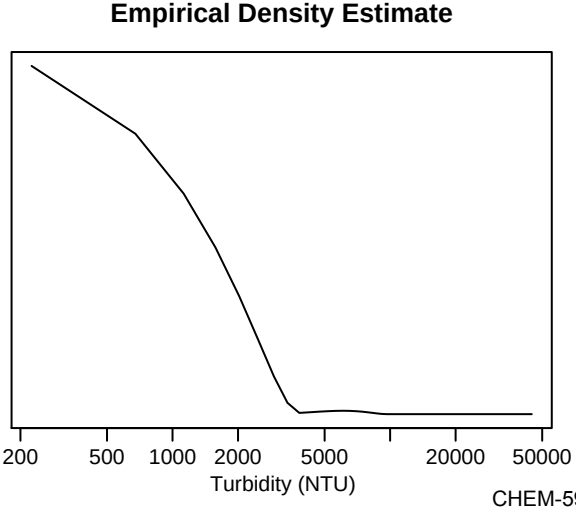
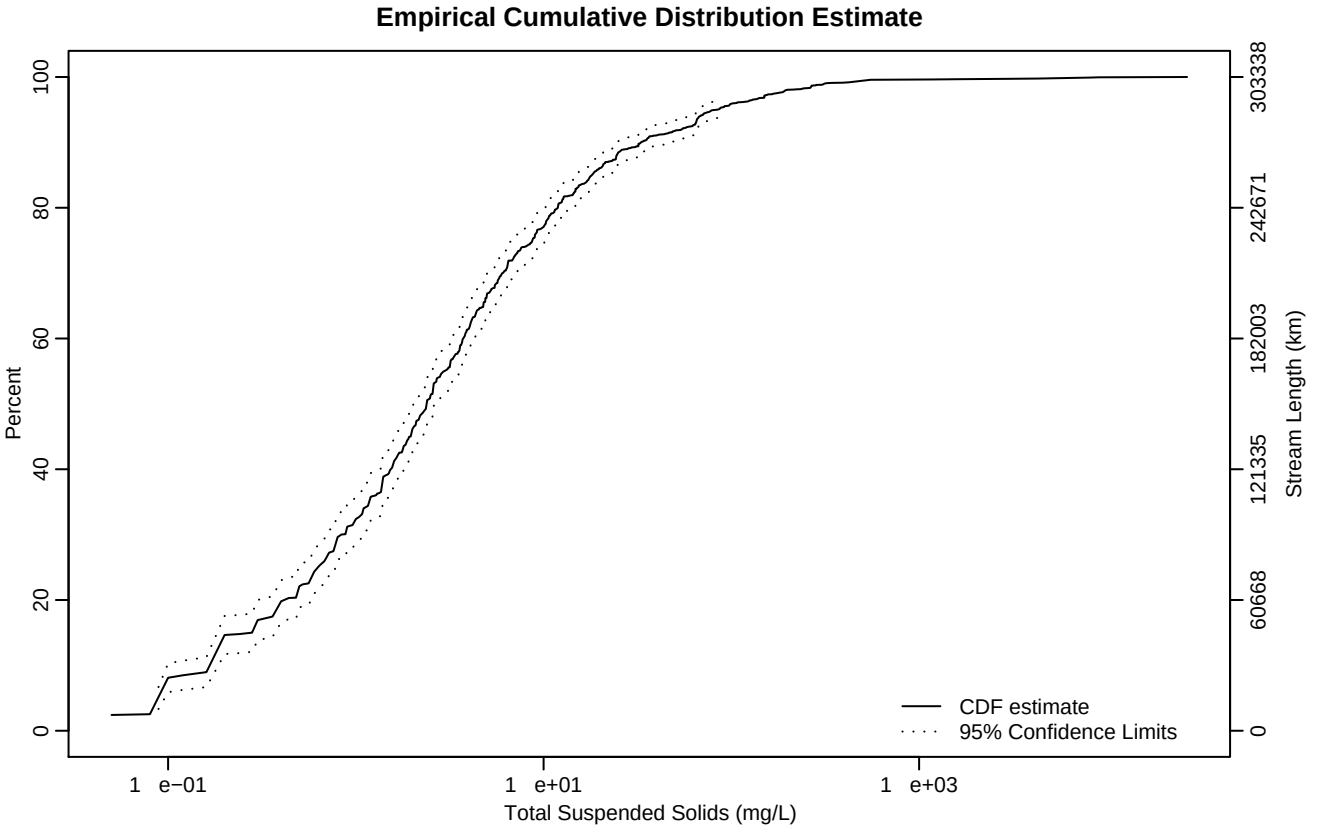


Figure CHEM−57 Indicator: TSS Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.08	0.09
10Pct	0.17	0.10	0.18
25Pct	0.63	0.49	0.78
50Pct	2.38	2.03	2.69
75Pct	8.72	6.89	10.29
90Pct	33.01	24.87	48.64
95Pct	84.15	66.51	122.35
Mean	49.09	19.20	78.98
Std Dev	276.75	152.68	400.81

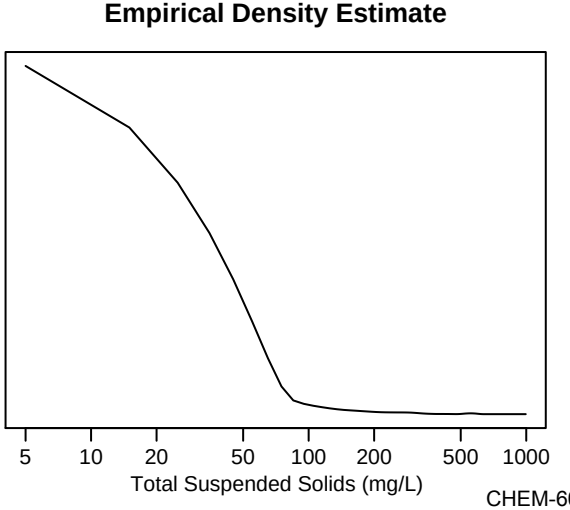
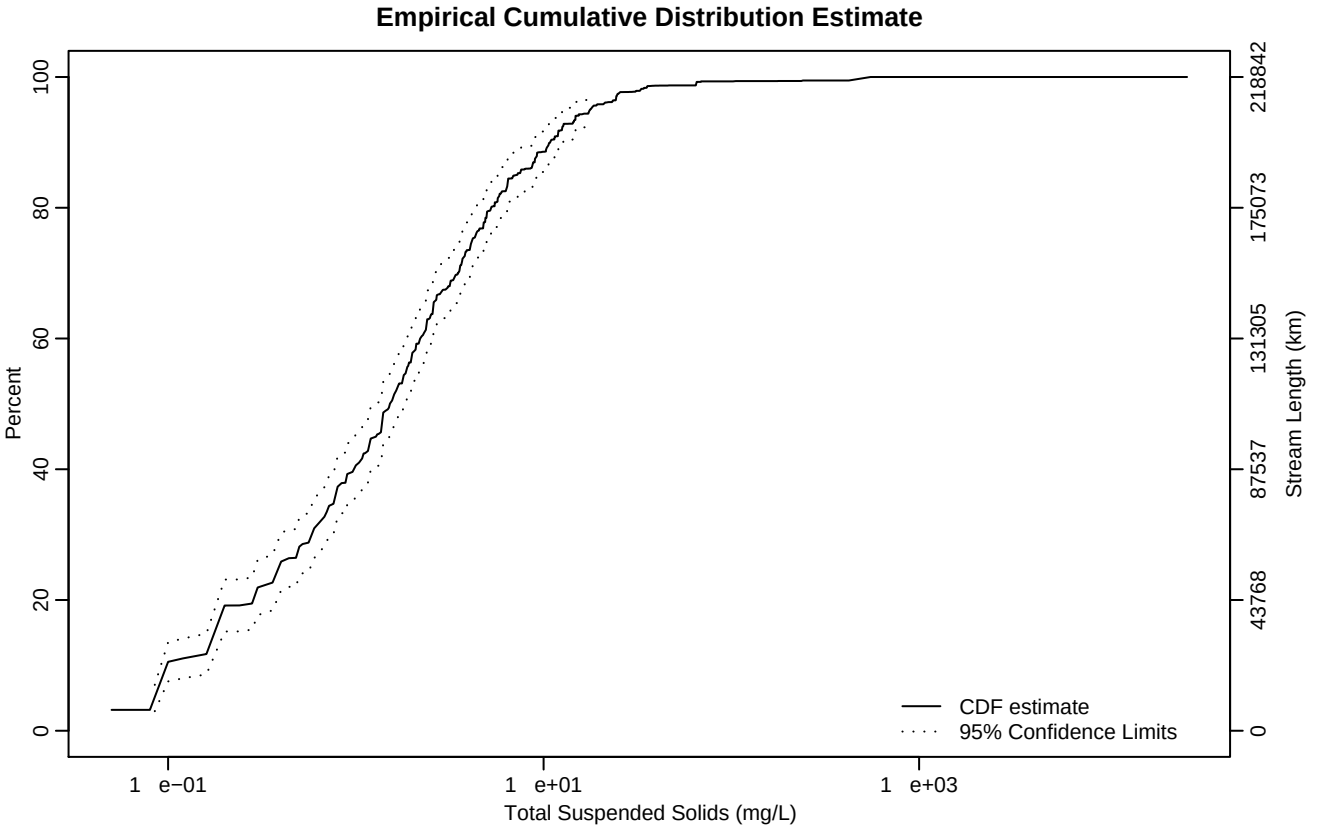


Figure CHEM−58 Indicator: TSS Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.08	0.08	0.09
10Pct	0.10	0.09	0.16
25Pct	0.39	0.29	0.57
50Pct	1.52	1.29	1.84
75Pct	4.16	3.58	4.99
90Pct	10.83	8.97	14.34
95Pct	17.66	14.34	24.39
Mean	7.17	2.21	12.14
Std Dev	23.36	9.29	37.43

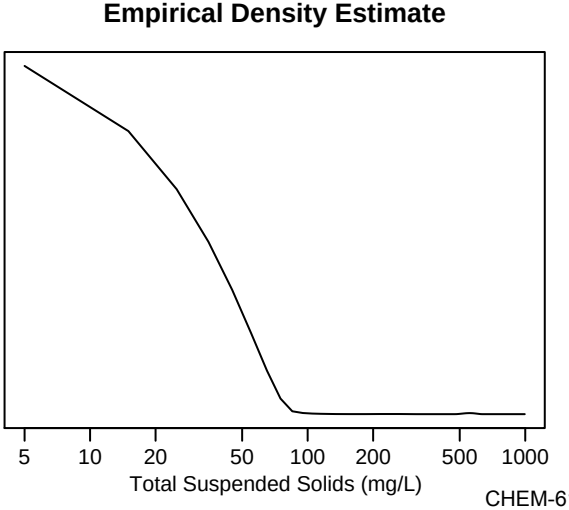
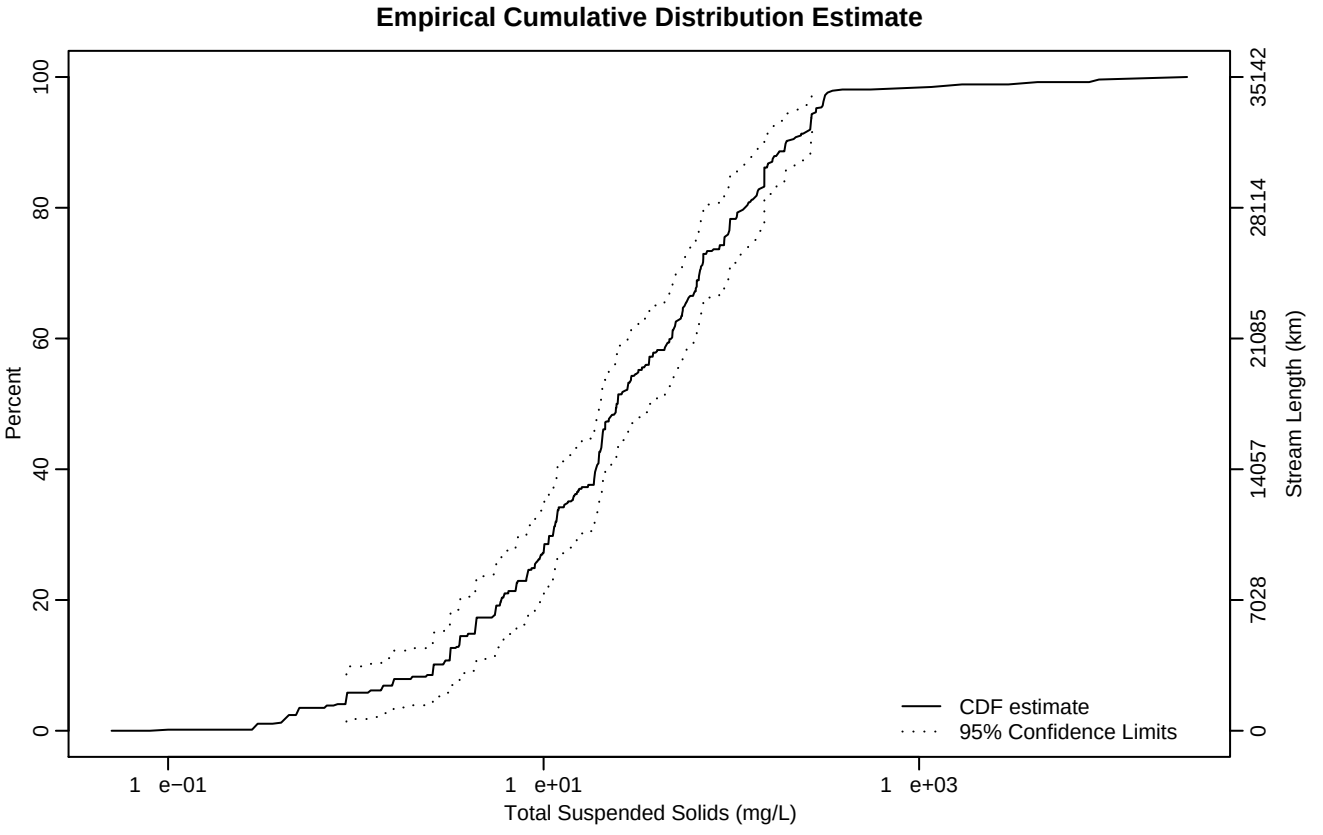


Figure CHEM−59 Indicator: TSS Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.89	0.42	1.98
10Pct	2.60	0.90	3.60
25Pct	8.97	5.53	11.57
50Pct	24.48	19.78	38.24
75Pct	91.66	65.41	136.72
90Pct	195.74	149.89	267.73
95Pct	282.82	263.47	339.05
Mean	227.29	35.88	418.69
Std Dev	1163.25	382.56	1943.94

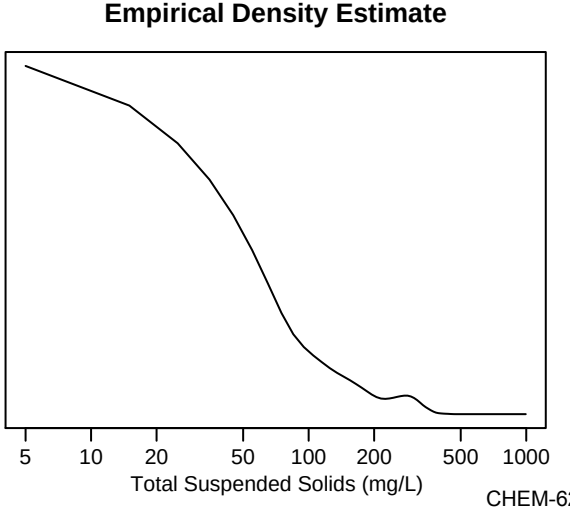
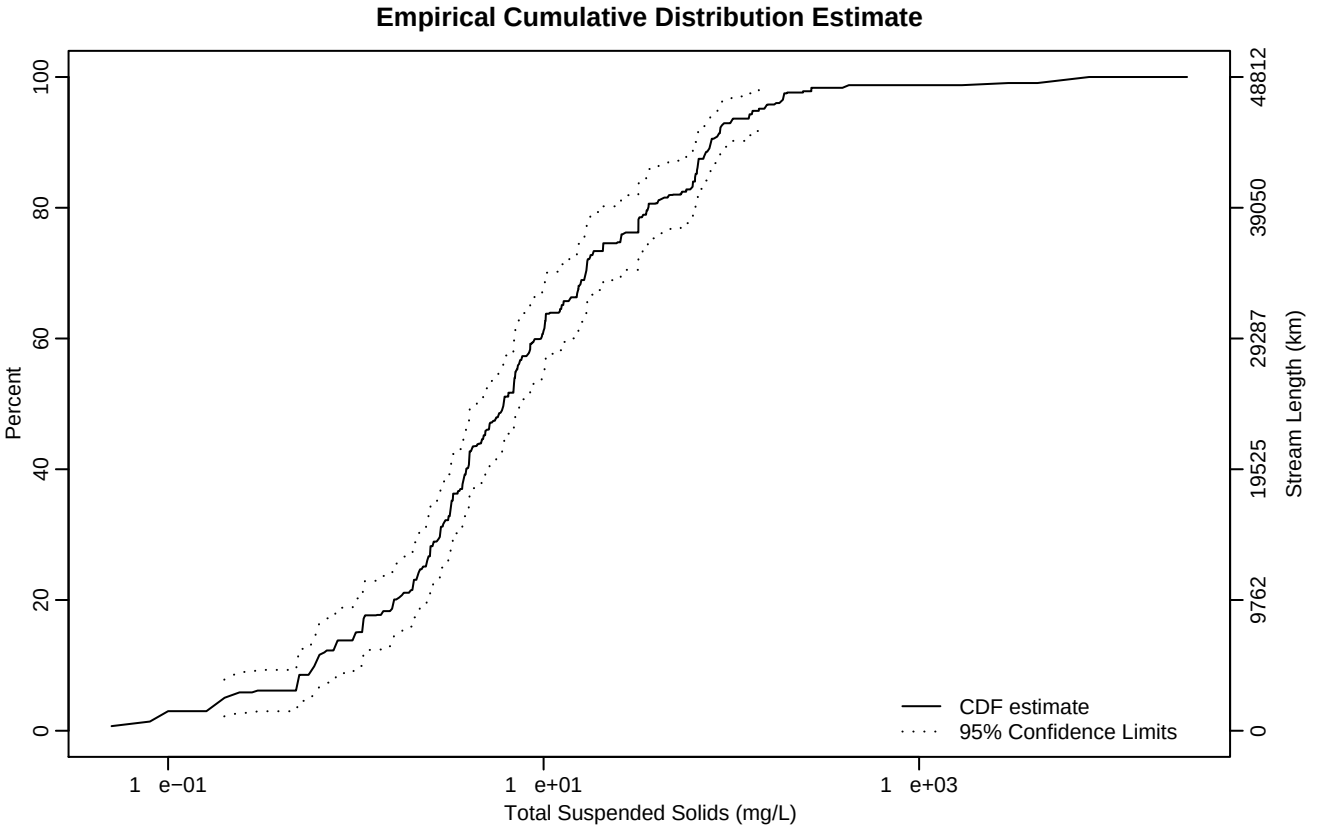


Figure CHEM−60 Indicator: TSS Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.20	0.09	0.49
10Pct	0.60	0.24	0.97
25Pct	2.27	1.56	2.89
50Pct	6.12	4.17	7.61
75Pct	25.70	16.50	40.58
90Pct	77.83	65.56	128.92
95Pct	140.16	87.26	266.63
Mean	109.24	−19.68	238.15
Std Dev	359.46	131.59	587.34

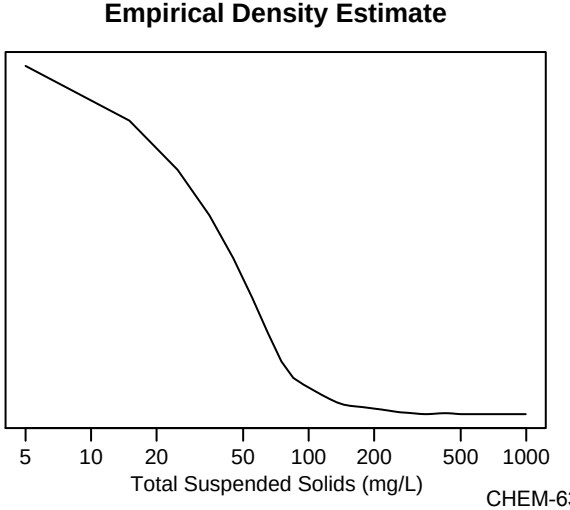
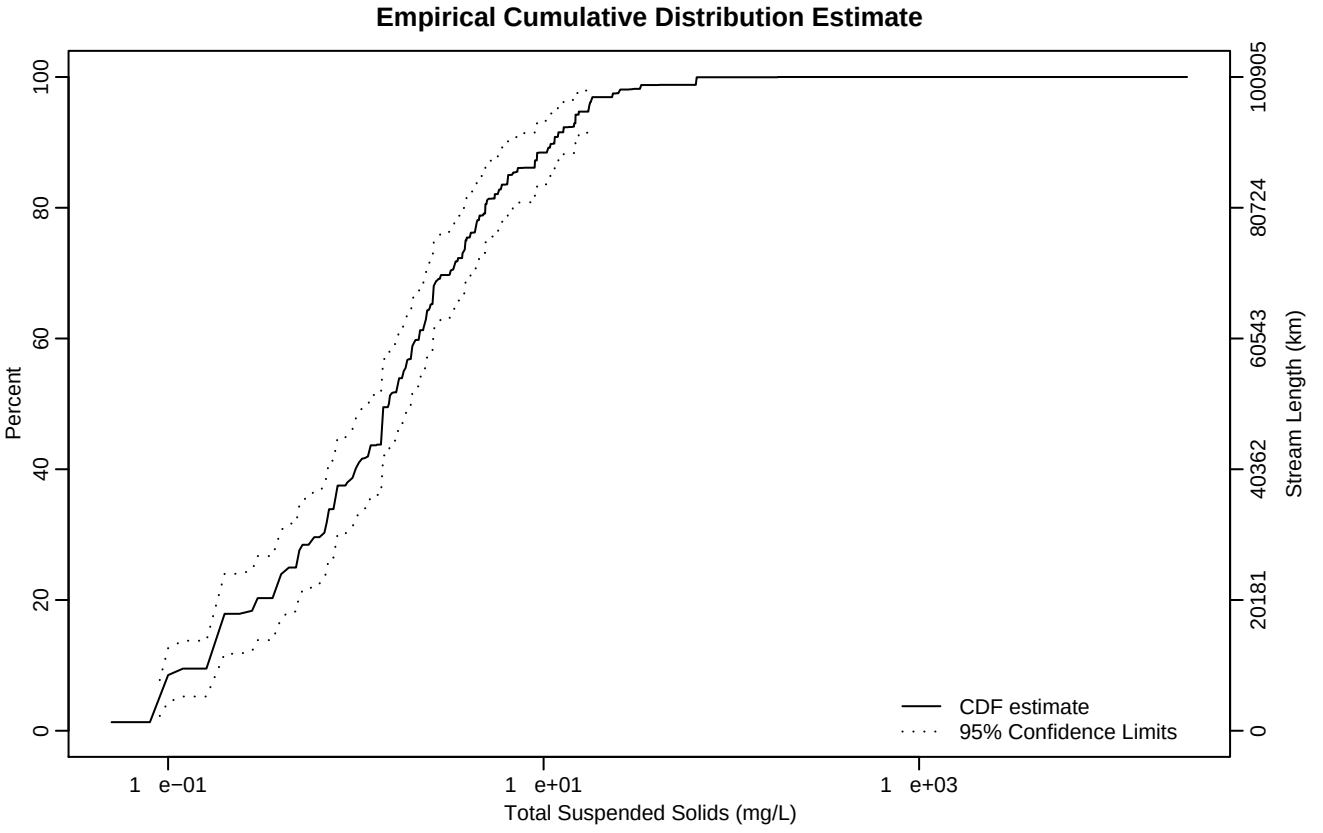


Figure CHEM−61 Indicator: TSS Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.09	0.09
10Pct	0.16	0.09	0.18
25Pct	0.48	0.28	0.70
50Pct	1.50	1.17	1.97
75Pct	3.84	2.63	5.49
90Pct	11.41	6.87	15.40
95Pct	17.37	12.74	32.69
Mean	4.25	2.88	5.62
Std Dev	7.08	5	9.15

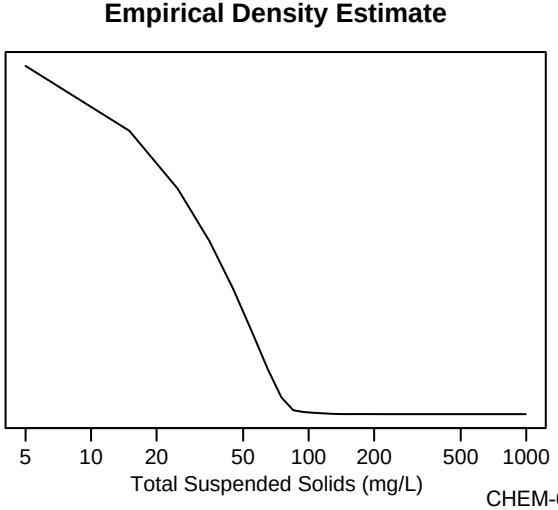
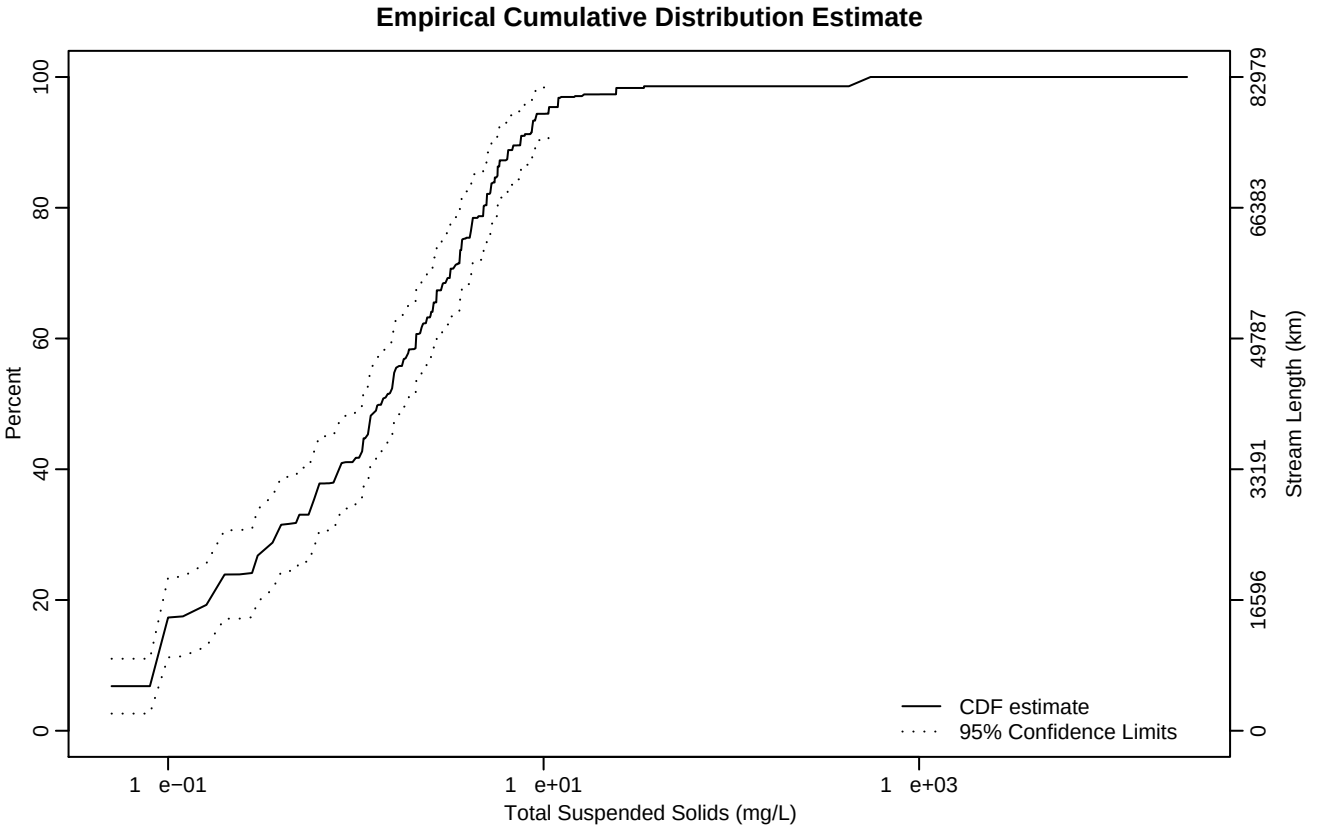


Figure CHEM−62 Indicator: TSS Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.05	0.08
10Pct	0.09	0.05	0.09
25Pct	0.29	0.14	0.48
50Pct	1.37	1.07	1.87
75Pct	3.68	2.87	5.17
90Pct	7.53	5.65	10.68
95Pct	10.66	7.60	466.14
Mean	10.50	−2.43	23.42
Std Dev	43.26	10.77	75.75

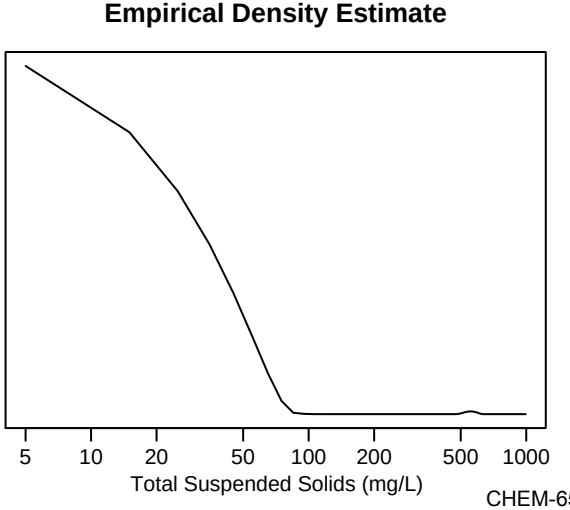
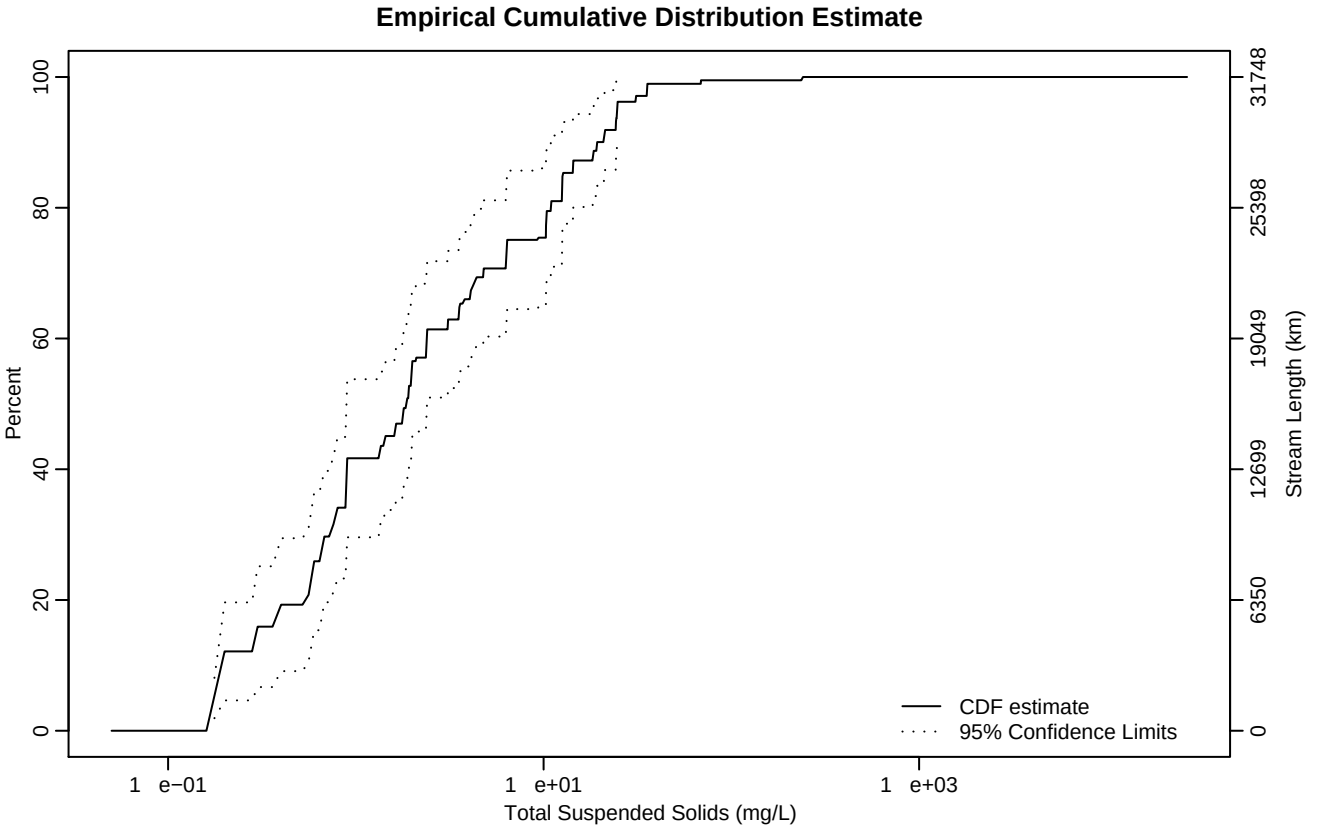


Figure CHEM−63 Indicator: TSS Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0.17	0.18
10Pct	0.19	0.19	0.20
25Pct	0.59	0.29	0.88
50Pct	1.86	0.89	3.09
75Pct	6.40	3.55	14.32
90Pct	19.29	12.56	31.01
95Pct	24.65	19.19	240.60
Mean	7.19	4.37	10.01
Std Dev	12.78	6.89	18.67

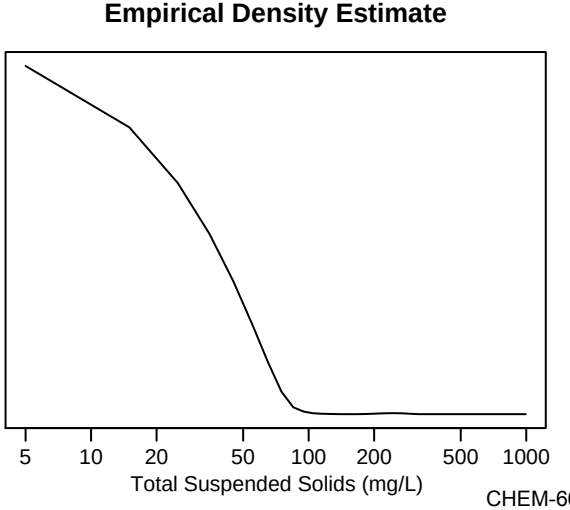
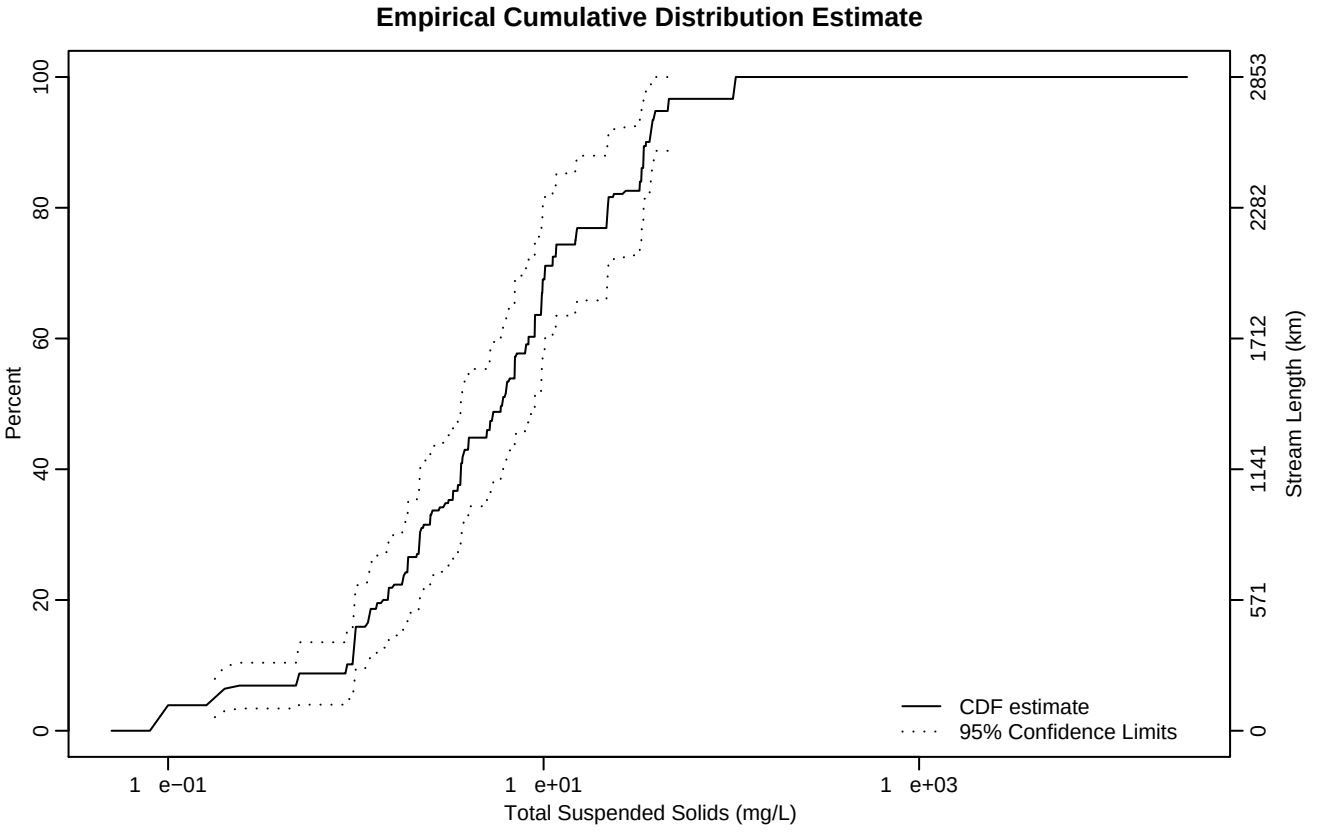


Figure CHEM−64 Indicator: TSS Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0.09	0.49
10Pct	0.90	0.18	0.99
25Pct	1.89	1.17	2.50
50Pct	6.02	3.62	8.97
75Pct	14.76	9.69	33.30
90Pct	35.09	23.57	103.54
95Pct	45.88	34.15	105.60
Mean	13.64	8	19.29
Std Dev	18.75	10.12	27.38

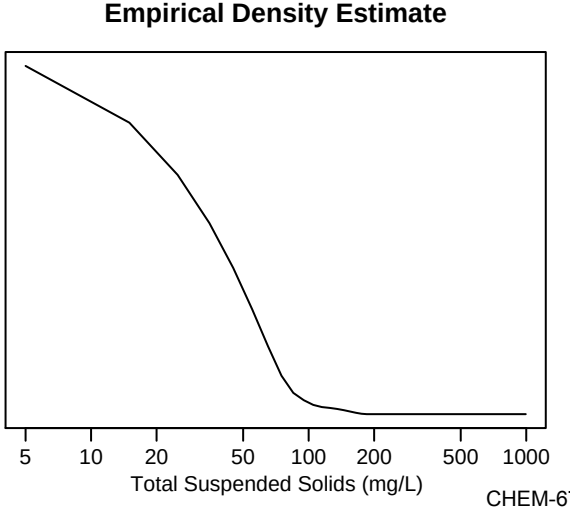
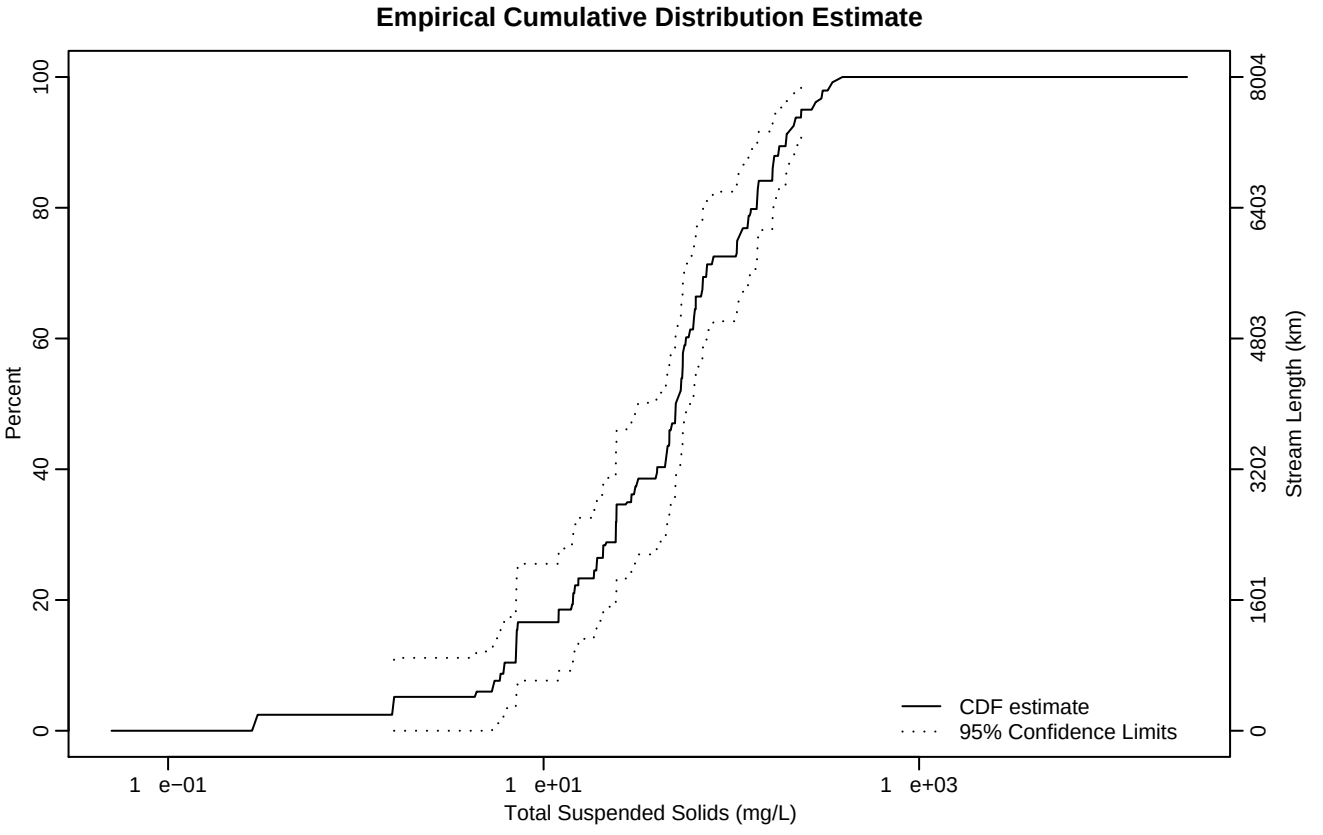


Figure CHEM−65 Indicator: TSS Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.60	0.29	6.12
10Pct	6.18	1.57	12
25Pct	19.14	7.25	24.47
50Pct	50.59	39.69	60.18
75Pct	107.63	64.62	165.31
90Pct	195.29	165.11	277.94
95Pct	235.80	196.56	345.03
Mean	76.50	59.67	93.33
Std Dev	77.39	62.09	92.69

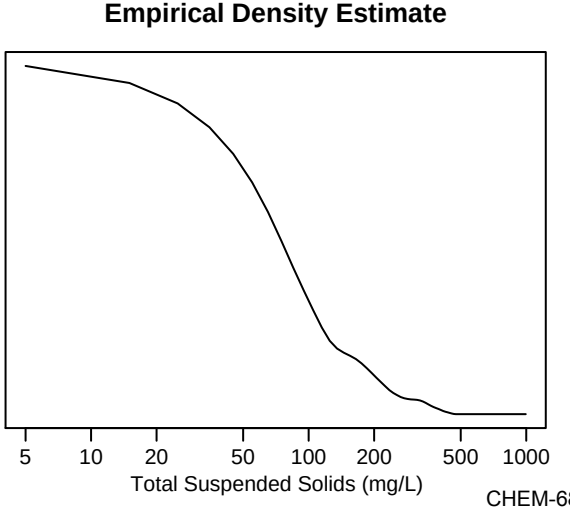
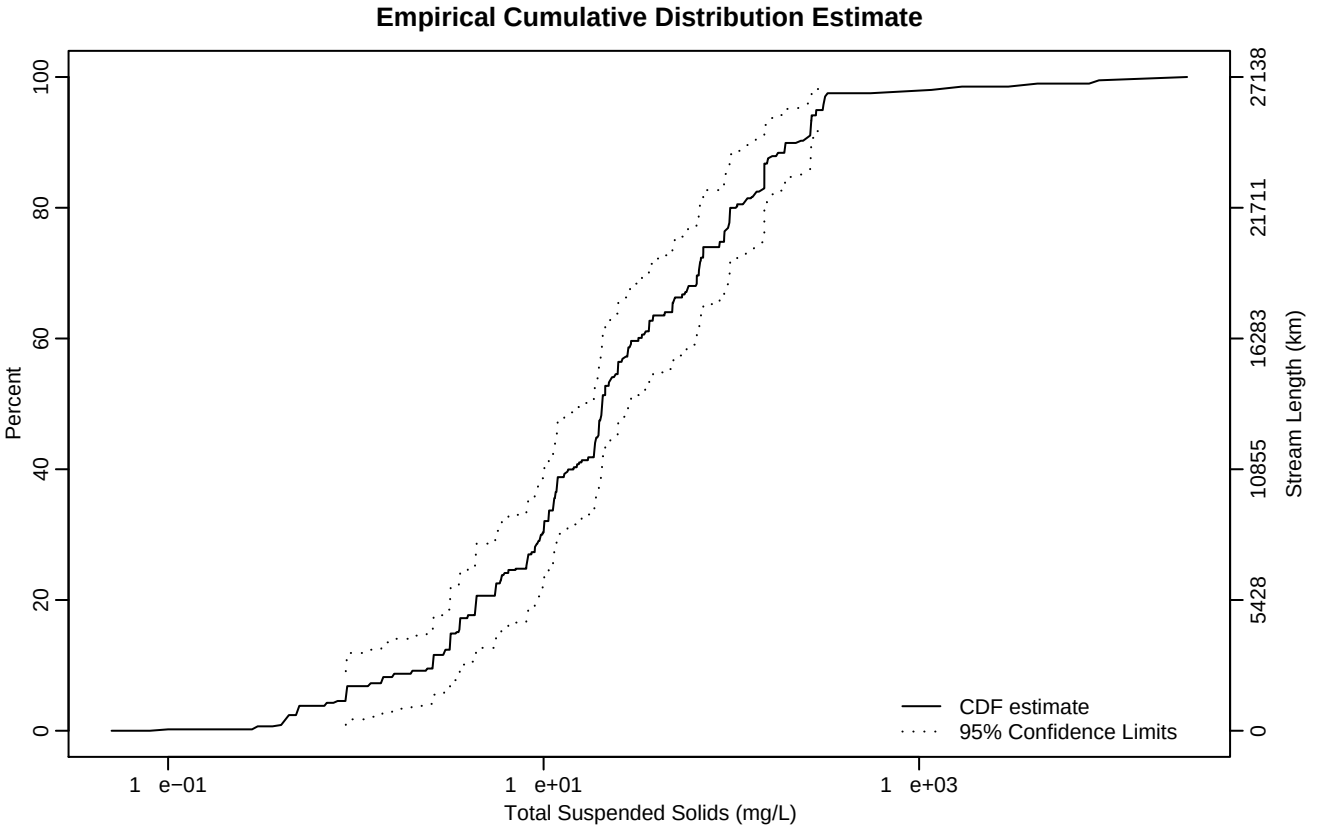


Figure CHEM−66 Indicator: TSS Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.88	0.41	1.97
10Pct	2.57	0.88	3.56
25Pct	8.09	3.59	10.67
50Pct	20.52	15.08	29.21
75Pct	91.45	54.61	149.82
90Pct	224.14	149.85	307.41
95Pct	306.70	264.05	1409.89
Mean	271.76	23.97	519.55
Std Dev	1245.86	400.70	2091.02

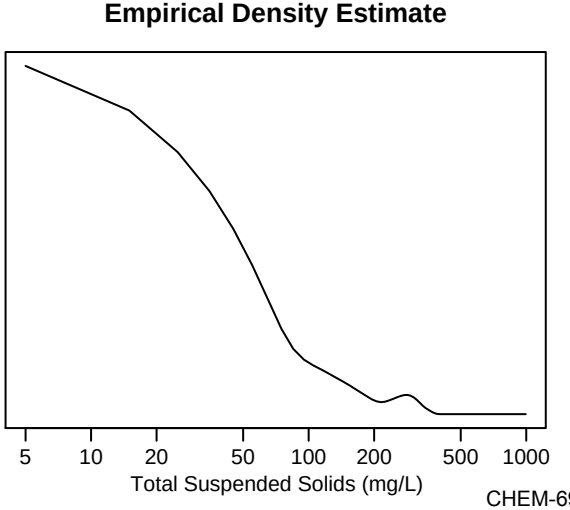
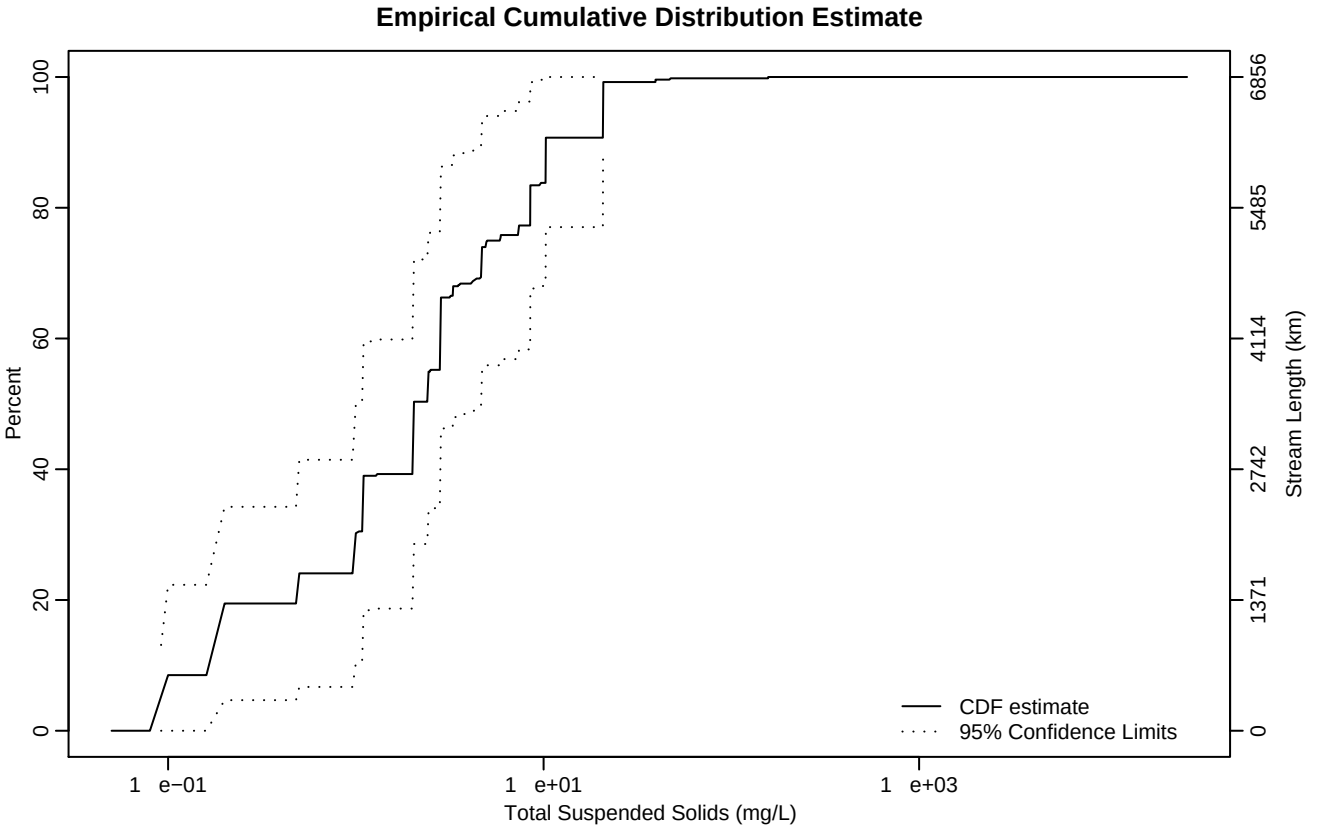


Figure CHEM−67 Indicator: TSS Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.09	0.09
10Pct	0.17	0.05	0.50
25Pct	0.97	0.10	2.01
50Pct	2.04	0.99	4.67
75Pct	5.84	2.80	20.73
90Pct	10.28	4.93	157.10
95Pct	20.74	8.49	157.10
Mean	5.01	2.18	7.84
Std Dev	9.40	5.04	13.75

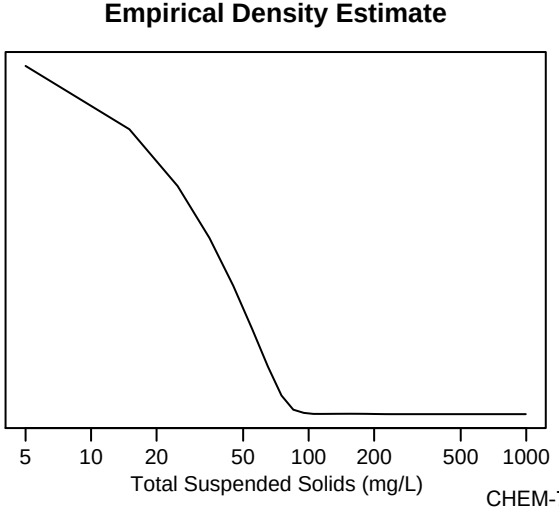
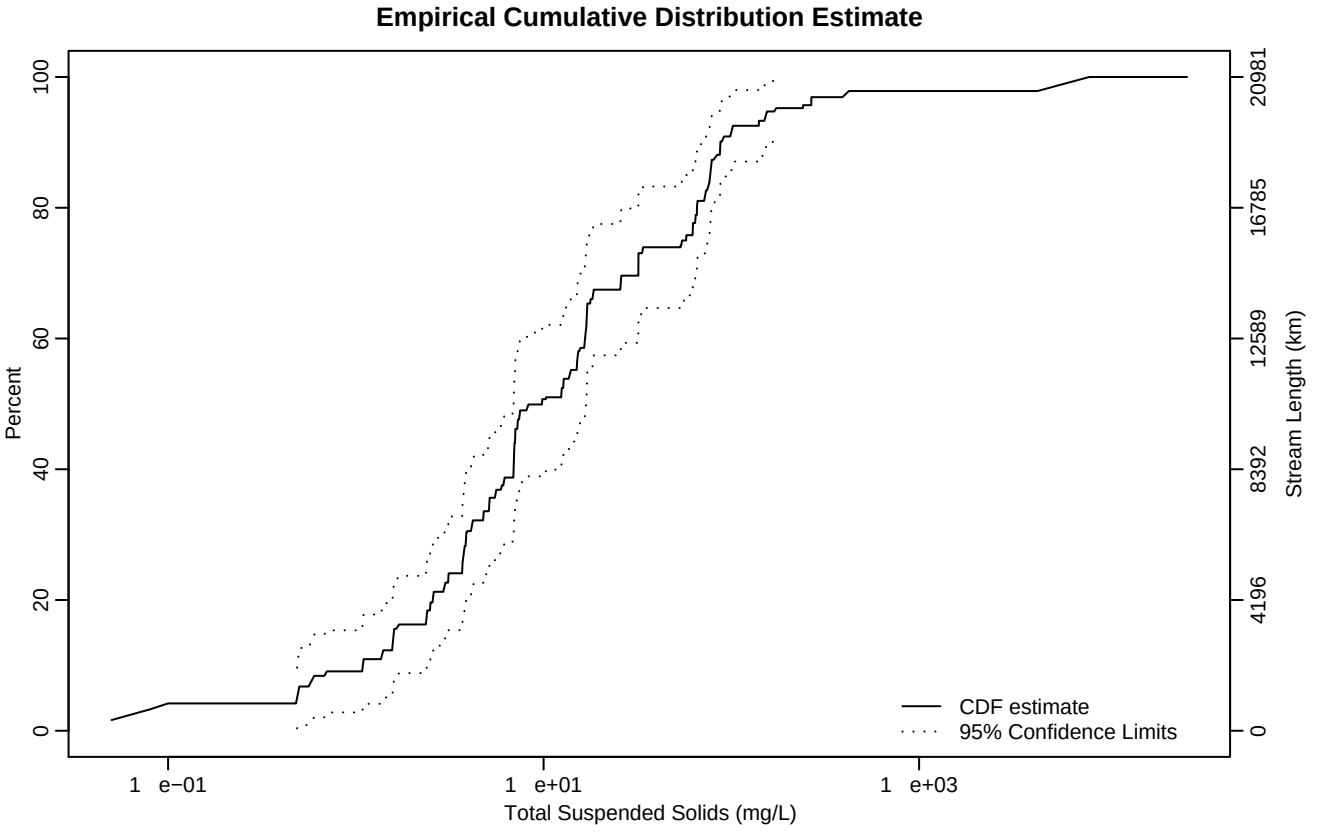


Figure CHEM−68 Indicator: TSS Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.49	0.05	0.70
10Pct	1.09	0.09	2.36
25Pct	3.69	1.68	5.12
50Pct	9.80	6.90	16.77
75Pct	57.40	17.74	76.70
90Pct	87.46	75.20	266.77
95Pct	171.37	89.62	7457.45
Mean	205.73	−91.58	503.04
Std Dev	679.36	161.65	1197.06

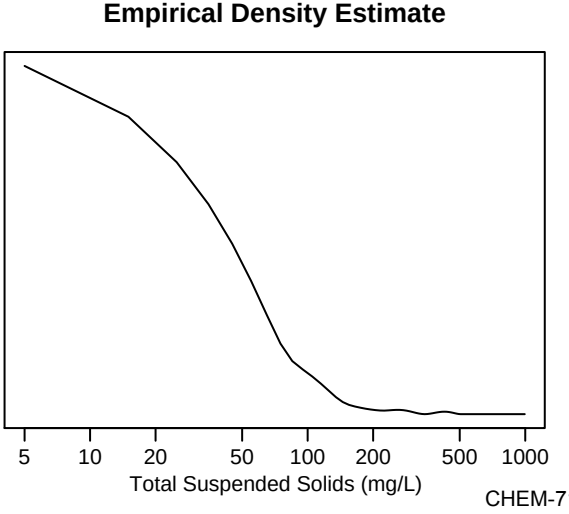
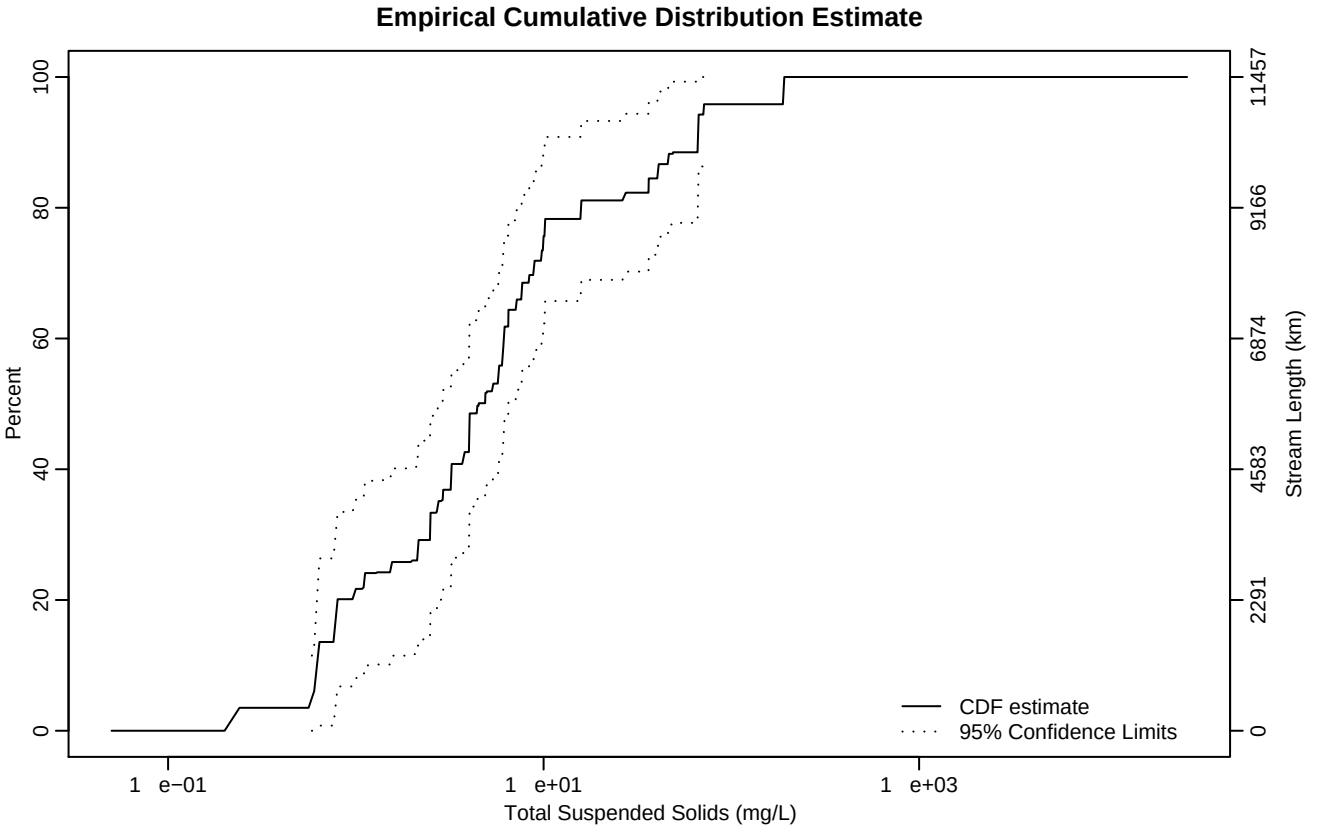


Figure CHEM−69 Indicator: TSS Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.58	0.05	0.63
10Pct	0.62	0.23	0.78
25Pct	1.54	0.62	3.23
50Pct	4.51	2.74	7.17
75Pct	9.97	6.18	66.10
90Pct	66.29	15.75	191.48
95Pct	71.23	46.01	191.48
Mean	19.36	5.33	33.38
Std Dev	29.37	15.62	43.12

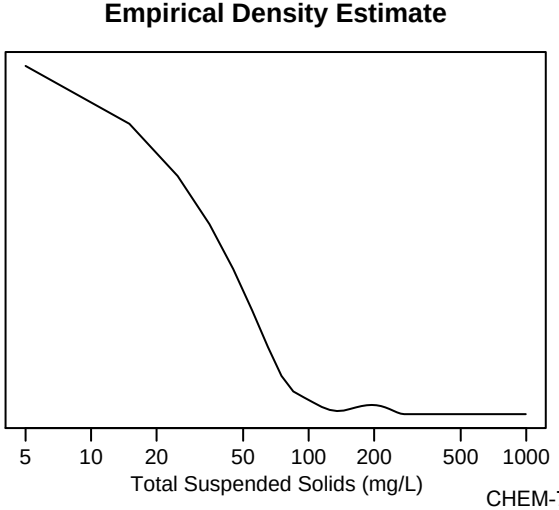
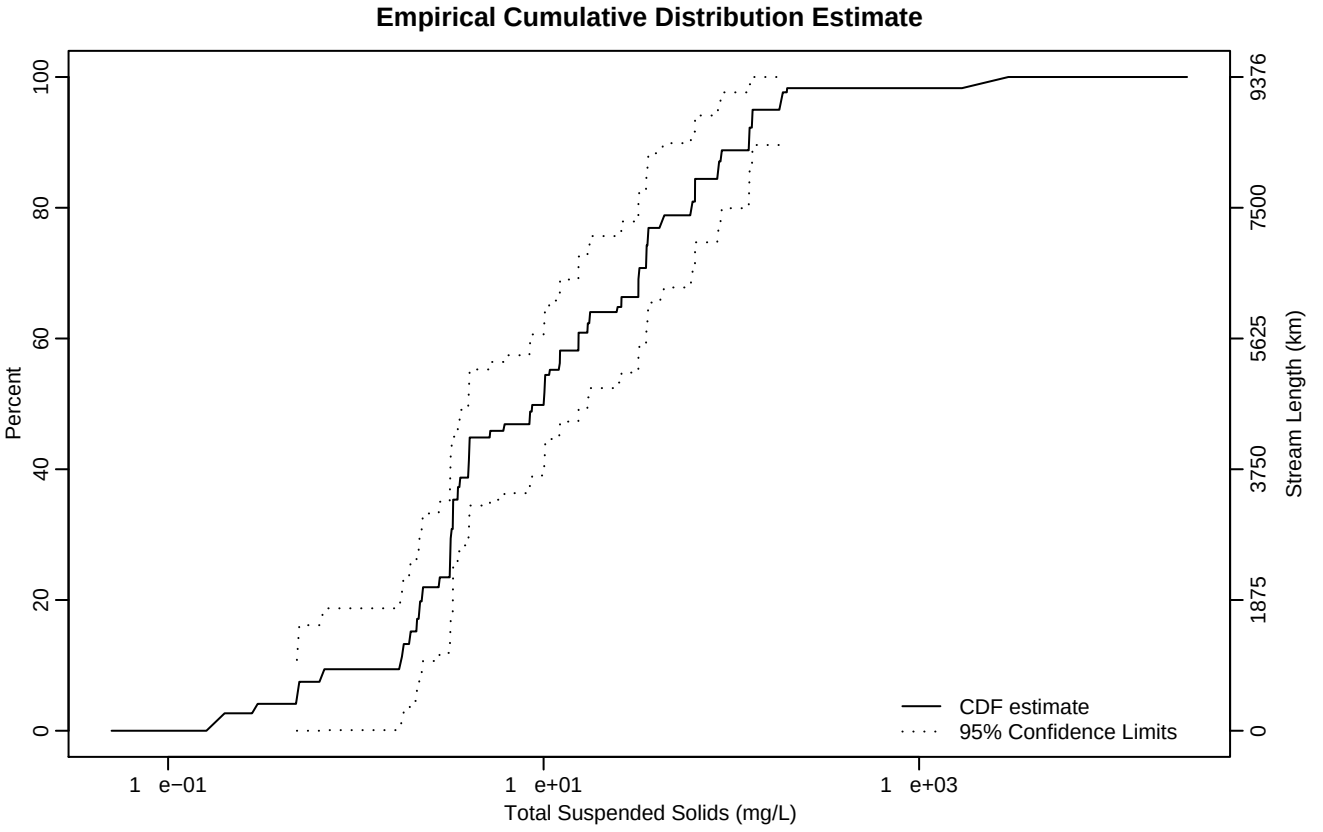


Figure CHEM−70 Indicator: TSS Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.49	0.16	1.71
10Pct	1.72	0.17	2.19
25Pct	3.17	1.92	3.49
50Pct	10.01	3.97	17.10
75Pct	35.86	17.61	85.86
90Pct	124.19	64	2150.45
95Pct	180.13	124.04	2988
Mean	80.93	−9.39	171.25
Std Dev	198.08	64.06	332.10

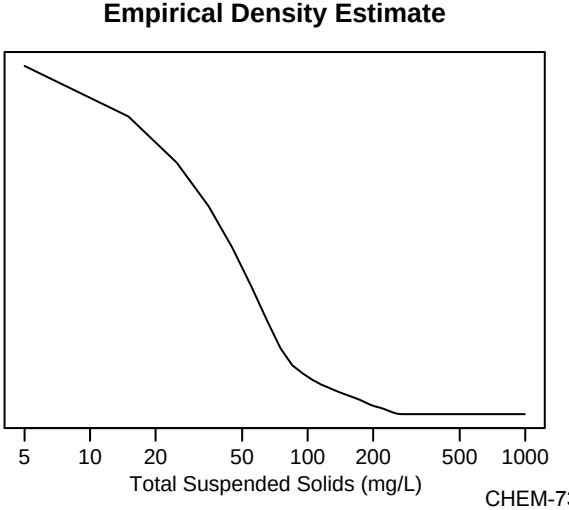
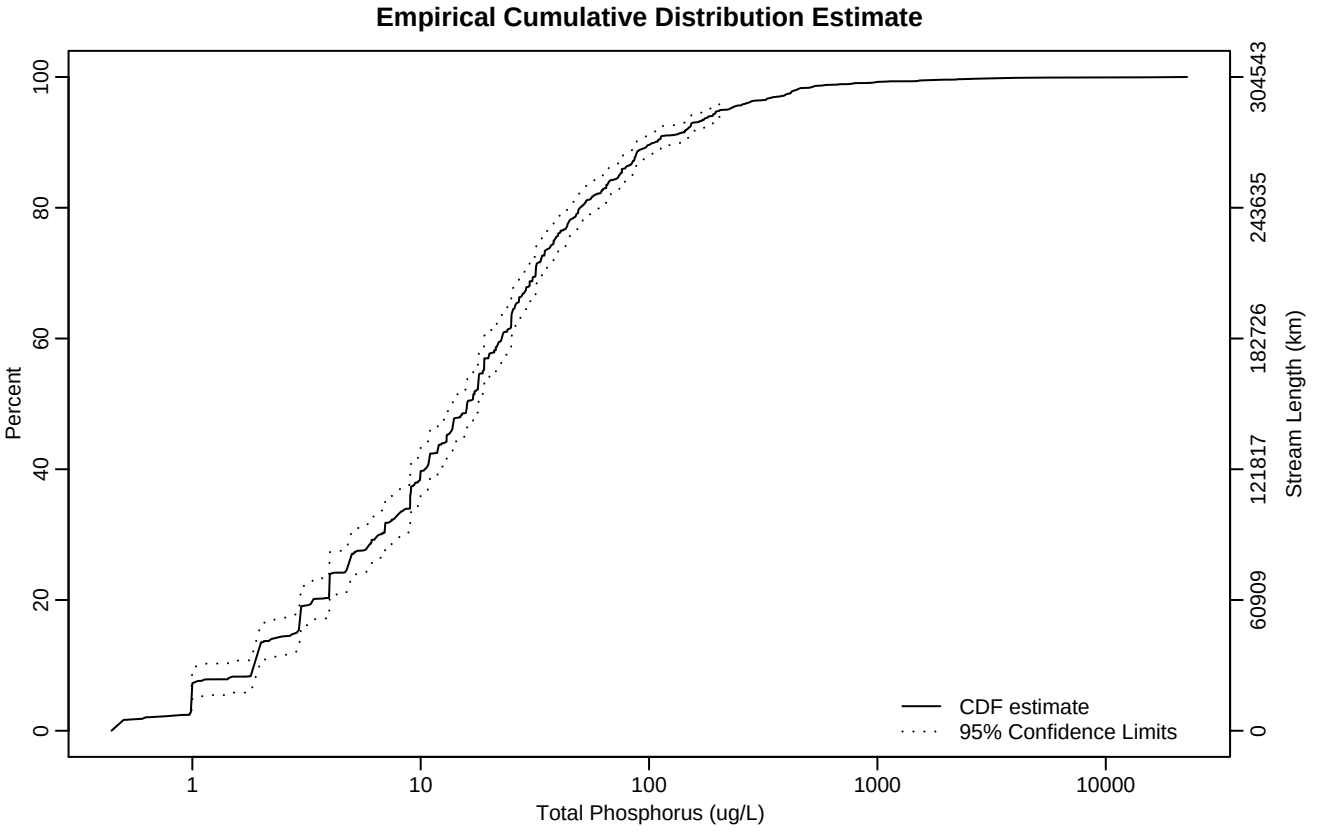


Figure CHEM−71 Indicator: Total_P Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.99	0.99	1
10Pct	1.86	1.04	1.96
25Pct	4.78	3.98	5.94
50Pct	15.97	13.79	17.92
75Pct	38.44	33.71	44.46
90Pct	105.85	88.17	143.08
95Pct	216.94	186.99	266.55
Mean	77.72	53.38	102.05
Std Dev	264.35	177.77	350.93

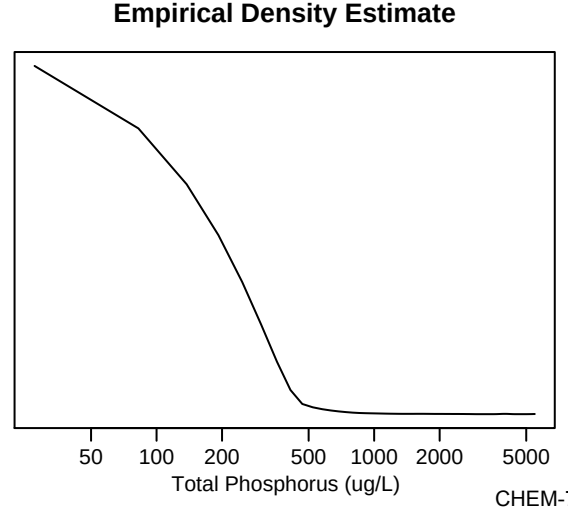
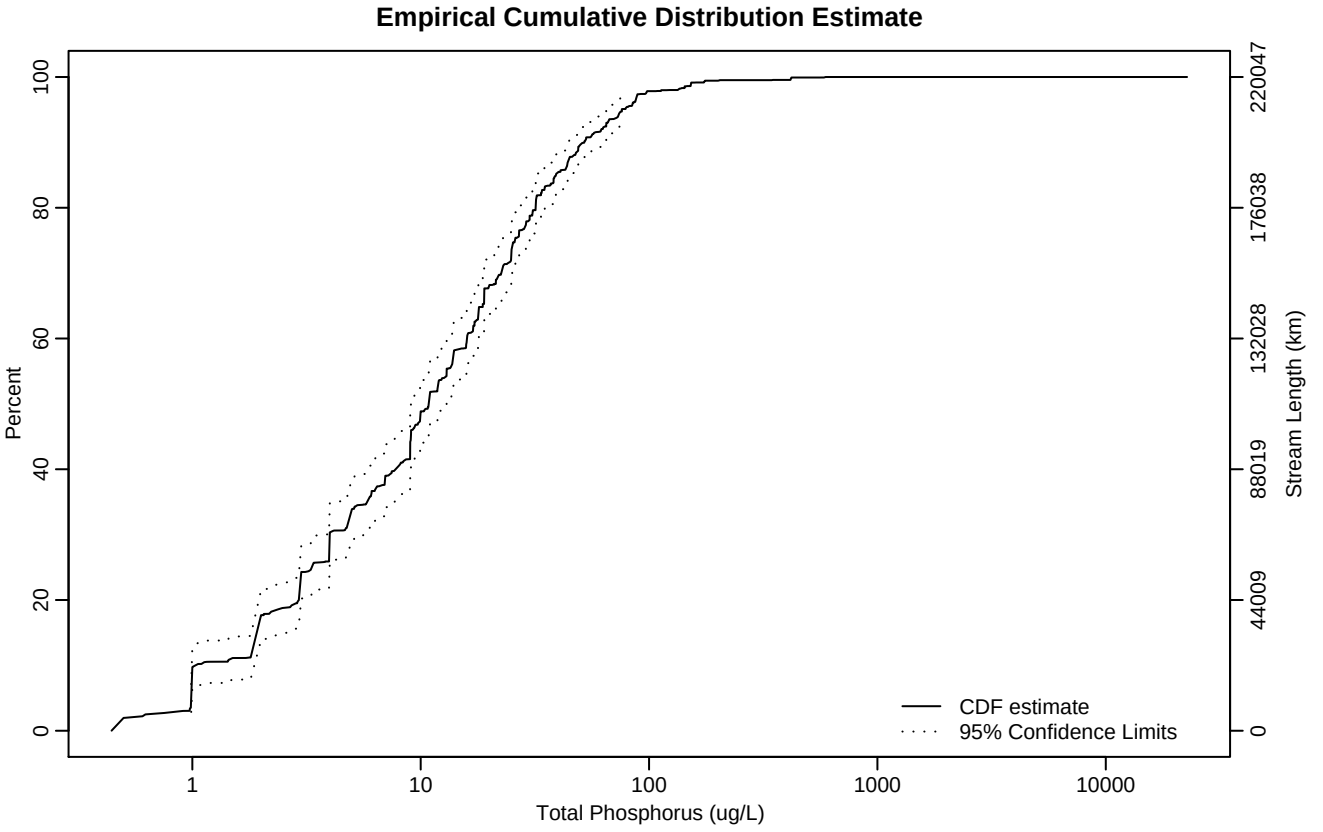


Figure CHEM−72 Indicator: Total_P Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.99	0.97	0.99
10Pct	1.03	0.99	1.86
25Pct	3.33	2.94	3.99
50Pct	10.84	9.07	12.99
75Pct	25.85	22.94	30.83
90Pct	52.05	44.71	64.91
95Pct	76	64.99	88.47
Mean	22.41	18.90	25.91
Std Dev	34.08	25.06	43.09

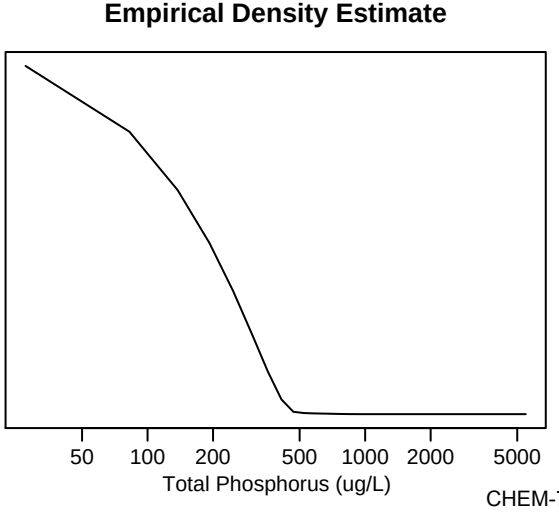
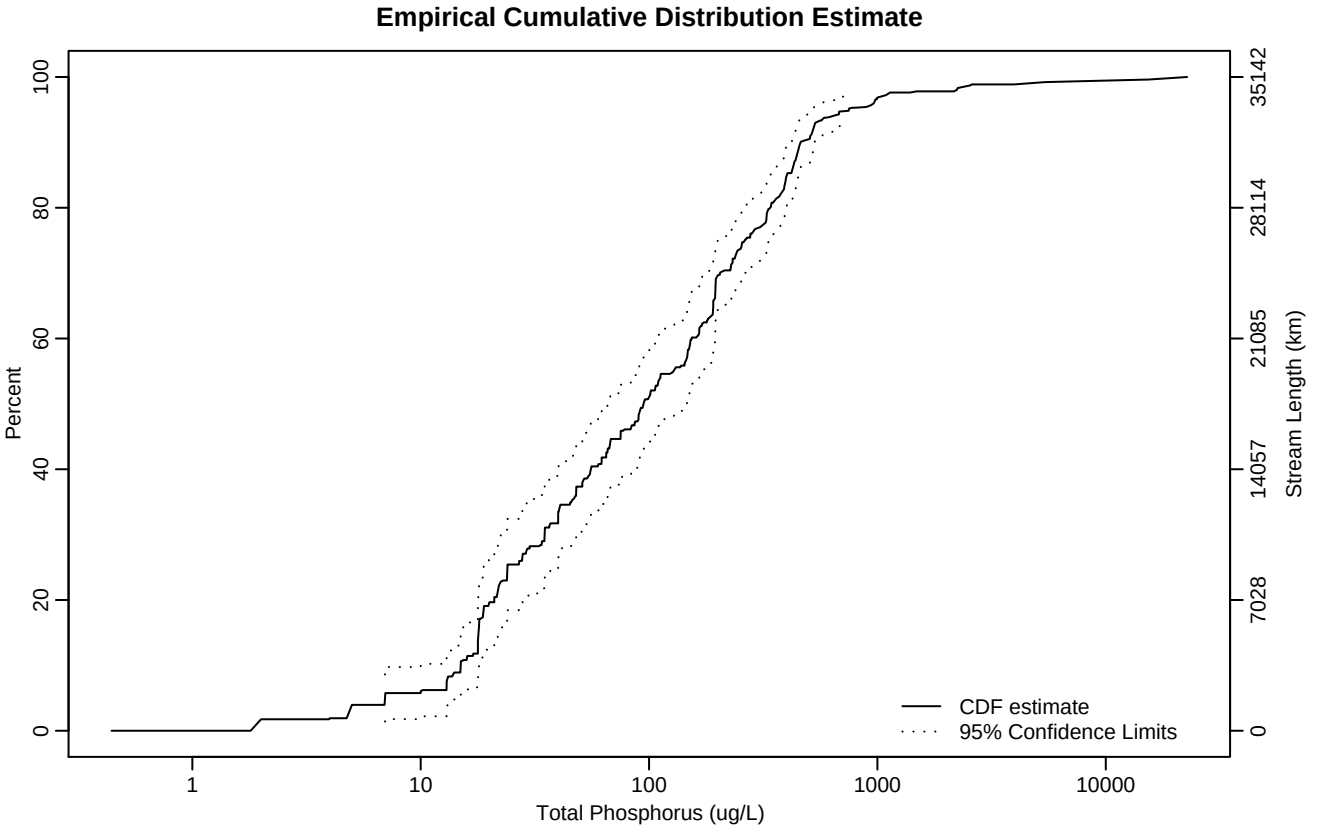


Figure CHEM−73 Indicator: Total_P Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.98	4	13.13
10Pct	14.97	10	17.84
25Pct	23.98	18.77	39.99
50Pct	94.58	65.92	146.29
75Pct	262.33	204.29	341.24
90Pct	460.81	426.13	620.89
95Pct	749.45	531.82	1087.18
Mean	367.55	178.40	556.70
Std Dev	1240.96	613.49	1868.44

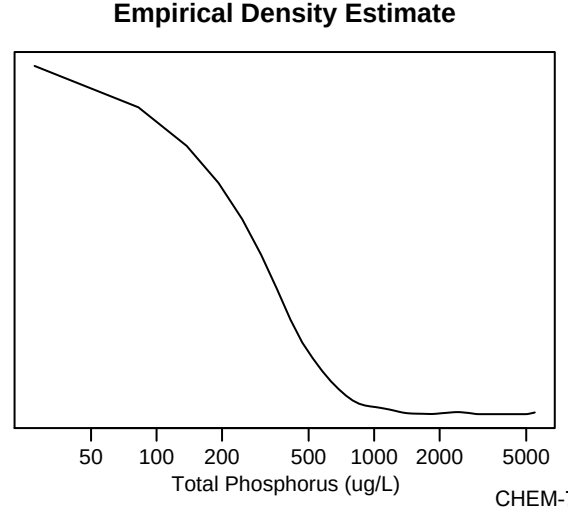
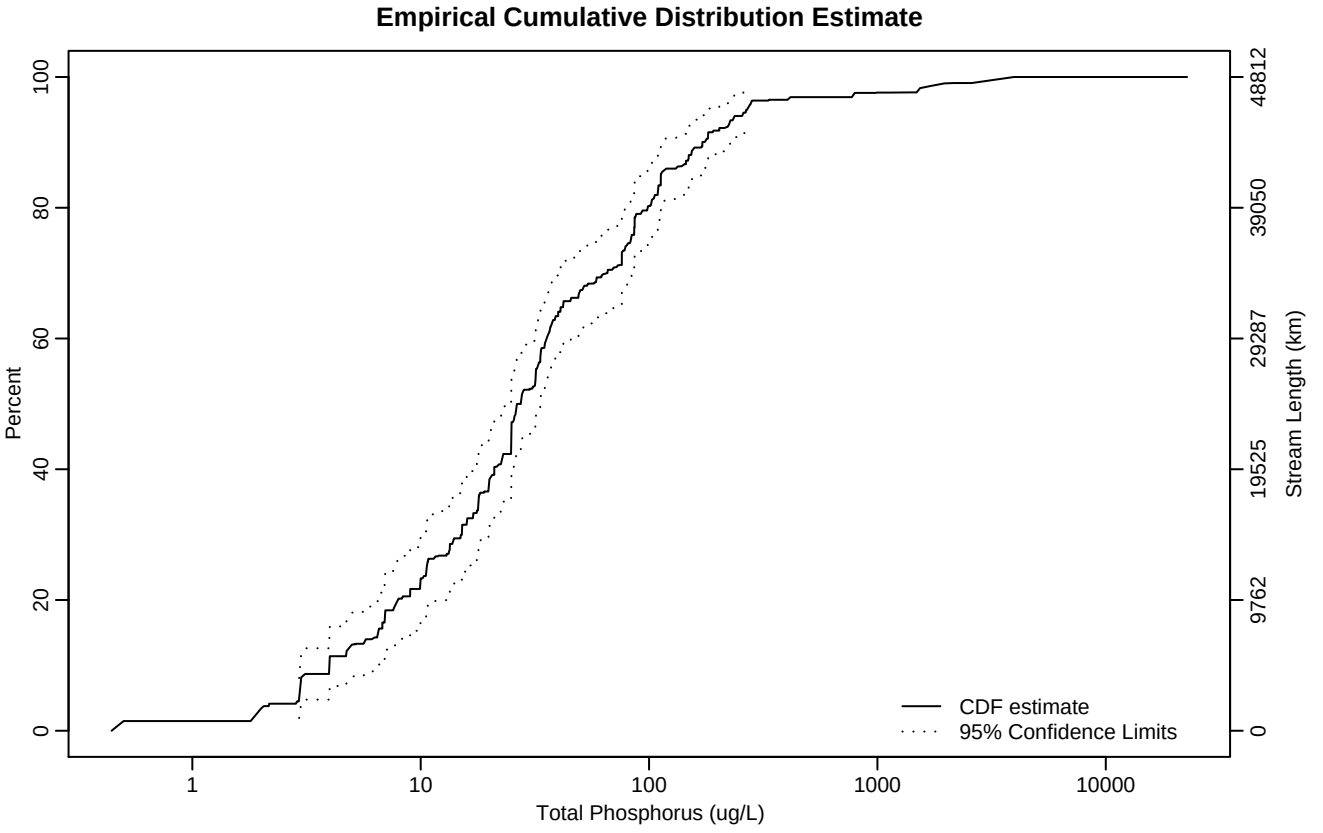


Figure CHEM−74 Indicator: Total_P Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.94	1.82	3.03
10Pct	3.98	2.95	6.20
25Pct	10.63	7	15.90
50Pct	27.42	24.88	33.42
75Pct	83.13	58.68	102.94
90Pct	171.25	116.52	257.24
95Pct	268.56	203.11	1513.60
Mean	118.92	51.25	186.60
Std Dev	278.86	161.43	396.29

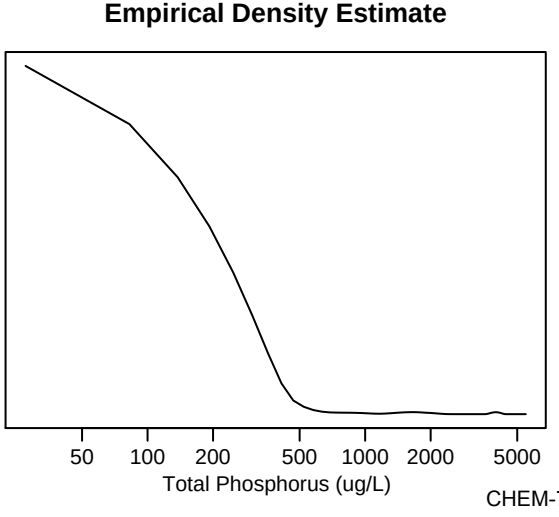
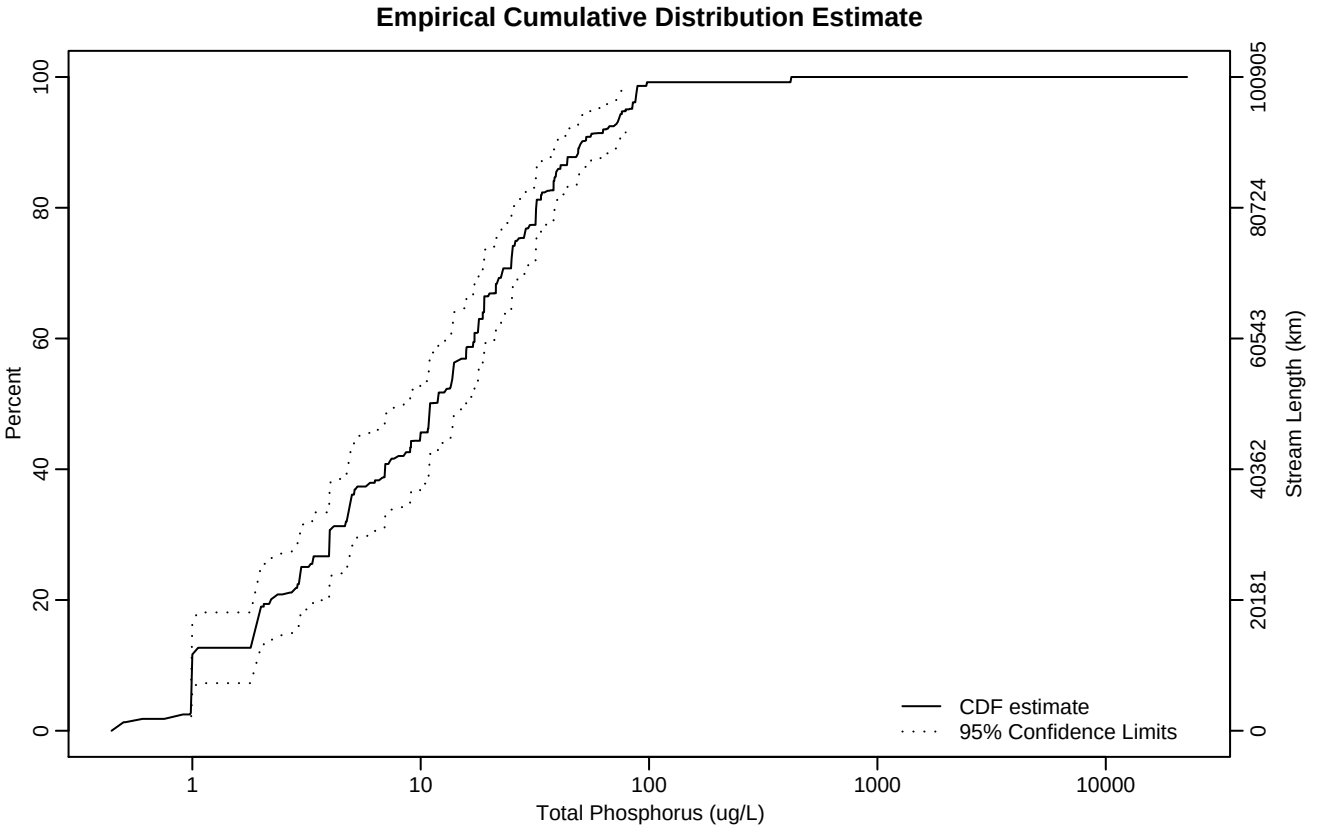


Figure CHEM−75 Indicator: Total_P Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.99	0.99	0.99
10Pct	1	0.99	1.02
25Pct	3	1.99	4.67
50Pct	10.99	8.48	15.81
75Pct	26.48	21.85	32.21
90Pct	50.64	39.88	74.66
95Pct	78.98	62.74	88.90
Mean	22.72	16.28	29.16
Std Dev	36.73	18.95	54.51

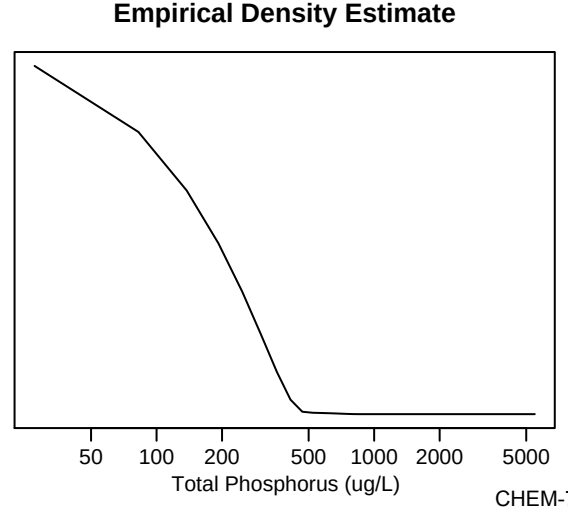
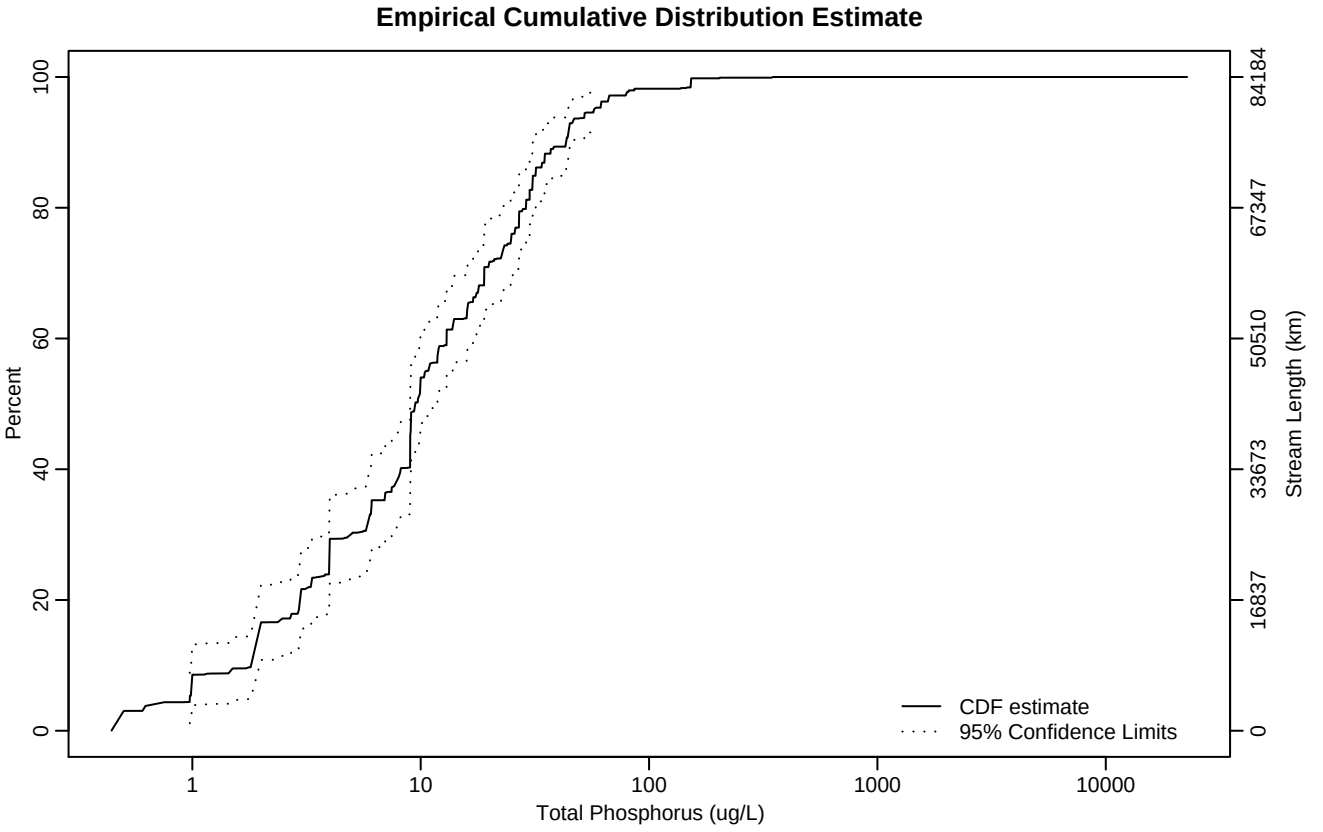


Figure CHEM−76 Indicator: Total_P Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.97	0.47	1.15
10Pct	1.81	0.98	1.95
25Pct	3.97	2.93	5.81
50Pct	9.47	8.99	11.84
75Pct	24.85	18.95	29.99
90Pct	43.31	31.91	52.24
95Pct	57.40	44.57	86.20
Mean	18.30	14.74	21.86
Std Dev	24	17.11	30.89

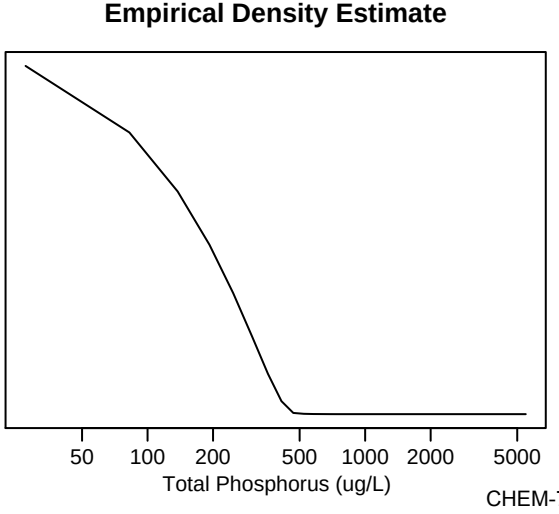
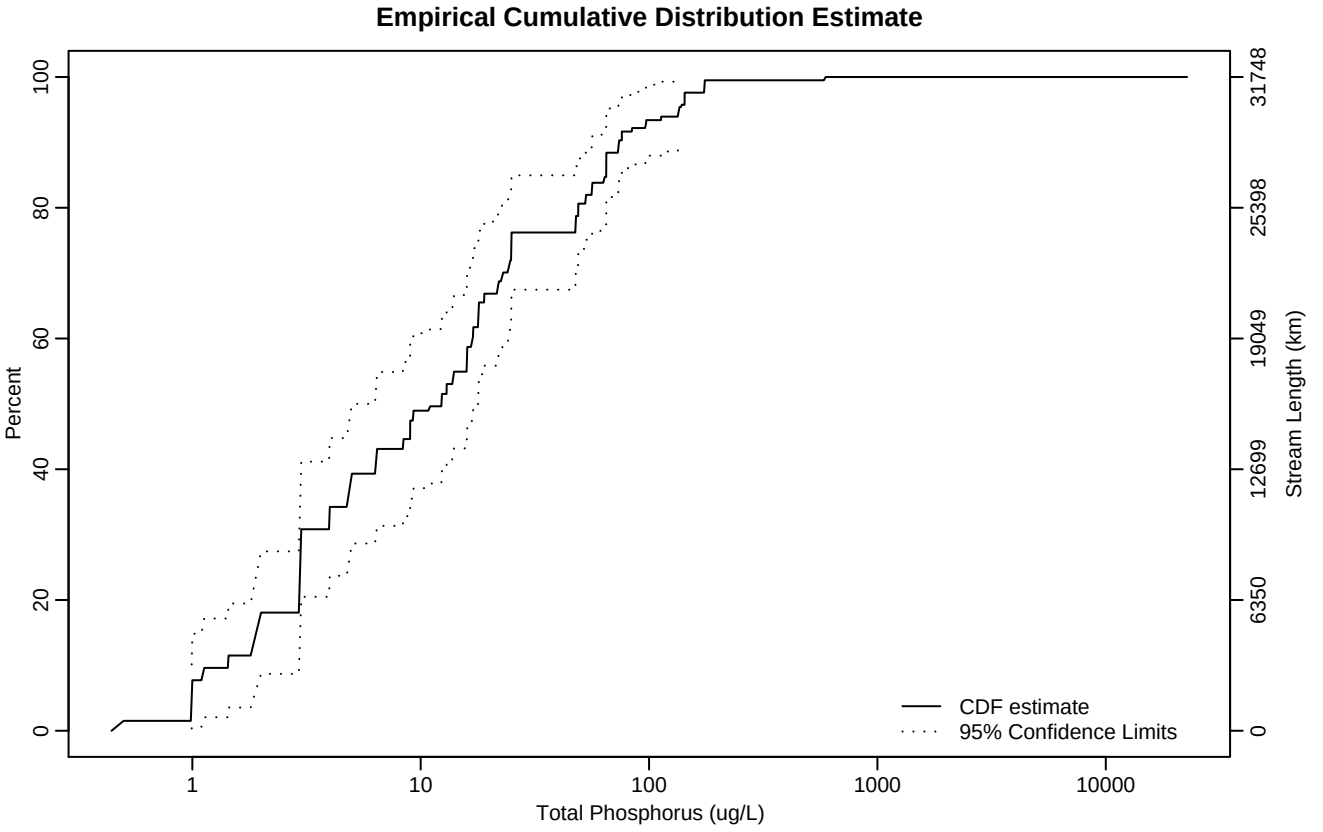


Figure CHEM−77 Indicator: Total_P Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.99	0.99	1
10Pct	1.43	0.99	1.98
25Pct	2.97	1.92	4.75
50Pct	12.33	4.94	17.82
75Pct	24.96	17.94	64.93
90Pct	73.84	56.37	143.10
95Pct	135.29	73.79	593.38
Mean	29.83	20.65	39.01
Std Dev	45.67	26.27	65.07

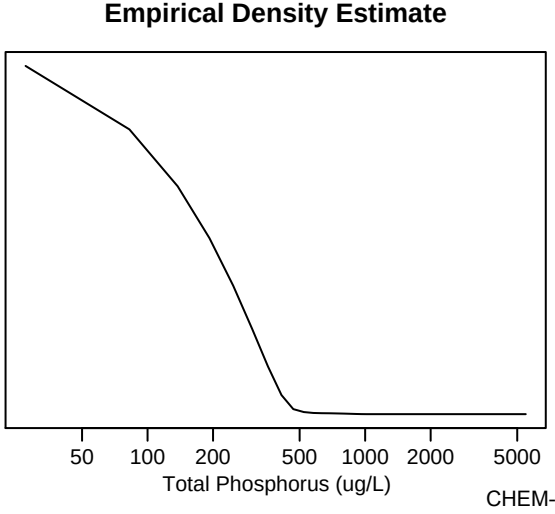
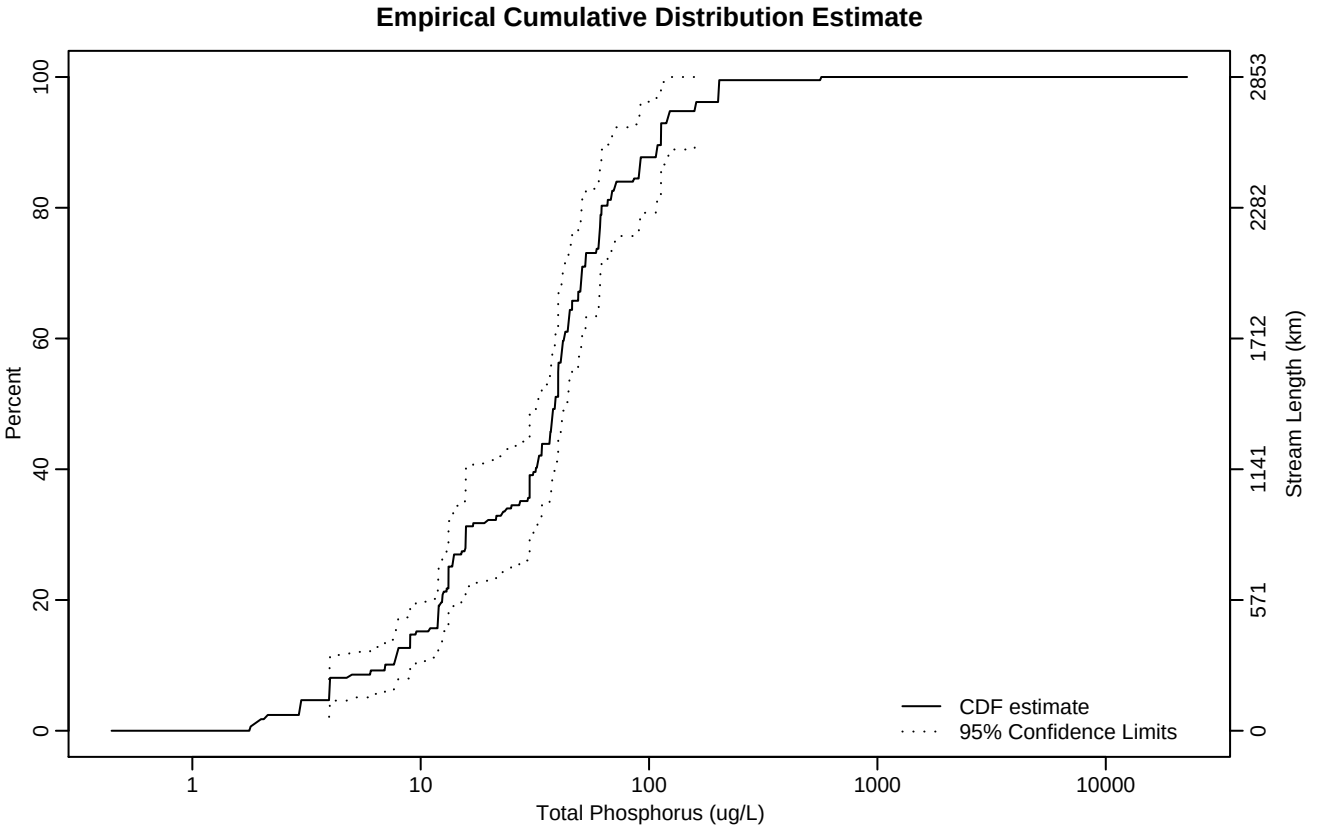


Figure CHEM−78 Indicator: Total_P Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.97	2.11	4.01
10Pct	6.99	3.99	8.99
25Pct	13.24	11.95	19.15
50Pct	38.78	31.95	42.43
75Pct	60.38	46.03	90.21
90Pct	112.70	68.52	201.92
95Pct	158.47	108.51	568
Mean	49.59	38.11	61.07
Std Dev	53.65	33.26	74.03

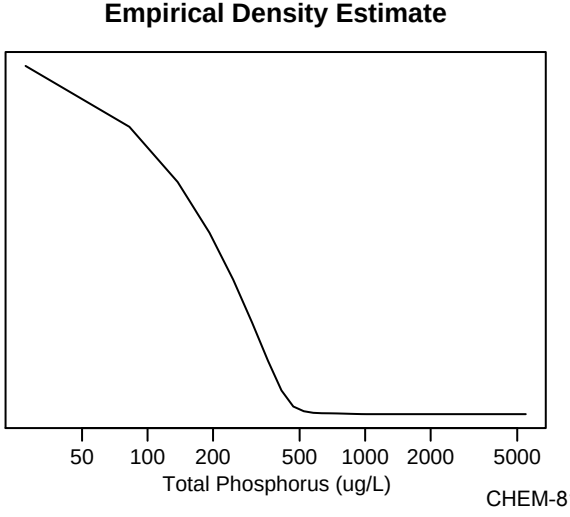
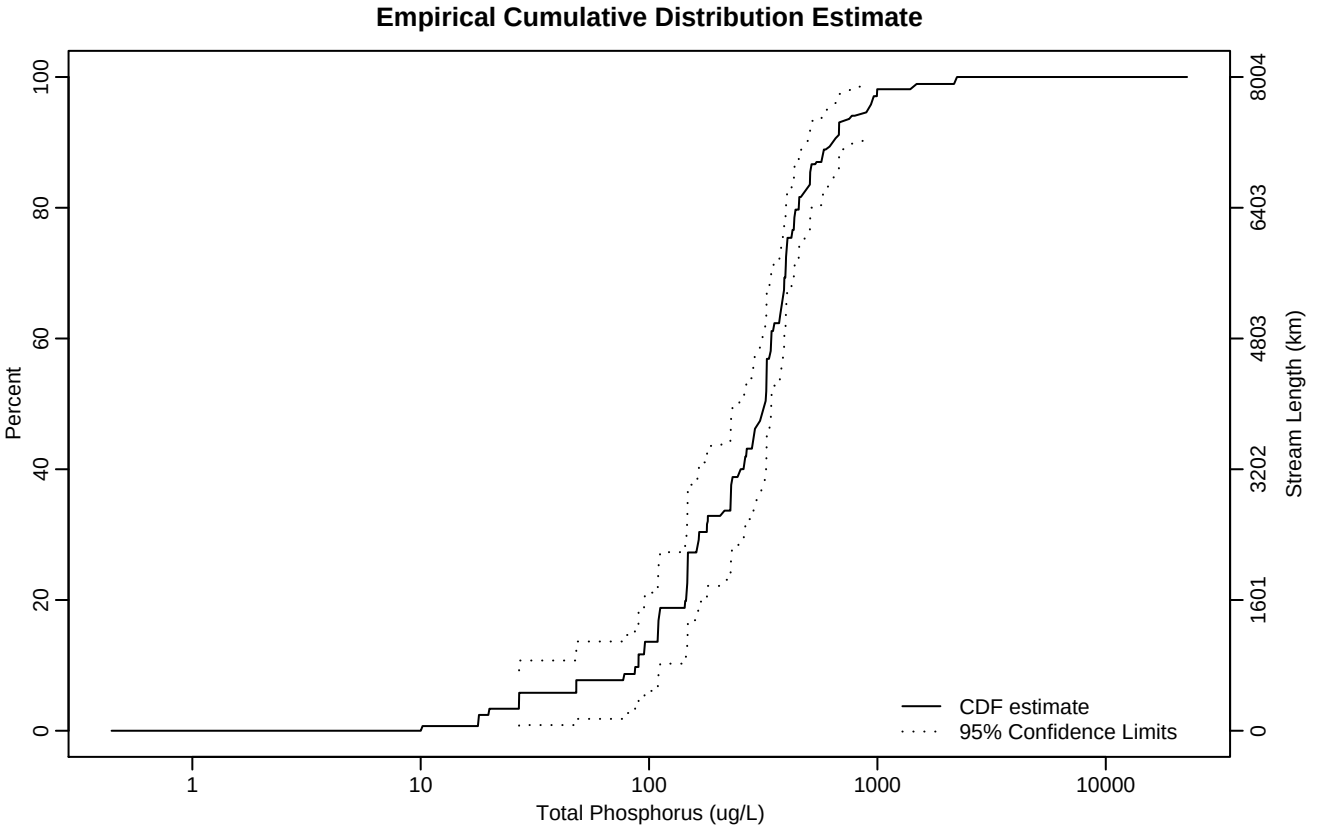


Figure CHEM−79 Indicator: Total_P Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	26.97	17.97	77.10
10Pct	89.87	26.93	109.79
25Pct	147.55	109.61	227.37
50Pct	321.37	244.89	343.93
75Pct	403.18	389.09	489.34
90Pct	636.87	506.53	938.91
95Pct	908.66	665.39	2178.41
Mean	349.64	291.11	408.17
Std Dev	265.90	203.53	328.27

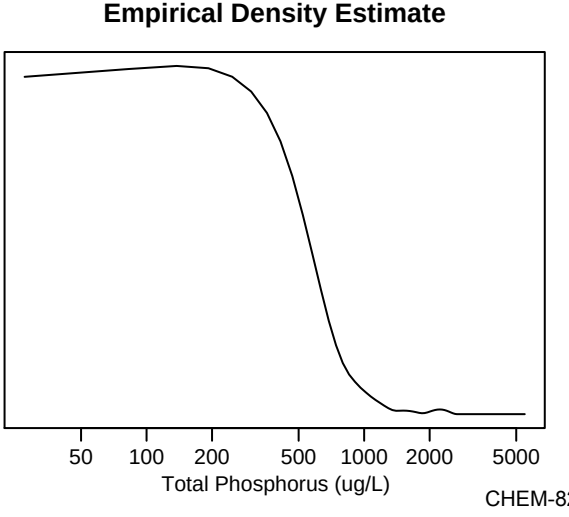
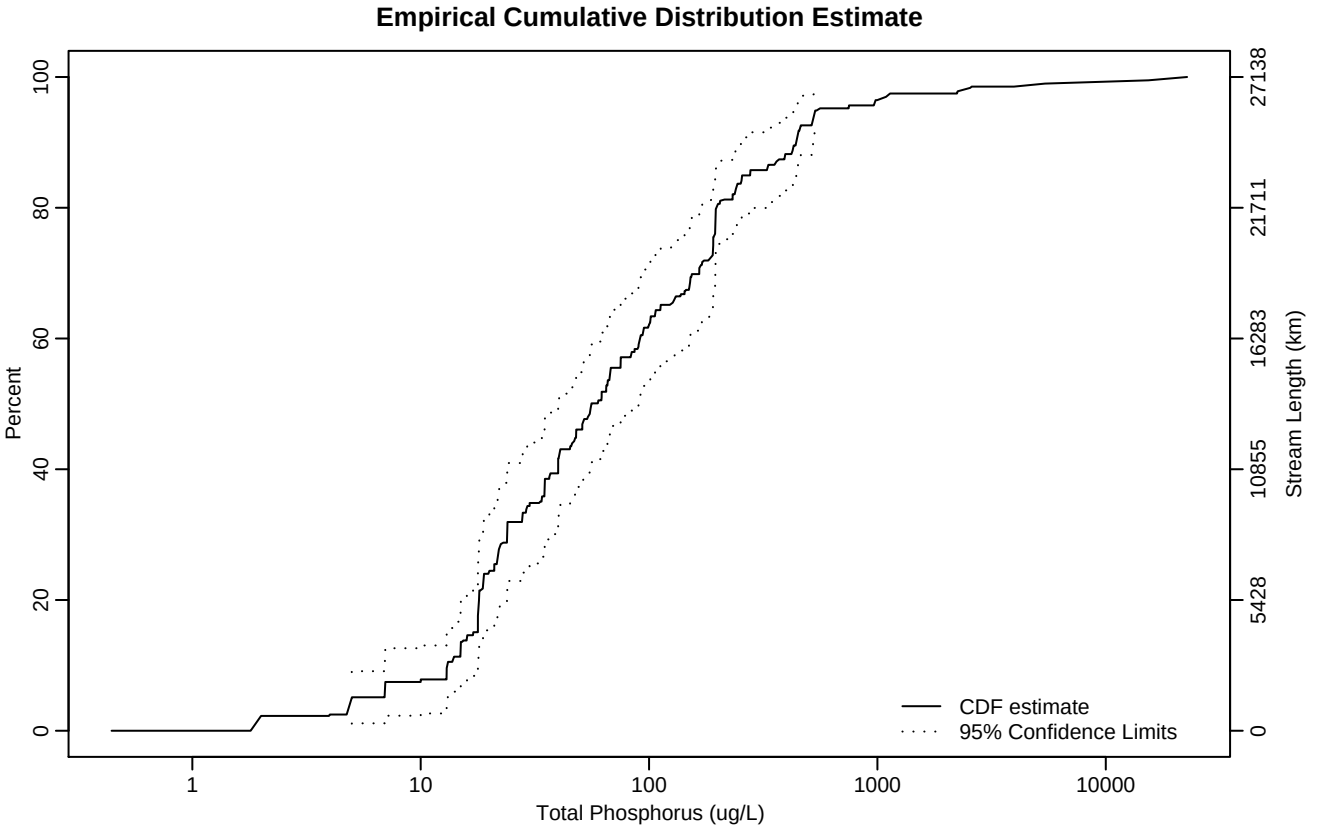


Figure CHEM−80 Indicator: Total_P Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.99	1.93	12.98
10Pct	13.08	4.94	17.80
25Pct	21	17.80	28.96
50Pct	55.94	40	89.93
75Pct	191.05	137.72	242.20
90Pct	440.93	255	748.92
95Pct	548.72	460	2236.76
Mean	372.83	128.38	617.27
Std Dev	1305.93	627.57	1984.30

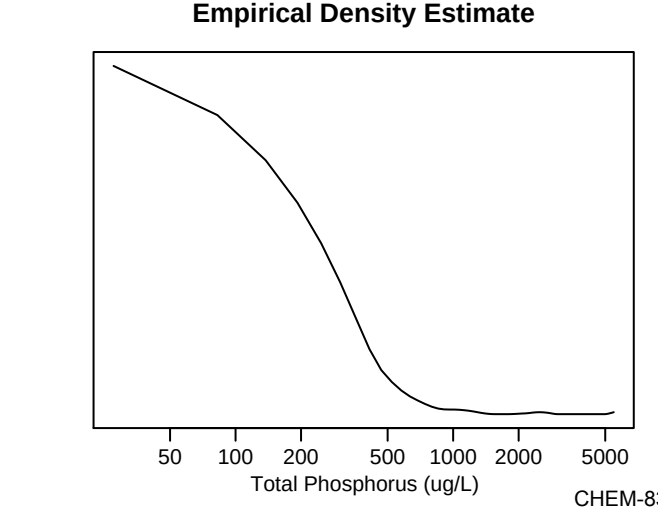
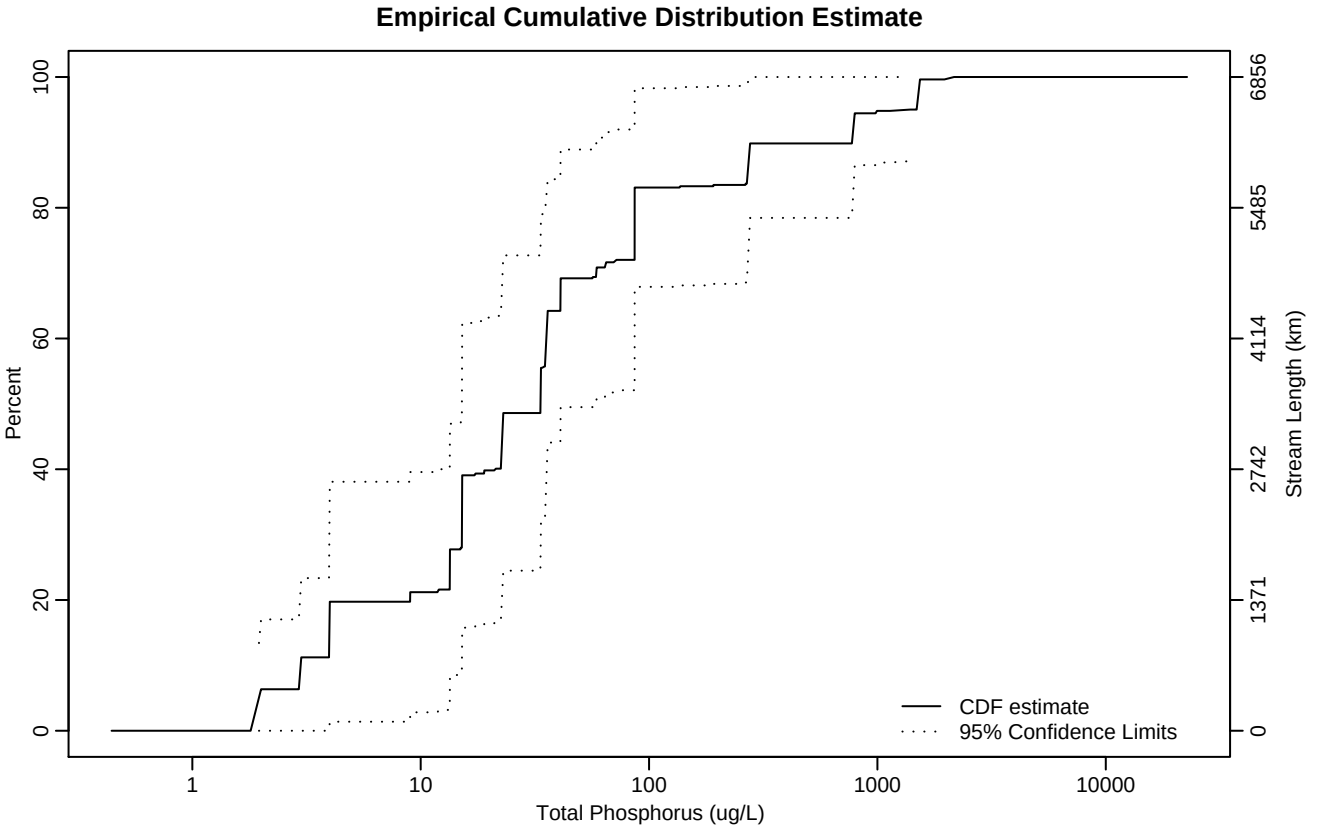


Figure CHEM−81 Indicator: Total_P Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.96	1.92	1.99
10Pct	2.98	0.44	9
25Pct	13.42	2.93	22.66
50Pct	33.47	13.42	86.46
75Pct	86.46	33.61	1486
90Pct	773.79	86.47	2165.34
95Pct	1367.51	273	2165.34
Mean	164.51	28.48	300.55
Std Dev	376.95	174.47	579.43

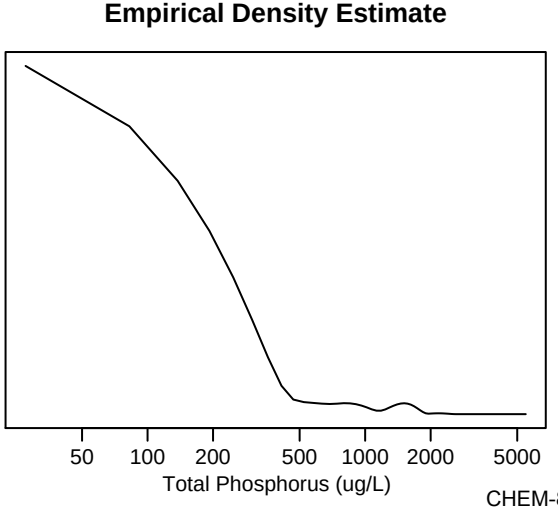
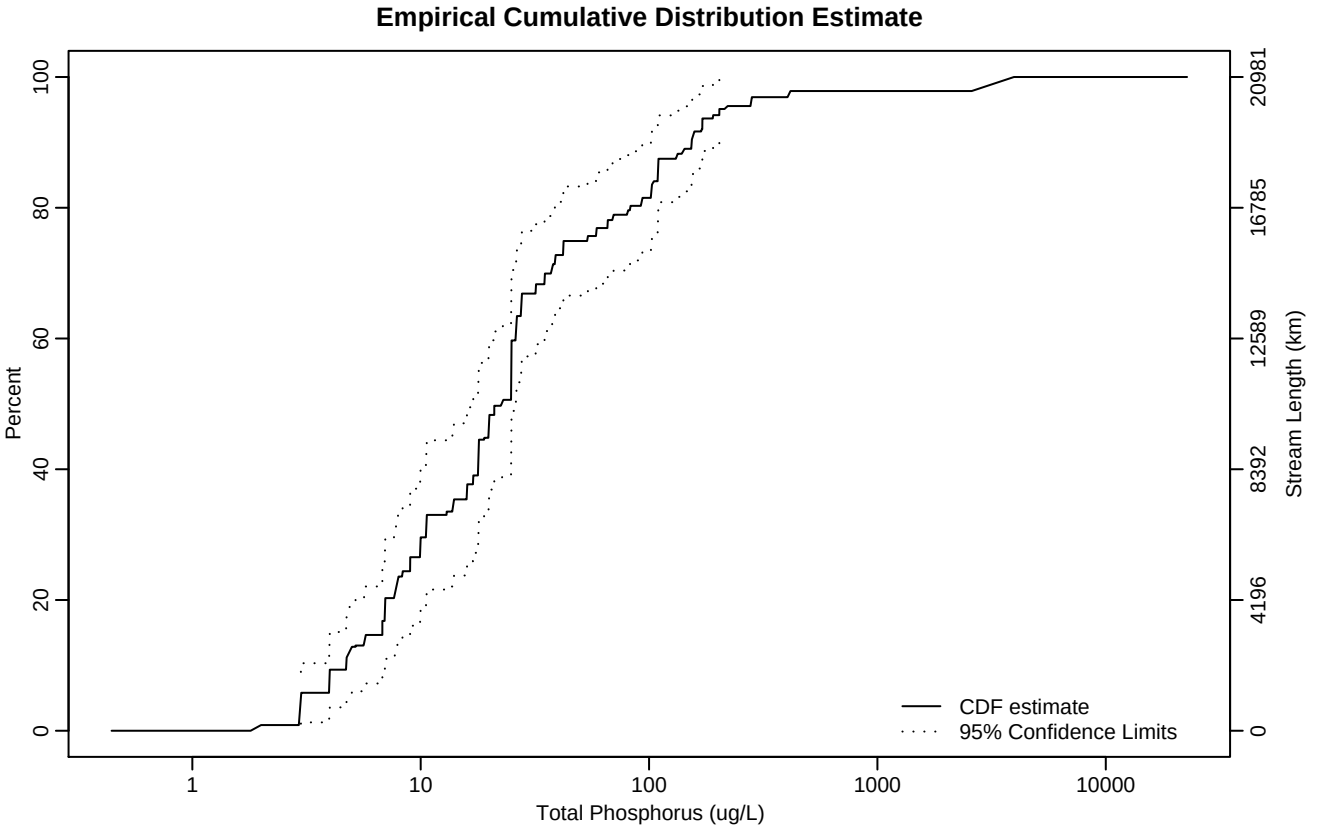


Figure CHEM−82 Indicator: Total_P Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.99	2.97	3.97
10Pct	4.72	2.98	6.79
25Pct	8.99	6.79	13.95
50Pct	22.62	16.97	26.20
75Pct	53.61	27.71	103.44
90Pct	153.69	102.96	280.82
95Pct	203.21	153.77	3882.74
Mean	130.03	−15.81	275.86
Std Dev	353.73	100.29	607.18

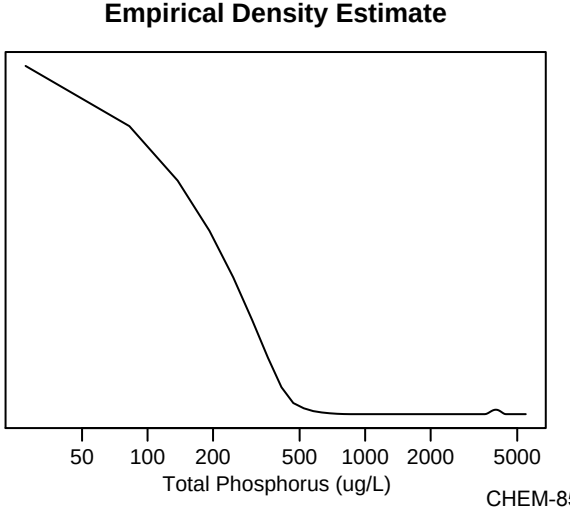
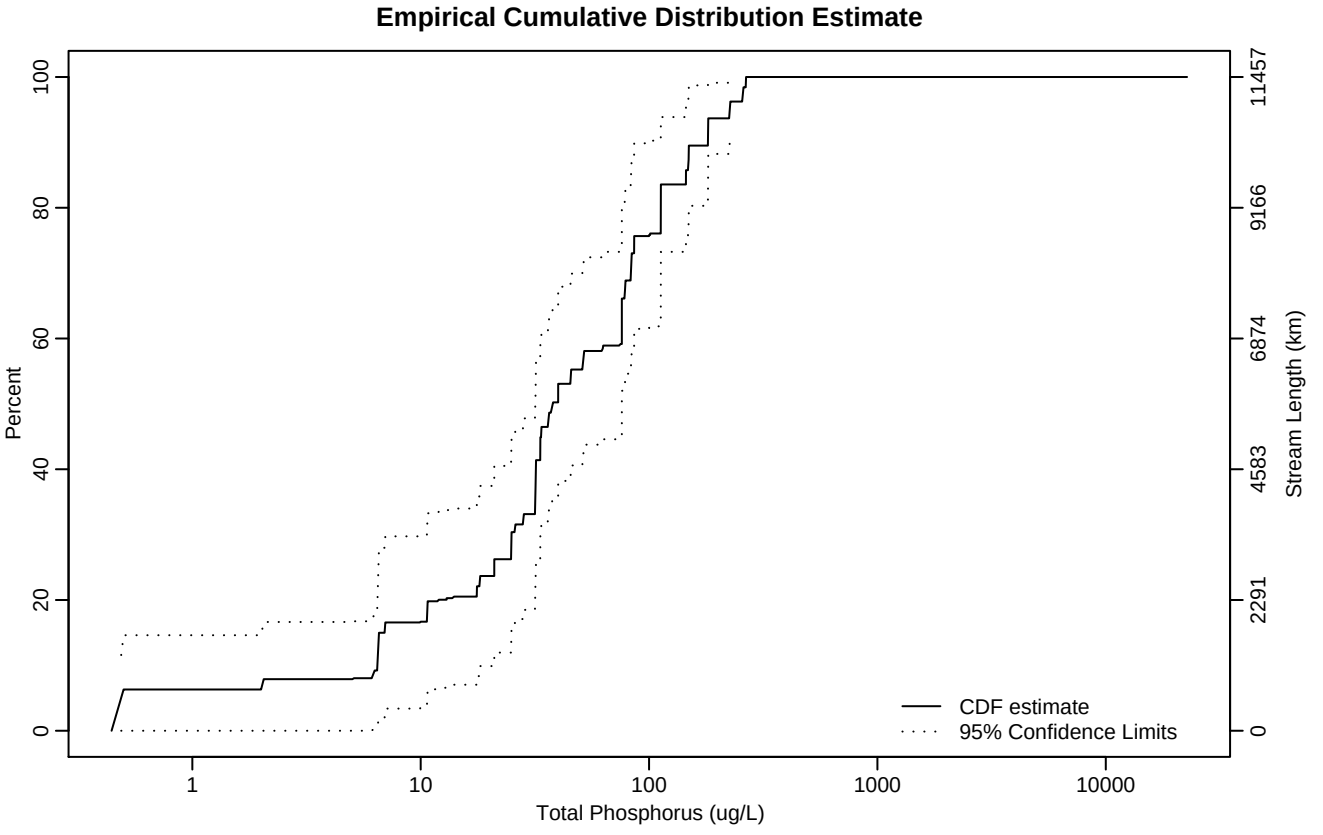


Figure CHEM−83 Indicator: Total_P Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.49	0.48	0.49
10Pct	6.46	0.44	13.98
25Pct	21	6.47	31.92
50Pct	37.87	31.70	76
75Pct	86.07	76	181.13
90Pct	181.08	112.60	265.60
95Pct	225.63	149.31	266
Mean	68.10	49.09	87.12
Std Dev	61.91	49.19	74.63

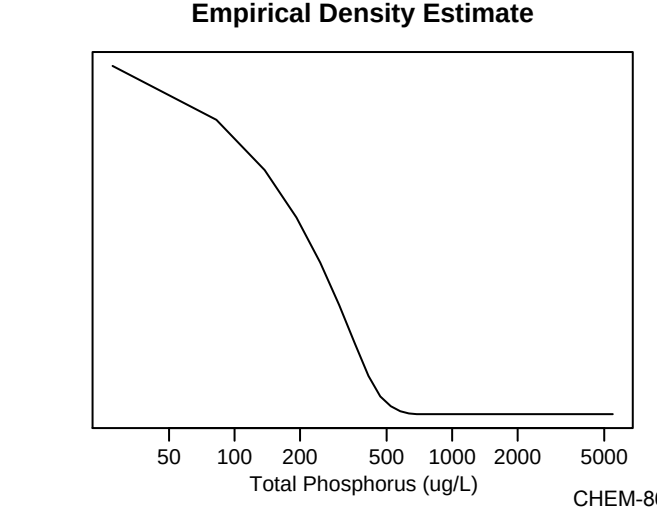
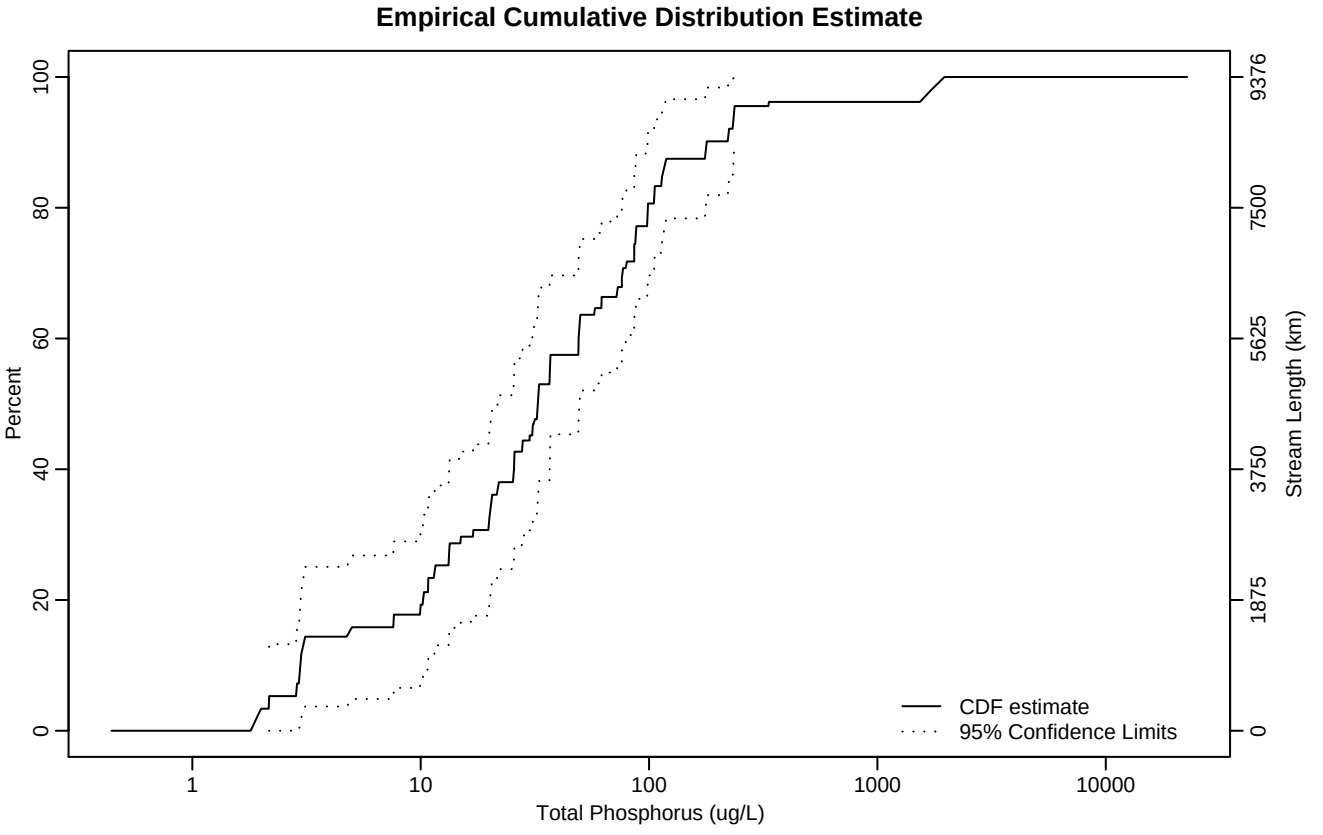


Figure CHEM−84 Indicator: Total_P Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.17	0.44	3
10Pct	2.97	1.90	9.95
25Pct	11.58	3.05	21.80
50Pct	32.58	20.45	57.98
75Pct	87.20	57.51	116.81
90Pct	178.79	105.09	1857.66
95Pct	236.25	118.88	1965
Mean	124.41	41.26	207.55
Std Dev	191.68	123.60	259.76

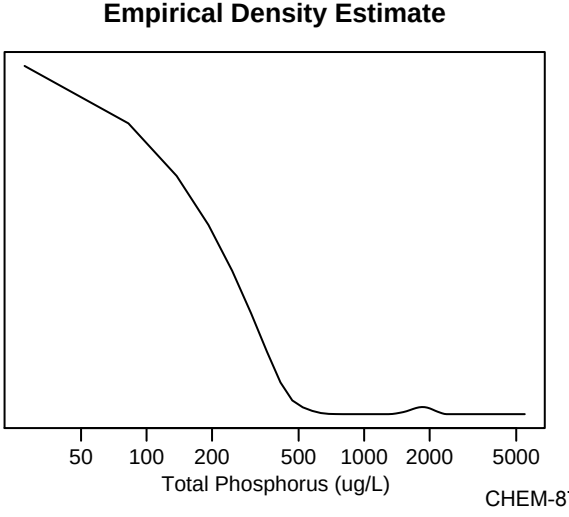
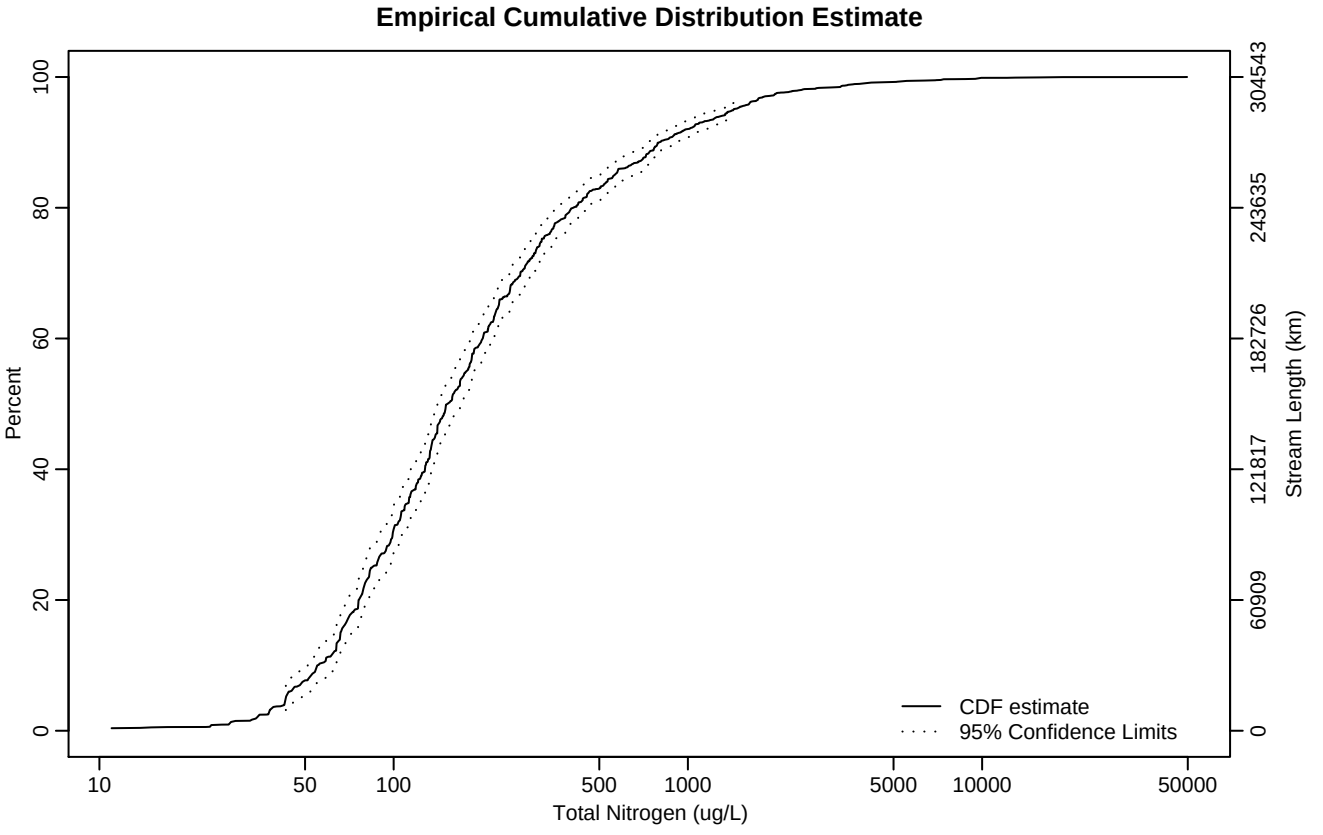


Figure CHEM−85 Indicator: Total_N Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	43	37.94	47.43
10Pct	55	49.38	63.79
25Pct	84.55	78.69	96.76
50Pct	152.30	140.90	168.55
75Pct	318.43	295.71	353.14
90Pct	798.74	741.47	926.75
95Pct	1428.82	1274.63	1625.07
Mean	400.89	356.47	445.31
Std Dev	927.52	732.31	1122.74

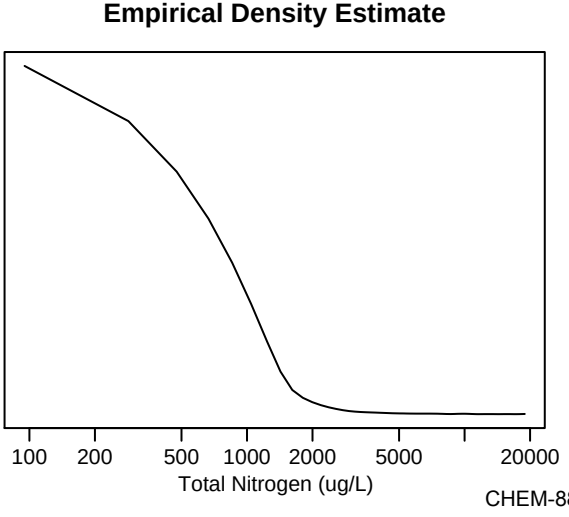
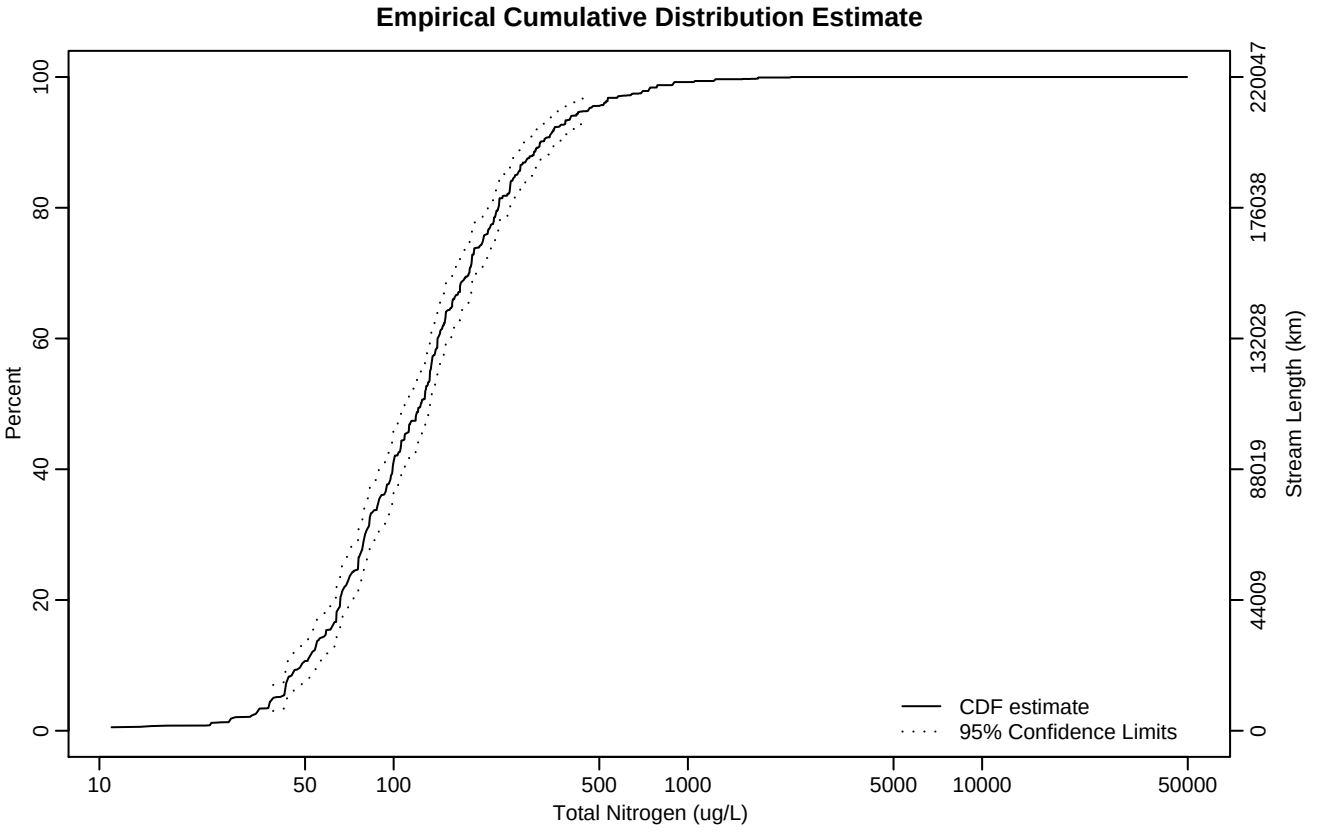


Figure CHEM−86 Indicator: Total_N Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	38.94	34.62	43.01
10Pct	48.51	43.04	54.45
25Pct	75.69	66.40	79.22
50Pct	123.79	108.97	132.96
75Pct	201.26	183.30	221.84
90Pct	315.42	282.83	370.61
95Pct	459.94	383.30	577.39
Mean	170.06	155.39	184.73
Std Dev	160.22	132.24	188.20

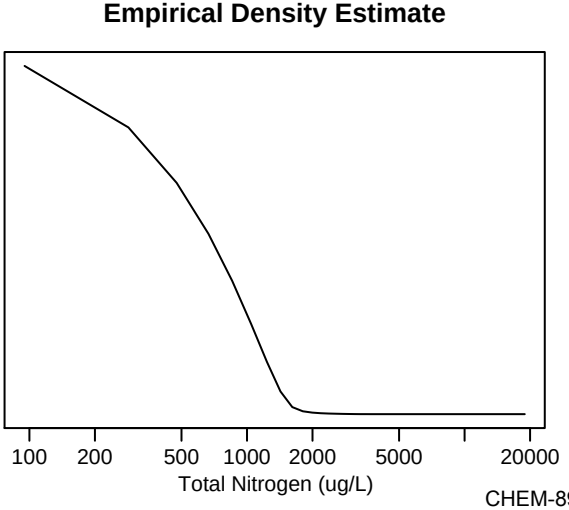
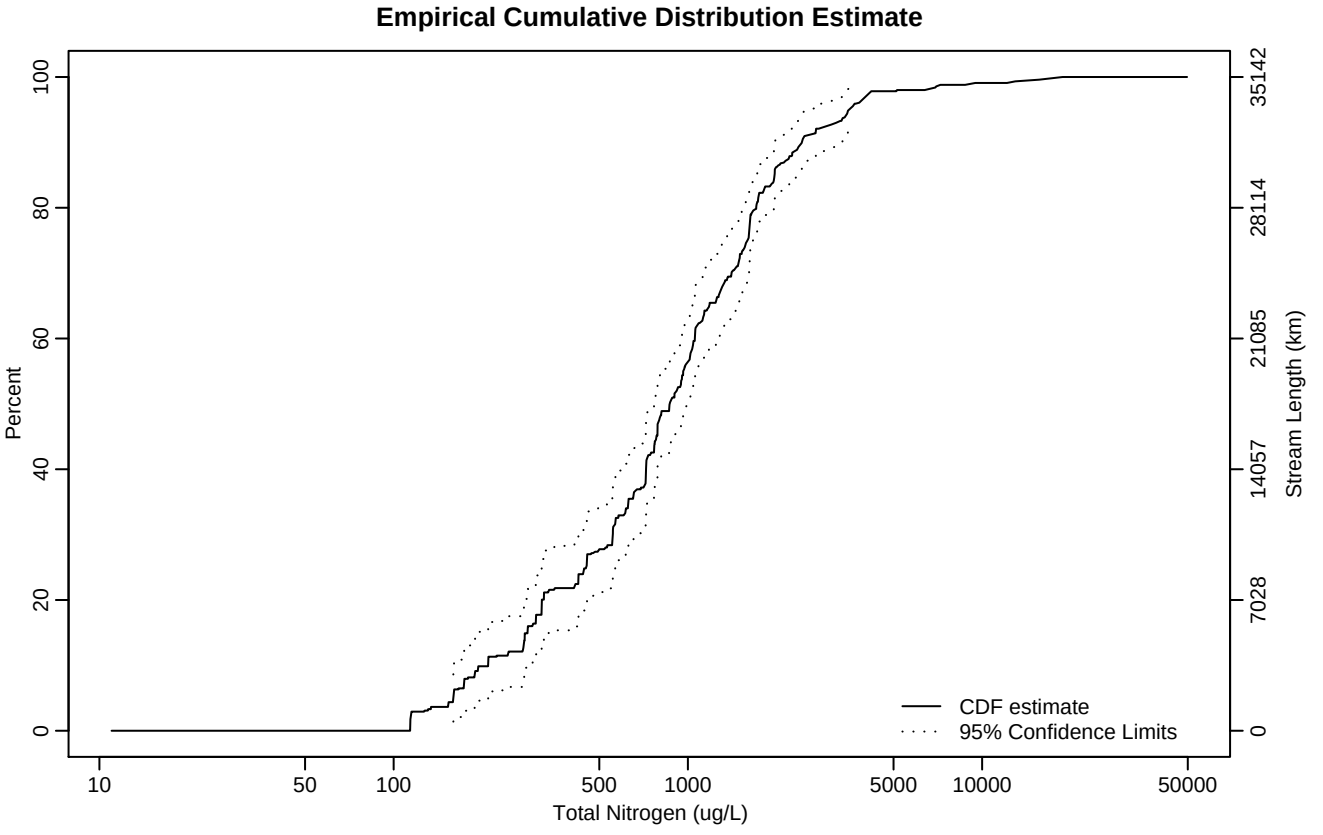


Figure CHEM−87 Indicator: Total_N Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	159.52	114	188.14
10Pct	209.43	159.28	285.35
25Pct	451.07	318.40	560.62
50Pct	867.34	770.13	991.12
75Pct	1593.45	1337	1731.67
90Pct	2439.49	1978.17	3438.24
95Pct	3529.71	2721.38	6787.89
Mean	1312.51	1097.44	1527.59
Std Dev	1498.31	1085.96	1910.67

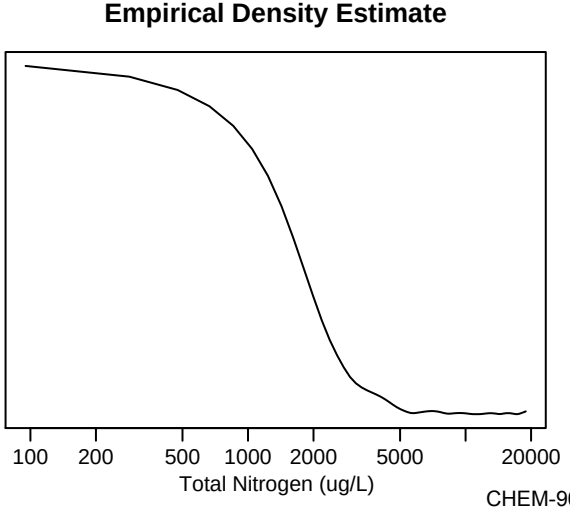
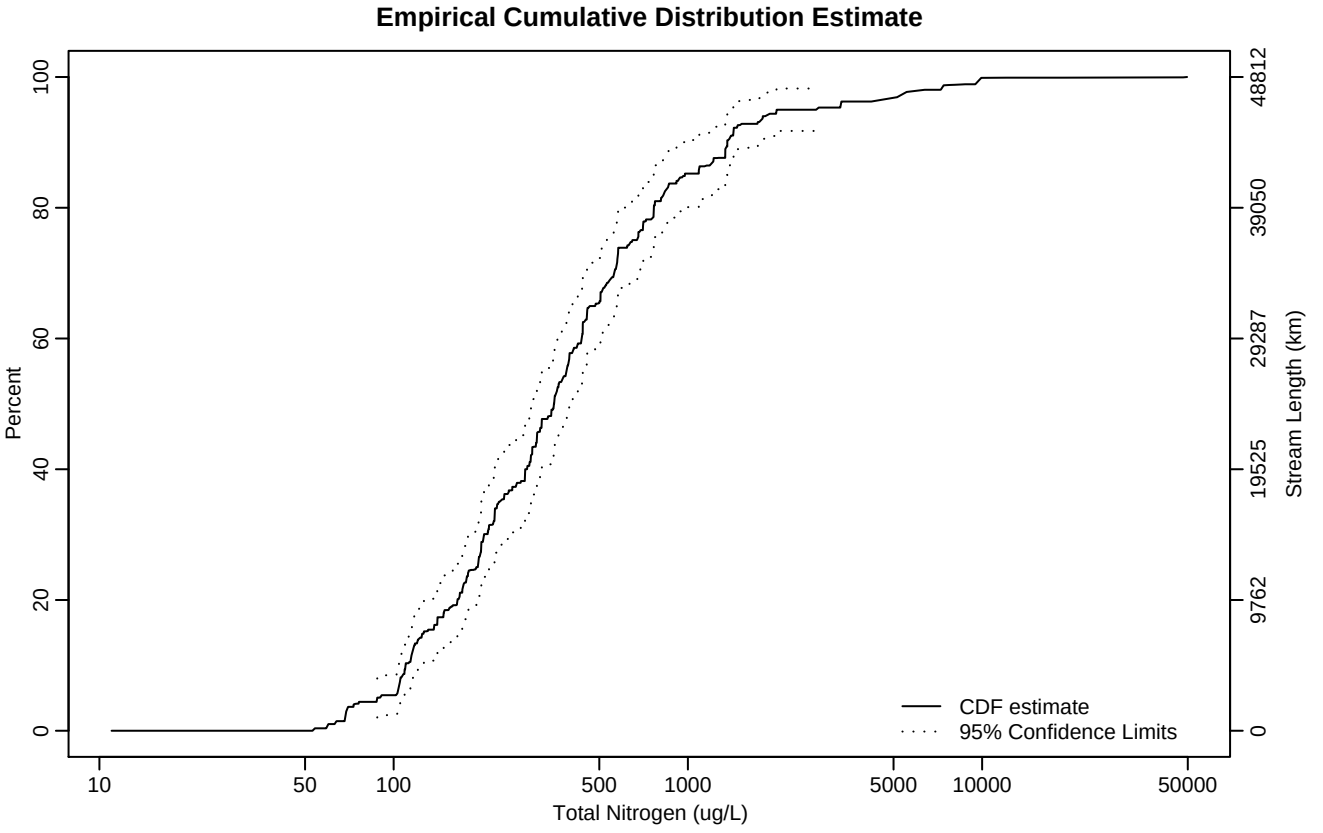


Figure CHEM−88 Indicator: Total_N Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	87.95	68.34	106.27
10Pct	109.78	103.32	121.54
25Pct	190.95	158.30	210.70
50Pct	350.57	295.67	396.01
75Pct	647.42	539.08	810.04
90Pct	1361.17	1089.35	1882.60
95Pct	2728.84	1430.14	7270.34
Mean	788.78	564.26	1013.31
Std Dev	1415.80	1069.64	1761.96

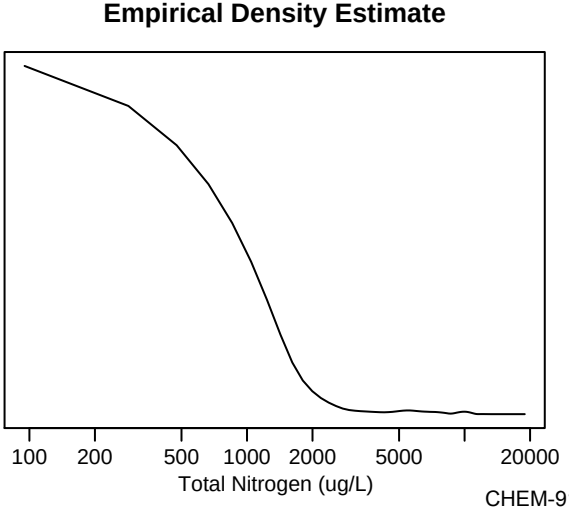
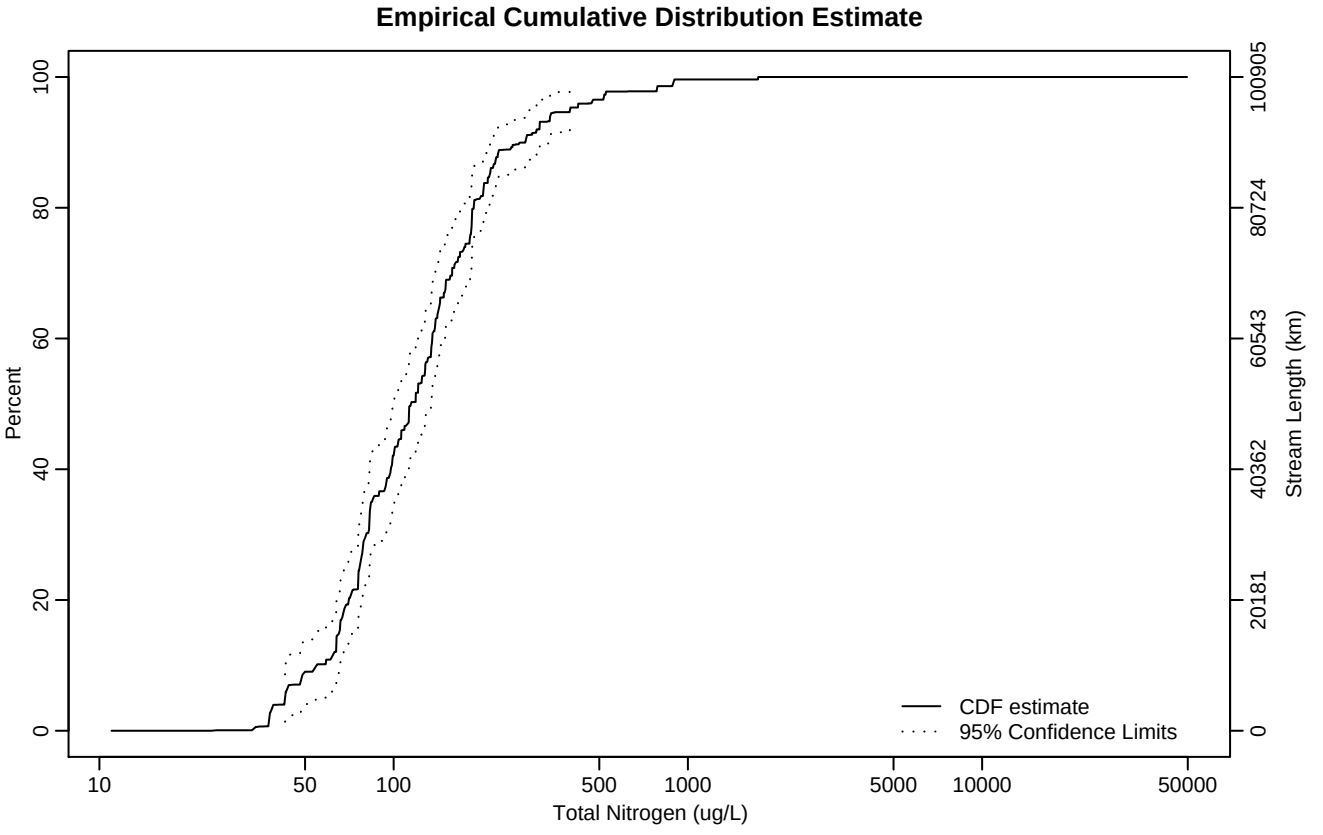


Figure CHEM−89 Indicator: Total_N Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	42.75	37.84	48.54
10Pct	54.71	42.74	65.31
25Pct	76.62	67.52	82.70
50Pct	114.54	99.30	134.11
75Pct	181.21	150.27	201.06
90Pct	280.12	213.77	340.88
95Pct	397.72	306.06	784.76
Mean	155.65	134.13	177.18
Std Dev	140.32	97.15	183.49

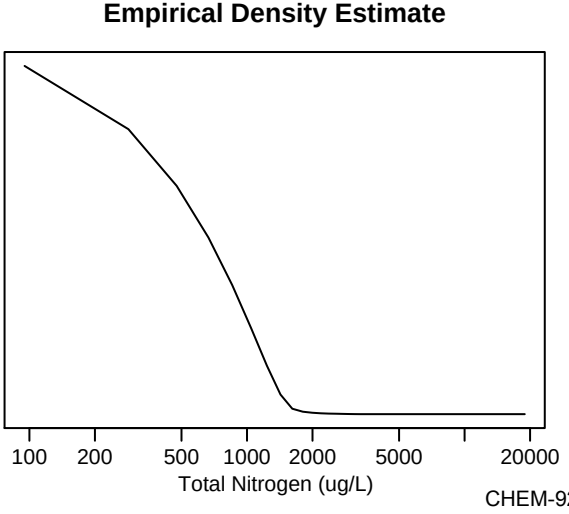
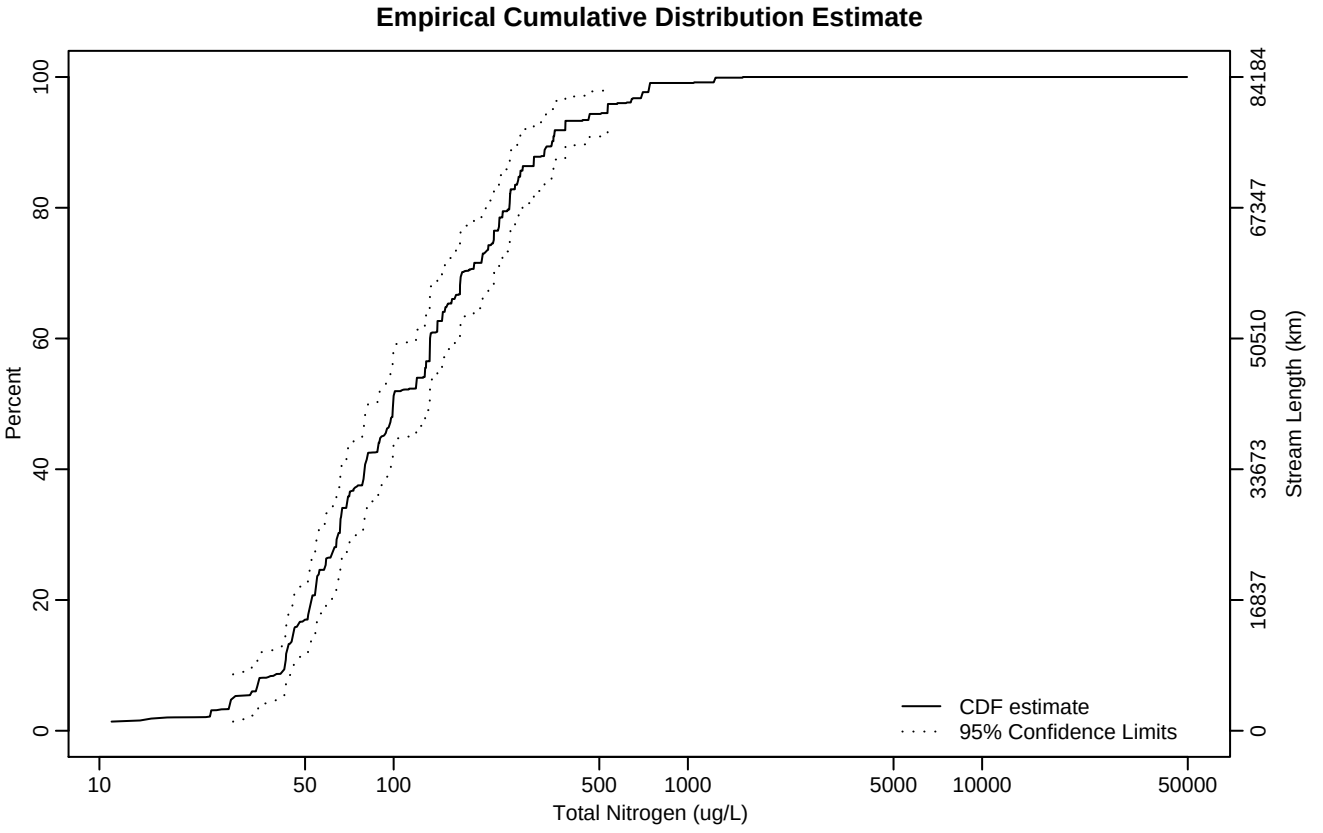


Figure CHEM−90 Indicator: Total_N Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	28.46	11	39.77
10Pct	42.71	32.97	45.19
25Pct	58.39	51.62	65.86
50Pct	99.58	88.06	132.61
75Pct	218.75	168.22	248.53
90Pct	345.49	269.24	533.80
95Pct	533.74	352.34	739.32
Mean	166.01	139.97	192.06
Std Dev	173.32	129.68	216.97

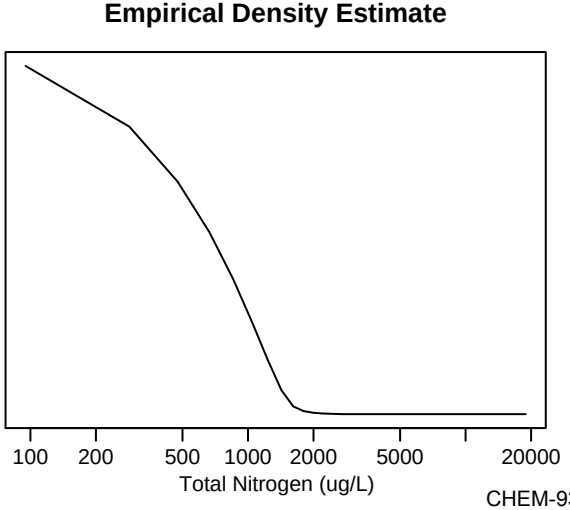
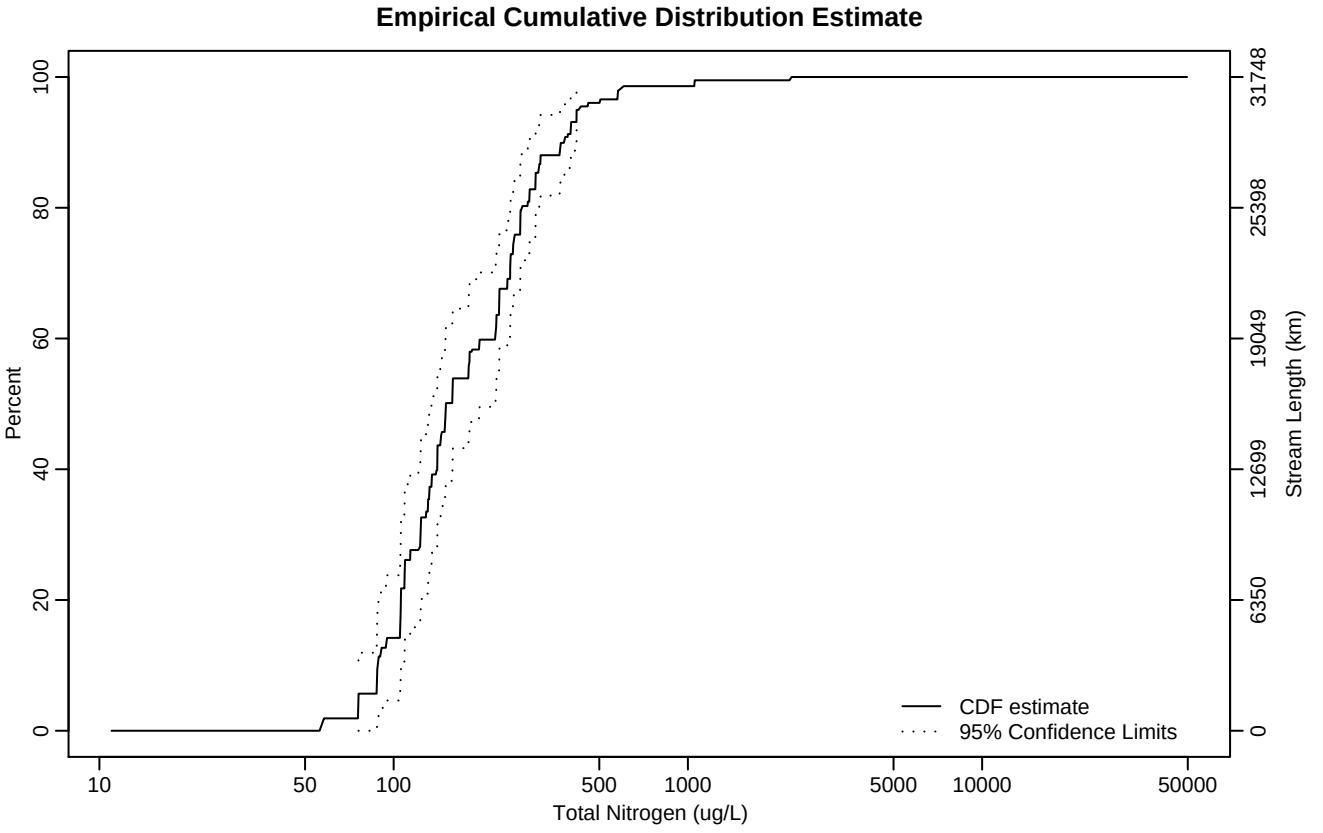


Figure CHEM−91 Indicator: Total_N Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	75.93	57.67	87.86
10Pct	88.29	57.67	105.67
25Pct	109.15	94.22	132.39
50Pct	150.59	134.64	223.06
75Pct	256.20	228.65	303.39
90Pct	379.11	303.81	427.60
95Pct	425.48	399.99	578.98
Mean	215.13	186.91	243.35
Std Dev	132.85	91.21	174.49

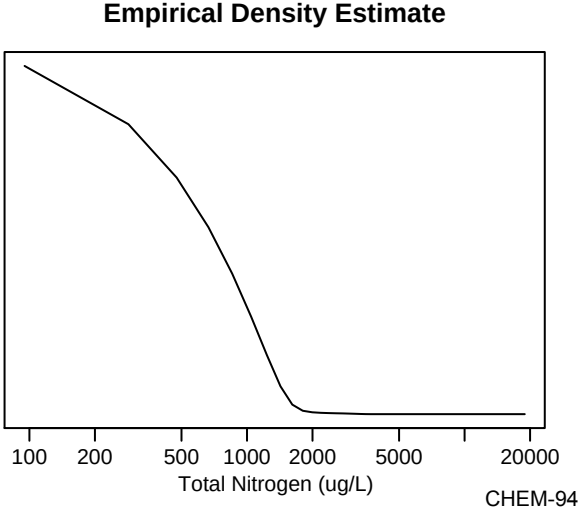
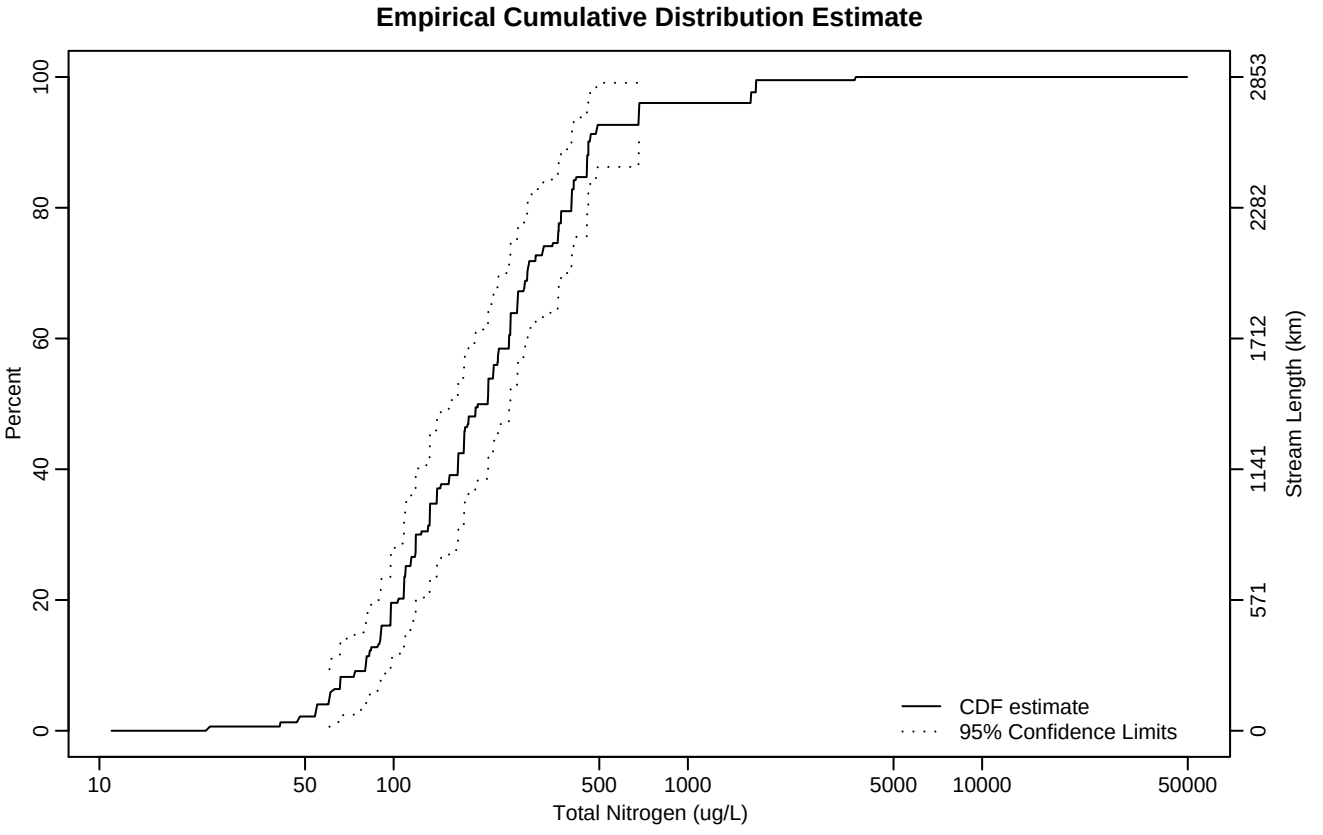


Figure CHEM−92 Indicator: Total_N Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	60.52	41.23	73.66
10Pct	80.38	60.01	90.94
25Pct	109.93	90.62	140.02
50Pct	208.77	154.50	249.27
75Pct	361.43	263.17	453.31
90Pct	458.98	403.47	1701.47
95Pct	682.47	458.81	3720
Mean	296.38	226.09	366.66
Std Dev	363.04	221.63	504.45

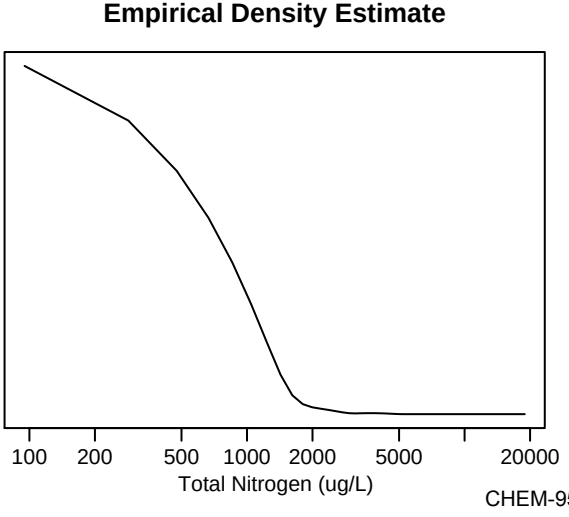
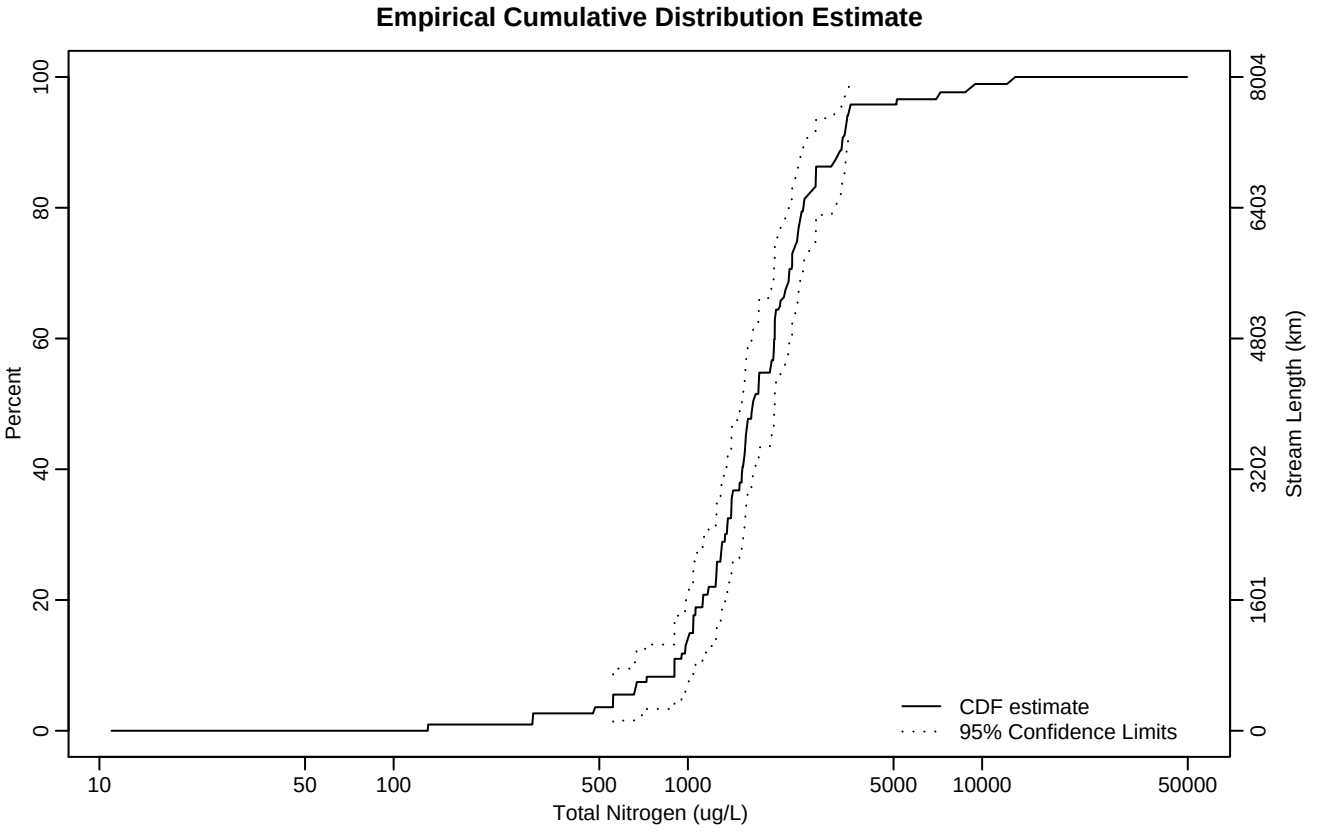


Figure CHEM−93 Indicator: Total_N Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	557.16	297.52	723.74
10Pct	900.40	557.17	1041.06
25Pct	1253.34	1042.51	1405.43
50Pct	1662.68	1524.92	1973.32
75Pct	2351.47	2055.12	2723.16
90Pct	3346.25	2713.31	7019.55
95Pct	3540.08	3369.10	12371.29
Mean	2083.11	1741.20	2425.02
Std Dev	1341.33	891.78	1790.88

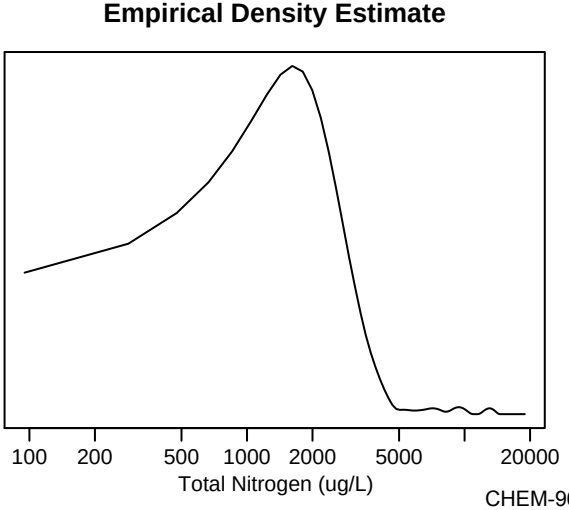
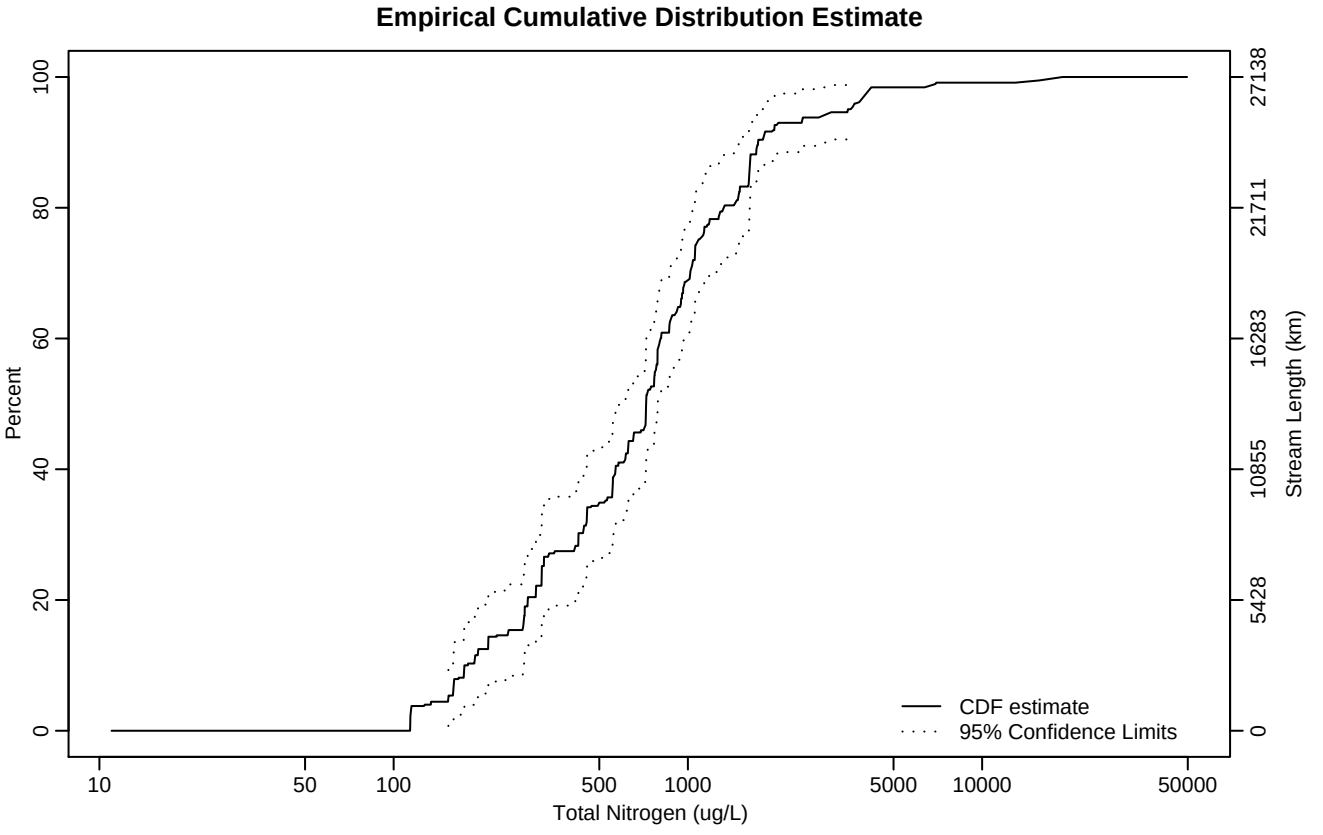


Figure CHEM−94 Indicator: Total_N Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	153.45	113.81	173.71
10Pct	174	133.90	275.11
25Pct	318.94	277.60	453.68
50Pct	721.20	580.73	798.95
75Pct	1083.73	963.15	1501.98
90Pct	1732.04	1617.01	3492.11
95Pct	3497.43	1809.94	13104.26
Mean	1085.23	823.78	1346.68
Std Dev	1466.84	952.16	1981.51

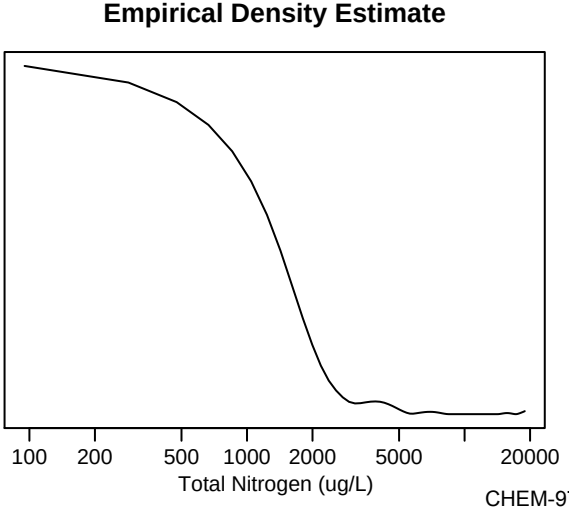
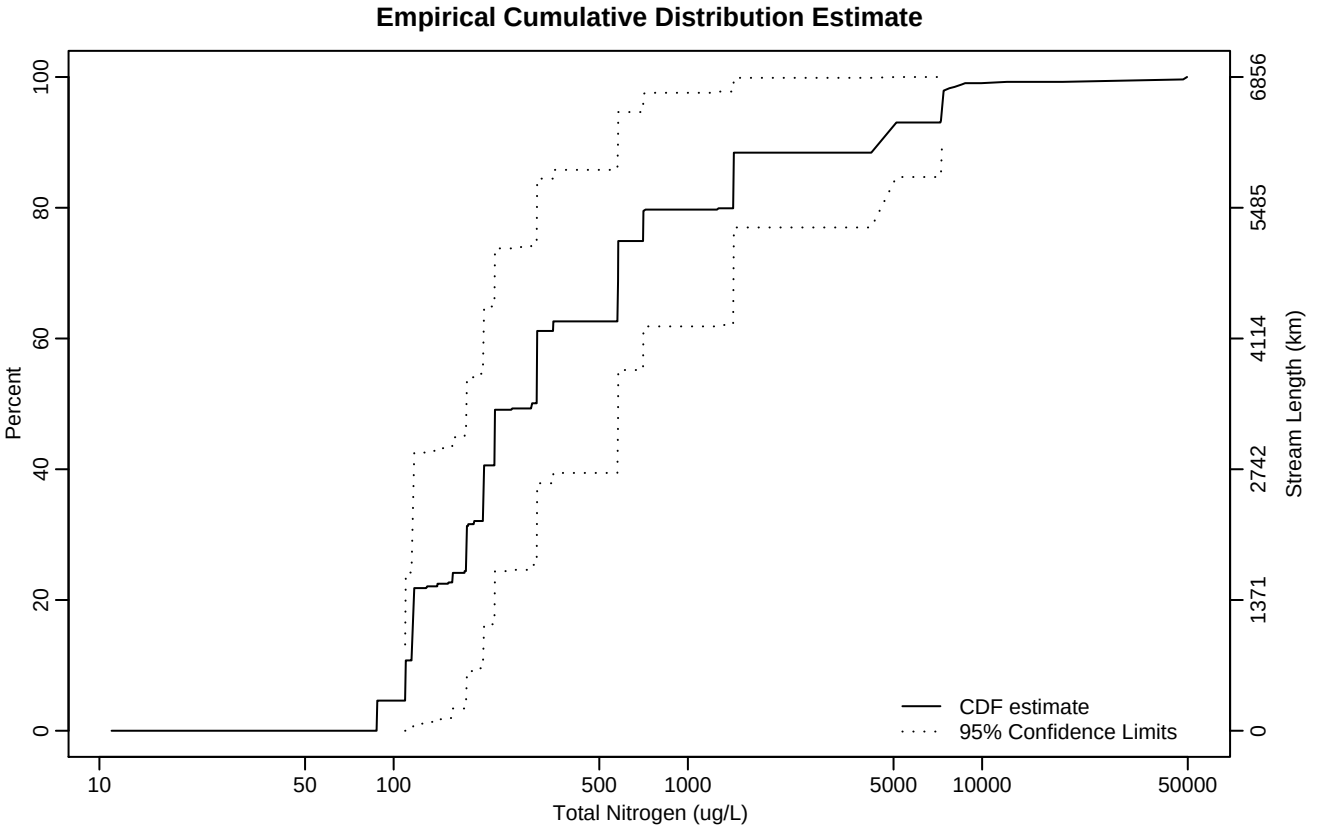


Figure CHEM−95 Indicator: Total_N Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	109.41	11	115.47
10Pct	109.92	87.70	116.67
25Pct	176.13	87.96	220.60
50Pct	295.32	176.20	579.96
75Pct	704.04	306.84	7291.96
90Pct	4511.24	705.86	49719
95Pct	7301.34	1431.45	49719
Mean	1426.86	584.30	2269.42
Std Dev	4577.97	2764.67	6391.27

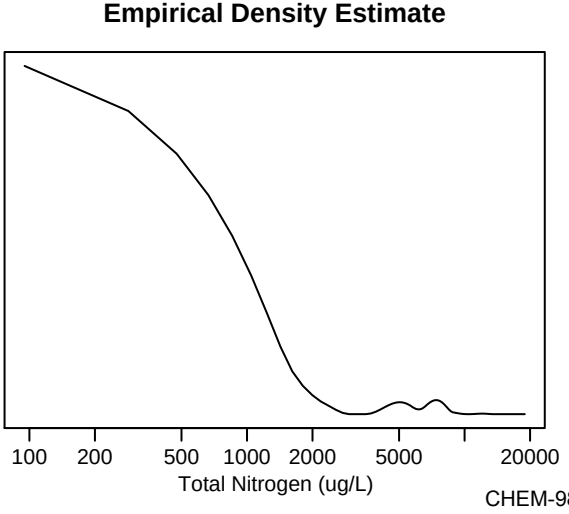
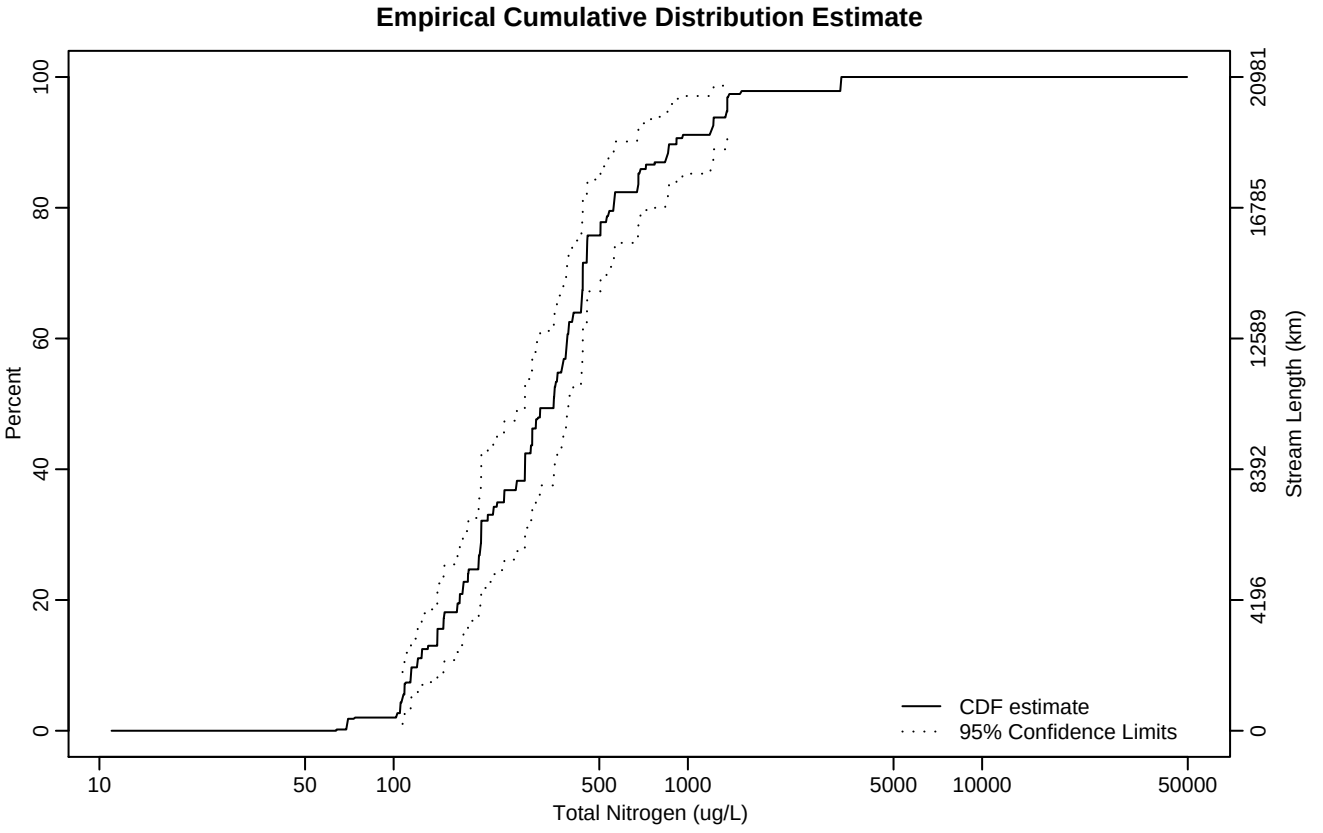


Figure CHEM−96 Indicator: Total_N Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	107.21	69.72	114.54
10Pct	120.22	108.76	140.83
25Pct	194.15	147.92	217.52
50Pct	349.87	279	393.72
75Pct	455.08	436.59	678.60
90Pct	914.57	678.81	1361.15
95Pct	1361.03	914.90	3317.99
Mean	466.18	346.05	586.31
Std Dev	429.29	262.10	596.47

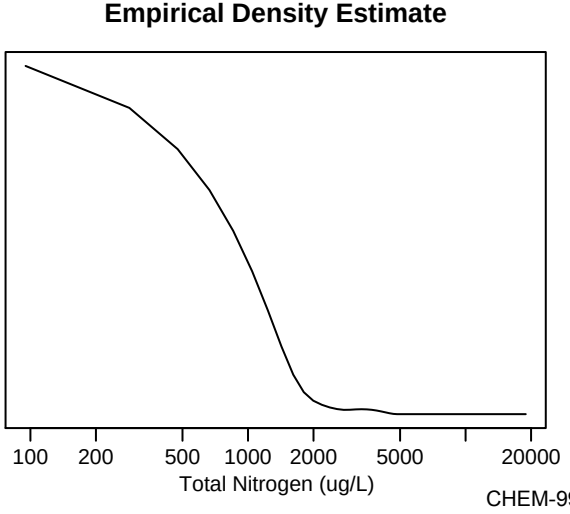
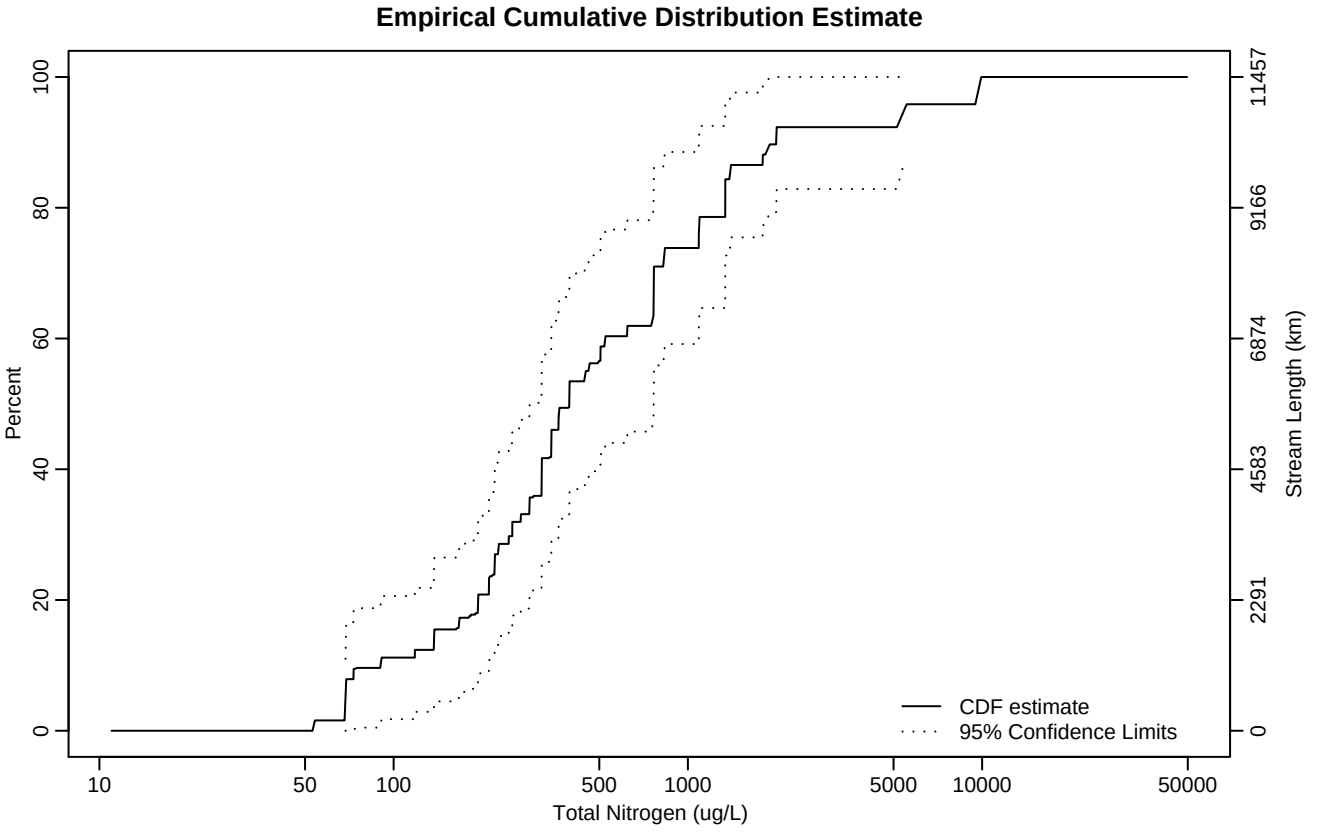


Figure CHEM−97 Indicator: Total_N Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	68.60	68.21	68.99
10Pct	90.25	11	193.98
25Pct	220.36	118.04	318.44
50Pct	395.16	289.03	765.26
75Pct	1089.20	621.23	1888.93
90Pct	1995.12	1339.41	9927.55
95Pct	5444.12	1394.32	9931
Mean	1137.64	366.28	1909
Std Dev	1637.96	829.42	2446.50

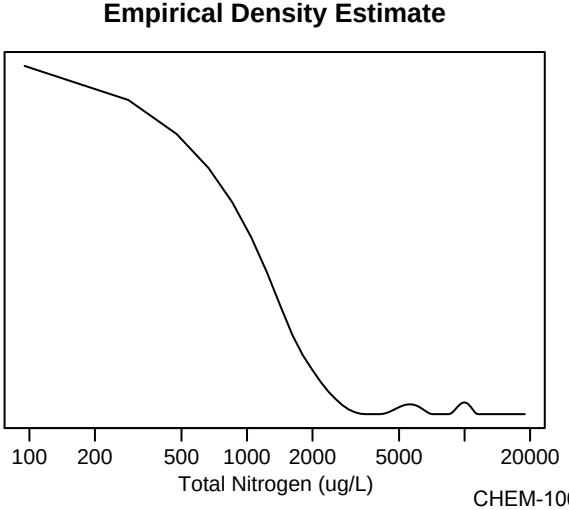
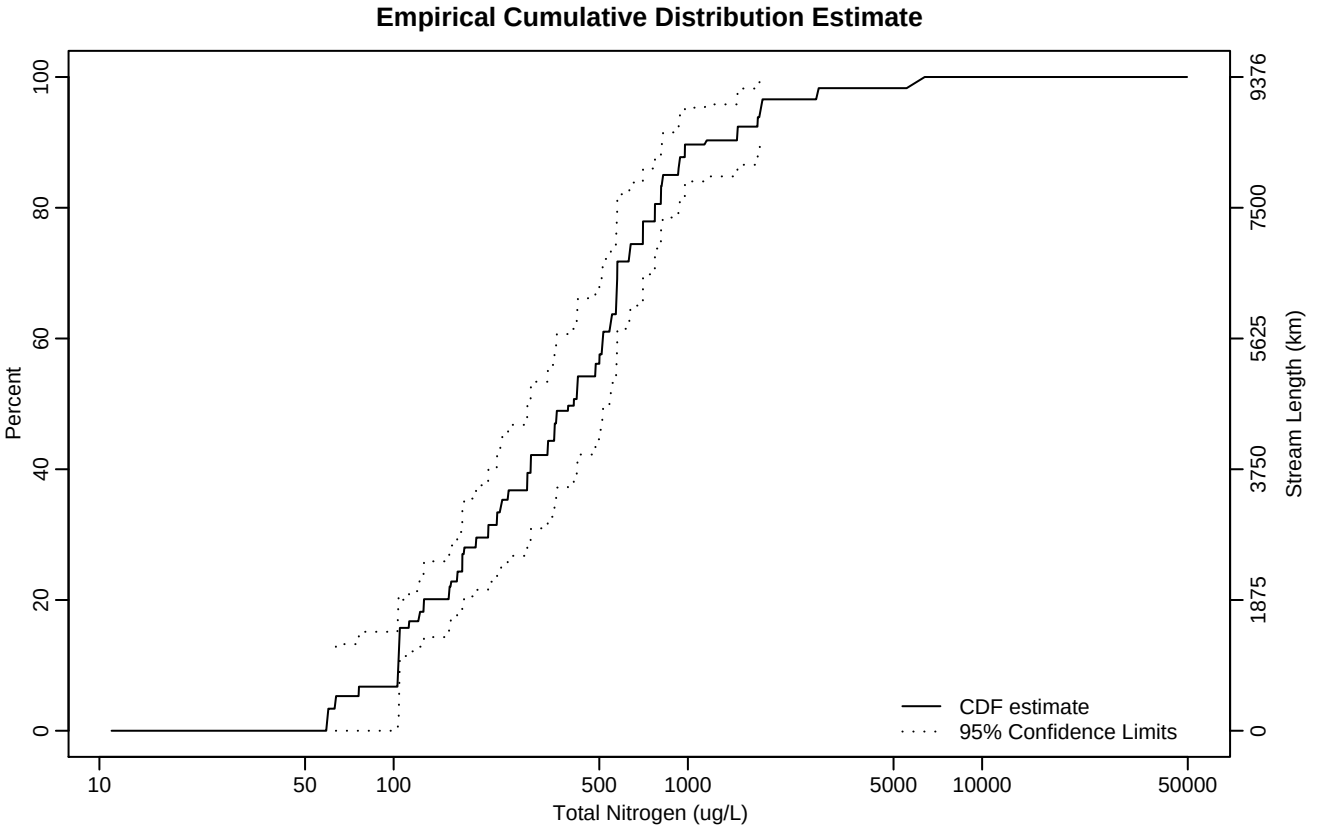


Figure CHEM−98 Indicator: Total_N Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	63.63	11	104.11
10Pct	103.72	59.56	122.92
25Pct	171.06	126.30	224.09
50Pct	409.55	284.47	545.02
75Pct	703.16	570.81	821.93
90Pct	1149.28	818.43	1783.04
95Pct	1767.33	977.38	6381
Mean	619.91	451.87	787.95
Std Dev	541.92	333.57	750.27

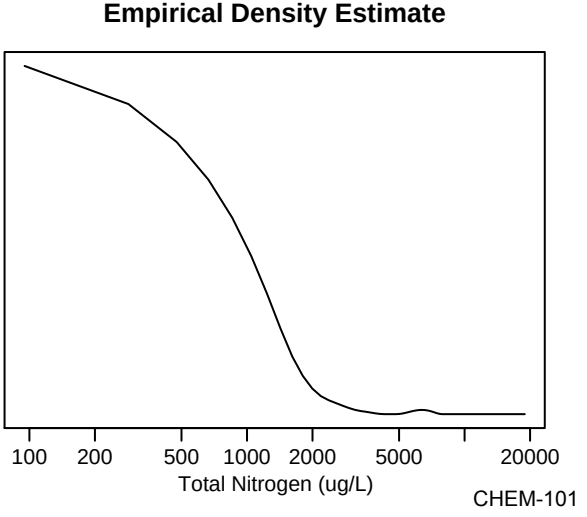
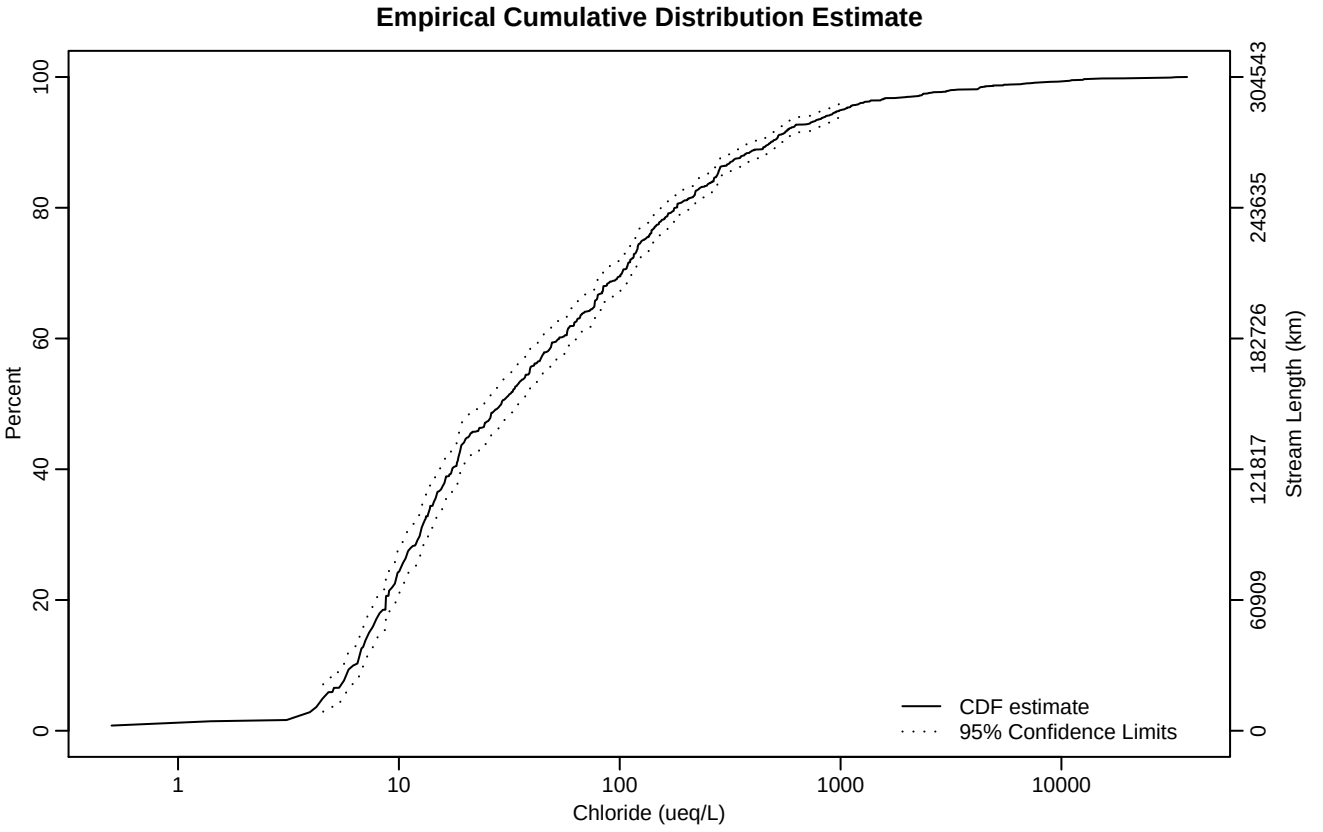


Figure CHEM−99 Indicator: Chloride Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.54	3.97	5.49
10Pct	6.23	5.52	6.88
25Pct	10.23	9.13	11.87
50Pct	29.10	24.36	35.13
75Pct	126.75	115.76	146.54
90Pct	482.90	394.68	551.90
95Pct	1018.50	855.47	1243.89
Mean	349.15	263.53	434.77
Std Dev	1160.22	846.76	1473.69

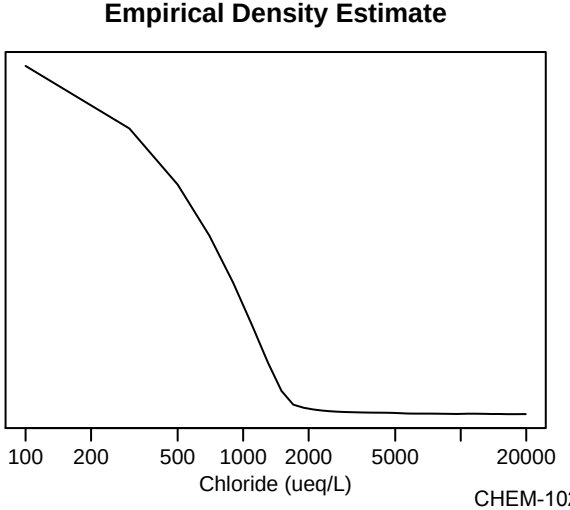
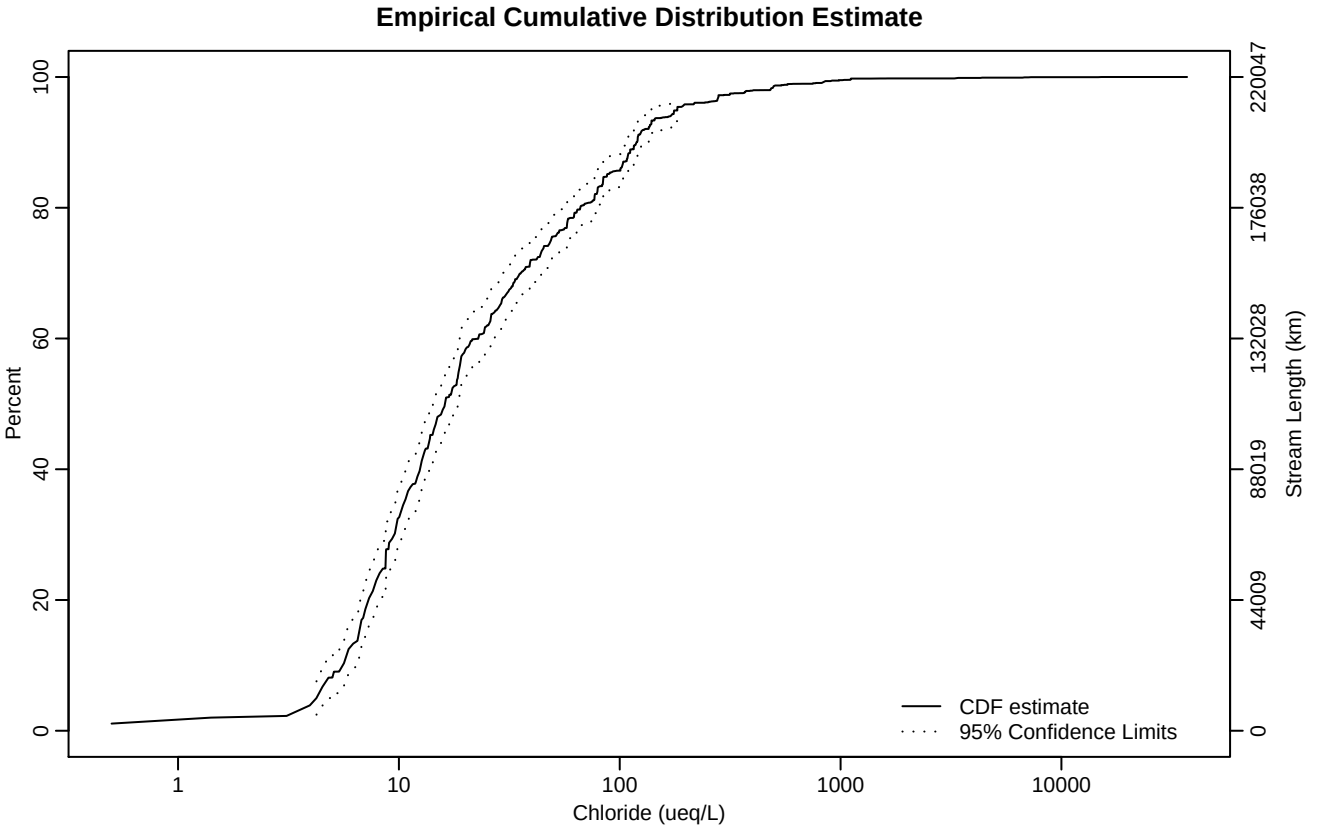
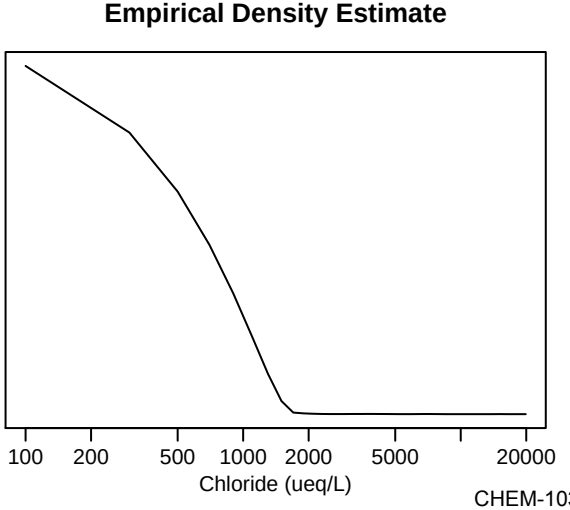


Figure CHEM−100 Indicator: Chloride Subpopulation: MT



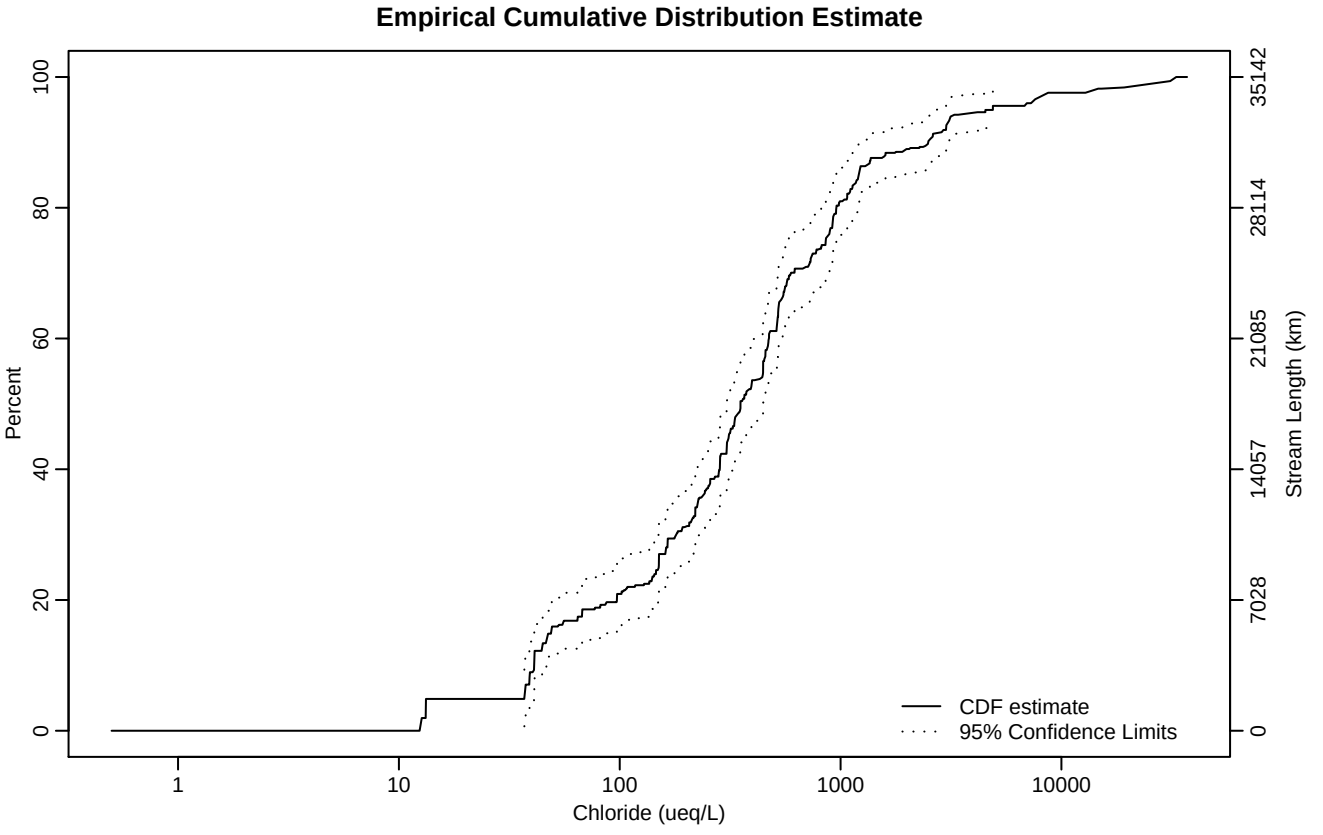
Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.23	3.18	4.68
10Pct	5.57	4.49	6.23
25Pct	8.69	7.45	9.26
50Pct	16.16	14.28	18.54
75Pct	48.79	39.24	59.35
90Pct	119.10	108.40	136.22
95Pct	182.27	143.59	277.57
Mean	64.80	53.67	75.93
Std Dev	110.65	90.78	130.52



CHEM-103

Figure CHEM−101 Indicator: Chloride Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	36.98	12.51	40.85
10Pct	40.97	37.08	47.20
25Pct	150.12	97.05	180.73
50Pct	352.18	305.27	450.92
75Pct	857.08	582.78	989.14
90Pct	2493.46	1229.45	3136.81
95Pct	4894.27	3006.59	13316.08
Mean	1375.60	747.13	2004.06
Std Dev	3163.22	1934.83	4391.61

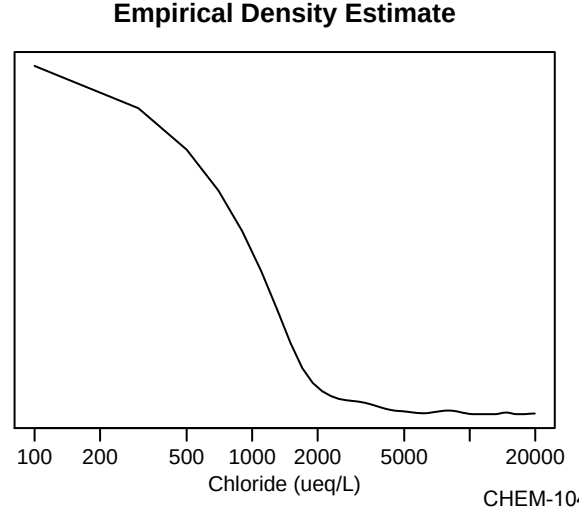
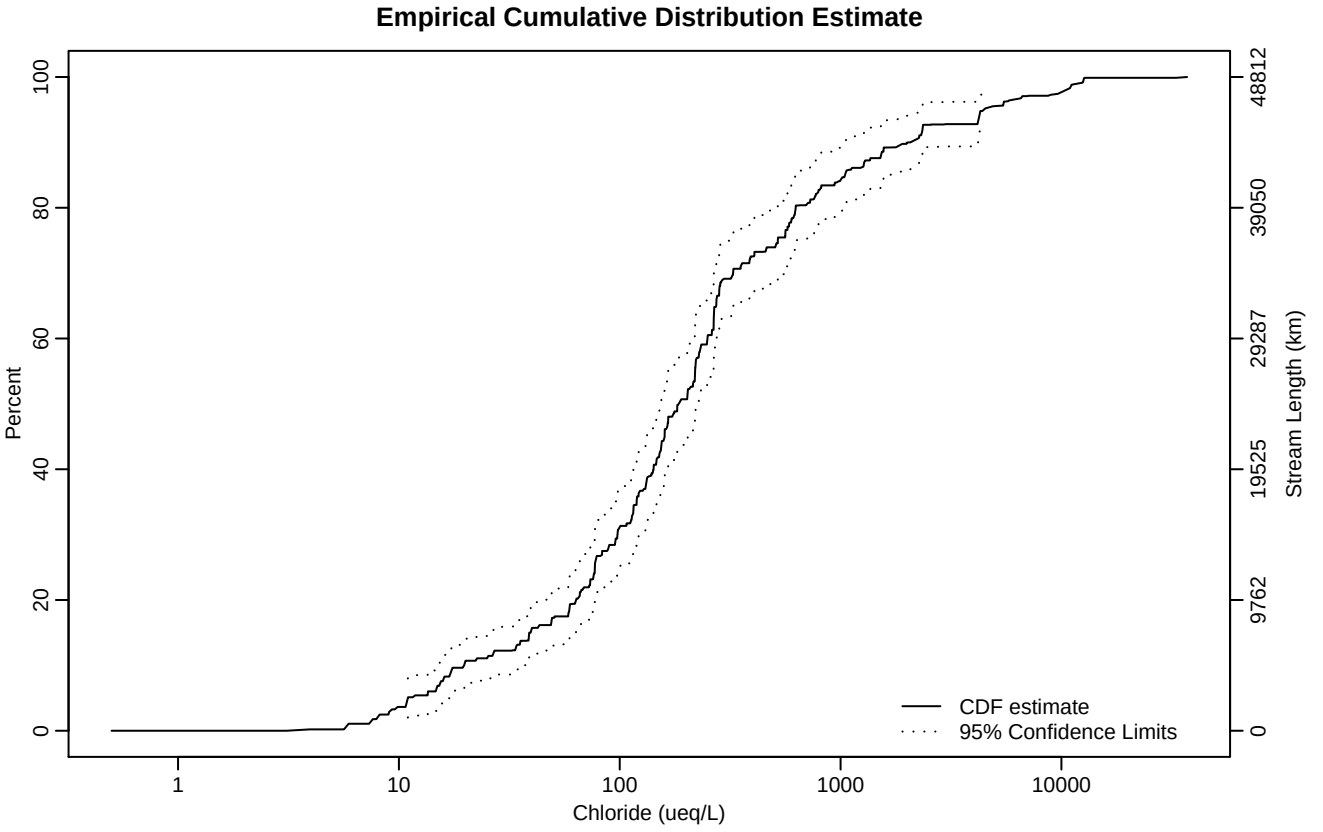


Figure CHEM−102 Indicator: Chloride Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.98	9	15.42
10Pct	19.74	14.74	37.83
25Pct	77.17	63	97.89
50Pct	184.82	153.49	227.70
75Pct	519.80	320.42	709.87
90Pct	2044.10	1115.78	4255.35
95Pct	4455.62	2360.23	9751.77
Mean	895.81	609.33	1182.30
Std Dev	1818.40	1320.97	2315.82

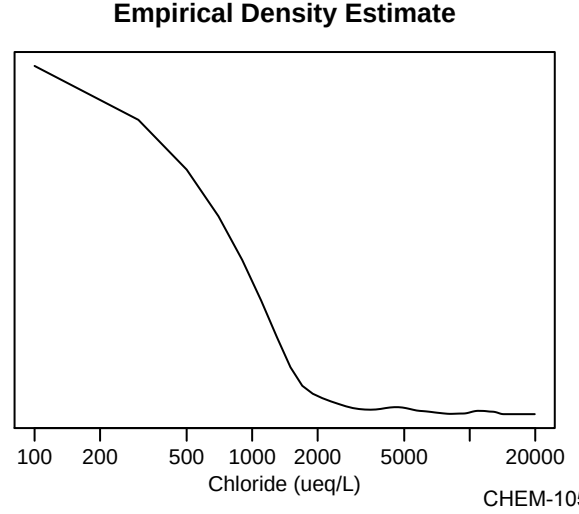
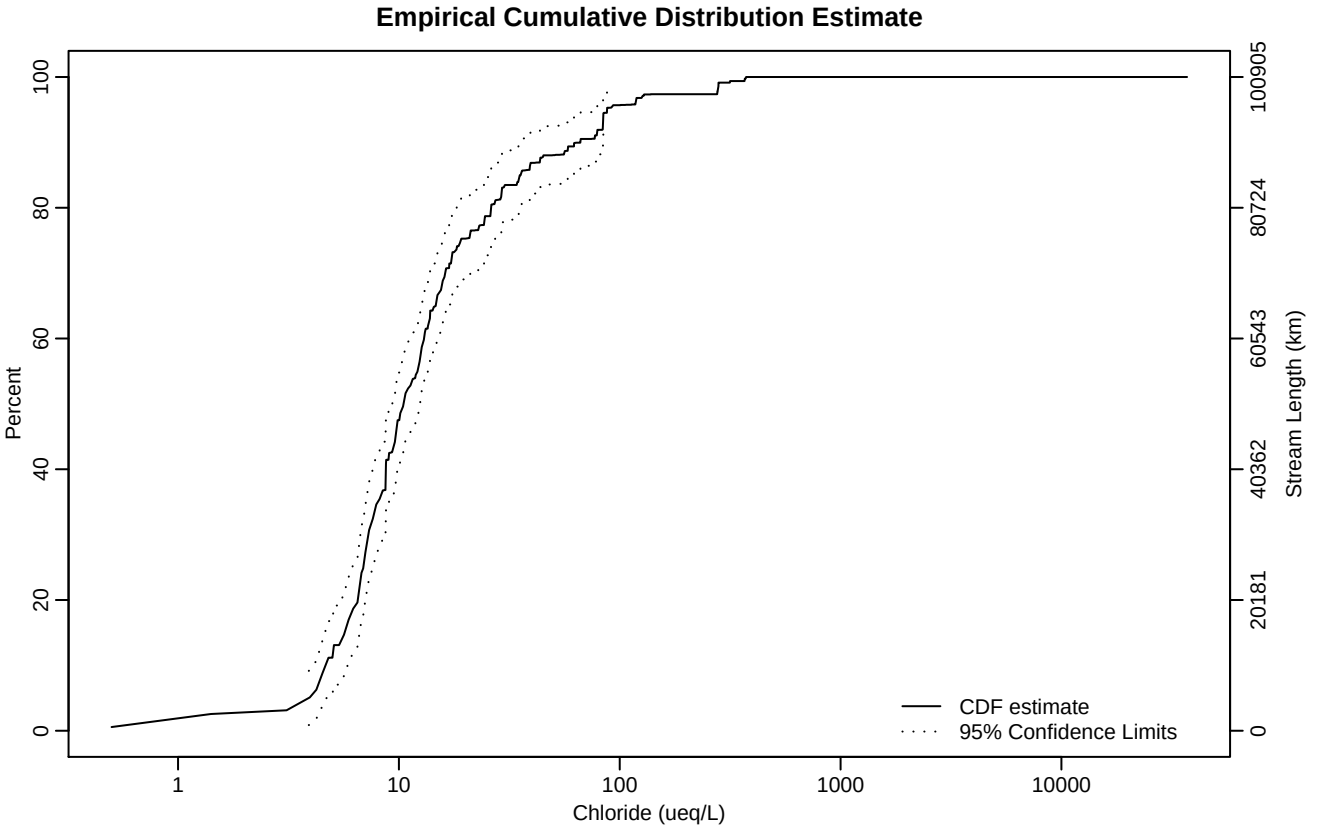
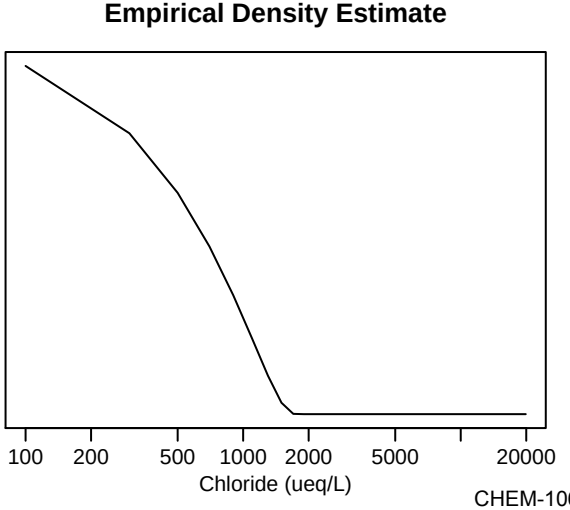


Figure CHEM−103 Indicator: Chloride Subpopulation: MT−NROCK



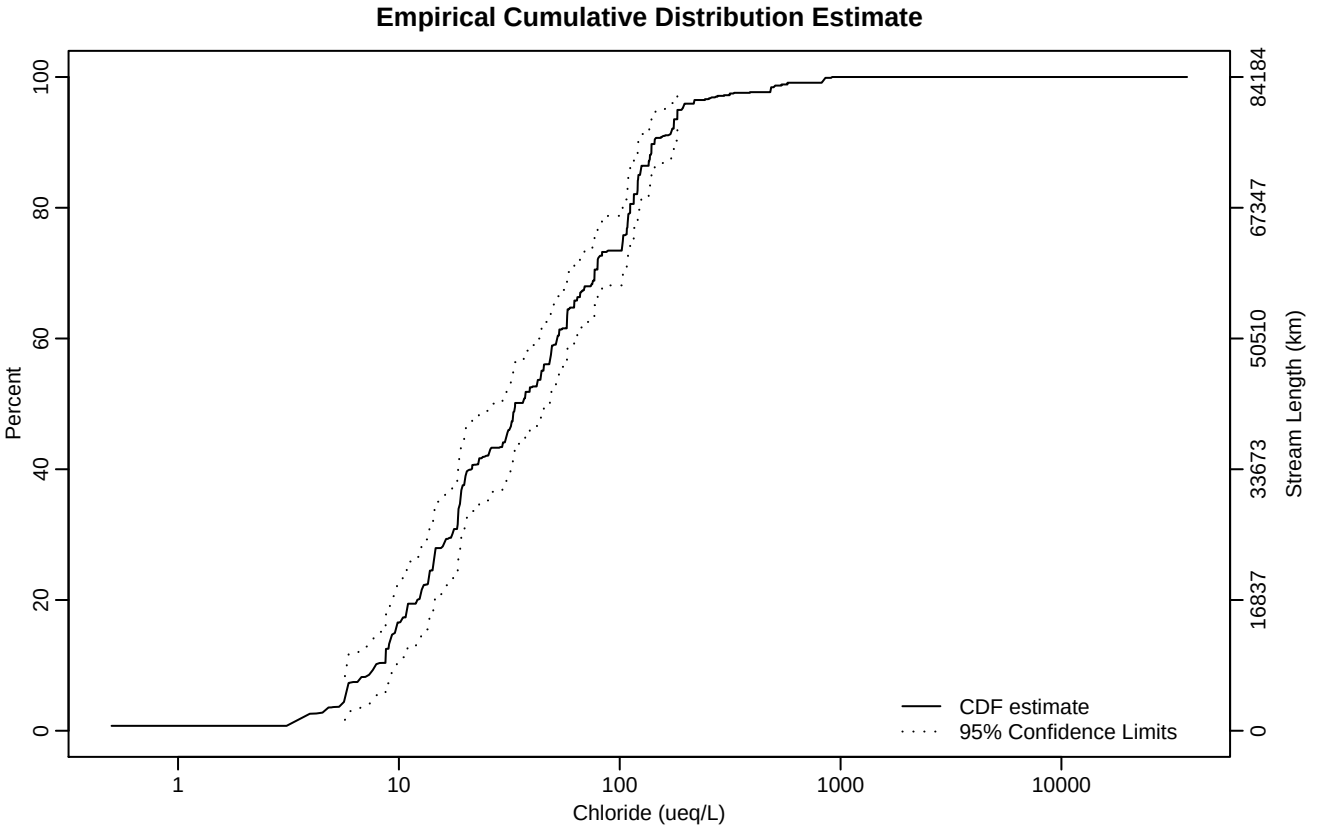
Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.91	0.86	4.49
10Pct	4.66	3.89	5.68
25Pct	6.90	6.04	7.61
50Pct	10.49	9.33	12.52
75Pct	19.06	15.78	28.79
90Pct	66.30	37.67	84.29
95Pct	87.61	83.80	277.58
Mean	26.76	20.56	32.96
Std Dev	41.82	30.76	52.89



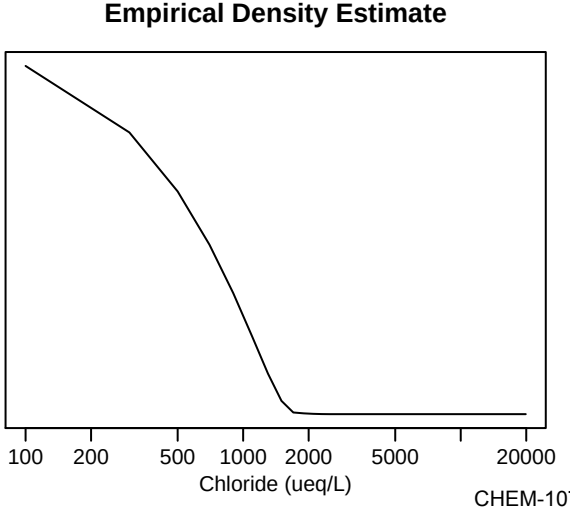
CHEM-106

Figure CHEM−104 Indicator: Chloride Subpopulation: MT−PNW



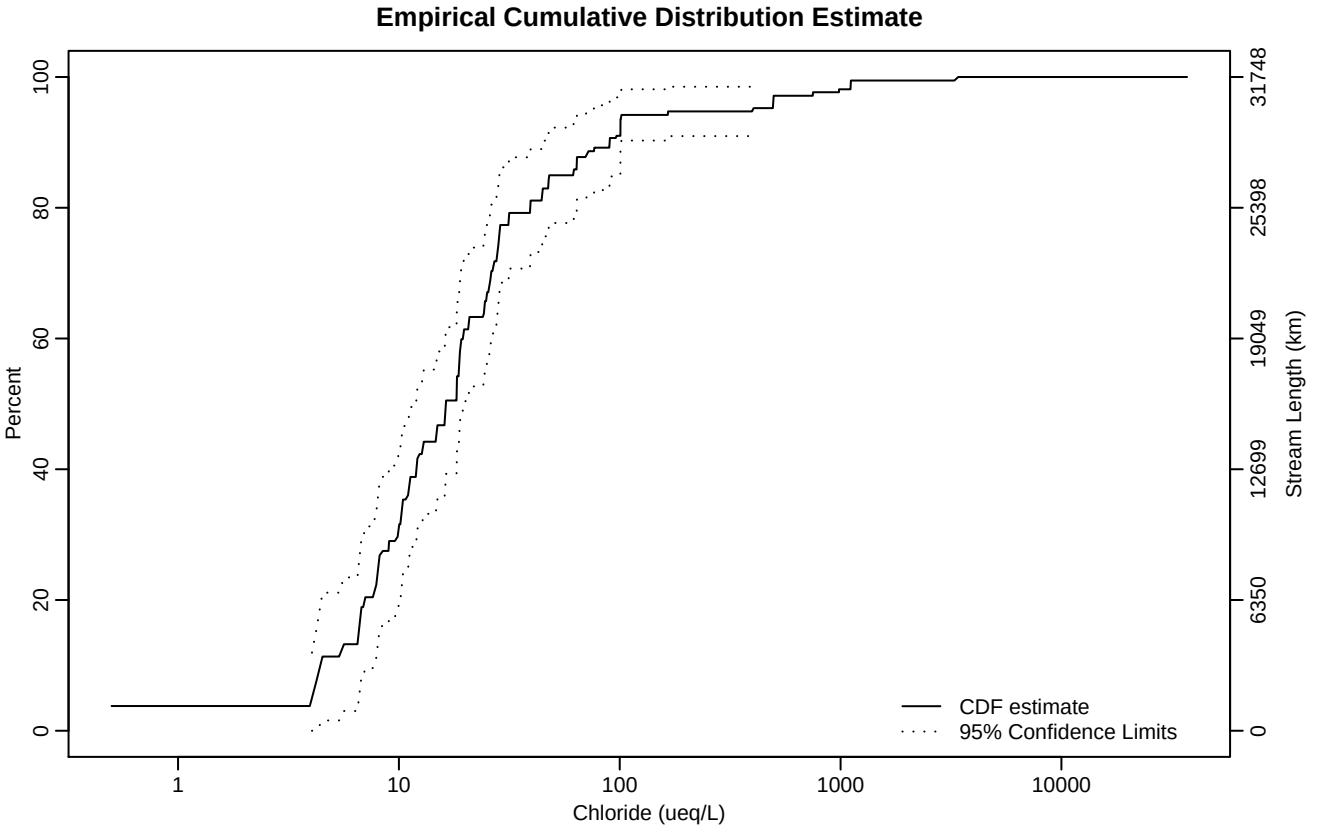
Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.70	3.65	6.71
10Pct	7.84	5.73	9.30
25Pct	14.26	10.83	18.48
50Pct	33.59	29.42	48.15
75Pct	103.31	76.86	111.53
90Pct	143.77	124.77	182.32
95Pct	190.70	175.73	314.92
Mean	71.12	57.17	85.06
Std Dev	89.47	67.03	111.91



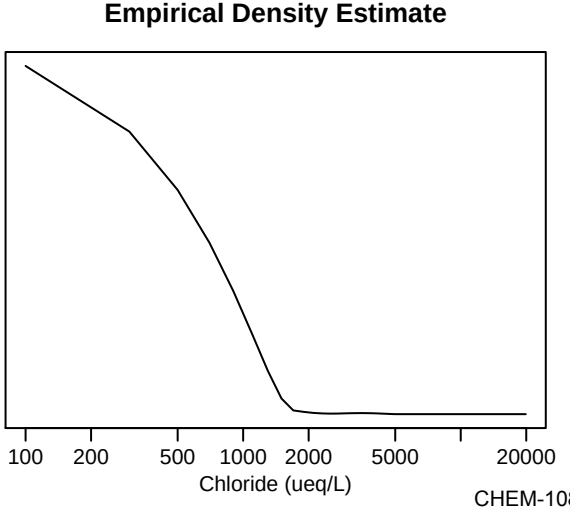
CHEM-107

Figure CHEM−105 Indicator: Chloride Subpopulation: MT−SROCK



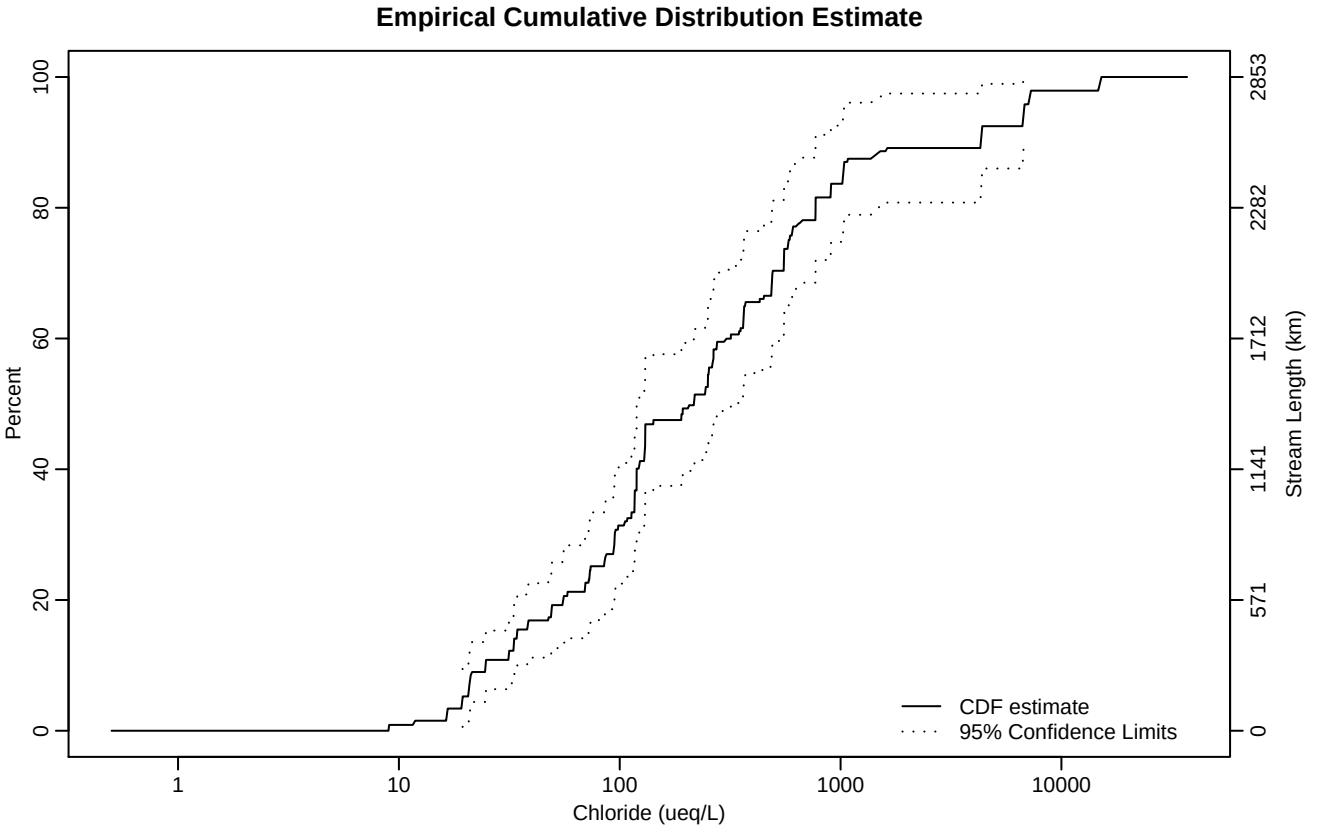
Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.04	0.50	5.38
10Pct	4.41	0.50	6.72
25Pct	8.07	6.51	11.03
50Pct	16.32	11.25	20.60
75Pct	28.33	24.85	47.63
90Pct	90.01	47.52	496.31
95Pct	400.62	100.71	1111.35
Mean	75.52	40.18	110.86
Std Dev	174.36	92.64	256.09



CHEM-108

Figure CHEM−106 Indicator: Chloride Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	19.42	16.37	21.13
10Pct	24.69	20.61	34.23
25Pct	73.83	47.47	112.97
50Pct	216.65	119.30	318.48
75Pct	582.21	369.77	1025.75
90Pct	4315.95	771.13	14805.76
95Pct	6773.99	1487.07	15181.03
Mean	1108.34	503.44	1713.24
Std Dev	2301.72	1314.66	3288.78

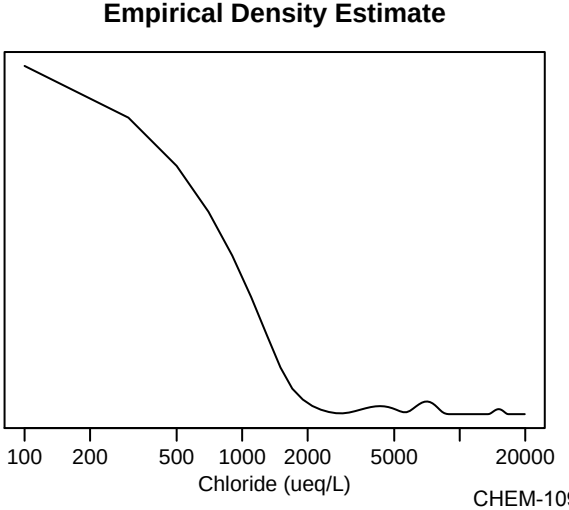
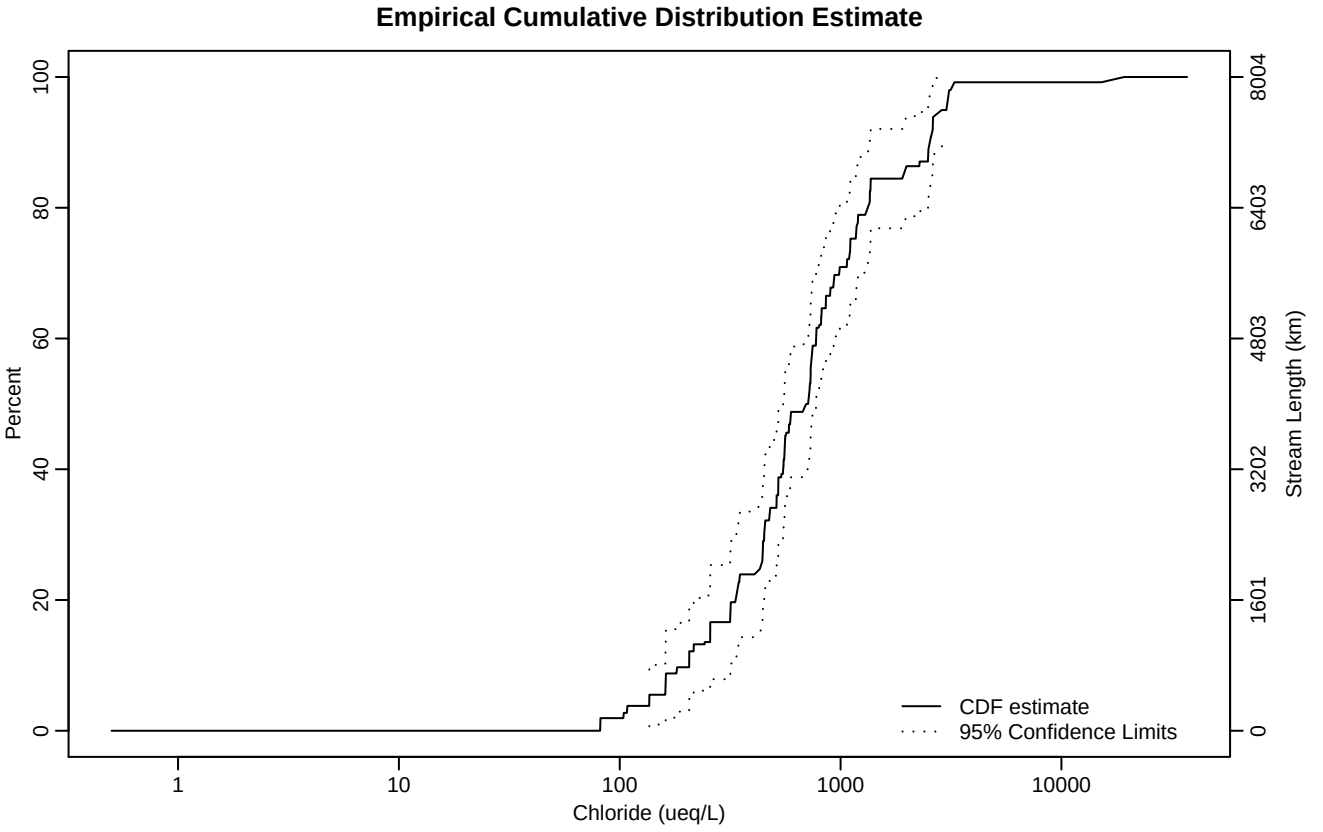


Figure CHEM−107 Indicator: Chloride Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	136.15	81.69	180.65
10Pct	206.22	107.99	316.08
25Pct	433.25	256.80	513.07
50Pct	712.60	549.68	774.93
75Pct	1108.07	857.96	1369.72
90Pct	2535.03	1358.12	3086.49
95Pct	3014.09	2515.24	19232.26
Mean	1072.56	748.32	1396.79
Std Dev	1662.86	659.40	2666.32

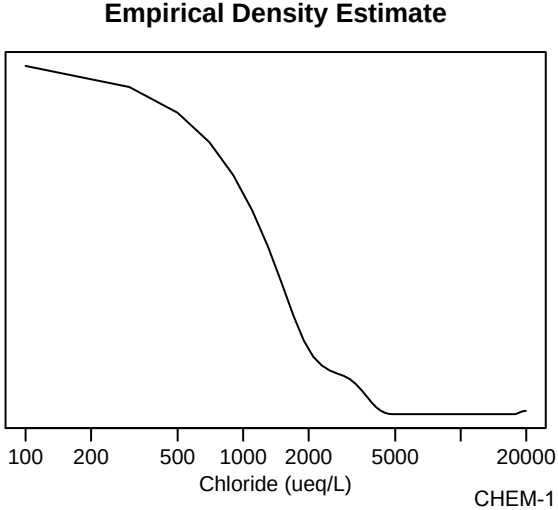
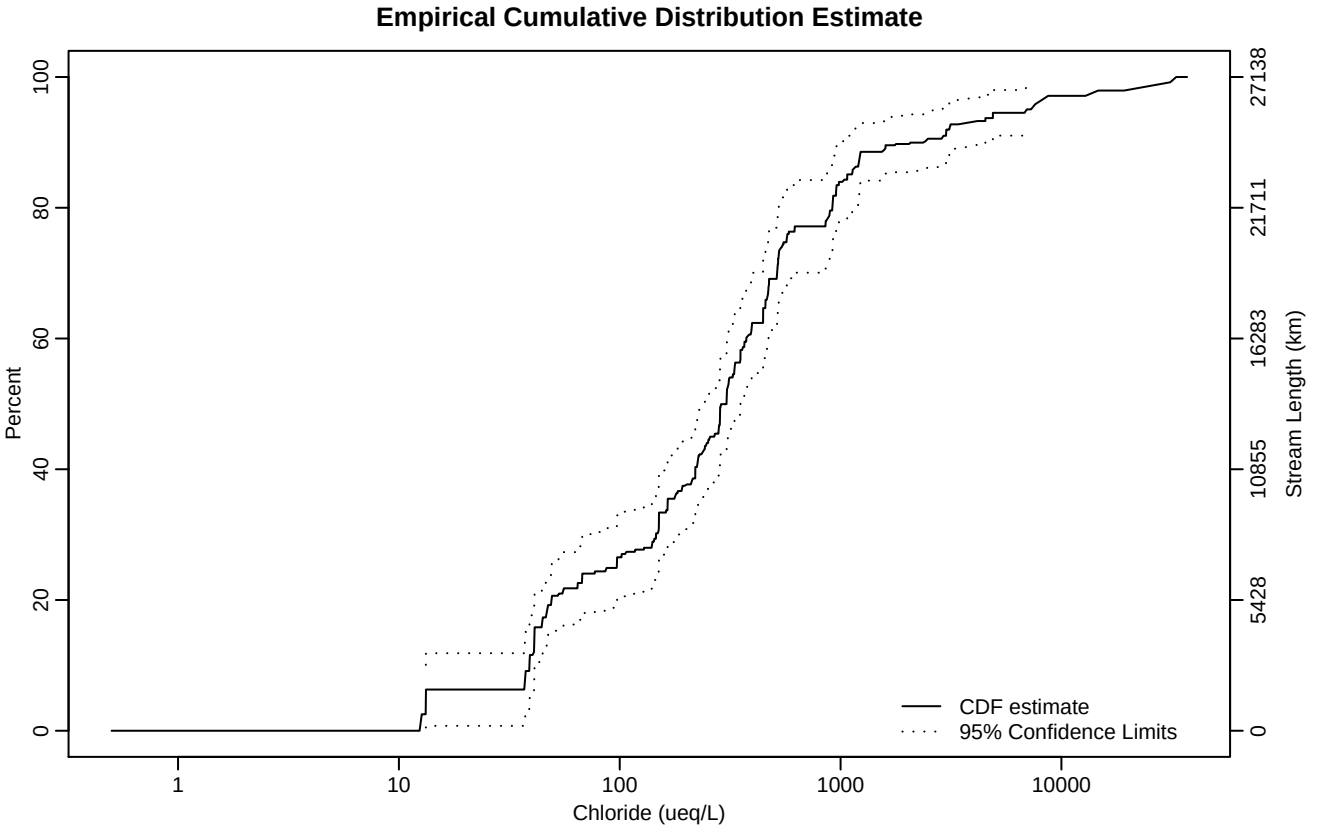


Figure CHEM−108 Indicator: Chloride Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	13.25	12.50	38.92
10Pct	39	13.24	44.34
25Pct	96.88	47.13	150.35
50Pct	304.37	235.60	352.16
75Pct	569.45	471.45	954.23
90Pct	2375	1132.79	4894.58
95Pct	6958.09	3007.75	24100.89
Mean	1464.97	656.95	2273
Std Dev	3297.11	1953.71	4640.52

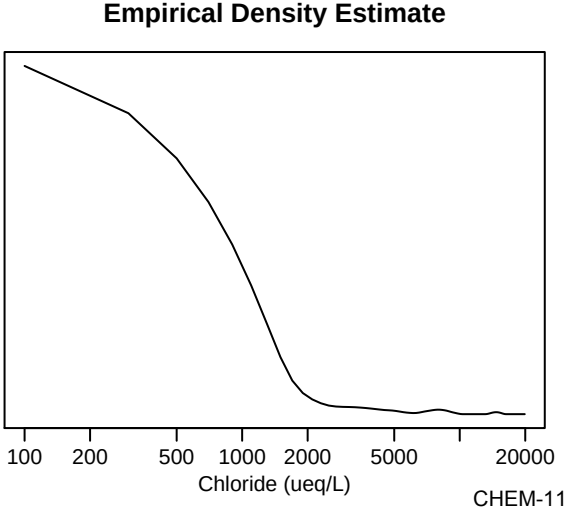
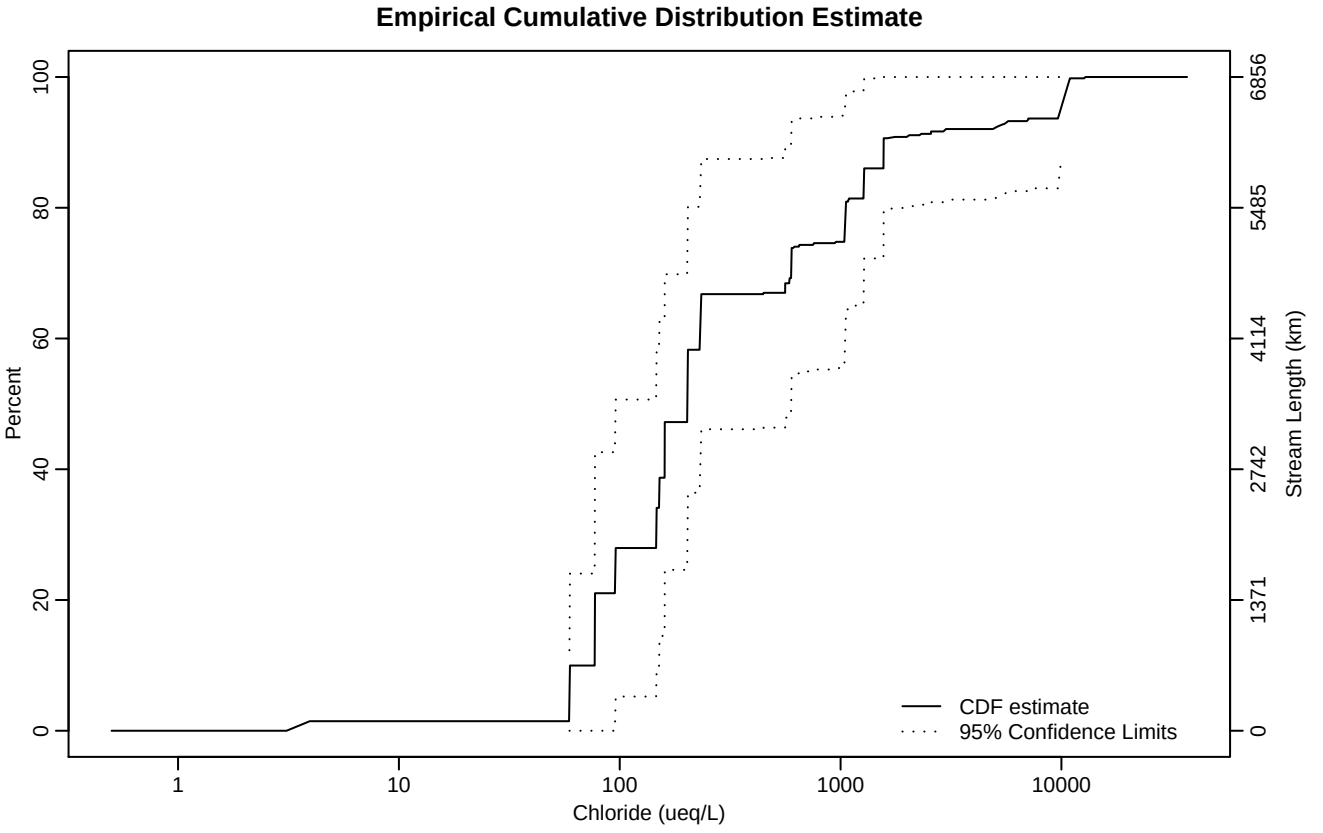


Figure CHEM−109 Indicator: Chloride Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	59.18	59	59.37
10Pct	77	0.50	95.42
25Pct	95.54	59.09	159.90
50Pct	202.38	95.83	599.52
75Pct	1040.35	203.26	9773.16
90Pct	1567.39	1045.28	12853.47
95Pct	9923.17	1275.89	12853.47
Mean	1168.33	−21.39	2358.04
Std Dev	2694.82	826.43	4563.21

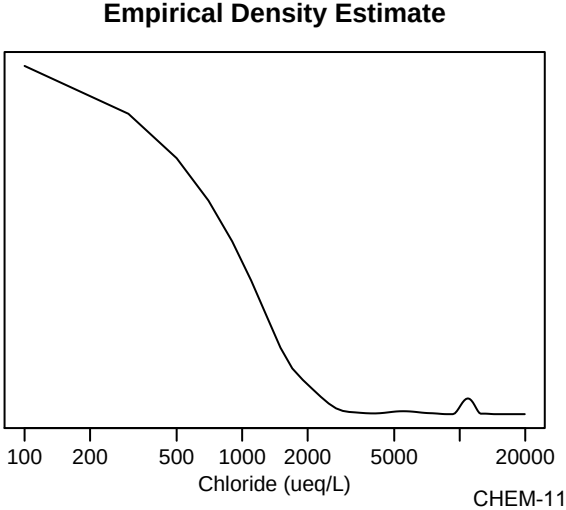
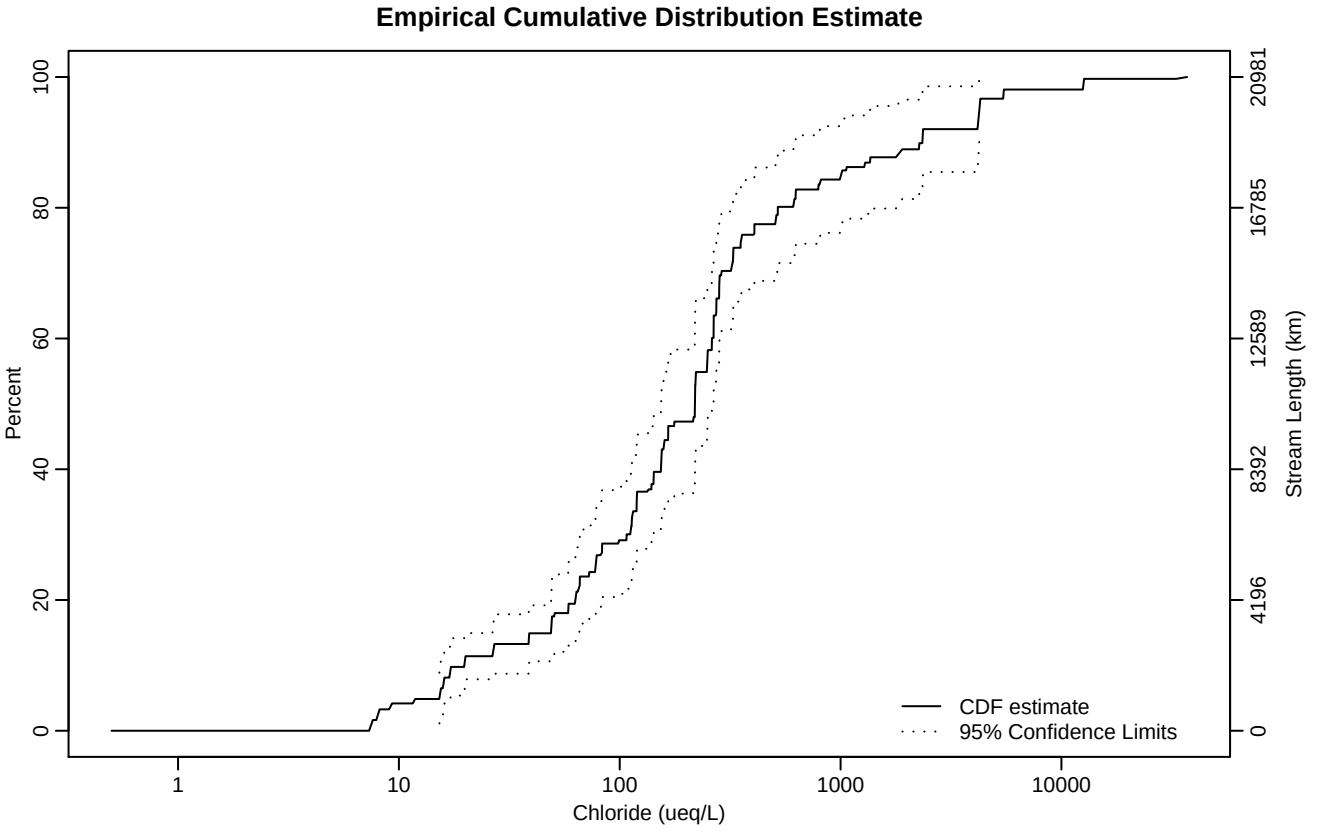


Figure CHEM−110 Indicator: Chloride Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	15.25	7.54	17.04
10Pct	19.78	15.35	38.84
25Pct	77.68	50.55	113.57
50Pct	219.03	142.41	266.18
75Pct	354.42	281.91	794.59
90Pct	2346.12	627.02	5472.99
95Pct	4250.57	1841.41	37067.20
Mean	886.48	418.83	1354.13
Std Dev	2000.82	1156.55	2845.08

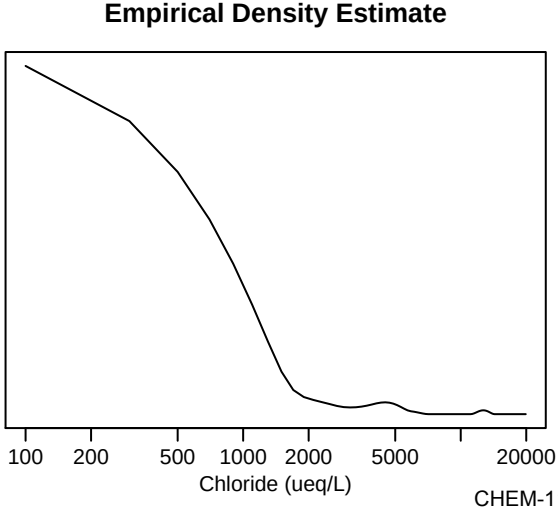
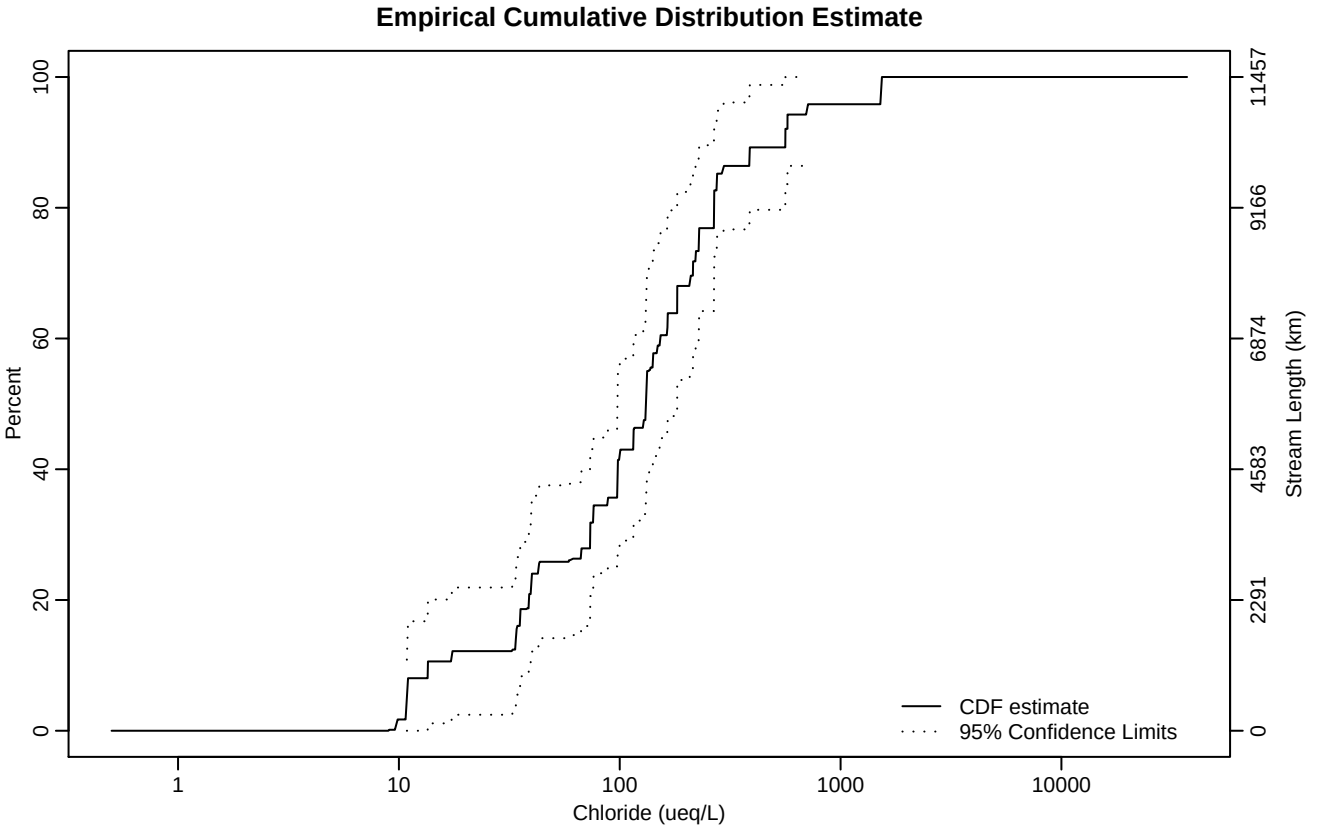
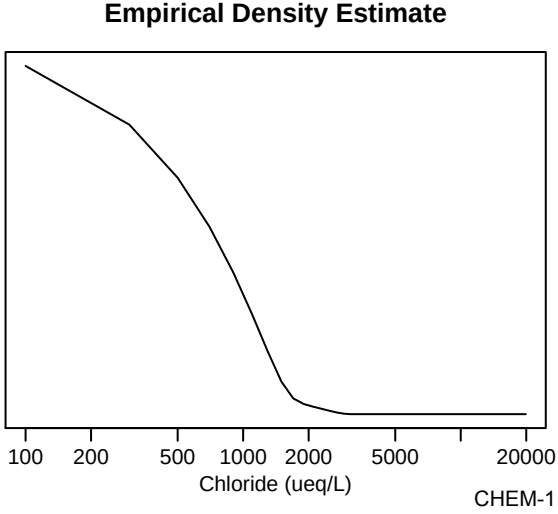


Figure CHEM−111 Indicator: Chloride Subpopulation: XE−NORTH



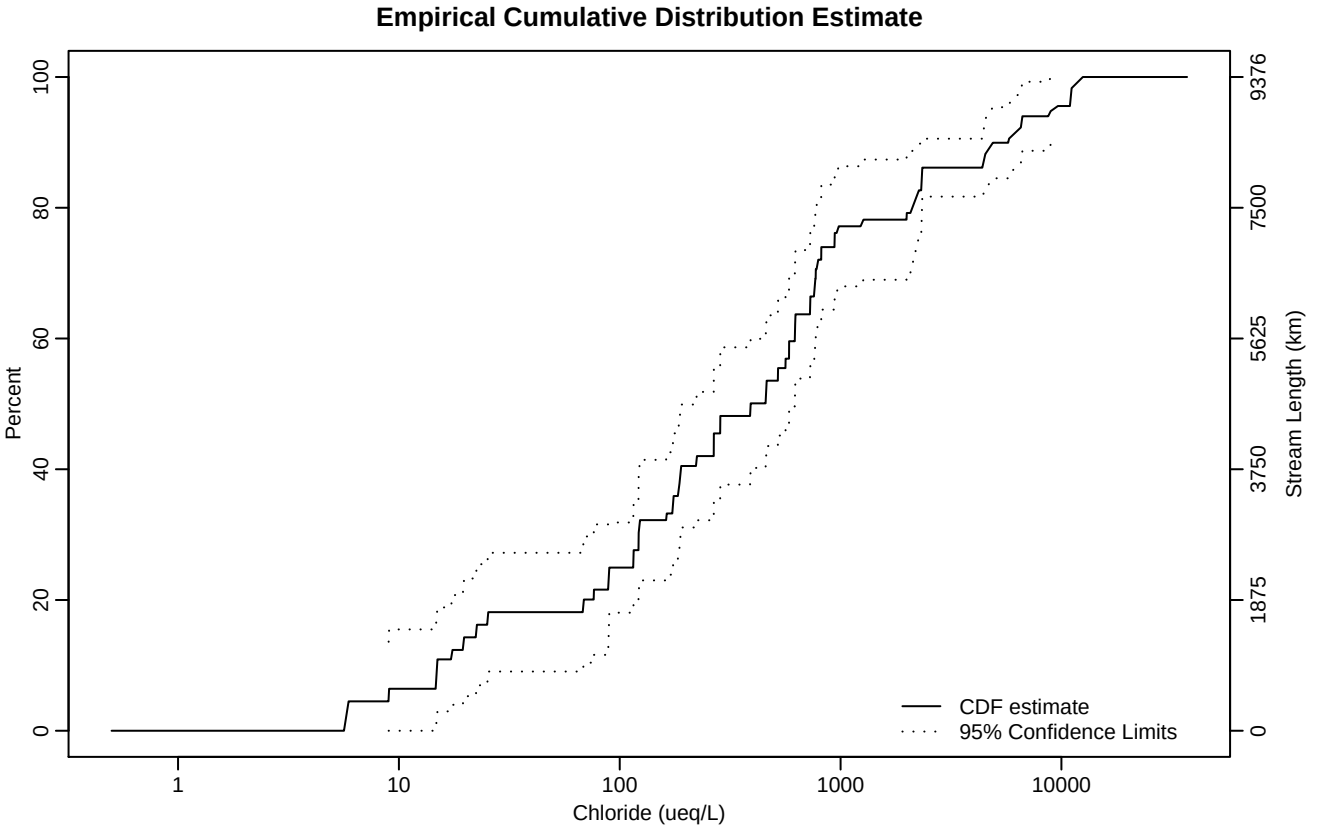
Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.87	10.74	10.99
10Pct	13.53	0.50	38.86
25Pct	42.94	17.47	97.65
50Pct	131.43	87.88	182.03
75Pct	228.27	163.77	387.94
90Pct	562.09	267.51	1537.07
95Pct	704.74	386.52	1539.20
Mean	218.20	109.70	326.70
Std Dev	258.94	140	377.88



CHEM-114

Figure CHEM−112 Indicator: Chloride Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.99	0.50	19.66
10Pct	14.89	5.68	68.51
25Pct	115.09	25.32	162.33
50Pct	391.68	188.19	621.40
75Pct	939.59	728.98	2330.73
90Pct	5743.38	2331.25	10928.65
95Pct	9140.89	4847.33	12504.57
Mean	1541.99	1070.48	2013.49
Std Dev	1515.71	1205.29	1826.13

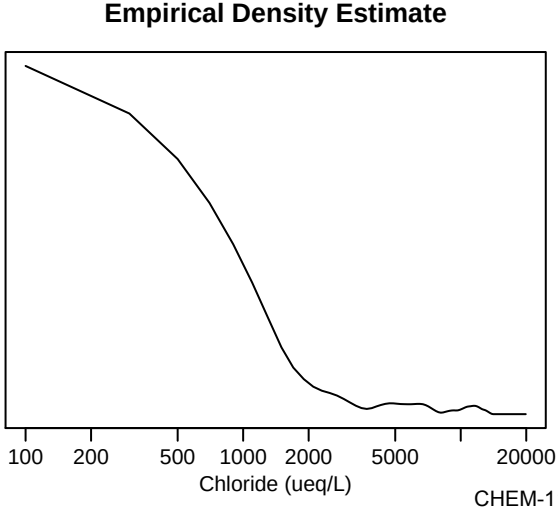
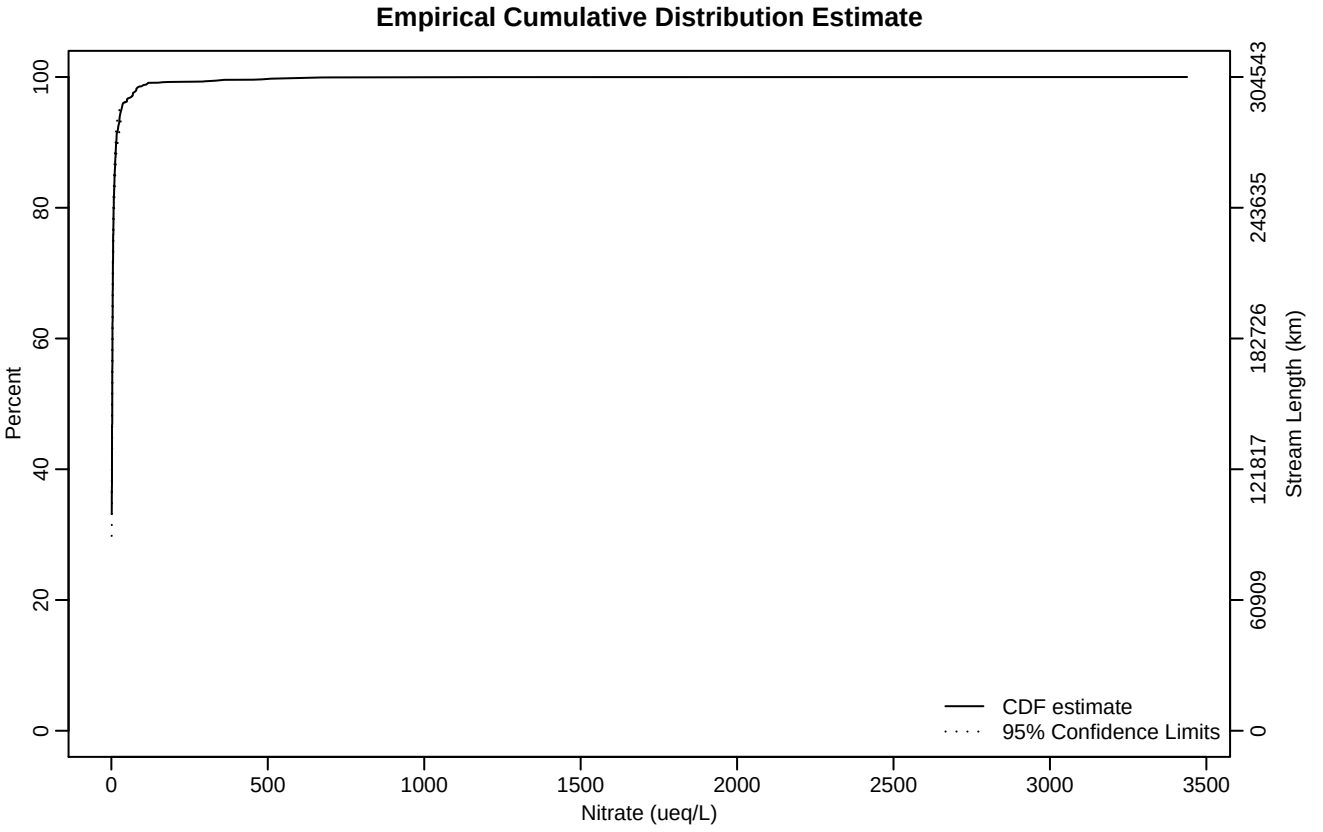


Figure CHEM−113 Indicator: Nitrate Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	0.70
50Pct	2.81	2.13	2.85
75Pct	5.66	4.97	6.80
90Pct	15.53	13.53	21.07
95Pct	31.99	25.68	49.78
Mean	11.40	8.74	14.06
Std Dev	50.28	37.72	62.83

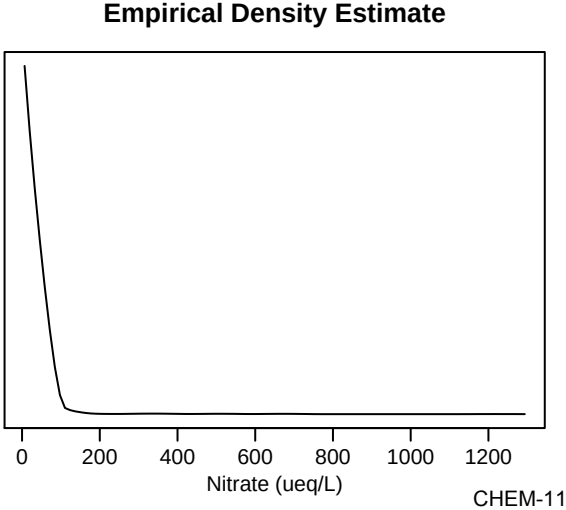
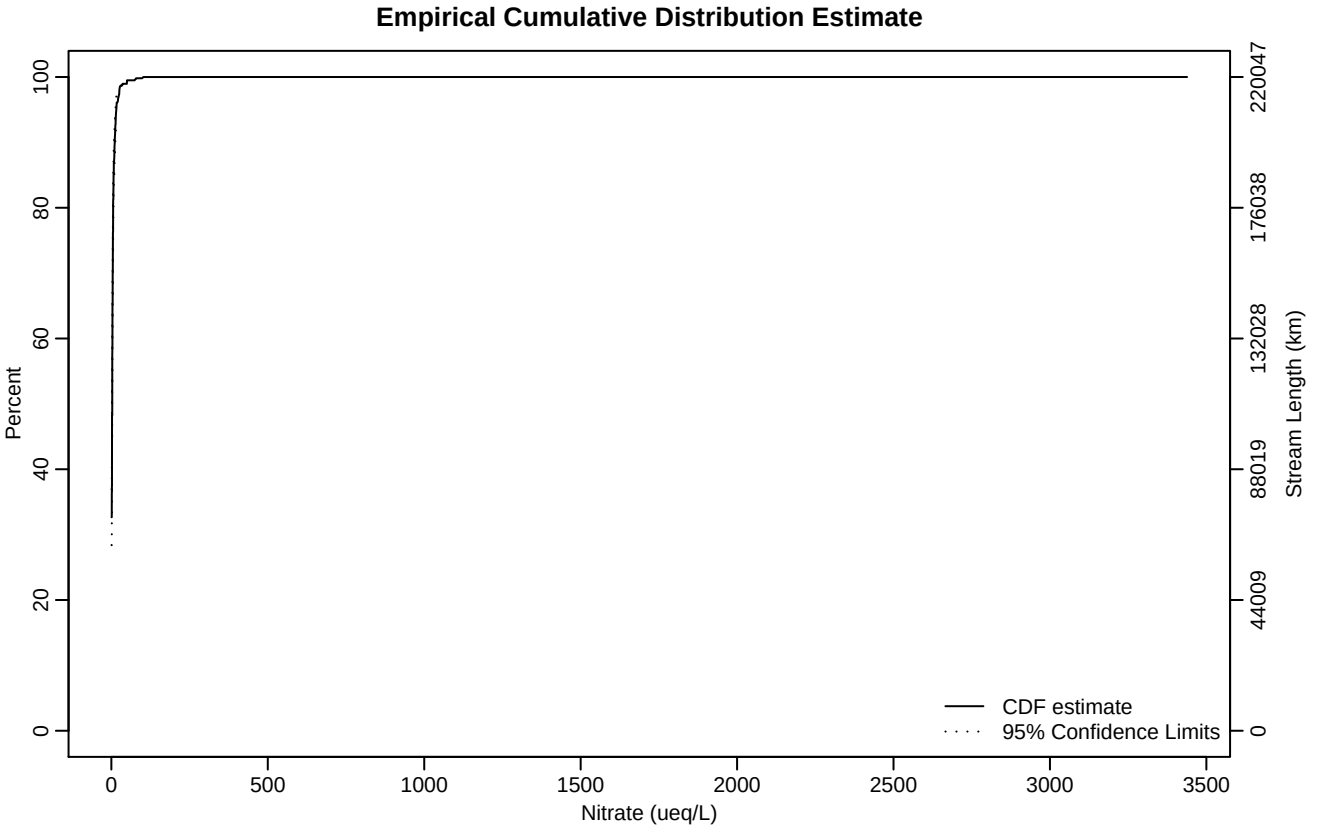


Figure CHEM−114 Indicator: Nitrate Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	0.70
50Pct	2.79	2.09	2.84
75Pct	4.90	4.54	5.62
90Pct	10.72	8.75	13.51
95Pct	15.78	13.52	23.29
Mean	4.87	4.15	5.59
Std Dev	7.64	5.90	9.37

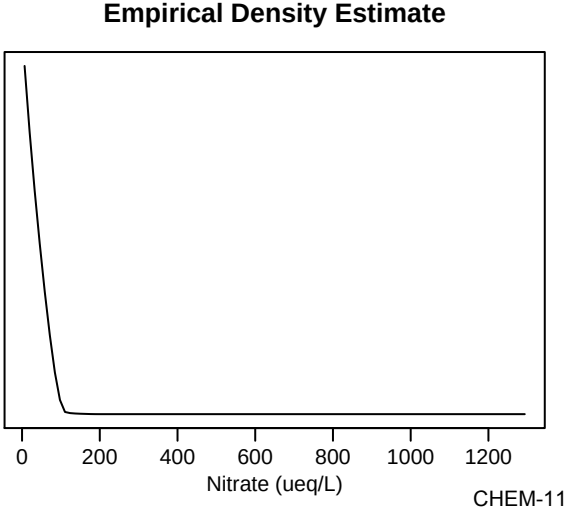
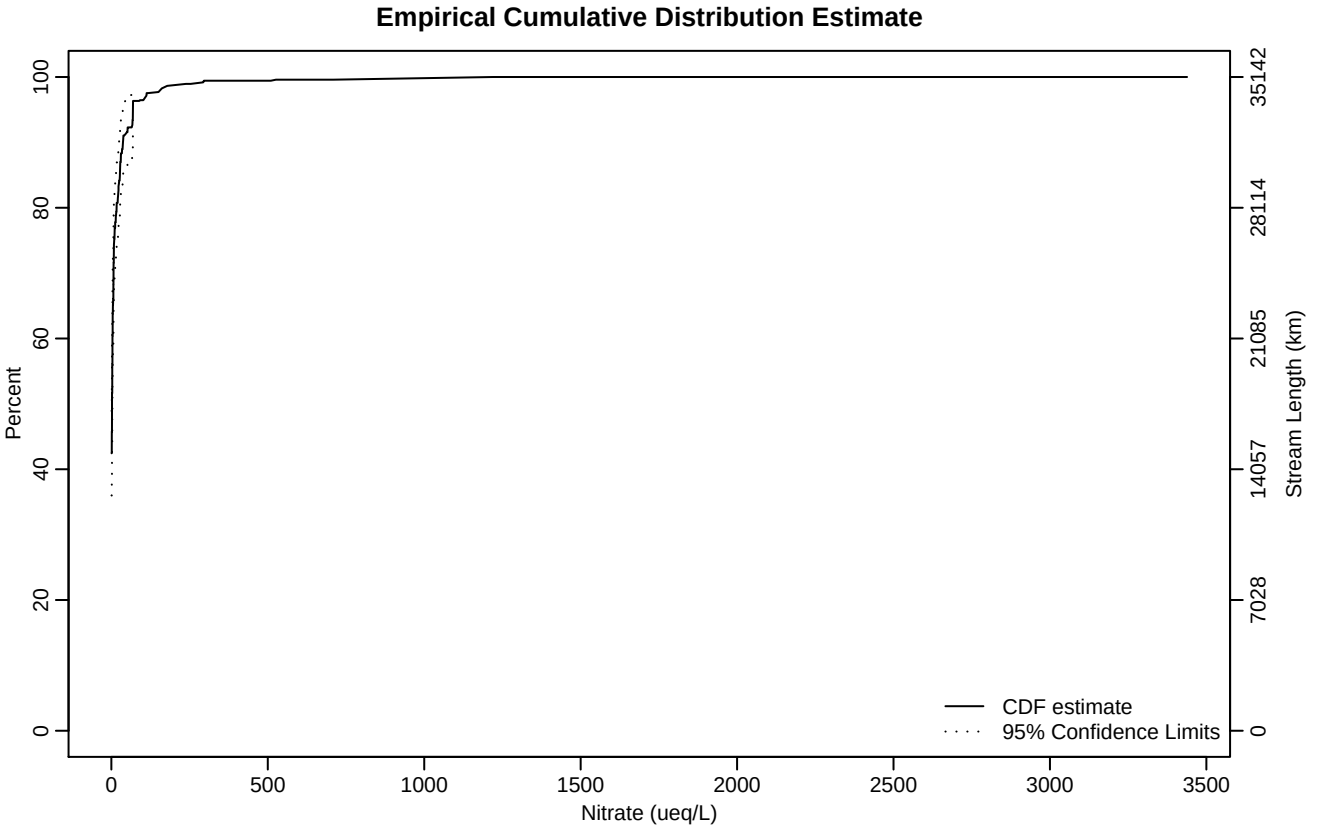


Figure CHEM−115 Indicator: Nitrate Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	0.70
50Pct	2.09	1.28	3.46
75Pct	9.01	6.68	21.10
90Pct	37.07	26.70	69.06
95Pct	68.92	37.22	1103.01
Mean	19.96	9.60	30.33
Std Dev	44.23	27.80	60.67

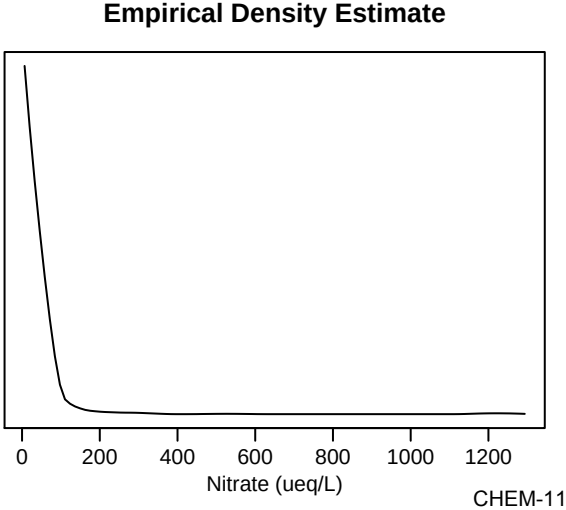
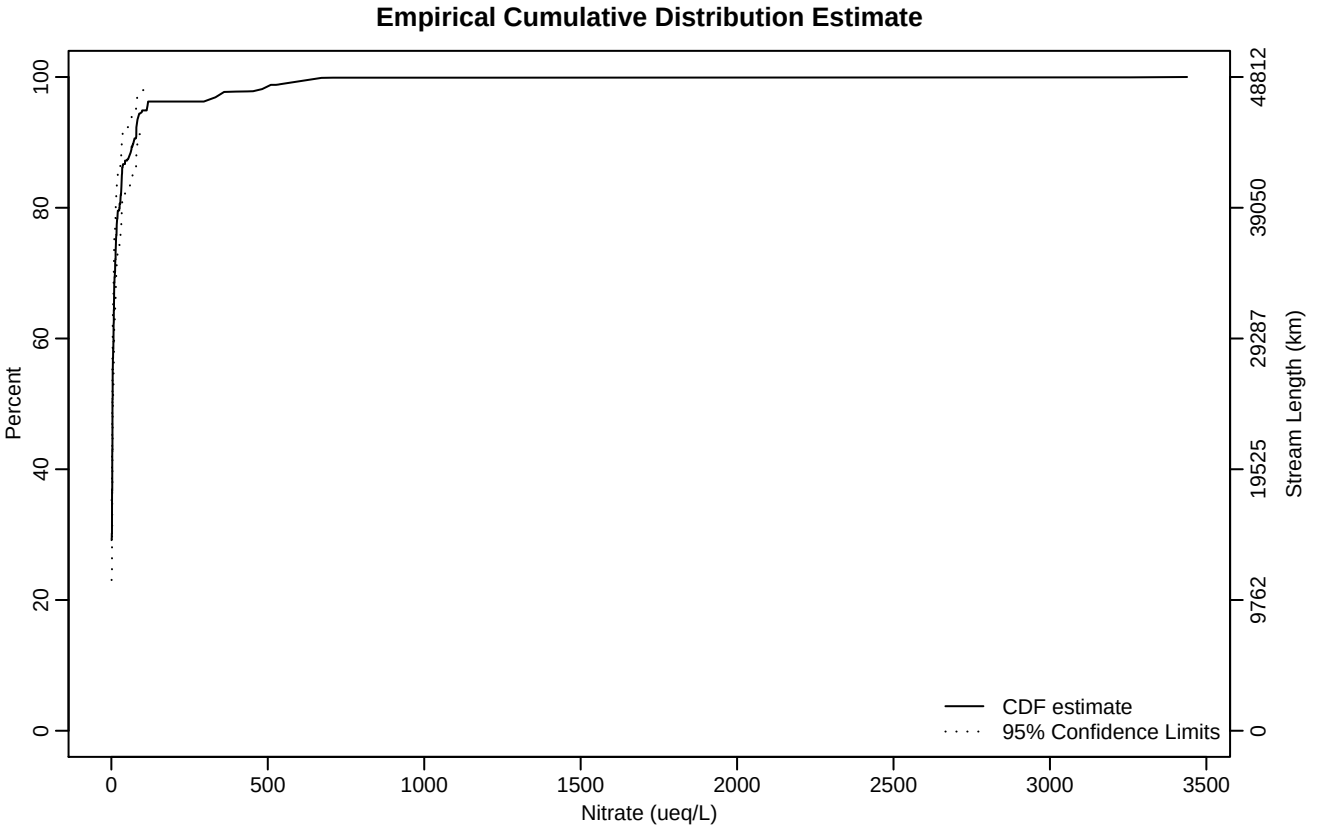


Figure CHEM−116 Indicator: Nitrate Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	2.01
50Pct	3.56	3.44	4.86
75Pct	14.84	9.99	29.18
90Pct	70.92	34.39	92.99
95Pct	113.23	79.88	467.42
Mean	34.76	19.68	49.85
Std Dev	91.66	67.48	115.84

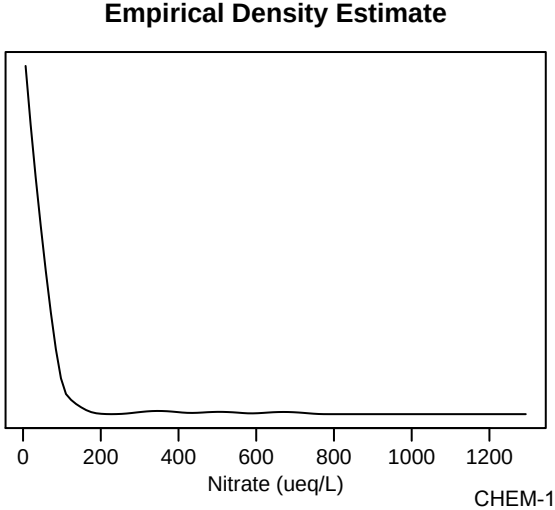
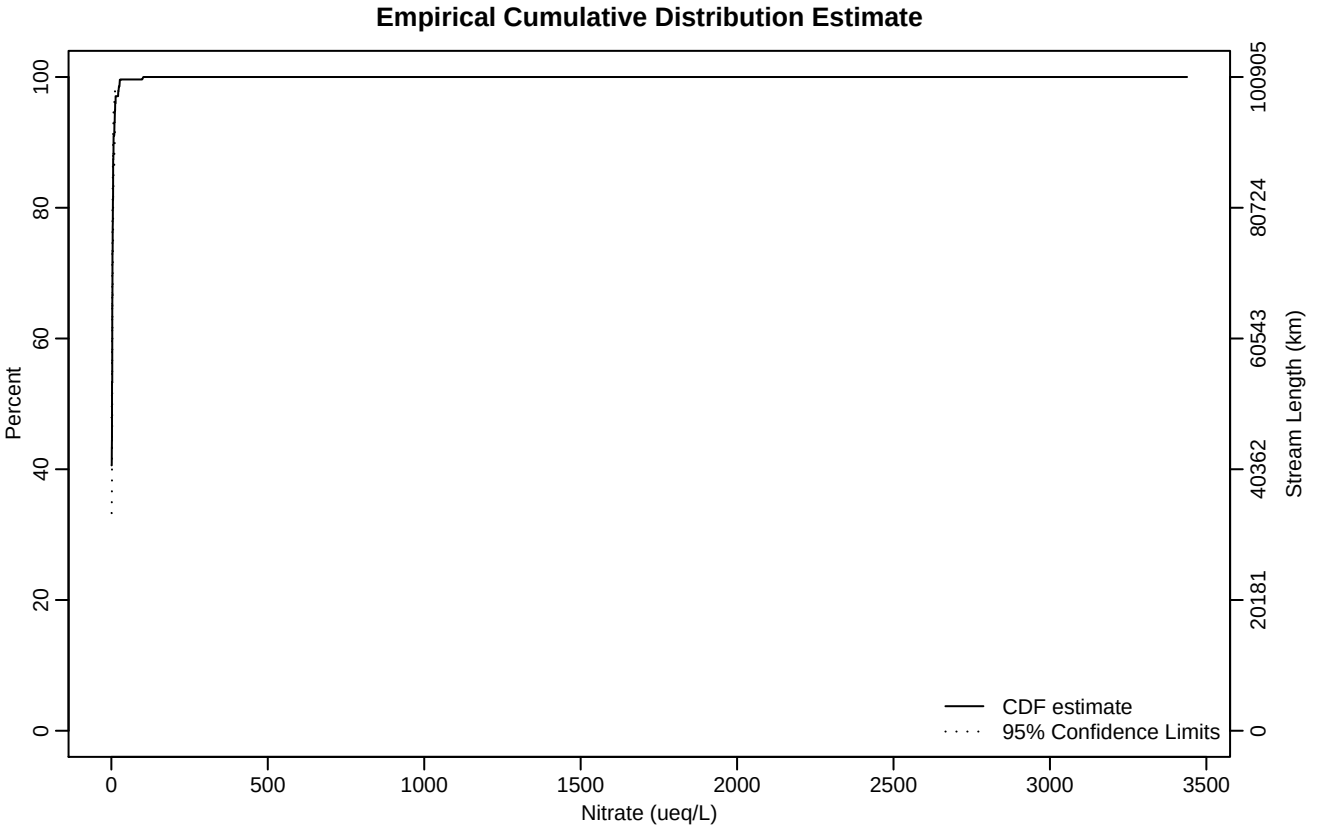


Figure CHEM−117 Indicator: Nitrate Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	0.70
50Pct	2.08	1.37	2.81
75Pct	4.18	3.45	5.47
90Pct	6.97	5.60	12.02
95Pct	11.96	9.60	23.20
Mean	3.83	2.98	4.68
Std Dev	5.88	3.91	7.85

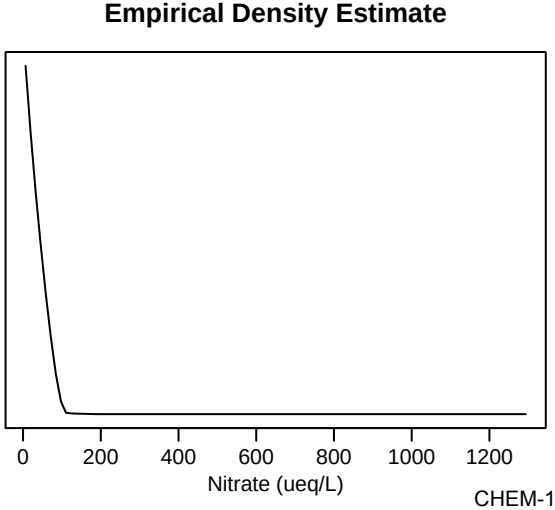
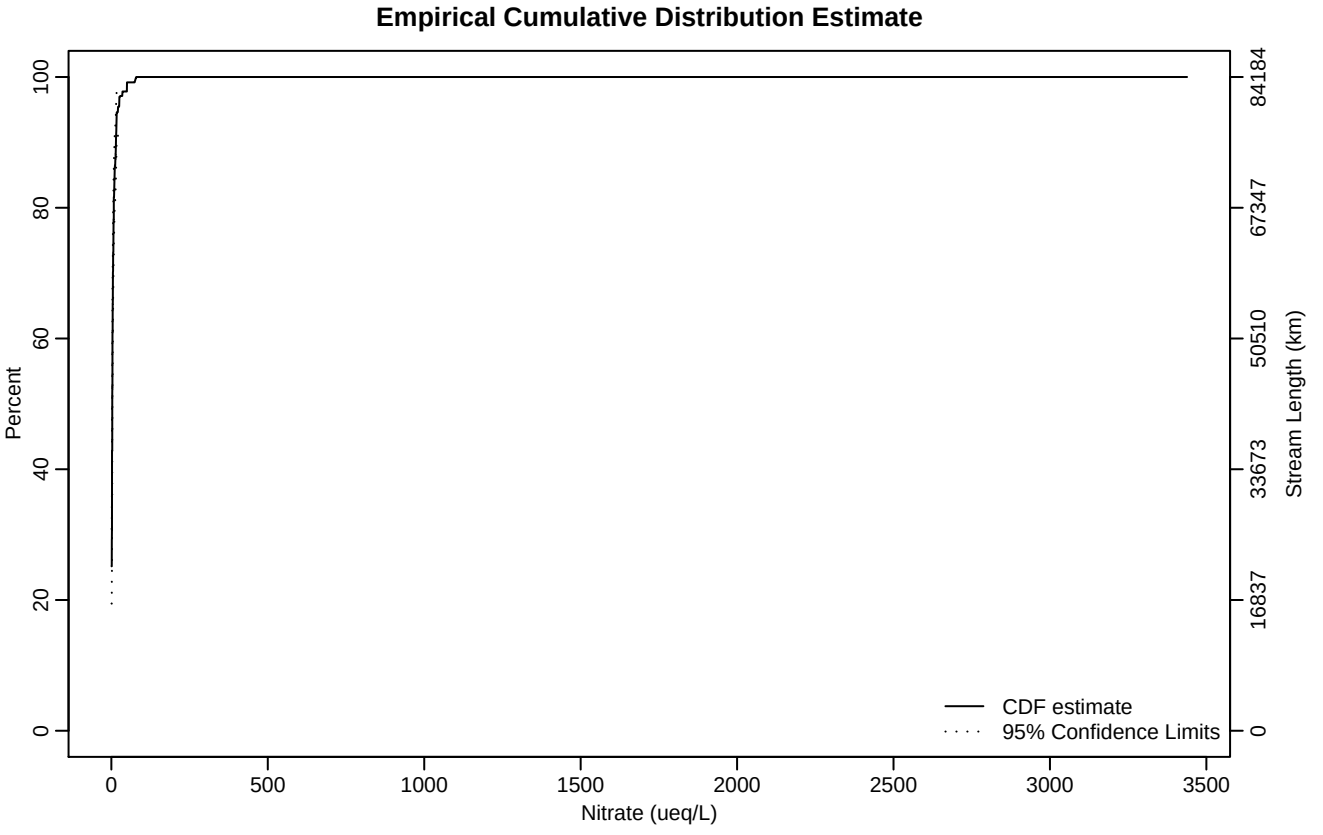


Figure CHEM−118 Indicator: Nitrate Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	1.82
50Pct	2.84	2.78	3.50
75Pct	6.50	4.85	7.84
90Pct	14.65	10.28	21.02
95Pct	21	15.17	49.90
Mean	6.24	4.69	7.79
Std Dev	9.86	6.53	13.19

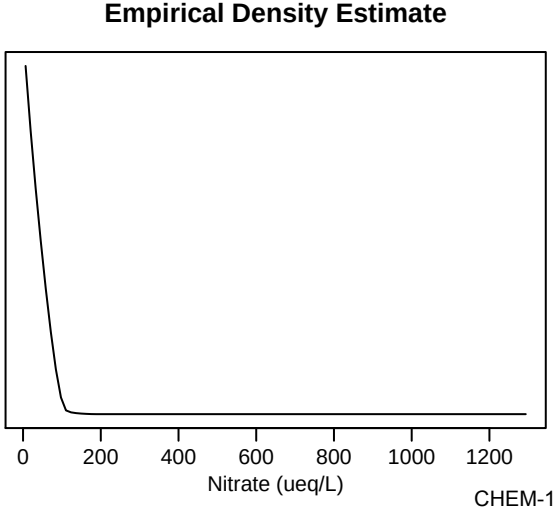
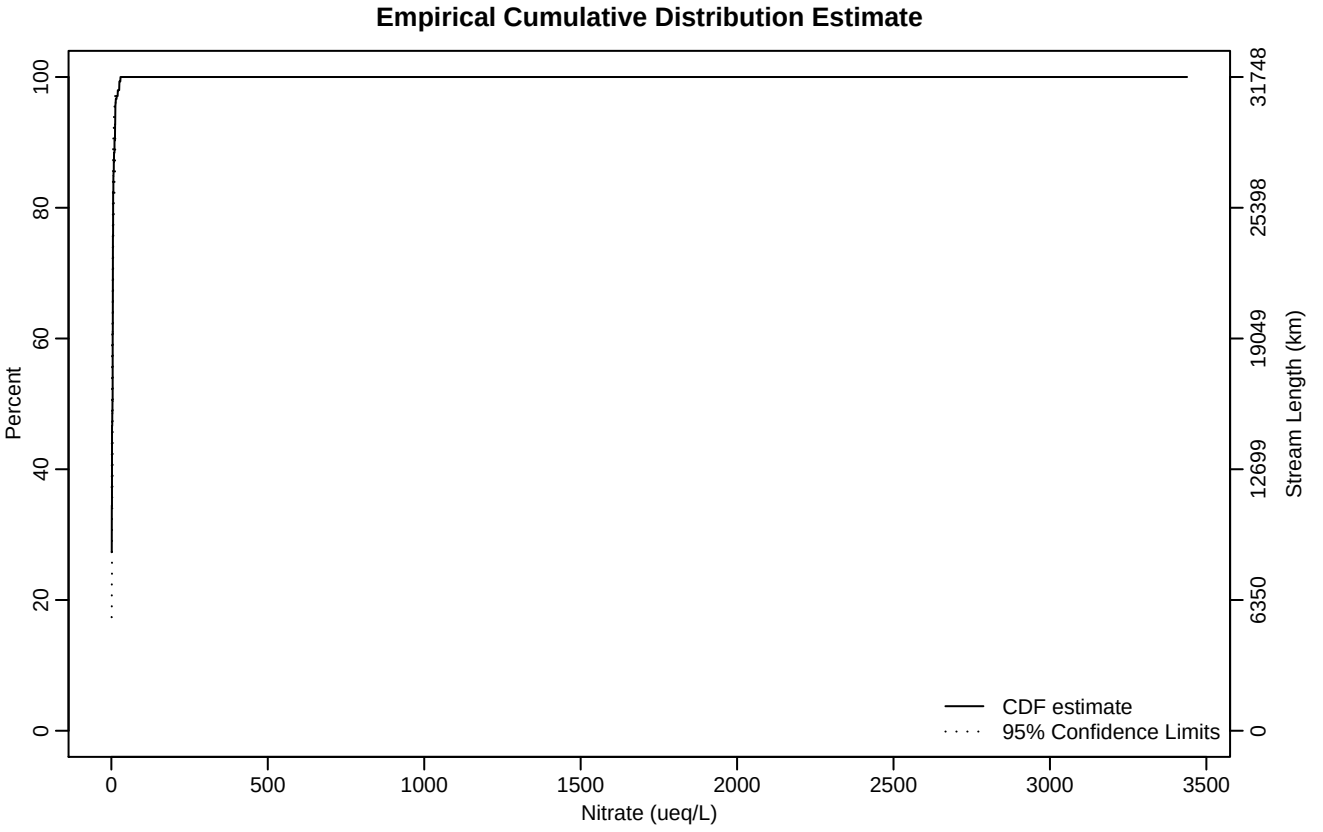


Figure CHEM−119 Indicator: Nitrate Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	1.97
50Pct	3.54	2.01	4.59
75Pct	4.98	4.61	7.84
90Pct	10	6.40	13.94
95Pct	12.71	11.52	25.67
Mean	4.48	3.65	5.31
Std Dev	3.82	3.13	4.52

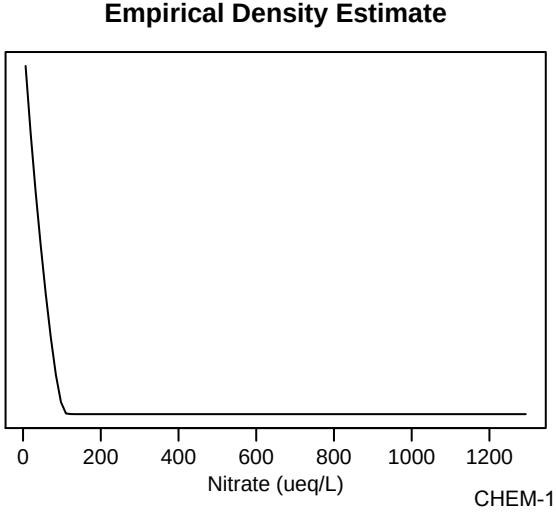
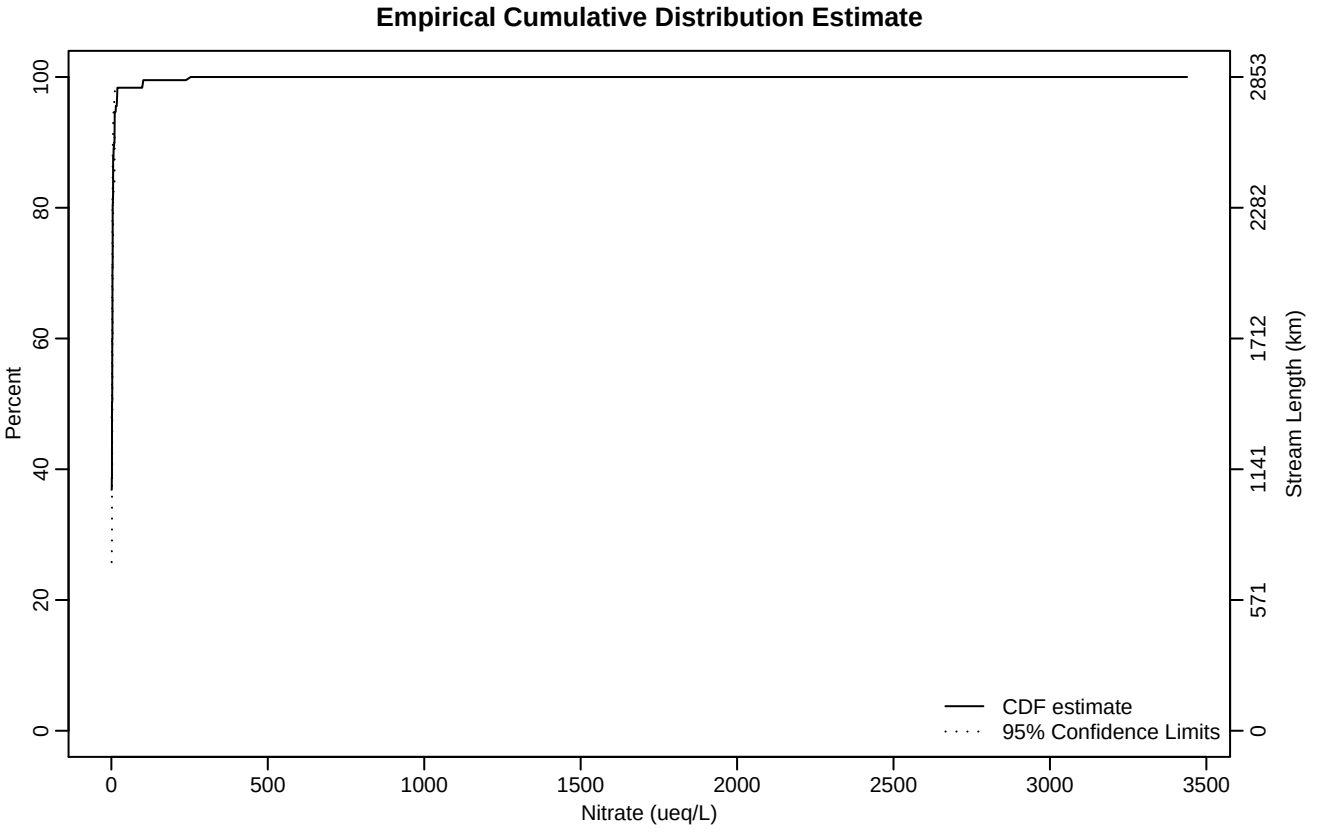


Figure CHEM−120 Indicator: Nitrate Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	0.70
50Pct	2.14	1.98	3.44
75Pct	4.18	3.49	5.61
90Pct	9.99	5.52	17.87
95Pct	13.98	10.14	98.93
Mean	5.75	3.05	8.45
Std Dev	12.42	5.73	19.11

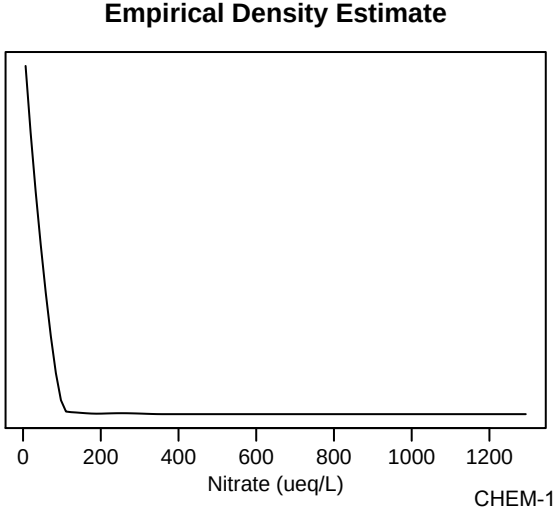
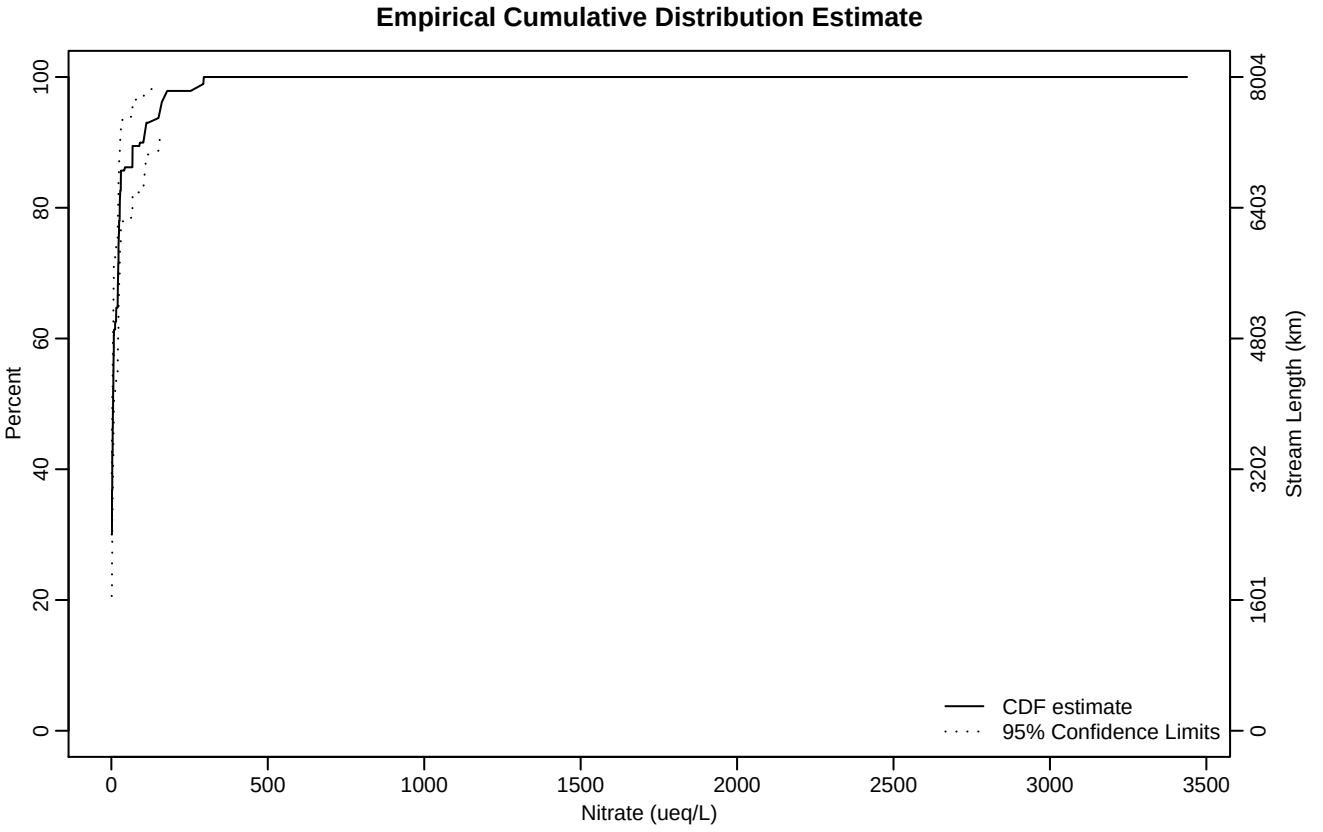


Figure CHEM−121 Indicator: Nitrate Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	2.08
50Pct	5.49	2.82	7.84
75Pct	23.46	20.07	30.53
90Pct	102.22	30.04	171.01
95Pct	156.25	90.83	295.55
Mean	28.02	17.72	38.31
Std Dev	35.49	26.63	44.36

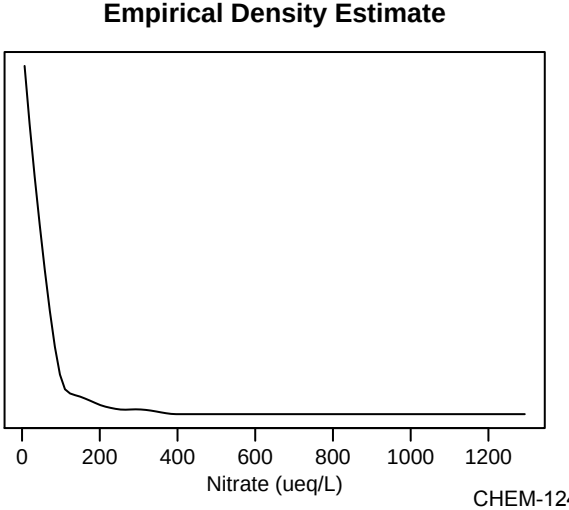
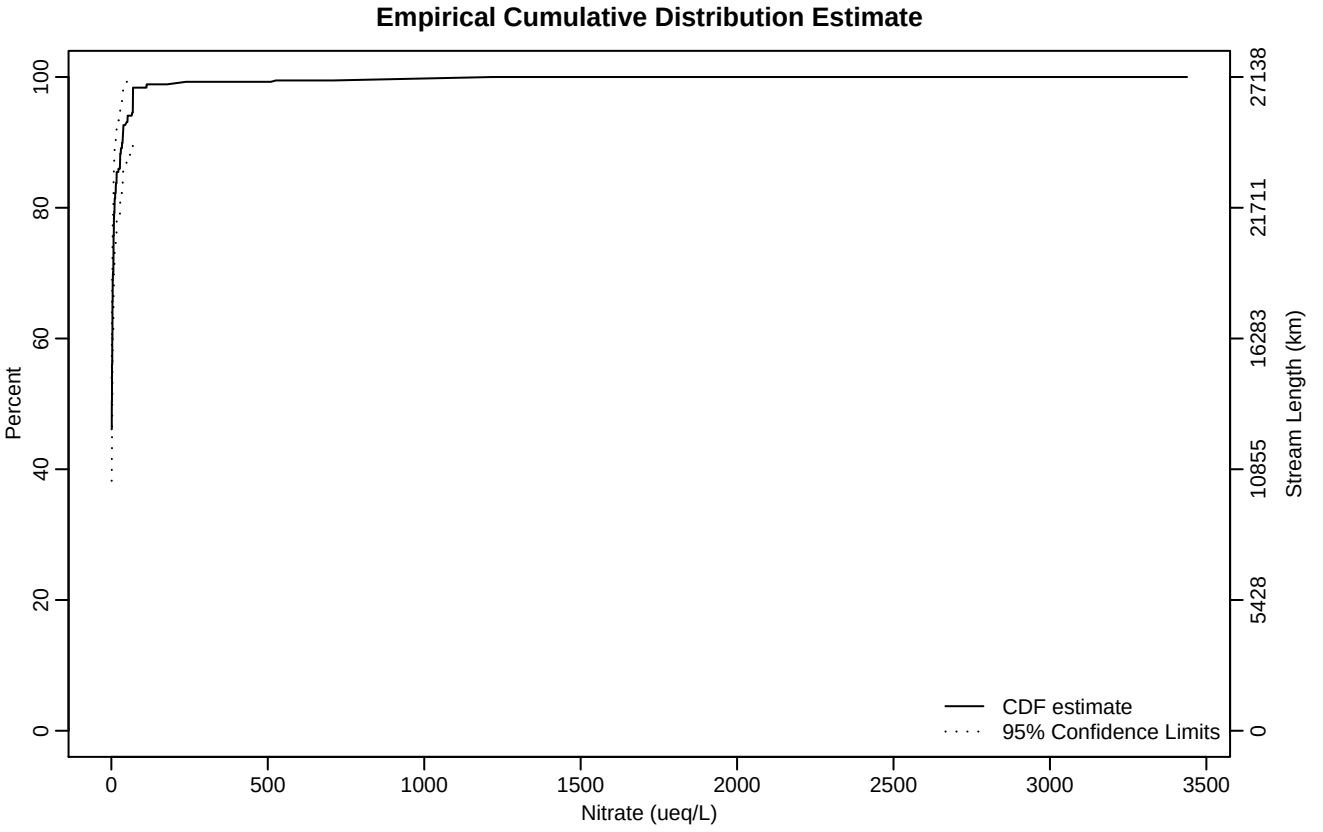


Figure CHEM−122 Indicator: Nitrate Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	0.70
50Pct	1.41	0.70	2.82
75Pct	7.04	4.11	16.55
90Pct	35.79	14.19	68.95
95Pct	68.61	30.62	1219.39
Mean	17.59	4.48	30.69
Std Dev	44.13	23.21	65.05

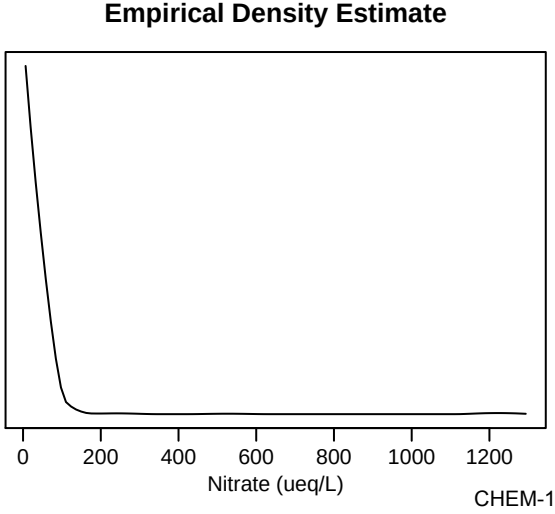
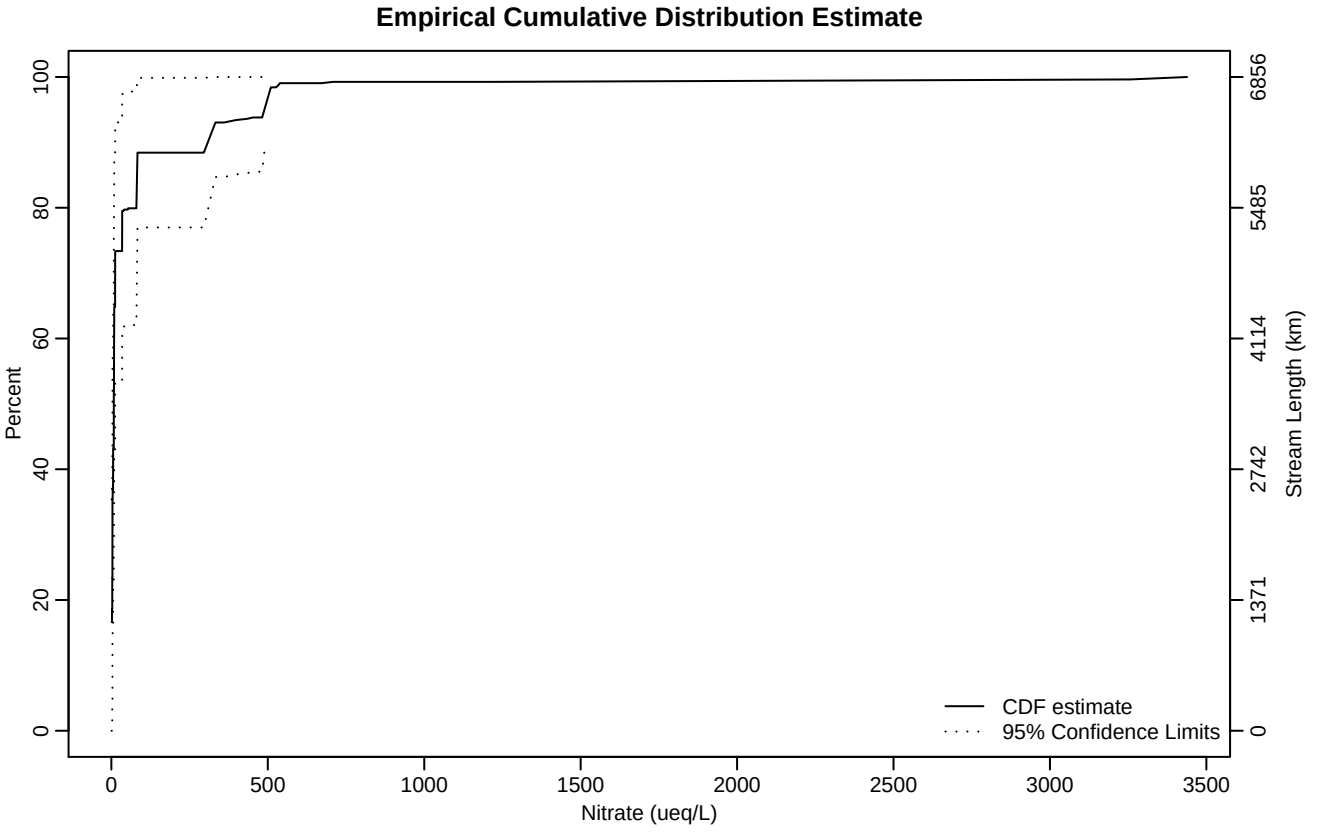


Figure CHEM−123 Indicator: Nitrate Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	3.44
10Pct	0.70	0.70	3.50
25Pct	3.45	0.70	7.77
50Pct	7.83	3.50	12.08
75Pct	34.38	8.44	486.38
90Pct	308.21	34.64	3438.29
95Pct	489.09	82.84	3438.29
Mean	85.20	27.30	143.10
Std Dev	312.86	187.13	438.60

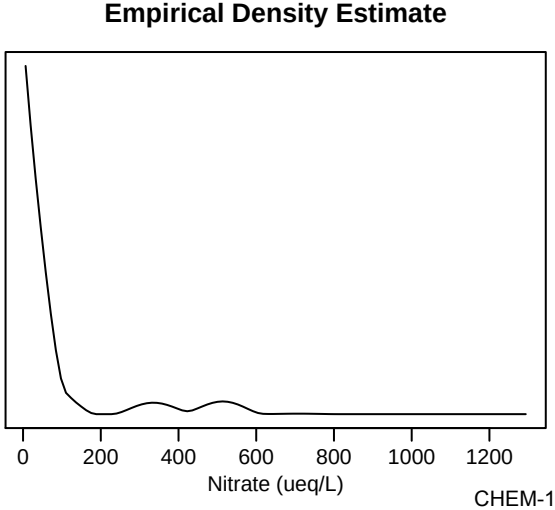
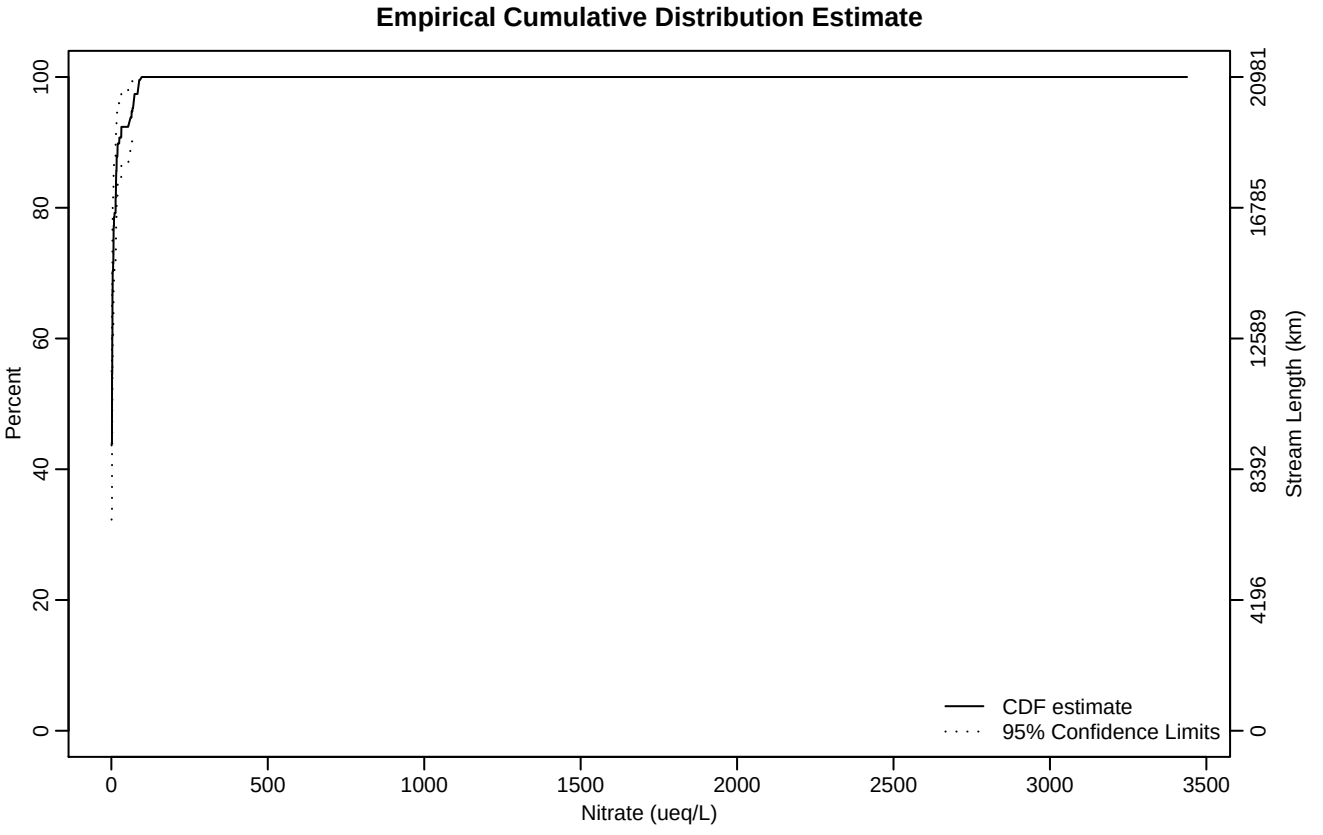


Figure CHEM−124 Indicator: Nitrate Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	0.70	0.70	0.70
50Pct	2.11	0.70	3.45
75Pct	6.95	3.52	15.34
90Pct	25.12	14.92	71.07
95Pct	67.47	25.51	89.11
Mean	9.99	5.64	14.35
Std Dev	17.03	12.89	21.17

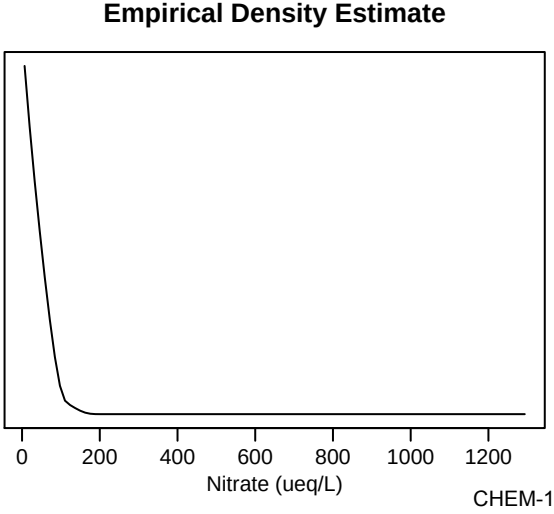
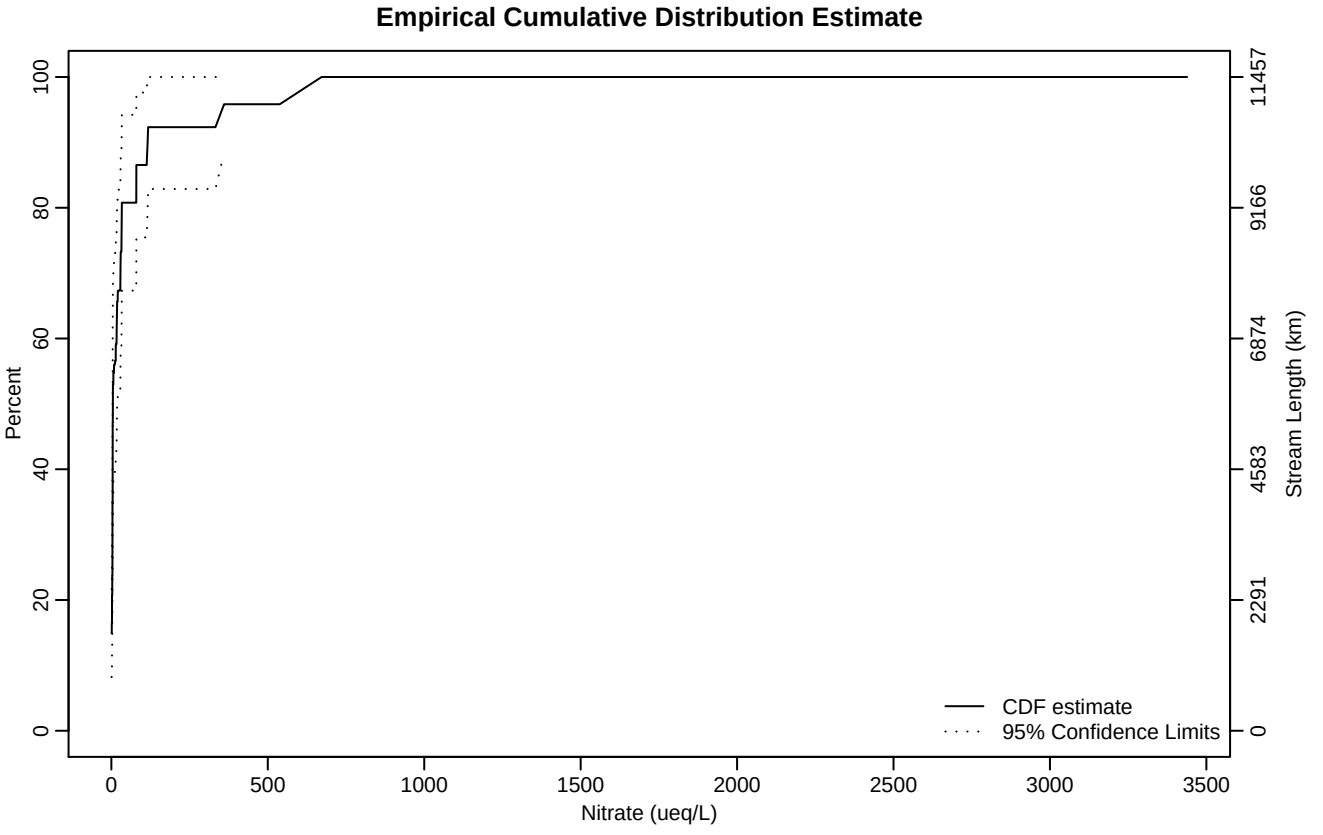


Figure CHEM−125 Indicator: Nitrate Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	1.97
25Pct	3.45	1.99	3.55
50Pct	4.77	3.56	20.15
75Pct	32.46	16.56	116.14
90Pct	115.87	33.41	670.76
95Pct	353.79	79.91	671.78
Mean	59.93	7.32	112.54
Std Dev	108.18	52.13	164.24

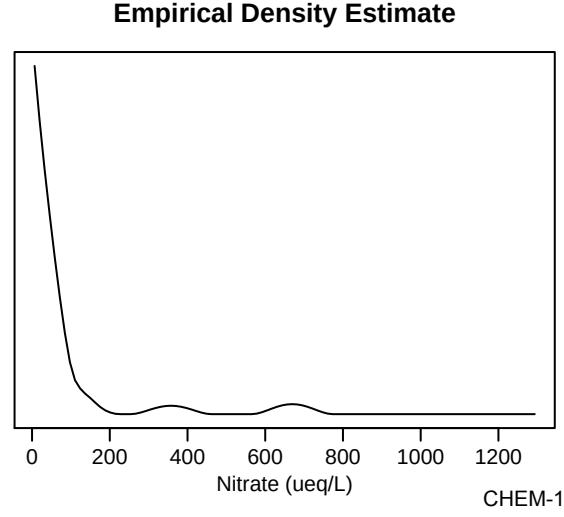
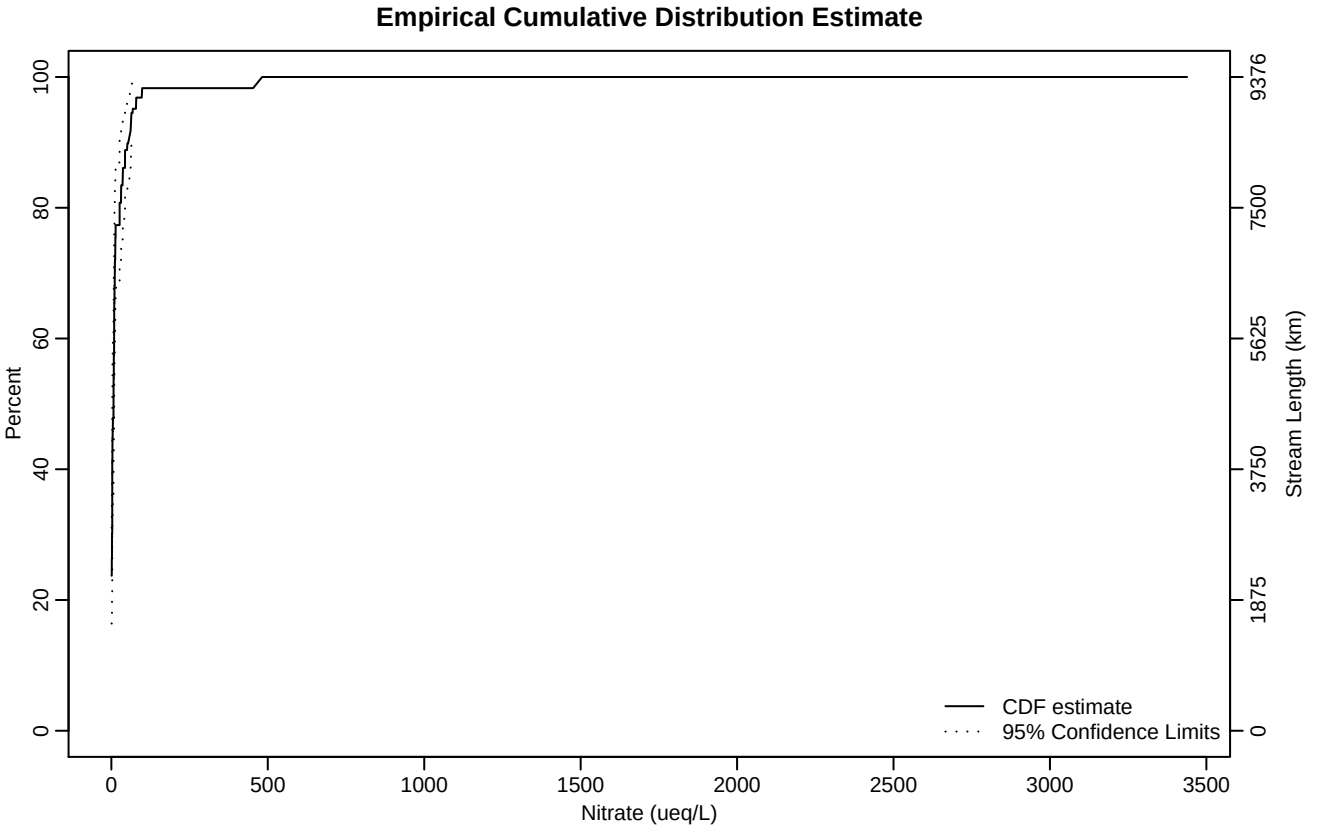


Figure CHEM−126 Indicator: Nitrate Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.70	0.70	0.70
10Pct	0.70	0.70	0.70
25Pct	1.34	0.70	2.80
50Pct	6.84	2.83	9.03
75Pct	12.77	9.14	43.55
90Pct	54.17	31.28	97.30
95Pct	68.37	56.35	472.90
Mean	22.58	9.22	35.94
Std Dev	38.79	19.37	58.22

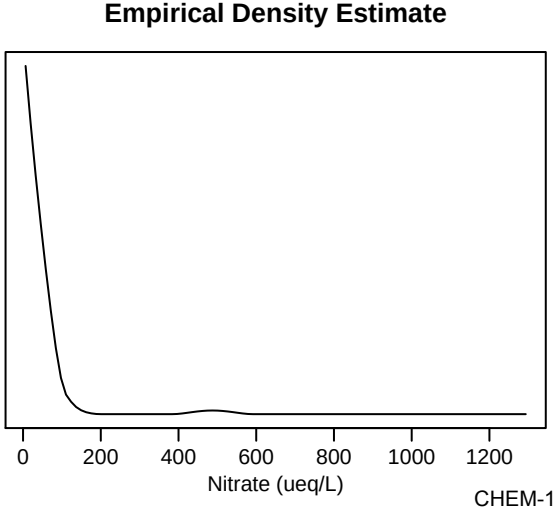
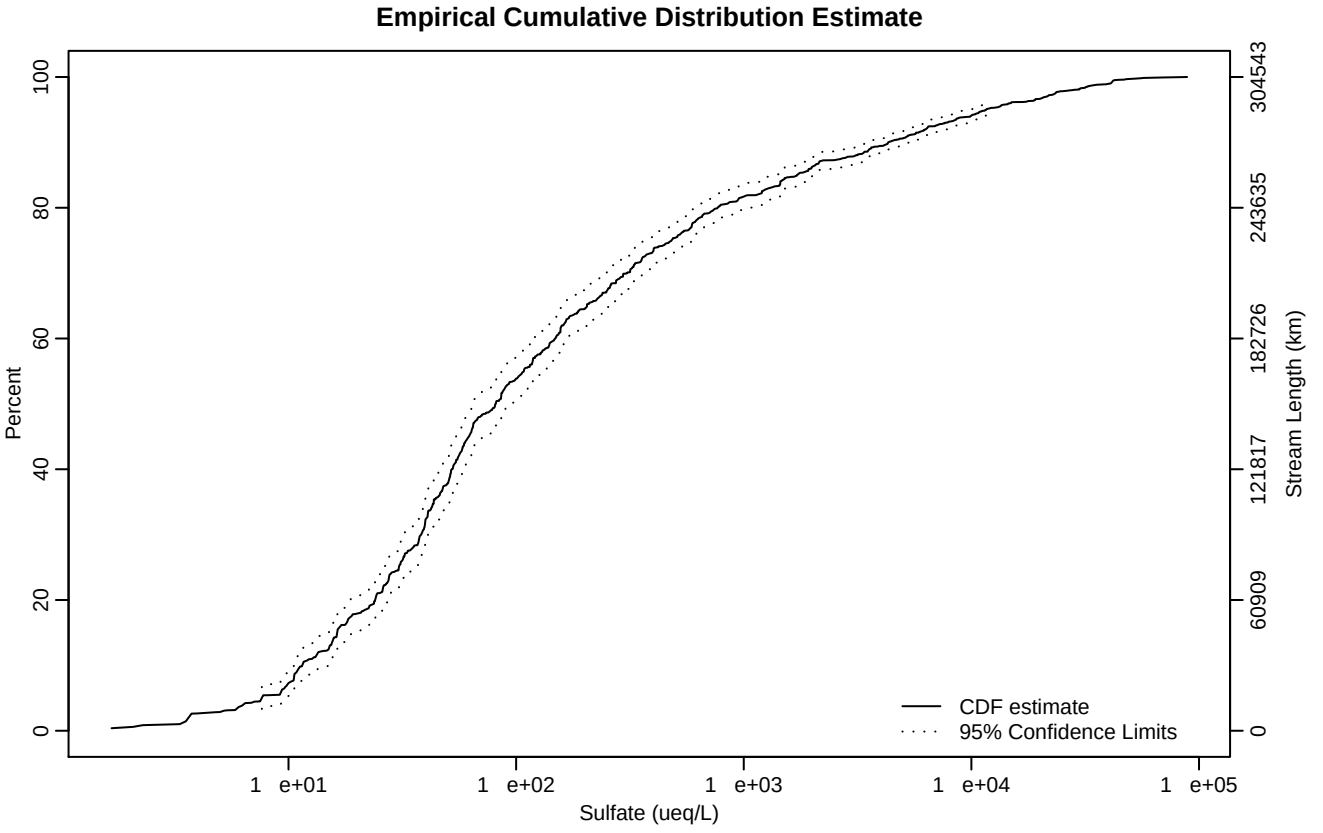


Figure CHEM−127 Indicator: Sulfate Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	7.63	5.91	9.66
10Pct	11.49	10.44	14.91
25Pct	30.55	26.02	35.41
50Pct	81.21	64.63	96.97
75Pct	481.39	370.30	591.68
90Pct	4309.62	3537.02	5406.72
95Pct	11629.10	10016.81	14479.44
Mean	2062.23	1781.49	2342.96
Std Dev	4362.74	3796.70	4928.77

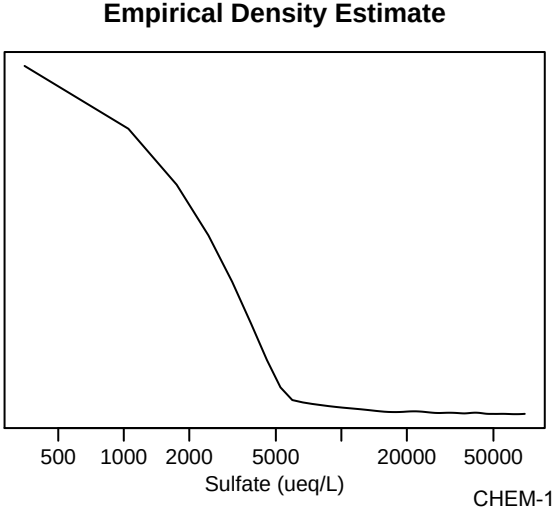
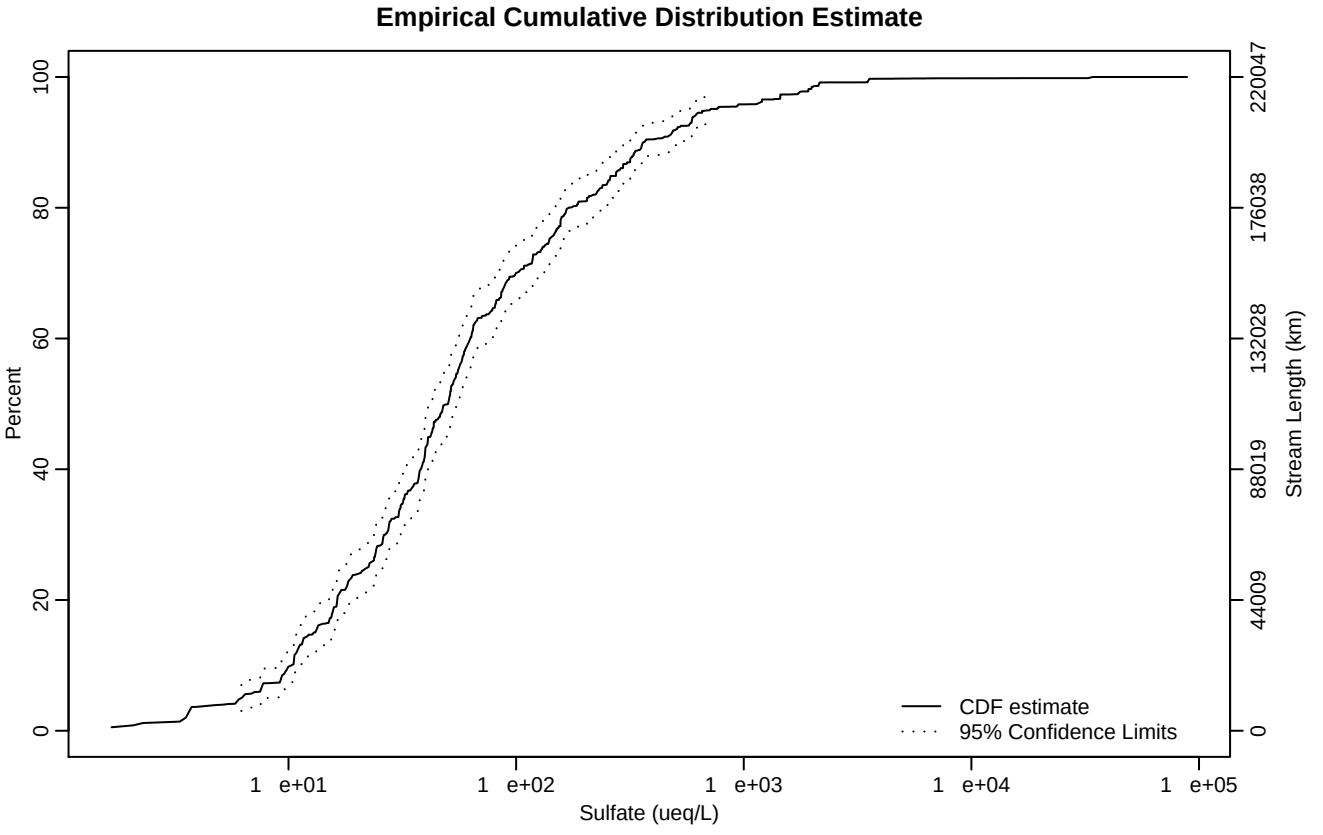


Figure CHEM−128 Indicator: Sulfate Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.20	3.66	7.70
10Pct	10.30	7.74	11.10
25Pct	22.31	16.82	25.89
50Pct	50.21	42.10	55.38
75Pct	139.82	108.37	163.35
90Pct	361.19	317.20	572.97
95Pct	711.66	580.82	1447.45
Mean	242.22	140.94	343.50
Std Dev	738.47	402.26	1074.69

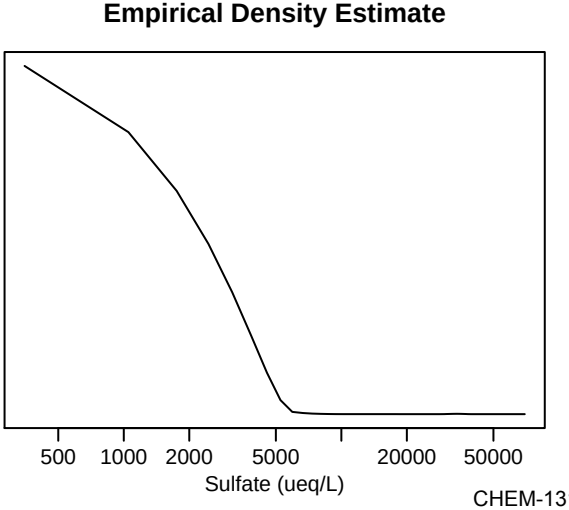
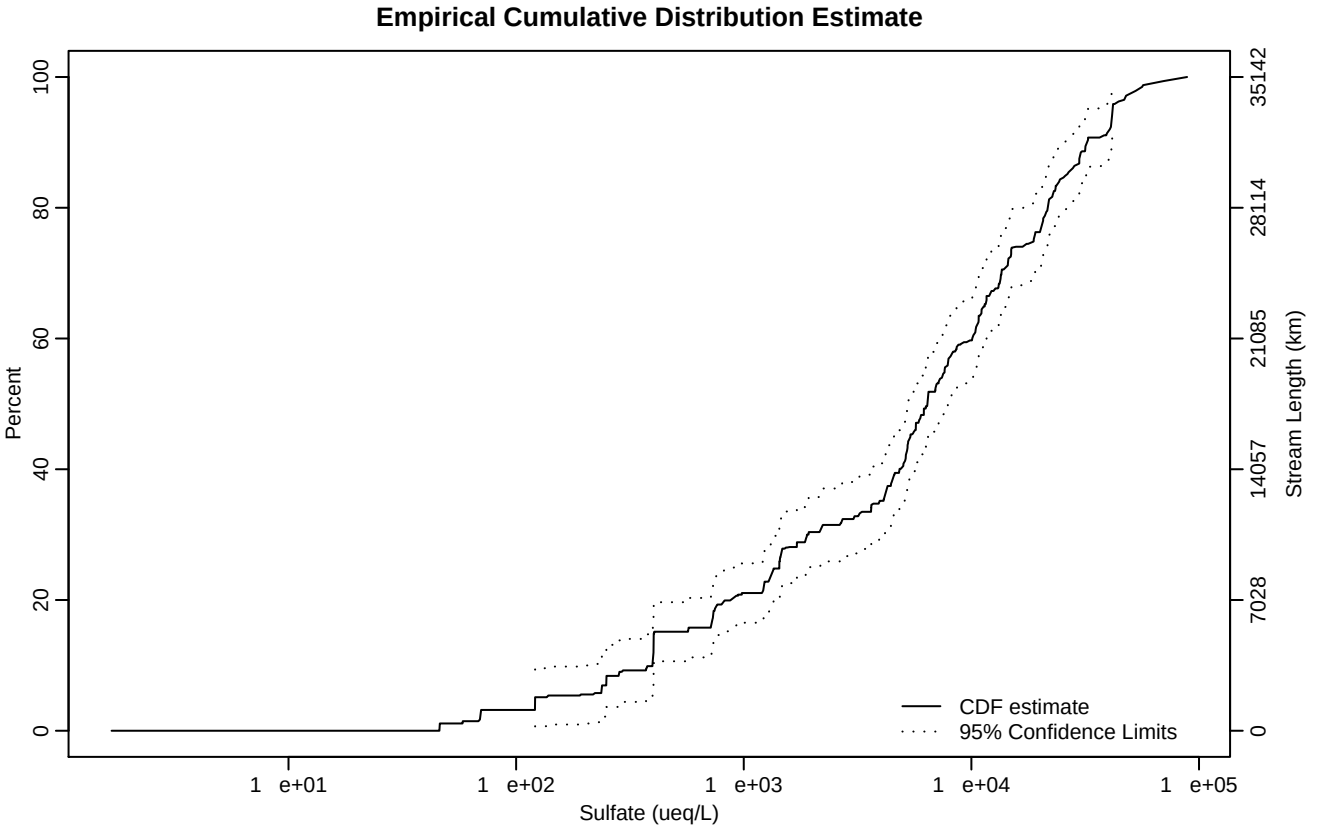


Figure CHEM−129 Indicator: Sulfate Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	121.16	69.43	249.30
10Pct	397.03	136.40	402.24
25Pct	1432.56	810.83	2153.08
50Pct	6408.25	5248.06	7891.14
75Pct	18780.93	13431.34	21847.95
90Pct	32211.71	26491.05	41664.61
95Pct	41717.70	39181.79	58601.23
Mean	12348.34	10295.81	14400.87
Std Dev	14374.94	12078.96	16670.92

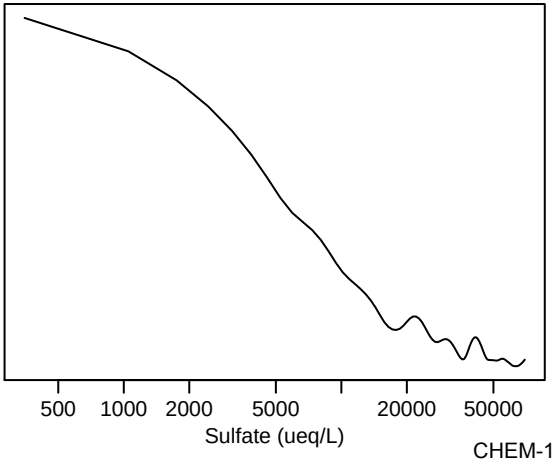
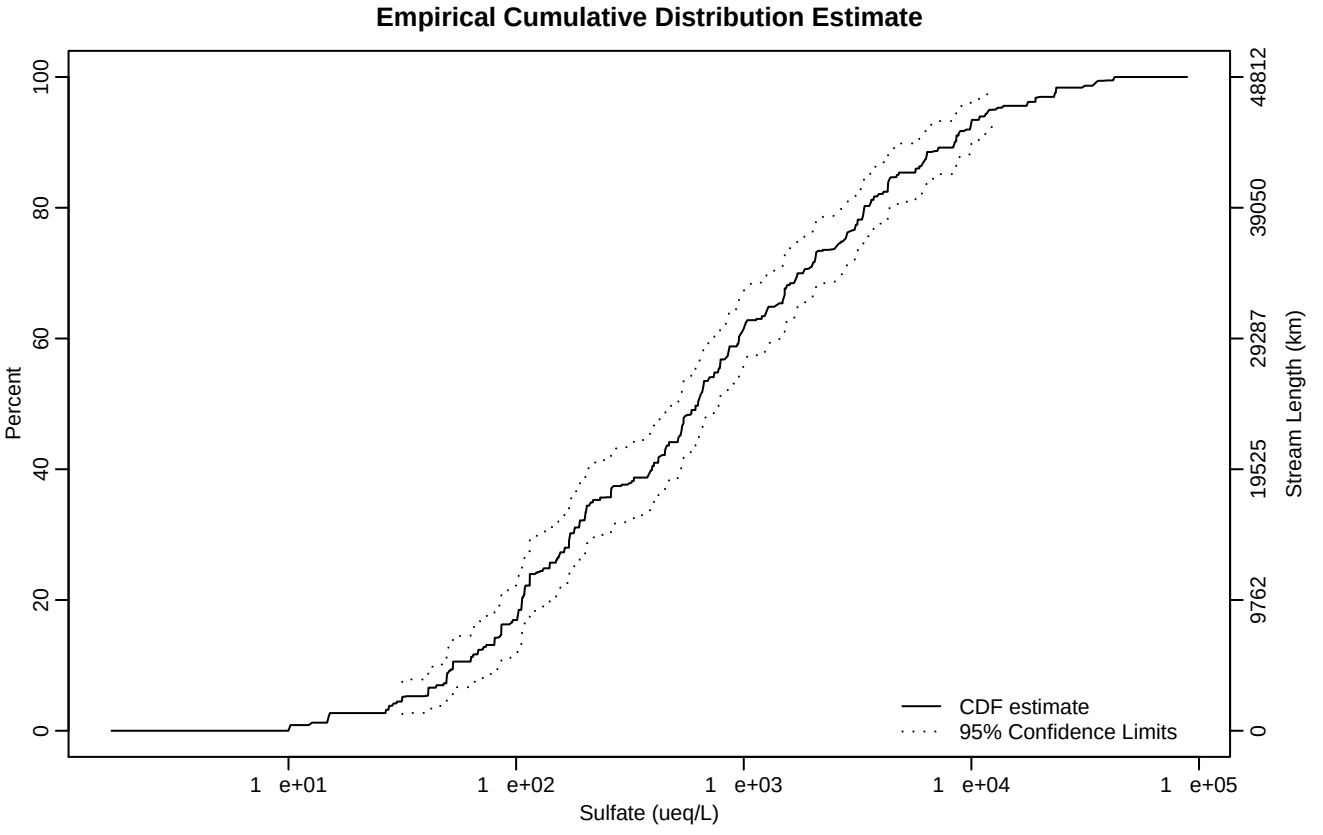


Figure CHEM−130 Indicator: Sulfate Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	31.59	26.66	49.32
10Pct	52.78	41.12	80.49
25Pct	140.23	105.54	189.16
50Pct	629.77	469.32	788.44
75Pct	2749.52	1718.96	3393.27
90Pct	8461.64	5900.70	11365.01
95Pct	12457.93	9915.41	23482.26
Mean	2884.20	2148.04	3620.36
Std Dev	4729.29	3657.18	5801.41

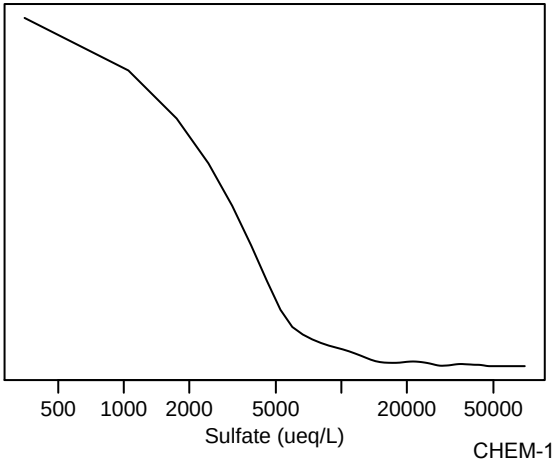
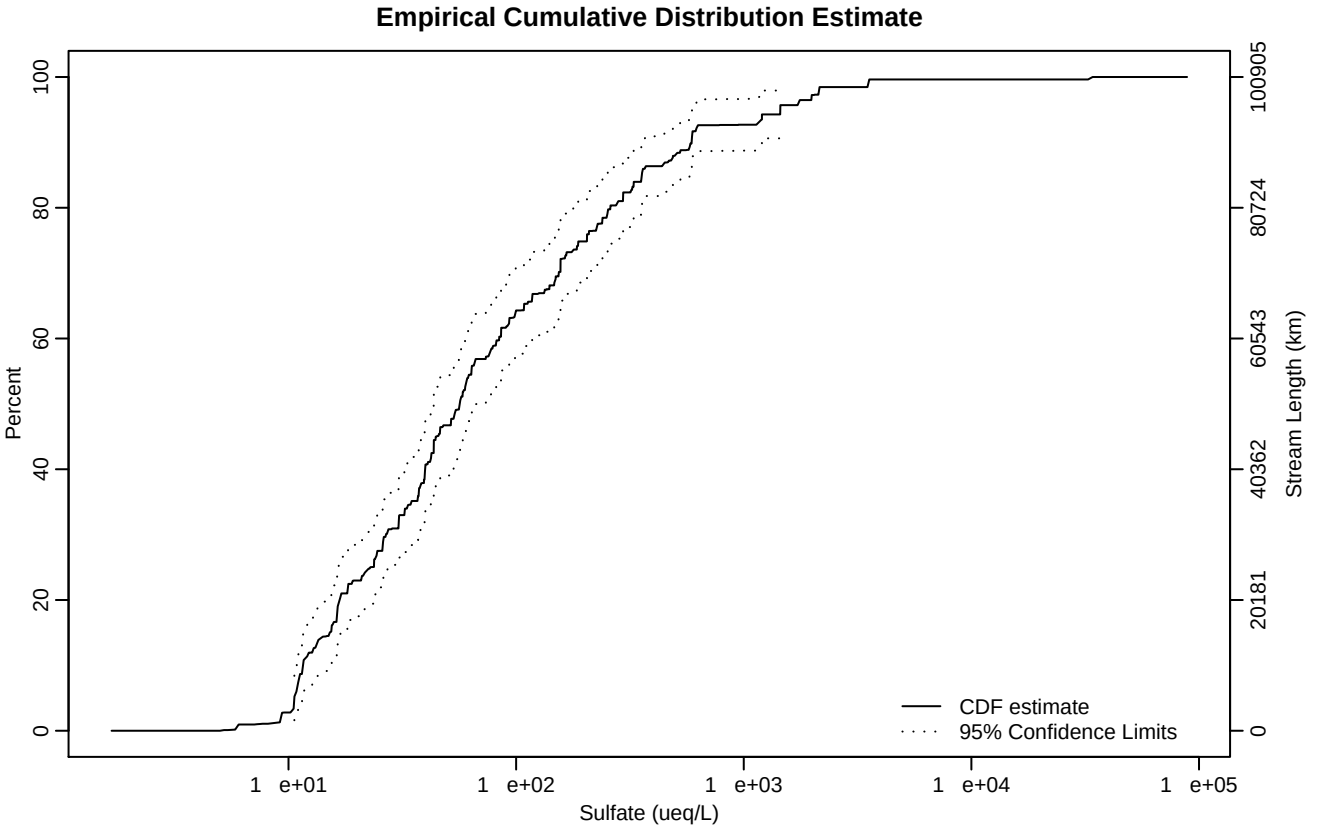


Figure CHEM−131 Indicator: Sulfate Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.61	9.28	11.11
10Pct	11.58	10.71	14.59
25Pct	22.88	16.46	30.40
50Pct	56.52	43.42	76.06
75Pct	204.68	147.82	294.77
90Pct	590.07	358.48	1445.91
95Pct	1446.92	593.82	3512.31
Mean	371.90	154.16	589.64
Std Dev	1102.32	451.15	1753.49

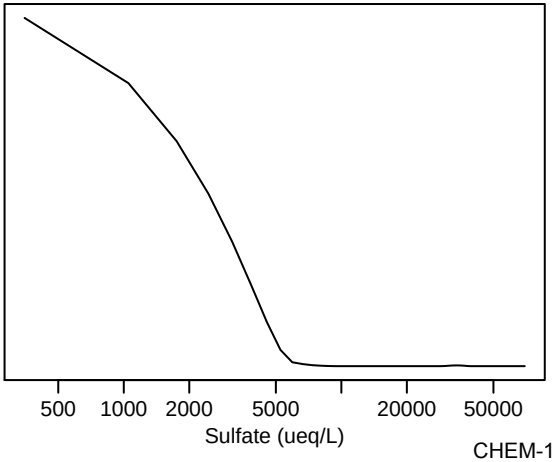
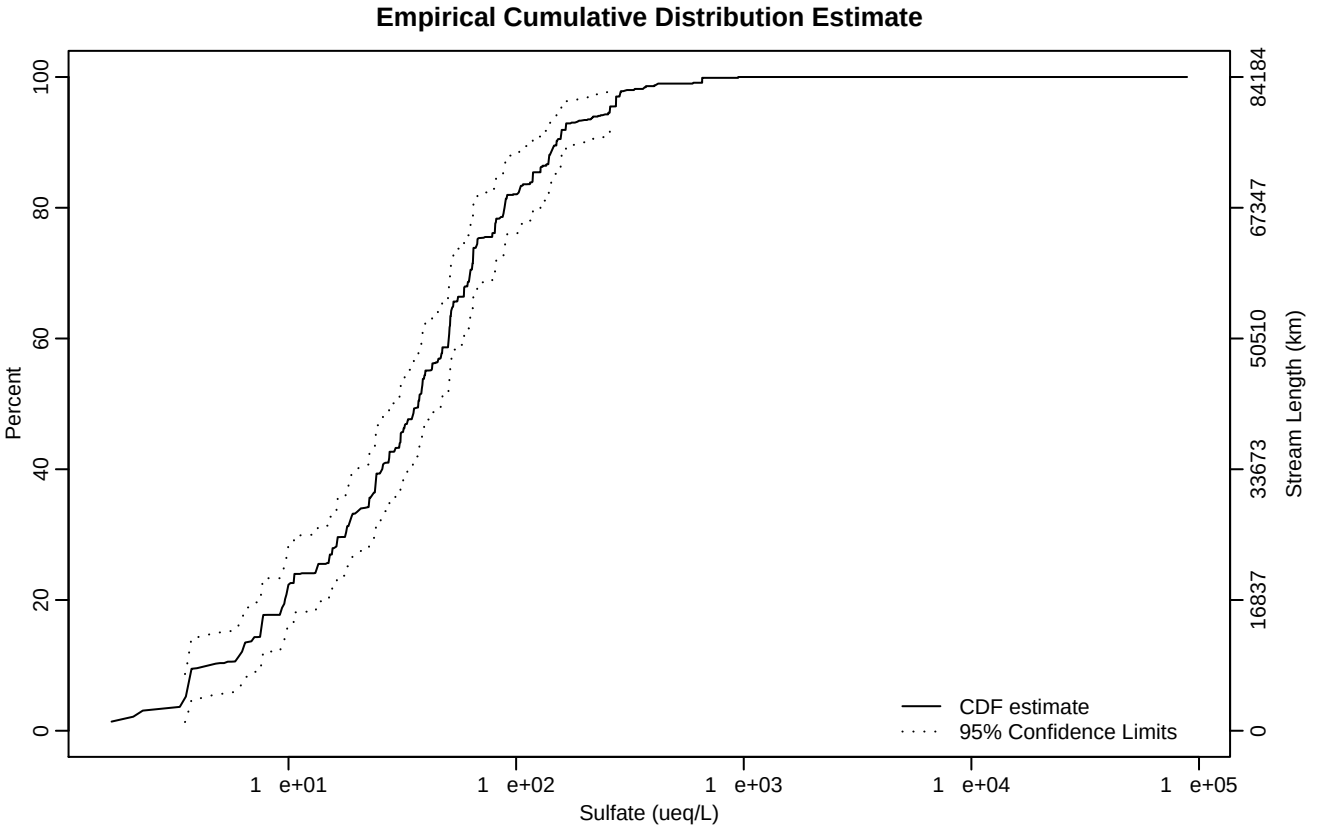


Figure CHEM−132 Indicator: Sulfate Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.51	1.85	3.69
10Pct	4.48	3.52	7.54
25Pct	13.38	9.36	18.10
50Pct	37.17	27.78	46.96
75Pct	67.61	61.11	91.28
90Pct	150.53	127.92	253.87
95Pct	258.24	158.14	371.19
Mean	65.37	53.34	77.40
Std Dev	77.90	62.49	93.31

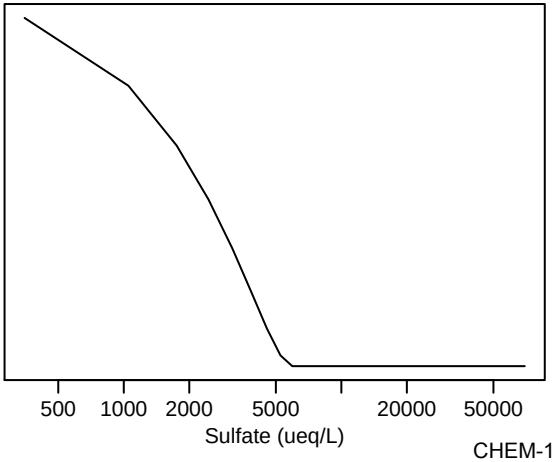
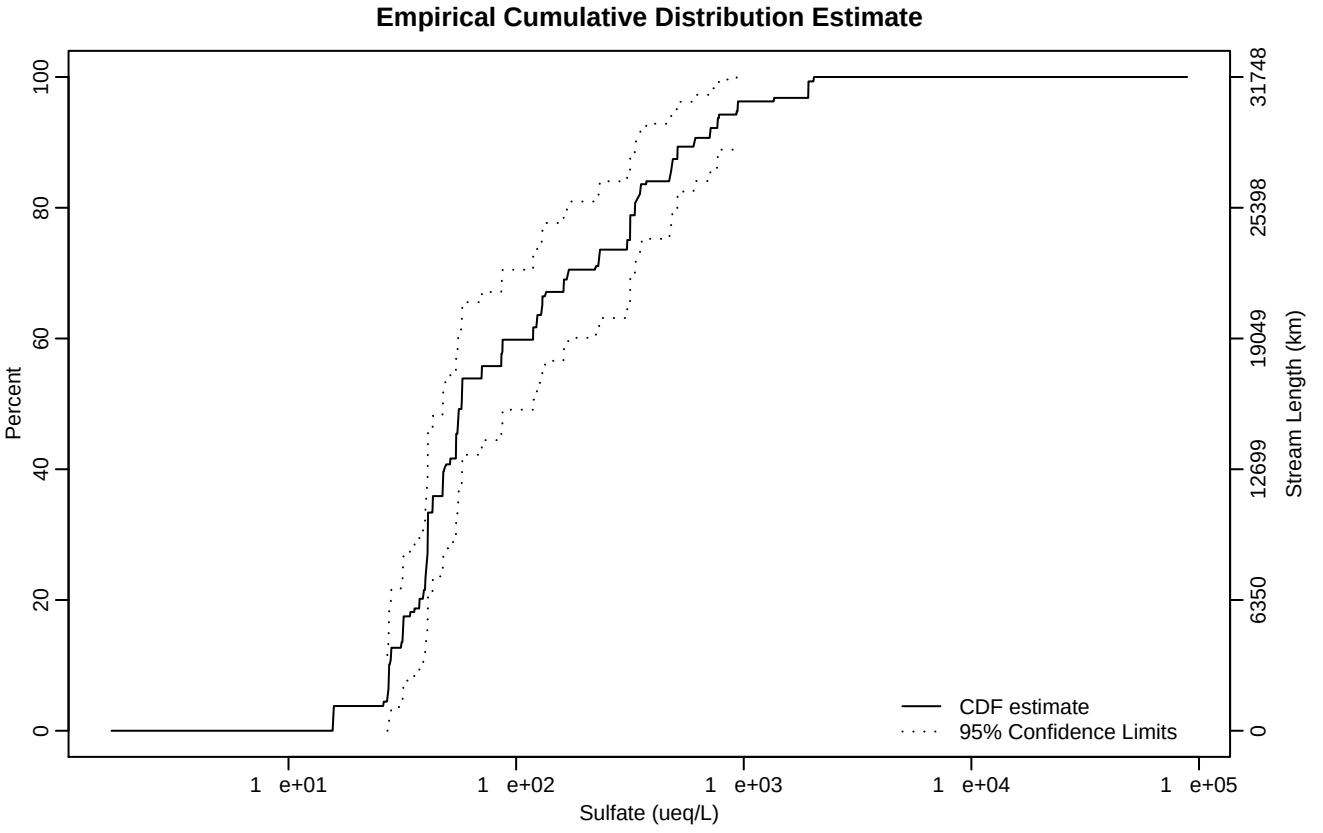


Figure CHEM−133 Indicator: Sulfate Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	27.19	1.67	28.17
10Pct	27.68	15.77	32.03
25Pct	40.33	31.73	43.08
50Pct	57.65	47.68	123.02
75Pct	307.87	129.68	478.81
90Pct	606.98	352.52	1919.32
95Pct	939.06	604.37	2035.99
Mean	232.73	140.23	325.22
Std Dev	365.49	206.11	524.88

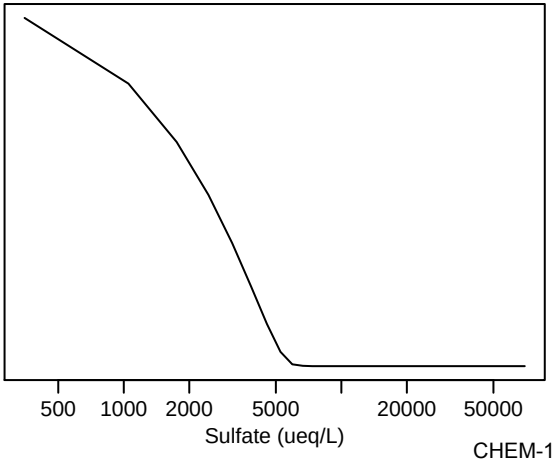
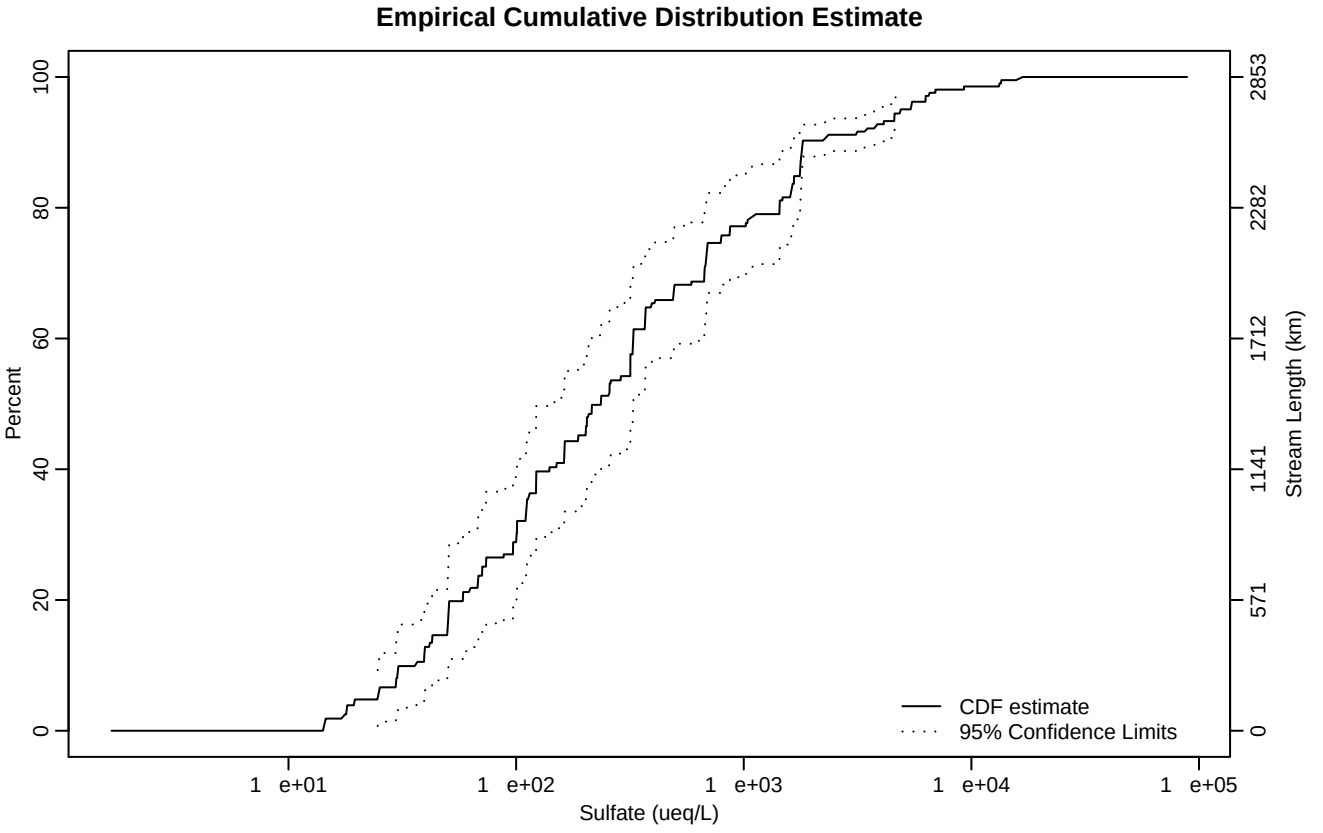


Figure CHEM−134 Indicator: Sulfate Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	24.64	14.35	30.23
10Pct	35.99	18.08	50.14
25Pct	70.98	49.94	111.32
50Pct	235.58	122.60	327.35
75Pct	793.86	492.76	1622.33
90Pct	1815.37	1662.78	5436.36
95Pct	4892.65	3808.67	6545.32
Mean	1003.40	826.05	1180.74
Std Dev	1420.97	1162.51	1679.43

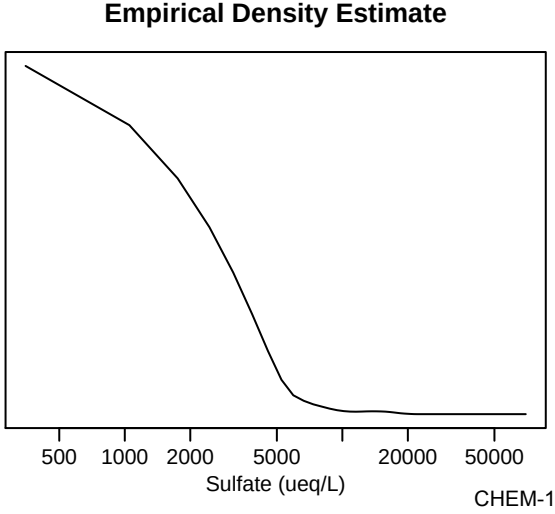
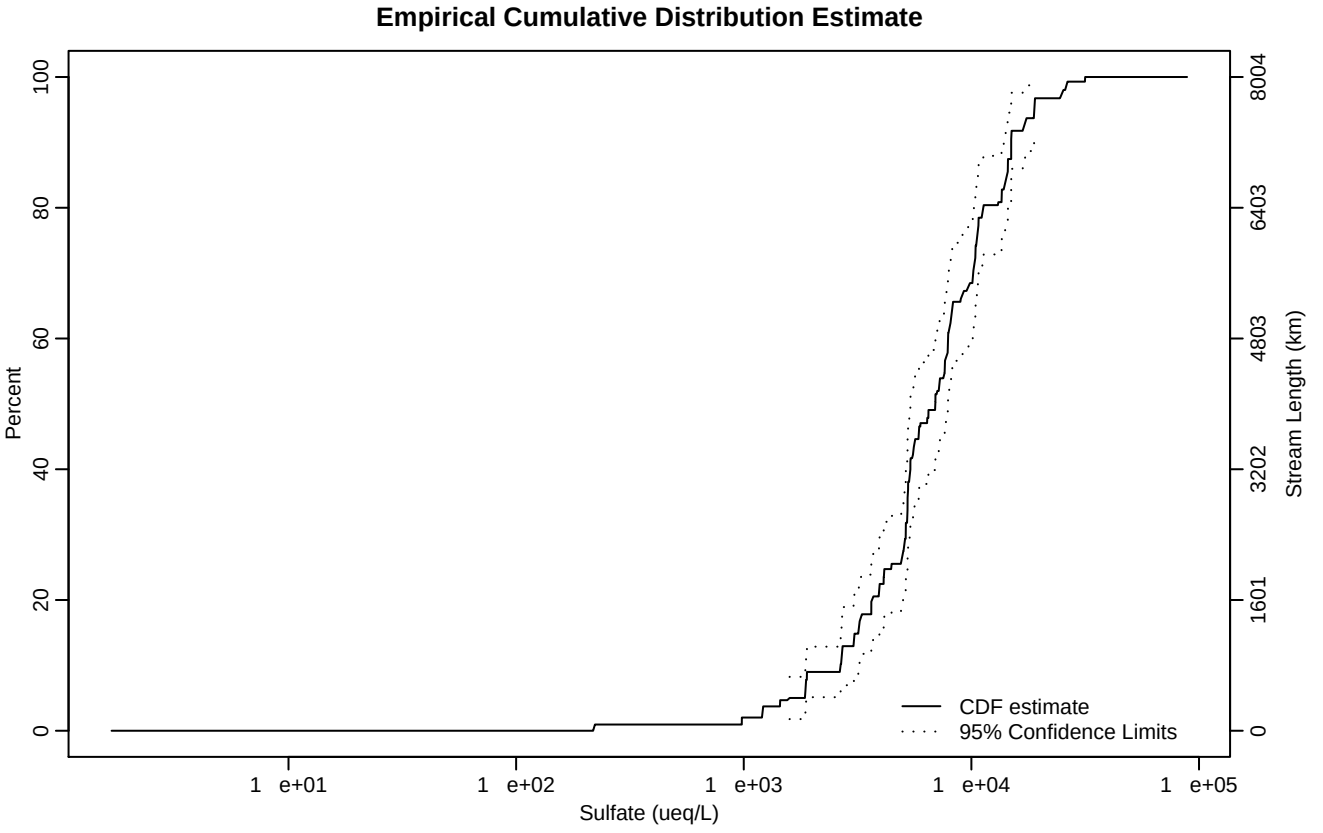


Figure CHEM−135 Indicator: Sulfate Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1589.10	980.83	1893.27
10Pct	2662.96	1861.31	3058.75
25Pct	4447.65	3276.81	5225.07
50Pct	6942.62	5395.03	7891.46
75Pct	10555.97	8992.07	14100
90Pct	14957.37	13877.57	24752.27
95Pct	18900.16	14957.36	31610.17
Mean	8240.26	7373.17	9107.34
Std Dev	5211.40	4308.17	6114.63

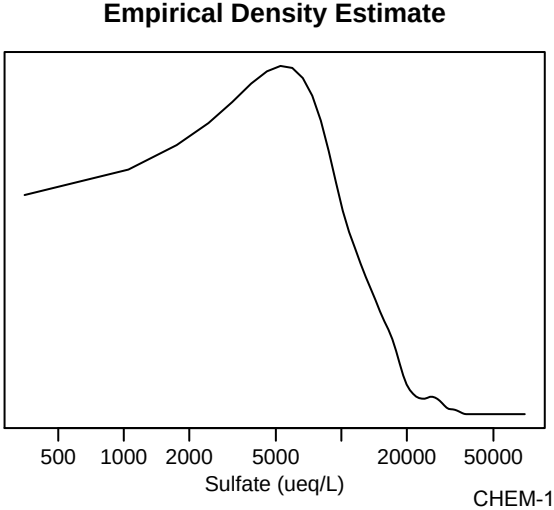
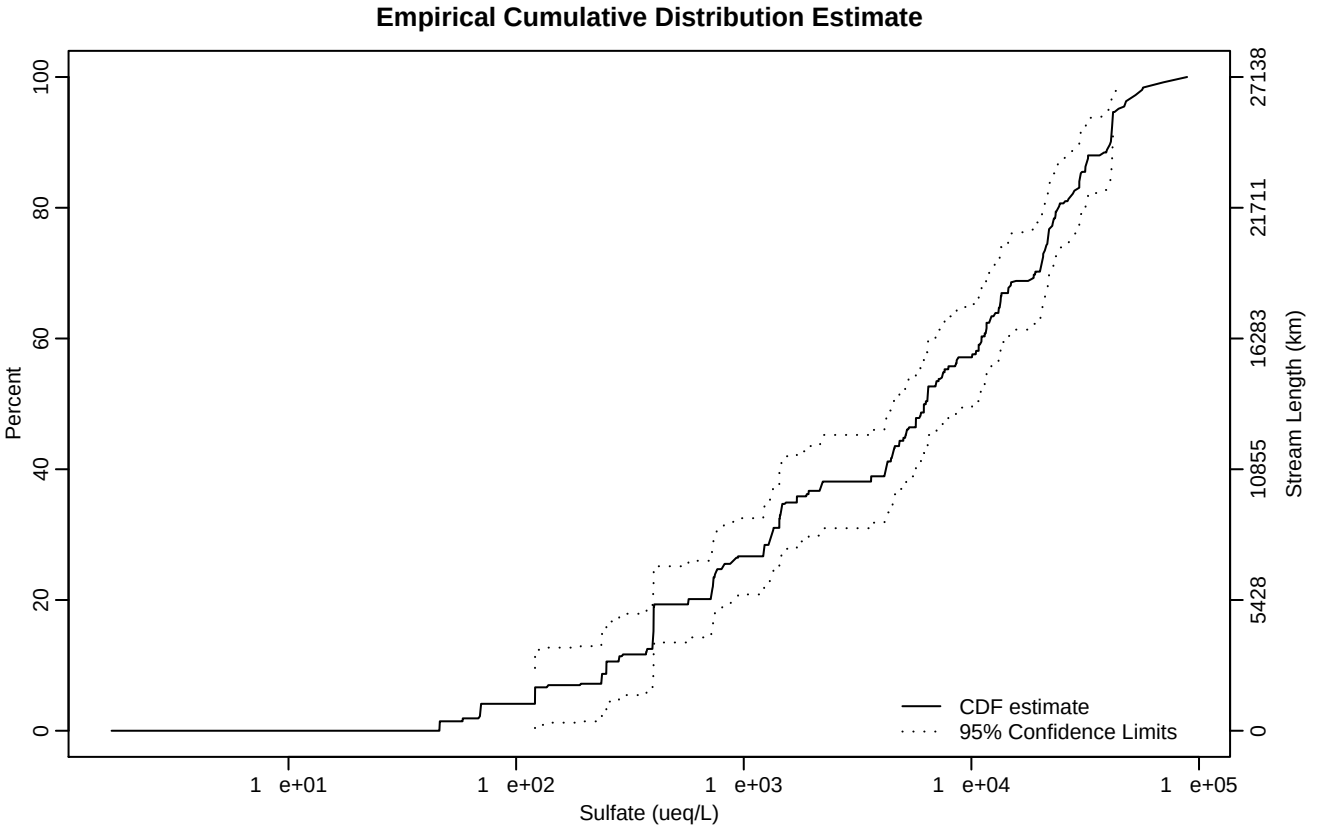


Figure CHEM−136 Indicator: Sulfate Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	121.03	46.15	248.91
10Pct	249.23	70.03	401.47
25Pct	807.27	402.19	1432.52
50Pct	6300.94	4519.47	10443.89
75Pct	21638.93	14724.62	27781.88
90Pct	40908.27	29900.99	47148.02
95Pct	43807.73	41387.74	56430.87
Mean	13559.99	10918.23	16201.76
Std Dev	15870.55	13236.13	18504.96

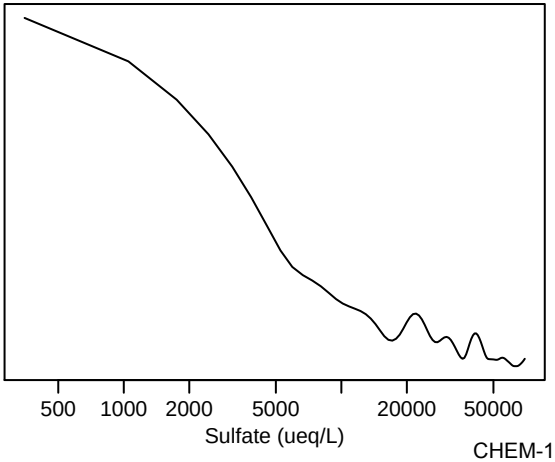
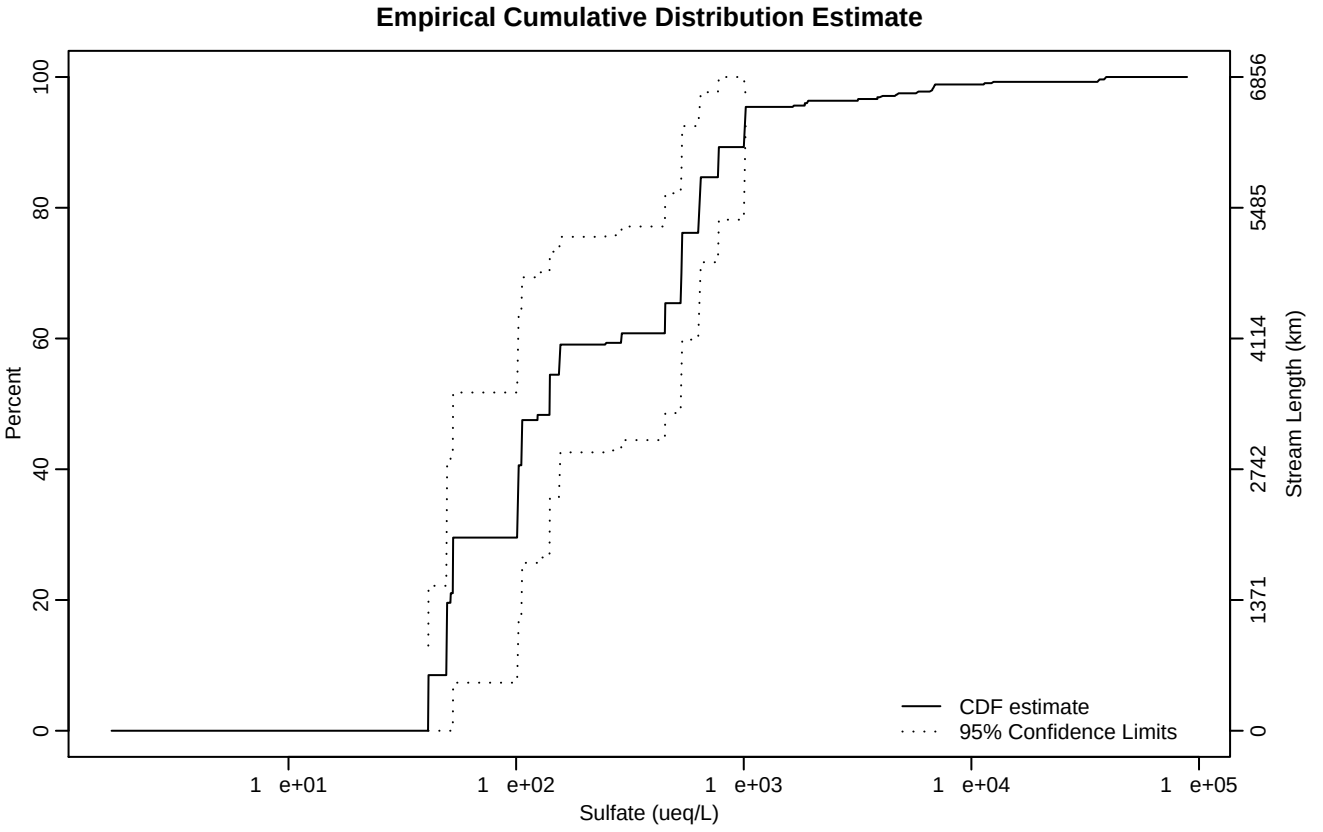


Figure CHEM−137 Indicator: Sulfate Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	41.14	41.11	41.16
10Pct	49.38	1.67	52.74
25Pct	52.77	41.11	106.21
50Pct	140.29	52.85	533.49
75Pct	535.91	290.07	1002.45
90Pct	1002.77	636.08	39109.75
95Pct	1019.20	646.48	39109.75
Mean	768.58	459.53	1077.64
Std Dev	3407.56	1973.65	4841.48

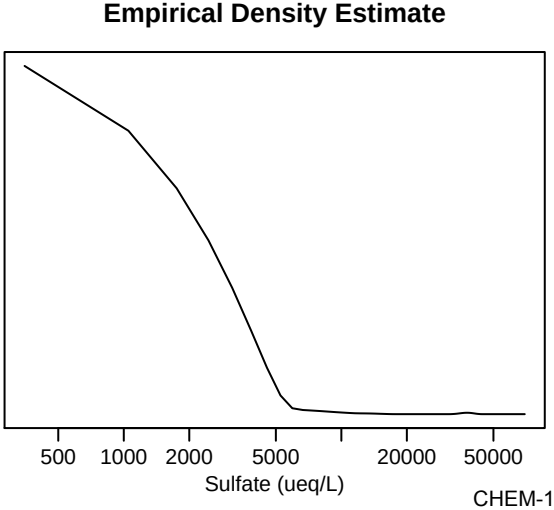
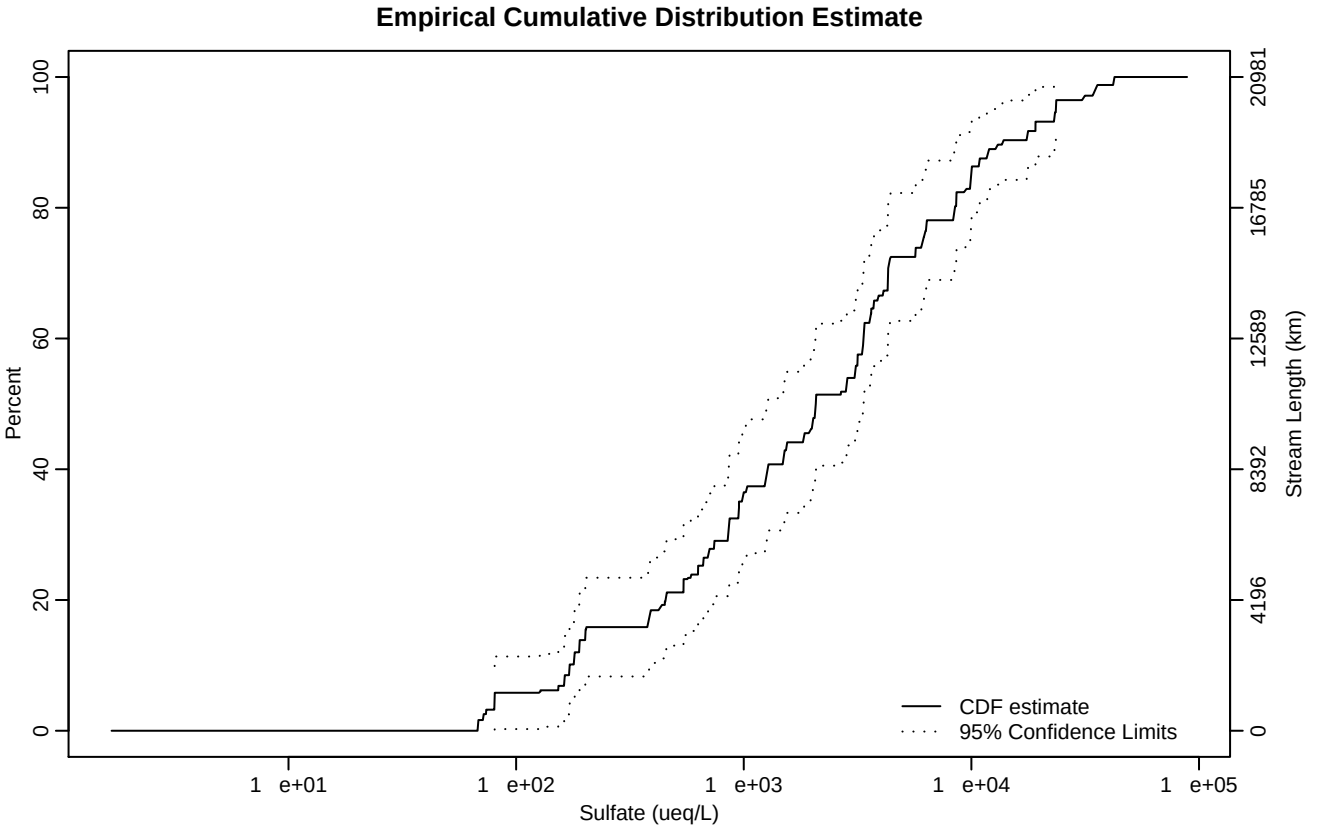


Figure CHEM−138 Indicator: Sulfate Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	80.44	68.25	163.62
10Pct	171.87	80.28	377.89
25Pct	630.20	378.95	951.34
50Pct	2071.93	1262.06	3369.24
75Pct	6127.27	3731.35	9947.88
90Pct	13737.38	9914.61	23579.05
95Pct	23505.62	13839.59	42403.75
Mean	5379.79	3675.94	7083.64
Std Dev	7954.80	5724.12	10185.49

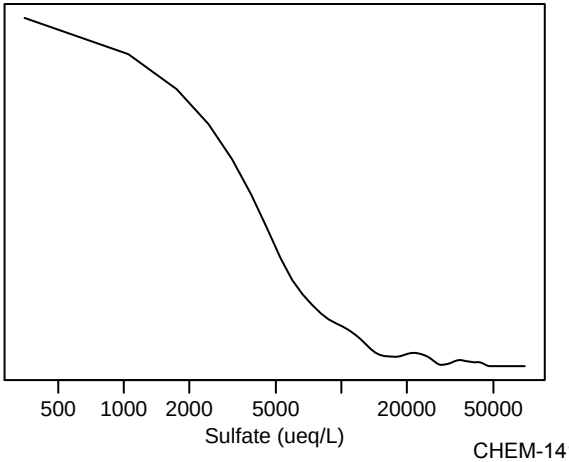
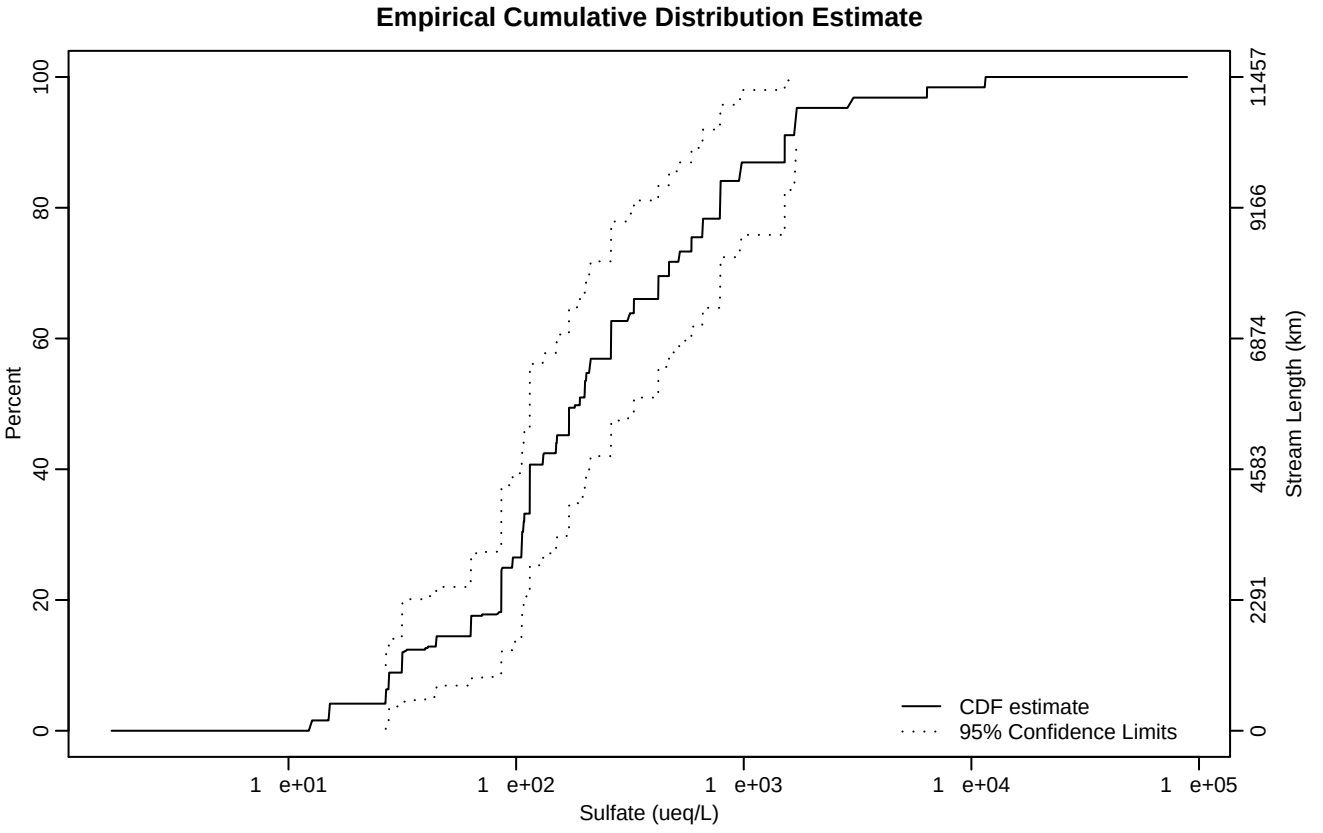


Figure CHEM−139 Indicator: Sulfate Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	26.73	12.32	31.50
10Pct	31.51	15.19	63.28
25Pct	96.02	31.62	114.87
50Pct	190.36	114.76	329.22
75Pct	589.40	261.45	1513.17
90Pct	1513.30	785.97	11552.60
95Pct	1707.52	978.69	11552.60
Mean	687.81	329.64	1045.99
Std Dev	1230.45	623.95	1836.95

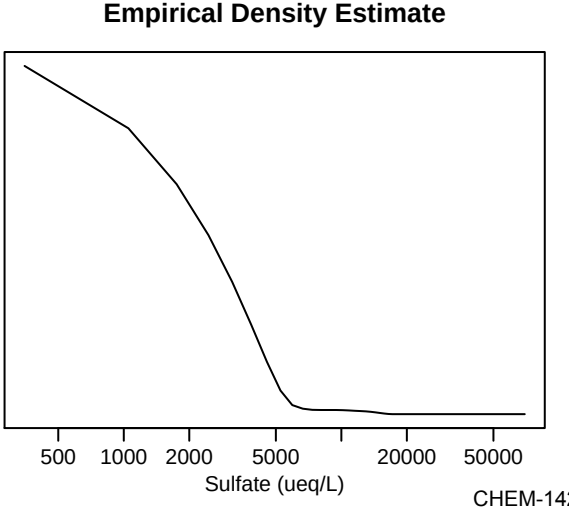
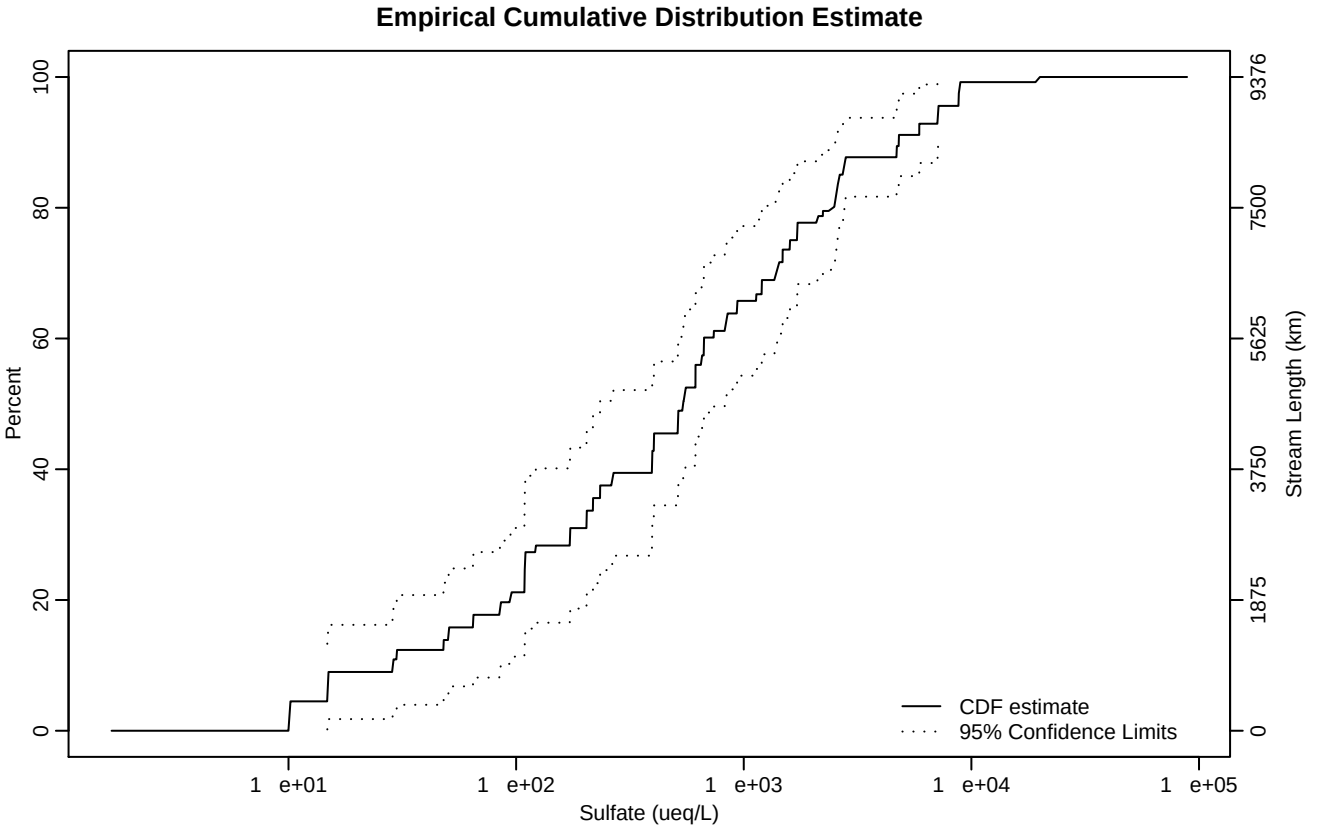


Figure CHEM−140 Indicator: Sulfate Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.80	1.67	48.07
10Pct	28.74	10.05	84.99
25Pct	109.21	47.95	233.94
50Pct	541.58	264.59	828.03
75Pct	1597.52	933.89	2731.90
90Pct	4796.19	2588.55	8788.71
95Pct	7155.70	4698.21	19998.65
Mean	1569.56	1060.56	2078.56
Std Dev	2031.59	1381.21	2681.97

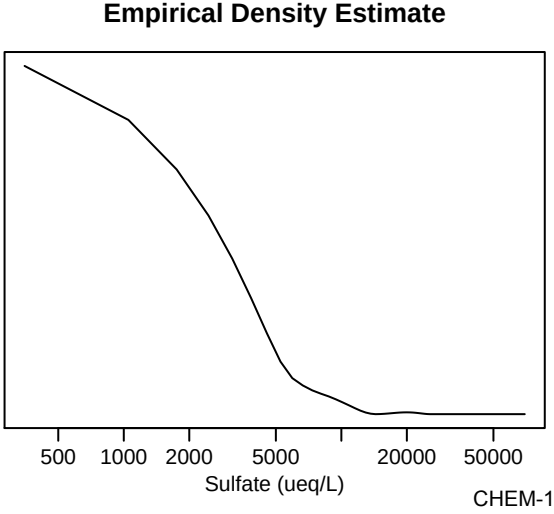
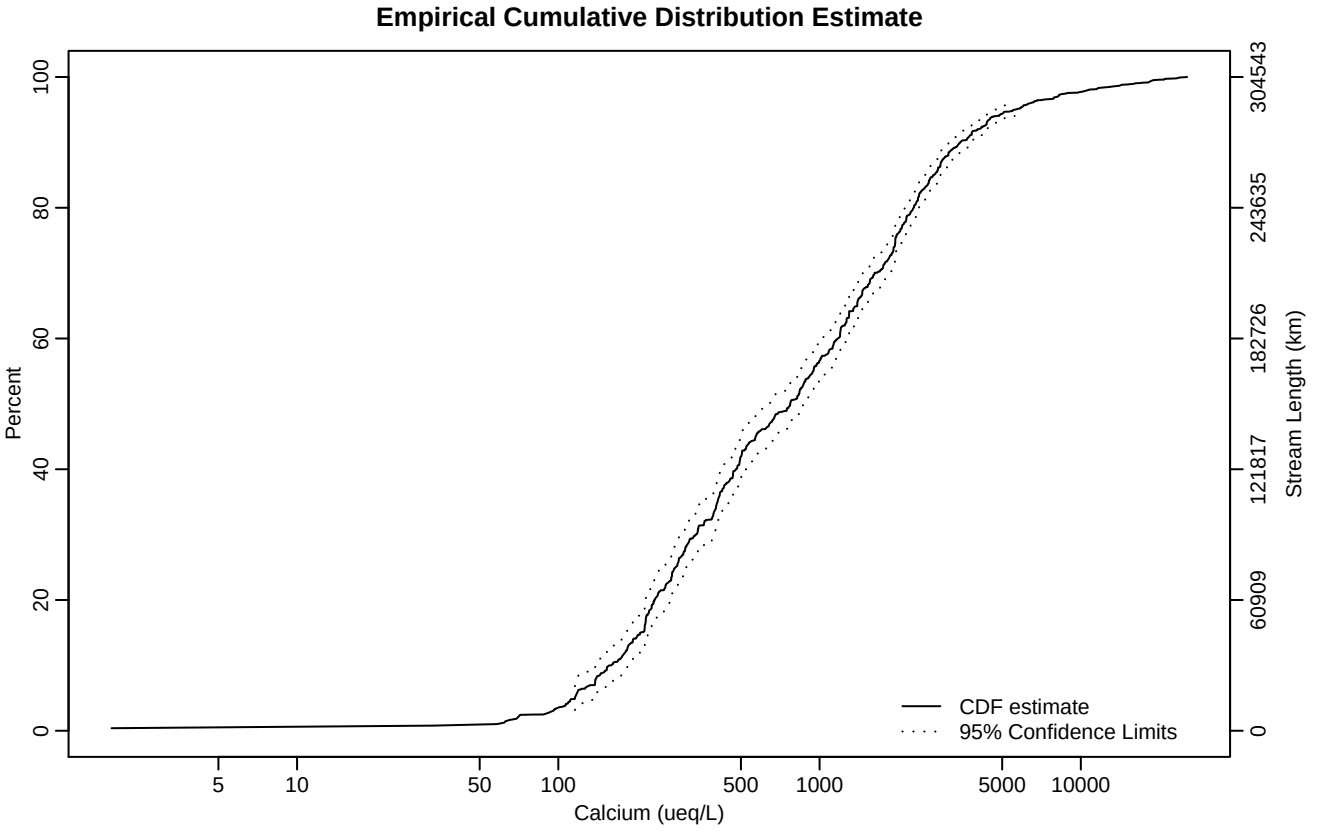


Figure CHEM−141 Indicator: Calcium Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	115.80	96.48	129.40
10Pct	159.45	138.35	183.78
25Pct	281.25	253.97	310.10
50Pct	771.92	640.38	872.43
75Pct	1948.90	1858.79	2084.82
90Pct	3461.12	3117.08	3831
95Pct	5582.24	4772.75	6359.84
Mean	1641.10	1525.62	1756.59
Std Dev	1961.21	1712.88	2209.53

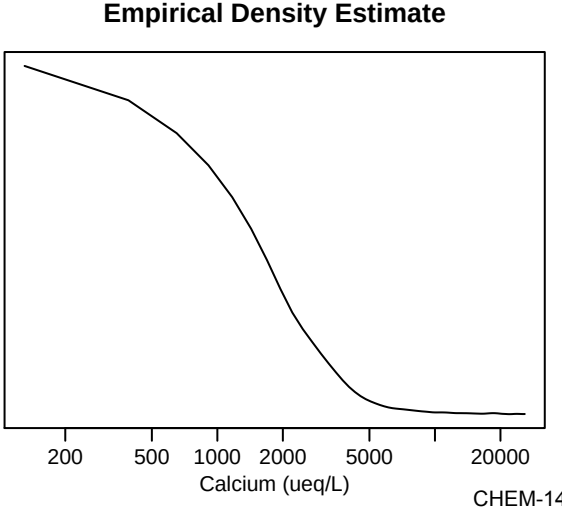
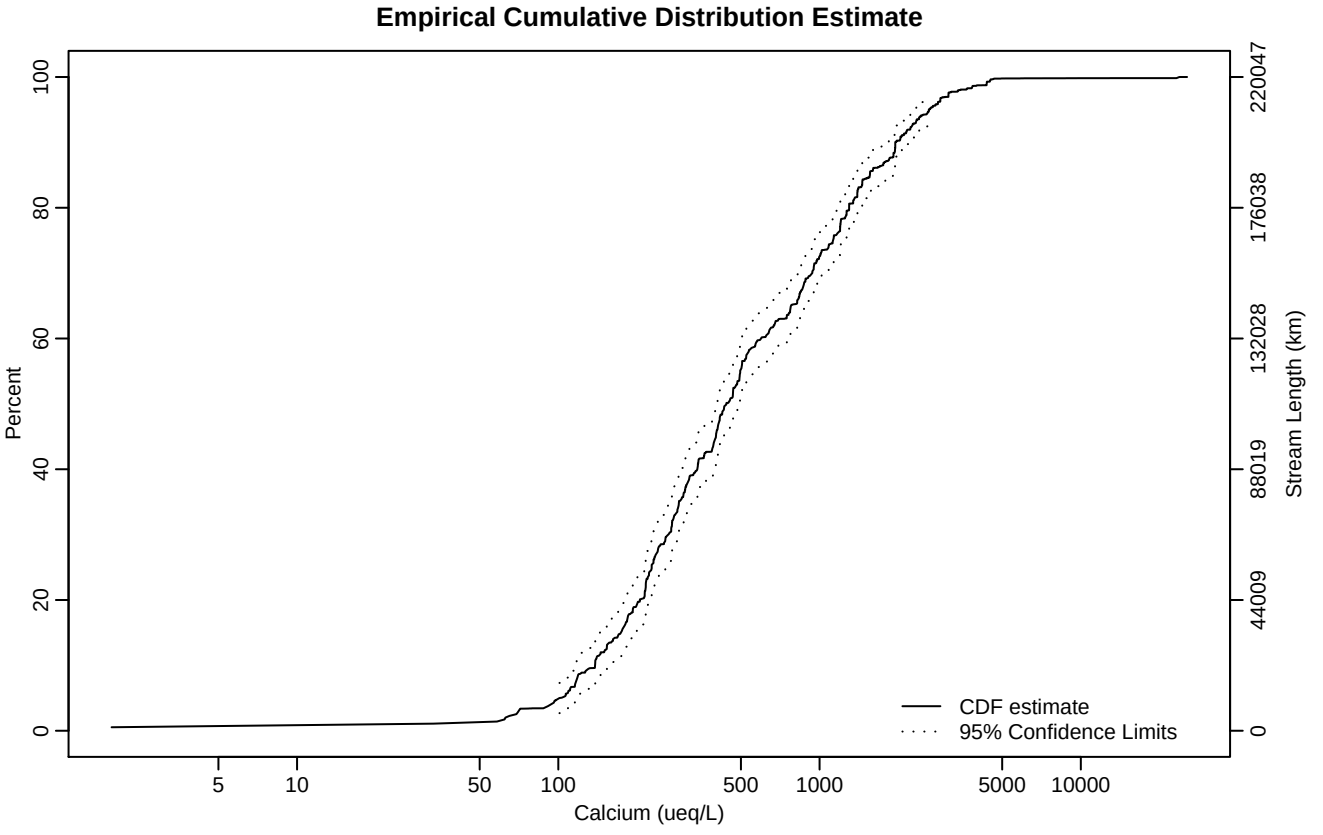


Figure CHEM−142 Indicator: Calcium Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	101.03	69.64	116.34
10Pct	138.24	115.85	153.53
25Pct	227.70	214.11	256.98
50Pct	439.69	402.95	494.83
75Pct	1125.84	952.84	1262.12
90Pct	1949.06	1845.91	2266.08
95Pct	2620.40	2334.41	3112.70
Mean	840.47	748.60	932.34
Std Dev	939.95	719.99	1159.91

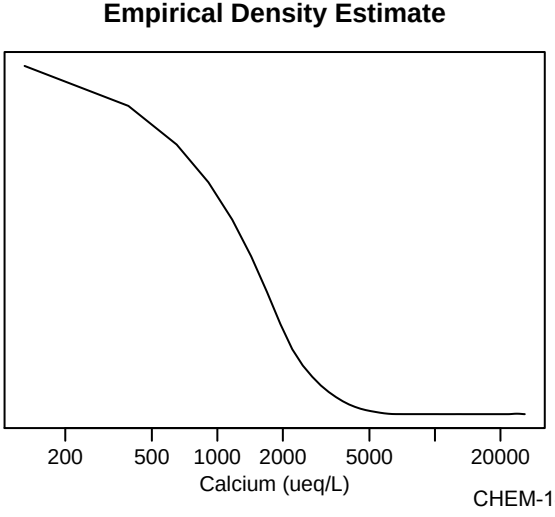
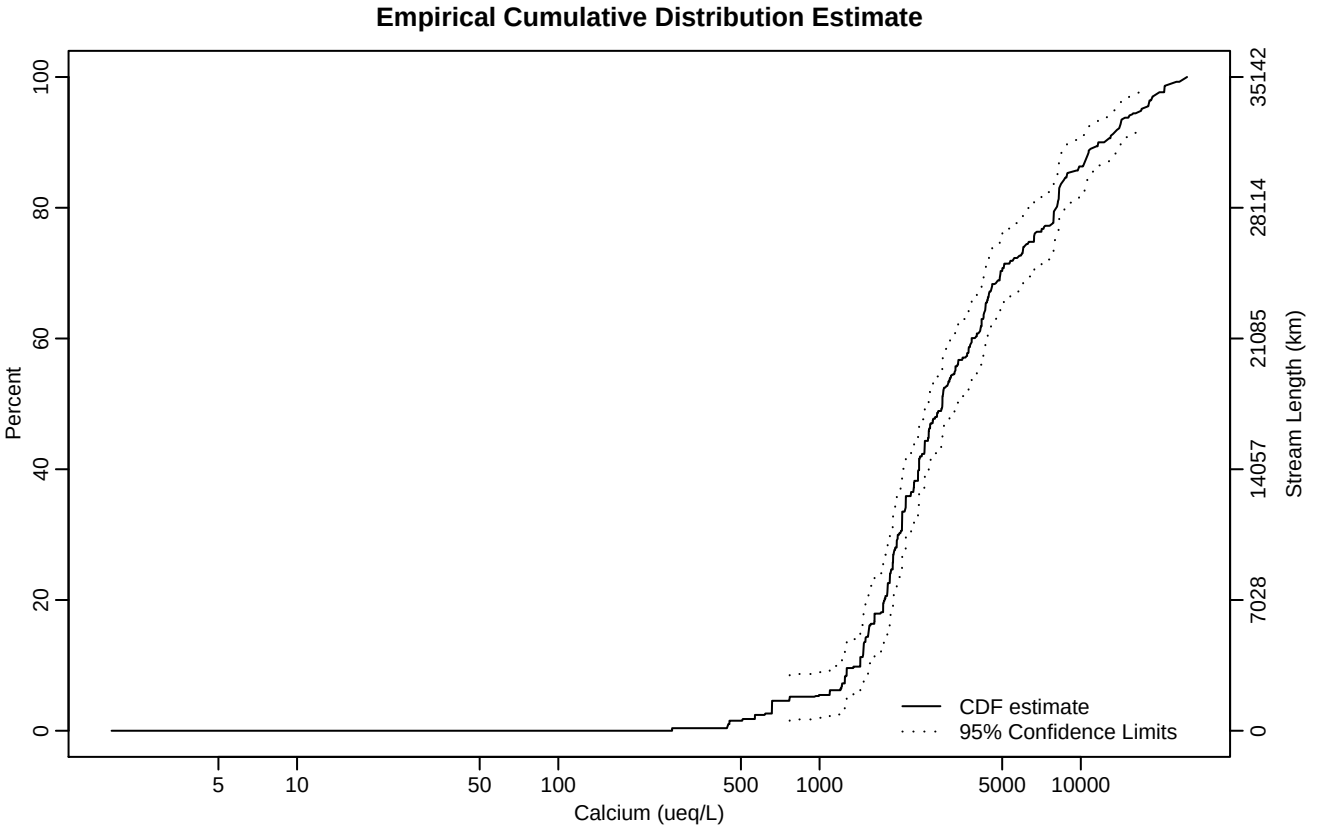


Figure CHEM−143 Indicator: Calcium Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	768.15	452.17	1268.15
10Pct	1431.46	1093.95	1500.67
25Pct	1905.24	1750.99	2068.10
50Pct	2951.85	2529.23	3367.99
75Pct	6616.71	4914.82	8119.82
90Pct	11668.62	10197.04	14574.27
95Pct	17055.07	13928.92	20869.54
Mean	5046.75	4433.93	5659.56
Std Dev	4394.78	3521.11	5268.45

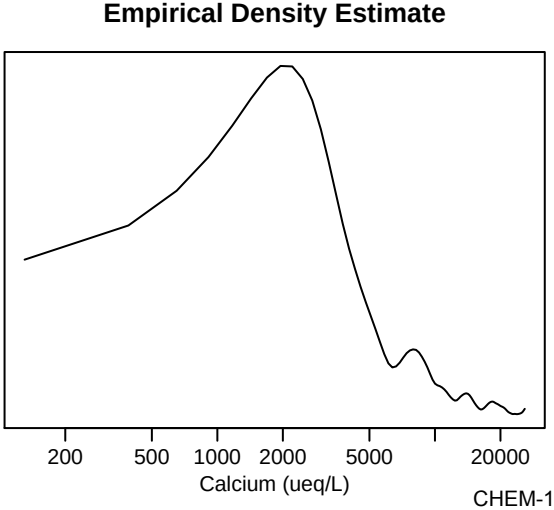
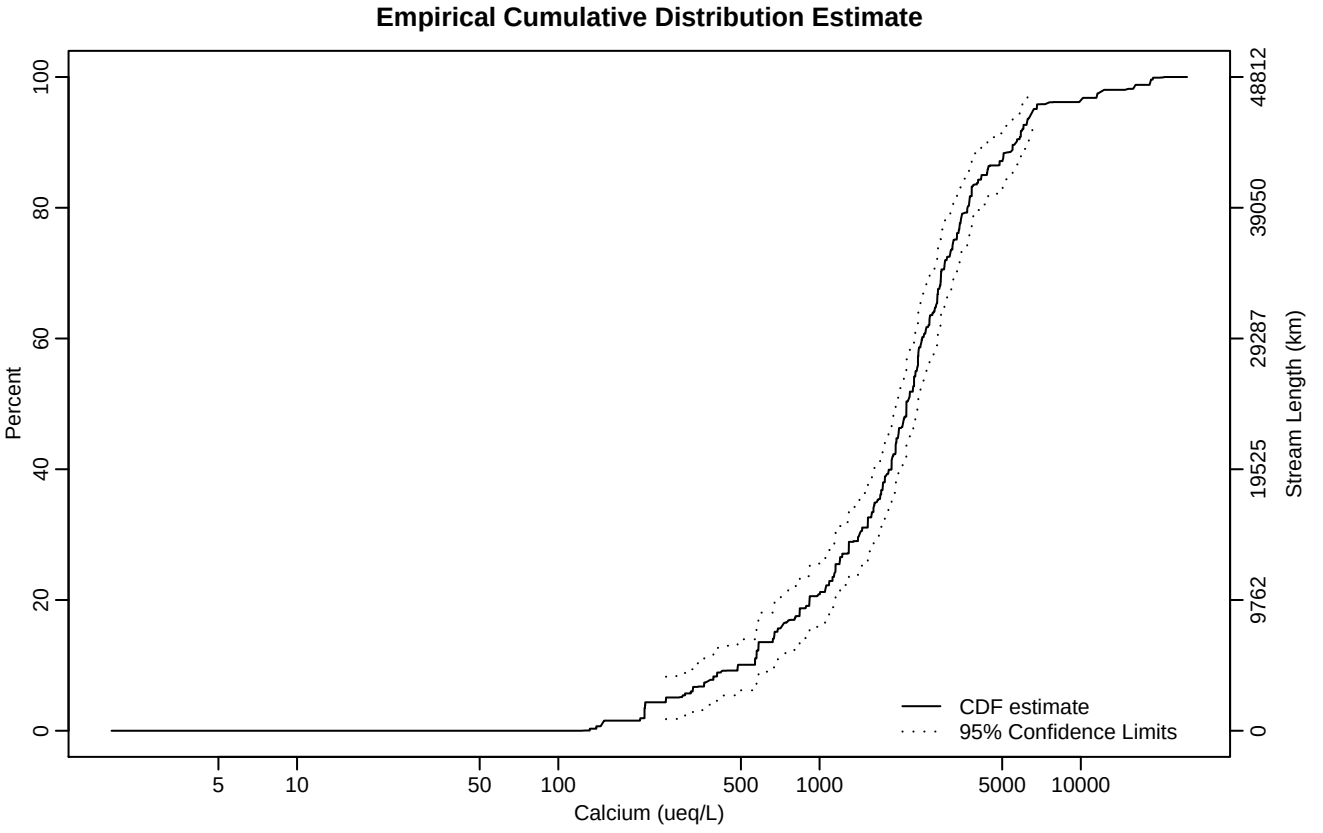


Figure CHEM−144 Indicator: Calcium Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	258.49	213.77	392.24
10Pct	487.31	326.80	662.72
25Pct	1151.30	914.96	1426.63
50Pct	2150.62	1955.64	2380.54
75Pct	3256.29	2911.07	3745.85
90Pct	5656.21	4420.84	6367.14
95Pct	6589.57	5895.78	15985.53
Mean	2814.60	2464.83	3164.36
Std Dev	2367.72	1915.44	2820

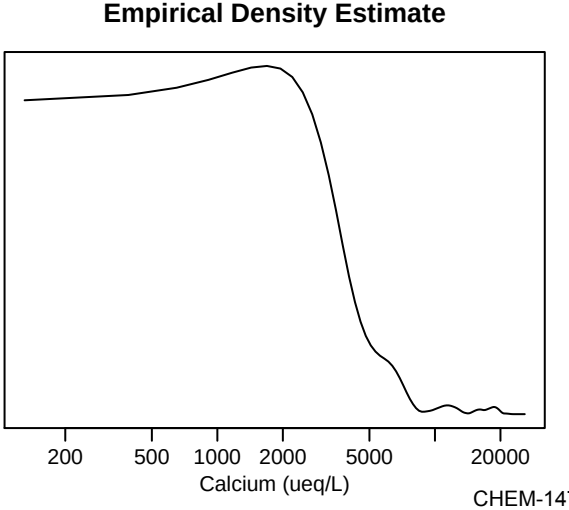
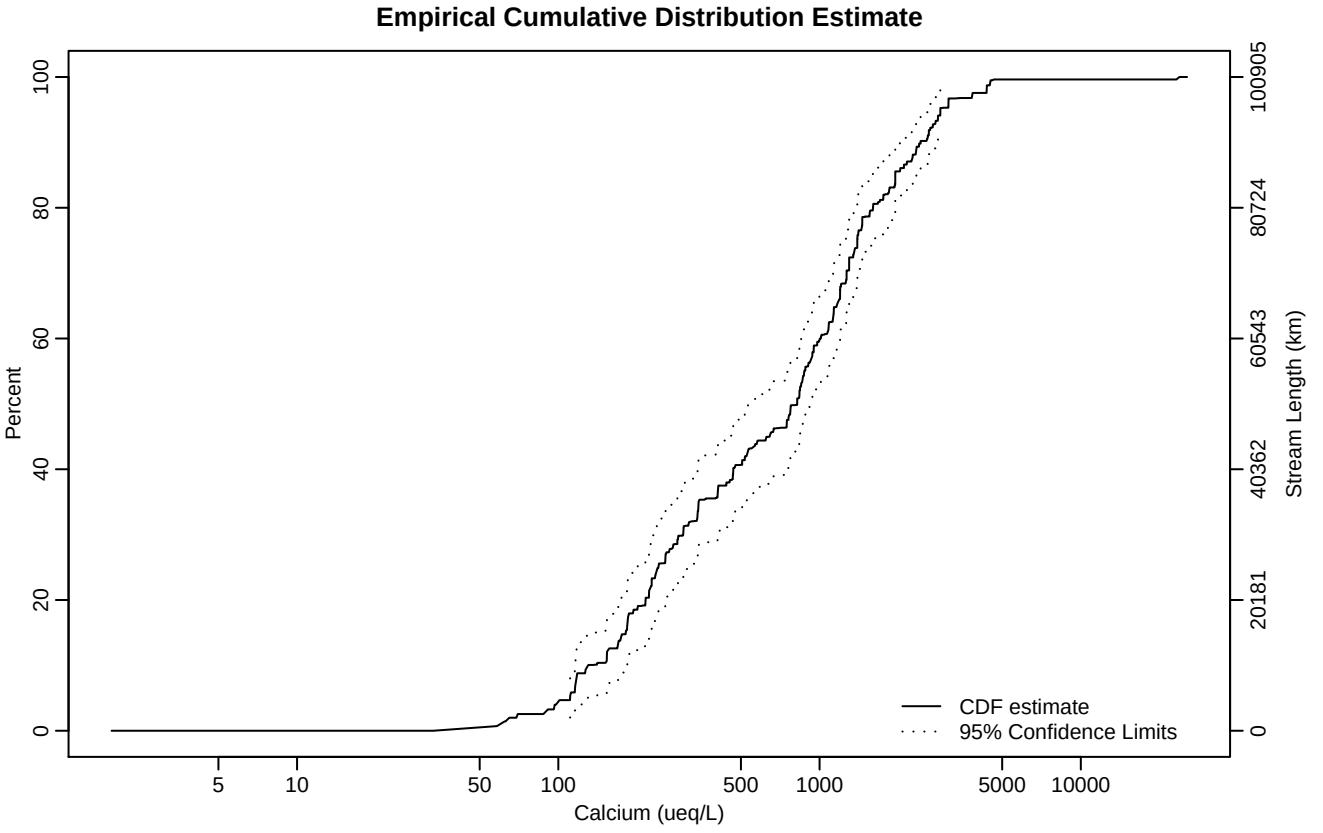


Figure CHEM−145 Indicator: Calcium Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	110.94	69.31	117.18
10Pct	130.01	111.06	174.86
25Pct	241.51	193.56	315.92
50Pct	820.94	532.70	935.41
75Pct	1394.63	1263.93	1702.91
90Pct	2436.46	2034.84	2897.85
95Pct	2900.12	2619.30	4368.97
Mean	1105.22	918.49	1291.96
Std Dev	1241.51	824.37	1658.66

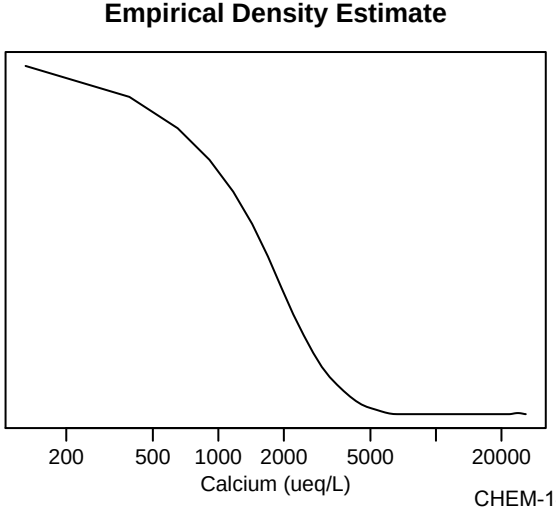
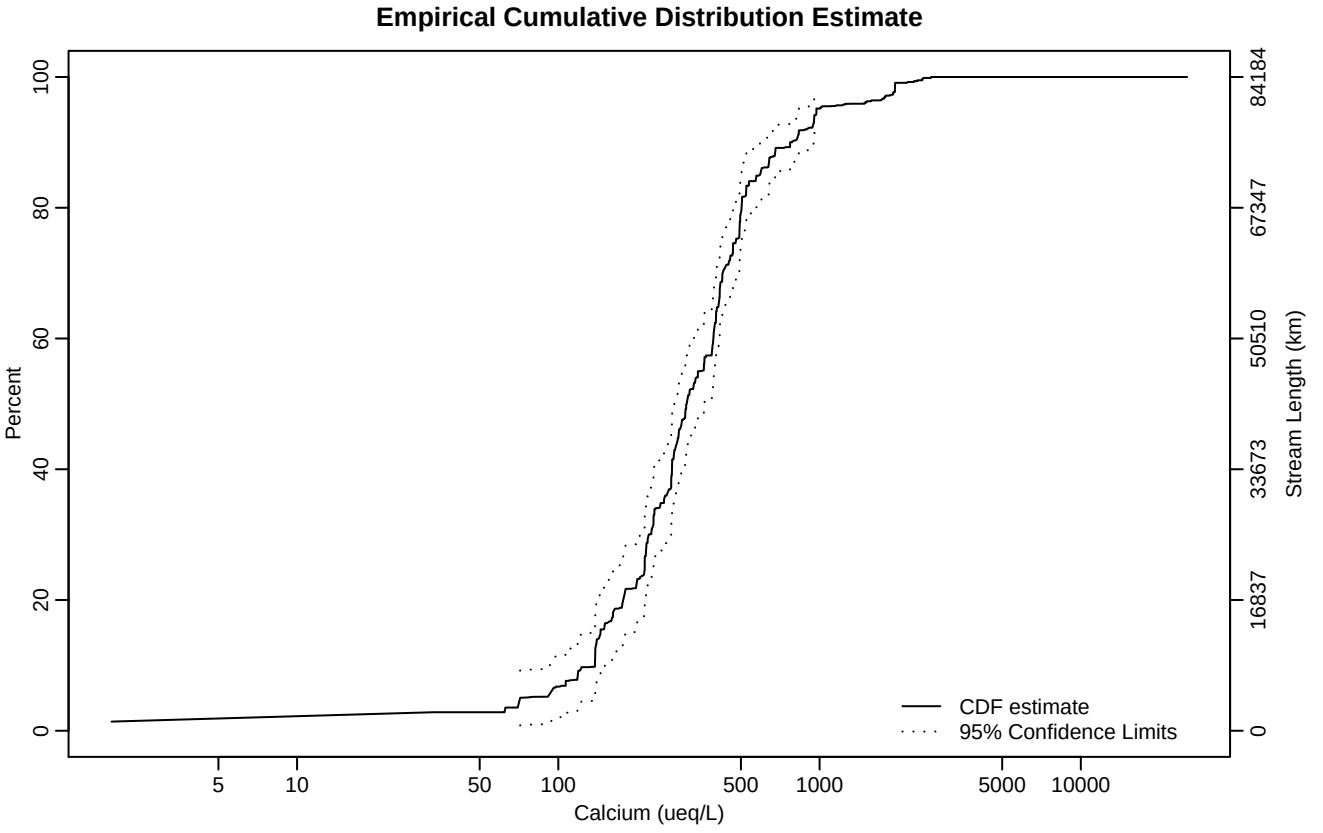


Figure CHEM−146 Indicator: Calcium Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	71.41	4.47	118.71
10Pct	138.12	71.20	145.11
25Pct	214.11	163.43	231.35
50Pct	309.94	277.55	367.80
75Pct	478.59	423.94	504.64
90Pct	771.24	638.51	952.86
95Pct	972.50	939.70	1917.97
Mean	415.86	370.55	461.16
Std Dev	336.60	250.72	422.49

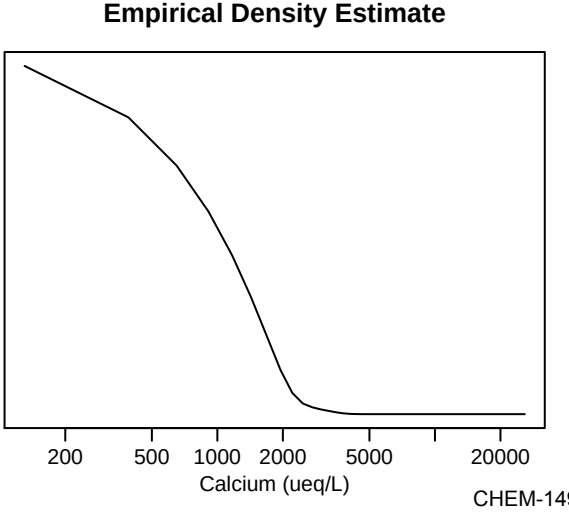
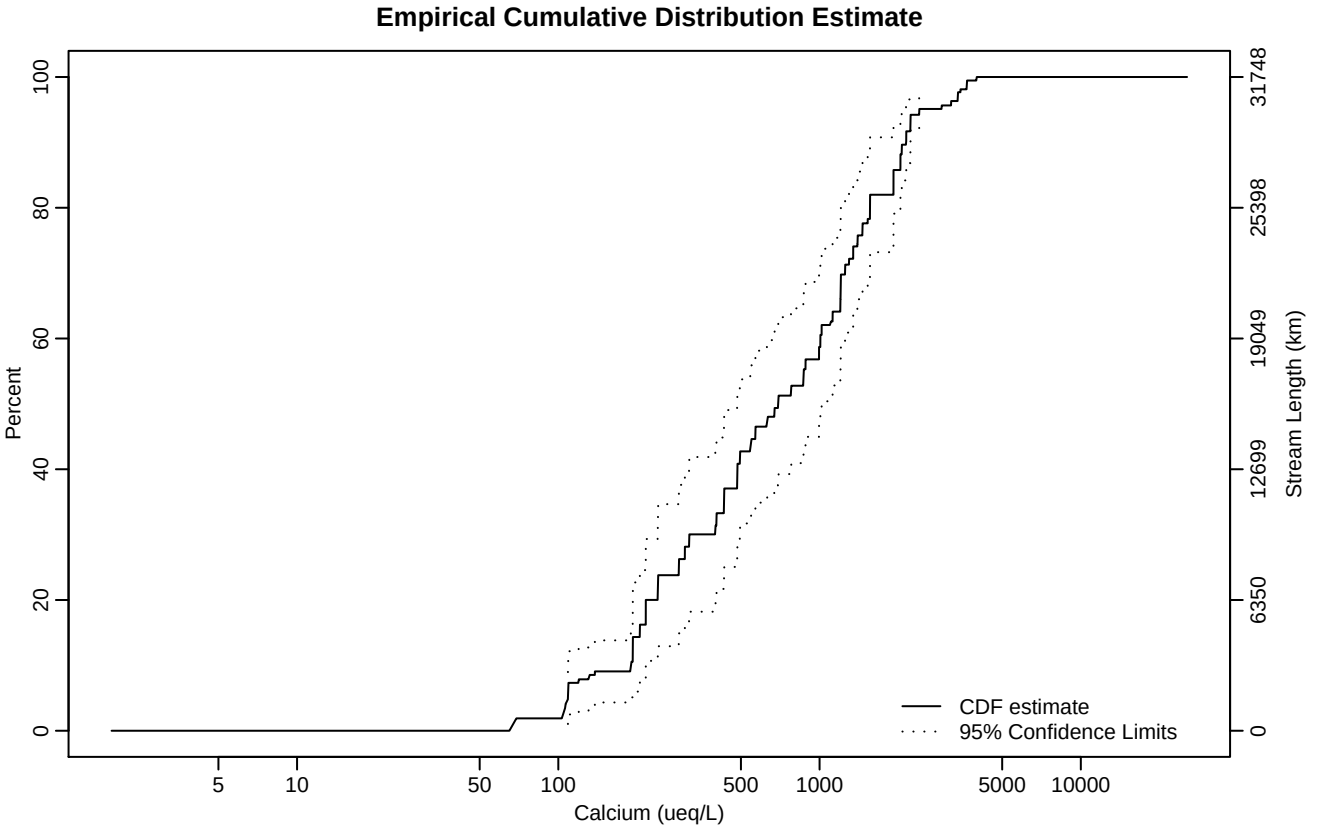


Figure CHEM−147 Indicator: Calcium Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	108.83	67.43	138.03
10Pct	189.78	108.91	205.02
25Pct	289.39	192.93	431.27
50Pct	694.22	483.70	1018.45
75Pct	1398.24	1200.97	1918.89
90Pct	2144.13	1918.74	2934.95
95Pct	2409.08	2226.65	3387.99
Mean	978.82	816.53	1141.11
Std Dev	753.60	651.21	856

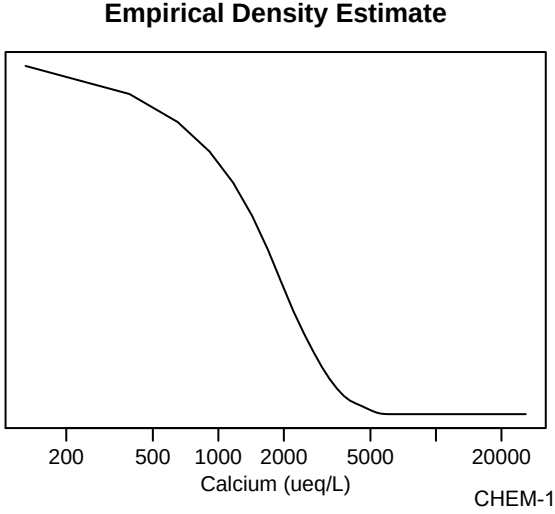
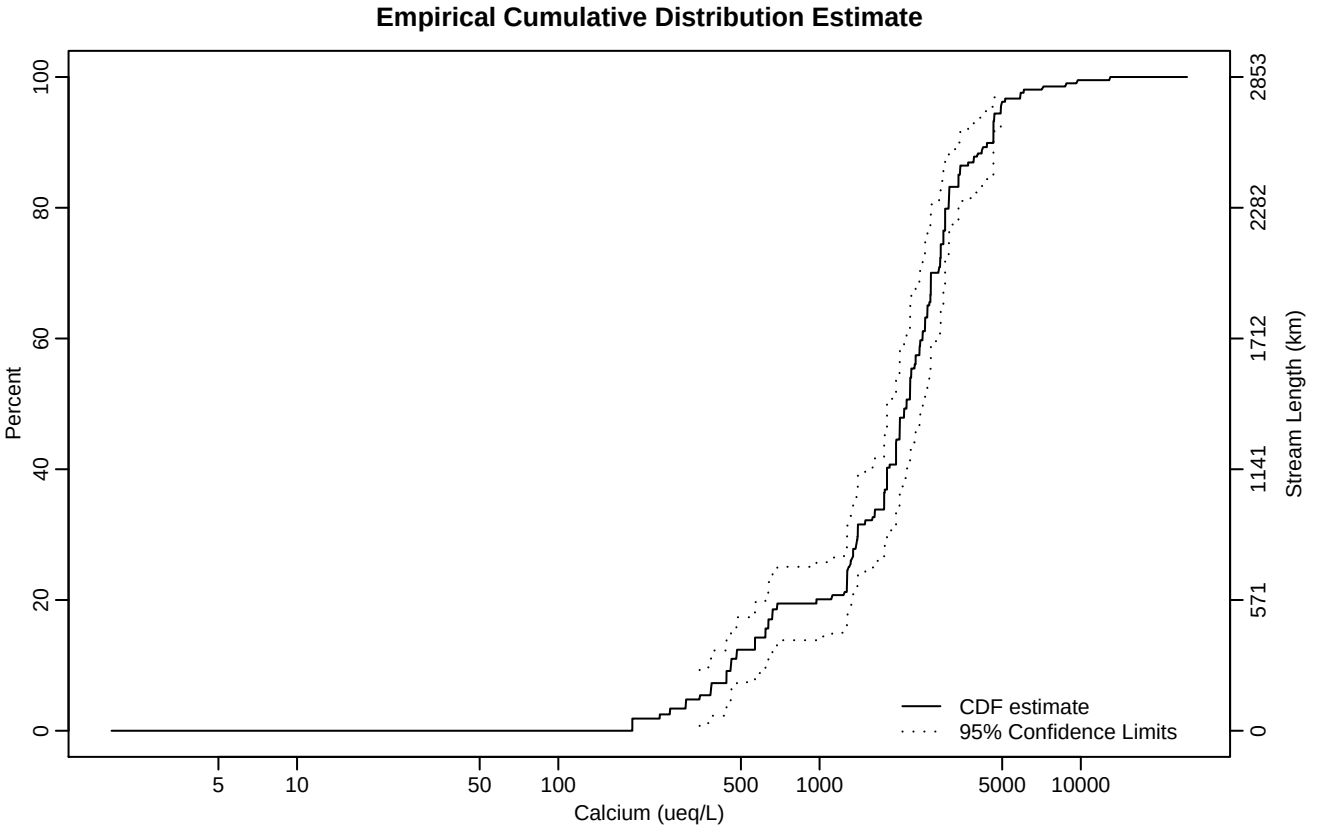


Figure CHEM−148 Indicator: Calcium Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	347.48	191.99	456.17
10Pct	457.85	347.28	620.82
25Pct	1291.37	660.88	1493.73
50Pct	2153.31	1812.09	2481.49
75Pct	2978.35	2630.88	3402.32
90Pct	4626.91	3402.24	4947.05
95Pct	4941.01	4630.60	5882.87
Mean	2324.37	2105.66	2543.08
Std Dev	1491.59	1279.37	1703.80

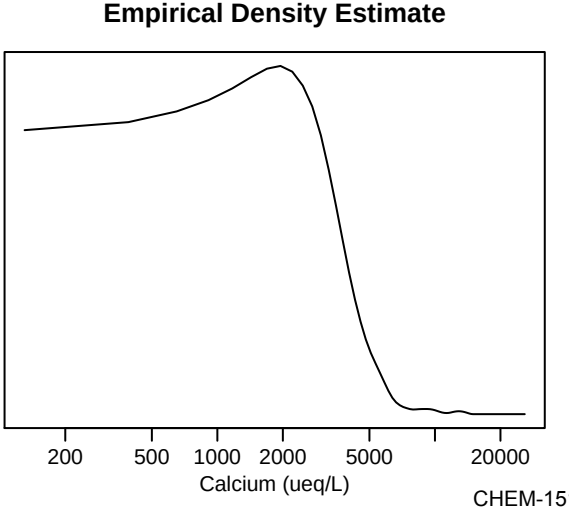
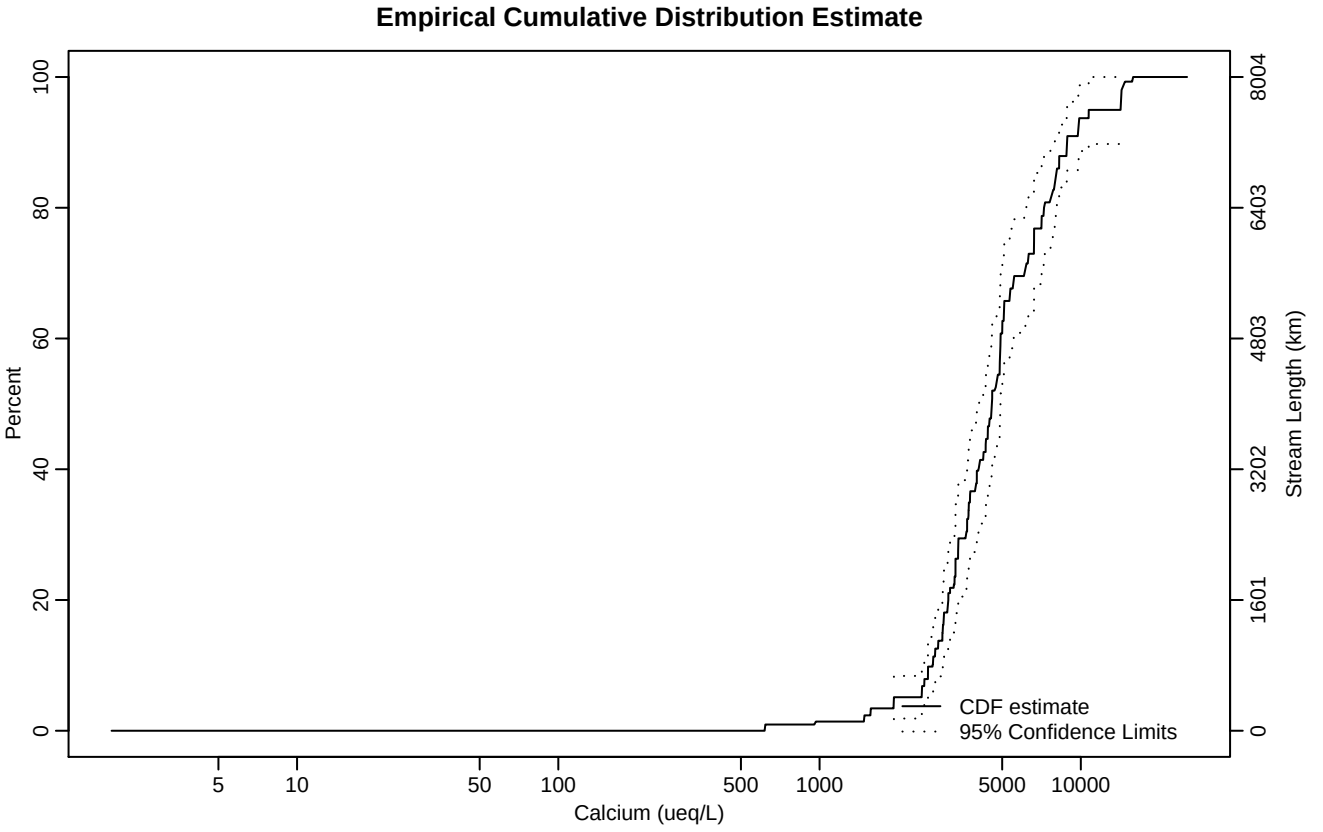


Figure CHEM−149 Indicator: Calcium Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1925.61	1483.60	2519.95
10Pct	2708.72	1925.52	2958.03
25Pct	3313.64	2989.73	3710.28
50Pct	4565.62	3999.34	4932.31
75Pct	6621.95	5332.61	7982.49
90Pct	8858.65	8028.74	14202.96
95Pct	14195.32	8852.31	15858.22
Mean	5364.02	4842.75	5885.28
Std Dev	2563.80	2086.42	3041.18

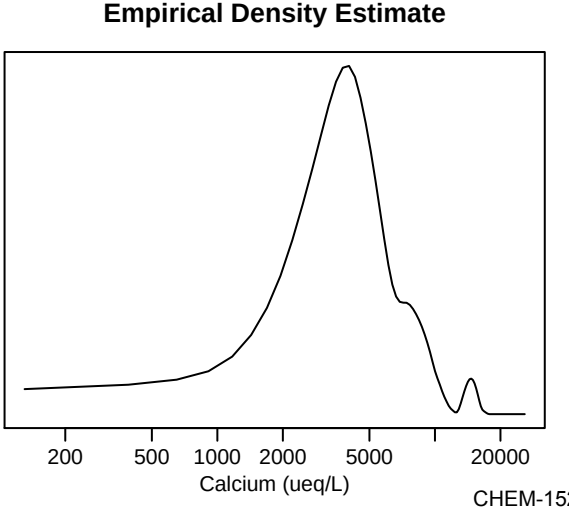
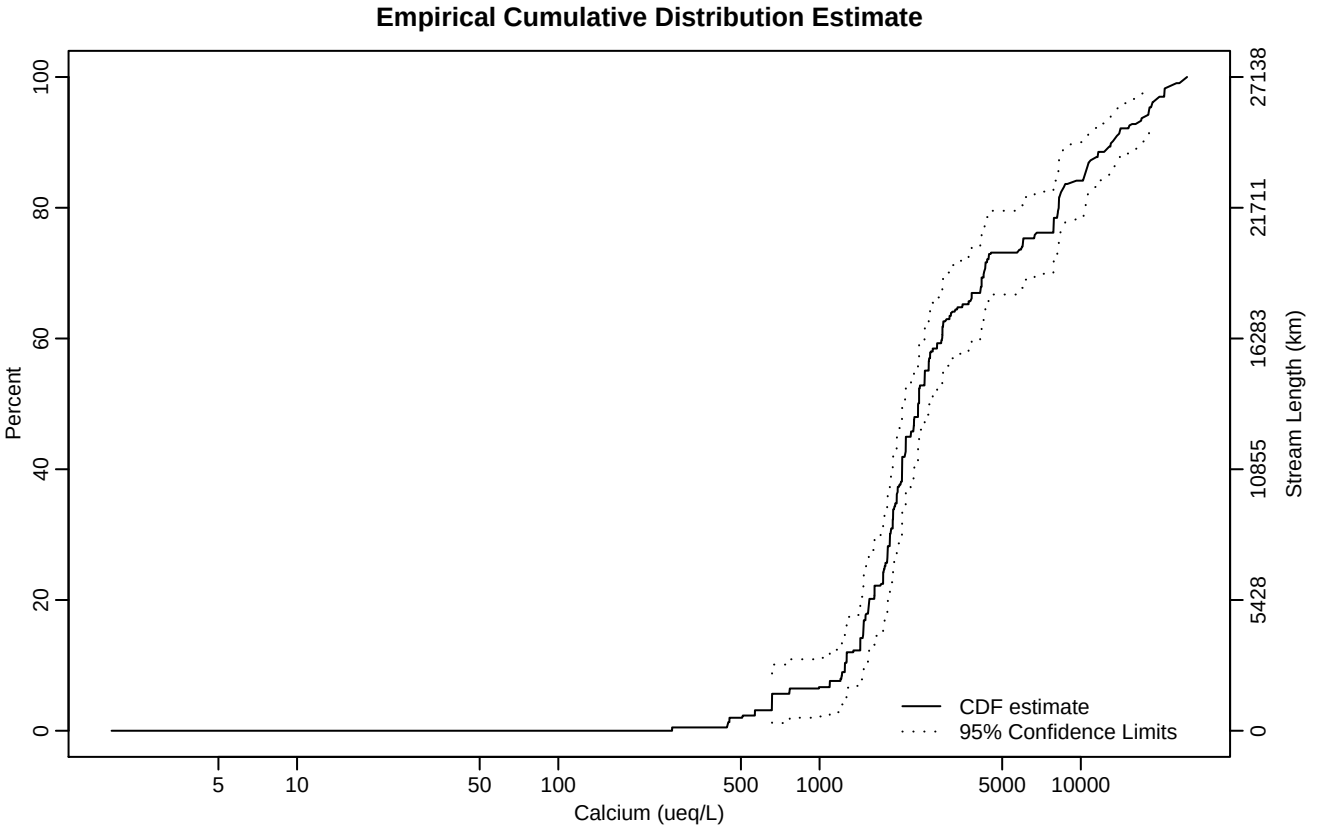


Figure CHEM−150 Indicator: Calcium Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	657.79	656.79	1092.84
10Pct	1250.34	657.83	1469.43
25Pct	1774.51	1498.06	1911.89
50Pct	2385.60	2136.74	2627.51
75Pct	6016.56	4171.60	8251.42
90Pct	13135.82	10494.54	18139.70
95Pct	18264	14031.96	22020.35
Mean	4953.17	4172.97	5733.37
Std Dev	4808.03	3693.45	5922.61

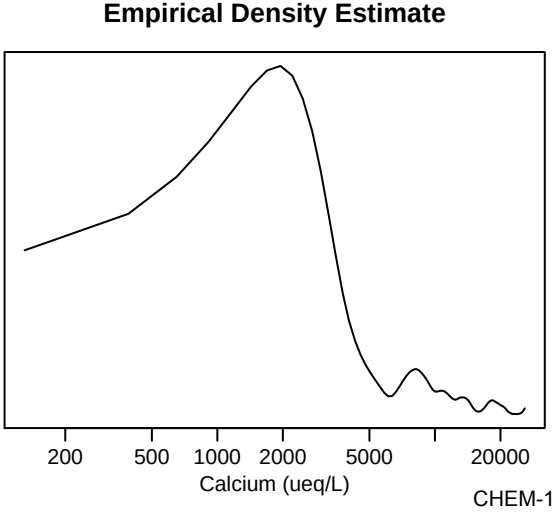
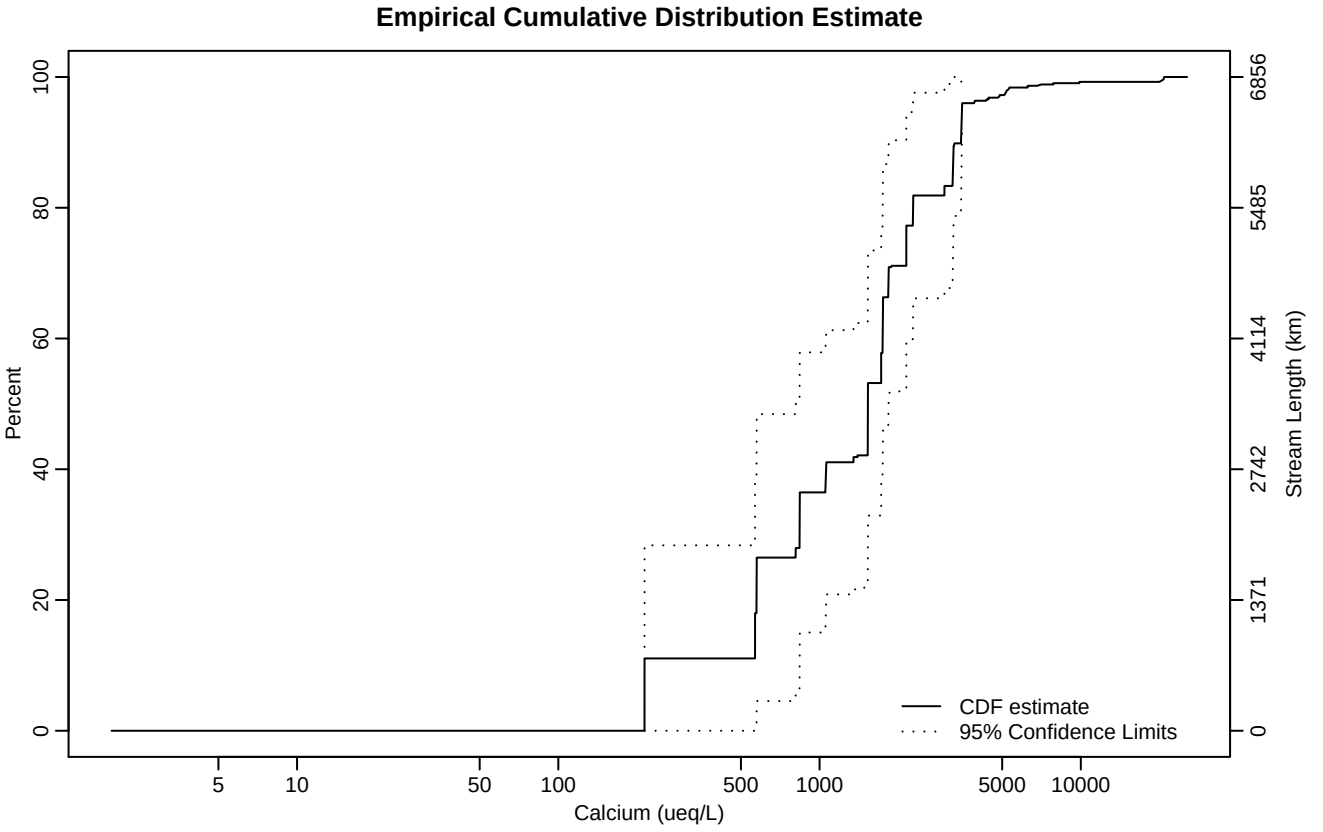


Figure CHEM−151 Indicator: Calcium Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	213.79	213.79	213.80
10Pct	213.82	213.81	566.29
25Pct	574.55	213.79	1529.70
50Pct	1531.07	838.48	1839.03
75Pct	2148.27	1721.18	3501.70
90Pct	3478.23	2278.25	20843.53
95Pct	3508.44	3231.58	20843.53
Mean	1790.25	1306.16	2274.34
Std Dev	2051.53	1417.26	2685.80

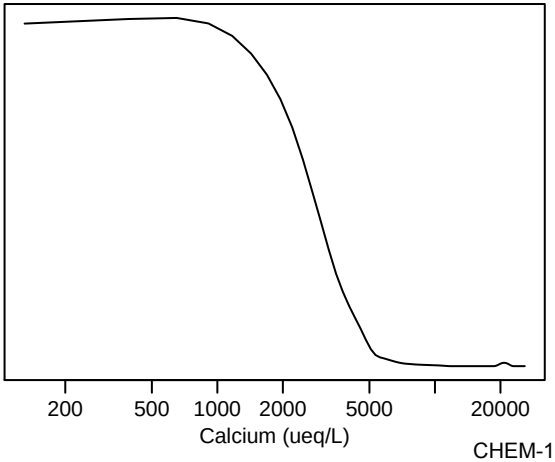
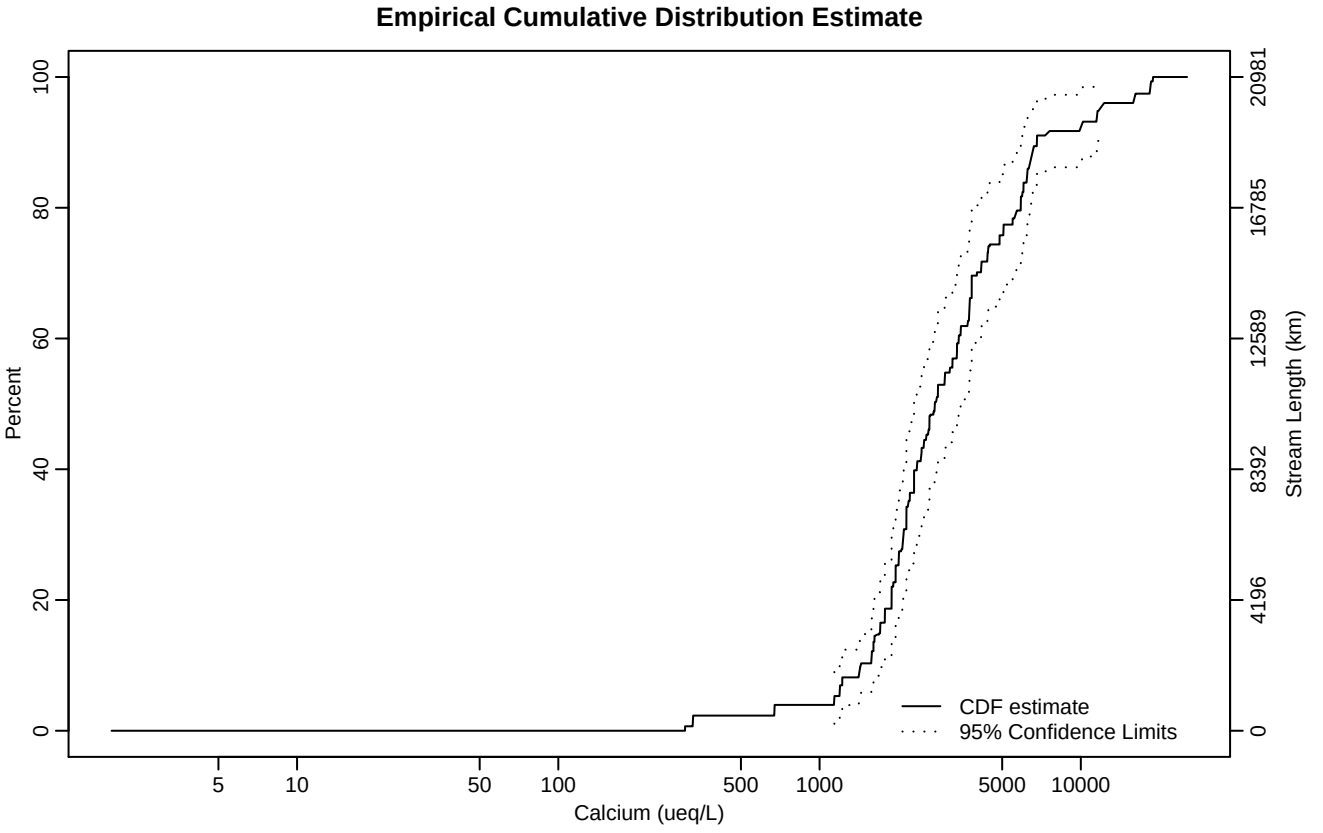


Figure CHEM−152 Indicator: Calcium Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1139.09	327.50	1414.21
10Pct	1436.78	1192.88	1623.08
25Pct	1955.74	1708.85	2150.85
50Pct	2762.70	2300.26	3469.91
75Pct	4886.59	3756.96	6214.17
90Pct	6788.35	6204.78	12231.36
95Pct	11769.21	6792.79	18868.12
Mean	4056.70	3285.60	4827.81
Std Dev	3536.73	2531.91	4541.56

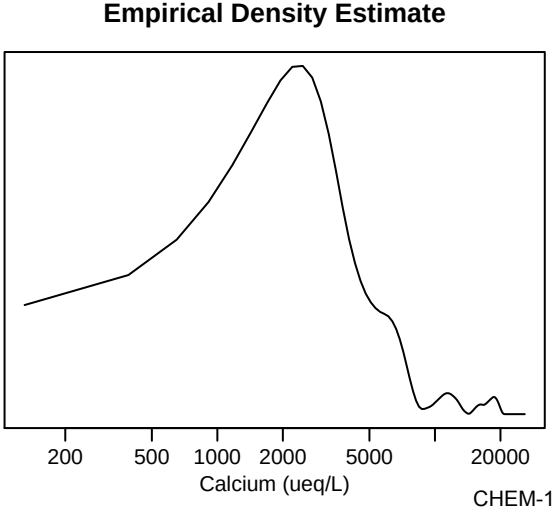
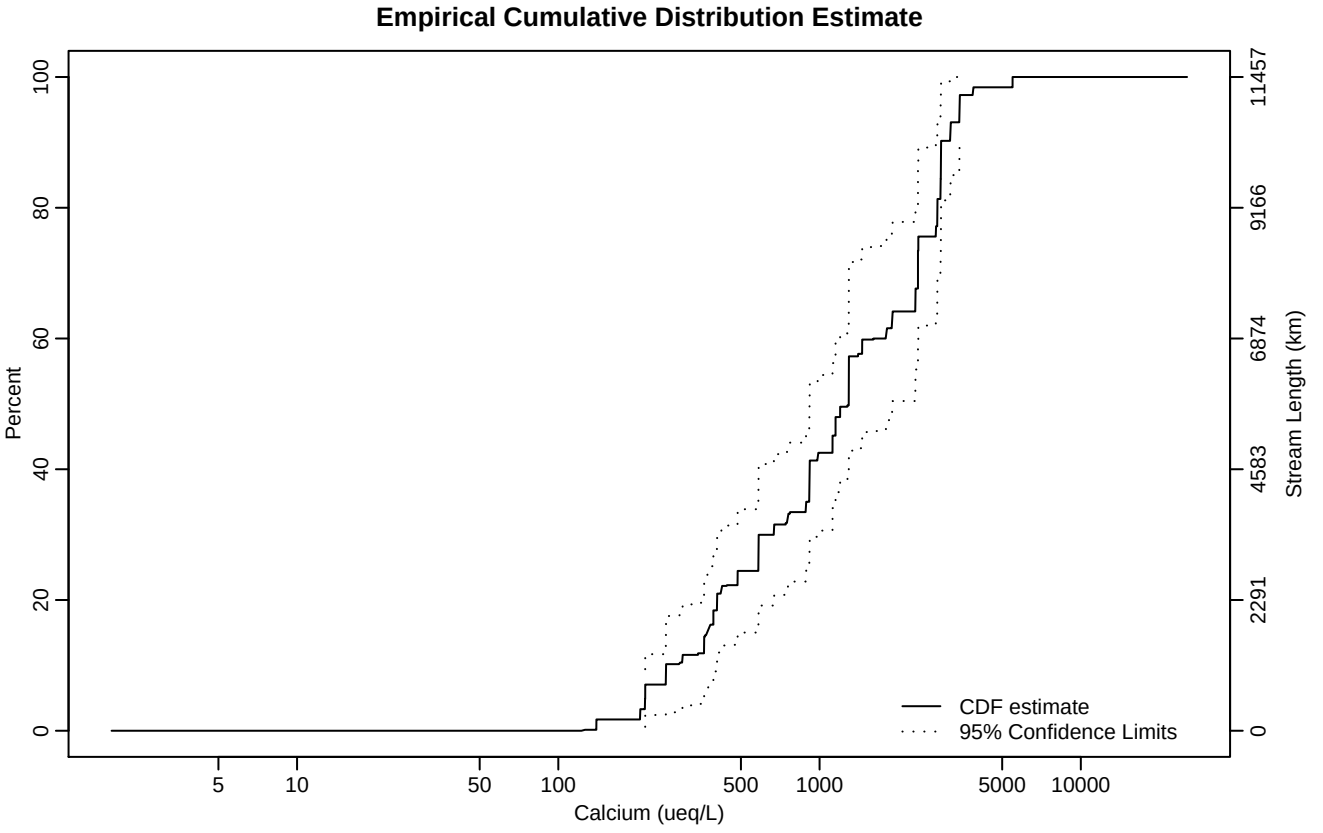


Figure CHEM−153 Indicator: Calcium Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	215.08	139.81	258.38
10Pct	258.53	215.08	369.86
25Pct	583.03	365	913.07
50Pct	1292.99	914.17	1897.66
75Pct	2388.08	1888.60	2916.24
90Pct	2918.78	2821.46	5480.97
95Pct	3433.73	2914.13	5480.97
Mean	1575.56	1290.46	1860.65
Std Dev	1018.02	791.92	1244.13

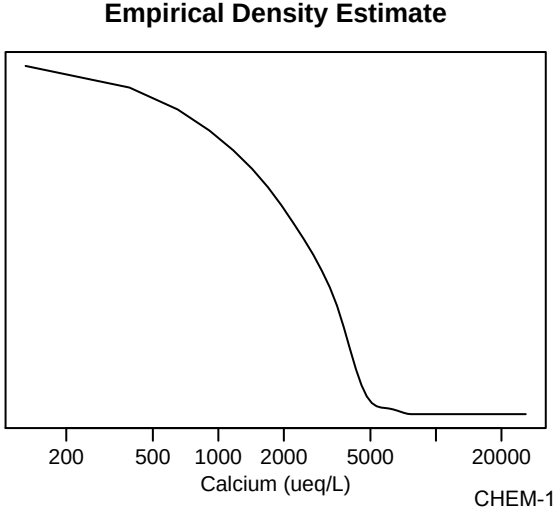
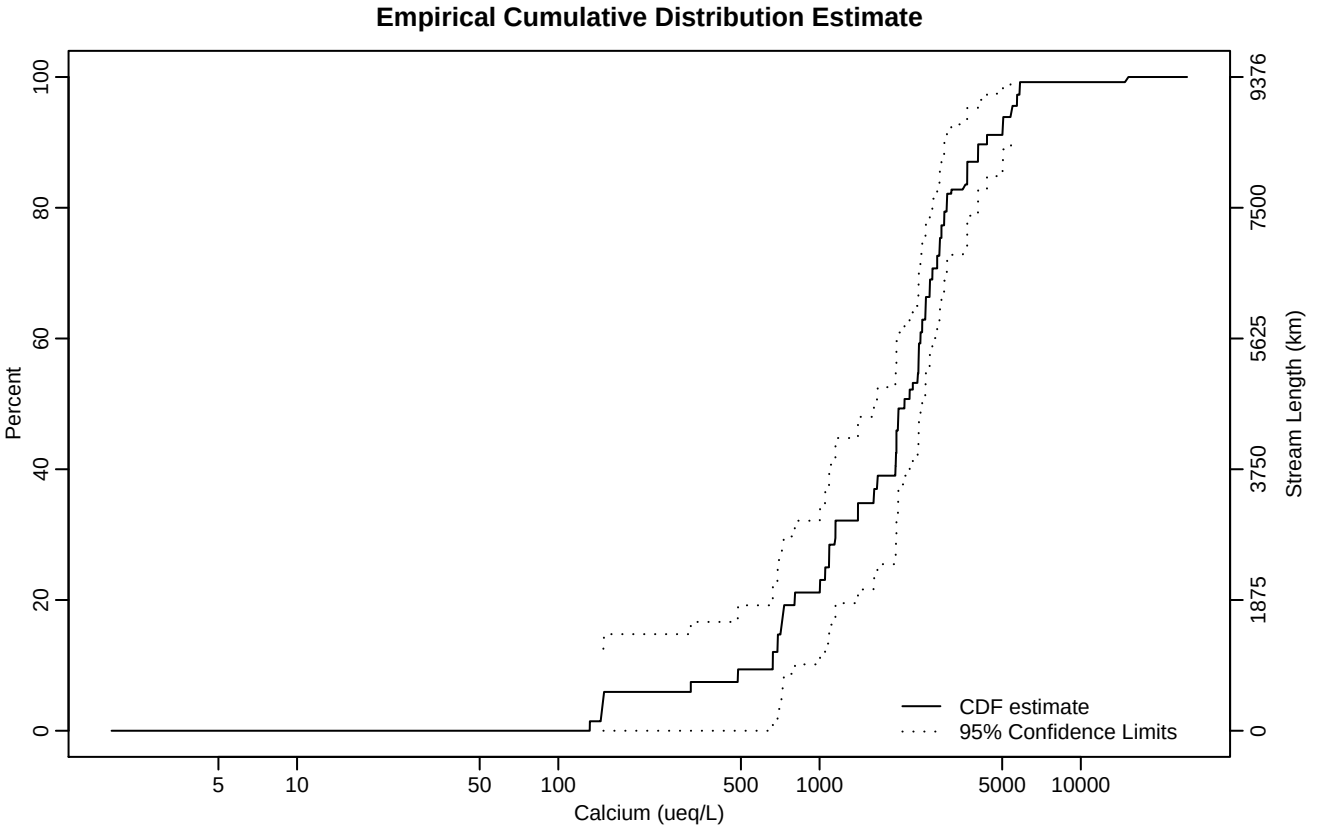


Figure CHEM−154 Indicator: Calcium Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	148.76	146.08	486.10
10Pct	661.98	1.95	803.41
25Pct	1086.28	690.31	1660.32
50Pct	2113.47	1664.83	2470.76
75Pct	2888.69	2544.02	3675.74
90Pct	4373.82	3554.94	5703.72
95Pct	5444.50	4373.85	15152.76
Mean	2307.39	1931.22	2683.57
Std Dev	1430.96	1134.76	1727.15

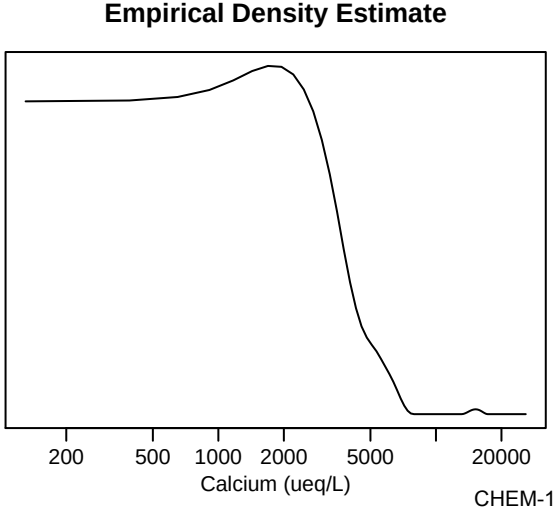
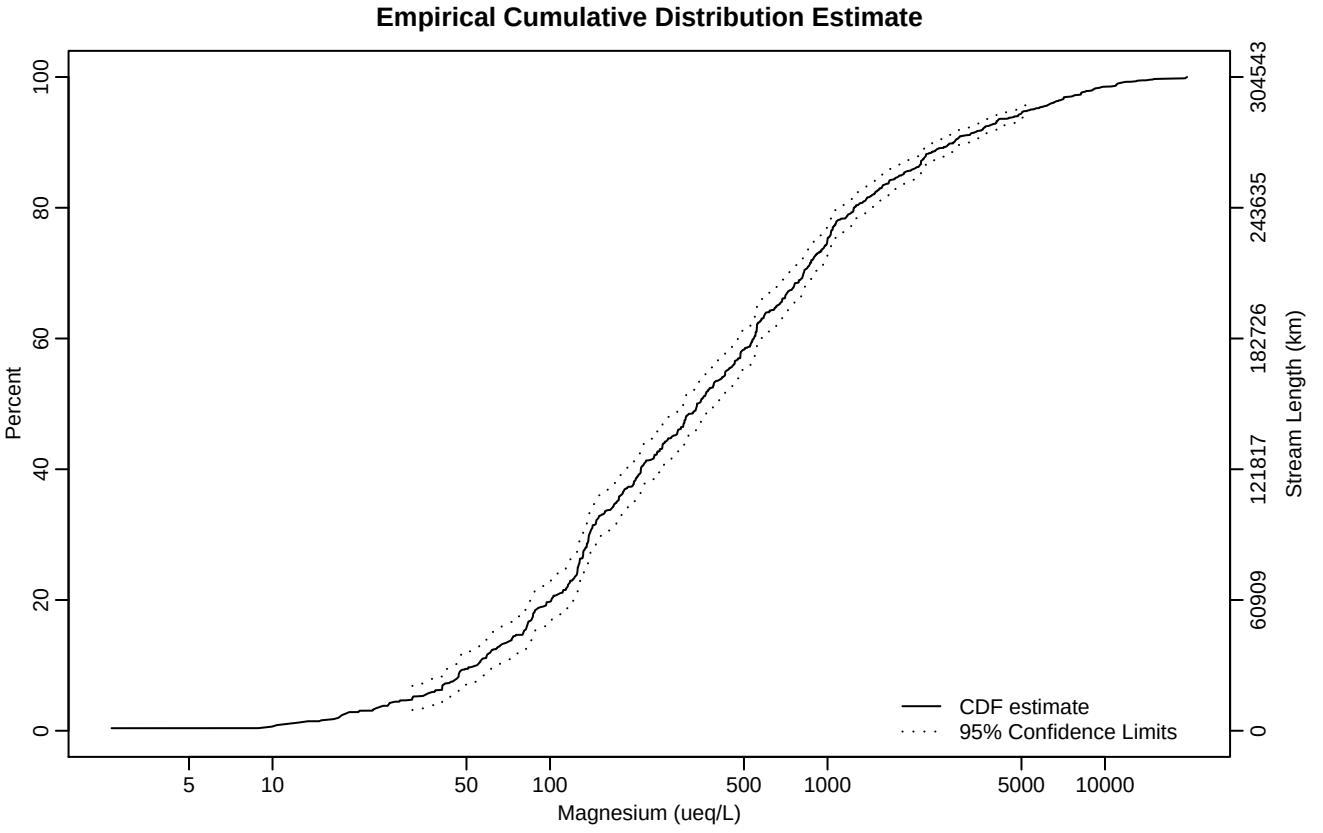
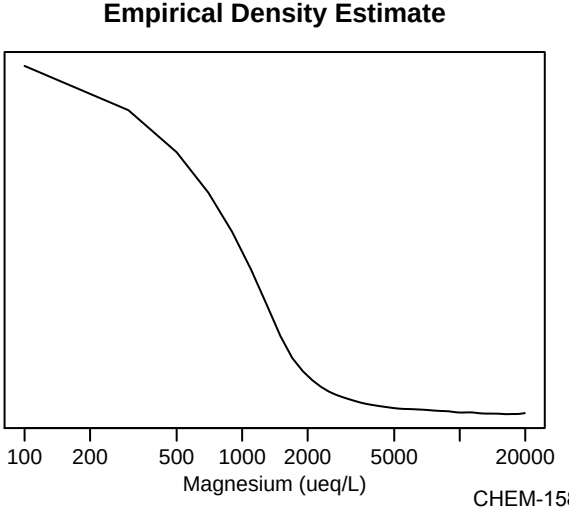


Figure CHEM−155 Indicator: Magnesium Subpopulation: West−wide



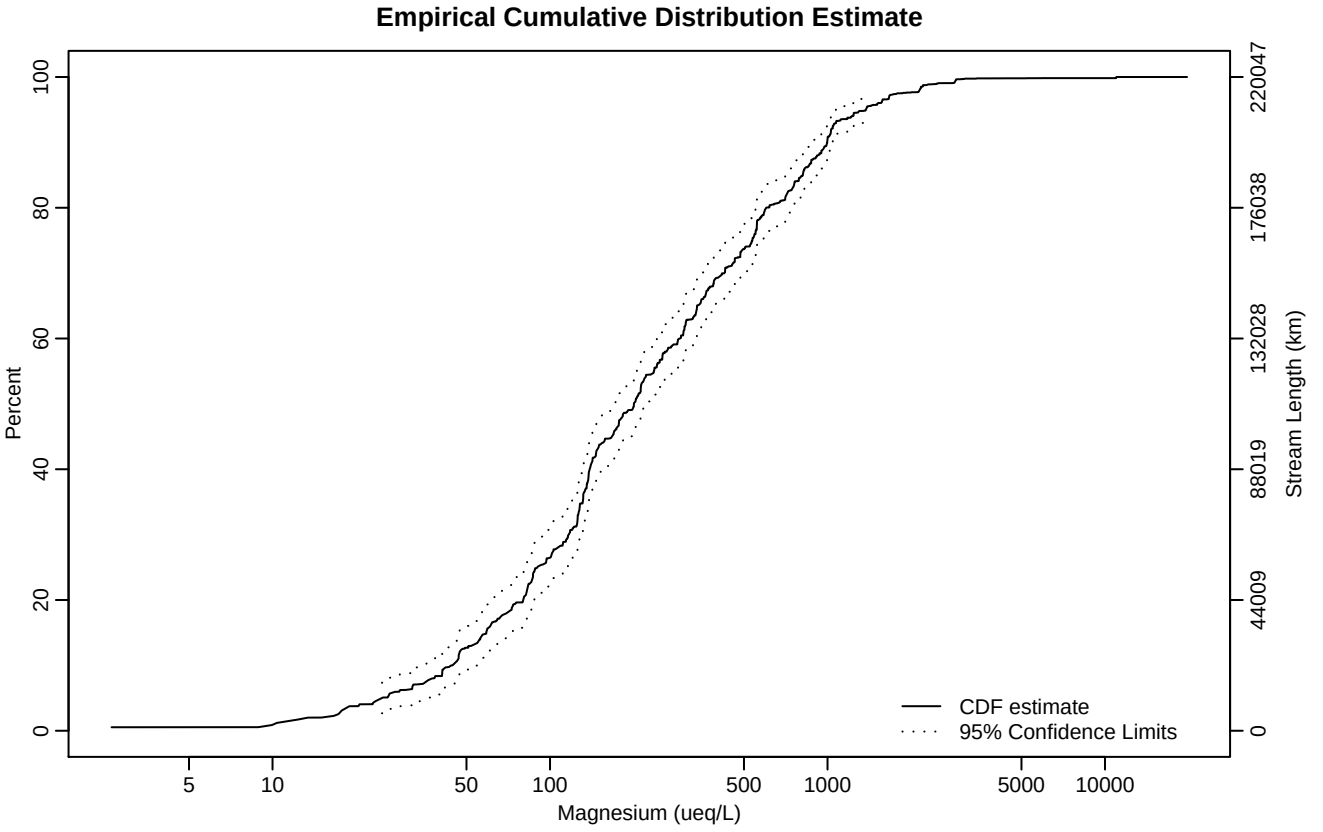
Summary Statistics

Statistic	Est	LCB	UCB
5Pct	31.92	23	40.93
10Pct	54.31	44.61	62.80
25Pct	125.86	114.08	135.67
50Pct	338.77	302.20	391.72
75Pct	999.13	900.71	1066.20
90Pct	2842.99	2443.20	3287.83
95Pct	5378.79	4861.06	6335.75
Mean	1126.61	1031.22	1222
Std Dev	1558.42	1337.45	1779.39



CHEM-158

Figure CHEM−156 Indicator: Magnesium Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	24.79	17.49	34.99
10Pct	44.51	32.05	52.62
25Pct	90.02	81.44	115.10
50Pct	200.64	170.42	221.61
75Pct	535.97	452.83	578.89
90Pct	997.51	874.42	1053.45
95Pct	1375.15	1073.75	1667.81
Mean	410.35	362.25	458.45
Std Dev	473.35	379.08	567.62

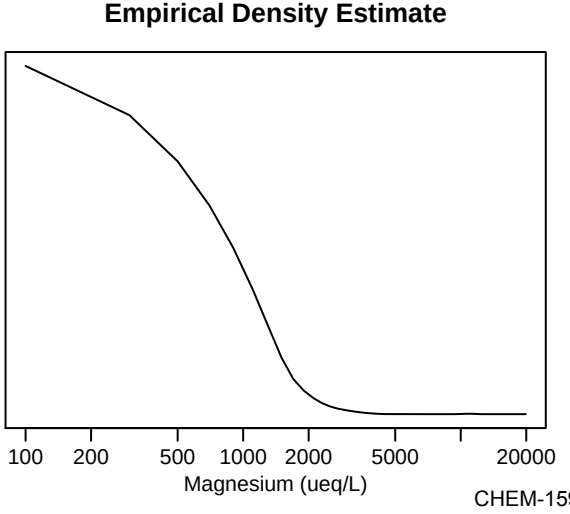
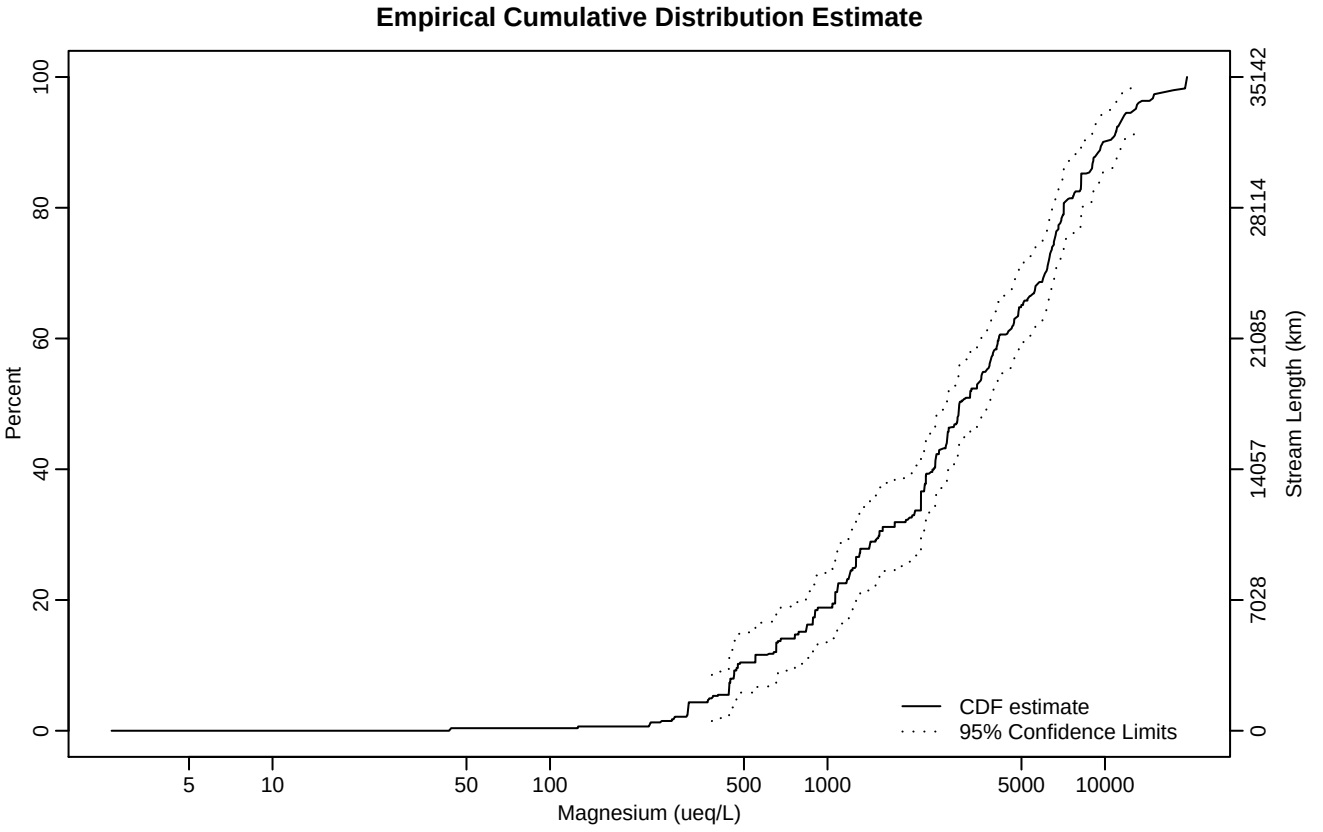


Figure CHEM−157 Indicator: Magnesium Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	382.93	252.61	460.61
10Pct	475.25	402.98	762.85
25Pct	1260.13	922.15	1746.49
50Pct	2986.24	2690.68	3837.49
75Pct	6564.68	5980.79	7156.84
90Pct	9826.63	8729.68	12475.34
95Pct	12801.99	10880.26	19523.96
Mean	4526.96	3904.97	5148.95
Std Dev	4046.55	3239.52	4853.59

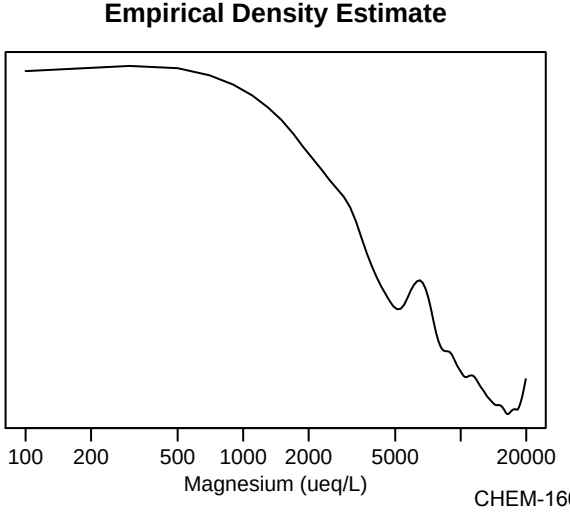
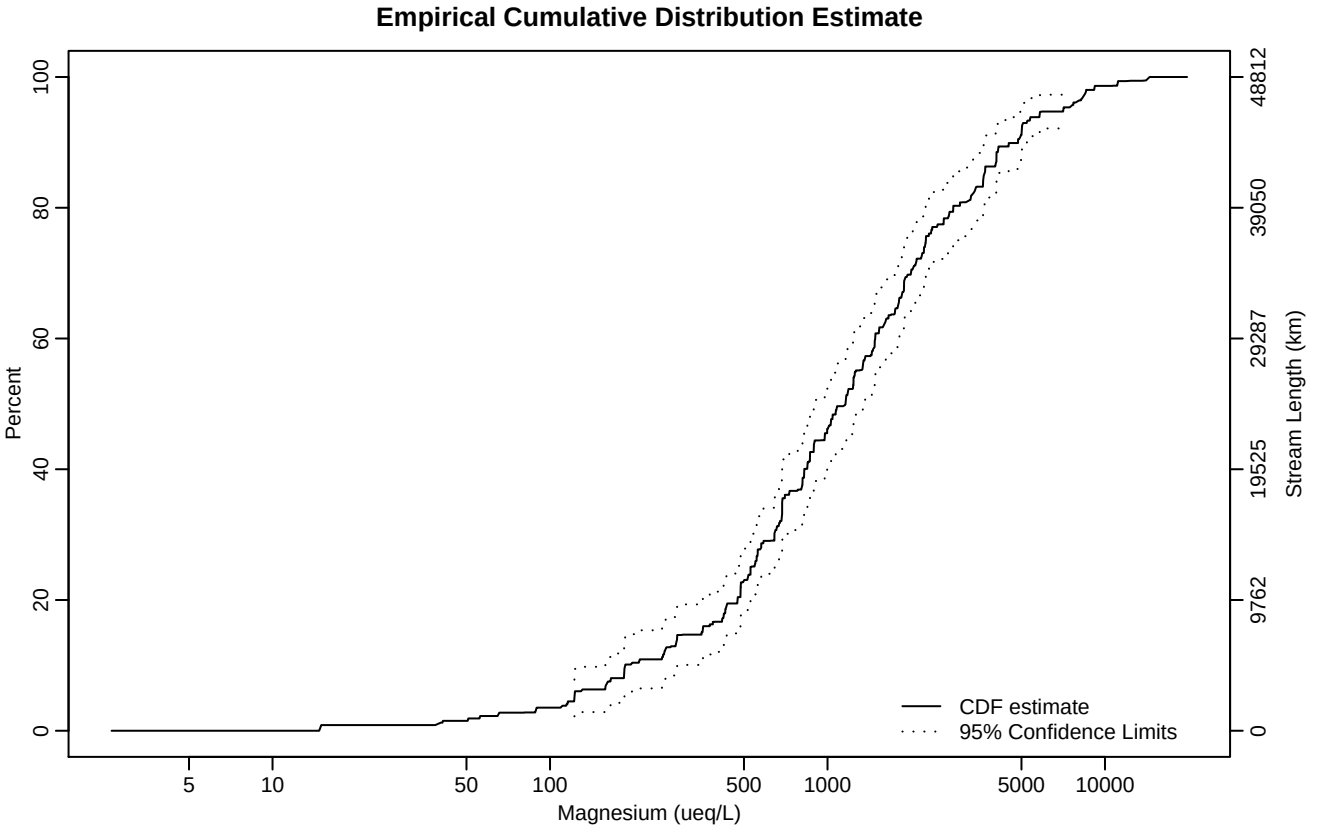


Figure CHEM−158 Indicator: Magnesium Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	122.43	65.22	161.46
10Pct	186.58	122.70	287.24
25Pct	527.95	473.03	646.94
50Pct	1160.81	892.13	1364.78
75Pct	2261.43	1934.31	3001.20
90Pct	4860.33	3701.48	5805.37
95Pct	7078.48	5024.76	8491.84
Mean	1918.58	1657.90	2179.26
Std Dev	1938.34	1626.27	2250.41

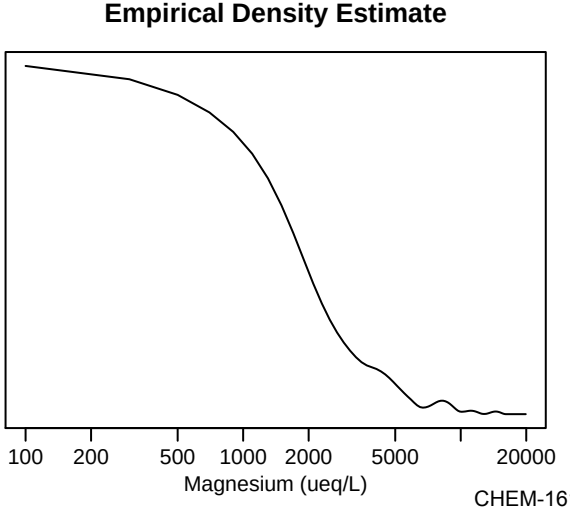
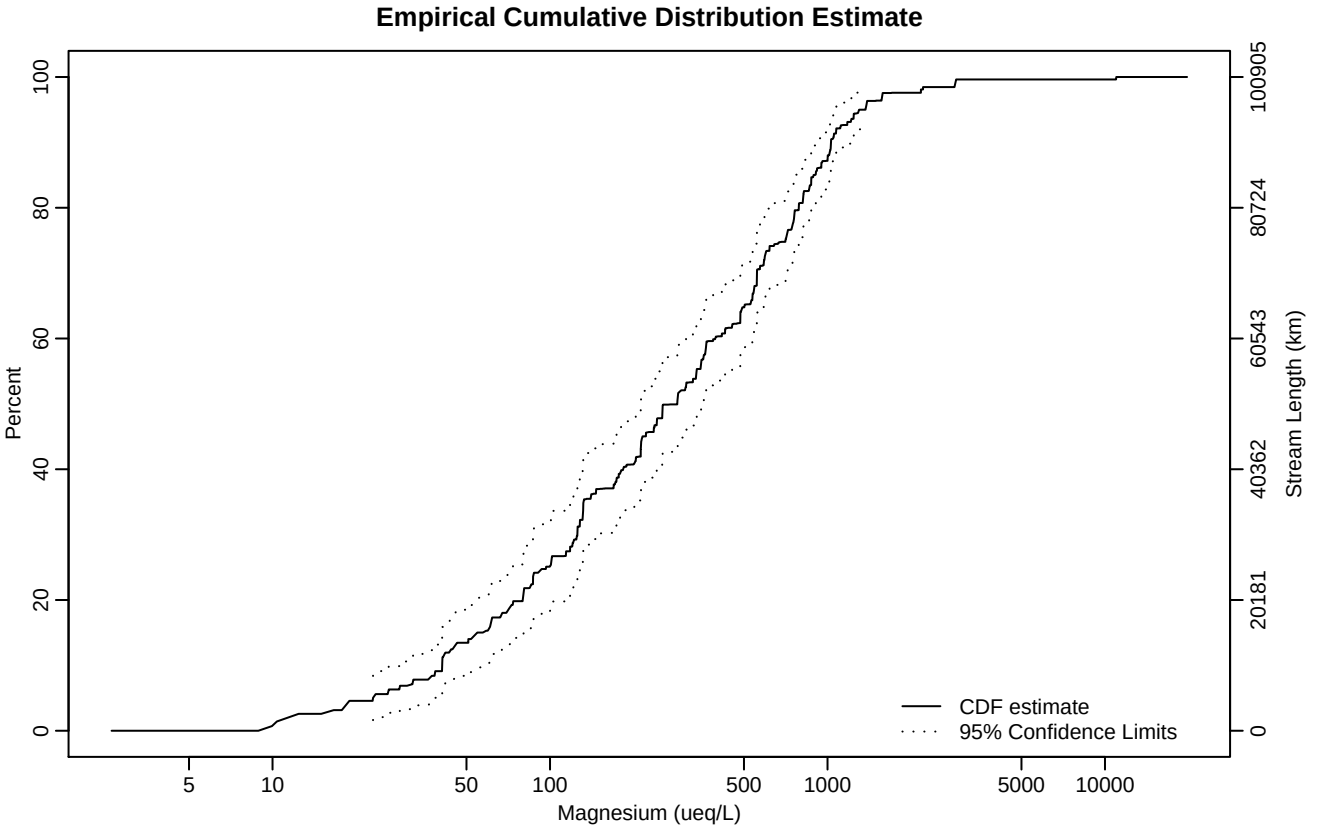


Figure CHEM−159 Indicator: Magnesium Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	23.02	10.76	37.43
10Pct	40.86	26.10	52.14
25Pct	96.79	69.95	128.13
50Pct	287.42	212.29	357.24
75Pct	705.67	556.26	815.81
90Pct	1029.30	916.43	1243.05
95Pct	1370.30	1074.57	2208.96
Mean	487.84	396.47	579.22
Std Dev	579.77	393.92	765.61

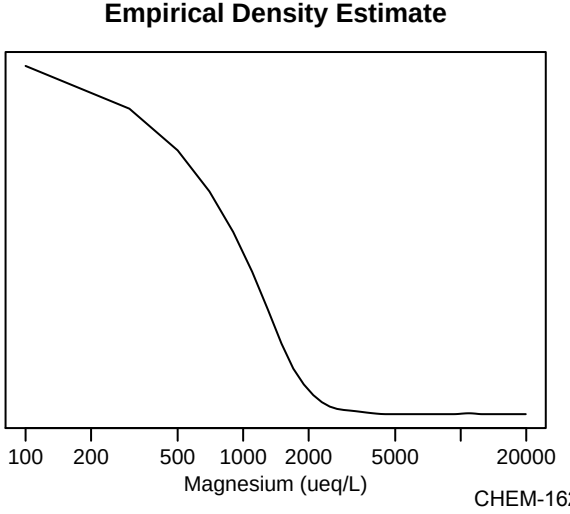
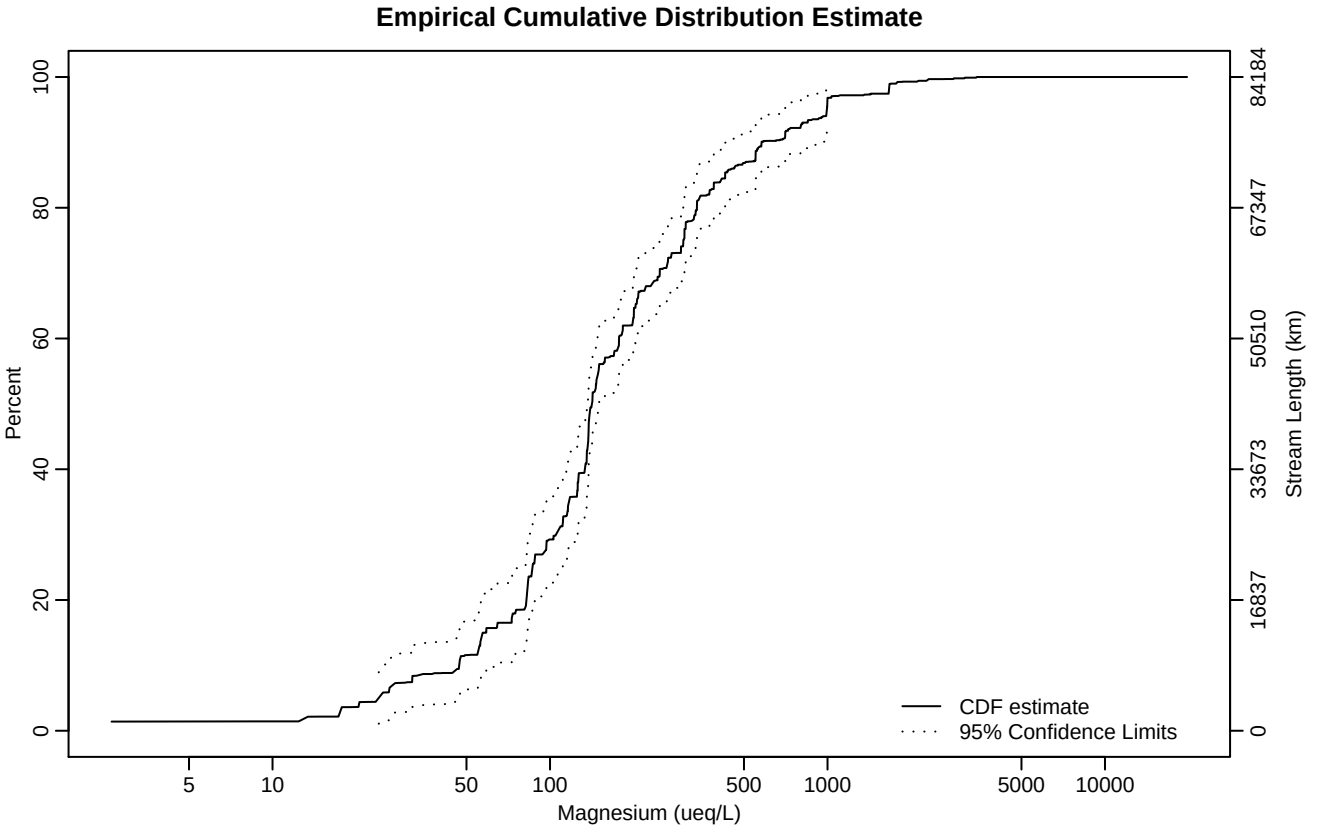


Figure CHEM−160 Indicator: Magnesium Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	24.13	2.63	37.63
10Pct	47.07	24.30	57.06
25Pct	86.46	75.39	111.07
50Pct	141.60	136.44	157.69
75Pct	302.33	244.14	338.65
90Pct	578.69	438.32	990.68
95Pct	994.64	703.86	1688.52
Mean	270.48	227.66	313.29
Std Dev	293.30	239.57	347.02

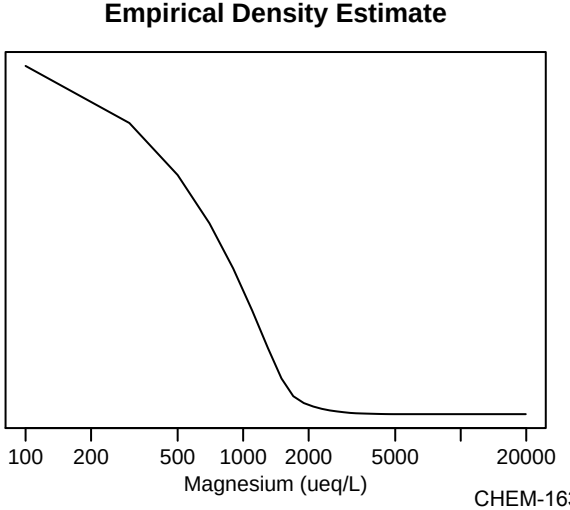


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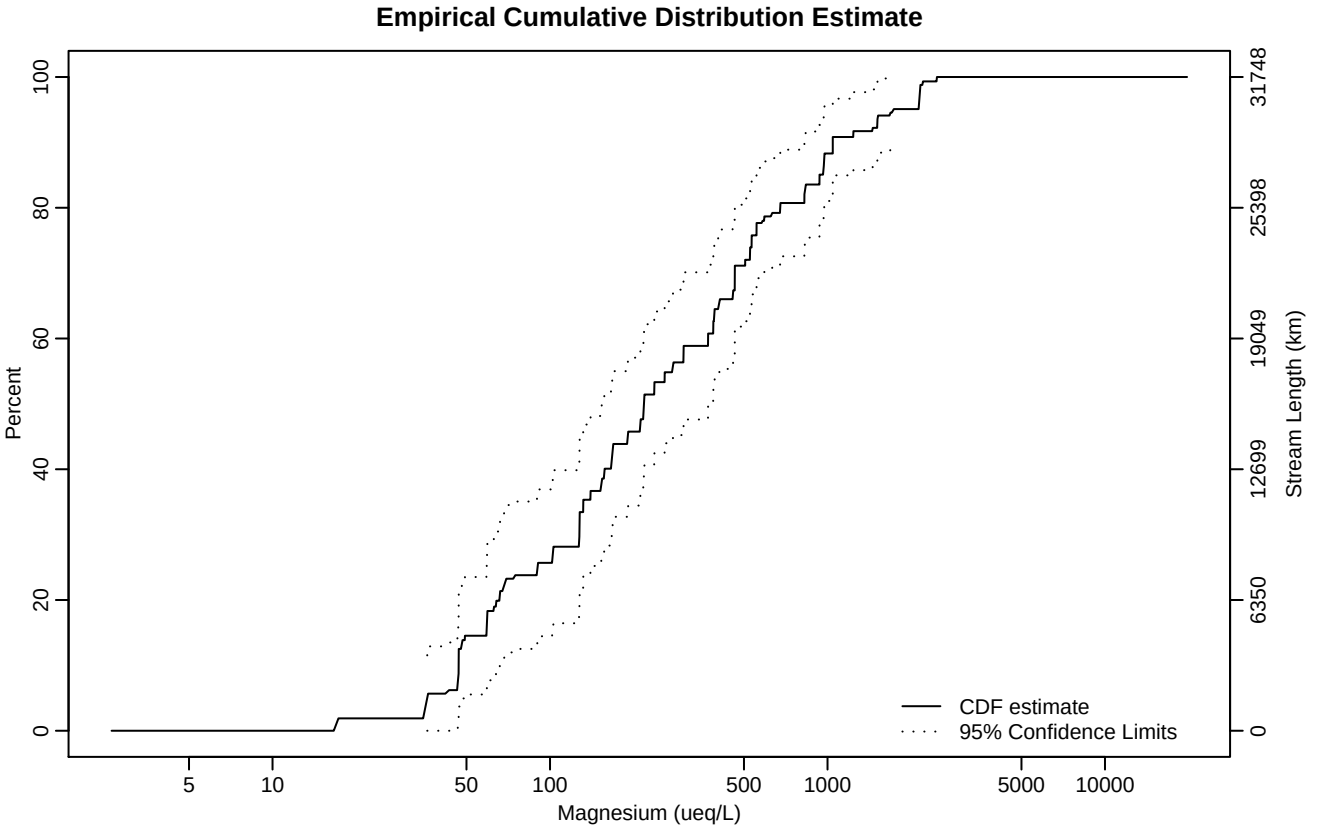
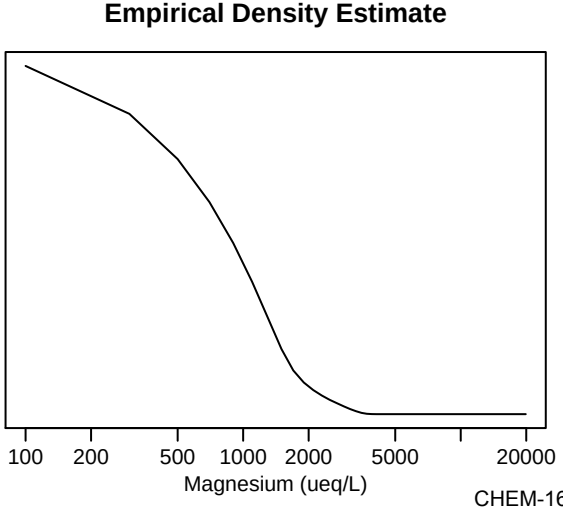
Figure CHEM−161 Indicator: Magnesium Subpopulation: MT−SROCK



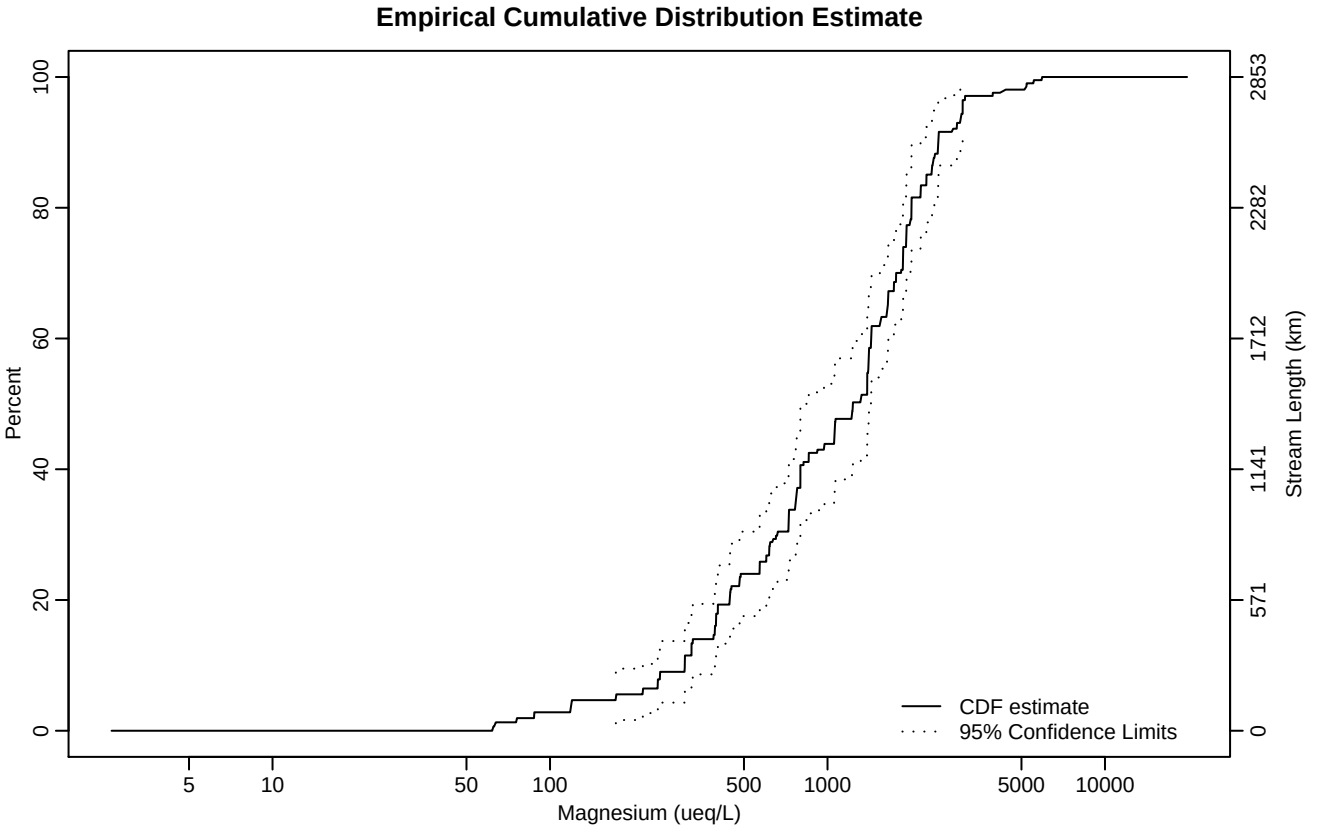
Summary Statistics

Statistic	Est	LCB	UCB
5Pct	36.10	17.22	46.72
10Pct	46.85	35.02	59.42
25Pct	90.18	48.28	139.98
50Pct	218.04	156.57	387.34
75Pct	532.87	407.71	935.73
90Pct	1044.74	827.38	2152.64
95Pct	1728.87	1044.73	2479.67
Mean	448.91	332.10	565.72
Std Dev	420.61	347.30	493.92



CHEM-164

Figure CHEM−162 Indicator: Magnesium Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	172.67	63.58	249.31
10Pct	305.95	172.83	392.25
25Pct	569.61	402.58	724.01
50Pct	1234.42	798.61	1435.11
75Pct	1921.36	1734.21	2166.38
90Pct	2507.55	2167.55	3937.83
95Pct	3069.33	2513.12	5527.30
Mean	1365.65	1239.59	1491.70
Std Dev	978.74	855.77	1101.72

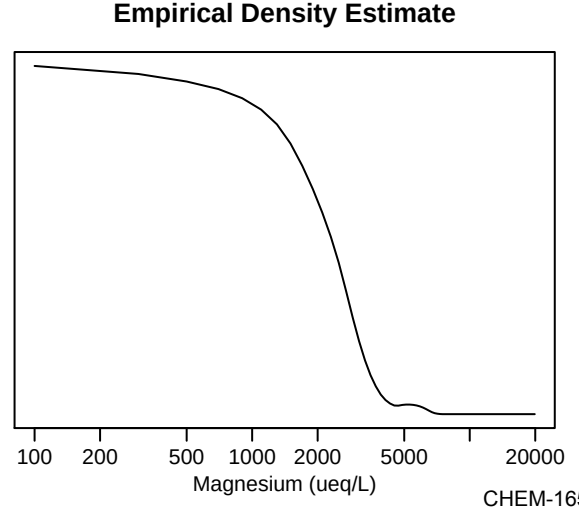
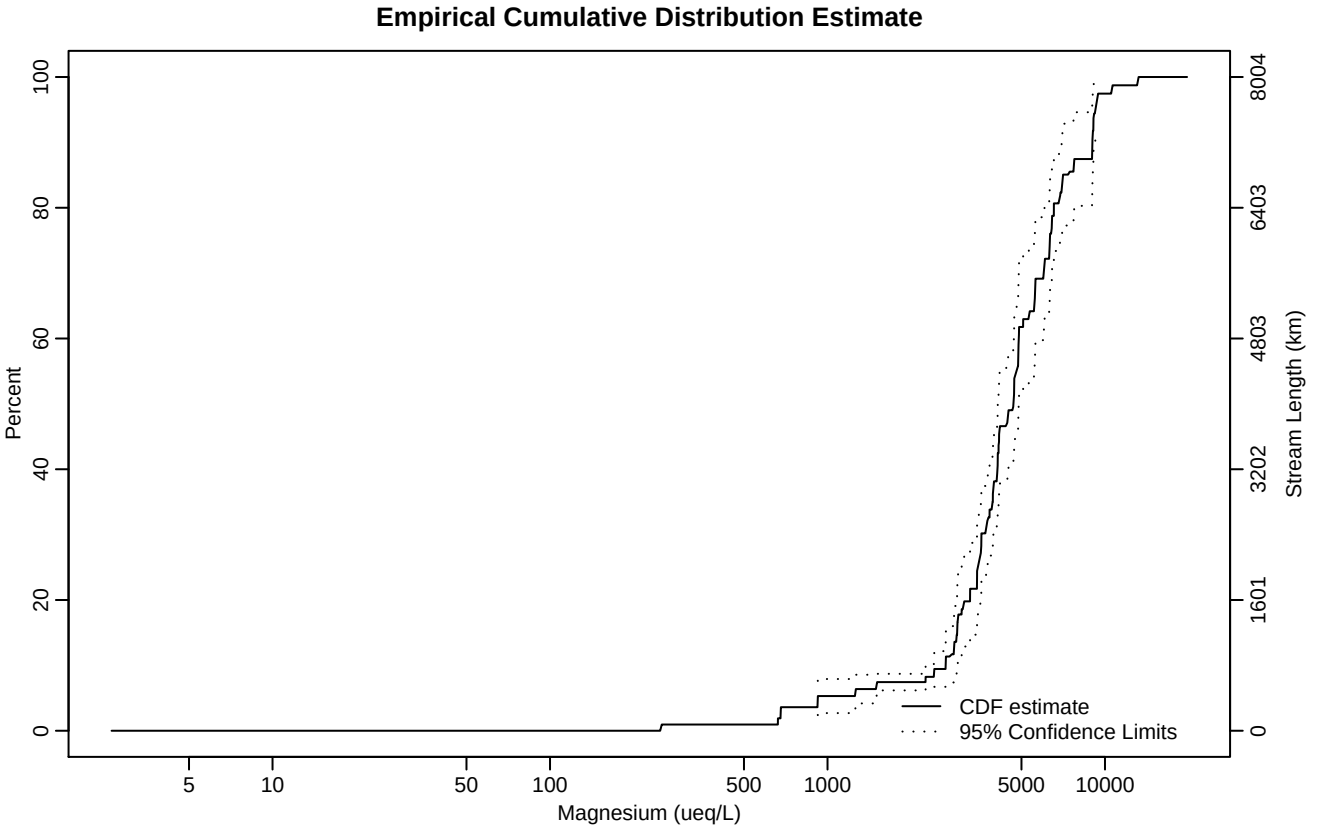


Figure CHEM−163 Indicator: Magnesium Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	922.47	677.32	2256.02
10Pct	2665.51	1495.45	2866.66
25Pct	3482.02	2955.14	3836.02
50Pct	4677.08	4104.49	4880.15
75Pct	6328.65	5591.34	7006.21
90Pct	9007.87	6981.74	9423.19
95Pct	9239.23	9009.36	13201.35
Mean	5002.04	4634.08	5369.99
Std Dev	2057.27	1708.45	2406.08

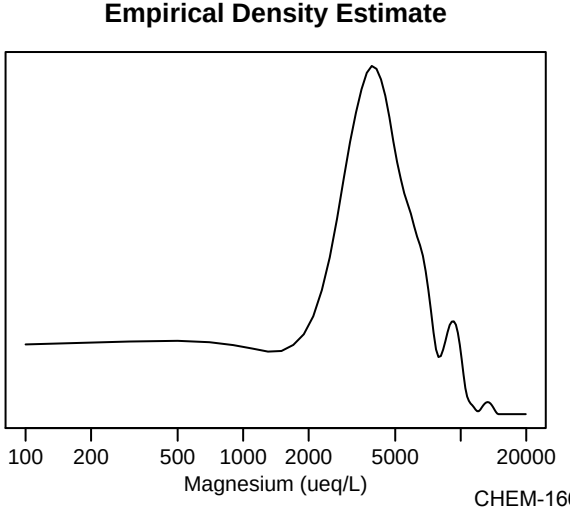
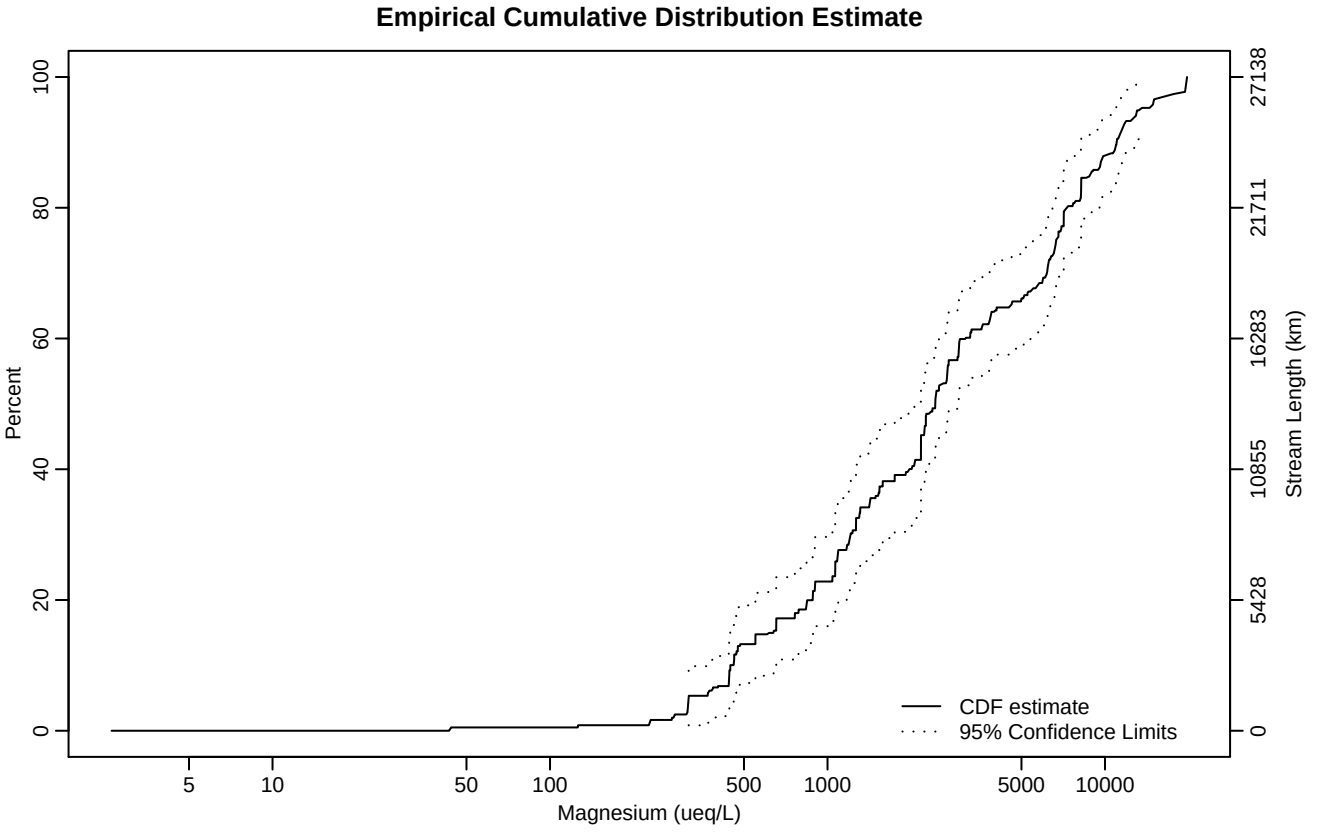


Figure CHEM−164 Indicator: Magnesium Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	315.90	313.37	403.11
10Pct	446.56	314.95	653.34
25Pct	1066.33	786.20	1267.07
50Pct	2445.35	2171.34	2967.37
75Pct	6668.09	5695.94	8191.98
90Pct	11017.50	8210.75	14875.35
95Pct	13328.51	11160.09	19674.77
Mean	4386.83	3589.02	5184.65
Std Dev	4491.31	3457.23	5525.39

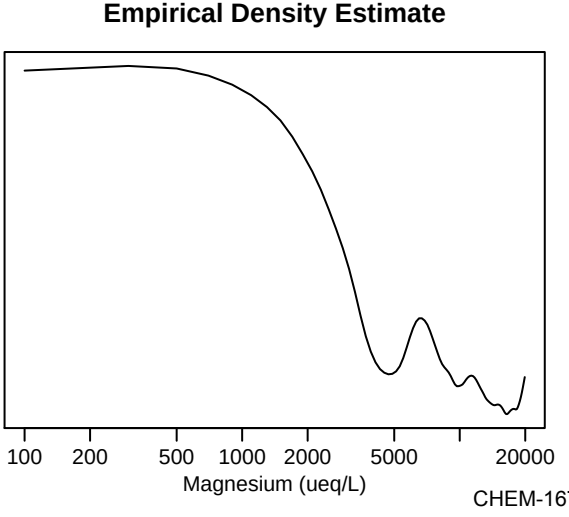
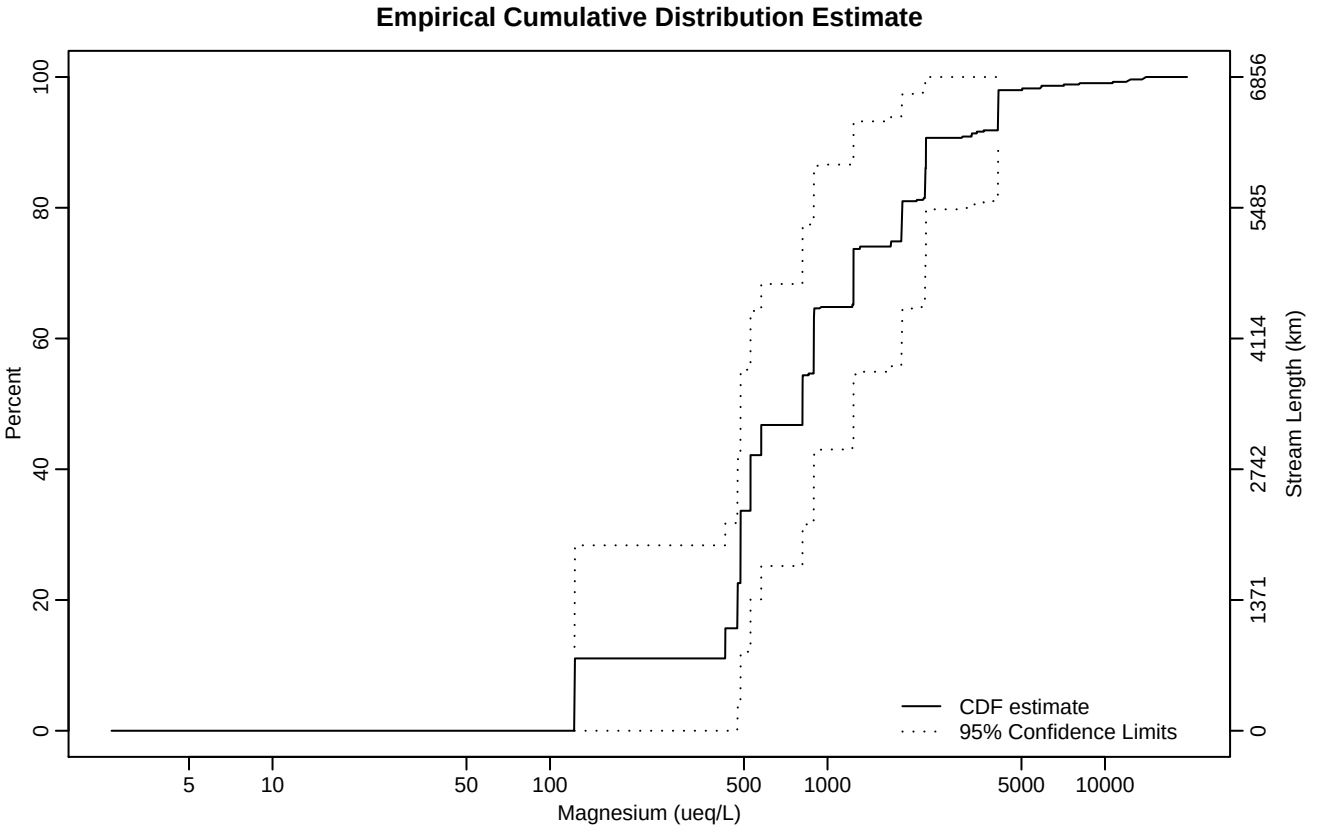


Figure CHEM−165 Indicator: Magnesium Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	122.53	122.45	122.61
10Pct	122.90	122.74	427.94
25Pct	485.66	122.61	576.98
50Pct	812.59	485.99	1240.81
75Pct	1844.74	891.76	4118.12
90Pct	2264.32	1848.51	14060.55
95Pct	4121.78	2250.36	14060.55
Mean	1288.06	795.17	1780.95
Std Dev	1608.86	1166.05	2051.68

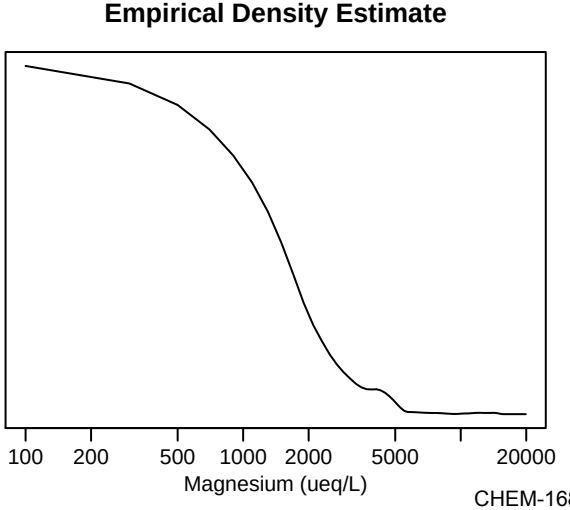
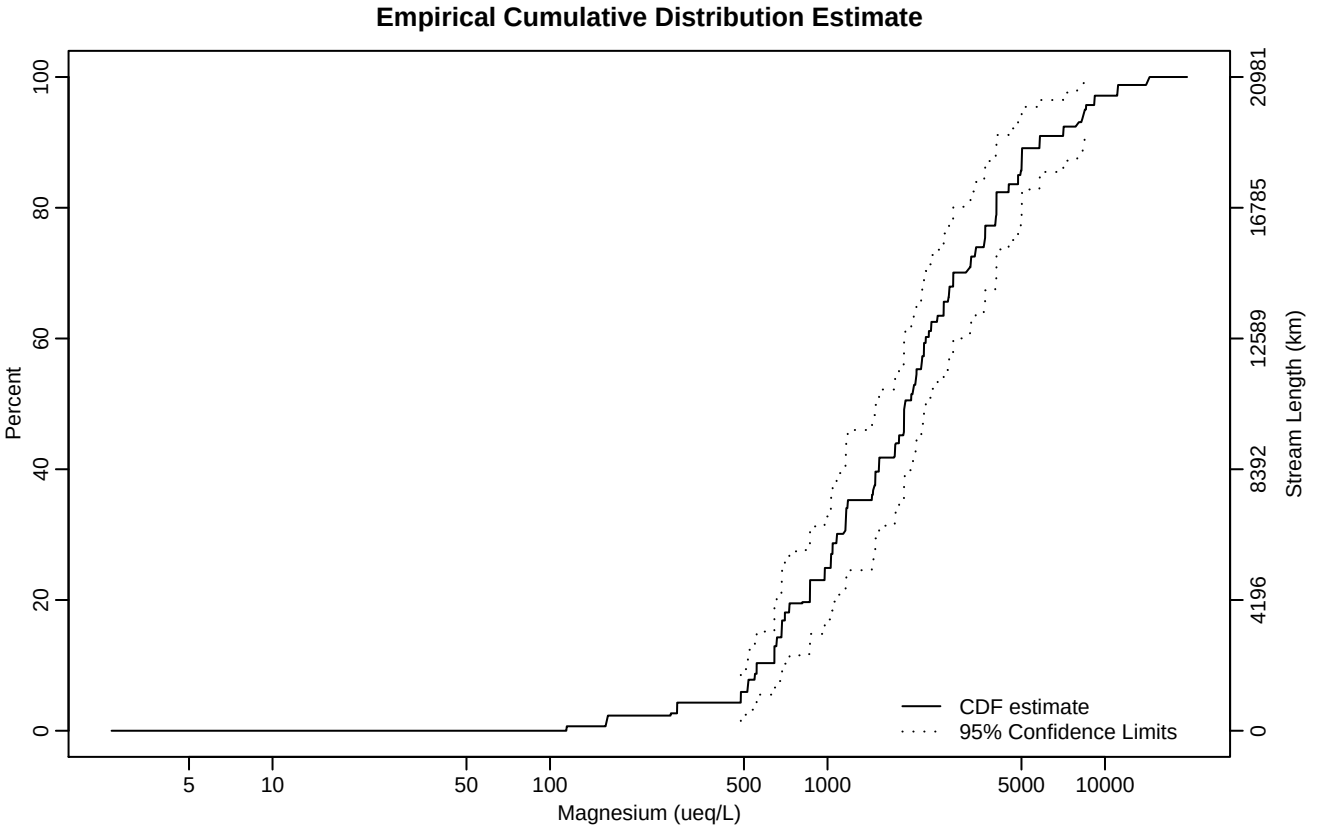
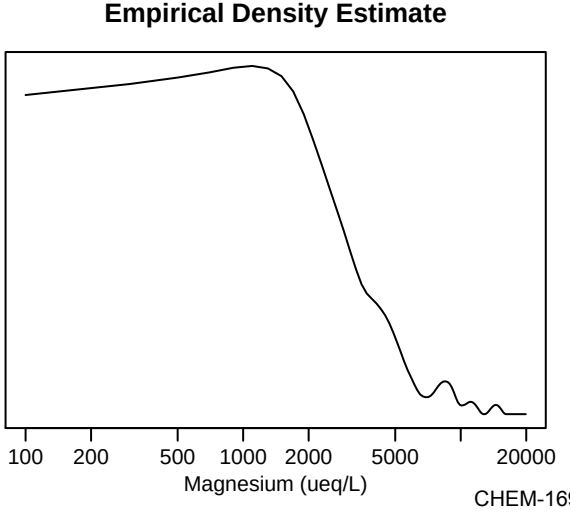


Figure CHEM−166 Indicator: Magnesium Subpopulation: XE−EPLAT



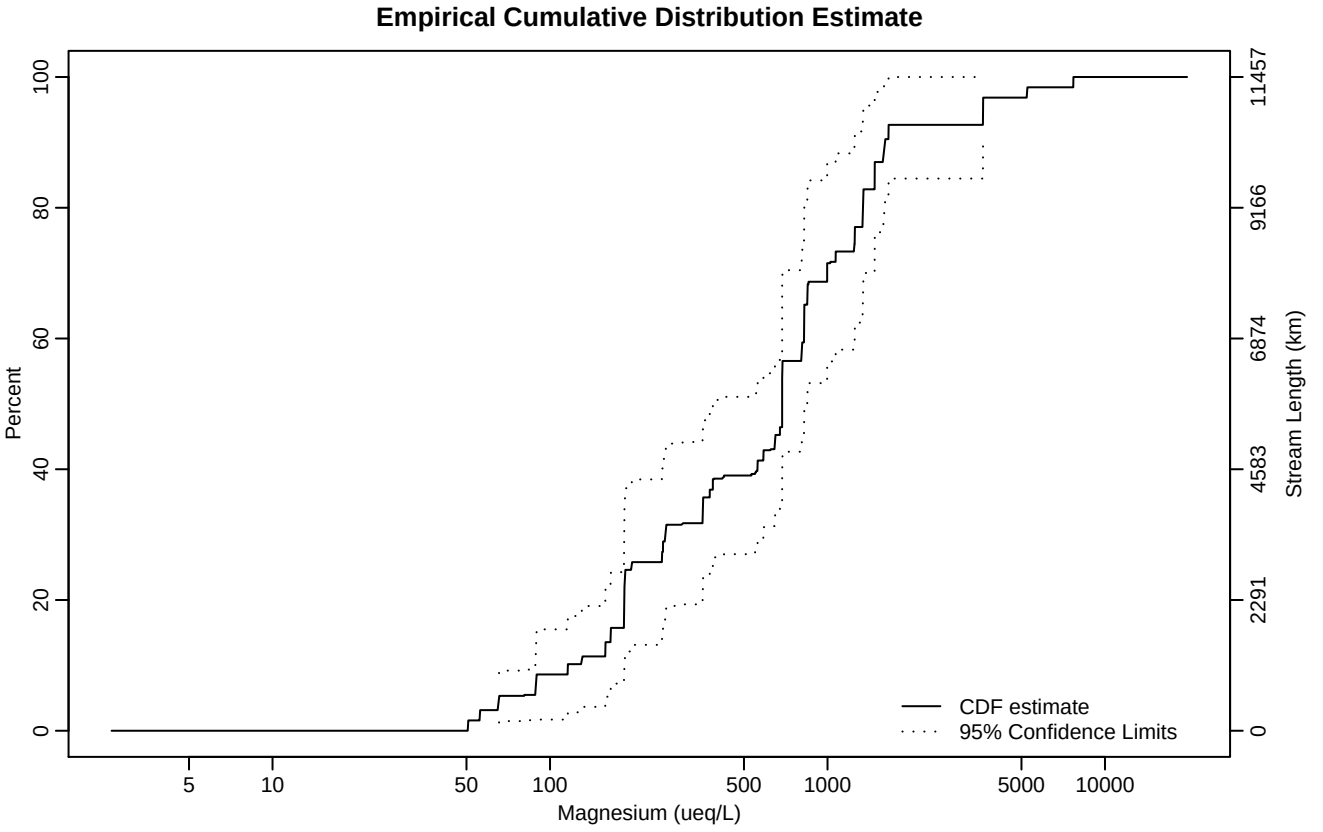
Summary Statistics

Statistic	Est	LCB	UCB
5Pct	487.04	160.07	547.50
10Pct	555.52	487.09	683.18
25Pct	1026.66	685.73	1167.92
50Pct	1902.51	1488.01	2319.07
75Pct	3685.63	2623.43	4953.05
90Pct	5815.13	4860.27	9158.30
95Pct	8462.80	5814	14478.46
Mean	2758.56	2220.31	3296.82
Std Dev	2578.44	1939.70	3217.17



CHEM-169

Figure CHEM−167 Indicator: Magnesium Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	65.51	50.74	89.48
10Pct	115.96	55.98	184.78
25Pct	196.45	158.16	386.23
50Pct	686.30	386.16	824.13
75Pct	1253.10	822.97	1609.85
90Pct	1611.51	1340.88	7696.97
95Pct	3635.16	1480.22	7696.97
Mean	975.59	651.40	1299.78
Std Dev	1140.51	712.69	1568.32

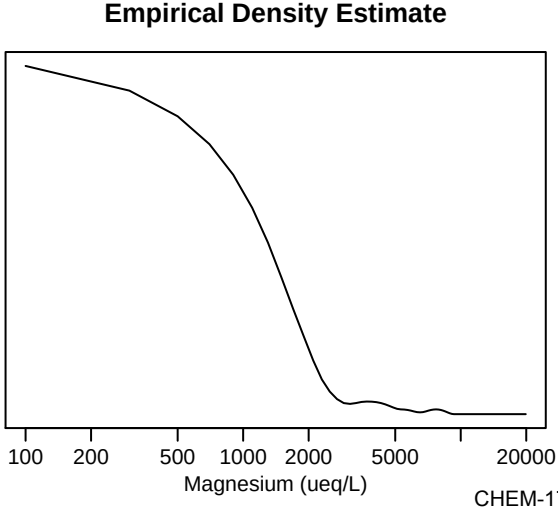
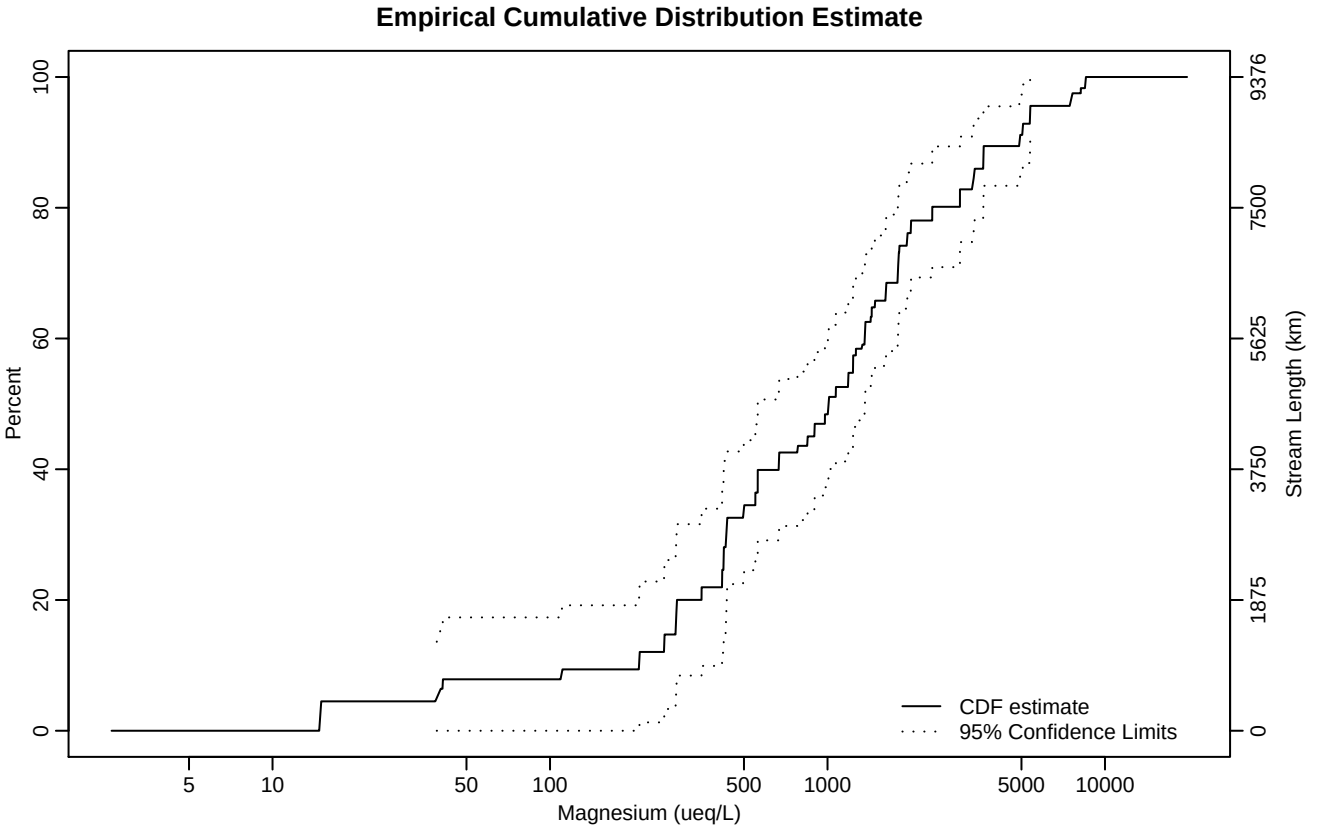


Figure CHEM−168 Indicator: Magnesium Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	39.06	2.63	258.24
10Pct	209.31	2.63	351.54
25Pct	421.75	257.61	560.40
50Pct	1008.98	560.51	1366.32
75Pct	1935.06	1482.77	3366.46
90Pct	4918.68	3340.82	7523.36
95Pct	5377.85	3652.32	8538.37
Mean	1672.67	1294.45	2050.90
Std Dev	1552.73	1110.67	1994.80

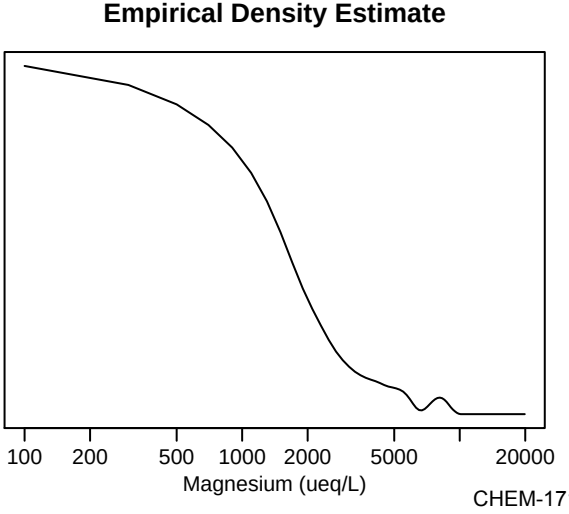
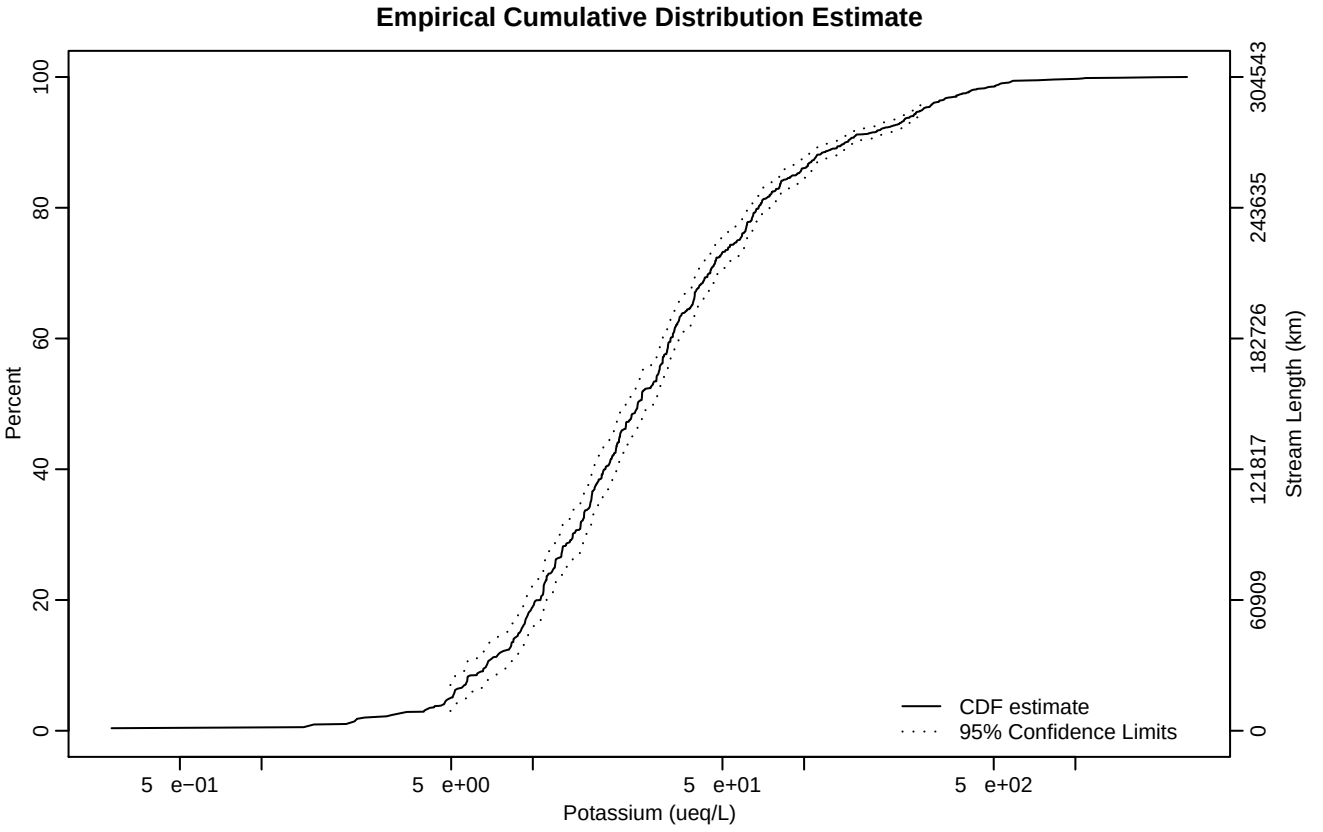


Figure CHEM−169 Indicator: Potassium Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.97	3.98	5.58
10Pct	6.75	5.69	8.23
25Pct	12.05	10.95	13.26
50Pct	24.37	22.02	28.31
75Pct	56.77	48.72	61.62
90Pct	142.28	125.26	155.11
95Pct	273.27	253.32	296.67
Mean	62.77	57.59	67.95
Std Dev	85.28	66.70	103.86

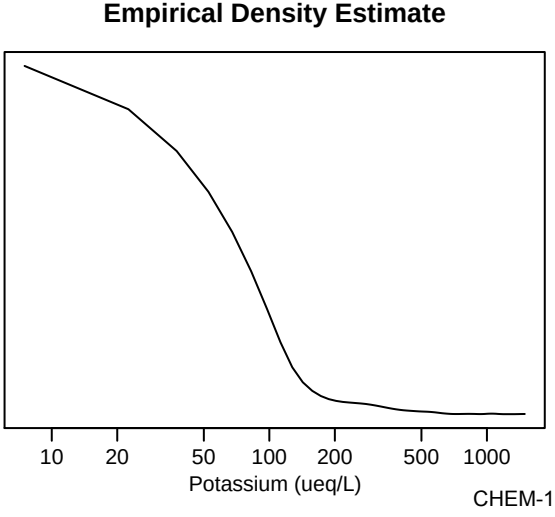
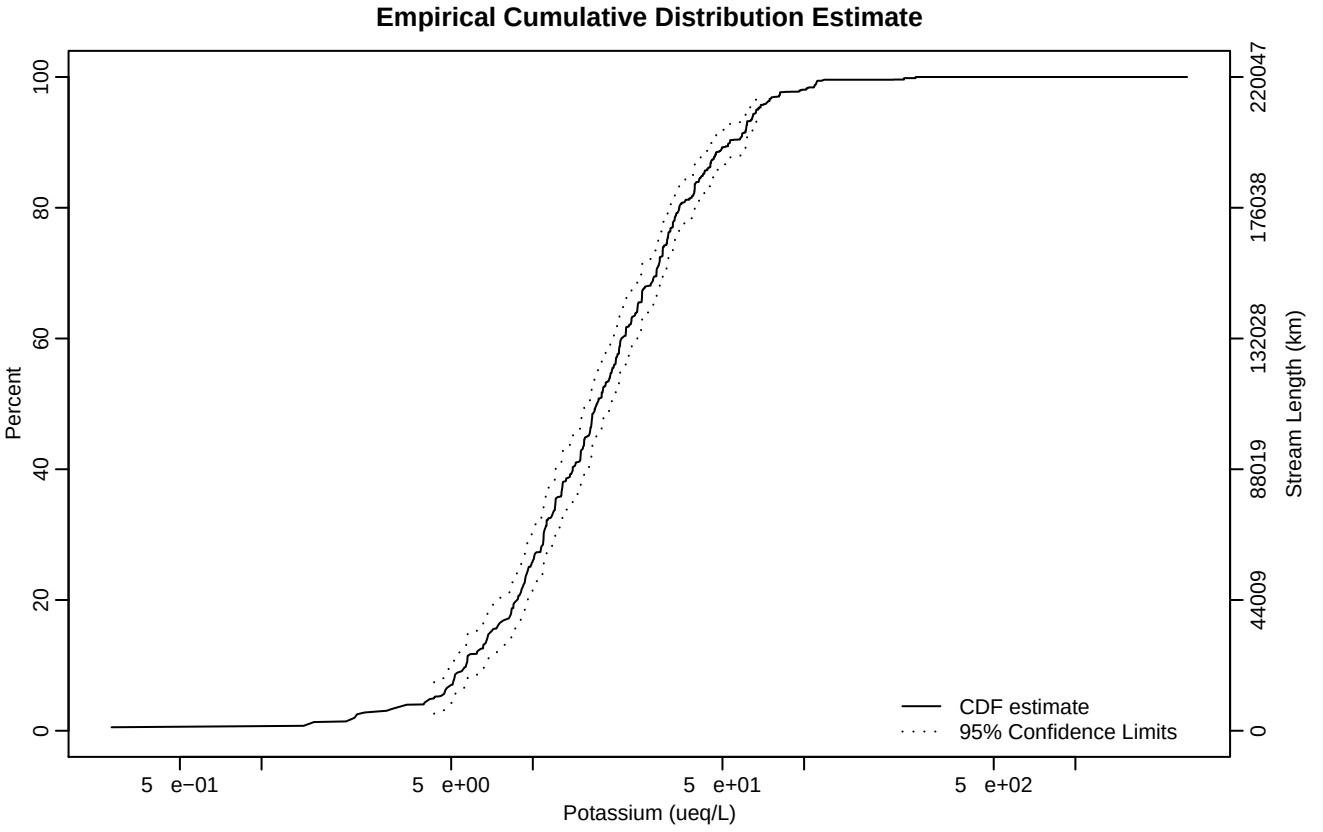


Figure CHEM−170 Indicator: Potassium Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.33	2.29	5.08
10Pct	5.67	4.96	6.57
25Pct	9.66	8.84	10.95
50Pct	17.24	16.11	19.50
75Pct	31.27	29.05	33.71
90Pct	53.27	45.96	61.38
95Pct	66.69	61.65	76.31
Mean	24.85	22.77	26.94
Std Dev	23.65	19.77	27.52

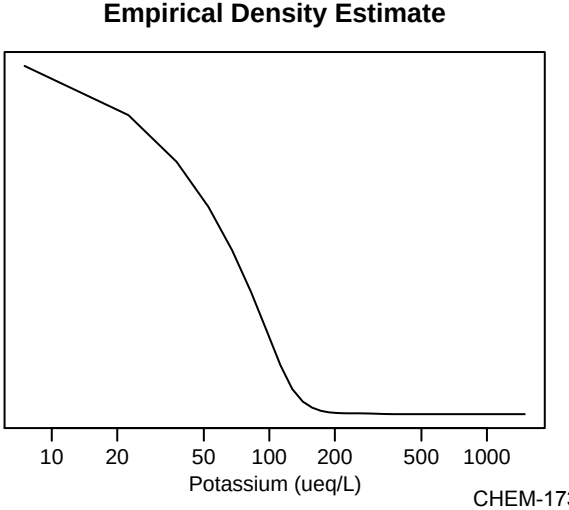
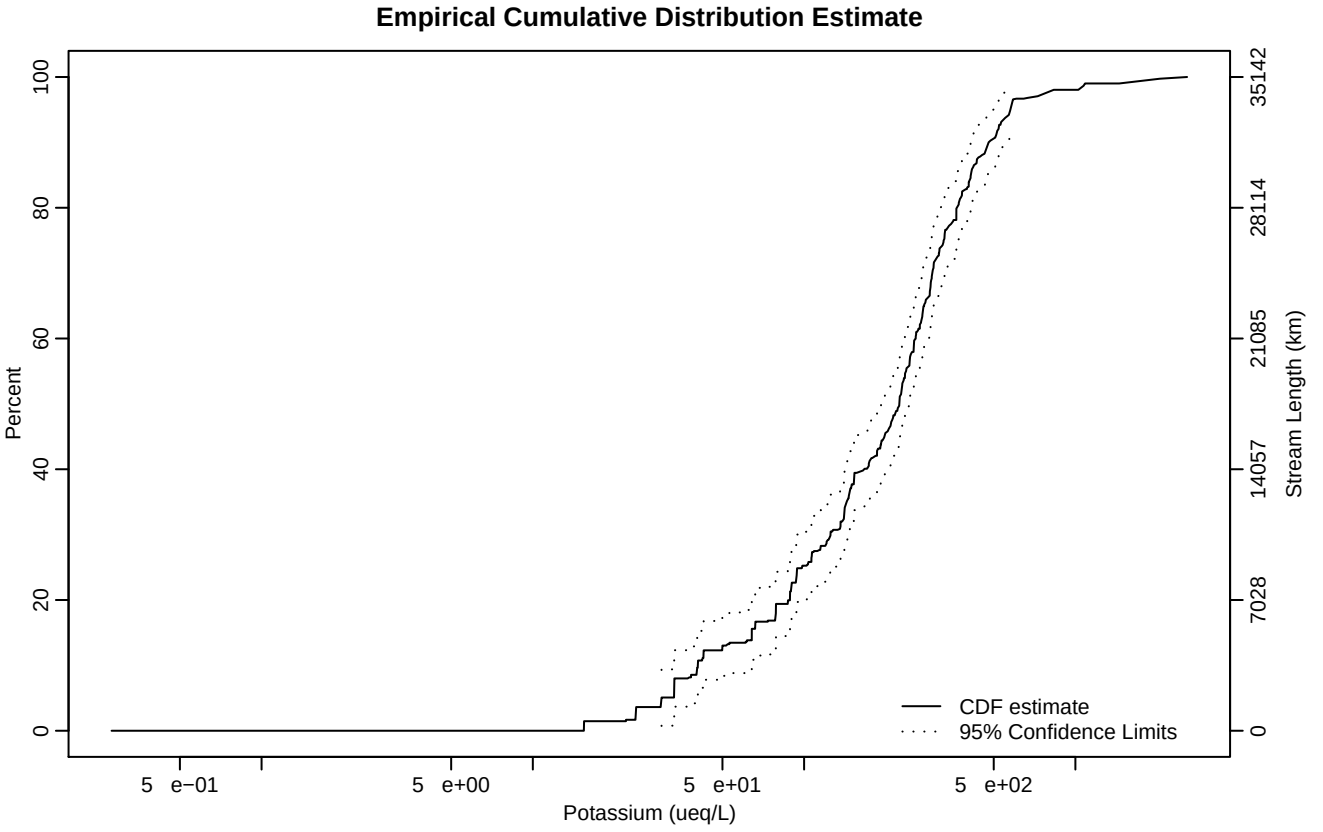


Figure CHEM−171 Indicator: Potassium Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	29.81	15.44	40.22
10Pct	40.57	33.15	64.14
25Pct	98.22	87.03	127.28
50Pct	224.35	191.40	244.85
75Pct	326.83	294.15	373.60
90Pct	478.86	411.81	575.45
95Pct	575.80	510.34	1080.57
Mean	260.20	224.47	295.92
Std Dev	240.09	157.90	322.28

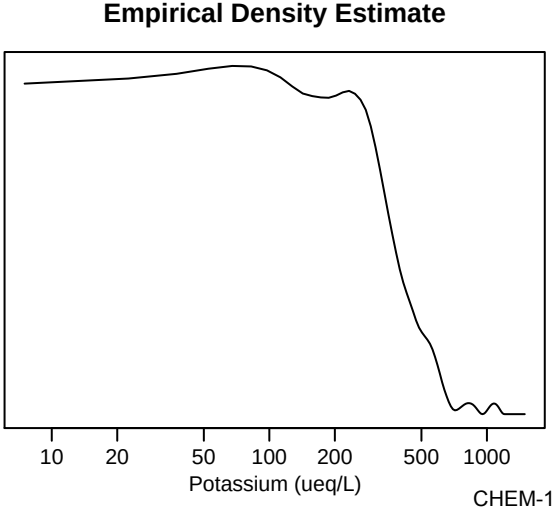
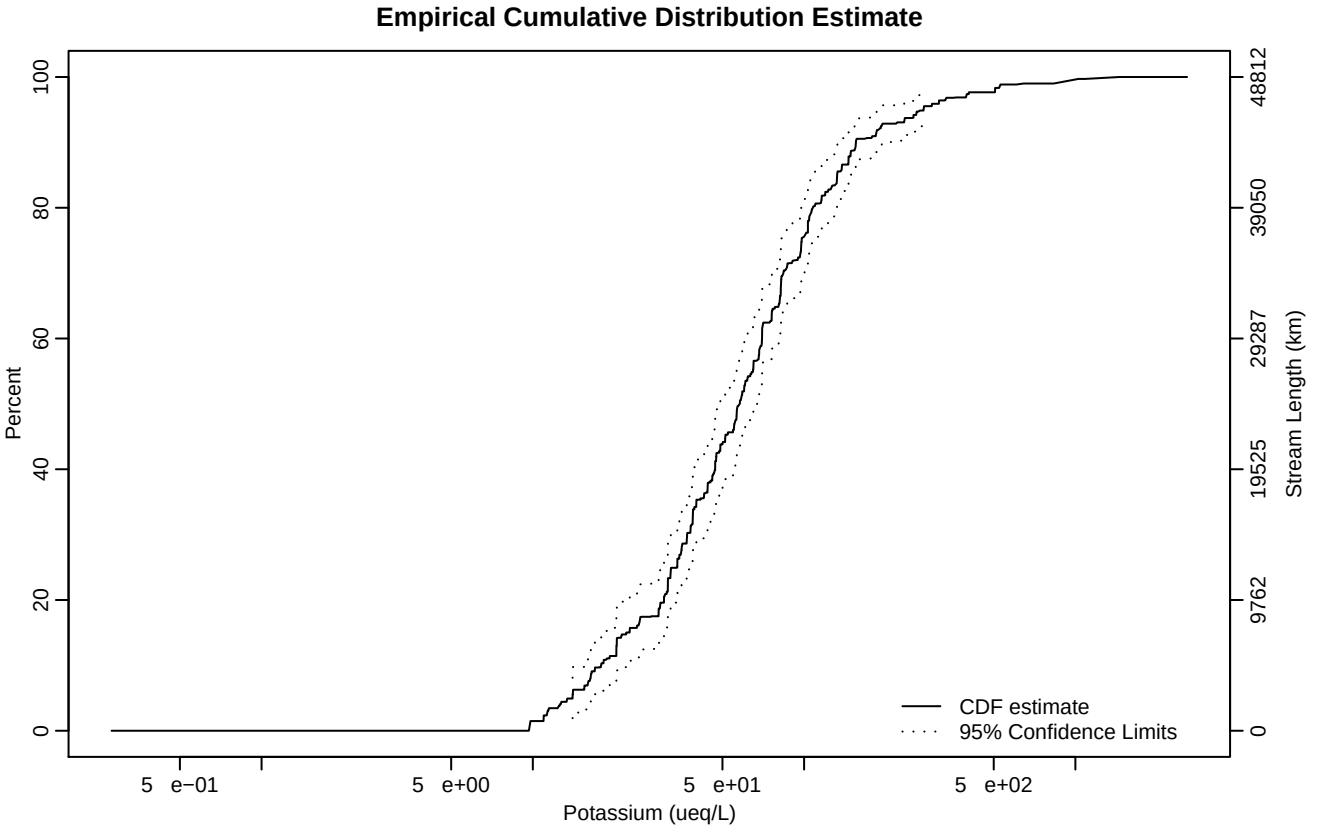


Figure CHEM−172 Indicator: Potassium Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.01	10.95	16.36
10Pct	17.85	14.05	21.14
25Pct	34.07	29.48	38.13
50Pct	57.90	49.09	67.98
75Pct	97.94	82.41	115.44
90Pct	155.23	137.87	234.89
95Pct	275.68	193.28	404.54
Mean	91.82	75.81	107.83
Std Dev	109.17	80.65	137.68

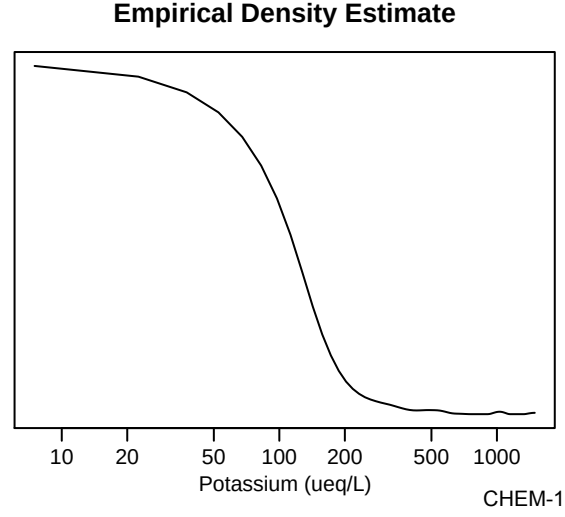
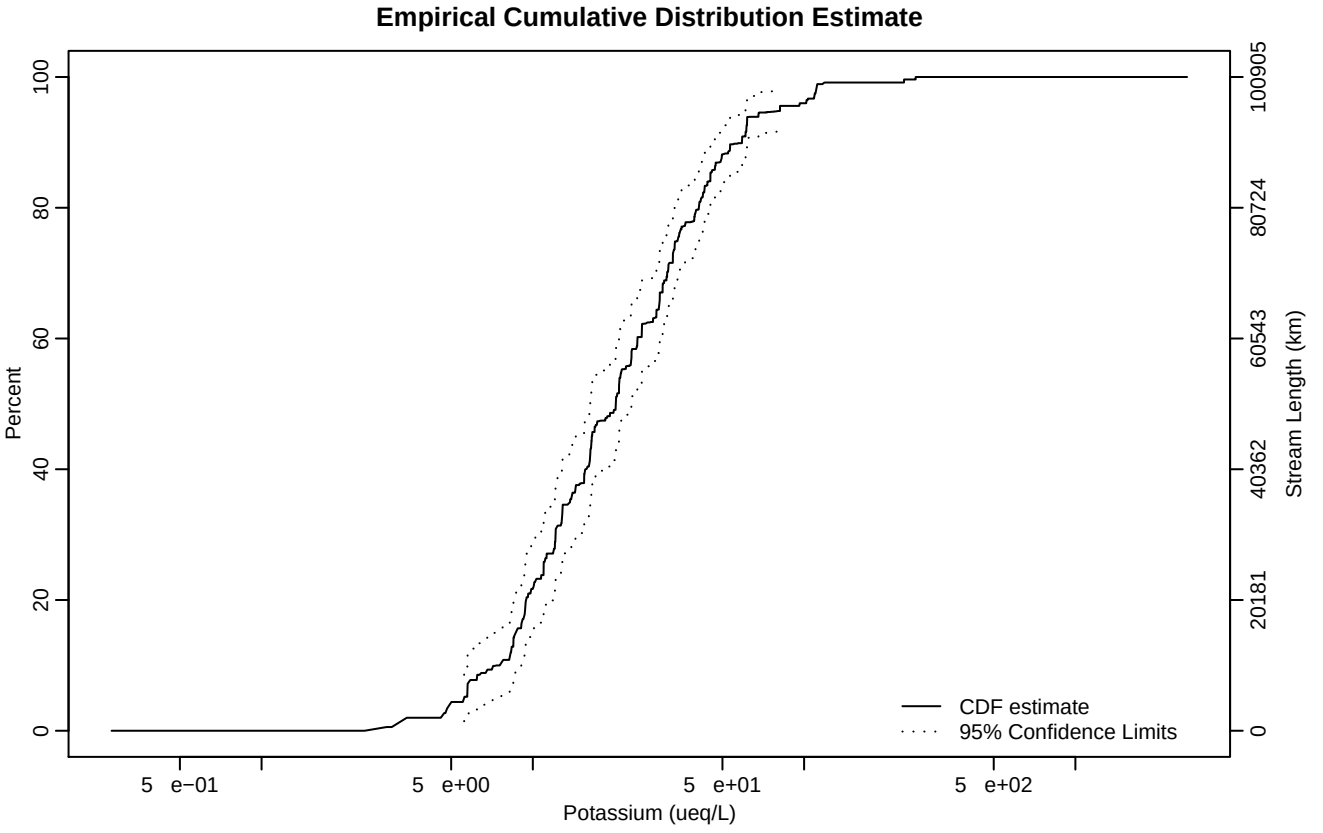


Figure CHEM−173 Indicator: Potassium Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.58	3.33	6.23
10Pct	7.55	5.57	8.67
25Pct	10.96	9.36	12.73
50Pct	20.23	16.28	23.11
75Pct	34.17	31.09	41.15
90Pct	59	45.79	67.91
95Pct	81.48	61.24	110.87
Mean	28.37	24.45	32.29
Std Dev	28.21	20.21	36.21

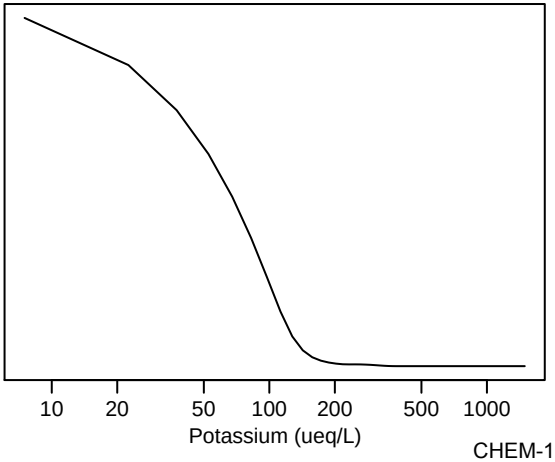
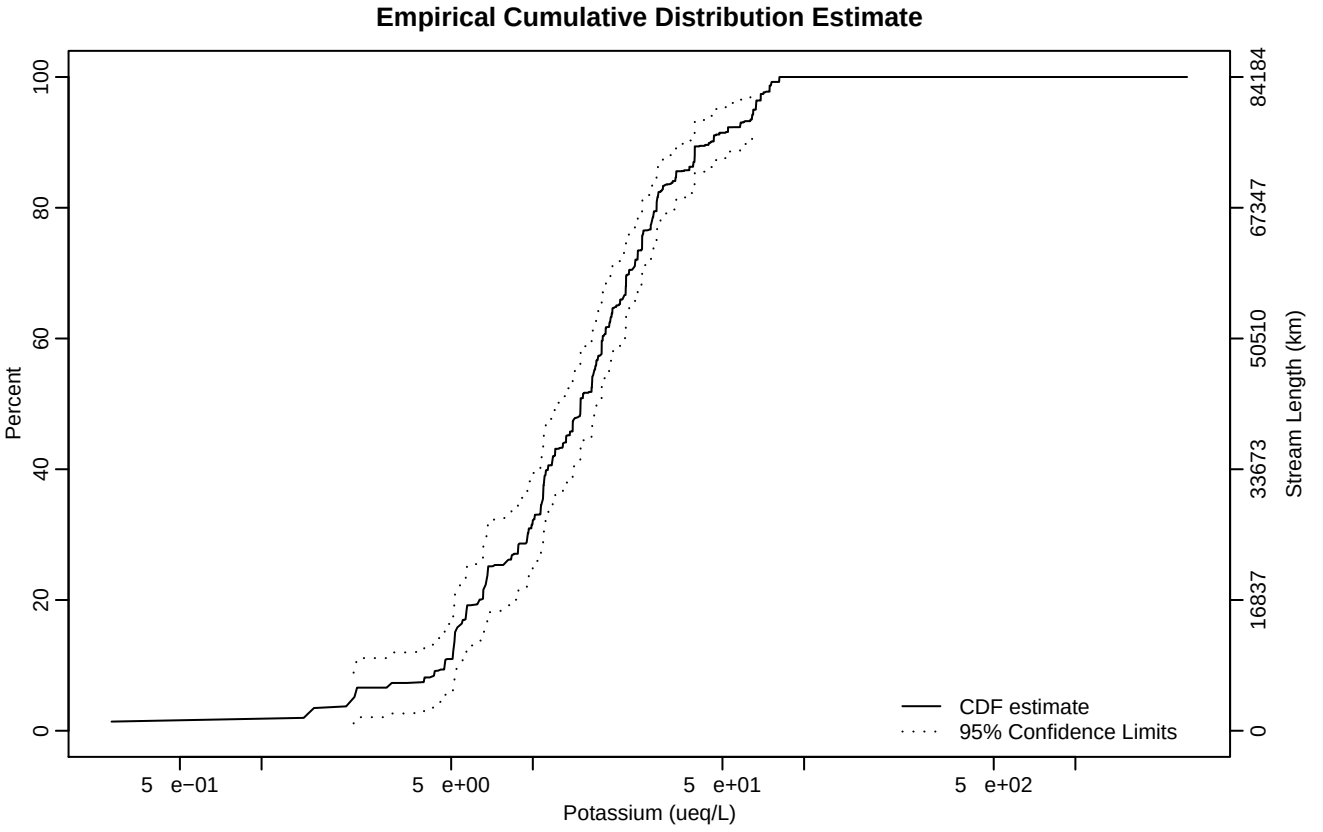


Figure CHEM−174 Indicator: Potassium Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.18	0.58	4.32
10Pct	4.73	2.19	5.17
25Pct	6.84	5.69	9.98
50Pct	14.99	12.09	17.40
75Pct	25.29	22.59	28.59
90Pct	45.10	37.77	64.30
95Pct	64.96	52.41	74.61
Mean	20.15	17.95	22.34
Std Dev	16.90	14.70	19.10

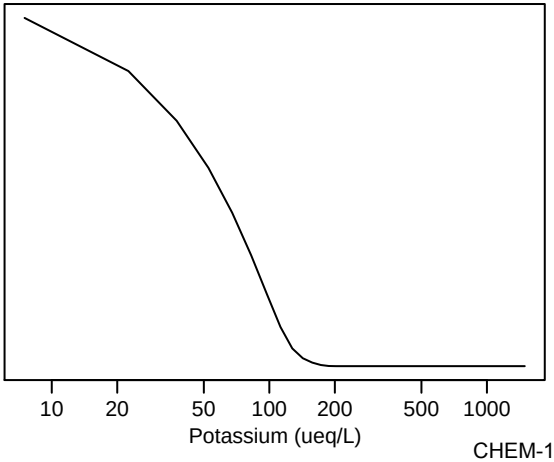
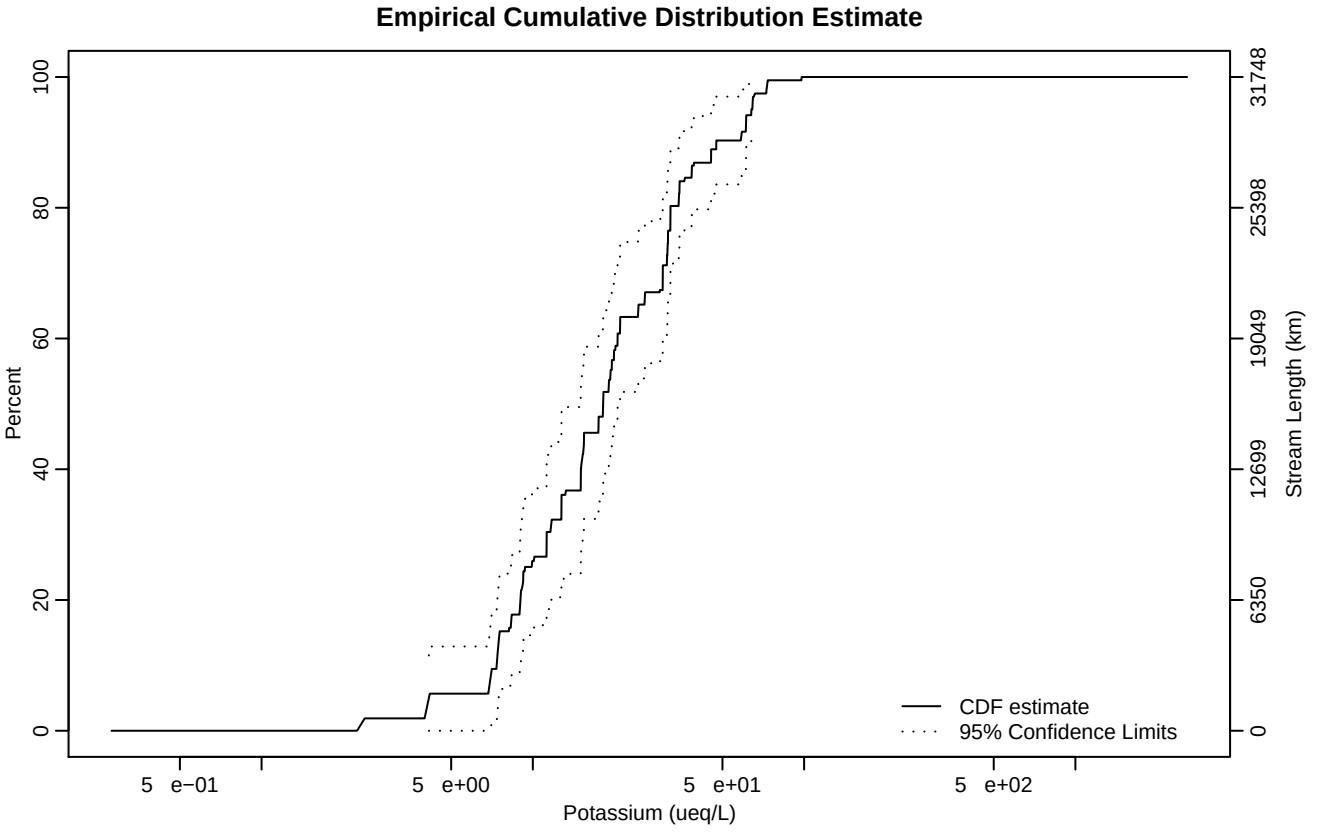


Figure CHEM−175 Indicator: Potassium Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.14	2.39	6.99
10Pct	7.36	2.36	8.96
25Pct	9.36	7.51	12.76
50Pct	18.16	15.01	20.99
75Pct	31.49	24.49	38.51
90Pct	47.46	34.73	64.78
95Pct	63.91	47.47	97.81
Mean	23.42	19.50	27.33
Std Dev	17.21	13.68	20.74

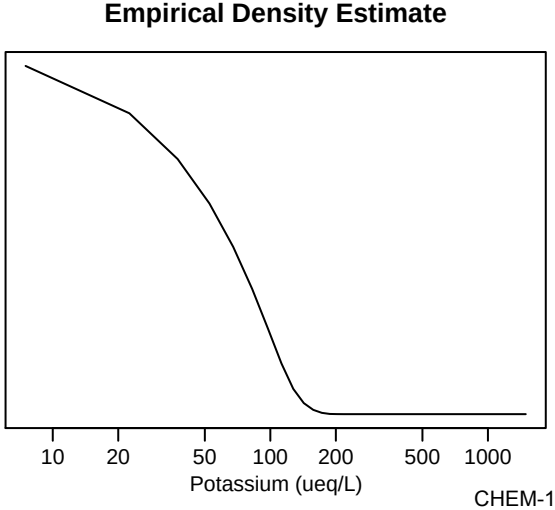
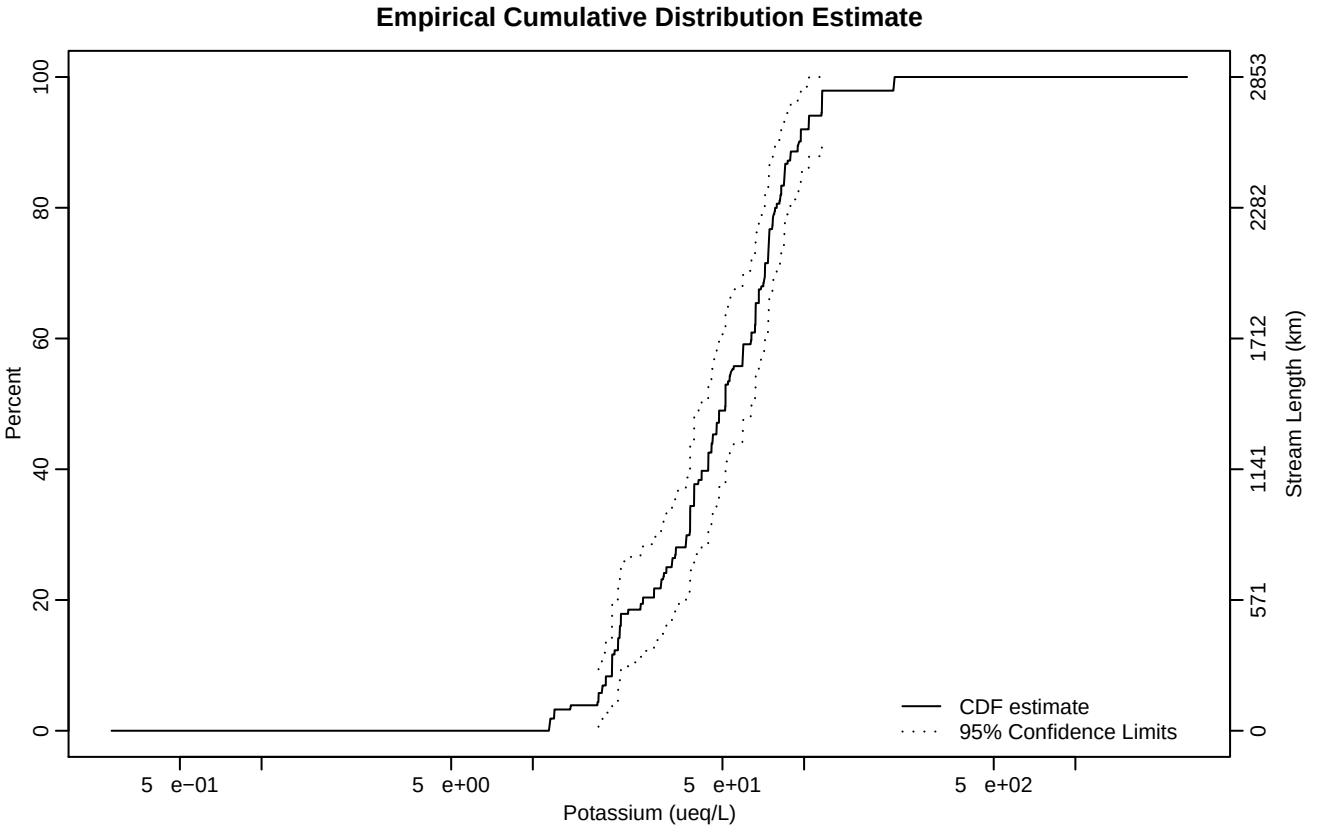


Figure CHEM−176 Indicator: Potassium Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	17.46	11.52	19.58
10Pct	19.59	17.44	20.93
25Pct	31.08	21.11	38.02
50Pct	51.31	40.84	65.93
75Pct	74.19	66.30	84.76
90Pct	95.74	82.36	116.52
95Pct	116.26	94.67	215.61
Mean	57.08	49.05	65.11
Std Dev	35.05	24.70	45.41

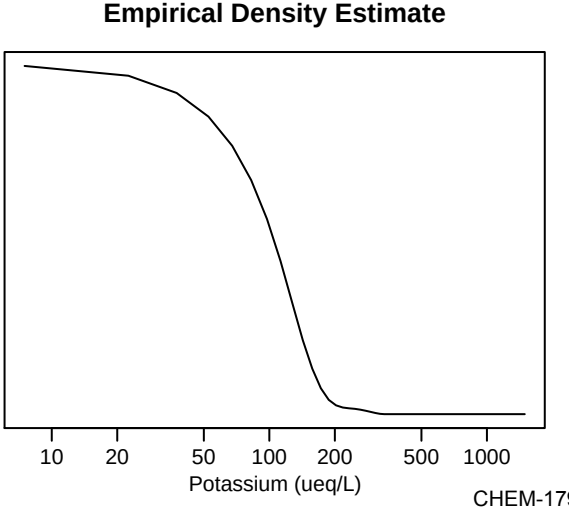
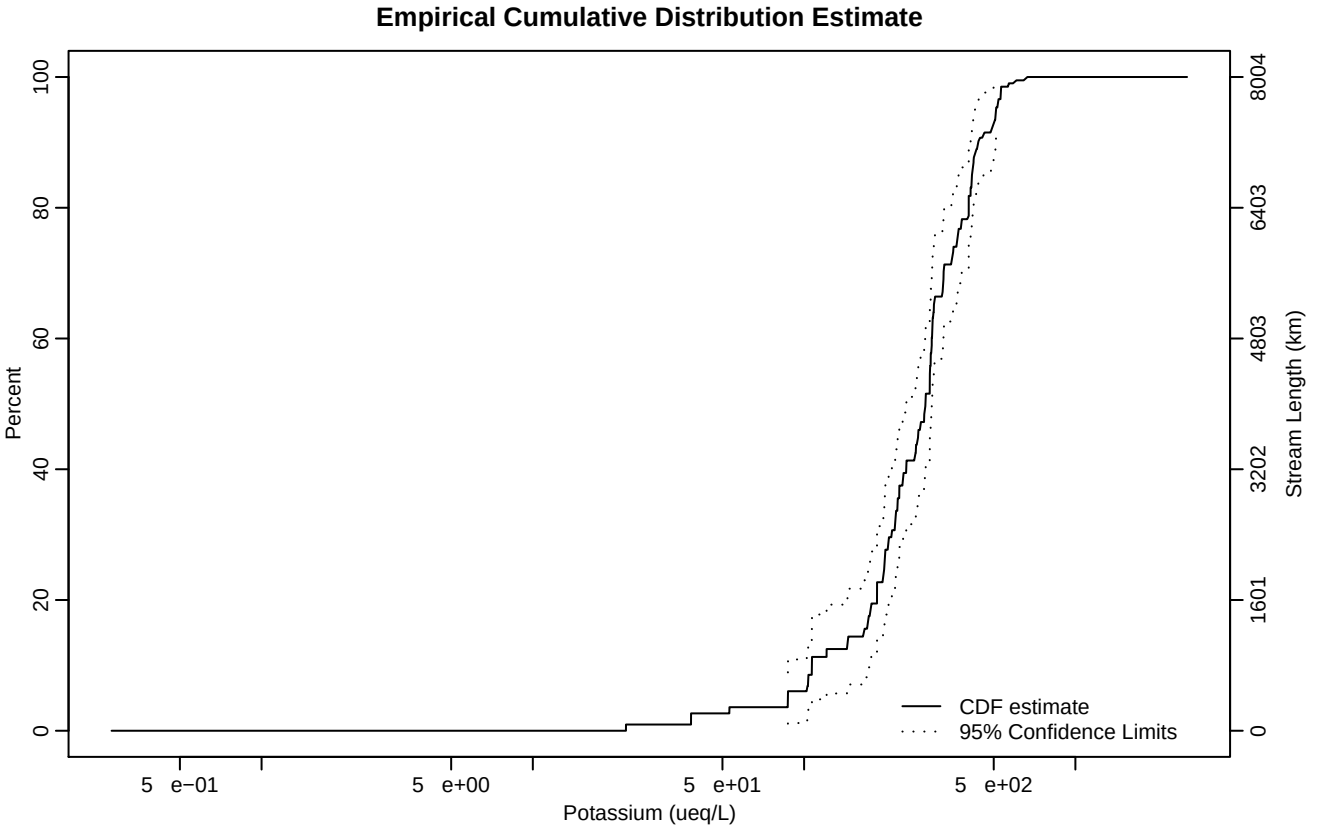


Figure CHEM−177 Indicator: Potassium Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	87.14	38.31	103.54
10Pct	106.84	87.09	167
25Pct	197.48	170.95	220.77
50Pct	280.02	237.64	296.40
75Pct	366.72	303.39	414.36
90Pct	438.45	413.85	529.40
95Pct	509.88	437.60	665.44
Mean	282.38	260.56	304.19
Std Dev	118.11	102.47	133.75

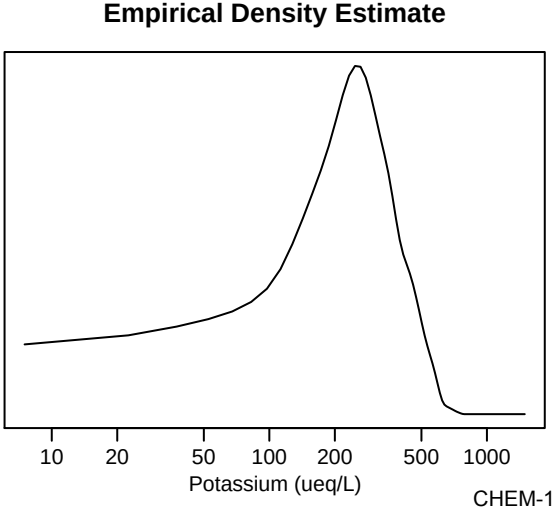
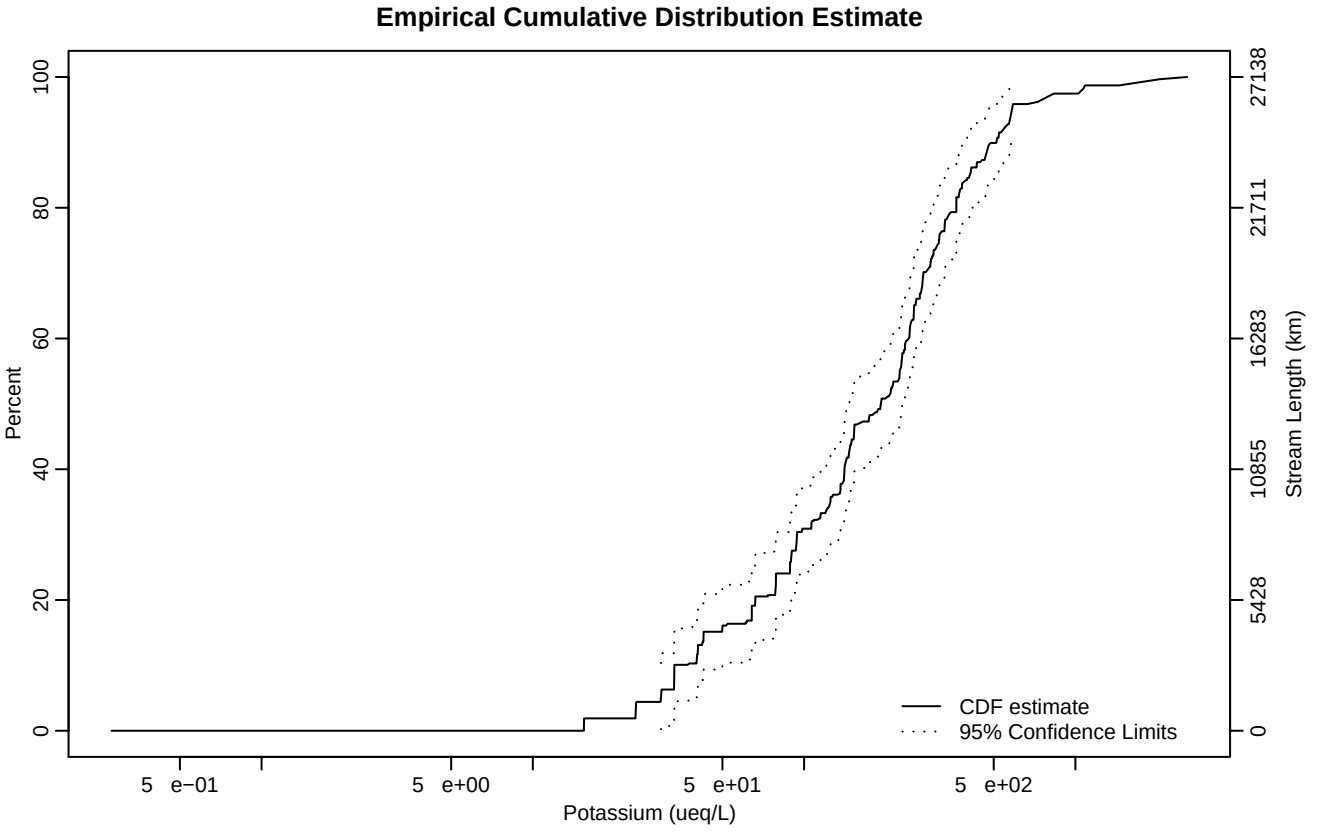


Figure CHEM−178 Indicator: Potassium Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	29.66	0.28	37.66
10Pct	33.25	29.60	49.94
25Pct	88.72	64.14	106.42
50Pct	191.93	146.38	230.08
75Pct	313.82	271	374.40
90Pct	511.23	398.84	586.94
95Pct	583.40	511.11	2580.22
Mean	253.65	207.86	299.44
Std Dev	269.03	166.28	371.79

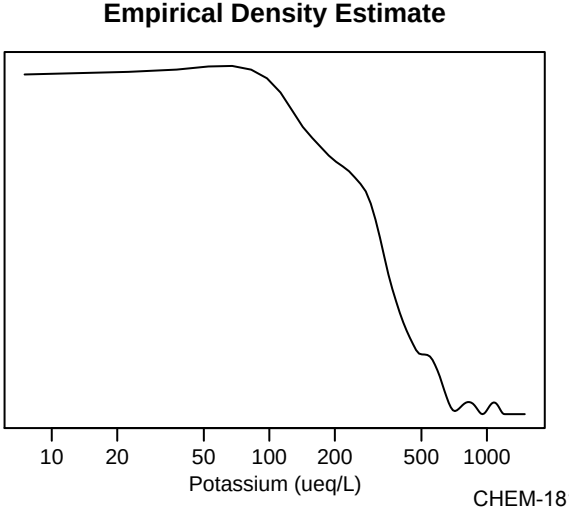
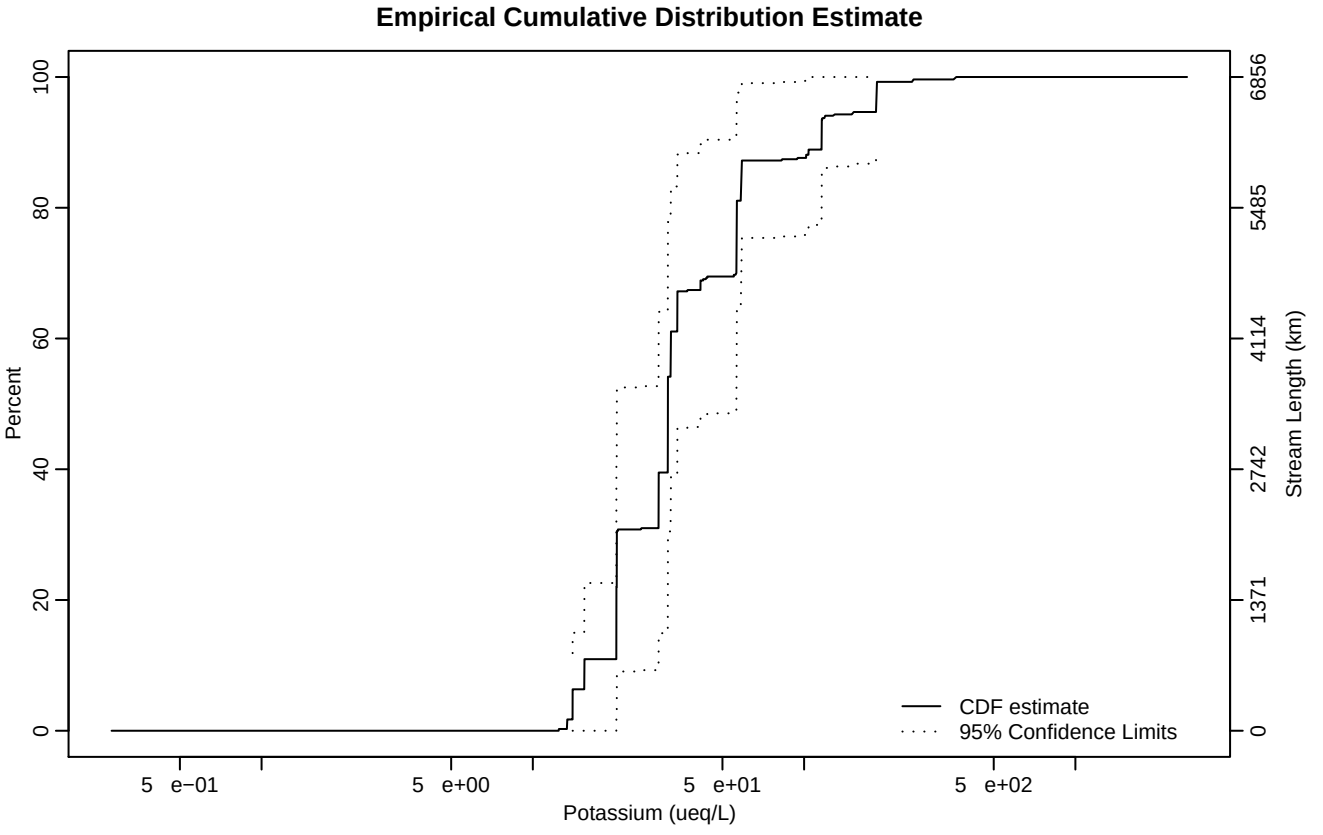


Figure CHEM−179 Indicator: Potassium Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.02	14.01	15.48
10Pct	15.49	13.38	20.32
25Pct	20.39	14.02	31.46
50Pct	31.47	20.40	56.35
75Pct	56.38	31.48	184.54
90Pct	116.01	56.46	363.92
95Pct	184.17	58.97	363.92
Mean	47.59	31.31	63.87
Std Dev	46.18	28.47	63.89

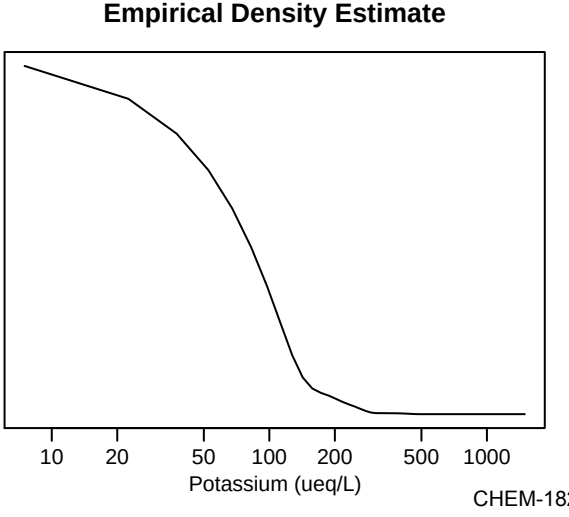
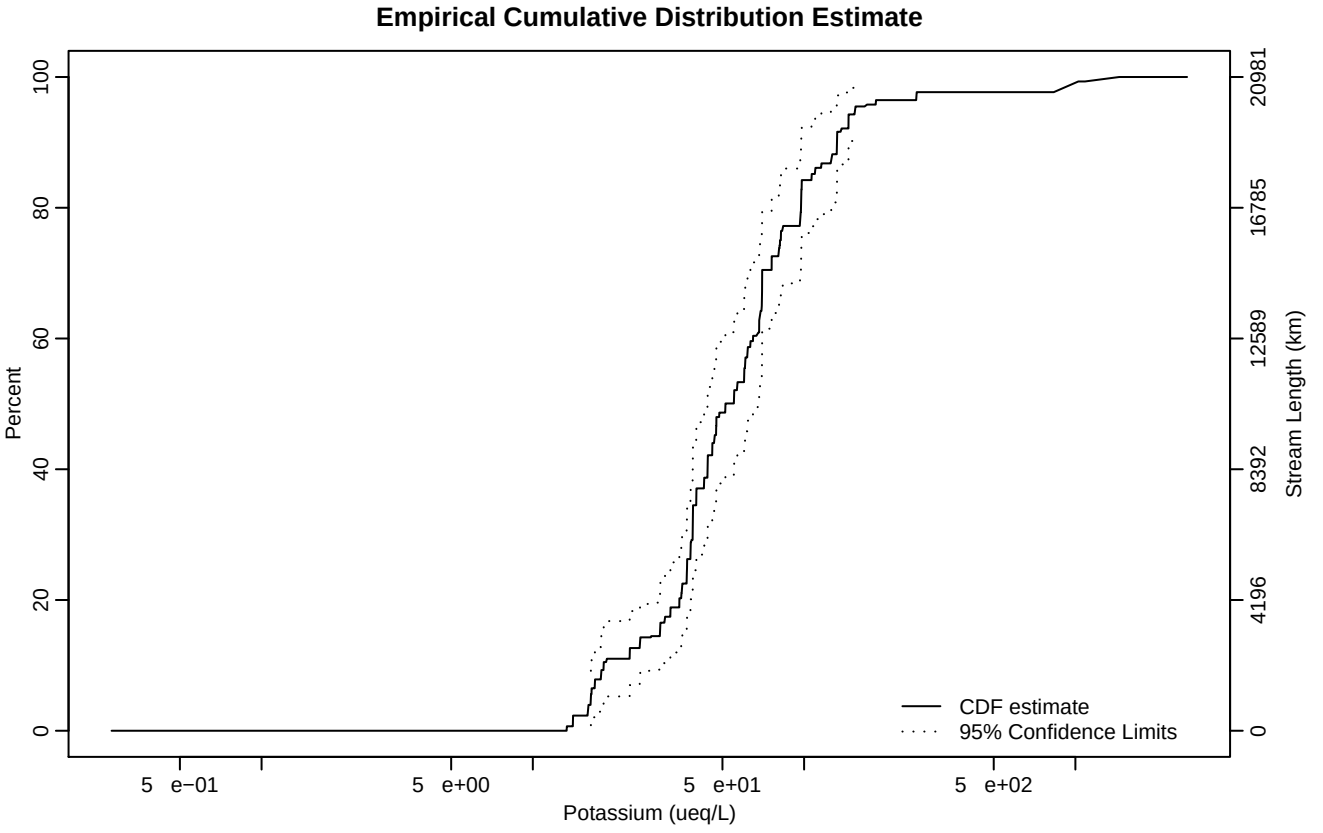


Figure CHEM−180 Indicator: Potassium Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	16.36	14.05	17.86
10Pct	18.24	16.34	29.47
25Pct	37.02	30.62	38.91
50Pct	51.30	44.03	67.52
75Pct	81.48	69.90	97.99
90Pct	132.18	97.69	259.83
95Pct	154.16	132.34	999.82
Mean	88.74	56.89	120.59
Std Dev	137.62	75.39	199.84

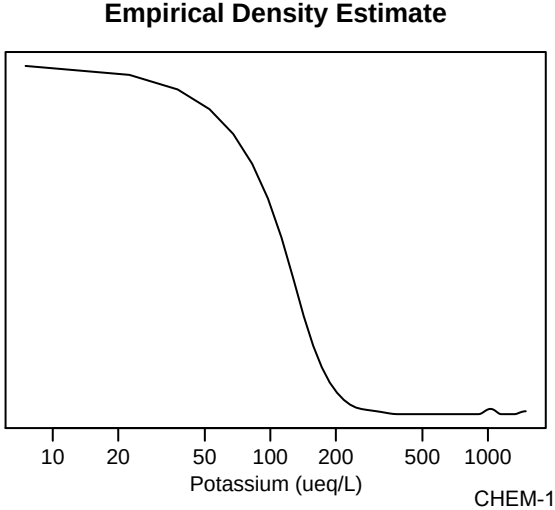
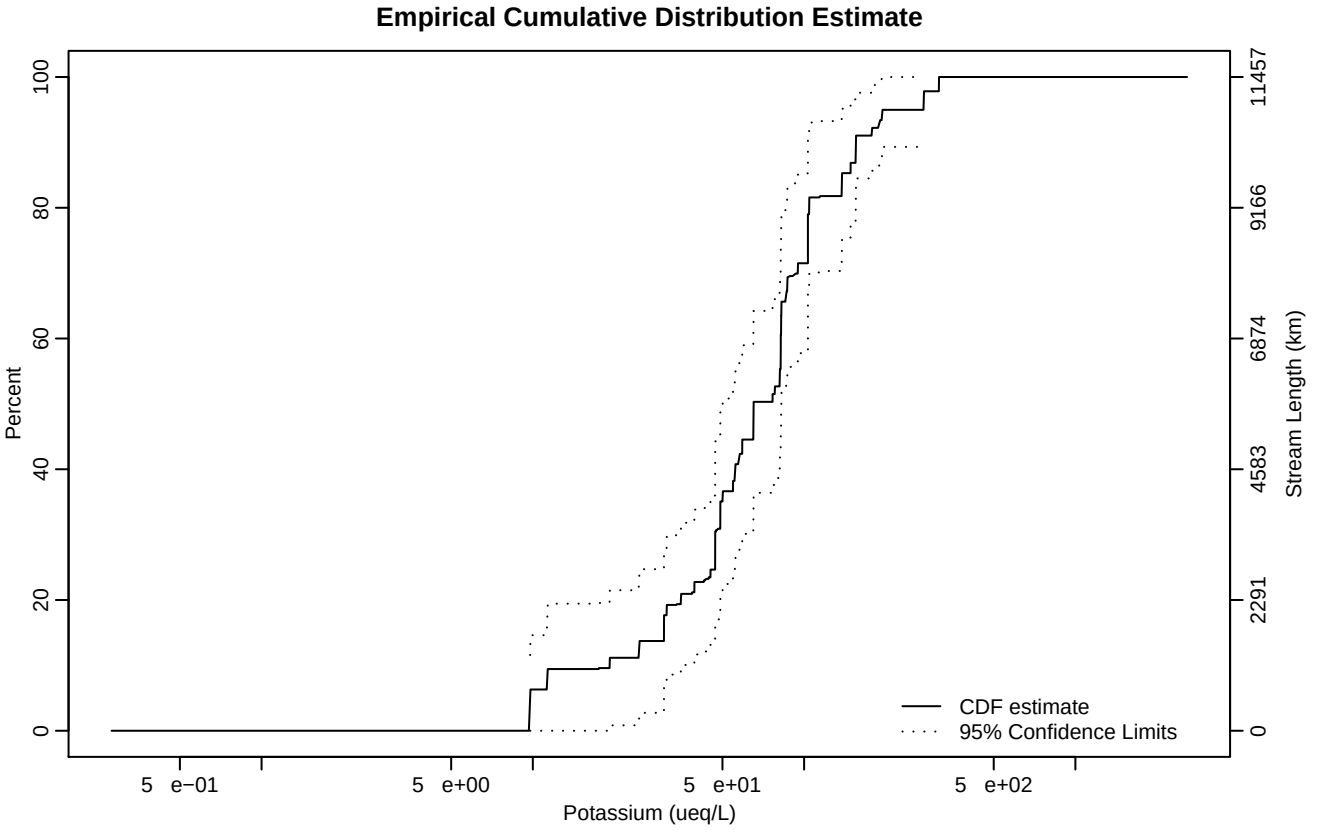


Figure CHEM−181 Indicator: Potassium Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	9.77	9.76	9.79
10Pct	19.19	0.28	39.39
25Pct	46.98	24.58	55.38
50Pct	65.15	49.13	82.49
75Pct	103.28	82.23	155.09
90Pct	155.25	104.40	314.25
95Pct	275.44	155.11	314.30
Mean	84.01	66.77	101.24
Std Dev	57.78	44.93	70.63

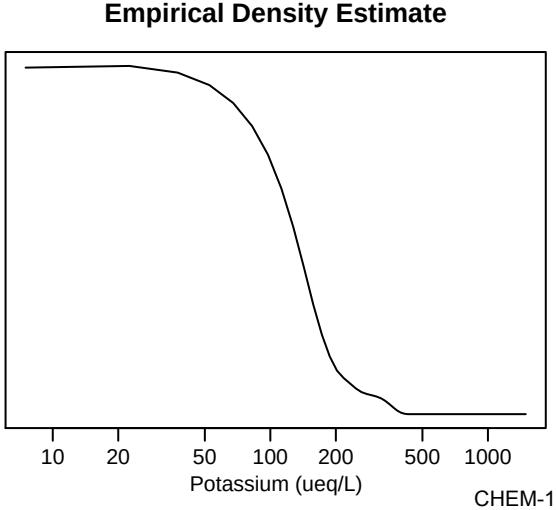
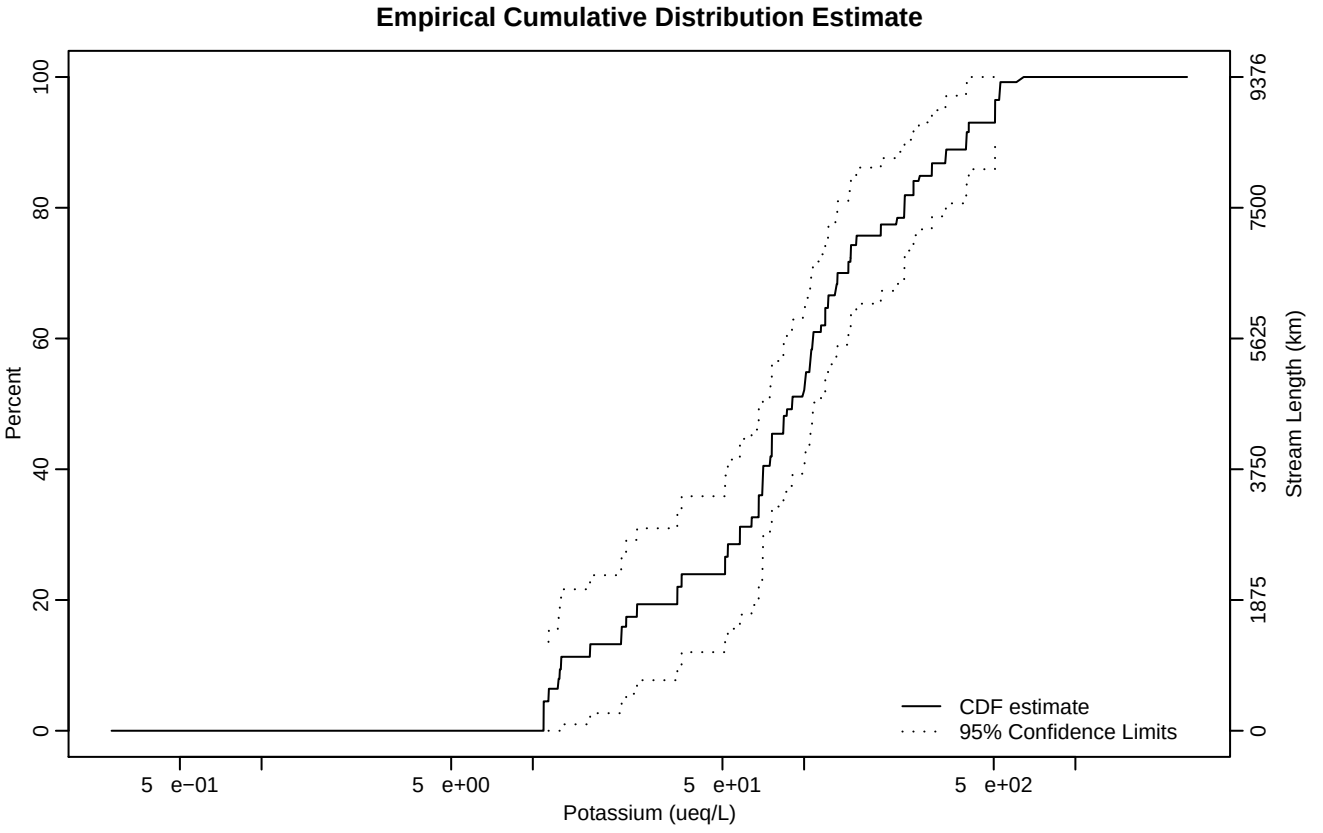


Figure CHEM−182 Indicator: Potassium Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	11.42	0.28	21.16
10Pct	12.70	0.28	34.08
25Pct	51.13	16.28	70.20
50Pct	90.36	70.37	115.46
75Pct	155.82	119.70	295.65
90Pct	396.12	235.03	527.40
95Pct	505.78	332.65	644.72
Mean	141.28	107.26	175.31
Std Dev	131.48	100.44	162.52

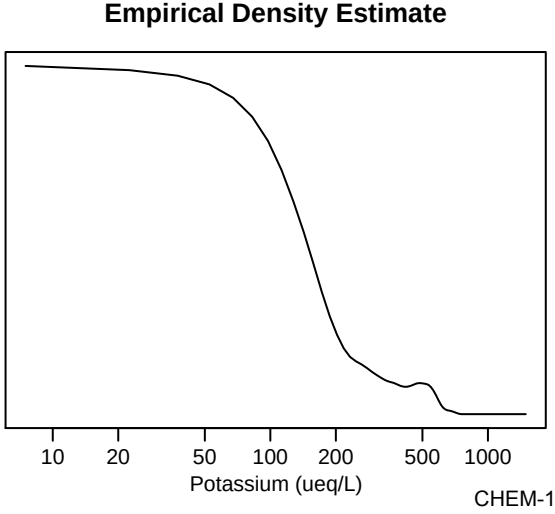
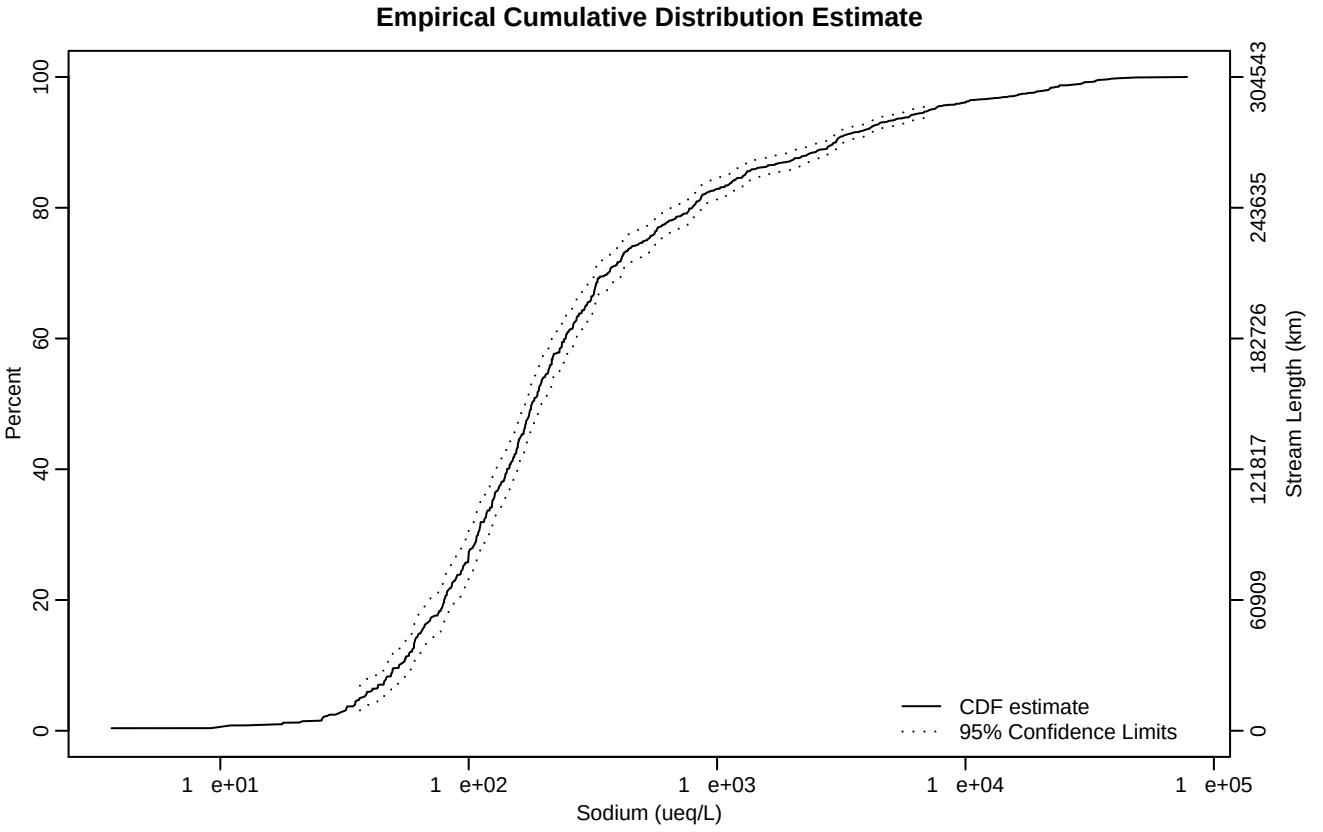


Figure CHEM−183 Indicator: Sodium Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	36.46	31.93	43.14
10Pct	52.43	45.76	59.33
25Pct	94.95	82.79	105.55
50Pct	179.65	168.71	196.63
75Pct	517.17	418.25	600.54
90Pct	3008.20	2580.64	3303.22
95Pct	7240.85	6055.52	9122.48
Mean	1549.44	1340.53	1758.34
Std Dev	3223.98	2726.32	3721.63

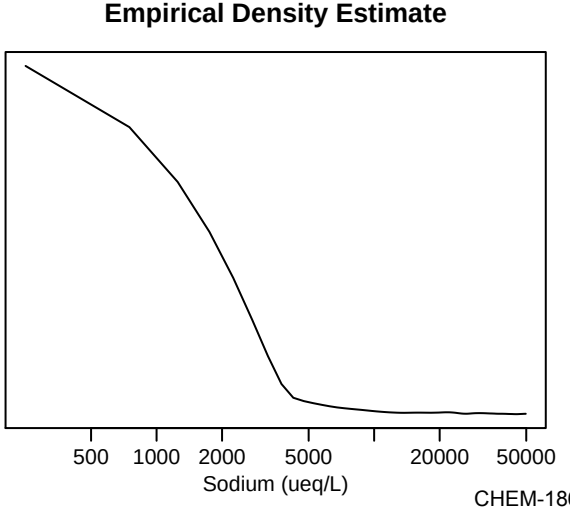
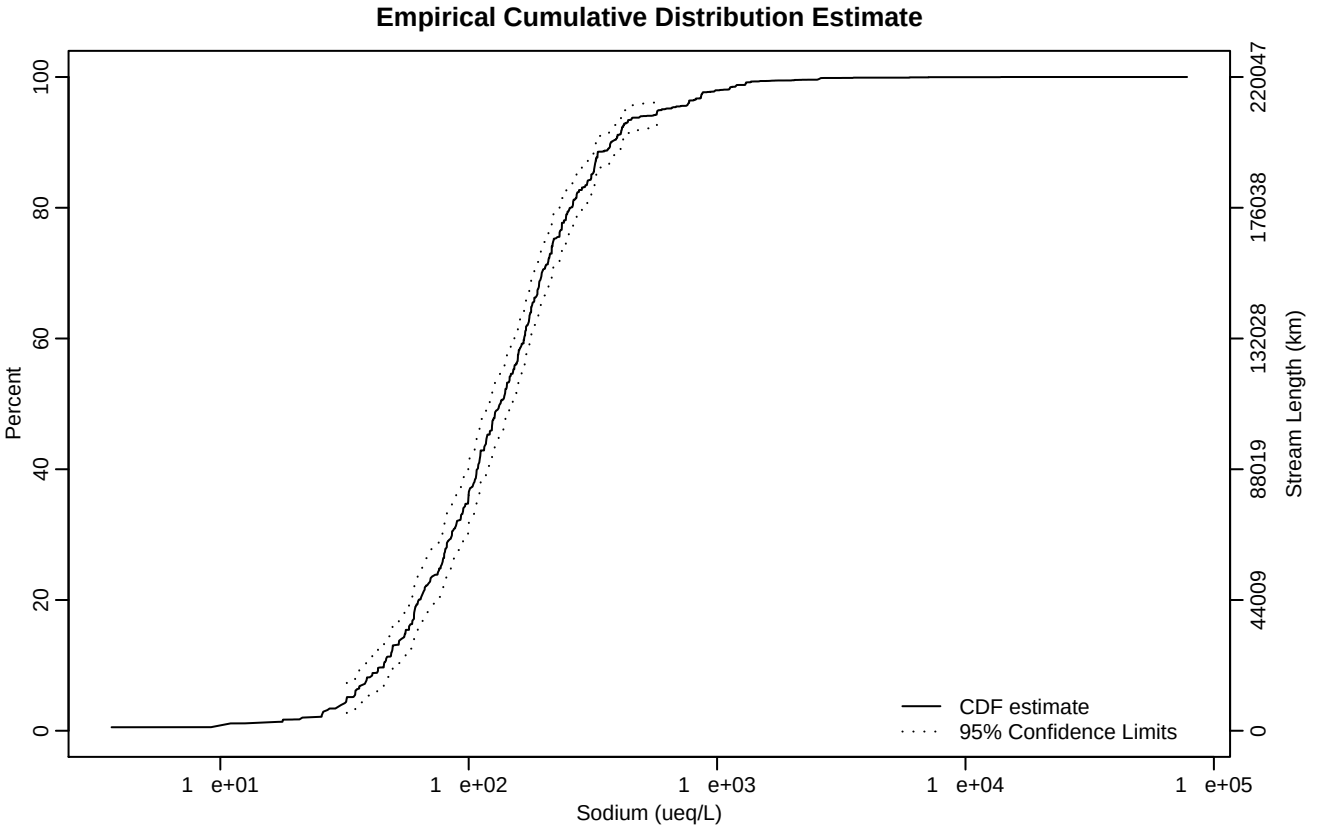


Figure CHEM−184 Indicator: Sodium Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	32.31	25.90	38.22
10Pct	45.56	37.62	49.46
25Pct	77.15	64.74	84.50
50Pct	133.88	121.46	150.30
75Pct	219.59	203.32	249.24
90Pct	374.44	329.78	414.12
95Pct	597.84	437.81	856.41
Mean	209.19	189.66	228.71
Std Dev	232.06	195.30	268.81

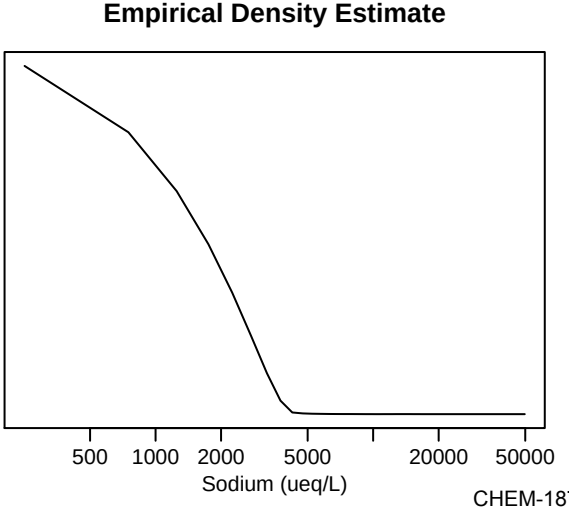
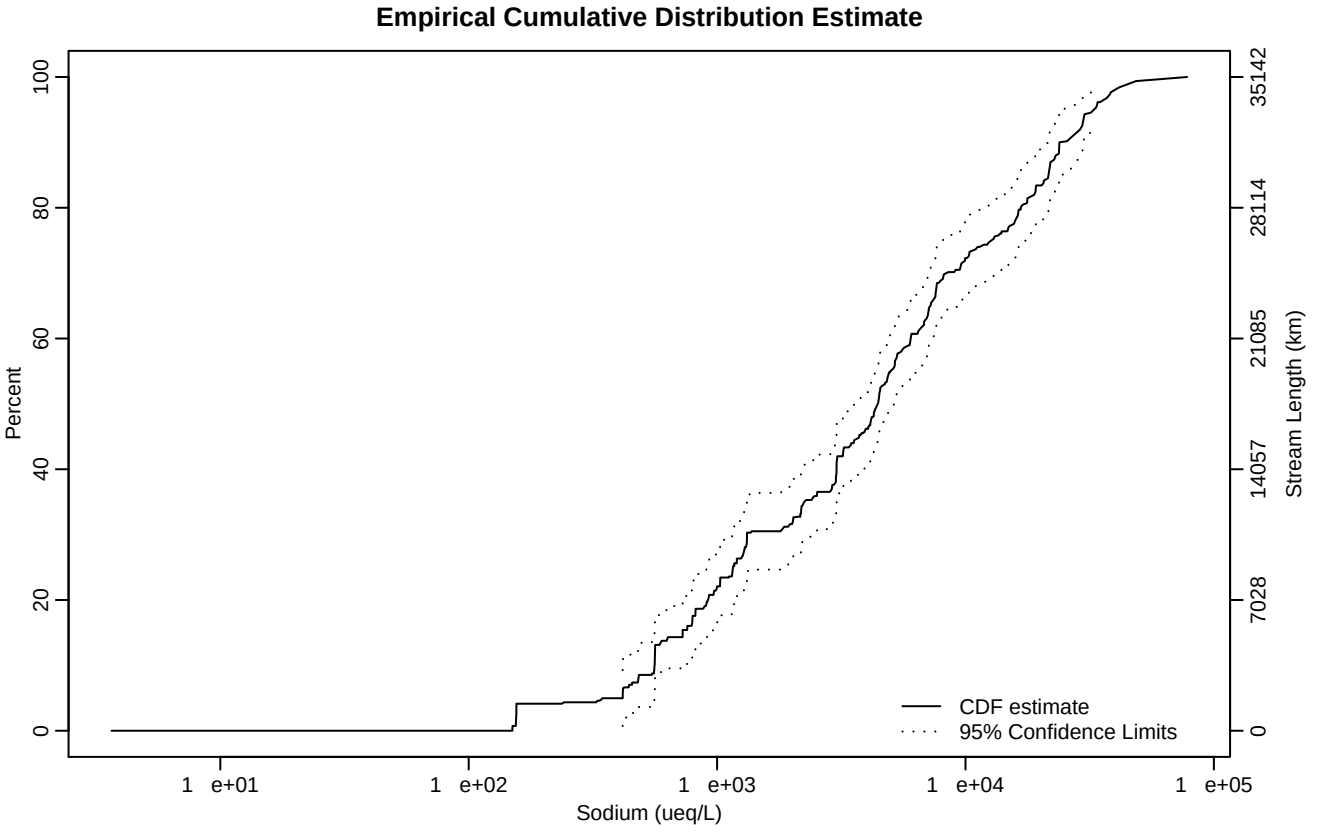


Figure CHEM−185 Indicator: Sodium Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	416.85	154.72	558.12
10Pct	560.11	416.90	726.58
25Pct	1158.88	888.88	1847.66
50Pct	4434.22	3555.81	5177.23
75Pct	12723.16	8126.95	17568.43
90Pct	23883.82	21557.27	33119.32
95Pct	32856.14	28767.33	40322.79
Mean	9180.20	7565.94	10794.47
Std Dev	11319.08	9296.97	13341.18

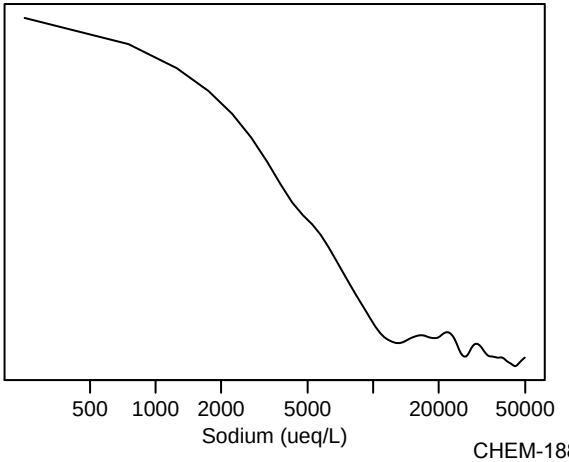
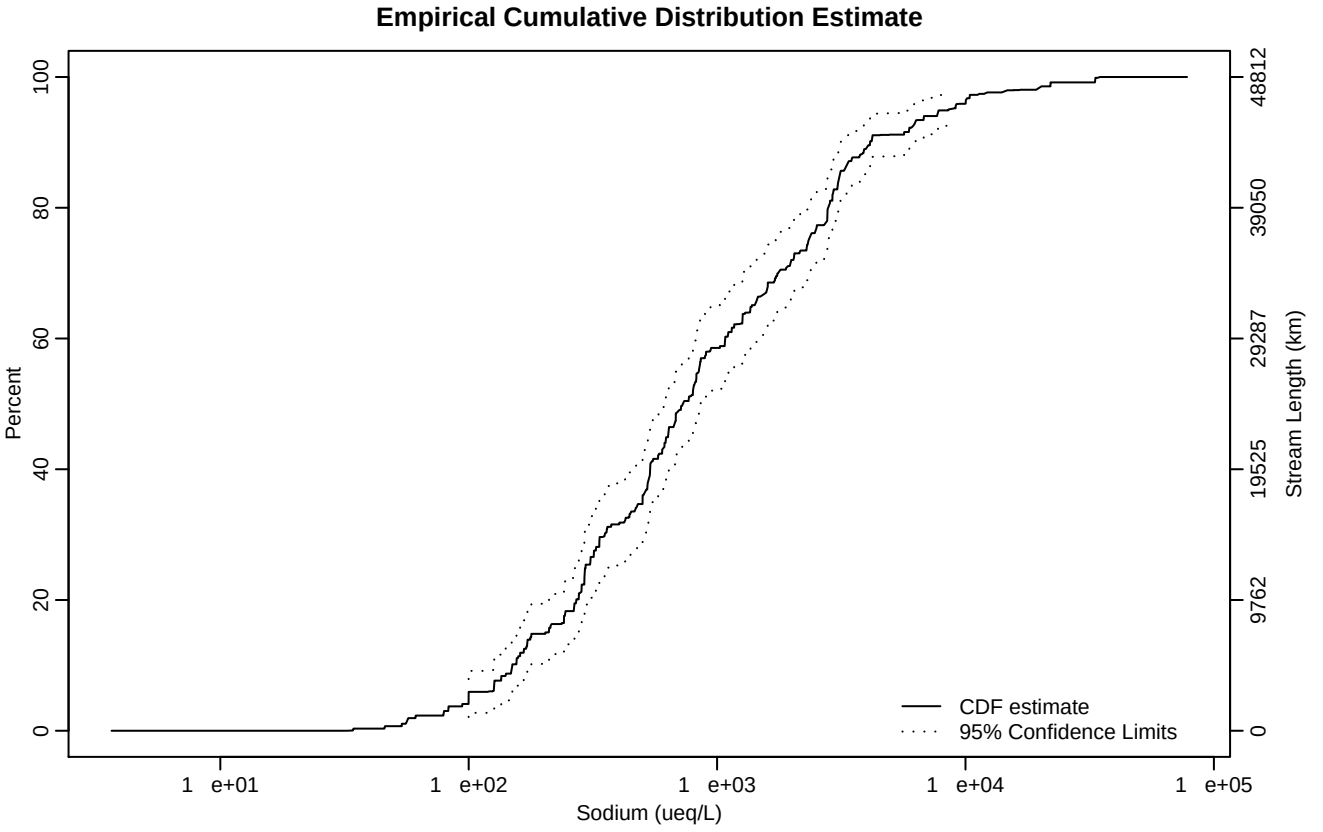


Figure CHEM−186 Indicator: Sodium Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	99.92	79.18	126.90
10Pct	149.76	99.97	178.46
25Pct	295.44	265.44	374.64
50Pct	728.25	605.16	859.91
75Pct	2333.57	1725.10	2837.49
90Pct	4129.88	3297.75	6794.86
95Pct	8542.32	6188.08	11308.49
Mean	2113.28	1588.75	2637.80
Std Dev	3197.18	2319.22	4075.14

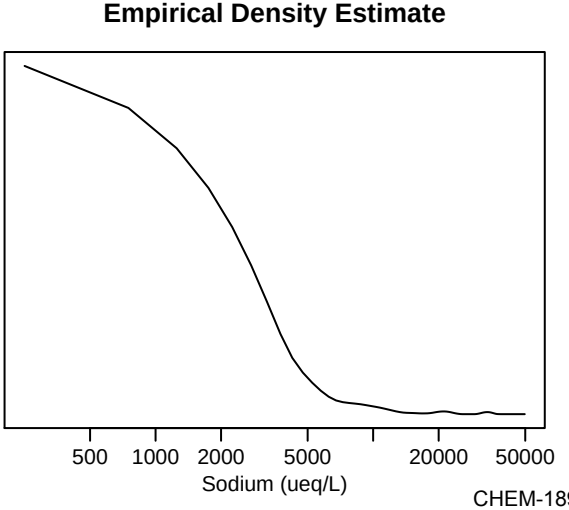
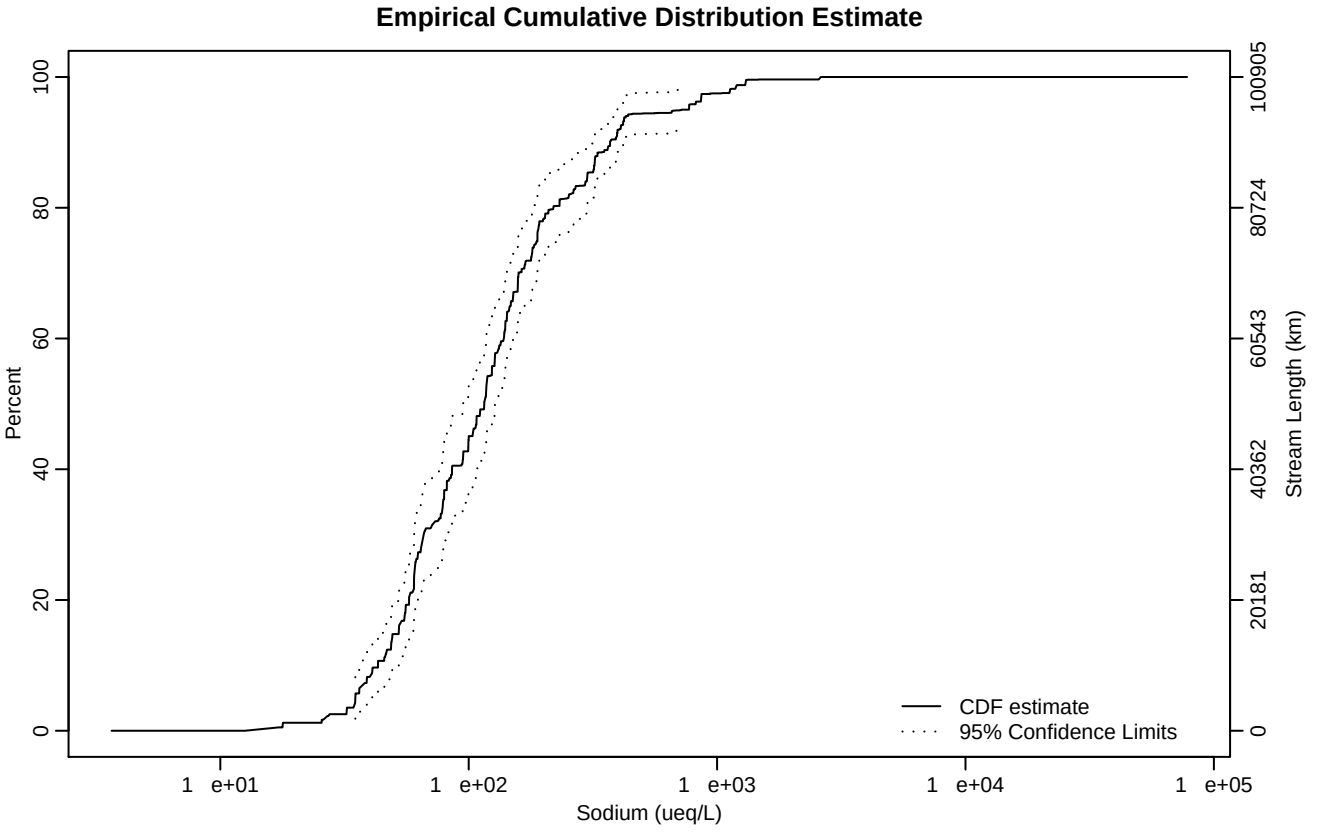


Figure CHEM−187 Indicator: Sodium Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	34.96	26.79	38.90
10Pct	43.12	36.25	49.11
25Pct	60.75	55.70	71.12
50Pct	115.49	95	130.28
75Pct	189.10	157.85	232.21
90Pct	370.68	319.68	422.24
95Pct	720.08	397.21	1140.76
Mean	187.06	153.69	220.43
Std Dev	231.11	162.92	299.30

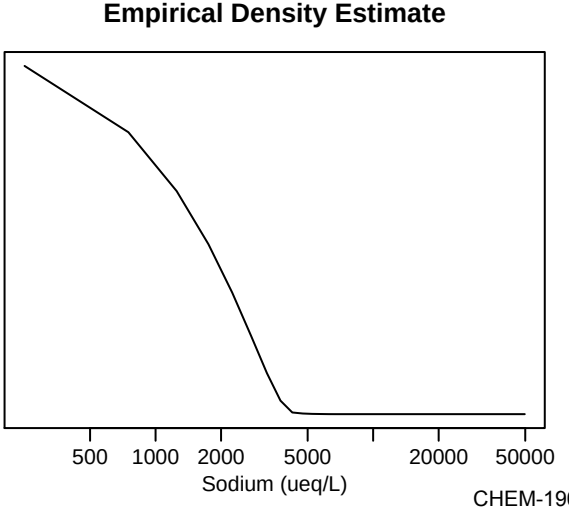
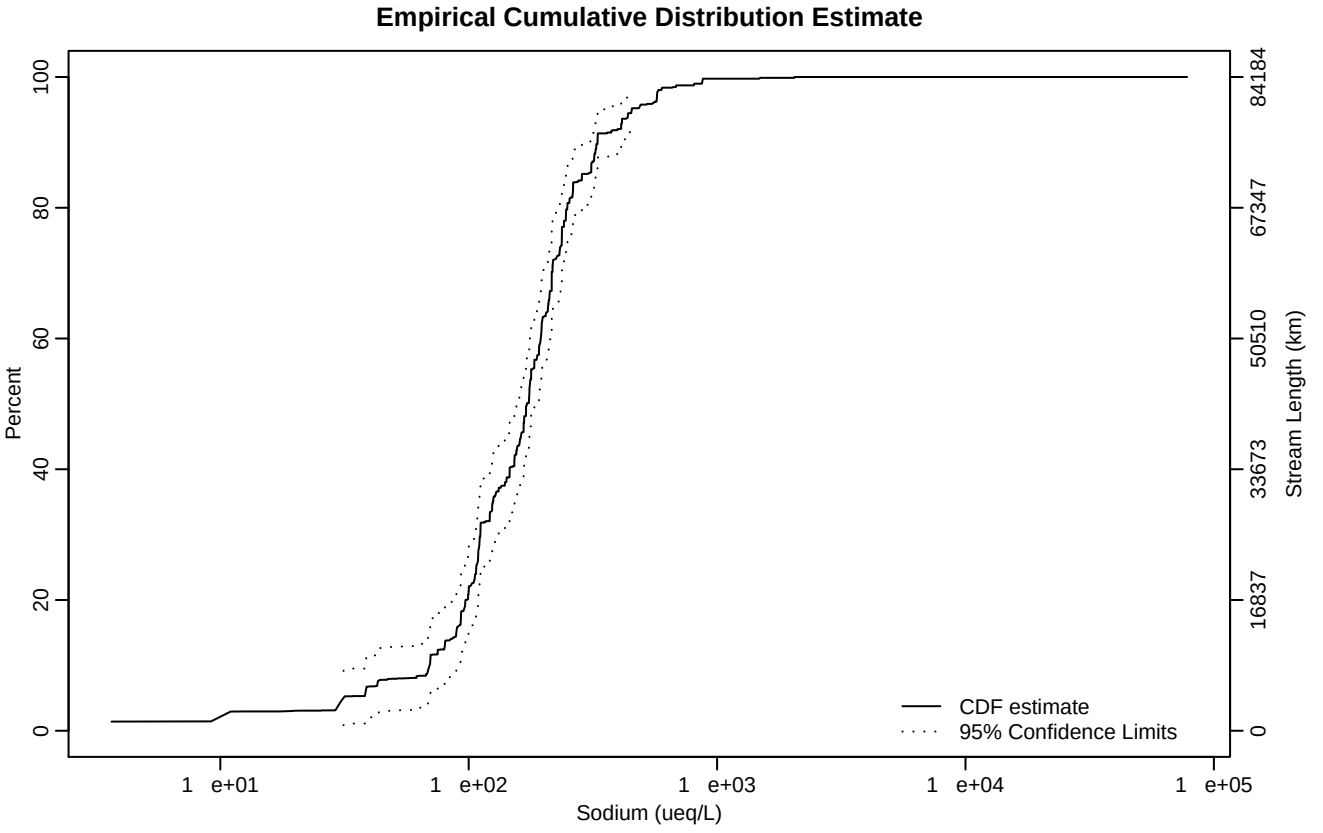


Figure CHEM−188 Indicator: Sodium Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	31.32	3.65	68.45
10Pct	69.59	31.13	89.23
25Pct	107.29	95.45	111.70
50Pct	171.49	156.41	187.91
75Pct	237.01	215.85	261.86
90Pct	330.12	311.53	437.08
95Pct	453.40	410.98	578.37
Mean	197.20	178.70	215.69
Std Dev	139.72	115.04	164.40

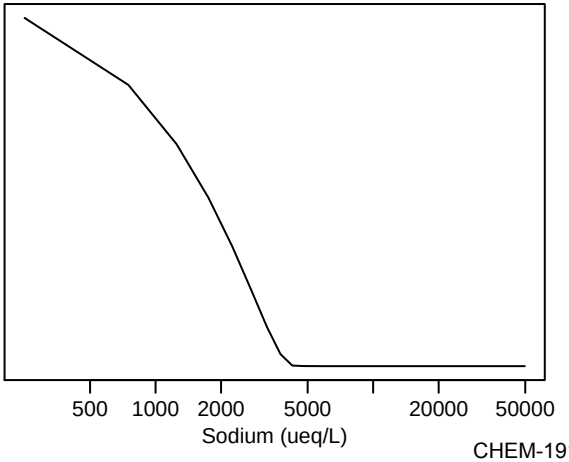
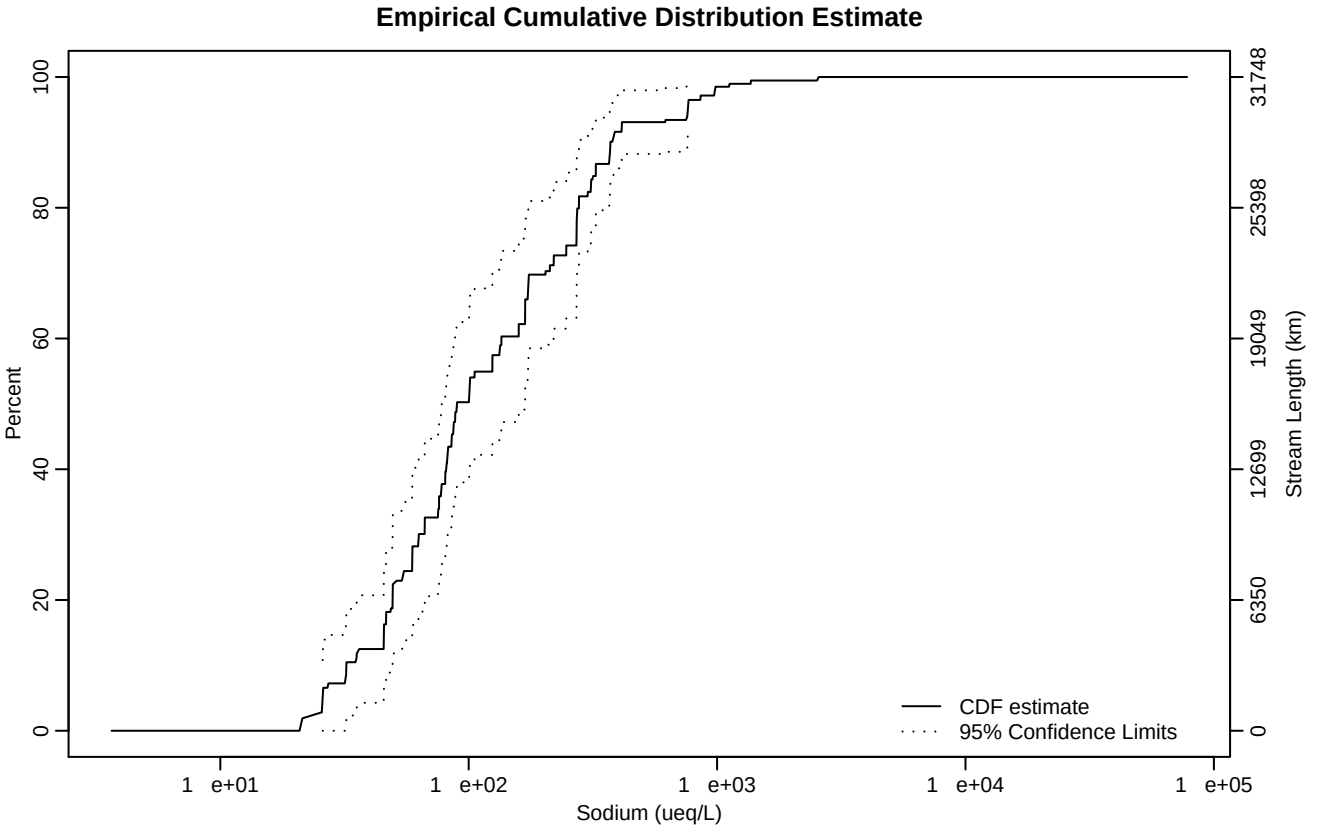


Figure CHEM−189 Indicator: Sodium Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	25.82	21.26	32.10
10Pct	32.17	23.39	46.52
25Pct	59.19	45.54	75.98
50Pct	89.72	77.70	168.67
75Pct	271.62	168.72	324.92
90Pct	371.98	310.84	767.19
95Pct	762.34	372.04	2559.67
Mean	197.99	151.70	244.29
Std Dev	222.01	157.28	286.74

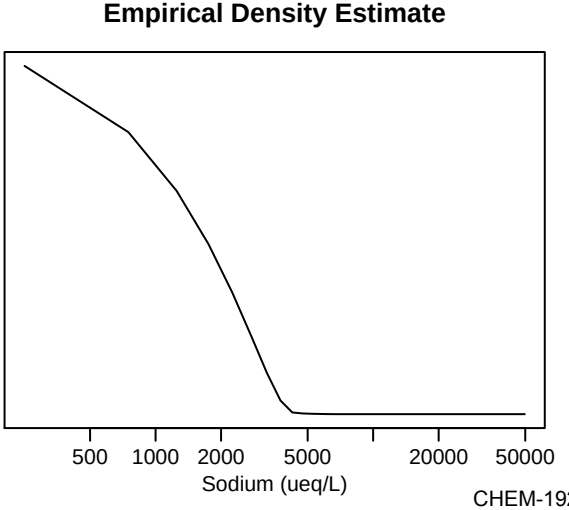
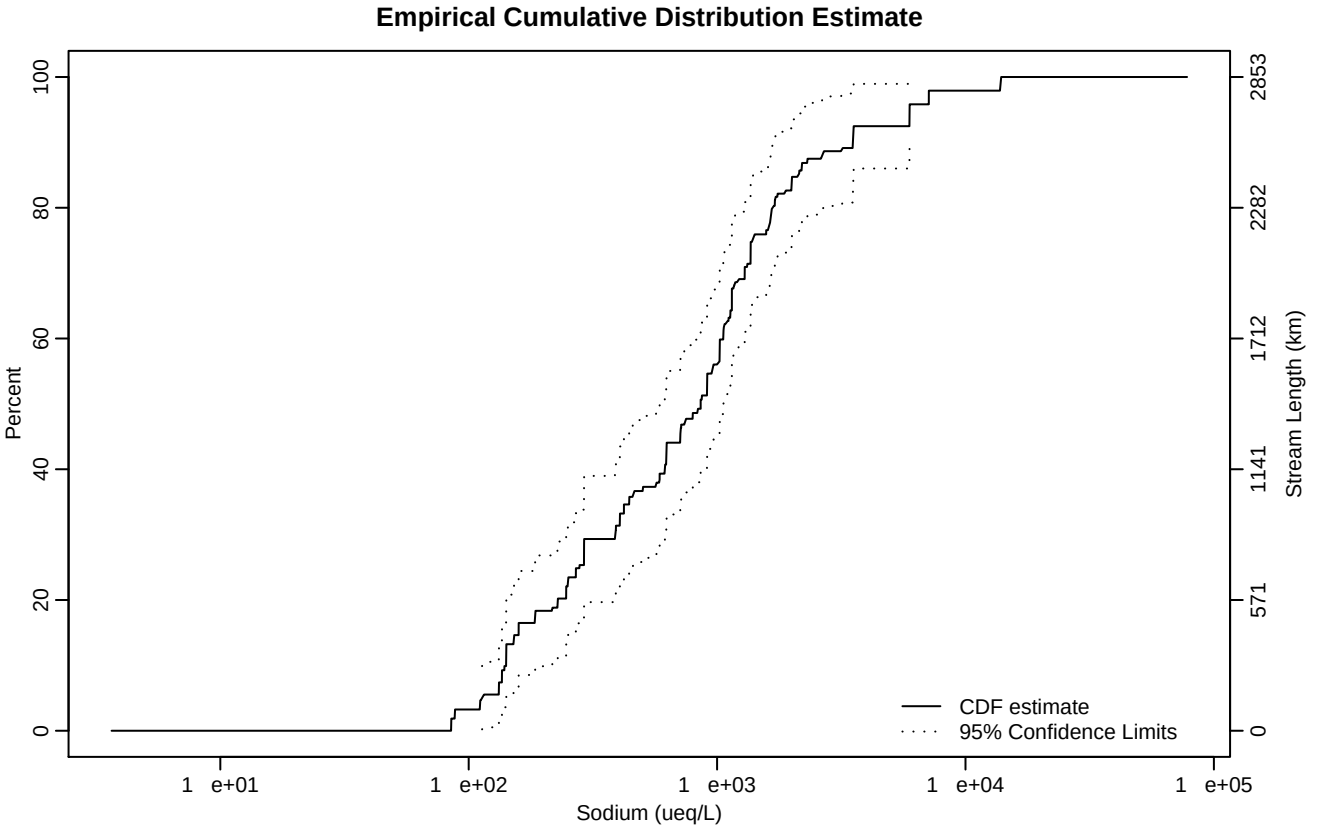


Figure CHEM−190 Indicator: Sodium Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	113.16	84.94	139.25
10Pct	141.42	110.99	158.92
25Pct	279.09	184.54	406.49
50Pct	858.74	587.09	1061.38
75Pct	1387.41	1146.88	2002.62
90Pct	3521.29	1719.19	13805.20
95Pct	5956.02	2679.10	13923.67
Mean	1485.21	957.57	2012.84
Std Dev	2150.92	1268.03	3033.81

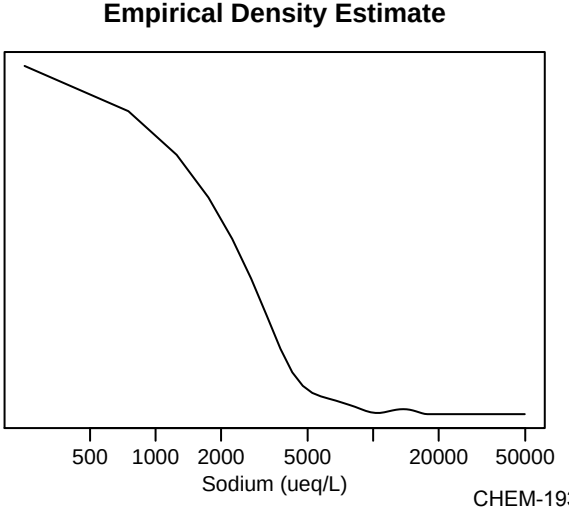
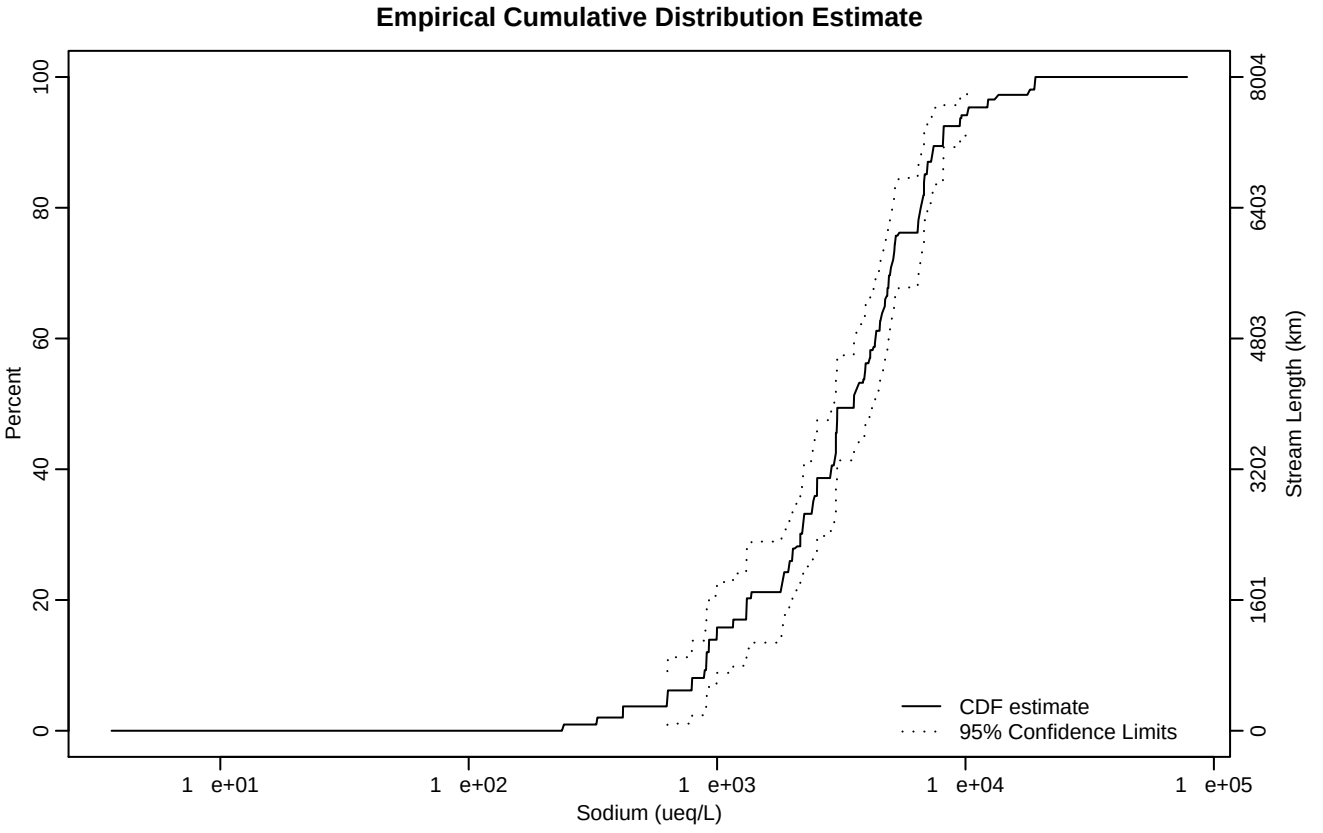


Figure CHEM−191 Indicator: Sodium Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	630.71	329.16	885.39
10Pct	904.19	627.31	1159.12
25Pct	1945.56	1312.18	2223.44
50Pct	3552.09	2982.88	4235.91
75Pct	5218.34	4841.69	6807.14
90Pct	8117.22	6820.56	12285.05
95Pct	10256.09	8161.68	18918.22
Mean	4302.43	3715.55	4889.30
Std Dev	3356.01	2616.49	4095.53

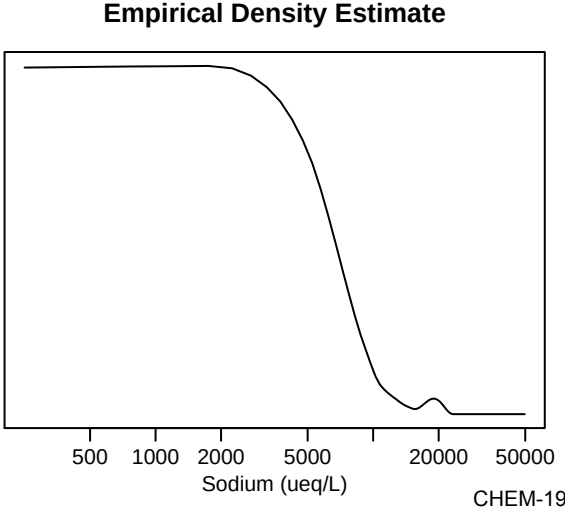
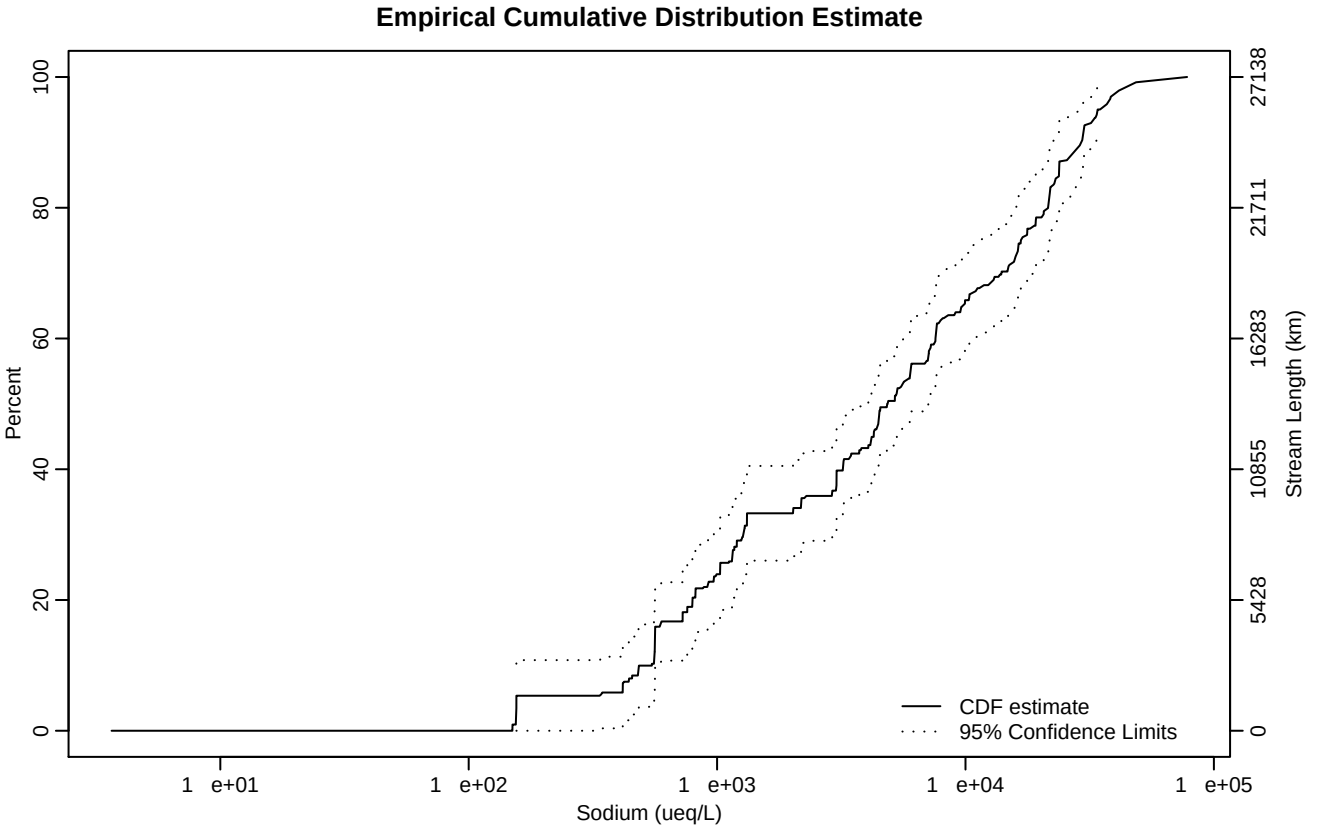


Figure CHEM−192 Indicator: Sodium Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	155.58	150.02	482.93
10Pct	546.11	155.56	591.99
25Pct	1029.07	726.70	1318.80
50Pct	4855.96	3801.98	7067.31
75Pct	16712.77	11403.51	21853.23
90Pct	29229.09	23345.60	35821.01
95Pct	34043.48	29723.49	46881.16
Mean	10618.88	8545.52	12692.24
Std Dev	12289.54	10011.08	14567.99

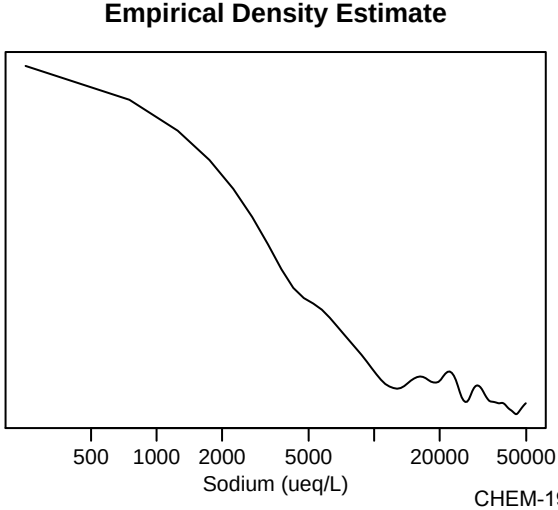
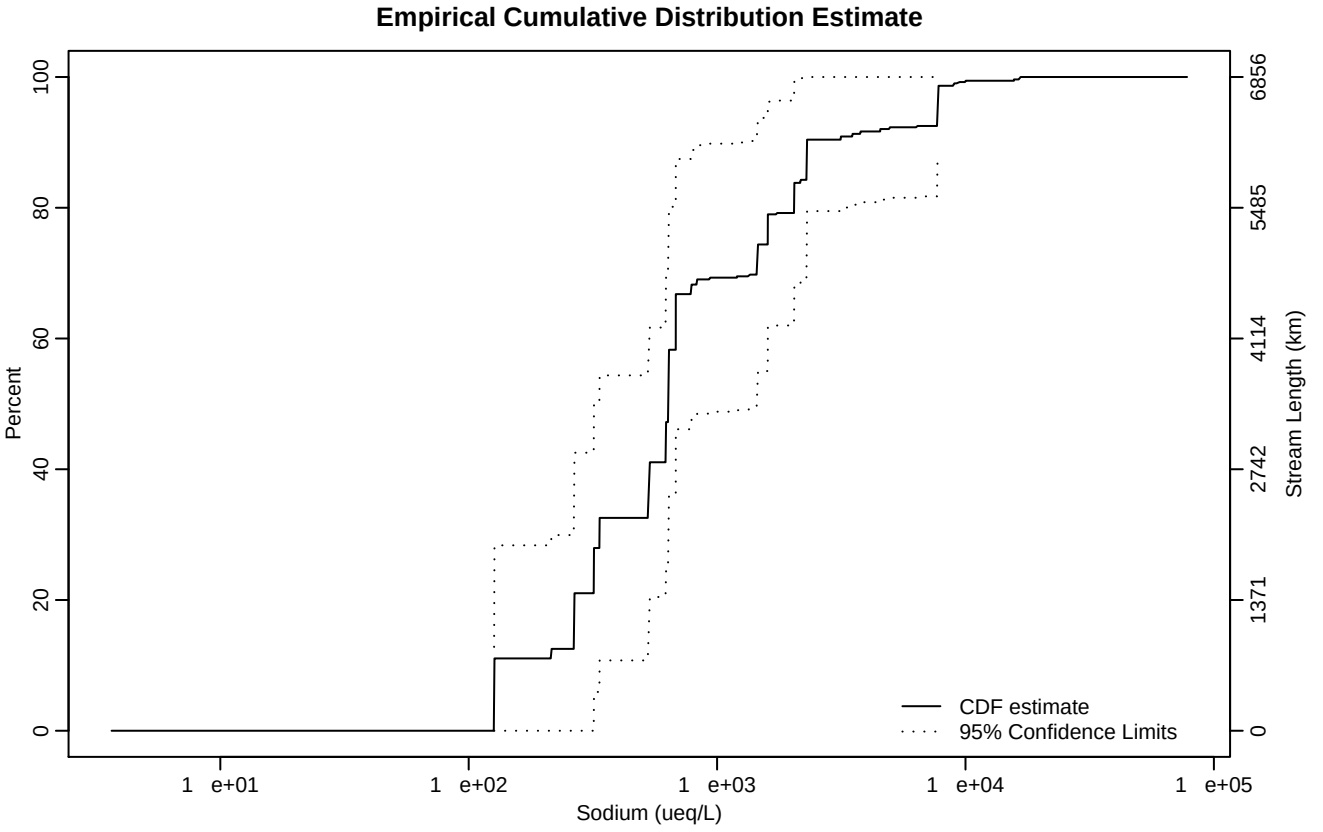


Figure CHEM−193 Indicator: Sodium Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	126.55	126.47	126.63
10Pct	126.90	126.74	215.38
25Pct	319.10	126.45	622.84
50Pct	635.79	319.39	1453.98
75Pct	1599.28	638.89	7711.11
90Pct	2302.22	1599.11	16669.24
95Pct	7724.34	2288.60	16669.24
Mean	1438.80	566.84	2310.77
Std Dev	2277.67	1281.44	3273.90

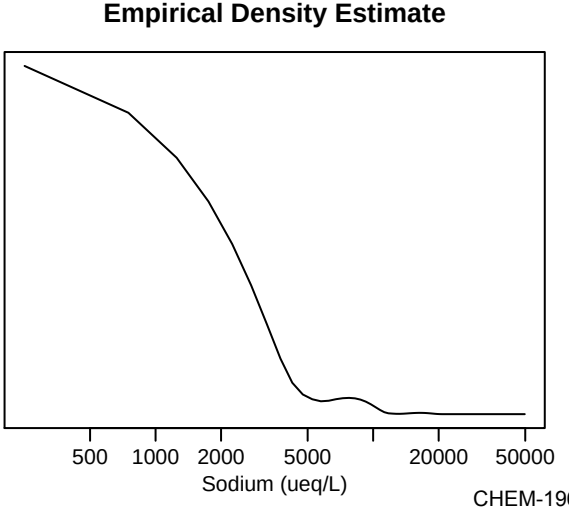
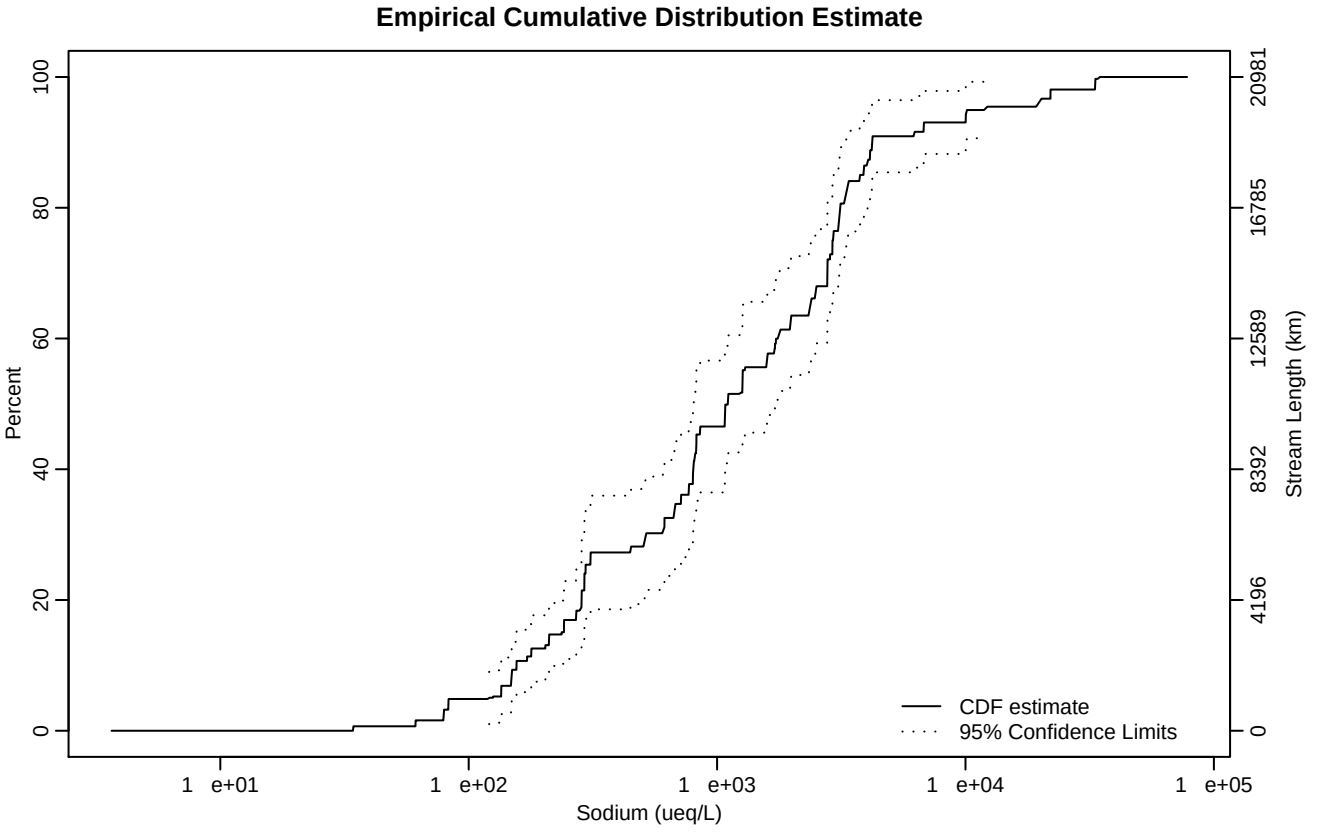


Figure CHEM−194 Indicator: Sodium Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	120.77	61.08	149.31
10Pct	155.74	135.14	210.75
25Pct	295.57	242.05	672.53
50Pct	1103.98	802.52	1725.96
75Pct	2915.20	2474.08	3377.93
90Pct	4211.92	3363.77	20117.90
95Pct	11906.89	4223.18	33319.51
Mean	2909.45	1763.31	4055.58
Std Dev	4974.02	2971.16	6976.87

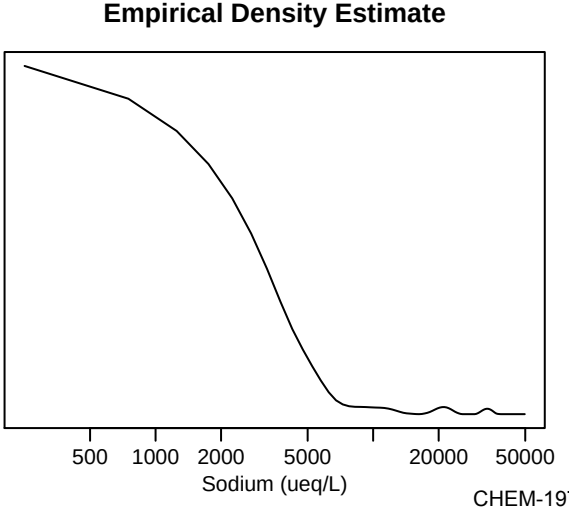
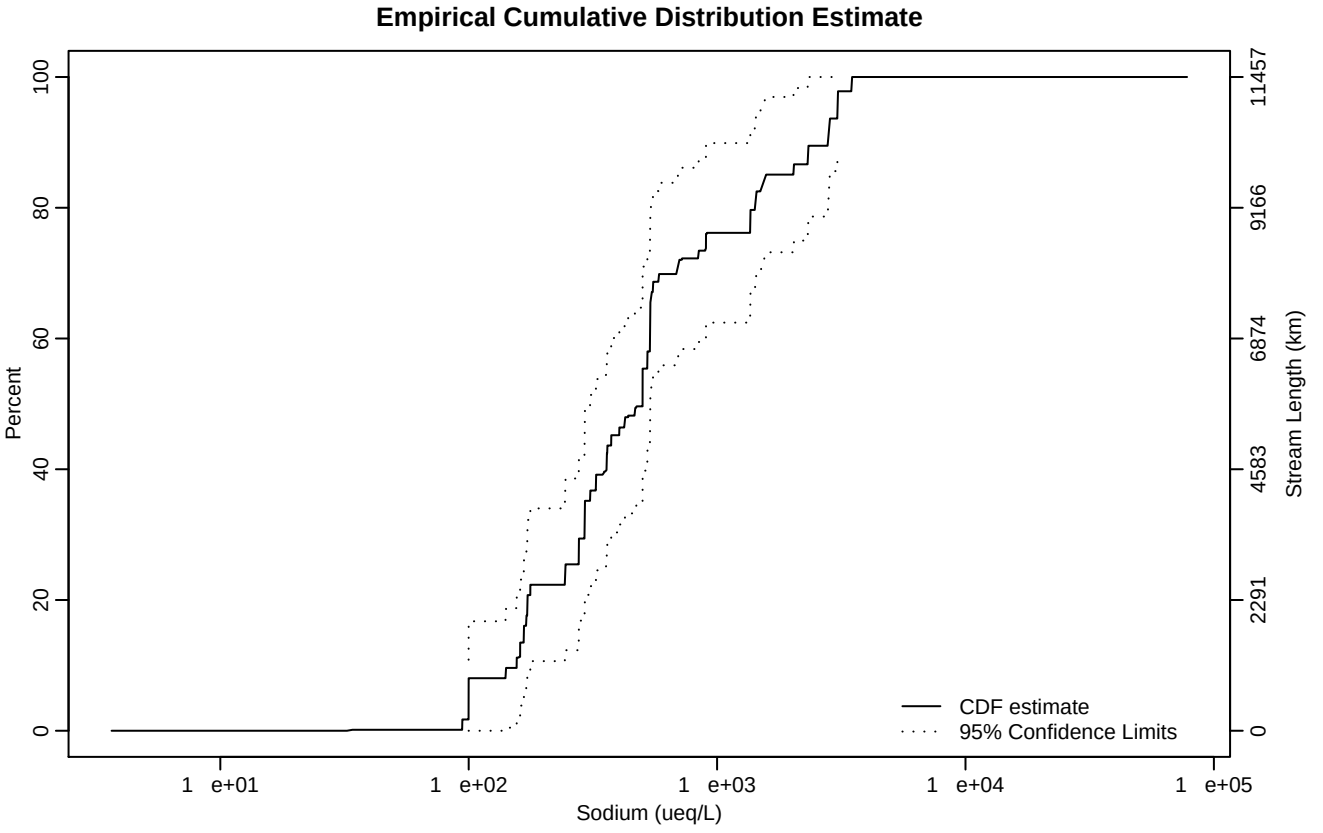


Figure CHEM−195 Indicator: Sodium Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	99.92	99.88	99.96
10Pct	155.96	3.65	176.99
25Pct	245.19	161.10	325.23
50Pct	501.13	293.65	539.75
75Pct	902.18	537.31	2330.18
90Pct	2793.10	1362.97	3496.37
95Pct	3053.76	2316.29	3496.37
Mean	830.20	523.84	1136.56
Std Dev	870.96	656.26	1085.67

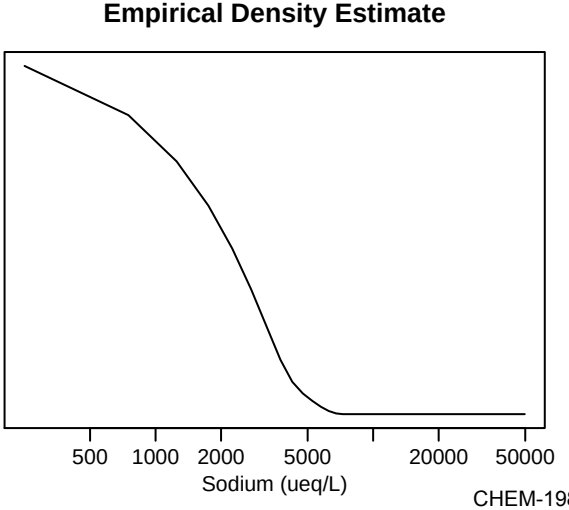
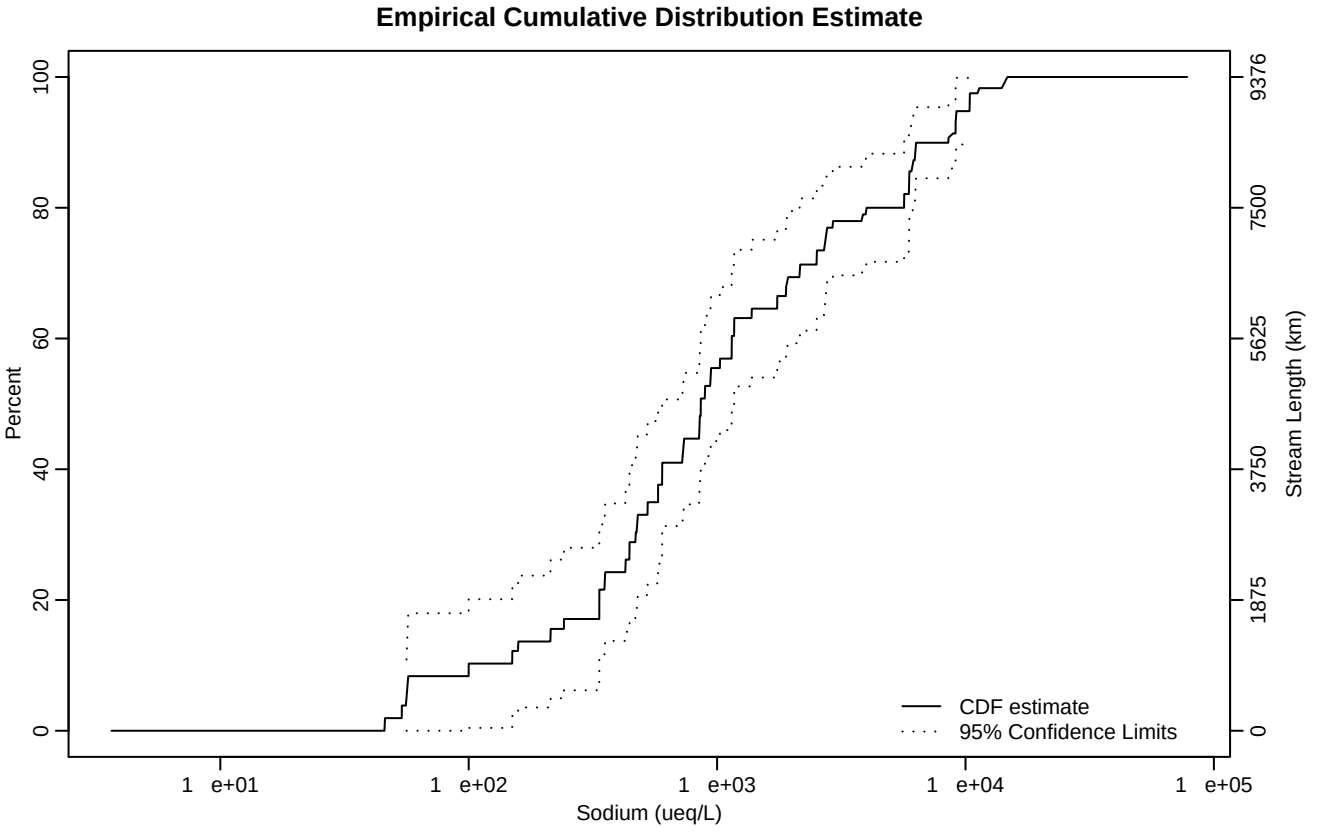


Figure CHEM−196 Indicator: Sodium Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	56.17	45.84	99.99
10Pct	99.99	45.81	335.65
25Pct	427.60	213.18	578.63
50Pct	859.85	601.09	1146.70
75Pct	2728.99	1745.85	5938.36
90Pct	8525.85	5936.25	10392.94
95Pct	10385.76	6318.17	14749.30
Mean	2412.02	1830.96	2993.07
Std Dev	2250.92	1763.26	2738.58

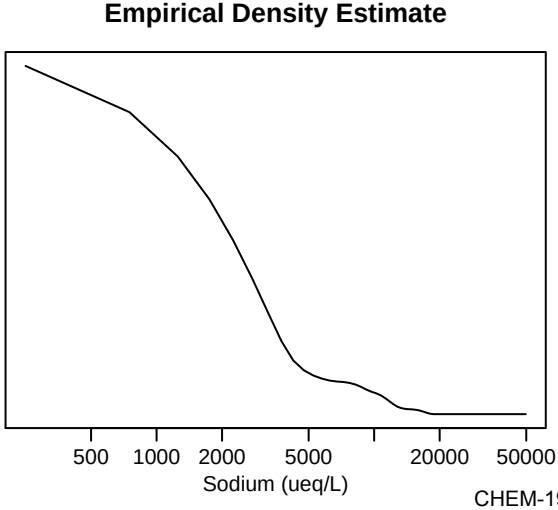
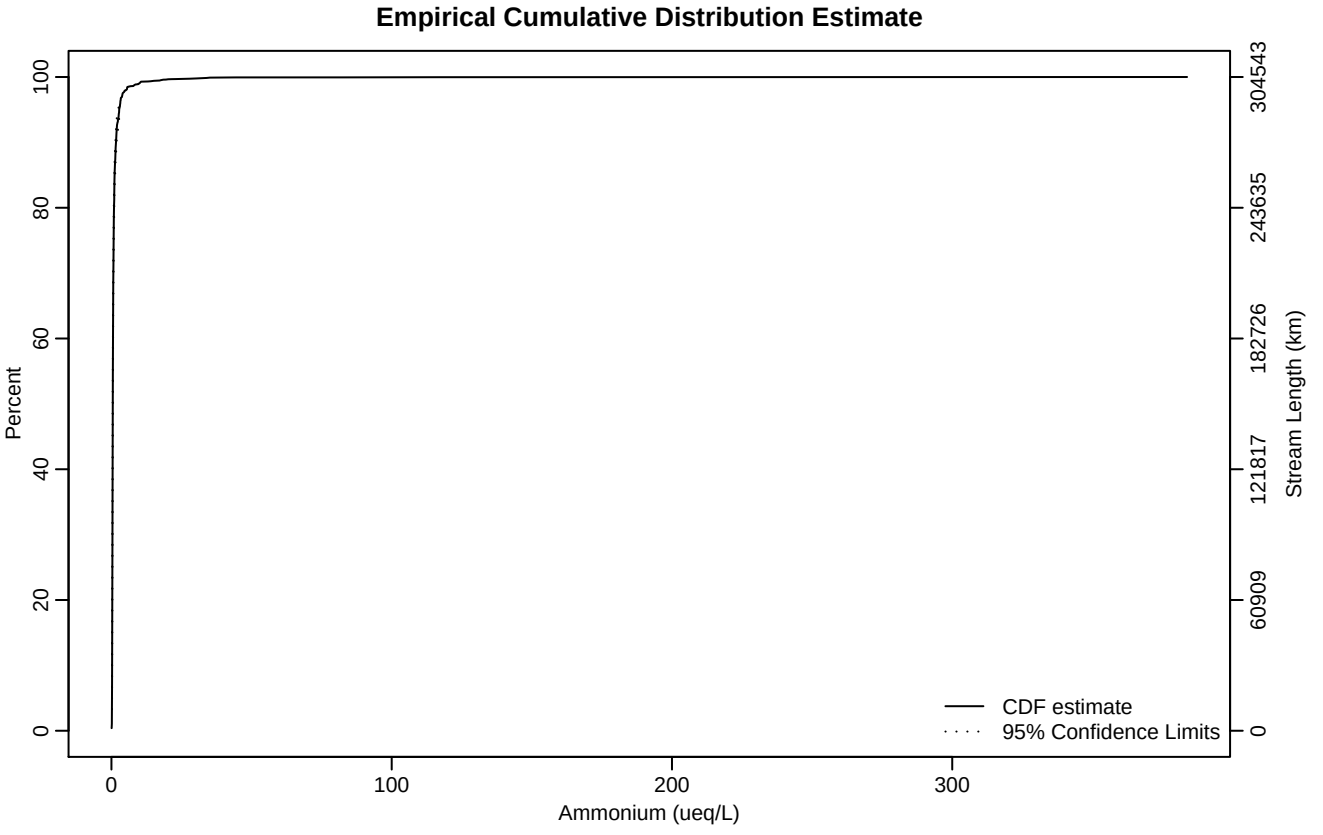


Figure CHEM−197 Indicator: Ammonium Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.19	0.18	0.20
10Pct	0.23	0.22	0.25
25Pct	0.33	0.31	0.35
50Pct	0.47	0.45	0.50
75Pct	0.78	0.73	0.84
90Pct	1.62	1.41	1.87
95Pct	2.77	2.41	3.21
Mean	1.11	0.92	1.31
Std Dev	3.53	1.87	5.20

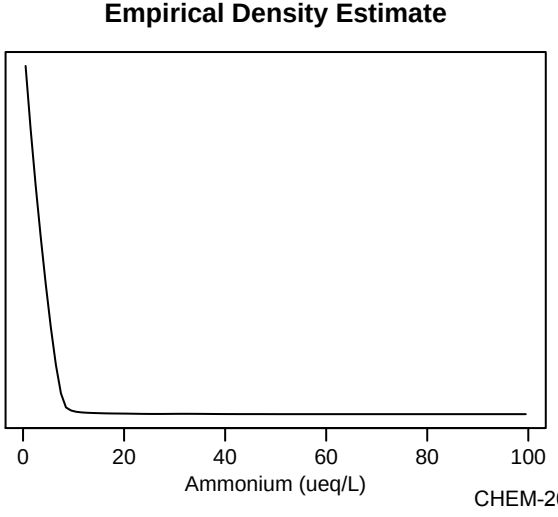
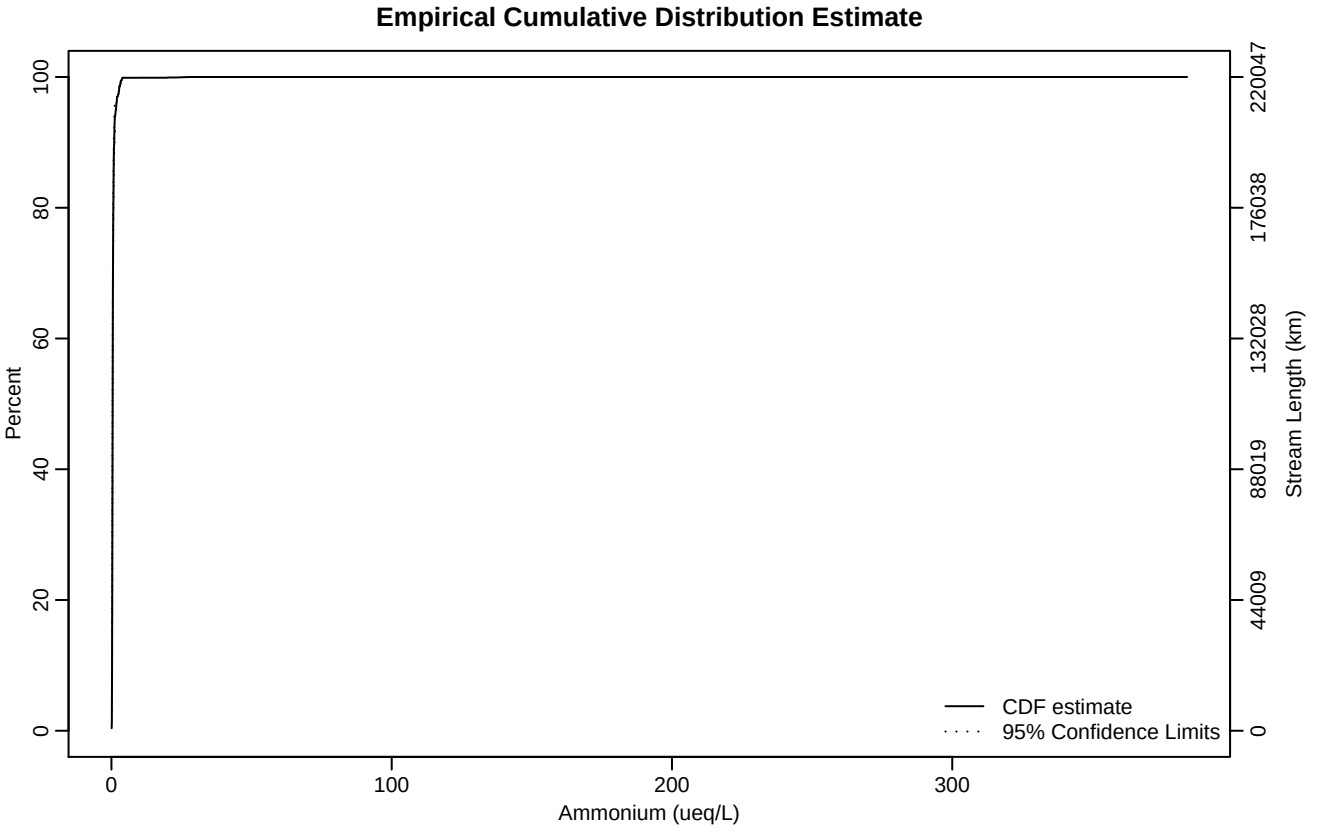


Figure CHEM−198 Indicator: Ammonium Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0.17	0.18
10Pct	0.22	0.19	0.23
25Pct	0.30	0.28	0.32
50Pct	0.43	0.40	0.45
75Pct	0.60	0.56	0.64
90Pct	1	0.83	1.09
95Pct	1.64	1.11	2.33
Mean	0.62	0.56	0.68
Std Dev	0.65	0.48	0.82

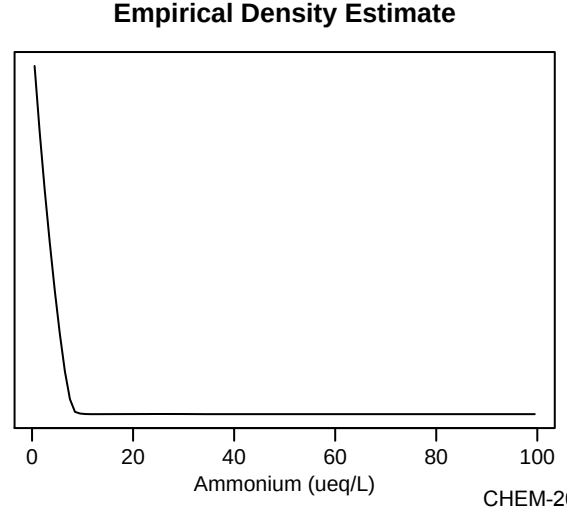
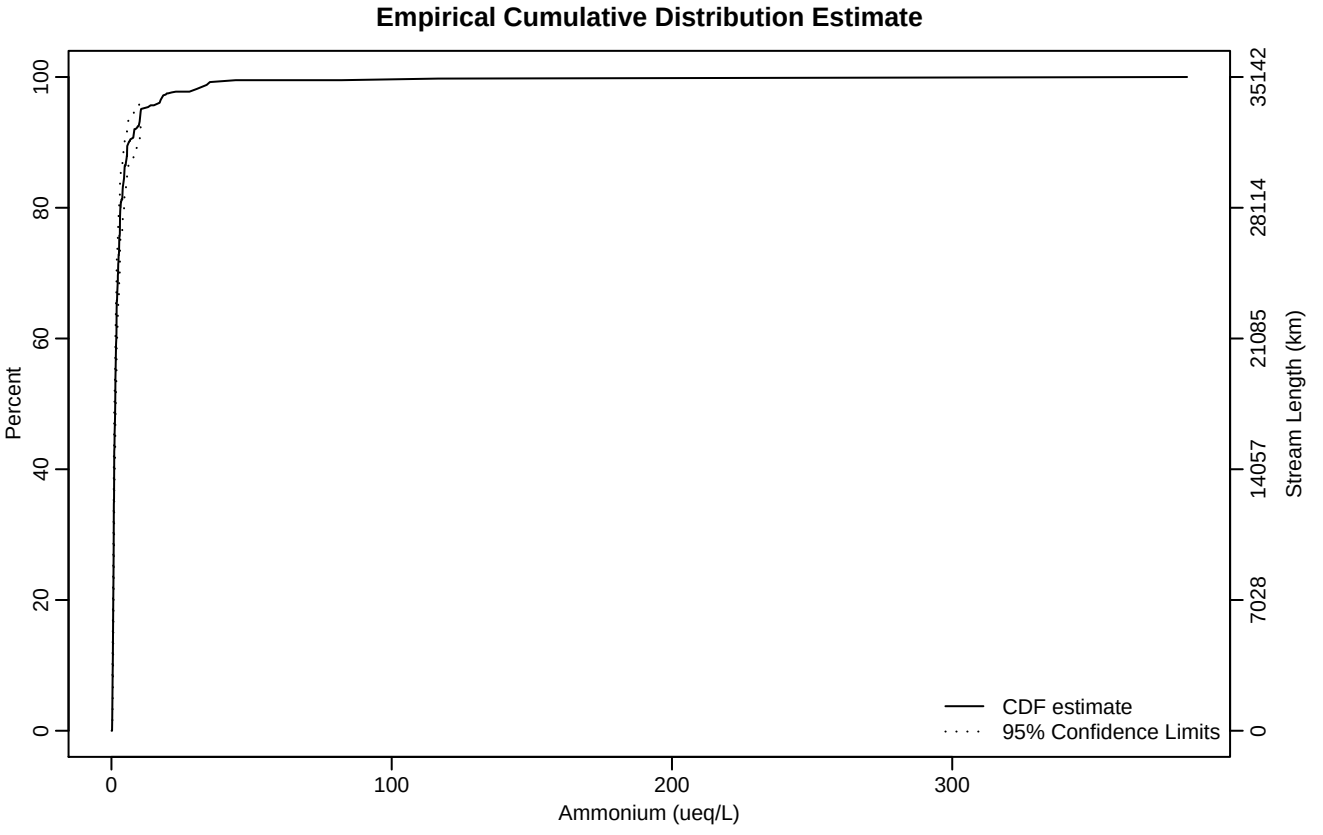


Figure CHEM−199 Indicator: Ammonium Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.35	0.29	0.41
10Pct	0.47	0.35	0.56
25Pct	0.75	0.63	0.82
50Pct	1.35	1.08	1.53
75Pct	2.78	2.28	3.55
90Pct	6.18	4.75	10.17
95Pct	10.53	9.80	19.40
Mean	4.26	2.60	5.93
Std Dev	8.87	5.27	12.47

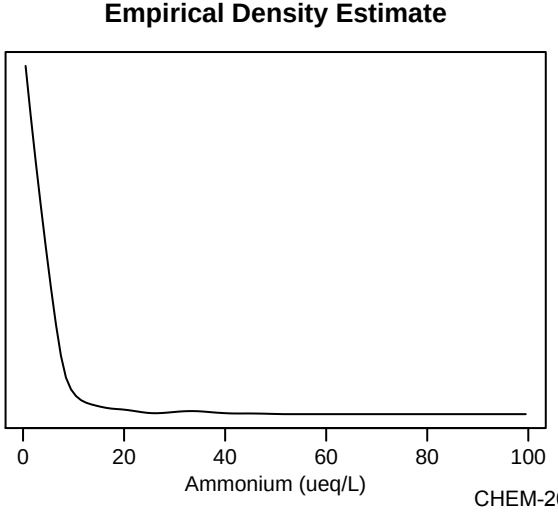
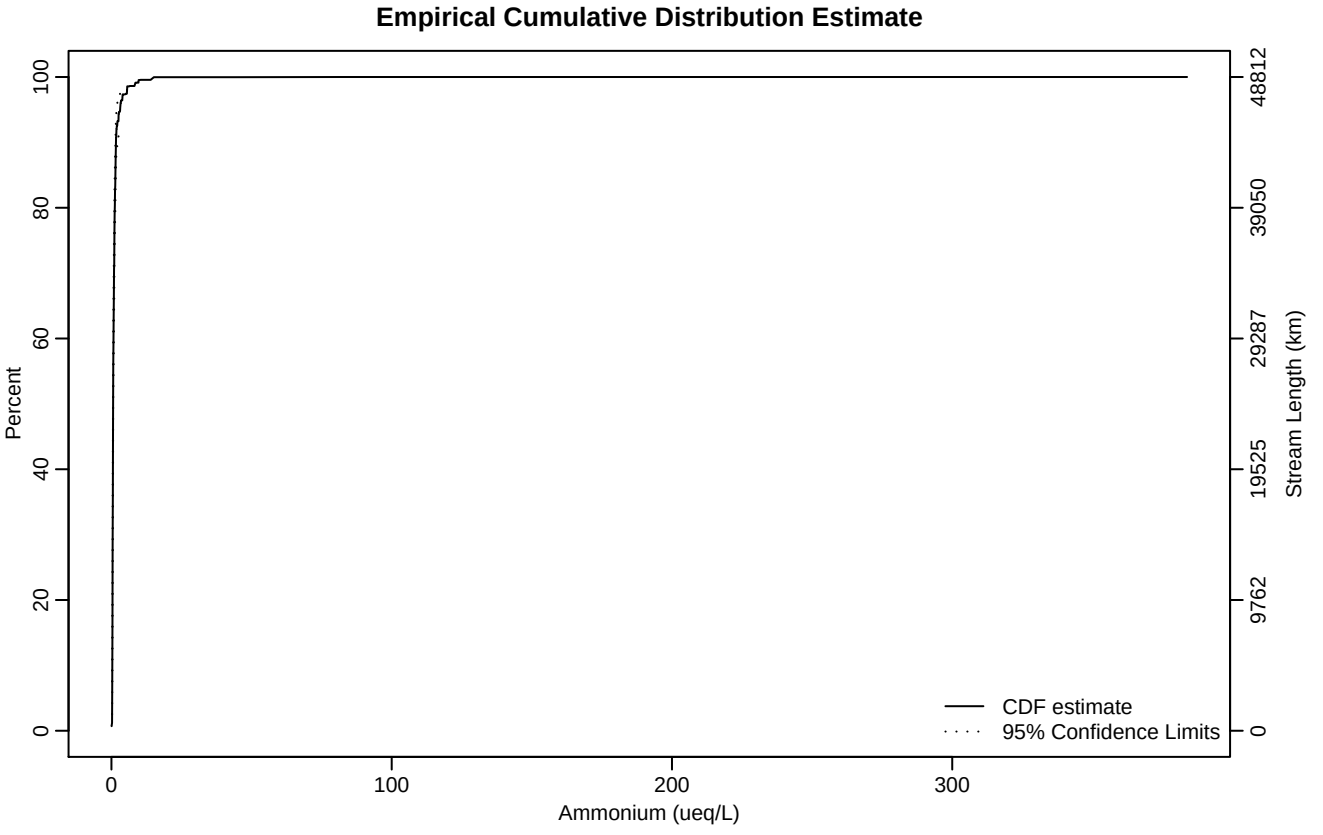


Figure CHEM−200 Indicator: Ammonium Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.26	0.24	0.28
10Pct	0.31	0.28	0.33
25Pct	0.41	0.38	0.44
50Pct	0.59	0.54	0.67
75Pct	1.05	0.89	1.25
90Pct	1.61	1.44	2.55
95Pct	3.09	1.90	5.53
Mean	1.06	0.89	1.23
Std Dev	1.53	1	2.06

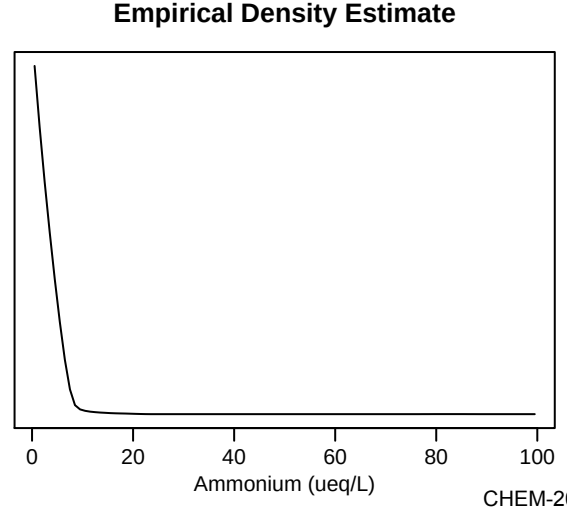
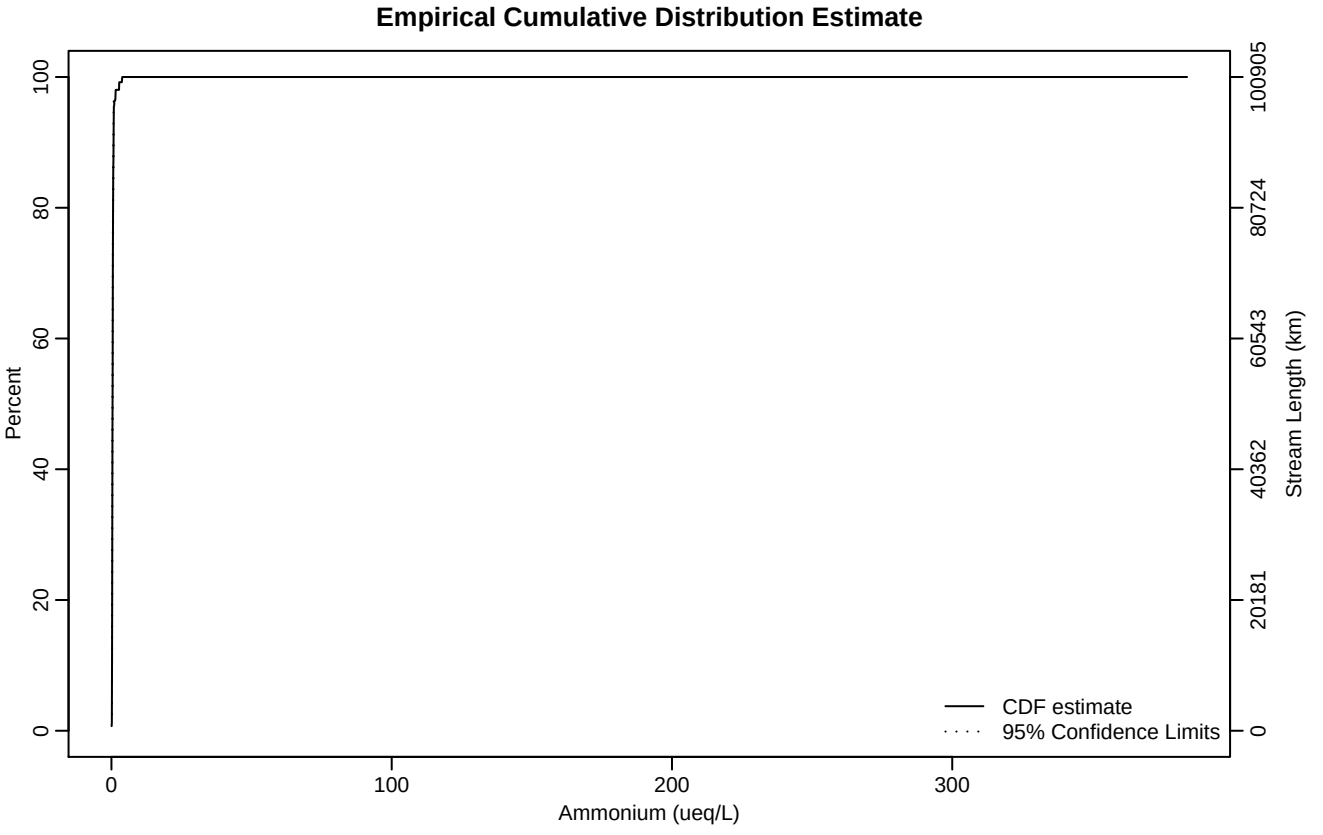


Figure CHEM−201 Indicator: Ammonium Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	0.16	0.18
10Pct	0.20	0.19	0.21
25Pct	0.28	0.25	0.30
50Pct	0.39	0.34	0.44
75Pct	0.53	0.49	0.60
90Pct	0.75	0.64	0.84
95Pct	0.85	0.77	2.77
Mean	0.52	0.45	0.58
Std Dev	0.35	0.20	0.50

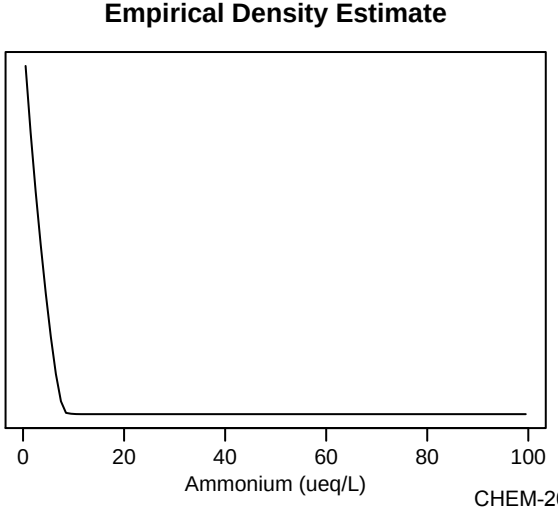
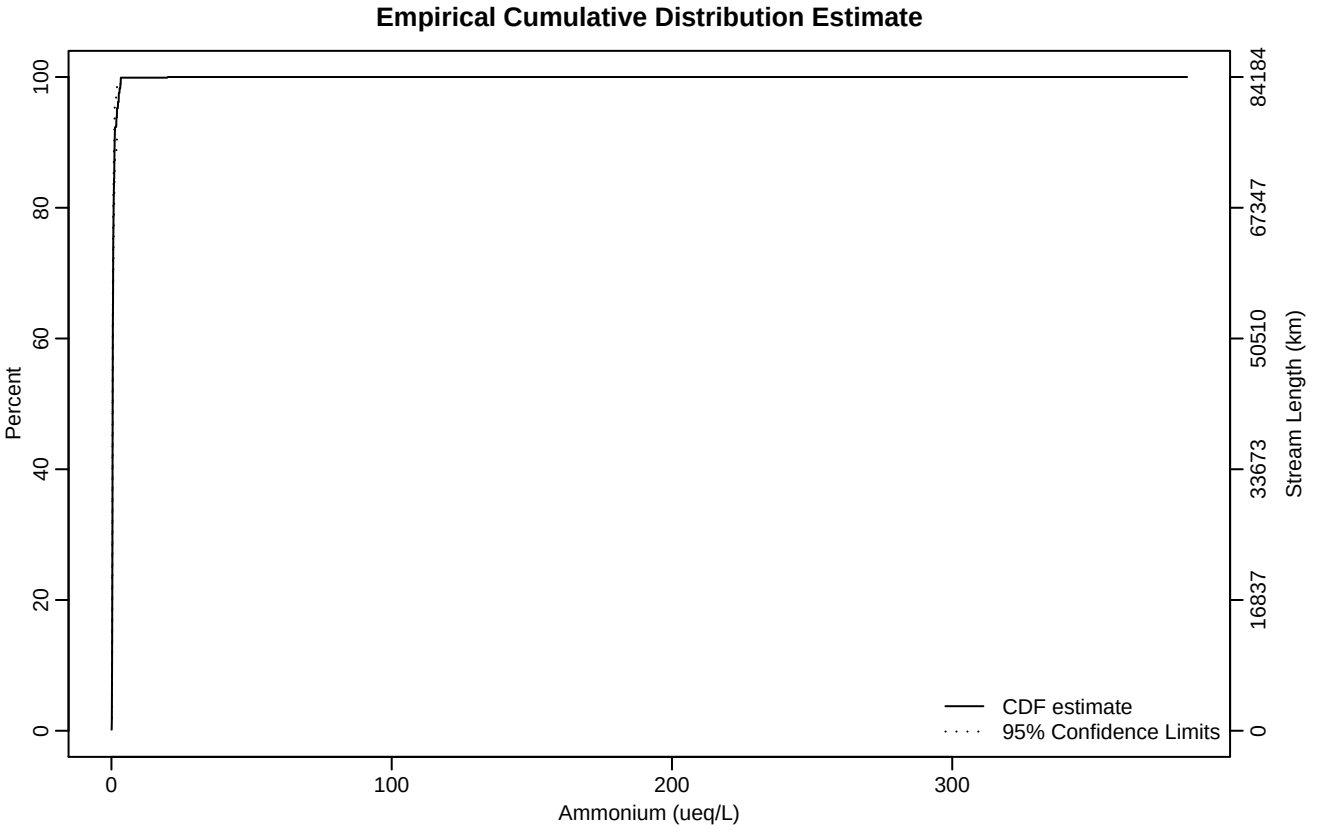


Figure CHEM−202 Indicator: Ammonium Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	0.15	0.19
10Pct	0.22	0.18	0.26
25Pct	0.32	0.29	0.35
50Pct	0.44	0.40	0.48
75Pct	0.65	0.60	0.79
90Pct	1.15	1	1.98
95Pct	1.99	1.20	3.21
Mean	0.69	0.59	0.78
Std Dev	0.79	0.48	1.10

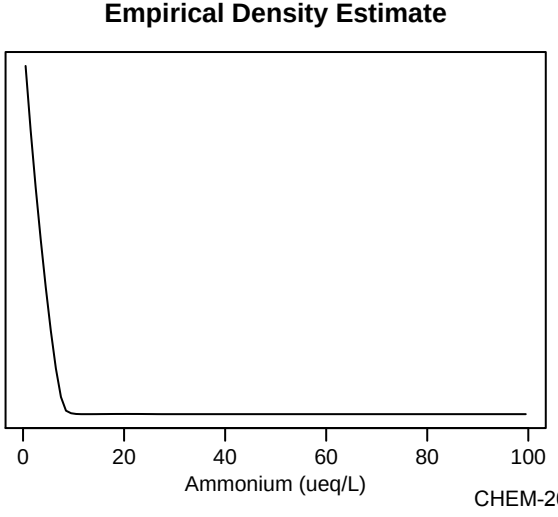
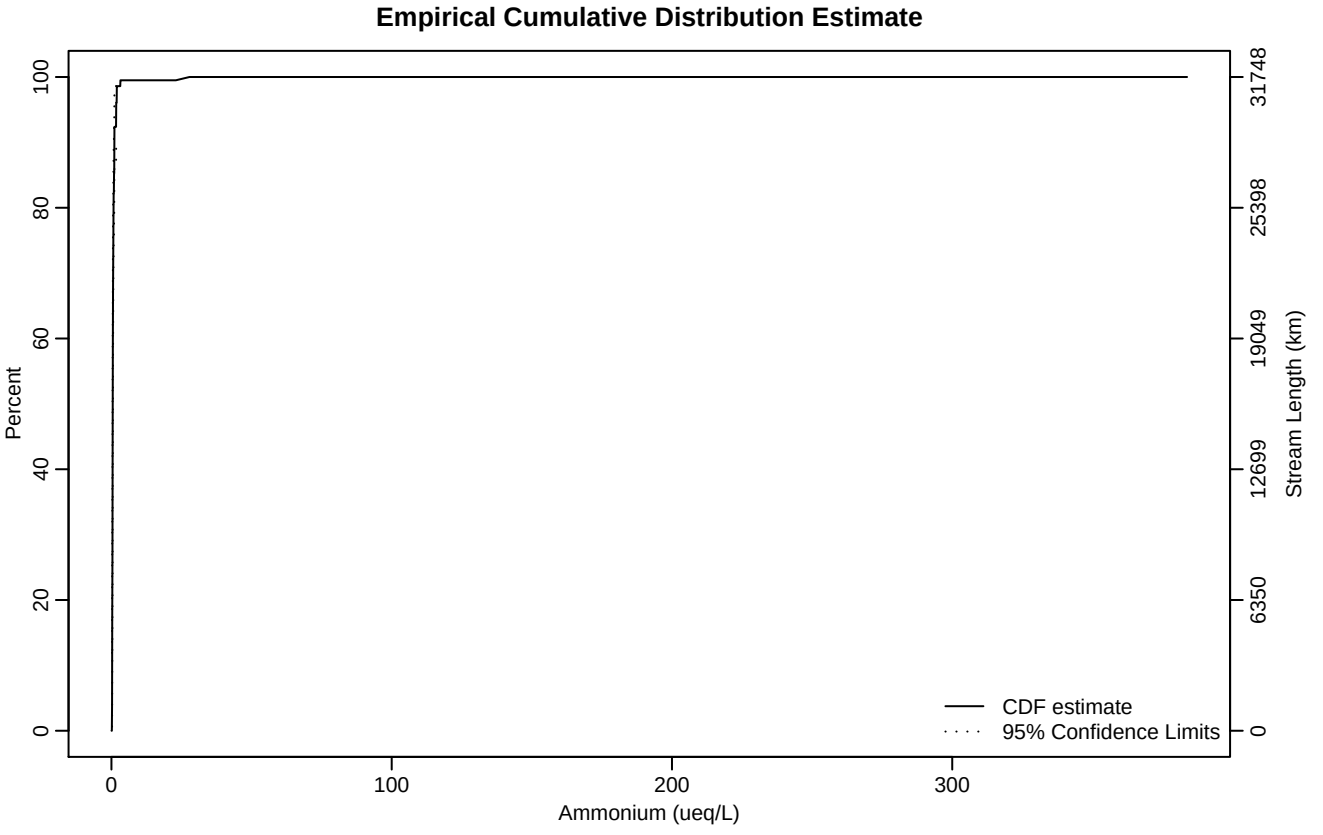


Figure CHEM−203 Indicator: Ammonium Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.05	0.25
10Pct	0.25	0.21	0.28
25Pct	0.34	0.27	0.39
50Pct	0.46	0.40	0.52
75Pct	0.67	0.55	0.90
90Pct	1.04	0.80	1.91
95Pct	1.69	1.03	27.84
Mean	0.77	0.51	1.02
Std Dev	1.11	0.41	1.81

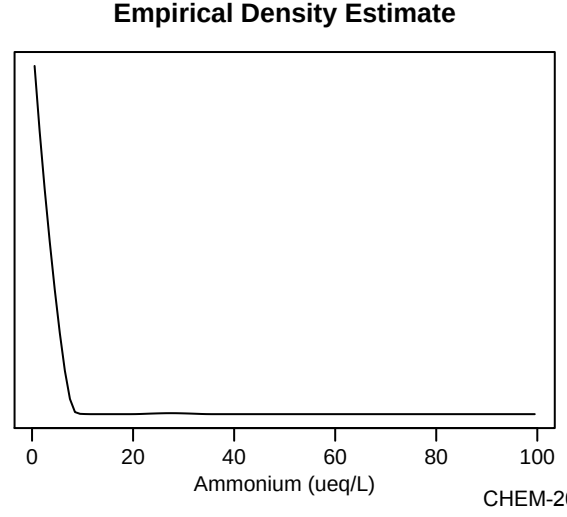
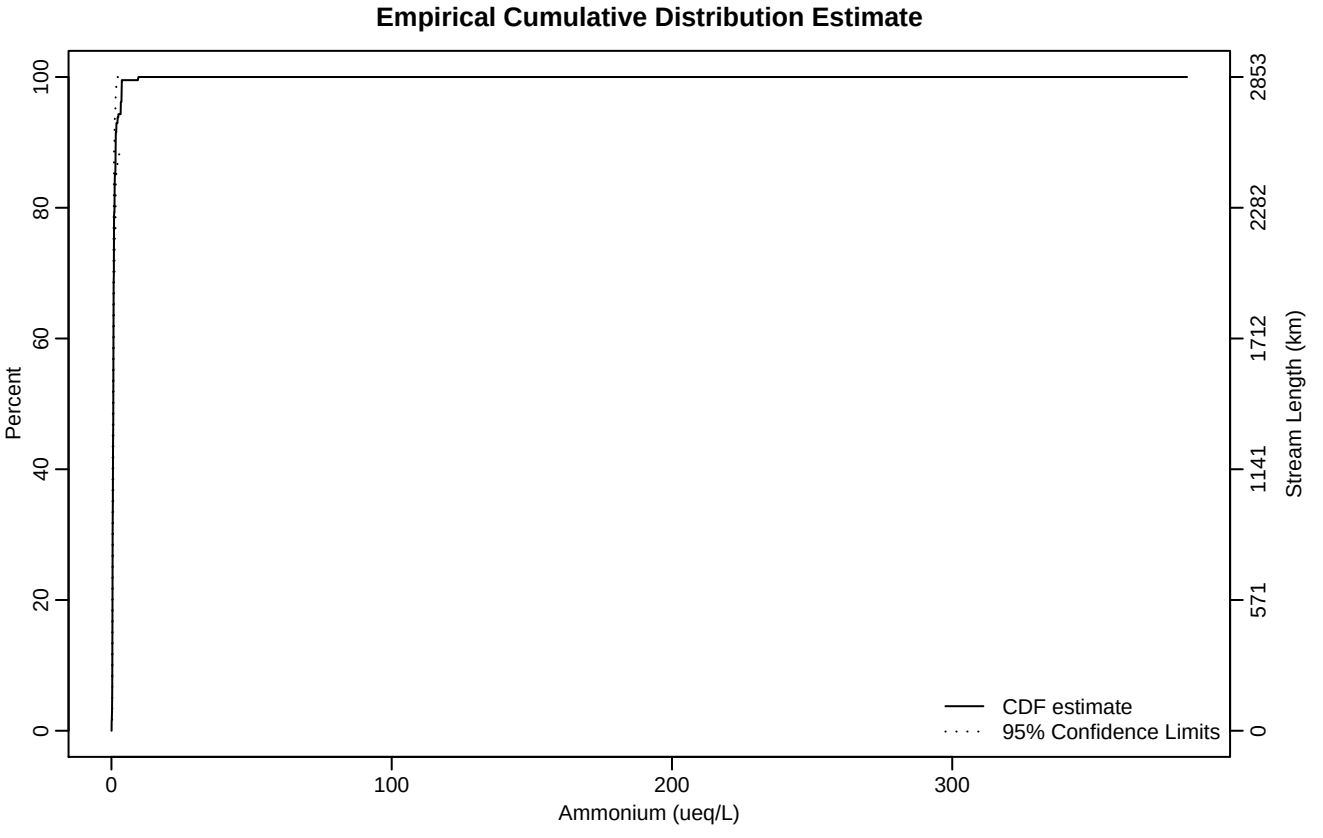


Figure CHEM−204 Indicator: Ammonium Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.25	0.18	0.29
10Pct	0.31	0.27	0.34
25Pct	0.40	0.35	0.47
50Pct	0.66	0.52	0.74
75Pct	0.90	0.75	1.42
90Pct	1.52	1.13	3.63
95Pct	3.31	1.49	9.64
Mean	0.92	0.70	1.14
Std Dev	0.94	0.57	1.32

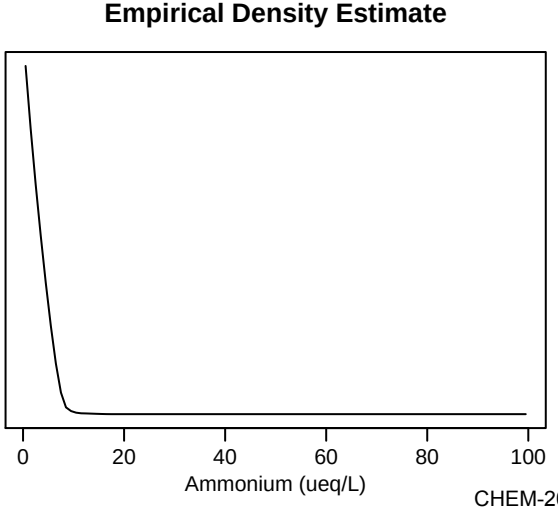
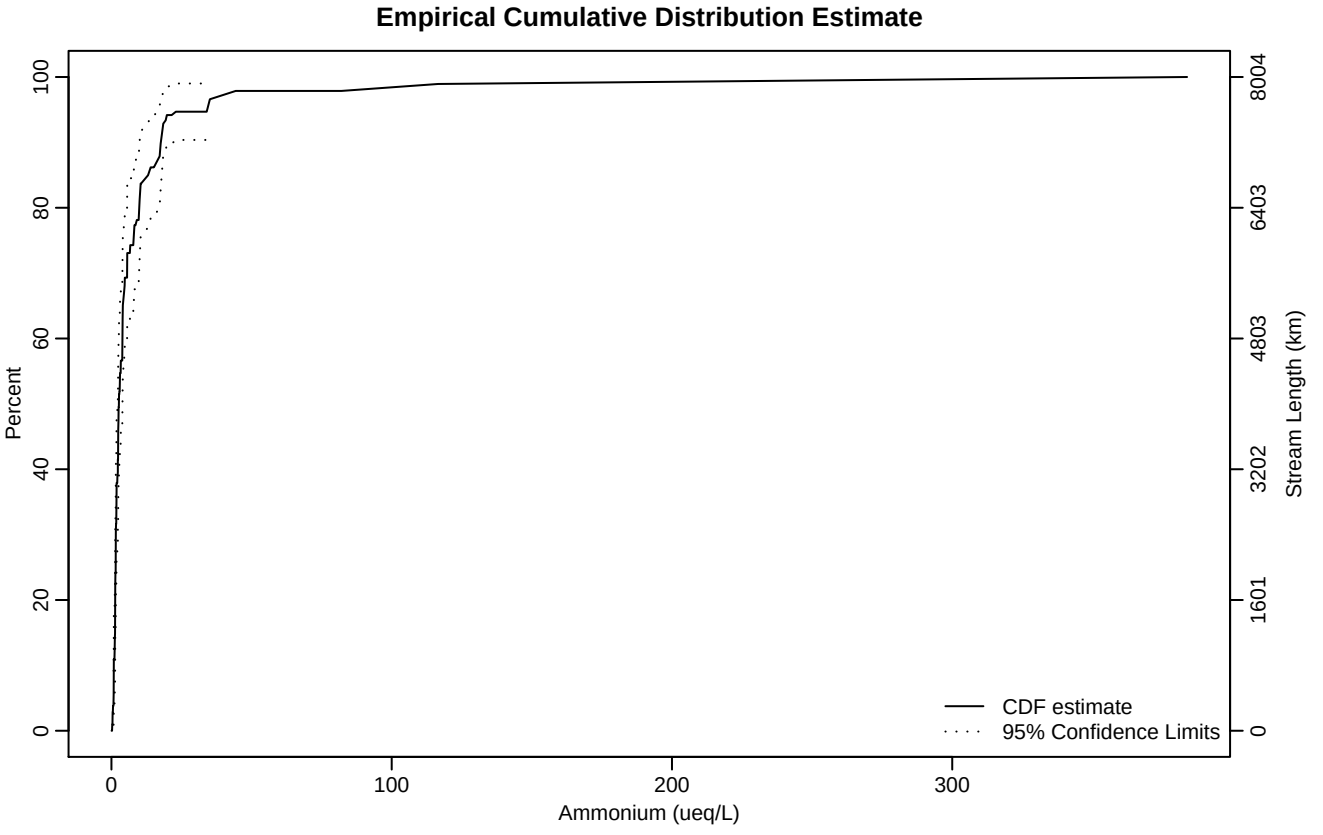


Figure CHEM−205 Indicator: Ammonium Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.76	0.36	0.83
10Pct	0.84	0.79	1.23
25Pct	1.51	1.30	1.75
50Pct	2.66	2.14	3.95
75Pct	7.88	4.05	13.30
90Pct	17.62	10.32	37.92
95Pct	34.17	17.86	189.07
Mean	11.17	3.81	18.53
Std Dev	17.23	9.83	24.62

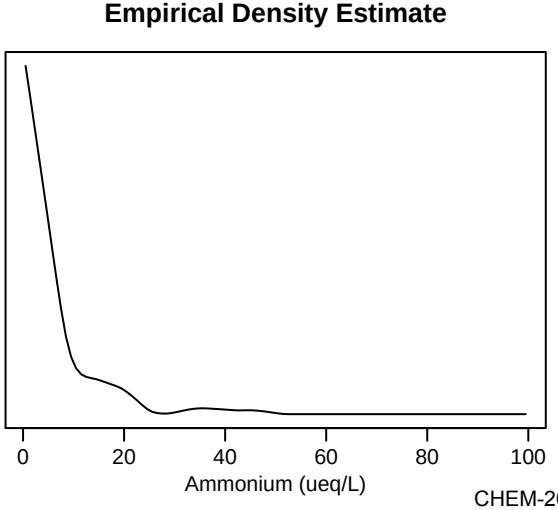
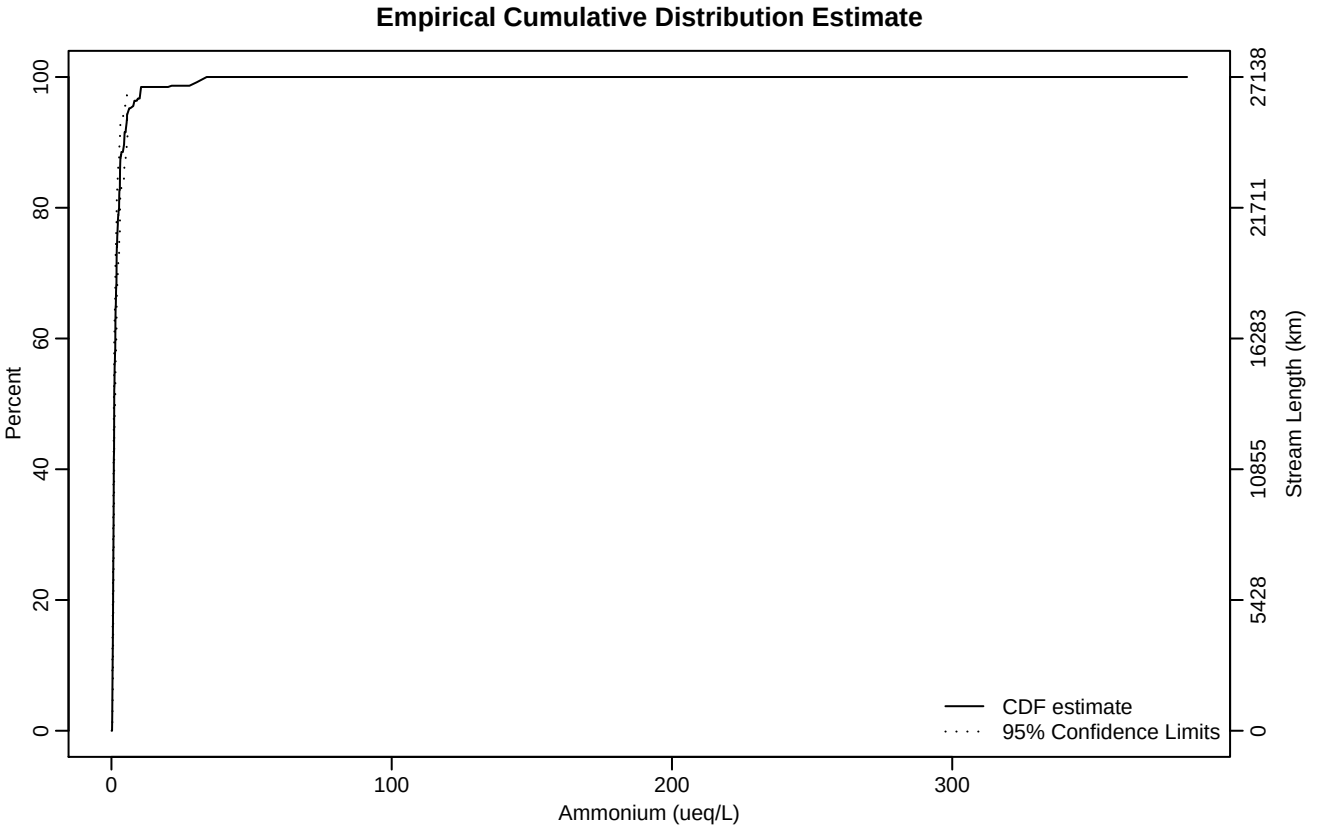


Figure CHEM−206 Indicator: Ammonium Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.33	0.26	0.39
10Pct	0.42	0.33	0.52
25Pct	0.65	0.55	0.77
50Pct	0.99	0.85	1.37
75Pct	2.04	1.66	2.84
90Pct	4.54	3.05	6.30
95Pct	6.18	4.70	20.84
Mean	2.23	1.63	2.82
Std Dev	3.30	1.99	4.62

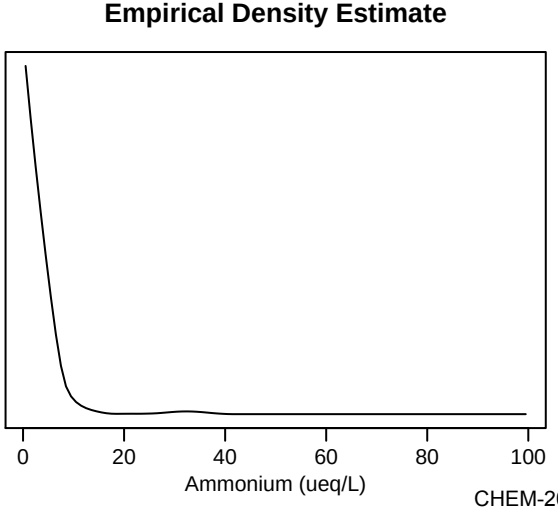
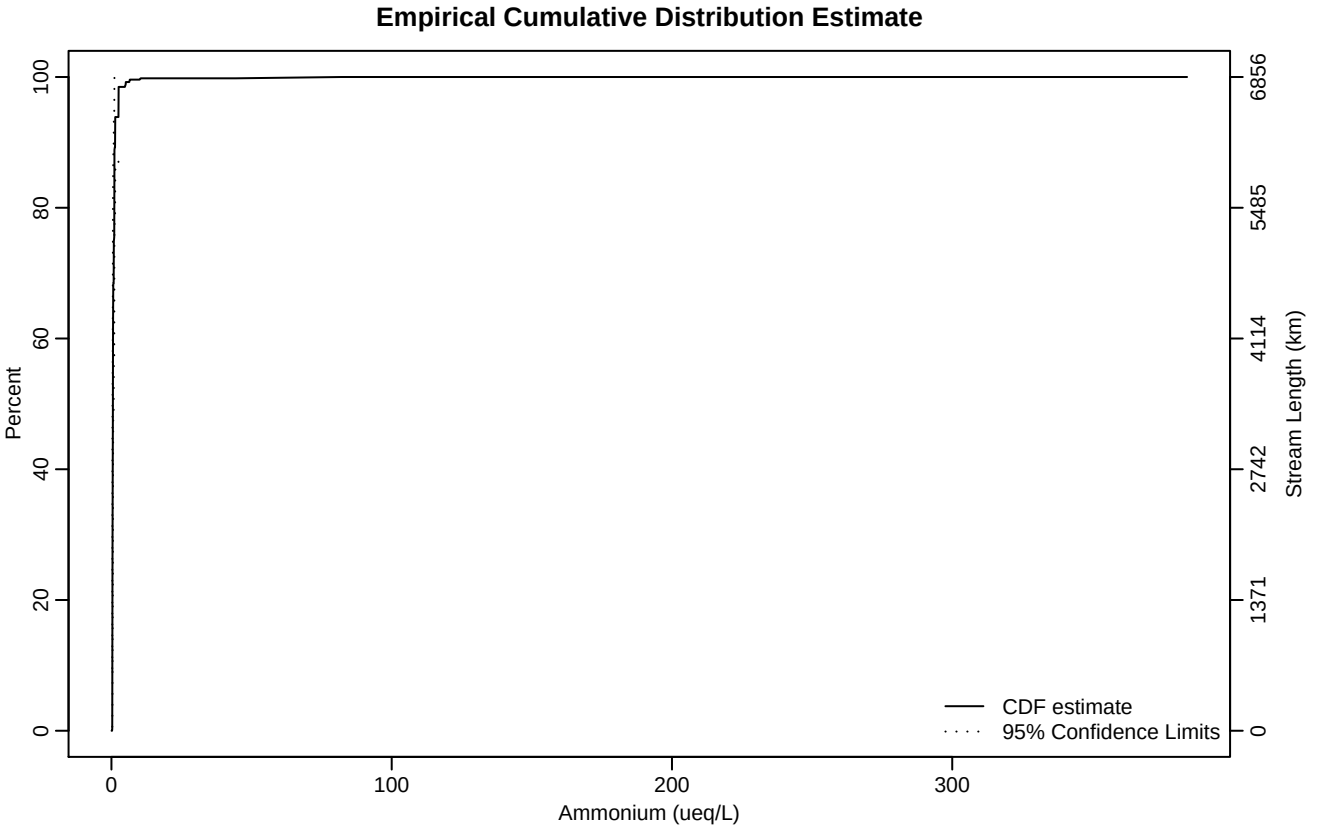


Figure CHEM−207 Indicator: Ammonium Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.30	0.30	0.30
10Pct	0.32	0.31	0.32
25Pct	0.37	0.30	0.49
50Pct	0.52	0.37	0.84
75Pct	0.88	0.55	1.35
90Pct	1.30	1.02	82.03
95Pct	2.52	1.06	82.03
Mean	0.96	0.61	1.30
Std Dev	3.73	0.79	6.67

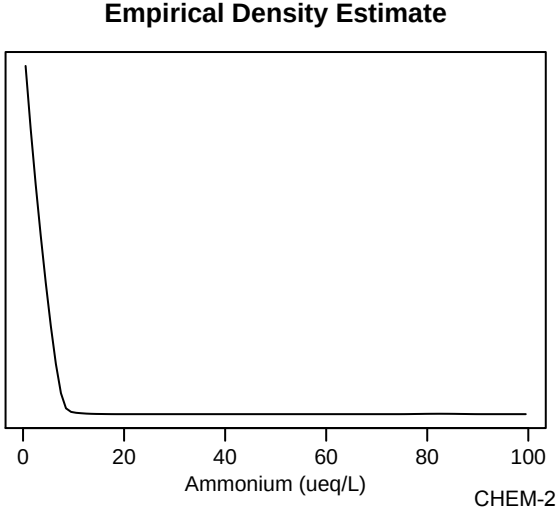
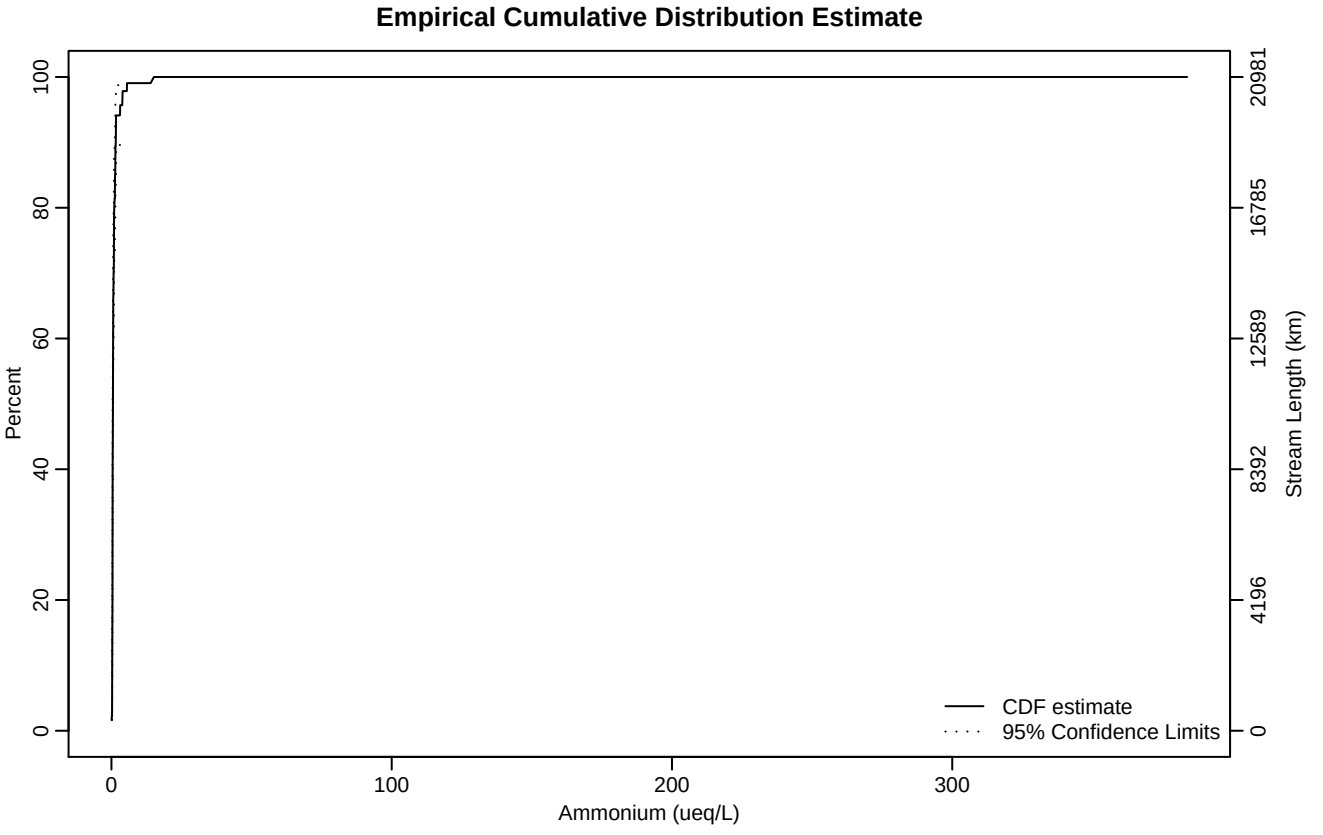


Figure CHEM−208 Indicator: Ammonium Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.24	0.10	0.26
10Pct	0.28	0.25	0.30
25Pct	0.38	0.33	0.41
50Pct	0.53	0.42	0.61
75Pct	0.90	0.64	1.36
90Pct	1.53	1.24	3.95
95Pct	3.10	1.55	14.66
Mean	0.97	0.68	1.25
Std Dev	1.09	0.61	1.58

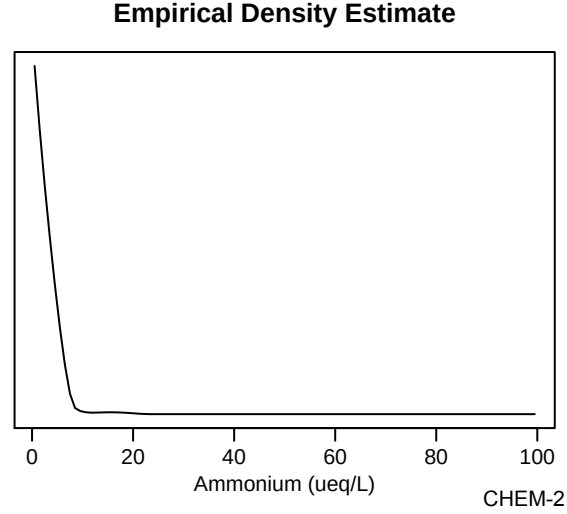
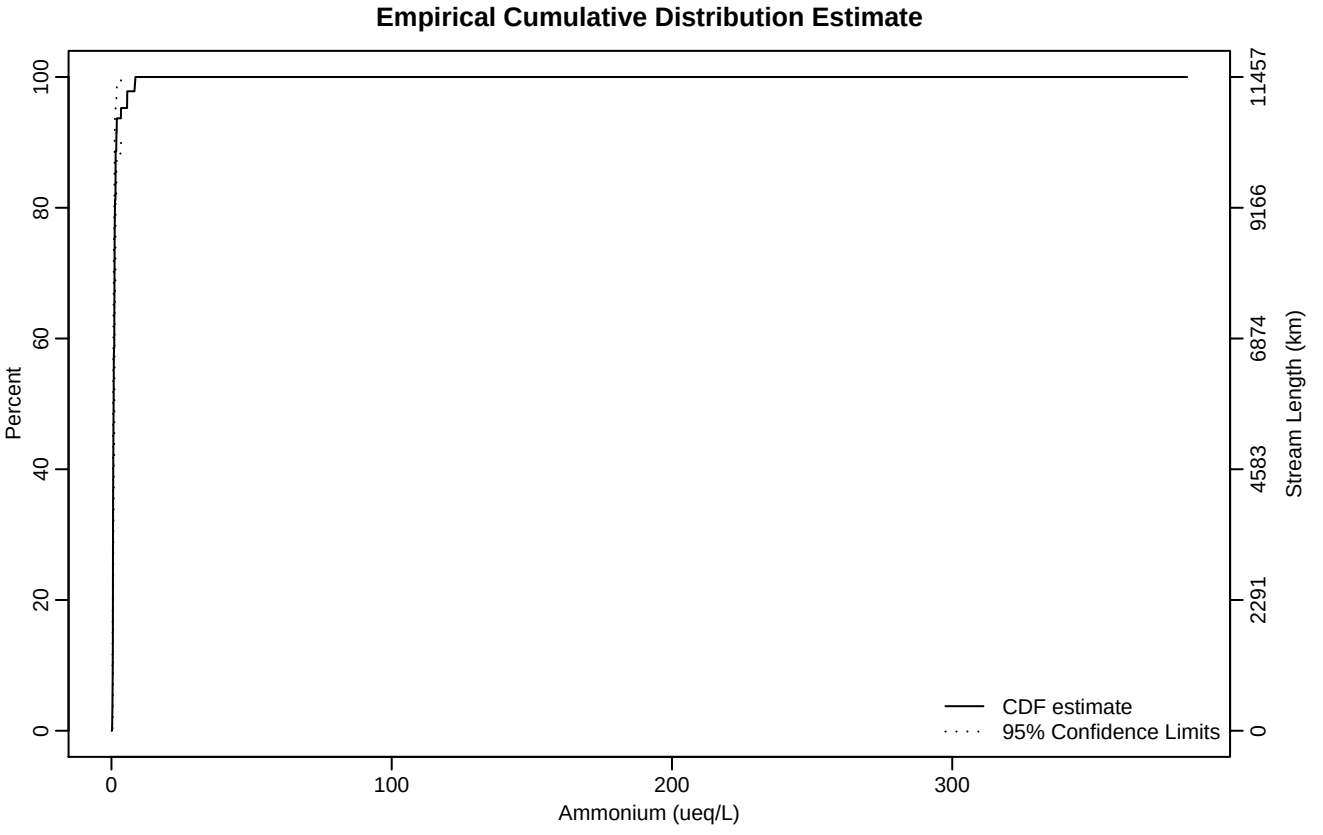


Figure CHEM−209 Indicator: Ammonium Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.38	0.22	0.46
10Pct	0.46	0.35	0.51
25Pct	0.54	0.51	0.58
50Pct	0.77	0.59	1.06
75Pct	1.14	1	1.78
90Pct	1.75	1.44	5.64
95Pct	3.42	1.73	8.57
Mean	1.21	0.87	1.55
Std Dev	1.11	0.59	1.62

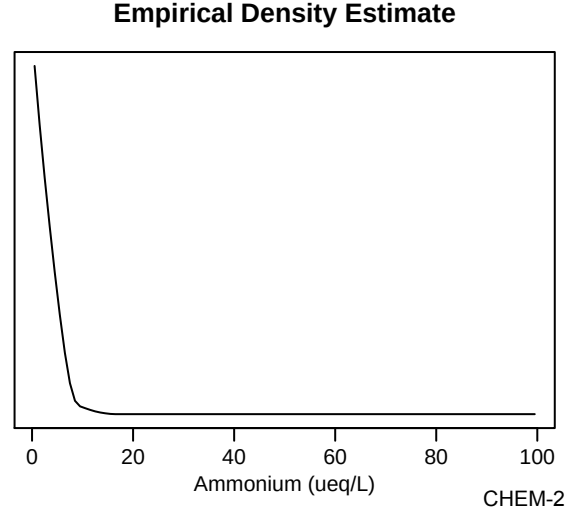
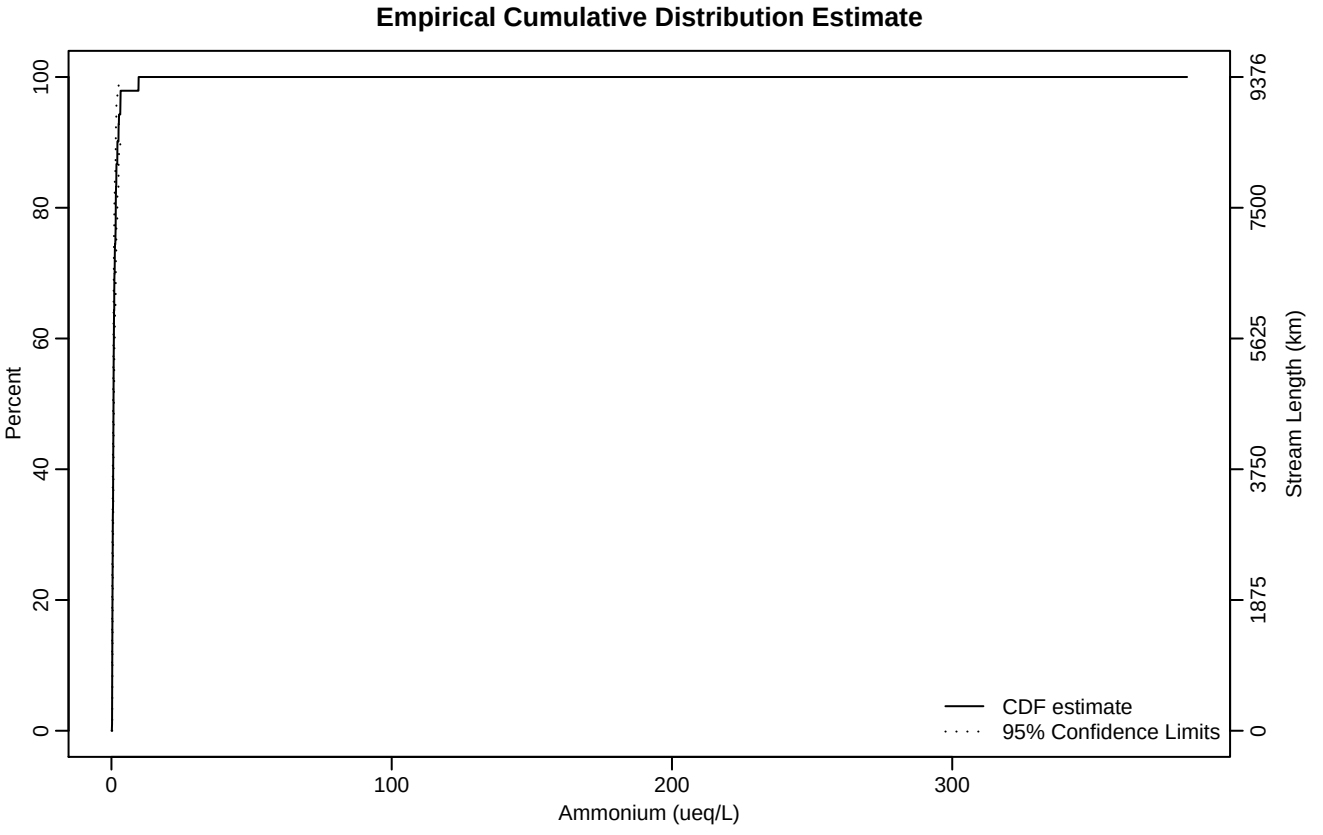


Figure CHEM−210 Indicator: Ammonium Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.25	0.23	0.26
10Pct	0.29	0.27	0.30
25Pct	0.42	0.31	0.59
50Pct	0.73	0.61	0.87
75Pct	1.40	1	1.76
90Pct	2.14	1.56	9.68
95Pct	3.17	2.13	9.71
Mean	1.18	0.84	1.51
Std Dev	1.04	0.66	1.43

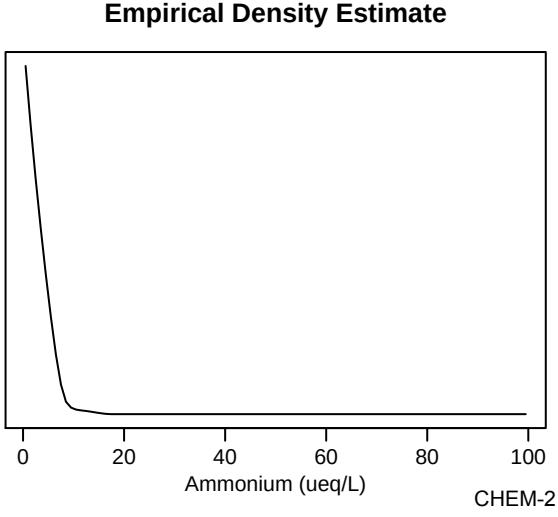
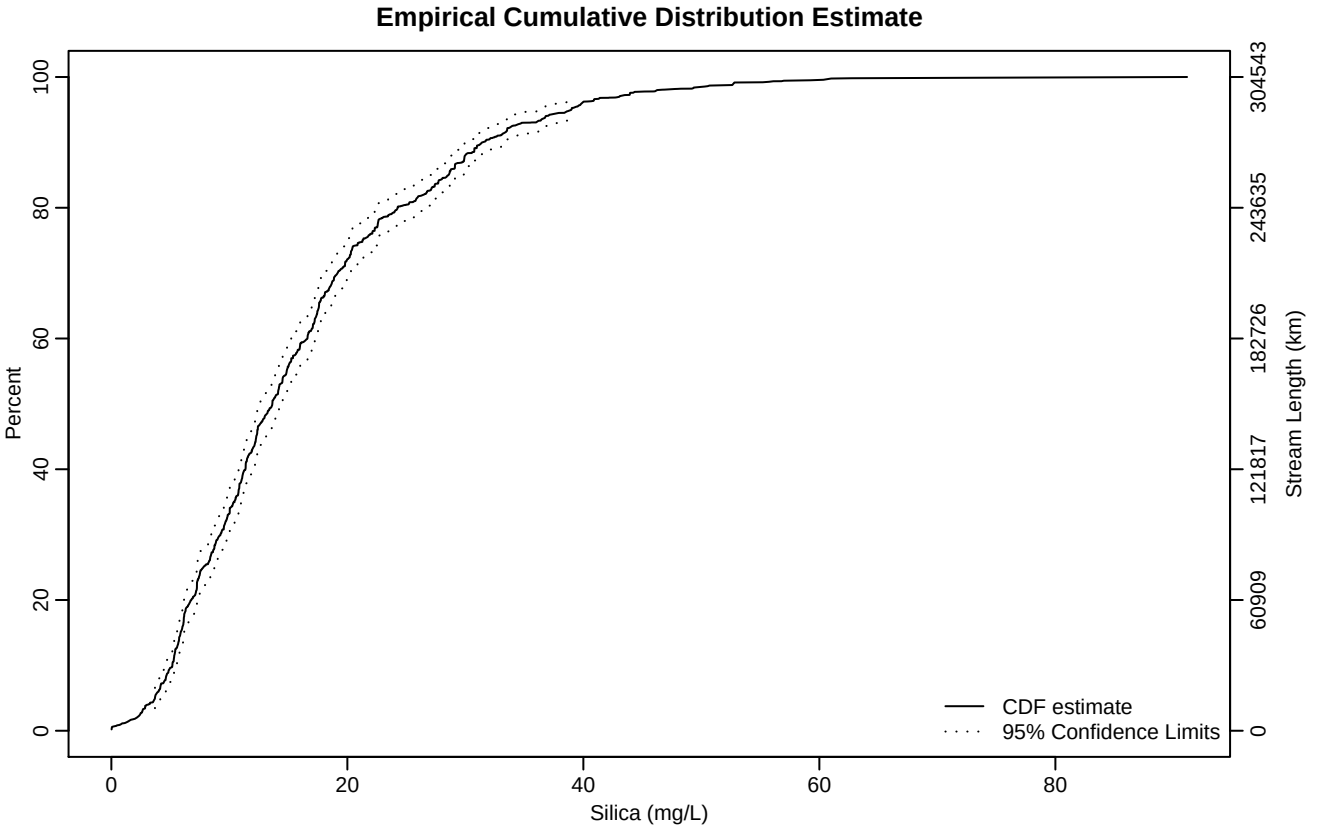


Figure CHEM−211 Indicator: Silica Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.69	2.86	4.14
10Pct	5.17	4.59	5.41
25Pct	7.79	7.25	8.73
50Pct	13.64	12.43	14.50
75Pct	21.28	20	22.62
90Pct	31.44	30.07	33.53
95Pct	38.98	36.54	40.88
Mean	16.35	15.69	17
Std Dev	10.01	9.36	10.65

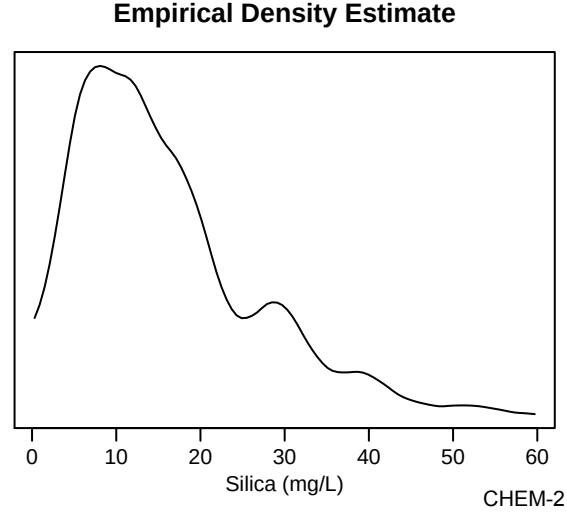
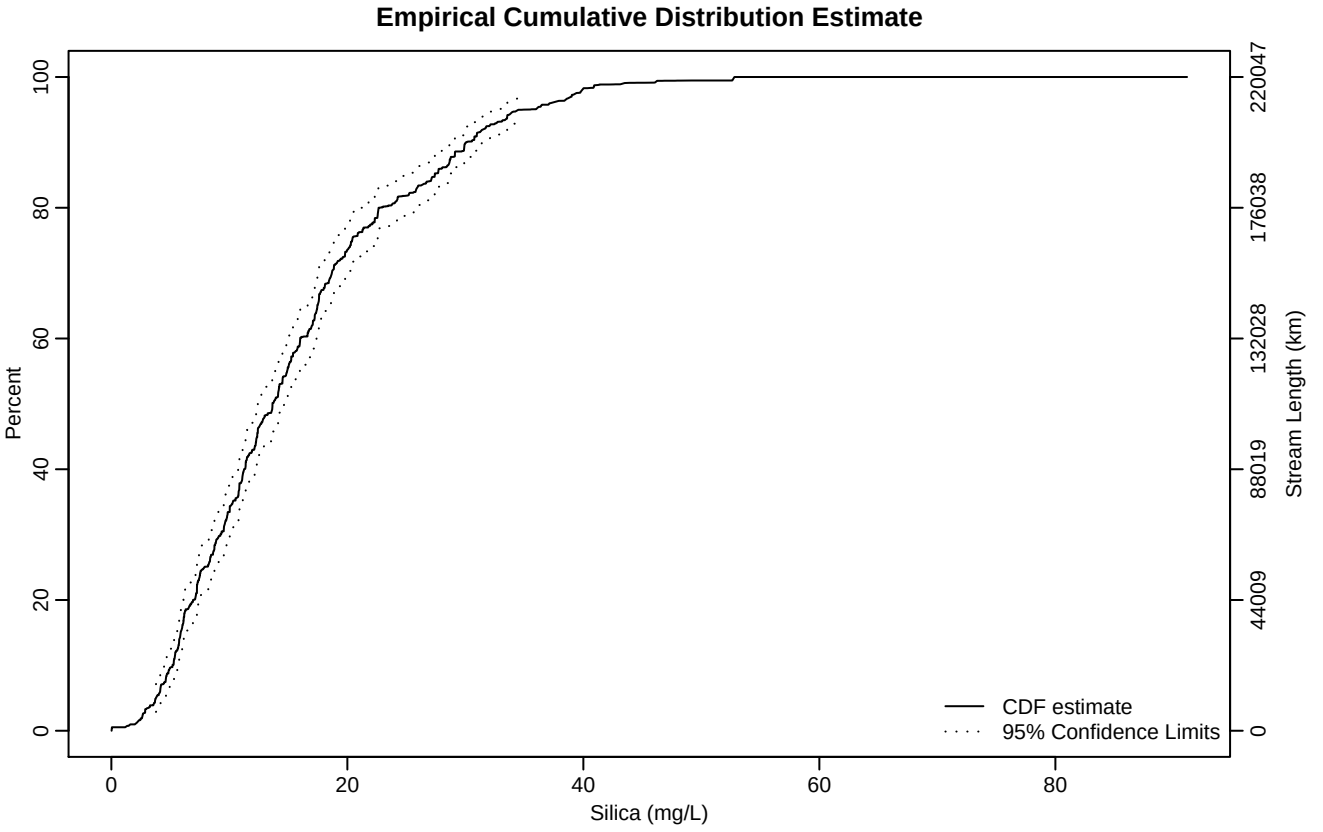


Figure CHEM−212 Indicator: Silica Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.78	2.86	4.23
10Pct	5.19	4.40	5.67
25Pct	7.88	7.25	8.85
50Pct	13.66	12.41	14.81
75Pct	20.41	18.88	22.57
90Pct	30.08	28.76	31.75
95Pct	34.87	33.11	38.75
Mean	15.71	14.95	16.48
Std Dev	9.08	8.37	9.79

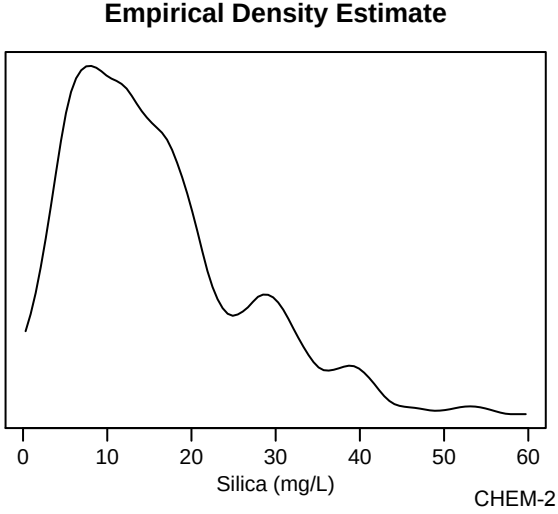
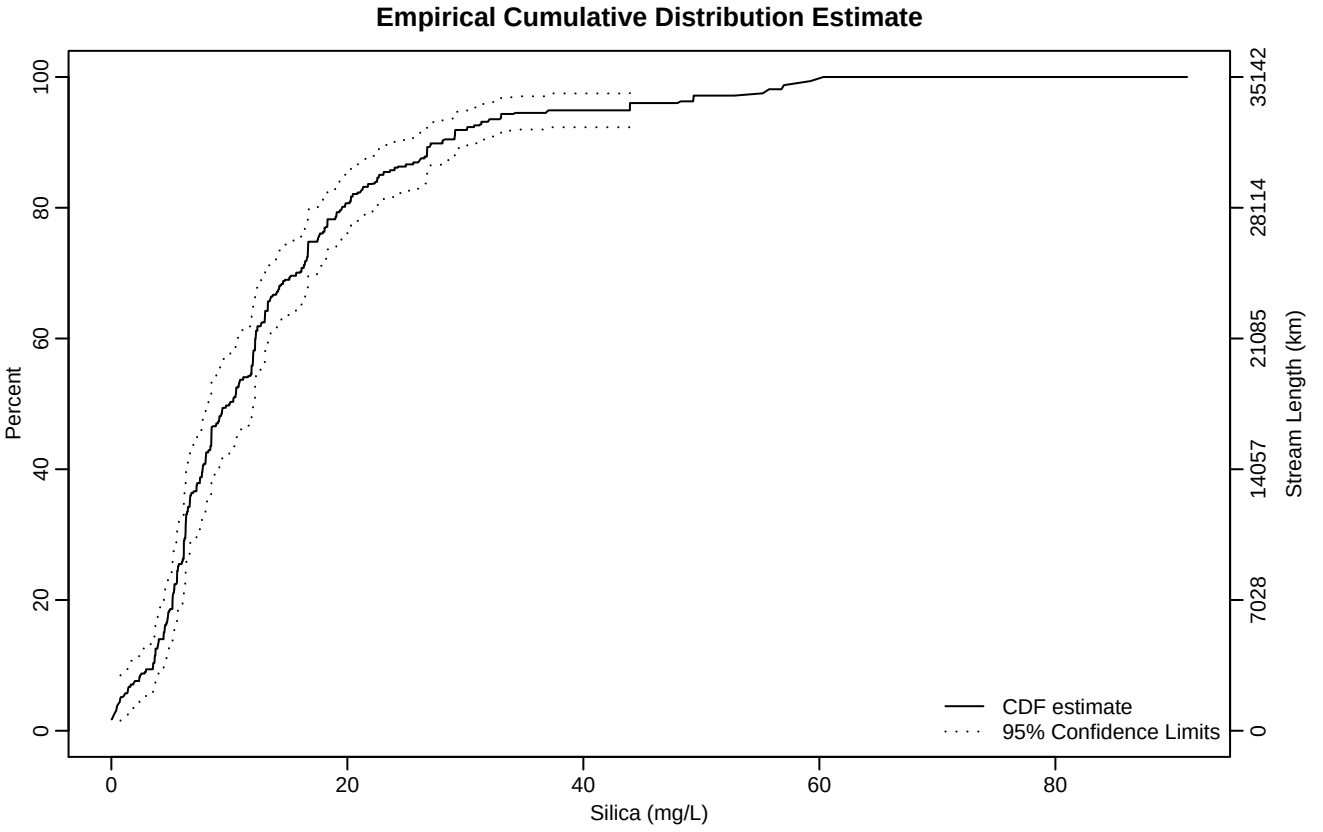


Figure CHEM−213 Indicator: Silica Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.78	0.02	2.44
10Pct	3.54	1.40	4.02
25Pct	5.65	4.98	6.30
50Pct	10.01	8.03	12.02
75Pct	17.48	15.65	19.80
90Pct	28.06	25.58	31.97
95Pct	43.94	30.74	55.32
Mean	13.49	12.17	14.82
Std Dev	10.47	9.29	11.65

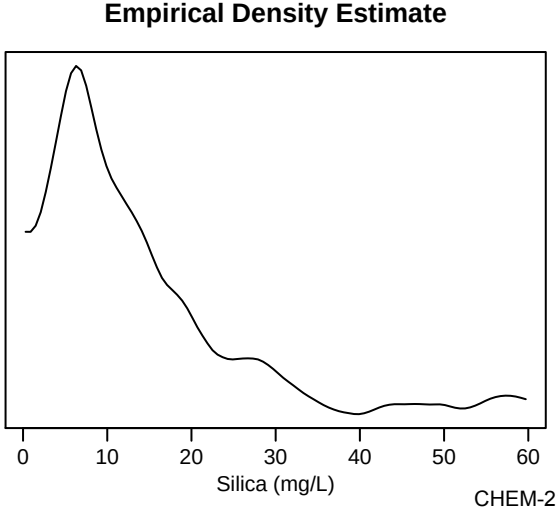
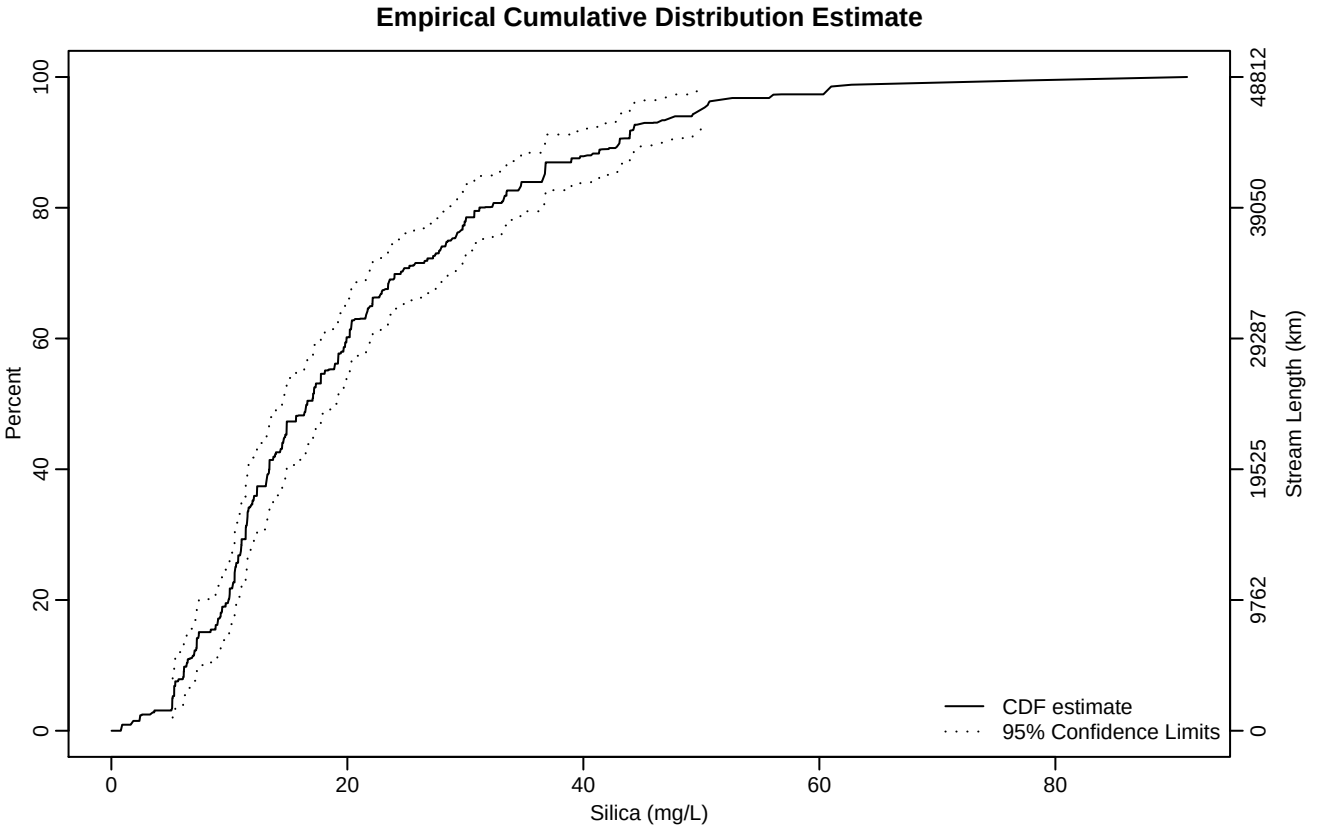


Figure CHEM−214 Indicator: Silica Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.19	2.42	6.08
10Pct	6.37	5.32	7.39
25Pct	10.51	9.40	11.40
50Pct	16.60	14.36	19.22
75Pct	28.78	24	32.33
90Pct	43.06	36.77	47.71
95Pct	49.96	43.96	60.87
Mean	21	19.21	22.80
Std Dev	11.96	10.44	13.48

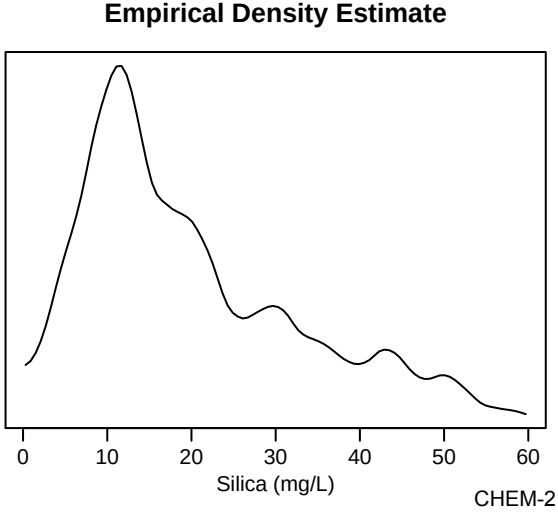
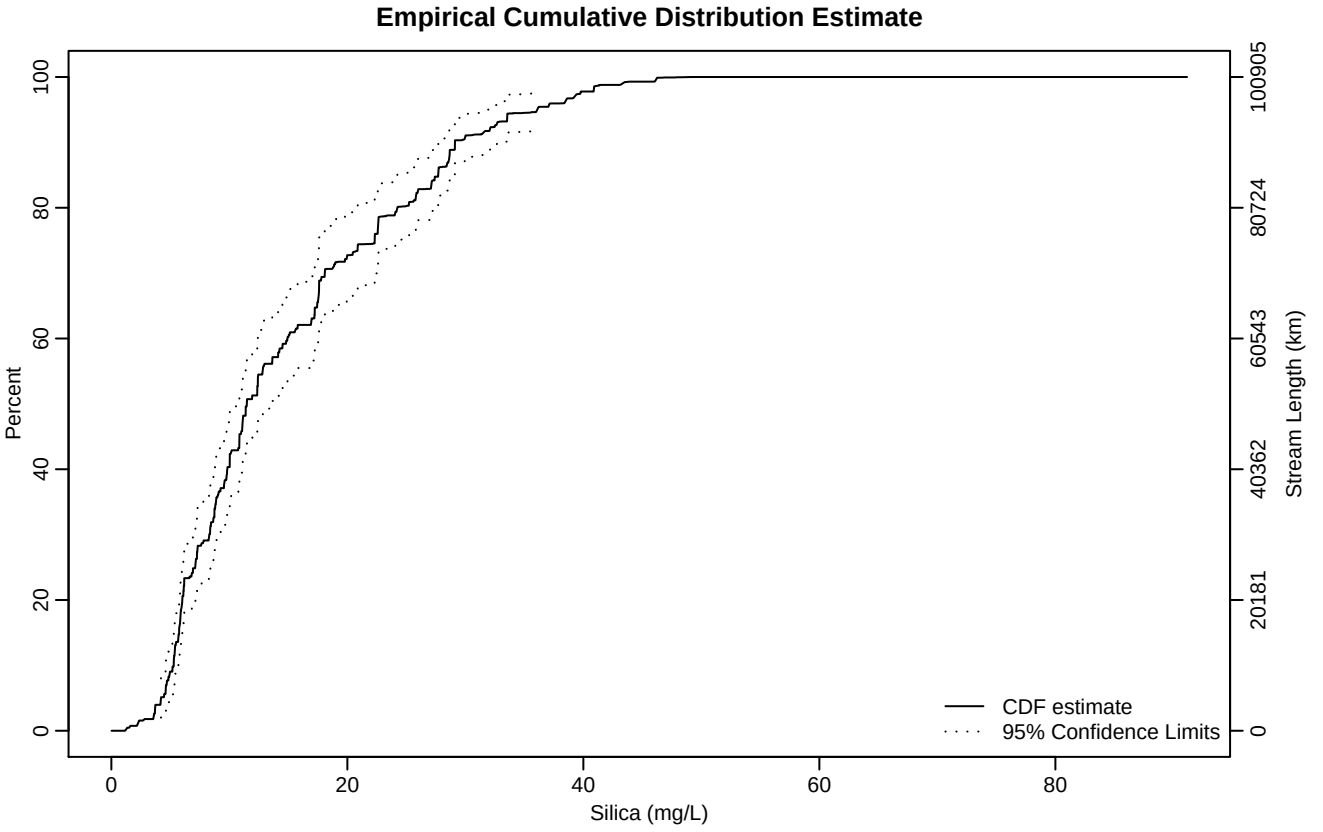


Figure CHEM−215 Indicator: Silica Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.20	3.62	4.71
10Pct	5.28	4.59	5.68
25Pct	7.11	5.98	8.37
50Pct	11.48	10.84	13.64
75Pct	22.32	17.61	25.78
90Pct	29.12	28.01	33.54
95Pct	36.09	32.11	40.87
Mean	15.20	13.95	16.45
Std Dev	8.56	7.44	9.68

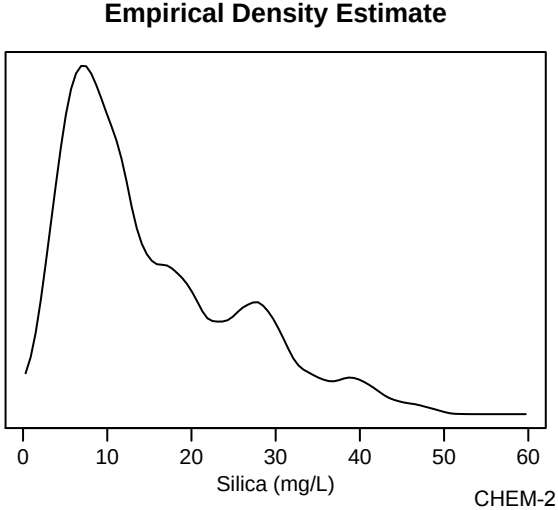
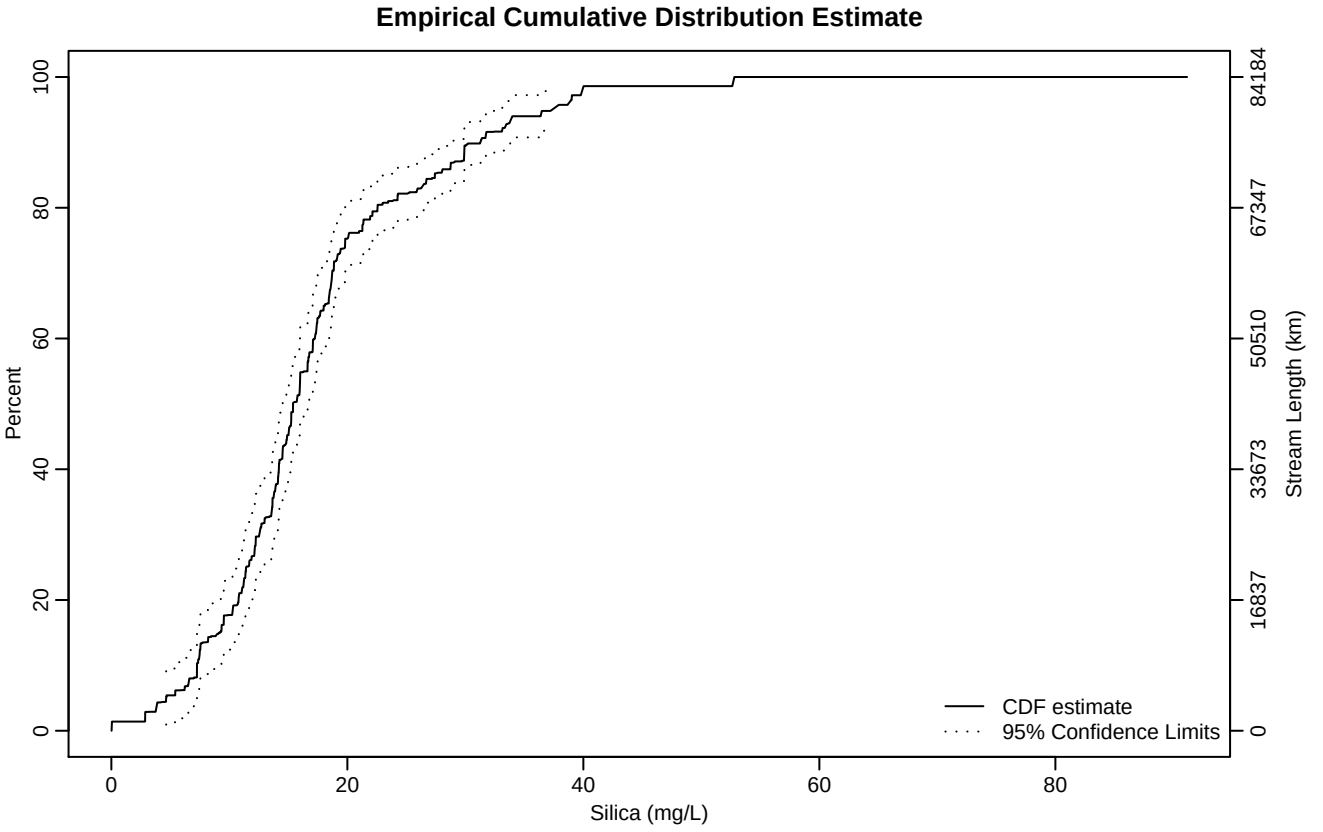


Figure CHEM−216 Indicator: Silica Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.65	0.04	7.25
10Pct	7.26	5.41	8.45
25Pct	11.43	10.29	12.71
50Pct	15.40	14.52	16.70
75Pct	19.82	18.70	22.57
90Pct	31.27	28.76	33.81
95Pct	37.36	33.13	39.92
Mean	17.38	16.29	18.47
Std Dev	8.98	7.77	10.20

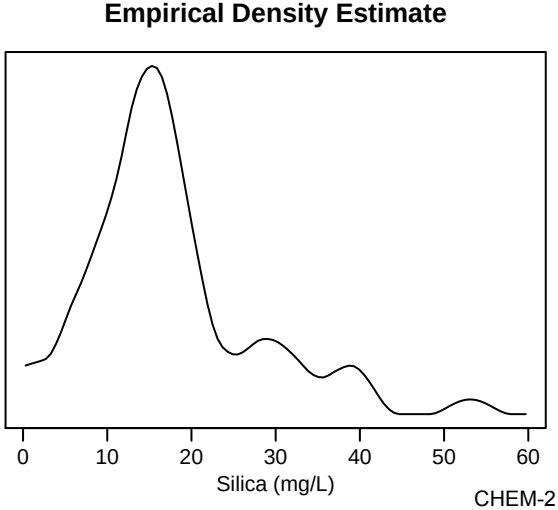
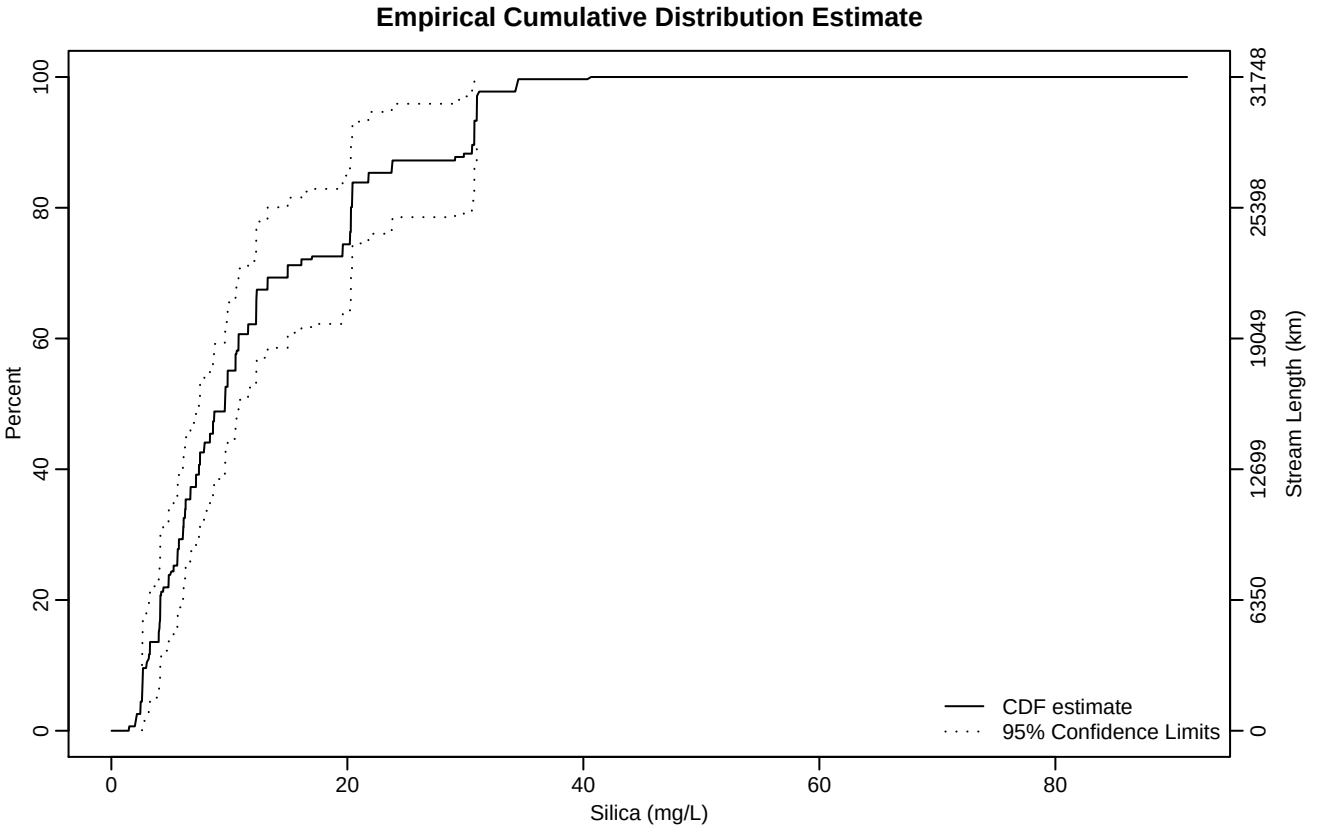


Figure CHEM−217 Indicator: Silica Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.60	1.50	2.68
10Pct	2.97	2.11	4.14
25Pct	5.28	4.02	6.30
50Pct	9.63	7.42	11.58
75Pct	20.22	12.28	23.76
90Pct	30.75	20.40	34.39
95Pct	30.97	30.55	40.65
Mean	12.39	10.46	14.33
Std Dev	8.96	7.41	10.51

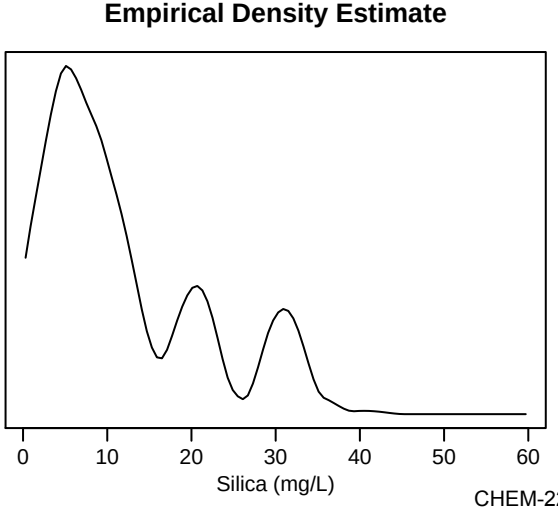
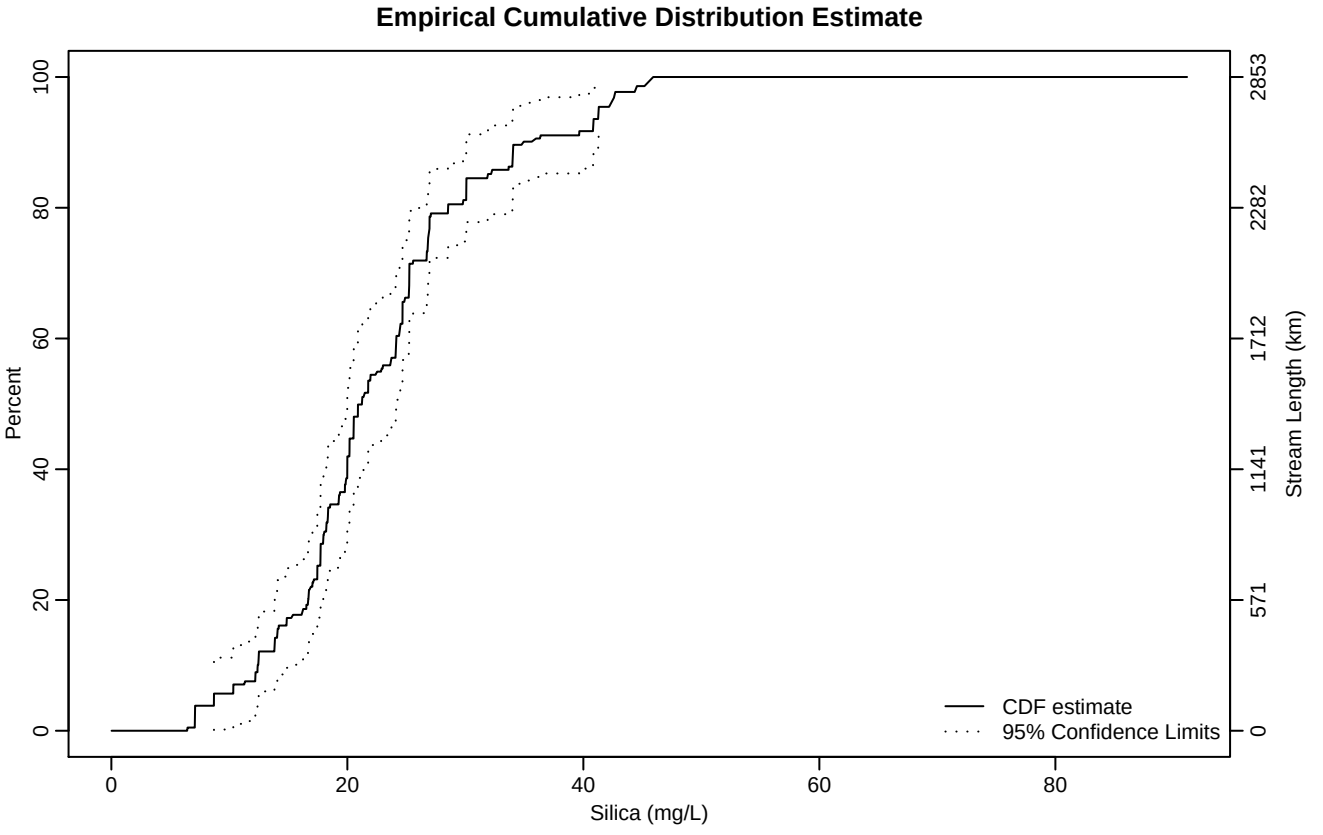


Figure CHEM−218 Indicator: Silica Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.70	0.02	12.46
10Pct	12.41	8.69	14.18
25Pct	17.46	14.86	18.36
50Pct	21.23	19.99	24.44
75Pct	26.84	25.22	30.08
90Pct	34.91	30.09	42.34
95Pct	41.30	35.76	45.77
Mean	22.87	21.41	24.34
Std Dev	8.86	7.49	10.22

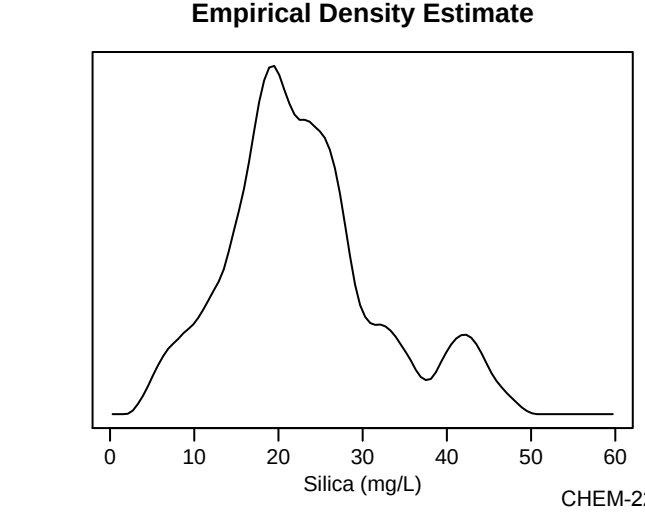
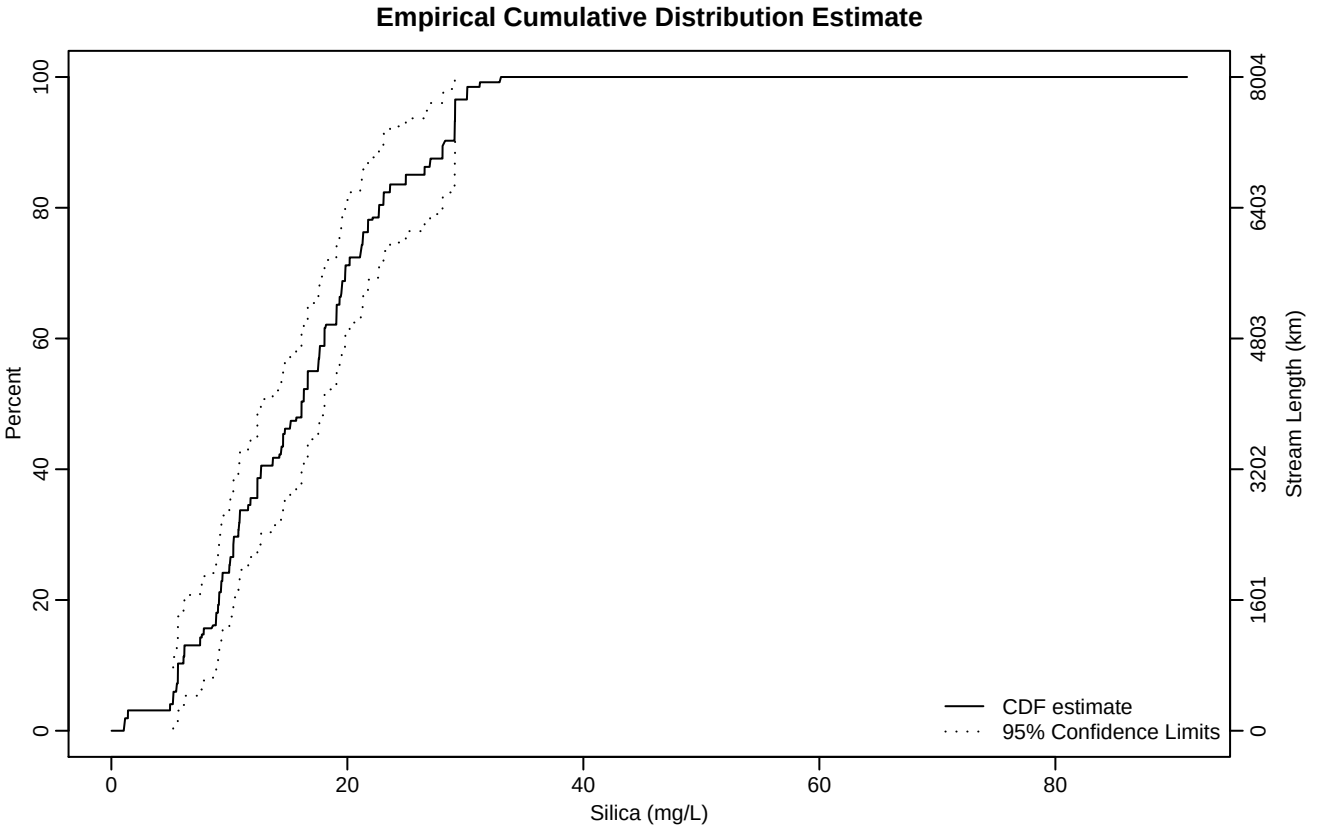


Figure CHEM−219 Indicator: Silica Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.24	1.11	5.64
10Pct	5.65	5.22	8.52
25Pct	10	8.59	11.59
50Pct	16.12	12.66	18.07
75Pct	21.30	19.10	26.54
90Pct	28.22	23.08	30.16
95Pct	29.13	28.07	33.02
Mean	16.12	14.45	17.78
Std Dev	7.52	6.48	8.56

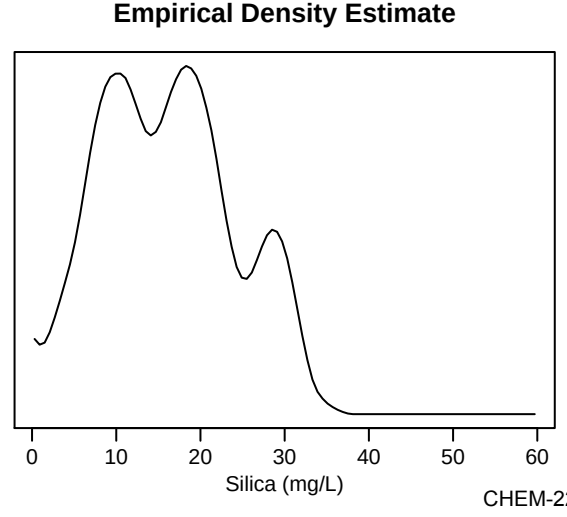
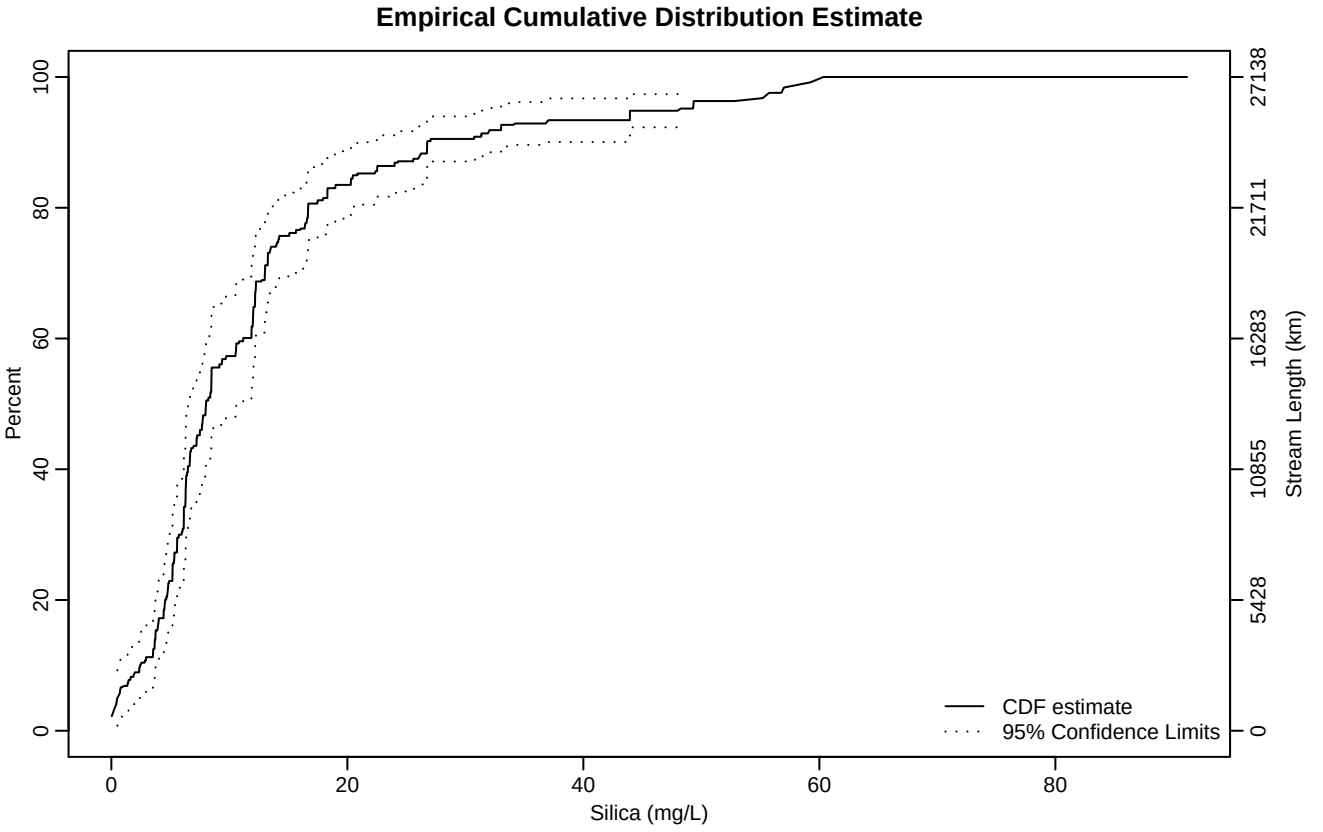


Figure CHEM−220 Indicator: Silica Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.51	0.02	2.36
10Pct	2.44	0.57	3.74
25Pct	5.19	4.02	6.15
50Pct	8.02	6.64	10.80
75Pct	14.15	12.26	18.30
90Pct	26.77	20.86	43.95
95Pct	48.11	33.03	56.79
Mean	12.72	11.08	14.36
Std Dev	10.39	9.01	11.78

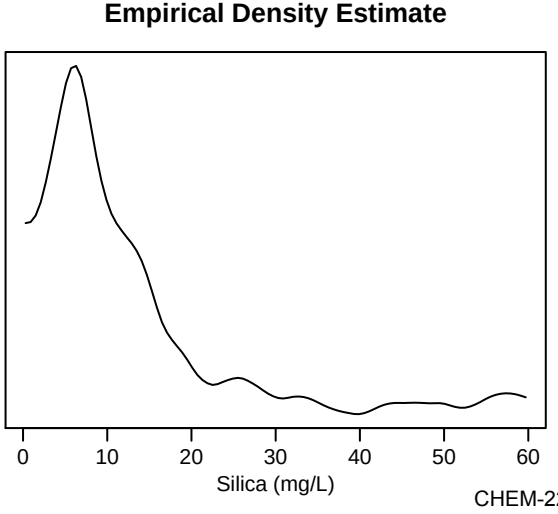
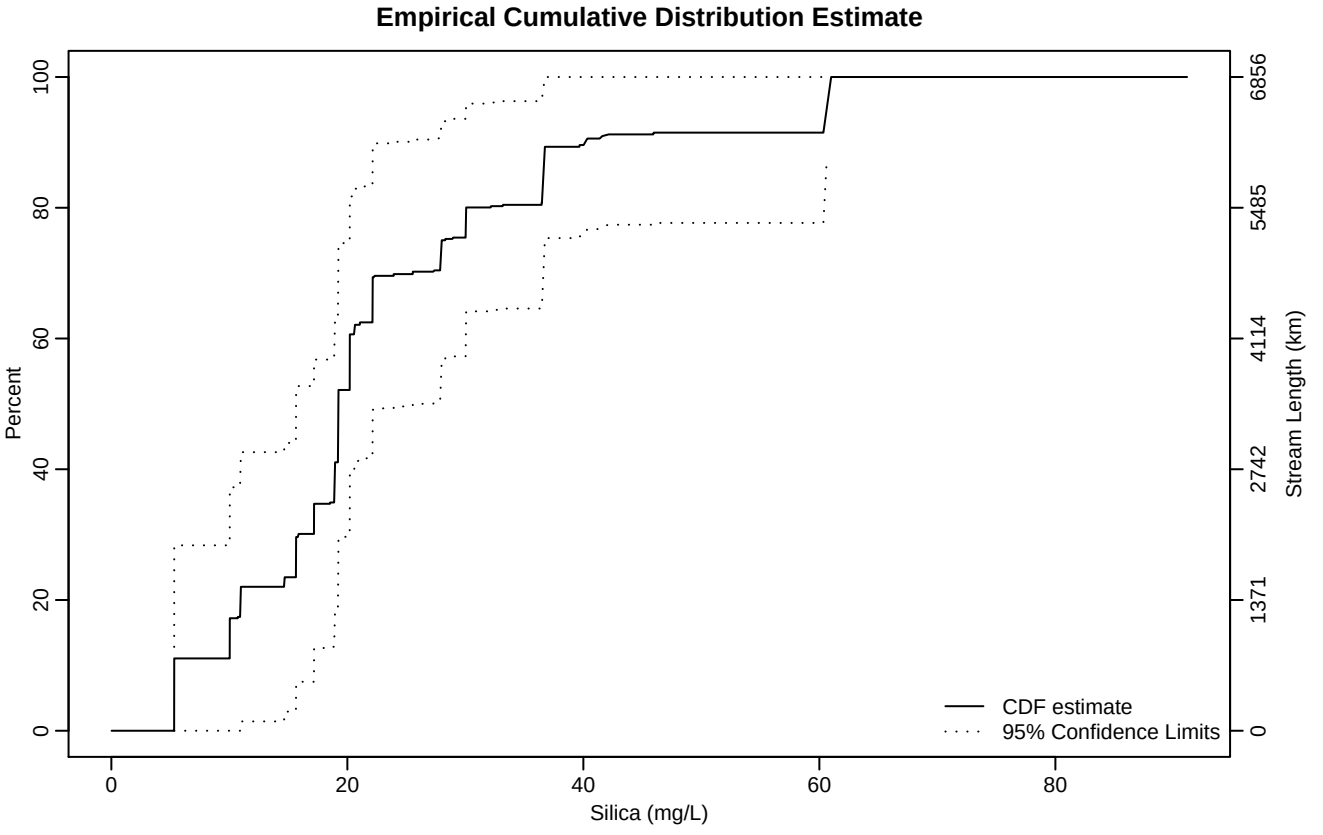


Figure CHEM−221 Indicator: Silica Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	5.32	5.32	5.33
10Pct	5.33	5.33	10.03
25Pct	15.64	5.32	19.22
50Pct	19.24	15.65	27.93
75Pct	28	20.20	60.60
90Pct	40.15	30.03	61
95Pct	60.61	36.50	61
Mean	23.27	16.43	30.12
Std Dev	14.57	8.22	20.92

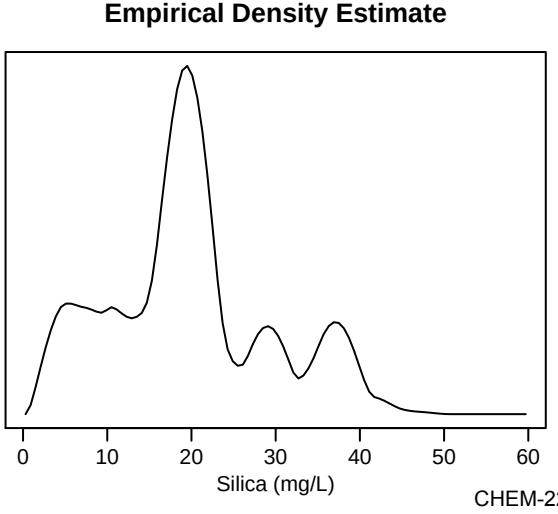
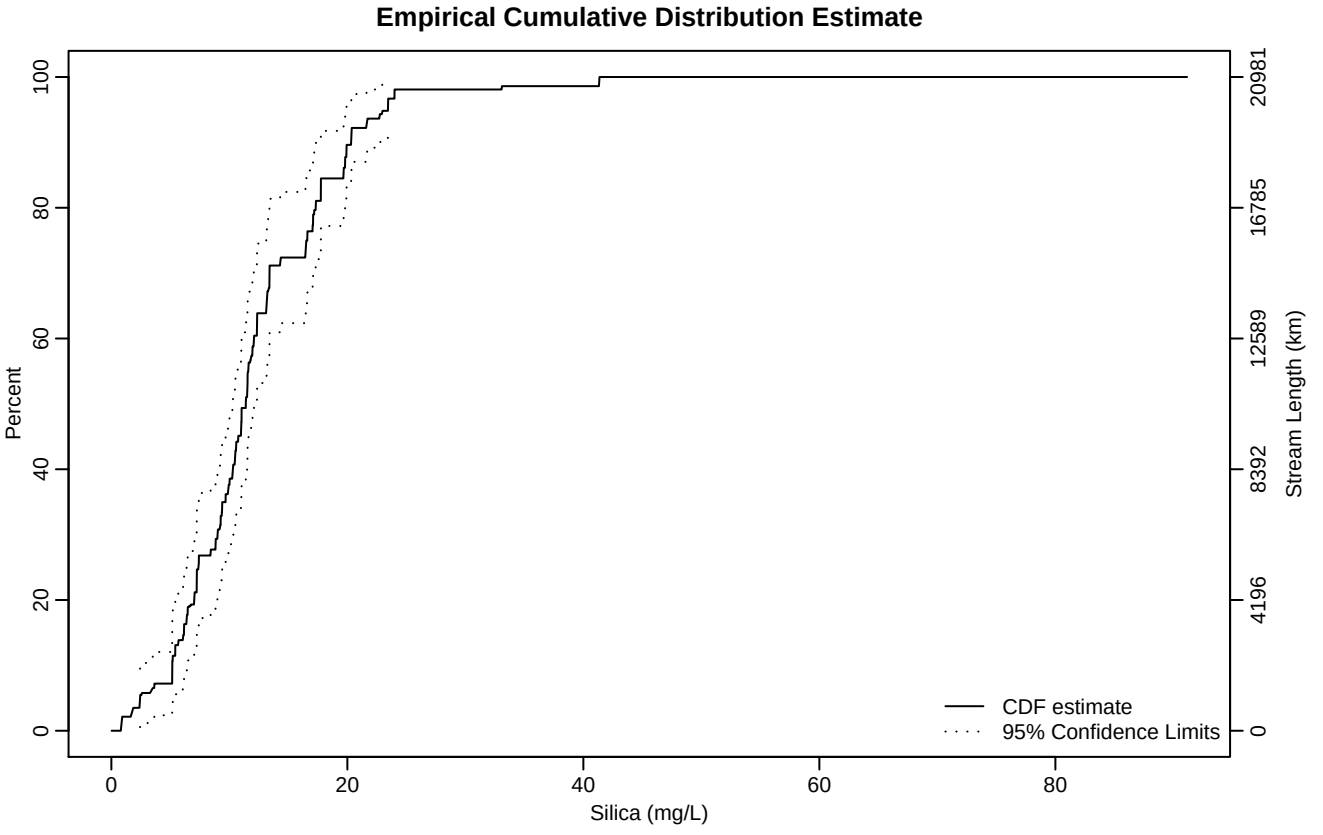


Figure CHEM−222 Indicator: Silica Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.43	0.84	5.16
10Pct	5.17	2.44	6.15
25Pct	7.38	6.16	9.39
50Pct	11.40	10.03	12.34
75Pct	16.60	13.17	19.66
90Pct	20.32	17.76	23.46
95Pct	23.44	20.34	41.34
Mean	12.23	10.92	13.55
Std Dev	6.22	4.85	7.58

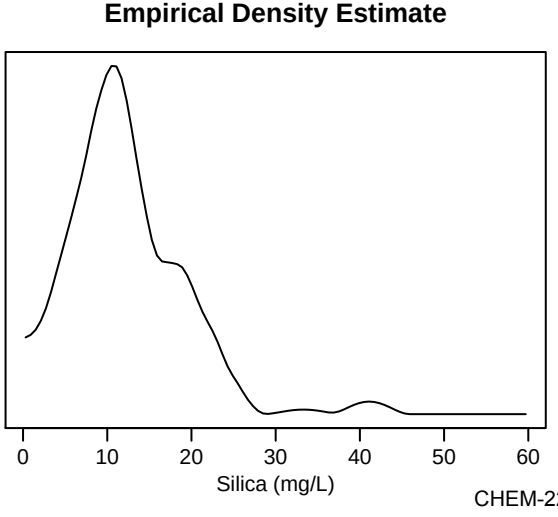
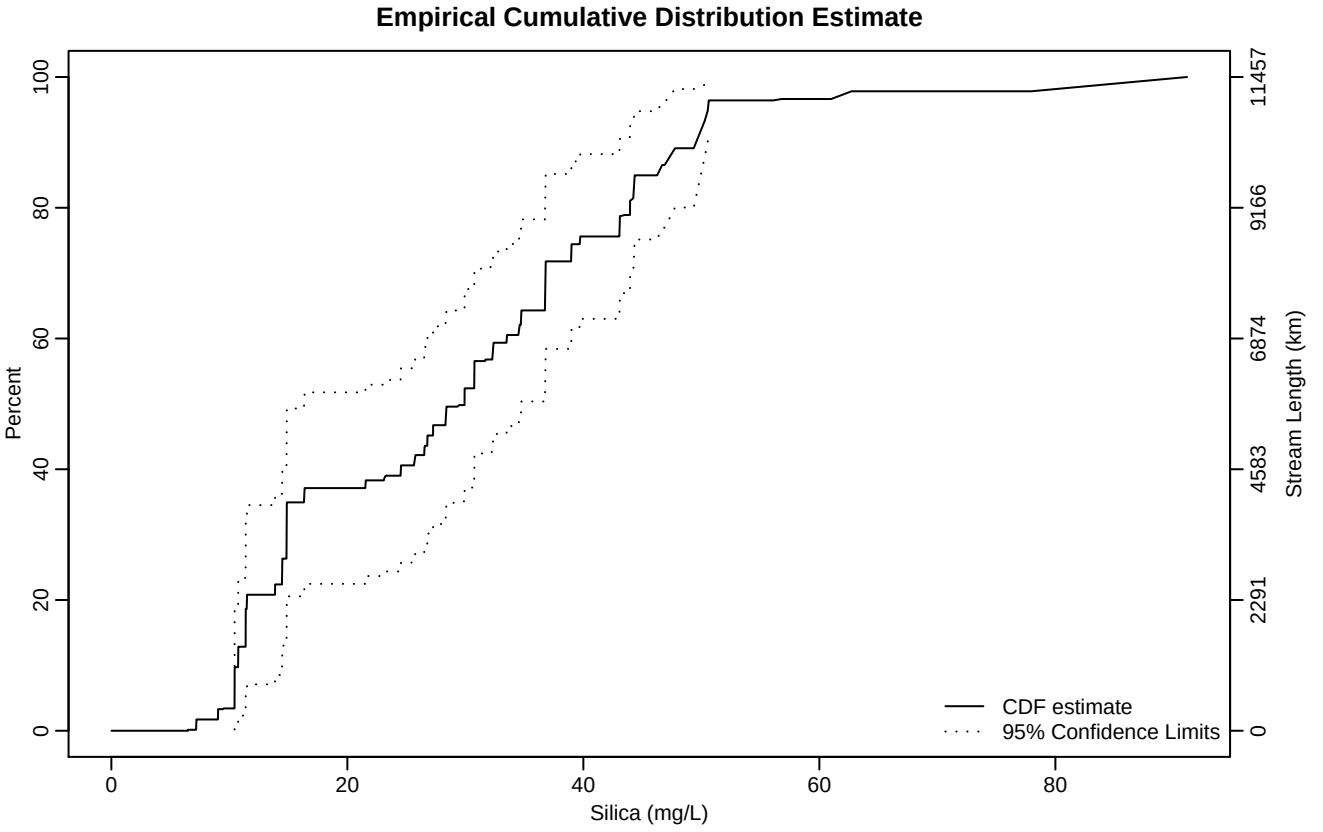


Figure CHEM−223 Indicator: Silica Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.44	7.20	10.45
10Pct	10.74	0.02	11.50
25Pct	14.48	10.75	24.52
50Pct	29.93	14.87	36.75
75Pct	39.71	34.70	47.34
90Pct	49.55	43.96	85.60
95Pct	50.55	49.59	90.07
Mean	29.45	24.68	34.21
Std Dev	16.03	12.71	19.36

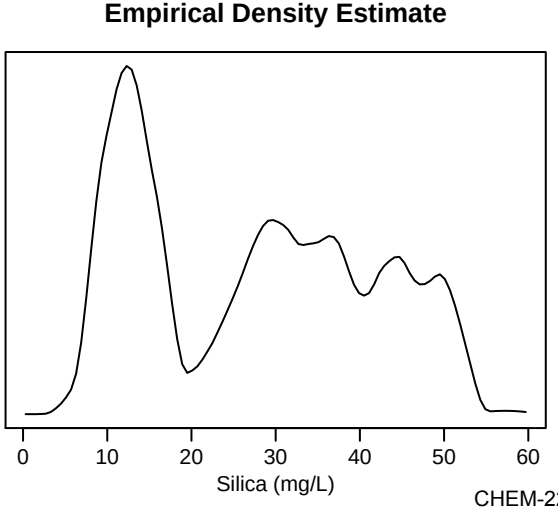
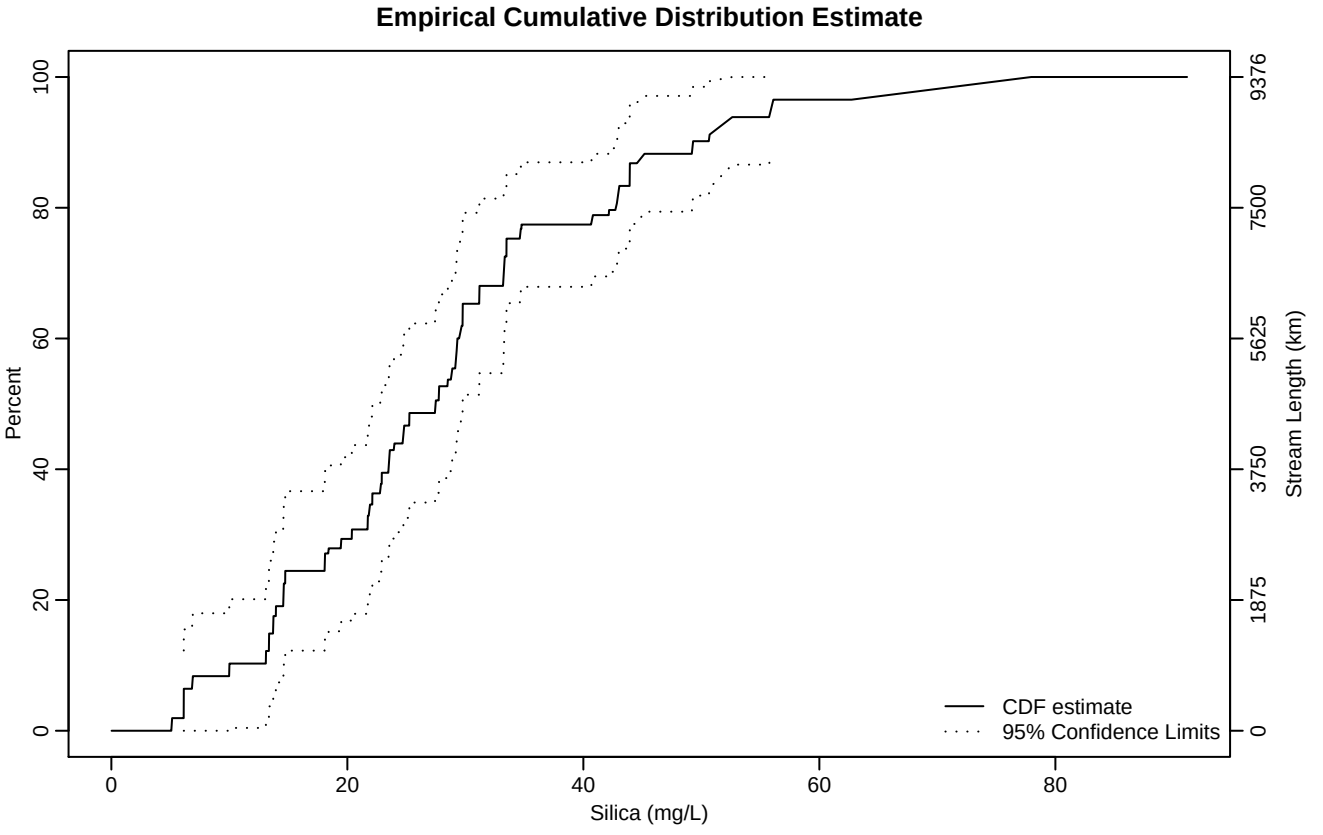


Figure CHEM−224 Indicator: Silica Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.14	5.14	9.98
10Pct	10.01	5.08	14.57
25Pct	18.08	13.35	22.82
50Pct	27.48	22.77	29.77
75Pct	33.49	29.78	43.93
90Pct	49.29	42.87	73.42
95Pct	55.89	44.91	77.96
Mean	28.64	24.18	33.10
Std Dev	14.65	11	18.30

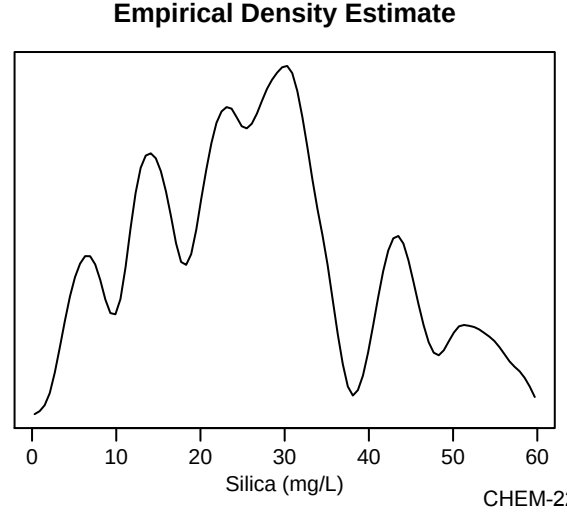
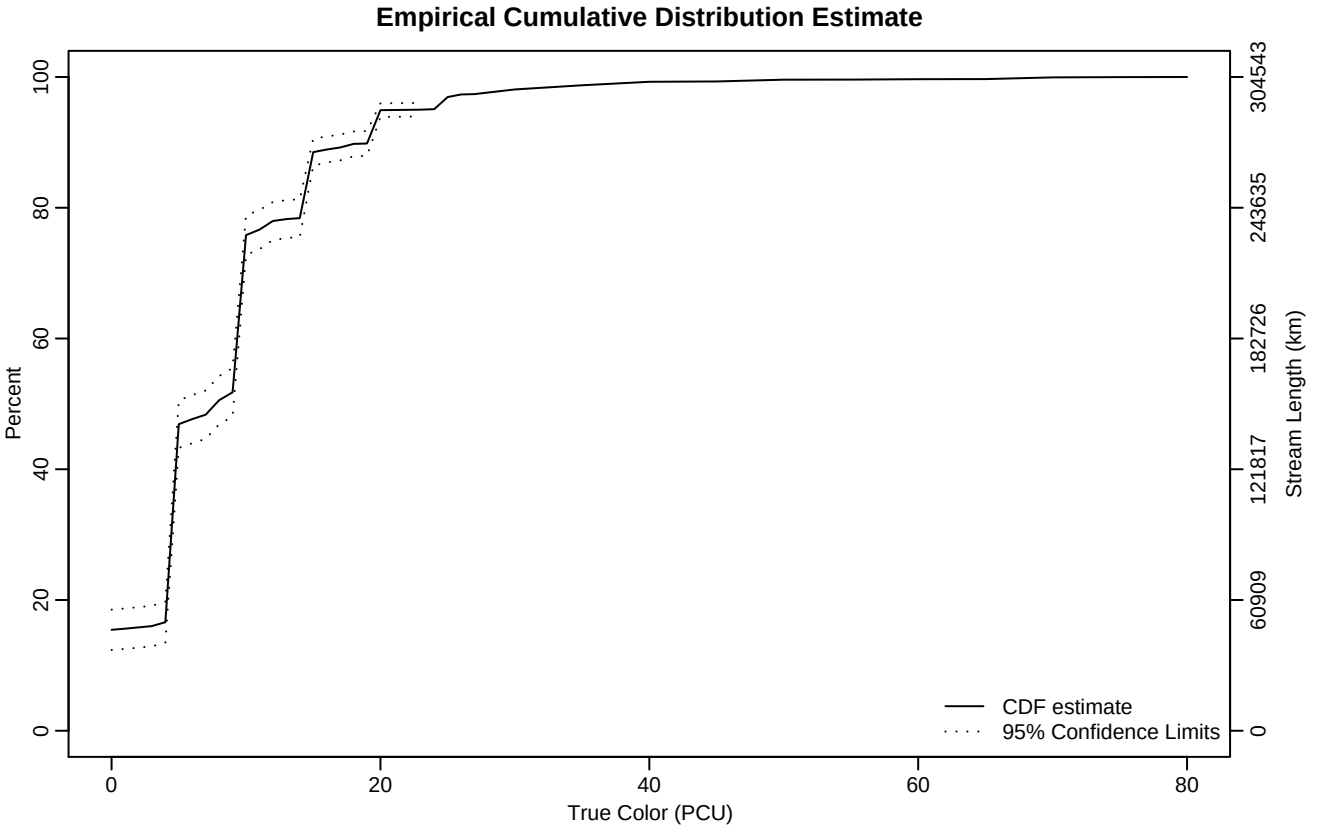


Figure CHEM−225 Indicator: True_Color Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	4.28	4.17	4.38
50Pct	7.75	4.98	9.08
75Pct	9.97	9.81	14.03
90Pct	19.03	14.96	19.41
95Pct	22.96	19.81	24.52
Mean	9.11	8.63	9.59
Std Dev	7.06	6.38	7.74

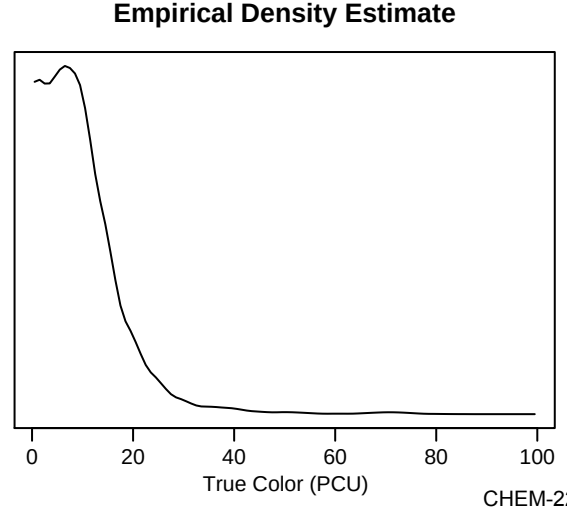
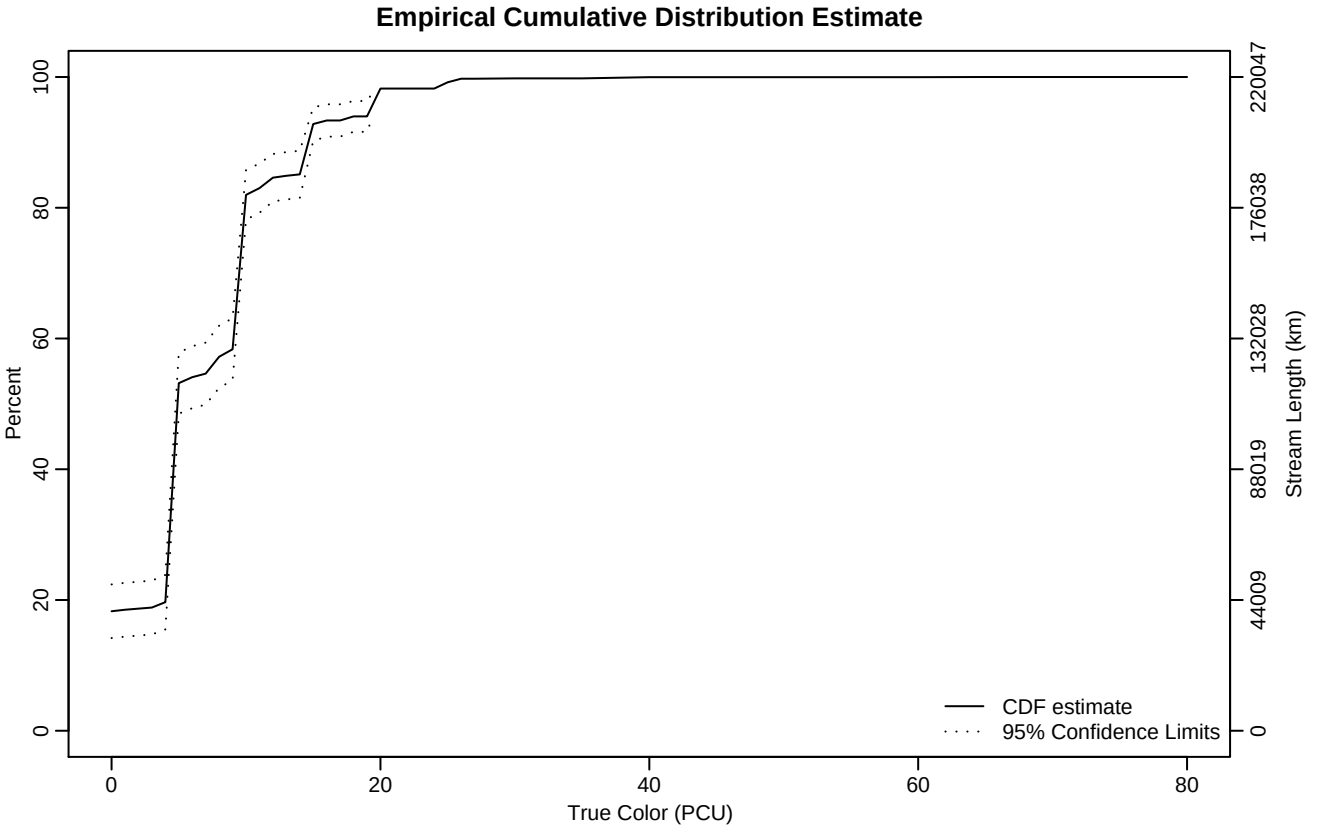


Figure CHEM−226 Indicator: True_Color Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	4.16	4.03	4.28
50Pct	4.91	4.78	6.39
75Pct	9.70	9.50	9.91
90Pct	14.64	14.16	17.52
95Pct	19.24	14.98	19.80
Mean	7.55	6.99	8.11
Std Dev	5.66	5.20	6.13

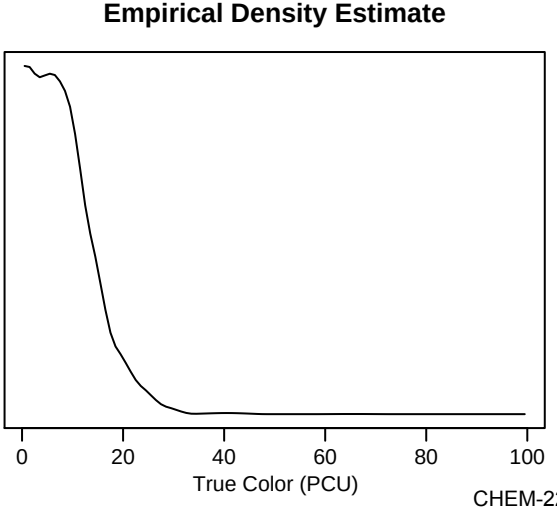
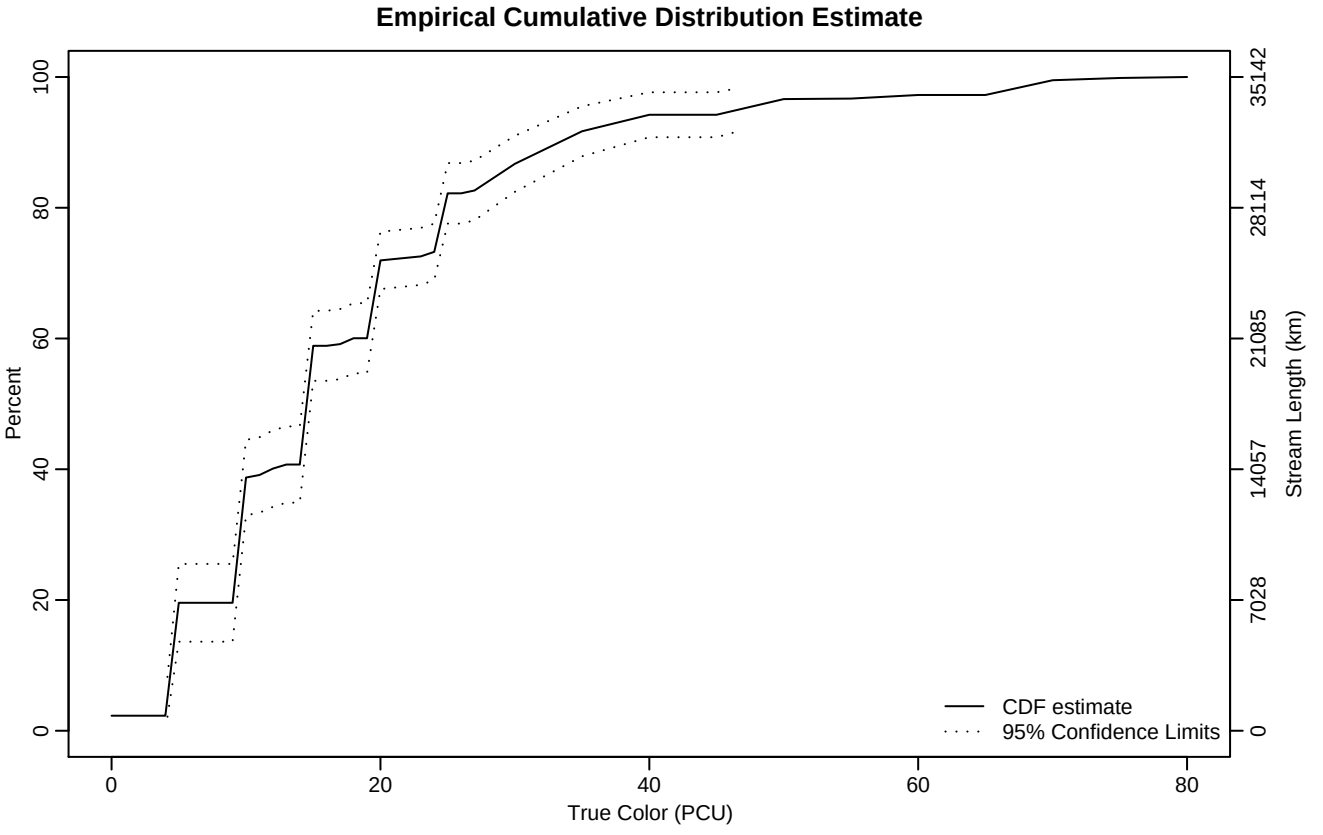


Figure CHEM−227 Indicator: True_Color Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.16	0	4.31
10Pct	4.45	4.28	4.61
25Pct	9.28	4.97	9.59
50Pct	14.51	14.18	14.84
75Pct	24.20	19.90	24.68
90Pct	33.29	29.25	45.16
95Pct	46.62	34.86	67.63
Mean	18.50	16.79	20.21
Std Dev	13.02	10.06	15.99

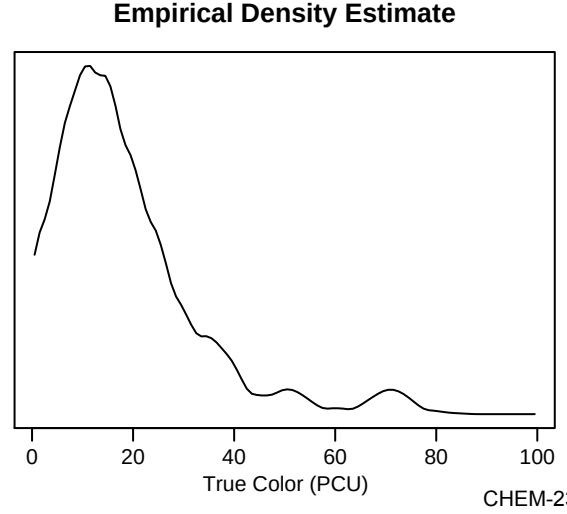
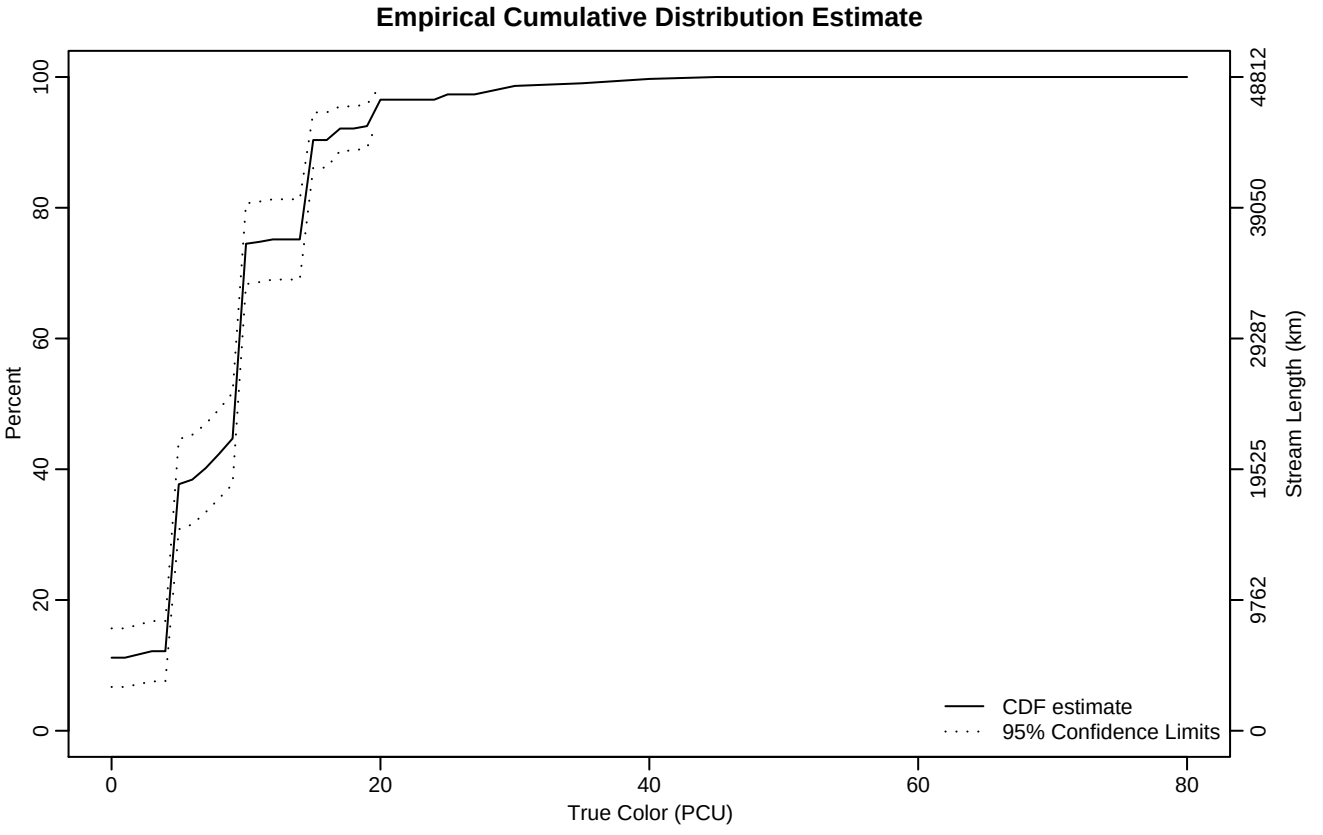


Figure CHEM−228 Indicator: True_Color Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	4.09
25Pct	4.50	4.31	4.69
50Pct	9.18	8.19	9.42
75Pct	11.58	9.81	14.40
90Pct	14.98	14.56	19.96
95Pct	19.62	16.78	29.16
Mean	9.50	8.60	10.41
Std Dev	6.42	5.54	7.31

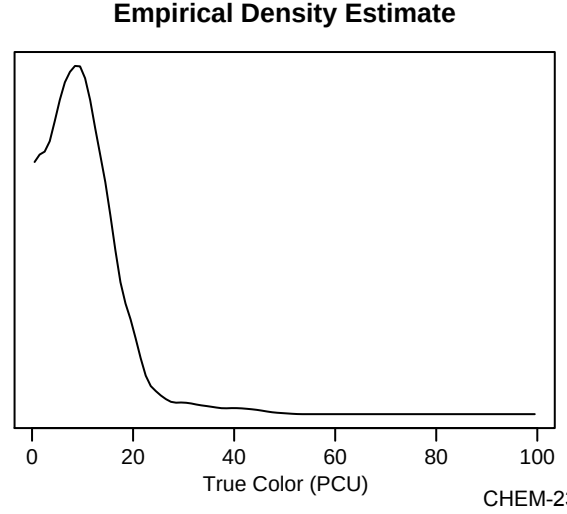
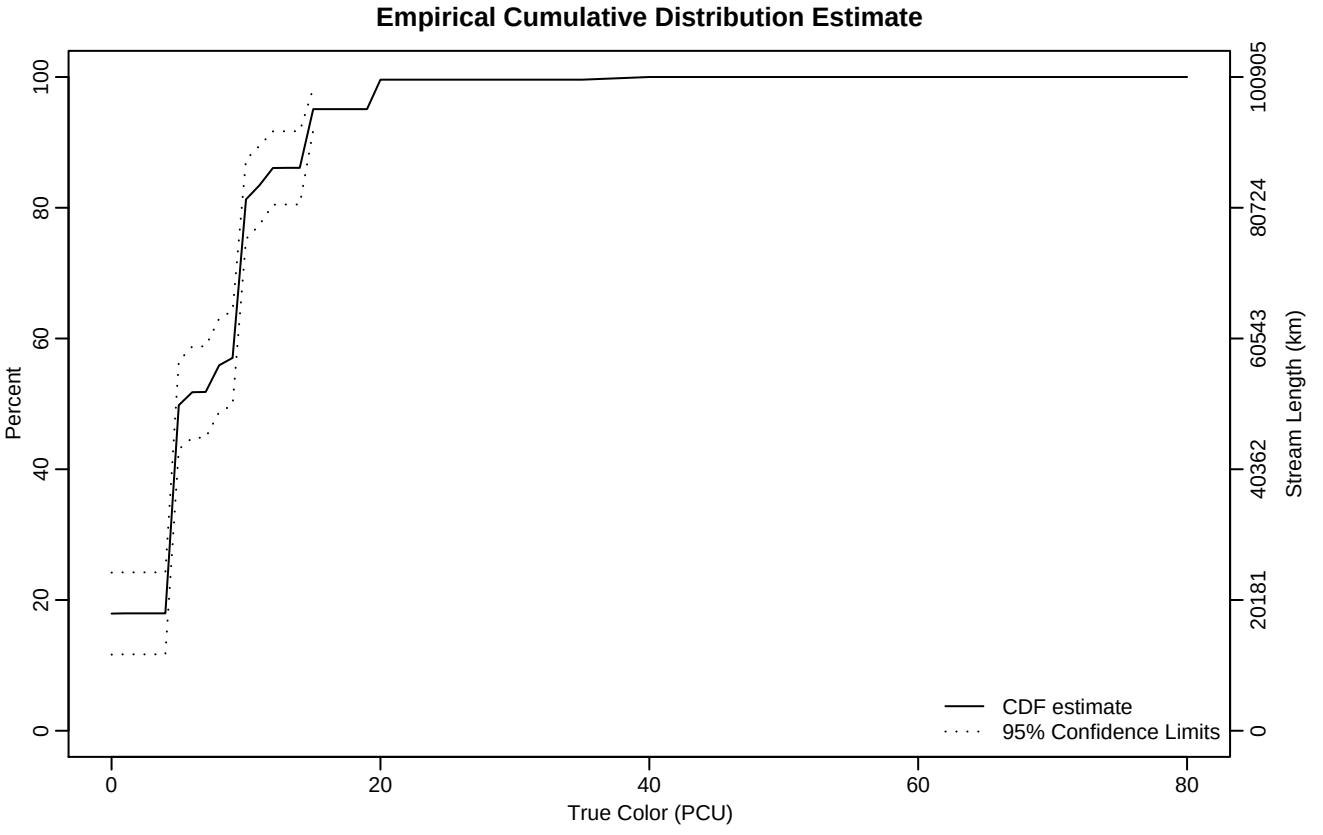


Figure CHEM−229 Indicator: True_Color Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	4.22	4.02	4.42
50Pct	5.10	4.78	9
75Pct	9.74	9.43	10.57
90Pct	14.43	11.34	19.13
95Pct	14.99	14.35	40
Mean	7.54	6.73	8.34
Std Dev	5.30	4.57	6.03

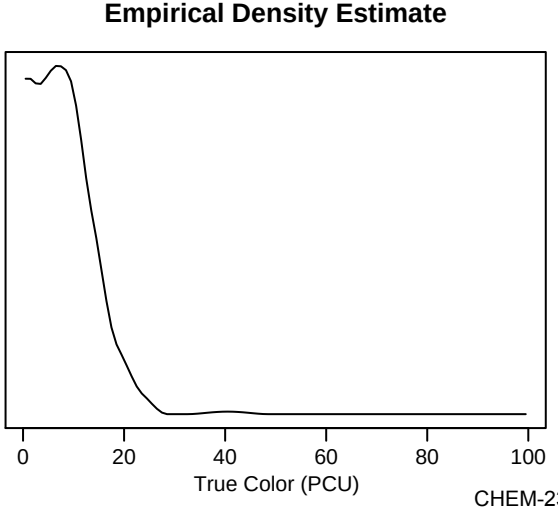
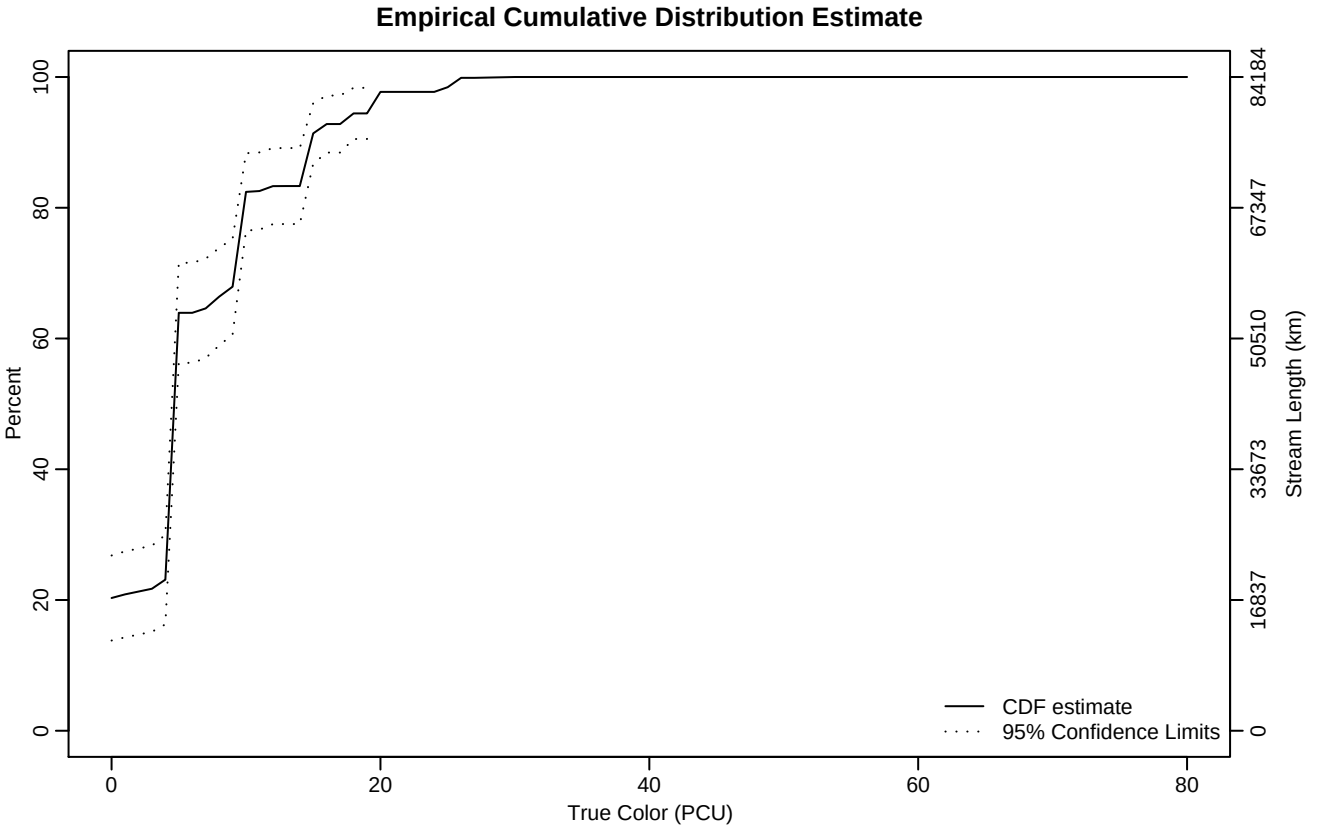


Figure CHEM−230 Indicator: True_Color Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	4.05	0	4.21
50Pct	4.66	4.48	4.83
75Pct	9.49	8.85	9.99
90Pct	14.83	14.07	19.51
95Pct	19.17	14.96	25.36
Mean	6.99	6.04	7.94
Std Dev	5.69	5.05	6.32

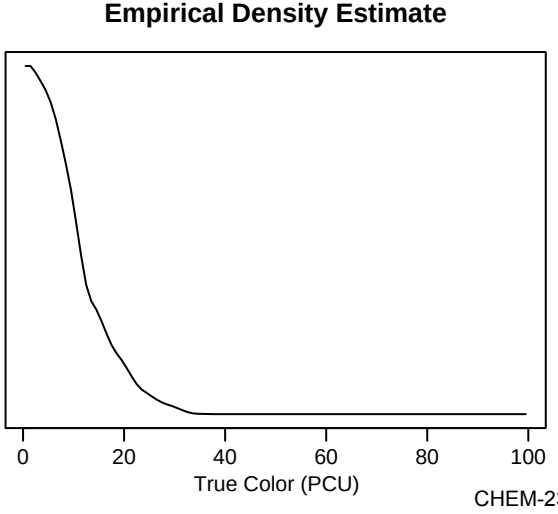
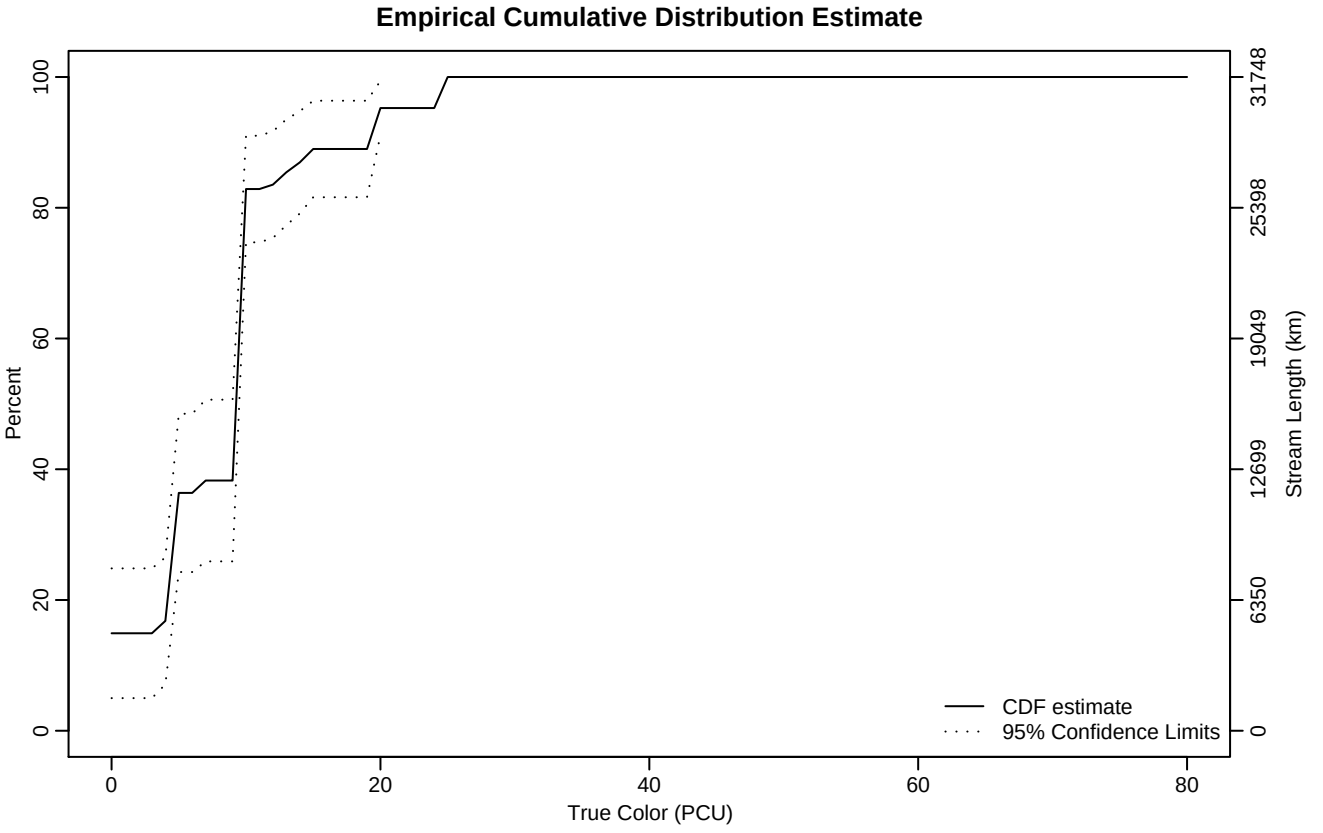


Figure CHEM−231 Indicator: True_Color Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	3.17
10Pct	0	0	4.17
25Pct	4.42	3.16	4.92
50Pct	9.26	6.67	9.54
75Pct	9.82	9.54	14.31
90Pct	19.16	10	24.44
95Pct	19.96	14.36	25
Mean	8.93	7.51	10.36
Std Dev	6.04	4.89	7.20

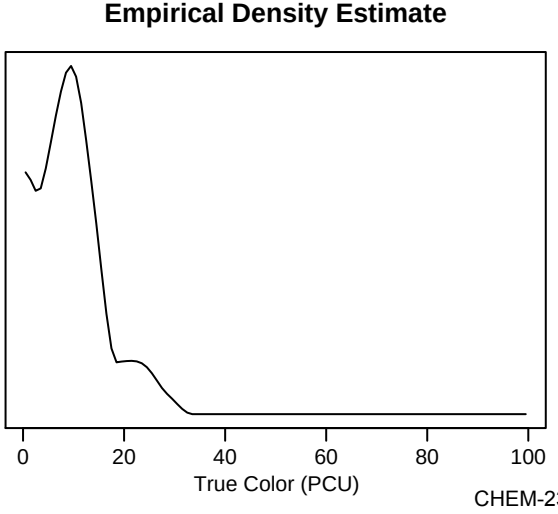
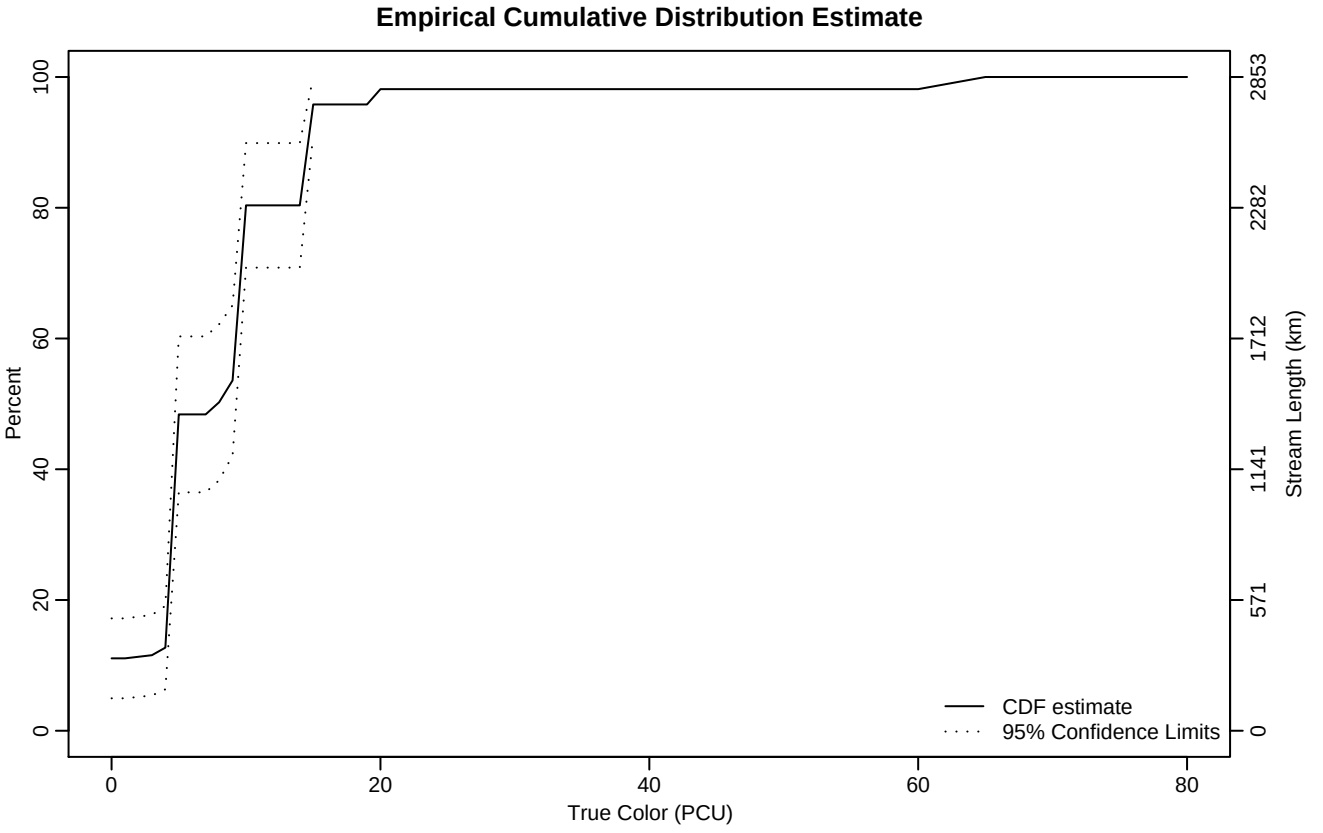


Figure CHEM−232 Indicator: True_Color Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	4.10
25Pct	4.34	4.15	4.54
50Pct	7.87	4.71	9.31
75Pct	9.80	9.36	14.41
90Pct	14.62	10	64.27
95Pct	14.95	14.31	65
Mean	8.96	6.96	10.97
Std Dev	8.63	4.07	13.18

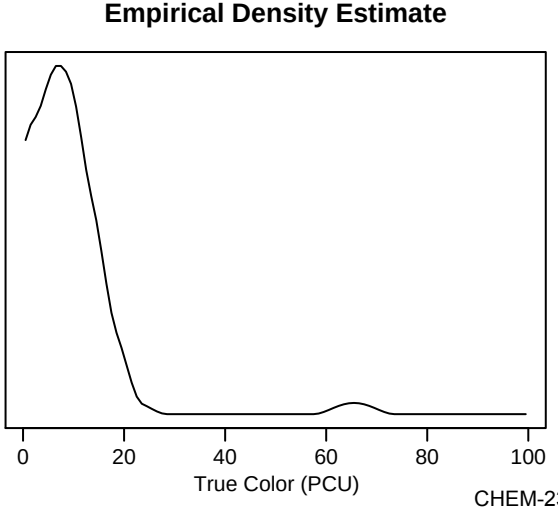
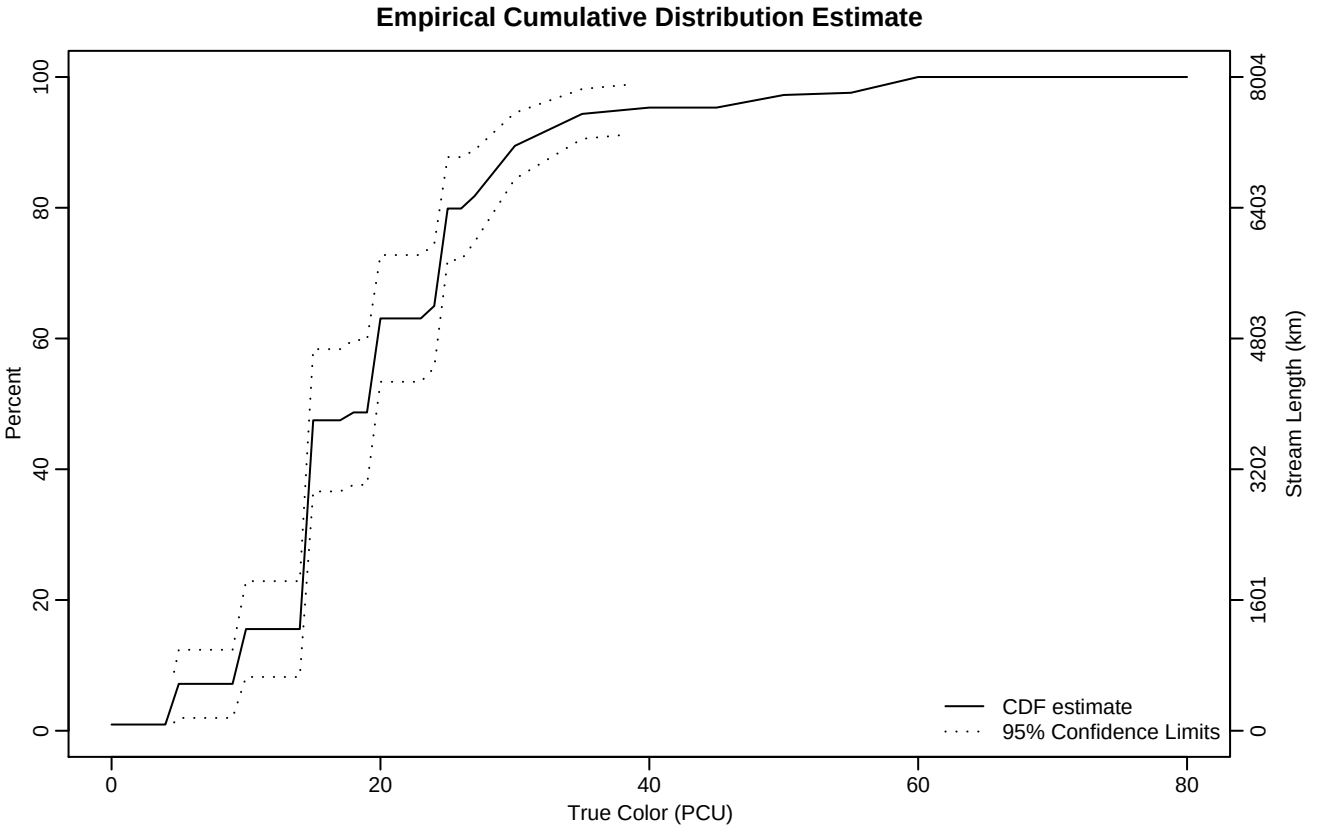


Figure CHEM−233 Indicator: True_Color Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.65	4.37	4.93
10Pct	9.34	4.62	9.96
25Pct	14.30	14.06	14.53
50Pct	19.09	14.73	19.87
75Pct	24.67	24.04	28.01
90Pct	30.54	28.24	38.56
95Pct	38.34	31.70	57.65
Mean	20.73	18.85	22.60
Std Dev	9.11	7.60	10.62

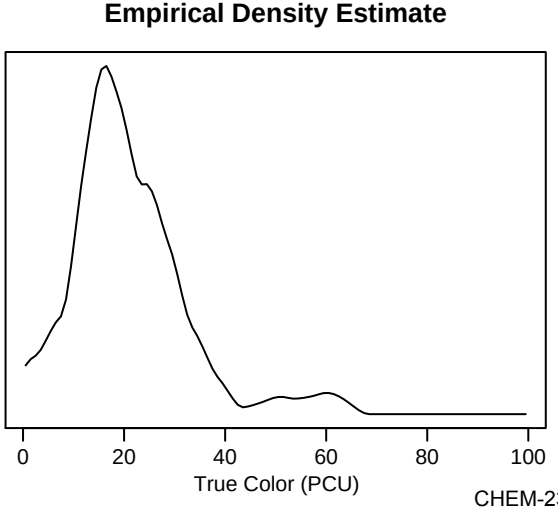
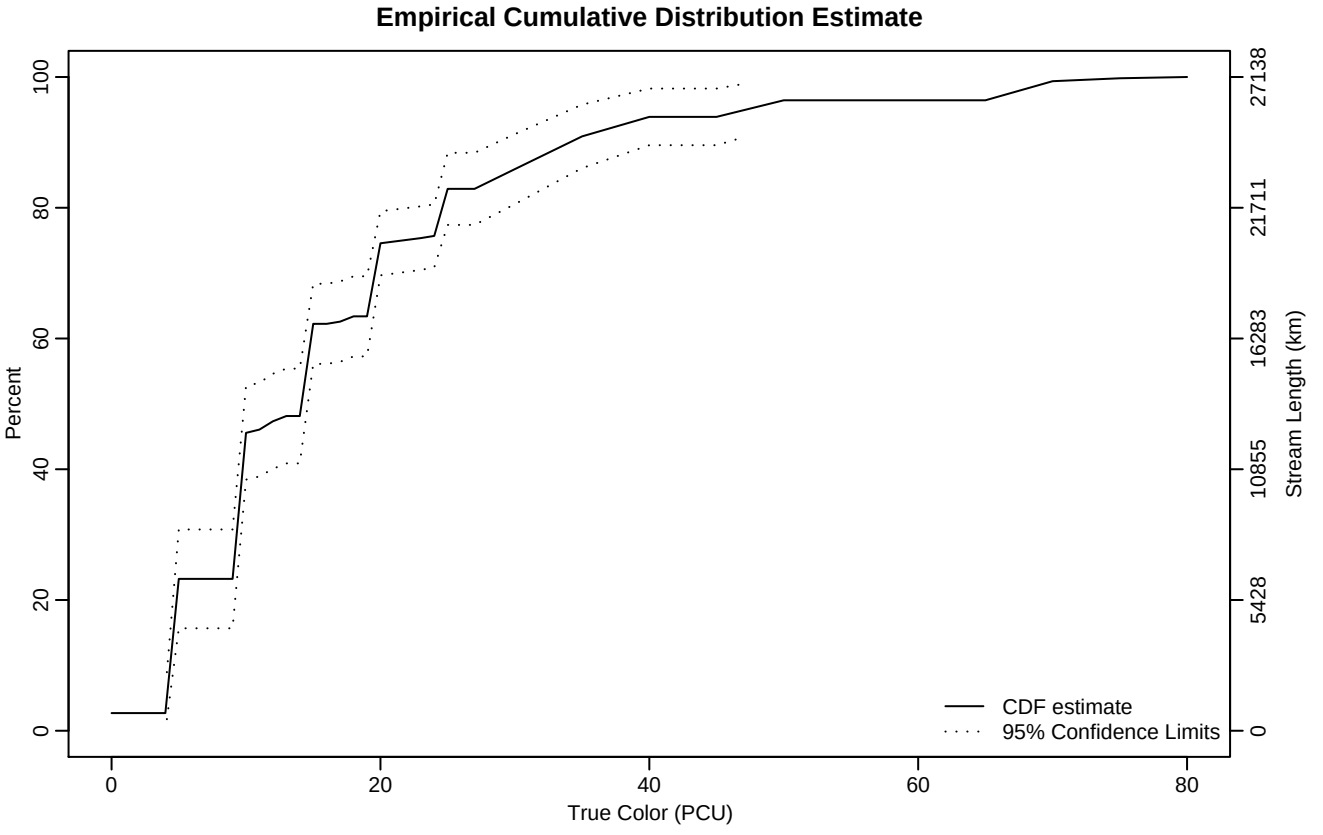


Figure CHEM−234 Indicator: True_Color Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.11	0	4.28
10Pct	4.36	4.18	4.53
25Pct	9.08	4.72	9.42
50Pct	14.13	9.87	14.66
75Pct	21.65	19.60	24.59
90Pct	34.08	28.72	47.92
95Pct	47.17	34.76	69.94
Mean	17.84	15.70	19.99
Std Dev	13.83	10.08	17.59

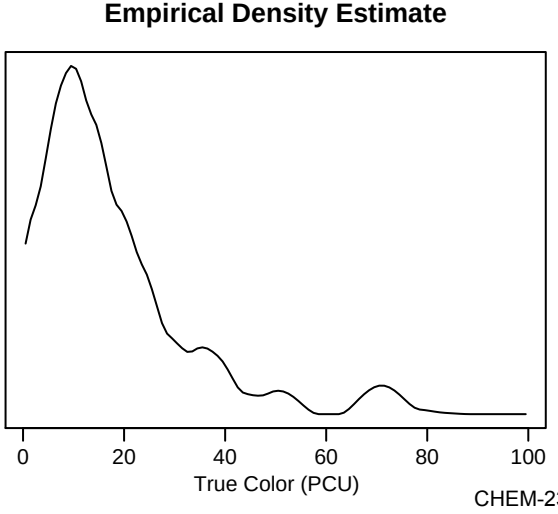
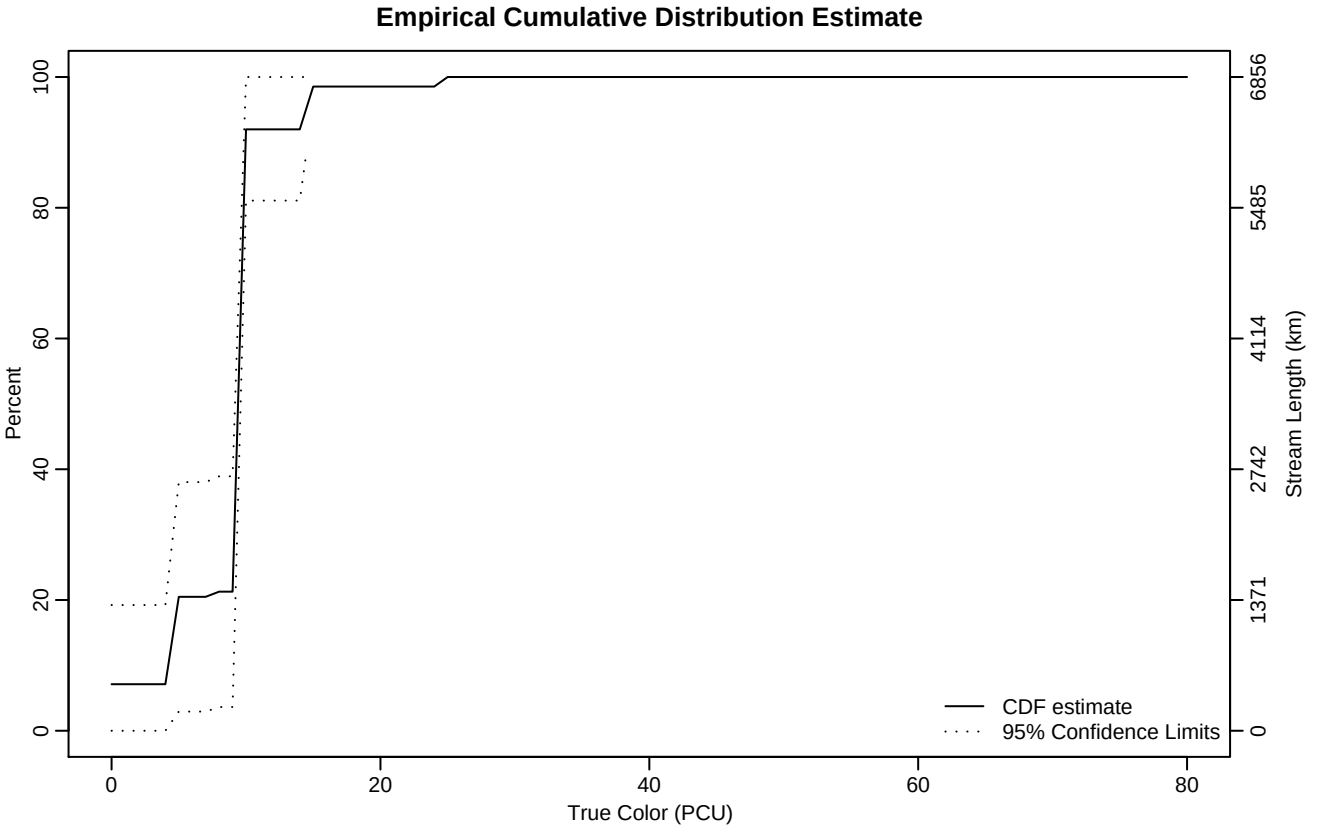


Figure CHEM−235 Indicator: True_Color Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	4.74
10Pct	4.22	0	9.01
25Pct	9.05	0	9.31
50Pct	9.41	9.11	9.70
75Pct	9.76	9.41	24.92
90Pct	9.97	9.58	25
95Pct	14.46	9.89	25
Mean	9.15	7.65	10.65
Std Dev	3.83	2.25	5.41

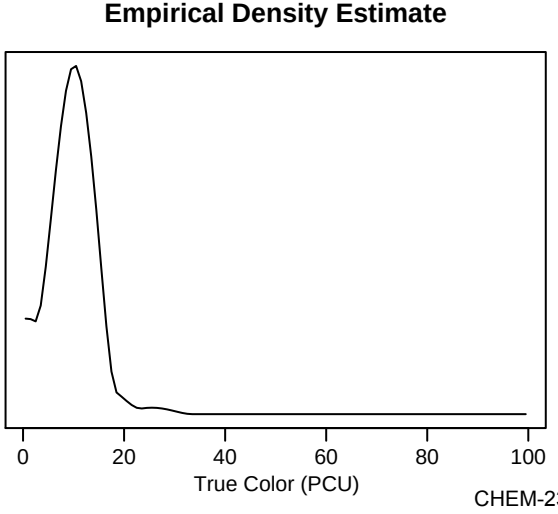
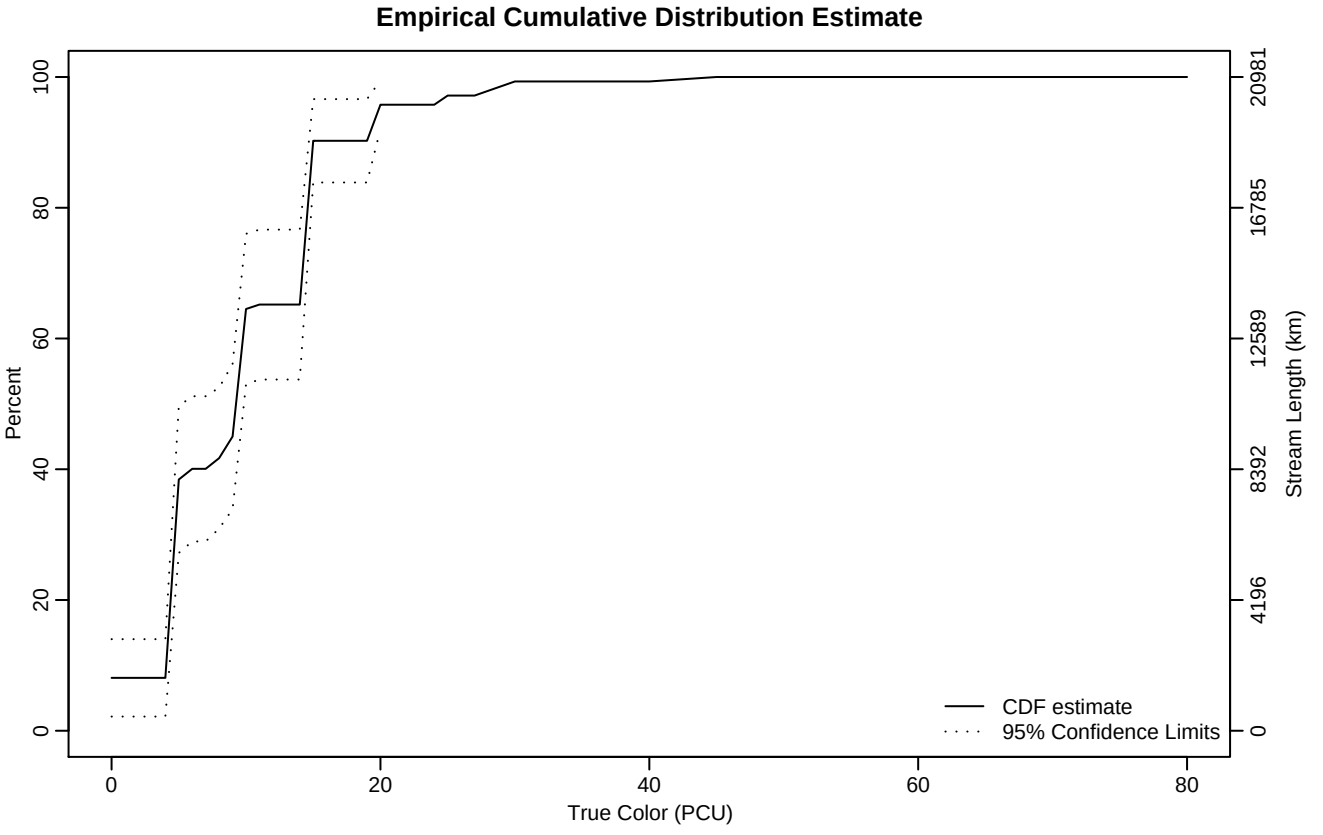


Figure CHEM−236 Indicator: True_Color Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	4.09
10Pct	4.06	0	4.26
25Pct	4.56	4.35	4.76
50Pct	9.26	5.25	9.83
75Pct	14.39	9.95	14.85
90Pct	14.99	14.52	45
95Pct	19.86	14.94	45
Mean	10.23	8.75	11.71
Std Dev	6.81	5.47	8.16

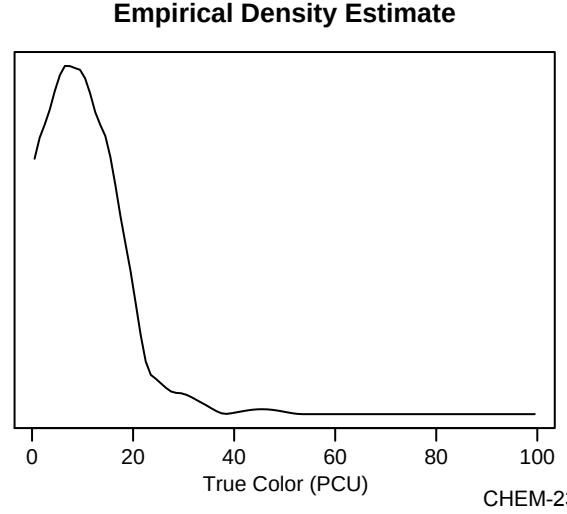
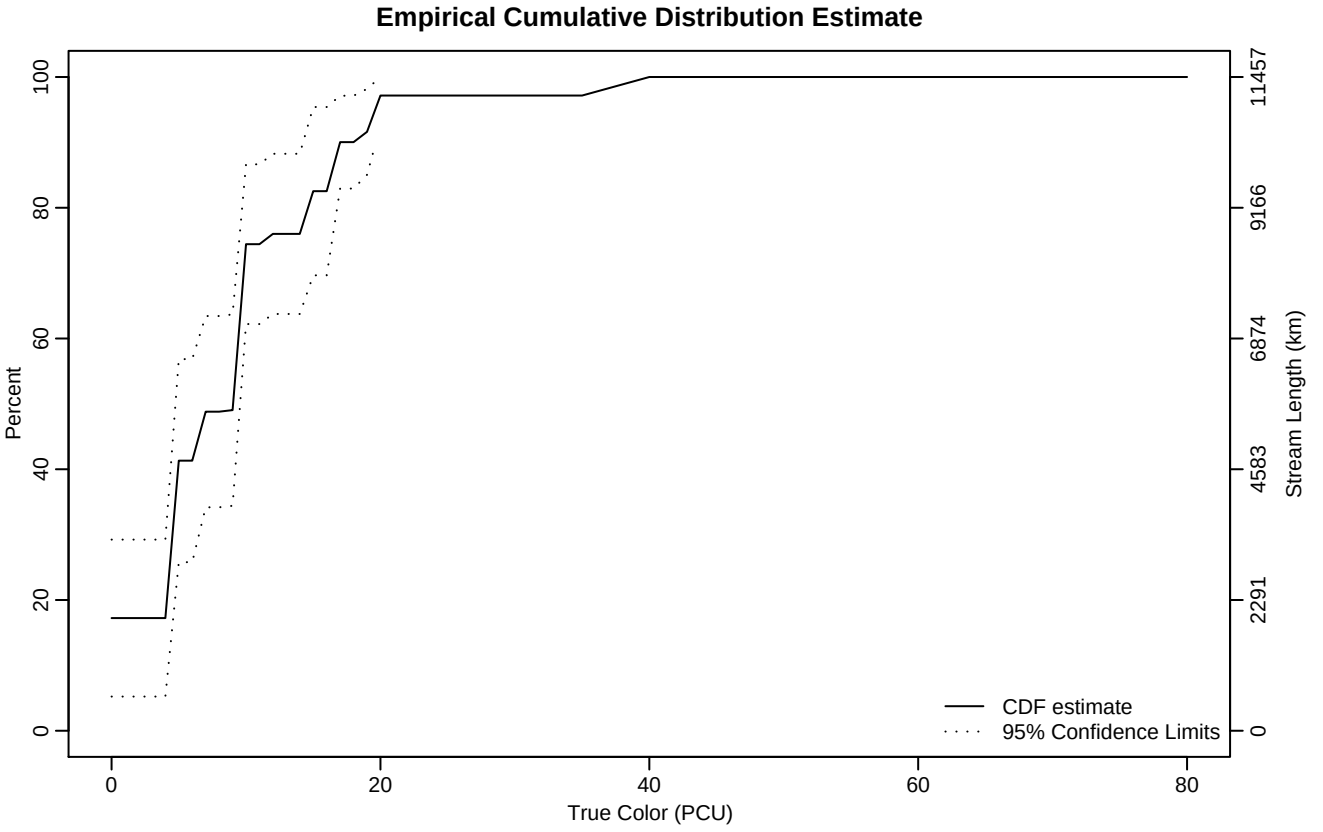


Figure CHEM−237 Indicator: True_Color Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	4
10Pct	0	0	4.21
25Pct	4.32	0	4.83
50Pct	9.04	4.74	9.63
75Pct	11.36	9.52	16.70
90Pct	17	14.07	40
95Pct	19.61	16.75	40
Mean	9.28	6.99	11.56
Std Dev	6.98	5.08	8.88

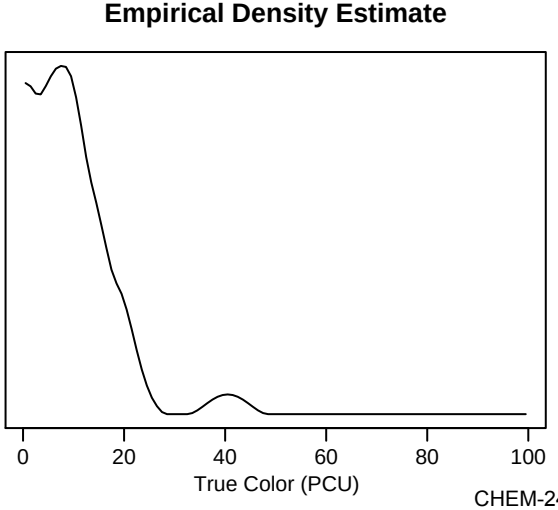
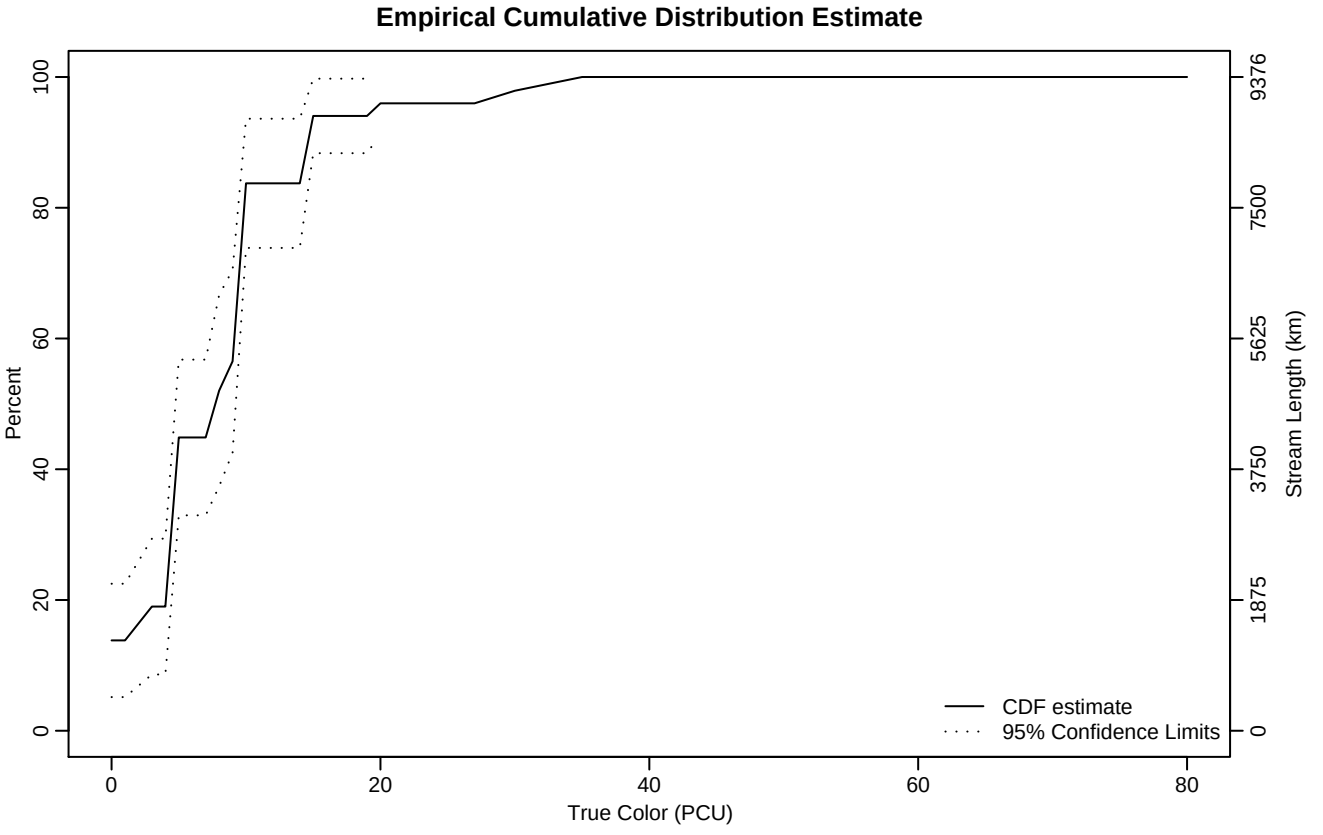


Figure CHEM−238 Indicator: True_Color Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	2.84
25Pct	4.23	1.29	4.64
50Pct	7.72	4.74	9.20
75Pct	9.68	9.16	14.51
90Pct	14.61	9.86	35
95Pct	19.50	14.54	35
Mean	8.39	6.70	10.09
Std Dev	6.24	4.60	7.88

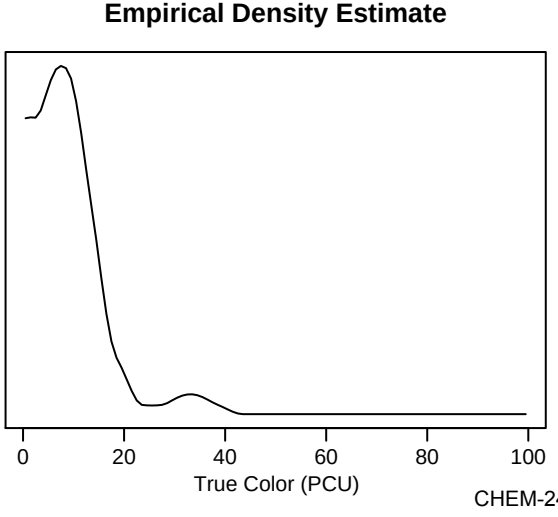
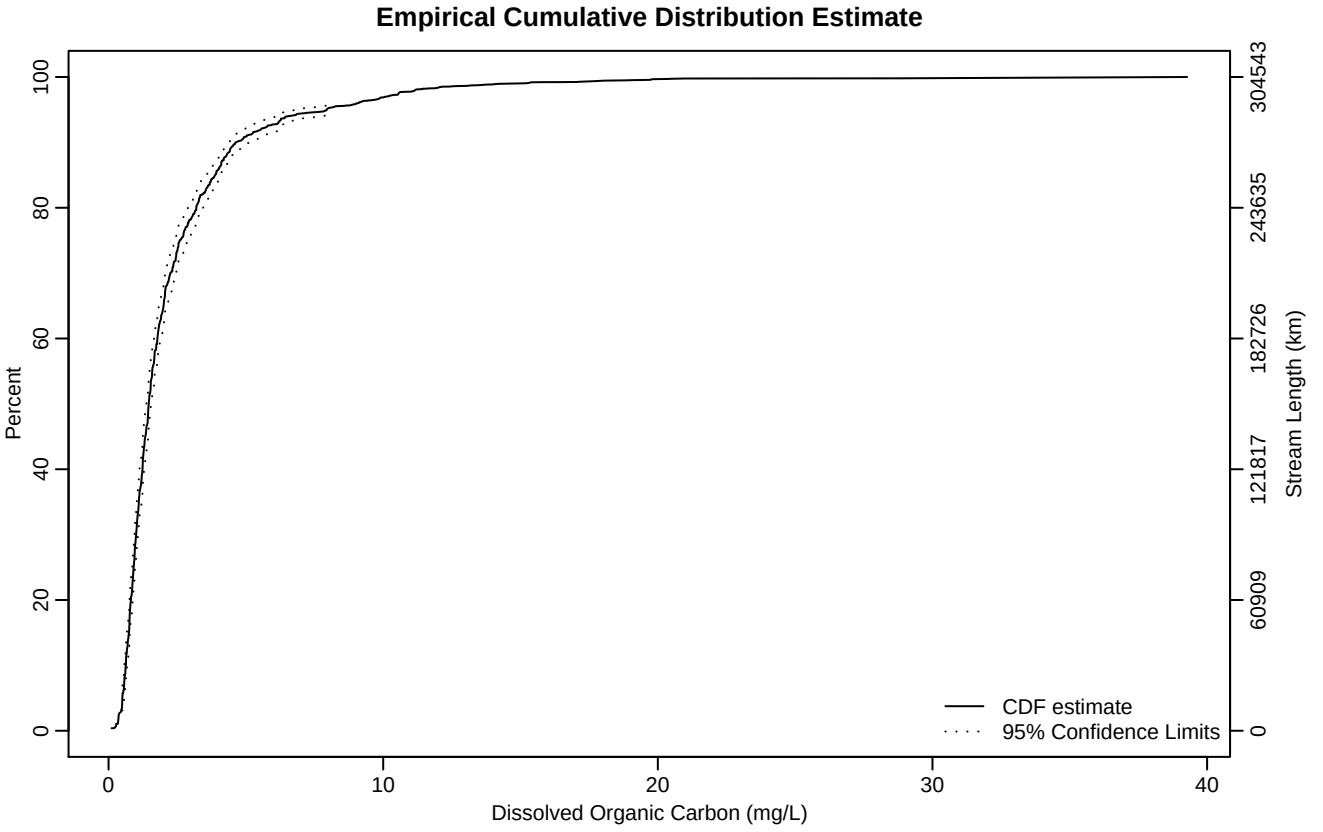


Figure CHEM−239 Indicator: DOC Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.46	0.56
10Pct	0.63	0.57	0.67
25Pct	0.91	0.86	0.97
50Pct	1.46	1.38	1.55
75Pct	2.59	2.45	2.89
90Pct	4.63	4.41	5.24
95Pct	7.94	6.83	8.87
Mean	2.41	2.27	2.55
Std Dev	2	1.53	2.46

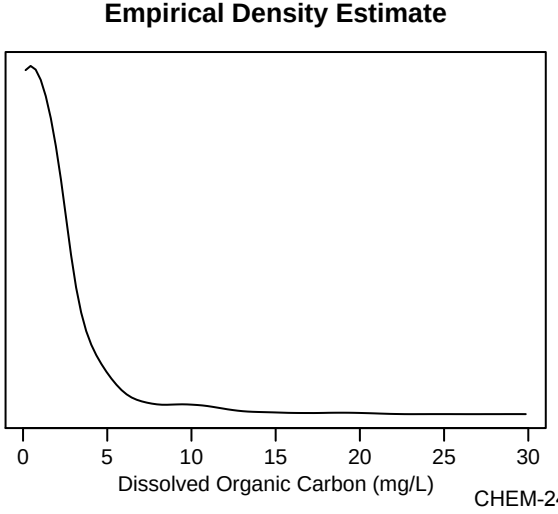
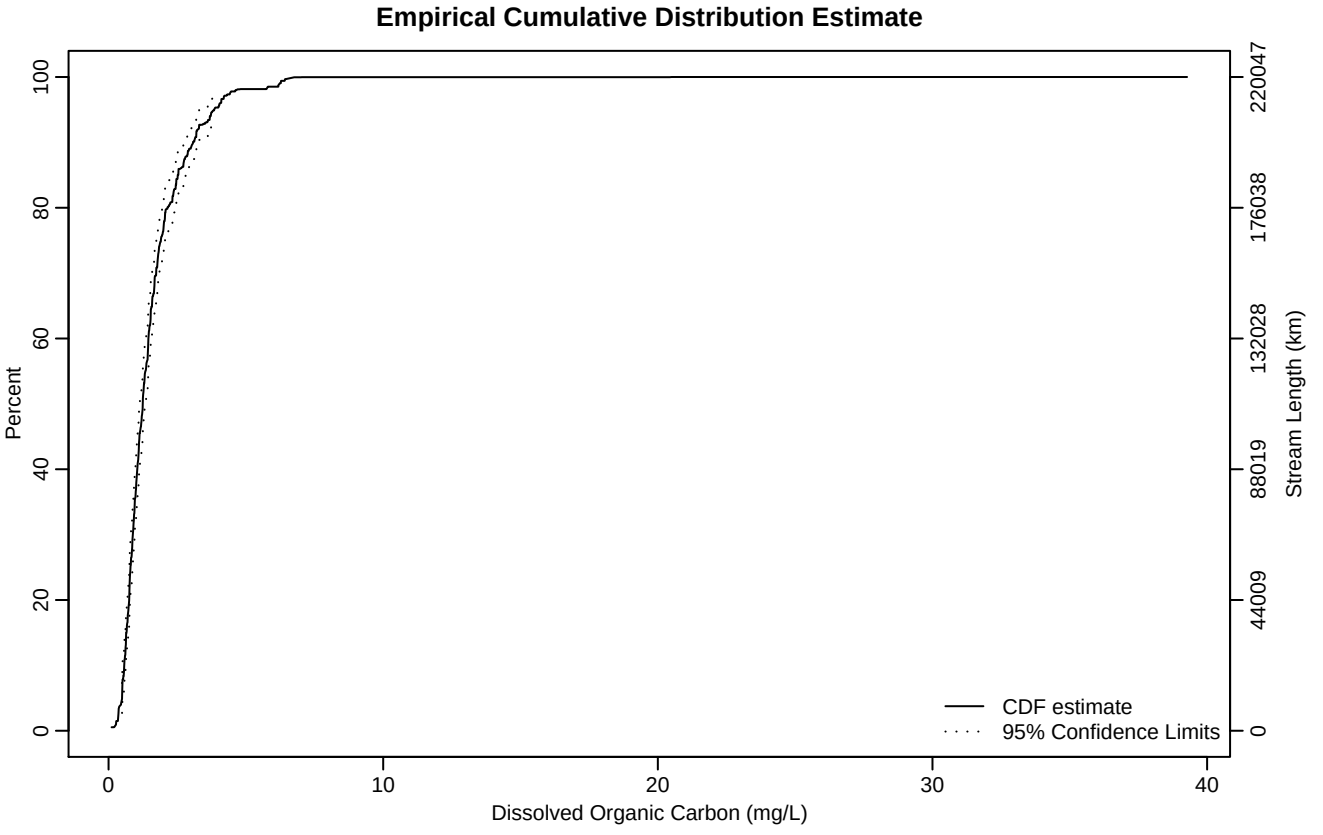


Figure CHEM−240 Indicator: DOC Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.49	0.36	0.51
10Pct	0.57	0.50	0.63
25Pct	0.80	0.76	0.87
50Pct	1.24	1.13	1.33
75Pct	1.90	1.77	2.06
90Pct	3.08	2.75	3.30
95Pct	3.85	3.54	4.20
Mean	1.57	1.47	1.67
Std Dev	1.05	0.93	1.16

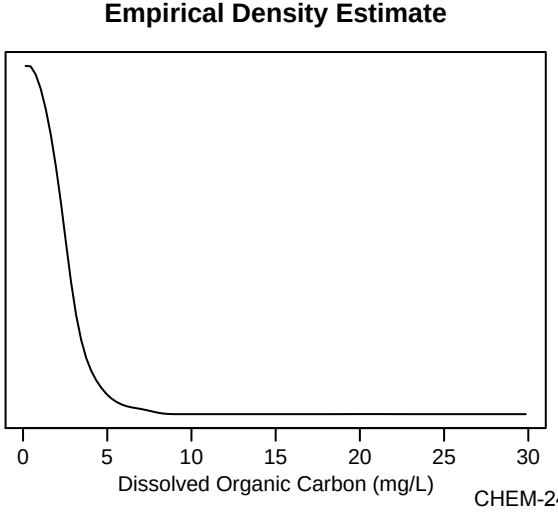
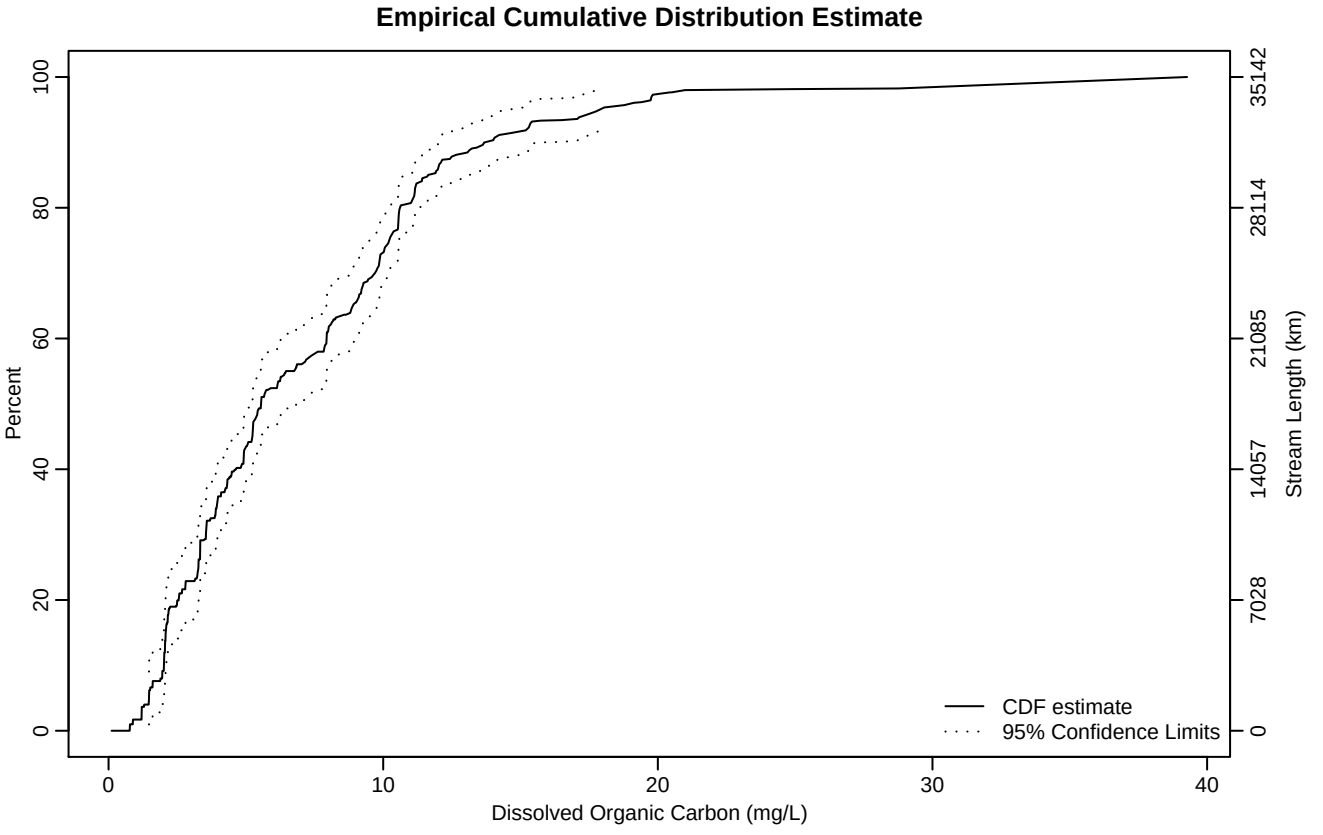


Figure CHEM−241 Indicator: DOC Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.47	0.88	1.96
10Pct	2.02	1.47	2.08
25Pct	3.27	2.46	3.56
50Pct	5.55	5.20	6.85
75Pct	10.22	9.69	10.61
90Pct	13.70	12.01	17.11
95Pct	17.88	15.09	28.27
Mean	7.49	6.52	8.46
Std Dev	5.40	3.48	7.32

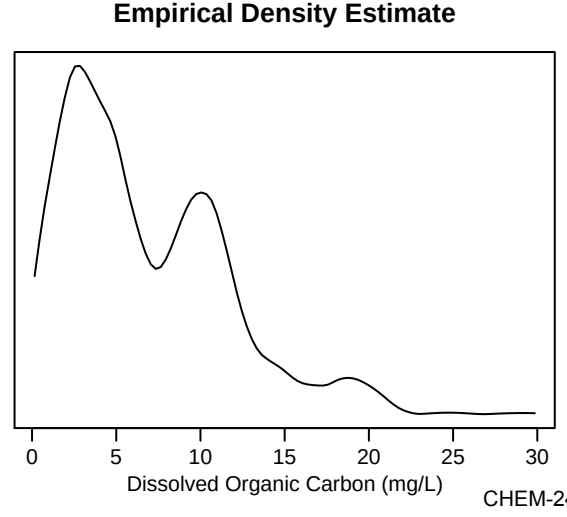
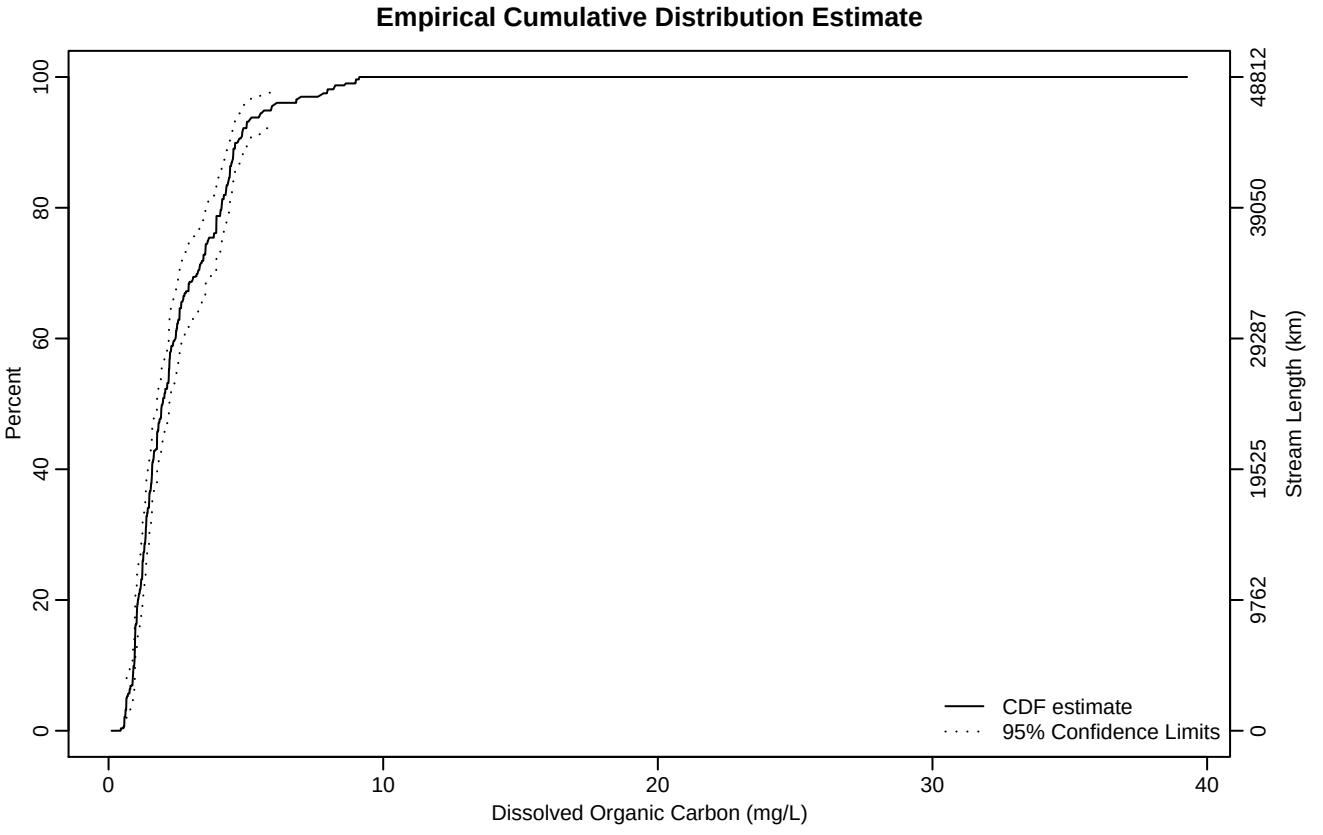


Figure CHEM−242 Indicator: DOC Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.66	0.58	0.89
10Pct	0.93	0.76	0.97
25Pct	1.23	1.05	1.36
50Pct	1.96	1.76	2.21
75Pct	3.63	3.04	4.14
90Pct	4.70	4.43	5.48
95Pct	5.92	5.02	7.96
Mean	2.56	2.35	2.77
Std Dev	1.56	1.37	1.76

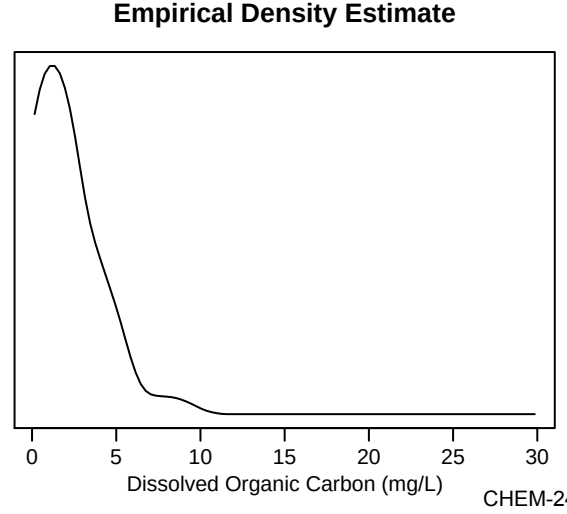
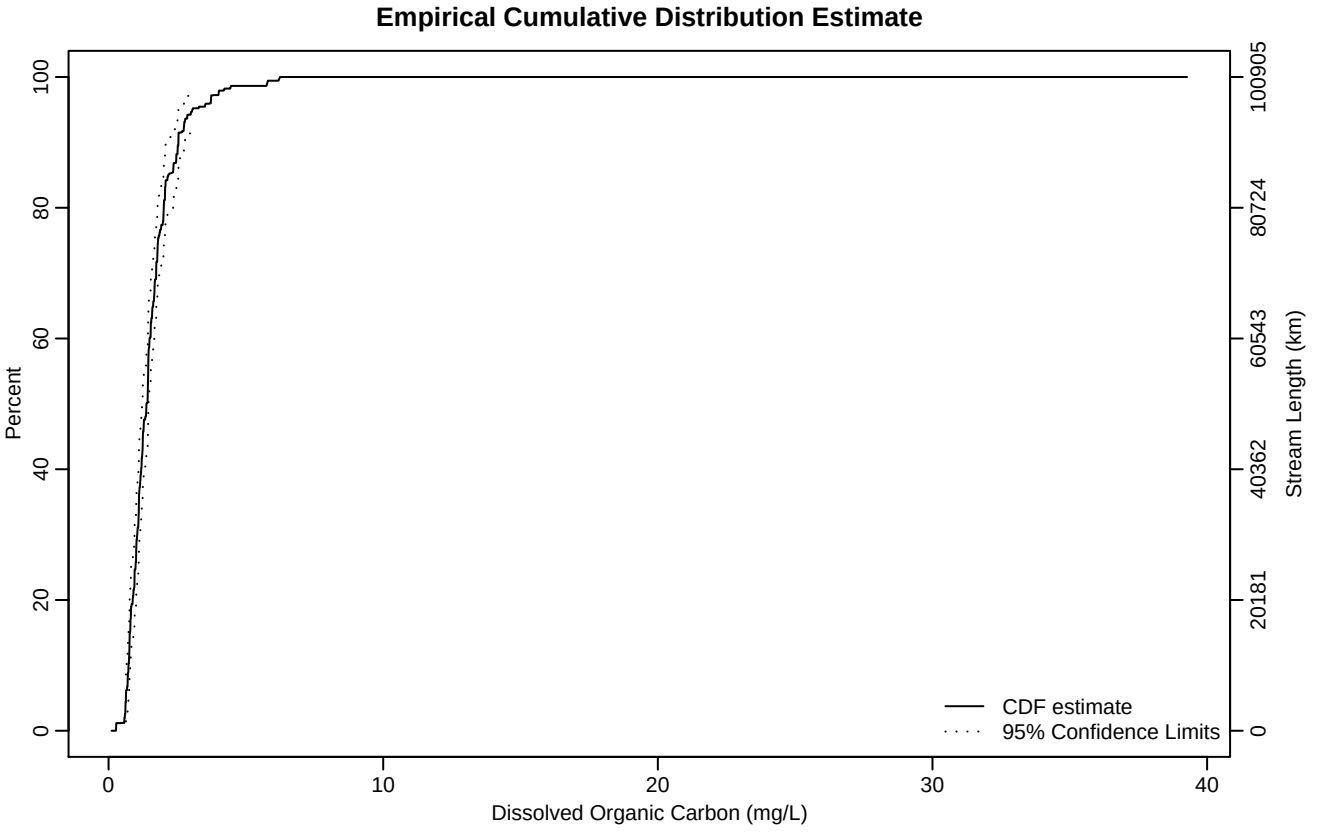


Figure CHEM−243 Indicator: DOC Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.63	0.57	0.70
10Pct	0.73	0.63	0.77
25Pct	0.98	0.82	1.09
50Pct	1.38	1.23	1.45
75Pct	1.80	1.68	2.05
90Pct	2.54	2.17	3.06
95Pct	3.05	2.74	4.02
Mean	1.55	1.43	1.68
Std Dev	0.85	0.69	1

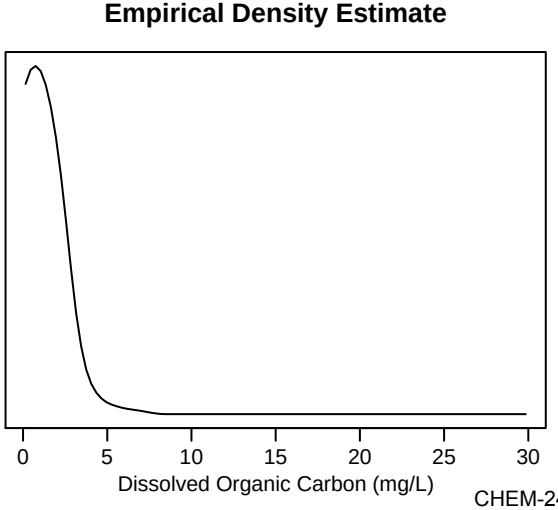
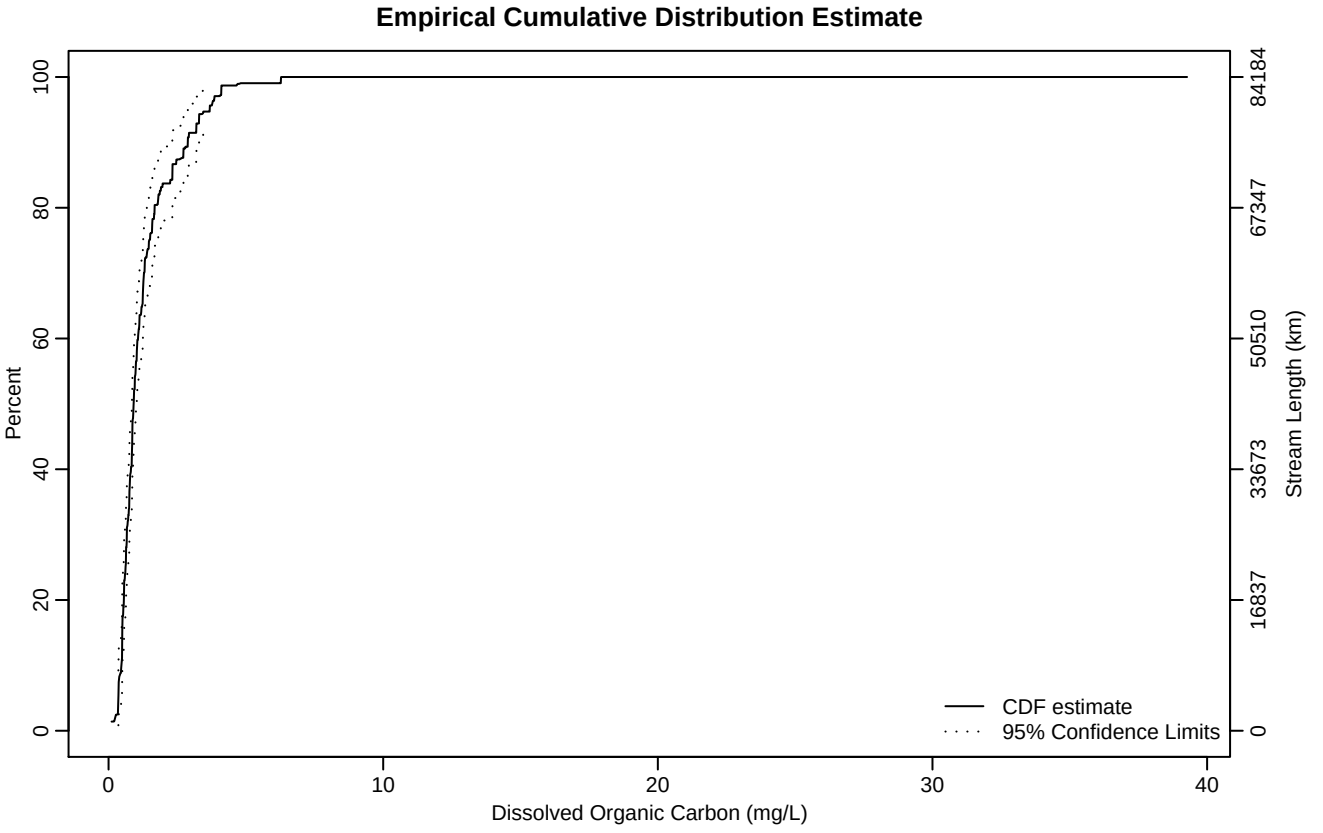


Figure CHEM−244 Indicator: DOC Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.36	0.25	0.38
10Pct	0.47	0.36	0.50
25Pct	0.62	0.53	0.70
50Pct	0.91	0.85	1.03
75Pct	1.48	1.26	1.86
90Pct	2.88	2.32	3.68
95Pct	3.68	3.19	4.11
Mean	1.28	1.12	1.45
Std Dev	1.01	0.81	1.21

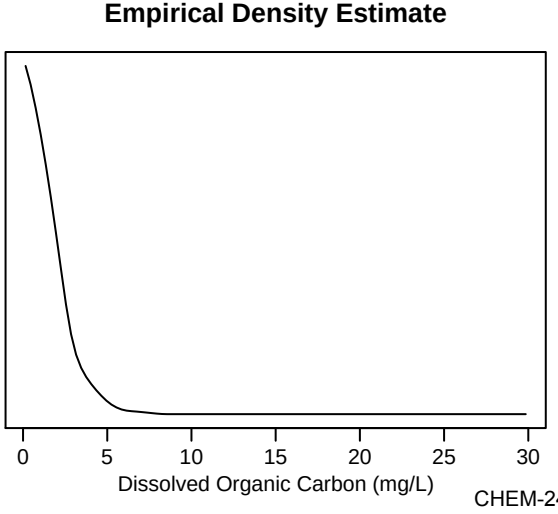
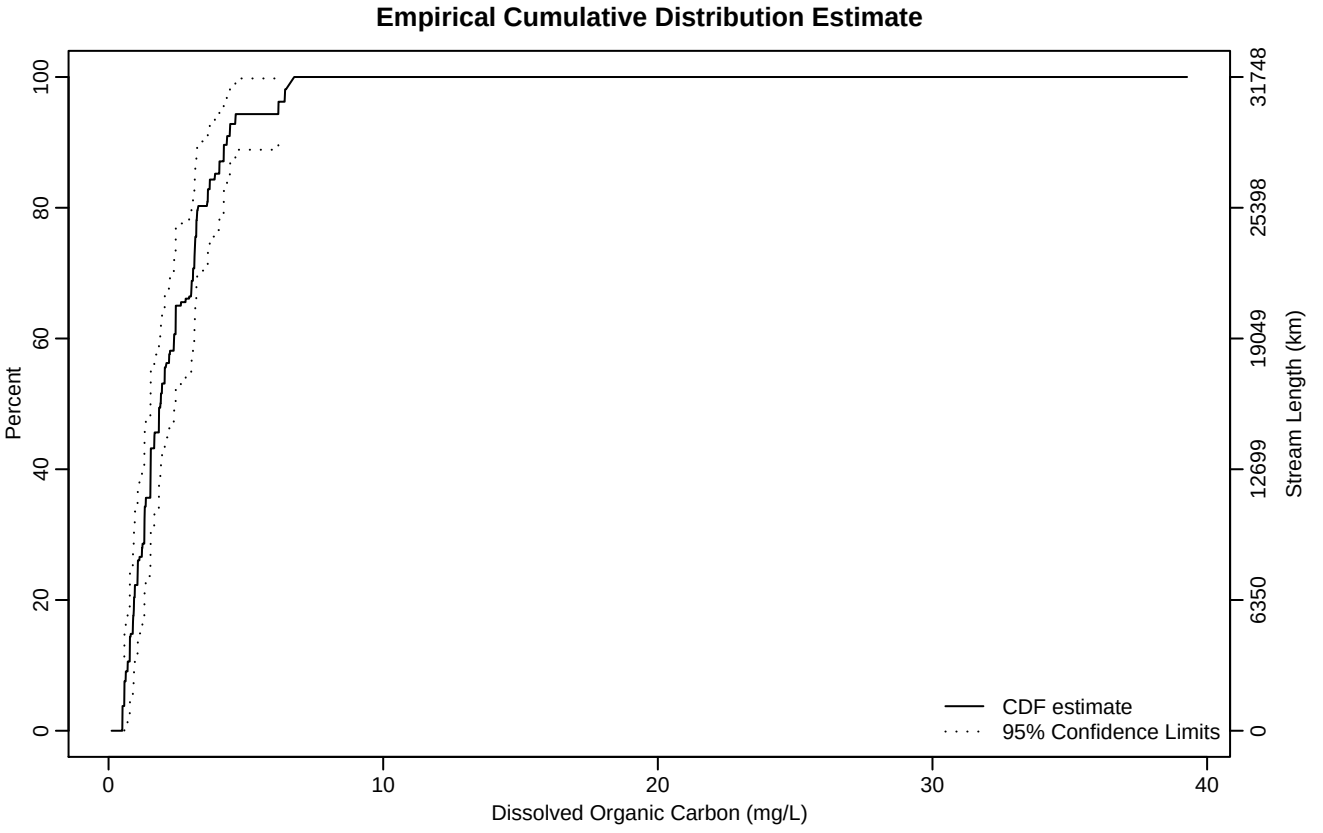


Figure CHEM−245 Indicator: DOC Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.57	0.11	0.77
10Pct	0.70	0.51	0.91
25Pct	1.06	0.78	1.52
50Pct	1.89	1.53	2.44
75Pct	3.15	2.45	4.03
90Pct	4.31	3.68	6.42
95Pct	6.18	4.20	6.76
Mean	2.31	1.95	2.68
Std Dev	1.46	1.17	1.75

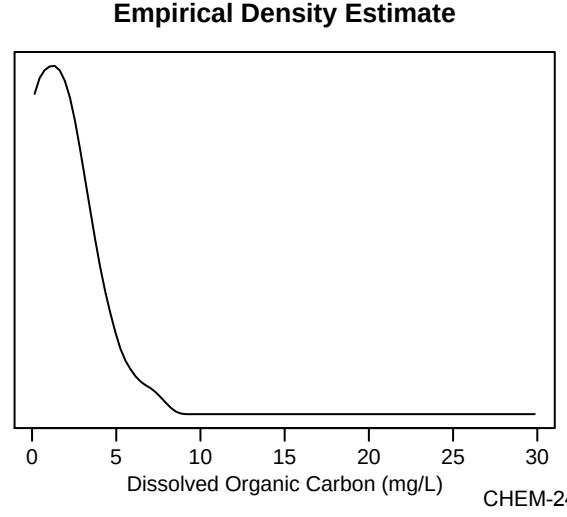
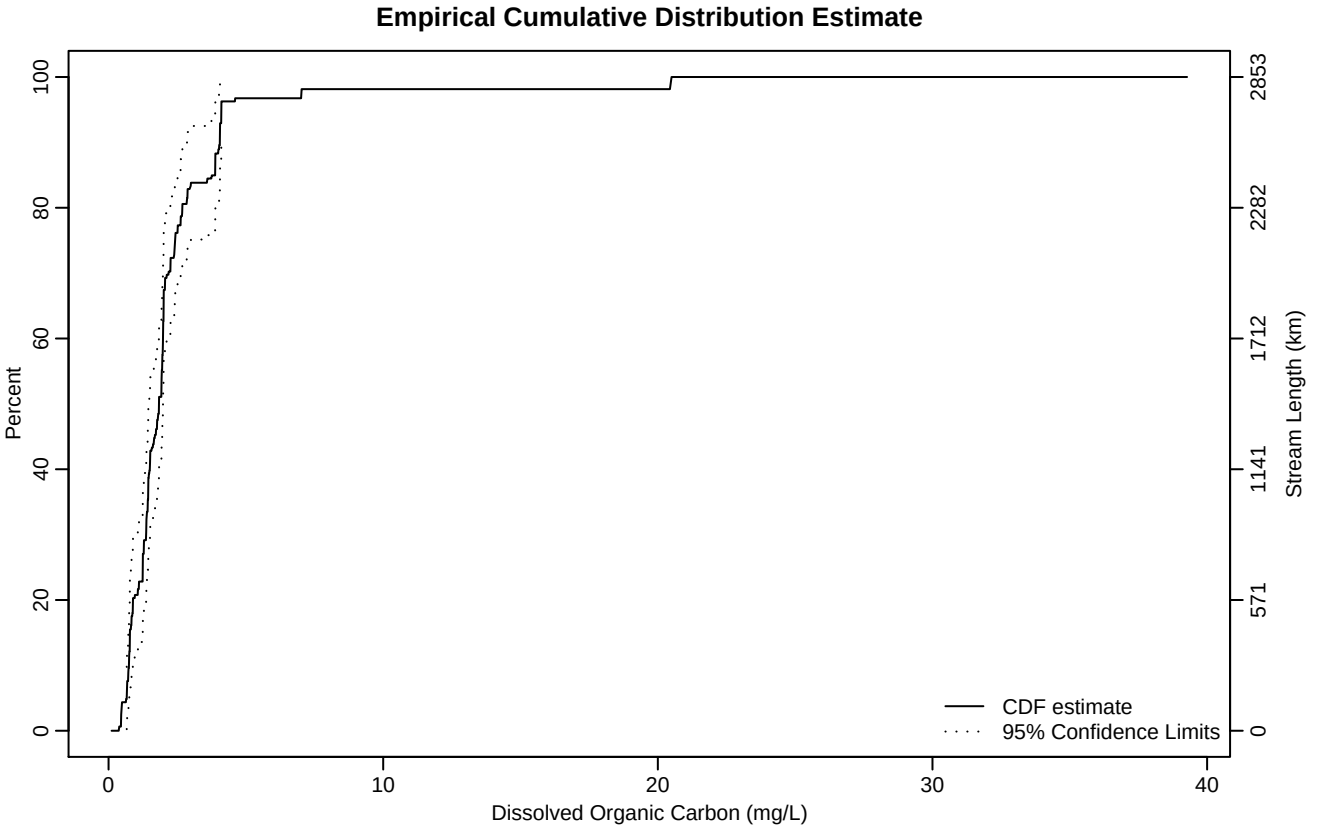


Figure CHEM−246 Indicator: DOC Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.66	0.38	0.74
10Pct	0.74	0.49	0.82
25Pct	1.25	0.81	1.42
50Pct	1.84	1.46	1.99
75Pct	2.42	2.01	3.74
90Pct	4.05	2.87	20.44
95Pct	4.11	3.99	20.50
Mean	2.32	1.72	2.92
Std Dev	2.55	1	4.11

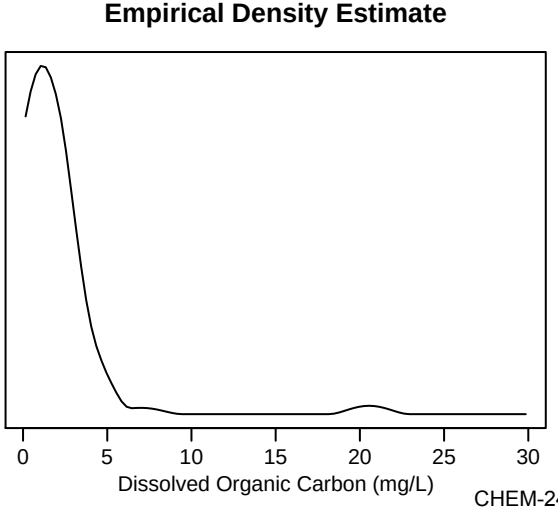
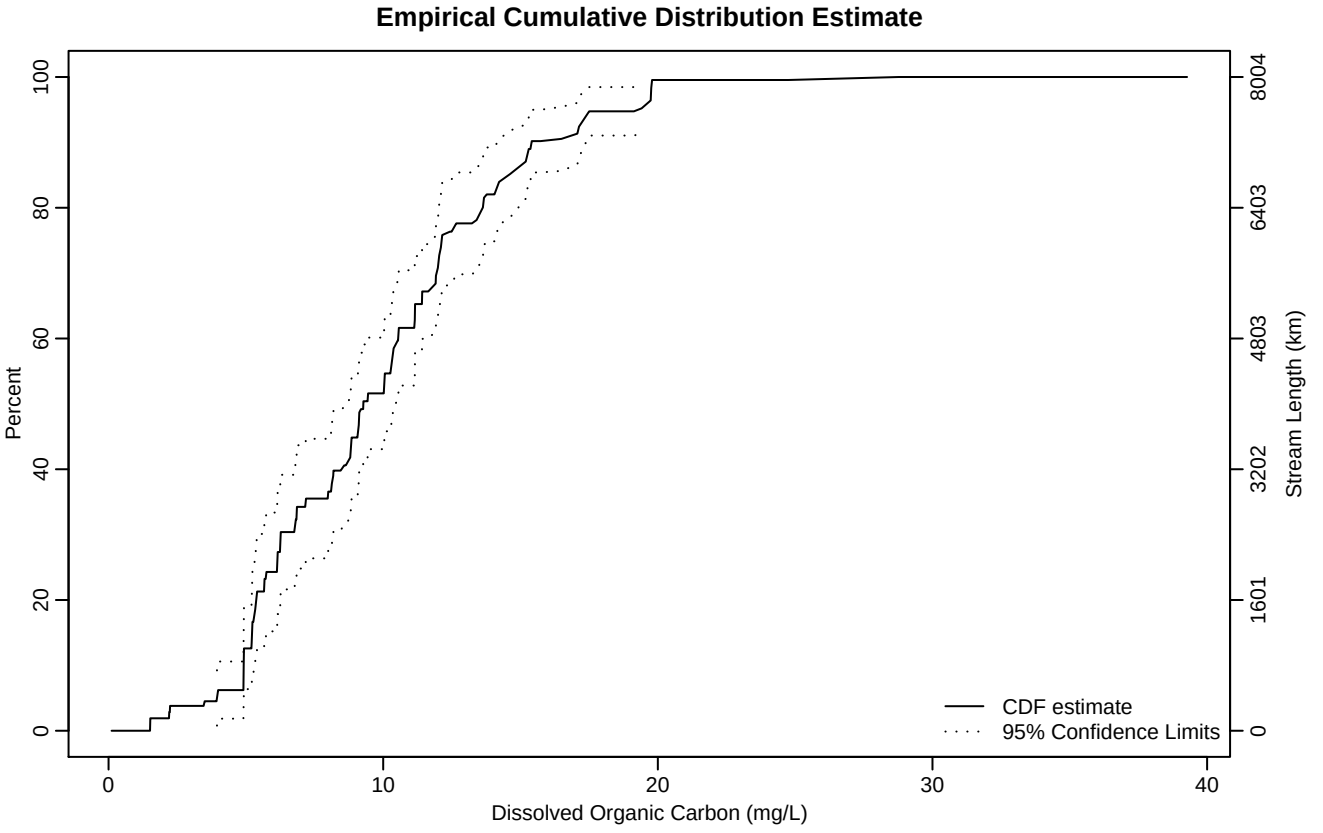


Figure CHEM−247 Indicator: DOC Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.95	1.52	4.92
10Pct	4.92	3.50	5.23
25Pct	6.14	5.23	6.86
50Pct	9.28	8.72	10.42
75Pct	12.13	11.42	14.15
90Pct	15.40	14.60	19.22
95Pct	19.28	16.99	19.77
Mean	9.87	9.17	10.57
Std Dev	3.94	3.44	4.44

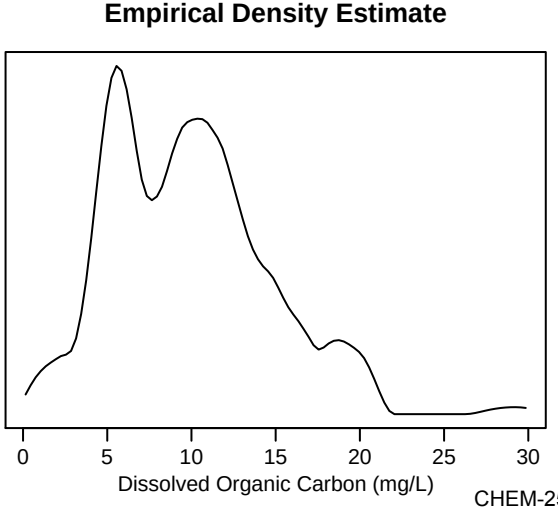
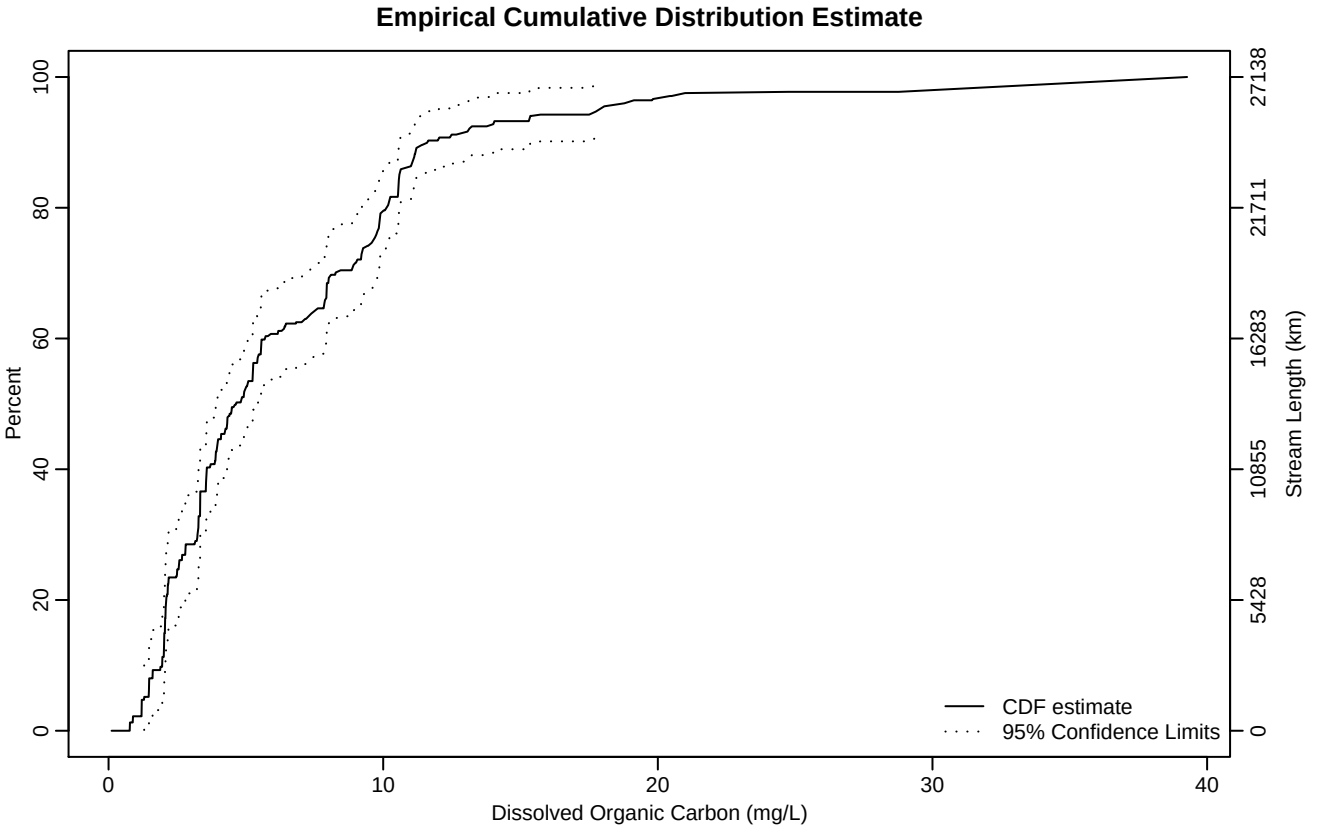


Figure CHEM−248 Indicator: DOC Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.30	0.77	1.95
10Pct	1.95	1.21	2.06
25Pct	2.56	2.07	3.28
50Pct	4.64	3.95	5.42
75Pct	9.63	7.94	10.54
90Pct	11.61	10.61	17.64
95Pct	17.85	12.46	34.79
Mean	6.79	5.55	8.03
Std Dev	5.79	3.31	8.27

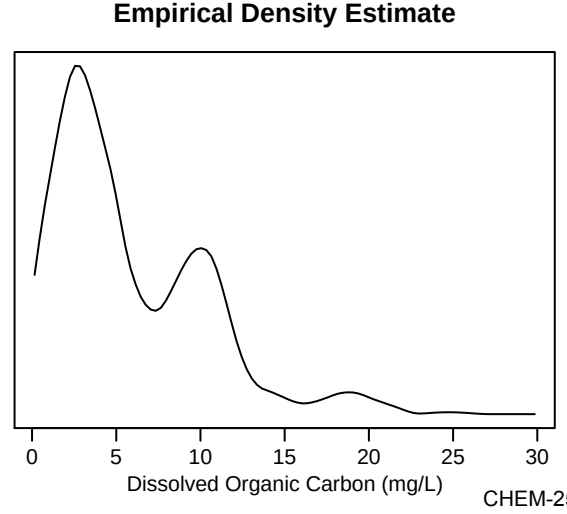
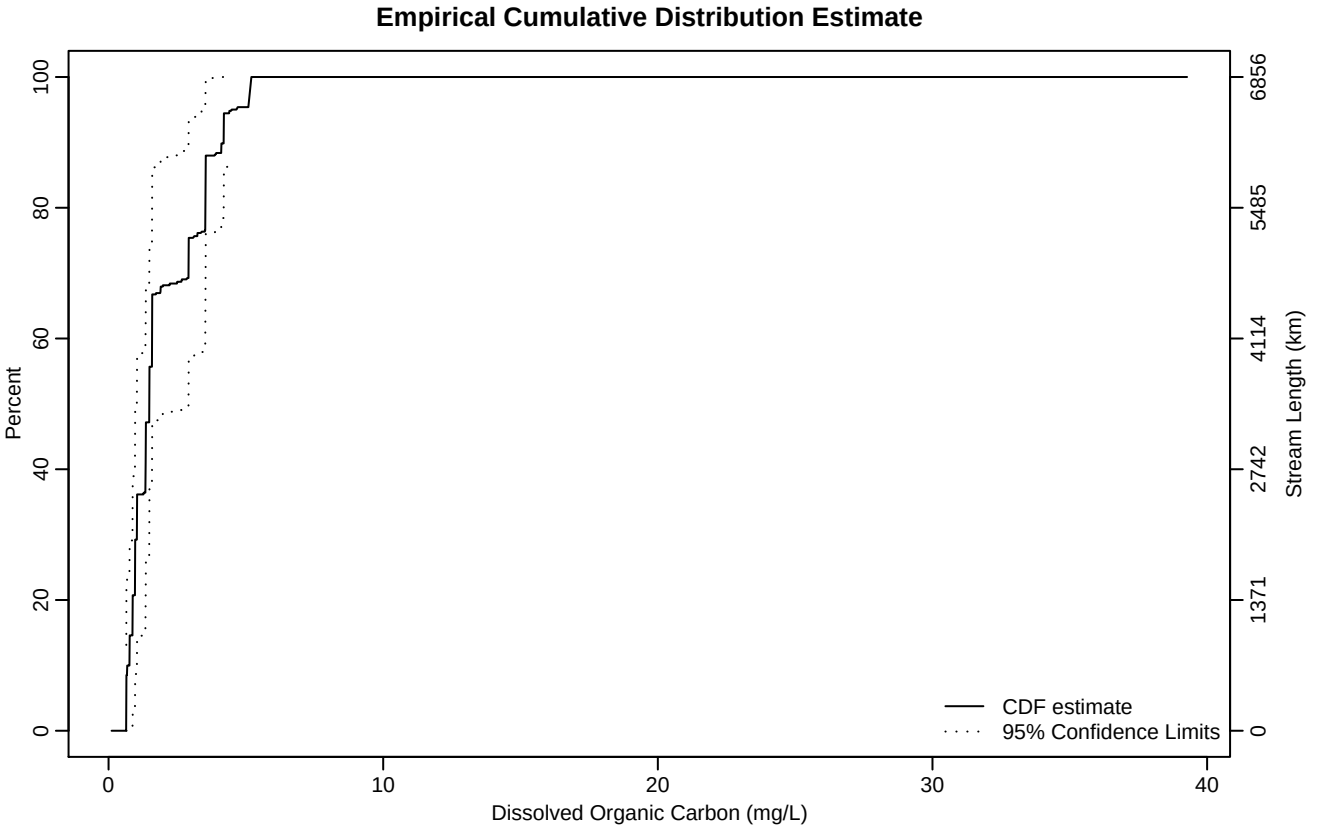


Figure CHEM−249 Indicator: DOC Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.65	0.64	0.65
10Pct	0.76	0.11	0.96
25Pct	0.97	0.65	1.35
50Pct	1.48	0.97	2.91
75Pct	2.92	1.49	4.48
90Pct	4.19	3.52	5.20
95Pct	4.48	3.54	5.20
Mean	1.99	1.47	2.51
Std Dev	1.32	0.98	1.66

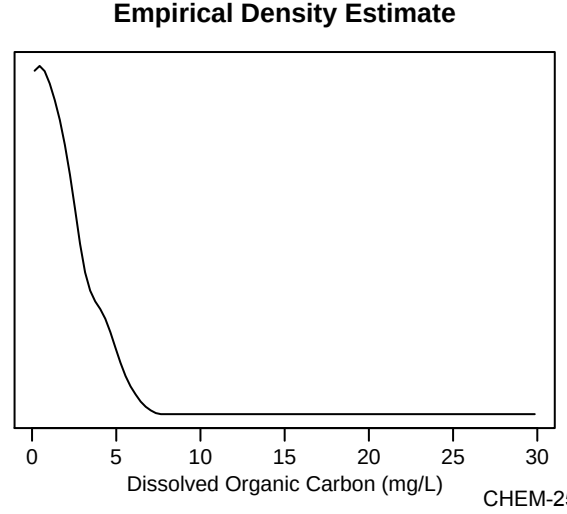
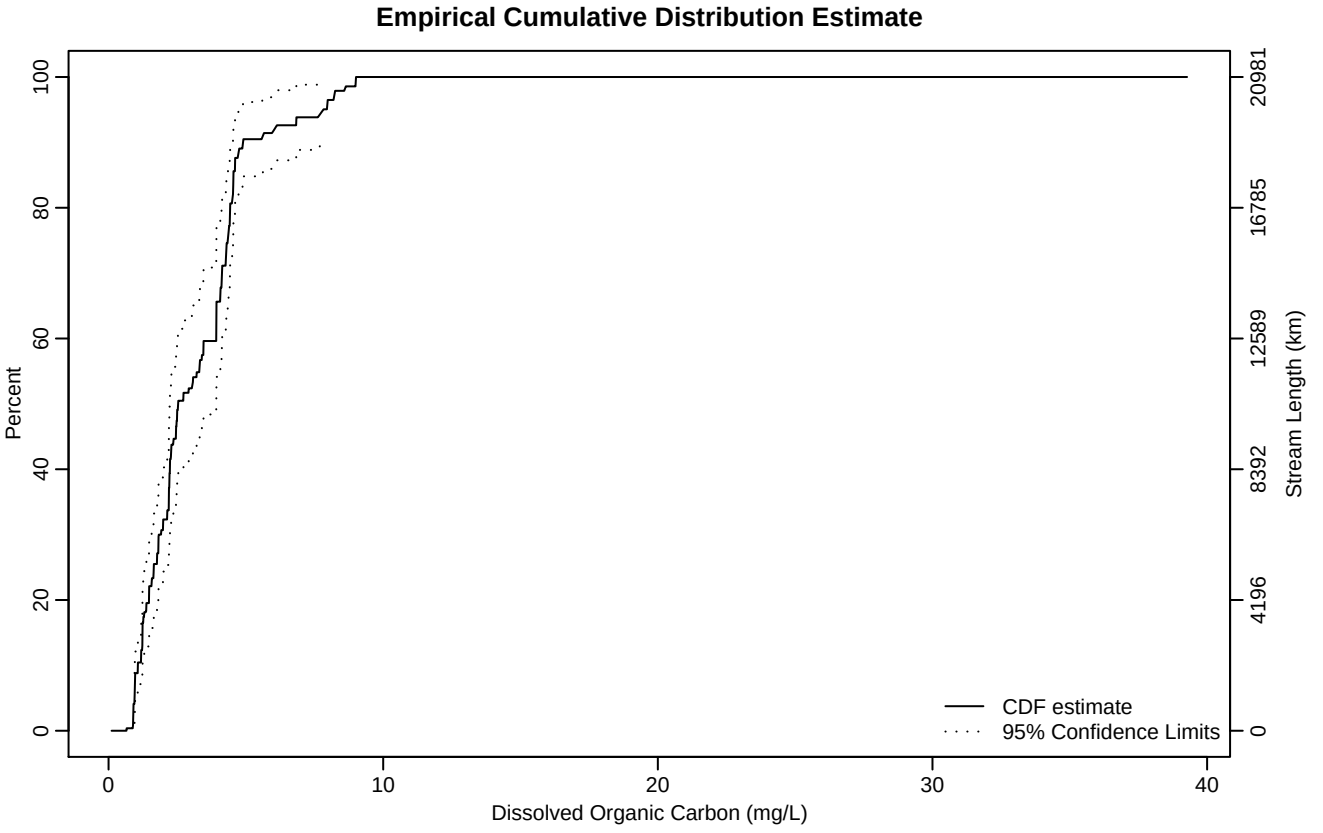


Figure CHEM−250 Indicator: DOC Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.95	0.90	0.97
10Pct	1.07	0.96	1.23
25Pct	1.65	1.27	2.13
50Pct	2.53	2.22	3.92
75Pct	4.34	3.93	4.55
90Pct	4.90	4.54	7.97
95Pct	7.82	4.90	9.01
Mean	3.20	2.82	3.58
Std Dev	1.79	1.44	2.15

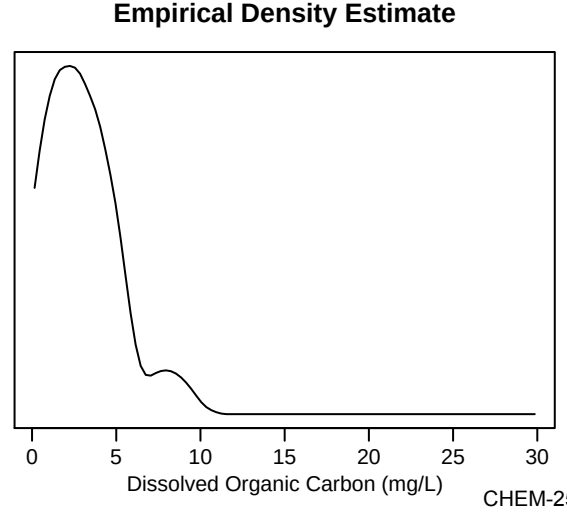
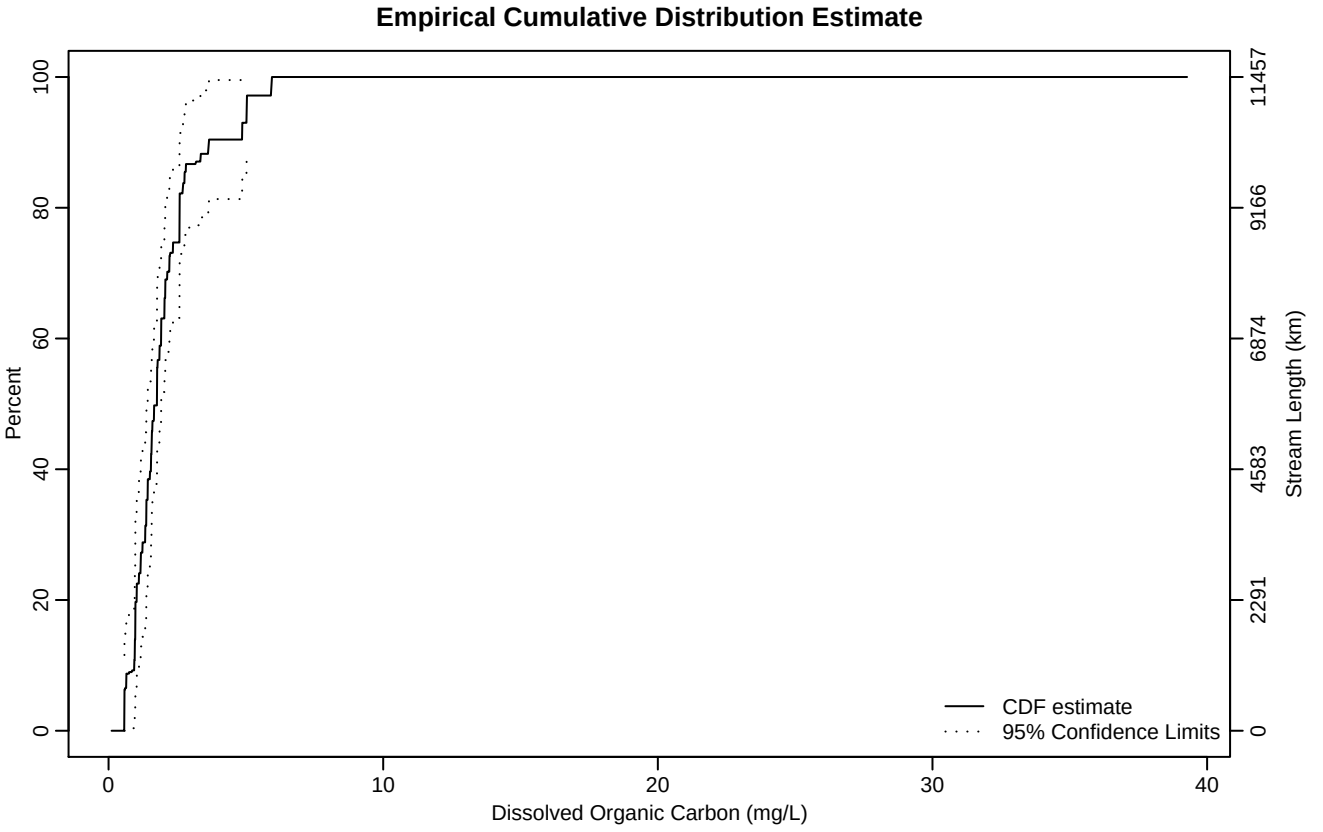


Figure CHEM−251 Indicator: DOC Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.58	0.58	0.58
10Pct	0.93	0.11	1.02
25Pct	1.17	0.94	1.51
50Pct	1.76	1.42	2.03
75Pct	2.58	1.92	3.34
90Pct	3.65	2.59	5.95
95Pct	5.03	2.82	5.95
Mean	2.02	1.68	2.36
Std Dev	1.16	0.80	1.51

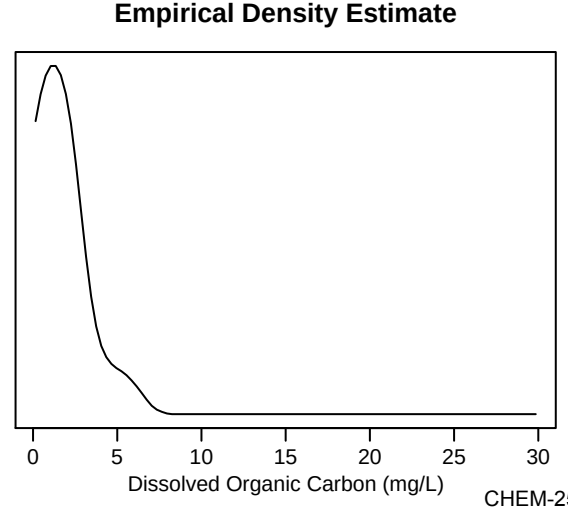
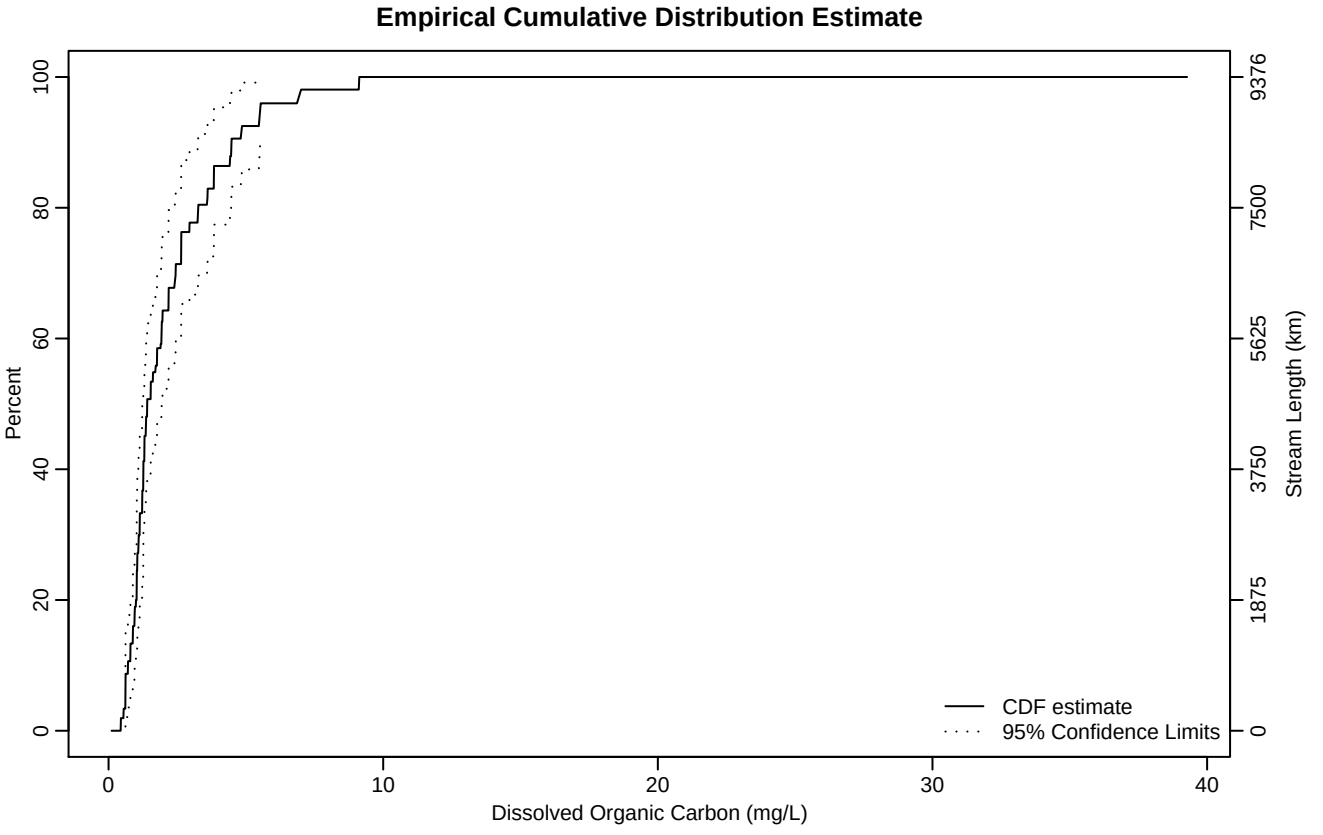


Figure CHEM−252 Indicator: DOC Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.61	0.44	0.70
10Pct	0.71	0.61	0.94
25Pct	1.04	0.80	1.26
50Pct	1.41	1.26	1.93
75Pct	2.65	1.96	4.41
90Pct	4.48	3.60	9.12
95Pct	5.52	4.46	9.13
Mean	2.20	1.78	2.62
Std Dev	1.58	1.17	2

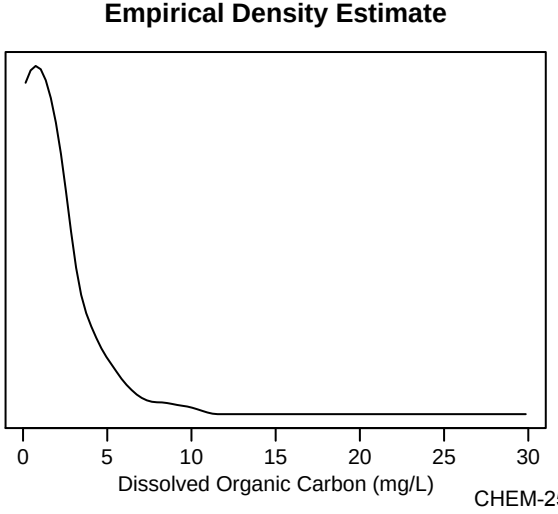
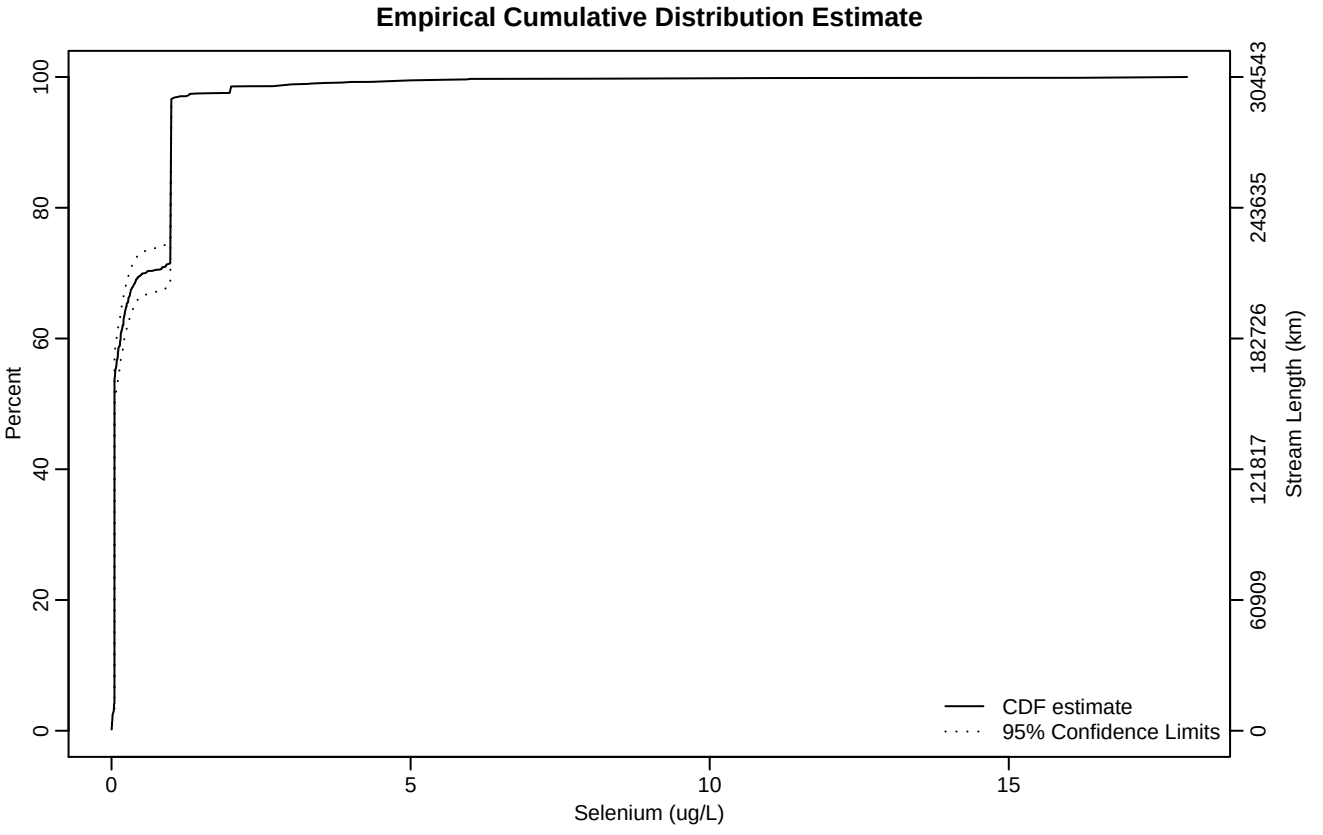


Figure CHEM−253 Indicator: Selenium Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.04	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.05	0.05	0.05
75Pct	0.98	0.98	0.99
90Pct	1	0.99	1
95Pct	1	1	2
Mean	0.44	0.39	0.50
Std Dev	0.76	0.61	0.92

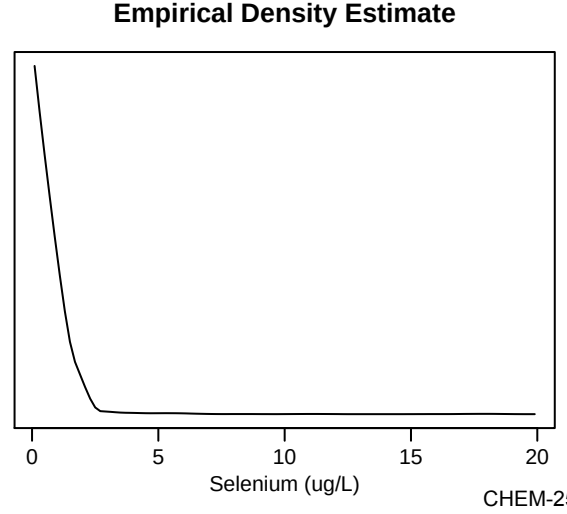
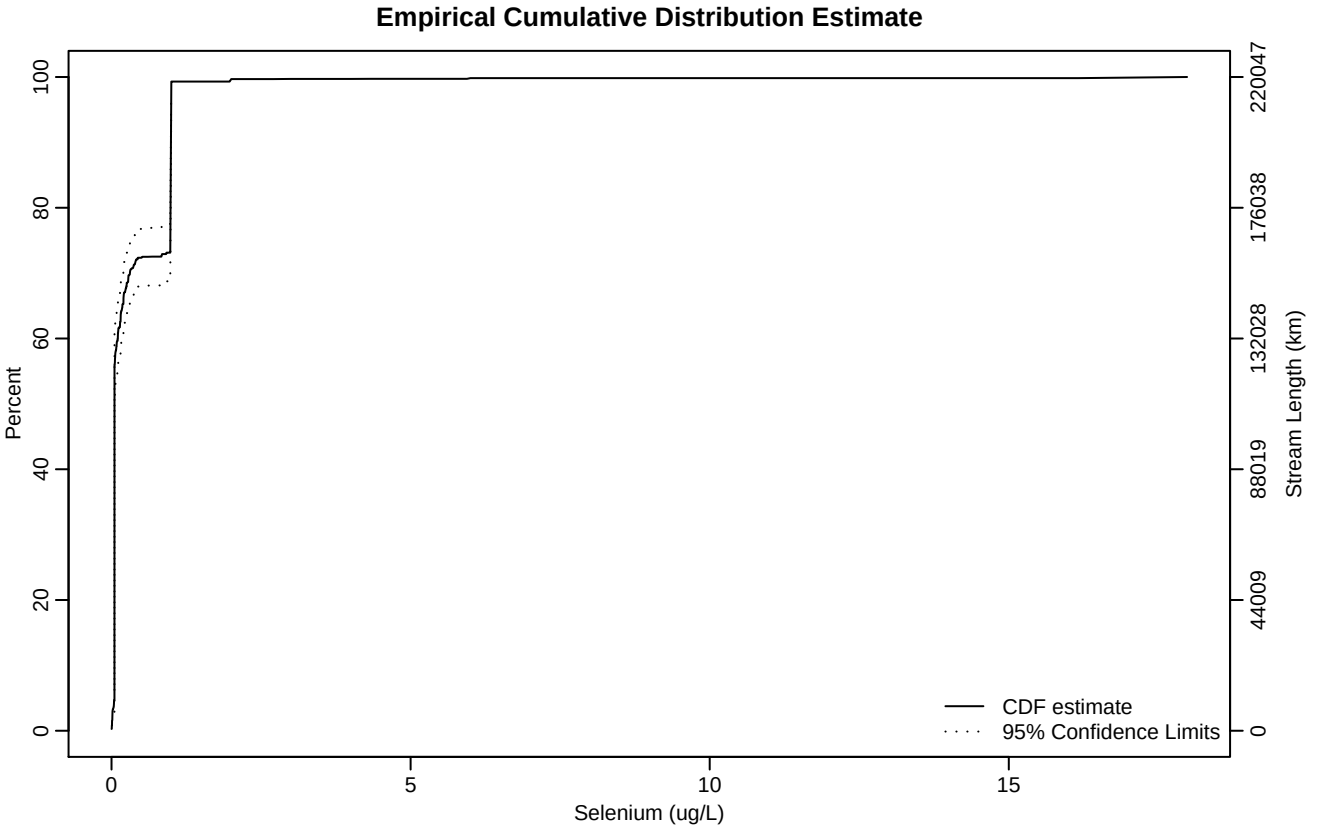


Figure CHEM−254 Indicator: Selenium Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.02	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.05	0.05	0.05
75Pct	0.98	0.32	0.99
90Pct	0.99	0.99	1
95Pct	1	0.99	1.99
Mean	0.37	0.31	0.44
Std Dev	0.61	0.44	0.78

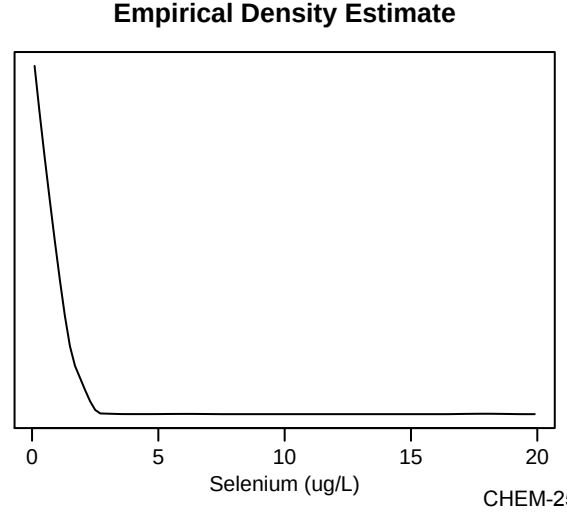
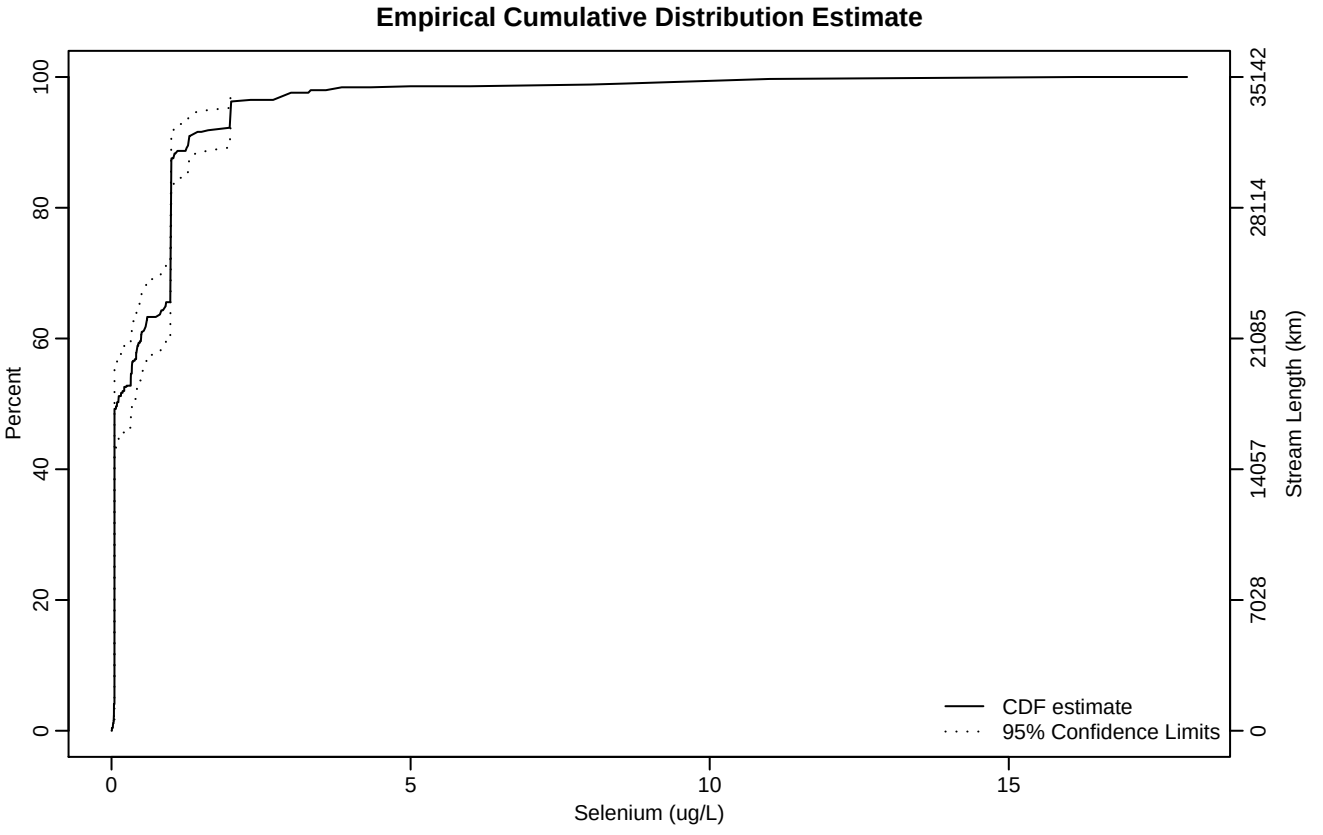


Figure CHEM−255 Indicator: Selenium Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.04	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.09	0.05	0.39
75Pct	0.99	0.98	0.99
90Pct	1.29	1	1.99
95Pct	1.99	1.69	3.63
Mean	0.69	0.54	0.85
Std Dev	1.08	0.71	1.46

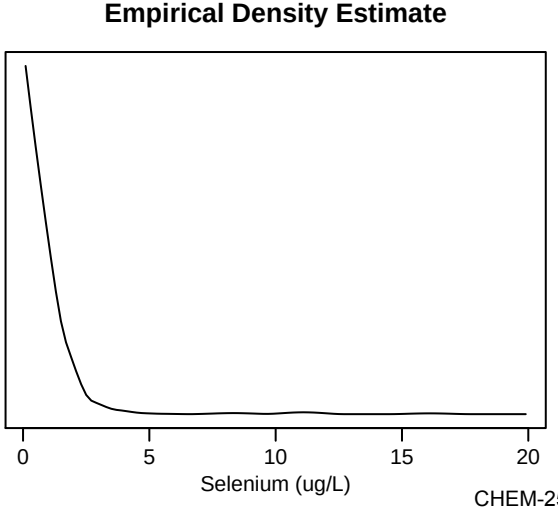
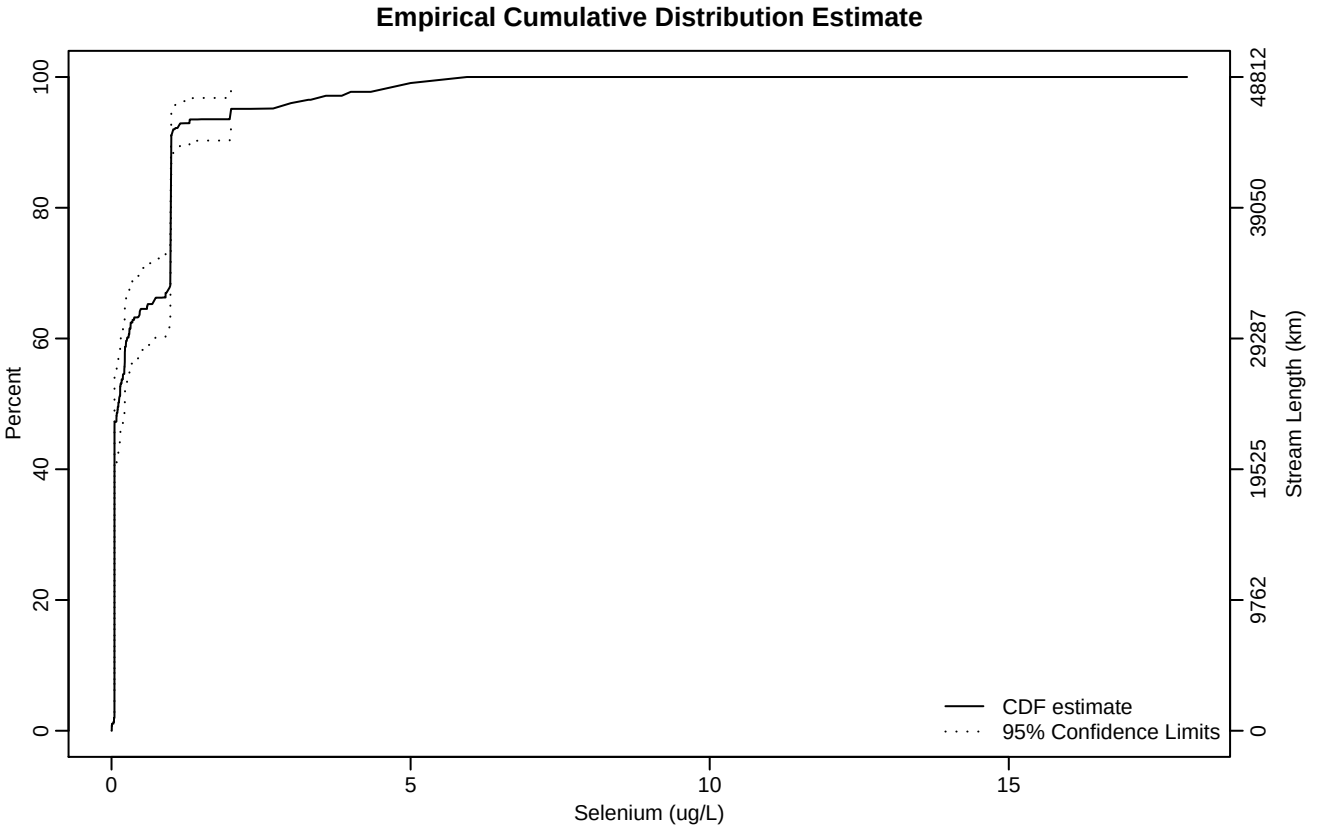


Figure CHEM−256 Indicator: Selenium Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.05	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.11	0.05	0.22
75Pct	0.99	0.98	0.99
90Pct	1	0.99	3.21
95Pct	2	1.03	4.49
Mean	0.59	0.46	0.72
Std Dev	0.79	0.64	0.94

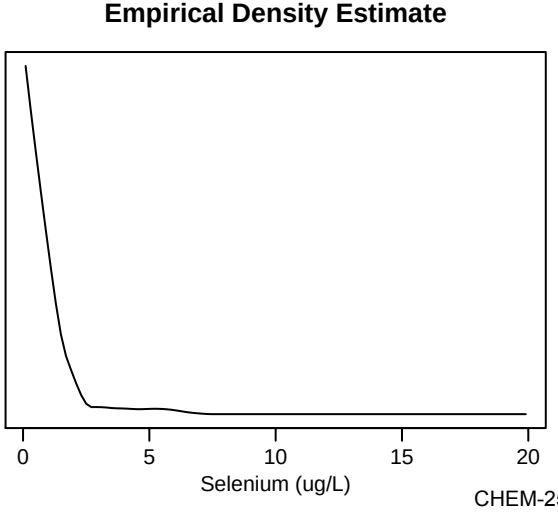
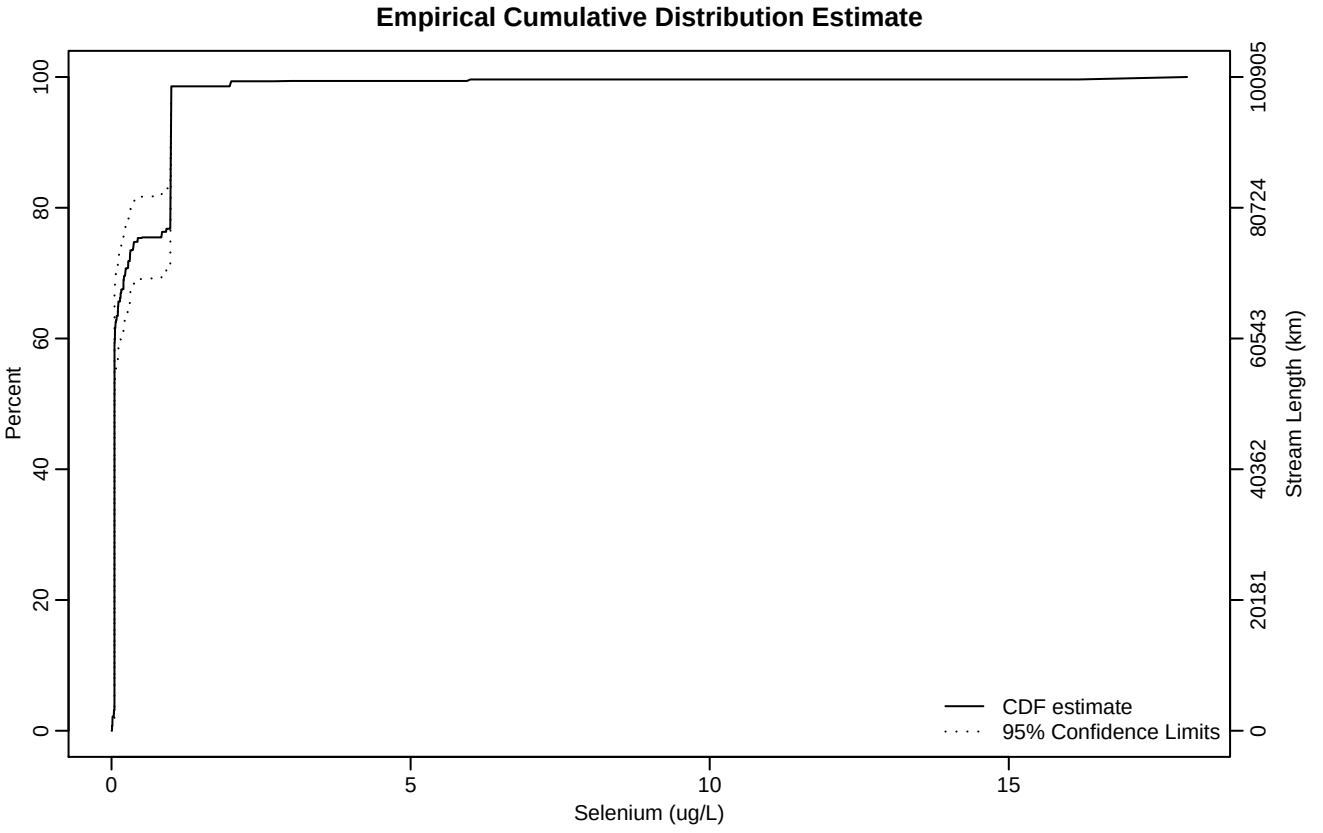


Figure CHEM−257 Indicator: Selenium Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.02	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.05	0.05	0.05
75Pct	0.44	0.20	0.99
90Pct	0.99	0.99	1
95Pct	1	0.99	17.98
Mean	0.39	0.27	0.51
Std Dev	0.79	0.45	1.13

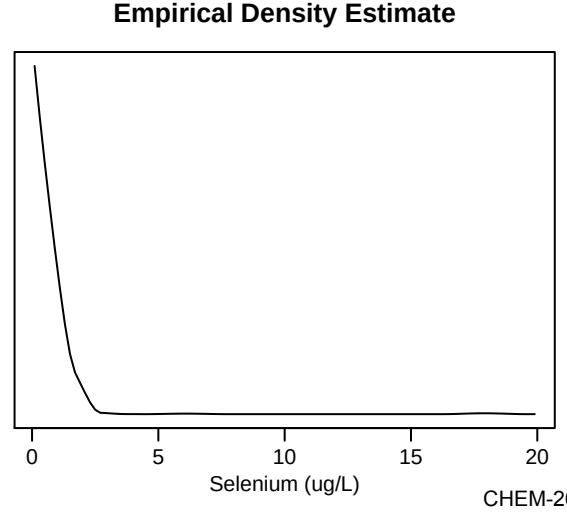
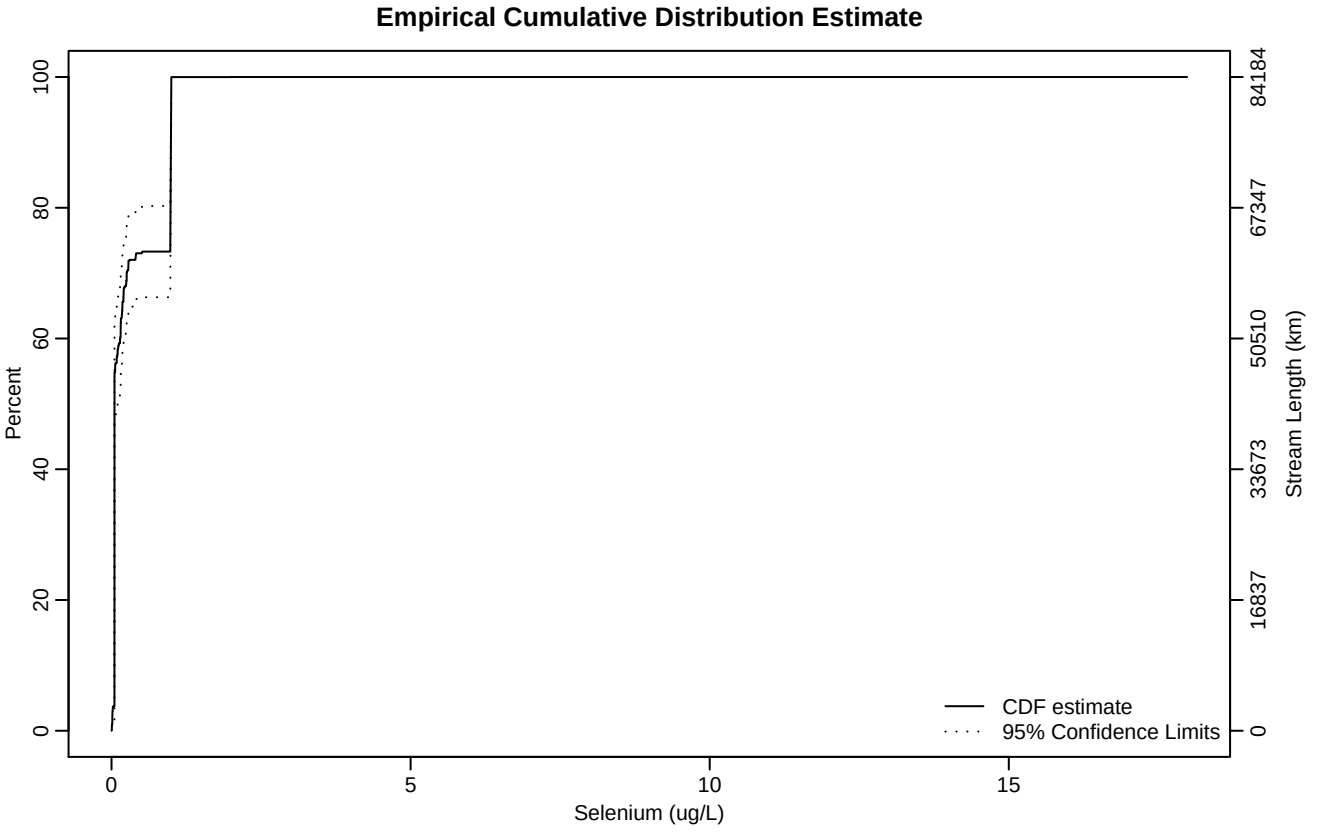


Figure CHEM−258 Indicator: Selenium Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.01	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.05	0.05	0.06
75Pct	0.98	0.22	0.99
90Pct	0.99	0.99	1
95Pct	1	0.99	
Mean	0.33	0.26	0.39
Std Dev	0.41	0.37	0.44

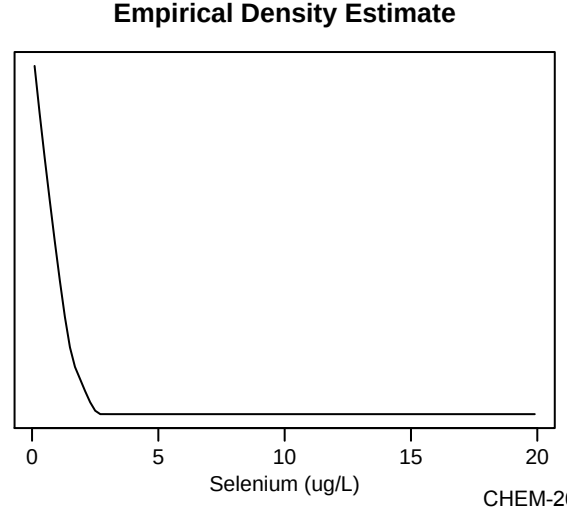
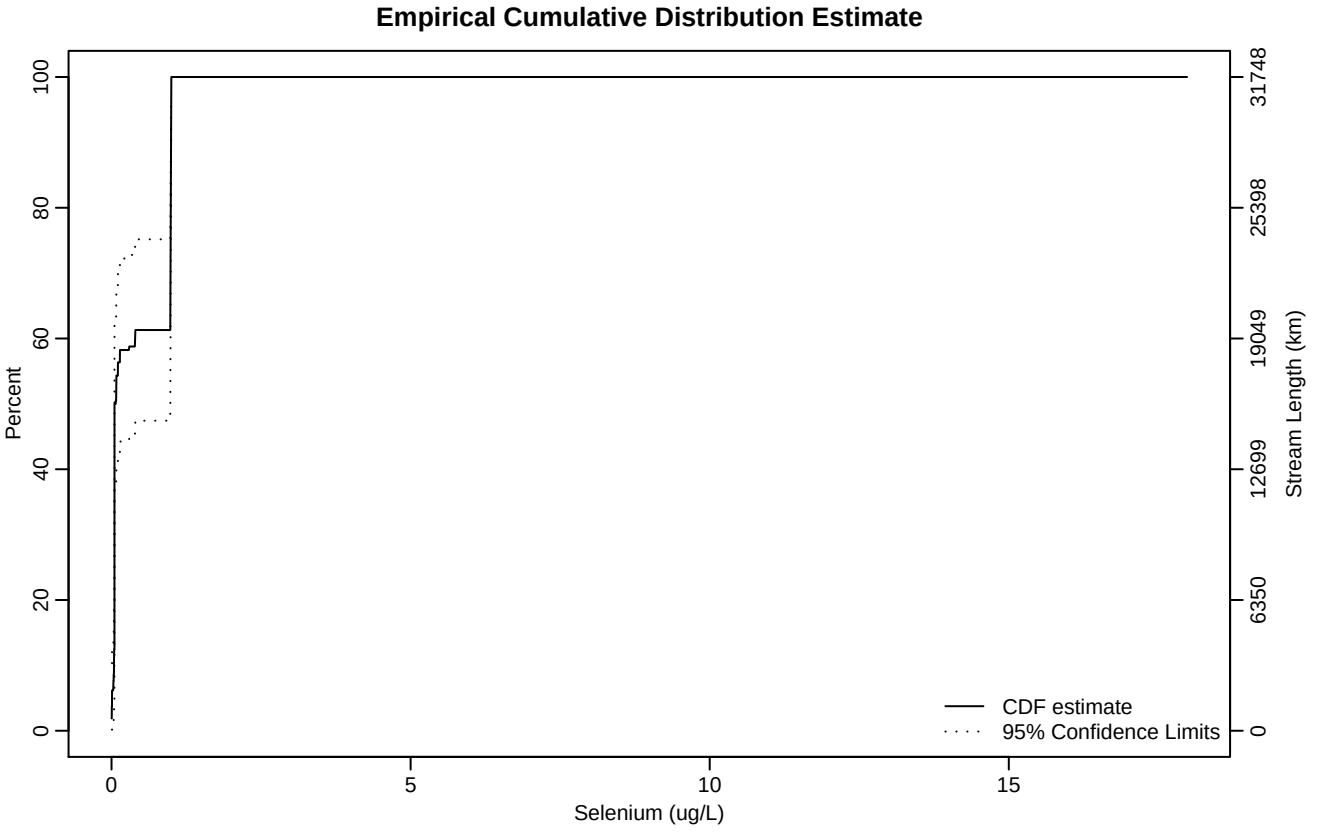


Figure CHEM−259 Indicator: Selenium Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.04
10Pct	0.04	0	0.05
25Pct	0.05	0.05	0.05
50Pct	0.05	0.05	0.39
75Pct	0.99	0.40	1
90Pct	1	0.99	1
95Pct	1	0.99	1
Mean	0.43	0.30	0.56
Std Dev	0.46	0.42	0.49

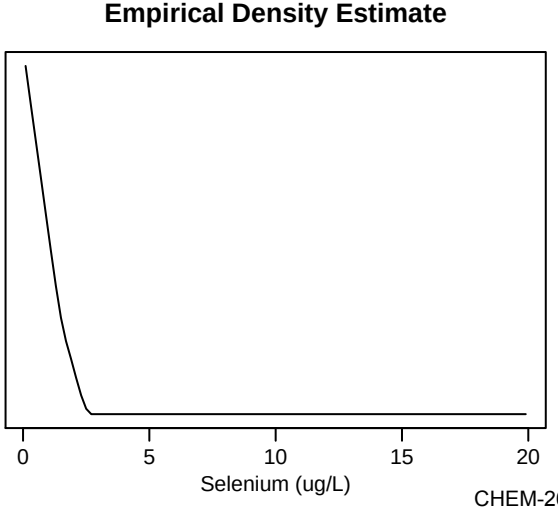
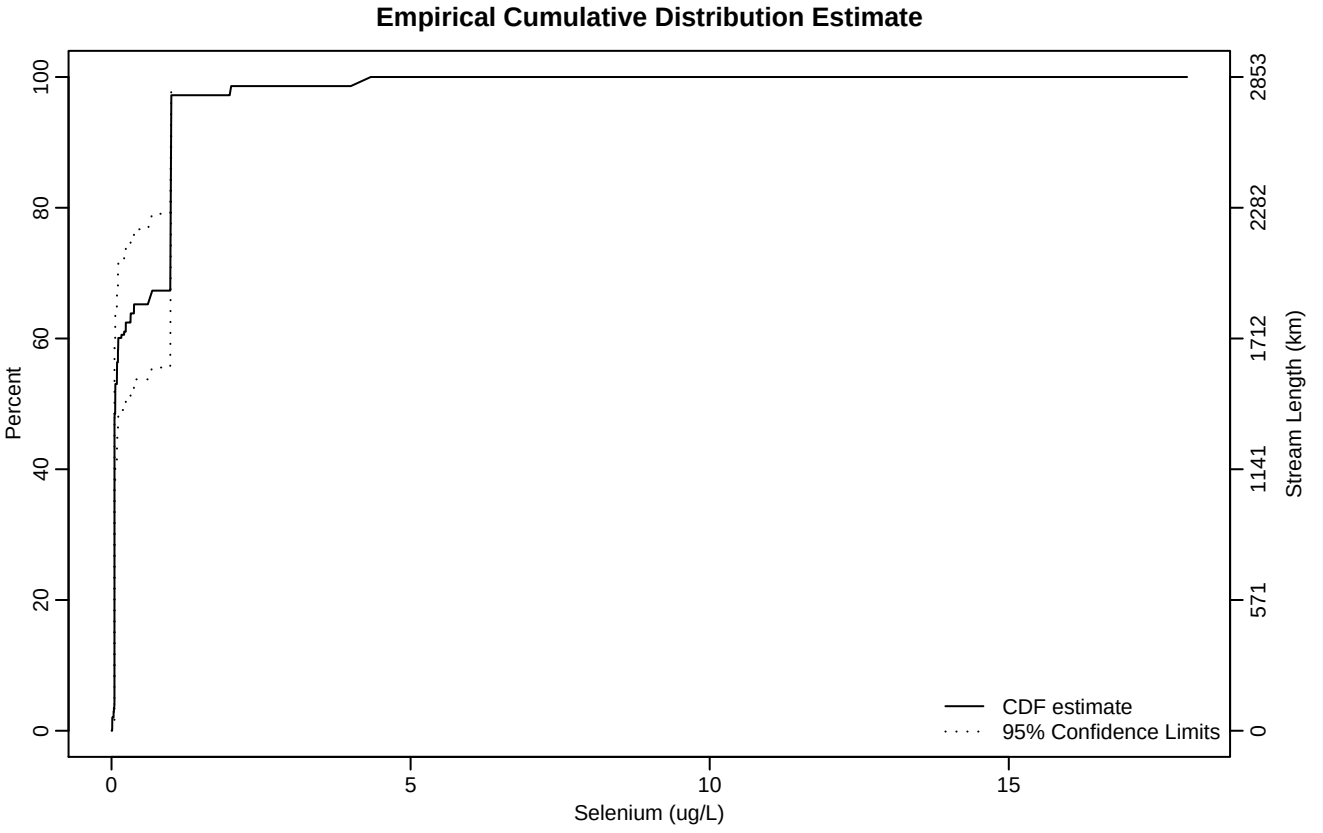


Figure CHEM−260 Indicator: Selenium Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.01	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.06	0.05	0.17
75Pct	0.99	0.32	0.99
90Pct	1	0.99	4.33
95Pct	1	0.99	4.33
Mean	0.45	0.31	0.59
Std Dev	0.64	0.40	0.88

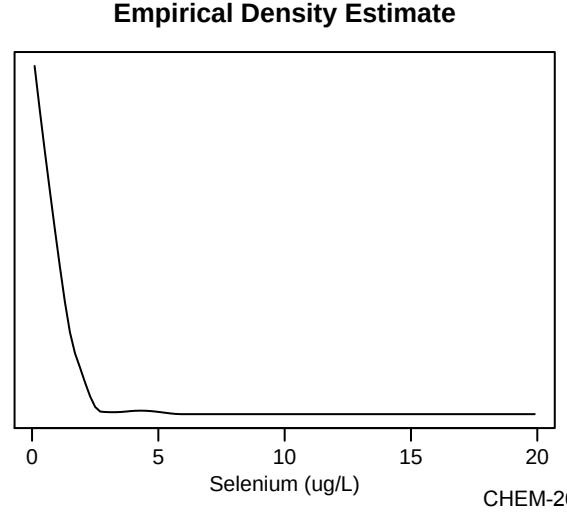
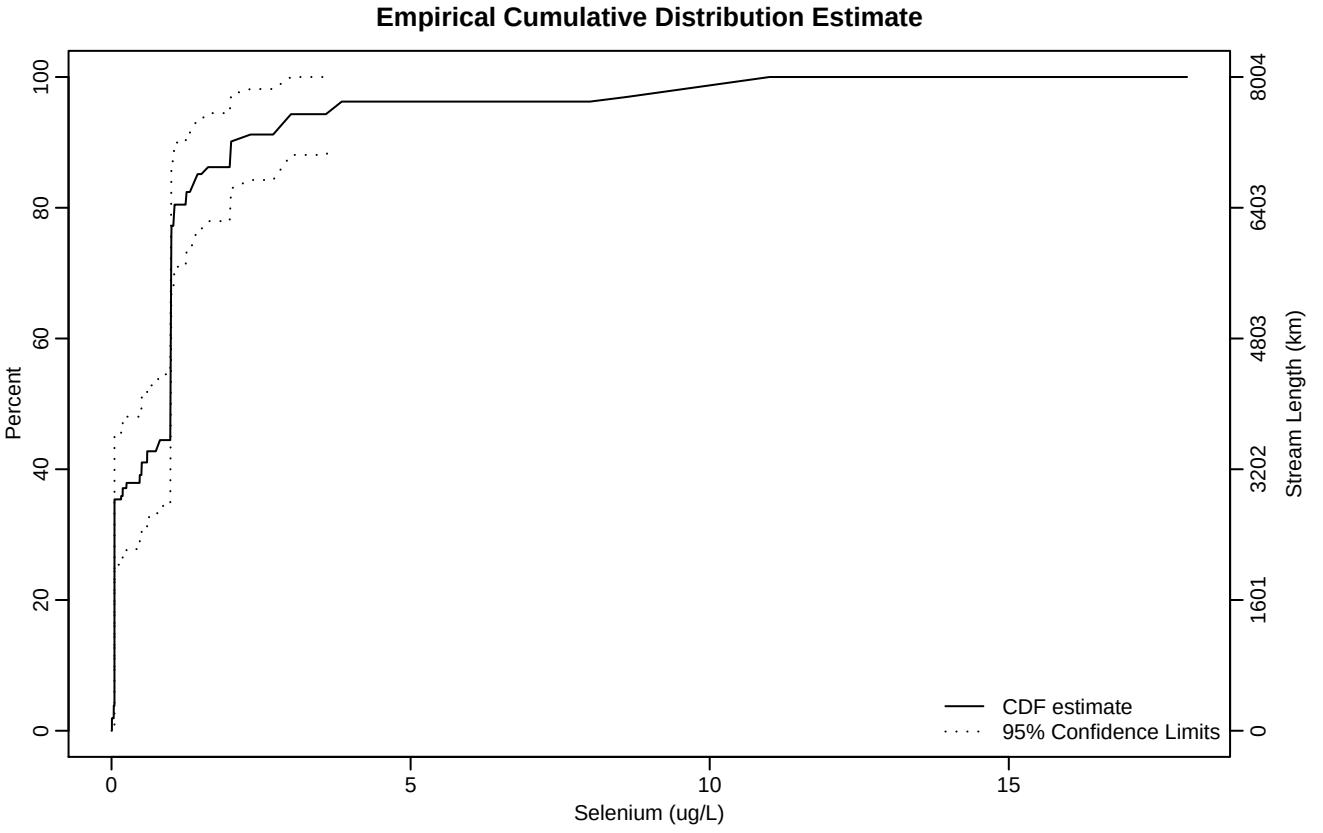


Figure CHEM−261 Indicator: Selenium Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.01	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.99	0.50	0.99
75Pct	1	0.99	1.56
90Pct	2	1.25	9.64
95Pct	3.68	1.99	11
Mean	1.17	0.62	1.72
Std Dev	1.77	0.91	2.62

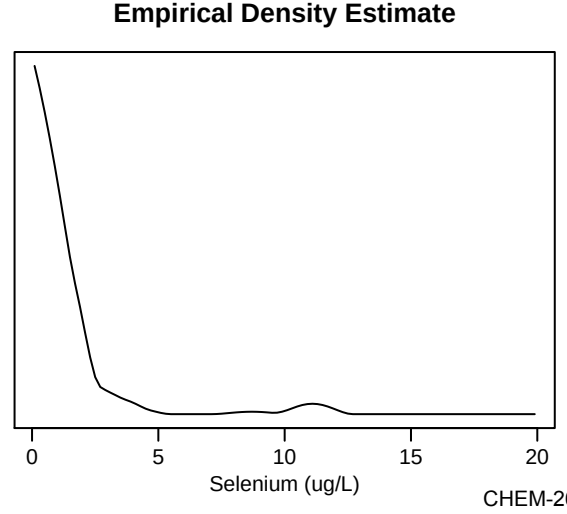
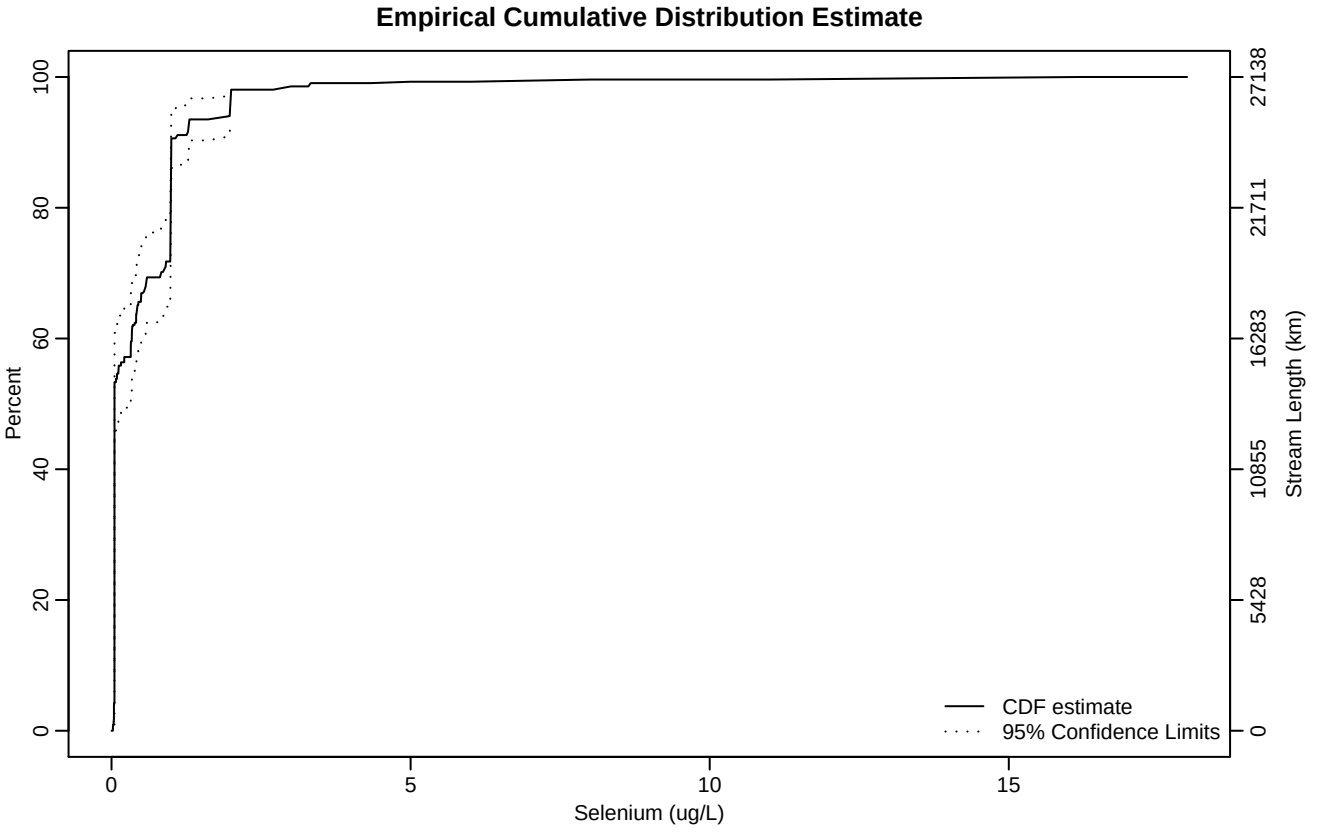


Figure CHEM−262 Indicator: Selenium Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.03	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.05	0.05	0.09
75Pct	0.99	0.57	0.99
90Pct	1	0.99	1.99
95Pct	1.98	1.28	2.75
Mean	0.55	0.43	0.68
Std Dev	0.75	0.54	0.97

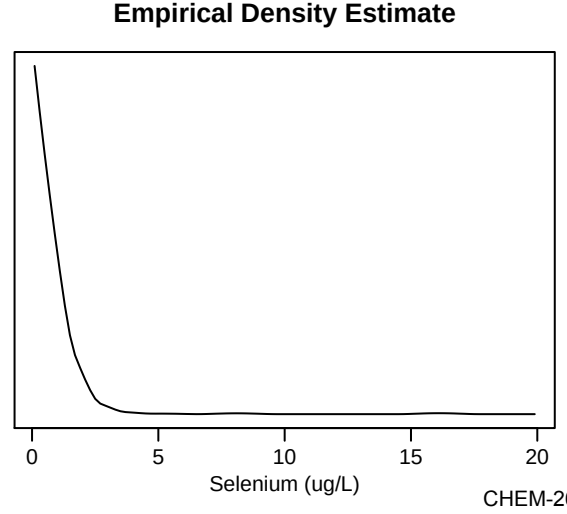
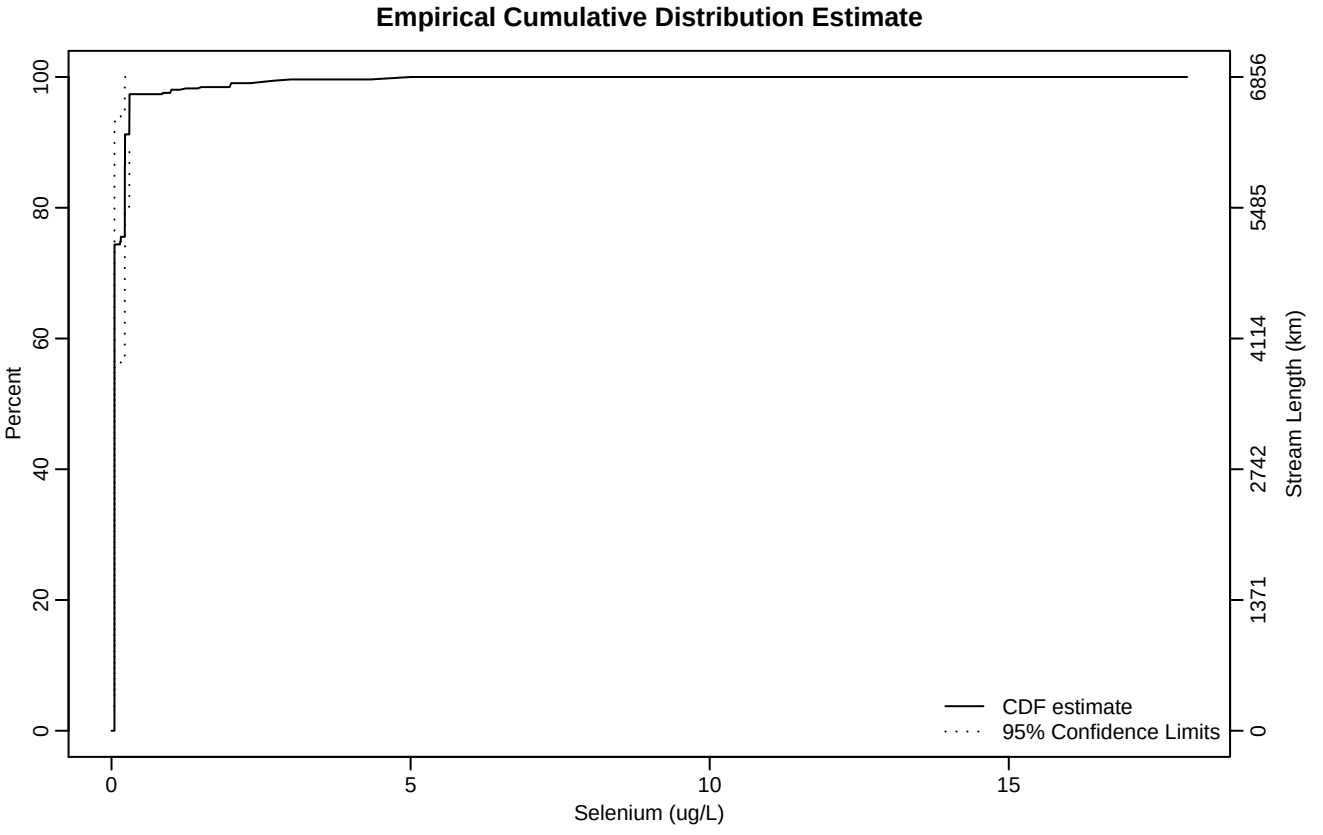


Figure CHEM−263 Indicator: Selenium Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.05	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.05	0.05	0.05
75Pct	0.15	0.05	0.30
90Pct	0.23	0.22	5
95Pct	0.30	0.22	5
Mean	0.15	0.11	0.20
Std Dev	0.41	0.24	0.58

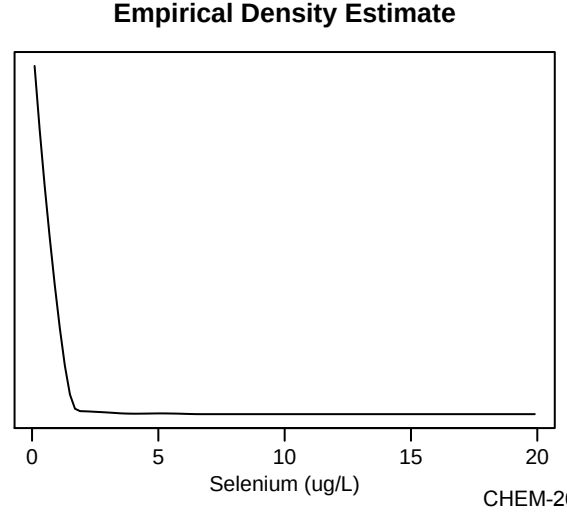
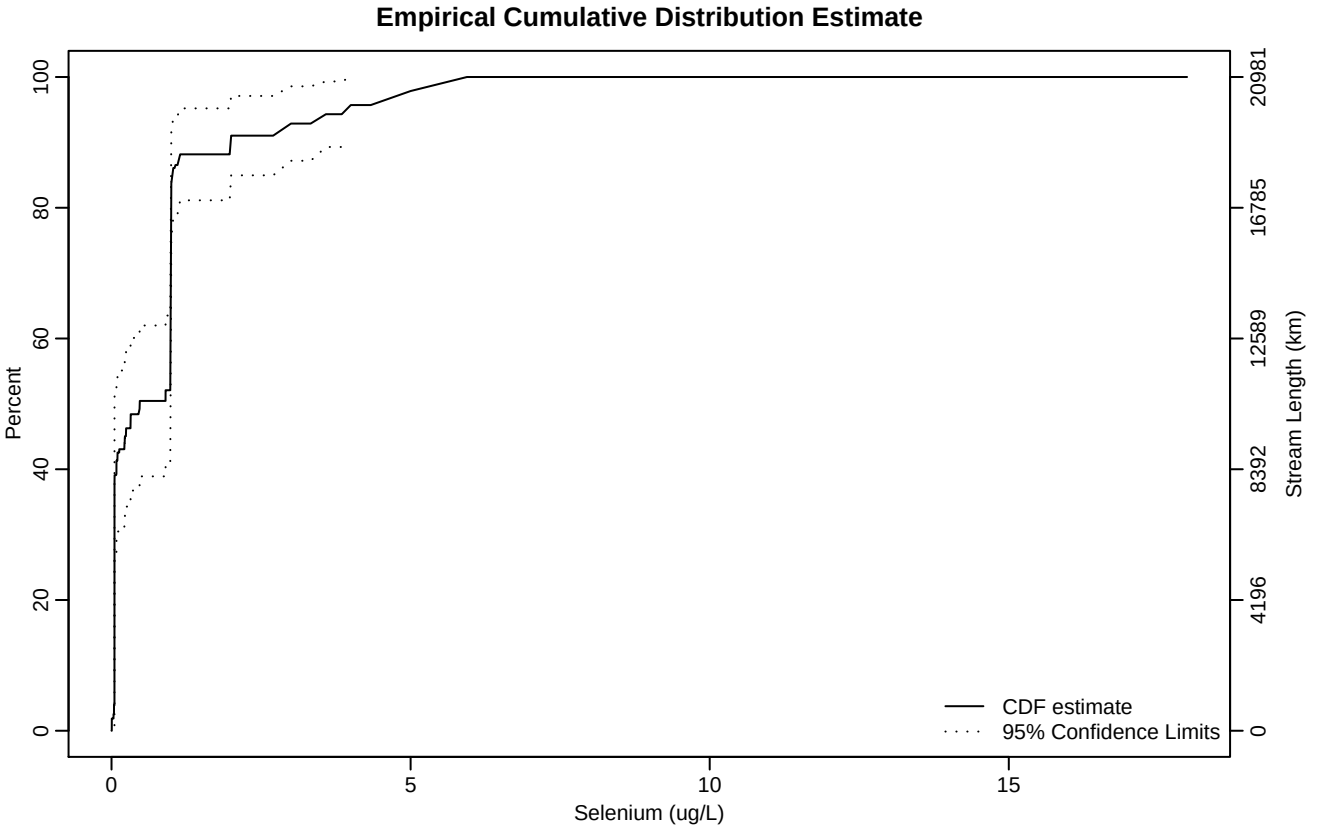


Figure CHEM−264 Indicator: Selenium Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.47	0.05	0.99
75Pct	0.99	0.99	1.11
90Pct	1.99	1	4.62
95Pct	3.92	1.99	5.90
Mean	0.88	0.60	1.16
Std Dev	1.10	0.83	1.37

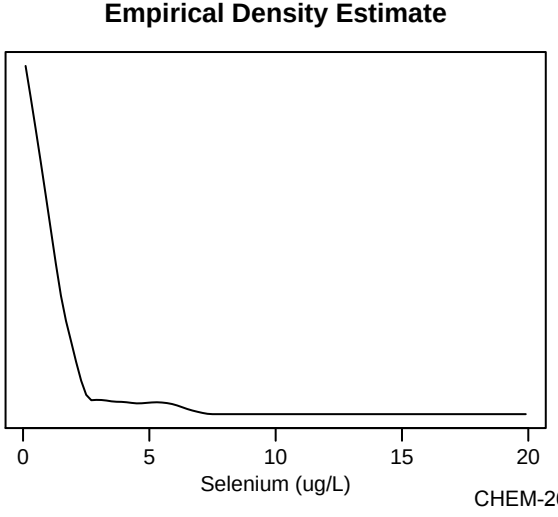
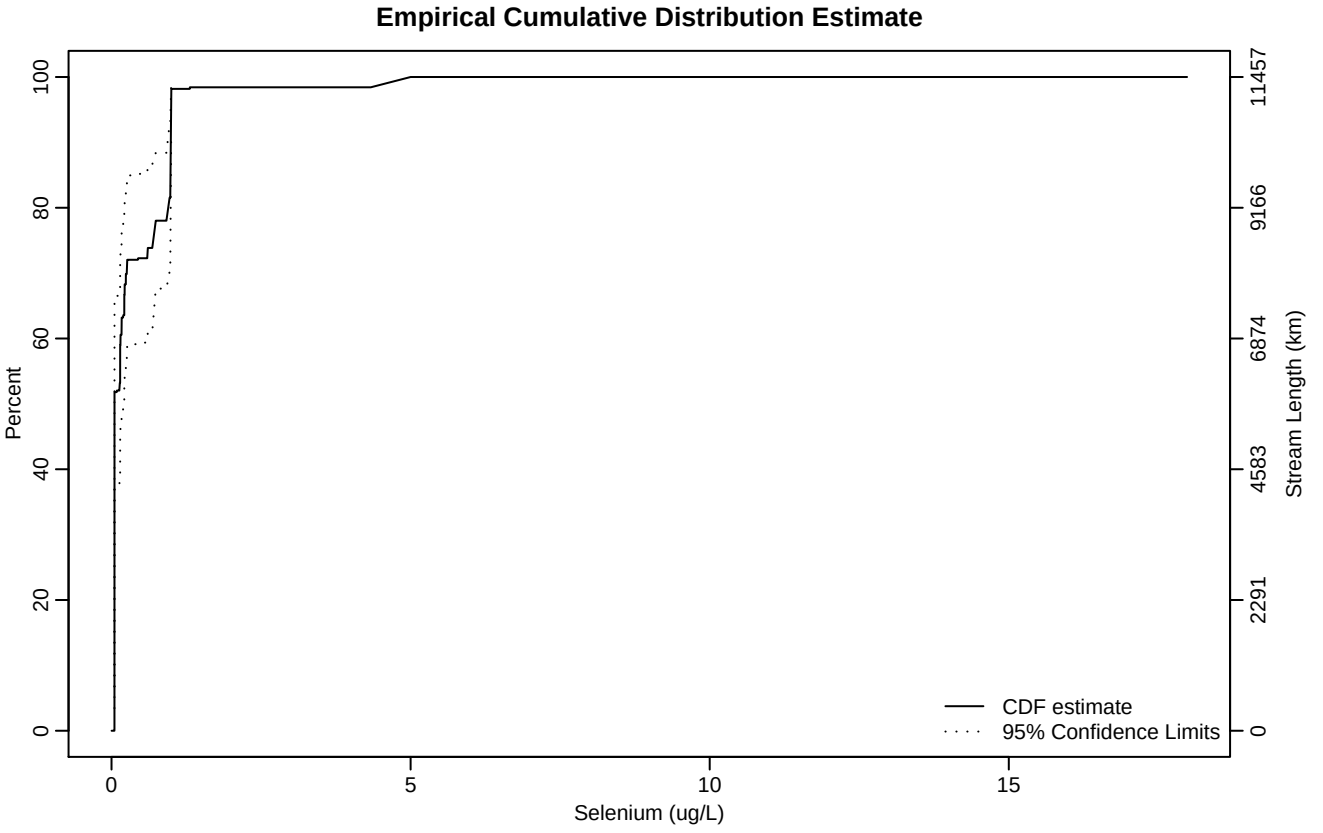


Figure CHEM−265 Indicator: Selenium Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.05	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.05	0.05	0.14
75Pct	0.70	0.17	0.99
90Pct	0.99	0.73	5
95Pct	1	0.98	5
Mean	0.39	0.22	0.56
Std Dev	0.59	0.29	0.88

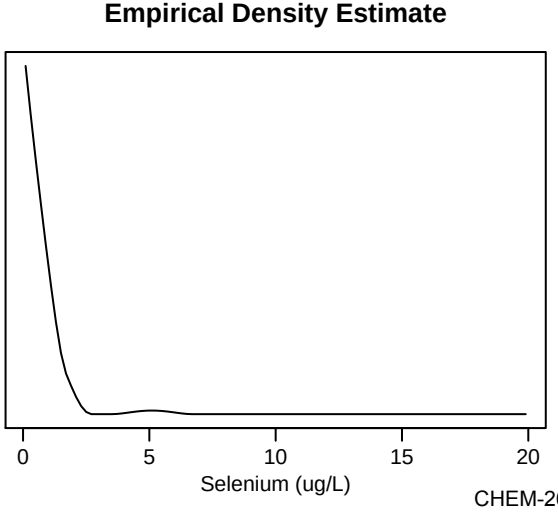
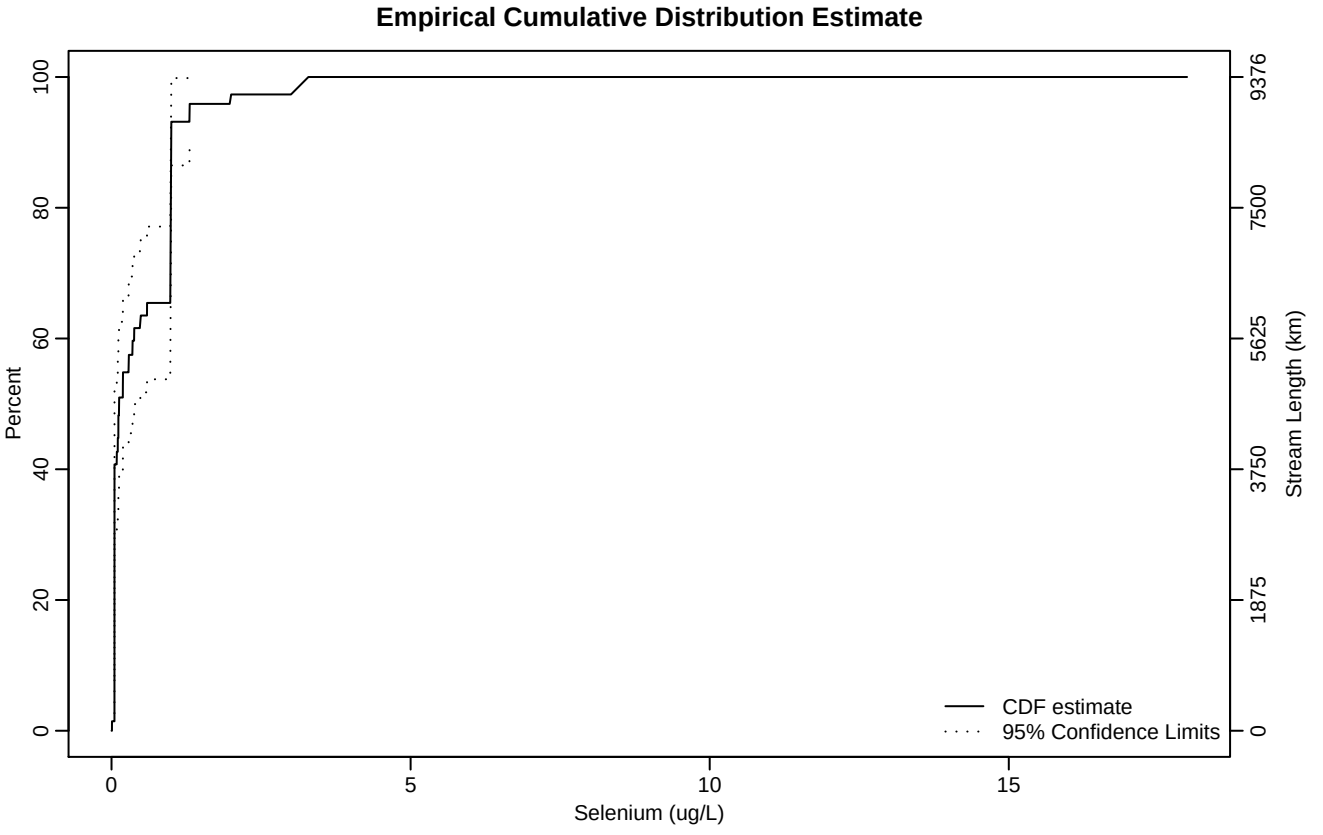


Figure CHEM−266 Indicator: Selenium Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.05	0.05
10Pct	0.05	0.05	0.05
25Pct	0.05	0.05	0.05
50Pct	0.13	0.05	0.48
75Pct	0.99	0.49	1
90Pct	1	0.99	3.29
95Pct	1.31	1	3.29
Mean	0.51	0.35	0.68
Std Dev	0.58	0.36	0.80

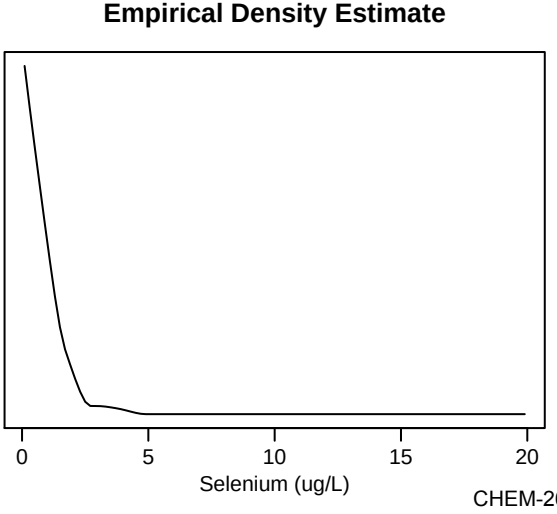
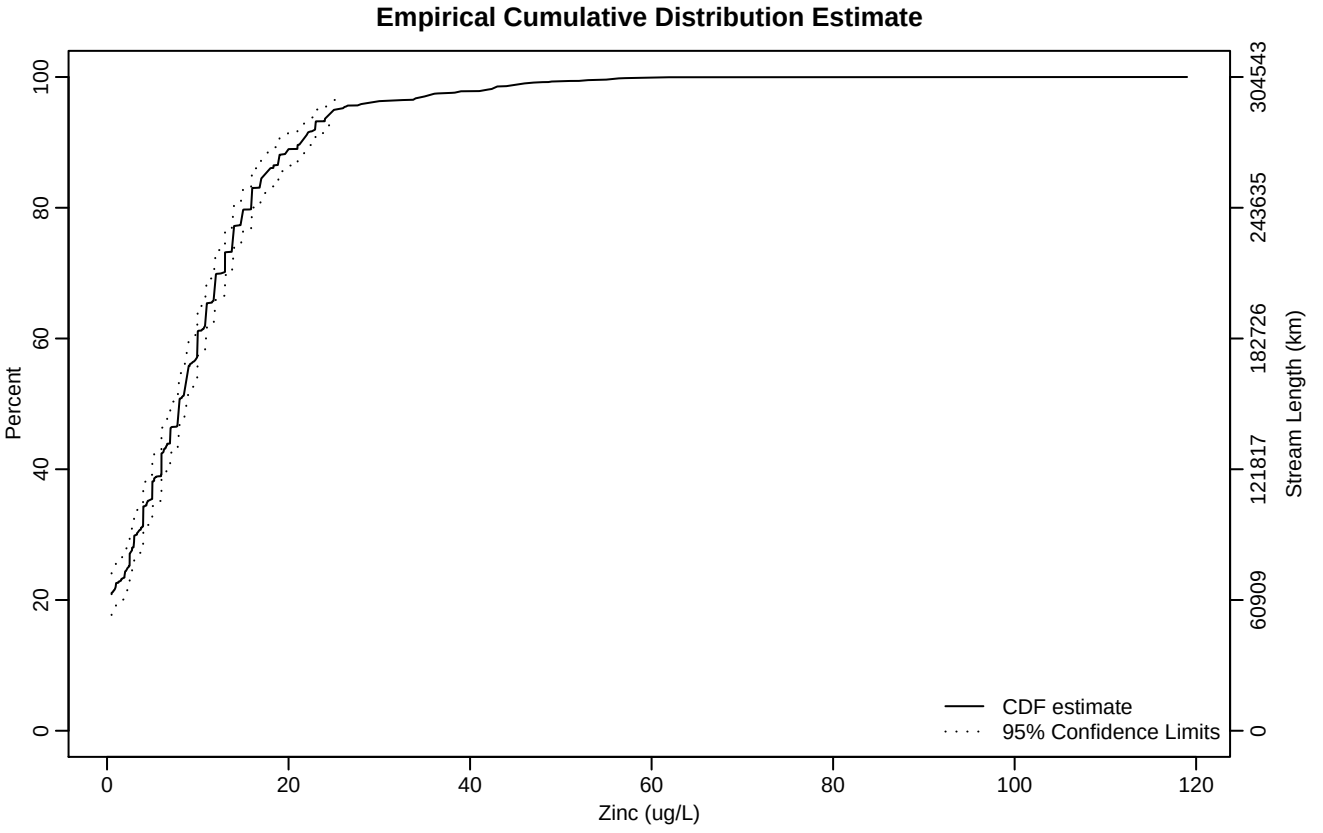


Figure CHEM−267 Indicator: Zinc Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.50
25Pct	2.34	0.85	2.94
50Pct	7.95	6.99	8.77
75Pct	13.85	13	14.85
90Pct	21.38	18.94	22.95
95Pct	25.10	24	33.48
Mean	9.85	9.16	10.55
Std Dev	9.37	8.62	10.13

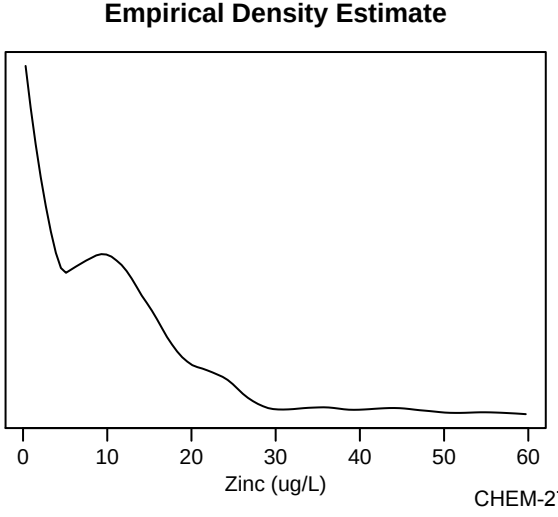
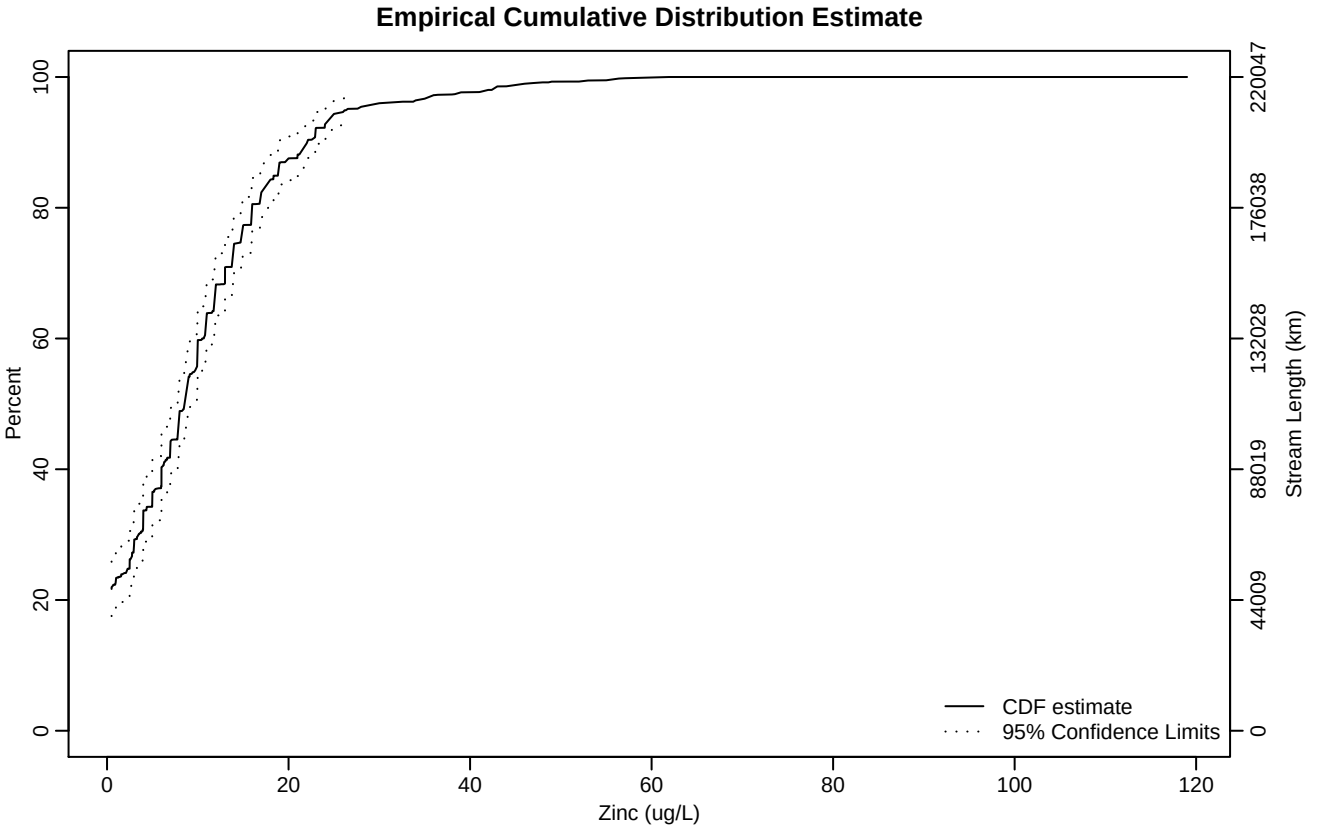


Figure CHEM−268 Indicator: Zinc Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.50
25Pct	2.49	0.50	3.14
50Pct	8.54	7.77	9.69
75Pct	14.74	13	15.95
90Pct	22.04	19.71	24.10
95Pct	26.40	24.19	35.50
Mean	10.25	9.33	11.17
Std Dev	9.57	8.69	10.45

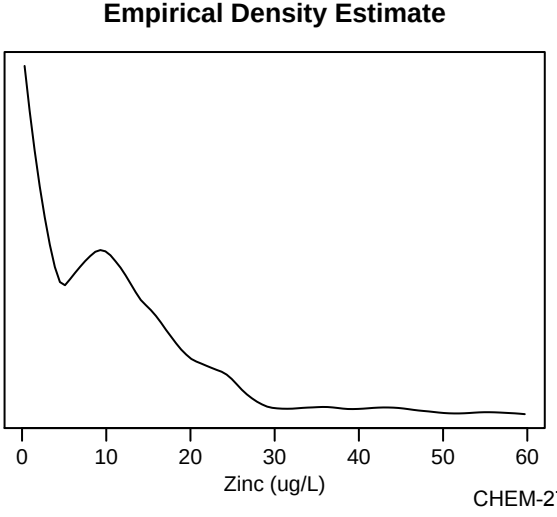
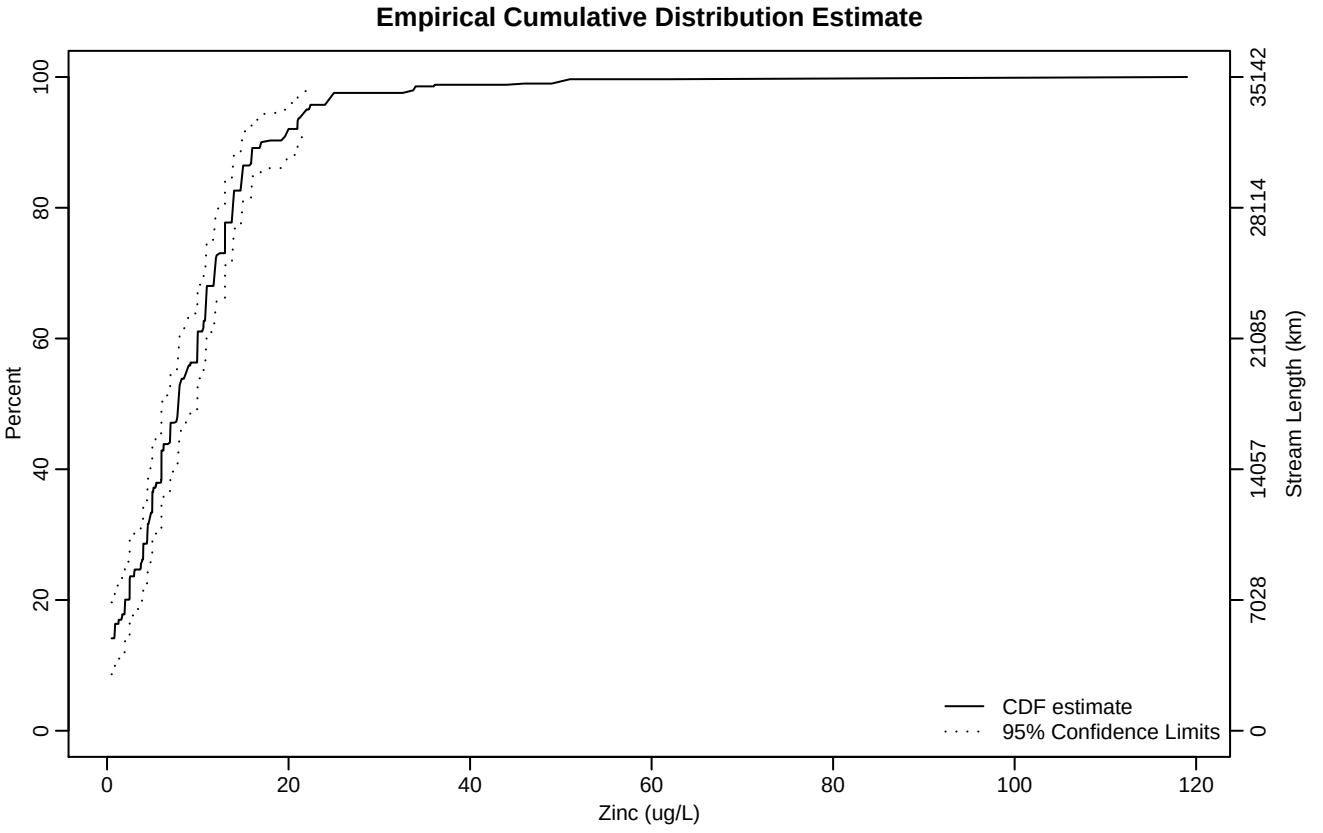


Figure CHEM−269 Indicator: Zinc Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.86
25Pct	3.72	1.96	4.48
50Pct	7.85	6	9.94
75Pct	13	11	13.97
90Pct	16.99	14.94	21.56
95Pct	21.98	19.79	34
Mean	9.42	8.19	10.65
Std Dev	8.95	6.88	11.01

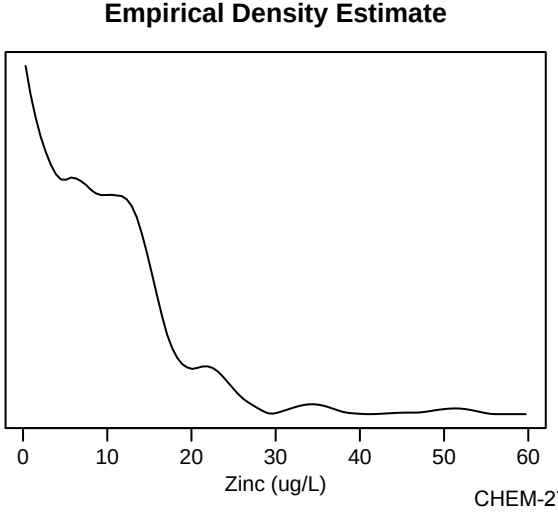
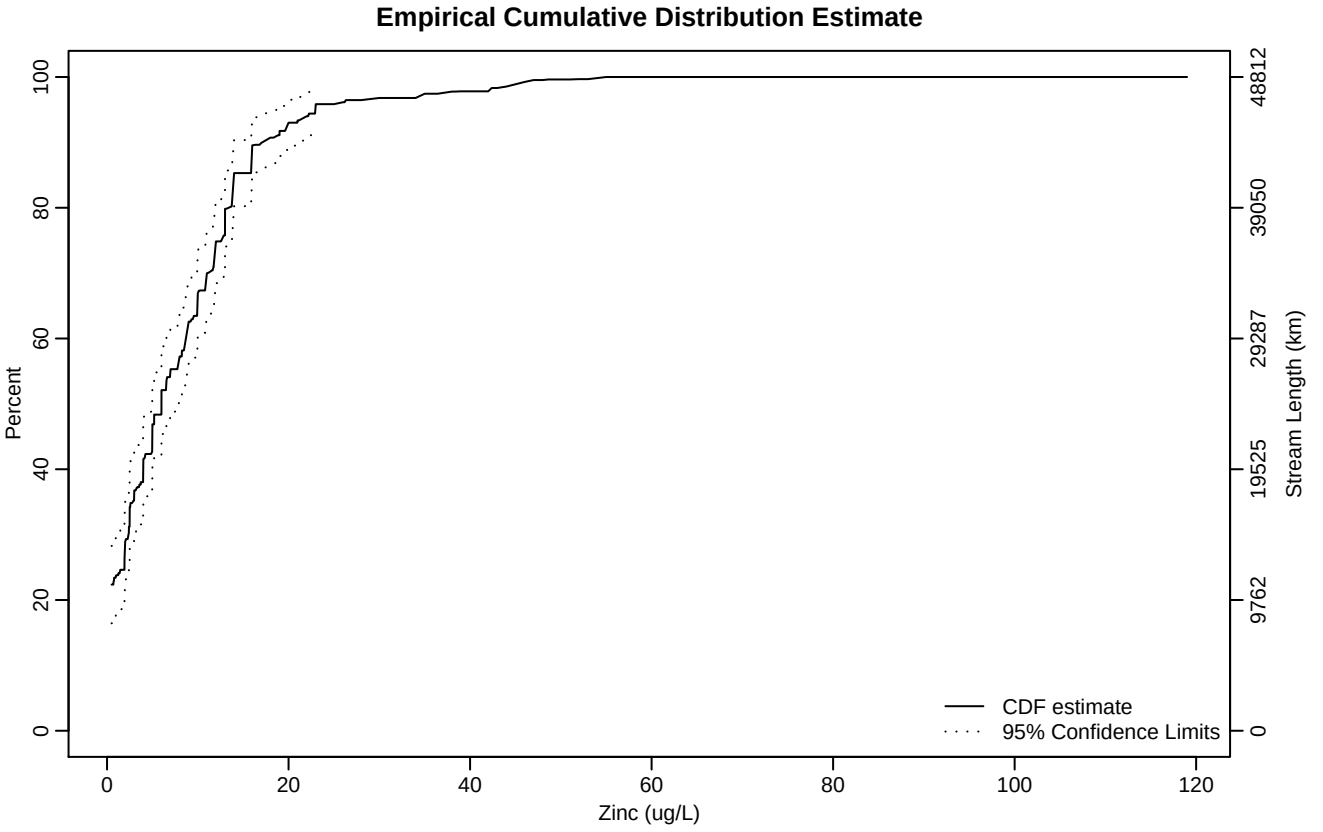


Figure CHEM−270 Indicator: Zinc Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.50
25Pct	1.92	0.50	2.41
50Pct	6	4.98	7.90
75Pct	12.60	10.89	13.80
90Pct	17.10	15.88	22.21
95Pct	22.95	19.01	43.15
Mean	8.39	7.23	9.54
Std Dev	7.80	6.46	9.13

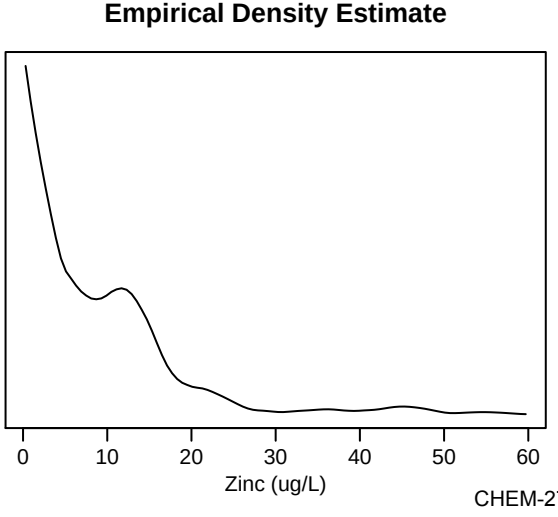
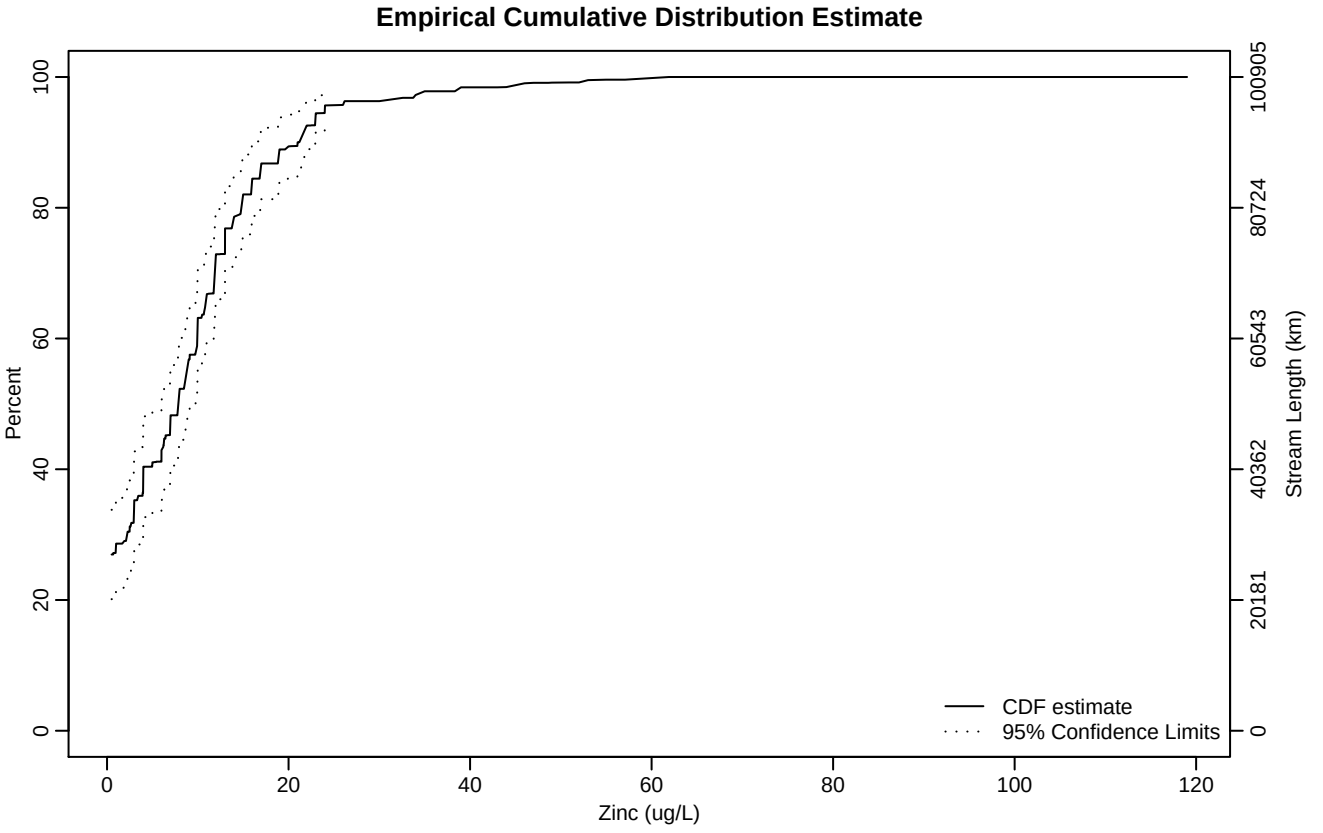


Figure CHEM−271 Indicator: Zinc Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.50
25Pct	0.50	0.50	2.93
50Pct	7.86	6	9.74
75Pct	13	11.79	14.99
90Pct	21	16.86	23.99
95Pct	24	21.88	34.96
Mean	9.23	7.91	10.54
Std Dev	9.42	7.86	10.98

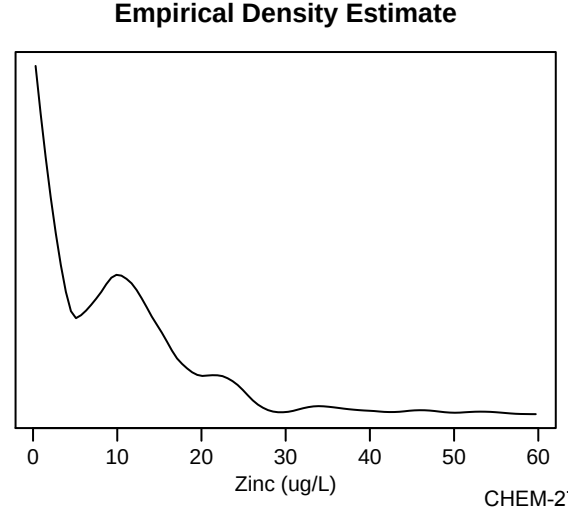
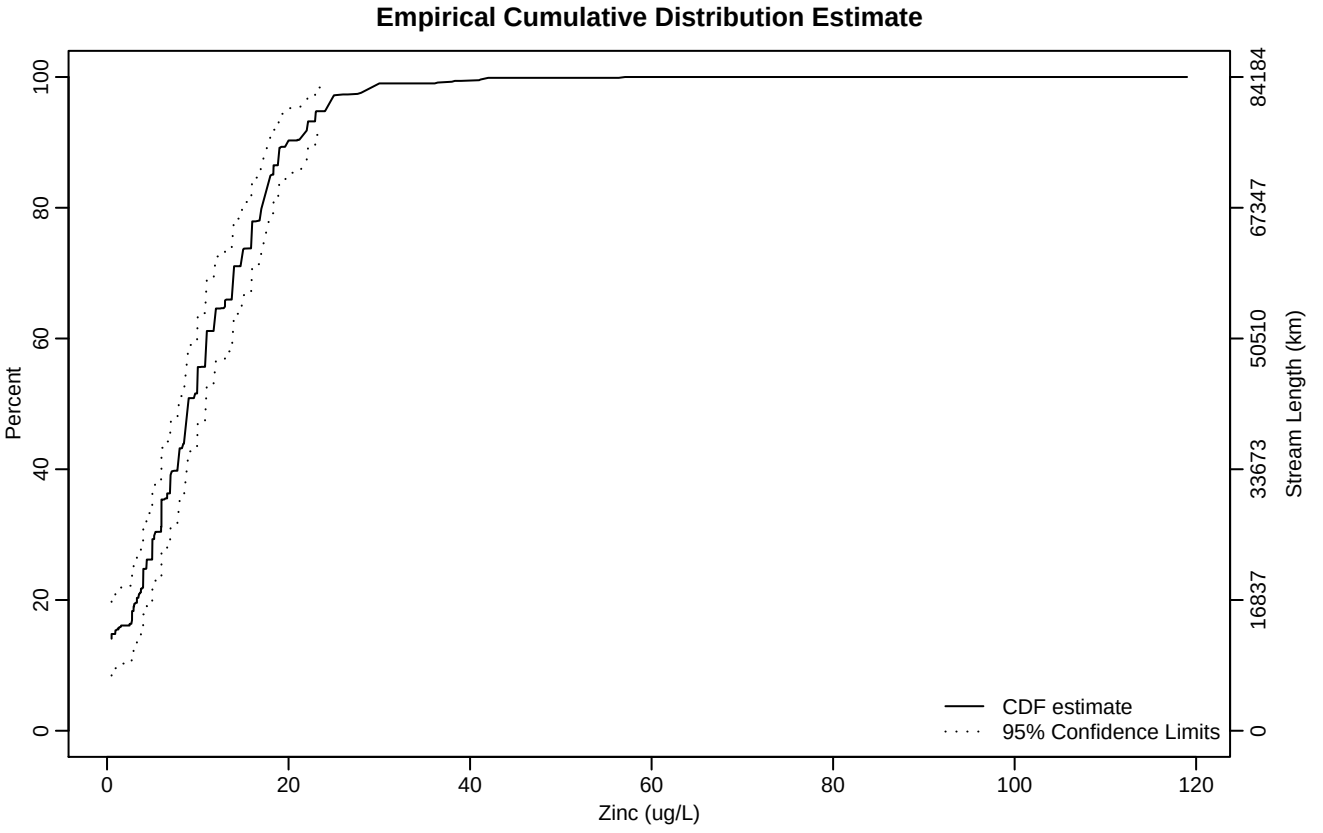


Figure CHEM−272 Indicator: Zinc Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	1.25
25Pct	4.33	2.76	5.99
50Pct	8.93	7.90	10.89
75Pct	15.91	13.84	17.44
90Pct	19.88	18.04	24.13
95Pct	24.11	21.72	29.50
Mean	10.50	9.27	11.73
Std Dev	7.79	6.93	8.65

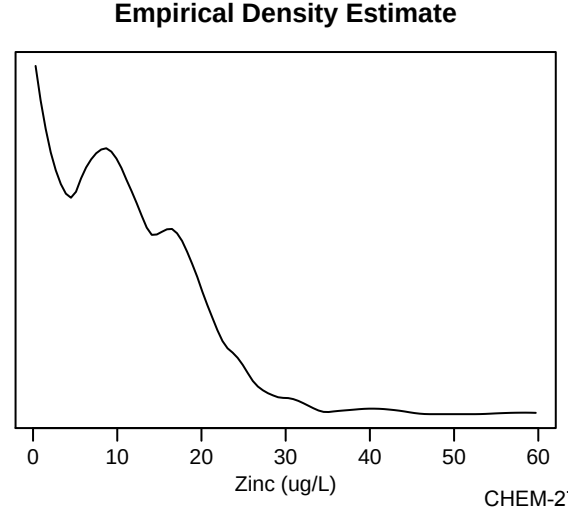
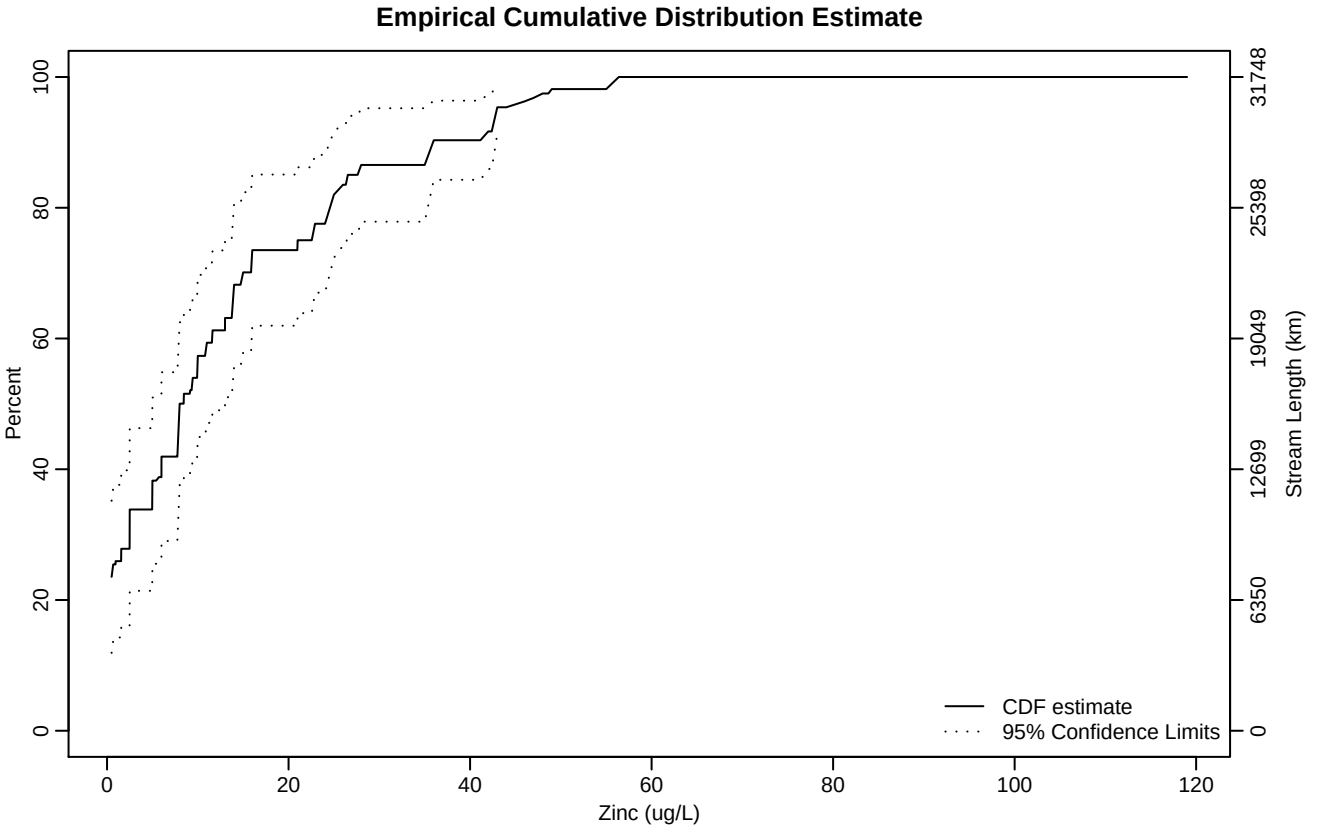


Figure CHEM−273 Indicator: Zinc Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.50
25Pct	0.64	0.50	4.99
50Pct	8	4.99	13
75Pct	21	13.74	35.06
90Pct	35.91	24.73	55.81
95Pct	42.94	35.47	56.39
Mean	13.43	9.87	16.99
Std Dev	13.20	11.30	15.11

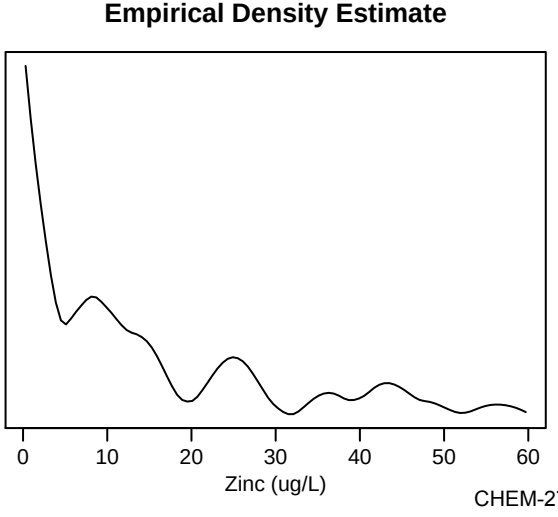
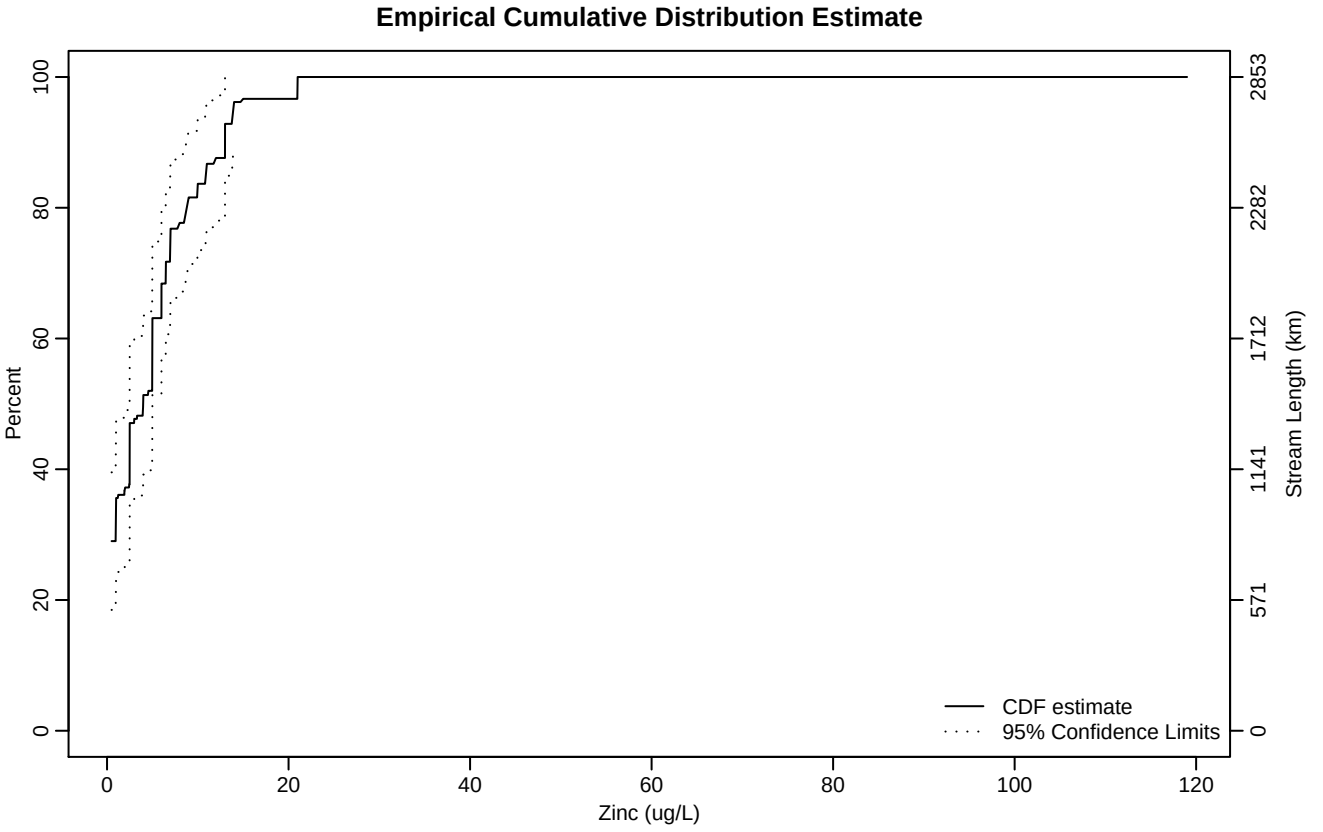


Figure CHEM−274 Indicator: Zinc Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.50
25Pct	0.50	0.50	1
50Pct	3.98	2.48	5
75Pct	6.98	5.99	10.96
90Pct	13	8.81	21
95Pct	13.91	11.80	21
Mean	5.11	3.69	6.54
Std Dev	5.02	3.78	6.25

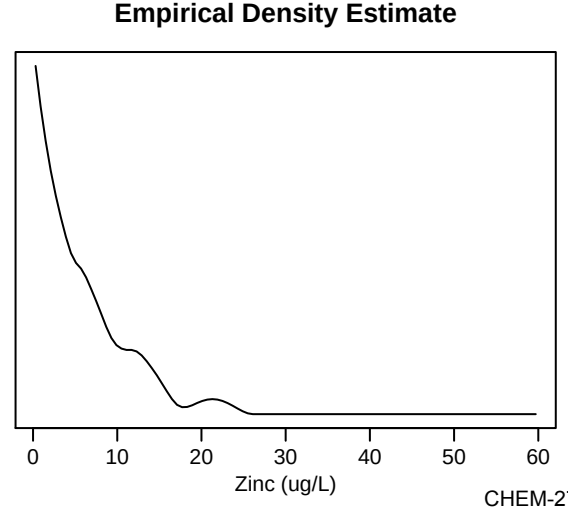
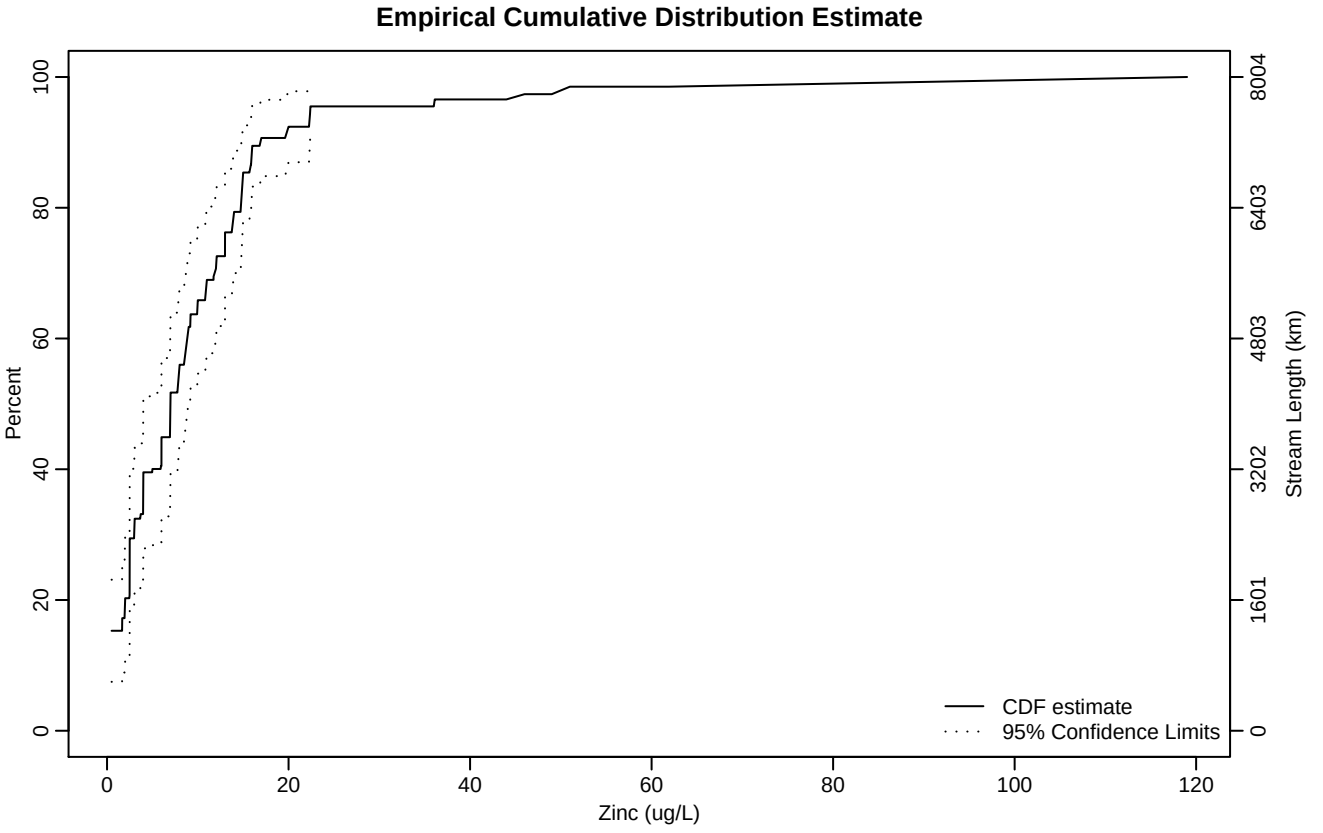


Figure CHEM−275 Indicator: Zinc Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	1.95
25Pct	2.49	1.66	3.98
50Pct	6.98	3.99	9.17
75Pct	13	9.95	15.71
90Pct	16.89	14.92	36.07
95Pct	22.39	19.63	90.49
Mean	10.41	7.09	13.73
Std Dev	13.82	7.26	20.38

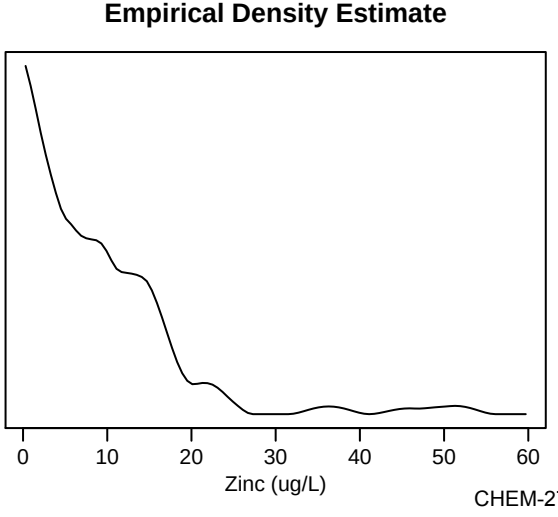
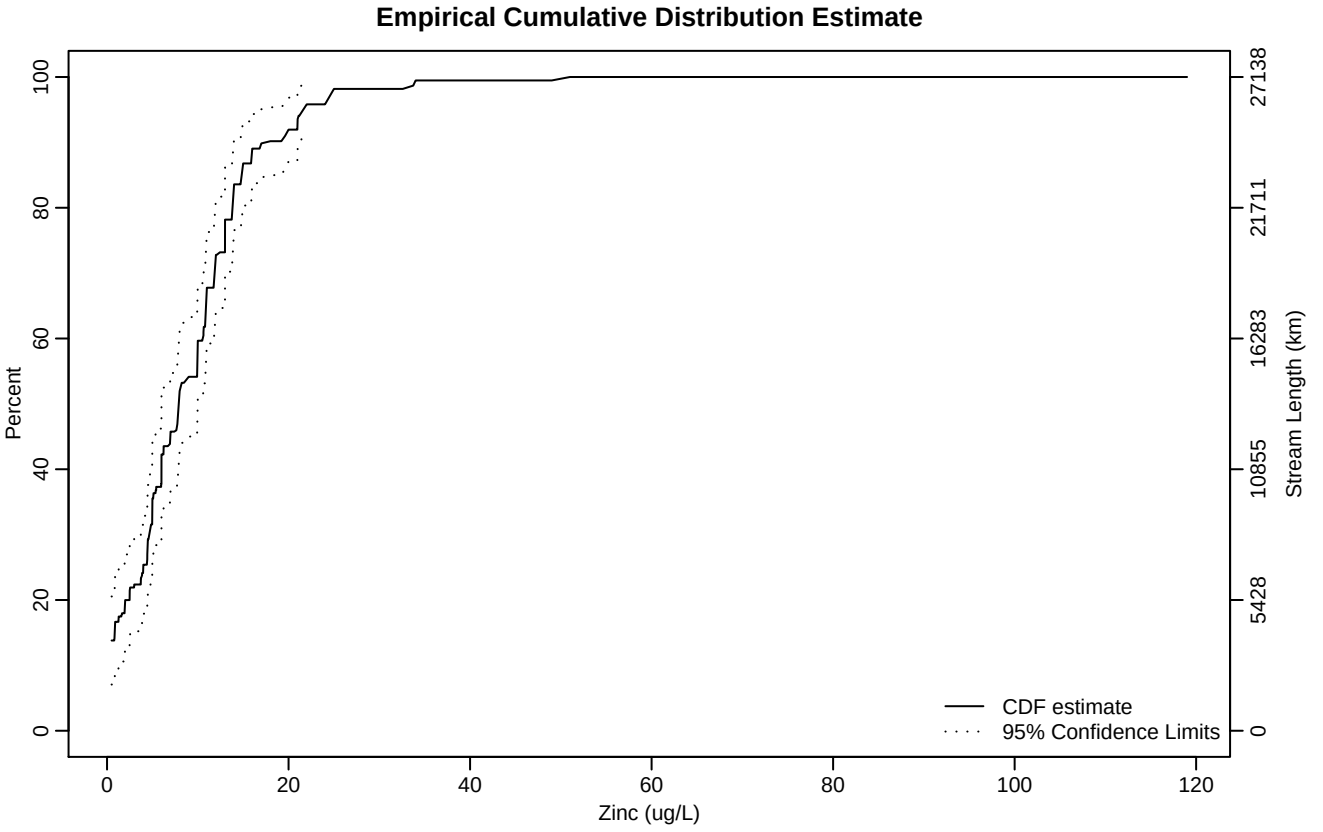


Figure CHEM−276 Indicator: Zinc Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.89
25Pct	3.99	1.59	4.98
50Pct	7.90	6	10
75Pct	13	10.96	14
90Pct	17.47	14.82	21.72
95Pct	21.62	19.45	33.95
Mean	9.13	7.87	10.40
Std Dev	6.95	6.04	7.86

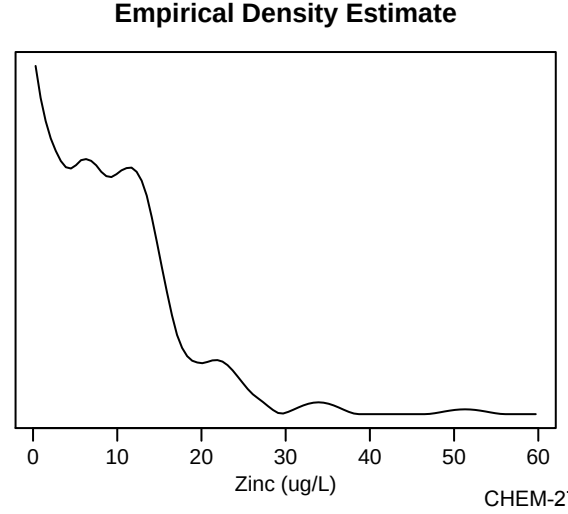
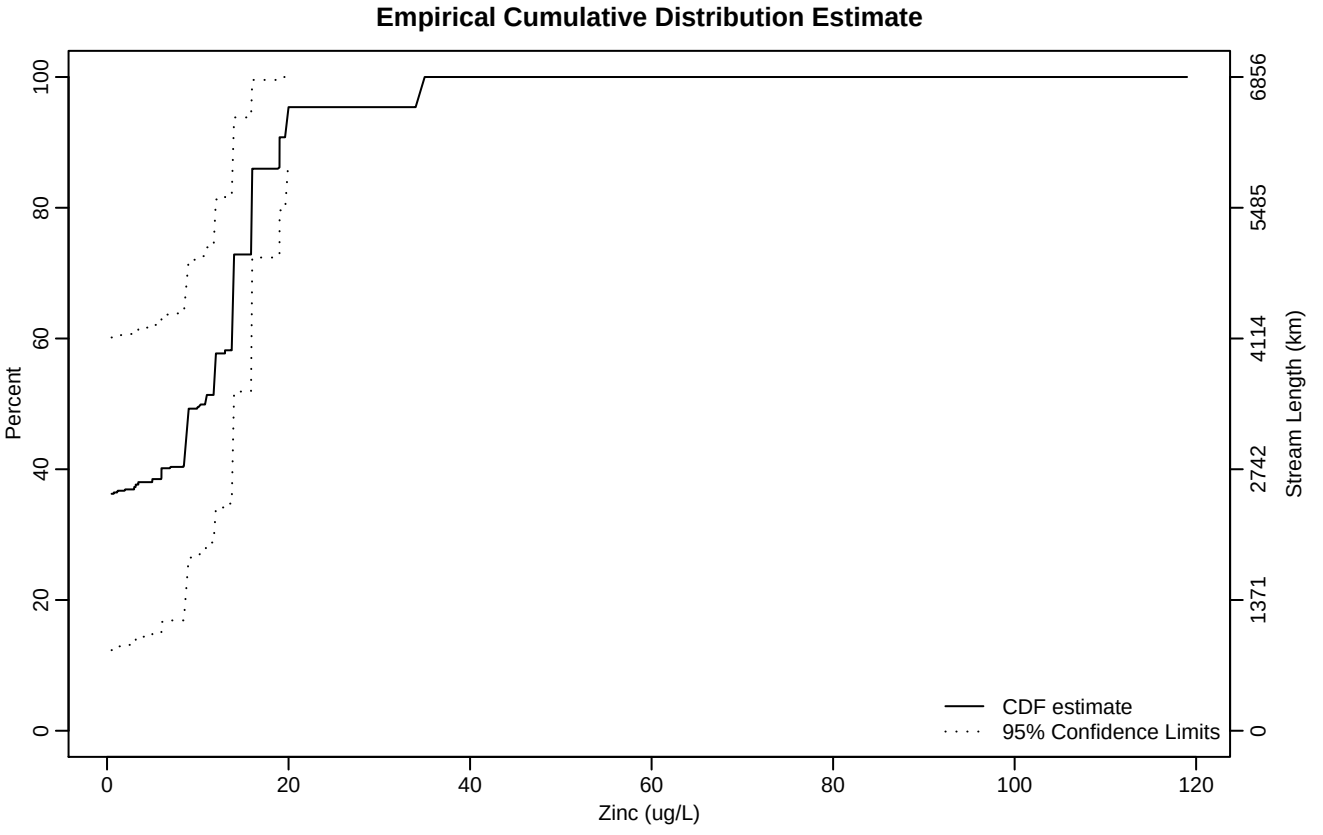


Figure CHEM−277 Indicator: Zinc Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	3.16
25Pct	0.50	0.50	10.86
50Pct	10.81	0.50	14
75Pct	15.89	11.86	34.08
90Pct	19.01	15.91	35
95Pct	19.97	15.98	35
Mean	9.81	5.64	13.99
Std Dev	8.88	6.30	11.46

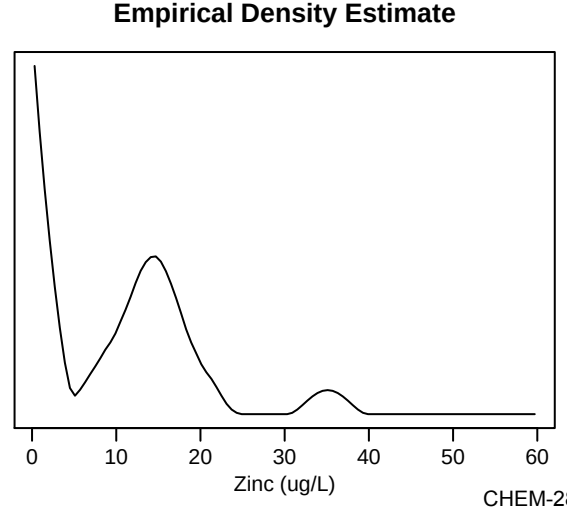
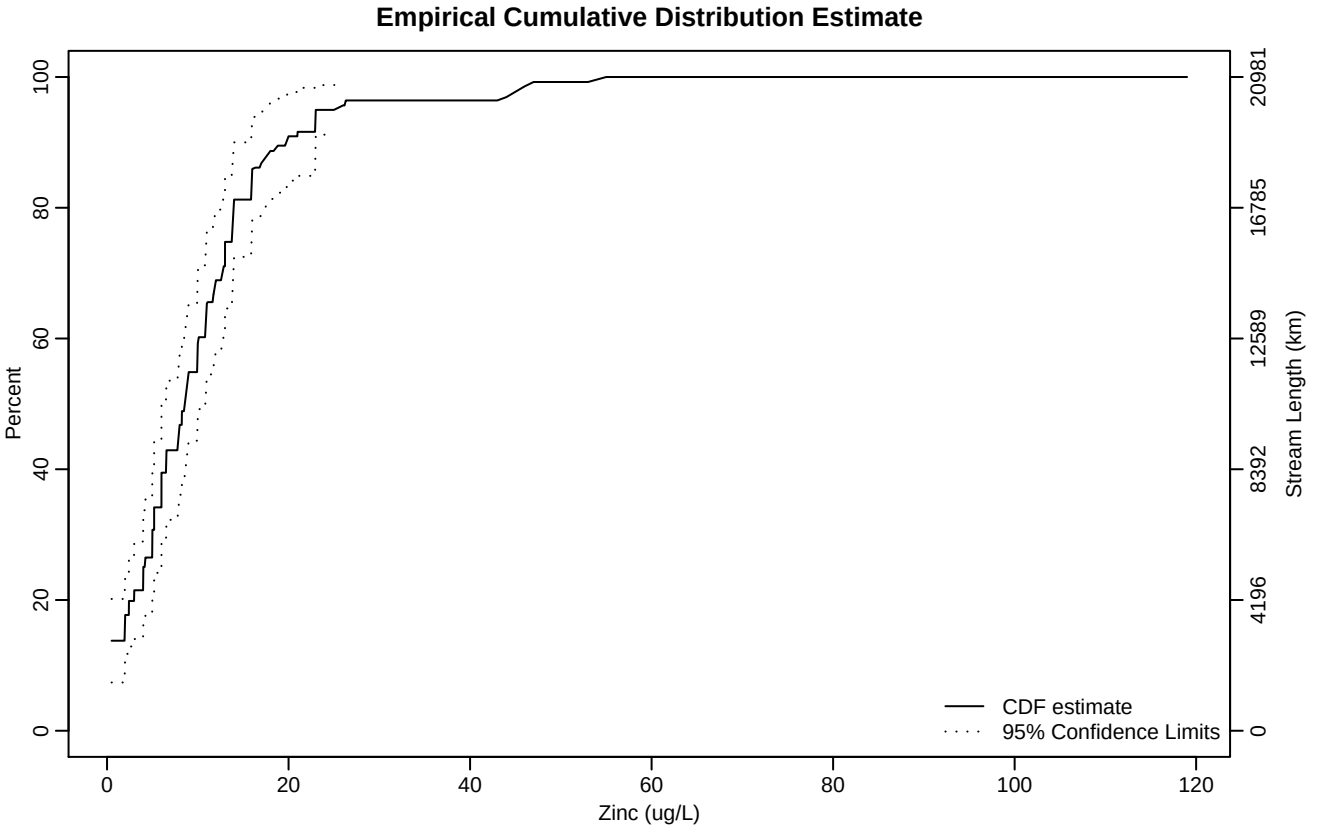


Figure CHEM−278 Indicator: Zinc Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	1.98
25Pct	4	1.99	5.19
50Pct	8.57	6	10.84
75Pct	13.74	10.98	15.98
90Pct	19.75	15.91	44.45
95Pct	25.04	20.98	46.25
Mean	10.28	8.35	12.21
Std Dev	8.72	6.61	10.84

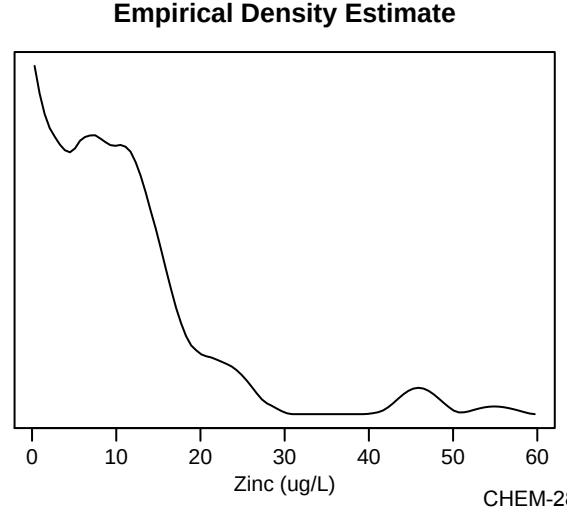
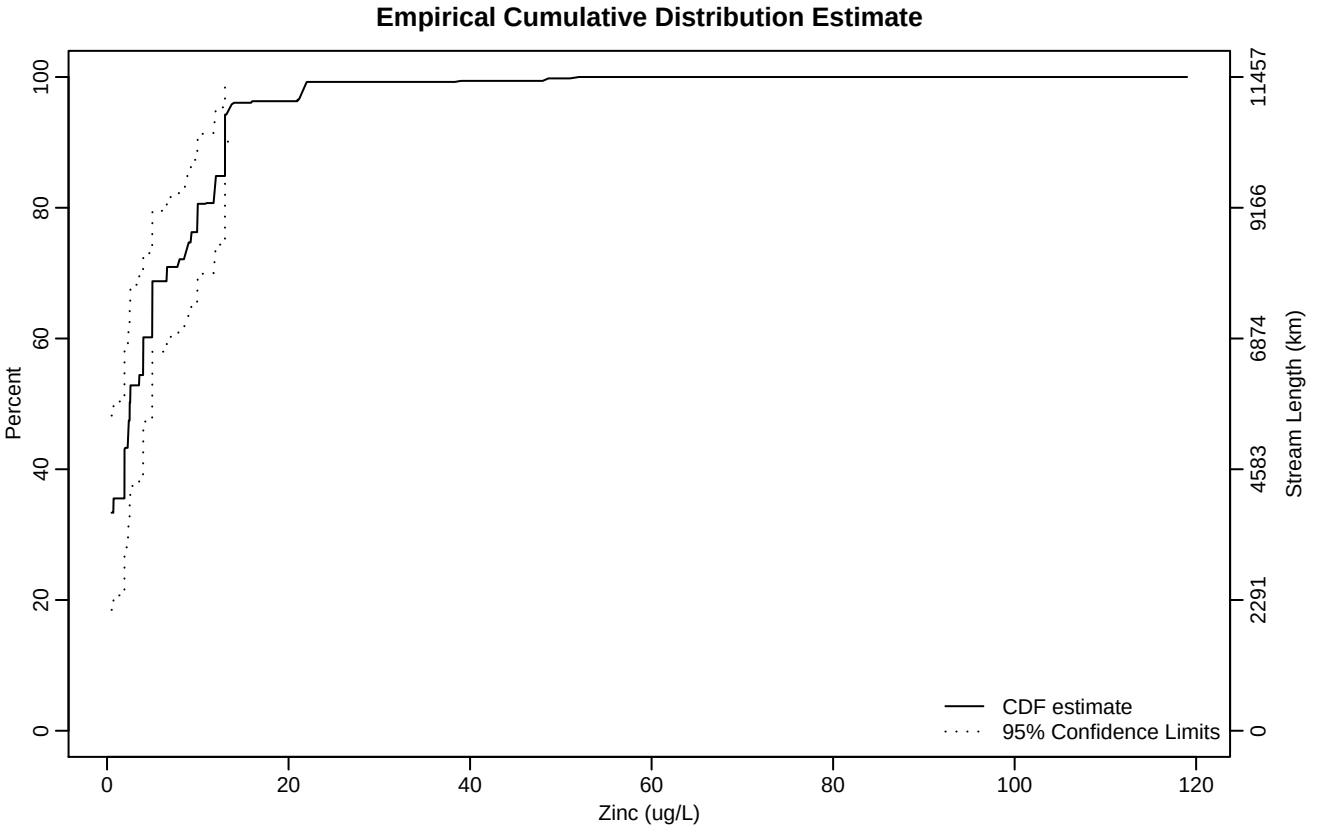


Figure CHEM−279 Indicator: Zinc Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.50
25Pct	0.50	0.50	1.92
50Pct	2.50	0.71	4.99
75Pct	9.23	4.98	13
90Pct	13	9.95	52
95Pct	13.43	13	51.70
Mean	5.36	4	6.71
Std Dev	4.46	3.81	5.11

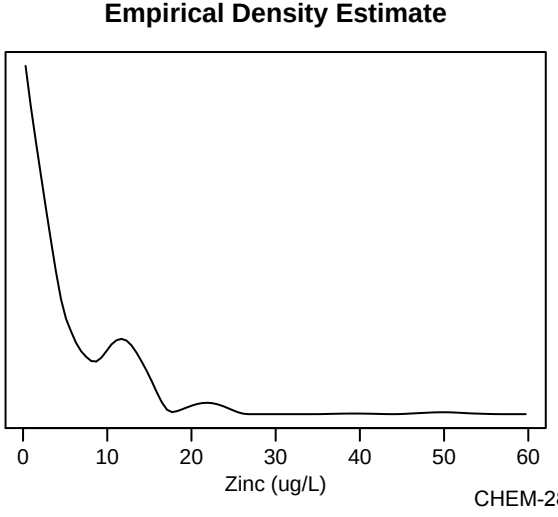
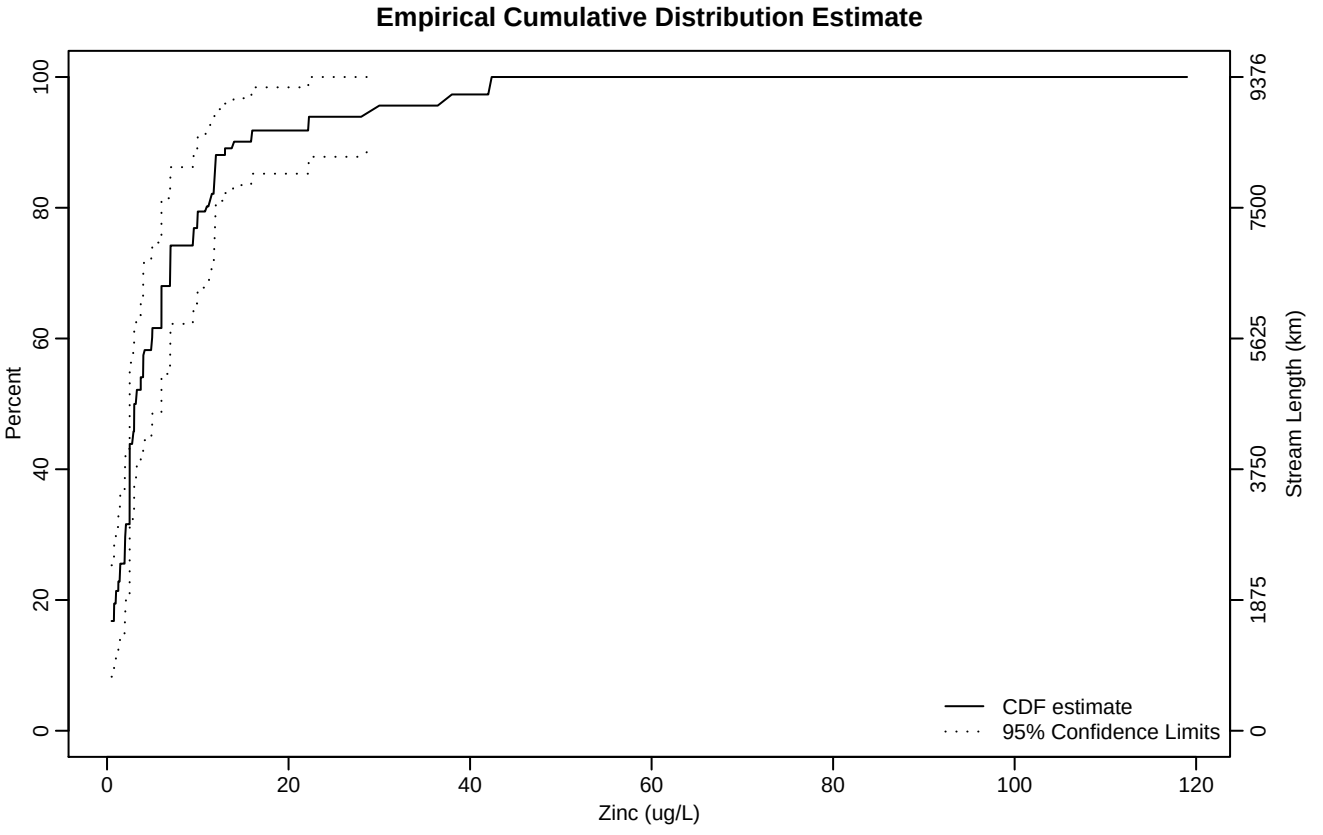
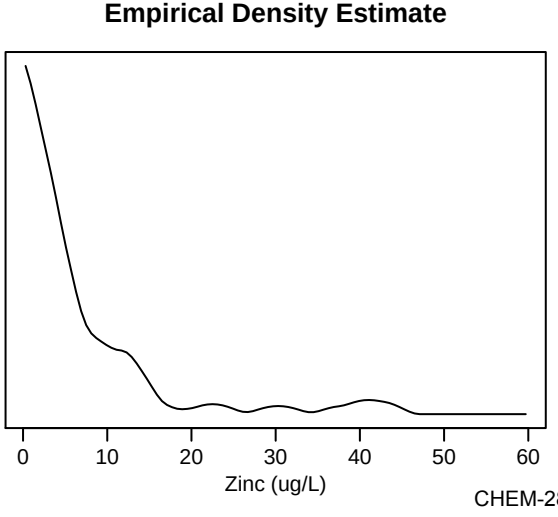


Figure CHEM−280 Indicator: Zinc Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.50	0.50
10Pct	0.50	0.50	0.78
25Pct	1.45	0.50	2.49
50Pct	3.16	2.49	5.99
75Pct	9.48	5.99	11.95
90Pct	13.97	11.79	37.44
95Pct	29.27	13	42.38
Mean	6.93	4.56	9.29
Std Dev	8.44	4.61	12.26



Physical Habitat

Fluvial habitat includes *all* physical, chemical, and biological attributes that influence or sustain organisms within streams or rivers. *Physical habitat* refers to structural attributes of habitat. For the EMAP-West Streams Assessment (EMAP-W), we consider eight general attributes of physical habitat condition, including direct measures of human disturbance. Specific metrics quantifying each attribute are separately discussed in the subsection "*Physical Habitat Attributes and Metrics to Quantify Them."* The population distributions (CDFs and other statistics) for all the physical habitat metrics are presented Figures PHAB-1 to PHAB-434 for the Western region as a whole, for three major climatic/topographic regions, and for ten aggregate ecological regions.

- **Habitat Volume/Stream Size**
- **Habitat Complexity and Cover for Aquatic Biota**
- **Streambed Particle Size**
- **Bed Stability**
- **Channel-Riparian and Floodplain Interaction**
- **Hydrologic Regime**
- **Riparian Vegetation Cover and Structure**
- **Riparian Disturbance**

These attributes were identified during EPA's 1992 national stream monitoring workshop (Kaufmann, 1993) as those essential for evaluated physical habitat in regional monitoring and assessments, and are typically incorporated in some fashion in regional habitat survey protocols (e.g., Platts et al., 1983; Lazorchak et al., 1998; Fitzpatrick et al., 1998). Some of these attributes are useful measures of habitat condition in their own right (e.g., channel incision); others are important controls on ecological processes and biota in U.S. streams. Like biological characteristics, these habitat attributes vary according to their geomorphic and ecological setting. Even the, a direct measure of human activities and disturbances within the riparian zone, is also strongly influenced by the geomorphic setting. We report on specific metrics for each of these 8 attributes of physical habitat at multiple scales: (1) for all of the EMAP-West study area (12 states); (2) for three climatic/topographic regions; and (3) for 10 aggregate ecological regions (see Table 1 and Figure 1 in Introduction). Within these regions, stream drainage area and overall stream gradient are strong natural determinants of many aspects of stream habitat, because of their influence on discharge, flood stage, and stream power (the product of discharge times gradient). In addition, all these attributes may be directly or indirectly altered by anthropogenic activities.

Physical Habitat Sampling and Data Processing

Physical habitat data were collected from longitudinal profiles and from eleven cross-sectional transects evenly spaced along each sampled wadeable stream reach (Peck et al. 2005b) or non-wadeable river reach (Peck et al. 2005a).

The length of each sampling reach was defined proportional to the wetted channel width and measurements were placed systematically along that length to represent the entire reach. Sample reach lengths were 40 and 100 wetted channel-widths (ChW) long in wadeable streams and non-wadeable rivers, respectively, with a minimum reach length of 150 m for channels less than 3.5 m wide. Maximum (thalweg) depth was measured at points evenly spaced approximately every one-half channel width along these reaches to give profiles consisting of 100 measurements in wadeable streams (150 in wadeable streams <2.5m wide), and 200 measurements in non-wadeable rivers.

Thalweg depth measurements (deepest part of channel), habitat classification, and mid-channel substrate observations were made at very tightly spaced intervals; whereas channel cross-sections, and shoreline-riparian stations for measuring or observing substrate, fish cover, large woody debris, bank characteristics and riparian vegetation structure were spaced further apart. The tightly spaced depth measures allow calculation of indices of channel structural complexity, objective classification of channel units such as pools, and quantification of residual pool depth, pool volume, and total stream volume.

In wadeable streams, field crews took measurements while wading the length of each sample reach (Table PHAB-1). The thalweg profile is a longitudinal survey of depth, habitat class, presence of soft/small sediment deposits, and off-channel habitat at 100 equally spaced intervals (150 in streams less than 2.5 m wide) along the centerline between the two ends of the sampling reach. "Thalweg" refers to the flow path of the deepest water in a stream channel. Wetted width was measured and substrate size and embeddedness were evaluated using a modified Wolman pebble count of 105 particles spaced systematically along 21 equally spaced cross-sections. The size and number of pieces of large woody debris in the bankfull channel were tallied along the entire length of wadeable sample reaches. Channel incision and the dimensions of the wetted and bankfull stream channel were measured at 11 equally-spaced transects. Fish cover, bank characteristics, riparian vegetation structure, presence of large (legacy) riparian trees, non-native (alien) riparian plants, and evidence of human disturbances (e.g. roads, buildings, cut stumps, agriculture, channel revetment, pipes, etc.) were visually assessed on 10 x 10 meter riparian plots and 10 meter long instream plots. In addition, measurements of the stream slope and compass bearing between stations were obtained, providing information necessary for calculating reach gradient, residual pool volume, and channel sinuosity. Channel constraint and evidence of debris torrents and major floods were assessed over the whole reach after the other components were completed. Discharge was measured by the velocity-area method at the time of sampling, or by other approximations if that method was not practicable (Peck et al. 2005b).

In non-wadeable rivers, EMAP-W field crews floating downstream in inflatable rafts measured the longitudinal thalweg depth profile (approximated at mid-channel) using 7.5m telescoping survey rods or SONAR, at the same time tallying snags and off-channel habitats, classifying main channel habitat types, and characterizing mid-channel substrate. At 11 littoral/riparian plots (each 10m wide x 20m long) spaced systematically along the river sample reach, field crews measured channel wetted

width, bankfull channel dimensions, incision, channel constraint, bearing, gradient and GPS lat/long; then assessed near-shore, shoreline, and riparian physical habitat characteristics by measuring or observing littoral depths, riparian canopy cover, substrate, large woody debris, fish cover, bank characteristics, riparian vegetation structure, presence of large ("legacy") riparian trees, non-native riparian plants, and evidence of human activities. After all the thalweg and littoral/riparian measurements and observations were completed, the crews estimated the extent and type of channel constraint. Elements of the non-wadeable river physical habitat field methods are shown in Table PHAB-2.

See Kaufmann et al. (1999) for calculations of reach-scale summary metrics from field data, including mean channel dimensions, residual pool depth, geometric mean substrate diameter, wood volume, bed shear stress, relative bed stability (RBS), riparian vegetation cover and complexity, and proximity-weighted indices of riparian human disturbances.

Physical Habitat Attributes and Metrics to Quantify Them

Synopsis of Variables and Data Presentation:

The 31 metrics used to characterize the 8 general attributes of stream and river physical habitat are summarized in Table PHAB-3. The names of the basic habitat variables that are used alone or to calculate new habitat metrics in the tables and throughout this text are defined by Kaufmann et al. (1999), and are explained in following sub-sections. Figures PHAB-1 to PHAB-434 summarize population statistics for each of the physical habitat metrics. There are 14 figures for each metric, summarizing statistics for the EMAP-W region as a whole, for the Mountain (MT), Plains (PL), and Xeric (XE) subregions, and for 10 smaller aggregations of ecoregions that are listed in Table 1 (in Introduction). Each figure contains an empirical cumulative distribution function curve (CDF) with 95% confidence bounds, a population density function (frequency distribution), and population summary statistics including the population mean, standard deviation, median, and quantiles with their upper and lower 95% confidence limits.

Habitat Volume (CDF Figures PHAB-1 to 14):

Habitat volume is a major determinant of the quantity of lotic habitat. The general size class of a stream, based on its drainage area, stream order or annual runoff, is relatively immutable. However, anthropogenic activities frequently alter channel dimensions, floods, and low flow discharges, thereby altering the quantity and quality of aquatic habitat. Estimates of mean wetted channel volume can be quantitatively estimated from EMAP-W's systematic profiles of width and depth along stream reaches (XWXD). However, XWXD, an index of the mean wetted cross-section of the channel, is sensitive to the flow stage on the given day of sampling. It does not necessarily reflect the habitat volume that might remain during drought conditions when habitat volume might be limiting. Estimates of residual pool frequency and size distribution can be quantitatively estimated from EMAP's systematic profiles of width and depth along stream reaches (Kaufmann 1987a; Stack, 1989; Robison and Kaufmann 1994; Kaufmann et al, 1999).

These measures give an indication of the minimum amount of habitat space during extremely low flows (Lisle 1982, 1987). We use reach-wide Mean Residual Depth (RP100) as an indicator of Habitat Volume. Because it varies widely across streams, we present Log_{10}-transformed values (LRP100). A value of 0 is a mean residual depth of 1 cm, a value of 1=10cm, 2=100cm, etc.

Scaled Habitat Volume (CDF Figures PHAB-15 to 28):

RP100 is controlled to a large degree by the size and power of the stream, which in turn vary with drainage area, runoff, and slope (Stack and Beschta, 1989). In some assessment interpretations we are interested in the deviation of RP100 from what would be predicted on the basis of its geoclimatic setting. To assess the habitat volume of streams relative to their natural potential or reference expectations, we examined the deviations of observed RP100 from that predicted based on each stream's basin area, runoff, channel slope, and lithology. Following is a preliminary regression model predicting LRP100 (PLRP100) from Log_{10} basin area (km^2), Log_{10} reach slope (%), Log_{10} long term annual precipitation (m/yr), and ECO3 classification. ECO_3 is a "dummy" variable in this model, where Mountain sites have ECO3_MT=1 and ECO3_PL=0; Plains sites have ECO3_PL=1 and ECO3_MT=0; Xeric sites have zero values for both ECO3_MT and ECO3_PL. In this model ECO3 is a surrogate for the influence of catchment lithology and hydrology on runoff characteristics that might affect the scouring of residual pools. We used long-term mean annual precipitation rather than runoff for two reasons: the precipitation data is available at finer spatial resolution and there is no hydrological interaction between precipitation and basin size, as would be expected for long-term mean annual runoff.

Predicted PLRP100=0.602 +0.190(LWSAREAKM) -0.282(LXSLOPE) +0.631(LPRECIPM) +0.0839(ECO3_MT)+0.0751(ECO3_PL)

The model is based on data from 1080 wadeable and non-wadeable streams and rivers and has R^2=0.512 and RMSE=0.322, with P<0.0001 for the full model and all predictors except ECO3, which had P=0.0105. It shows that the expected magnitude of residual pool volume (indexed here as mean residual depth) increases with drainage area, decreases with channel gradient, and increases with mean annual precipitation. Further, it suggests that the residual mean depth of streams or rivers of similar drainage area, slope, and precipitation in the Mountains or Plains aggregated ecoregions will tend to be similar, but will be about 20% greater (antilog of average of +0.0839 and +0.0751) than expected in analogous landscape settings in the Xeric ecoregions.

The scaled measure of site-specific deviation of residual pools from geomorphic expectations is then calculated from model results as follows:

LDvRP100=LRP100-PLRP100

A value of LDvRP100=0 means the stream's residual depth is exactly as predicted or expected, given it's ecoregional setting, catchment size, slope, and the mean annual precipitation in its catchment. A value of 1 means that a stream has a measured mean residual depth 10 times its expected value, and -1.0 is 1/10th the expected value. It is important to note that this does not necessarily mean that a value of 0 is the *reference*

expectation, as these predictive relationships are based on all the streams and rivers surveyed, including those ranging from pristine to disturbed.

The precision of both the unscaled and scaled residual pool metrics is easily adequate for this regional assessment (Table PHAB-4). The RMSE of both LRP100 and LDvRP100 are approximately 0.13, which means that a given residual mean depth measurement in a stream or river reach has a repeat visit standard deviation of about +/- 35 percent of the reported value. The among-site variance of LRP100 is 10.9 times this repeat visit variance, termed its "signal-to-noise" (S/N) variance ratio by Kaufmann et al. (1999). Because a portion of the variance in residual pool variance among sites is due to natural geomorphic variability, the scaled residual pool variable LDvRP100, which factors out most of this natural variability, has a somewhat lower S/N ratio (5.5), though still adequate for the assessment.

Habitat Complexity and Cover for Aquatic Biota (CDF Figures PHAB-29 to 126):

When other needs are met, complex habitat with abundant cover should generally support greater biodiversity than simple habitats that lack cover (Gorman and Karr, 1978; Benson and Magnuson, 1992). Habitat complexity is, however, difficult to quantify. EMAP-W Physical Habitat protocols provide estimates for nearly all of the following components of complexity identified during EPA's 1992 stream monitoring workshop (Kaufmann, 1993):

- Habitat Type and Distribution (e.g., Bisson et al., 1982; O'Neill and Abrahams, 1984; Frissell et al., 1986; Hankin and Reeves, 1988; Hawkins et al., 1993; Montgomery and Buffington, 1993, 1997, 1998).
- Large Woody Debris count and size (e.g., Harmon et al., 1986; Robison and Beschta, 1990).
- In-Channel Cover: Percentage areal cover of fish concealment features, including undercut banks, overhanging vegetation, large woody debris, boulders (Hankin and Reeves, 1988; Kaufmann and Whittier, 1997)
- Residual pools, channel complexity, hydraulic roughness (e.g., Lisle 1992, 1987; Kaufmann, 1987a, 1987b; Robison and Kaufmann, 1994)
- Width variance and bank sinuosity (Moore and Gregory, 1988).

Residual depth was identified in the previous subsection as a measure of habitat volume; it also serves as one of the indicators of channel habitat complexity, particularly when expressed as LDvRP100, which is scaled to factor out the influence of basin size. A stream with more complex bottom profile will have greater residual depth than one of similar drainage area, discharge, and slope that lacks that complexity (Kaufmann, 1987a). Similarly, between two streams of equal discharge and slope, the one with greater residual depth (i.e., larger, more abundant residual pools) will have greater variation in cross-sectional area, slope, and substrate size. A related measure of the complexity of channel morphology is the coefficient of variation in thalweg depth,

CVDpth, calculated entirely from the thalweg depth profile (SDDepth/XDepth). To complement these two measures of channel morphometric complexity, we chose for the EMAP-W assessment two measures of in-channel large wood (sometimes called “large woody debris” or simply “LWD”), and several estimates of the areal cover of various types of fish and macroinvertebrate “cover” or concealment features. The large wood metrics are C1WM100 (the count of LWD pieces per 100 m of bankfull channel) and LV1W_msq, (the Log_{10} of estimated large wood volume in the sample reach expressed in cubic meters of wood per square meter of bankfull channel). The “fish cover” variables are XFC_NAT, XFC_NORK, XFC_AQM, and XFC_ALG, all of which are estimates of the areal cover of single or combined types of habitat features. XFC_NAT is the sum of cover from large wood, brush, overhanging vegetation, live trees and roots, boulders, rock ledges, and undercut banks. XFC_NORK is the same as XFC_NAT, but without boulders and rock ledges. XFC_AQM is the areal cover of aquatic macrophytes or submerged non-woody vascular vegetation. XFC_ALG is the areal cover of filamentous algae in the wetted stream channel.

The S/N ratios of CVDpth (7.4) and LV1W_msq (4.6) are moderate, but those of the various combinations of fish and macroinvertebrate cover (e.g., XFC_NAT) are relatively low (approximately 2). However, these variables were retained as habitat indicators because they contain biologically relevant information not available in other metrics, and have moderate to very high S/N ratios in particular regions (Table PHAB-4). For example, XFC_NORK has S/N=8.1 in the Xeric subregion, XFC_AQM has S/N=53.6 in the Plains, and XFC_ALG has S/N of 5.6 in the Mountains.

Habitat complexity and the abundance of various types of habitat features differ naturally with stream size, slope, lithology, flow regime, and potential natural vegetation. For example, boulder cover will not occur naturally in streams draining deep deposits of loess or alluvium that do not contain large rocks. Similarly, large wood will not be found naturally in streams located in regions where riparian or upland trees do not grow naturally. Consequently, stream-specific expectations for habitat complexity metrics will be set based on region-specific reference sites (for 10 aggregate ecological regions), adjusted as appropriate for stream size, slope, and elevation.

Streambed Particle Size (CDF Figures PHAB-127 to 168):

Streambed characteristics (e.g., bedrock, cobbles, silt) are often cited as major controls on the species composition of macroinvertebrate, periphyton, and fish assemblages in streams (e.g., Hynes 1972, Cummins 1974, Platts et al. 1983; Barbour et al., 1997). Along with bedform (e.g., riffles and pools), streambed particle size influences the hydraulic roughness and consequently the range of water velocities in a stream channel. It also influences the size range of interstices that provide living space and cover for macroinvertebrates and smaller vertebrates. Accumulations of fine substrate particles fill the interstices of coarser bed materials, reducing habitat space and its availability for benthic fish and macroinvertebrates (Platts et al. 1983, Hawkins et al. 1983, Rinne 1988). In addition, these fine particles impede circulation of oxygenated water into hyporheic habitats. Streambed characteristics are often sensitive indicators of the effects of human activities on streams (MacDonald et al. 1991; Barbour et al, 1997).

Decreases in the mean particle size and increases in streambed fine sediments can destabilize stream channels (Wilcock 1997, 1998) and may indicate increases in the rates of upland erosion and sediment supply (Lisle 1982, Dietrich et al. 1989).

Although many human activities directly or indirectly alter the size of stream bed material, bed particle sizes also vary naturally in streams with different drainage areas, slopes, and surficial geologies (Leopold et al. 1964, Morisawa 1968). The particle size composition of a streambed depends on the rates of supply of various sediment sizes to the stream and the rates at which the flow takes them downstream (Mackin 1948). Topography, precipitation, and land cover influence sediment supply to streams, but the source of sediments is the basin soil and geology, and supplies are greater where these materials are inherently more erodible. Once sediments reach a channel and become part of the streambed, their transport is largely a function of channel slope and discharge during floods (in turn, discharge is largely dependent upon drainage area, precipitation, and runoff rates). For streams that have the same rate of sediment input from watershed erosion, steeper streams tend to have coarser substrates than those with lower gradient, and larger streams (because they tend to be deeper) have coarser substrates than small ones flowing at the same slope. However, a stream or river's competence and capacity to transport sediments can be greatly altered by the presence of such features as large woody debris and complexities in channel shape (sinuosity, pools, changes in width/depth ratio, etc.). The combination of these factors determines the depth and velocity of streamflow and the shear stress (erosive force) that it exerts on the streambed. By comparing the actual particle sizes observed in a stream with a calculation of the sizes of particles that can be mobilized by that stream, the stream bed stability can be evaluated (see following Subsection on Relative Bed Stability).

As our "unscaled" measures of surficial streambed particle size in EMAP-W, we use PCT_FN and PCT_SAFN; respectively, these are the areal percentages of substrate <0.06mm (silt and finer) and <2mm diameter (i.e., sand, silt, and finer). On their own, they are useful descriptors of stream bed conditions. We also report the areal percentage of the streambed that is embedded by sand and finer particles (XEMBED). In a given stream, increases in PCT_FN, PCT_SAFN, and XEMBED, and reductions in the mean streambed particle diameter (LSUB_dmm) may result from anthropogenic increases in bank and hillslope erosion. However, a great deal of the variation in bed particle size we see among streams is natural: the result of differences in stream or river size, slope, and basin lithology. The power of streams to transport progressively larger sediment particles increases in direct proportion to the product of flow depth and slope. Steep streams tend to have coarser beds than similar size streams on gentle slopes. Similarly, the larger of two streams flowing at the same slope will tend to have coarser bed material, because its deeper flow has more power to scour and transport fine particles downstream (Leopold et al. 1964; Morisawa 1968). For these reasons, we "scale" bed particle size metrics, expressing bed particle size in each stream as a deviation from that expected as a result of its size, power, and landscape setting.

Scaled Bed Particle Size (CDF Figures PHAB-169 to 210):

The variables DPct_FN, DPct_SF, and DevLSub were calculated for each sample stream and river reach based on its bankfull bed shear stress, catchment mean annual precipitation, aggregated ecoregion (MT, PL, or XE), and the method used to quantify the bed substrate (wadeable stream method or non-wadeable river method). A similar process-informed empirical approach was used by Kaufmann and Hughes (in press) in a more restricted region than that addressed by EMAP-W. They estimated excess fine sediments (<0.06mm) in Pacific NW coastal streams as a deviation of surficial fine sediments from a regression on bankfull critical diameter (a function of streambed shear stress). The same approach was previously applied to Appalachian streams to assess the effects of land use on aquatic macroinvertebrates (Bryce et al. 1999) and the percentage of excess sand and silt in streambeds (U.S.EPA 2000).

DPct_FN was calculated as PCT_FN – (Expected PCT_FN), where the Expected value of PCT_FN was calculated from the following regression model:

Expected PCT_FN = +35.6-9.55(LDMB_bw5)-23.9(LPRECIPM) -5.22(ECO3_MT) +18.5(ECO3_PL)-13.2(RIVER)

Where:

LDMB_bw5 = Log_{10} of bankfull bed shear stress,

LPRECIPM = Log_{10} of 30 year mean annual areal precipitation at centroid of catchment,

ECO3_MT = 1 if ECO3=MT, otherwise = 0; and ECO3_PL = 1 if ECO3=PL, otherwise = 0,

RIVER = 1 if non-wadeable river field methods were used, otherwise = 0.

The model was based on data from 1078 wadeable and non-wadeable streams and rivers and had R^2=0.37 and RMSE=21.9, with p<0.0001 for the model and all predictors. These results show that the percentage of “fines” (silt and finer) in stream or river beds is expected to decrease as bed shear stress increases and as basin mean annual precipitation increases. Further, it shows that, for analogous flow conditions (bed shear stress and precipitation), sites in the Mountain ecoregions will tend to have PCT_FN about 5 percentage points less than sites in the Xeric ecoregions. On the other hand, Plains sites would be expected to have PCT_FN about 18 percentage points higher. Because of the differences in methods of determining channel bed fines, non-wadeable rivers (where fines were determined mid-channel) would be expected to have PCT_FN values 13 percentage points lower than in wadeable streams with similar flow conditions.

DPct_SF is calculated as PCT_SAFN – (Expected PCT_SAFN), where the Expected value of PCT_SAFN was calculated from the following regression model:

Expected PCT_SAFN = 56.13-13.15(LDMB_BW5)-35.07(LPRECIPM) -8.30(ECO3_MT) +26.05(ECO3_PL)-12.66(RIVER).

Predictor variables are the same as for Expected PCT_FN. The PCT_SAFN regression was based on data from 1078 wadeable and non-wadeable streams and rivers and had R^2=0.54 and RMSE=22.0, with p<0.0001 for the model and all predictors.

The regression for calculating the expected value of the Log_{10} of Streambed Particle Mean Diameter (LSUB_dmm) from values predicted from the Landscape setting is:

Expected LSUB_dmm= -0.316+0.660(LDMB_BW5) +1.57(LPRECIPM) +0.271(ECO3_MT)-0.922(ECO3_PL) +0.585(RIVER)

Predictor variables are the same as for PCT_FN and PCT_SAFN. The regression was based on data from 1078 wadeable and non-wadeable streams and rivers and had R^2= 0.54, RMSE=0.898, with p<0.0001 for all predictors.

Because we used all streams and rivers in the dataset to fit these models, the expected reference (unaltered stream/river) value must subsequently be determined based on the distribution of DPct_FN, DPct_SF, and DevLSub values in minimally-disturbed reference sites in each region.

The precision of both the unscaled and scaled bed particle size metrics is easily adequate for this regional assessment (Table PHAB-4). The RMSE's of the unscaled metrics PCT_FN, PCT_SAFN, and XEMBED are 5.5, 7.1 and 6.5 percent, respectively. Partly owing to their large natural variability, their S/N variance ratios in the EMAP-W region are high (22, 18, and 14). The precision of the scaled variables DPct_FN and DPct_SF are nearly identical to the unscaled variables they are based upon, as indicated by their RMSE's. Despite "loosing" the portion of the variance in bed particle size due to natural geomorphic variability, the S/N variance ratios for DPct_FN and DPct_SF, and DevLSub are still high, ranging from 13 down to 9.0 (Table PHAB-4), and certainly adequate for the assessment.

Relative Bed Stability (CDF Figures PHAB-211 to 224):

Background: Many researchers have scaled observed stream reach or riffle particle size (e.g., median diameter D_{50}, or geometric mean diameter D_{gm}) by the calculated mobile, or "critical" bed particle diameter (D_{cbf}) in the stream channel. The scaled median streambed particle size is expressed as Relative Bed Stability (RBS), calculated as the ratio D_{50}/ D_{cbf} (Dingman 1984; Gordon et al. 1992), where D_{50} is based on systematic streambed particle sampling ("pebble counts") and D_{cbf} is based on the estimated streambed shear stress at bankfull flows. Kaufmann et al. (1999) modified the calculation of D_{cbf} to incorporate large wood and pools, which can greatly reduce shear stress in complex natural streams. They also formulated the calculation of both D_{gm} and D_{cbf} so that RBS could be estimated from physical habitat data obtained from large-scale regional ecological surveys. RBS is a measure of habitat stability for aquatic organisms as well as an indication of the potential for economic risk to stream side property and structures from stream channel movement. In many regions of the US, we may also be able to use RBS to infer whether sediment supply is augmented by upslope or bank erosion from anthropogenic or other disturbances, because it can indicate the

degree of departure from a balance between sediment supply and transport that is typical of some regions. RBS is quantified as the ratio of observed bed surface particle diameter divided by the “critical” or mobile particle diameter calculated for a given streamflow condition (Dingman 1984). RBS is the inverse of the streambed “fining” measure calculated by Buffington and Montgomery (1999a, b), and is conceptually similar to the “Riffle Stability Index” of Kappesser (2002) and the bed stability ratio discussed by Dietrich et al. (1989).

Bed Substrate Size: When evaluating the stability of whole streambeds (vs. individual bed particles), observed substrate is typically represented by the median surface particle diameter (e.g., D_{50}) or the geometric mean diameter (D_{gm}). To characterize the actual substrate particle size distribution in a stream channel, EMAP field protocols (Peck et al. 2005a; 2005b) followed the widely accepted procedure (e.g., Platts et al., 1983; Bauer and Burton, 1993) of employing a systematic “pebble count," as described by Wolman (1954). Observed bed particle size was calculated as the geometric mean particle diameter from systematic “pebble counts” of 105 particles along the stream bed.

Critical Streambed Particle Size: To calculate critical (mobile) bed particle diameter in a natural stream, it is necessary to estimate average streambed tractive force, or shear stress, for some common reference flow conditions likely to mobilize the streambed. Bankfull discharge is typically chosen for this purpose, because the shear stress under these conditions can be estimated from field evidence observed during low flow in most regions. Bankfull flows are large enough to erode the stream bottom and banks, but frequent enough (return interval of 1 to 2 years) not to allow substantial growth of upland terrestrial vegetation (Harrelson et al. 1994; Kaufmann et al., 1999). Consequently, in many regions, it is these flows that have determined the width and depth of the channel, so the depth of 1-2 year floods can be approximated from the depth of the bankfull channel when evaluated in the field at low flow (Dunne and Leopold 1978; Leopold, 1994). The EMAP approach for estimating the critical diameter for bed particles in a stream is based on sediment transport theory (e.g., Simons and Senturk, 1977), which allows an estimate of the average streambed shear stress or erosive tractive force on the bed during bankfull flow, based on quantitative estimates of bankfull flow depth, slope, channel shape, and roughness. Stream channels can be very complex, exhibiting a wide range in local bed shear stress due to small-scale spatial variation in slope, depth, and roughness within a channel reach (Lyle et al., 2000). The influence of large-scale channel roughness can be very important in determining bed stability, so we modified Dingman’s (1984) RBS formulation to accommodate losses in shear stress resulting from large woody debris and channel complexity (Kaufmann et al., 1999; Kaufmann and Larsen, in review). These roughness elements reduce shear stress, and therefore critical diameter, in streams flowing at a given depth and slope. Compared with simple or hydraulically “smooth” channels, shear stress is reduced in streams with large roughness elements, thereby increasing the stability of fine particles.

Calculation of Relative Bed Stability: Finally, we calculated RBS as the reach-wide geometric mean substrate diameter divided by the bankfull critical diameter ($RBS = D_{gm}/D_{cbf}$), typically expressing it as the EMAP variable LRBS_bw5, which is $Log_{10}(RBS)$.

Similarly, $Log_{10}(RBS)=Log_{10}(D_{gm}) – Log_{10}(D_{cbf})$. The equivalent formula, expressed in EMAP variables is LRBS_bw5= LSUB_dmm – LDMB_bw5.

The RMSE of LRBS_bw5 is 0.365, which translates to an asymmetrical error bound of 0.5y to 2.0y around an untransformed RBS value of "y." As noted above, RBS varies over approximately 6 orders of magnitude in EMAP-W, so it is useful to log transform this variable (LRBS_bw5). The S/N variance ratio for LRBS_bw5 is high in this region (8.7), making it a useful variable in this assessment (Table PHAB-4).

Interpretation of RBS Values: In interpreting RBS on a regional scale, Kaufmann et al. (1999) argued that, over time, streams and rivers adjust sediment transport to match supply from natural weathering and delivery mechanisms driven by the natural disturbance regime, so that RBS in appropriately stratified regional reference sites should tend towards a range characteristic of the climate, lithology, and natural disturbance regime. Earlier researchers demonstrated reductions in D_{50} relative to D_{cbf} as a result of increases in sediment supply containing a mix of particle sizes, and had investigated the processes causing these reductions (Lisle 1982; Dietrich et al. 1989; Buffington 1998). Large positive (armoring) or negative (fining) deviations of D_{50} relative to D_{cbf} can be strongly inferred by weight of evidence (Hill, 1965) to be anthropogenic if they are consistently associated with measures of human disturbances and not other natural gradients, and can be explained by plausible mechanisms (Kaufmann and Larsen, in review; Kaufmann and Hughes, in press). In streams with low RBS, bed materials are easily moved by floods smaller than bankfull, so may be rapidly transported downstream. The persistence of fine surficial streambed particles is made possible under these circumstances by high rates of sediment supply (including fines) that continue to replenish the streambed.

RBS values in EMAP-W sample streams ranged between 0.00003 and 22 (LRBS_bw5 range from -4.5 to +1.35). A high value of RBS (e.g., >100) indicates an extremely stable, immovable stream substrate like that in an armored canal, a tailwater reach below a dam, or other situations where the sediment supply is low, relative to the hydraulic competence of the stream to transport bedload sediments downstream (Dietrich et al., 1989). Very small RBS values (e.g., <0.01) describe a channel composed of substrates that are frequently moved by even small to moderate discharges. These "live-bed" conditions in streams or rivers can be the result of anthropogenic disturbances or can be natural, as in the case of naturally sand-bedded streams that transport bedload at lower flows.

In watersheds where sediment supplies are augmented relative to a stream's bedload transport competence, we expect to see evidence of excess fine sediments, or "textural fining" (Dietrich et al., 1989). Very small RBS values (e.g., .01-.00003) describe a channel composed of sediment that can be transported by a wide range of flows and hence moves frequently, indicating excessive amounts of fine particles compared with expected values in comparable undisturbed watersheds. Such evidence of textural fining of the streambed (RBS<<1) typically occurs when land use activities increase hillslope erosion (Lisle 1982; Dietrich et al. 1989; Lisle and Hilton 1992). We further expect that, for streams draining basins of equal erodibility, RBS values should decrease in proportion to increases in sediment supply above that provided by the

natural land disturbance regime. To the extent that human land use increases sediment supply by land erosion within regions of relatively uniform erodibility, RBS of streams in surveys should be inversely related to basin and riparian land use intensity and extent. We have demonstrated this association of lower RBS with land use disturbances in several regions (Kaufmann et al, 1999, Kaufmann and Larsen, in review). Finally, the more erodible the basin lithology within a geoclimatic region, the steeper we expect the decline in RBS with progressive disturbance to be. As demonstrated for streams in the Pacific Coastal region by Kaufmann and Larsen (in review), this means that we expect any given amount of land use disturbance to augment sediment supplies to a greater degree in basins underlain by erodible rocks than in basins underlain by more resistant rock.

Channel-Riparian and Floodplain Interaction (CDF Figures PHAB-225 to 280):

Anthropogenic activities including grazing, farming, flood control, channel revetment, and urbanization can result in the separation of streams from their floodplains and riparian zones. Secondary effects (changes in channel structure, groundwater levels, bank stability, riparian vegetation, and ephemeral aquatic habitats) can cause economic losses and can markedly affect biotic integrity of stream ecosystems. Expectations for the potential magnitude and extent of interaction of streams with the terrestrial environment differ for streams according to their channel type and degree of valley constraint (Rosgen, 1985, 1994; Gregory et al., 1991; Stanford and Ward, 1993). Possible stream attributes that indicate channel-riparian interaction include channel sinuosity, incision, morphometric complexity, and the degree of variation of channel dimensions with changes in flow stage. We chose for this assessment four metrics of channel-riparian interaction: channel sinuosity, channel incision, bankfull width/depth ratio, and the ratio of bankfull width to wetted width.

Channel sinuosity of a stream or river reach is the ratio of channel length (as the water flows) divided by the straight-line distance between the two ends of the reach. A ratio of 1 is a perfectly straight reach. We observed sinuosity between 1 and 10 in EMAP-W. The greater the sinuosity, the slower water flows through a valley, and the more chance it has to interact with the terrestrial landscape. In addition, the greater the sinuosity, the larger the volume of aquatic habitat within any given land area. Channel straightening decreases sinuosity, increases channel slope, and can lead to lower bed stability, greater sediment transport, increased bank instability, channel downcutting, and downstream flooding. We report sinuosity values as the $\log_{10}$ transformed variable LSINU, so a value of LSINU=0 is a perfectly straight reach and a value of 1 is extremely sinuous.

Stream incision, or downcutting, is a common and often serious problem throughout the West and other parts of the U.S., particularly in relatively arid areas. It results when the erosive ability of a stream increases, the bedload sediment supply decreases, or the stream bottom and banks are destabilized by disturbances. Conversely, aggradation occurs when sediment supplies exceed the capacity of the river to transport sediment. Human activities can change the balance between sediment transport and supply in a

number of ways. The power of the river to transport sediment may be increased by human activities that increase flood flows (e.g., increases in watershed impervious area), or remove large roughness elements like woody debris that dissipate stream power that might otherwise transport sediment. The erosive ability of a stream can also increase when a stream is straightened (decreased sinuosity) or deepened, when banks are armored, or when runoff hydrology is altered (as occurs when increased impervious area causes increased flood runoff from a stream's drainage area). In addition, relatively stable sediments in streambeds and banks can be mobilized by removal or heavy grazing of riparian vegetation that protects stream banks and channels. Conversely, the ability of the river to transport sediment may be decreased by impoundments downstream (they decrease river slope), or by upstream flow controls that reduce the size of flood flows. The supply of sediment may be increased by upslope erosion, or decreased when, for example, upstream impoundments trap bedload sediments or when gravel mining actually removes sediment from the stream or river bed. In EMAP, we measured channel incision as the difference between the elevation of the first valley terrace above bankfull height and the elevation of the bankfull height itself (both measurements were recorded as heights measured from the water surface at the time of sampling). The variable reported in this assessment is $\log_{10}$ transformed incision height: LINCIS_H = Log_{10} (XINC_H - XBKF_H + 0.1) = Log of Incision from terrace to bankfull ht (m). LINCIS_H provides a benchmark to be compared with the range of incision values in reference sites, and from which we can monitor downcutting (increased incision) or aggradation (decreased incision). It may not be evident at the time of sampling whether the channel is downcutting, stable, or aggrading (raising its bed by depositing sediment). However, by recording incision heights and monitoring them over time, we will be able to tell if rivers are incising or aggrading.

In addition to changes in bed elevation (downcutting or aggradation) or textural responses such as streambed fining (see previous sections on substrate and RBS), channels may respond to changes in sediment supply and transport through changes in channel morphology. In particular, large inputs of sediment (increased sediment supply) can cause increases in width-depth ratio or decreases in channel complexity and the depth and frequency of pools (Madej, 2001). Such responses would have important implications for channel shading and for hyporheic flow, which is largely driven by streambed morphology (Kasahara and Wondzell, 2003), and hence also would have important implications for stream temperature, which is profoundly influenced by both shading and hyporheic flow (White et al., 1987; Fortner and White, 1988). Relevant morphological characteristics are quantified in EMAP data by several metrics derived from thalweg depth profiles and channel cross-sections. We quantified two aspects of channel shape to assess possible morphological responses to altered hydrologic regime or sediment supply from human activities. The first is bankfull width-to-depth ratio: LBFWDRat = Log_{10}(Bankfull Width/Depth Ratio), with high values indicating wide, shallow channels. The second morphologic measure is the ratio of bankfull width to low flow width: LBFXWRat = Log_{10} (Bankfull Width / Wetted Width) = Log_{10} (BKF_W / XWIDTH). LBFXWRat is an index of streamside flood inundation potential. A high value

of LBFXWRat indicates that a stream or river has very unconstrained access to the valley flood plain and has flood flows sufficiently large to do so.

The precision of LSINU, LINCIS_H, LBFWDRat, and LBFXWRat in the EMAP-W survey was moderate compared with their variation across the region, with S/N ratios ranging from 4.3 to 6.9 (Table PHAB-4). Reference expectations for all of these measures of interaction between channel and riparian will be based on characteristics of reference streams, adjusted as appropriate for basin size, channel slope, lithology and potential natural vegetation.

Hydrologic Regime and Hydrologic Alteration (CDF Figures PHAB-281 to 308):

Human use of water throughout the arid portions of the West can cause substantial stress to lotic ecosystems, where streamflow may be highly modified by flow regulation, dams, direct withdrawal and groundwater pumping for irrigation, and inter-basin water transfers (Poff et al., 1997). Furthermore, development and land use practices may alter runoff and groundwater recharge, causing changes in the amount and seasonal pattern of streamflows. Changes from the historic timing, frequency, and duration of floods can disrupt the reproduction, survival, spawning, and migration of biota that are adapted to a particular flood flow regime (Poff and Ward, 1989; Junk et al., 1998). Stream organisms are also vulnerable to changes in flow regime because of their sensitivity to changes in water velocity (Moog, 1993; Allan, 1995).

Unfortunately, the suite of physical habitat measures collected in the field by EMAP-W provides only limited information with which to examine the alterations in flow regime identified by Poff et al. (1987) or incorporated into an index of hydrologic alteration by Richter et al. (1996). The available information from the survey is confined to the instantaneous measurement of discharge and low flow measures of channel shape, from which bankfull flow magnitudes can be approximated. Areal discharge (discharge/drainage area) can be calculated for a variety of discharge statistics (e.g., mean annual, instantaneous low flow, etc.), and largely scales discharge measurements so that streams and rivers of various sizes can be compared on equal footing. We calculated low flow areal discharge, Q_{sp} by dividing the instantaneous low flow discharge measurement made by EMAP-W field crews divided by the contributing drainage area, and its units are m^3/s per km^2. It has potential as an indicator of Habitat Volume/Hydrologic Alteration at individual sites, though it systematically varies among ecoregions and is also likely to vary with the amount of interchange between groundwater and surface water. It may also vary with basin size and position in the drainage network, though it is difficult to examine that relationship because the drainage area is used to define this variable. To create a rough index of low flow hydrologic alteration, we divided Q_{sp} by the 30 year average annual runoff: LQSLTR_rat =Log_{10} (Qsp / LTROFF) = Log of ratio of instantaneous discharge ($m^3/s/km^2$) divided by Long-Term Runoff ($m^3/yr/m^2$ or m/yr). If one prefers to think of this index as a dimensionless ratio of instantaneous runoff divided by annual runoff, the ratio can simply be multiplied by 31.5 (i.e. 31,536,000 s/ yr divided by 1,000,000 m^2/km^2). In other words, add 1.5 to the log-transformed value (LQSLTR_rat). A value of -1.5, therefore, describes a reach

where the crudely measured instantaneous discharge was equal to the also crudely interpreted runoff, when expressed over the same time period. Since the EMAP-W field sampling period is generally during a low flow season, LQSLTR_rat describes how much smaller the dry season flows are than flows during other times of the year. High values suggest relatively unvarying flow from dry to wet seasons, while low values suggest large differences, with greater water stress (drought) during the low flow season. Spring-fed streams would tend to have high values of the index, whereas streams that nearly dry out during the spring or summer sampling season would have very low values of LQSLTR_rat.

We present regional distributions of a second index, based only on channel morphology, that may be useful for evaluating another aspect of hydrologic alteration, hydrologic flashiness. Comparing the range of variation between low and high flows gives an indication of hydrologic flashiness. Bankfull flows are large enough to erode the stream bottom and banks, but frequent enough not to allow substantial growth of upland terrestrial vegetation (every 1 to 2 years). Consequently, in many regions, it is these flows that have determined the width and depth of the channel, so we can use channel morphology to roughly infer their magnitude, even though they occur when our field crews are not there to observe them. We calculate this hydrologic flashiness index as a log-transformed variable LBFXDRat=Log_{10} (Bankfull depth/wetted depth) =Log_{10} {(XBKF_H + (XDEPTH/100) / (XDEPTH/100)}. Summer water withdrawals and peak flow increases from impervious surface runoff will tend to increase LBFXDRat, while flood controls and dry season flow augmentations will tend to decrease this ratio.

The precision of LQSLTR_rat was low, with a RMSE of 0.782 and a S/N variance ratio of 1.0, indicating that, proportionally, these low flow areal discharges varied substantially at the same site, compared with the variation observed among streams across the region (Table PHAB-4). We suggest caution in “over-interpreting” LQSLTR_rat for two reasons. Firstly, the numerator is an instantaneous discharge measurement that can change several-fold over the sampling period. Secondly, the denominator is derived from very coarse-resolution gridding of hydrologic data (1:2,000,000 scale), and is interpolated to the grid located in the centroid of the watershed. It does not likely capture the variability in runoff that may occur throughout a large watershed, nor could it describe the variation in groundwater contribution or loss of streamflow to the ground that may occur in nearby locations that are at different positions along the river continuum.

In contrast to LQSLTR_rat, the precision of LBDFXDRat, the purely morphometric index of hydrologic “flashiness”, was reasonably good (Table PHAB-4). This variable had a RMSE of 0.10, which means that between visits in the same season, it varied by only a factor of about 26%. In addition, its S/N ratio was moderate (4.7), suggesting a good ability to discern differences among streams and moderate usefulness in associational studies (Kaufmann et al., 1999).

Riparian Vegetation (CDF Figures PHAB-309 to 350):

The importance of riparian vegetation to channel structure, cover, shading, nutrient inputs, large woody debris, wildlife corridors, and as a buffer against anthropogenic

disturbance is well recognized (Naiman et al., 1988; Gregory et al., 1991). Riparian vegetation not only moderates stream temperatures through shading, but also increases bank stability and the potential for inputs of coarse and fine particulate organic material. Organic inputs from riparian vegetation become food for stream organisms and provide structure that creates and maintains complex channel habitat.

For EMAP-W, we evaluate the cover and complexity of riparian vegetation based on canopy densiometer measurements and visual estimates of the areal cover and type of vegetation in three layers (canopy, mid-layer, and ground cover). XCDENMID quantifies mid-channel canopy density as the average of 44 individual canopy densiometer measurements systematically spaced along each sample reach, and was measured only on wadeable streams. XCMG is a combined measure of all vegetation types summed over three layers, canopy, mid-layer, and groundcover, giving an indication of the abundance of vegetation cover and its structural complexity. Its theoretical maximum is 3.0 if there was 100% cover in each of the three vegetation layers. The separate measures of large and small diameter trees, woody and non-woody mid-layer vegetation, and woody and non-woody ground cover were all visual estimates of areal cover. XCMGW is the same as XCMG, but sums areal cover for only the woody components in these three layers, giving an indication of the longevity and sustainability of perennial vegetation in the riparian corridor (Kaufmann et al, 1999). We will examine region-specific reference site data and the relationship between riparian vegetation and stream size, elevation, and precipitation to refine the natural expectations of woody and herbaceous vegetation in these layers. XCMGW will be most useful in assessing riparian vegetation condition in regions expected to have woody riparian vegetation, where complex, multi-layered vegetation indicates longevity and sustainability of vegetation in the riparian corridor. In regions where woody vegetation is not expected naturally, the total riparian vegetation cover variable (XCMG) may prove more useful, again setting subregion-specific natural expectations based on reference sites and their basin size, elevation and precipitation.

XCDENMID is an instrument-aided visual quantification of canopy density determined with adequate spatial representation on stream reaches during a time period when vegetation canopy density was not changing greatly (i.e., trees are not rapidly loosing or gaining leaves). Consequently, it is not surprising that it was determined with considerable precision (RMSE=5.58% and S/N = 34.8). XCMG and XCMGW were respectively, moderate and high in precision, with S/N ratios of 3.8 and 8.0 (Table PHAB-4).

Riparian Vegetation Alteration (CDF Figures PHAB-351 to 364):

We calculated a composite riparian condition index (QR1) from the reach summary data describing the cover and structure of riparian vegetation and a proximity-weighted tally of streamside human activities. QR1 has a theoretical minimum approaching zero where there is no riparian vegetation and very high values of W1_HALL, the proximity weighted tally of streamside human land use activities. It approaches 1.0 where there is abundant, complex riparian woody vegetation, high bankside canopy density (measured with densiometer), and no visible human land use activities or channel alterations. It is

intended for use in those riparian settings in regions where reference condition is a multi-storied woody vegetation corridor (XCMGW approaching 2.0), with bankside canopy density (XCDENBK) generally complete (85%-100%) along stream banks, and along rivers above bankfull height. Reference condition is set near zero for the types of riparian human activities identified by the EMAP Physical Habitat field methods (Peck et al.2005a; Peck et al., 2005b). QR1 is then defined as the geometric mean of three scaled variables as follows (the cube-root is taken to reduce extreme skewness in the product of the three component variables:

QR1= {(QRVEG1) (QRVEG2) [1/ (1+W1_HALL)]} $^{0.333}$; where:

if XCMGW <=2.00, then QRVeg1=.1+(.9 (XCMGW/2.00)), and

if XCMGW >2.00 then QRVeg1=1; and

QRVeg2=0.1 + [0.9(XCDENBK/100)]; and

W1_HALL= distance weighted tally of in-channel, riparian, and near stream human activities;

QR1 decreases with increases in streamside human activities (W1_HALL), and increases with increasing riparian woody vegetation complexity (XCMGW) and riparian cover density measured at the streambank with a canopy densiometer (XCDENBK).

We will examine region-specific reference site data and the relationship between riparian vegetation and stream size, elevation, and precipitation to refine the natural expectations in QR1.

QR1 is a very precise measure, with RMSE=0.04 in its possible range of 0 to 1 and a S/N ratio of 16.6 (Table PHAB-4).

Riparian Human Disturbances (CDF Figures PHAB-365 to 434):

Agriculture, buildings, and other evidence of human activities in the stream channel and its riparian zone may, in themselves, serve as indicators of habitat quality. They may also serve as diagnostic indicators of anthropogenic stress. EPA's 1992 stream monitoring workshop recommended field assessment of the frequency and extent of both in-channel and near-channel human activities and disturbances (Kaufmann, 1993). In-channel disturbances include channel revetment, pipes, straightening, bridges, culverts, and trash. Near-channel riparian disturbances include buildings, lawns, roads, pastures, orchards, and row crops.

For the EMAP-W, we use a proximity-weighted tally of single and multiple types of human activities and disturbances along each stream reach (e.g., W1H_Crop and W1_HAG) as direct measures of Riparian Disturbance. These indices are based on visual observations at 22 positions along each reach. Totally undisturbed stream reaches would have zero values for these measures of riparian human disturbances. However, we will set ecoregion-specific reference expectations based on values observed at minimally-disturbed reference sites. We transformed the variable W1_HALL, a proximity-weighted tally of all the targeted types of human activities into an index that is more sensitive at the low end of disturbance and has a range constrained

from 0 to 1. The new variable, QRDIST1=1/ (1+W1_HALL), is an *inverse* measure of riparian disturbance, with value of 1 when there are no observable human disturbances, and approaches 0 as the number and extent of human disturbances increases. Note that QRDIST1 was one of the component metrics used to define the riparian vegetation alteration variable QR1 in the previous section.

W1H_CROP and W1H_ROAD were determined with high to moderate precision relative to their variation throughout the West, with S/N ratios of 11.2 and 6.0 (Table PHAB-4). Lower precision was achieved in W1_HAG, the sum of agricultural disturbances and W1H_WALL, a measurement of channel revetments (S/N 2.8 and 1.7). In the Xeric subregions, however, W1H_WALL was determined very precisely relative to its regional variation (S/N 33.4). The relative precision of Log10(1+W1_HALL) was moderate (S/N=3.8), as was that of QRDIST (S/N = 4.2).

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Tables

Table PHAB-1. Components of Physical Habitat Characterization in Wadeable Streams sampled by EMAP-West -- from Peck et al. (In Press)

TABLE 7-2. COMPONENTS OF PHYSICAL HABITAT CHARACTERIZATION

Component	Description
Thalweg Profile: (Section 7.4.1)	• Measure maximum depth, classify habitat and pool-forming features, check presence of backwaters, side channels and deposits of soft, small sediment at 10-15 equally spaced intervals between each of 11 channel cross-section transects (100 or 150 individual measurements along entire reach). • Measure wetted width and evaluate substrate size classes at 11 regular channel cross-section transects and midway between them (21 width measurements and substrate cross-sections).
Woody Debris Tally: (Section 7.4.2)	• Between each of the channel cross sections, tally large woody debris numbers within and above the bankfull channel according to length and diameter classes (10 separate tallies).
Channel and Riparian Characterization: (Section 7.5)	• At 11 cross-section transects (21 for substrate size) placed at equal intervals along reach length: - Measure: channel cross section dimensions, bank height, bank undercut distance, bank angle, slope and compass bearing (backsight), and riparian canopy density (densiometer). - Visually Estimate[a]: substrate size class and embeddedness; areal cover class and type (e.g., woody trees) of riparian vegetation in Canopy, Mid-Layer and Ground Cover; areal cover class of fish concealment features, aquatic macrophytes and filamentous algae. - Observe & Record[a]: Presence and proximity of human disturbances and large trees; presence of alien plants
Assessment of Channel Constraint, Debris Torrents, and Major Floods (Section 7.6)	• After completing Thalweg and Transect measurements and observations, identify features causing channel constraint, estimate the percentage of constrained channel margin for the whole reach, and estimate the ratio of bankfull/valley width. Check evidence of recent major floods and debris torrent scour or deposition.
Discharge: (see Section 6)	• In medium and large streams (defined in Section 6) measure water depth and velocity at 0.6 depth at 15 to 20 equally spaced intervals across one carefully chosen channel cross-section. • In very small streams, measure discharge by timing the filling of a bucket or timing the passage of a neutral buoyant object through a segment whose cross-sectional area has been estimated.

[a] Substrate size class is estimated for a total of 105 particles taken at 5 equally-spaced points along each of 21 cross-sections. Depth is measured and embeddedness estimated for the 55 particles located along the 11 regular transects A through K. Cross-sections are defined by laying the surveyor's rod or tape to span the wetted channel. Woody debris is tallied over the distance between each cross-section and the next cross-section upstream. Riparian vegetation and human disturbances are observed 5m upstream and 5m downstream from the cross section transect. They extend shoreward 10m from left and right banks. Fish cover types, aquatic macrophytes, and algae are observed within the channel 5m upstream and 5m downstream from the cross section stations. These boundaries for visual observations are estimated by eye.

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Table PHAB-2. Components of Physical Habitat Characterization in Non-Wadeable Rivers and Streams sampled by EMAP-West -- from Lazorchak et al (2000).

TABLE 6-1. COMPONENTS OF RIVER PHYSICAL HABITAT PROTOCOL

1. Thalweg Profile:

At 10 equally spaced intervals between each of 11 channel cross-sections (100 along entire reach):

- Classify habitat type, record presence of backwater and off-channel habitats. (10 between cross-sections, 100 total)
- Determine dominant substrate visually or using sounding rod. (10 between cross-sections, 100 total)

At 20 equally spaced intervals between each of 11 channel cross-sections (200 along entire reach)**:**

- Tally mid-channel snags -(20 between cross-sections, 200 total).
- Measure thalweg (maximum) depth using Sonar or rod (20 between cross-sections, 200 total)

2. Littoral/Riparian Cross-Sections: @ 11 stops ("transects") at equal intervals along reach length:

Measure/estimate from one chosen bank on 11 channel cross-sections :

- Gradient (clinometer or Abney level) between cross-section and previous one upstream.
- Bearing (compass) between cross-section and previous one downstream. **Alternatively, set GPS waypoints at transect midstream and all major channel bends, then record lat/long of these waypoints on field form.**
- Wetted width and Mid-channel bar width (laser range finder).
- Bankfull width and height (estimate).
- Incision height (estimate).
- Bank angle (estimate)
- Riparian canopy cover (densiometer) in four directions from chosen bank.
- Shoreline Substrate in the first 1m above waterline (est. dominant and subdominant size class).

In 20m long Littoral Plot extending streamward 10m from chosen bank : [1]

- Littoral depth at 5 locations systematically-spaced within plot (Sonar or sounding rod).
- Dominant and Subdominant substrate size class at 5 systematically-spaced locations (visual or sounding rod).
- Tally large woody debris in littoral plot and in bankfull channel by size and length class.
- Areal cover class of fish concealment and other features, including:

filamentous algae	overhanging vegetation	aquatic macrophytes
undercut banks	large woody debris	boulders and rock ledges
brush/small woody debris	live trees or roots	artificial structures

[1]Note: Boundaries for visual observations are estimated by eye. **(Continued)**

Table PHAB-2 (Continued). Components of Physical Habitat Characterization in Non-Wadeable Rivers and Streams sampled by EMAP-West -- from Lazorchak et al. (2000).

TABLE 6-1 (Contnued)

In 20m long Littoral Plot extending 10m landward starting at bankfull margin--both sides of river:[1]

- Estimate areal cover class and type (e.g., woody) of riparian vegetation in Canopy, Mid-Layer, and Ground Cover layers
- Observe and record human activities and disturbances and their proximity to the channel.
- Record species of alien (non-native) trees, shrubs, grasses visible within riparian plot.

Looking upstream and downstream from each Transect (both sides of river):

- Look for largest visible tree within 100m from the water's edge or as far as you can see, if less: Estimate diameter (Dbh), height, species, and distance from river edge.

2. For the whole Reach, after completing thalweg and littoral/riparian measurements:*

- Classify channel type and degree of constraint, identify features causing constraint, estimate the percentage of constrained channel margin for the whole reach, and estimate the bankfull and valley widths.

[1]Note: Boundaries for visual observations are estimated by eye.

Table PHAB-3. Metrics used to characterize the general attributes of stream and river physical habitat.

Habitat Volume (CDF Figures PHAB-1 to 14):

- LRP100 = *Log_{10}(RP100) = Log of Mean Residual Depth (cm)*

Scaled Habitat Volume (CDF Figures PHAB-15 to 28):

- LDvRP100 = *Log_{10}(RP100) – Log_{10}(Predicted RP100) = Deviation in Mean Residual Depth*

Habitat Complexity (CDF Figures PHAB-29 to 126):

- CVDpth = *SDDEPTH/XDEPTH = Coefficient of Thalweg Depth Variation*
- C1WM100 = *Number of Large Woody Debris pieces/100m of channel.*
- LV1W_msq = *Volume of Large Woody Debris per m2 of bankfull channel area (m3/m2).*
- XFC_NAT = *Areal Cover of "Natural" Concealment Features (excluding Aquatic Macrophytes)*
- XFC_NORK = *Areal Cover of Woody Debris, Brush, Undercut Banks, Overhanging Veg.*
- XFC_AQM = *Areal Cover of Aquatic Macrophytes*
- XFC_ALG = *Areal Cover of Filamentous Algae detectable by the unaided eye.*

Streambed Particle Size (CDF Figures PHAB-127 to 168):

- PCT_FN = *% Streambed Silt & Finer*
- PCT_SAFN = *% Streambed Sand & Finer*
- XEMBED = *% Substrate Embedded by Sand and Fines*

Scaled Streambed Particle Size (CDF Figures PHAB-169 to 210):

- DPct_FN=*Deviation of Pct_FN from expected value ("excess Fines")*
- DPct_SF=*Deviation of Pct_SAFN from expected value ("excess Sand+Fines")*
- DevLSub=*Deviation of LSUB_dmm from expected value (Streambed Fining Index)*

Relative Bed Stability (CDF Figures PHAB-211 to 224):

- LRBS_bw5 = *Log_{10} of diameter ratio: mean bed particle diameter / Critical (mobile) diameter at bankfull.*

Table PHAB-4. (Continued). Metrics used to characterize the general attributes of stream and river physical habitat.

Floodplain Interaction (CDF Figures PHAB-225 to 280):

- LSINU = *Log_{10}(SINU) = Log_{10}(Channel Sinuosity).*
- LINCIS_H = *Log_{10}(XINC_H - XBKF_H + 0.1) = Log of Incision from terrace to bankfull ht (m).*
- LBFWDRat = *Log_{10}{(BKF_W / BKF_H+(XDEPTH/100})= Log_{10} (Bankfull Width/Depth Ratio)*
- LBFXWRat = *Log_{10}(BKF_W / XWIDTH)= Log_{10} (Bankfull Width / Wetted Width) (~ an index of streamside flood inundation potential)*

Hydrologic Regime (CDF Figures PHAB-281 to 308):

- LQSLTR_rat = *Log_{10}{(Qsp+0.0000001)/LTROFF_M}=Log_{10}{low flow /annual mean runoff} (~ an inverse index of "droughtiness", where: Qsp = Flow_mps/WSAREAKM= (flow_cfs/35.315)/WSAREAKM*
- LBFXDRat =*Log_{10}{(XBKF_H+(XDEPTH/100) / (XDEPTH/100)}= Log_{10}(ratio of bankfull depth / wetted depth) ~ a morphometric index of "flashiness".*

Riparian Vegetation (CDF Figures PHAB-309 to 350):

- XCDENMID: *% Canopy Density measured midstream.*
- XCMG = *Riparian Canopy+Mid-+Ground Layer Vegetation (areal cover proportion)*
- XCMGW = *Riparian Canopy+Mid+Ground Layer <u>Woody</u> Veg.(areal cover proportion)*

Riparian Habitat Alteration (CDF Figures PHAB-351 to 364):

- QR1=*(QRVEG1*QRVEG2*QRDIST1)$^{0.3333}$; where:*

  if XCMGW <=2.00 then QRVeg1=.1+(.9(XCMGW/2.00));*

  if XCMGW >2.00 then QRVeg1=1; QRVeg2=.1+(0.9(XCDENBK/100)); and QRDIST1=1/(1+W1_HALL);*

Riparian Human Disturbances (CDF Figures PHAB-365 to 434):

- W1_HAG = *Riparian & near-Stream Agriculture – all types (proximity-wt'd tally)*
- W1H_ROAD = *Riparian & near-Stream Roads (proximity-wt'd tally)*
- W1H_CROP = *Riparian & near-Stream Rowcrop Agriculture (proximity-wt'd tally)*
- W1H_WALL = *Riparian & near-Stream Walls, Dikes, Revetment (prox.-wt'd tally)*
- QRDIST1 = 1/(1+W1_HALL) = *Prox-wt'd Inverse Index of Human Disturbances of All Types*

Table PHAB-4. Sample ranges, RMSE, and S/N variance ratios for 31 Physical Habitat variables selected for the EMAP-W Assessment (see Kaufmann et al. 1999 for ANOVA methods to calculate RMSE and S/N). For most variables these are based on 1524 unique sites and 90 repeat visits (years 2000-2004). XEMBED, LSINU, XCDENMID include wadeable streams only (1271 sites, 73 repeats). LDvRP100, DPct_FN, DPct_SF, and DevLSub include wadeable and non-wadeable in years 2000-2003 (1128 sites, 84 repeats). LQsLTR_rat includes wadeable only in years 2000-2003 (990 sites, 64 repeats).

Variable	Units	Minimum	Maximum	RMSE	S/N
LRP100	Log_{10}(cm)	-0.9417	+2.36	0.133	10.9
LDvRP100	log ratio	-1.76	+.724	0.129	5.5
CVDpth	ratio	0.070	5.71	0.110	7.4
C1WM100	pieces/100m	0.0	331	12.2	2.4
LV1W_msq	$Log_{10}(m^3/m^2)$	-6.0	-0.42	0.742	4.6
XFC_NAT	areal cover	0.0	3.205	0.214	2.1
XFC_NORK	areal cover	0.0	3.196	0.182	1.8*
XFC_AQM	areal cover	0.0	0.875	0.099	1.8*
XFC_ALG	areal cover	0.0	0.875	0.089	1.7*
PCT_FN	percent	0.0	100	5.50	22.2**
PCT_SAFN	percent	0.0	100	7.08	18.3**
XEMBED	percent	0.0	100	6.48	13.8
DPct_FN	percent	-55.6	+79.4	5.76	12.8**
DPct_SF	percent	-66.6	+93.2	6.77	9.2**
DevLSub	log ratio	-3.36	+2.49	0.277	9.0**
LRBS_bw5	log ratio	-4.50	+1.35	0.365	8.7**
LSINU	Log_{10} ratio	0.0	+1.02	0.046	4.3
LINCIS_H	Log_{10}(m)	-1.00	+1.46	0.255	3.9
LBFWDRat	Log_{10} ratio	0.066	2.24	0.11	6.0
LBFXWRat	Log_{10} ratio	-0.11	+1.97	0.075	6.9
LQSLTR_rat	log ratio	-7.36	+1.14	0.782	1.0*
LBFXDRat	ratio	0	2.00	0.10	4.7

Variable	Units	Minimum	Maximum	RMSE	S/N
XCDENMID	percent	0	100	5.58	34.8
XCMG	areal cover	0.0045	3.42	0.238	3.8
XCMGW	areal cover	0.00	2.79	0.148	8.0
QR1	index 0-1	0.142	1.00	0.044	16.6
W1_HAG	prox wt'd tally	0.00	2.17	0.313	2.8
W1H_ROAD	prox wt'd tally	0.00	1.13	0.087	6.0
W1H_CROP	prox wt'd tally	0.00	1.05	0.037	11.2
W1H_WALL	prox wt'd tally	0.00	1.50	0.099	1.7*
QRDIST1	index 0-1	0.145	1.00	0.110	4.2

* XFC_NORK: S/N in MT= 0.9; PL=2.6; XE=53.6

* XFC_AQM: S/N in MT= 0.8; PL=8.1; XE= 1.4

* XFC_ALG: S/N in MT= 5.5; PL=0.9; XE= 0.8

* LQSLTR_rat: S/N in MT= 0.8; PL=1.2; XE= 1.3

* W1H_WALL: S/N in MT= 1.6; PL= 0; XE= 33.4

** For these six variables, 4 of the 64 to 90 repeat visit pairs were excluded as outliers.

Presentation of Results

The following pages present empirical distribution estimates (CDFs) for all of the physical habitat variables and metrics discussed in the text, at three levels of geographic resolution: (1) all of the EMAP-West study area (12 states); (2) three climatic/topographic regions; and (3) ten aggregate ecological regions (from Table 1 and Figure 1 in Introduction). Physical habitat results are presented in the following order:

Habitat Volume (CDF Figures PHAB-1 to 14):

Scaled Habitat Volume (CDF Figures PHAB-15 to 28):

Habitat Complexity and Cover for Aquatic Biota (CDF Figures PHAB-29 to 126

Streambed Particle Size (CDF Figures PHAB-127 to 168):

Scaled Streambed Particle Size (CDF Figures PHAB-169 to 210):

Relative Bed Stability (CDF Figures PHAB-211 to 224):

Channel-Riparian and Floodplain Interaction (CDF Figures PHAB-225 to 280):

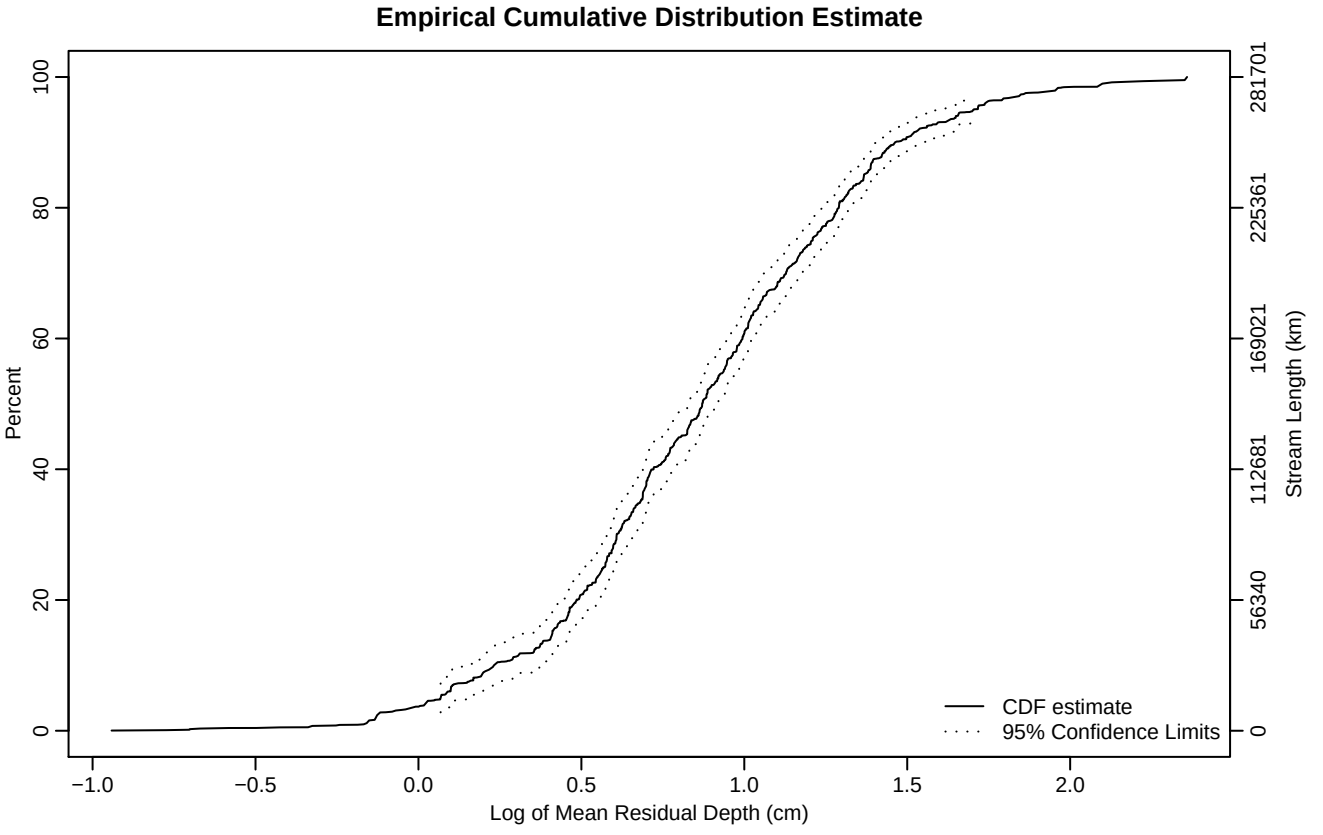
Hydrologic Regime and Hydrologic Alteration (CDF Figures PHAB-281 to 308):

Riparian Vegetation (CDF Figures PHAB-309 to 350):

Riparian Vegetation Alteration (CDF Figures PHAB-351 to 364):

Riparian Human Disturbances (CDF Figures PHAB-365 to 434):

Figure PHAB−1 Indicator: LRP100 Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.07	−0.10	0.11
10Pct	0.23	0.11	0.37
25Pct	0.57	0.51	0.60
50Pct	0.87	0.83	0.92
75Pct	1.21	1.16	1.27
90Pct	1.46	1.42	1.55
95Pct	1.70	1.62	1.81
Mean	0.88	0.84	0.92
Std Dev	0.46	0.43	0.49

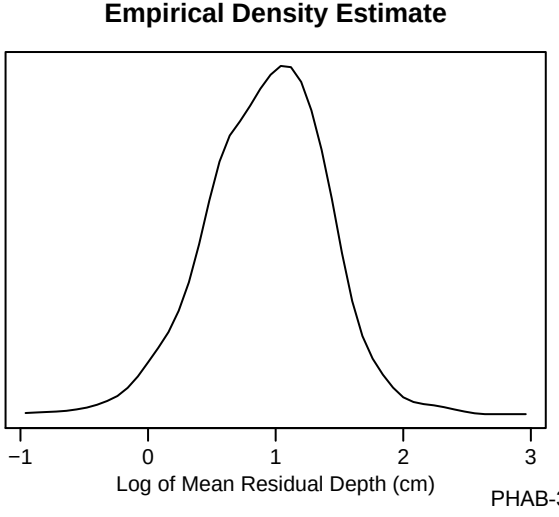
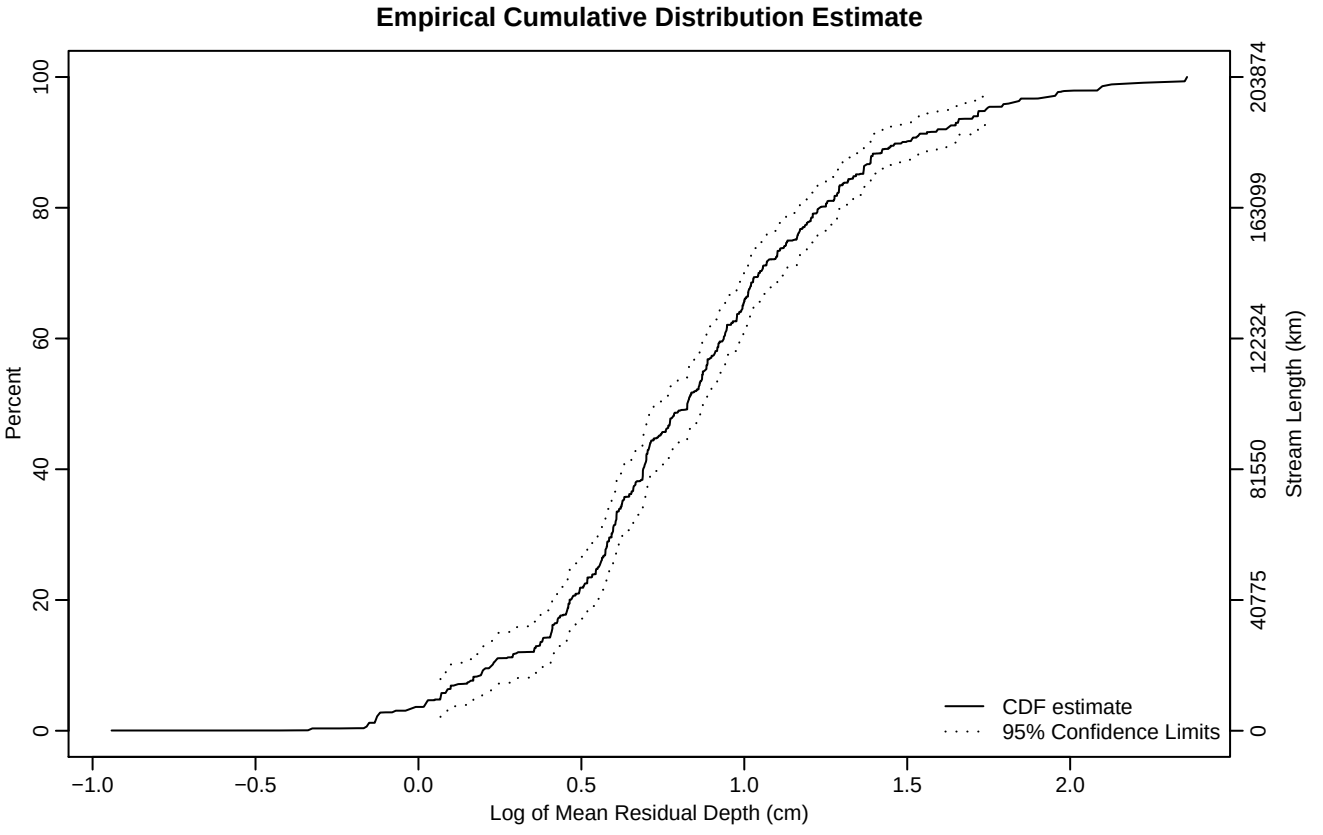


Figure PHAB−2 Indicator: LRP100 Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.07	−0.13	0.17
10Pct	0.23	0.09	0.38
25Pct	0.55	0.47	0.59
50Pct	0.83	0.74	0.88
75Pct	1.15	1.06	1.21
90Pct	1.48	1.39	1.65
95Pct	1.74	1.65	1.96
Mean	0.85	0.80	0.90
Std Dev	0.47	0.43	0.50

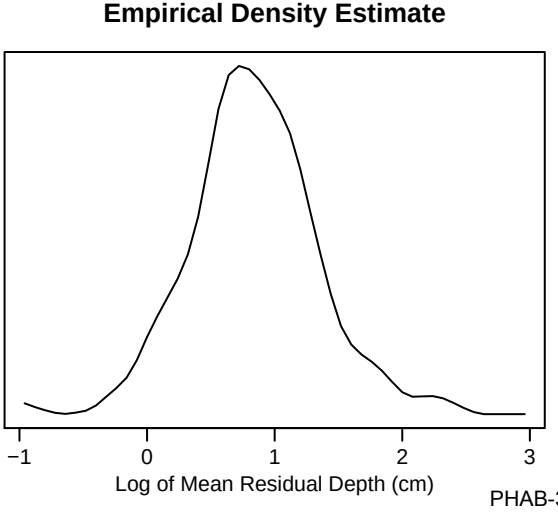
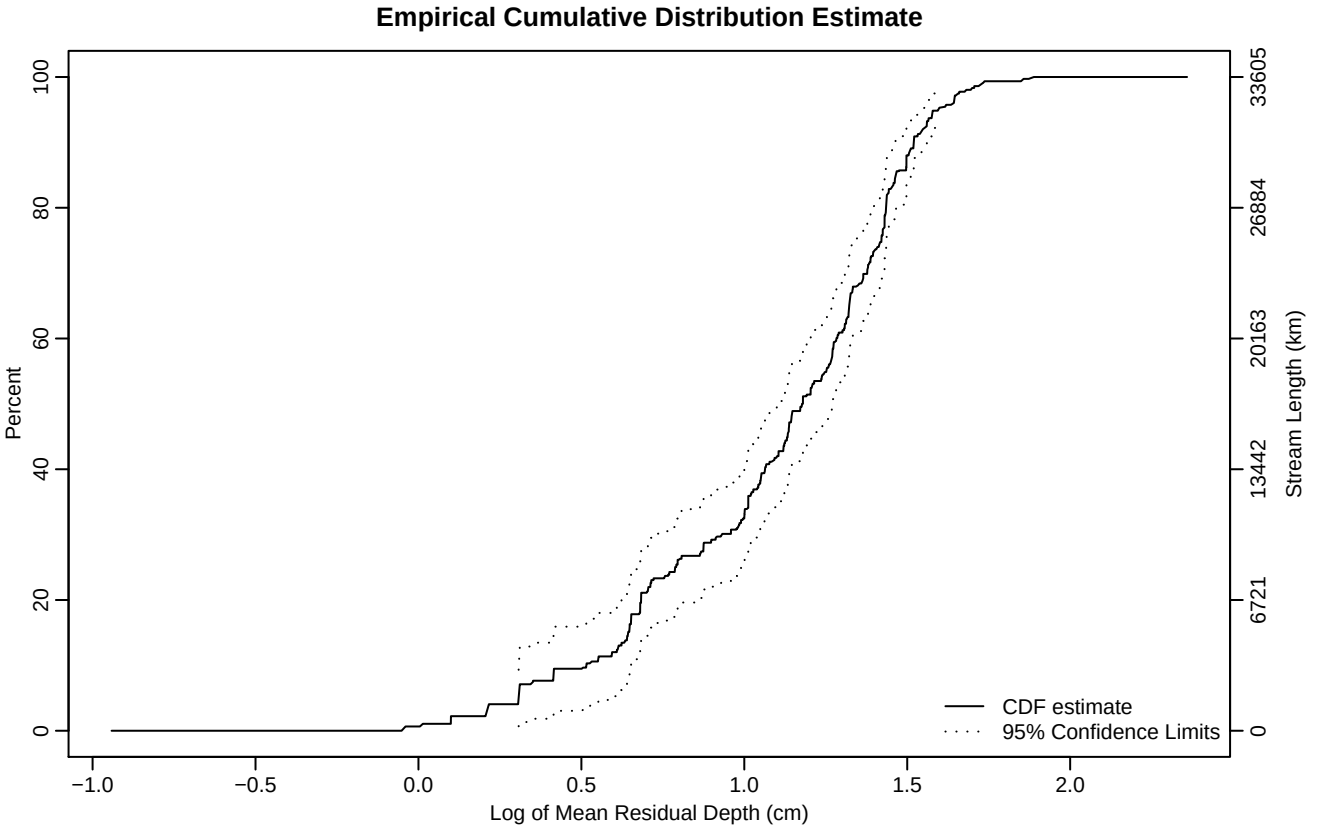


Figure PHAB−3 Indicator: LRP100 Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.31	0.10	0.41
10Pct	0.52	0.21	0.65
25Pct	0.79	0.68	0.99
50Pct	1.18	1.10	1.27
75Pct	1.42	1.35	1.44
90Pct	1.52	1.50	1.58
95Pct	1.60	1.56	1.66
Mean	1.09	1.02	1.16
Std Dev	0.39	0.35	0.43

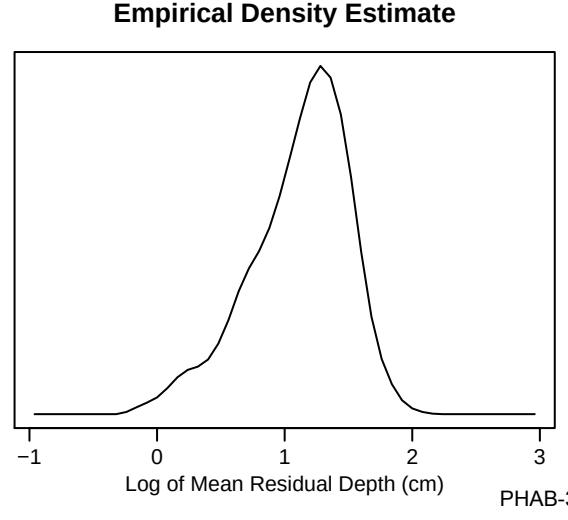
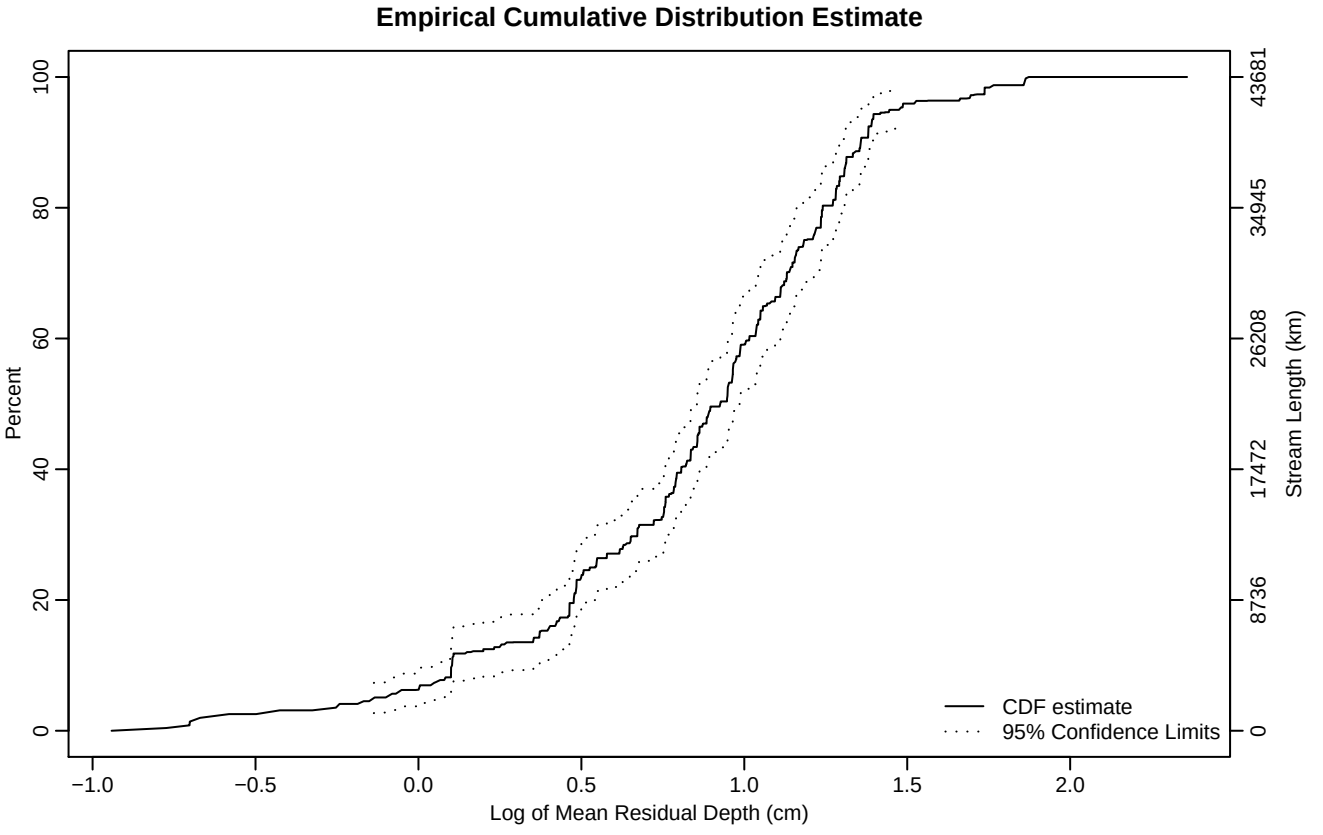


Figure PHAB−4 Indicator: LRP100 Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.14	−0.49	0.05
10Pct	0.10	0	0.35
25Pct	0.54	0.46	0.67
50Pct	0.93	0.84	0.99
75Pct	1.18	1.12	1.28
90Pct	1.36	1.30	1.48
95Pct	1.48	1.38	1.74
Mean	0.84	0.78	0.90
Std Dev	0.41	0.37	0.45

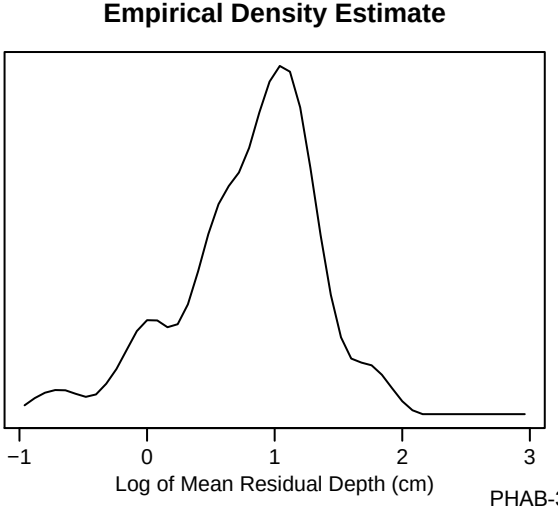
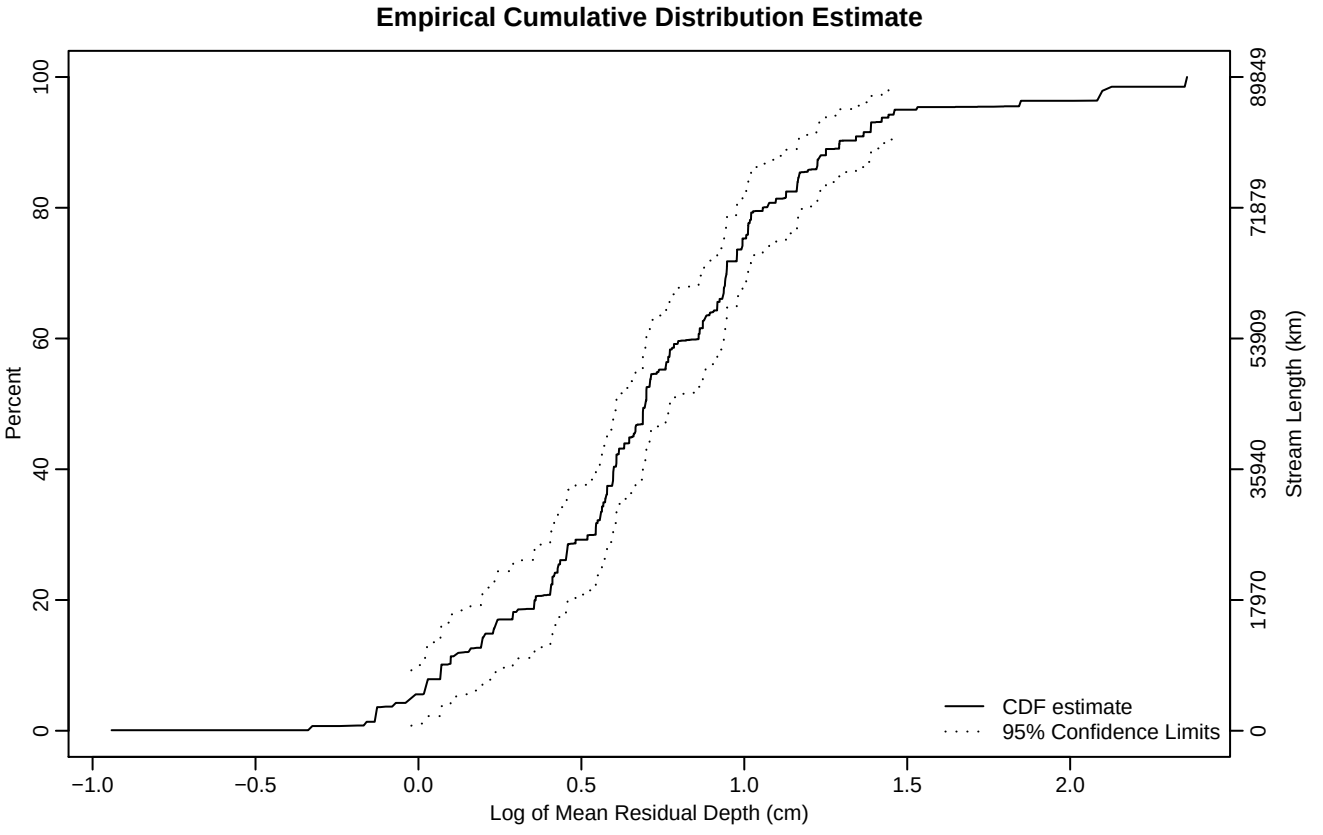


Figure PHAB−5 Indicator: LRP100 Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.02	−0.16	0.07
10Pct	0.07	−0.07	0.23
25Pct	0.43	0.24	0.56
50Pct	0.70	0.61	0.78
75Pct	0.99	0.94	1.13
90Pct	1.29	1.17	1.46
95Pct	1.46	1.37	2.35
Mean	0.74	0.65	0.83
Std Dev	0.47	0.41	0.54

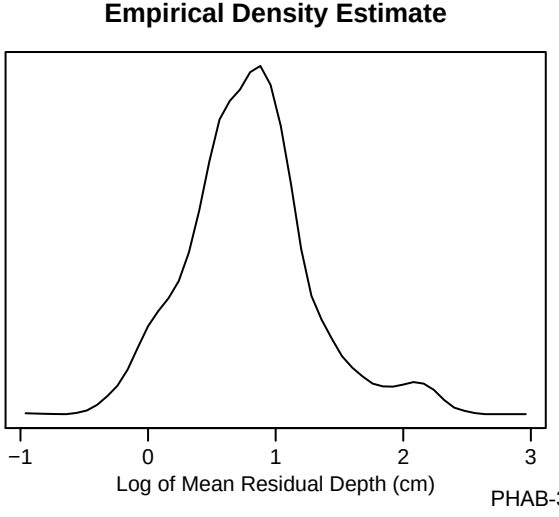
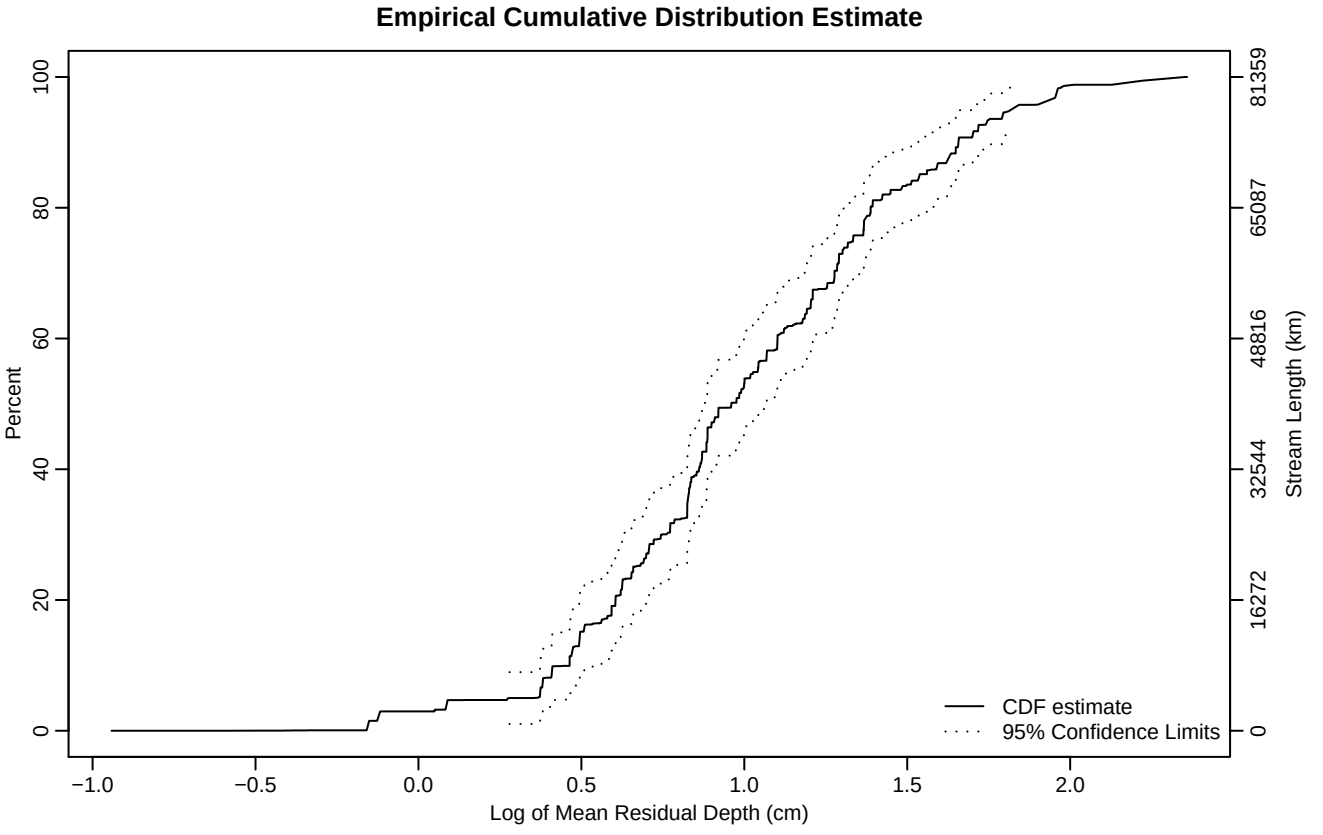


Figure PHAB−6 Indicator: LRP100 Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.28	−0.15	0.41
10Pct	0.46	0.27	0.51
25Pct	0.66	0.59	0.79
50Pct	0.96	0.87	1.07
75Pct	1.33	1.28	1.39
90Pct	1.66	1.56	1.81
95Pct	1.82	1.70	1.98
Mean	1.01	0.93	1.08
Std Dev	0.47	0.43	0.52

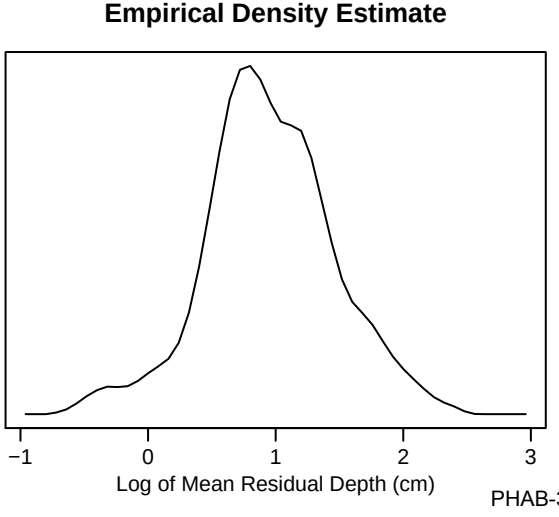
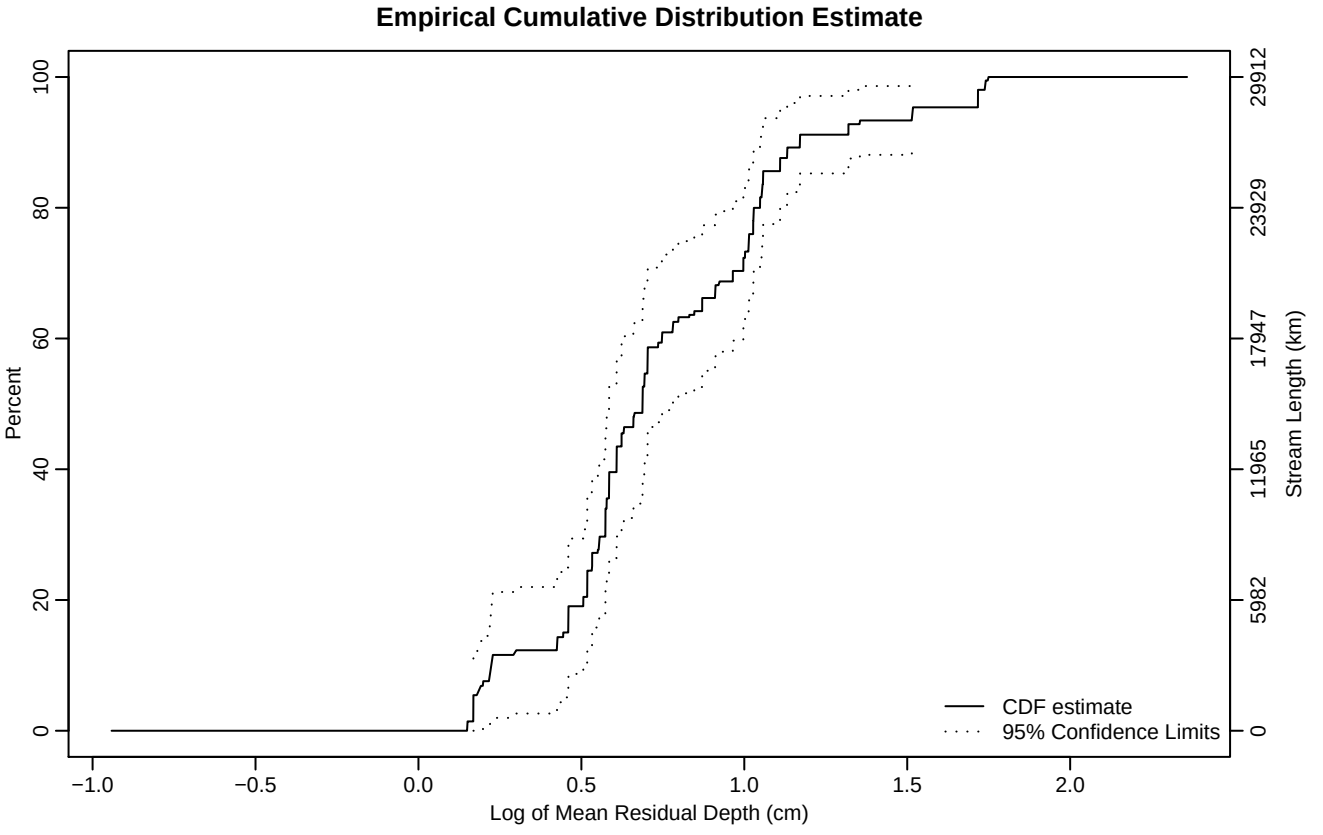


Figure PHAB−7 Indicator: LRP100 Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	0.17	0.20
10Pct	0.22	0.17	0.46
25Pct	0.53	0.43	0.59
50Pct	0.69	0.58	0.85
75Pct	1.01	0.87	1.06
90Pct	1.17	1.06	1.72
95Pct	1.52	1.17	1.75
Mean	0.75	0.67	0.84
Std Dev	0.37	0.30	0.43

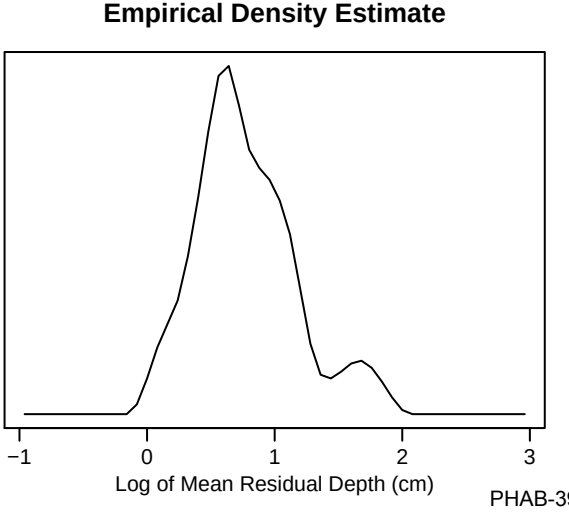
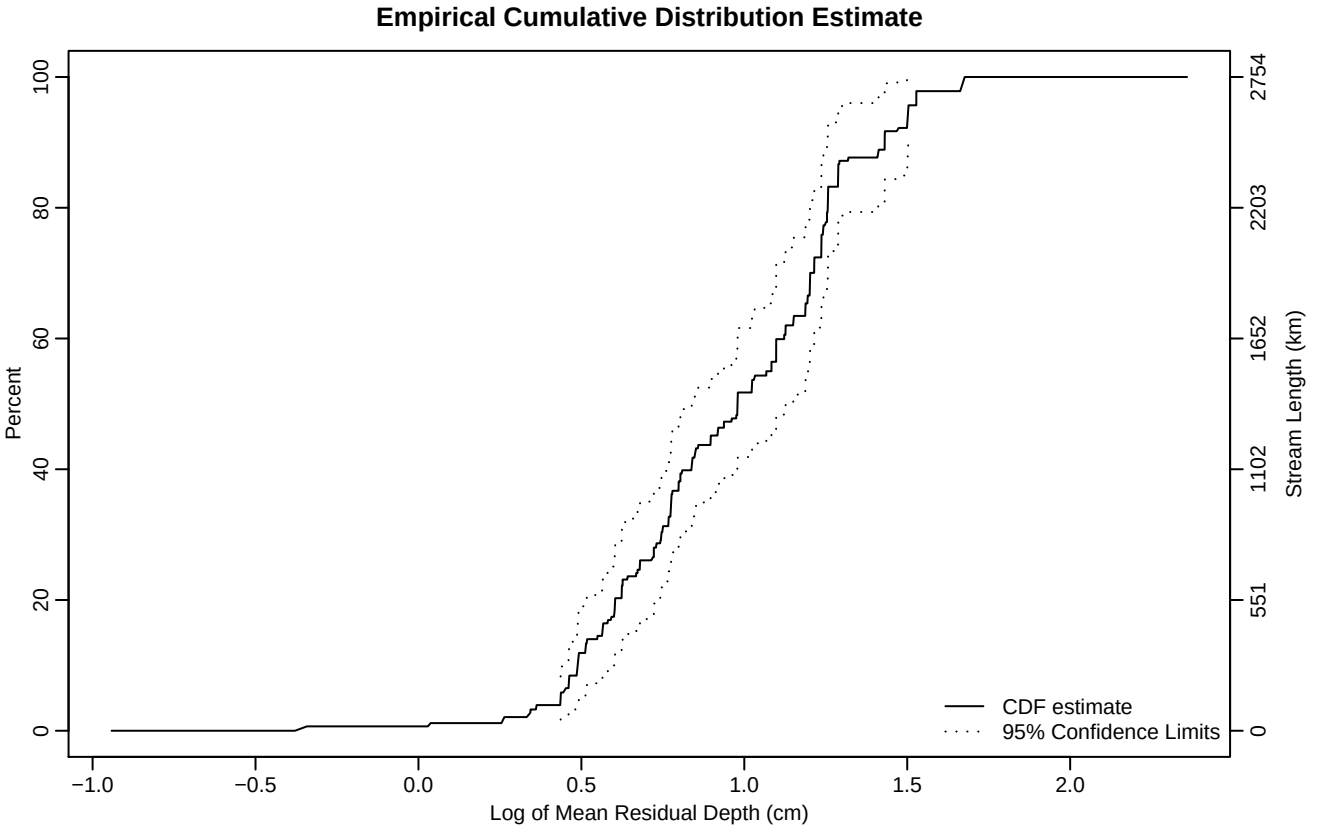


Figure PHAB−8 Indicator: LRP100 Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.44	0.34	0.46
10Pct	0.49	0.44	0.56
25Pct	0.68	0.57	0.77
50Pct	0.98	0.84	1.10
75Pct	1.24	1.19	1.29
90Pct	1.43	1.26	1.66
95Pct	1.50	1.32	1.68
Mean	0.96	0.89	1.03
Std Dev	0.35	0.30	0.39

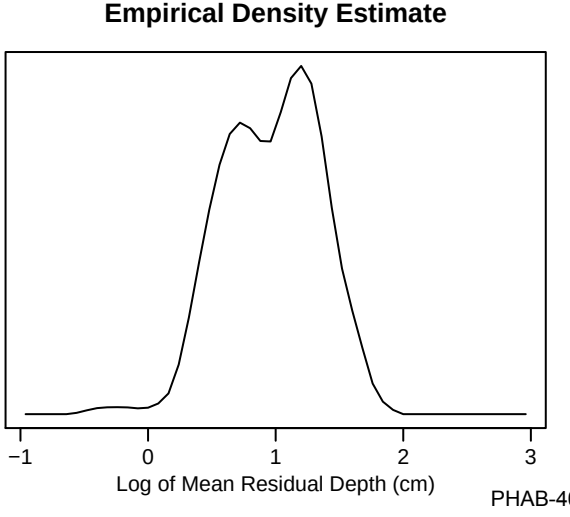
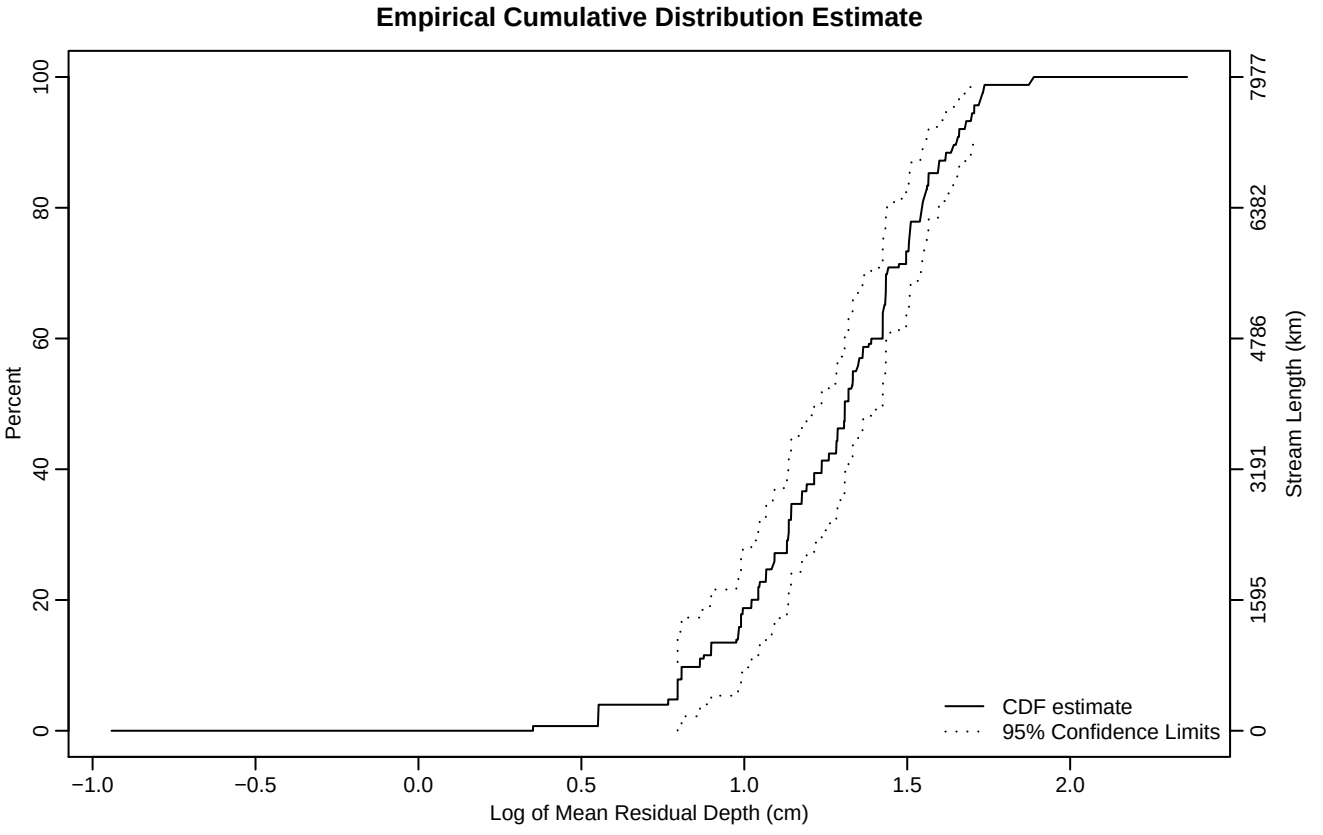


Figure PHAB−9 Indicator: LRP100 Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.80	−0.94	0.86
10Pct	0.86	0.55	0.99
25Pct	1.09	0.98	1.18
50Pct	1.31	1.21	1.42
75Pct	1.51	1.43	1.57
90Pct	1.65	1.56	1.72
95Pct	1.71	1.65	1.89
Mean	1.28	1.21	1.35
Std Dev	0.30	0.26	0.34

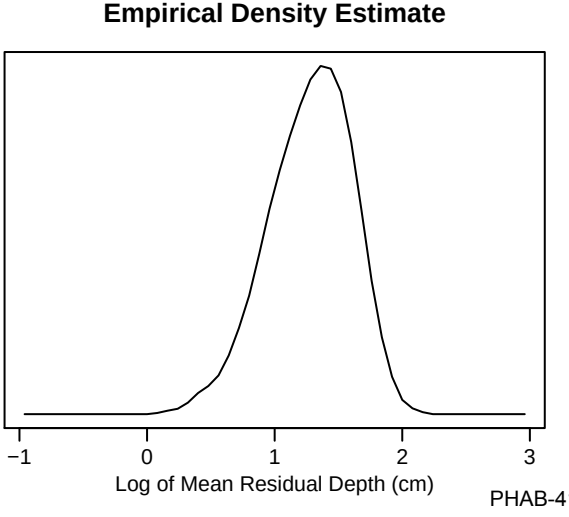
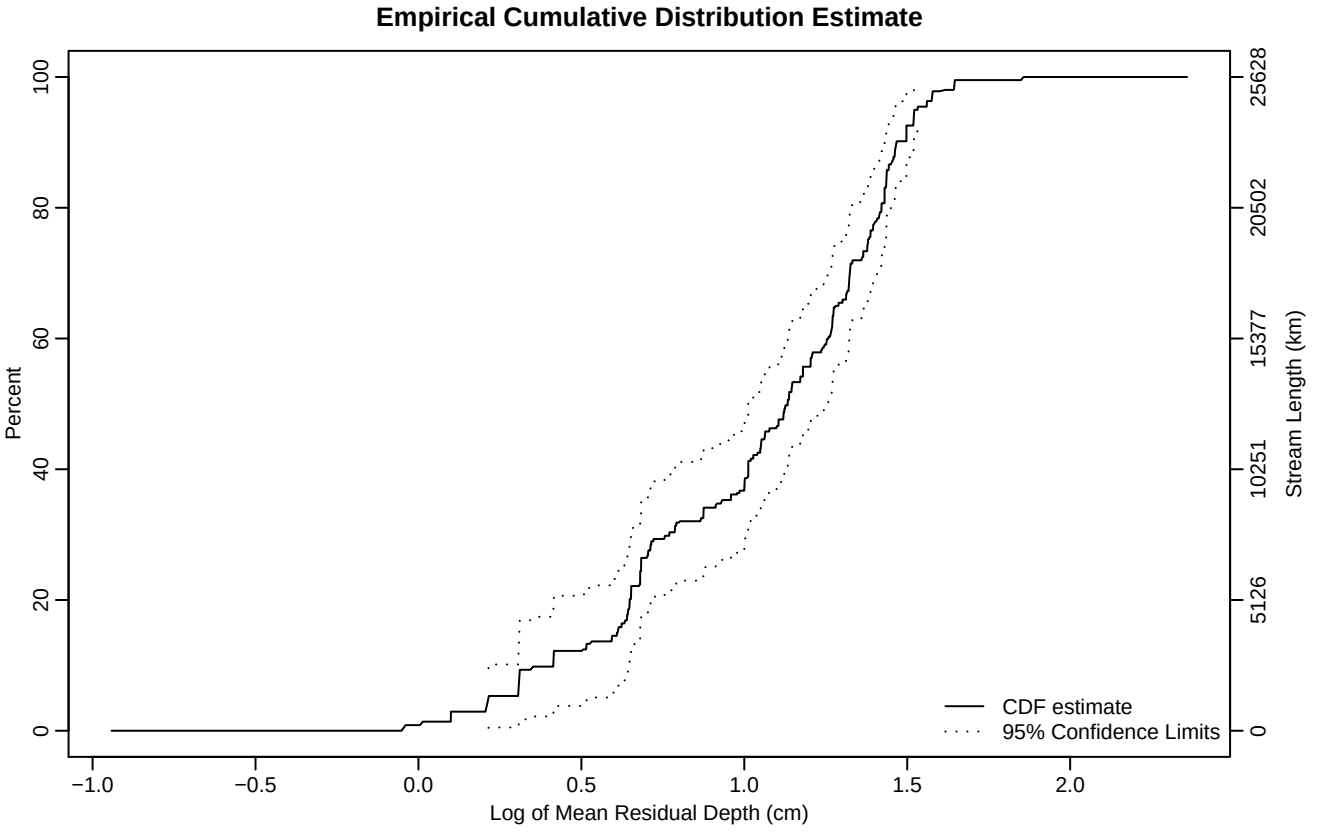


Figure PHAB−10 Indicator: LRP100 Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.21	0.10	0.31
10Pct	0.41	0.10	0.64
25Pct	0.68	0.63	0.87
50Pct	1.13	1.01	1.25
75Pct	1.38	1.31	1.44
90Pct	1.47	1.44	1.58
95Pct	1.53	1.50	1.64
Mean	1.03	0.94	1.12
Std Dev	0.41	0.36	0.45

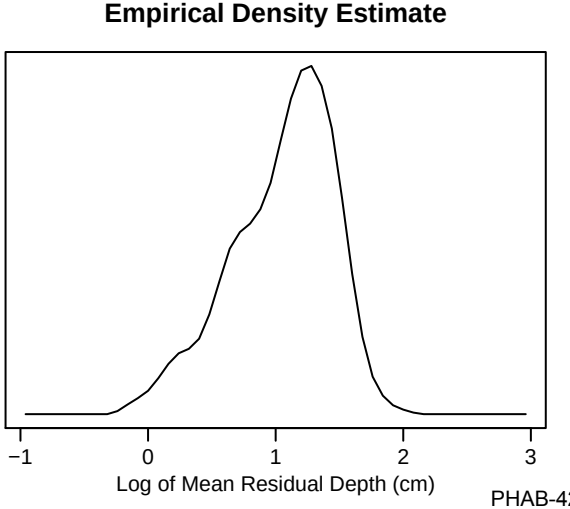
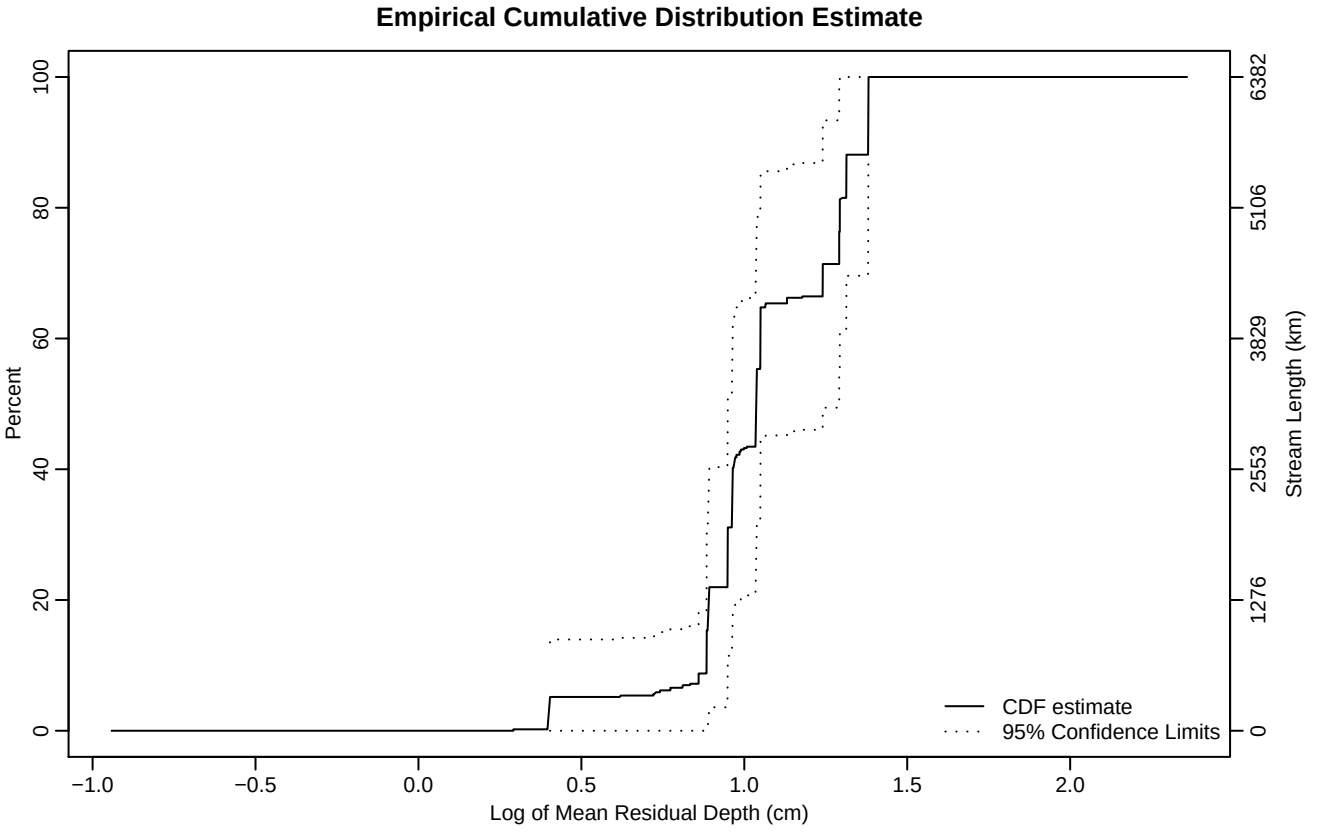


Figure PHAB−11 Indicator: LRP100 Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.40	0.40	0.77
10Pct	0.88	0.40	0.89
25Pct	0.95	0.77	1.03
50Pct	1.04	0.95	1.29
75Pct	1.29	1.04	1.38
90Pct	1.38	1.24	1.38
95Pct	1.38	1.29	1.38
Mean	1.06	0.96	1.16
Std Dev	0.23	0.15	0.32

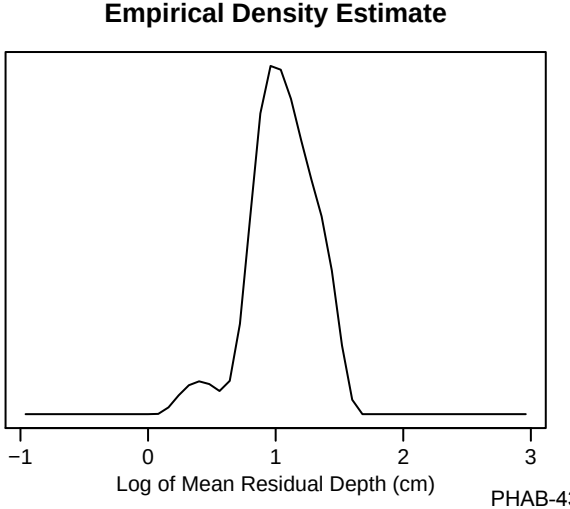
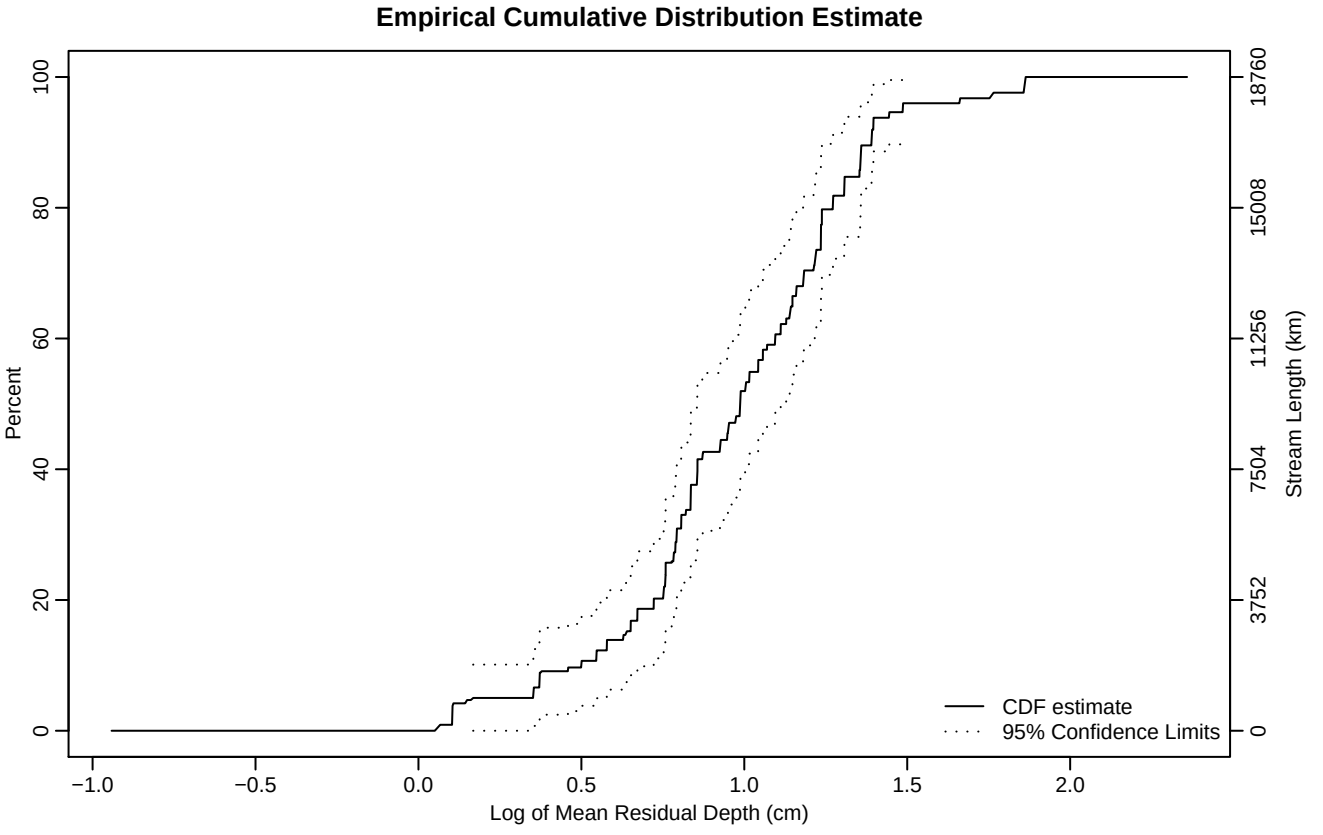


Figure PHAB−12 Indicator: LRP100 Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	−0.94	0.50
10Pct	0.50	0.10	0.65
25Pct	0.76	0.65	0.84
50Pct	0.99	0.84	1.13
75Pct	1.23	1.14	1.36
90Pct	1.39	1.31	1.66
95Pct	1.49	1.39	1.86
Mean	0.97	0.88	1.06
Std Dev	0.35	0.29	0.42

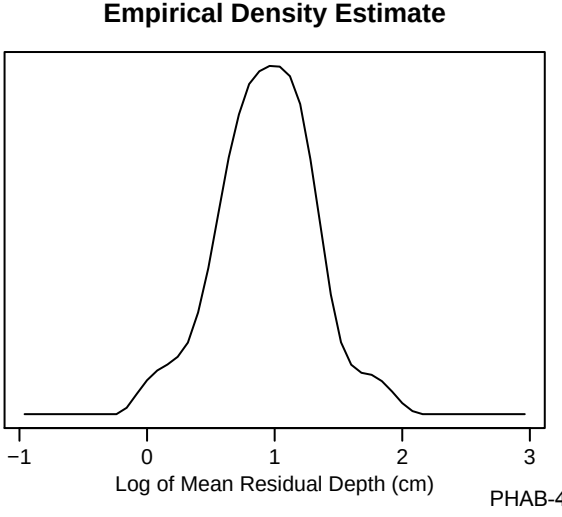
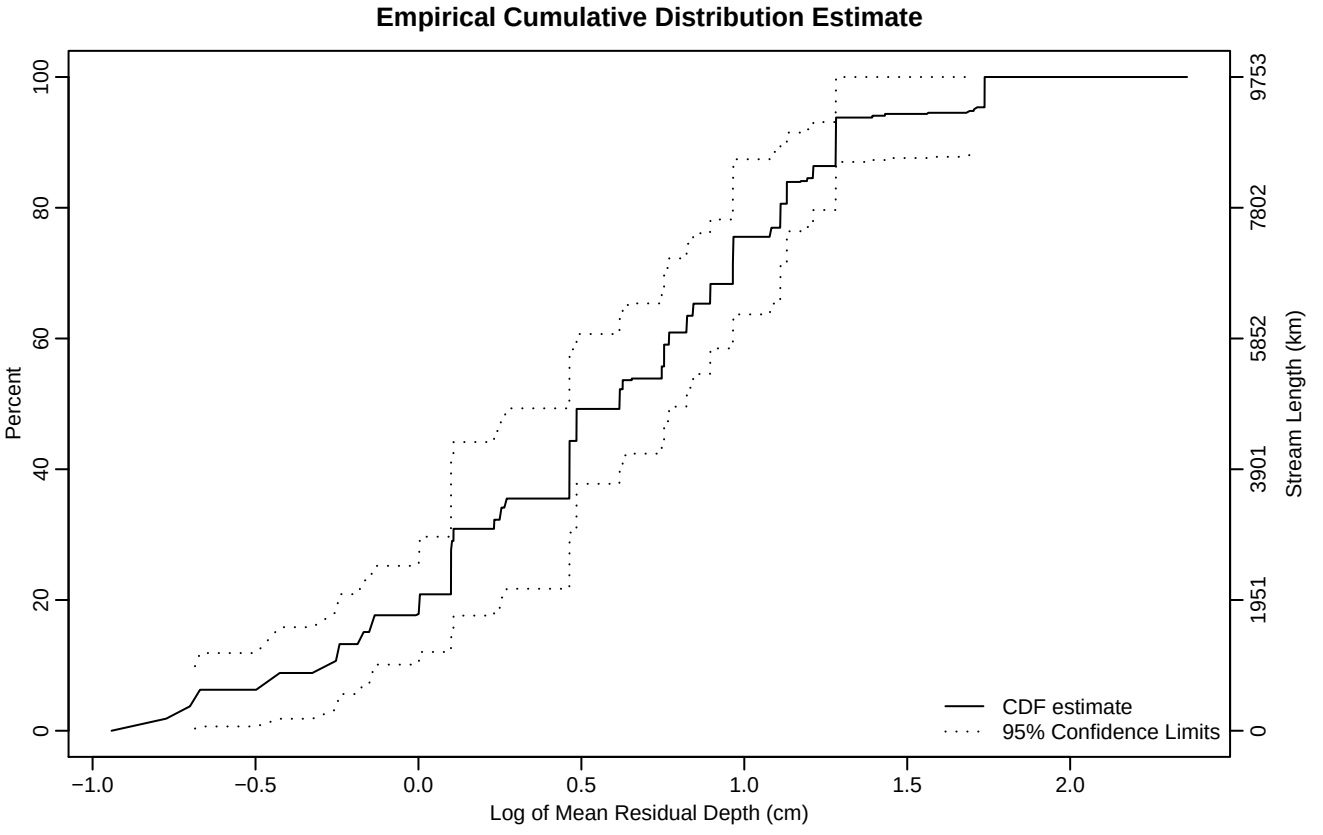


Figure PHAB−13 Indicator: LRP100 Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.69	−0.86	−0.31
10Pct	−0.28	−0.74	−0.14
25Pct	0.10	−0.15	0.27
50Pct	0.62	0.46	0.84
75Pct	0.97	0.77	1.28
90Pct	1.28	1.11	1.74
95Pct	1.70	1.28	1.74
Mean	0.55	0.42	0.69
Std Dev	0.47	0.40	0.54

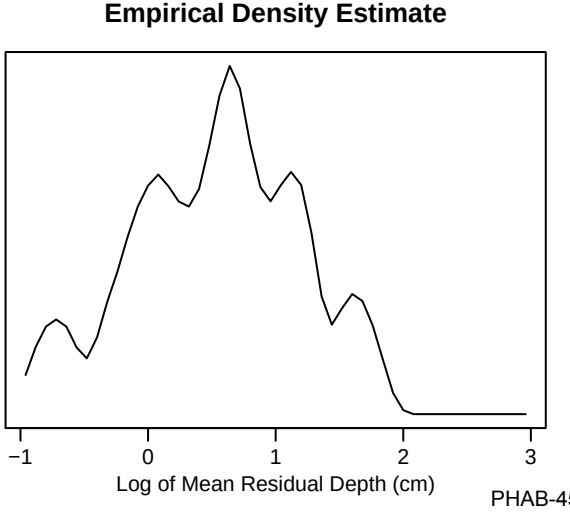
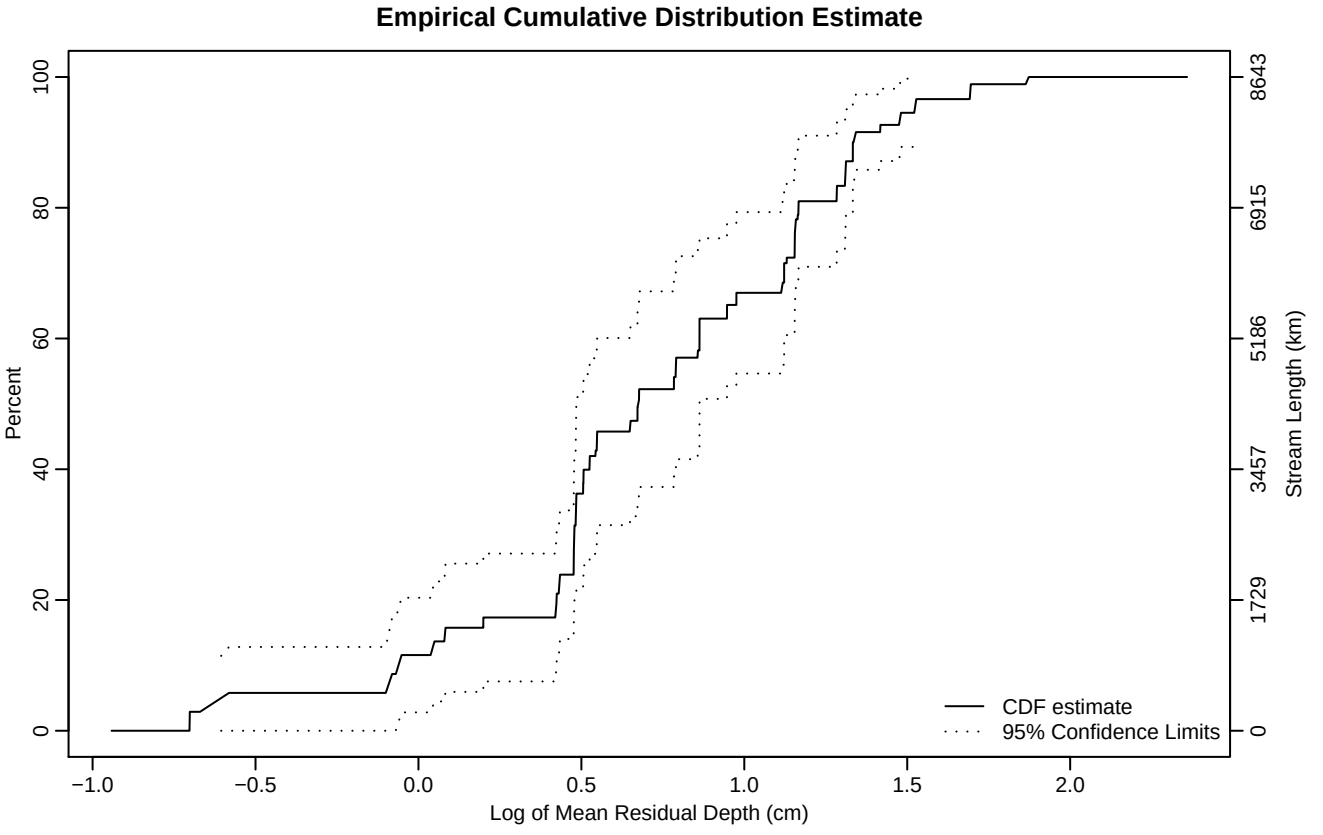


Figure PHAB−14 Indicator: LRP100 Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.61	−0.70	−0.06
10Pct	−0.06	−0.70	0.42
25Pct	0.48	0.08	0.48
50Pct	0.67	0.48	0.95
75Pct	1.15	0.95	1.31
90Pct	1.33	1.28	1.69
95Pct	1.52	1.33	1.87
Mean	0.71	0.56	0.85
Std Dev	0.51	0.41	0.60

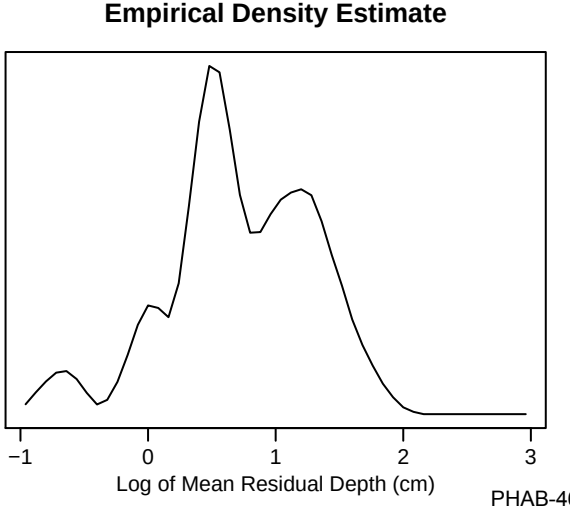
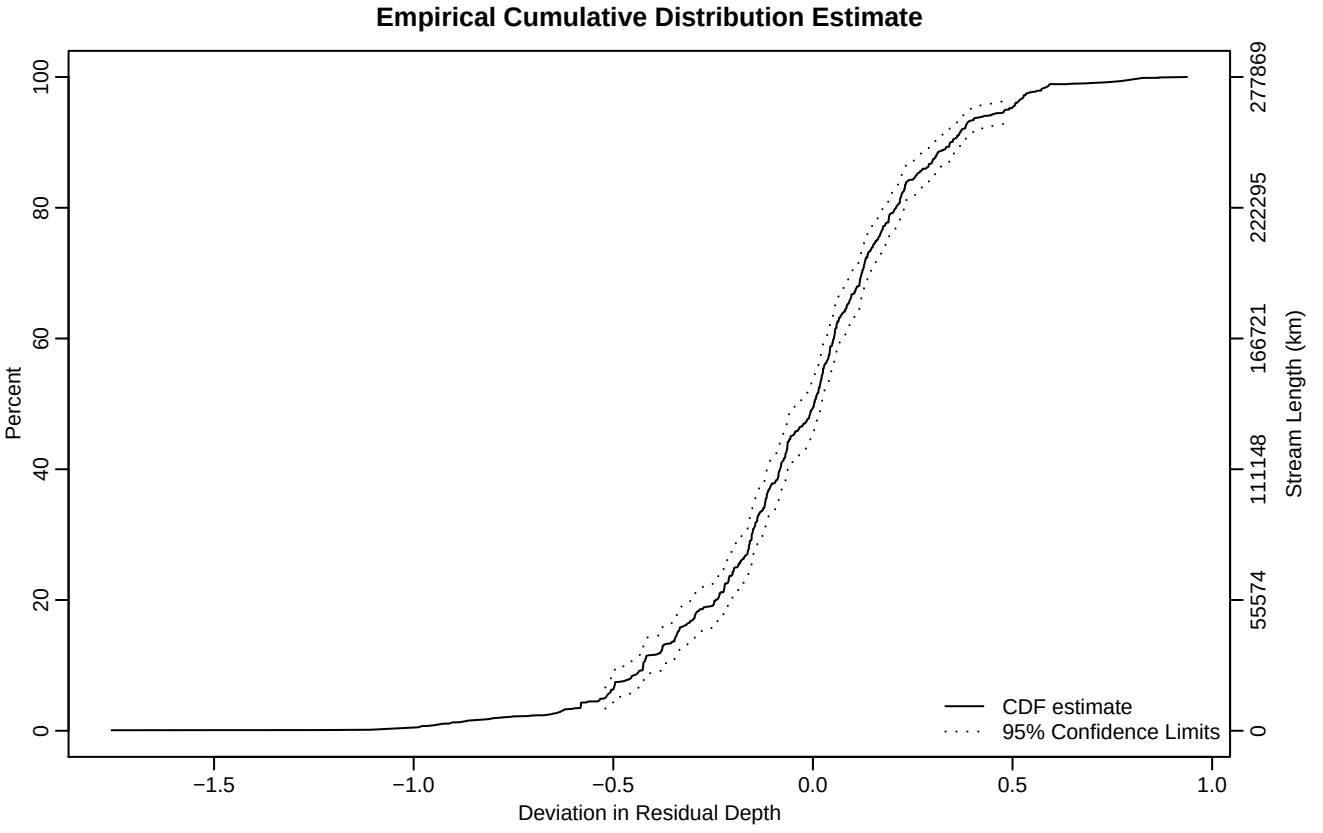


Figure PHAB−15 Indicator: LDvRP100 Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.52	−0.60	−0.50
10Pct	−0.43	−0.48	−0.38
25Pct	−0.19	−0.22	−0.16
50Pct	0	−0.04	0.02
75Pct	0.16	0.13	0.19
90Pct	0.34	0.31	0.38
95Pct	0.48	0.40	0.52
Mean	−0.03	−0.05	0
Std Dev	0.29	0.28	0.31

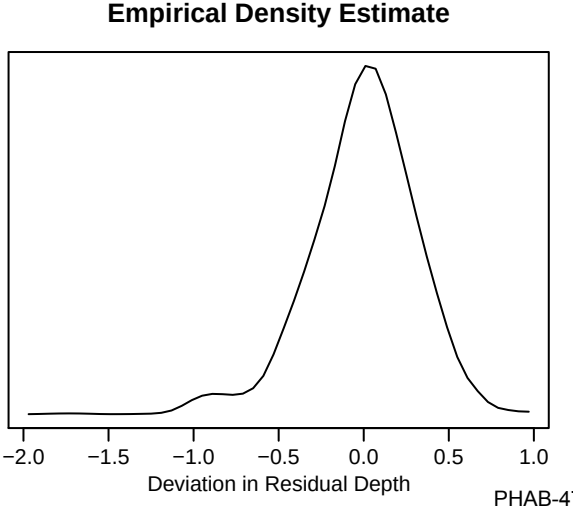
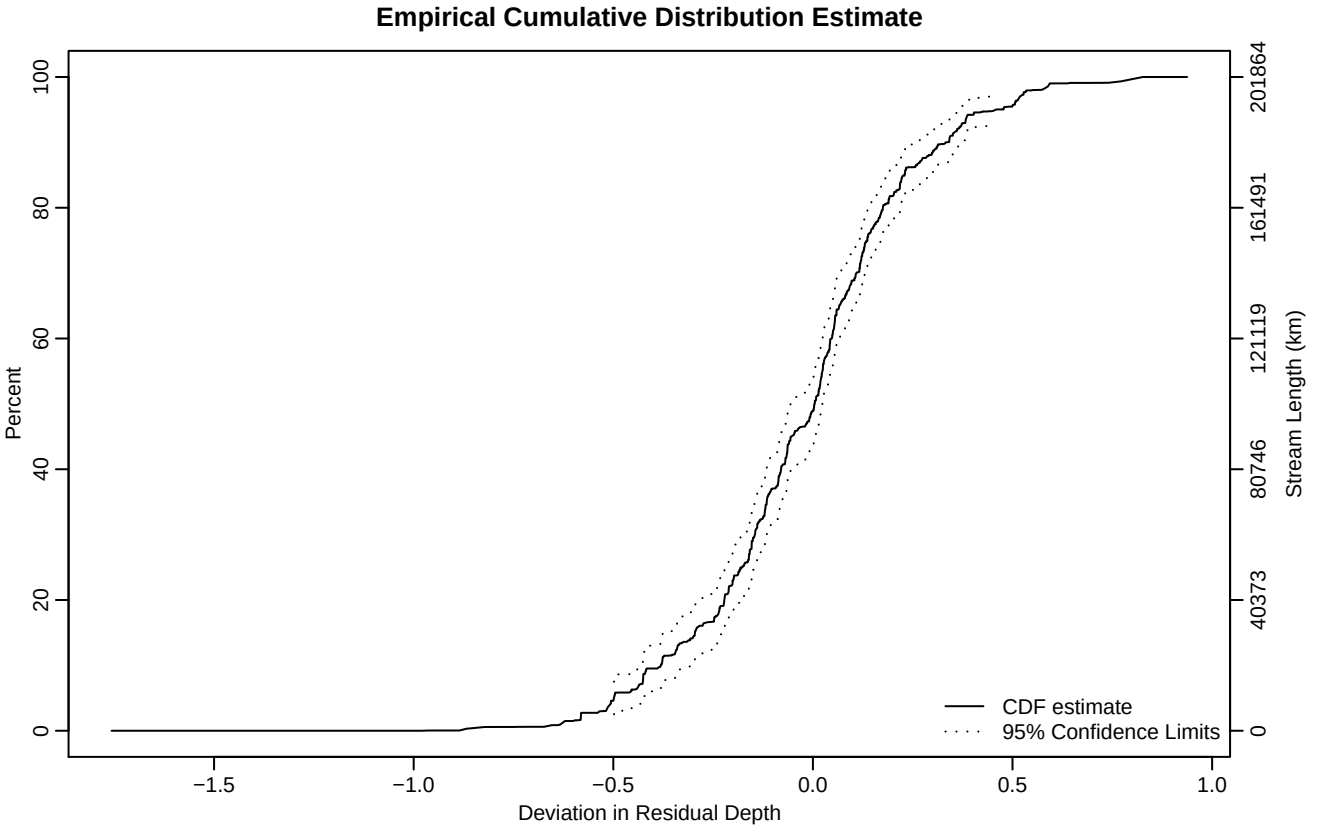


Figure PHAB−16 Indicator: LDvRP100 Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.50	−0.58	−0.43
10Pct	−0.38	−0.44	−0.32
25Pct	−0.18	−0.22	−0.15
50Pct	0	−0.06	0.02
75Pct	0.14	0.12	0.17
90Pct	0.33	0.27	0.38
95Pct	0.46	0.37	0.52
Mean	−0.02	−0.05	0.01
Std Dev	0.26	0.24	0.29

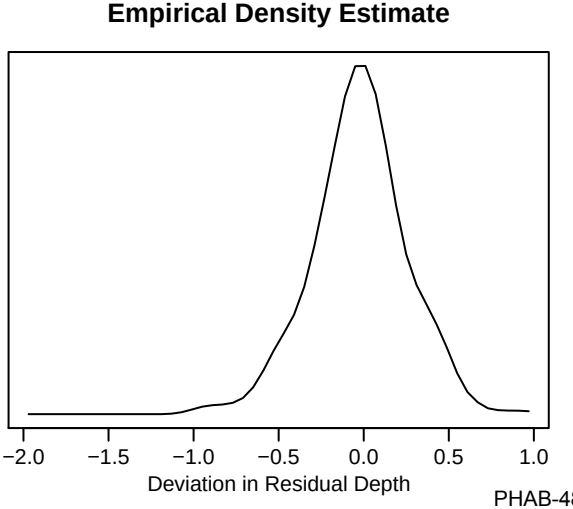
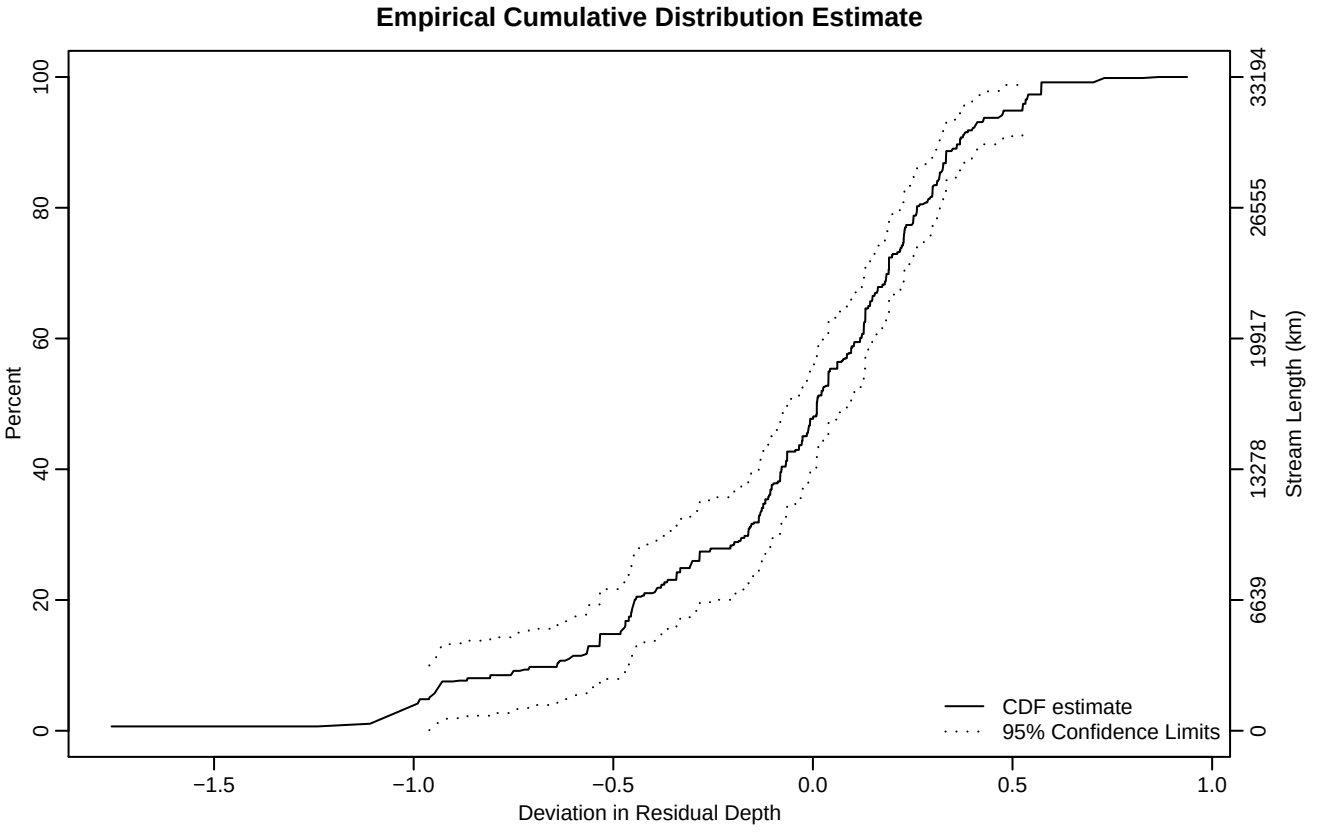


Figure PHAB−17 Indicator: LDvRP100 Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.96	−1.76	−0.64
10Pct	−0.64	−0.99	−0.47
25Pct	−0.31	−0.46	−0.14
50Pct	0.01	−0.06	0.10
75Pct	0.23	0.18	0.29
90Pct	0.37	0.32	0.48
95Pct	0.52	0.38	0.57
Mean	−0.07	−0.15	0.01
Std Dev	0.41	0.36	0.46

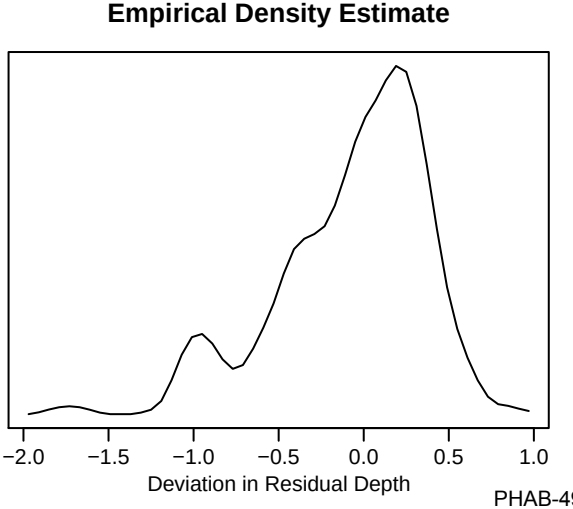
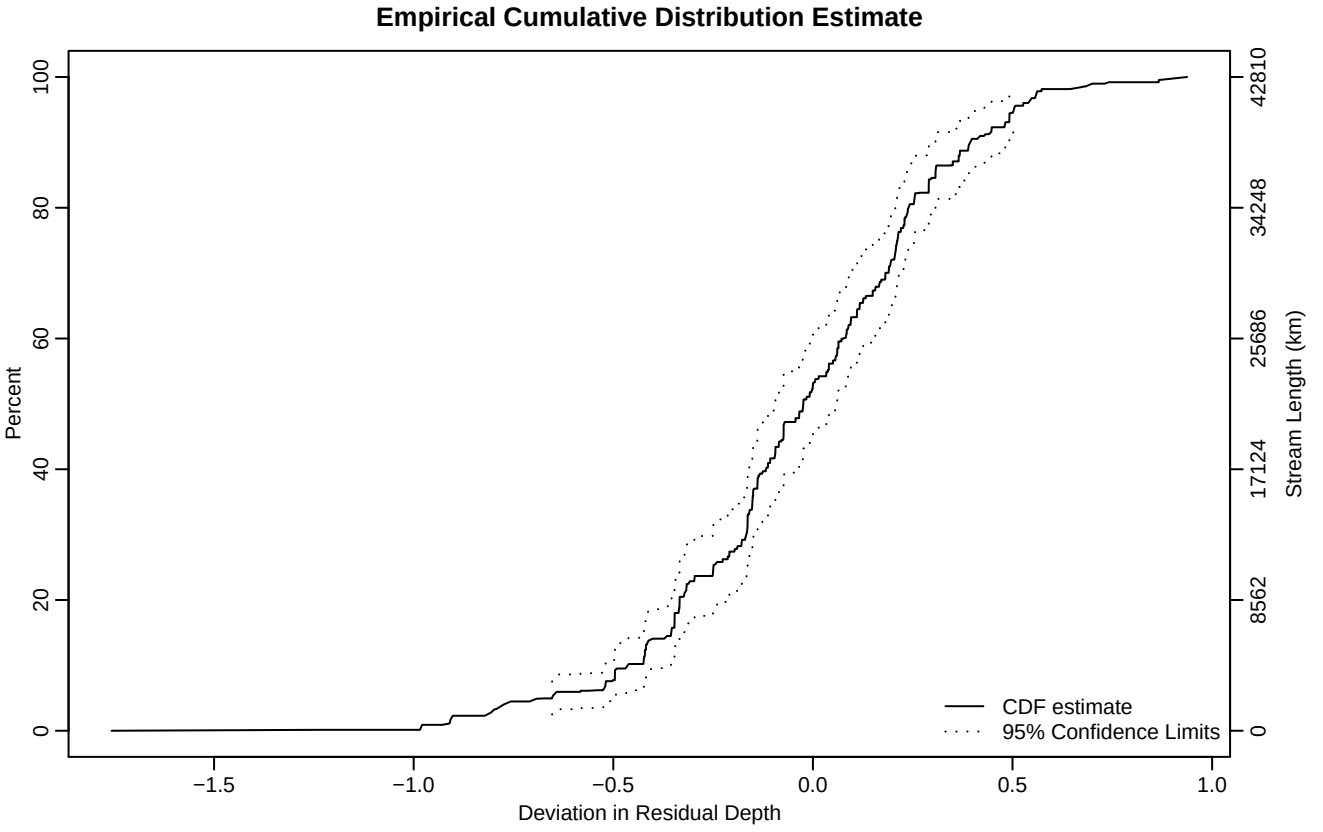


Figure PHAB−18 Indicator: LDvRP100 Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.65	−0.82	−0.50
10Pct	−0.46	−0.58	−0.40
25Pct	−0.25	−0.34	−0.16
50Pct	−0.02	−0.09	0.06
75Pct	0.21	0.17	0.25
90Pct	0.39	0.31	0.49
95Pct	0.50	0.45	0.65
Mean	−0.03	−0.08	0.02
Std Dev	0.32	0.29	0.35

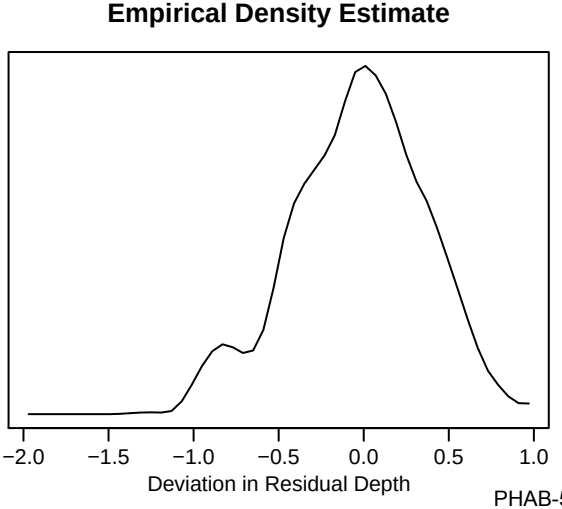
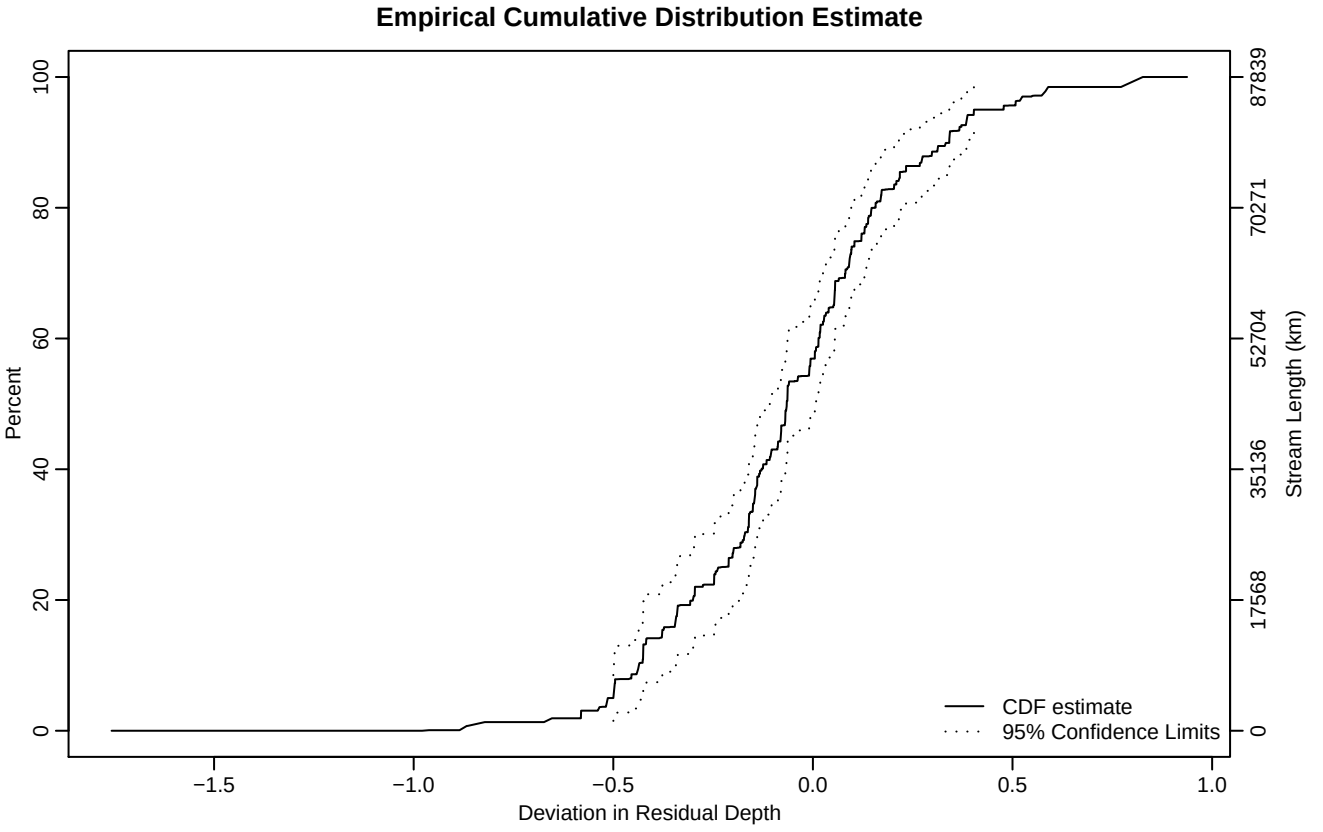


Figure PHAB−19 Indicator: LDvRP100 Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.50	−0.67	−0.45
10Pct	−0.44	−0.52	−0.37
25Pct	−0.23	−0.34	−0.16
50Pct	−0.07	−0.11	0.01
75Pct	0.12	0.06	0.17
90Pct	0.34	0.22	0.40
95Pct	0.40	0.34	0.78
Mean	−0.05	−0.10	0
Std Dev	0.29	0.25	0.33

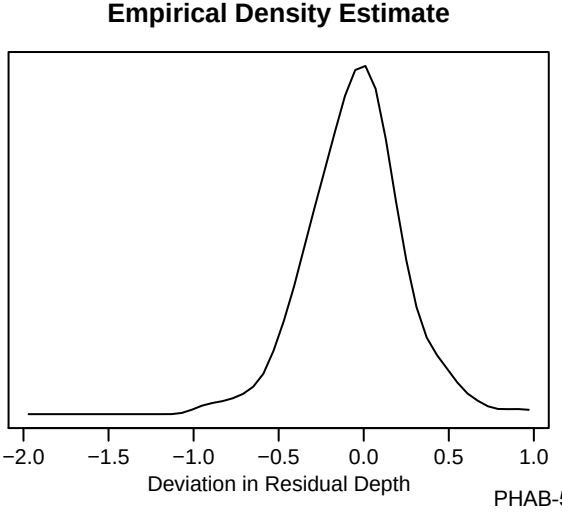
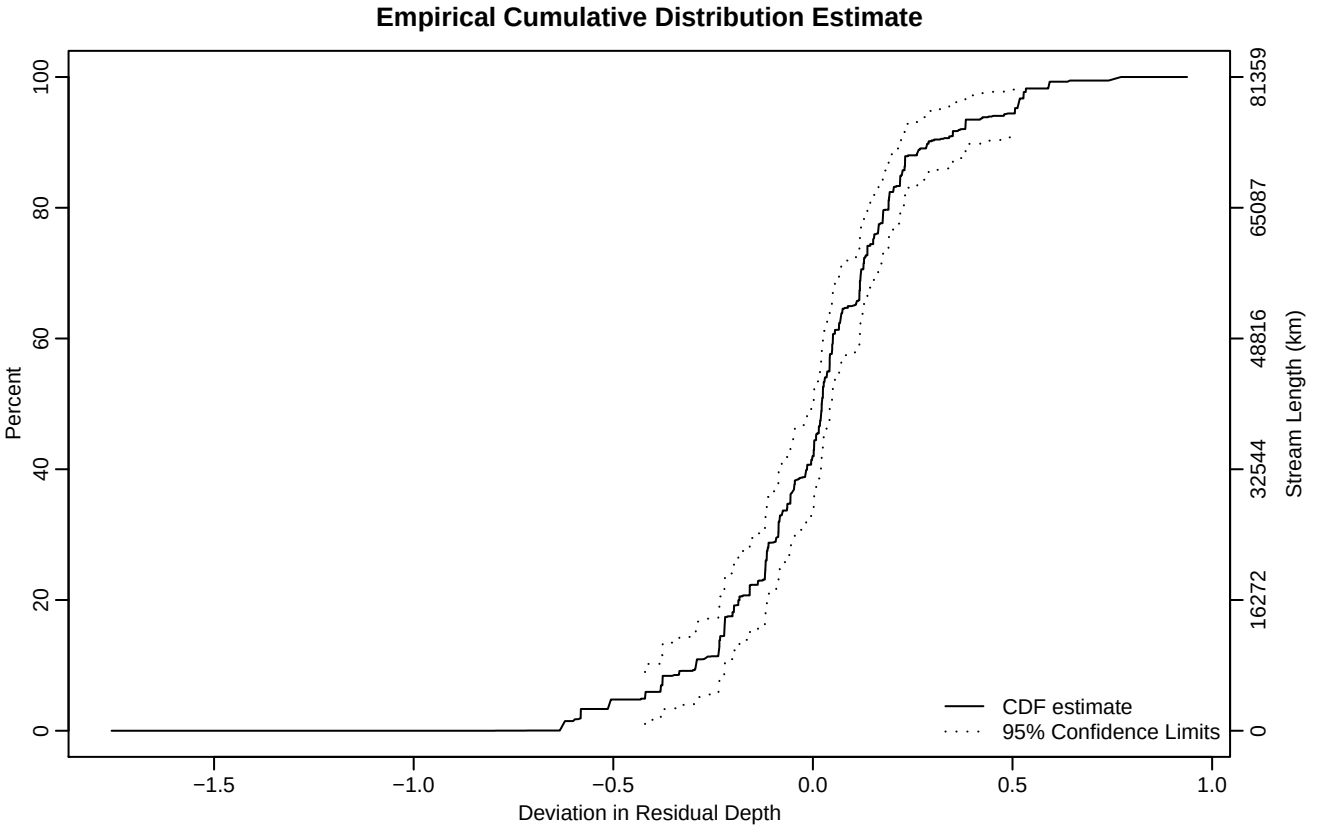


Figure PHAB−20 Indicator: LDvRP100 Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.42	−0.63	−0.33
10Pct	−0.29	−0.51	−0.22
25Pct	−0.12	−0.20	−0.08
50Pct	0.02	0	0.05
75Pct	0.15	0.12	0.19
90Pct	0.29	0.22	0.51
95Pct	0.51	0.35	0.59
Mean	0.01	−0.03	0.05
Std Dev	0.24	0.21	0.27

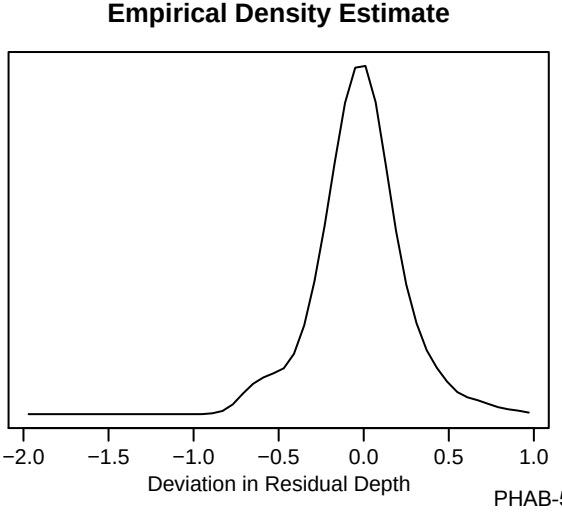
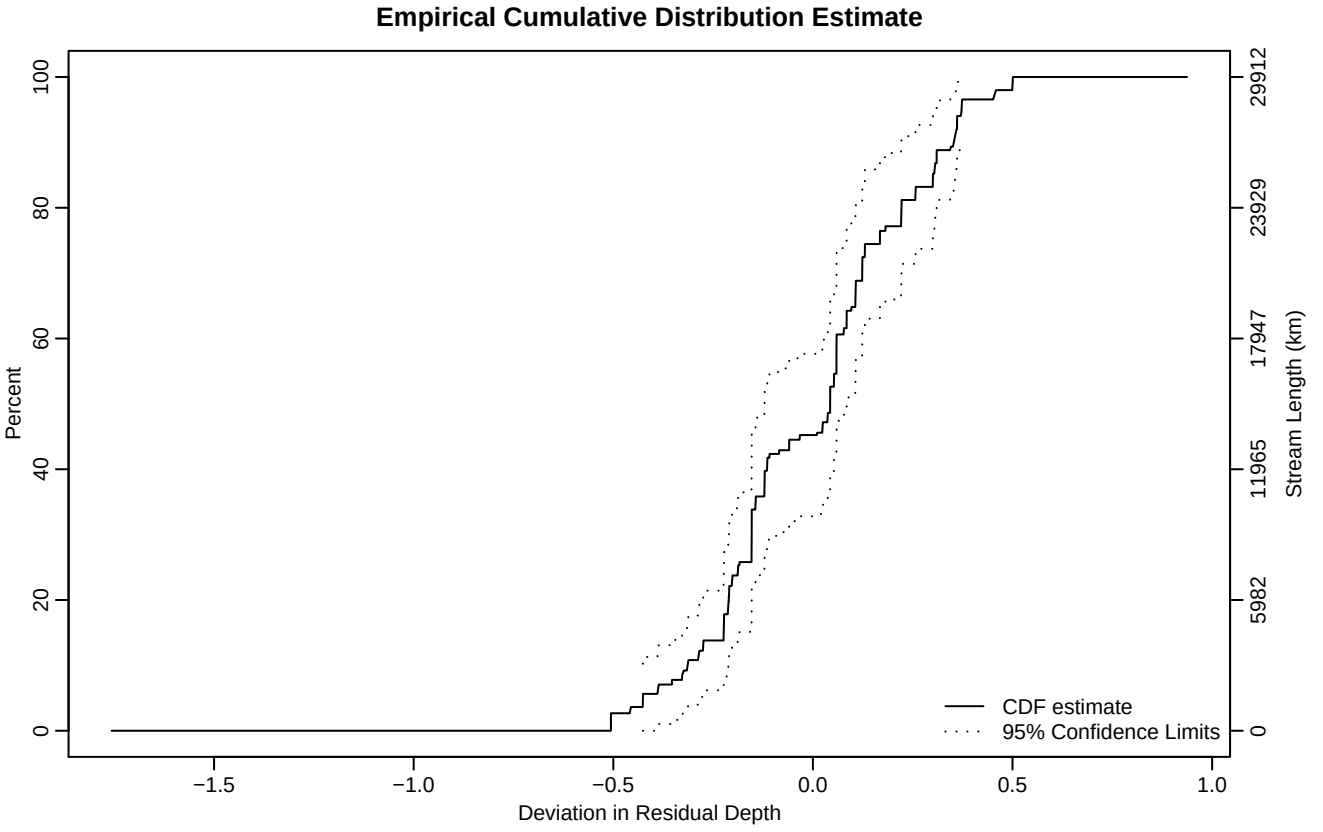


Figure PHAB−21 Indicator: LDvRP100 Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.43	−0.51	−0.32
10Pct	−0.31	−0.43	−0.22
25Pct	−0.19	−0.22	−0.14
50Pct	0.04	−0.12	0.08
75Pct	0.17	0.08	0.31
90Pct	0.35	0.26	0.46
95Pct	0.37	0.35	0.50
Mean	0	−0.06	0.06
Std Dev	0.24	0.20	0.28

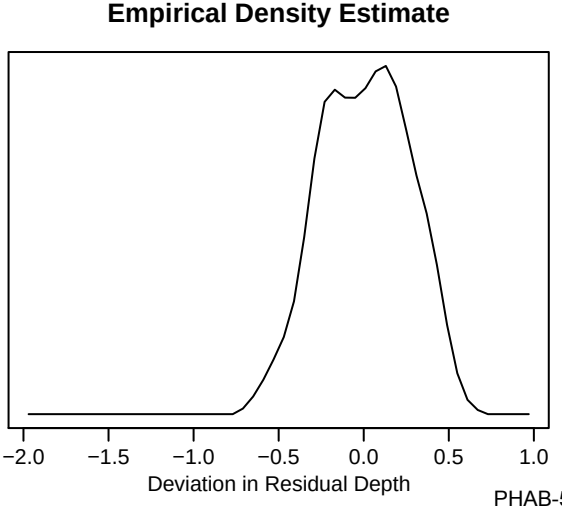
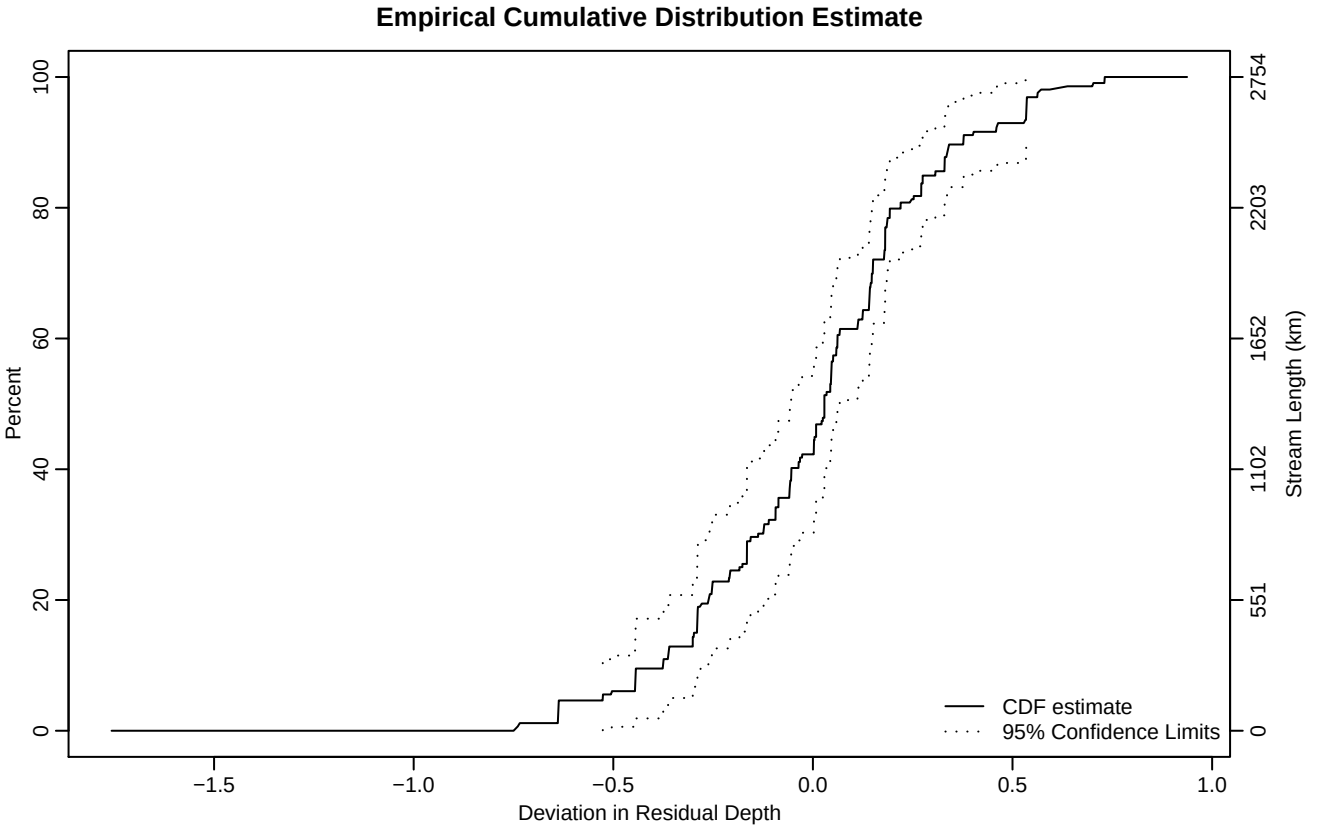


Figure PHAB−22 Indicator: LDvRP100 Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.53	−1.76	−0.37
10Pct	−0.38	−0.64	−0.29
25Pct	−0.18	−0.30	−0.09
50Pct	0.03	−0.06	0.11
75Pct	0.18	0.14	0.27
90Pct	0.38	0.27	0.54
95Pct	0.53	0.34	0.73
Mean	0	−0.06	0.07
Std Dev	0.30	0.25	0.34

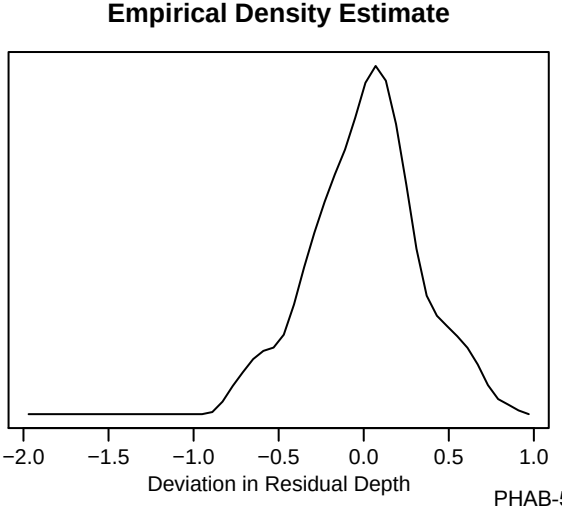
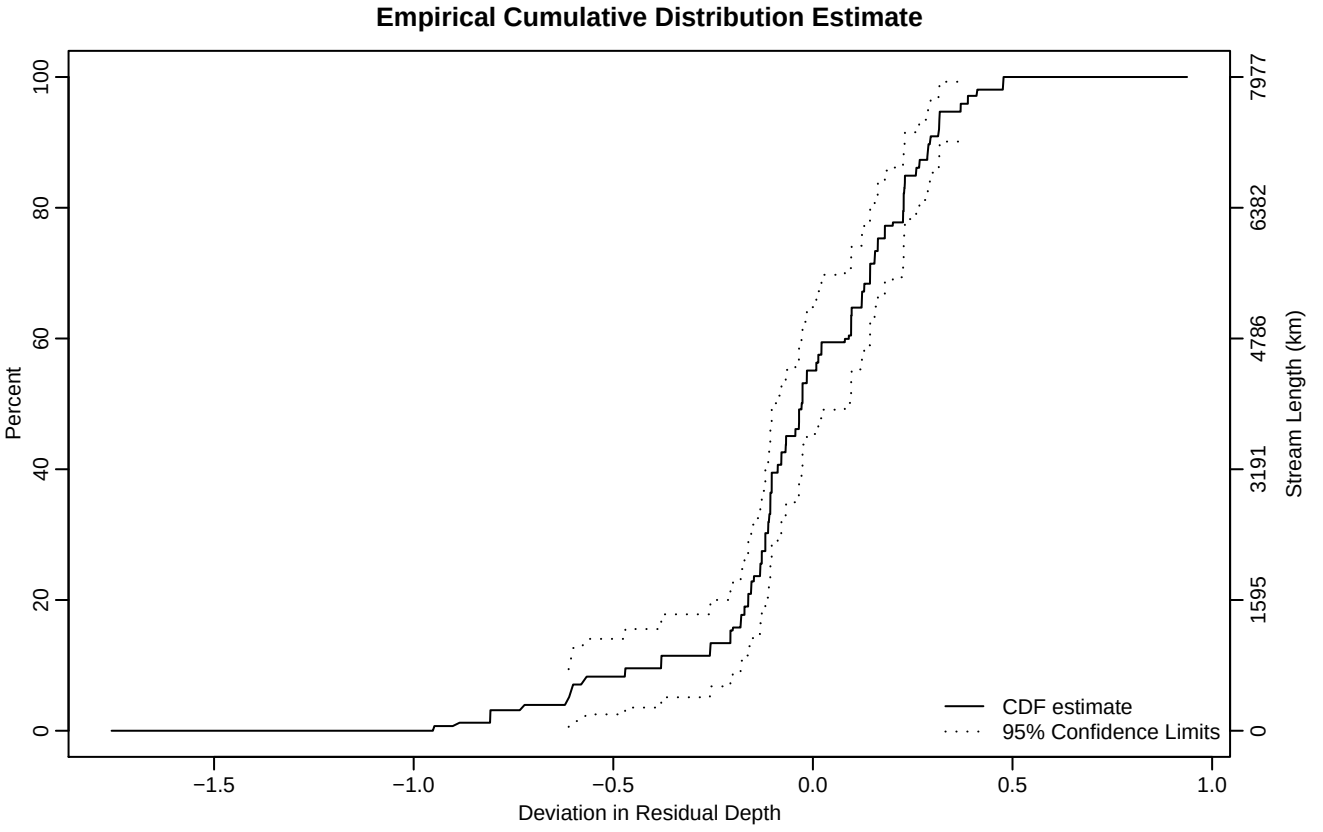


Figure PHAB−23 Indicator: LDvRP100 Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.61	−0.89	−0.47
10Pct	−0.38	−0.62	−0.18
25Pct	−0.13	−0.18	−0.11
50Pct	−0.03	−0.09	0.09
75Pct	0.16	0.12	0.23
90Pct	0.29	0.23	0.37
95Pct	0.37	0.29	0.48
Mean	−0.03	−0.08	0.03
Std Dev	0.27	0.22	0.32

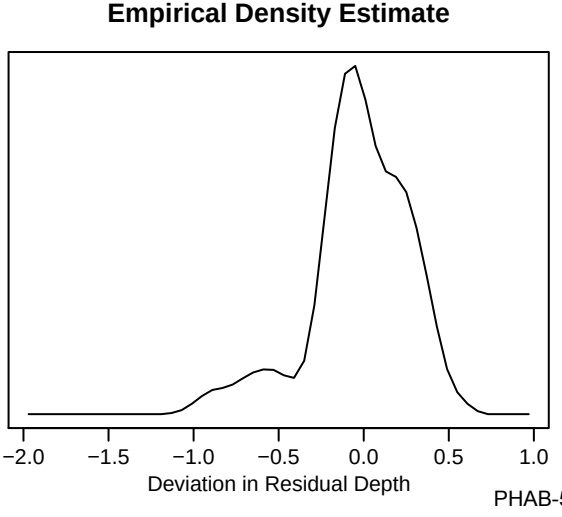
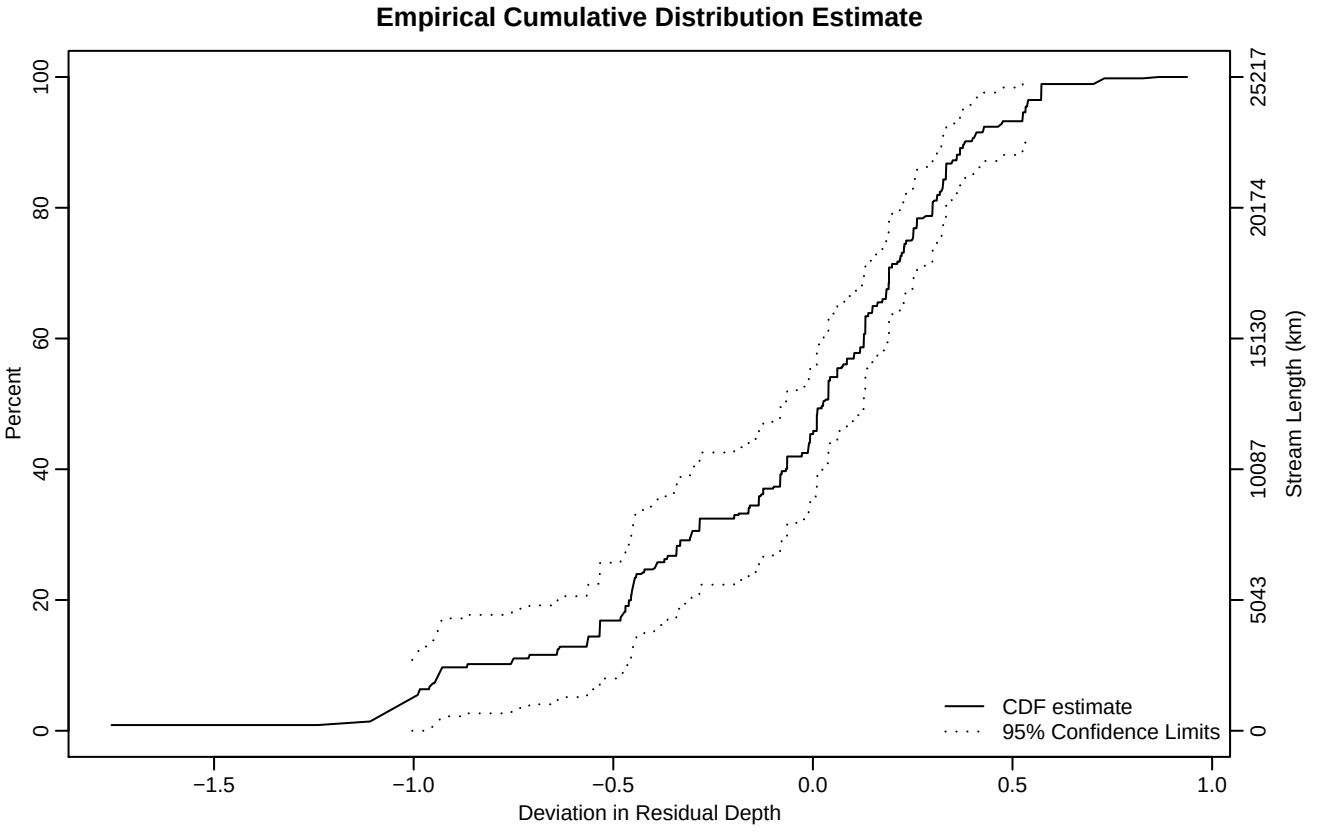


Figure PHAB−24 Indicator: LDvRP100 Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1.06	−0.96
10Pct	−0.87	−1.08	−0.48
25Pct	−0.40	−0.53	−0.14
50Pct	0.03	−0.06	0.13
75Pct	0.25	0.18	0.32
90Pct	0.38	0.33	0.54
95Pct	0.53	0.40	0.73
Mean	−0.08	−0.18	0.02
Std Dev	0.44	0.38	0.51

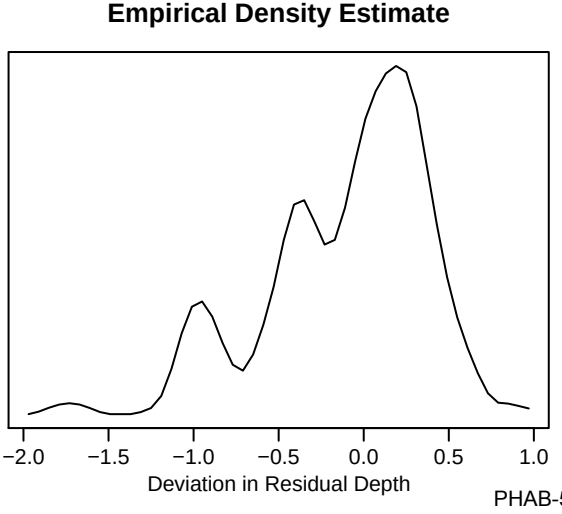
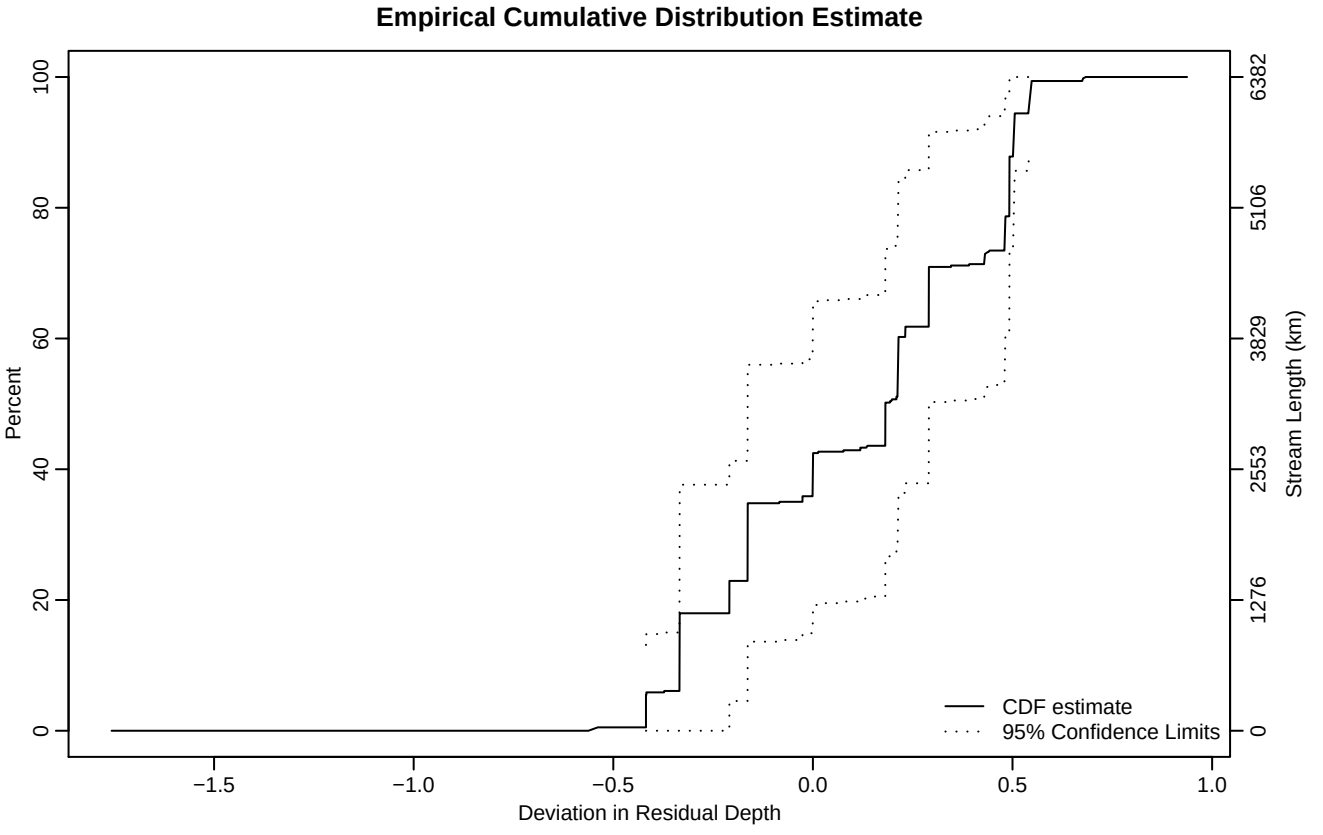


Figure PHAB−25 Indicator: LDvRP100 Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.42	−0.42	−0.33
10Pct	−0.33	−0.42	−0.21
25Pct	−0.16	−0.33	0.13
50Pct	0.18	−0.16	0.43
75Pct	0.48	0.21	0.54
90Pct	0.50	0.48	0.68
95Pct	0.54	0.49	0.68
Mean	0.11	−0.04	0.27
Std Dev	0.32	0.28	0.37

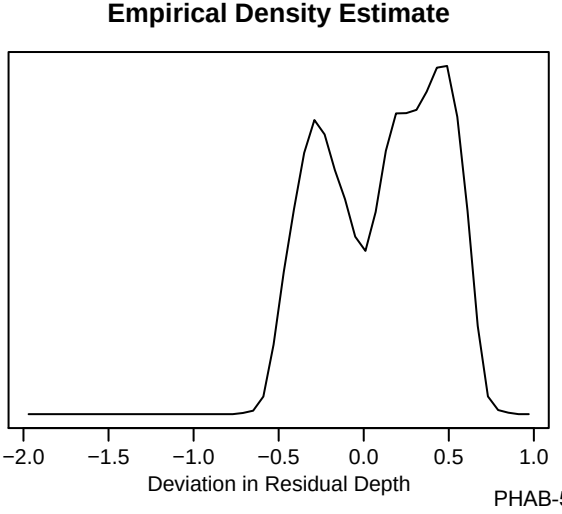
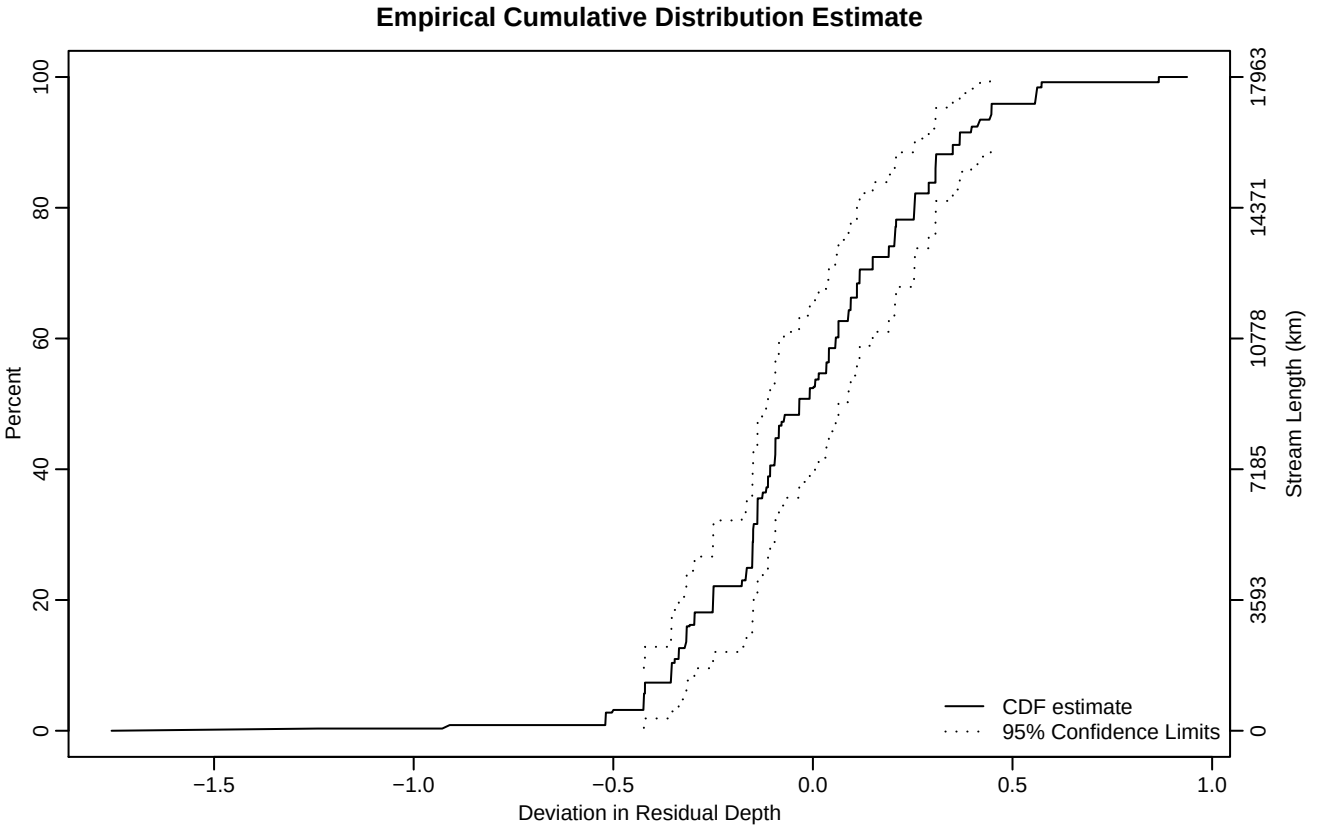


Figure PHAB−26 Indicator: LDvRP100 Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.42	−0.52	−0.35
10Pct	−0.35	−0.42	−0.32
25Pct	−0.15	−0.32	−0.14
50Pct	−0.03	−0.11	0.06
75Pct	0.20	0.09	0.31
90Pct	0.37	0.29	0.56
95Pct	0.45	0.35	0.87
Mean	−0.01	−0.07	0.06
Std Dev	0.27	0.22	0.31

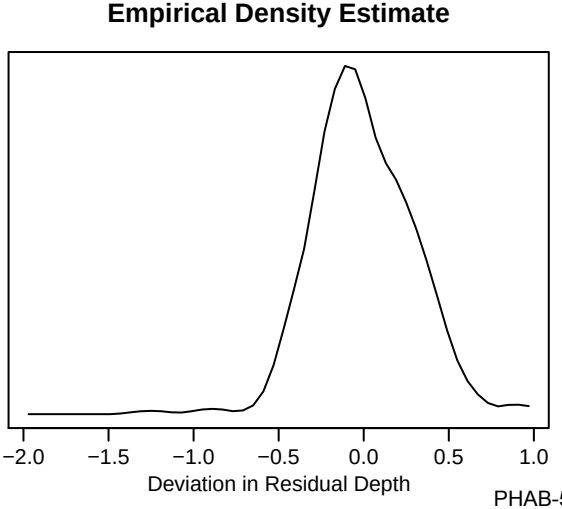
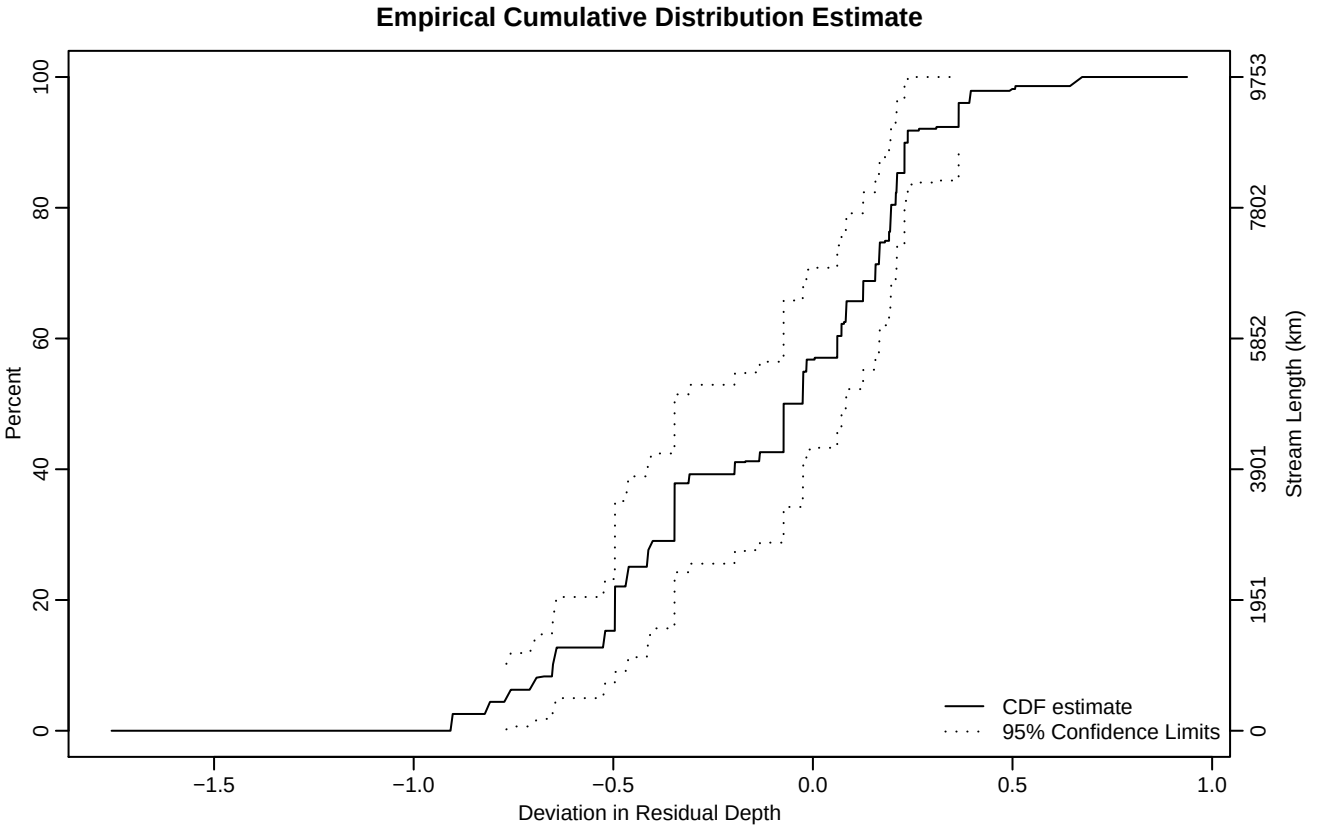


Figure PHAB−27 Indicator: LDvRP100 Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.77	−1.76	−0.65
10Pct	−0.65	−0.82	−0.50
25Pct	−0.46	−0.65	−0.31
50Pct	−0.07	−0.35	0.13
75Pct	0.19	0.07	0.23
90Pct	0.24	0.21	0.65
95Pct	0.37	0.23	0.67
Mean	−0.13	−0.23	−0.03
Std Dev	0.32	0.27	0.37

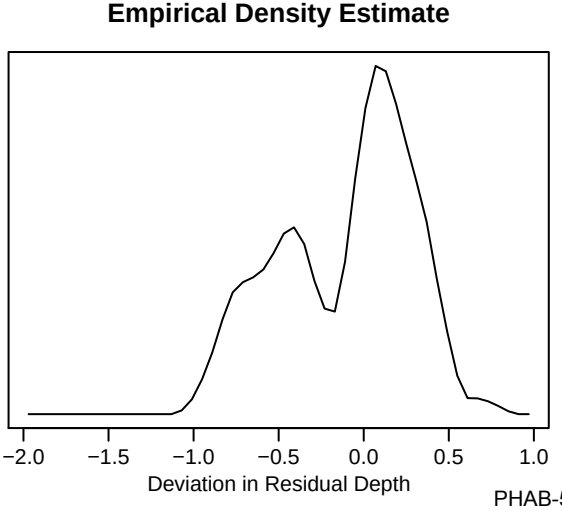
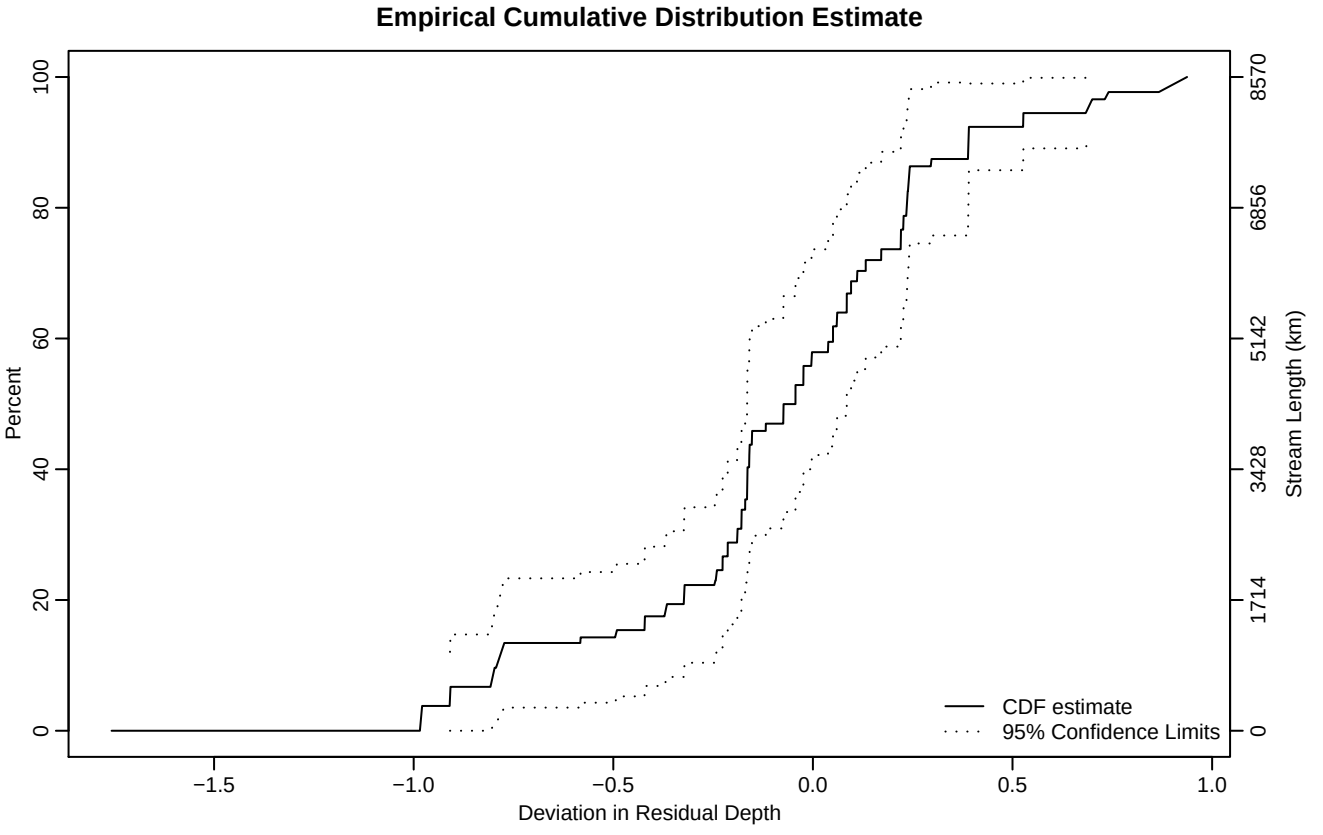


Figure PHAB−28 Indicator: LDvRP100 Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.91	−1.76	−0.78
10Pct	−0.79	−0.98	−0.37
25Pct	−0.23	−0.77	−0.16
50Pct	−0.04	−0.18	0.08
75Pct	0.22	0.05	0.39
90Pct	0.39	0.23	0.94
95Pct	0.69	0.39	0.94
Mean	−0.08	−0.21	0.05
Std Dev	0.40	0.33	0.47

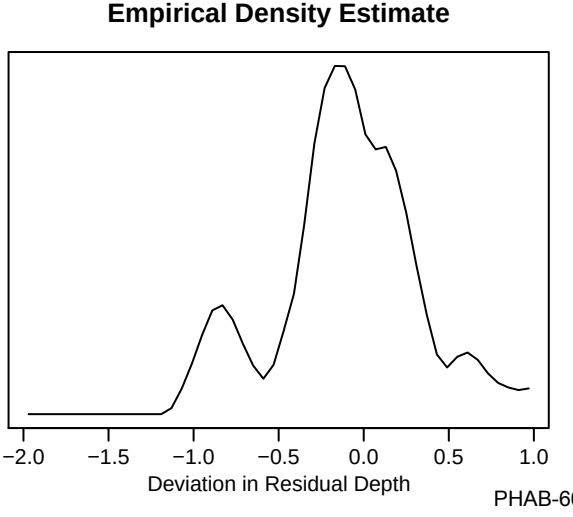
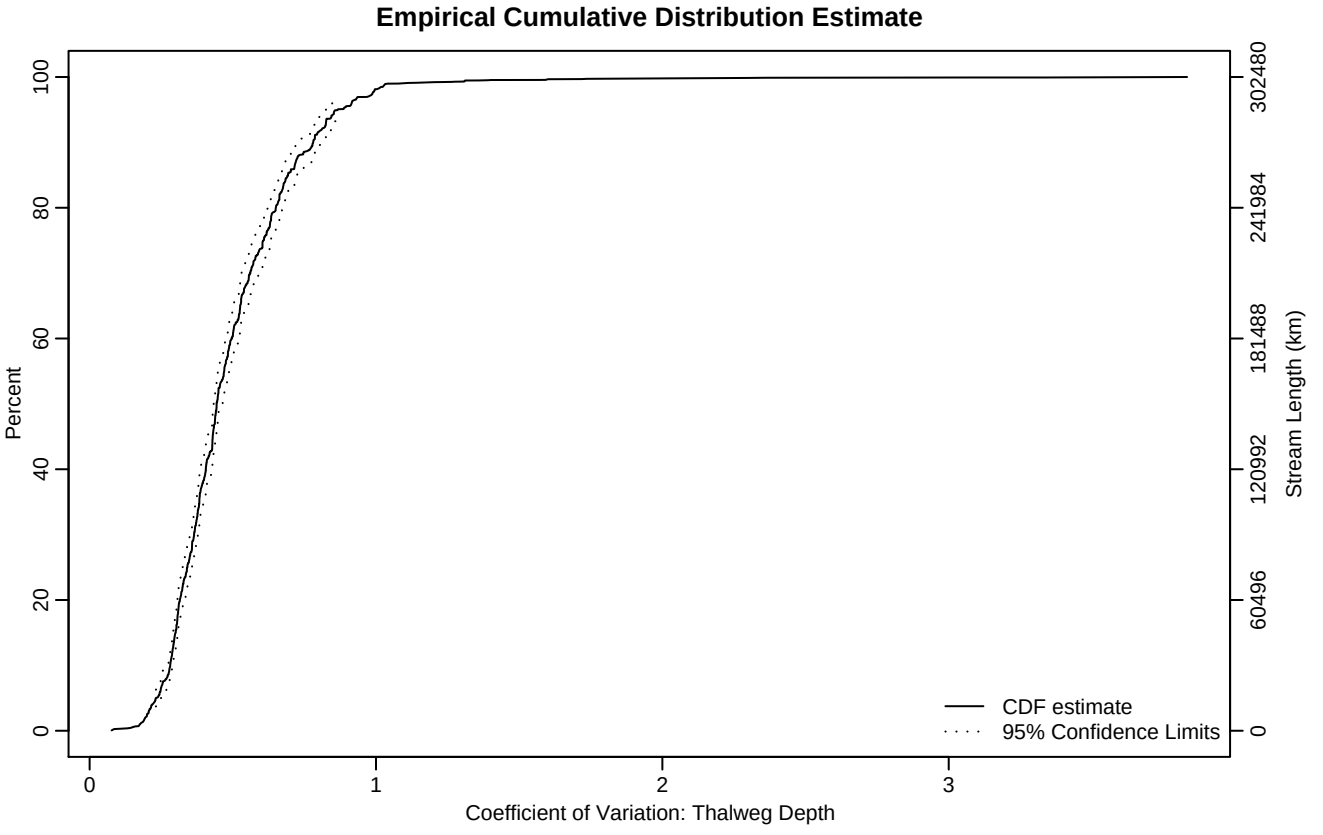


Figure PHAB−29 Indicator: CVDpth Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.23	0.21	0.25
10Pct	0.28	0.27	0.29
25Pct	0.34	0.32	0.36
50Pct	0.44	0.43	0.46
75Pct	0.61	0.57	0.63
90Pct	0.78	0.73	0.82
95Pct	0.87	0.83	0.93
Mean	0.50	0.48	0.51
Std Dev	0.21	0.19	0.23

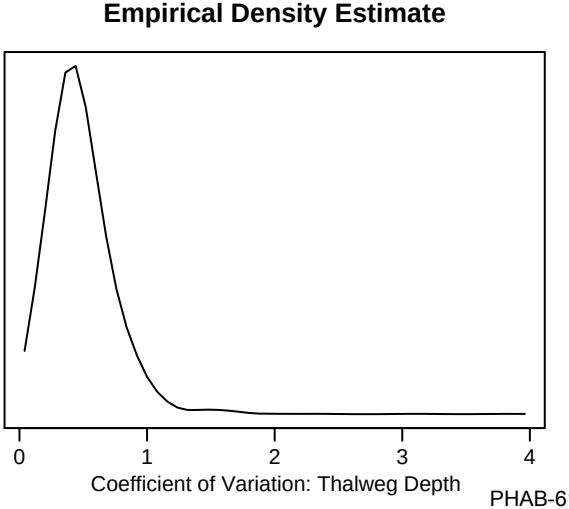
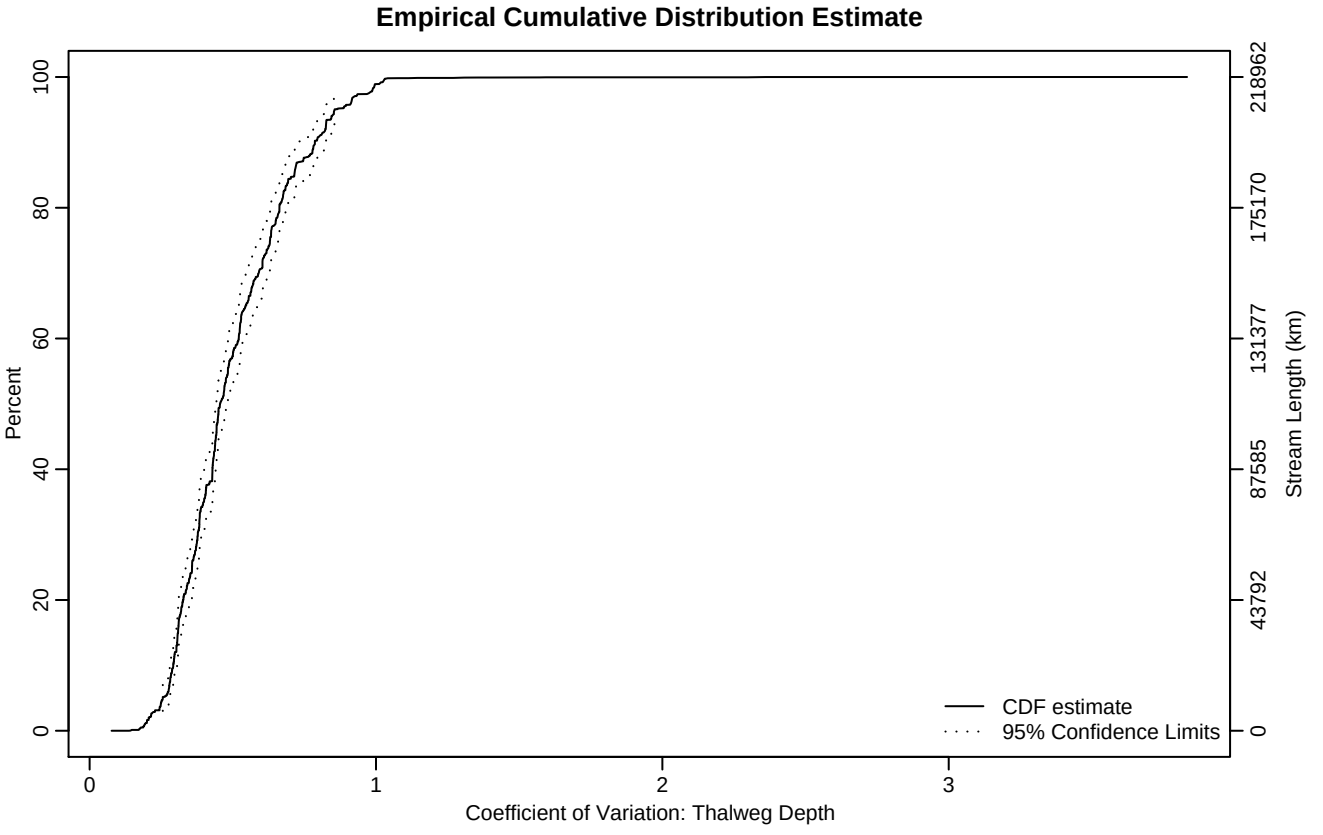


Figure PHAB−30 Indicator: CVDpth Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.26	0.23	0.28
10Pct	0.29	0.28	0.30
25Pct	0.36	0.33	0.37
50Pct	0.46	0.44	0.48
75Pct	0.63	0.60	0.66
90Pct	0.79	0.75	0.83
95Pct	0.86	0.83	0.93
Mean	0.50	0.49	0.52
Std Dev	0.18	0.17	0.19

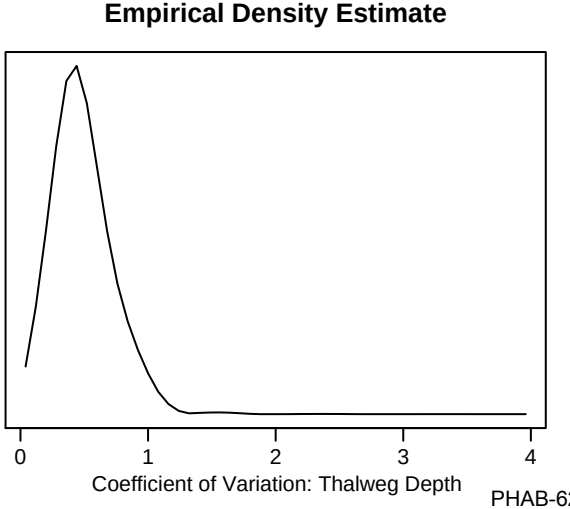
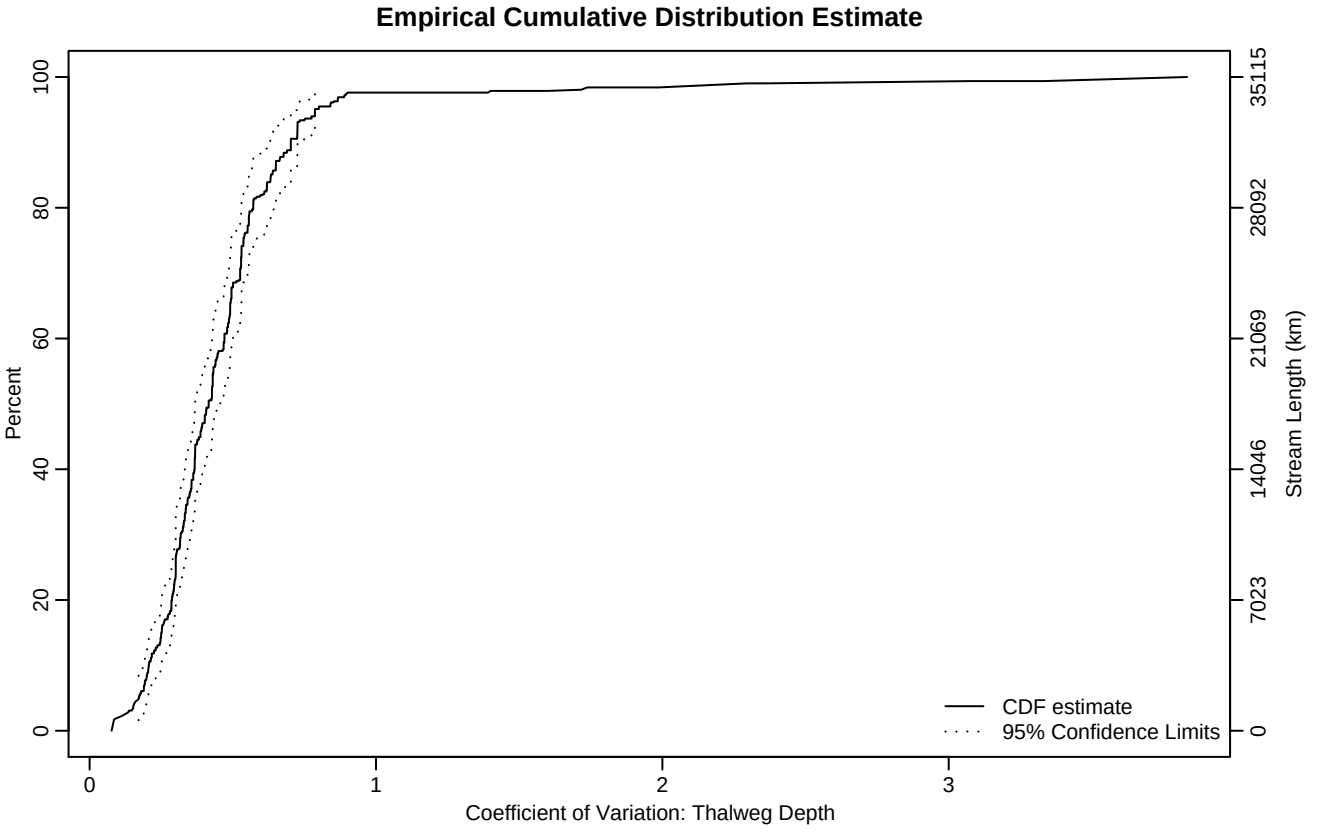


Figure PHAB−31 Indicator: CVDpth Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	0.08	0.20
10Pct	0.21	0.18	0.25
25Pct	0.30	0.29	0.33
50Pct	0.42	0.37	0.45
75Pct	0.54	0.50	0.59
90Pct	0.70	0.63	0.80
95Pct	0.79	0.73	1.63
Mean	0.48	0.42	0.53
Std Dev	0.32	0.22	0.43

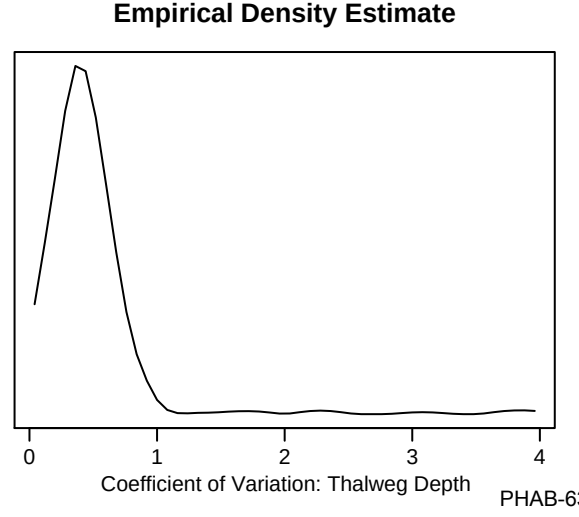
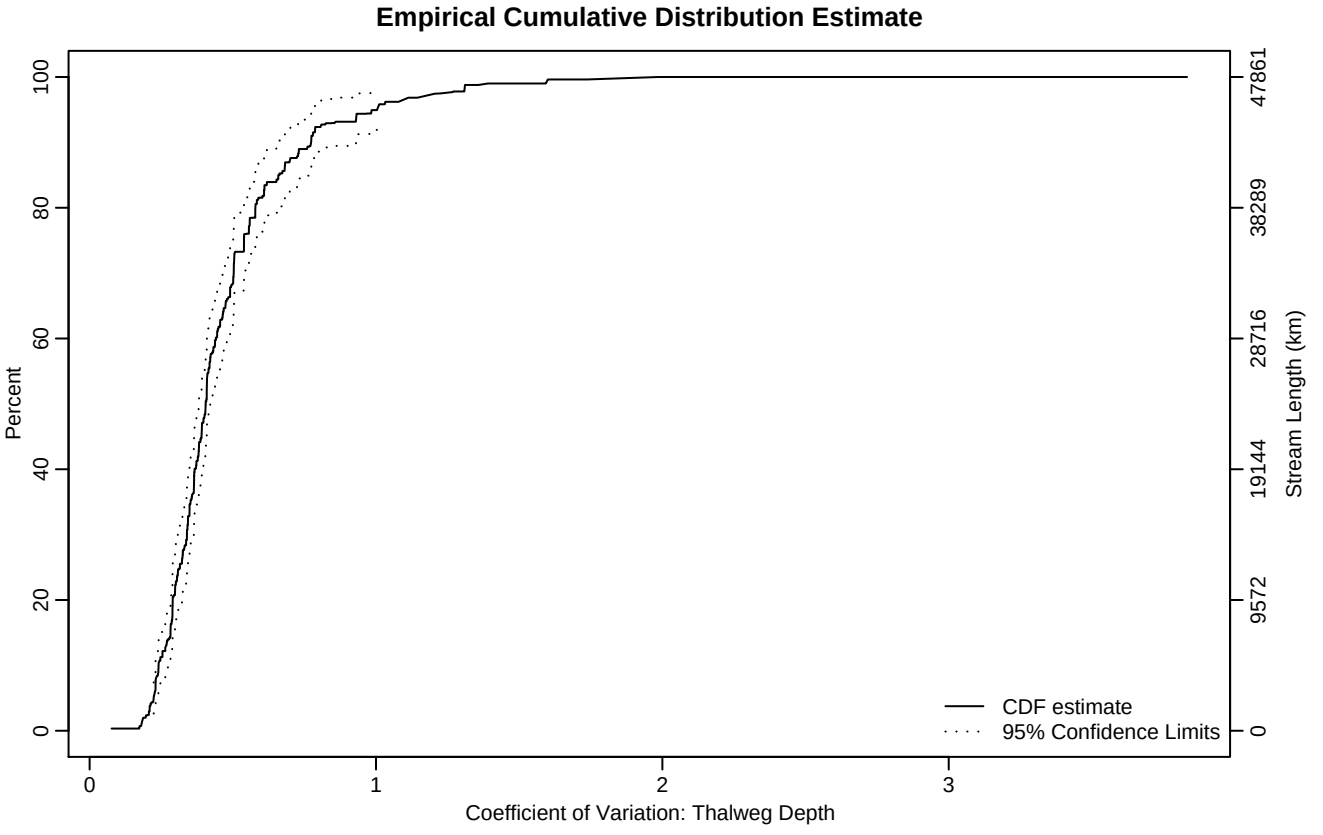


Figure PHAB−32 Indicator: CVDpth Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.21	0.23
10Pct	0.24	0.23	0.27
25Pct	0.32	0.29	0.34
50Pct	0.41	0.38	0.42
75Pct	0.54	0.50	0.58
90Pct	0.77	0.67	0.98
95Pct	1	0.79	1.31
Mean	0.47	0.44	0.50
Std Dev	0.23	0.19	0.27

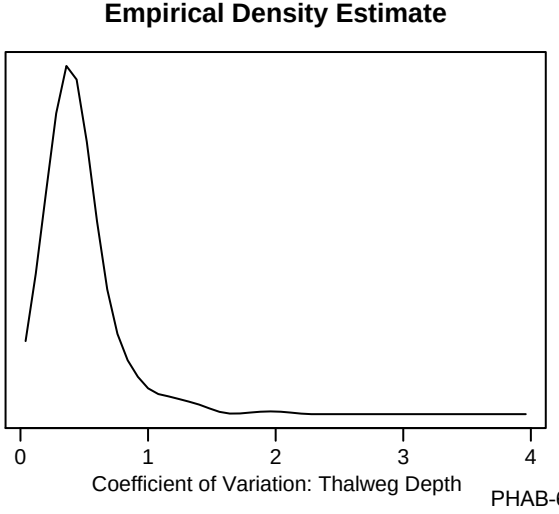
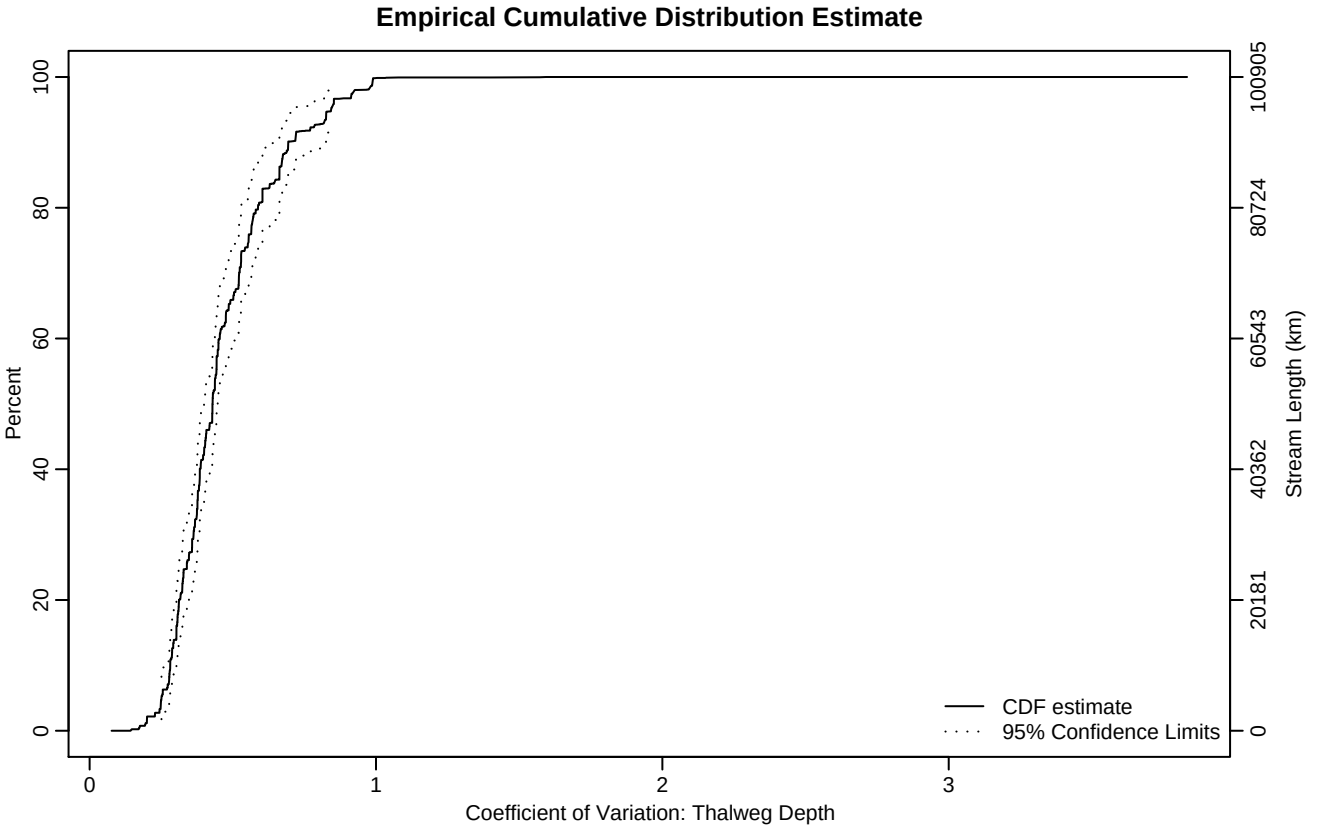


Figure PHAB−33 Indicator: CVDpth Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.25	0.20	0.28
10Pct	0.28	0.26	0.29
25Pct	0.34	0.31	0.37
50Pct	0.43	0.40	0.45
75Pct	0.56	0.52	0.60
90Pct	0.69	0.66	0.84
95Pct	0.84	0.74	0.98
Mean	0.47	0.44	0.49
Std Dev	0.17	0.15	0.19

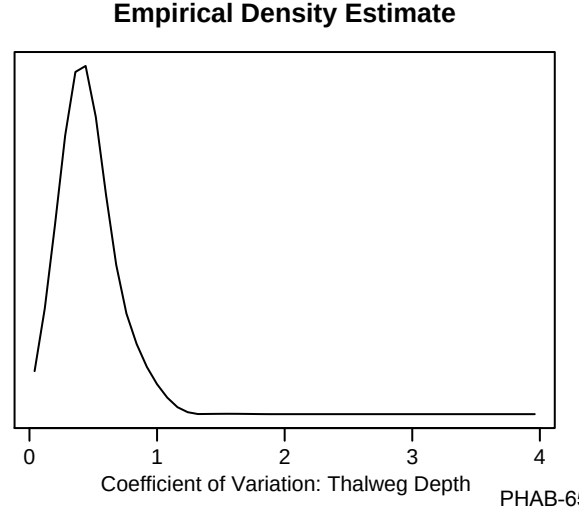
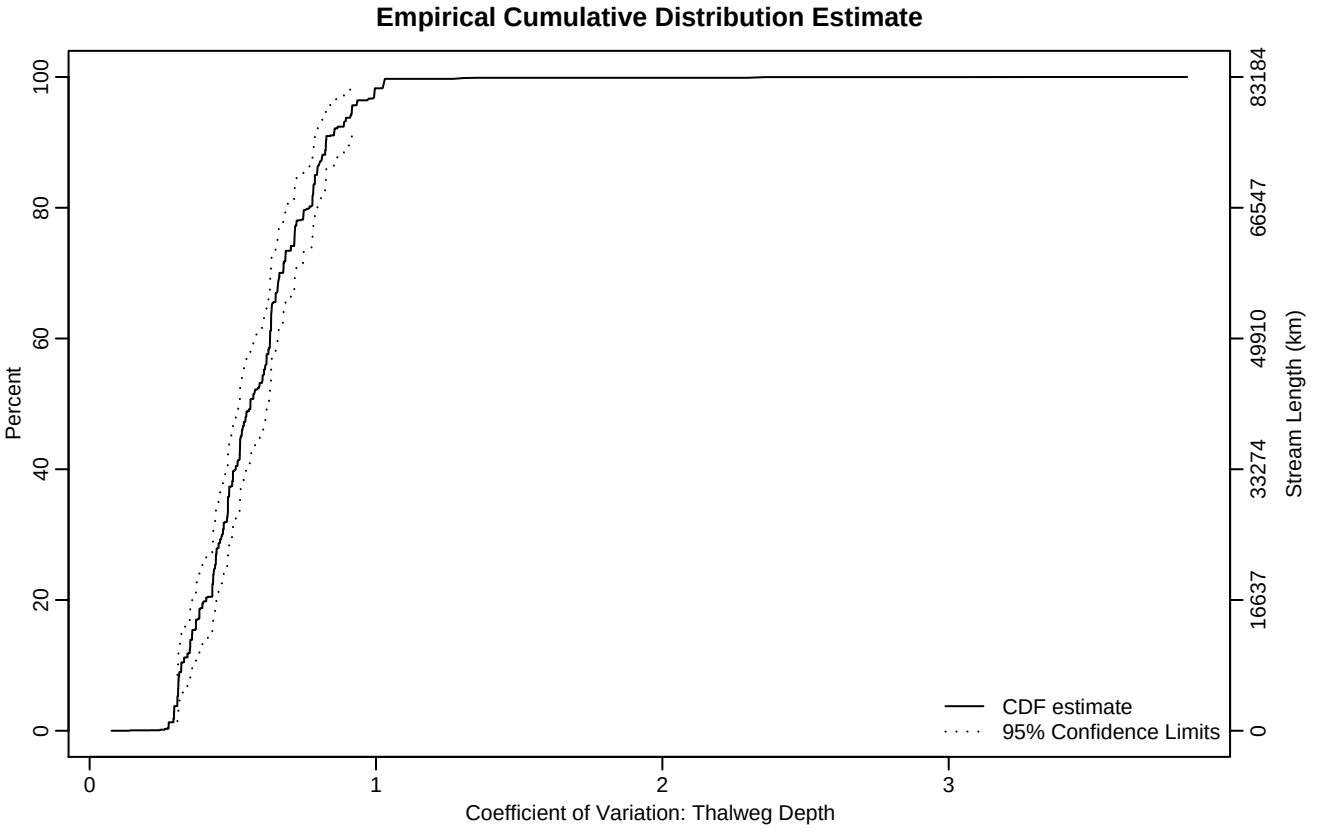


Figure PHAB−34 Indicator: CVDpth Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.31	0.29	0.31
10Pct	0.32	0.31	0.36
25Pct	0.44	0.38	0.47
50Pct	0.56	0.52	0.62
75Pct	0.72	0.66	0.78
90Pct	0.83	0.79	0.92
95Pct	0.92	0.83	1.03
Mean	0.58	0.55	0.61
Std Dev	0.20	0.18	0.22

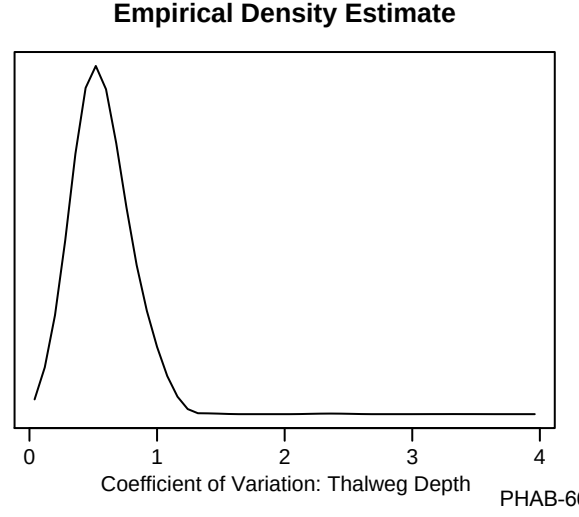
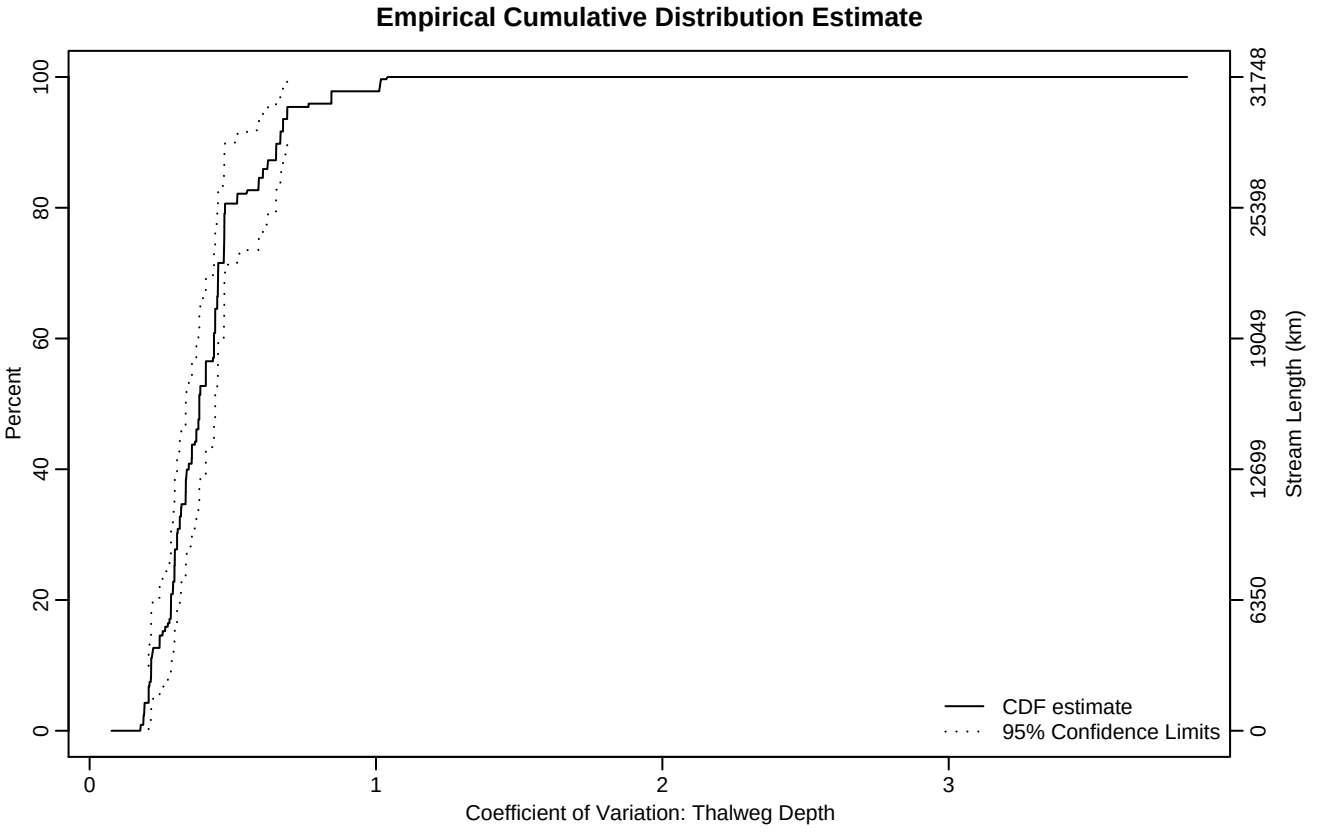


Figure PHAB−35 Indicator: CVDpth Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.21	0.18	0.21
10Pct	0.21	0.19	0.28
25Pct	0.30	0.24	0.34
50Pct	0.38	0.34	0.44
75Pct	0.47	0.44	0.62
90Pct	0.67	0.59	0.84
95Pct	0.69	0.67	1.04
Mean	0.42	0.37	0.46
Std Dev	0.16	0.13	0.20

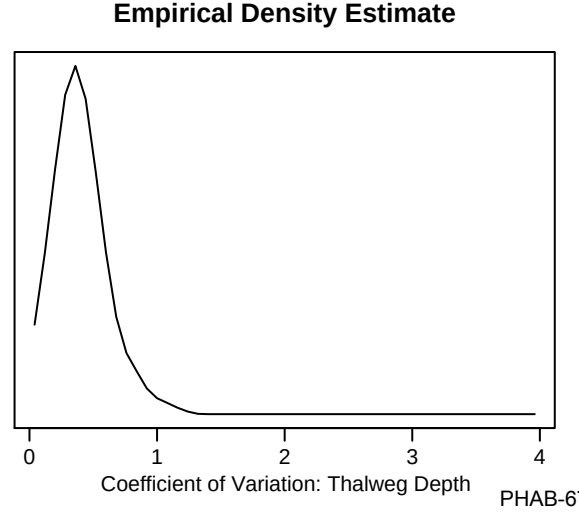
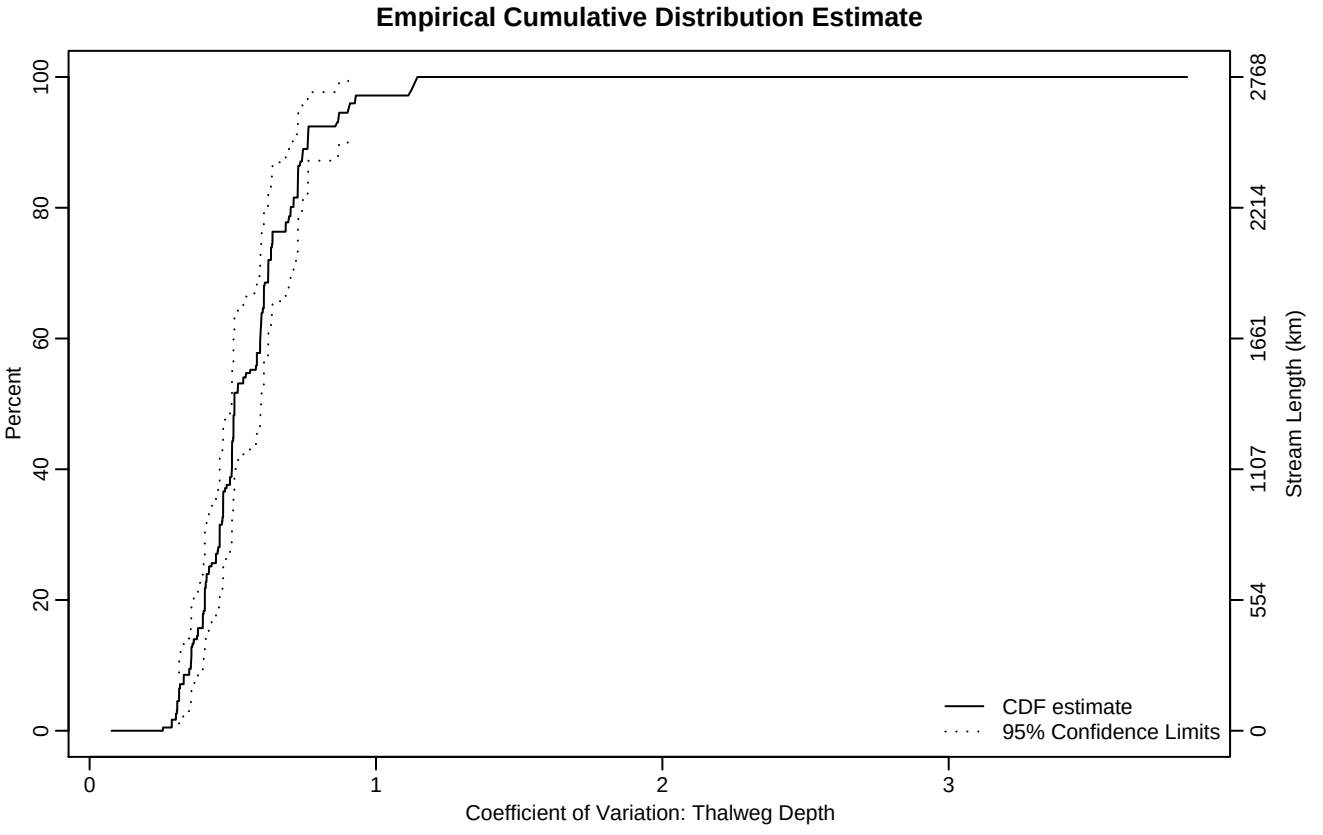


Figure PHAB−36 Indicator: CVDpth Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.31	0.29	0.35
10Pct	0.35	0.31	0.40
25Pct	0.42	0.40	0.47
50Pct	0.51	0.49	0.60
75Pct	0.64	0.60	0.73
90Pct	0.76	0.73	1.12
95Pct	0.90	0.76	1.14
Mean	0.56	0.52	0.60
Std Dev	0.18	0.14	0.21

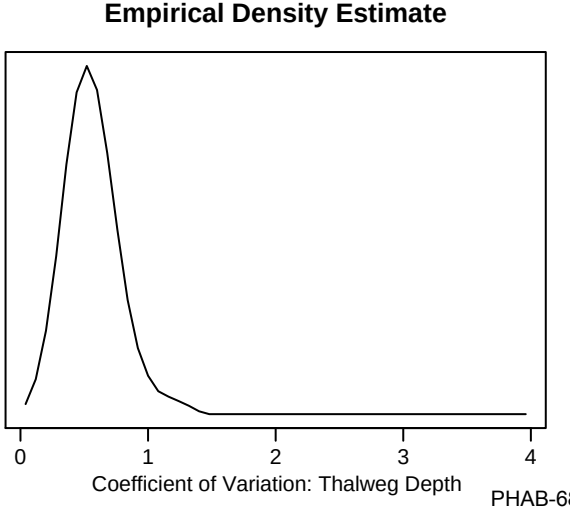
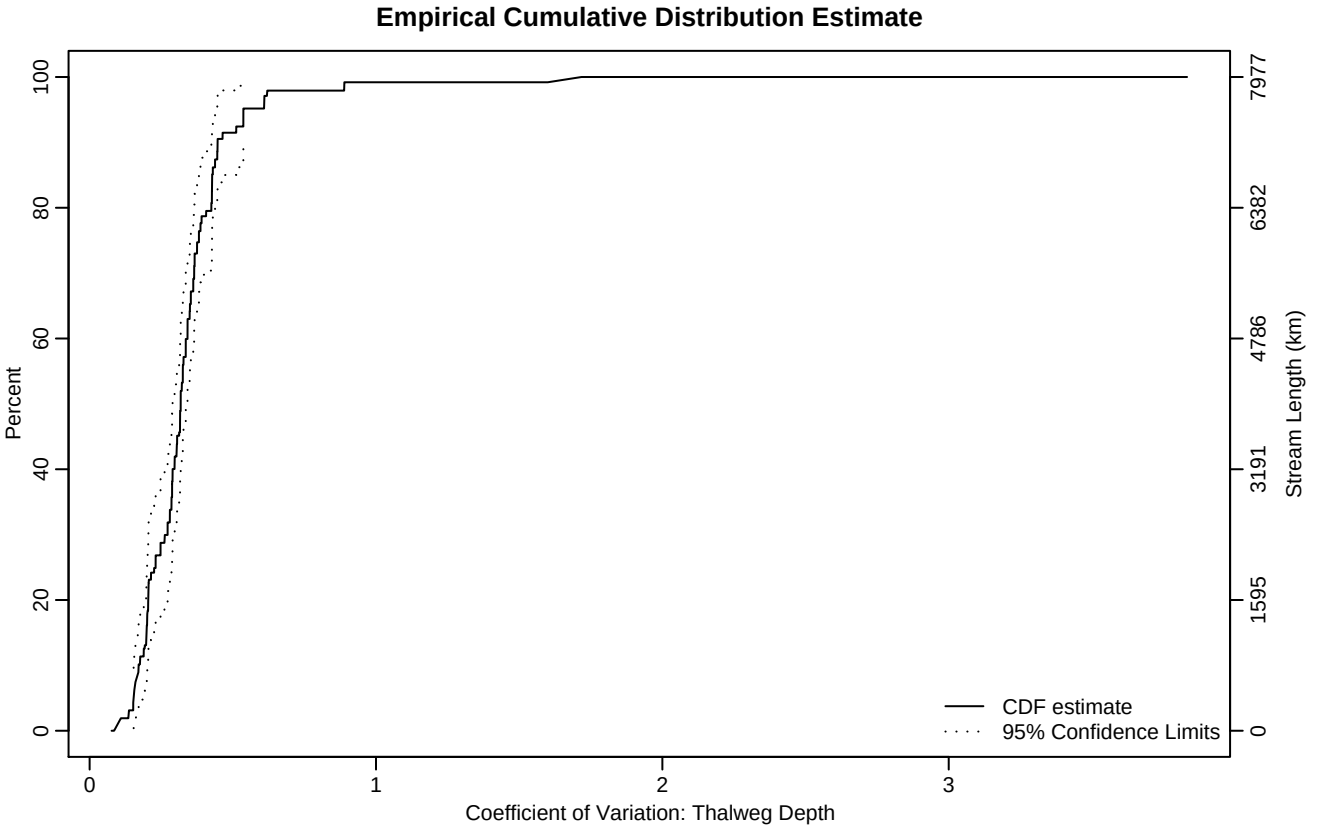


Figure PHAB−37 Indicator: CVDpth Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.15	0.09	0.17
10Pct	0.17	0.15	0.20
25Pct	0.23	0.20	0.29
50Pct	0.32	0.29	0.34
75Pct	0.38	0.35	0.43
90Pct	0.45	0.43	0.61
95Pct	0.54	0.45	1.72
Mean	0.33	0.30	0.37
Std Dev	0.17	0.10	0.24

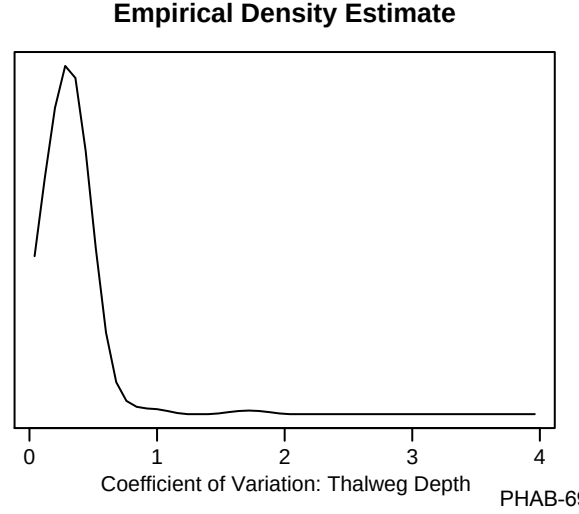
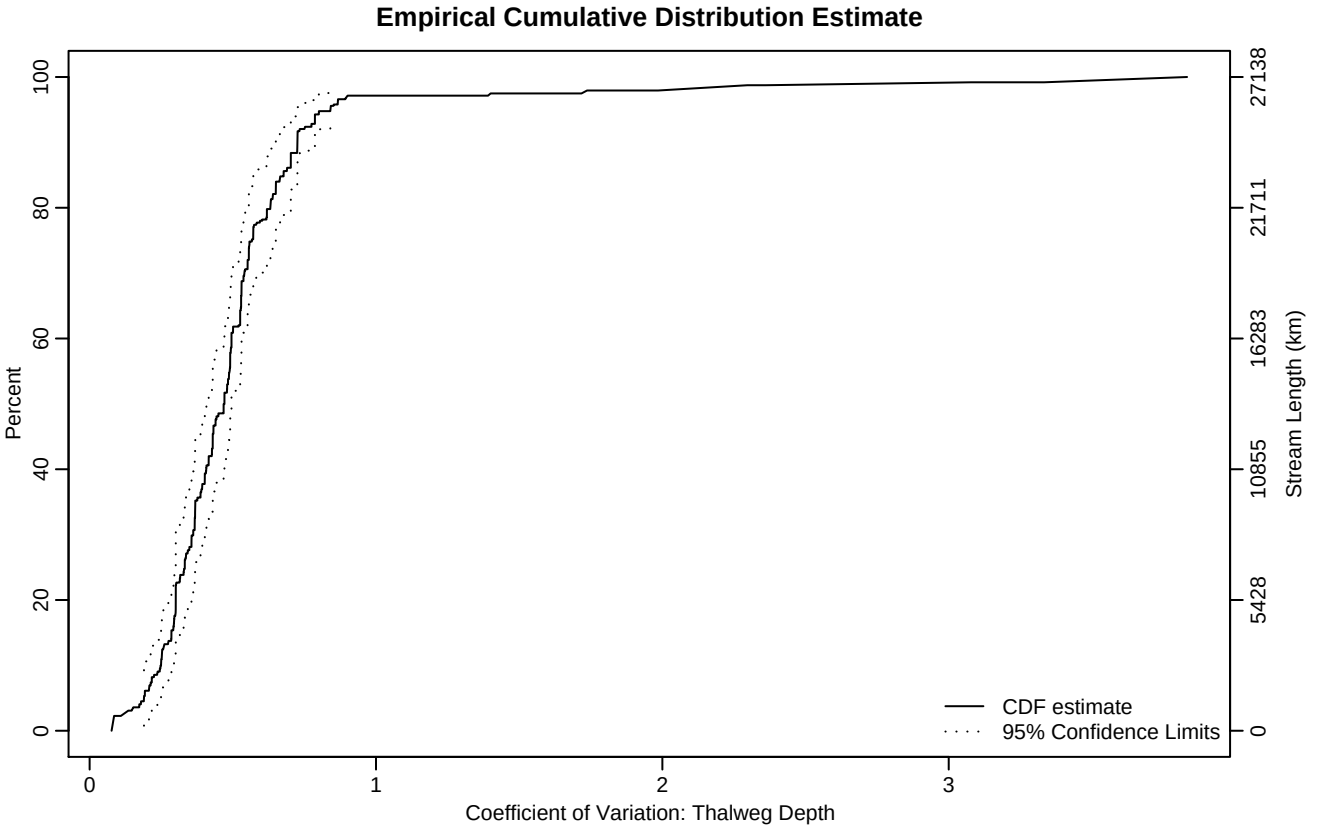


Figure PHAB−38 Indicator: CVDpth Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.19	0.08	0.24
10Pct	0.25	0.19	0.29
25Pct	0.33	0.29	0.37
50Pct	0.47	0.41	0.50
75Pct	0.57	0.53	0.65
90Pct	0.73	0.66	0.84
95Pct	0.84	0.75	1.73
Mean	0.52	0.45	0.58
Std Dev	0.33	0.23	0.44

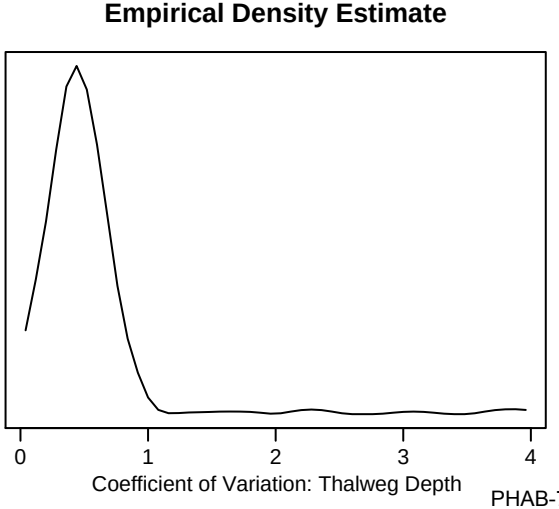
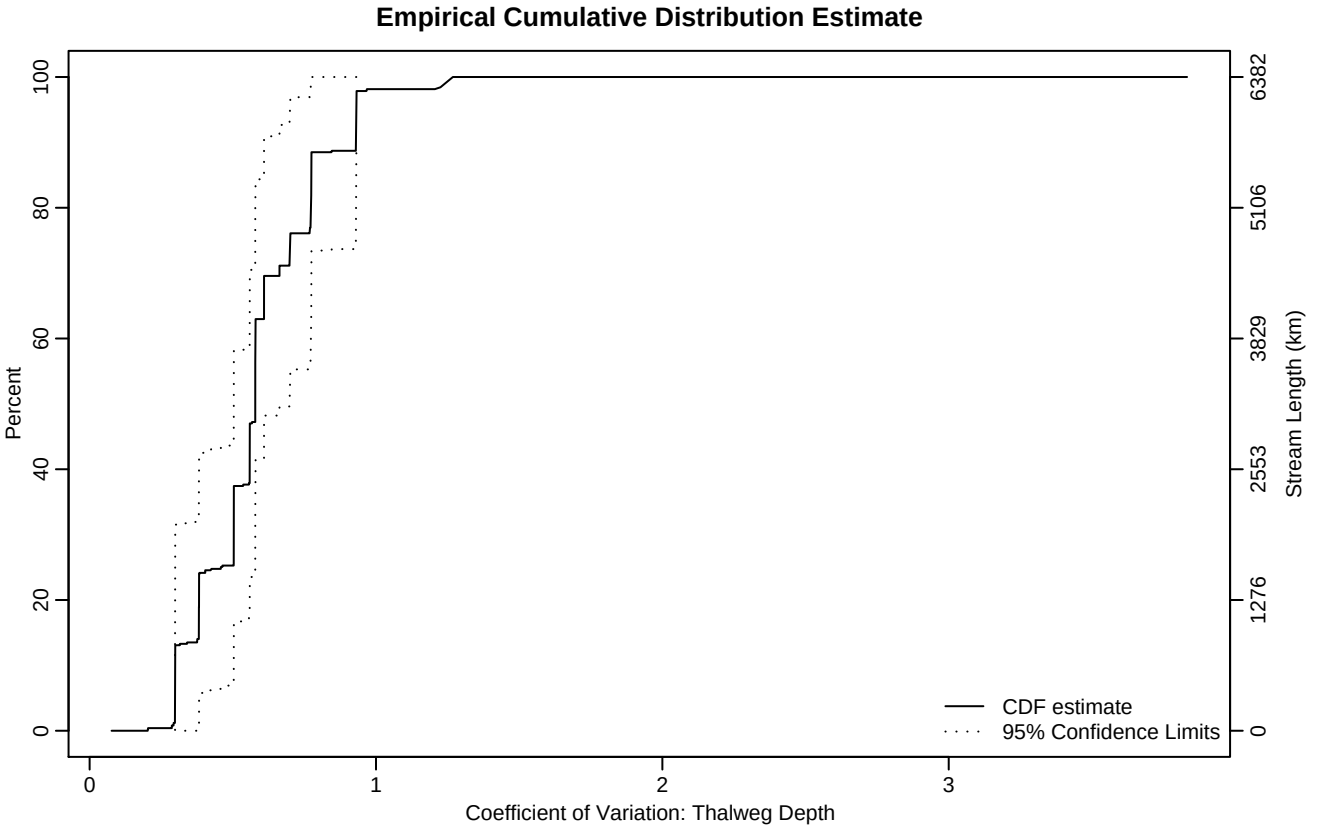


Figure PHAB−39 Indicator: CVDpth Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.30	0.30	0.30
10Pct	0.30	0.30	0.30
25Pct	0.46	0.30	0.56
50Pct	0.58	0.50	0.70
75Pct	0.70	0.58	0.93
90Pct	0.93	0.70	1.27
95Pct	0.93	0.77	1.27
Mean	0.59	0.50	0.68
Std Dev	0.21	0.15	0.26

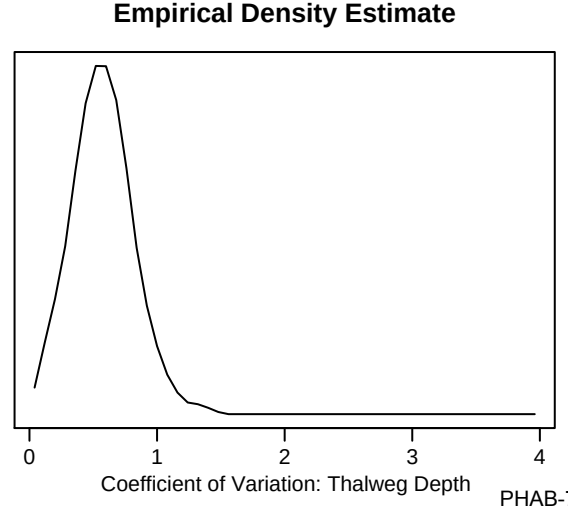
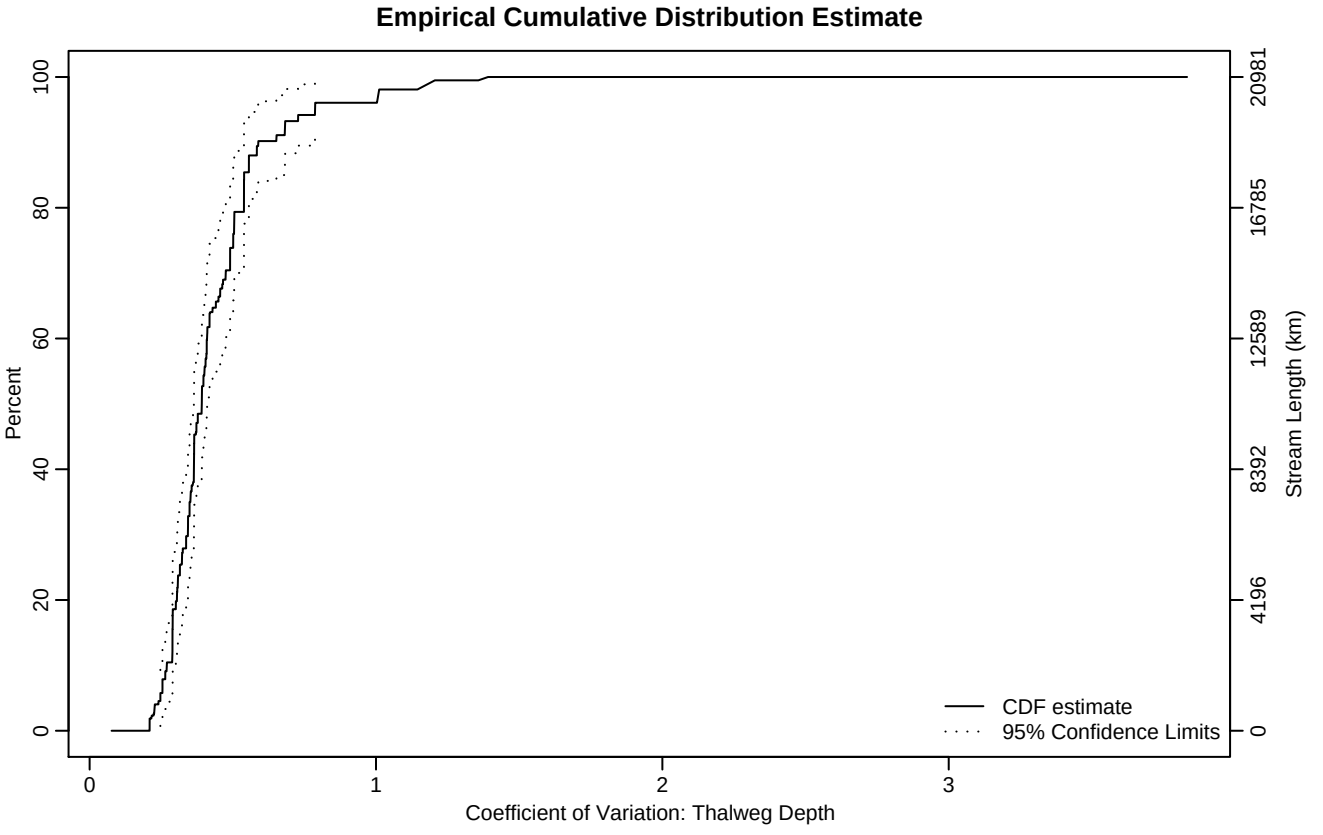


Figure PHAB−40 Indicator: CVDpth Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.25	0.21	0.27
10Pct	0.27	0.24	0.29
25Pct	0.32	0.29	0.35
50Pct	0.39	0.36	0.41
75Pct	0.50	0.43	0.56
90Pct	0.59	0.54	1
95Pct	0.79	0.65	1.37
Mean	0.43	0.40	0.47
Std Dev	0.18	0.13	0.22

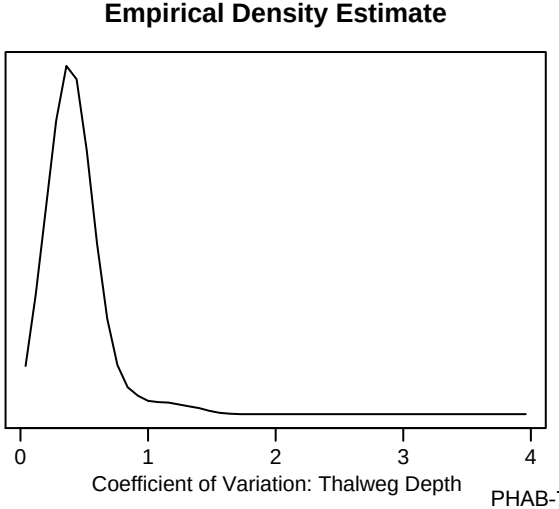
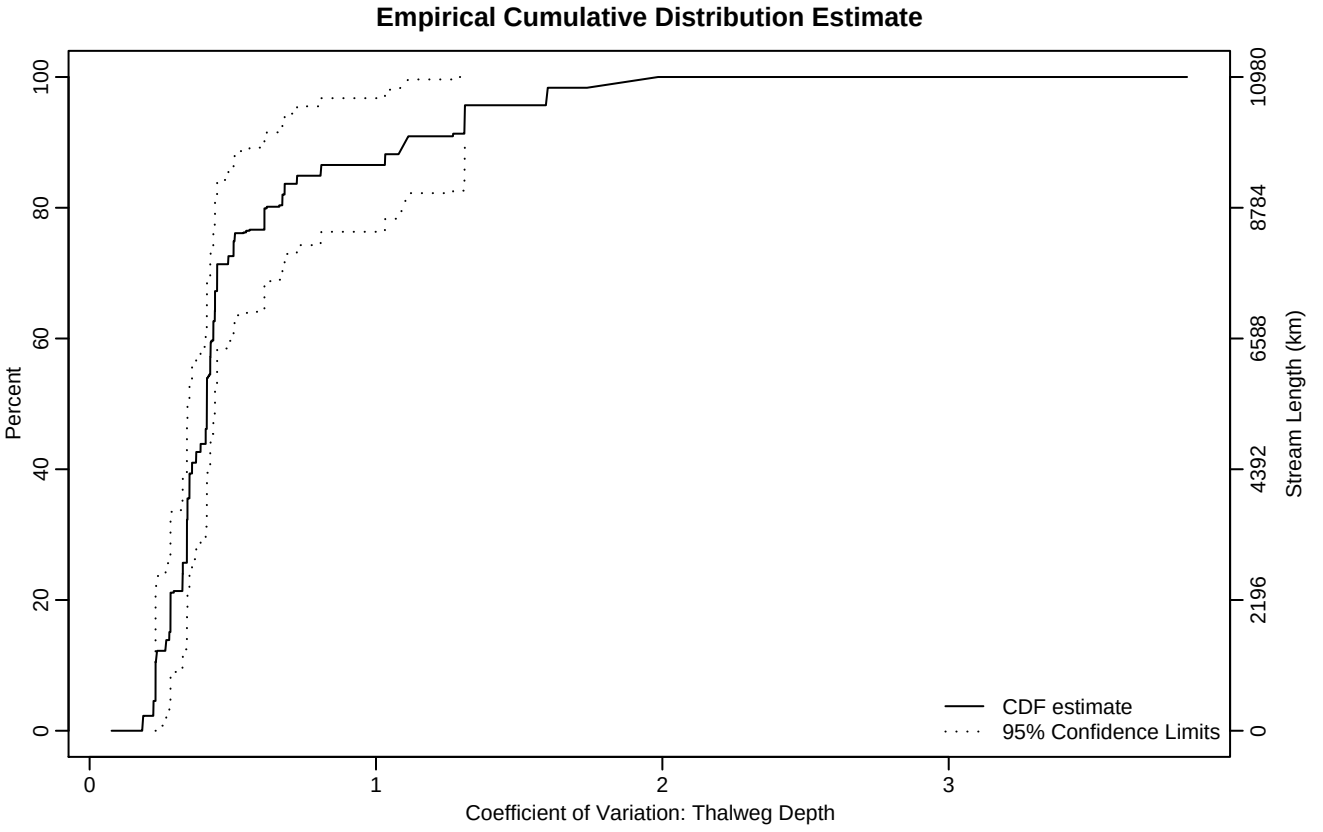


Figure PHAB−41 Indicator: CVDpth Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.23	0.08	0.23
10Pct	0.23	0.23	0.28
25Pct	0.33	0.23	0.35
50Pct	0.41	0.34	0.44
75Pct	0.51	0.43	1.03
90Pct	1.10	0.66	1.96
95Pct	1.31	0.81	1.99
Mean	0.53	0.42	0.63
Std Dev	0.36	0.24	0.48

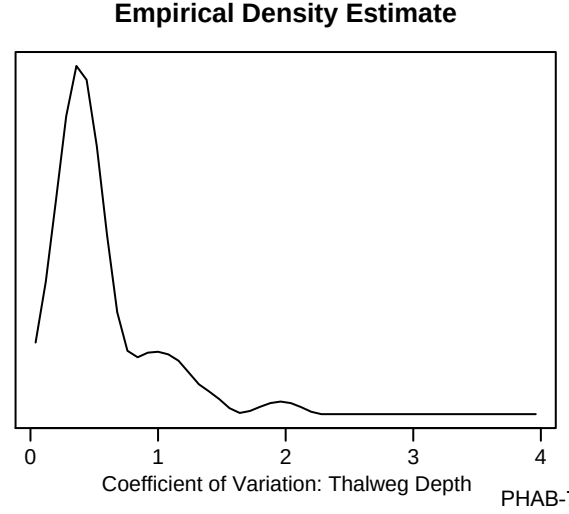
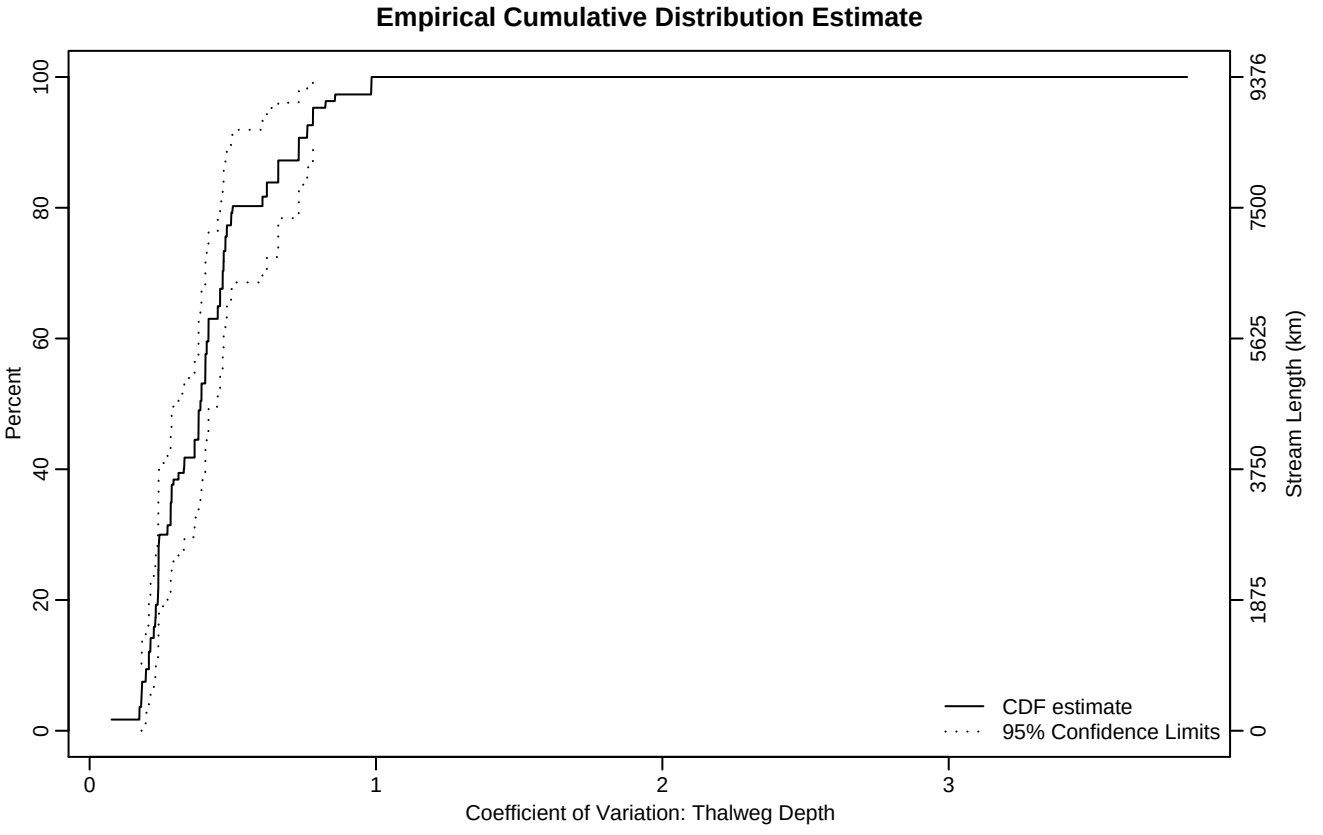


Figure PHAB−42 Indicator: CVDpth Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0.08	0.20
10Pct	0.21	0.17	0.23
25Pct	0.24	0.22	0.29
50Pct	0.39	0.29	0.45
75Pct	0.47	0.42	0.73
90Pct	0.73	0.60	0.98
95Pct	0.78	0.73	0.98
Mean	0.41	0.36	0.46
Std Dev	0.19	0.15	0.23

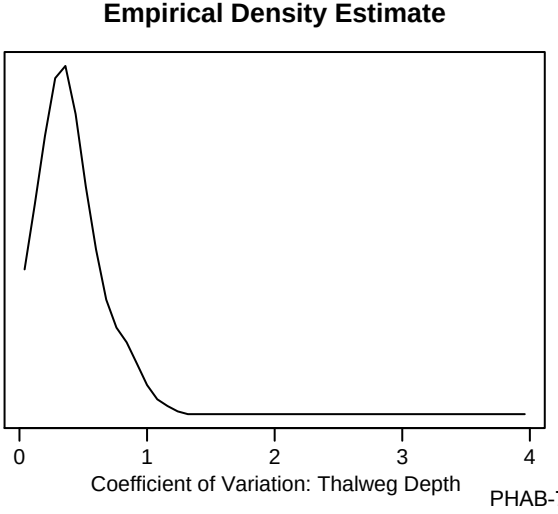
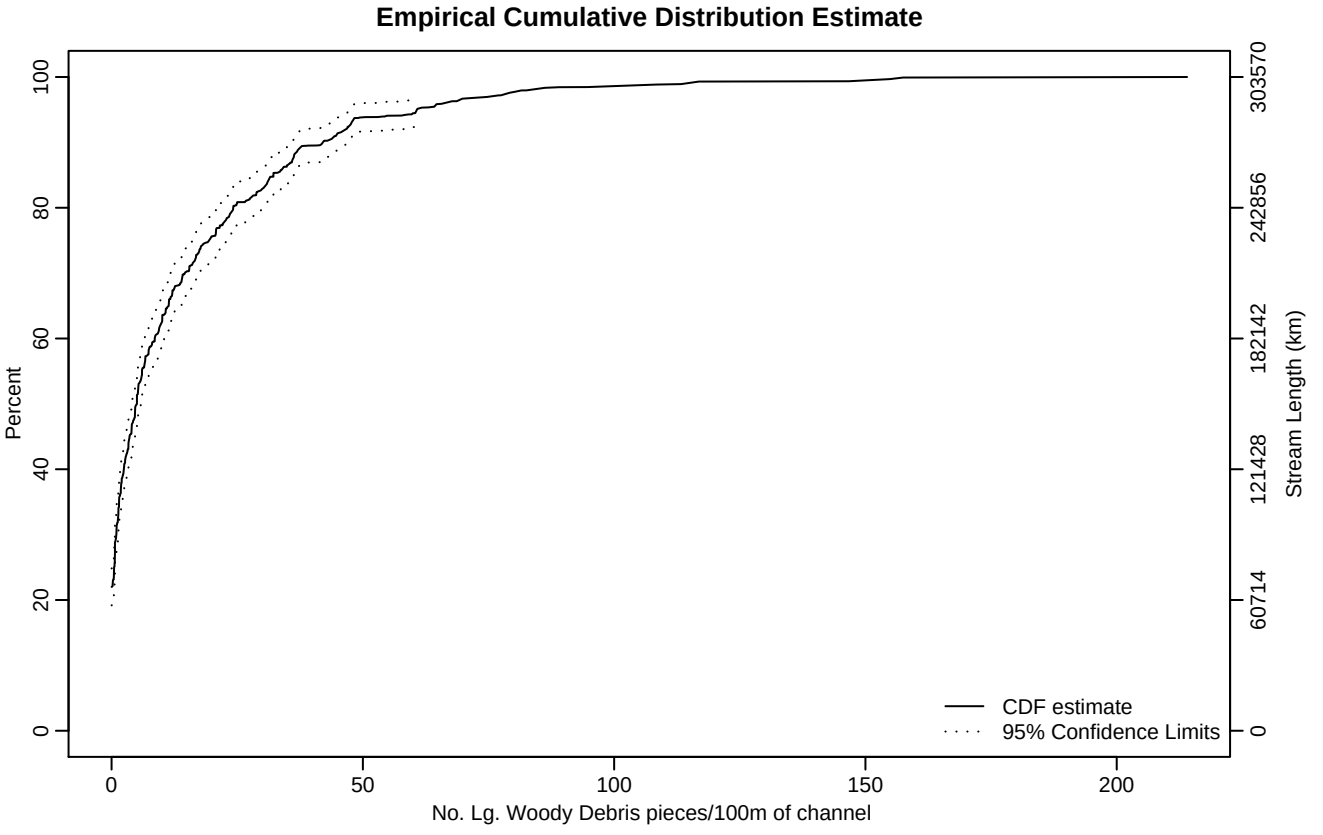


Figure PHAB−43 Indicator: C1WM100 Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.50	0	0.67
50Pct	5.02	3.98	5.90
75Pct	19.39	16.08	23.35
90Pct	42.04	35.99	47.48
95Pct	60.76	47.62	76.90
Mean	14.65	12.74	16.56
Std Dev	21	18.02	23.98

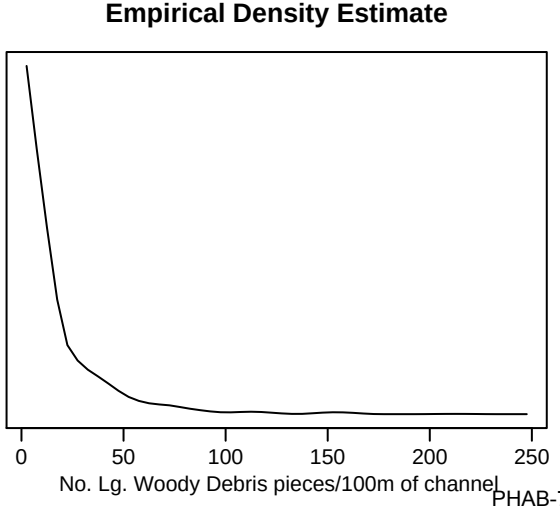
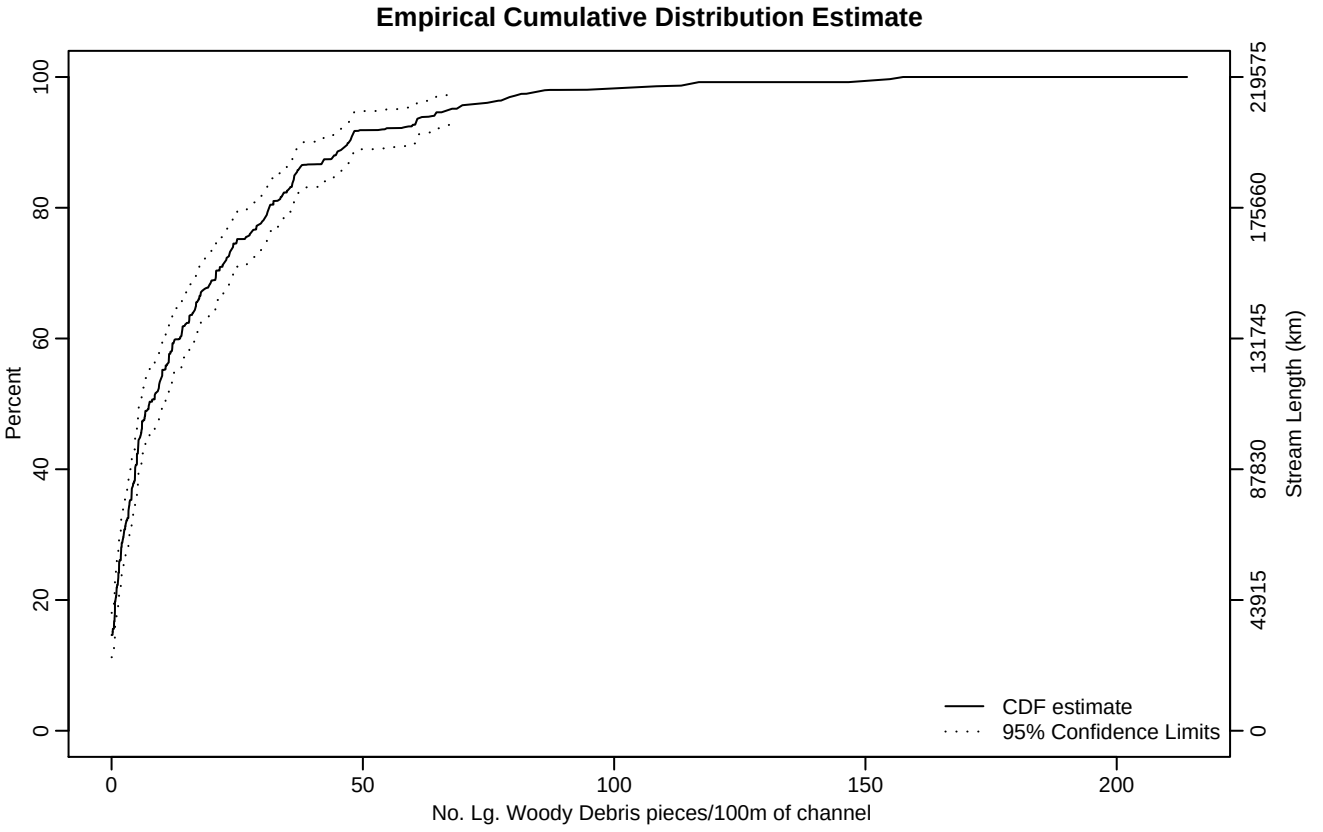


Figure PHAB−44 Indicator: C1WM100 Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	1.49	0.94	2.24
50Pct	7.50	5.69	10.10
75Pct	24.95	21.51	31.03
90Pct	47.21	41.85	60.65
95Pct	67.19	59.76	83.07
Mean	18.11	15.58	20.64
Std Dev	23.02	19.55	26.50

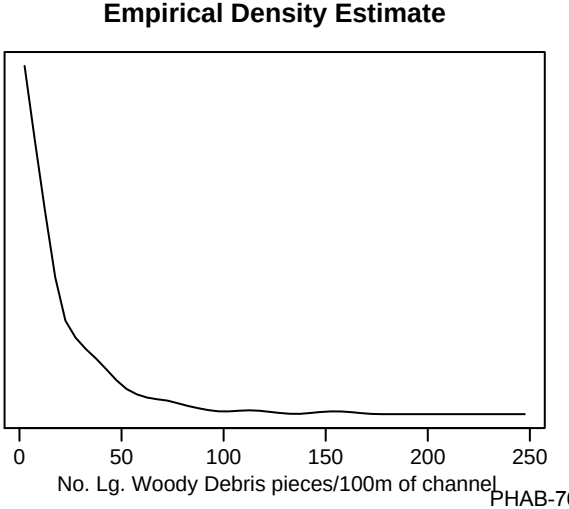
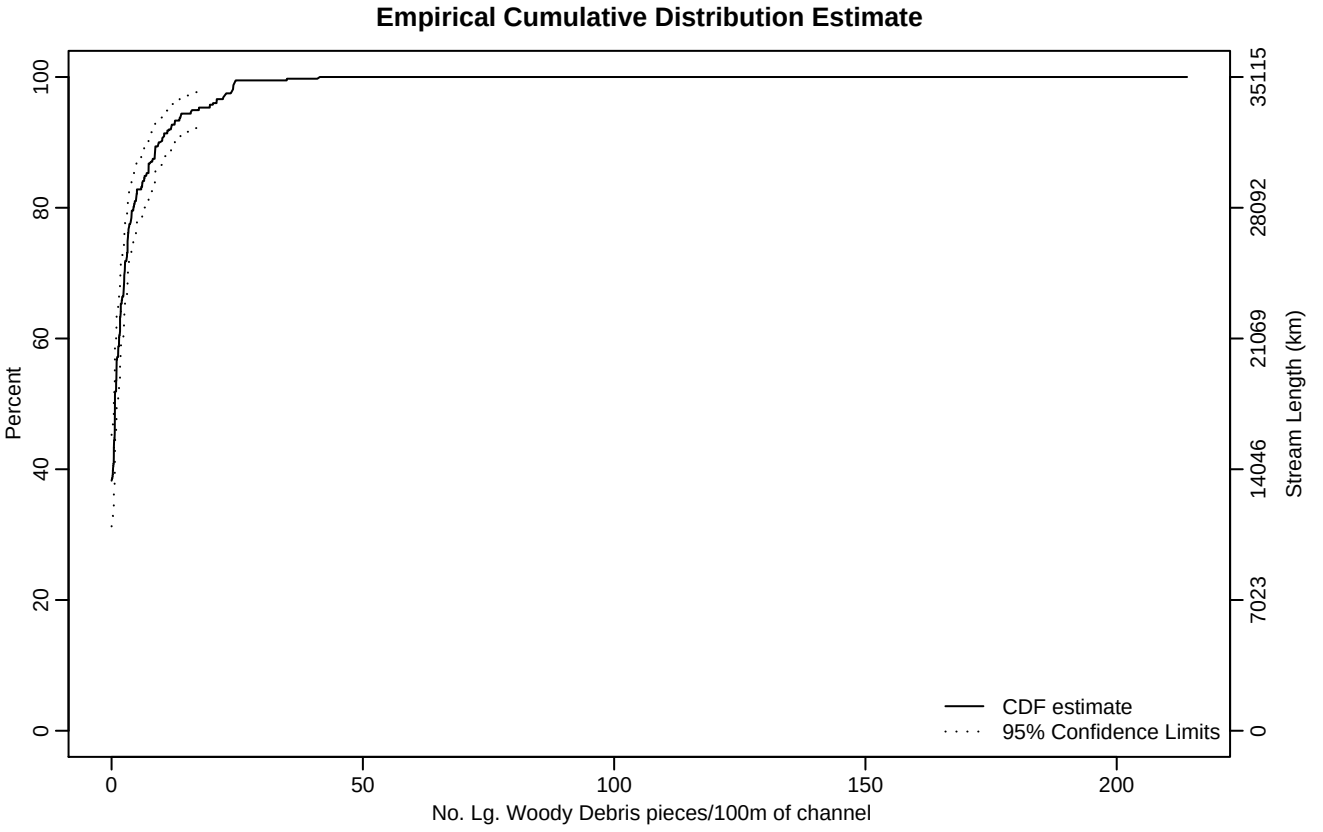


Figure PHAB−45 Indicator: C1WM100 Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.67	0.45	1.30
75Pct	3.19	2.51	4.59
90Pct	9.39	7.37	13.69
95Pct	17.37	11.86	23.90
Mean	3.20	2.49	3.92
Std Dev	5.61	4.55	6.68

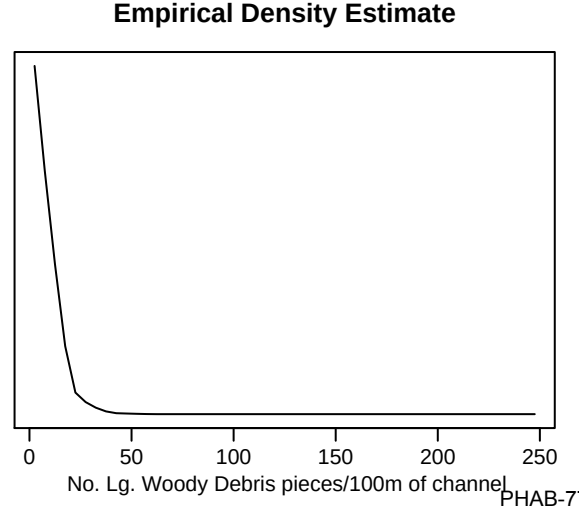
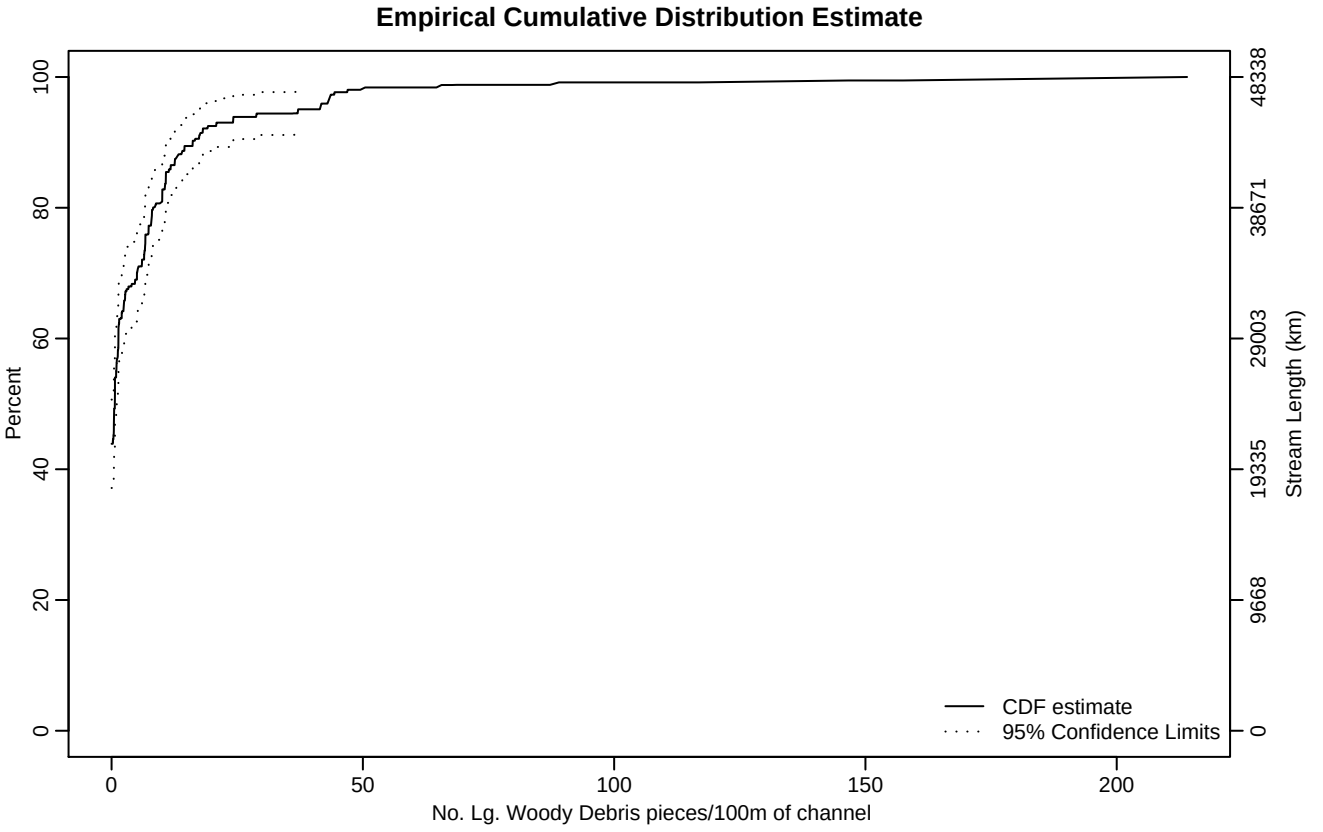


Figure PHAB−46 Indicator: C1WM100 Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.65	0	1.23
75Pct	6.72	4.67	10.07
90Pct	16.14	11.39	28.84
95Pct	37.12	18.14	50.25
Mean	7.05	4.63	9.47
Std Dev	14.82	10.71	18.94

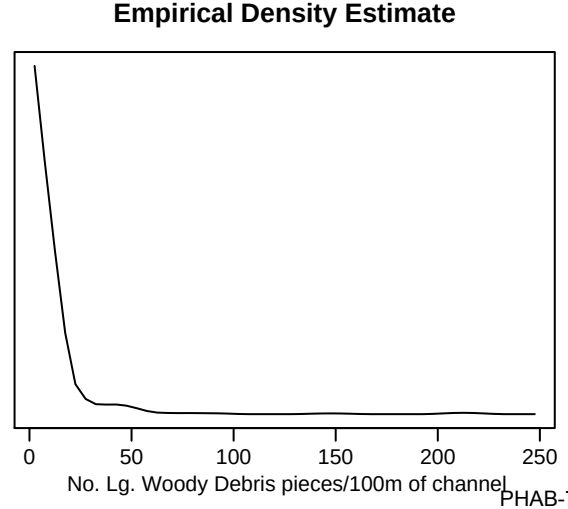
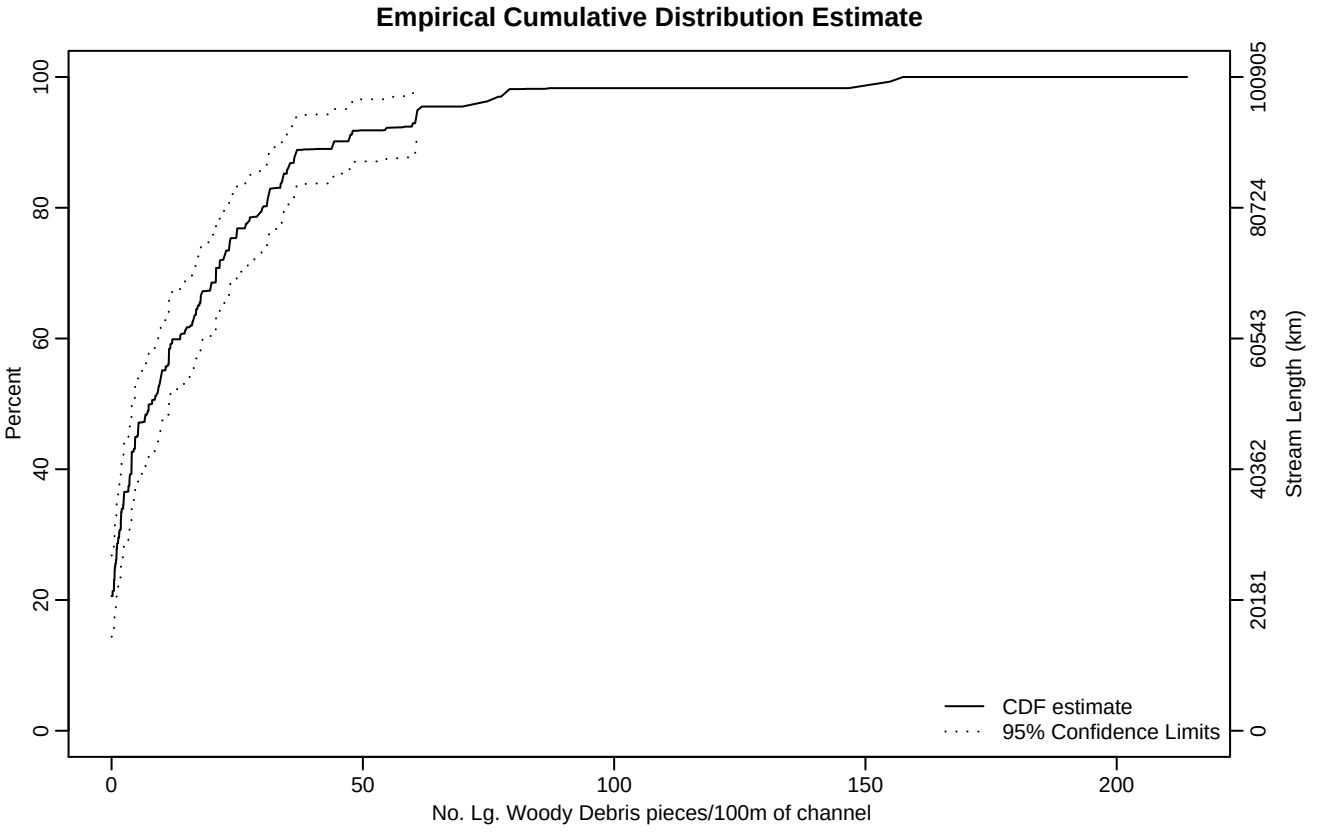


Figure PHAB−47 Indicator: C1WM100 Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.66	0	1.83
50Pct	8.05	4.01	11.43
75Pct	23.59	19.82	31.20
90Pct	44.22	34.11	61.52
95Pct	60.99	47.92	147.79
Mean	17.55	13.32	21.79
Std Dev	24.83	18.07	31.60

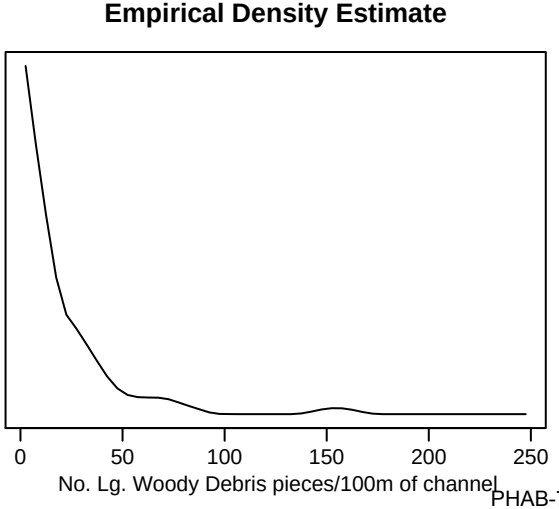
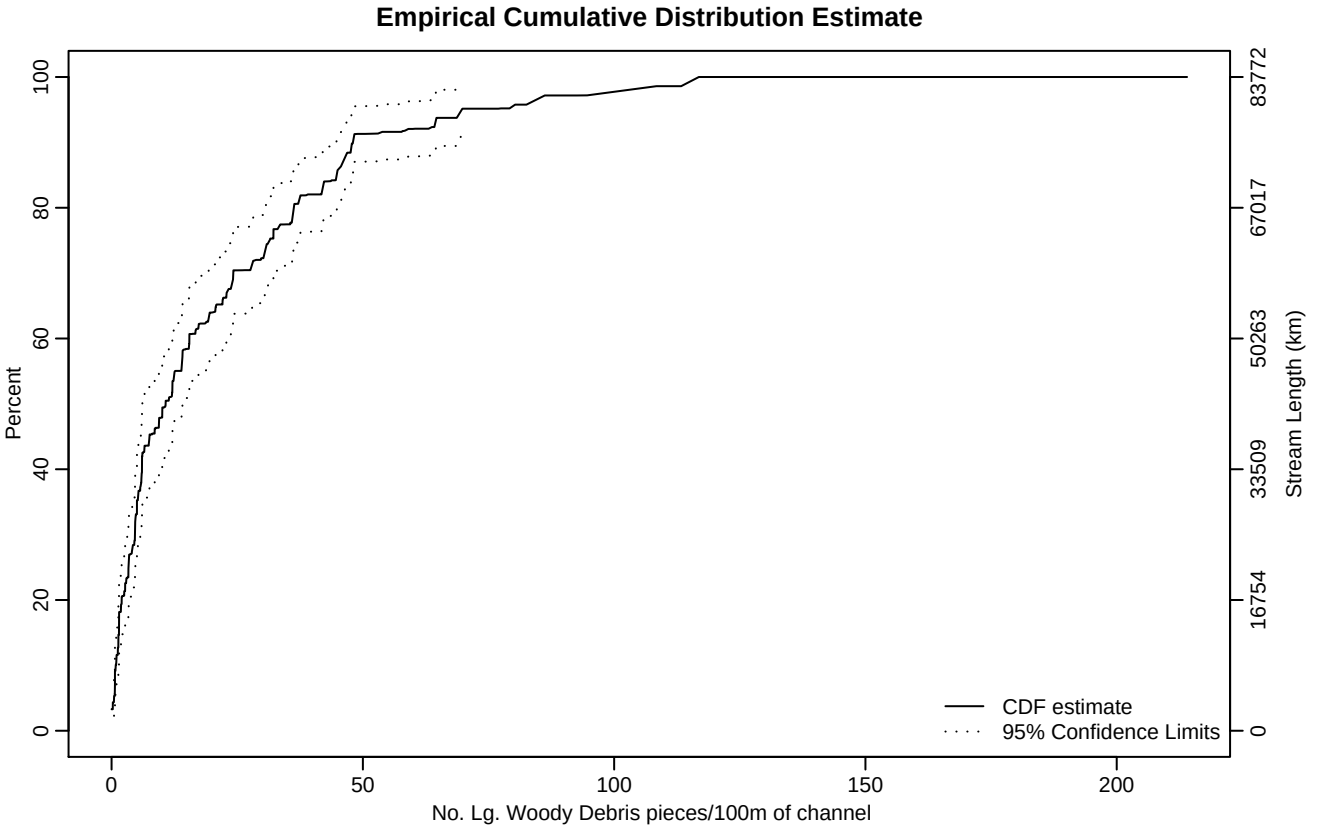


Figure PHAB−48 Indicator: C1WM100 Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.49	0	0.67
10Pct	0.83	0.65	1.35
25Pct	3.37	1.86	4.69
50Pct	10.75	6.12	14.13
75Pct	31.43	23.94	37.51
90Pct	48.02	44.79	69.69
95Pct	69.68	48.14	115.60
Mean	20.85	17.11	24.58
Std Dev	22.03	18.72	25.34

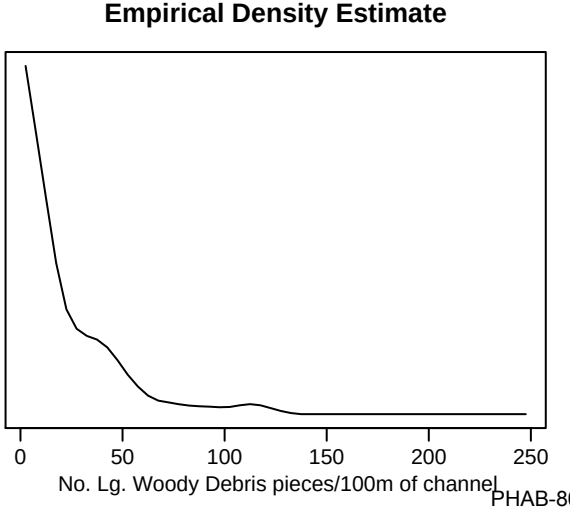
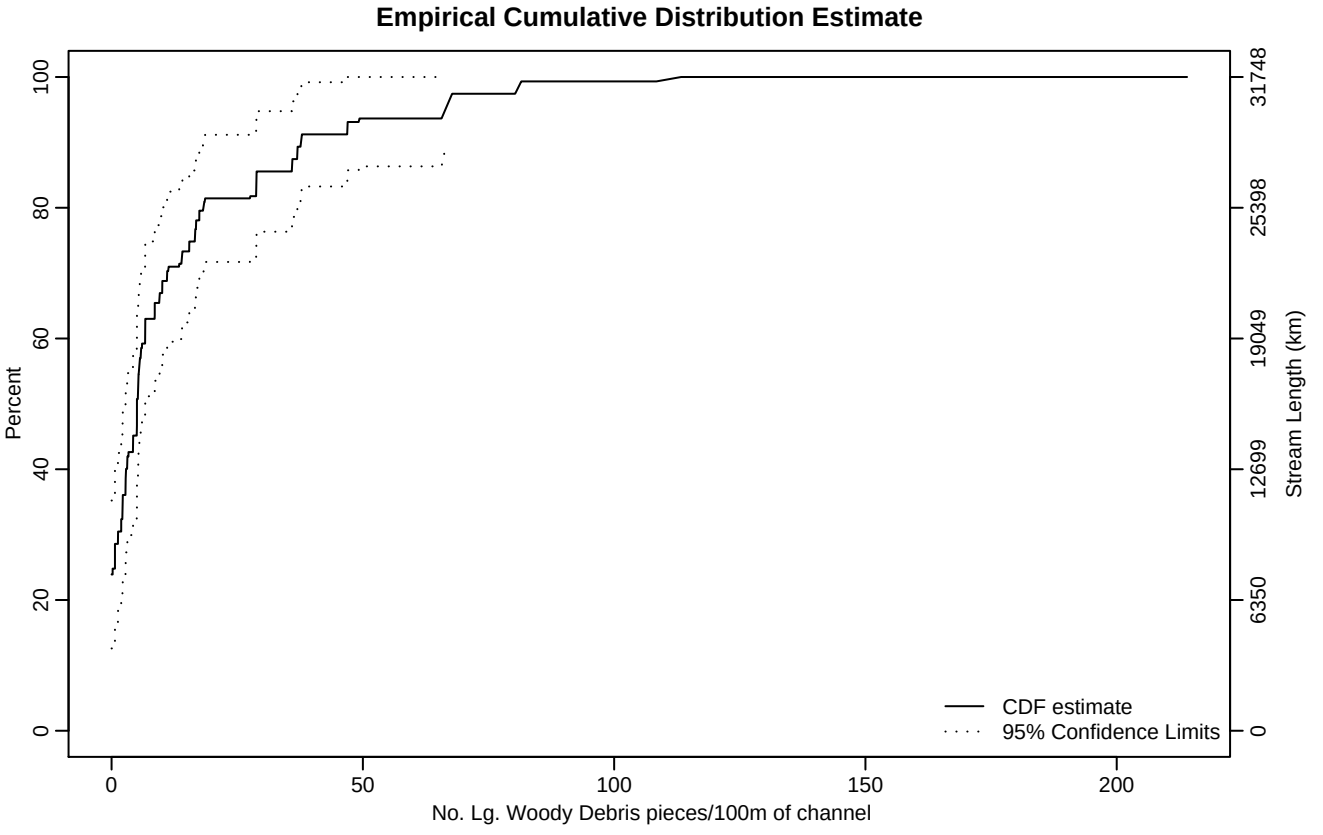


Figure PHAB−49 Indicator: C1WM100 Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.67	0	2.76
50Pct	5.05	2.77	8.57
75Pct	16.56	8.59	35.89
90Pct	37.69	27.55	80.95
95Pct	66.41	36.92	113.33
Mean	13.28	7.94	18.63
Std Dev	19.45	13.69	25.21

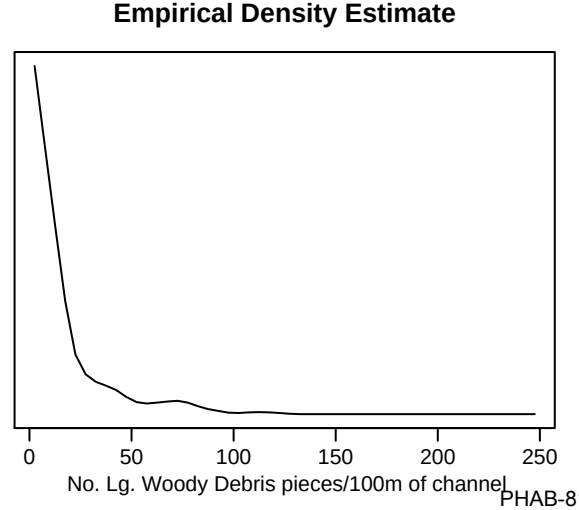
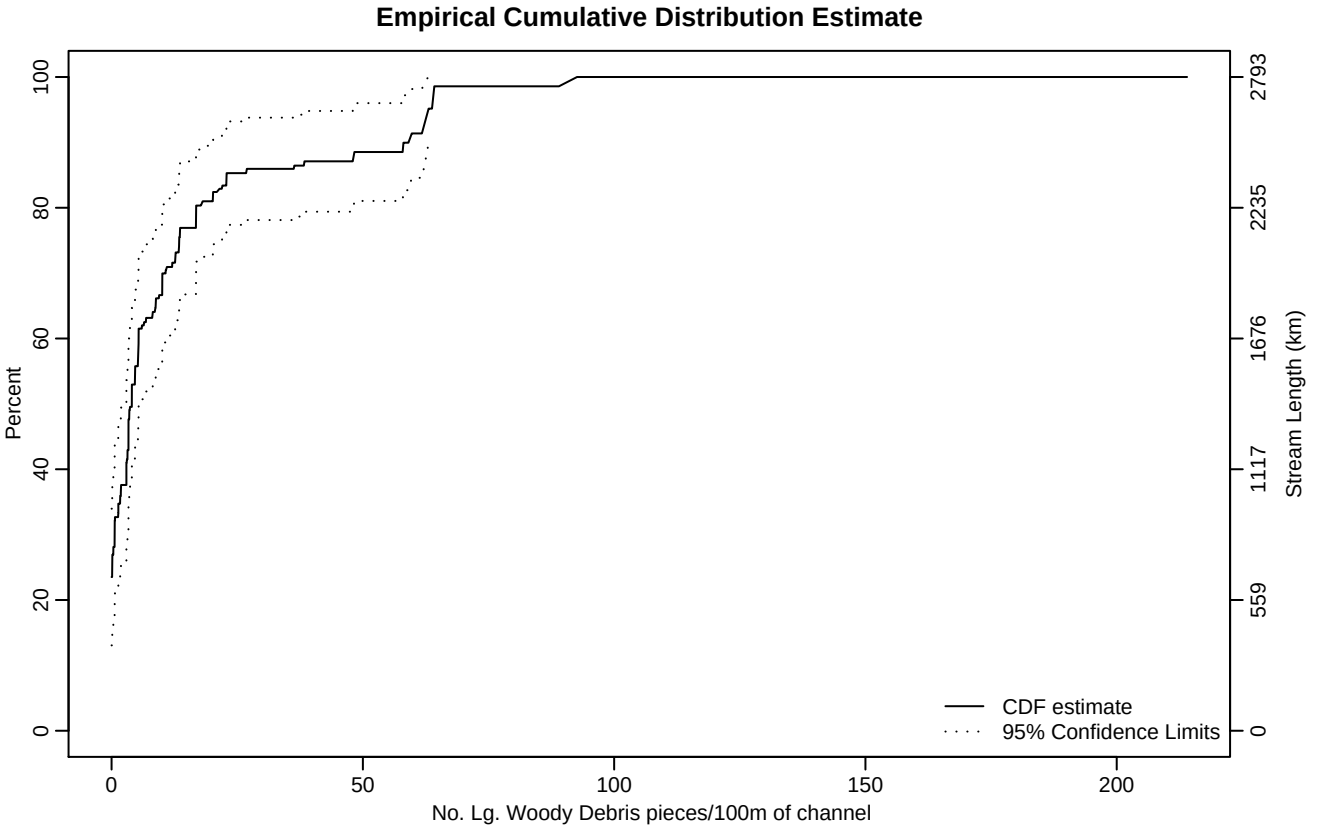


Figure PHAB−50 Indicator: C1WM100 Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.13	0	1.71
50Pct	4.03	2.95	6.42
75Pct	13.45	8.76	22.89
90Pct	59.09	21.33	64.04
95Pct	63.03	57.95	92.62
Mean	13.22	8.35	18.09
Std Dev	19.57	15.50	23.63

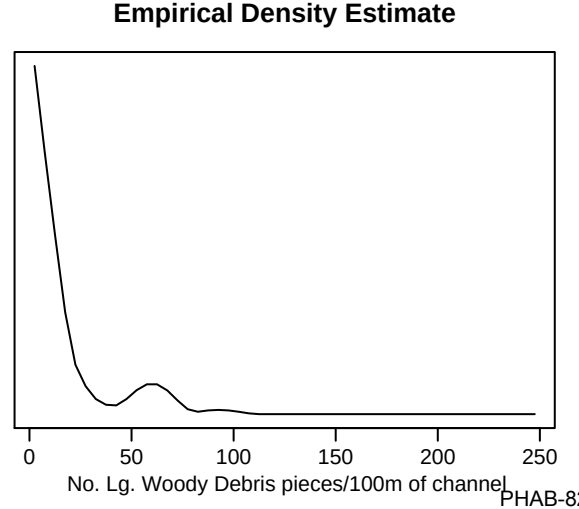
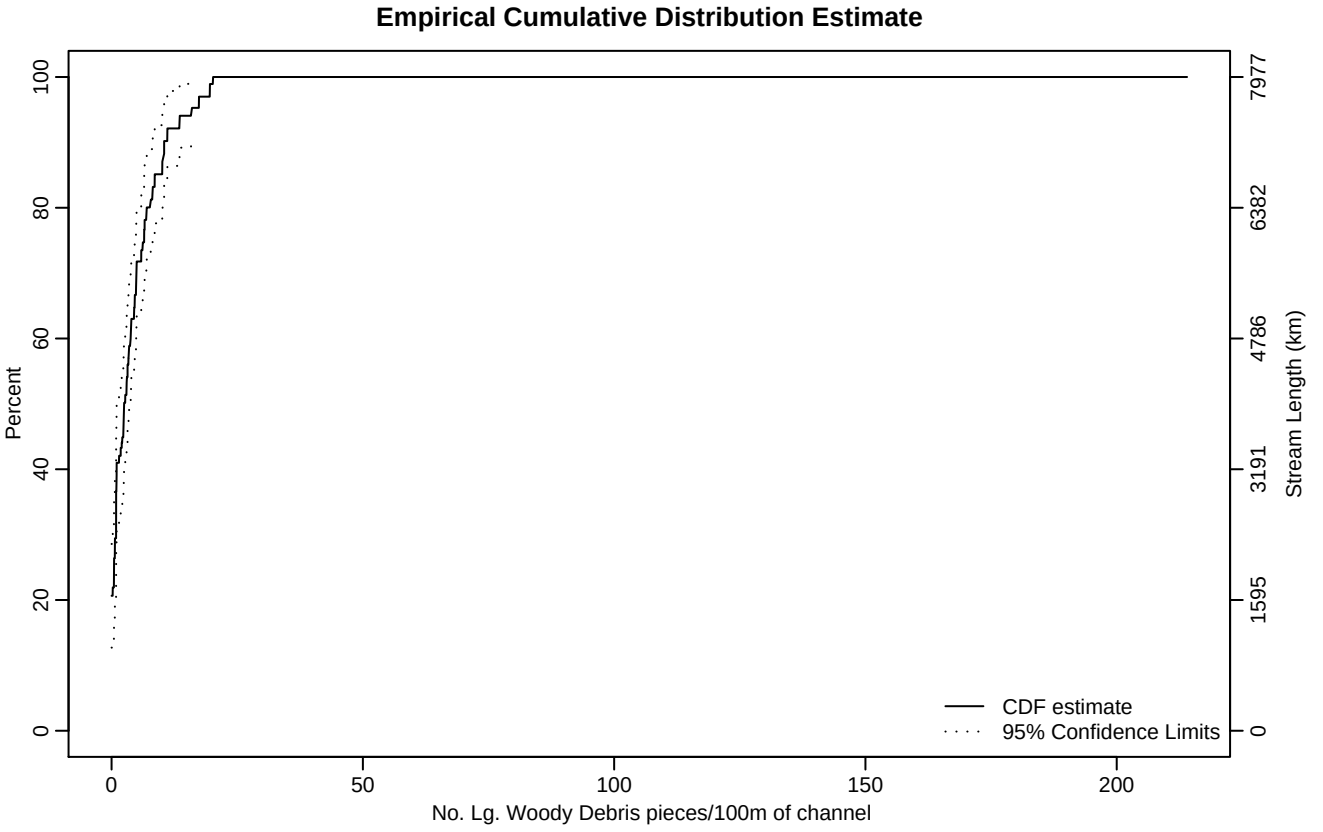


Figure PHAB−51 Indicator: C1WM100 Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.49	0	0.90
50Pct	2.49	1	3.82
75Pct	6.48	4.62	8.57
90Pct	10.46	8.18	19.53
95Pct	15.95	10.46	20.20
Mean	4.26	3.33	5.19
Std Dev	4.02	3.30	4.73

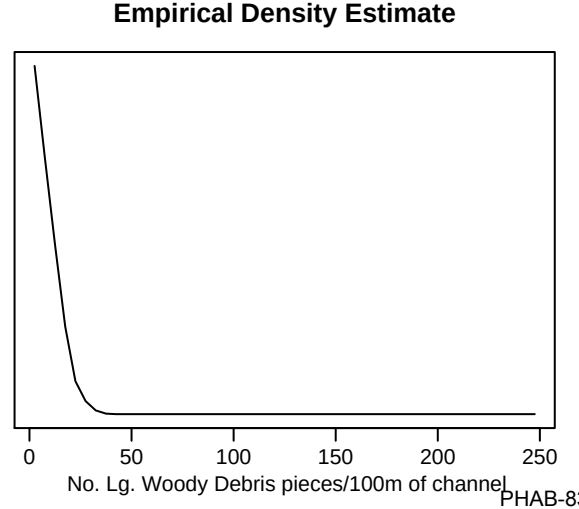
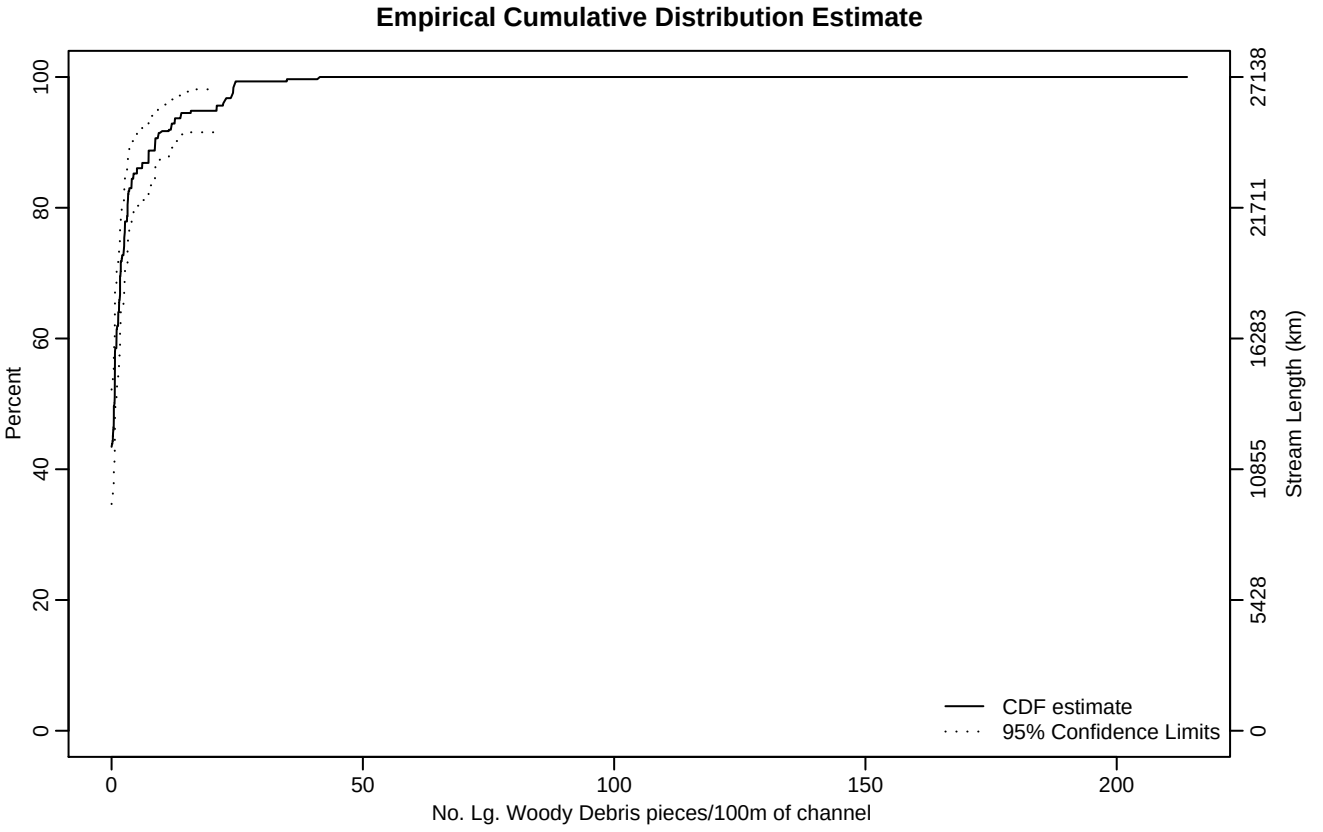


Figure PHAB−52 Indicator: C1WM100 Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.56	0	0.96
75Pct	2.52	1.68	3.50
90Pct	8.68	4.32	20.92
95Pct	20.89	10.01	24.24
Mean	2.90	2.02	3.77
Std Dev	5.38	4.13	6.62

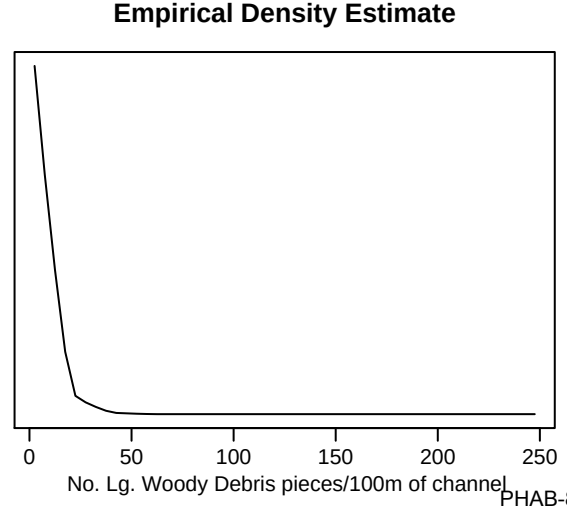
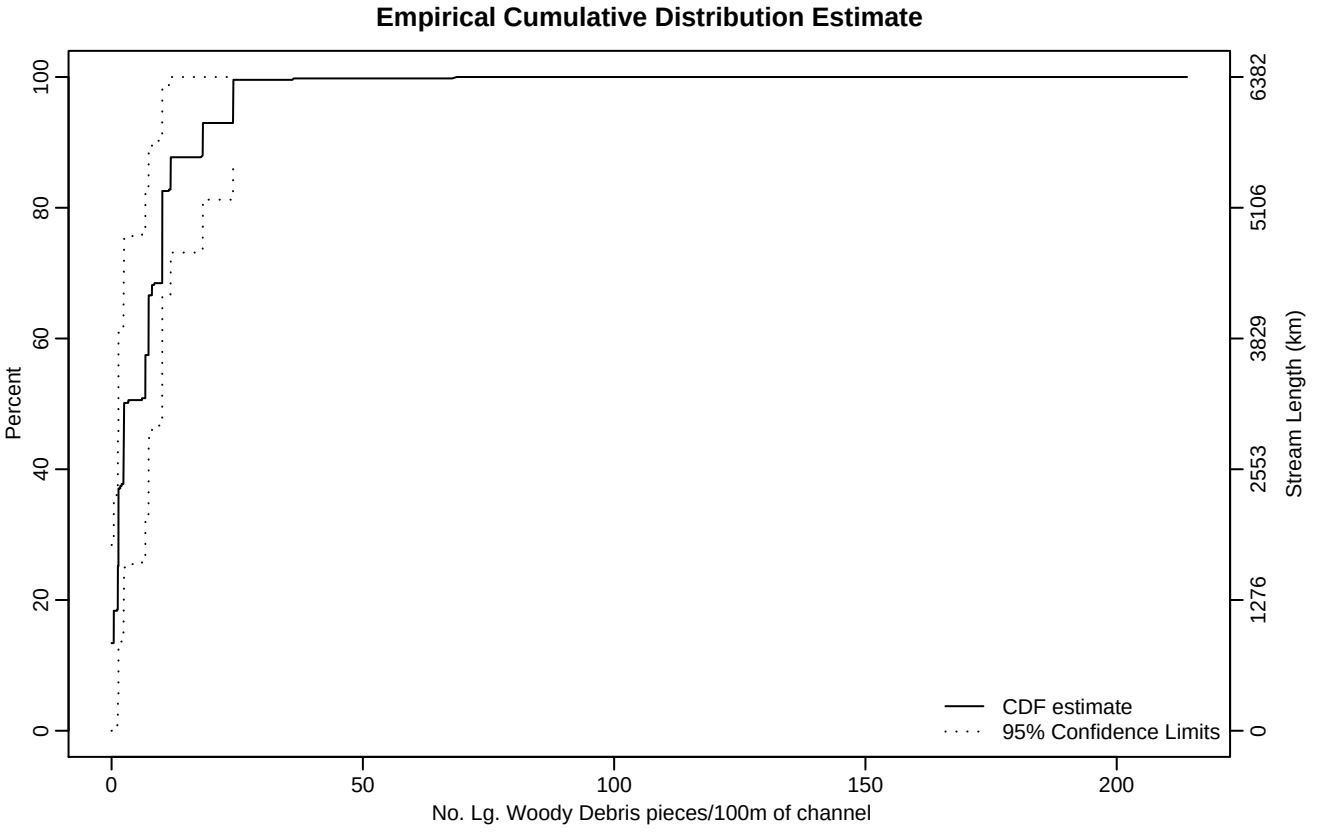


Figure PHAB−53 Indicator: C1WM100 Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	1.24
10Pct	0	0	1.26
25Pct	1.26	0	2.42
50Pct	2.50	1.37	10.08
75Pct	10.08	6.72	24.20
90Pct	18.15	10.08	68.69
95Pct	24.19	11.74	68.69
Mean	6.71	3.43	9.98
Std Dev	7.49	4.93	10.06

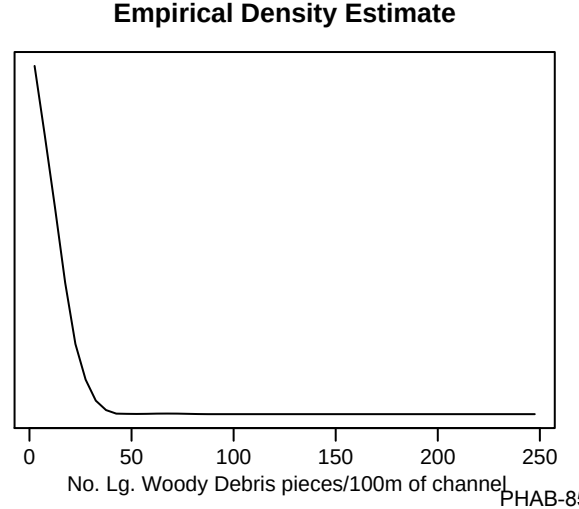
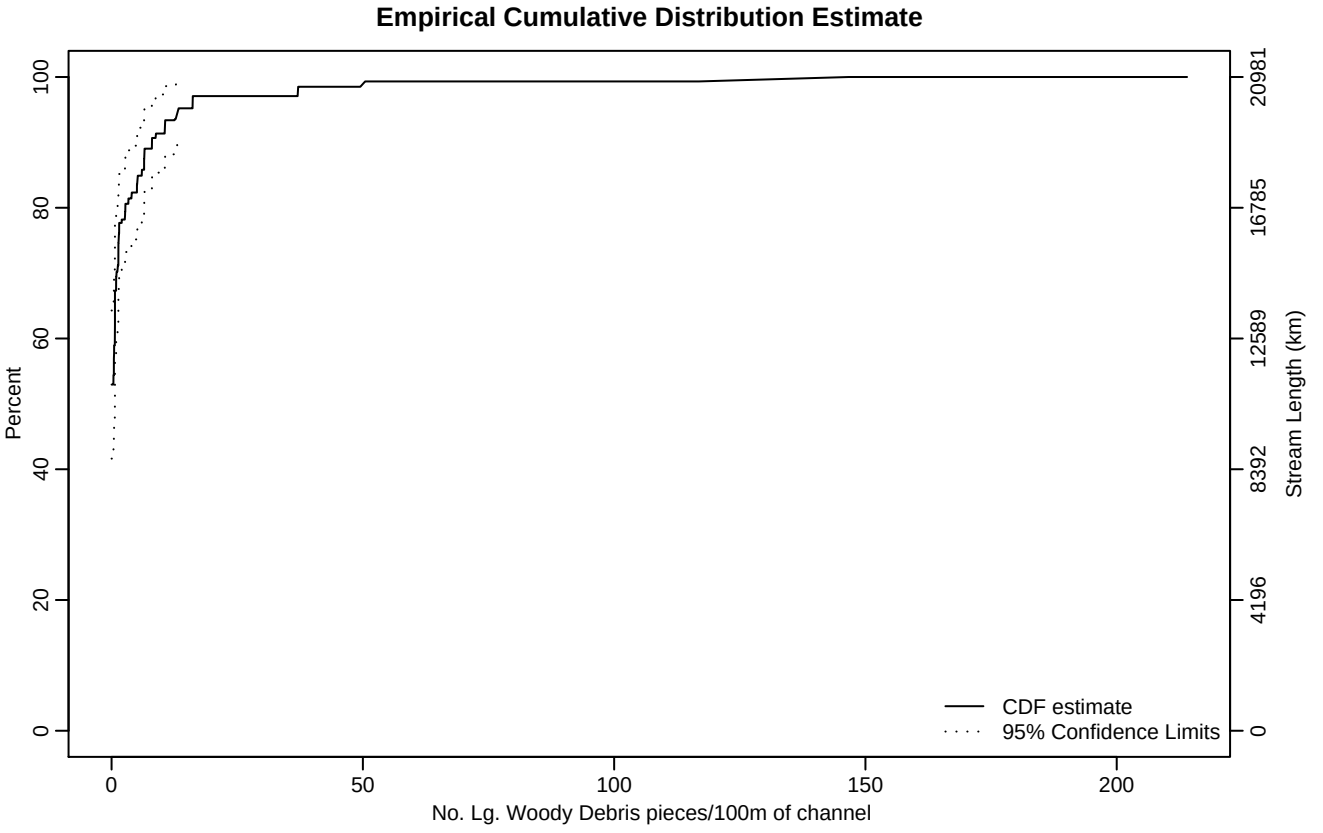


Figure PHAB−54 Indicator: C1WM100 Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.66
75Pct	1.40	0.67	5.05
90Pct	8.04	5.05	16.15
95Pct	13.26	8.03	146.67
Mean	3.64	1.46	5.82
Std Dev	10.10	5.54	14.66

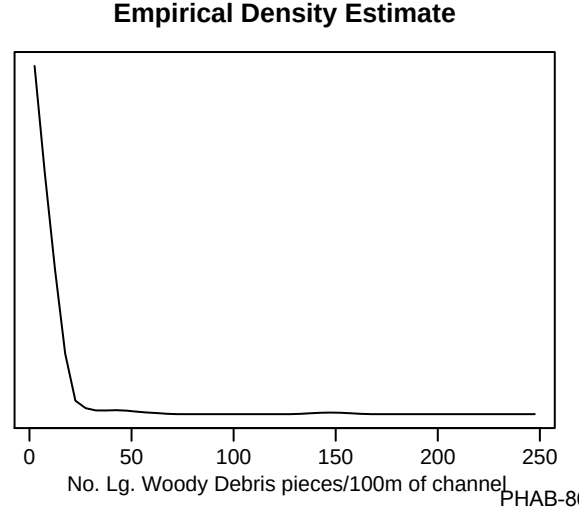
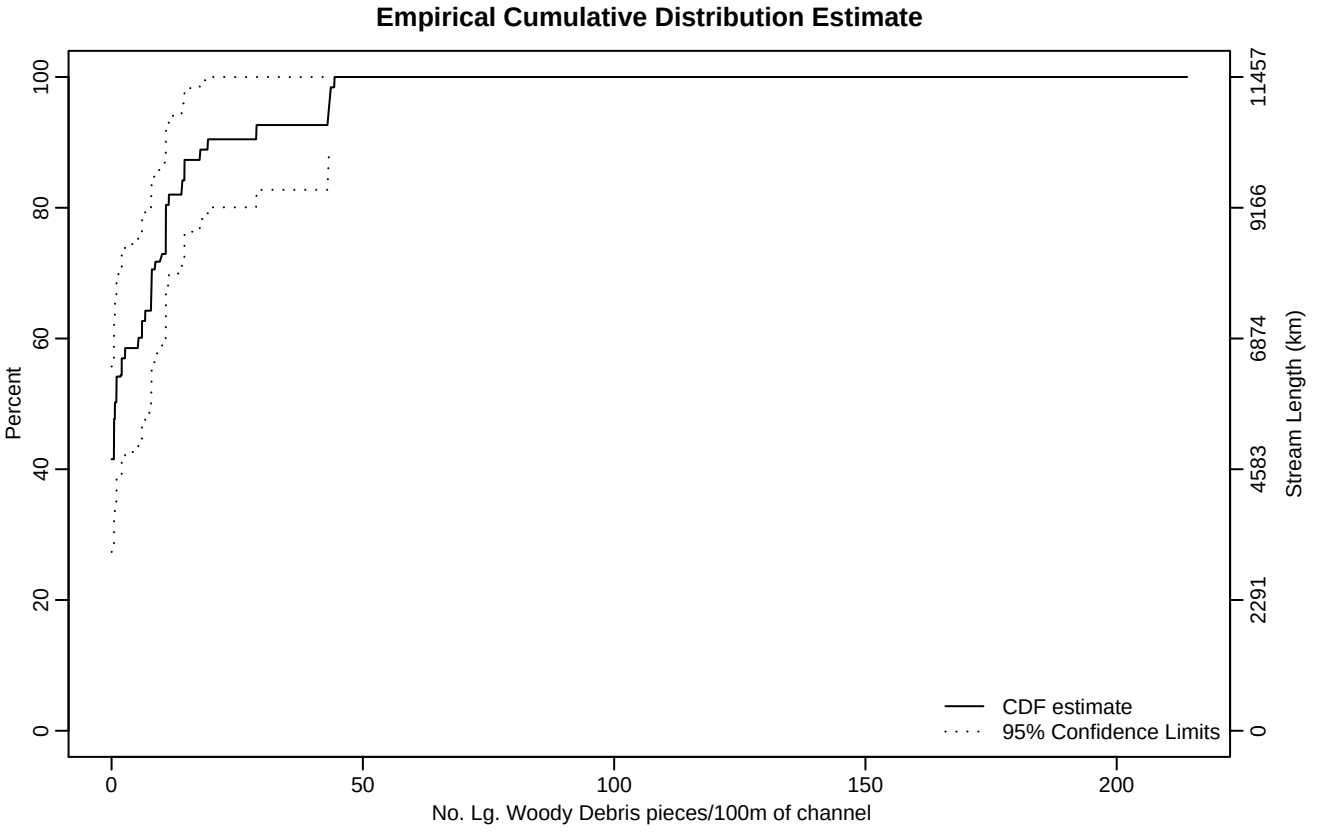


Figure PHAB−55 Indicator: C1WM100 Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.67	0	7.87
75Pct	10.79	5.35	19.16
90Pct	19.16	10.81	44.37
95Pct	43.23	14.49	44.37
Mean	7.44	3.12	11.76
Std Dev	10.53	7.09	13.97

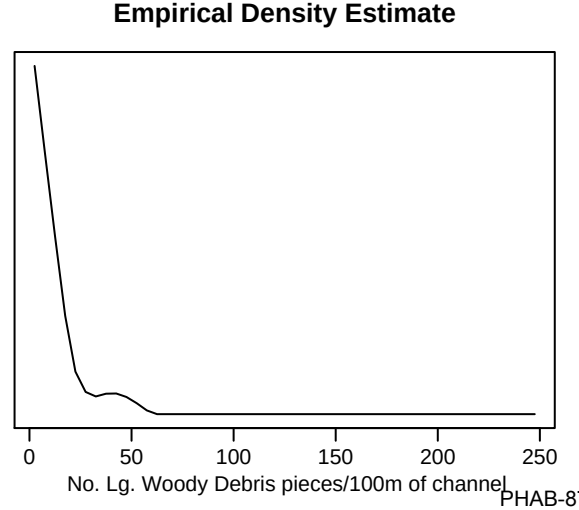
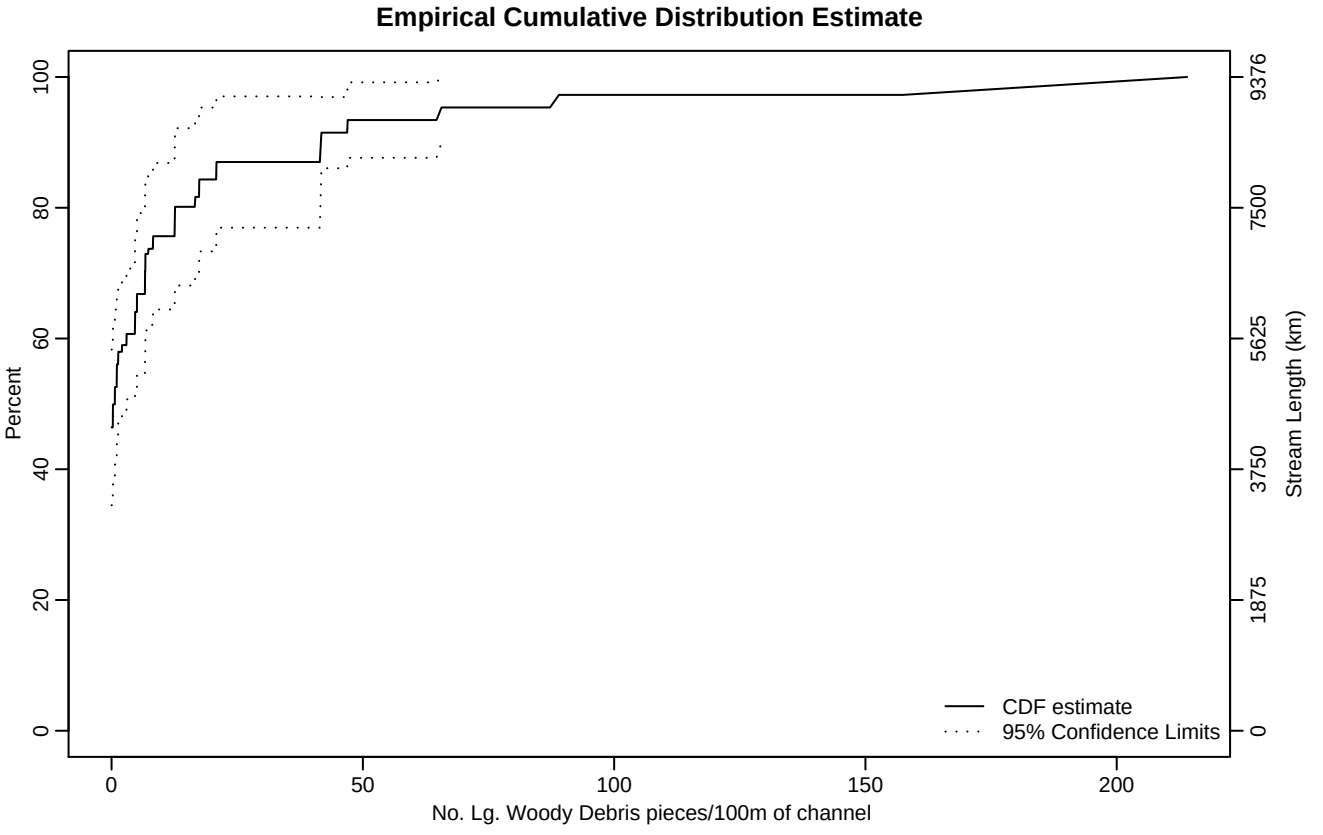


Figure PHAB−56 Indicator: C1WM100 Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.64	0	4.65
75Pct	8.25	4.67	41.46
90Pct	41.65	12.62	214
95Pct	65.48	41.59	214
Mean	14.54	4.76	24.31
Std Dev	29.16	18.51	39.80

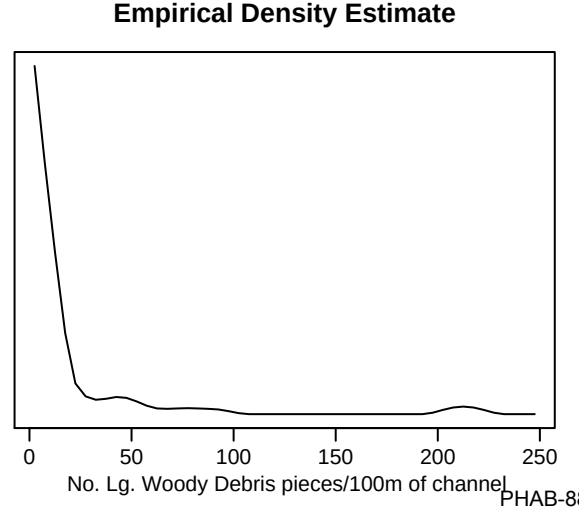
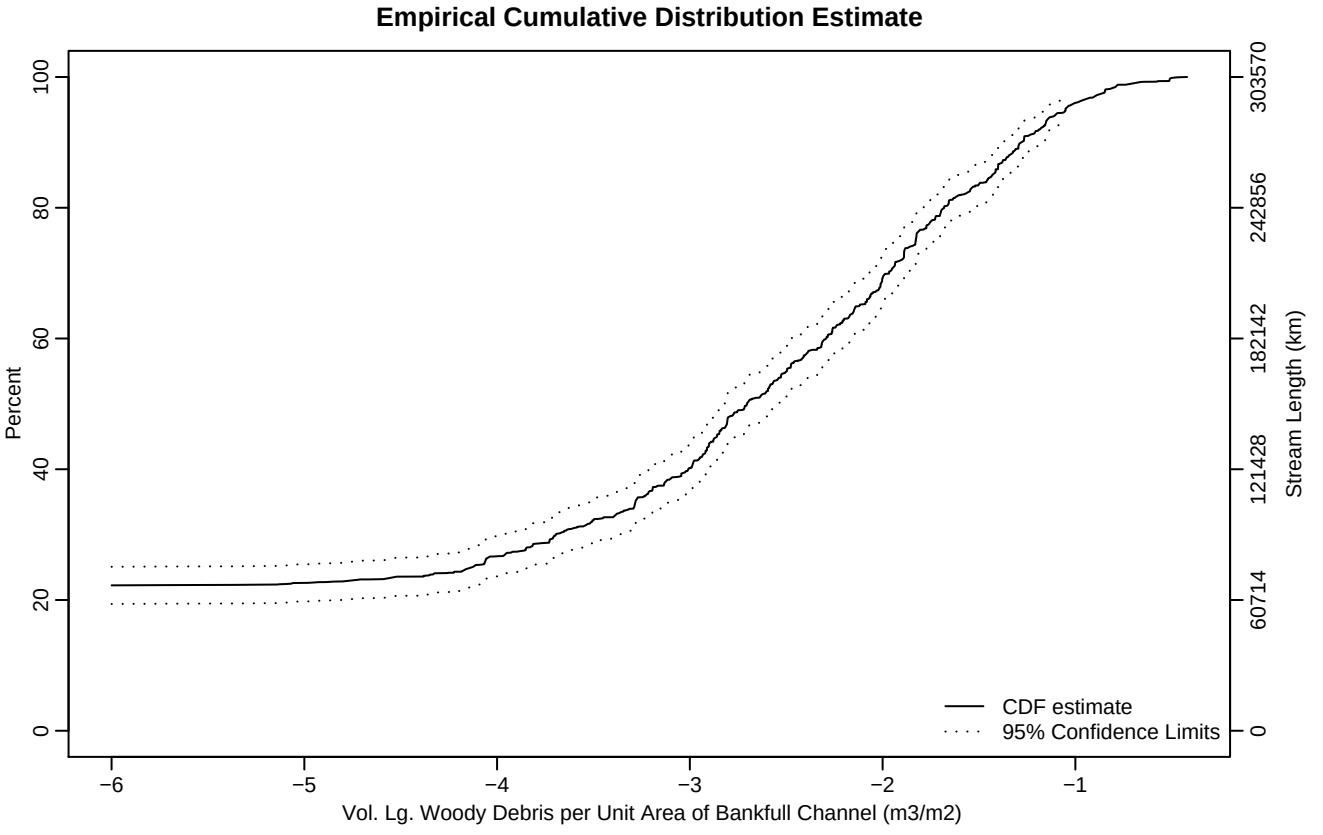


Figure PHAB−57 Indicator: LV1W_msq Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−4.13	−6	−3.83
50Pct	−2.70	−2.84	−2.54
75Pct	−1.83	−1.94	−1.70
90Pct	−1.28	−1.36	−1.16
95Pct	−1.05	−1.15	−0.90
Mean	−3.16	−3.28	−3.04
Std Dev	1.53	1.47	1.59

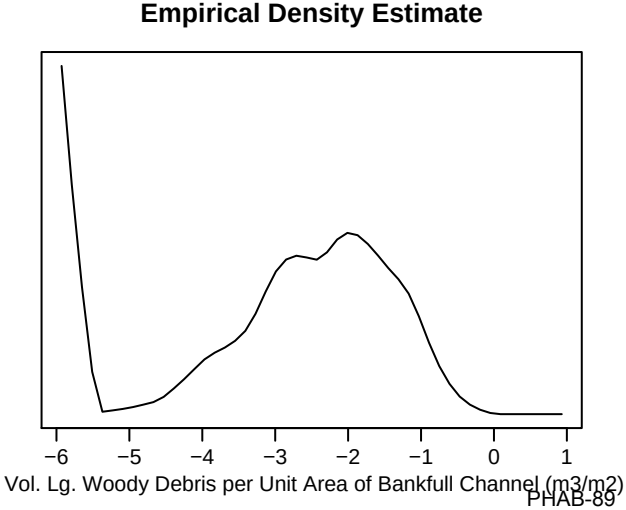
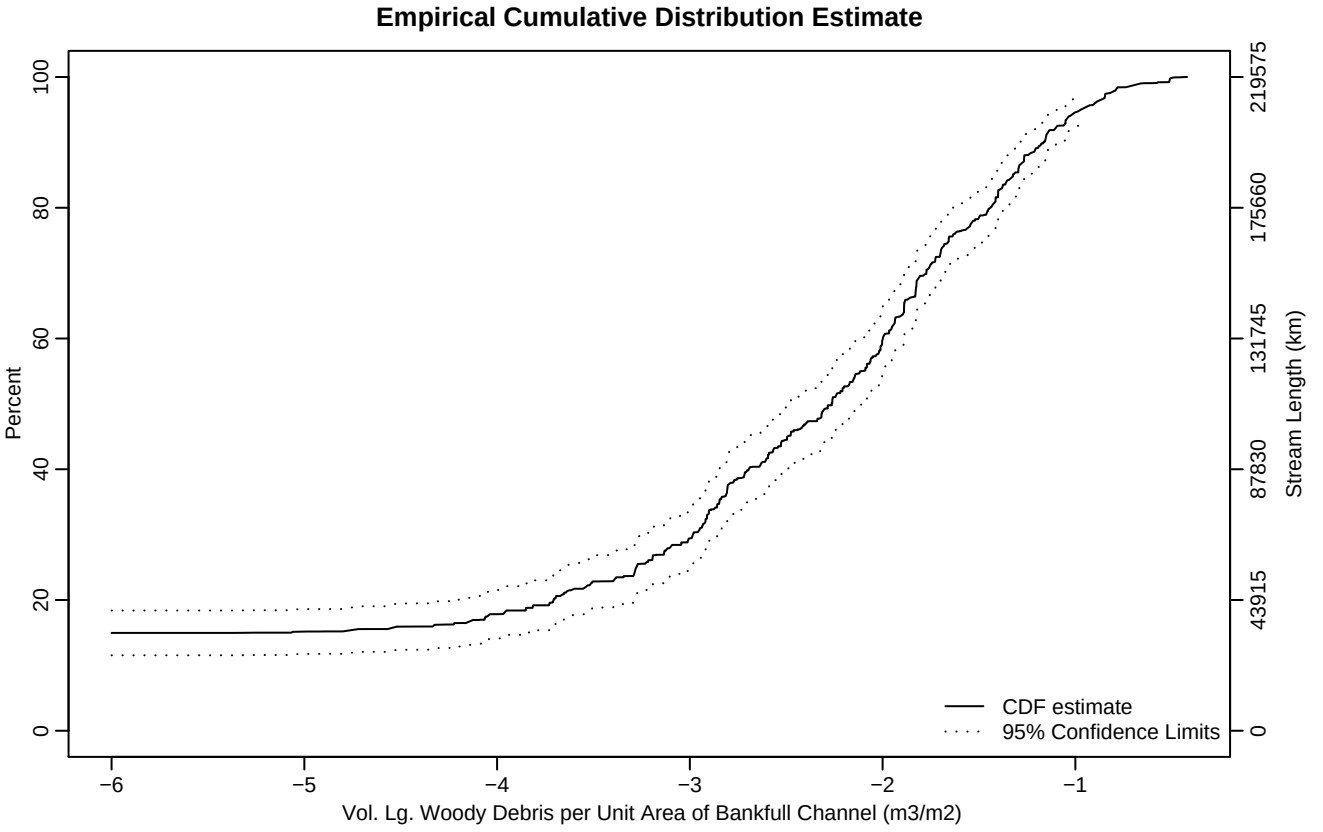


Figure PHAB−58 Indicator: LV1W_msq Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−3.28	−3.67	−3.01
50Pct	−2.26	−2.50	−2.09
75Pct	−1.66	−1.77	−1.46
90Pct	−1.17	−1.28	−1.05
95Pct	−0.97	−1.06	−0.85
Mean	−2.75	−2.91	−2.60
Std Dev	1.42	1.33	1.51

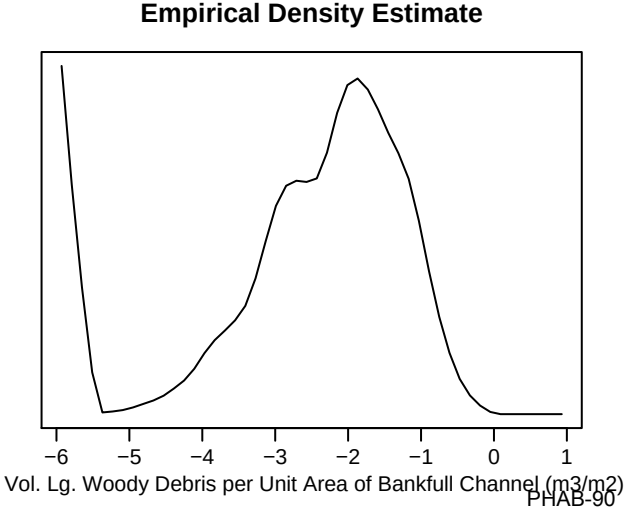
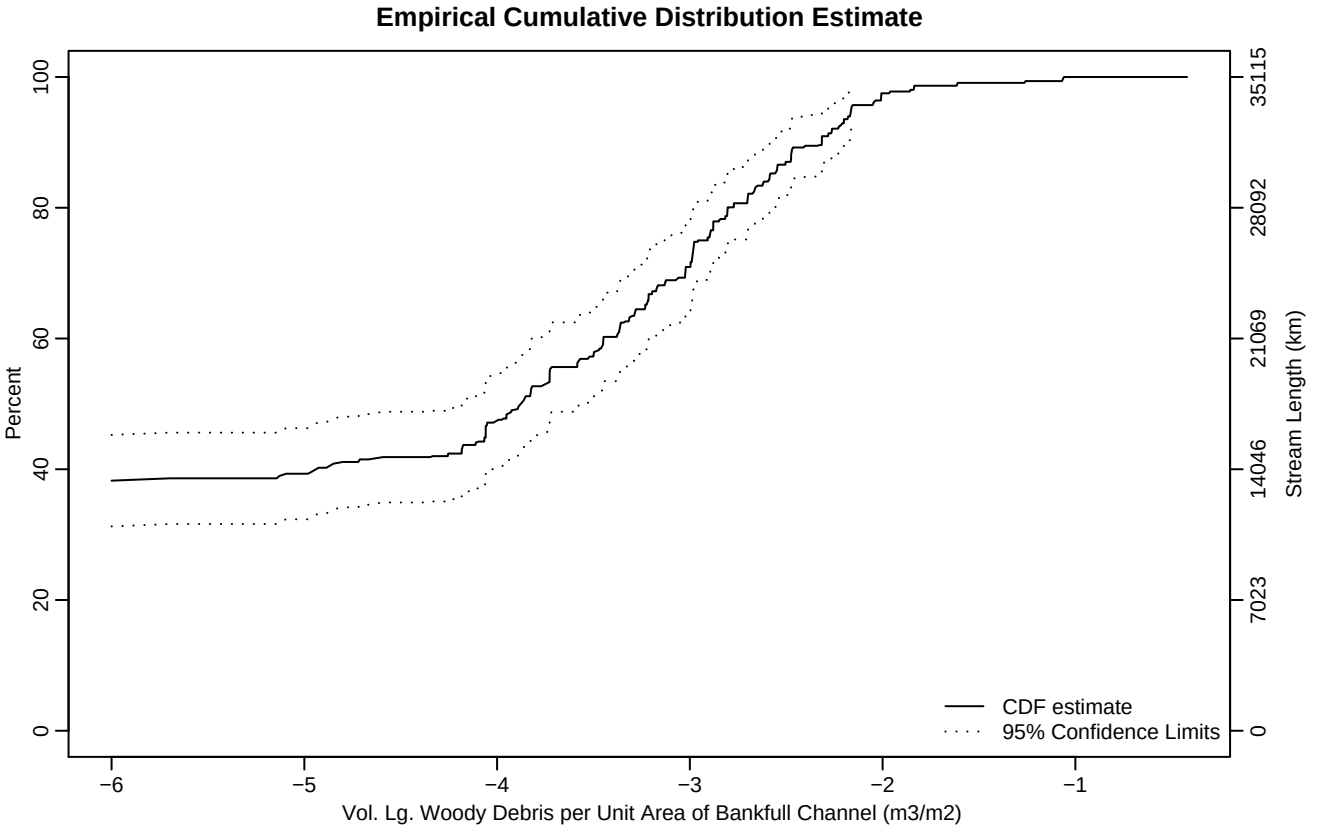


Figure PHAB−59 Indicator: LV1W_msq Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−6	−6	−6
50Pct	−3.88	−4.18	−3.52
75Pct	−2.96	−3.07	−2.70
90Pct	−2.32	−2.56	−2.16
95Pct	−2.16	−2.28	−1.84
Mean	−4.25	−4.46	−4.03
Std Dev	1.49	1.42	1.57

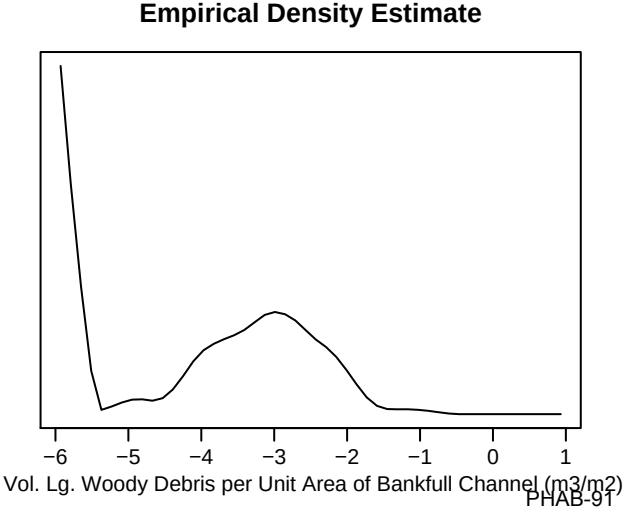
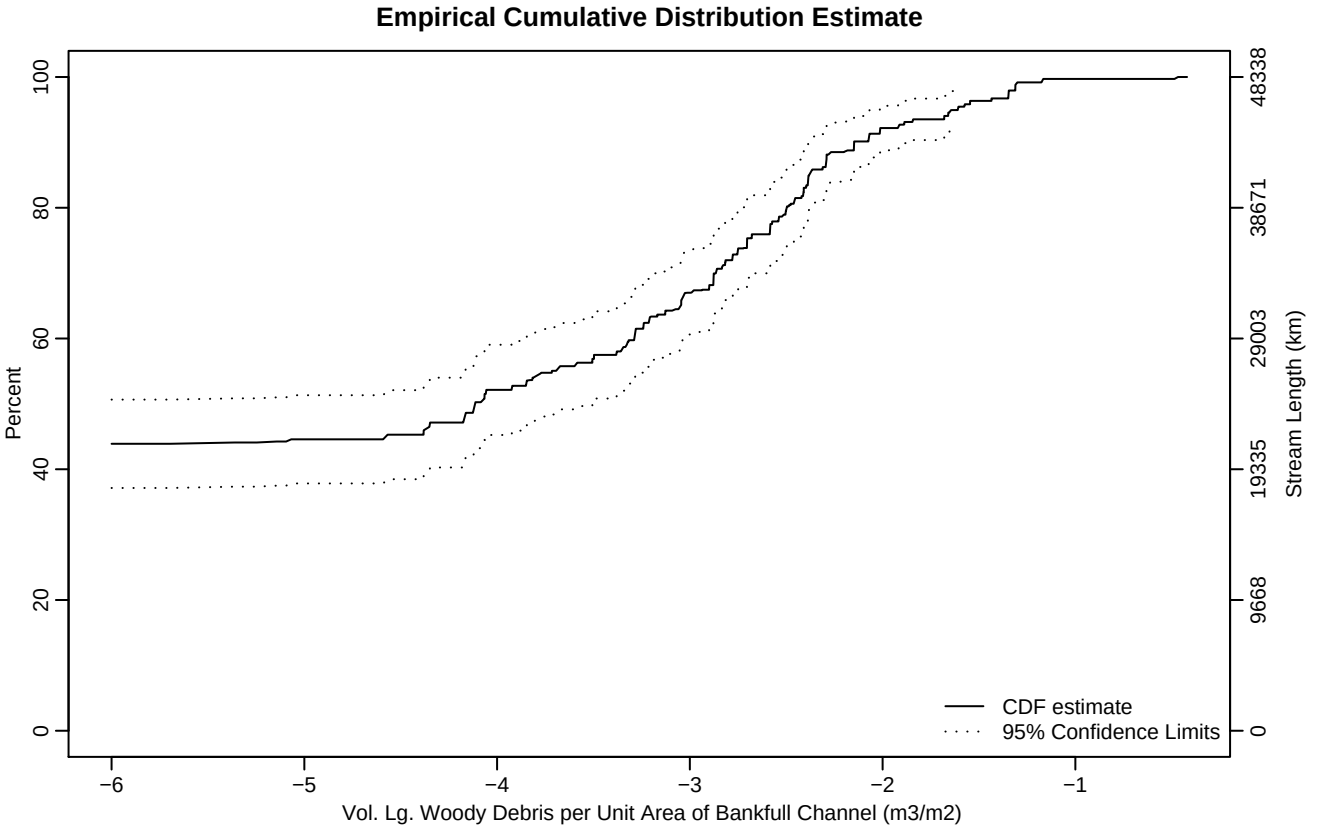


Figure PHAB−60 Indicator: LV1W_msq Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−6	−6	−6
50Pct	−4.11	−6	−3.50
75Pct	−2.70	−2.88	−2.45
90Pct	−2.15	−2.37	−1.66
95Pct	−1.61	−2.01	−1.35
Mean	−4.24	−4.47	−4.02
Std Dev	1.56	1.45	1.66

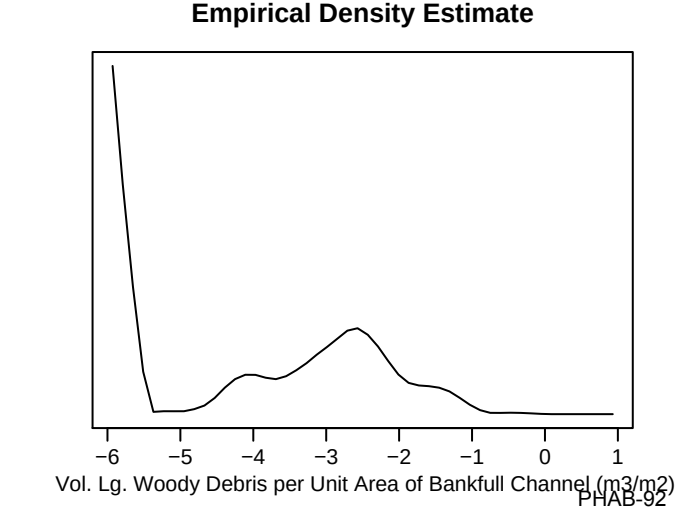
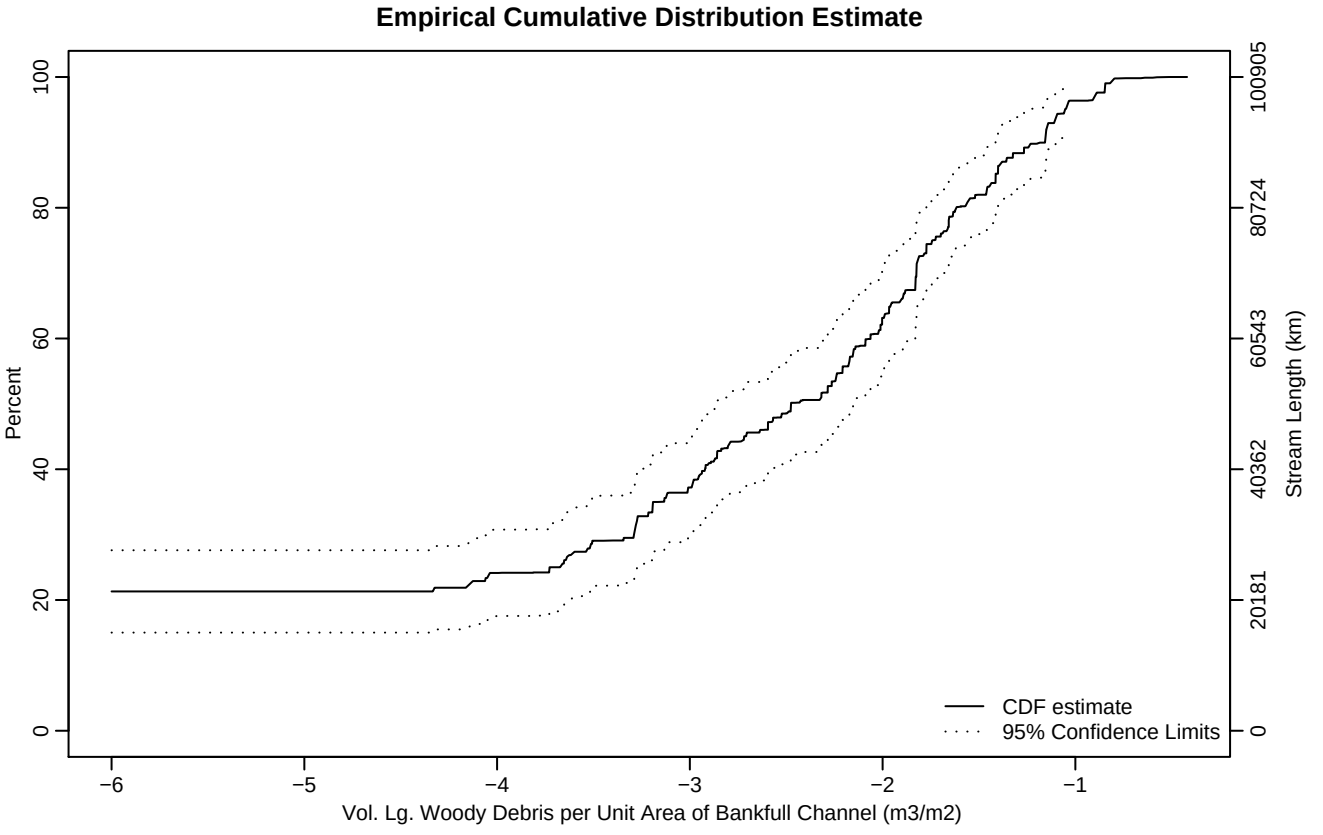


Figure PHAB−61 Indicator: LV1W_msq Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−3.73	−6	−3.28
50Pct	−2.48	−2.86	−2.15
75Pct	−1.74	−1.83	−1.52
90Pct	−1.16	−1.41	−1.04
95Pct	−1.05	−1.15	−0.85
Mean	−3.02	−3.29	−2.74
Std Dev	1.59	1.46	1.72

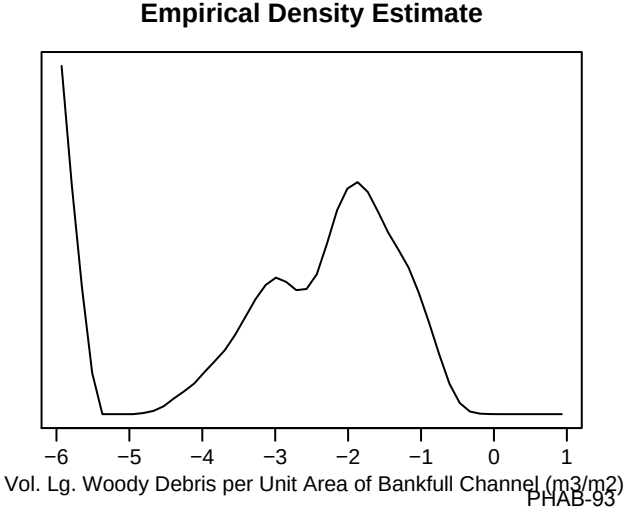
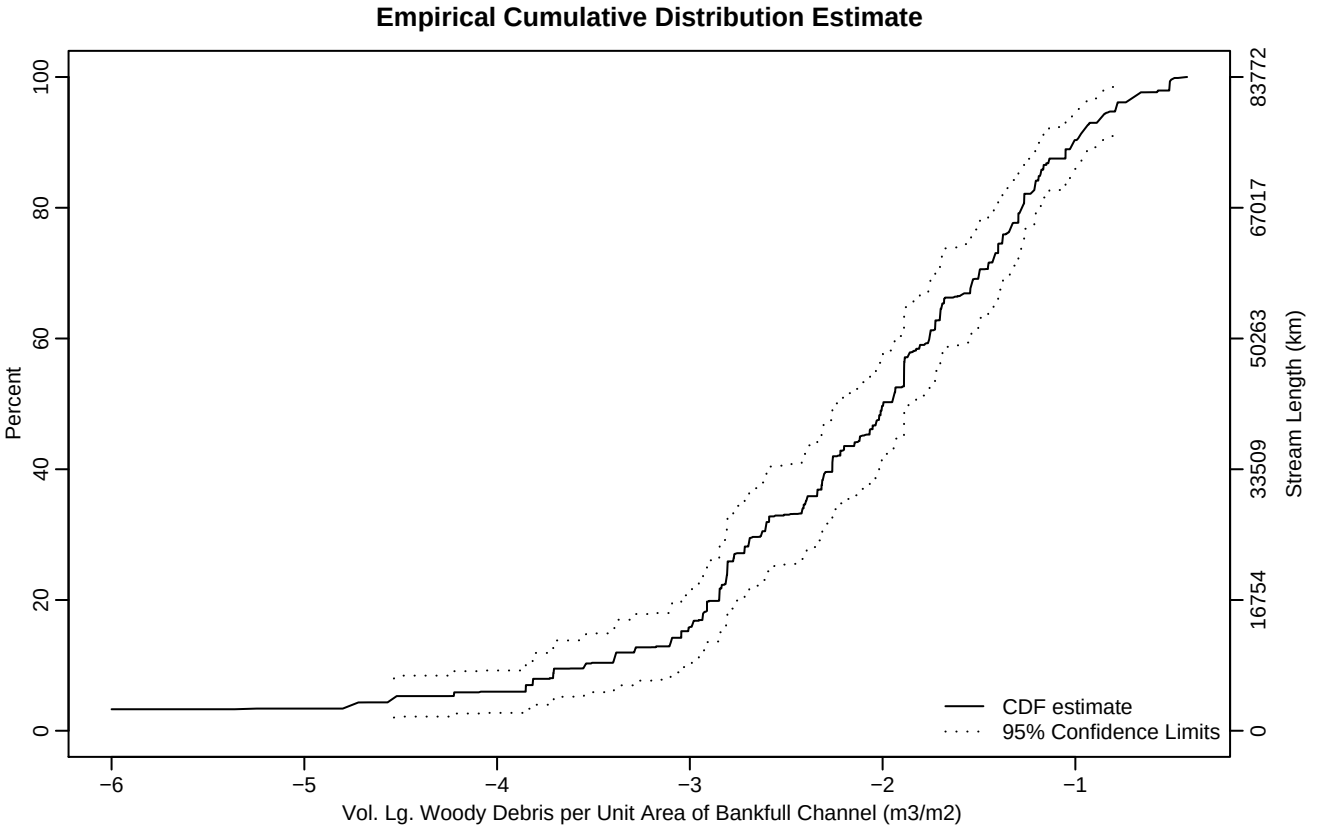


Figure PHAB−62 Indicator: LV1W_msq Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−4.54	−6	−3.81
10Pct	−3.54	−4.22	−3.04
25Pct	−2.81	−2.93	−2.59
50Pct	−2	−2.23	−1.85
75Pct	−1.38	−1.54	−1.23
90Pct	−1.01	−1.18	−0.79
95Pct	−0.79	−0.97	−0.51
Mean	−2.19	−2.36	−2.03
Std Dev	1.09	0.95	1.24

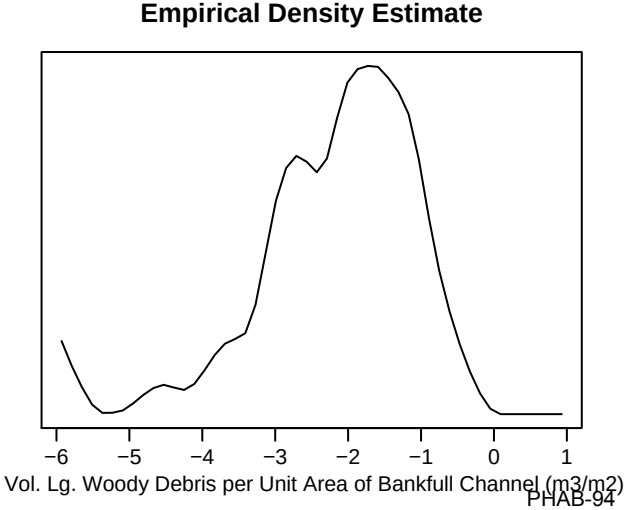
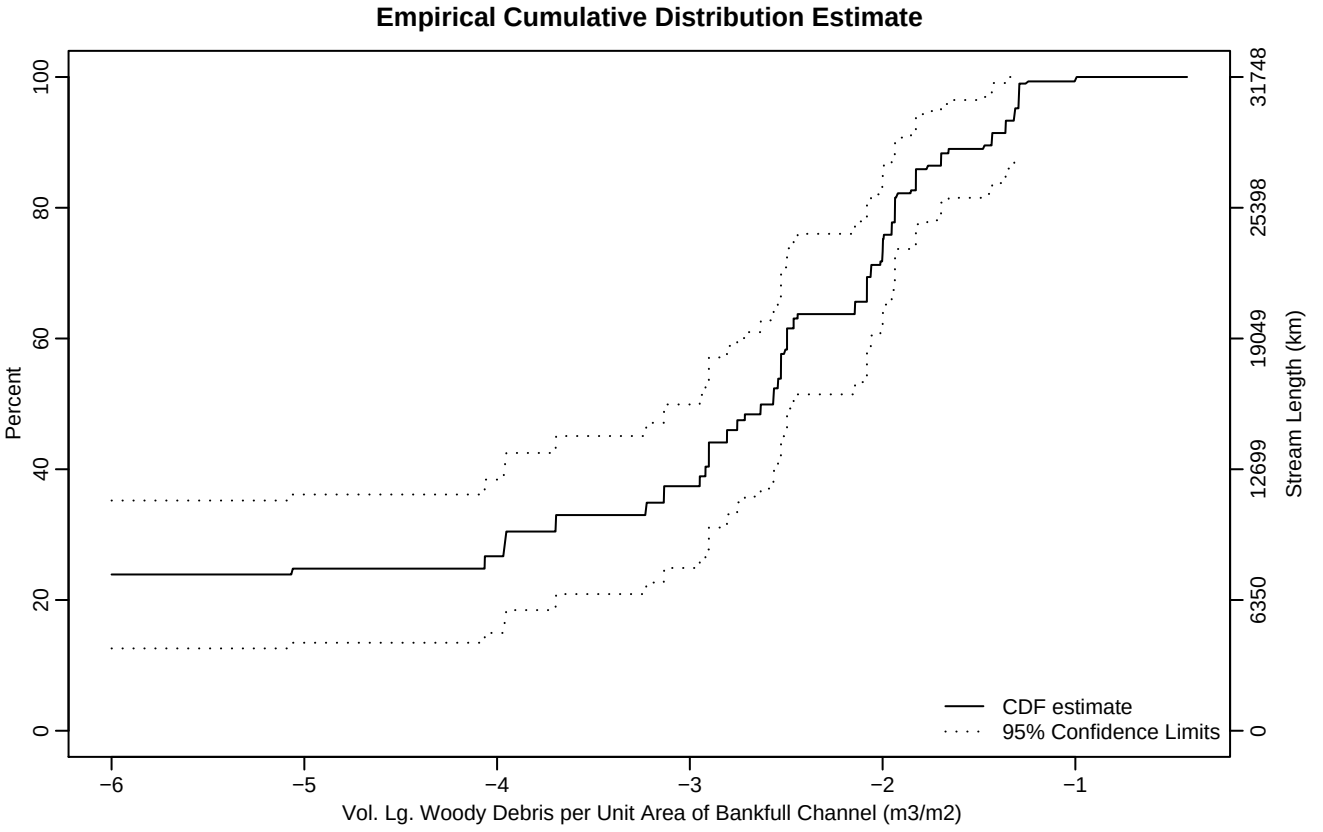


Figure PHAB−63 Indicator: LV1W_msq Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−4.06	−6	−3.13
50Pct	−2.57	−3.13	−2.46
75Pct	−2	−2.14	−1.77
90Pct	−1.43	−1.85	−1.29
95Pct	−1.31	−1.70	−0.99
Mean	−3.28	−3.71	−2.84
Std Dev	1.65	1.40	1.90

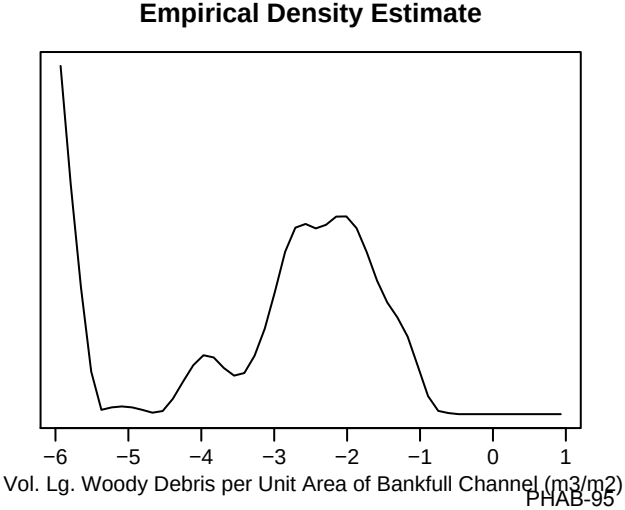
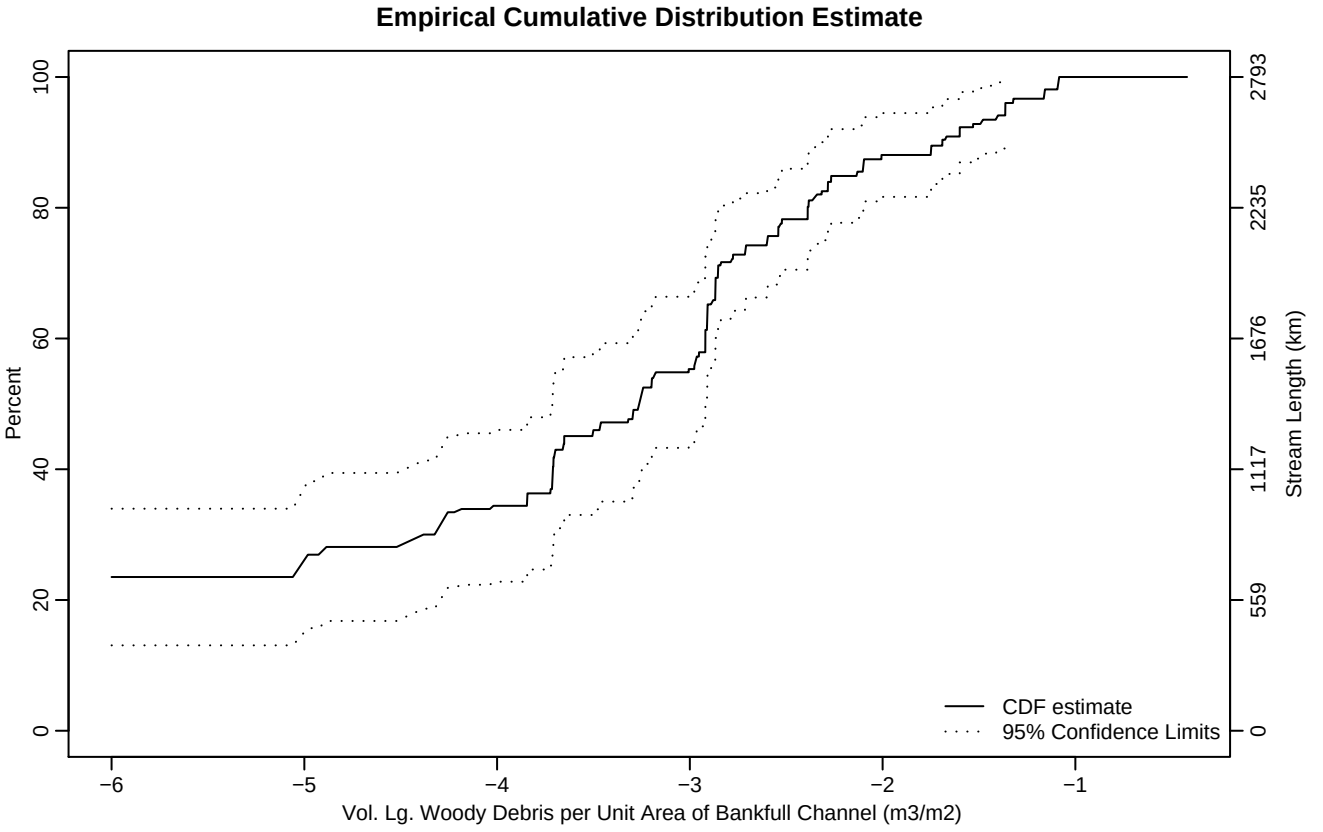


Figure PHAB−64 Indicator: LV1W_msq Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−5.03	−6	−3.84
50Pct	−3.26	−3.71	−2.91
75Pct	−2.60	−2.87	−2.28
90Pct	−1.69	−2.27	−1.36
95Pct	−1.36	−1.69	−1.08
Mean	−3.68	−4.03	−3.32
Std Dev	1.53	1.37	1.70

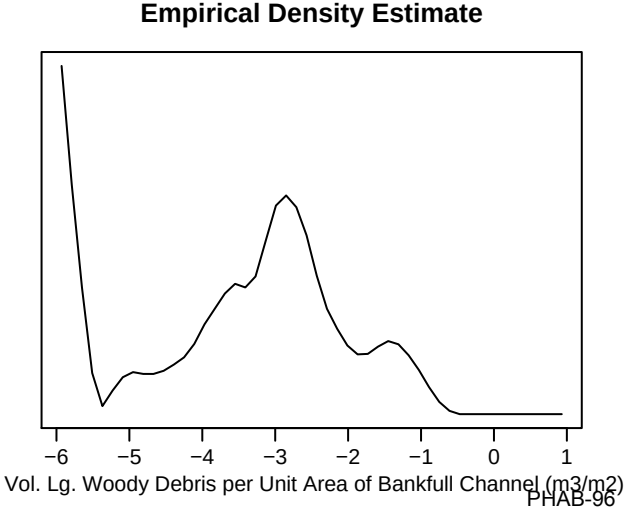
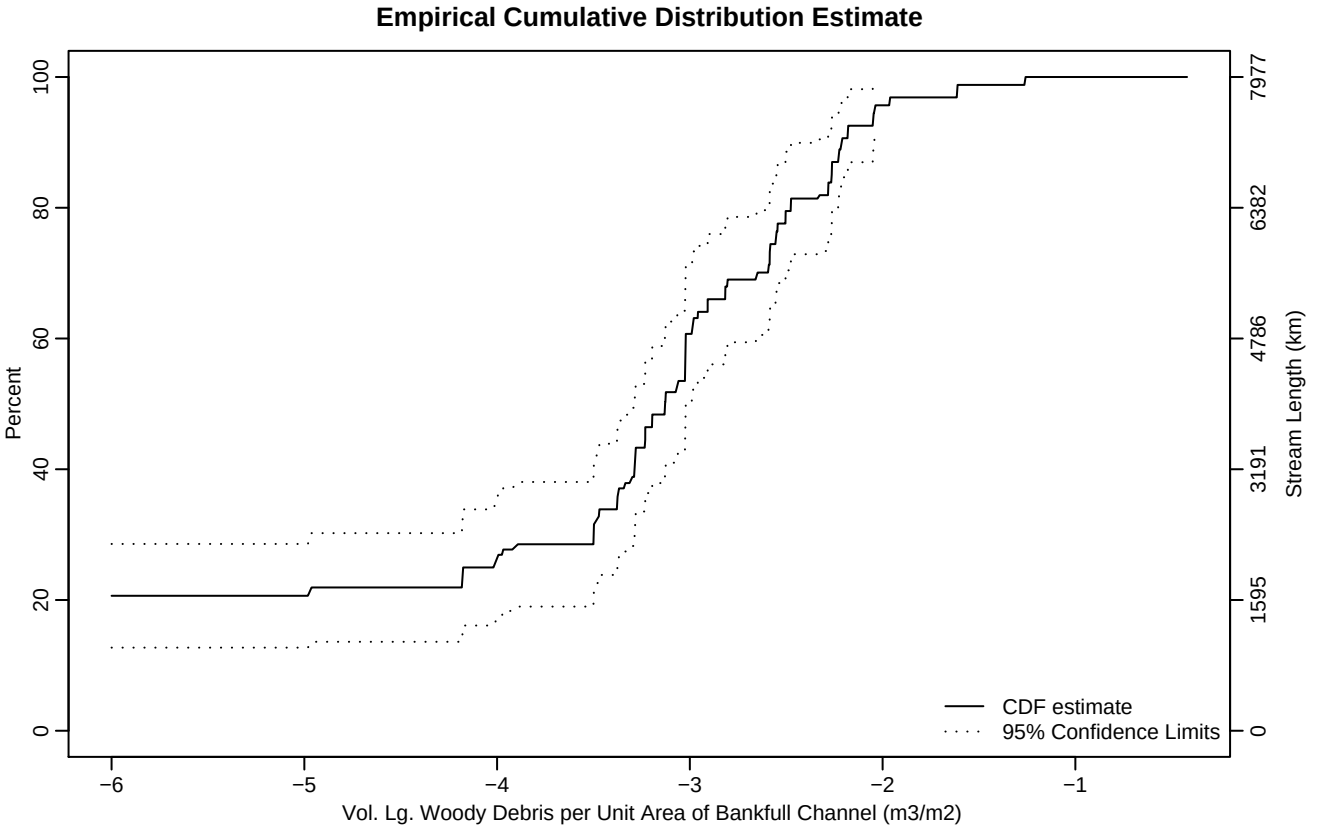


Figure PHAB−65 Indicator: LV1W_msq Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−4.02	−6	−3.38
50Pct	−3.13	−3.29	−2.99
75Pct	−2.55	−2.91	−2.27
90Pct	−2.21	−2.28	−1.96
95Pct	−2.04	−2.21	−1.26
Mean	−3.55	−3.83	−3.27
Std Dev	1.21	1.08	1.34

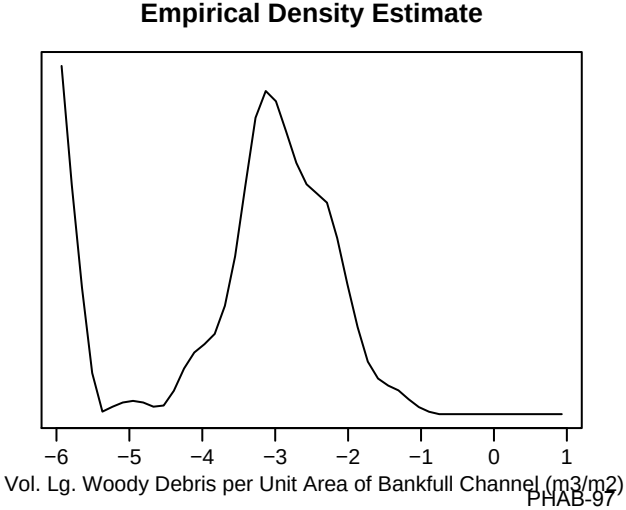
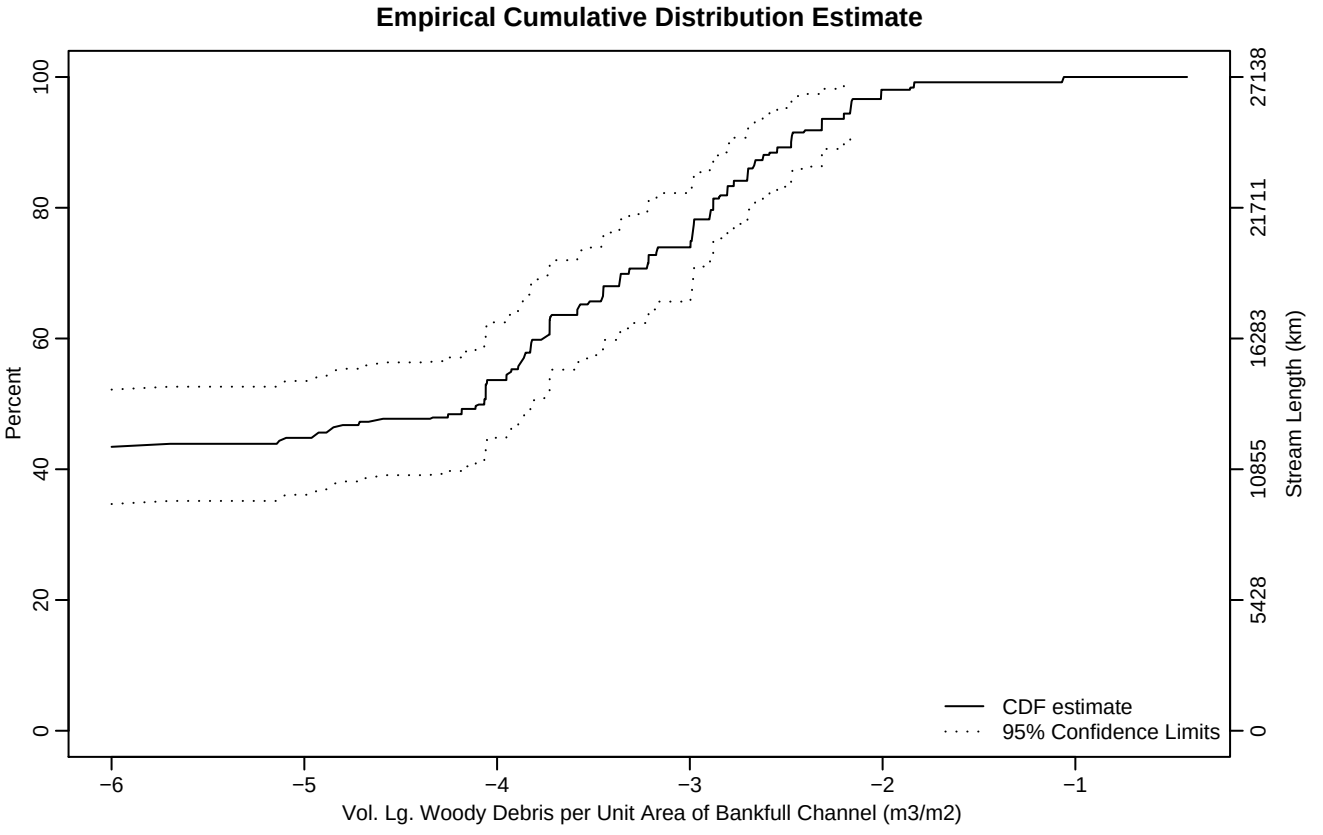


Figure PHAB−66 Indicator: LV1W_msq Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−6	−6	−6
50Pct	−4.07	−6	−3.82
75Pct	−2.99	−3.45	−2.80
90Pct	−2.47	−2.77	−2.16
95Pct	−2.17	−2.47	−1.07
Mean	−4.45	−4.71	−4.19
Std Dev	1.47	1.37	1.56

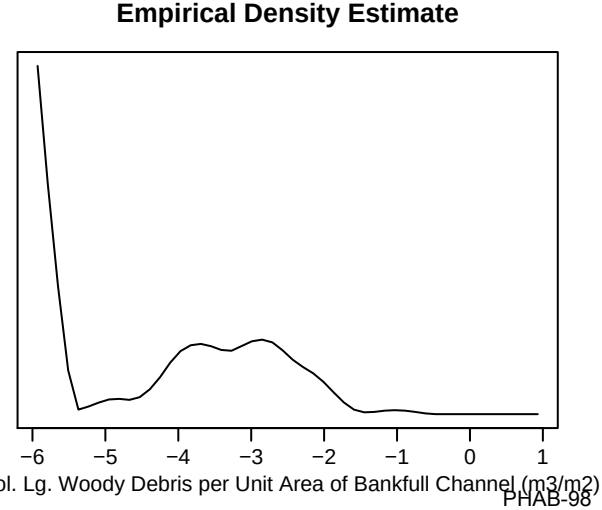
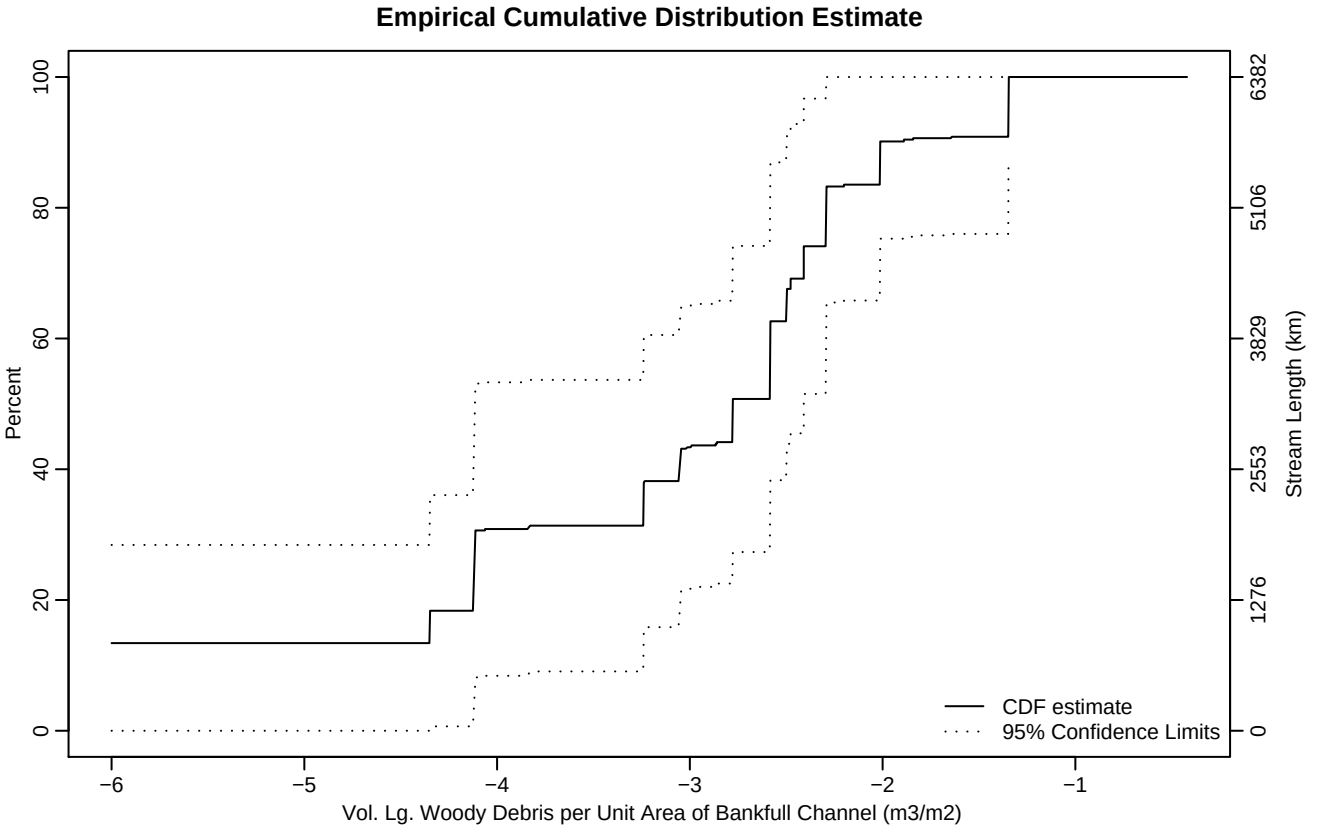


Figure PHAB−67 Indicator: LV1W_msq Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−4.12
10Pct	−6	−6	−4.12
25Pct	−4.12	−6	−3.02
50Pct	−2.78	−4.11	−2.41
75Pct	−2.30	−2.58	−1.35
90Pct	−2.01	−2.41	−1.35
95Pct	−1.35	−2.29	−1.35
Mean	−3.21	−3.83	−2.59
Std Dev	1.36	0.93	1.79

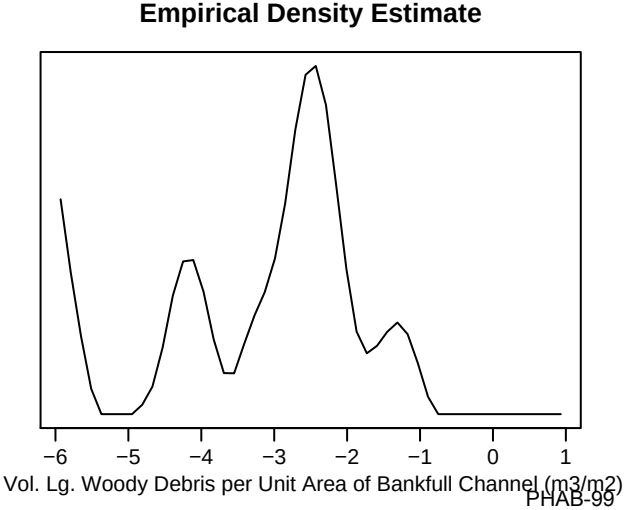
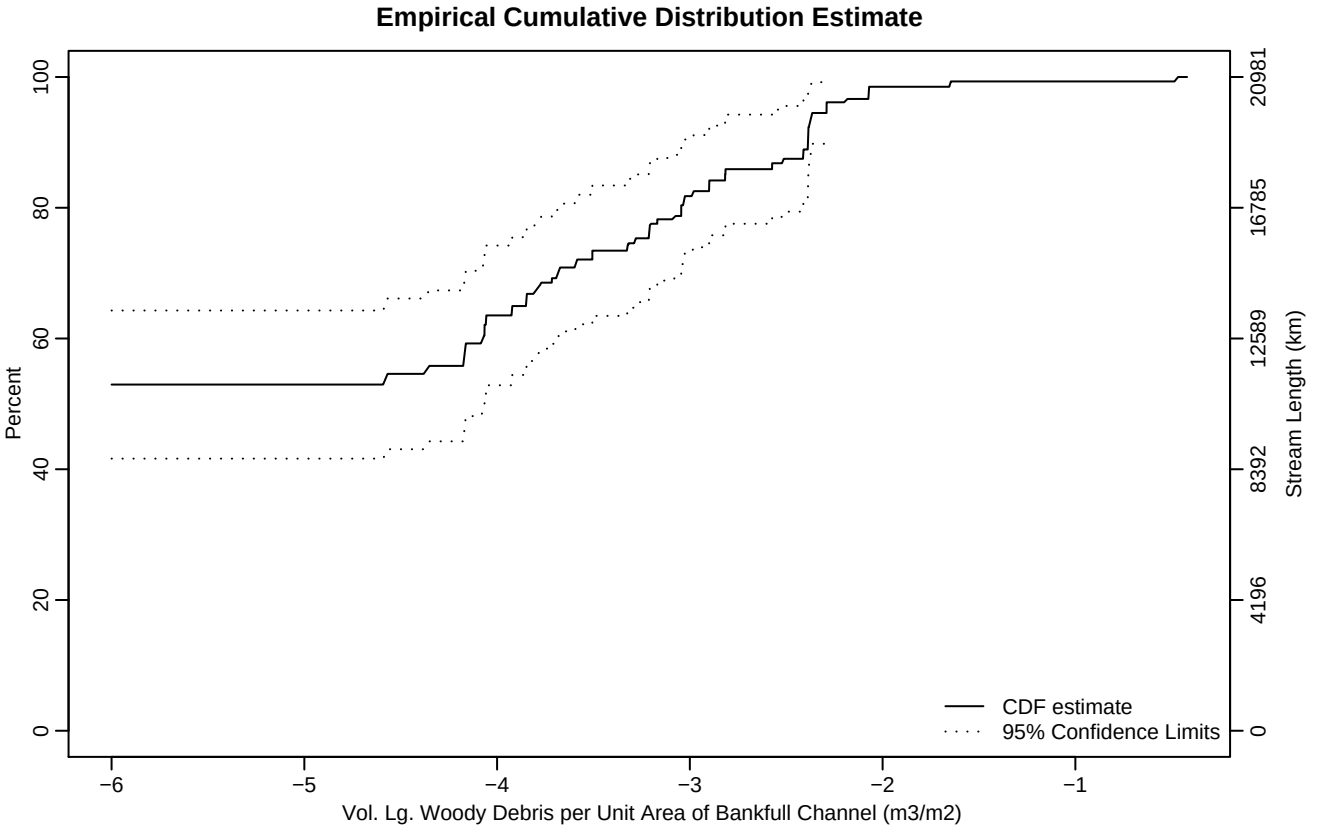


Figure PHAB−68 Indicator: LV1W_msq Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−6	−6	−6
50Pct	−6	−6	−4.07
75Pct	−3.28	−3.85	−2.82
90Pct	−2.39	−2.98	−2.07
95Pct	−2.29	−2.39	−0.48
Mean	−4.68	−5.03	−4.34
Std Dev	1.47	1.32	1.62

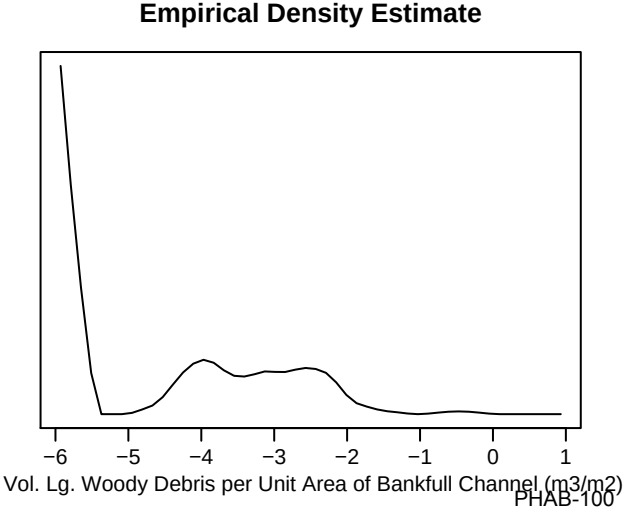
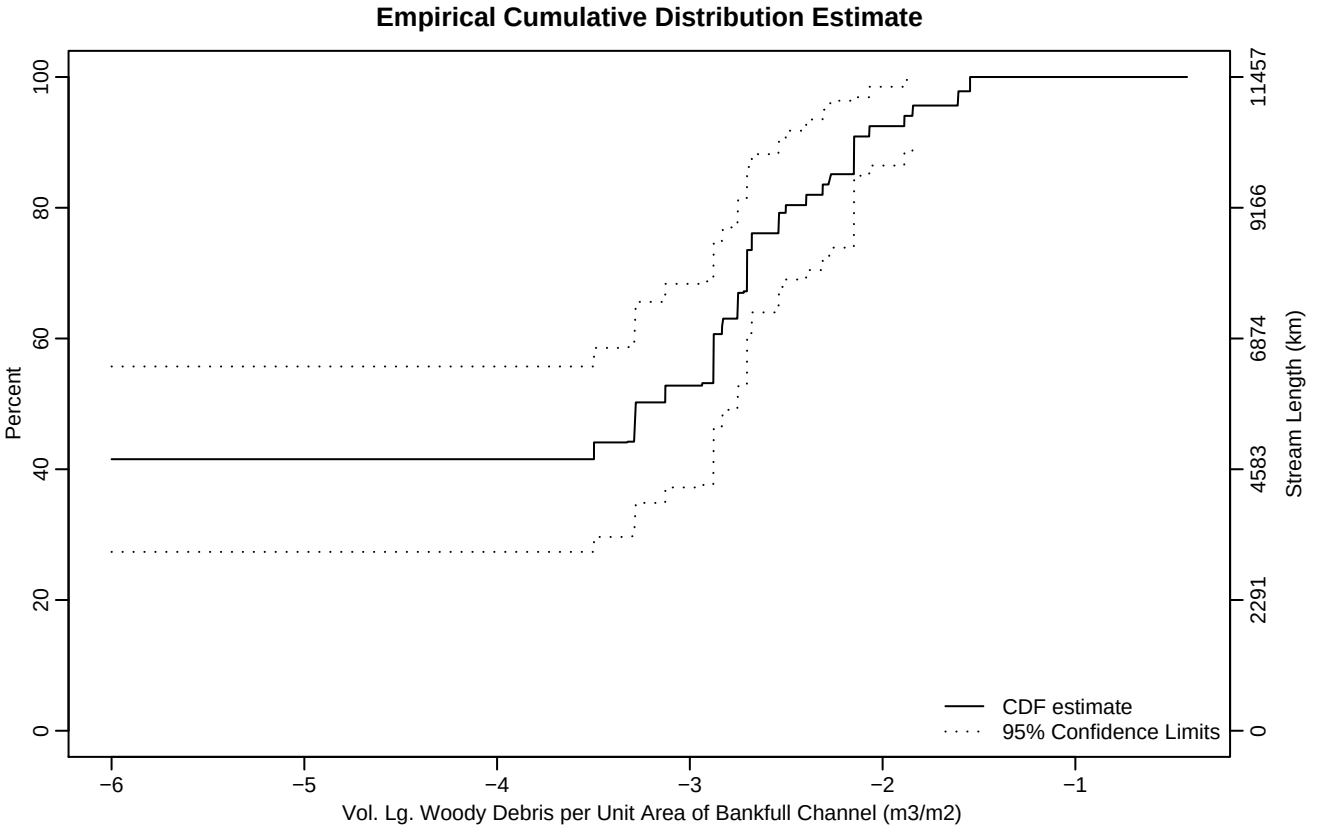


Figure PHAB−69 Indicator: LV1W_msq Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−6	−6	−6
50Pct	−3.28	−6	−2.75
75Pct	−2.68	−2.83	−2.15
90Pct	−2.15	−2.54	−1.55
95Pct	−1.84	−2.15	−1.55
Mean	−4.01	−4.51	−3.52
Std Dev	1.68	1.52	1.83

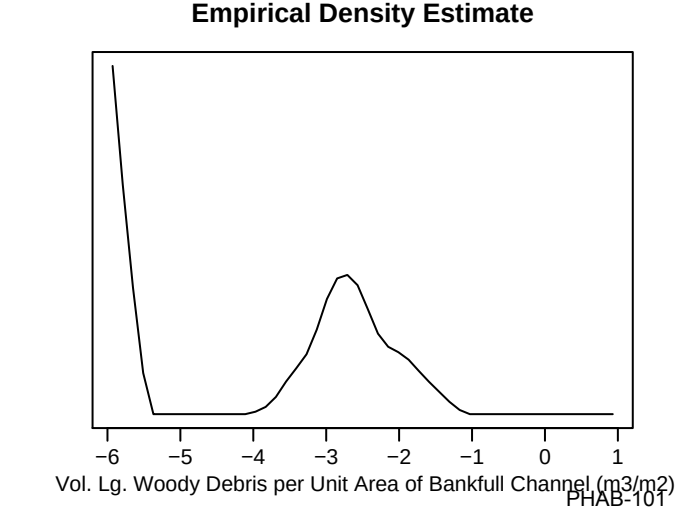
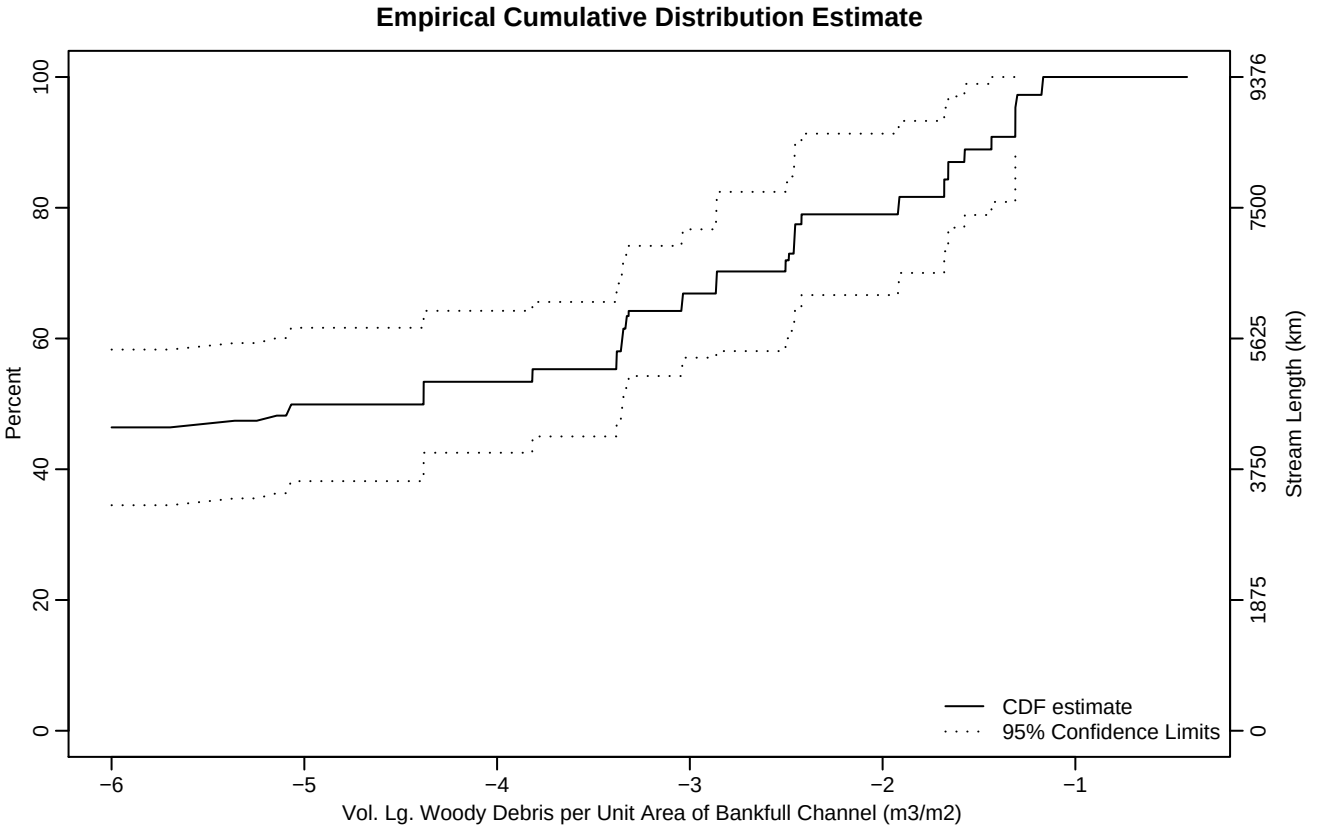


Figure PHAB−70 Indicator: LV1W_msq Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6	−6	−6
10Pct	−6	−6	−6
25Pct	−6	−6	−6
50Pct	−4.38	−6	−3.33
75Pct	−2.46	−3.33	−1.58
90Pct	−1.44	−1.92	−1.17
95Pct	−1.31	−1.66	−1.17
Mean	−4.20	−4.62	−3.77
Std Dev	1.66	1.49	1.83

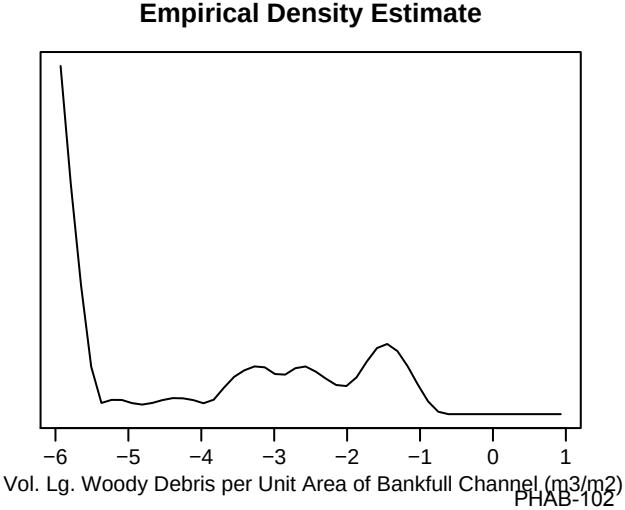
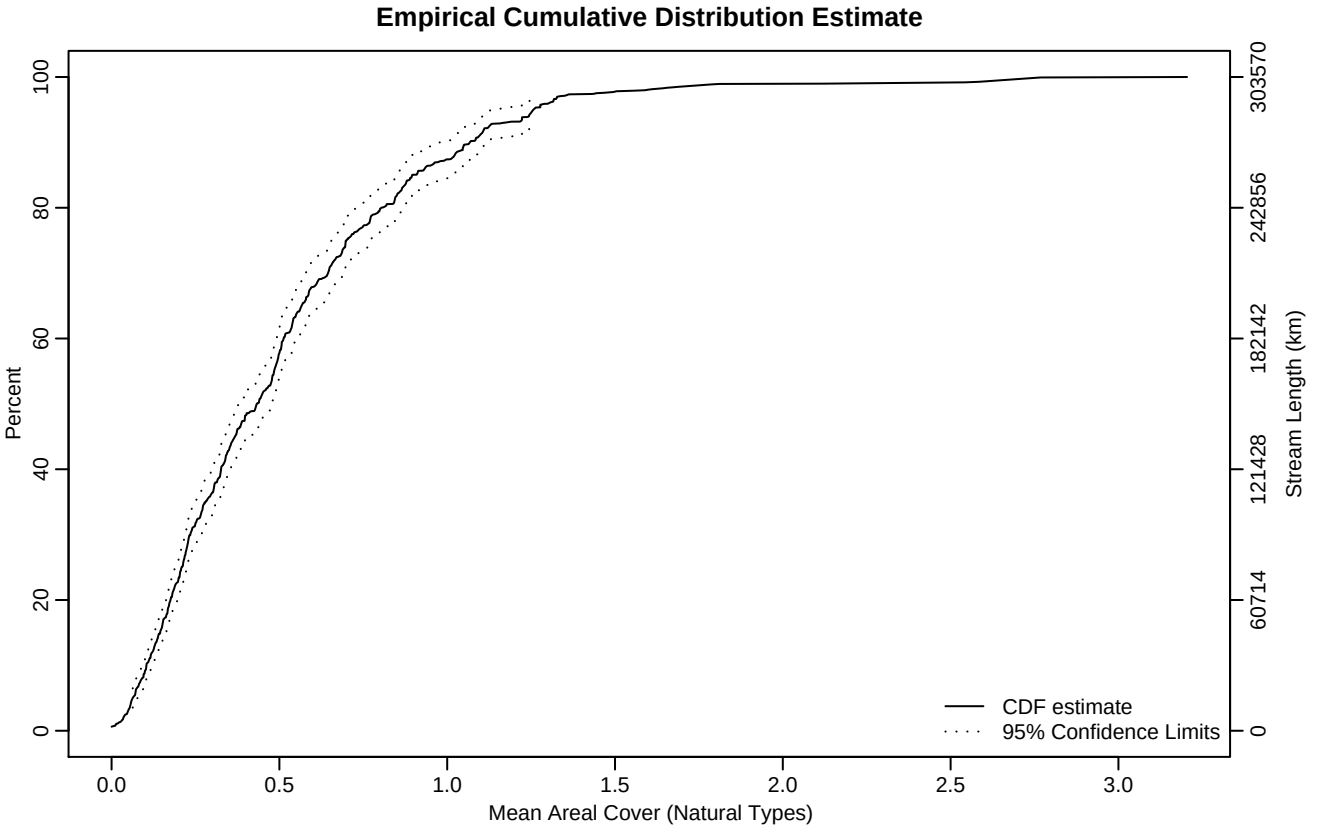


Figure PHAB−71 Indicator: XFC_NAT Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0.05	0.07
10Pct	0.10	0.09	0.12
25Pct	0.21	0.19	0.22
50Pct	0.43	0.38	0.48
75Pct	0.70	0.66	0.77
90Pct	1.07	0.99	1.13
95Pct	1.26	1.18	1.33
Mean	0.52	0.48	0.56
Std Dev	0.38	0.33	0.43

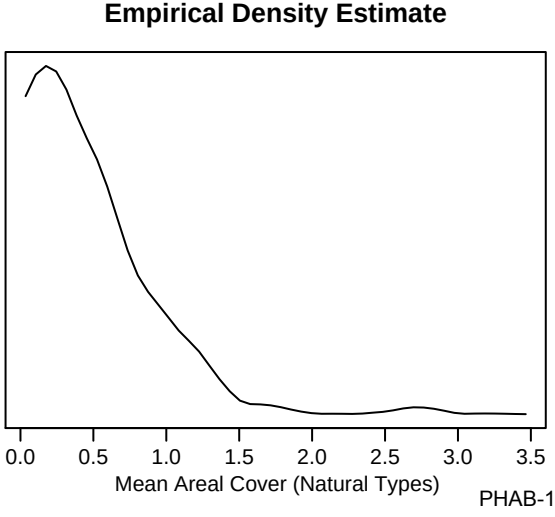
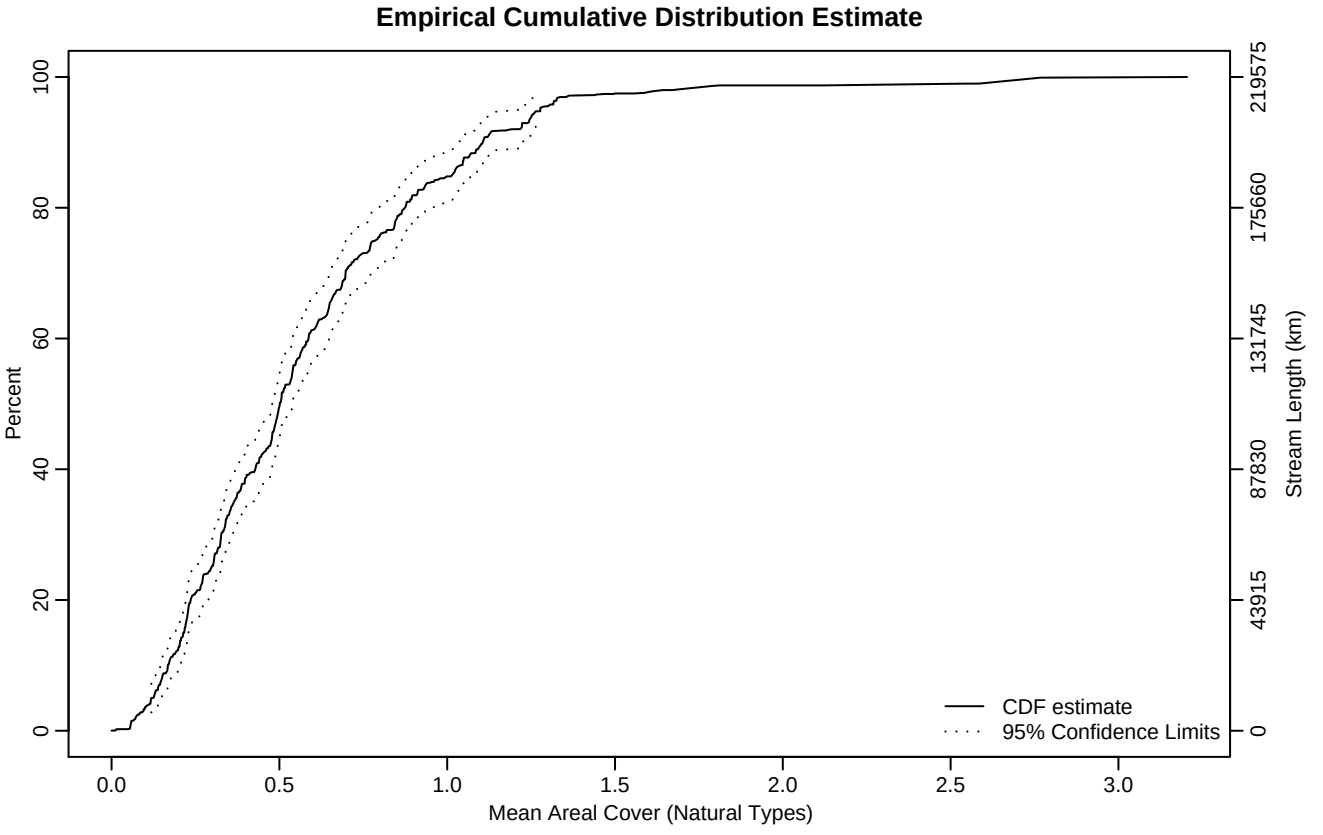


Figure PHAB−72 Indicator: XFC_NAT Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.12	0.09	0.14
10Pct	0.17	0.14	0.20
25Pct	0.30	0.25	0.33
50Pct	0.50	0.48	0.54
75Pct	0.79	0.70	0.87
90Pct	1.11	1.05	1.24
95Pct	1.28	1.22	1.50
Mean	0.59	0.54	0.64
Std Dev	0.38	0.32	0.43

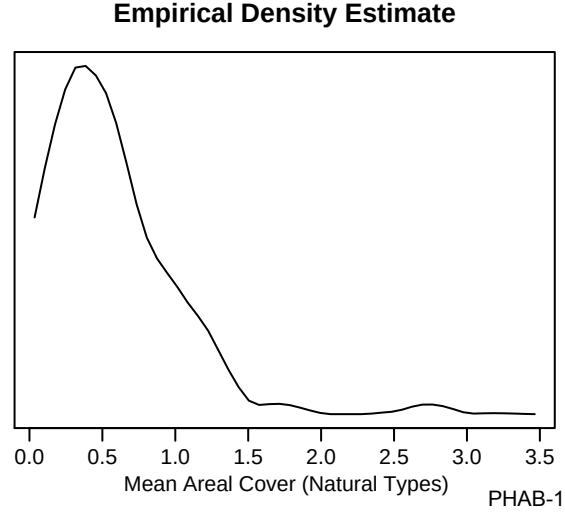
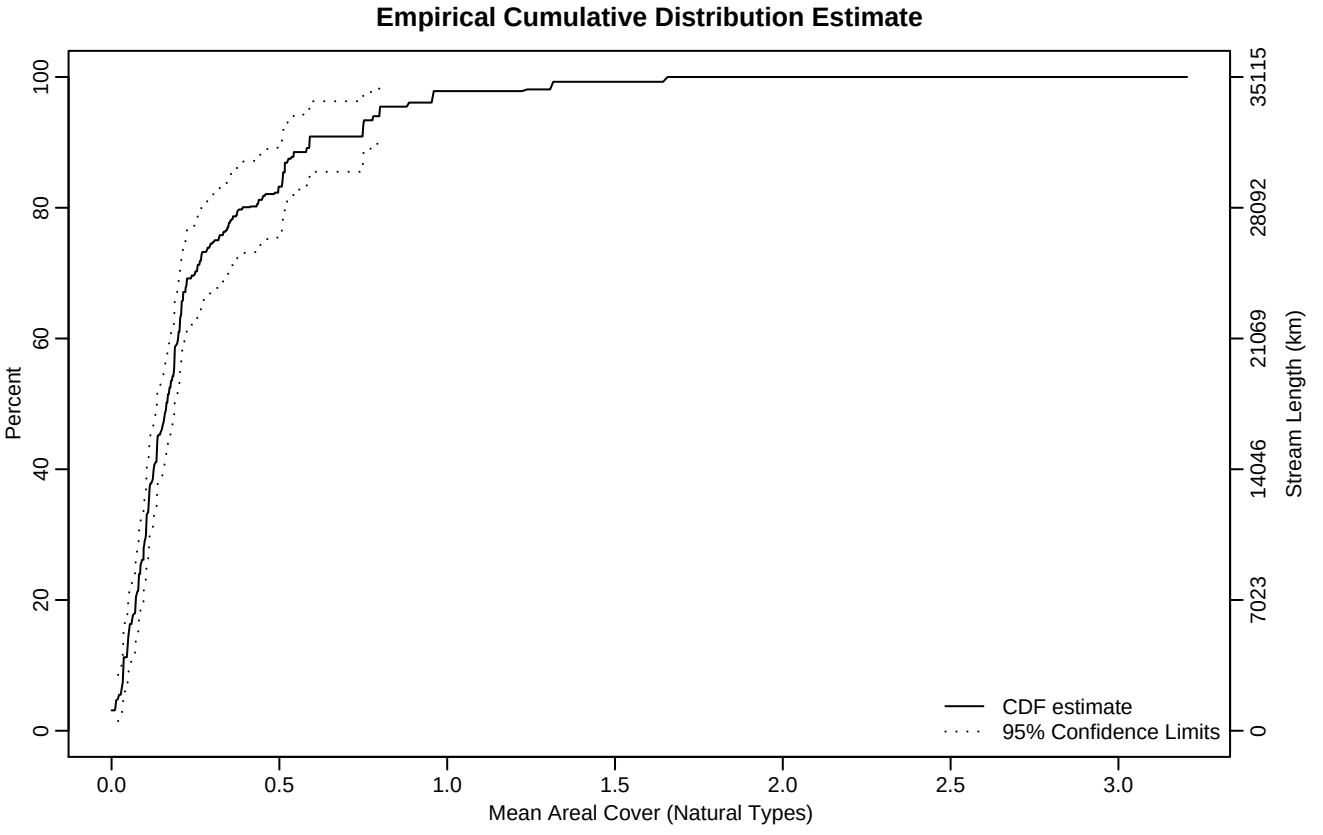


Figure PHAB−73 Indicator: XFC_NAT Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0	0.03
10Pct	0.04	0.03	0.05
25Pct	0.09	0.07	0.10
50Pct	0.16	0.13	0.19
75Pct	0.31	0.22	0.48
90Pct	0.59	0.51	0.88
95Pct	0.80	0.59	1.32
Mean	0.26	0.21	0.31
Std Dev	0.24	0.20	0.28

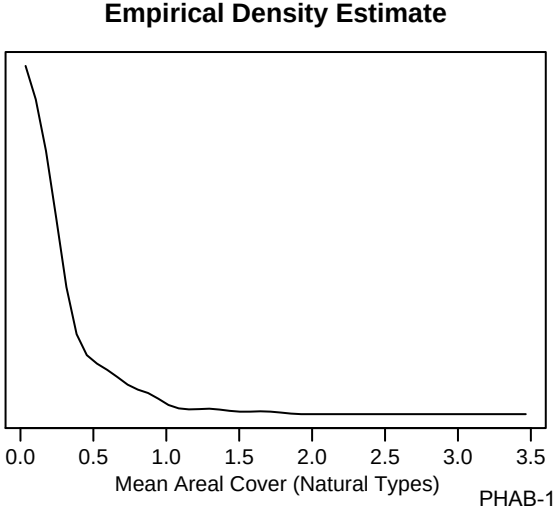
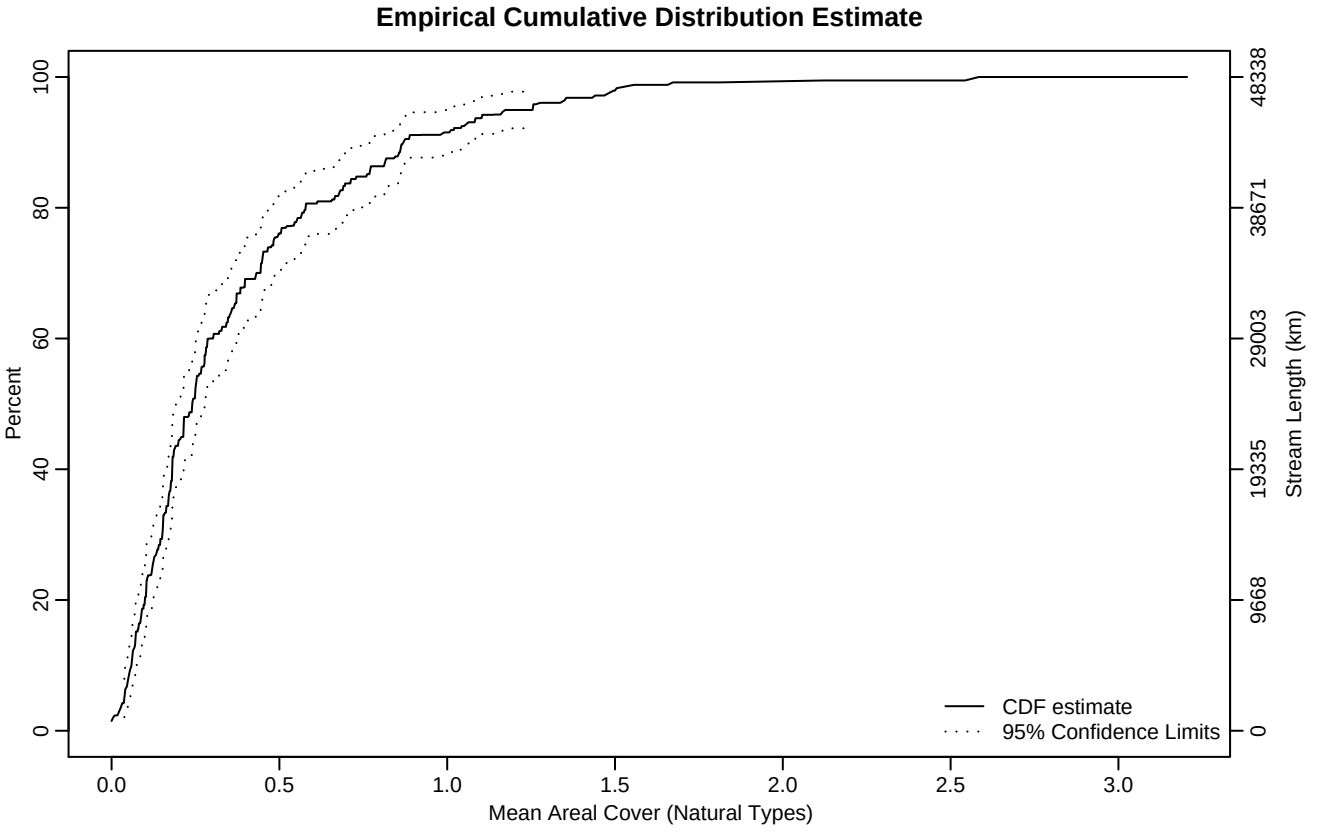


Figure PHAB−74 Indicator: XFC_NAT Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.02	0.05
10Pct	0.06	0.04	0.07
25Pct	0.12	0.10	0.15
50Pct	0.24	0.19	0.28
75Pct	0.48	0.40	0.61
90Pct	0.87	0.77	1.10
95Pct	1.25	1.04	1.49
Mean	0.38	0.33	0.43
Std Dev	0.35	0.30	0.40

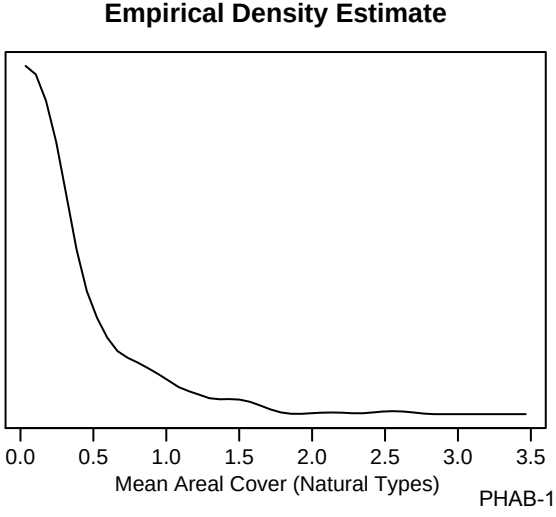
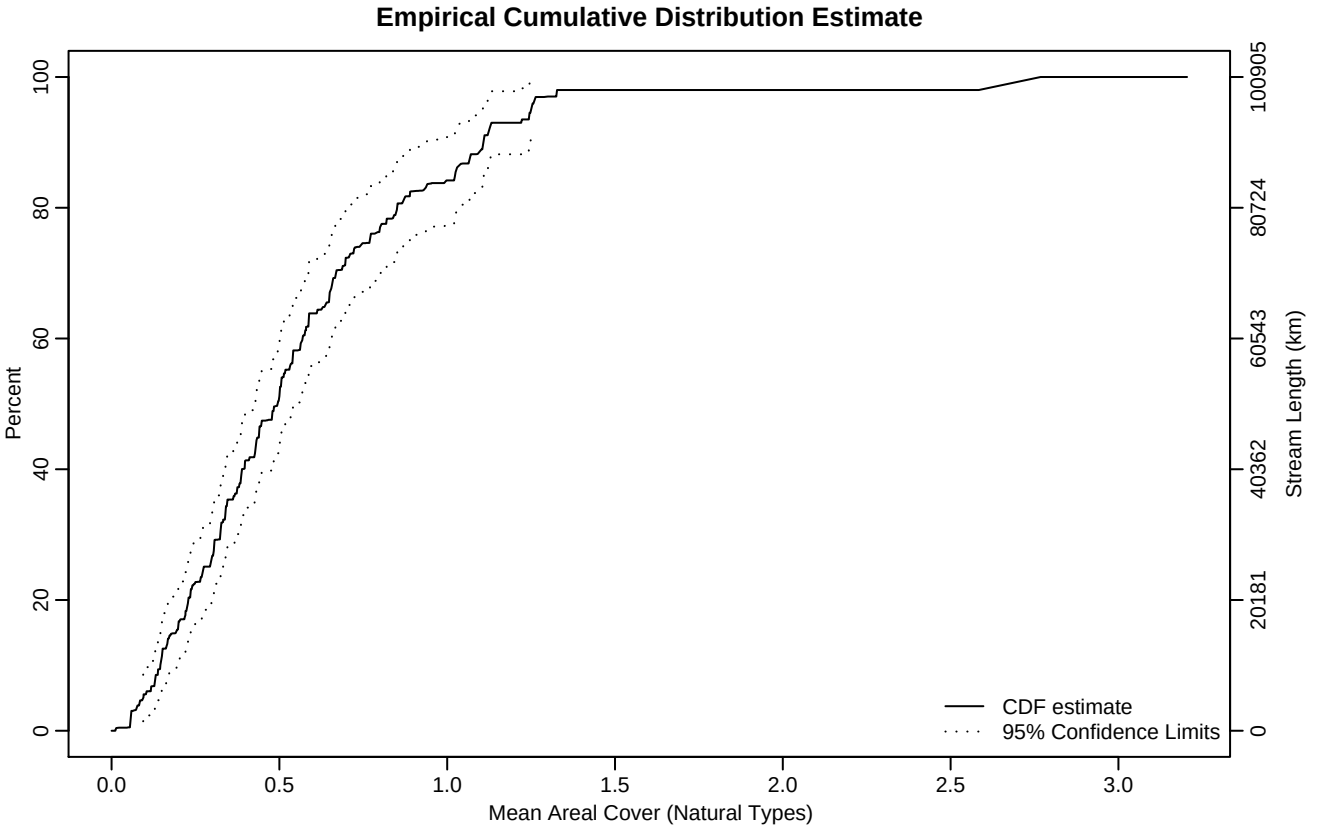


Figure PHAB−75 Indicator: XFC_NAT Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.06	0.13
10Pct	0.15	0.10	0.18
25Pct	0.27	0.22	0.33
50Pct	0.49	0.43	0.54
75Pct	0.77	0.65	0.89
90Pct	1.11	1	1.25
95Pct	1.25	1.11	2.73
Mean	0.58	0.49	0.67
Std Dev	0.41	0.30	0.52

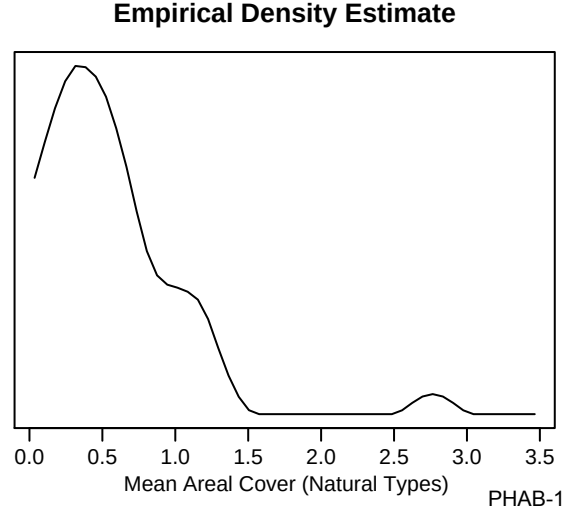
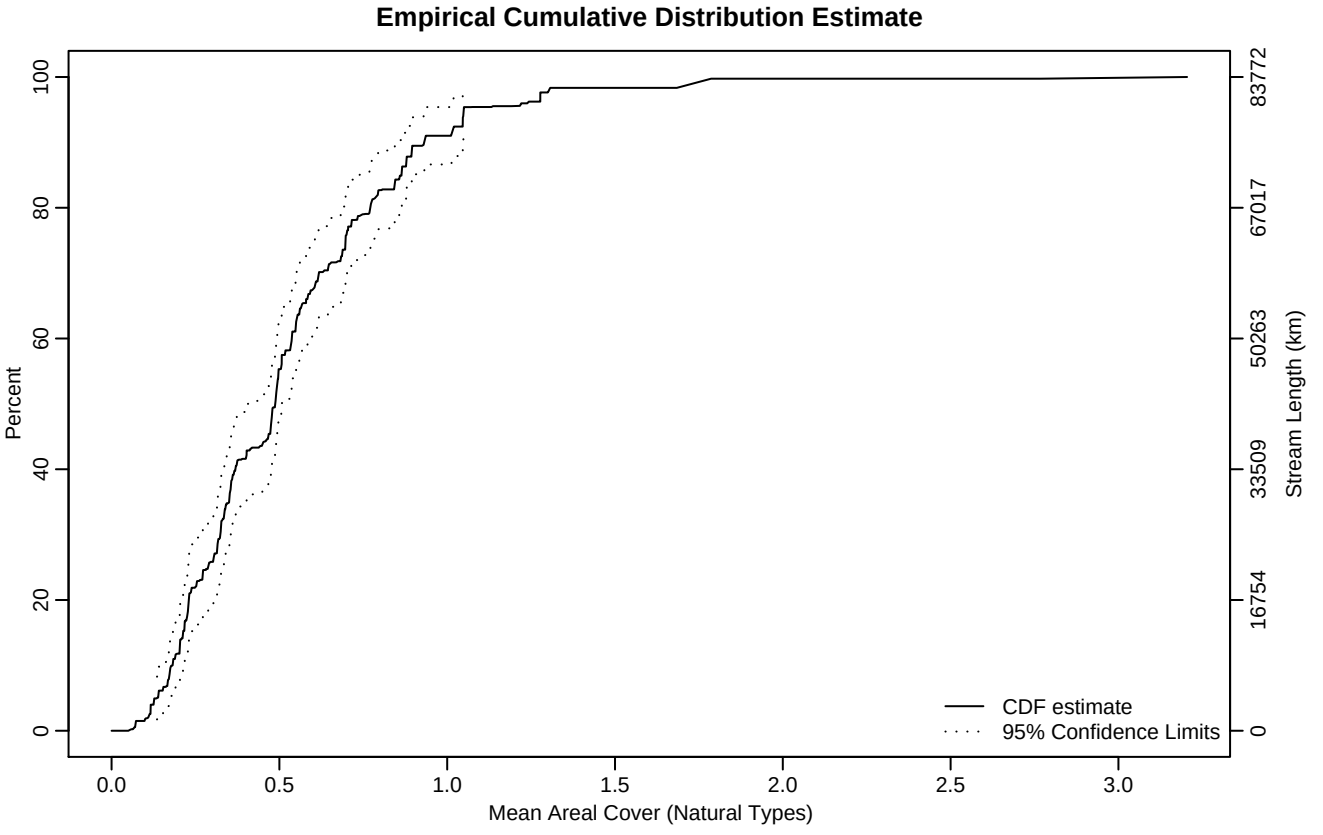


Figure PHAB−76 Indicator: XFC_NAT Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.14	0.10	0.17
10Pct	0.18	0.14	0.21
25Pct	0.29	0.23	0.33
50Pct	0.49	0.40	0.52
75Pct	0.70	0.61	0.79
90Pct	0.93	0.86	1.05
95Pct	1.05	0.94	1.73
Mean	0.53	0.48	0.58
Std Dev	0.32	0.26	0.37

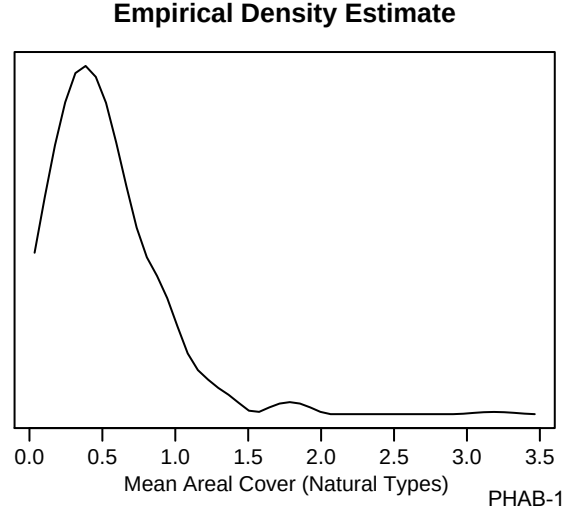
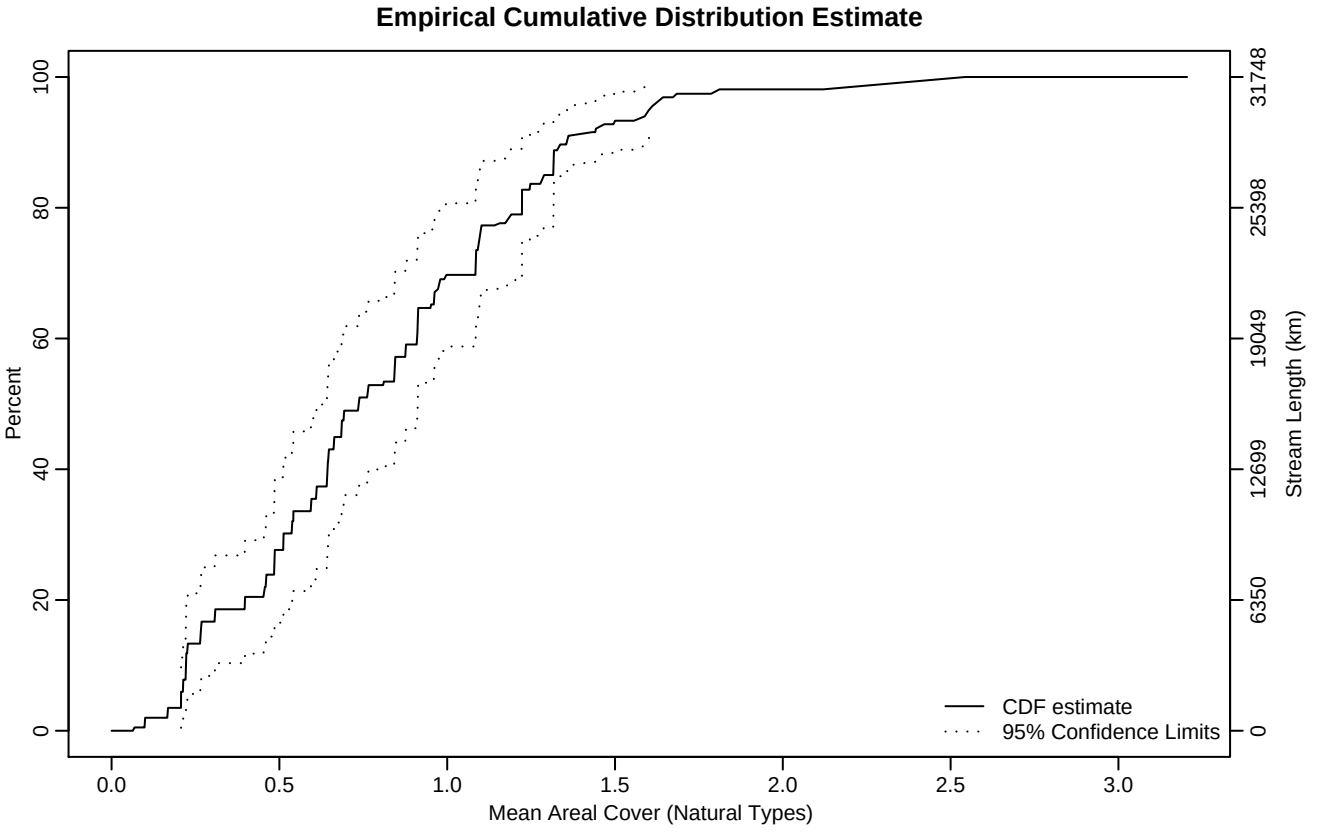


Figure PHAB−77 Indicator: XFC_NAT Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.21	0.10	0.22
10Pct	0.22	0.21	0.27
25Pct	0.48	0.27	0.59
50Pct	0.74	0.64	0.91
75Pct	1.10	0.91	1.32
90Pct	1.36	1.29	1.60
95Pct	1.60	1.36	2.39
Mean	0.81	0.71	0.92
Std Dev	0.41	0.29	0.53

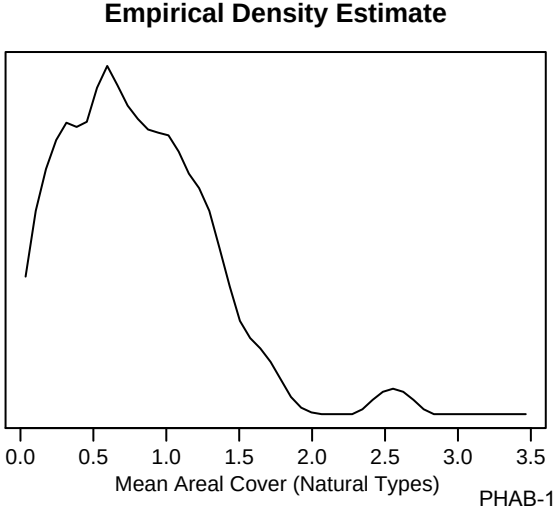
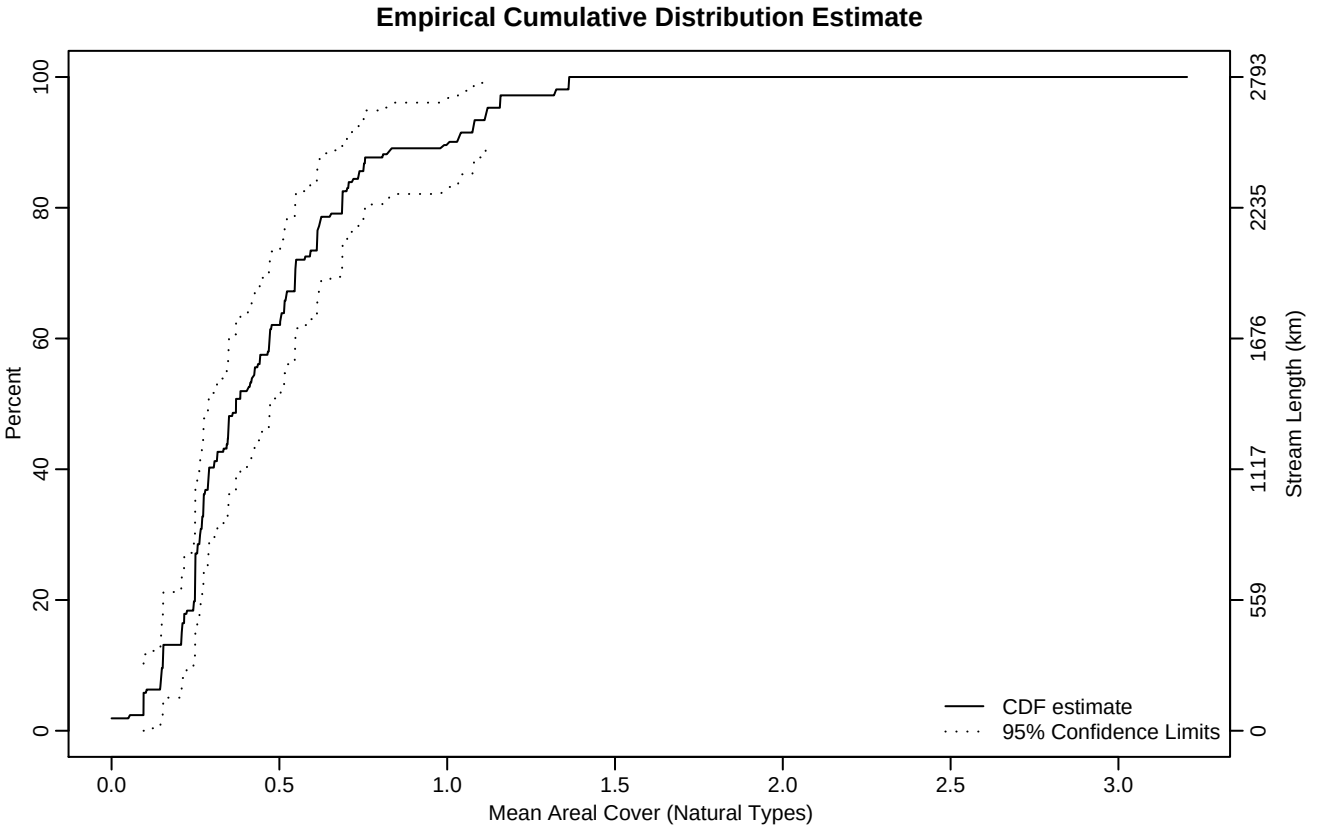


Figure PHAB−78 Indicator: XFC_NAT Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.10	0	0.15
10Pct	0.15	0.10	0.22
25Pct	0.25	0.21	0.27
50Pct	0.37	0.29	0.50
75Pct	0.61	0.51	0.74
90Pct	1.01	0.71	1.16
95Pct	1.12	0.98	1.36
Mean	0.47	0.40	0.54
Std Dev	0.30	0.24	0.36

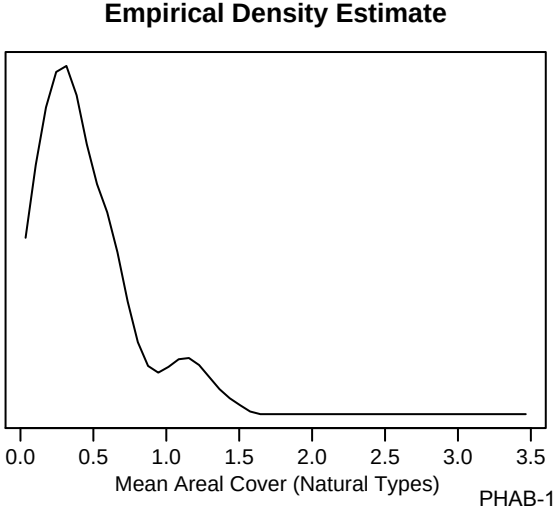
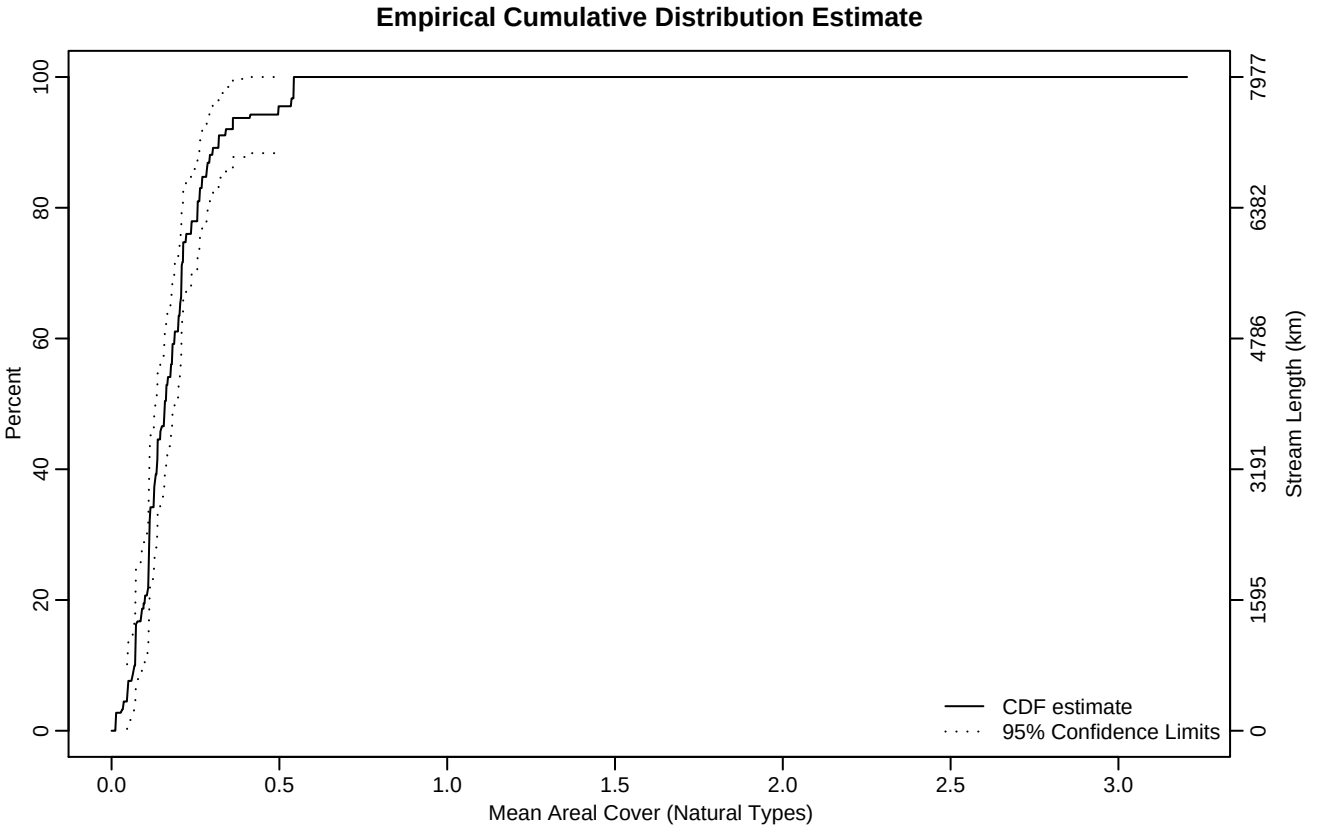


Figure PHAB−79 Indicator: XFC_NAT Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.01	0.07
10Pct	0.07	0.03	0.08
25Pct	0.11	0.07	0.13
50Pct	0.16	0.13	0.19
75Pct	0.22	0.21	0.27
90Pct	0.32	0.27	0.54
95Pct	0.50	0.30	0.54
Mean	0.18	0.16	0.21
Std Dev	0.11	0.08	0.14

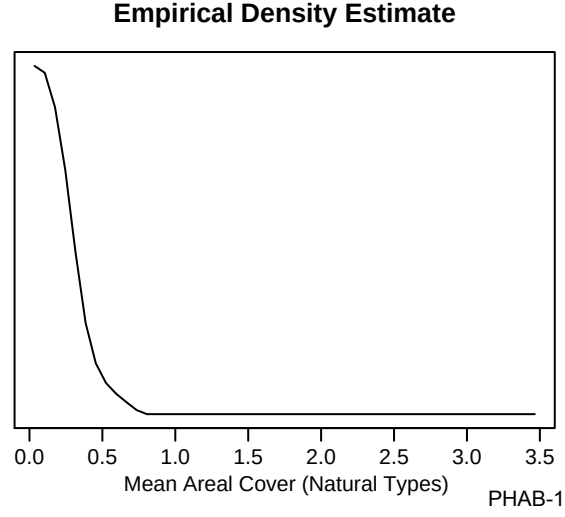
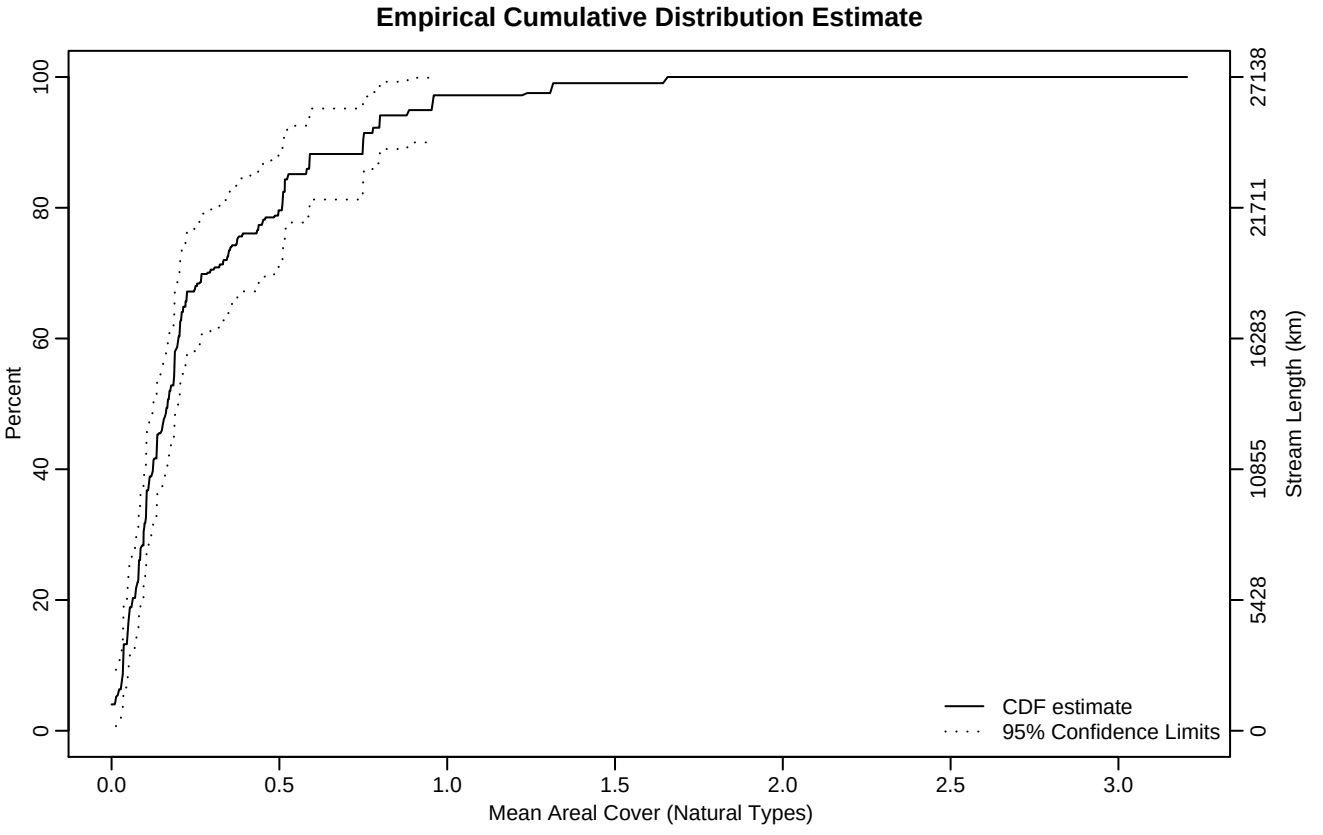


Figure PHAB−80 Indicator: XFC_NAT Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.03
10Pct	0.03	0.01	0.05
25Pct	0.08	0.05	0.10
50Pct	0.17	0.12	0.20
75Pct	0.37	0.22	0.52
90Pct	0.75	0.52	0.96
95Pct	0.95	0.75	1.66
Mean	0.28	0.22	0.34
Std Dev	0.27	0.22	0.32

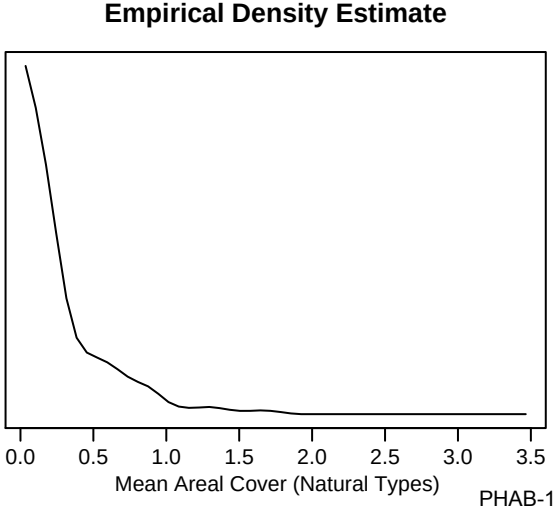
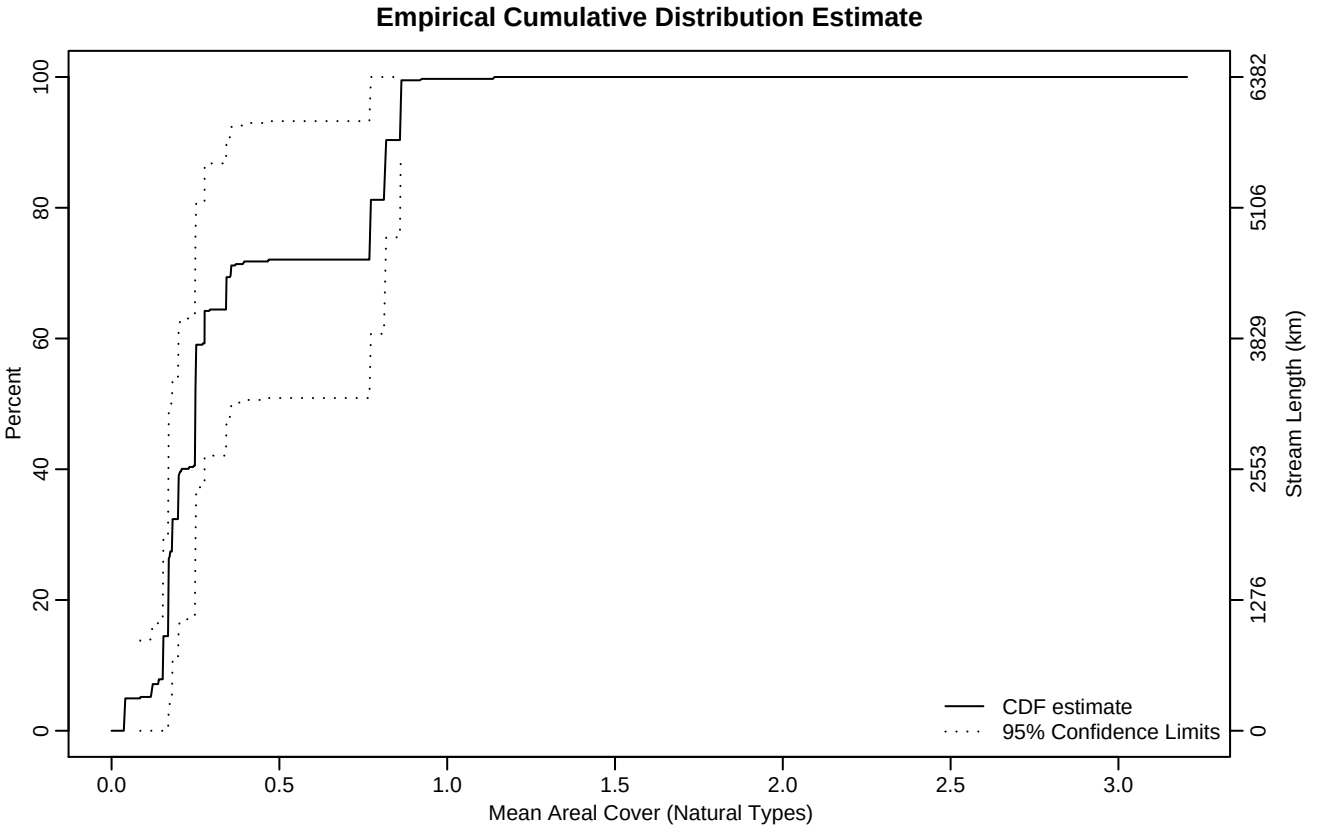


Figure PHAB−81 Indicator: XFC_NAT Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0	0.15
10Pct	0.15	0.04	0.17
25Pct	0.17	0.15	0.25
50Pct	0.25	0.17	0.77
75Pct	0.77	0.25	0.86
90Pct	0.82	0.34	1.14
95Pct	0.86	0.77	1.14
Mean	0.38	0.25	0.52
Std Dev	0.28	0.22	0.35

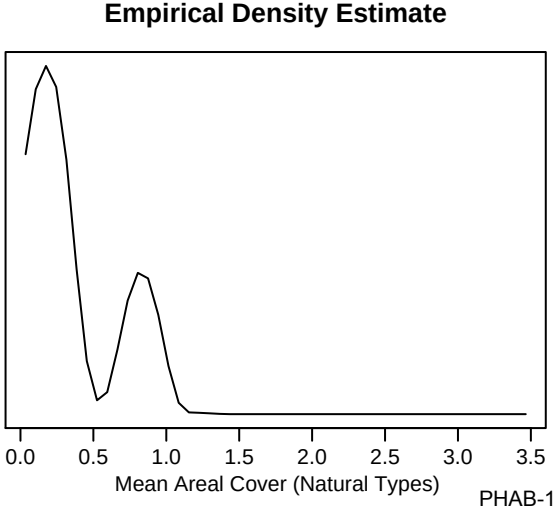
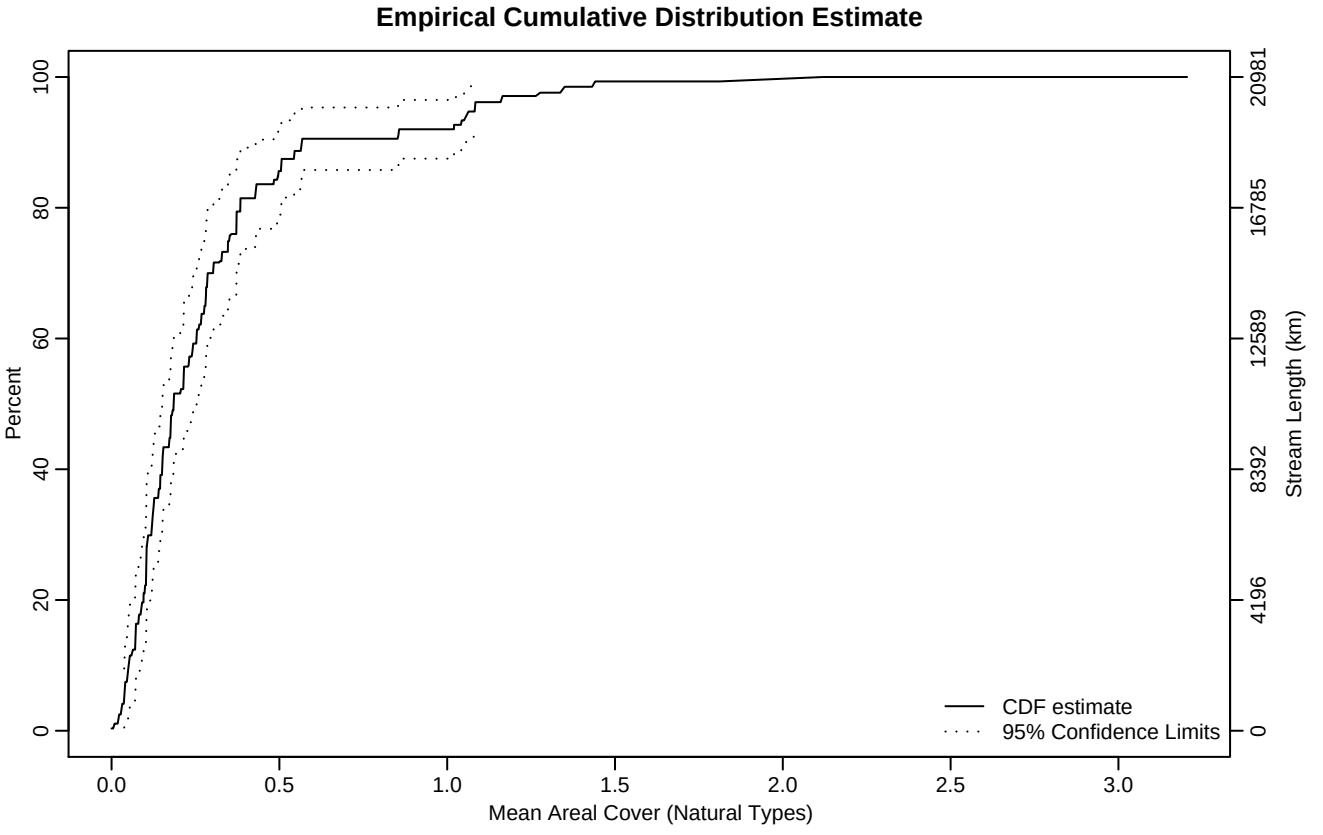


Figure PHAB−82 Indicator: XFC_NAT Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.02	0.05
10Pct	0.05	0.02	0.08
25Pct	0.10	0.07	0.12
50Pct	0.18	0.15	0.25
75Pct	0.35	0.28	0.49
90Pct	0.57	0.48	1.08
95Pct	1.08	0.85	1.44
Mean	0.30	0.25	0.35
Std Dev	0.28	0.21	0.35

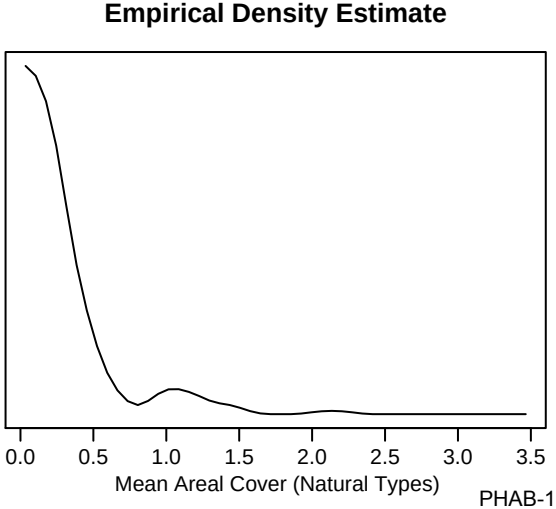
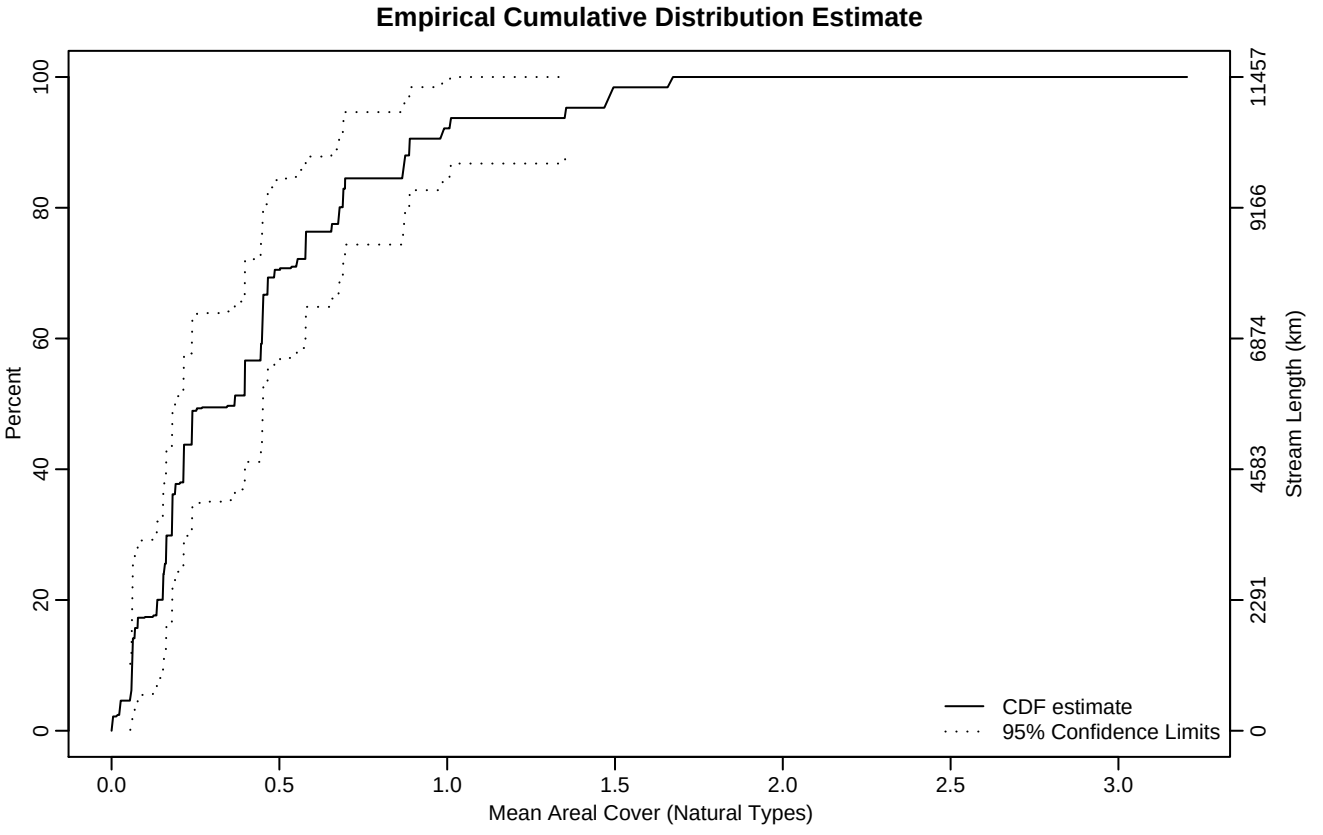


Figure PHAB−83 Indicator: XFC_NAT Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0	0.06
10Pct	0.06	0.03	0.08
25Pct	0.16	0.06	0.21
50Pct	0.37	0.18	0.45
75Pct	0.58	0.45	0.89
90Pct	0.89	0.69	1.66
95Pct	1.35	0.89	1.67
Mean	0.43	0.32	0.54
Std Dev	0.37	0.27	0.48

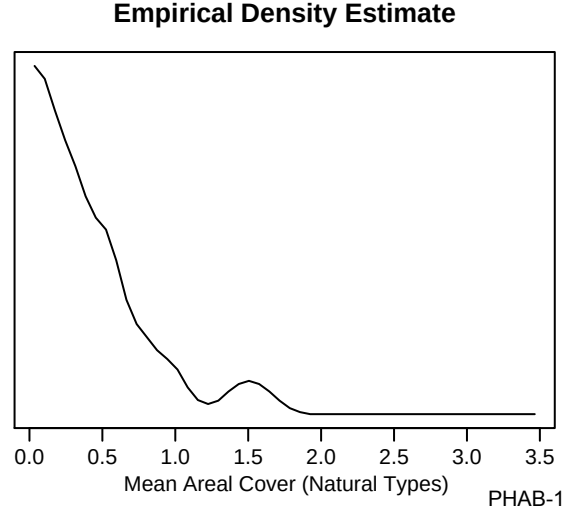
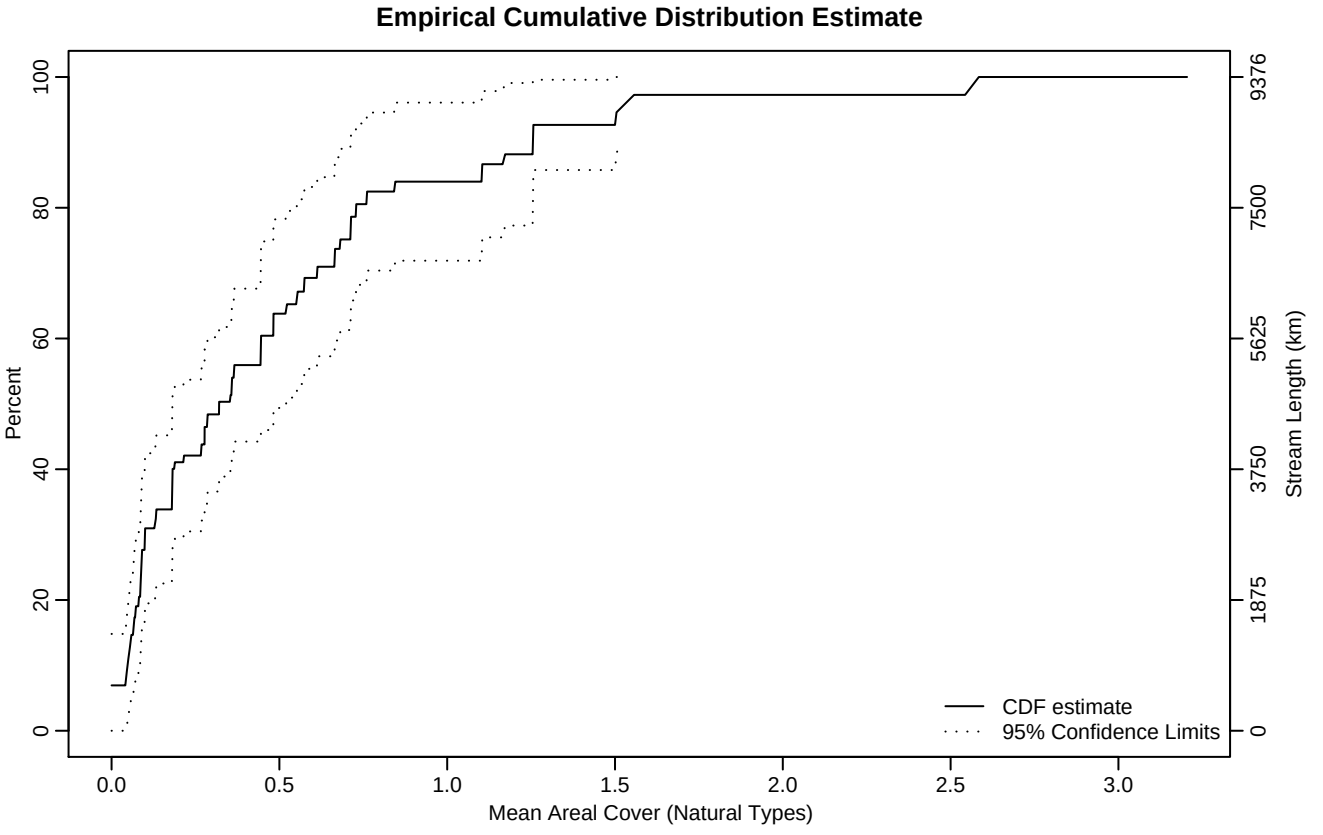


Figure PHAB−84 Indicator: XFC_NAT Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.06
10Pct	0.05	0	0.07
25Pct	0.09	0.06	0.18
50Pct	0.32	0.18	0.48
75Pct	0.68	0.48	1.25
90Pct	1.26	0.73	2.58
95Pct	1.51	1.25	2.58
Mean	0.50	0.35	0.65
Std Dev	0.48	0.36	0.60

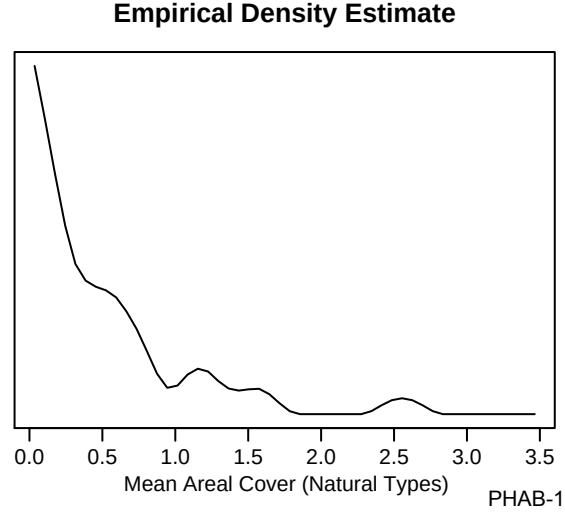
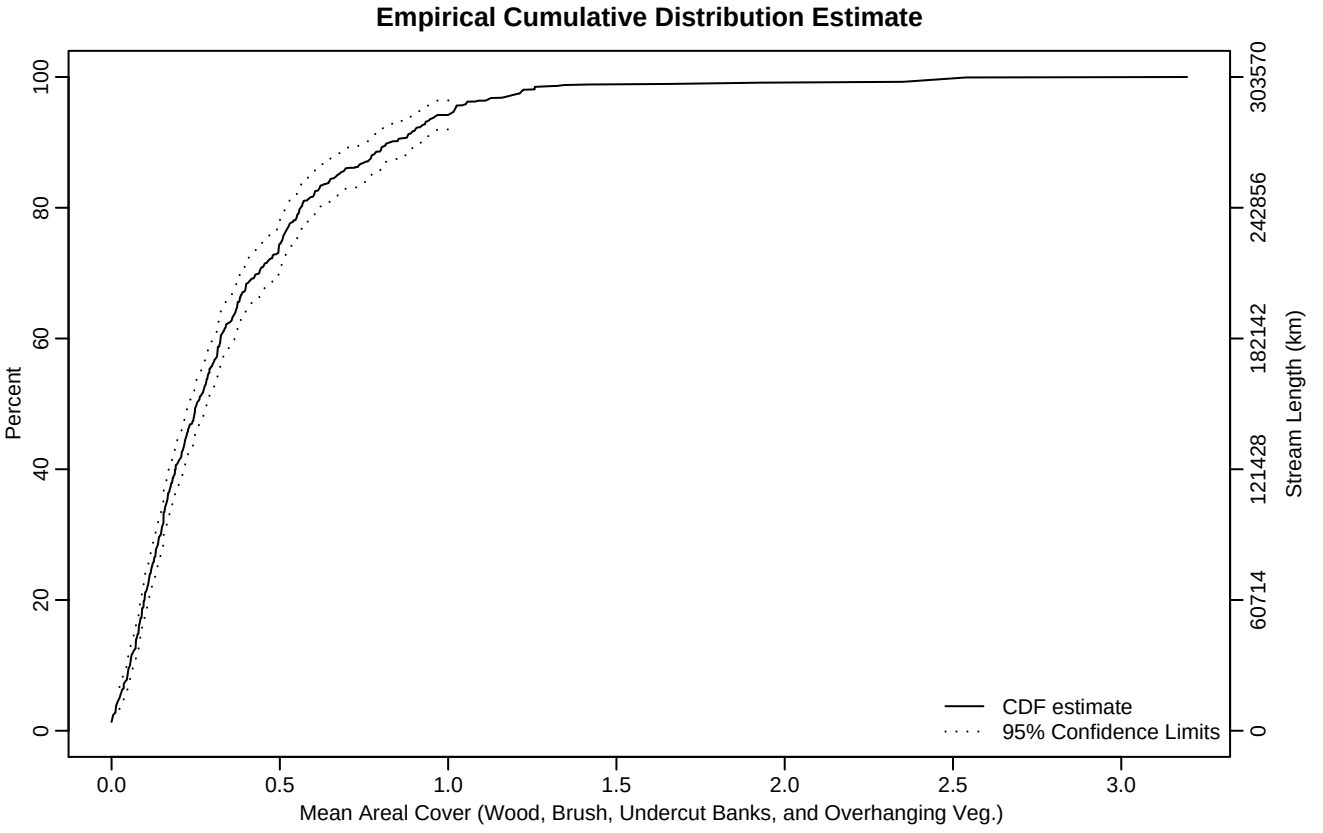


Figure PHAB−85 Indicator: XFC_NORK Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.04
10Pct	0.05	0.04	0.07
25Pct	0.12	0.11	0.13
50Pct	0.25	0.23	0.28
75Pct	0.51	0.45	0.55
90Pct	0.83	0.76	0.93
95Pct	1.02	0.93	1.18
Mean	0.37	0.33	0.40
Std Dev	0.33	0.28	0.38

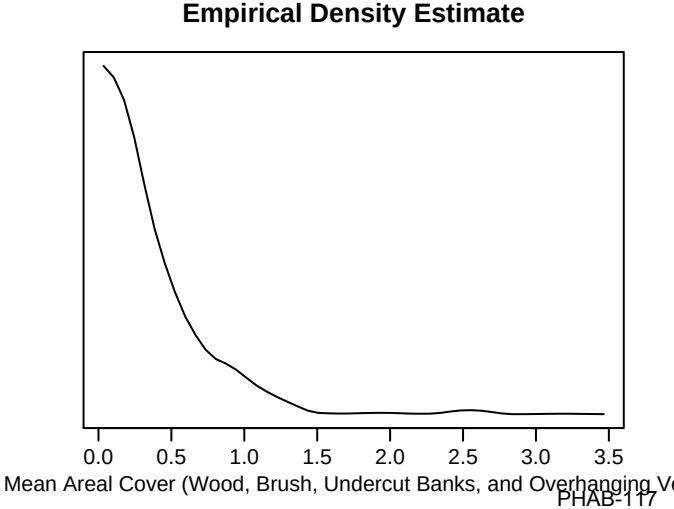
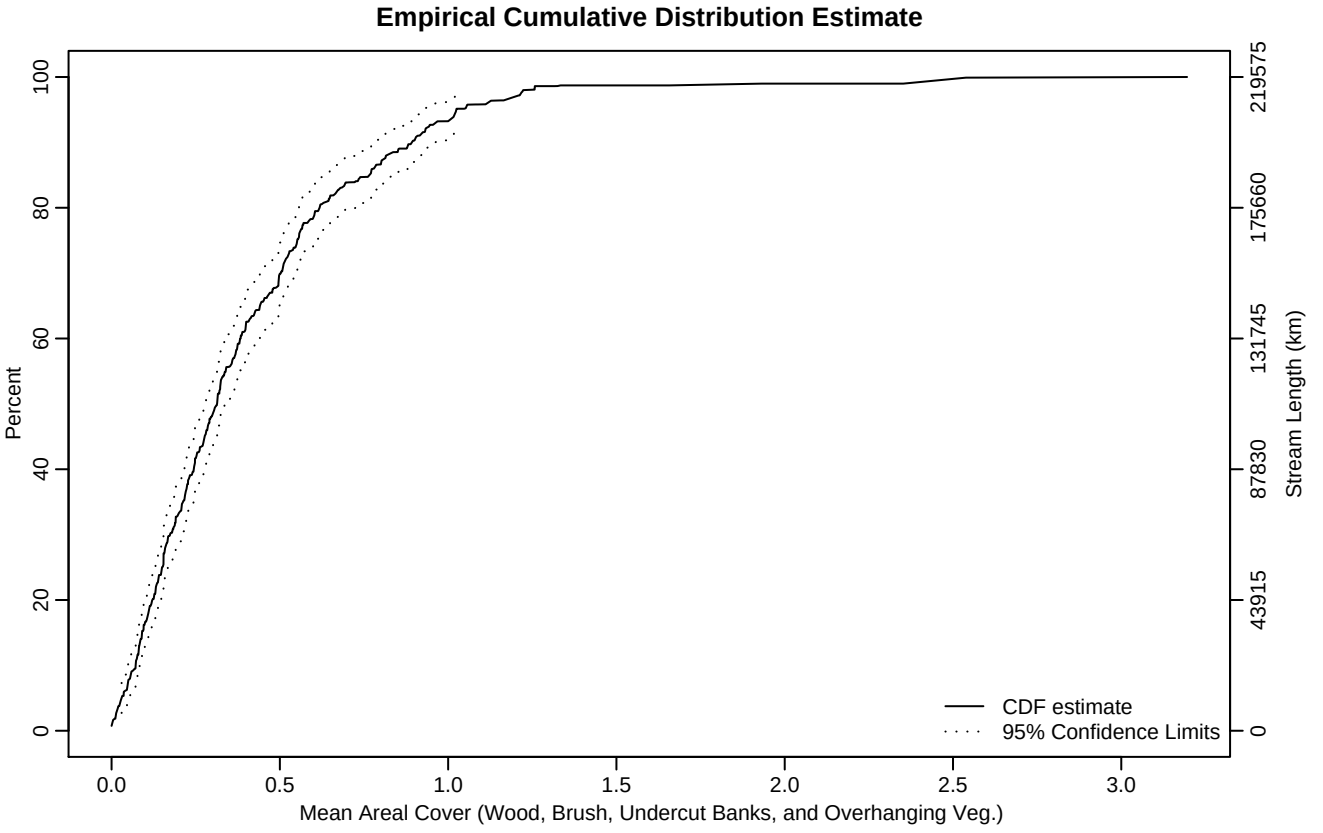


Figure PHAB−86 Indicator: XFC_NORK Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.01	0.05
10Pct	0.07	0.05	0.08
25Pct	0.15	0.13	0.17
50Pct	0.31	0.28	0.34
75Pct	0.55	0.51	0.61
90Pct	0.89	0.79	1
95Pct	1.02	0.94	1.22
Mean	0.41	0.36	0.45
Std Dev	0.34	0.28	0.40

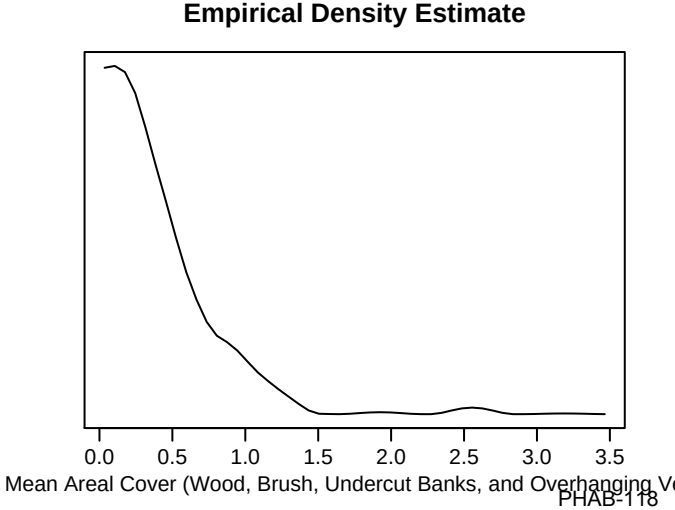
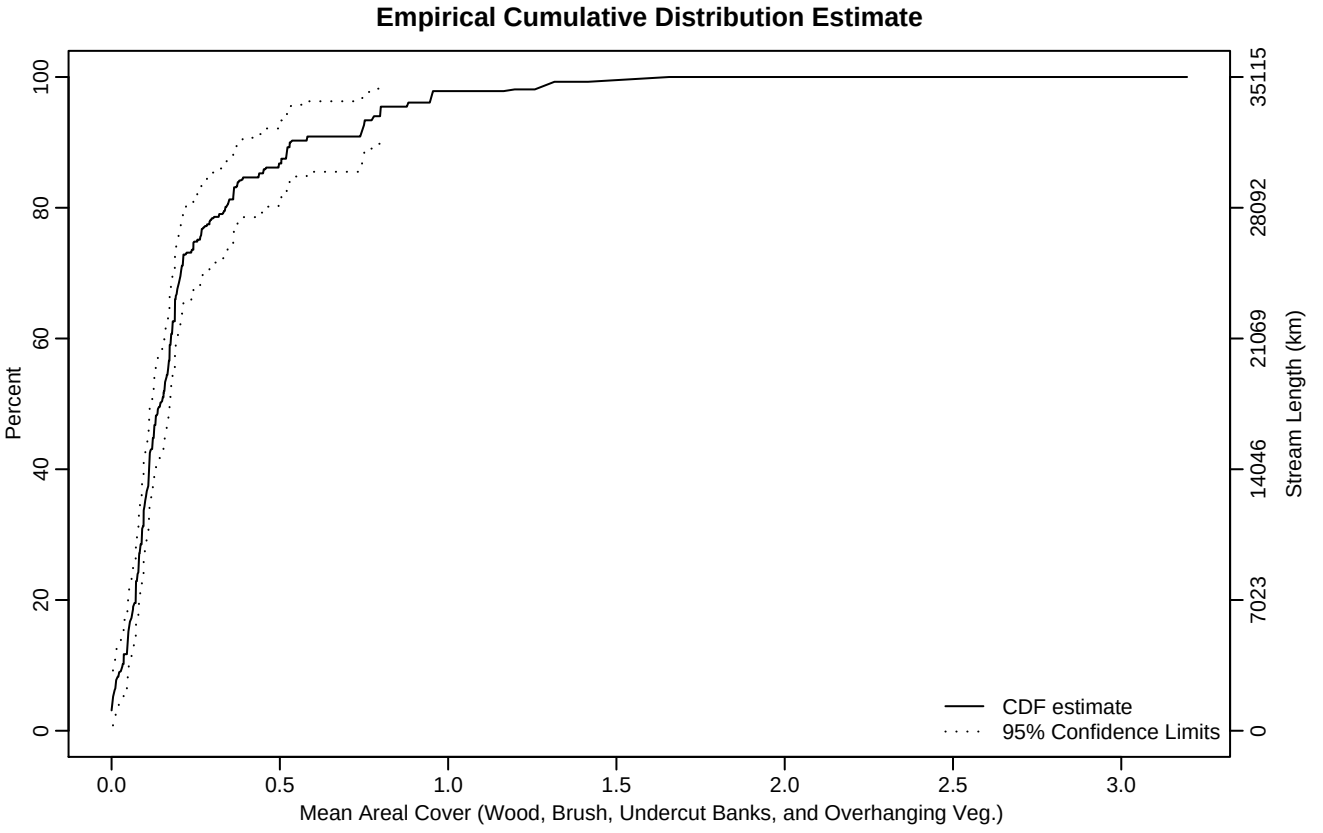


Figure PHAB−87 Indicator: XFC_NORK Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.02
10Pct	0.03	0	0.05
25Pct	0.08	0.06	0.10
50Pct	0.14	0.11	0.17
75Pct	0.25	0.20	0.36
90Pct	0.53	0.39	0.80
95Pct	0.80	0.58	1.31
Mean	0.24	0.19	0.28
Std Dev	0.23	0.19	0.28

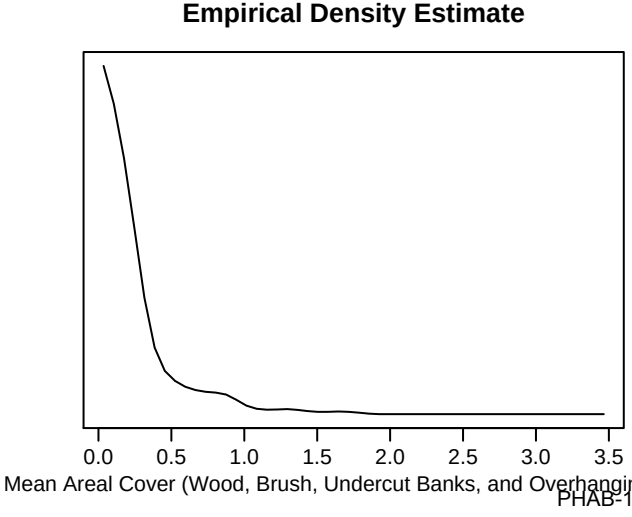
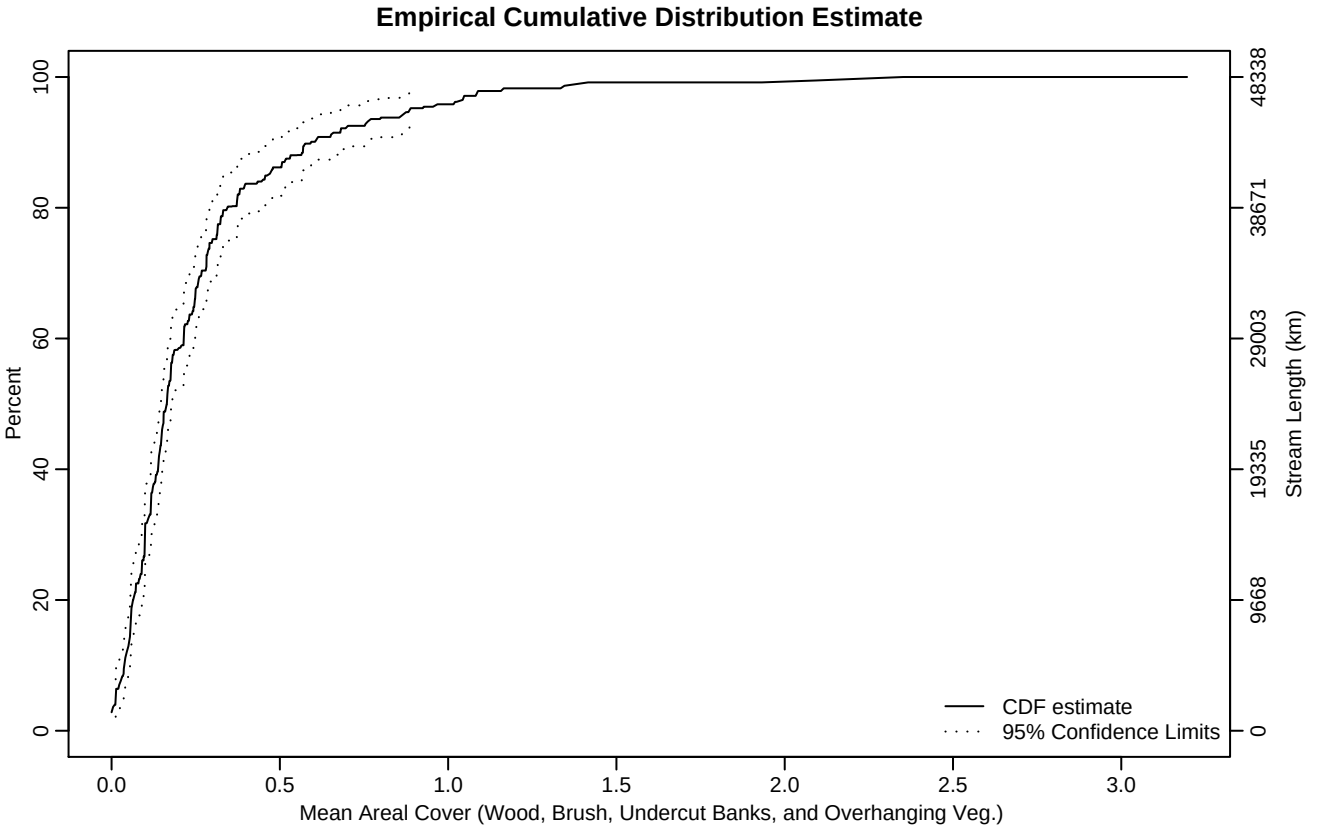


Figure PHAB−88 Indicator: XFC_NORK Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.03
10Pct	0.04	0.01	0.05
25Pct	0.09	0.06	0.10
50Pct	0.16	0.14	0.18
75Pct	0.30	0.26	0.37
90Pct	0.59	0.51	0.80
95Pct	0.89	0.70	1.09
Mean	0.26	0.23	0.30
Std Dev	0.27	0.22	0.32

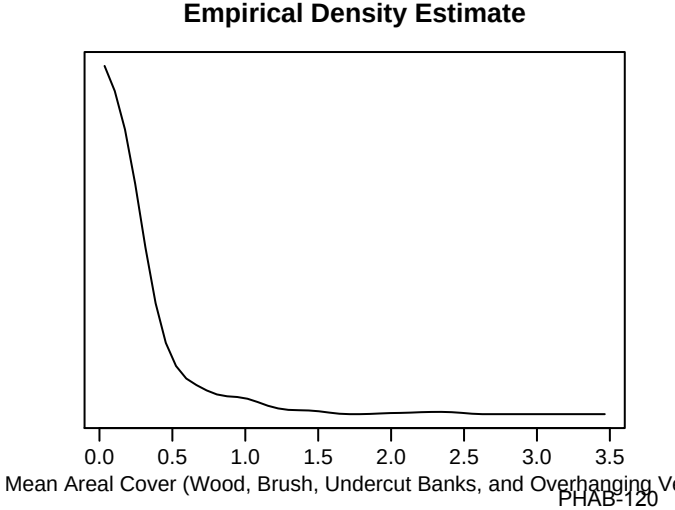
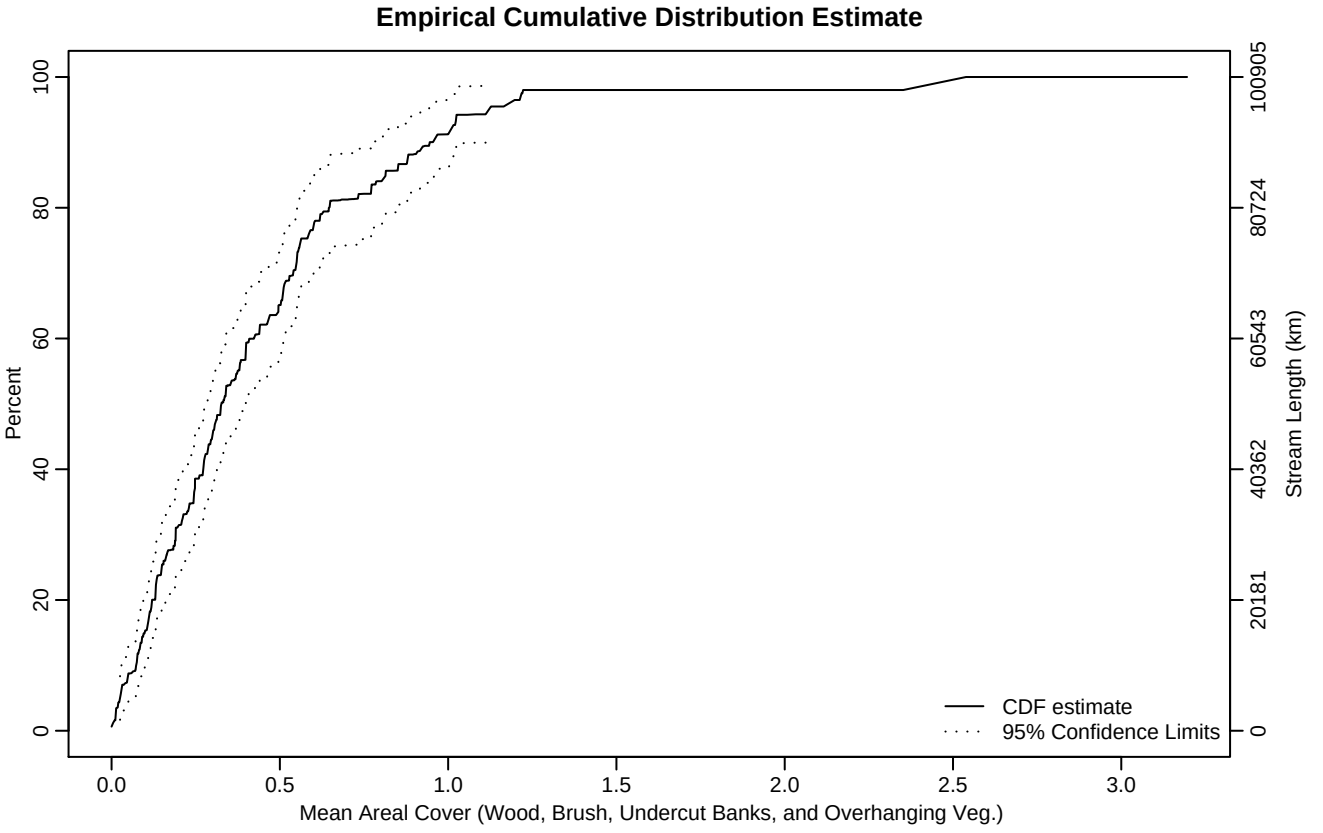


Figure PHAB−89 Indicator: XFC_NORK Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.01	0.05
10Pct	0.07	0.03	0.09
25Pct	0.15	0.12	0.20
50Pct	0.33	0.28	0.40
75Pct	0.56	0.51	0.77
90Pct	0.95	0.81	1.17
95Pct	1.12	0.96	2.49
Mean	0.45	0.36	0.53
Std Dev	0.37	0.27	0.48

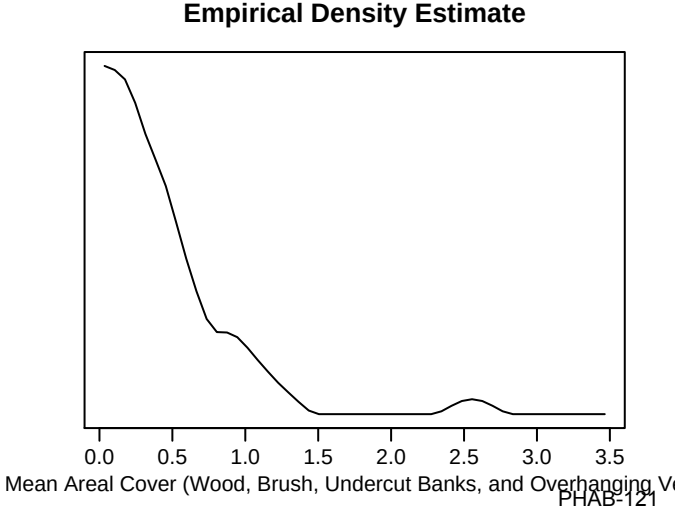
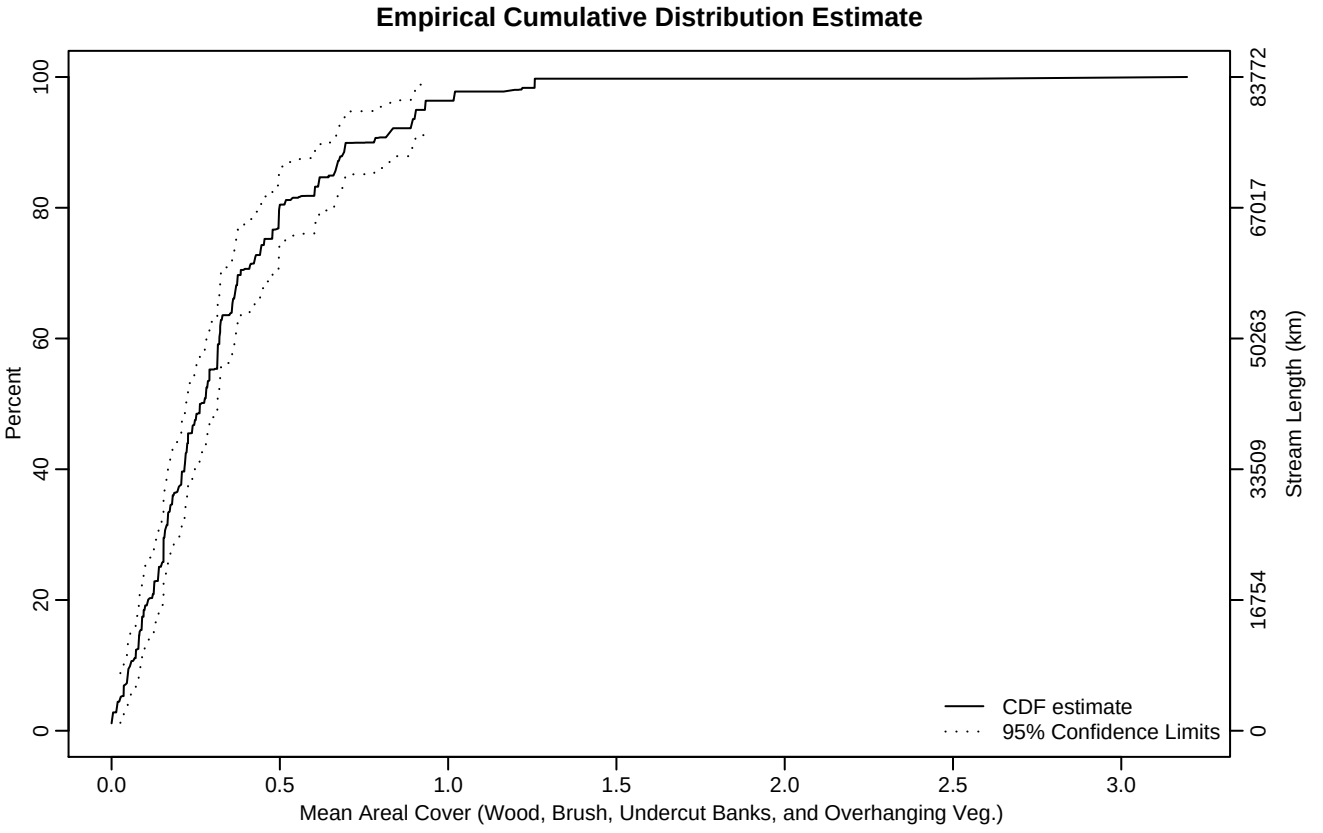


Figure PHAB−90 Indicator: XFC_NORK Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0	0.05
10Pct	0.06	0.03	0.08
25Pct	0.14	0.10	0.16
50Pct	0.26	0.22	0.31
75Pct	0.45	0.37	0.60
90Pct	0.78	0.66	0.93
95Pct	0.93	0.82	1.26
Mean	0.35	0.30	0.39
Std Dev	0.28	0.22	0.34

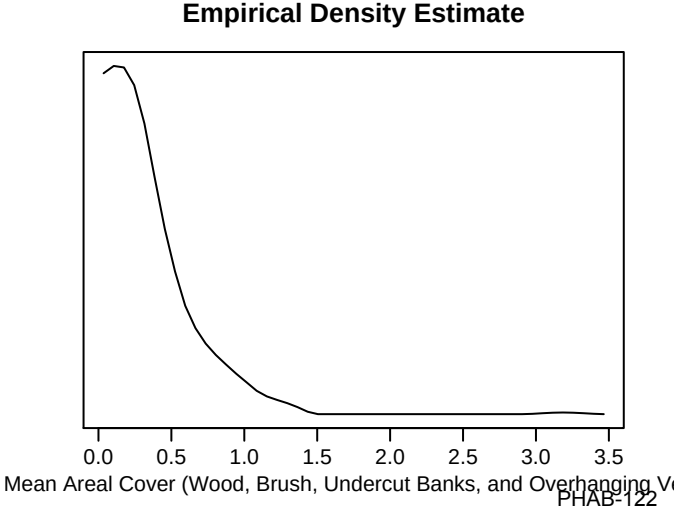
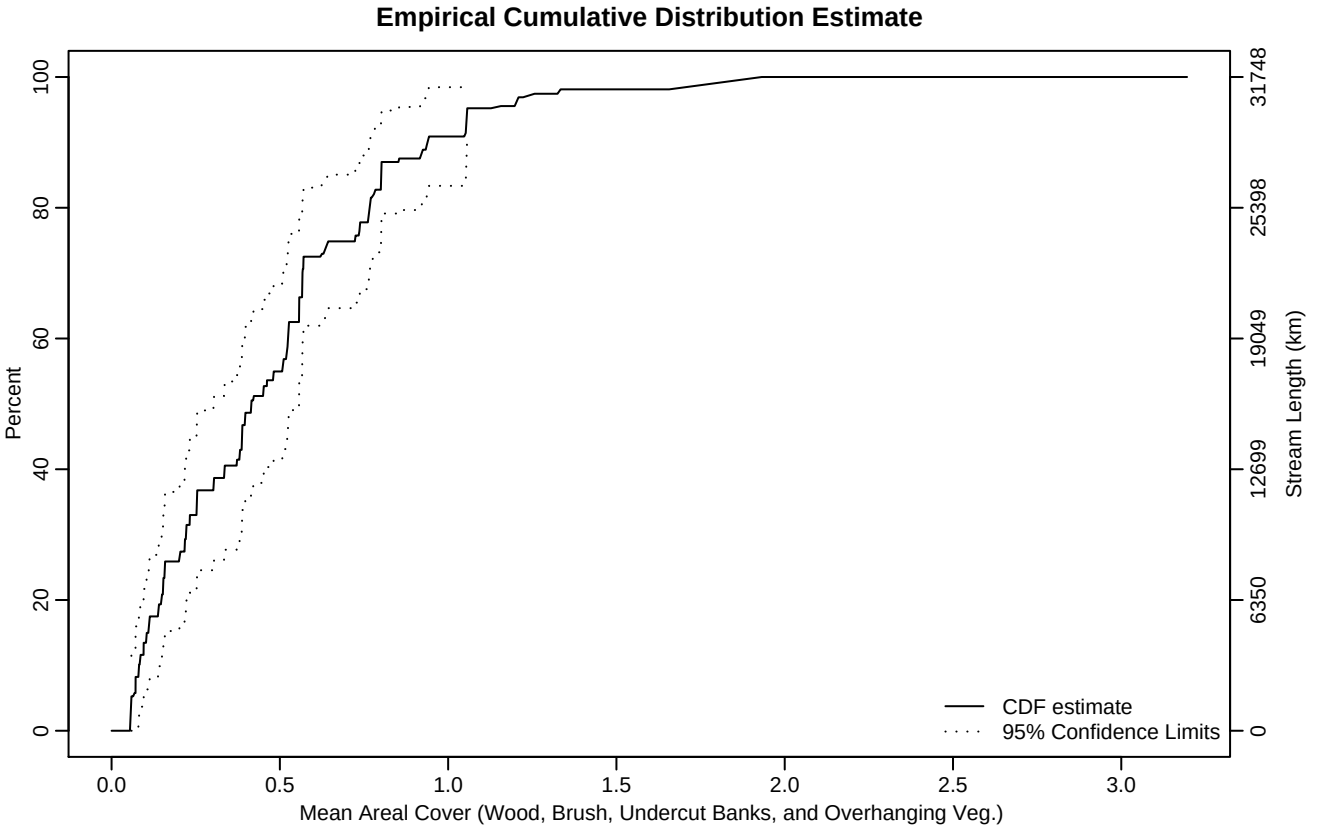


Figure PHAB−91 Indicator: XFC_NORK Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0.06	0.07
10Pct	0.08	0.06	0.14
25Pct	0.16	0.11	0.25
50Pct	0.42	0.30	0.56
75Pct	0.72	0.56	0.80
90Pct	0.94	0.78	1.33
95Pct	1.06	0.85	1.93
Mean	0.48	0.39	0.58
Std Dev	0.34	0.23	0.45

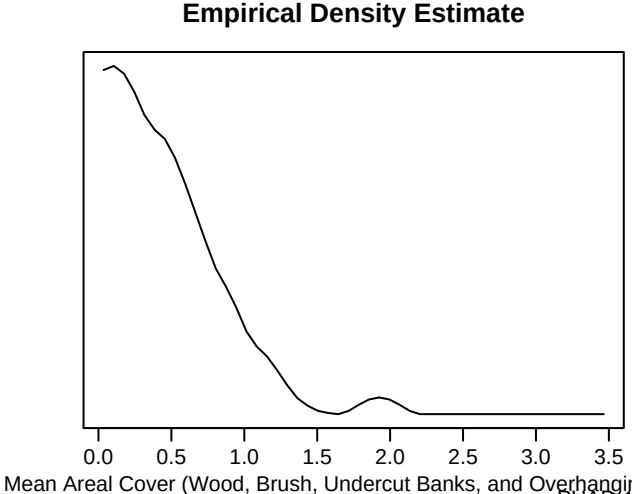
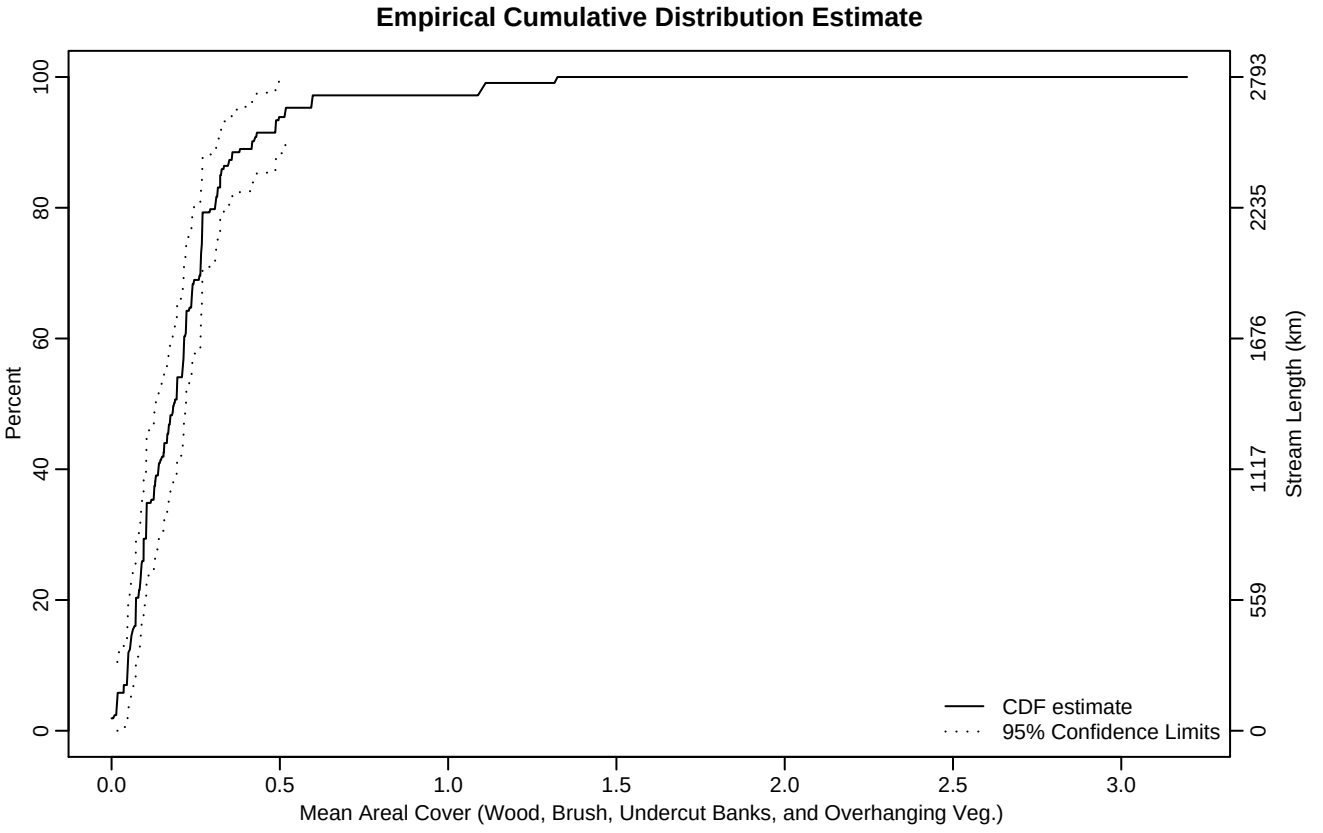


Figure PHAB−92 Indicator: XFC_NORK Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0	0.05
10Pct	0.05	0.02	0.07
25Pct	0.09	0.07	0.10
50Pct	0.19	0.13	0.22
75Pct	0.27	0.24	0.32
90Pct	0.42	0.32	0.60
95Pct	0.52	0.42	1.32
Mean	0.22	0.18	0.27
Std Dev	0.21	0.13	0.29

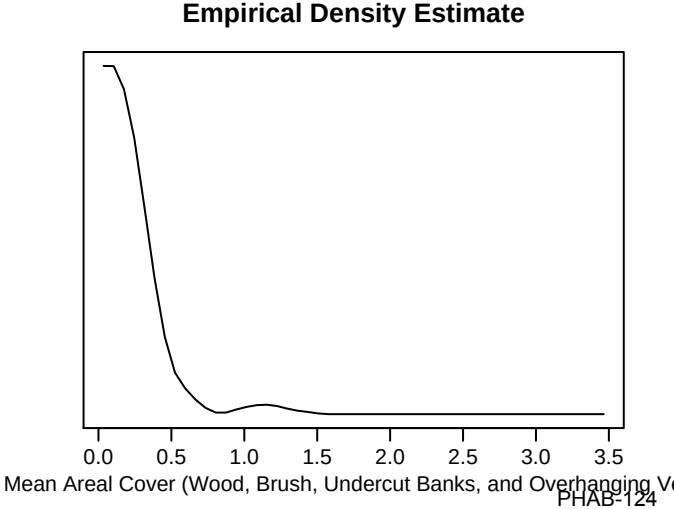
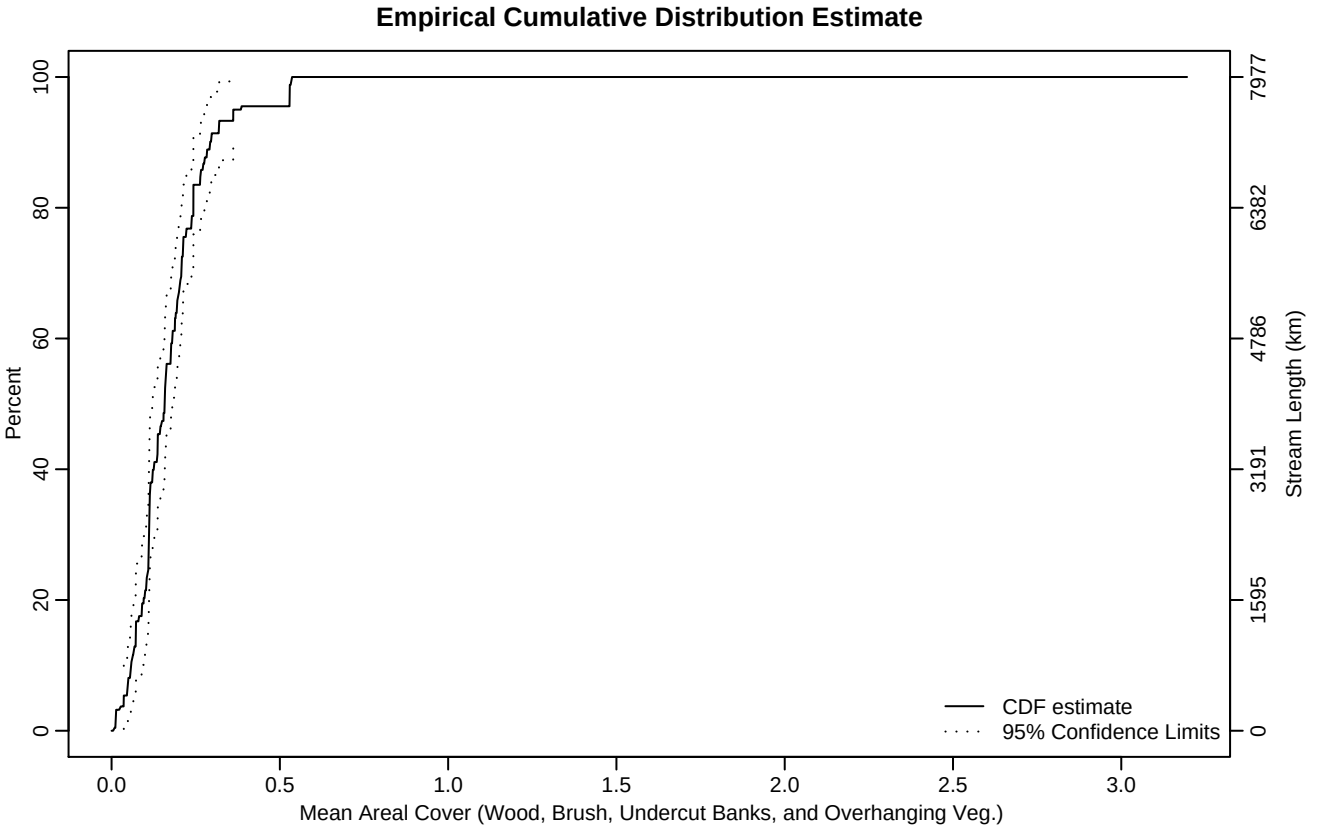


Figure PHAB−93 Indicator: XFC_NORK Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.01	0.06
10Pct	0.06	0.04	0.07
25Pct	0.11	0.07	0.11
50Pct	0.16	0.12	0.18
75Pct	0.21	0.20	0.26
90Pct	0.29	0.24	0.53
95Pct	0.36	0.28	0.54
Mean	0.18	0.15	0.20
Std Dev	0.11	0.08	0.13

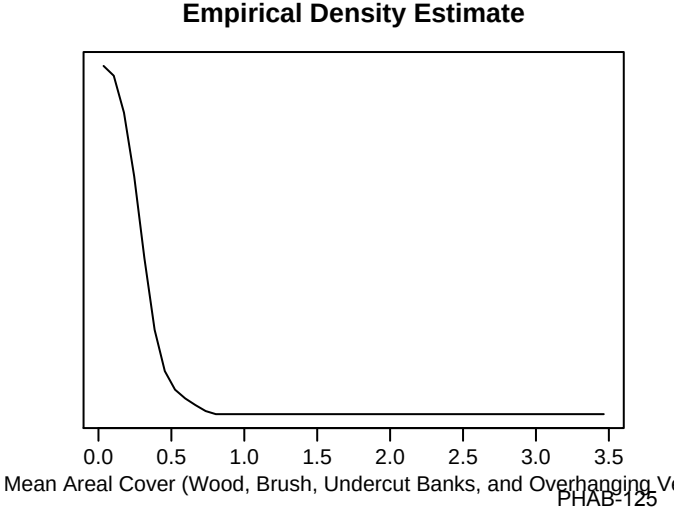
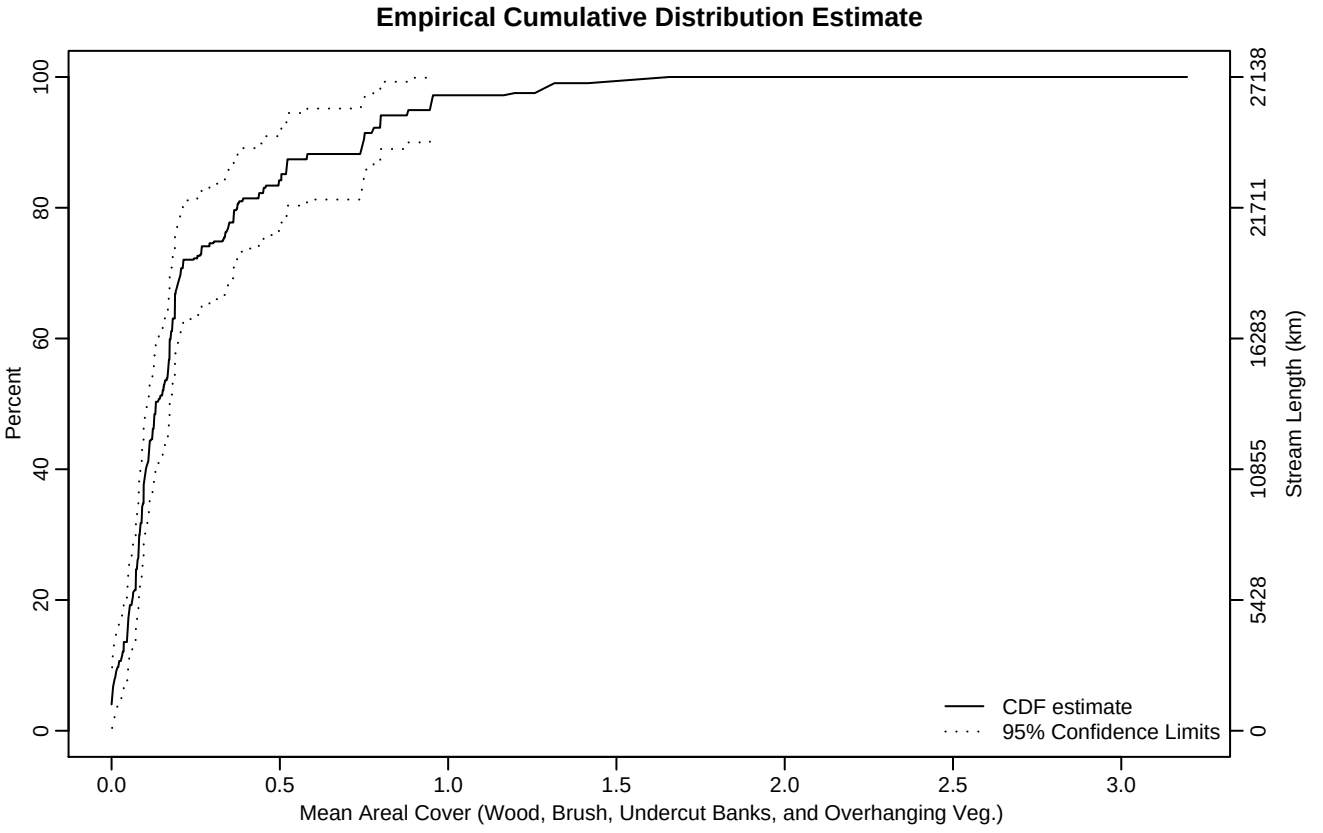


Figure PHAB−94 Indicator: XFC_NORK Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0.02	0	0.05
25Pct	0.08	0.05	0.09
50Pct	0.13	0.11	0.17
75Pct	0.33	0.19	0.50
90Pct	0.75	0.46	0.95
95Pct	0.95	0.75	1.64
Mean	0.25	0.19	0.31
Std Dev	0.27	0.22	0.32

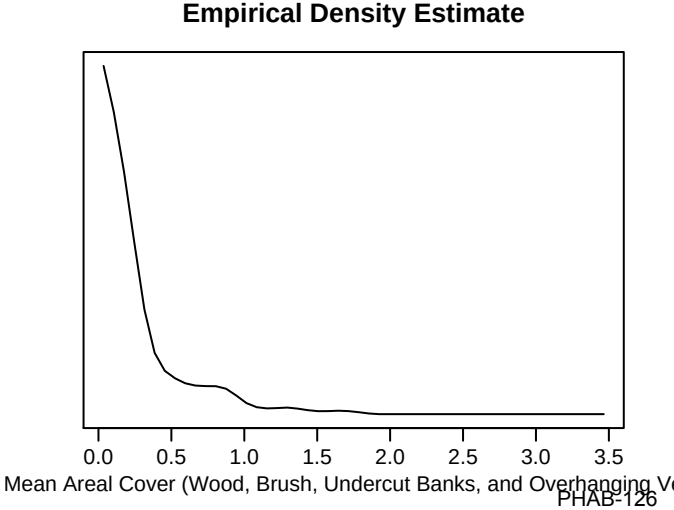
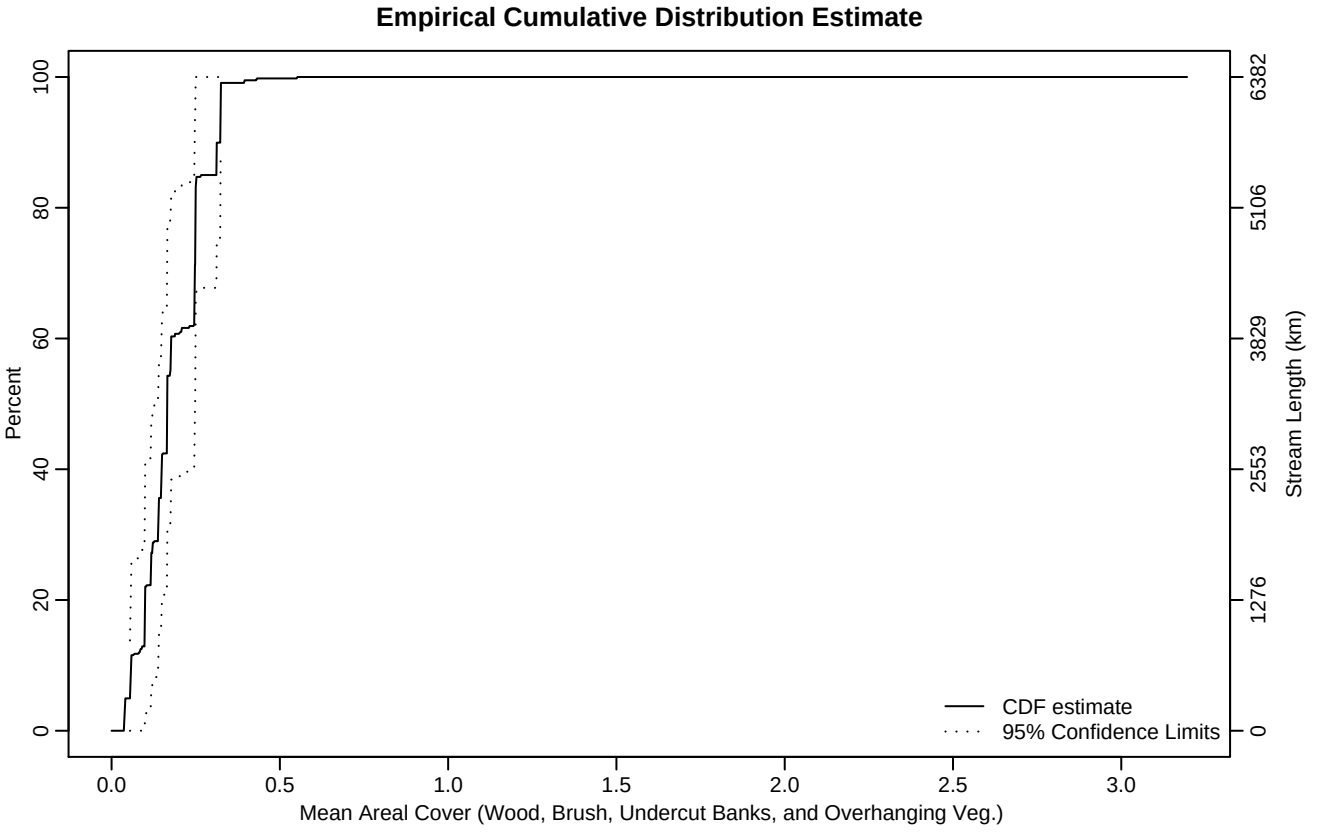


Figure PHAB−95 Indicator: XFC_NORK Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0	0.10
10Pct	0.06	0.04	0.10
25Pct	0.12	0.05	0.16
50Pct	0.17	0.12	0.25
75Pct	0.25	0.17	0.32
90Pct	0.32	0.25	0.55
95Pct	0.32	0.25	0.55
Mean	0.18	0.15	0.22
Std Dev	0.09	0.07	0.11

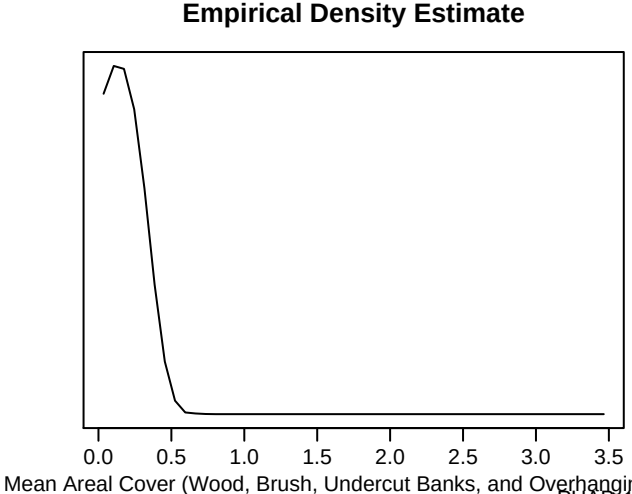
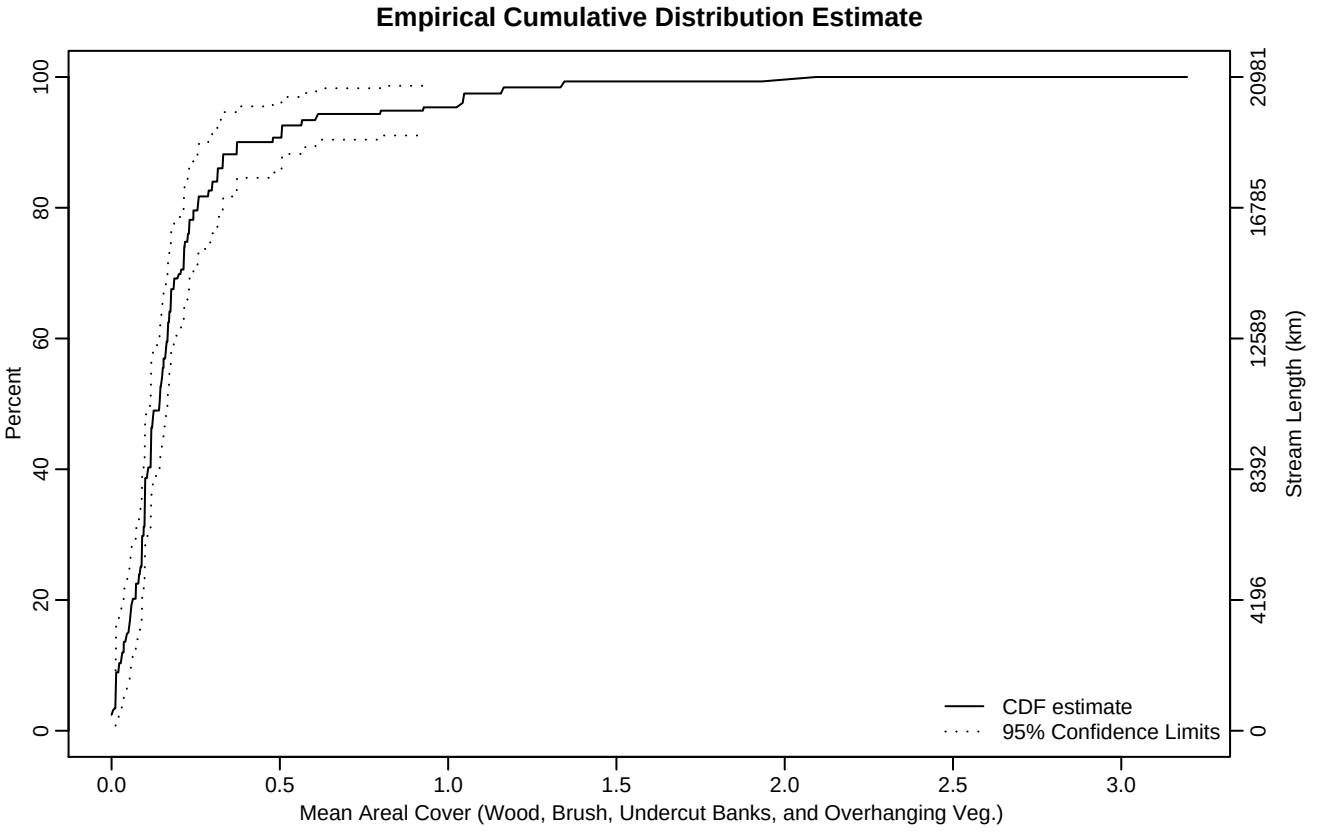


Figure PHAB−96 Indicator: XFC_NORK Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.02	0	0.06
25Pct	0.09	0.05	0.10
50Pct	0.14	0.11	0.17
75Pct	0.23	0.18	0.31
90Pct	0.37	0.30	1.04
95Pct	0.93	0.51	1.34
Mean	0.22	0.17	0.26
Std Dev	0.26	0.18	0.34

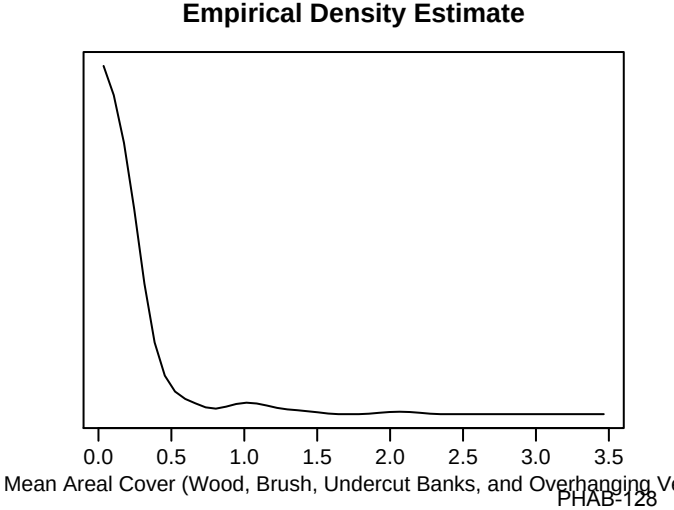
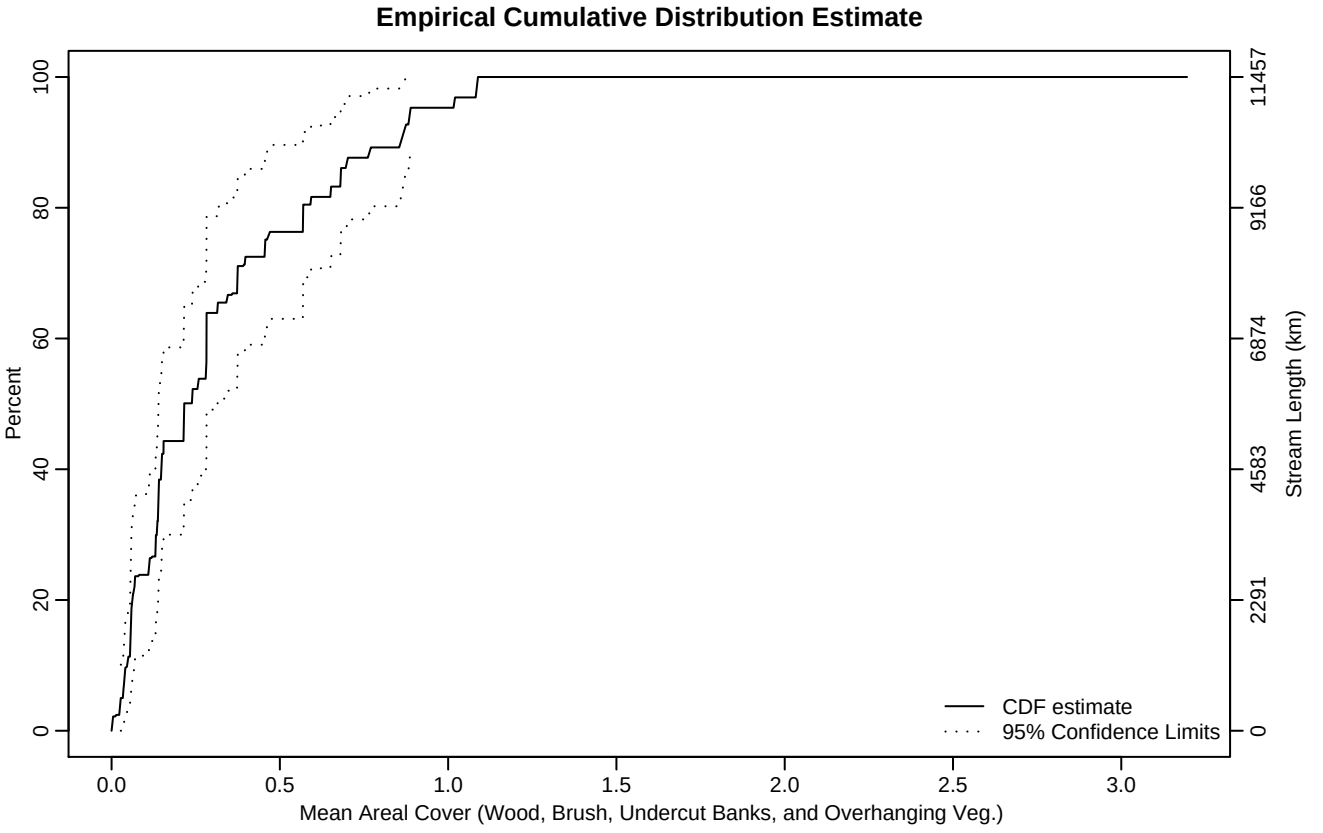


Figure PHAB−97 Indicator: XFC_NORK Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0	0.04
10Pct	0.05	0.02	0.06
25Pct	0.11	0.06	0.14
50Pct	0.22	0.14	0.32
75Pct	0.46	0.28	0.77
90Pct	0.86	0.59	1.09
95Pct	0.89	0.76	1.09
Mean	0.33	0.24	0.41
Std Dev	0.29	0.22	0.36

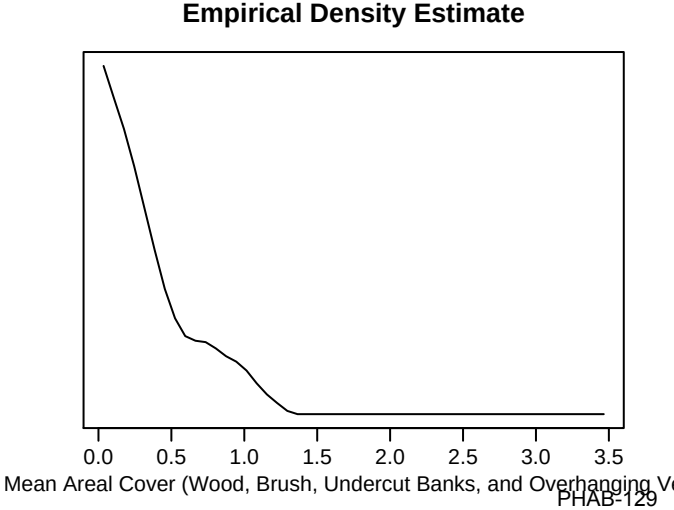
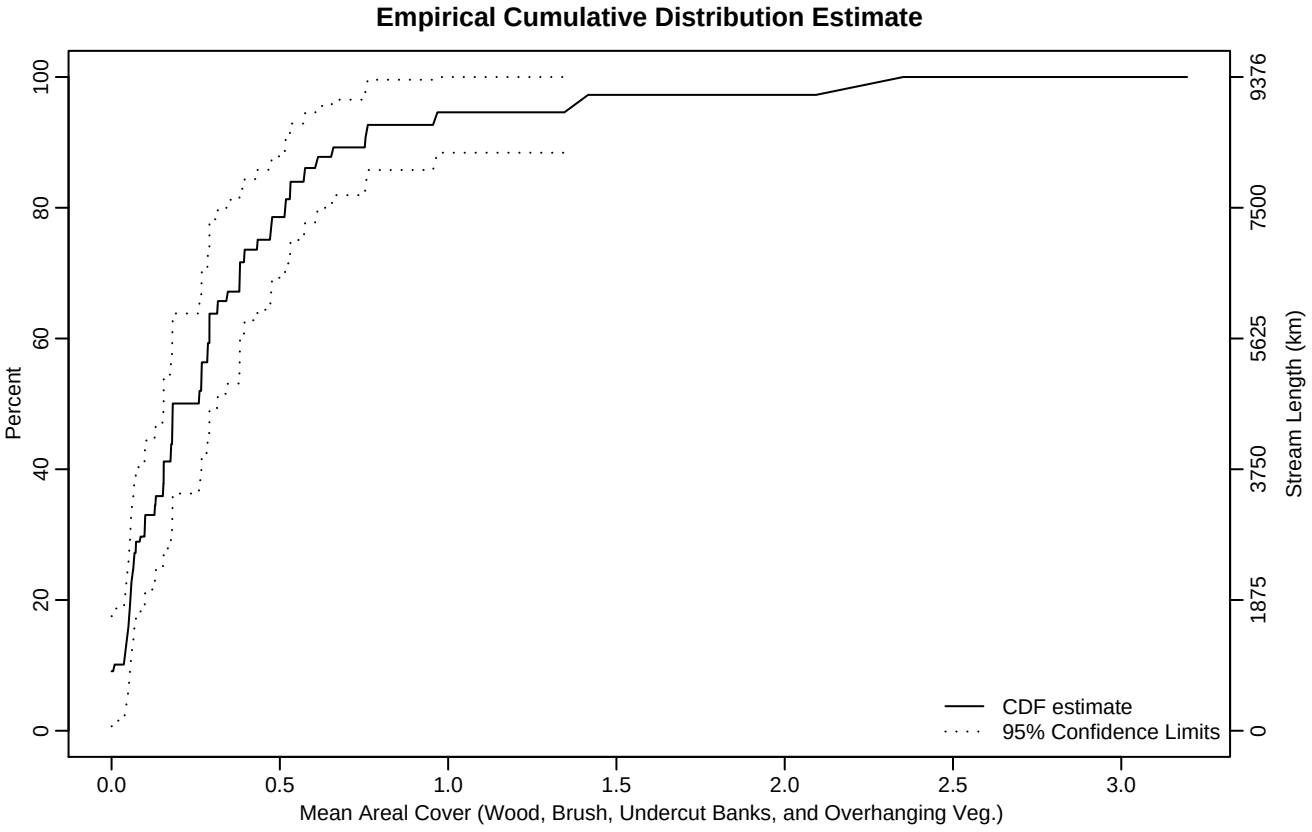


Figure PHAB−98 Indicator: XFC_NORK Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.04
10Pct	0.01	0	0.05
25Pct	0.06	0.05	0.15
50Pct	0.18	0.15	0.31
75Pct	0.43	0.31	0.57
90Pct	0.75	0.53	2.10
95Pct	1.36	0.66	2.35
Mean	0.35	0.24	0.46
Std Dev	0.37	0.24	0.49

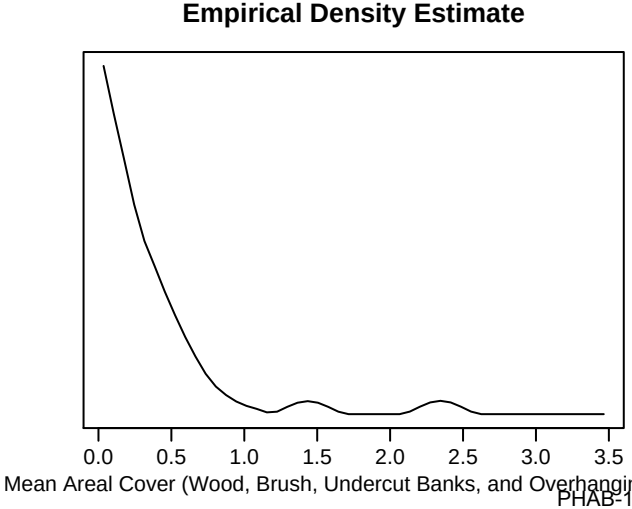
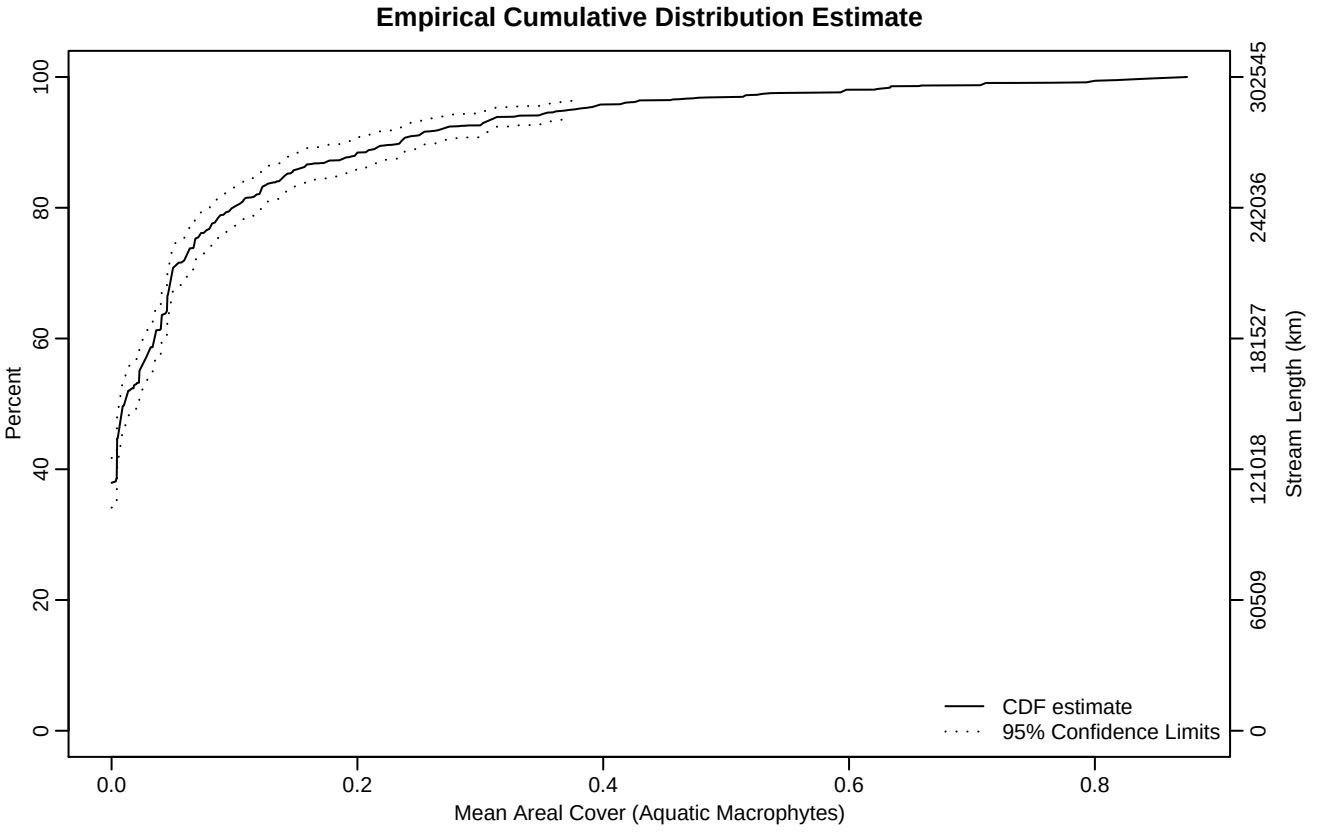


Figure PHAB−99 Indicator: XFC_AQM Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0.01	0.02
75Pct	0.07	0.06	0.09
90Pct	0.23	0.19	0.27
95Pct	0.37	0.31	0.43
Mean	0.07	0.06	0.08
Std Dev	0.13	0.12	0.15

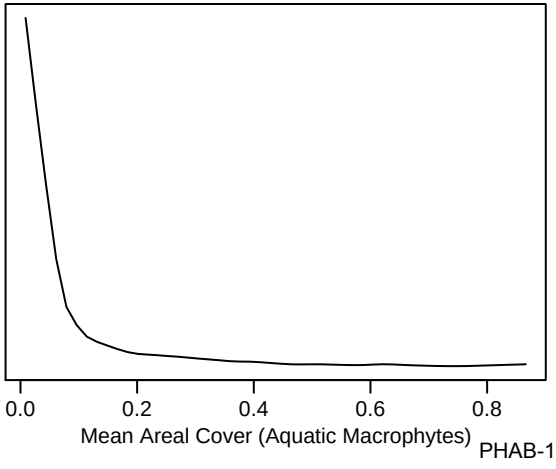
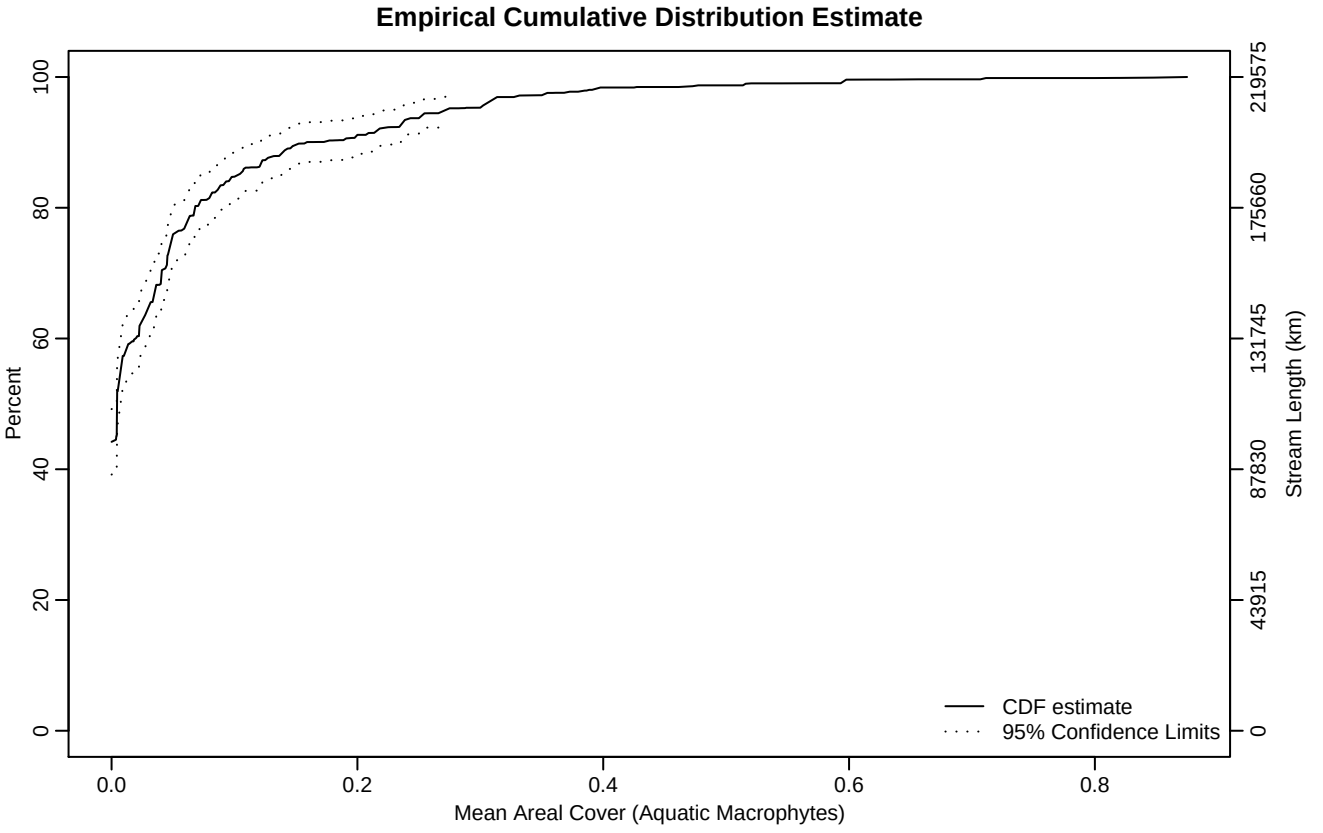


Figure PHAB−100 Indicator: XFC_AQM Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.01
75Pct	0.05	0.04	0.07
90Pct	0.16	0.12	0.24
95Pct	0.27	0.24	0.34
Mean	0.05	0.04	0.06
Std Dev	0.10	0.08	0.11

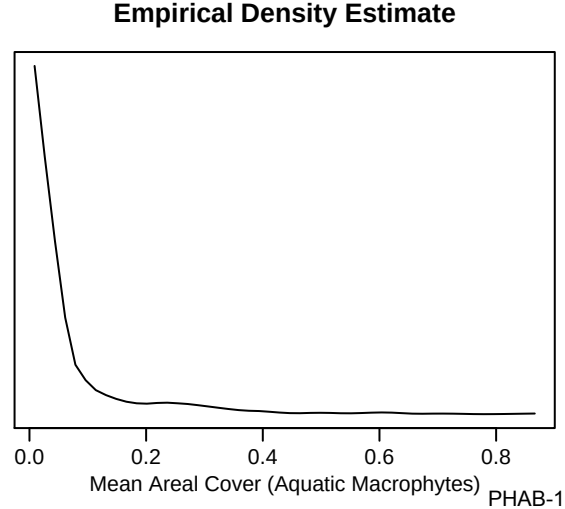
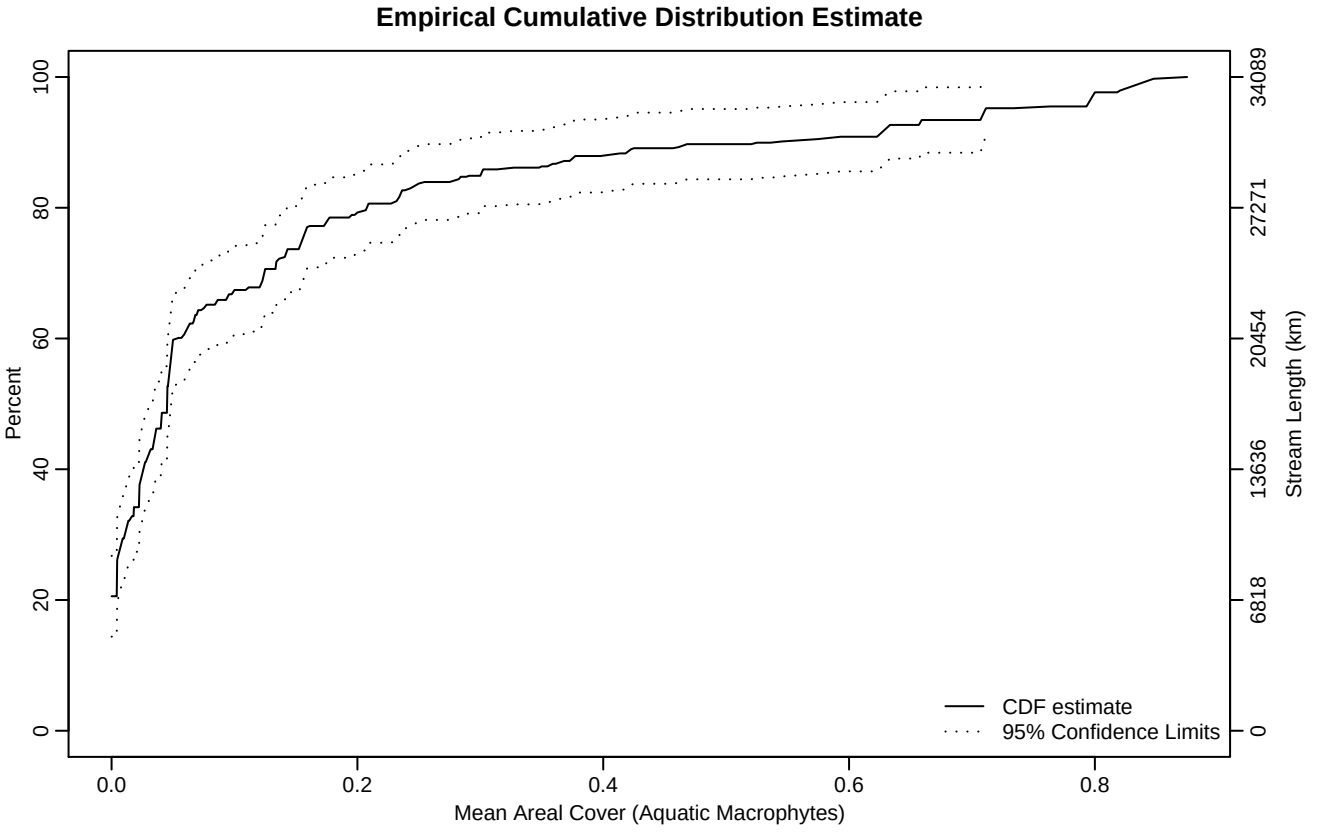


Figure PHAB−101 Indicator: XFC_AQM Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.05	0.03	0.05
75Pct	0.15	0.12	0.23
90Pct	0.54	0.28	0.79
95Pct	0.71	0.52	0.88
Mean	0.14	0.10	0.18
Std Dev	0.20	0.17	0.23

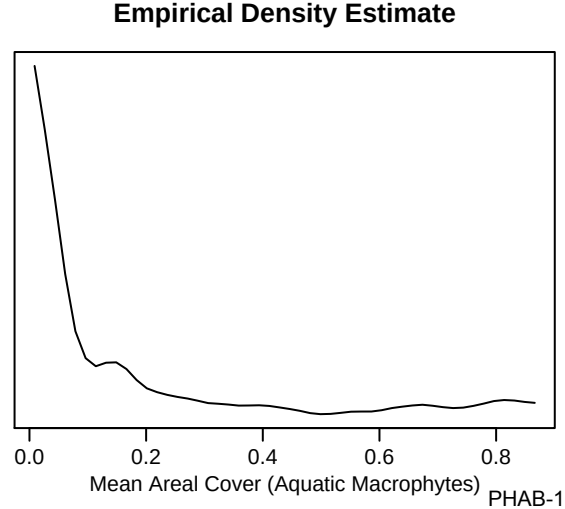
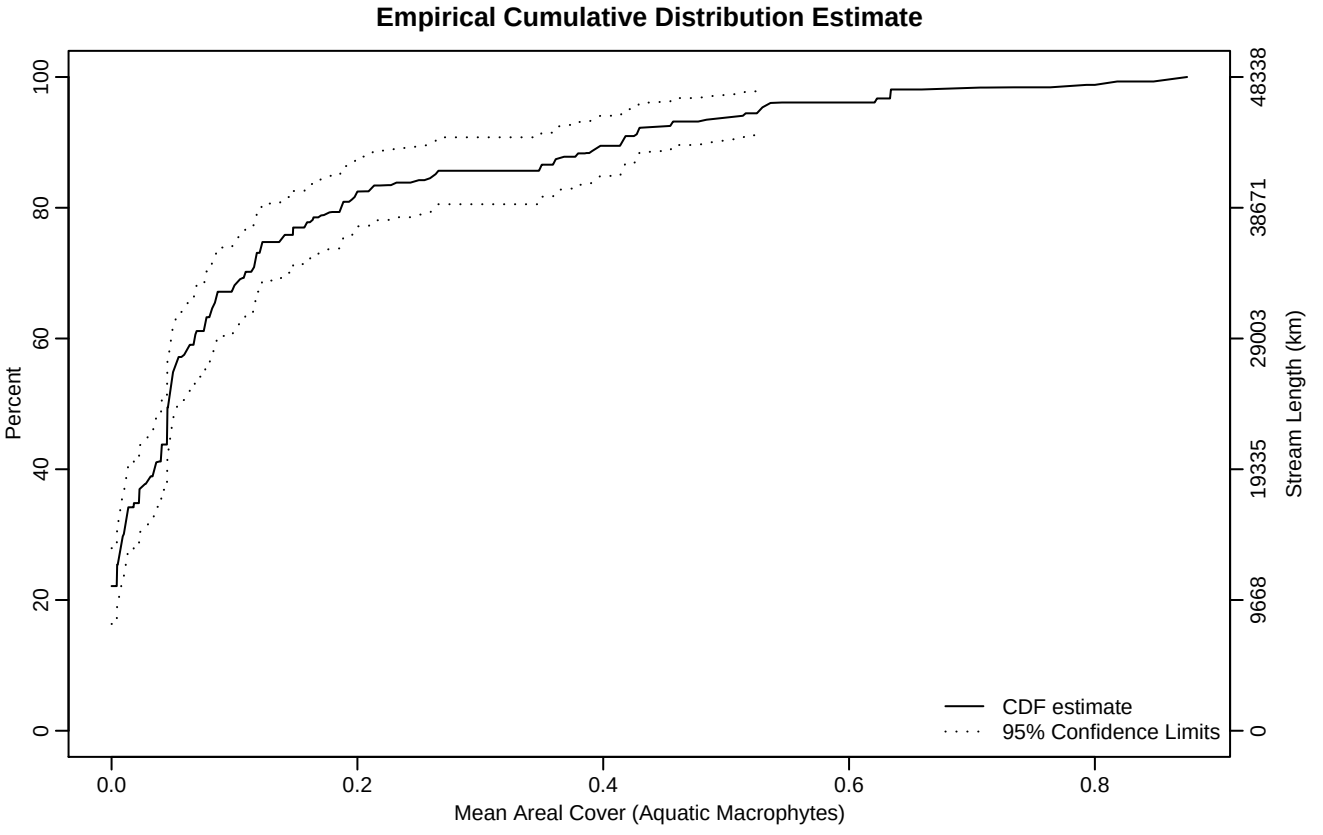


Figure PHAB−102 Indicator: XFC_AQM Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.05	0.04	0.05
75Pct	0.14	0.10	0.19
90Pct	0.42	0.26	0.53
95Pct	0.53	0.43	0.72
Mean	0.12	0.10	0.15
Std Dev	0.16	0.14	0.18

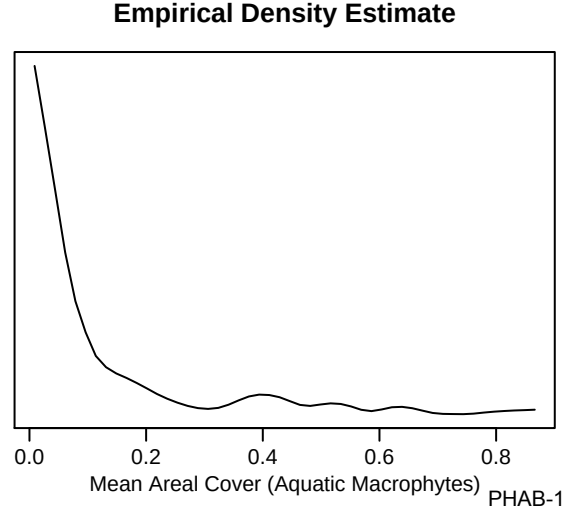
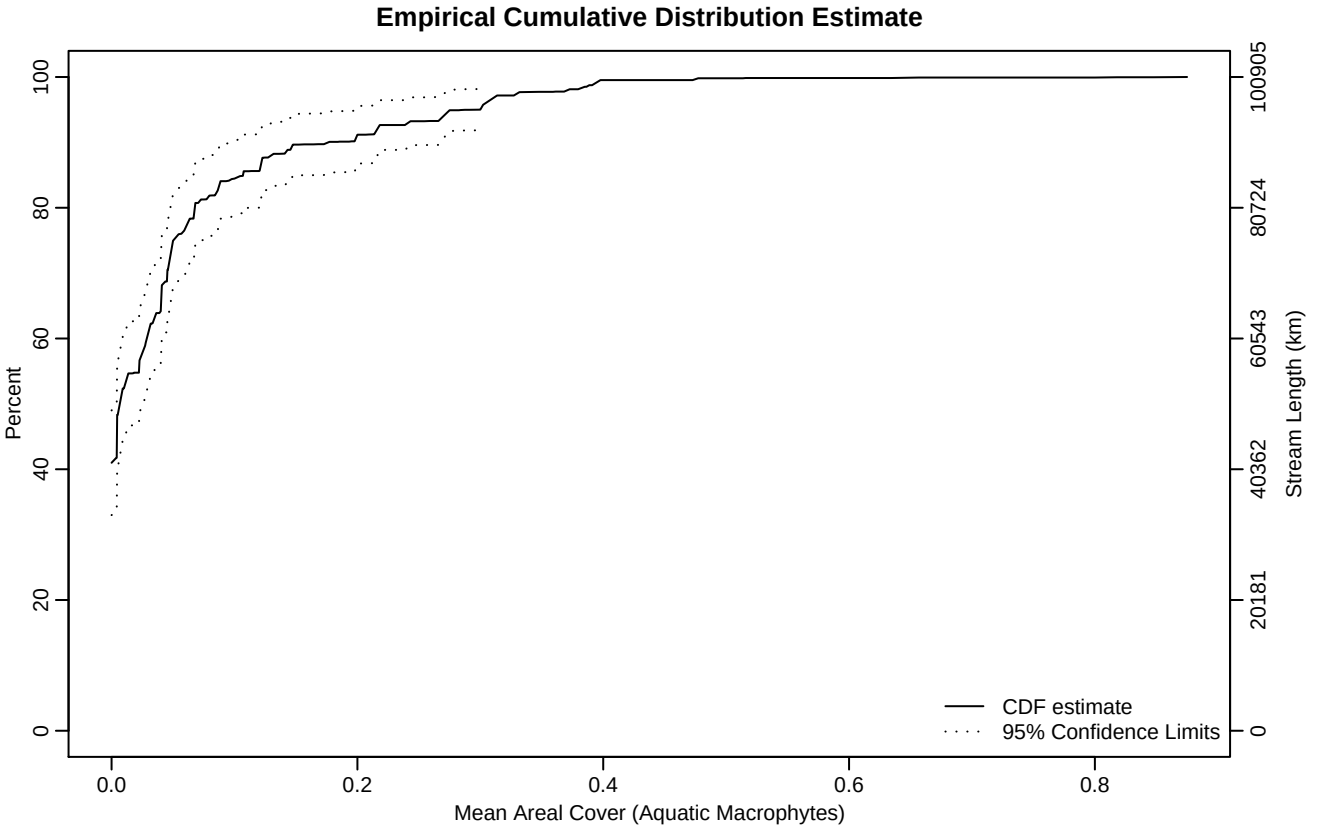


Figure PHAB−103 Indicator: XFC_AQM Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.03
75Pct	0.05	0.04	0.09
90Pct	0.18	0.11	0.27
95Pct	0.30	0.22	0.38
Mean	0.05	0.04	0.07
Std Dev	0.08	0.07	0.10

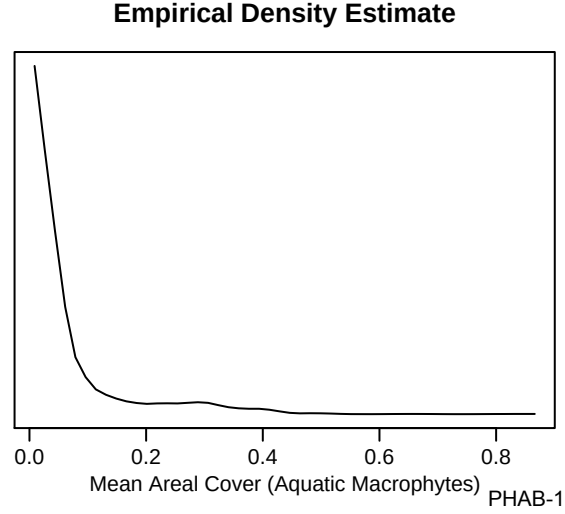
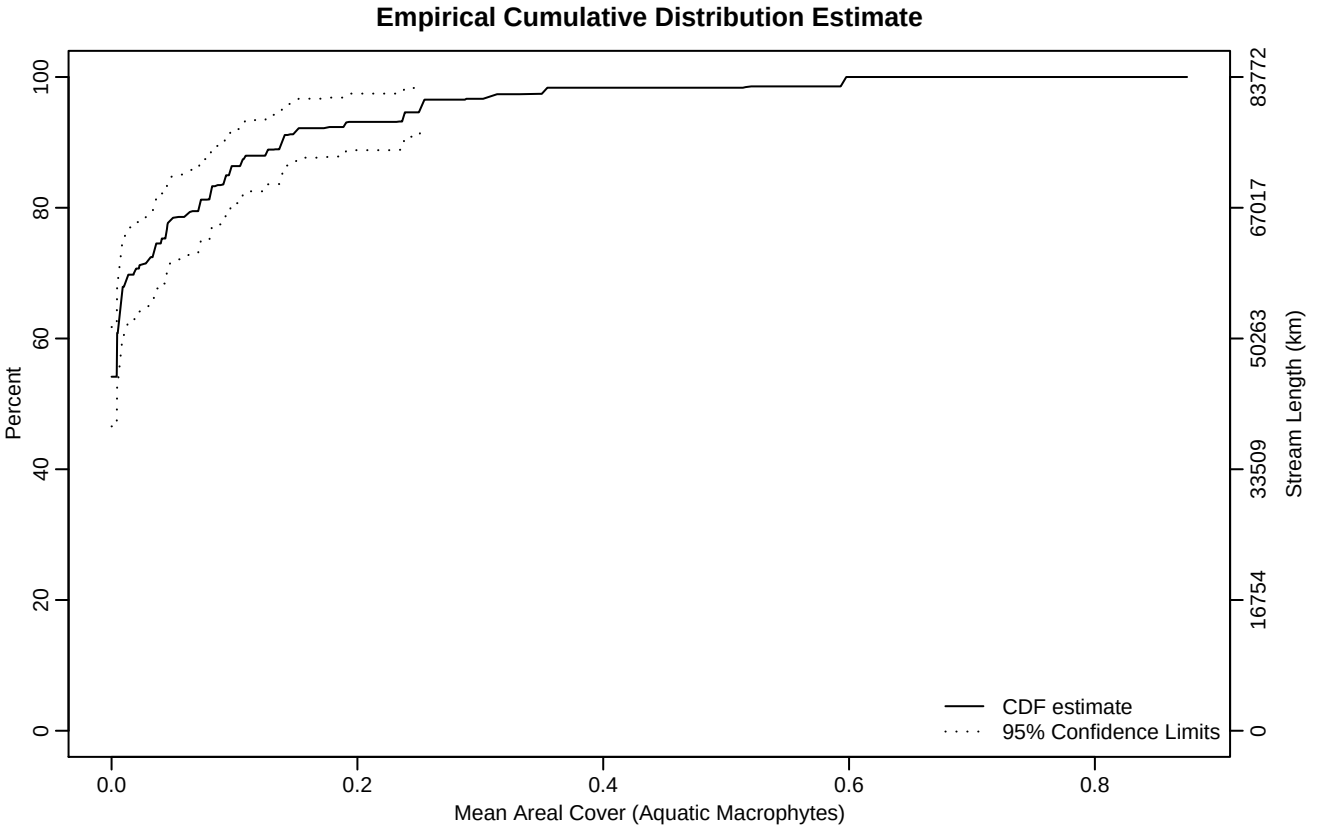


Figure PHAB−104 Indicator: XFC_AQM Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.04	0.01	0.08
90Pct	0.14	0.09	0.25
95Pct	0.25	0.15	0.59
Mean	0.04	0.03	0.06
Std Dev	0.10	0.07	0.13

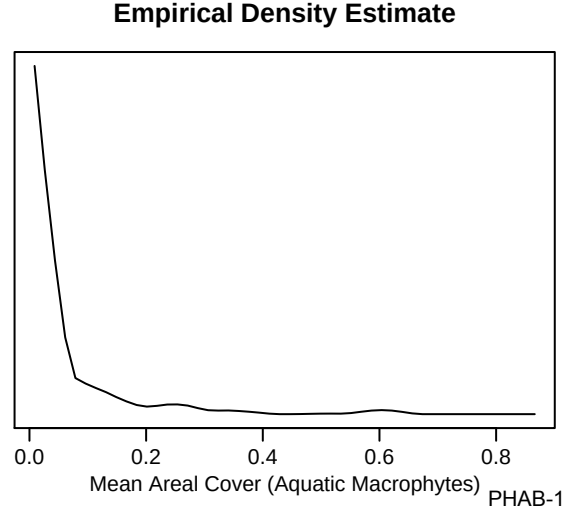
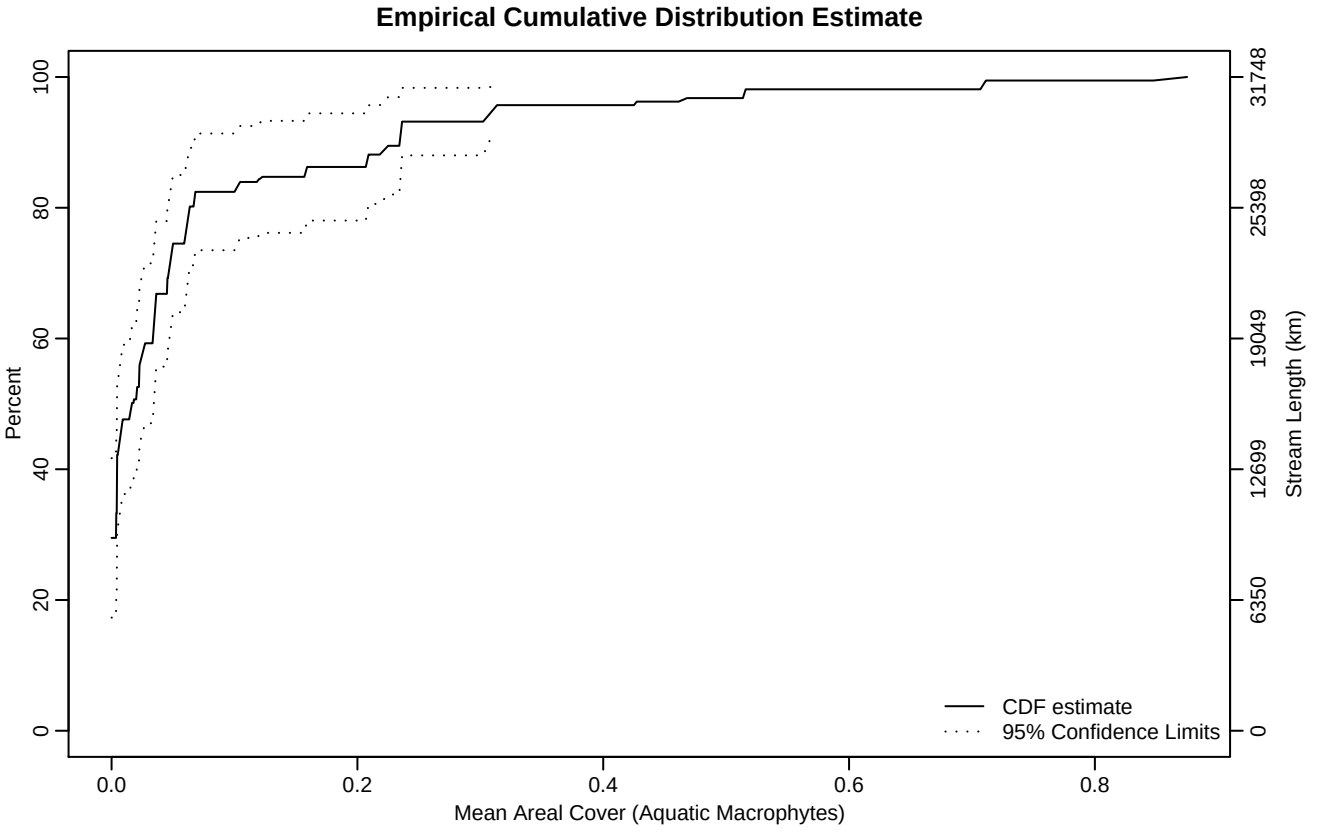


Figure PHAB−105 Indicator: XFC_AQM Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.02	0	0.03
75Pct	0.06	0.04	0.16
90Pct	0.23	0.07	0.52
95Pct	0.31	0.23	0.88
Mean	0.07	0.04	0.10
Std Dev	0.11	0.08	0.13

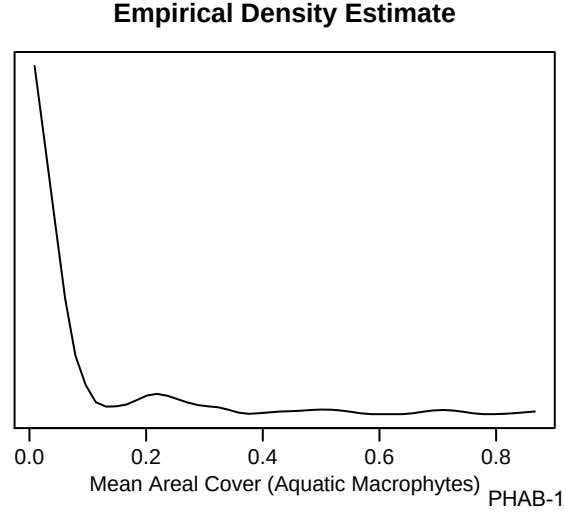
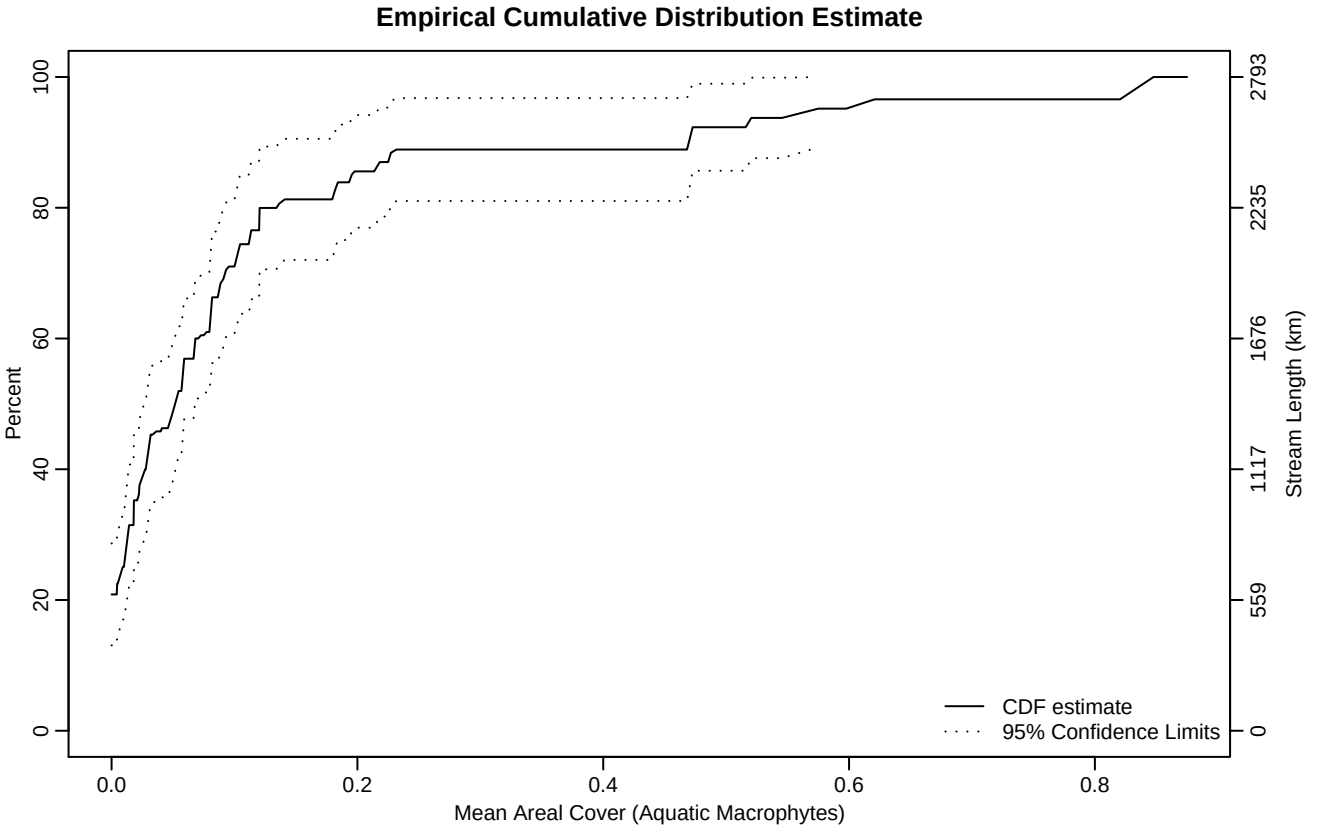


Figure PHAB−106 Indicator: XFC_AQM Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.02
50Pct	0.05	0.03	0.07
75Pct	0.11	0.08	0.21
90Pct	0.47	0.18	0.83
95Pct	0.57	0.23	0.85
Mean	0.12	0.07	0.17
Std Dev	0.18	0.12	0.24

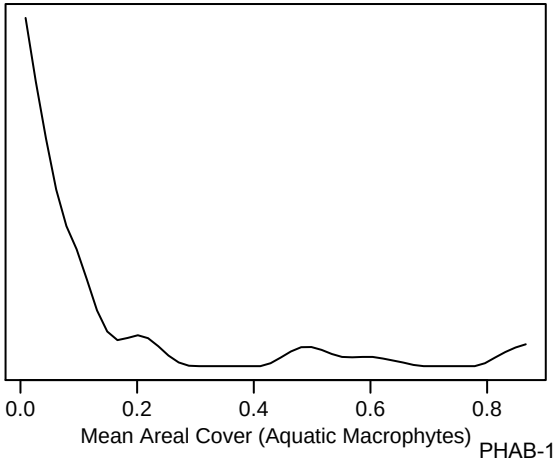
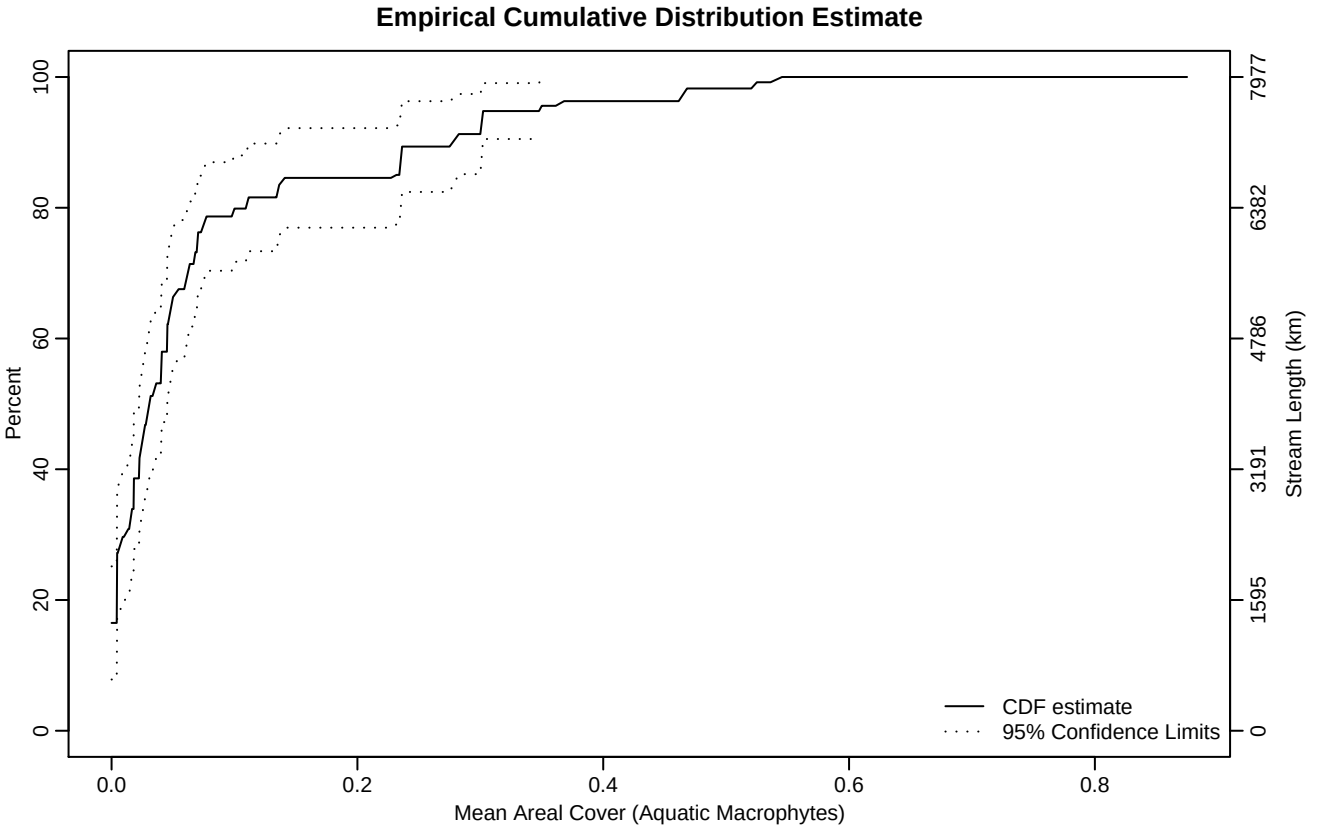


Figure PHAB−107 Indicator: XFC_AQM Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.03	0.02	0.05
75Pct	0.07	0.05	0.14
90Pct	0.28	0.14	0.46
95Pct	0.35	0.28	0.52
Mean	0.08	0.05	0.10
Std Dev	0.11	0.08	0.14

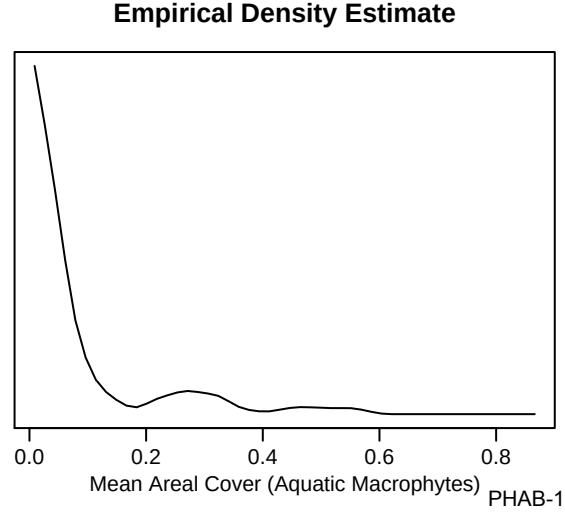
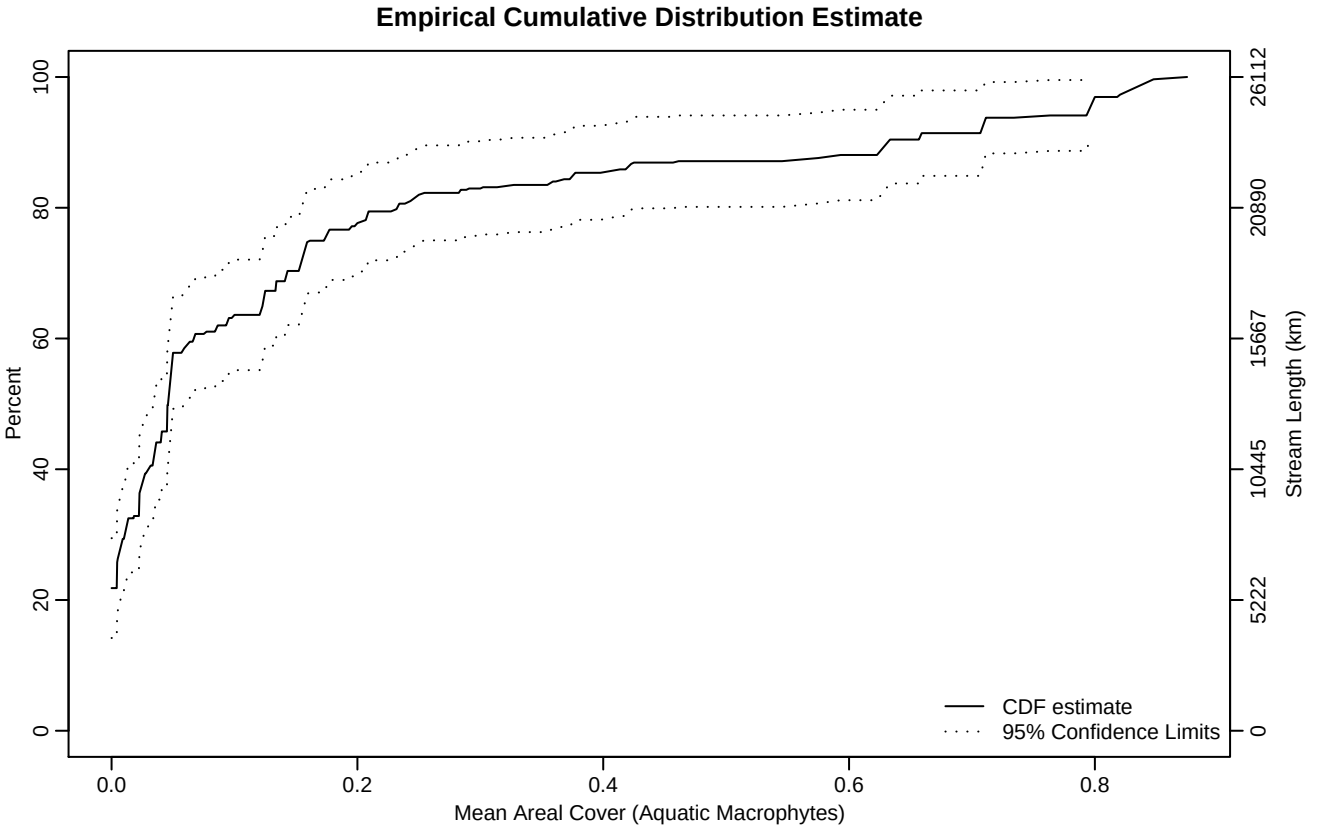


Figure PHAB−108 Indicator: XFC_AQM Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.05	0.03	0.06
75Pct	0.17	0.12	0.30
90Pct	0.63	0.29	0.82
95Pct	0.80	0.63	0.88
Mean	0.16	0.11	0.21
Std Dev	0.22	0.18	0.25

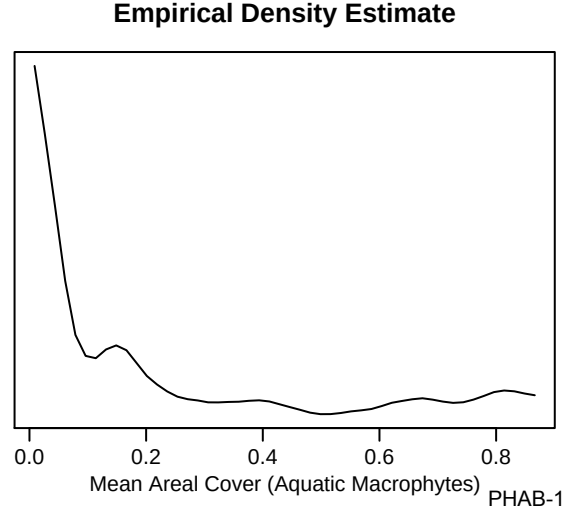
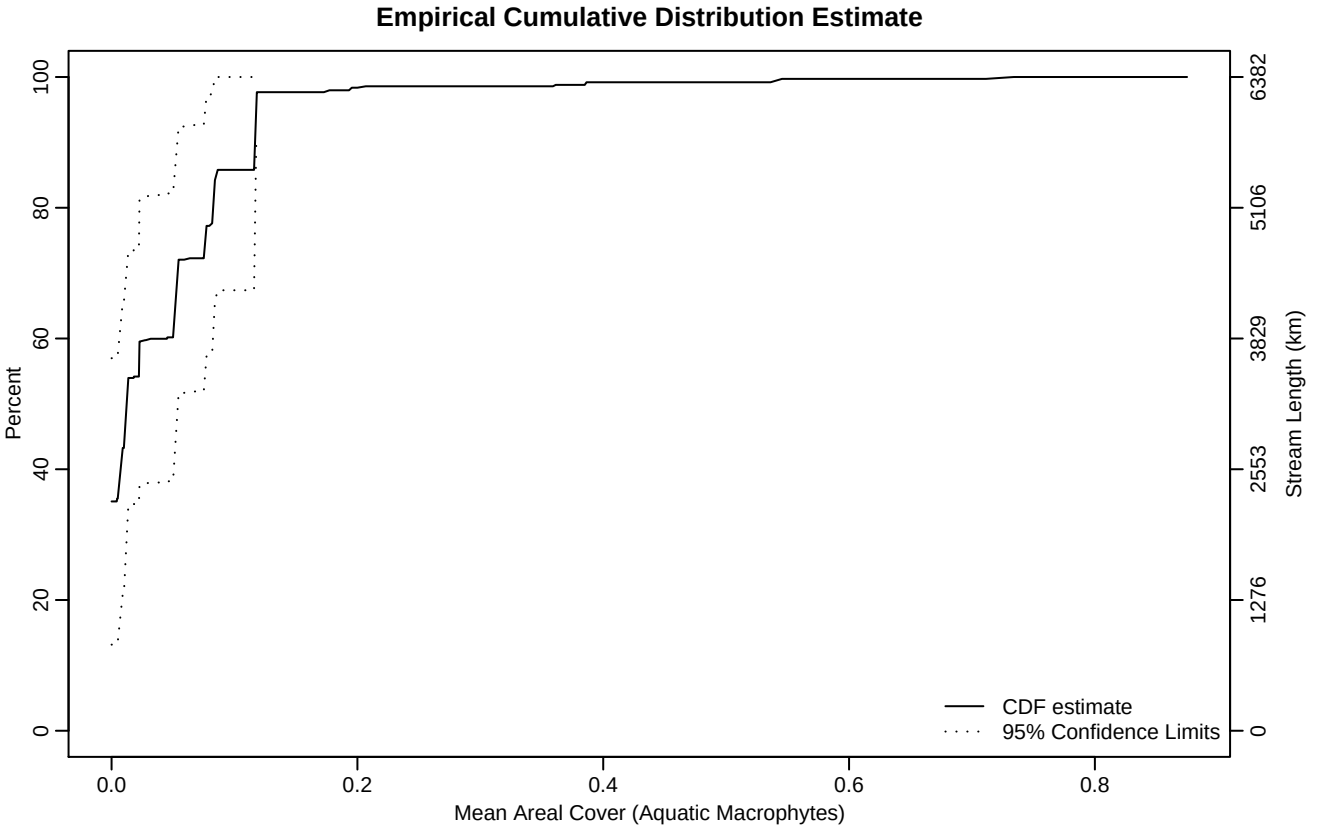


Figure PHAB−109 Indicator: XFC_AQM Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.01	0	0.08
75Pct	0.08	0.02	0.12
90Pct	0.12	0.05	0.73
95Pct	0.12	0.08	0.73
Mean	0.04	0.02	0.06
Std Dev	0.07	0.05	0.10

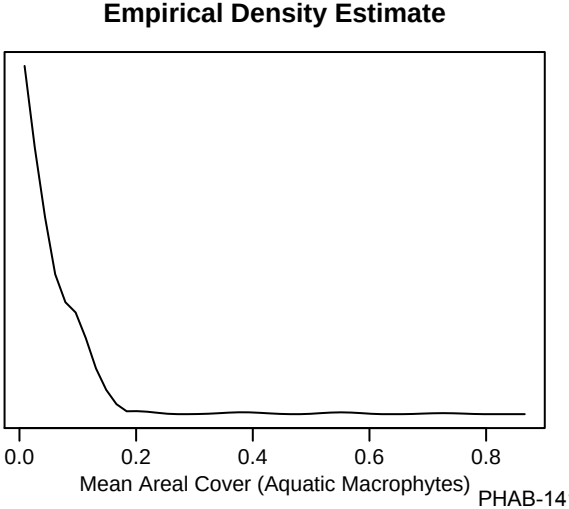
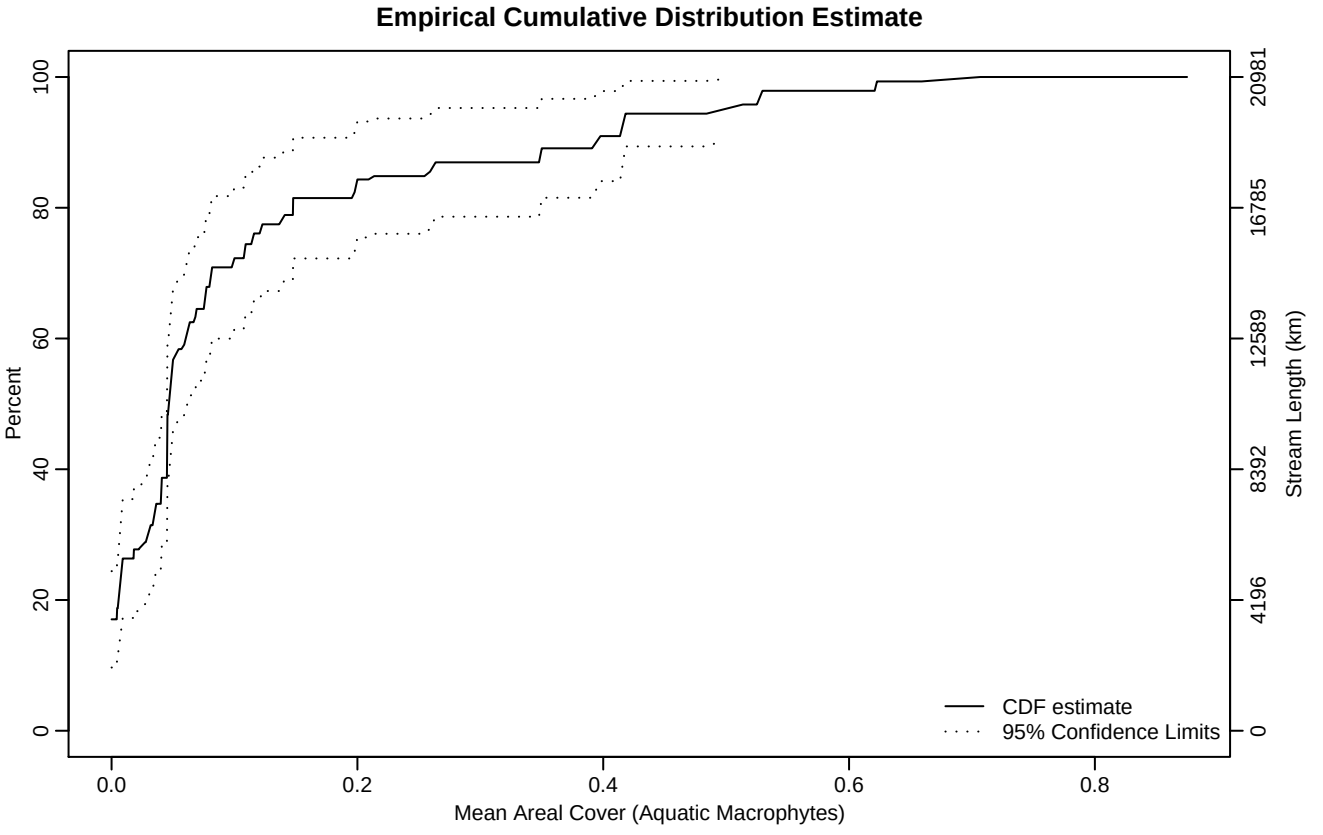


Figure PHAB−110 Indicator: XFC_AQM Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.03
50Pct	0.05	0.05	0.06
75Pct	0.11	0.07	0.26
90Pct	0.39	0.20	0.53
95Pct	0.50	0.39	0.71
Mean	0.11	0.07	0.15
Std Dev	0.15	0.11	0.18

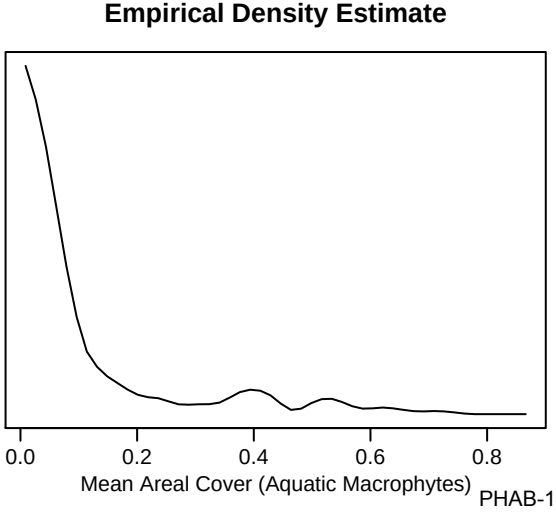
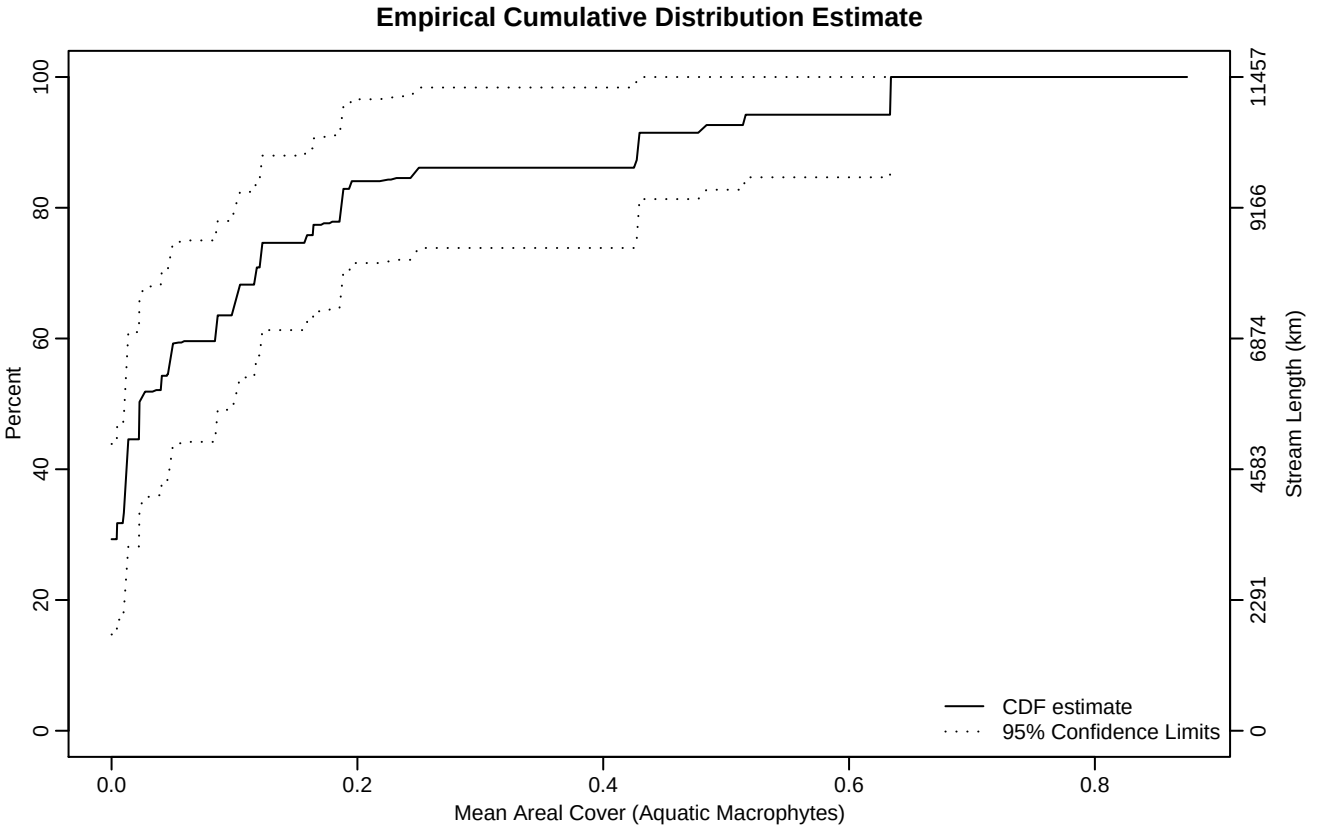


Figure PHAB−111 Indicator: XFC_AQM Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.02	0.01	0.10
75Pct	0.16	0.09	0.43
90Pct	0.43	0.19	0.63
95Pct	0.63	0.25	0.63
Mean	0.12	0.05	0.19
Std Dev	0.15	0.11	0.19

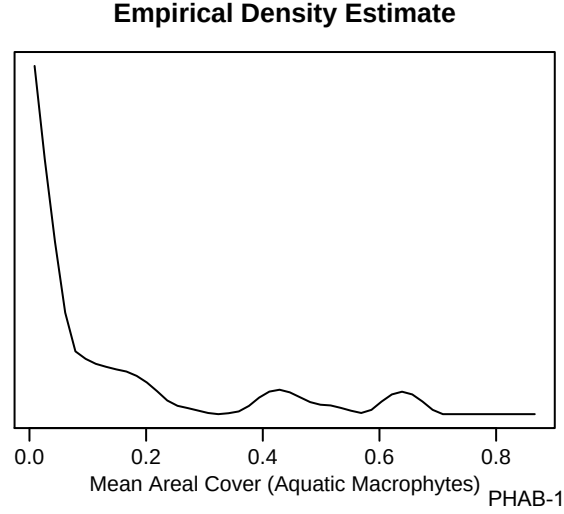
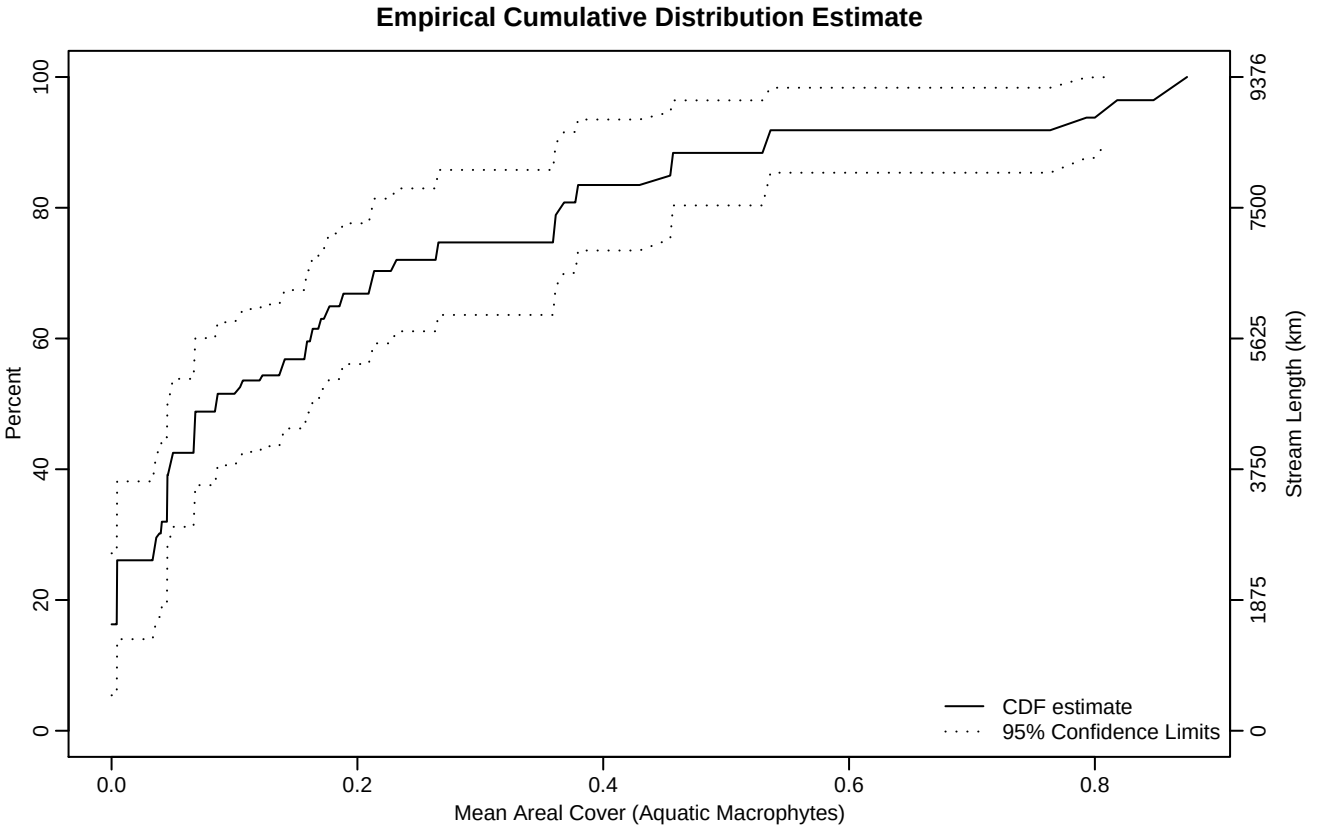


Figure PHAB−112 Indicator: XFC_AQM Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.05
50Pct	0.09	0.05	0.16
75Pct	0.36	0.17	0.46
90Pct	0.53	0.38	0.86
95Pct	0.81	0.53	0.88
Mean	0.20	0.14	0.25
Std Dev	0.21	0.17	0.26

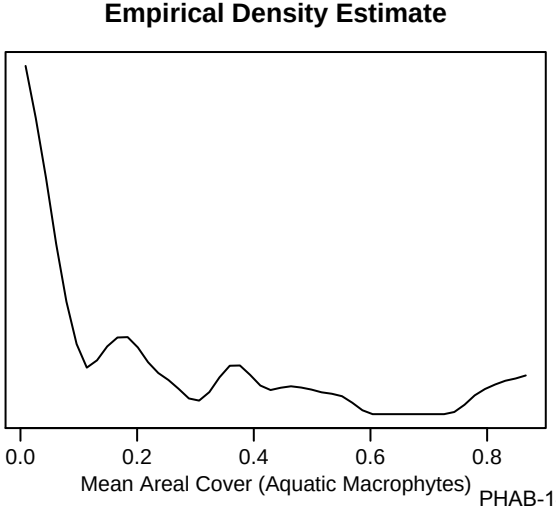
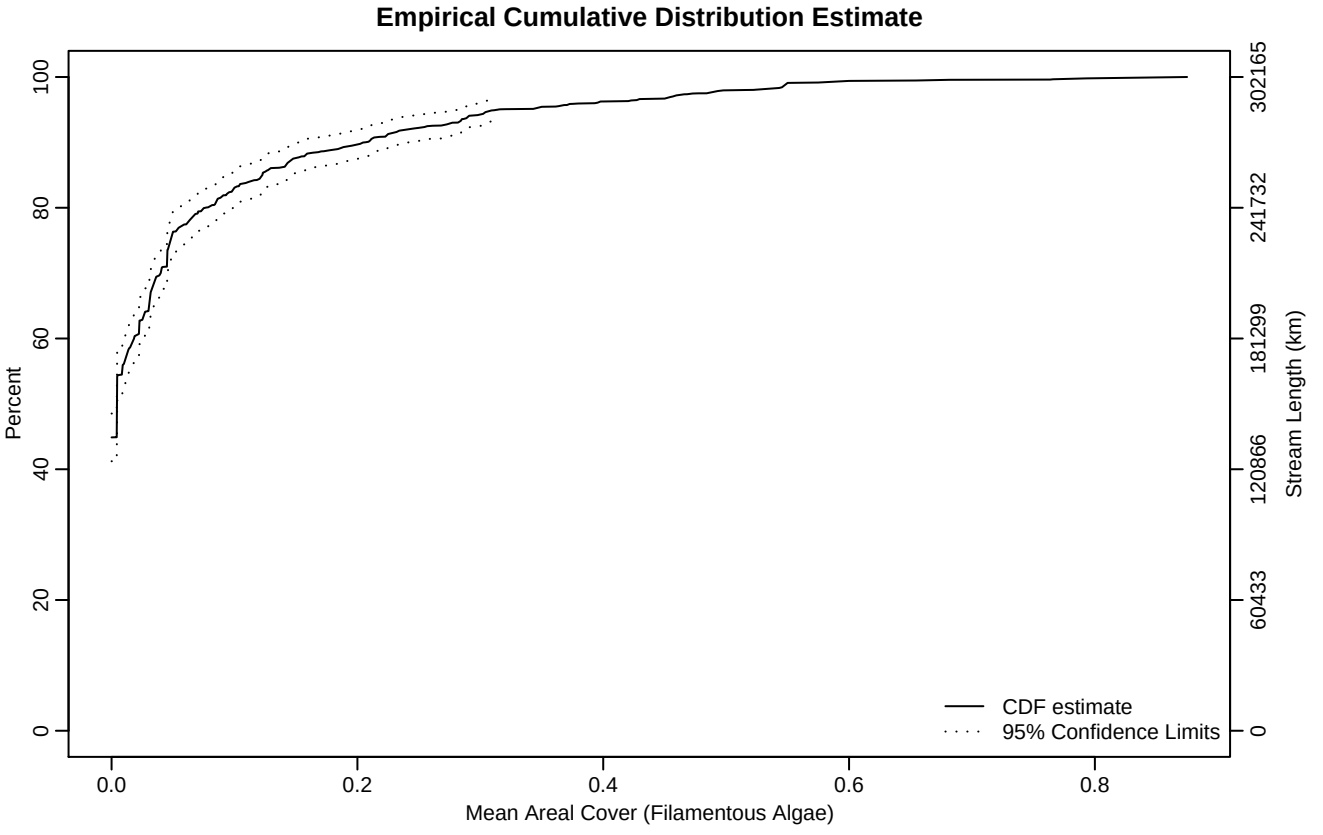


Figure PHAB−113 Indicator: XFC_ALG Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.05	0.05	0.06
90Pct	0.21	0.15	0.25
95Pct	0.31	0.28	0.44
Mean	0.06	0.05	0.07
Std Dev	0.11	0.10	0.12

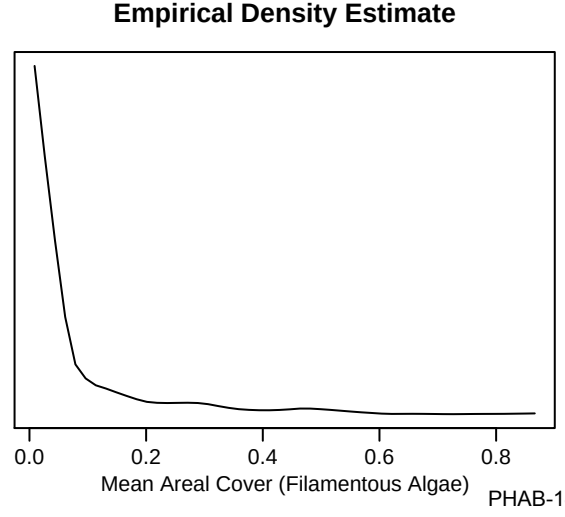
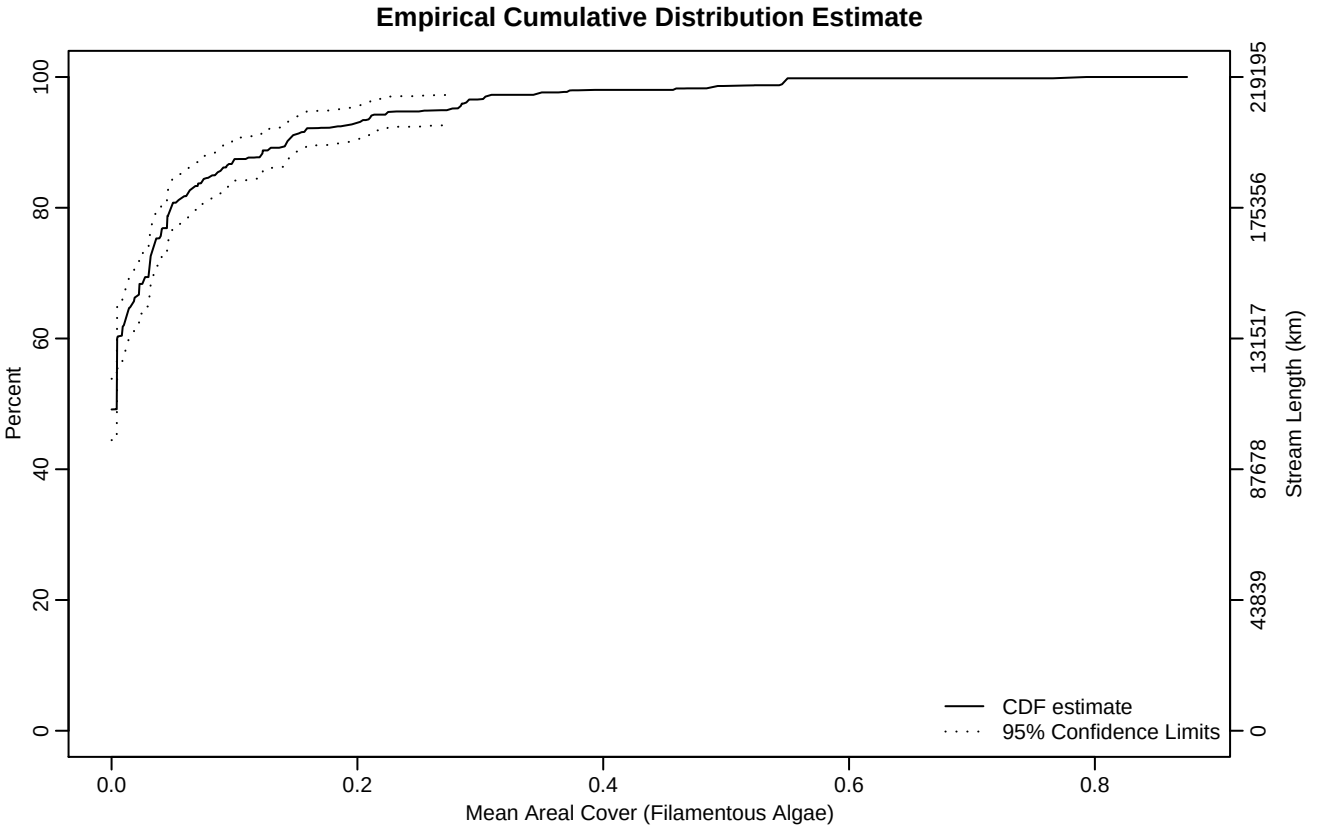


Figure PHAB−114 Indicator: XFC_ALG Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.04	0.03	0.05
90Pct	0.14	0.10	0.20
95Pct	0.27	0.19	0.34
Mean	0.04	0.03	0.06
Std Dev	0.08	0.07	0.10

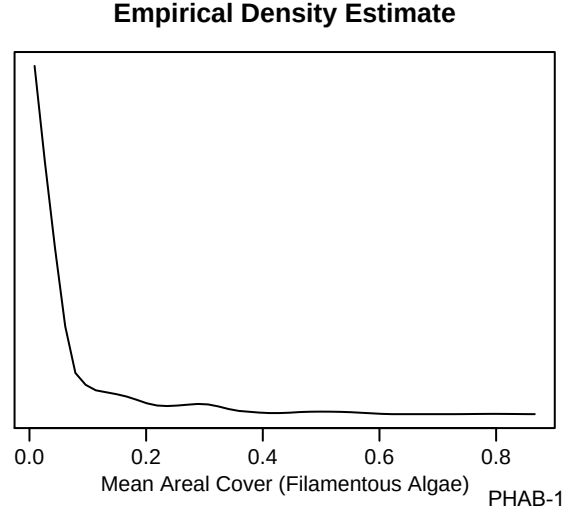
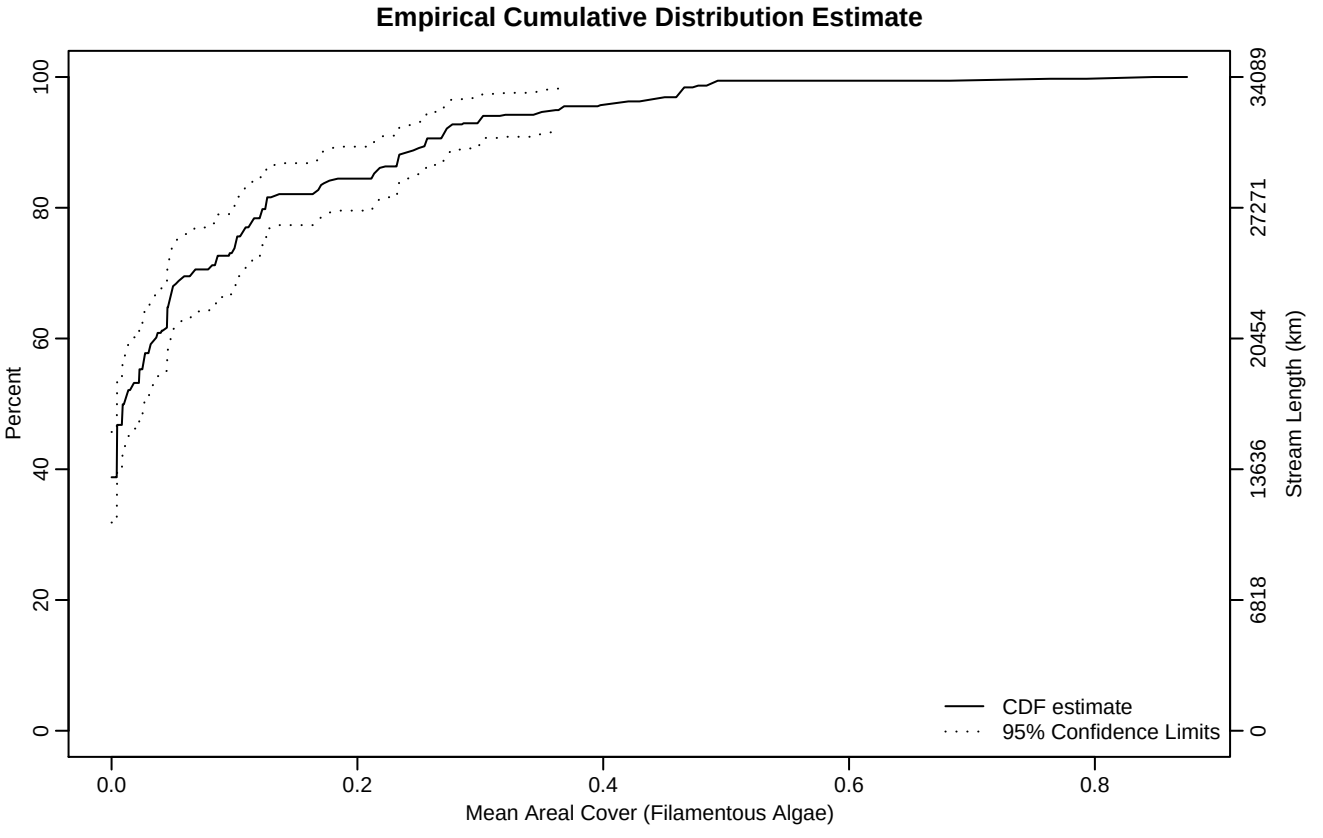


Figure PHAB−115 Indicator: XFC_ALG Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.03
75Pct	0.10	0.05	0.13
90Pct	0.26	0.22	0.30
95Pct	0.36	0.27	0.47
Mean	0.08	0.06	0.09
Std Dev	0.12	0.10	0.14

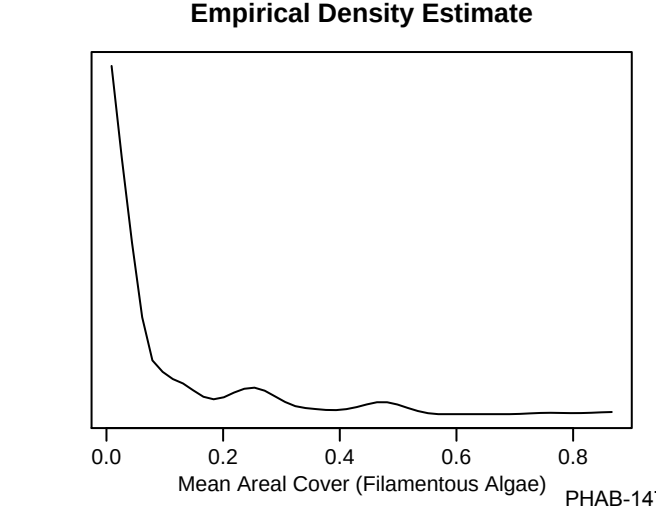
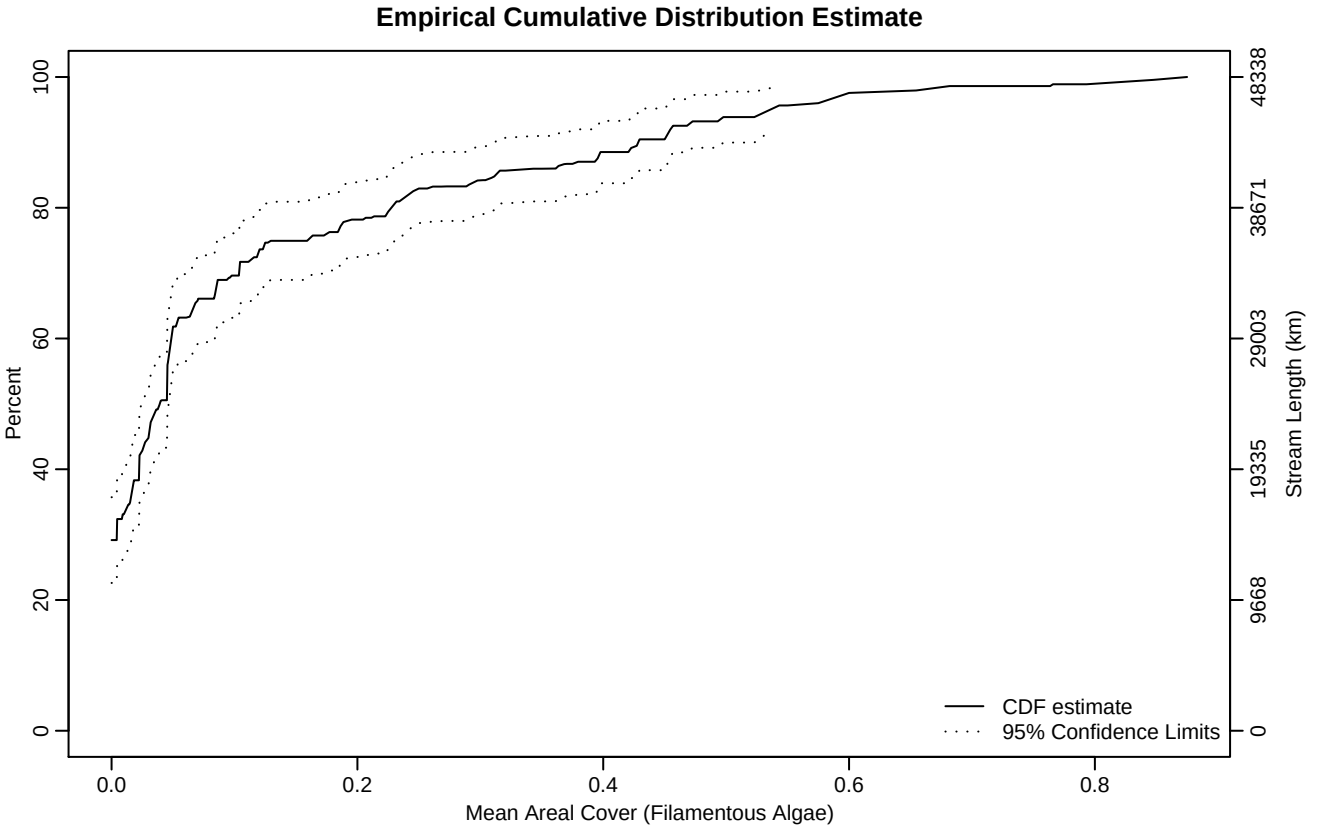


Figure PHAB−116 Indicator: XFC_ALG Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.04	0.02	0.05
75Pct	0.16	0.09	0.23
90Pct	0.43	0.31	0.53
95Pct	0.54	0.45	0.81
Mean	0.12	0.10	0.15
Std Dev	0.17	0.14	0.19

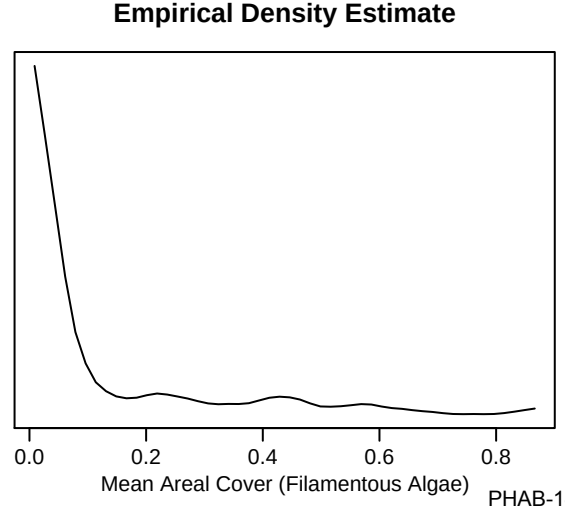
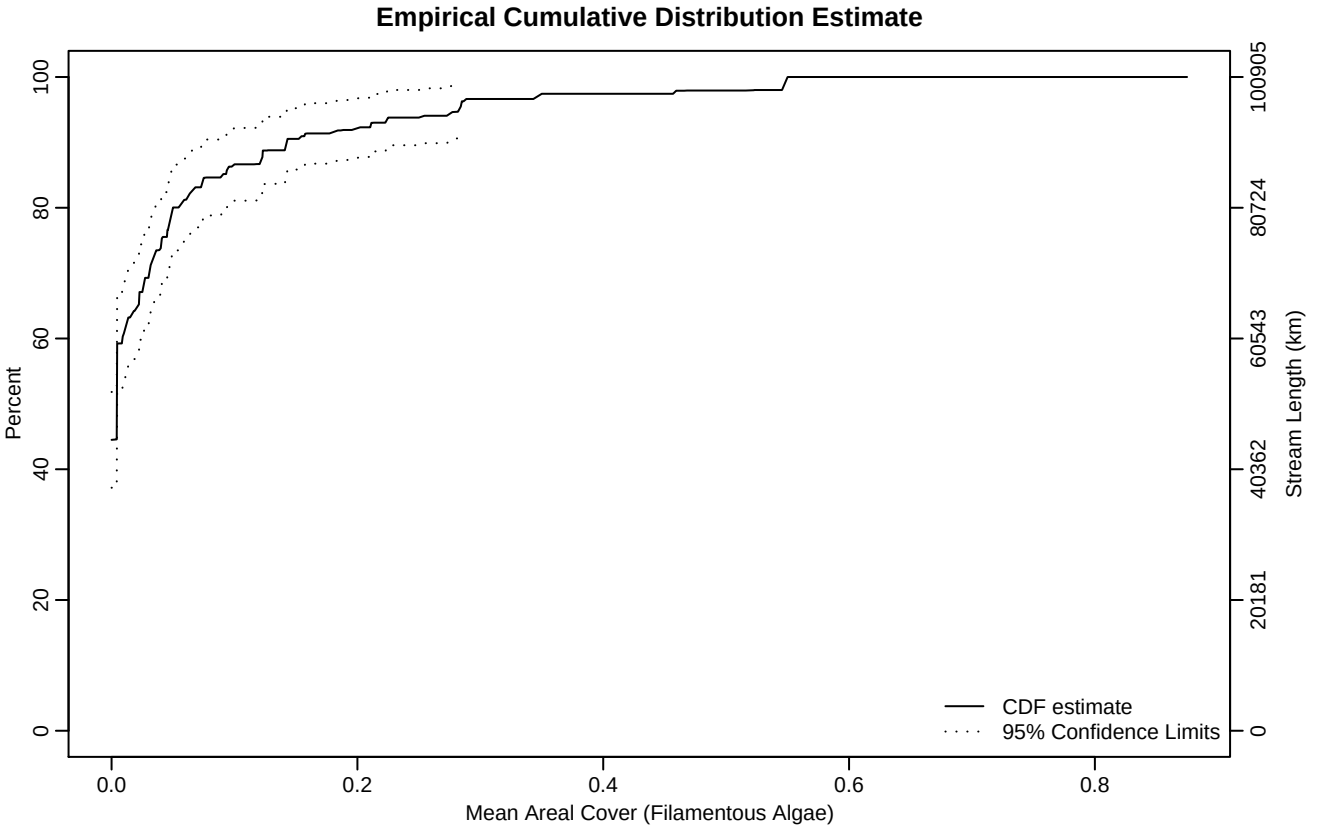


Figure PHAB−117 Indicator: XFC_ALG Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.04	0.03	0.06
90Pct	0.14	0.09	0.28
95Pct	0.28	0.15	0.55
Mean	0.05	0.03	0.07
Std Dev	0.09	0.06	0.11

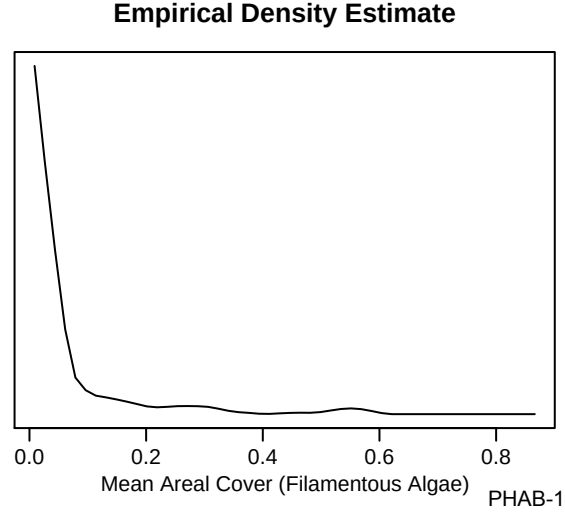
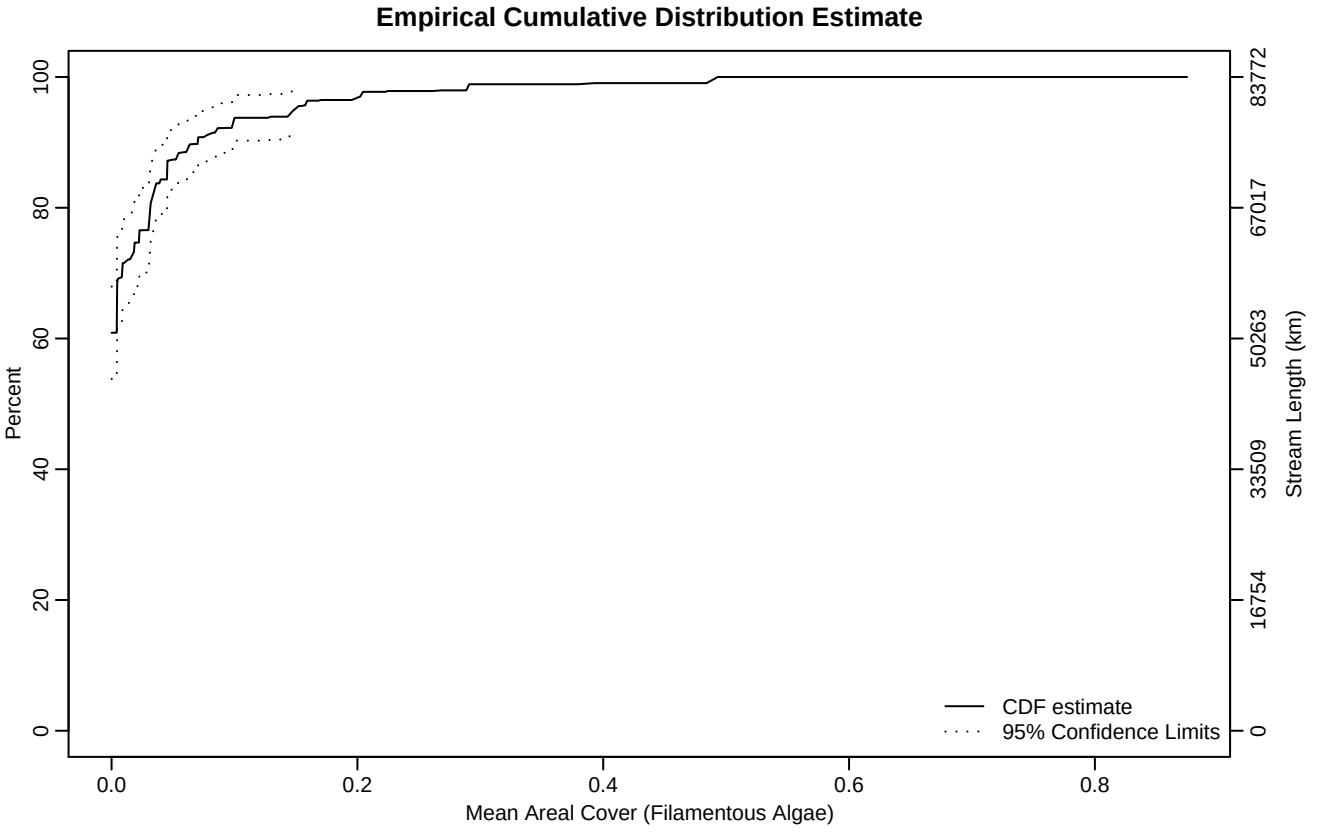


Figure PHAB−118 Indicator: XFC_ALG Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.02	0	0.03
90Pct	0.07	0.05	0.14
95Pct	0.15	0.09	0.29
Mean	0.03	0.02	0.04
Std Dev	0.06	0.04	0.08

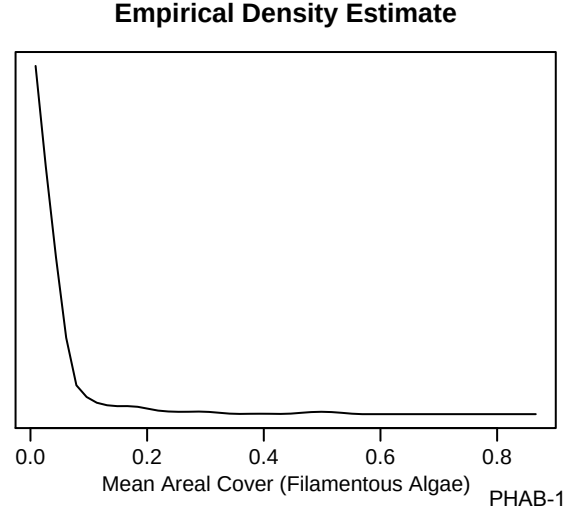
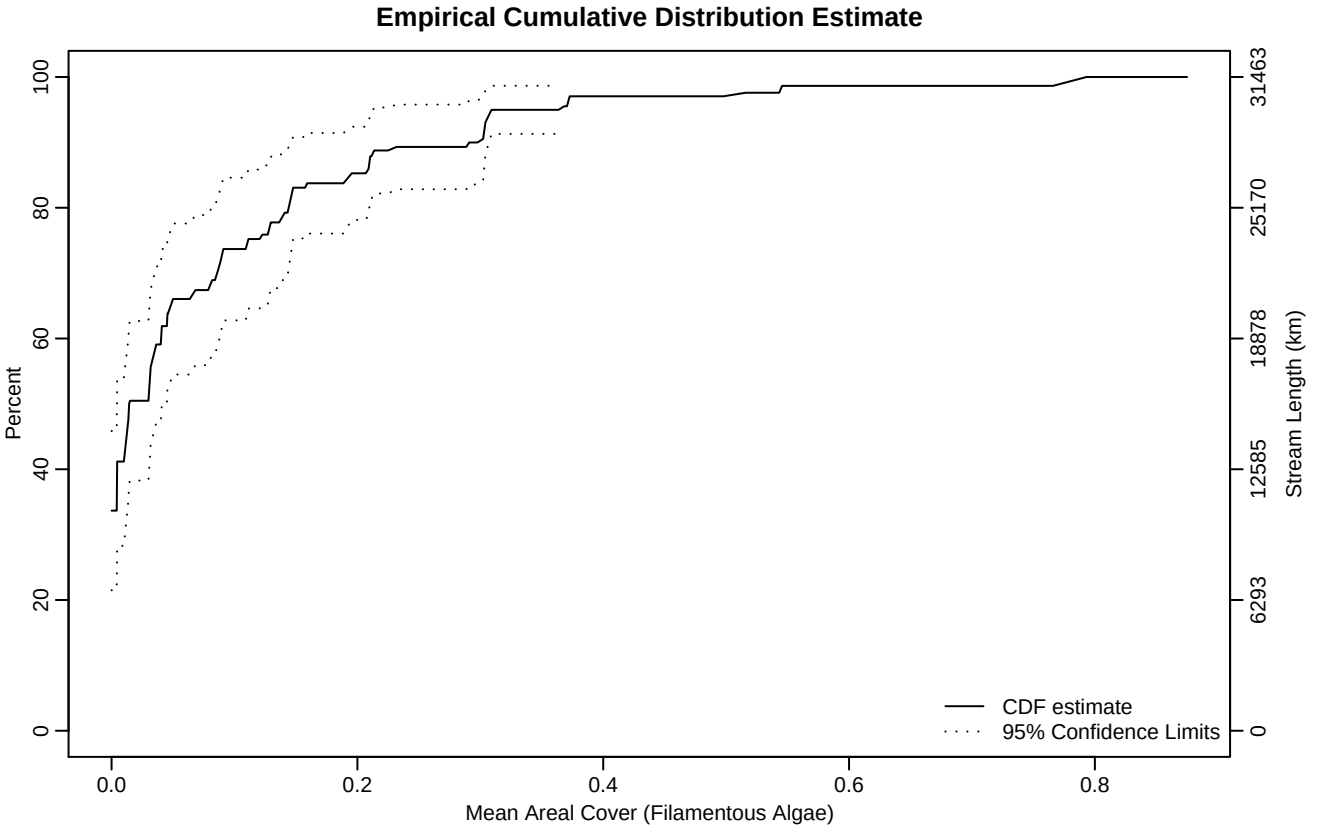


Figure PHAB−119 Indicator: XFC_ALG Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.05
75Pct	0.11	0.05	0.21
90Pct	0.30	0.16	0.37
95Pct	0.36	0.30	0.77
Mean	0.08	0.06	0.11
Std Dev	0.12	0.09	0.14

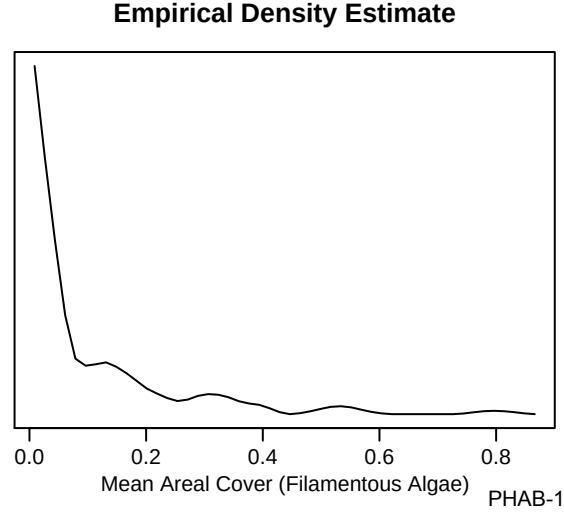
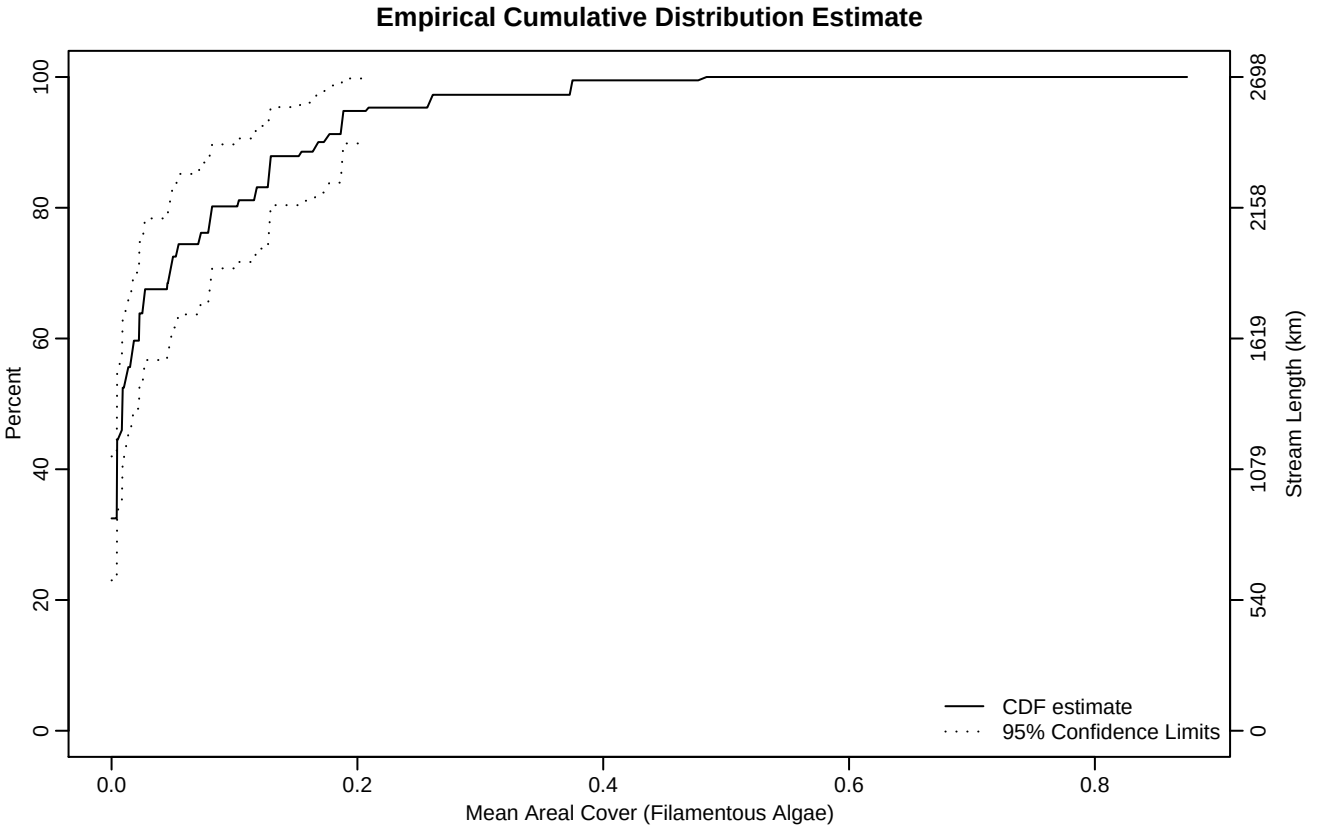


Figure PHAB−120 Indicator: XFC_ALG Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.02
75Pct	0.07	0.03	0.13
90Pct	0.17	0.12	0.37
95Pct	0.21	0.17	0.48
Mean	0.05	0.03	0.07
Std Dev	0.09	0.06	0.11

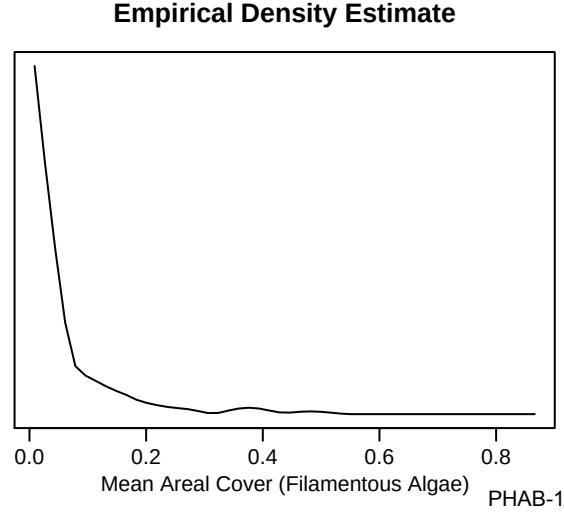
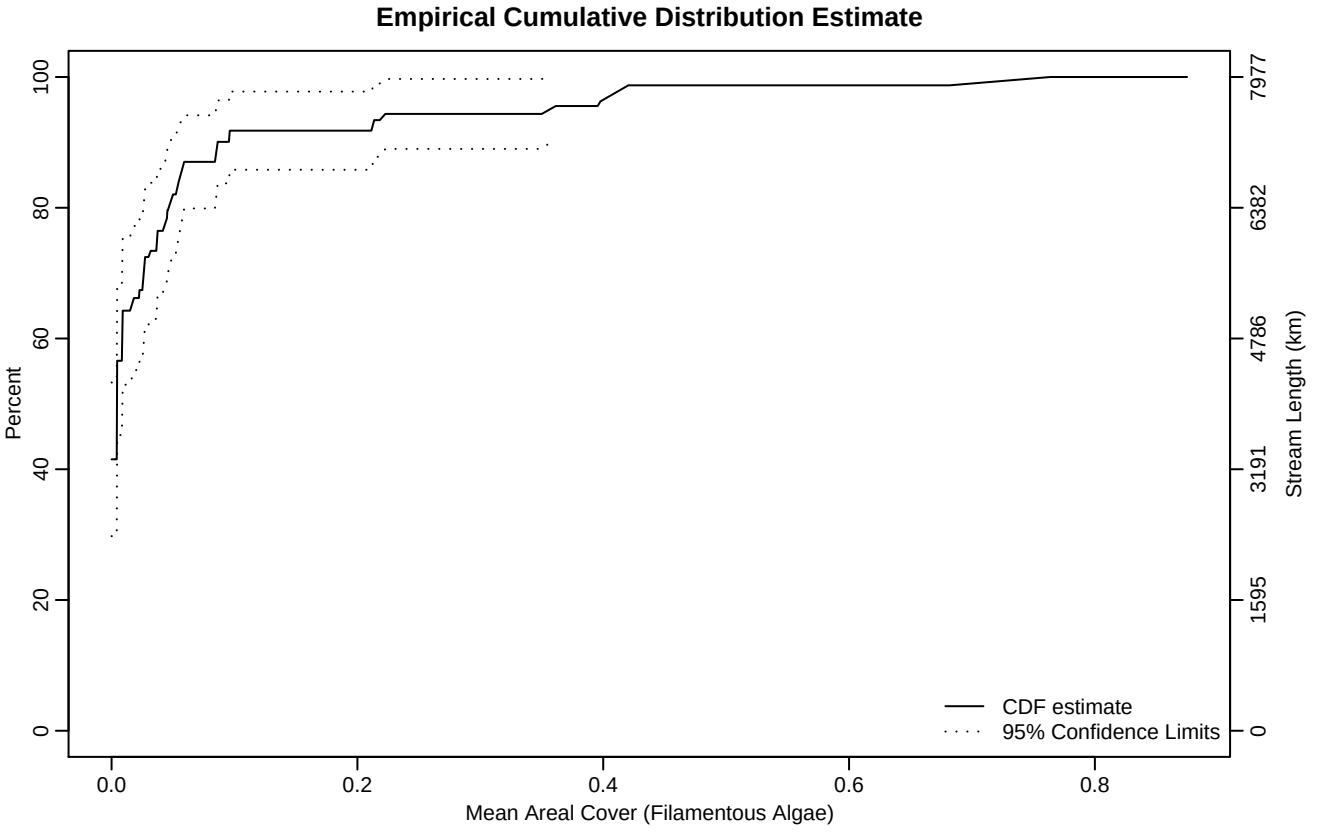


Figure PHAB−121 Indicator: XFC_ALG Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.01
75Pct	0.04	0.02	0.06
90Pct	0.09	0.05	0.41
95Pct	0.36	0.09	0.76
Mean	0.05	0.02	0.07
Std Dev	0.11	0.06	0.15

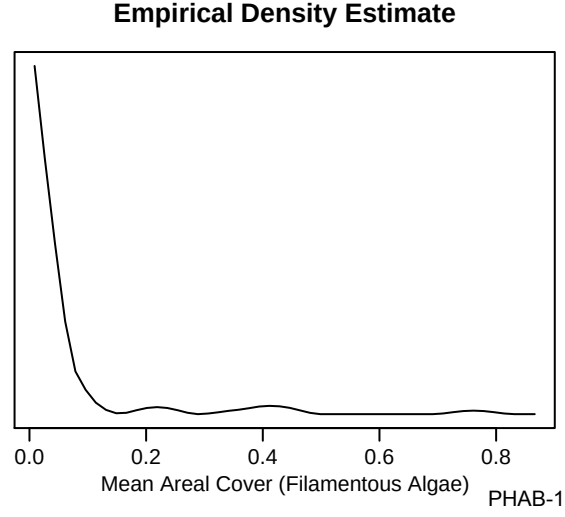
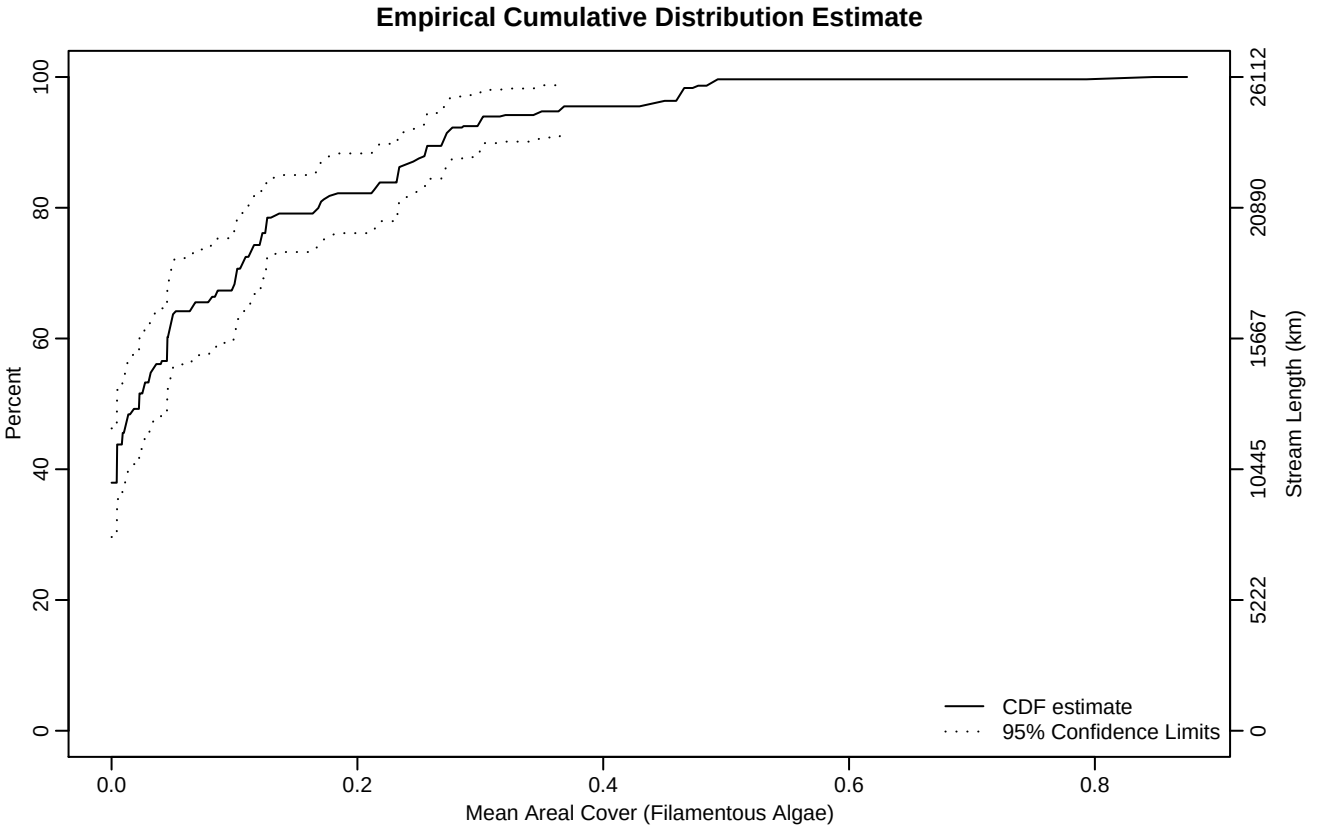


Figure PHAB−122 Indicator: XFC_ALG Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.02	0	0.05
75Pct	0.12	0.10	0.21
90Pct	0.27	0.23	0.37
95Pct	0.37	0.27	0.49
Mean	0.09	0.07	0.11
Std Dev	0.12	0.10	0.14

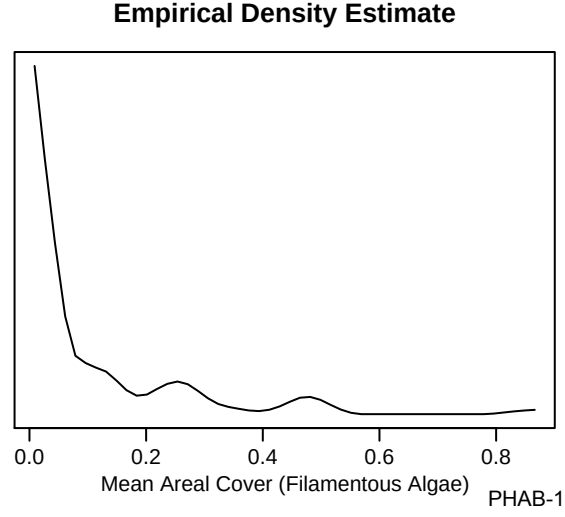
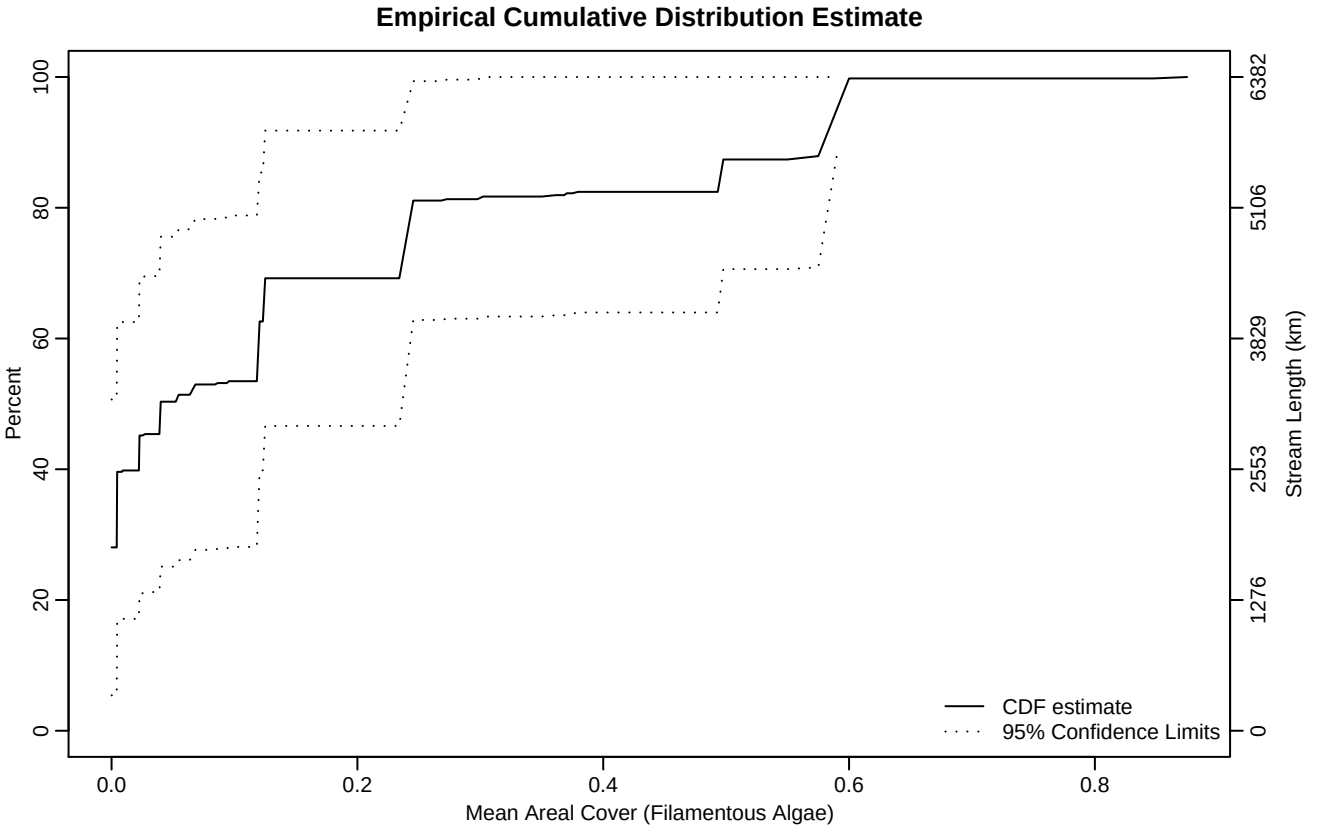


Figure PHAB−123 Indicator: XFC_ALG Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.04
50Pct	0.04	0	0.24
75Pct	0.24	0.06	0.60
90Pct	0.58	0.24	0.88
95Pct	0.59	0.24	0.88
Mean	0.16	0.06	0.26
Std Dev	0.21	0.14	0.28

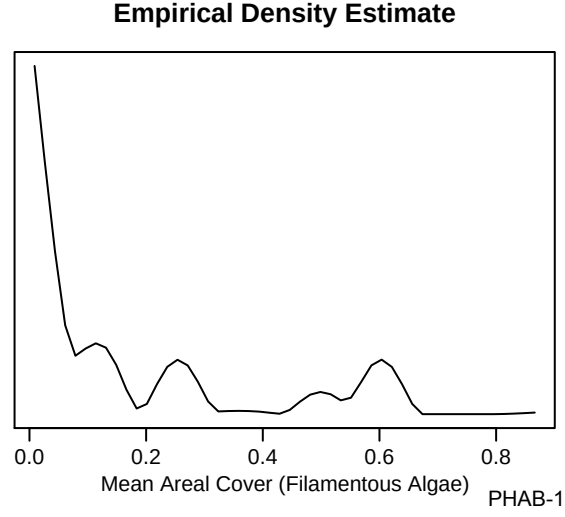
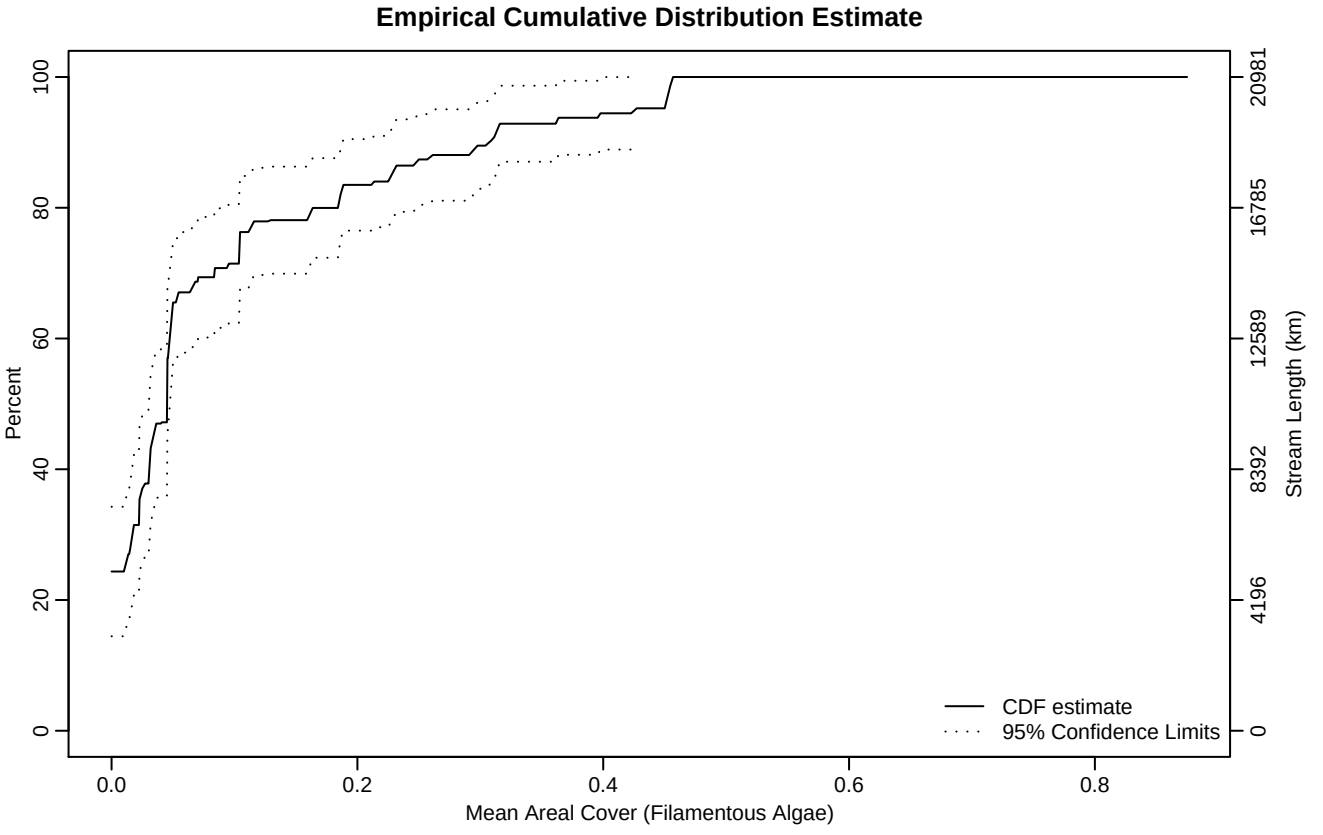


Figure PHAB−124 Indicator: XFC_ALG Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.02
50Pct	0.05	0.03	0.05
75Pct	0.10	0.05	0.23
90Pct	0.31	0.19	0.45
95Pct	0.43	0.30	0.46
Mean	0.09	0.07	0.12
Std Dev	0.11	0.09	0.14

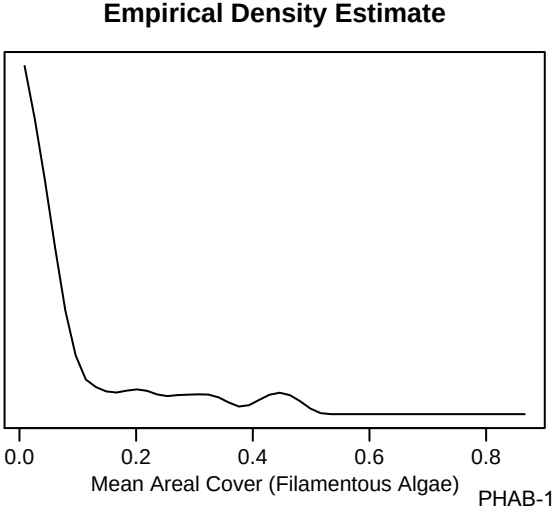
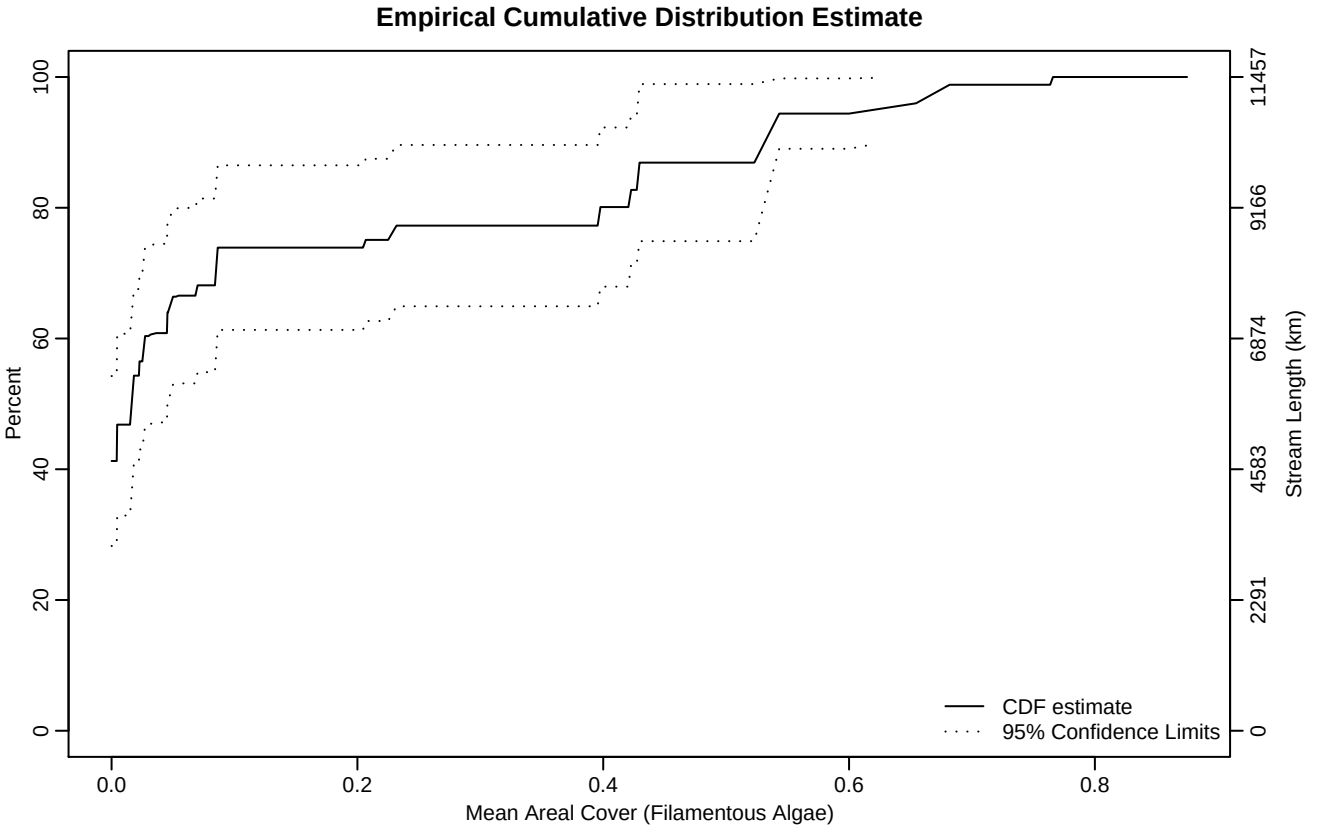


Figure PHAB−125 Indicator: XFC_ALG Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.02	0	0.05
75Pct	0.21	0.05	0.53
90Pct	0.53	0.40	0.77
95Pct	0.62	0.53	0.77
Mean	0.14	0.08	0.20
Std Dev	0.20	0.16	0.24

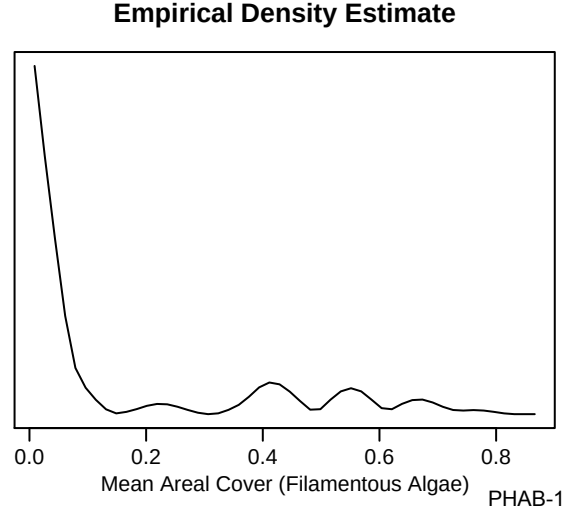
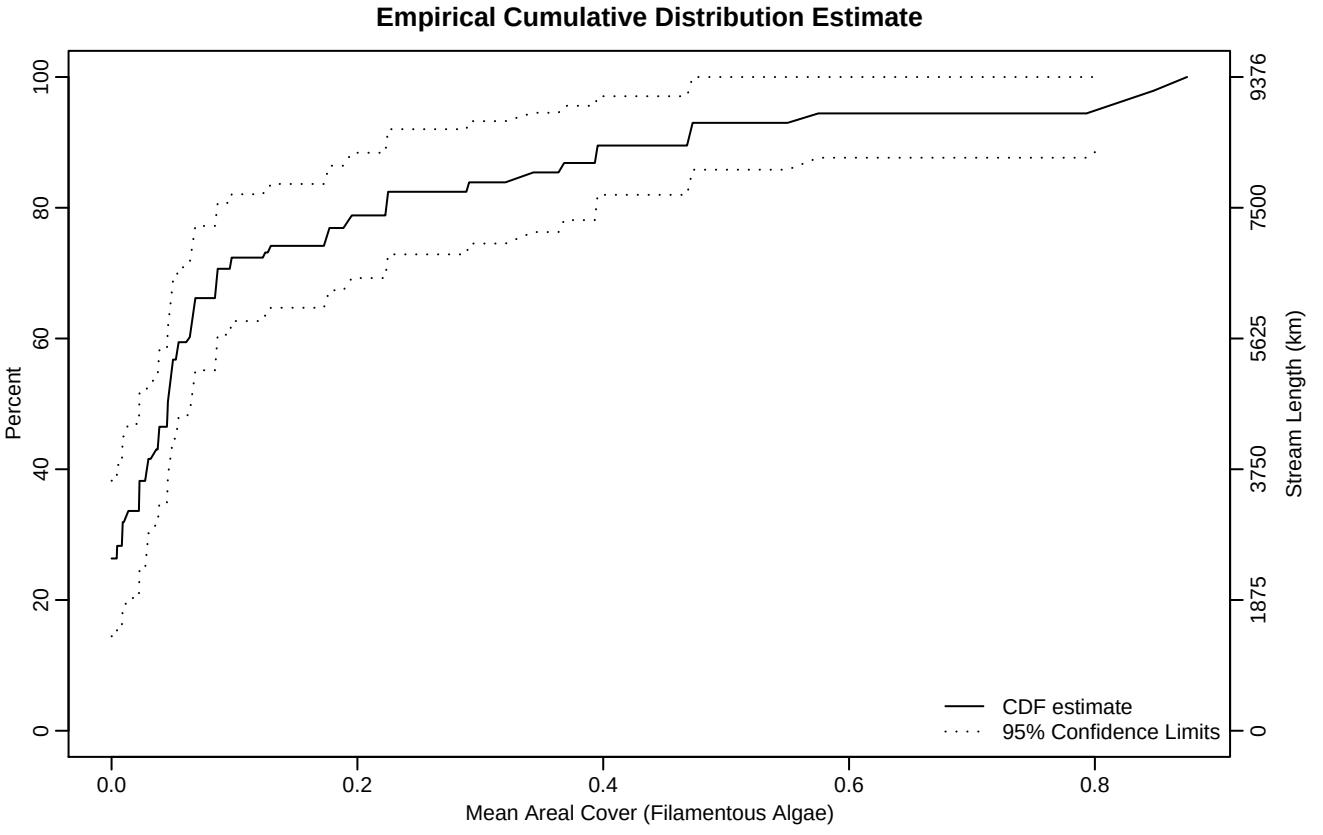


Figure PHAB−126 Indicator: XFC_ALG Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.02
50Pct	0.05	0.02	0.06
75Pct	0.17	0.07	0.33
90Pct	0.47	0.22	0.84
95Pct	0.80	0.39	0.88
Mean	0.14	0.08	0.19
Std Dev	0.20	0.13	0.26

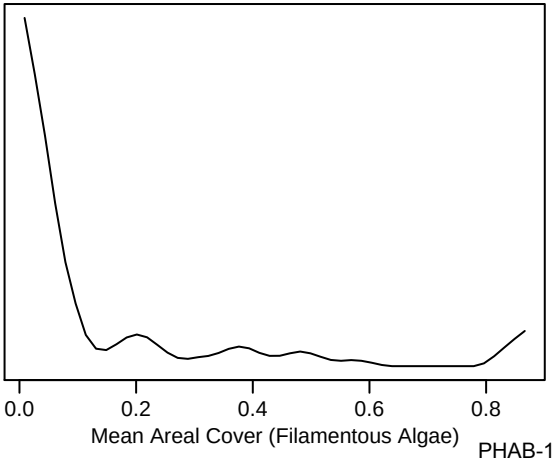
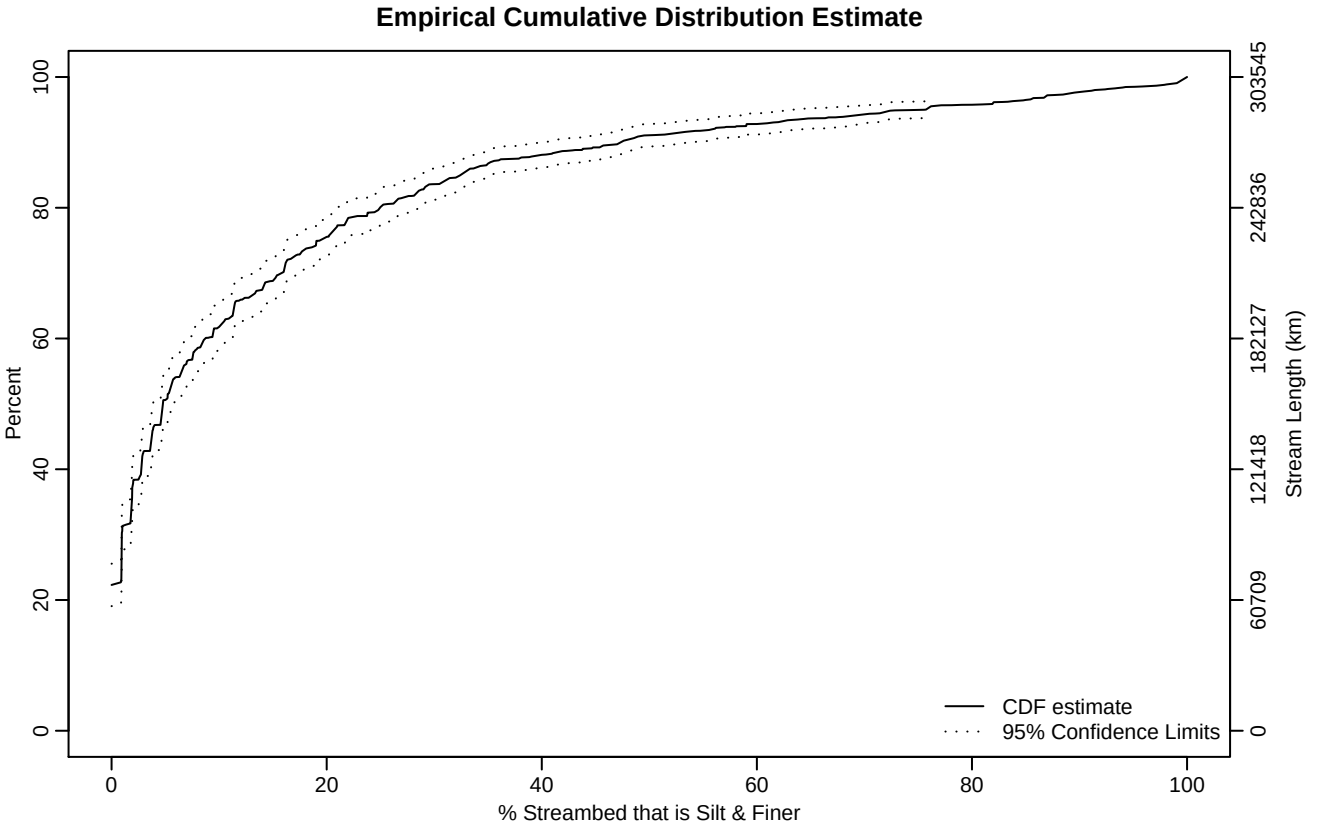


Figure PHAB−127 Indicator: PCT_FN Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.92	0	0.94
50Pct	4.77	3.86	5.76
75Pct	19.37	16.34	21.86
90Pct	47.33	40.15	55.51
95Pct	75.62	66.38	83.70
Mean	15.33	13.95	16.71
Std Dev	19.84	18.10	21.59

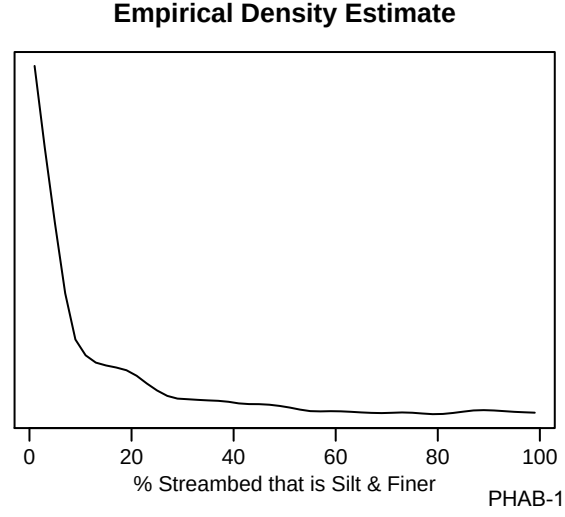
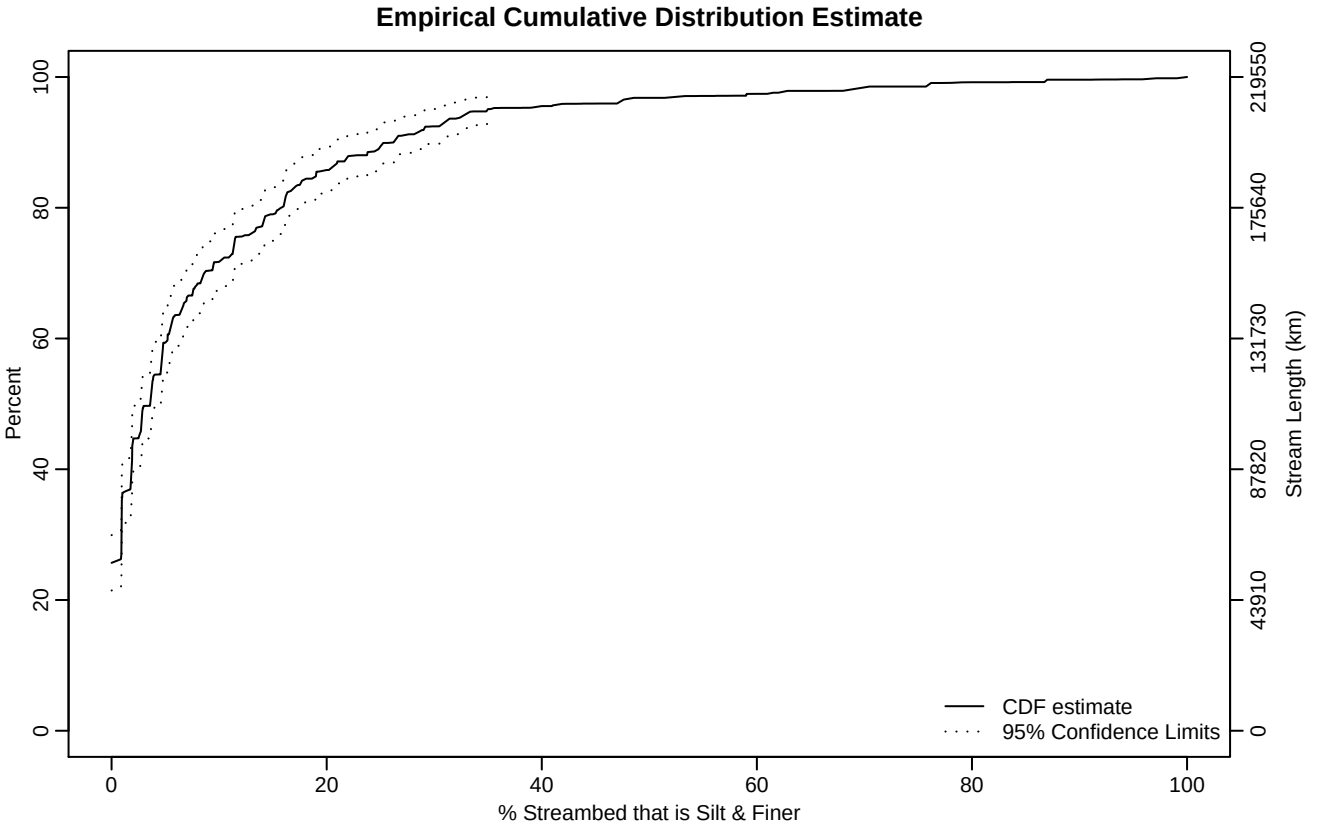


Figure PHAB−128 Indicator: PCT_FN Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.92
50Pct	3.59	2.54	4.57
75Pct	11.45	9.40	15.30
90Pct	26.22	20.95	31.09
95Pct	34.96	30.82	56.18
Mean	9.37	7.90	10.85
Std Dev	14.55	12.27	16.83

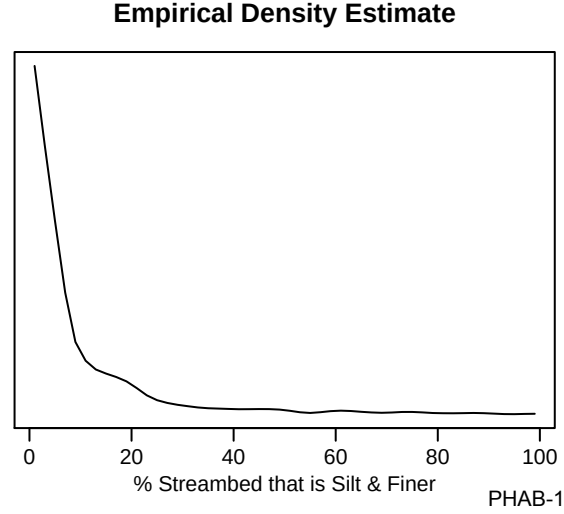
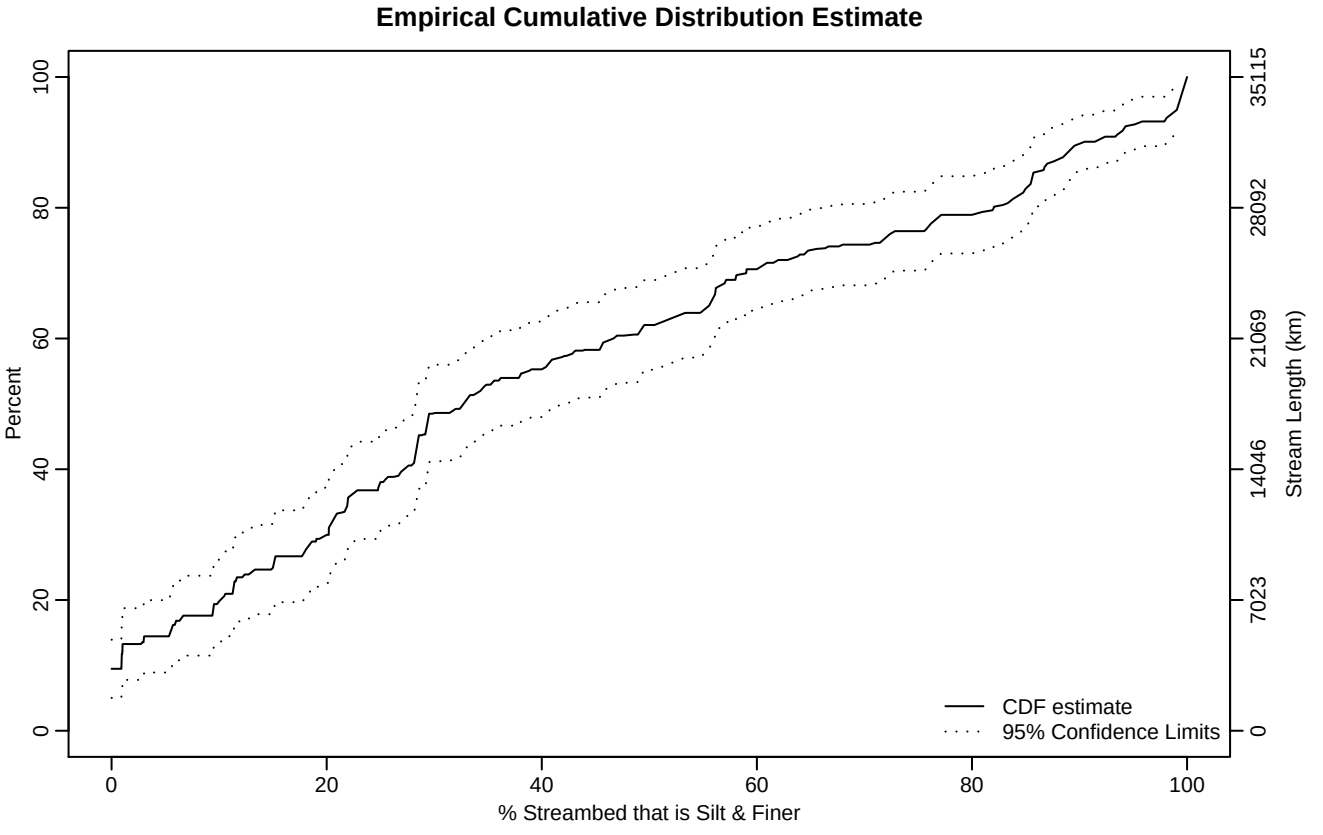


Figure PHAB−129 Indicator: PCT_FN Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.91
10Pct	0.92	0	5.34
25Pct	15.01	9.43	20.45
50Pct	32.73	28.28	42.60
75Pct	71.69	57.06	83.80
90Pct	90.32	86.67	98.45
95Pct	99.05	93.75	99.72
Mean	42.02	37.27	46.77
Std Dev	31.13	28.13	34.13

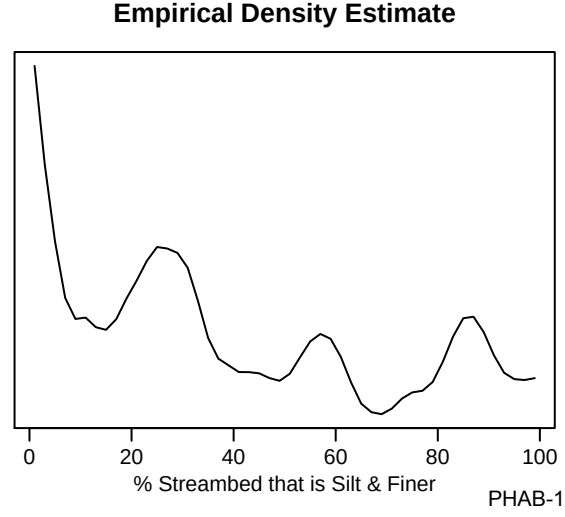
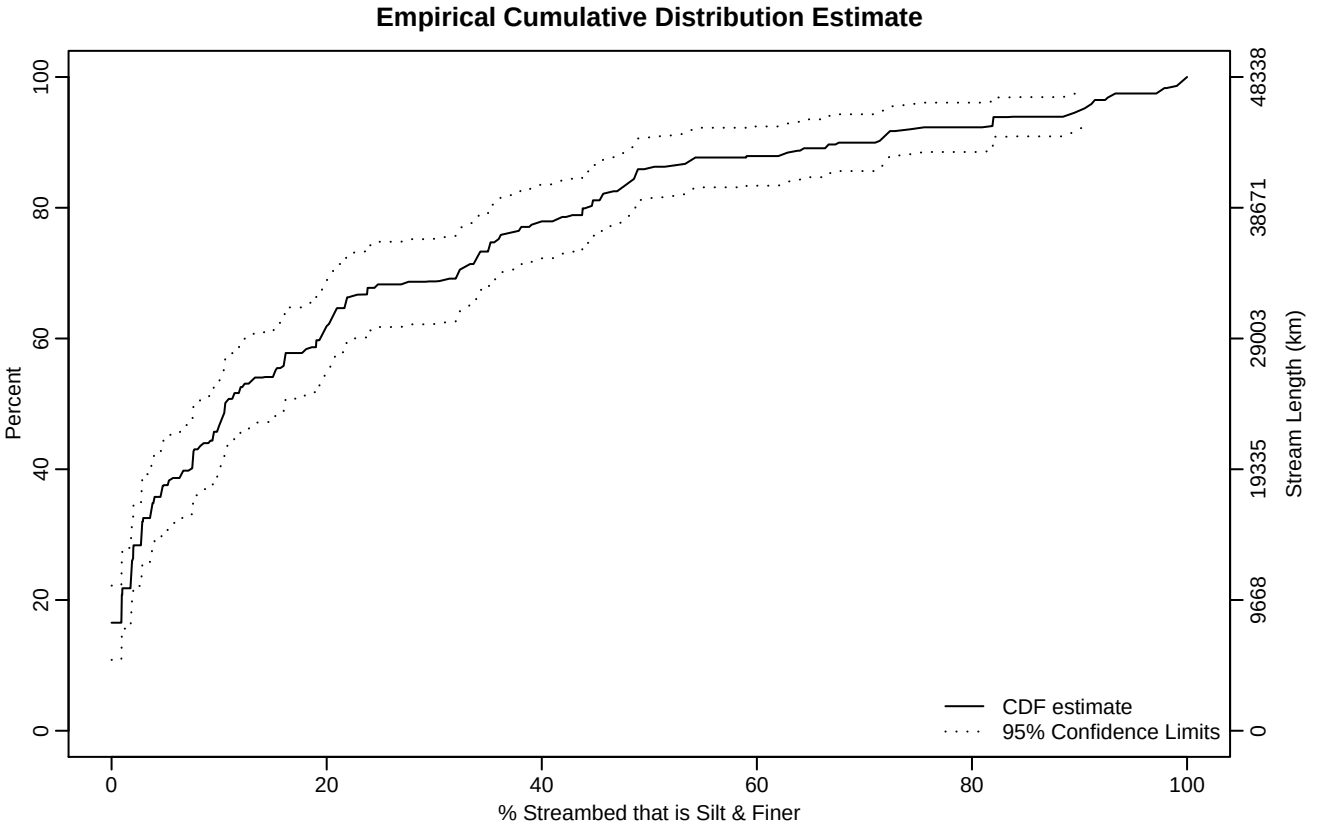


Figure PHAB−130 Indicator: PCT_FN Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	1.87	0.93	2.84
50Pct	10.57	8.12	16.09
75Pct	35.81	31.28	44.73
90Pct	71.06	48.86	89.31
95Pct	90.19	74.51	97.56
Mean	23.10	19.38	26.82
Std Dev	25.13	22.39	27.87

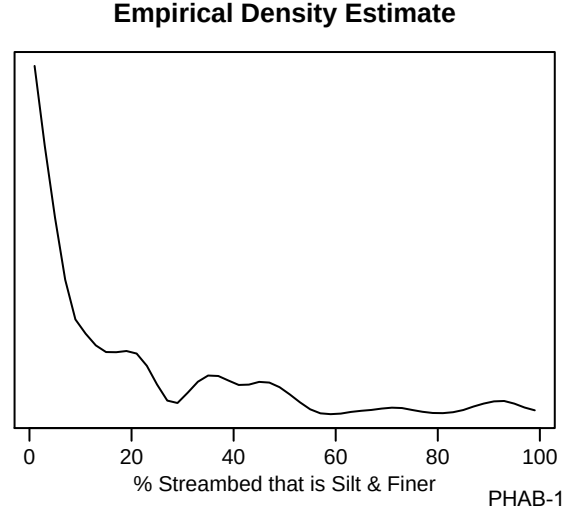
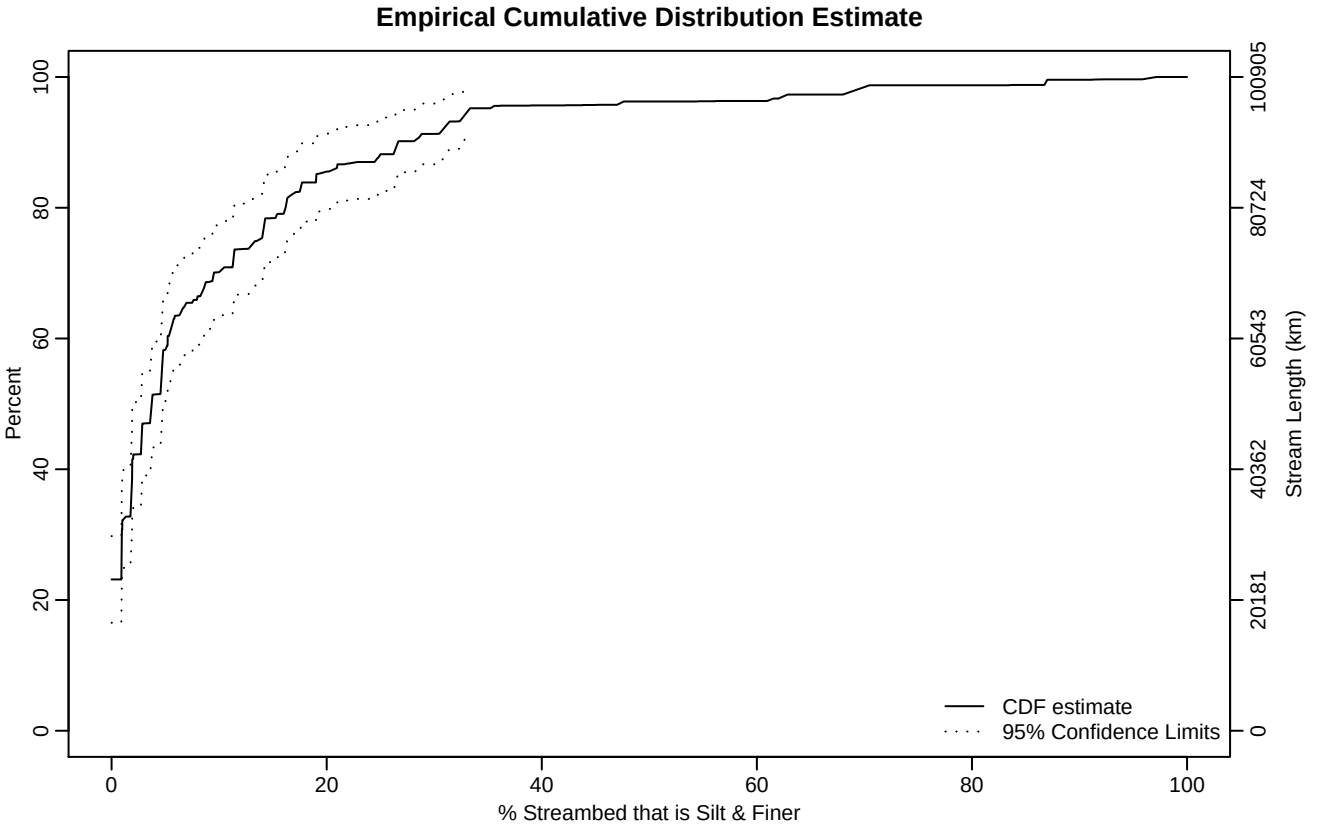


Figure PHAB−131 Indicator: PCT_FN Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.92	0	1
50Pct	3.73	2.01	4.80
75Pct	13.58	8.66	16.66
90Pct	26.63	19.01	47.05
95Pct	33.23	28.58	86.89
Mean	9.99	7.51	12.47
Std Dev	15.48	11.75	19.21

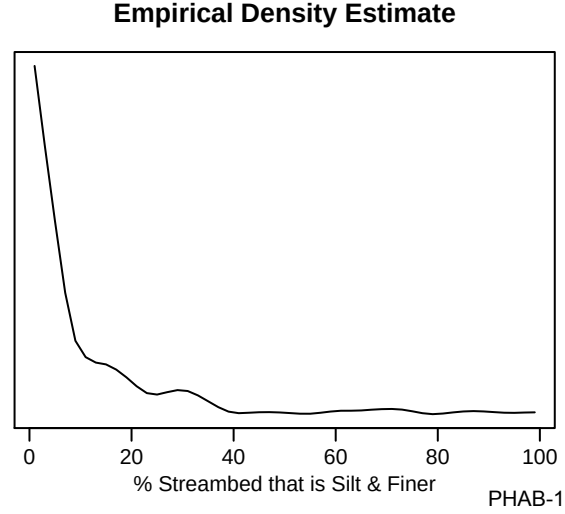
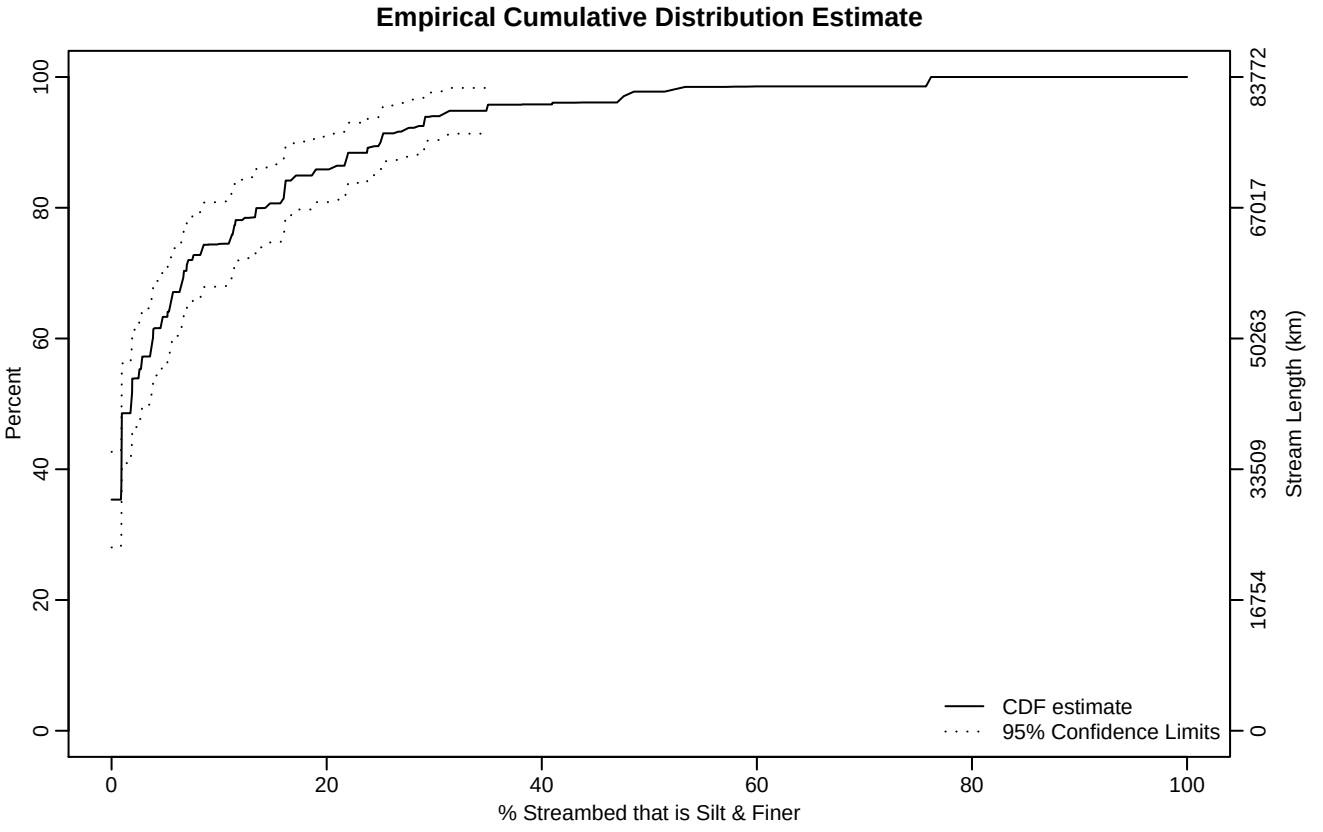


Figure PHAB−132 Indicator: PCT_FN Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	1.82	0.93	3.61
75Pct	11	6.53	16.01
90Pct	25	18.92	30.84
95Pct	34.88	26.43	57.35
Mean	8.04	5.90	10.19
Std Dev	13.14	9.95	16.32

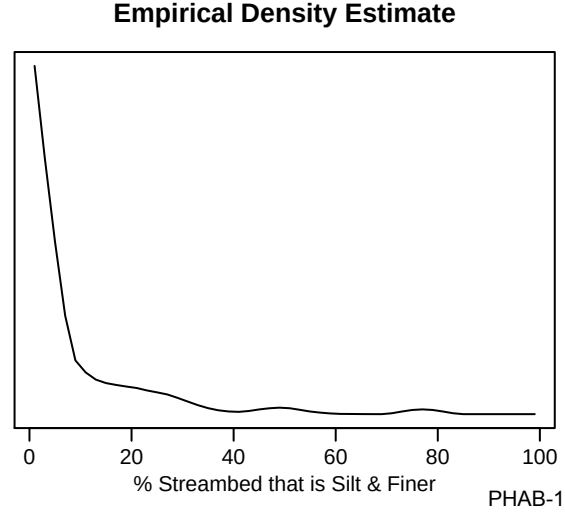
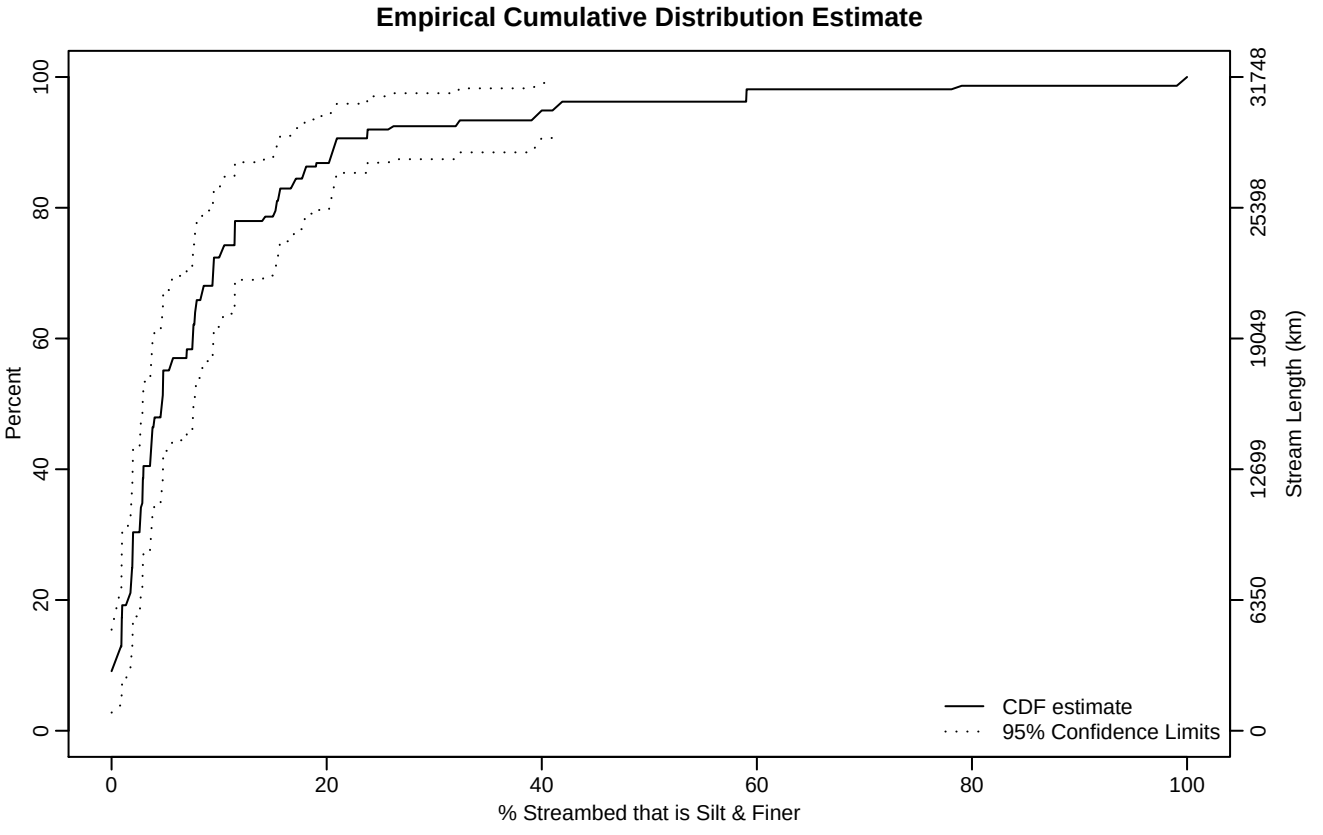


Figure PHAB−133 Indicator: PCT_FN Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.48
10Pct	0.20	0	0.94
25Pct	1.92	0.91	2.89
50Pct	4.68	2.89	7.73
75Pct	11.44	7.78	17.99
90Pct	20.83	15.65	59.03
95Pct	41.08	23.75	99.52
Mean	10.28	7.14	13.42
Std Dev	13.50	9.31	17.69

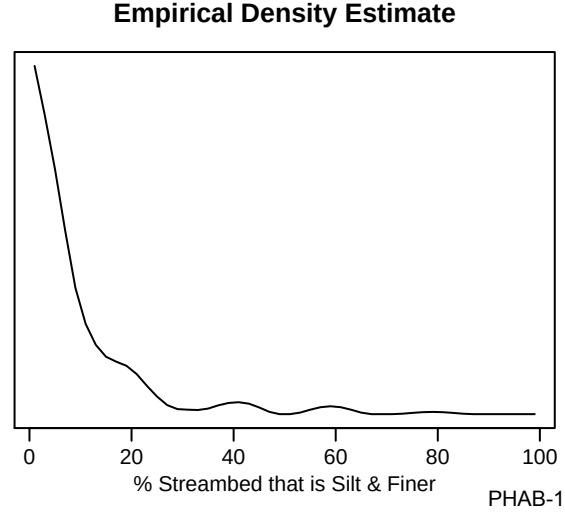
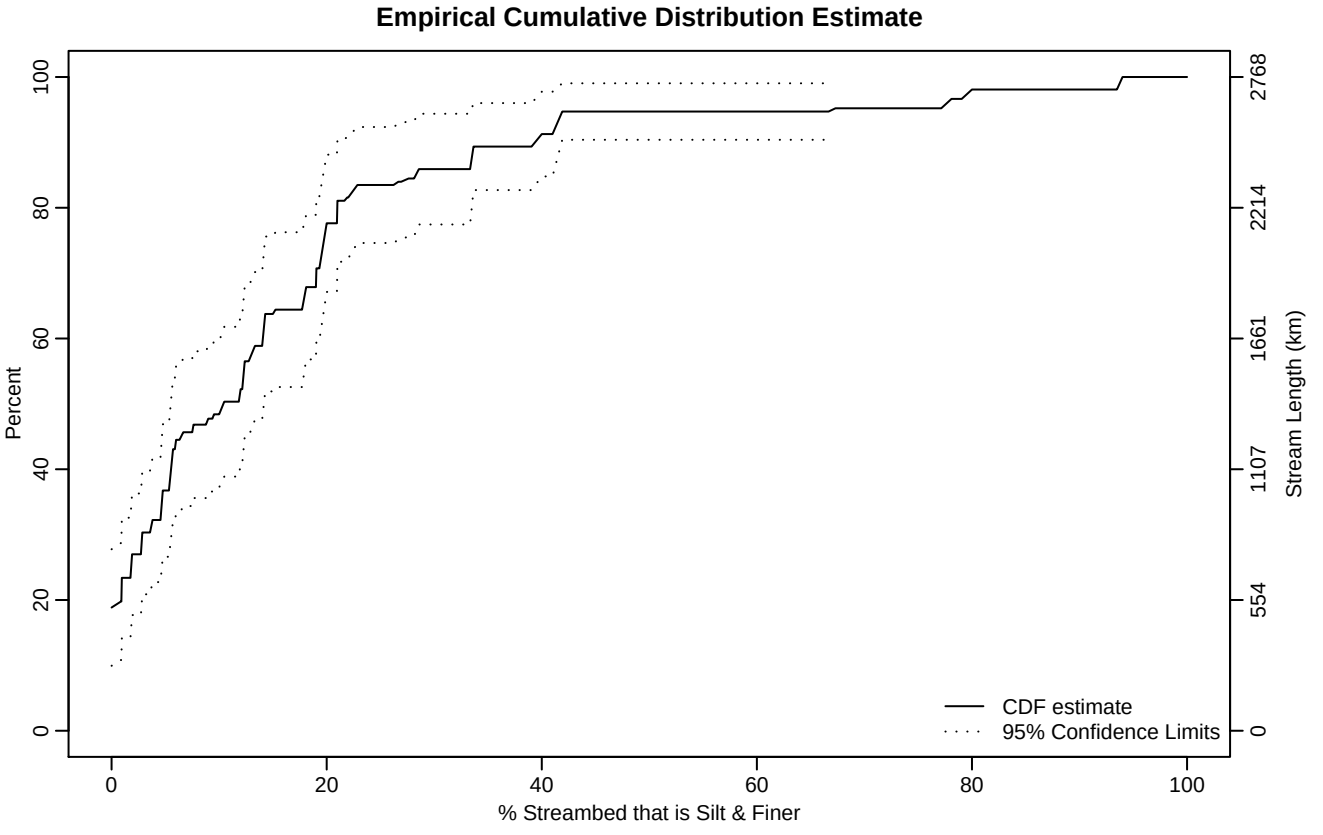


Figure PHAB−134 Indicator: PCT_FN Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.06
25Pct	1.82	0	4.64
50Pct	10.39	5.44	14.15
75Pct	19.74	14.28	33.38
90Pct	39.37	22.78	79.08
95Pct	67.03	39.72	93.81
Mean	15.60	11.76	19.43
Std Dev	18.27	13.61	22.94

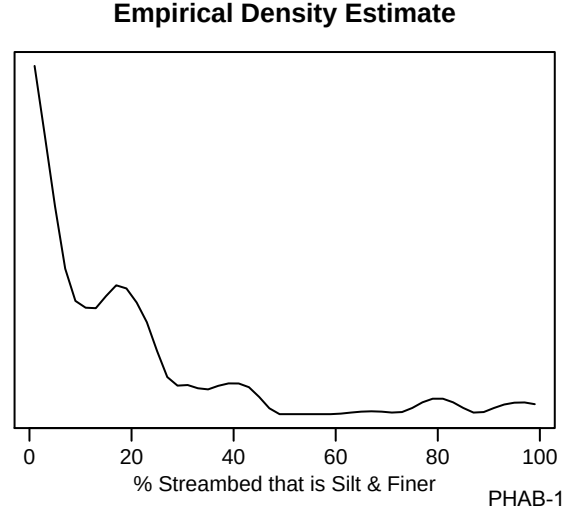
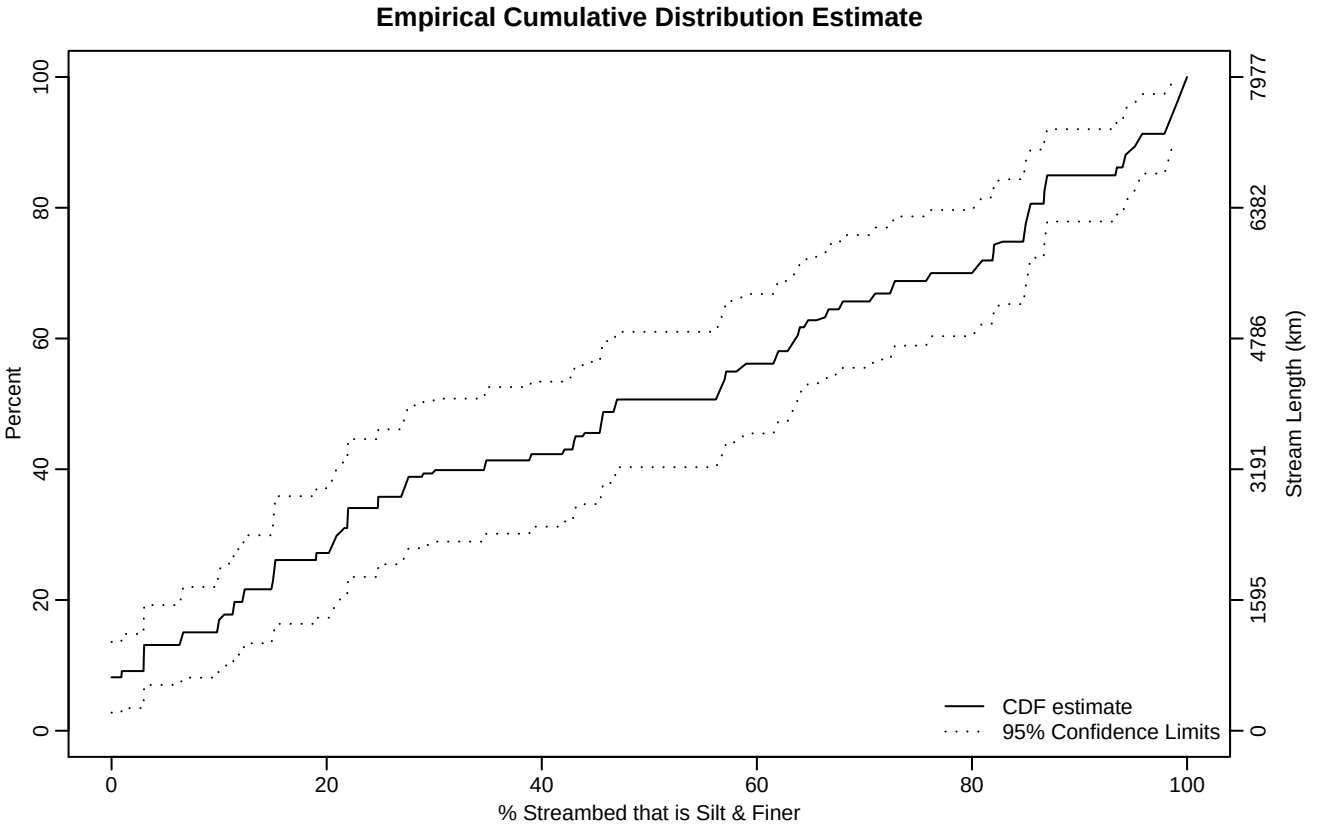


Figure PHAB−135 Indicator: PCT_FN Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	2.99
10Pct	2.98	0	9.87
25Pct	15.16	9.94	21.99
50Pct	46.88	28.95	63.86
75Pct	84.78	67.93	86.96
90Pct	95.37	86.80	99.25
95Pct	98.81	94.92	100
Mean	49.36	42.23	56.49
Std Dev	32.34	29.82	34.86

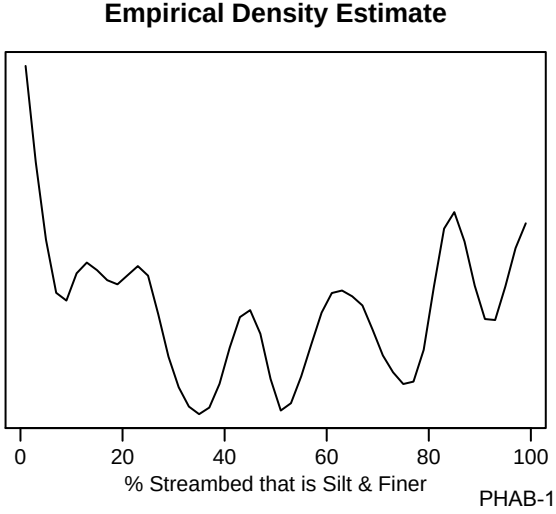
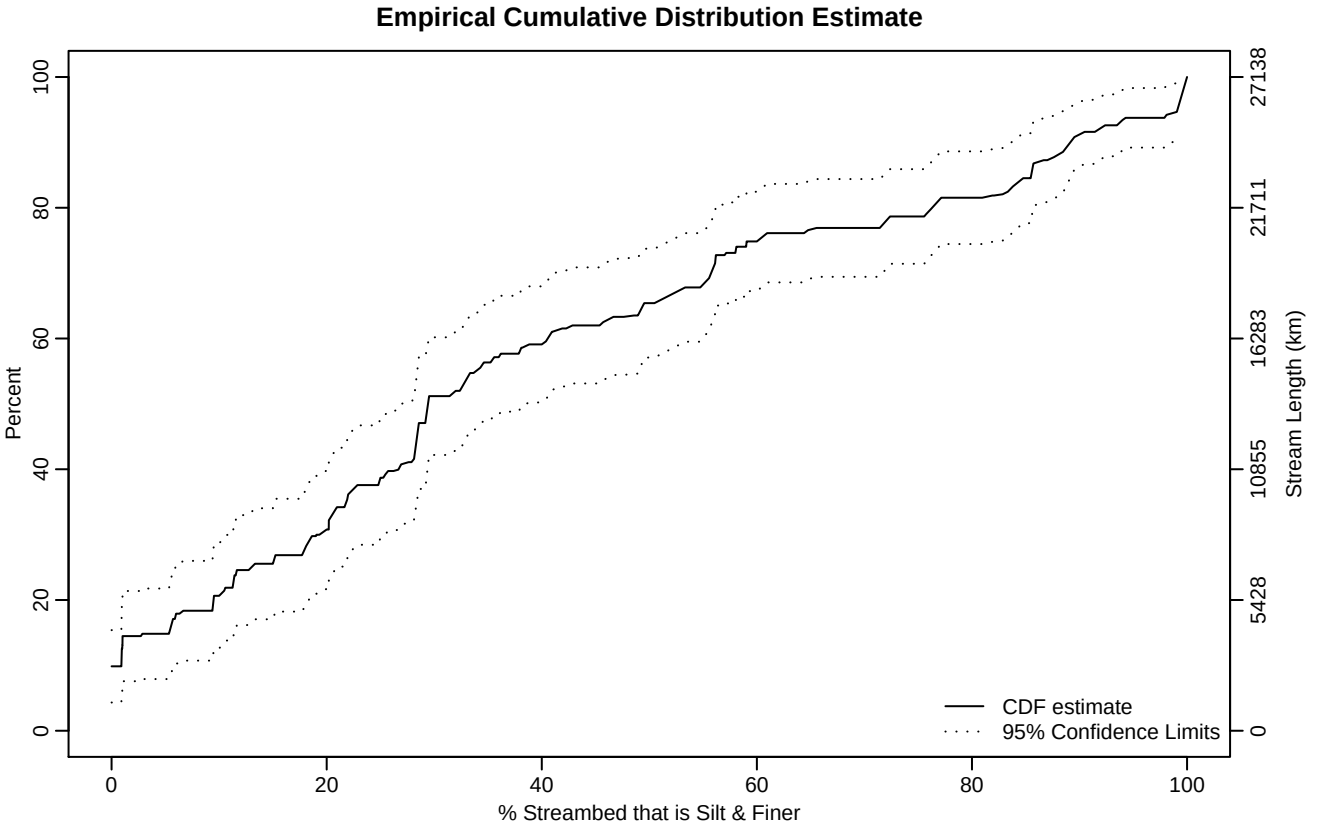


Figure PHAB−136 Indicator: PCT_FN Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.92
10Pct	0.91	0	5.46
25Pct	13	5.64	20.62
50Pct	29.42	26.68	40.56
75Pct	60.12	52.66	83.51
90Pct	89.14	84.19	99.33
95Pct	99.11	89.43	99.89
Mean	39.86	34.09	45.63
Std Dev	30.44	26.64	34.24

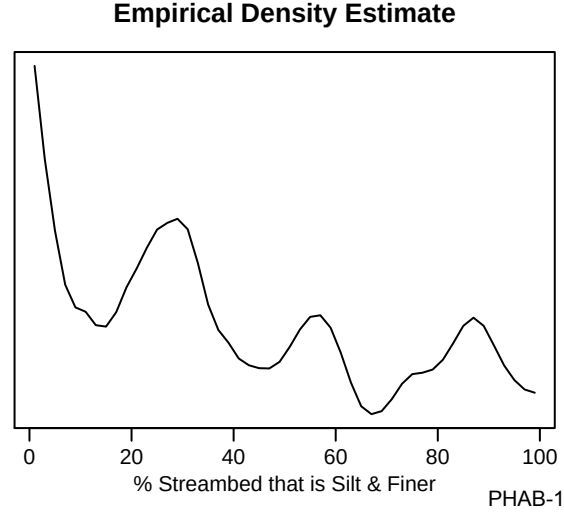
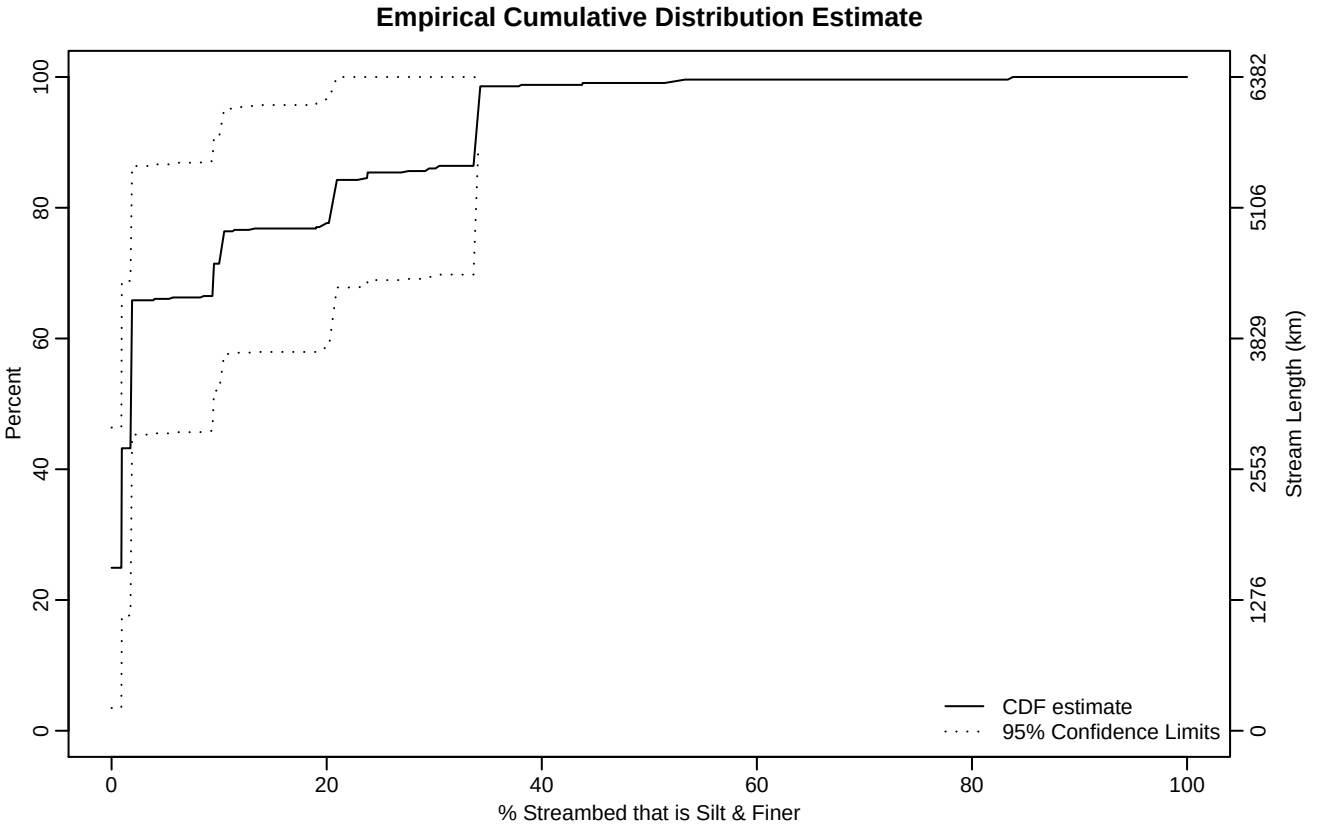


Figure PHAB−137 Indicator: PCT_FN Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.91
10Pct	0	0	0.93
25Pct	0.91	0	1.78
50Pct	1.80	0	10.40
75Pct	10.34	1.83	34.09
90Pct	33.84	10.13	83.81
95Pct	34.10	19.04	83.81
Mean	8.80	3.21	14.38
Std Dev	13.28	9.67	16.89

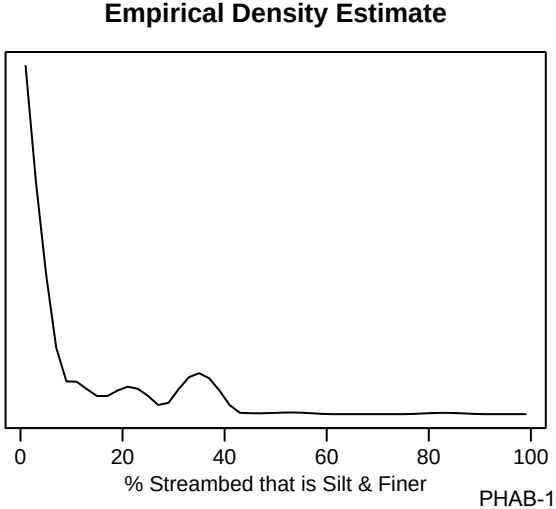
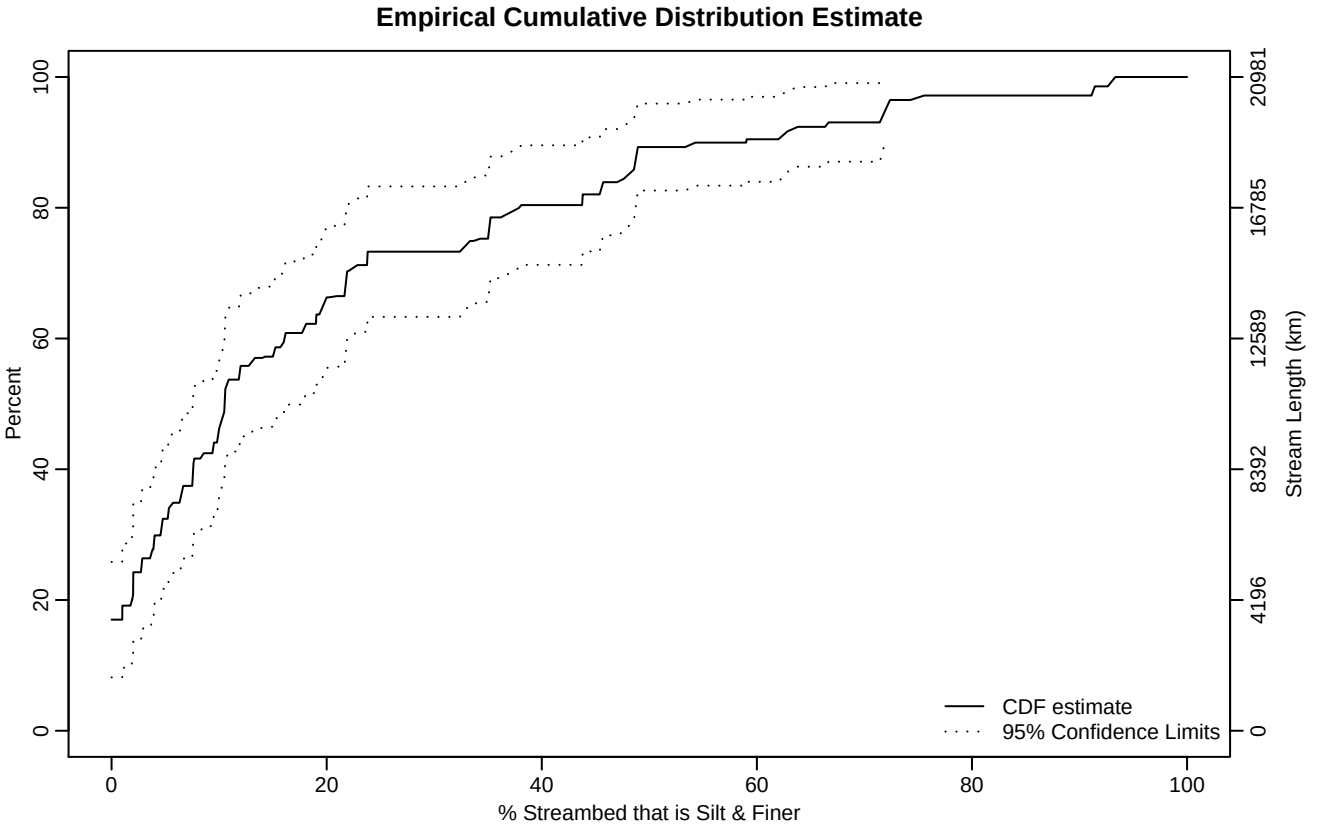


Figure PHAB−138 Indicator: PCT_FN Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	1
25Pct	2.77	0	6.42
50Pct	10.51	7.57	16.13
75Pct	33.80	19.69	47.94
90Pct	59	45.61	74.58
95Pct	71.97	48.89	93.33
Mean	20.60	15.38	25.82
Std Dev	23.03	18.96	27.10

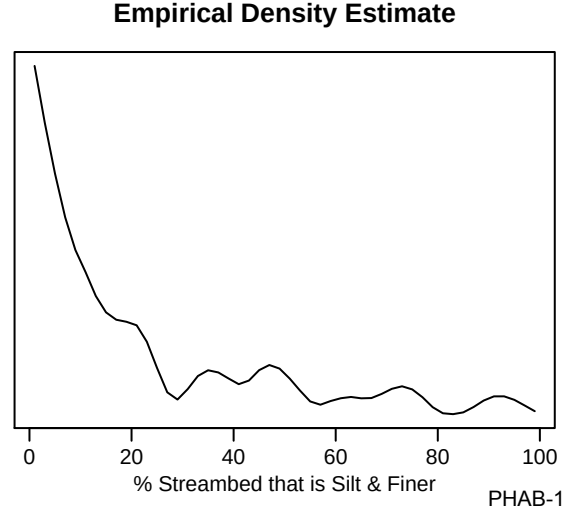
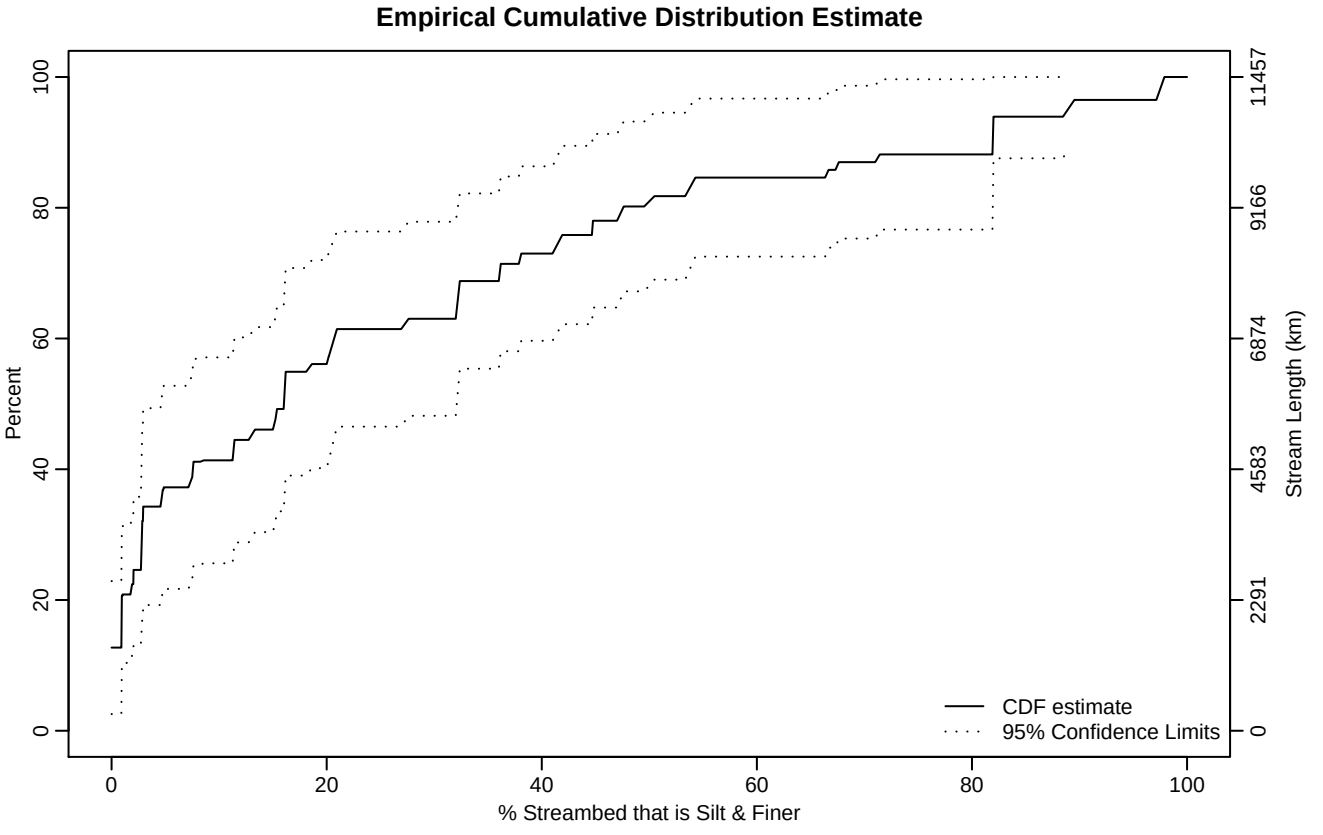


Figure PHAB−139 Indicator: PCT_FN Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.92
10Pct	0	0	0.95
25Pct	2.73	0	7.28
50Pct	16.03	2.94	32.19
75Pct	41.64	26.99	81.91
90Pct	81.94	47.10	97.89
95Pct	88.91	81.91	97.89
Mean	26.48	16.84	36.13
Std Dev	28.55	22.26	34.84

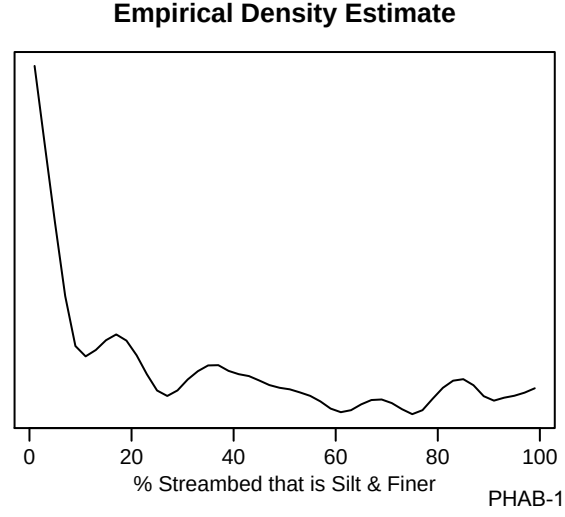
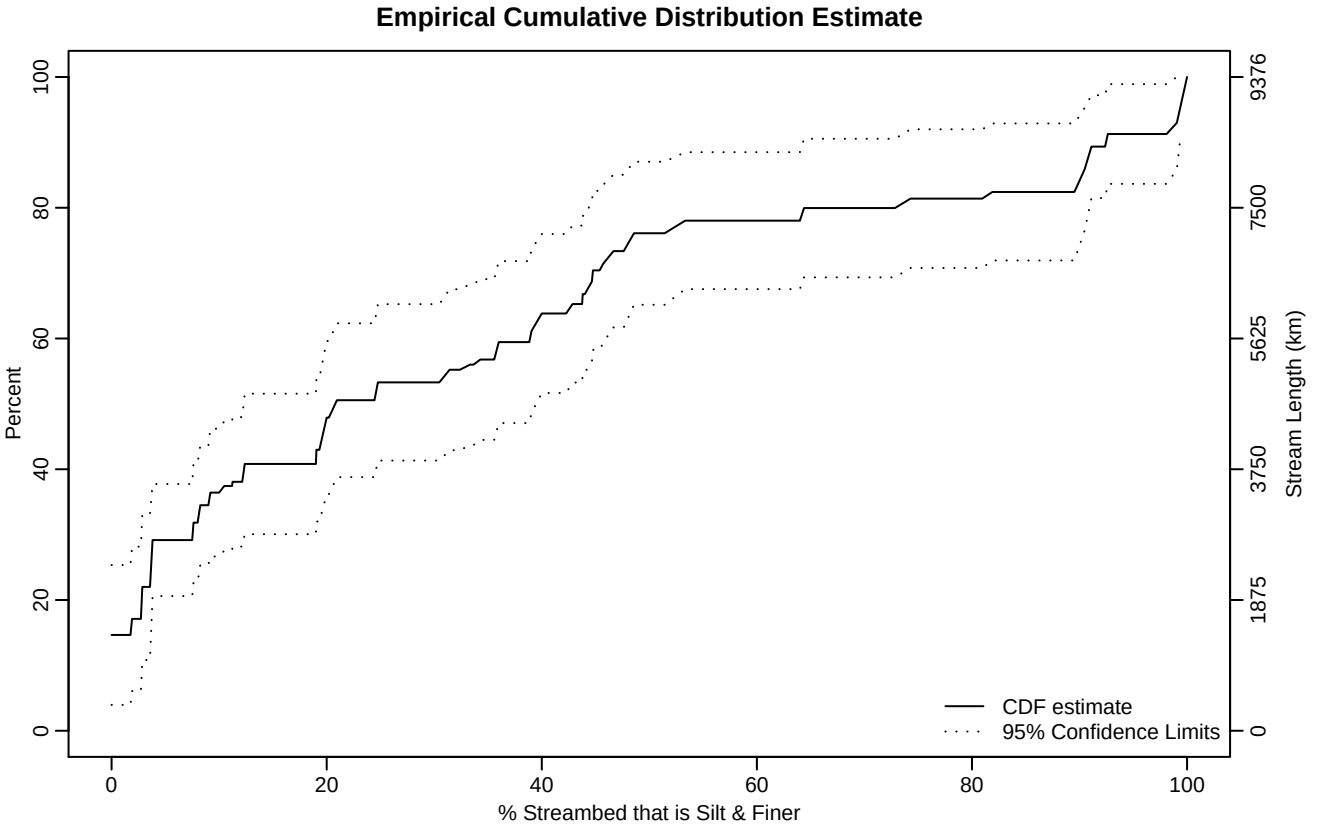


Figure PHAB−140 Indicator: PCT_FN Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	1.83
10Pct	0	0	2.83
25Pct	3.67	0	9.15
50Pct	20.80	12.16	39.29
75Pct	48.19	39.78	90.64
90Pct	92.47	81.65	99.71
95Pct	99.32	90.83	100
Mean	34.60	26.13	43.07
Std Dev	29.81	25.51	34.11

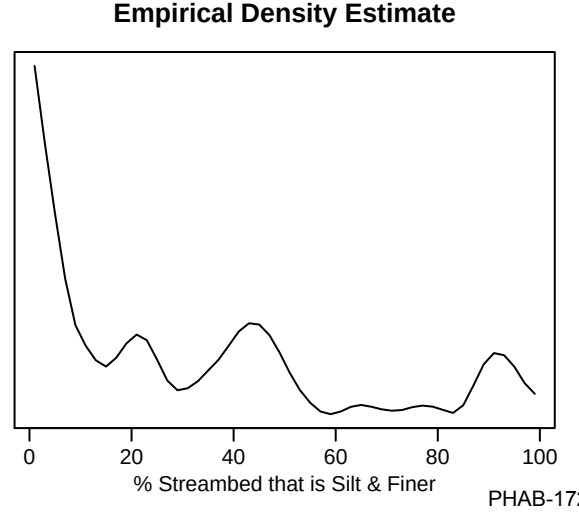
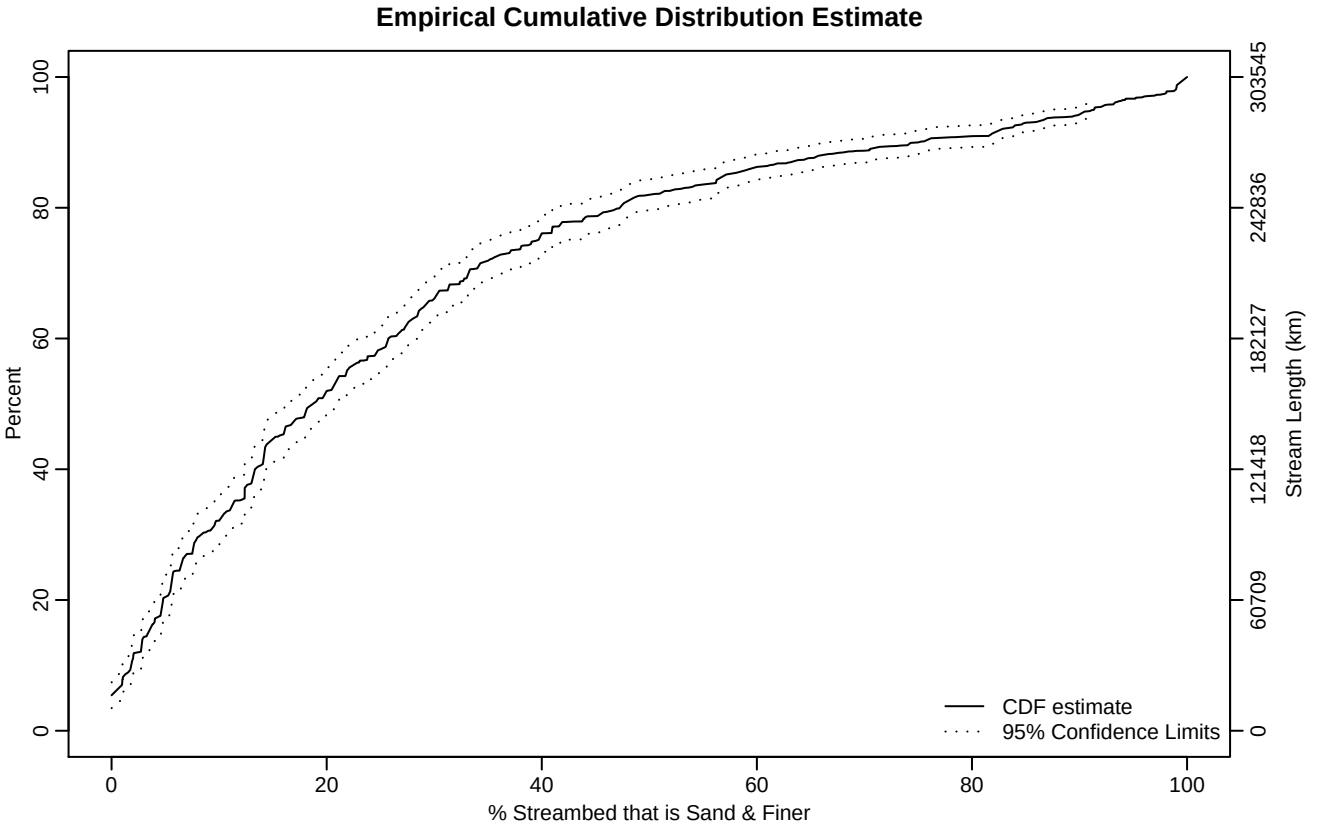


Figure PHAB−141 Indicator: PCT_SAFN Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.95
10Pct	1.83	0.99	2.76
25Pct	6.41	5.47	7.66
50Pct	18.72	16.15	20.97
75Pct	39.55	35.18	43.75
90Pct	75	66.63	82.47
95Pct	91.35	88.68	93.33
Mean	27.88	26.23	29.52
Std Dev	23.30	21.76	24.84

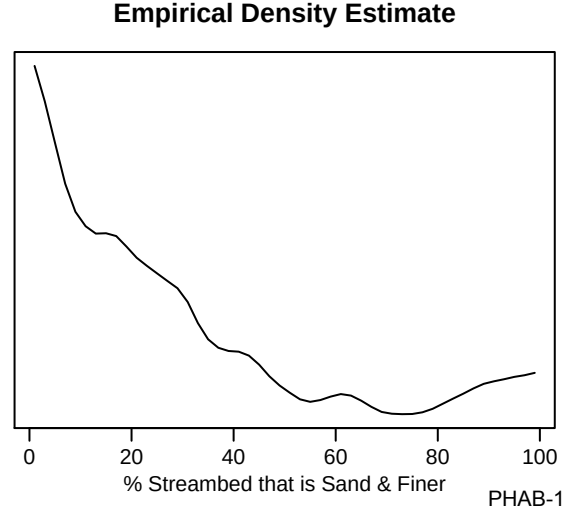
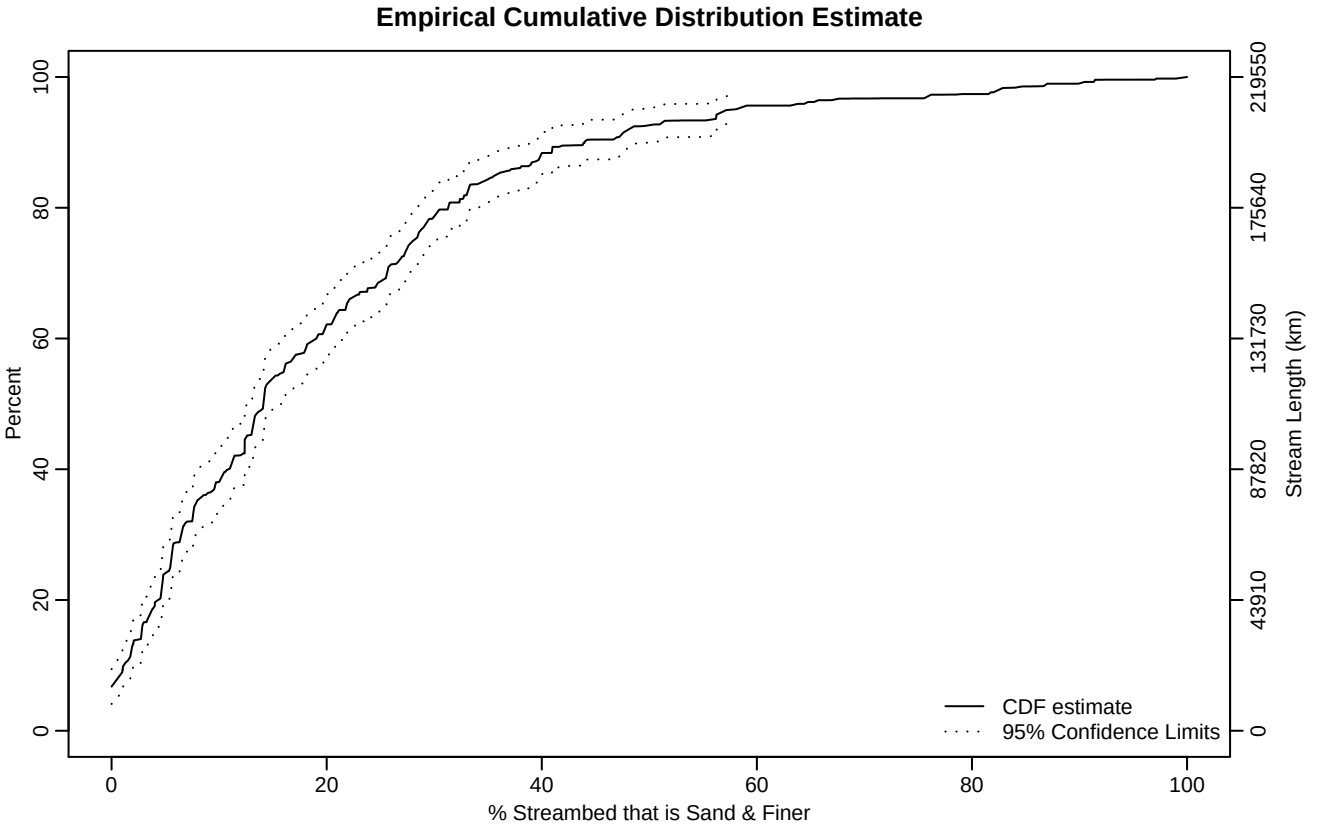


Figure PHAB−142 Indicator: PCT_SAFN Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.41
10Pct	1.13	0.07	1.96
25Pct	5.46	4.57	6.41
50Pct	14.12	12.56	16.01
75Pct	28.08	25.70	30.33
90Pct	43.97	39.03	51.31
95Pct	57.58	51.05	76.02
Mean	19.75	17.88	21.61
Std Dev	18.79	16.88	20.70

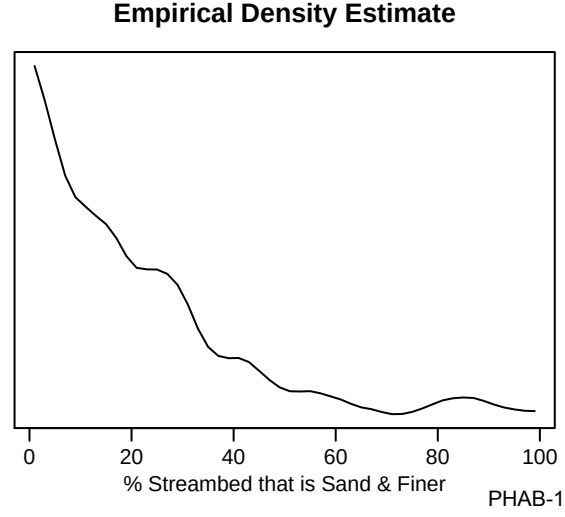
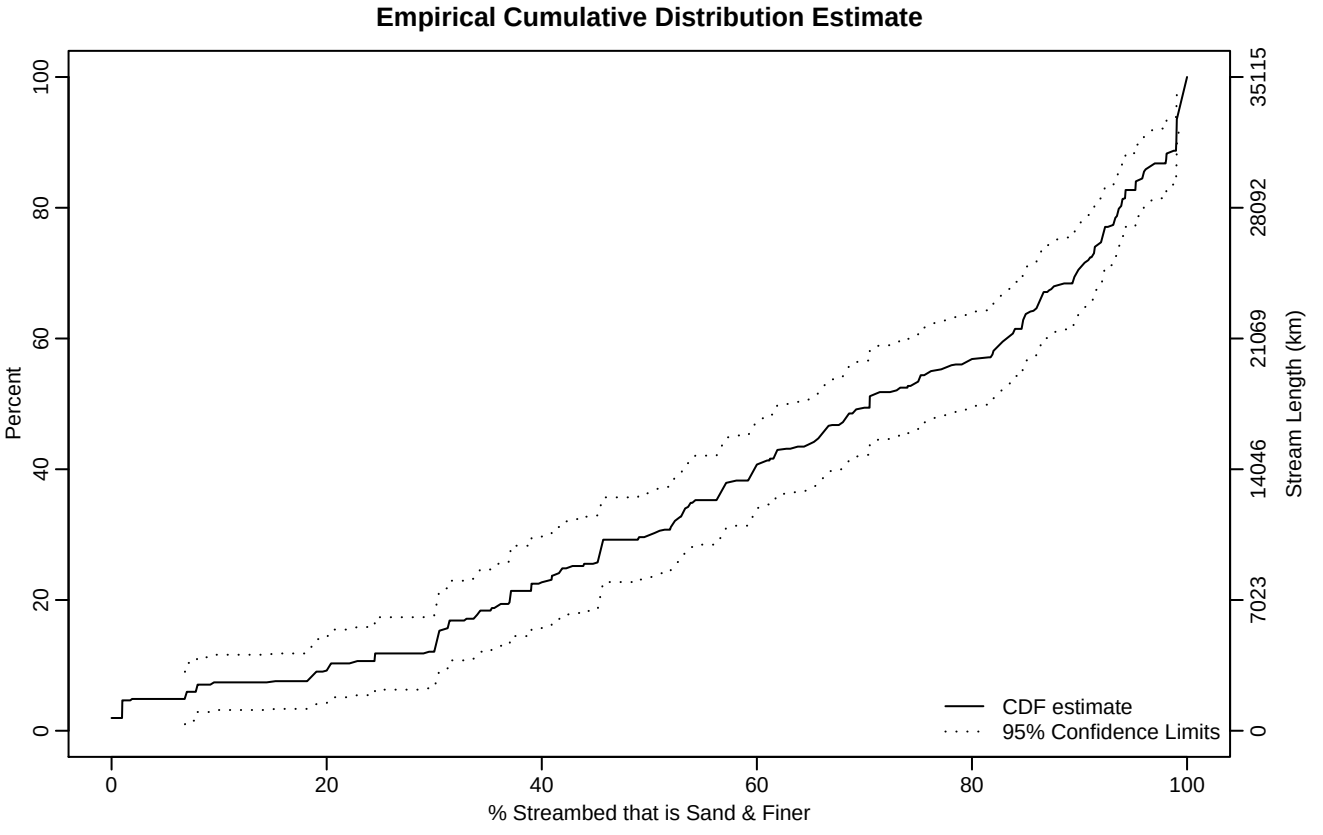


Figure PHAB−143 Indicator: PCT_SAFN Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	6.82	0	19.04
10Pct	20.30	6.83	30.43
25Pct	42.53	34.13	52.32
50Pct	70.49	61.81	81.83
75Pct	92.05	88.13	94.25
90Pct	99	95.95	99.23
95Pct	99.26	99.02	99.82
Mean	65.36	60.95	69.76
Std Dev	25.42	23.29	27.55

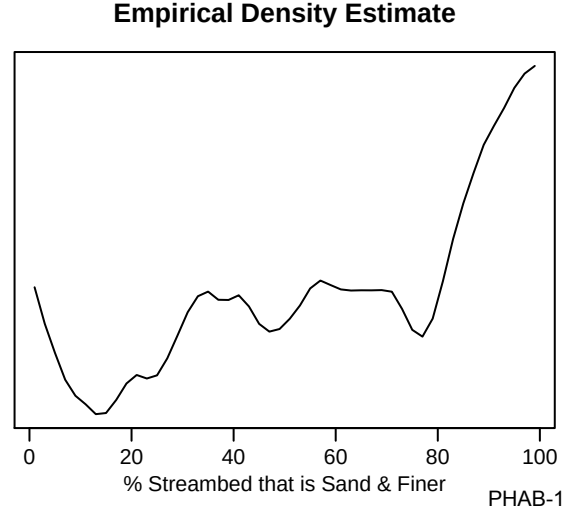
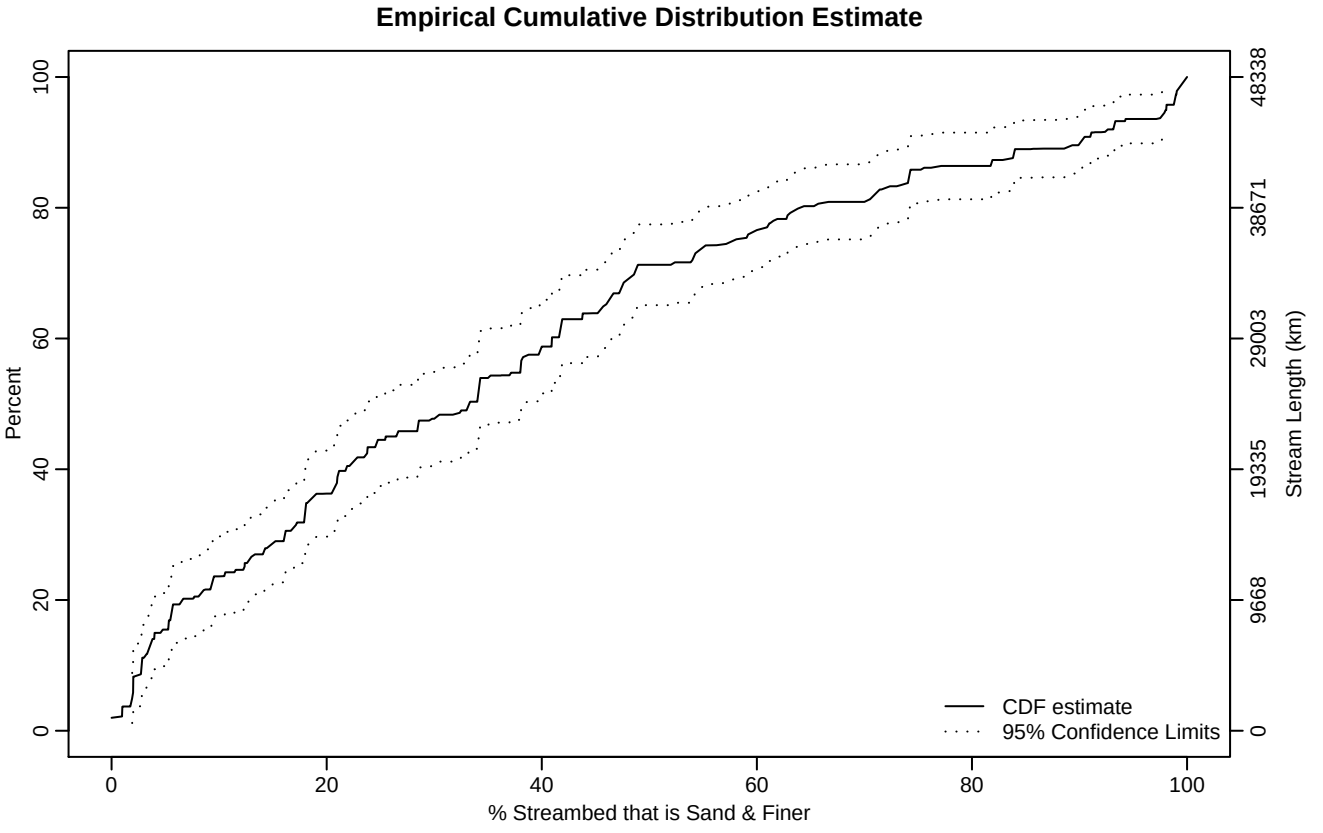


Figure PHAB−144 Indicator: PCT_SAFN Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.91	0	2.74
10Pct	2.80	1.93	4
25Pct	12.34	5.64	17.07
50Pct	33.25	23.79	38.25
75Pct	57.86	48.03	70.02
90Pct	90.10	74.26	97.82
95Pct	98.06	91.37	99.32
Mean	37.73	33.40	42.06
Std Dev	29.16	26.31	32.01

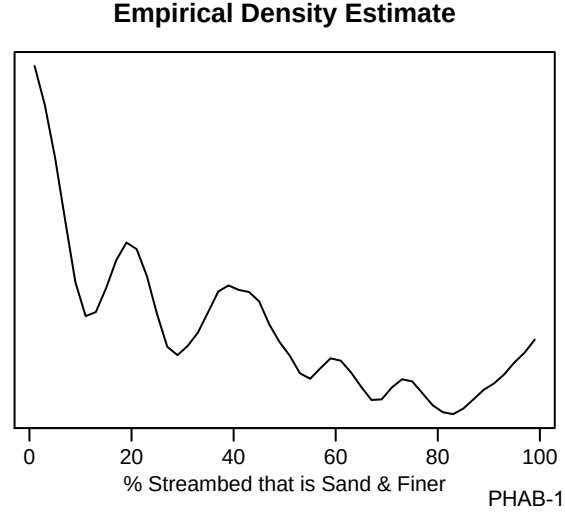
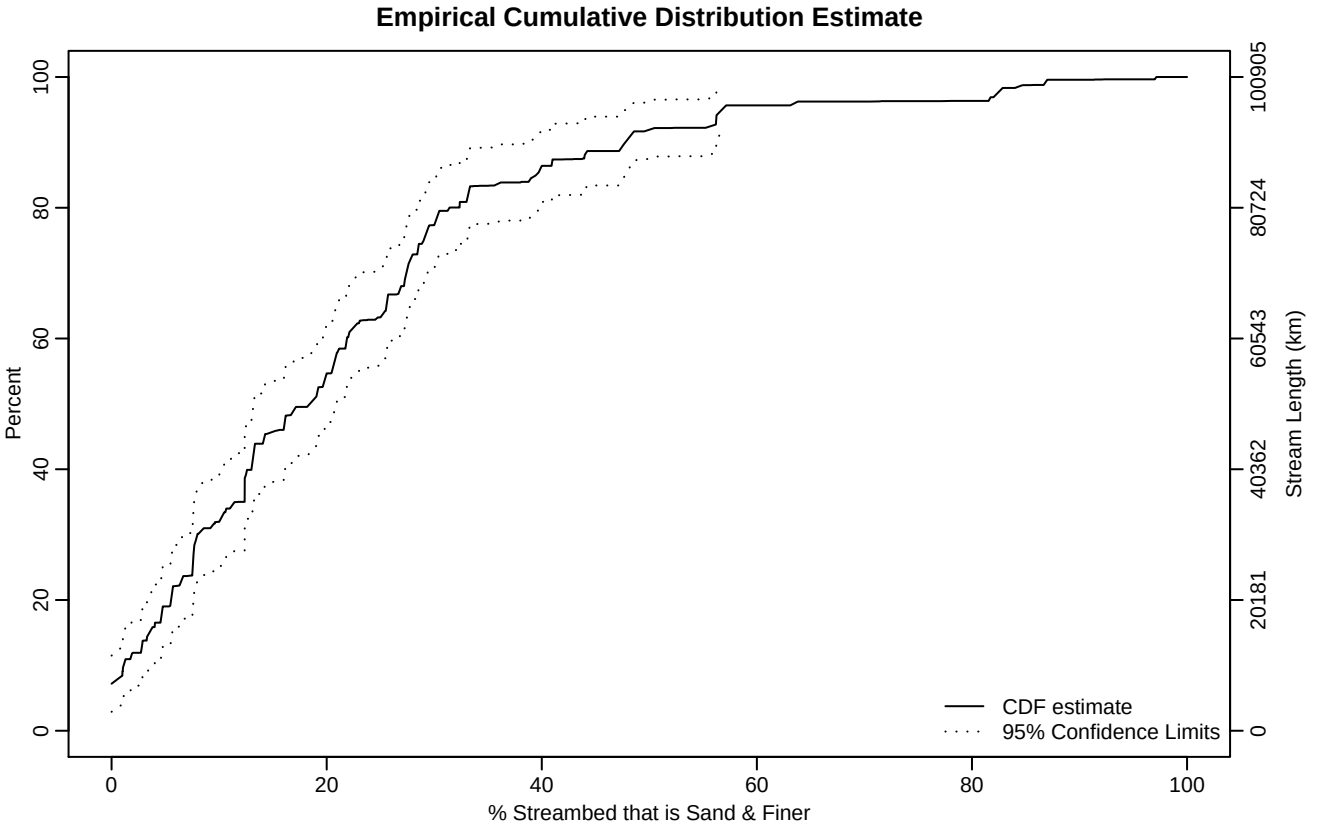


Figure PHAB−145 Indicator: PCT_SAFN Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	1.05
10Pct	1.12	0	3.39
25Pct	7.55	4.71	9.48
50Pct	18.43	13.21	20.91
75Pct	29.01	27.21	33.12
90Pct	47.77	39.37	56.83
95Pct	56.75	48.39	84.59
Mean	21.72	18.73	24.72
Std Dev	19.12	16.07	22.17

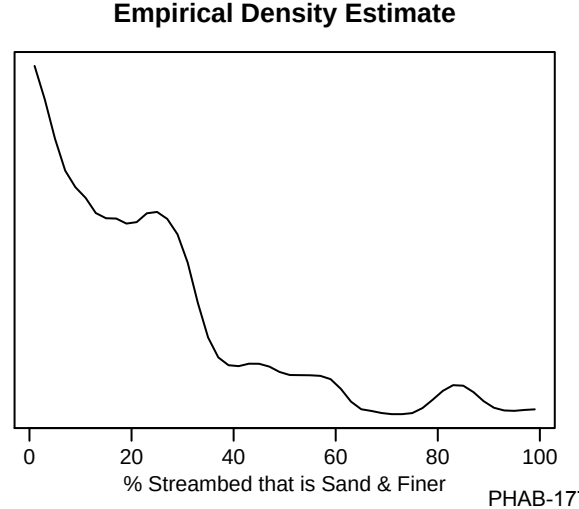
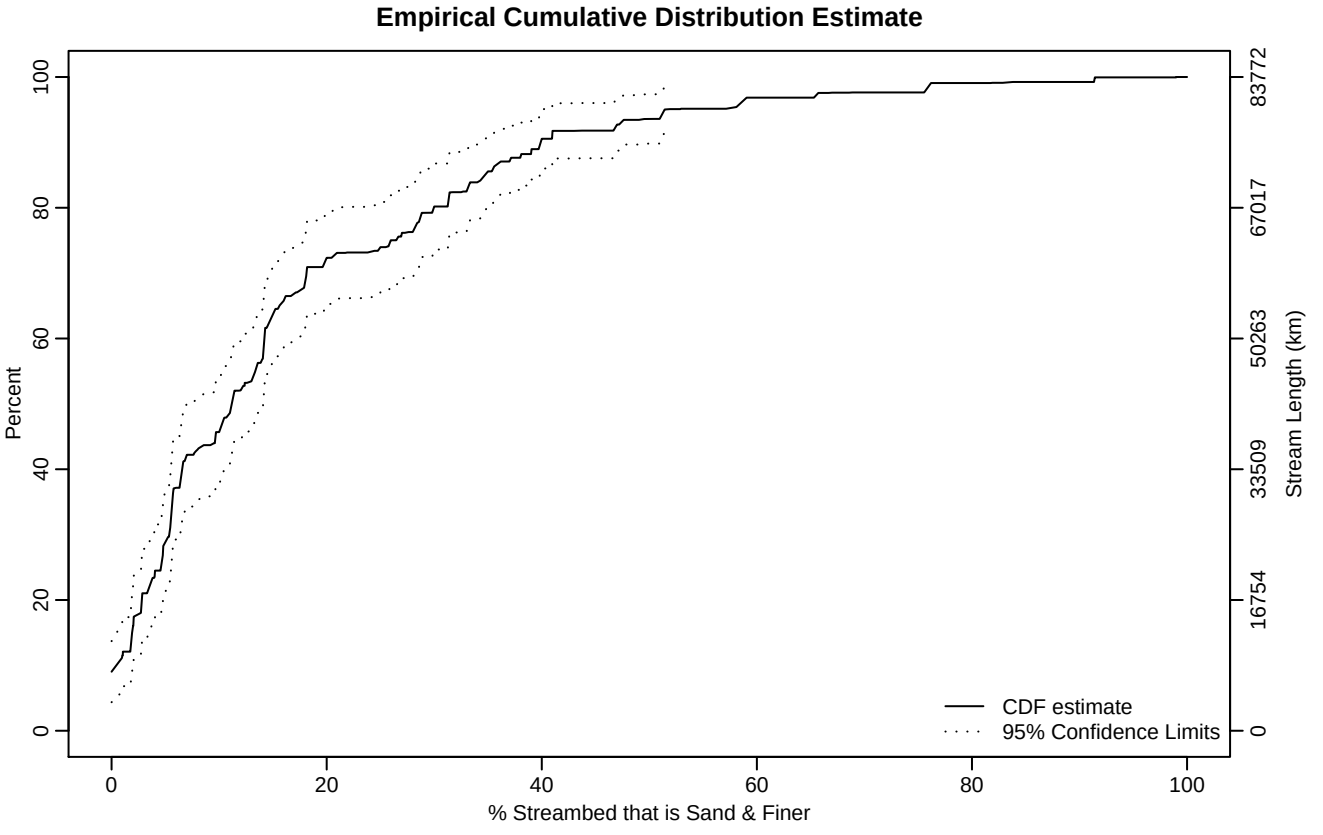


Figure PHAB−146 Indicator: PCT_SAFN Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.30
10Pct	0.44	0	1.89
25Pct	4.59	2.63	5.50
50Pct	11.18	7.63	14.10
75Pct	25.96	17.93	31.40
90Pct	39.90	34.85	51.33
95Pct	51.42	40.97	76.13
Mean	16.97	14.18	19.76
Std Dev	17.53	14.83	20.23

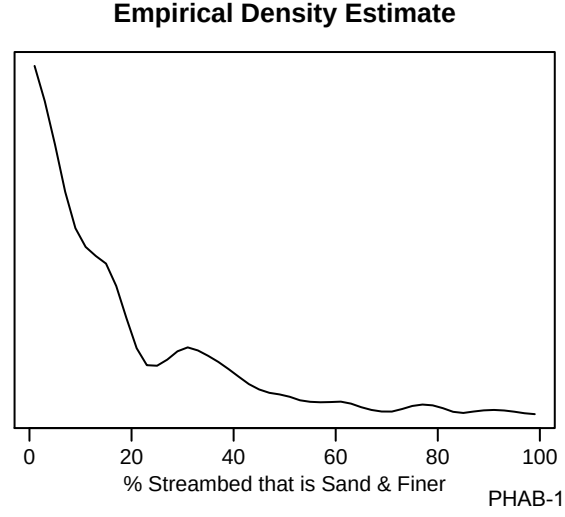
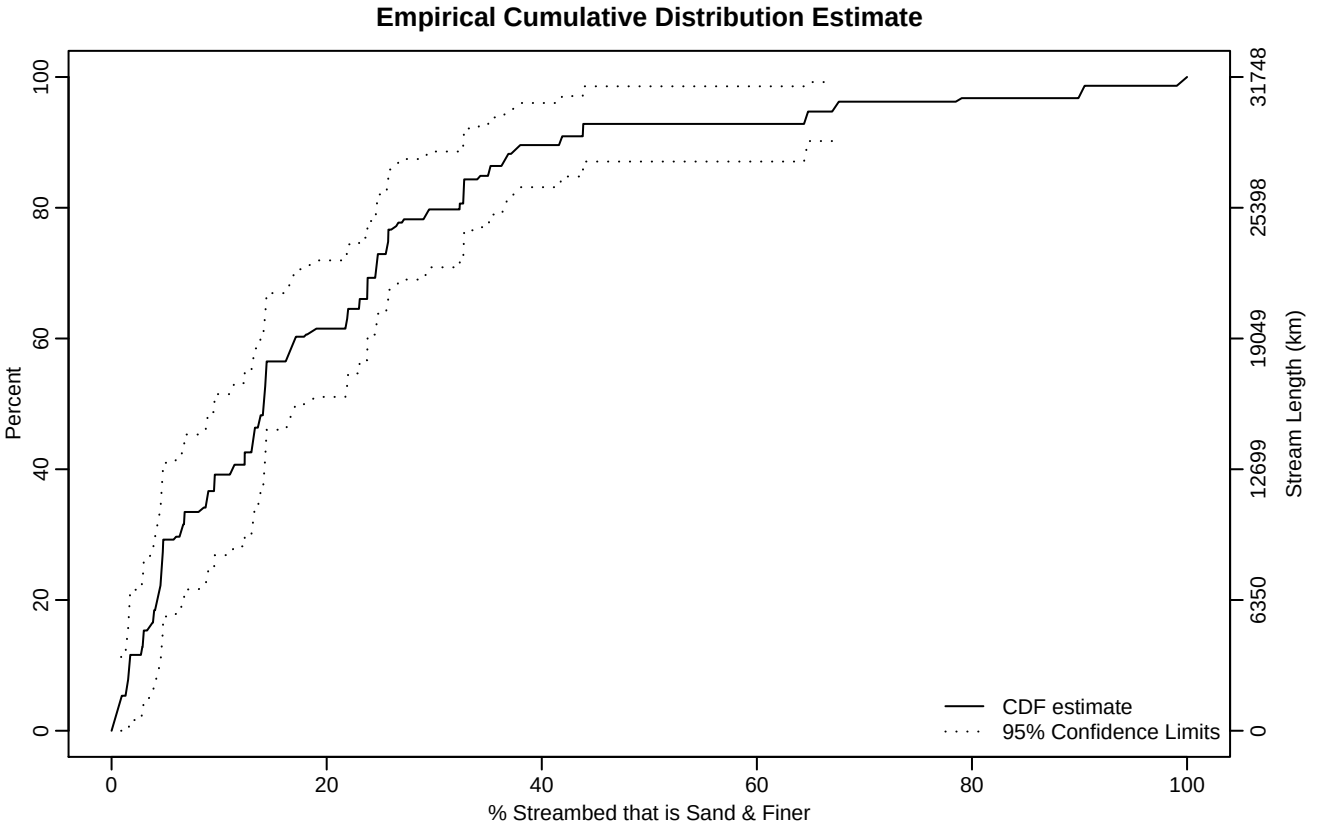


Figure PHAB−147 Indicator: PCT_SAFN Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.89	0.81	1.31
10Pct	1.65	0.39	3.92
25Pct	4.66	2.91	9.52
50Pct	14.15	9.57	21.79
75Pct	25.72	23.04	34.18
90Pct	41.69	32.77	78.75
95Pct	67.12	41.80	99.66
Mean	19.98	15.39	24.56
Std Dev	19.72	14.48	24.97

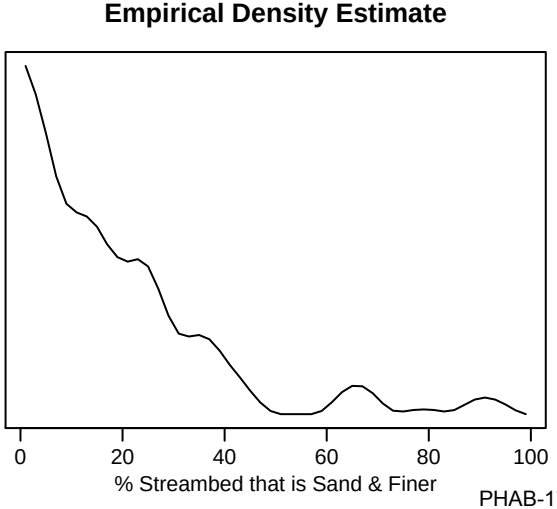
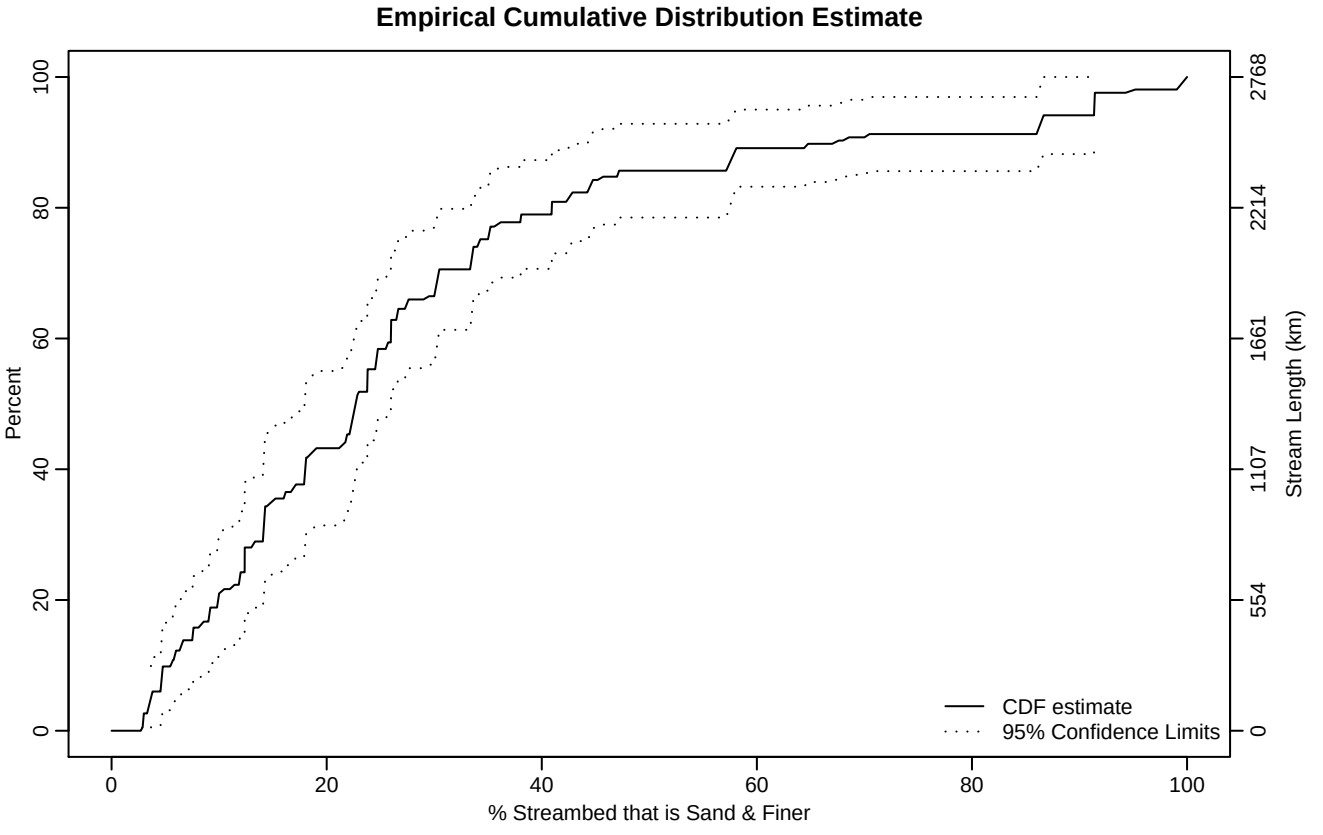


Figure PHAB−148 Indicator: PCT_SAFN Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.66	2.91	4.71
10Pct	5.50	3.41	8.54
25Pct	12.37	7.61	14.28
50Pct	22.69	17.92	25.99
75Pct	34.24	30.08	44.36
90Pct	67.27	44.73	91.39
95Pct	91.37	58.07	
Mean	28.85	24.33	33.38
Std Dev	24.03	19.60	28.46

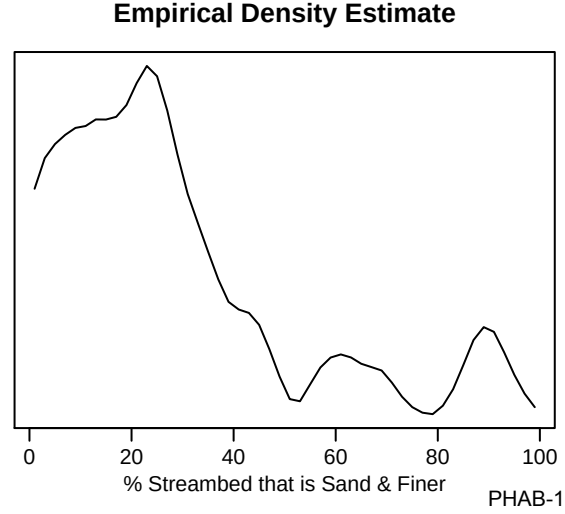
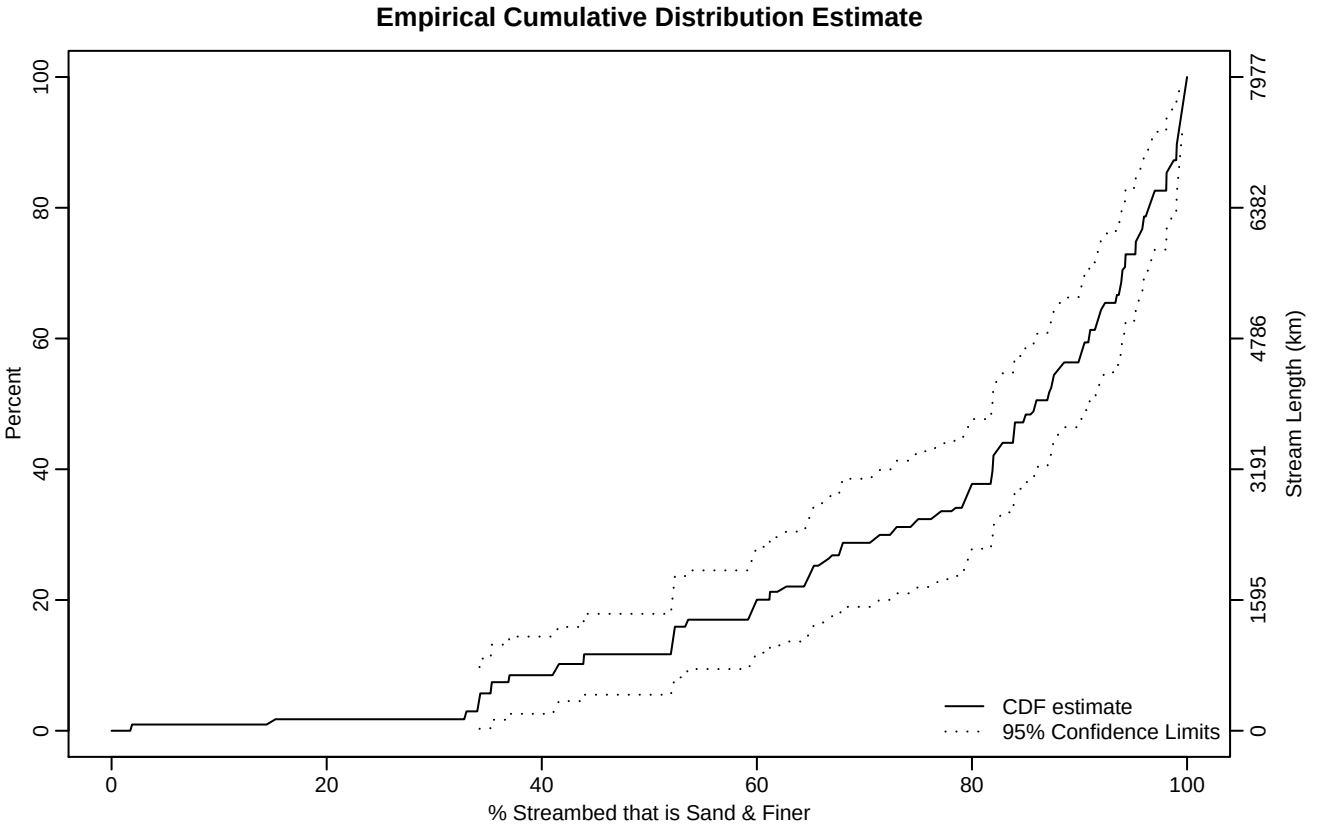


Figure PHAB−149 Indicator: PCT_SAFN Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	34.21	32.83	36.95
10Pct	41.53	34.11	53.36
25Pct	65.24	53.35	78.45
50Pct	85.91	81.89	90.92
75Pct	95.30	92.21	98.09
90Pct	99.07	96.98	99.77
95Pct	99.54	98.99	100
Mean	78.80	74.64	82.95
Std Dev	18.57	14.97	22.17

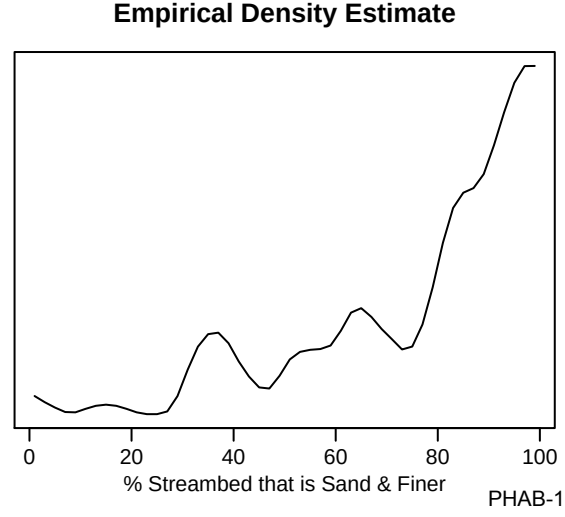
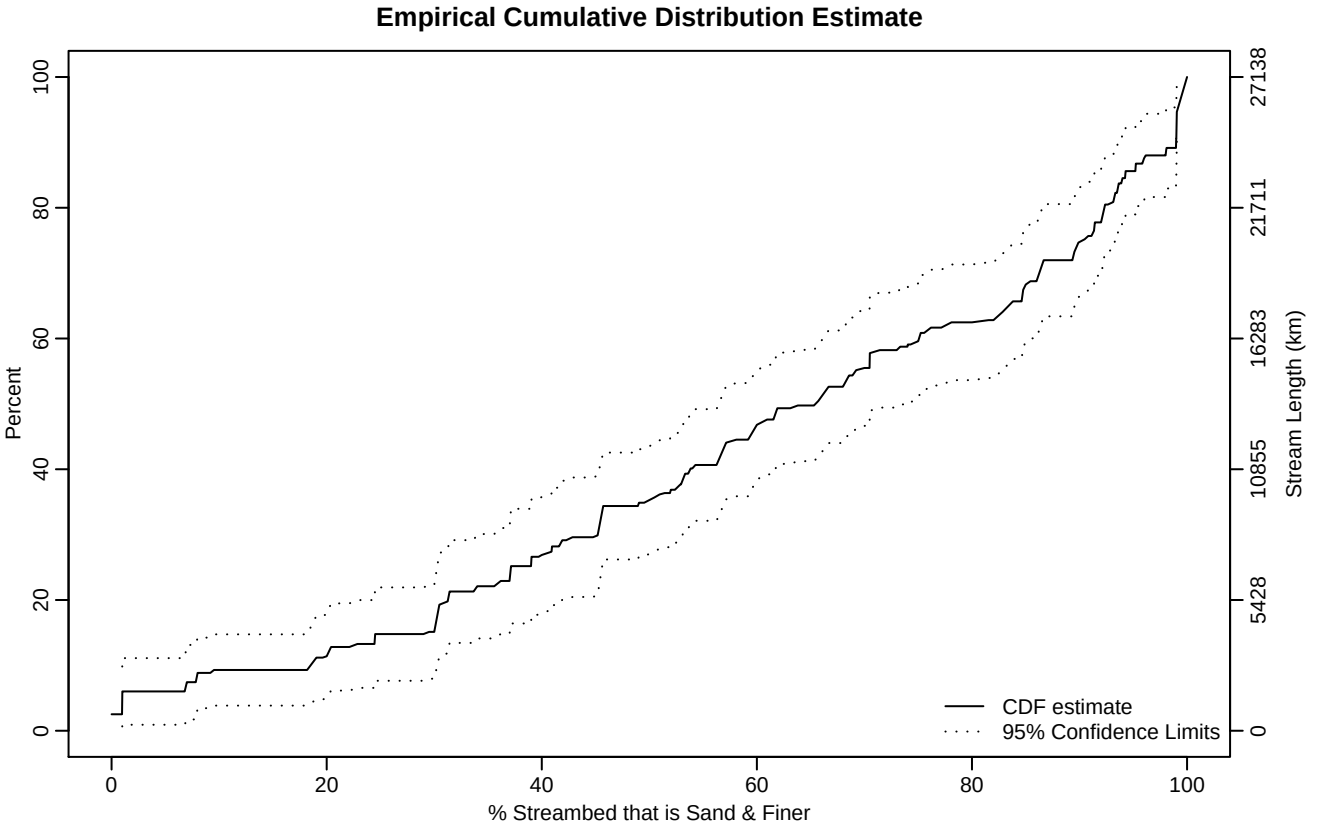


Figure PHAB−150 Indicator: PCT_SAFN Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.99	0	9.41
10Pct	18.51	0.99	30.04
25Pct	37.13	30.23	45.54
50Pct	65.45	56.40	74
75Pct	90.27	84.69	93.61
90Pct	98.98	93.89	99.32
95Pct	99.11	99	99.89
Mean	61.41	55.84	66.97
Std Dev	26.86	24.31	29.40

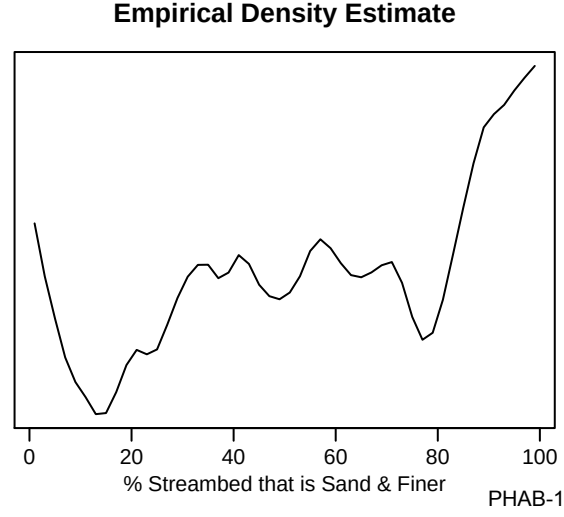
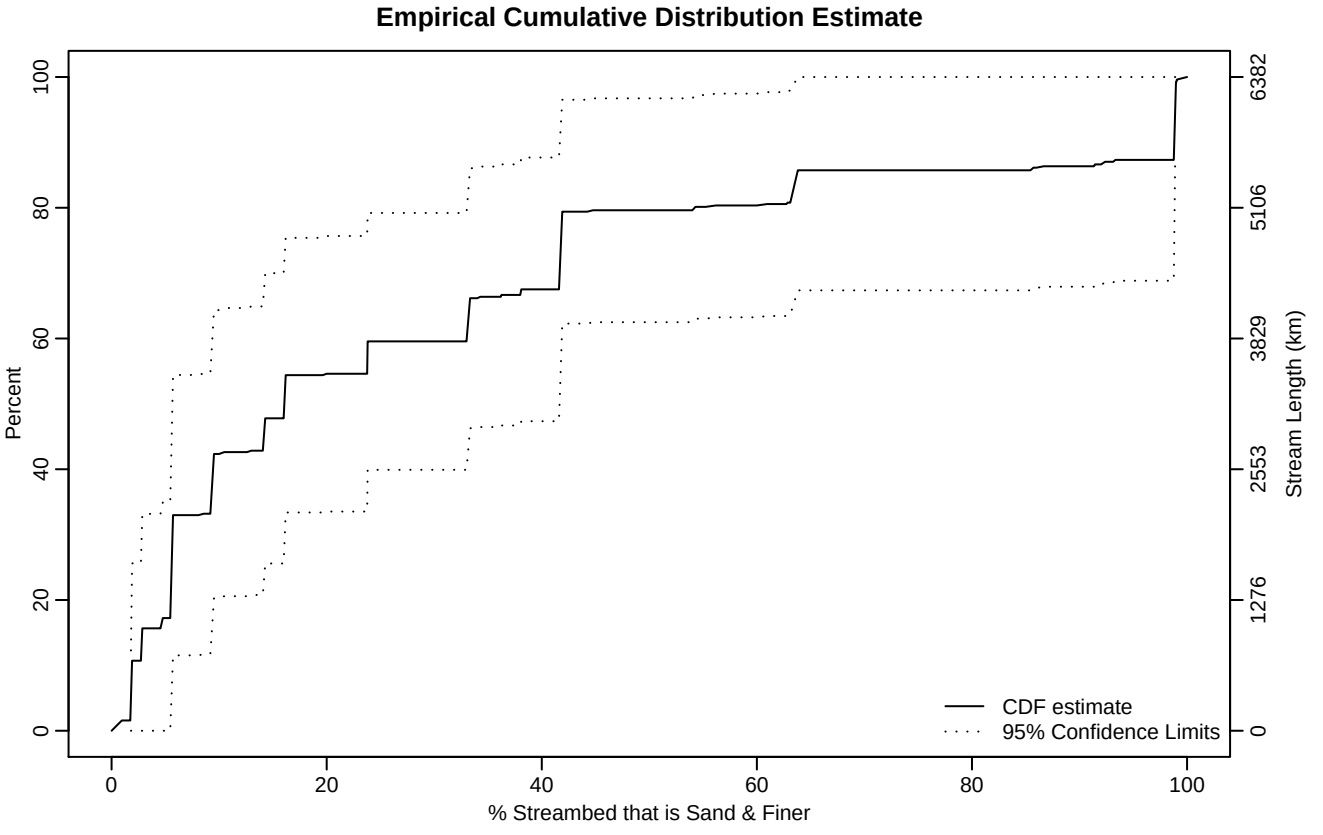


Figure PHAB−151 Indicator: PCT_SAFN Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.80	1.75	1.86
10Pct	1.89	1.82	2.81
25Pct	5.58	1.83	14.08
50Pct	16.06	5.63	41.73
75Pct	41.79	16.17	98.92
90Pct	98.81	41.70	100
95Pct	98.90	41.81	100
Mean	30.84	16.27	45.41
Std Dev	32.21	20.12	44.30

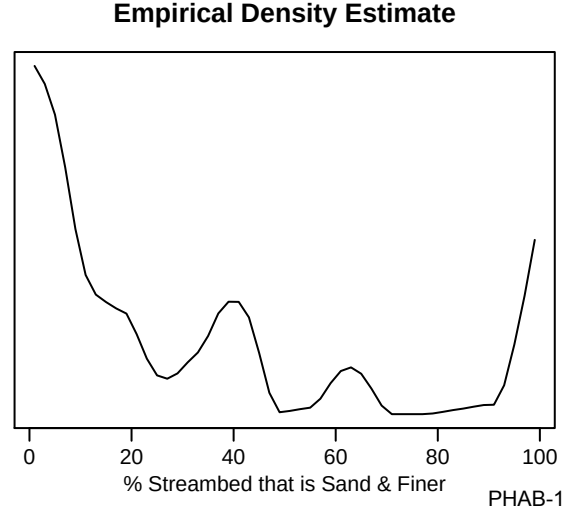
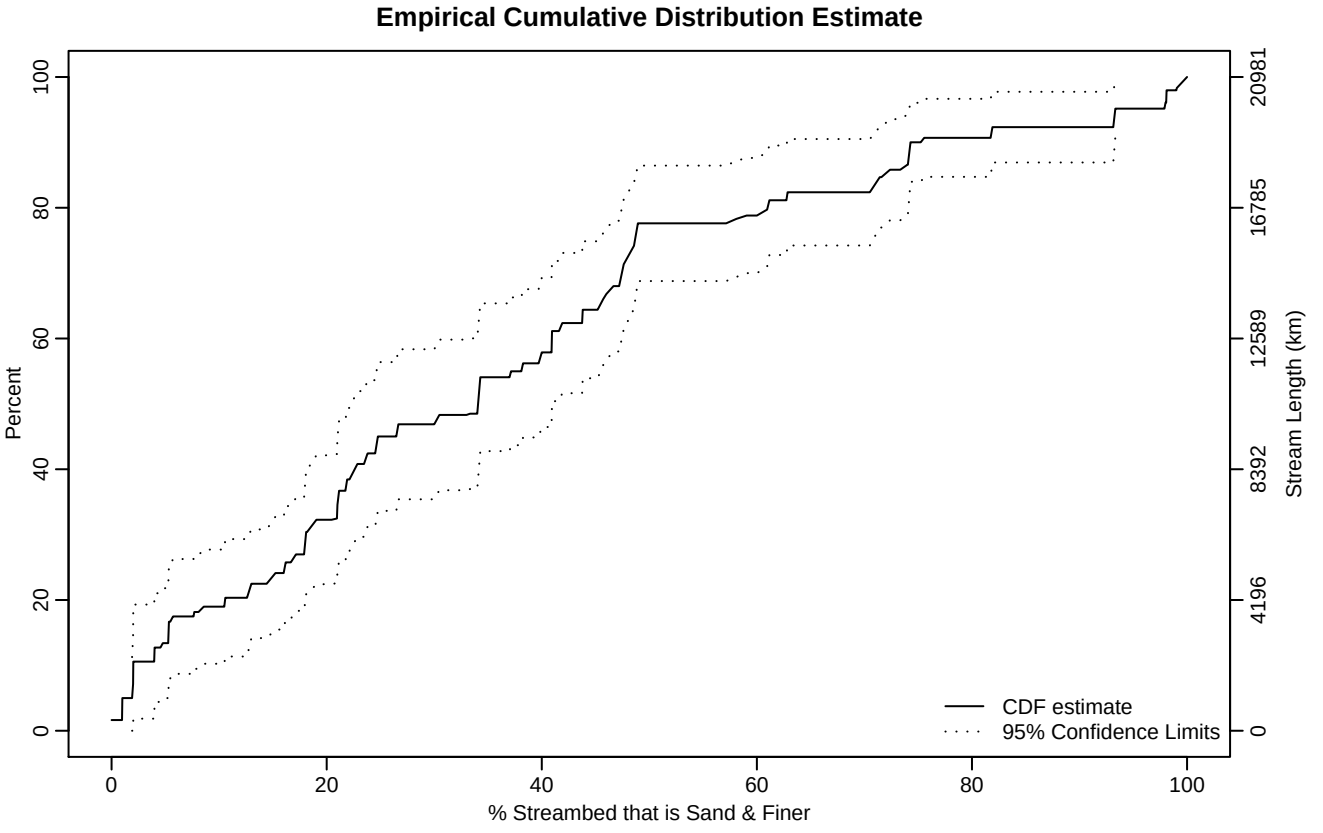


Figure PHAB−152 Indicator: PCT_SAFN Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	1.91	0	3.98
10Pct	2.02	0.98	5.66
25Pct	16.10	5.33	20.98
50Pct	34.08	22.15	41.68
75Pct	48.66	45.46	71.63
90Pct	74.28	62.85	98.09
95Pct	93.32	74.26	100
Mean	36.80	30.79	42.82
Std Dev	27.22	23.63	30.80

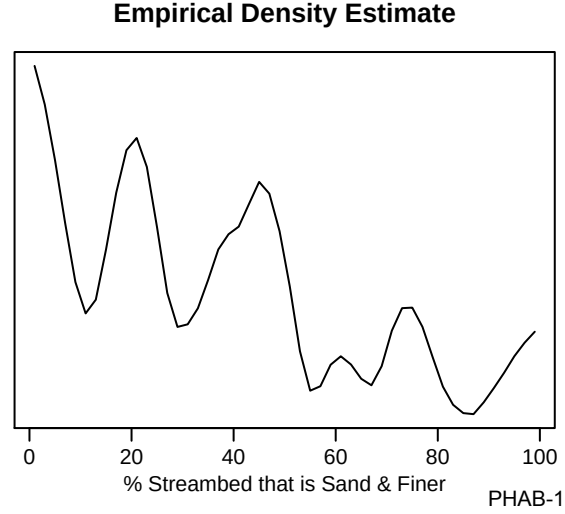
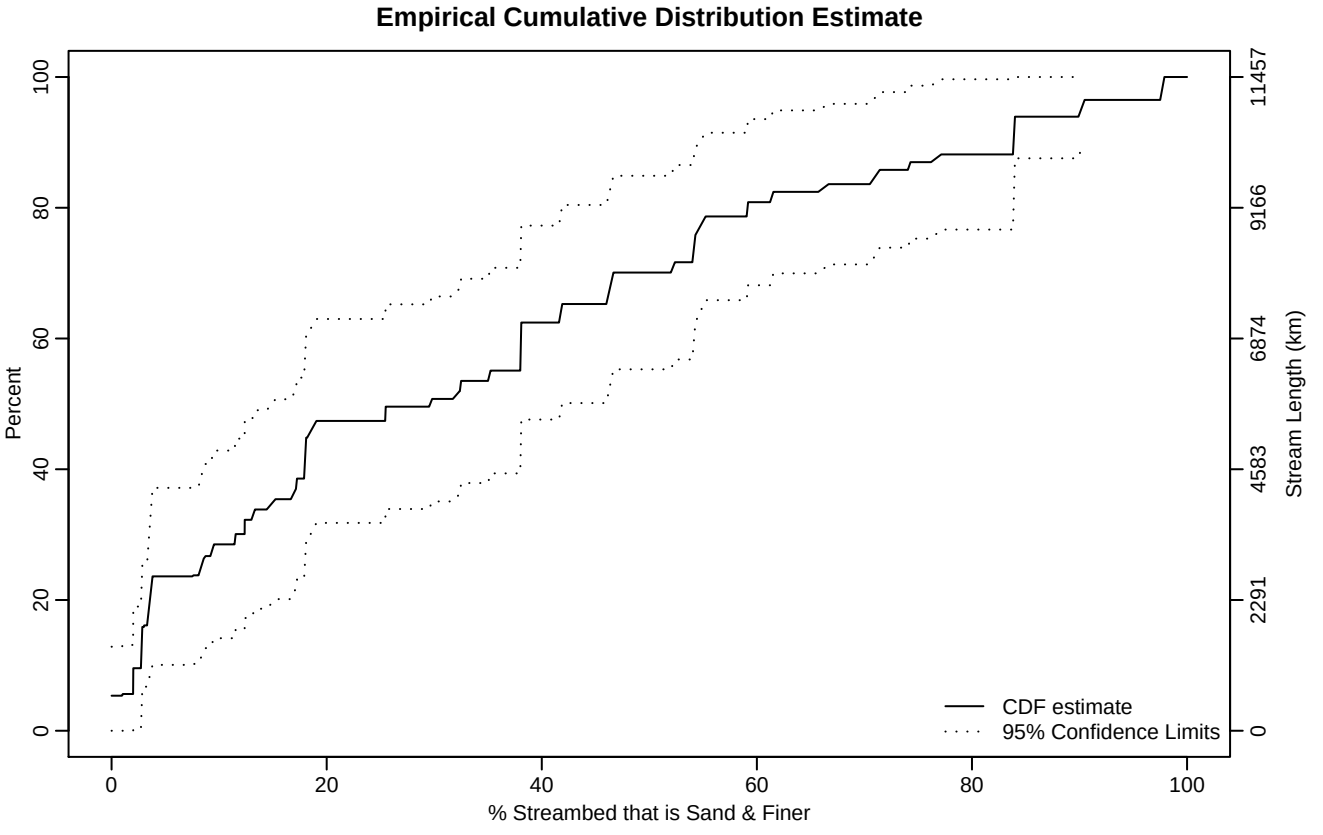


Figure PHAB−153 Indicator: PCT_SAFN Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	2.79
10Pct	2.74	0	3.52
25Pct	8.32	2.73	17.94
50Pct	29.63	14.56	46.09
75Pct	54.23	38.06	83.87
90Pct	83.87	55.13	97.89
95Pct	90.14	83.82	97.89
Mean	34.31	24.39	44.22
Std Dev	28.21	23.05	33.36

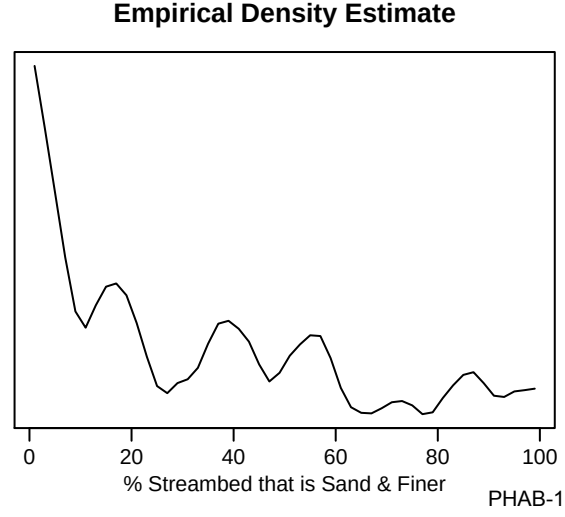
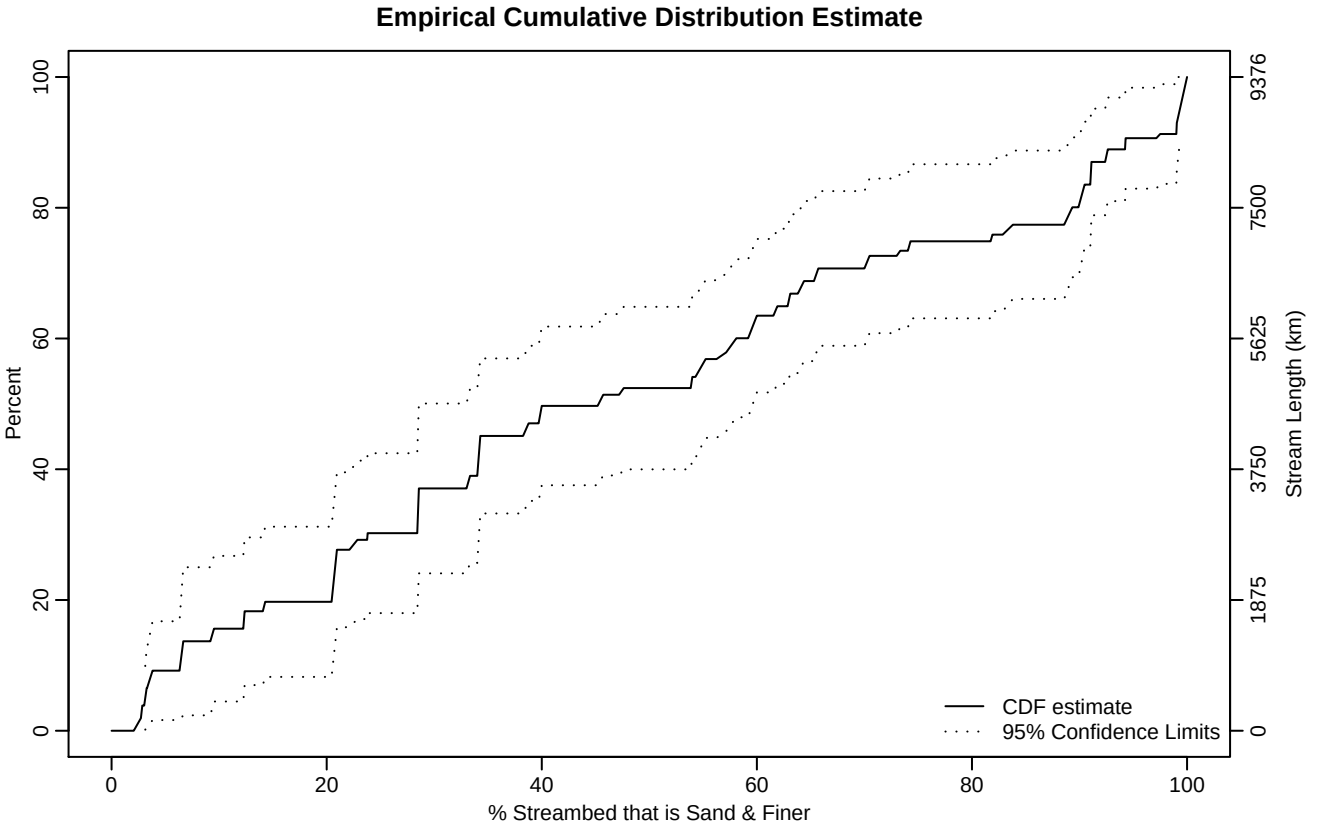


Figure PHAB−154 Indicator: PCT_SAFN Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.13	2.42	3.77
10Pct	6.38	2.76	12.34
25Pct	20.78	6.65	28.56
50Pct	45.29	33.14	59.68
75Pct	81.75	59.93	91.10
90Pct	94.27	90.24	99.71
95Pct	99.32	92.49	100
Mean	48.81	40.59	57.04
Std Dev	29.05	25.98	32.12

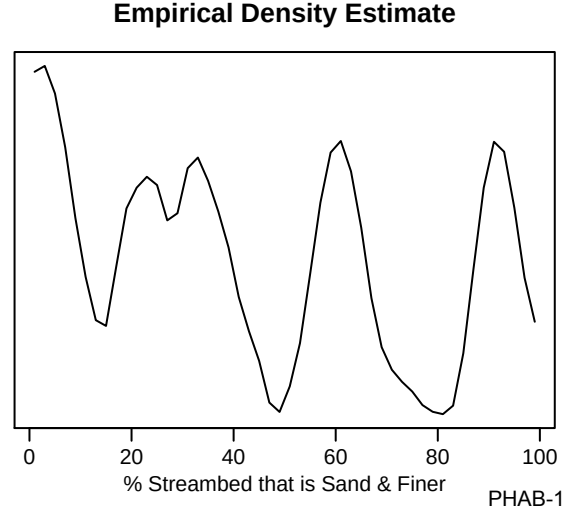
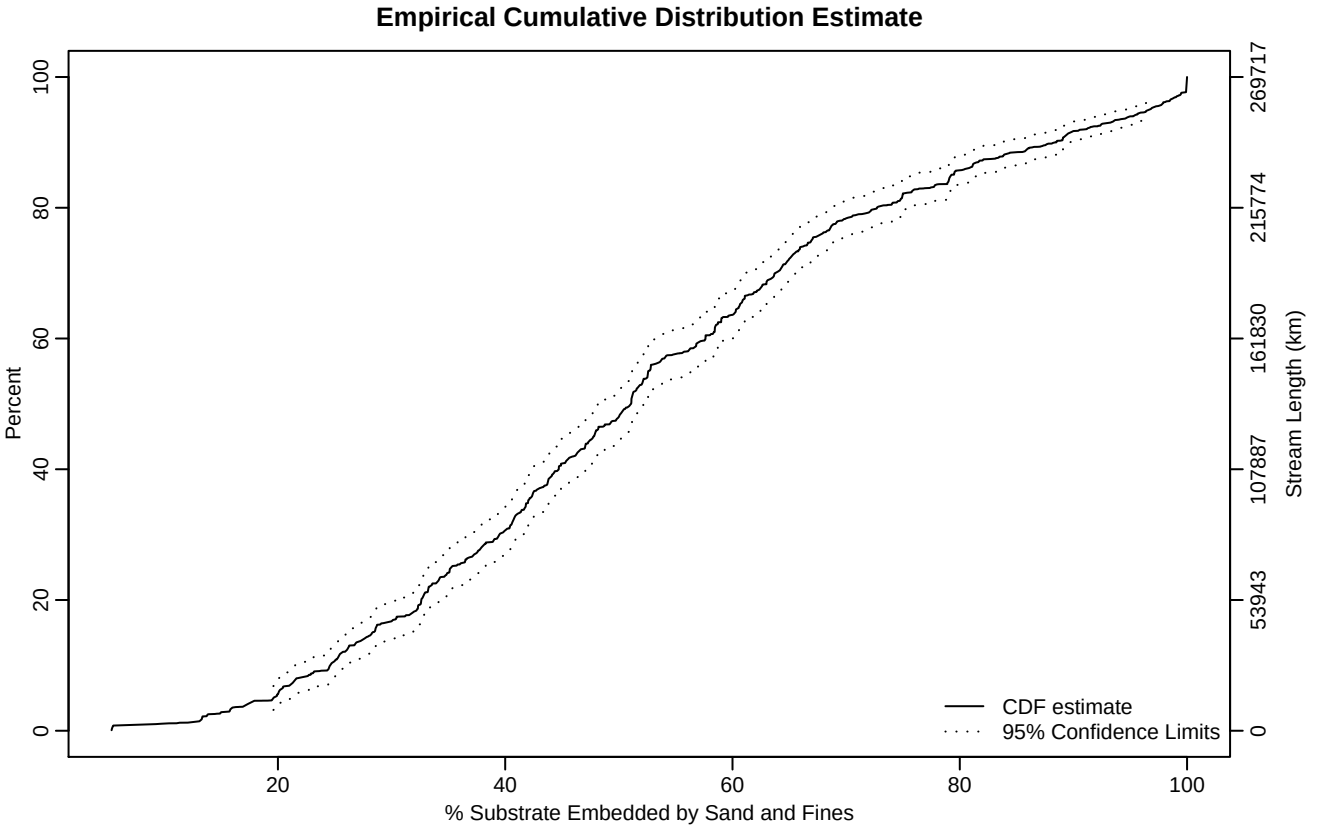


Figure PHAB−155 Indicator: XEMBED Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	19.60	15.81	20.45
10Pct	24.60	21.38	26.12
25Pct	35.26	33.21	38.17
50Pct	51.07	48.11	52.48
75Pct	66.95	64.83	69.74
90Pct	88.46	83.89	90.53
95Pct	96.67	94.67	98.16
Mean	52.91	51.41	54.41
Std Dev	19.38	18.41	20.34

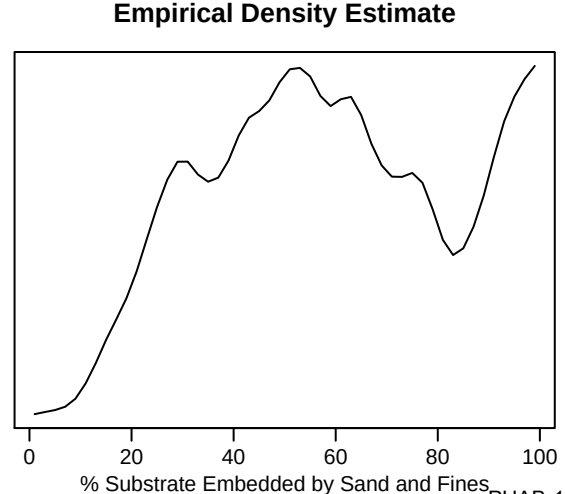
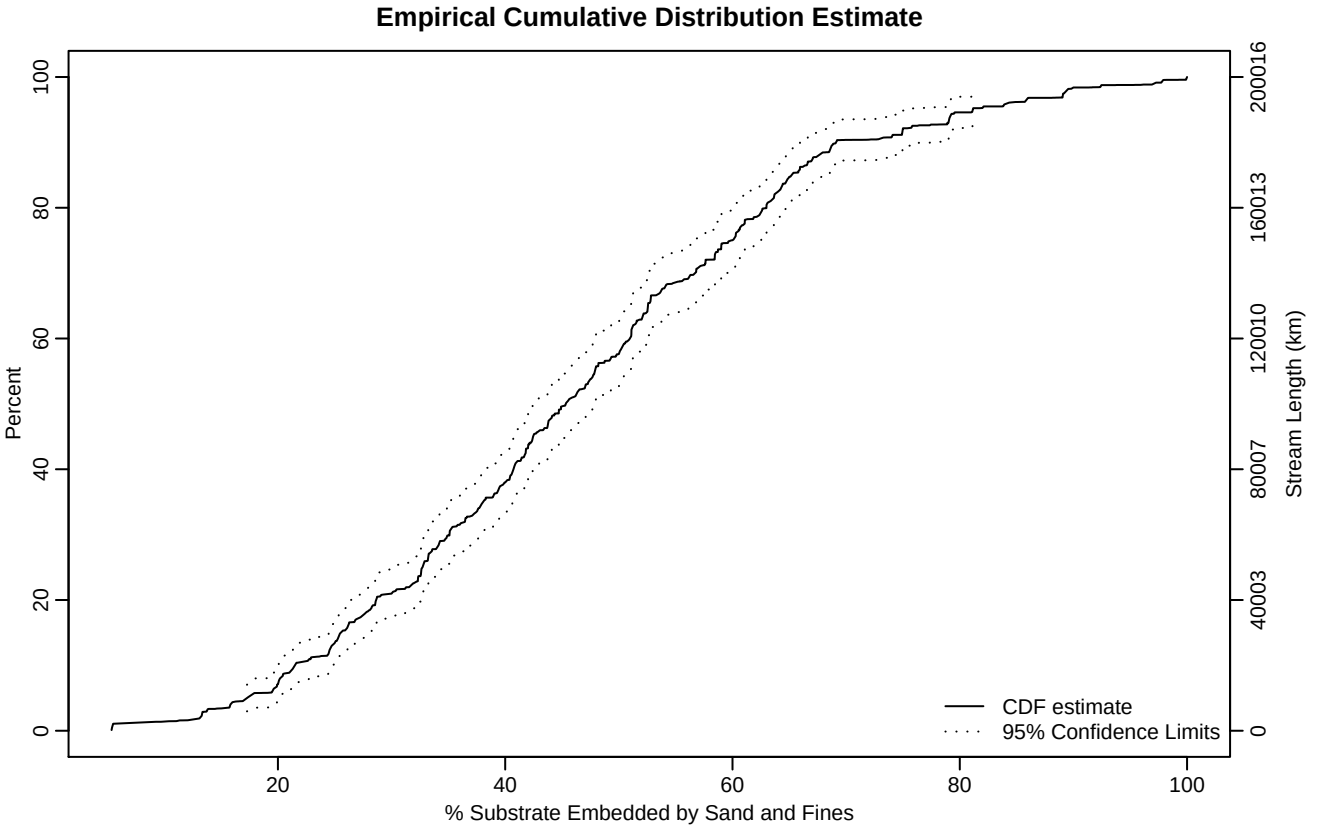


Figure PHAB−156 Indicator: XEMBED Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	17.28	13.75	19.92
10Pct	21.49	19.93	24.72
25Pct	32.72	29.24	34.68
50Pct	45.33	42.45	47.90
75Pct	59.89	56.80	62.62
90Pct	69.11	66.60	79.03
95Pct	81.15	76.42	89.09
Mean	46.55	44.71	48.38
Std Dev	17.95	16.70	19.20

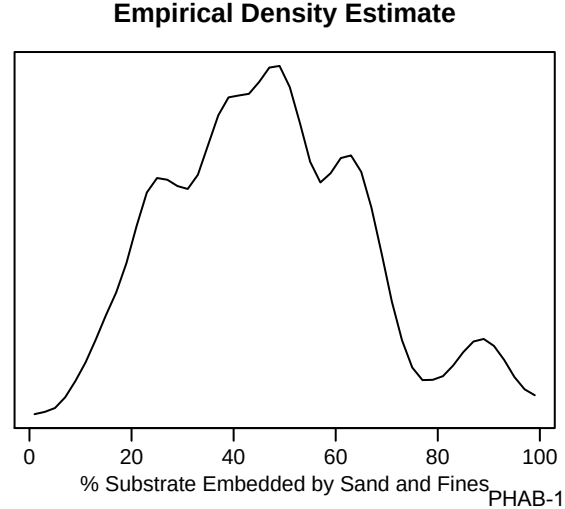
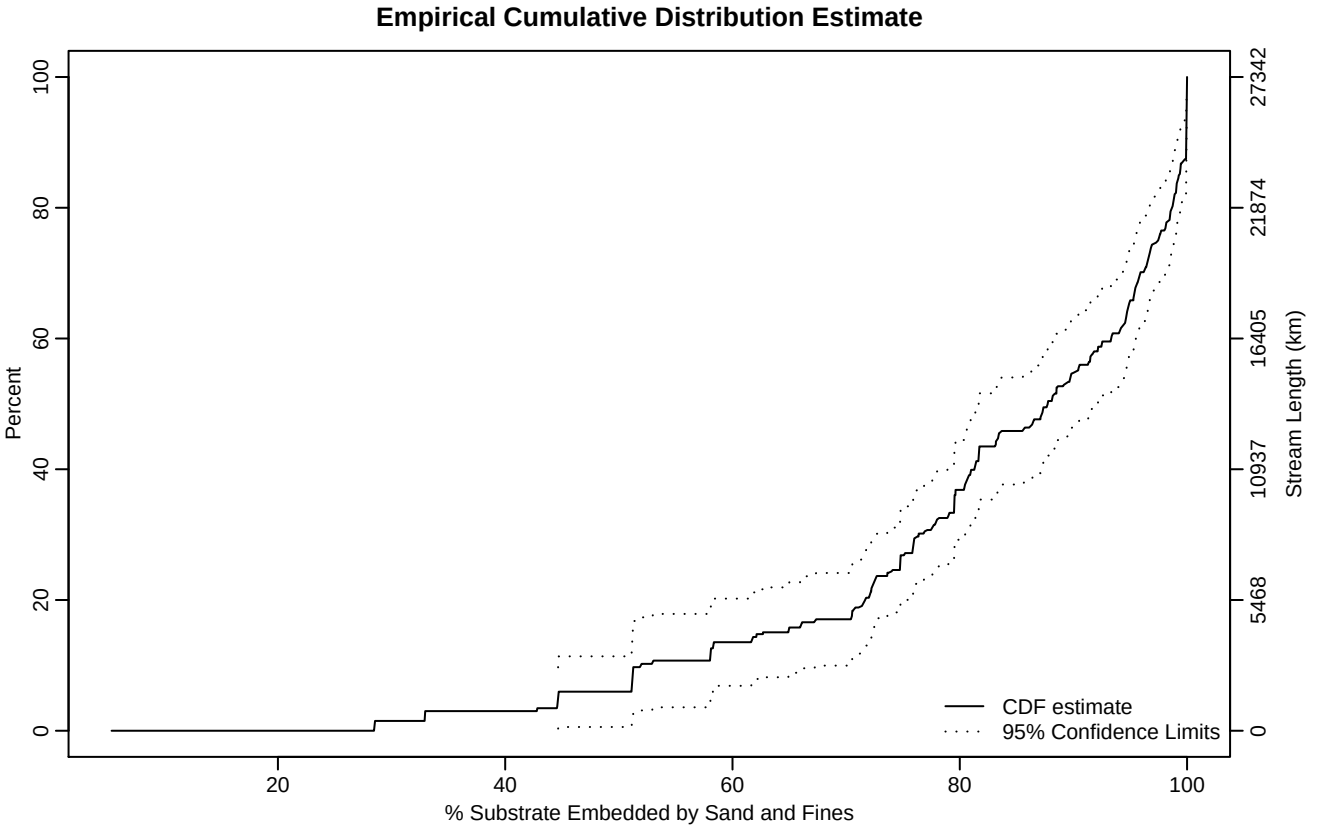


Figure PHAB−157 Indicator: XEMBED Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	44.65	28.53	51.23
10Pct	51.93	32.95	70.48
25Pct	74.74	70.61	77.83
50Pct	87.73	81.64	92.18
75Pct	97.46	95.47	98.96
90Pct	99.93	99.15	99.97
95Pct	99.96	99.92	100
Mean	82.69	79.49	85.89
Std Dev	14.91	13.19	16.62

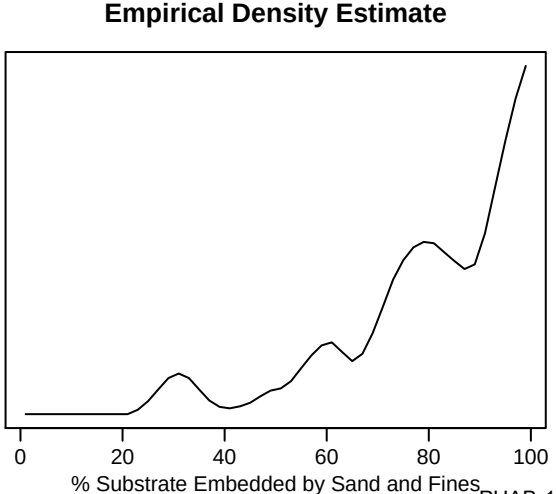
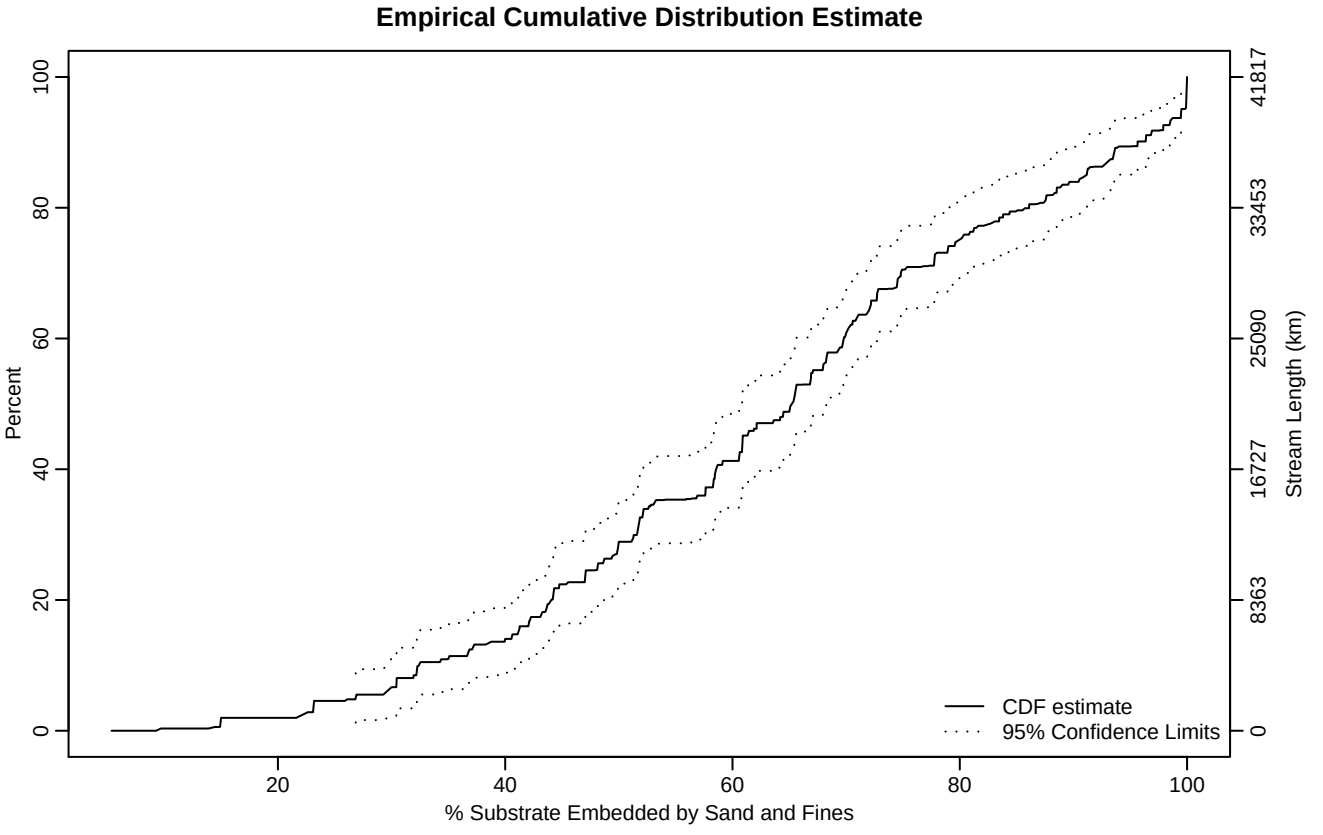


Figure PHAB−158 Indicator: XEMBED Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	26.84	14.92	32.23
10Pct	32.40	25.99	41.20
25Pct	48.13	43.55	51.77
50Pct	65.23	60.63	68.31
75Pct	79.87	74.54	87.51
90Pct	95.65	91.23	99.46
95Pct	99.49	97.90	99.96
Mean	63.96	60.88	67.05
Std Dev	19.48	17.83	21.14

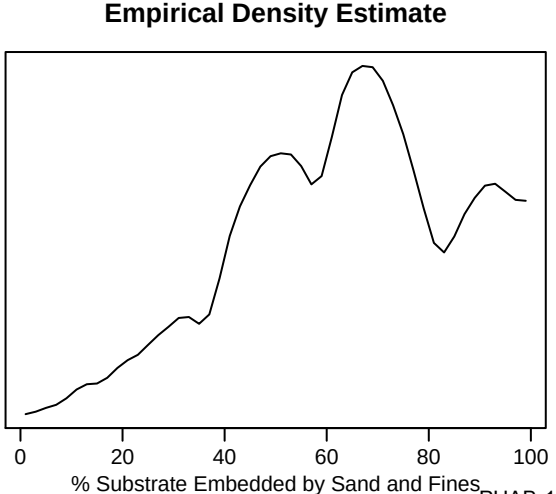
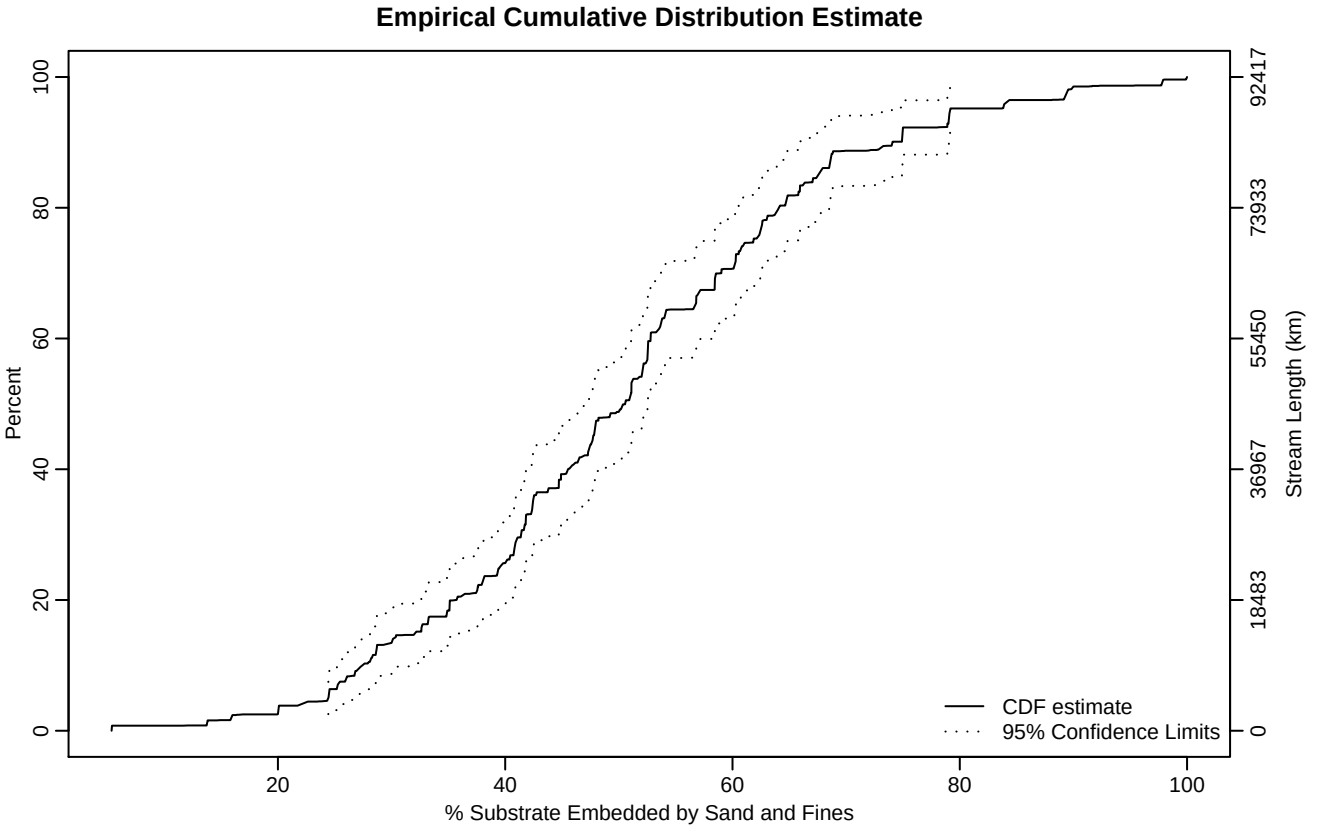


Figure PHAB−159 Indicator: XEMBED Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	24.43	15.98	25.95
10Pct	27.43	24.51	30.20
25Pct	39.52	35.10	41.69
50Pct	50.55	46.88	52.54
75Pct	61.85	58.43	65.82
90Pct	74.08	67.41	83.83
95Pct	79.16	74.97	89.96
Mean	50.42	47.86	52.99
Std Dev	17.09	15.30	18.88

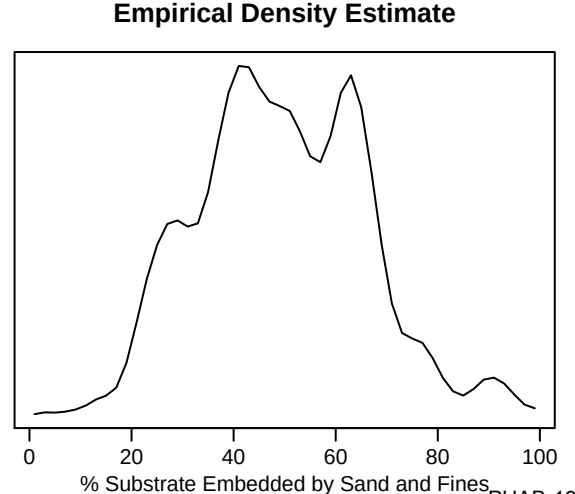
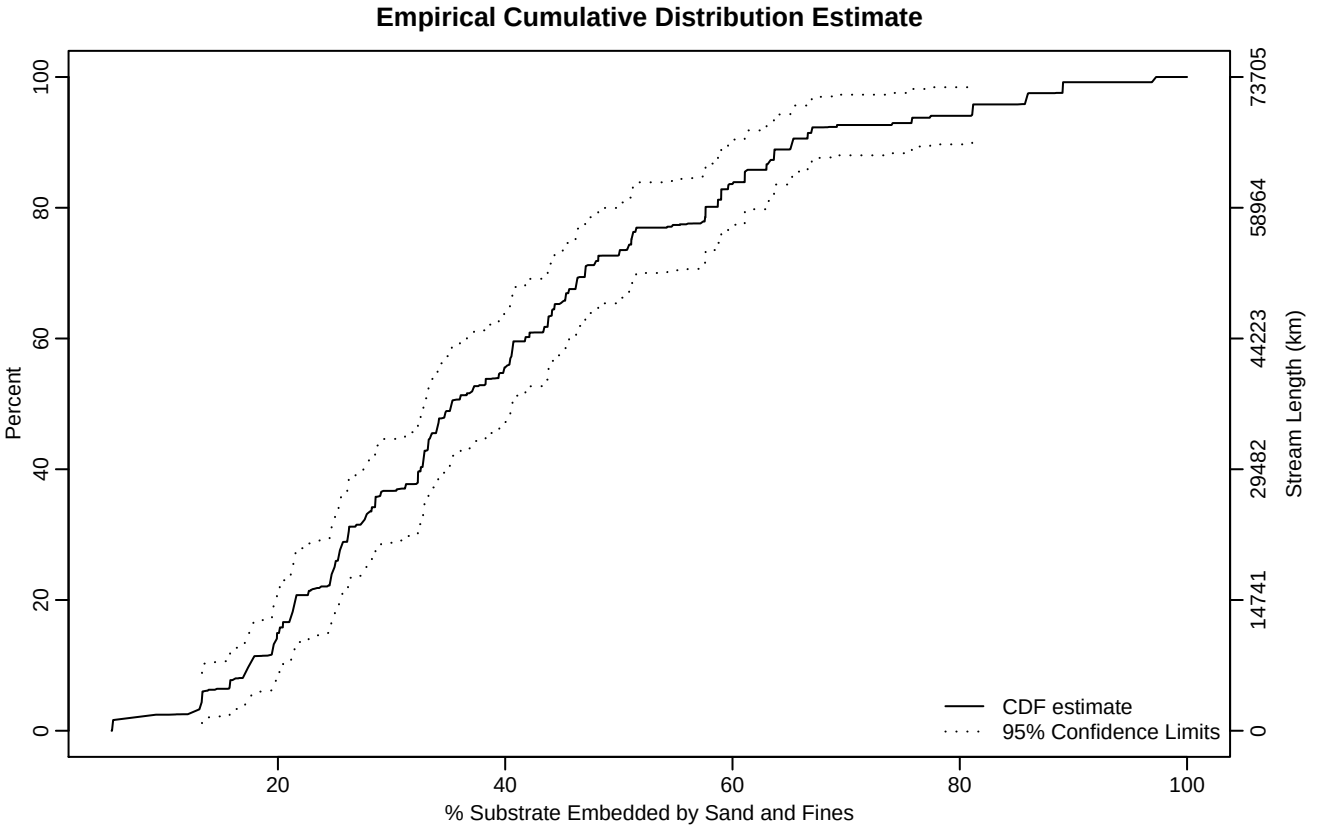


Figure PHAB−160 Indicator: XEMBED Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	13.32	5.48	17.07
10Pct	17.48	13.32	20.10
25Pct	24.98	21.20	27.64
50Pct	35.29	32.82	40.64
75Pct	51.10	46.20	59.01
90Pct	65.27	61.08	81.16
95Pct	81.14	65.36	97.02
Mean	39.82	36.42	43.21
Std Dev	19.11	16.78	21.44

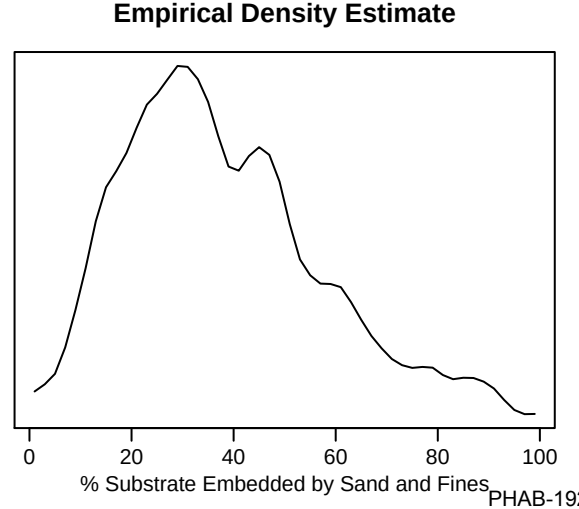
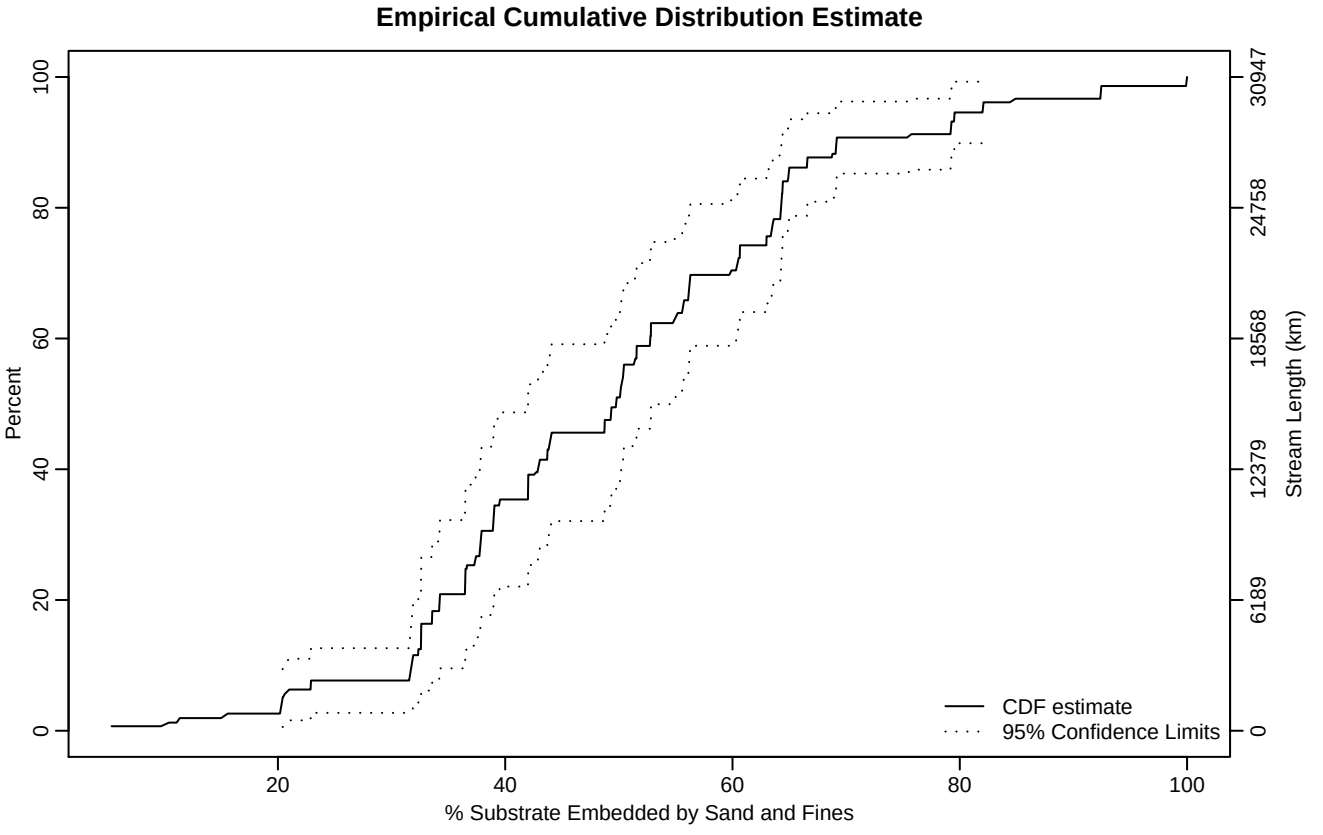


Figure PHAB−161 Indicator: XEMBED Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	20.41	20.22	22.89
10Pct	31.76	20.41	32.60
25Pct	36.62	32.58	42.02
50Pct	49.76	42.01	54.99
75Pct	62.99	55.63	64.95
90Pct	69.15	64.41	92.36
95Pct	82.02	69.16	99.98
Mean	49.64	45.56	53.72
Std Dev	17.18	14.66	19.70

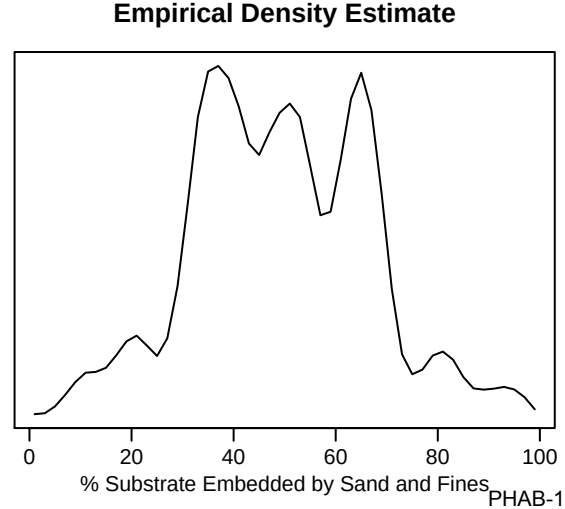
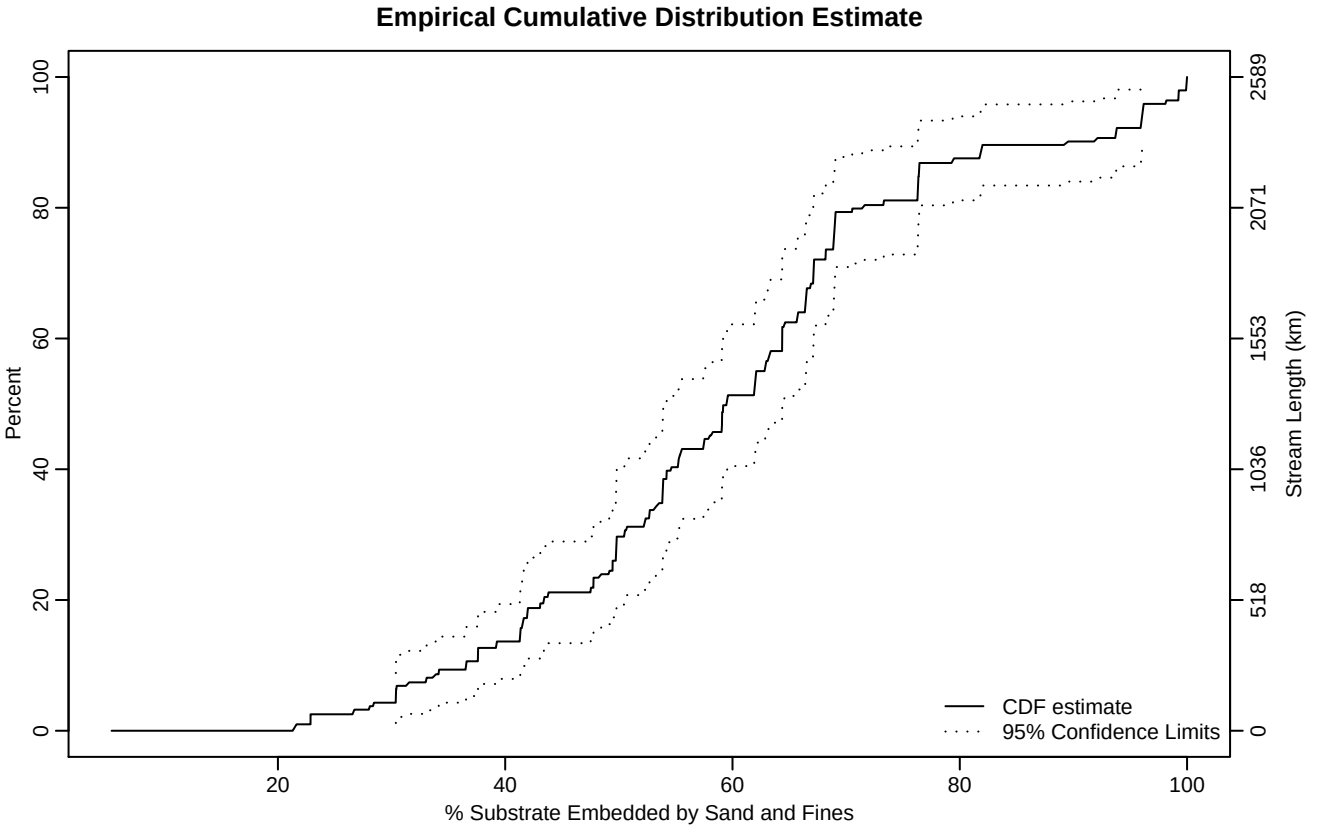


Figure PHAB−162 Indicator: XEMBED Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	30.38	22.87	33.78
10Pct	36.56	30.37	41.34
25Pct	49.45	41.55	52.71
50Pct	59.47	54.19	64.38
75Pct	68.91	66.40	76.41
90Pct	89.44	76.34	98.15
95Pct	96.12	81.93	100
Mean	60.07	56.88	63.25
Std Dev	17.48	14.93	20.03

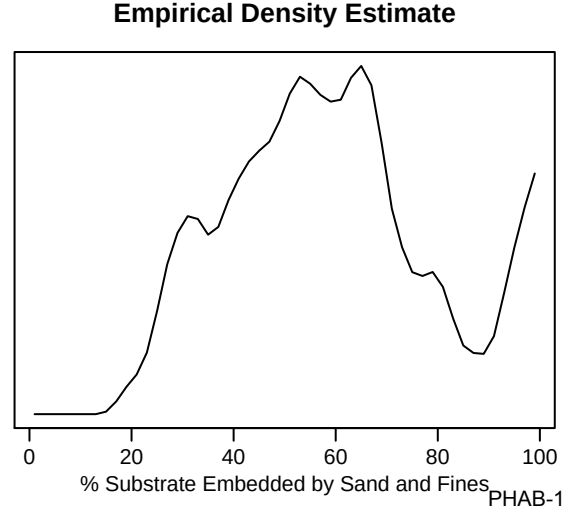
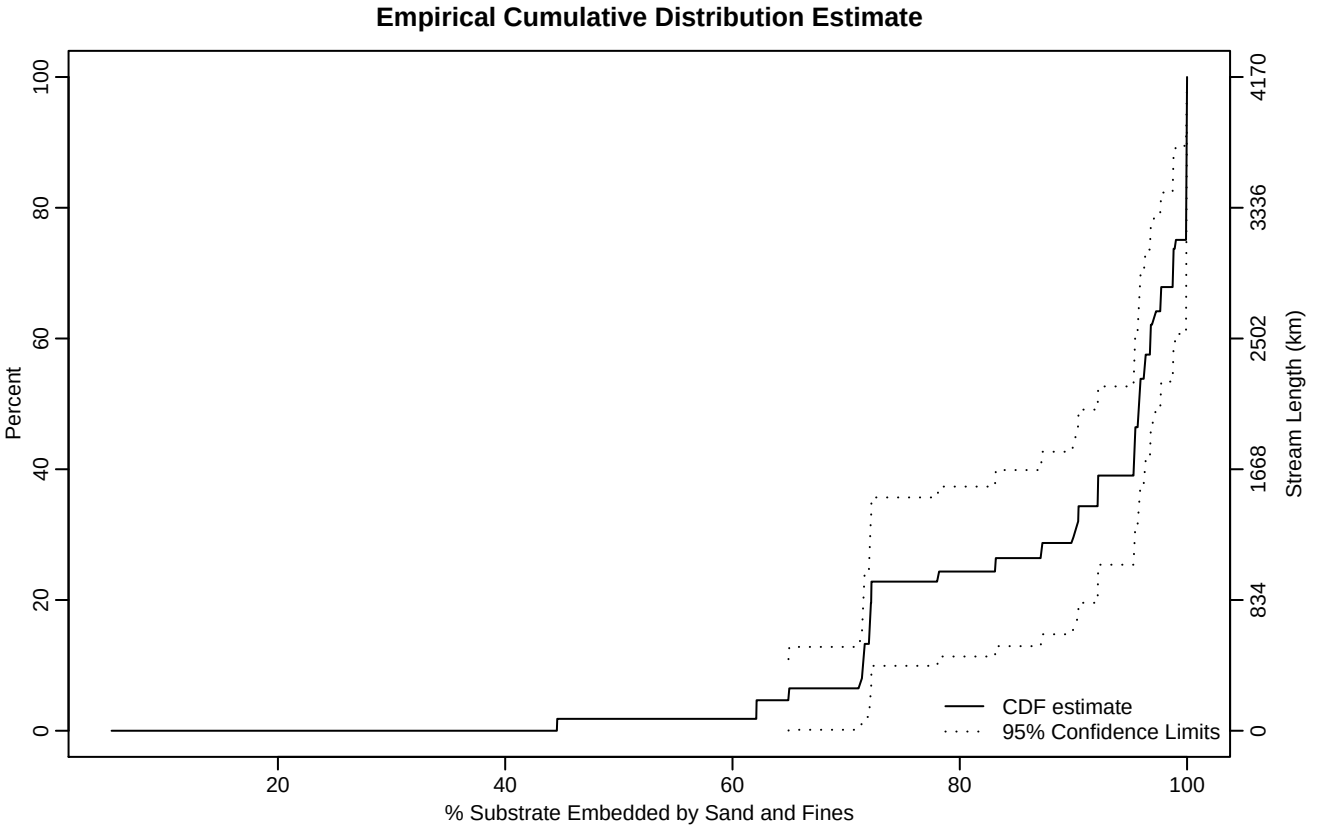


Figure PHAB−163 Indicator: XEMBED Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	64.93	5.36	71.52
10Pct	71.48	62.11	72.10
25Pct	83.12	71.55	92.18
50Pct	95.77	92.13	97.66
75Pct	99.01	96.79	99.96
90Pct	99.96	99.91	100
95Pct	99.98	99.93	100
Mean	89.67	85.97	93.37
Std Dev	11.08	8.22	13.95

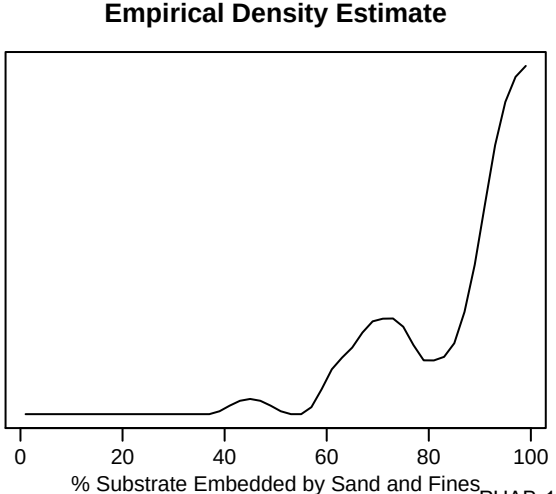
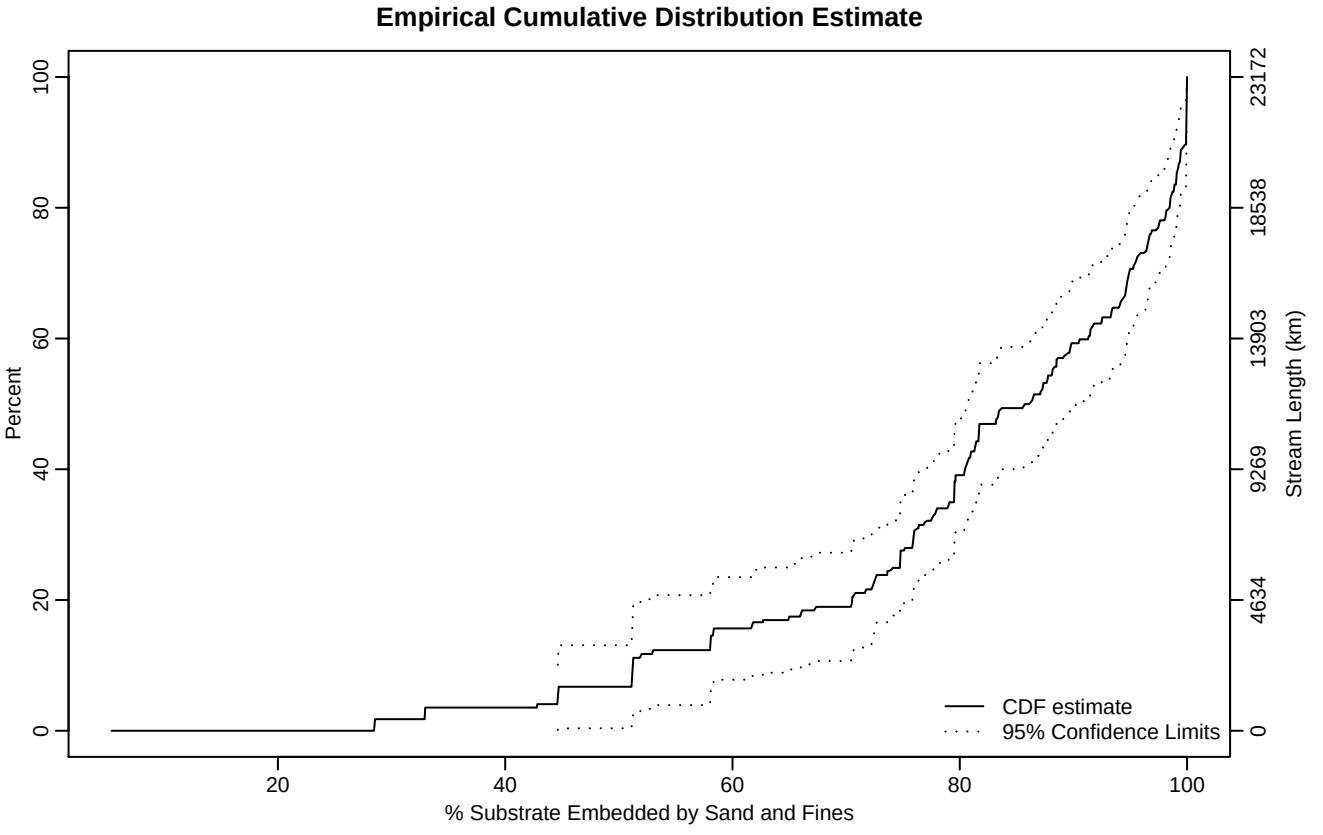


Figure PHAB−164 Indicator: XEMBED Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	44.63	28.49	51.21
10Pct	51.23	42.79	61.76
25Pct	74.73	65.97	77.54
50Pct	86.12	80.51	90.53
75Pct	96.61	94.38	99.03
90Pct	99.91	98.90	99.97
95Pct	99.96	99.44	100
Mean	81.43	77.71	85.15
Std Dev	15.45	13.48	17.42

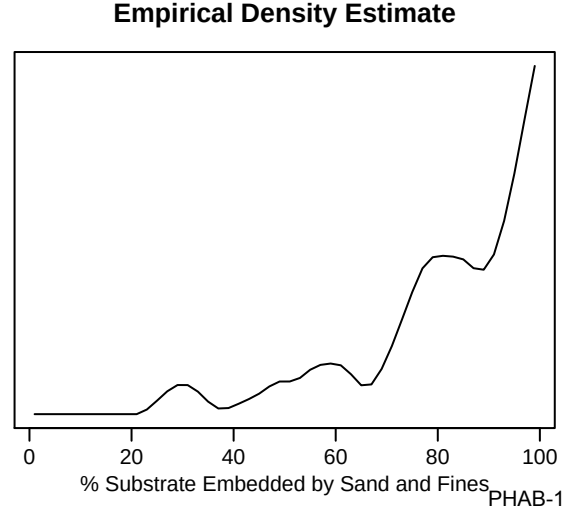
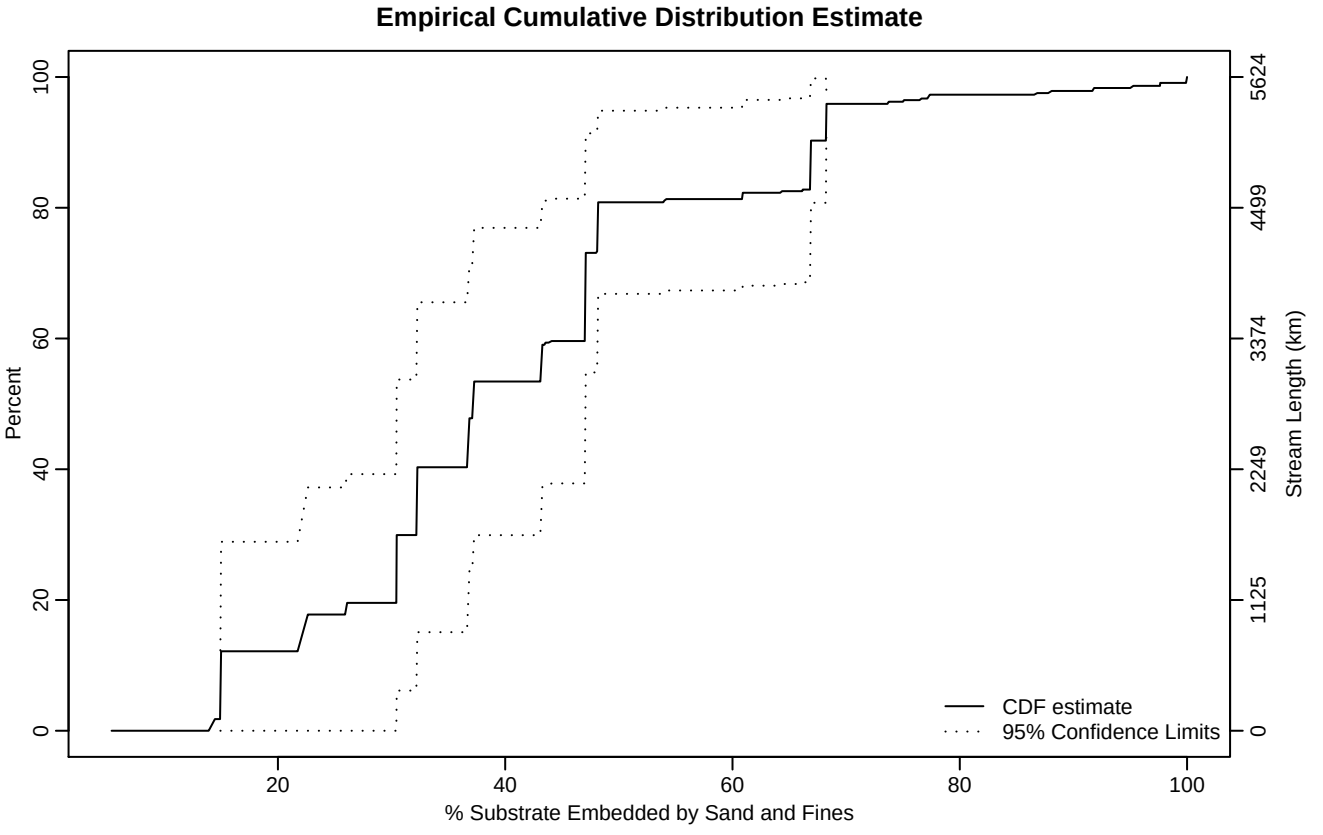


Figure PHAB−165 Indicator: XEMBED Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.94	14.42	14.97
10Pct	14.98	14.95	22.04
25Pct	30.44	14.94	36.77
50Pct	37.16	30.44	48.09
75Pct	48.11	43.20	68.25
90Pct	66.91	48.12	100
95Pct	68.26	66.85	100
Mean	41.33	34.55	48.12
Std Dev	18.24	14.37	22.11

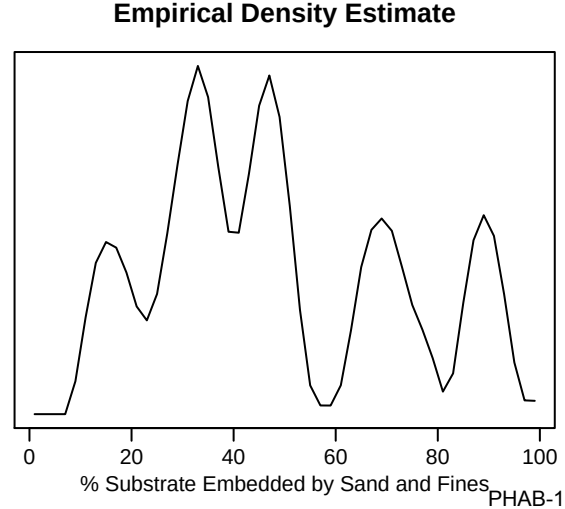
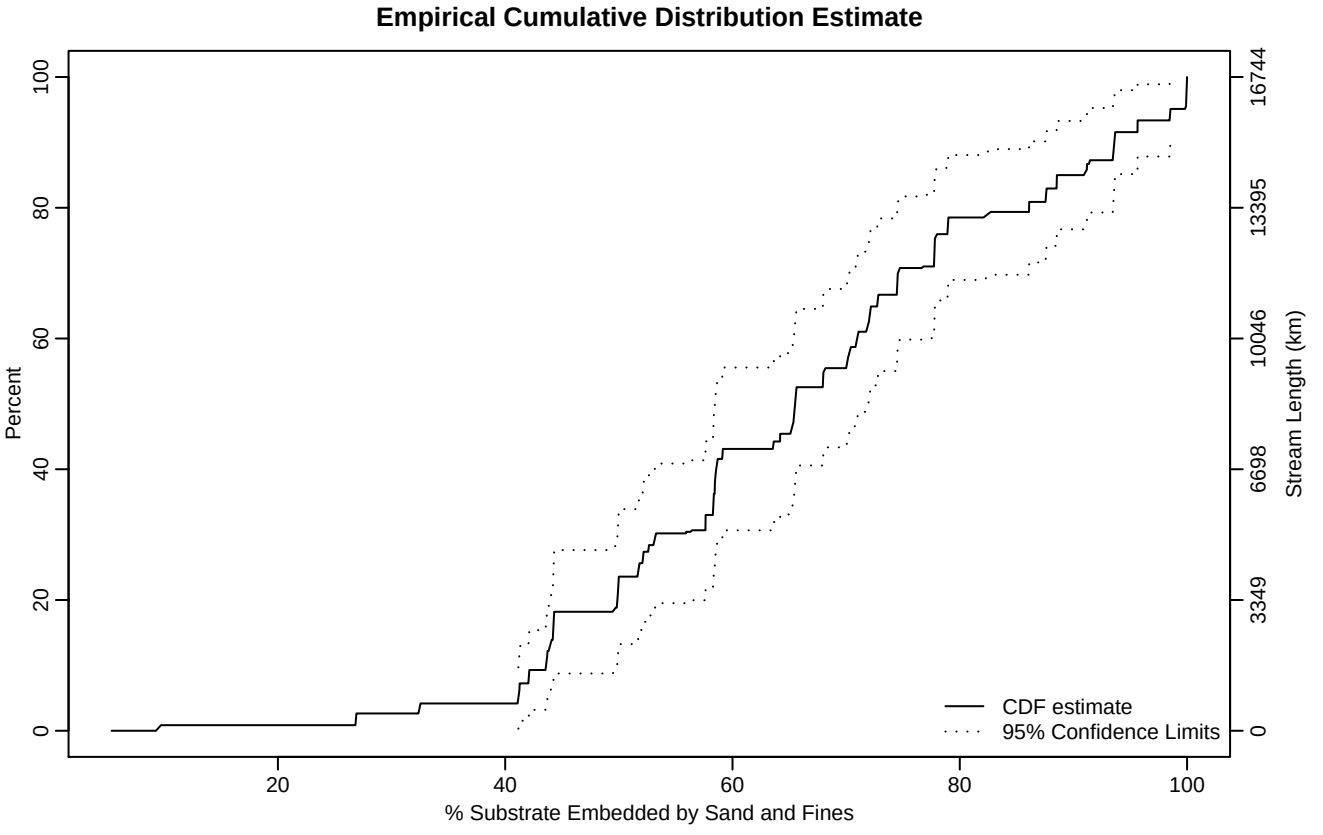


Figure PHAB−166 Indicator: XEMBED Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	41.16	26.82	42.12
10Pct	43.60	32.51	44.25
25Pct	51.76	44.20	58.34
50Pct	65.51	58.45	71.95
75Pct	77.81	72.09	91.19
90Pct	93.60	87.59	99.96
95Pct	98.54	93.57	100
Mean	66.13	61.71	70.54
Std Dev	18.73	16.28	21.18

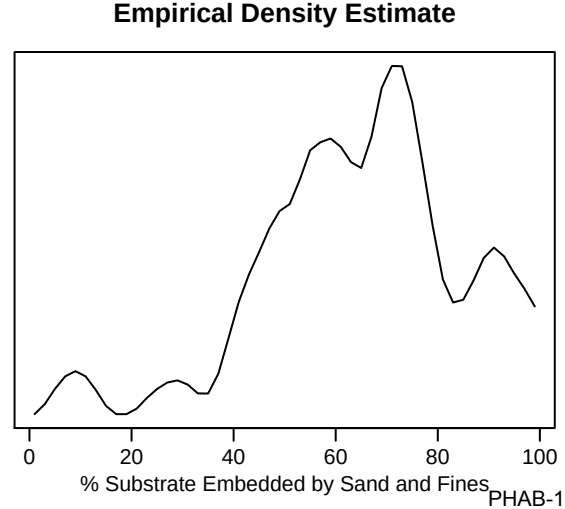
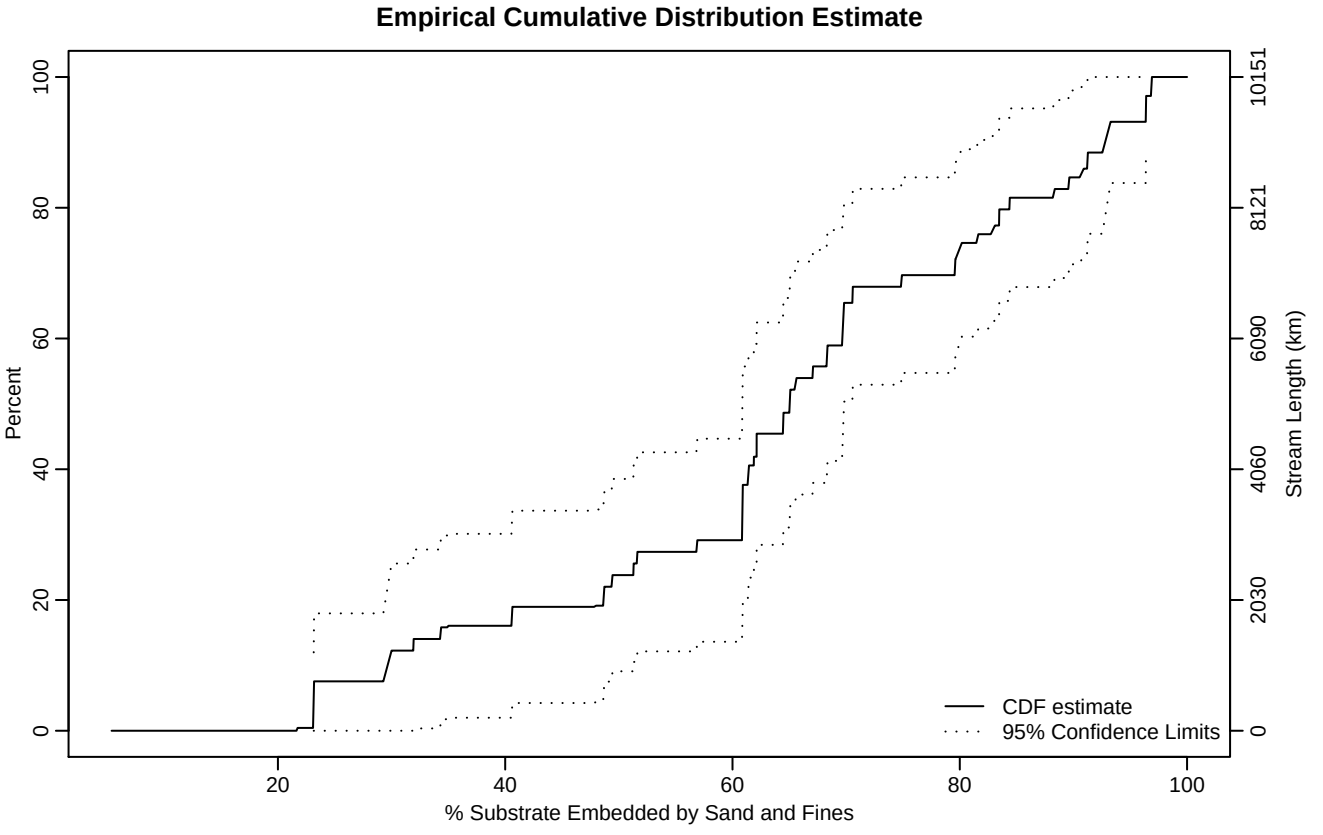


Figure PHAB−167 Indicator: XEMBED Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	23.15	23.14	23.16
10Pct	29.65	5.36	49.42
25Pct	51.29	29.46	61.88
50Pct	65.03	60.86	74.83
75Pct	81.51	69.68	92.70
90Pct	92.79	83.46	96.91
95Pct	96.38	90.90	96.91
Mean	64.29	55.90	72.68
Std Dev	19.74	15.53	23.96

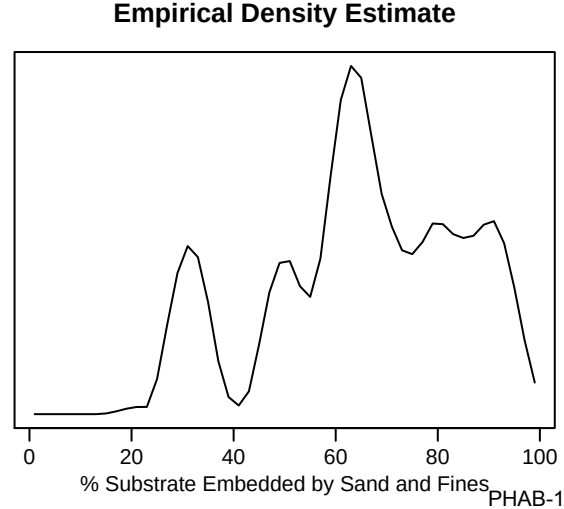
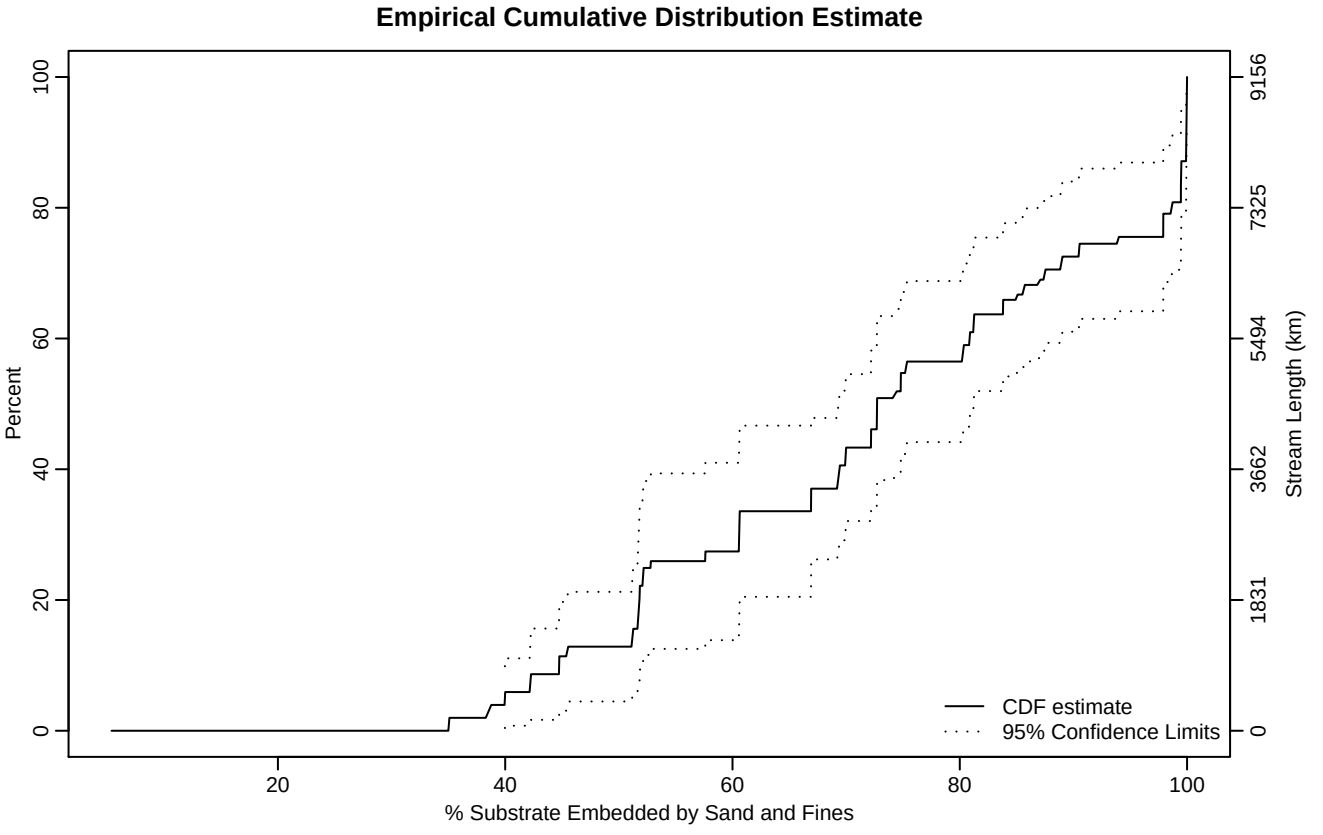


Figure PHAB−168 Indicator: XEMBED Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	39.97	35.02	44.74
10Pct	44.74	38.54	51.69
25Pct	52.79	45.39	69.30
50Pct	72.72	69.26	81.22
75Pct	93.91	81.26	99.49
90Pct	99.93	99.46	99.99
95Pct	99.96	99.50	100
Mean	73.60	68.38	78.81
Std Dev	18.20	16.31	20.09

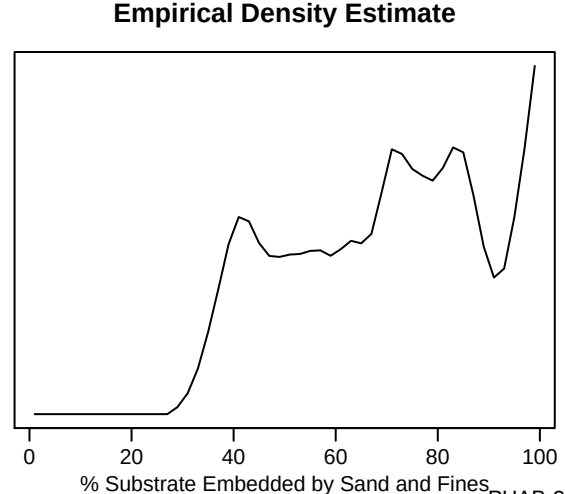
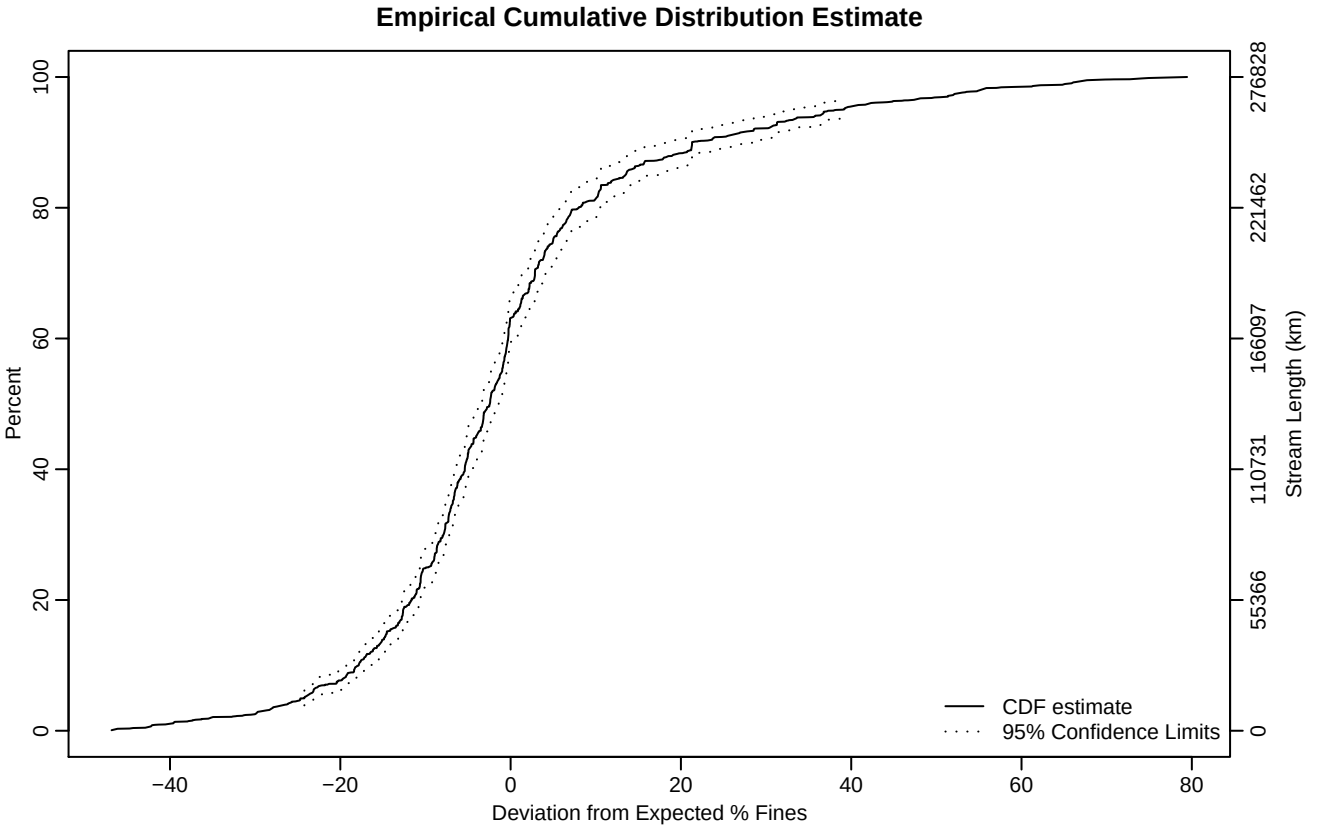


Figure PHAB−169 Indicator: DPct_FN Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−24.22	−26.84	−23.15
10Pct	−17.84	−19.33	−16.83
25Pct	−9.67	−10.68	−8.66
50Pct	−2.44	−3.50	−1.40
75Pct	5	3.32	6.75
90Pct	21.31	19.08	28.55
95Pct	38.92	33.46	46
Mean	−0.04	−1.20	1.13
Std Dev	16.93	15.60	18.26

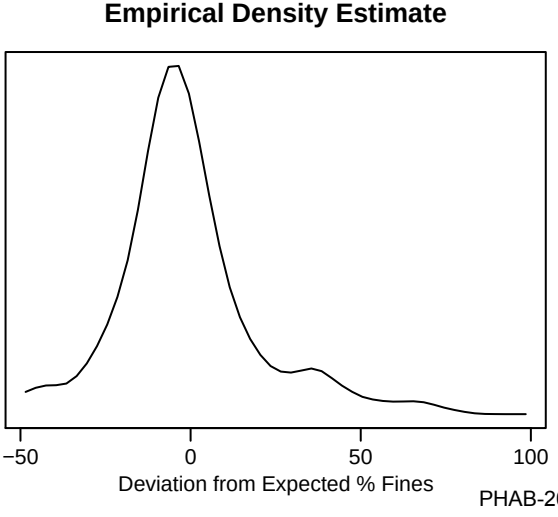
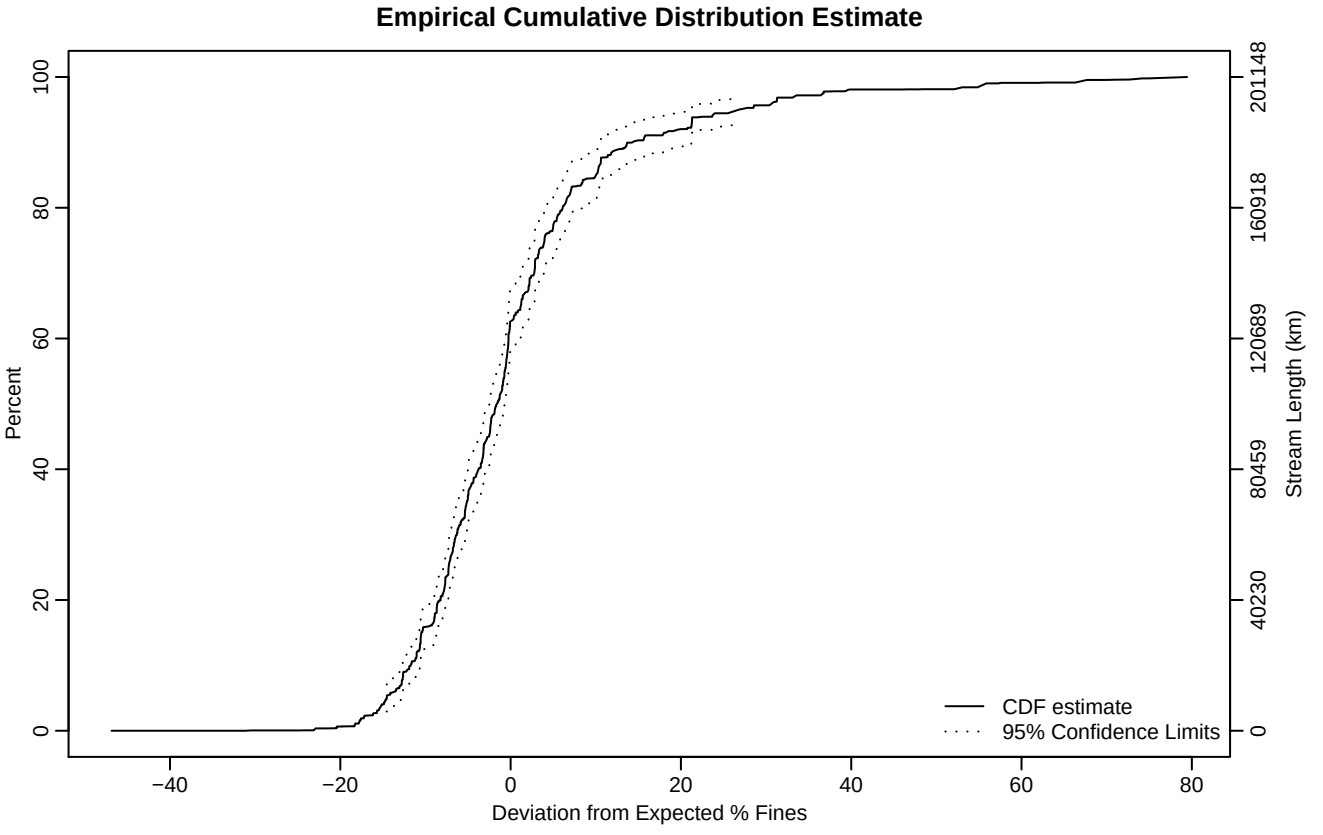


Figure PHAB−170 Indicator: DPct_FN Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−14.54	−15.69	−12.80
10Pct	−11.74	−12.78	−10.67
25Pct	−7.28	−7.94	−6.58
50Pct	−1.60	−2.50	−0.70
75Pct	3.98	2.82	6.01
90Pct	14.28	10.60	21.28
95Pct	26.79	21.28	33.37
Mean	0.64	−0.56	1.84
Std Dev	12.61	10.82	14.40

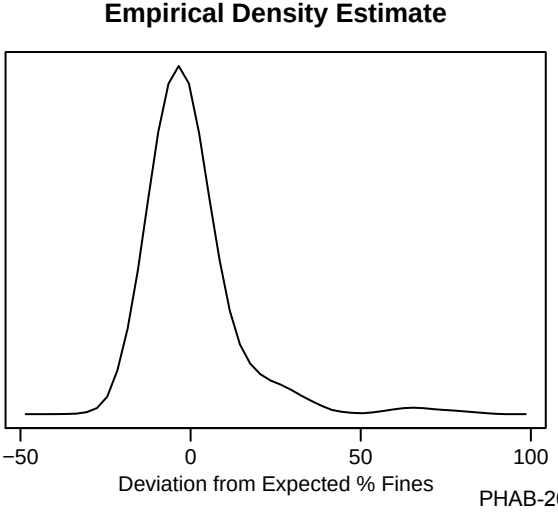
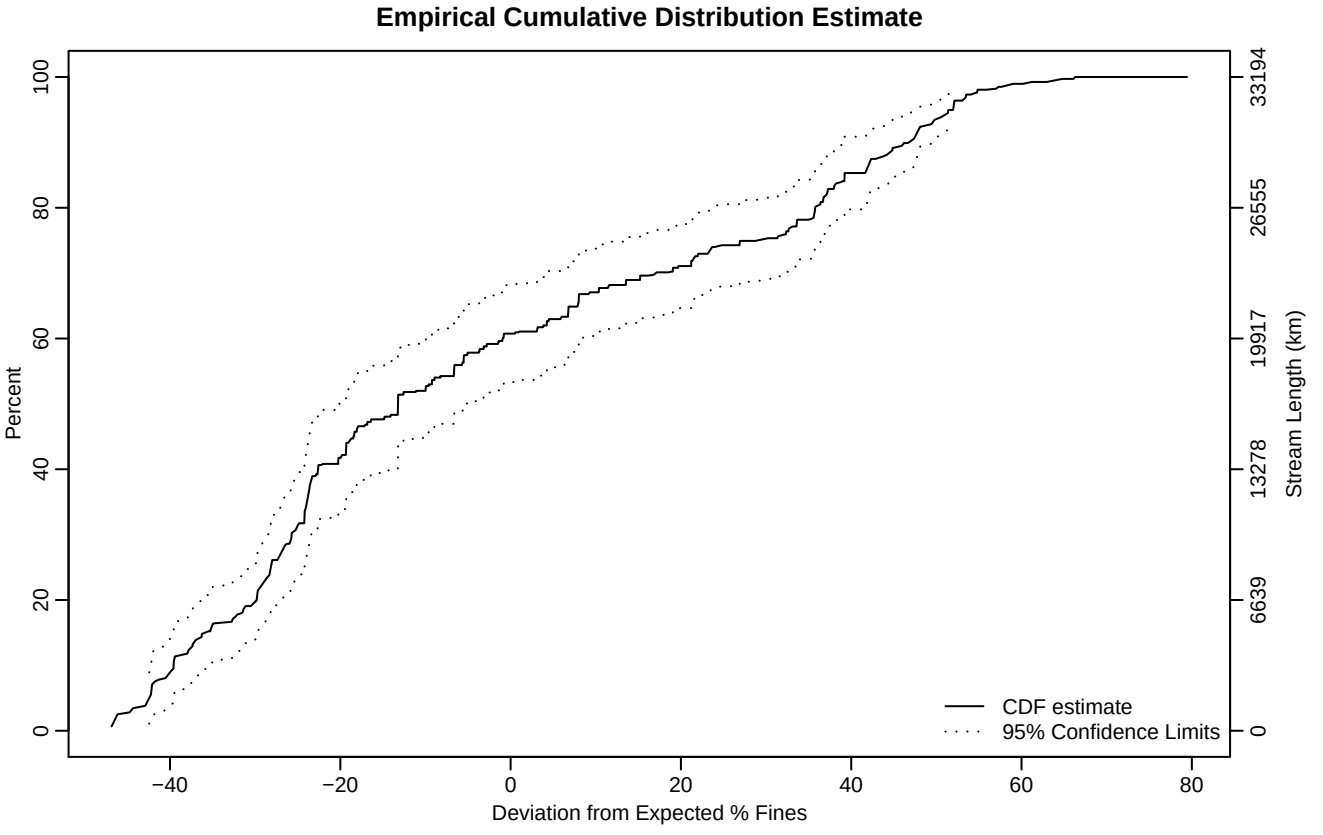


Figure PHAB−171 Indicator: DPct_FN Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−42.44	−46.64	−40.11
10Pct	−39.58	−42.52	−35.53
25Pct	−28.16	−31.42	−24.89
50Pct	−13.23	−19.91	−3.65
75Pct	28.99	13.56	36.71
90Pct	46.76	41.74	51.26
95Pct	51.96	48.50	54.44
Mean	−2.57	−7.34	2.21
Std Dev	30.26	27.34	33.18

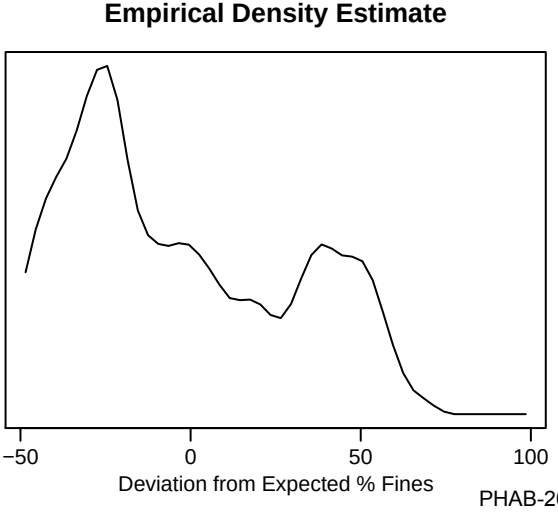
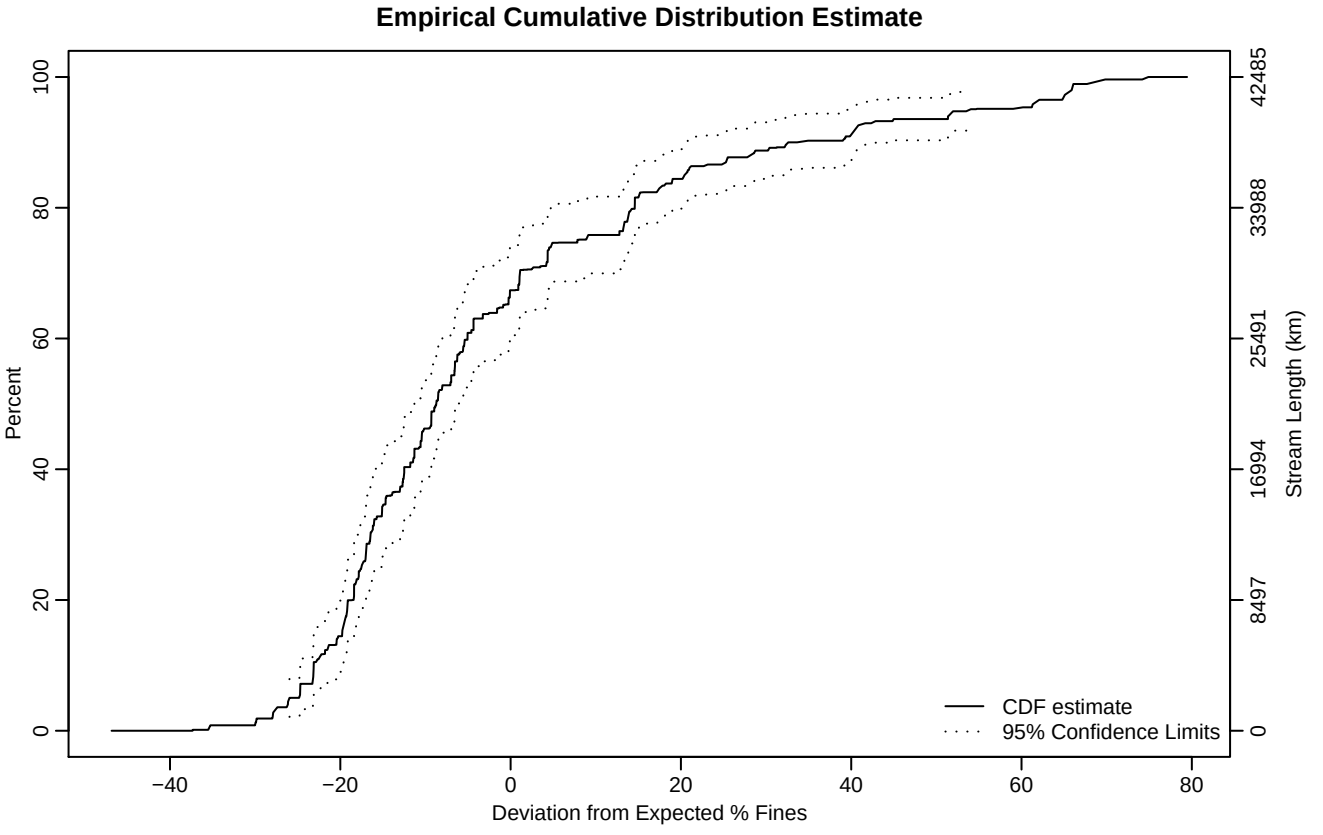


Figure PHAB−172 Indicator: DPct_FN Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−25.97	−27.92	−23.23
10Pct	−23.13	−24.78	−19.78
25Pct	−17.52	−19.23	−16.03
50Pct	−8.73	−11.29	−6.26
75Pct	7.85	1.04	14.59
90Pct	32.60	20.81	51.61
95Pct	53.92	40.48	65.89
Mean	−1.26	−4.44	1.93
Std Dev	21.03	18.55	23.51

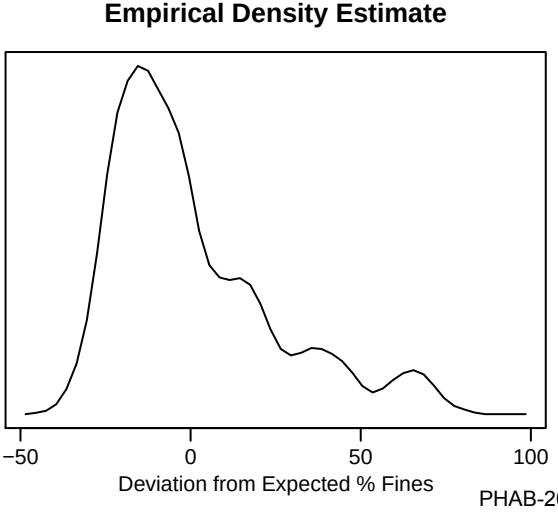
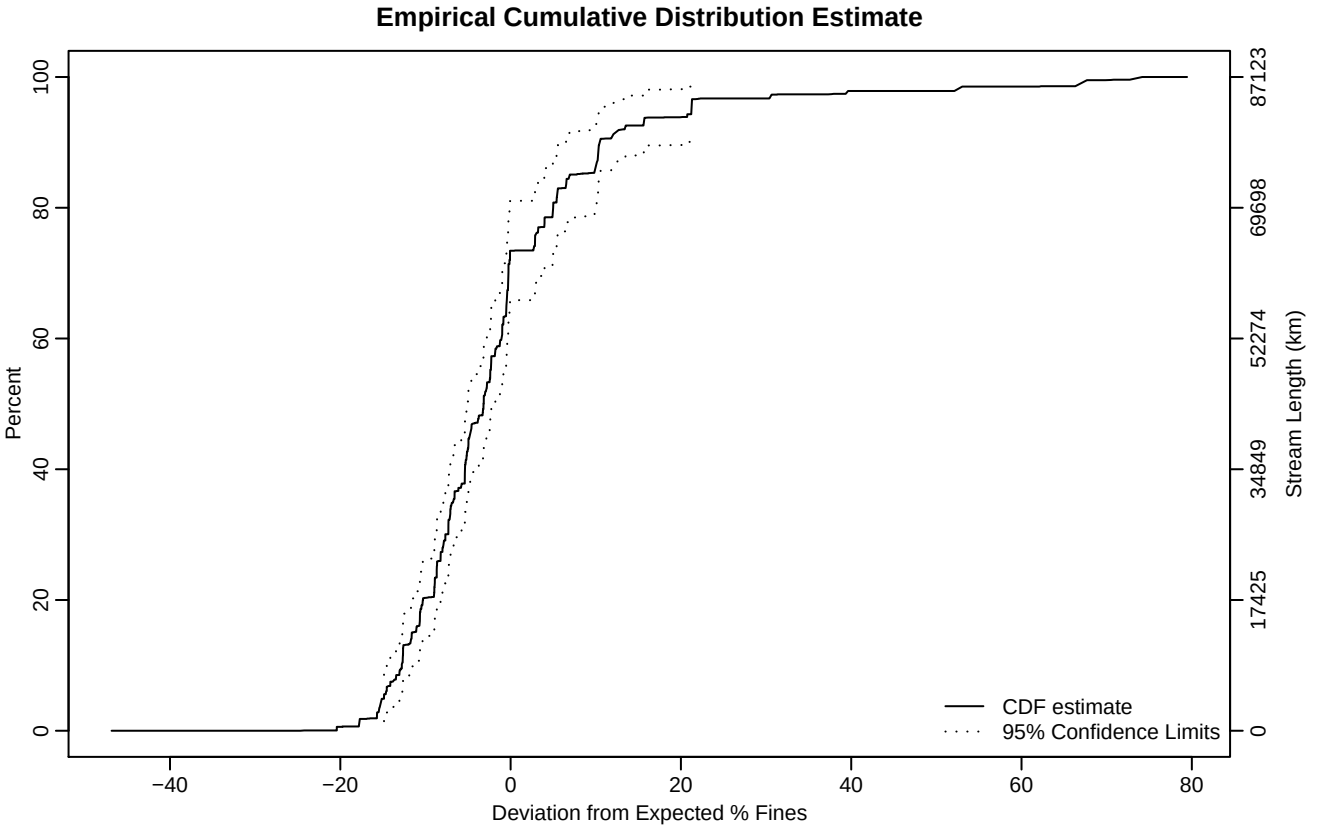


Figure PHAB−173 Indicator: DPct_FN Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−14.87	−17.75	−13.07
10Pct	−12.78	−14.64	−11.63
25Pct	−8.66	−10.49	−7.31
50Pct	−3.18	−5.14	−1.83
75Pct	2.87	−0.39	5.52
90Pct	10.46	6.90	21.25
95Pct	21.24	11.84	67.41
Mean	−0.98	−2.93	0.98
Std Dev	12.88	9.65	16.11

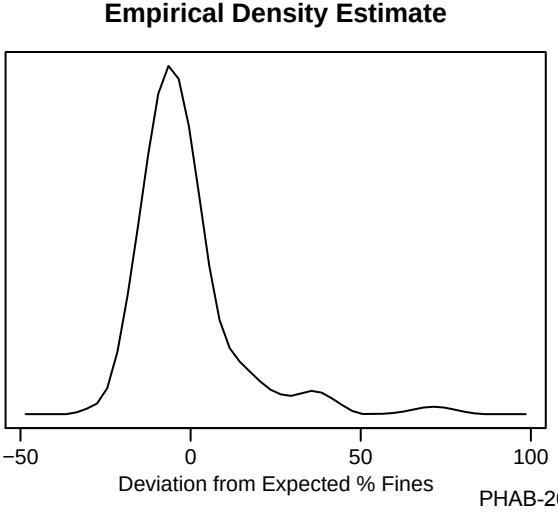
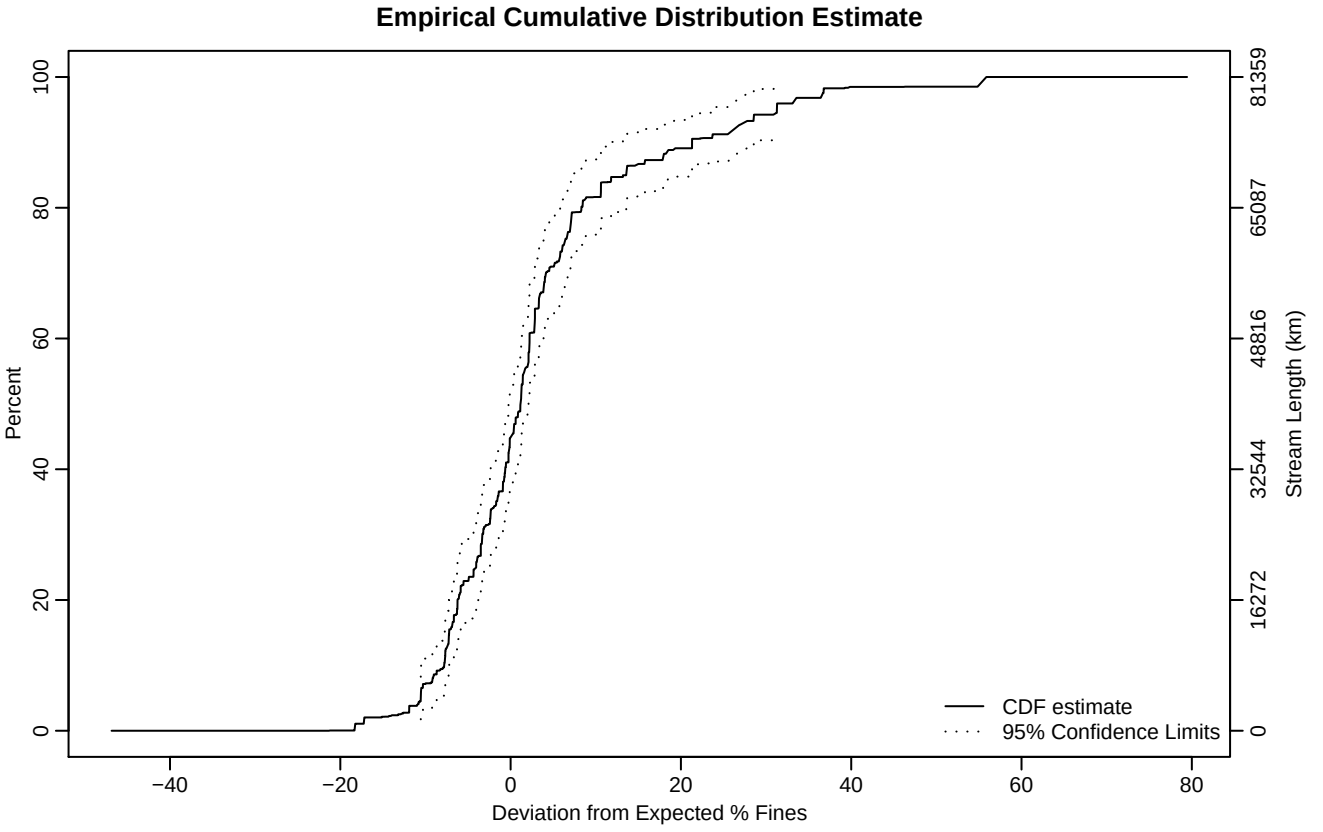


Figure PHAB−174 Indicator: DPct_FN Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−10.55	−17.18	−9.15
10Pct	−7.80	−10.53	−7.26
25Pct	−4.05	−6.29	−2.64
50Pct	1.16	−0.25	2.11
75Pct	6.40	3.90	10.59
90Pct	21.31	13.62	31.05
95Pct	31.27	23.71	55.10
Mean	3.42	1.56	5.28
Std Dev	11.88	9.64	14.12

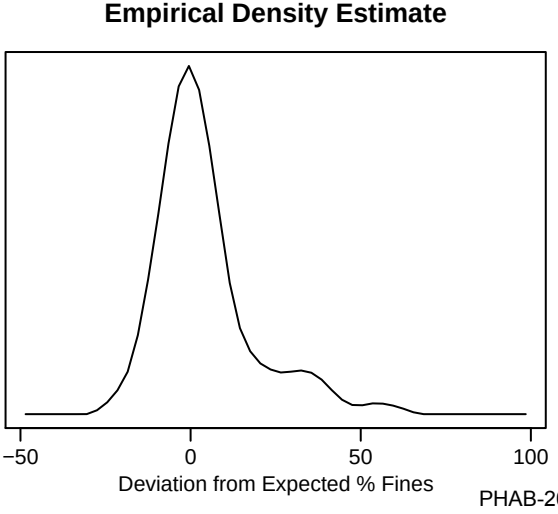
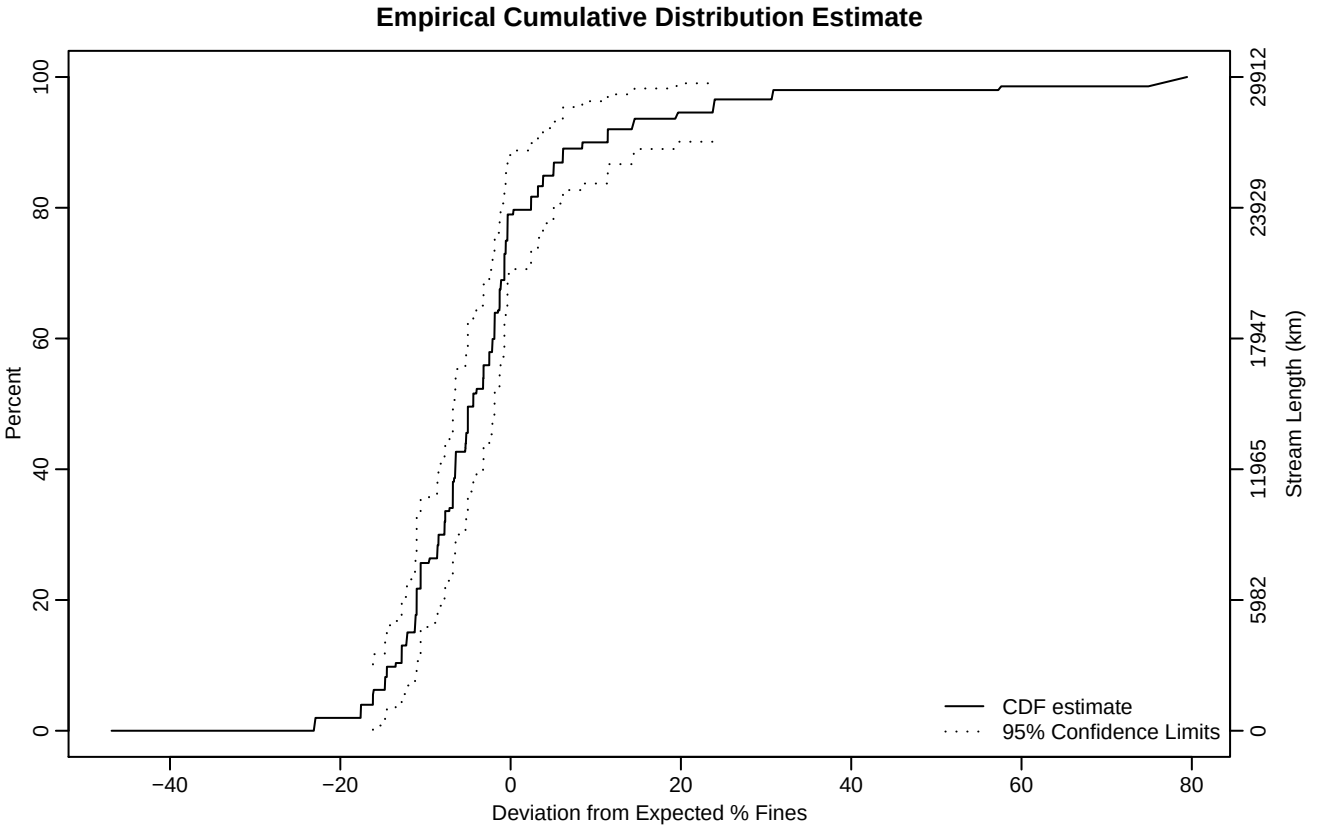


Figure PHAB−175 Indicator: DPct_FN Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−16.17	−23.09	−14.52
10Pct	−13.50	−16.17	−12.12
25Pct	−10.56	−12.15	−6.79
50Pct	−4.39	−6.78	−1.87
75Pct	−0.38	−1.32	5.04
90Pct	8.44	3.79	23.97
95Pct	23.78	11.40	78.25
Mean	−2.12	−4.72	0.49
Std Dev	10.29	7.81	12.77

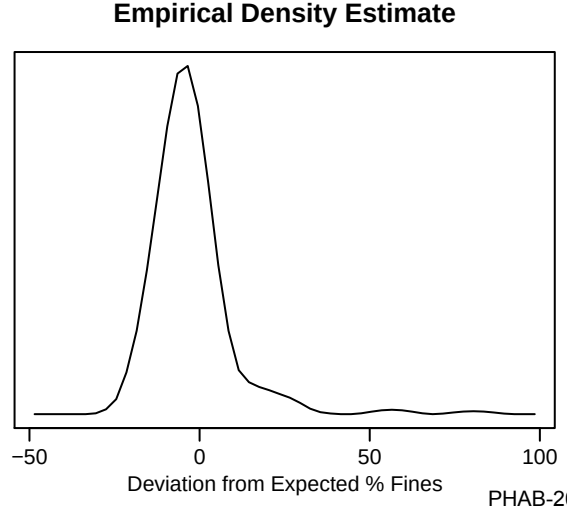
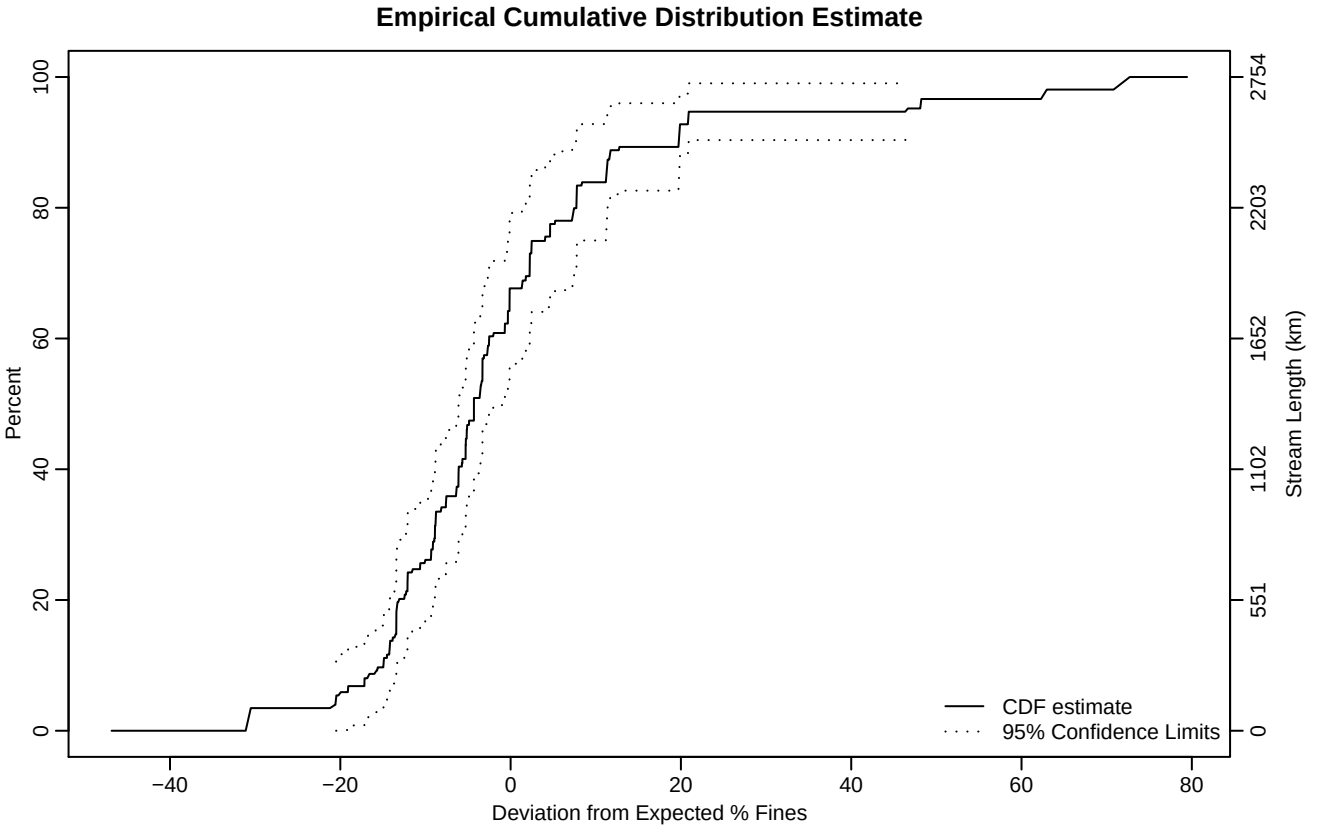


Figure PHAB−176 Indicator: DPct_FN Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−20.49	−46.86	−14.93
10Pct	−14.94	−21.01	−13.42
25Pct	−10.63	−13.43	−7.60
50Pct	−4.31	−6.12	−0.67
75Pct	4.04	−0.31	11.31
90Pct	19.75	7.79	62.33
95Pct	46.54	19.78	72.03
Mean	−0.61	−4.43	3.22
Std Dev	17.14	12.90	21.37

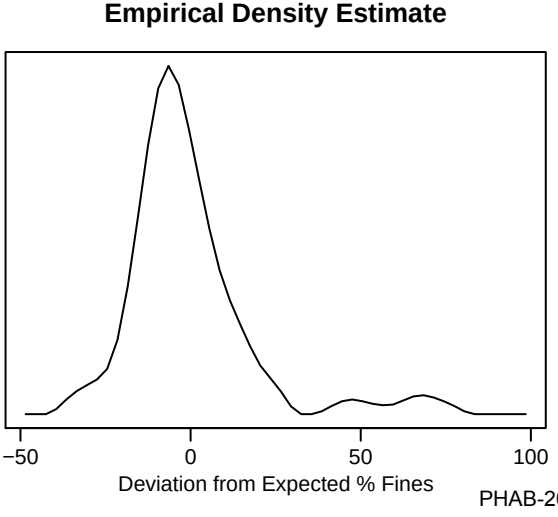
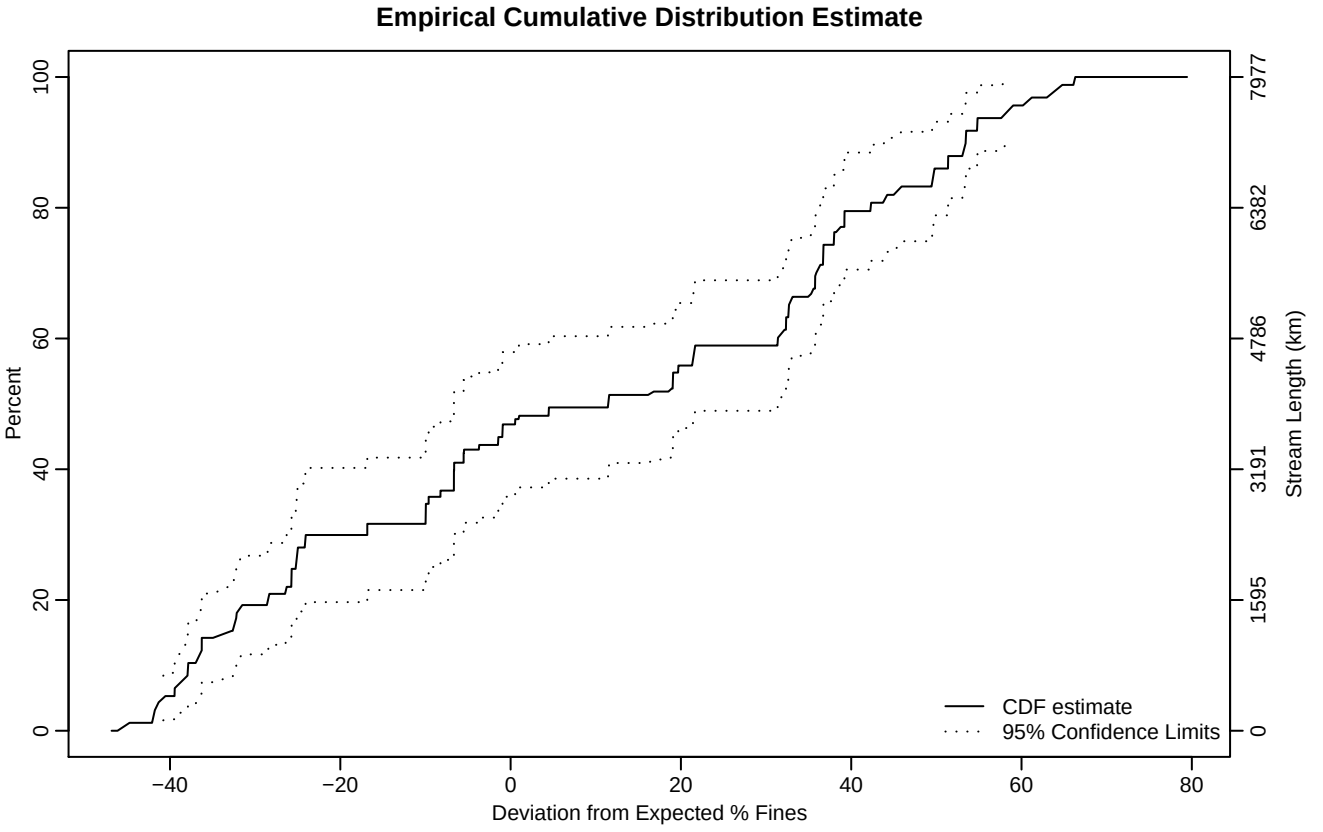


Figure PHAB−177 Indicator: DPct_FN Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−40.79	−41.99	−38.19
10Pct	−37.87	−41.03	−32.64
25Pct	−25.23	−32.41	−9.96
50Pct	11.46	−6.66	31.88
75Pct	37.97	33.04	49.51
90Pct	53.44	49.50	60.63
95Pct	58.55	53.44	66.32
Mean	9.01	2	16.03
Std Dev	32.19	29.72	34.66

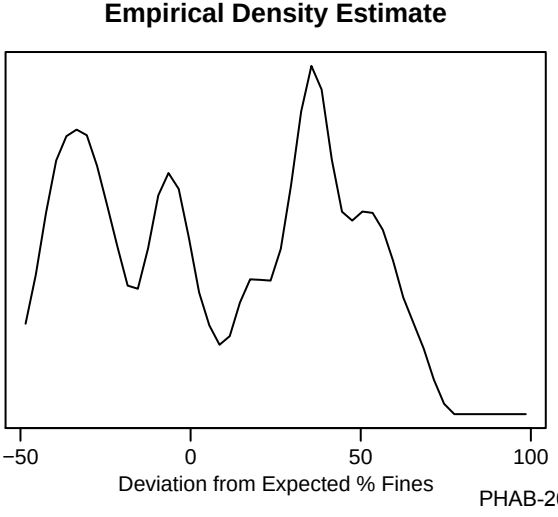
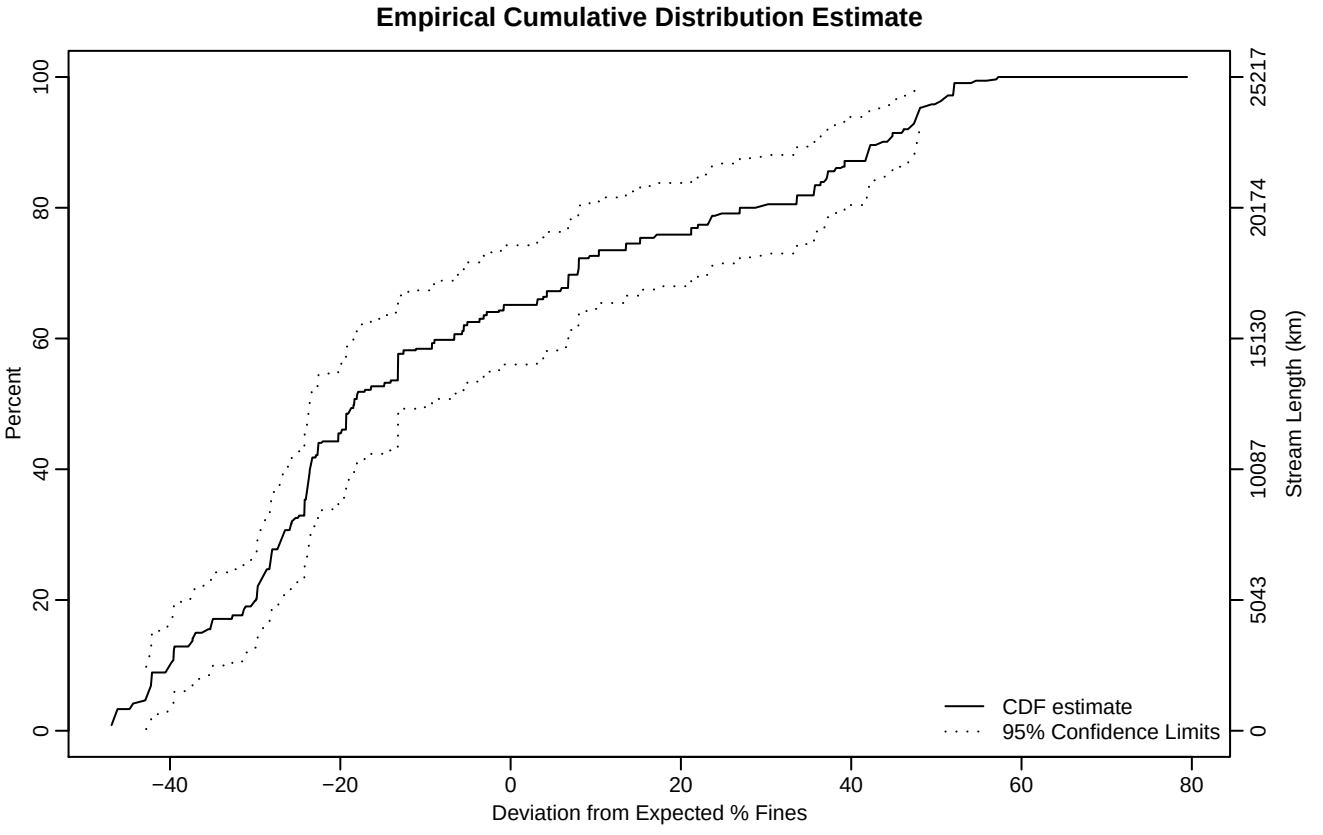


Figure PHAB−178 Indicator: DPct_FN Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−42.80	−46.86	−40.18
10Pct	−40.03	−44.60	−35.11
25Pct	−28.30	−35.01	−24.23
50Pct	−18.37	−23.59	−6.62
75Pct	15.21	4.26	35.71
90Pct	43.57	37.14	48.43
95Pct	48.01	43.66	57.23
Mean	−6.23	−12.11	−0.35
Std Dev	29.16	25.38	32.95

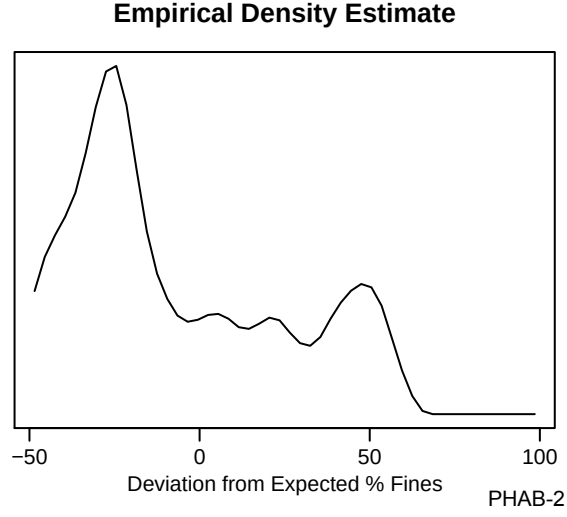
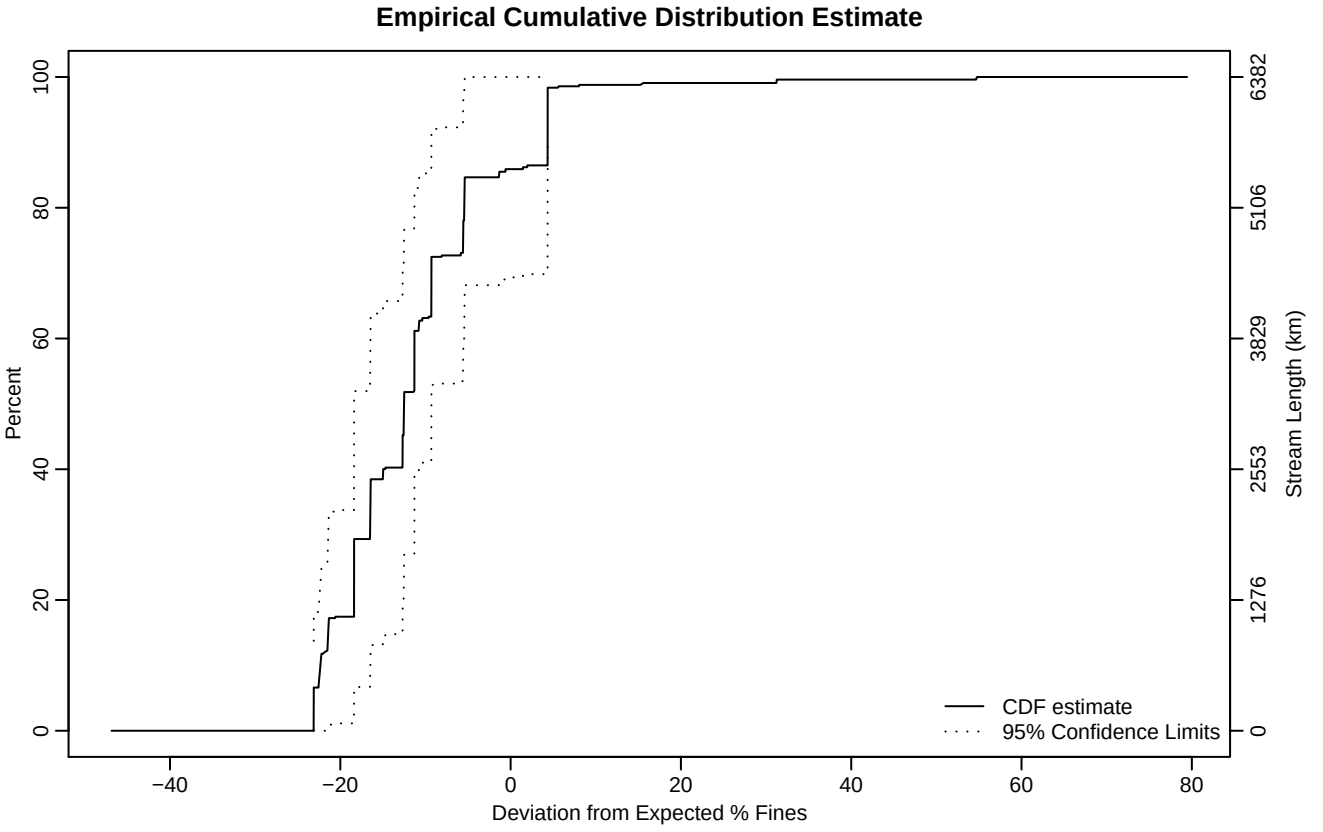


Figure PHAB−179 Indicator: DPct_FN Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−23.12	−23.12	−23.12
10Pct	−22.34	−46.86	−18.38
25Pct	−18.38	−22.48	−12.69
50Pct	−12.51	−18.38	−5.57
75Pct	−5.58	−11.30	4.35
90Pct	4.35	−5.85	54.77
95Pct	4.35	−5.56	54.77
Mean	−11.13	−15.04	−7.22
Std Dev	9.80	7.59	12.01

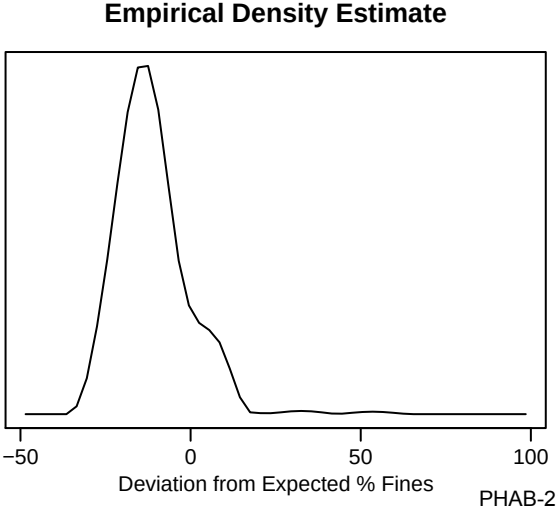
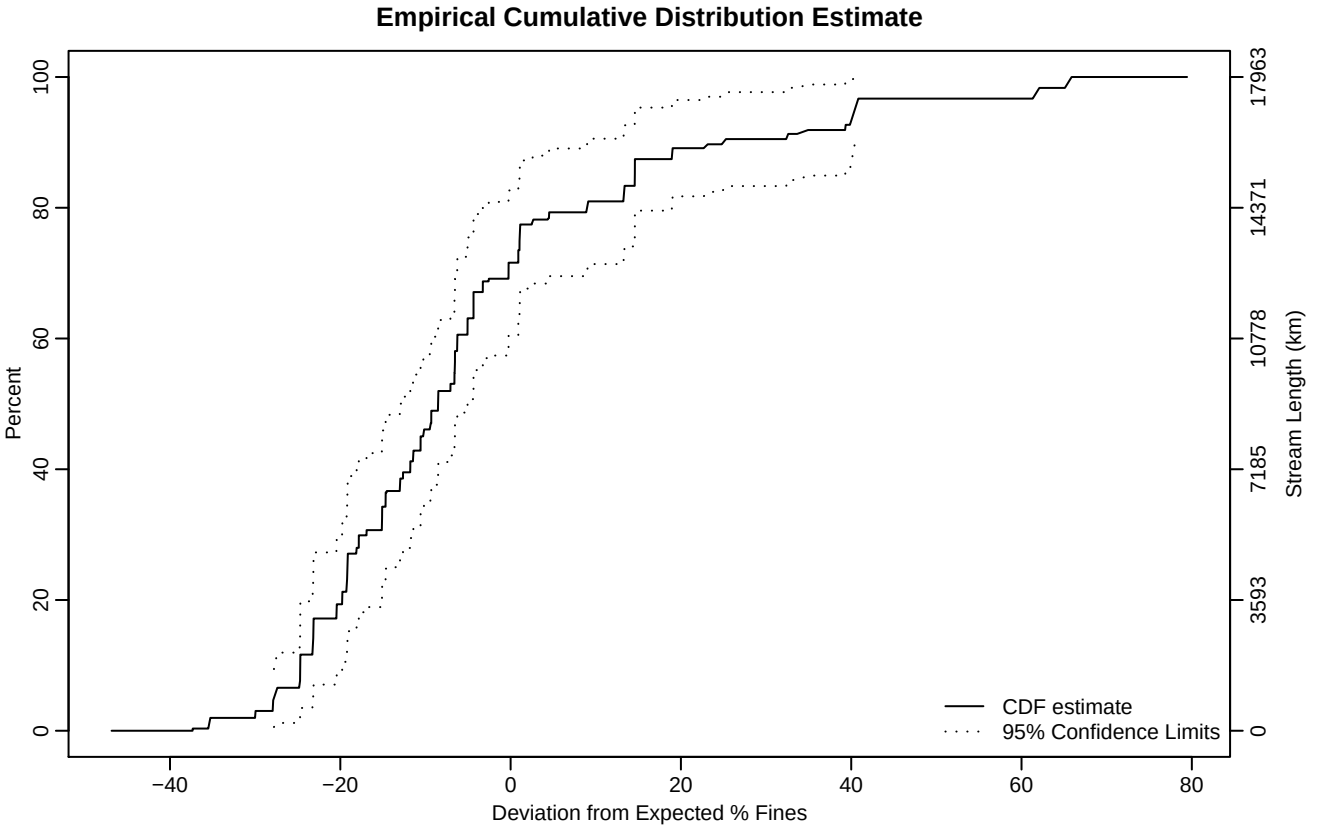


Figure PHAB−180 Indicator: DPct_FN Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−27.79	−35.44	−24.71
10Pct	−24.70	−27.89	−23.16
25Pct	−19.16	−23.18	−14.67
50Pct	−8.52	−12.64	−5.06
75Pct	1.05	−4.36	14.59
90Pct	24.98	13.34	61.67
95Pct	40.42	18.95	65.88
Mean	−4.15	−9.24	0.93
Std Dev	20.20	15.55	24.85

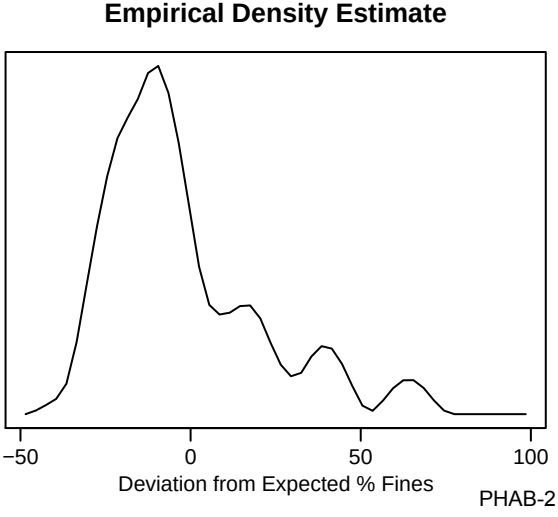
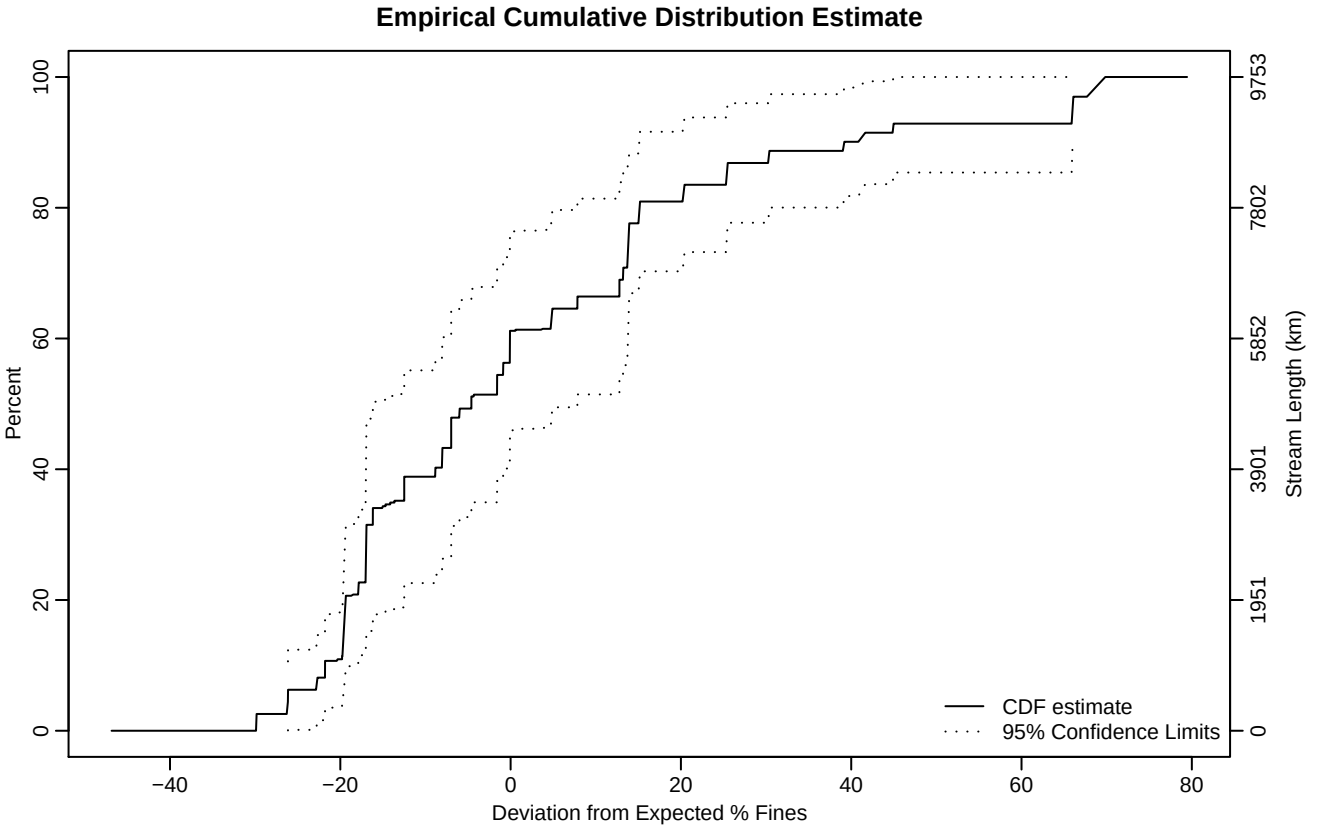


Figure PHAB−181 Indicator: DPct_FN Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−26.15	−46.86	−21.79
10Pct	−21.79	−26.24	−19.52
25Pct	−17.01	−19.69	−12.49
50Pct	−4.61	−16.18	12.78
75Pct	13.84	−0.08	39.19
90Pct	39.18	20.21	69.01
95Pct	65.99	30.27	69.83
Mean	2.36	−5.11	9.83
Std Dev	23.51	19.32	27.70

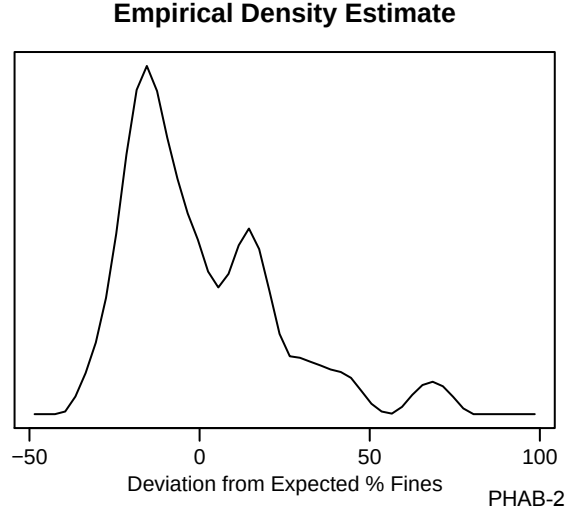
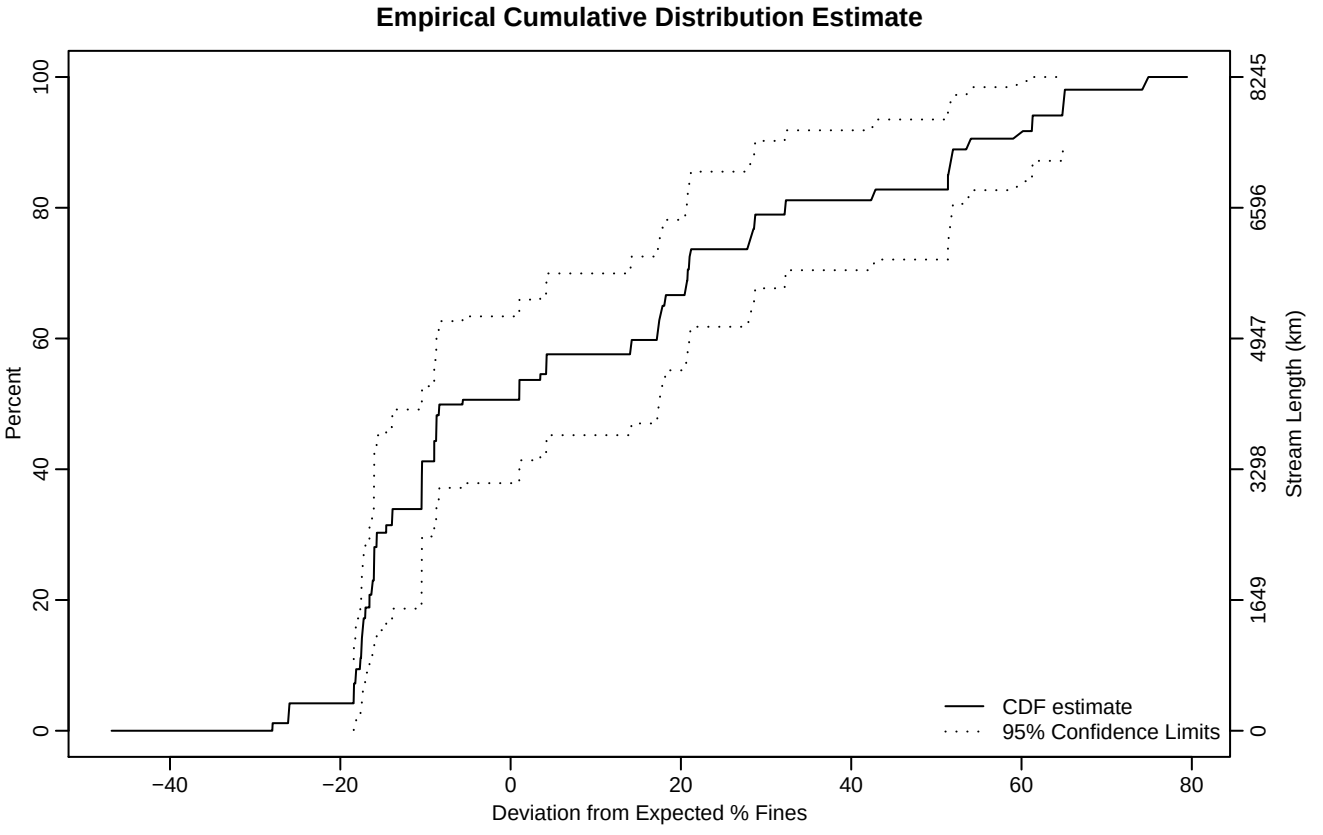


Figure PHAB−182 Indicator: DPct_FN Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−18.42	−46.86	−17.65
10Pct	−17.68	−26.08	−17.07
25Pct	−16.04	−17.47	−10.45
50Pct	−5.65	−10.44	17.45
75Pct	28.10	17.50	51.68
90Pct	53.86	42.51	74.28
95Pct	64.86	51.83	74.90
Mean	8.75	1.23	16.28
Std Dev	26.19	22.17	30.22

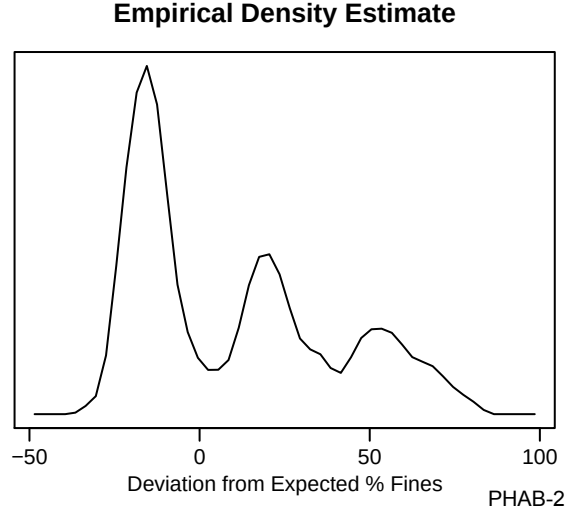
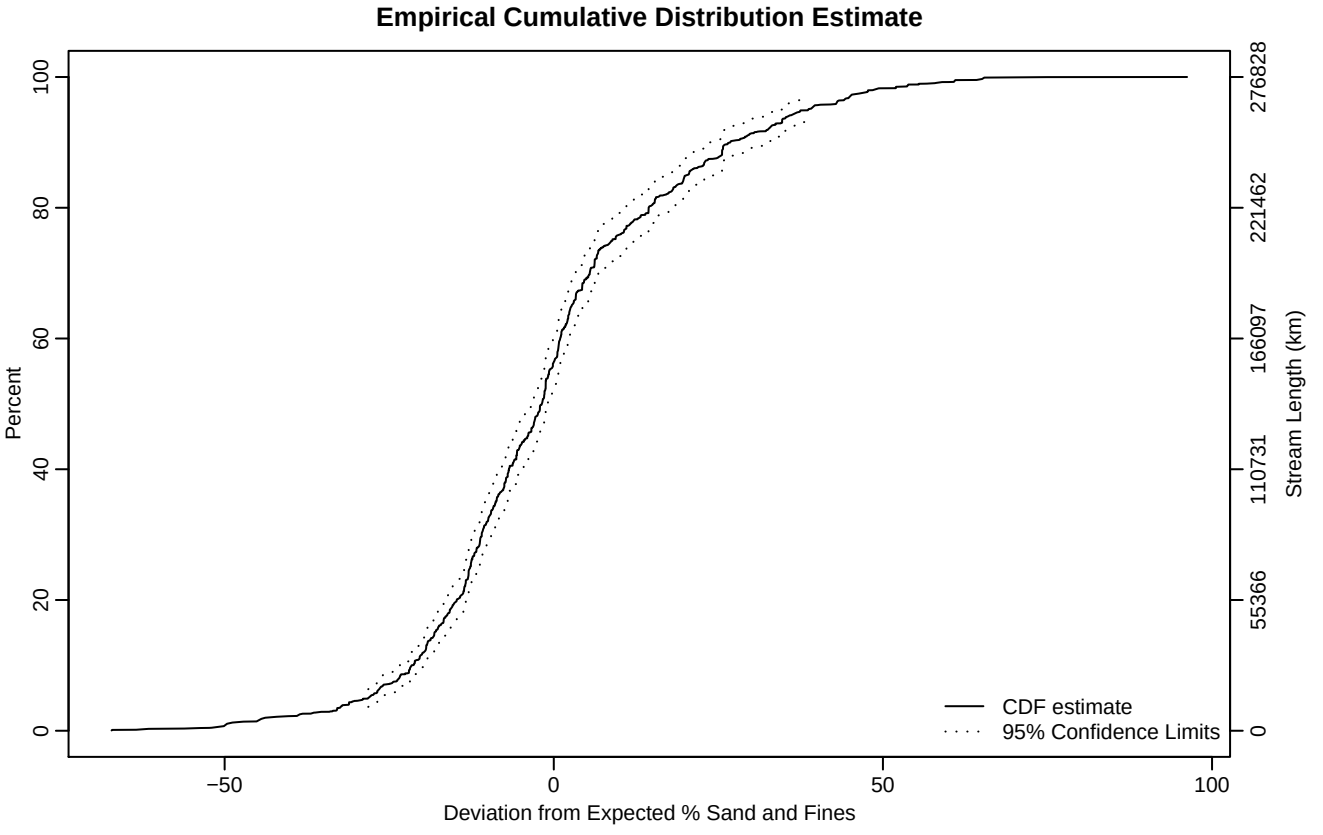


Figure PHAB−183 Indicator: DPct_SF Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−28.18	−32.35	−26.54
10Pct	−21.59	−23.47	−19.86
25Pct	−12.70	−13.62	−11.31
50Pct	−1.82	−3.41	−0.90
75Pct	8.89	6.21	12.93
90Pct	26.81	25	32.87
95Pct	38.67	34.69	44.79
Mean	−0.22	−1.67	1.23
Std Dev	19.39	18.14	20.64

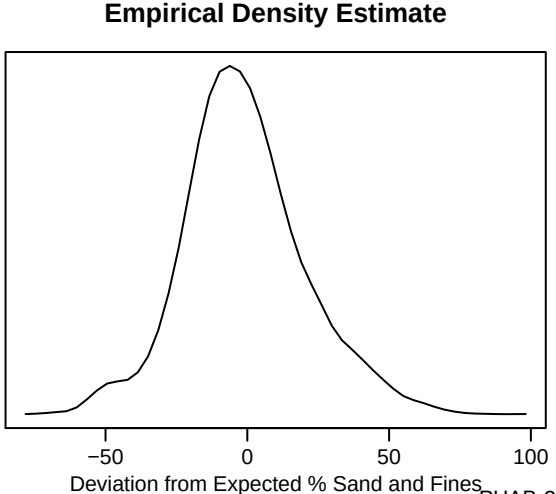
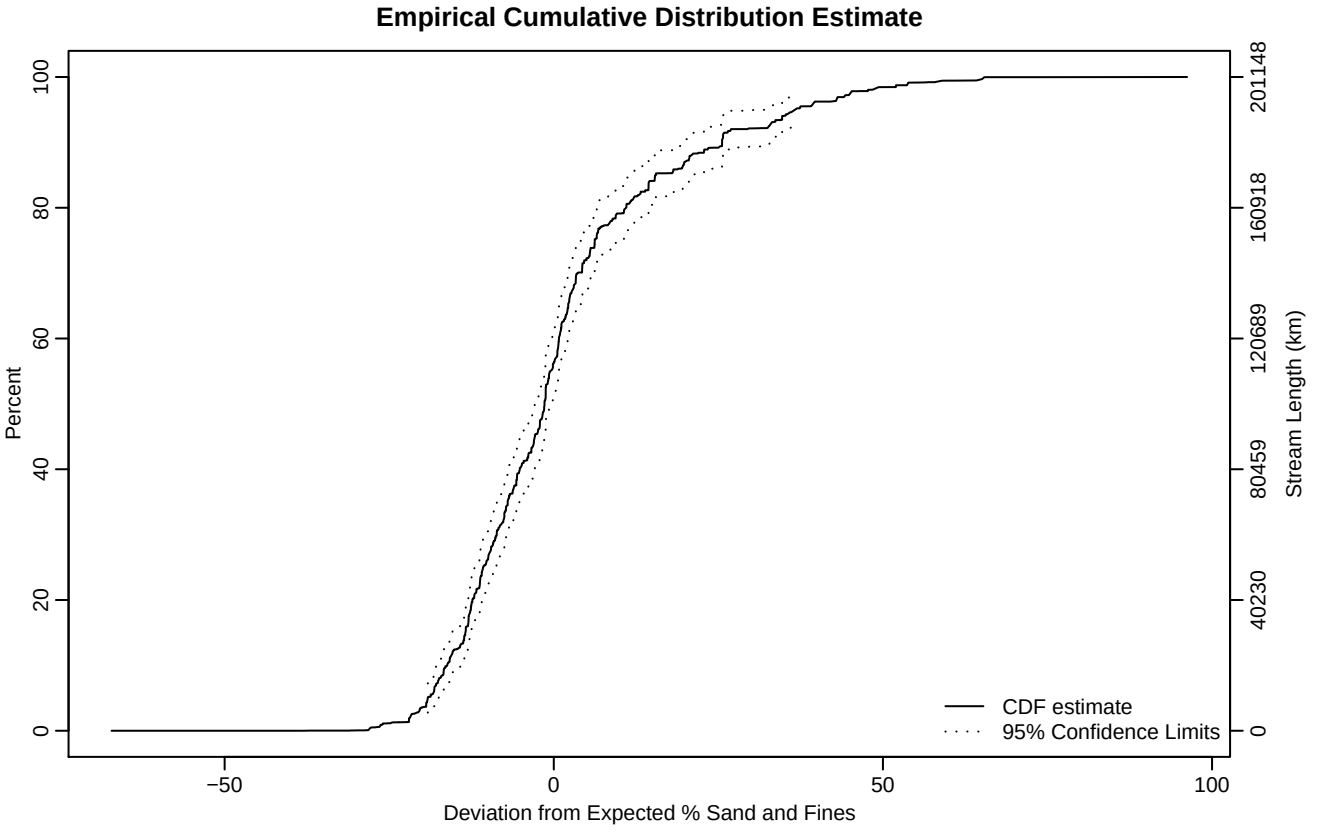


Figure PHAB−184 Indicator: DPct_SF Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−19.14	−20.83	−17.79
10Pct	−16.18	−17.89	−14.23
25Pct	−10.74	−12.08	−8.91
50Pct	−1.41	−2.90	−0.37
75Pct	6.22	4.30	10.68
90Pct	25.57	19.78	33.67
95Pct	36.65	32.80	44.96
Mean	1.15	−0.47	2.76
Std Dev	15.90	14.43	17.37

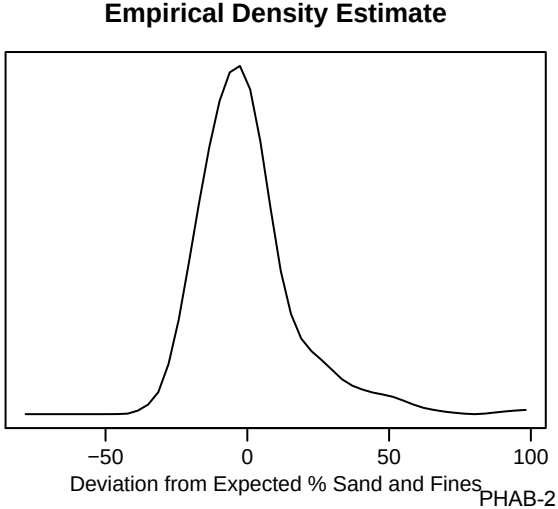
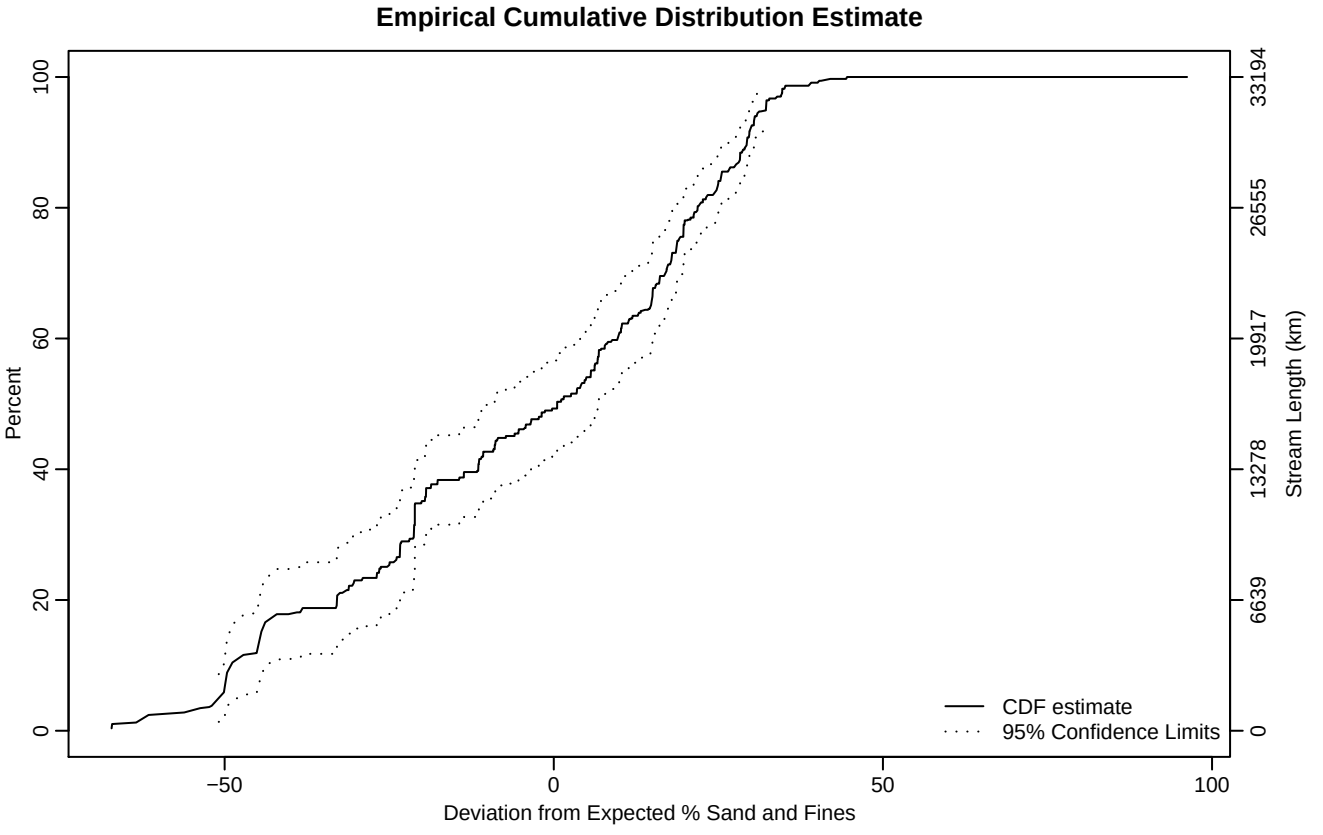


Figure PHAB−185 Indicator: DPct_SF Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−50.90	−61.82	−49.82
10Pct	−49.04	−51	−44.43
25Pct	−26.27	−42.33	−21.11
50Pct	0.51	−10.72	6.83
75Pct	18.95	16.10	22.34
90Pct	29.33	26.71	30.81
95Pct	32.22	29.81	34.71
Mean	−5.13	−9.43	−0.83
Std Dev	24.87	22.52	27.21

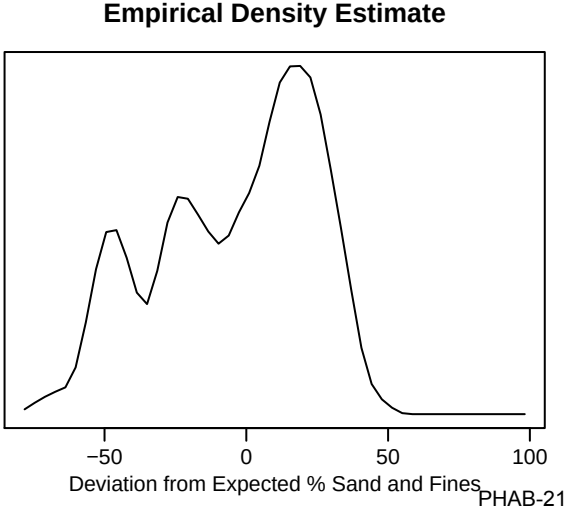
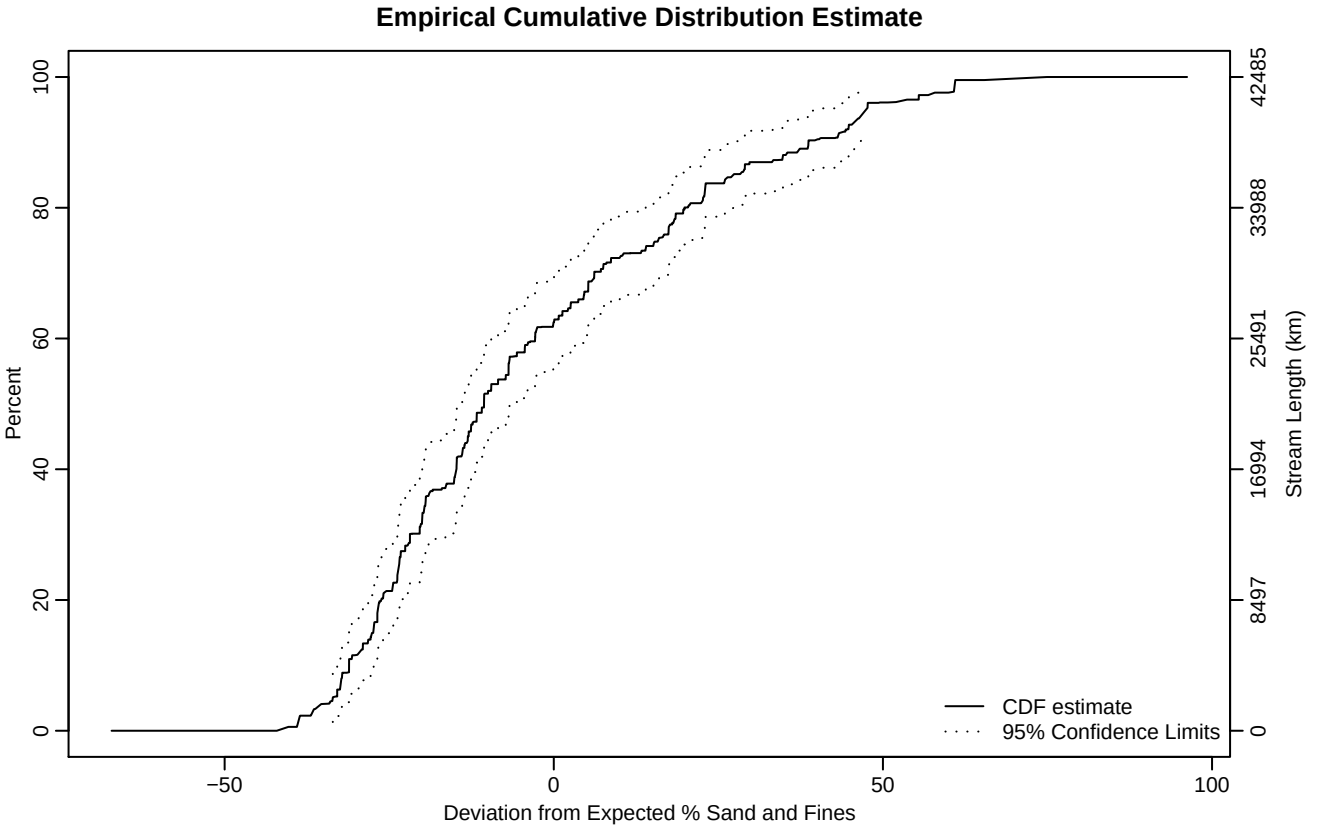


Figure PHAB−186 Indicator: DPct_SF Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−33.57	−38.79	−32.15
10Pct	−31.10	−33.25	−27.66
25Pct	−23.56	−26.78	−20.01
50Pct	−10.60	−13.90	−5.61
75Pct	15.85	5.81	22.65
90Pct	38.69	28.41	47.22
95Pct	47.43	43.27	60.90
Mean	−2.83	−6.80	1.13
Std Dev	25.04	22.24	27.84

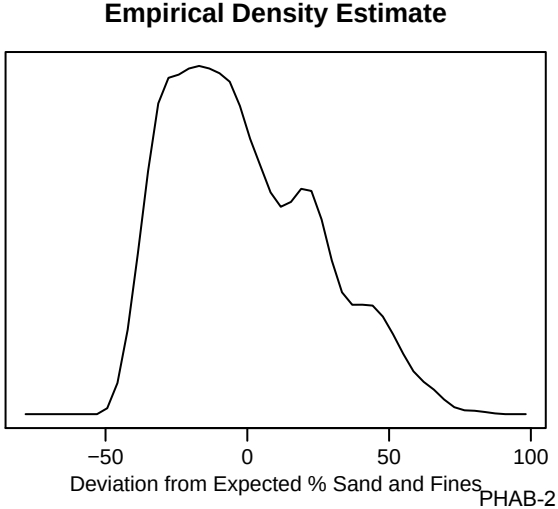
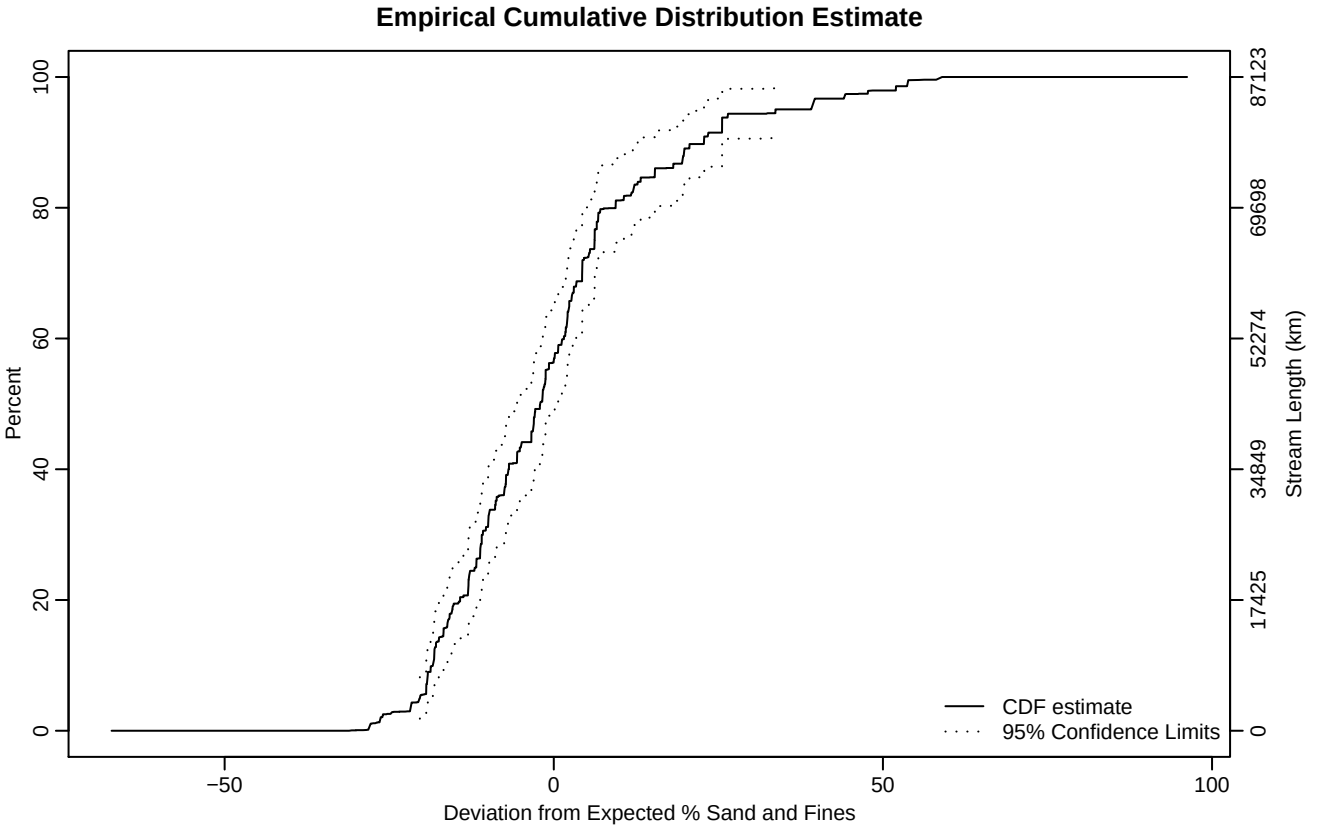


Figure PHAB−187 Indicator: DPct_SF Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−20.34	−26.34	−19.18
10Pct	−18.38	−20.28	−16.77
25Pct	−11.78	−15.52	−9.95
50Pct	−2.07	−5.58	0.67
75Pct	6.20	3.04	12.08
90Pct	22.81	15.34	39.14
95Pct	33.68	23.43	53.72
Mean	−0.36	−3.02	2.30
Std Dev	16.22	13.83	18.60

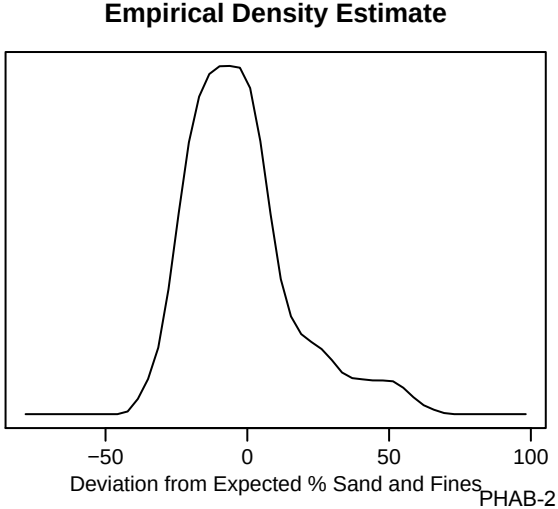
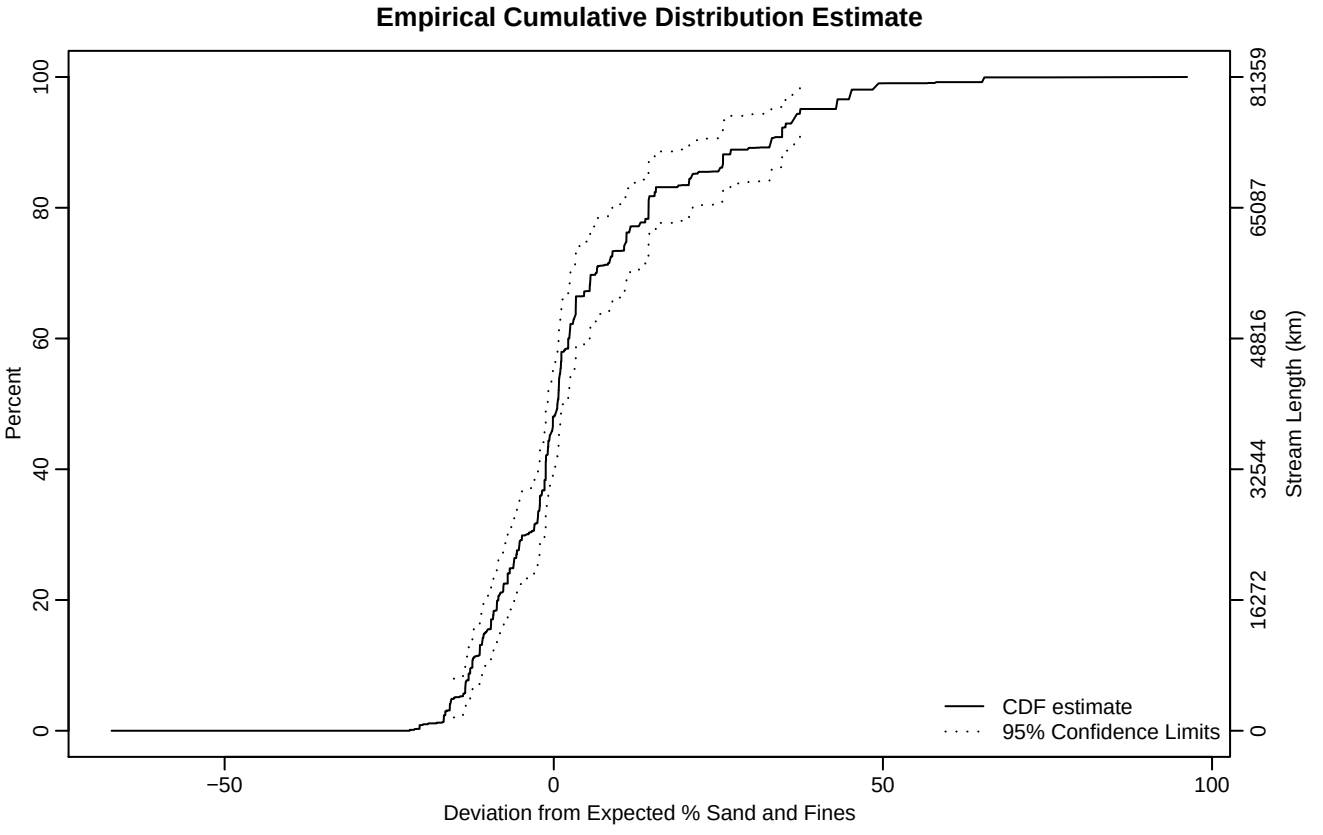


Figure PHAB−188 Indicator: DPct_SF Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−15.18	−16.70	−12.94
10Pct	−12.36	−13.55	−10.71
25Pct	−6.14	−8.67	−2.94
50Pct	0.56	−1.18	1.58
75Pct	11.03	5.47	15.32
90Pct	32.97	20.92	42.89
95Pct	37.45	34.69	49.09
Mean	4.59	2.14	7.03
Std Dev	15.29	13.33	17.24

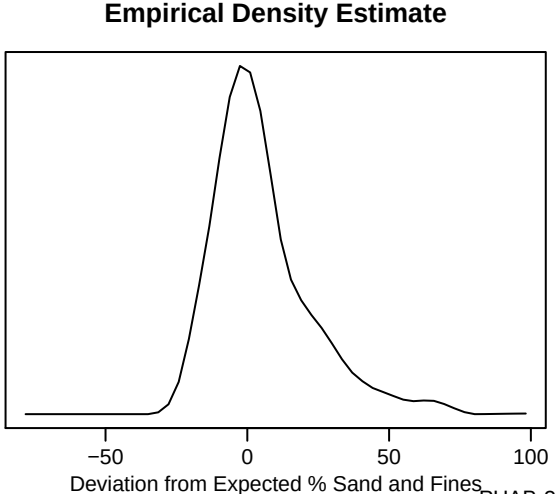
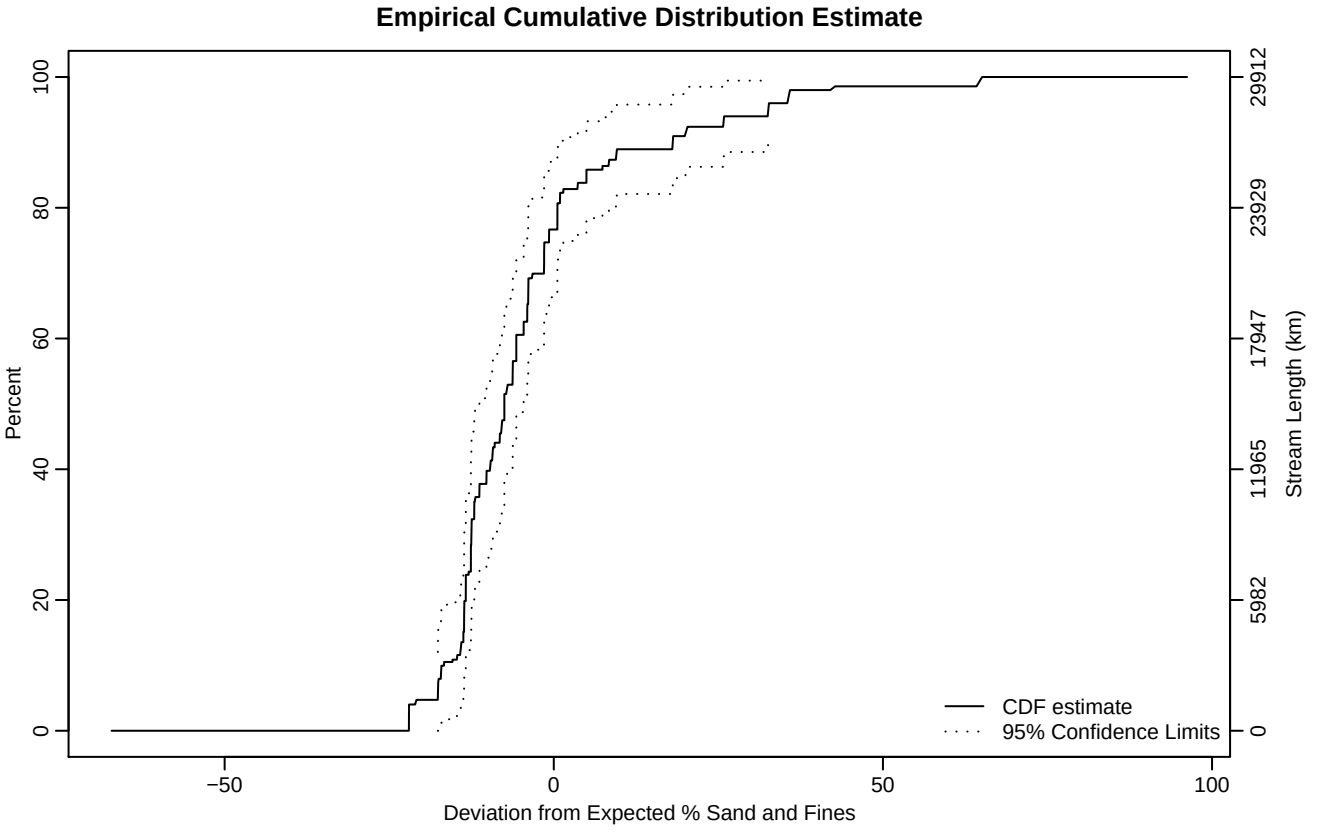


Figure PHAB−189 Indicator: DPct_SF Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−17.61	−67.17	−14.19
10Pct	−16.68	−22	−13.60
25Pct	−12.59	−14.09	−11.29
50Pct	−7.51	−11.30	−4.03
75Pct	−0.72	−4.03	7.39
90Pct	18.08	3.61	35.66
95Pct	32.59	18.05	65.07
Mean	−3.68	−7.18	−0.17
Std Dev	14	10.66	17.34

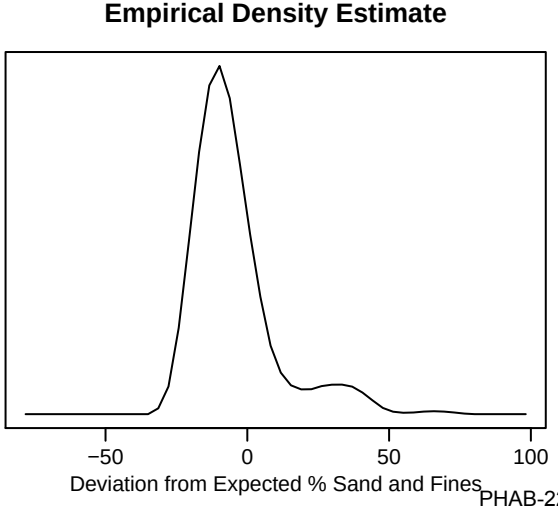
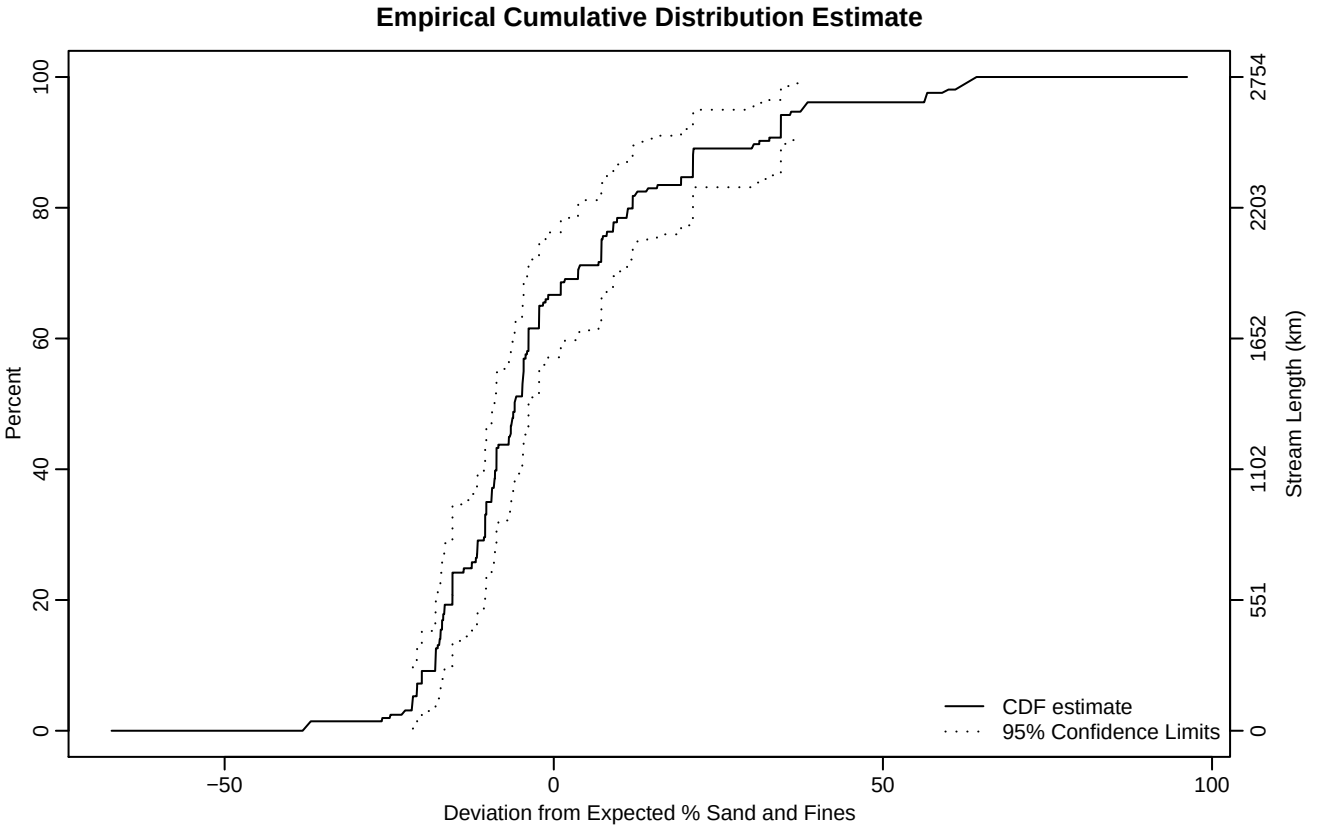


Figure PHAB−190 Indicator: DPct_SF Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−21.41	−24.92	−20.05
10Pct	−17.99	−21.51	−16.97
25Pct	−12.46	−17.21	−9.46
50Pct	−5.94	−9.01	−2.25
75Pct	7.26	−2.20	21.13
90Pct	31.22	19.34	38.38
95Pct	37.70	32.75	63.07
Mean	−0.41	−4.17	3.35
Std Dev	19.67	16.10	23.24

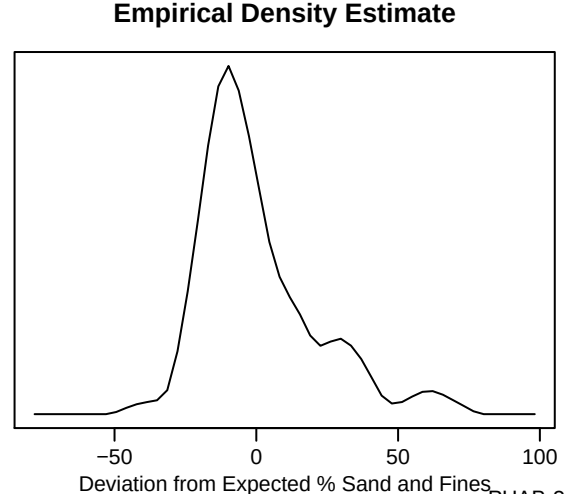
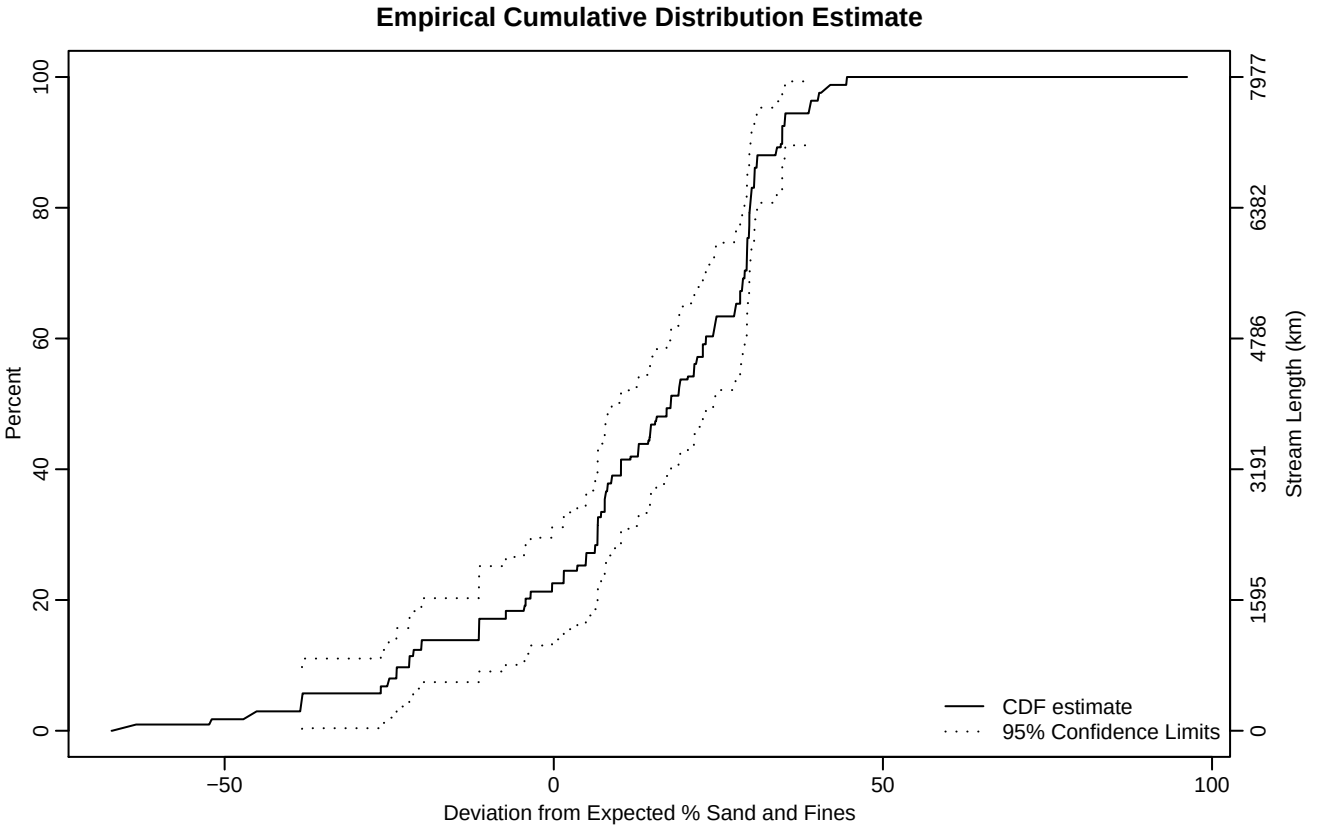


Figure PHAB−191 Indicator: DPct_SF Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−38.25	−46.73	−24.98
10Pct	−21.97	−38.39	−11.34
25Pct	3.57	−11.35	7.74
50Pct	17.77	10.21	24.20
75Pct	29.41	27.56	30.52
90Pct	34.70	30.08	40.21
95Pct	38.82	34.70	44.53
Mean	12.18	7.71	16.65
Std Dev	19.99	15.83	24.15

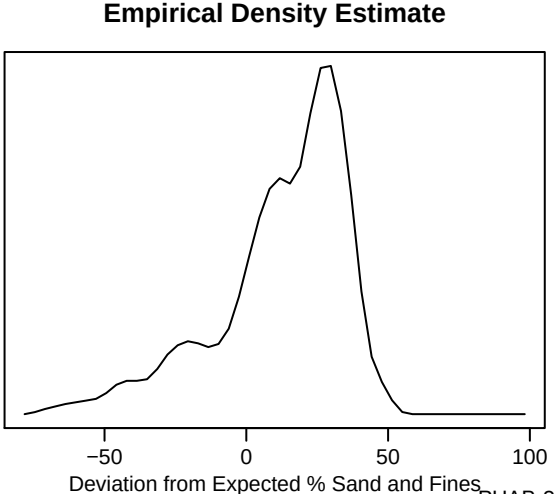
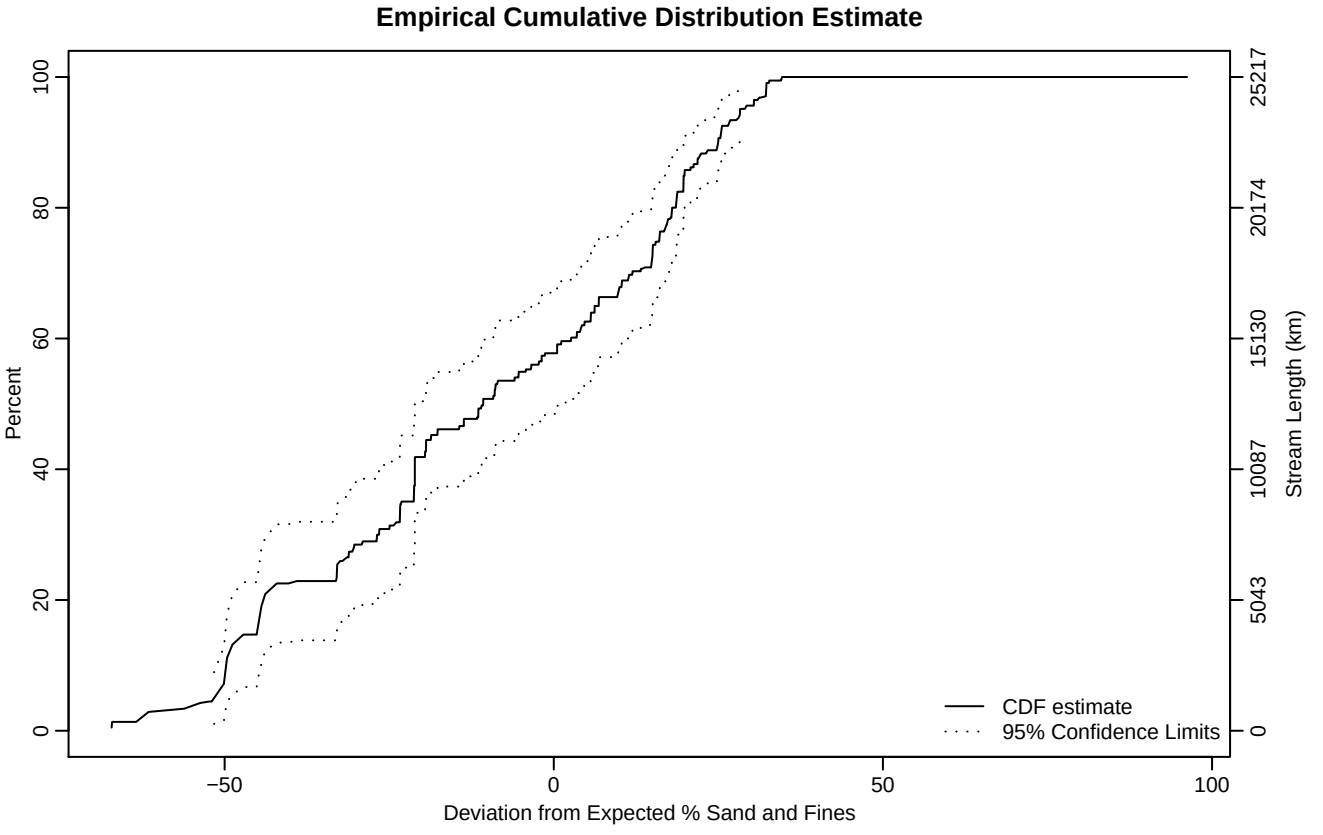


Figure PHAB−192 Indicator: DPct_SF Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−51.60	−63.33	−49.95
10Pct	−49.77	−54.06	−44.94
25Pct	−32.92	−44.93	−23.34
50Pct	−10.73	−21.11	1.13
75Pct	16.02	9.67	19.70
90Pct	24.97	19.87	28.30
95Pct	28.30	25.33	32.69
Mean	−10.61	−16.08	−5.14
Std Dev	25.47	22.74	28.20

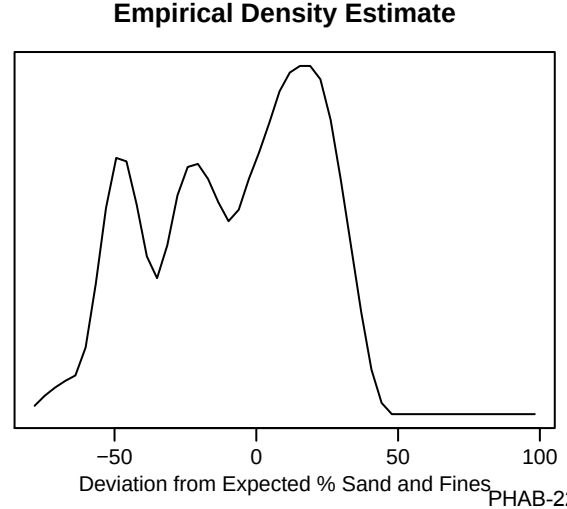
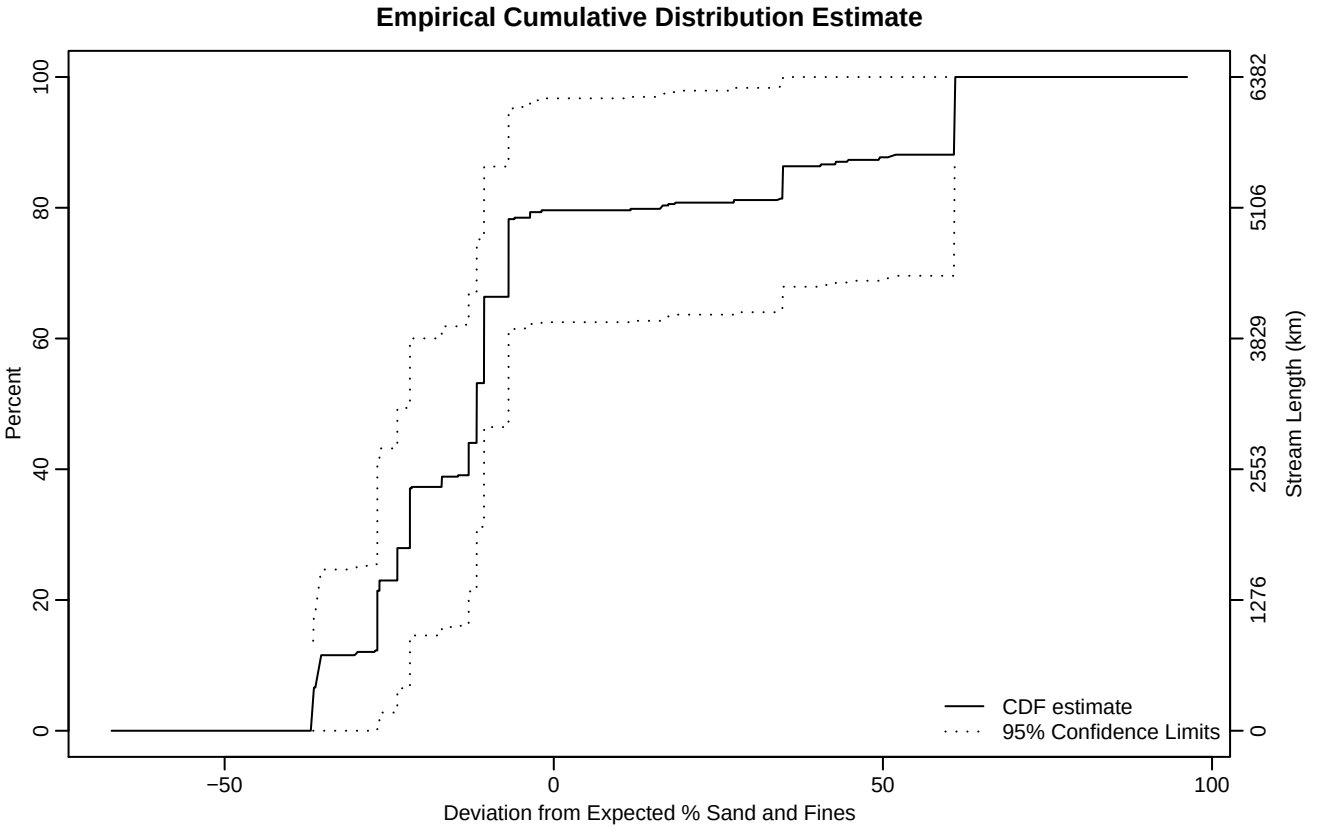


Figure PHAB−193 Indicator: DPct_SF Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−36.55	−36.64	−36.46
10Pct	−35.61	−67.17	−26.48
25Pct	−23.77	−36.57	−11.73
50Pct	−11.70	−23.76	−6.87
75Pct	−6.86	−10.60	60.93
90Pct	60.82	−6.87	61
95Pct	60.91	−6.86	61
Mean	−4.55	−18.49	9.39
Std Dev	29.66	17.45	41.87

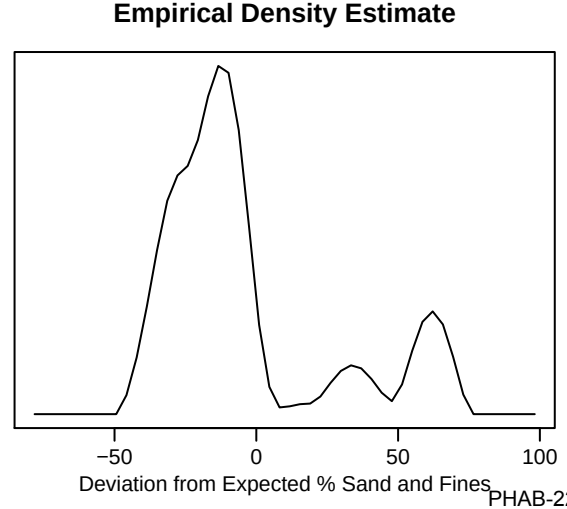
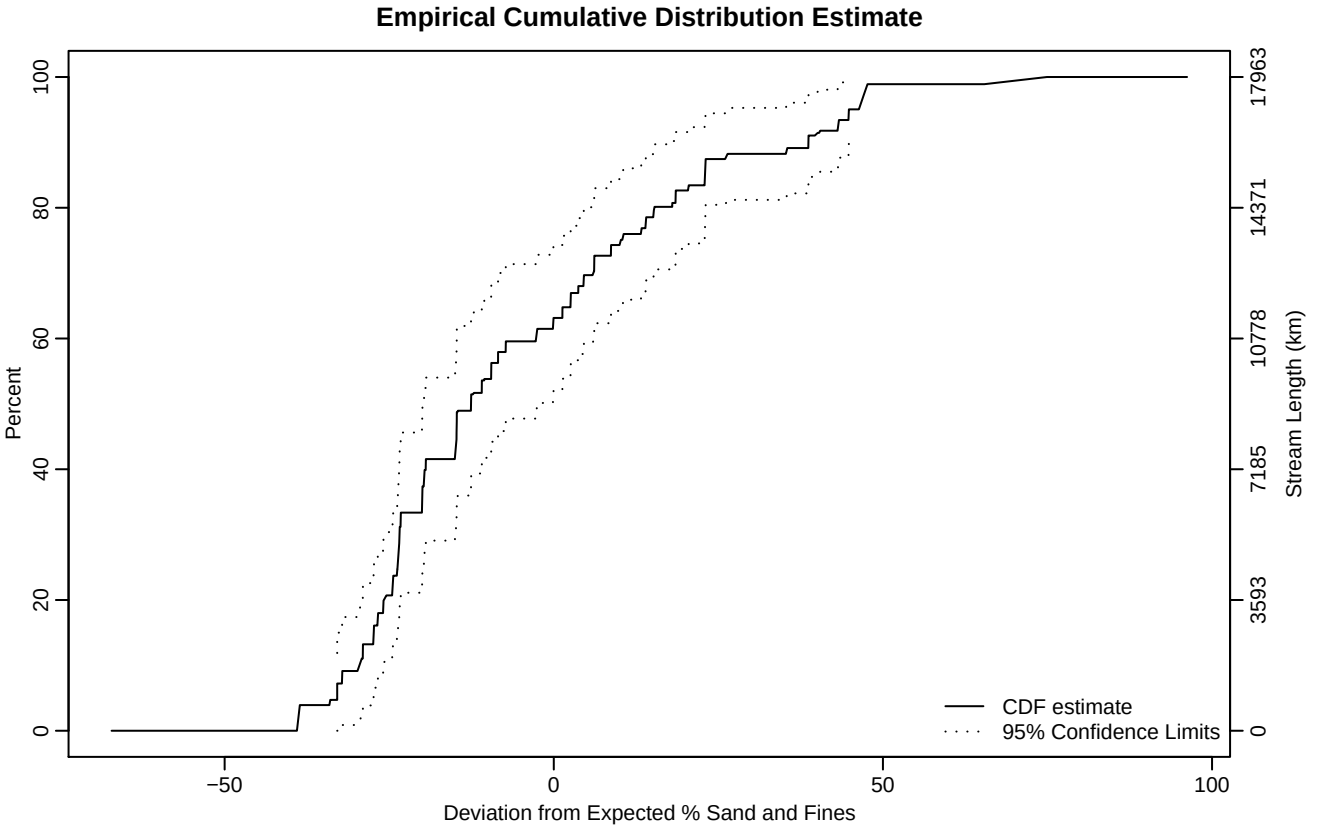


Figure PHAB−194 Indicator: DPct_SF Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−32.90	−67.17	−29.01
10Pct	−29.52	−38.83	−25.92
25Pct	−23.73	−27.36	−19.99
50Pct	−12.57	−19.95	−0.04
75Pct	10.18	2.54	22.97
90Pct	38.68	20.45	47
95Pct	44.83	38.67	74.92
Mean	−4.73	−10.71	1.25
Std Dev	24.25	20.53	27.97

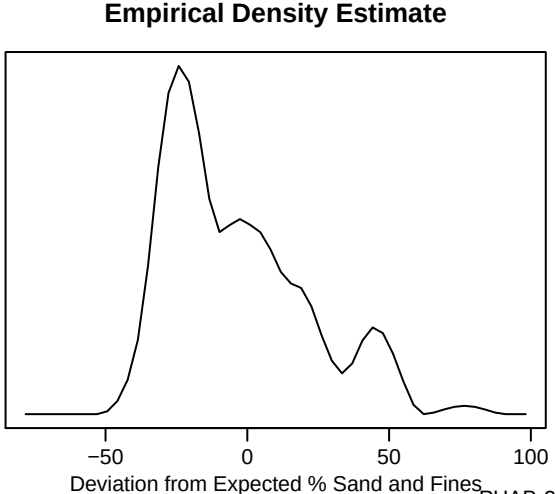
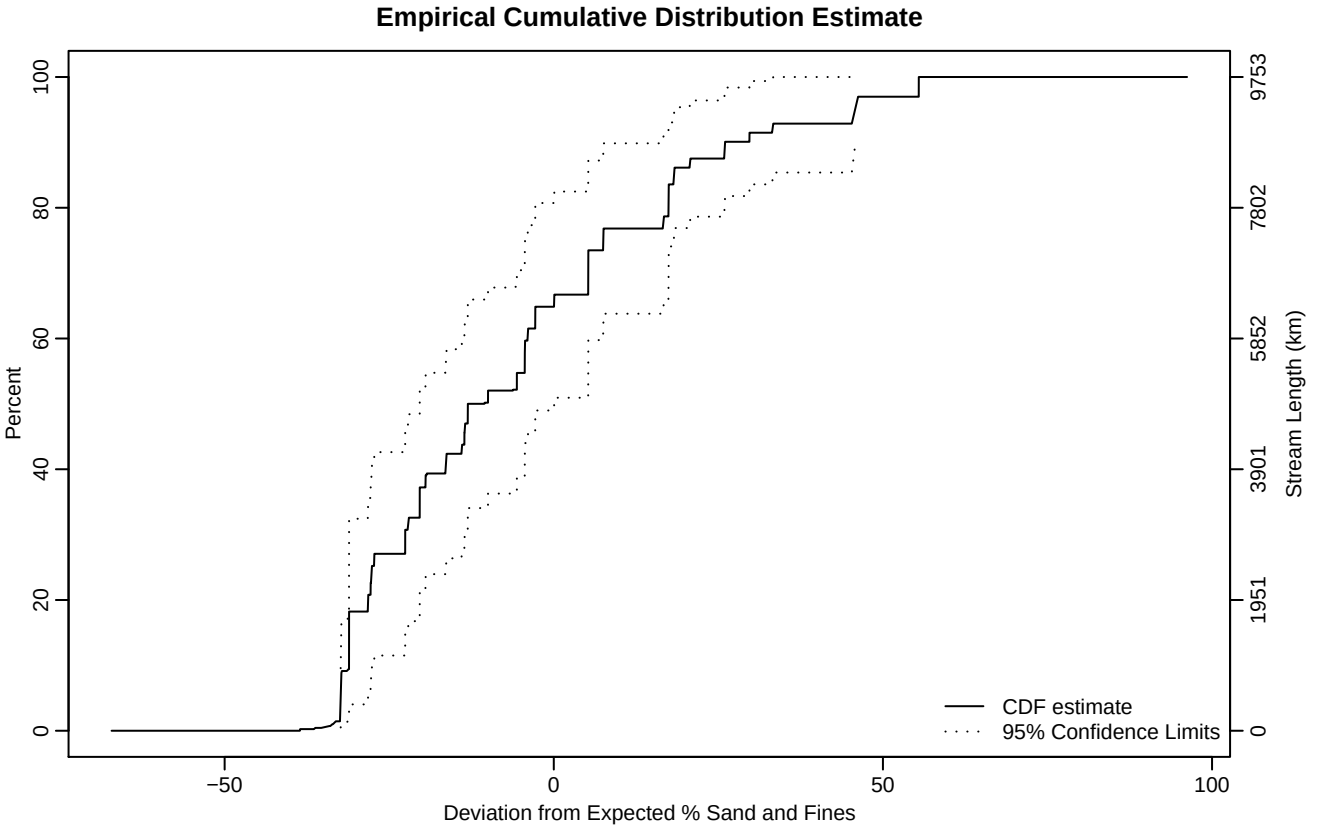


Figure PHAB−195 Indicator: DPct_SF Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−32.37	−32.41	−32.33
10Pct	−31.11	−38.57	−28.20
25Pct	−27.63	−31.42	−16.38
50Pct	−13.05	−20.37	0.08
75Pct	7.52	−3.92	25.96
90Pct	26.02	17.44	55.45
95Pct	45.77	20.73	55.45
Mean	−5.45	−13.10	2.19
Std Dev	22.92	19.12	26.72

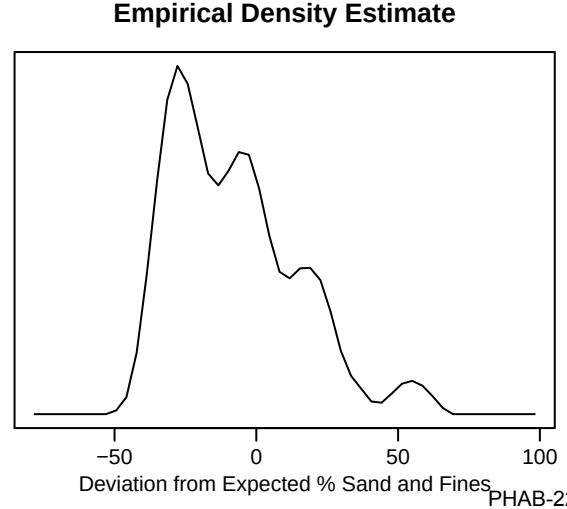
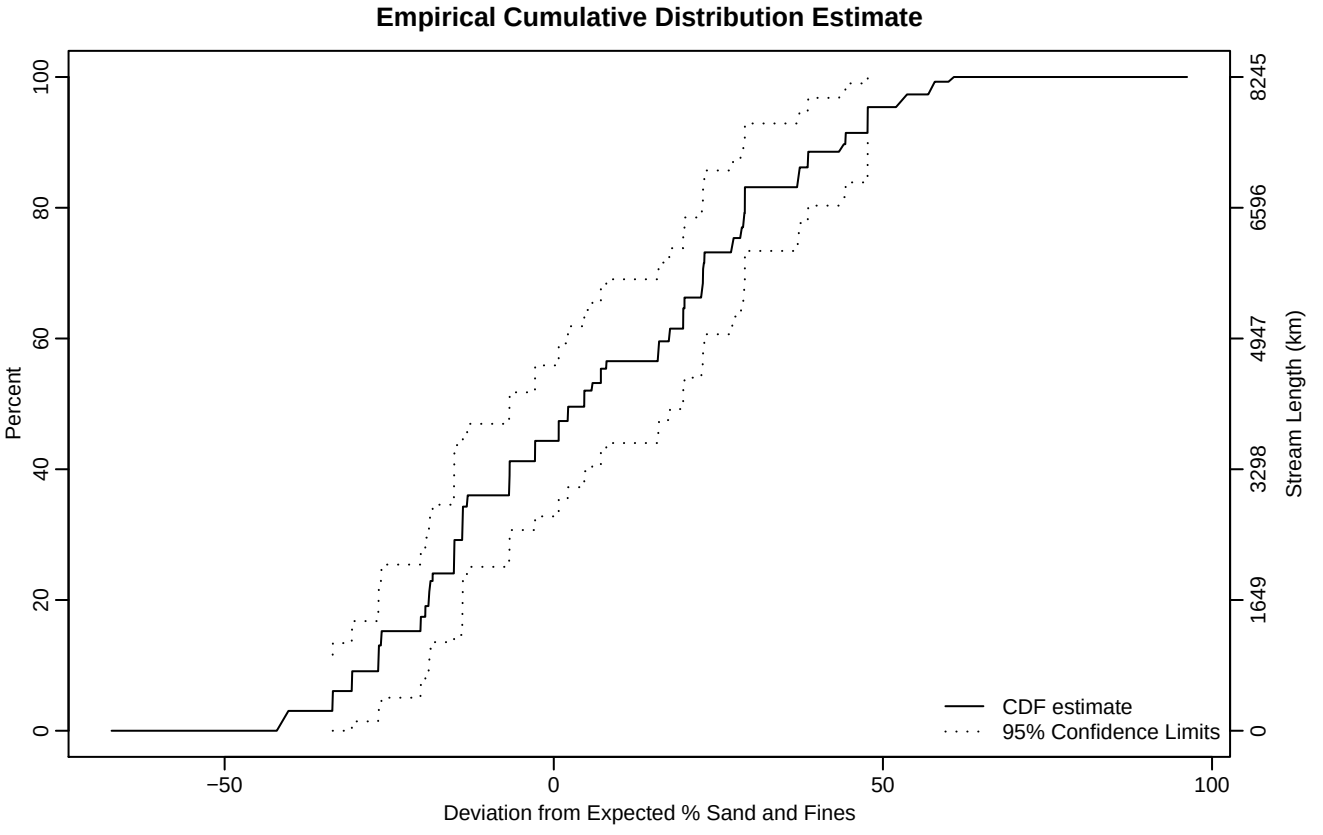


Figure PHAB−196 Indicator: DPct_SF Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−33.58	−67.17	−26.64
10Pct	−26.65	−40.75	−19.52
25Pct	−15.16	−26.19	−13.11
50Pct	4.63	−6.75	19.66
75Pct	27.26	19.66	38.62
90Pct	44.30	29.03	57.13
95Pct	47.70	38.62	60.78
Mean	5.88	−0.68	12.45
Std Dev	22.87	19.88	25.87

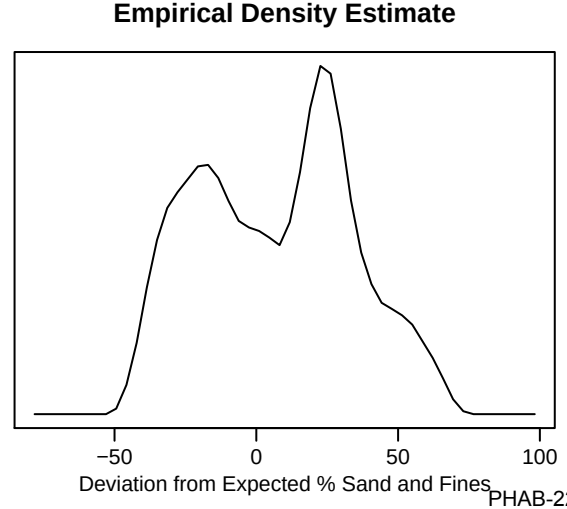
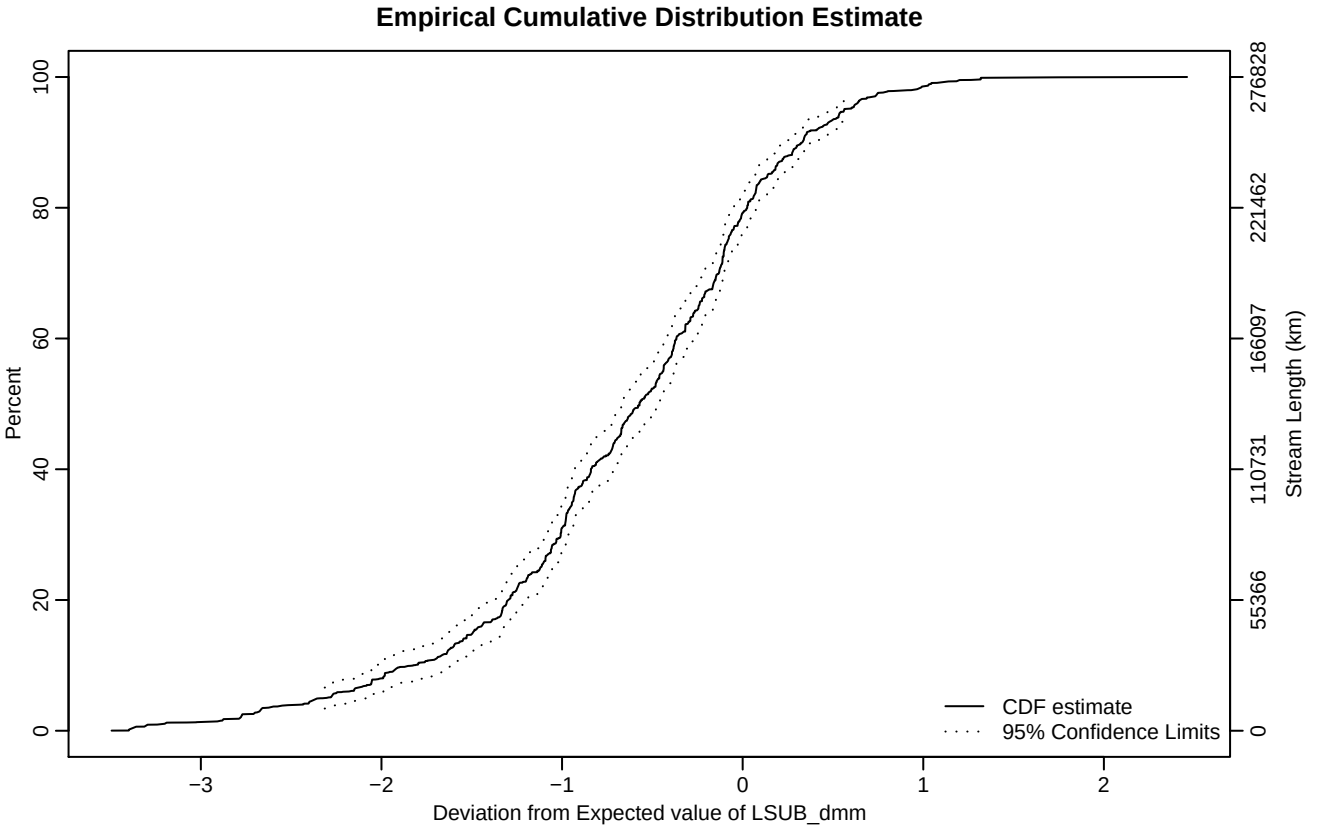


Figure PHAB−197 Indicator: DevLSUB Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.31	−2.66	−2.13
10Pct	−1.82	−2.05	−1.62
25Pct	−1.12	−1.25	−1.05
50Pct	−0.57	−0.67	−0.46
75Pct	−0.08	−0.11	−0.01
90Pct	0.33	0.24	0.42
95Pct	0.56	0.50	0.65
Mean	−0.66	−0.73	−0.60
Std Dev	0.82	0.78	0.87

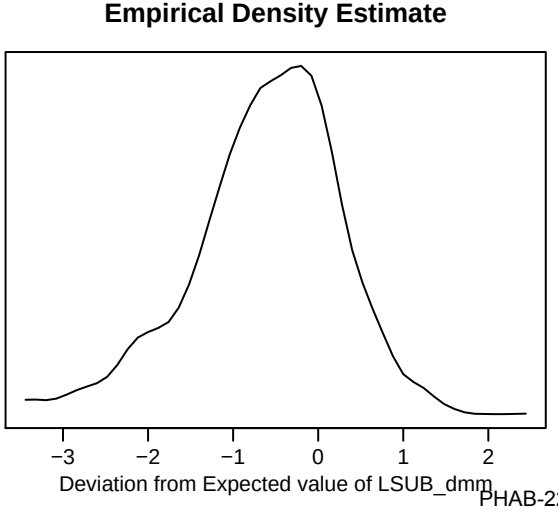
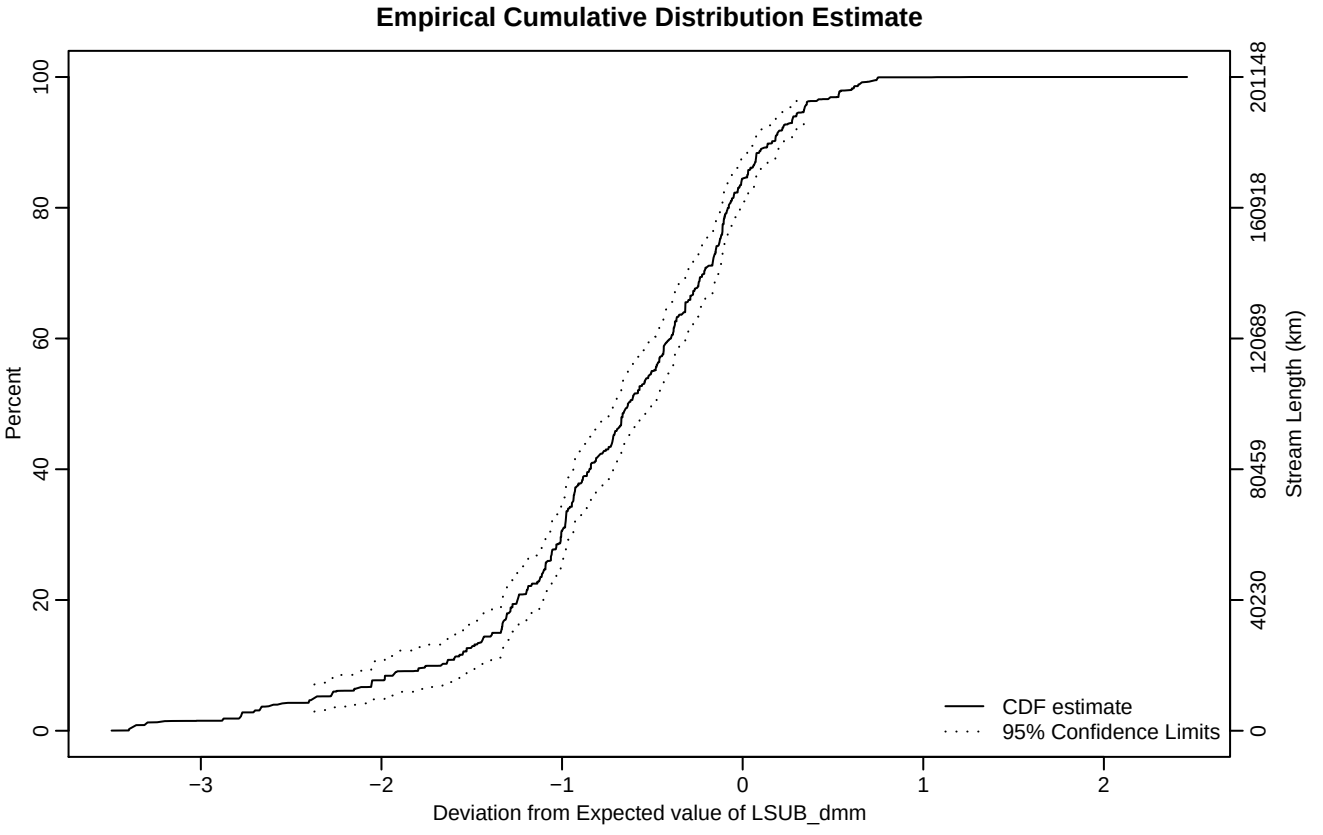


Figure PHAB−198 Indicator: DevLSUB Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.37	−2.70	−2.06
10Pct	−1.67	−2.06	−1.47
25Pct	−1.09	−1.24	−1.01
50Pct	−0.64	−0.72	−0.49
75Pct	−0.13	−0.21	−0.09
90Pct	0.16	0.07	0.25
95Pct	0.34	0.27	0.53
Mean	−0.72	−0.79	−0.64
Std Dev	0.74	0.68	0.81

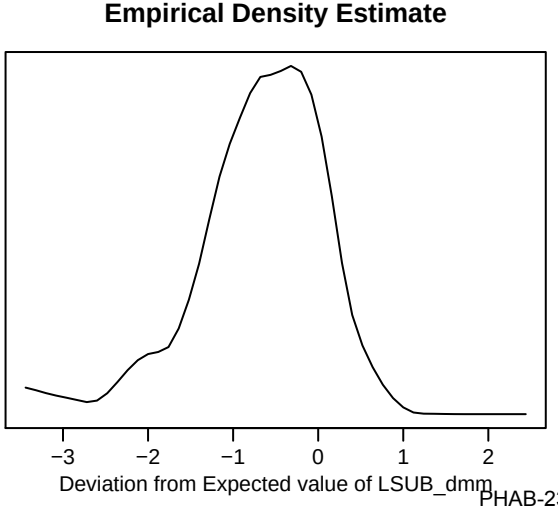
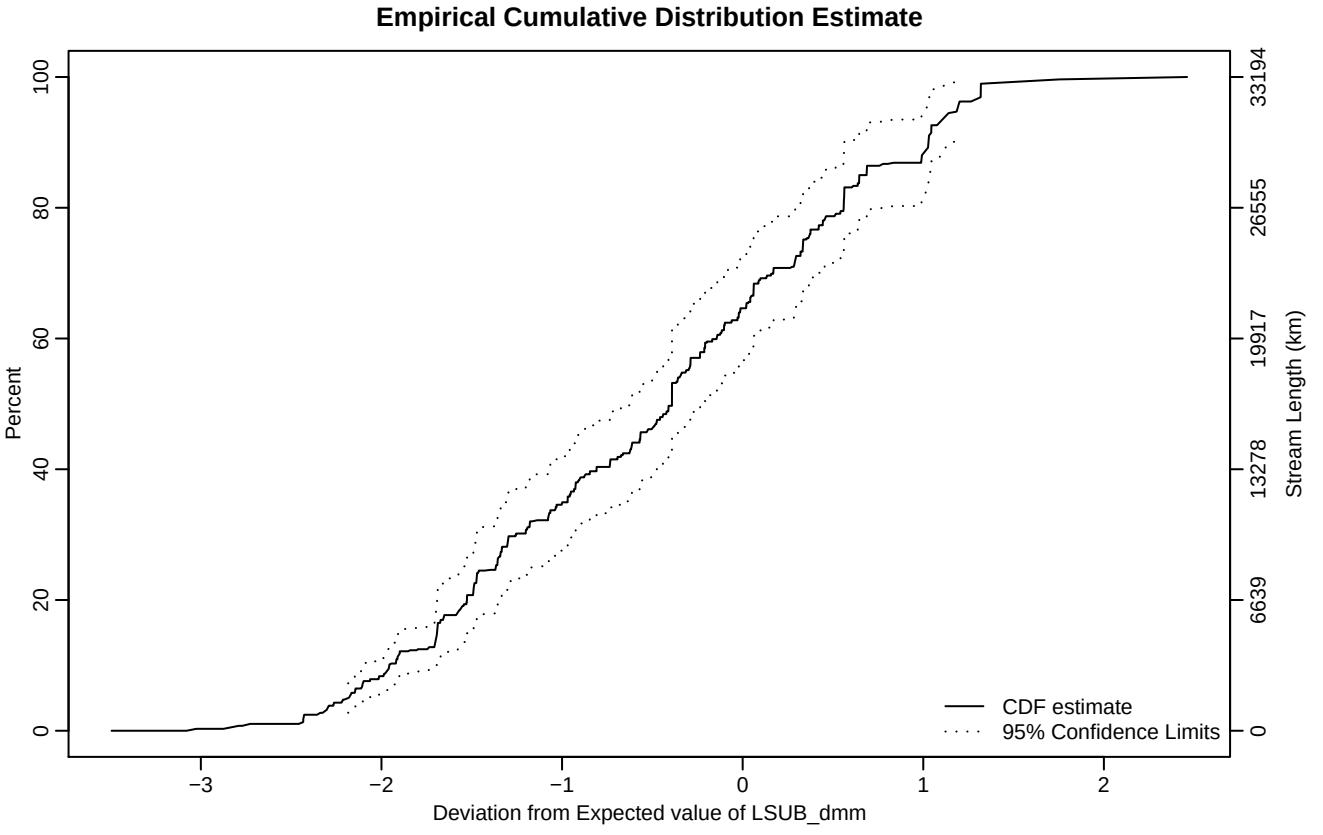


Figure PHAB−199 Indicator: DevLSUB Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.18	−2.34	−2.10
10Pct	−1.96	−2.11	−1.70
25Pct	−1.37	−1.57	−1.18
50Pct	−0.39	−0.66	−0.24
75Pct	0.34	0.06	0.56
90Pct	1.03	0.64	1.28
95Pct	1.19	1.03	1.70
Mean	−0.49	−0.65	−0.32
Std Dev	0.97	0.88	1.06

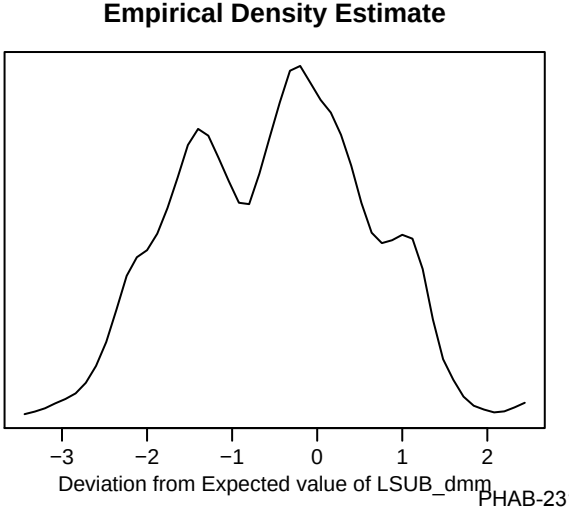
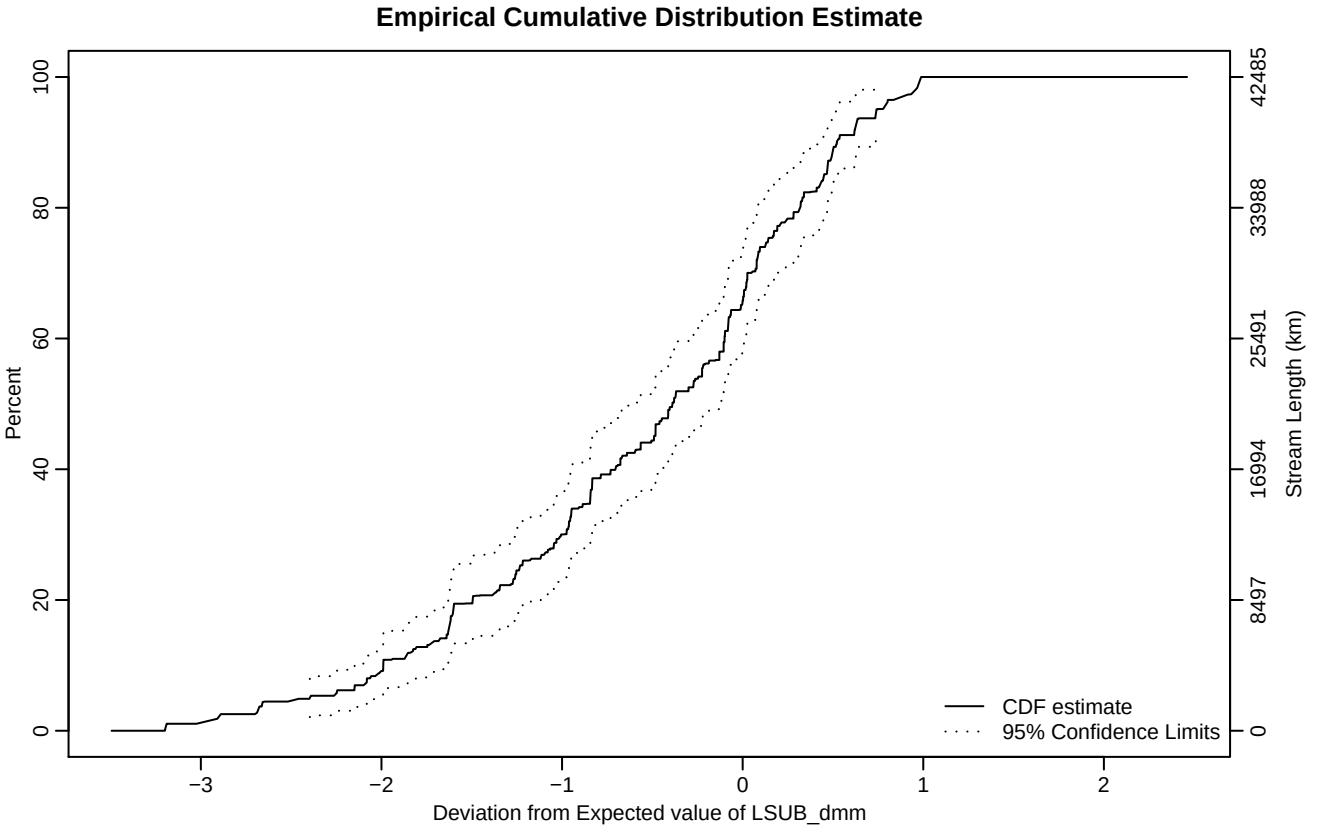


Figure PHAB−200 Indicator: DevLSUB Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.40	−2.90	−2.08
10Pct	−1.99	−2.15	−1.68
25Pct	−1.23	−1.60	−0.96
50Pct	−0.39	−0.64	−0.13
75Pct	0.14	0.02	0.34
90Pct	0.52	0.45	0.78
95Pct	0.74	0.54	0.98
Mean	−0.57	−0.71	−0.42
Std Dev	0.92	0.83	1.01

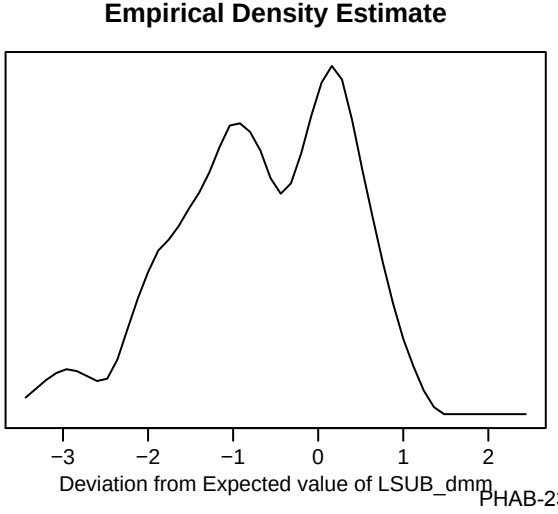
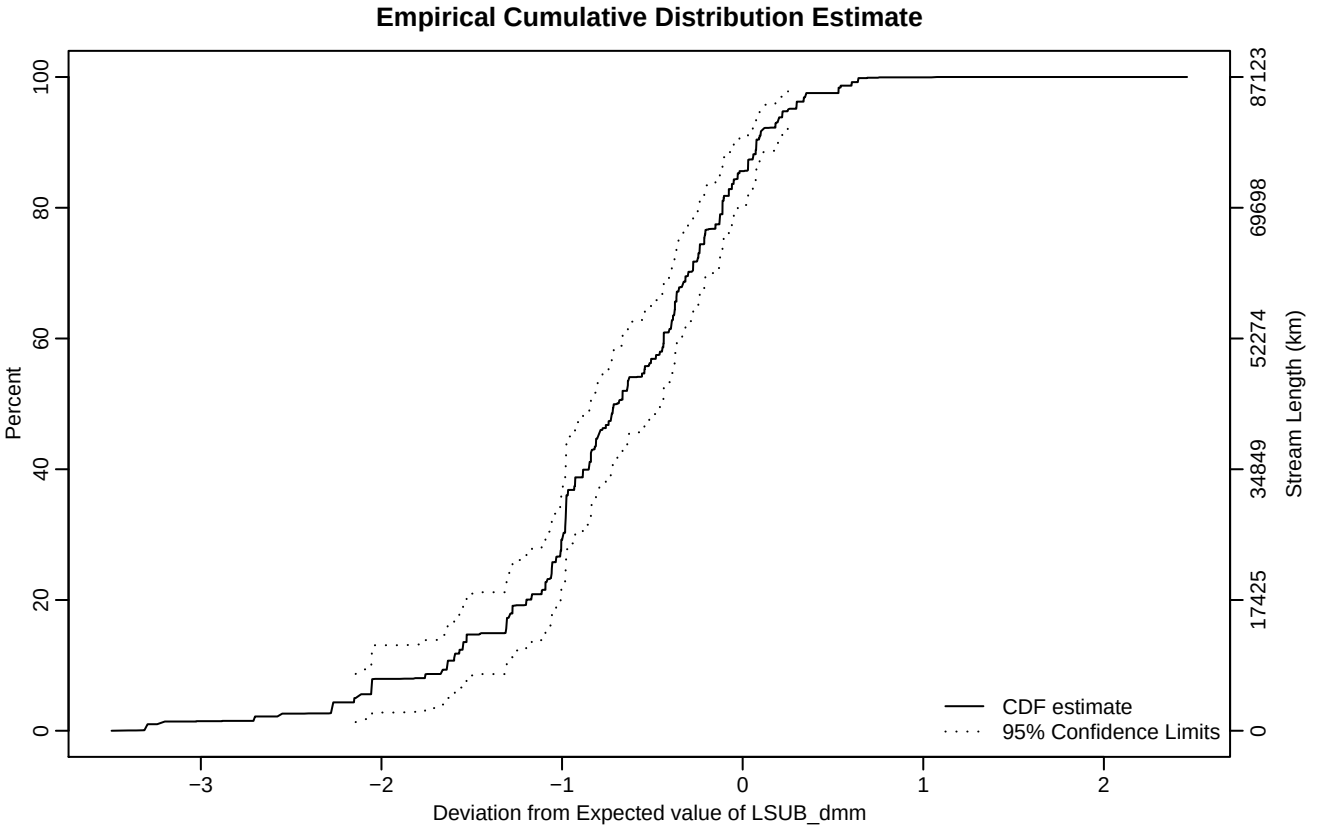


Figure PHAB−201 Indicator: DevLSUB Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.14	−3.21	−1.67
10Pct	−1.64	−2.15	−1.31
25Pct	−1.06	−1.29	−0.98
50Pct	−0.70	−0.84	−0.45
75Pct	−0.21	−0.34	−0.08
90Pct	0.08	−0.02	0.22
95Pct	0.25	0.15	0.53
Mean	−0.73	−0.85	−0.61
Std Dev	0.71	0.61	0.81

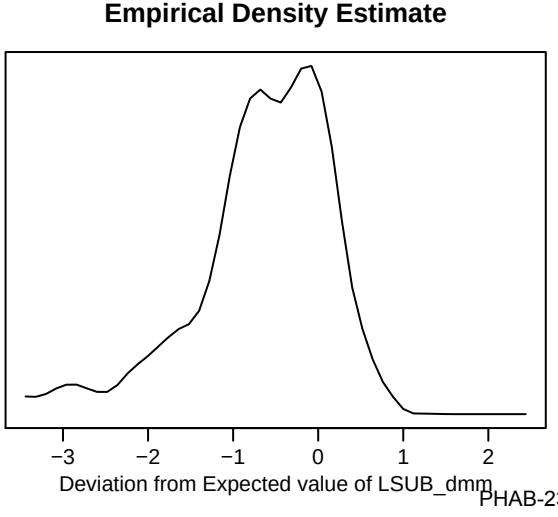
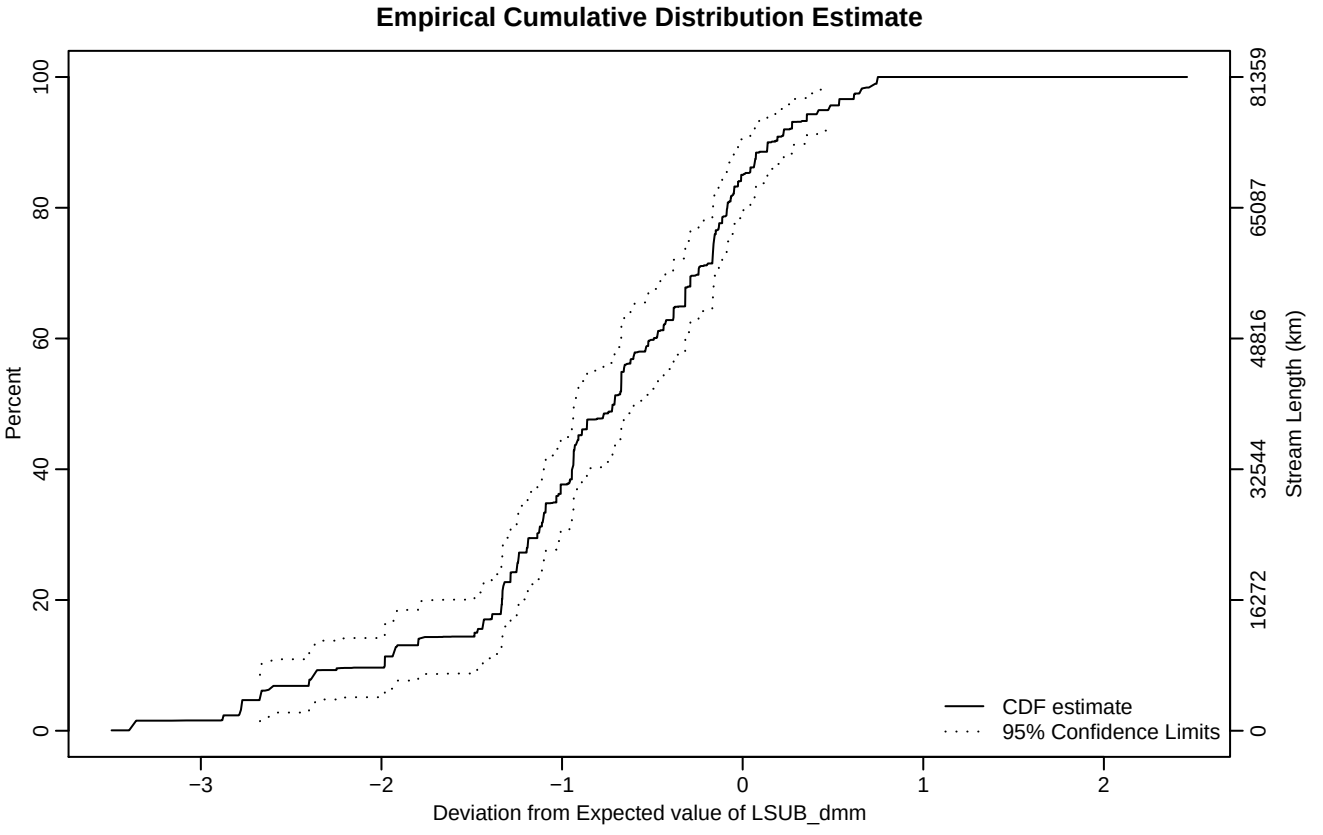


Figure PHAB−202 Indicator: DevLSUB Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.67	−2.89	−2.38
10Pct	−1.98	−2.67	−1.49
25Pct	−1.25	−1.34	−1.11
50Pct	−0.71	−0.94	−0.60
75Pct	−0.16	−0.29	−0.06
90Pct	0.14	0.01	0.42
95Pct	0.47	0.23	0.66
Mean	−0.82	−0.94	−0.69
Std Dev	0.82	0.73	0.91

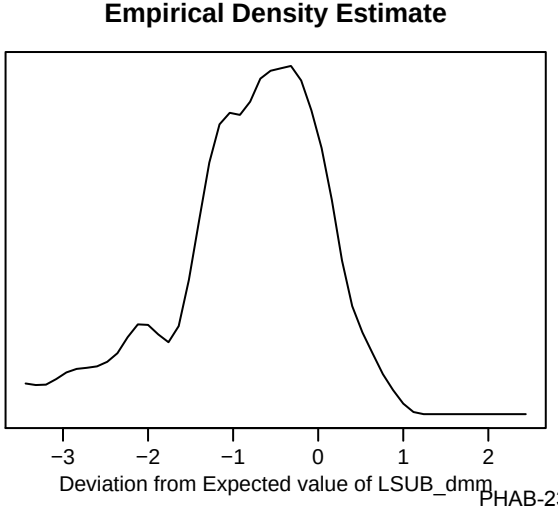
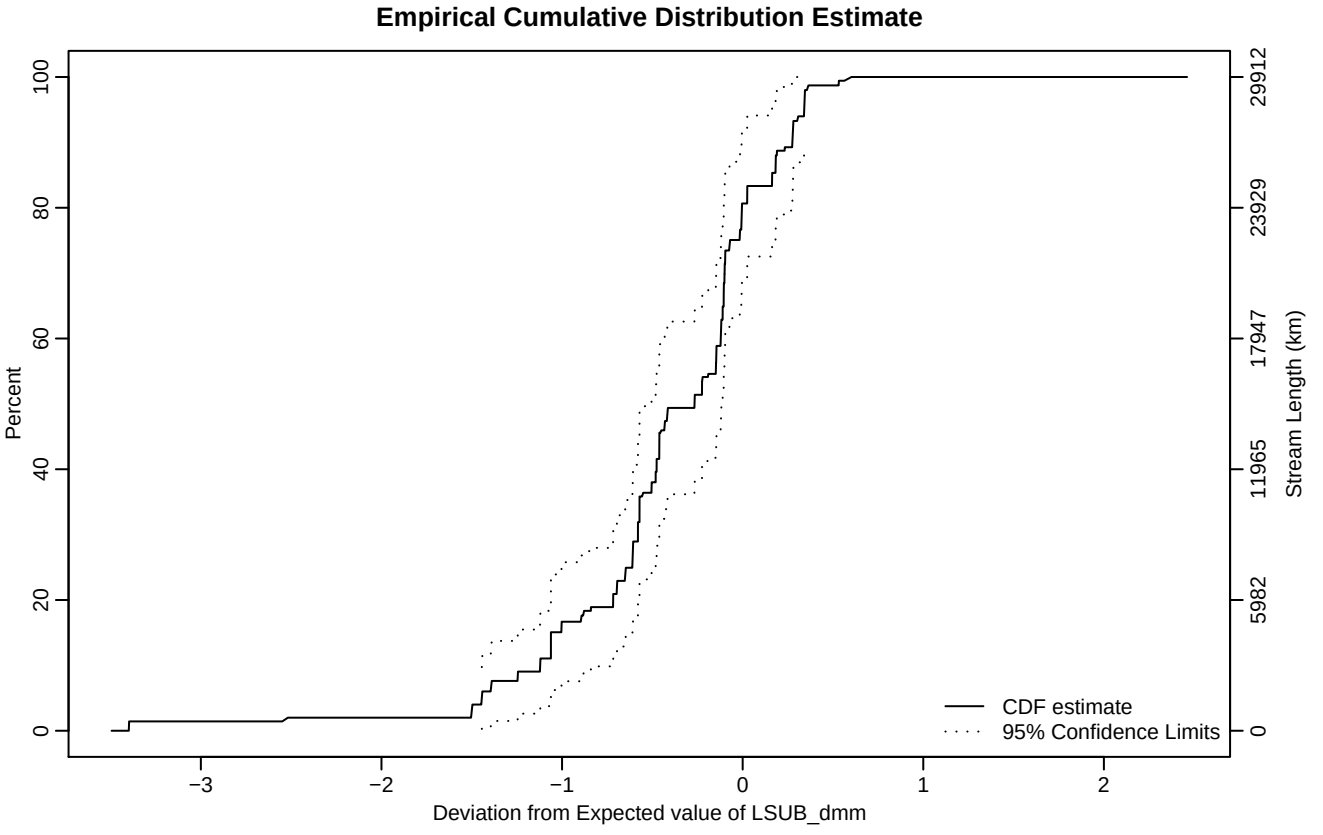


Figure PHAB−203 Indicator: DevLSUB Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1.44	−3.40	−1.12
10Pct	−1.12	−1.50	−1
25Pct	−0.61	−1.06	−0.57
50Pct	−0.27	−0.50	−0.11
75Pct	−0.07	−0.12	0.18
90Pct	0.28	0	0.58
95Pct	0.34	0.18	0.60
Mean	−0.42	−0.56	−0.27
Std Dev	0.56	0.47	0.66

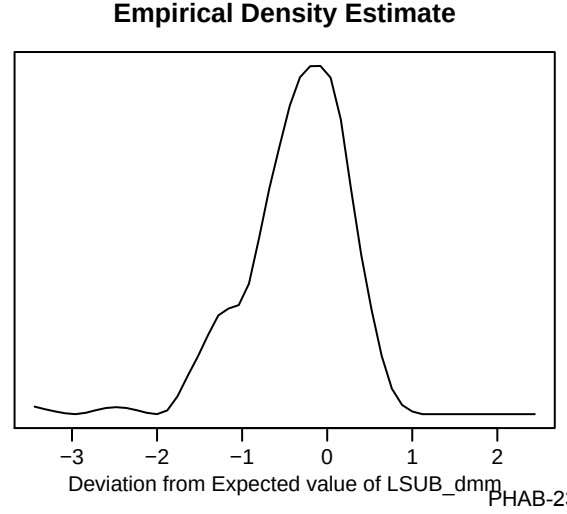
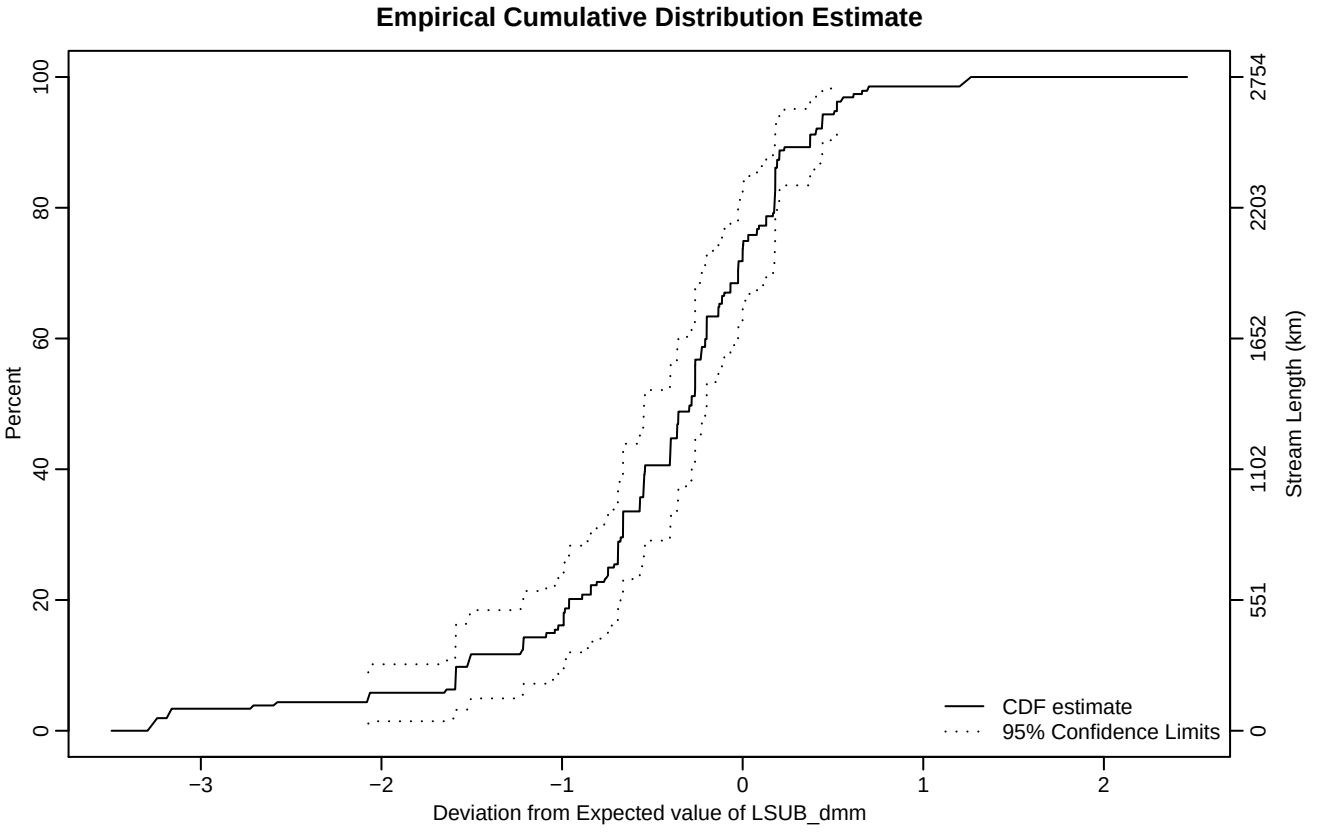


Figure PHAB−204 Indicator: DevLSUB Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.07	−3.26	−1.59
10Pct	−1.52	−2.73	−0.99
25Pct	−0.71	−0.99	−0.57
50Pct	−0.28	−0.55	−0.20
75Pct	0.03	−0.11	0.18
90Pct	0.37	0.18	0.52
95Pct	0.52	0.37	1.22
Mean	−0.47	−0.62	−0.31
Std Dev	0.81	0.66	0.96

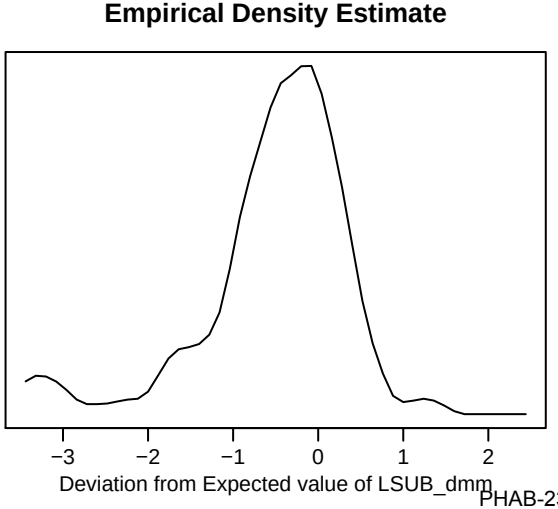
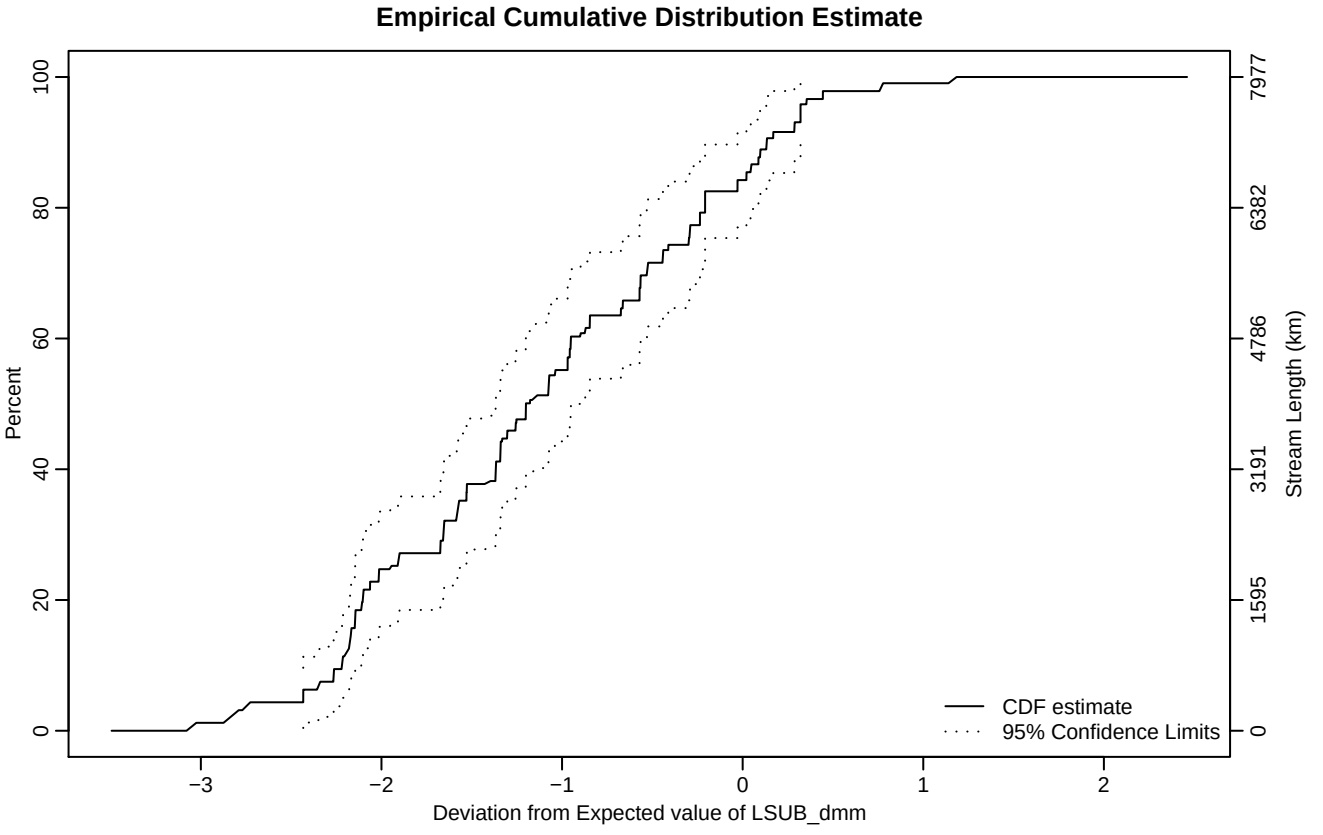


Figure PHAB−205 Indicator: DevLSUB Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.43	−3.05	−2.26
10Pct	−2.22	−2.73	−2.15
25Pct	−1.95	−2.15	−1.58
50Pct	−1.20	−1.37	−0.90
75Pct	−0.30	−0.66	0.02
90Pct	0.13	−0.03	0.35
95Pct	0.32	0.13	1.18
Mean	−1.11	−1.29	−0.93
Std Dev	0.85	0.74	0.95

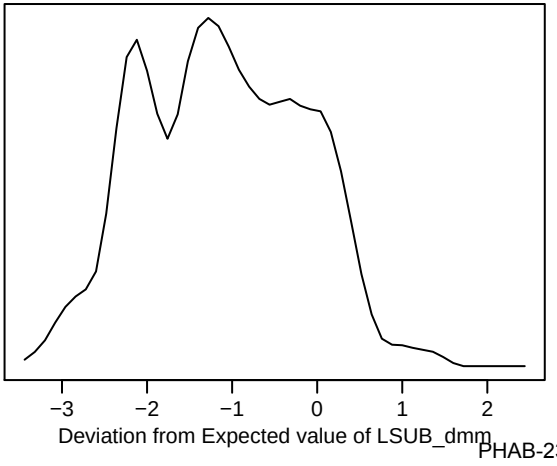
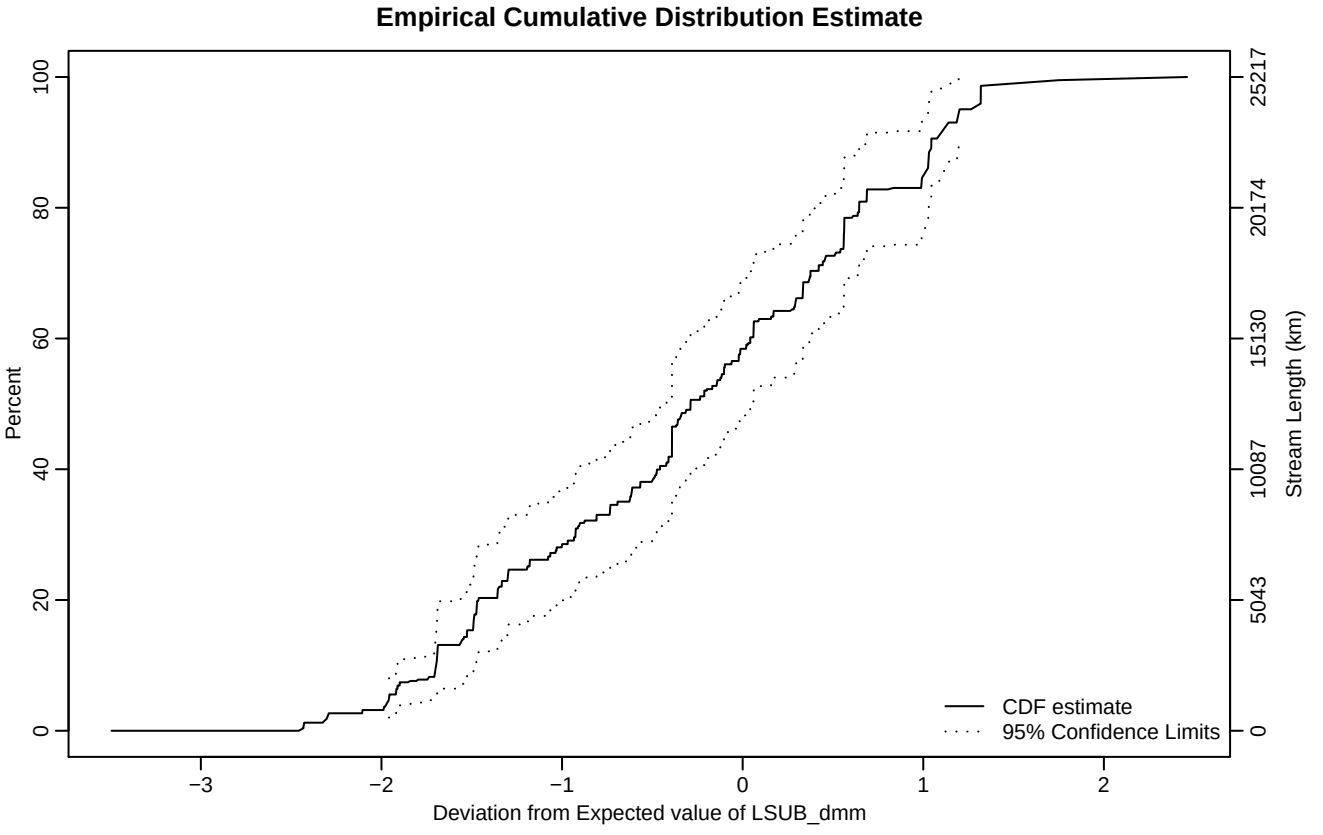


Figure PHAB−206 Indicator: DevLSUB Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1.96	−2.30	−1.74
10Pct	−1.70	−1.92	−1.56
25Pct	−1.19	−1.49	−0.74
50Pct	−0.29	−0.48	0.06
75Pct	0.56	0.30	0.99
90Pct	1.04	0.69	1.32
95Pct	1.20	1.04	
Mean	−0.29	−0.50	−0.08
Std Dev	0.98	0.87	1.08

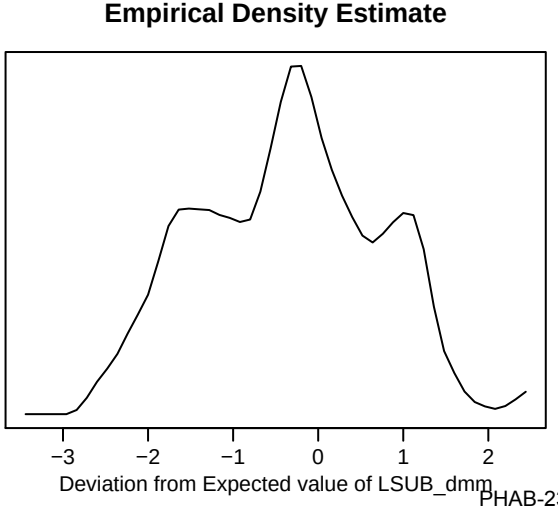
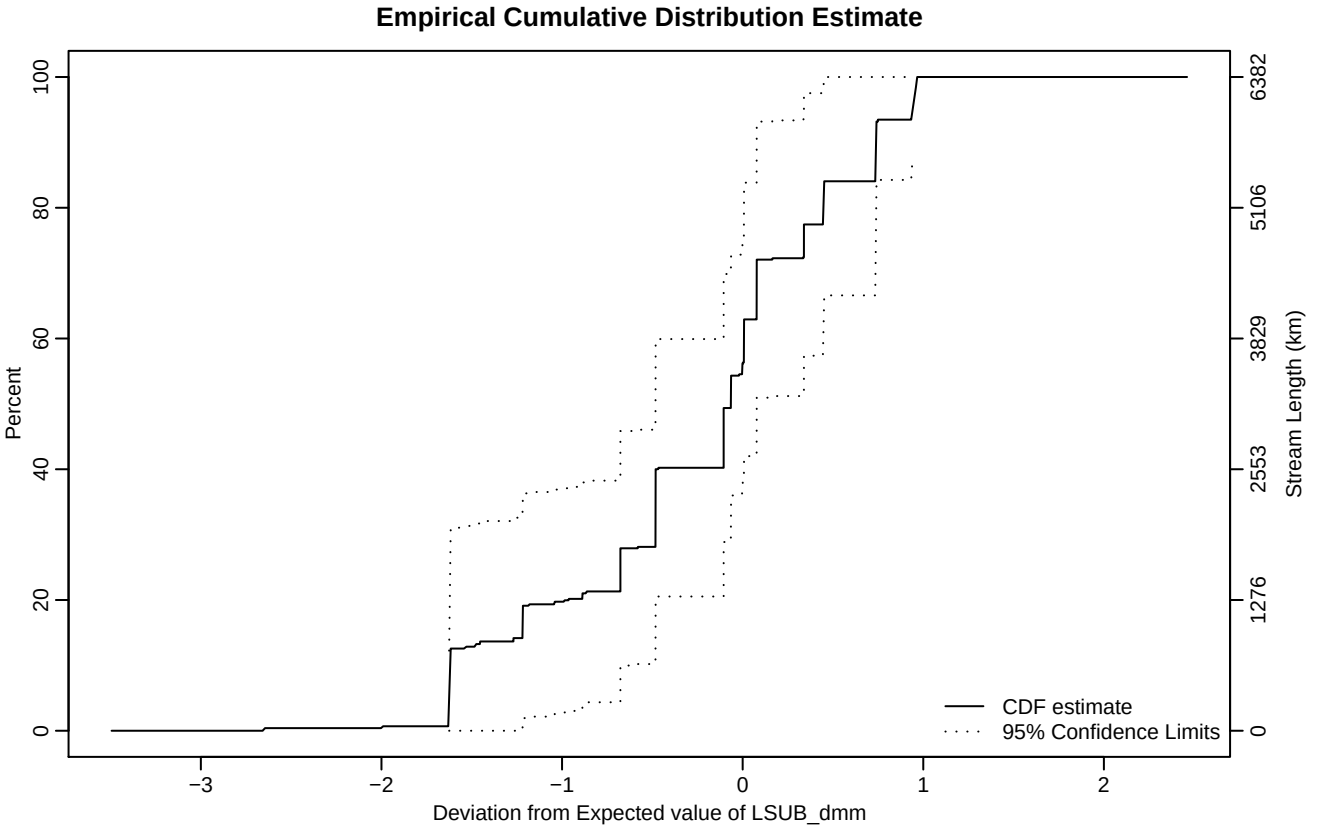


Figure PHAB−207 Indicator: DevLSUB Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1.63	−1.63	−1.62
10Pct	−1.62	−1.62	−1.54
25Pct	−0.68	−1.62	−0.11
50Pct	−0.07	−0.48	0.08
75Pct	0.34	−0.06	0.95
90Pct	0.74	0.34	0.97
95Pct	0.94	0.74	0.97
Mean	−0.24	−0.56	0.08
Std Dev	0.78	0.56	1

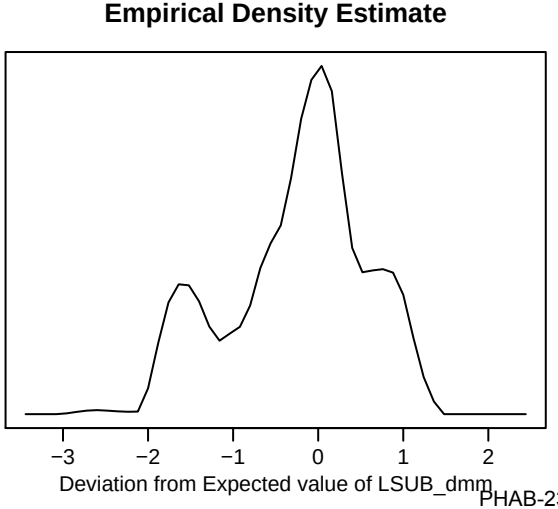
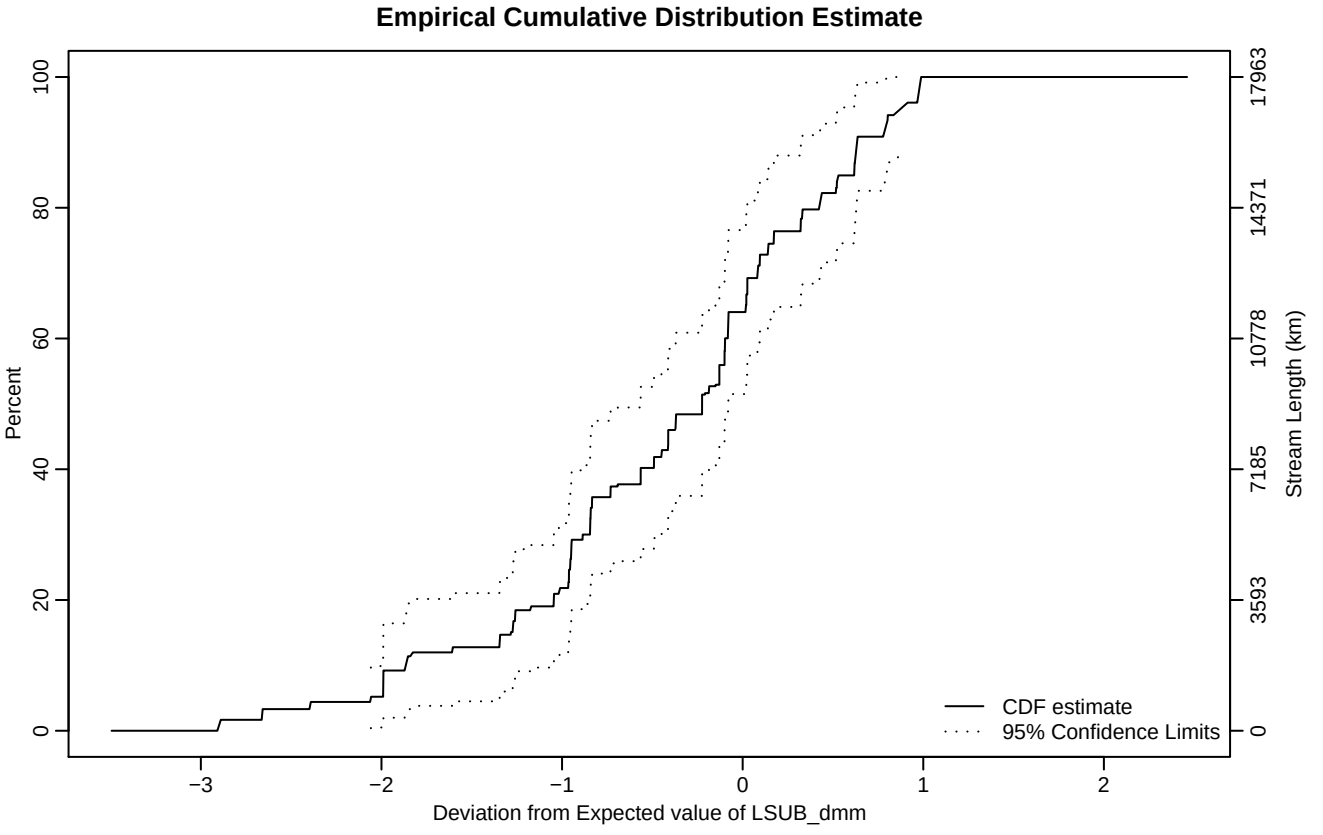


Figure PHAB−208 Indicator: DevLSUB Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.06	−2.90	−1.87
10Pct	−1.87	−2.66	−1.26
25Pct	−0.96	−1.34	−0.83
50Pct	−0.22	−0.73	−0.08
75Pct	0.17	−0.08	0.62
90Pct	0.63	0.42	0.99
95Pct	0.87	0.62	0.99
Mean	−0.43	−0.66	−0.20
Std Dev	0.90	0.75	1.06

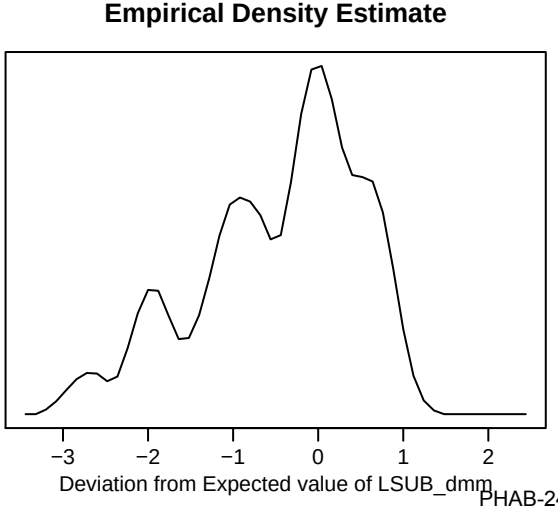
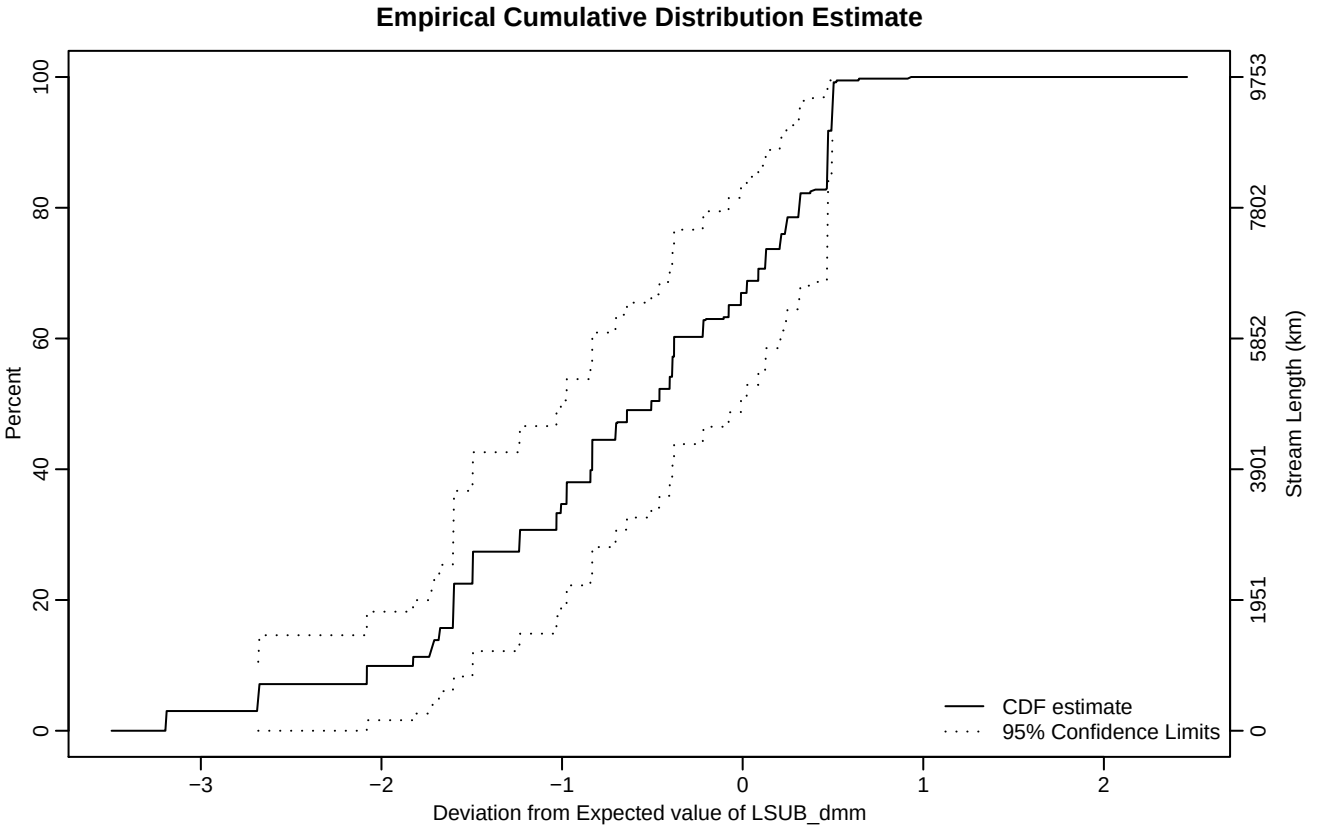


Figure PHAB−209 Indicator: DevLSUB Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.68	−3.19	−2.08
10Pct	−1.83	−3.19	−1.60
25Pct	−1.49	−1.82	−0.84
50Pct	−0.51	−1.01	−0.01
75Pct	0.21	−0.38	0.47
90Pct	0.47	0.13	0.93
95Pct	0.50	0.47	0.93
Mean	−0.68	−1.02	−0.34
Std Dev	0.95	0.81	1.08

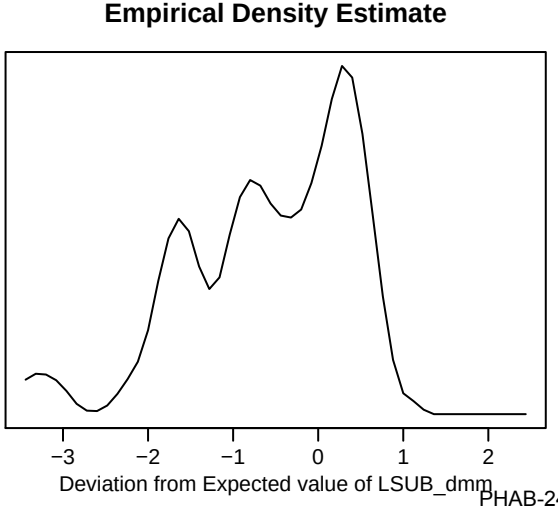
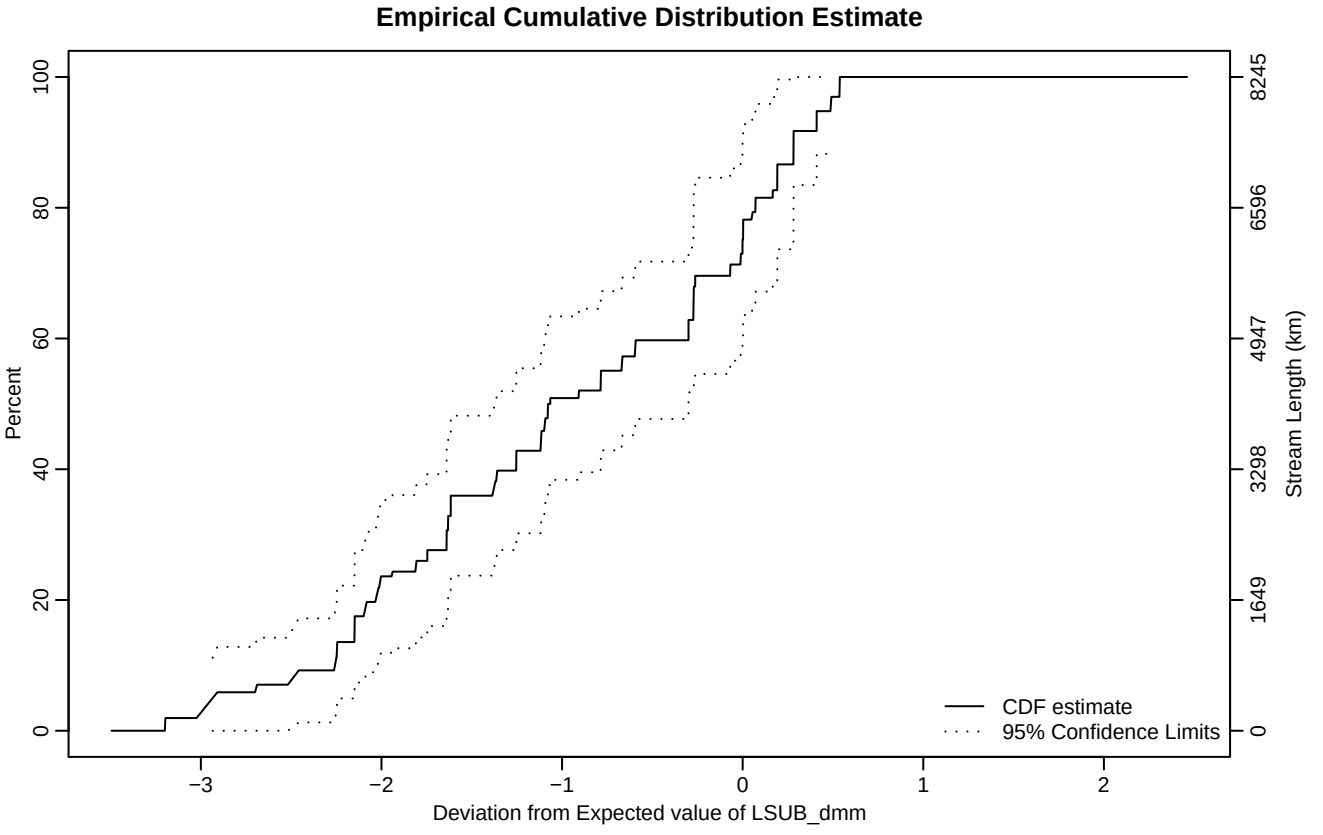


Figure PHAB−210 Indicator: DevLSUB Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.93	−3.20	−2.48
10Pct	−2.26	−3.02	−2.10
25Pct	−1.81	−2.25	−1.38
50Pct	−1.07	−1.37	−0.30
75Pct	0	−0.30	0.28
90Pct	0.28	0	0.54
95Pct	0.49	0.28	0.54
Mean	−0.98	−1.25	−0.71
Std Dev	0.94	0.80	1.07

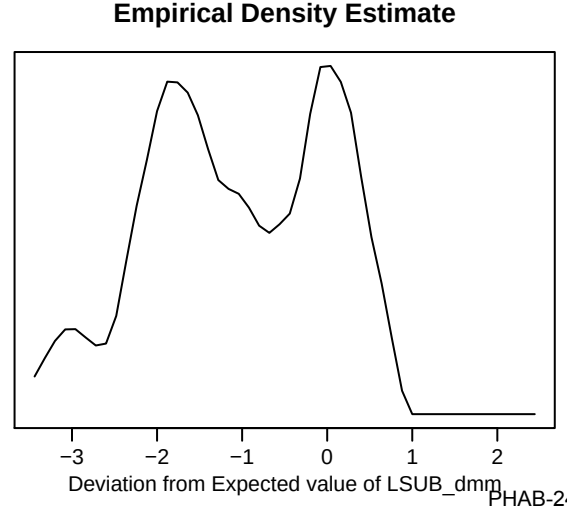
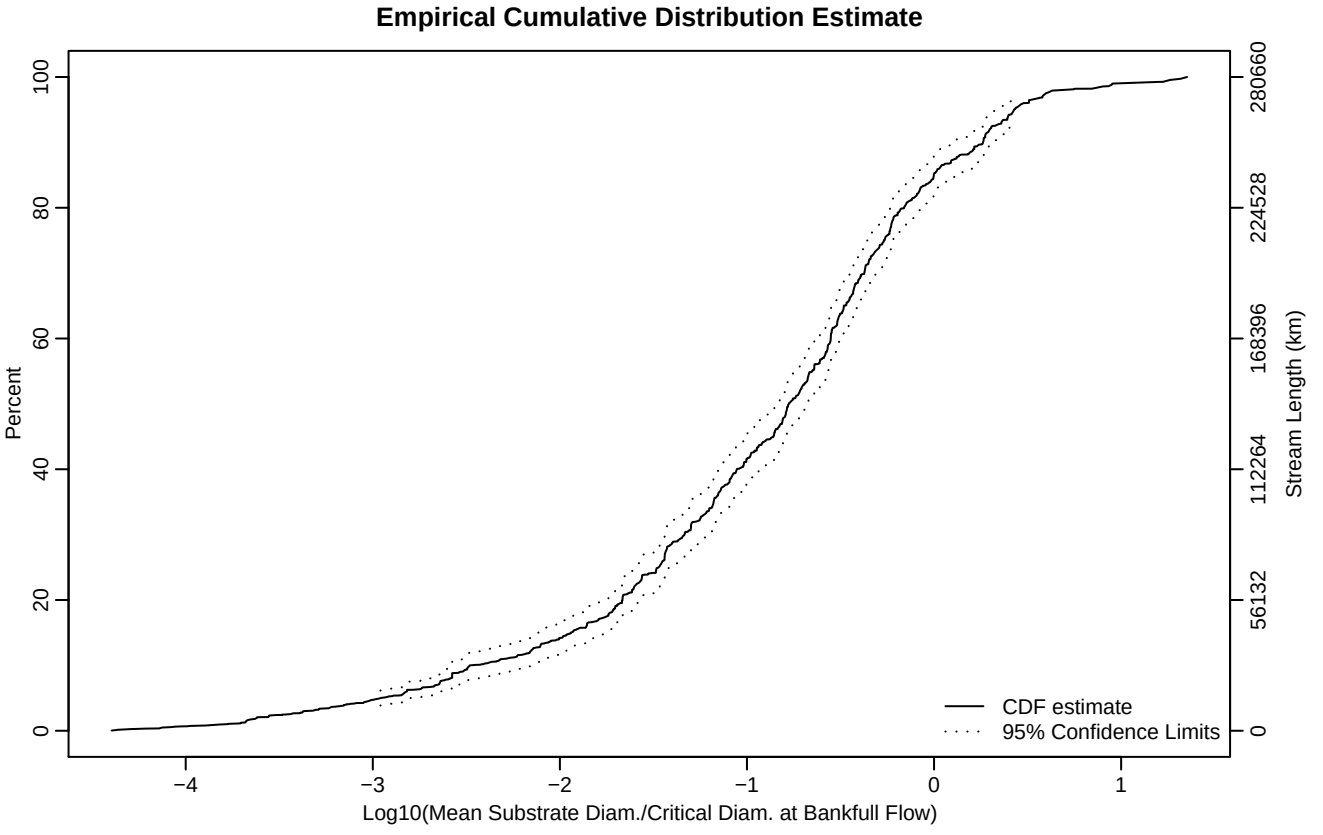


Figure PHAB−211 Indicator: LRBS_bw5 Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.96	−3.16	−2.82
10Pct	−2.48	−2.58	−2.16
25Pct	−1.47	−1.61	−1.43
50Pct	−0.78	−0.85	−0.68
75Pct	−0.27	−0.35	−0.22
90Pct	0.26	0.11	0.33
95Pct	0.43	0.36	0.58
Mean	−0.94	−1.01	−0.88
Std Dev	0.89	0.84	0.94

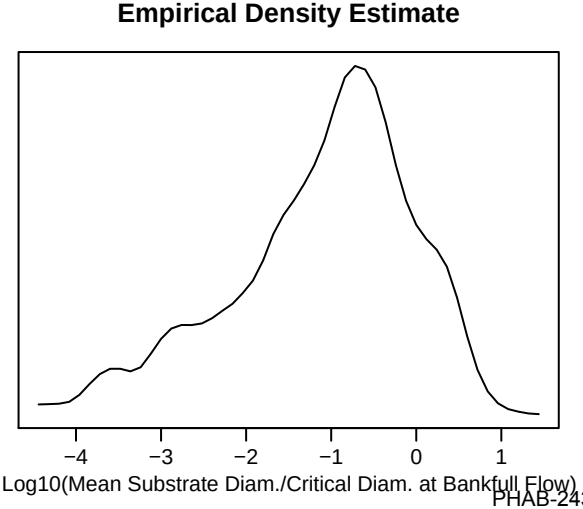
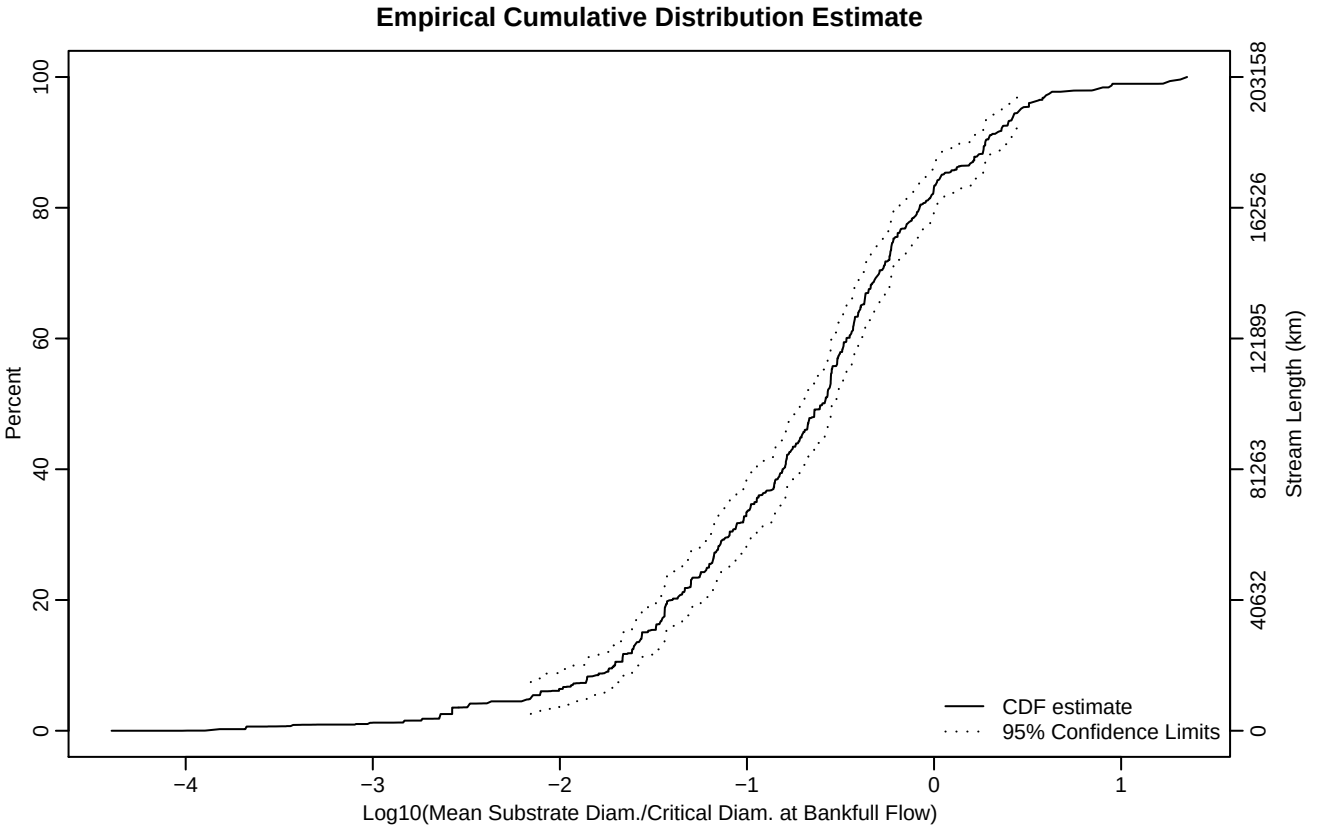


Figure PHAB−212 Indicator: LRBS_bw5 Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.16	−2.58	−1.86
10Pct	−1.71	−1.94	−1.60
25Pct	−1.20	−1.37	−1.10
50Pct	−0.60	−0.72	−0.55
75Pct	−0.22	−0.27	−0.09
90Pct	0.27	0.20	0.40
95Pct	0.46	0.39	0.61
Mean	−0.72	−0.80	−0.64
Std Dev	0.79	0.73	0.84

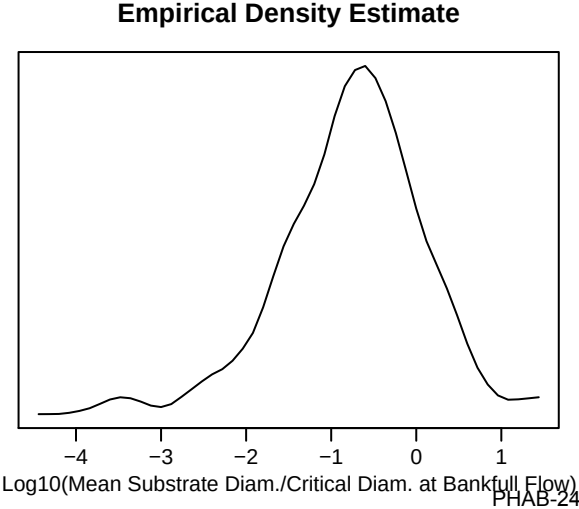
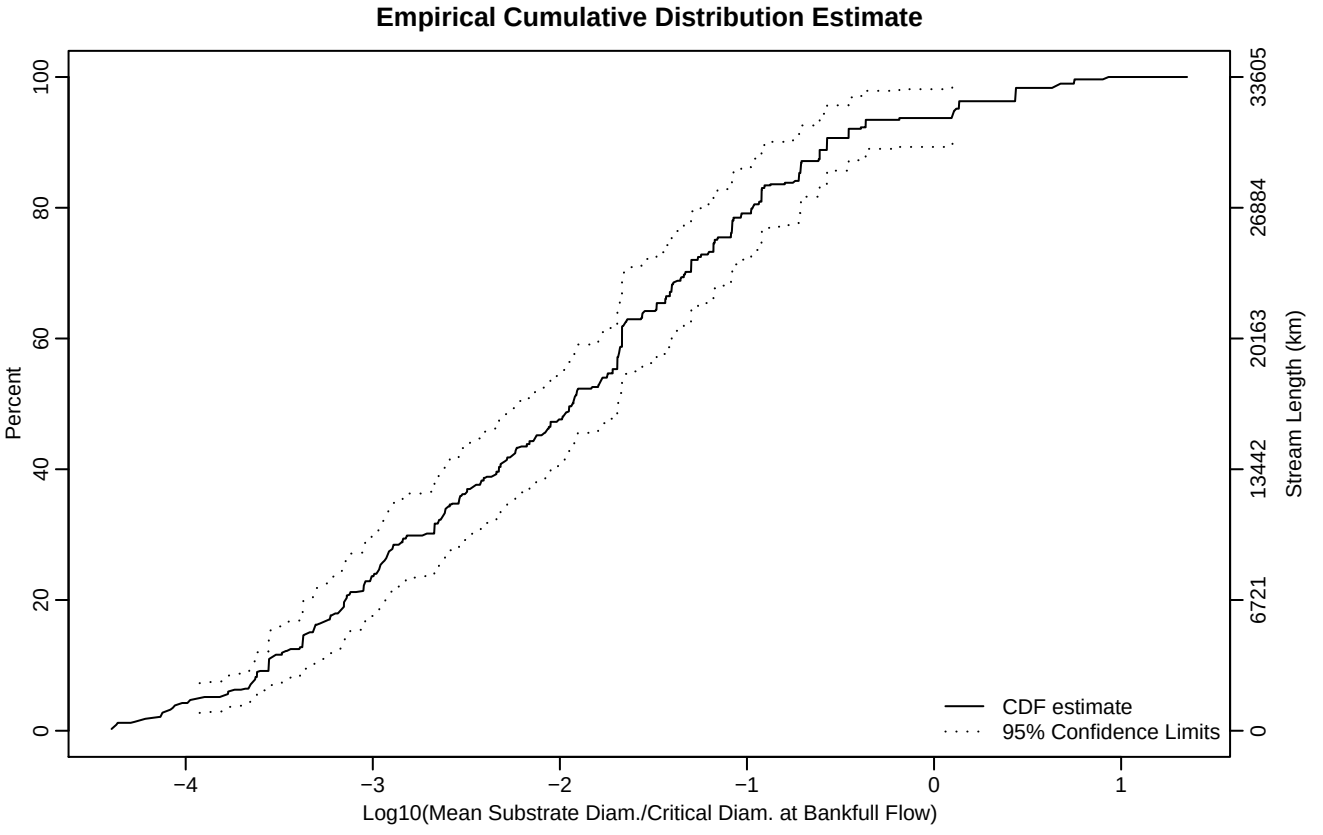


Figure PHAB−213 Indicator: LRBS_bw5 Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−3.93	−4.12	−3.65
10Pct	−3.56	−3.66	−3.38
25Pct	−2.96	−3.16	−2.67
50Pct	−1.93	−2.24	−1.69
75Pct	−1.17	−1.40	−0.92
90Pct	−0.57	−0.72	0.13
95Pct	0.11	−0.46	0.75
Mean	−1.99	−2.17	−1.82
Std Dev	1.06	0.95	1.17

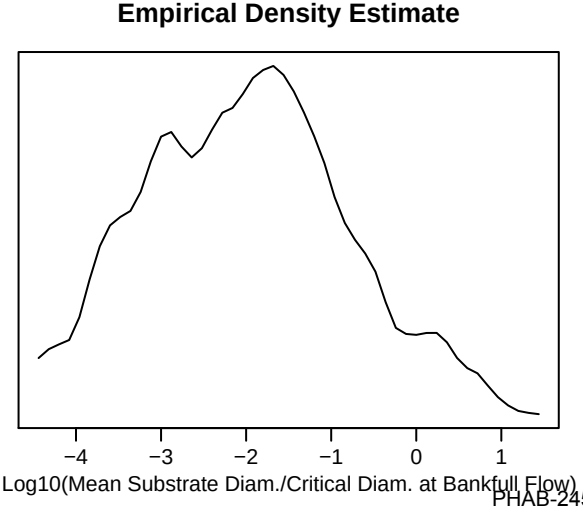
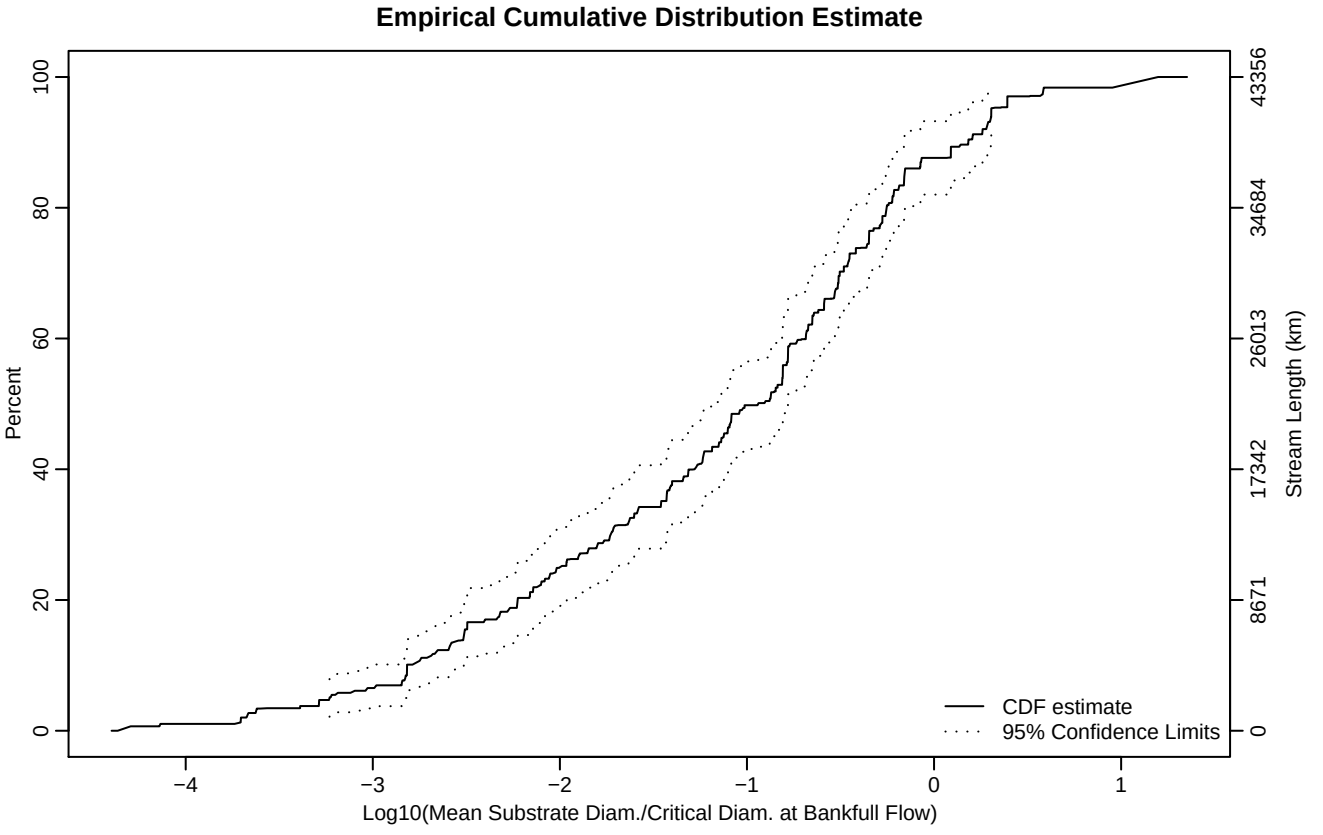


Figure PHAB−214 Indicator: LRBS_bw5 Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−3.23	−3.67	−2.83
10Pct	−2.82	−3.04	−2.53
25Pct	−2	−2.23	−1.71
50Pct	−0.94	−1.19	−0.78
75Pct	−0.35	−0.51	−0.22
90Pct	0.18	−0.16	0.36
95Pct	0.31	0.20	1.12
Mean	−1.18	−1.33	−1.02
Std Dev	0.99	0.90	1.09

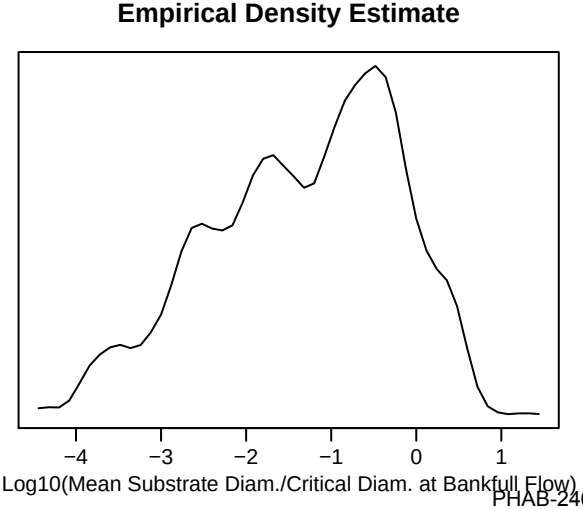
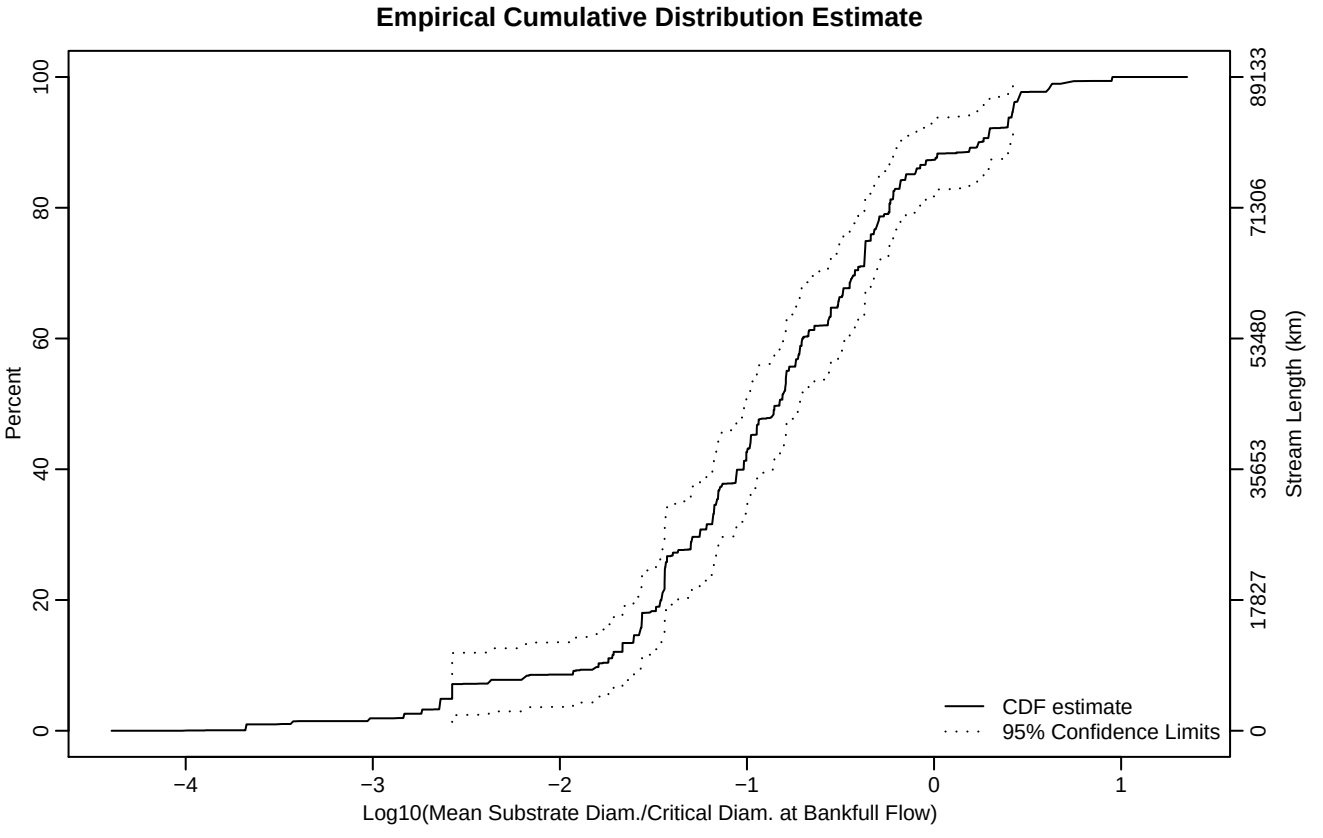


Figure PHAB−215 Indicator: LRBS_bw5 Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.58	−3.43	−1.93
10Pct	−1.79	−2.58	−1.57
25Pct	−1.44	−1.56	−1.18
50Pct	−0.83	−1	−0.72
75Pct	−0.34	−0.45	−0.22
90Pct	0.24	−0.15	0.42
95Pct	0.42	0.29	0.63
Mean	−0.90	−1.04	−0.76
Std Dev	0.83	0.73	0.94

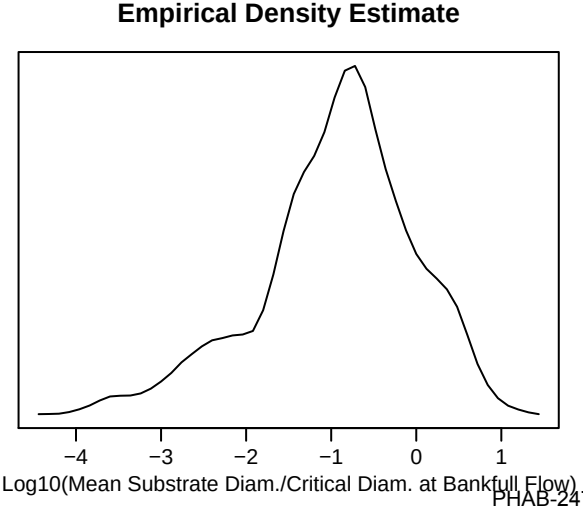
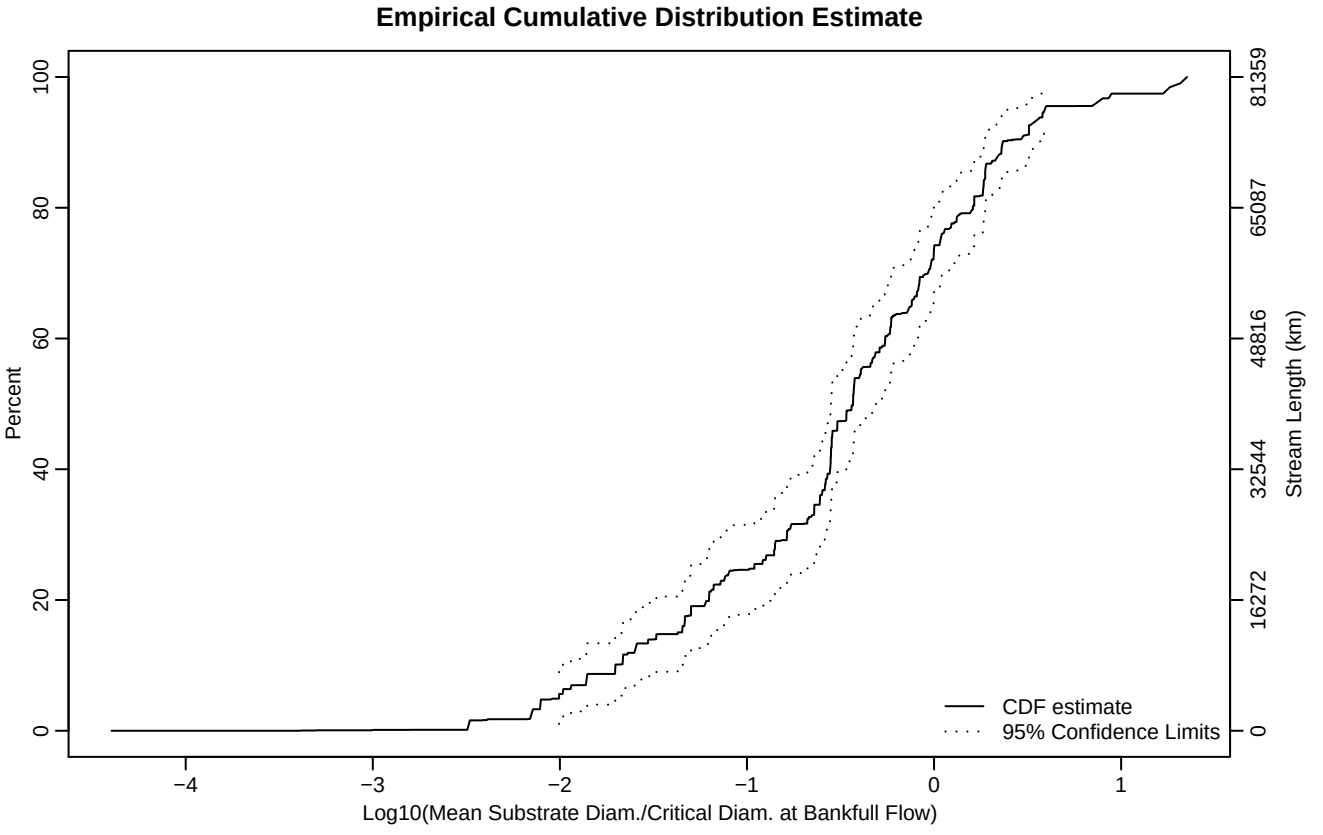


Figure PHAB−216 Indicator: LRBS_bw5 Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2	−2.49	−1.70
10Pct	−1.70	−2	−1.48
25Pct	−0.96	−1.30	−0.68
50Pct	−0.43	−0.55	−0.31
75Pct	0.03	−0.08	0.22
90Pct	0.37	0.27	0.59
95Pct	0.59	0.51	1.26
Mean	−0.50	−0.63	−0.37
Std Dev	0.79	0.71	0.87

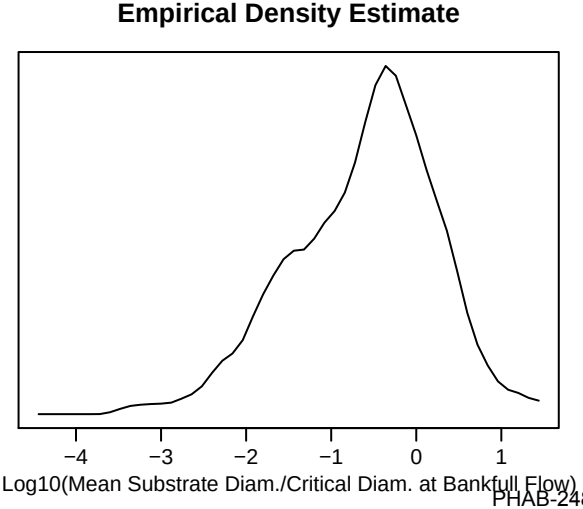
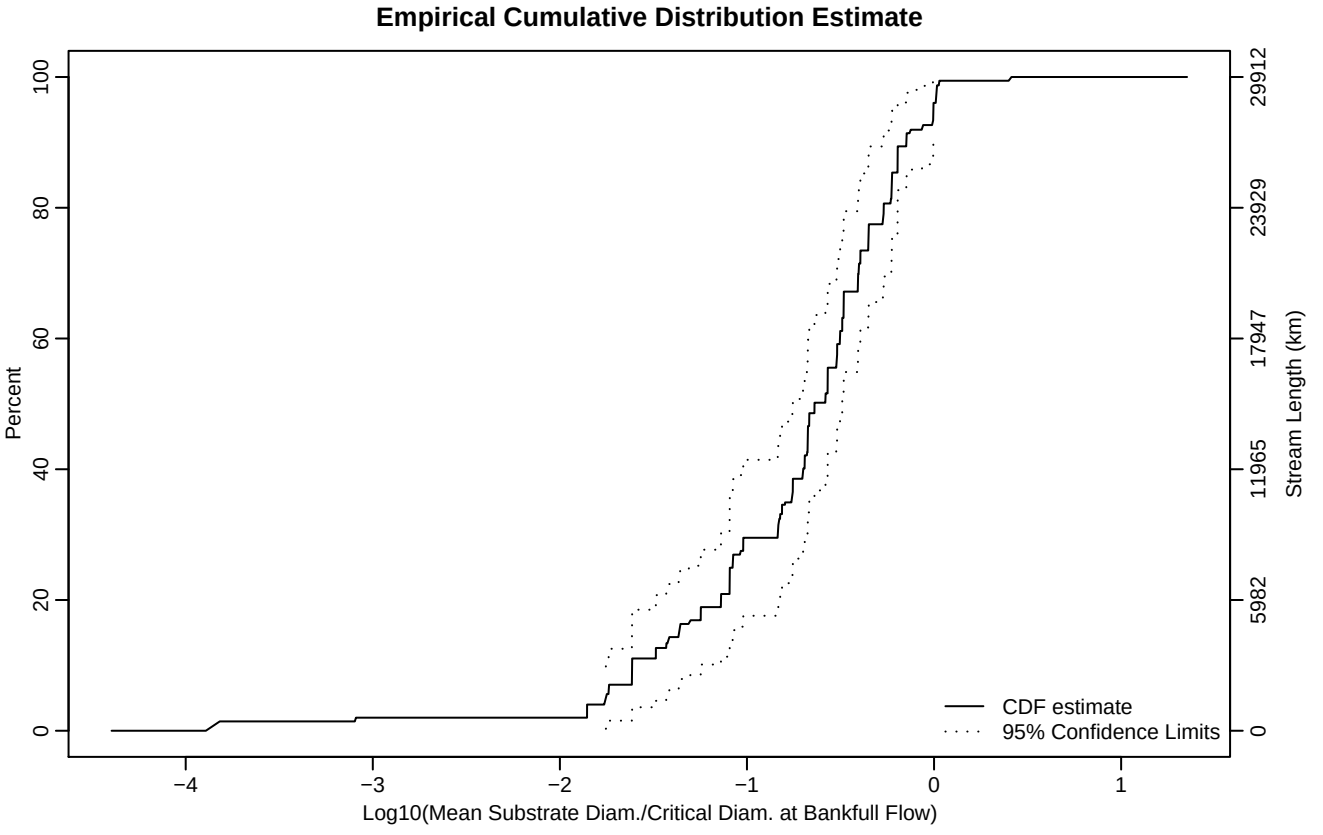


Figure PHAB−217 Indicator: LRBS_bw5 Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1.75	−3.86	−1.61
10Pct	−1.61	−1.76	−1.36
25Pct	−1.08	−1.42	−0.76
50Pct	−0.64	−0.76	−0.48
75Pct	−0.35	−0.49	−0.19
90Pct	−0.15	−0.23	0.01
95Pct	0	−0.19	0.41
Mean	−0.75	−0.90	−0.61
Std Dev	0.56	0.47	0.66

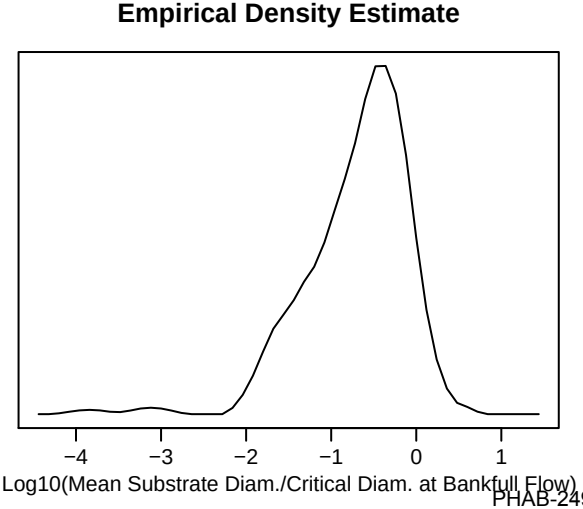
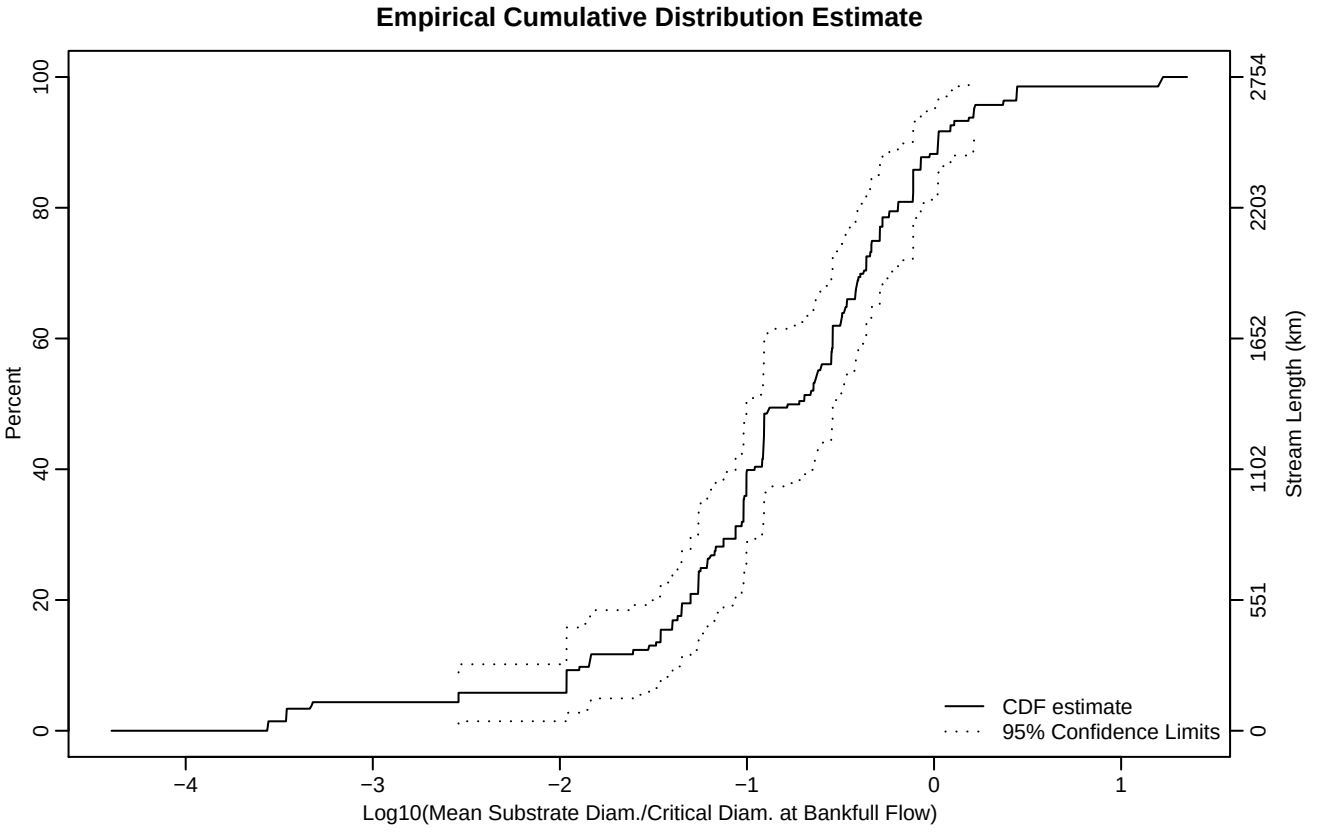


Figure PHAB−218 Indicator: LRBS_bw5 Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.54	−3.56	−1.96
10Pct	−1.84	−3.34	−1.40
25Pct	−1.21	−1.46	−1.02
50Pct	−0.72	−1	−0.50
75Pct	−0.29	−0.47	−0.11
90Pct	0.02	−0.11	0.44
95Pct	0.21	0.02	1.22
Mean	−0.84	−1.01	−0.67
Std Dev	0.85	0.70	0.99

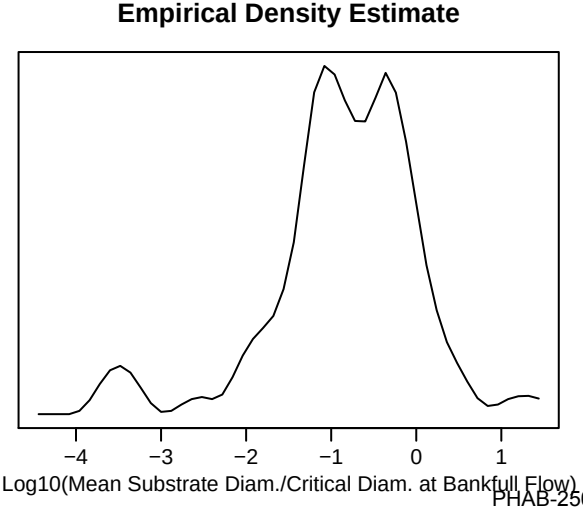
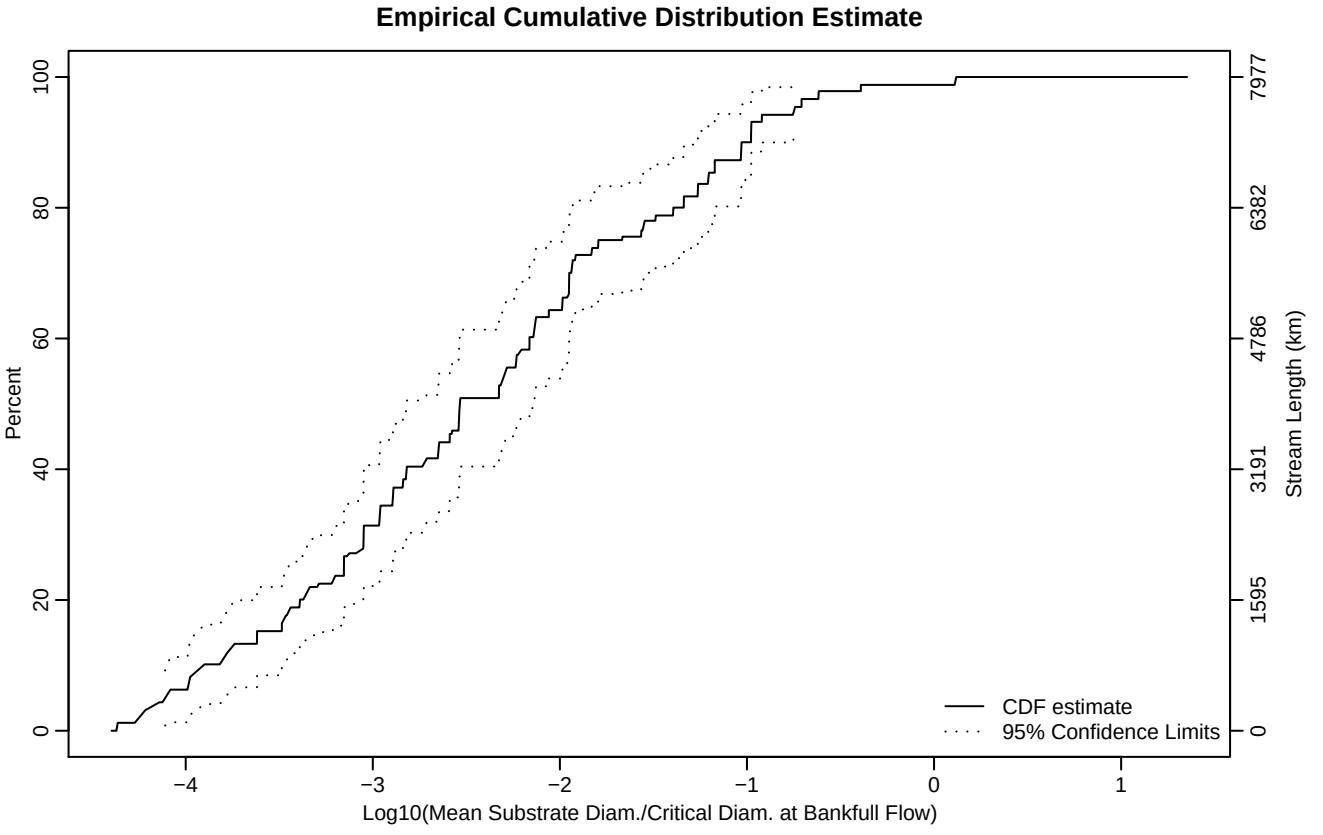


Figure PHAB−219 Indicator: LRBS_bw5 Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−4.11	−4.36	−3.95
10Pct	−3.91	−4.15	−3.49
25Pct	−3.15	−3.48	−2.96
50Pct	−2.53	−2.82	−2.14
75Pct	−1.79	−1.98	−1.21
90Pct	−1.03	−1.26	−0.62
95Pct	−0.75	−0.98	0.11
Mean	−2.42	−2.62	−2.23
Std Dev	0.93	0.82	1.04

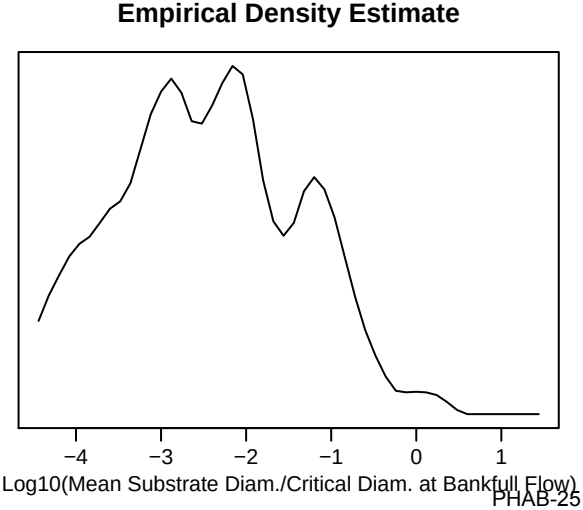
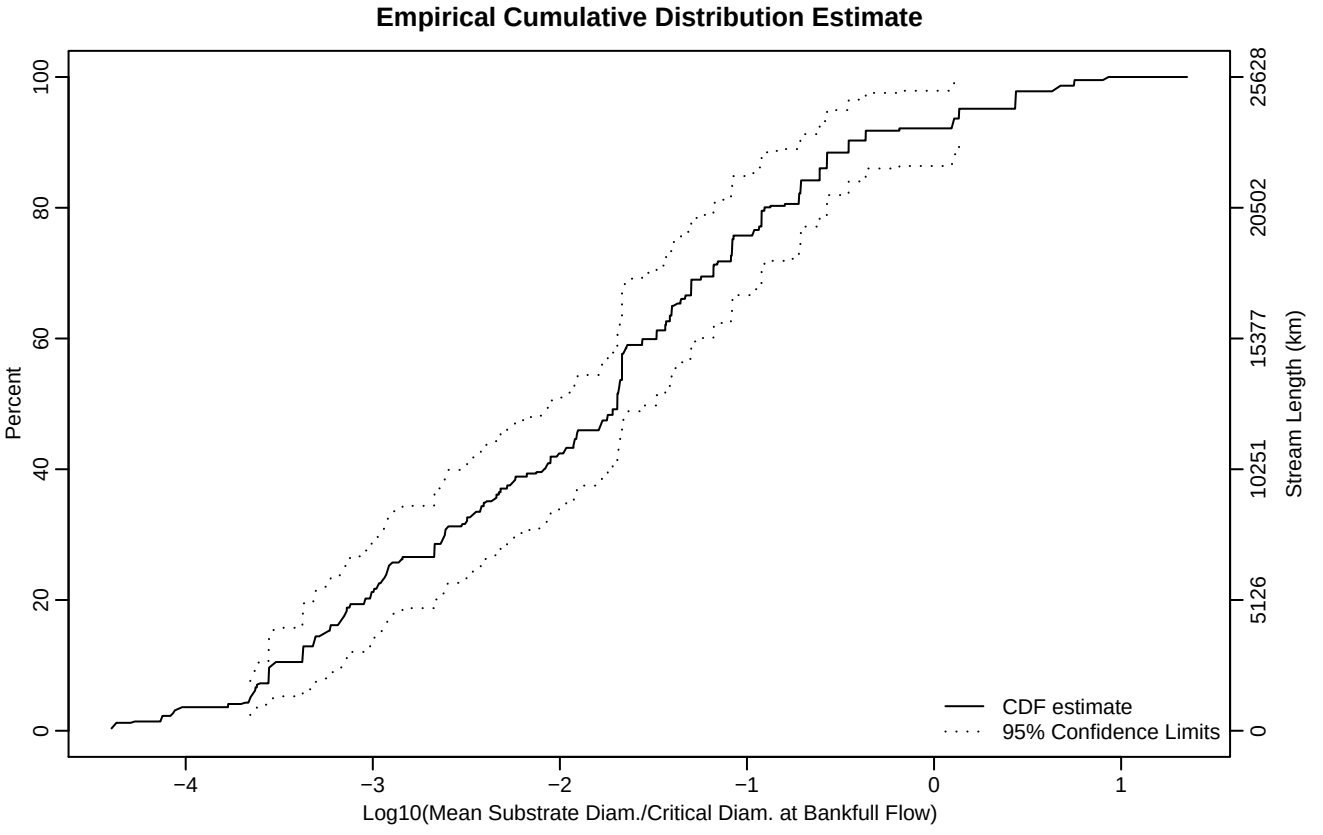


Figure PHAB−220 Indicator: LRBS_bw5 Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−3.66	−4.07	−3.56
10Pct	−3.54	−3.66	−3.25
25Pct	−2.92	−3.16	−2.47
50Pct	−1.69	−2.05	−1.56
75Pct	−1.08	−1.35	−0.61
90Pct	−0.46	−0.71	0.44
95Pct	0.13	−0.46	
Mean	−1.86	−2.08	−1.64
Std Dev	1.08	0.95	1.22

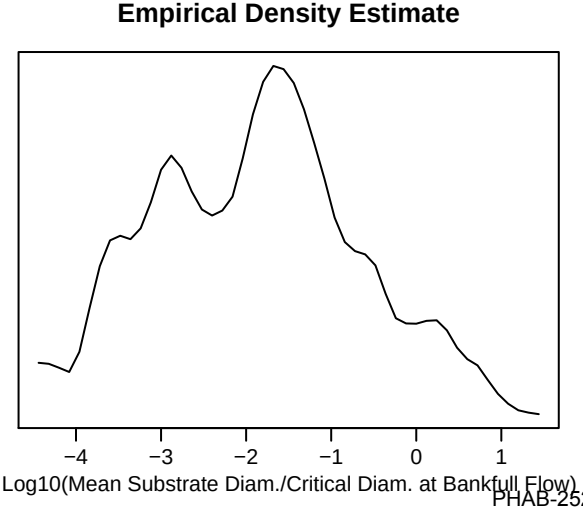
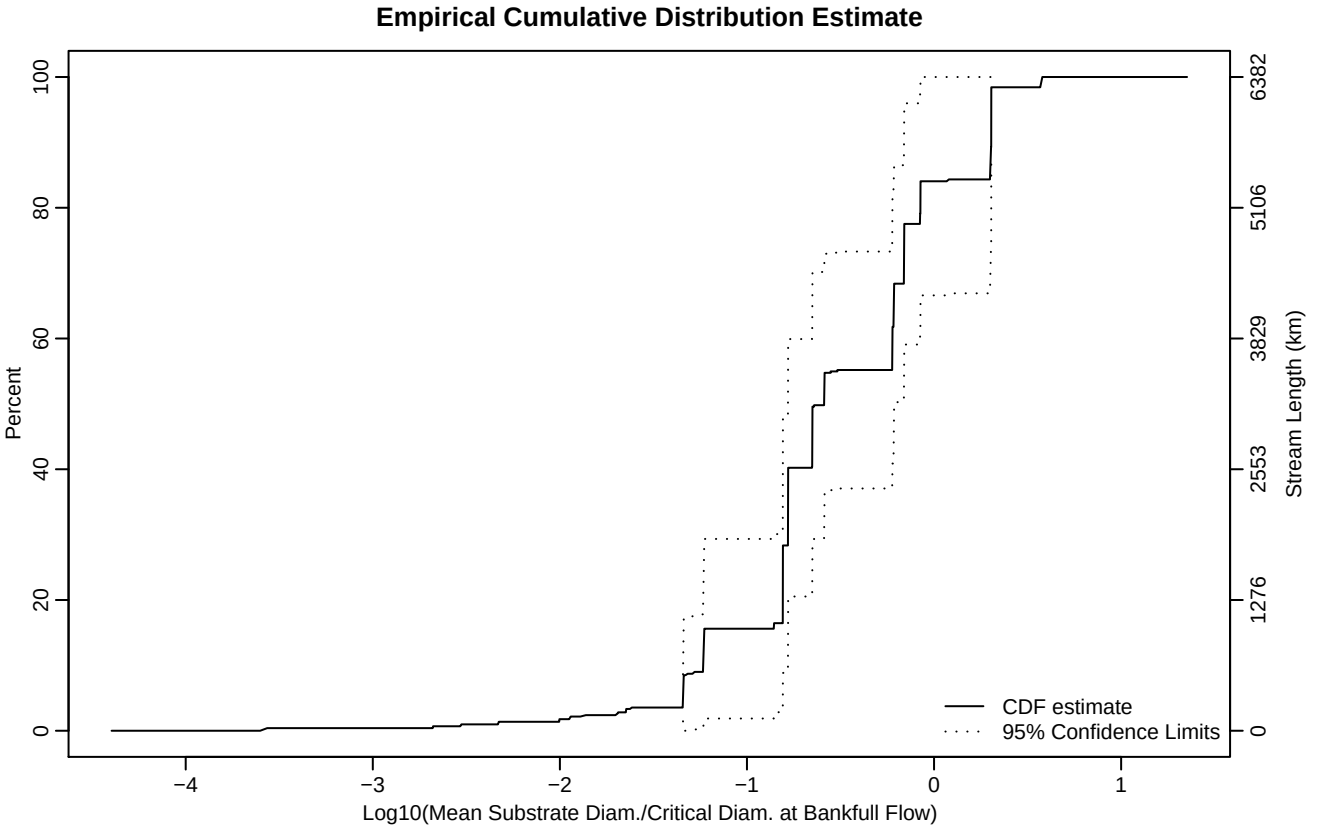


Figure PHAB−221 Indicator: LRBS_bw5 Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1.34	−1.65	−1.34
10Pct	−1.23	−2.33	−0.81
25Pct	−0.81	−1.23	−0.78
50Pct	−0.59	−0.78	−0.16
75Pct	−0.16	−0.22	0.31
90Pct	0.31	−0.16	0.58
95Pct	0.31	−0.07	0.58
Mean	−0.52	−0.69	−0.34
Std Dev	0.59	0.47	0.72

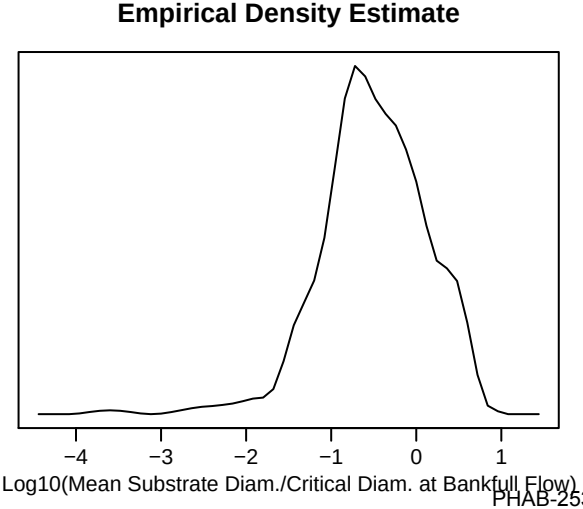
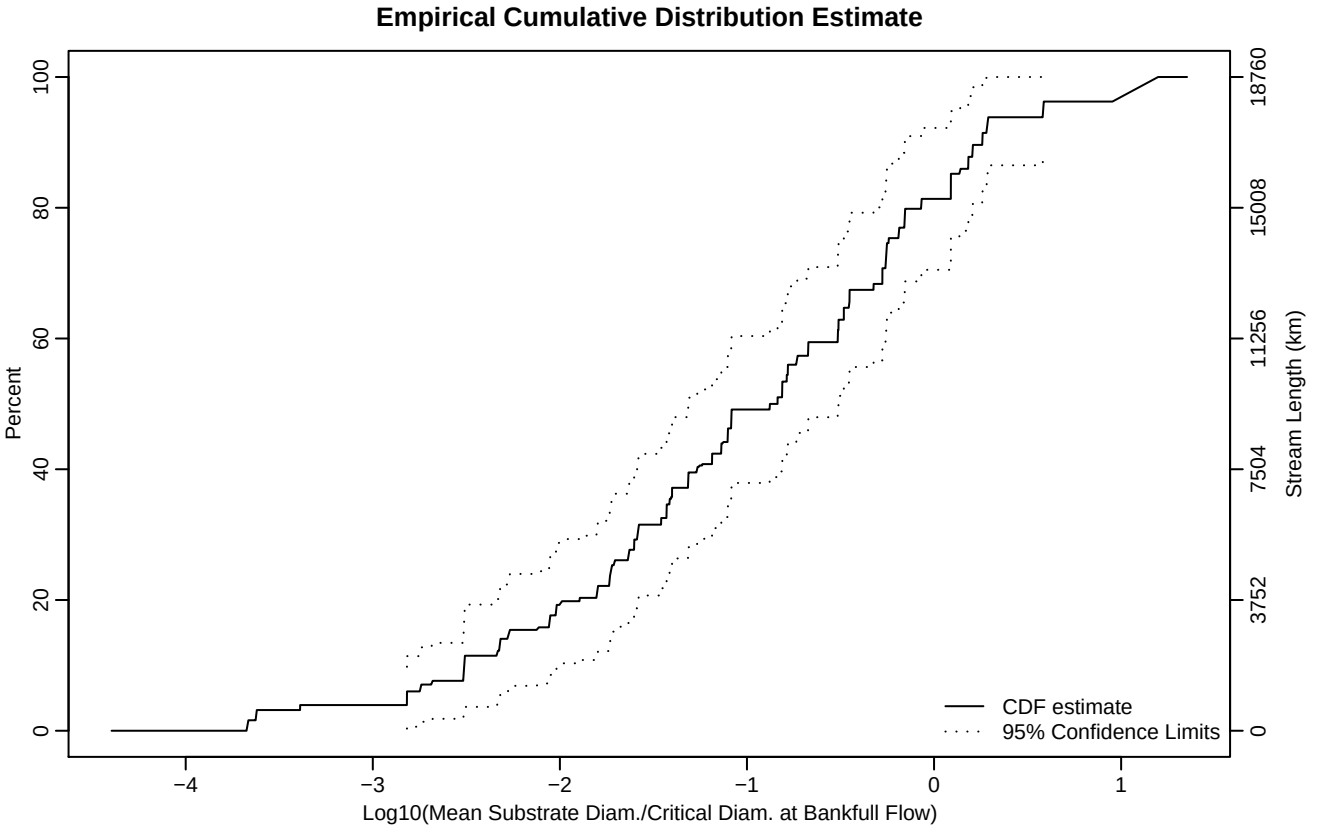


Figure PHAB−222 Indicator: LRBS_bw5 Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−2.82	−3.67	−2.51
10Pct	−2.51	−2.82	−2.06
25Pct	−1.72	−2.27	−1.41
50Pct	−0.84	−1.31	−0.51
75Pct	−0.24	−0.48	0.18
90Pct	0.26	−0.07	1.12
95Pct	0.58	0.18	1.20
Mean	−1	−1.28	−0.73
Std Dev	1.07	0.89	1.25

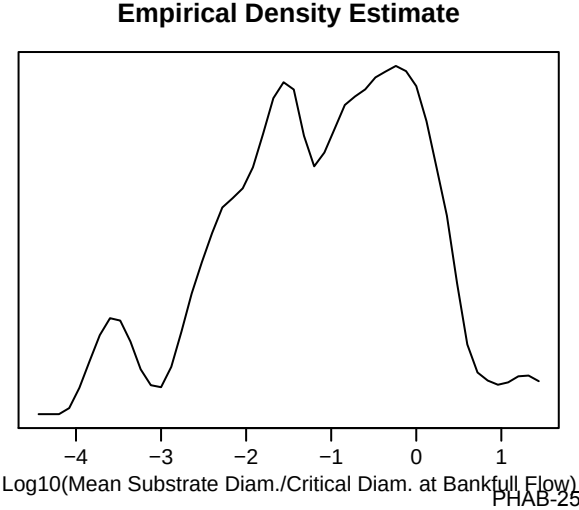
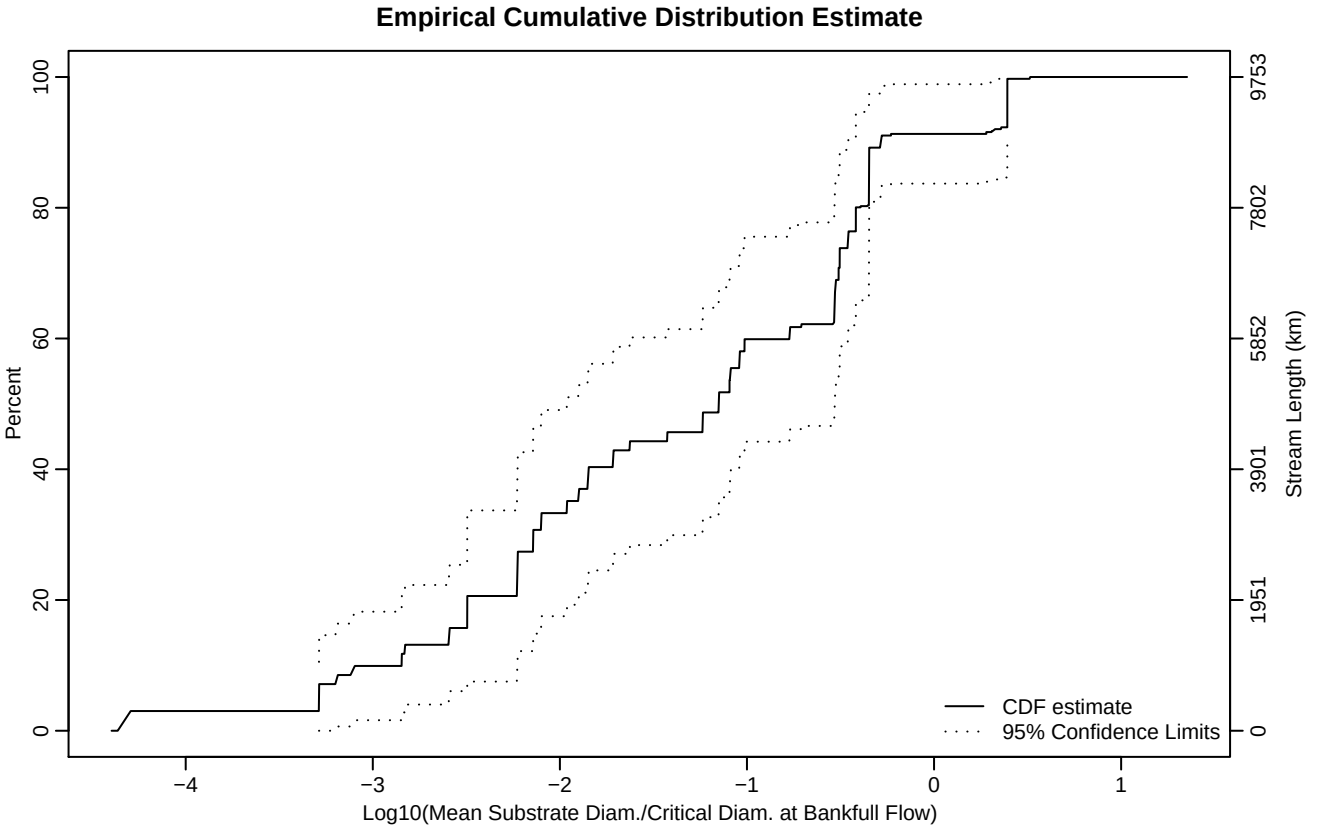


Figure PHAB−223 Indicator: LRBS_bw5 Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−3.29	−4.35	−3.11
10Pct	−2.85	−4.33	−2.50
25Pct	−2.23	−2.84	−1.85
50Pct	−1.15	−1.96	−0.53
75Pct	−0.46	−1.01	−0.23
90Pct	−0.28	−0.42	0.51
95Pct	0.39	−0.35	0.51
Mean	−1.39	−1.75	−1.04
Std Dev	1.07	0.91	1.24

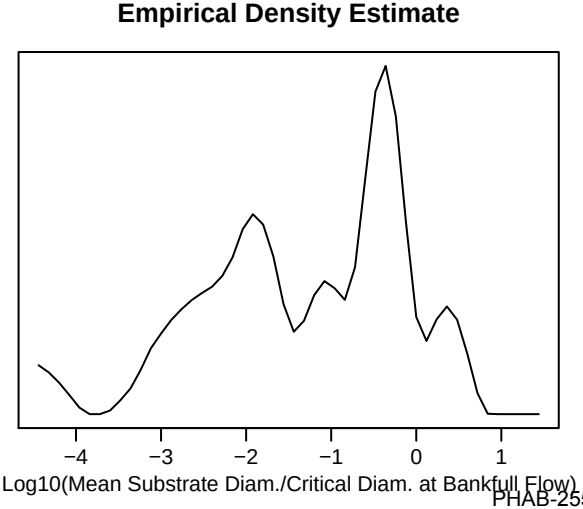
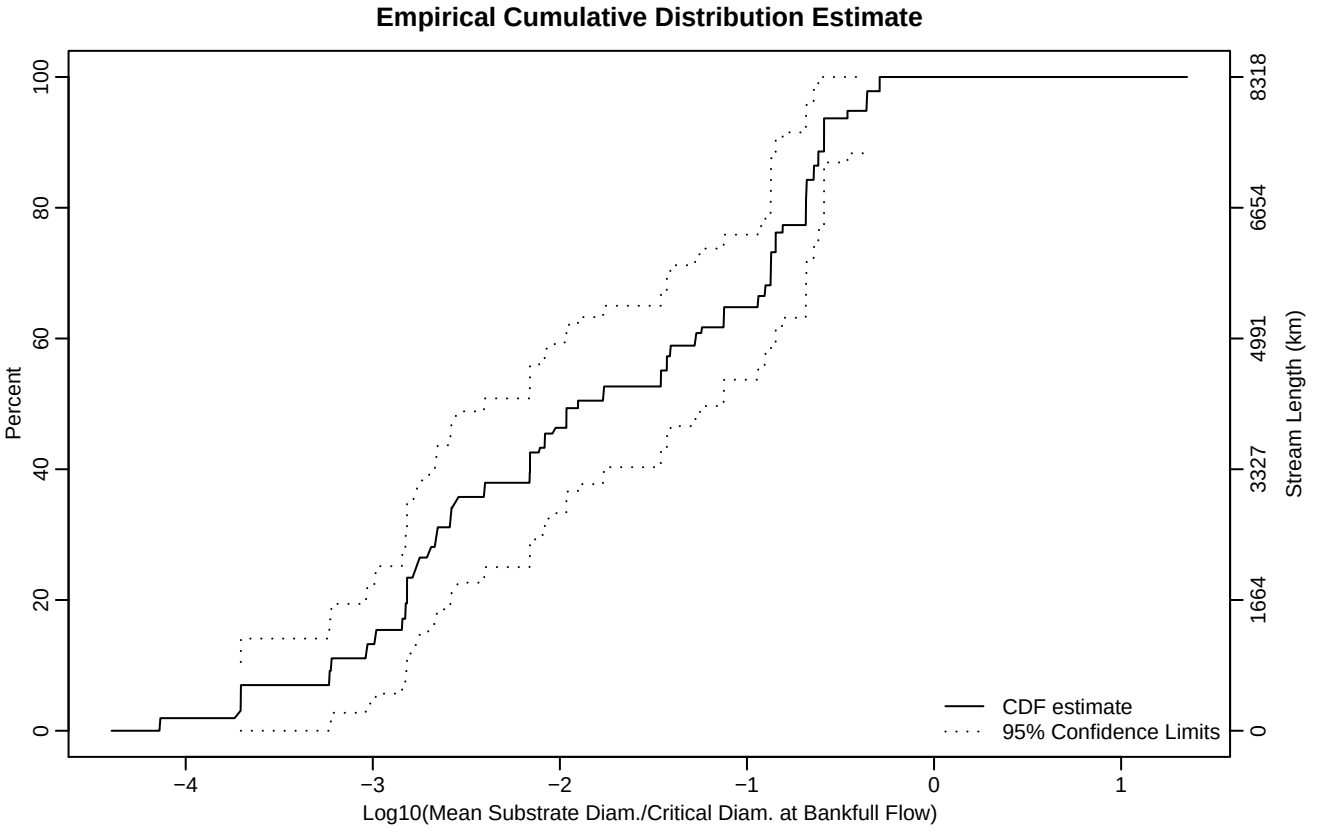


Figure PHAB−224 Indicator: LRBS_bw5 Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−3.71	−4.14	−3.23
10Pct	−3.22	−3.73	−2.83
25Pct	−2.77	−2.99	−2.40
50Pct	−1.90	−2.40	−1.12
75Pct	−0.85	−1.27	−0.59
90Pct	−0.59	−0.69	−0.29
95Pct	−0.36	−0.62	−0.29
Mean	−1.83	−2.10	−1.56
Std Dev	0.93	0.81	1.06

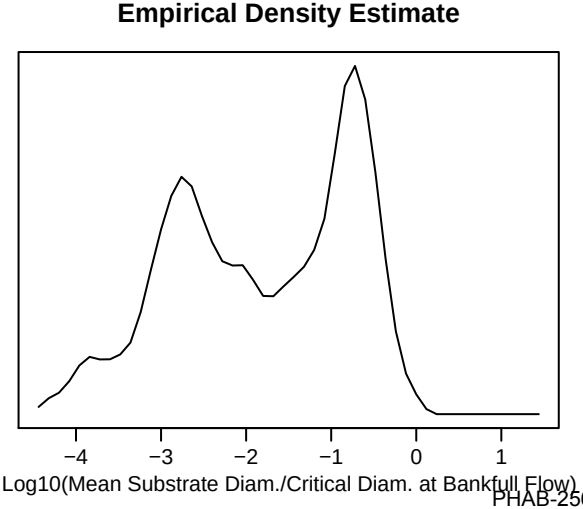
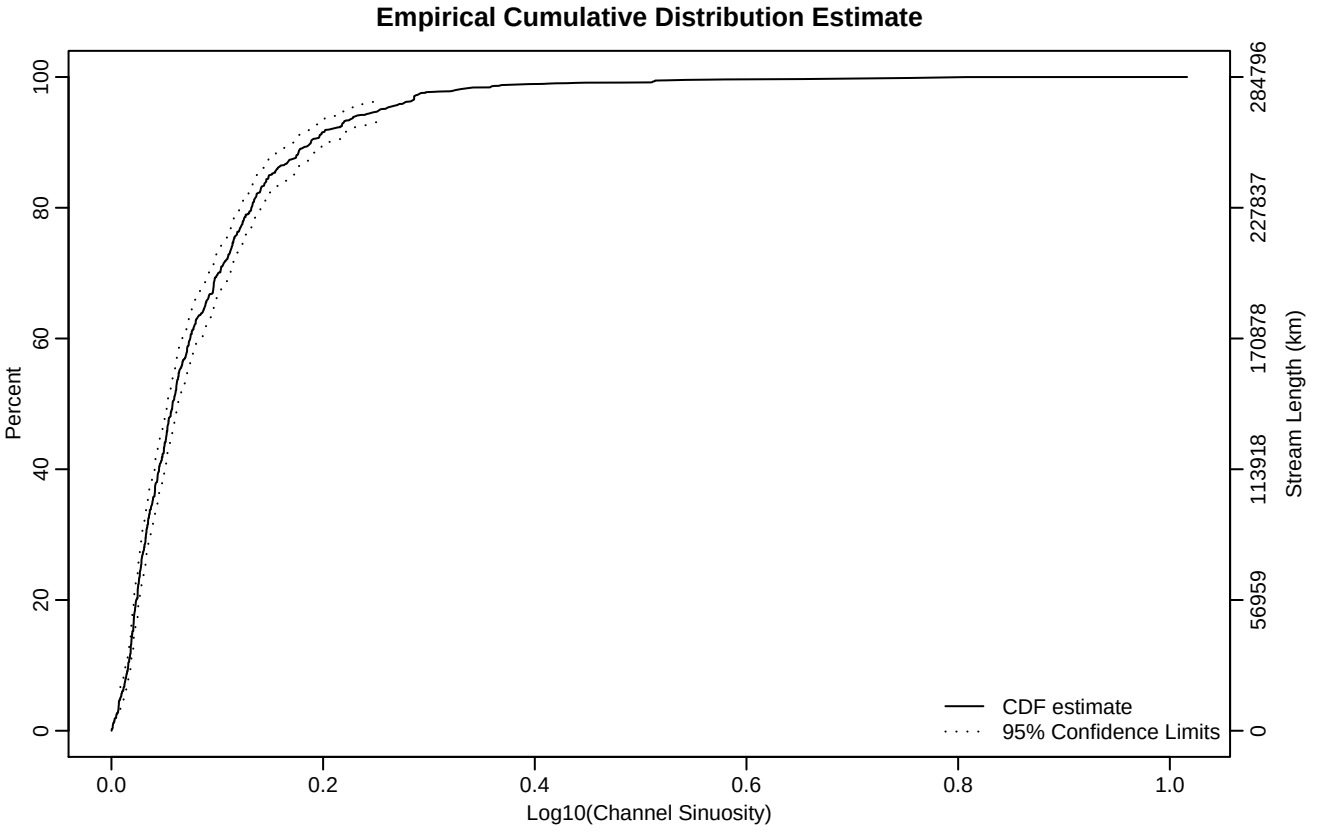


Figure PHAB−225 Indicator: LSINU Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.02	0.01	0.02
25Pct	0.03	0.02	0.03
50Pct	0.06	0.05	0.06
75Pct	0.12	0.11	0.13
90Pct	0.19	0.17	0.21
95Pct	0.25	0.22	0.29
Mean	0.09	0.08	0.09
Std Dev	0.08	0.07	0.09

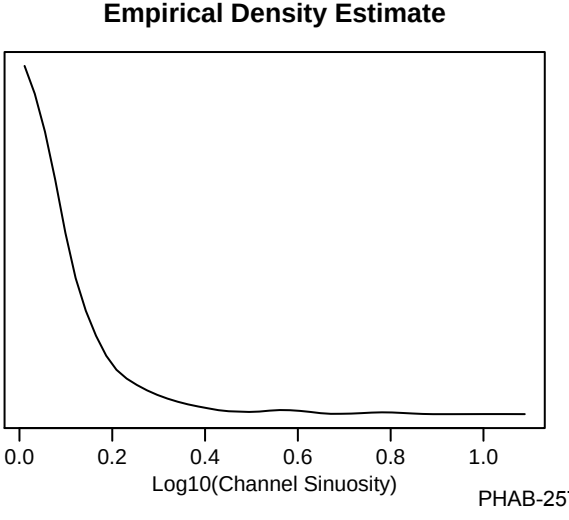
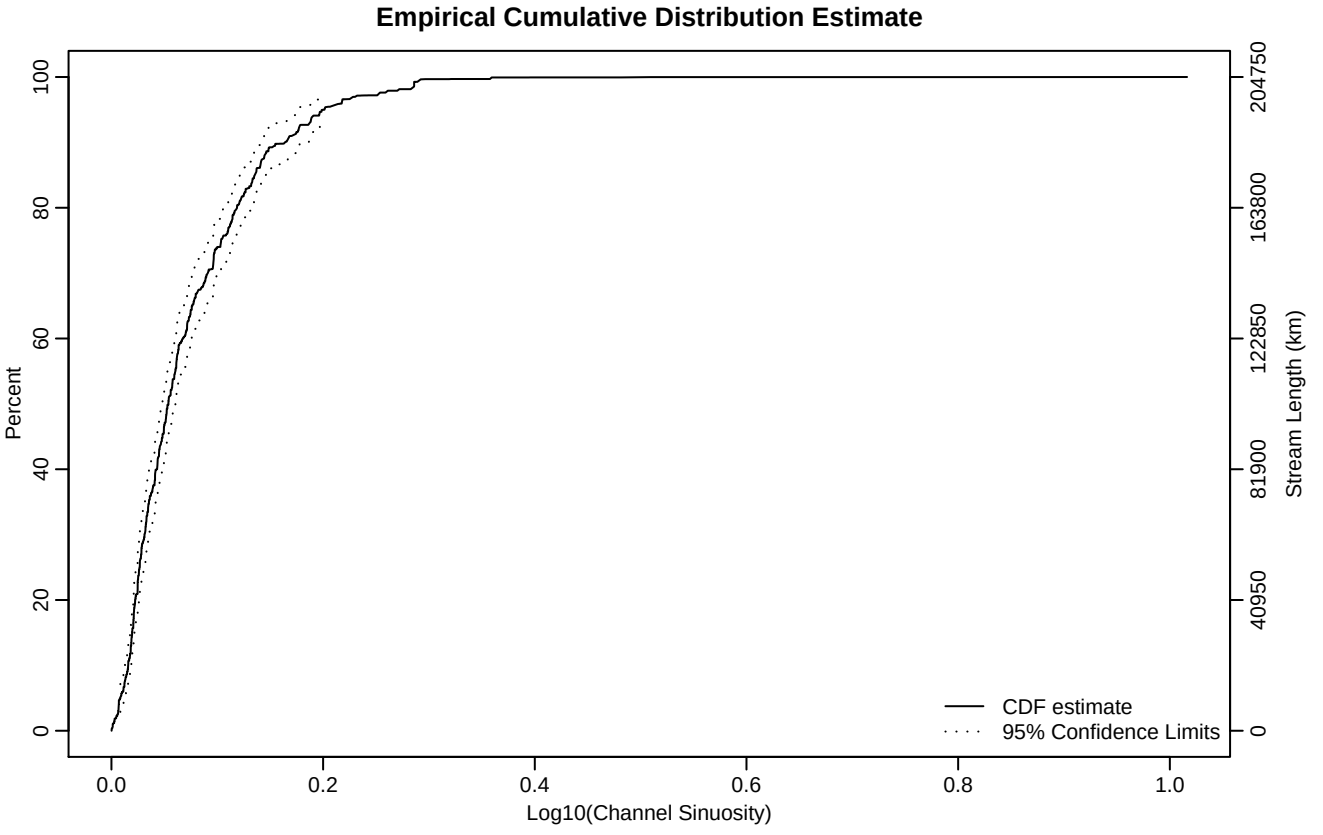


Figure PHAB−226 Indicator: LSINU Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.02	0.01	0.02
25Pct	0.03	0.02	0.03
50Pct	0.05	0.05	0.06
75Pct	0.10	0.10	0.12
90Pct	0.16	0.14	0.19
95Pct	0.20	0.19	0.25
Mean	0.07	0.07	0.08
Std Dev	0.06	0.06	0.07

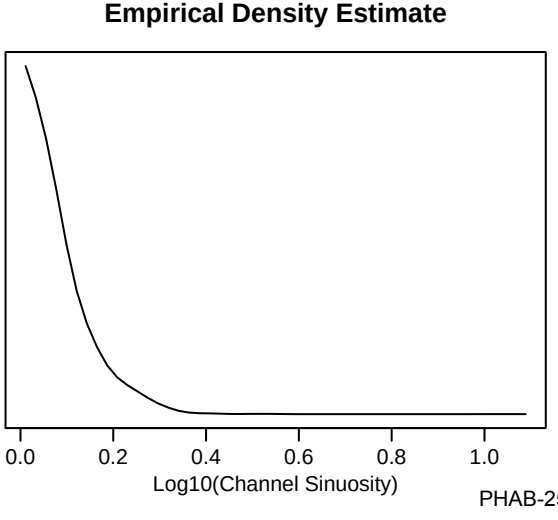
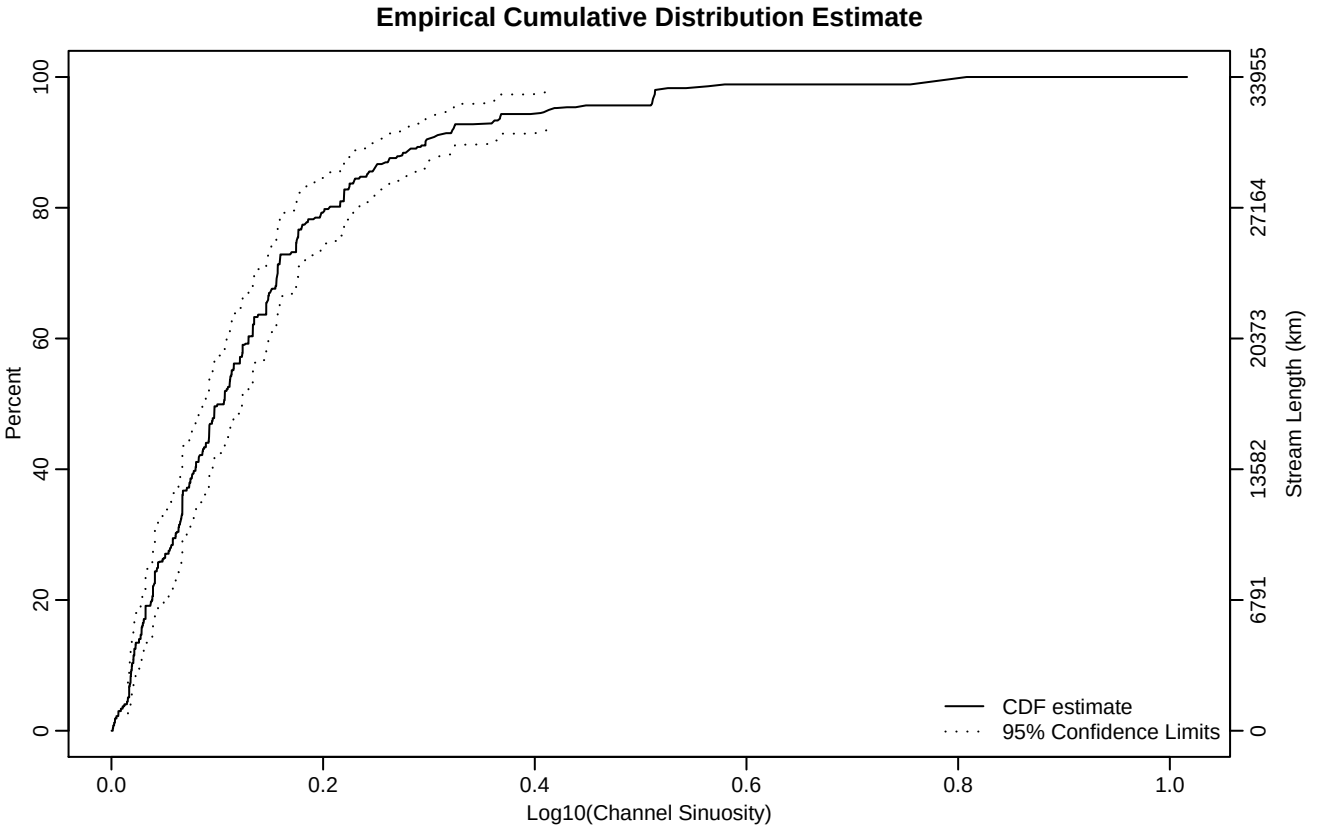


Figure PHAB−227 Indicator: LSINU Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.02
10Pct	0.02	0.02	0.03
25Pct	0.04	0.03	0.06
50Pct	0.11	0.09	0.12
75Pct	0.18	0.16	0.22
90Pct	0.30	0.25	0.37
95Pct	0.41	0.32	0.51
Mean	0.14	0.12	0.16
Std Dev	0.13	0.10	0.16

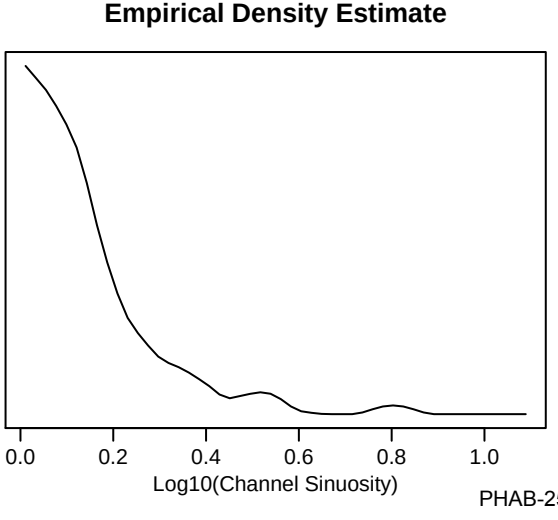
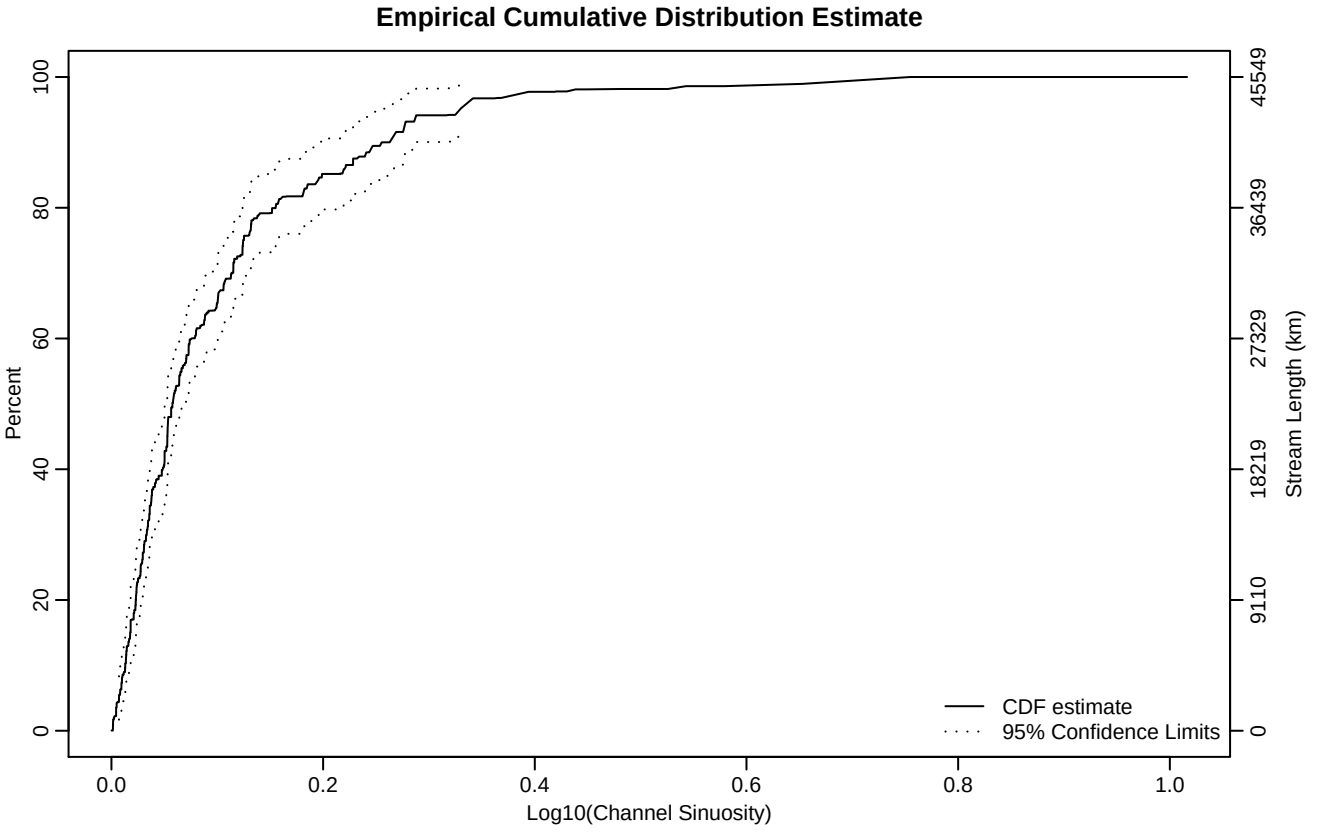


Figure PHAB−228 Indicator: LSINU Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0.01	0.02
25Pct	0.03	0.02	0.03
50Pct	0.06	0.05	0.07
75Pct	0.12	0.11	0.16
90Pct	0.26	0.20	0.33
95Pct	0.33	0.27	0.67
Mean	0.10	0.08	0.12
Std Dev	0.09	0.08	0.11

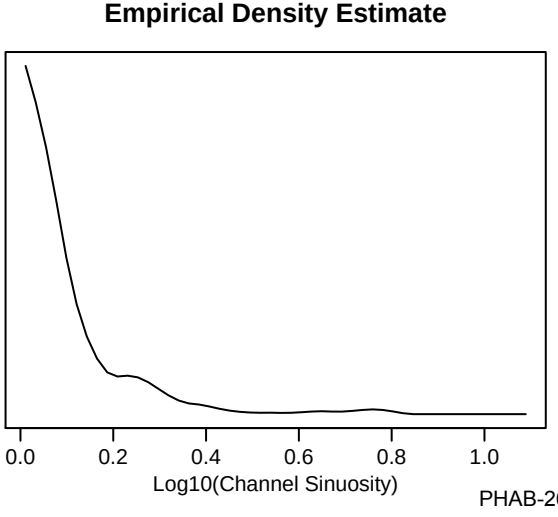
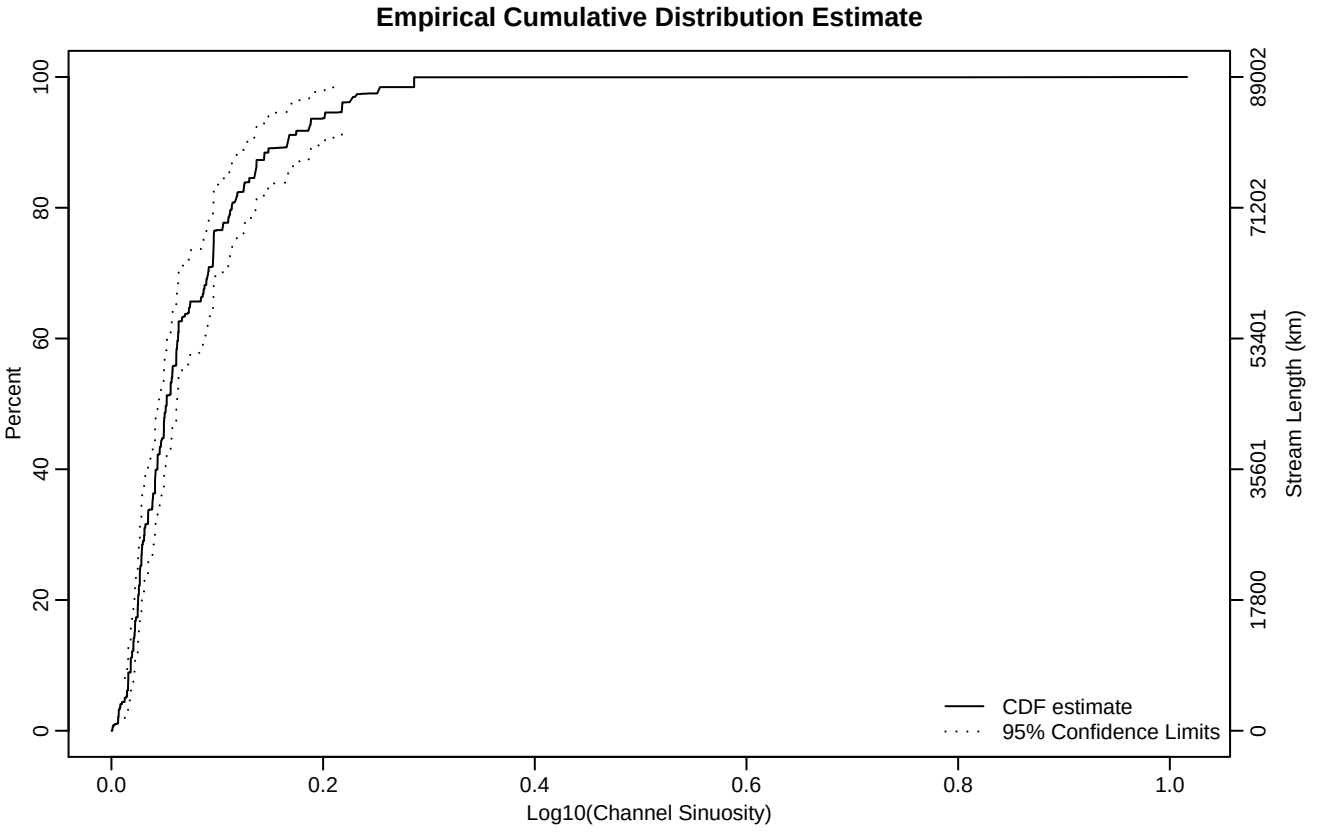


Figure PHAB−229 Indicator: LSINU Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.02
10Pct	0.02	0.01	0.02
25Pct	0.03	0.02	0.03
50Pct	0.05	0.04	0.06
75Pct	0.10	0.09	0.12
90Pct	0.17	0.13	0.22
95Pct	0.22	0.17	0.29
Mean	0.07	0.06	0.08
Std Dev	0.06	0.05	0.07

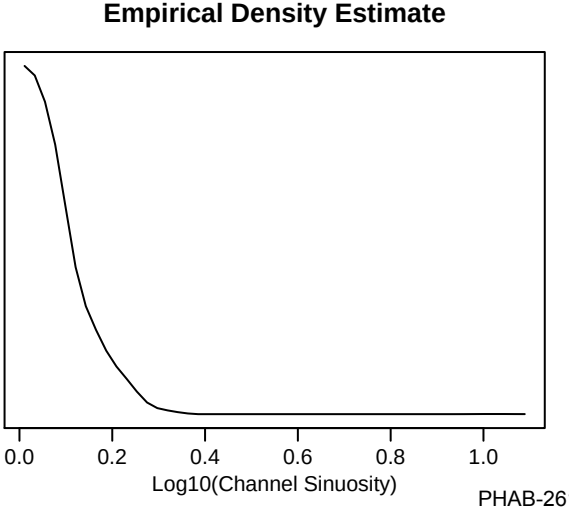
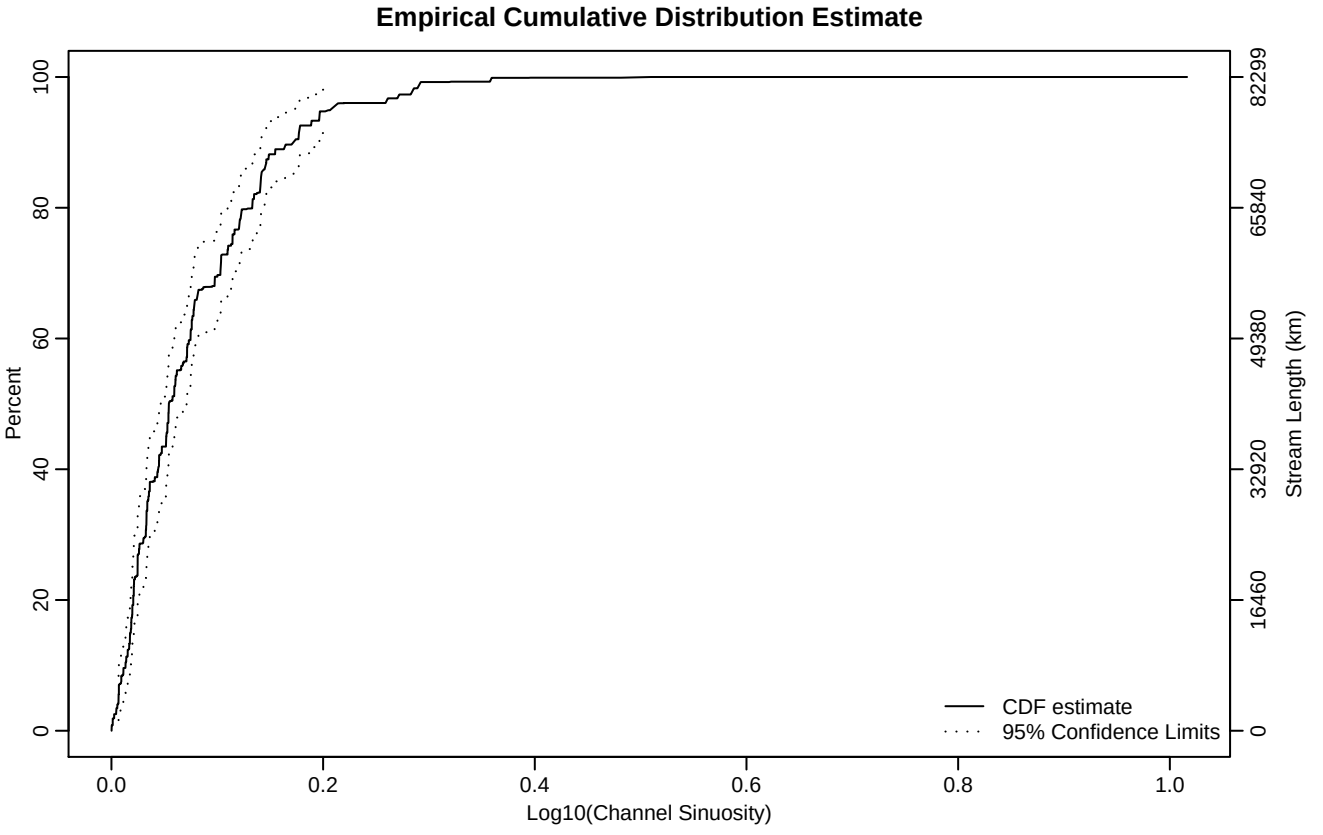


Figure PHAB−230 Indicator: LSINU Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0.01	0.02
25Pct	0.02	0.02	0.03
50Pct	0.05	0.05	0.07
75Pct	0.11	0.10	0.13
90Pct	0.17	0.14	0.20
95Pct	0.21	0.18	0.29
Mean	0.08	0.07	0.09
Std Dev	0.07	0.06	0.08

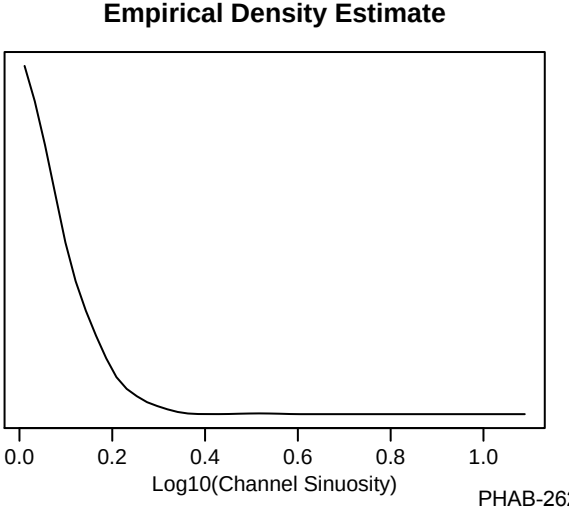
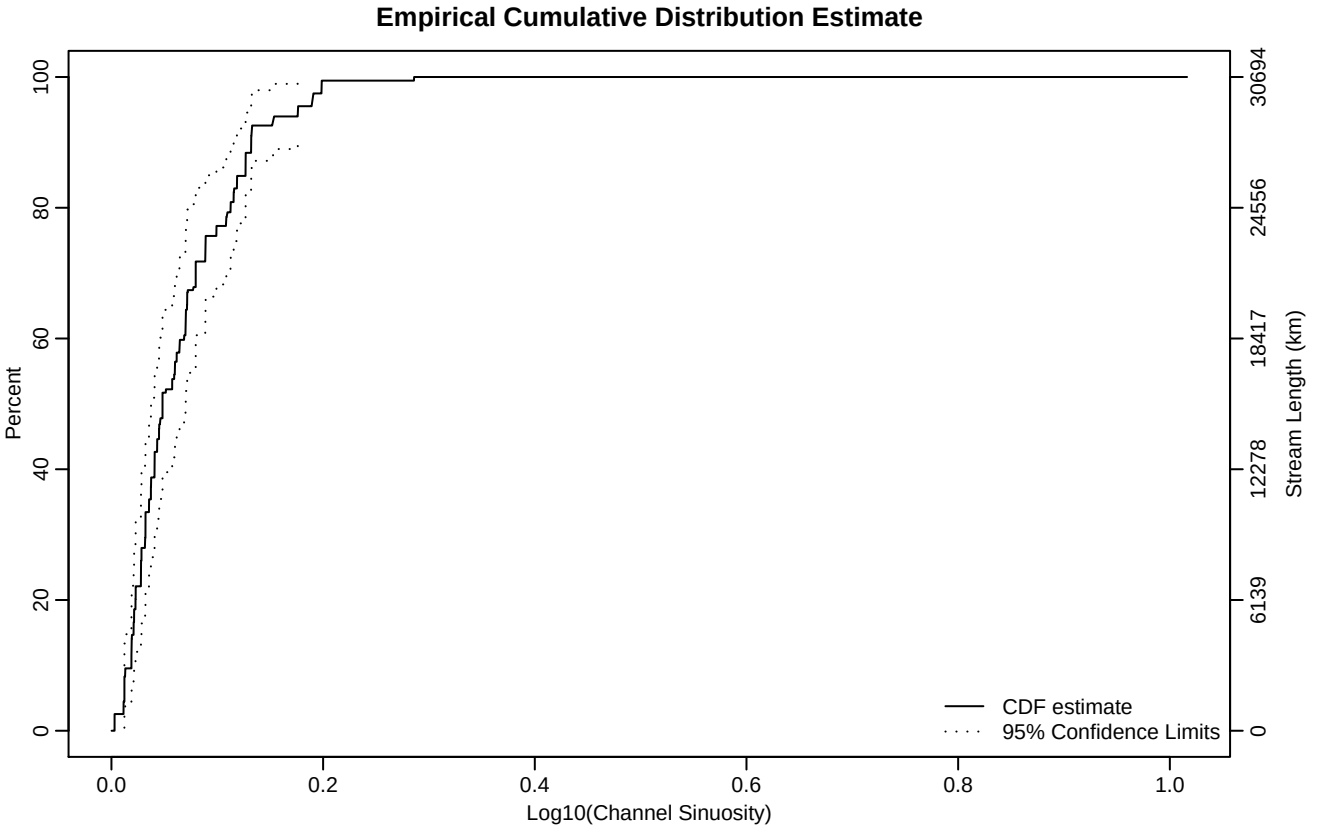


Figure PHAB−231 Indicator: LSINU Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.02
10Pct	0.02	0.01	0.02
25Pct	0.03	0.02	0.04
50Pct	0.05	0.04	0.07
75Pct	0.09	0.07	0.13
90Pct	0.13	0.12	0.19
95Pct	0.18	0.13	0.29
Mean	0.07	0.06	0.08
Std Dev	0.05	0.04	0.06

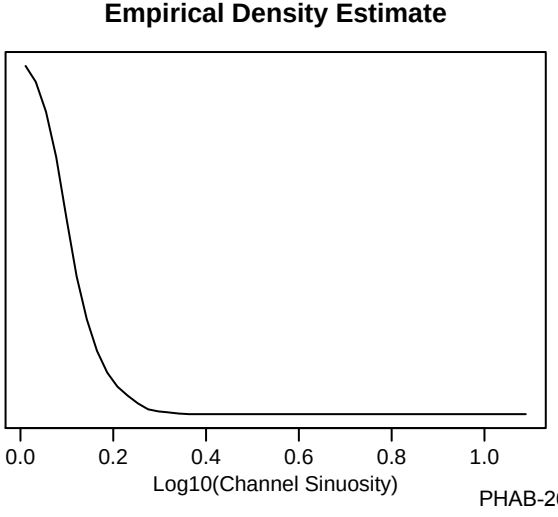
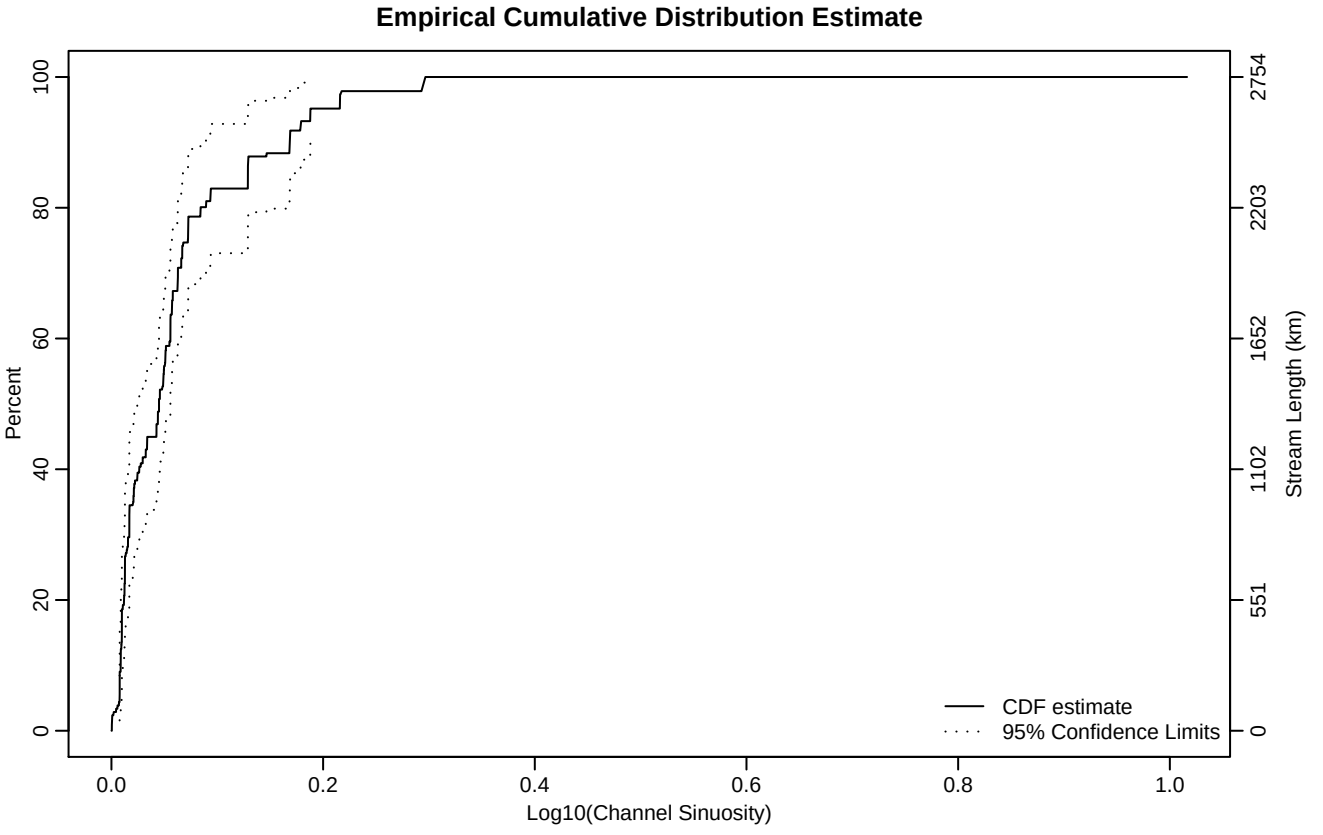


Figure PHAB−232 Indicator: LSINU Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.02
50Pct	0.04	0.02	0.06
75Pct	0.07	0.06	0.13
90Pct	0.17	0.09	0.29
95Pct	0.19	0.17	0.30
Mean	0.06	0.04	0.08
Std Dev	0.06	0.05	0.07

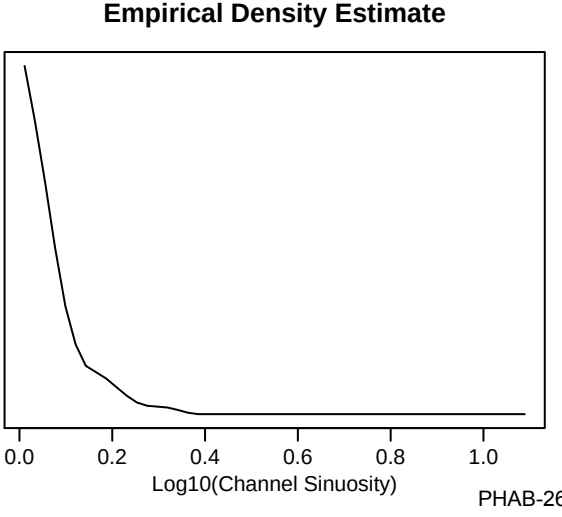
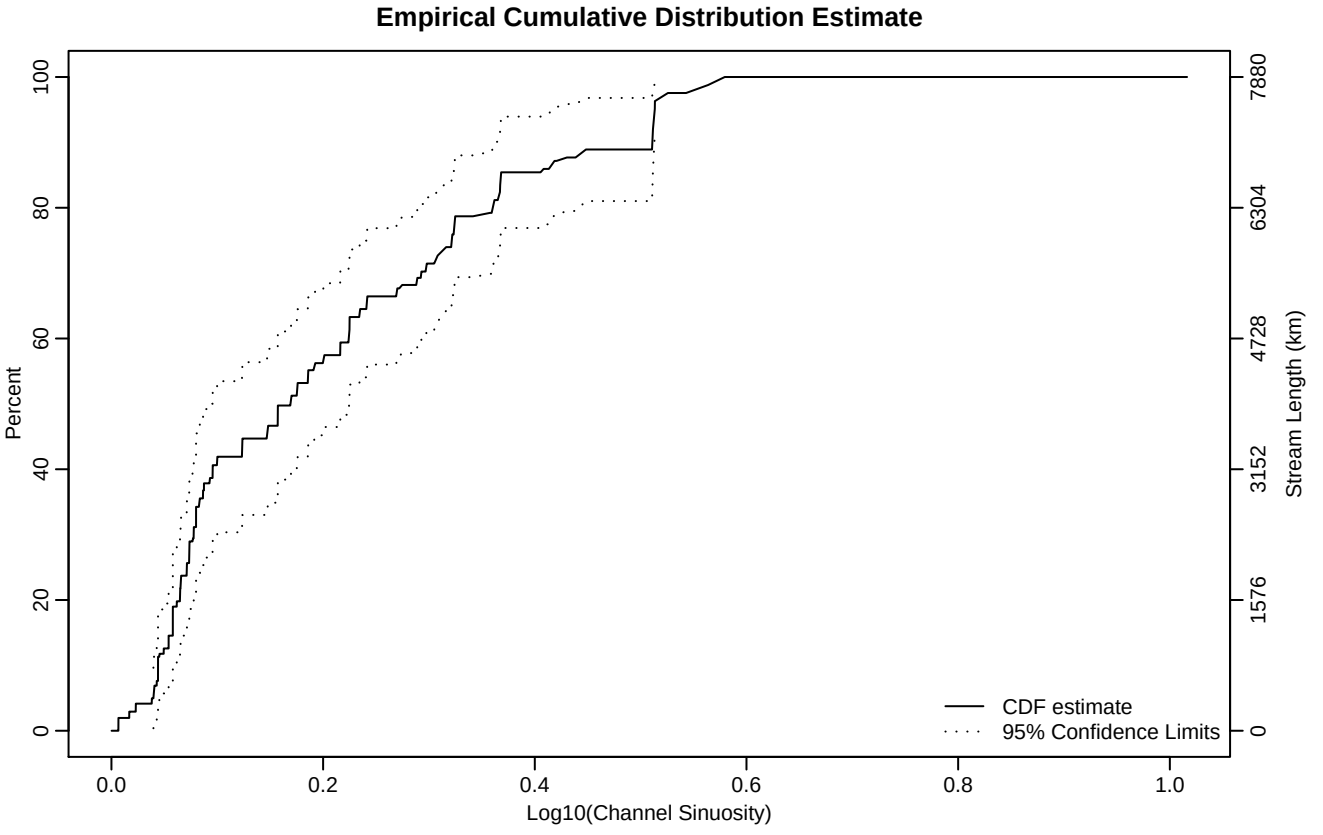


Figure PHAB−233 Indicator: LSINU Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.01	0.04
10Pct	0.04	0.02	0.06
25Pct	0.07	0.06	0.08
50Pct	0.17	0.09	0.22
75Pct	0.32	0.24	0.37
90Pct	0.51	0.37	0.55
95Pct	0.51	0.45	0.58
Mean	0.21	0.17	0.24
Std Dev	0.16	0.13	0.18

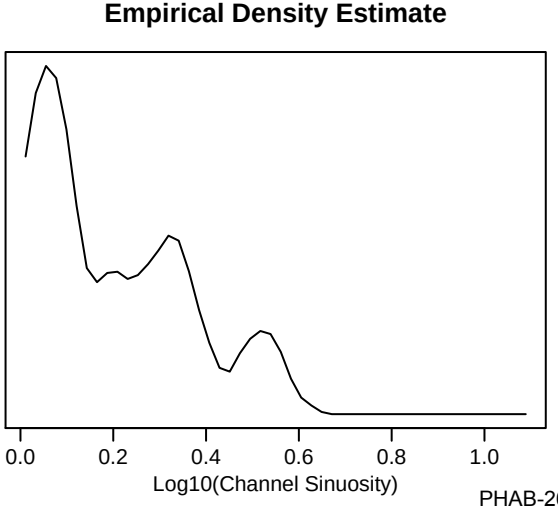
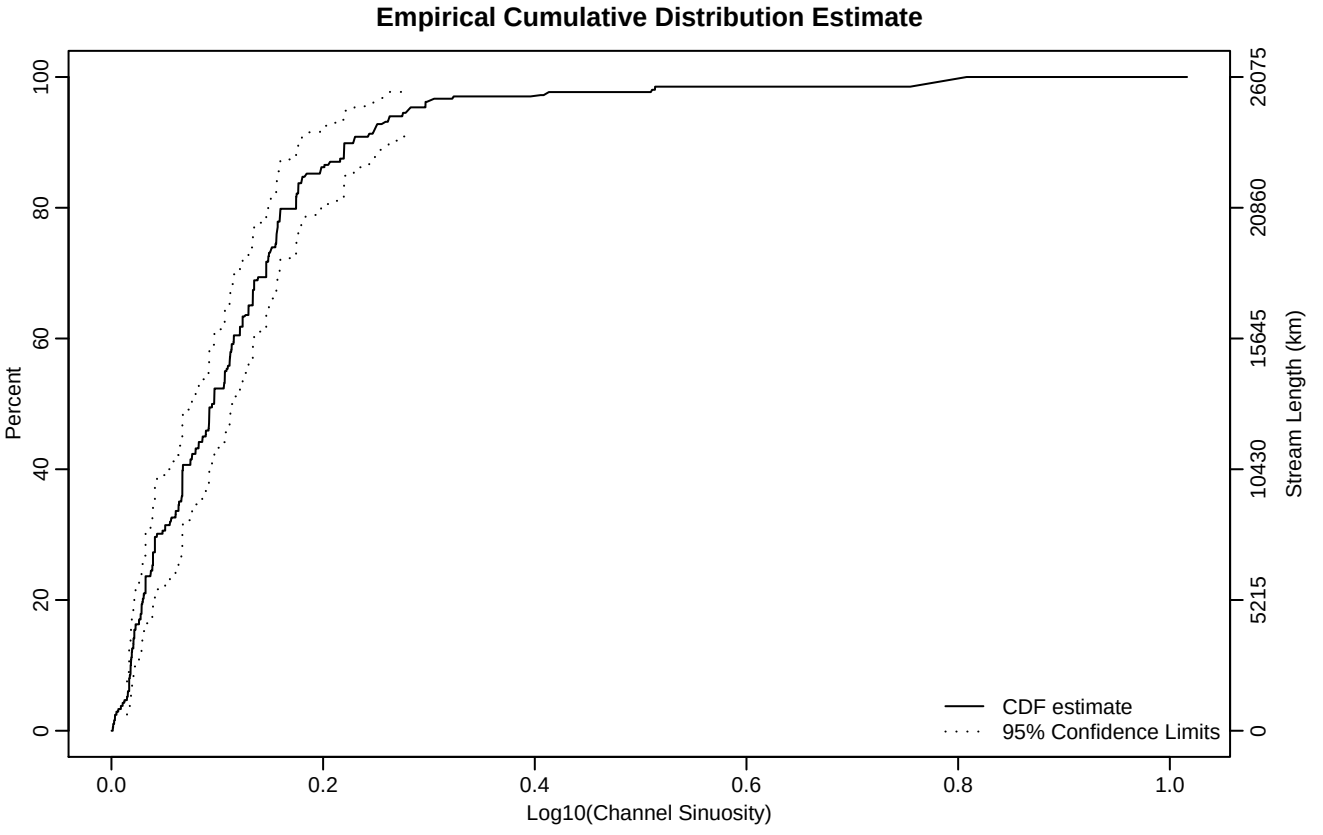


Figure PHAB−234 Indicator: LSINU Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.02
10Pct	0.02	0.02	0.02
25Pct	0.04	0.03	0.06
50Pct	0.10	0.07	0.11
75Pct	0.16	0.13	0.18
90Pct	0.23	0.18	0.28
95Pct	0.28	0.25	0.76
Mean	0.12	0.10	0.14
Std Dev	0.11	0.07	0.15

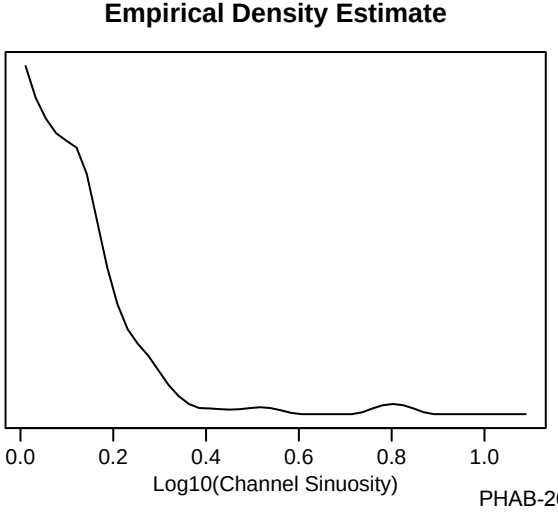
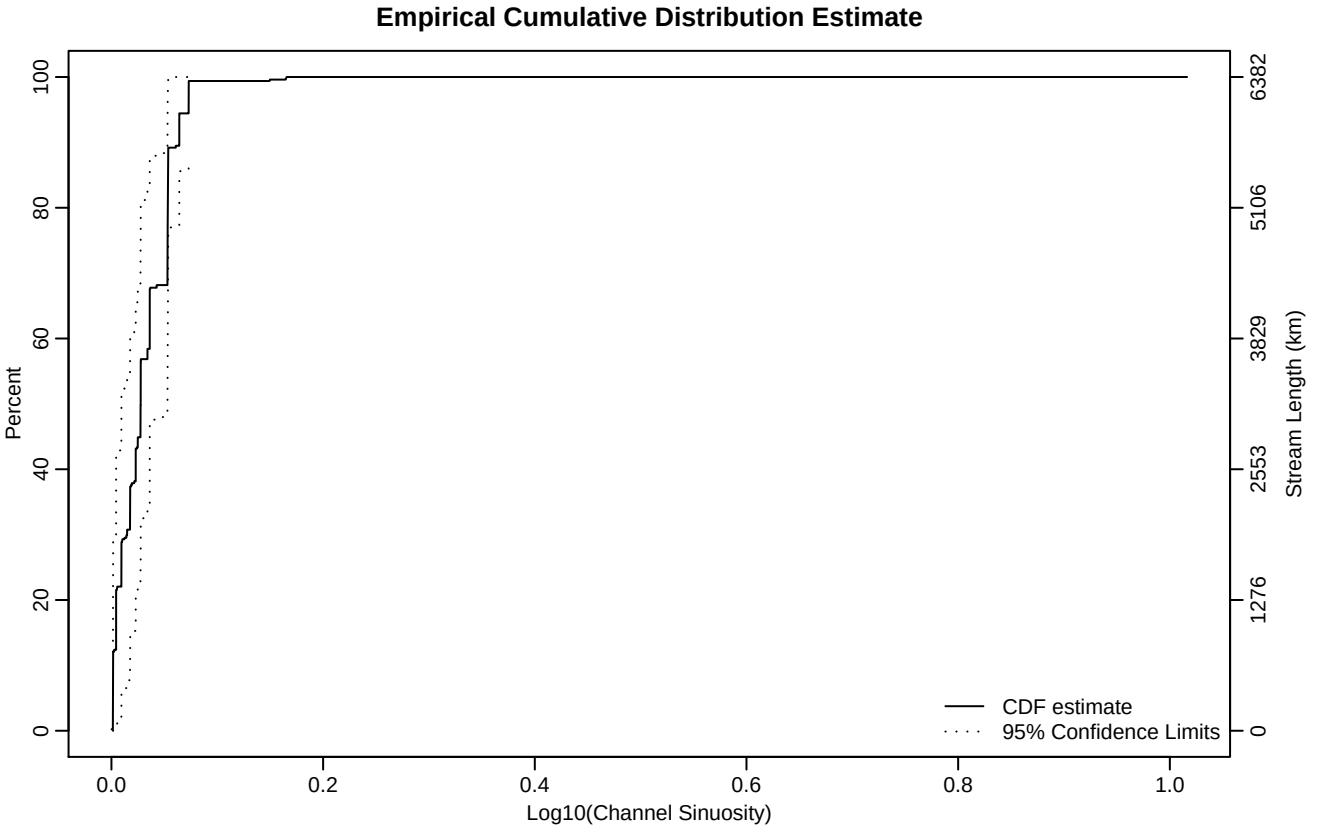


Figure PHAB−235 Indicator: LSINU Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.03
50Pct	0.03	0.01	0.05
75Pct	0.05	0.03	0.07
90Pct	0.06	0.05	0.17
95Pct	0.07	0.05	0.17
Mean	0.03	0.02	0.04
Std Dev	0.02	0.02	0.03

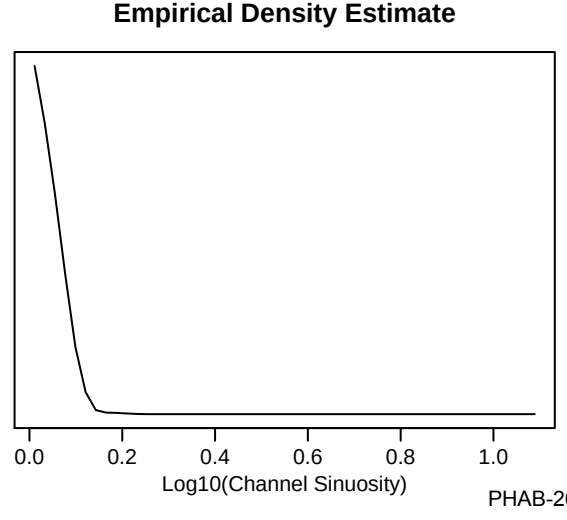
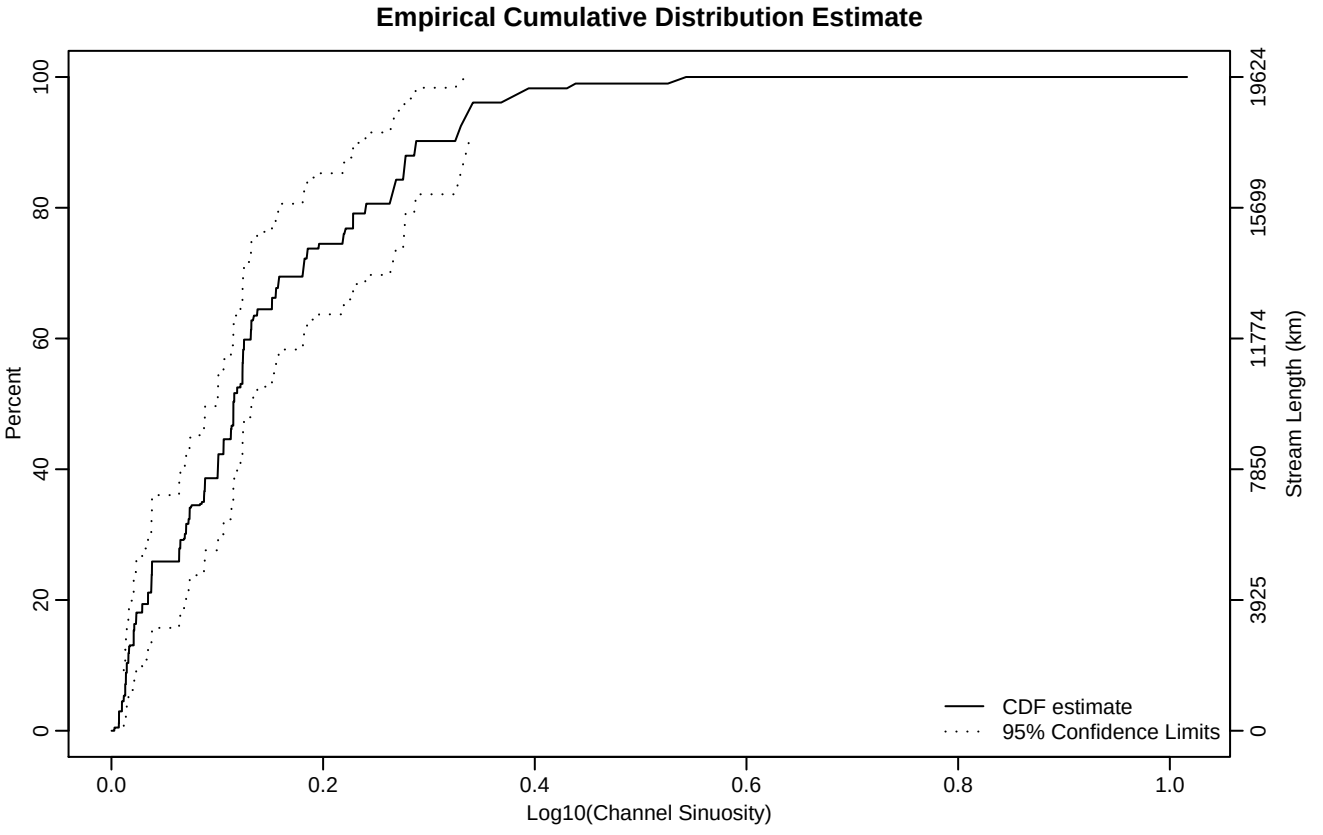


Figure PHAB−236 Indicator: LSINU Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.02
25Pct	0.04	0.02	0.09
50Pct	0.12	0.09	0.13
75Pct	0.22	0.14	0.28
90Pct	0.29	0.26	0.44
95Pct	0.34	0.28	0.54
Mean	0.14	0.11	0.17
Std Dev	0.11	0.09	0.13

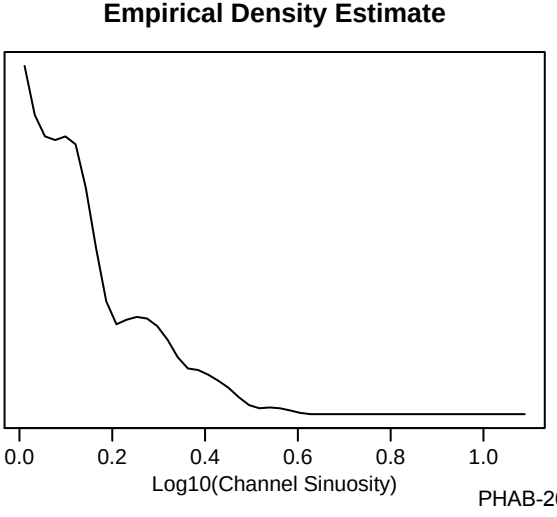
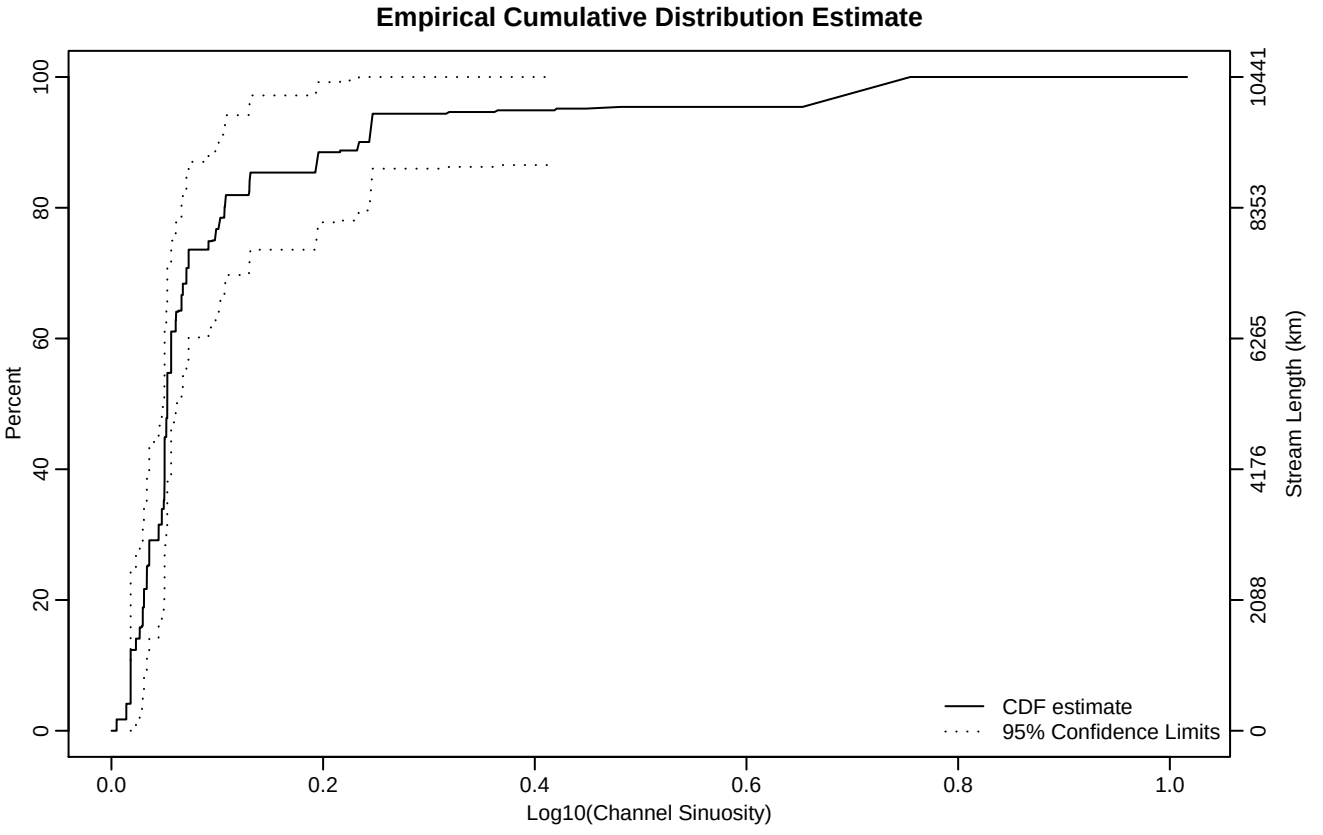


Figure PHAB−237 Indicator: LSINU Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0	0.02
10Pct	0.02	0.02	0.03
25Pct	0.03	0.02	0.05
50Pct	0.05	0.05	0.07
75Pct	0.10	0.06	0.20
90Pct	0.23	0.11	0.75
95Pct	0.42	0.19	0.75
Mean	0.10	0.04	0.17
Std Dev	0.13	0.07	0.18

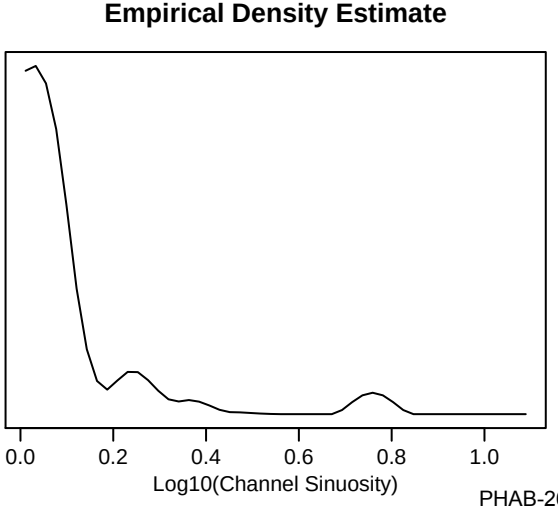
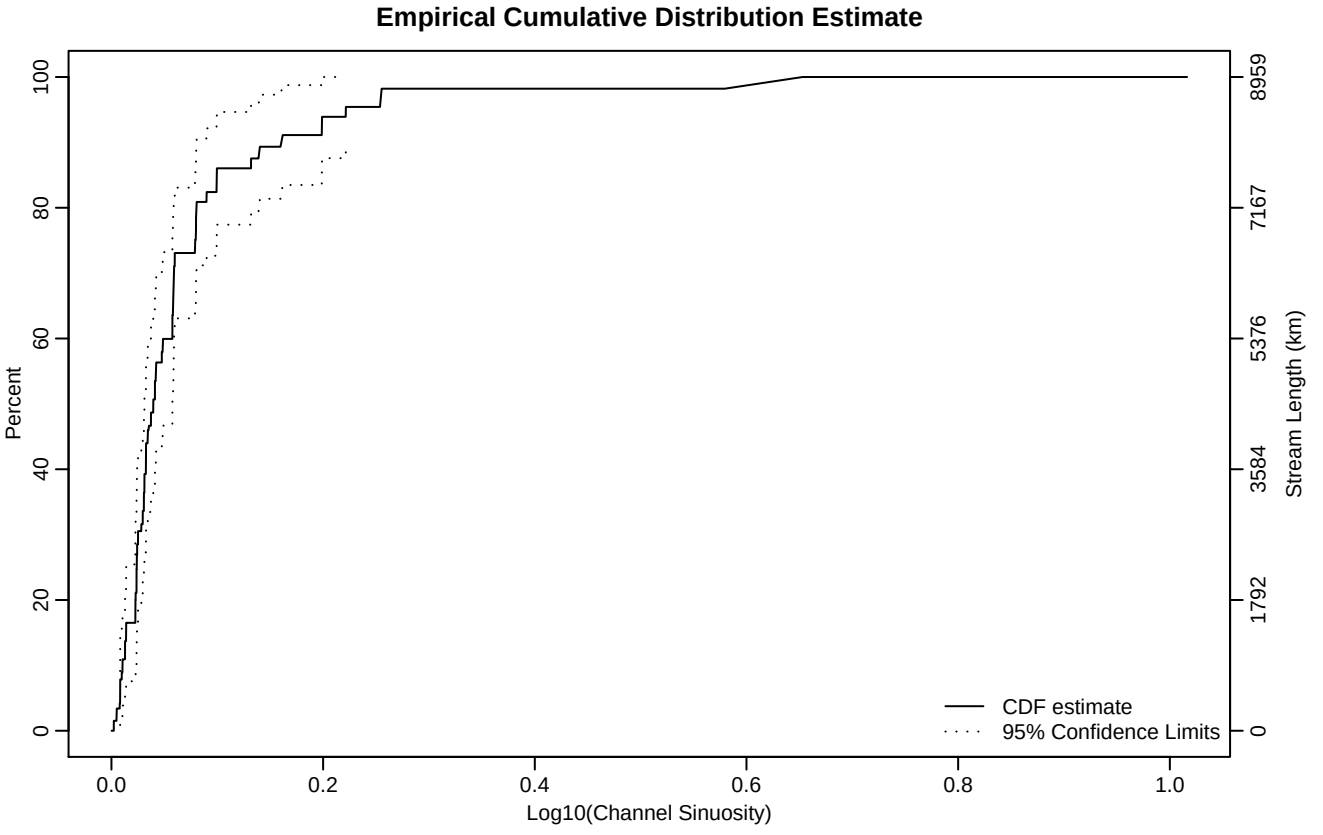


Figure PHAB−238 Indicator: LSINU Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0.01	0.02
25Pct	0.02	0.01	0.03
50Pct	0.04	0.03	0.06
75Pct	0.08	0.06	0.10
90Pct	0.16	0.09	0.26
95Pct	0.22	0.14	
Mean	0.07	0.05	0.09
Std Dev	0.08	0.05	0.10

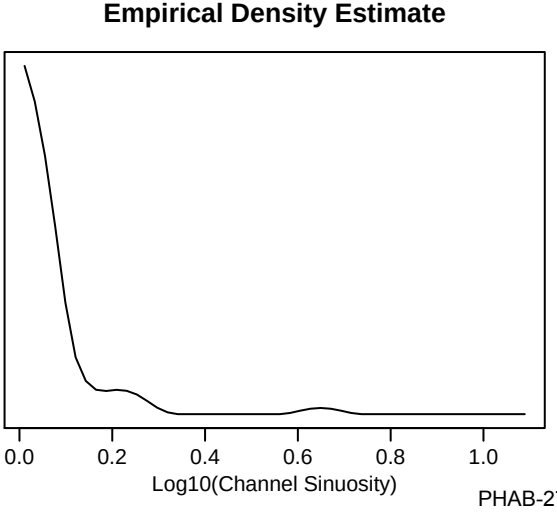
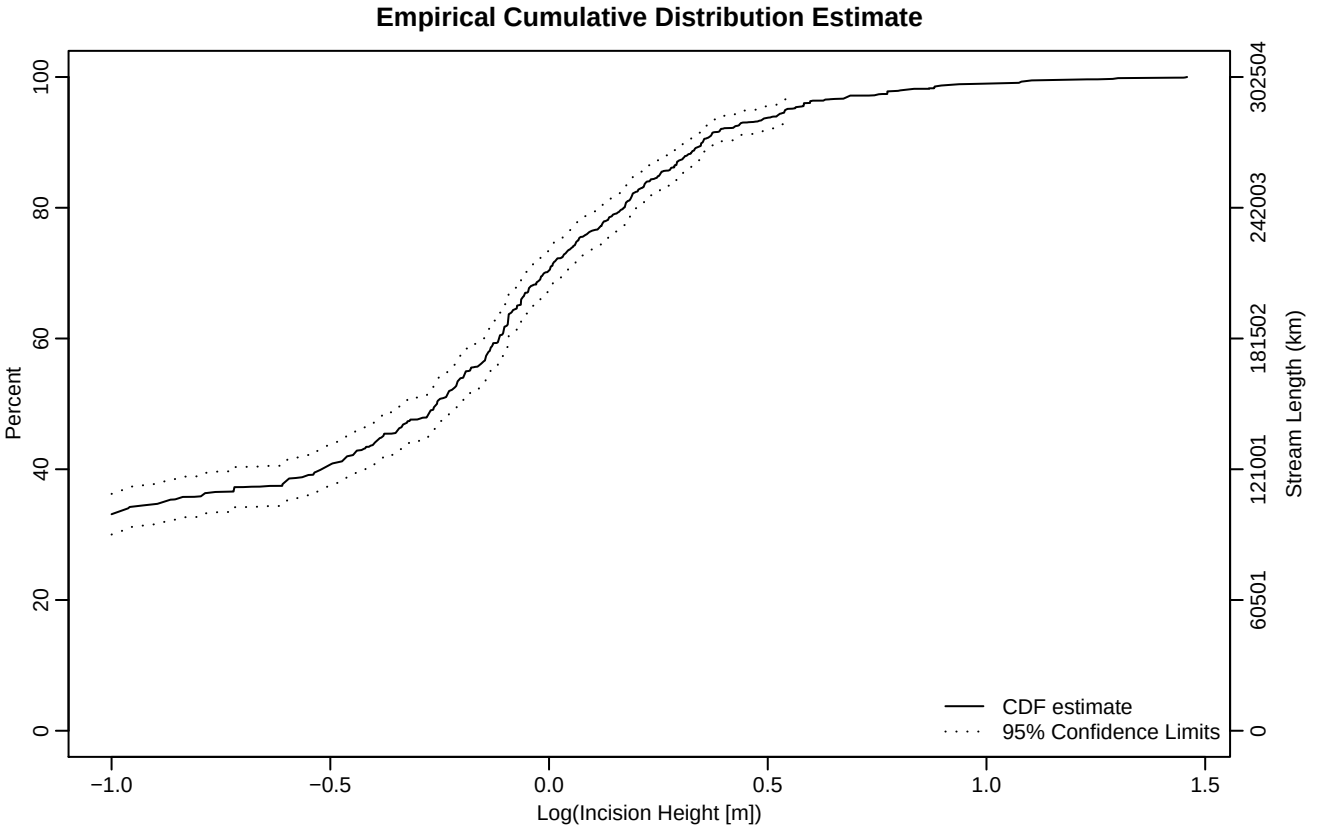


Figure PHAB−239 Indicator: LINCIS_H Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−1
25Pct	−1	−1	−1
50Pct	−0.26	−0.34	−0.21
75Pct	0.07	0.02	0.13
90Pct	0.35	0.31	0.39
95Pct	0.54	0.49	0.65
Mean	−0.35	−0.38	−0.31
Std Dev	0.49	0.46	0.51

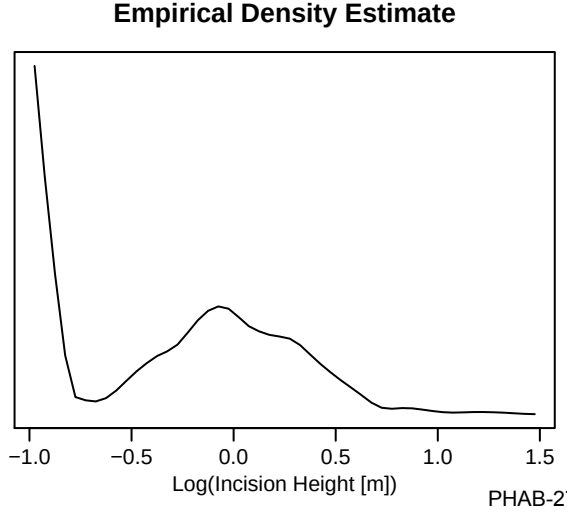
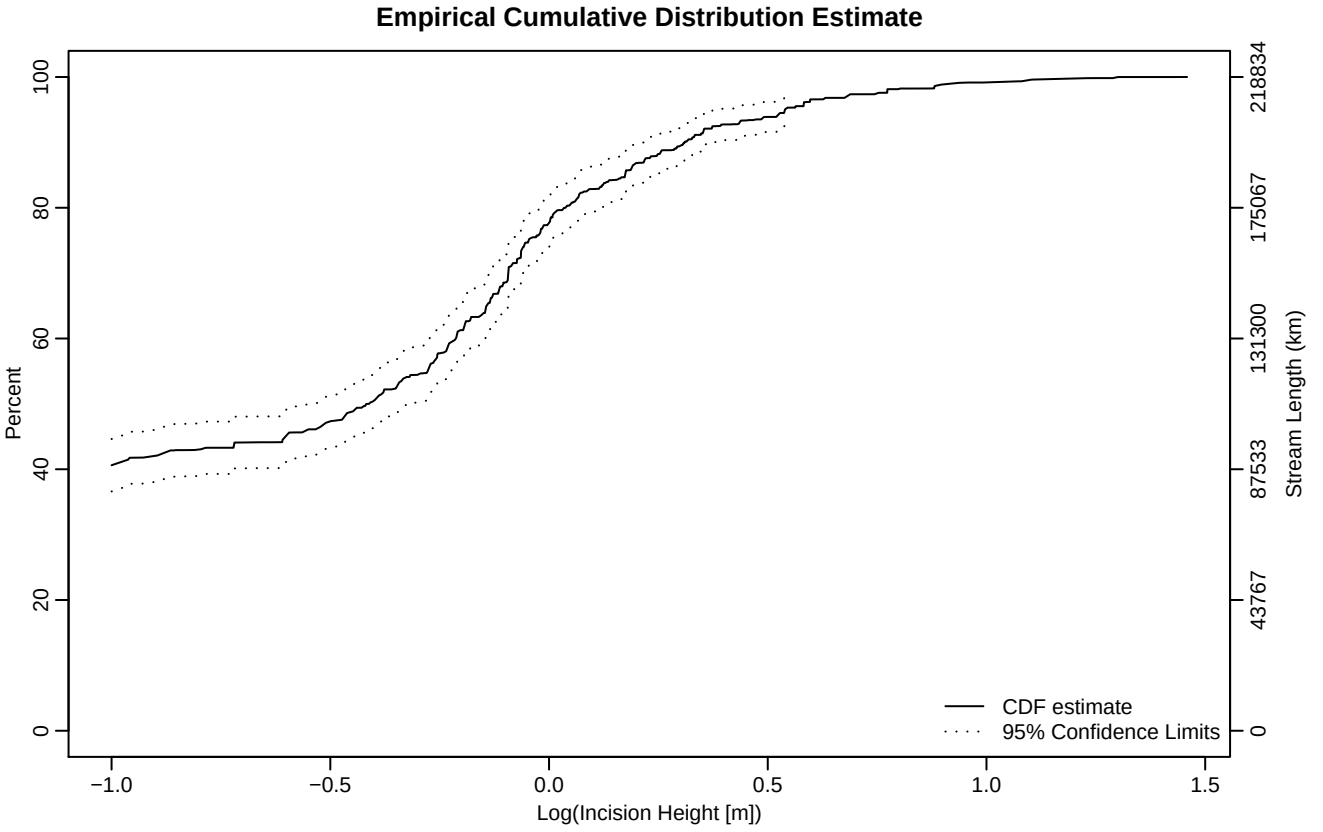


Figure PHAB−240 Indicator: LINCIS_H Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−1
25Pct	−1	−1	−1
50Pct	−0.41	−0.58	−0.32
75Pct	−0.05	−0.09	0.01
90Pct	0.31	0.22	0.40
95Pct	0.54	0.42	0.69
Mean	−0.44	−0.48	−0.39
Std Dev	0.47	0.43	0.50

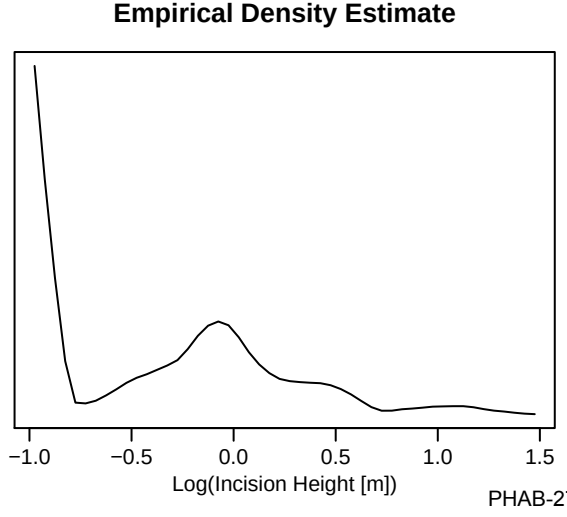
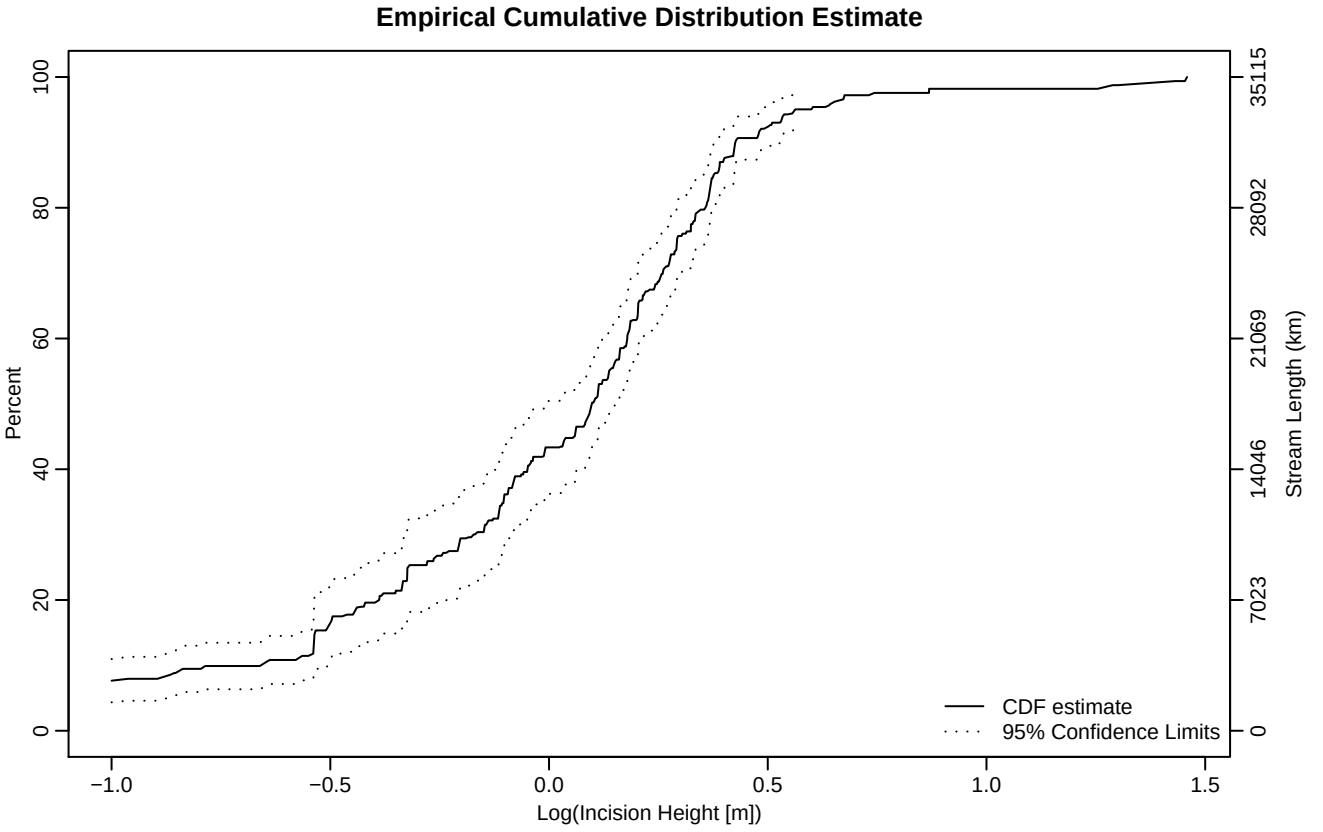


Figure PHAB−241 Indicator: LINCIS_H Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−0.88
10Pct	−0.66	−1	−0.54
25Pct	−0.32	−0.45	−0.14
50Pct	0.10	−0.01	0.15
75Pct	0.29	0.25	0.36
90Pct	0.43	0.39	0.53
95Pct	0.56	0.49	0.87
Mean	−0.01	−0.07	0.06
Std Dev	0.43	0.39	0.47

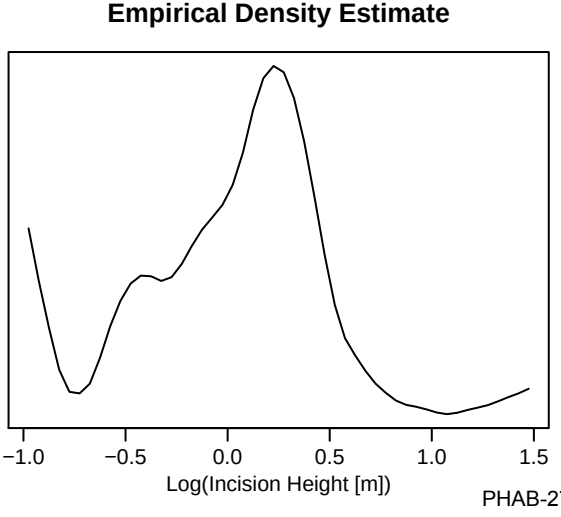
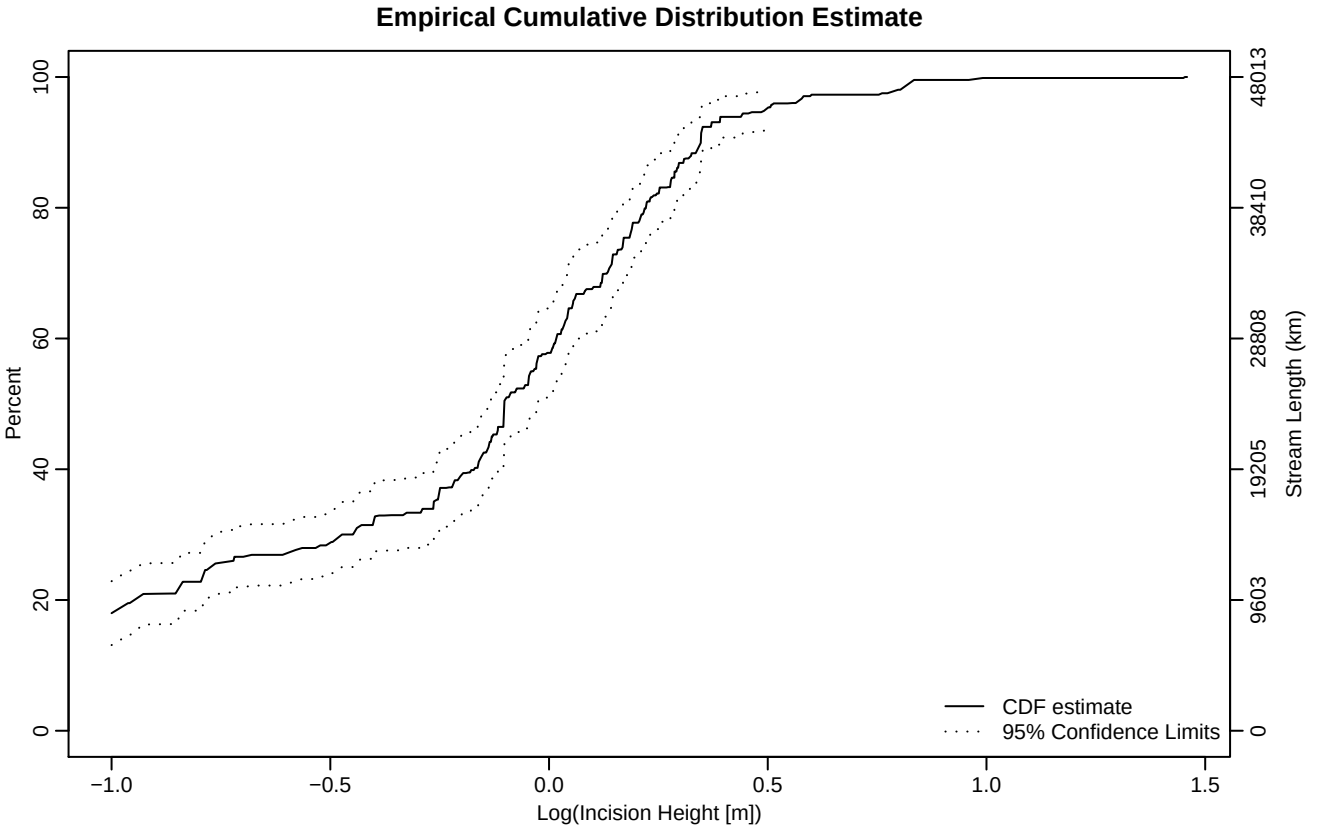


Figure PHAB−242 Indicator: LINCIS_H Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−1
25Pct	−0.77	−0.94	−0.48
50Pct	−0.10	−0.14	−0.03
75Pct	0.17	0.12	0.23
90Pct	0.35	0.29	0.44
95Pct	0.49	0.35	0.80
Mean	−0.21	−0.27	−0.15
Std Dev	0.42	0.38	0.47

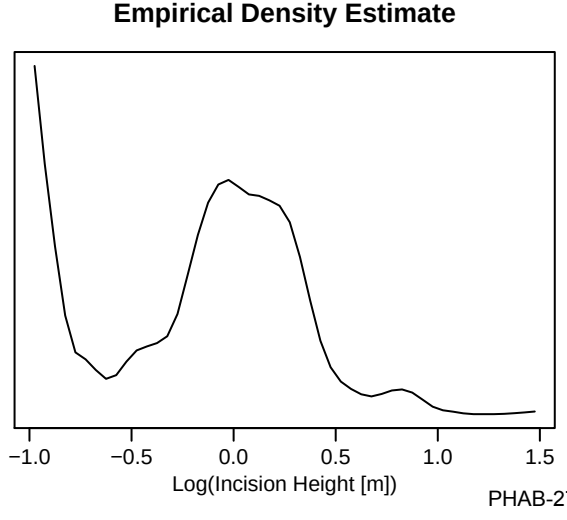
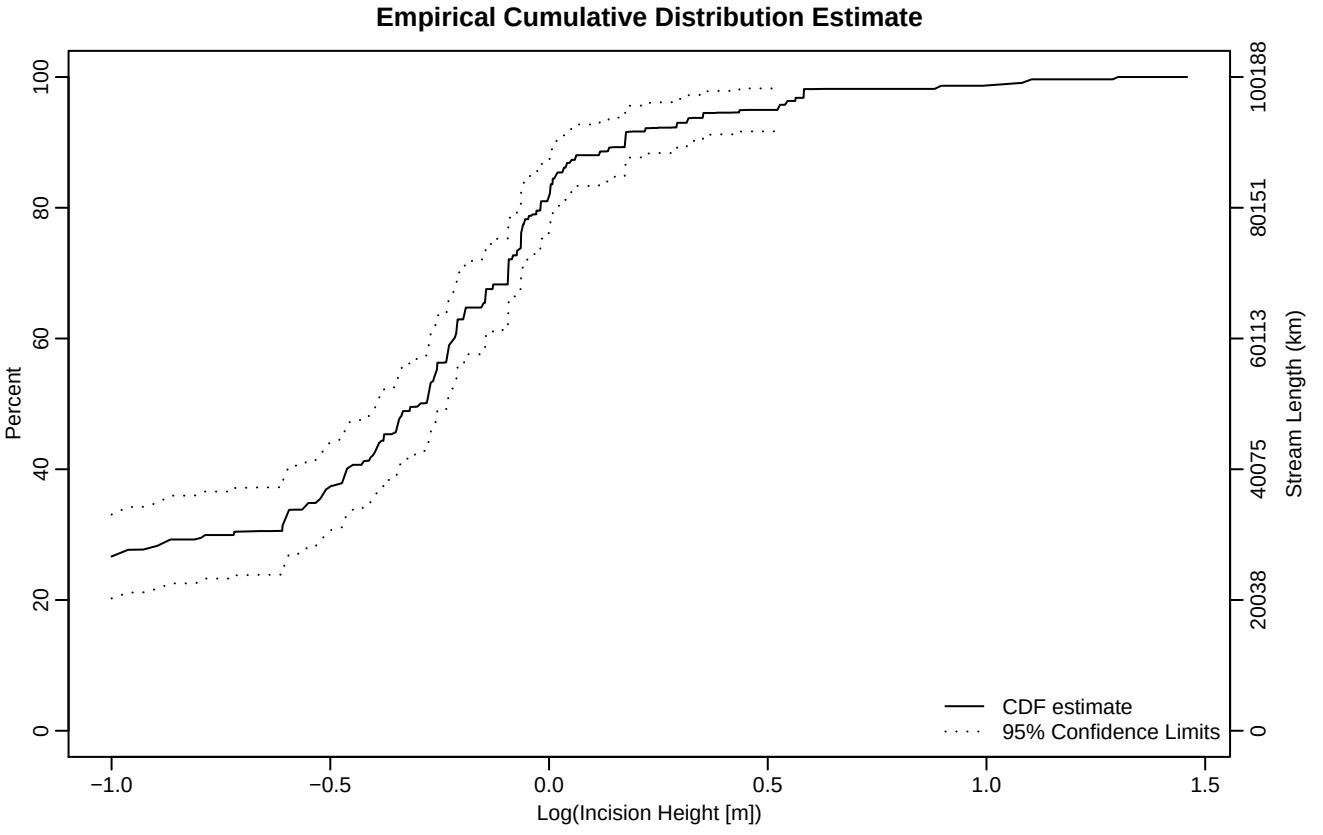


Figure PHAB−243 Indicator: LINCIS_H Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−1
25Pct	−1	−1	−0.61
50Pct	−0.29	−0.40	−0.23
75Pct	−0.06	−0.09	0
90Pct	0.17	0.03	0.35
95Pct	0.52	0.22	0.88
Mean	−0.38	−0.45	−0.31
Std Dev	0.46	0.41	0.52

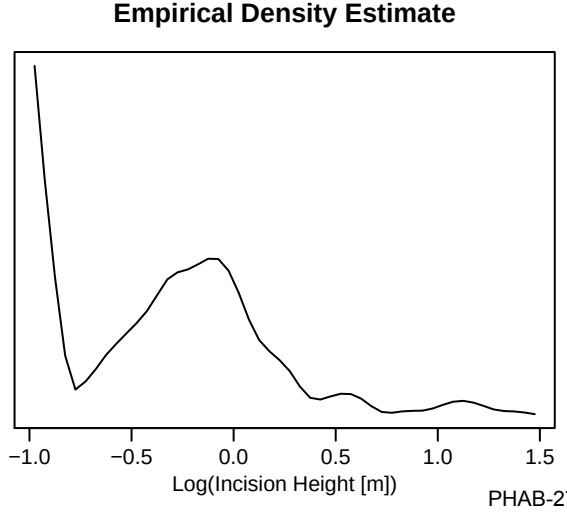
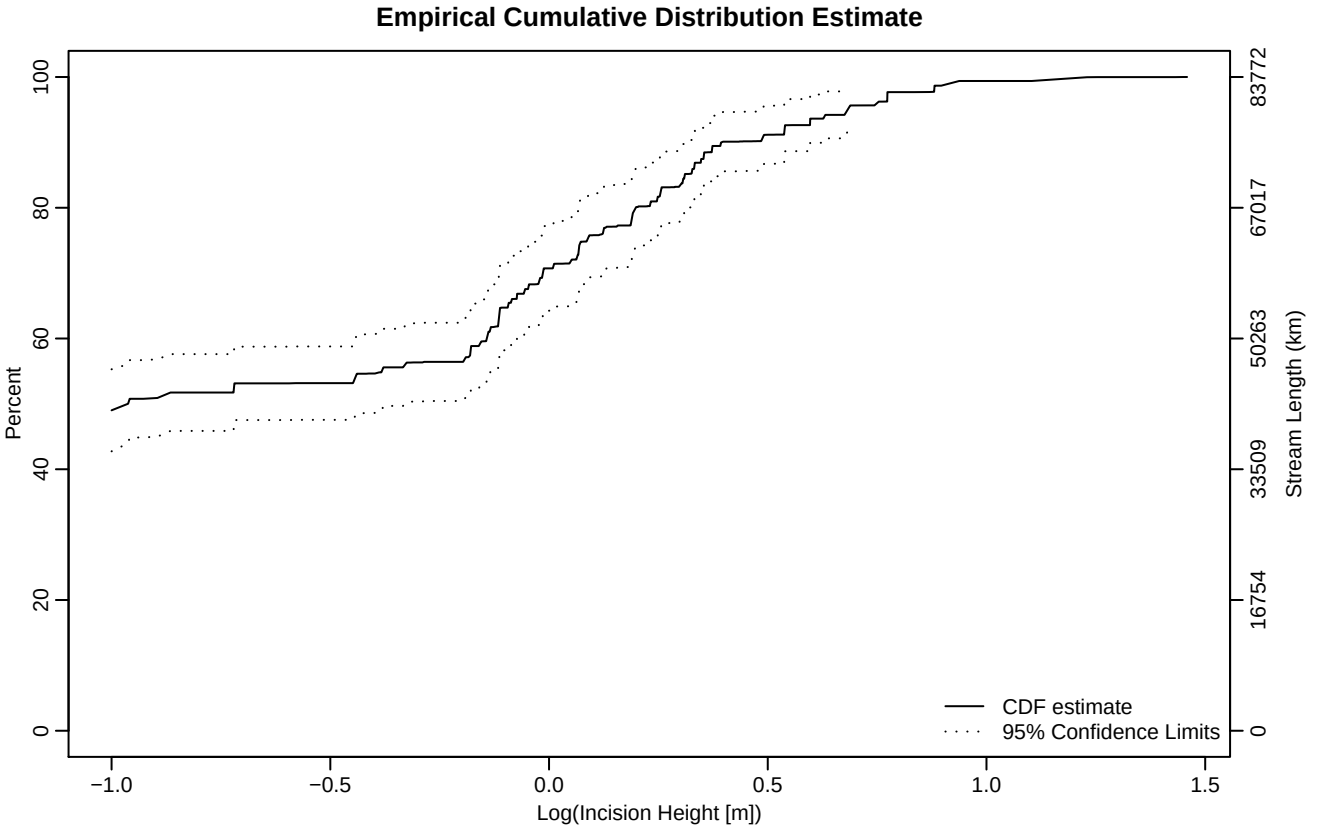


Figure PHAB−244 Indicator: LINCIS_H Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−1
25Pct	−1	−1	−1
50Pct	−0.96	−1	−0.19
75Pct	0.09	−0.02	0.25
90Pct	0.39	0.33	0.68
95Pct	0.68	0.54	0.88
Mean	−0.44	−0.51	−0.37
Std Dev	0.48	0.42	0.54

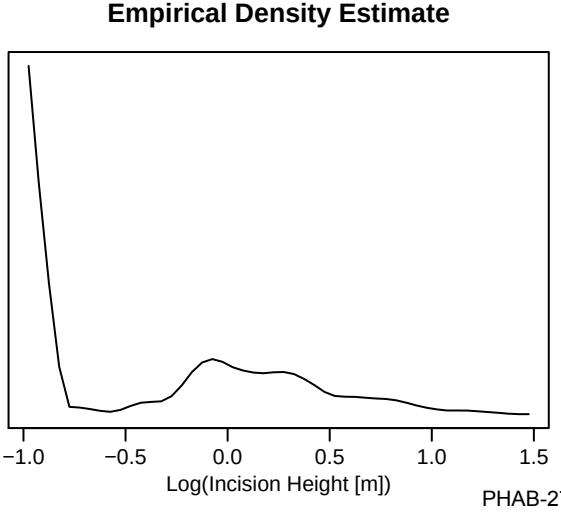
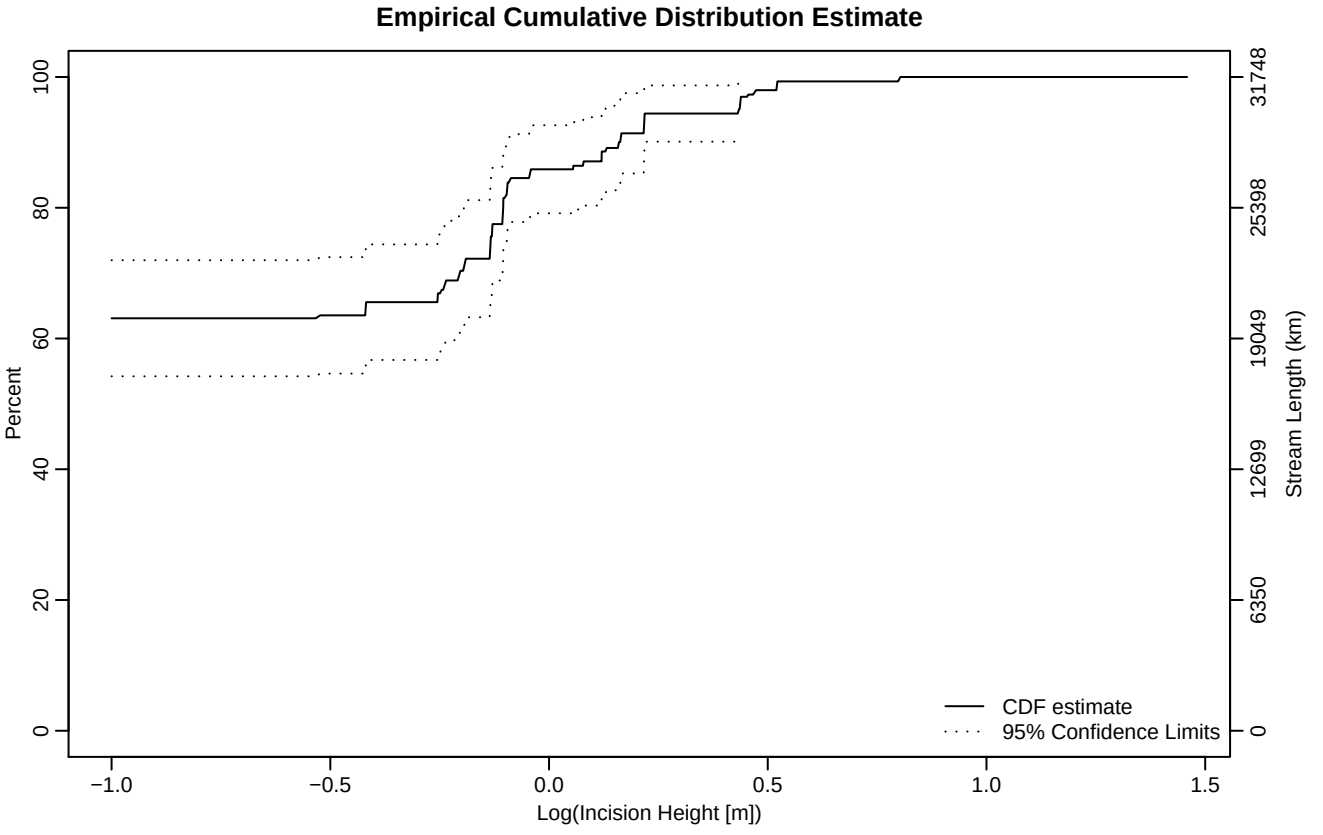


Figure PHAB−245 Indicator: LINCIS_H Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−1
25Pct	−1	−1	−1
50Pct	−1	−1	−1
75Pct	−0.13	−0.26	−0.09
90Pct	0.16	−0.10	0.44
95Pct	0.43	0.16	0.52
Mean	−0.63	−0.72	−0.53
Std Dev	0.43	0.34	0.51

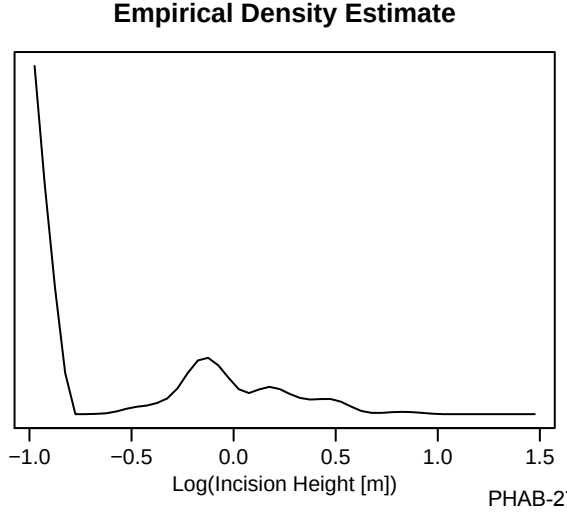
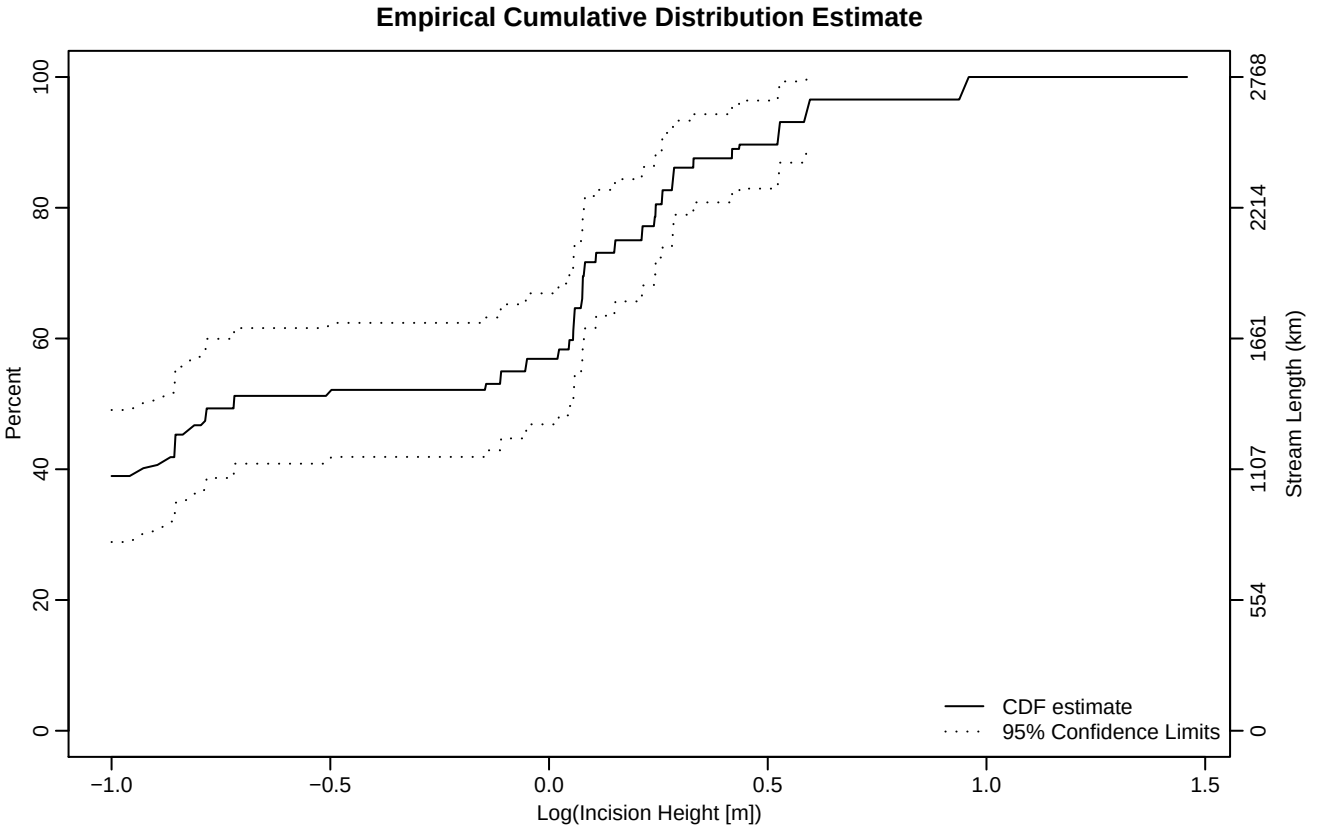


Figure PHAB−246 Indicator: LINCIS_H Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−1
25Pct	−1	−1	−1
50Pct	−0.72	−0.95	0.06
75Pct	0.15	0.07	0.28
90Pct	0.52	0.28	0.94
95Pct	0.59	0.42	
Mean	−0.37	−0.50	−0.25
Std Dev	0.52	0.44	0.59

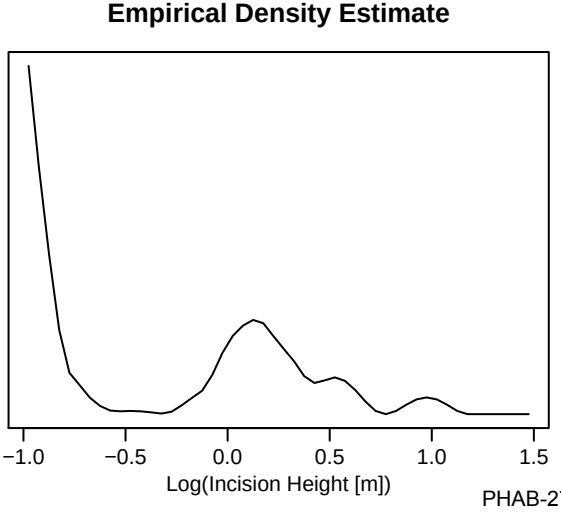
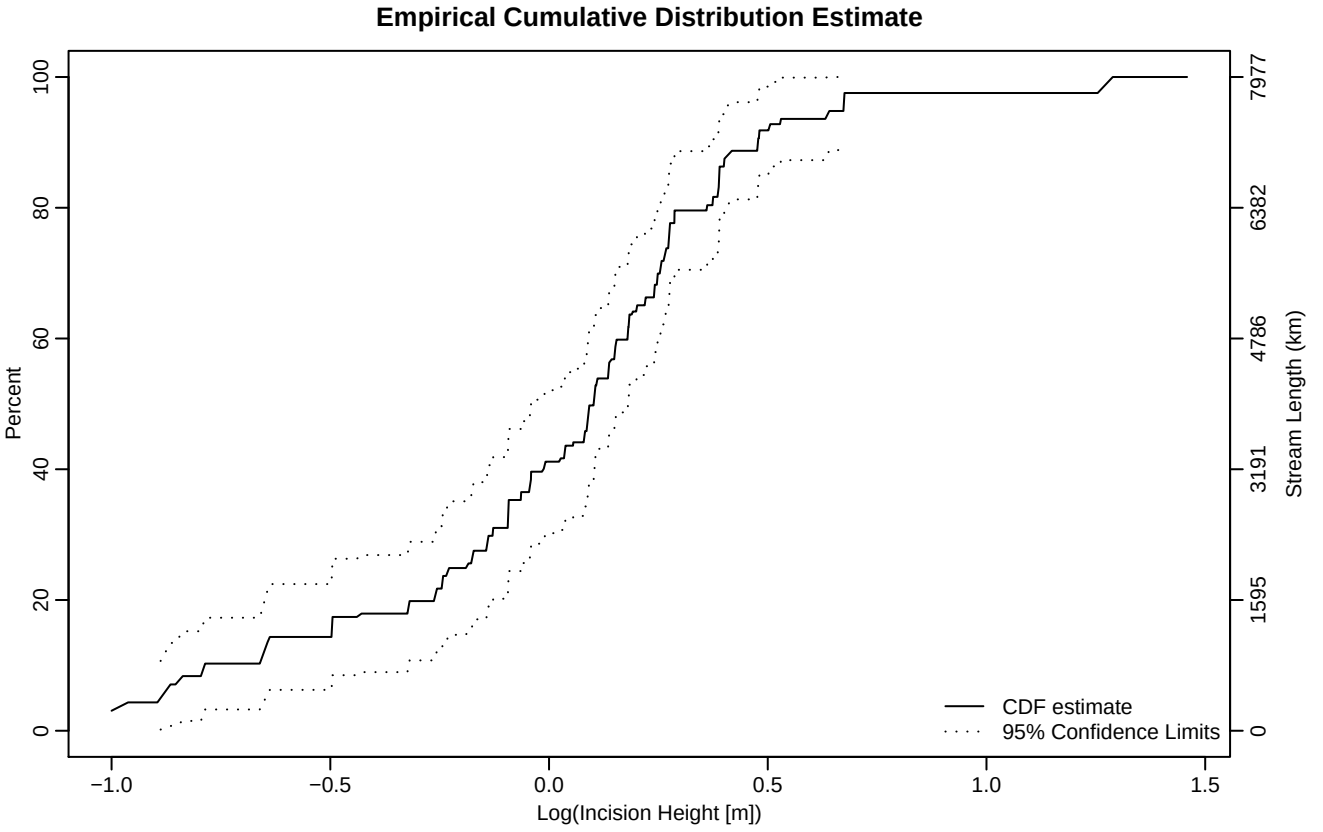


Figure PHAB−247 Indicator: LINCIS_H Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−0.89	−1	−0.66
10Pct	−0.79	−1	−0.50
25Pct	−0.19	−0.50	−0.06
50Pct	0.10	−0.04	0.18
75Pct	0.27	0.22	0.39
90Pct	0.48	0.39	0.68
95Pct	0.67	0.48	1.29
Mean	0.01	−0.11	0.14
Std Dev	0.40	0.33	0.47

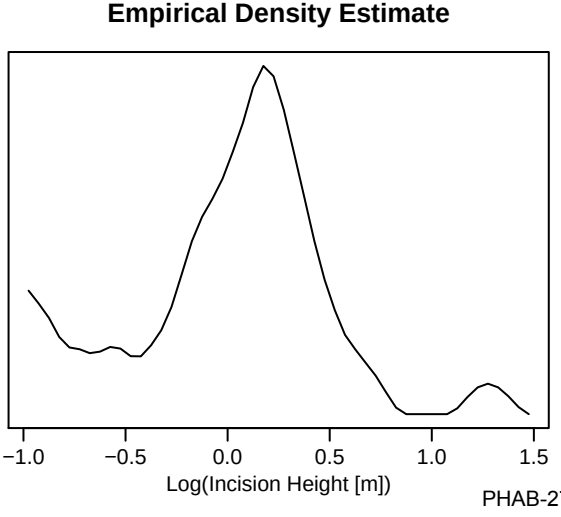
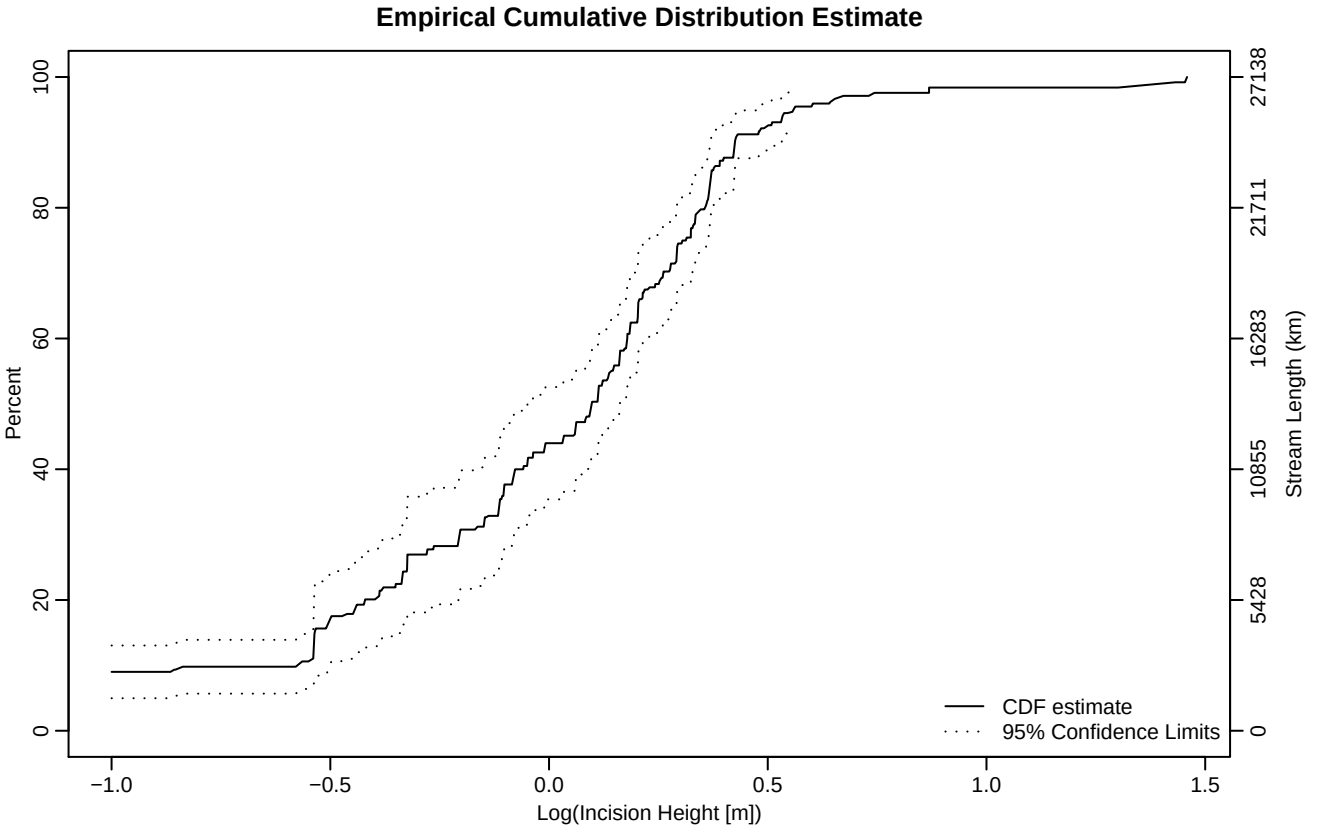


Figure PHAB−248 Indicator: LINCIS_H Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−0.86
10Pct	−0.58	−1	−0.54
25Pct	−0.32	−0.50	−0.12
50Pct	0.10	−0.04	0.16
75Pct	0.31	0.24	0.36
90Pct	0.42	0.37	0.56
95Pct	0.56	0.48	0.87
Mean	−0.01	−0.09	0.07
Std Dev	0.43	0.38	0.48

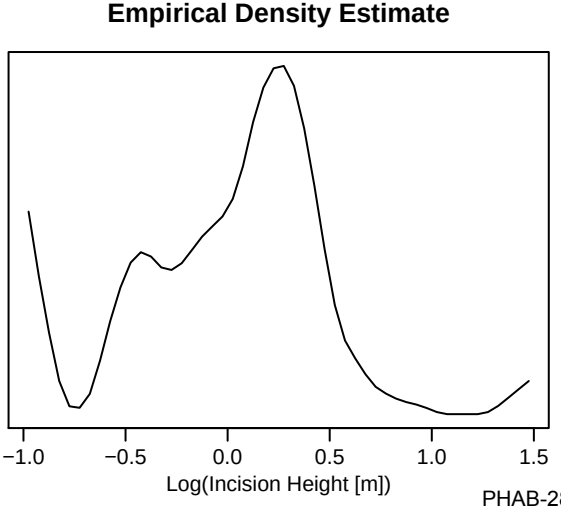
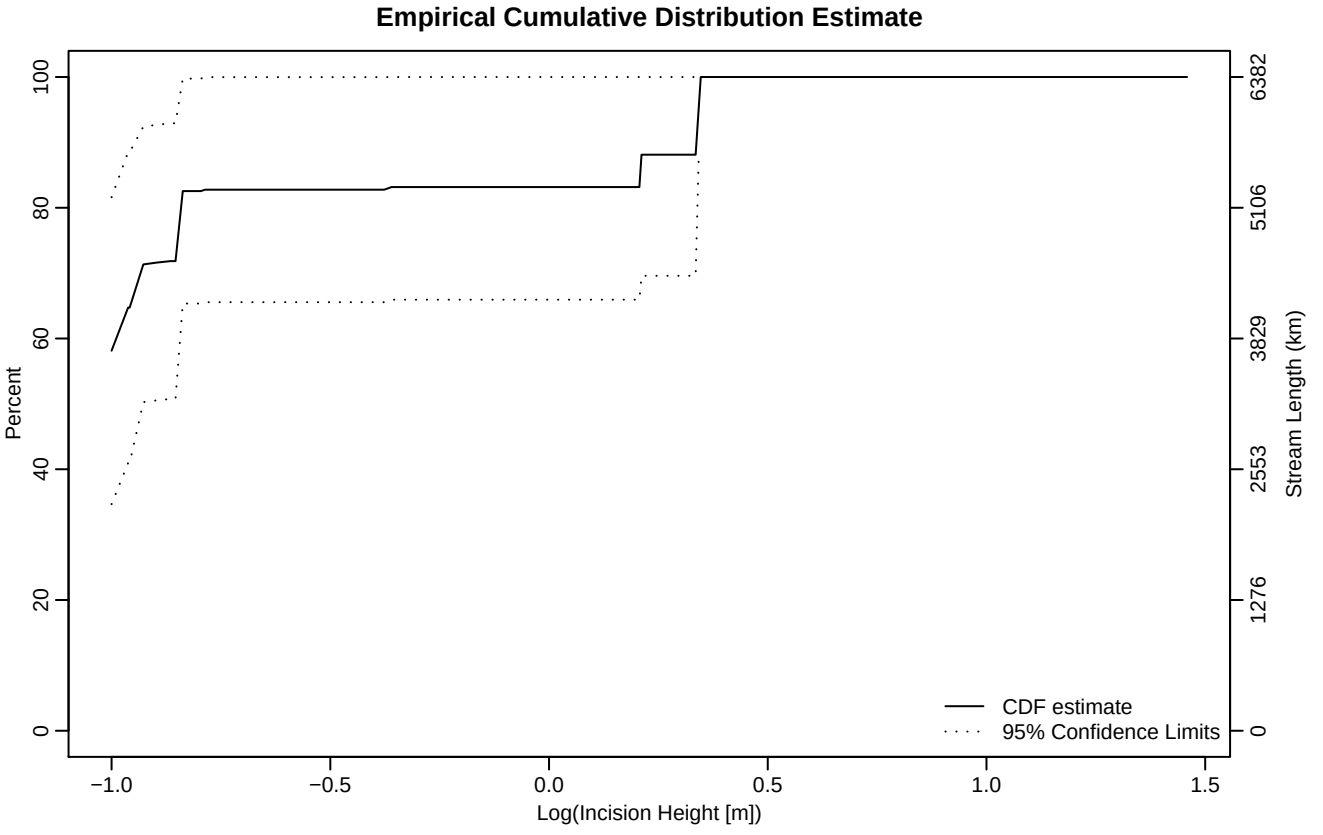


Figure PHAB−249 Indicator: LINCIS_H Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−1
25Pct	−1	−1	−1
50Pct	−1	−1	−0.85
75Pct	−0.85	−1	0.34
90Pct	0.34	−0.93	0.35
95Pct	0.34	−0.85	0.35
Mean	−0.75	−0.98	−0.52
Std Dev	0.48	0.27	0.69

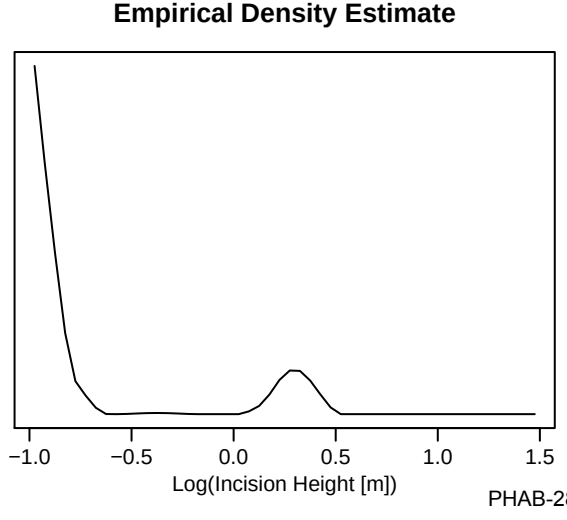
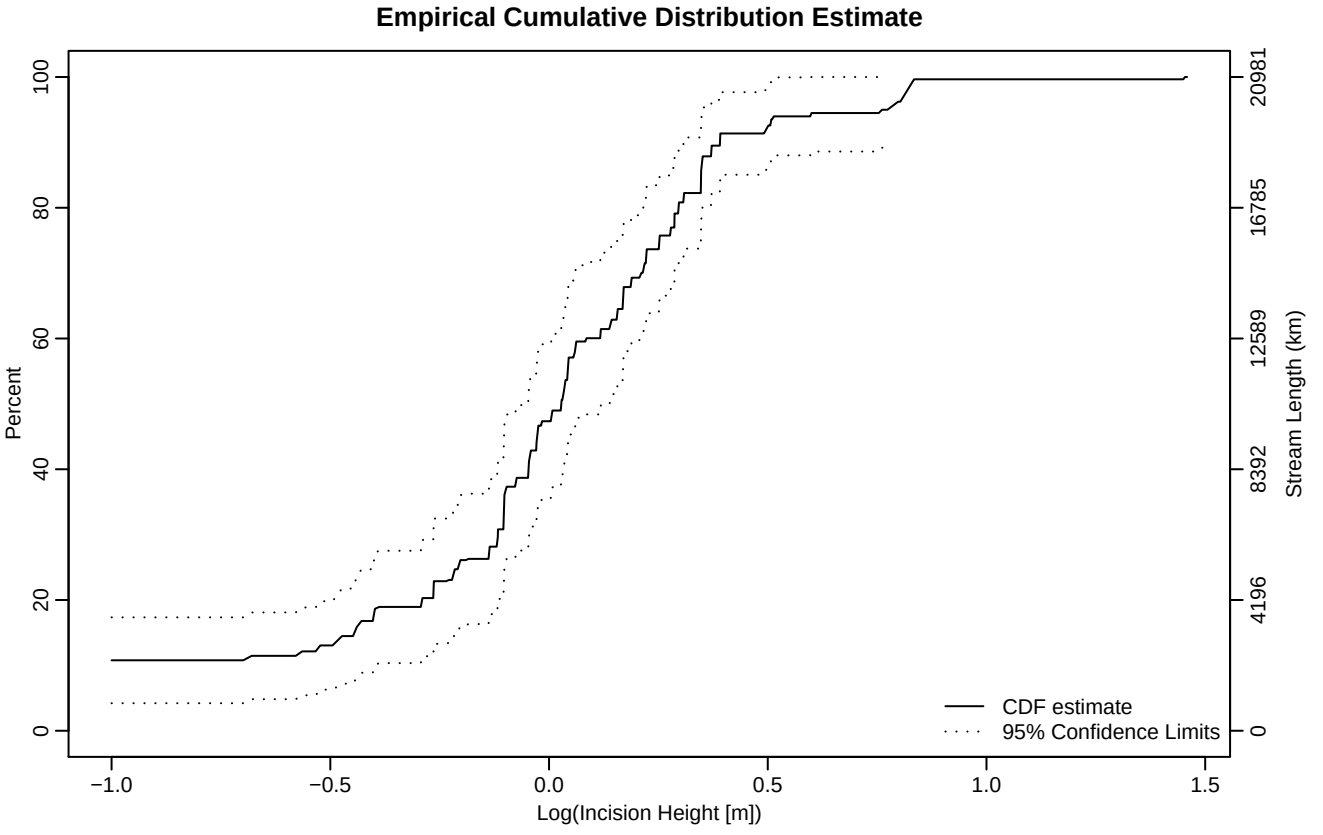


Figure PHAB−250 Indicator: LINCIS_H Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−0.57
10Pct	−1	−1	−0.43
25Pct	−0.21	−0.44	−0.10
50Pct	0.03	−0.07	0.14
75Pct	0.25	0.17	0.35
90Pct	0.39	0.35	0.81
95Pct	0.77	0.37	1.45
Mean	−0.03	−0.13	0.07
Std Dev	0.43	0.36	0.49

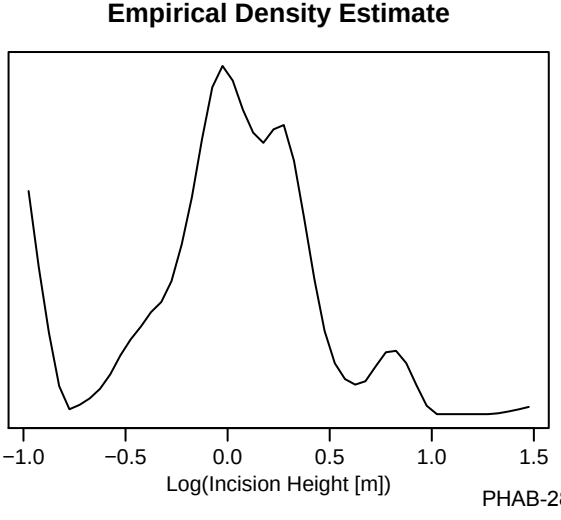
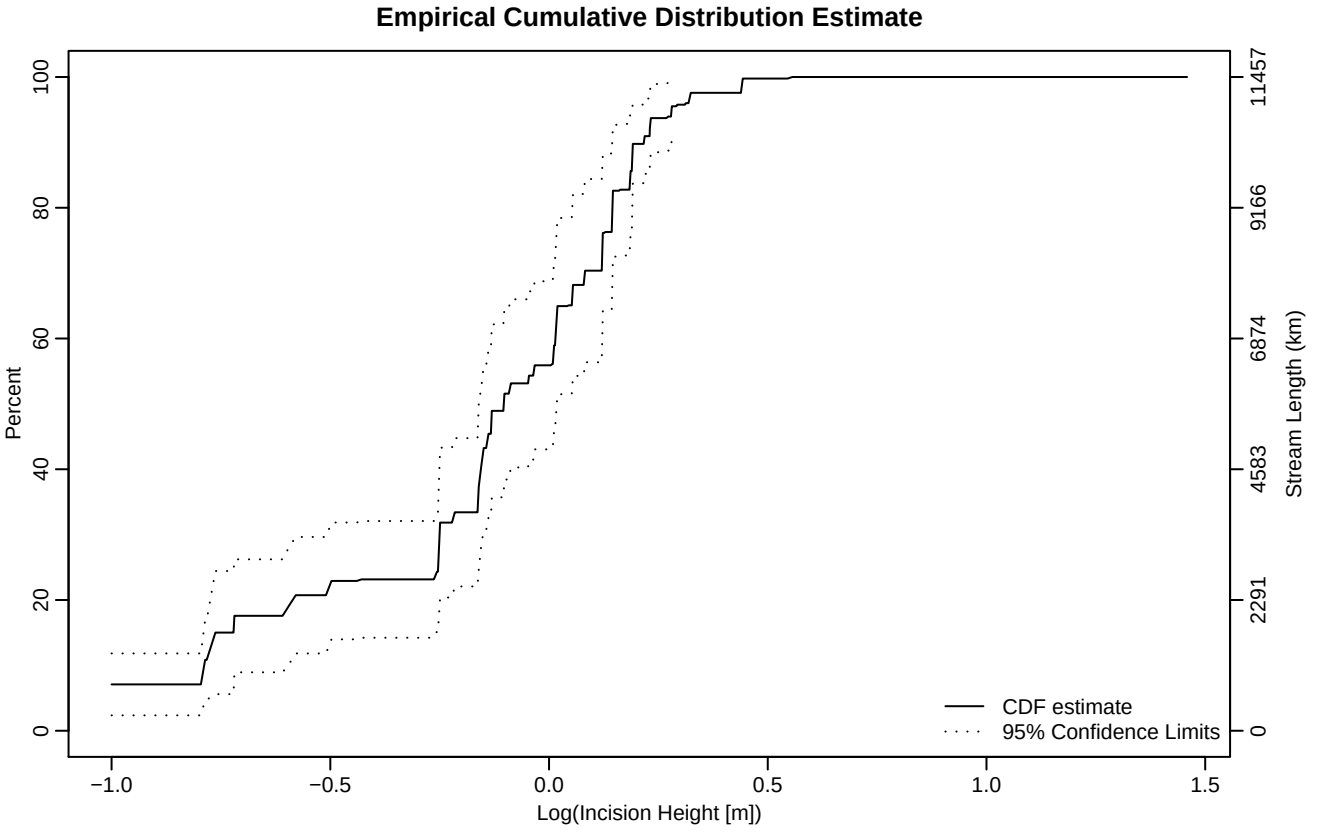


Figure PHAB−251 Indicator: LINCIS_H Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−0.79
10Pct	−0.79	−1	−0.72
25Pct	−0.25	−0.77	−0.16
50Pct	−0.10	−0.16	0.02
75Pct	0.12	0.02	0.19
90Pct	0.22	0.19	0.32
95Pct	0.28	0.19	0.56
Mean	−0.17	−0.24	−0.09
Std Dev	0.32	0.26	0.38

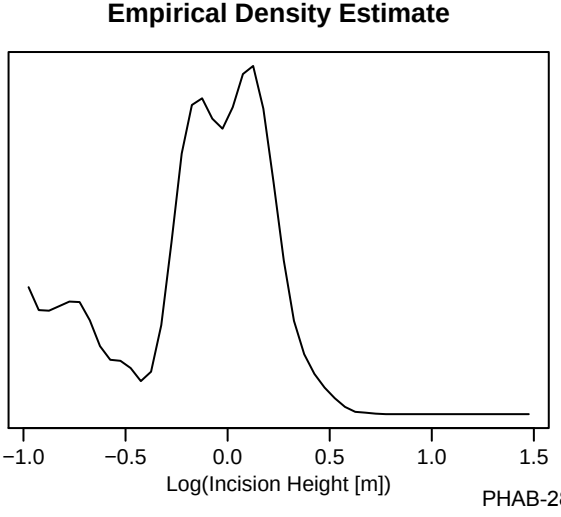
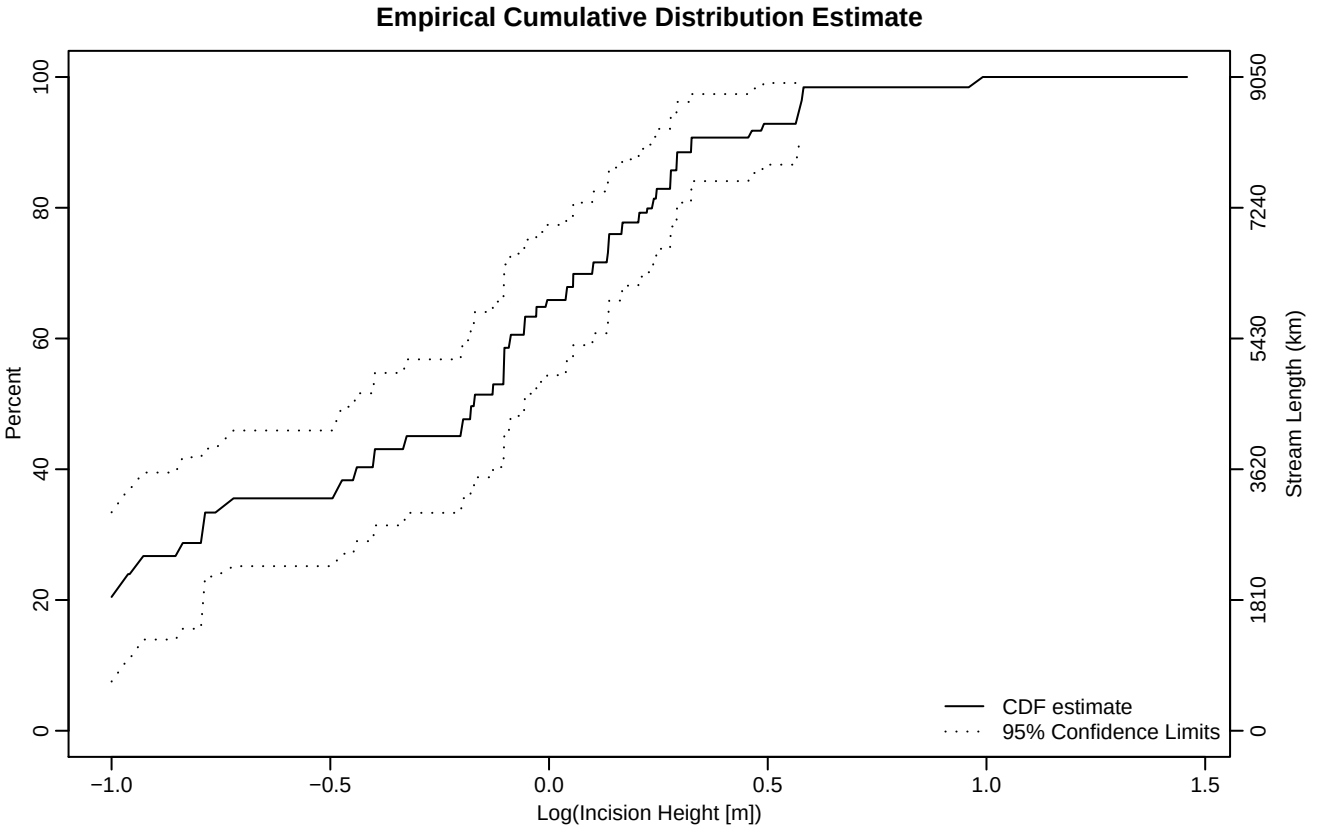


Figure PHAB−252 Indicator: LINCIS_H Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−1	−1	−1
10Pct	−1	−1	−0.97
25Pct	−0.95	−1	−0.48
50Pct	−0.17	−0.48	−0.06
75Pct	0.14	−0.03	0.29
90Pct	0.33	0.25	0.58
95Pct	0.57	0.32	
Mean	−0.29	−0.42	−0.16
Std Dev	0.47	0.41	0.53

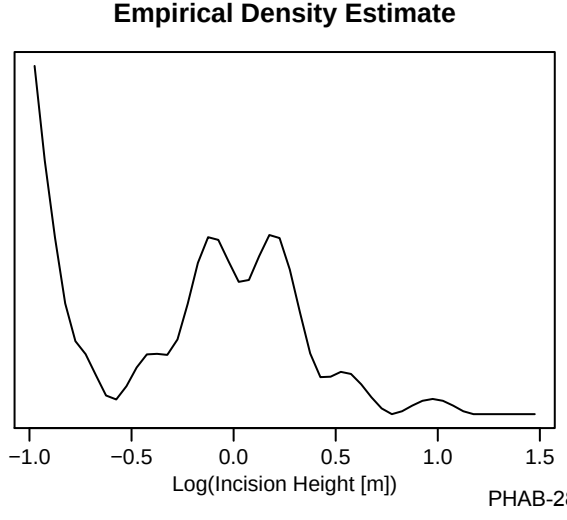
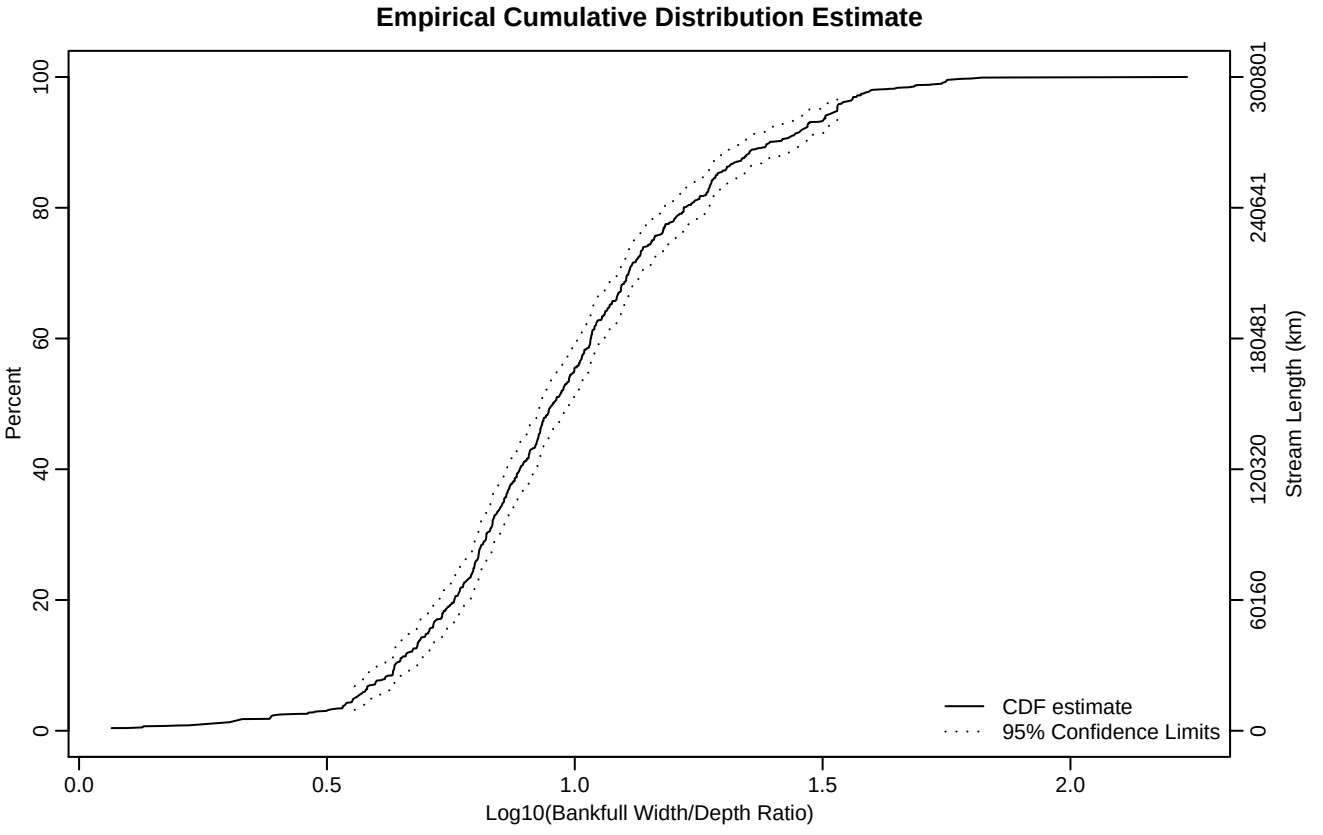


Figure PHAB−253 Indicator: LBFWDRat Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.56	0.50	0.58
10Pct	0.64	0.60	0.68
25Pct	0.80	0.77	0.82
50Pct	0.96	0.93	0.99
75Pct	1.16	1.12	1.20
90Pct	1.39	1.34	1.47
95Pct	1.53	1.50	1.56
Mean	0.99	0.96	1.01
Std Dev	0.28	0.27	0.30

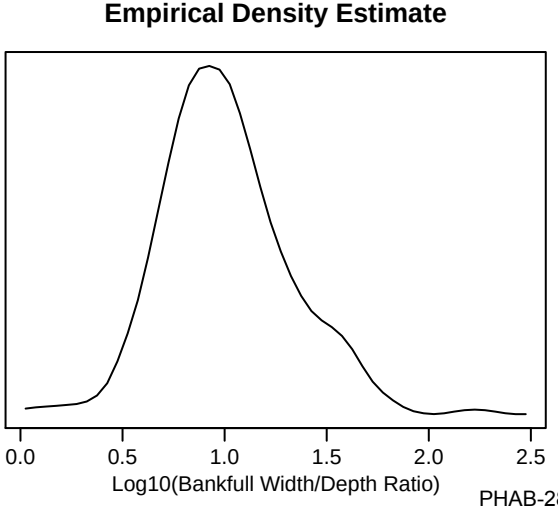
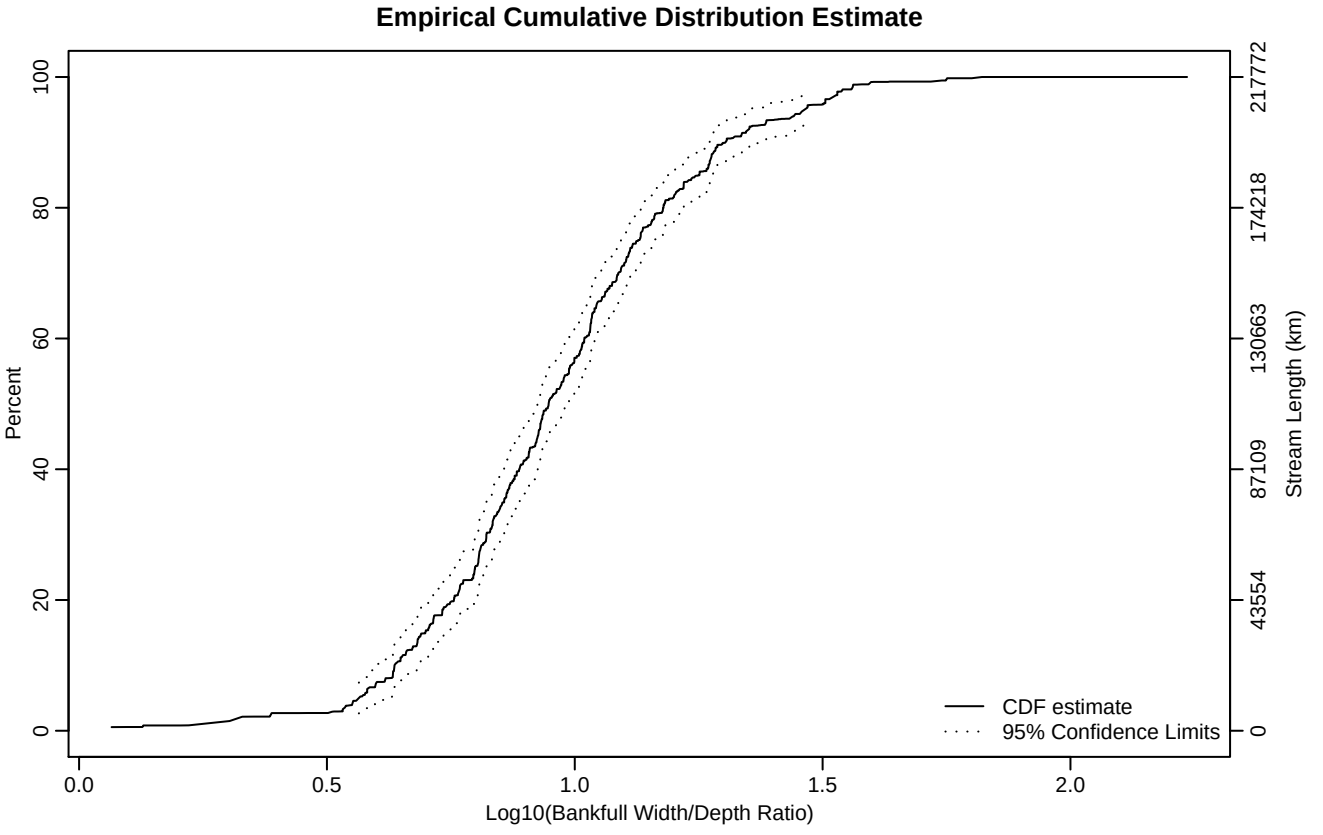


Figure PHAB−254 Indicator: LBFWDRat Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.56	0.39	0.60
10Pct	0.64	0.58	0.68
25Pct	0.80	0.76	0.82
50Pct	0.95	0.92	0.99
75Pct	1.13	1.09	1.17
90Pct	1.30	1.27	1.39
95Pct	1.46	1.37	1.53
Mean	0.96	0.94	0.99
Std Dev	0.26	0.24	0.28

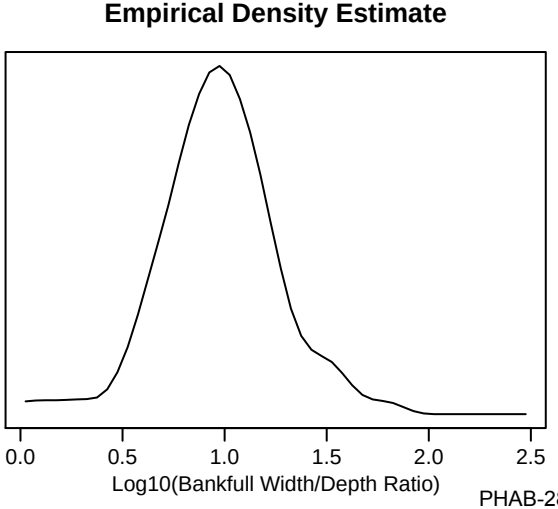
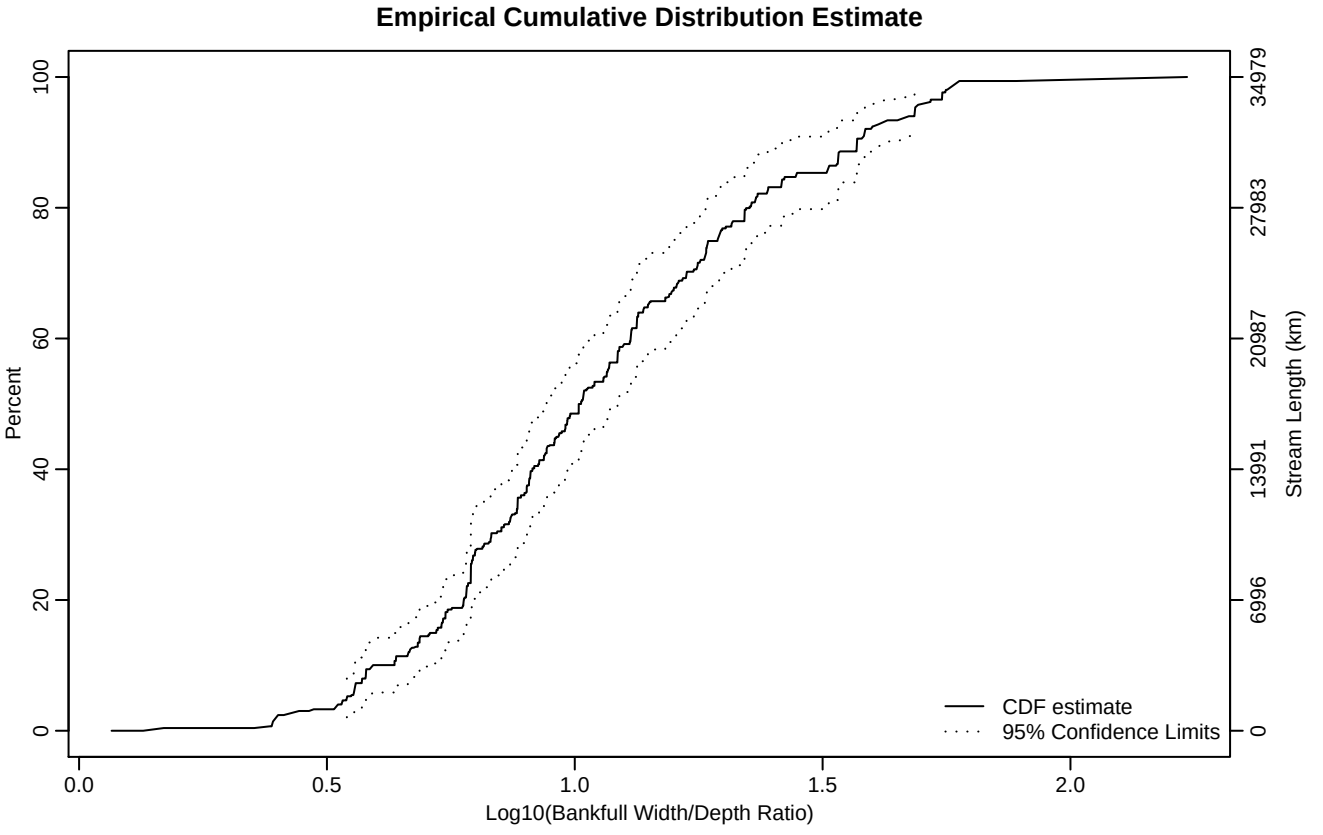


Figure PHAB−255 Indicator: LBFWDRat Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.54	0.40	0.57
10Pct	0.59	0.55	0.69
25Pct	0.79	0.78	0.84
50Pct	1.01	0.94	1.09
75Pct	1.29	1.21	1.37
90Pct	1.57	1.45	1.69
95Pct	1.69	1.59	1.75
Mean	1.05	1	1.11
Std Dev	0.33	0.31	0.36

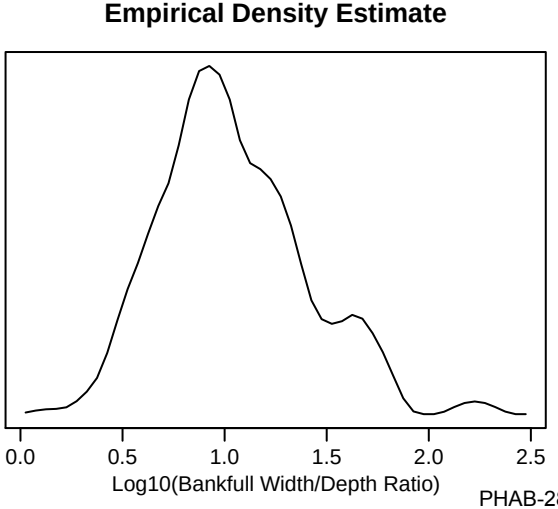
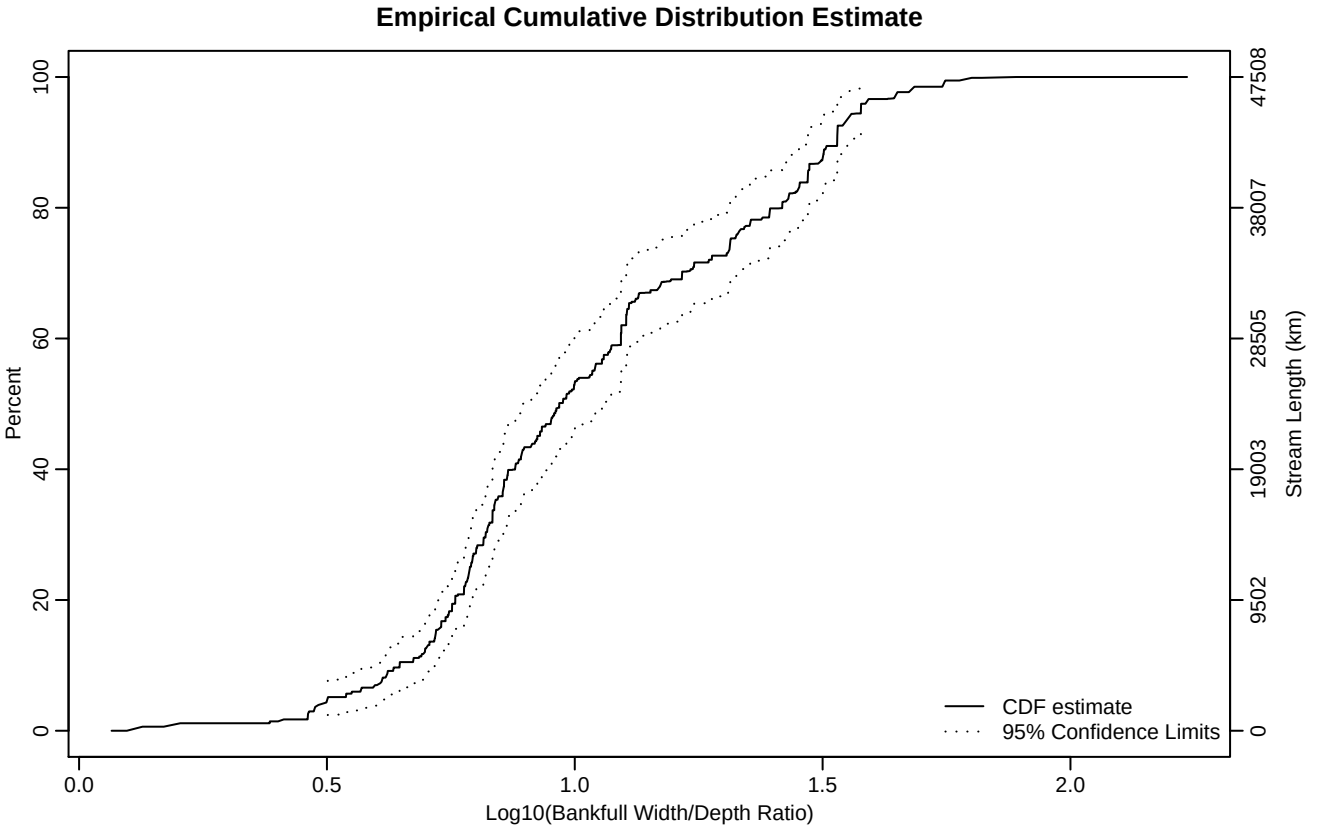


Figure PHAB−256 Indicator: LBFWDRat Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.50	0.46	0.61
10Pct	0.65	0.57	0.72
25Pct	0.79	0.75	0.82
50Pct	0.97	0.90	1.06
75Pct	1.31	1.17	1.43
90Pct	1.53	1.47	1.58
95Pct	1.58	1.53	1.74
Mean	1.03	0.99	1.08
Std Dev	0.31	0.28	0.33

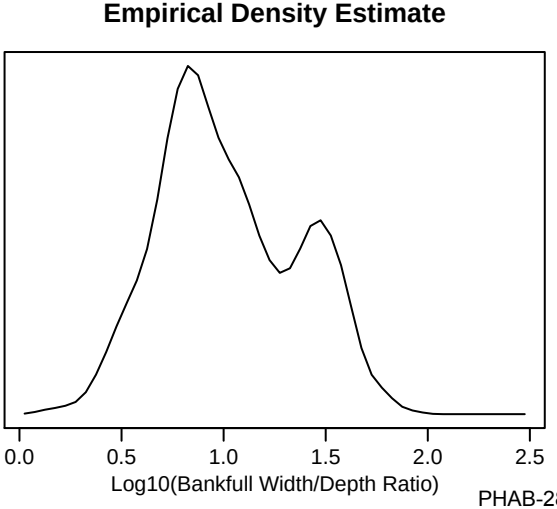
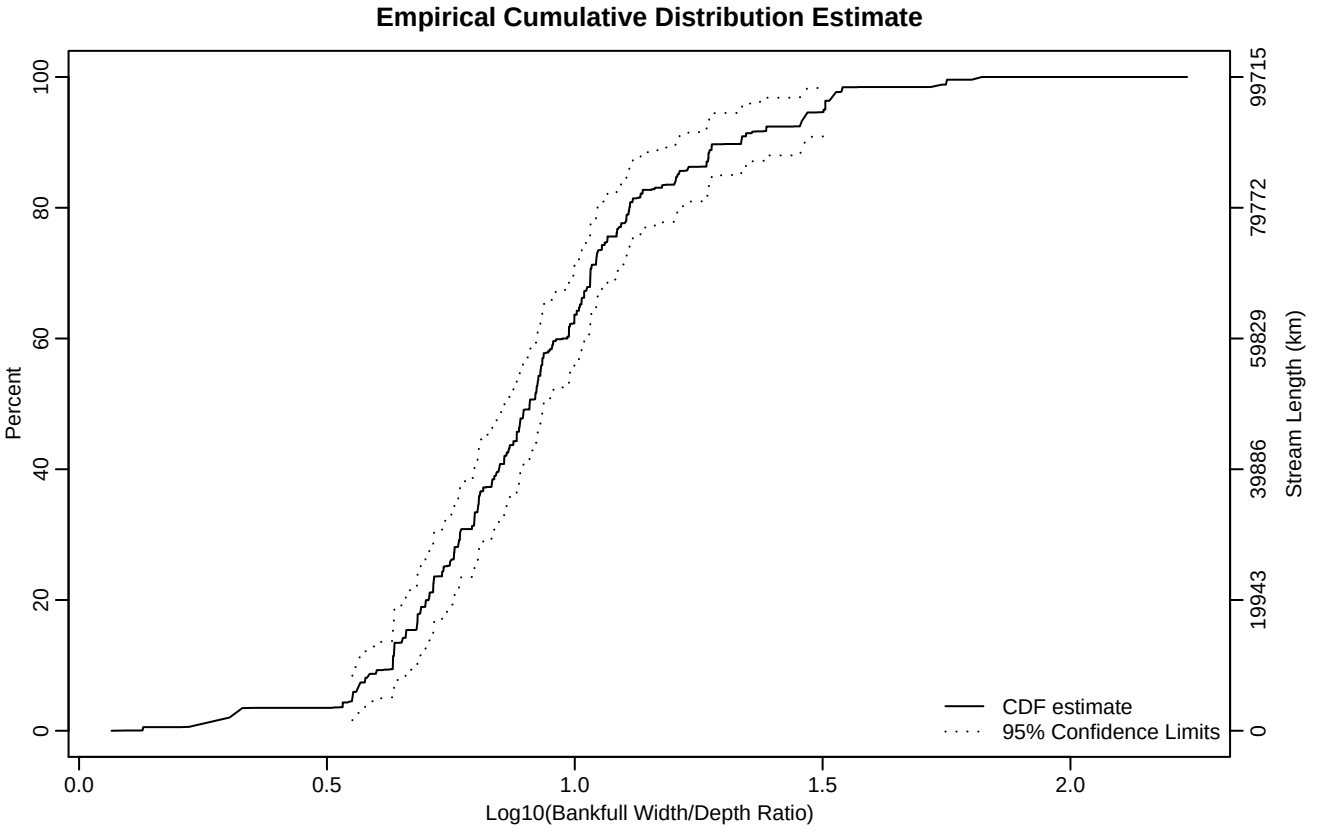


Figure PHAB−257 Indicator: LBFWDRat Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.55	0.29	0.58
10Pct	0.63	0.55	0.66
25Pct	0.74	0.69	0.80
50Pct	0.91	0.86	0.95
75Pct	1.07	1.03	1.13
90Pct	1.34	1.21	1.50
95Pct	1.50	1.35	1.73
Mean	0.93	0.89	0.97
Std Dev	0.27	0.24	0.30

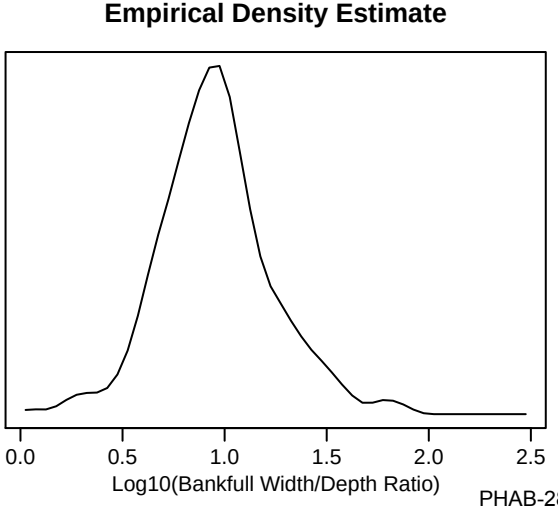
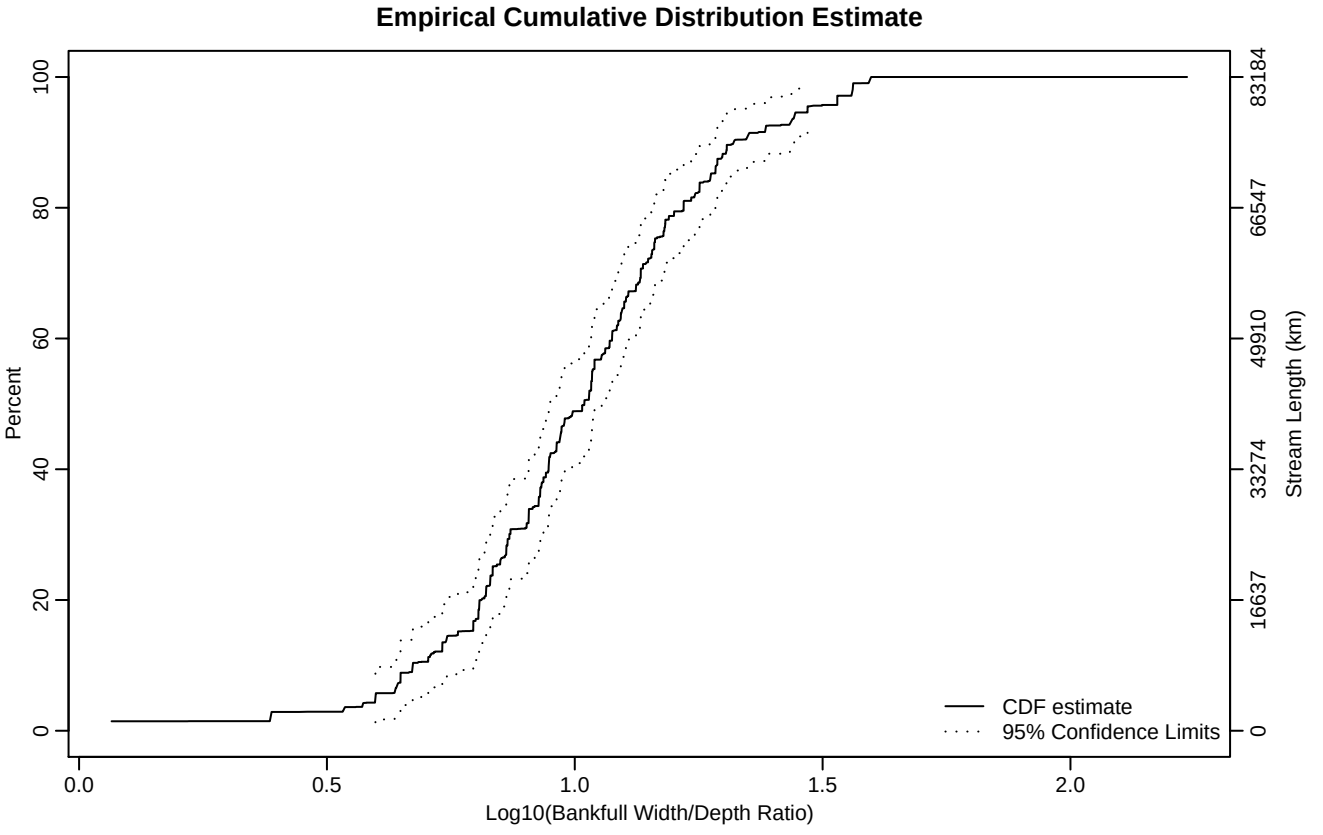


Figure PHAB−258 Indicator: LBFWDRat Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.60	0.39	0.65
10Pct	0.67	0.60	0.76
25Pct	0.83	0.81	0.91
50Pct	1.02	0.95	1.06
75Pct	1.16	1.12	1.24
90Pct	1.32	1.27	1.47
95Pct	1.47	1.35	1.56
Mean	1.01	0.96	1.05
Std Dev	0.26	0.23	0.30

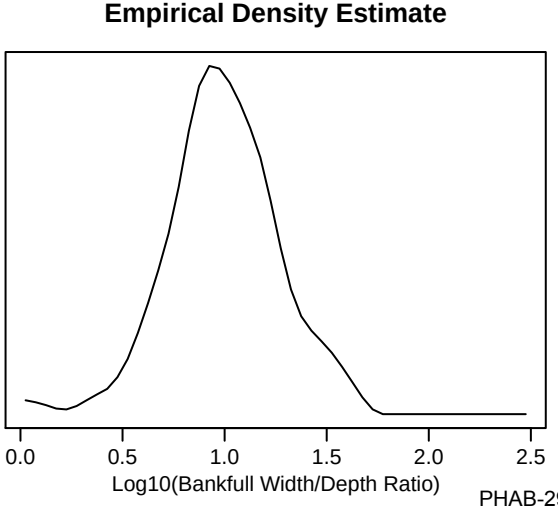
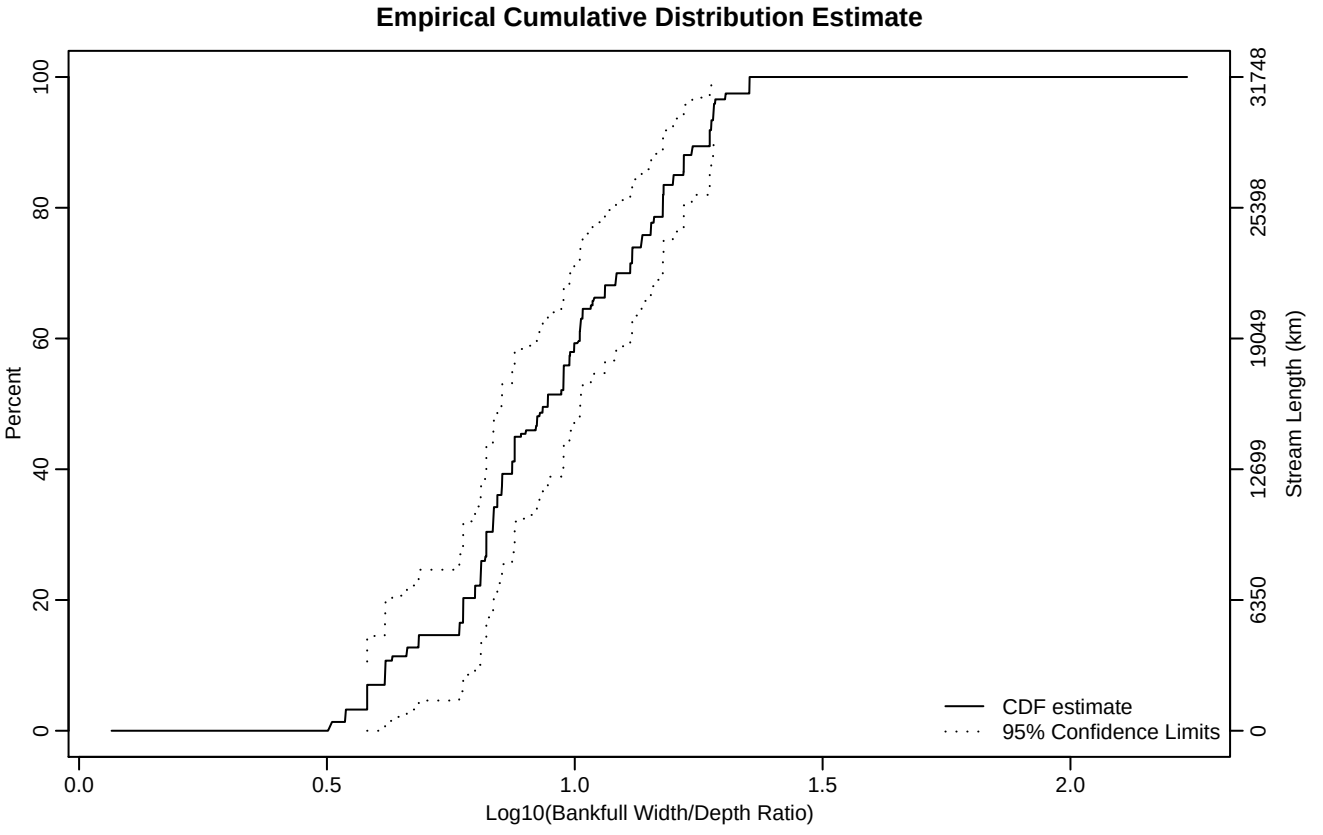


Figure PHAB−259 Indicator: LBFWDRat Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.58	0.51	0.62
10Pct	0.62	0.54	0.77
25Pct	0.81	0.68	0.85
50Pct	0.95	0.85	1.01
75Pct	1.14	1.03	1.22
90Pct	1.27	1.18	1.30
95Pct	1.28	1.24	1.35
Mean	0.95	0.90	1.01
Std Dev	0.22	0.18	0.25

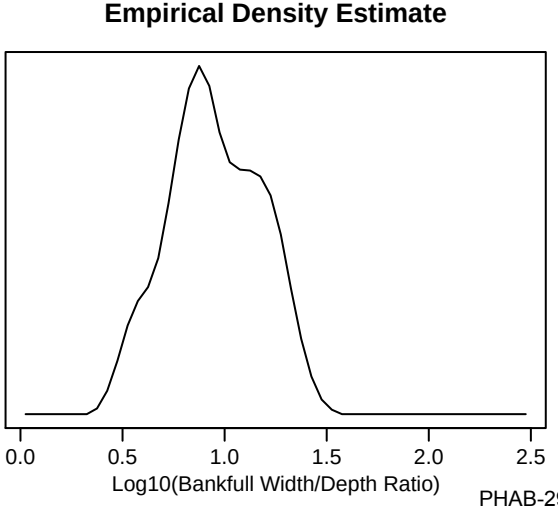
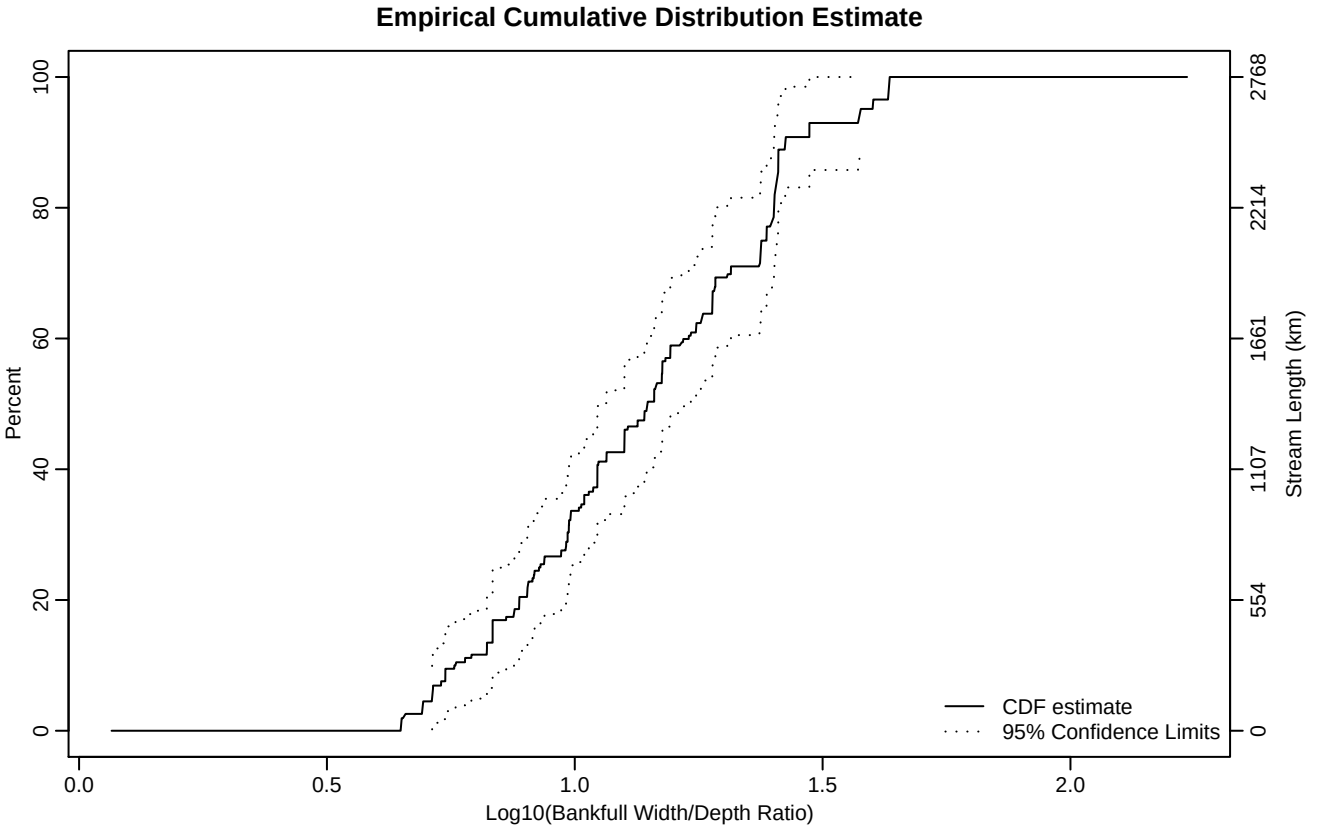


Figure PHAB−260 Indicator: LBFWDRat Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.71	0.65	0.76
10Pct	0.76	0.69	0.83
25Pct	0.93	0.83	1.01
50Pct	1.15	1.05	1.22
75Pct	1.39	1.28	1.41
90Pct	1.42	1.40	1.63
95Pct	1.58	1.41	
Mean	1.14	1.09	1.19
Std Dev	0.24	0.21	0.27

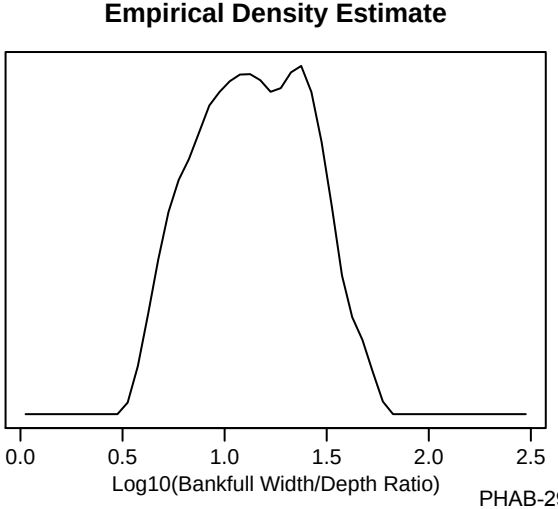
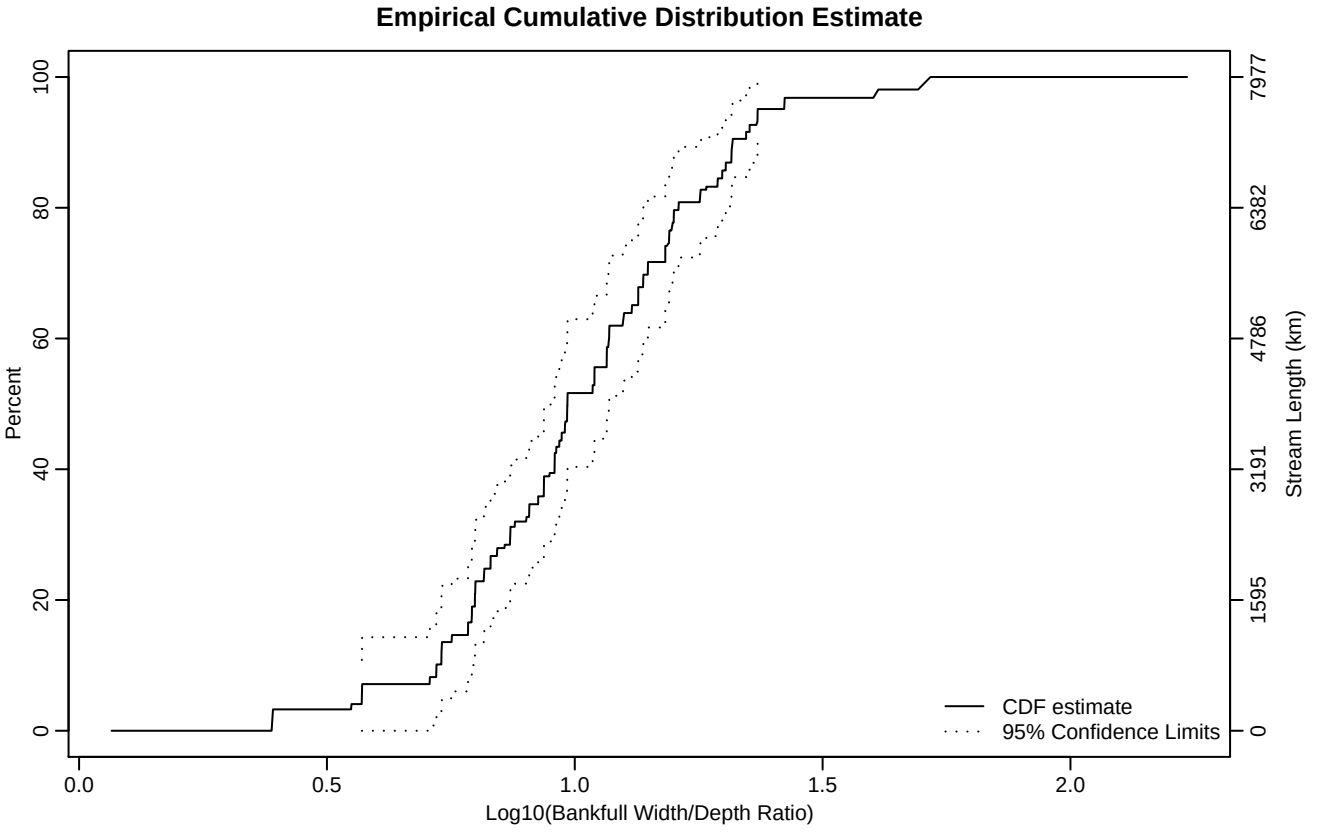


Figure PHAB−261 Indicator: LBFWDRat Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.57	0.07	0.73
10Pct	0.72	0.39	0.79
25Pct	0.83	0.78	0.91
50Pct	0.99	0.95	1.07
75Pct	1.19	1.13	1.29
90Pct	1.32	1.29	1.42
95Pct	1.37	1.32	1.72
Mean	1.01	0.95	1.08
Std Dev	0.24	0.19	0.28

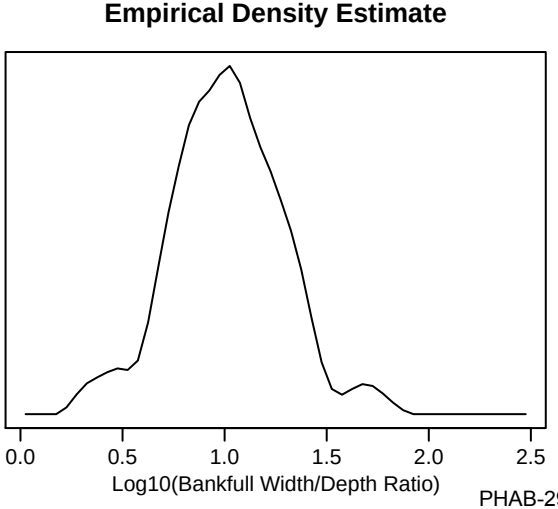
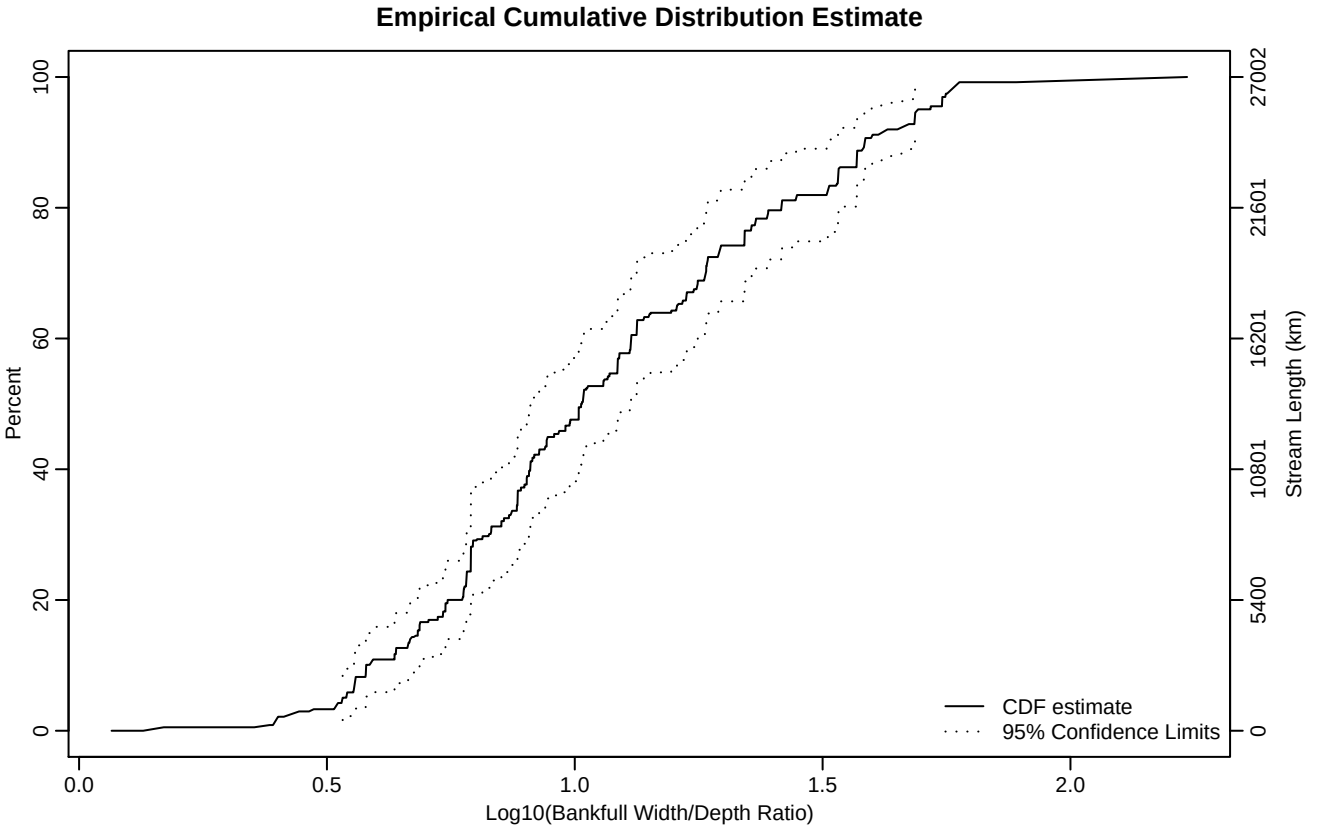


Figure PHAB−262 Indicator: LBFWDRat Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.53	0.40	0.56
10Pct	0.58	0.54	0.68
25Pct	0.79	0.74	0.85
50Pct	1.01	0.91	1.11
75Pct	1.34	1.23	1.53
90Pct	1.58	1.53	1.69
95Pct	1.69	1.60	1.77
Mean	1.07	1	1.14
Std Dev	0.36	0.33	0.39

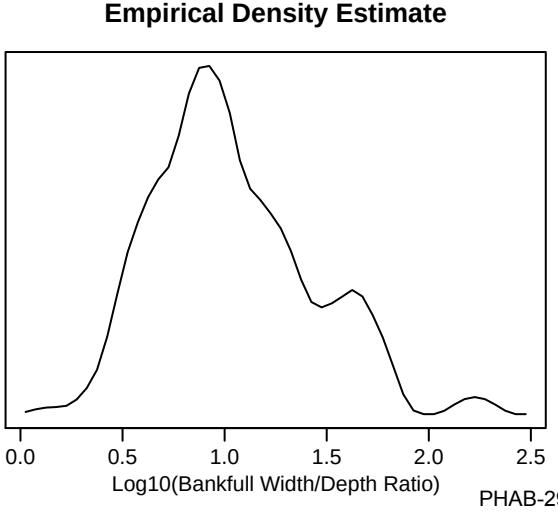
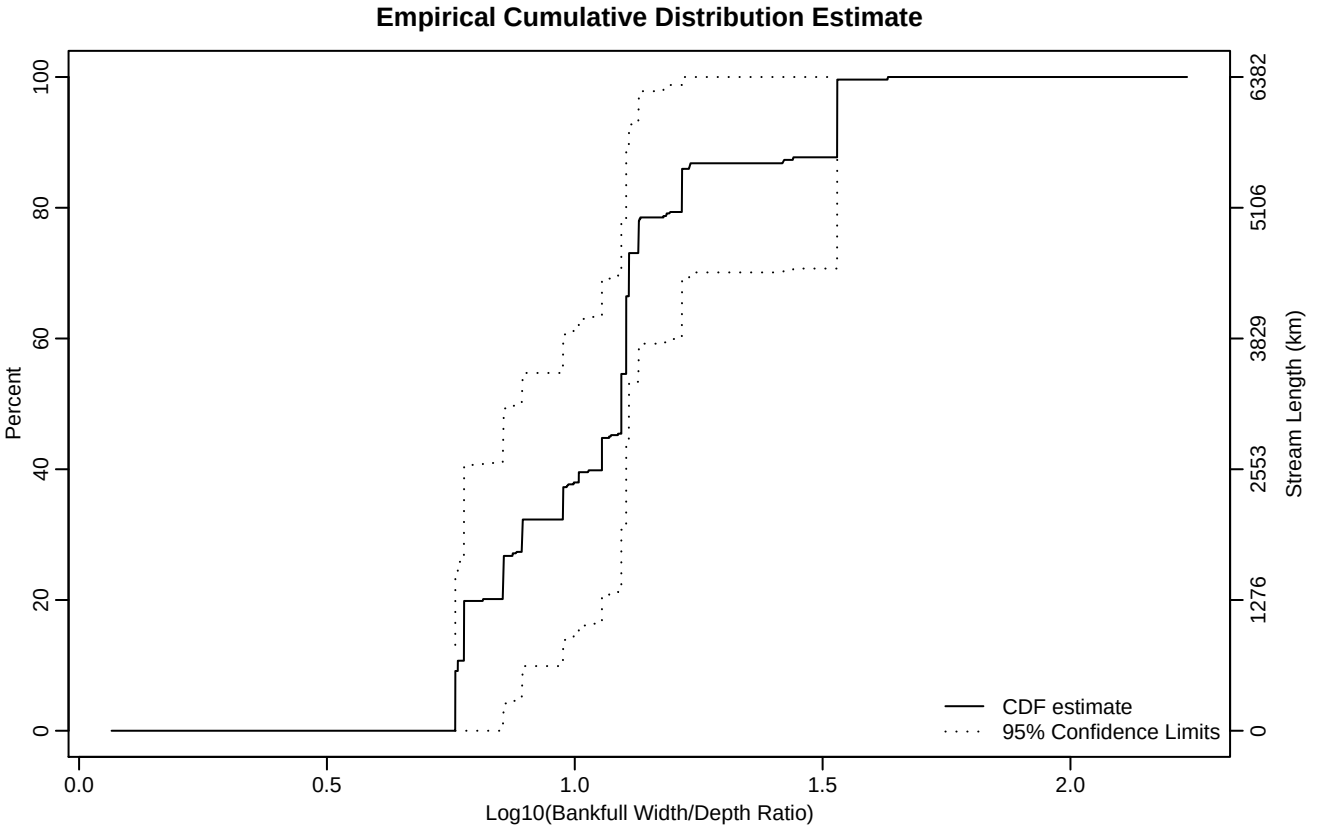


Figure PHAB−263 Indicator: LBFWDRat Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.76	0.76	0.76
10Pct	0.76	0.07	0.86
25Pct	0.86	0.76	1.09
50Pct	1.09	0.86	1.13
75Pct	1.13	1.10	1.53
90Pct	1.53	1.11	1.63
95Pct	1.53	1.13	1.63
Mean	1.06	0.95	1.18
Std Dev	0.23	0.15	0.31

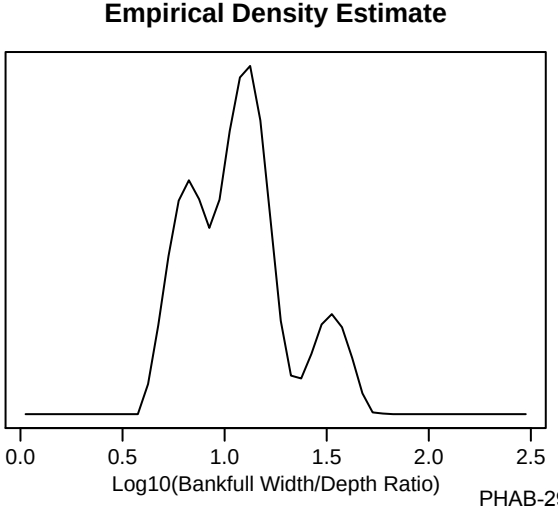
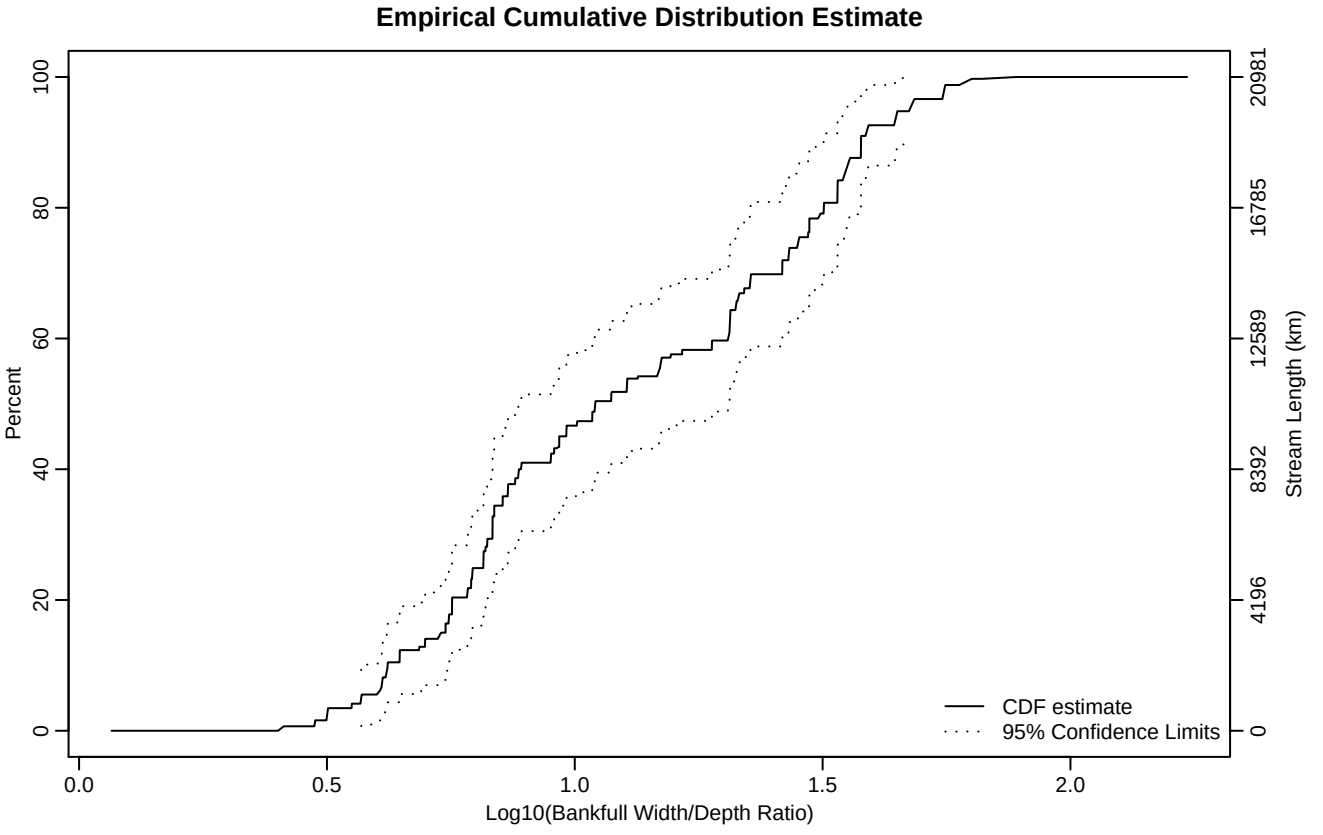


Figure PHAB−264 Indicator: LBFWDRat Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.57	0.48	0.62
10Pct	0.62	0.57	0.74
25Pct	0.82	0.74	0.84
50Pct	1.04	0.89	1.31
75Pct	1.45	1.31	1.55
90Pct	1.58	1.53	1.75
95Pct	1.68	1.58	1.89
Mean	1.11	1.03	1.19
Std Dev	0.35	0.31	0.39

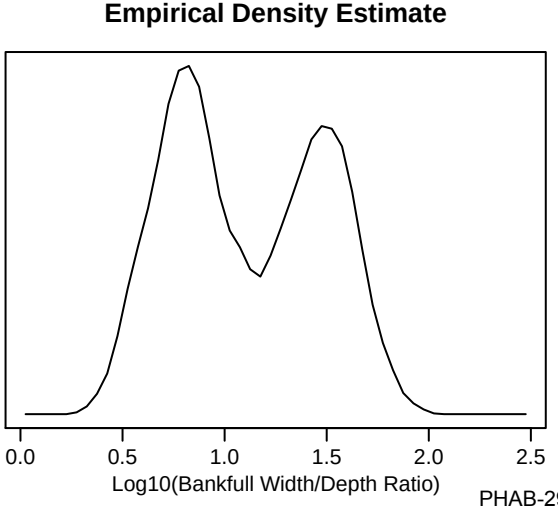
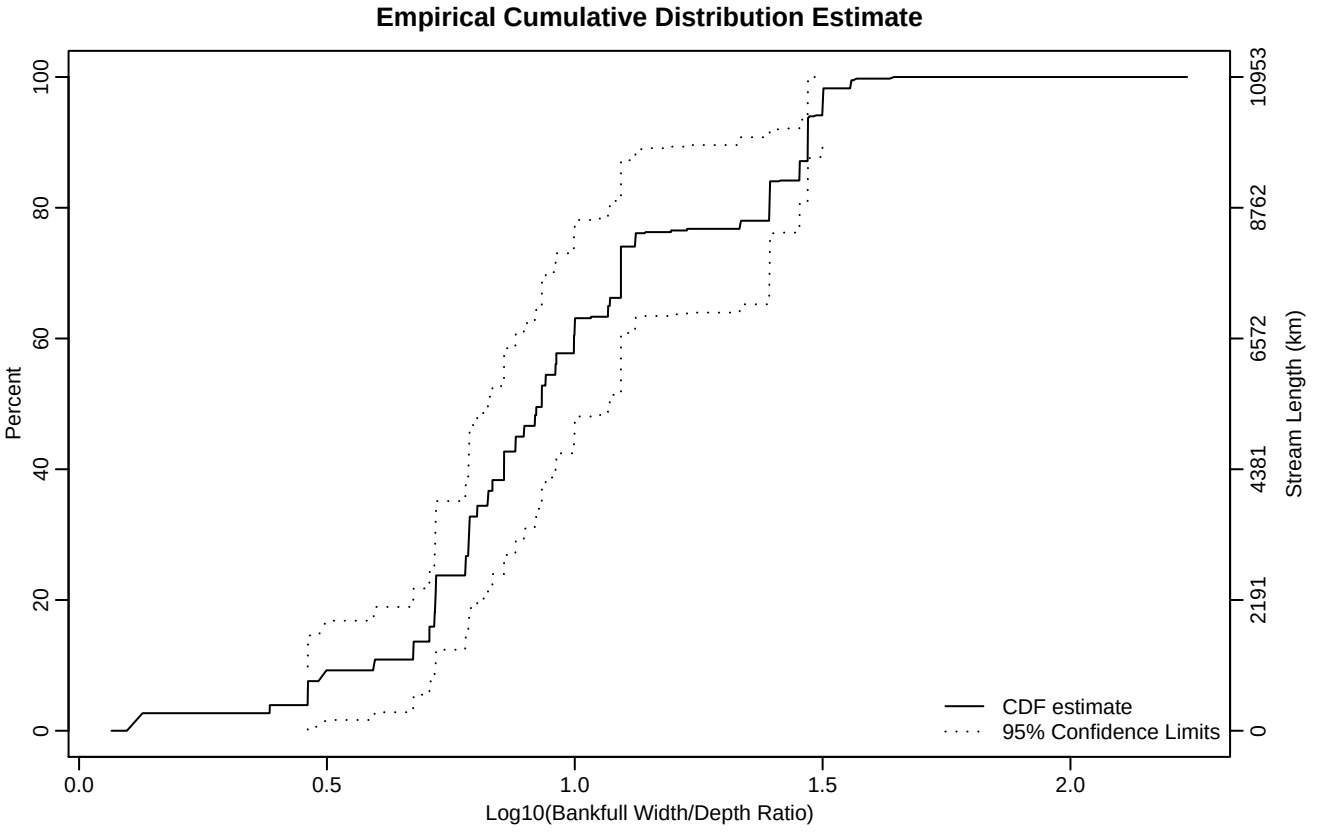


Figure PHAB−265 Indicator: LBFWDRat Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.46	0.10	0.59
10Pct	0.59	0.12	0.72
25Pct	0.78	0.67	0.83
50Pct	0.93	0.80	1.07
75Pct	1.12	1	1.47
90Pct	1.47	1.39	1.64
95Pct	1.50	1.47	1.64
Mean	0.97	0.87	1.06
Std Dev	0.31	0.26	0.36

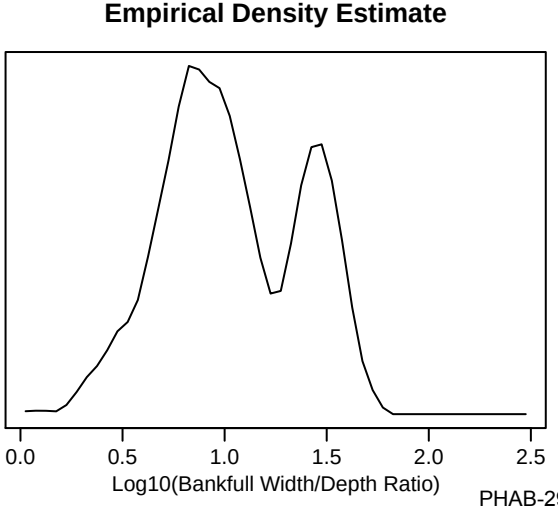
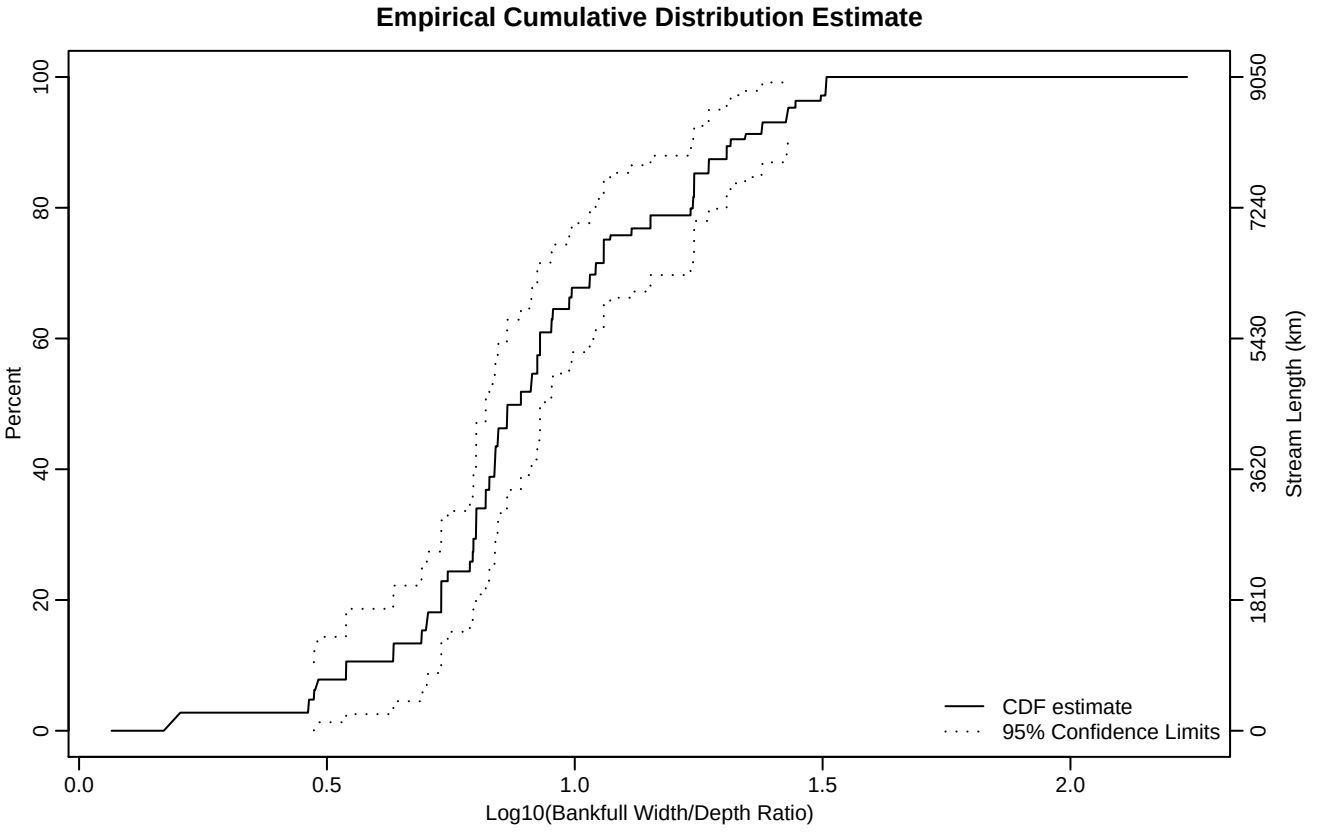


Figure PHAB−266 Indicator: LBFWDRat Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.47	0.07	0.54
10Pct	0.54	0.46	0.70
25Pct	0.79	0.70	0.82
50Pct	0.89	0.82	0.96
75Pct	1.06	0.99	1.24
90Pct	1.31	1.24	1.50
95Pct	1.43	1.31	
Mean	0.92	0.86	0.99
Std Dev	0.24	0.19	0.29

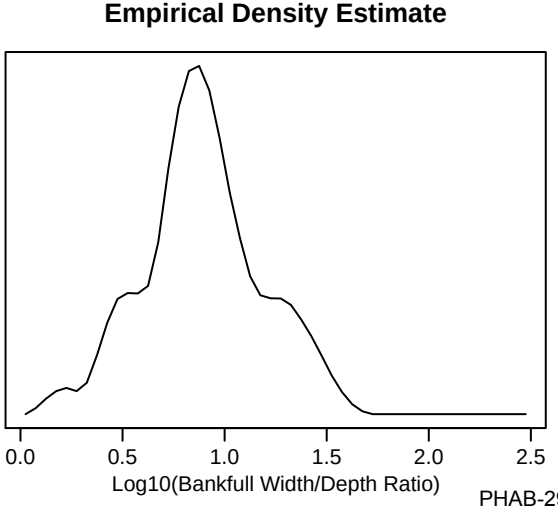
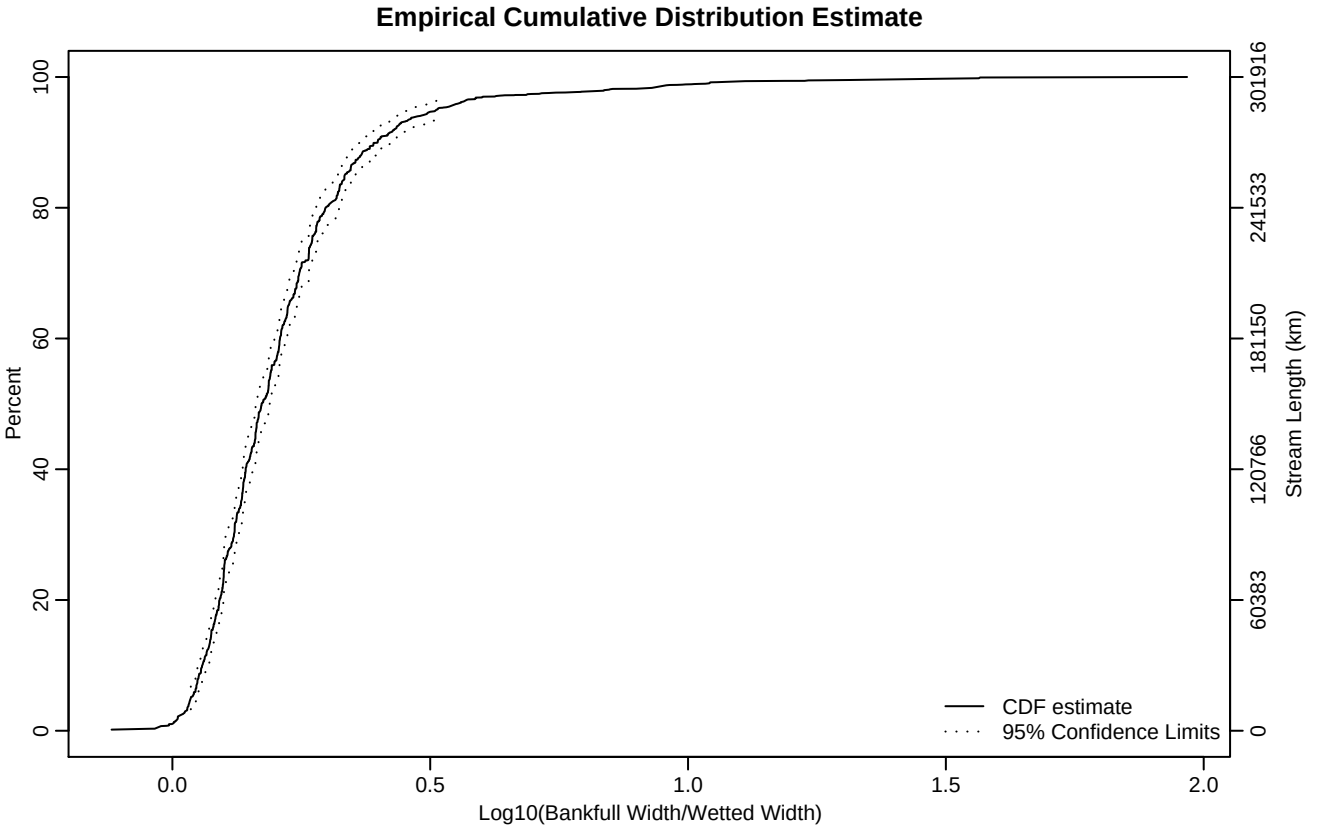


Figure PHAB−267 Indicator: LBFXWRat Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.03	0.05
10Pct	0.06	0.05	0.07
25Pct	0.10	0.10	0.11
50Pct	0.17	0.16	0.19
75Pct	0.27	0.26	0.29
90Pct	0.40	0.37	0.43
95Pct	0.51	0.46	0.57
Mean	0.22	0.21	0.23
Std Dev	0.16	0.15	0.18

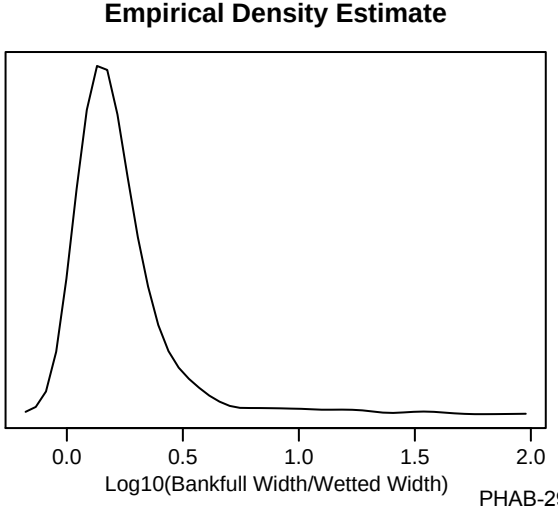
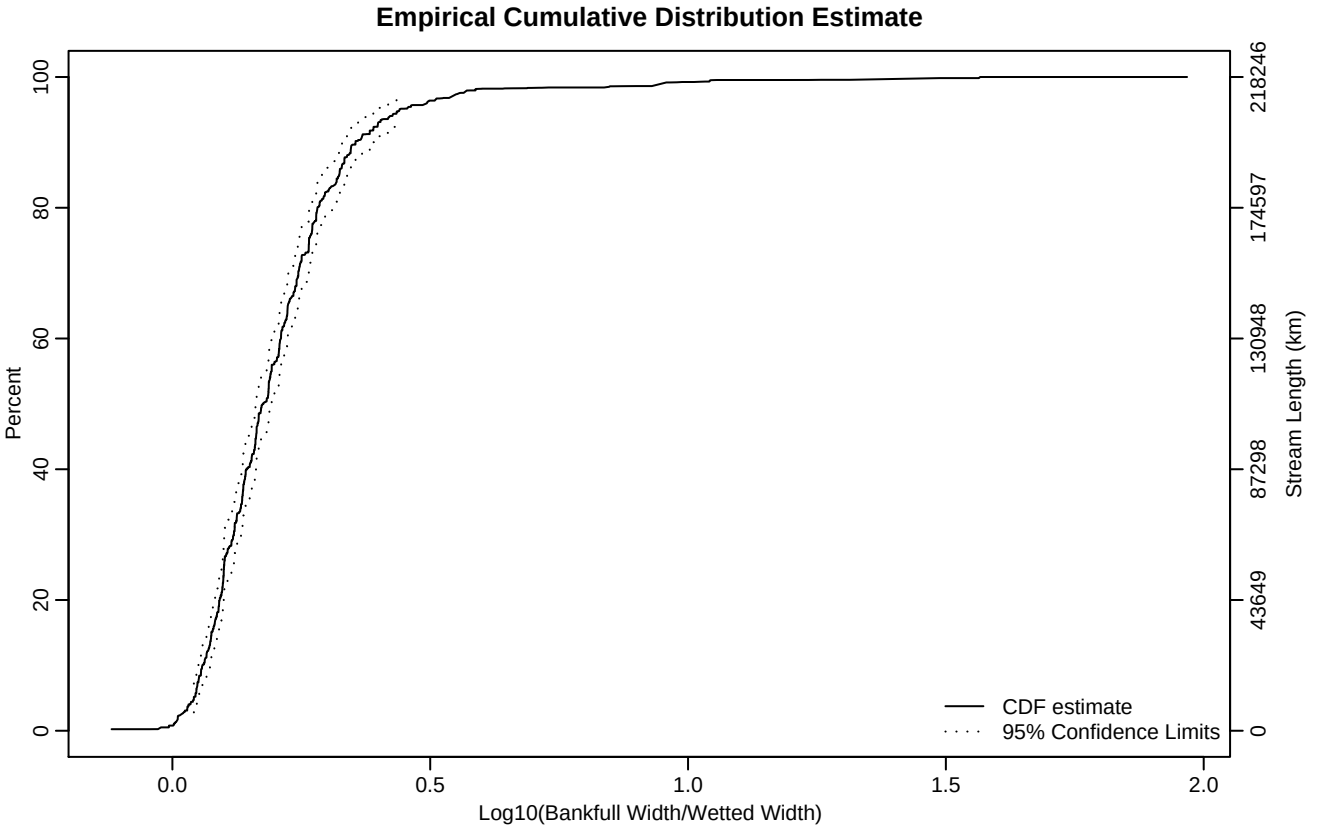


Figure PHAB−268 Indicator: LBFXWRat Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.02	0.05
10Pct	0.06	0.05	0.07
25Pct	0.10	0.10	0.12
50Pct	0.18	0.16	0.19
75Pct	0.26	0.25	0.28
90Pct	0.36	0.33	0.40
95Pct	0.44	0.40	0.54
Mean	0.21	0.19	0.22
Std Dev	0.14	0.12	0.17

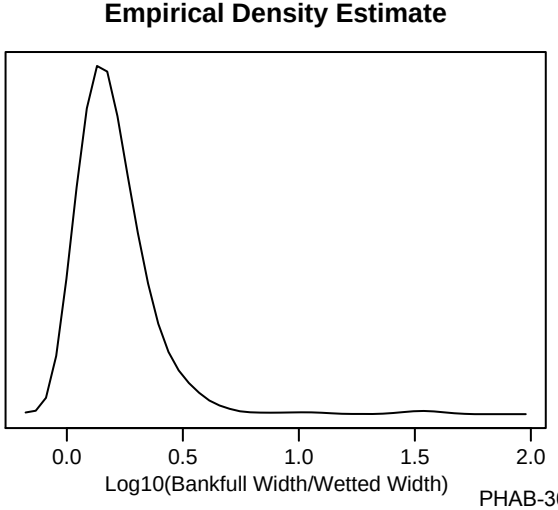
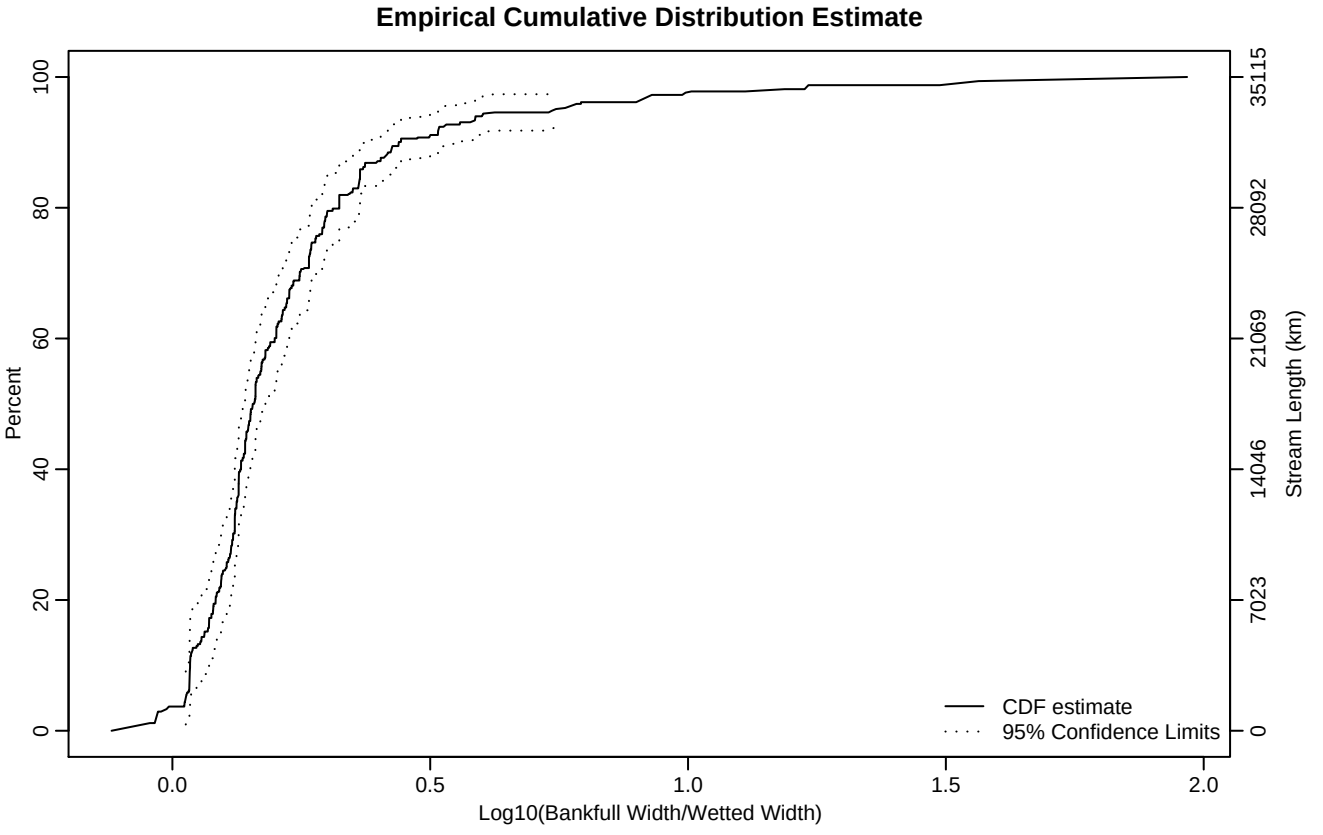


Figure PHAB−269 Indicator: LBFXWRat Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	−0.03	0.03
10Pct	0.03	0.02	0.07
25Pct	0.11	0.08	0.12
50Pct	0.16	0.14	0.18
75Pct	0.28	0.25	0.32
90Pct	0.44	0.37	0.59
95Pct	0.74	0.52	1.11
Mean	0.23	0.20	0.27
Std Dev	0.22	0.17	0.26

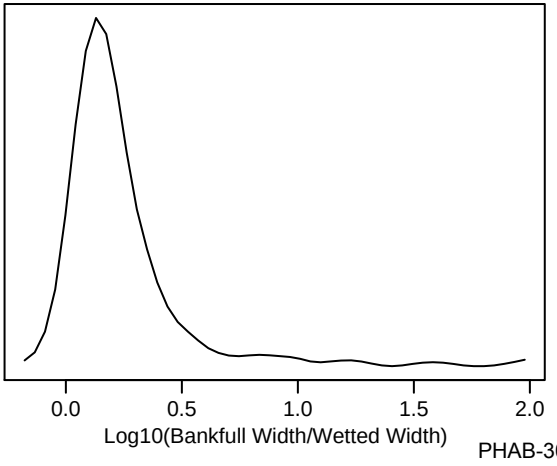
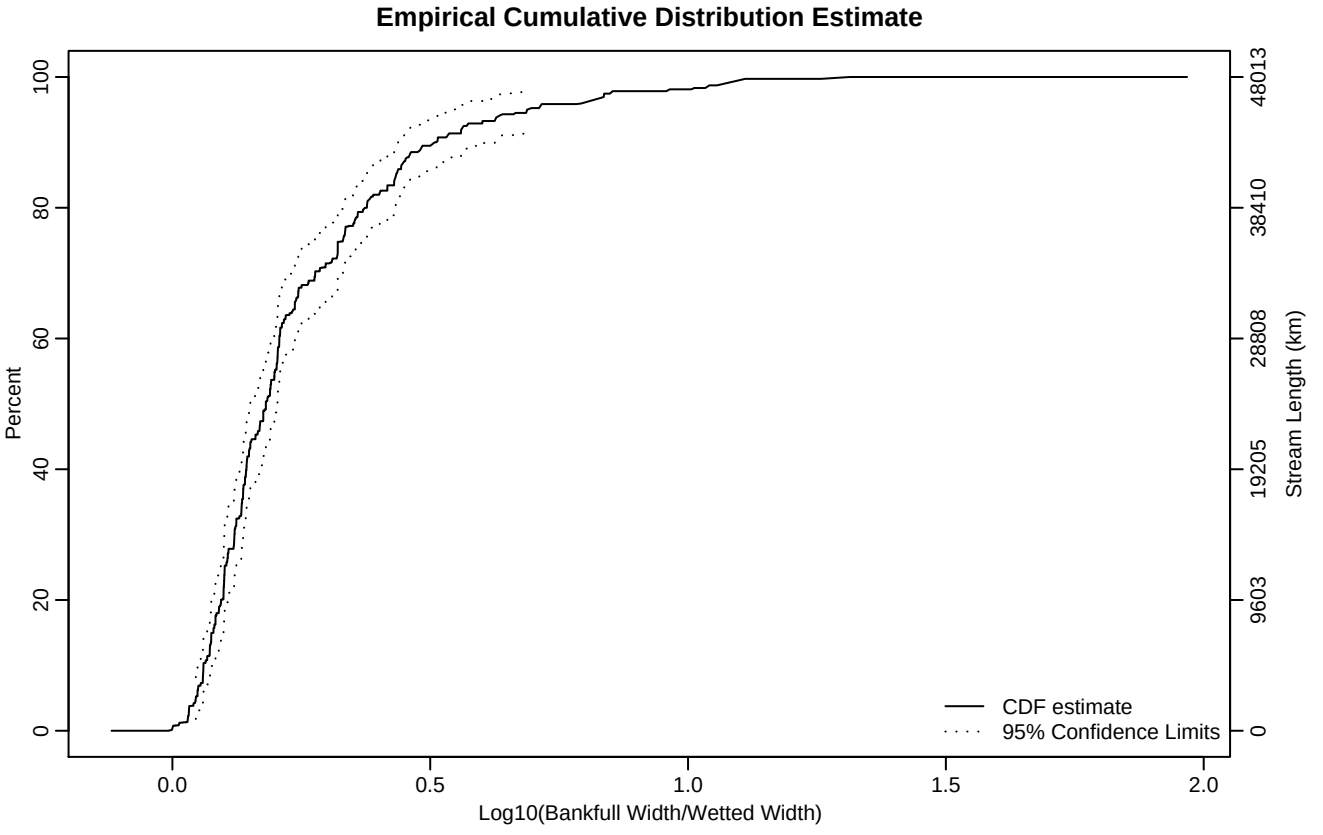


Figure PHAB−270 Indicator: LBFXWRat Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.03	0.06
10Pct	0.06	0.05	0.08
25Pct	0.10	0.09	0.12
50Pct	0.18	0.15	0.20
75Pct	0.33	0.28	0.38
90Pct	0.51	0.44	0.63
95Pct	0.69	0.56	0.96
Mean	0.25	0.22	0.28
Std Dev	0.18	0.16	0.20

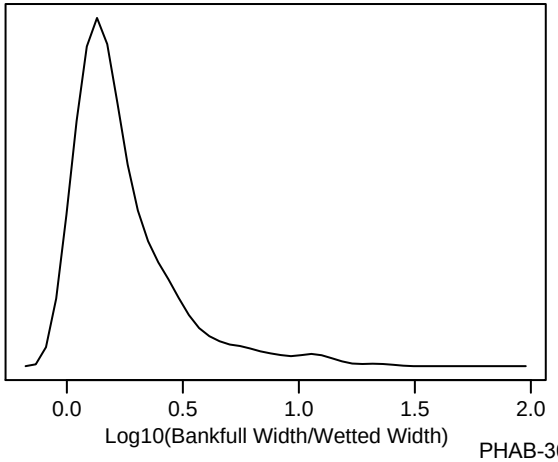
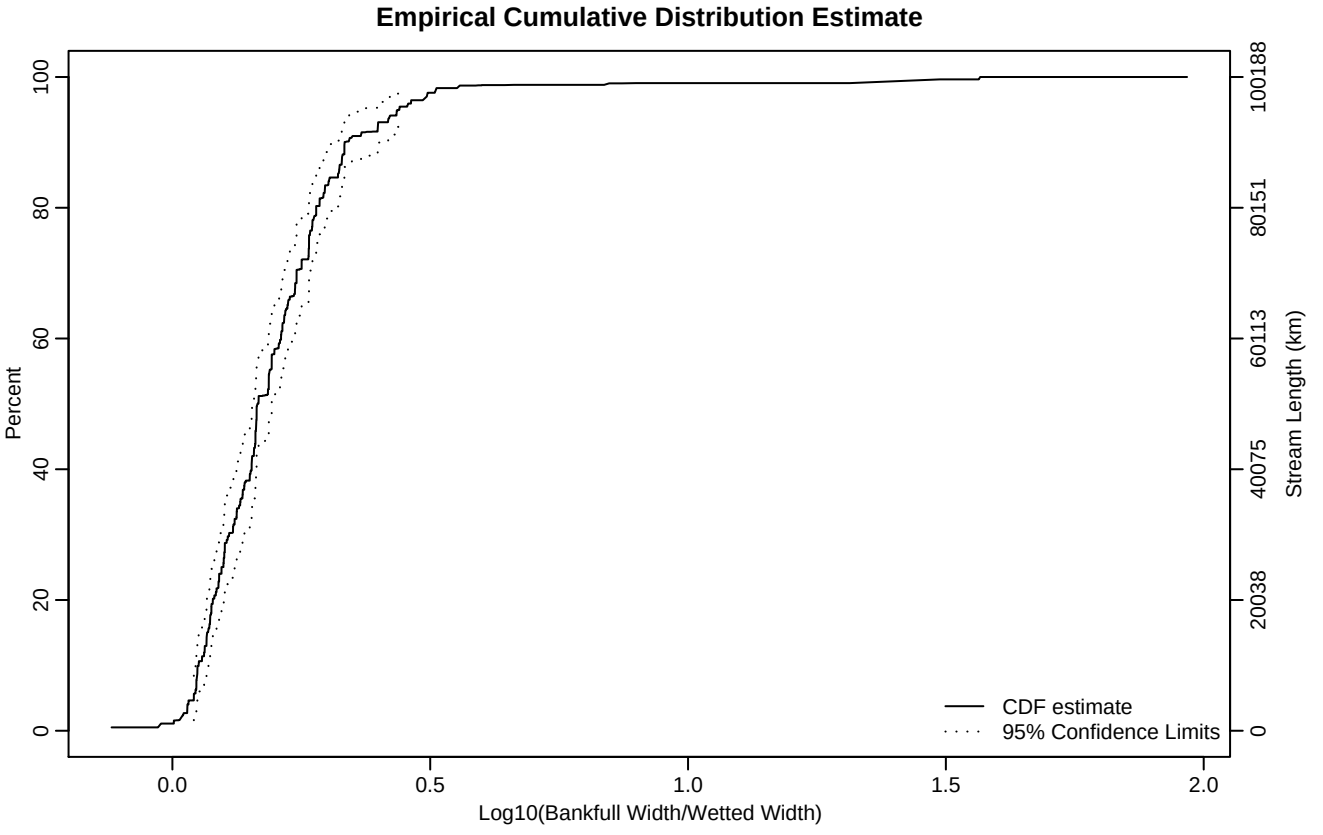


Figure PHAB−271 Indicator: LBFXWRat Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.01	0.05
10Pct	0.05	0.04	0.07
25Pct	0.10	0.08	0.12
50Pct	0.17	0.16	0.19
75Pct	0.26	0.24	0.29
90Pct	0.33	0.32	0.42
95Pct	0.44	0.40	0.49
Mean	0.20	0.18	0.22
Std Dev	0.15	0.11	0.19

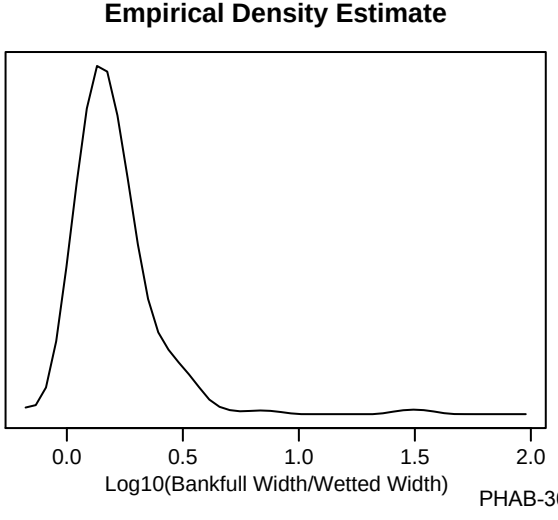
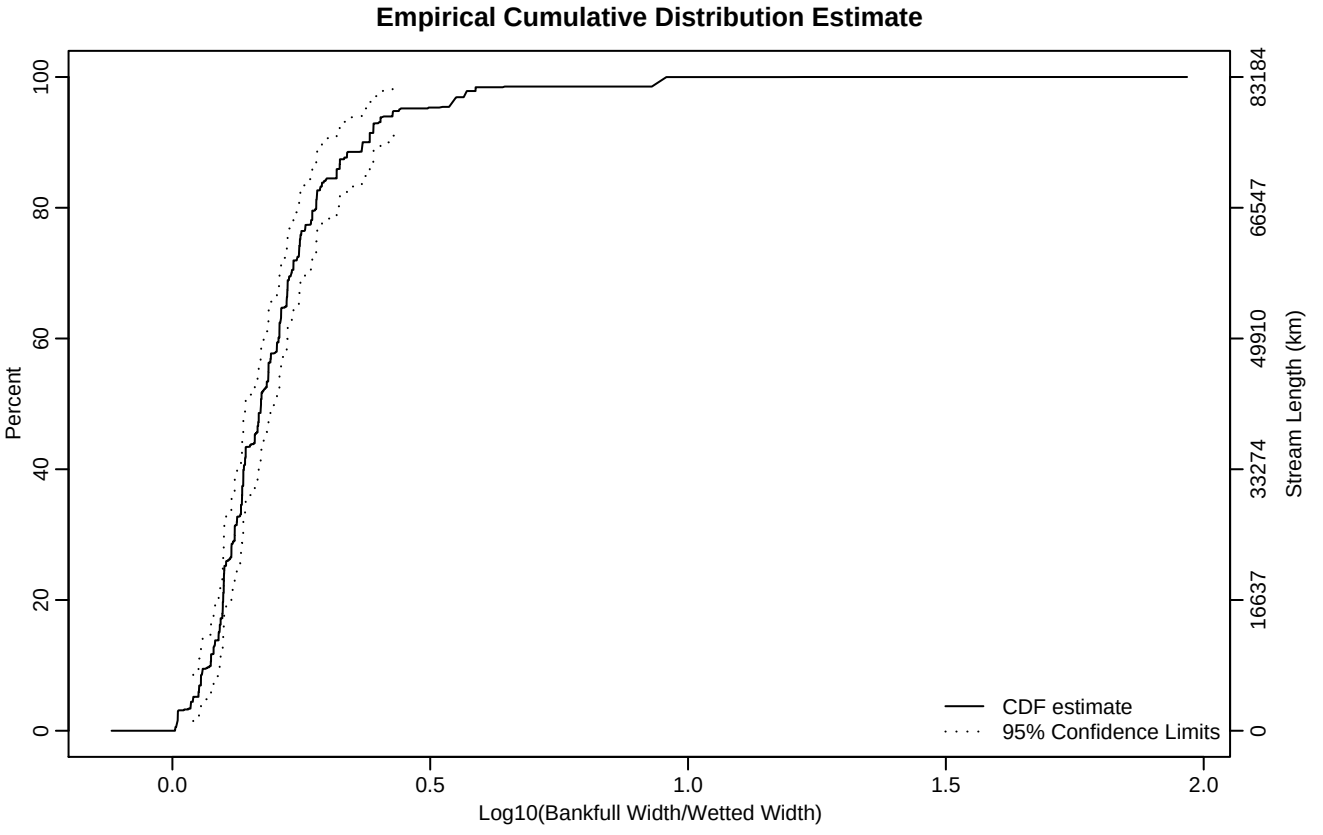


Figure PHAB−272 Indicator: LBFXWRat Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.01	0.06
10Pct	0.07	0.05	0.09
25Pct	0.10	0.10	0.12
50Pct	0.17	0.14	0.19
75Pct	0.25	0.22	0.28
90Pct	0.37	0.32	0.52
95Pct	0.44	0.38	0.94
Mean	0.20	0.18	0.23
Std Dev	0.14	0.11	0.17

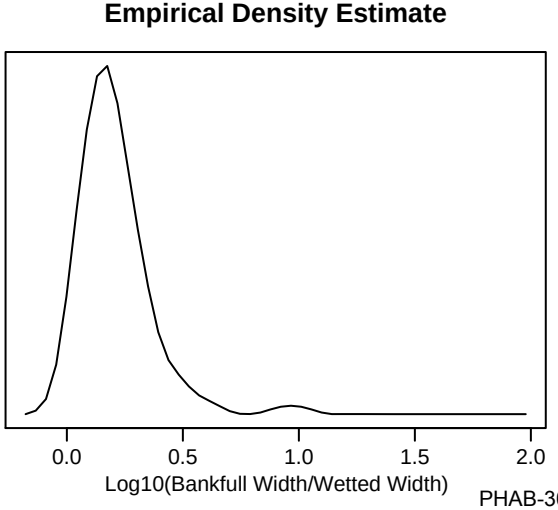
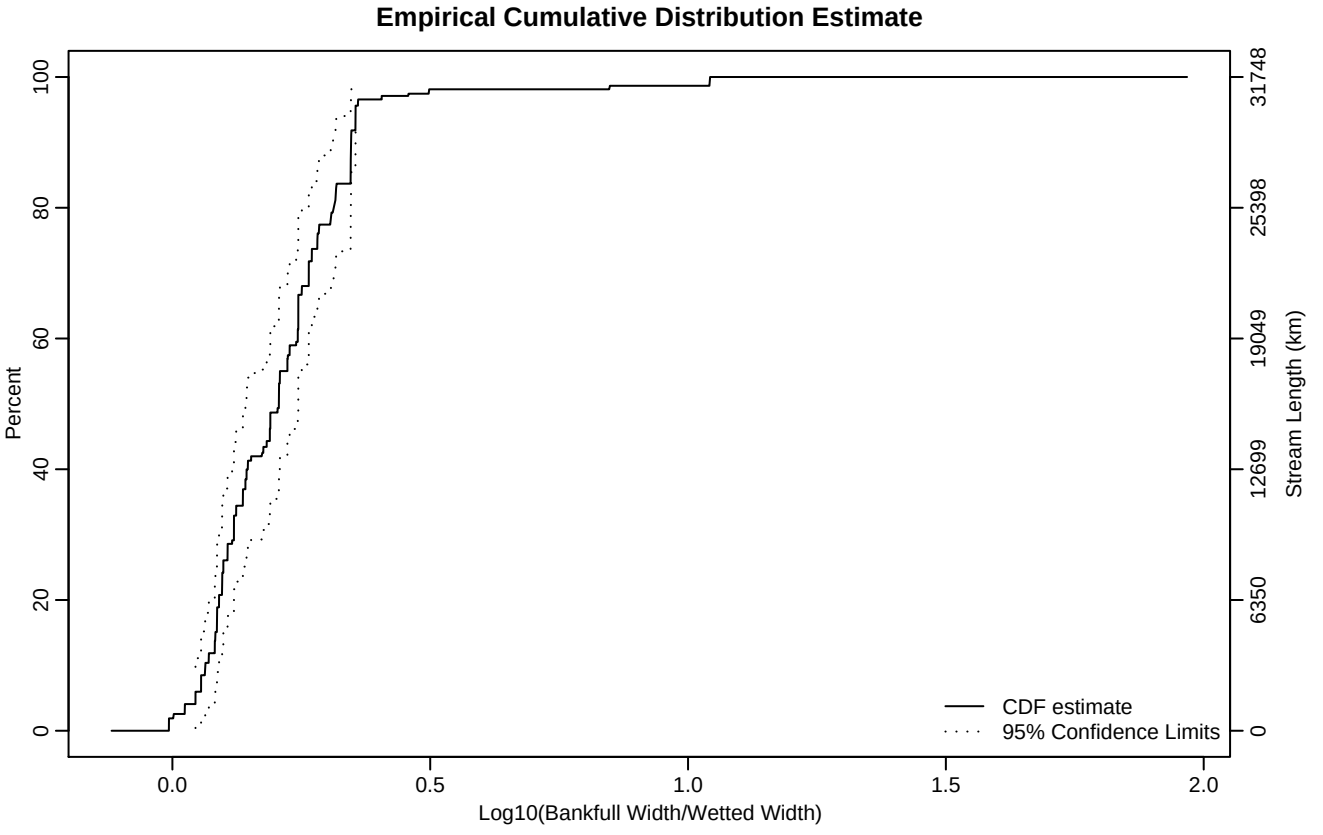


Figure PHAB−273 Indicator: LBFXWRat Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	−0.01	0.06
10Pct	0.06	0.02	0.09
25Pct	0.10	0.08	0.14
50Pct	0.21	0.14	0.24
75Pct	0.28	0.24	0.35
90Pct	0.35	0.32	0.85
95Pct	0.36	0.35	1.04
Mean	0.21	0.18	0.24
Std Dev	0.13	0.10	0.15

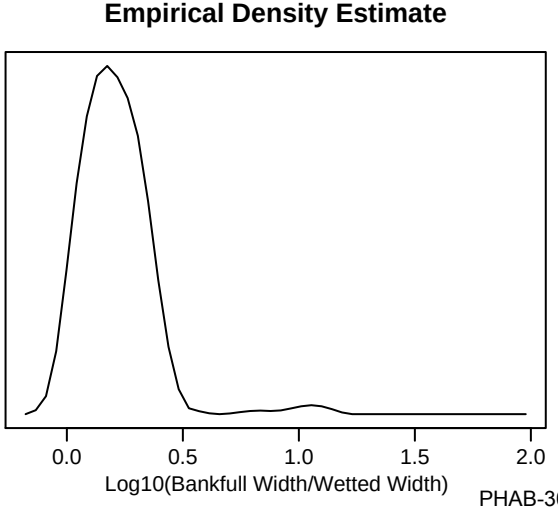
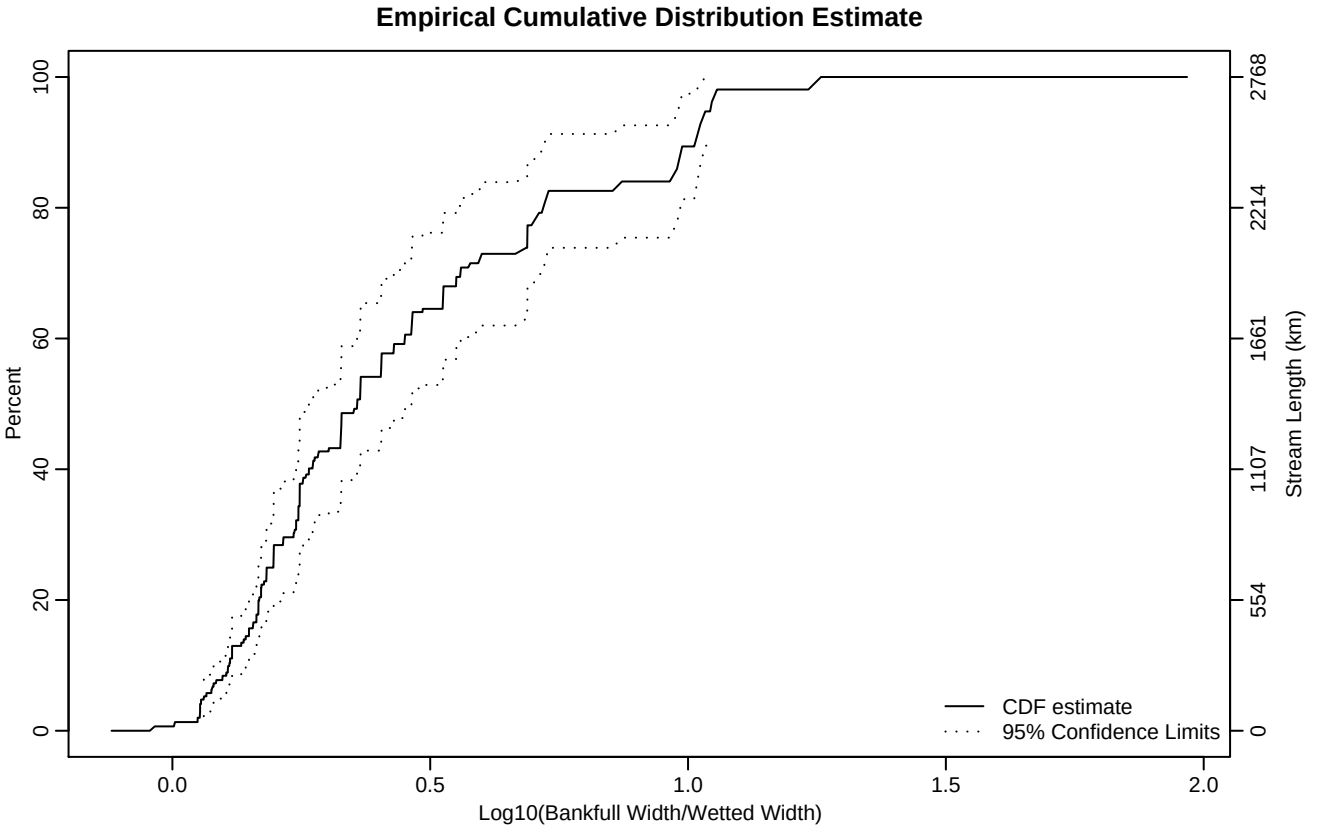


Figure PHAB−274 Indicator: LBFXWRat Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0.05	0.10
10Pct	0.11	0.08	0.13
25Pct	0.20	0.17	0.24
50Pct	0.36	0.26	0.45
75Pct	0.69	0.49	0.98
90Pct	1.01	0.73	1.06
95Pct	1.04	1.01	
Mean	0.45	0.38	0.52
Std Dev	0.27	0.23	0.30

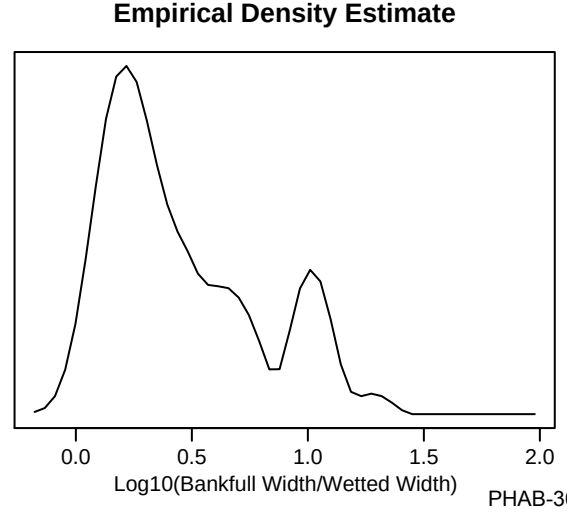
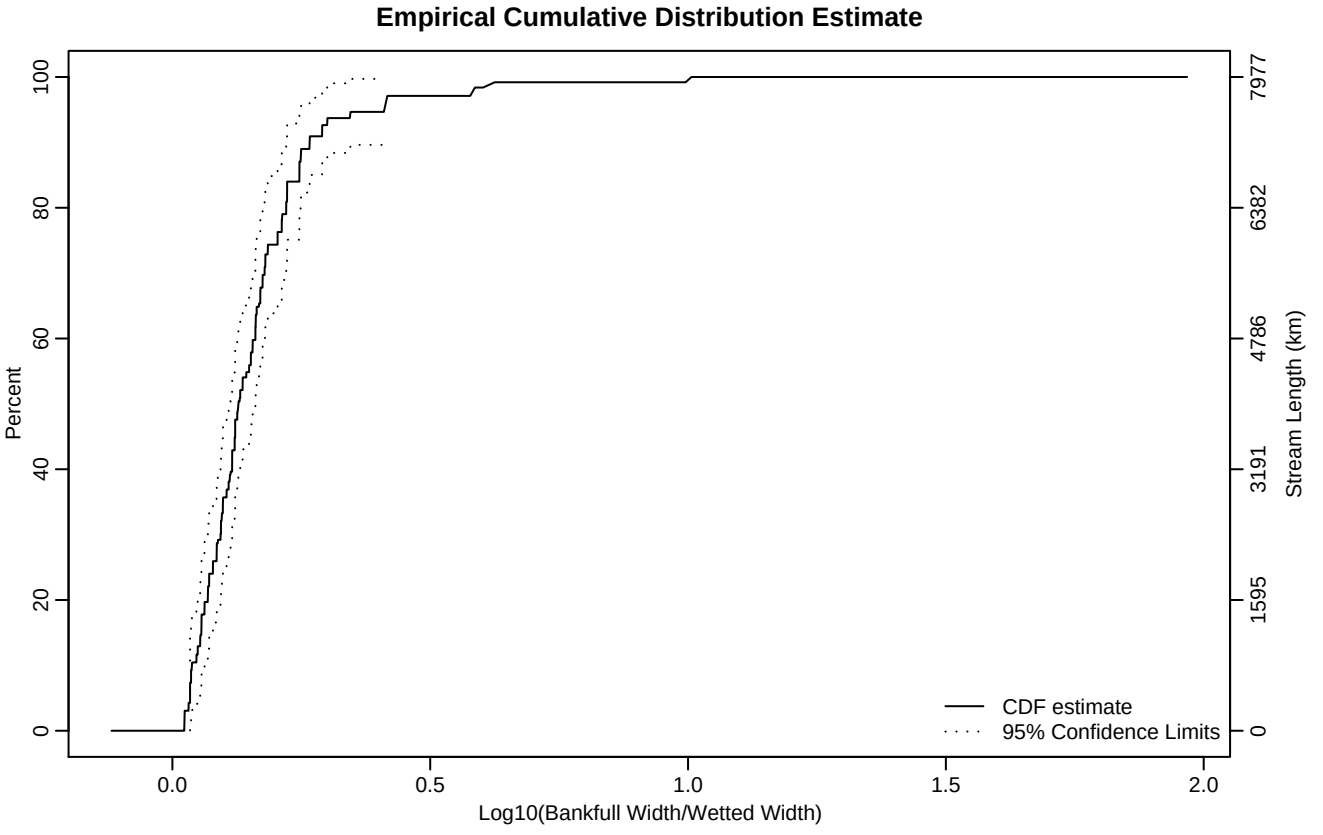


Figure PHAB−275 Indicator: LBFXWRat Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	−0.12	0.04
10Pct	0.04	0.02	0.06
25Pct	0.08	0.06	0.10
50Pct	0.13	0.11	0.16
75Pct	0.20	0.16	0.25
90Pct	0.27	0.22	0.42
95Pct	0.41	0.27	1.01
Mean	0.16	0.13	0.19
Std Dev	0.13	0.09	0.17

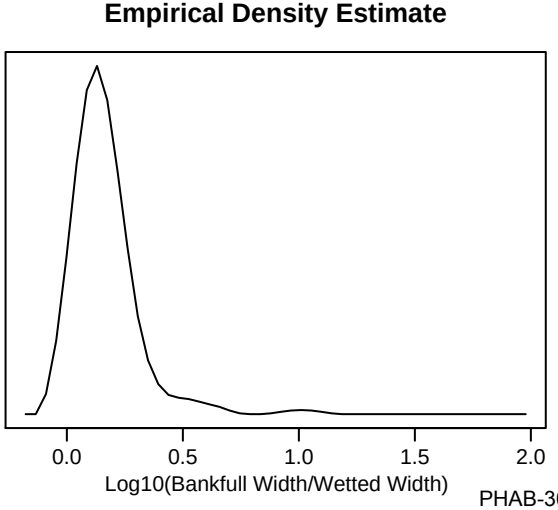
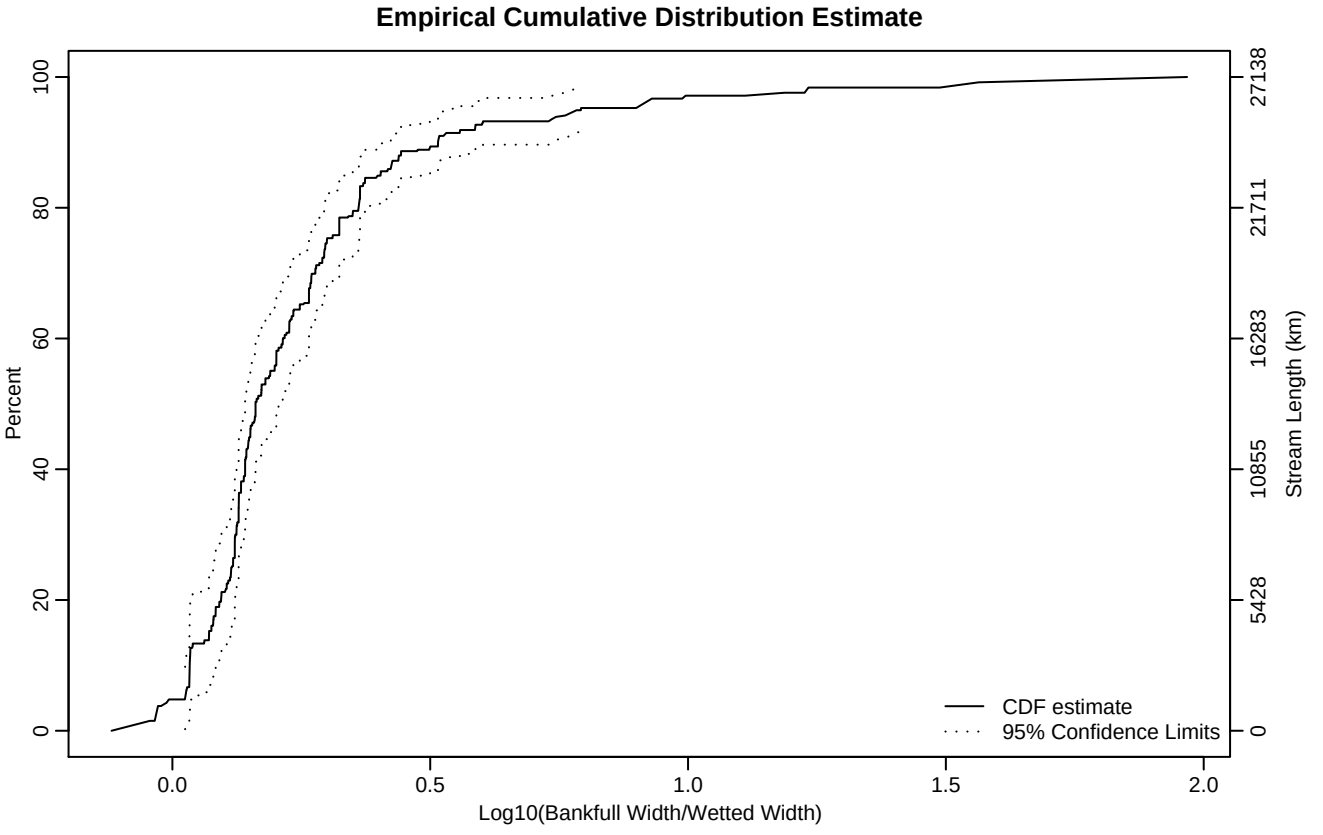


Figure PHAB−276 Indicator: LBFXWRat Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	−0.10	0.03
10Pct	0.03	−0.01	0.08
25Pct	0.12	0.08	0.13
50Pct	0.16	0.14	0.21
75Pct	0.30	0.27	0.36
90Pct	0.52	0.42	0.76
95Pct	0.79	0.56	1.49
Mean	0.26	0.21	0.30
Std Dev	0.22	0.17	0.27

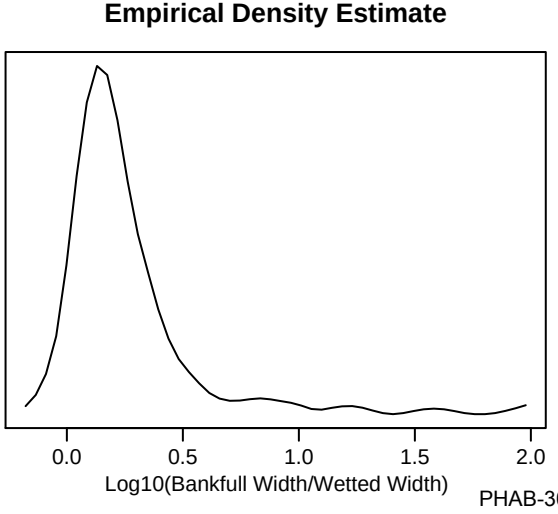
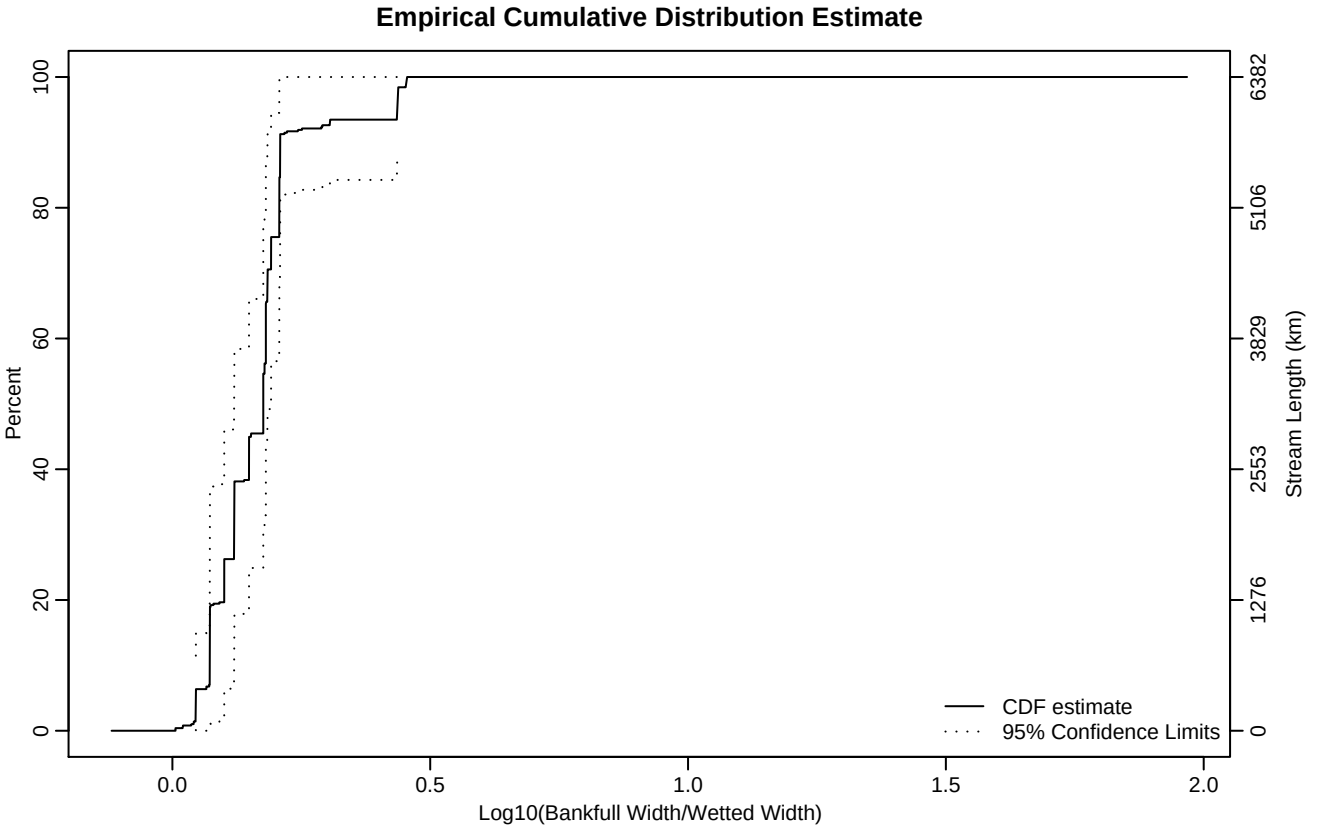


Figure PHAB−277 Indicator: LBFXWRat Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.05	0.07
10Pct	0.07	0.04	0.07
25Pct	0.10	0.07	0.15
50Pct	0.18	0.12	0.18
75Pct	0.19	0.18	0.44
90Pct	0.21	0.19	0.46
95Pct	0.44	0.21	0.46
Mean	0.17	0.13	0.20
Std Dev	0.09	0.05	0.13

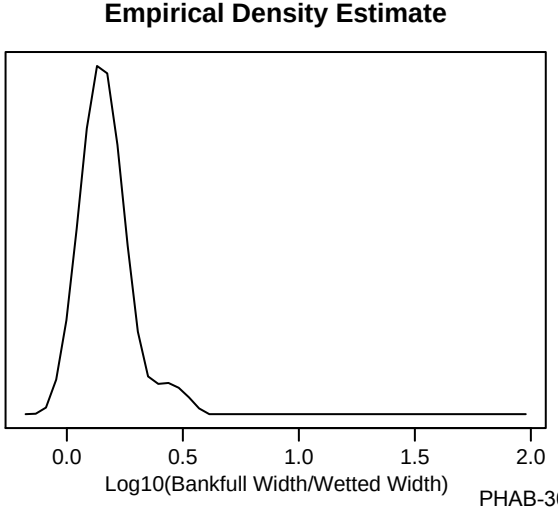
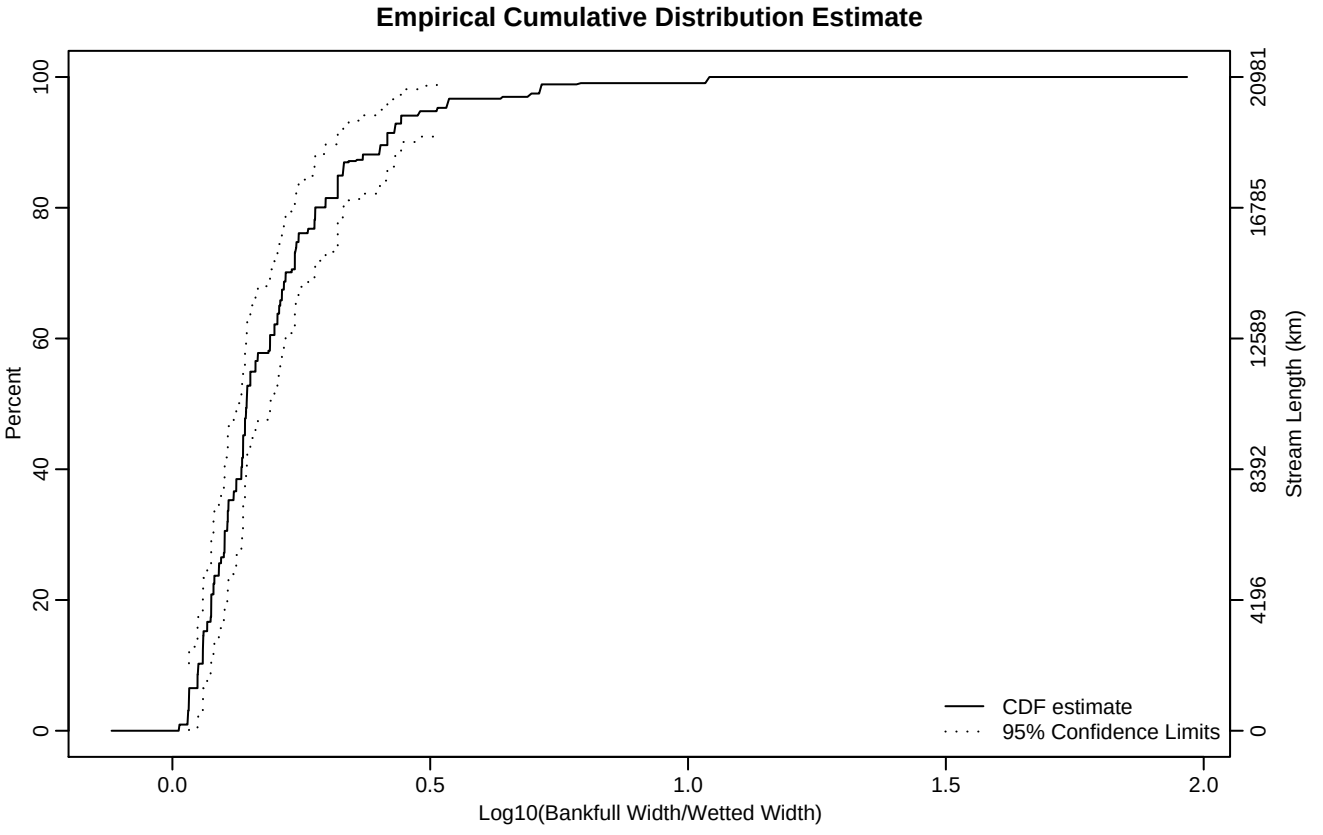


Figure PHAB−278 Indicator: LBFXWRat Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.03	0.05
10Pct	0.05	0.03	0.07
25Pct	0.09	0.06	0.11
50Pct	0.14	0.13	0.19
75Pct	0.24	0.21	0.32
90Pct	0.42	0.32	0.53
95Pct	0.51	0.42	0.72
Mean	0.20	0.17	0.23
Std Dev	0.15	0.12	0.19

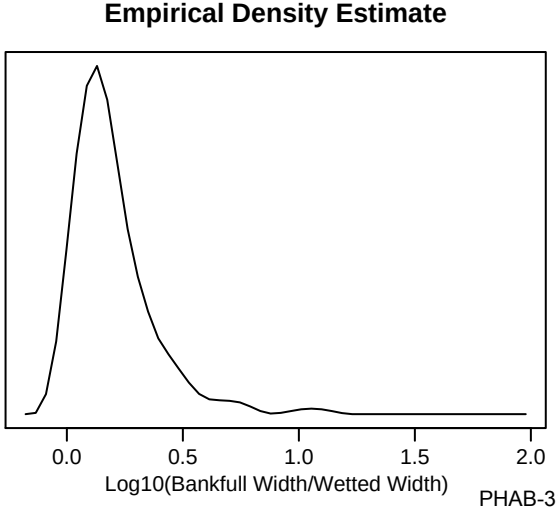
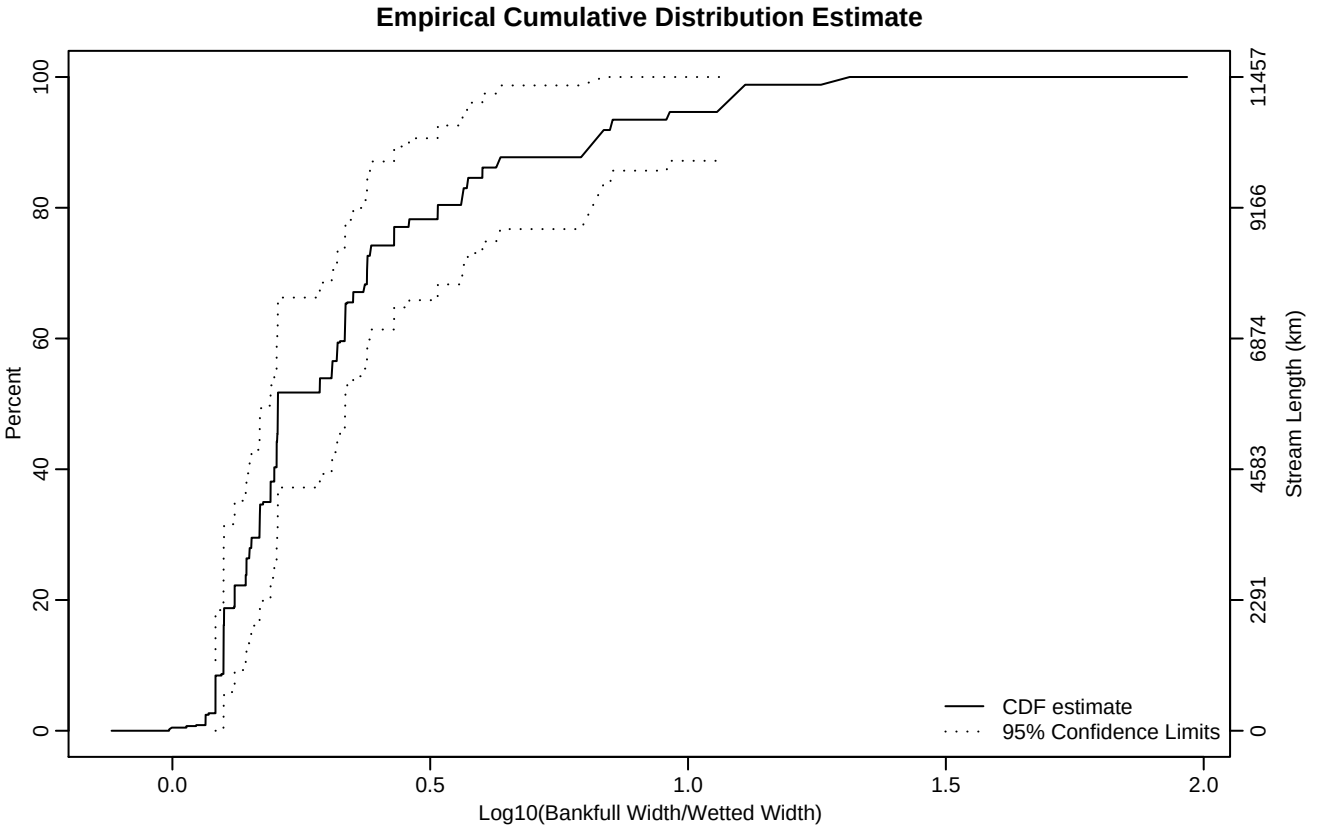


Figure PHAB−279 Indicator: LBFXWRat Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.08	0.06	0.08
10Pct	0.10	−0.12	0.12
25Pct	0.14	0.10	0.20
50Pct	0.20	0.17	0.35
75Pct	0.43	0.33	0.80
90Pct	0.82	0.51	1.31
95Pct	1.06	0.64	1.31
Mean	0.34	0.25	0.44
Std Dev	0.25	0.19	0.32

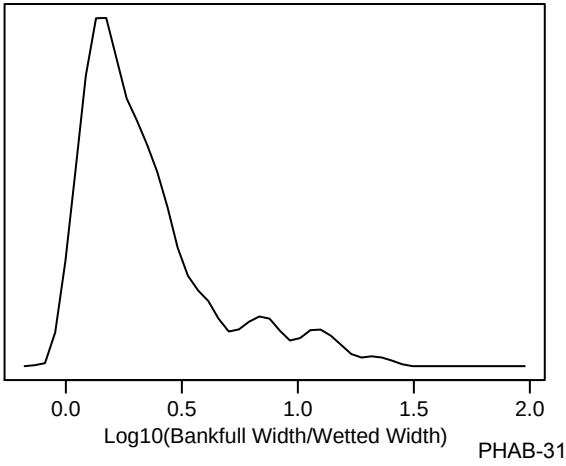
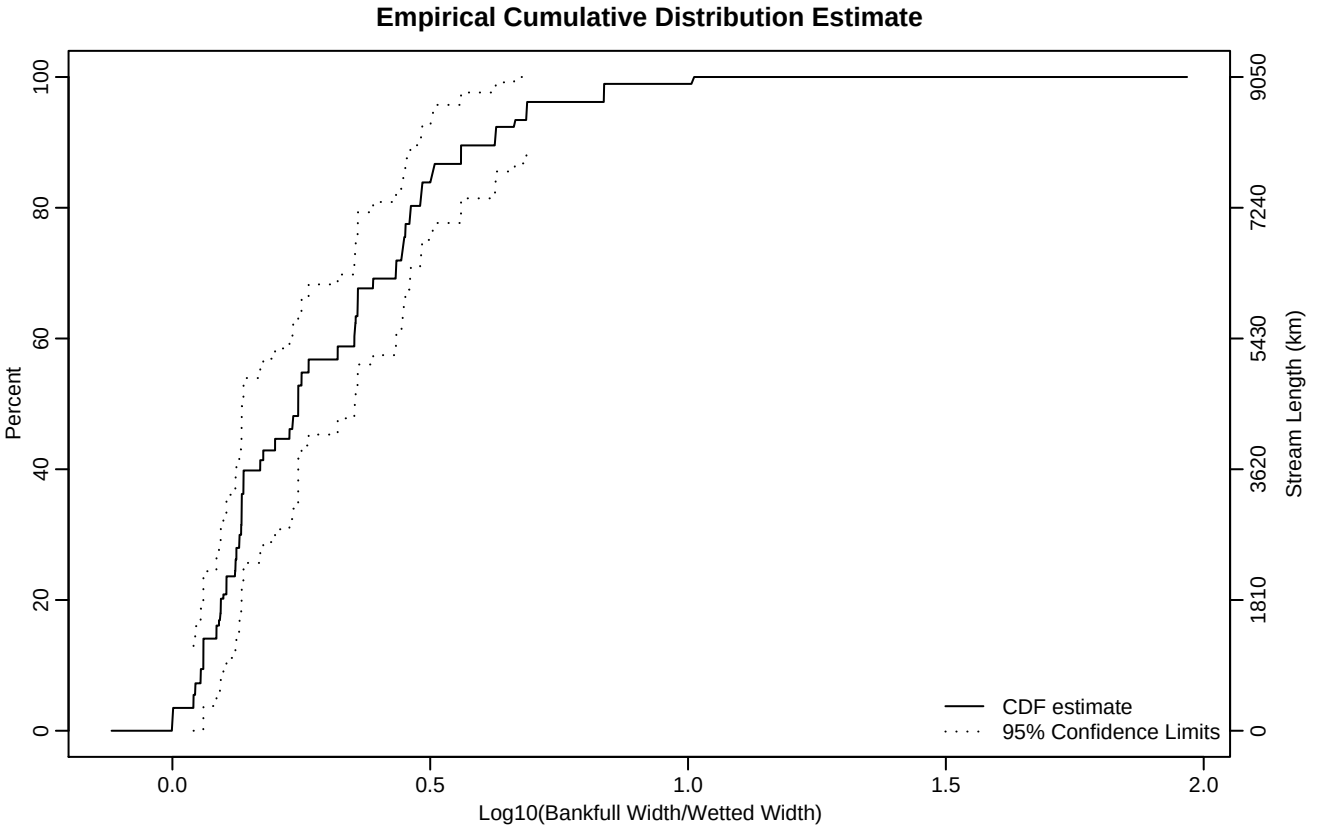


Figure PHAB−280 Indicator: LBFXWRat Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	−0.12	0.06
10Pct	0.06	0	0.09
25Pct	0.12	0.06	0.14
50Pct	0.24	0.13	0.36
75Pct	0.45	0.36	0.51
90Pct	0.63	0.48	0.84
95Pct	0.69	0.56	
Mean	0.29	0.24	0.35
Std Dev	0.20	0.17	0.24

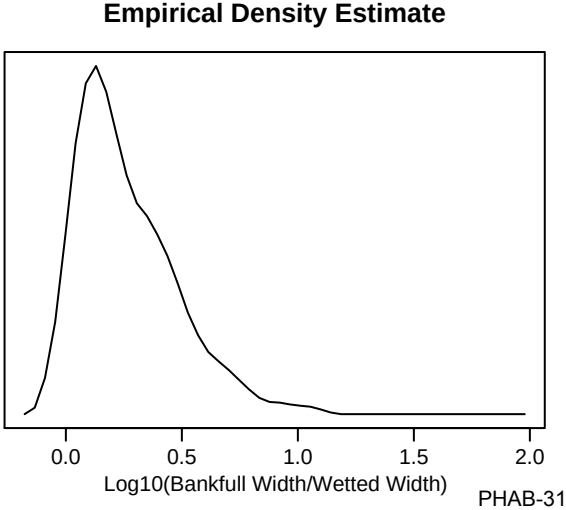
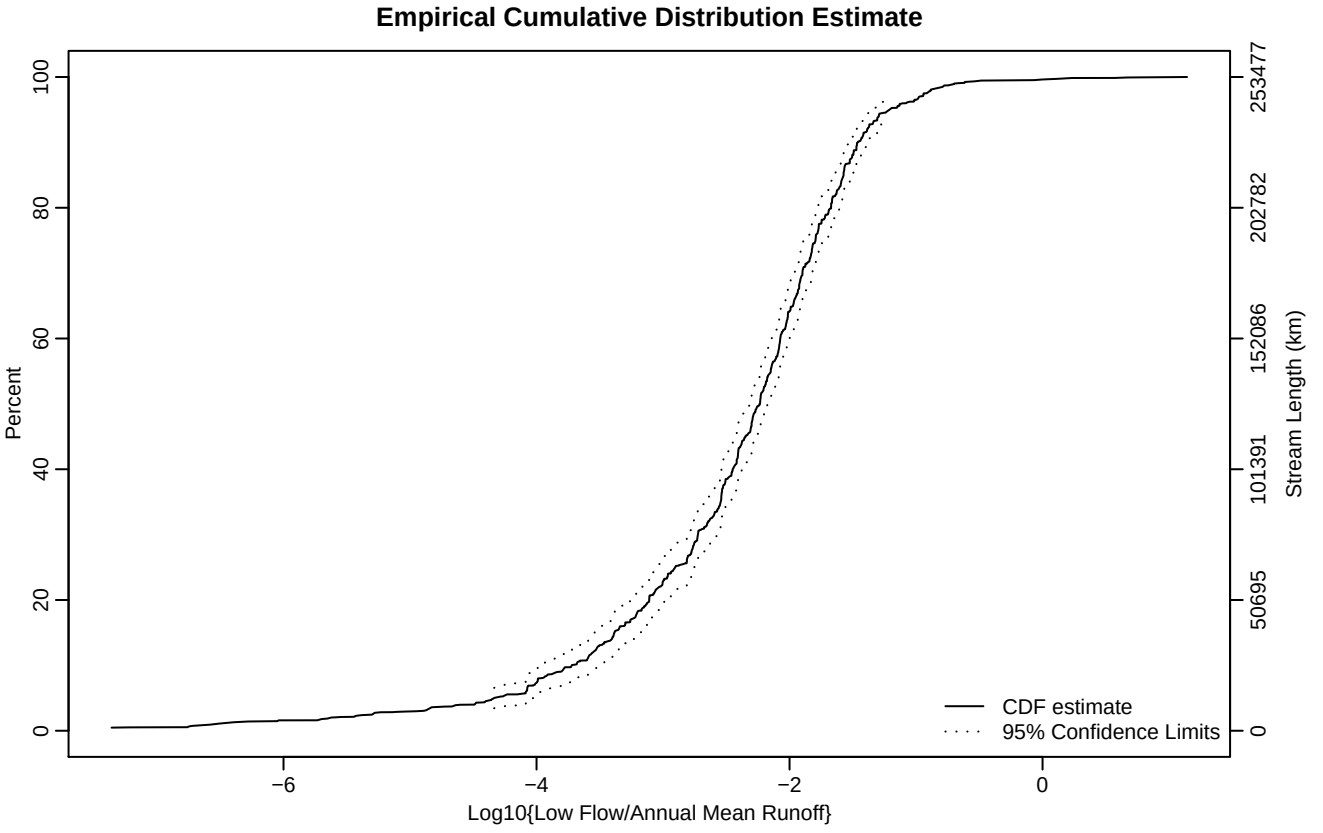


Figure PHAB−281 Indicator: LQSLTR_Rat Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−4.33	−4.84	−4.07
10Pct	−3.72	−3.99	−3.53
25Pct	−2.90	−3.06	−2.76
50Pct	−2.24	−2.31	−2.17
75Pct	−1.80	−1.88	−1.70
90Pct	−1.46	−1.51	−1.37
95Pct	−1.21	−1.33	−0.98
Mean	−2.45	−2.53	−2.37
Std Dev	0.98	0.89	1.07

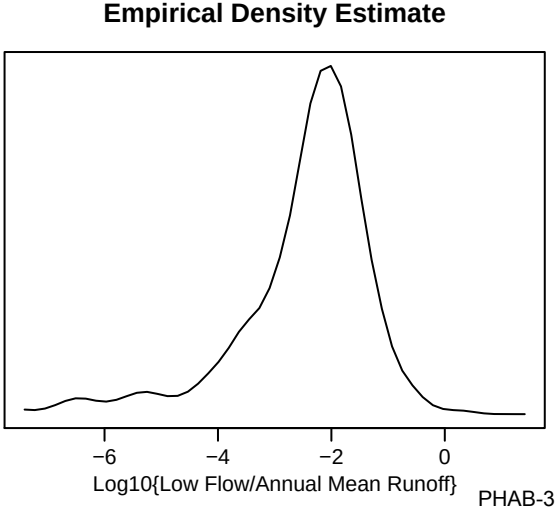
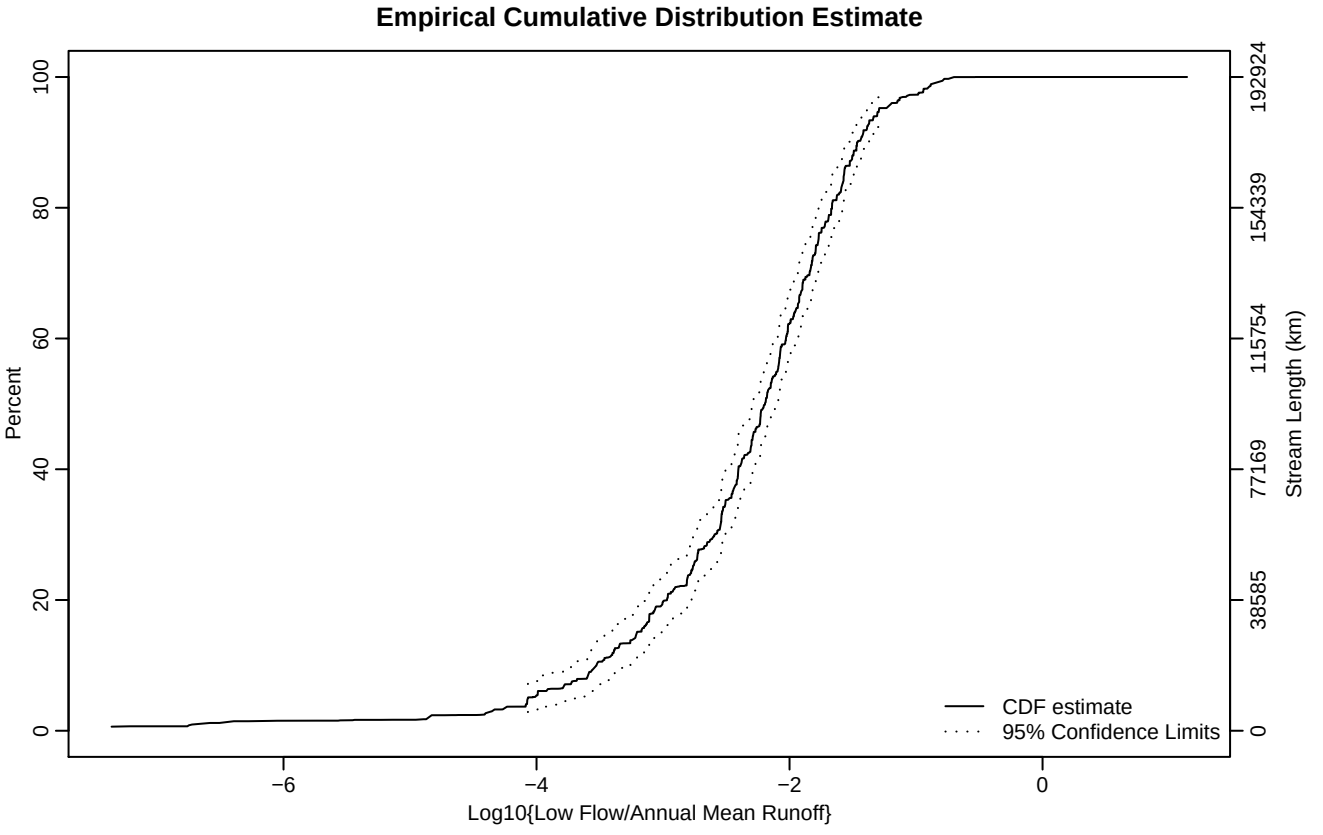


Figure PHAB−282 Indicator: LQSLTR_Rat Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−4.07	−4.38	−3.73
10Pct	−3.53	−3.79	−3.26
25Pct	−2.76	−2.96	−2.61
50Pct	−2.19	−2.29	−2.09
75Pct	−1.77	−1.84	−1.67
90Pct	−1.47	−1.52	−1.37
95Pct	−1.29	−1.38	−1.02
Mean	−2.38	−2.47	−2.28
Std Dev	0.88	0.76	0.99

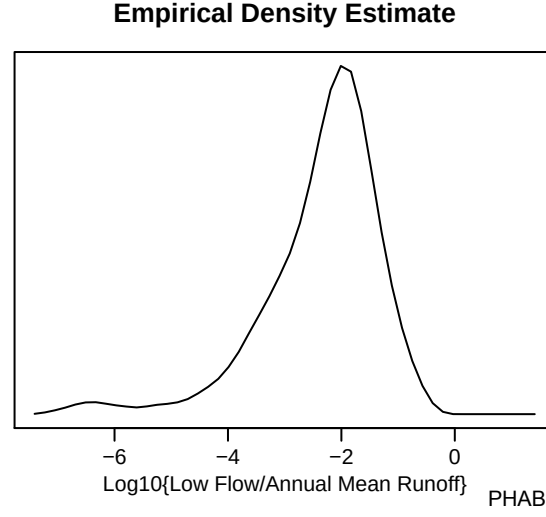
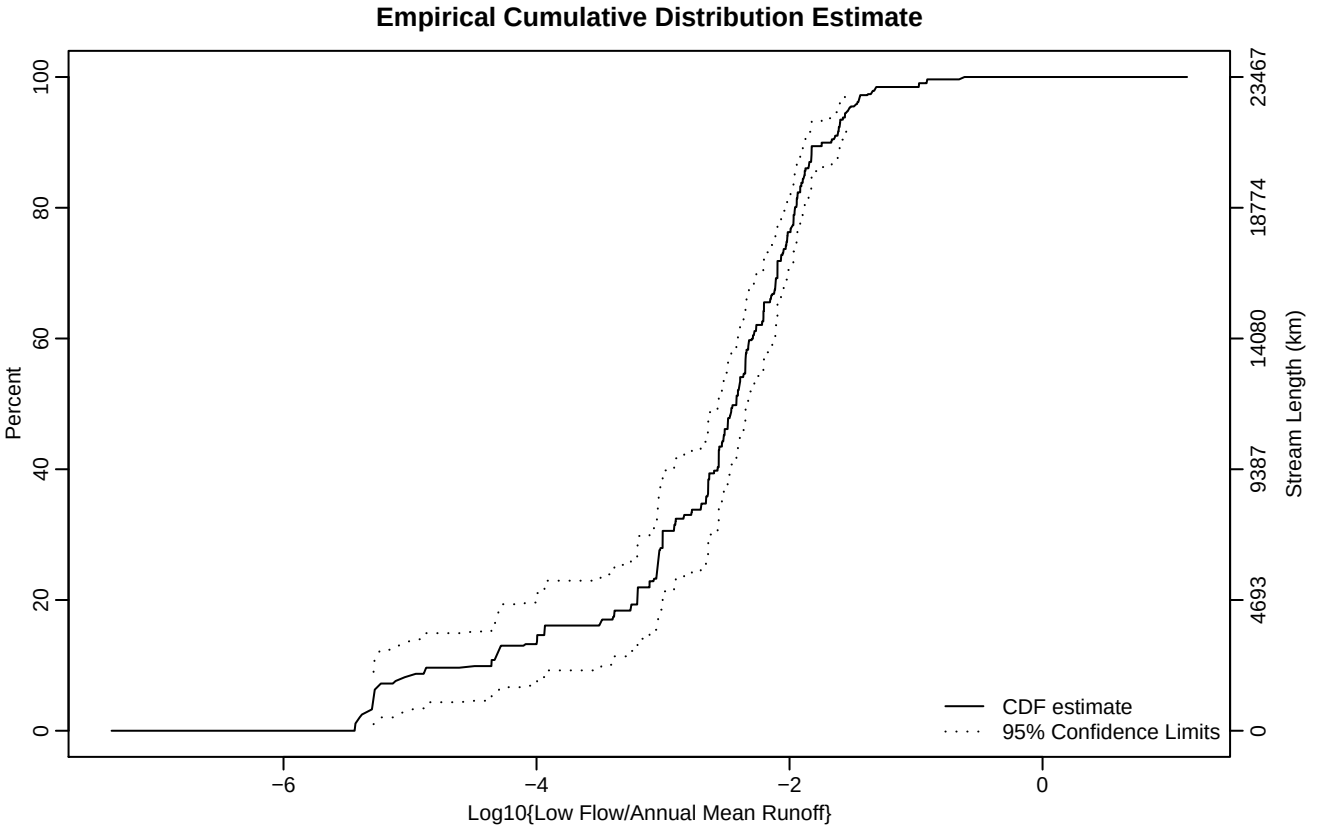


Figure PHAB−283 Indicator: LQSLTR_Rat Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−5.29	−5.39	−5.10
10Pct	−4.36	−5.29	−3.94
25Pct	−3.04	−3.40	−2.83
50Pct	−2.42	−2.56	−2.32
75Pct	−2.02	−2.11	−1.94
90Pct	−1.67	−1.85	−1.58
95Pct	−1.53	−1.61	−1.33
Mean	−2.72	−2.90	−2.54
Std Dev	0.96	0.82	1.11

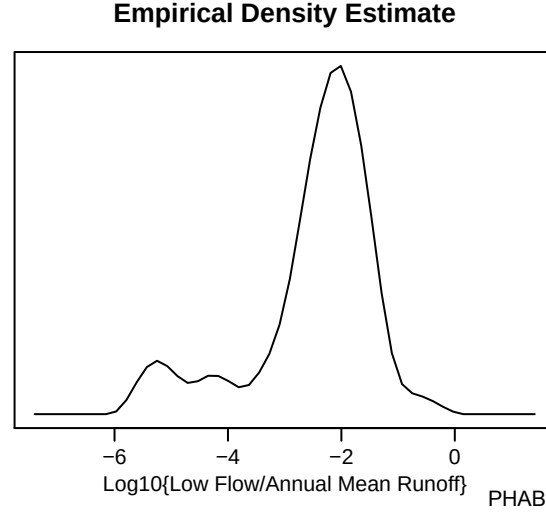
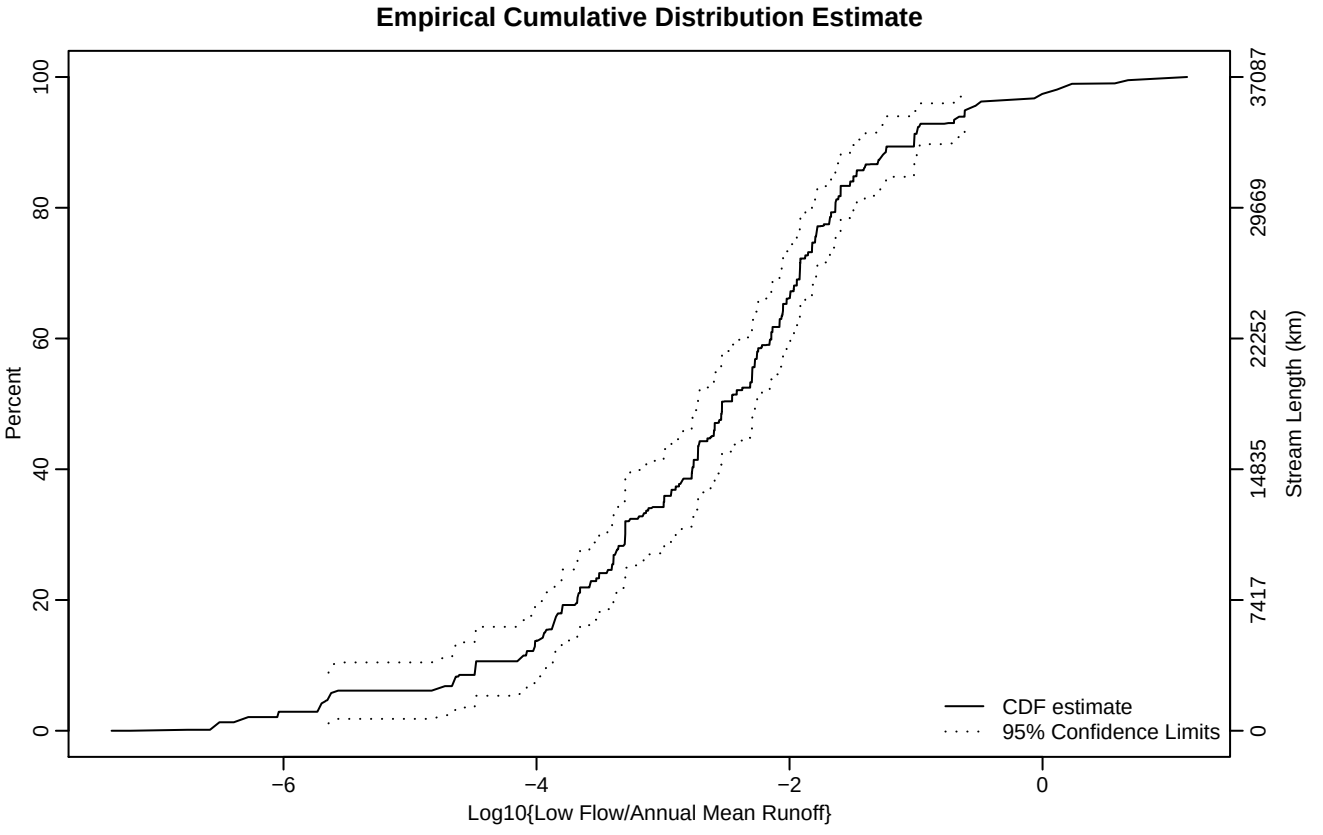


Figure PHAB−284 Indicator: LQSLTR_Rat Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−5.64	−6.38	−4.49
10Pct	−4.48	−5.64	−3.94
25Pct	−3.40	−3.80	−3.30
50Pct	−2.53	−2.72	−2.26
75Pct	−1.80	−1.94	−1.61
90Pct	−1.02	−1.47	−0.62
95Pct	−0.60	−0.98	0.04
Mean	−2.64	−2.83	−2.46
Std Dev	1.17	1.02	1.31

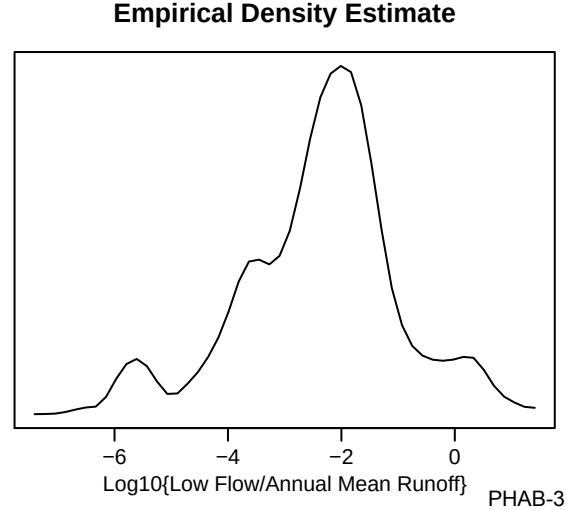
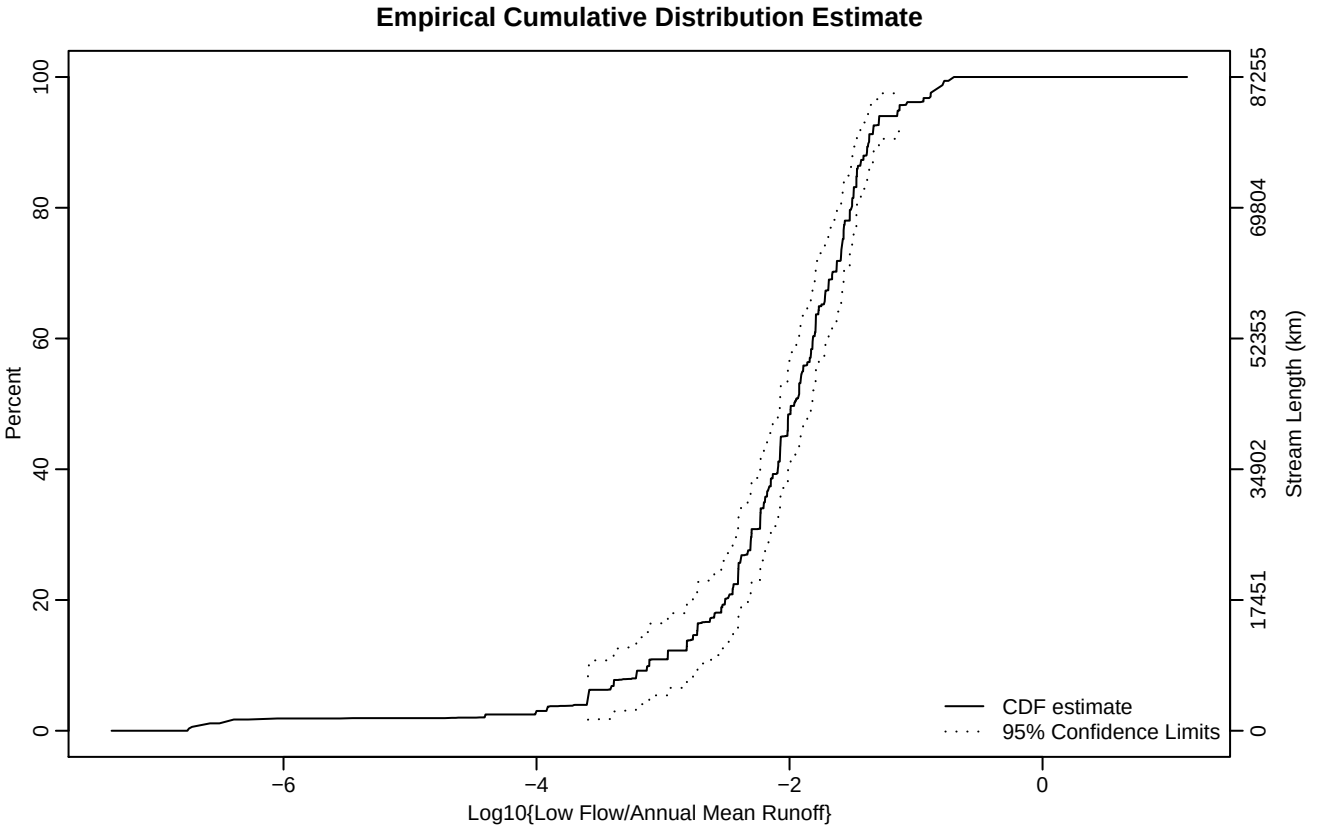


Figure PHAB−285 Indicator: LQSLTR_Rat Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−3.59	−4	−3.39
10Pct	−3.11	−3.60	−2.73
25Pct	−2.40	−2.59	−2.23
50Pct	−1.96	−2.08	−1.82
75Pct	−1.58	−1.69	−1.49
90Pct	−1.37	−1.47	−1.14
95Pct	−1.13	−1.34	−0.83
Mean	−2.12	−2.26	−1.99
Std Dev	0.82	0.68	0.97

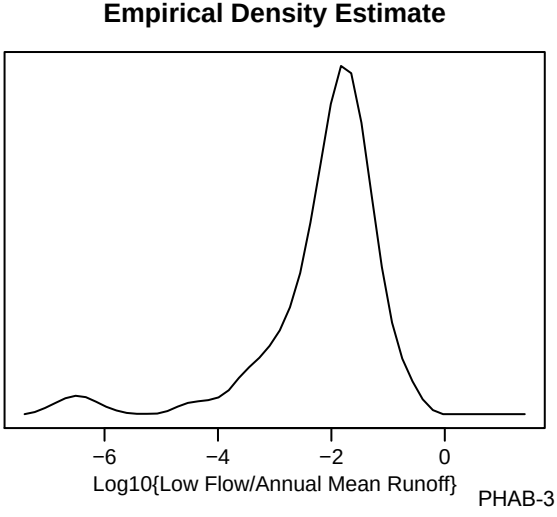
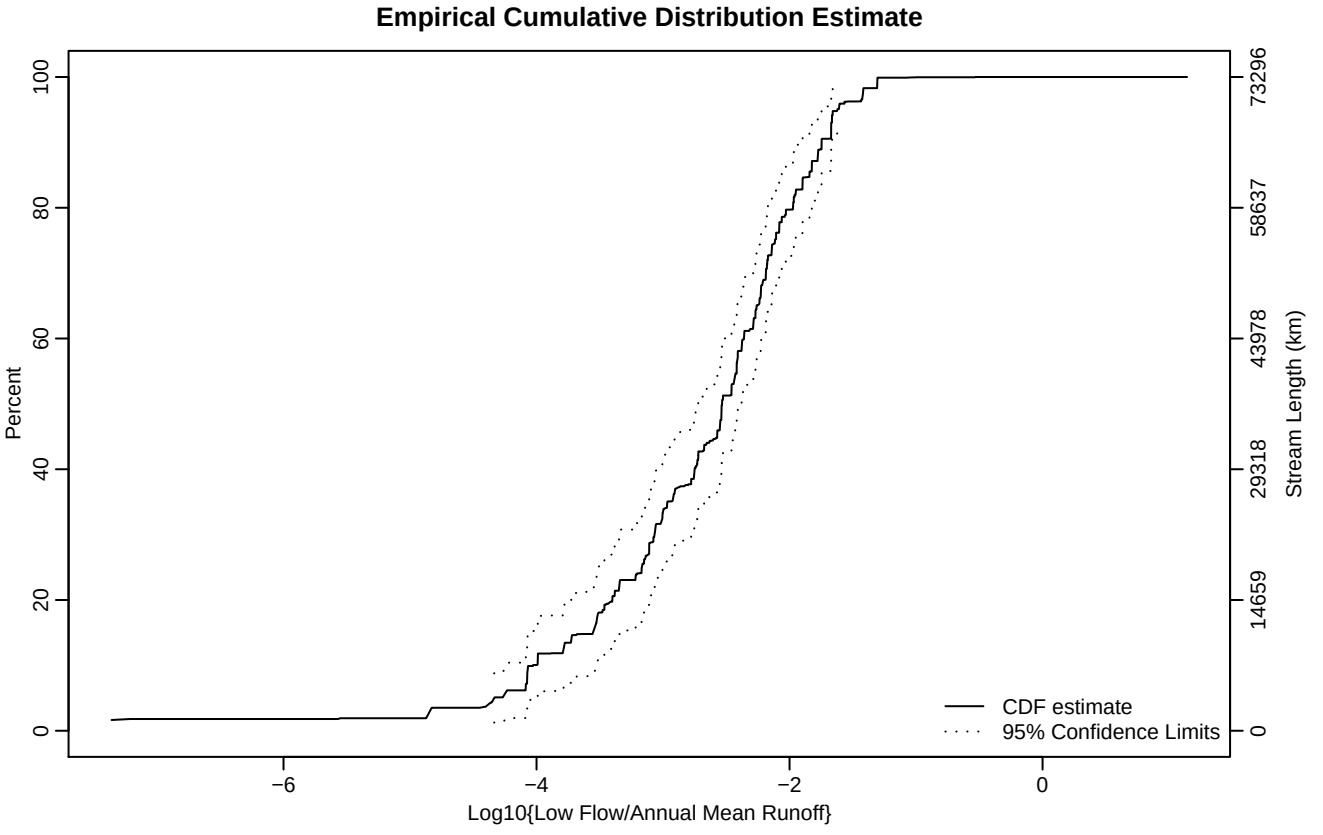


Figure PHAB−286 Indicator: LQSLTR_Rat Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−4.33	−7.36	−4.07
10Pct	−4.03	−4.34	−3.55
25Pct	−3.17	−3.52	−3
50Pct	−2.53	−2.73	−2.38
75Pct	−2.11	−2.23	−1.95
90Pct	−1.75	−1.90	−1.61
95Pct	−1.62	−1.67	−1.31
Mean	−2.75	−2.93	−2.56
Std Dev	0.98	0.75	1.21

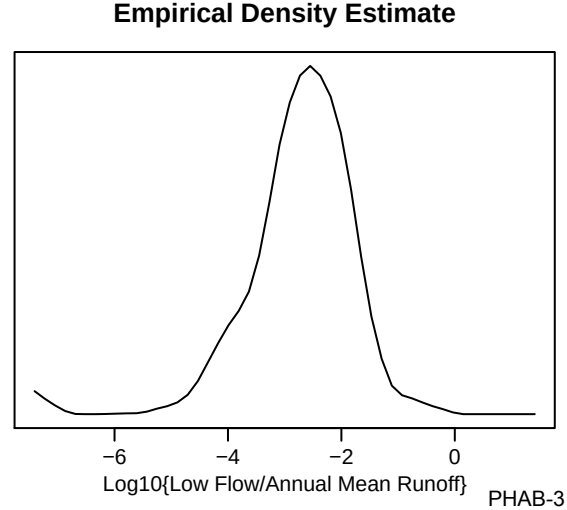
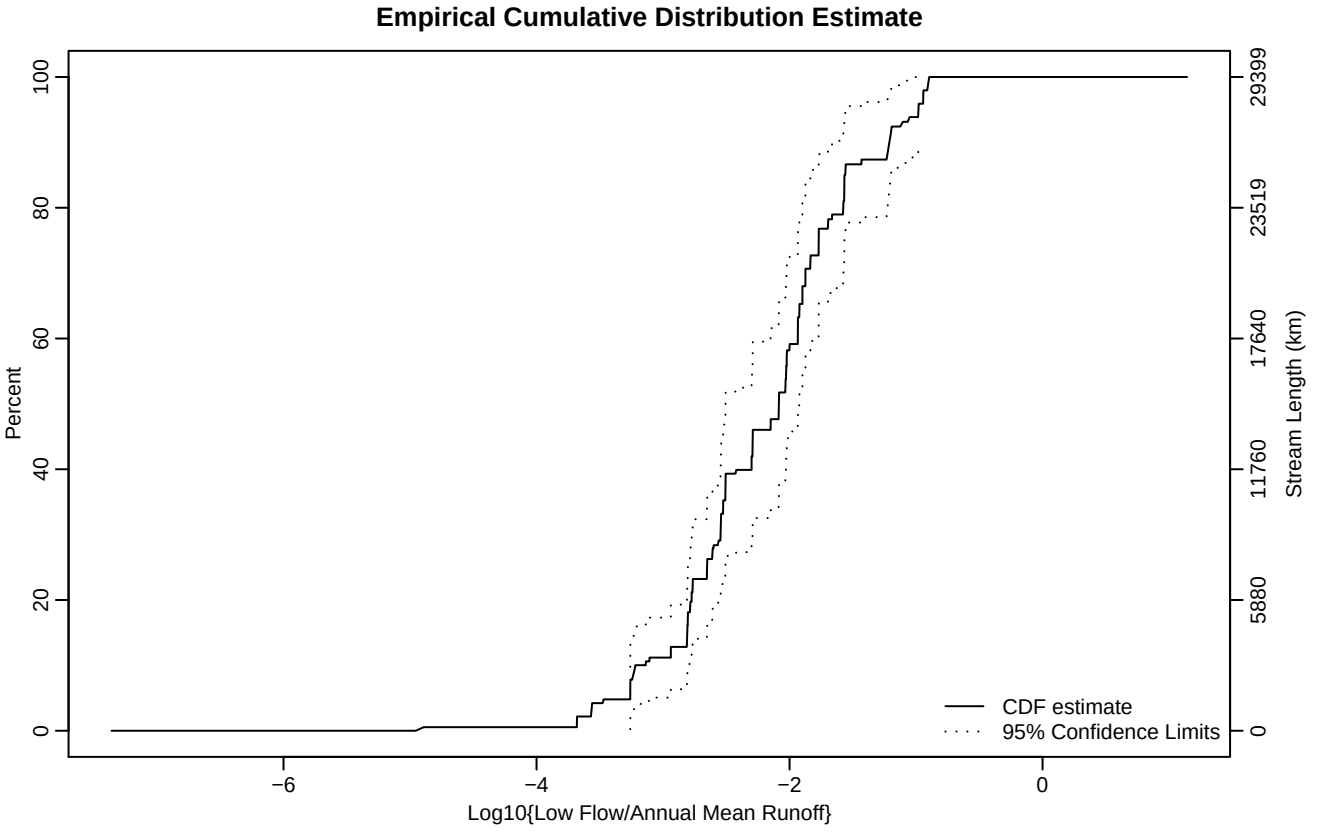


Figure PHAB−287 Indicator: LQSLTR_Rat Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−3.26	−4.92	−3.22
10Pct	−3.22	−3.56	−2.81
25Pct	−2.65	−2.81	−2.52
50Pct	−2.08	−2.51	−1.92
75Pct	−1.77	−1.93	−1.23
90Pct	−1.21	−1.57	−0.91
95Pct	−0.98	−1.22	
Mean	−2.19	−2.35	−2.03
Std Dev	0.69	0.59	0.79

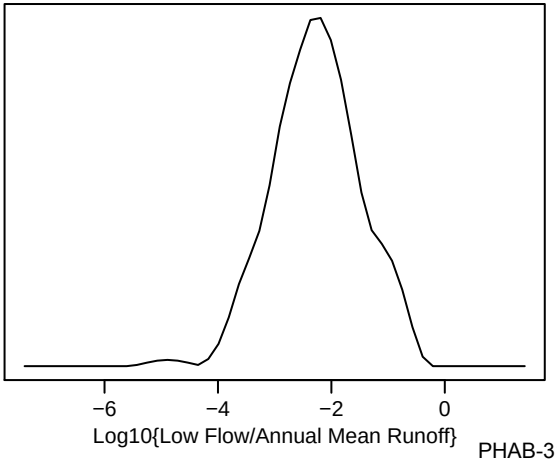
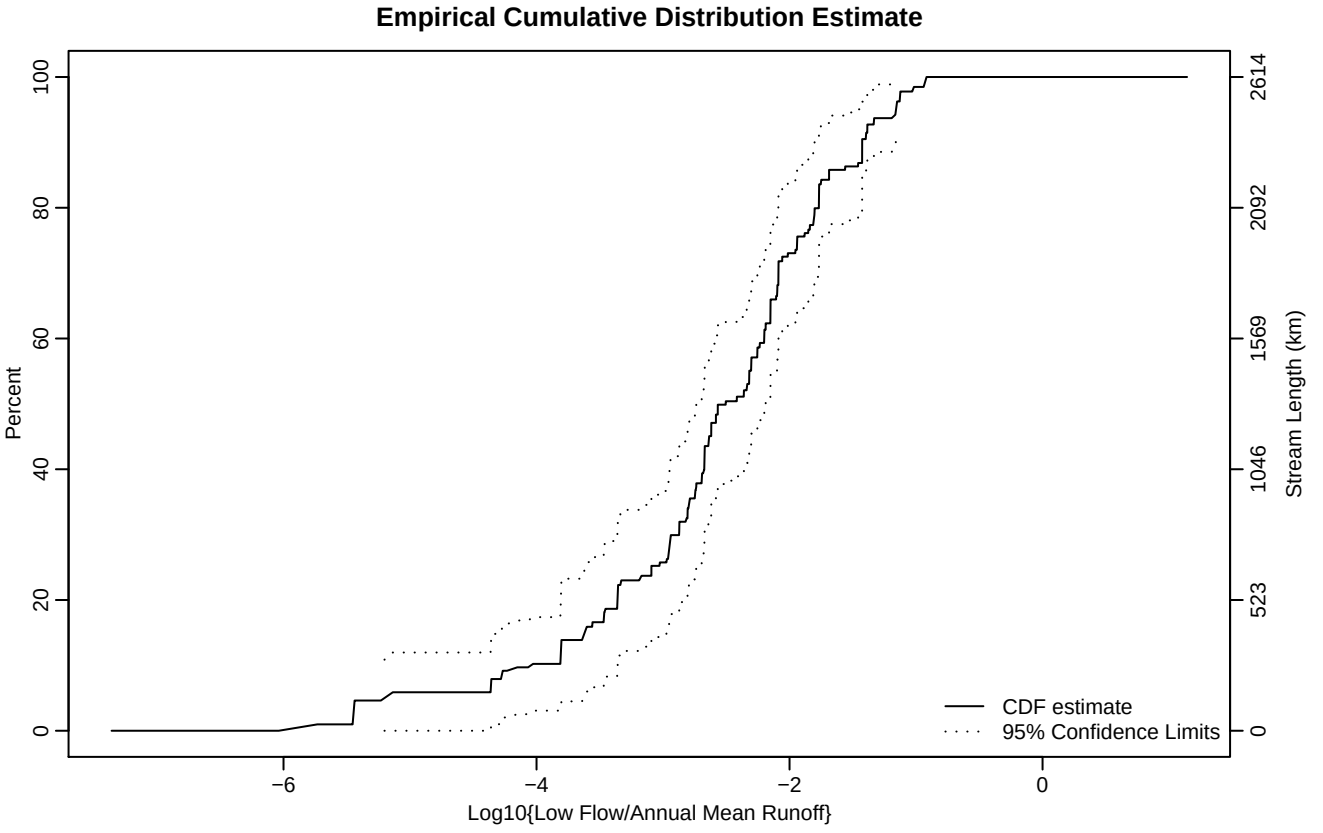


Figure PHAB−288 Indicator: LQSLTR_Rat Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−5.20	−7.36	−3.81
10Pct	−4.04	−5.45	−3.47
25Pct	−3.09	−3.63	−2.75
50Pct	−2.50	−2.70	−2.19
75Pct	−1.94	−2.15	−1.56
90Pct	−1.43	−1.77	−1.02
95Pct	−1.16	−1.43	−0.92
Mean	−2.63	−2.90	−2.35
Std Dev	1.05	0.82	1.28

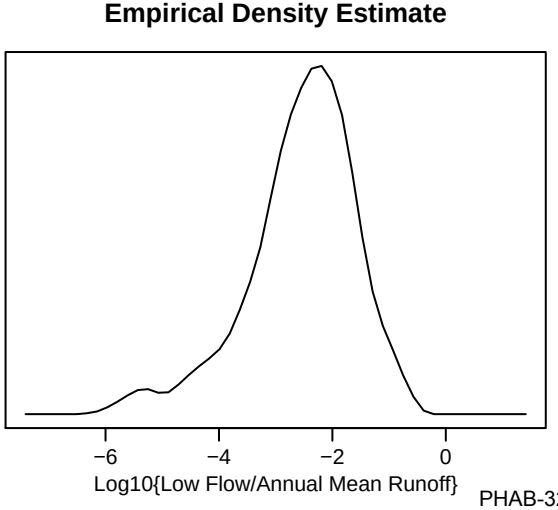
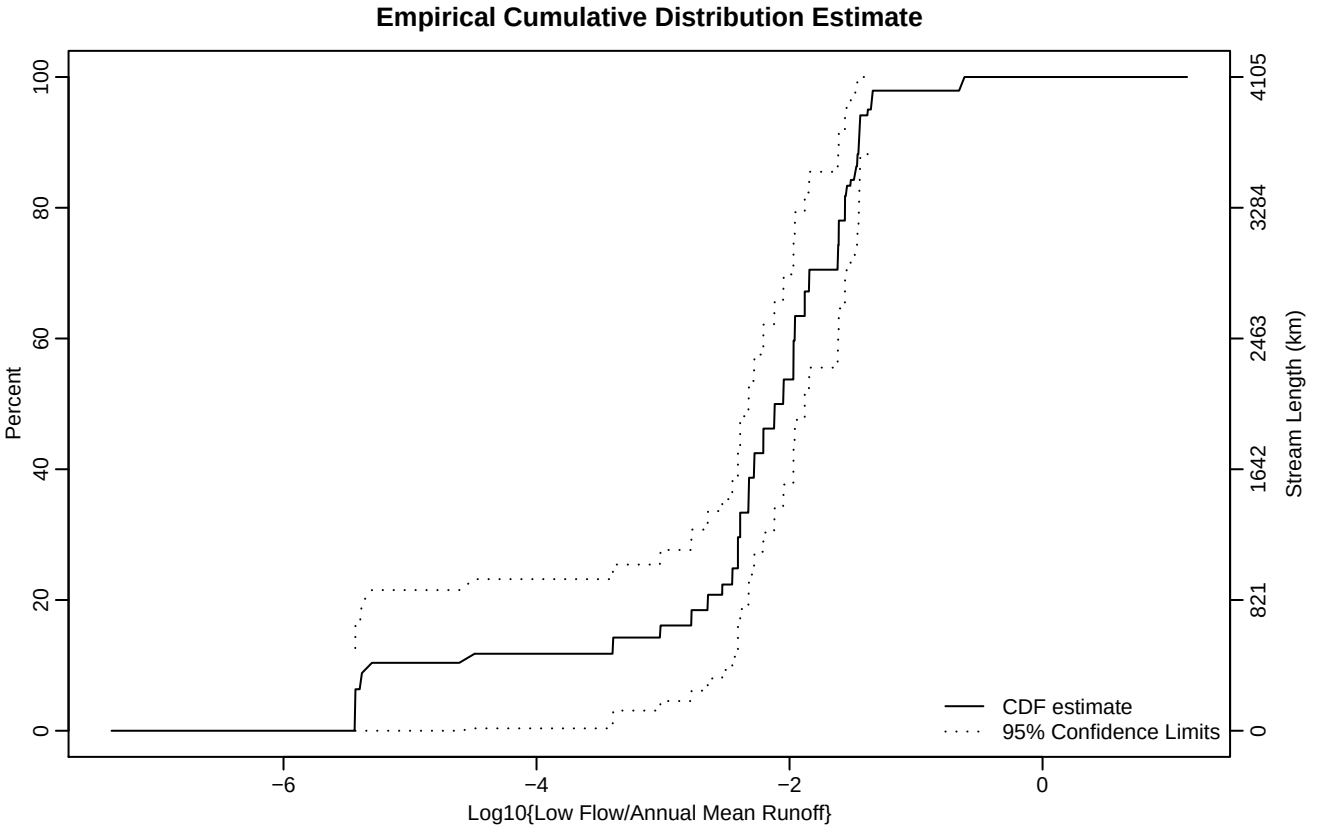


Figure PHAB−289 Indicator: LQSLTR_Rat Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−5.43	−5.43	−5.43
10Pct	−5.32	−7.36	−2.53
25Pct	−2.41	−4.50	−2.32
50Pct	−2.05	−2.32	−1.88
75Pct	−1.61	−1.96	−1.45
90Pct	−1.45	−1.56	−0.62
95Pct	−1.38	−1.46	−0.62
Mean	−2.39	−2.78	−2
Std Dev	1.02	0.72	1.32

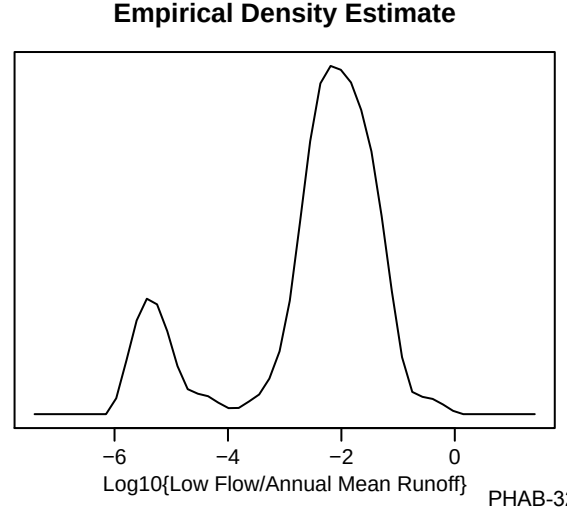
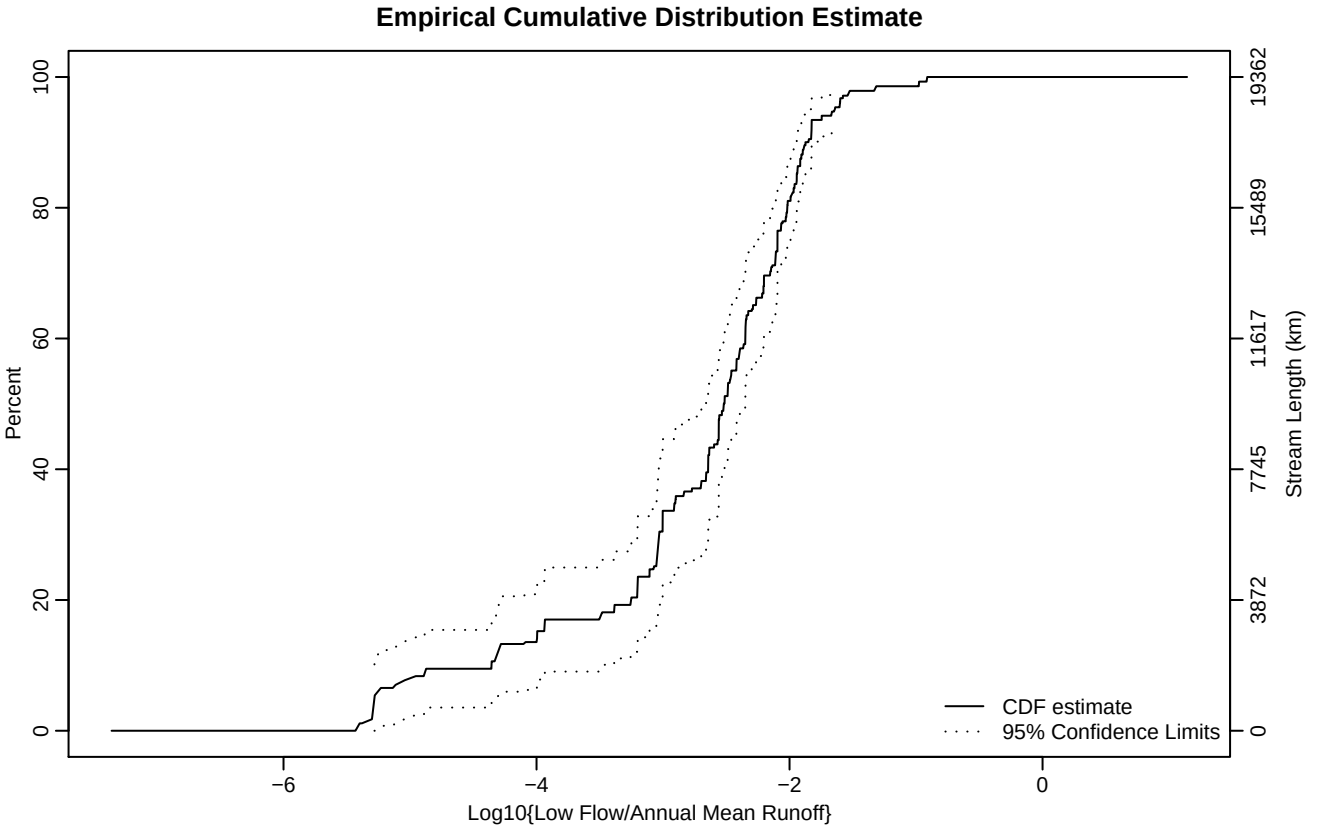


Figure PHAB−290 Indicator: LQSLTR_Rat Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−5.28	−5.29	−5.09
10Pct	−4.36	−5.29	−3.94
25Pct	−3.07	−3.94	−2.91
50Pct	−2.52	−2.64	−2.35
75Pct	−2.10	−2.21	−1.96
90Pct	−1.87	−1.94	−1.65
95Pct	−1.64	−1.83	−1.33
Mean	−2.79	−2.99	−2.59
Std Dev	0.94	0.78	1.10

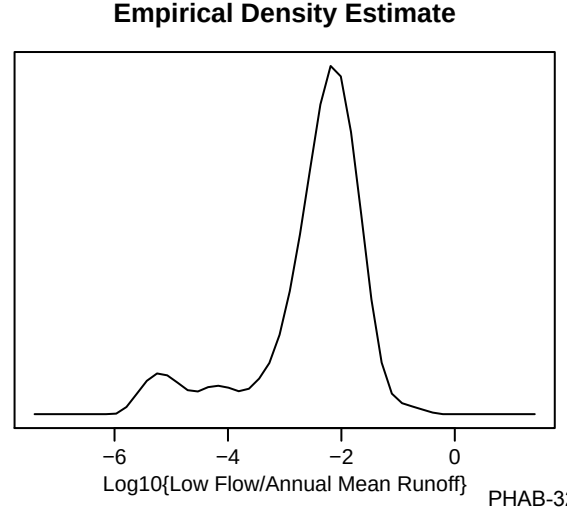
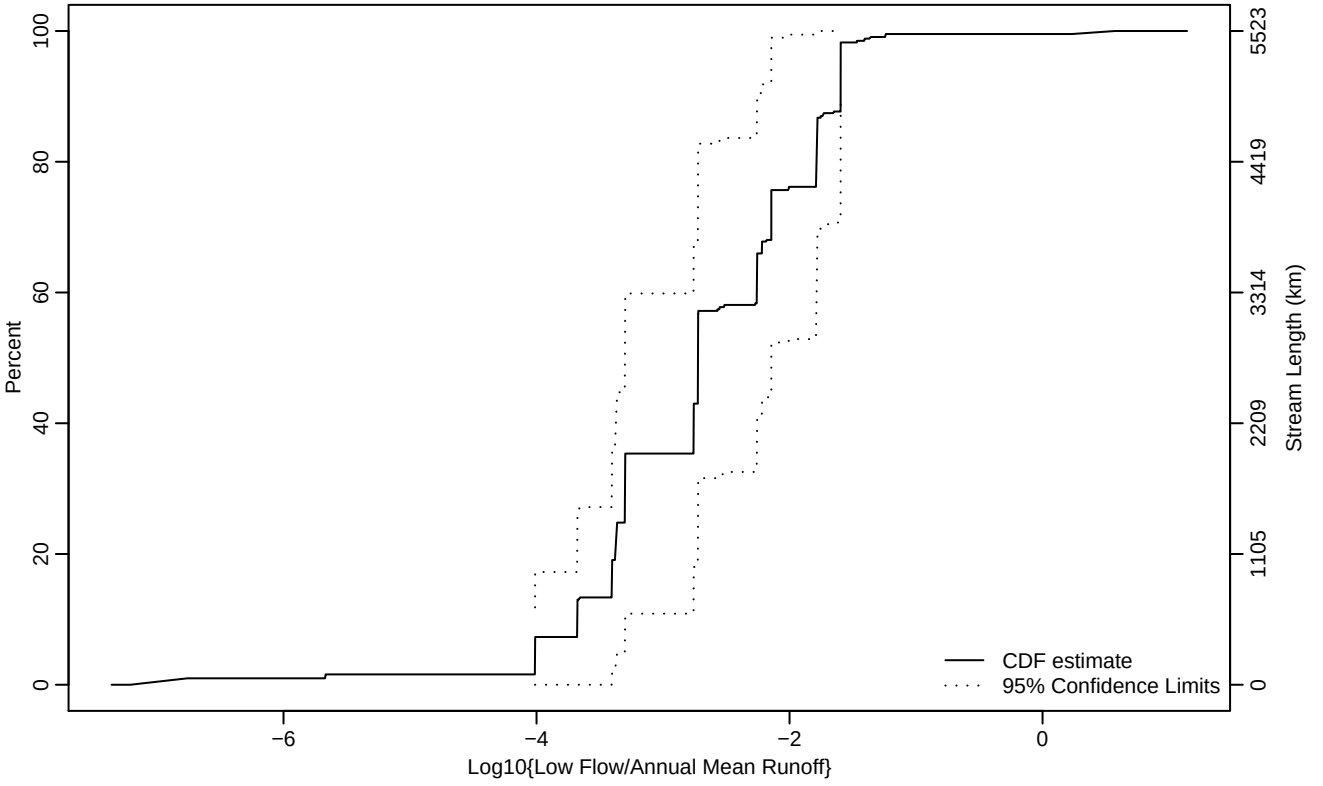


Figure PHAB−291 Indicator: LQSLTR_Rat Subpopulation: XE−CALIF

Empirical Cumulative Distribution Estimate



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−4.01	−4.01	−3.68
10Pct	−3.68	−7.36	−3.38
25Pct	−3.30	−4.01	−2.72
50Pct	−2.72	−3.36	−2.01
75Pct	−2.14	−2.72	−1.36
90Pct	−1.60	−2.14	0.57
95Pct	−1.60	−1.79	0.57
Mean	−2.69	−3.07	−2.31
Std Dev	0.90	0.67	1.13

Empirical Density Estimate

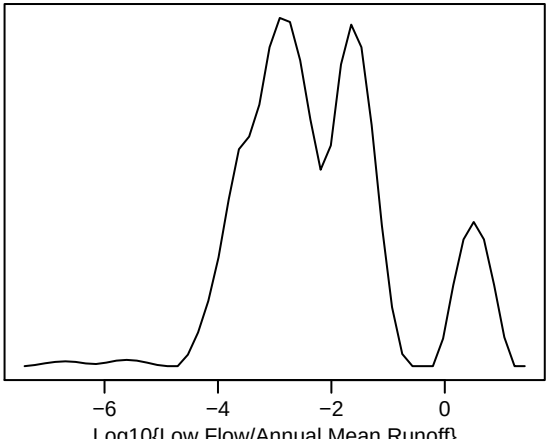
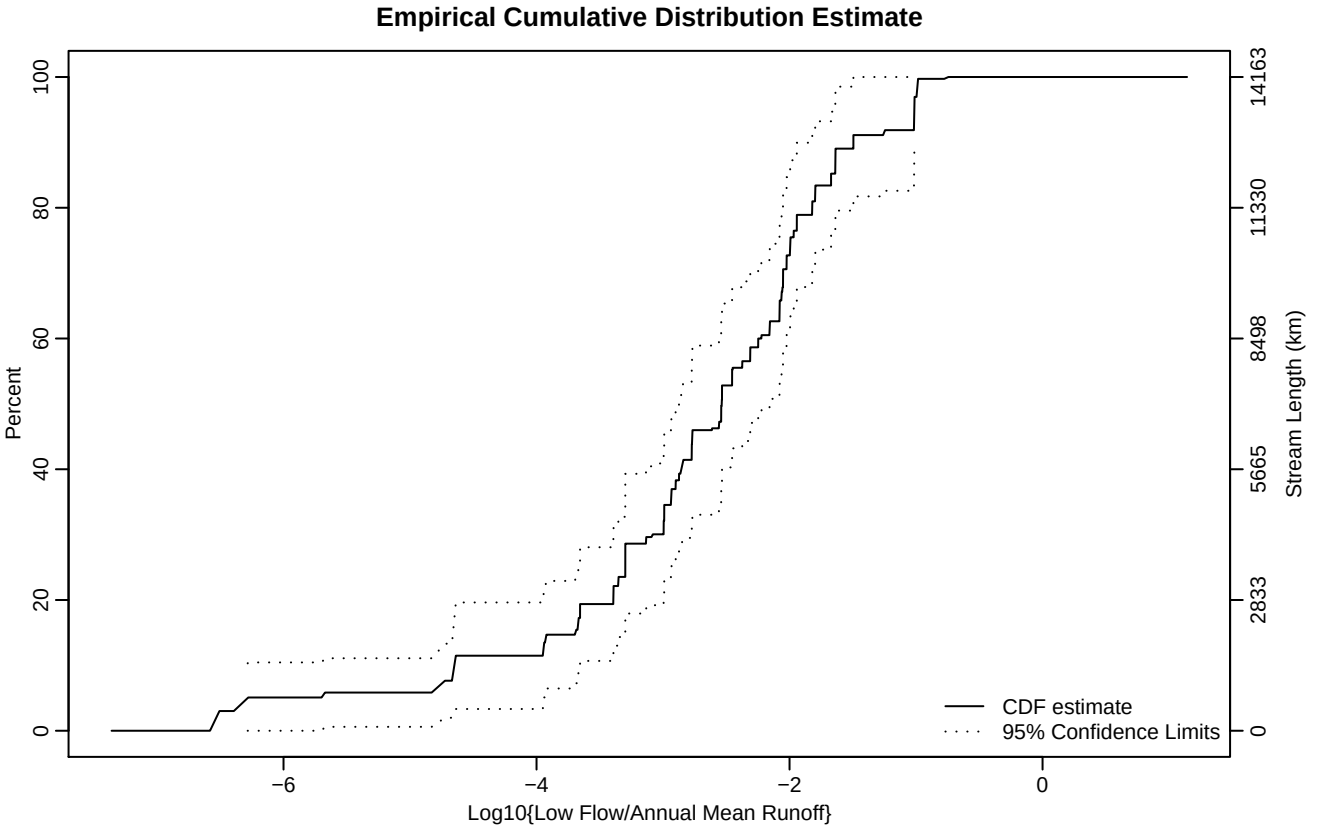


Figure PHAB−292 Indicator: LQSLTR_Rat Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−6.28	−6.56	−4.66
10Pct	−4.65	−6.35	−3.67
25Pct	−3.30	−3.69	−2.94
50Pct	−2.54	−2.93	−2.08
75Pct	−1.99	−2.08	−1.64
90Pct	−1.50	−1.82	−0.77
95Pct	−1.01	−1.64	−0.74
Mean	−2.77	−3.06	−2.47
Std Dev	1.11	0.85	1.36

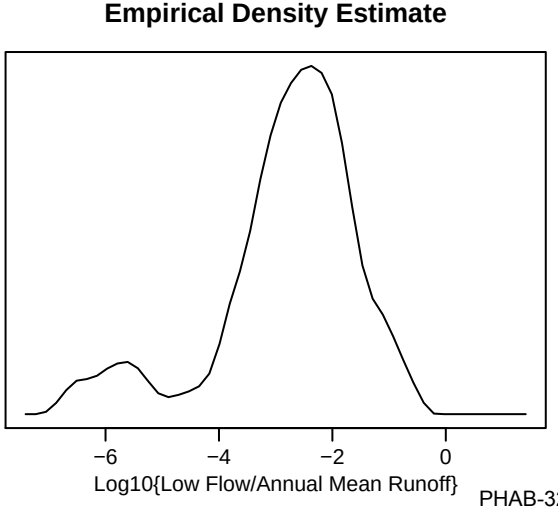
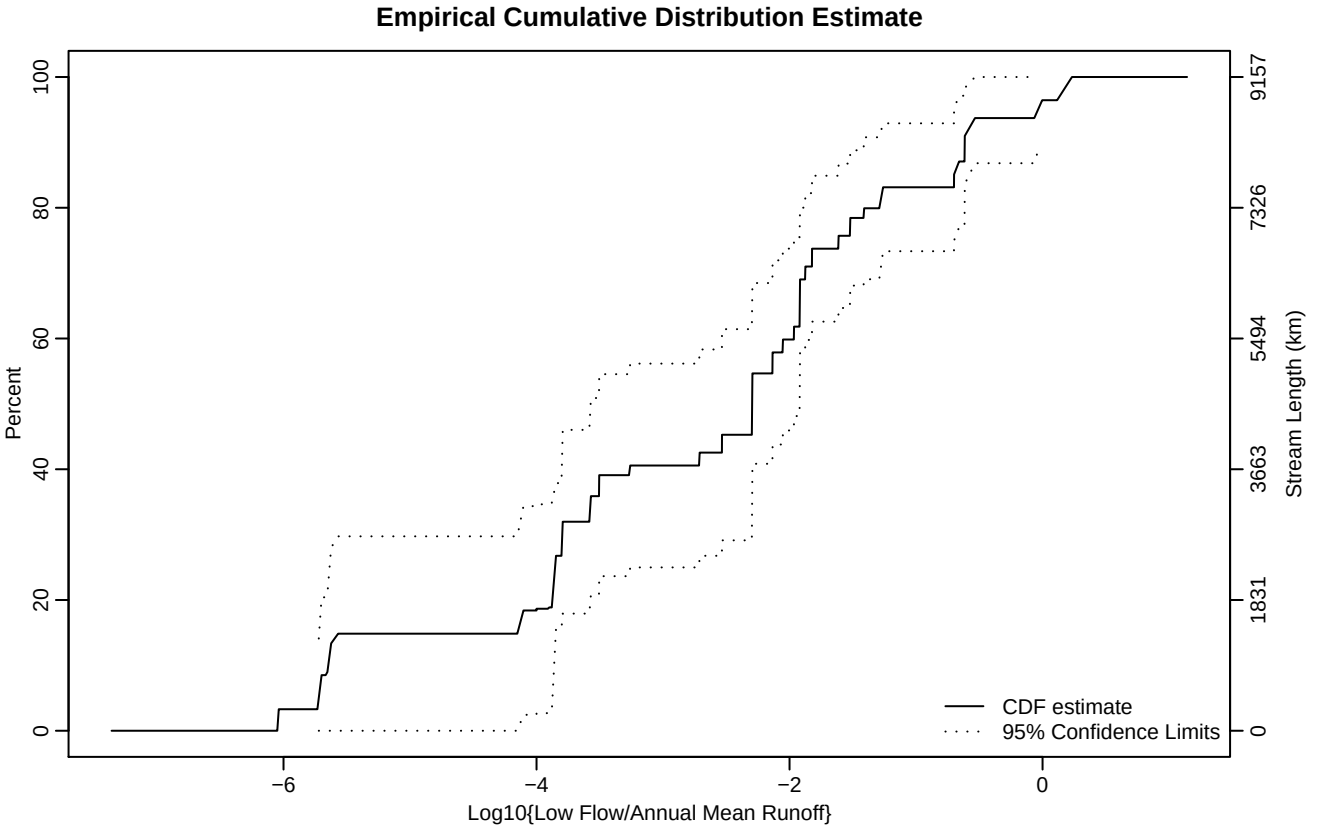


Figure PHAB−293 Indicator: LQSLTR_Rat Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−5.72	−7.36	−5.63
10Pct	−5.65	−7.36	−3.87
25Pct	−3.85	−5.65	−3.26
50Pct	−2.30	−3.58	−1.92
75Pct	−1.61	−1.92	−0.66
90Pct	−0.62	−1.41	0.23
95Pct	−0.04	−0.62	0.23
Mean	−2.72	−3.22	−2.22
Std Dev	1.35	1.05	1.66

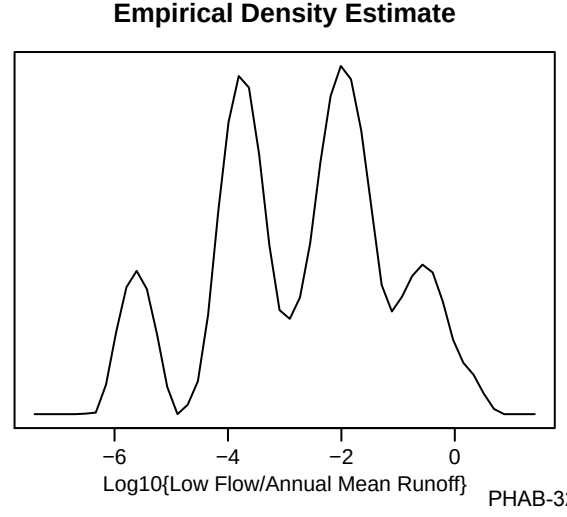
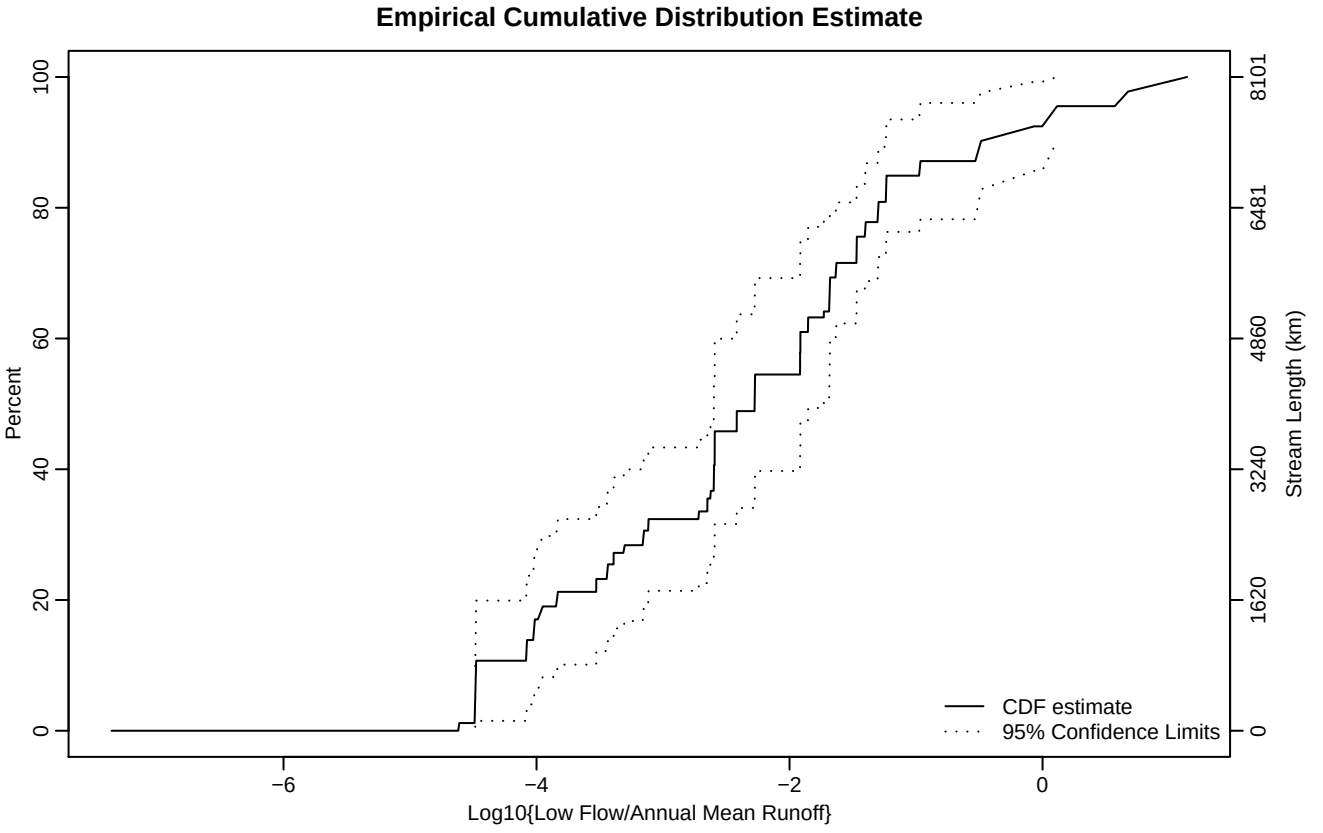


Figure PHAB−294 Indicator: LQSLTR_Rat Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	−4.48	−4.49	−4.48
10Pct	−4.48	−4.48	−4.08
25Pct	−3.44	−4.08	−2.62
50Pct	−2.28	−2.65	−1.69
75Pct	−1.47	−1.69	−1.23
90Pct	−0.49	−1.24	0.90
95Pct	0.09	−0.52	1.14
Mean	−2.30	−2.64	−1.96
Std Dev	1.17	0.96	1.39

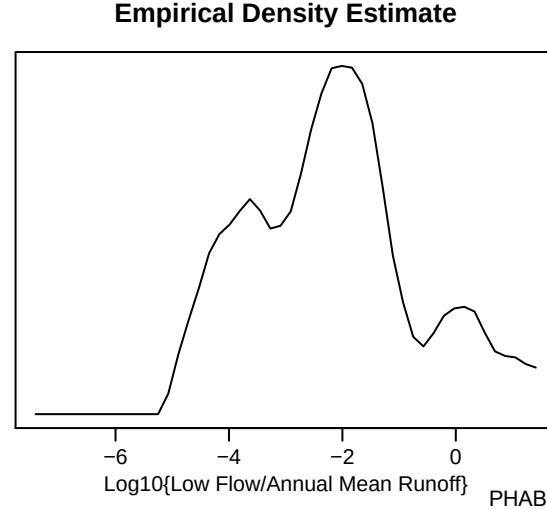
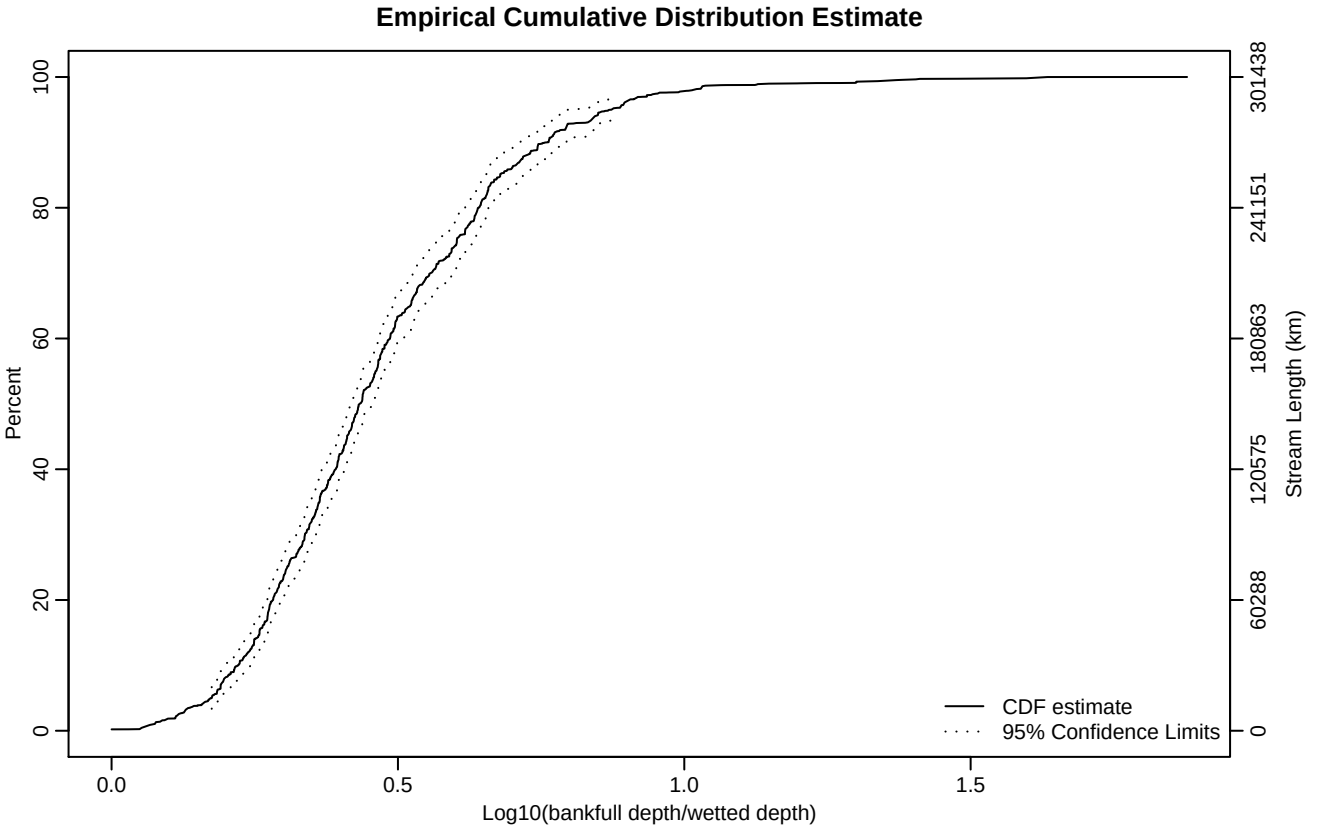


Figure PHAB−295 Indicator: LBFXD_Rat Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	0.13	0.19
10Pct	0.22	0.20	0.24
25Pct	0.31	0.29	0.33
50Pct	0.43	0.42	0.46
75Pct	0.60	0.57	0.63
90Pct	0.76	0.72	0.80
95Pct	0.87	0.84	0.91
Mean	0.47	0.45	0.49
Std Dev	0.20	0.19	0.22

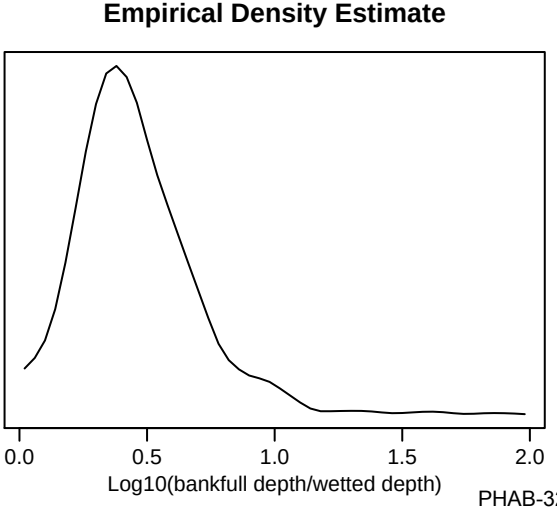
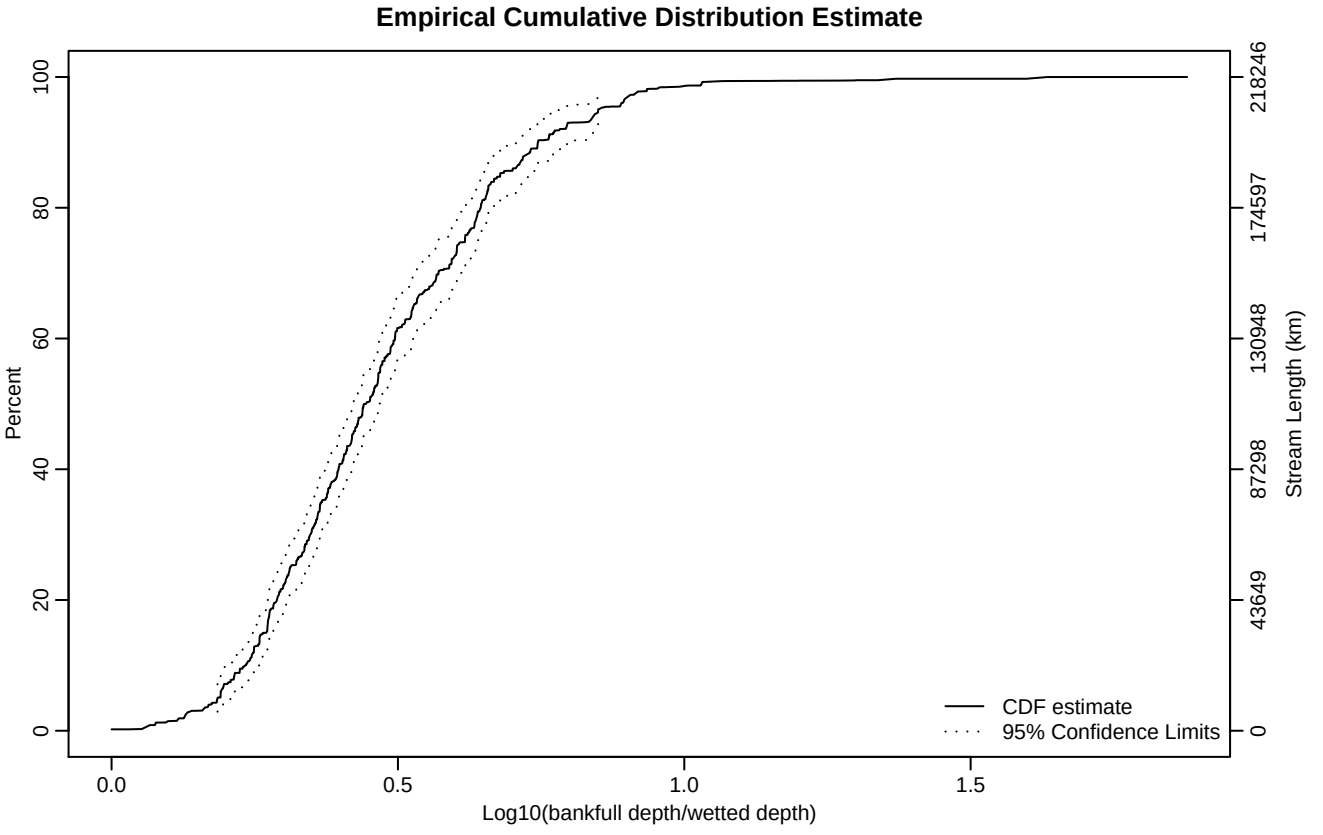


Figure PHAB−296 Indicator: LBFXD_Rat Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0.14	0.20
10Pct	0.23	0.20	0.25
25Pct	0.31	0.29	0.34
50Pct	0.44	0.42	0.47
75Pct	0.62	0.57	0.64
90Pct	0.74	0.71	0.84
95Pct	0.85	0.80	0.91
Mean	0.47	0.45	0.50
Std Dev	0.20	0.18	0.22

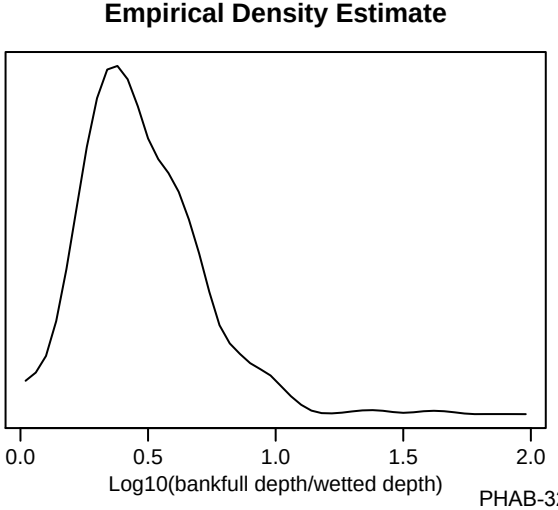
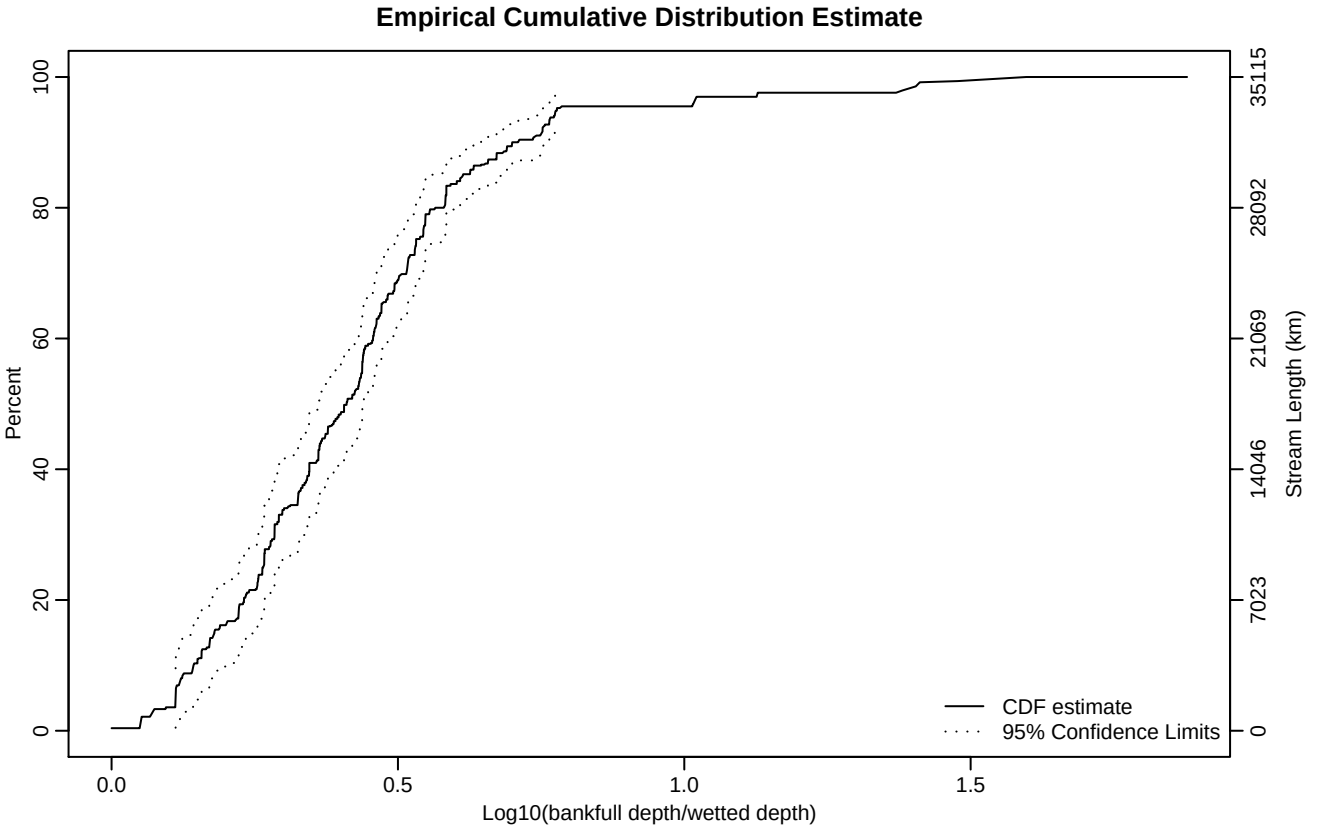


Figure PHAB−297 Indicator: LBFXD_Rat Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.11	0.05	0.12
10Pct	0.14	0.11	0.19
25Pct	0.26	0.22	0.29
50Pct	0.41	0.36	0.44
75Pct	0.53	0.50	0.58
90Pct	0.70	0.65	0.76
95Pct	0.78	0.75	1.37
Mean	0.43	0.40	0.46
Std Dev	0.23	0.20	0.25

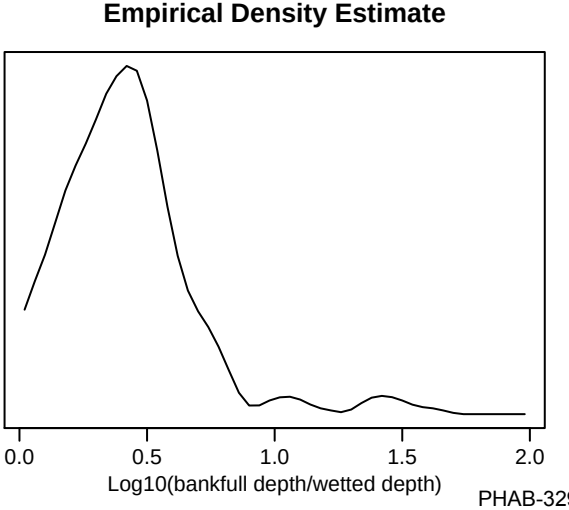
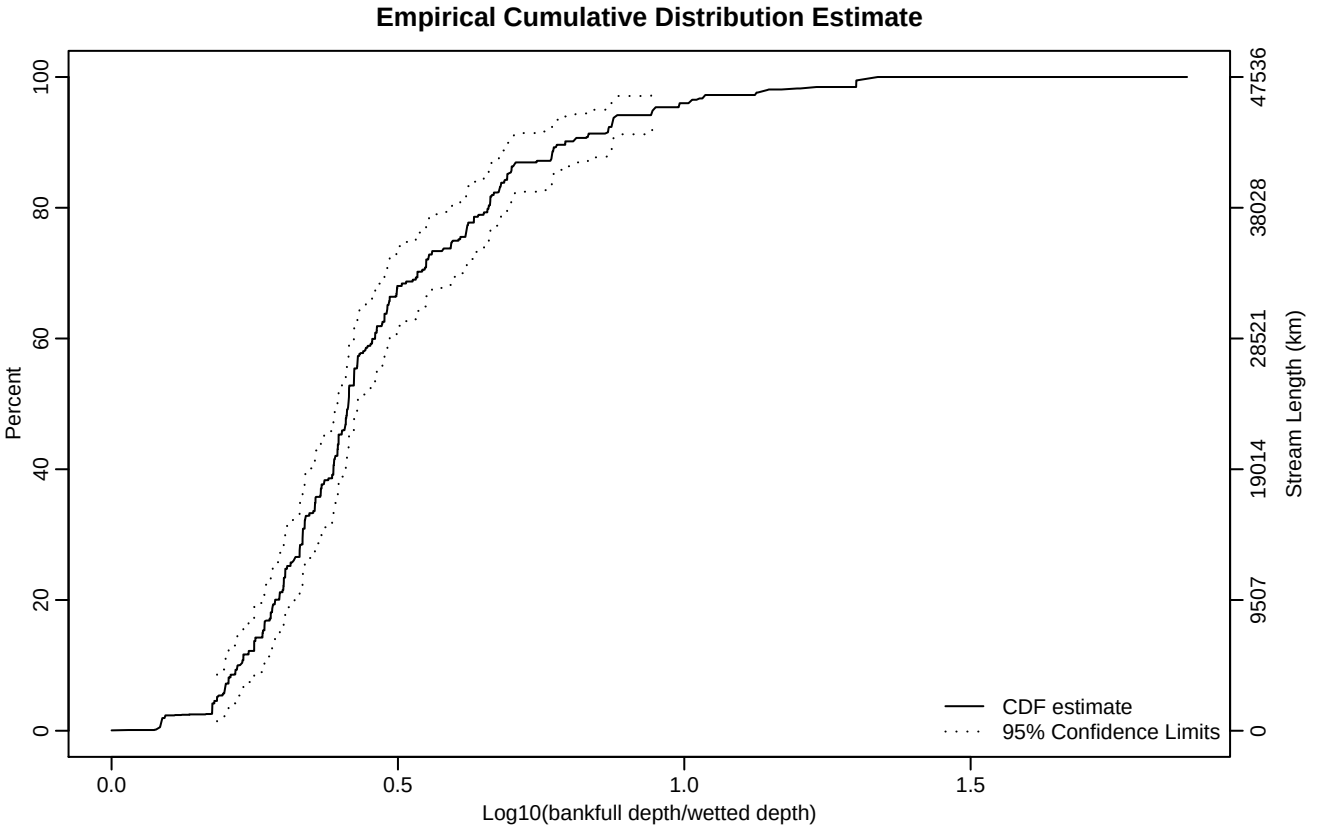


Figure PHAB−298 Indicator: LBFXD_Rat Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0.09	0.21
10Pct	0.22	0.19	0.26
25Pct	0.31	0.28	0.34
50Pct	0.41	0.39	0.43
75Pct	0.61	0.53	0.66
90Pct	0.79	0.70	0.88
95Pct	0.95	0.87	1.14
Mean	0.47	0.44	0.50
Std Dev	0.20	0.18	0.23

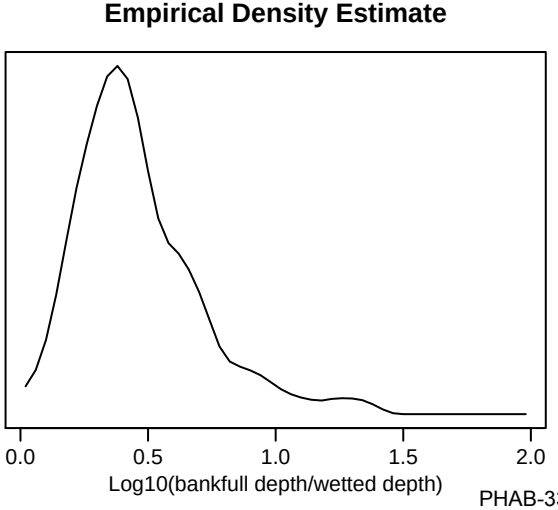
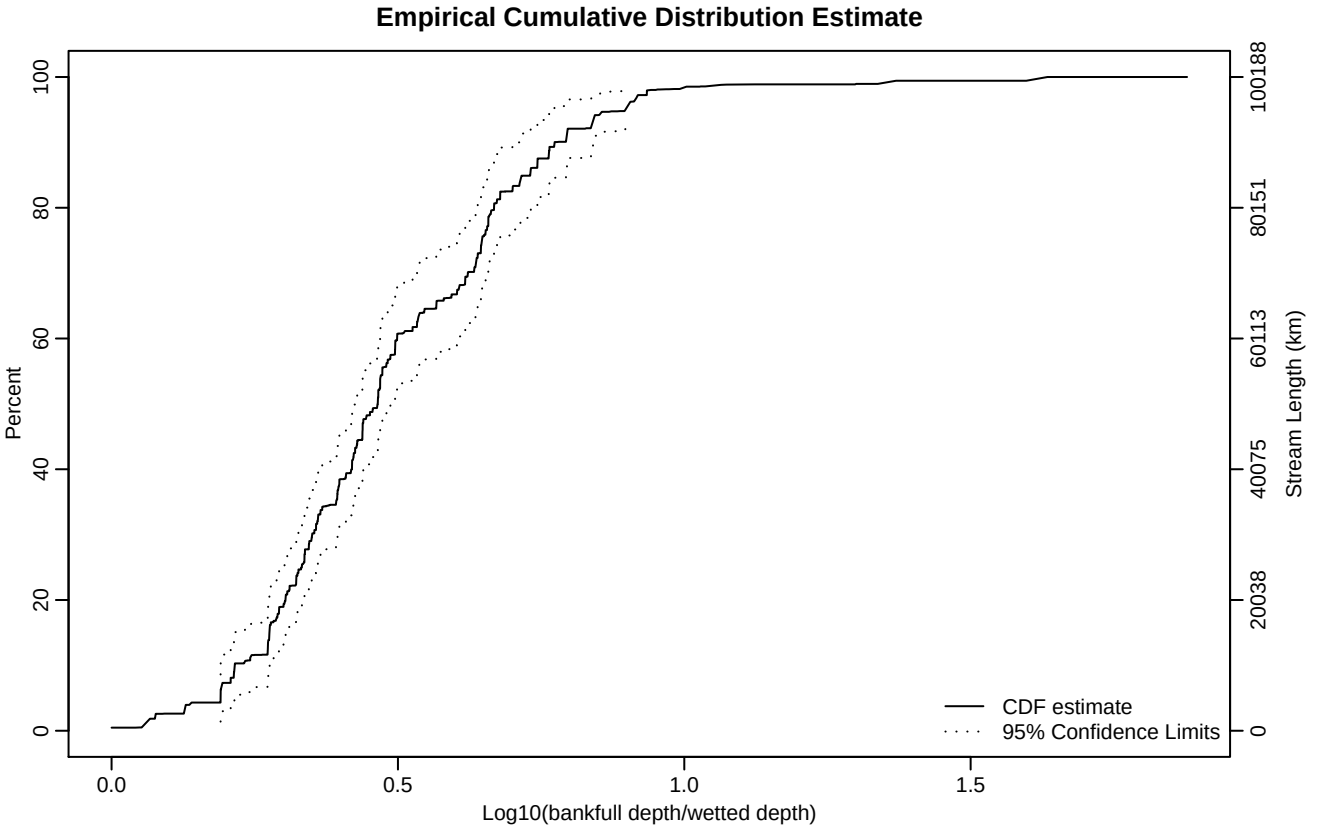


Figure PHAB−299 Indicator: LBFXD_Rat Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.19	0.07	0.21
10Pct	0.22	0.19	0.28
25Pct	0.33	0.29	0.36
50Pct	0.46	0.43	0.49
75Pct	0.65	0.60	0.70
90Pct	0.77	0.71	0.90
95Pct	0.90	0.80	0.95
Mean	0.49	0.46	0.53
Std Dev	0.21	0.18	0.25

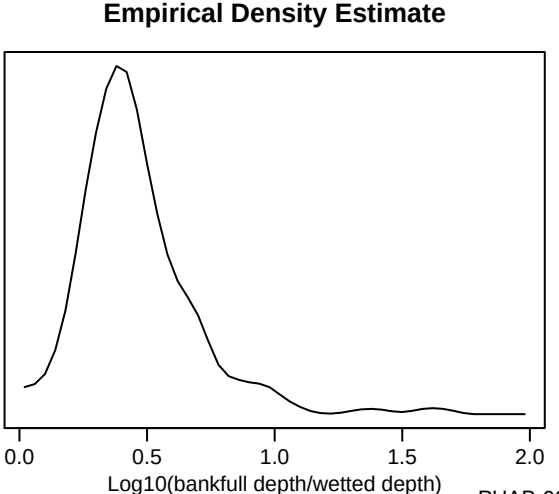
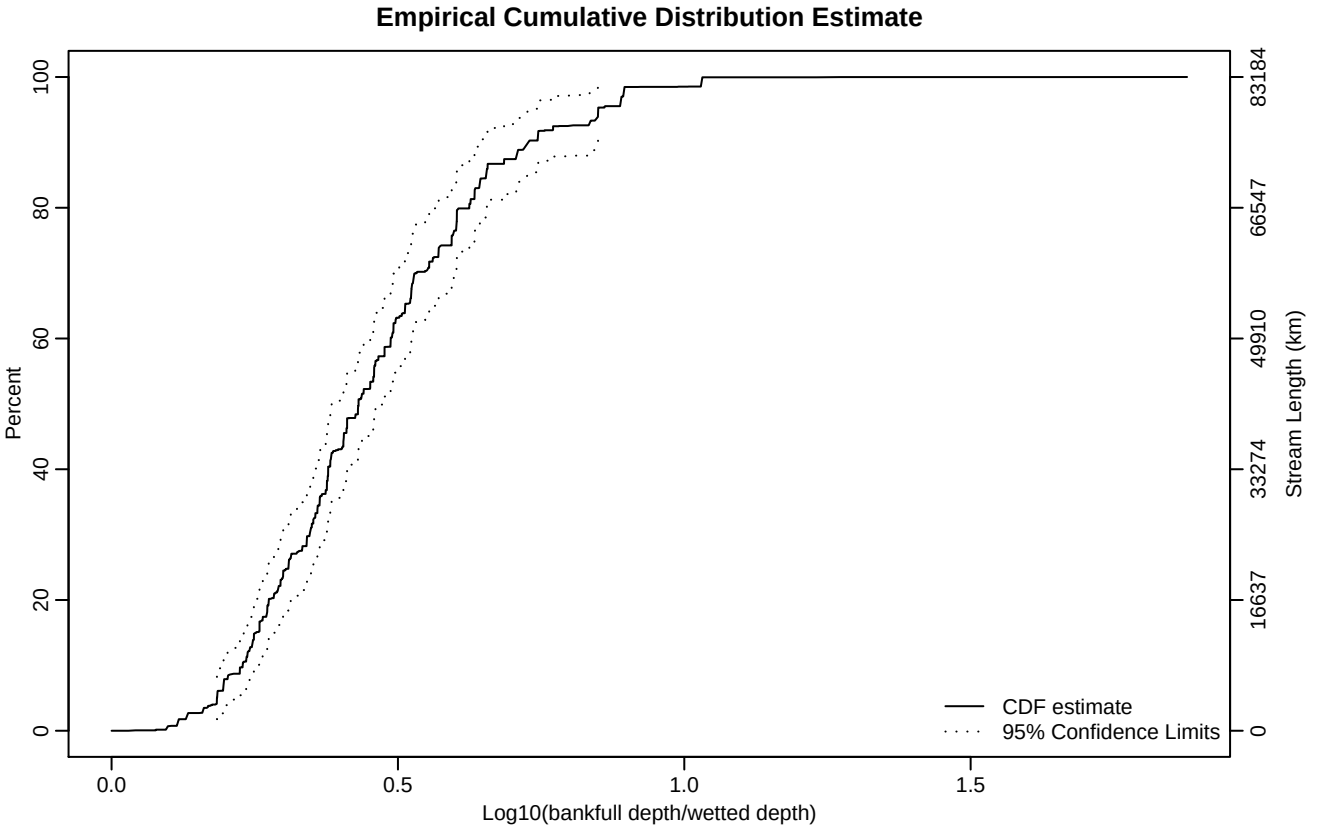


Figure PHAB−300 Indicator: LBFXD_Rat Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0.13	0.20
10Pct	0.23	0.18	0.25
25Pct	0.31	0.27	0.35
50Pct	0.43	0.38	0.48
75Pct	0.59	0.52	0.63
90Pct	0.73	0.65	0.85
95Pct	0.85	0.74	1.03
Mean	0.46	0.43	0.49
Std Dev	0.19	0.17	0.21

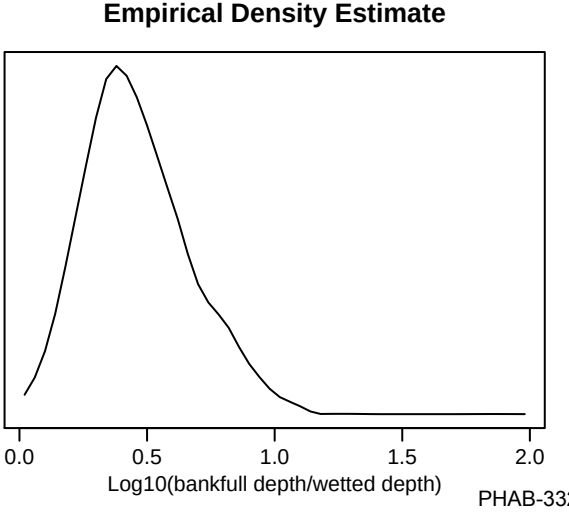
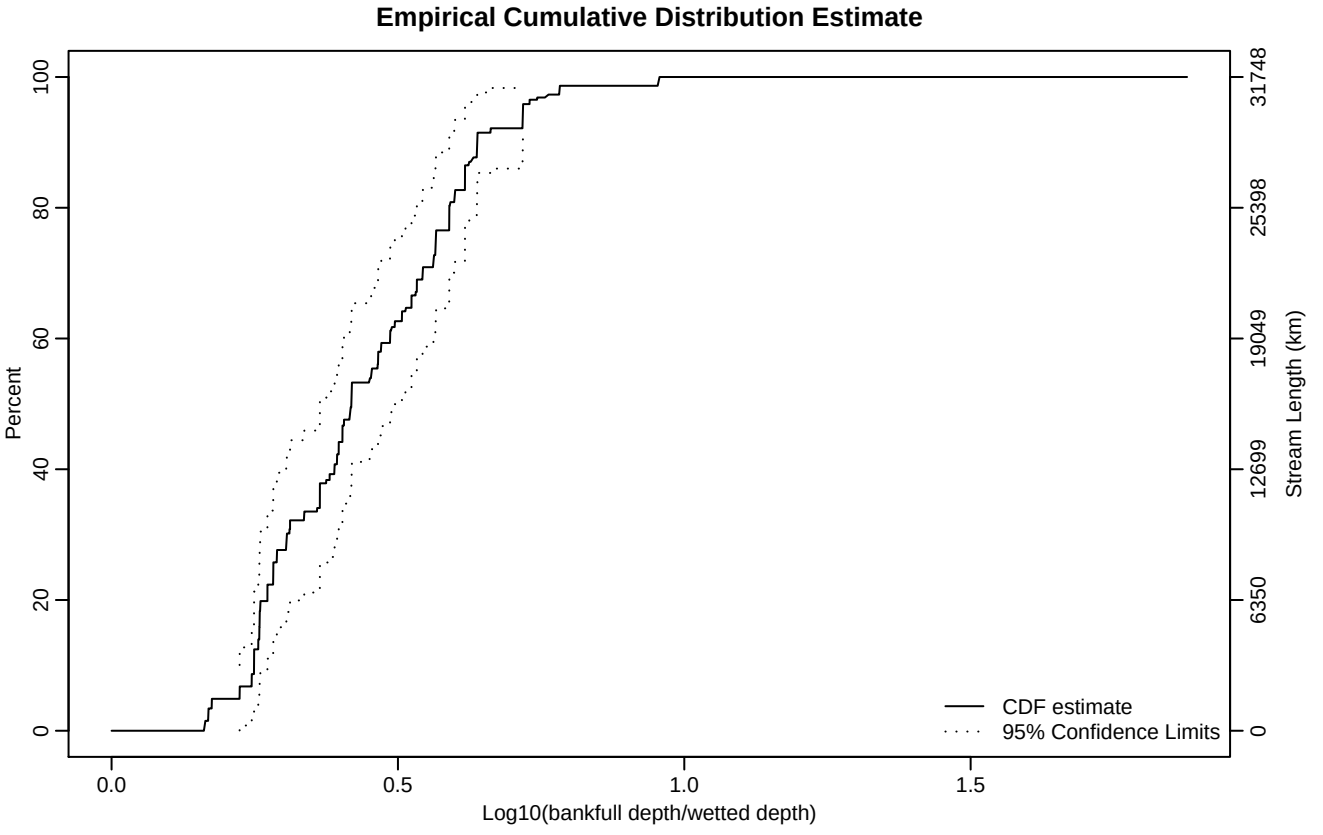


Figure PHAB−301 Indicator: LBFXD_Rat Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.16	0.25
10Pct	0.25	0.17	0.26
25Pct	0.28	0.26	0.36
50Pct	0.42	0.36	0.51
75Pct	0.57	0.49	0.63
90Pct	0.64	0.59	0.96
95Pct	0.72	0.64	0.96
Mean	0.44	0.40	0.48
Std Dev	0.16	0.14	0.18

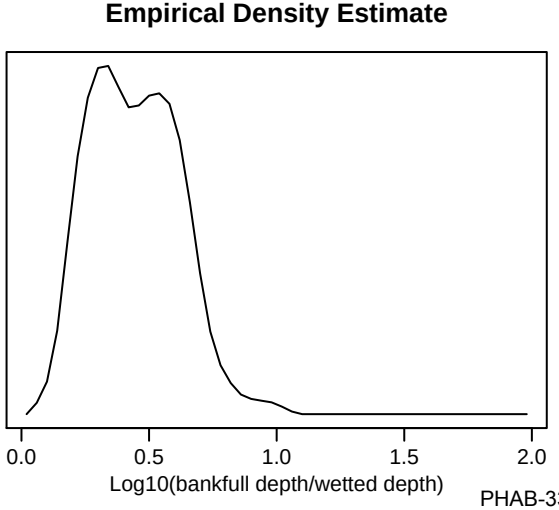
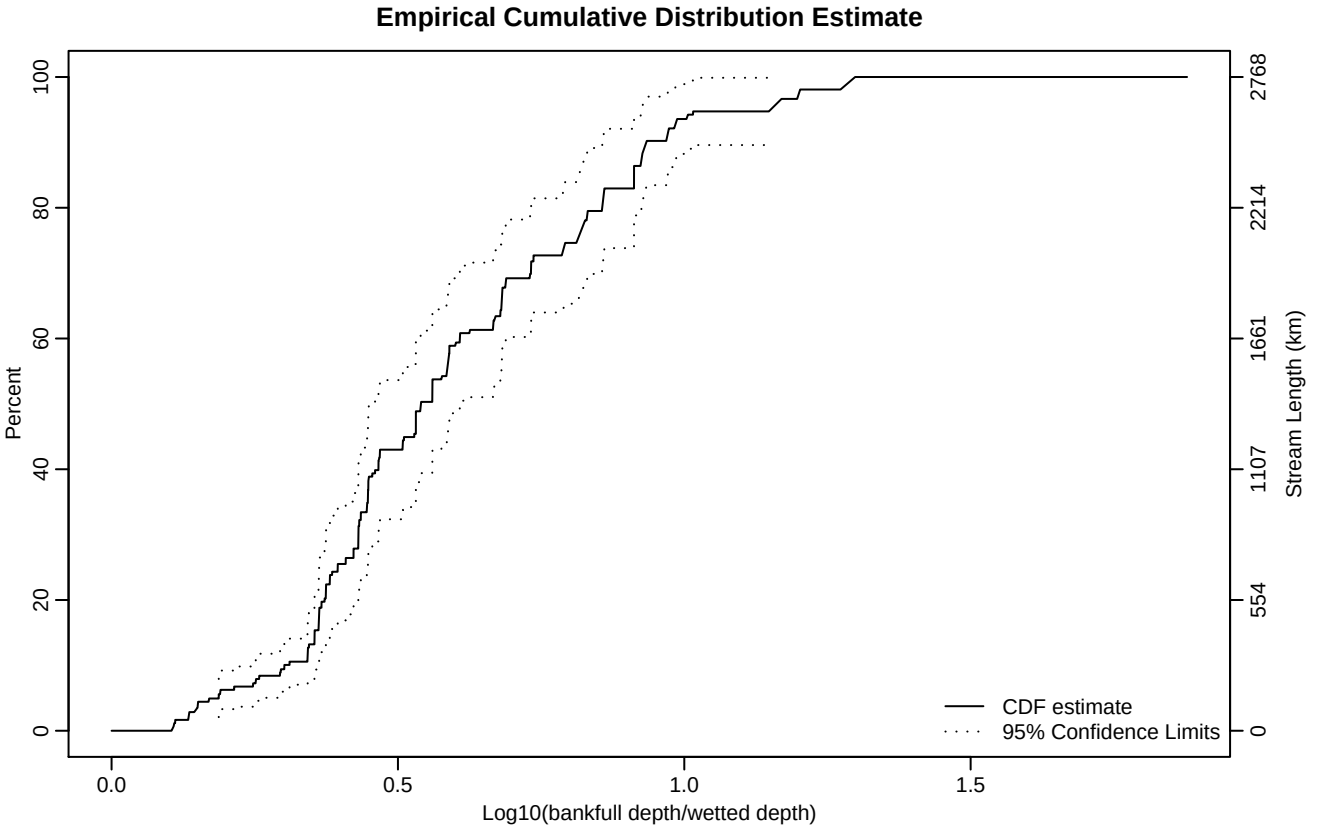


Figure PHAB−302 Indicator: LBFXD_Rat Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.19	0.13	0.26
10Pct	0.30	0.21	0.35
25Pct	0.39	0.36	0.45
50Pct	0.54	0.46	0.63
75Pct	0.81	0.68	0.91
90Pct	0.93	0.86	1.20
95Pct	1.15	0.93	
Mean	0.60	0.54	0.65
Std Dev	0.24	0.21	0.28

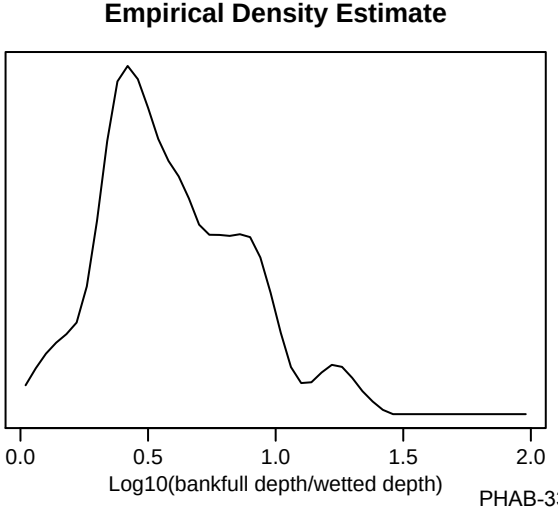
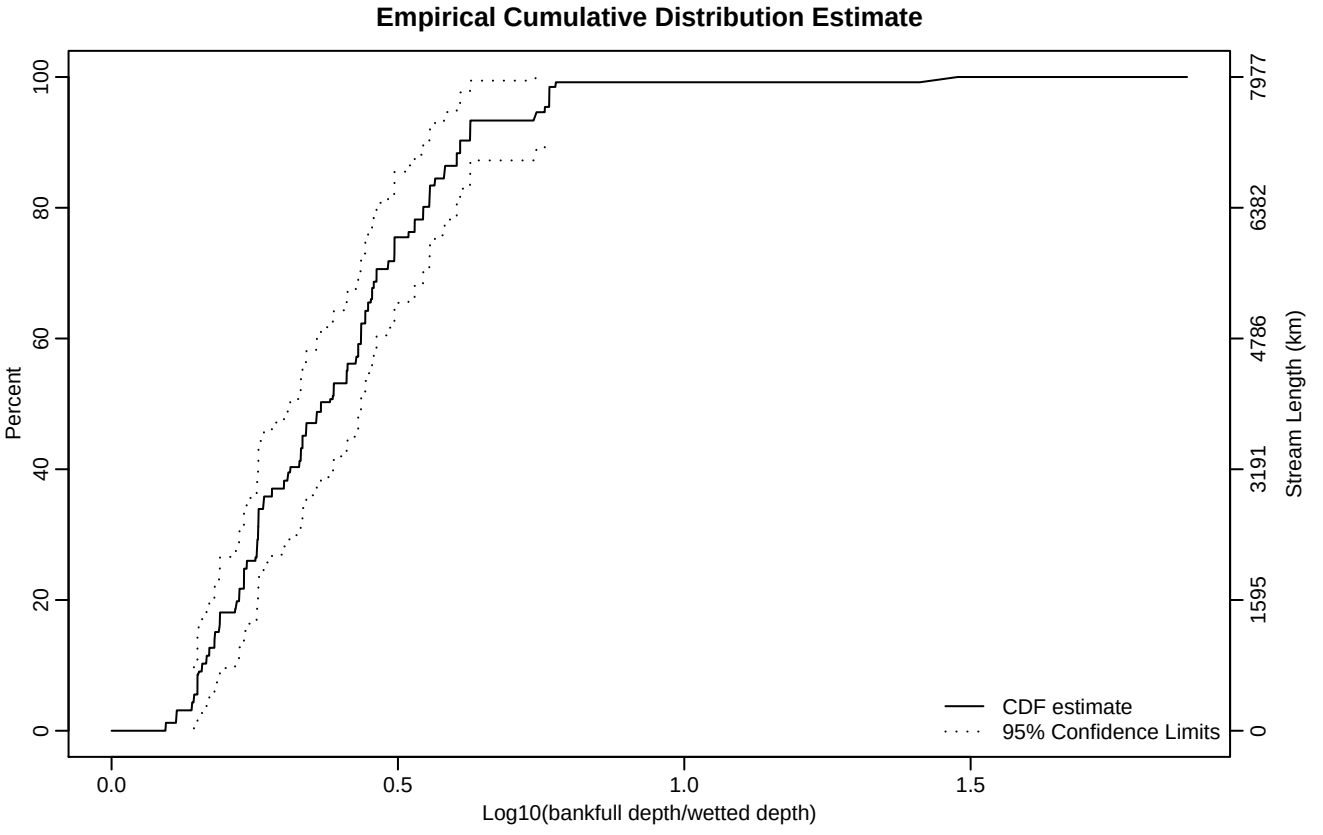


Figure PHAB−303 Indicator: LBFXD_Rat Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.14	0.09	0.16
10Pct	0.16	0.11	0.19
25Pct	0.24	0.19	0.27
50Pct	0.37	0.31	0.44
75Pct	0.49	0.45	0.58
90Pct	0.61	0.56	0.76
95Pct	0.76	0.61	1.48
Mean	0.39	0.35	0.43
Std Dev	0.20	0.15	0.24

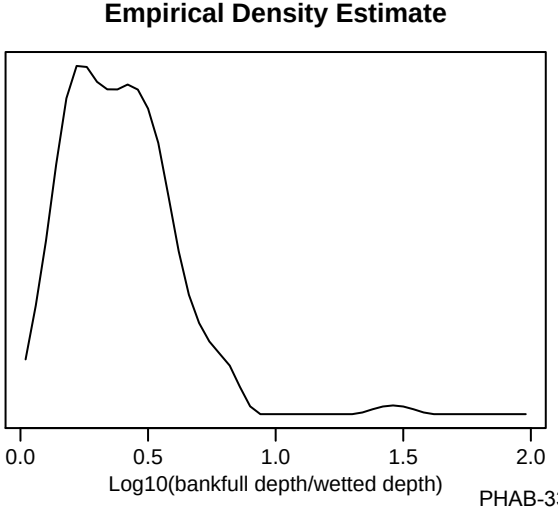
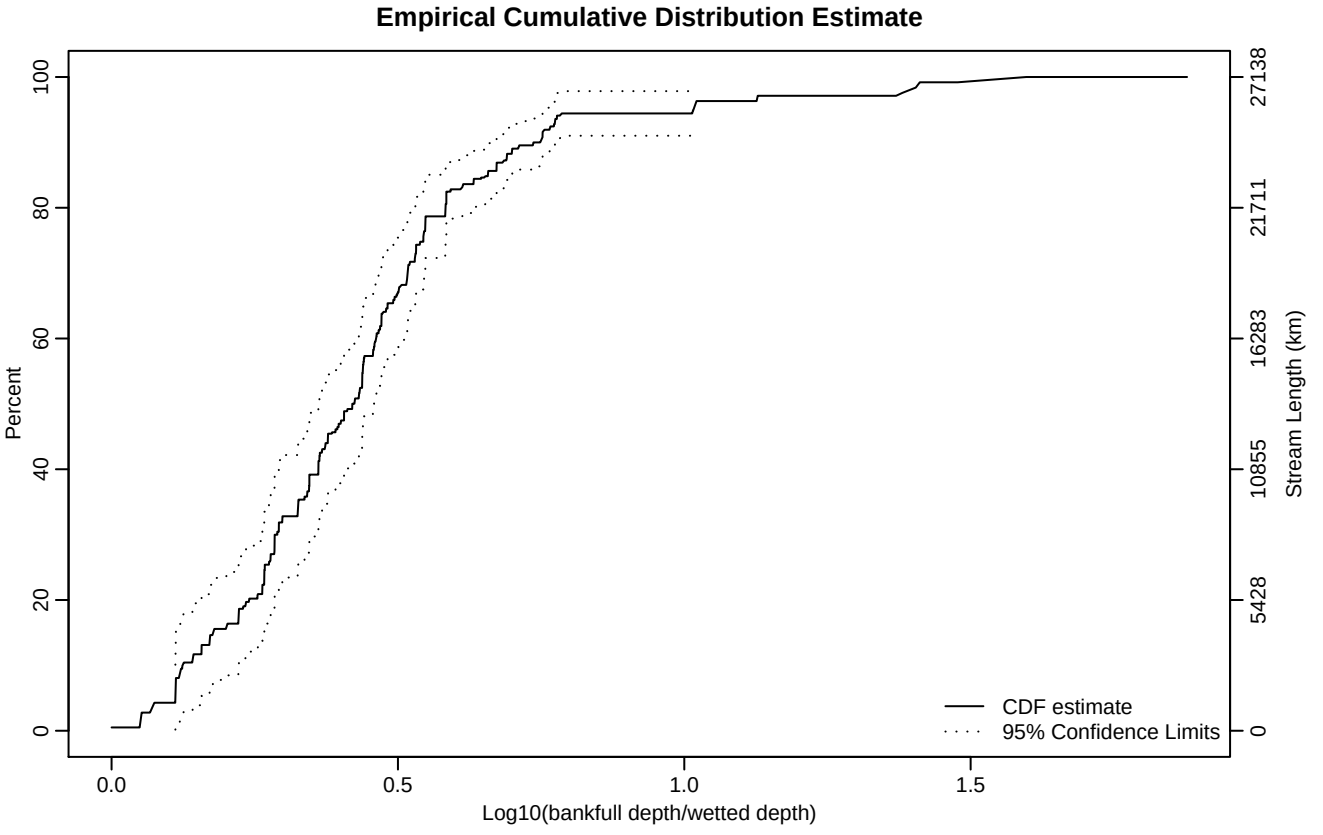


Figure PHAB−304 Indicator: LBFXD_Rat Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.11	0	0.12
10Pct	0.12	0.05	0.22
25Pct	0.27	0.20	0.33
50Pct	0.42	0.36	0.46
75Pct	0.54	0.50	0.58
90Pct	0.75	0.67	0.78
95Pct	1.02	0.75	1.40
Mean	0.44	0.40	0.48
Std Dev	0.22	0.19	0.25

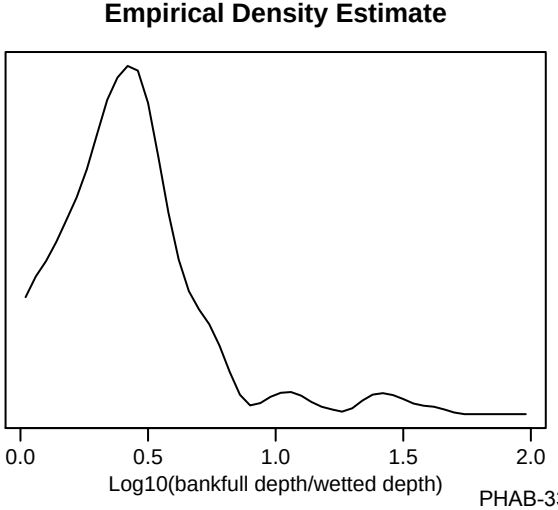
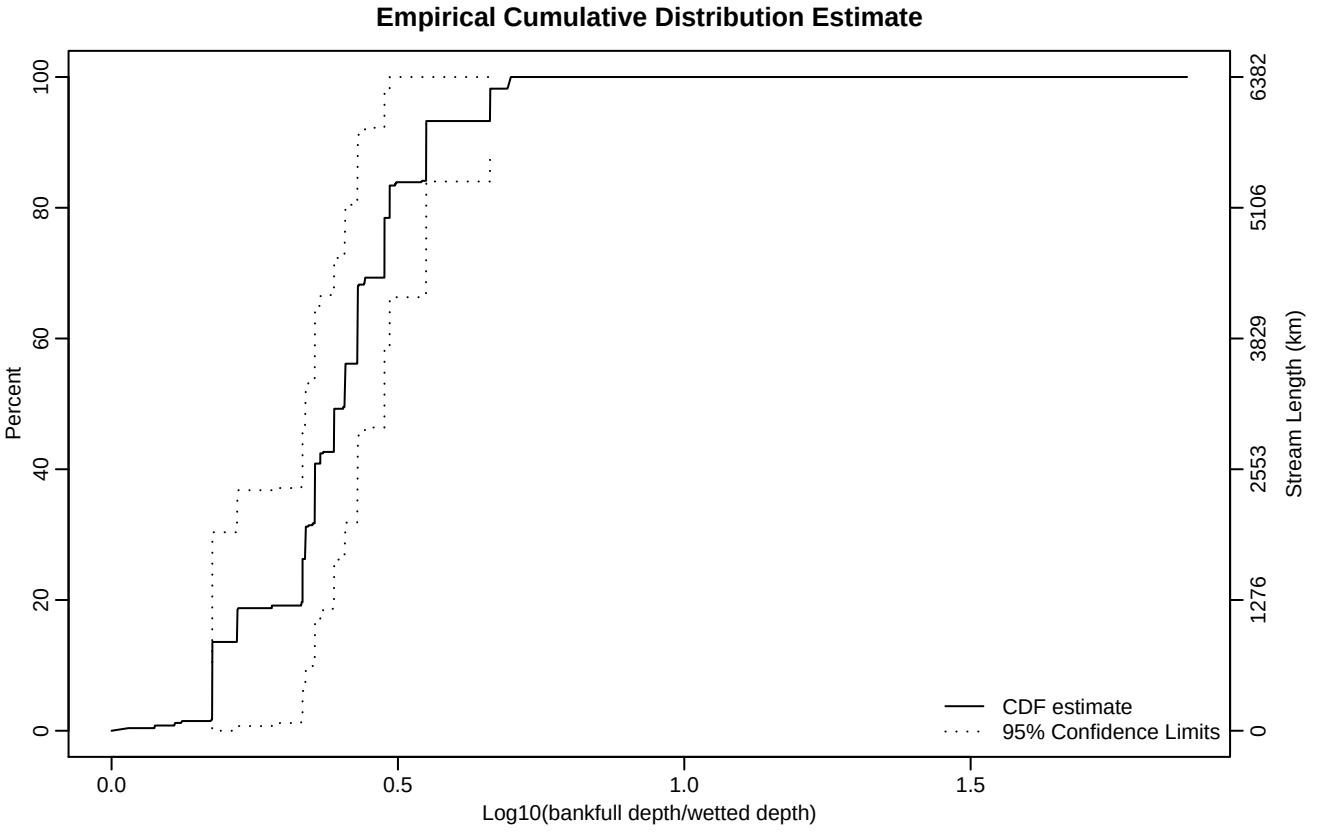


Figure PHAB−305 Indicator: LBFXD_Rat Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0.18	0.18
10Pct	0.18	0.18	0.18
25Pct	0.33	0.18	0.36
50Pct	0.41	0.34	0.48
75Pct	0.48	0.41	0.66
90Pct	0.55	0.48	0.70
95Pct	0.66	0.55	0.70
Mean	0.39	0.33	0.45
Std Dev	0.13	0.10	0.17

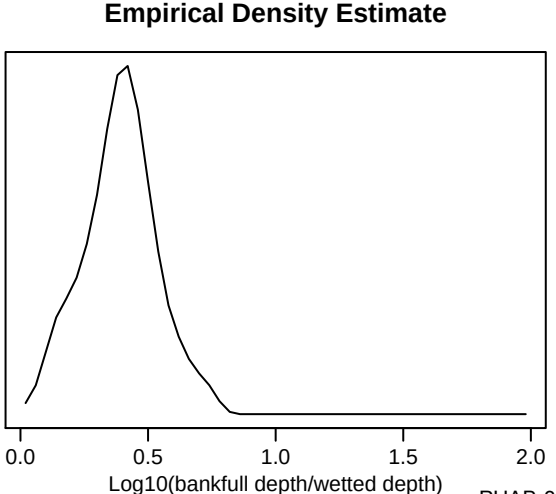
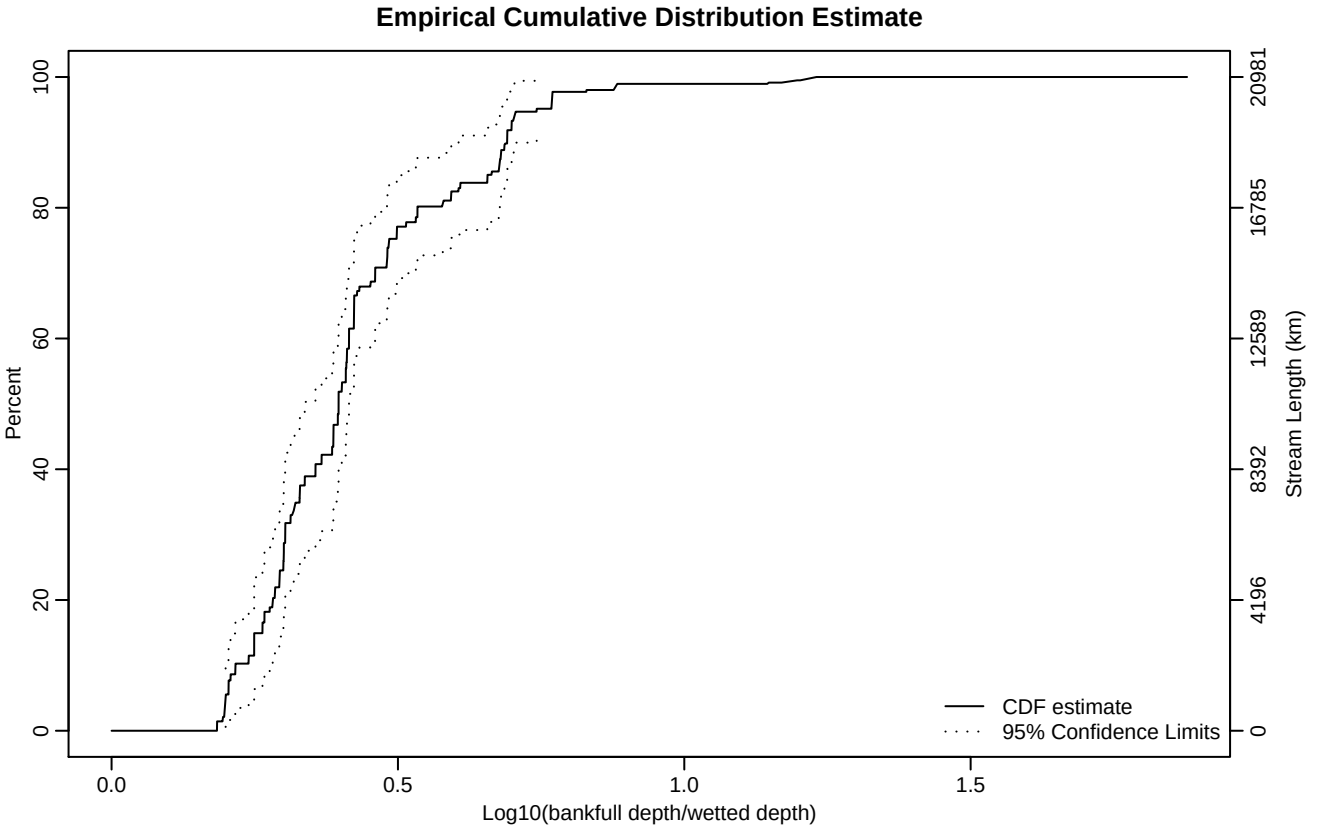


Figure PHAB−306 Indicator: LBFXD_Rat Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.20	0.20	0.21
10Pct	0.22	0.20	0.26
25Pct	0.30	0.25	0.33
50Pct	0.40	0.34	0.42
75Pct	0.48	0.42	0.61
90Pct	0.69	0.61	0.77
95Pct	0.74	0.69	1.22
Mean	0.42	0.39	0.46
Std Dev	0.15	0.13	0.18

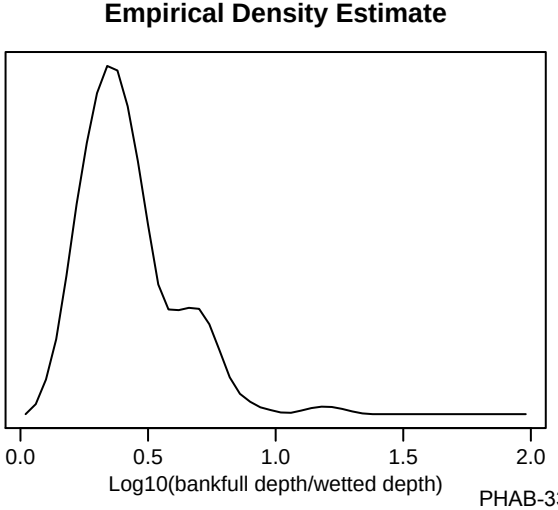
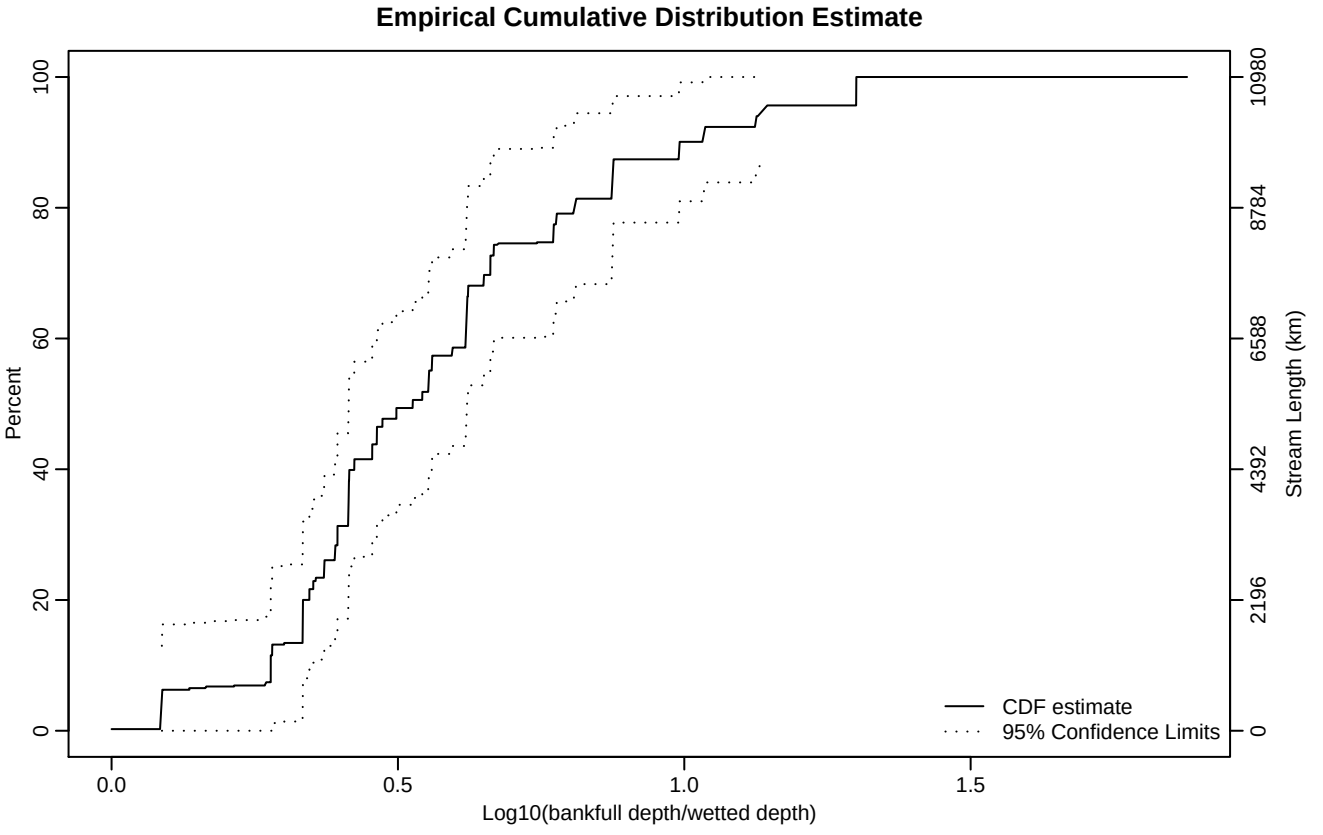


Figure PHAB−307 Indicator: LBFXD_Rat Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.09	0.09
10Pct	0.28	0	0.35
25Pct	0.37	0.28	0.41
50Pct	0.53	0.41	0.62
75Pct	0.77	0.62	0.99
90Pct	0.99	0.81	1.30
95Pct	1.14	0.88	1.30
Mean	0.57	0.47	0.67
Std Dev	0.27	0.21	0.34

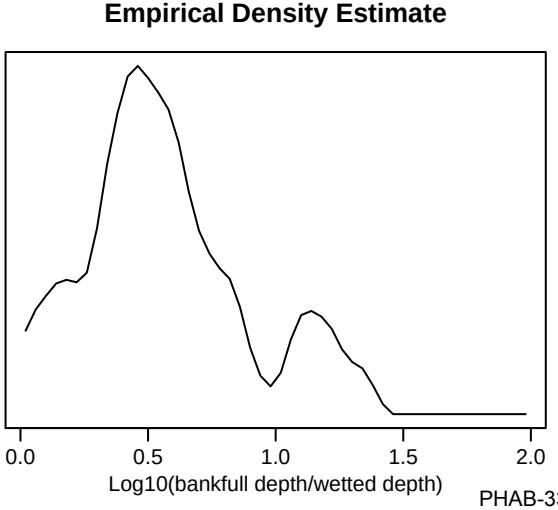
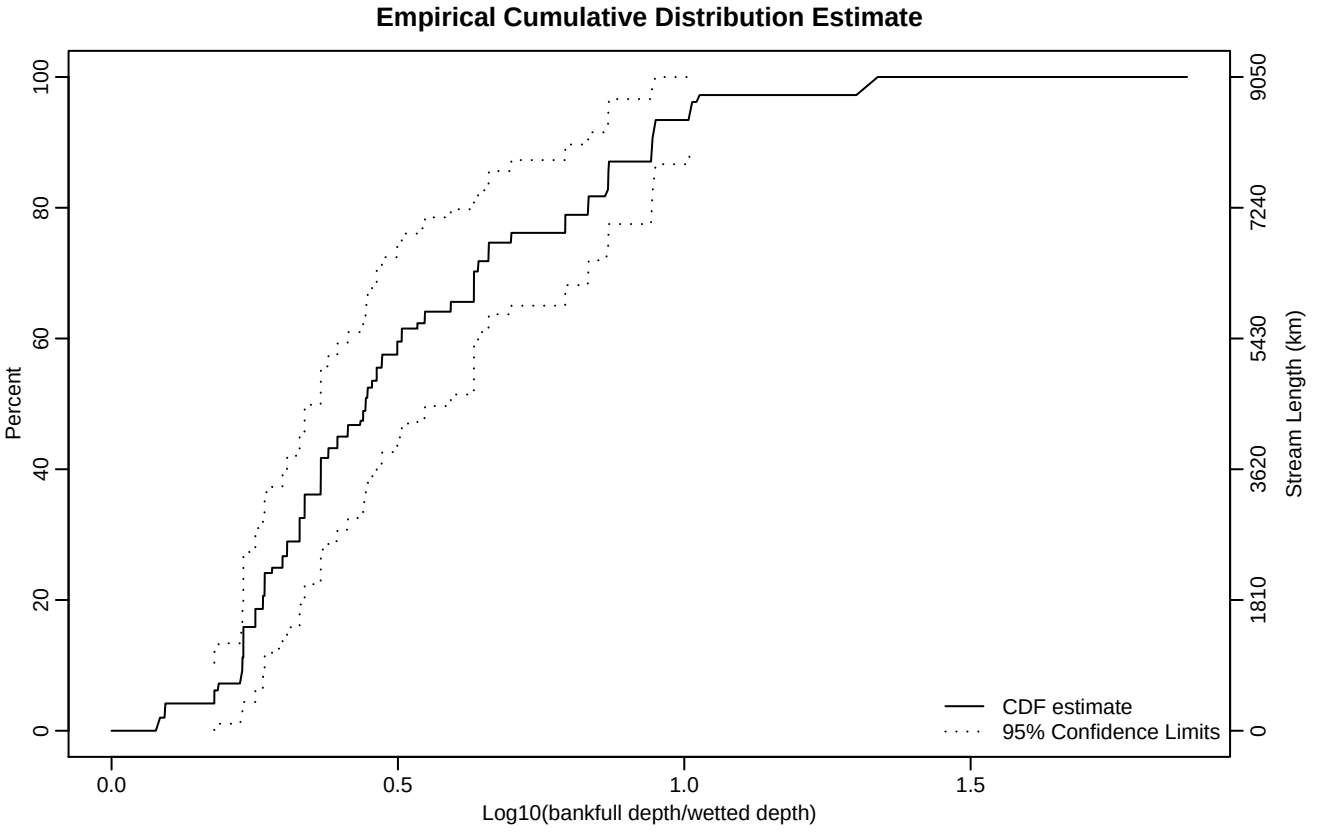


Figure PHAB−308 Indicator: LBFXD_Rat Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.18	0	0.23
10Pct	0.23	0.09	0.25
25Pct	0.30	0.23	0.37
50Pct	0.44	0.36	0.55
75Pct	0.70	0.55	0.87
90Pct	0.94	0.83	1.33
95Pct	1.01	0.94	
Mean	0.52	0.44	0.60
Std Dev	0.28	0.23	0.33

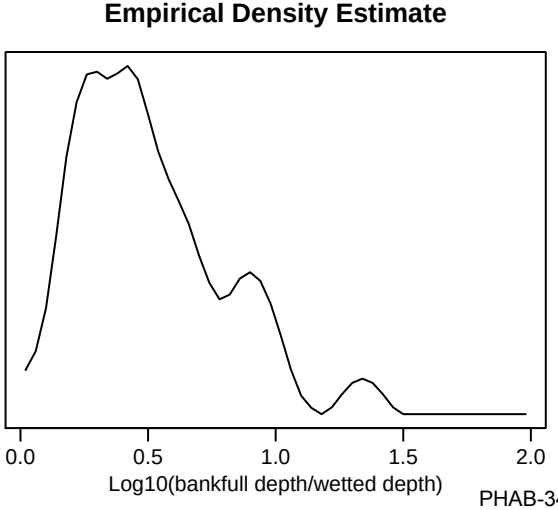
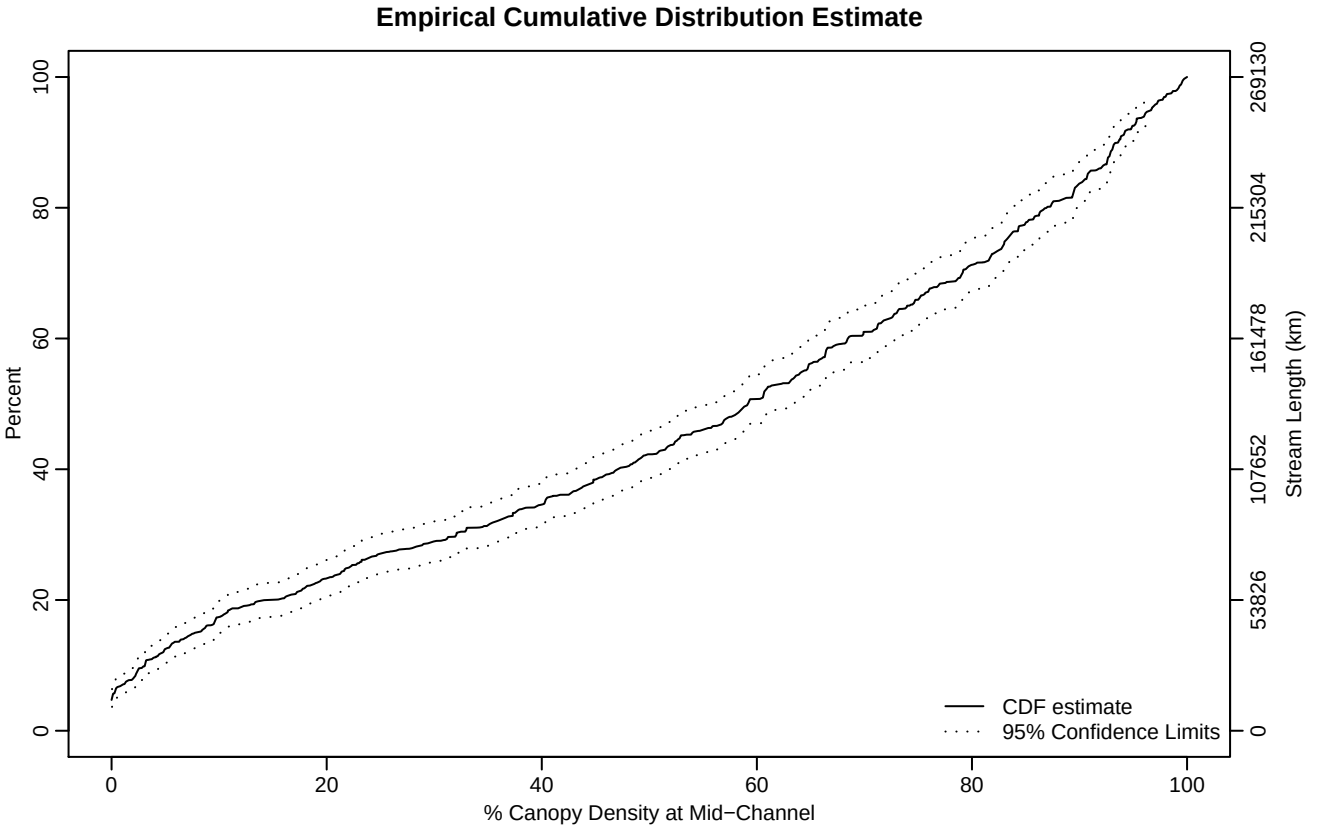


Figure PHAB−309 Indicator: XCDENMID Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0	0.38
10Pct	3.10	2.06	4.67
25Pct	22.11	18.13	27.89
50Pct	59.16	55.22	63.36
75Pct	83.14	79.62	86.26
90Pct	93.59	92.59	95.18
95Pct	96.68	95.26	97.86
Mean	53.46	51.13	55.78
Std Dev	27.90	26.58	29.23

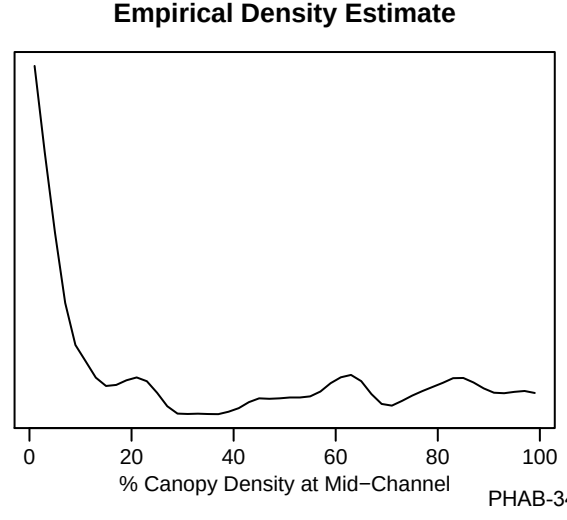
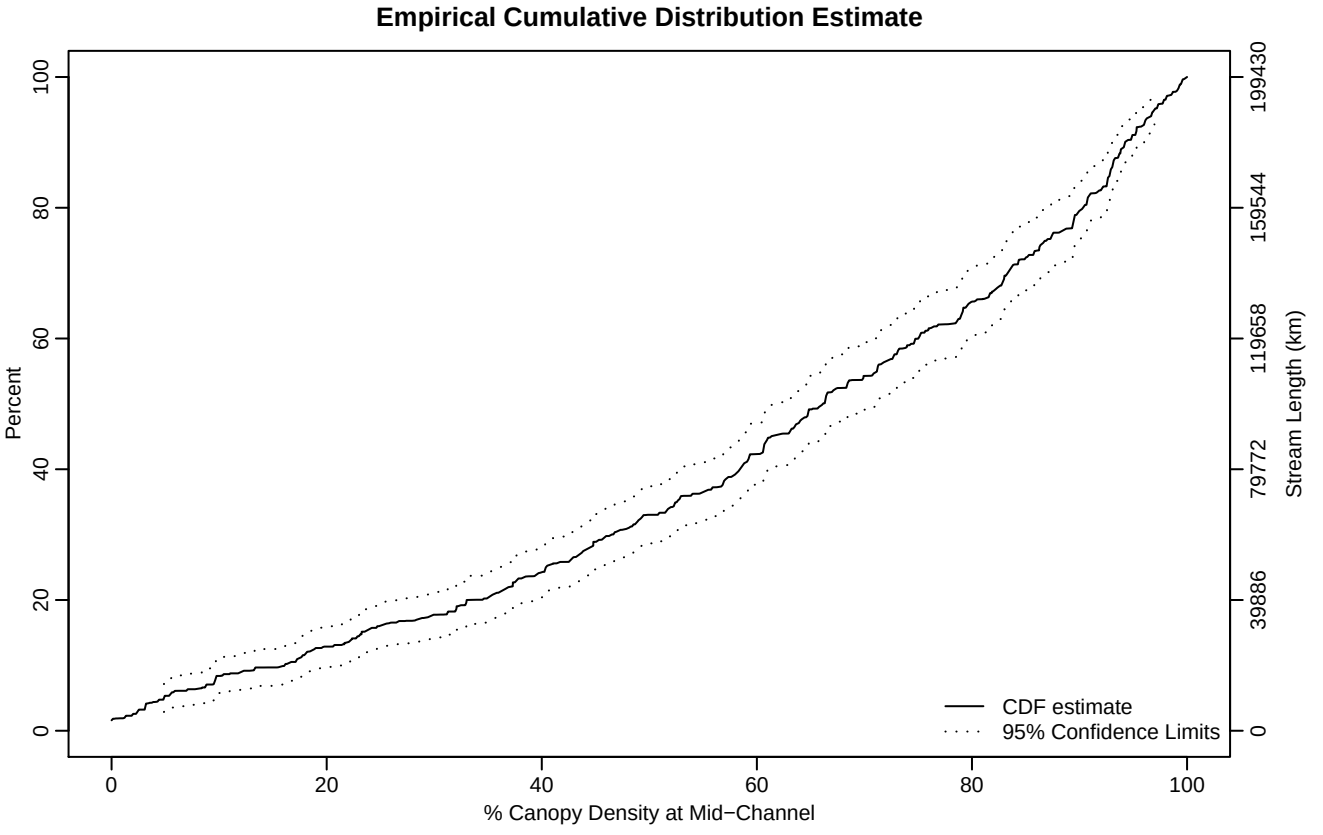


Figure PHAB−310 Indicator: XCDENMID Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.87	2.43	8.81
10Pct	16.08	9.51	19.70
25Pct	40.38	35.78	45.08
50Pct	66.14	61.11	71.18
75Pct	86.93	83.26	90.39
90Pct	94.24	93.09	96.15
95Pct	96.97	95.91	98.58
Mean	61.33	58.56	64.10
Std Dev	26.05	24.40	27.71

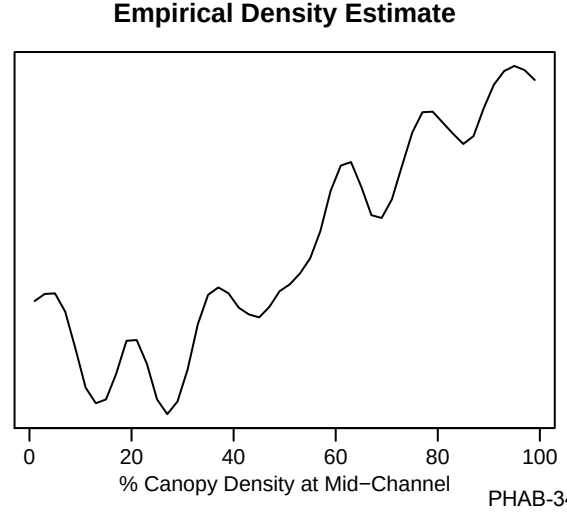
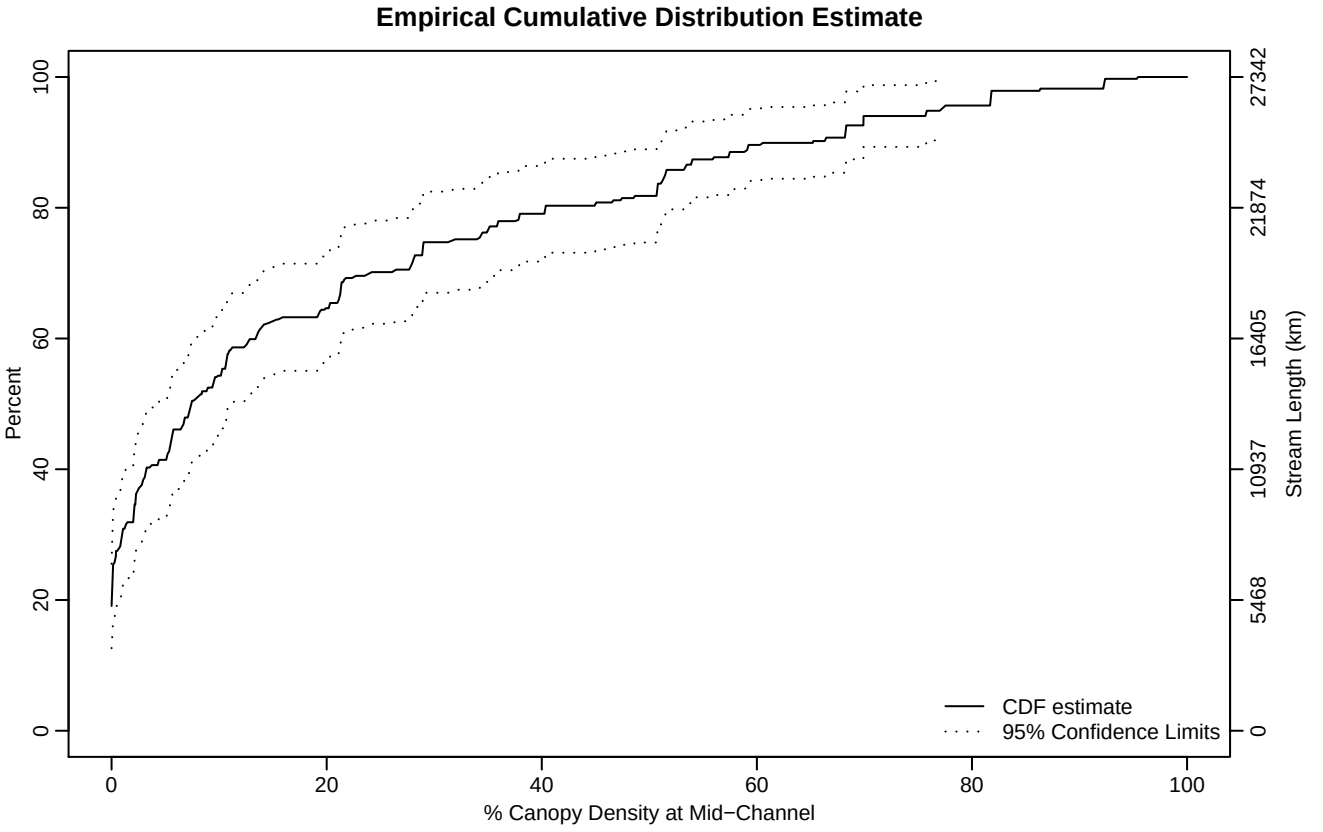


Figure PHAB−311 Indicator: XCDENMID Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.13	0	2.08
50Pct	7.41	4.30	12.61
75Pct	31.69	21.29	50.73
90Pct	65.21	51.34	77.44
95Pct	77.12	66.38	92.36
Mean	20.05	15.33	24.77
Std Dev	23.78	20.88	26.68

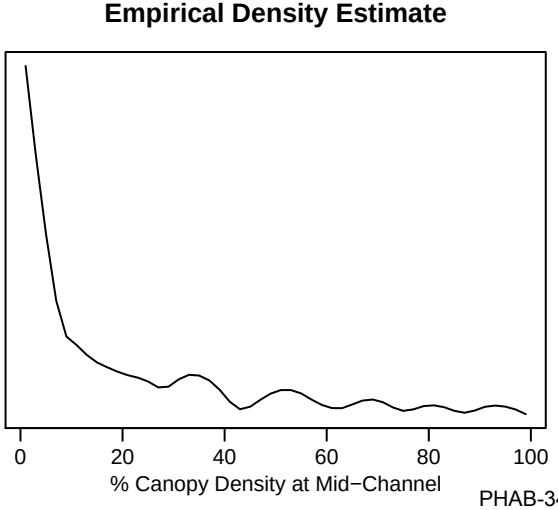
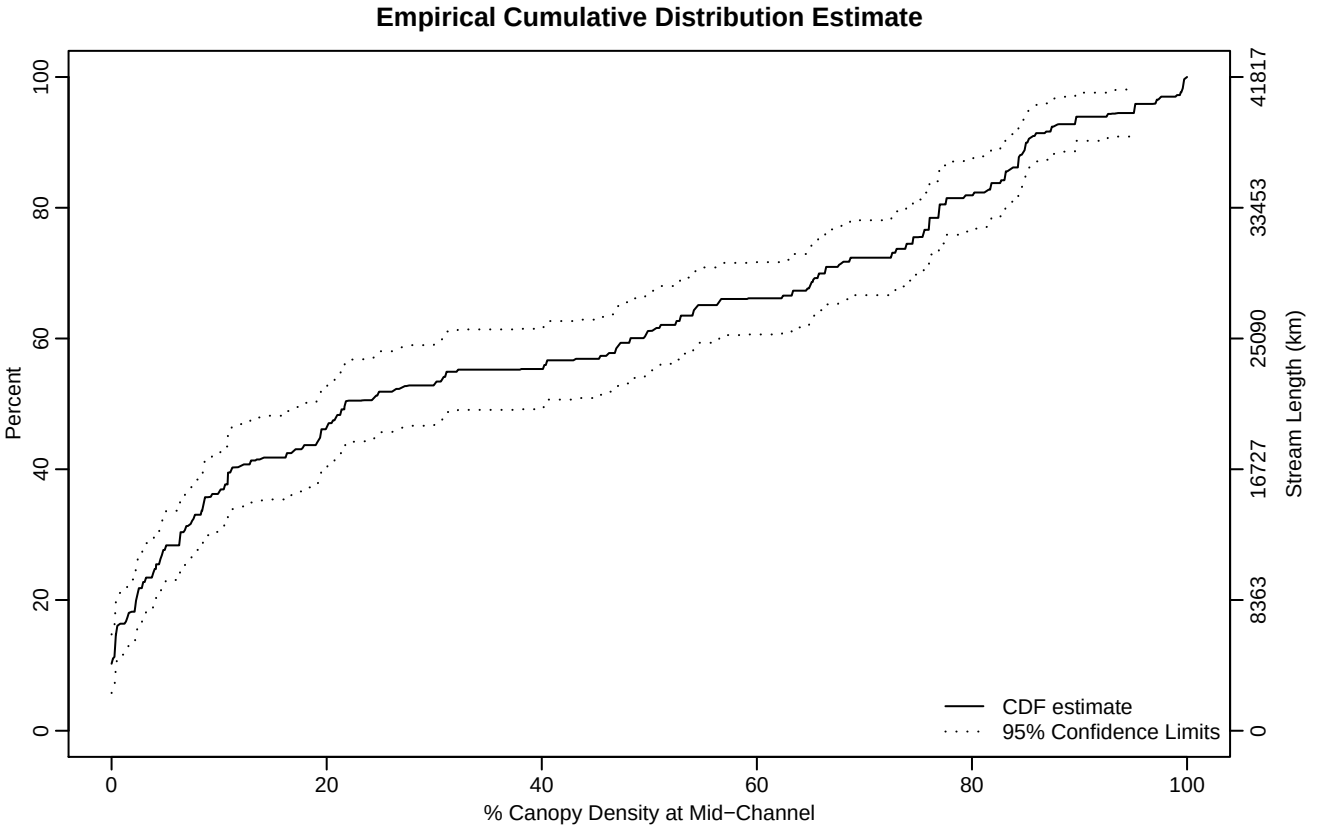


Figure PHAB−312 Indicator: XCDENMID Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.39
25Pct	4.13	2.21	6.86
50Pct	21.72	17.76	43.03
75Pct	74.51	65.22	77.61
90Pct	85.16	83.13	95.07
95Pct	95.10	85.93	99.64
Mean	37.53	33.49	41.57
Std Dev	26.59	23.95	29.24

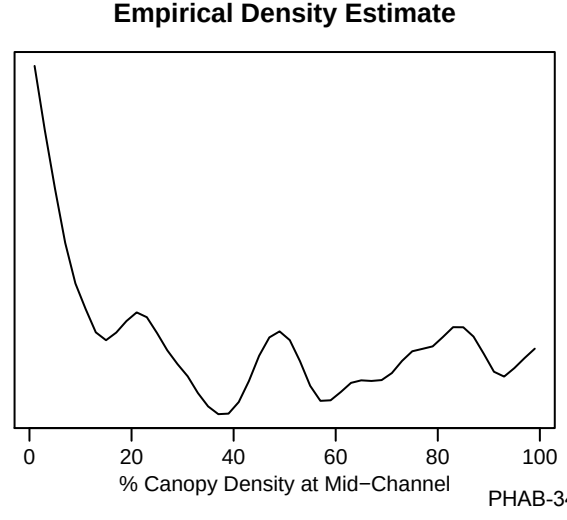
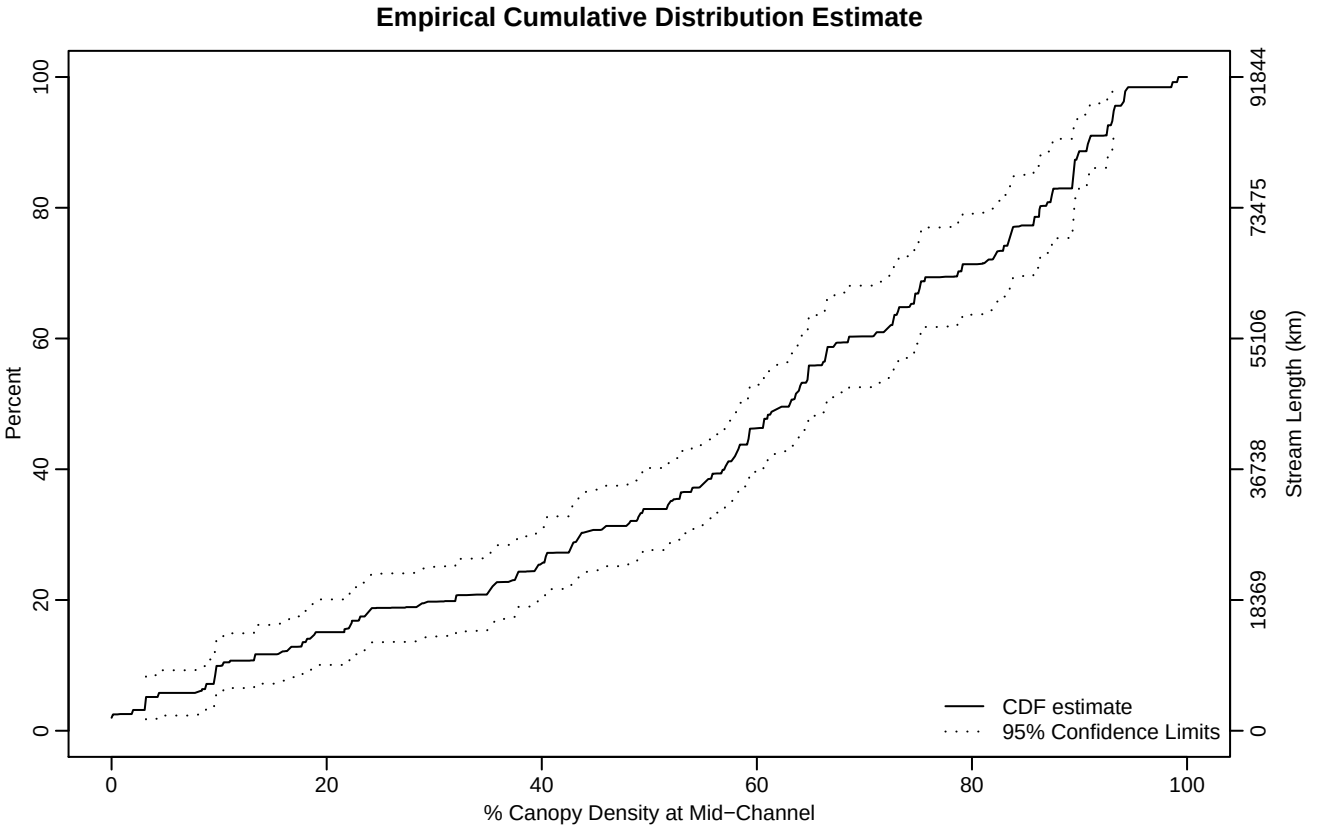


Figure PHAB−313 Indicator: XCDENMID Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	3.20	1.88	9.52
10Pct	10.31	7.89	18.49
25Pct	39.55	28.64	45.56
50Pct	63.07	58.17	66.41
75Pct	83.44	75.01	89.31
90Pct	90.83	89.40	93.29
95Pct	93.21	92.53	98.59
Mean	58.12	54.23	62.02
Std Dev	23.51	21.16	25.85

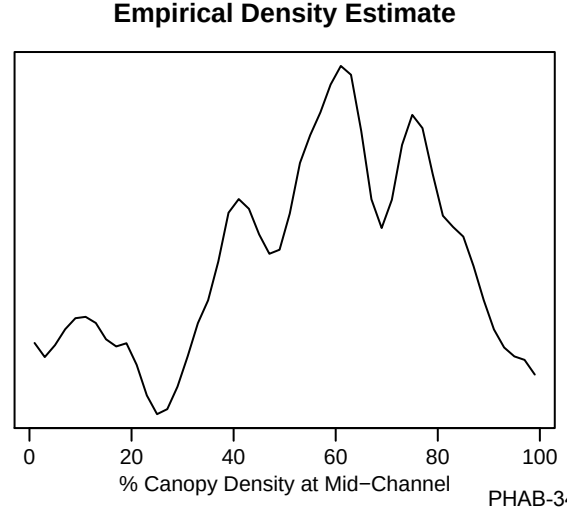
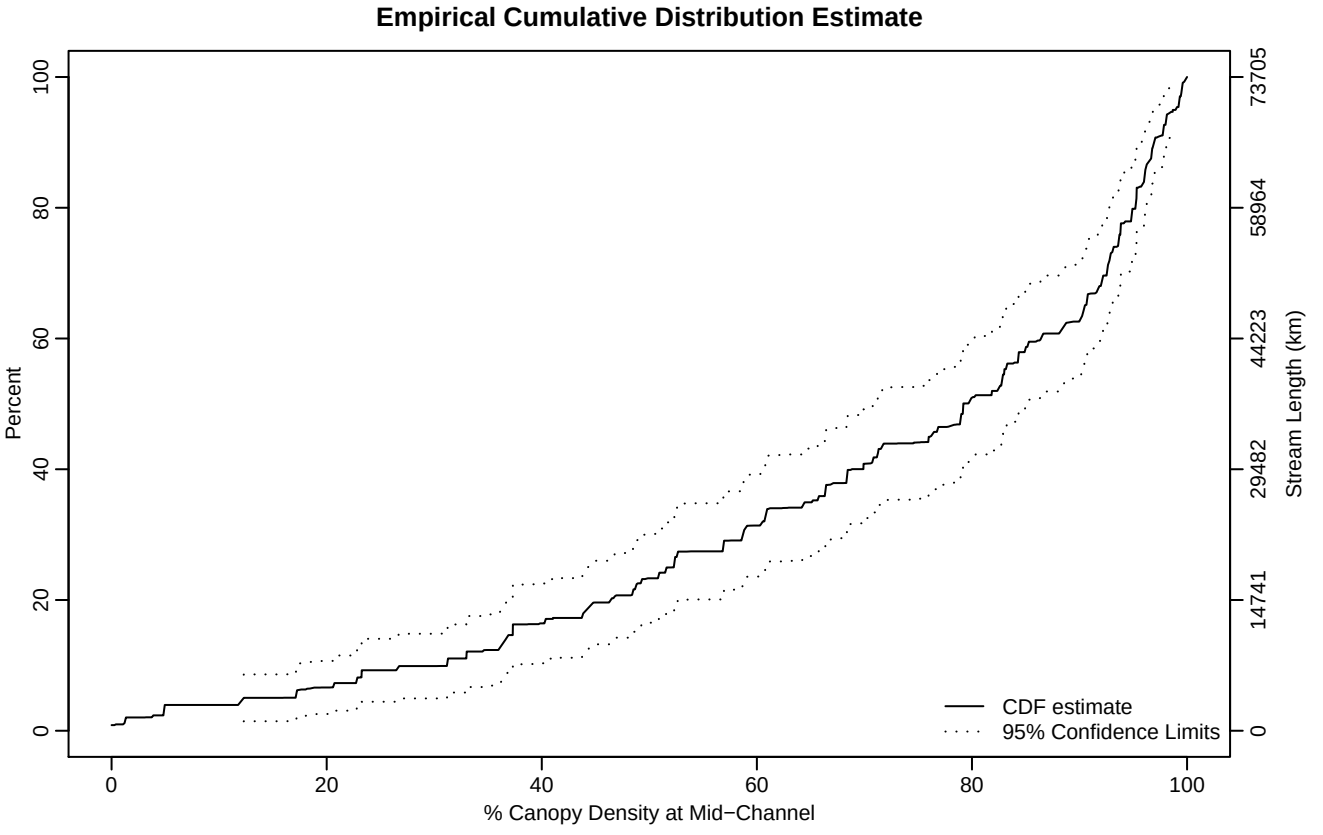


Figure PHAB−314 Indicator: XCDENMID Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	12.28	1.32	22.85
10Pct	31.18	17.12	37.30
25Pct	52.27	43.99	60.47
50Pct	79.20	70.74	85.18
75Pct	93.65	91.58	95.32
90Pct	96.93	96.03	99.21
95Pct	98.94	97.74	99.57
Mean	70.52	65.91	75.13
Std Dev	26.86	23.84	29.89

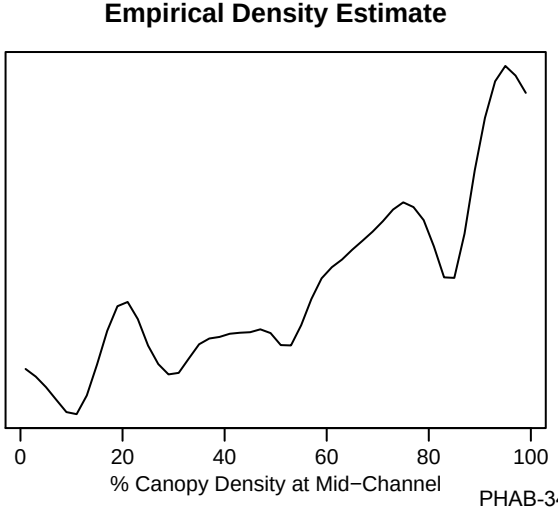
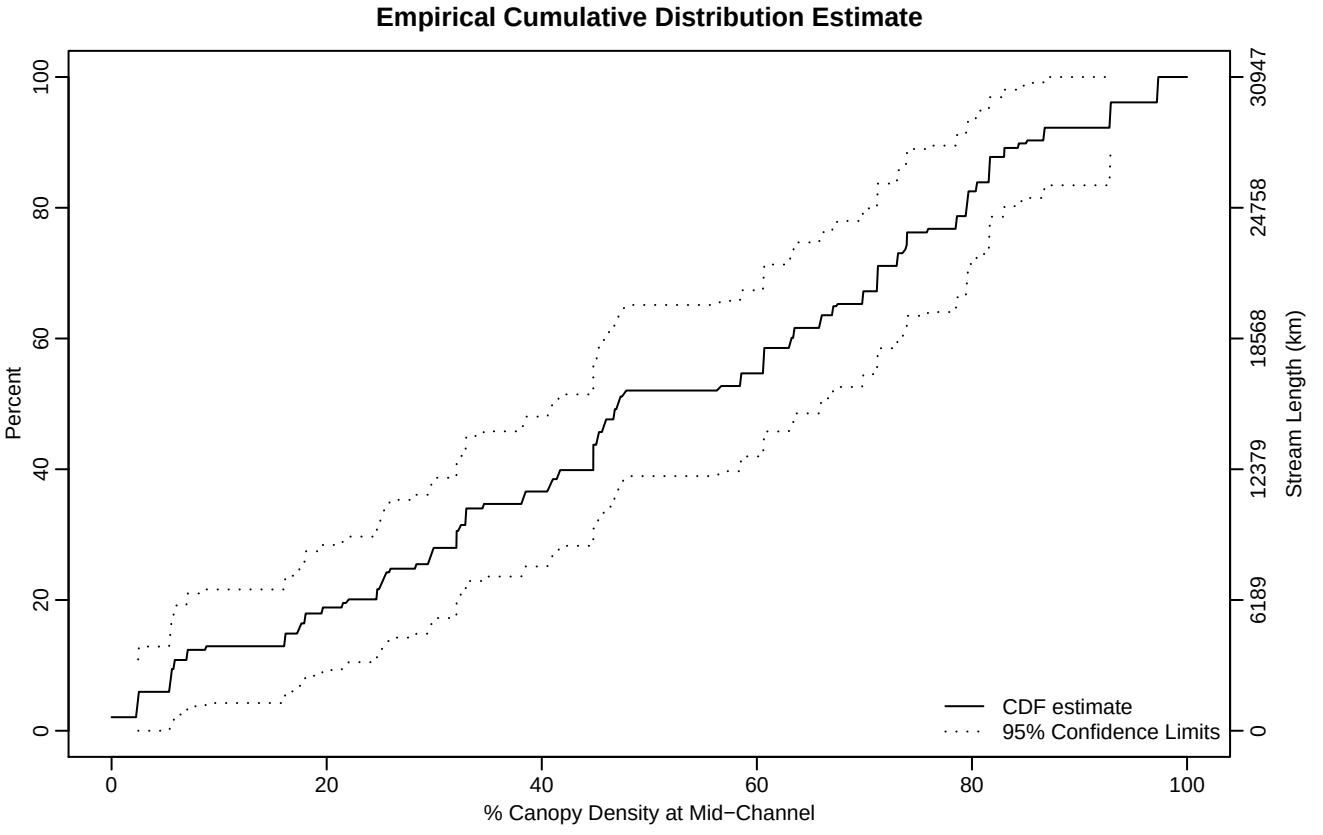


Figure PHAB−315 Indicator: XCDENMID Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.47	2.28	5.49
10Pct	5.80	0	19.54
25Pct	28.25	16.15	38.29
50Pct	47.09	40.56	66
75Pct	73.95	65.85	82.98
90Pct	85.07	79.58	97.29
95Pct	92.88	81.62	
Mean	50.45	42.75	58.14
Std Dev	28.26	24.93	31.59

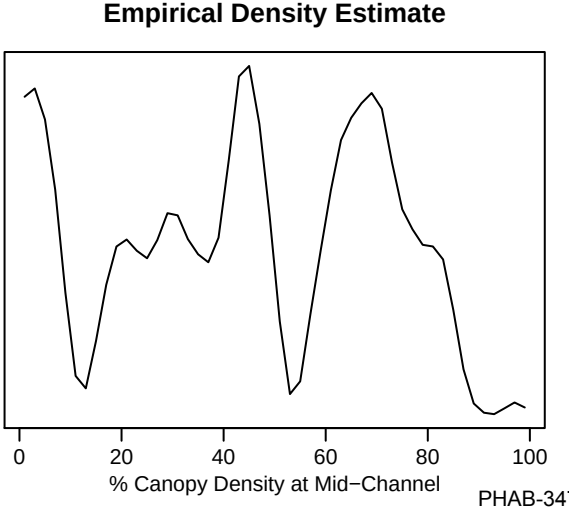
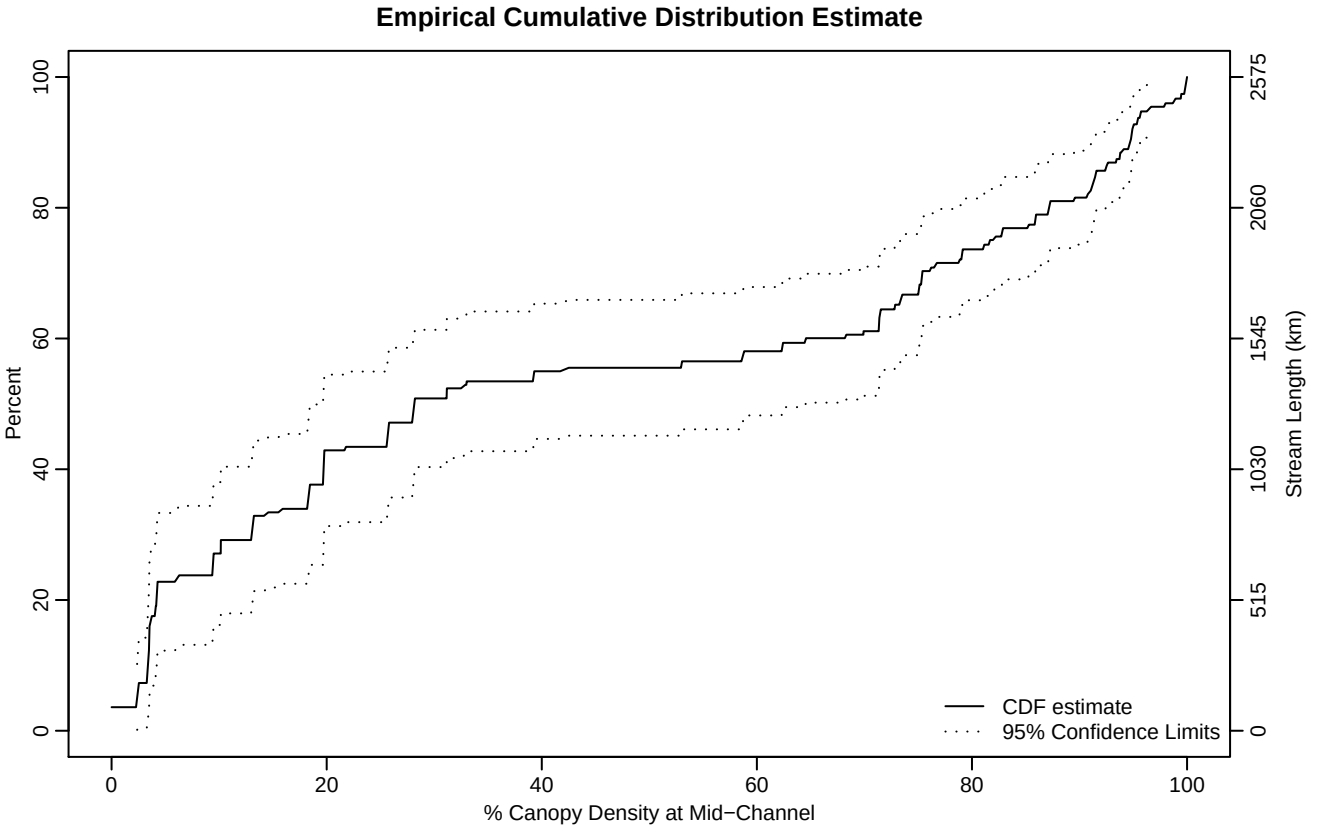


Figure PHAB−316 Indicator: XCDENMID Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	2.37	0	3.35
10Pct	3.38	0	3.66
25Pct	9.41	3.50	18.31
50Pct	28.15	19.66	71.35
75Pct	81.67	75.01	91.15
90Pct	94.70	91.32	97.99
95Pct	96.41	94.83	99.90
Mean	44.47	37.15	51.80
Std Dev	32.99	29.02	36.95

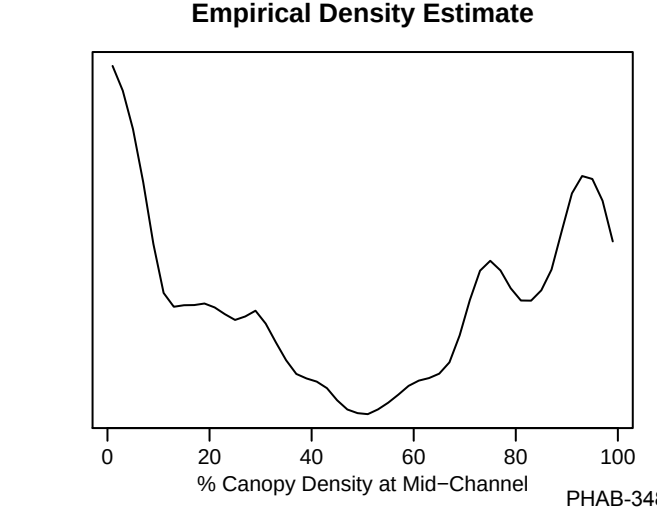
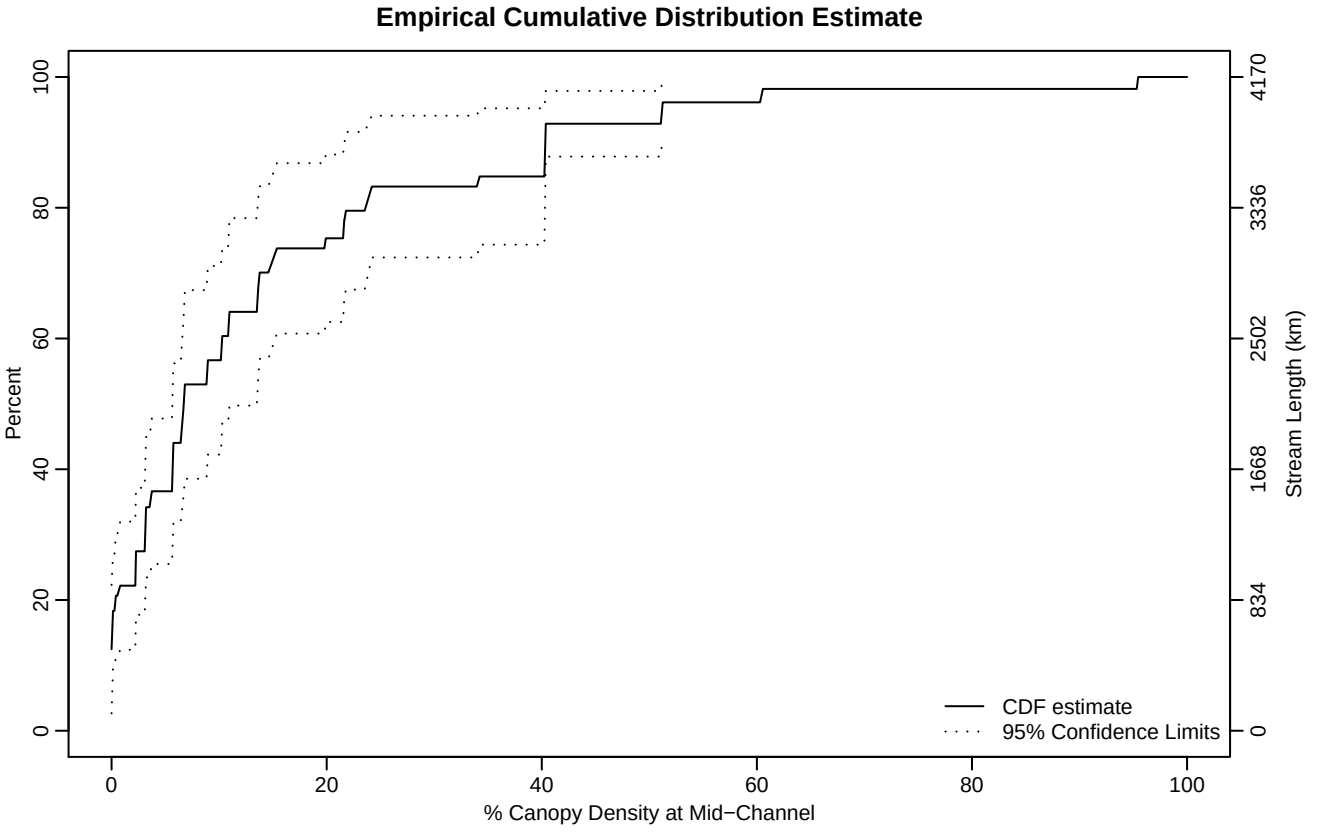


Figure PHAB−317 Indicator: XCDENMID Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.05
10Pct	0	0	0.34
25Pct	2.24	0.05	3.64
50Pct	6.71	5.62	10.93
75Pct	19.89	10.88	40.30
90Pct	40.33	21.72	95.45
95Pct	51.18	40.31	95.45
Mean	14.55	9.89	19.22
Std Dev	14.05	9.40	18.69

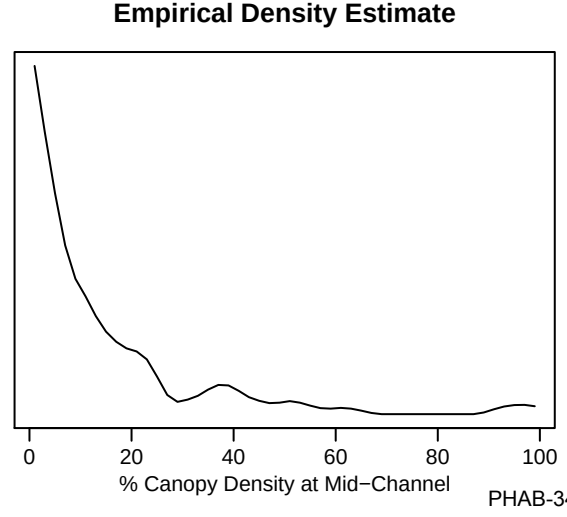
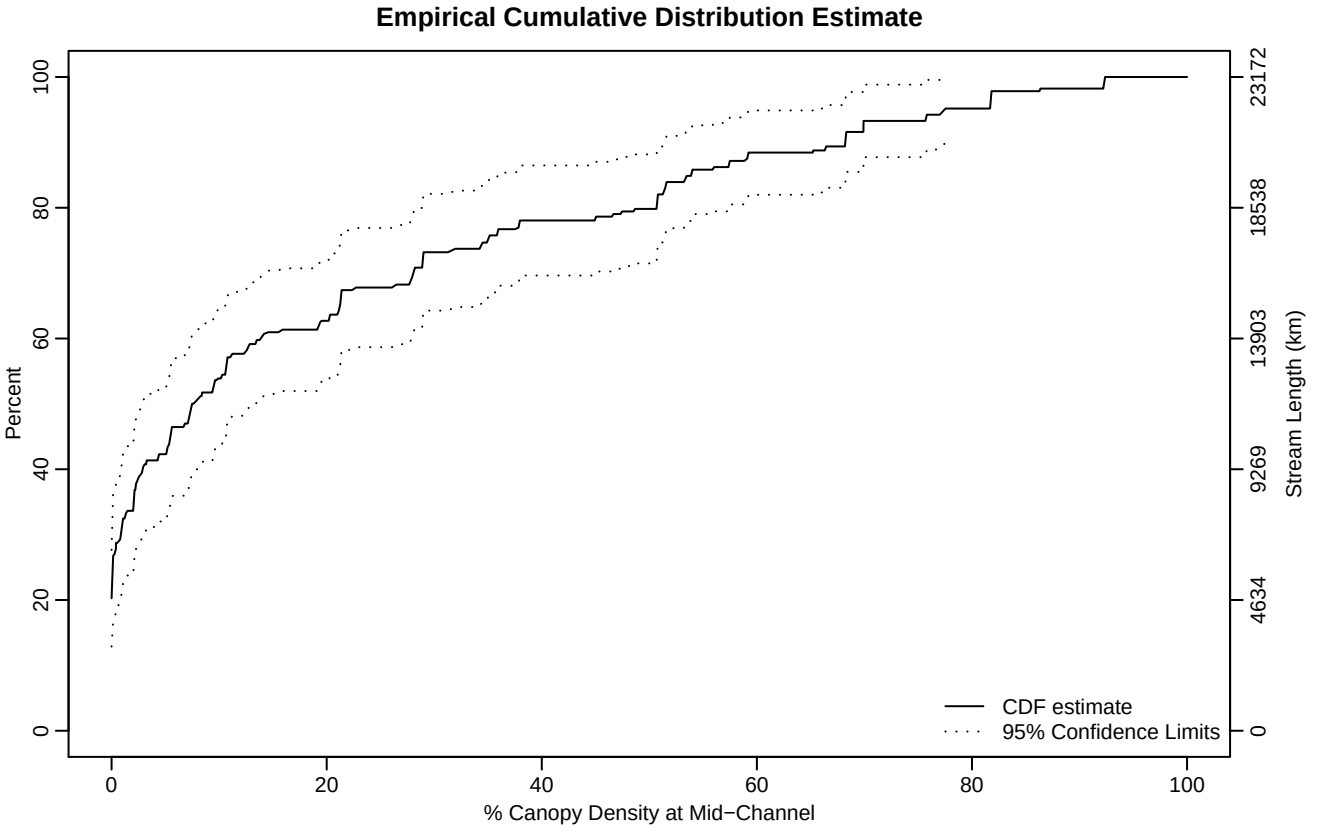


Figure PHAB−318 Indicator: XCDENMID Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.11	0	1.07
50Pct	7.48	2.80	14.12
75Pct	34.97	21.31	51.59
90Pct	68.22	51.57	81.74
95Pct	77.44	68.20	92.38
Mean	21.04	15.53	26.55
Std Dev	24.60	21.37	27.83

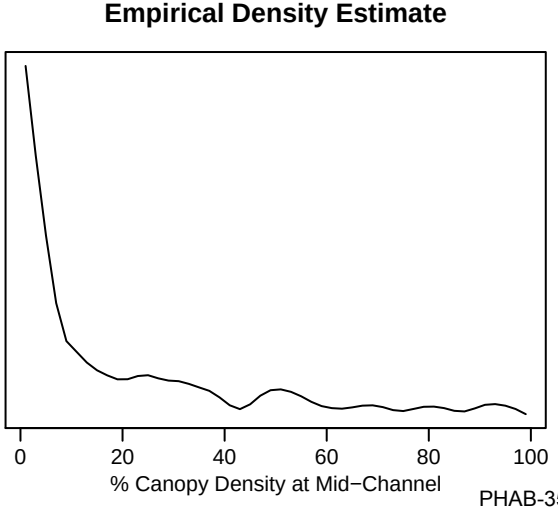
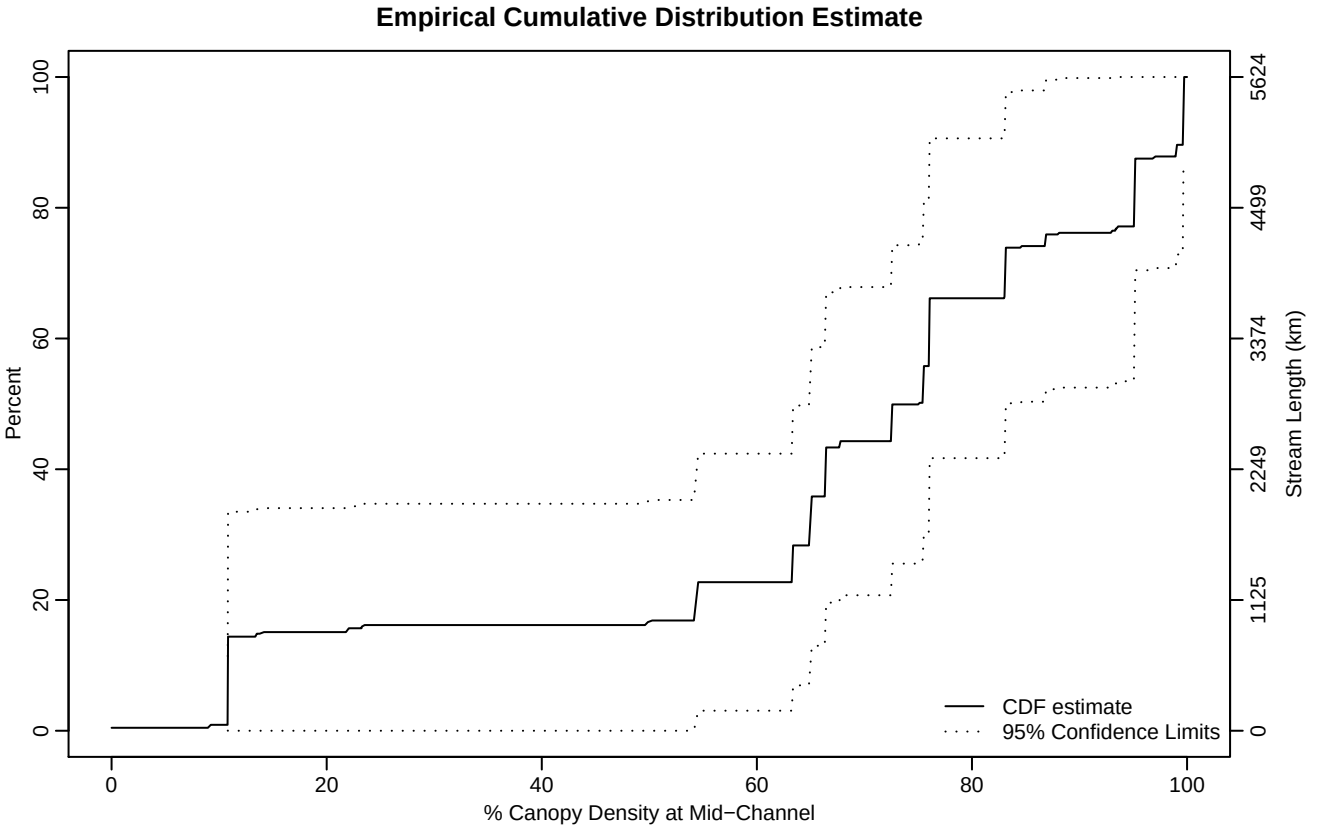


Figure PHAB−319 Indicator: XCDENMID Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.80	10.79	10.80
10Pct	10.81	10.81	10.82
25Pct	63.29	10.80	72.46
50Pct	75.05	63.30	86.78
75Pct	86.83	75.43	99.72
90Pct	99.60	83.14	99.73
95Pct	99.67	95.06	99.73
Mean	67.48	53.02	81.94
Std Dev	27.91	17.82	38

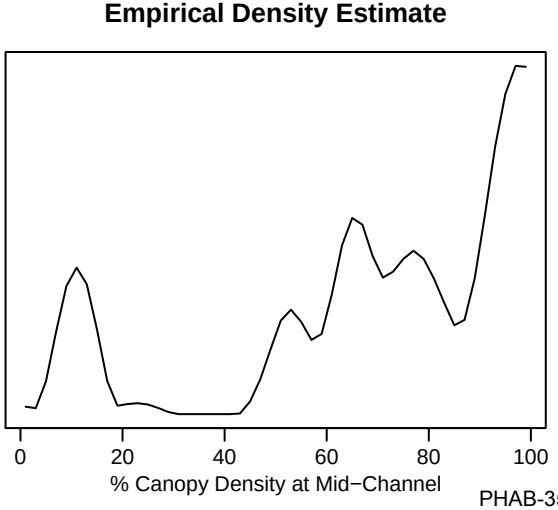
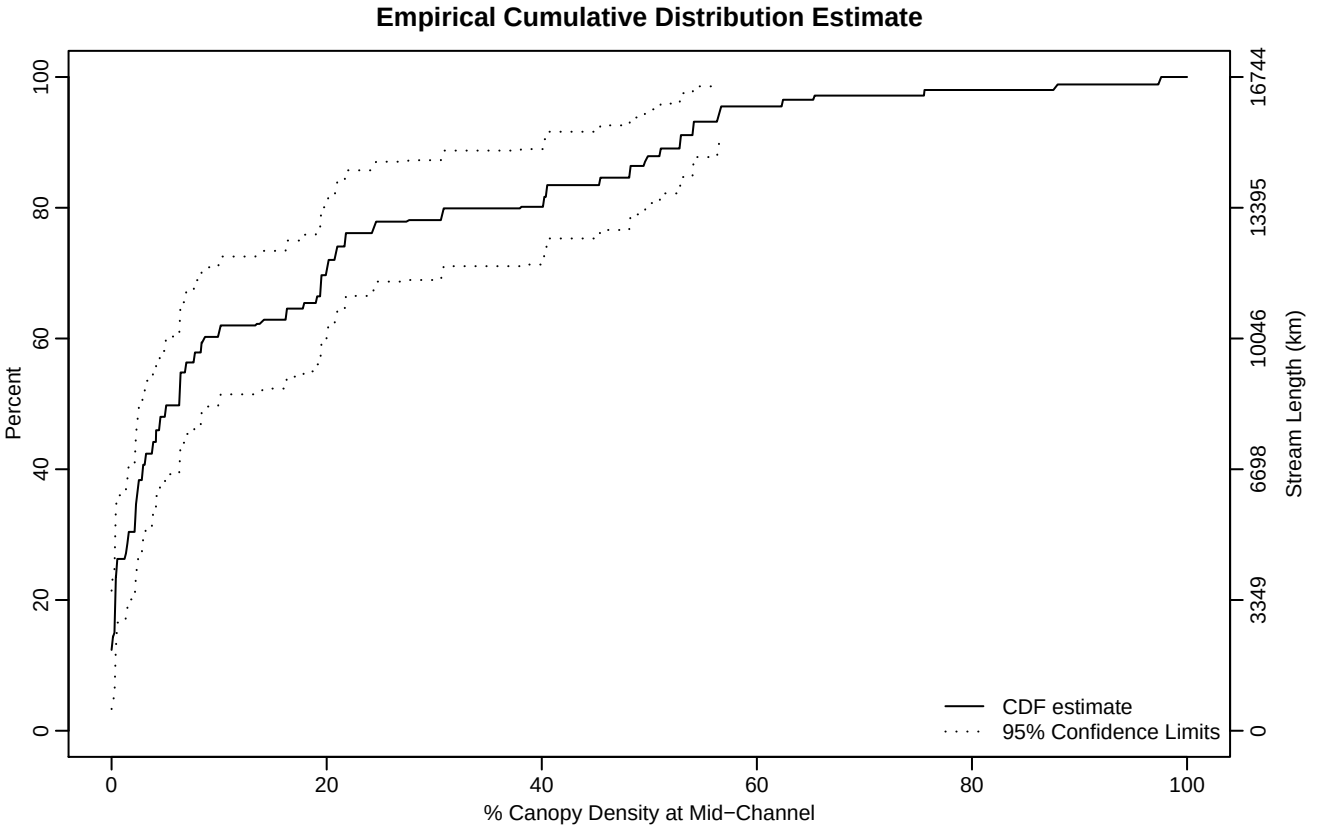


Figure PHAB−320 Indicator: XCDENMID Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.13
10Pct	0	0	0.33
25Pct	0.48	0.04	2.44
50Pct	6.29	2.83	10.03
75Pct	21.72	17.85	48.16
90Pct	52.87	40.49	65.31
95Pct	56.60	52.85	97.59
Mean	16.70	12.16	21.23
Std Dev	21.11	17.33	24.90

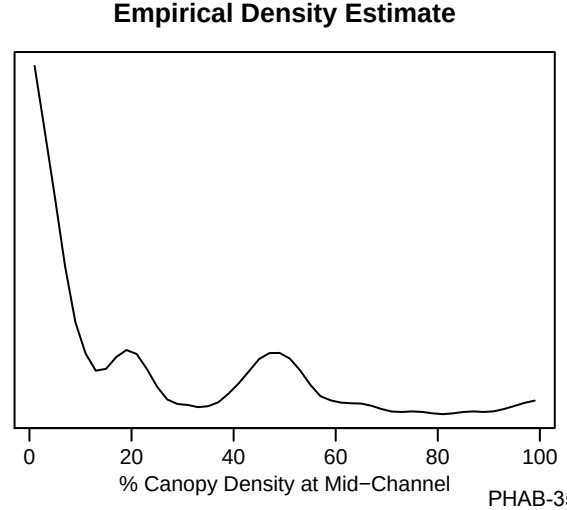
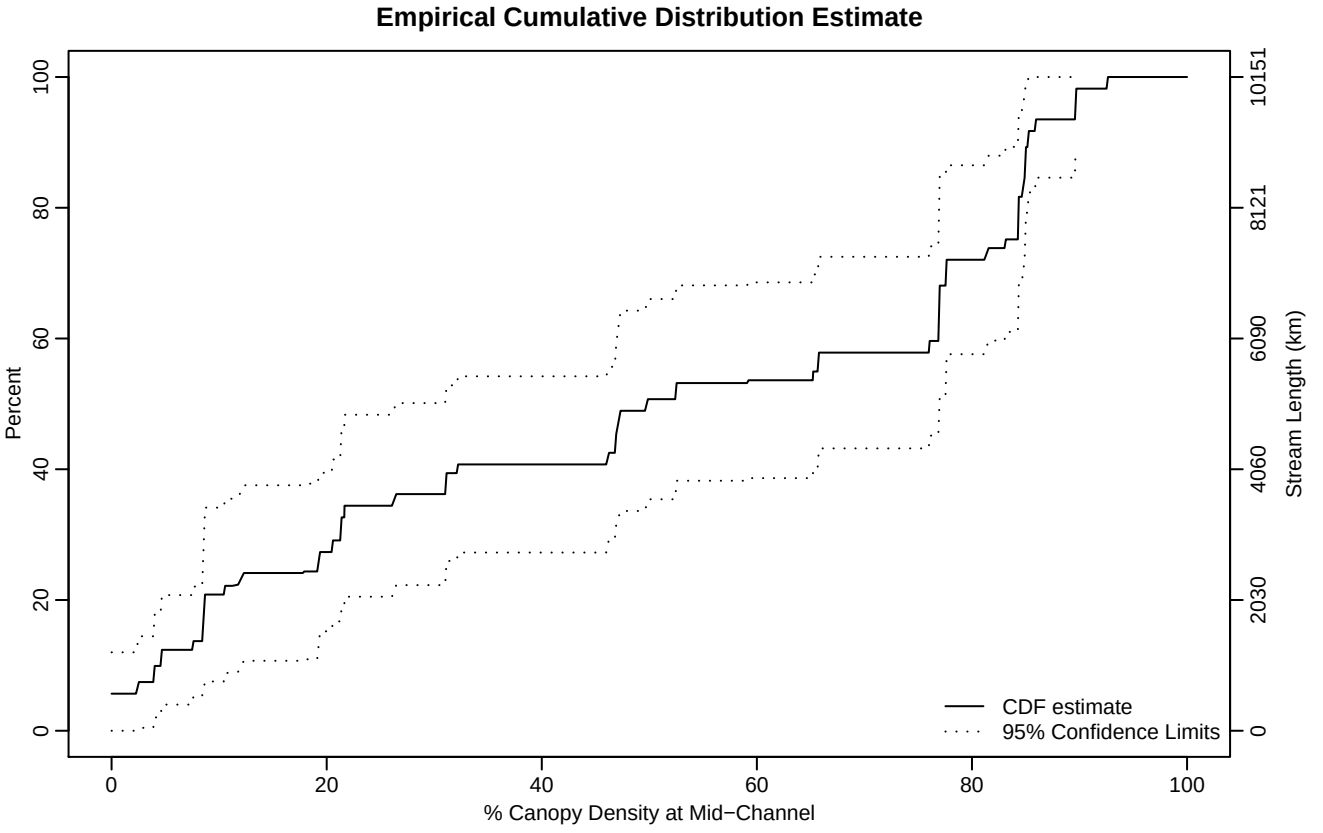


Figure PHAB−321 Indicator: XCDENMID Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	4.63
10Pct	4.55	0	8.59
25Pct	19.17	4.01	32.16
50Pct	49.76	21.64	76.99
75Pct	83.14	76.89	85.03
90Pct	85.19	84.33	92.65
95Pct	89.61	84.94	92.65
Mean	49.41	40.07	58.75
Std Dev	27.14	22.20	32.08

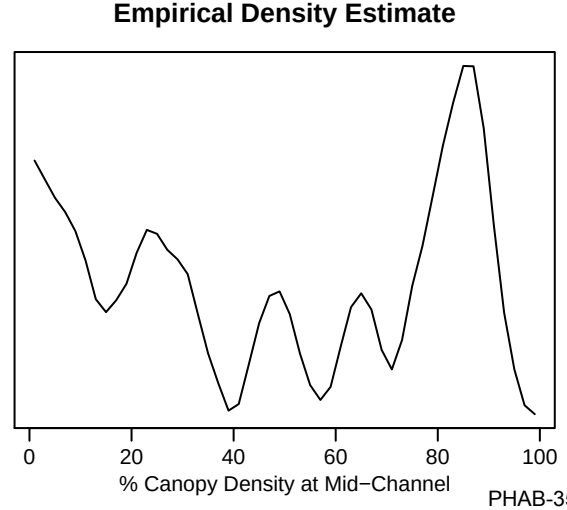
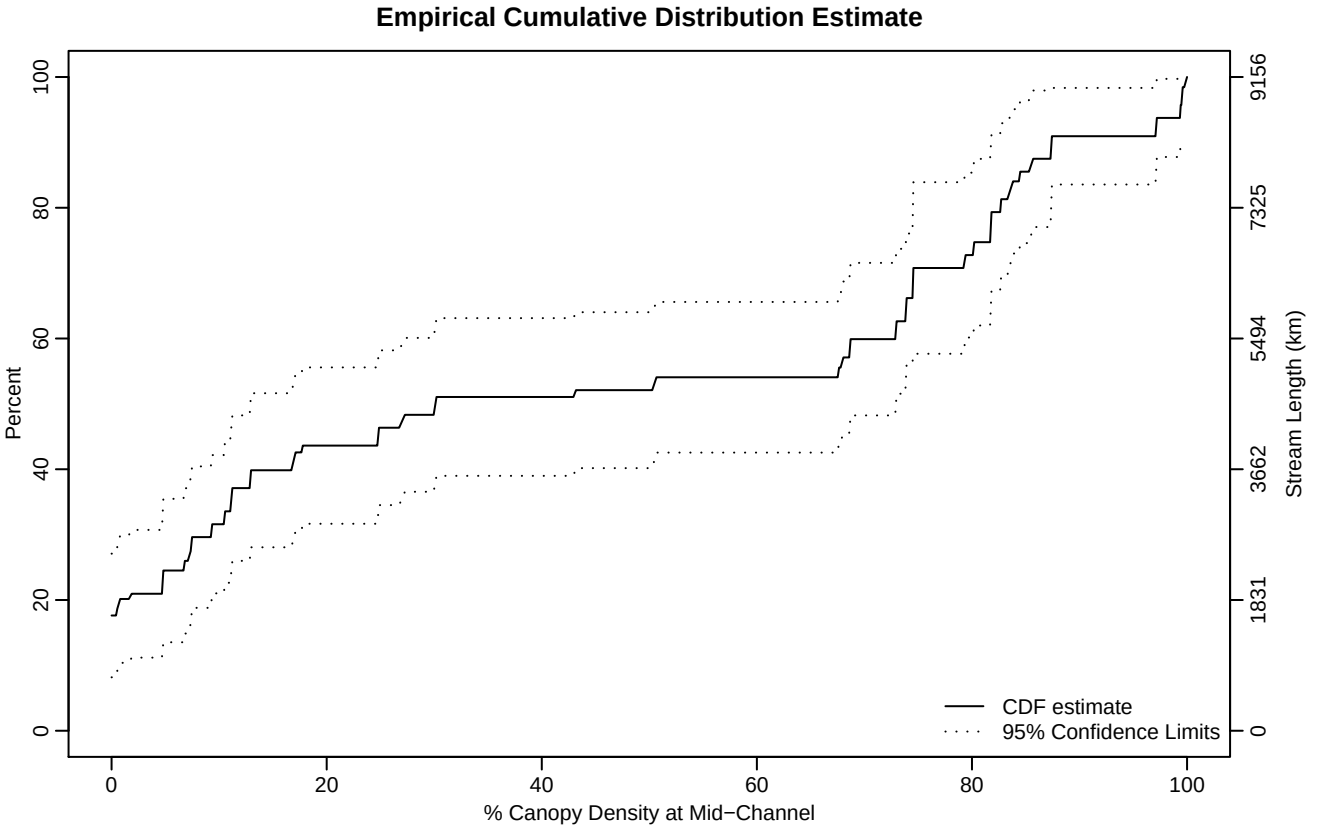


Figure PHAB−322 Indicator: XCDENMID Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.69
25Pct	6.73	0	11.16
50Pct	30.11	12.89	72.96
75Pct	81.69	72.99	87.30
90Pct	87.40	82.64	100
95Pct	99.38	87.36	100
Mean	43.65	34.85	52.44
Std Dev	32.02	29.06	34.99

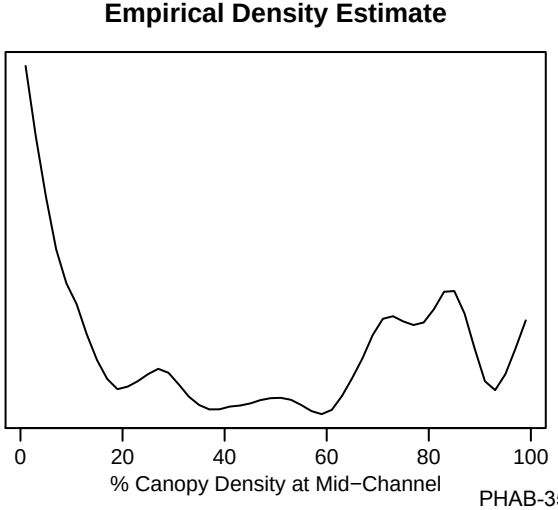
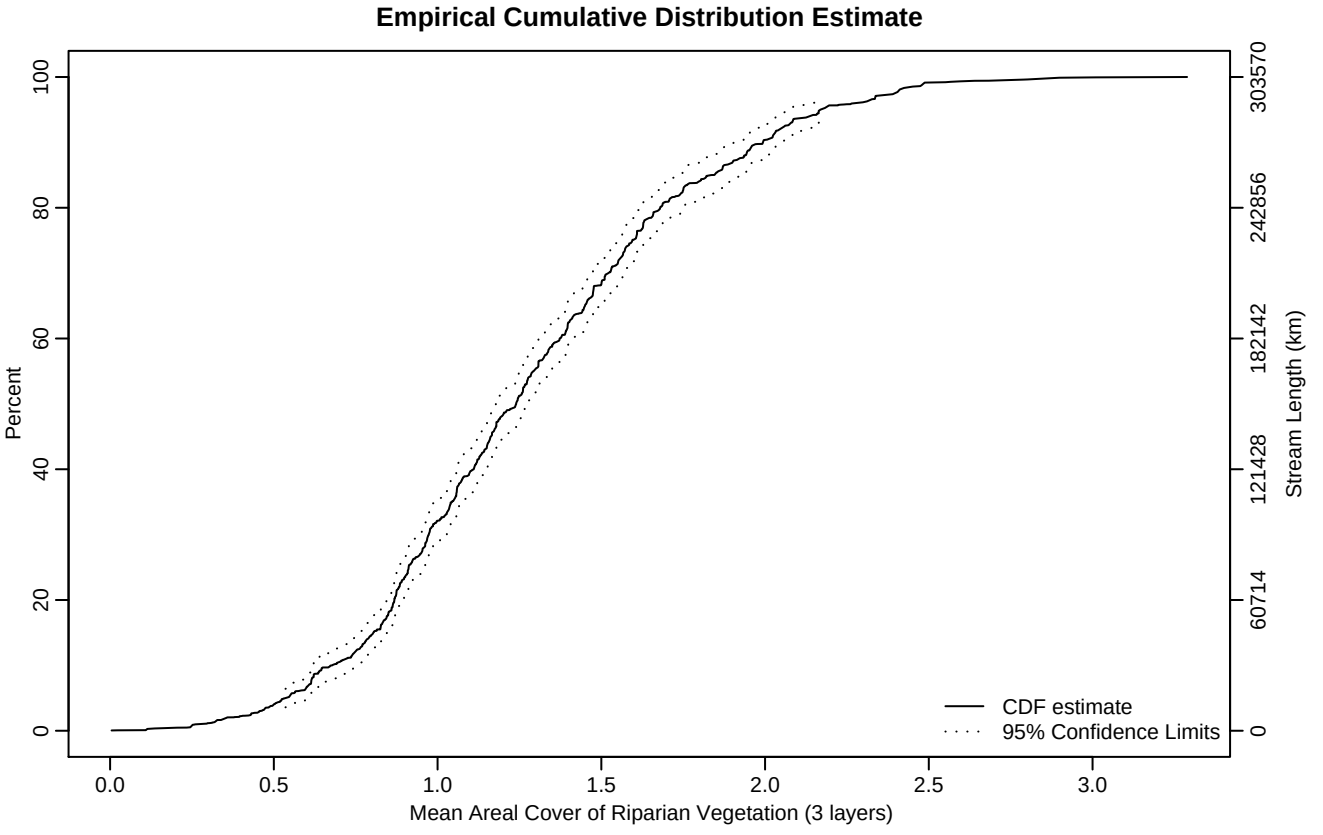


Figure PHAB−323 Indicator: XCMG Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.54	0.48	0.60
10Pct	0.68	0.62	0.75
25Pct	0.91	0.88	0.96
50Pct	1.24	1.18	1.27
75Pct	1.59	1.55	1.64
90Pct	1.99	1.92	2.06
95Pct	2.17	2.08	2.34
Mean	1.29	1.25	1.32
Std Dev	0.44	0.41	0.47

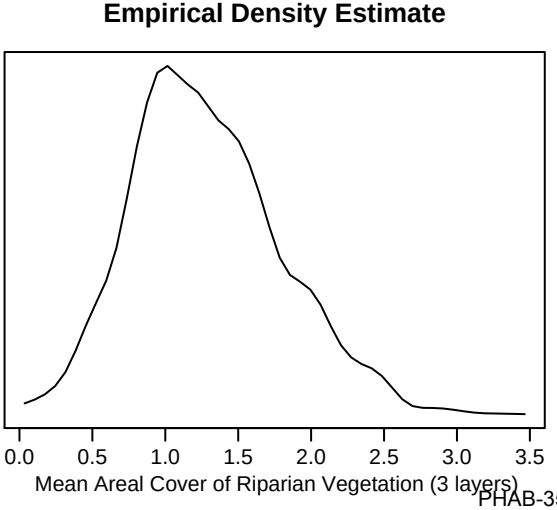
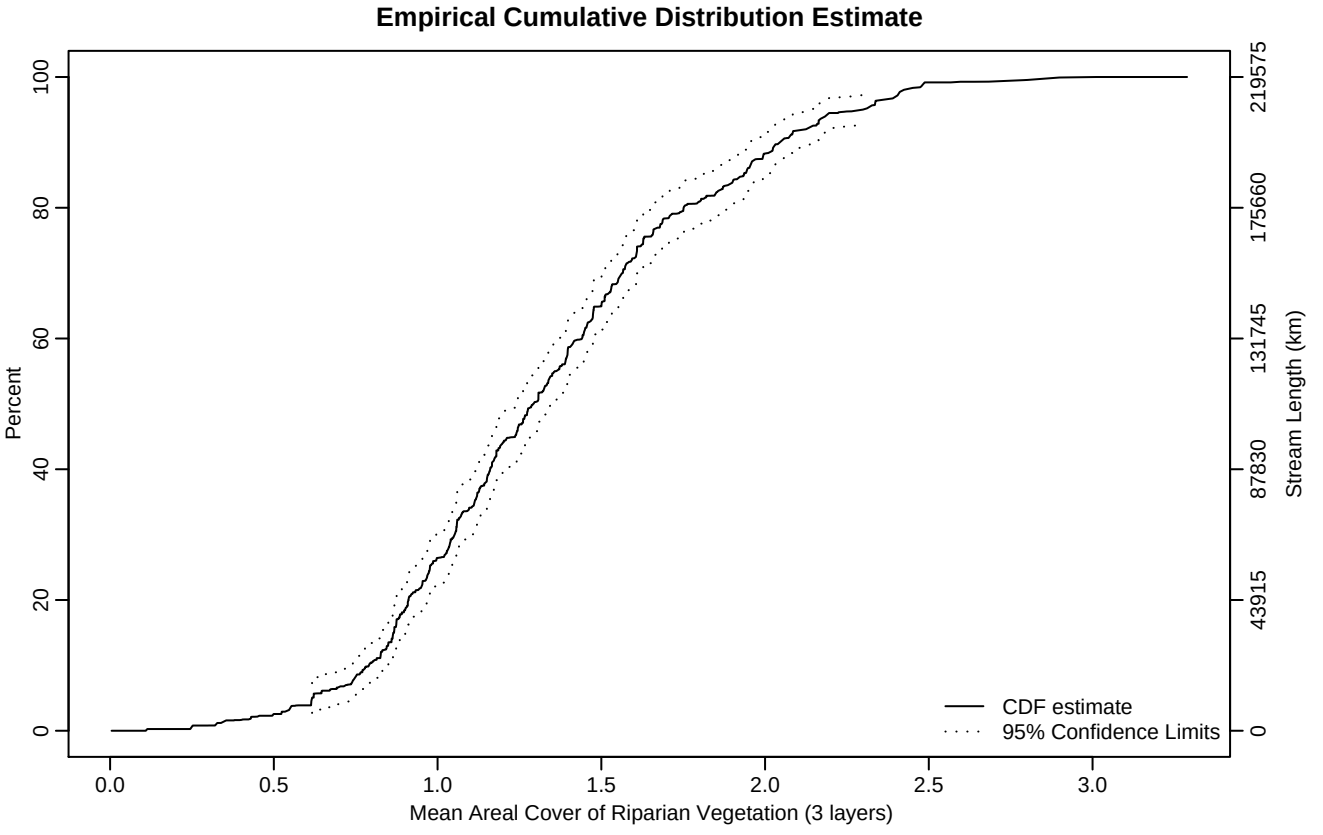


Figure PHAB−324 Indicator: XCMG Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.62	0.52	0.74
10Pct	0.79	0.73	0.84
25Pct	0.98	0.92	1.04
50Pct	1.29	1.24	1.35
75Pct	1.63	1.57	1.73
90Pct	2.04	1.96	2.16
95Pct	2.30	2.16	2.41
Mean	1.35	1.31	1.39
Std Dev	0.44	0.40	0.47

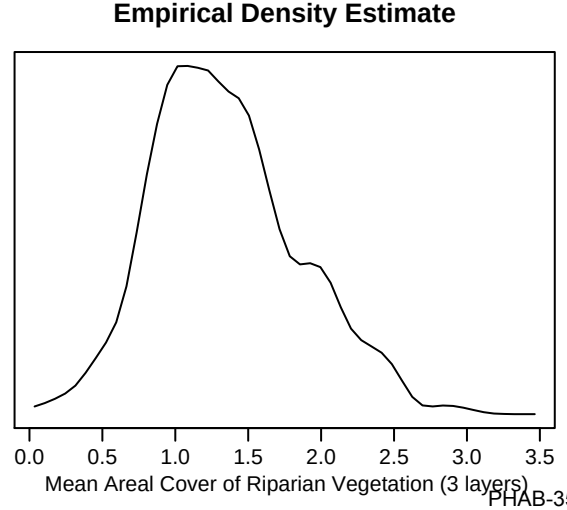
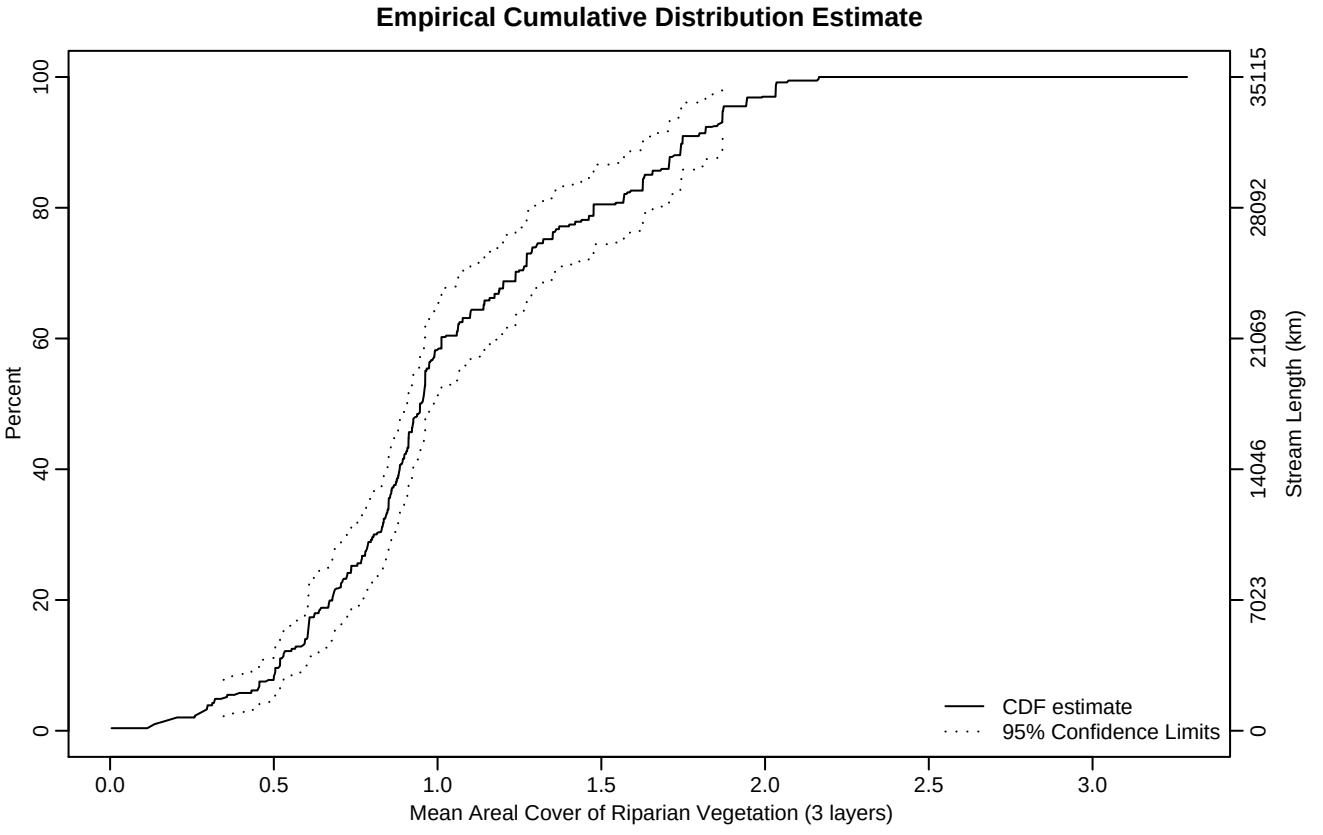


Figure PHAB−325 Indicator: XCMG Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.35	0.26	0.50
10Pct	0.52	0.45	0.60
25Pct	0.74	0.64	0.83
50Pct	0.95	0.91	0.98
75Pct	1.32	1.20	1.57
90Pct	1.75	1.63	1.87
95Pct	1.87	1.75	2.07
Mean	1.05	0.98	1.11
Std Dev	0.41	0.37	0.44

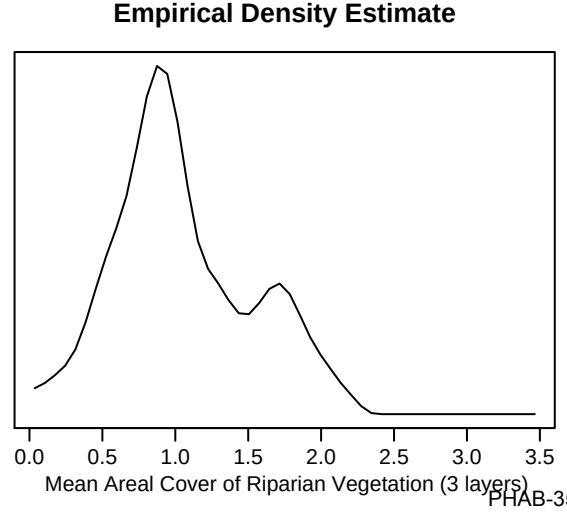
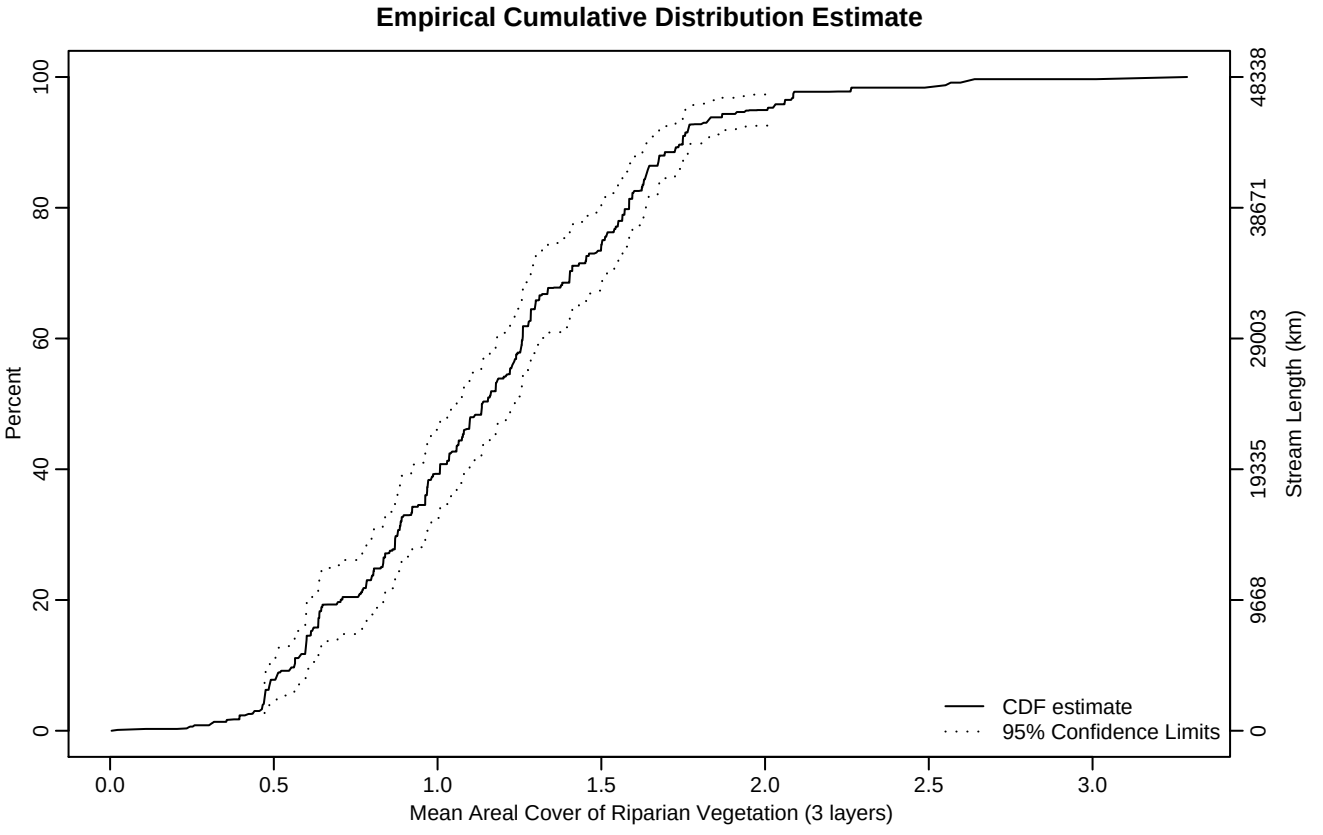


Figure PHAB−326 Indicator: XCMG Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.47	0.46	0.49
10Pct	0.56	0.47	0.60
25Pct	0.83	0.65	0.88
50Pct	1.14	1.06	1.24
75Pct	1.50	1.40	1.59
90Pct	1.75	1.65	1.83
95Pct	2.01	1.77	2.09
Mean	1.16	1.10	1.22
Std Dev	0.44	0.40	0.49

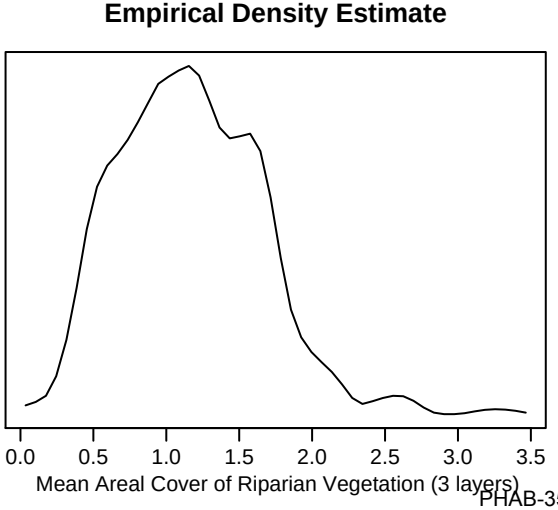
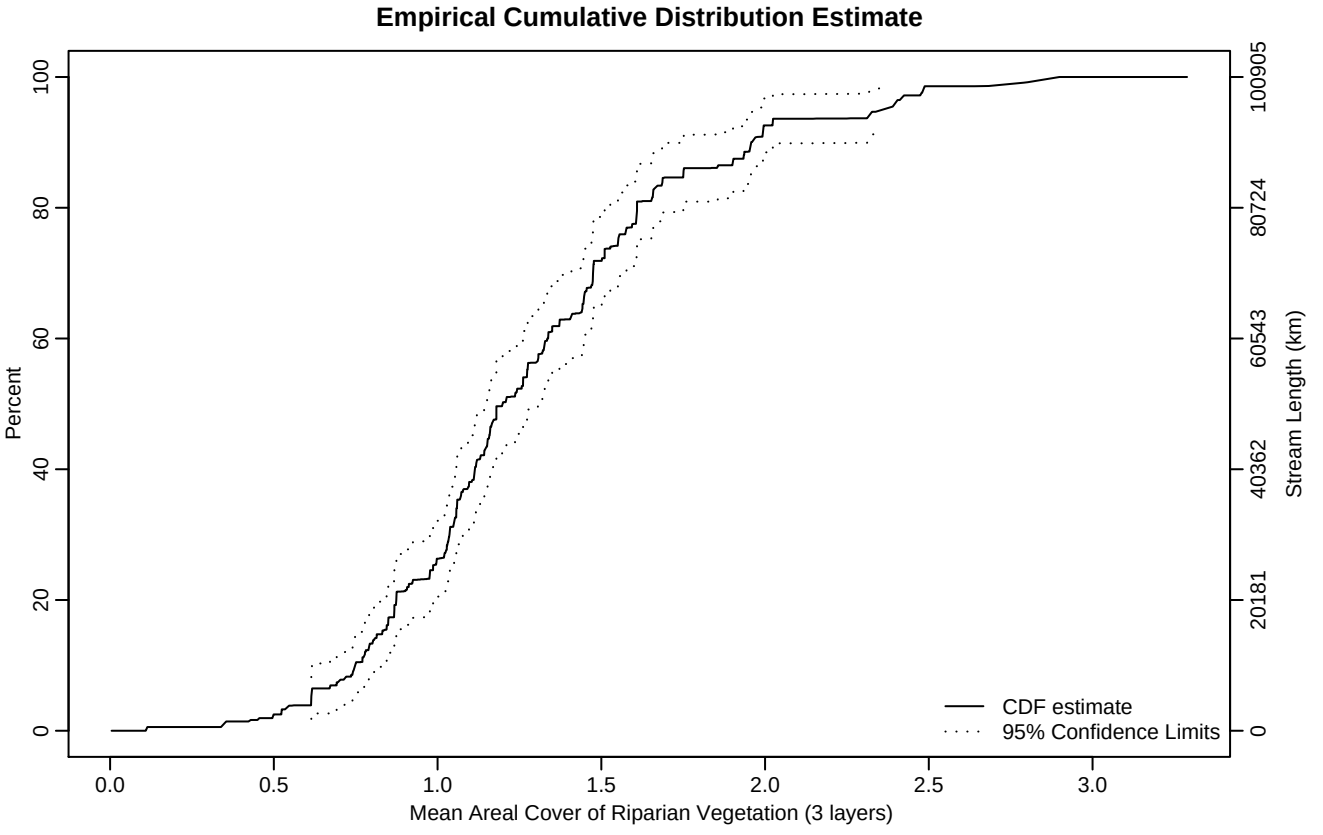


Figure PHAB−327 Indicator: XCMG Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.61	0.50	0.70
10Pct	0.75	0.62	0.81
25Pct	0.99	0.87	1.04
50Pct	1.20	1.14	1.31
75Pct	1.55	1.47	1.66
90Pct	1.96	1.75	2.35
95Pct	2.36	1.99	2.49
Mean	1.29	1.23	1.36
Std Dev	0.42	0.38	0.47

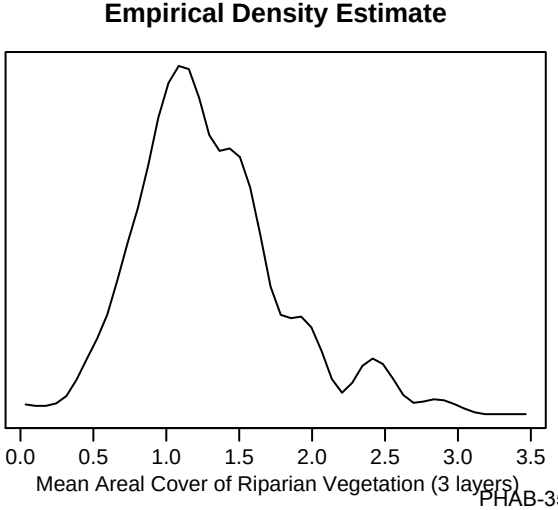
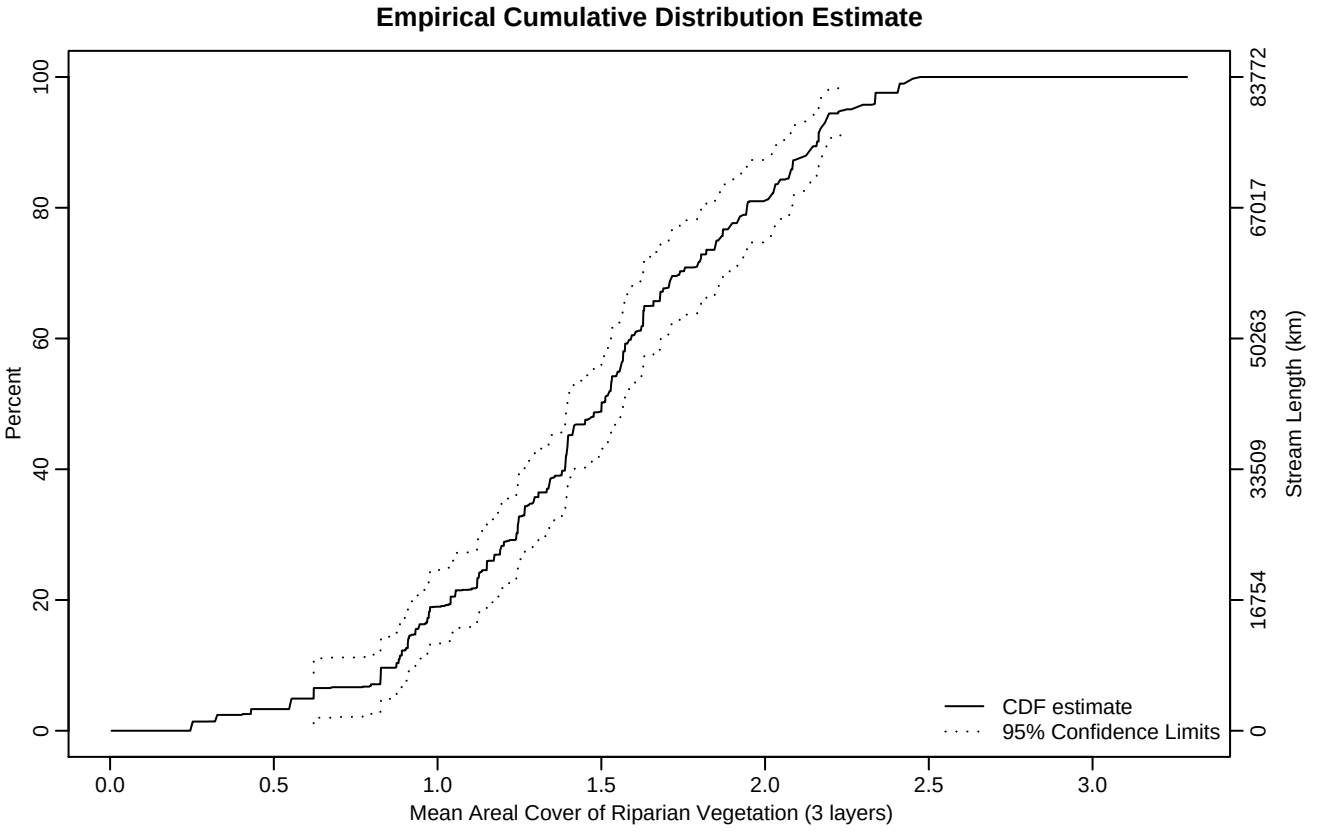


Figure PHAB−328 Indicator: XCMG Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.62	0.25	0.83
10Pct	0.87	0.62	0.93
25Pct	1.15	0.98	1.24
50Pct	1.50	1.40	1.57
75Pct	1.86	1.71	2.02
90Pct	2.16	2.08	2.23
95Pct	2.25	2.16	2.41
Mean	1.48	1.41	1.55
Std Dev	0.46	0.40	0.52

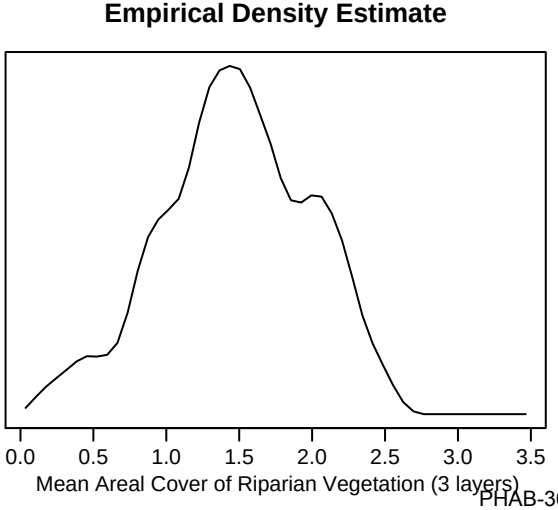
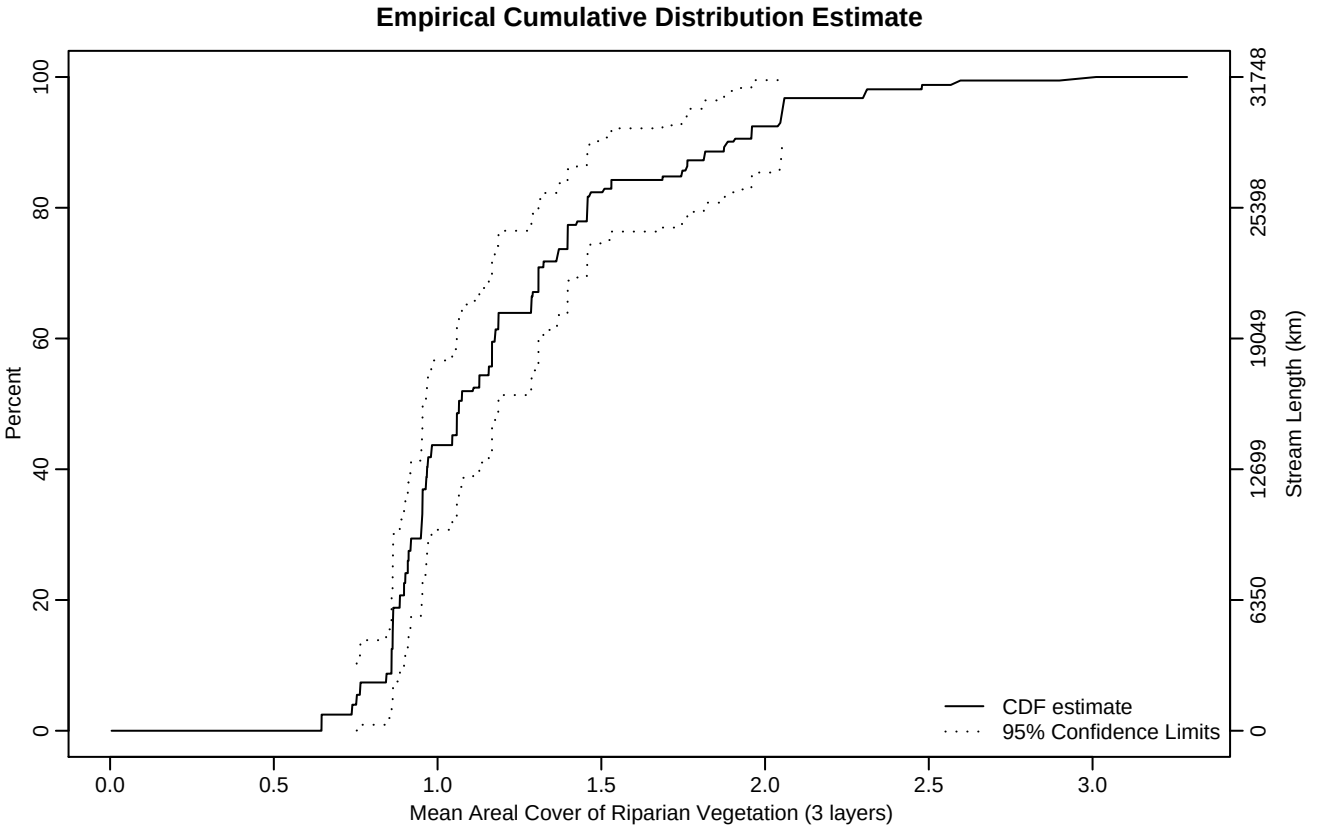


Figure PHAB−329 Indicator: XCMG Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.75	0.65	0.86
10Pct	0.86	0.74	0.86
25Pct	0.91	0.86	0.95
50Pct	1.07	0.95	1.19
75Pct	1.40	1.29	1.75
90Pct	1.88	1.47	2.31
95Pct	2.05	1.82	3.01
Mean	1.21	1.12	1.31
Std Dev	0.35	0.26	0.44

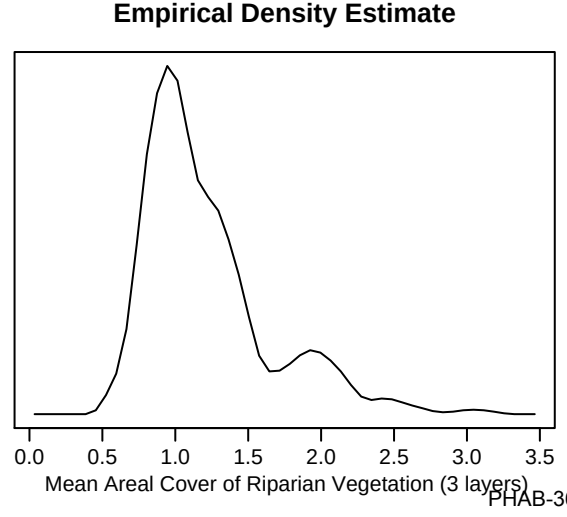
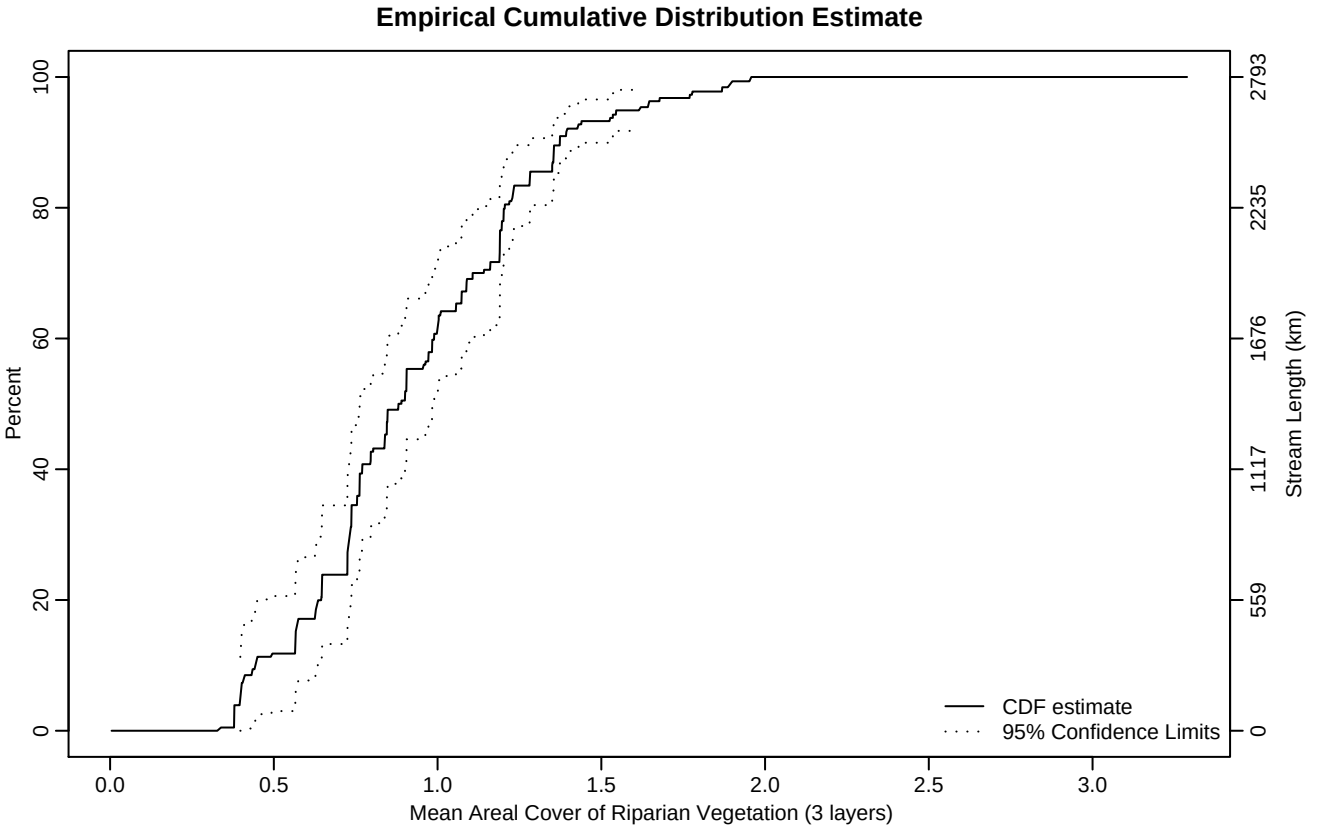


Figure PHAB−330 Indicator: XCMG Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.40	0	0.45
10Pct	0.44	0.38	0.63
25Pct	0.72	0.57	0.75
50Pct	0.88	0.76	1
75Pct	1.19	1.07	1.28
90Pct	1.37	1.35	1.54
95Pct	1.62	1.40	1.87
Mean	0.93	0.86	1
Std Dev	0.31	0.27	0.35

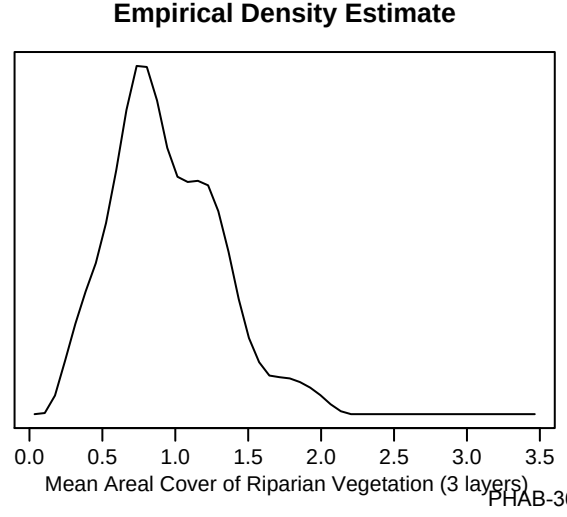
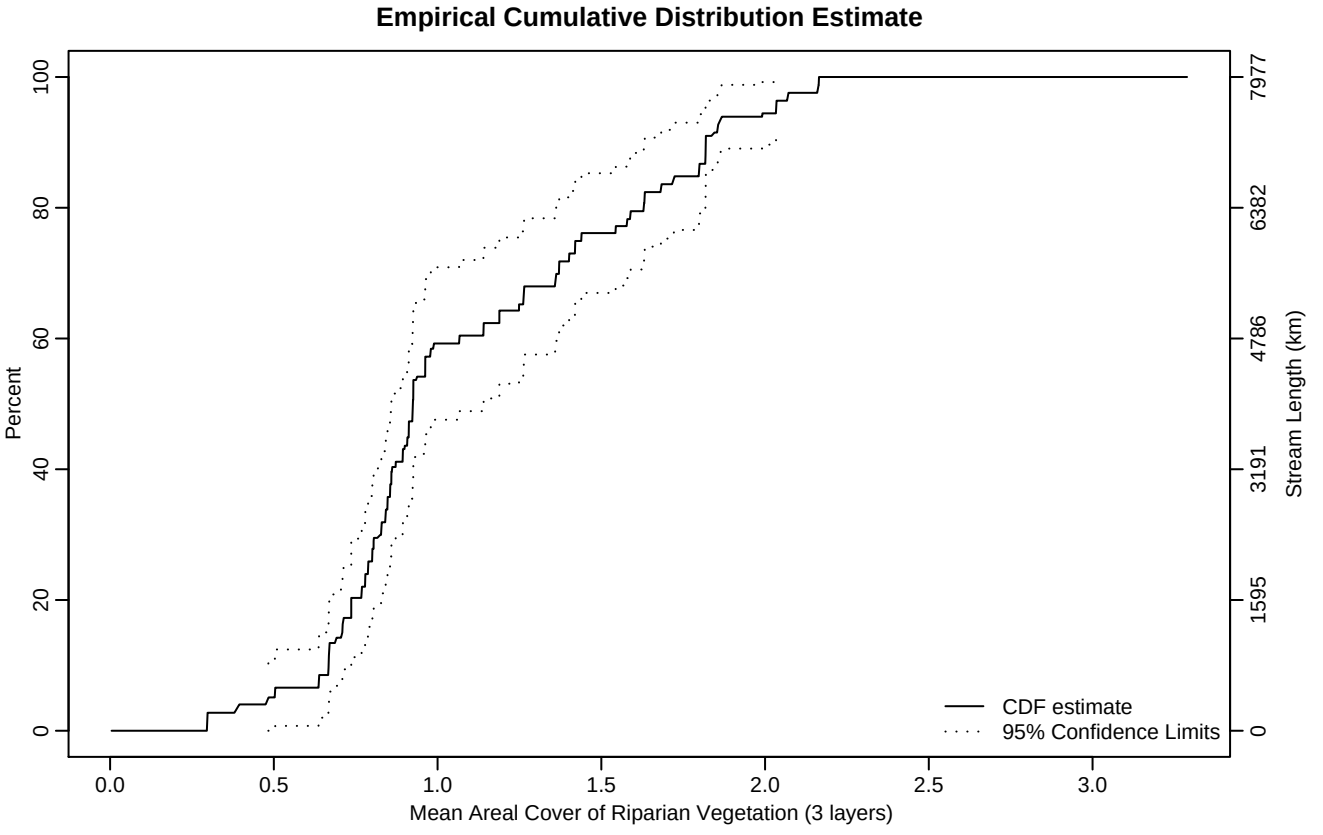


Figure PHAB−331 Indicator: XCMG Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.48	0.30	0.67
10Pct	0.67	0.39	0.71
25Pct	0.79	0.71	0.85
50Pct	0.92	0.86	1.14
75Pct	1.44	1.26	1.72
90Pct	1.82	1.68	2.07
95Pct	2.03	1.82	2.16
Mean	1.11	1	1.22
Std Dev	0.46	0.40	0.52

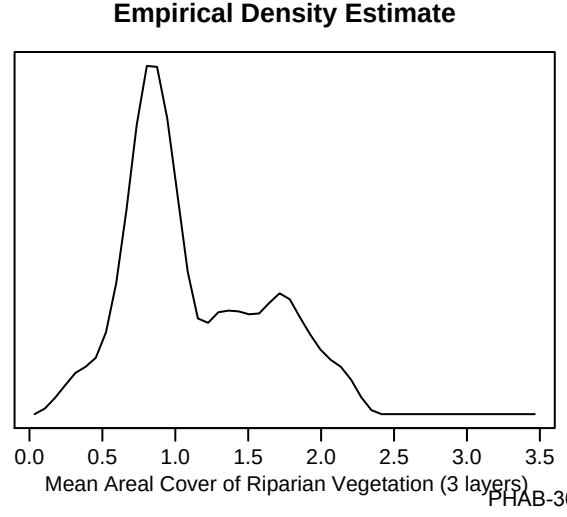
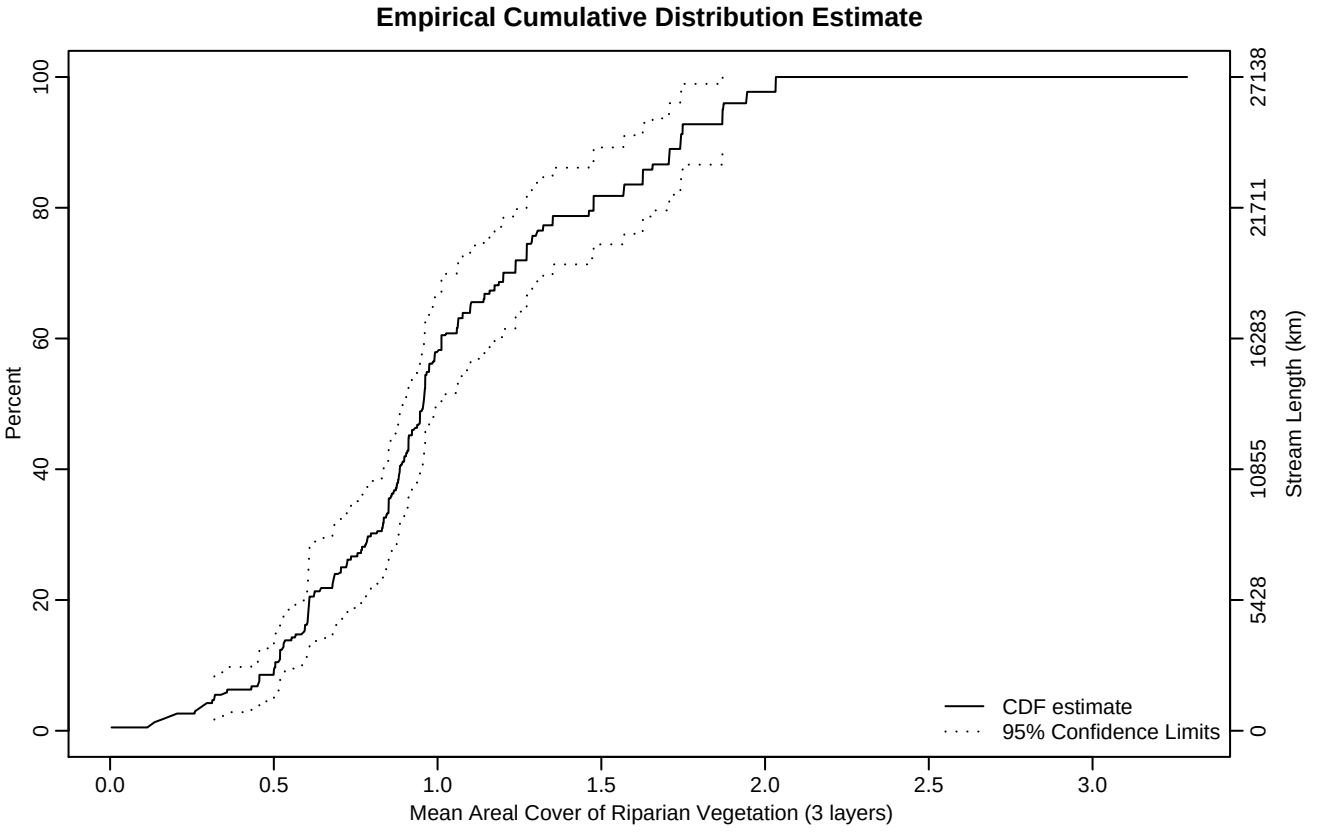


Figure PHAB−332 Indicator: XCMG Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.32	0.16	0.46
10Pct	0.50	0.35	0.57
25Pct	0.71	0.60	0.84
50Pct	0.96	0.90	1.01
75Pct	1.29	1.16	1.57
90Pct	1.74	1.57	1.94
95Pct	1.87	1.71	2.03
Mean	1.03	0.95	1.11
Std Dev	0.36	0.32	0.40

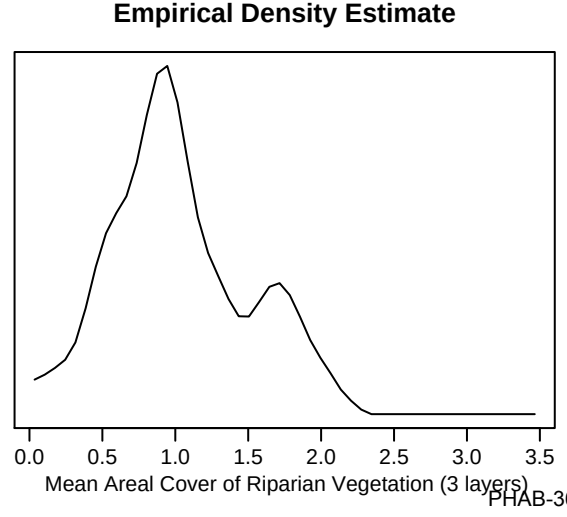
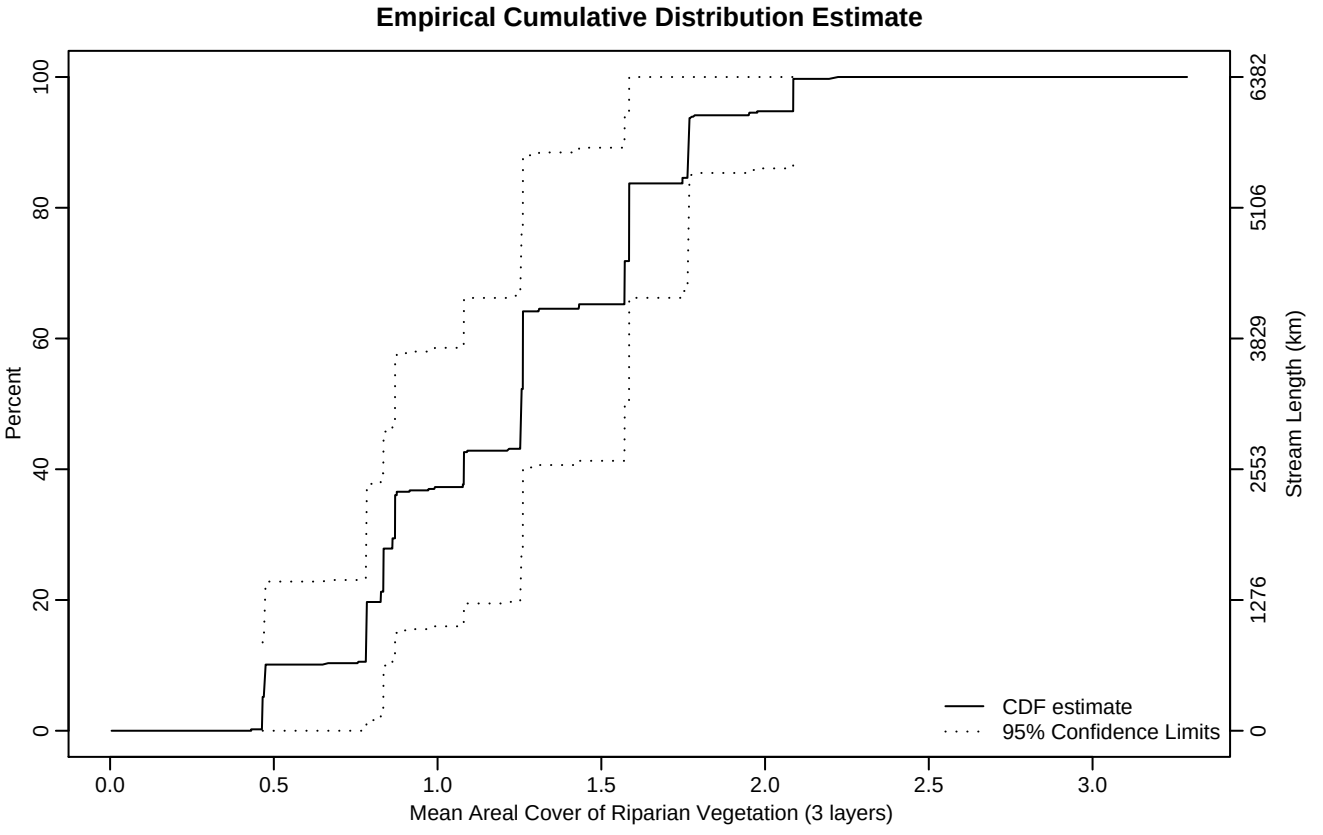


Figure PHAB−333 Indicator: XCMG Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.47	0.47	0.47
10Pct	0.47	0.46	0.78
25Pct	0.83	0.47	1.25
50Pct	1.26	0.83	1.58
75Pct	1.58	1.26	2.09
90Pct	1.77	1.58	2.22
95Pct	2.09	1.76	2.22
Mean	1.21	1.02	1.41
Std Dev	0.45	0.34	0.55

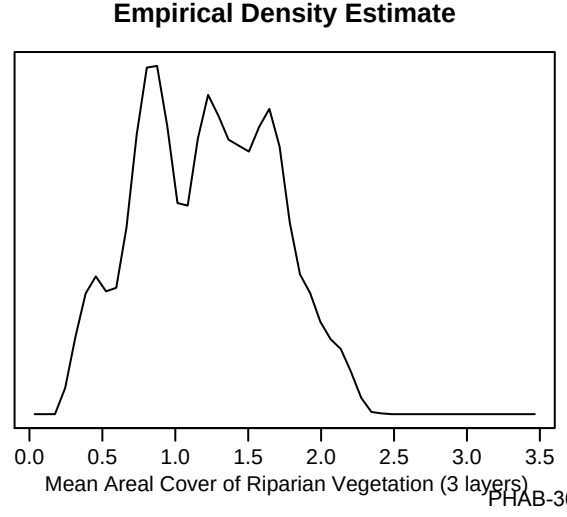
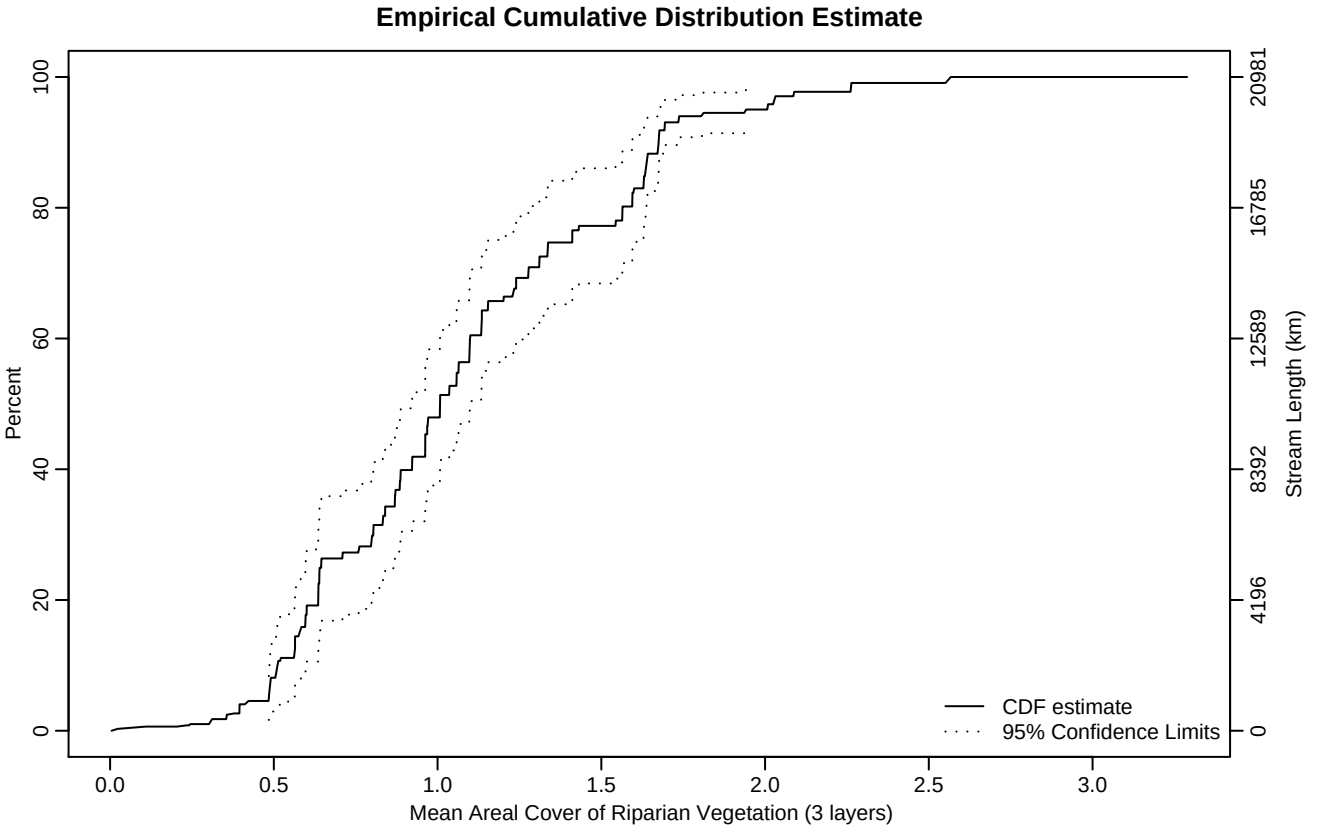


Figure PHAB−334 Indicator: XCMG Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.48	0.35	0.50
10Pct	0.51	0.48	0.58
25Pct	0.64	0.58	0.87
50Pct	1.01	0.89	1.13
75Pct	1.41	1.15	1.63
90Pct	1.67	1.63	2.01
95Pct	1.94	1.68	2.26
Mean	1.08	0.99	1.16
Std Dev	0.44	0.38	0.50

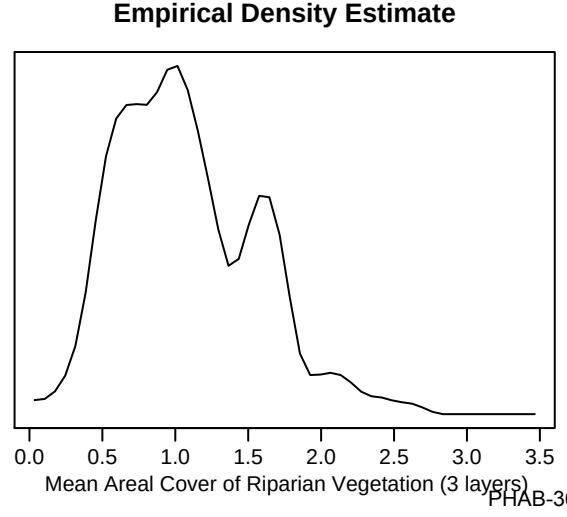
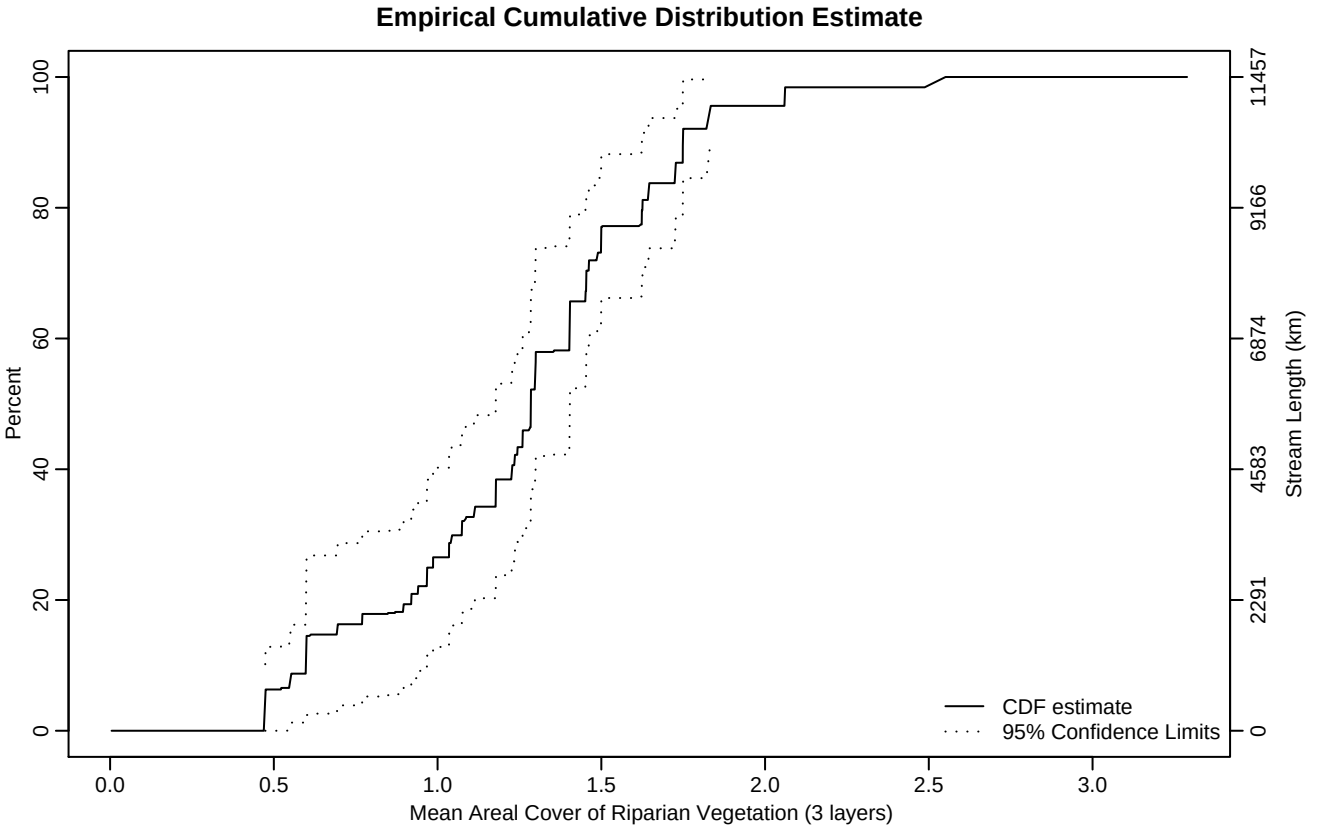


Figure PHAB−335 Indicator: XCMG Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.47	0.47	0.47
10Pct	0.60	0.47	0.90
25Pct	0.99	0.60	1.23
50Pct	1.28	1.18	1.40
75Pct	1.50	1.40	1.73
90Pct	1.75	1.64	2.06
95Pct	1.83	1.75	2.55
Mean	1.26	1.12	1.39
Std Dev	0.42	0.33	0.50

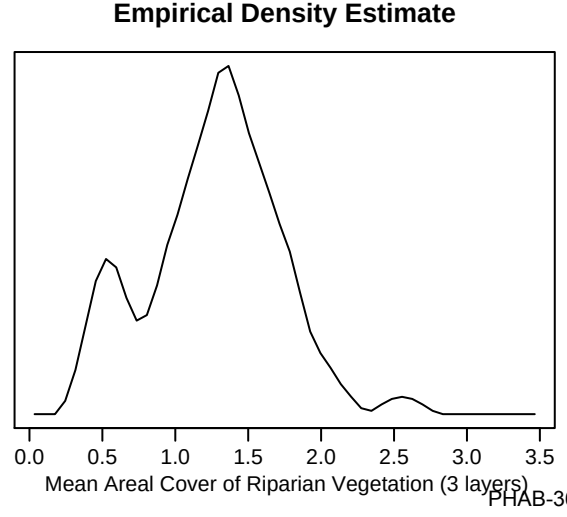
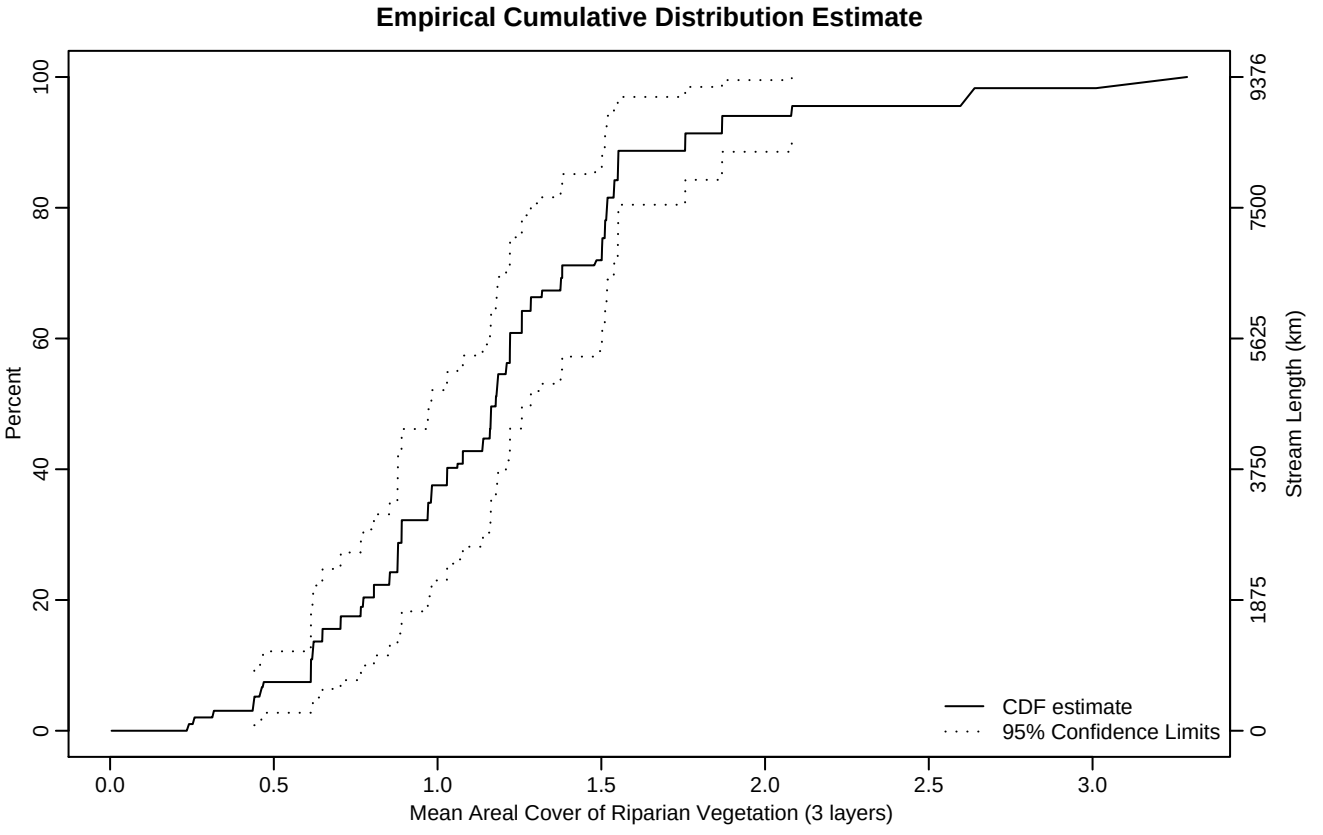


Figure PHAB−336 Indicator: XCMG Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.44	0.31	0.47
10Pct	0.61	0.44	0.65
25Pct	0.88	0.65	0.98
50Pct	1.18	0.98	1.26
75Pct	1.50	1.26	1.55
90Pct	1.76	1.54	2.64
95Pct	2.08	1.76	3.29
Mean	1.20	1.06	1.33
Std Dev	0.45	0.38	0.53

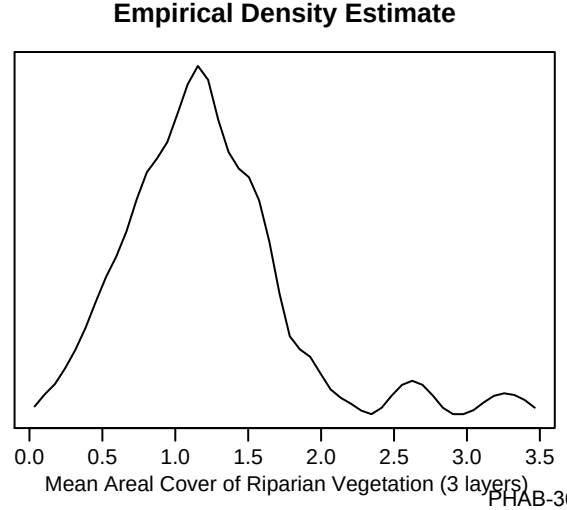
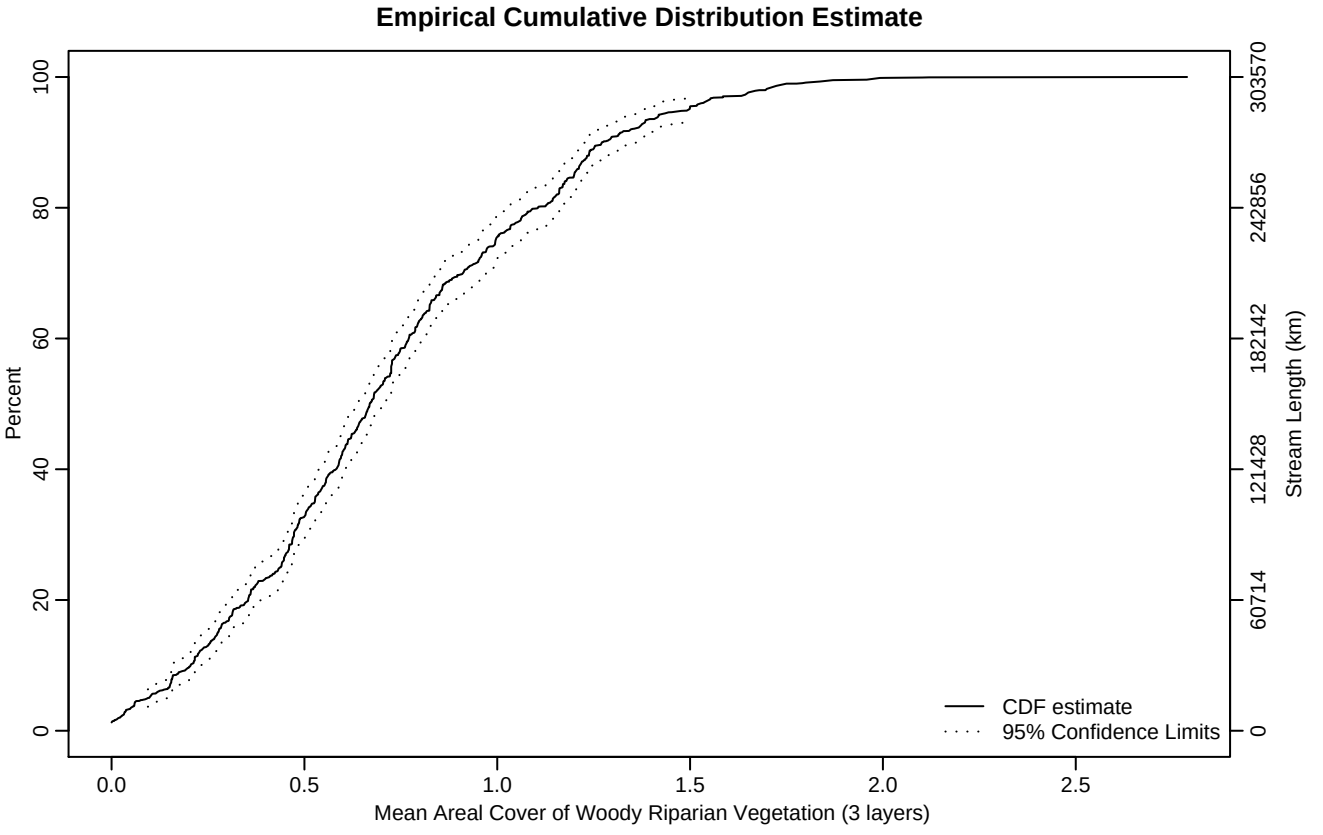


Figure PHAB−337 Indicator: XCMGW Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.09	0.05	0.14
10Pct	0.20	0.16	0.23
25Pct	0.44	0.37	0.46
50Pct	0.67	0.64	0.71
75Pct	1	0.95	1.06
90Pct	1.27	1.23	1.37
95Pct	1.50	1.38	1.56
Mean	0.72	0.69	0.75
Std Dev	0.36	0.34	0.39

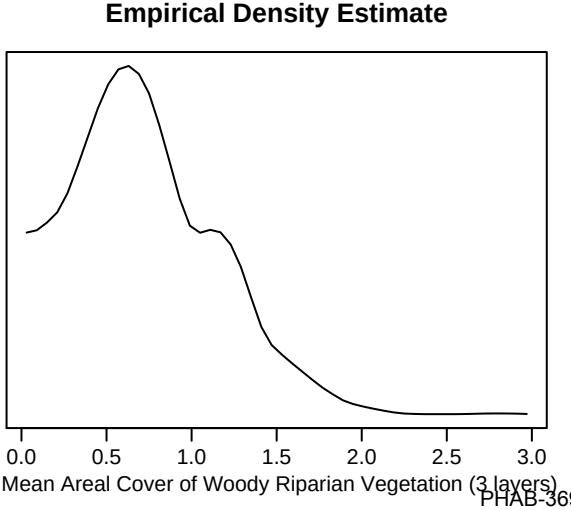
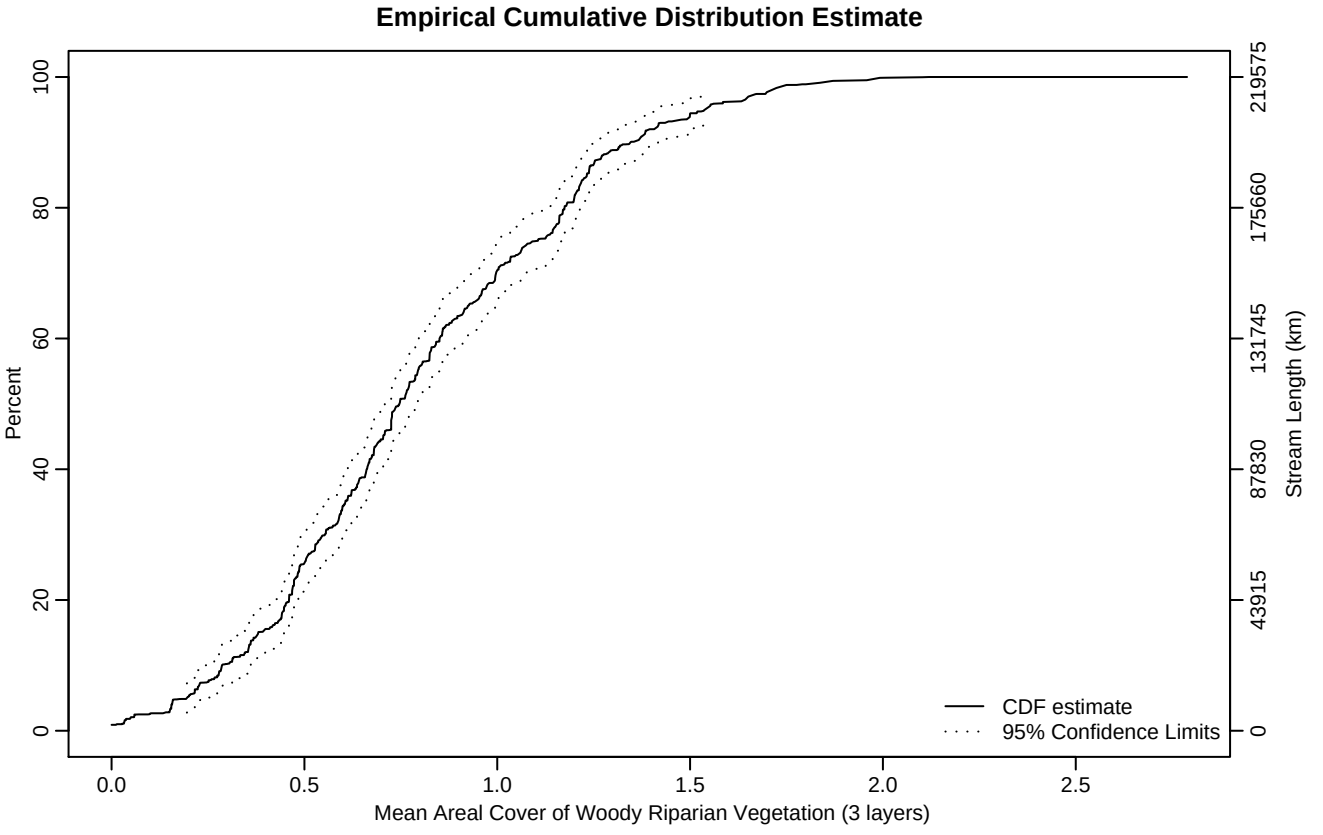


Figure PHAB−338 Indicator: XCMGW Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.20	0.14	0.23
10Pct	0.29	0.23	0.36
25Pct	0.49	0.46	0.54
50Pct	0.75	0.71	0.79
75Pct	1.11	1	1.17
90Pct	1.35	1.25	1.42
95Pct	1.54	1.42	1.66
Mean	0.80	0.76	0.84
Std Dev	0.37	0.34	0.40

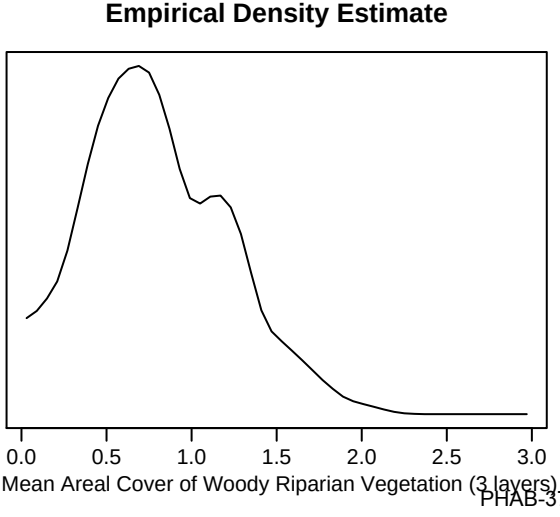
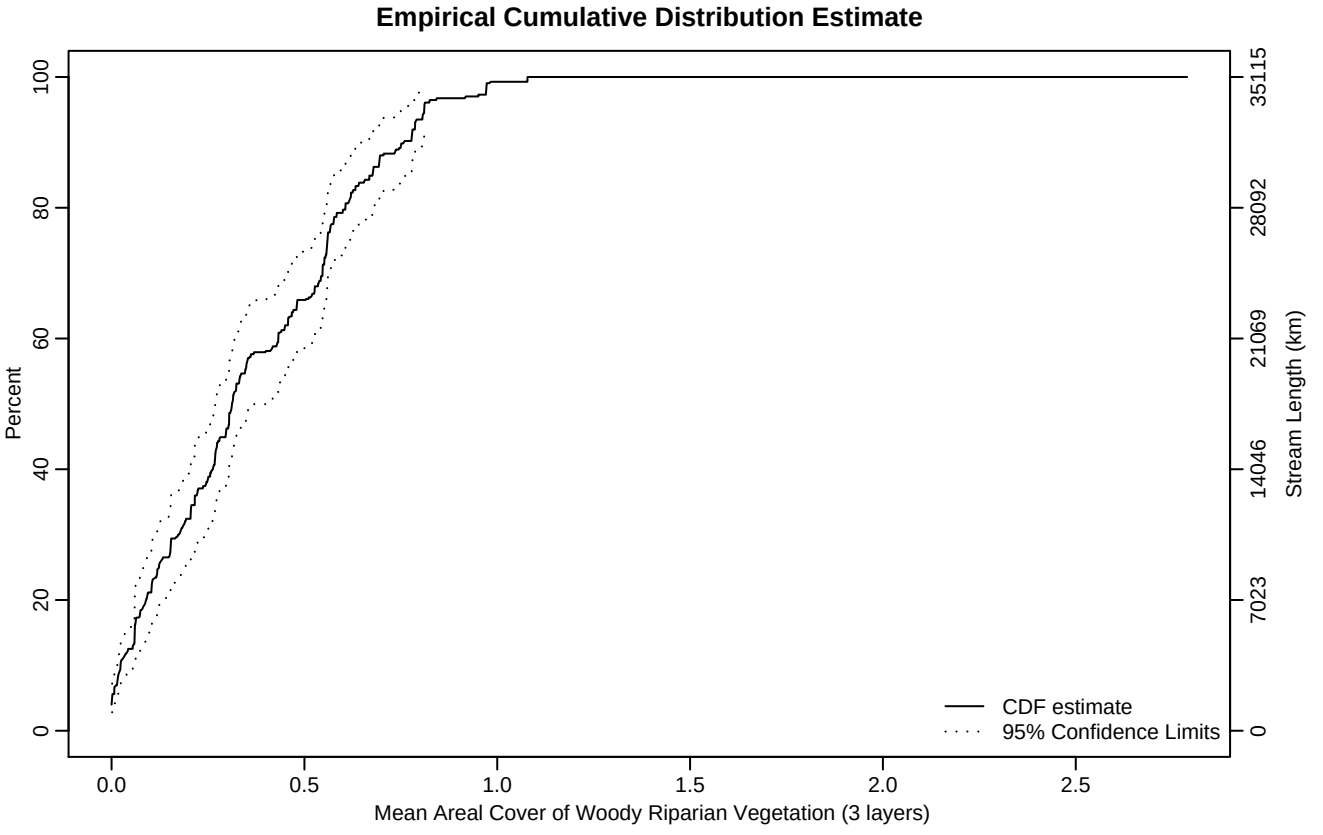


Figure PHAB−339 Indicator: XCMGW Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0.02	0.01	0.06
25Pct	0.12	0.08	0.18
50Pct	0.31	0.27	0.37
75Pct	0.56	0.53	0.62
90Pct	0.76	0.67	0.81
95Pct	0.81	0.78	0.97
Mean	0.36	0.32	0.41
Std Dev	0.24	0.22	0.27

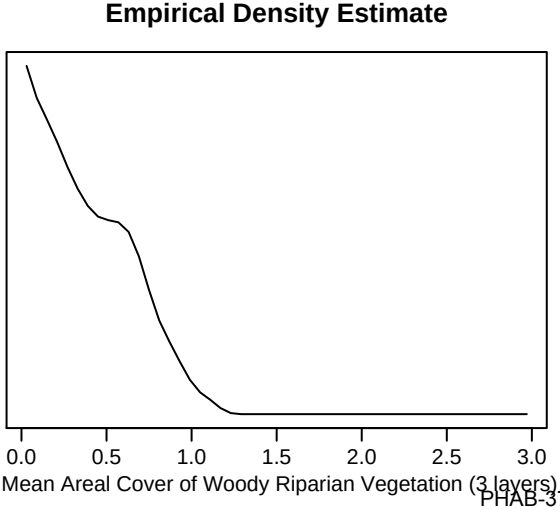
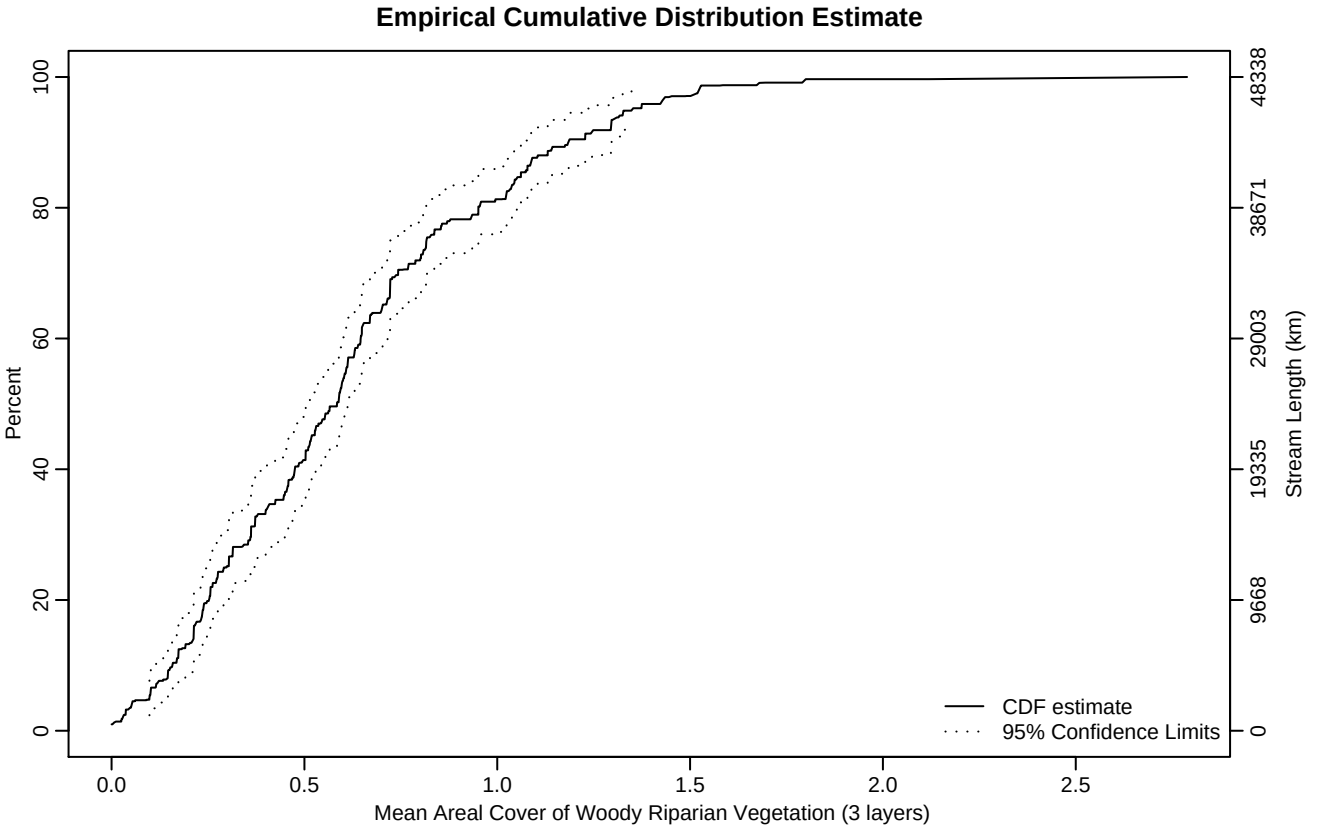


Figure PHAB−340 Indicator: XCMGW Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.10	0.03	0.12
10Pct	0.16	0.10	0.21
25Pct	0.30	0.24	0.36
50Pct	0.58	0.51	0.61
75Pct	0.82	0.73	0.96
90Pct	1.18	1.07	1.33
95Pct	1.35	1.29	1.52
Mean	0.62	0.57	0.67
Std Dev	0.35	0.32	0.38

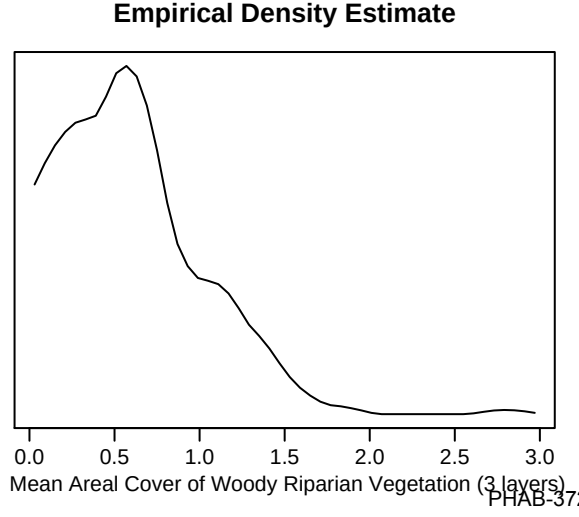
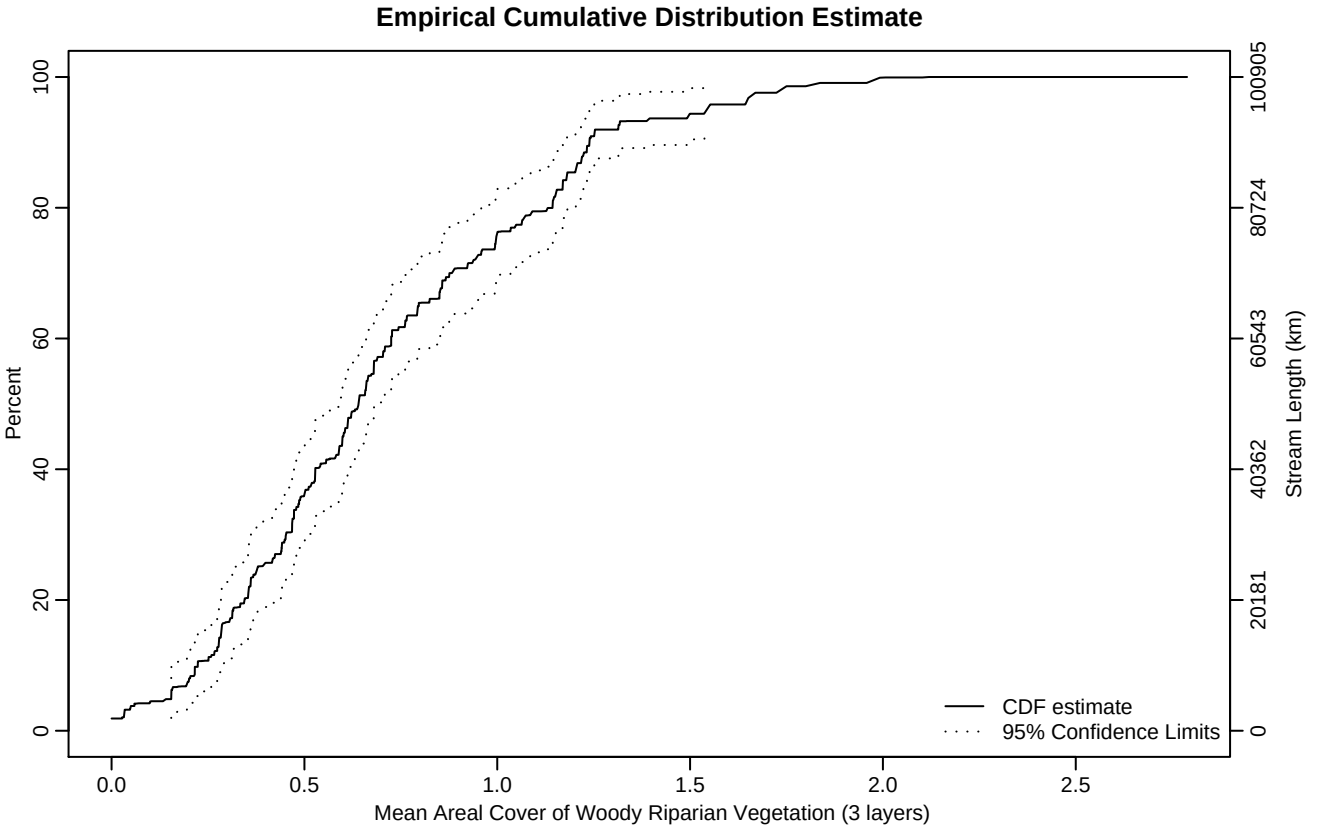


Figure PHAB−341 Indicator: XCMGW Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.15	0.03	0.20
10Pct	0.22	0.15	0.28
25Pct	0.38	0.31	0.47
50Pct	0.64	0.59	0.70
75Pct	1	0.86	1.15
90Pct	1.24	1.18	1.54
95Pct	1.54	1.25	1.82
Mean	0.71	0.65	0.77
Std Dev	0.39	0.35	0.43

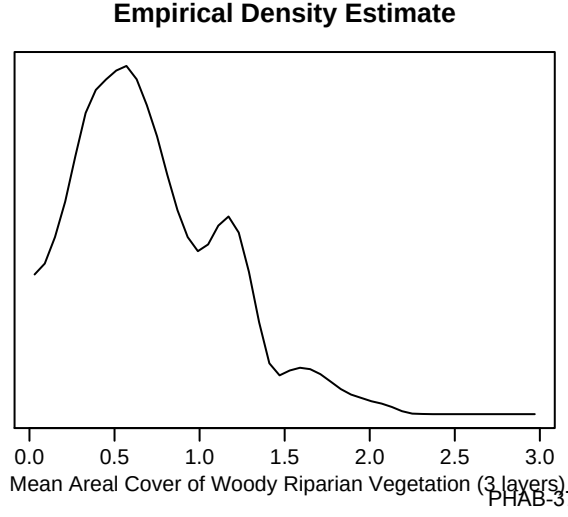
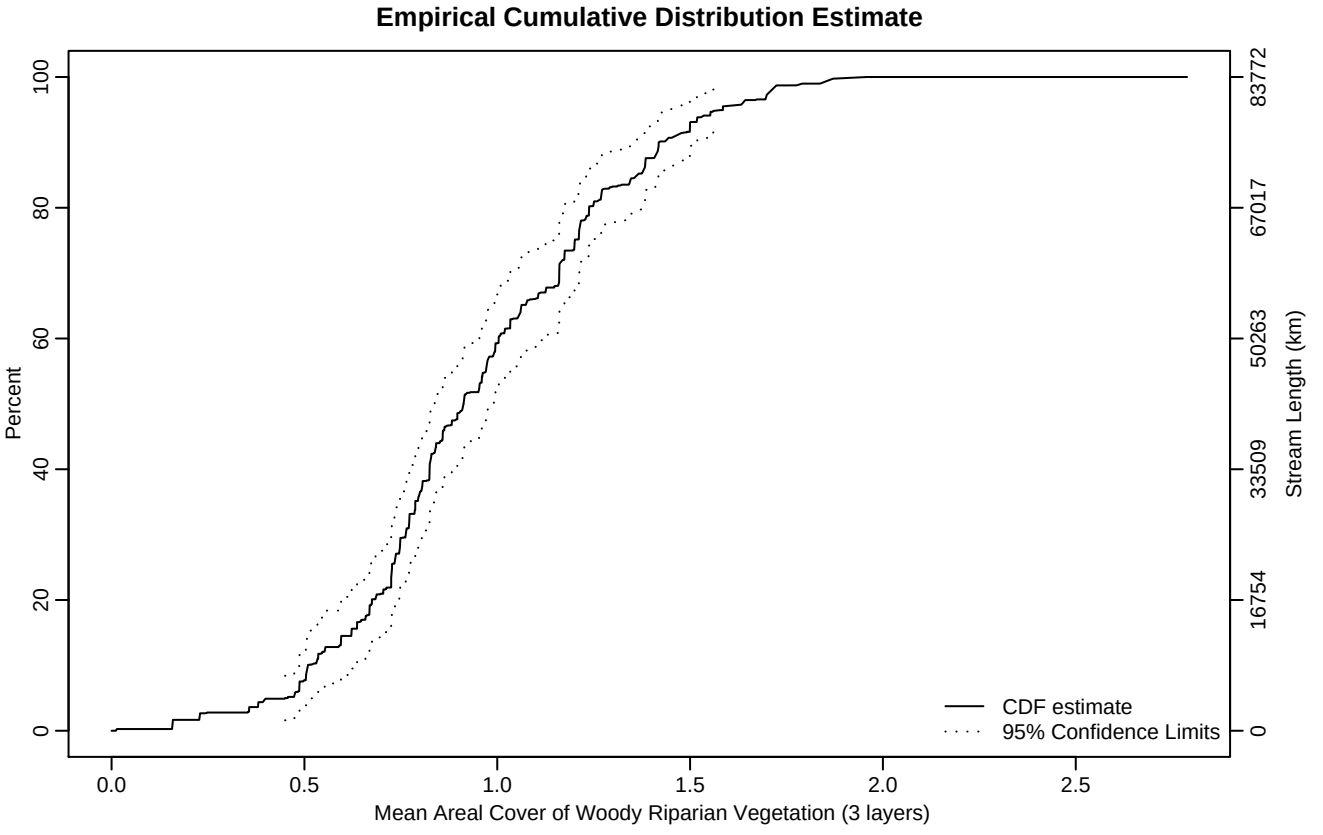


Figure PHAB−342 Indicator: XCMGW Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.45	0.16	0.50
10Pct	0.51	0.47	0.62
25Pct	0.73	0.67	0.77
50Pct	0.91	0.84	0.99
75Pct	1.20	1.15	1.27
90Pct	1.42	1.38	1.55
95Pct	1.59	1.50	1.72
Mean	0.96	0.91	1.01
Std Dev	0.35	0.31	0.39

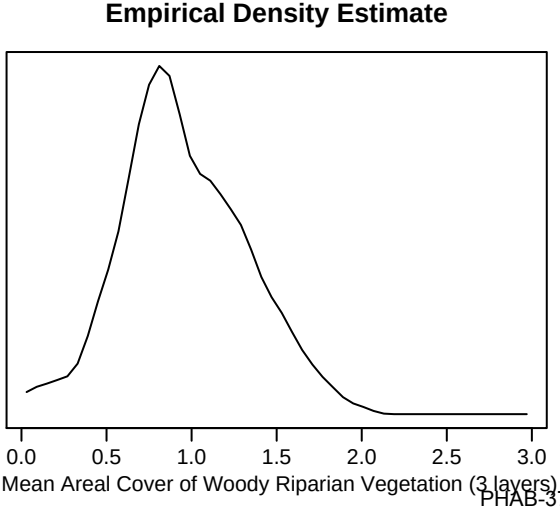
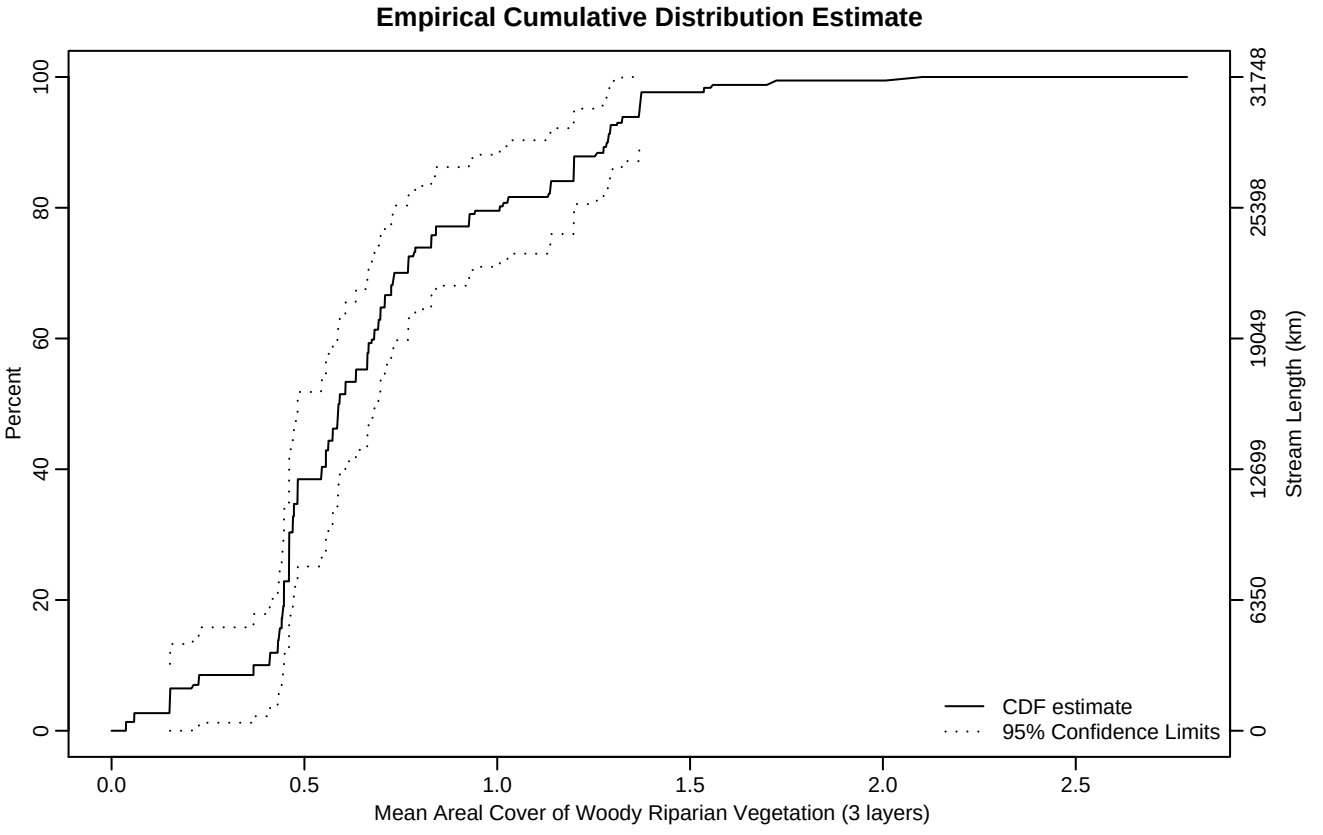


Figure PHAB−343 Indicator: XCMGW Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.15	0.06	0.23
10Pct	0.37	0.06	0.44
25Pct	0.46	0.43	0.48
50Pct	0.59	0.48	0.69
75Pct	0.83	0.71	1.20
90Pct	1.29	1.14	1.37
95Pct	1.37	1.26	2.10
Mean	0.69	0.61	0.78
Std Dev	0.30	0.25	0.36

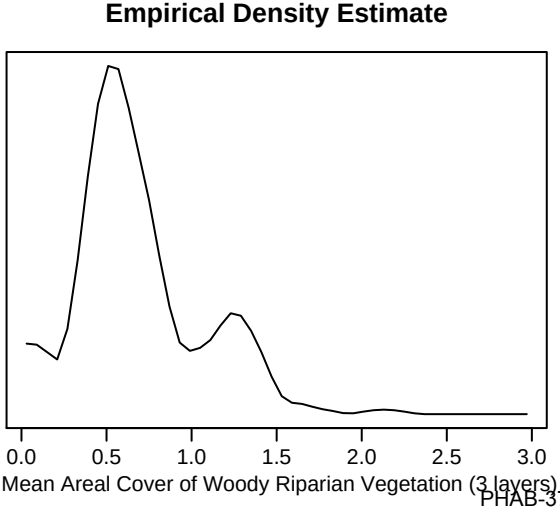
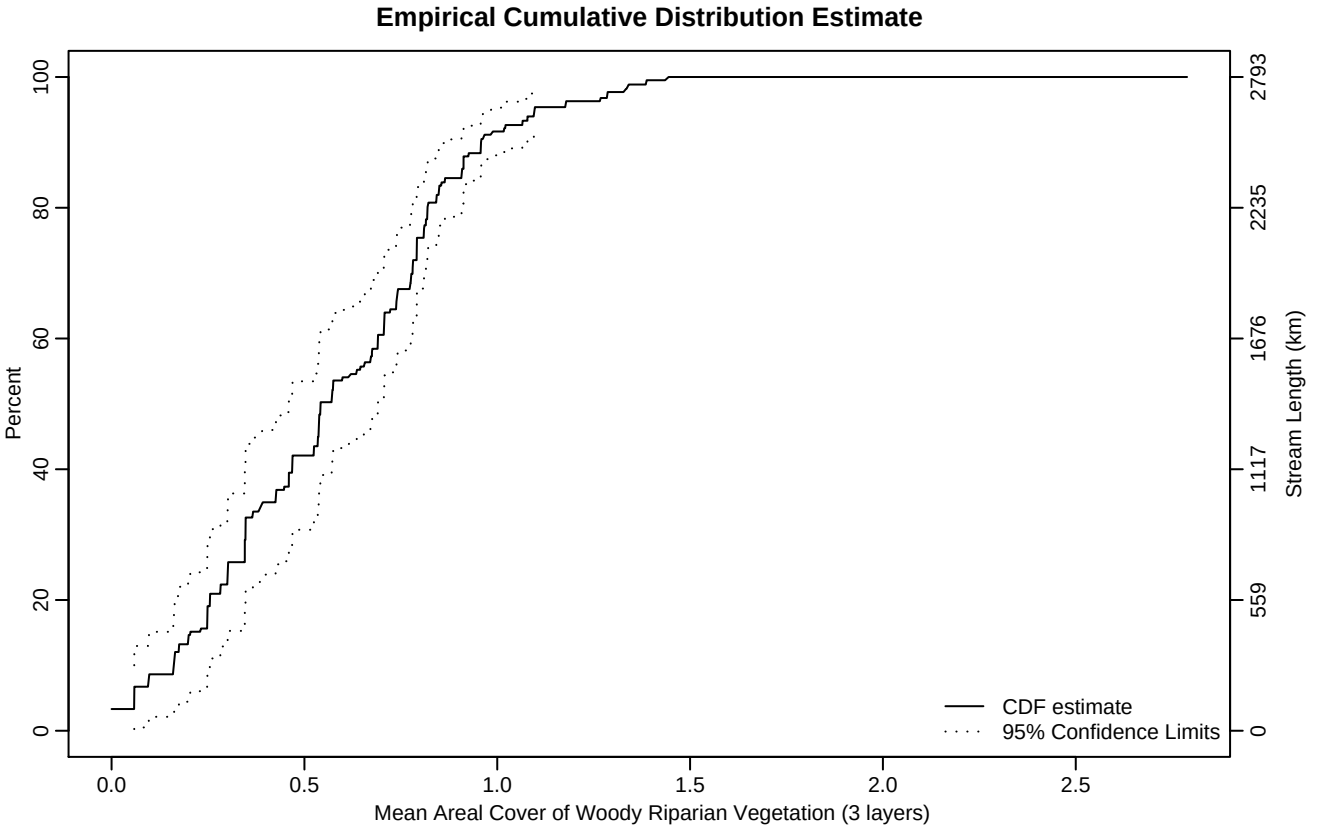


Figure PHAB−344 Indicator: XCMGW Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0	0.16
10Pct	0.16	0.06	0.25
25Pct	0.30	0.23	0.39
50Pct	0.54	0.46	0.71
75Pct	0.79	0.74	0.91
90Pct	0.96	0.91	1.10
95Pct	1.10	0.99	1.34
Mean	0.57	0.51	0.63
Std Dev	0.28	0.25	0.32

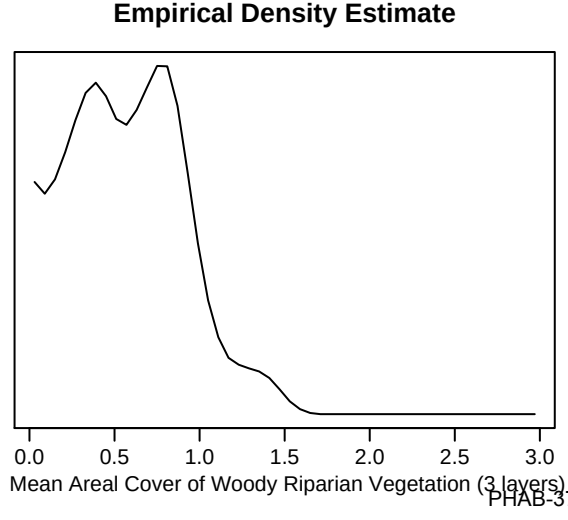
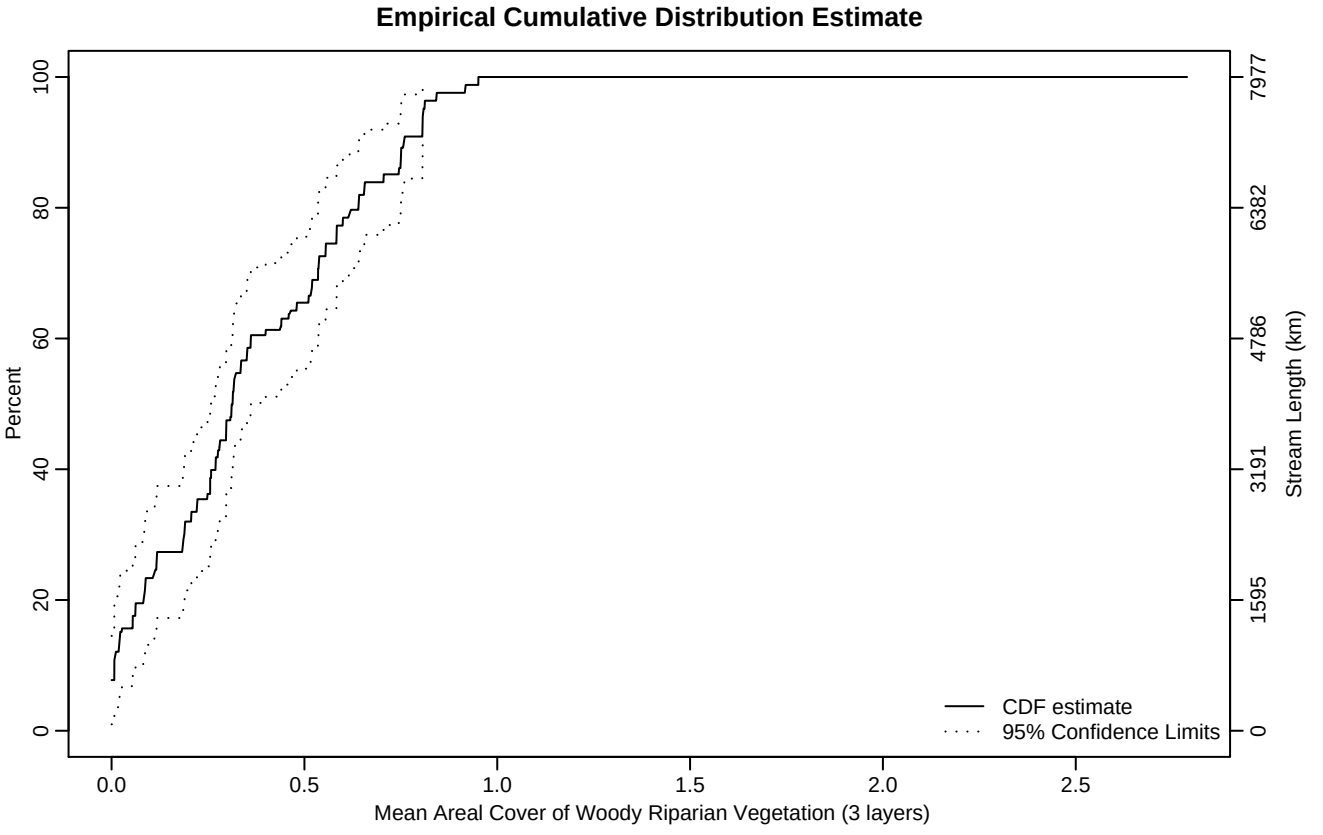


Figure PHAB−345 Indicator: XCMGW Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0.01	0	0.05
25Pct	0.12	0.02	0.22
50Pct	0.31	0.26	0.40
75Pct	0.58	0.48	0.71
90Pct	0.76	0.66	0.84
95Pct	0.81	0.76	0.95
Mean	0.36	0.30	0.42
Std Dev	0.25	0.21	0.28

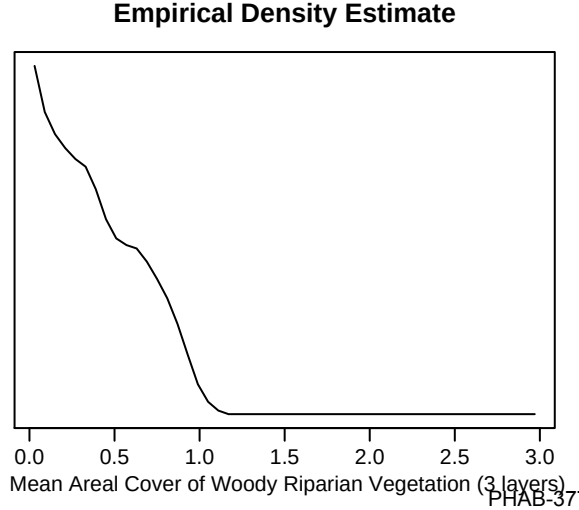
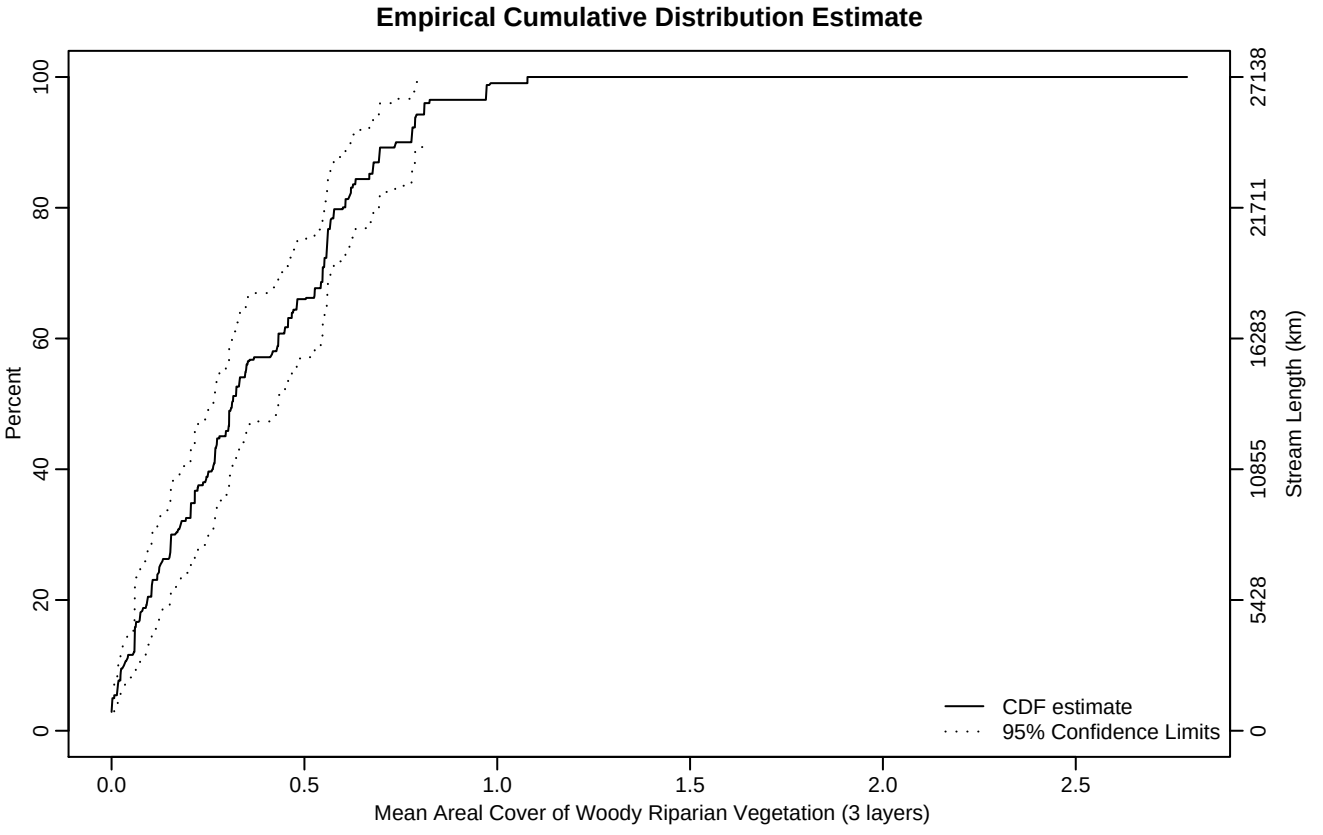


Figure PHAB−346 Indicator: XCMGW Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.02
10Pct	0.03	0.02	0.06
25Pct	0.12	0.07	0.19
50Pct	0.31	0.26	0.43
75Pct	0.56	0.53	0.63
90Pct	0.74	0.63	0.97
95Pct	0.81	0.74	1.08
Mean	0.36	0.31	0.42
Std Dev	0.24	0.21	0.27

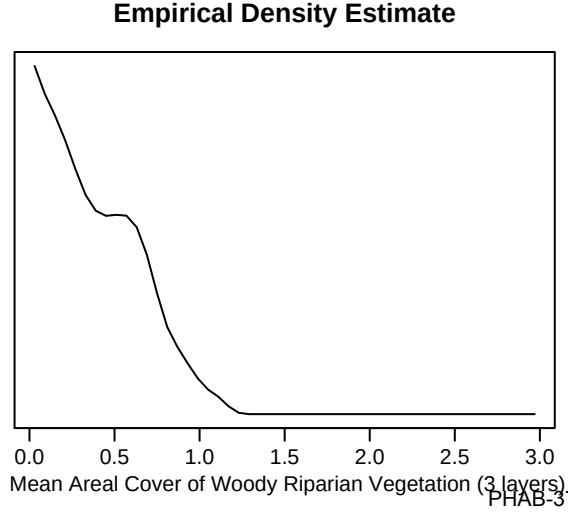
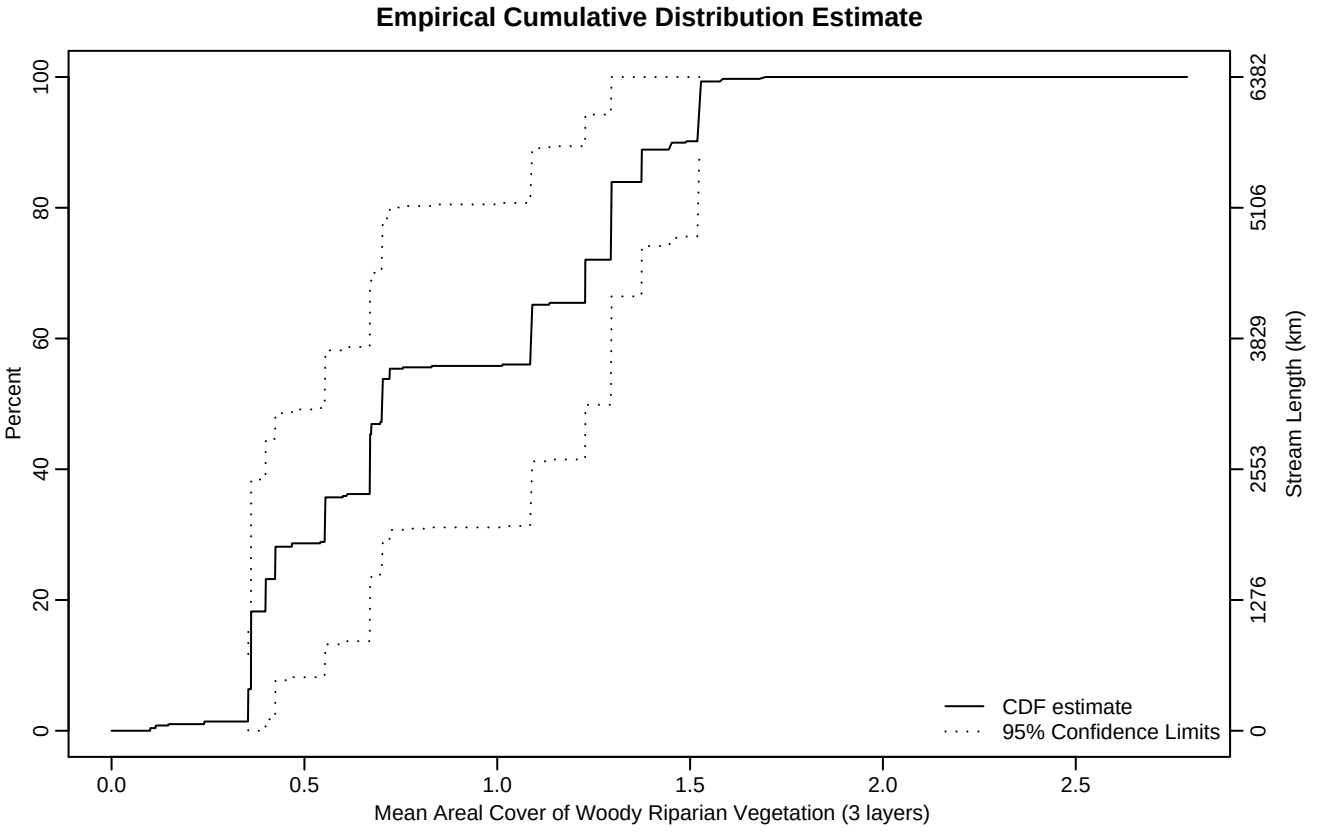


Figure PHAB−347 Indicator: XCMGW Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.35	0.35	0.36
10Pct	0.36	0.15	0.40
25Pct	0.42	0.35	0.67
50Pct	0.70	0.42	1.29
75Pct	1.29	0.70	1.53
90Pct	1.49	1.29	1.70
95Pct	1.52	1.30	1.70
Mean	0.86	0.65	1.07
Std Dev	0.43	0.35	0.50

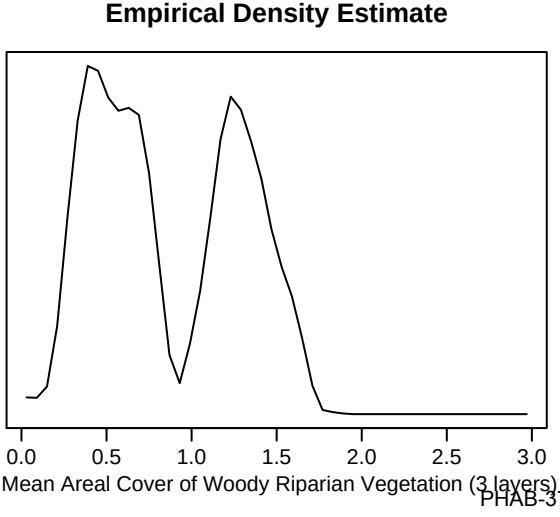
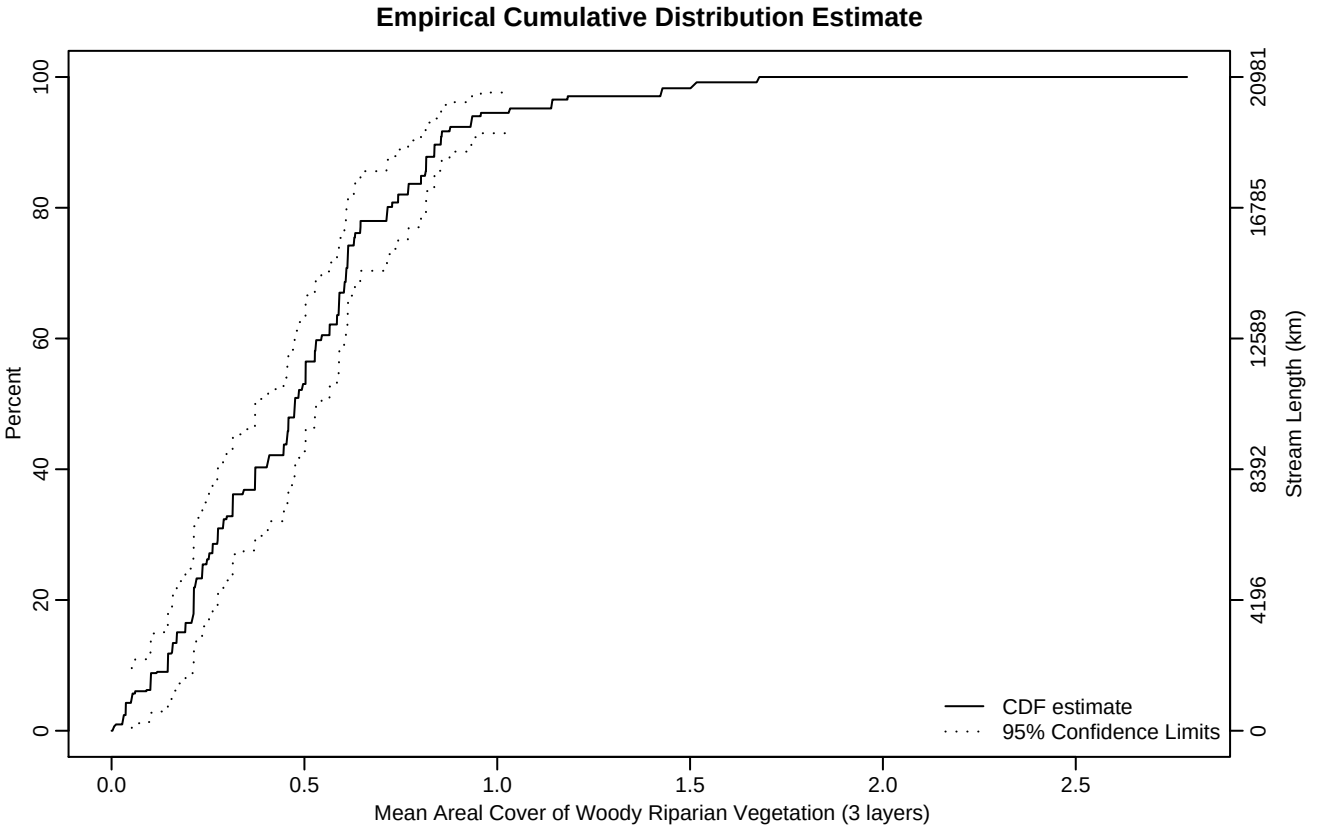


Figure PHAB−348 Indicator: XCMGW Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.01	0.15
10Pct	0.15	0.04	0.19
25Pct	0.24	0.19	0.31
50Pct	0.48	0.37	0.56
75Pct	0.63	0.60	0.77
90Pct	0.85	0.82	0.94
95Pct	1.03	0.88	1.43
Mean	0.49	0.45	0.54
Std Dev	0.28	0.24	0.32

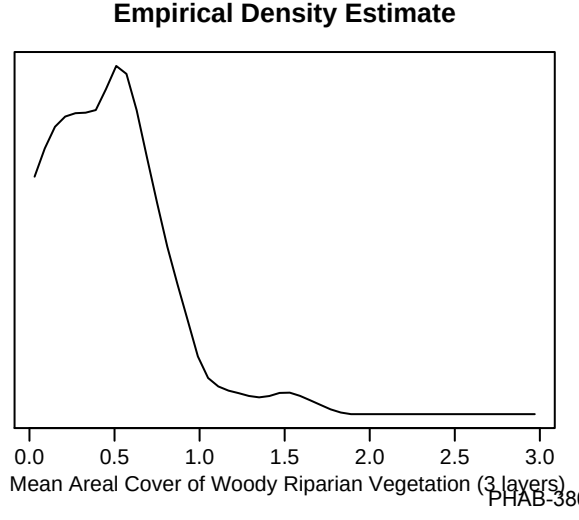
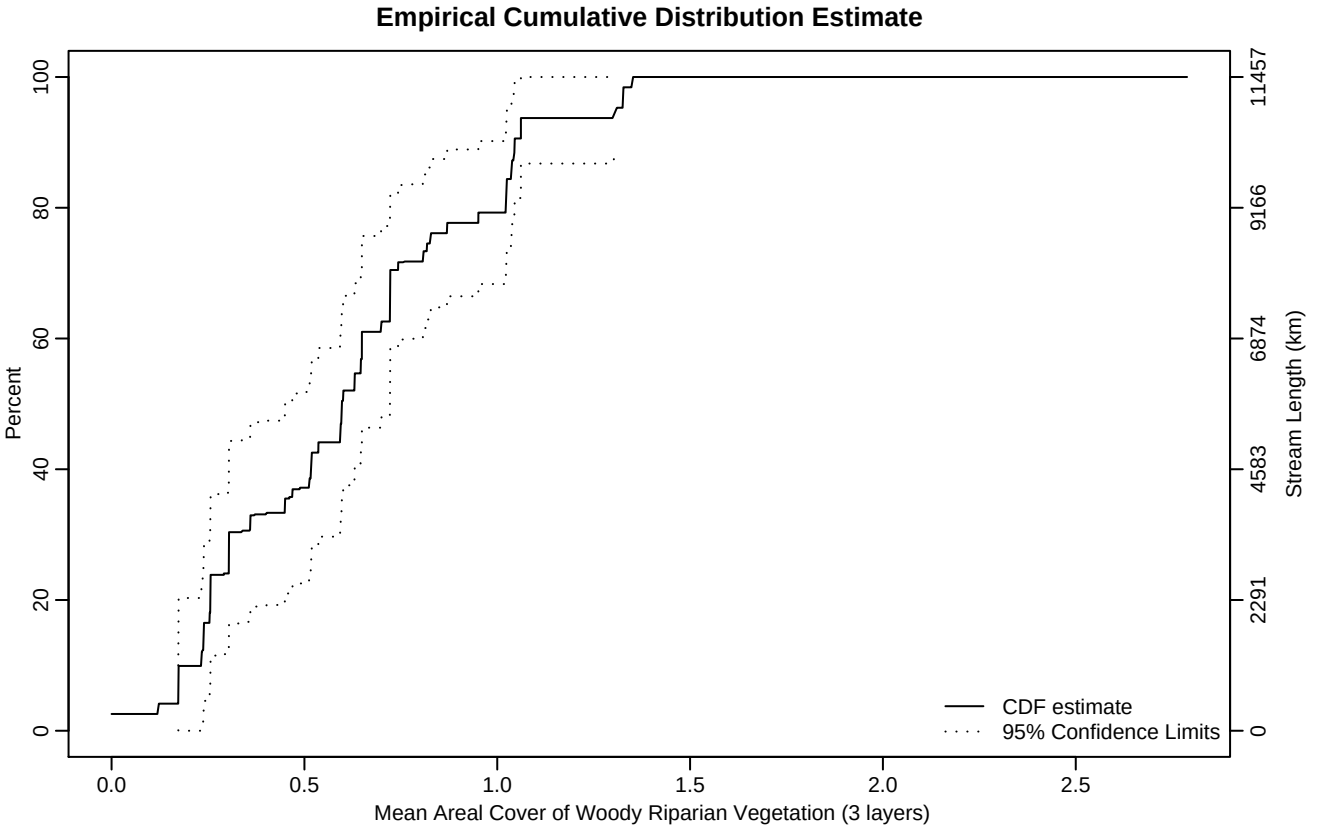


Figure PHAB−349 Indicator: XCMGW Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	0	0.17
10Pct	0.23	0	0.26
25Pct	0.30	0.23	0.51
50Pct	0.60	0.45	0.72
75Pct	0.83	0.72	1.04
90Pct	1.05	1.02	1.35
95Pct	1.31	1.04	1.35
Mean	0.61	0.51	0.71
Std Dev	0.32	0.27	0.37

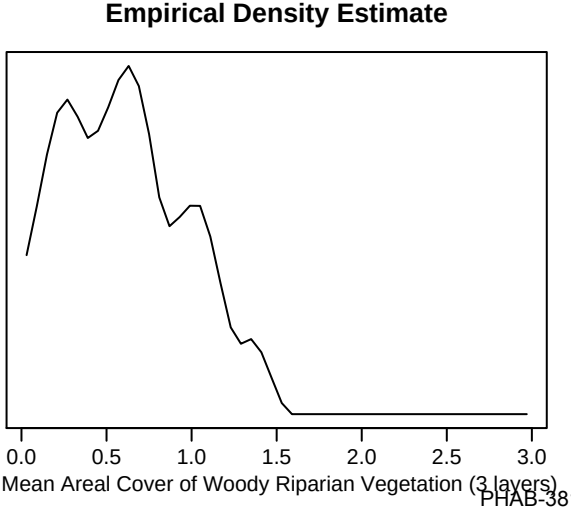
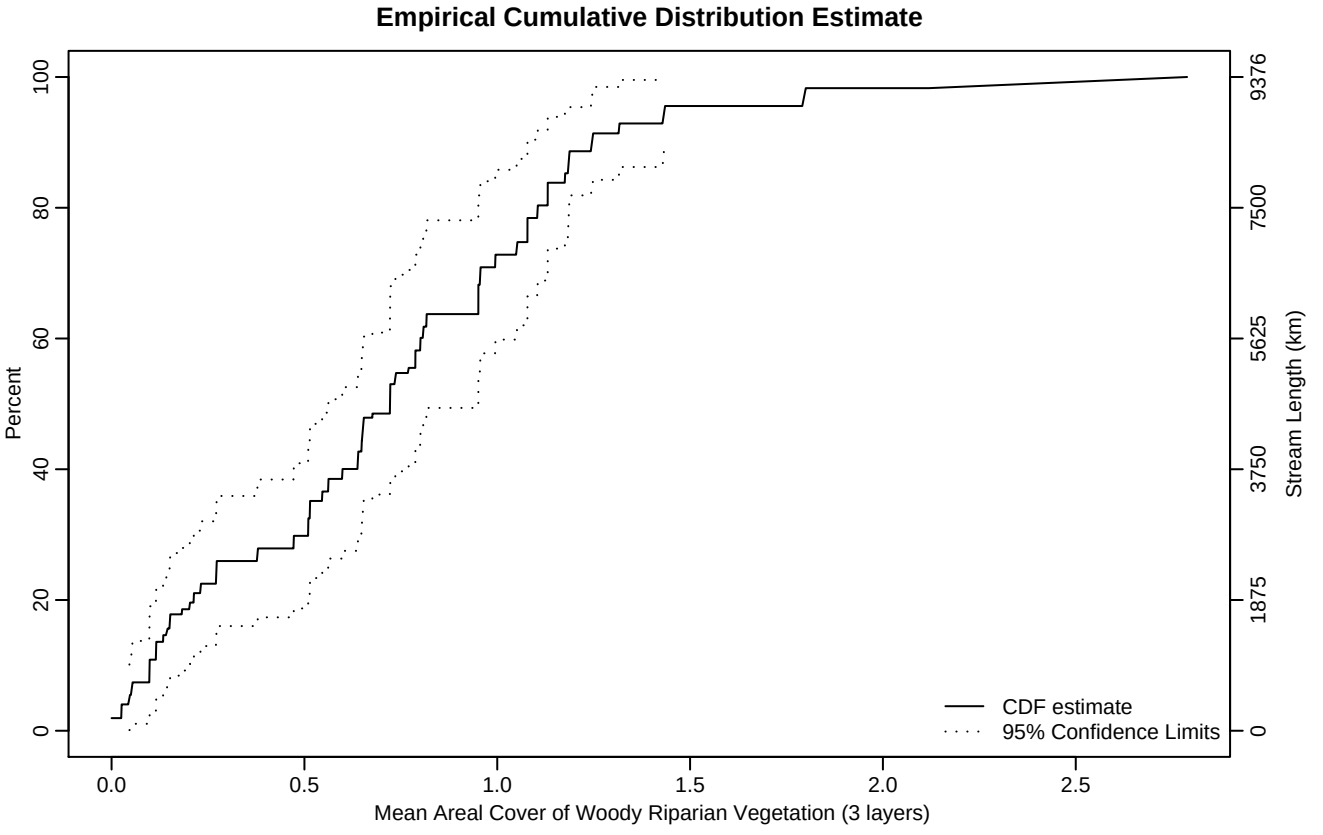


Figure PHAB−350 Indicator: XCMGW Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0	0.10
10Pct	0.10	0.03	0.15
25Pct	0.27	0.14	0.51
50Pct	0.72	0.56	0.82
75Pct	1.08	0.82	1.19
90Pct	1.25	1.13	1.80
95Pct	1.43	1.19	2.79
Mean	0.73	0.61	0.86
Std Dev	0.45	0.37	0.52

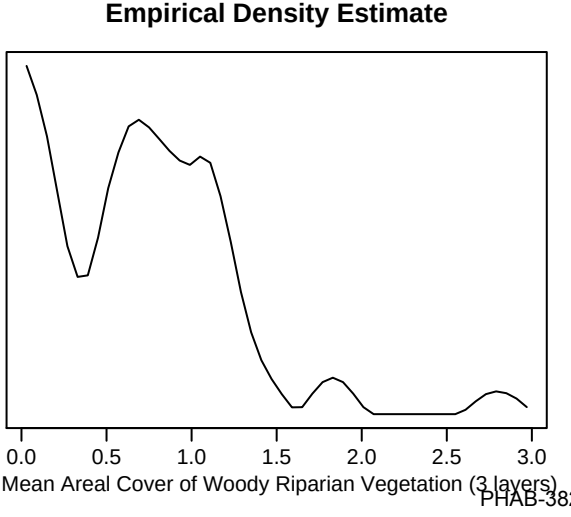
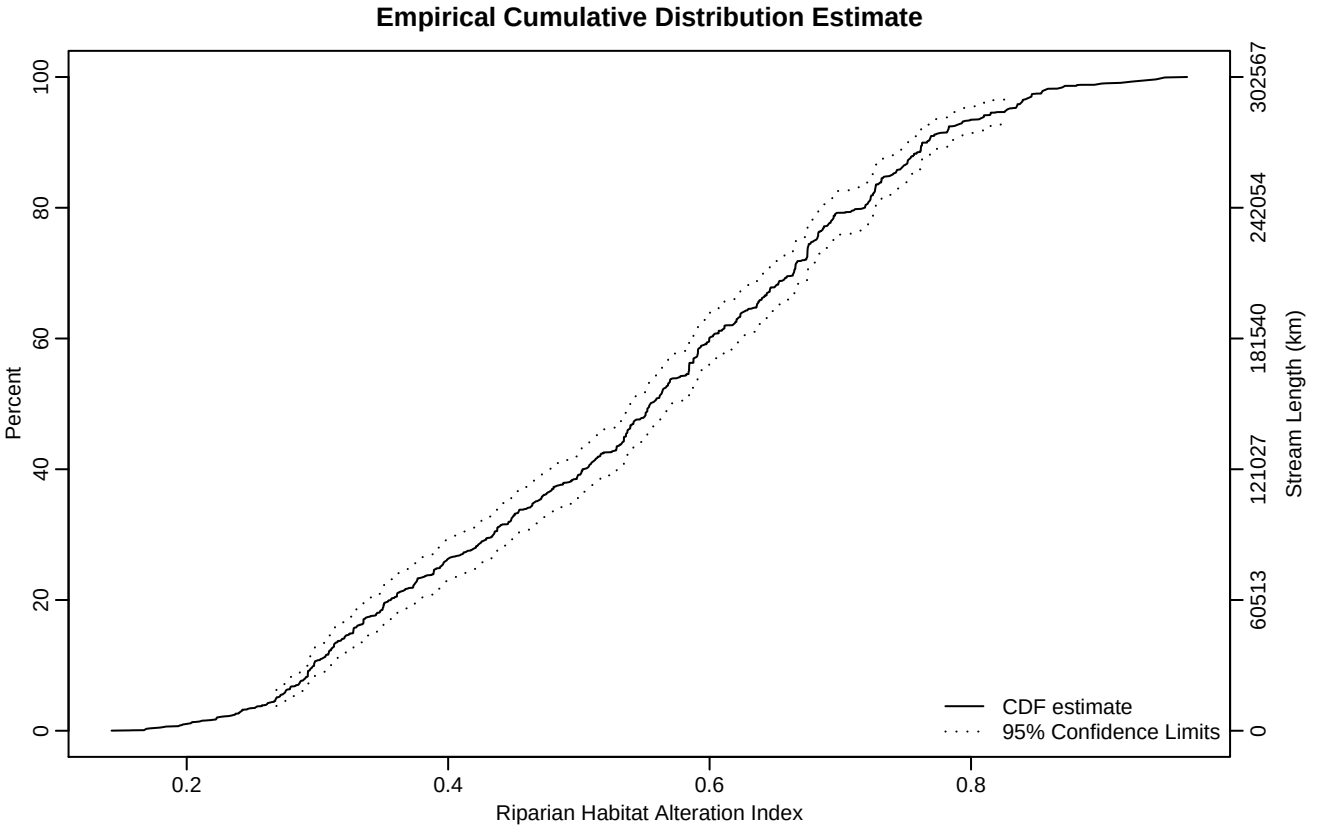


Figure PHAB−351 Indicator: QR1 Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.27	0.26	0.28
10Pct	0.30	0.29	0.31
25Pct	0.39	0.37	0.42
50Pct	0.55	0.54	0.57
75Pct	0.68	0.67	0.69
90Pct	0.77	0.75	0.79
95Pct	0.83	0.79	0.85
Mean	0.54	0.53	0.56
Std Dev	0.16	0.15	0.16

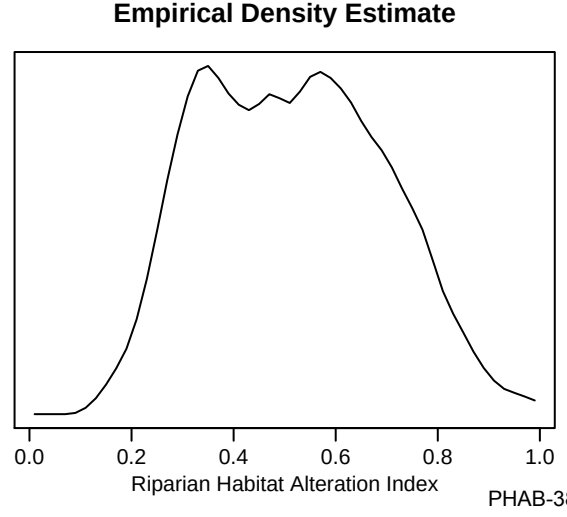
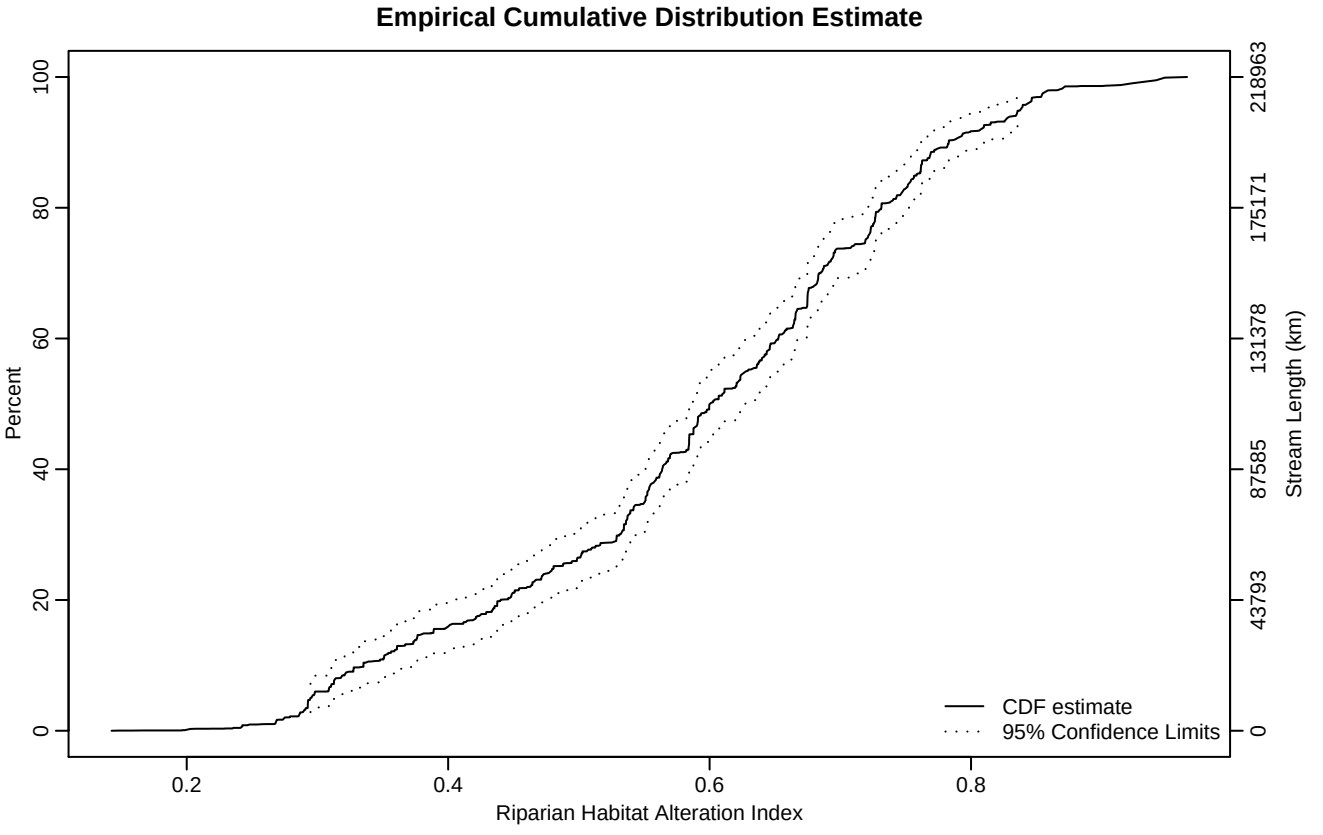


Figure PHAB−352 Indicator: QR1 Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.29	0.29	0.31
10Pct	0.34	0.31	0.37
25Pct	0.48	0.45	0.53
50Pct	0.60	0.58	0.63
75Pct	0.72	0.69	0.73
90Pct	0.78	0.76	0.82
95Pct	0.84	0.81	0.85
Mean	0.59	0.58	0.61
Std Dev	0.15	0.14	0.16

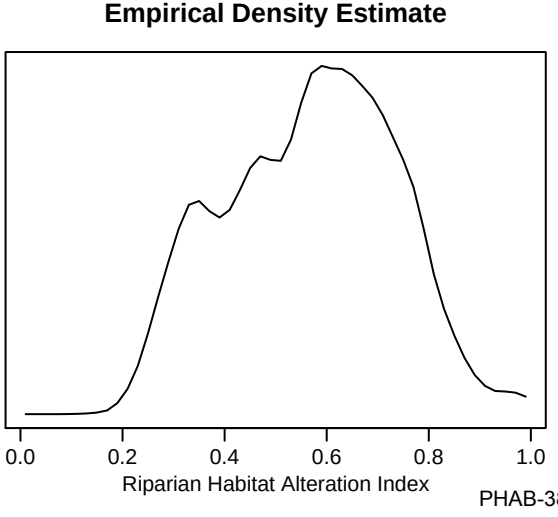
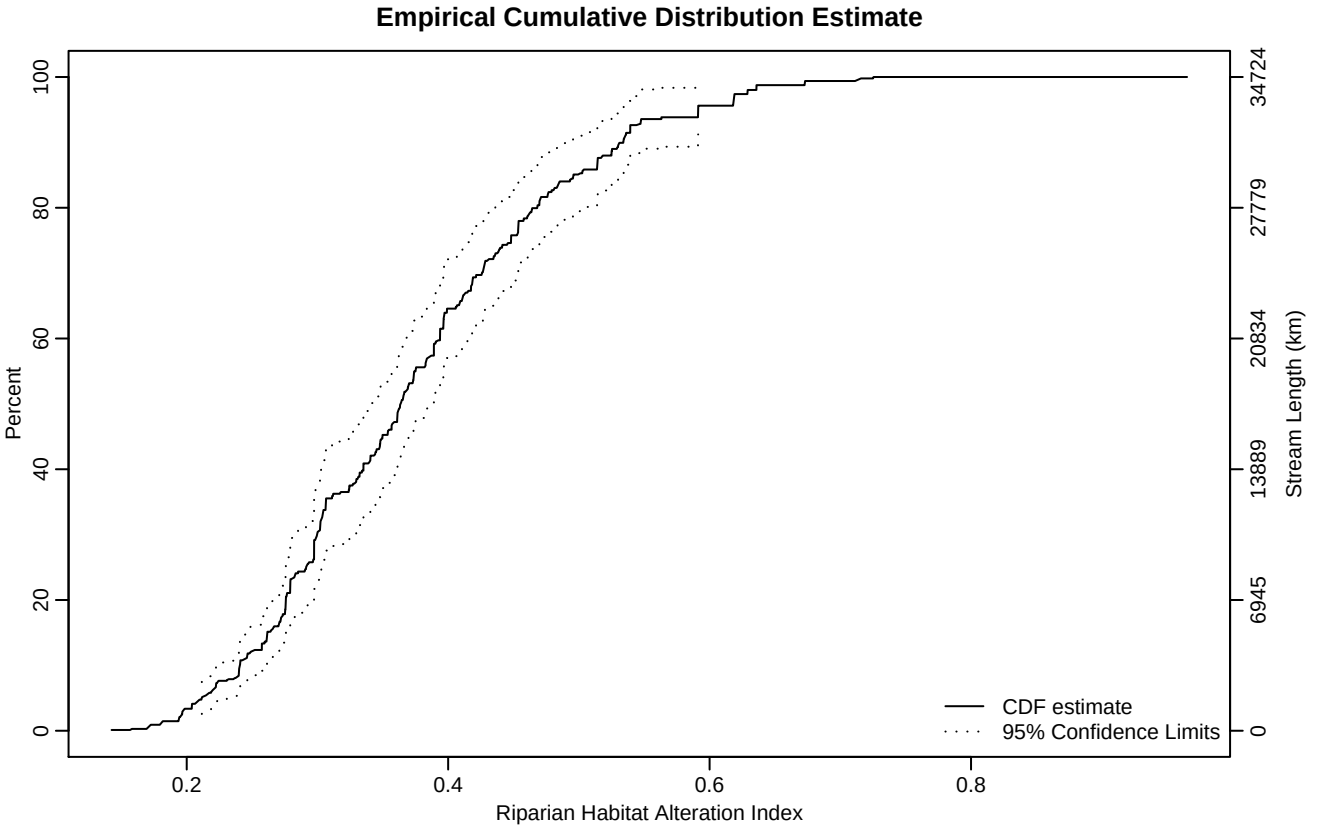


Figure PHAB−353 Indicator: QR1 Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.21	0.20	0.22
10Pct	0.24	0.22	0.26
25Pct	0.29	0.28	0.30
50Pct	0.36	0.34	0.39
75Pct	0.45	0.42	0.48
90Pct	0.53	0.50	0.59
95Pct	0.59	0.53	0.71
Mean	0.38	0.36	0.39
Std Dev	0.11	0.10	0.12

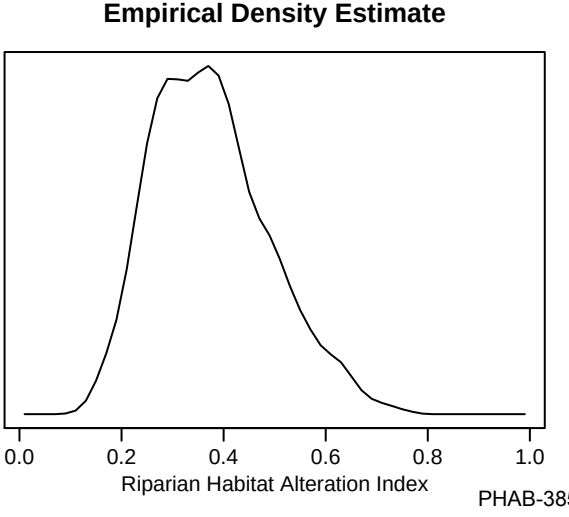
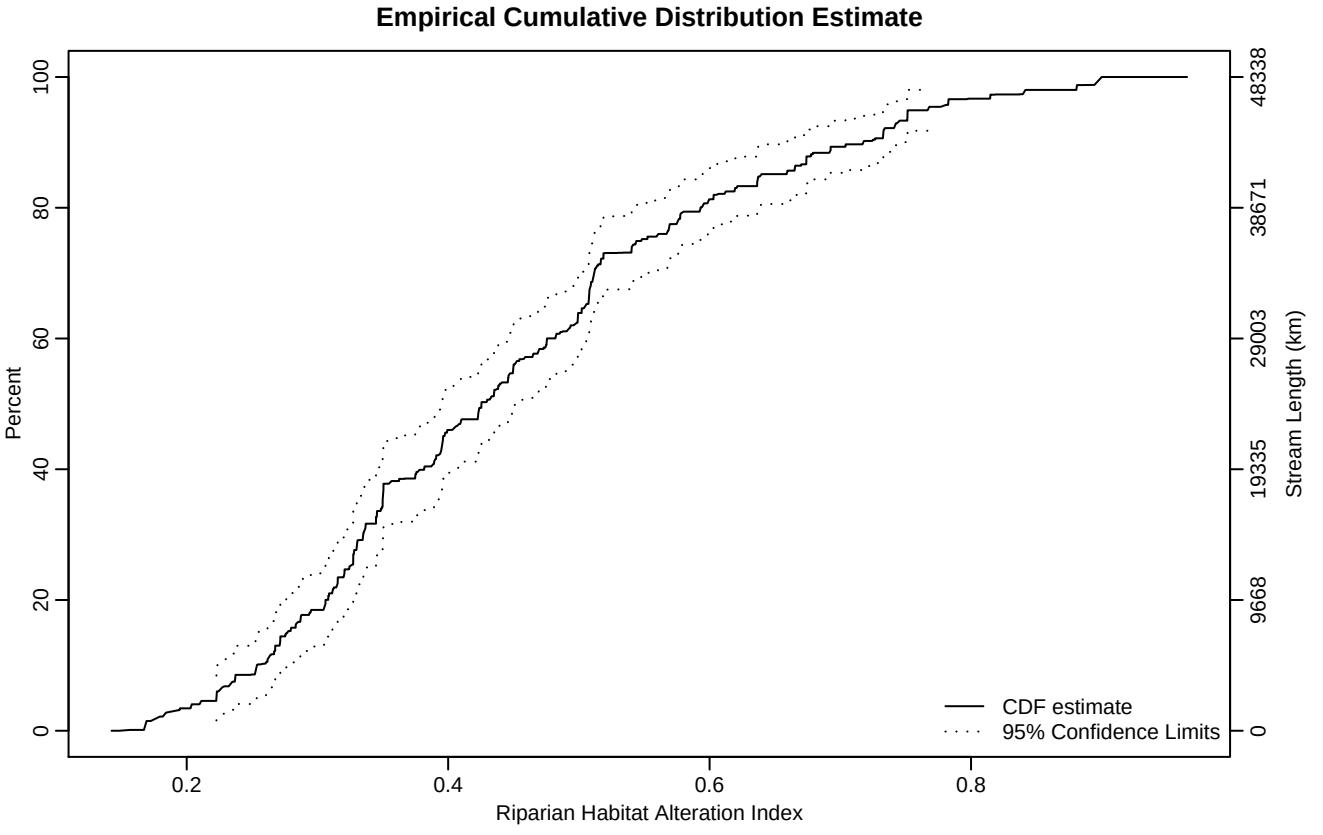


Figure PHAB−354 Indicator: QR1 Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.18	0.24
10Pct	0.25	0.22	0.28
25Pct	0.32	0.31	0.34
50Pct	0.43	0.40	0.45
75Pct	0.55	0.51	0.60
90Pct	0.72	0.67	0.75
95Pct	0.77	0.73	0.88
Mean	0.45	0.43	0.47
Std Dev	0.14	0.13	0.16

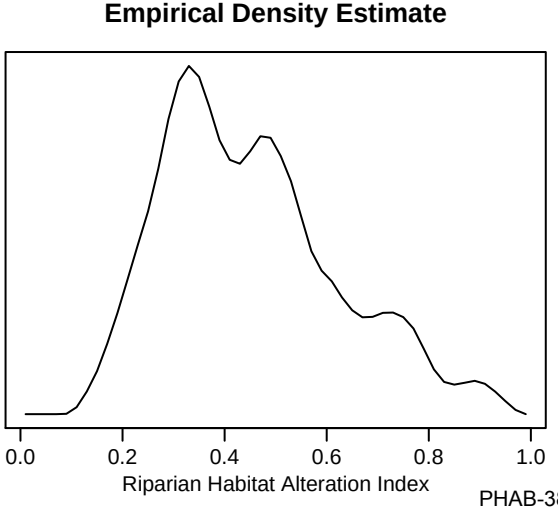
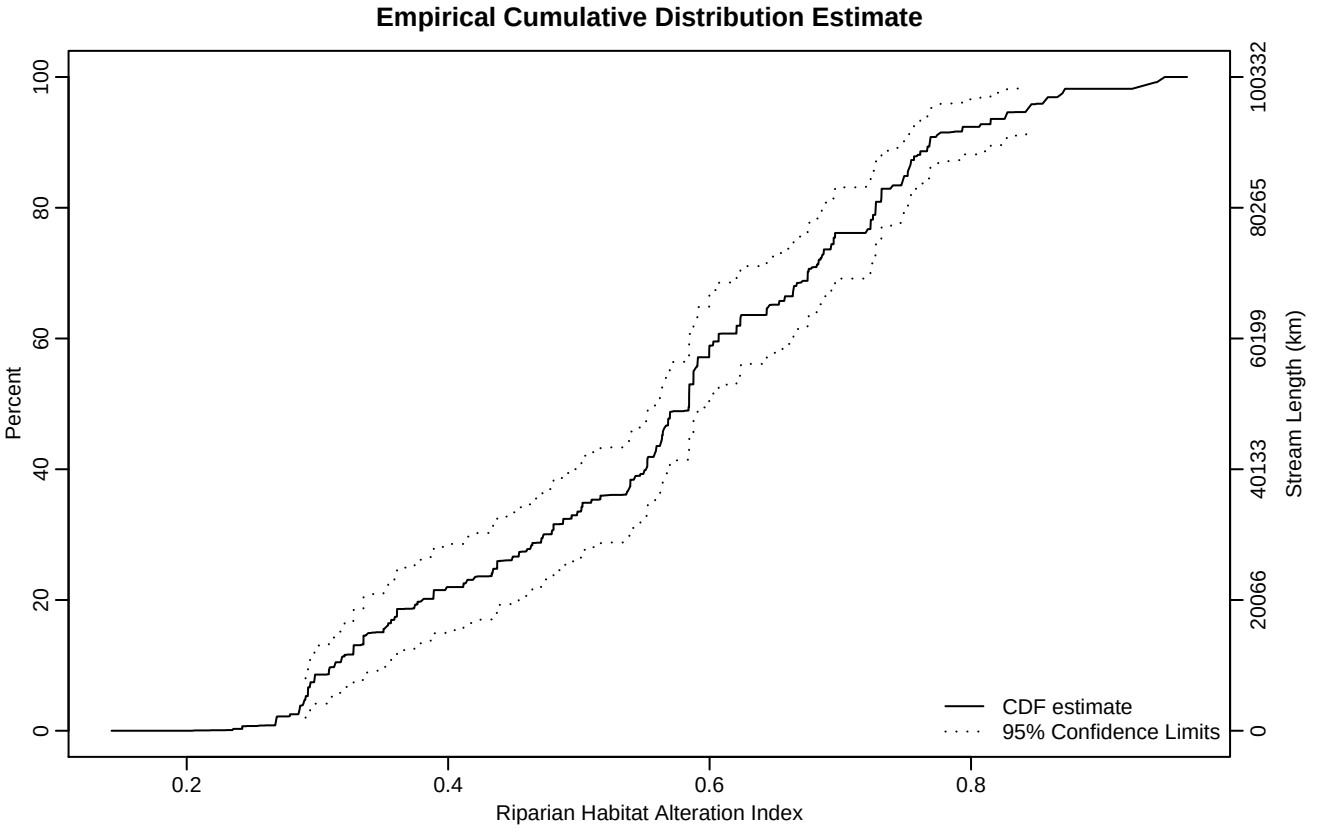


Figure PHAB−355 Indicator: QR1 Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.29	0.27	0.30
10Pct	0.31	0.29	0.34
25Pct	0.44	0.36	0.49
50Pct	0.58	0.56	0.60
75Pct	0.69	0.66	0.73
90Pct	0.77	0.75	0.84
95Pct	0.84	0.78	0.93
Mean	0.57	0.54	0.59
Std Dev	0.16	0.15	0.18

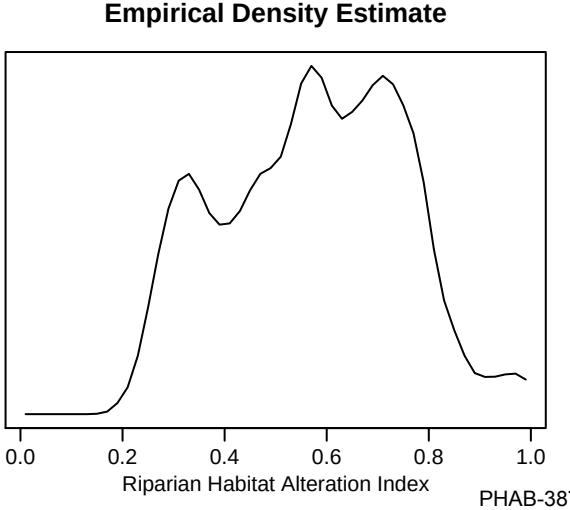
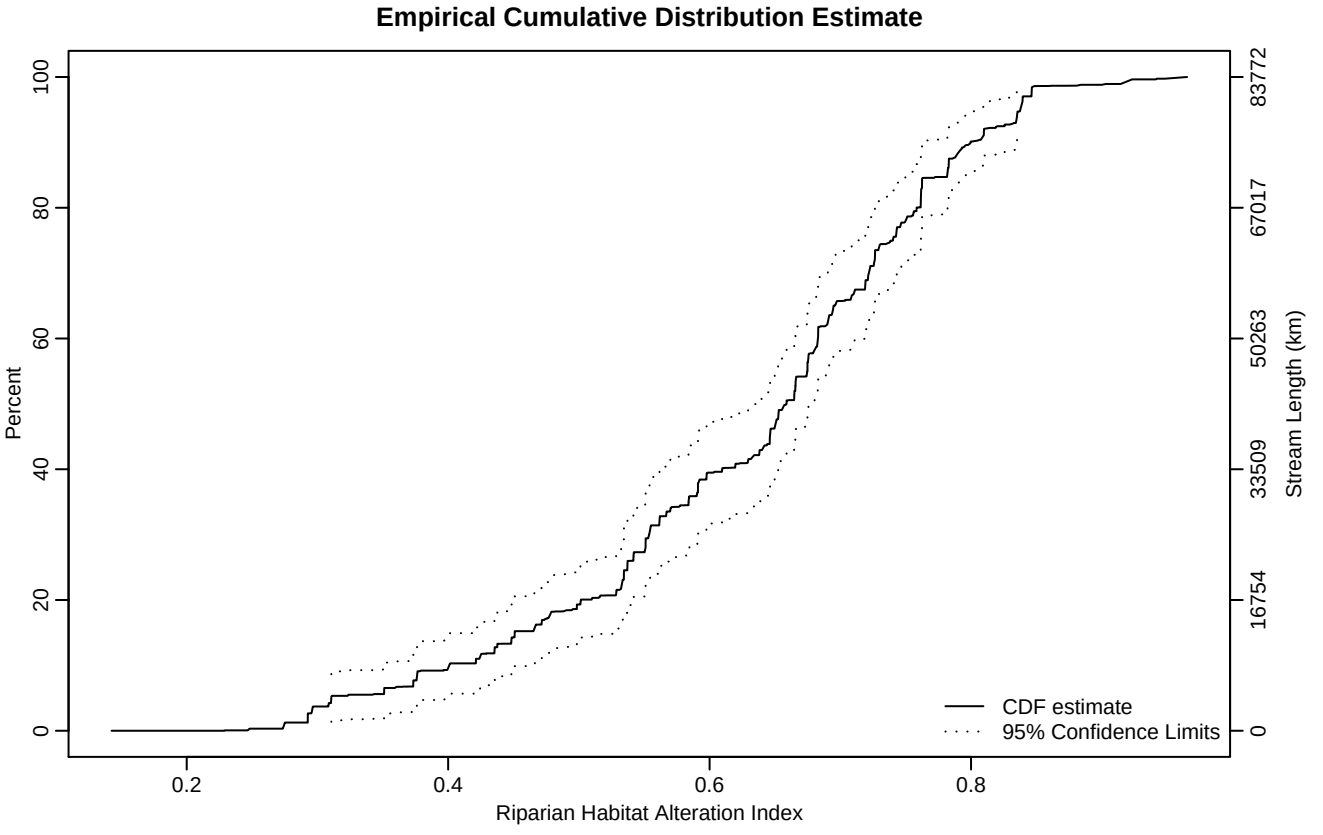


Figure PHAB−356 Indicator: QR1 Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.31	0.29	0.38
10Pct	0.40	0.32	0.45
25Pct	0.54	0.49	0.56
50Pct	0.66	0.63	0.68
75Pct	0.74	0.72	0.76
90Pct	0.80	0.78	0.84
95Pct	0.84	0.81	0.88
Mean	0.63	0.61	0.65
Std Dev	0.14	0.13	0.15

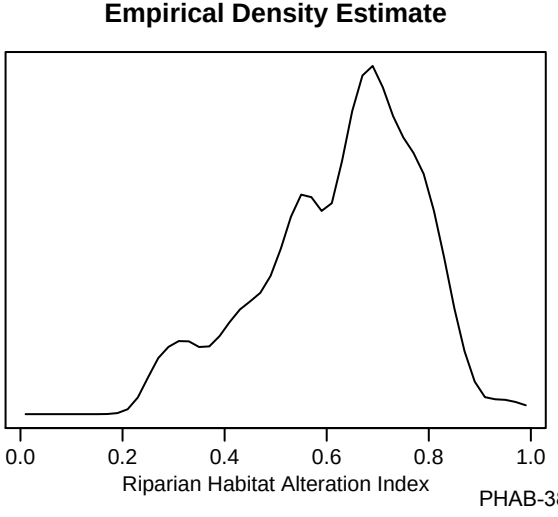
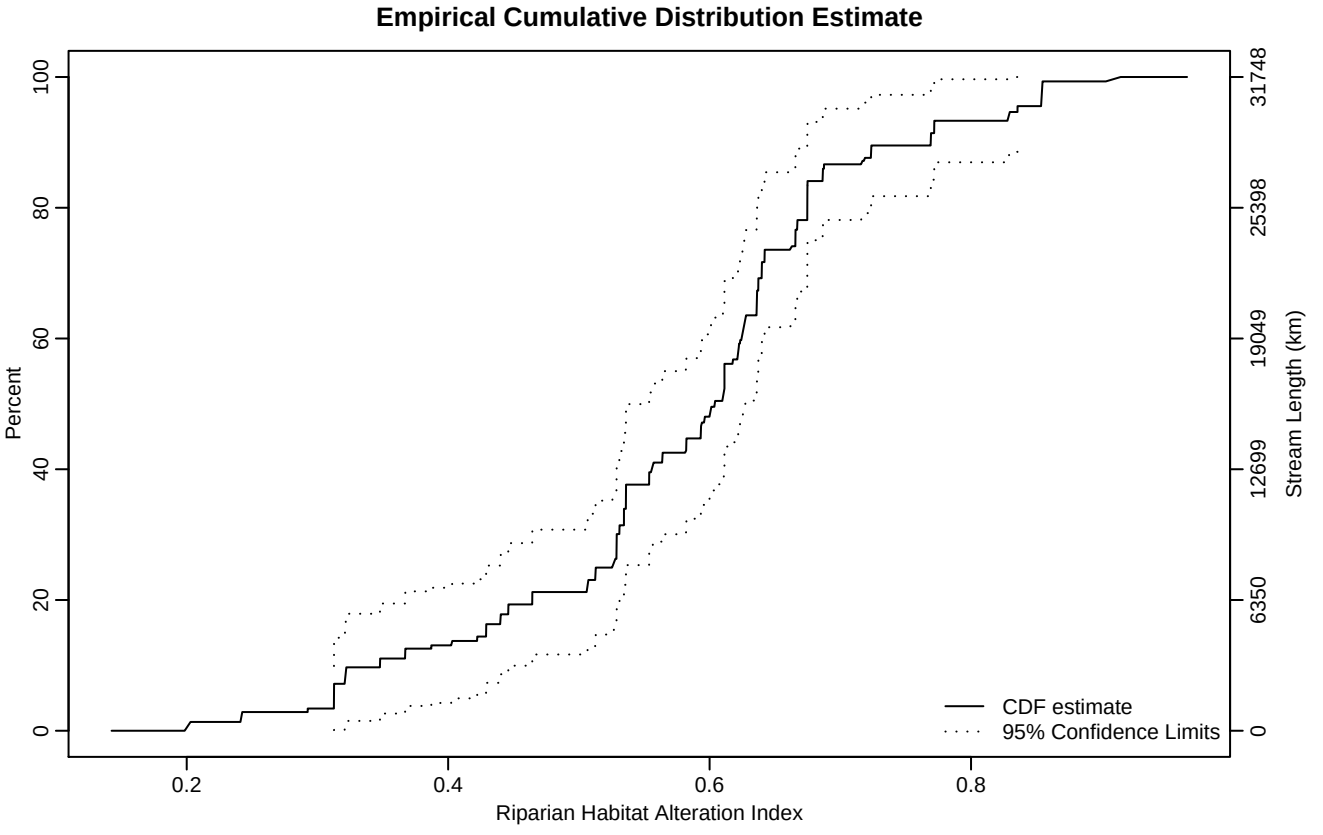


Figure PHAB−357 Indicator: QR1 Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.31	0.24	0.32
10Pct	0.35	0.24	0.45
25Pct	0.53	0.43	0.54
50Pct	0.60	0.54	0.63
75Pct	0.67	0.63	0.72
90Pct	0.77	0.67	0.85
95Pct	0.84	0.72	0.91
Mean	0.58	0.54	0.61
Std Dev	0.14	0.12	0.16

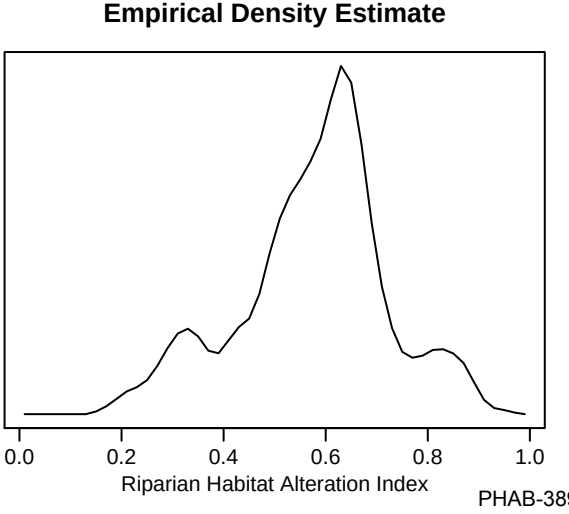
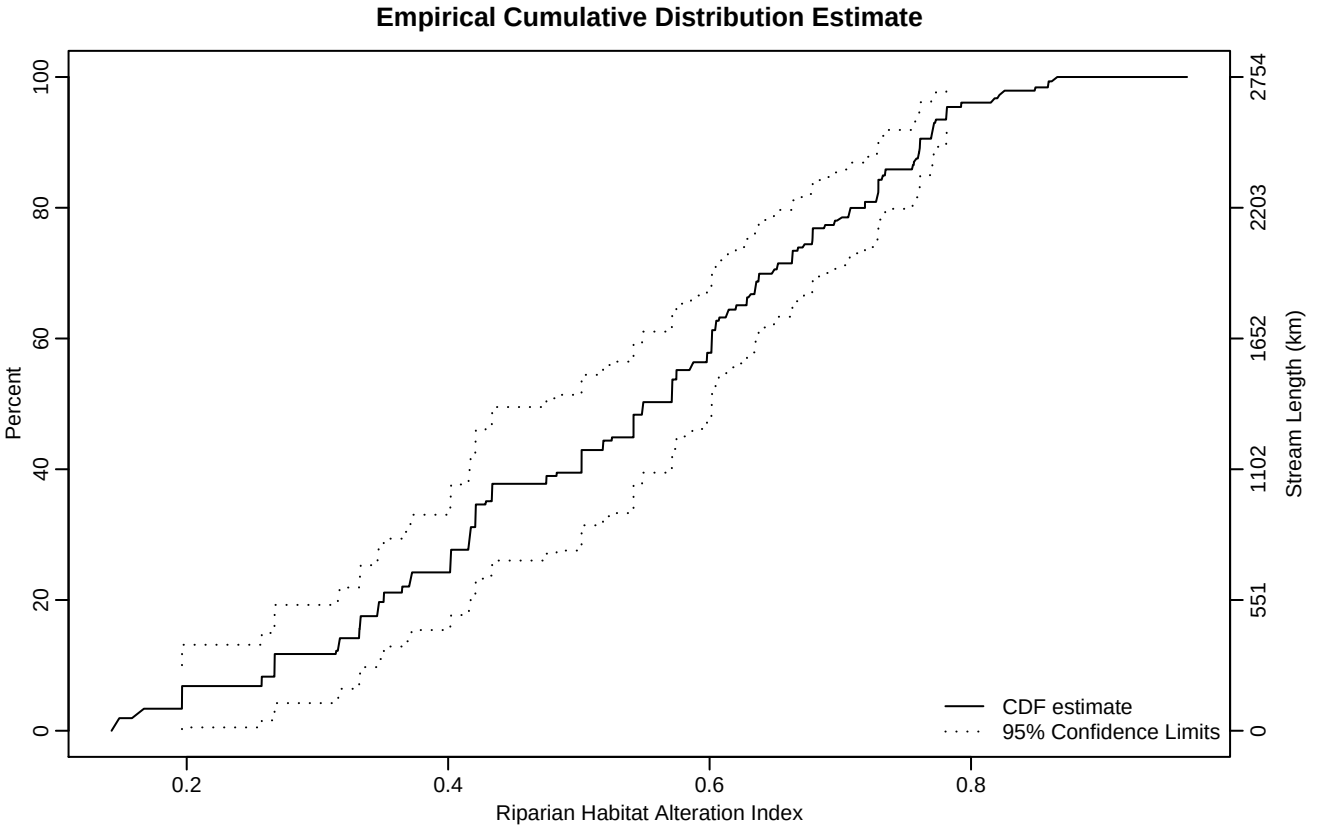


Figure PHAB−358 Indicator: QR1 Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.20	0.15	0.27
10Pct	0.27	0.17	0.33
25Pct	0.40	0.33	0.42
50Pct	0.55	0.48	0.60
75Pct	0.68	0.63	0.73
90Pct	0.76	0.73	0.79
95Pct	0.78	0.77	0.86
Mean	0.53	0.50	0.56
Std Dev	0.16	0.14	0.18

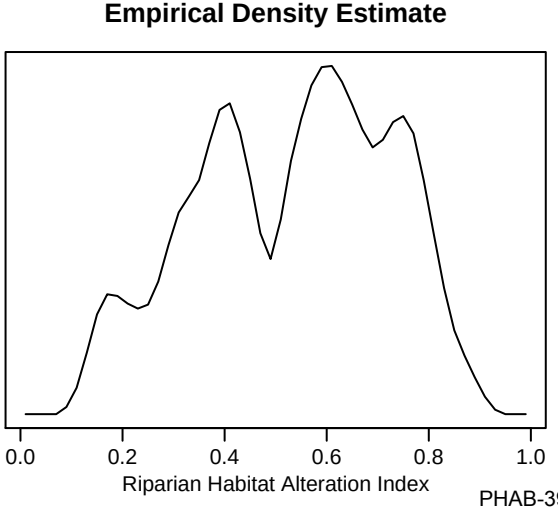
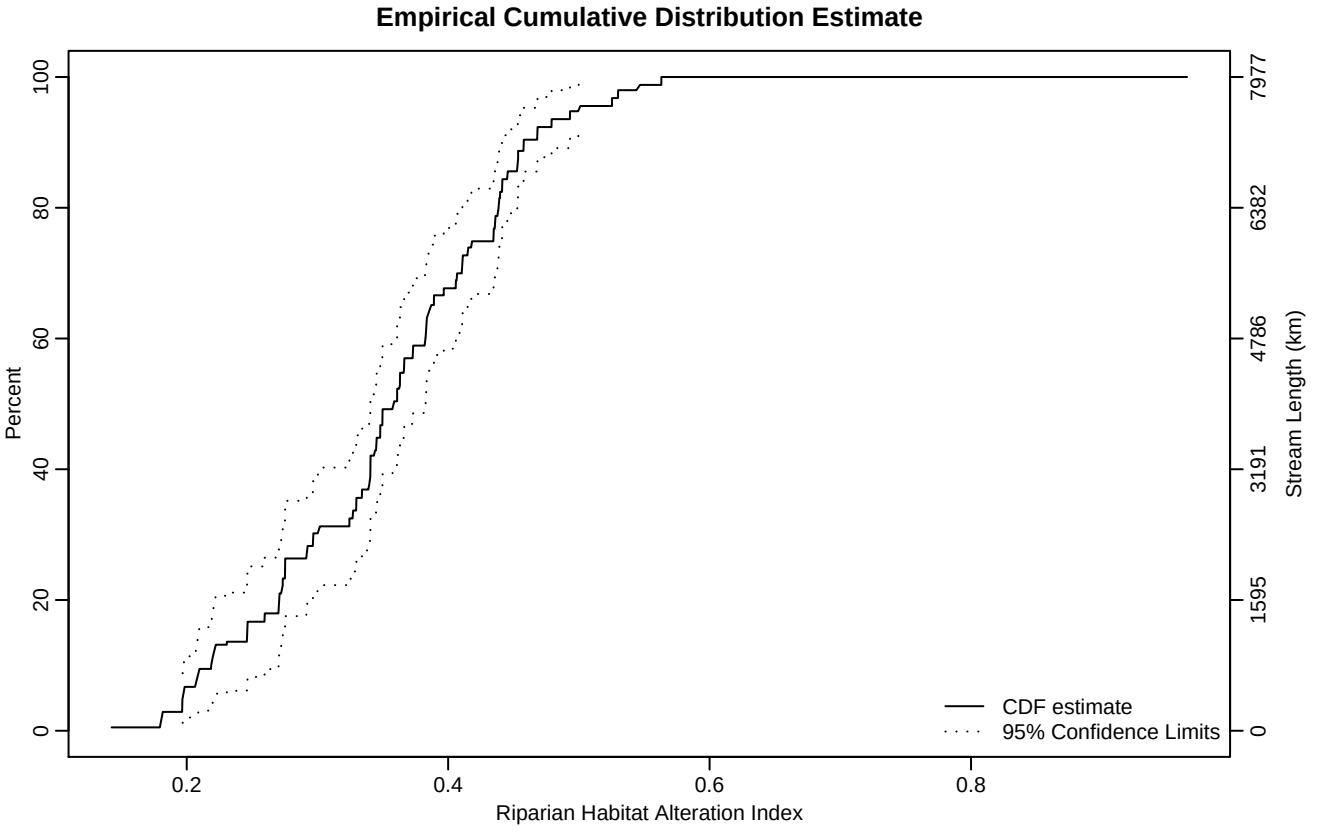


Figure PHAB−359 Indicator: QR1 Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.20	0.18	0.21
10Pct	0.22	0.20	0.25
25Pct	0.28	0.25	0.33
50Pct	0.36	0.34	0.38
75Pct	0.43	0.40	0.44
90Pct	0.46	0.45	0.50
95Pct	0.50	0.47	0.56
Mean	0.35	0.34	0.37
Std Dev	0.08	0.07	0.09

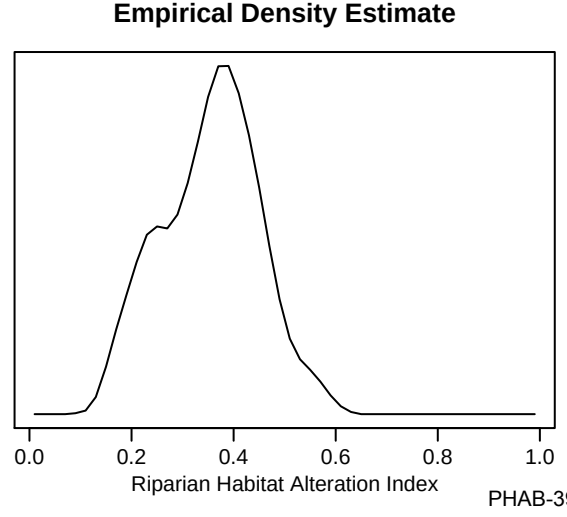
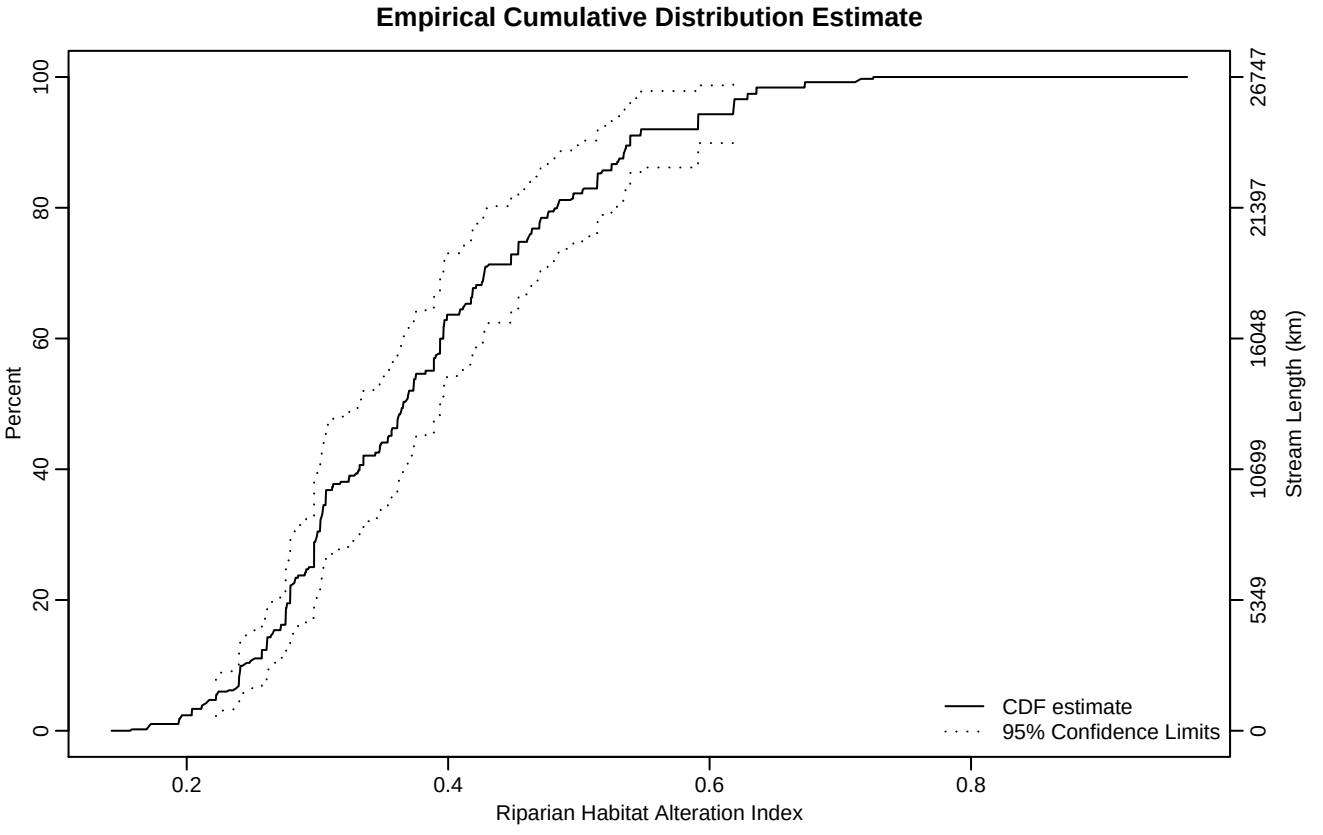


Figure PHAB−360 Indicator: QR1 Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.20	0.24
10Pct	0.24	0.22	0.26
25Pct	0.29	0.28	0.30
50Pct	0.37	0.33	0.39
75Pct	0.46	0.42	0.51
90Pct	0.54	0.51	0.62
95Pct	0.62	0.54	0.71
Mean	0.38	0.36	0.40
Std Dev	0.11	0.10	0.12

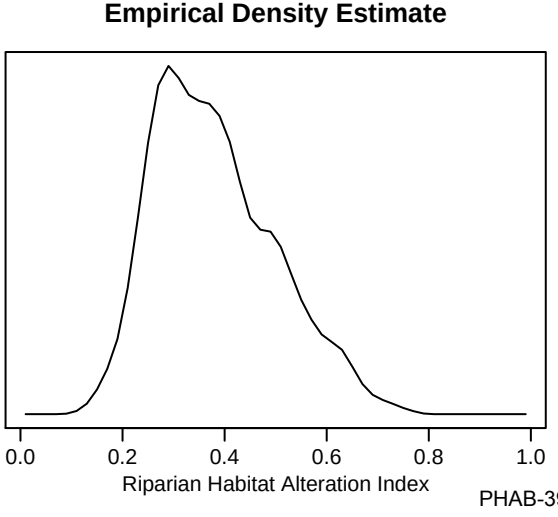
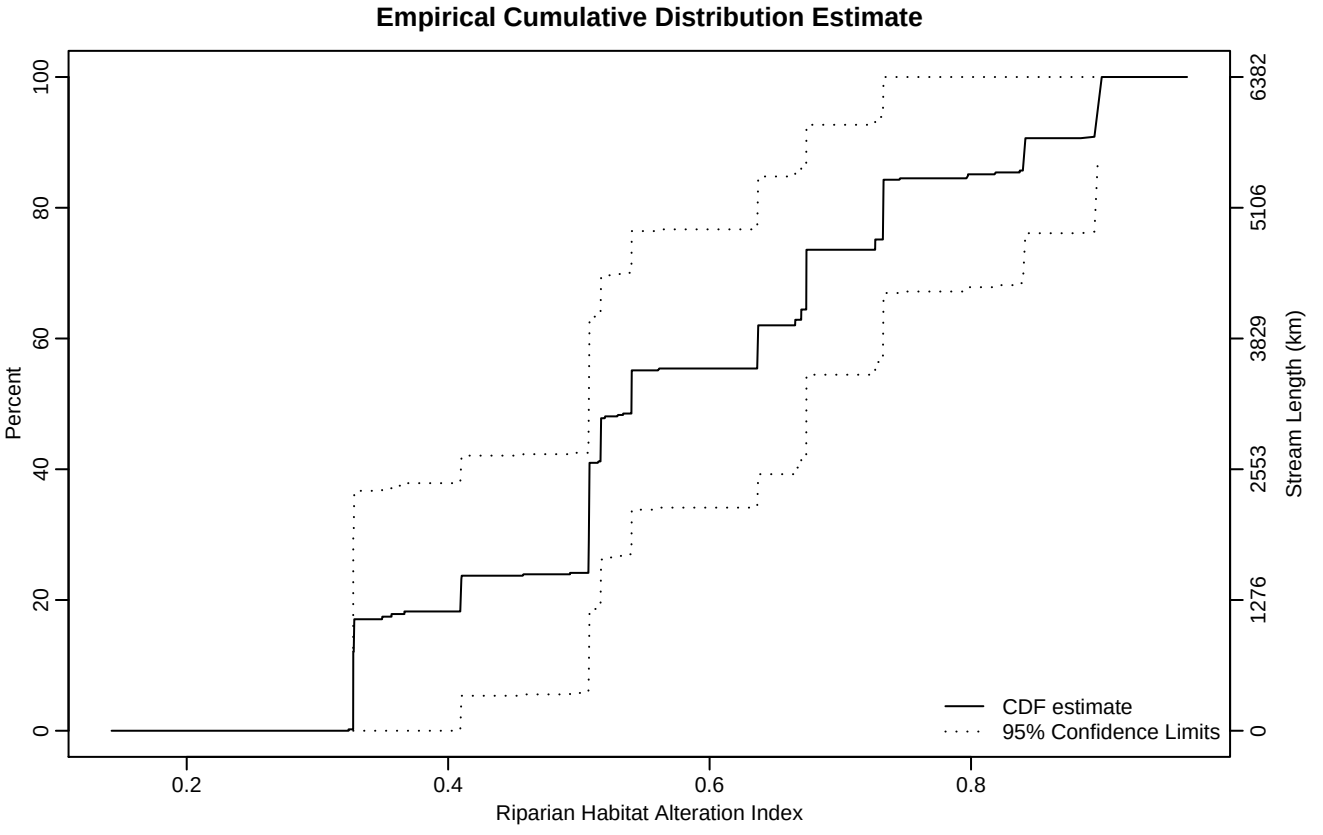


Figure PHAB−361 Indicator: QR1 Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.33	0.33	0.33
10Pct	0.33	0.33	0.33
25Pct	0.51	0.33	0.52
50Pct	0.54	0.51	0.67
75Pct	0.73	0.64	0.90
90Pct	0.84	0.67	0.90
95Pct	0.90	0.73	0.90
Mean	0.58	0.50	0.66
Std Dev	0.18	0.13	0.23

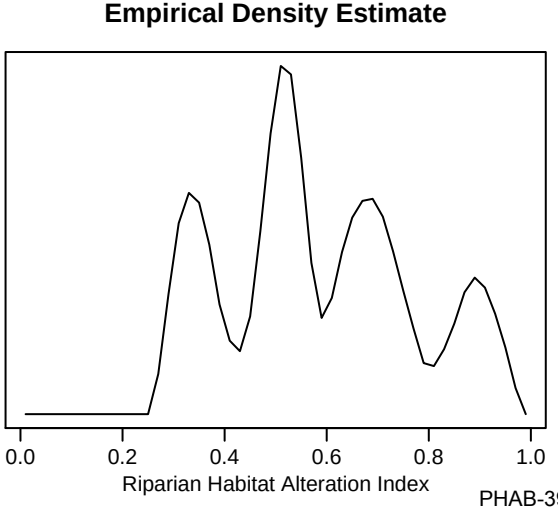
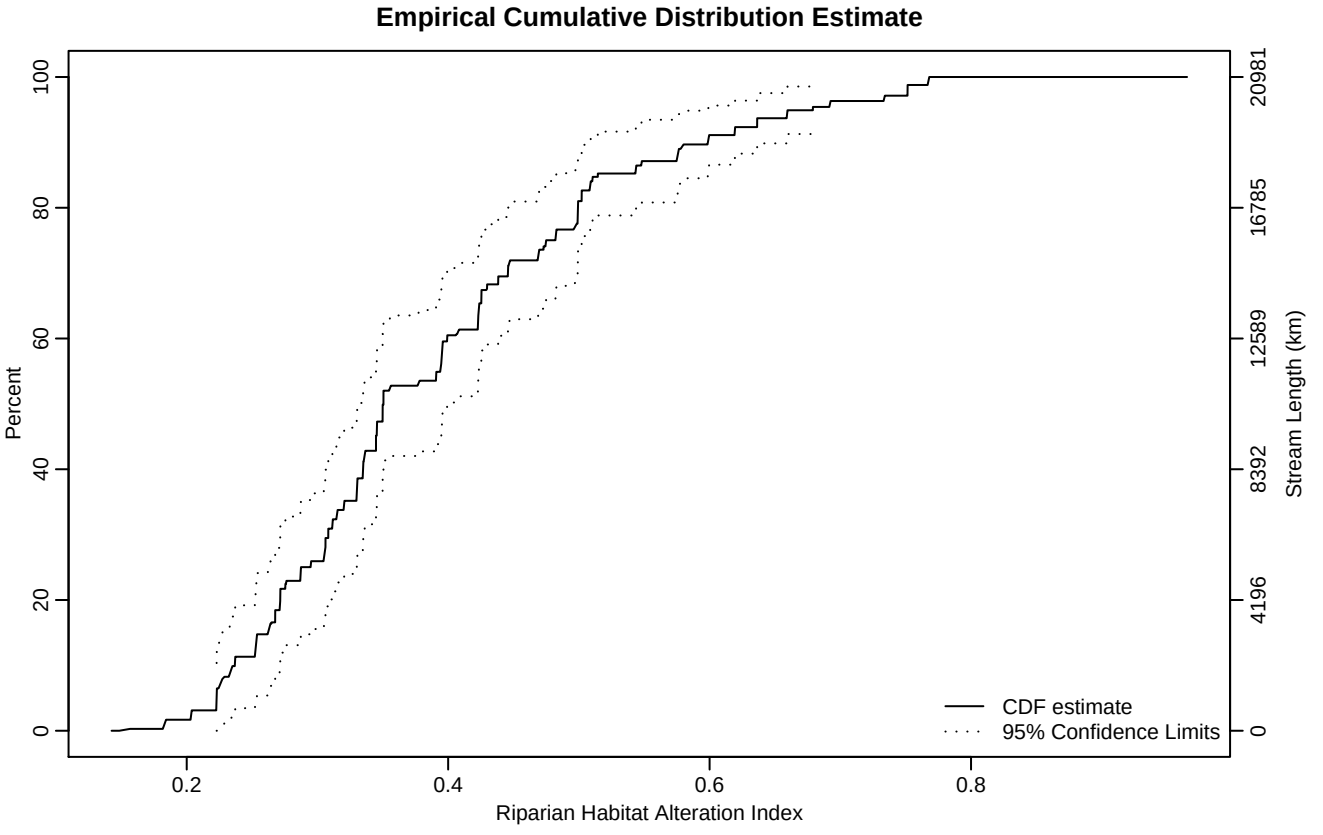


Figure PHAB−362 Indicator: QR1 Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.18	0.23
10Pct	0.24	0.20	0.27
25Pct	0.29	0.26	0.32
50Pct	0.35	0.33	0.41
75Pct	0.47	0.43	0.51
90Pct	0.60	0.51	0.68
95Pct	0.68	0.62	0.75
Mean	0.39	0.37	0.42
Std Dev	0.12	0.10	0.14

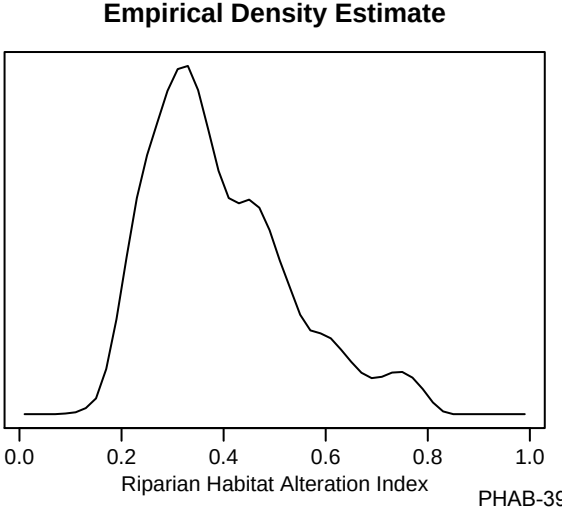
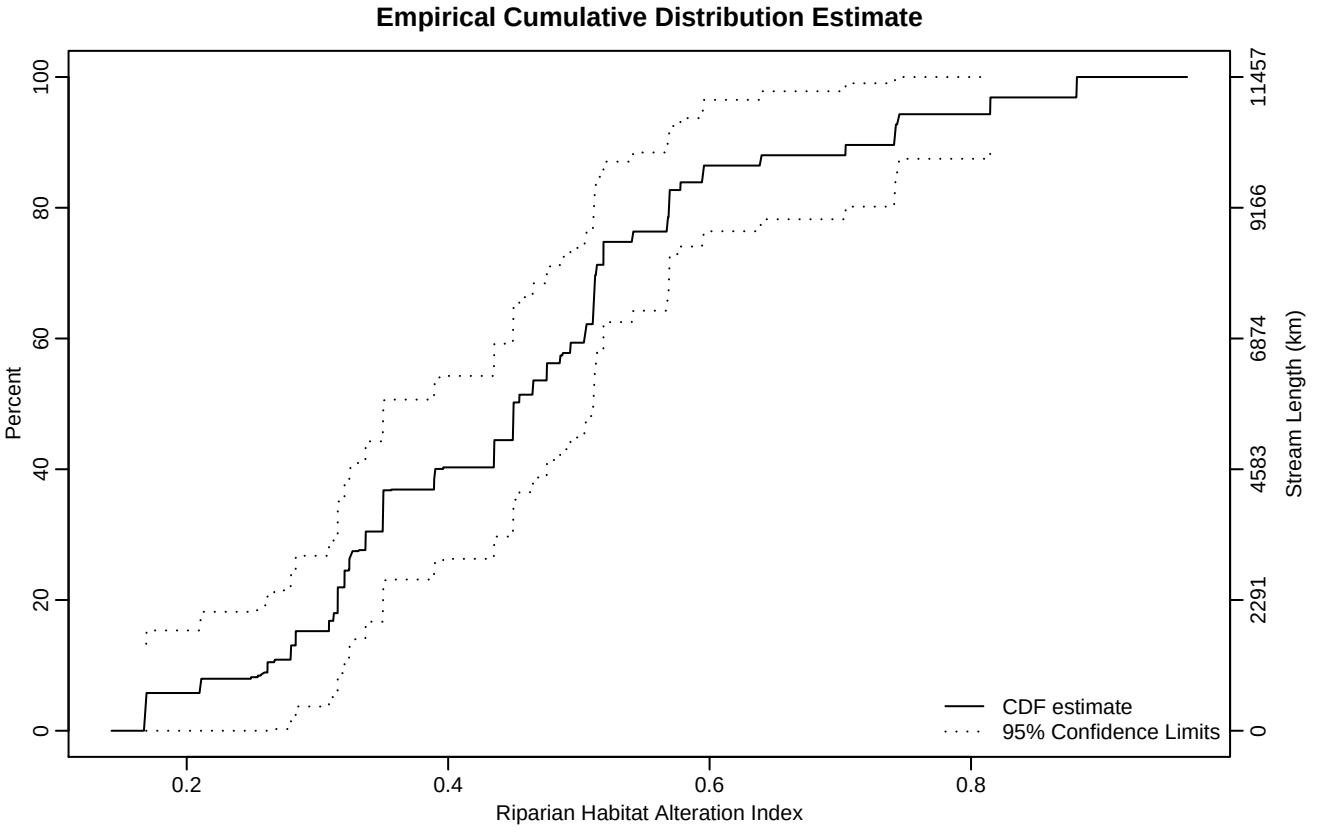


Figure PHAB−363 Indicator: QR1 Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.17	0.17	0.17
10Pct	0.26	0.14	0.32
25Pct	0.32	0.28	0.39
50Pct	0.45	0.35	0.51
75Pct	0.54	0.51	0.64
90Pct	0.74	0.57	0.88
95Pct	0.81	0.70	0.88
Mean	0.46	0.41	0.51
Std Dev	0.16	0.12	0.19

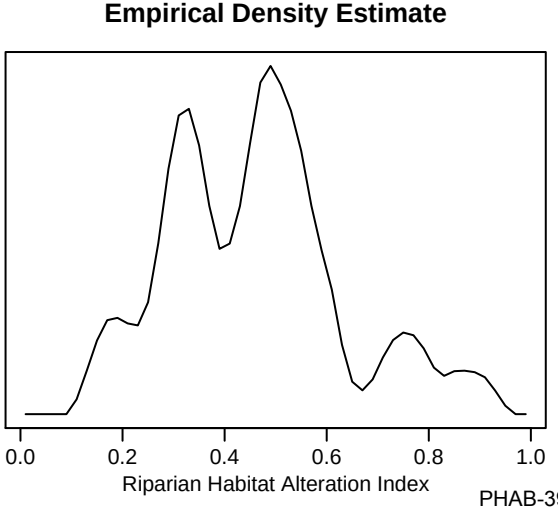
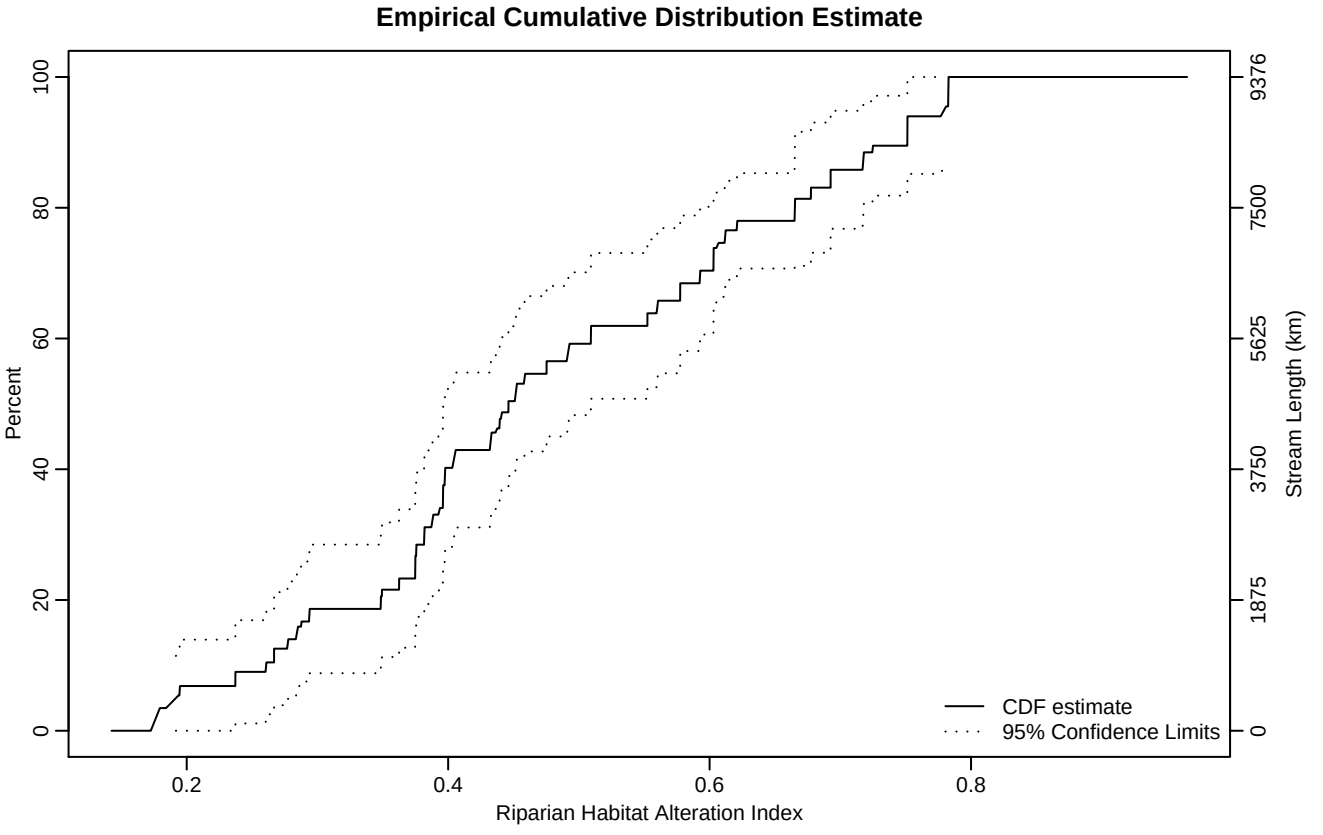


Figure PHAB−364 Indicator: QR1 Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.19	0.14	0.27
10Pct	0.26	0.18	0.29
25Pct	0.37	0.28	0.40
50Pct	0.45	0.40	0.51
75Pct	0.61	0.58	0.69
90Pct	0.75	0.67	0.78
95Pct	0.78	0.72	0.78
Mean	0.48	0.44	0.52
Std Dev	0.14	0.11	0.16

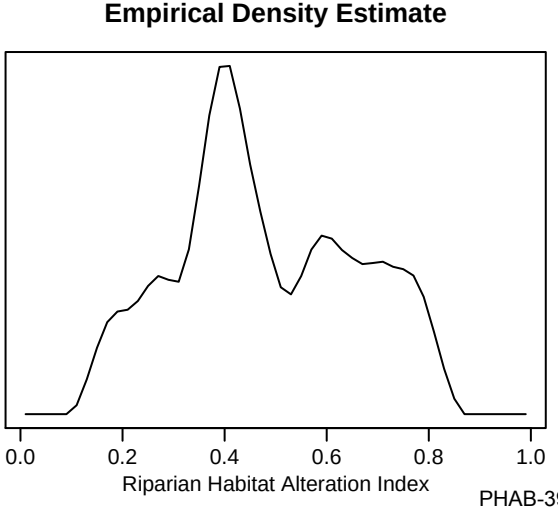
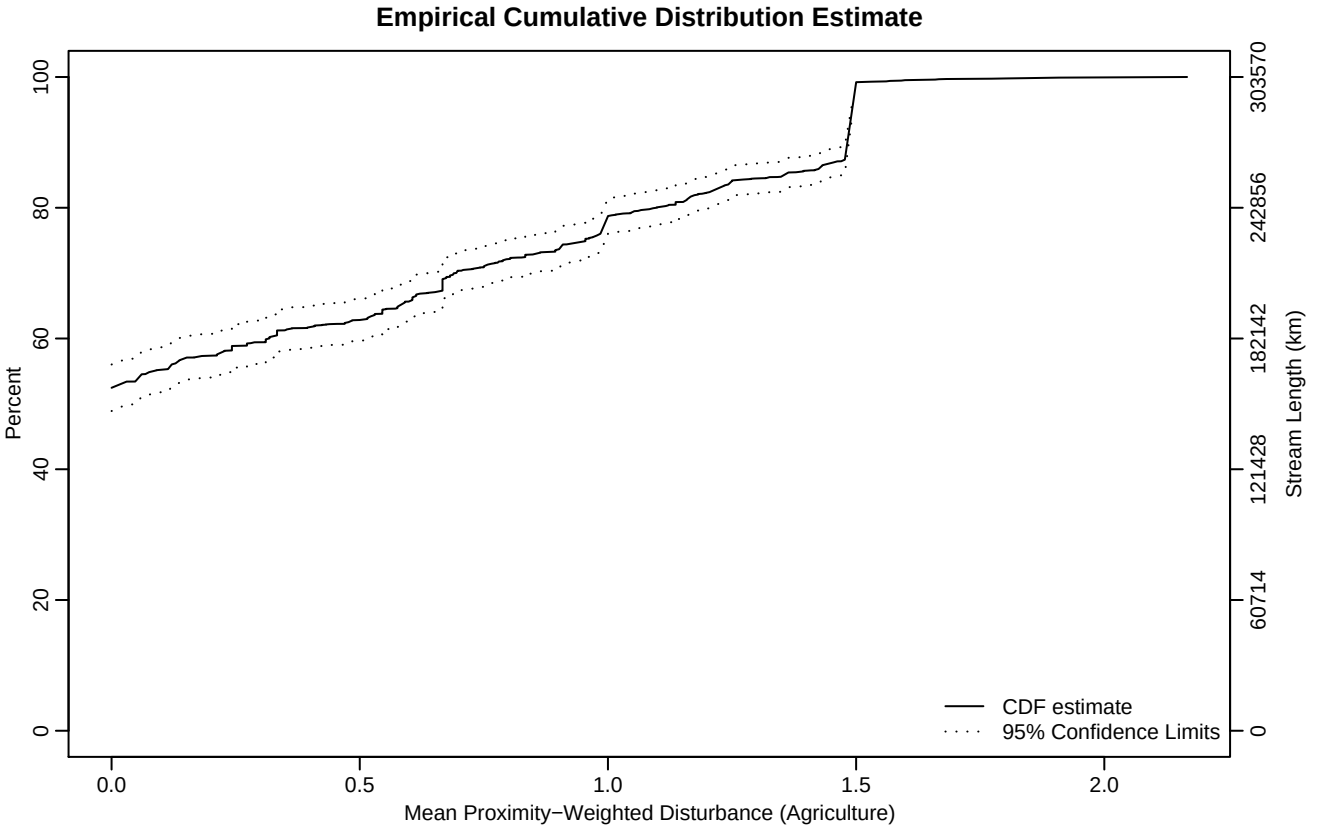


Figure PHAB−365 Indicator: W1_HAG Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.05
75Pct	0.95	0.80	1
90Pct	1.48	1.48	1.49
95Pct	1.49	1.49	1.50
Mean	0.44	0.41	0.48
Std Dev	0.50	0.47	0.53

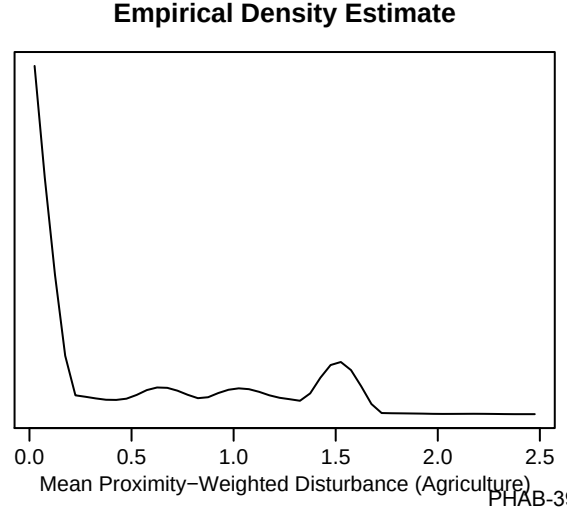
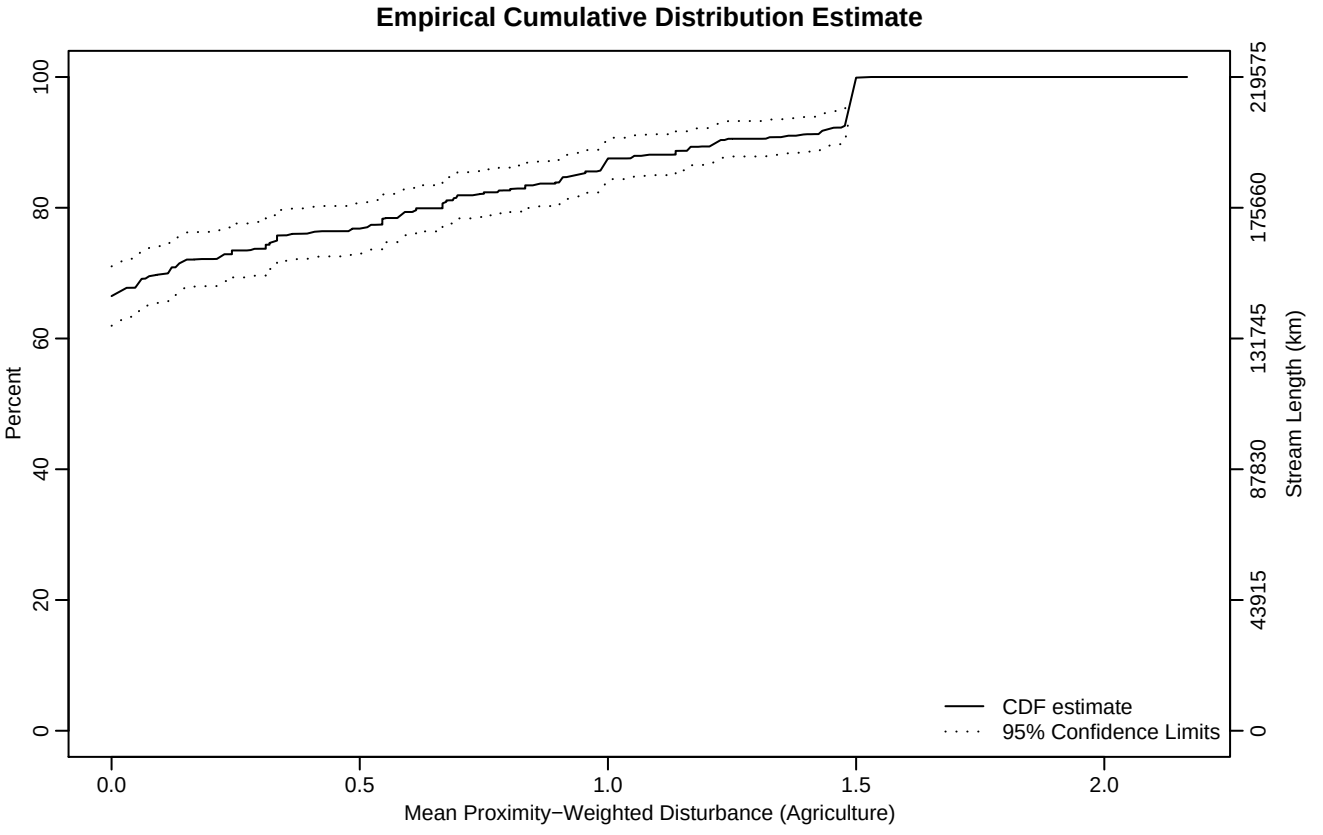


Figure PHAB−366 Indicator: W1_HAG Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.33	0.13	0.58
90Pct	1.22	1	1.48
95Pct	1.48	1.48	1.49
Mean	0.28	0.23	0.32
Std Dev	0.47	0.43	0.52

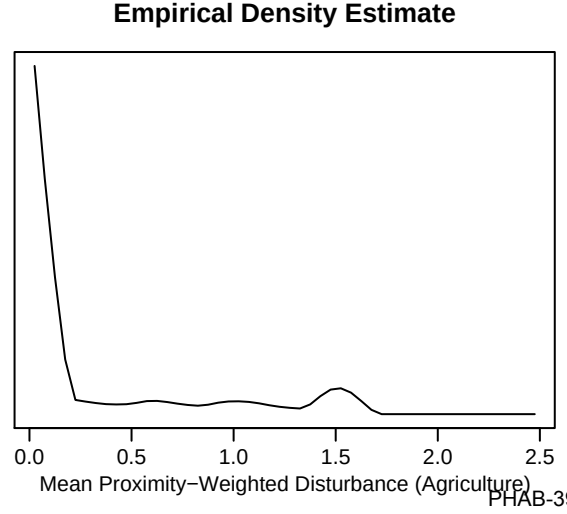
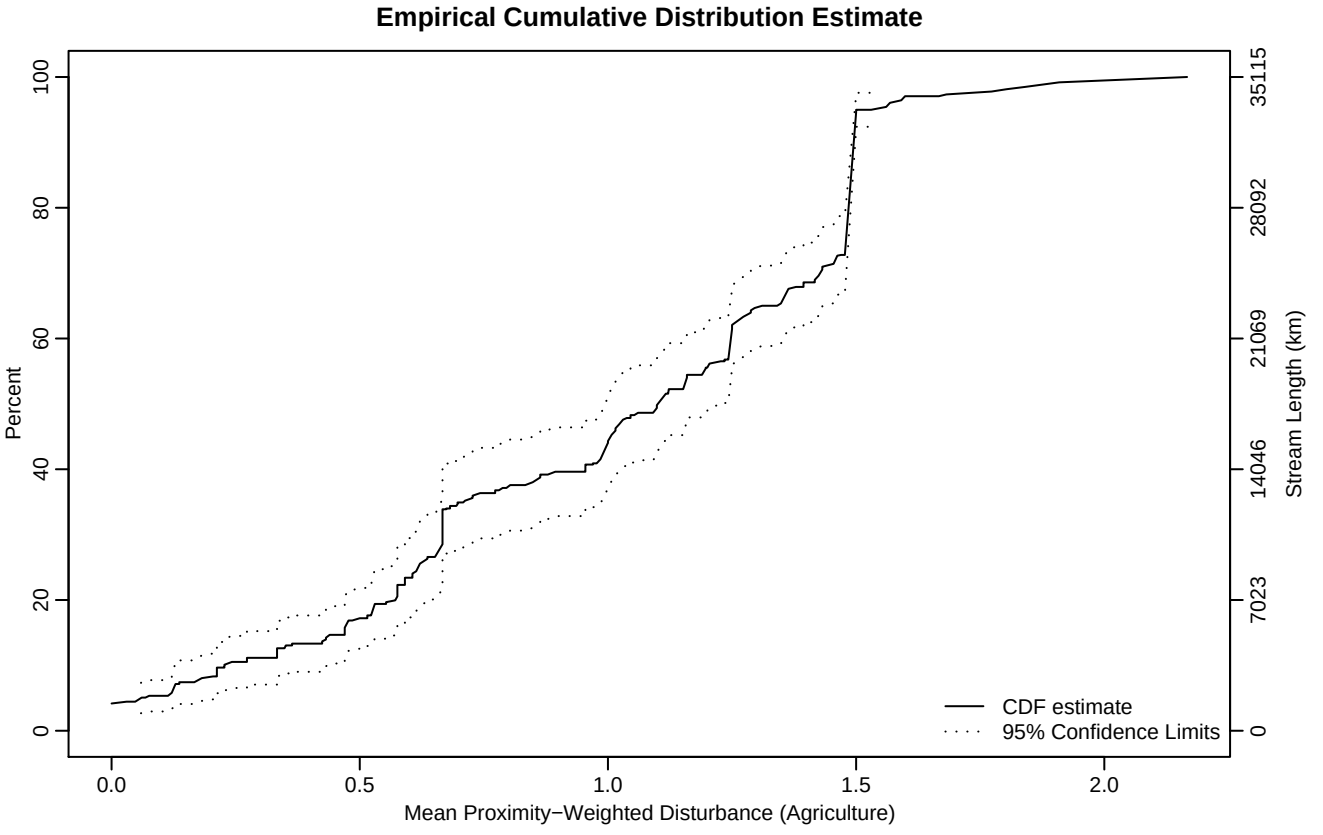


Figure PHAB−367 Indicator: W1_HAG Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0	0.14
10Pct	0.23	0.12	0.43
25Pct	0.62	0.53	0.67
50Pct	1.10	0.99	1.24
75Pct	1.48	1.42	1.49
90Pct	1.50	1.49	1.57
95Pct	1.53	1.50	1.74
Mean	1.01	0.94	1.07
Std Dev	0.47	0.43	0.50

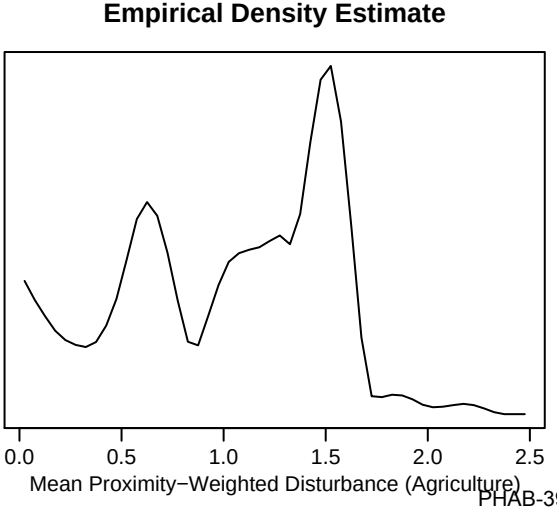
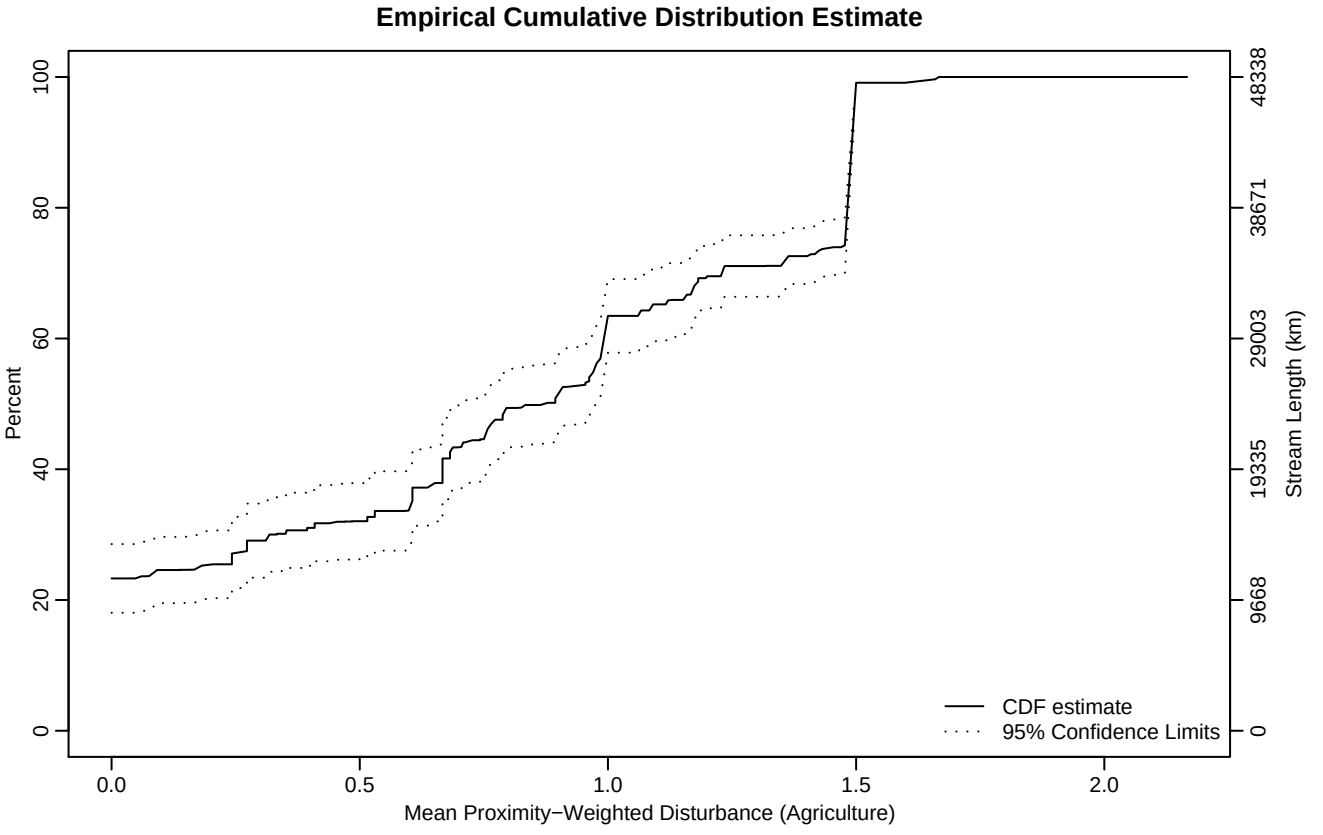


Figure PHAB−368 Indicator: W1_HAG Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.18	0	0.35
50Pct	0.87	0.71	0.98
75Pct	1.48	1.23	1.48
90Pct	1.49	1.49	1.50
95Pct	1.50	1.49	1.64
Mean	0.80	0.74	0.86
Std Dev	0.44	0.40	0.48

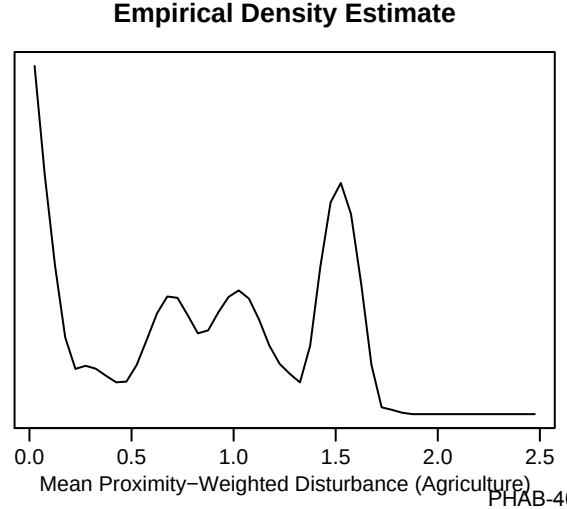
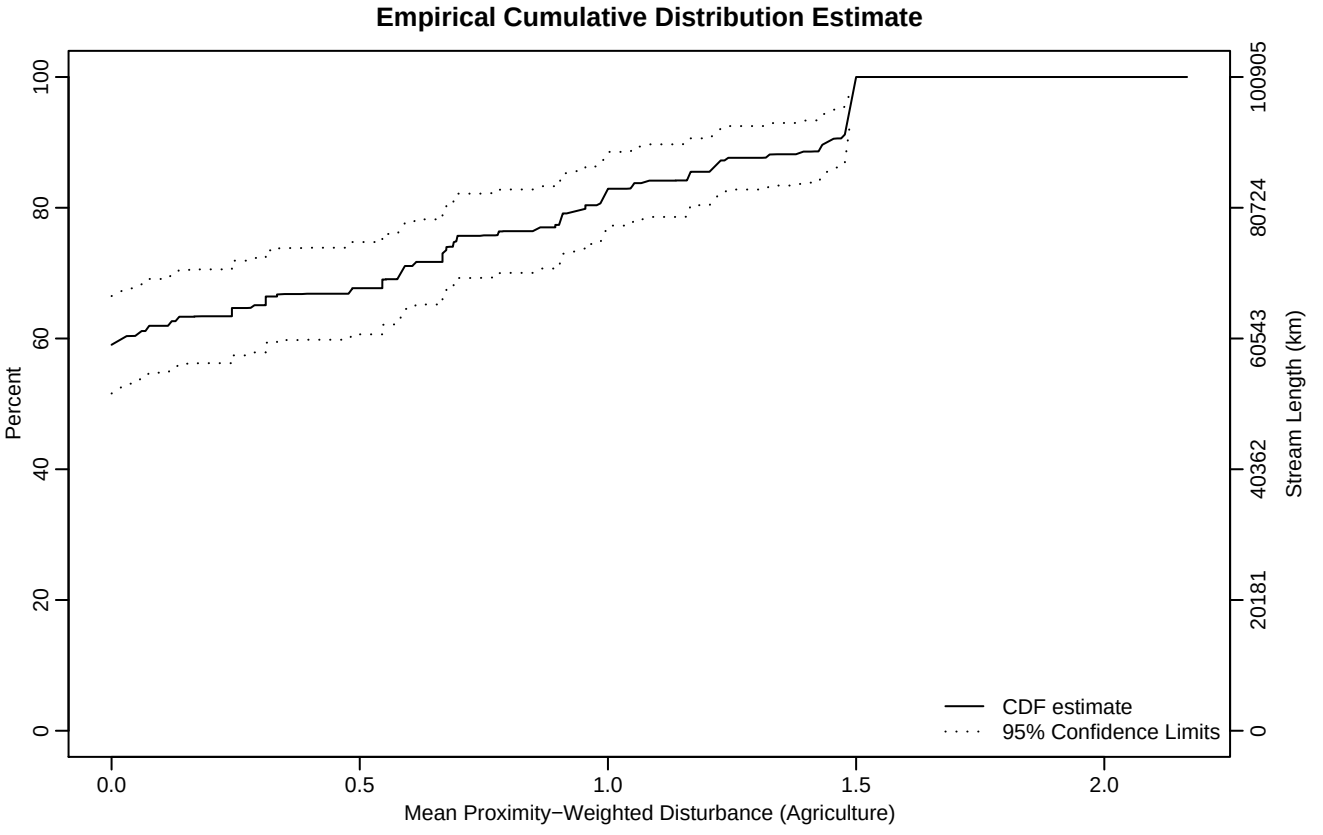


Figure PHAB−369 Indicator: W1_HAG Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.69	0.55	0.99
90Pct	1.44	1.17	1.49
95Pct	1.49	1.47	1.50
Mean	0.37	0.29	0.45
Std Dev	0.53	0.48	0.59

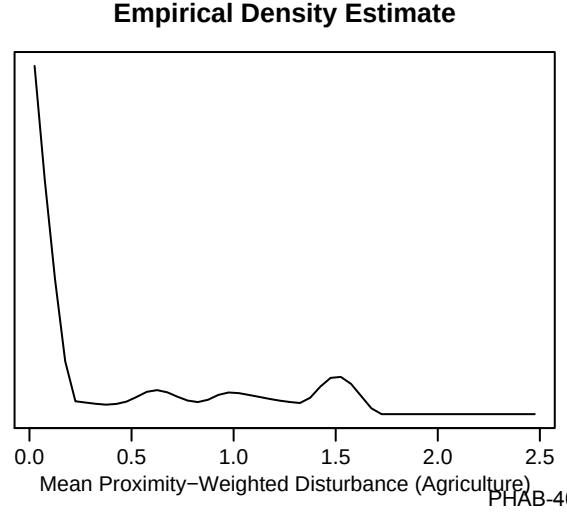
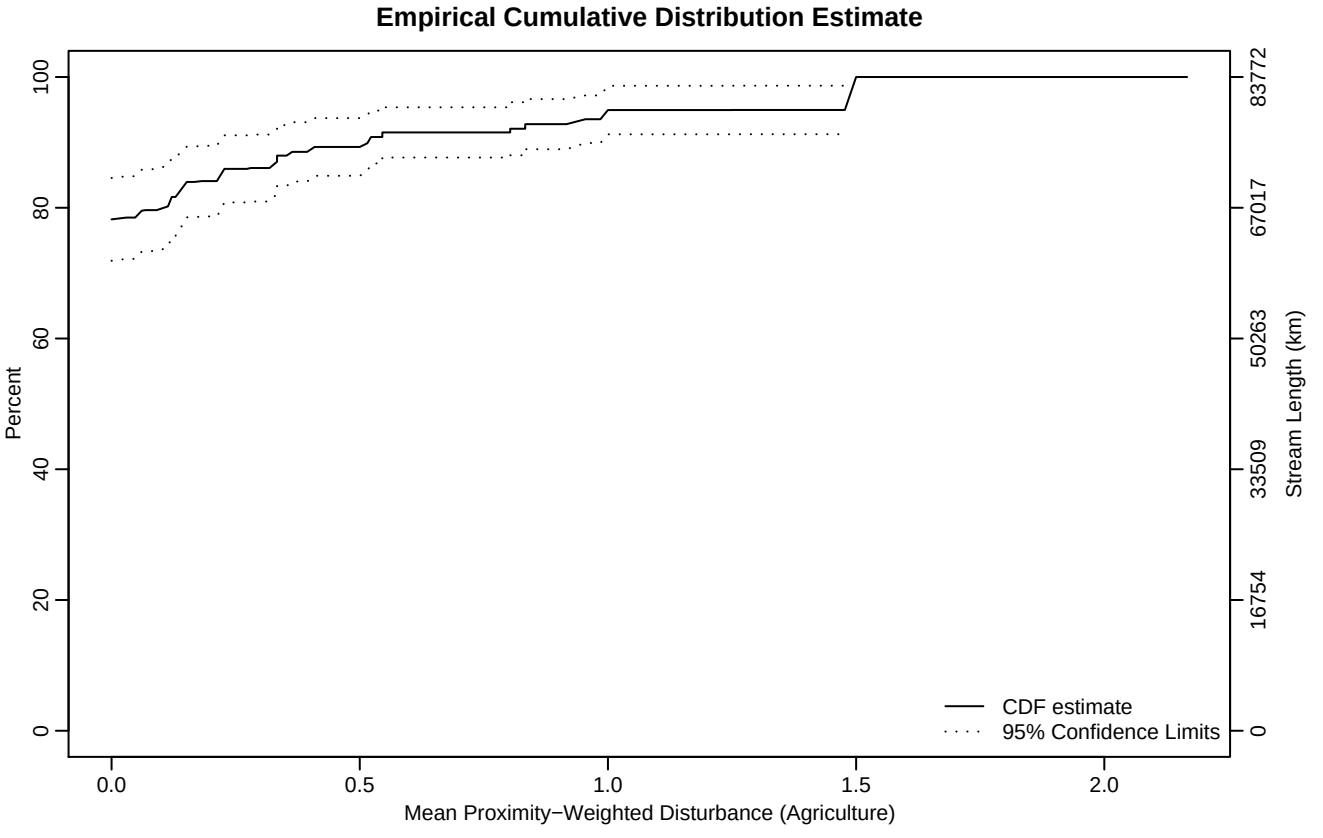


Figure PHAB−370 Indicator: W1_HAG Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.12
90Pct	0.52	0.23	0.99
95Pct	1.48	0.55	1.49
Mean	0.14	0.09	0.20
Std Dev	0.36	0.27	0.45

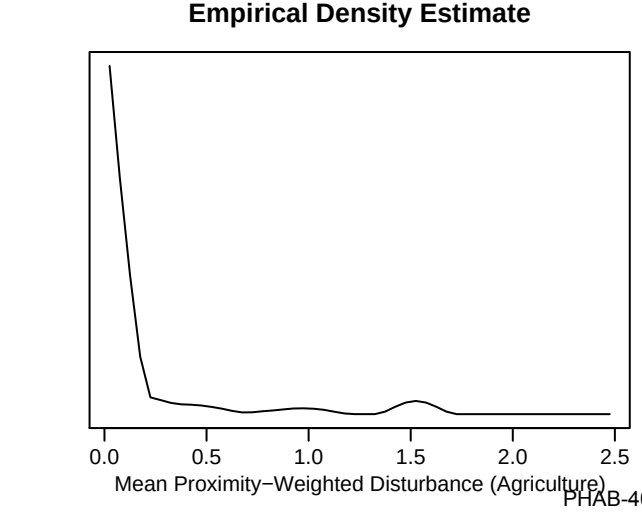
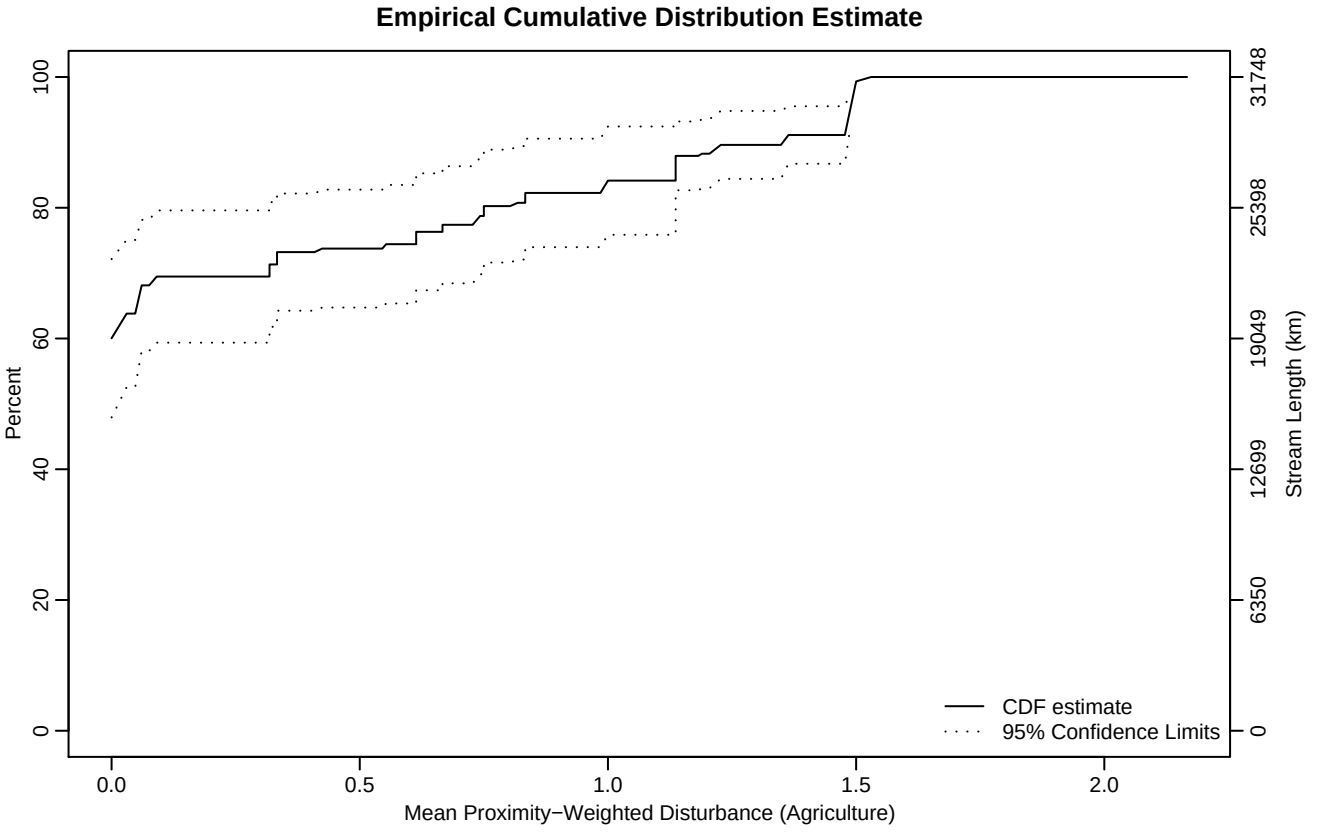


Figure PHAB−371 Indicator: W1_HAG Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.02
75Pct	0.61	0.05	1.14
90Pct	1.35	1.14	1.49
95Pct	1.49	1.36	1.51
Mean	0.32	0.21	0.42
Std Dev	0.44	0.35	0.52

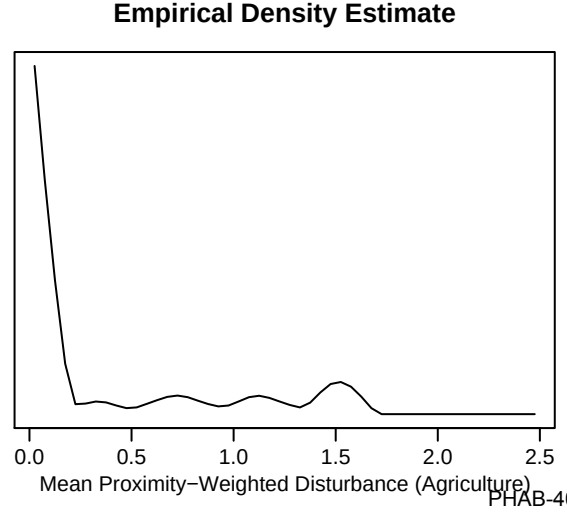
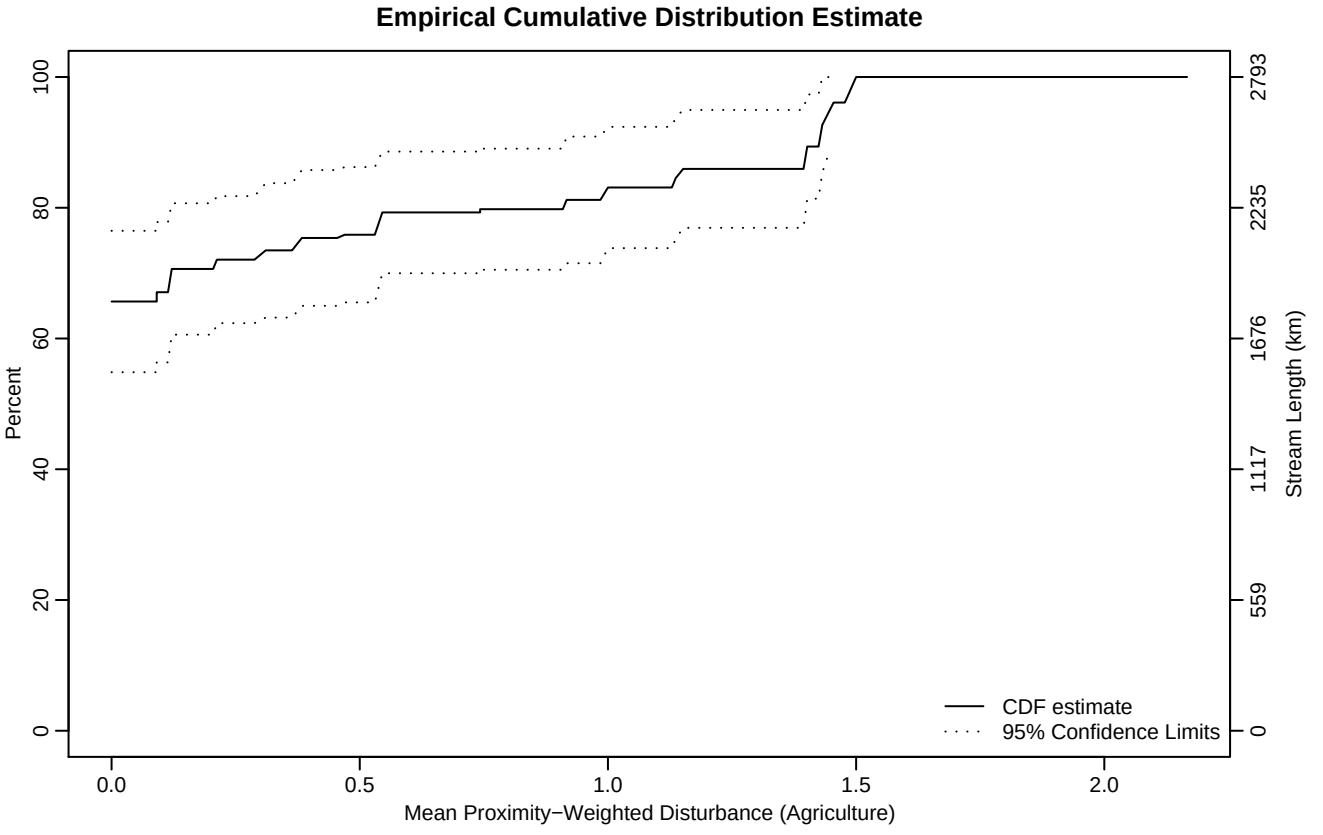


Figure PHAB−372 Indicator: W1_HAG Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.38	0	1.15
90Pct	1.43	0.99	1.49
95Pct	1.45	1.40	1.50
Mean	0.31	0.19	0.44
Std Dev	0.48	0.40	0.56

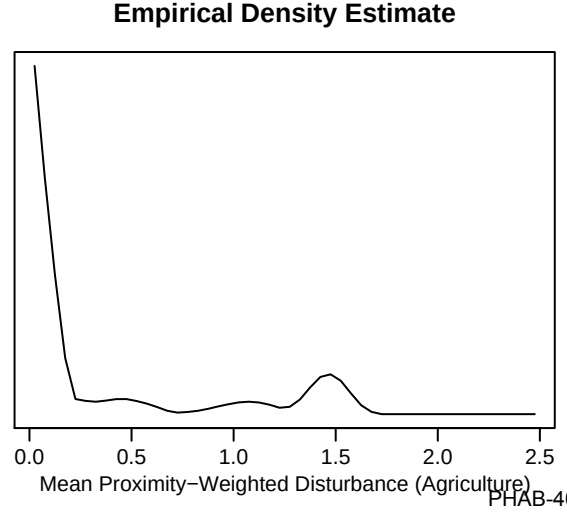
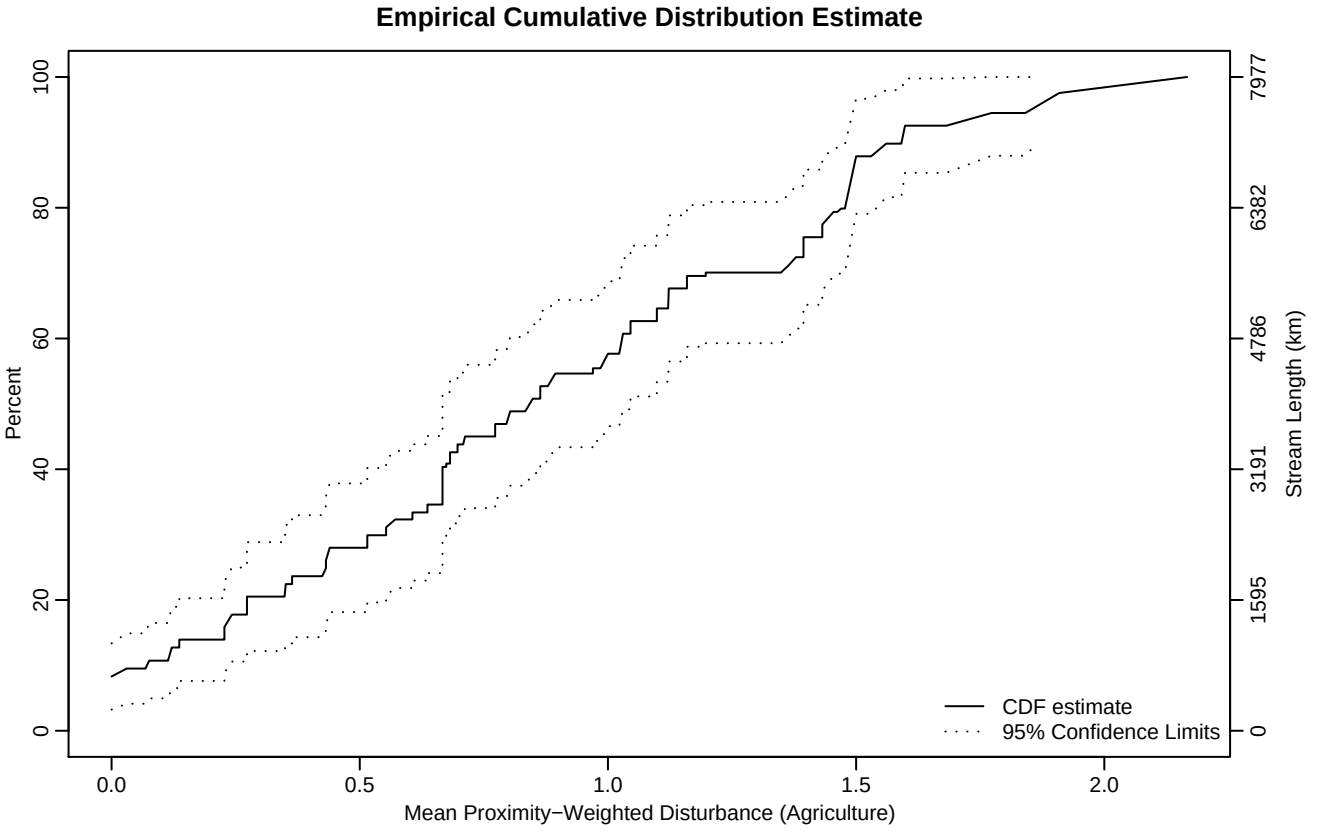


Figure PHAB−373 Indicator: W1_HAG Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.07
10Pct	0.07	0	0.23
25Pct	0.43	0.23	0.67
50Pct	0.84	0.67	1.05
75Pct	1.39	1.10	1.50
90Pct	1.59	1.48	1.99
95Pct	1.85	1.54	2.17
Mean	0.88	0.75	1.02
Std Dev	0.54	0.48	0.61

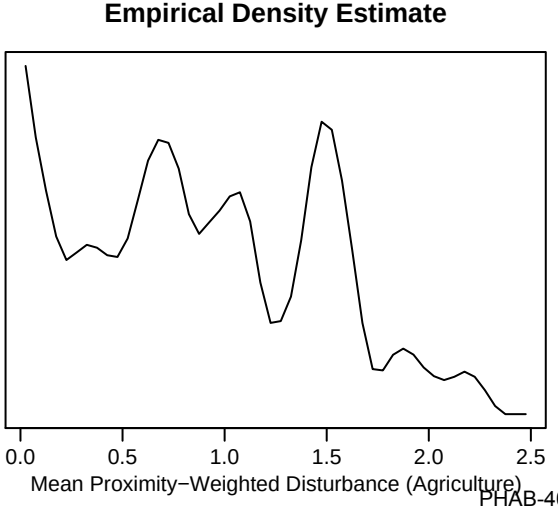
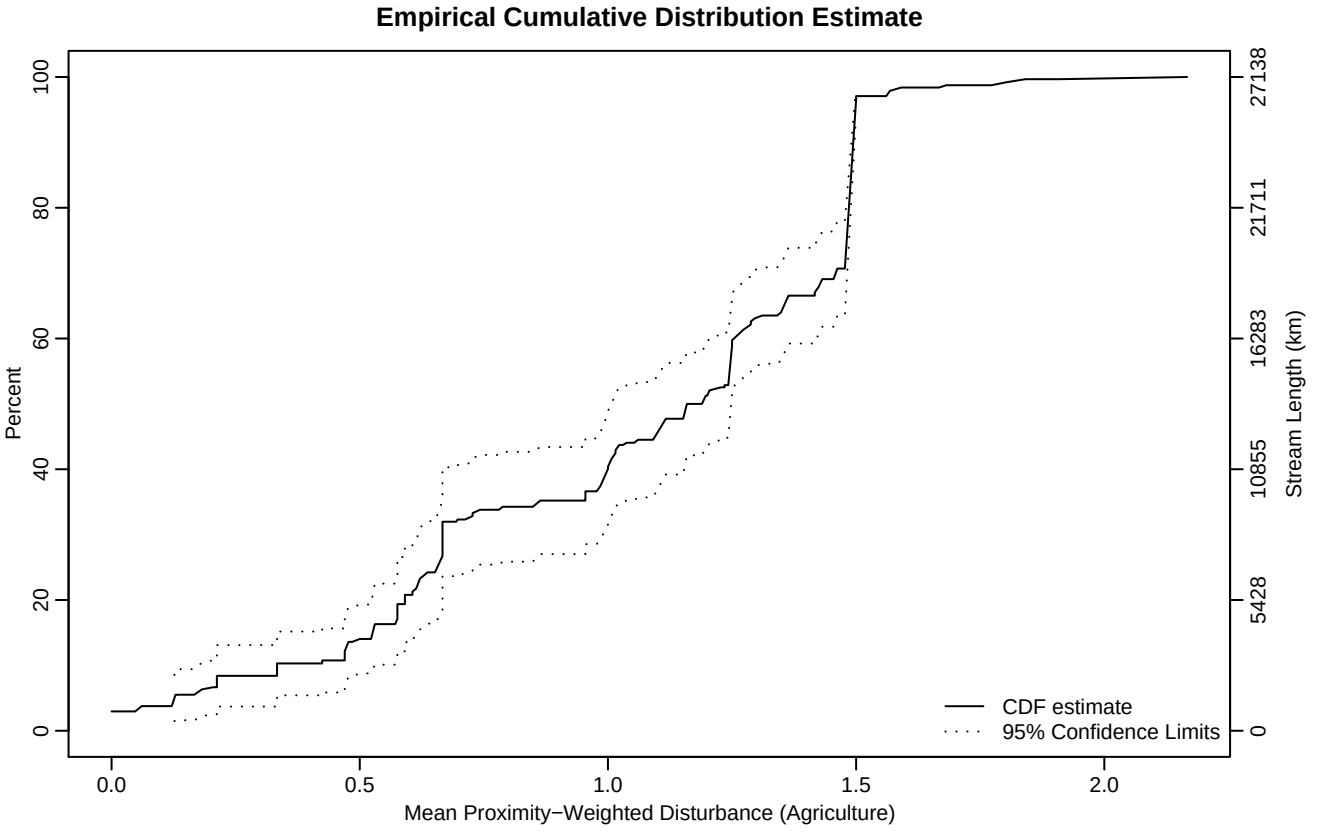


Figure PHAB−374 Indicator: W1_HAG Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.13	0	0.21
10Pct	0.33	0.13	0.52
25Pct	0.66	0.58	0.73
50Pct	1.19	1.01	1.25
75Pct	1.48	1.42	1.49
90Pct	1.49	1.49	1.50
95Pct	1.50	1.49	2.17
Mean	1.04	0.97	1.11
Std Dev	0.43	0.39	0.48

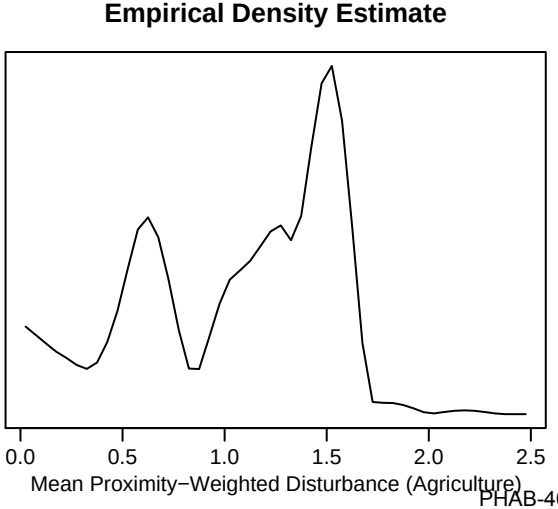
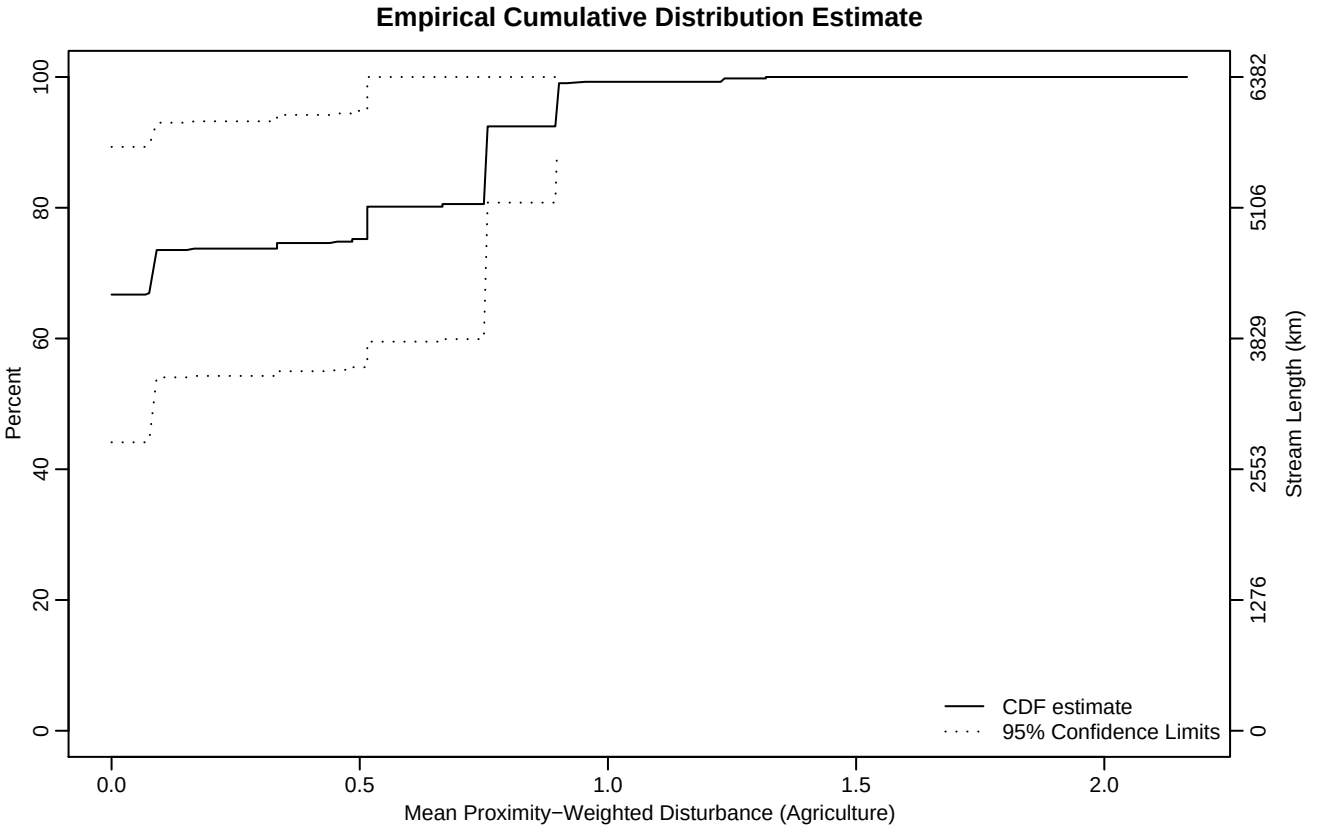


Figure PHAB−375 Indicator: W1_HAG Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.09
75Pct	0.48	0	0.90
90Pct	0.76	0.08	1.32
95Pct	0.90	0.75	1.32
Mean	0.20	0.04	0.36
Std Dev	0.34	0.24	0.44

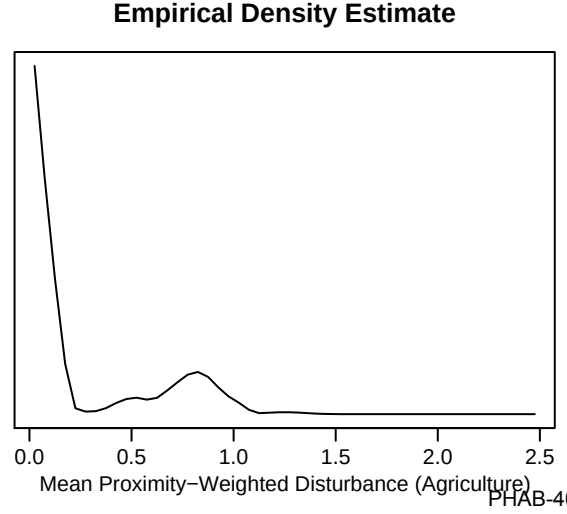
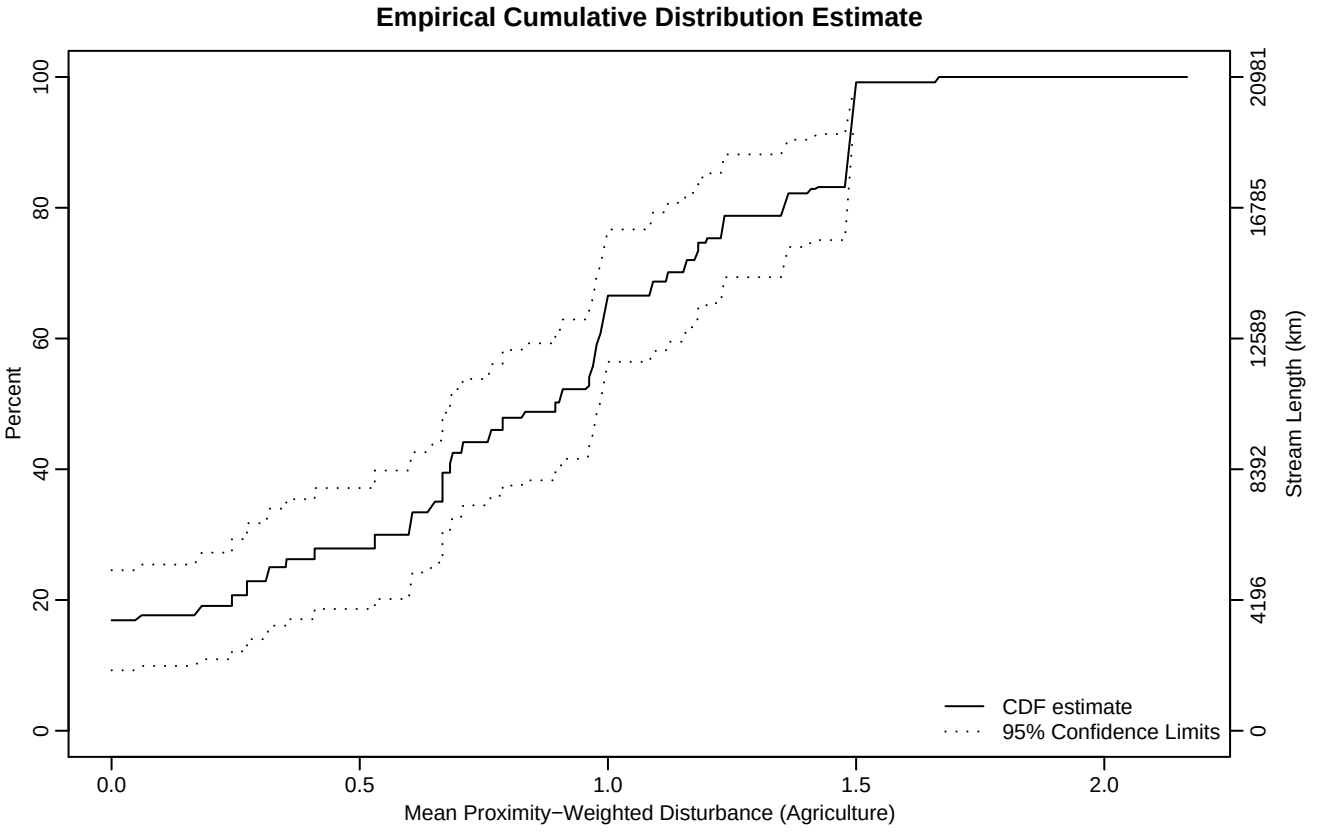


Figure PHAB−376 Indicator: W1_HAG Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.17
25Pct	0.32	0	0.64
50Pct	0.89	0.67	0.98
75Pct	1.20	1	1.48
90Pct	1.49	1.36	1.50
95Pct	1.49	1.48	1.67
Mean	0.80	0.70	0.90
Std Dev	0.49	0.44	0.55

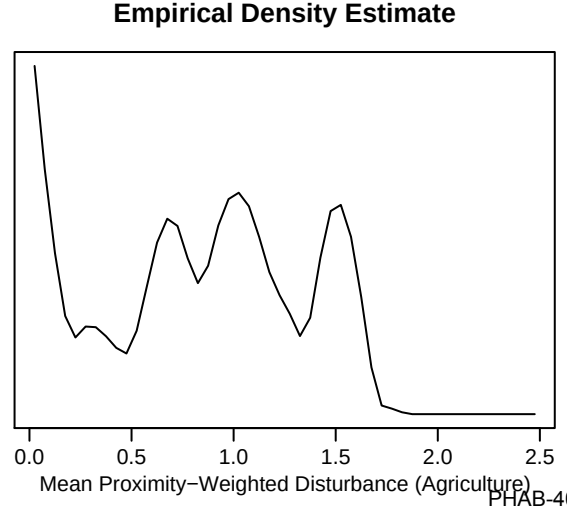
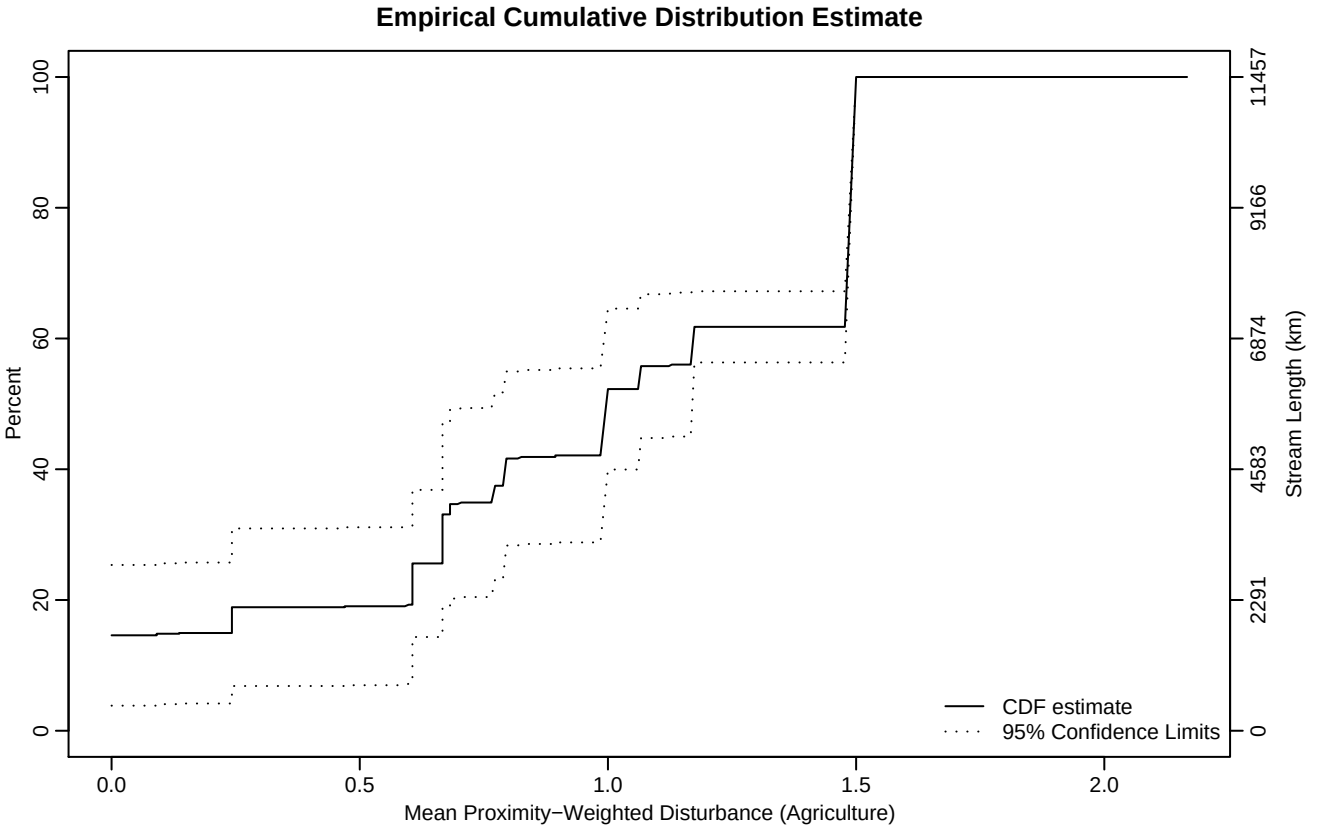


Figure PHAB−377 Indicator: W1_HAG Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.24
10Pct	0	0	0.61
25Pct	0.61	0	0.77
50Pct	1	0.77	1.48
75Pct	1.49	1.48	1.49
90Pct	1.49	1.49	1.50
95Pct	1.50	1.49	1.50
Mean	0.95	0.83	1.08
Std Dev	0.42	0.32	0.52

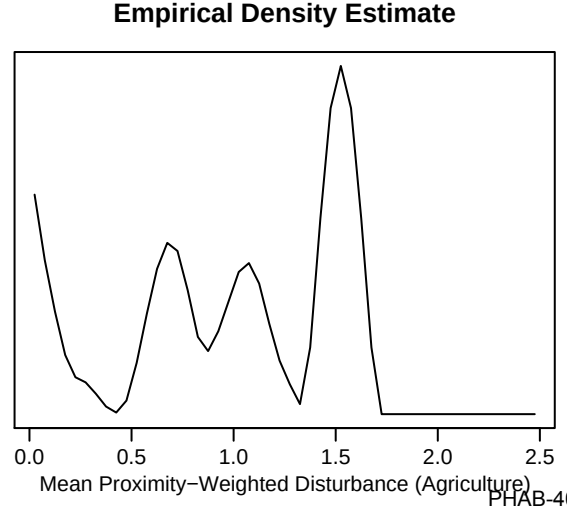
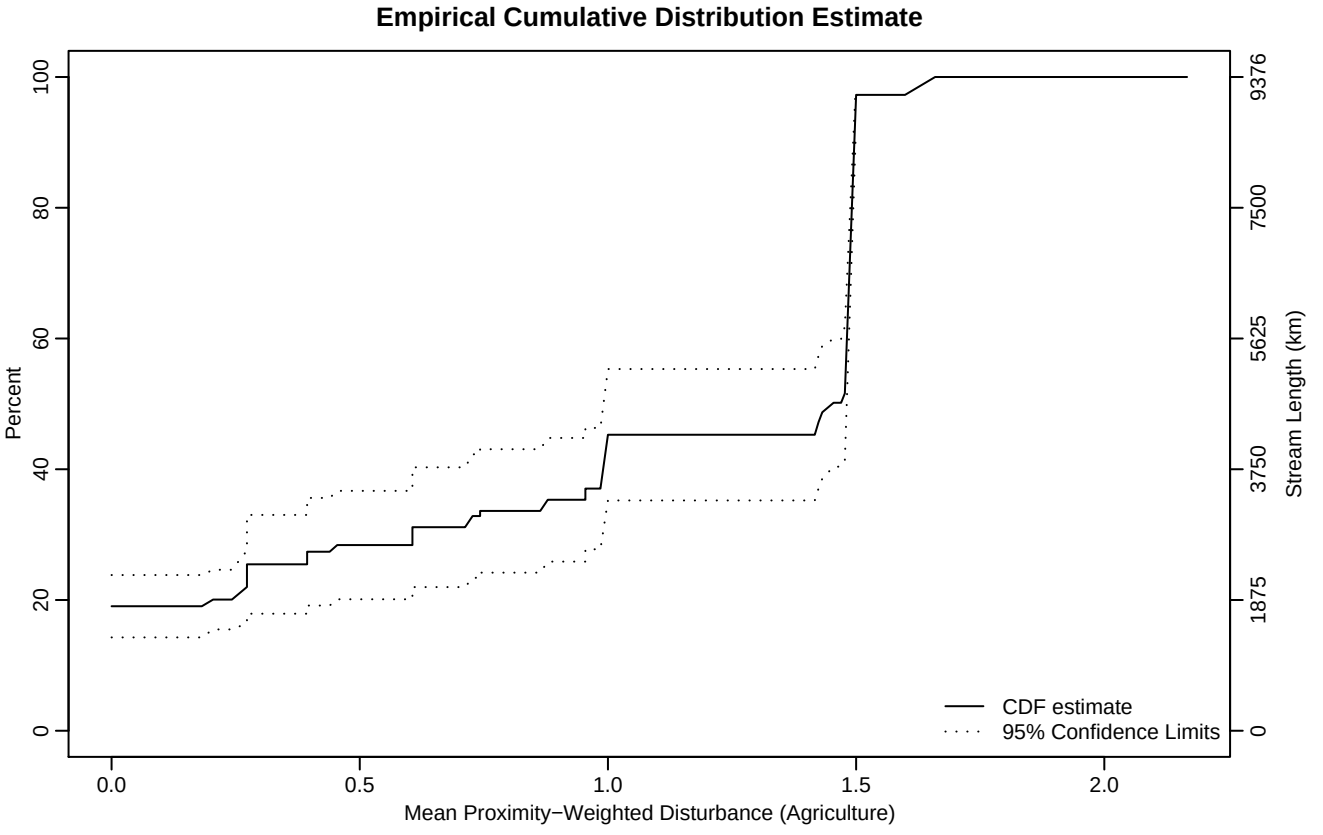


Figure PHAB−378 Indicator: W1_HAG Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.27	0	0.61
50Pct	1.45	0.99	1.48
75Pct	1.49	1.48	1.49
90Pct	1.50	1.49	1.66
95Pct	1.50	1.49	1.66
Mean	1	0.89	1.11
Std Dev	0.39	0.30	0.48

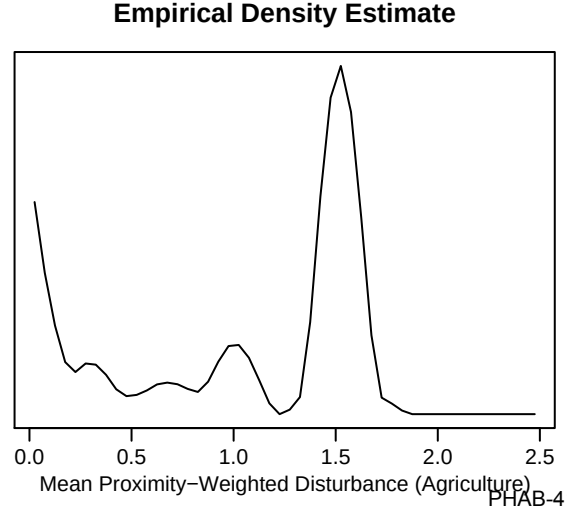
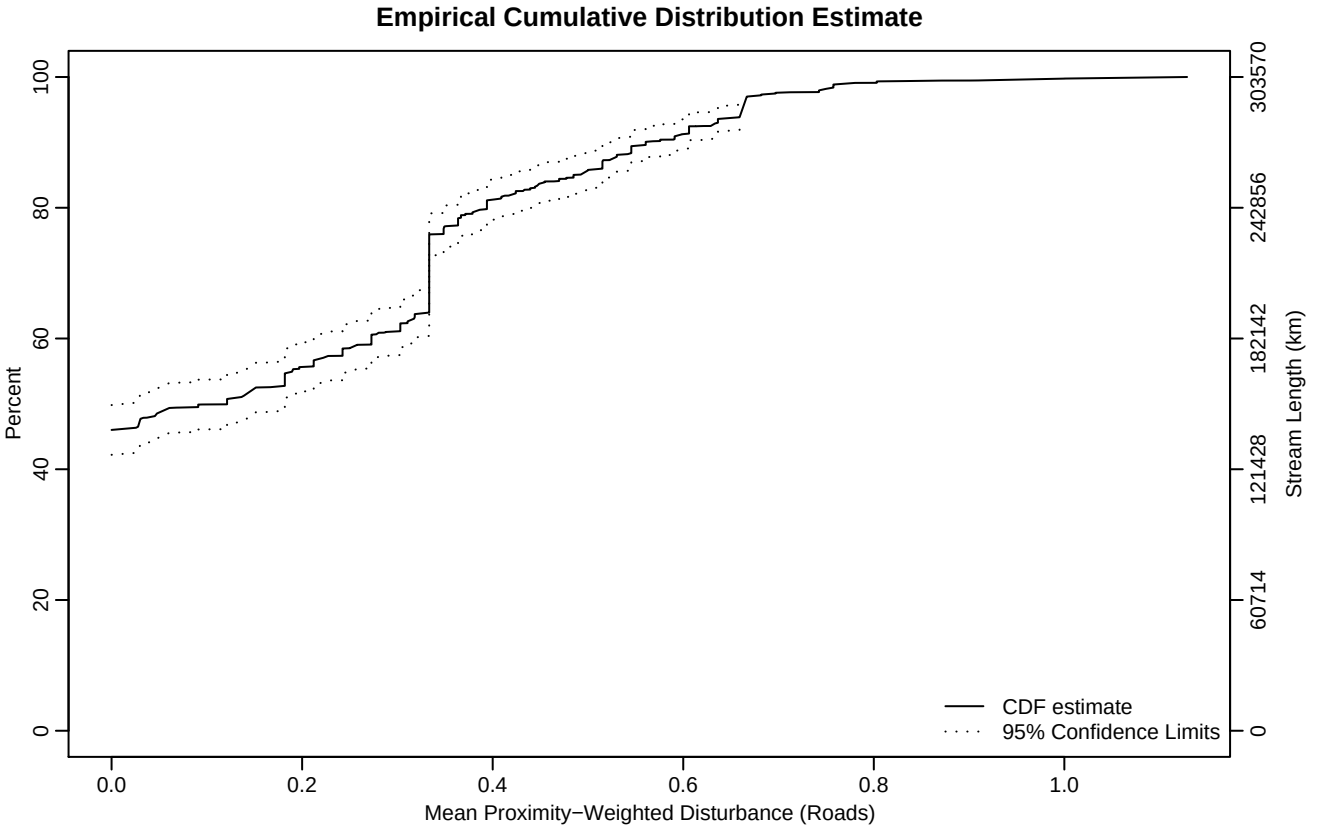


Figure PHAB−379 Indicator: W1H_ROAD Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.12	0.01	0.18
75Pct	0.33	0.33	0.37
90Pct	0.56	0.53	0.61
95Pct	0.66	0.64	0.67
Mean	0.21	0.19	0.22
Std Dev	0.22	0.21	0.24

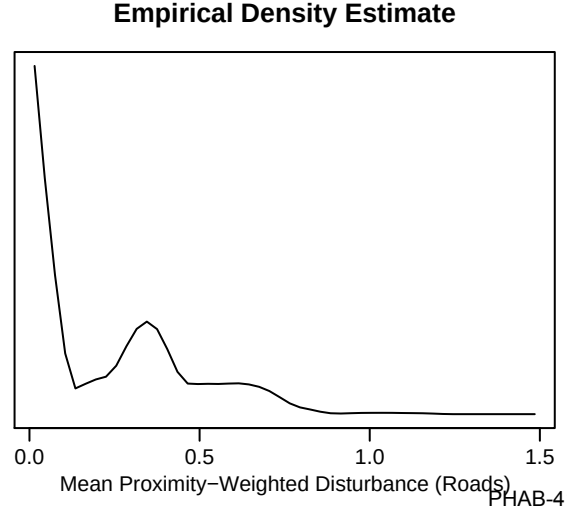
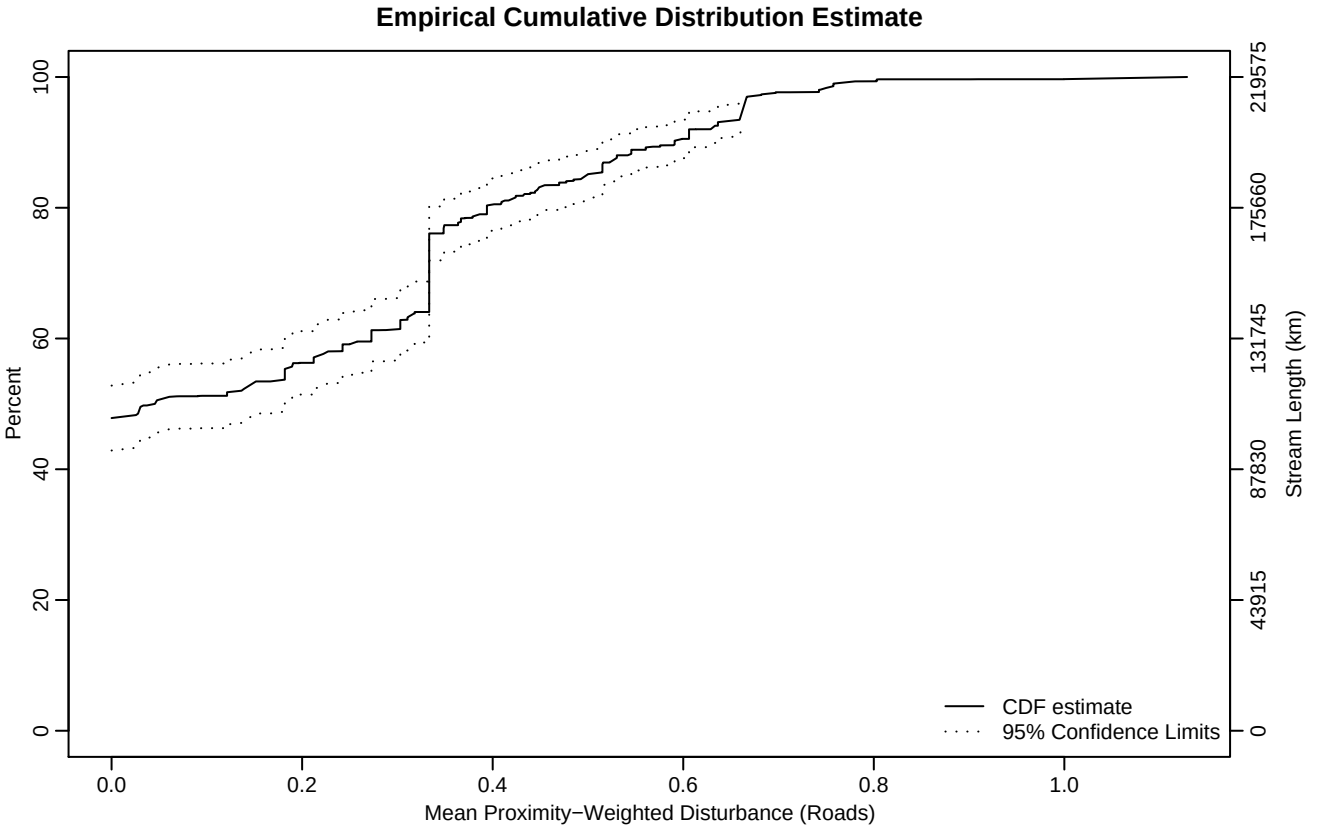


Figure PHAB−380 Indicator: W1H_ROAD Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.05	0	0.18
75Pct	0.33	0.33	0.39
90Pct	0.59	0.52	0.64
95Pct	0.66	0.63	0.69
Mean	0.20	0.18	0.23
Std Dev	0.22	0.21	0.24

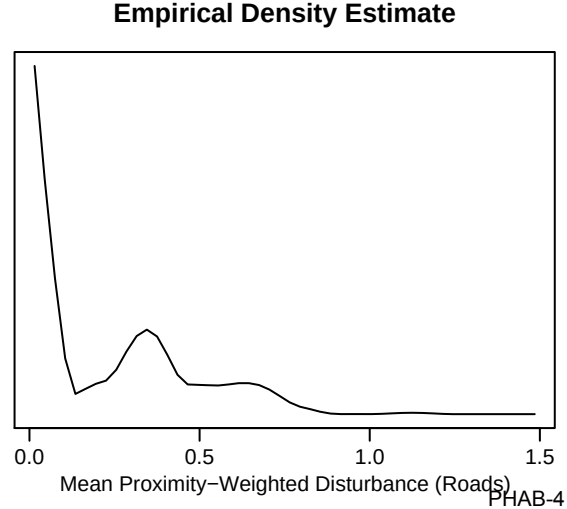
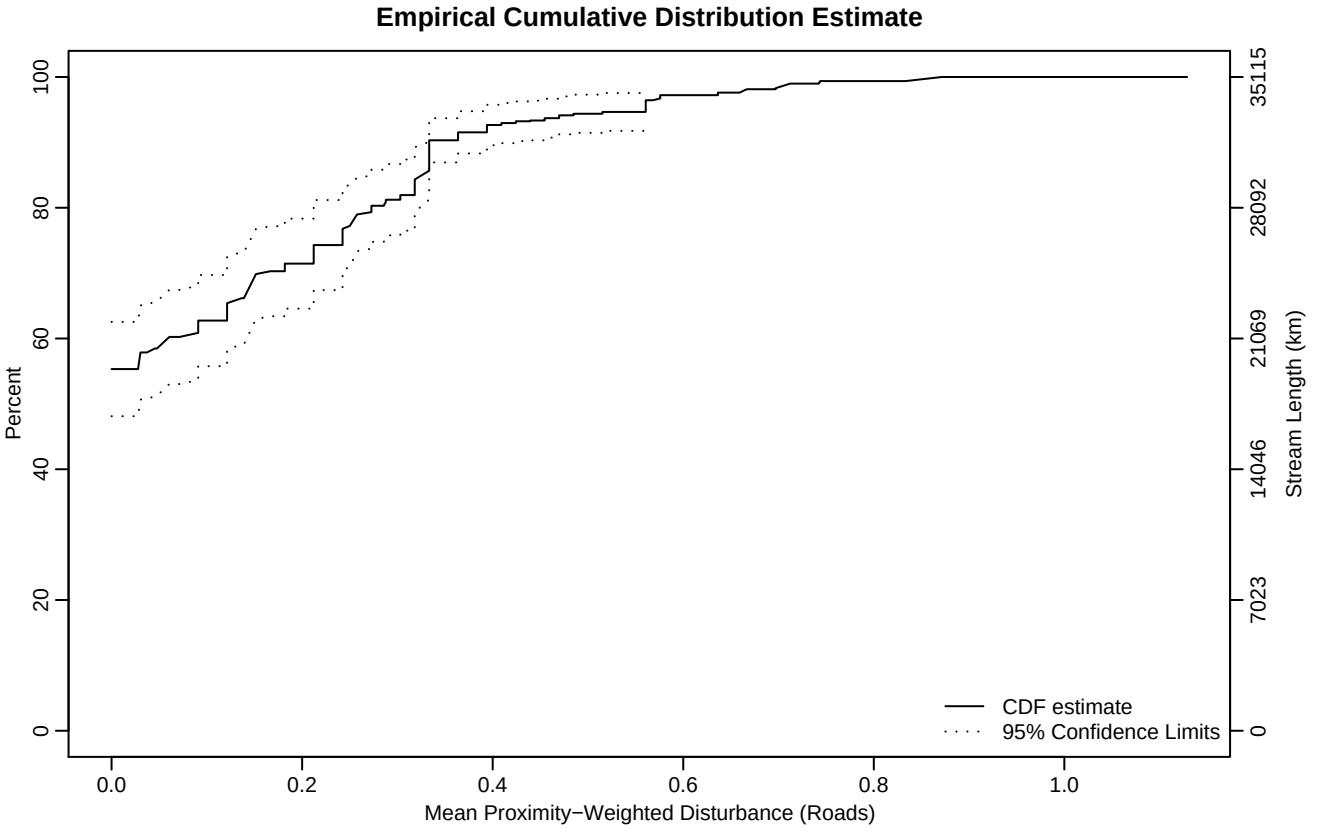


Figure PHAB−381 Indicator: W1H_ROAD Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.03
75Pct	0.24	0.15	0.30
90Pct	0.33	0.33	0.52
95Pct	0.56	0.39	0.66
Mean	0.12	0.10	0.15
Std Dev	0.18	0.15	0.20

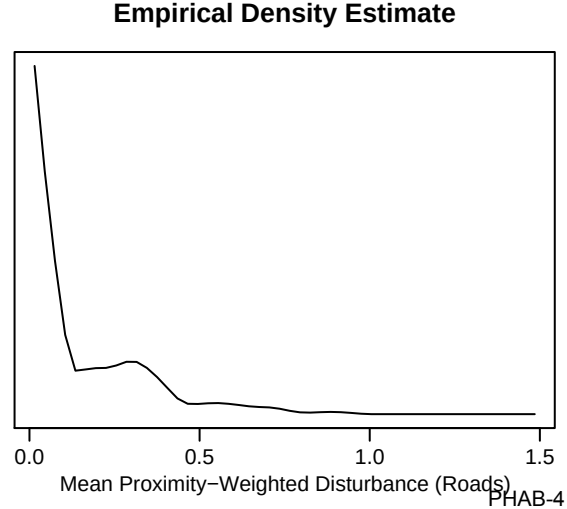
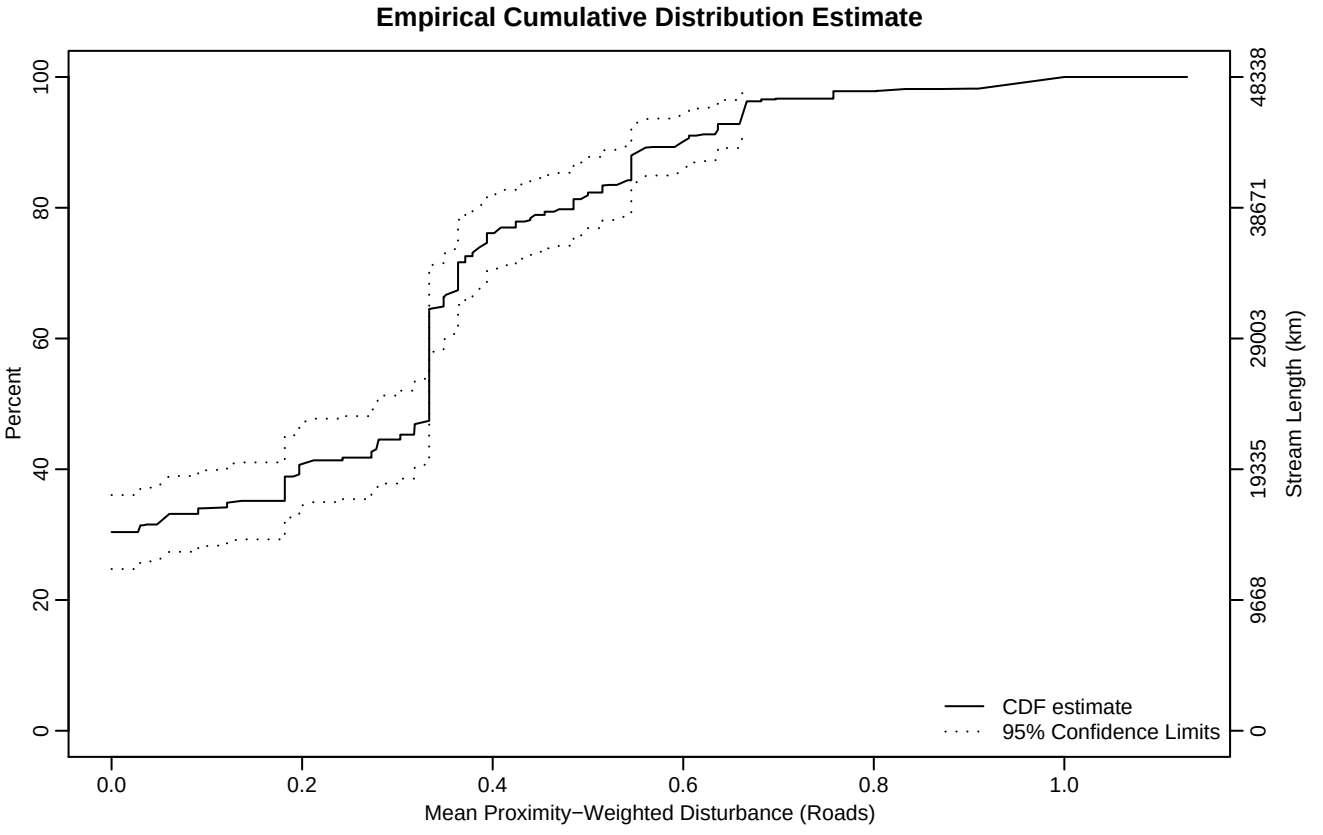


Figure PHAB−382 Indicator: W1H_ROAD Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.03
50Pct	0.33	0.28	0.33
75Pct	0.39	0.36	0.49
90Pct	0.60	0.55	0.66
95Pct	0.66	0.62	0.94
Mean	0.28	0.24	0.31
Std Dev	0.22	0.20	0.24

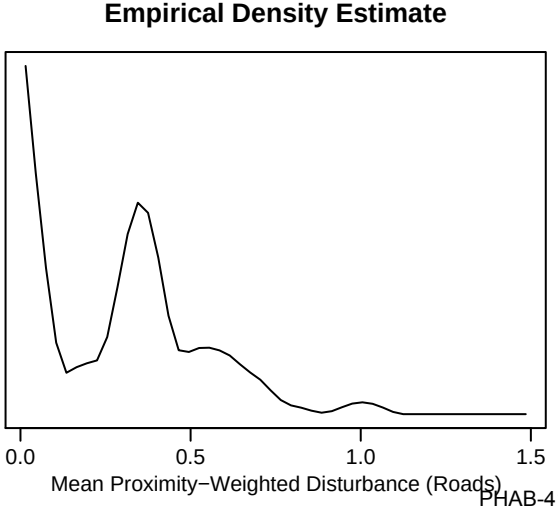
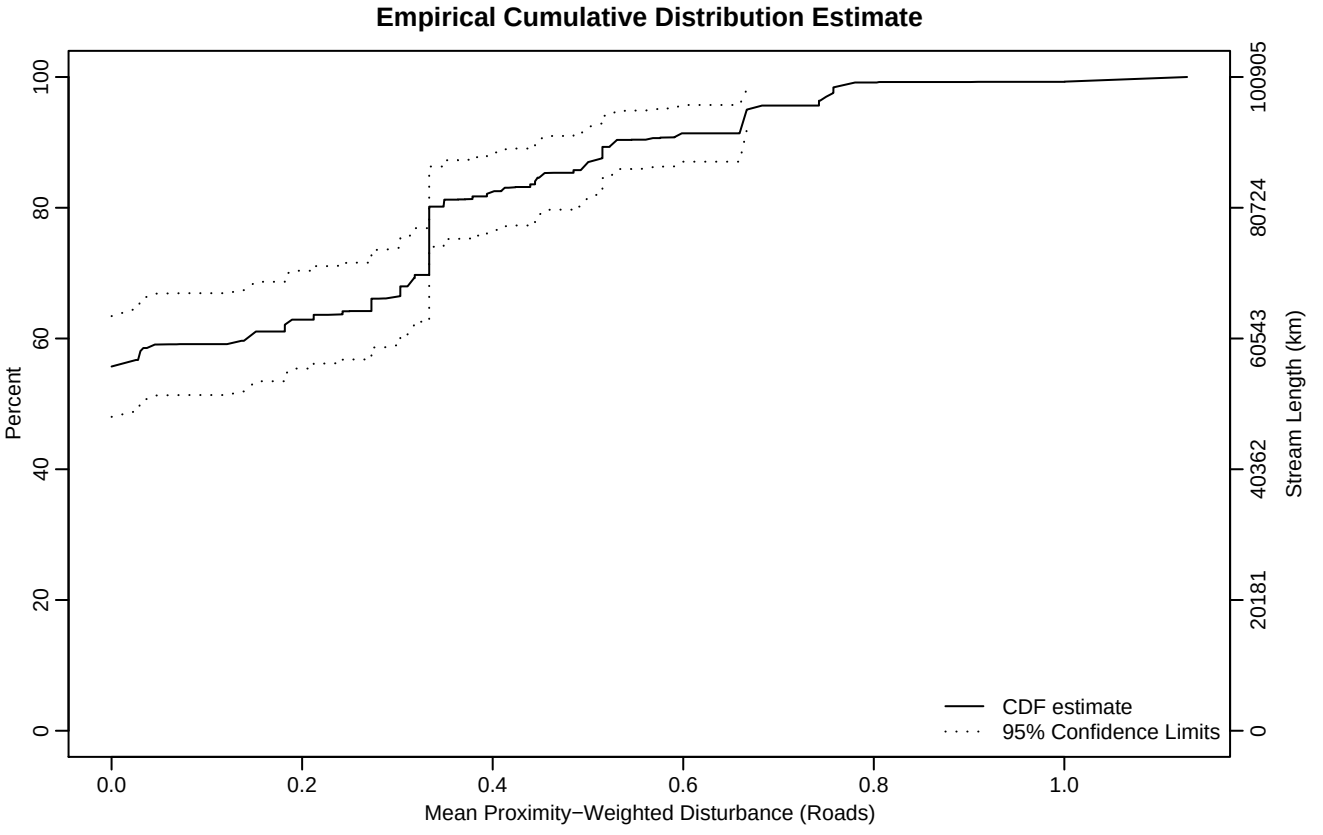


Figure PHAB−383 Indicator: W1H_ROAD Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.03
75Pct	0.33	0.30	0.39
90Pct	0.53	0.45	0.67
95Pct	0.67	0.57	1.02
Mean	0.18	0.14	0.22
Std Dev	0.23	0.20	0.26

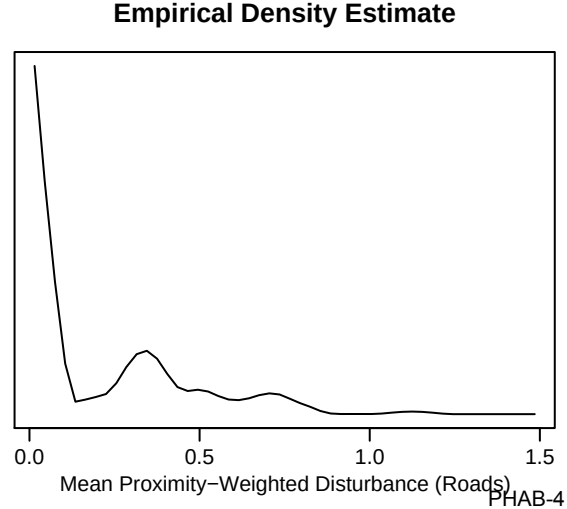
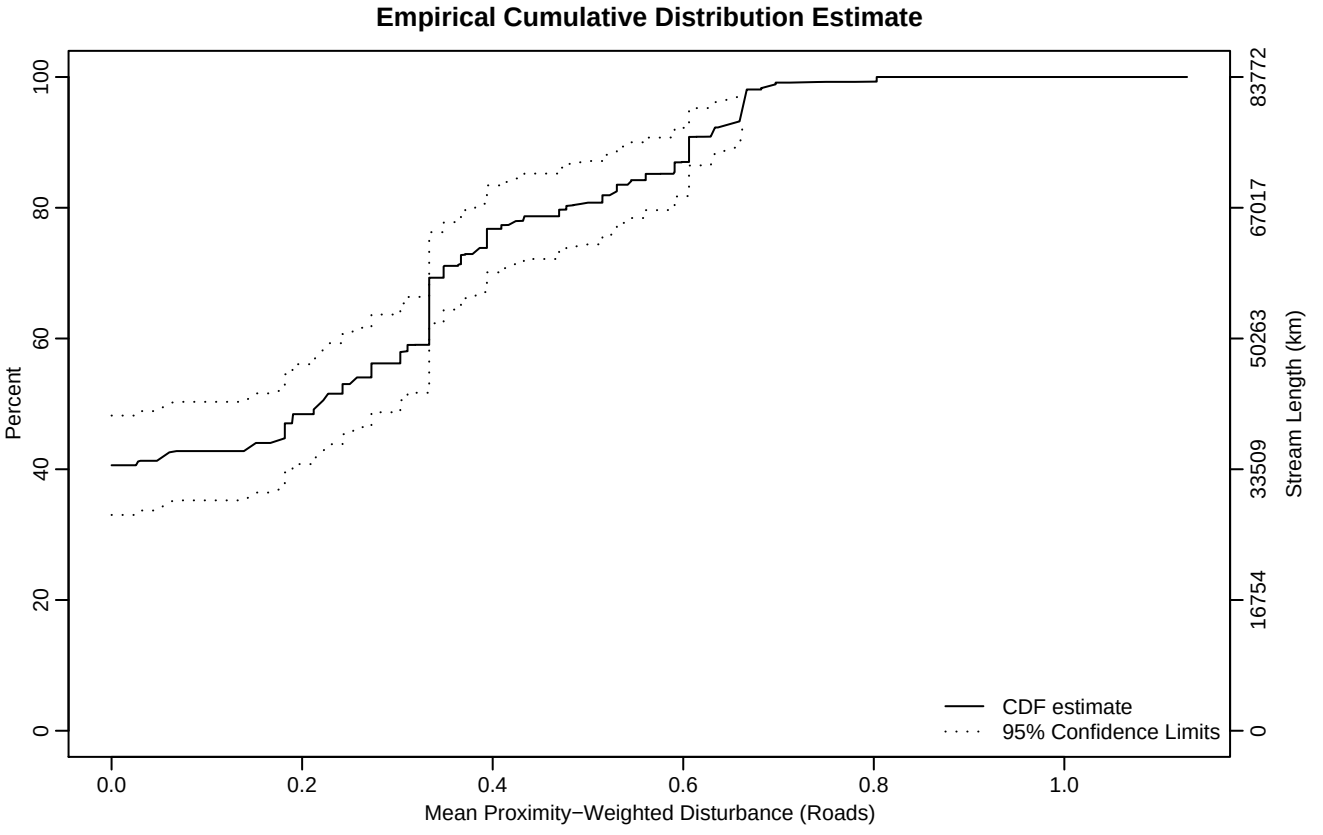


Figure PHAB−384 Indicator: W1H_ROAD Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.22	0.06	0.30
75Pct	0.39	0.33	0.52
90Pct	0.61	0.56	0.66
95Pct	0.66	0.63	0.70
Mean	0.24	0.20	0.27
Std Dev	0.22	0.20	0.23

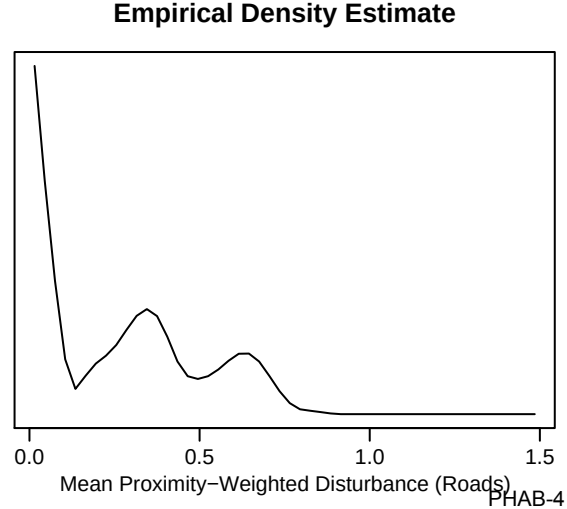
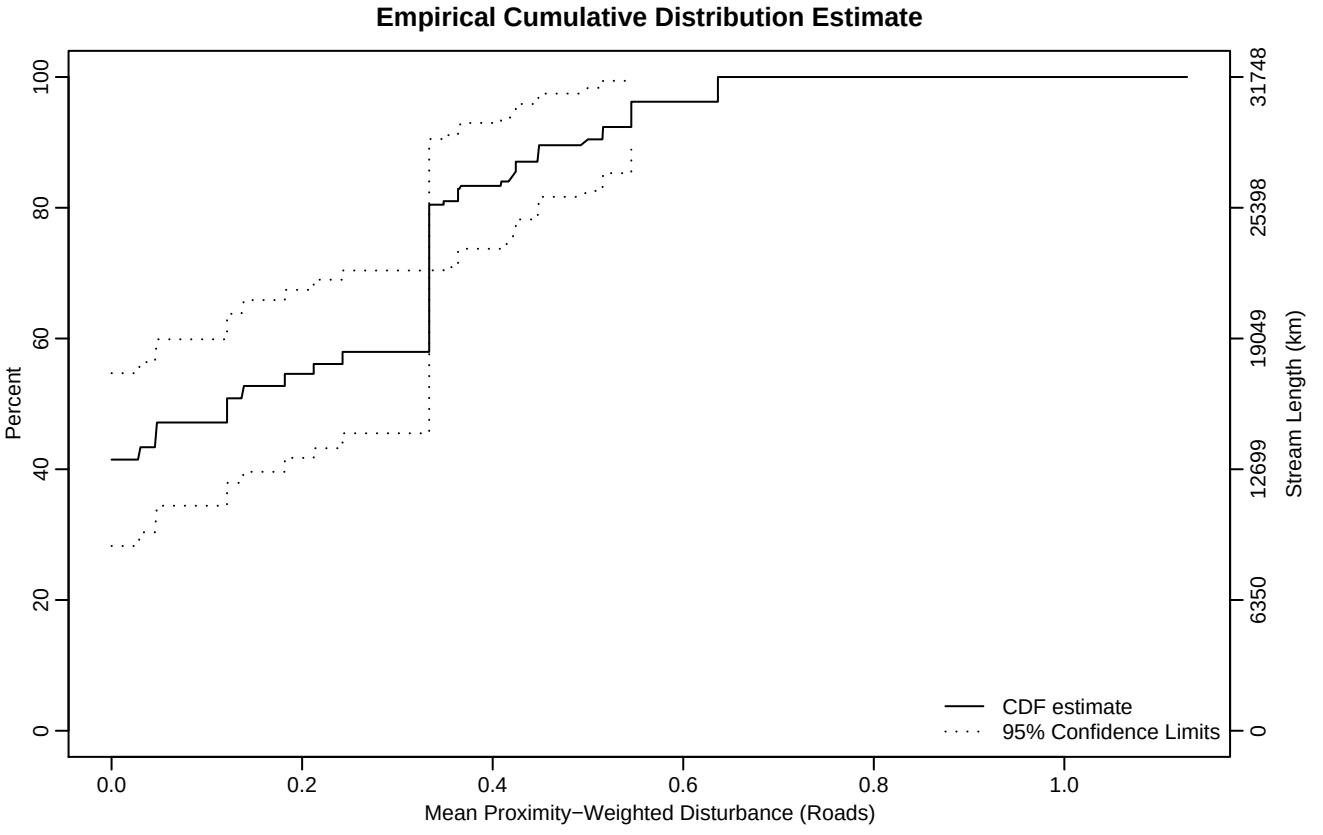


Figure PHAB−385 Indicator: W1H_ROAD Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.12	0	0.33
75Pct	0.33	0.33	0.45
90Pct	0.50	0.36	0.64
95Pct	0.55	0.45	0.64
Mean	0.19	0.14	0.25
Std Dev	0.20	0.17	0.22

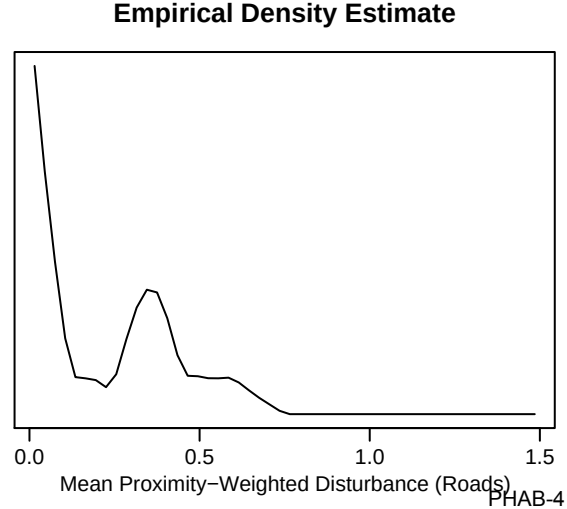
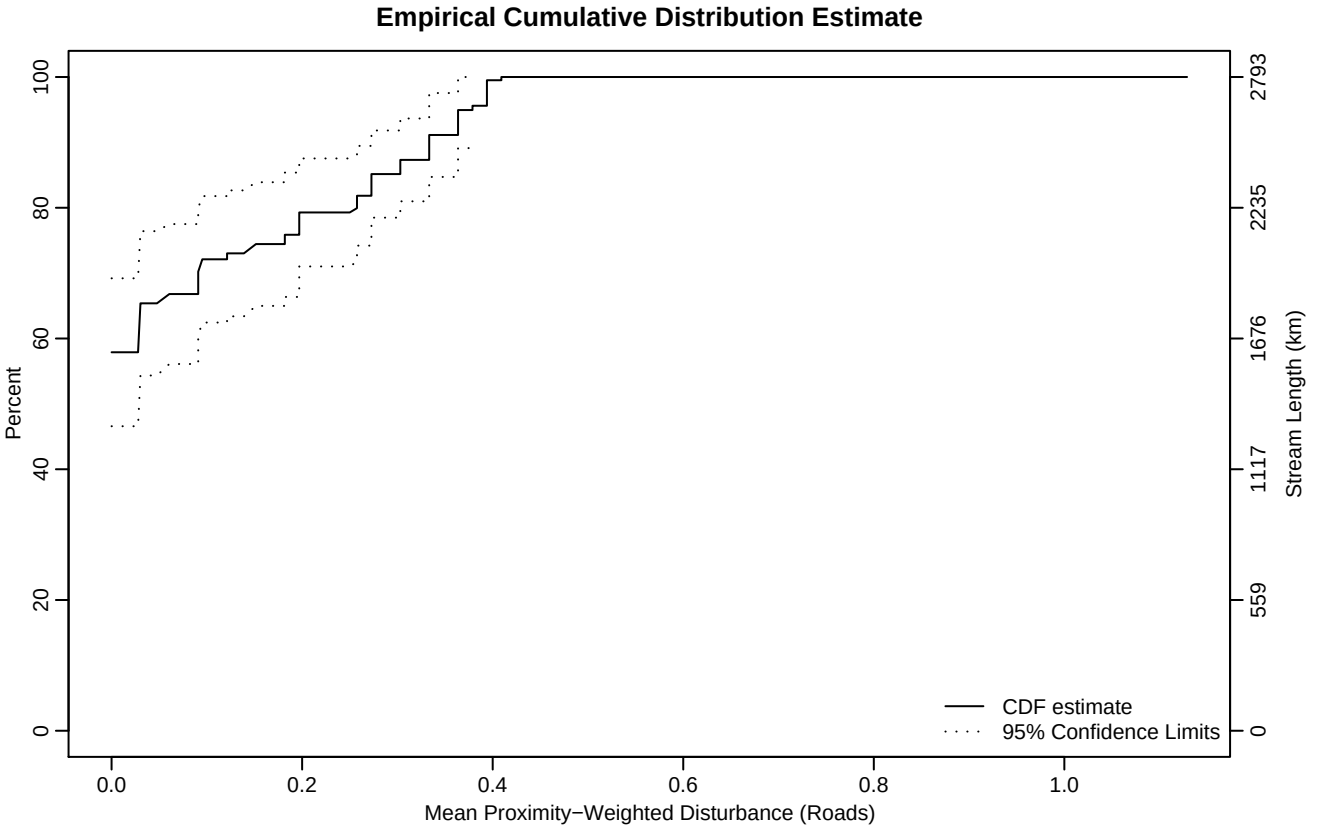


Figure PHAB−386 Indicator: W1H_ROAD Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.03
75Pct	0.18	0.05	0.27
90Pct	0.33	0.27	0.39
95Pct	0.38	0.33	0.41
Mean	0.09	0.06	0.12
Std Dev	0.13	0.11	0.16

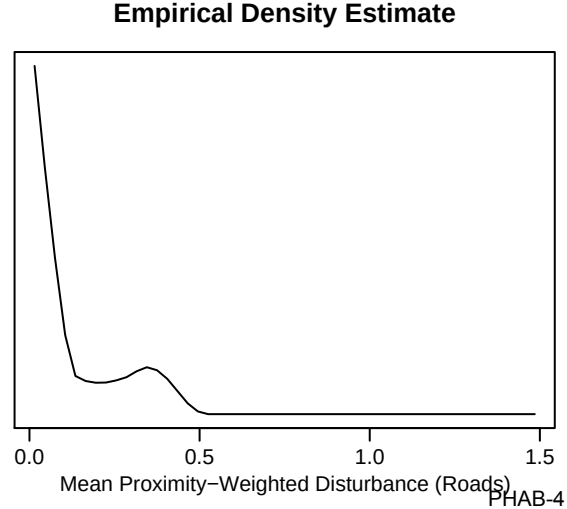
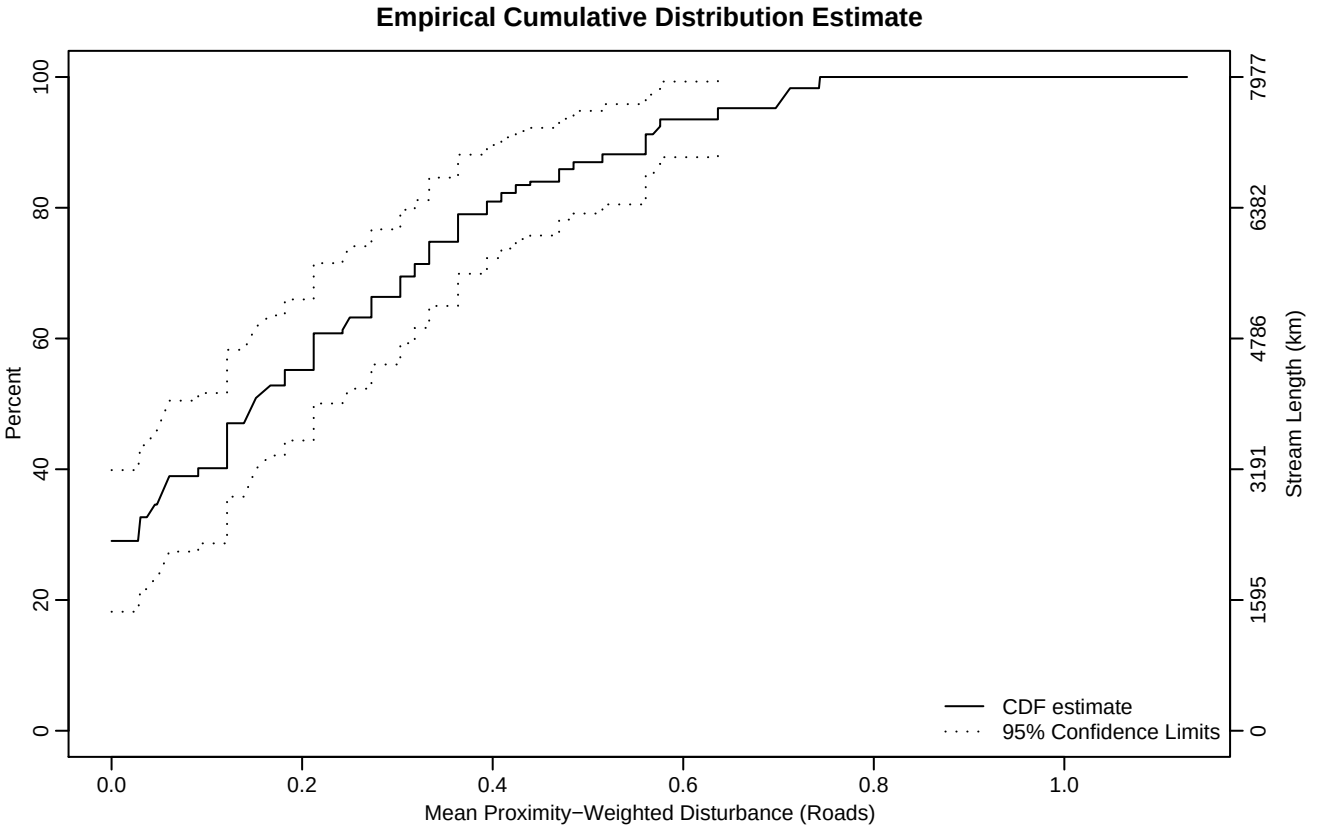


Figure PHAB−387 Indicator: W1H_ROAD Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.05
50Pct	0.15	0.06	0.24
75Pct	0.36	0.27	0.47
90Pct	0.56	0.41	0.71
95Pct	0.64	0.56	0.74
Mean	0.21	0.16	0.26
Std Dev	0.19	0.16	0.22

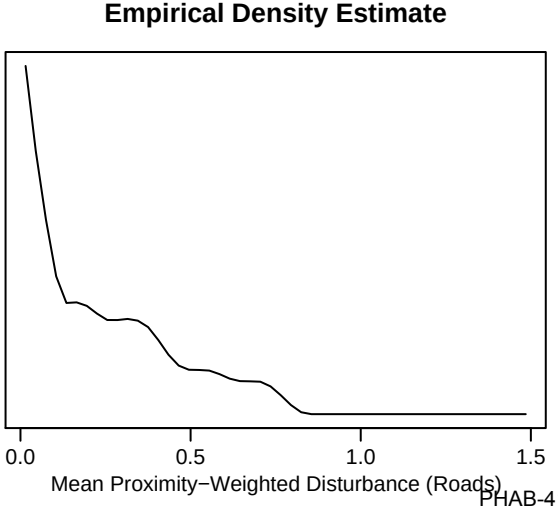
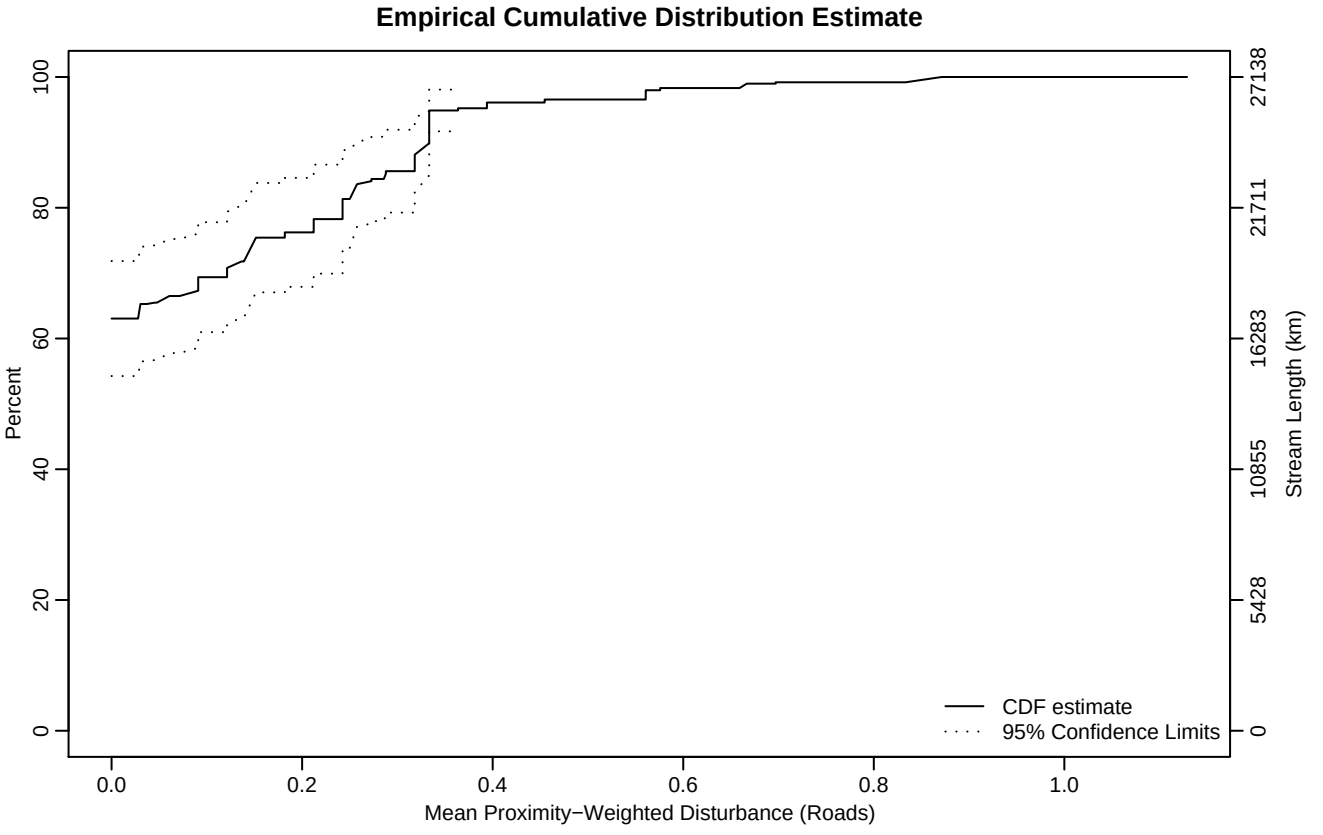


Figure PHAB−388 Indicator: W1H_ROAD Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.15	0.06	0.26
90Pct	0.33	0.29	0.36
95Pct	0.36	0.33	0.58
Mean	0.10	0.07	0.13
Std Dev	0.16	0.13	0.19

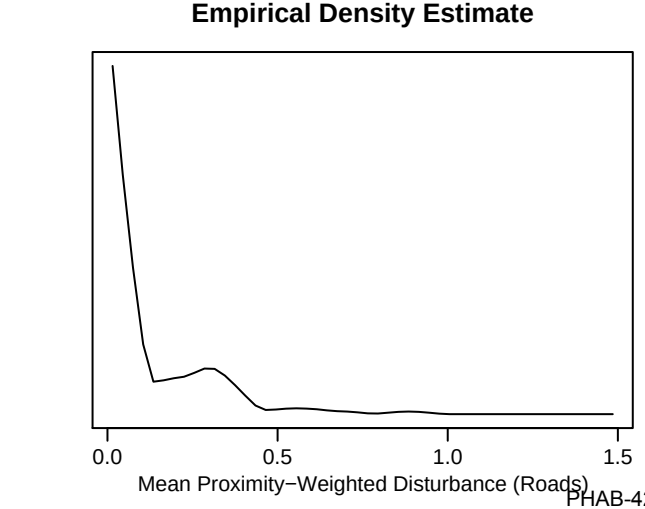
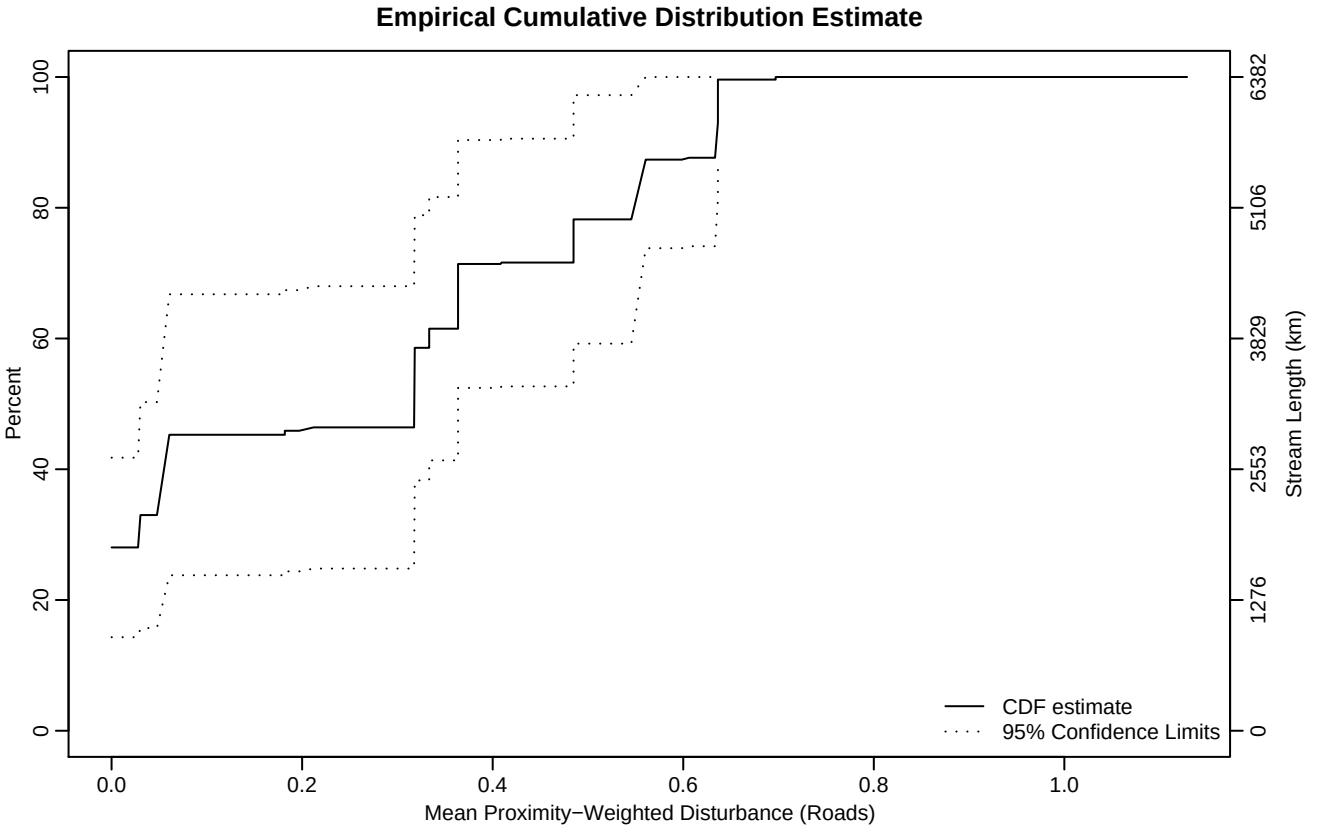


Figure PHAB−389 Indicator: W1H_ROAD Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.05
50Pct	0.32	0.03	0.48
75Pct	0.48	0.32	0.64
90Pct	0.63	0.48	0.70
95Pct	0.64	0.55	0.70
Mean	0.26	0.16	0.36
Std Dev	0.24	0.20	0.28

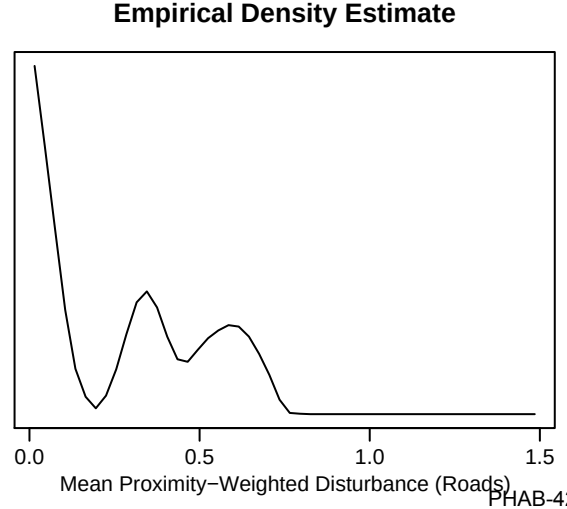
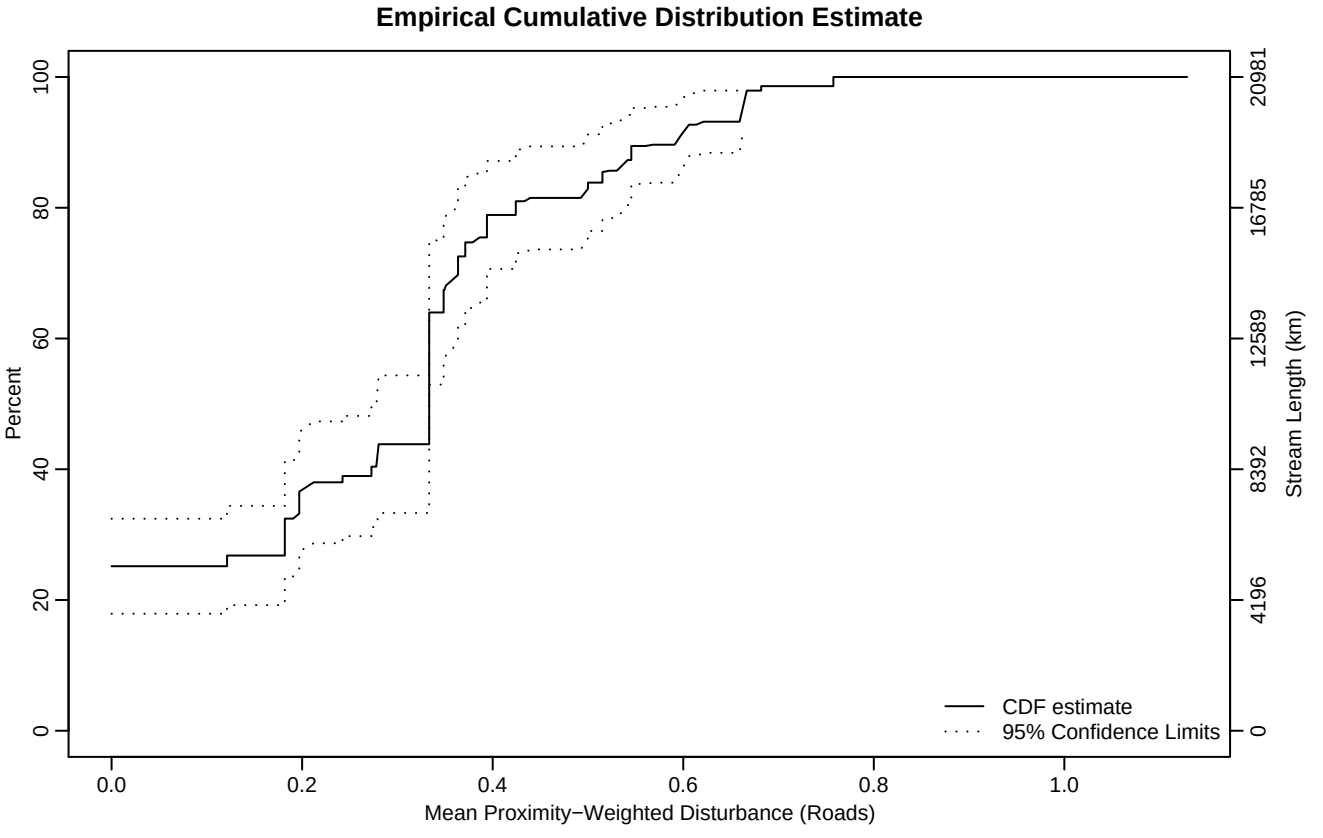


Figure PHAB−390 Indicator: W1H_ROAD Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.19
50Pct	0.33	0.27	0.33
75Pct	0.38	0.35	0.52
90Pct	0.59	0.52	0.66
95Pct	0.66	0.59	0.76
Mean	0.28	0.25	0.32
Std Dev	0.19	0.16	0.21

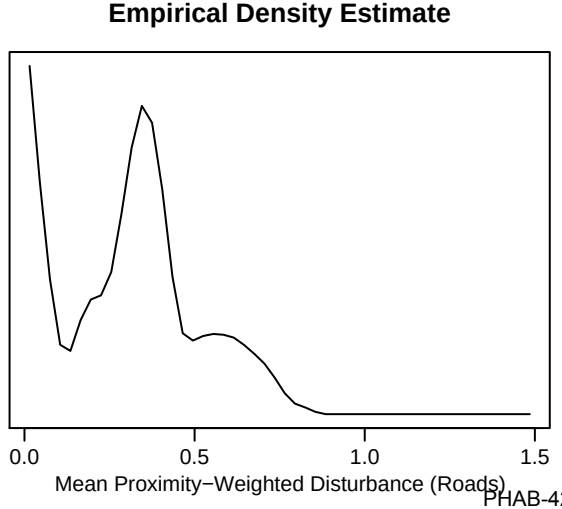
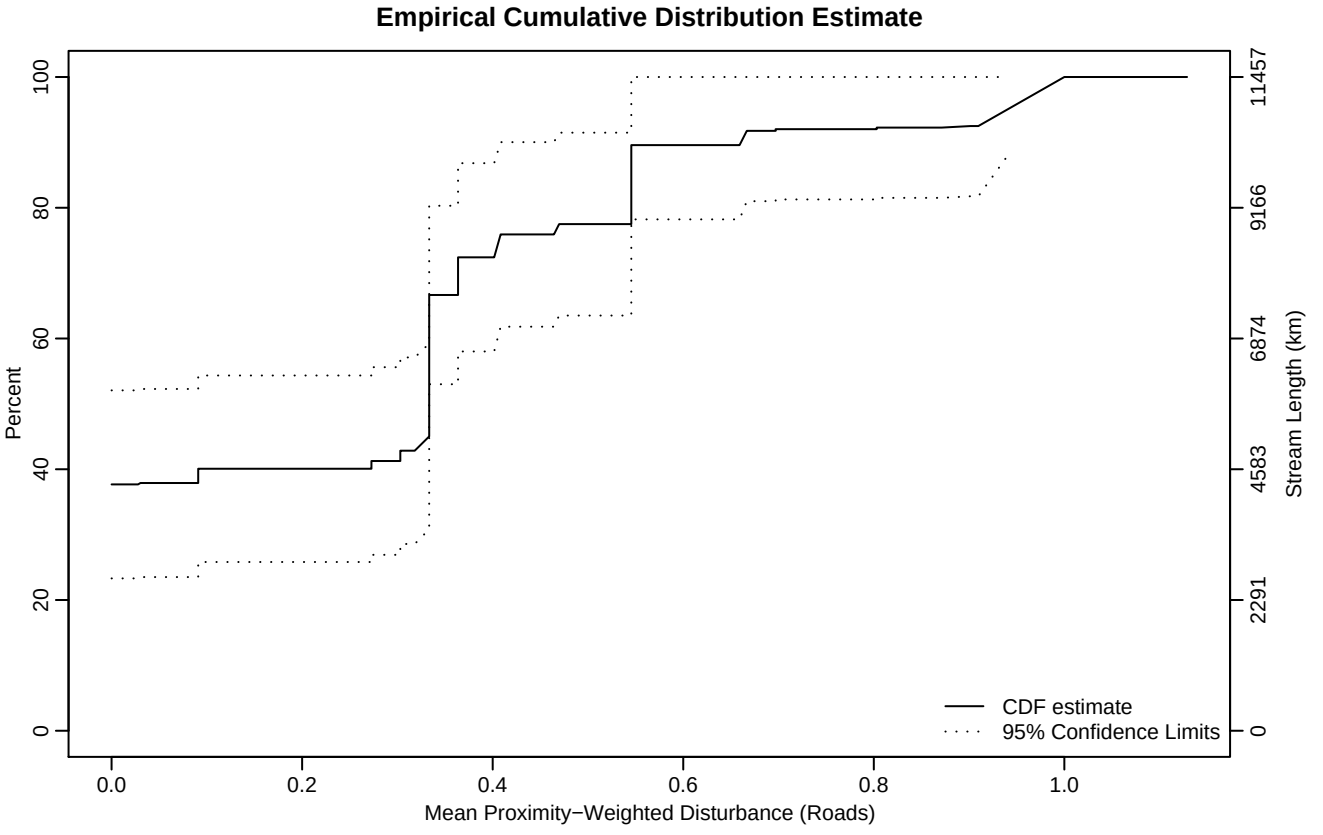


Figure PHAB−391 Indicator: W1H_ROAD Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.09
50Pct	0.33	0	0.33
75Pct	0.41	0.33	0.66
90Pct	0.66	0.55	1
95Pct	0.94	0.55	1
Mean	0.29	0.19	0.40
Std Dev	0.25	0.20	0.30

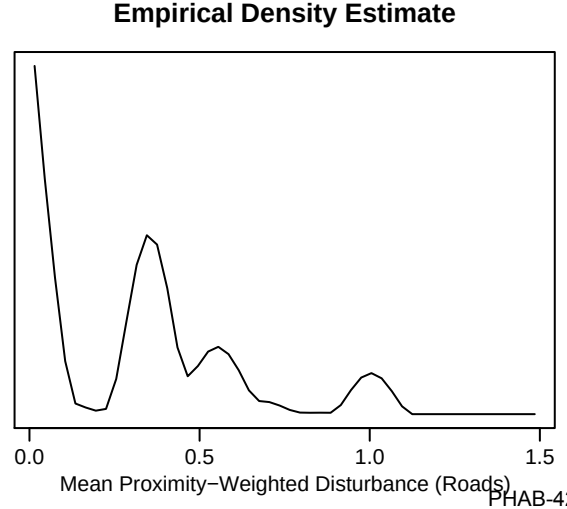
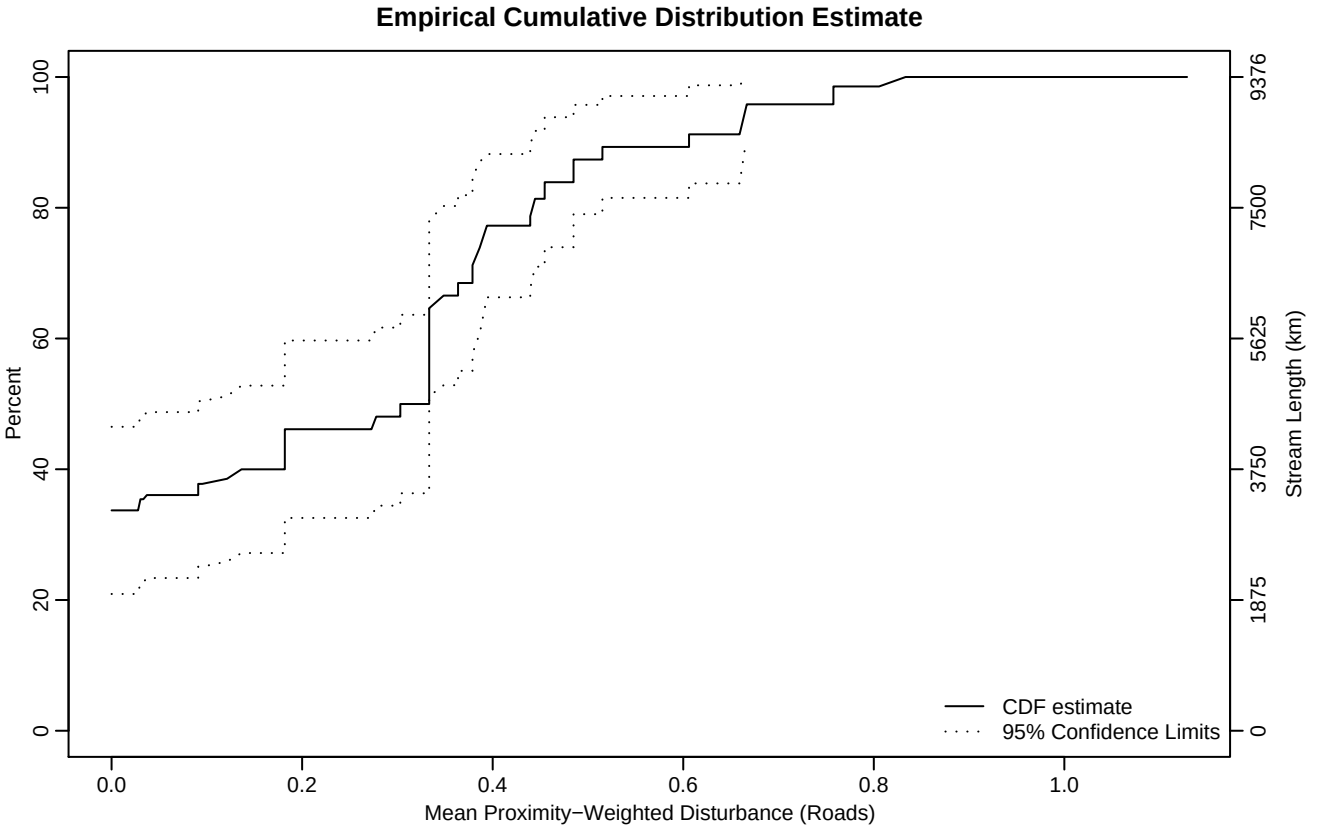


Figure PHAB−392 Indicator: W1H_ROAD Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.12
50Pct	0.33	0.09	0.33
75Pct	0.39	0.33	0.52
90Pct	0.61	0.45	0.76
95Pct	0.67	0.52	0.83
Mean	0.26	0.20	0.32
Std Dev	0.22	0.18	0.26

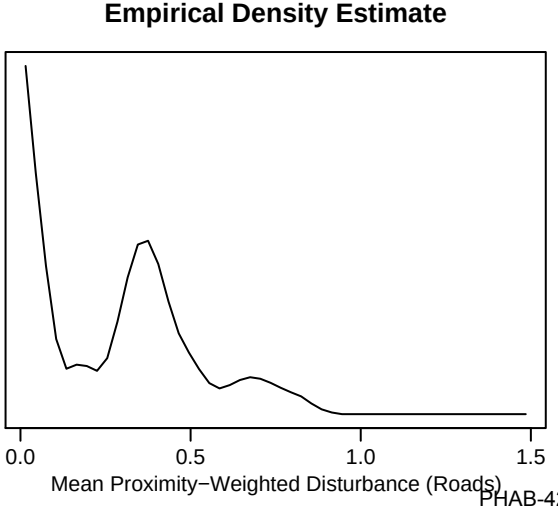
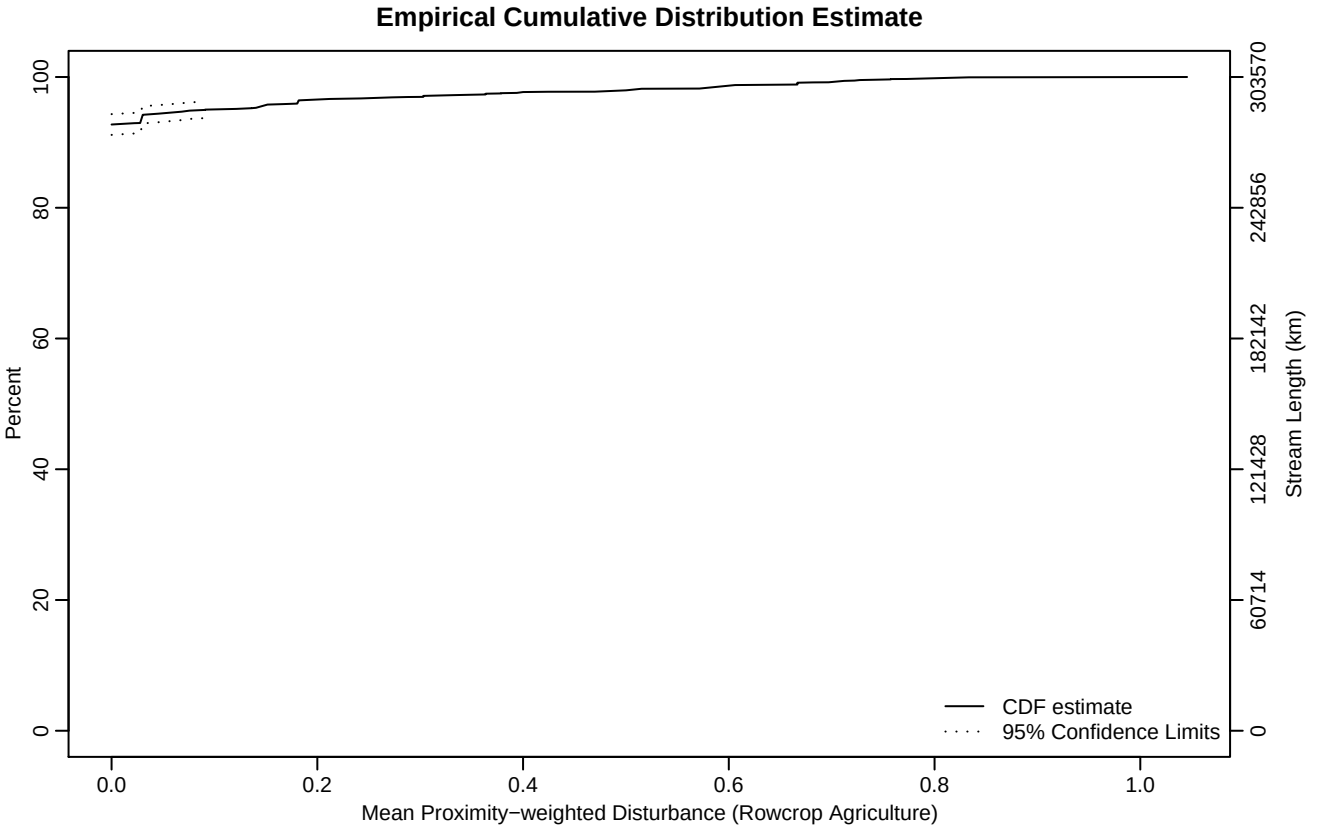


Figure PHAB−393 Indicator: W1H_CROP Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0.09	0.03	0.18
Mean	0.02	0.02	0.03
Std Dev	0.08	0.07	0.10

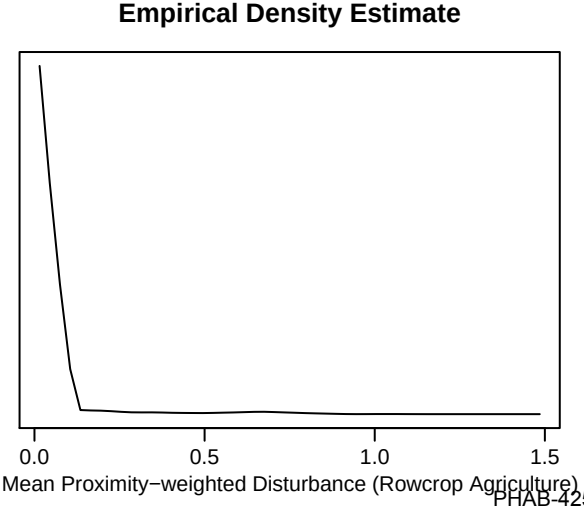
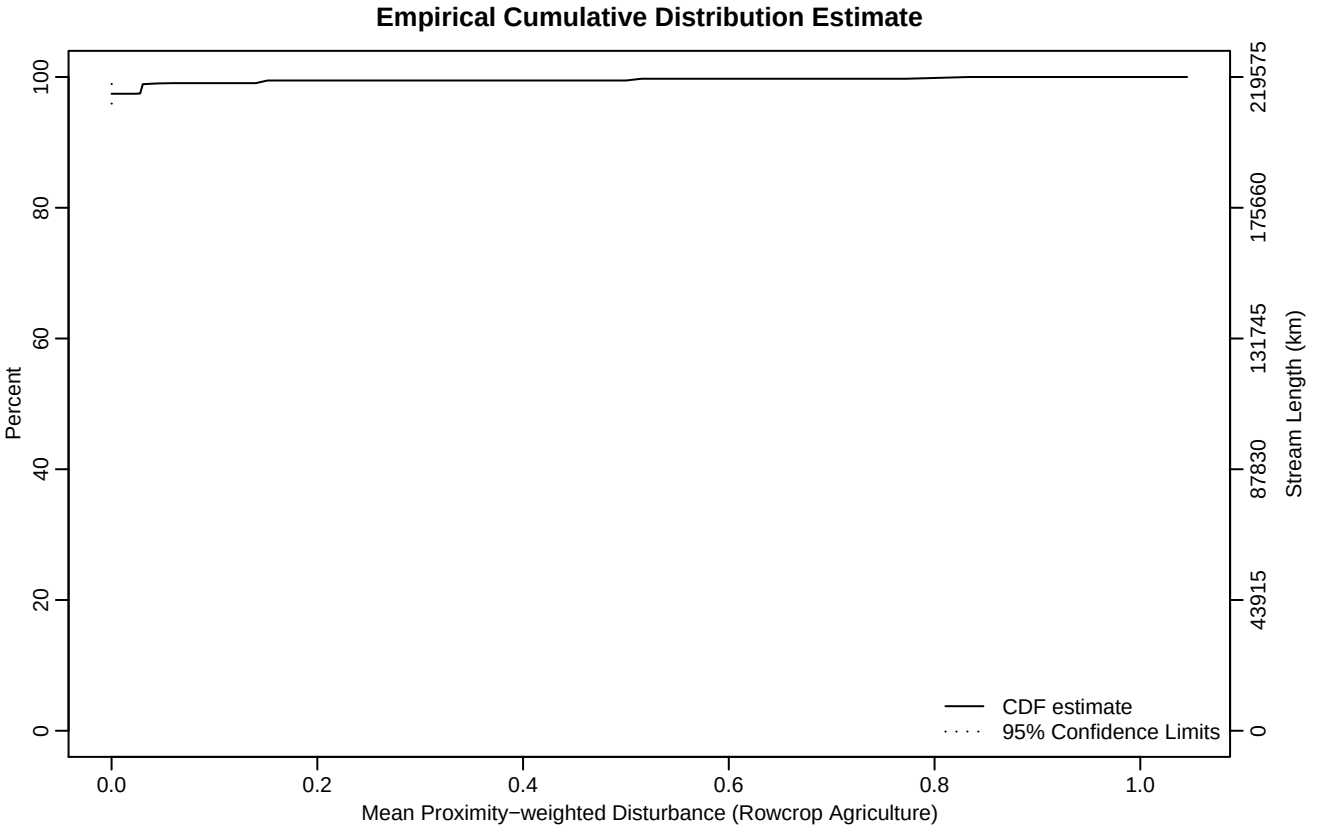


Figure PHAB−394 Indicator: W1H_CROP Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0
Mean	0	0	0.01
Std Dev	0.03	0.01	0.04

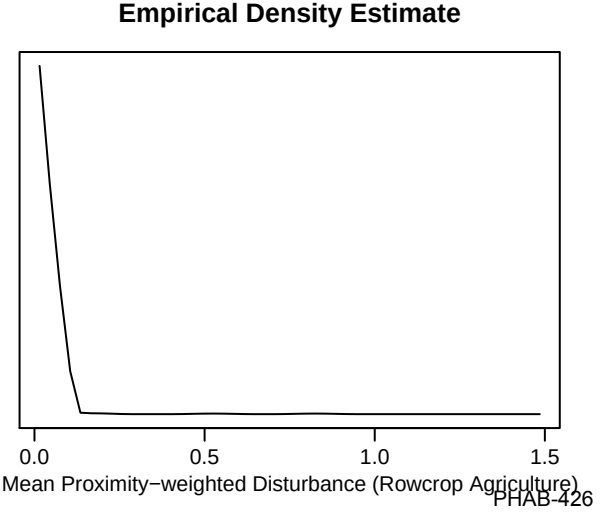
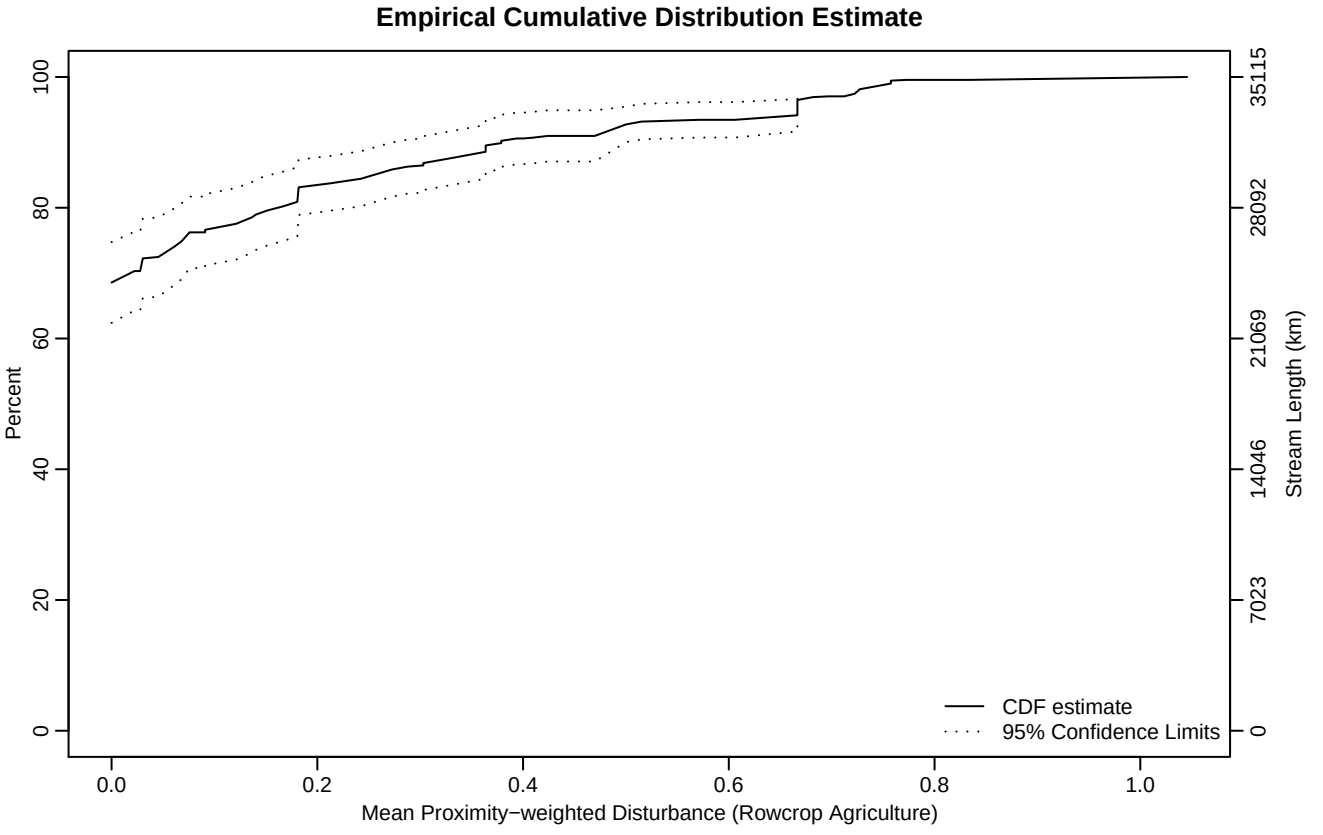


Figure PHAB−395 Indicator: W1H_CROP Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.07	0.01	0.18
90Pct	0.38	0.28	0.66
95Pct	0.67	0.50	0.72
Mean	0.10	0.08	0.12
Std Dev	0.17	0.14	0.21

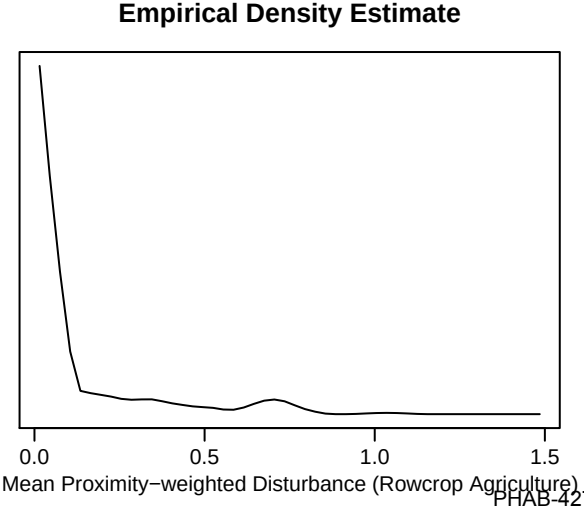
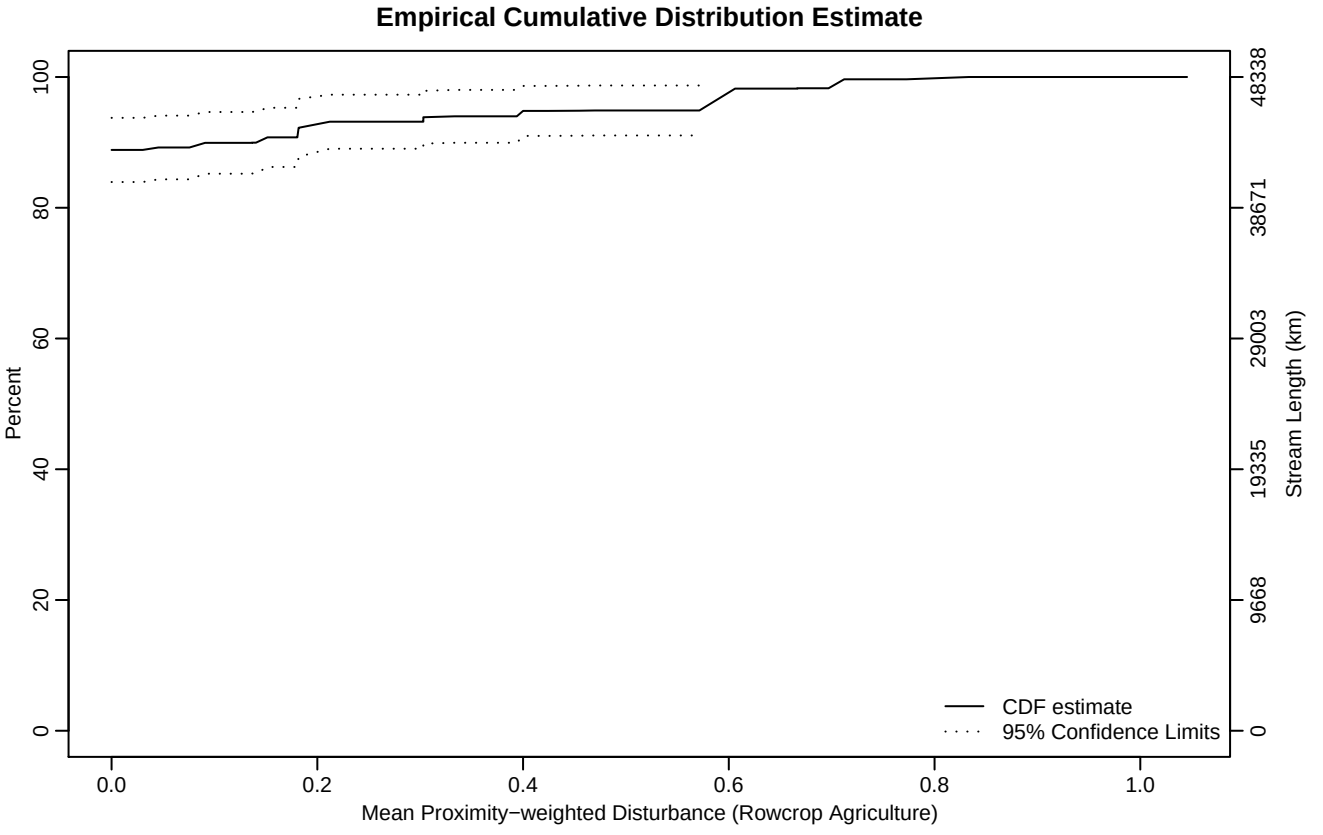


Figure PHAB−396 Indicator: W1H_CROP Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.14	0	0.57
95Pct	0.57	0.18	0.71
Mean	0.05	0.02	0.07
Std Dev	0.10	0.07	0.12

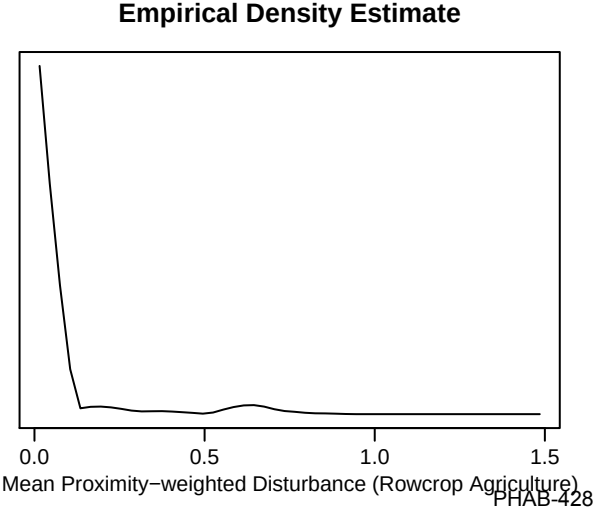
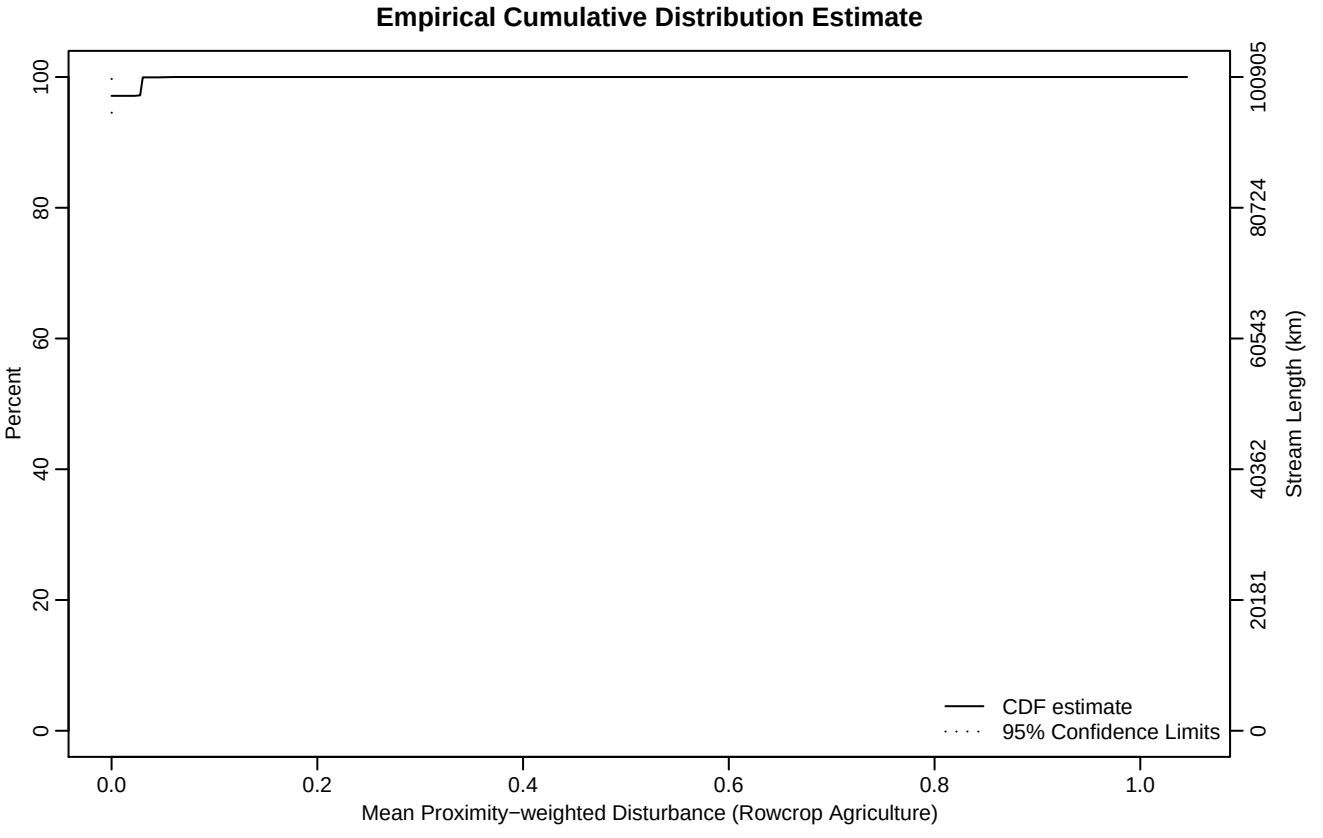


Figure PHAB−397 Indicator: W1H_CROP Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.03
Mean	0	0	0
Std Dev	0	0	0

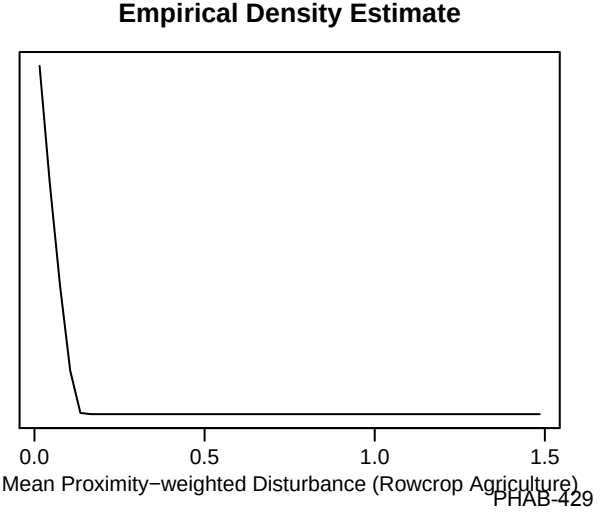
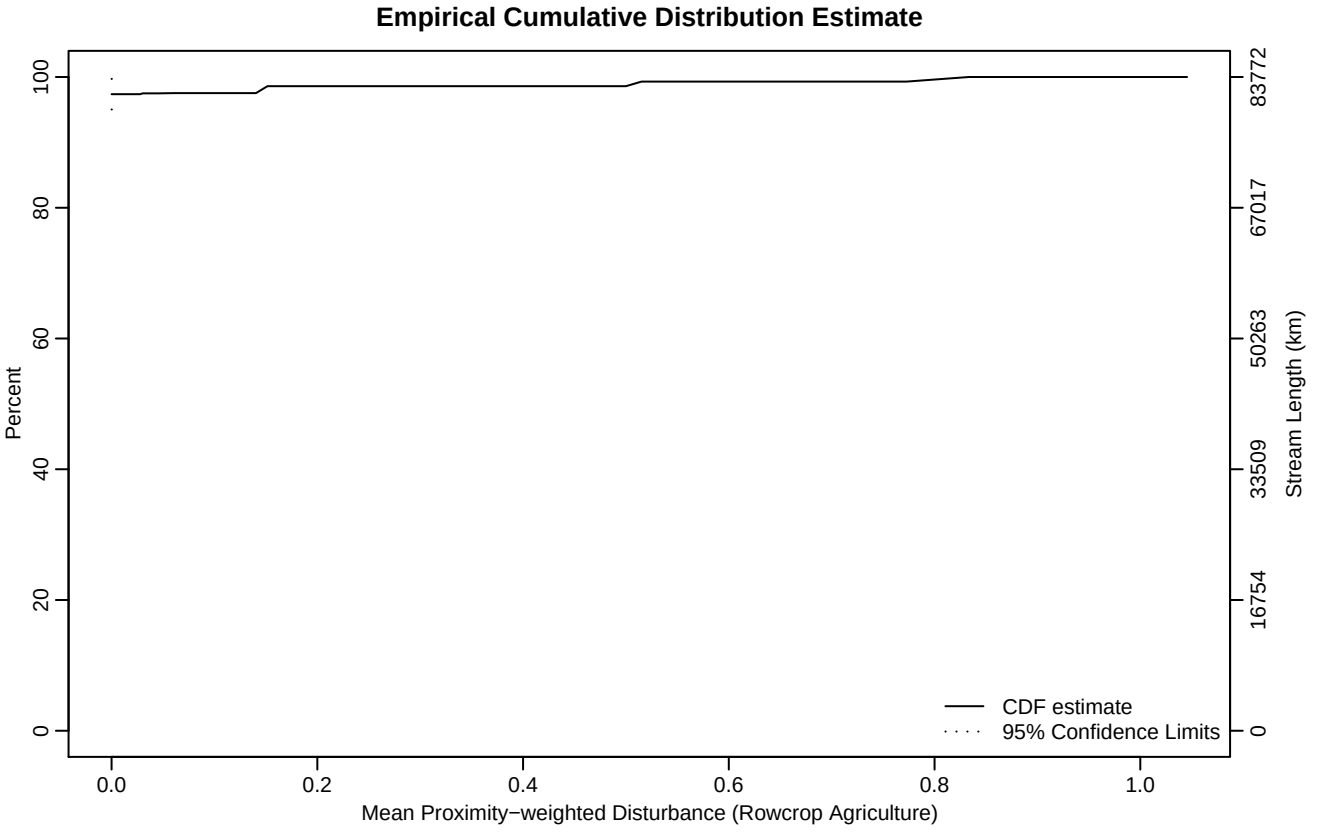


Figure PHAB−398 Indicator: W1H_CROP Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0
Mean	0.01	0	0.02
Std Dev	0.06	0.03	0.10

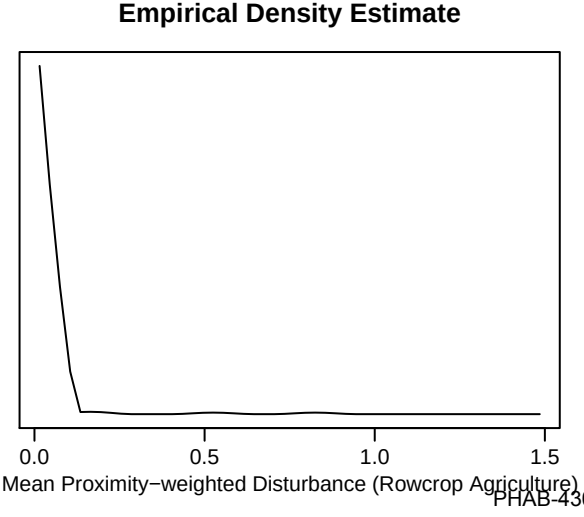
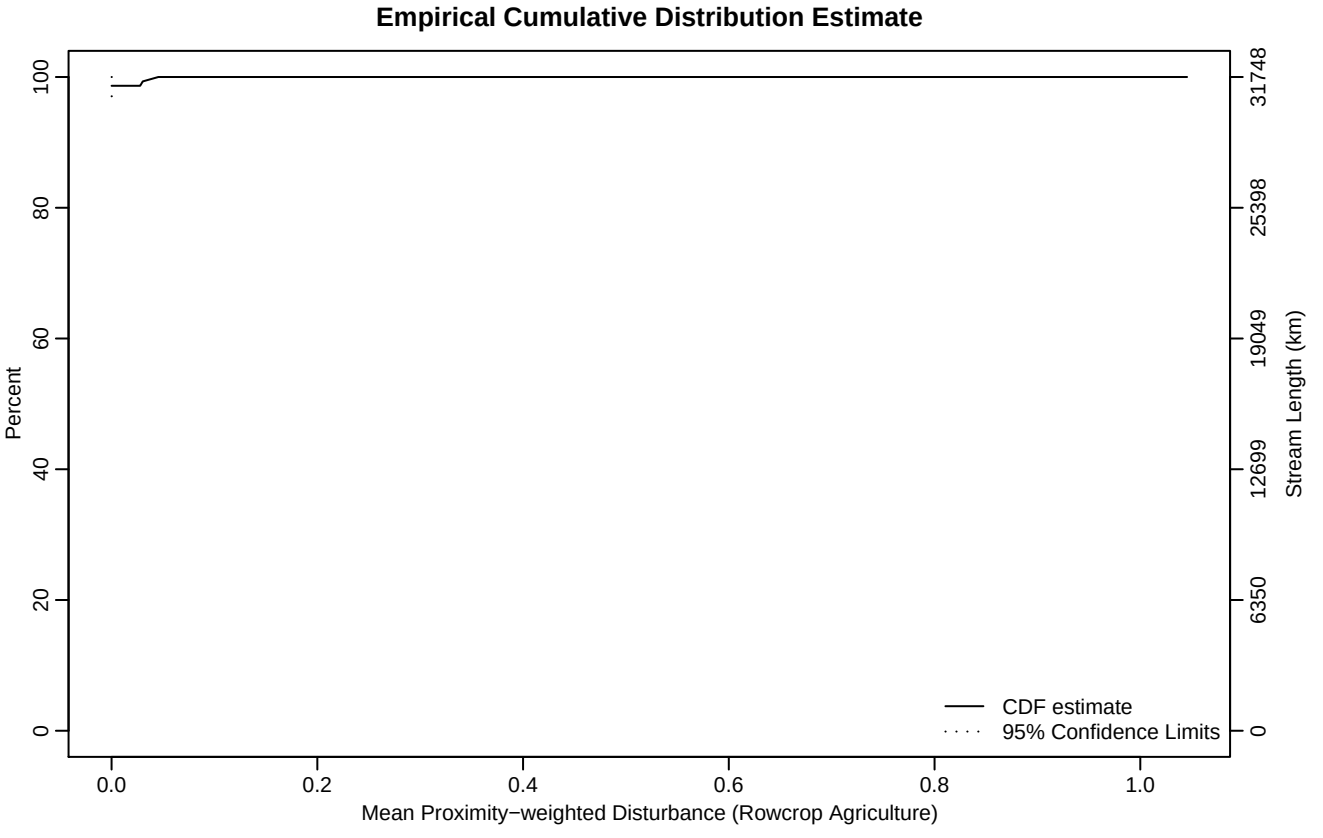


Figure PHAB−399 Indicator: W1H_CROP Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0
Mean	0	0	0
Std Dev	0	0	0

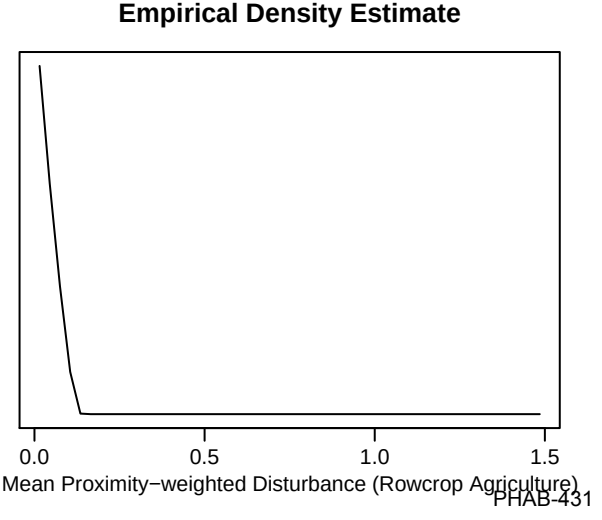
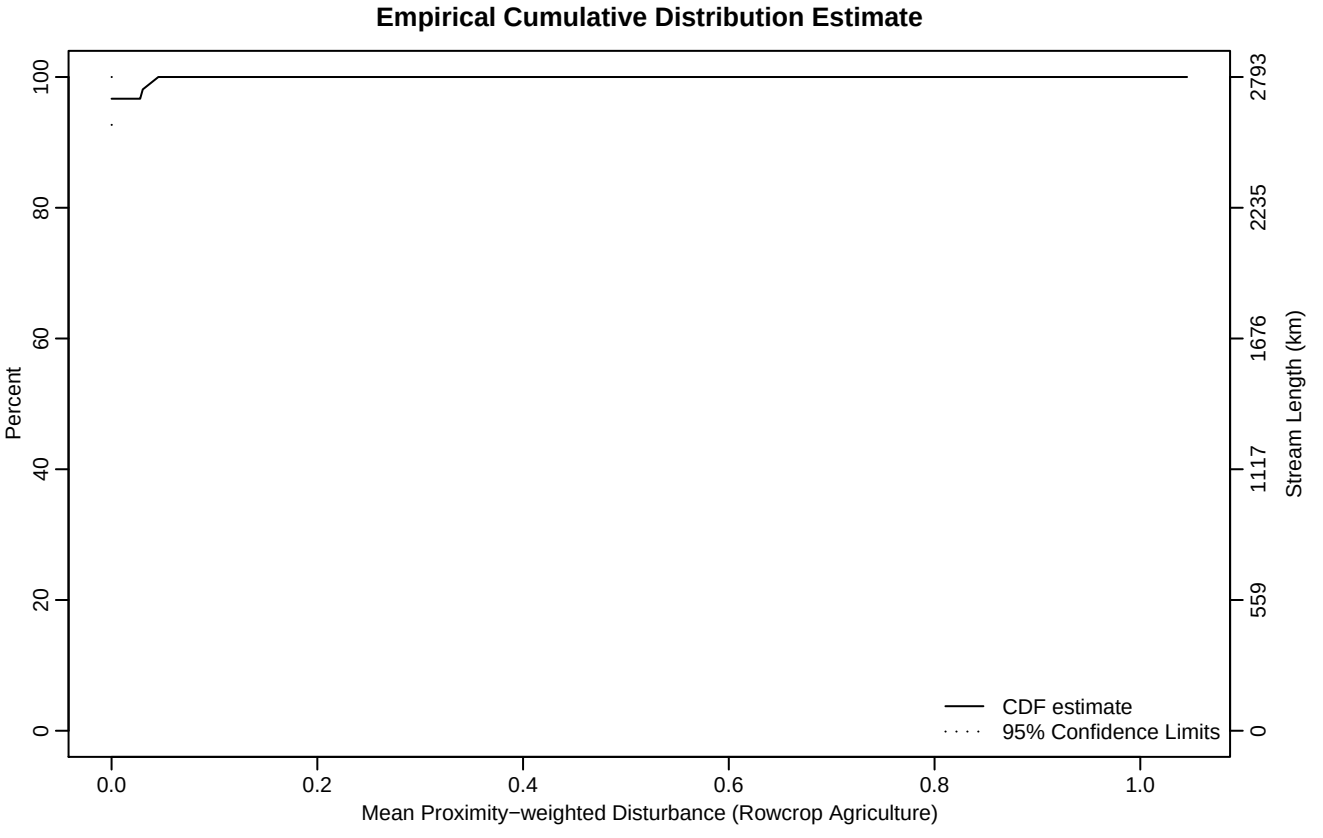


Figure PHAB−400 Indicator: W1H_CROP Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0
95Pct	0	0	0.04
Mean	0	0	0
Std Dev	0.01	0	0.01

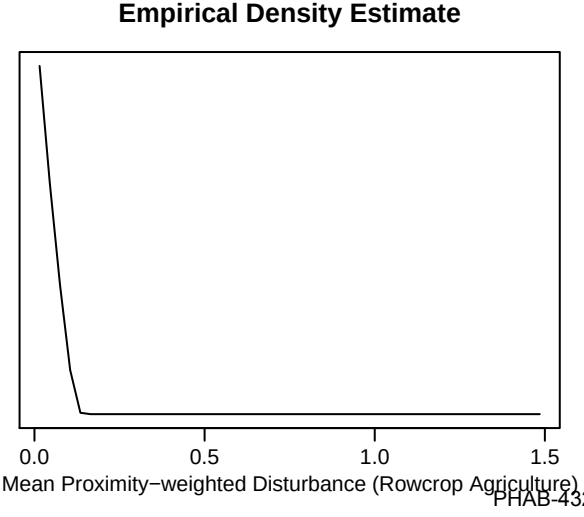
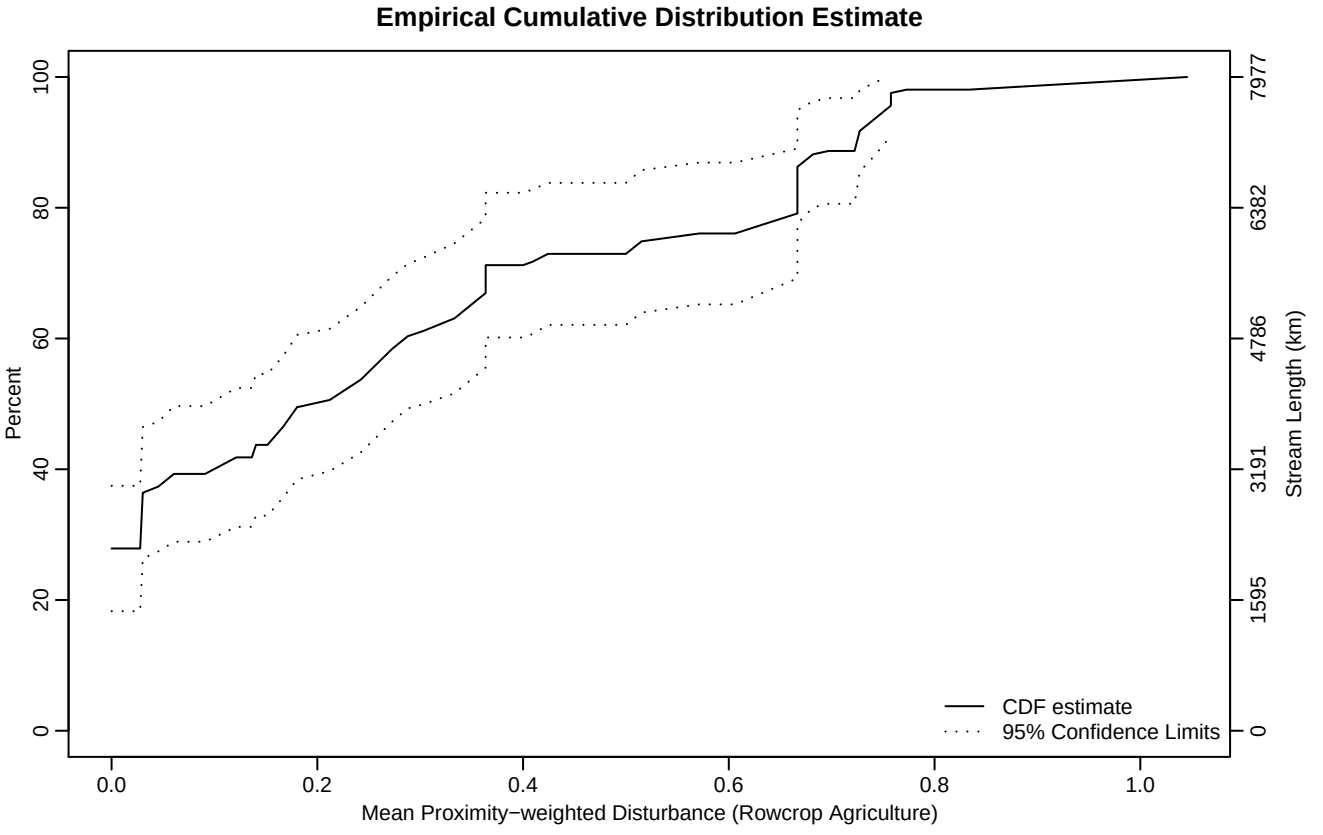


Figure PHAB−401 Indicator: W1H_CROP Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.03
50Pct	0.19	0.06	0.30
75Pct	0.52	0.34	0.67
90Pct	0.72	0.67	0.84
95Pct	0.75	0.72	1.05
Mean	0.29	0.22	0.35
Std Dev	0.27	0.24	0.31

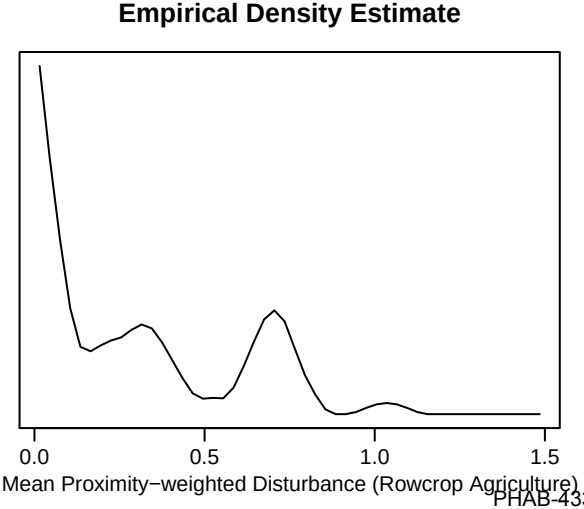
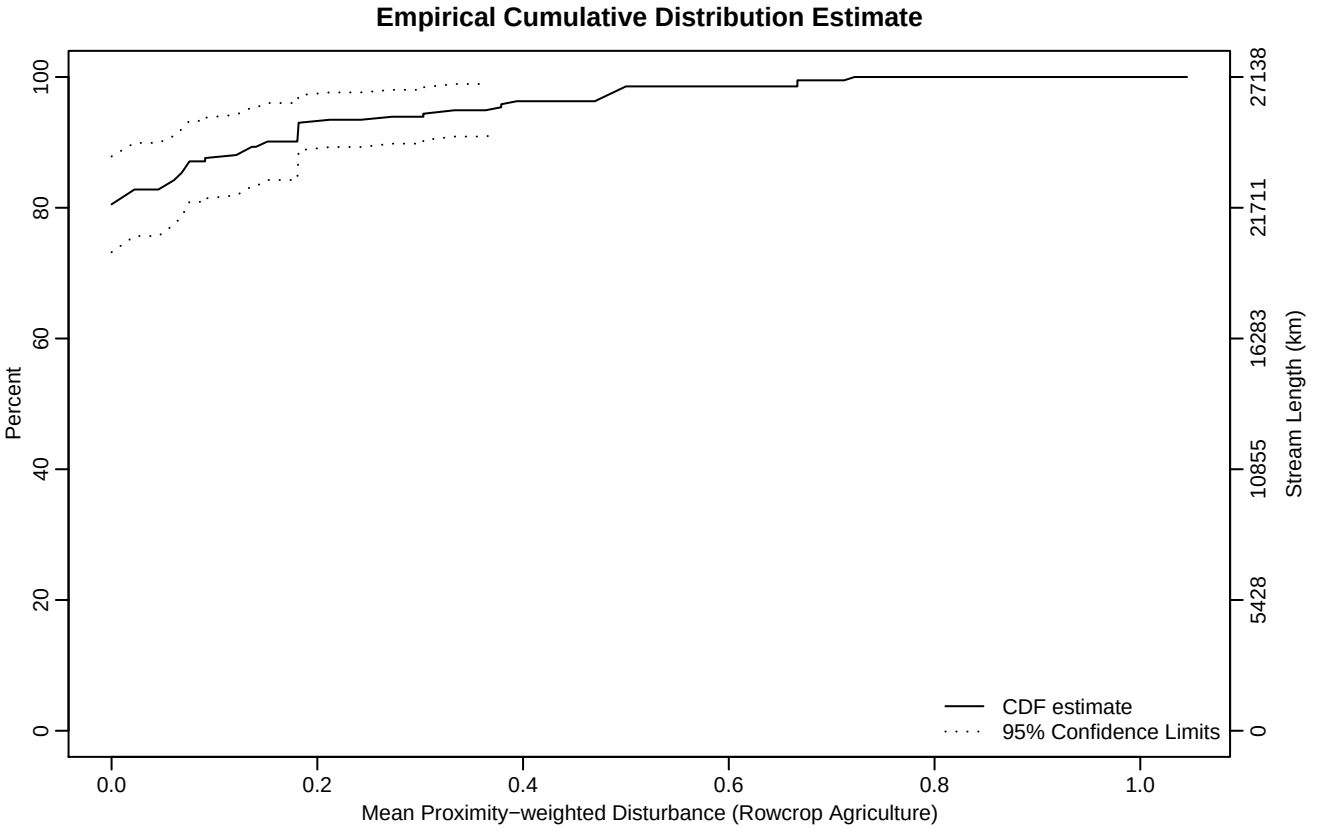


Figure PHAB−402 Indicator: W1H_CROP Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.02
90Pct	0.15	0.06	0.39
95Pct	0.37	0.18	0.67
Mean	0.04	0.02	0.07
Std Dev	0.12	0.08	0.16

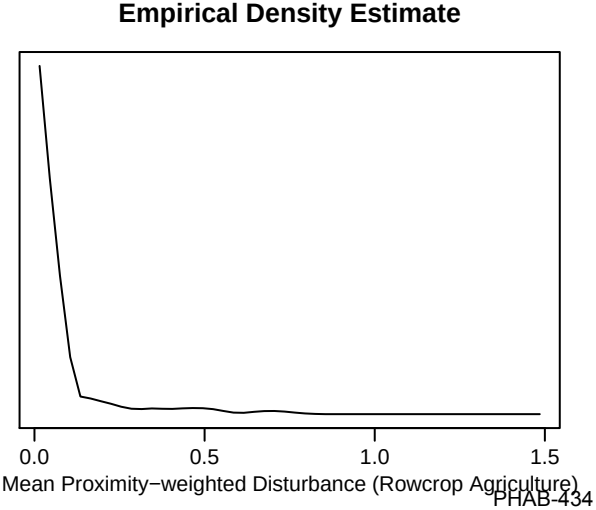
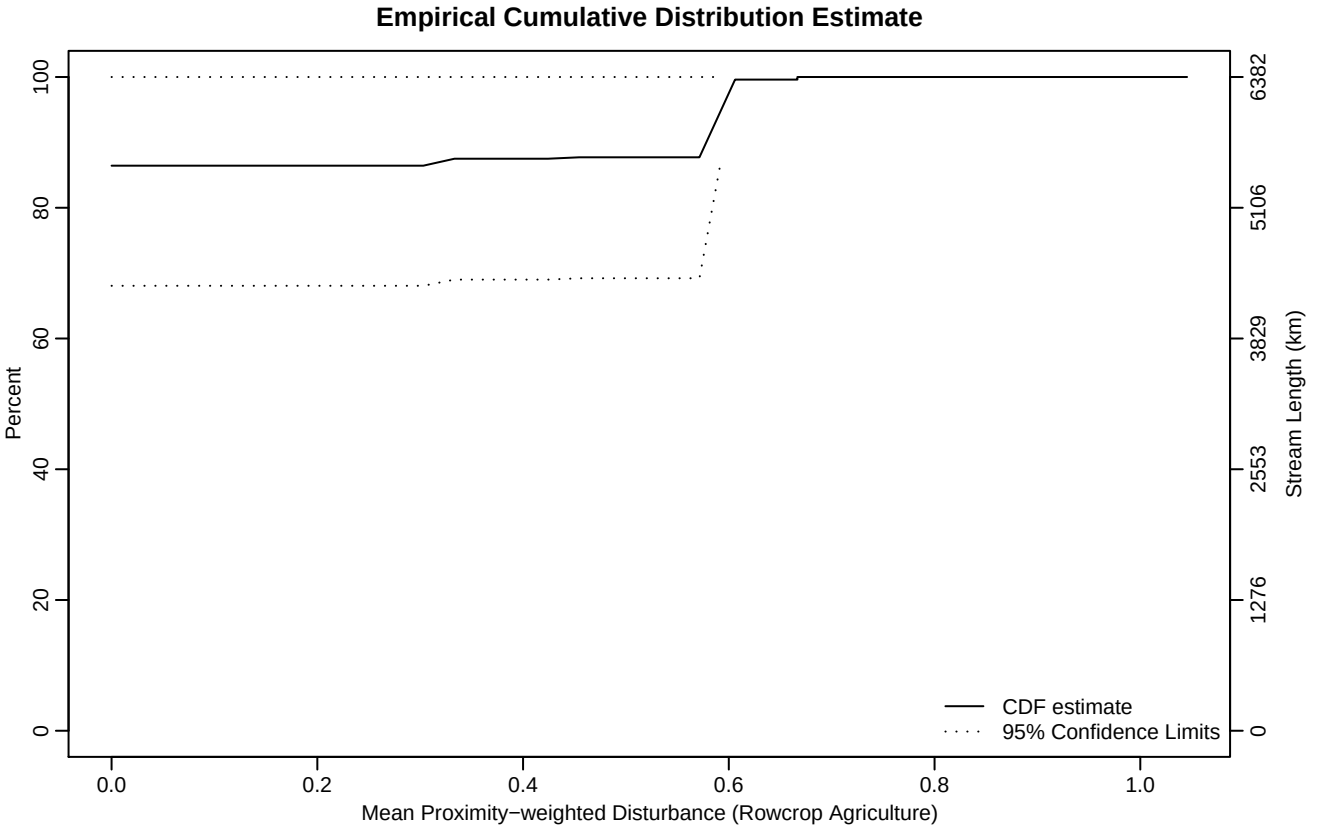


Figure PHAB−403 Indicator: W1H_CROP Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.59
90Pct	0.58	0	0.67
95Pct	0.59	0	0.67
Mean	0.08	−0.03	0.19
Std Dev	0.20	0.08	0.33

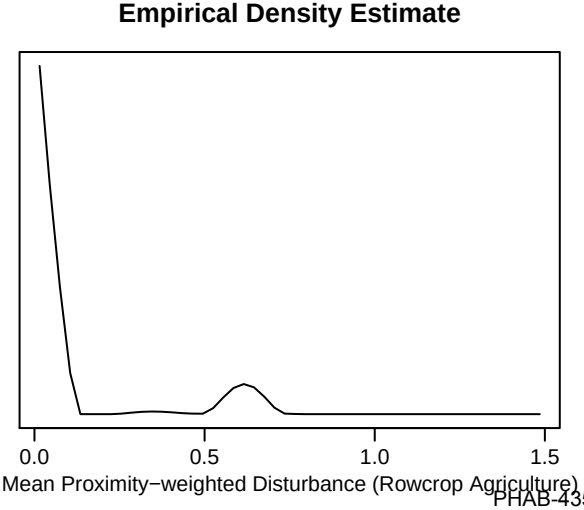
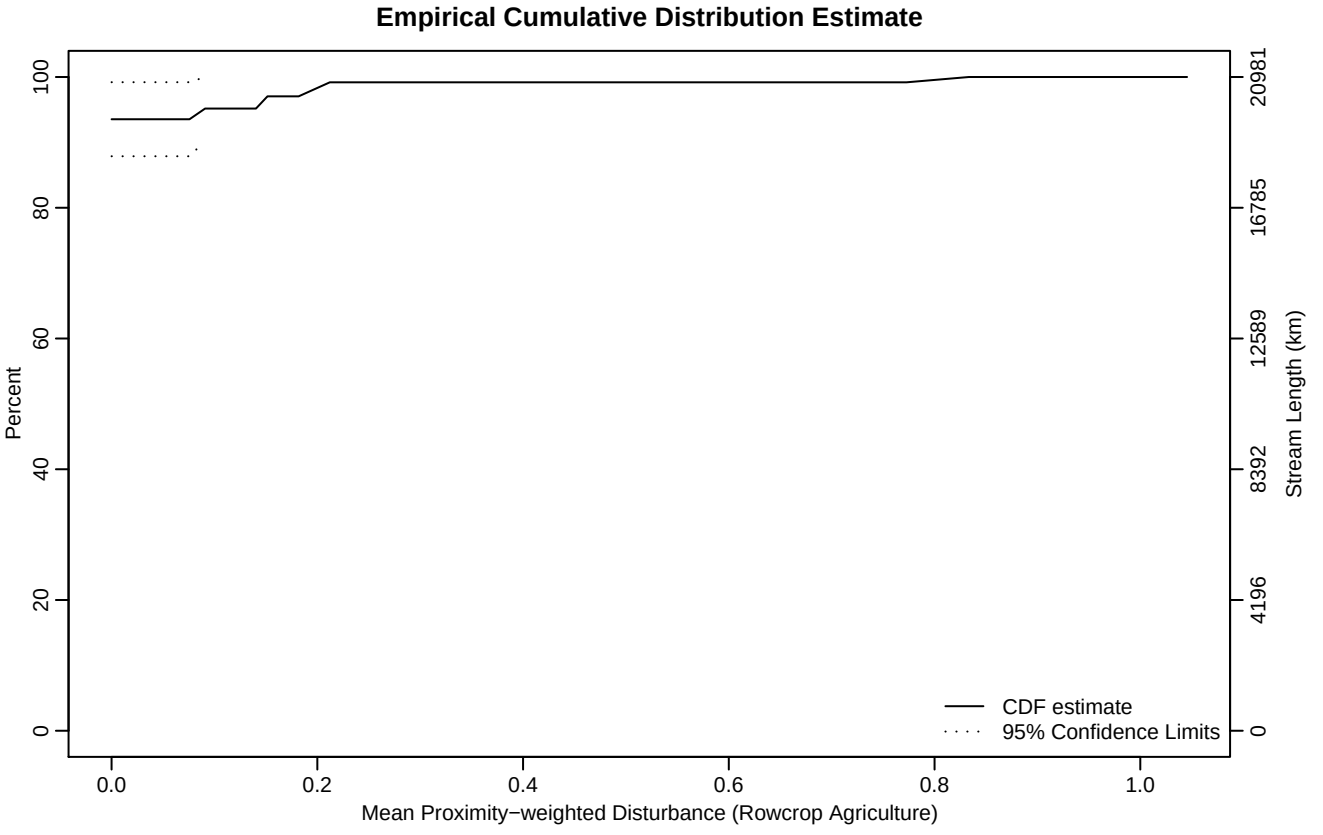


Figure PHAB−404 Indicator: W1H_CROP Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.14
95Pct	0.09	0	0.83
Mean	0.02	0	0.03
Std Dev	0.07	0.03	0.10

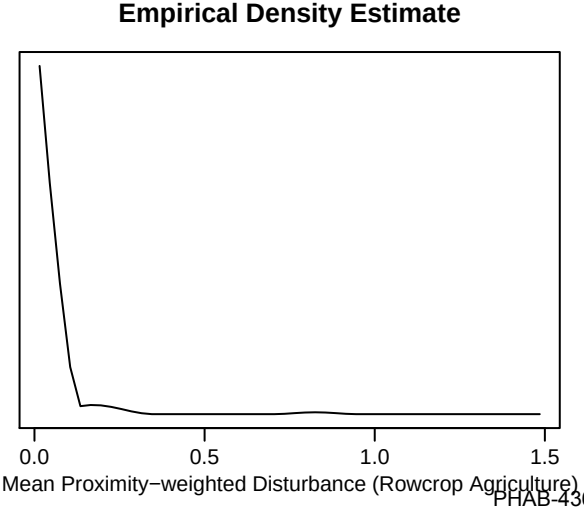
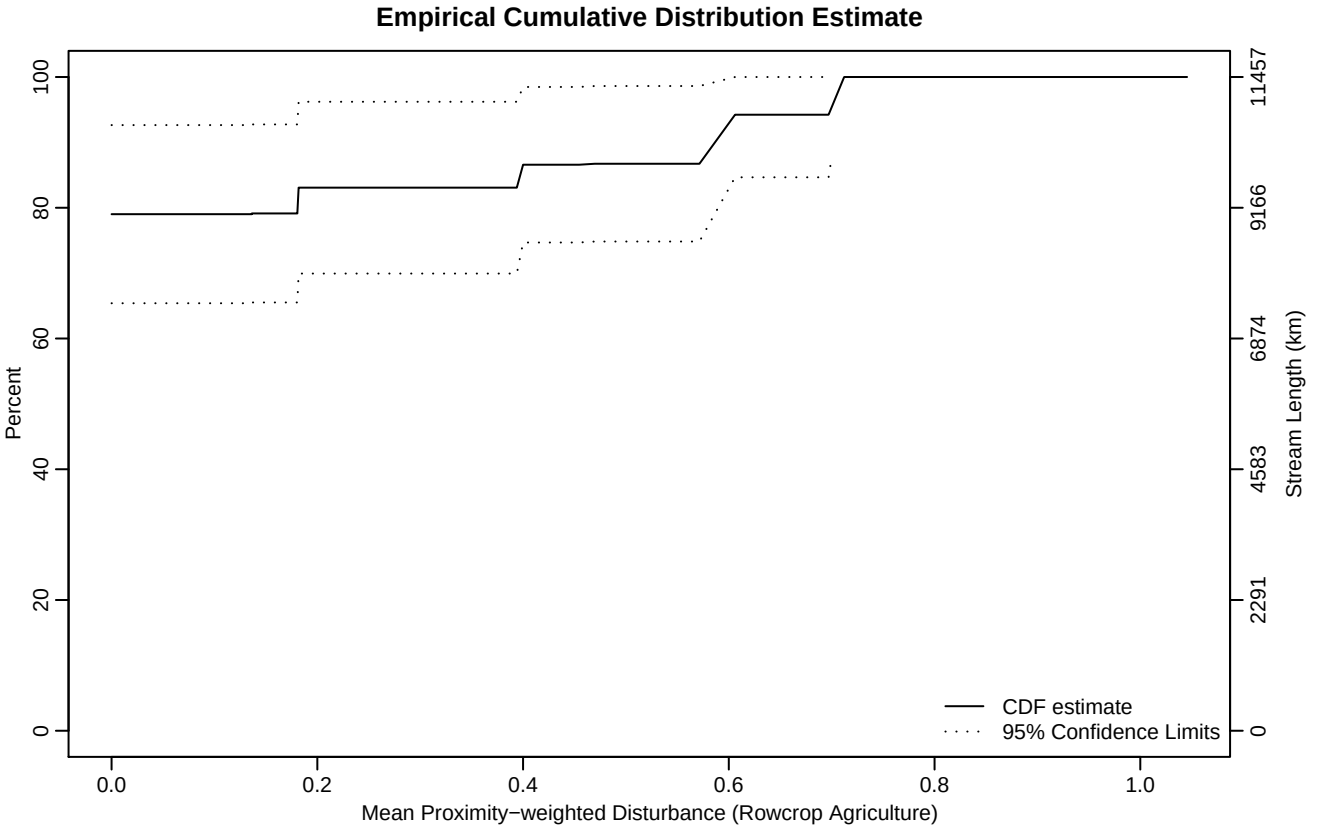


Figure PHAB−405 Indicator: W1H_CROP Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.58
90Pct	0.59	0	0.71
95Pct	0.70	0.40	0.71
Mean	0.11	0.03	0.19
Std Dev	0.13	0.11	0.16

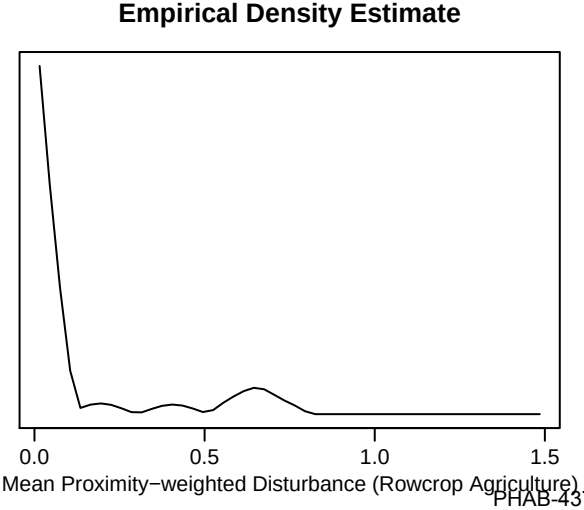
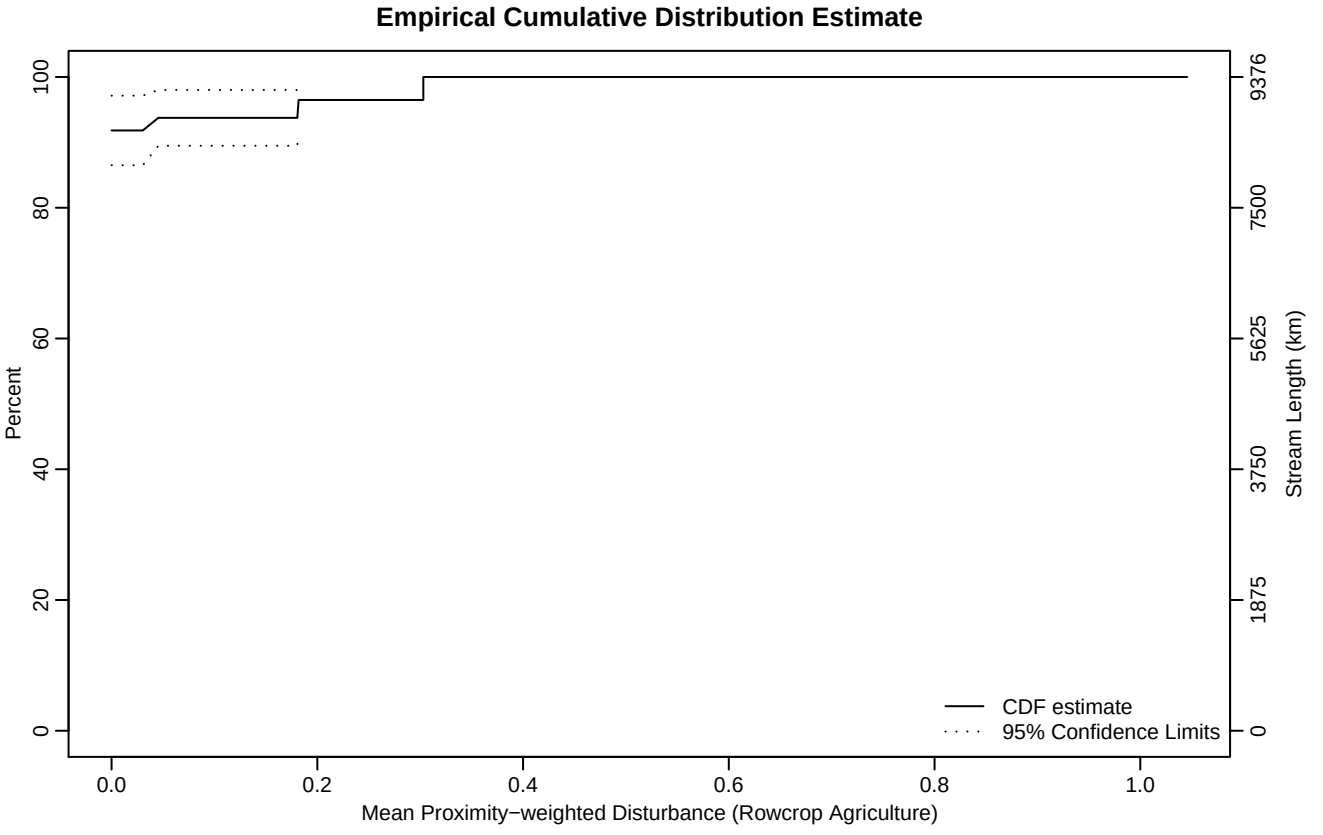


Figure PHAB−406 Indicator: W1H_CROP Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0	0	0.18
95Pct	0.18	0	0.30
Mean	0.02	0	0.03
Std Dev	0.03	0.02	0.04

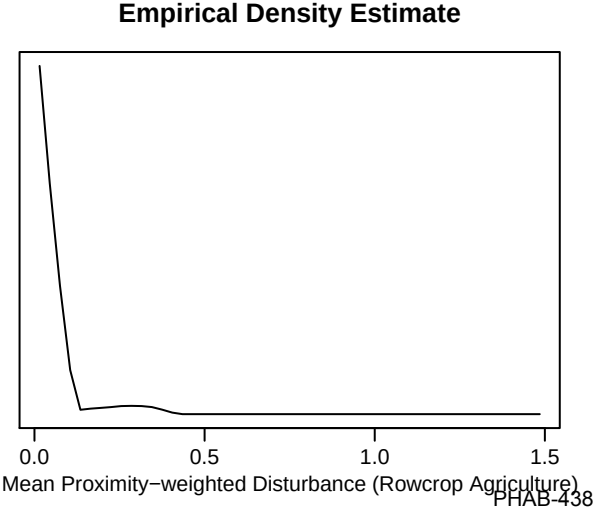
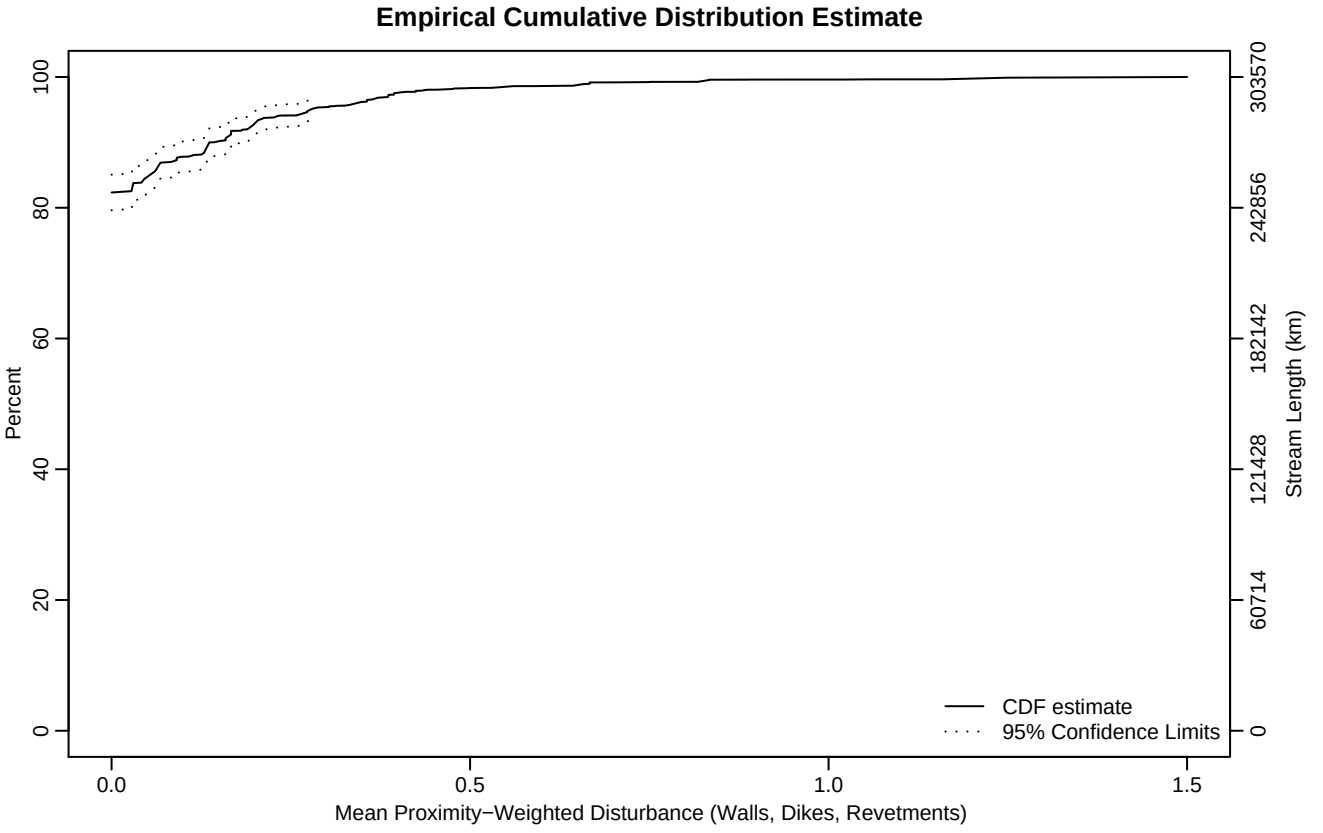


Figure PHAB−407 Indicator: W1H_WALL Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.14	0.09	0.19
95Pct	0.28	0.20	0.36
Mean	0.04	0.03	0.05
Std Dev	0.12	0.10	0.14

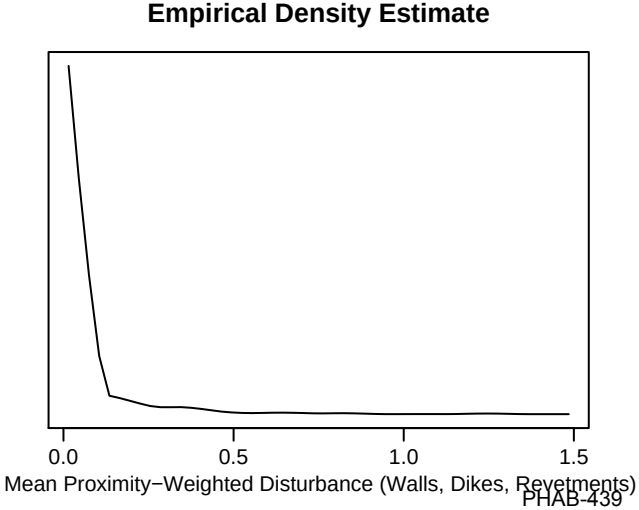
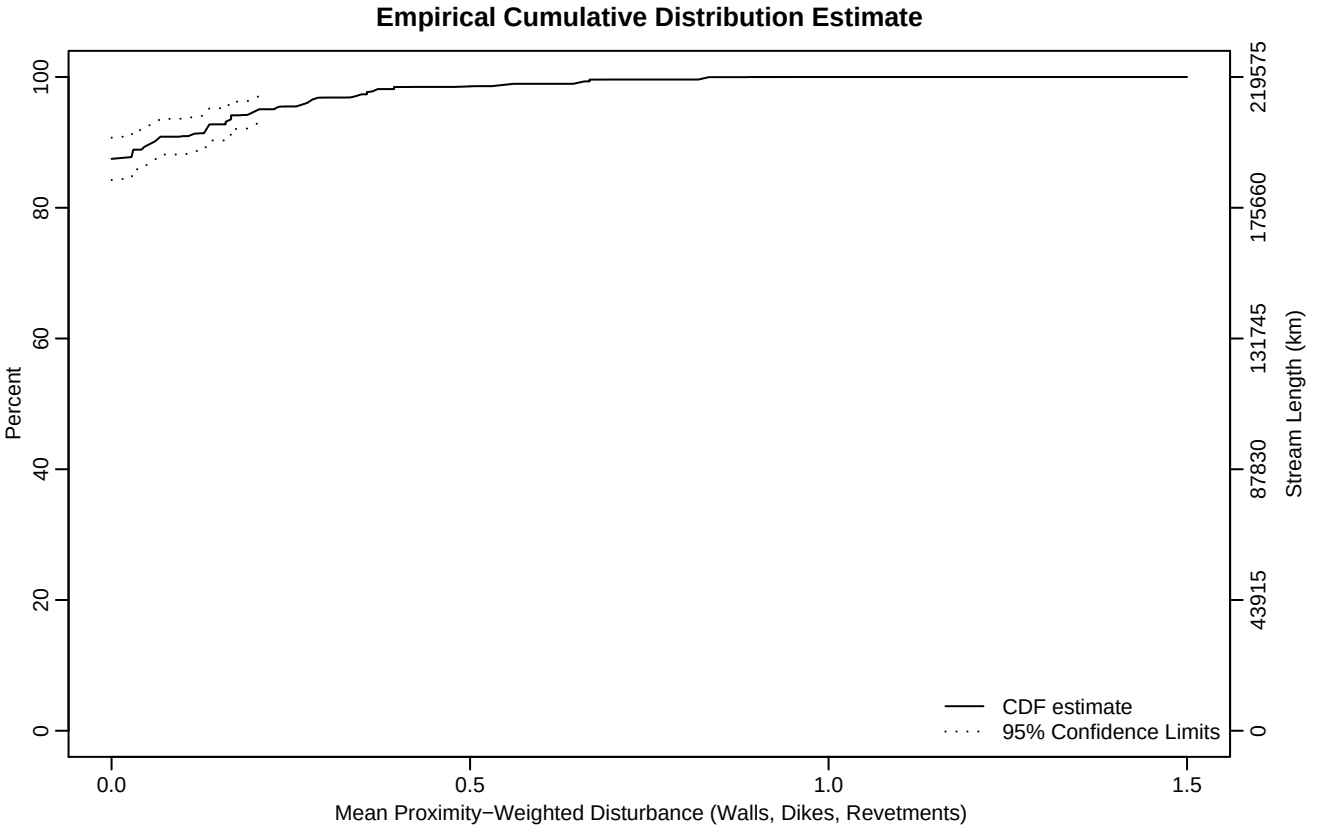


Figure PHAB−408 Indicator: W1H_WALL Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.06	0	0.16
95Pct	0.20	0.16	0.34
Mean	0.03	0.02	0.04
Std Dev	0.09	0.07	0.11

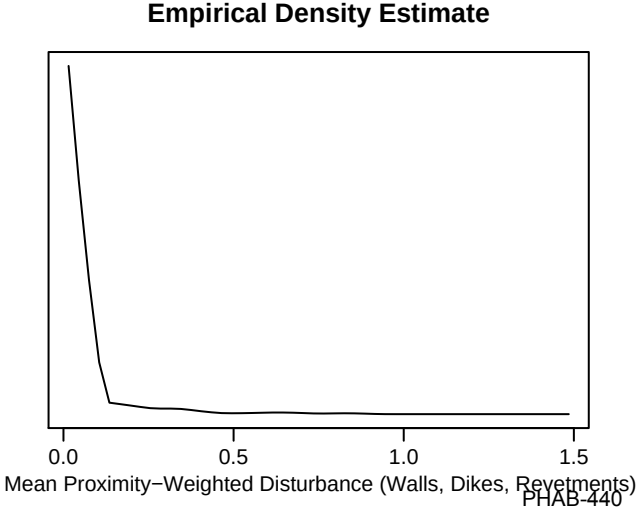
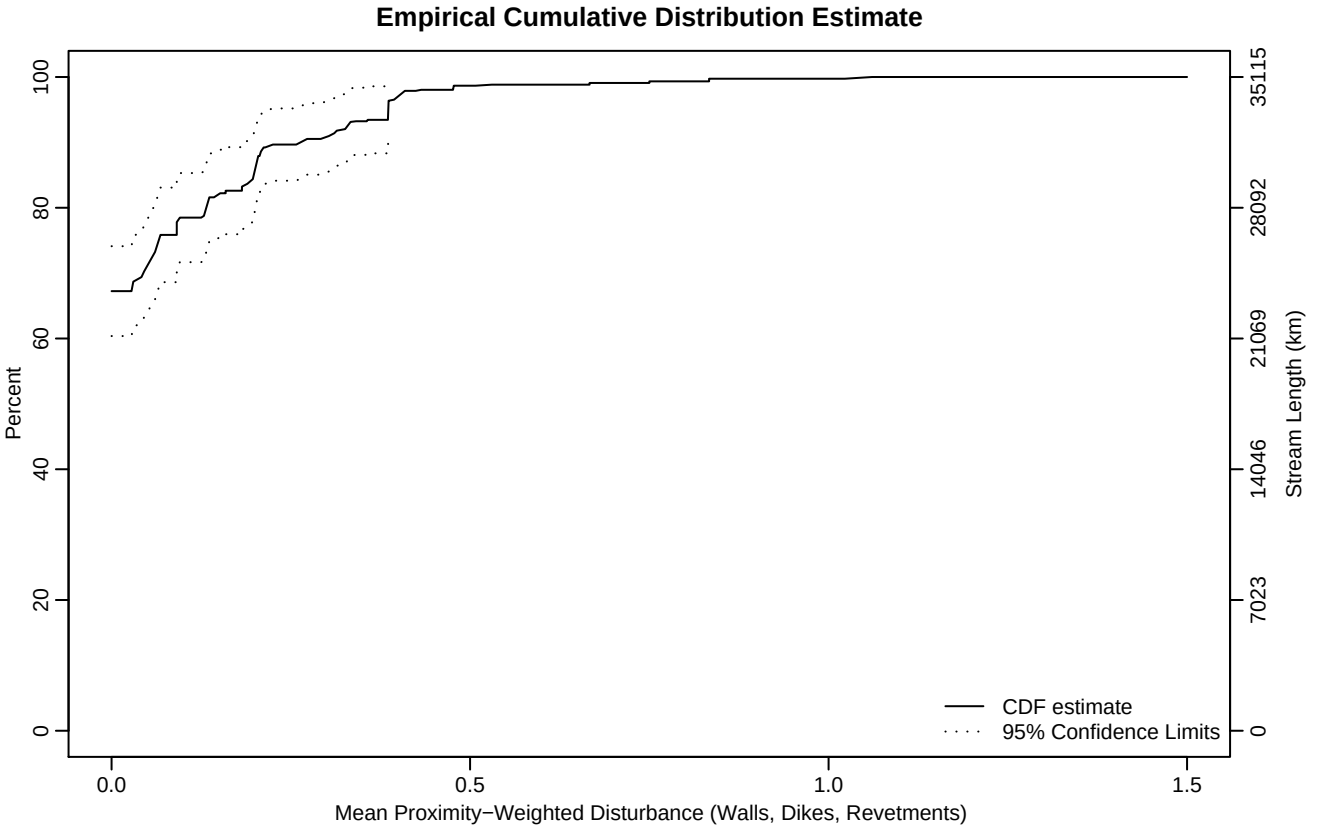


Figure PHAB−409 Indicator: W1H_WALL Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.07	0.03	0.16
90Pct	0.26	0.20	0.39
95Pct	0.39	0.26	
Mean	0.07	0.05	0.09
Std Dev	0.14	0.11	0.16

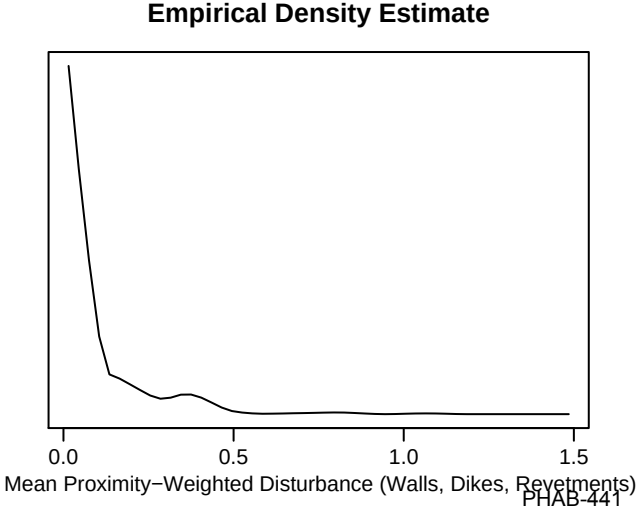
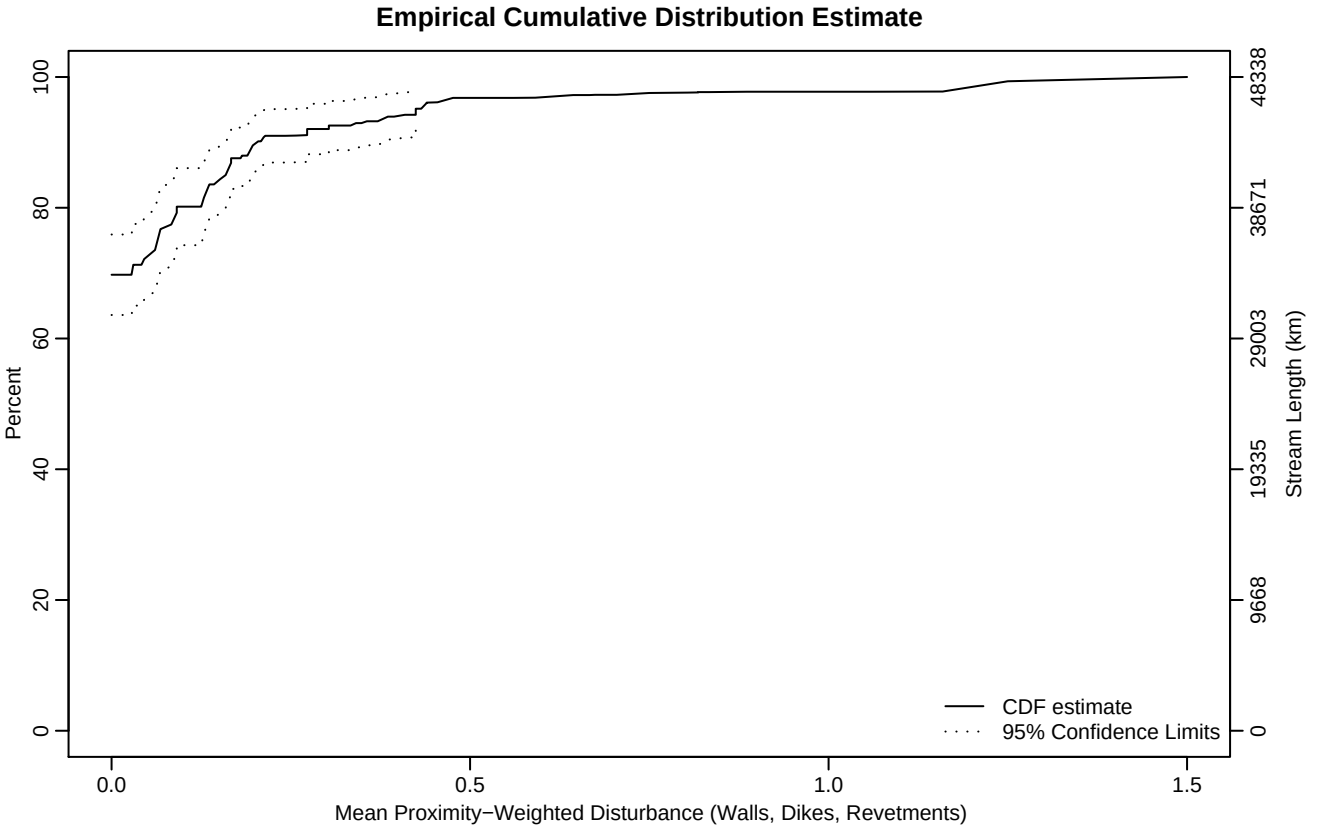


Figure PHAB−410 Indicator: W1H_WALL Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.06	0	0.13
90Pct	0.20	0.16	0.42
95Pct	0.42	0.27	1.21
Mean	0.08	0.05	0.12
Std Dev	0.16	0.13	0.20

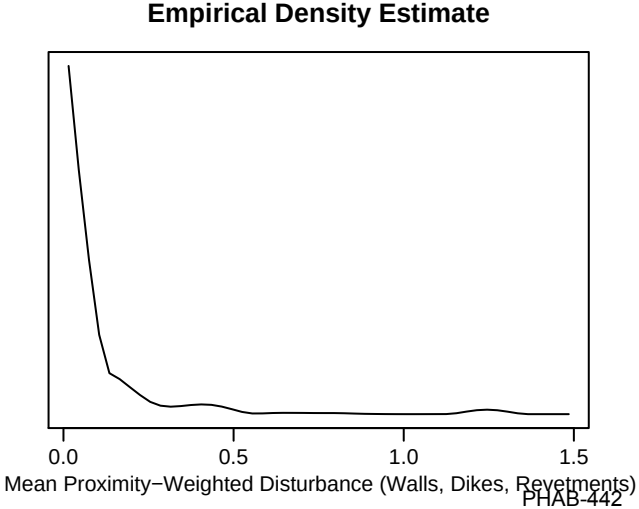
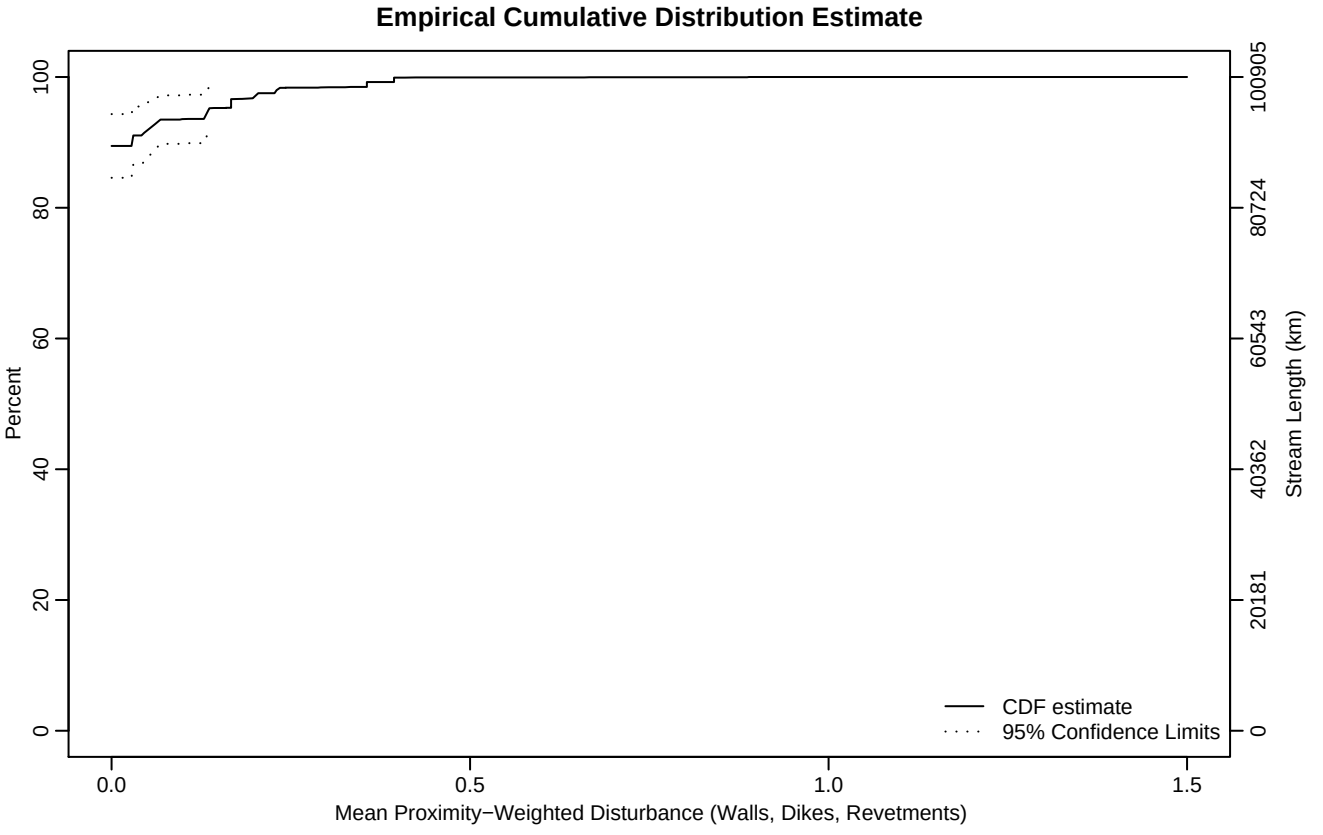


Figure PHAB−411 Indicator: W1H_WALL Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.03	0	0.13
95Pct	0.14	0.04	0.36
Mean	0.02	0.01	0.03
Std Dev	0.06	0.04	0.07

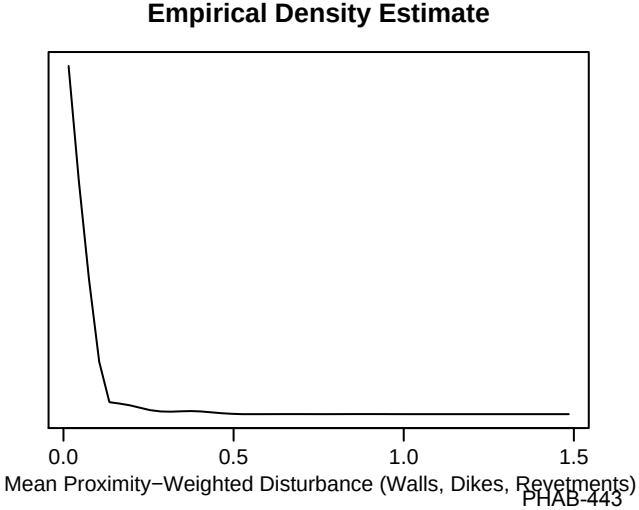
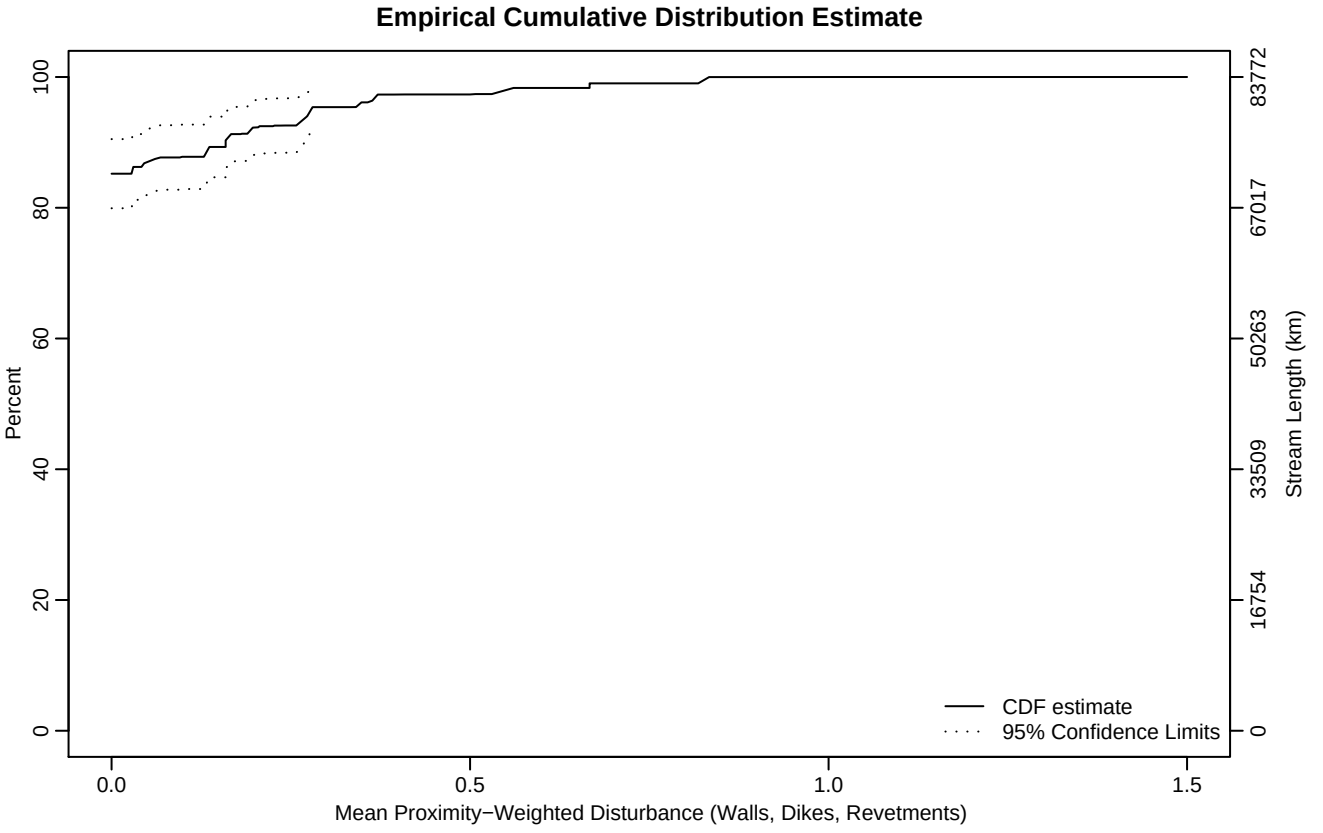


Figure PHAB−412 Indicator: W1H_WALL Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.16	0.03	0.28
95Pct	0.28	0.19	0.67
Mean	0.04	0.02	0.06
Std Dev	0.12	0.09	0.16

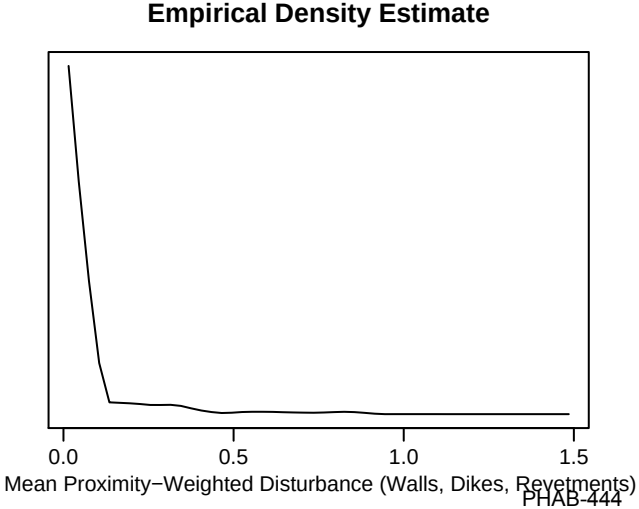
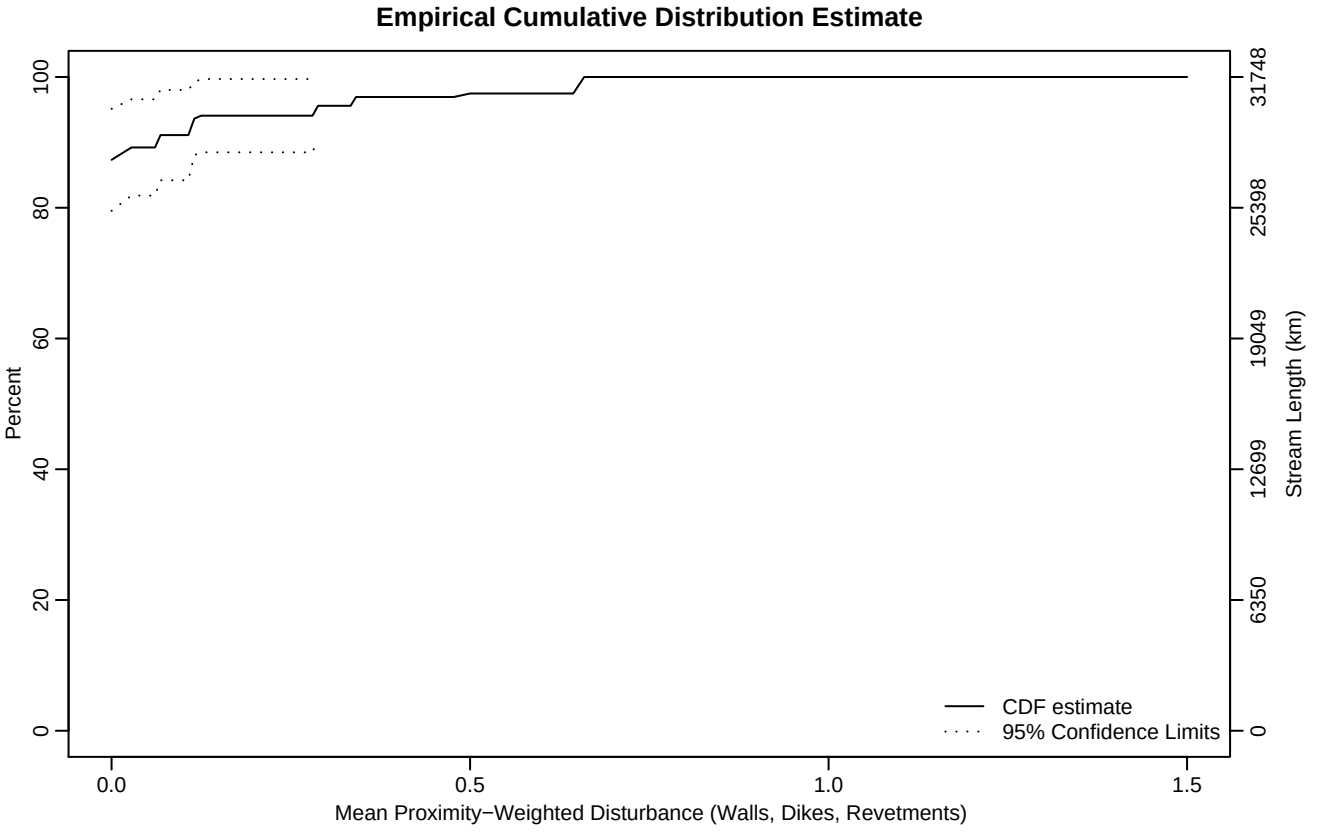


Figure PHAB−413 Indicator: W1H_WALL Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.06	0	0.49
95Pct	0.28	0.06	0.66
Mean	0.03	0	0.06
Std Dev	0.11	0.05	0.18

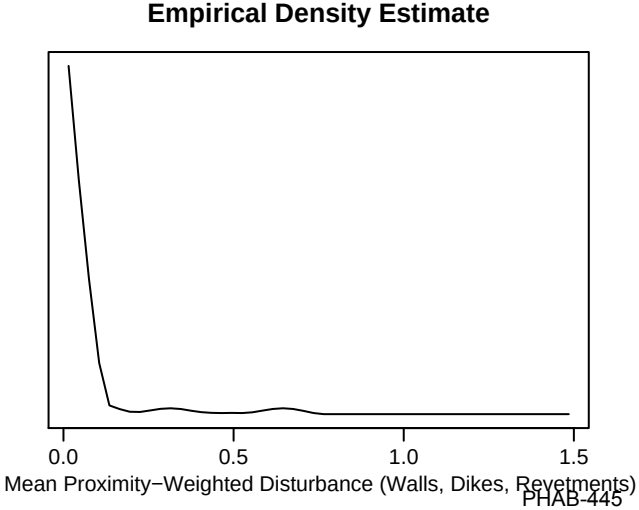
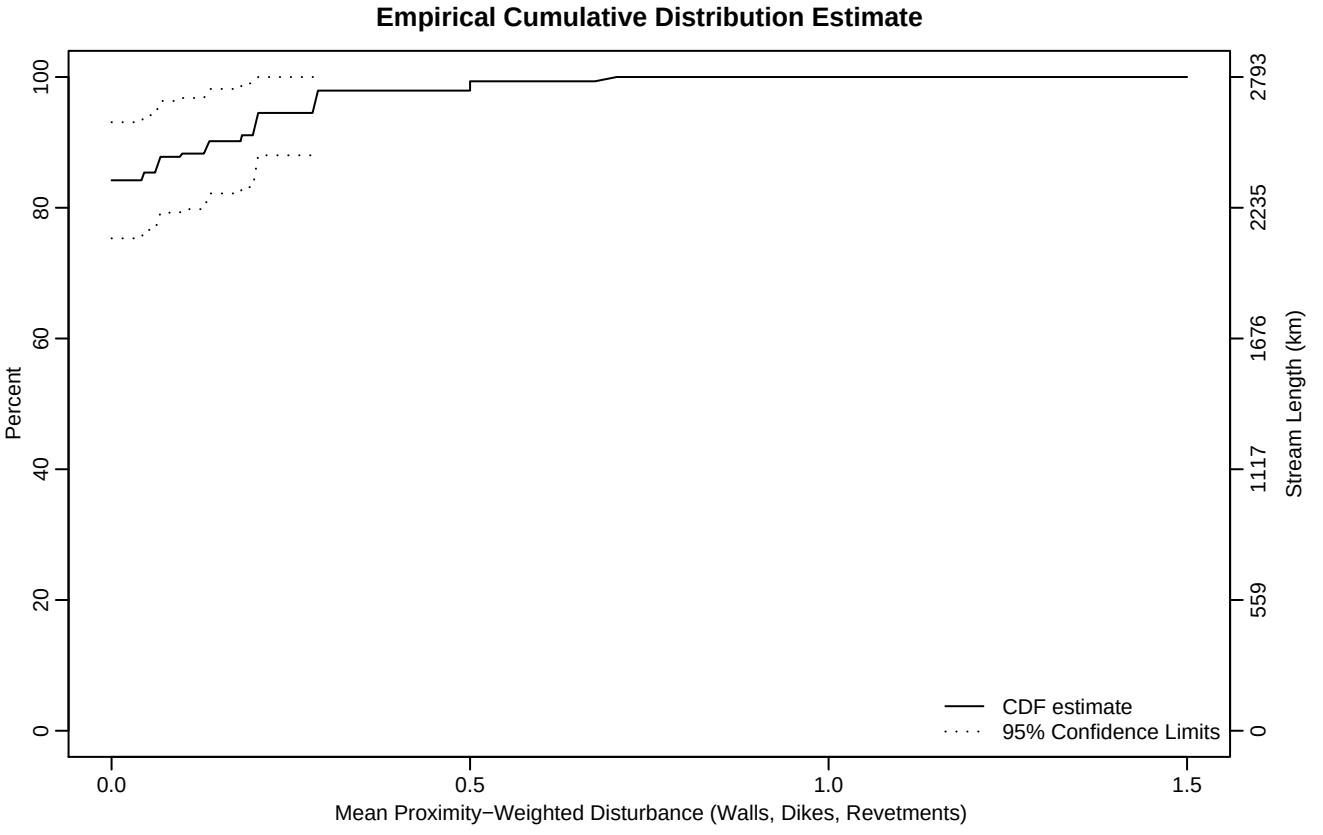


Figure PHAB−414 Indicator: W1H_WALL Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0
90Pct	0.14	0	0.50
95Pct	0.28	0.13	0.70
Mean	0.04	0.01	0.06
Std Dev	0.10	0.07	0.14

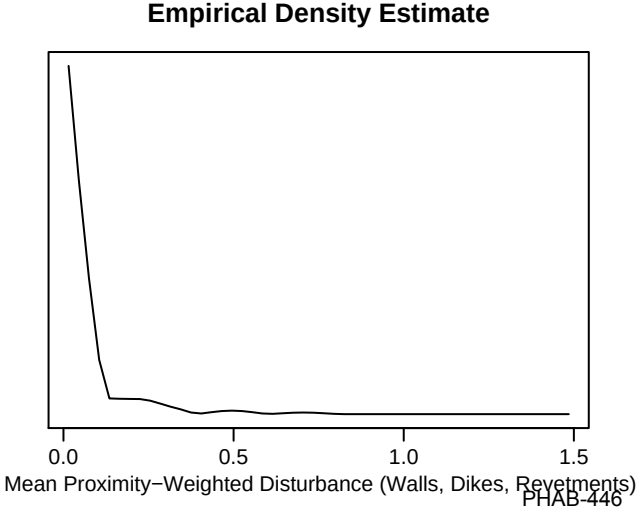
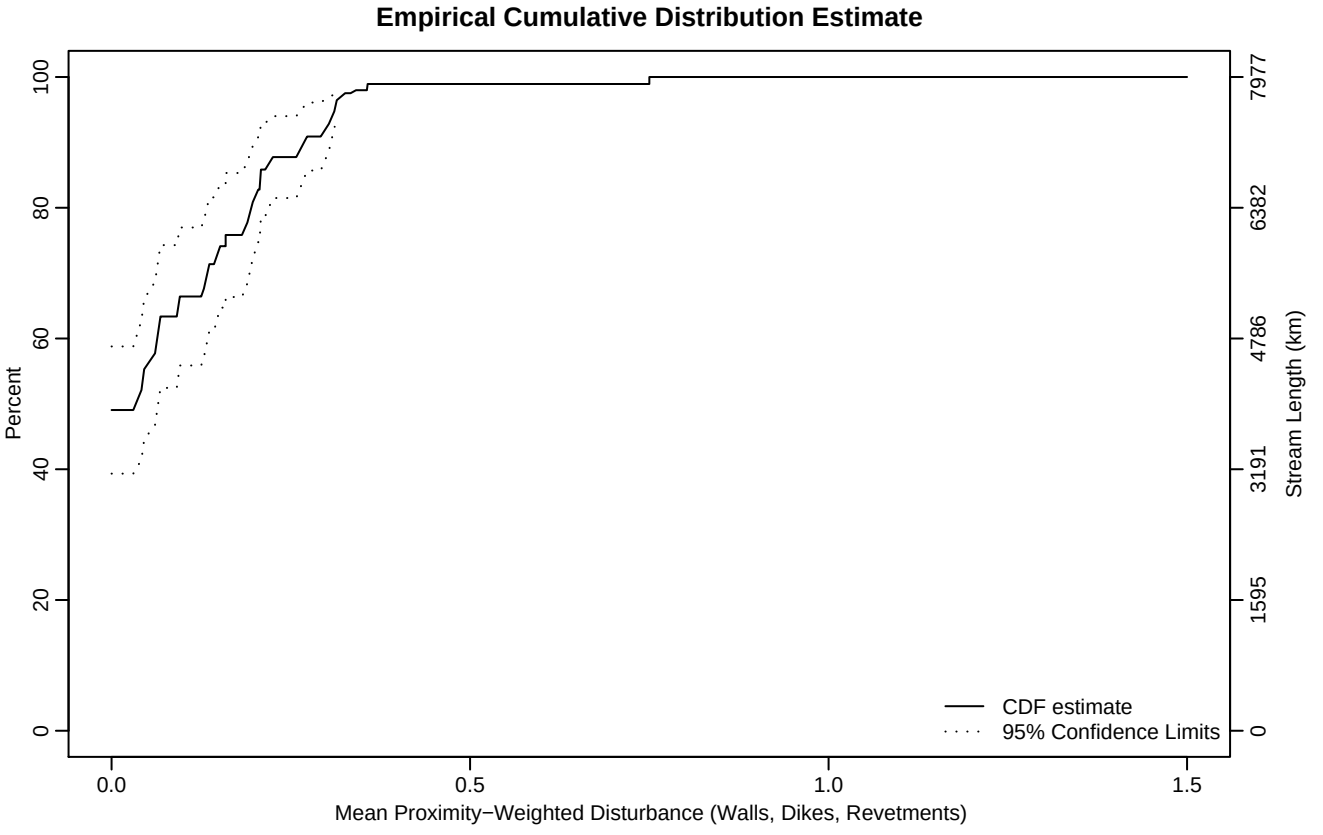


Figure PHAB−415 Indicator: W1H_WALL Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.03	0	0.06
75Pct	0.16	0.09	0.21
90Pct	0.27	0.21	0.31
95Pct	0.31	0.30	0.34
Mean	0.09	0.07	0.11
Std Dev	0.11	0.09	0.12

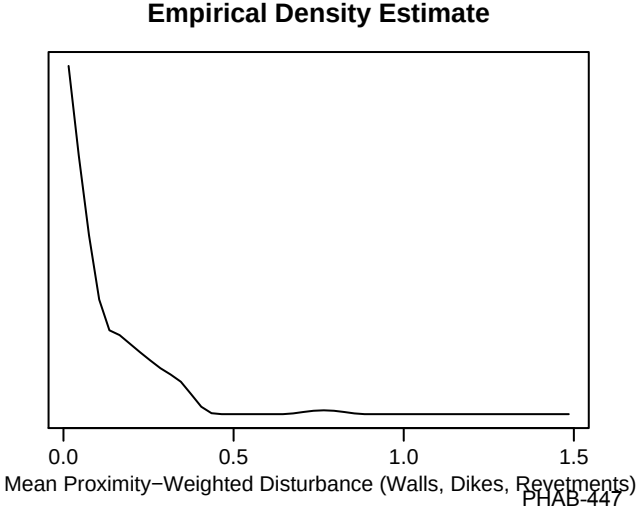
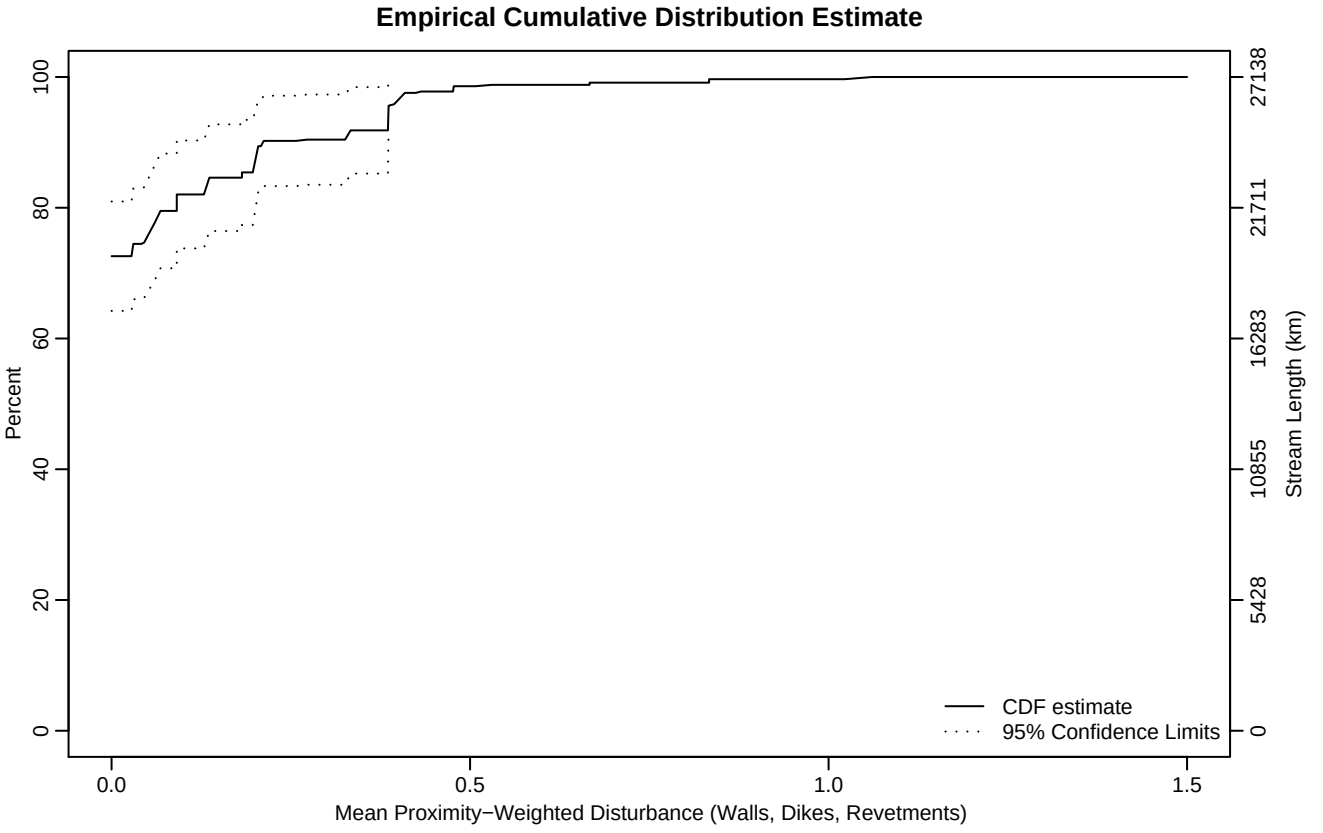


Figure PHAB−416 Indicator: W1H_WALL Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.05	0	0.13
90Pct	0.21	0.13	0.41
95Pct	0.39	0.20	1.06
Mean	0.06	0.04	0.09
Std Dev	0.14	0.11	0.17

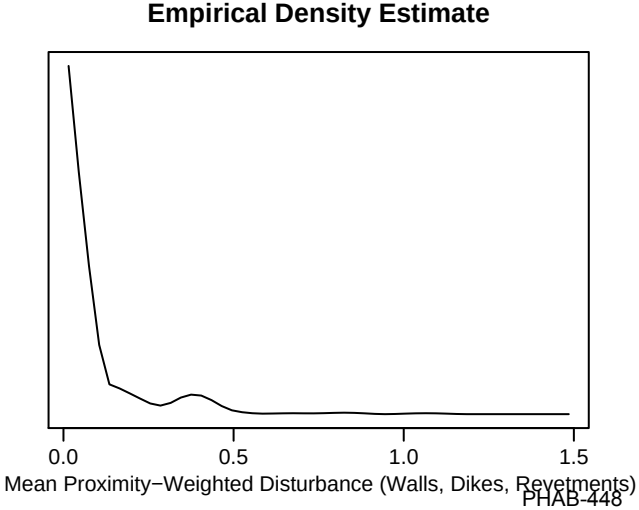
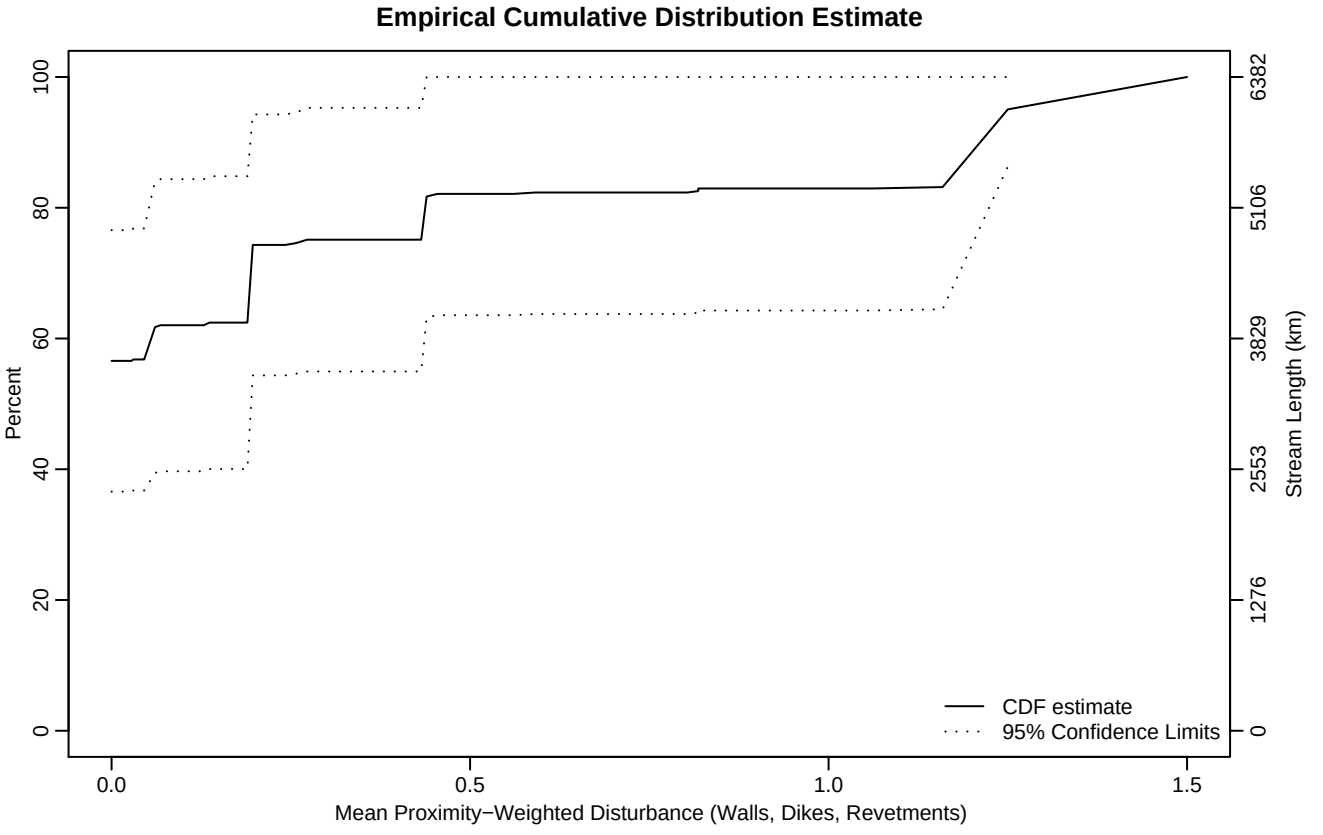


Figure PHAB−417 Indicator: W1H_WALL Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.19
75Pct	0.27	0	1.25
90Pct	1.21	0.19	1.50
95Pct	1.25	0.27	1.50
Mean	0.29	0.06	0.52
Std Dev	0.49	0.30	0.68

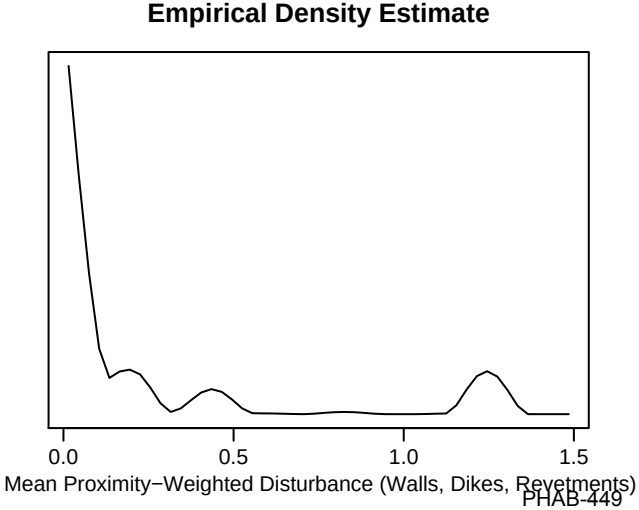
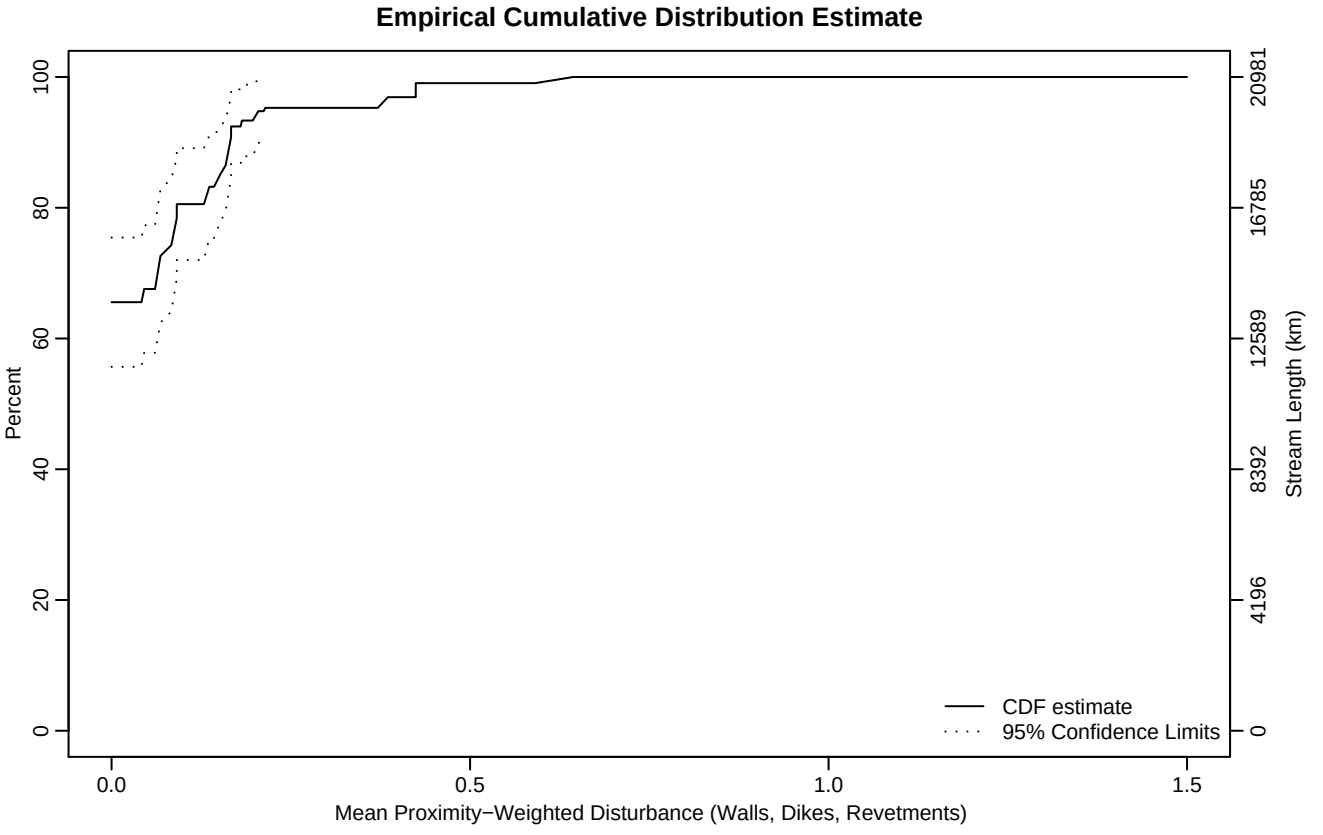


Figure PHAB−418 Indicator: W1H_WALL Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.08	0	0.15
90Pct	0.17	0.14	0.38
95Pct	0.21	0.17	0.63
Mean	0.06	0.04	0.08
Std Dev	0.10	0.07	0.14

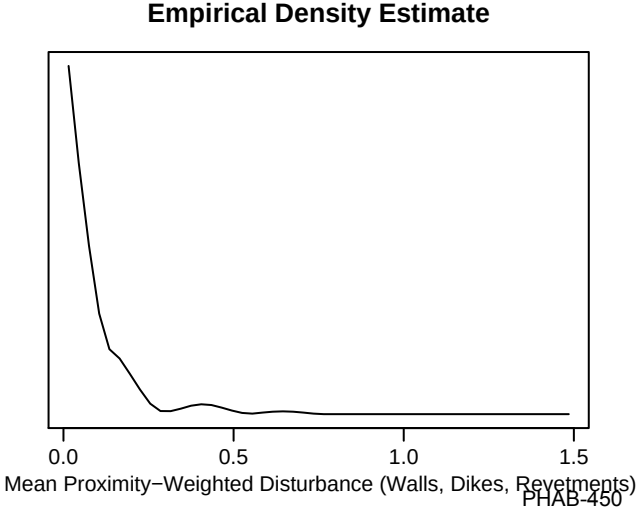
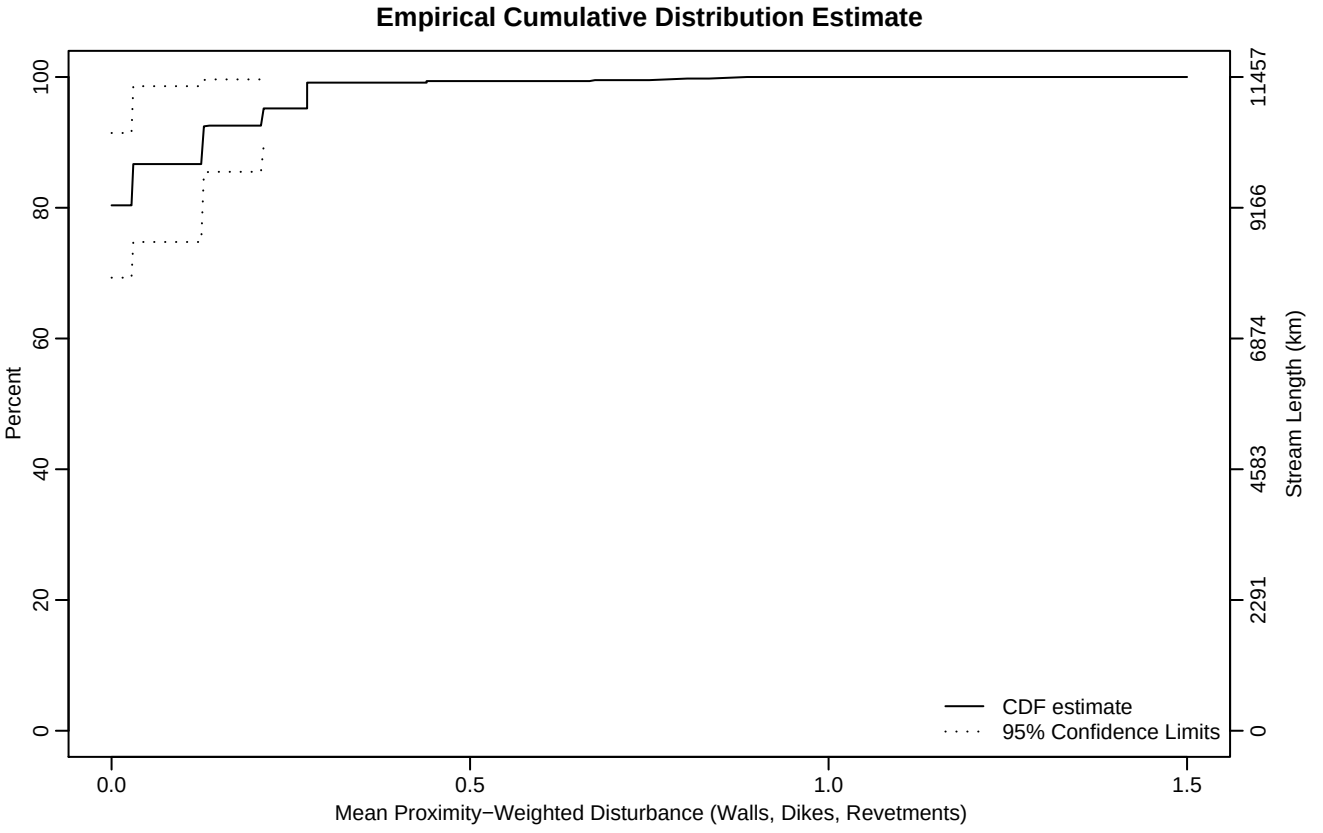


Figure PHAB−419 Indicator: W1H_WALL Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0	0	0.13
90Pct	0.13	0	0.89
95Pct	0.21	0.13	0.89
Mean	0.03	0.01	0.05
Std Dev	0.06	0.04	0.07

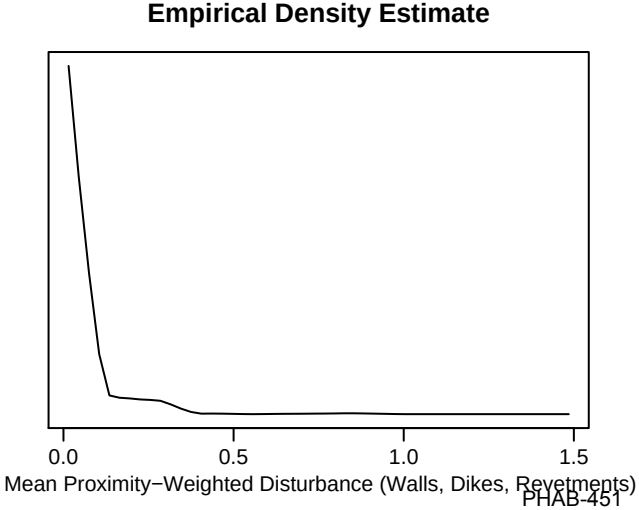
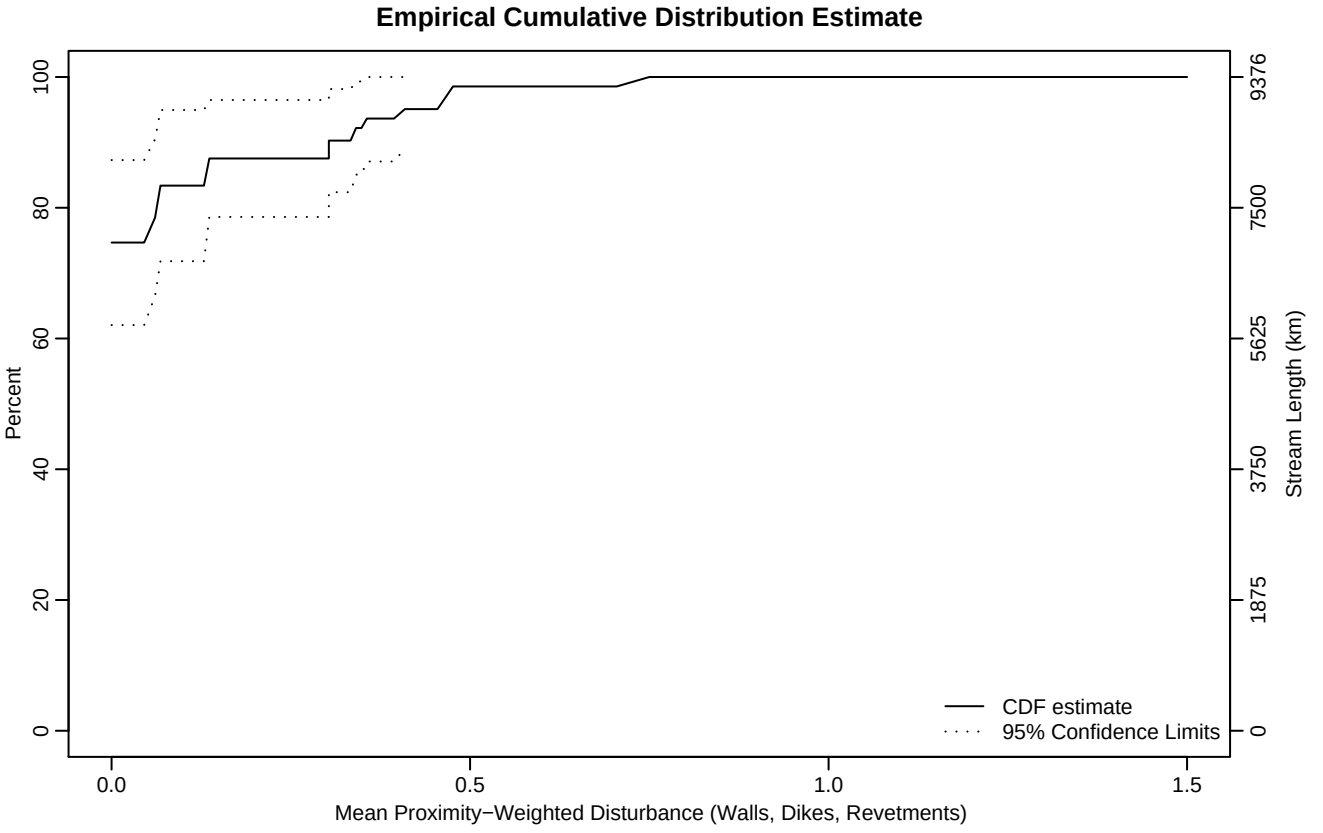


Figure PHAB−420 Indicator: W1H_WALL Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0
75Pct	0.05	0	0.30
90Pct	0.30	0.06	0.72
95Pct	0.41	0.30	0.75
Mean	0.06	0.02	0.10
Std Dev	0.14	0.10	0.18

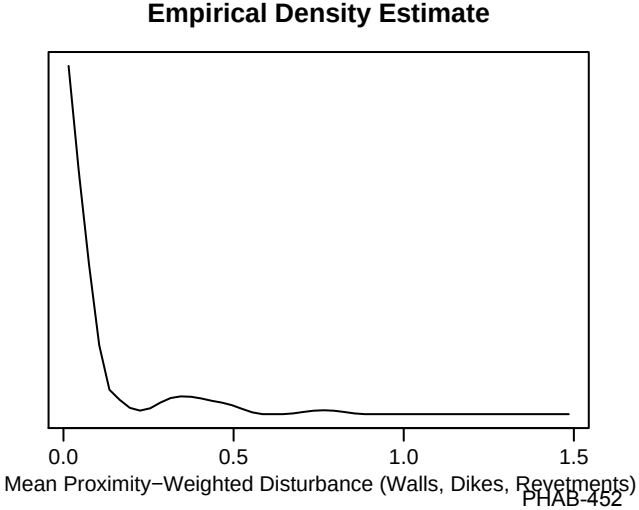
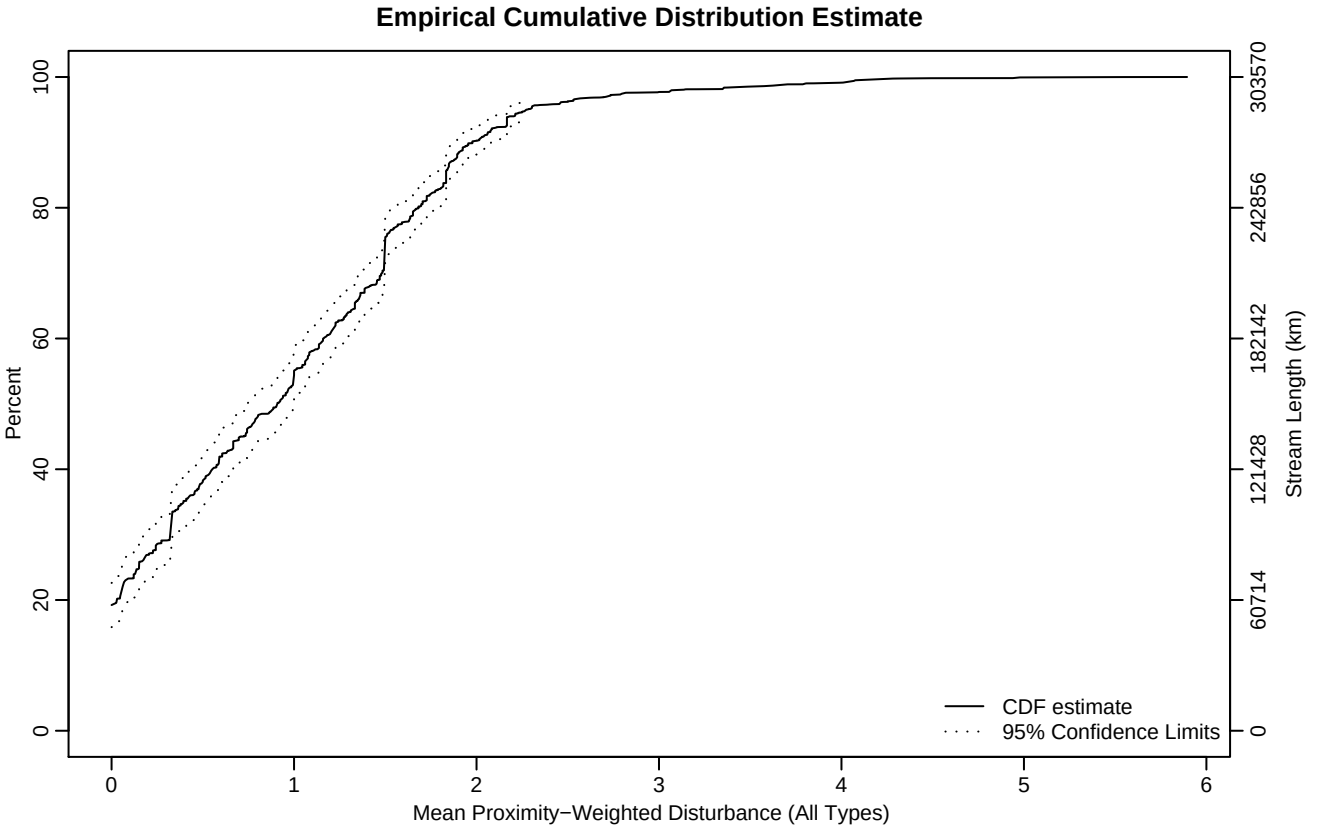


Figure PHAB−421 Indicator: W1_HALL Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.15	0.05	0.26
50Pct	0.91	0.74	1
75Pct	1.50	1.49	1.64
90Pct	1.98	1.89	2.09
95Pct	2.27	2.17	2.53
Mean	0.97	0.90	1.03
Std Dev	0.82	0.77	0.87

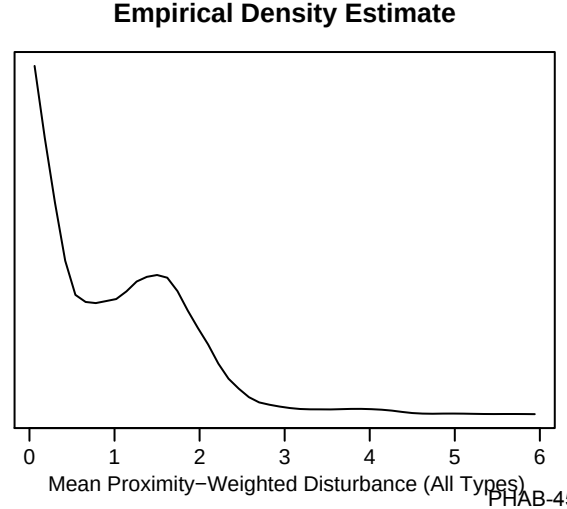
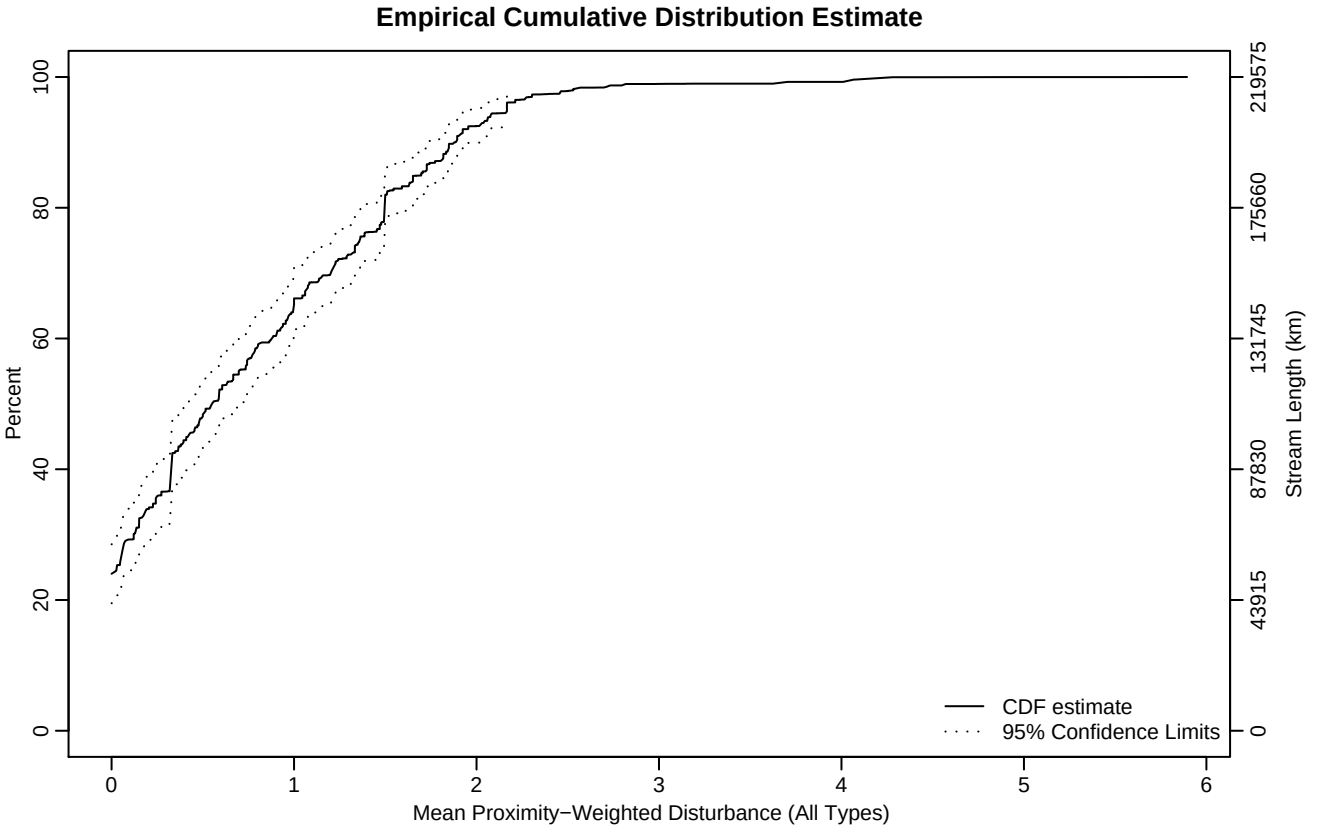


Figure PHAB−422 Indicator: W1_HALL Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.03	0	0.12
50Pct	0.55	0.41	0.70
75Pct	1.36	1.21	1.50
90Pct	1.88	1.77	2.04
95Pct	2.17	2.03	2.30
Mean	0.78	0.70	0.86
Std Dev	0.75	0.70	0.81

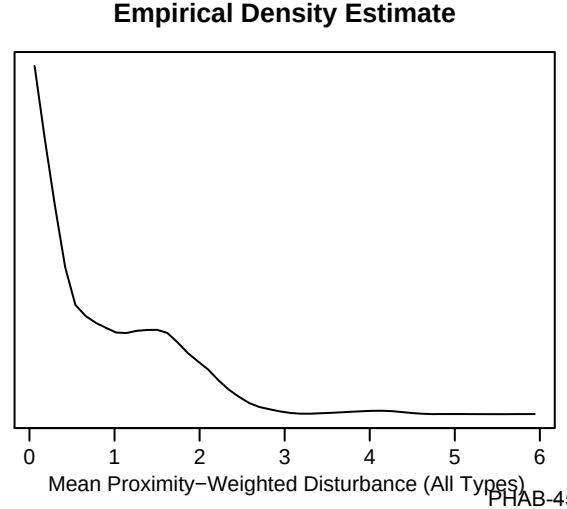
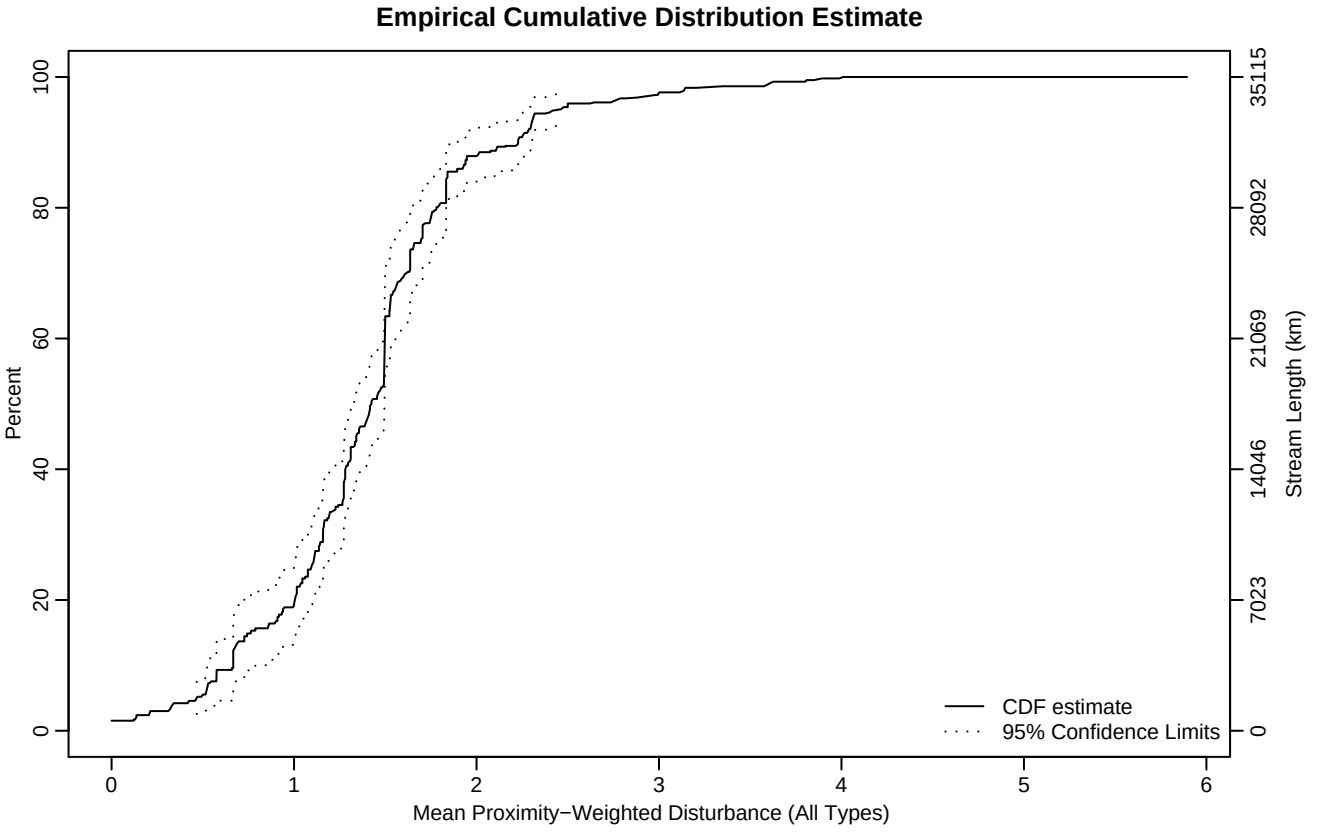


Figure PHAB−423 Indicator: W1_HALL Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.47	0.21	0.54
10Pct	0.67	0.49	0.74
25Pct	1.09	0.95	1.16
50Pct	1.42	1.31	1.50
75Pct	1.70	1.57	1.83
90Pct	2.23	1.93	2.31
95Pct	2.45	2.30	3
Mean	1.42	1.34	1.50
Std Dev	0.59	0.53	0.66

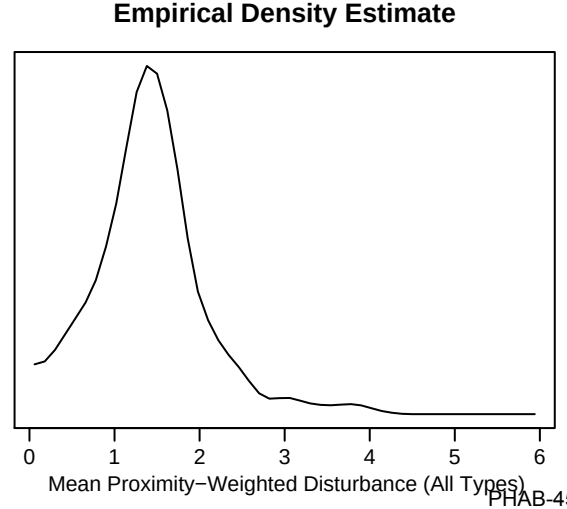
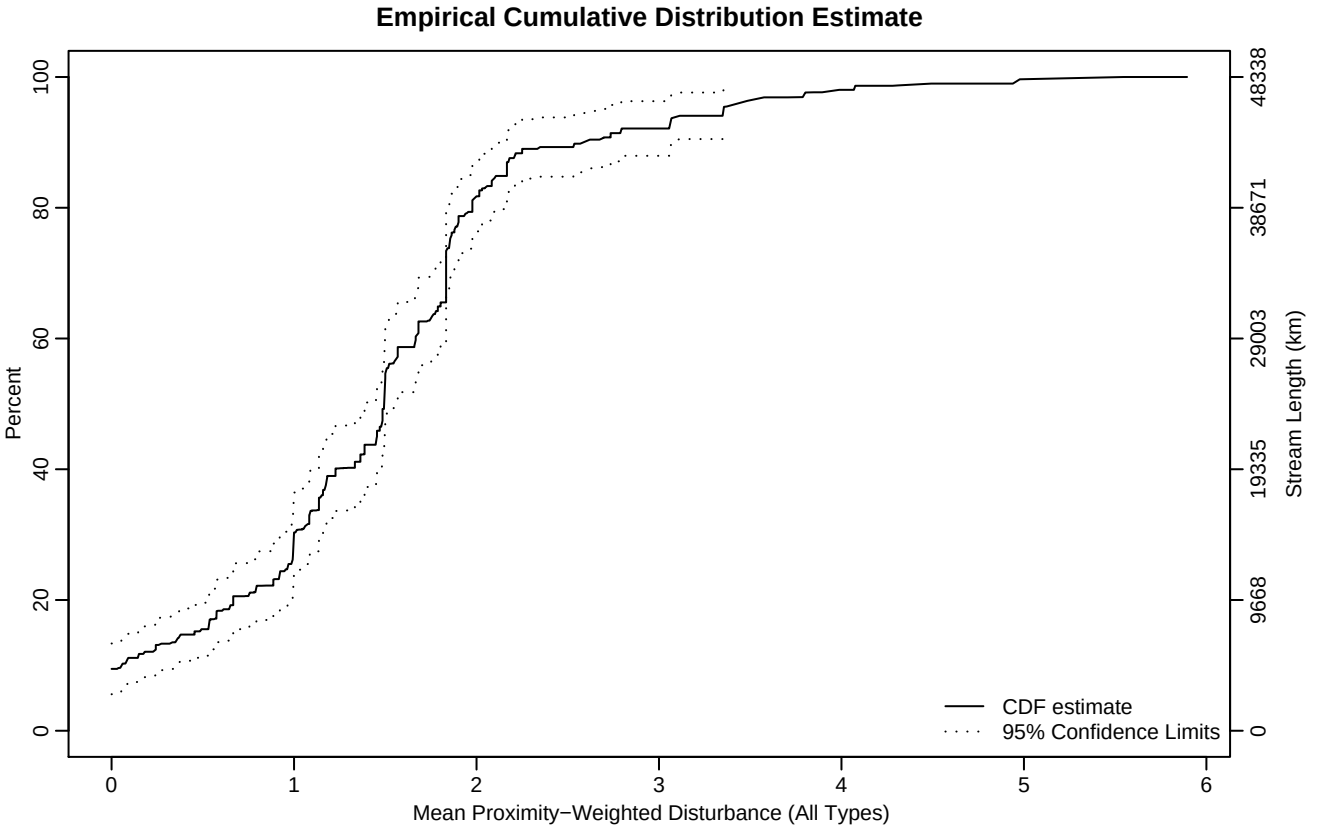


Figure PHAB−424 Indicator: W1_HALL Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.06	0	0.36
25Pct	0.97	0.67	1.01
50Pct	1.49	1.39	1.56
75Pct	1.85	1.83	1.99
90Pct	2.59	2.17	3.35
95Pct	3.35	2.79	4.07
Mean	1.47	1.35	1.60
Std Dev	0.89	0.77	1

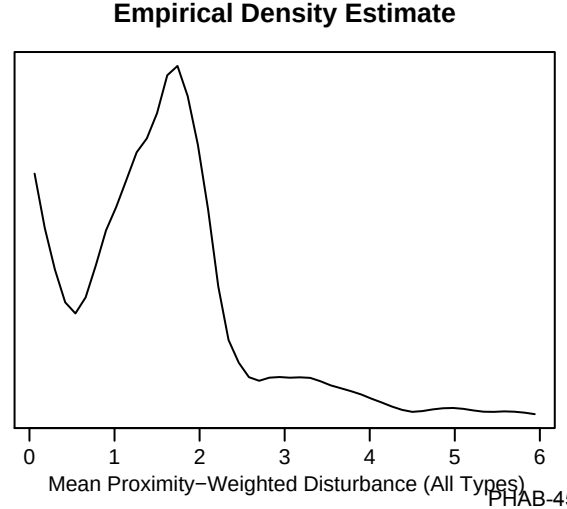
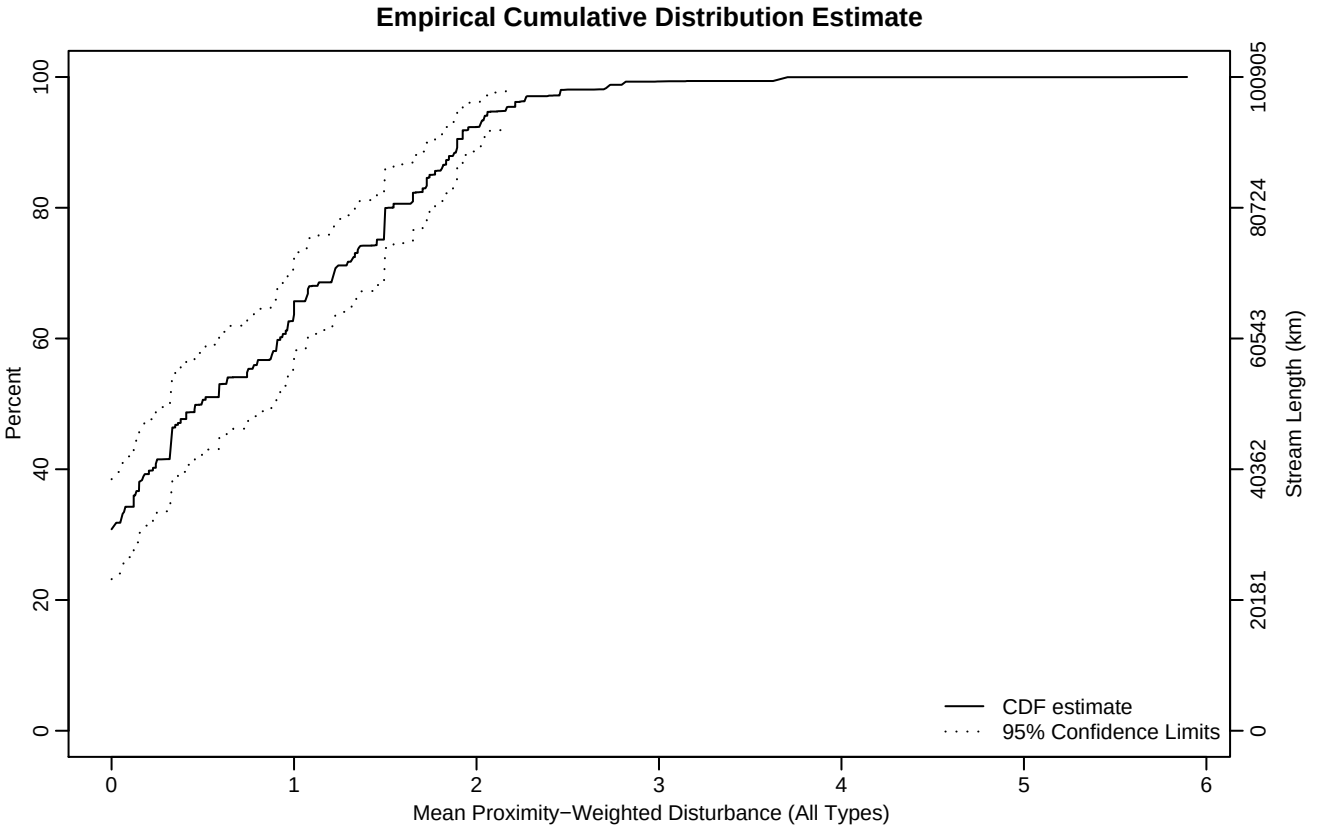


Figure PHAB−425 Indicator: W1_HALL Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.06
50Pct	0.49	0.32	0.88
75Pct	1.45	1.13	1.65
90Pct	1.89	1.77	2.06
95Pct	2.16	1.95	2.46
Mean	0.77	0.65	0.90
Std Dev	0.78	0.72	0.84

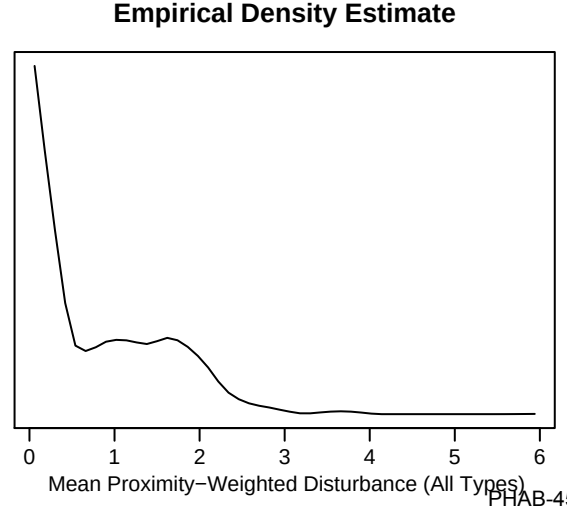
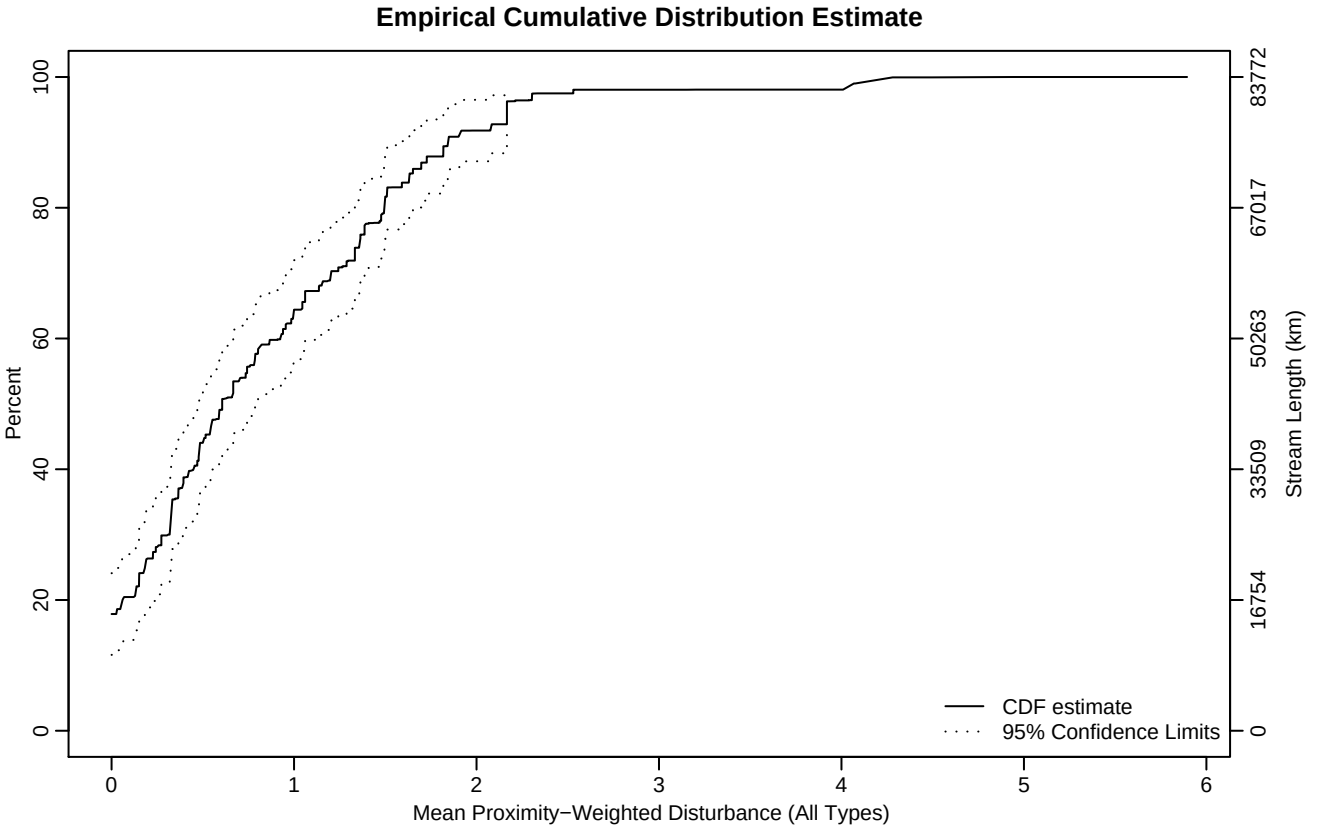


Figure PHAB−426 Indicator: W1_HALL Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.18	0	0.32
50Pct	0.61	0.48	0.80
75Pct	1.36	1.14	1.51
90Pct	1.84	1.63	2.17
95Pct	2.17	1.85	4.17
Mean	0.84	0.71	0.97
Std Dev	0.75	0.63	0.87

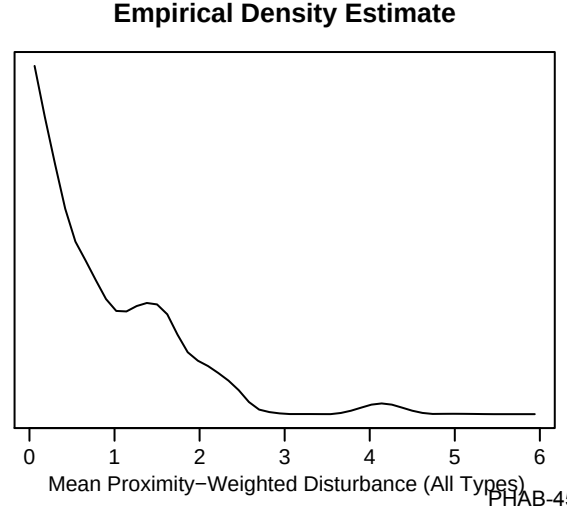
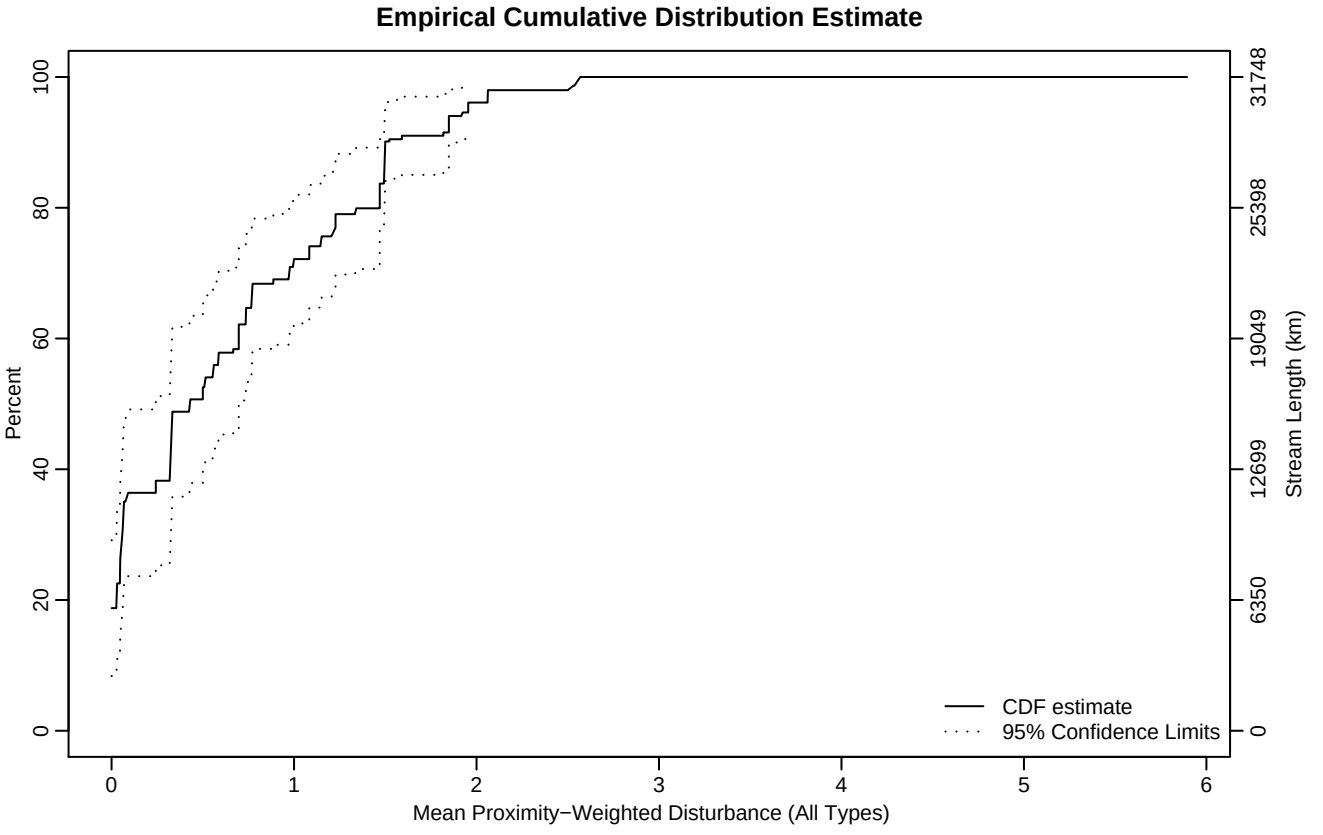


Figure PHAB−427 Indicator: W1_HALL Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.03
25Pct	0.05	0	0.24
50Pct	0.43	0.24	0.74
75Pct	1.15	0.77	1.49
90Pct	1.50	1.47	2.06
95Pct	1.95	1.59	2.55
Mean	0.65	0.50	0.80
Std Dev	0.60	0.51	0.69

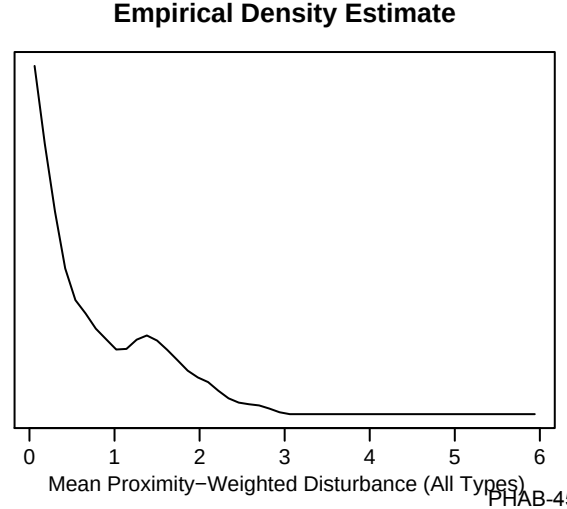
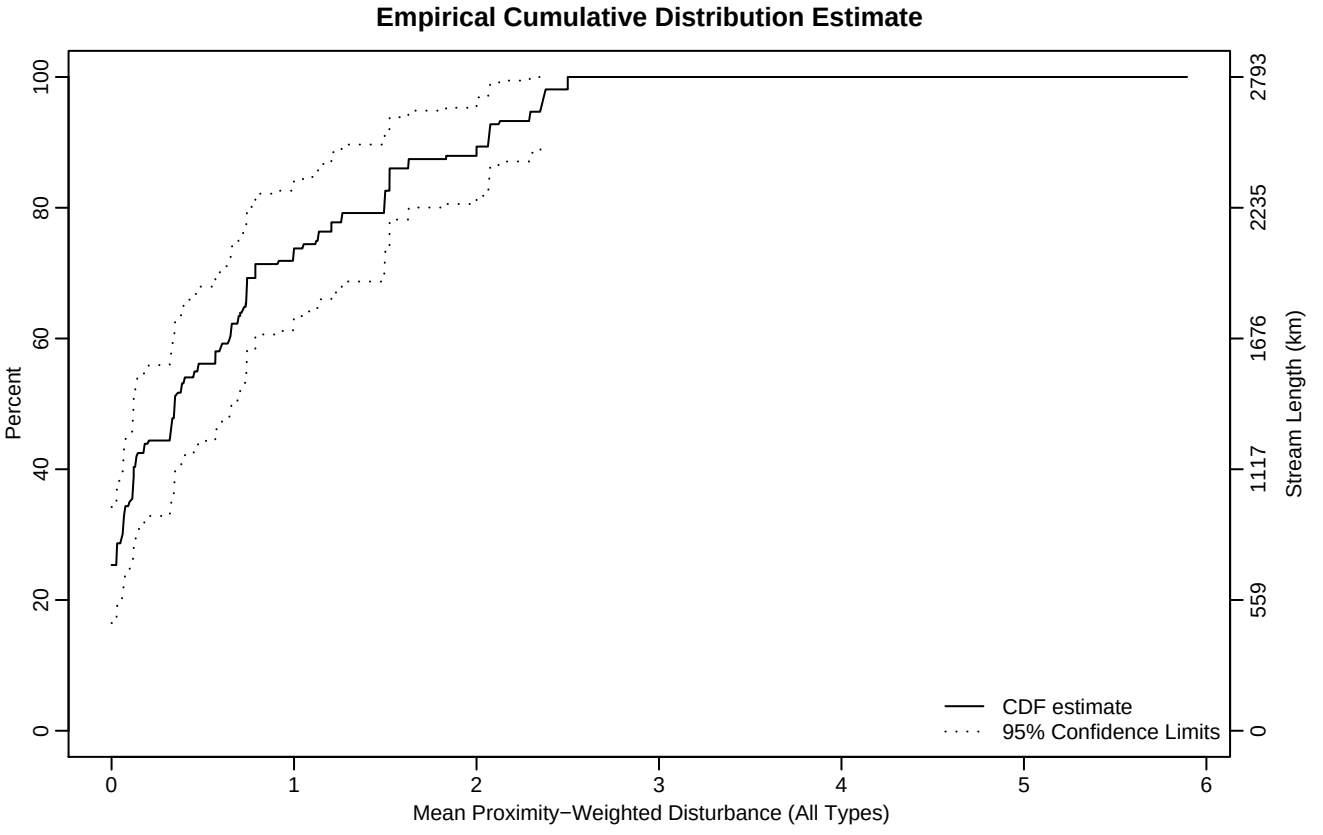


Figure PHAB−428 Indicator: W1_HALL Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.07
50Pct	0.35	0.12	0.66
75Pct	1.13	0.72	1.52
90Pct	2.07	1.50	2.37
95Pct	2.35	2	2.50
Mean	0.66	0.49	0.84
Std Dev	0.71	0.61	0.81

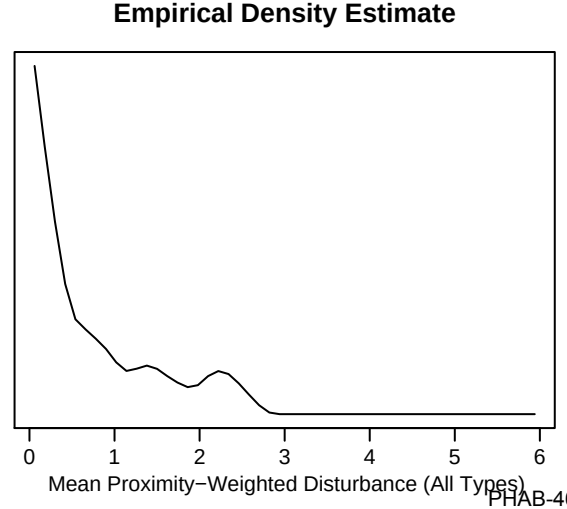
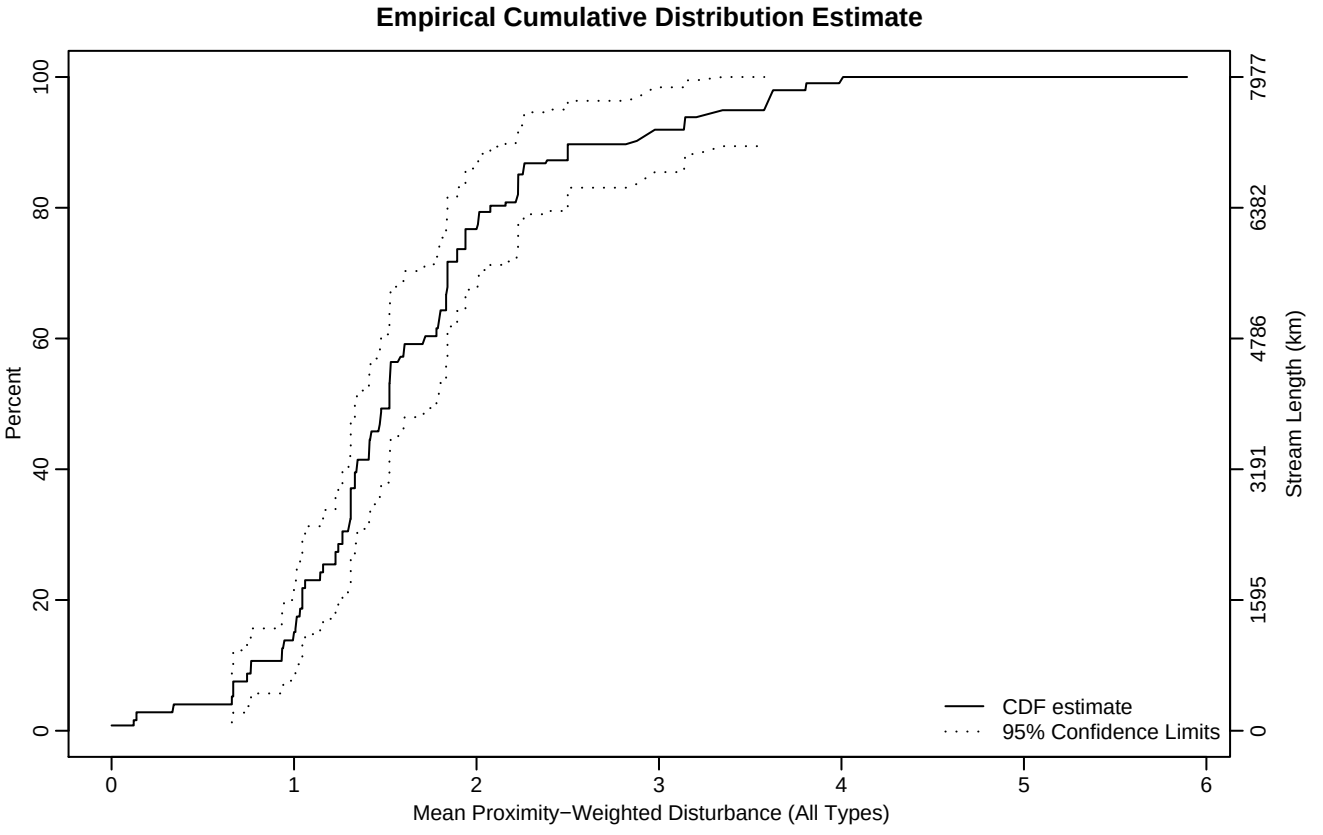


Figure PHAB−429 Indicator: W1_HALL Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.66	0.14	0.74
10Pct	0.76	0.66	1
25Pct	1.16	1.01	1.31
50Pct	1.52	1.33	1.78
75Pct	1.94	1.83	2.23
90Pct	2.85	2.23	3.61
95Pct	3.58	2.50	4.01
Mean	1.65	1.49	1.80
Std Dev	0.63	0.51	0.75

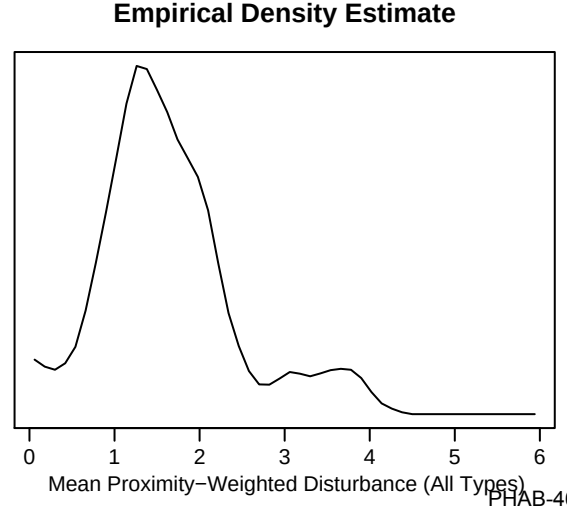
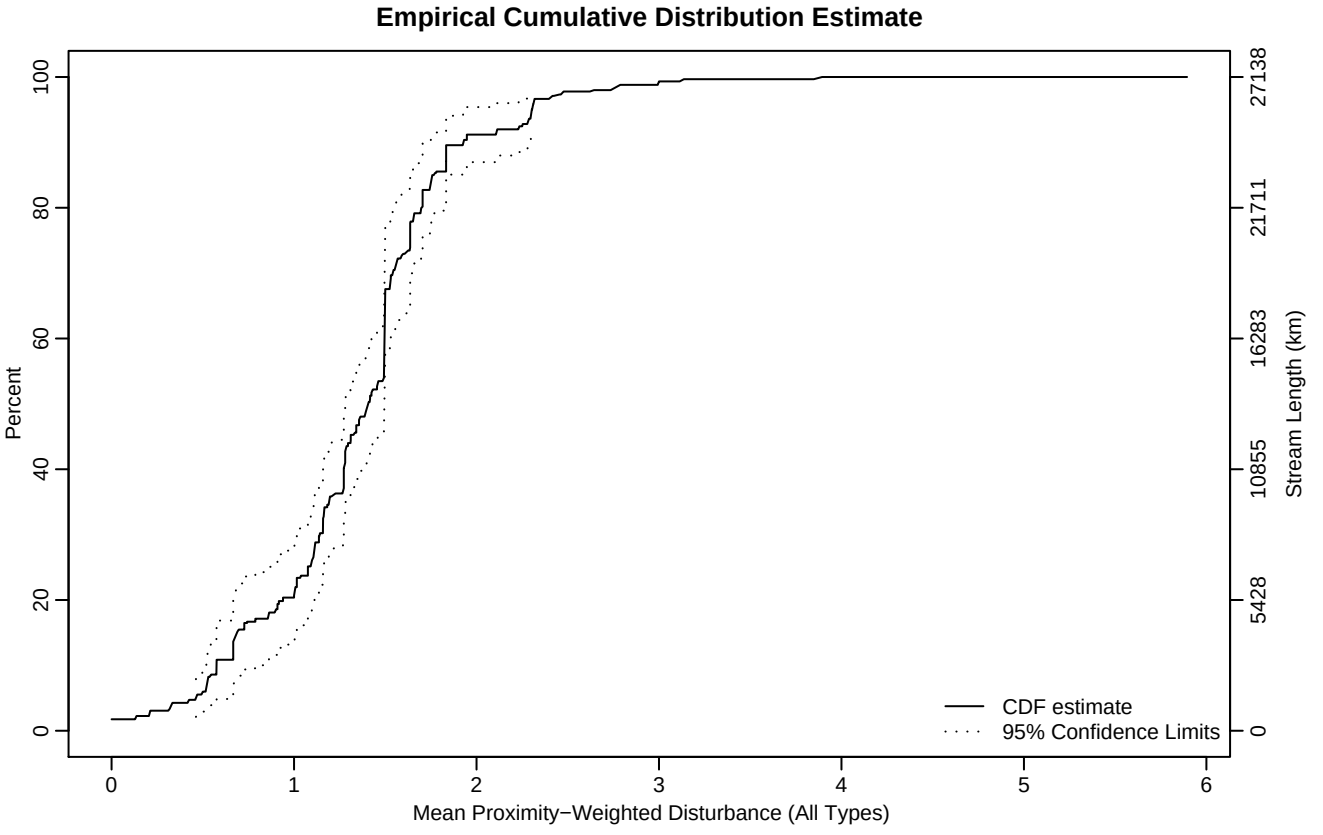


Figure PHAB−430 Indicator: W1_HALL Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.46	0.14	0.53
10Pct	0.58	0.47	0.68
25Pct	1.08	0.86	1.16
50Pct	1.41	1.28	1.49
75Pct	1.64	1.50	1.75
90Pct	1.93	1.78	2.30
95Pct	2.30	2.11	2.78
Mean	1.35	1.26	1.44
Std Dev	0.55	0.48	0.61

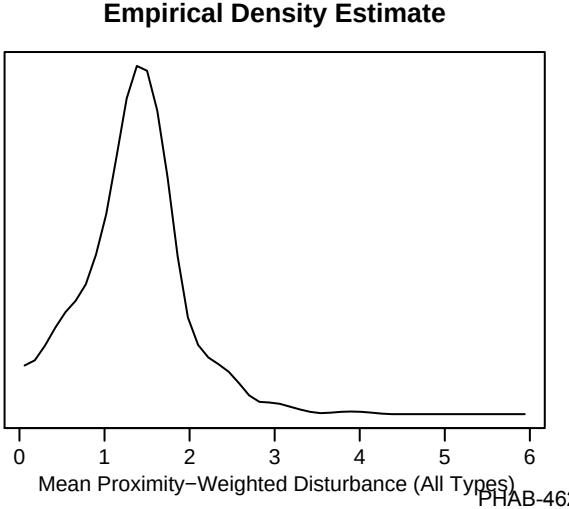
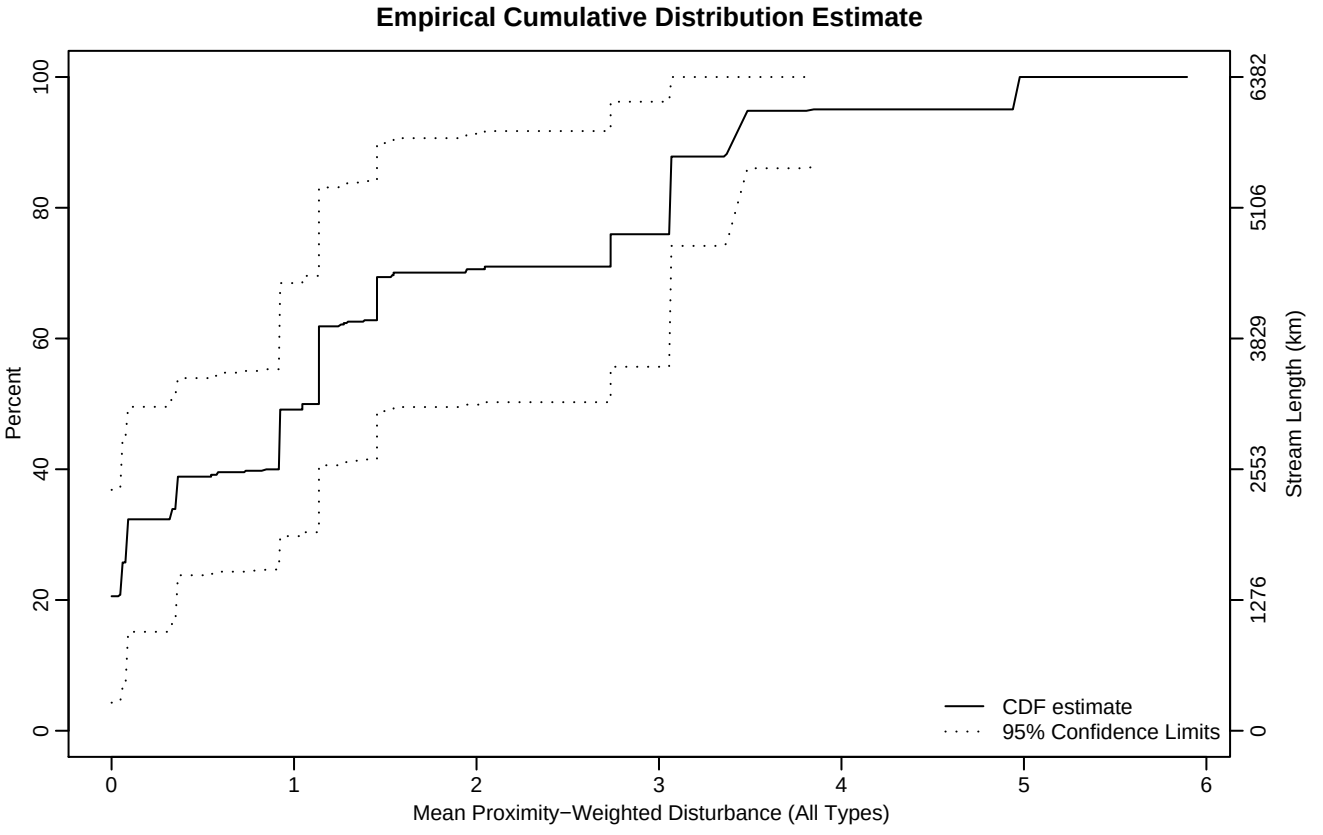


Figure PHAB−431 Indicator: W1_HALL Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.05
10Pct	0	0	0.08
25Pct	0.06	0	0.92
50Pct	1.14	0.09	1.54
75Pct	2.73	1.14	4.95
90Pct	3.40	3.06	4.98
95Pct	3.84	3.07	4.98
Mean	1.40	0.85	1.96
Std Dev	1.45	1.03	1.86

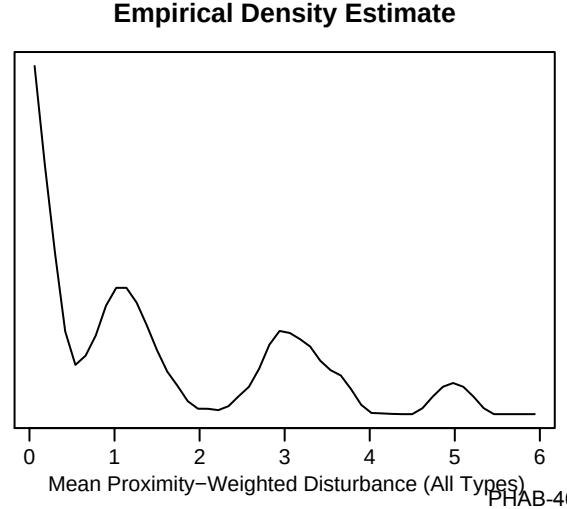
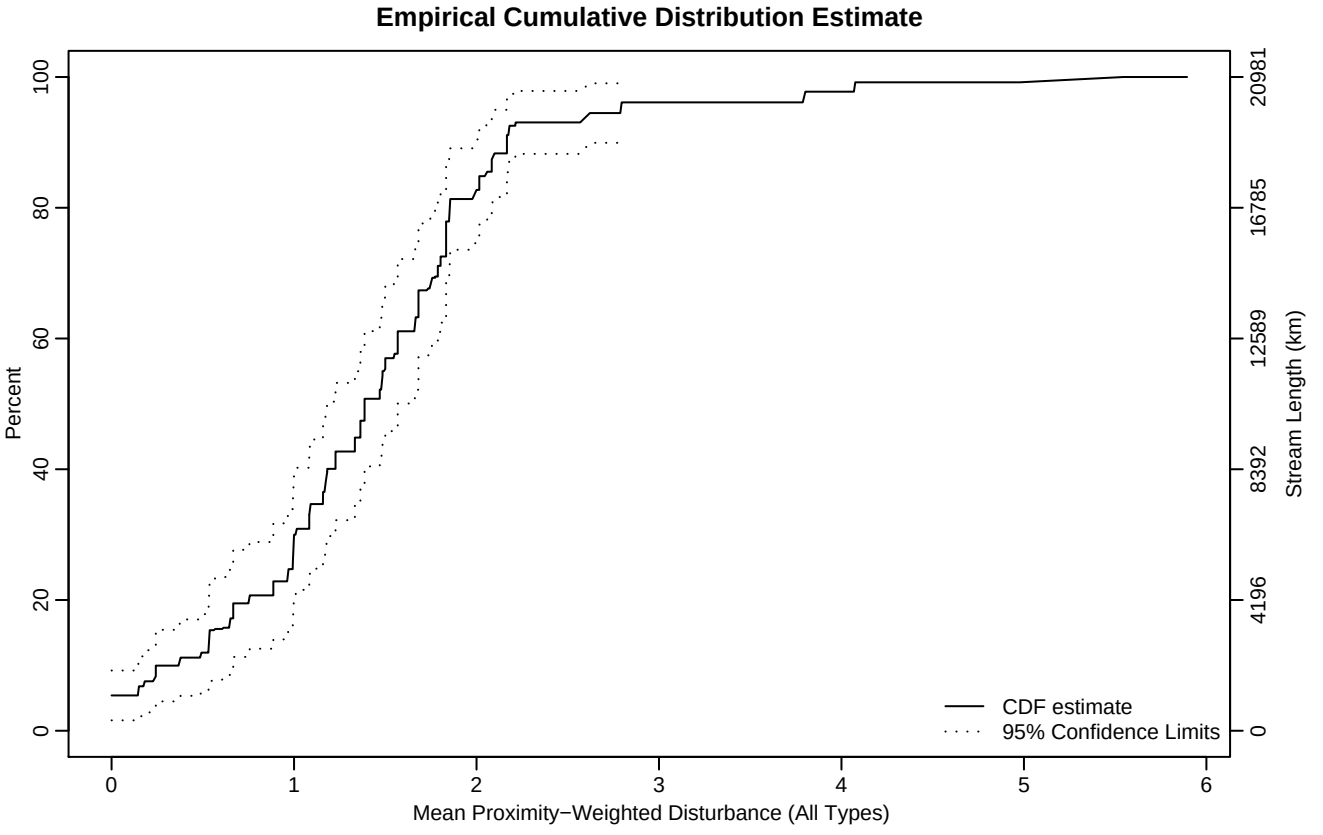


Figure PHAB−432 Indicator: W1_HALL Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.24
10Pct	0.37	0	0.57
25Pct	0.99	0.61	1.09
50Pct	1.39	1.18	1.57
75Pct	1.83	1.68	2.05
90Pct	2.17	2.02	3.79
95Pct	2.79	2.17	5.24
Mean	1.43	1.26	1.60
Std Dev	0.82	0.64	1.01

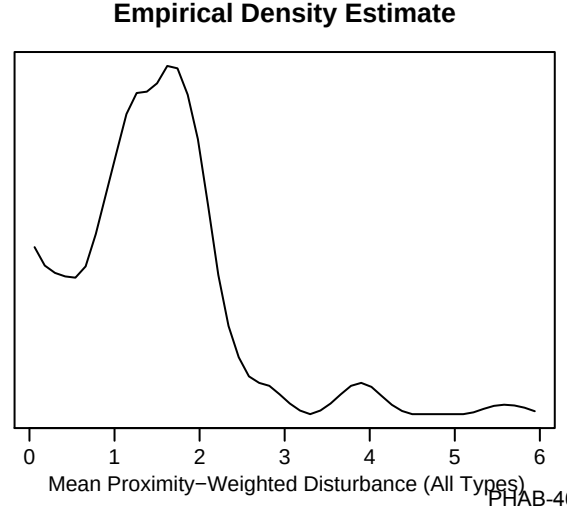
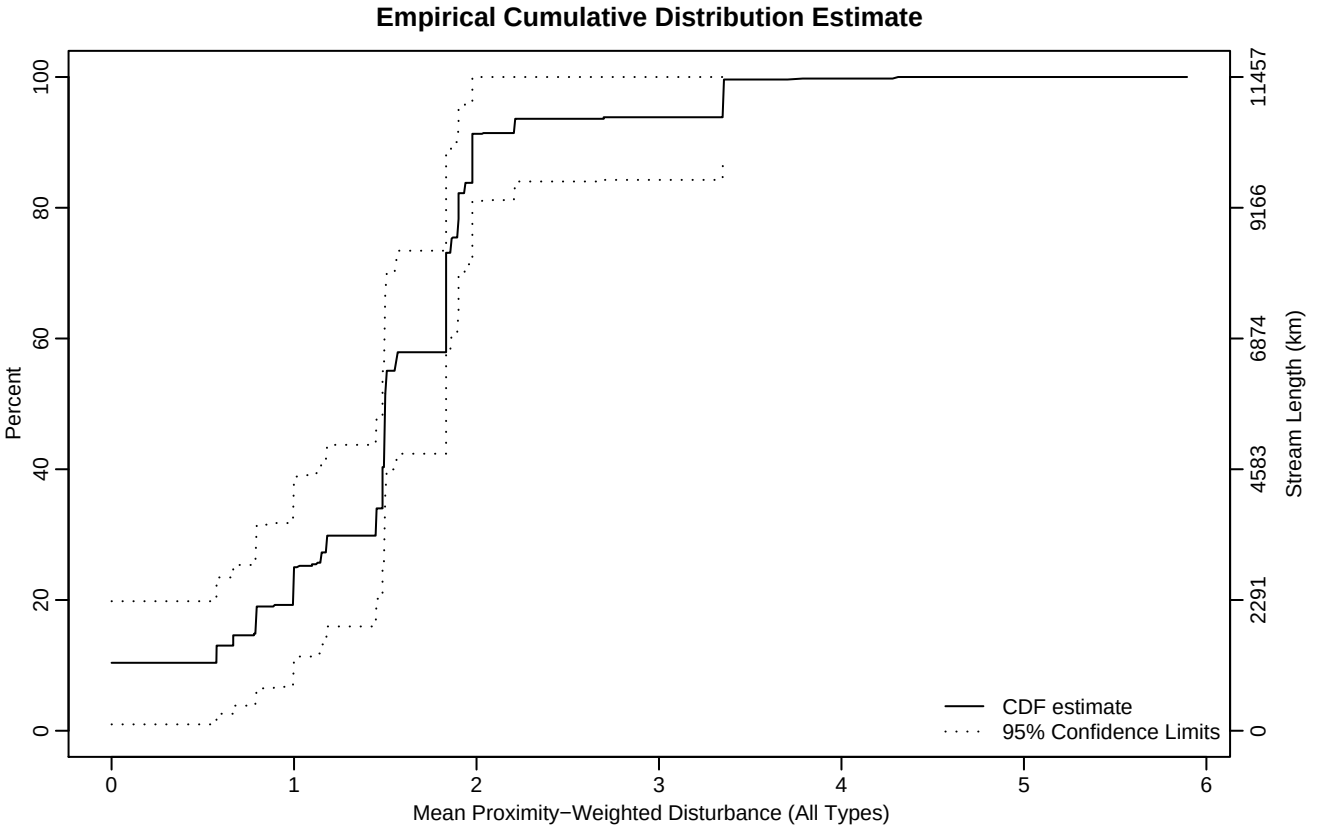


Figure PHAB−433 Indicator: W1_HALL Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.67
10Pct	0	0	0.89
25Pct	1	0.58	1.48
50Pct	1.50	1.48	1.83
75Pct	1.86	1.83	1.98
90Pct	1.98	1.90	4.31
95Pct	3.35	1.98	4.31
Mean	1.49	1.22	1.76
Std Dev	0.71	0.52	0.89

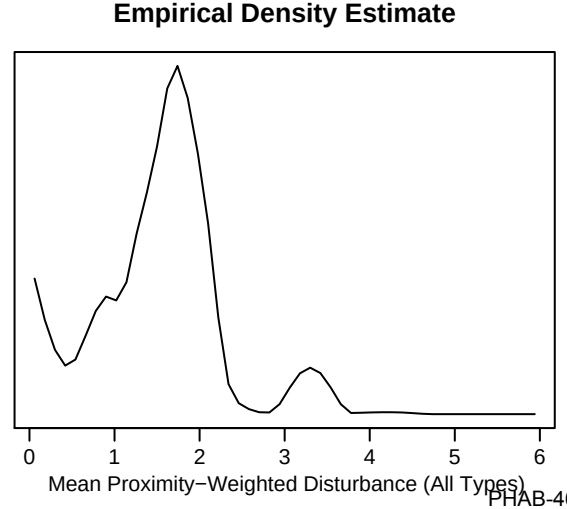
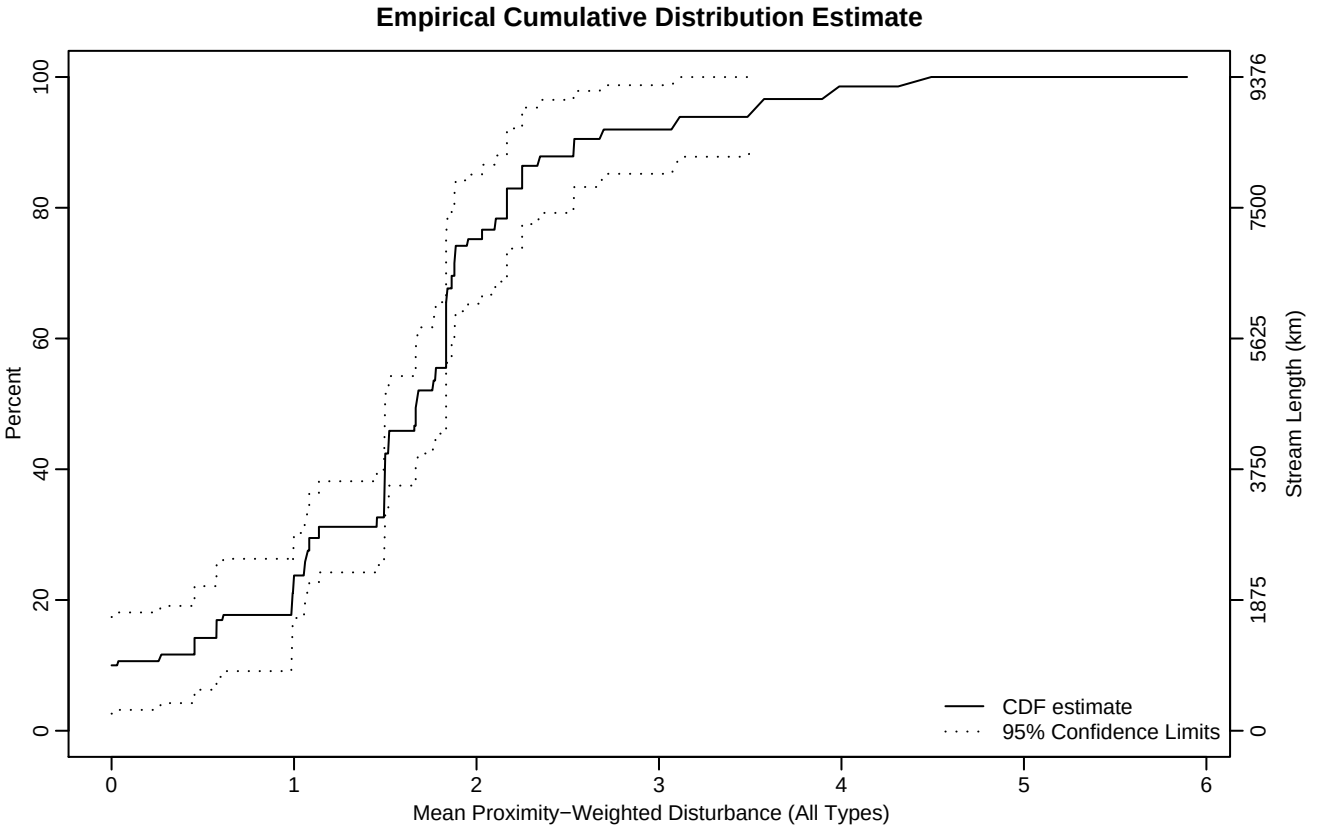


Figure PHAB−434 Indicator: W1_HALL Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.45
10Pct	0	0	0.99
25Pct	1.06	0.99	1.45
50Pct	1.67	1.50	1.83
75Pct	1.95	1.83	2.25
90Pct	2.53	2.17	4.32
95Pct	3.52	2.53	4.49
Mean	1.61	1.43	1.78
Std Dev	0.71	0.53	0.89

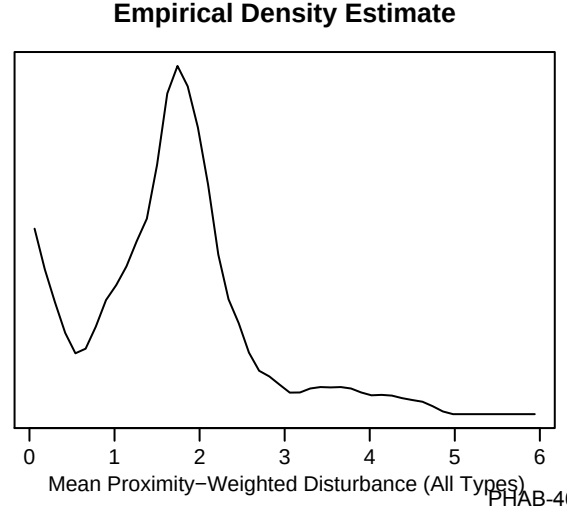
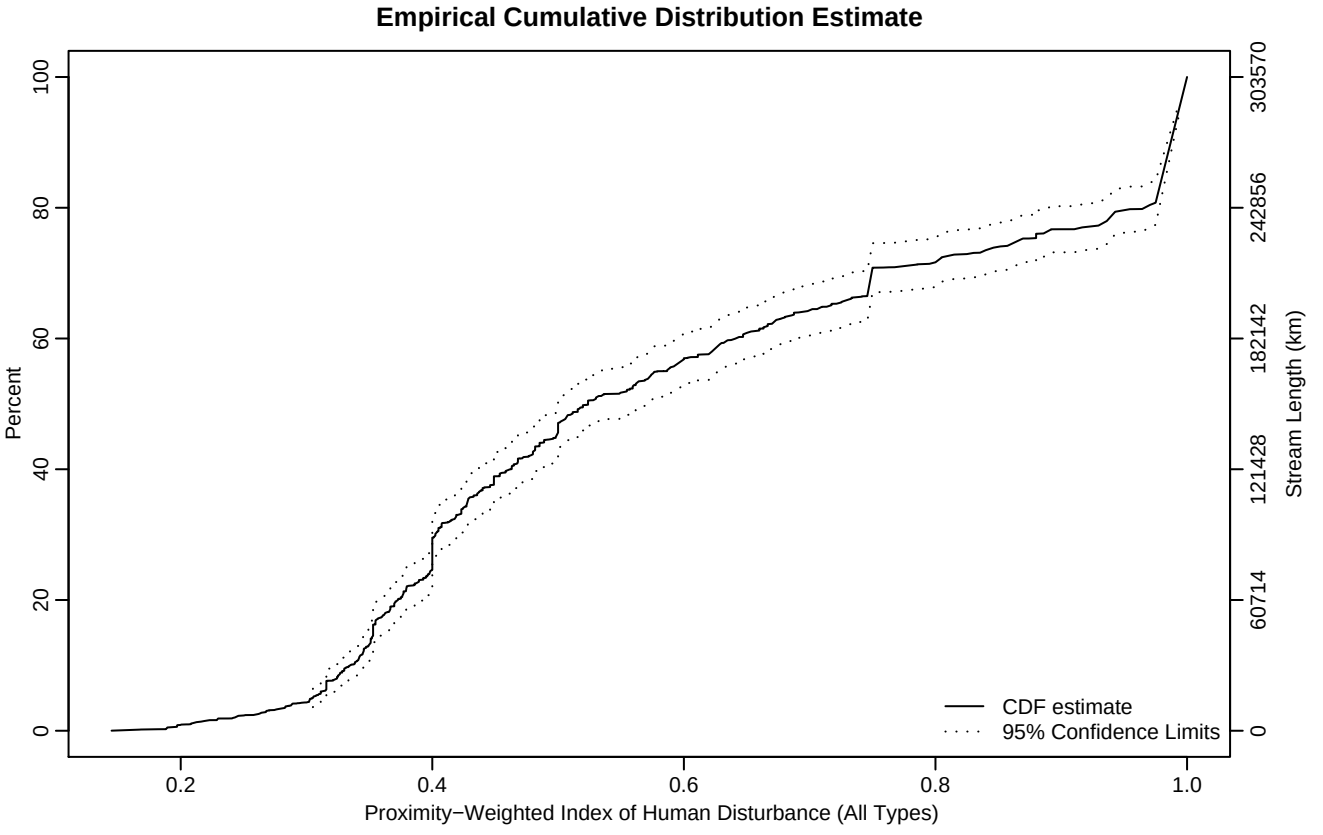


Figure PHAB−435 Indicator: QRDIST1 Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.31	0.28	0.32
10Pct	0.33	0.32	0.35
25Pct	0.40	0.38	0.40
50Pct	0.52	0.50	0.57
75Pct	0.87	0.78	0.94
90Pct	0.99	0.98	0.99
95Pct	0.99	0.99	1
Mean	0.61	0.59	0.63
Std Dev	0.24	0.23	0.25

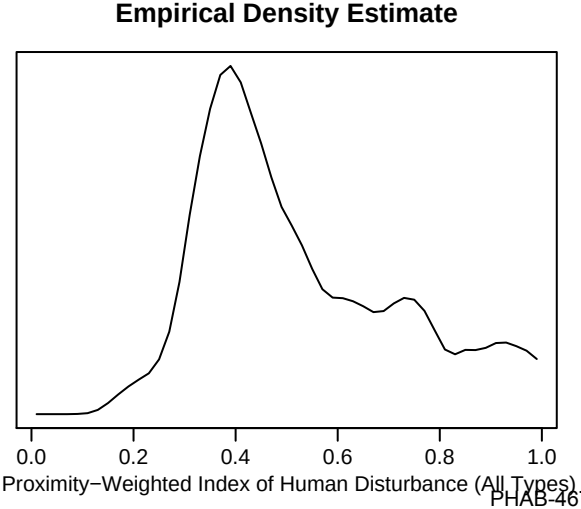
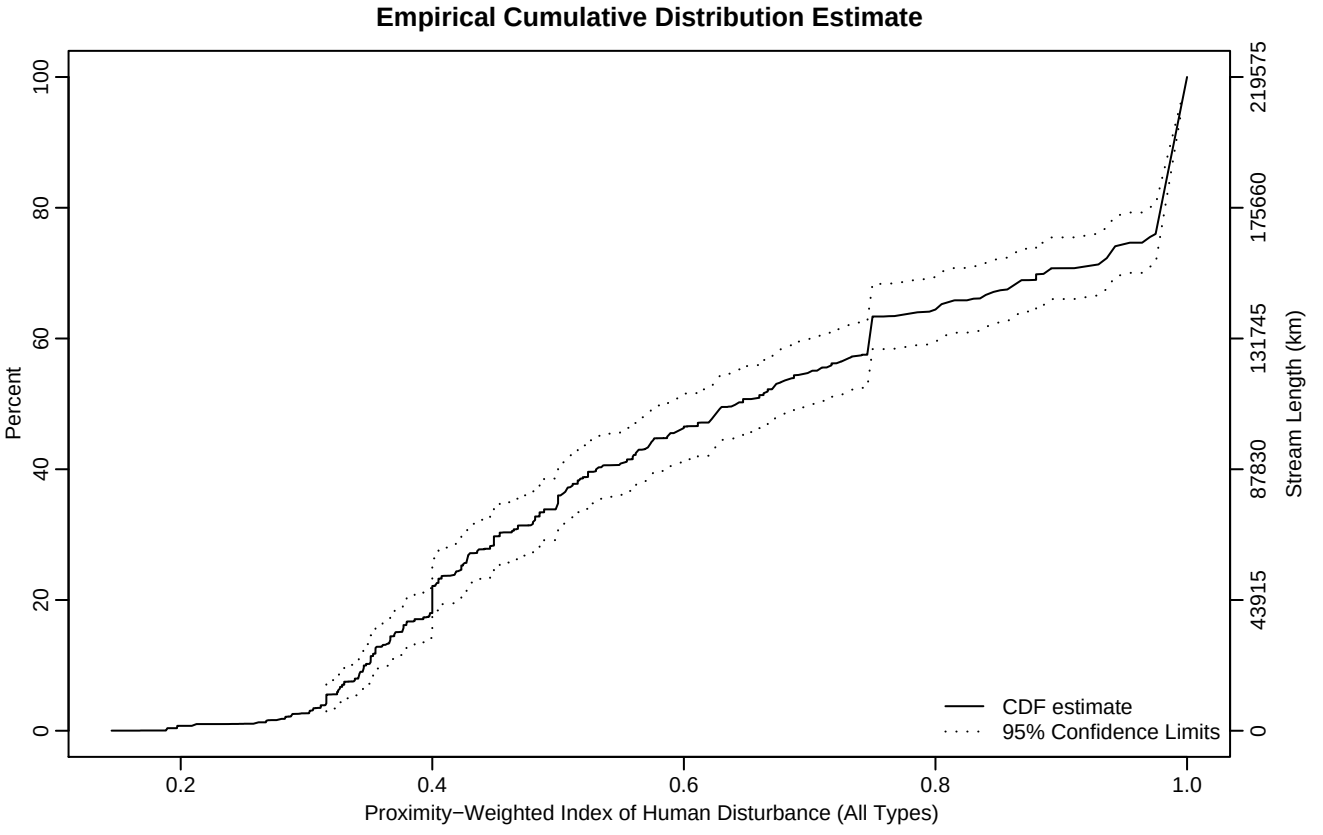


Figure PHAB−436 Indicator: QRDIST1 Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.32	0.31	0.33
10Pct	0.35	0.33	0.36
25Pct	0.42	0.40	0.45
50Pct	0.64	0.59	0.70
75Pct	0.97	0.89	0.98
90Pct	0.99	0.98	0.99
95Pct	0.99	0.99	1
Mean	0.67	0.64	0.69
Std Dev	0.24	0.23	0.26

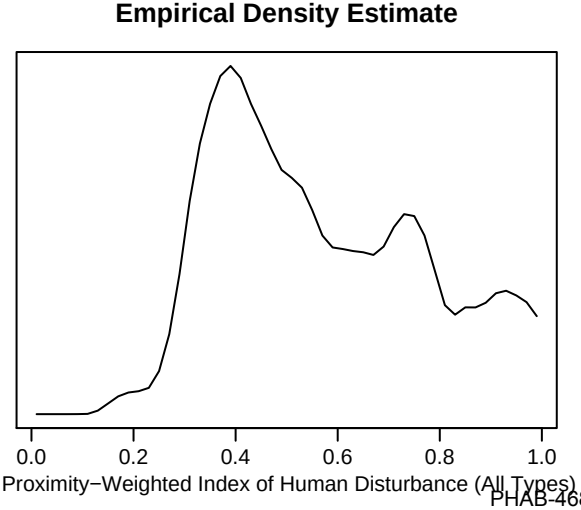
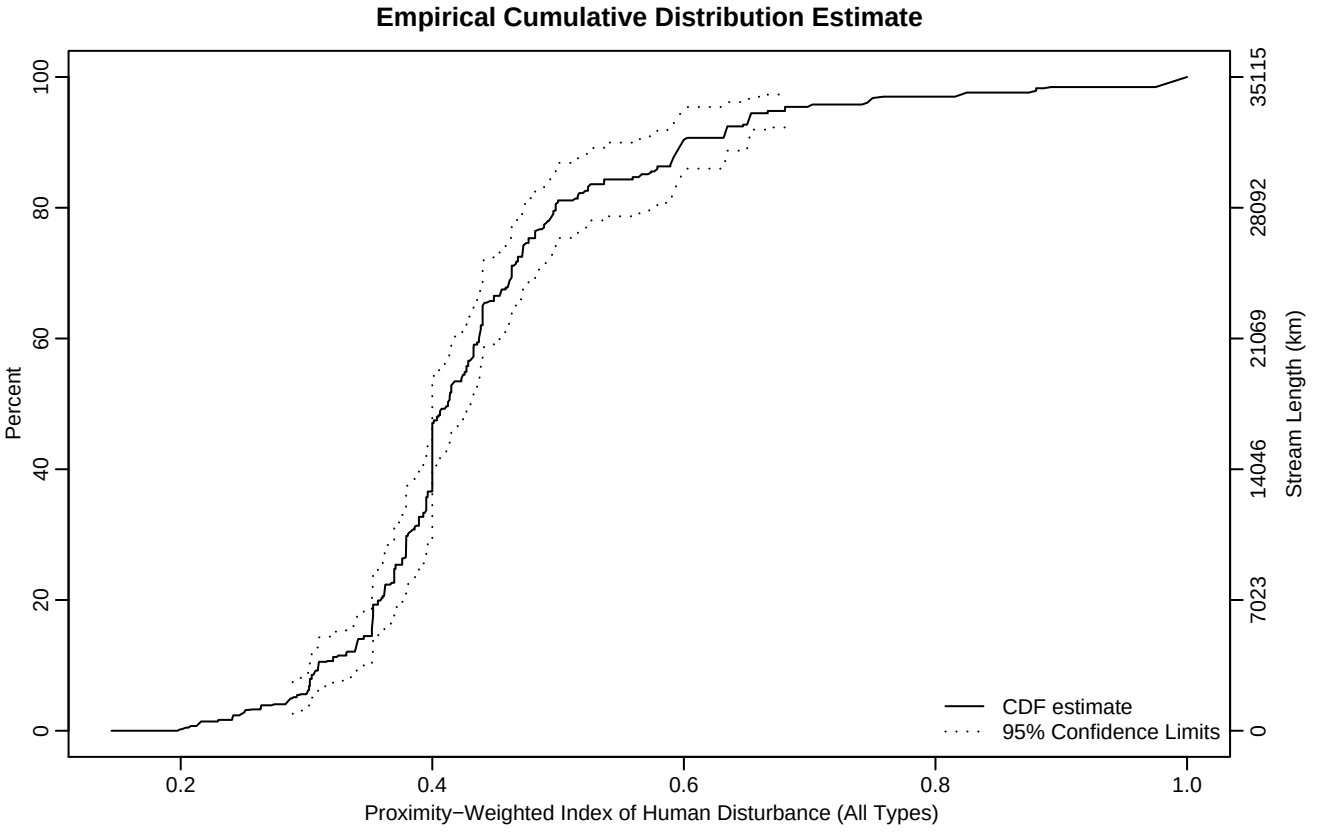


Figure PHAB−437 Indicator: QRDIST1 Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.29	0.25	0.30
10Pct	0.31	0.30	0.34
25Pct	0.37	0.35	0.39
50Pct	0.41	0.40	0.43
75Pct	0.48	0.46	0.50
90Pct	0.60	0.56	0.68
95Pct	0.68	0.65	0.82
Mean	0.44	0.43	0.46
Std Dev	0.13	0.11	0.15

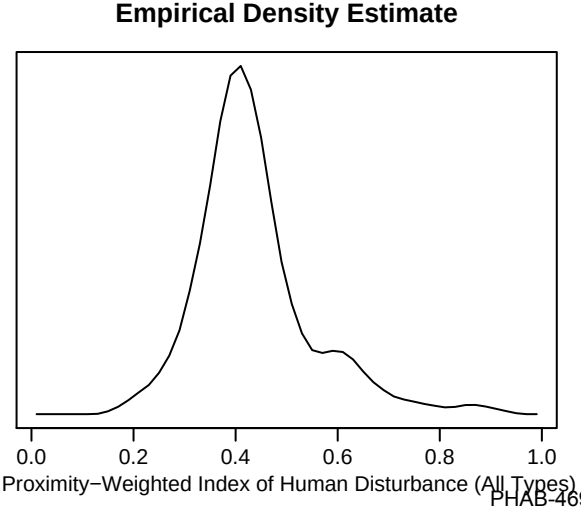
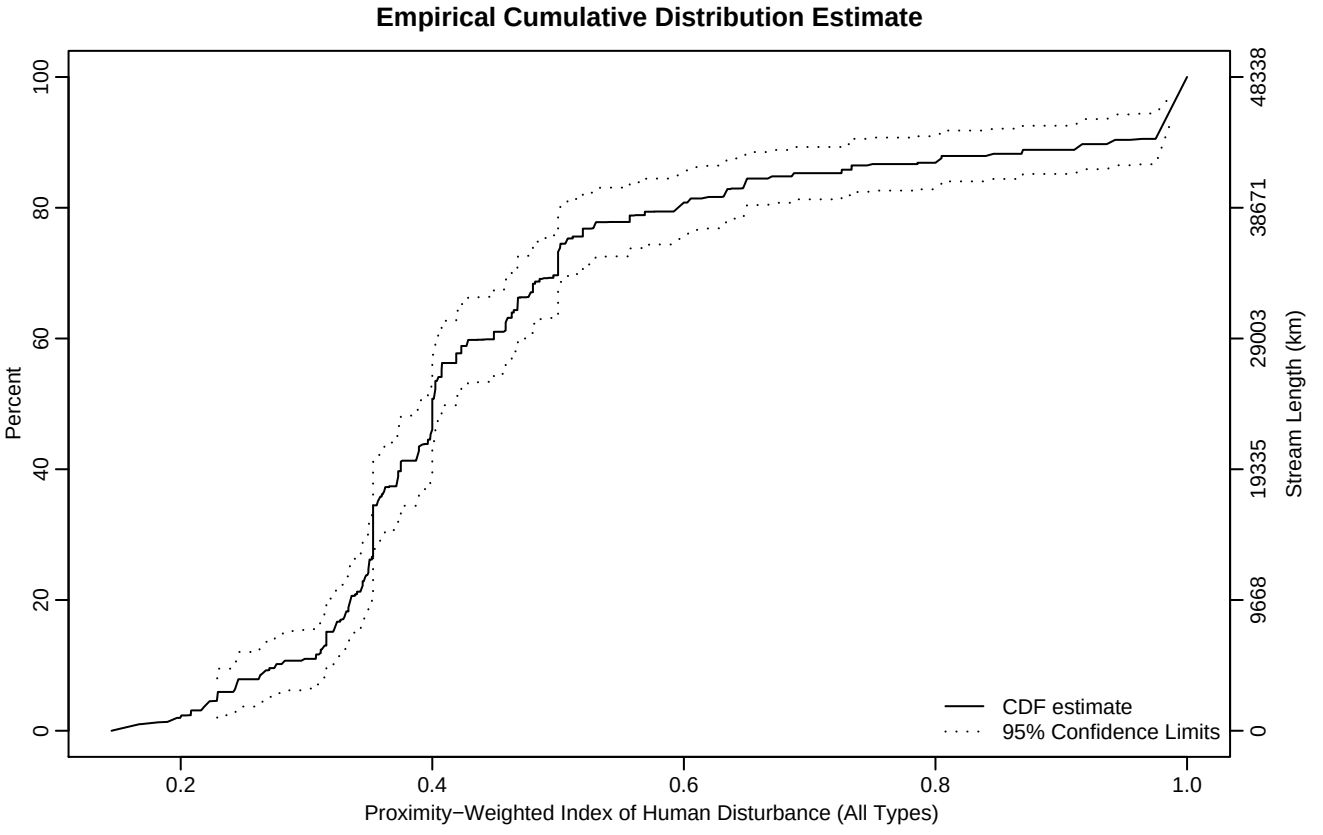


Figure PHAB−438 Indicator: QRDIST1 Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.23	0.20	0.25
10Pct	0.28	0.23	0.32
25Pct	0.35	0.33	0.35
50Pct	0.40	0.39	0.42
75Pct	0.51	0.49	0.60
90Pct	0.94	0.73	0.98
95Pct	0.99	0.98	1
Mean	0.48	0.45	0.50
Std Dev	0.19	0.16	0.21

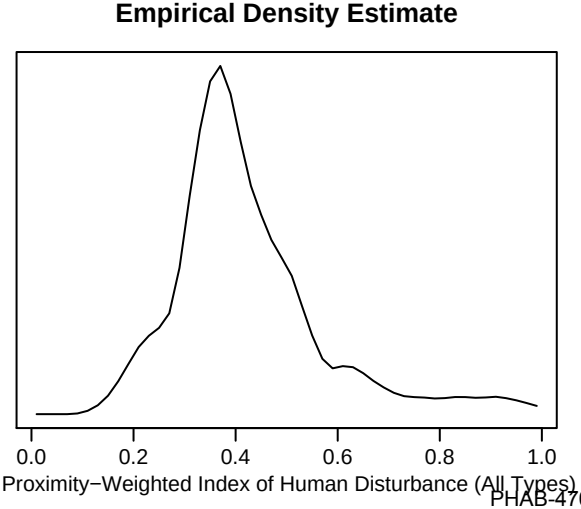
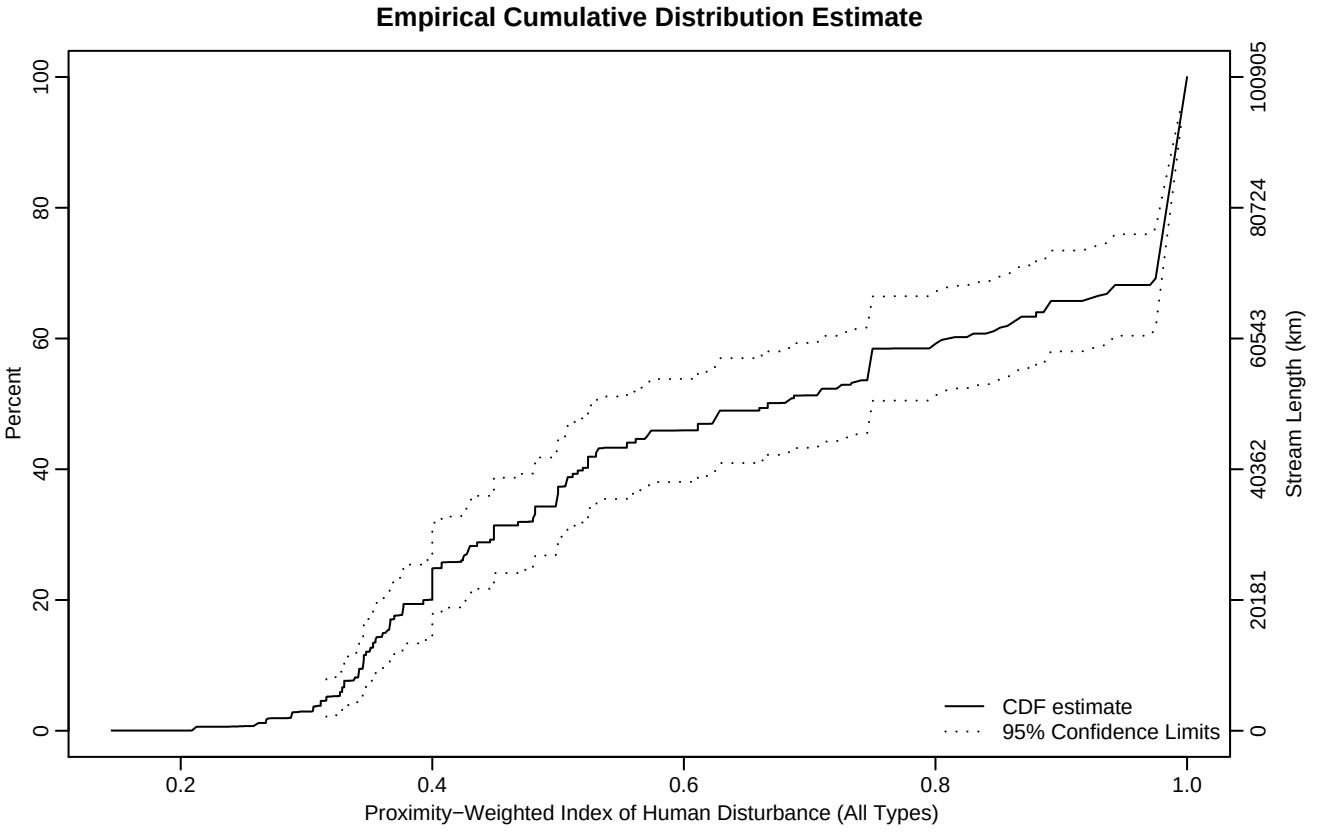


Figure PHAB−439 Indicator: QRDIST1 Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.32	0.29	0.34
10Pct	0.34	0.33	0.36
25Pct	0.41	0.38	0.47
50Pct	0.67	0.53	0.75
75Pct	0.98	0.94	0.99
90Pct	0.99	0.99	1
95Pct	1	0.99	1
Mean	0.68	0.64	0.72
Std Dev	0.26	0.25	0.28

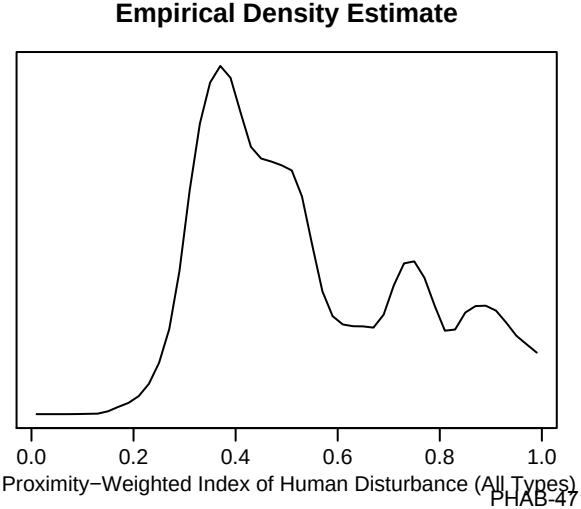
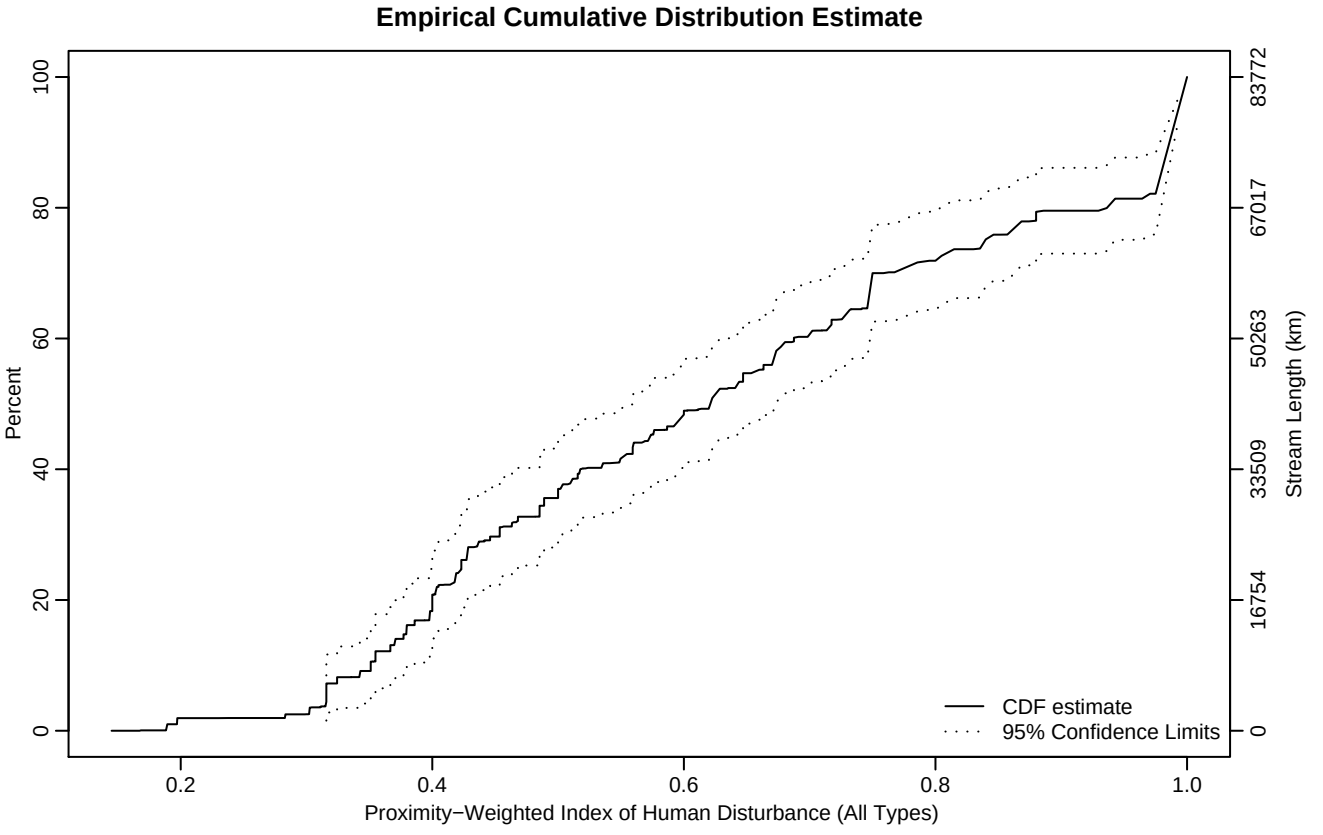


Figure PHAB−440 Indicator: QRDIST1 Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.32	0.20	0.34
10Pct	0.35	0.32	0.38
25Pct	0.42	0.40	0.47
50Pct	0.62	0.55	0.67
75Pct	0.84	0.75	0.98
90Pct	0.99	0.98	1
95Pct	0.99	0.98	1
Mean	0.64	0.60	0.68
Std Dev	0.22	0.20	0.24

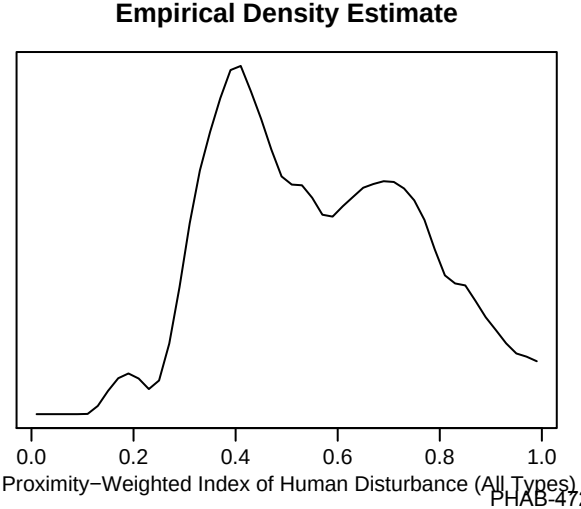
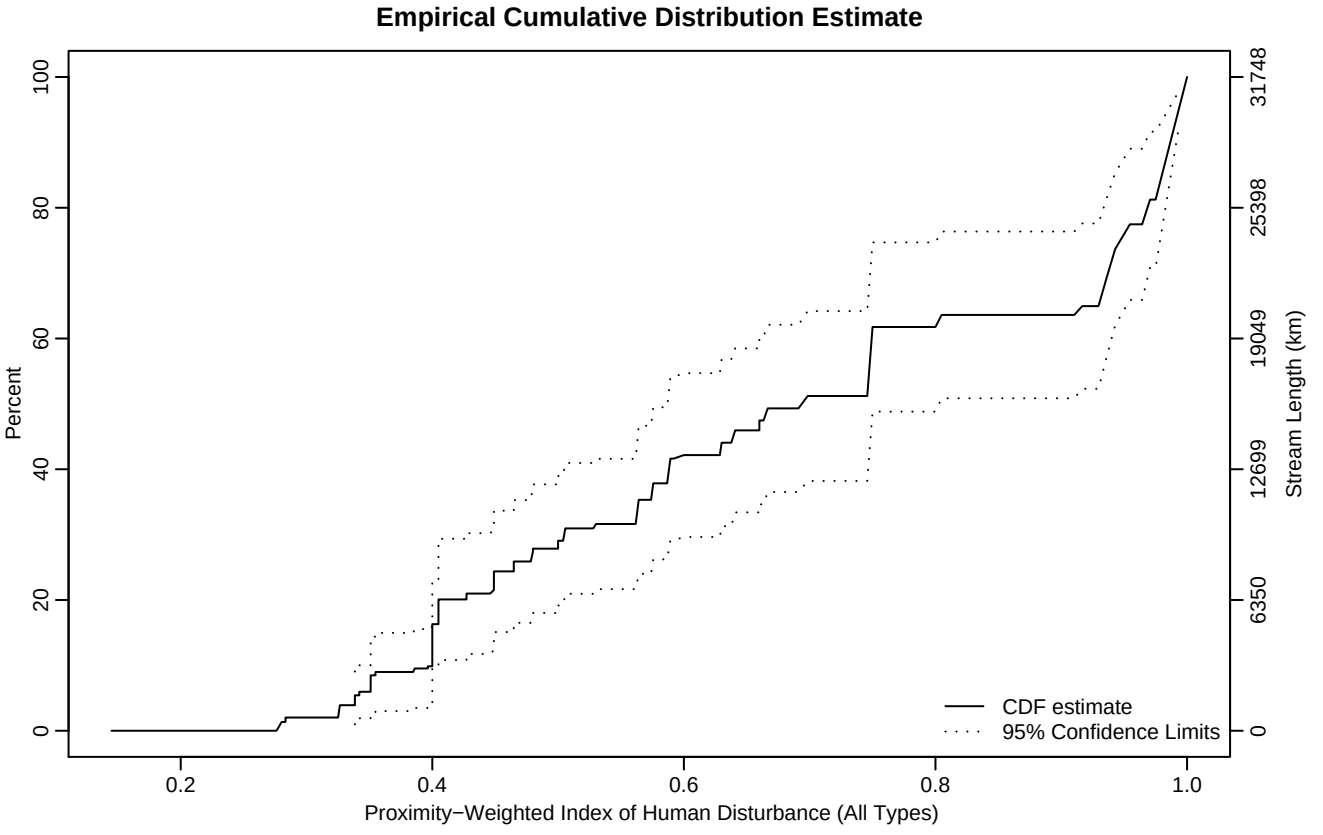


Figure PHAB−441 Indicator: QRDIST1 Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.34	0.28	0.38
10Pct	0.40	0.34	0.40
25Pct	0.46	0.40	0.56
50Pct	0.69	0.58	0.80
75Pct	0.95	0.80	0.98
90Pct	0.99	0.97	1
95Pct	0.99	0.98	1
Mean	0.70	0.64	0.76
Std Dev	0.23	0.20	0.25

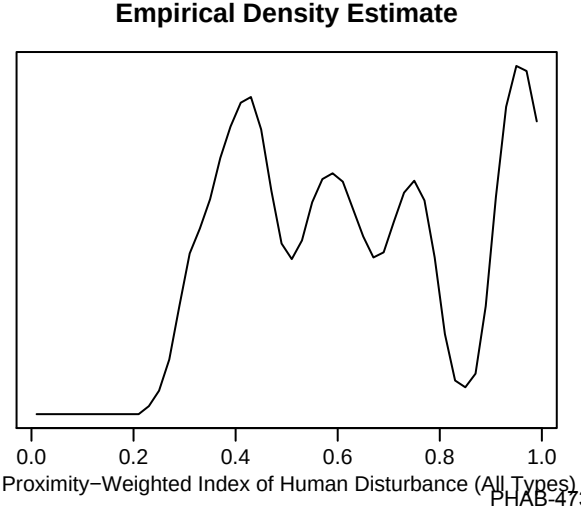
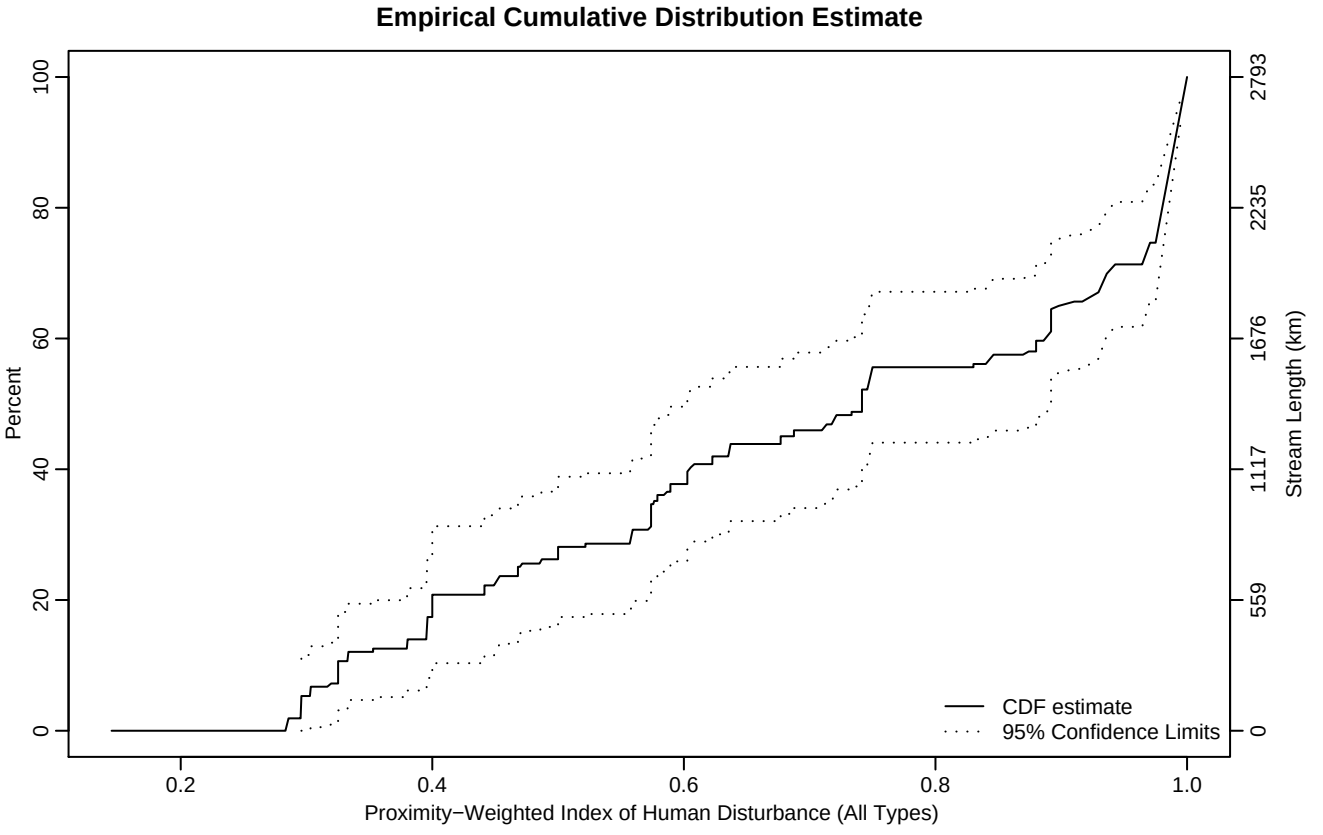


Figure PHAB−442 Indicator: QRDIST1 Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.30	0.29	0.33
10Pct	0.33	0.30	0.40
25Pct	0.47	0.40	0.58
50Pct	0.74	0.60	0.89
75Pct	0.98	0.92	0.98
90Pct	0.99	0.98	1
95Pct	1	0.99	1
Mean	0.71	0.65	0.77
Std Dev	0.24	0.22	0.26

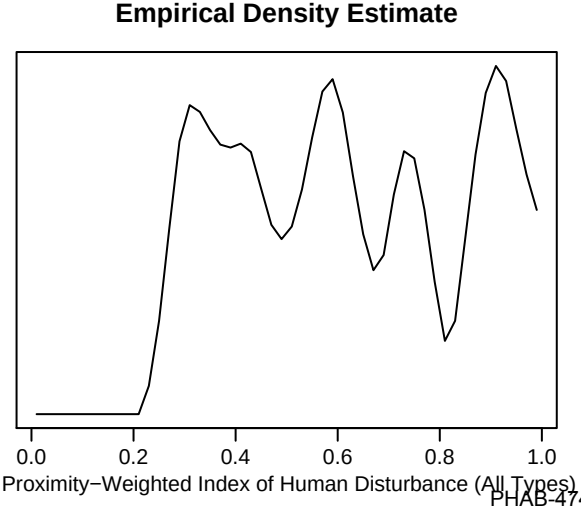
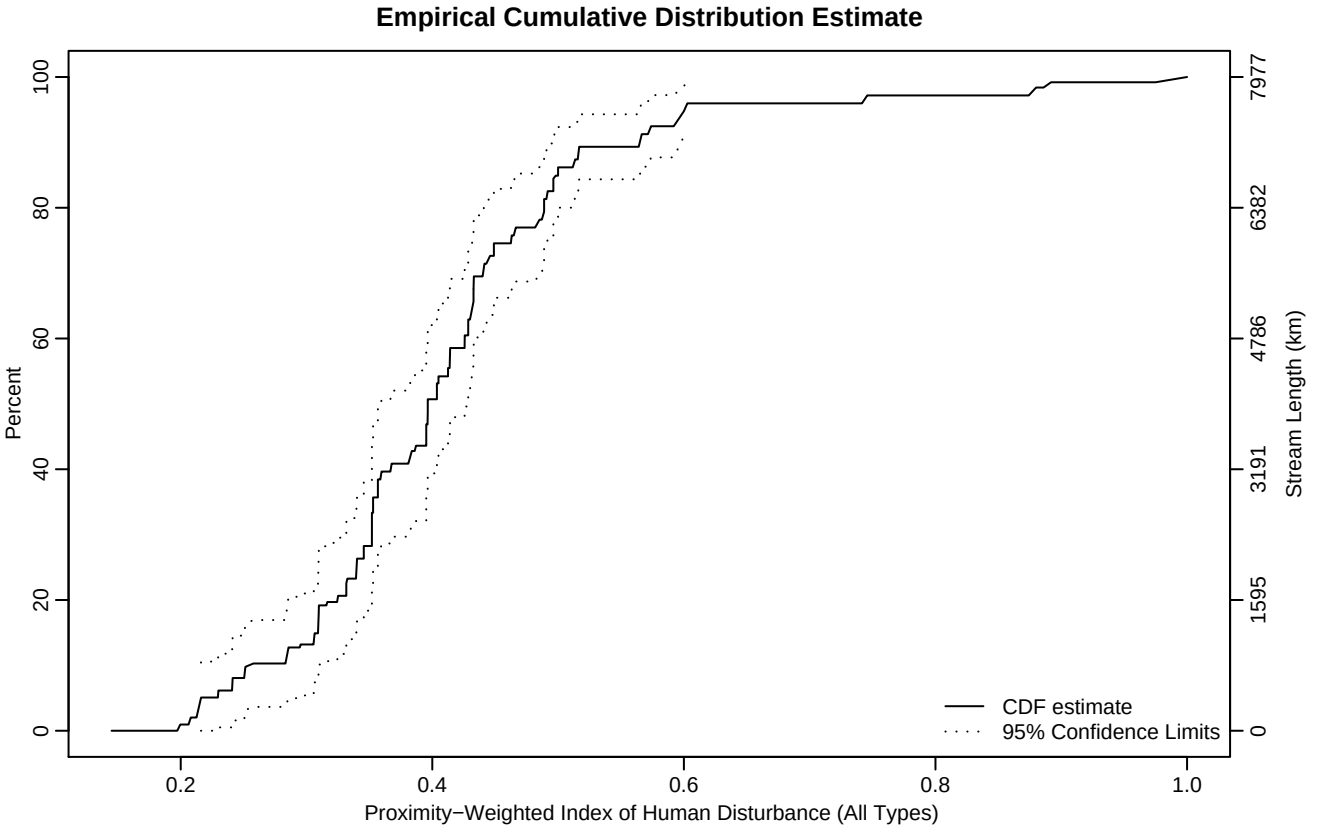


Figure PHAB−443 Indicator: QRDIST1 Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.21	0.24
10Pct	0.25	0.21	0.31
25Pct	0.34	0.31	0.35
50Pct	0.40	0.36	0.43
75Pct	0.46	0.43	0.50
90Pct	0.56	0.50	0.60
95Pct	0.60	0.57	0.89
Mean	0.41	0.39	0.43
Std Dev	0.11	0.09	0.13

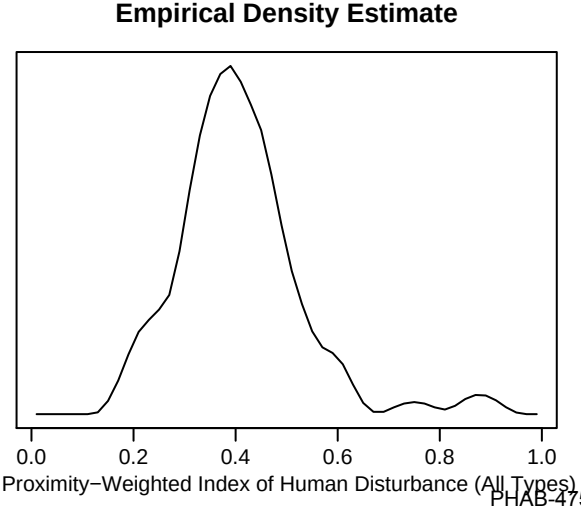
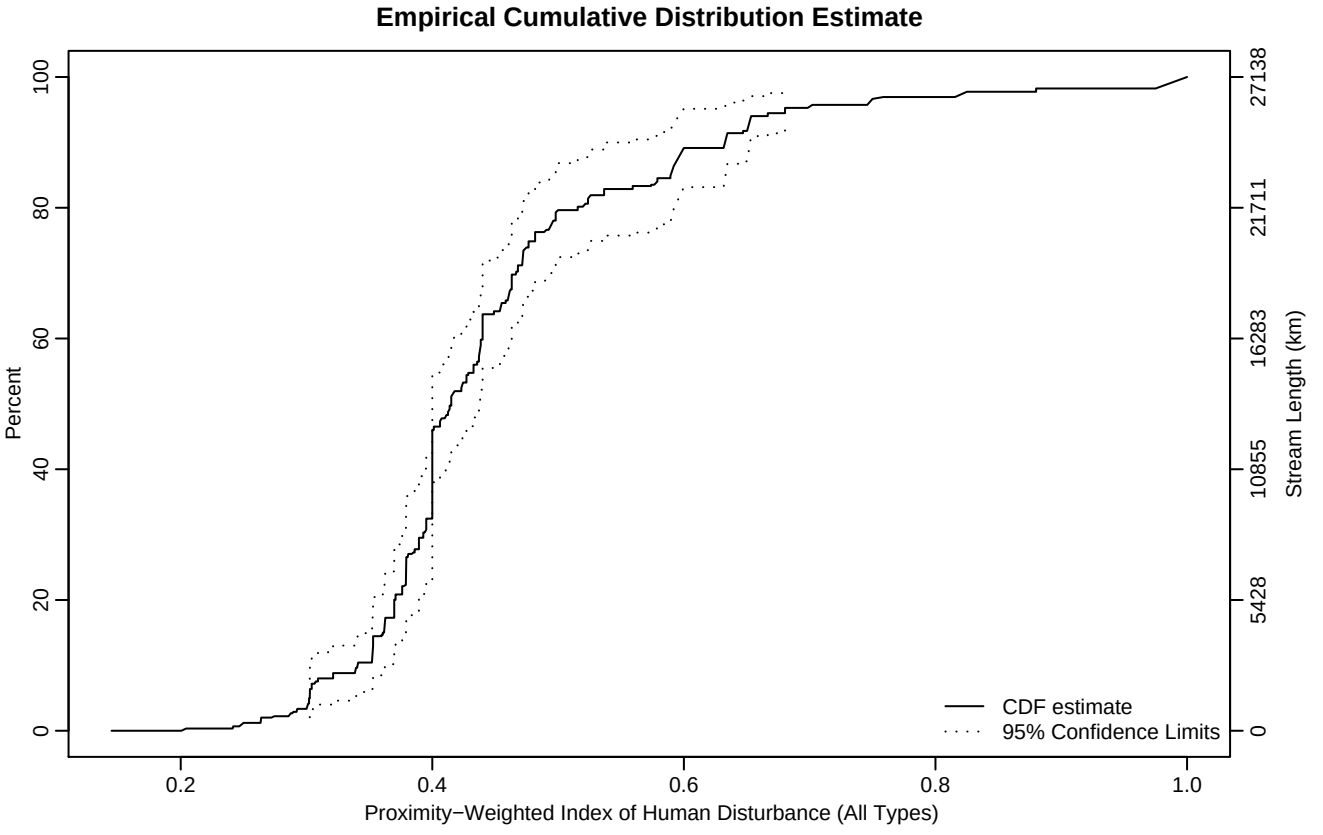


Figure PHAB−444 Indicator: QRDIST1 Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.30	0.27	0.31
10Pct	0.34	0.30	0.35
25Pct	0.38	0.36	0.40
50Pct	0.42	0.40	0.44
75Pct	0.48	0.46	0.54
90Pct	0.63	0.58	0.75
95Pct	0.68	0.65	0.88
Mean	0.45	0.43	0.47
Std Dev	0.13	0.10	0.15

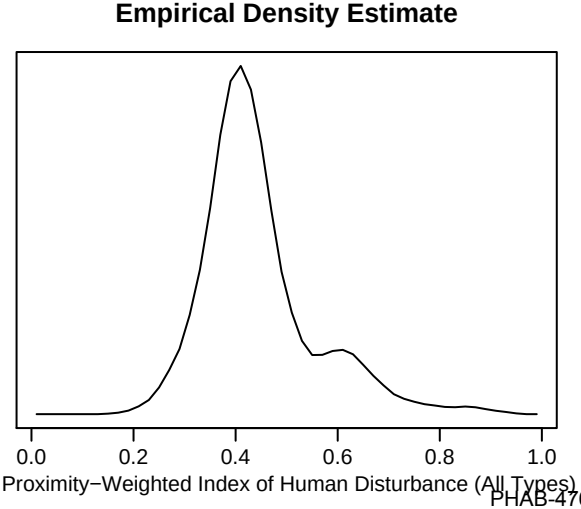
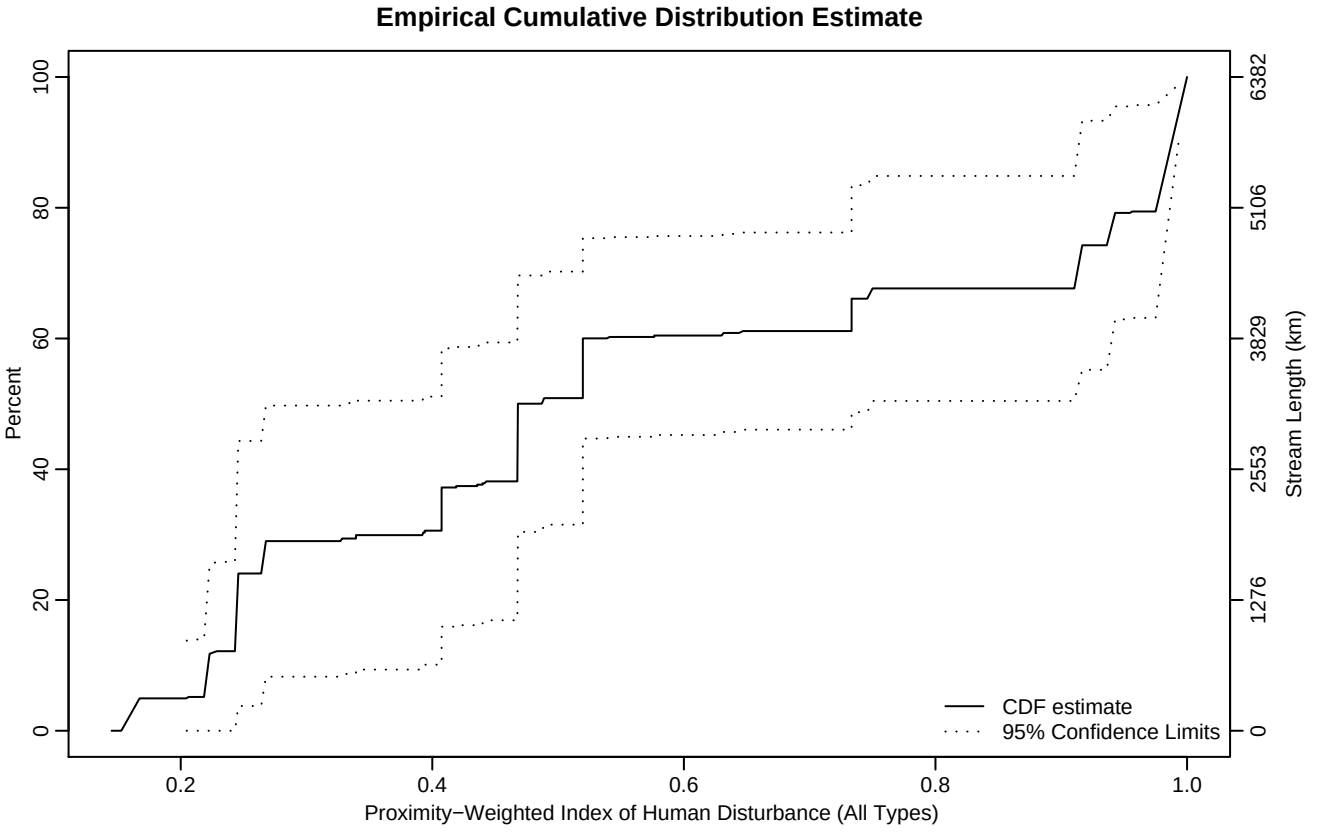


Figure PHAB−445 Indicator: QRDIST1 Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.20	0.15	0.24
10Pct	0.22	0.16	0.24
25Pct	0.26	0.17	0.47
50Pct	0.47	0.33	0.91
75Pct	0.94	0.52	0.99
90Pct	0.99	0.92	1
95Pct	0.99	0.94	1
Mean	0.58	0.48	0.68
Std Dev	0.30	0.26	0.35

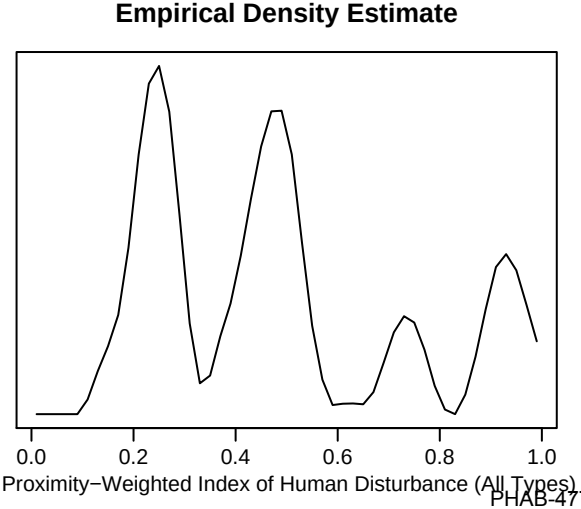
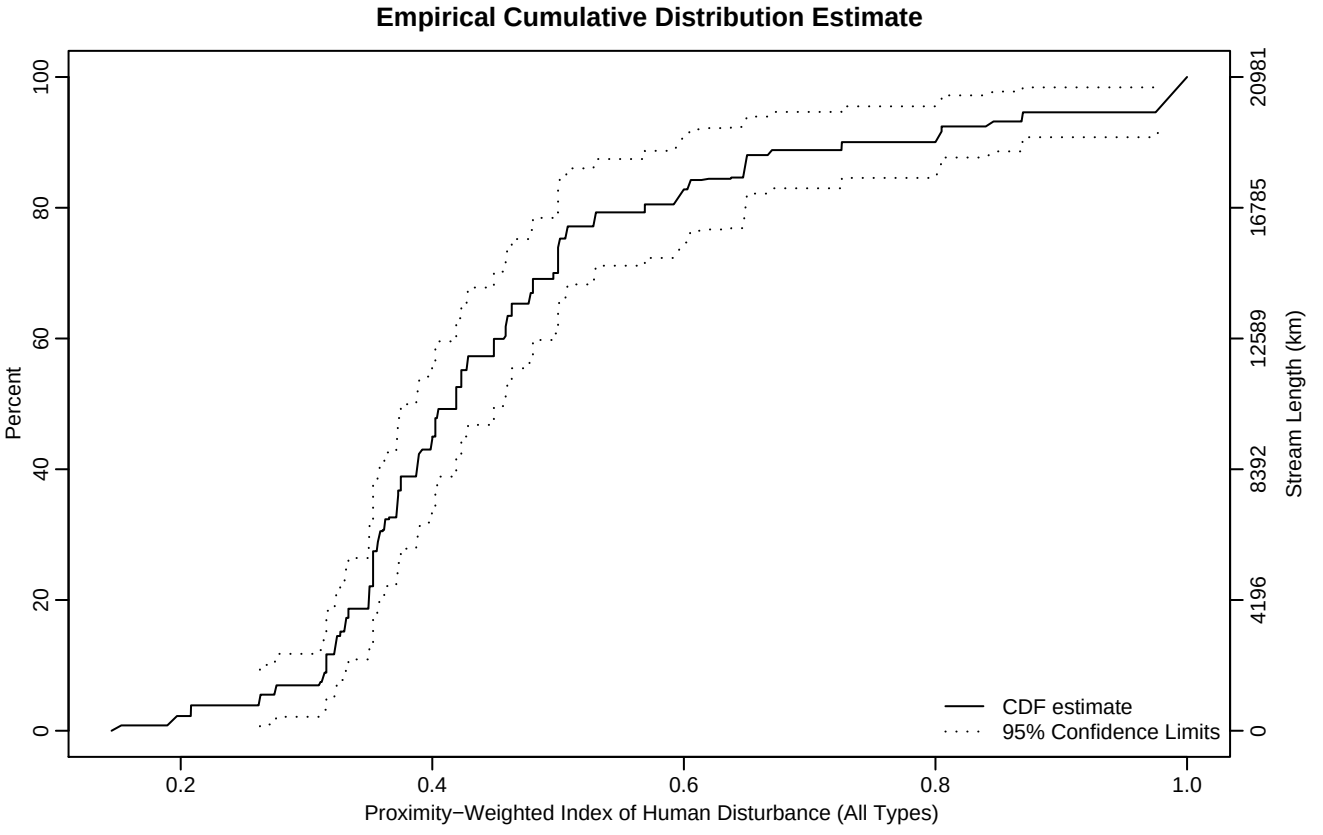


Figure PHAB−446 Indicator: QRDIST1 Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.26	0.19	0.31
10Pct	0.32	0.26	0.33
25Pct	0.35	0.33	0.37
50Pct	0.42	0.39	0.46
75Pct	0.50	0.48	0.64
90Pct	0.73	0.61	0.98
95Pct	0.98	0.80	0.99
Mean	0.47	0.43	0.50
Std Dev	0.17	0.13	0.20

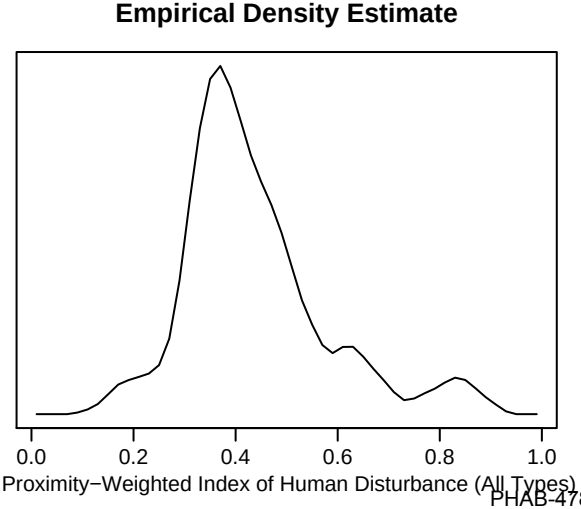
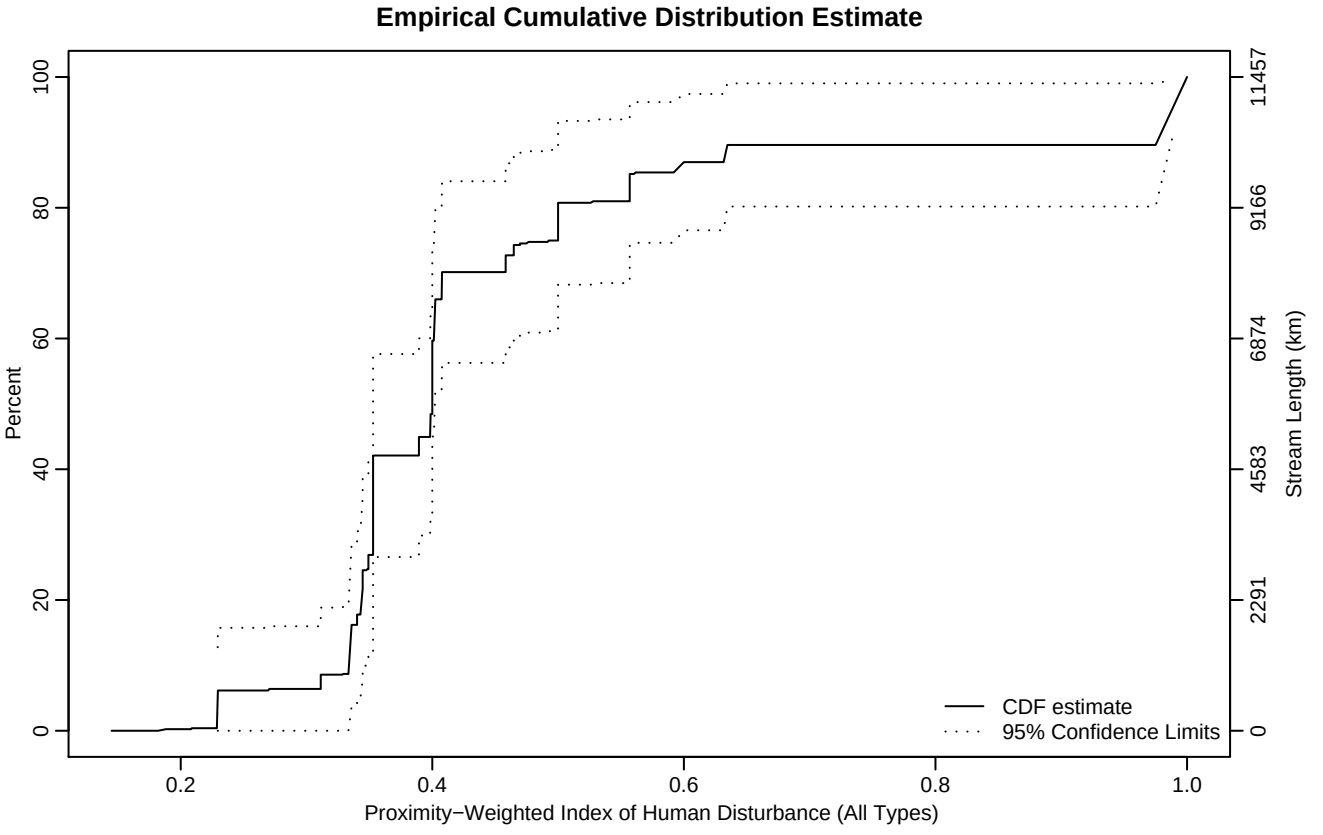


Figure PHAB−447 Indicator: QRDIST1 Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.23	0.23	0.23
10Pct	0.33	0.15	0.34
25Pct	0.35	0.33	0.35
50Pct	0.40	0.35	0.40
75Pct	0.50	0.40	0.63
90Pct	0.98	0.53	1
95Pct	0.99	0.60	1
Mean	0.46	0.39	0.52
Std Dev	0.18	0.13	0.24

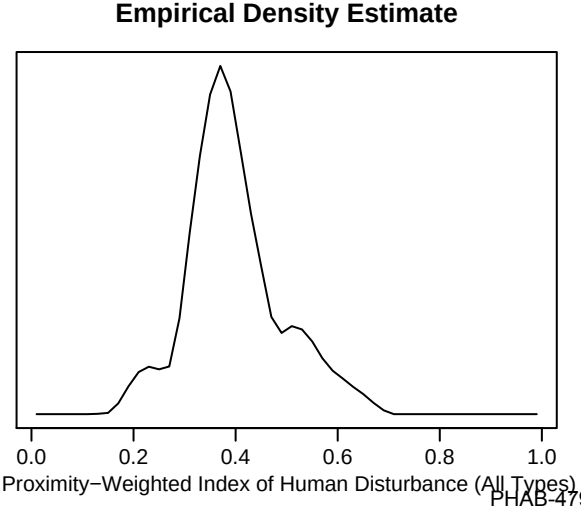
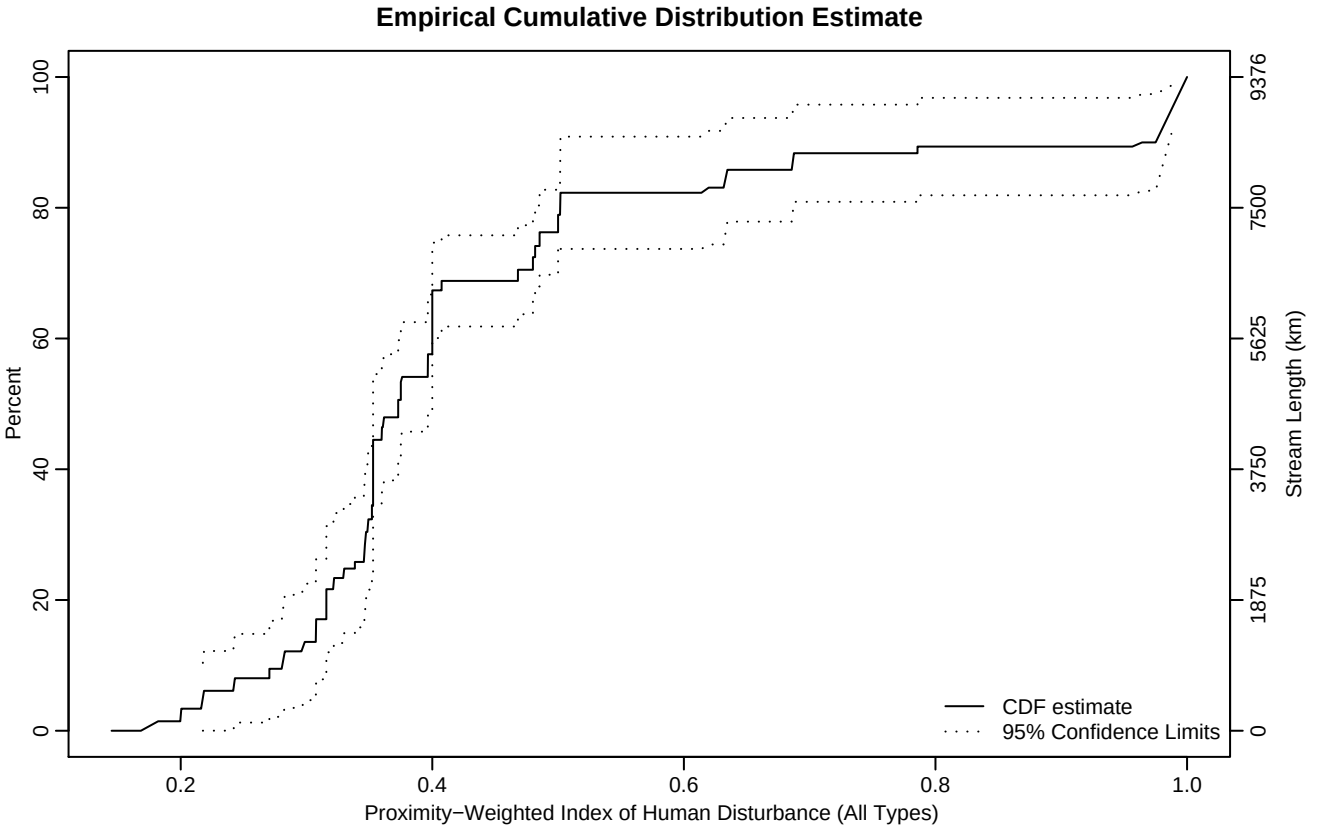
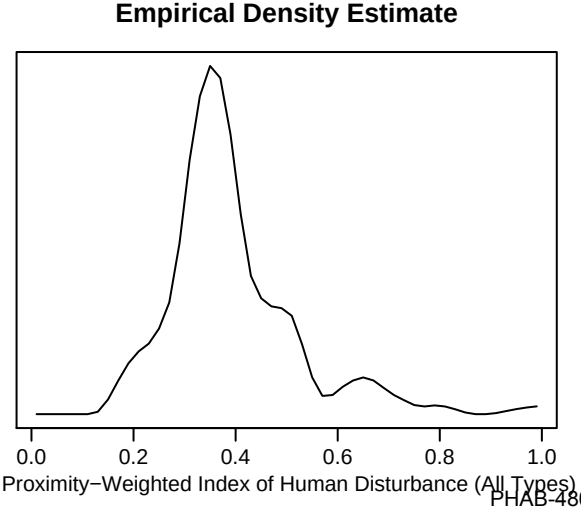


Figure PHAB−448 Indicator: QRDIST1 Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.22	0.17	0.27
10Pct	0.28	0.20	0.32
25Pct	0.34	0.31	0.35
50Pct	0.37	0.35	0.40
75Pct	0.49	0.41	0.50
90Pct	0.98	0.50	1
95Pct	0.99	0.69	1
Mean	0.45	0.41	0.49
Std Dev	0.11	0.09	0.13



Fish Tissue Contaminants (Metals)

Water borne metal contaminants are derived from various sources and have varying types and degrees of adverse effects on aquatic organisms and consumers of aquatic organisms. Low concentrations of metals in water can lead to bioaccumulation up the aquatic food chain with top predators (fish) harboring high contaminant concentrations. Fish consumption advisories frequently are issued by State departments of environmental quality when fish tissue levels meet or exceed pre-designated levels (criteria or standards) considered detrimental to humans. While the issuance of wildlife advisories is uncommon, contaminant levels in fish tissue are important to wildlife managers in understanding possible wildlife effects. Thus, regional fish tissue metals surveys provide an indication of relative regional contamination and they provide a basis for assessing potential relative health risks to wildlife and humans due to fish consumption. Ecological effects of metals contaminated fish focus on piscivorous birds and mammals, which consume entire fish. Therefore, the focus of this fish tissue survey is on whole fish metals concentrations.

Metals commonly found in fish tissue include cadmium (Cd), lead (Pb), mercury (Hg), and zinc (Zn). Excessive exposure of these metals to wildlife and humans can be detrimental, thus they are common components of fish tissue surveys. Because Hg bioaccumulates differently than other metals in fish tissue, and because it is a more wide-spread problem, Hg is given more attention in this summary than the other metals.

Contaminants Measured in EMAP-West

Cadmium

Principal sources and uses of cadmium are mining, smelting and plating of metals; urban runoff; and sewage discharge. It has been associated with reduced quail growth and adverse effects on mammalian reproduction or development when consumed daily at <2 µg/g and 3.5 – 7.5 µg/g, respectively, per fresh body weight (Richardson et al., 1974; Shore and Douben, 1994). The United States Environmental Protection Agency (U.S. EPA) set a daily fish tissue Cd consumption criterion of 0.016 µg/g, assuming a 70 kg human eating 0.75 kg of fish per day (http://www.epa.gov/iris). In 1993, the United States Public Health Service (USPHS) lowered the chronic consumption criterion to <0.0007 µg Cd/g body weight daily (USPHS, 1993). Since Cd tends to concentrate in the liver and gills of fish (Harrison and Klaverkamp, 1989), rather than in the muscle, use of whole body Cd concentration data should be avoided in the computation of human effect since those parts are seldom consumed.

Lead

The principal sources and uses of lead are mining, smelting and industrial casting; urban runoff; atmospheric pollution; fishing sinkers; and lead shot. Dietary Pb >5 µg/g impaired mallard duckling growth (Frederich, 1976), and >0.1 µg/g impaired herring gull chick righting response (Burger, 1990). EPA (U.S. EPA, 1980) set <0.2 µg/g as the total

daily intake criterion for Pb in 1980. However, Rice (1985) found that 0.05 µg/g dietary Pb per body weight of young monkeys impaired learning, and that changes in certain blood enzymes produced neurobehavioral development changes in children at Pb levels so low as to be essentially without a threshold.

Mercury

The principal sources and uses of mercury are herbicides; fungicides; pulp, paper and textile effluents; open-cycle chloralkali cells; landfills; mining; coal, plastic and wood combustion and associated atmospheric pollution. The U.S. EPA National Water Quality Inventory report of 1998 (U.S. EPA, 1998a) states that Hg is the most common contaminant found in fish. It is also one of the most persistent aquatic pollution problems. Streams draining gold mining areas from the 1800's still contain large amounts of Hg from those days. Most of this Hg is in elemental liquid form and thus of limited direct concern, however, bacterial methylation of this Hg due to reduced redox and pH produces methylmercury, a powerful neurotoxin, that bioaccumulates in the aquatic food chain. Fish, particularly large piscivorous fish, being at the top of the aquatic food chain, accumulate mercury. Most (95% – 99%) Hg in fish tissue is methylmercury (Grieb et al., 1990; Bloom, 1992), thus total Hg concentrations are used commonly as near approximations of methylmercury in fish tissue contamination assessments. Hg bioaccumulates in the muscle tissue (filet) of large (older) fish that people enjoy catching and eating. Thus, Hg is a major concern relative to both human and wildlife consumption of fish tissue.

Fathead minnows were deformed and had reduced growth at 1.36 – 18.8 µg Hg/g whole body wet weight (Snarski and Olson, 1982), while a 0.88 µg Hg/g dry weight ration impaired reproduction (Hammerschmidt et al., 2002). Brook trout experienced impaired reproduction at 2.7 µg Hg/g wet weight whole body (Wiener and Spry, 1996) and rainbow trout displayed chronic effects at 1 – 5 µg Hg/g wet weight whole body (Niimi and Kissoon, 1994).

Mallard ducks fed prey containing 3 µg Hg/g had impaired reproductive success (Heinz and Locke, 1976). Ducks with only 0.1 µg Hg/g wet weight exhibited modified reproductive behavior (Heinz, 1979). Yeardley et al., (1998) recommended a criterion of 0.020 µg Hg/g wet weight in the ration for fish eating birds.

A 1.0 µg Hg/g wet weight diet caused neurotoxicity, reduced progeny and mortality in mink and otter (Wren et al., 1987; Dansereau et al., 1999). Yeardley et al. (1998) and Lazorchak et al. (2003) recommended a criterion of 0.1 µg Hg/g wet weight for otter and 0.07 µg Hg/g for mink.

The U.S. EPA (1998) found that piscivorous wildlife criteria are 0.013 times those for human beings (0.00000064 vs.0.00005 µg/L in water). However, the action or advisory level for human consumption of fish containing Hg varies. The Food and Drug Administration action level for fish whole body is 1.0 µg Hg/g dietary wet weight while that of the World Health Organization is set at 0.5 µg Hg/g dietary wet weight (Carpenter, 1998. The U. S. EPA (2001) human health criterion for Hg is set at 0.30 µg/g wet weight.

Literature indicates that Zn concentrates more in structural tissues than in organs and more in organs than in muscle. Eisler (1993) found digestive problems among people consuming an 80 µg Zn/g diet for 6 weeks. Eisler (1981) recommended <40 µg/g Zn wet weight in human diets. Adverse effects have been observed in humans when Zn concentrations are >2.3 µg/g body weight (Samman and Roberts, 1988).

Sample Collection

The following stream sampling, laboratory, and analytical procedures have been reported previously by Peterson et al. (2002, 2005). Detailed information on the probability sampling design is presented in the Design Chapter (Olsen) of this document. From 2000 through 2003, we conducted a probability based sampling survey to determine the level and extent of selected metals concentrations (Cd, Pb, Hg, and Zn) in lotic fishes across twelve western states (North Dakota, South Dakota, Montana, Wyoming, Colorado, Arizona, Utah, Idaho, Washington, Oregon, Nevada, and California) of the United States (Figure FT-1). We collected fish from streams and rivers according to wadeable and nonwadable electrofishing protocols (Peck et al., 2005a; Peck et al., 2005b). Sampling via these procedures assured that results of the survey were inferable to all lotic systems throughout the sampling region. Field crews were directed to collect two sample types from each site: 1) 1 to 9 large fish (>120 mm long) of various sizes for each species encountered and 2) a 50 - 200 gram species composite sample of adult small fish (<100 mm long).

From 2000 through 2002 (June through September), we collected 1,361 large fish, representing 61 species, from 351 randomly selected unique stream sites (some sites were revisited, but are not included in this analysis), in the 12 states targeted for sampling (Figure FT-1). In addition, 210 small fish composite samples were collected from a subset of the sites in common with large fish collections. Large individual fish were identified to species, measured, weighed, wrapped in aluminum foil, double plastic bagged, labeled, and iced for shipment to the analytical laboratory the next day. Small fish composite samples were treated as such, and handled in the same manner as large fish. Small fish individuals were identified to species were possible. However, small fish samples were always composite analyses unless only a single small fish was collected.

Laboratory procedures

Fish samples received at the analytical laboratory were frozen at -20°C and stored until analyzed. At the time of analysis, fish were removed from the freezer, re-weighed, re-measured, and allowed to partially thaw. The whole fish was then “chunked” with stainless steel knives and blended with an approximate 1:1 ratio of deionized water by weight until the mixture appeared to be completely homogenous. The exact amount of water added was recorded and used to adjust the amount of analyt, in the “as received” fish samples, at the time of analysis. All cutting utensils, cutting surfaces, and blenders were cleaned with hot soapy water and rinsed three times with deionized water between samples to prevent cross contamination. Sub-samples were removed immediately after

mixing from the whole homogenate fish sample to prevent separation of lipids. Hg analyses were done for all 1361 big fish individuals and for all 210 small fish composite samples.

For Cd, Pb, and Zn analysis, dry-weight equivalent homogenate subsamples of 0.5 g were digested in 10 ml of high-purity, subboiled distilled nitric acid (High Purity Standards, Charleston, SC, USA) according to CEM Run Fish Digest program (CEM Corporation, 1998). After each flask cooled, 10 ml of Ultrex 30% hydrogen peroxide (Fisher Scientific, Houston, TX, USA) were added to each flask and the contents were redigested in the microwave using the same fish digestion program. After the second digestion and cooling, the contents were quantitatively transferred to 50-ml volumetric flasks and diluted to volume with deionized water. Approximately 40 ml of digested sample was then transferred to sterilized 40 ml glass, screw cap vials and refrozen at -20°C until analysis. At the time of analysis, the digested samples were thawed and remixed. Two or three replicate aliquots were removed from the remixed sample and analyzed. Results were reported as means (µg/g) of the two or three replicate analyses.

Analyses for Zn were done by Flame Atomic Absorption Spectrophotometry (FAAS) on a Perkin-Elmer 5100 (Perkin-Elmer, Norwalk, CT, USA). The Zn analyses followed EPA method 7000B (U.S. EPA, 1997; 1998b).

Cd and Pb analyses were done by Graphite Furnace Atomic Absorption Spectrophotometry (GFAAS) modification on the Perkin-Elmer 5100. The Cd and Pb analyses followed EPA method 7010 (U.S. EPA, 1997; 1998c).

In the case of Hg, fish tissue sample preparation stopped with the production of whole fish homogenate. Subsamples of the homogenate were removed immediately to prevent sample separation. The homogenate subsamples were transferred to sterilized 40-ml glass screw-cap vials and refrozen at -20°C until analysis. At the time of analysis, the homogenate sample was thawed, remixed and subsampled for analysis by combustion atomic absorption spectrometry (CAAS). Hg was analyzed using a Milestone™ DMA80 direct Mercury Analyzer (Milestone Inc., Monroe, CT) according to U.S. EPA (1998d). Following each thermal decomposition analysis of fish tissue, ash was removed from the sample weigh boats. The boats were soaked in deionized water for 30 minutes and heated to 550°C for one hour, then cooled before their next use. A major advantage of the CAAS method is that it requires very small samples (approx. 0.25 g) and no sample digestion (direct Hg analysis).

Quality assurance

Cadmium

Each sample was analyzed in duplicate by the FAAS. Results were calculated automatically by the software as the mean and standard deviation. If the percent RSD was >15% and above the Method Detection Limit (MDL) the sample was reanalyzed. Daily calibration curves were developed for the FAAS procedures. Typically the calibration curves consisted of a reagent blank and three calibration standards of increasing concentration spaced across the anticipated concentration range. Results of repeated analyses of cadmium (Lead and Zinc also) in dogfish standard reference

material (NIST DORM-2) is shown in Table FT – 1. The calibration curves must be linear and have a correlation coefficient of at least 0.9999 for FAAS. Calibration curves, once established, were verified by the use of an initial calibration blank and a second source check standard (SSCS). The calibration curve was verified by analyzing a continuing calibration blank and SSCS sample after every 10 samples and again at the end of the sample batch. The acceptance criterion was ± 10% of its true value.

Lead and Zinc

Each sample was analyzed in triplicate by the GFAAS. Results were calculated automatically by the software as the mean and standard deviation. With GFAAS, the percent RSD should be <15%. If it is not and the results are above the MDL, then the sample is reanalyzed. Also, any sample with concentrations exceeding the highest calibration standard are diluted and reanalyzed. Daily calibration curves were developed as for the FAAS and checked against standards. However, the correlative calibration acceptance level is reduced slightly to 0.995 for GFAAS. Calibration curves were checked against SSCS. The acceptance criteria for the GFAAS was ± 15% of its true value.

Mercury

For Hg, an instrument detection limit (IDL) of 0.05 ηg Hg was determined by replicate analysis of acidified, aqueous Hg standard solutions to assess precision. This corresponds to an IDL of 0.0002 μg Hg/g for a nominal fish tissue sample of 0.25 g. However, tissue analysis is more complex than standards and the method detection limit (MDL) for fish tissue is expected to be greater than 0.0002 μg Hg/g.

The thermal decomposition/amalgamation method for Hg analysis combines the release of Hg from the matrix and analysis in a single step. Therefore, doing an MDL study by spiking Hg (in acidified, aqueous solution) will not give the best estimate of MDL since the Hg added is already in a “released” form. In addition, it is nearly impossible to obtain Hg free fish tissue. Thus, we used the method of Taylor (1987) to estimate the MDL for tissue samples. This method is essentially the same as the EMAP protocol for MDL determination (U.S. EPA, 1997) except a sample is used rather than fortifying a clean matrix. The standard deviation (s.d.) for 202 measurements of Standard Reference Material (SRM) 2976 made during the previous year’s (2001) fish tissue analyses was used to estimate the MDL for tissue samples (0.02 μg Hg/g). Also, analyses included 103 tissue samples run in duplicate. The relative standard deviation (RSD) of the duplicates ranged from 0.01% to 25.8% (mean = 3.66%). In addition, 215 replicates of dogfish reference material DORM-2 and 202 replicates of SRM 2976 Mussel Tissue were analyzed with the project samples. Both groups met the precision objective of 15% relative standard deviation (RSD) or MDL, whichever was larger.

Accuracy was assessed by analysis of the reference materials DORM-2 (high level) and SRM 2976 (low level) as calibration checks during sample analysis. DORM-2 has a certified total Hg concentration of 4.64 μg Hg/g. Only one of the 215 replicate results slightly exceeded the criteria of 85% - 115% (average = 101% ± 4.4%). The certified total Hg value for SRM 2976 is 0.0610 μg Hg/g. The average recovery from 202

samples of this reference material was 115.1% ± 13.3%, an acceptable result since the certified value is within a factor of 5 of the estimated MDL for this method. Each day of analysis, reagent blanks (2% nitric acid) were analyzed after the standards were analyzed to ensure there was no carryover of Hg before environmental samples were analyzed. No samples were analyzed until acceptable blanks were obtained (corresponds to about 0.0004 μg Hg/g or about 0.0001 μg Hg in a typical 0.25 g environmental sample).

Fish tissue data analysis

Hg, its bioaccumulation characteristics, its potential affects on wildlife and humans, and our prior experience with Hg assessments (Peterson et al., 2002; Peterson et al., 2005) strongly influenced the direction of our data analysis. Because Hg bioaccumulates in fish largely through the food chain, large, primarily, piscivorous fish (largely game fish) commonly contain higher concentrations of Hg than do non-piscivorous large species (invertivore/piscivores, omnivores, herbivores, insectivores) or small adult species. Therefore, it is important to differentiate among these groups for Hg analysis. Fish tissue analyses were conducted on large, individual, whole fish and on composite samples of small fish.

We developed individual Empirical Cumulative Distribution Estimates (CDFs) for mercury in: (1) large piscivores; (2) large non-piscivores; and (3) composite small fish samples. Each CDF depicts the cumulative proportion of stream length affected by increases in fish tissue Hg concentrations (Figures FT Hg P – 1 Pisc; FT Hg NP-1 through 4 NonPisc; and FT Hg S-1 through 4 Small). Feeding guild and fish size are not as critical to bioaccumulation and concentration of Cd, Pb, and Zn in fish tissue, however, to be consistent we present CDFs for these metals in the same way that we did for Hg, e.g. For: (1) large piscivores; (2) large non-piscivores; and (3) composite small fish samples (Figures FT Mtl P-2 Cd Pisc; FT Mtl NP-5 through 8 Cd NonPisc; and FT Mtl S-5 through 8 Cd Small: Figures FT Mtl P-1 Pb Pisc; FT Mtl NP -1 through 4 Pb NonPisc; and FT Mtl S-1 through 4 Pb Small: FT Mtl P-3 Zn Pisc; FT Mtl NP-9 through 12 Zn NonPisc: and FT Mtl S-9 through 12 Zn Small) .

In addition, we developed scatter plots of Hg, Cd, Pb, and Zn concentration as a function of fish size (length) for the piscivorous (Figure FT-2) and non-piscivorous (Figure FT-3) fish groups. A simple linear regression was fit to the data and the r^2 reported. The fish tissue metals data is further summarized in Tables FT-2 to FT-5 to identify the fish species, the number of each species, feeding guild classification for each species, and the mean, minimum - maximum concentration of metal (Cd, Pb, Hg, or Zn) for each fish species. Small fish composite sample weight is shown in the small fish tables to show the range of small fish sample sizes (weight).

Analysis of fish tissue samples is incomplete and ongoing at this time. Therefore, this statistical summary includes years 2000–2002 for Hg data and years 2000–2001 for Cd, Pb, and Zn data. Table FT – 6 summarizes the number of fish tissue contaminant sites available for estimating CDF stream condition (West-wide and by the mountains, plains, and xeric ecoregions) relative to each of the metals. Analyses for additional years through the 2004 field season are scheduled for completion by the end of 2005 and will

be reported after that date. The varying amounts of completed analyses have implications for what we are able to report in this Statistical Summary.

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Tables

Table FT-1. Results of repeated analyses of metals in dogfish muscle certified reference material (NRCC DORM-2), 2000-2001. Values in bold are significantly different from certified value (one-tailed *t*-test, P = 0.05)

	Metal			
	Lead	**Cadmium**	**Zinc**	**Zinc (2 outliers removed)**
No. Samples	156	157	157	155
Certified Value µg/g ±95% Tolerance interval	0.065 ±0.0072	0.043 ±0.0008	25.6 ±2.304	25.6 ±2.304
Mean Value µg/g ±95% Confidence interval	**0.100** ±0.022	0.051 ±0.008ns	26.3 ±2.70ns	25.1 ±0.57ns
Bias (Mean -True Value), µg/g	0.035	0.008	0.7	-0.5
Std. Dev. µg/g	0.140	0.054	17.1	3.6
Minimum Value µg/g	0	0.012	4.2	20.7
Maximum Value µg/g	1.171	0.613	233.6	61.6

Table FT-2. Results of repeated analyses of mercury in dogfish muscle certified reference material NRCC DORM-2) and mussel tissue standard reference material (NIST SRM 2976), 2000-2002. For each sample, the mean value was not significantly different from the certified value (one-tailed *t*-test, P = 0.05).

	NRCC DORM-2	**NIST SRM 2976**
No. Samples	215	202
Certified Value µg/g ±95% Tolerance interval	4.64±0.26	0.061 ±0.0036
Mean Value µg/g ±95% Confidence Interval	4.68 ±0.028	0.061±0.001
Bias (Mean -True Value), µg/g	0.04	0
Std. Dev. µg/g	0.210	0.0081
Minimum Value µg/g	4.22	0.039
Maximum Value µg/g	5.38	0.109

Table FT - 2. Mercury concentration and fish length for large (> 120 mm total length) whole fish from the EMAP-West study region (2000 - 2002).

Fish Species (Common Name)	Trophic Guild	No. Fish (Total)	Fish Length (mm) (Mean, Min – Max)	Hg Conc. (ug/g) (Mean, Min – Max)
Apache X Rainbow Trout	IP	5	160.0, 120.0 – 200.0	0.046, 0.030 – 0.058
Black Bullhead	IP	39	189.6, 125.0 – 260.0	0.121, 0.014 – 1.056
Black Crappie	IP	1	142.0, 142.0 – 142.0	0.092, 0.092 – 0.092
Bluegill	IP	2	110.0, 90.0 – 130.0	0.088, 0.065 –0.111
Brook Trout	IP	107	186.8, 110.0 – 290.0	0.047, 0.003 – 0.321
Brown Bullhead	IP	17	217.7, 140.0 – 280.0	0.077, 0.025 – 0.409
Brown Trout	IP	147	235.3, 119.0 – 460.0	0.081, 0.010 – 0.725
Channel Catfish	IP	53	348.6, 80.7 – 625.0	0.110, 0.020 – 0.307
Common Carp	O	51	346.4, 110.0 – 650.0	0.074, 0.008 – 0.439
Creek Chub	O	20	167.7, 120.0 – 230.0	0.082, 0.026 – 0.206
Cutthroat Trout	IP	53	205.8, 120.0 – 515.0	0.073, 0.011 – 0.242
Desert Sucker	H	20	159.0, 120.0 – 210.0	0.077, 0.009 – 0.290
Flannelmouth Sucker	O	1	430.0, 430.0 – 430.0	0.120, 0.120 – 0.120
Flathead Catfish	P	3	320.0, 280.0 – 380.0	0.235, 0.188 – 0.288
Flathead Chub	I	6	144.5, 120.0 – 160.0	0.198, 0.036 – 0.515
Freshwater Drum	IP	6	347.5, 250.0 – 440.0	0.081, 0.038 – 0.192
Gizzard Shad	O	3	316.7, 270.0 – 370.0	0.017, 0.013 – 0.024
Golden Redhorse	I	3	381.7, 290.0 – 490.0	0.109, 0.061 – 0.133
Golden Shiner	O	3	111.7, 107.0 – 118.0	0.070, 0.060 – 0.083
Goldern Trout	IP	1	185.0, 185.0 – 185.0	0.025, 0.025 – 0.025
Goldeye	IP	29	333.3, 190.0 – 400.0	0.197, 0.074 – 0.291
Green Sunfish	IP	17	129.3, 110.0 – 150.0	0.073, 0.019 – 0.147
Klamath Smallscale Sucker	O	2	210.0, 165.0 – 255.0	0.052, 0.027 – 0.077
Largemouth Bass	P	17	271.3, 138.0 – 480.0	0.204, 0.042 – 1.050

Fish Species (Common Name)	Trophic Guild	No. Fish (Total)	Fish Length (mm) (Mean, Min – Max)	Hg Conc. (ug/g) (Mean, Min – Max)
Largescale Sucker	O	24	425.0, 360.0 – 515.0	0.174, 0.012 – 0.843
Longnose Sucker	I	20	286.3, 120.0 – 485.0	0.082, 0.020 – 0.194
Mottled Sculpin	I	5	131.6, 115.0 – 143.0	0.058, 0.039 – 0.109
Mountian Sucker	H	21	166.2, 120.0 – 230.0	0.069, 0.011 – 0.193
Mountian Whitefish	I	57	264.5, 137.0 – 390.0	0.061, 0.011 – 0.287
Northern Pike	P	31	336.7, 122.0 – 540.0	0.164, 0.042 – 0.397
Northern Pikeminnow	P	29	302.5, 159.0 – 480.0	0.402, 0.053 – 1.133
Peamouth	I	1	260.0, 260.0 – 260.0	0.105, 0.105 – 0.105
Prickly Sculpin	IP	3	155.0, 145.0 – 165.0	0.287, 0.107 – 0.468
Pumpkinseed	IP	1	125.0, 125.0 – 125.0	0.208, 0.208 – 0.208
Quillback	O	1	330.0, 330.0 – 330.0	0.037, 0.037 – 0.037
Rainbow Trout	IP	248	184.5, 70.00 – 550.0	0.053, 0.008 – 0.244
River Carpsucker	O	2	282.5, 240.0 – 325.0	0.029, 0.022 – 0.036
Rock Bass	IP	7	169.1, 55.5 – 250.0	0.155, 0.057 – 0.264
Roundtail Chub	O	10	311.4, 235.0 – 426.0	0.150, 0.075 – 0.353
Sacramento Sucker	O	3	285.0, 275.0 – 300.0	0.136, 0.097 – 0.213
Sauger	P	7	325.9, 240.0 – 455.0	0.334, 0.175 – 0.587
Shorthead Redhorse	I	32	278.0, 150.0 – 445.0	0.123, 0.029 – 0.352
Shortnose Gar	P	8	552.5, 430.0 – 650.0	0.268, 0.119 – 0.364
Smallmouth Bass	P	39	246.1, 139.0 – 485.0	0.154, 0.047 – 0.331
Sonora Sucker	I	2	130.0, 130.0 – 130.0	0.062, 0.059 – 0.064
Specked Dace	O	4	106.3, 76.0 – 130.0	0.042, 0.030 – 0.055
Spotted Bass	P	2	185.5, 151.0 – 220.0	0.167, 0.134 – 0.199
Stonecat	IP	4	149.5, 145.0 – 153.0	0.057, 0.036 – 0.072
Tahoe Sucker	O	1	215.0, 215.0 – 215.0	0.623, 0.623 – 0.623
Tiger Trout	I	3	177.7, 162.0 – 203.0	0.021, 0.020 – 0.022
Umpqua Pikeminnow	IP	15	239.4, 142.0 – 465.0	0.231, 0.064 – 0.676

Fish Species (Common Name)	Trophic Guild	No. Fish (Total)	Fish Length (mm) (Mean, Min – Max)	Hg Conc. (ug/g) (Mean, Min – Max)
Unknown Bullhead	IP	4	225.0, 180.0 – 260.0	0.158, 0.030 – 0.348
Unknown Carpoides	O	1	330.0, 330.0 – 330.0	0.038, 0.038 – 0.038
Unknown Sculpin	I	1	150.0, 150.0 – 150.00	0.077, 0.077 – 0.077
Unknown Sucker	O	3	205.0, 155.0 – 240.0	0.066, 0.055 – 0.077
Utah Sucker	O	11	148.9, 115.0 – 238.0	0.075, 0.035 – 0.209
Walleye	P	50	363.7, 135.0 – 570.0	0.243, 0.026 – 0.515
White Bass	P	3	275.0, 265.0 – 290.0	0.137, 0.119 – 0.160
White Sucker	O	87	264.3, 128.0 – 420.0	0.097, 0.011 – 0.304
Yellow Bullhead	IP	6	150.8, 125.0 – 180.0	0.063, 0.033 – 0.154
Yellow Perch	IP	9	231.1, 190.0 – 282.0	0.149, 0.052 – 0.228.
Total (61)		**1361**	**243.5, 70.0 – 650.0**	**0.105, 0.003 – 1.133**

* IP = invertivore/piscivore, O = omnivore, P = piscivore, H = herbivore, I = invertivore

Table FT - 3. Mercury concentration and fish weight for whole small fish (<100 mm total length) composite samples from the EMAP-West study area (2000 – 2002).

Fish Species (Common Name)	Trophic Guild*	No. Fish Samples (Total)	Fish Sample Weight (g)** (Mean, Min – Max)	Hg Conc. (ug/g) (Mean, Min – Max)
Arroyo Chub	I/O	1	482.0, 482.0 – 482.0	0.095, 0.095 – 0.095
Bigmouth Shiner	I/O	3	69.5, 20.50 – 129.0	0.083, 0.022 – 0.120
Black Bullhead	I/O	3	131.6, 27.0 – 209.4	0.52, 0.046 – 0.058
Bluegill	I/O	2	148.8, 42.6 – 254.9	0.073, 0.065 – 0.080
Bridgelip Sucker	I/O	1	217.6, 217.6 – 217.6	0.040, 0.040 – 0.040
Brook Trout	I/O	6	159.2, 13.2 – 536.2	0.040, 0.013 – 0.111
Brown Trout	I/O	6	125.0, 8.3 – 234.7	0.031, 0.014 – 0.068
California Roach	I/O	1	65.8, 65.8 – 65.8	0.152, 0.152 – 0.152
Channel Catfish	I/O	2	104.5, 46.8 – 162.2	0.051, 0.045 – 0.056
Common Carp	I/O	4	252.4, 104.6 – 397.0	0.57, 0.021 – 0.100
Common Shiner	I/O	8	201.9, 30.8 – 370.5	0.074, 0.035 – 0.112
Cheek Chub	I/O	6	192.1, 75.6 – 367.6	0.037, 0.025 – 0.061
Cutthroat Trout	I/O	4	144.7, 17.2 – 265.0	0.048, 0.011 – 0.131
Desert Sucker	I/O	1	114.8, 114.8 – 114.8	0.009, 0.009 – 0.009
Emerald Shiner	I/O	2	123.4, 24.5 – 222.3	0.128, 0.040 – 0.215
Fathead Minnow	I/O	11	81.1, 3.0 – 200.5	0.051, 0.029 – 0.102
Flathead Chub	I/O	10	225.5, 36.0 – 348.0	0.064, 0.040 – 0.114
Golden Shiner	I/O	1	372.0, 372.0 – 372.0	0.082, 0.082 – 0.082
Green Sunfish	I/O	3	250.2, 236.8 – 273.0	0.046, 0.036 – 0.066
Leopard Dace	I/O	1	305.1, 305.0 – 305.1	0.057, 0057 – 0.057
Longfin Dace	I/O	4	119.0, 10.1 – 273.0	0.095, 0.065 – 0.110
Longnose Dace	I/O	11	102.2, 26.0 – 272.8	0.083, 0.031 – 0.153
Longnose Sucker	I/O	1	41.2, 41.2 – 41.2	0.042, 0.042 – 0.042
Mottled Sculpin	I/O	18	230.5, 23.7 – 678.7	0.044, 0.007 – 0.175

Fish Species (Common Name)	Trophic Guild*	No. Fish Samples (Total)	Fish Sample Weight (g)** (Mean, Min – Max)	Hg Conc. (ug/g) (Mean, Min – Max)
Mountain Sucker	I/O	1	118.5, 118.5 – 118.5	0.139, 0.139 – 0.139
Mountain Whitefish	I/O	2	178.5, 48.3 – 308.7	0.034, 0.007 – 0.061
Northern Pike	I/O	1	2.8, 2.8 – 2.8	0.035, 0.035 – 0.035
Pacific Lamprey	I/O	1	387.2, 387.2 – 387.2	0.057, 0.057 – 0.057
Paiute Sculpin	I/O	1	153.3, 15.30 – 153.2	0.020, 0.020 – 0.020
Plains Killfish	I/O	2	434.4, 394.9 – 473.9	0.041, 0.038 – 0.044
Plains Minnow	I/O	1	270.5, 270.5 – 270.5	0.008, 0.008 – 0.008
Rainbow Trout	I/O	8	111.1, 10.1 – 308.7	0.037, 0.008 – 0.068
Red Shiner	I/O	6	144.0, 62.5 – 257.7	0.089, 0.034 – 0.151
Redside Shiner	I/O	18	180.4, 20.9 – 350.4	0.119, 0.042 – 0.367
Sacramento Sucker	I/O	1	223.5, 223.5 – 223.5	0.031, 0.031 – 0.031
Sand Shiner	I/O	6	133.3, 17.7 – 395.2	0.049, 0.025 – 0.089
Shorthead Redhorse	I/O	1	8.0, 8.0 – 8.0	0.062, 0.062 – 0.062
Shorthead Sculpin	I/O	1	25.3, 25.3 – 25.3	0.020, 0.020 – 0.020
Silver Chub	I/O	1	60.8, 60.8 – 60.8	0.142, 0.142 – 0.142
Slimy Sculpin	I/O	1	25.6, 25.6 – 25.6	0.032, 0.032 – 0.032
Smallmouth Bass	I/O	5	225.2, 64.2 – 575.6	0.050, 0.033 – 0.078
Sonora Sucker	I/O	1	25.4, 25.4 – 25.4	0.046, 0.046 – 0.046
Speckled Dace	I/O	14	211.4, 4.3 – 677.4	0.123, 0.022 – 0.302
Spotfin Shiner	I/O	1	169.0, 169.0 – 169.0	0.087, 0.087 – 0.087
Stonecat	I/O	2	22.2, 11.9 – 32.4	0.064, 0.063 – 0.065
Suckermouth Minnow	I/O	1	69.20, 69.2 – 69.2	0.105, 0.105 – 0.105
Threespine Stickleback	I/O	1	28.5, 28.5 – 28.5	0.038, 0.038 – 0.038
Torrent Scuplin	I/O	1	53.2, 53.2 – 53.2	0.019, 0.019 – 0.019
Tui Chub	I/O	1	250.2, 250.2 – 250.20	0.039, 0.039 – 0.039
Unknown Campostoma	I/O	2	372.1, 355.9 – 388.2	0.037, 0.028 – 0.045

Fish Species (Common Name)	Trophic Guild*	No. Fish Samples (Total)	Fish Sample Weight (g)** (Mean, Min – Max)	Hg Conc. (ug/g) (Mean, Min – Max)
Unknown Minnow	I/O	2	292.4, 57.6 – 527.2	0.069, 0.039 – 0.098
Unknown Sculpin	I/O	2	267.7, 197.0 – 338.4	0.063, 0.013 – 0.112
Utah Sucker	I/O	1	223.7, 223.7 – 223.7	0.033, 0.033 – 0.033
Western Mosquitofish	I/O	1	31.2, 31.2 – 31.2	0.059, 0.059 – 0.059
Western Silvery Minnow	I/O	2	139.4, 127.4 – 151.3	0.031, 0.015 – 0.047
White Sucker	I/O	9	119.3, 17.6 – 218.4	0.069, 0.029 – 0.115
Wood River Sculpin	I/O	1	4.7, 4.7 – 4.7	0.013, 0.013 - 0.013
Yellow Perch	I/O	1	171.5, 171.5 – 171.5	0.079, 0.079 – 0.079
Total		**210**	**167.9, 2.8 – 678.7**	**0.067, 0.007 – 0.367**

* Because of their small size, all of these fish taxa are considered invertivores/omnivores

** Composite sample weight shown only to indicate sample size variance

Table FT - 4. Lead, Cadmium, and Zinc concentrations in large, whole fish (>120 mm total length) from the EMAP-West study area (2000 – 2001).

Fish Species Common Name	Trophic Guild	No. Fish (Total)	Fish Length (mm) (Mean, Min–Max)	Pb Conc. (ug/g) (Mean, Min–Max)	Cd Conc. (ug/g) (Mean, Min–Max)	Zn Conc. (ug/g) (Mean, Min–Max)
Apache Rainbow Trout	IP	5	160.0, 120.0–200.0	0.081, 0.001–0.306	0.047, 0.028–0.104	56.035, 15.640–174.824
Black Bullhead	IP	20	189.6, 125.0–260.0	0.099, 0.018–0.752	0.024, 0.001–0.073	17.561, 7.278–25.500
Bluegill	IP	2	110.0, 90.0–130.0	0.026, 0.009–0.043	0.005, 0.000,–0.010	10.532, 2.168–18.896
Brook Trout	IP	70	190.8, 110.0–290.0	0.060, 0.001–0.423	0.037, 0.004–0.202	21.800, 7.863–40.972
Brown Bullhead	IP	8	222.7, 140.0–270.0	0.046, 0.023–0.093	0.017, 0.004–0.039	20.219, 12.357–30.047
Brown Trout	IP	78	229.8, 119.0–460.0	0.033, 0.001–0.456	0.016, 0.001–0.091	29.640, 6.152–52.649
Channel Catfish	IP	21	358.9, 200.0–595.0	0.045, 0.001–0.148	0.028, 0.005–0.145	15.974, 11.982–24.648
Common Carp	O	8	335.3, 220.0–620.0	0.041, 0.001–0.117	0.041, 0.009–0.164	38.175, 14.083–72.396
Creek Chub	O	14	175.2, 123.0–230.0	0.019, 0.001–0.061	0.019, .0.003 –0.050	17.461, 9.934–25.453
Cutthroat Trout	IP	43	187.8, 120.0–300.0	0.038, 0.001–0.464	0.015, 0.002–0.050	21.591, 13.315–41.422
Desert Sucker	H	17	163.3, 120.0–270.00	0.120, 0.038–0.282	0.016, 0.006–0.057	22.252, 11.343–39.175
Flathead Catfish	P	3	320.0, 280.0–380.0	0.242, 0.037 – 1.000	0.010, 0.009–0.010	12.869, 11.764–13.902
Flathead Chub	I	1	120.0, 120.0–120.0	0.037, 0.050–0.050	0.020, 0.020–0.022	20.093, 20.093–20.093
Freshwater Drum	IP	5	347.5, 250.0–440.00	0.067, 0.038–0.130	0.018, 0.008–0.025	10.499, 7.200–12.473
Golden Shiner	O	3	111.7, 107.0–118.0	0.001, 0.001–0.001	0.009, 0.008–0.010	32.518, 30.609–36.051
Goldeye	IP	15	321.3, 190.0–400.0	0.015, 0.001–0.048	0.027, 0.010–0.066	17.852, 13.673–24.928

Fish Species Common Name	Trophic Guild	No. Fish (Total)	Fish Length (mm) (Mean, Min–Max)	Pb Conc. (ug/g) (Mean, Min–Max)	Cd Conc. (ug/g) (Mean, Min–Max)	Zn Conc. (ug/g) (Mean, Min–Max)
Green Sunfish	IP	12	132.9, 17.0–150.0	0.030, 0.001–0.108	0.007, 0.004–0.011	18.226, 10.724–22.645
Largemouth Bass	P	11	267.3, 138.0–480.0	0.020, 0.001,–0.049	0.008, 0.000–0.018	15.701, 7.330–22.321
Longnose Sucker	I	4	286.3, 120.0–485.0	0.050, 0.024–0.096	0.048, 0.021–0.095	14.172, 11.203–19.044
Mottled Sculpin	I	5	131.6, 115.0–143.0	0.262, 0.030–0.806	0.030, 0.120–0.061	14.436, 13.004–16.765
Mountain Sucker	H	16	169.8, 120.0–230.0	0.082, 0.015–0.185	0.005, 0.000–0.019	19.310, 14.159–27.790
Mountain Whitefish	I	25	238.5, 137.0–370.0	0.045, 0.001–0.180	0.010, 0.001–0.030	18.587, 11.064–29.972
Northern Pike	P	24	338.9, 122.0–540.0	0.035, 0.001–0.256	0.020, 0.020–0.020	34.792, 13.601–60.323
Northern Pikeminnow	P	12	294.9, 159.0–480.0	0.008, 0.001–0.048	0.009, 0.003–0.015	18.993, 12.974–31.375
Peamouth	I	1	260.0, 260.0–260.0	0.005, 0.005–0.005	0.004, 0.004–0.004	18.466, 18.466–18.466
Rainbow Trout	IP	147	188.9, 100.0–453.0	0.042, 0.001–0.959	0.025, 0.000–0.405	24.458, 10.585–41.590
Rock Bass	IP	4	212.5, 180.0–250.0	0.042, 0.011–0.075	0.038, 0.023–0.050	26.686, 22.340–31.303
Roundtail Chub	O	7	312.7, 240.0–426.0	0.024, 0.007–0.054	0.011, 0.050–0.022	20.049, 15.041–25.246
Sauger	P	4	328.2, 240.0–455.0	0.092, 0.001–0.295	0.008, 0.001–0.013	16.934, 10.342–34.585
Shorthead Redhorse	I	10	244.0, 18.0–342.0	0.028, 0.001–0.062	0.033, 0.007–0.113	13.375, 9.551–19.267
Shortnose Gar	P	6	545.7, 430.0–650.0	0.051, 0.022–0.108	0.035, 0.006–0.094	23.065, 14.191–33.334
Smallmouth Bass	P	16	254.0, 139.0–360.0	0.037, 0.001–0.190	0.009, 0.002–0.024	11.716, 8.212–20.075
Sonora Sucker	I	2	130.0, 130.0–130.0	0.073, 0.052–0.095	0.035, 0.027–0.044	16.996, 14.901–19.092
Speckled Dace	O	2	82.5, 76.0–89.0	0.045, 0.039–0.051	0.033, 0.028–0.039	36.346, 34.346–38.345

Fish Species Common Name	Trophic Guild	No. Fish (Total)	Fish Length (mm) (Mean, Min–Max)	Pb Conc. (ug/g) (Mean, Min–Max)	Cd Conc. (ug/g) (Mean, Min–Max)	Zn Conc. (ug/g) (Mean, Min–Max)
Spotted Bass	P	1	185.5, 151.0–220.0	0.001, 0.001–0.001	0.059, 0.059–0.059	15.361, 15.361–15.361
Stonecat	IP	4	149.5, 145.0–153.0	0.036, 0.016–0.061	0.029, 0.010–0.055	17.629, 10.292–21.218
Tiger Trout	I	1	177.7, 162.0–203.0	0.138, 0.138–0.138	0.011, 0.011– 0.011	22.920, 22.920–22.920
Umpqua Pikeminnow	P	8	272.1, 152.0–465.0	0.014, 0.008–0.026	0.005, 0.003–0.009	18.440, 11.974–24.658
Unknown Sculpin	I	1	150.0, 150.0–150.0,	0.013, 0.013–0.013	0.003, 0.003–0.003	16.820, 16.820–16.820
Unknown Sucker	O	3	205.0, 155.0–240.0	0.043, 0.010–0.078	0.004, 0.003–0.005	22.458, 15.668–32.647
Utah Sucker	O	5	147.9, 115.0–238.0	0.465, 0.045–1.374	0.016, 0.006–0.025	18.953, 12.419–24.408
Walleye	P	29	346.7, 135.0–500.0	0.039, 0.001–0.292	0.004, 0.000–0.016	11.746, 4.049–36.721
White Bass	P	3	275.0, 265.0–290.0	0.018, 0.011–0.026	0.005, 0.003–0.006	14.342, 13.484–14.967
White Sucker	O	29	260.0, 130.00–420.0	0.048, 0.005–0.197	0.013, 0.002–0.062	14.591, 7.600–26.493
Yellow Bullhead	IP	6	150.8, 125.1–180.00	0.092, 0.033–0.254	0.013, 0.007–0.024	15.516, 13.447–18.932
Yellow Perch	IP	6	219.7, 190.0–280.00	0.017, 0.001–0.027	0.006, 0.003,–0.011	15.161, 12.929–17.800
Total		**718**	**243.0, 24.9–650.0**	**0.050, 0.001–1.374**	**0.007, 0.000–0.405**	**21.758, 2.168–174.824**

Table FT - 5. Lead, Cadmium, and Zinc concentrations in whole small fish (<100 mm total length) composite samples from the EMAP-West study area (2000 – 2001).

Fish Species Common Name	Trophic Guild*	No. Fish Samples (Total)	Fish Sample Weight (g)** (Mean, Min–Max)	Pb Conc. (ug/g) (Mean, Min–Max)	Cd Conc. (ug/g) (Mean, Min–Max)	Zn Conc. (ug/g) (Mean, Min–Max)
Arroyo Chub	I/O	1	482.000, 482.000 –482.000	0.014, 0.014 –0.014	0.150, 0.150 –0.150	35.976, 35.976 –35.976
Bigmouth Shiner	I/O	2	69.533, 20.500 –129.000	0.025, 0.008 –0.043	0.023, 0.018 –0.028	52.452, 50.301 –54.604
Black Bullhead	I/O	1	131.633, 27.000 –209.400	0.138, 0.138 –0.138	0.011, 0.011 –0.011	19.949, 19.949 –19.949
Bluegill	I/O	2	148.750, 42.600 –254.900	0.064, 0.026 –0.102	0.008, 0.000 –0.016	34.967, 33.217 –36.718
Bridgelip Sucker	I/O	1	217.600, 217.600–217.600	0.182, 0.182–0.182	0.032, 0.032–0.032	28.140, 28.140–28.140
Brook Trout	I/O	5	159.233, 13.200–536.200	0.032, 0.009–0.054	0.036, 0.008–0.110	24.029, 19.069–30.917
Brown Trout	I/O	3	125.017, 8.300–234.700	0.023, 0.012–0.029	0.009, 0.005–0.015	40.923, 27.625–49.027
Channel Catfish	I/O	2	104.500, 46.800–162.200	0.056, 0.030–0.082	0.029, 0.025–0.032	14.100, 8.927–19.273
Common Carp	I/O	1	252.350, 104.600–397.000	0.084, 0.084–0.084	0.014, 0.014–0.014	36.042, 36.042–36.042
Common Shiner	I/O	7	201.900, 30.800–370.500	0.049, 0.001–0.199	0.015, 0.002–0.039	37.102, 14.915–52.298
Cheek Chub	I/O	3	192.067, 75.600– 367.600	0.084, 0.048–0.145	0.033, 0.018–0.057	29.782, 23.960–37.975
Cutthroat Trout	I/O	3	144.675, 17.200–265.000	0.020, 0.016–0.023	0.054, 0.006–0.118	26.569, 21.345–33.563
Desert Sucker	I/O	1	114.800, 114.800–114.800	0.156, 0.156–0.156	0.014, 0.014–0.014	30.270, 30.270–30.270
Emerald Shiner	I/O	2	123.400, 24.500–222.300	0.022, 0.021–0.023	0.025, 0.013–0.036	40.064, 29.875–50.253
Fathead Minnow	I/O	5	81.100, 3.000–200.500	0.060, 0.050–0.191	0.020, 0.020–0.020	28.763, 1.035–47.040
Flathead Chub	I/O	5	225.530, 36.000–348.000	0.111, 0.023–0.253	0.030, 0.026–0.033	32.125, 23.595–56.325
Golden Shiner	I/O	1	372.000, 372.000–372.000	0.022, 0.022–0.022	0.017, 0.017–0.017	61.444, 61.444–61.444
Green Sunfish	I/O	2	250.167, 236.800–273.700	0.018, 0.013–0.023	0.007, 0.003–0.012	20.545, 18.847–22.244

Fish Species Common Name	Trophic Guild*	No. Fish Samples (Total)	Fish Sample Weight (g)** (Mean, Min–Max)	Pb Conc. (ug/g) (Mean, Min–Max)	Cd Conc. (ug/g) (Mean, Min–Max)	Zn Conc. (ug/g) (Mean, Min–Max)
Leopard Dace	I/O	1	305.100, 305.100–305.100	0.024, 0.024– 0.024	0.008, 0.008–0.008	52.058, 52.058 –52.058
Longfin Dace	I/O	2	118.950, 10.100– 273.000	0.046, 0.028– 0.064	0.028, 0.020–00.046	32.554, 25.938–39.171
Longnose Dace	I/O	6	102.223, 26.000–272.800	0.047, 0.022–0.077	0.019, 0.005–0.037	40.469, 23.061–50.810
Mottled Sculpin	I/O	8	230.511, 23.700–678.700	0.040, 0.007 –0.167	0.051, 0.004 –0.336	18.299, 12.281 –28.523
Mountain Whitefish	I/O	1	178.475, 48.300 –308.700	0.016, 0.016 –0.016	0.002, 0.002 –0.002	24.353, 24.353 –24.353
Northern Pike	I/O	1	2.800, 2.800 –2.800	0.043, 0.043–0.043	0.001, 0.001 –0.001	1.000, 1.000 –1.000
Paiute Sculpin	I/O	1	153.300, 153.300 –153.300	0.097, 0.097 –0.097	0.025, 0.025 –0.025	14.948, 14.948 –14.948
Plains Killifish	I/O	1	434.400, 394.900 –473.900	0.062, 0.062 –0.062	0.009, 0.009 –0.009	30.534, 30.534 –30.534
Rainbow Trout	I/O	7	111.114, 10.100 –308.700	0.040, 0.002–0.140	0.017, 0.006 –0.030	24.559, 11.946 –34.825
Red Shiner	I/O	2	144.008, 62.500 –257.700	0.031, 0.0527–0.034	0.018, 0.015 –0.022	51.427, 40.998–61.856
Redside Shiner	I/O	12	180.406, 20.900–350.400	0.055, 0.015 –0.127	0.0323 0.008 –0.142	43.876, 20.856 –59.227
Sacramento Sucker	I/O	1	223.500, 223.50 –223.500	0.003, 0.003 –0.003	0.006, 0.006 –0.006	42.813, 42.813 –42.813
Sand Shiner	I/O	3	133.300, 17.700 –395.200	0.049, 0.023 –0.079	0.011, 0.006 –0.017	45.841, 38.132 –56.901
Shorthead Sculpin	I/O	1	25.300, 25.300 –25.300	0.006, 0.006 –0.006	0.016, 0.016 –0.016	11.851, 11.851 –11.851
Silver Chub	I/O	1	60.800, 60.800 –60.800	0.032, 0.032 –0.032	0.101, 0.101 –0.101	23.068, 23.068 –23.068
Smallmouth Bass	I/O	2	225.200, 64.200 –575.600	0.010, 0.001 –0.019	0.016, 0.007 –0.026	17.741, 13.832 –21.650
Sonora Sucker	I/O	1	25.400, 25.400–25.400	0.011, 0.011 –0.011	0.035, 0.035 –0.035	17.327, 17.327 –17.327
Speckled Dace	I/O	6	211.414, 4.300 –677.400	0.056, 0.028 –0.091	0.020, 0.009 –0.041	50.940, 26.649 –63.190
Spotfin Shiner	I/O	1	169.000, 169.000–169.000	0.029, 0.029 –0.029	0.008, 0.008 –0.008	40.091, 40.091 –40.091

Fish Species Common Name	Trophic Guild*	No. Fish Samples (Total)	Fish Sample Weight (g)** (Mean, Min–Max)	Pb Conc. (ug/g) (Mean, Min–Max)	Cd Conc. (ug/g) (Mean, Min–Max)	Zn Conc. (ug/g) (Mean, Min–Max)
Stonecat	I/O	2	22.150, 11.900–32.400	0.030, 0.004 –0.057	0.007, 0.006 –0.009	16.503, 11.910 –21.095
Suckermouth Minnow	I/O	1	69.200. 69.200 –69.200	0.062, 0.062 –0.062	0.011, 0.011 –0.011	31.977, 31.977 –31.977
Threespine Stickleback	I/O	1	28.500, 28.500–28.500	0.010, 0.010 –0.010	0.012, 0.012 –0.012	34.292, 34.292 –34.292
Torrent Sculpin	I/O	1	53.200, 53.200 –53.200	0.014, 0.014 –0.014	`0.002, 0.002 –0.002	9.165, 9.165 –9.165
Unknown Sculpin	I/O	2	267.700, 197.000 –338.400	0.022, 0.001–0.042	0.006, 0.003–0.009	17.108, 17.060–17.156
Utah Sucker	I/O	1	223.700, 223.700–223.700	0.061, 0.061–0.061	0.006, 0.006–0.006	28.822, 28.822–28.822
Western Silvery Minnow	I/O	2	139.350, 127.400 - 151.300	0.260, 0.063–0.457	0.022, 0.009–0.035	38.071, 36.688– 39.455
White Sucker	I/O	5	119.322, 17.600–218.400	0.052, 0.031–0.066	0.015, 0.004–0.025	19.947, 18.434–23.613
Wood River Sculpin	I/O	1	4.700, 4.700–4.700	0.042, 0.042–0.042	0.052, 0.052–0.052	20.022, 20.002–20.002
Total		**121**	**168.553, 2.800–678.700**	**0.052, 0.001 -0.457**	**0.024, 0.000–0.336**	**31.999, 1.000–63.190**

* because of their small size, all of these fish taxa are considered either invertivores or omnivores
** Composite sample weight shown only to indicate sample size variance

Table FT- 6. Number of fish tissue sites available for estimating stream condition. Mean metal concentrations of individual (BF) or composite (SF) fish samples from each site and their respective weighting factors comprised data for Cumulative Distribution Function constructs

Subpopulation	Mercury Analyses			Cd, Pb and Zn Analyses		
	Piscivores	Non-piscivores	Small Fish	Piscivores	Non-piscivores	Small Fish
West-wide	57	343	205	31	198	119
Mountains (MT)	17	172	77	9	108	46
MT-NROCK	7	36	28	3	23	19
MT-PNW	8	71	22	4	42	11
MT-SROCK	0	35	9	0	21	4
MT-SWEST	2	30	18	2	22	12
Plains (PL)	33	97	84	20	49	49
PL-NCULT	27	42	34	17	24	23
PL-RANGE	6	55	50	3	25	26
Xeric (XE)	7	74	44	2	41	24
XE-CALIF	1	11	5	1	5	4
XE-EPLAT	2	32	25	0	21	13
XE-NORTH	2	11	6	1	5	3
XE-SOUTH	2	20	8	0	10	4

Figures

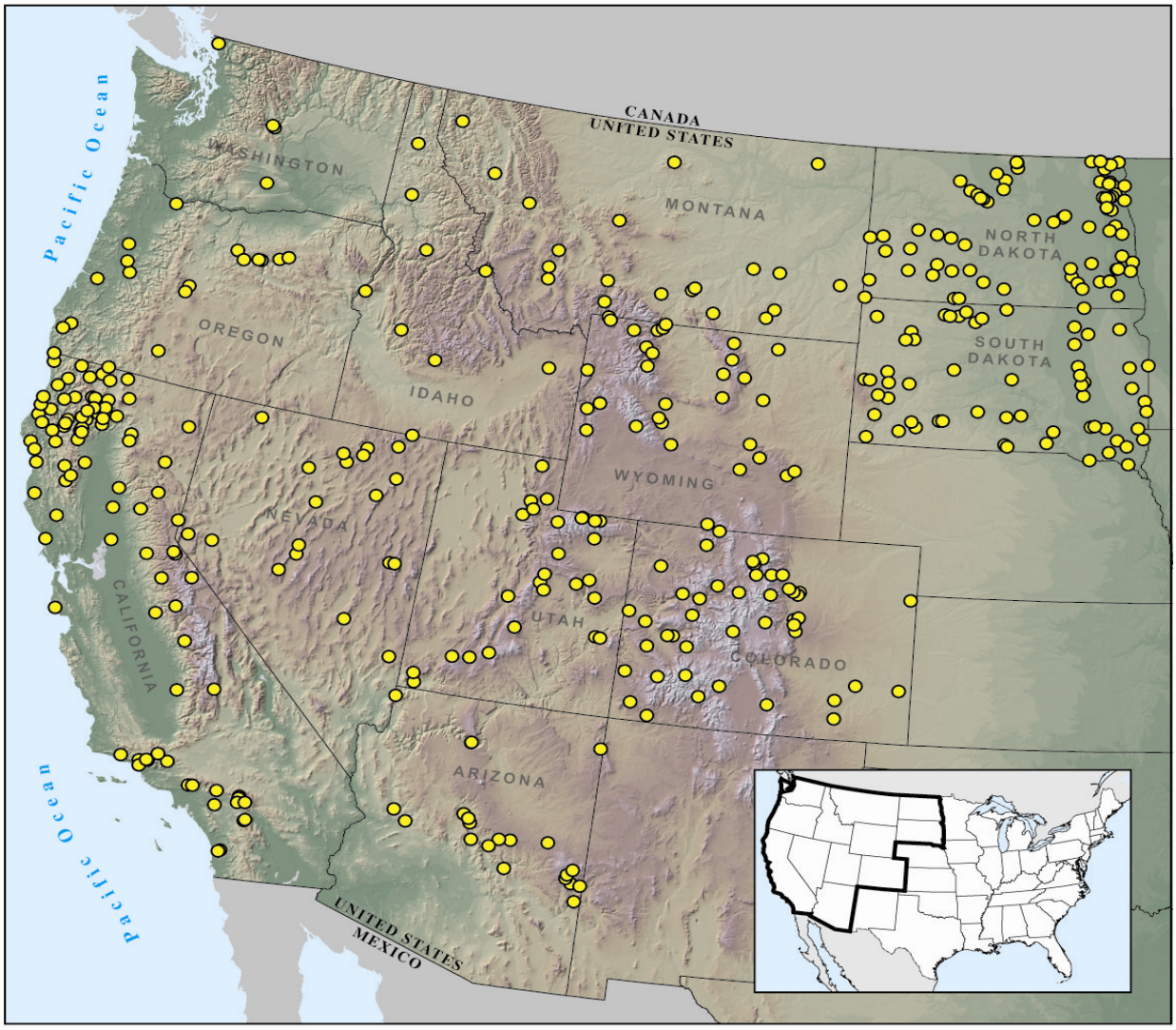


Figure FT-1. Location of 357 probability sites sampled for fish tissue contaminants in EMAP-West study area (2000 – 2002).

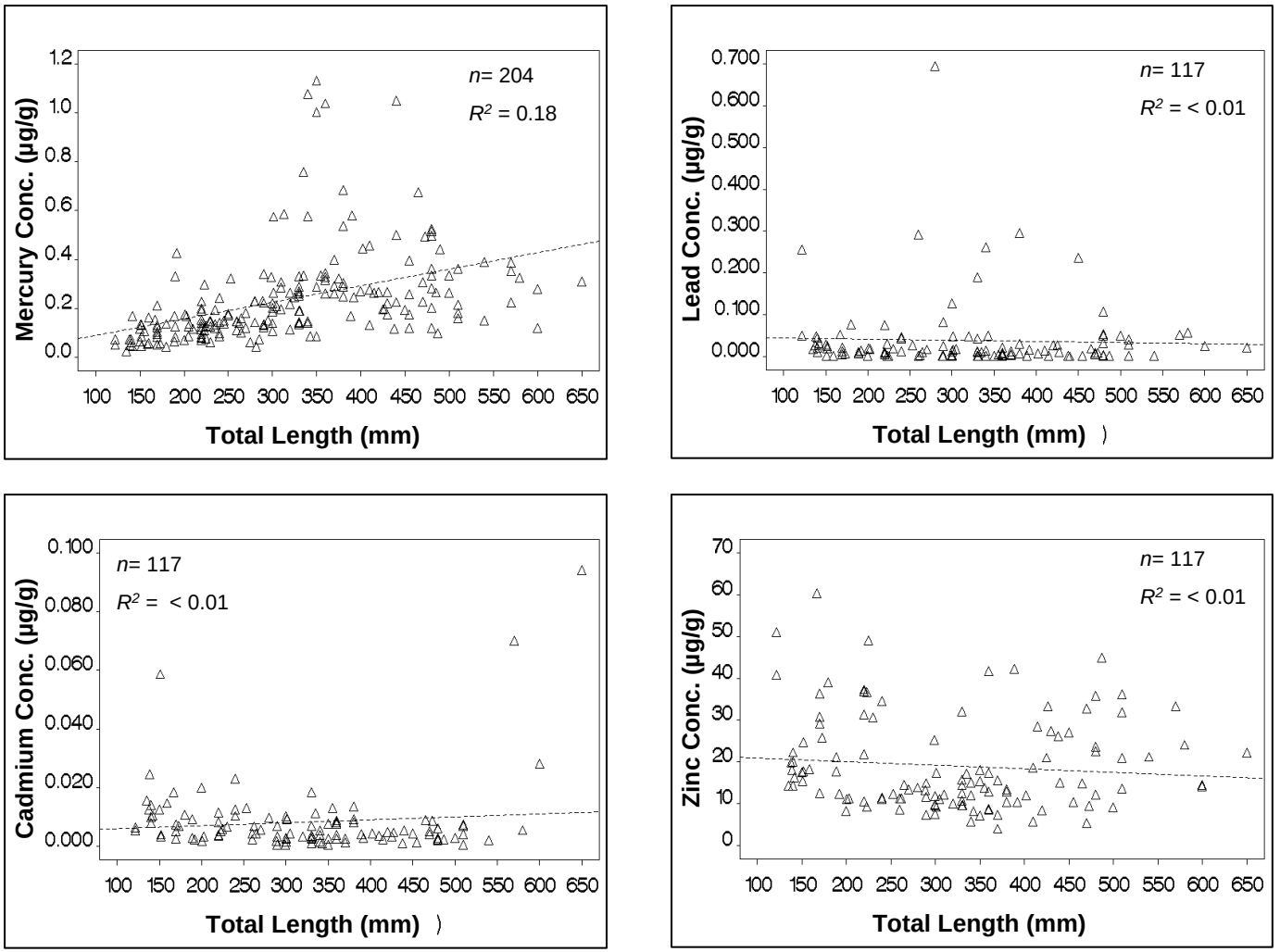


Figure FT-2. Relationships between contaminant concentrations and fish length (values for individual fish) for Mercury, Lead, Cadmium and Zinc in Piscivorous fish throughout EMAP-West study area.

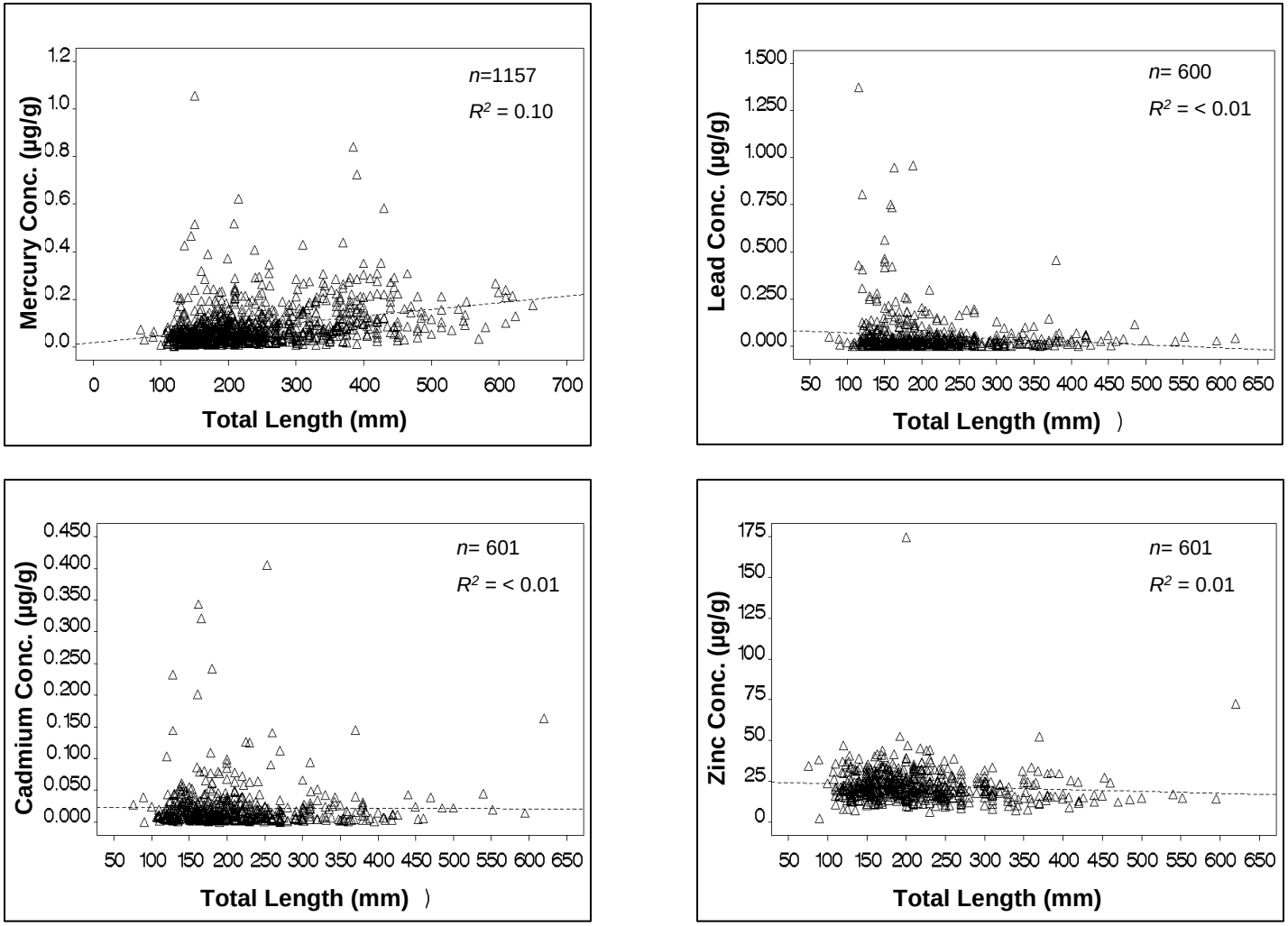


Figure FT-3. Relationships between contaminant concentrations and fish length (values for individual fish) for Mercury, Lead, Cadmium and Zinc in Non-Piscivorous fish throughout EMAP-West study area.

Presentation of Results

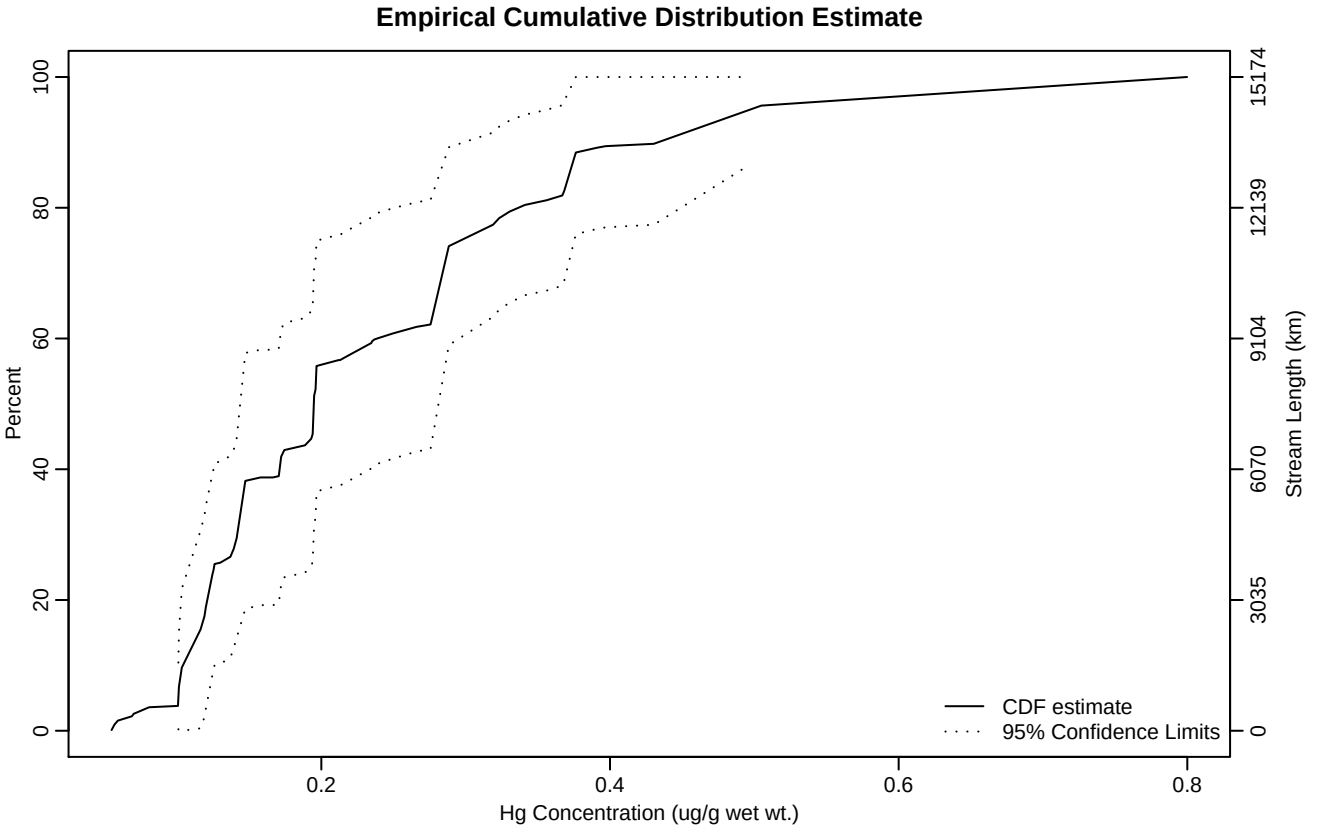
The following pages present empirical cumulative distribution (CDF) plots for mercury, lead, cadmium and zinc in large fish (piscivores and non-piscivores) and small fish (mixture of invertivores and omnivores). The distributions for each variable are presented West-wide, for each of the three climatic/topographic regions, and for 10 aggregate ecoregions (see Figures 1 and DE-6 for the locations of ecological regions), along with a summary of each distribution's statistical parameters. For an explanation of how to interpret CDFs, please see the section "How to Use this Report" earlier.

Because of the complexity in the way fish tissue contaminant results are reported (multiple variables and 3 classes of fish taxa), the numbering and naming conventions used in this report may be confusing. Table FT-7 lists the variables and limitations associated with fish tissue contaminant CDFs.

Table FT-7. Contaminants, fish classes, figure numbers, and explanations for reporting units that apply to all of the following fish fissue CDFs.

Contaminant	Fish Class	Figure Numbers	Naming Code Used in CDFs	Comments
Mercury	Piscivores	FT Hg P-1..4	Hg_Pisc_ug.g	Sample sizes too small for reporting in 10 aggregate ecoregions
	Non-Piscivores	FT Hg NP-1..14	Hg_NonPisc_ug.g	Reported at 3 geographic scales
	Small Fish	FT Hg S-1..14	Hg_Small_ug.g	Reported at 3 geographic scales
Metals (Pb, Cd, Zn)	Piscivores	FT Mtl P-1..9	Pb_Pisc_ug.g Cd_Pisc_ug.g Zn_Pisc_ug.g	Sample sizes too small for reporting in 10 aggregate ecoregions, or for Xeric region
	Non-Piscivores	FT Mtl P-1..42	Pb_NonPisc_ug.g Cd_NonPisc_ug.g Zn_NonPisc_ug.g	Reported at 3 geographic scales
	Small Fish	FT Mtl S-1..42	Pb_Small_ug.g Cd_Small_ug.g Zn_Small_ug.g	Reported at 3 geographic scales

Figure FT Hg P−1 Indicator: Hg_Piscivore Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.10	0.06	0.10
10Pct	0.10	0.06	0.12
25Pct	0.13	0.10	0.17
50Pct	0.19	0.14	0.29
75Pct	0.30	0.23	0.44
90Pct	0.43	0.32	0.80
95Pct	0.50	0.37	0.80
Mean	0.25	0.19	0.31
Std Dev	0.13	0.09	0.18

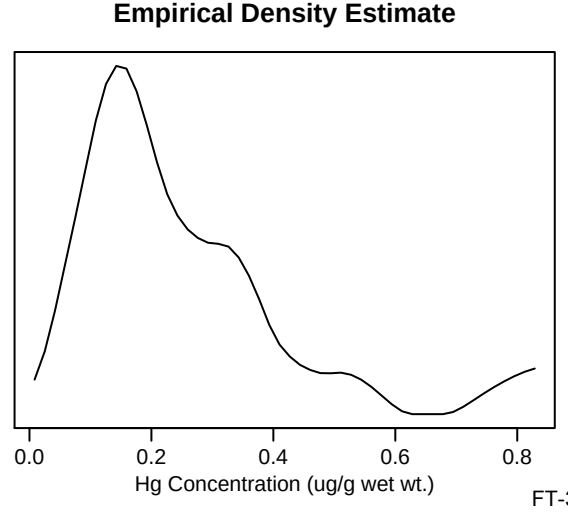
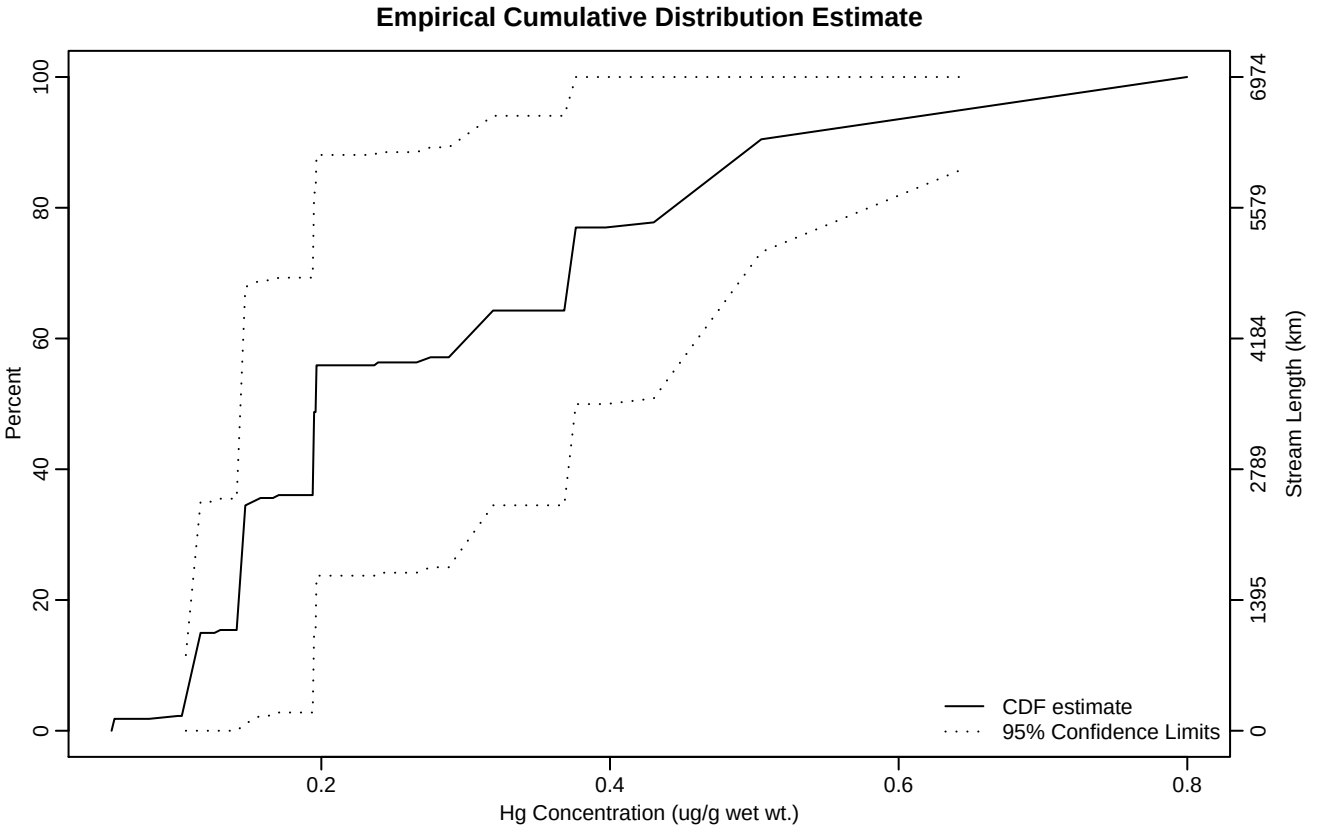


Figure FT Hg P−2 Indicator: Hg_Piscivore Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.11	0.06	0.11
10Pct	0.11	0.11	0.12
25Pct	0.14	0.11	0.19
50Pct	0.20	0.14	0.46
75Pct	0.38	0.19	0.80
90Pct	0.50	0.32	0.80
95Pct	0.65	0.43	0.80
Mean	0.30	0.17	0.43
Std Dev	0.20	0.11	0.29

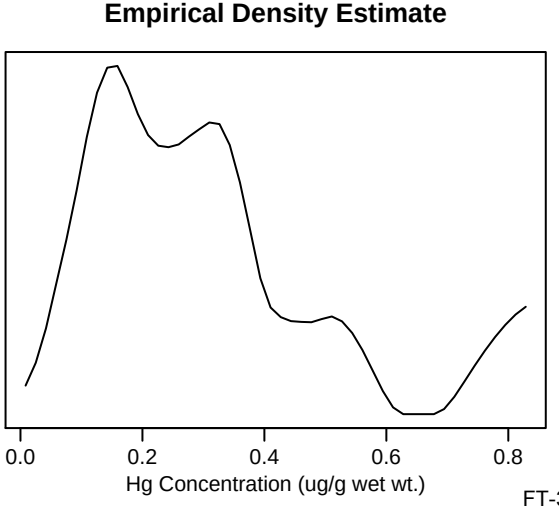
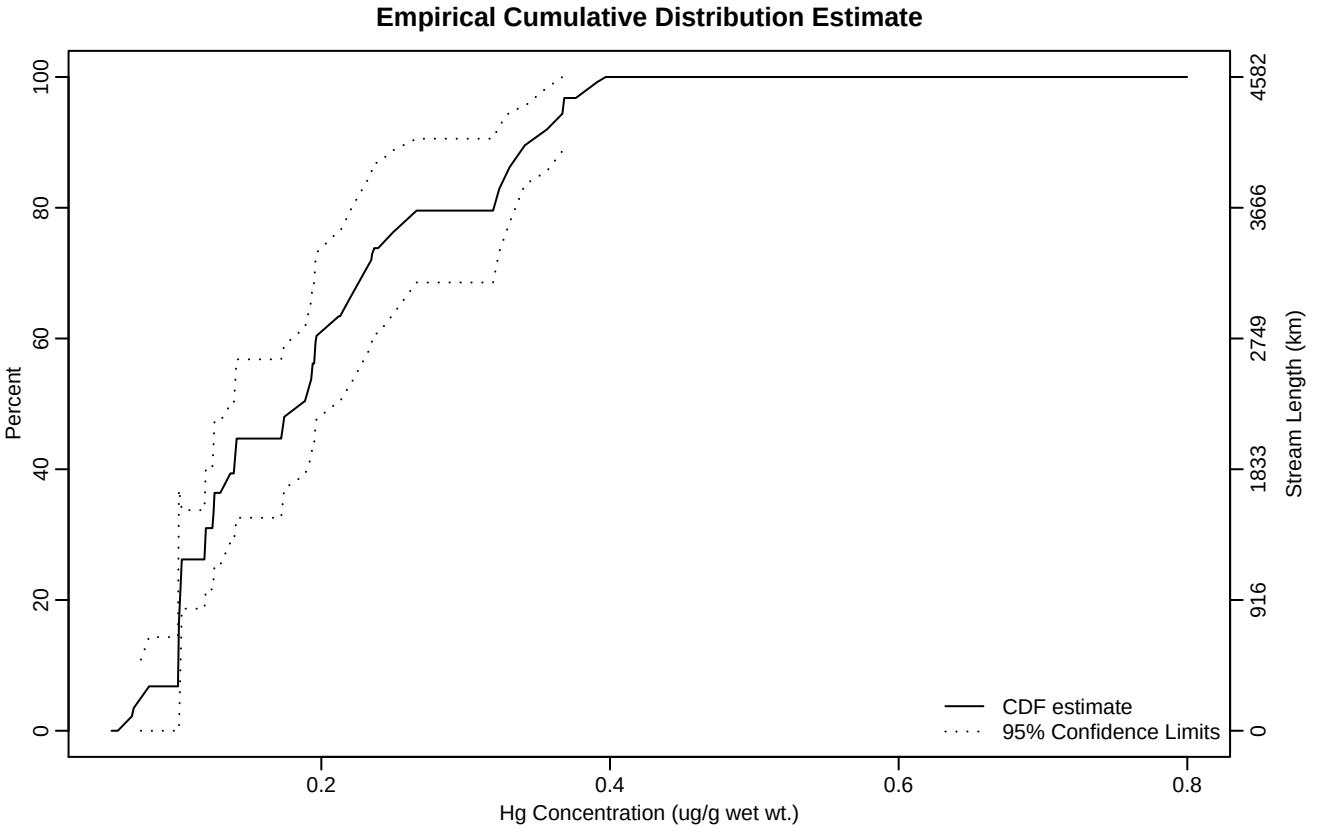


Figure FT Hg P−3 Indicator: Hg_Piscivore Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.07	0.06	0.10
10Pct	0.10	0.07	0.10
25Pct	0.10	0.07	0.17
50Pct	0.19	0.14	0.20
75Pct	0.24	0.20	0.34
90Pct	0.34	0.33	0.37
95Pct	0.37	0.34	0.40
Mean	0.20	0.17	0.22
Std Dev	0.07	0.06	0.08

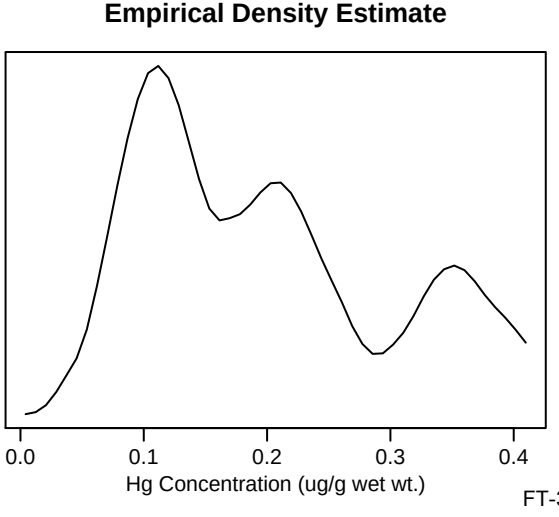
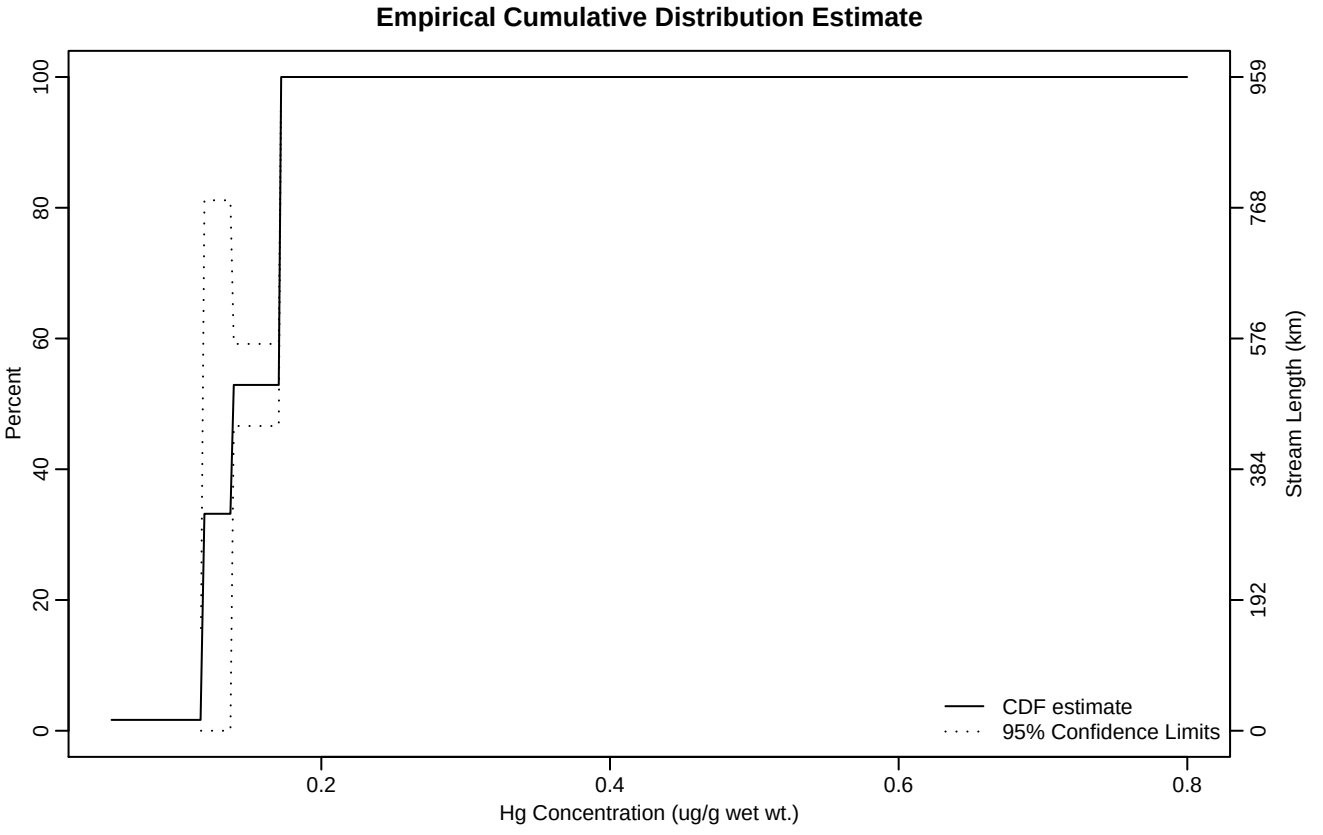


Figure FT Hg P−4 Indicator: Hg_Piscivore Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.12	0.05	0.12
10Pct	0.12	0.05	0.12
25Pct	0.12	0.05	0.14
50Pct	0.14	0.05	0.17
75Pct	0.17	0.12	0.17
90Pct	0.17	0.12	0.17
95Pct	0.17	0.12	0.17
Mean	0.15	0.13	0.16
Std Dev	0.02	0	0.03

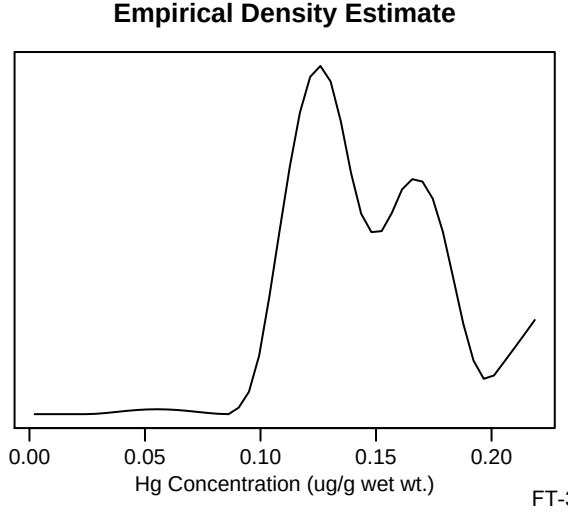
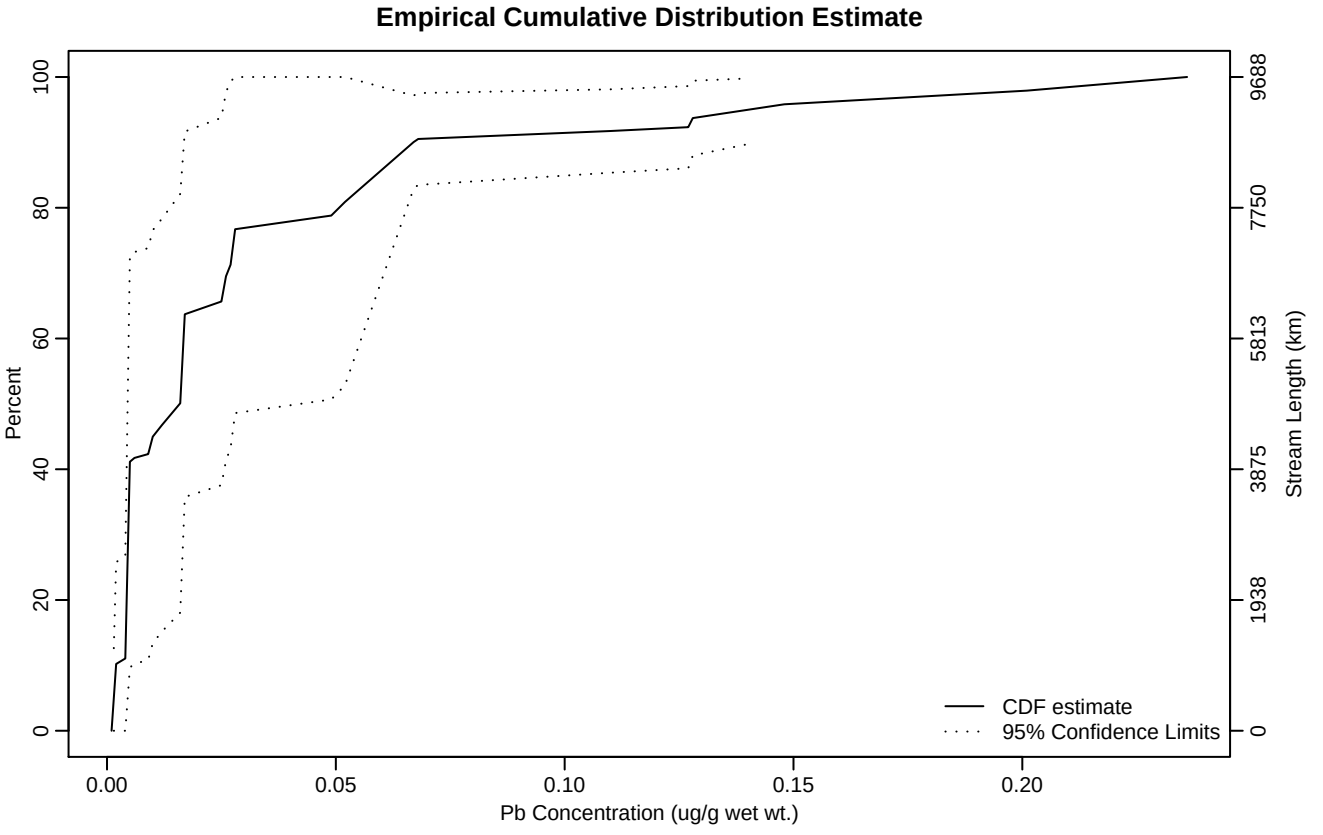


Figure FT Mtl P−1 Indicator: Pb_Piscivore Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.02	0	0.07
75Pct	0.03	0.01	
90Pct	0.07	0.03	
95Pct	0.14	0.07	
Mean	0.03	0.01	0.05
Std Dev	0.03	0.02	0.05

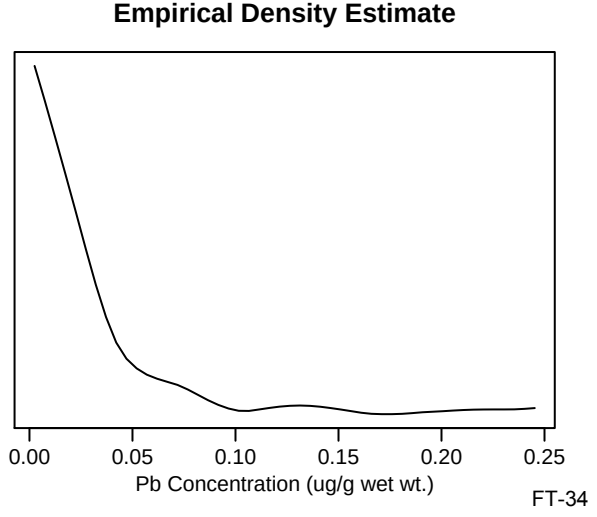
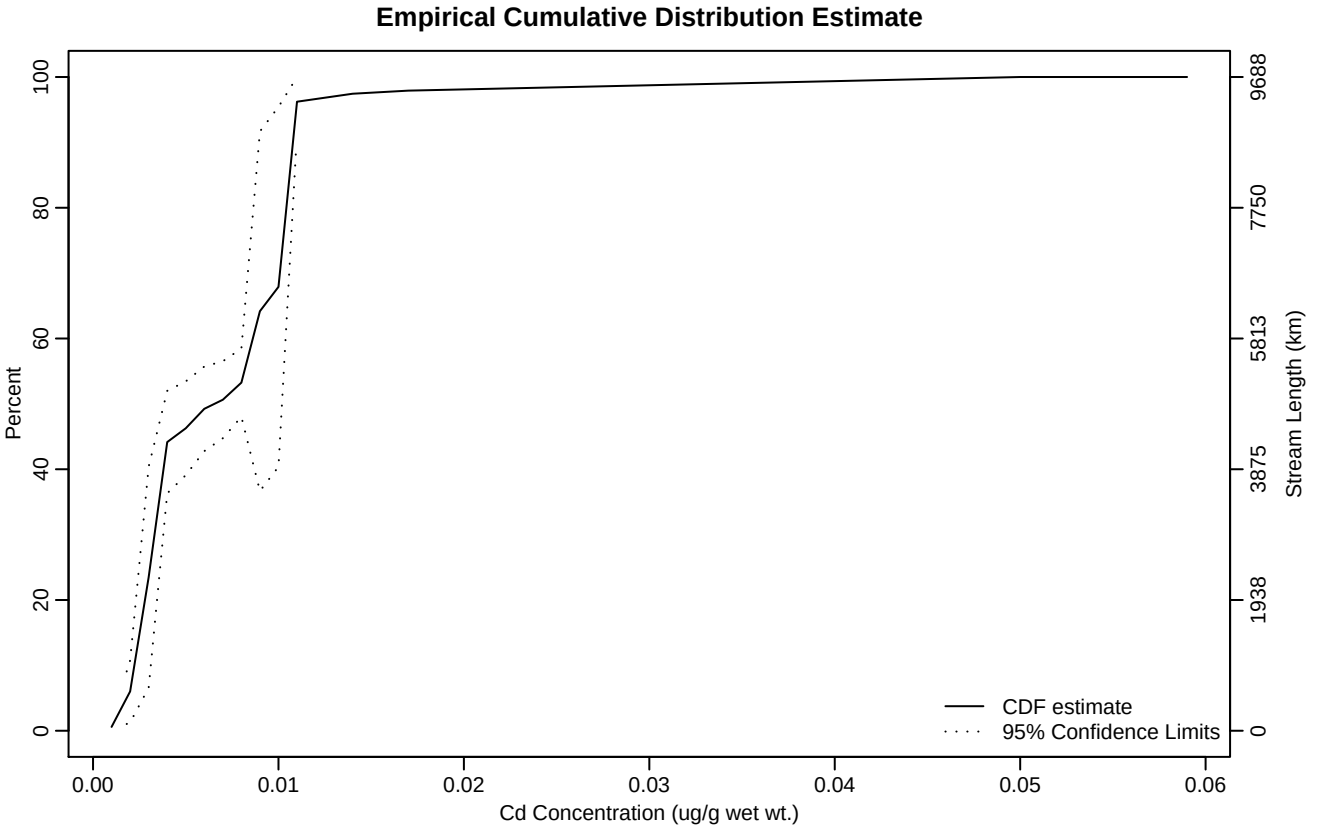


Figure FT Mtl P−2 Indicator: Cd_Piscivore Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.01	0	0.01
75Pct	0.01	0	
90Pct	0.01	0	
95Pct	0.01	0	
Mean	0.01	0.01	0.01
Std Dev	0	0	0.01

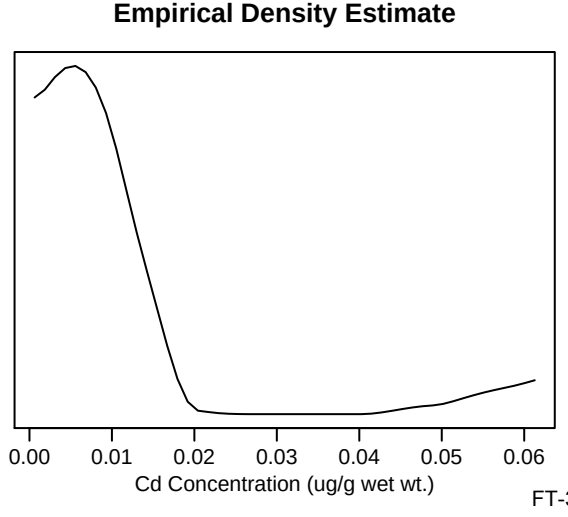
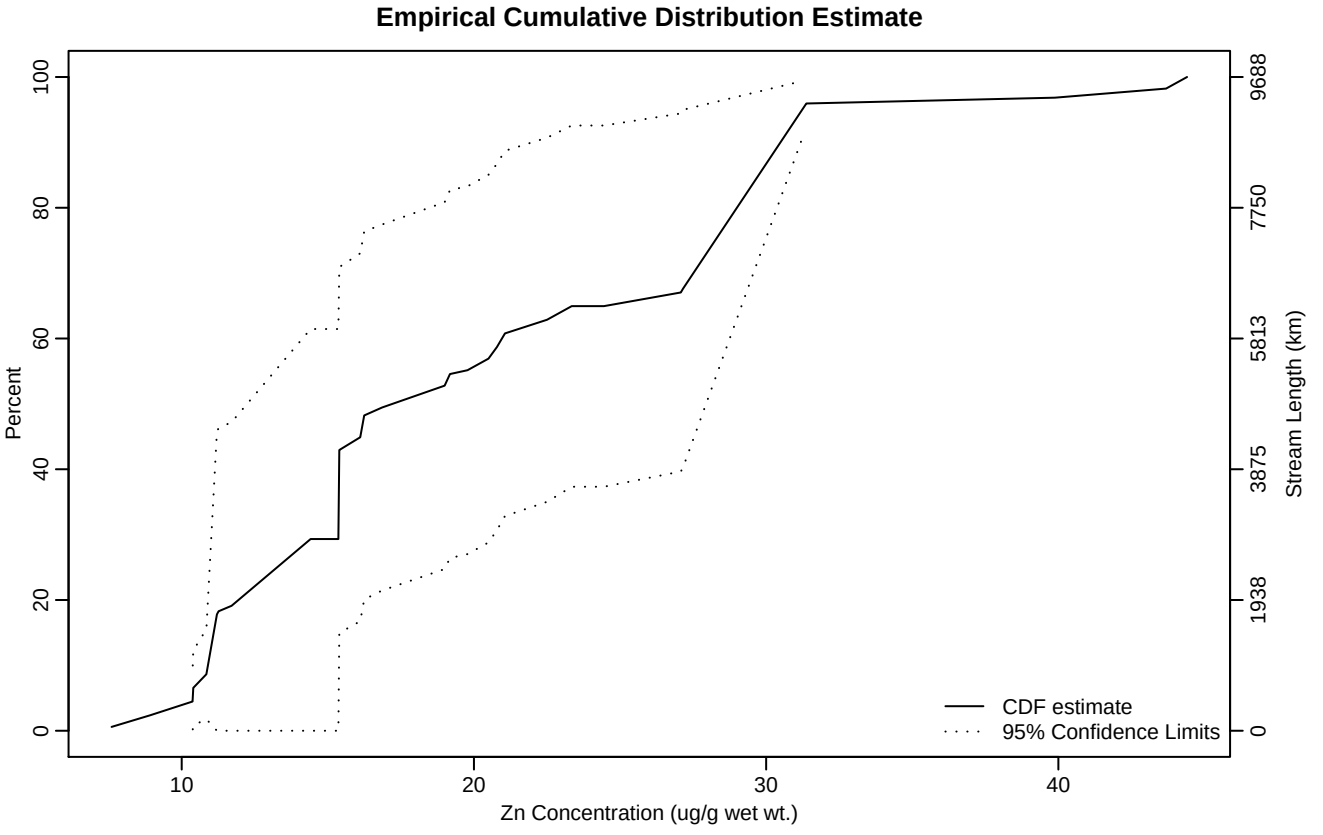


Figure FT Mtl P−3 Indicator: Zn_Piscivore Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.38	7.60	10.90
10Pct	10.90	8.66	11.23
25Pct	13.27	7.60	19.12
50Pct	17.21	10.94	30.34
75Pct	28.25	14.16	
90Pct	30.49	15.38	
95Pct	31.23	15.39	
Mean	21.25	15.62	26.88
Std Dev	6.71	3.31	10.12

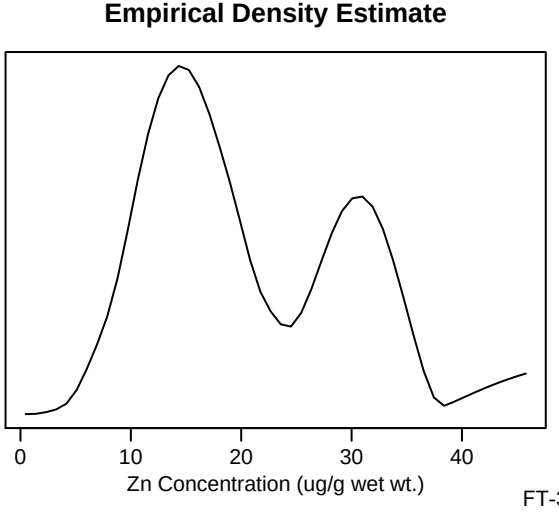
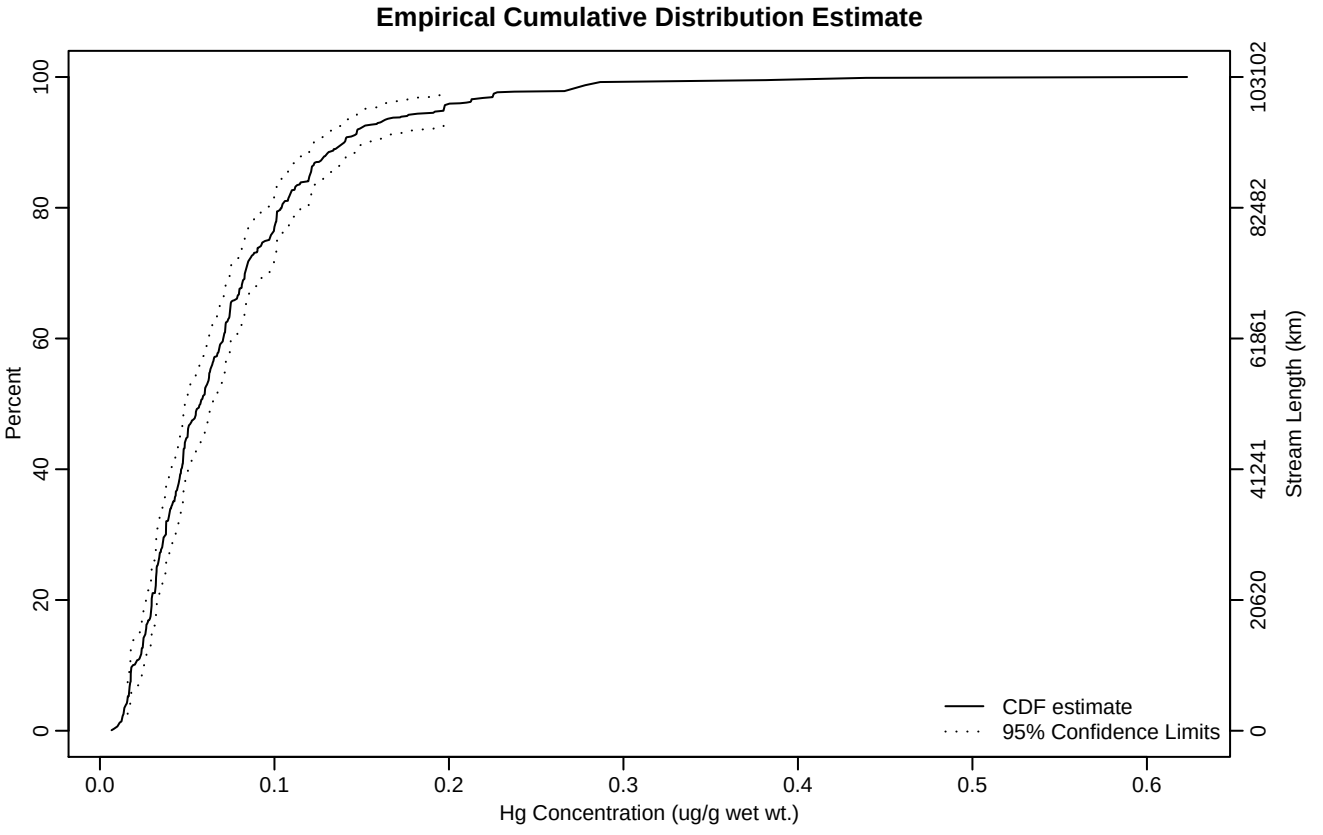


Figure FT Hg NP−1 Indicator: Hg_NonPiscivore Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.02
10Pct	0.02	0.02	0.02
25Pct	0.03	0.03	0.04
50Pct	0.06	0.05	0.06
75Pct	0.10	0.08	0.10
90Pct	0.14	0.13	0.16
95Pct	0.20	0.15	0.23
Mean	0.07	0.07	0.08
Std Dev	0.05	0.05	0.06

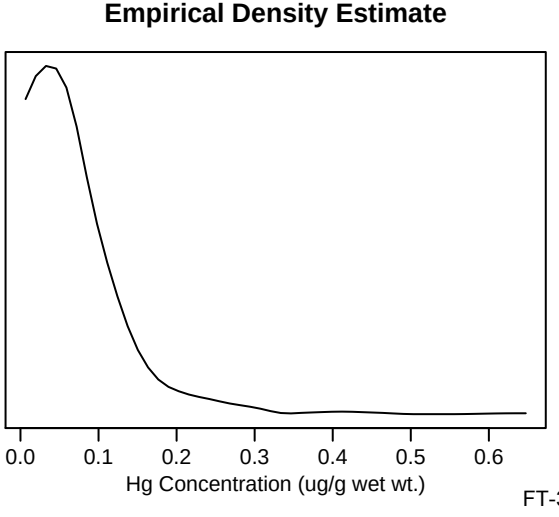
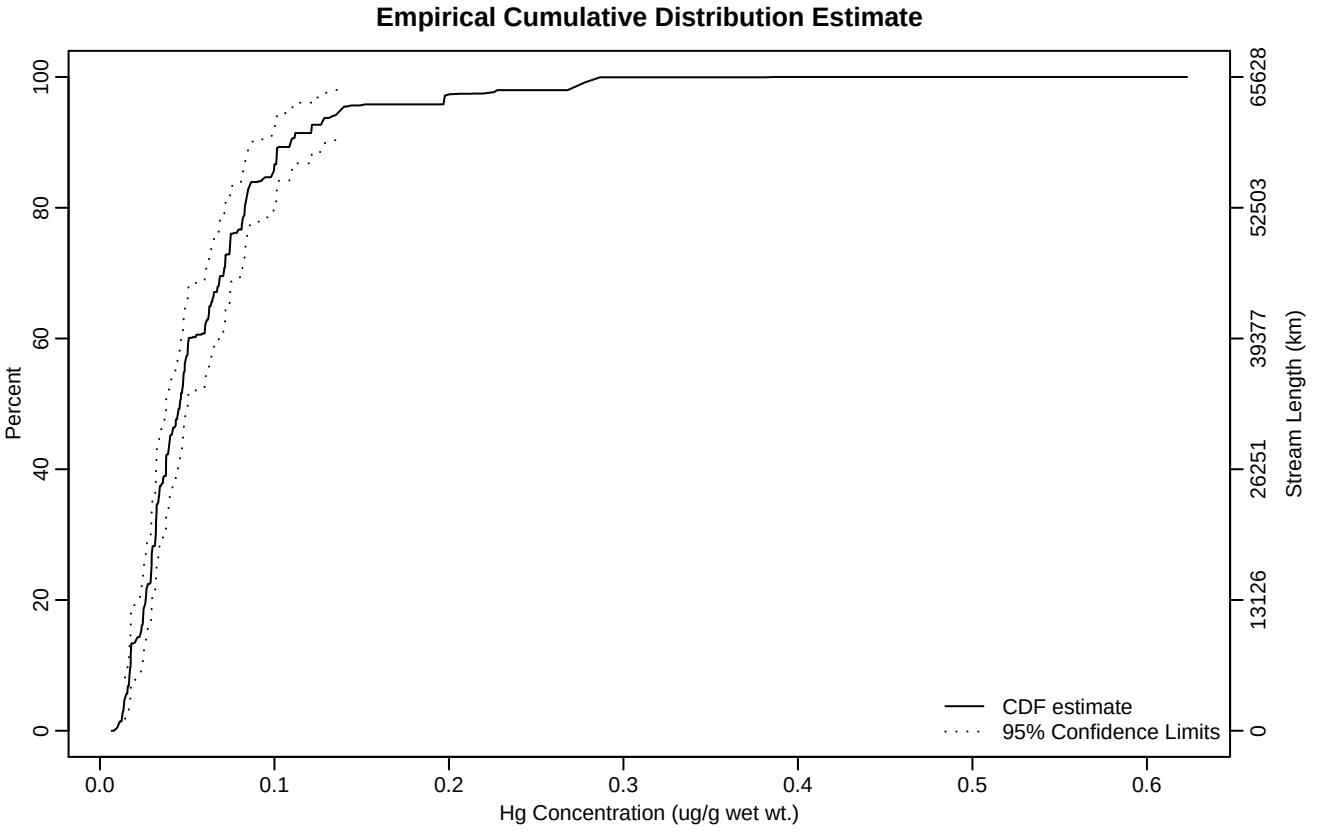


Figure FT Hg NP−2 Indicator: Hg_NonPiscivore Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.02
10Pct	0.02	0.01	0.02
25Pct	0.03	0.02	0.03
50Pct	0.05	0.04	0.05
75Pct	0.07	0.07	0.09
90Pct	0.11	0.10	0.14
95Pct	0.14	0.11	0.27
Mean	0.06	0.05	0.07
Std Dev	0.04	0.04	0.05

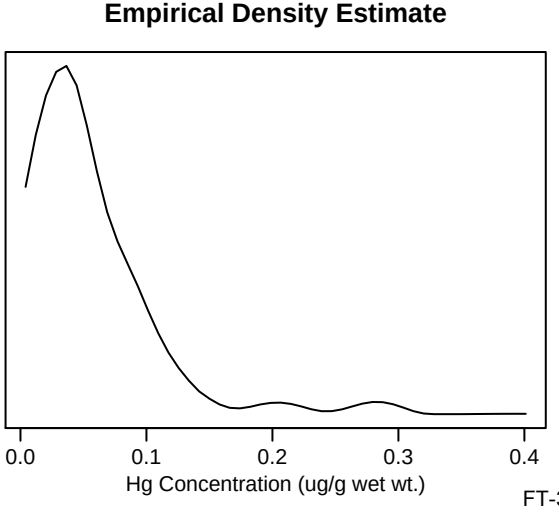
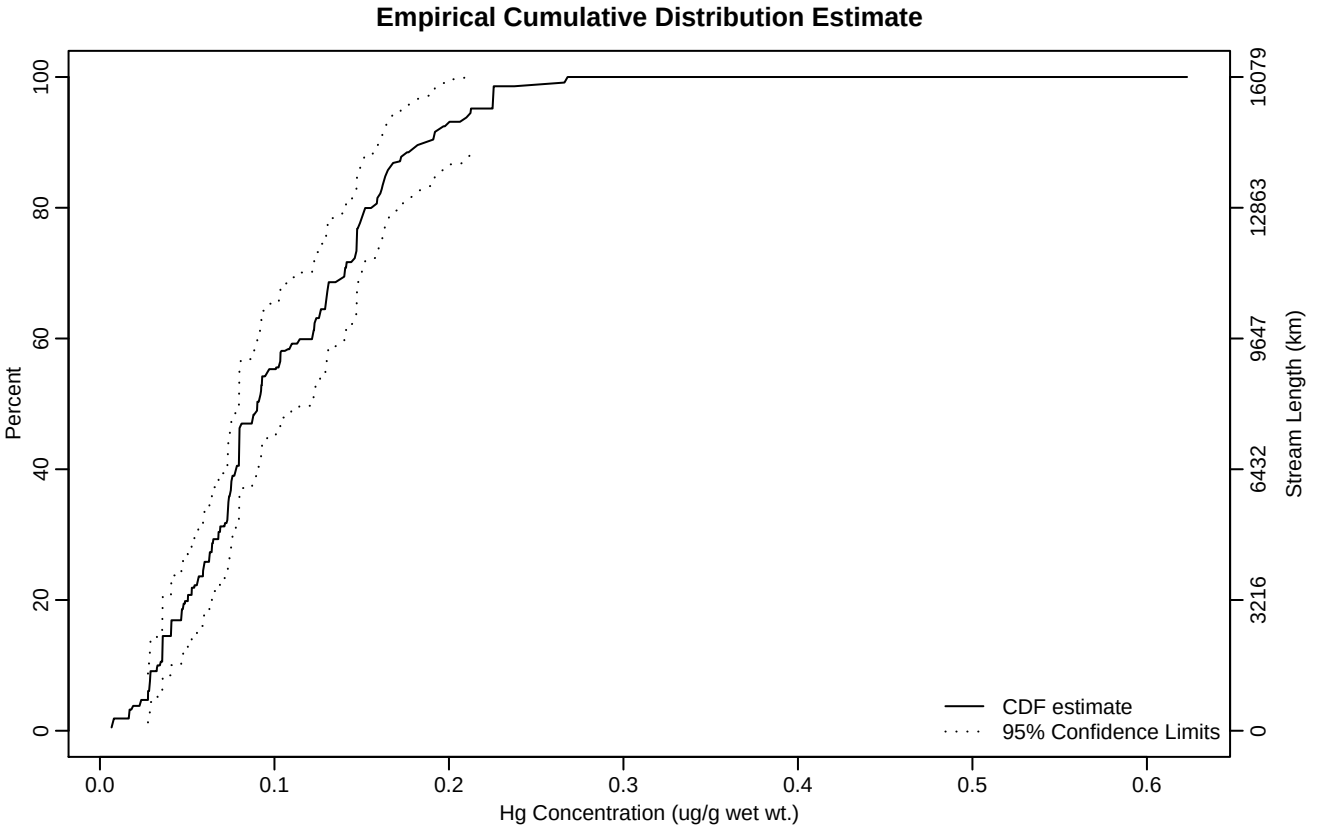


Figure FT Hg NP−3 Indicator: Hg_NonPiscivore Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.01	0.03
10Pct	0.03	0.03	0.04
25Pct	0.06	0.04	0.07
50Pct	0.09	0.08	0.12
75Pct	0.15	0.13	0.16
90Pct	0.19	0.16	0.23
95Pct	0.21	0.18	0.27
Mean	0.10	0.09	0.12
Std Dev	0.05	0.05	0.06

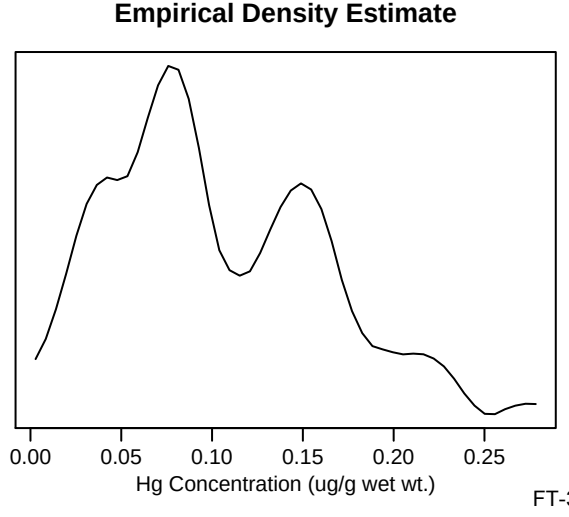
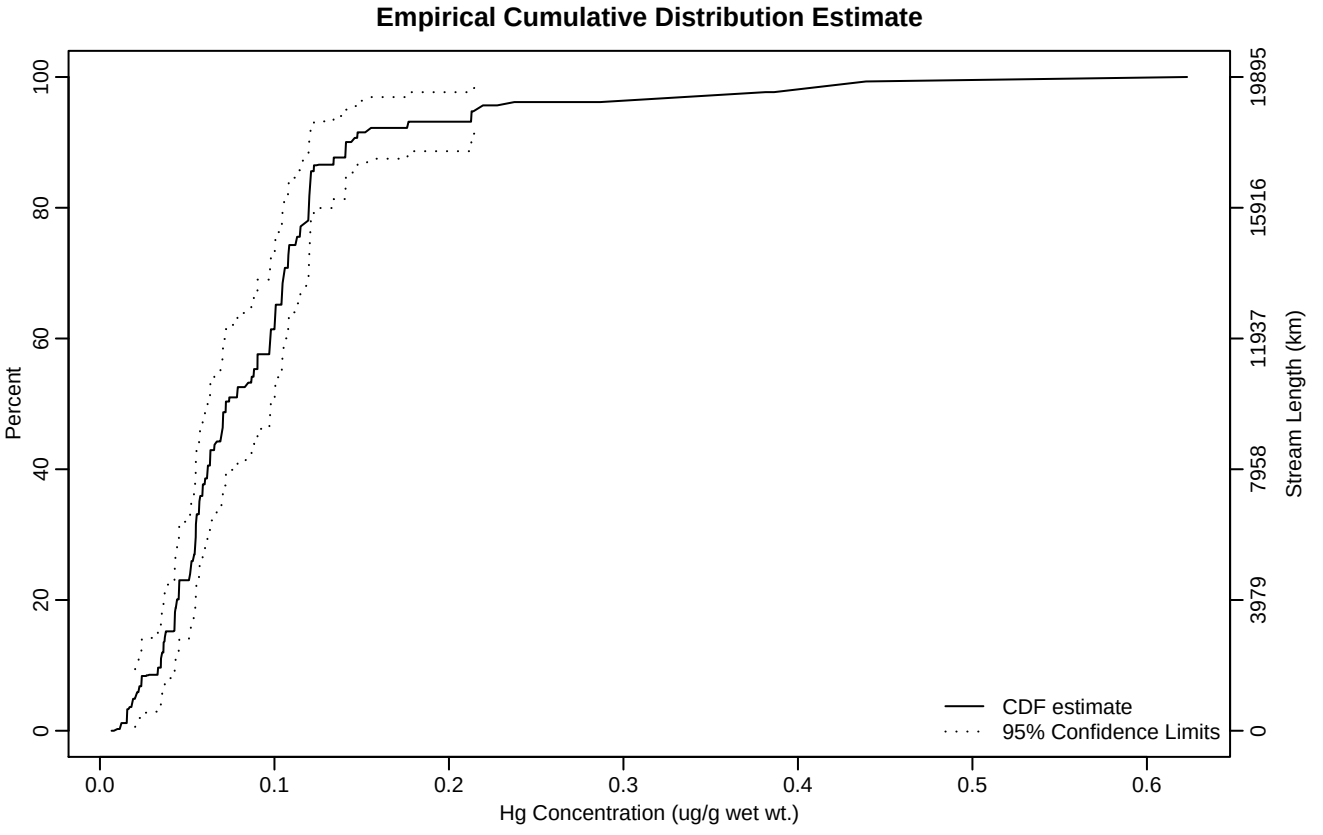


Figure FT Hg NP−4 Indicator: Hg_NonPiscivore Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.03
10Pct	0.03	0.02	0.04
25Pct	0.05	0.04	0.06
50Pct	0.07	0.06	0.10
75Pct	0.11	0.10	0.12
90Pct	0.14	0.12	0.30
95Pct	0.22	0.15	0.42
Mean	0.10	0.08	0.11
Std Dev	0.07	0.05	0.08

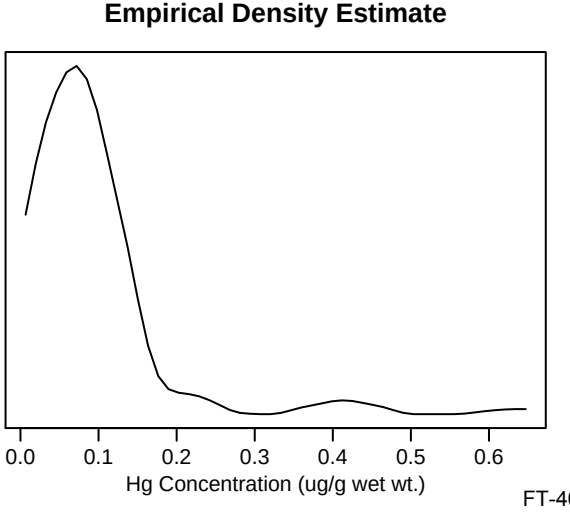
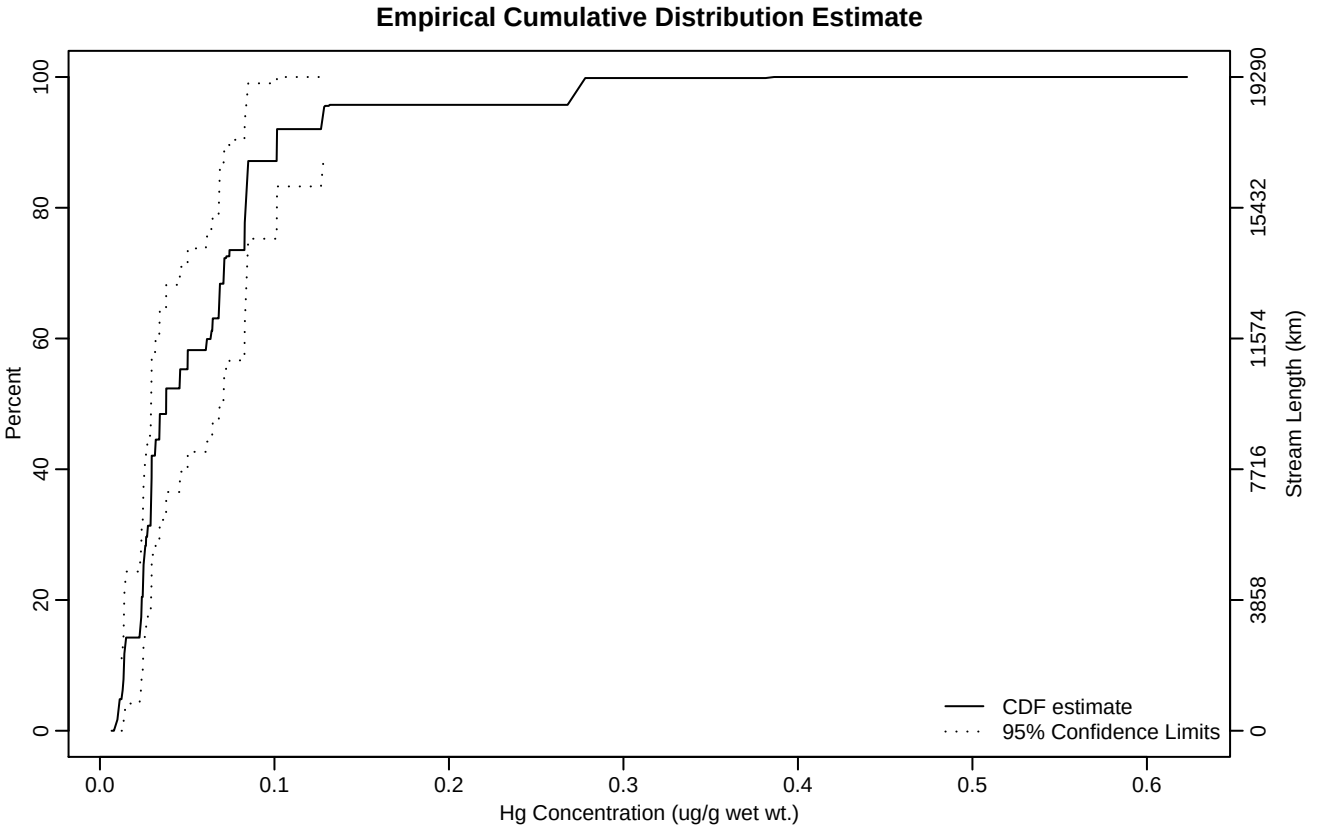


Figure FT Hg NP−5 Indicator: Hg_NonPiscivore Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.02
25Pct	0.02	0.01	0.03
50Pct	0.04	0.03	0.07
75Pct	0.08	0.05	0.13
90Pct	0.10	0.08	
95Pct	0.13	0.08	
Mean	0.06	0.04	0.08
Std Dev	0.05	0.03	0.06

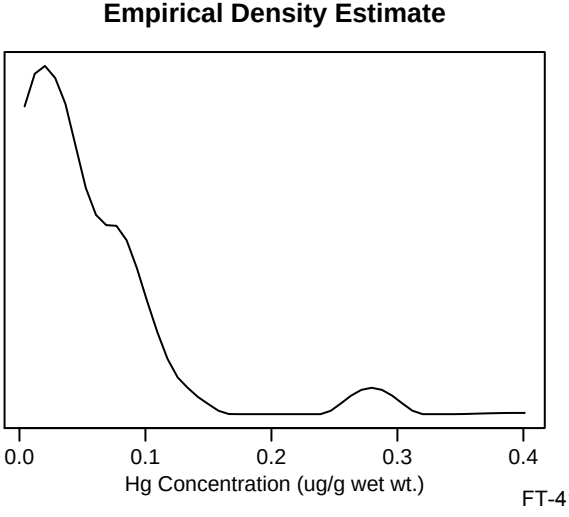
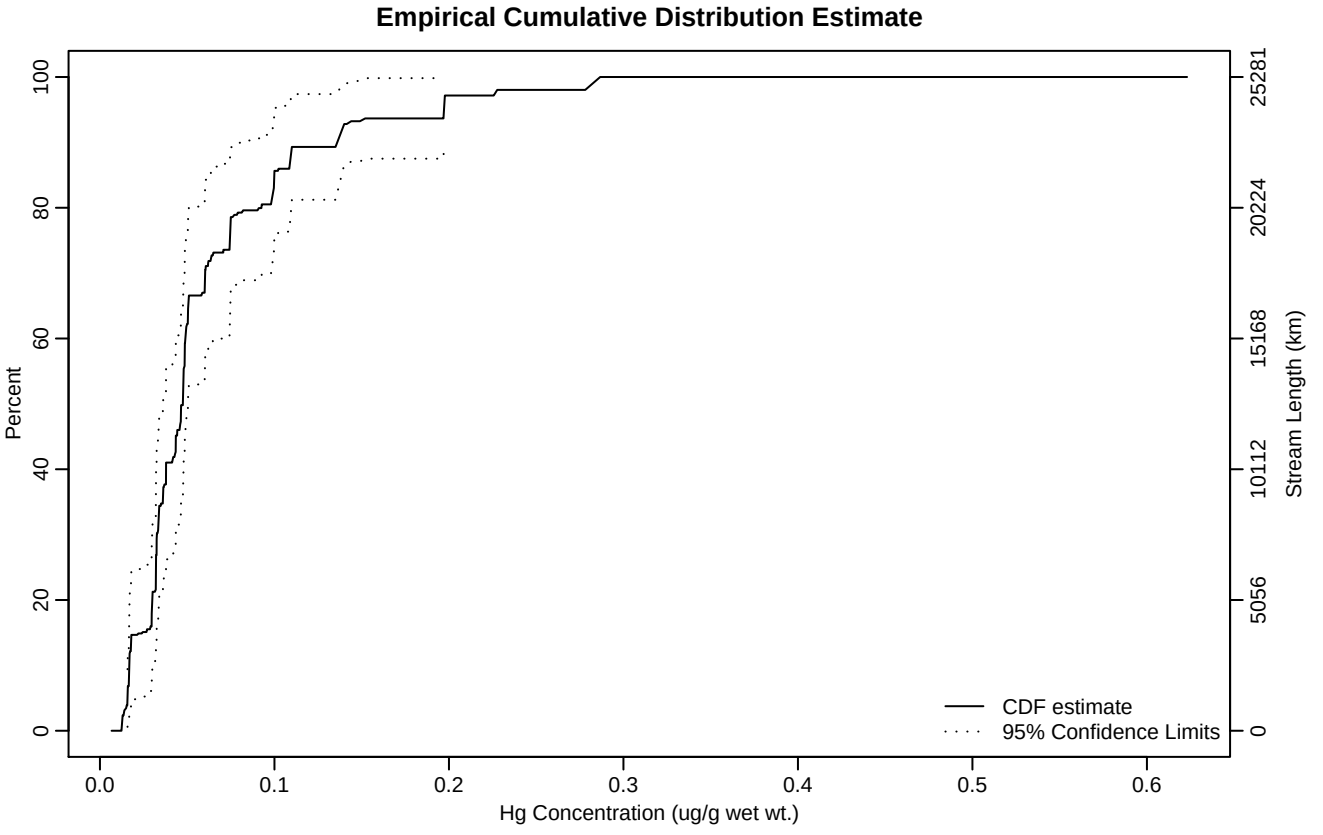


Figure FT Hg NP−6 Indicator: Hg_NonPiscivore Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.02
10Pct	0.02	0.02	0.03
25Pct	0.03	0.02	0.04
50Pct	0.05	0.04	0.05
75Pct	0.07	0.05	0.11
90Pct	0.14	0.10	0.23
95Pct	0.20	0.11	0.29
Mean	0.06	0.05	0.08
Std Dev	0.05	0.04	0.05

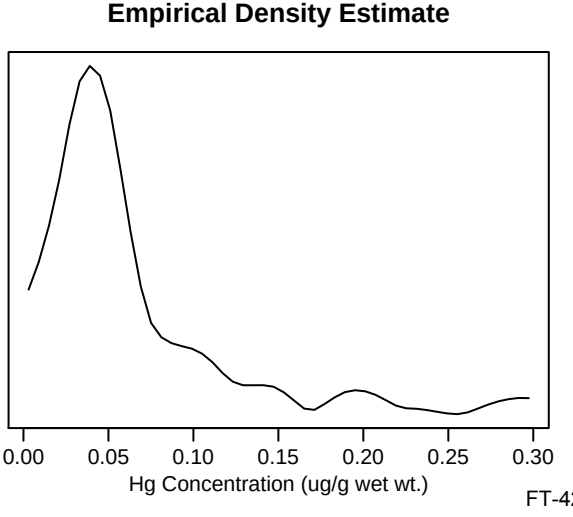
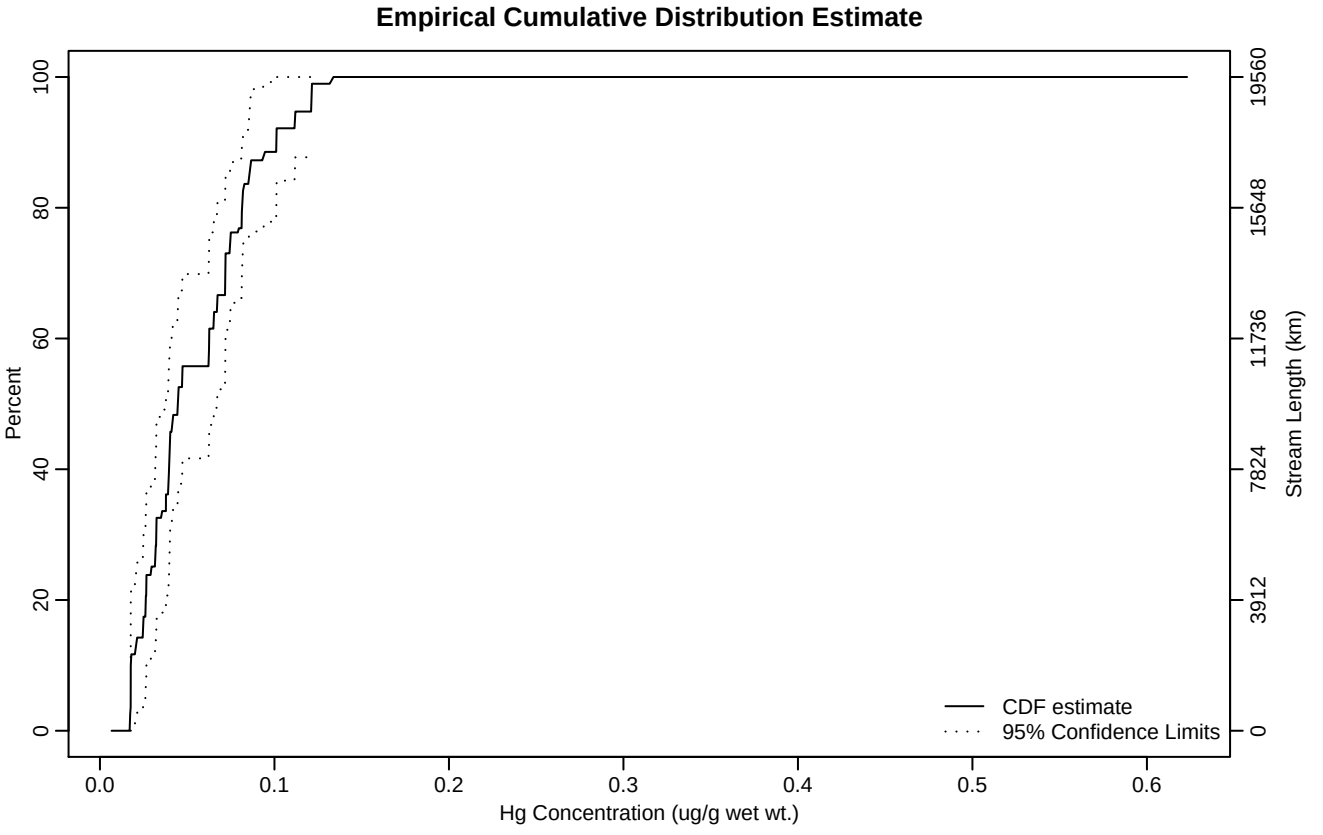


Figure FT Hg NP−7 Indicator: Hg_NonPiscivore Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.02
10Pct	0.02	0.01	0.03
25Pct	0.03	0.02	0.04
50Pct	0.04	0.04	0.07
75Pct	0.07	0.07	0.09
90Pct	0.10	0.08	0.13
95Pct	0.12	0.09	0.13
Mean	0.06	0.05	0.06
Std Dev	0.03	0.02	0.03

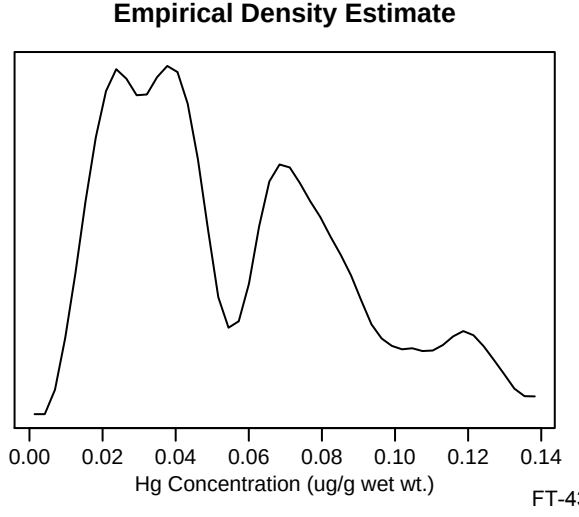
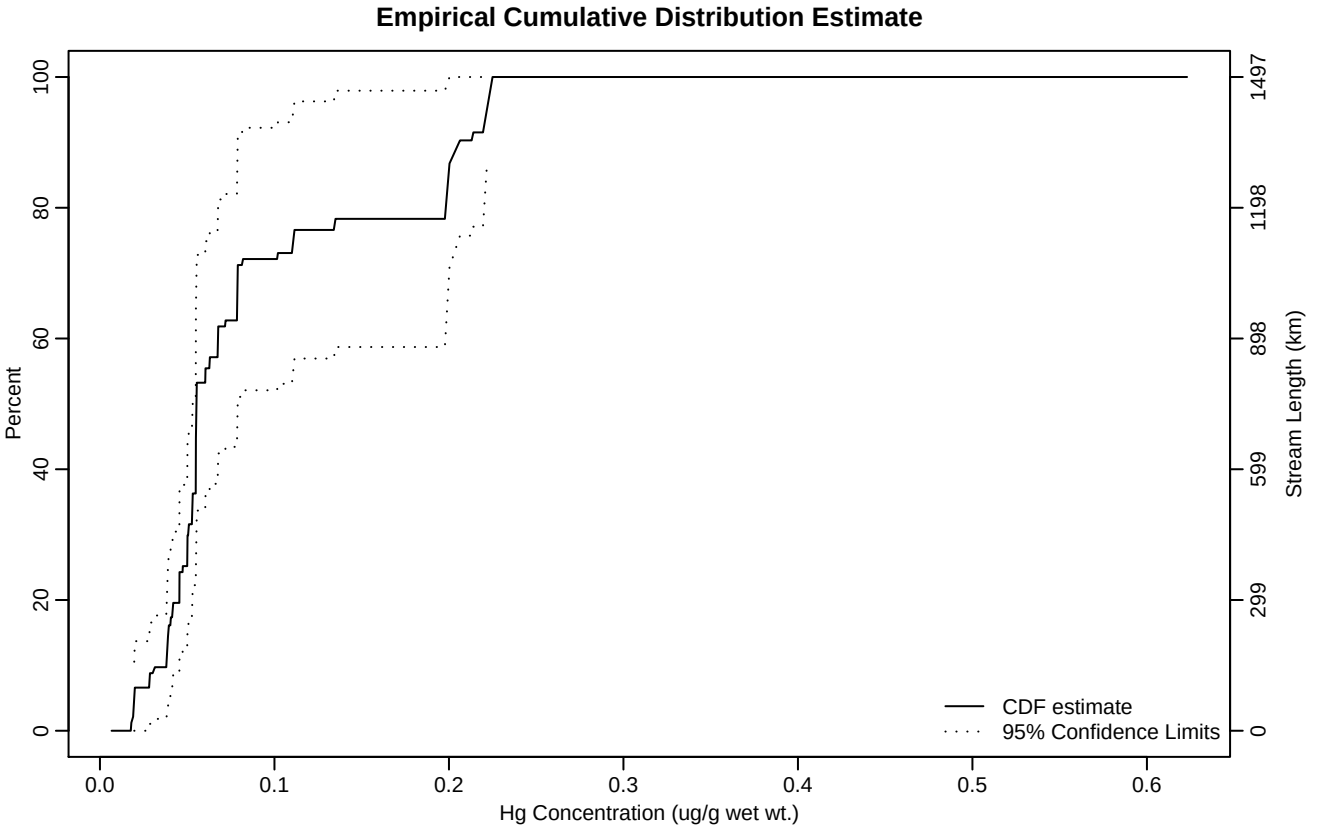


Figure FT Hg NP−8 Indicator: Hg_NonPiscivore Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.02	0.03
10Pct	0.04	0.02	0.04
25Pct	0.05	0.04	0.05
50Pct	0.06	0.05	0.08
75Pct	0.11	0.06	0.22
90Pct	0.21	0.11	
95Pct	0.22	0.20	
Mean	0.09	0.06	0.12
Std Dev	0.06	0.05	0.08

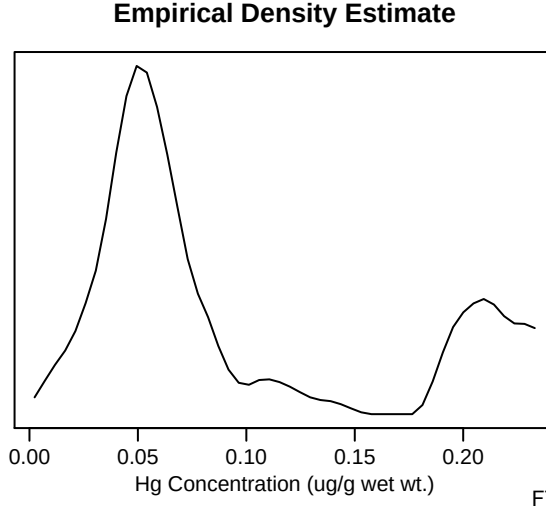
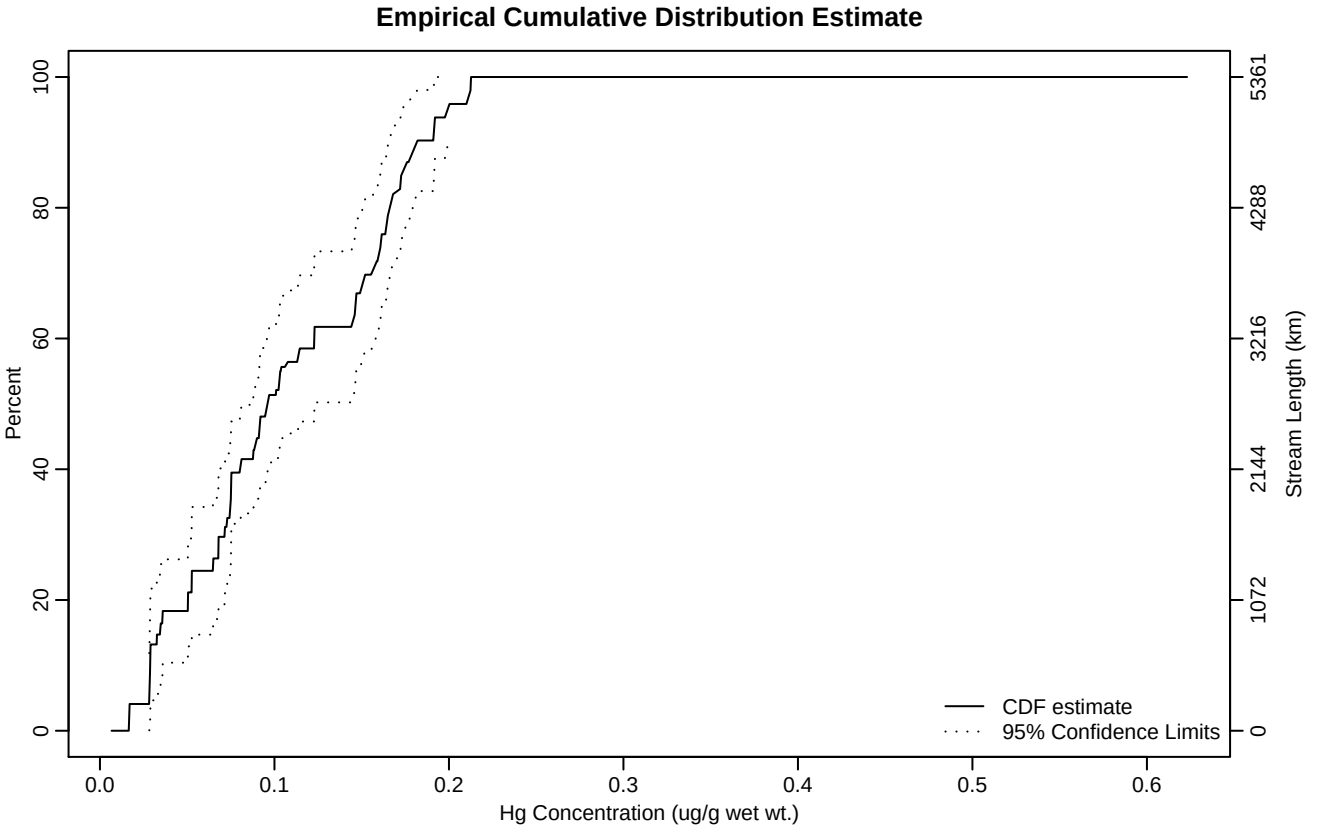


Figure FT Hg NP−9 Indicator: Hg_NonPiscivore Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.01	0.03
10Pct	0.03	0.02	0.05
25Pct	0.06	0.03	0.07
50Pct	0.10	0.08	0.12
75Pct	0.16	0.15	0.17
90Pct	0.18	0.17	0.21
95Pct	0.20	0.18	0.21
Mean	0.11	0.10	0.12
Std Dev	0.05	0.04	0.06

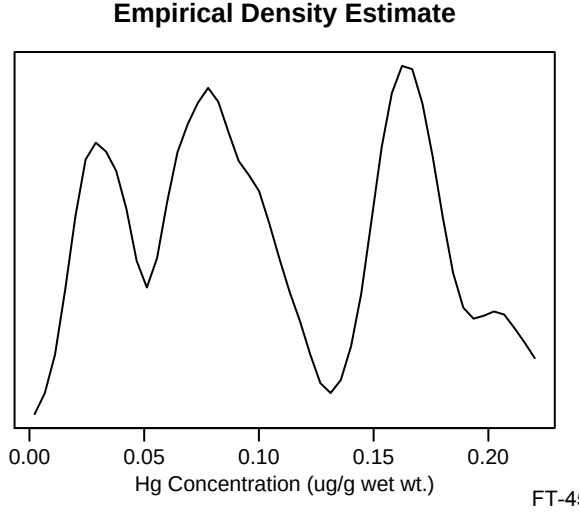
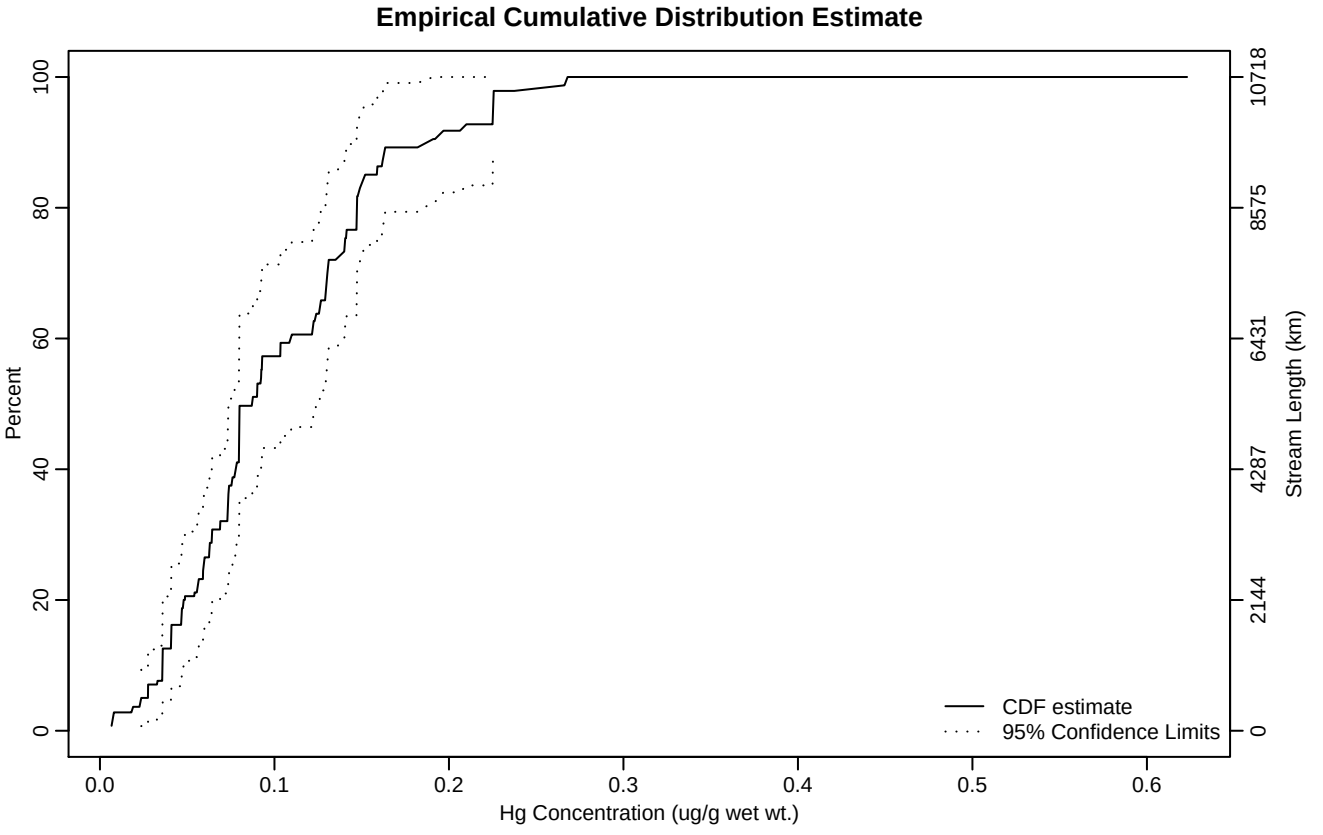


Figure FT Hg NP−10 Indicator: Hg_NonPiscivore Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.04
10Pct	0.04	0.02	0.04
25Pct	0.06	0.04	0.07
50Pct	0.09	0.07	0.13
75Pct	0.14	0.12	0.16
90Pct	0.19	0.15	0.27
95Pct	0.23	0.16	0.27
Mean	0.10	0.09	0.12
Std Dev	0.05	0.04	0.06

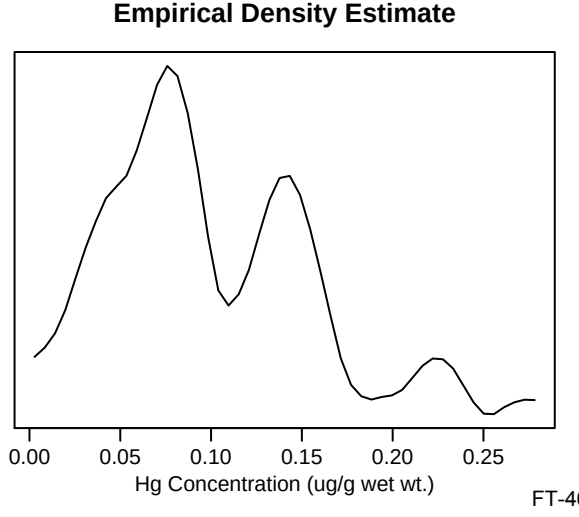
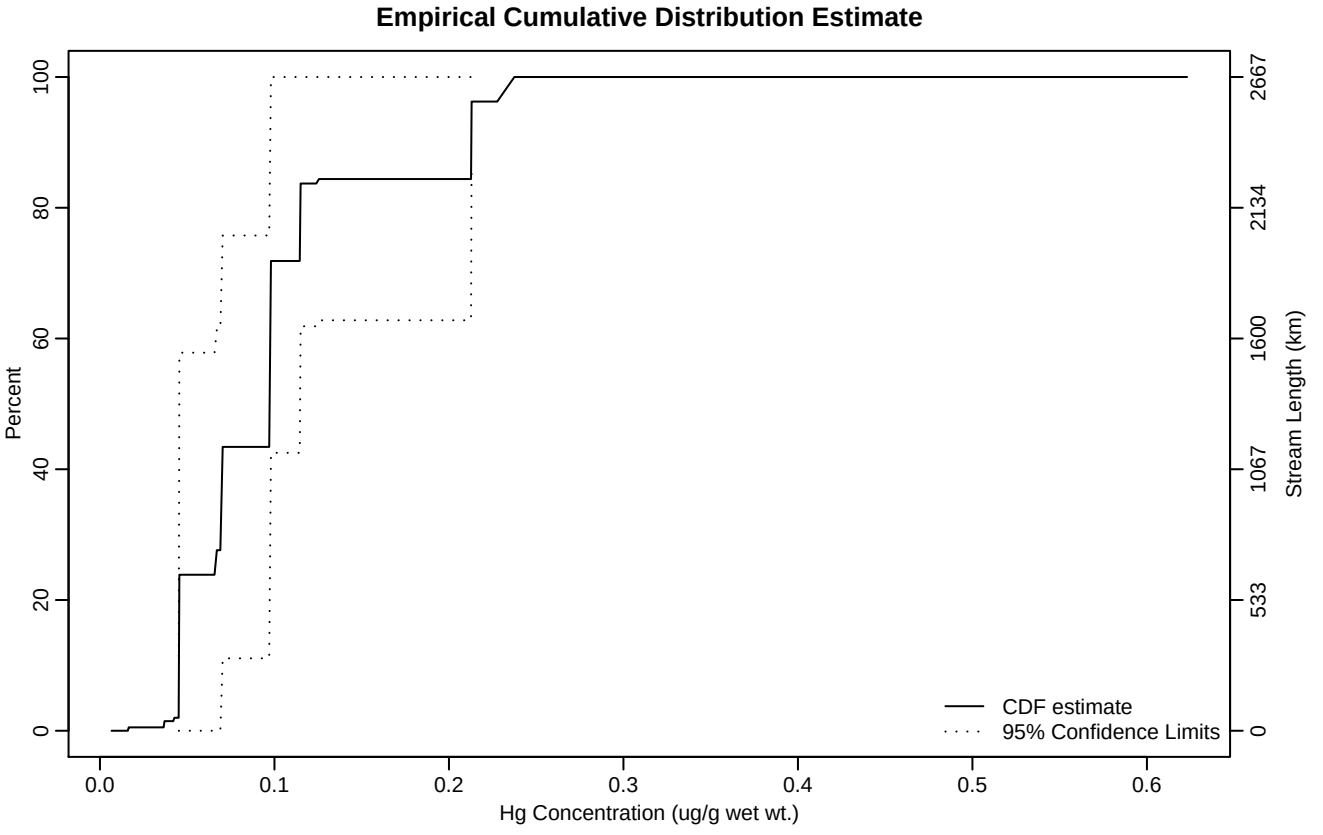


Figure FT Hg NP−11 Indicator: Hg_NonPiscivore Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.05	0.04	0.05
10Pct	0.05	0.05	0.05
25Pct	0.07	0.01	0.10
50Pct	0.10	0.05	0.11
75Pct	0.11	0.10	0.24
90Pct	0.21	0.10	0.24
95Pct	0.21	0.11	0.24
Mean	0.10	0.07	0.13
Std Dev	0.06	0.03	0.08

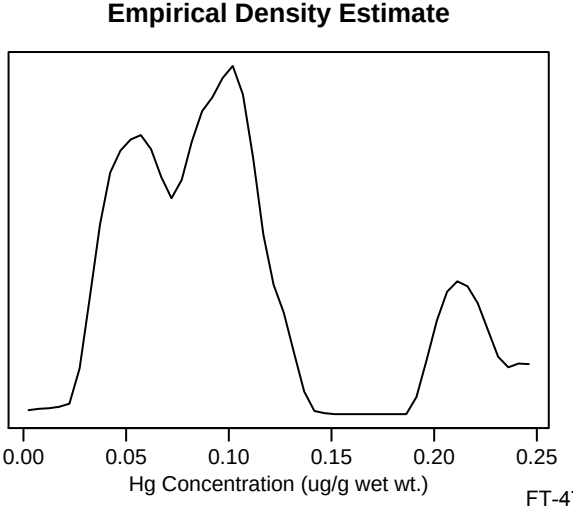
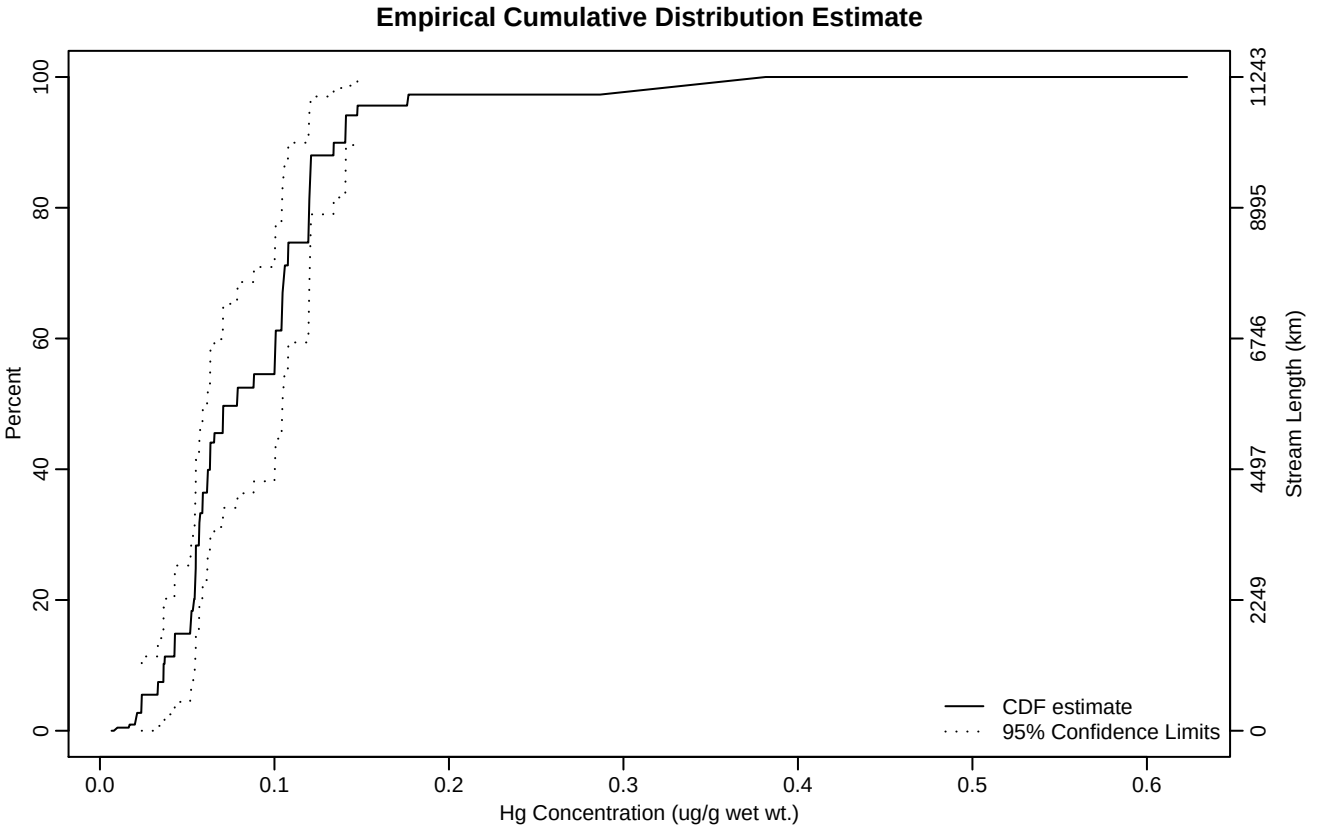


Figure FT Hg NP−12 Indicator: Hg_NonPiscivore Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.02	0.04
10Pct	0.04	0.02	0.05
25Pct	0.05	0.04	0.06
50Pct	0.08	0.06	0.10
75Pct	0.12	0.10	0.14
90Pct	0.14	0.12	0.33
95Pct	0.15	0.14	0.38
Mean	0.09	0.07	0.11
Std Dev	0.04	0.03	0.05

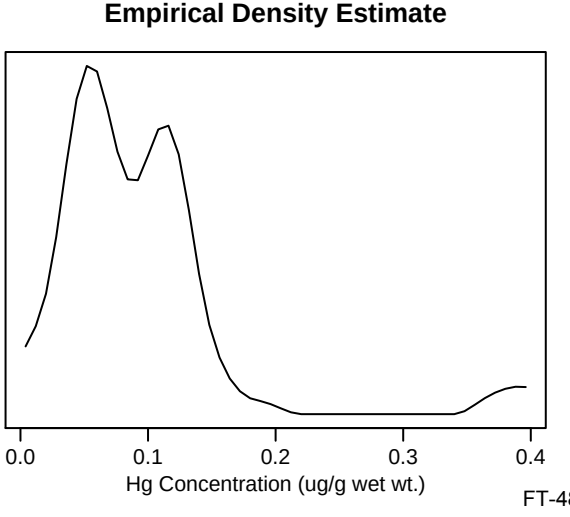
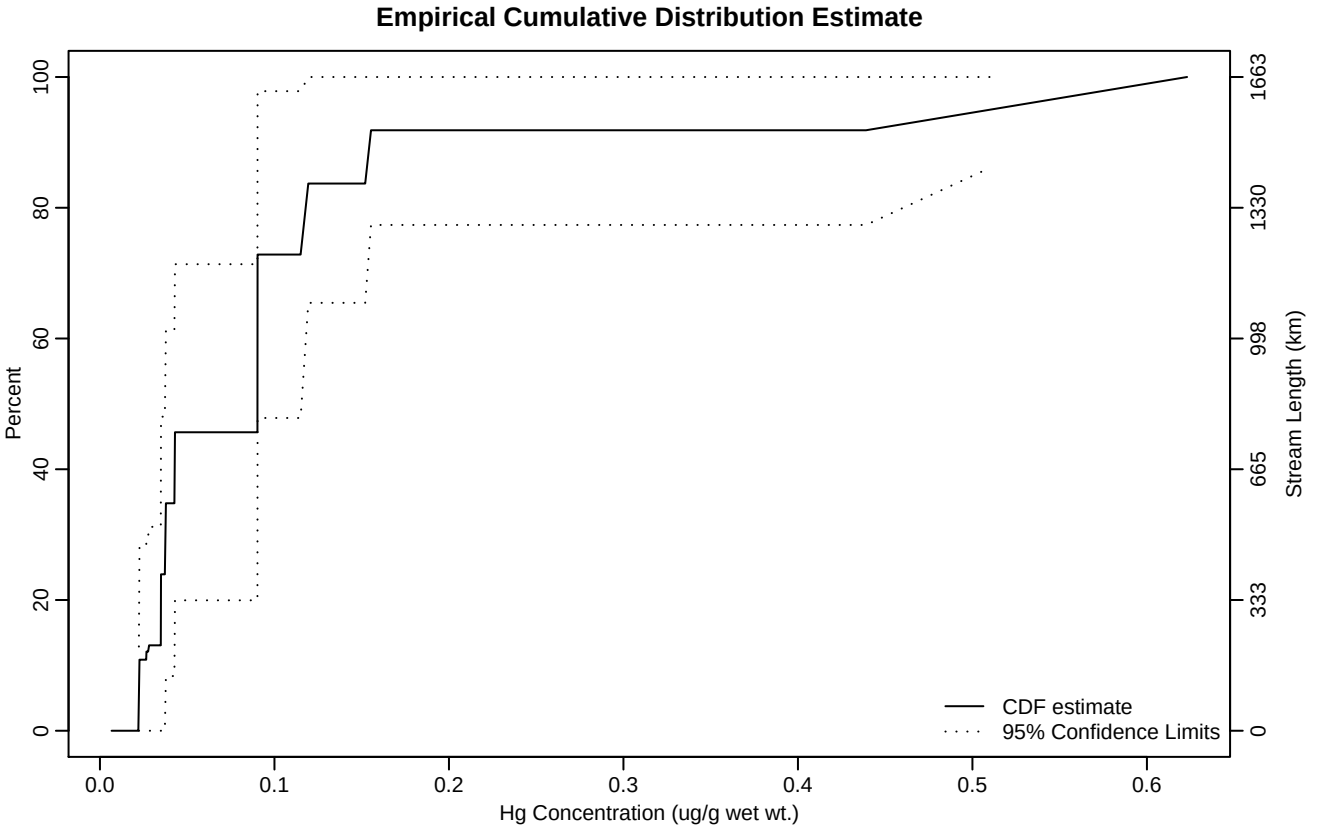


Figure FT Hg NP−13 Indicator: Hg_NonPiscivore Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.02	0.02
10Pct	0.02	0.02	0.03
25Pct	0.04	0.01	0.09
50Pct	0.09	0.03	0.15
75Pct	0.12	0.09	0.62
90Pct	0.15	0.09	0.62
95Pct	0.51	0.12	0.62
Mean	0.12	0.03	0.20
Std Dev	0.13	0.04	0.23

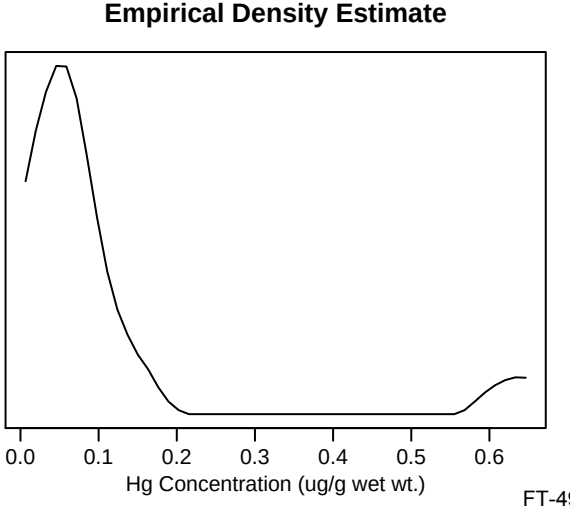
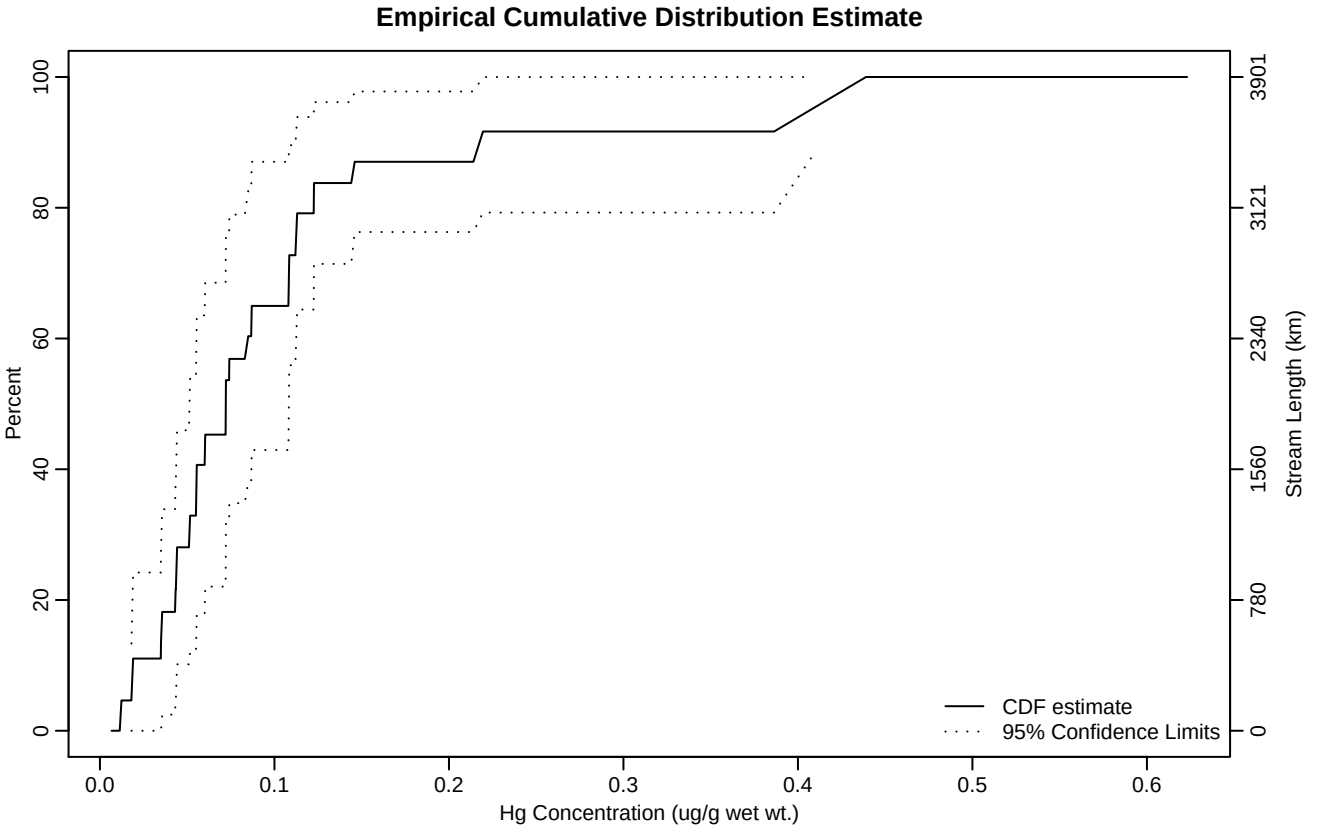


Figure FT Hg NP−14 Indicator: Hg_NonPiscivore Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.03
10Pct	0.02	0.01	0.04
25Pct	0.04	0.02	0.06
50Pct	0.07	0.04	0.11
75Pct	0.11	0.08	0.39
90Pct	0.22	0.11	0.44
95Pct	0.41	0.12	0.44
Mean	0.11	0.06	0.15
Std Dev	0.10	0.05	0.15

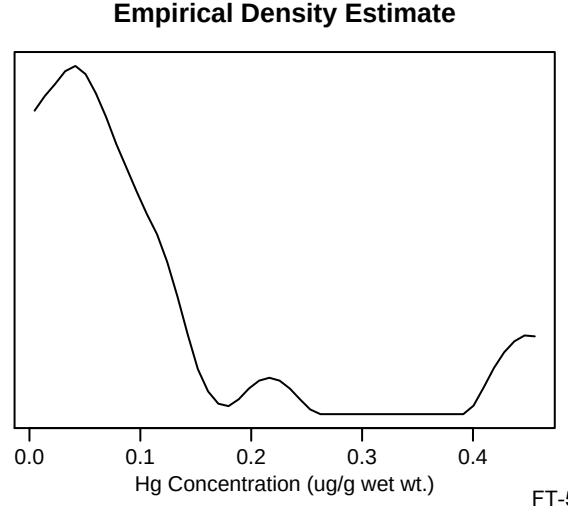
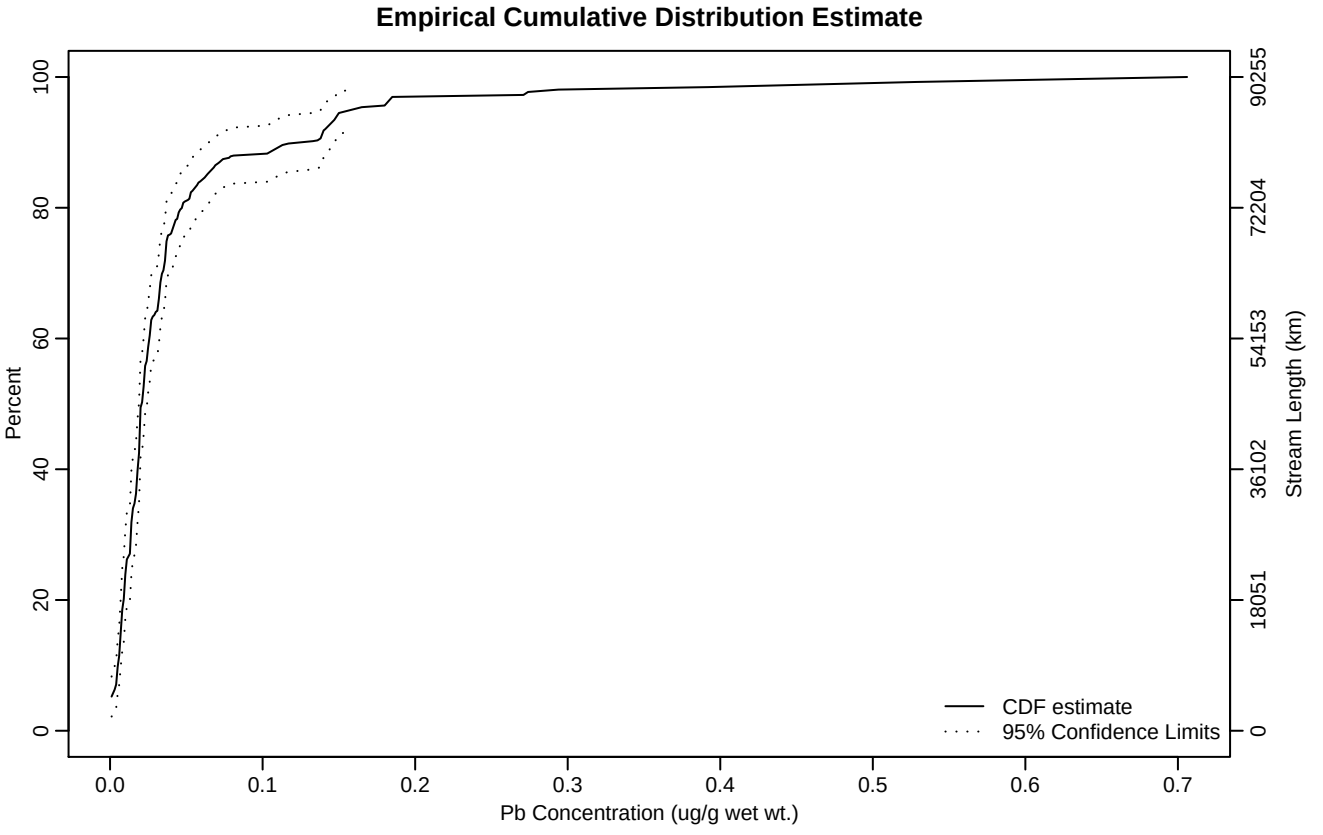


Figure FT Mtl NP−1 Indicator: Pb_NonPiscivore Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.01	0	0.01
25Pct	0.01	0.01	0.01
50Pct	0.02	0.02	0.02
75Pct	0.04	0.03	0.05
90Pct	0.12	0.07	0.15
95Pct	0.16	0.14	0.38
Mean	0.05	0.04	0.06
Std Dev	0.05	0.04	0.06

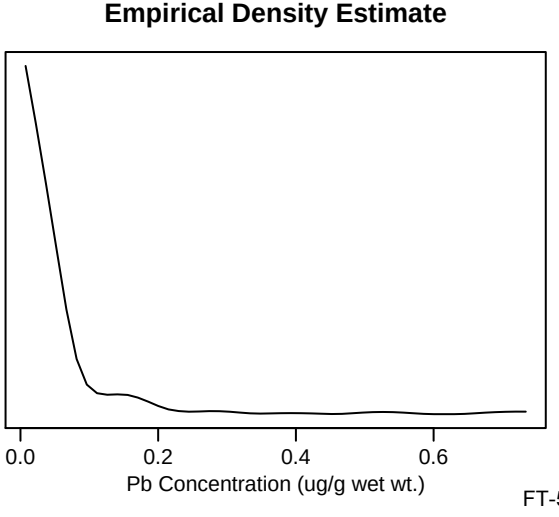
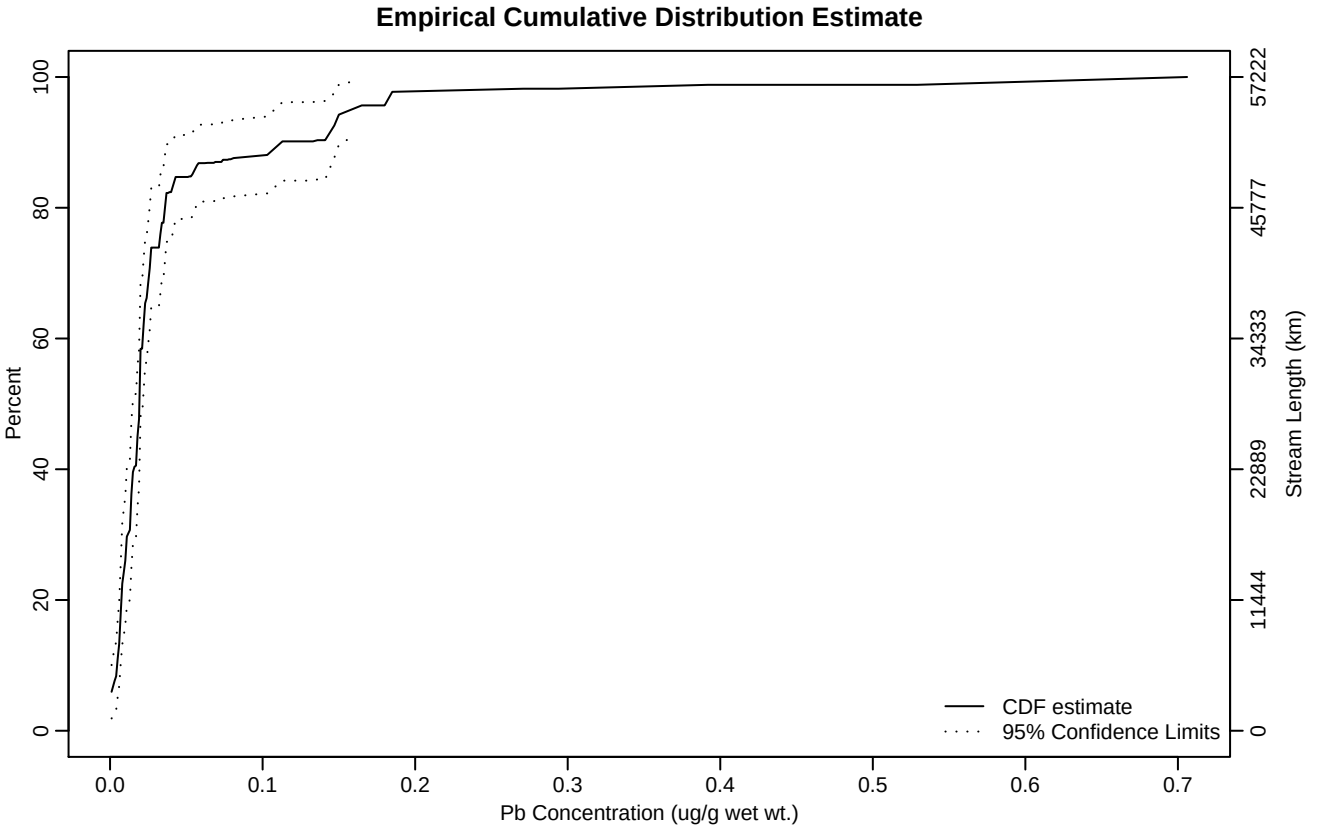


Figure FT Mtl NP−2 Indicator: Pb_NonPiscivore Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.01	0.01	0.01
50Pct	0.02	0.01	0.02
75Pct	0.03	0.02	0.04
90Pct	0.11	0.04	0.18
95Pct	0.16	0.13	0.68
Mean	0.04	0.03	0.06
Std Dev	0.04	0.04	0.05

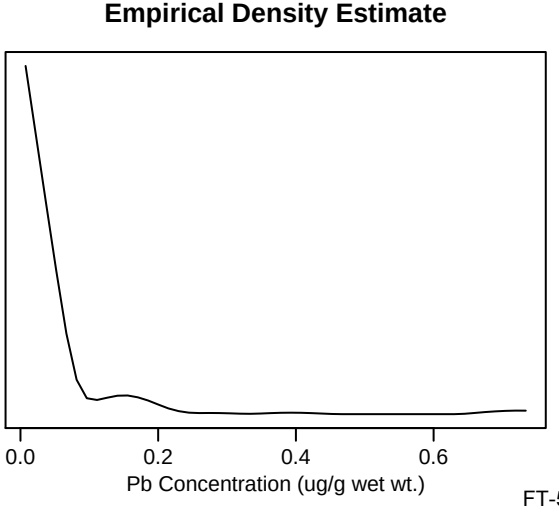
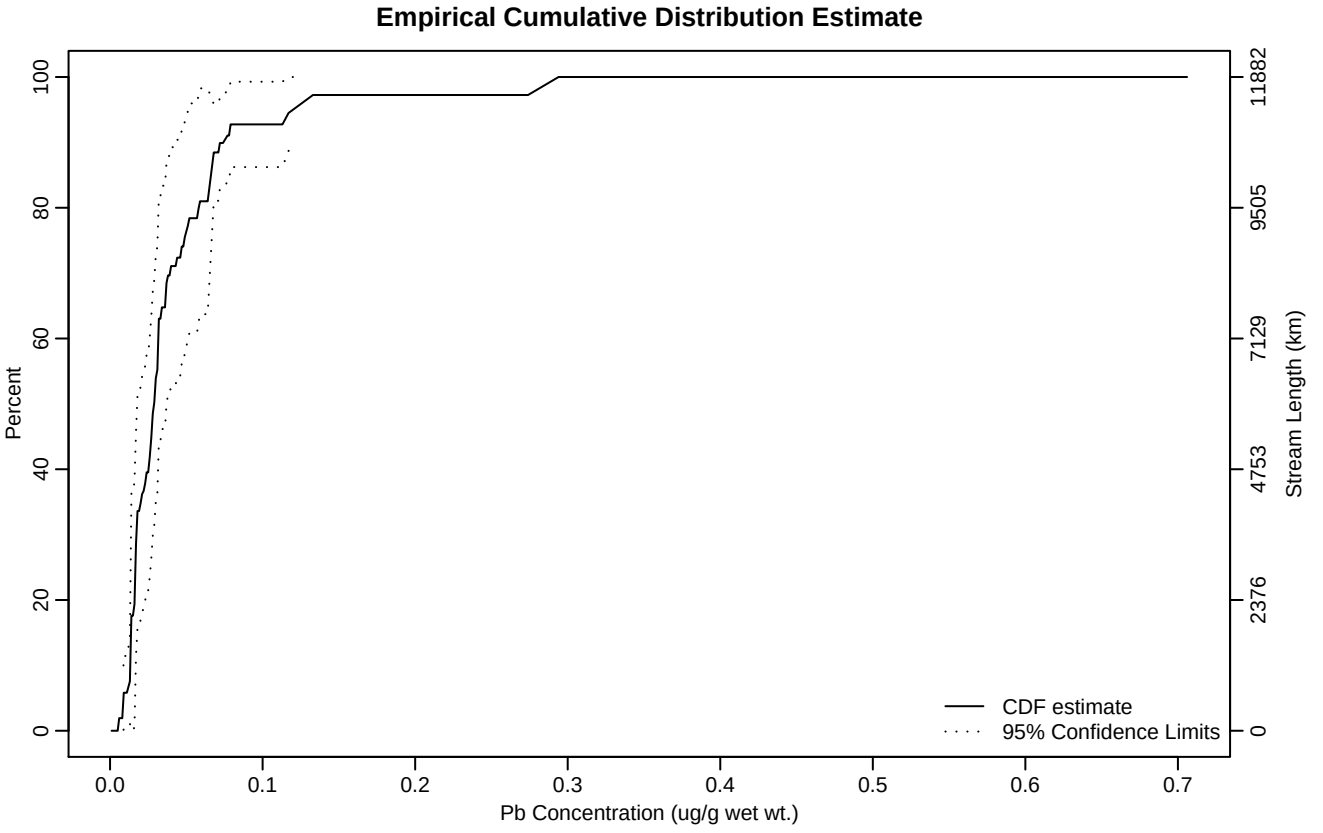


Figure FT Mtl NP−3 Indicator: Pb_NonPiscivore Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.02	0.01	0.03
50Pct	0.03	0.02	0.04
75Pct	0.05	0.03	0.08
90Pct	0.07	0.07	0.13
95Pct	0.12	0.07	0.29
Mean	0.04	0.03	0.06
Std Dev	0.04	0.03	0.06

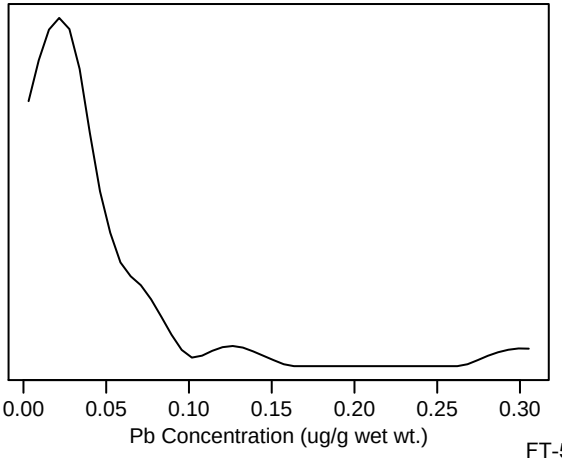
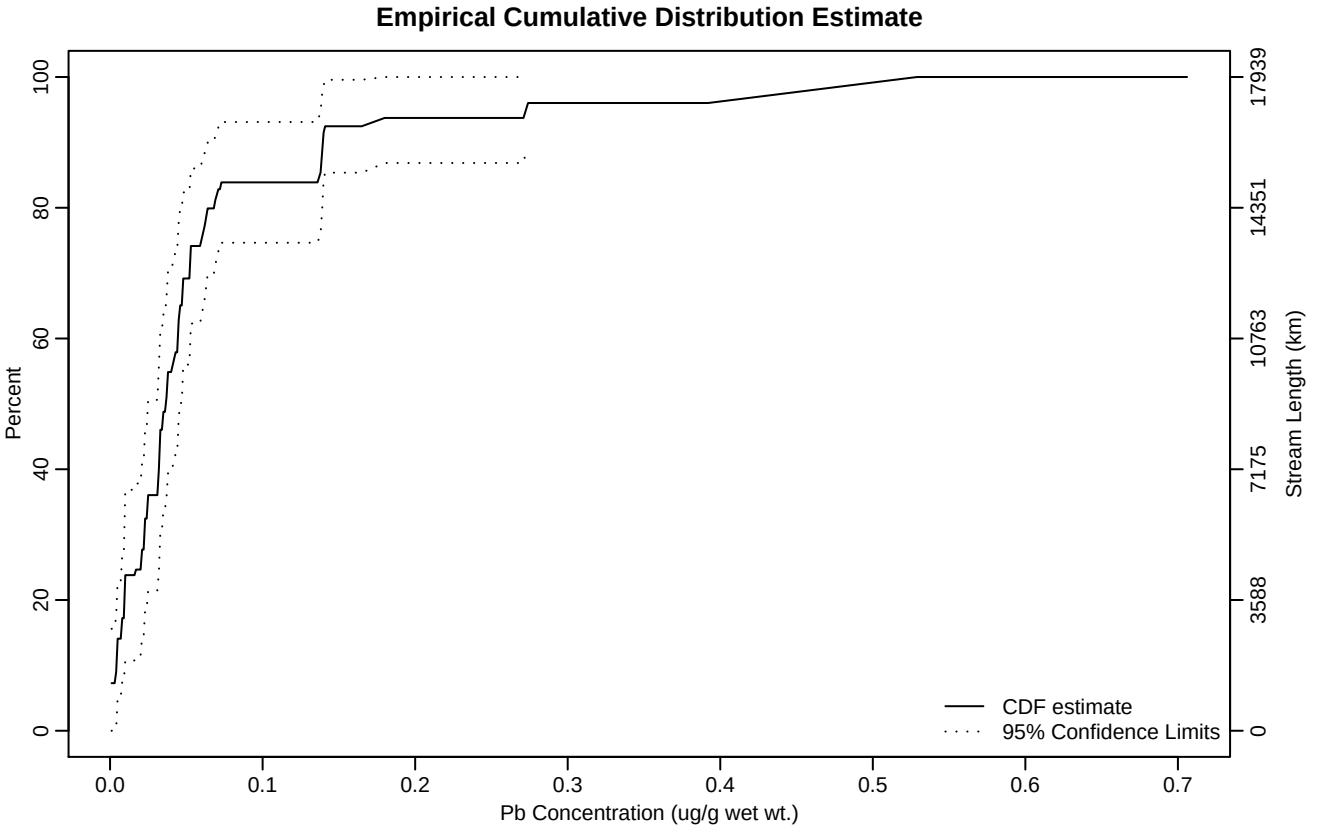


Figure FT Mtl NP−4 Indicator: Pb_NonPiscivore Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.02	0	0.03
50Pct	0.04	0.02	0.05
75Pct	0.06	0.05	0.14
90Pct	0.14	0.07	0.49
95Pct	0.27	0.14	0.53
Mean	0.07	0.04	0.10
Std Dev	0.08	0.05	0.11

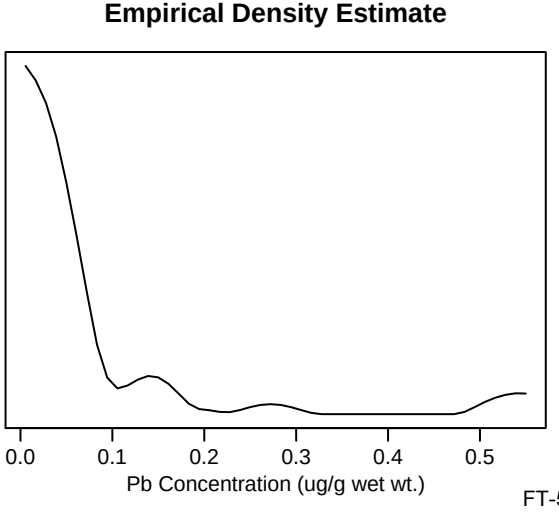
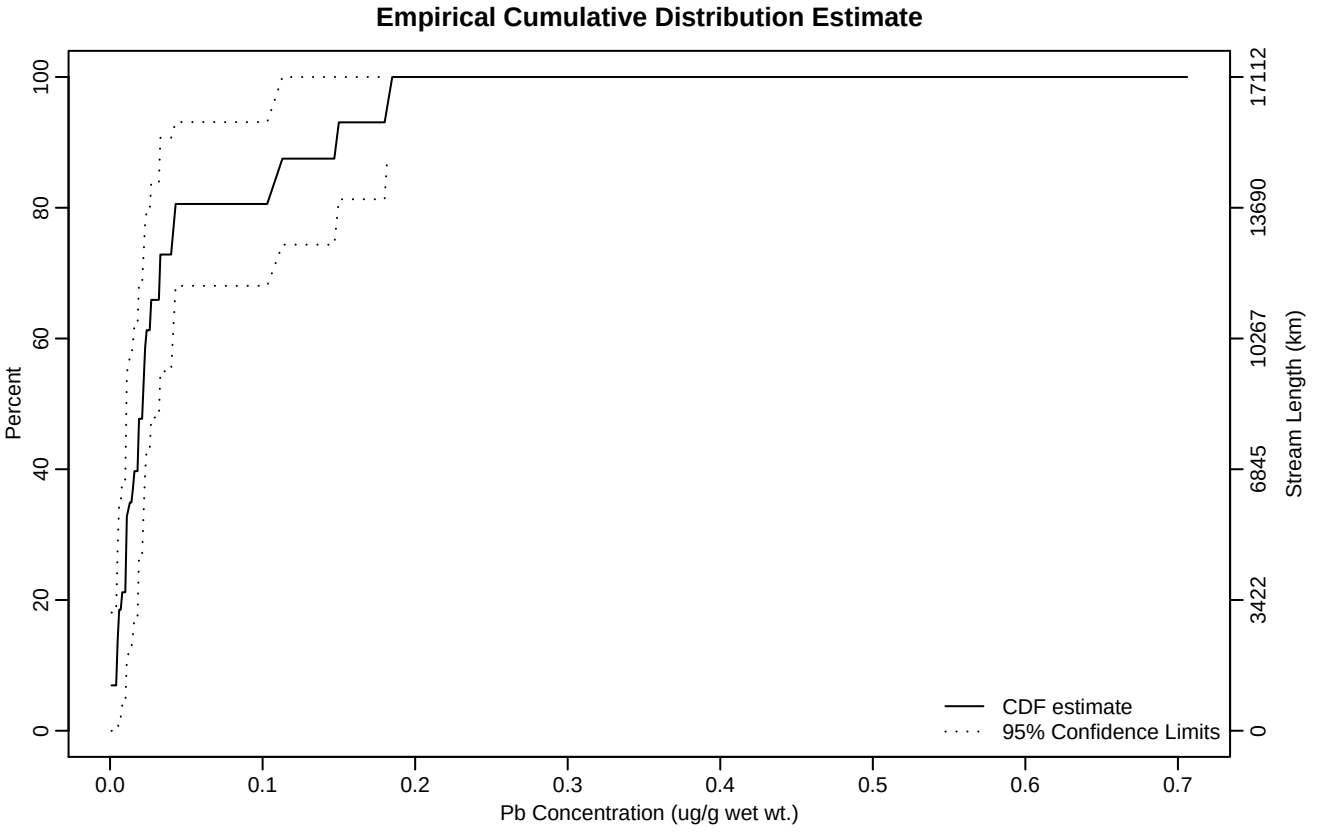


Figure FT Mtl NP−5 Indicator: Pb_NonPiscivore Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0	0	0.01
25Pct	0.01	0	0.02
50Pct	0.02	0.01	0.03
75Pct	0.04	0.02	0.15
90Pct	0.15	0.04	0.18
95Pct	0.18	0.11	0.18
Mean	0.04	0.02	0.06
Std Dev	0.04	0.03	0.05

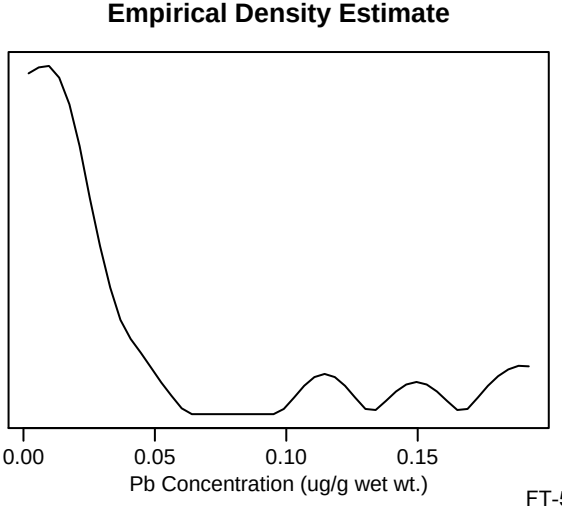
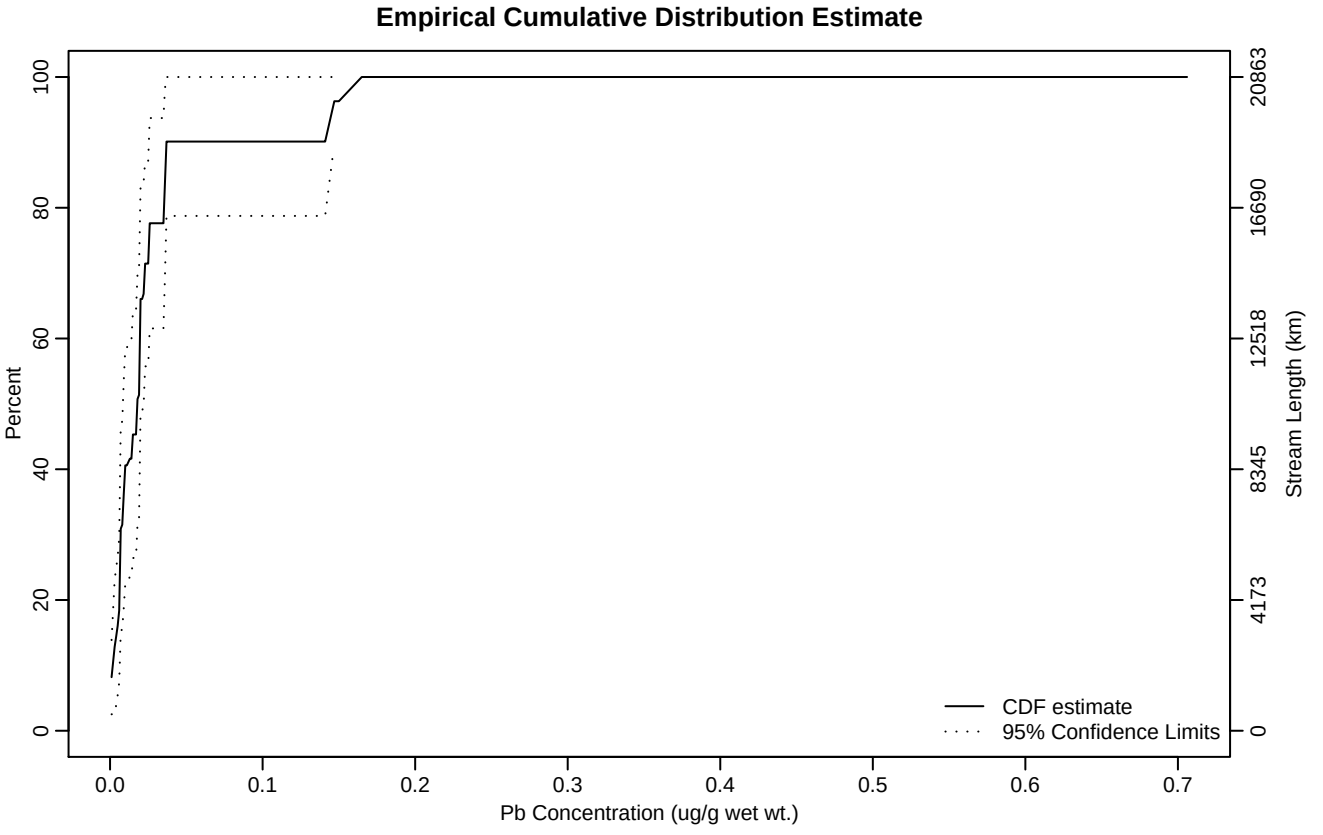


Figure FT Mtl NP−6 Indicator: Pb_NonPiscivore Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.01
50Pct	0.02	0.01	0.02
75Pct	0.03	0.02	0.14
90Pct	0.04	0.03	
95Pct	0.15	0.04	
Mean	0.03	0.01	0.05
Std Dev	0.04	0.02	0.06

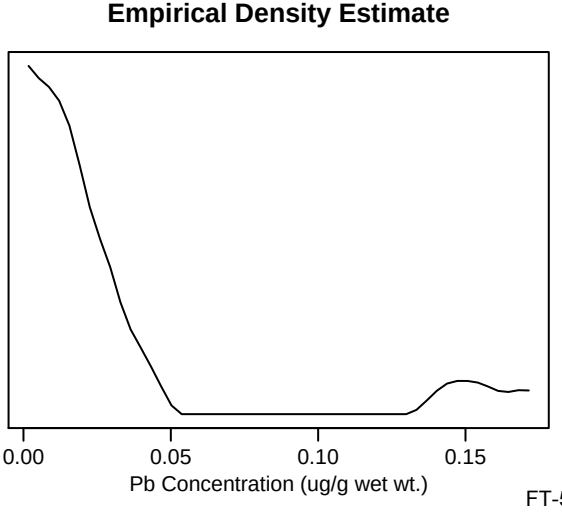
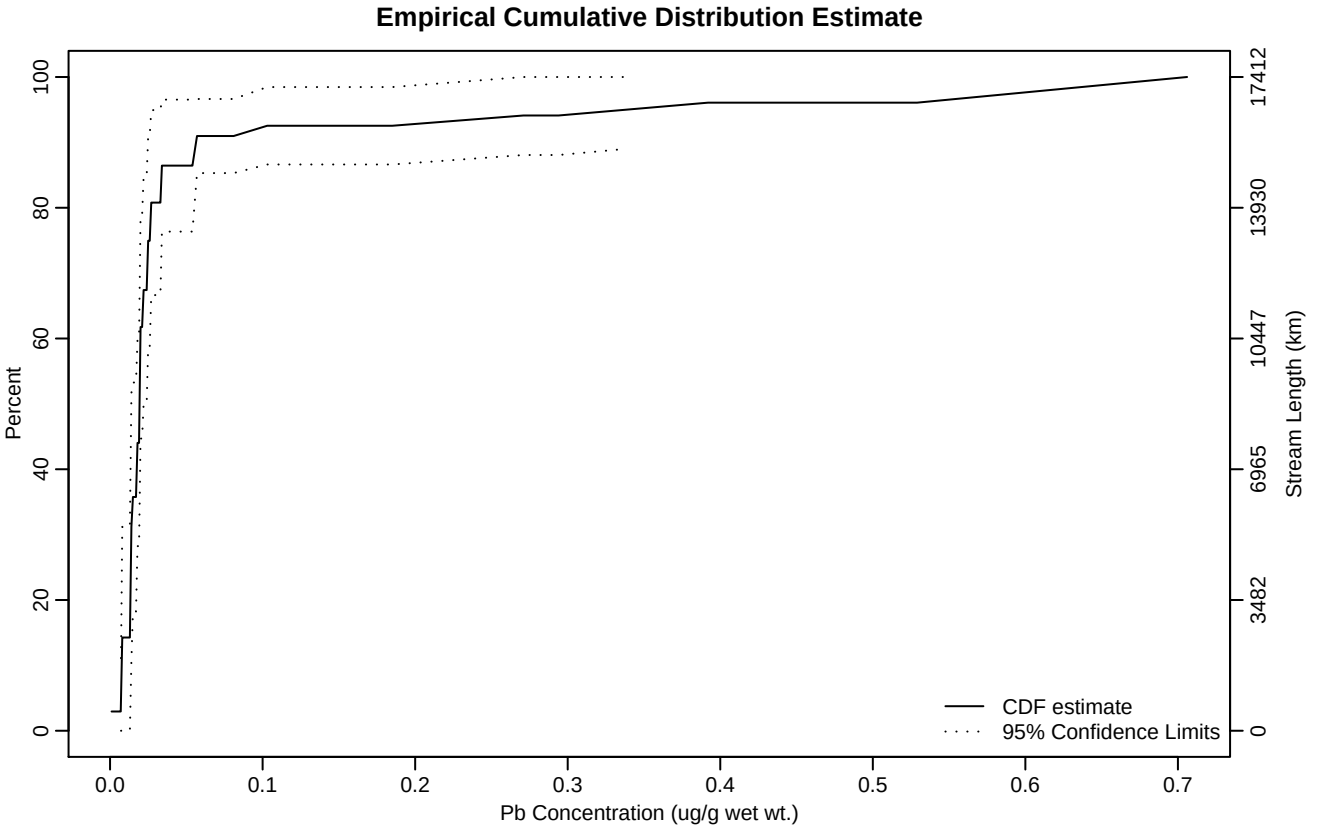


Figure FT Mtl NP−7 Indicator: Pb_NonPiscivore Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.02
50Pct	0.02	0.01	0.02
75Pct	0.03	0.02	0.09
90Pct	0.06	0.03	0.71
95Pct	0.34	0.05	0.71
Mean	0.06	0.02	0.10
Std Dev	0.05	0.04	0.07

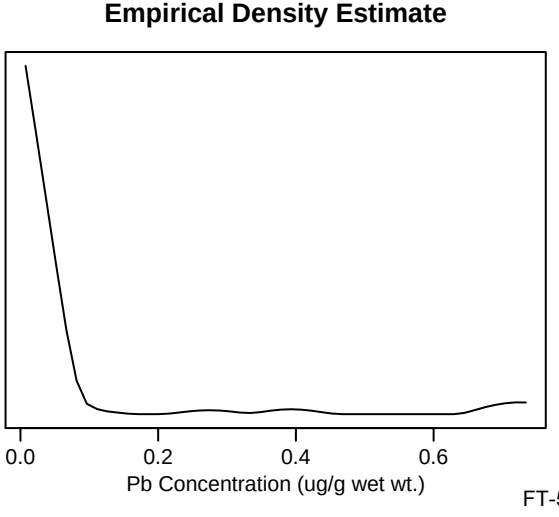
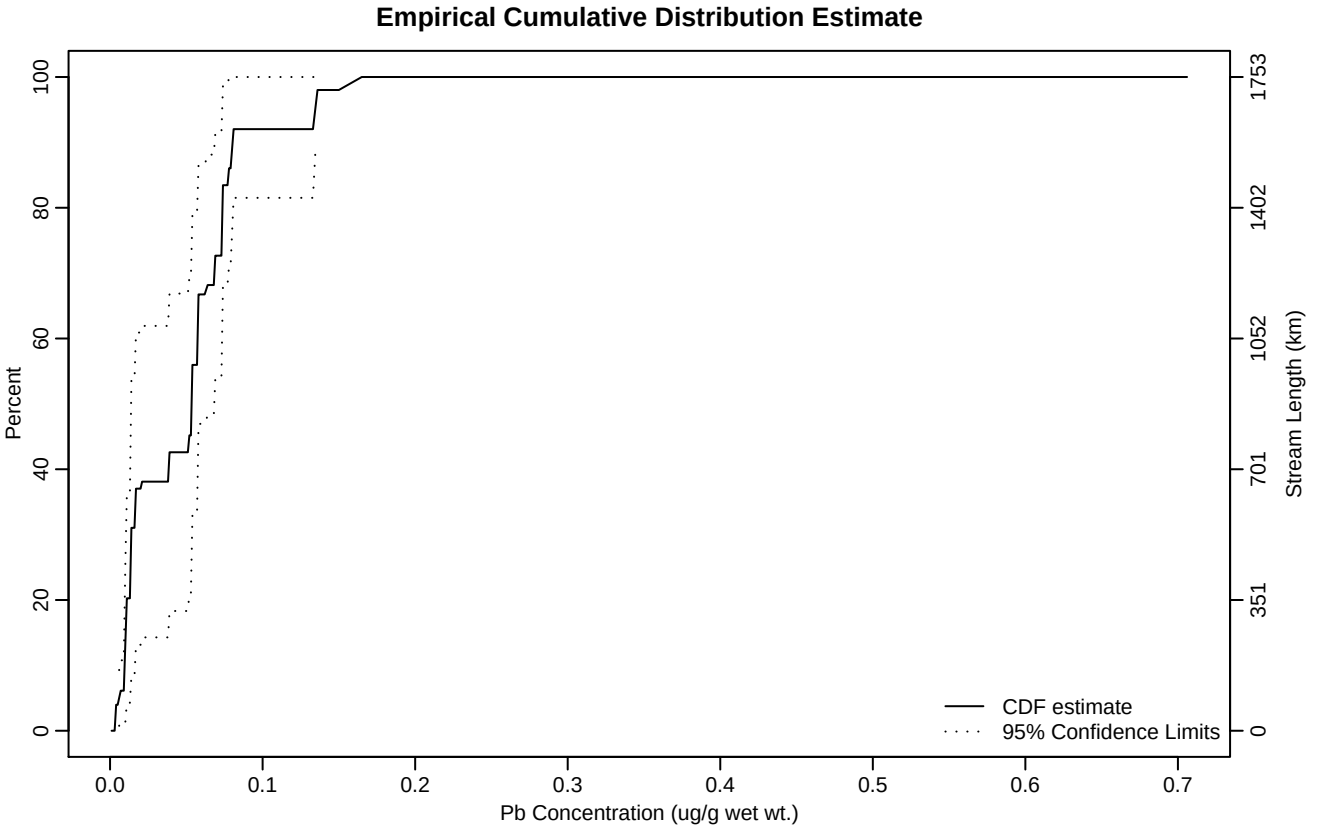


Figure FT Mtl NP−8 Indicator: Pb_NonPiscivore Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.04
50Pct	0.05	0.01	0.07
75Pct	0.07	0.06	0.13
90Pct	0.08	0.07	0.17
95Pct	0.13	0.08	0.17
Mean	0.05	0.03	0.07
Std Dev	0.04	0.03	0.05

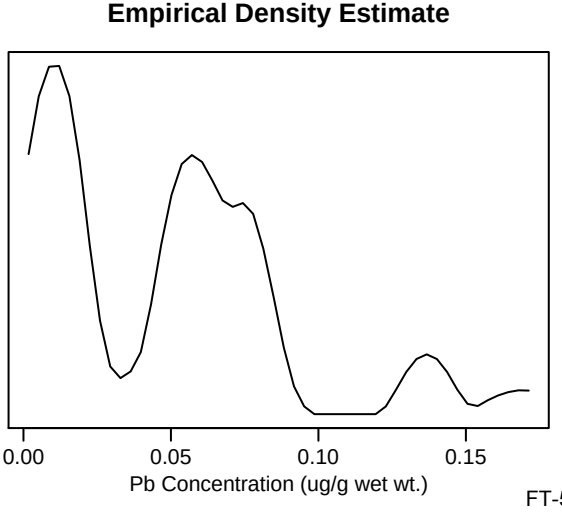
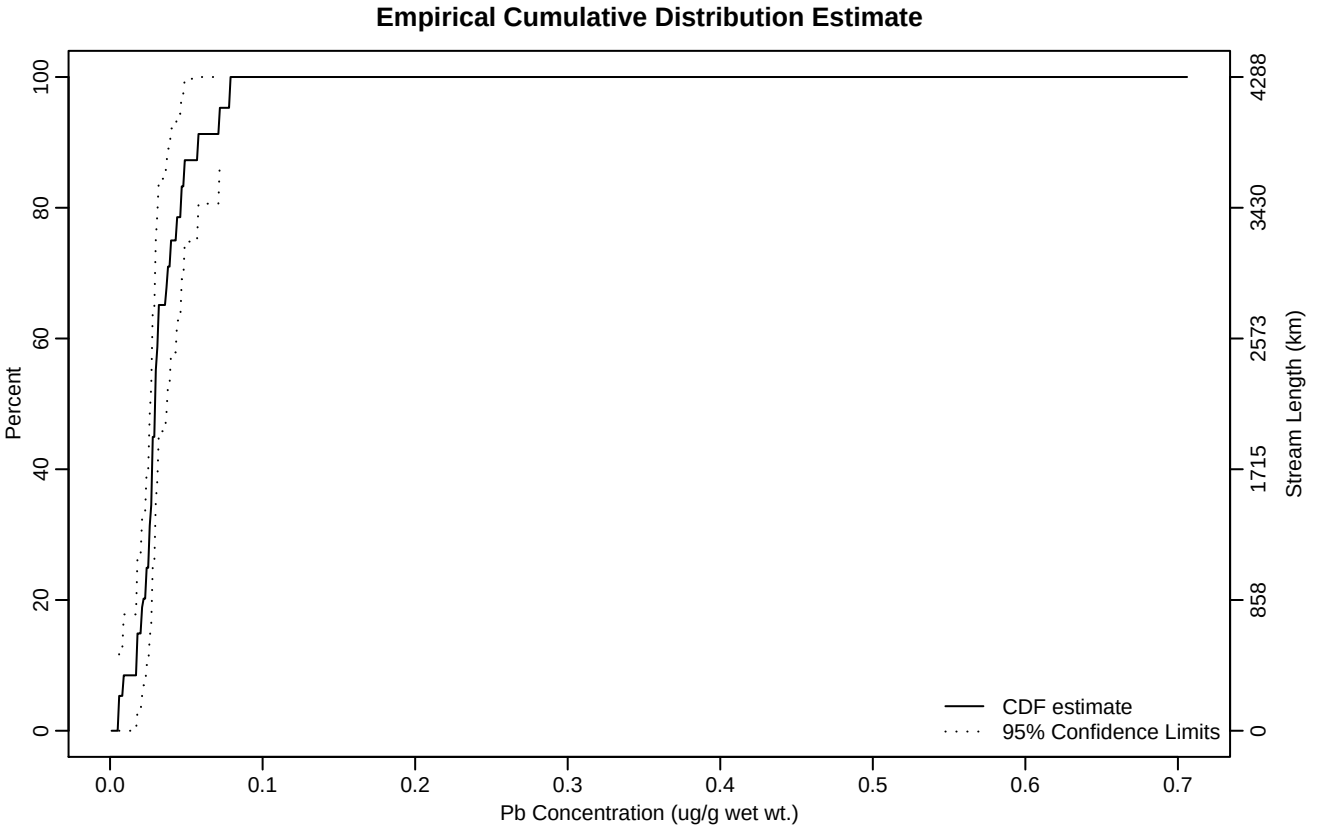


Figure FT Mtl NP−9 Indicator: Pb_NonPiscivore Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.02	0.01	0.02
25Pct	0.03	0.02	0.03
50Pct	0.03	0.03	0.04
75Pct	0.04	0.03	0.07
90Pct	0.06	0.04	
95Pct	0.07	0.05	
Mean	0.03	0.03	0.04
Std Dev	0.02	0.01	0.02

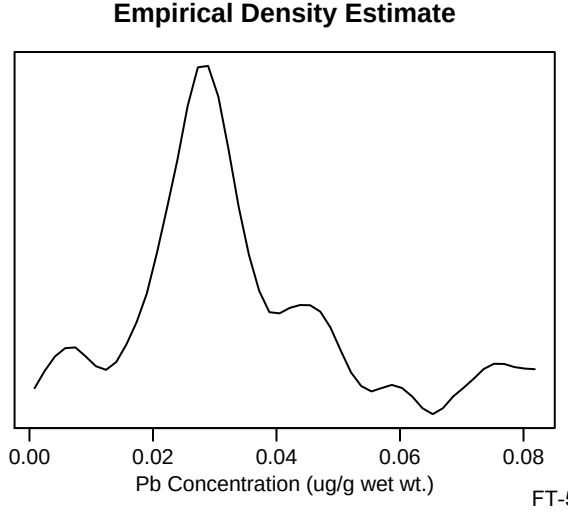
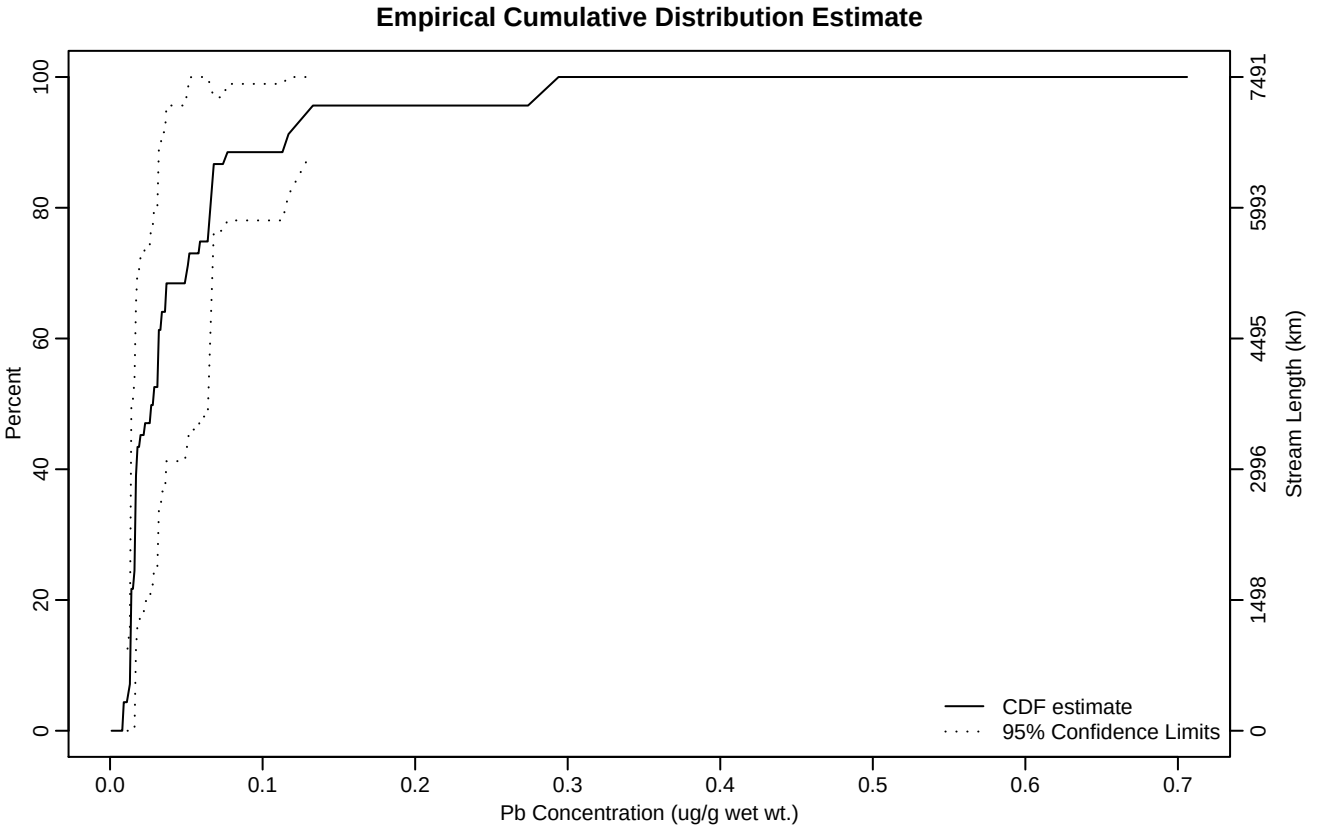


Figure FT Mtl NP−10 Indicator: Pb_NonPiscivore Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0.01	0.01
25Pct	0.02	0	0.03
50Pct	0.03	0.01	0.07
75Pct	0.06	0.03	0.29
90Pct	0.12	0.07	0.29
95Pct	0.13	0.07	0.29
Mean	0.05	0.03	0.07
Std Dev	0.05	0.03	0.07

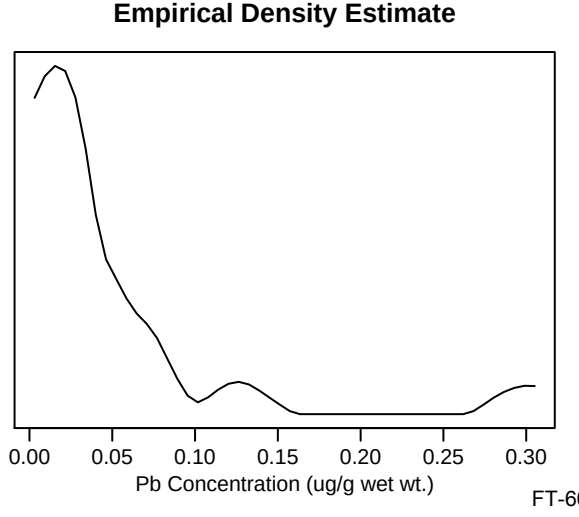
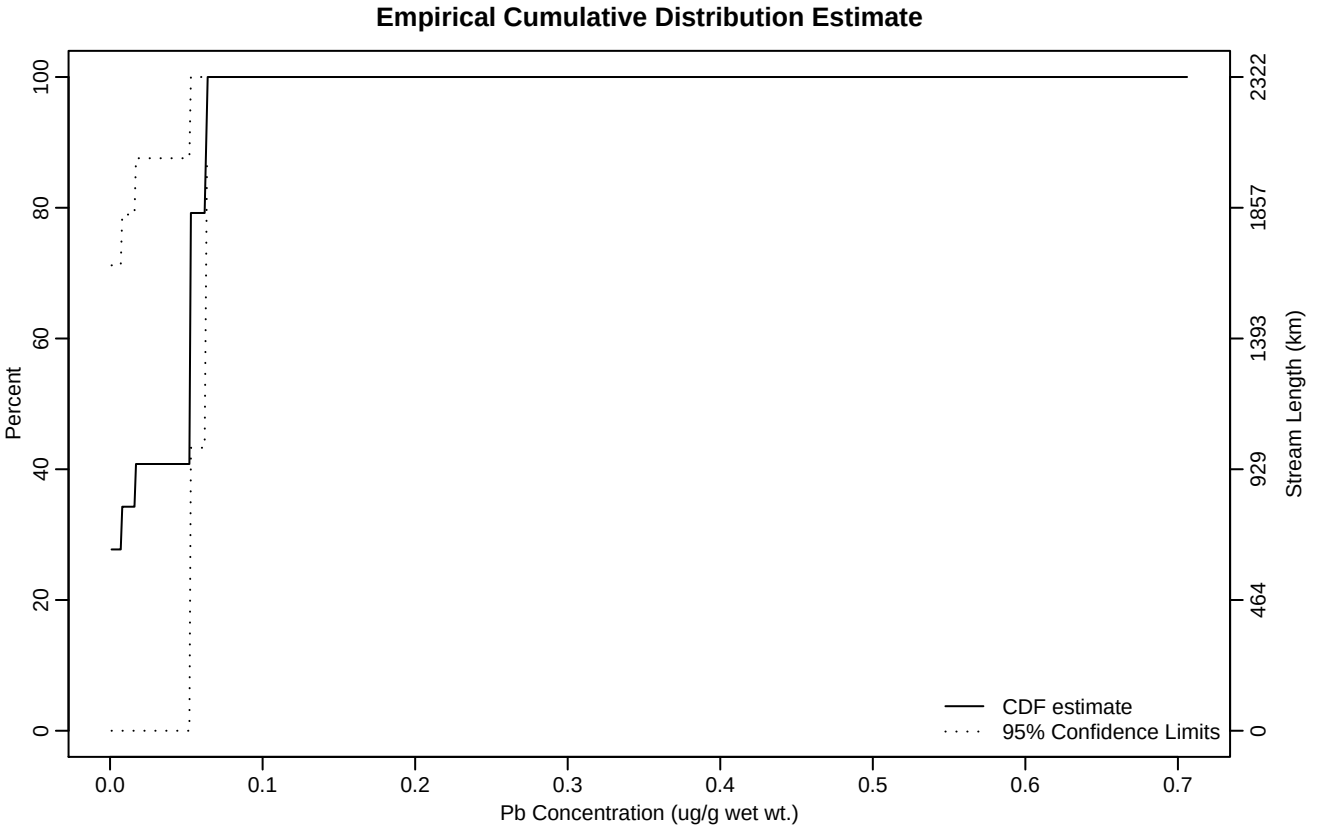


Figure FT Mtl NP−11 Indicator: Pb_NonPiscivore Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.05
10Pct	0	0	0.05
25Pct	0	0	0.05
50Pct	0.05	0	0.06
75Pct	0.05	0	0.06
90Pct	0.06	0.05	0.06
95Pct	0.06	0.05	0.06
Mean	0.04	0.01	0.06
Std Dev	0.03	0.02	0.03

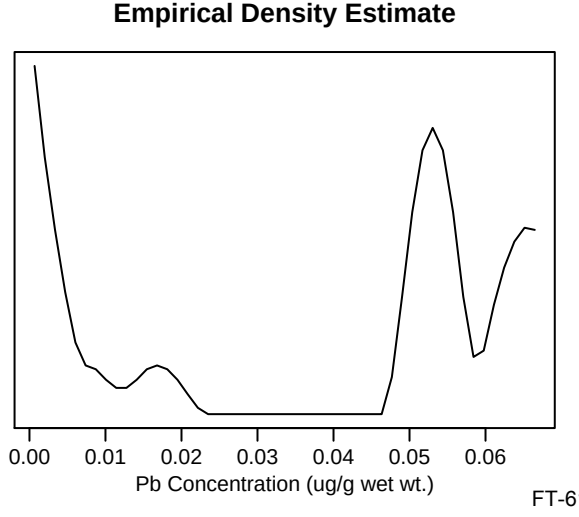
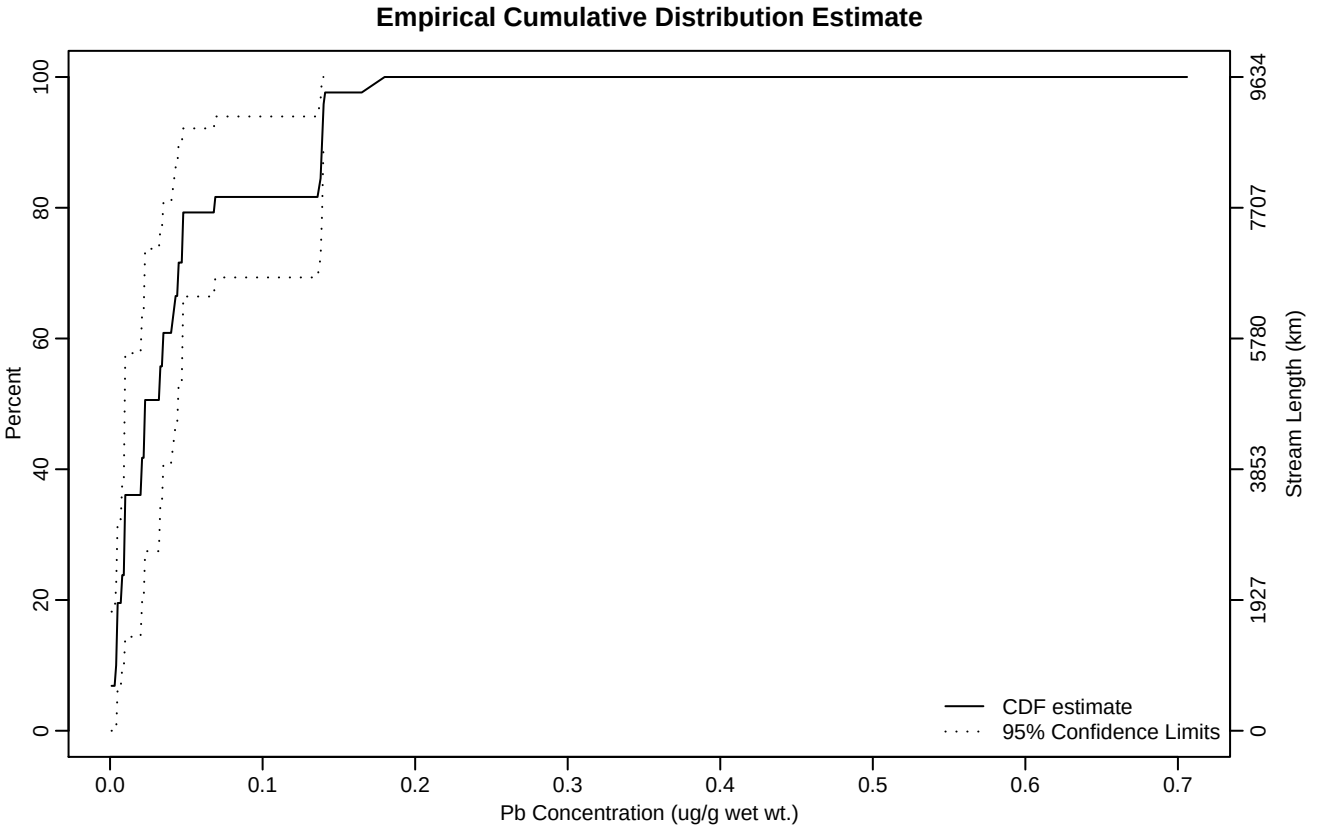


Figure FT Mtl NP−12 Indicator: Pb_NonPiscivore Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.01	0	0.02
50Pct	0.02	0.01	0.04
75Pct	0.05	0.03	0.14
90Pct	0.14	0.05	0.18
95Pct	0.14	0.14	0.18
Mean	0.05	0.03	0.06
Std Dev	0.04	0.03	0.05

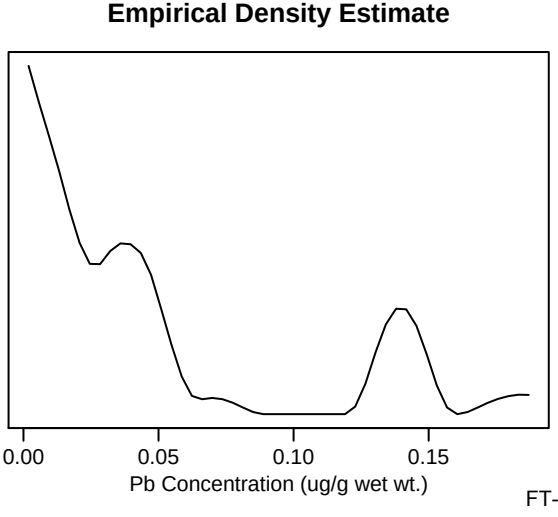
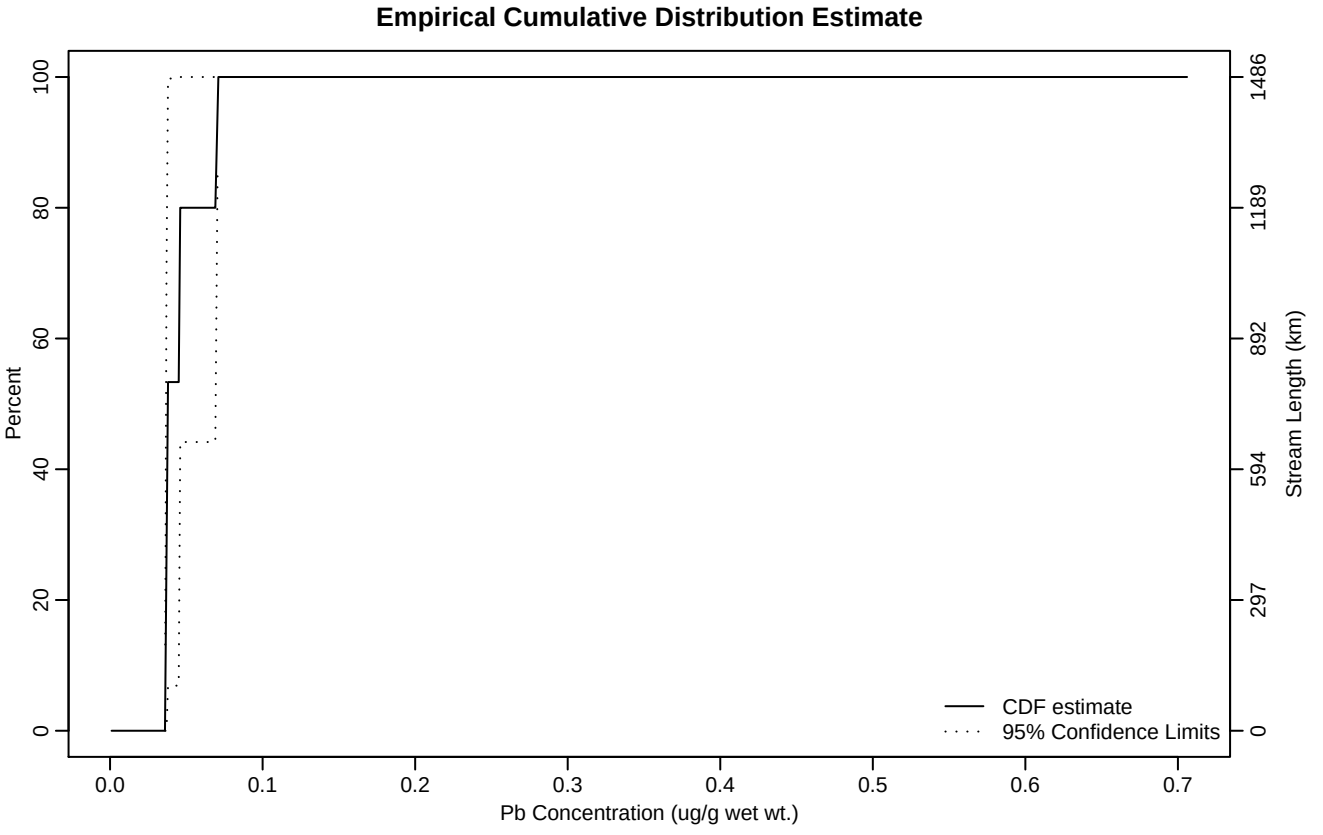


Figure FT Mtl NP−13 Indicator: Pb_NonPiscivore Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.04	0.04	0.04
10Pct	0.04	0.04	0.04
25Pct	0.04	0.04	0.04
50Pct	0.04	0.04	0.07
75Pct	0.05	0.04	0.07
90Pct	0.07	0.05	0.07
95Pct	0.07	0.05	0.07
Mean	0.05	0.03	0.06
Std Dev	0.01	0	0.02

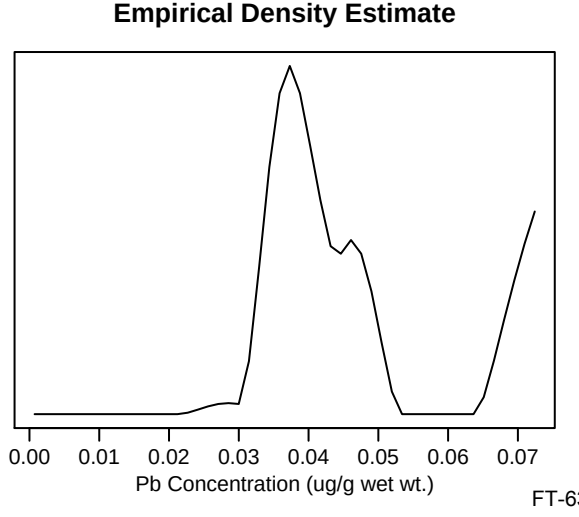
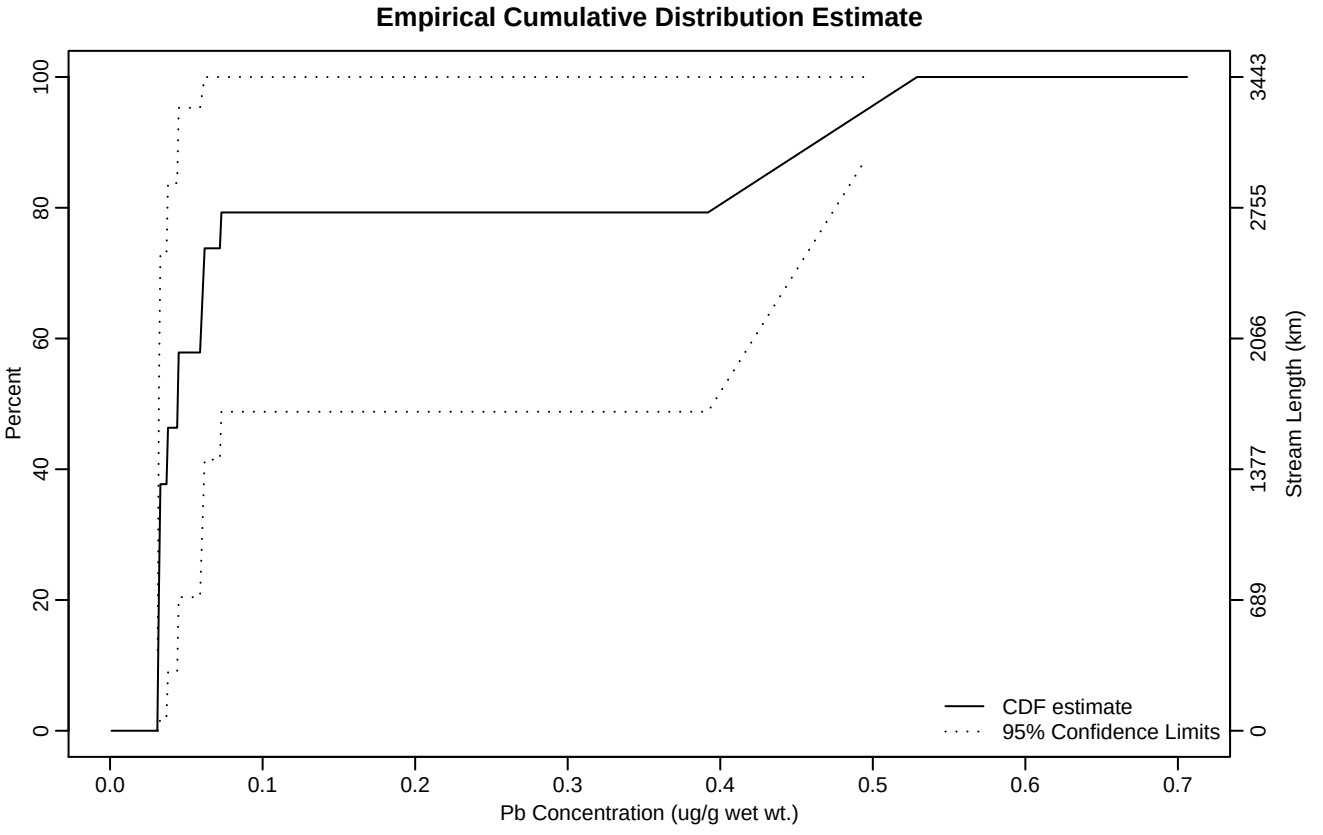


Figure FT Mtl NP−14 Indicator: Pb_NonPiscivore Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.03	0.03
10Pct	0.03	0.03	0.03
25Pct	0.03	0	0.04
50Pct	0.04	0.03	0.45
75Pct	0.07	0.04	0.53
90Pct	0.46	0.04	0.53
95Pct	0.50	0.06	0.53
Mean	0.14	0	0.29
Std Dev	0.19	0.09	0.28

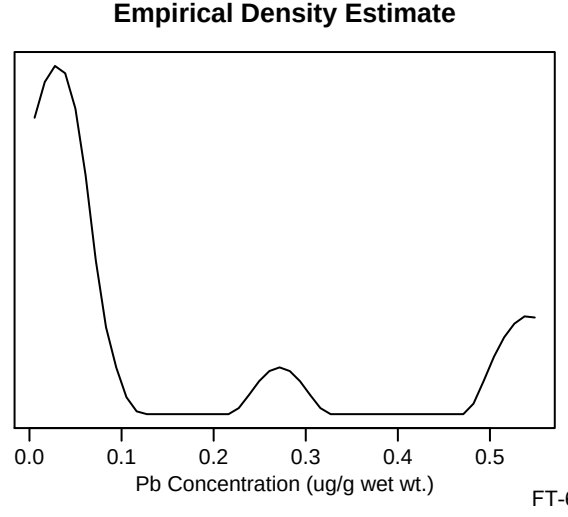
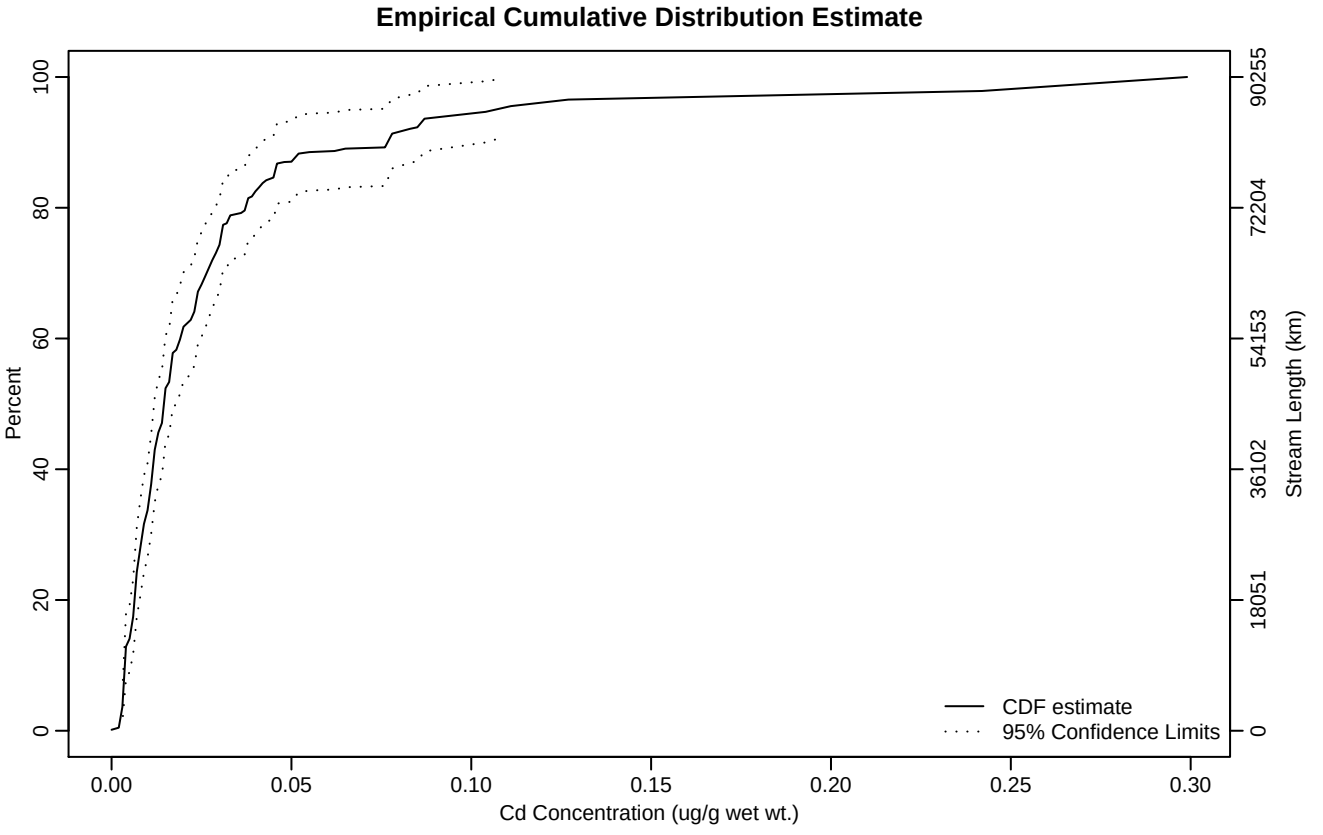


Figure FT Mtl NP−15 Indicator: Cd_NonPiscivore Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0.01	0.01
50Pct	0.01	0.01	0.02
75Pct	0.03	0.02	0.04
90Pct	0.08	0.04	0.12
95Pct	0.11	0.08	0.29
Mean	0.03	0.02	0.04
Std Dev	0.04	0.03	0.06

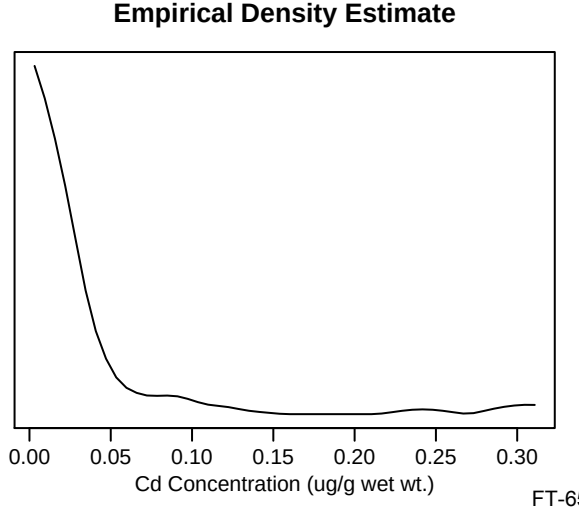
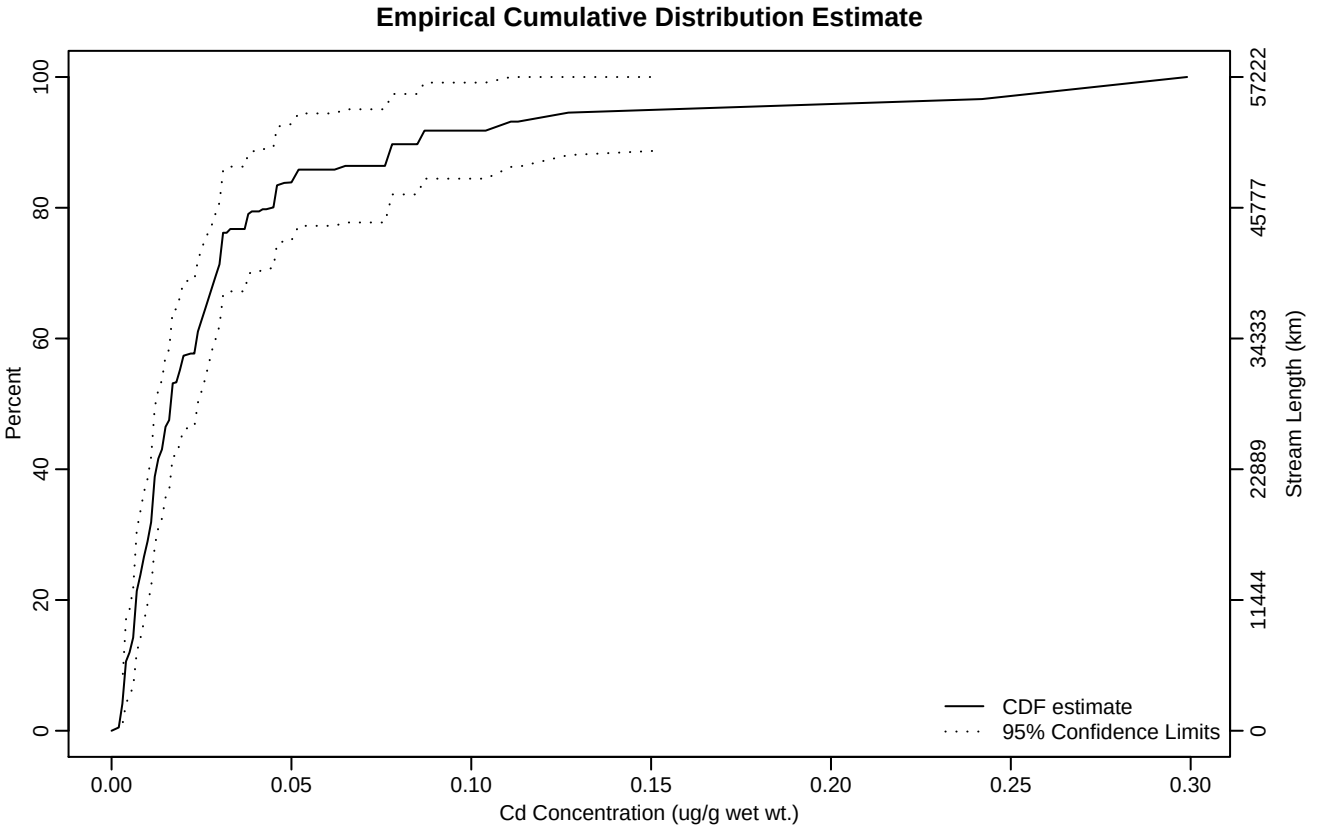


Figure FT Mtl NP−16 Indicator: Cd_NonPiscivore Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.01	0.01	0.01
50Pct	0.02	0.01	0.02
75Pct	0.03	0.03	0.05
90Pct	0.09	0.05	0.26
95Pct	0.15	0.08	0.30
Mean	0.04	0.02	0.06
Std Dev	0.05	0.03	0.07

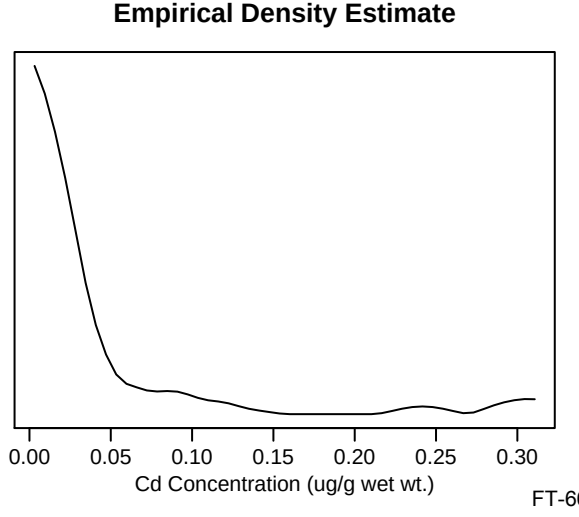
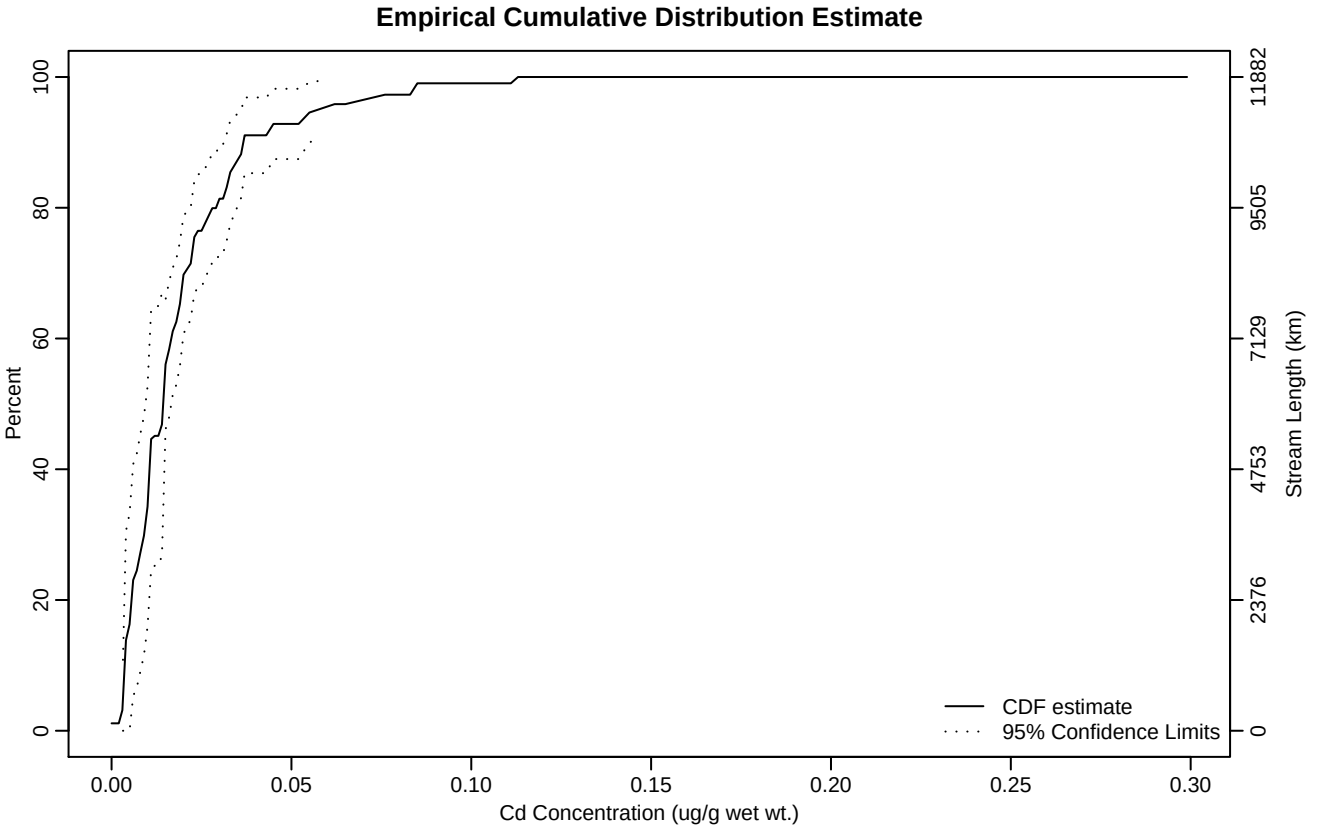


Figure FT Mtl NP−17 Indicator: Cd_NonPiscivore Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.01
50Pct	0.01	0.01	0.02
75Pct	0.02	0.02	0.03
90Pct	0.04	0.03	0.07
95Pct	0.06	0.04	0.11
Mean	0.02	0.02	0.02
Std Dev	0.01	0.01	0.02

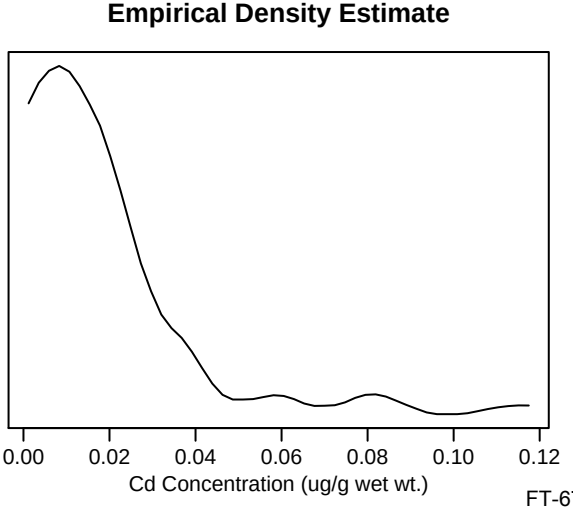
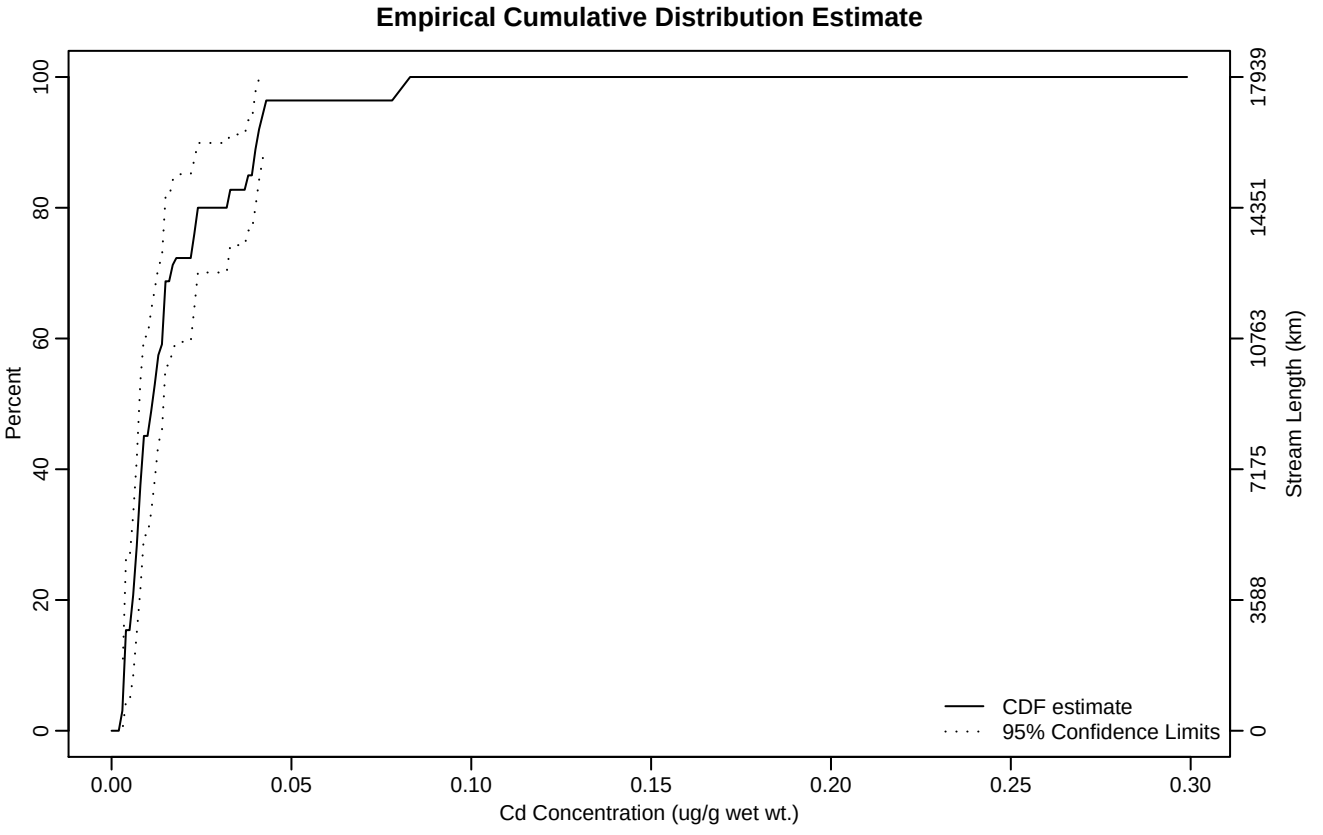


Figure FT Mtl NP−18 Indicator: Cd_NonPiscivore Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.01
50Pct	0.01	0.01	0.01
75Pct	0.02	0.01	0.04
90Pct	0.04	0.03	0.08
95Pct	0.04	0.04	0.08
Mean	0.02	0.01	0.02
Std Dev	0.01	0.01	0.02

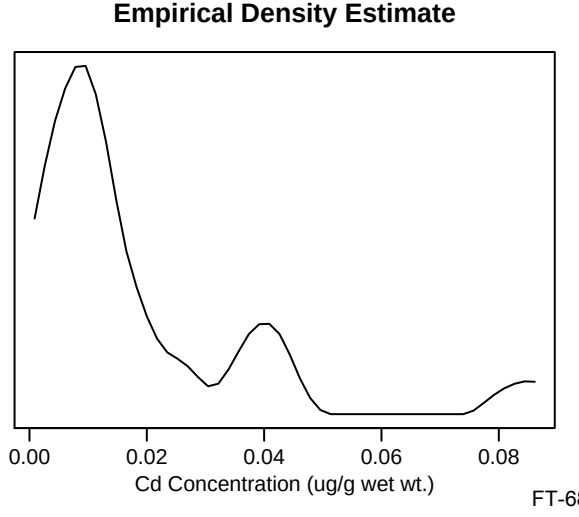
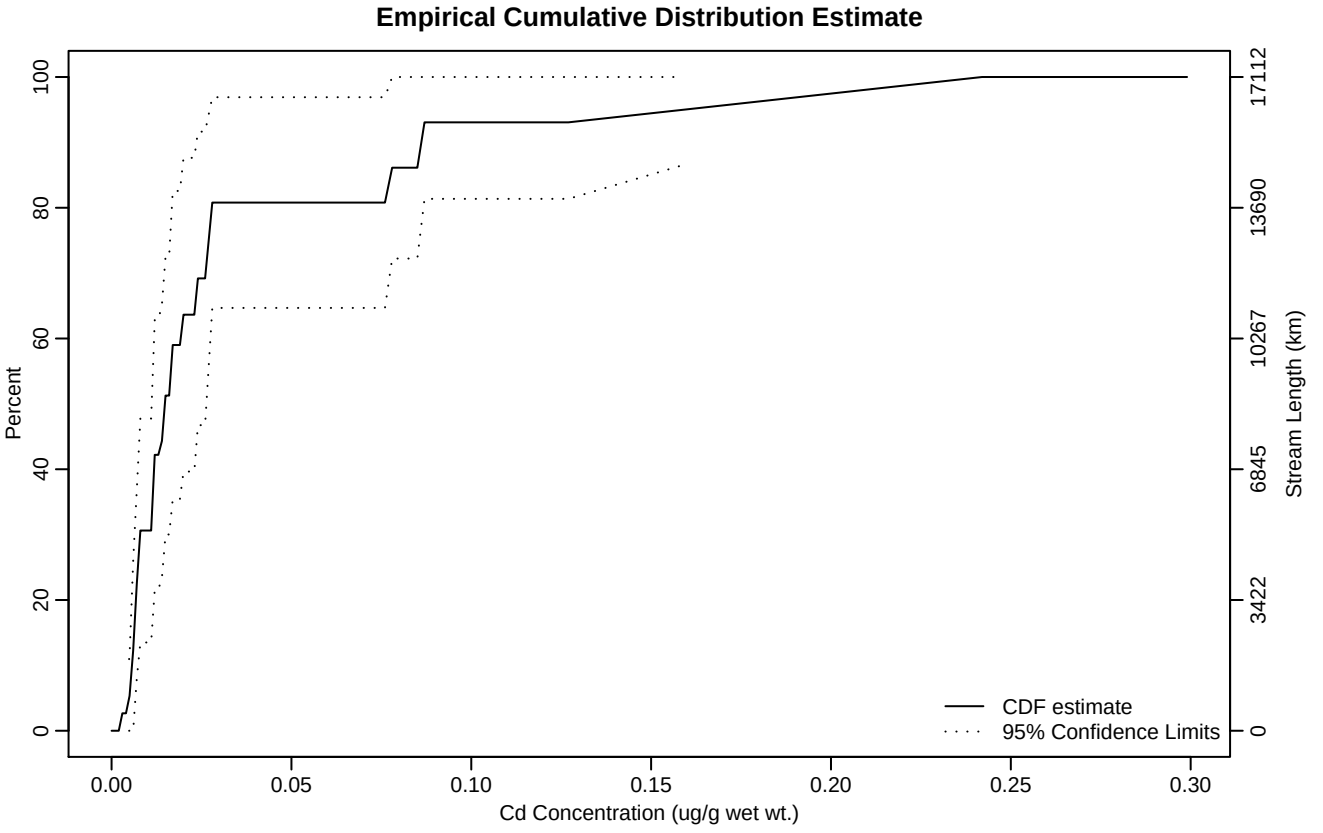


Figure FT Mtl NP−19 Indicator: Cd_NonPiscivore Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0.01	0	0.01
25Pct	0.01	0.01	0.01
50Pct	0.01	0.01	0.03
75Pct	0.03	0.02	0.21
90Pct	0.09	0.03	0.24
95Pct	0.16	0.08	0.24
Mean	0.04	0.01	0.07
Std Dev	0.05	0.03	0.07

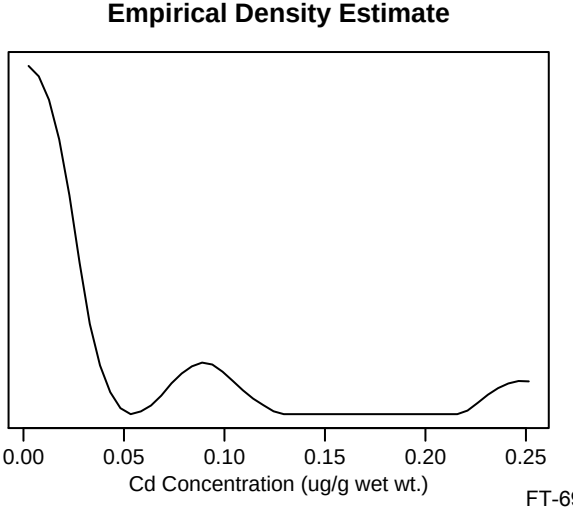
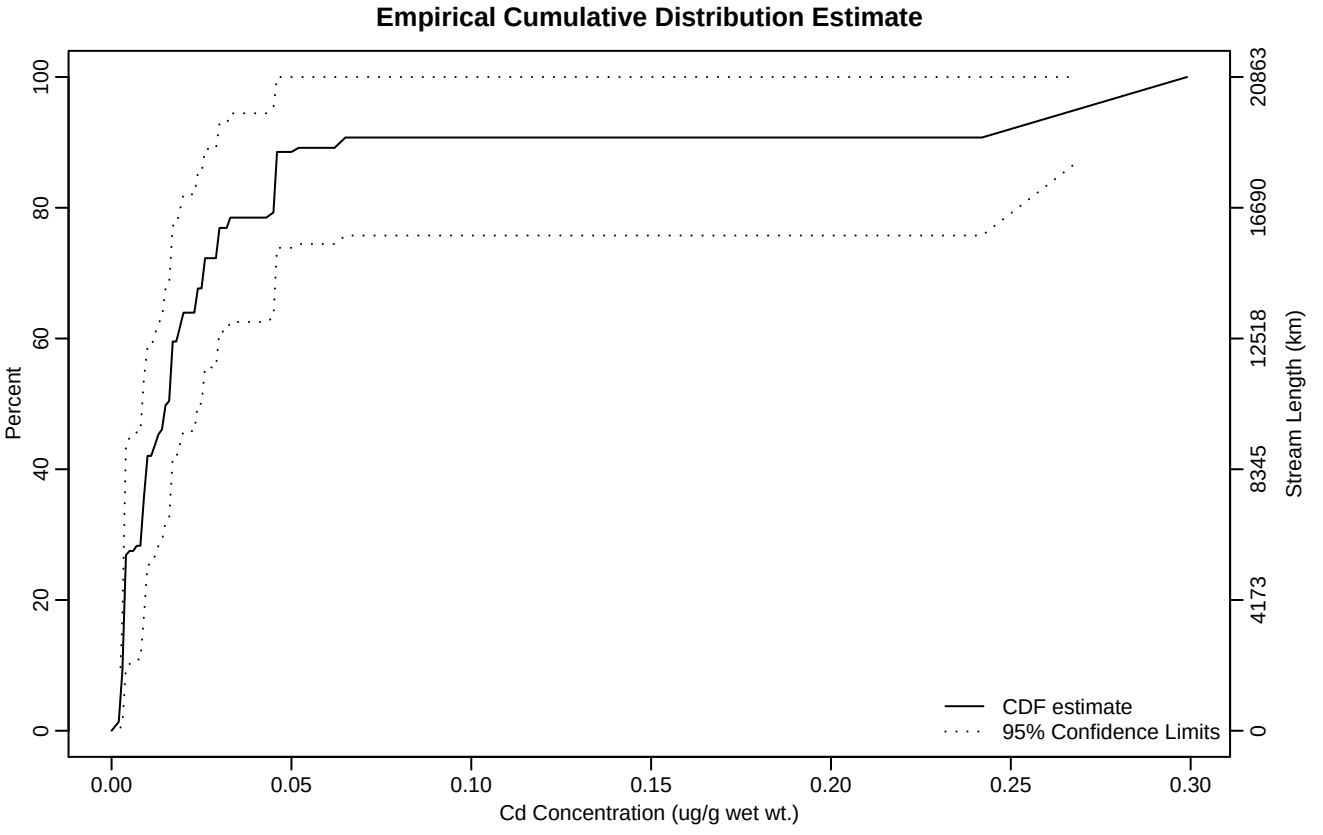


Figure FT Mtl NP−20 Indicator: Cd_NonPiscivore Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.02	0.01	0.03
75Pct	0.03	0.02	0.25
90Pct	0.06	0.03	
95Pct	0.27	0.05	
Mean	0.04	0	0.08
Std Dev	0.08	0.02	0.13

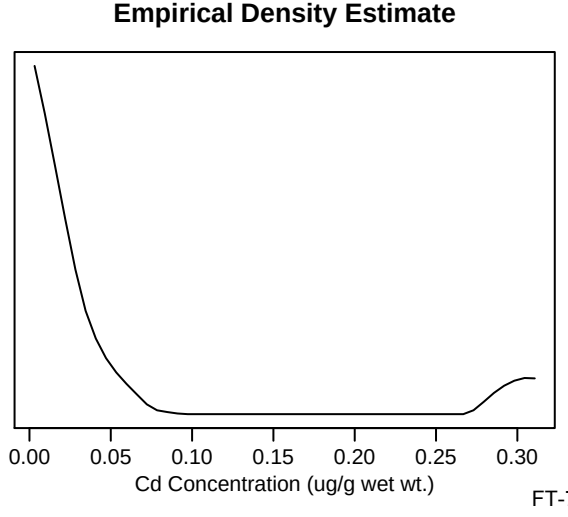
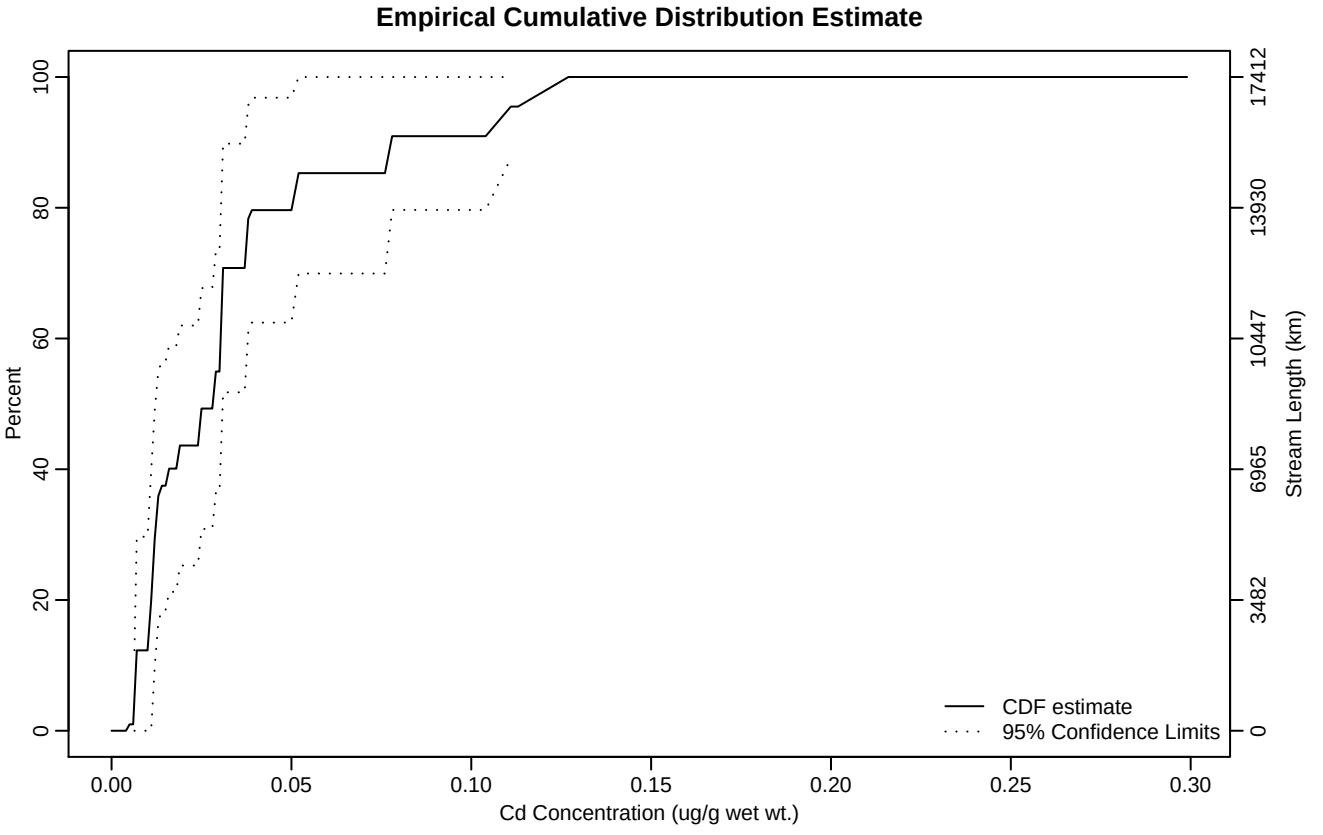


Figure FT Mtl NP−21 Indicator: Cd_NonPiscivore Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.02
50Pct	0.03	0.01	0.03
75Pct	0.04	0.03	0.11
90Pct	0.08	0.04	0.13
95Pct	0.11	0.05	0.13
Mean	0.03	0.02	0.05
Std Dev	0.03	0.02	0.04

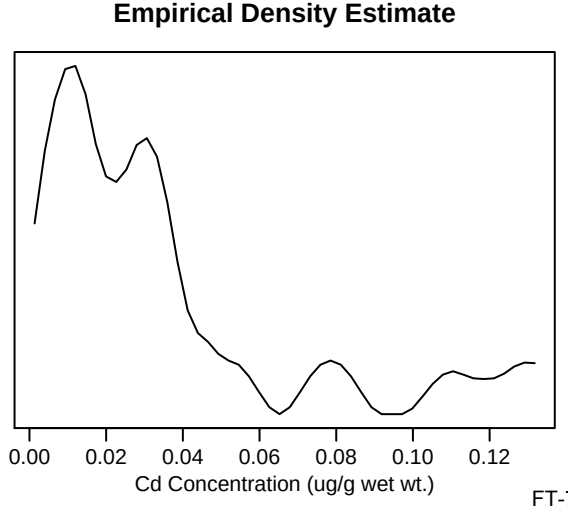
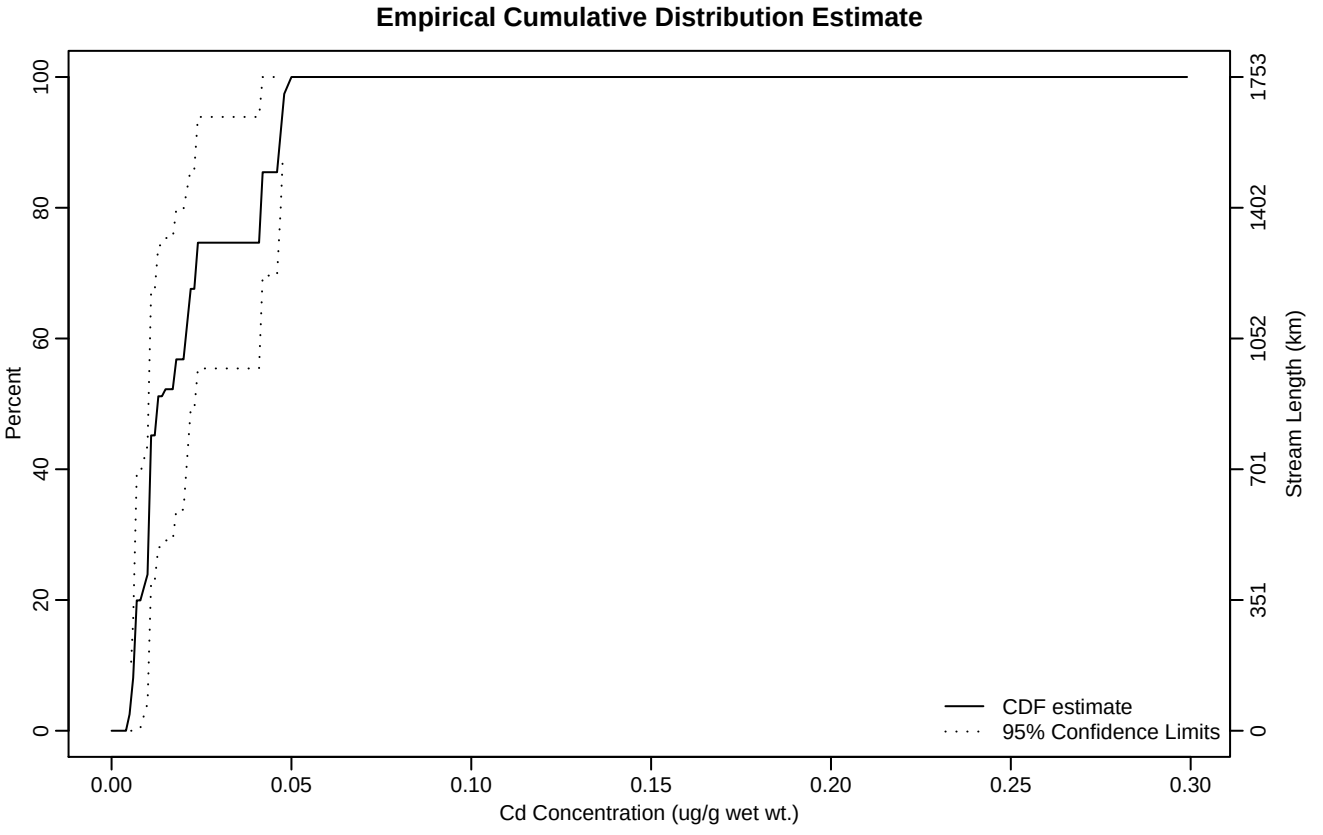


Figure FT Mtl NP−22 Indicator: Cd_NonPiscivore Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0	0.01
25Pct	0.01	0.01	0.01
50Pct	0.01	0.01	0.02
75Pct	0.04	0.02	0.05
90Pct	0.05	0.02	0.05
95Pct	0.05	0.04	0.05
Mean	0.02	0.01	0.03
Std Dev	0.01	0.01	0.02

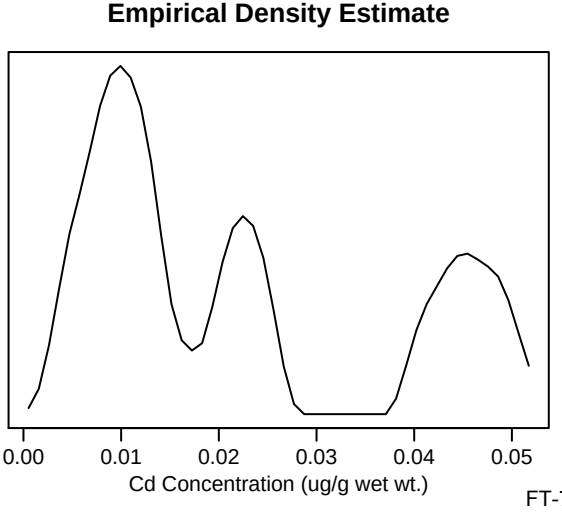
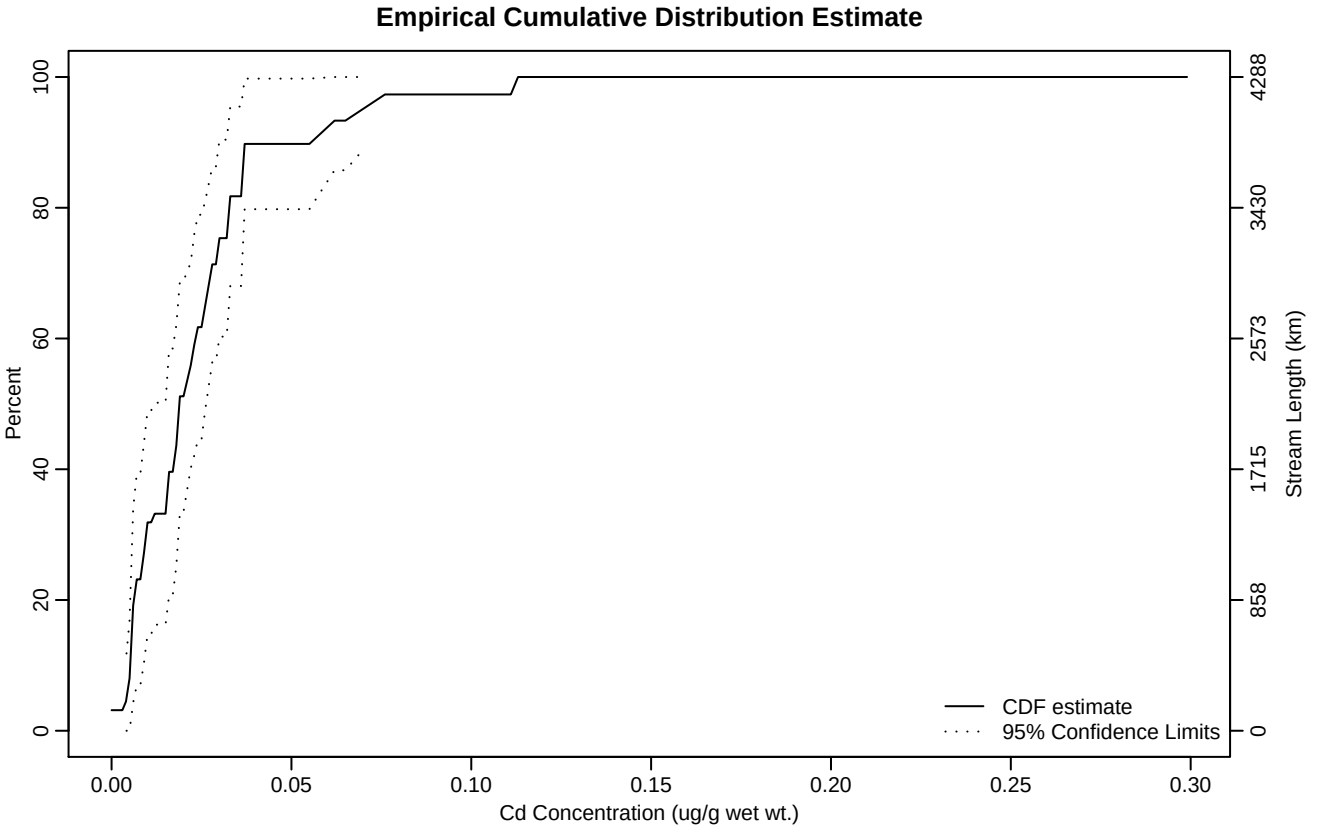


Figure FT Mtl NP−23 Indicator: Cd_NonPiscivore Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0.01	0	0.01
25Pct	0.01	0.01	0.02
50Pct	0.02	0.01	0.03
75Pct	0.03	0.02	0.04
90Pct	0.06	0.03	0.11
95Pct	0.07	0.04	
Mean	0.02	0.02	0.03
Std Dev	0.02	0.01	0.03

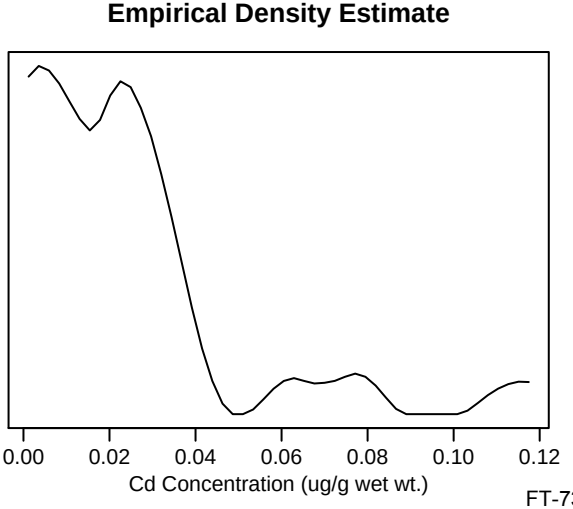
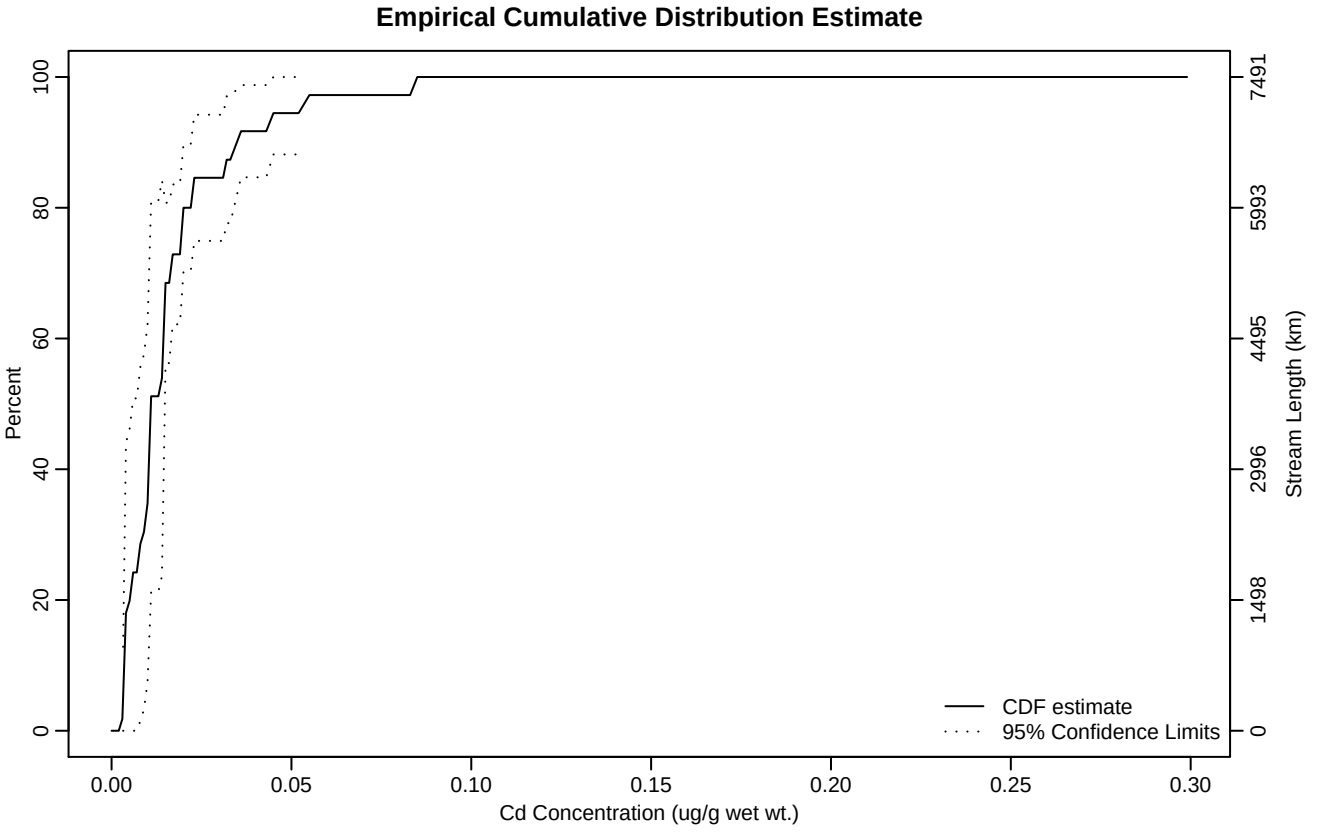


Figure FT Mtl NP−24 Indicator: Cd_NonPiscivore Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.01
50Pct	0.01	0.01	0.02
75Pct	0.02	0.01	0.03
90Pct	0.03	0.02	0.08
95Pct	0.05	0.03	0.09
Mean	0.02	0.01	0.02
Std Dev	0.01	0.01	0.01

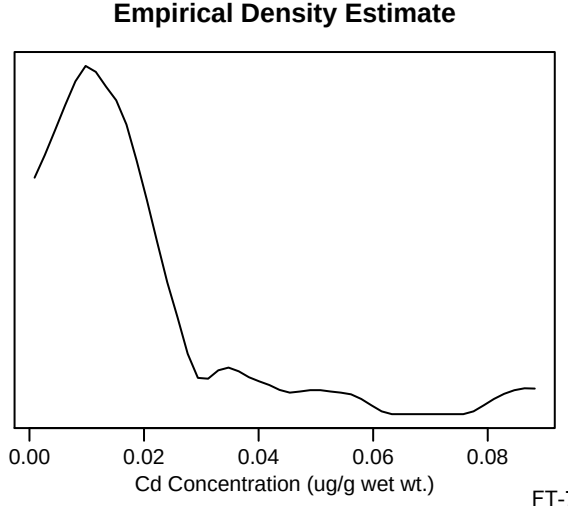
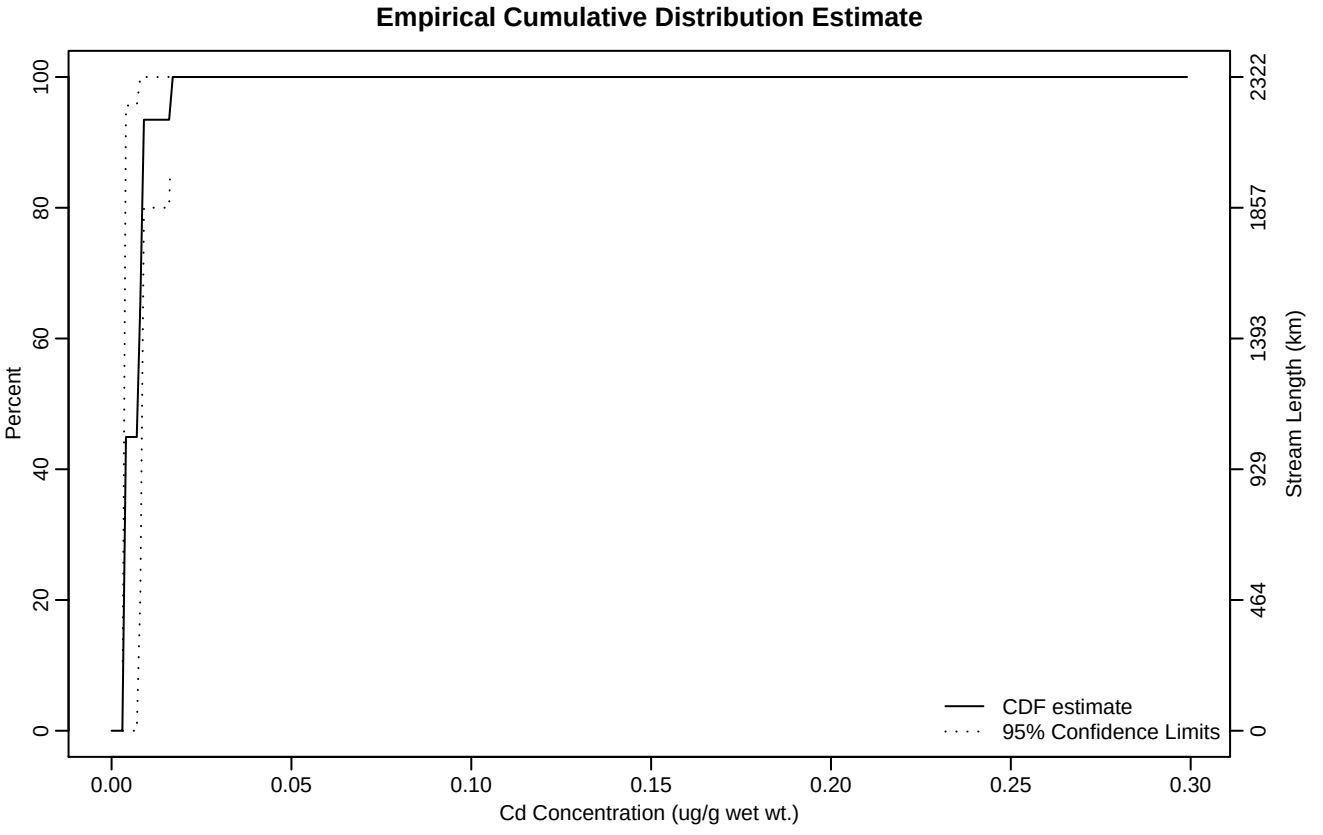


Figure FT Mtl NP−25 Indicator: Cd_NonPiscivore Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0.01	0	0.02
75Pct	0.01	0	0.02
90Pct	0.01	0.01	0.02
95Pct	0.02	0.01	0.02
Mean	0.01	0	0.01
Std Dev	0	0	0.01

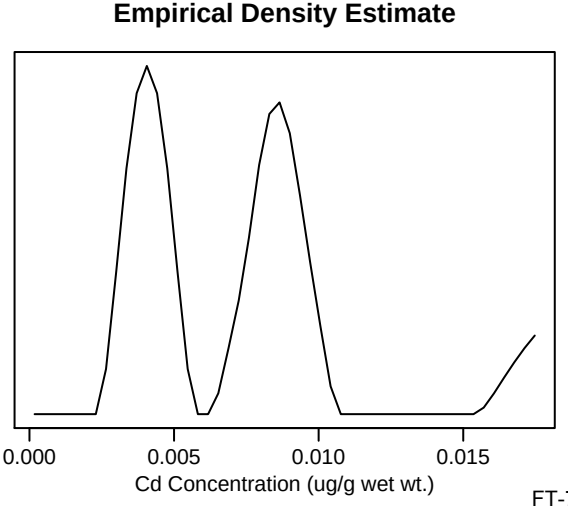
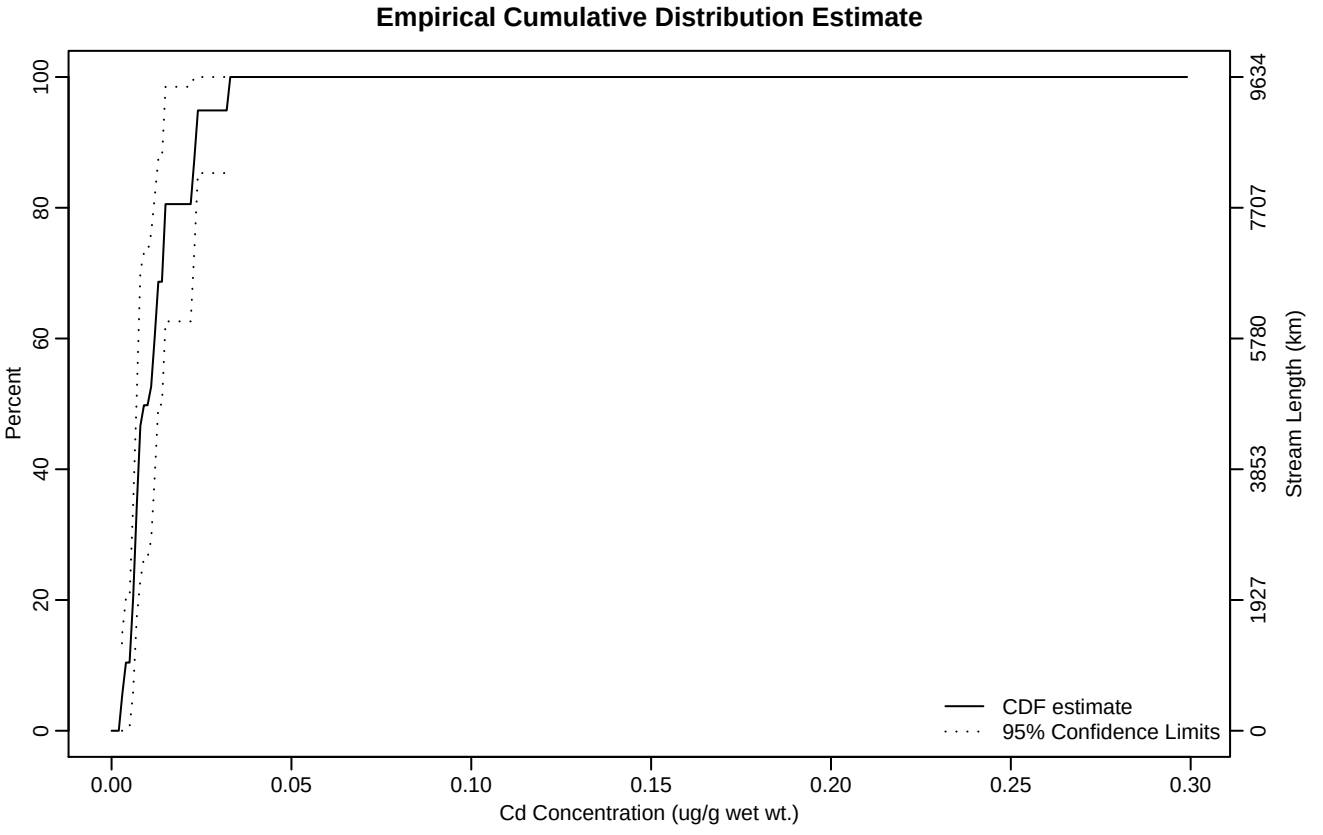


Figure FT Mtl NP−26 Indicator: Cd_NonPiscivore Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.01	0	0.01
50Pct	0.01	0.01	0.01
75Pct	0.01	0.01	0.02
90Pct	0.02	0.01	0.03
95Pct	0.03	0.02	0.03
Mean	0.01	0.01	0.02
Std Dev	0.01	0.01	0.01

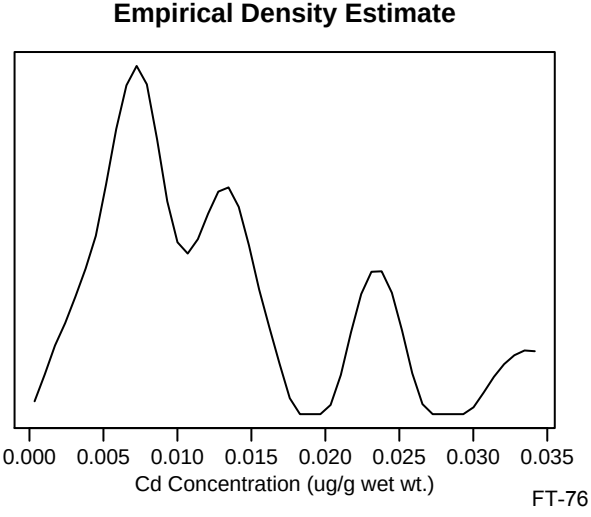
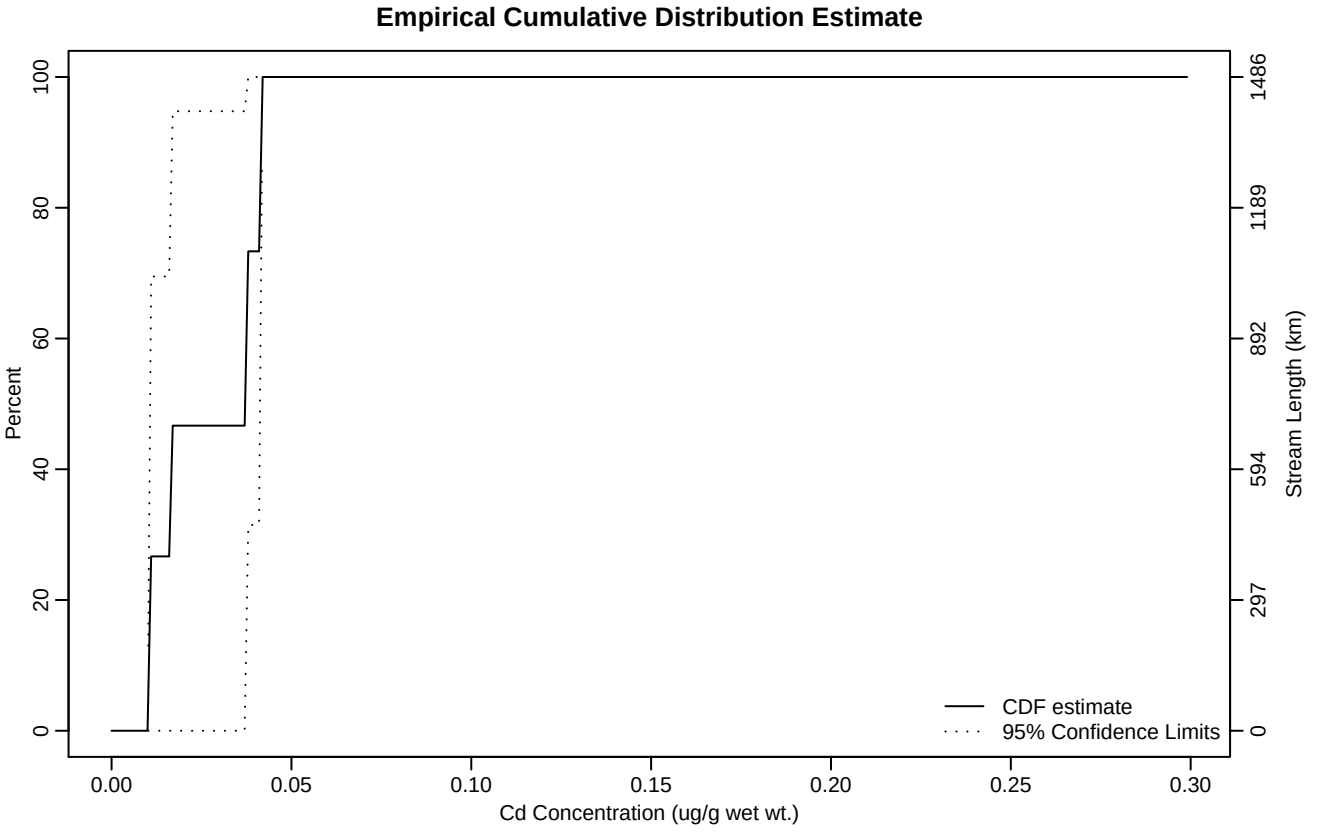


Figure FT Mtl NP−27 Indicator: Cd_NonPiscivore Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.02
50Pct	0.04	0.01	0.04
75Pct	0.04	0.02	0.04
90Pct	0.04	0.04	0.04
95Pct	0.04	0.04	0.04
Mean	0.03	0.01	0.04
Std Dev	0.01	0.01	0.02

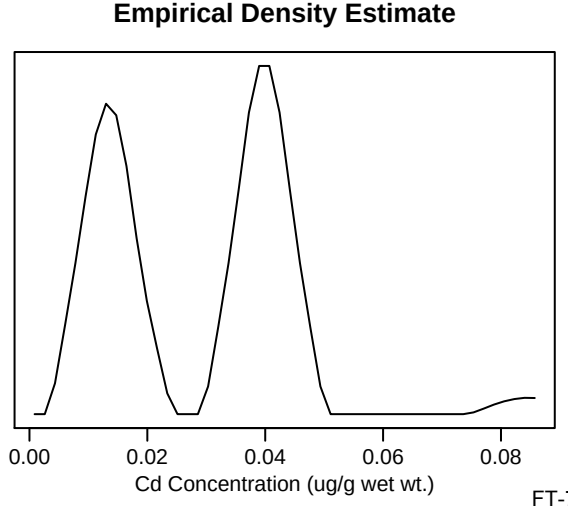
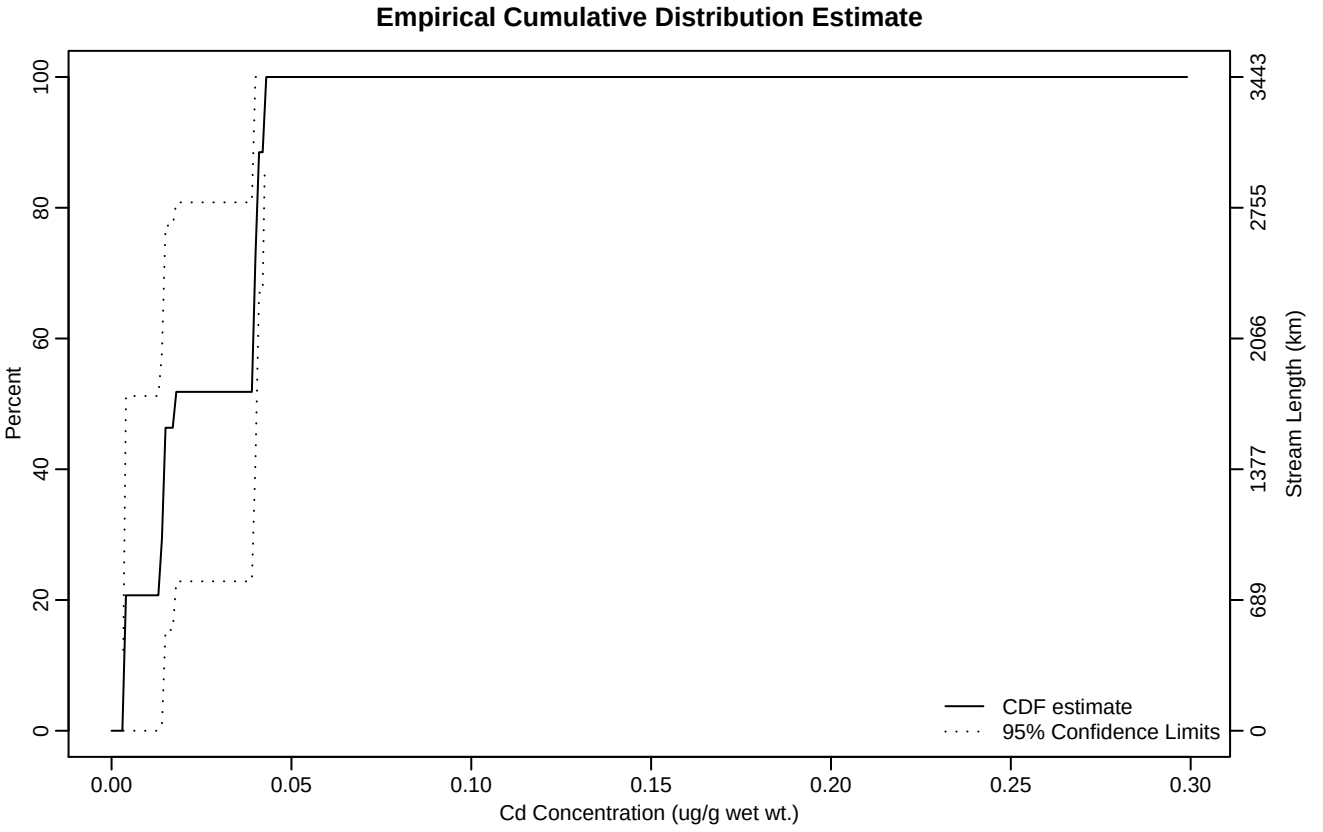


Figure FT Mtl NP−28 Indicator: Cd_NonPiscivore Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.04
50Pct	0.02	0	0.04
75Pct	0.04	0.01	0.04
90Pct	0.04	0.04	0.04
95Pct	0.04	0.04	0.04
Mean	0.03	0.02	0.04
Std Dev	0.01	0.01	0.02

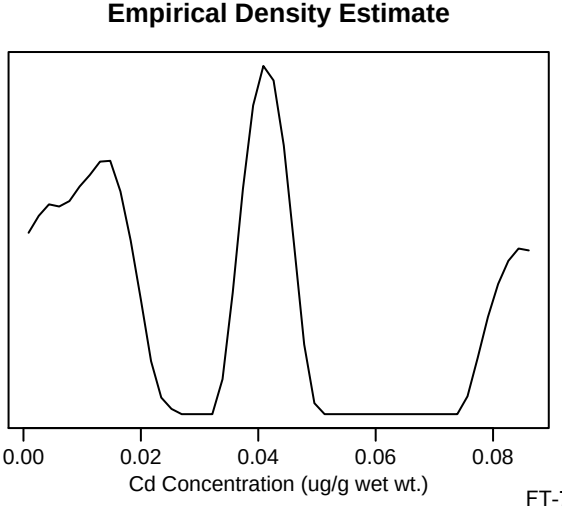
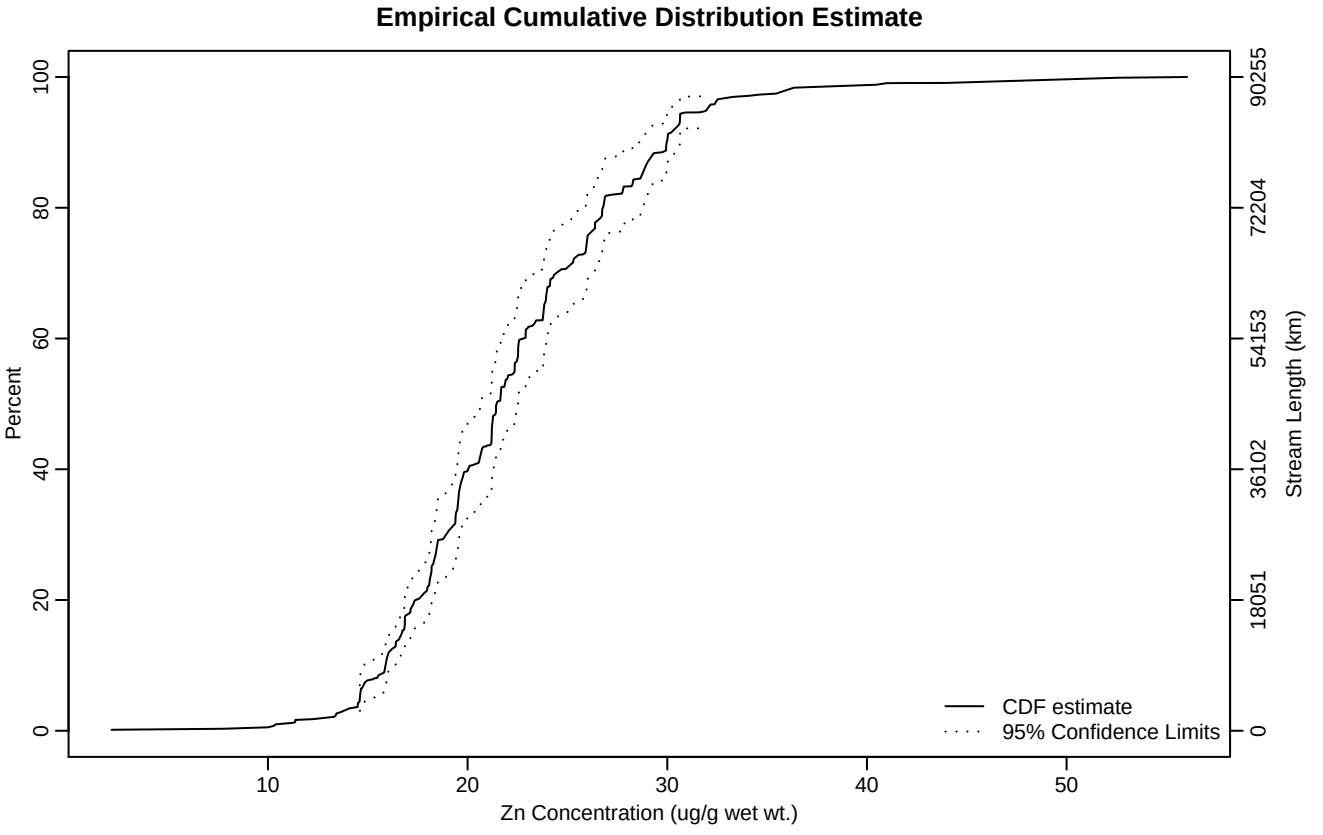


Figure FT Mtl NP−29 Indicator: Zn_NonPiscivore Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.60	14.24	14.70
10Pct	15.89	14.78	16.40
25Pct	18.20	17.28	19.06
50Pct	21.45	20.62	22.53
75Pct	25.98	24	27.58
90Pct	29.97	28.82	30.65
95Pct	31.97	30.54	35.38
Mean	22.43	21.68	23.19
Std Dev	5.04	4.46	5.61

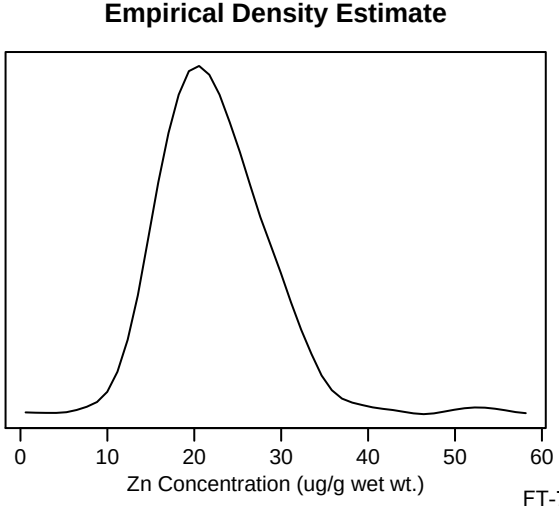
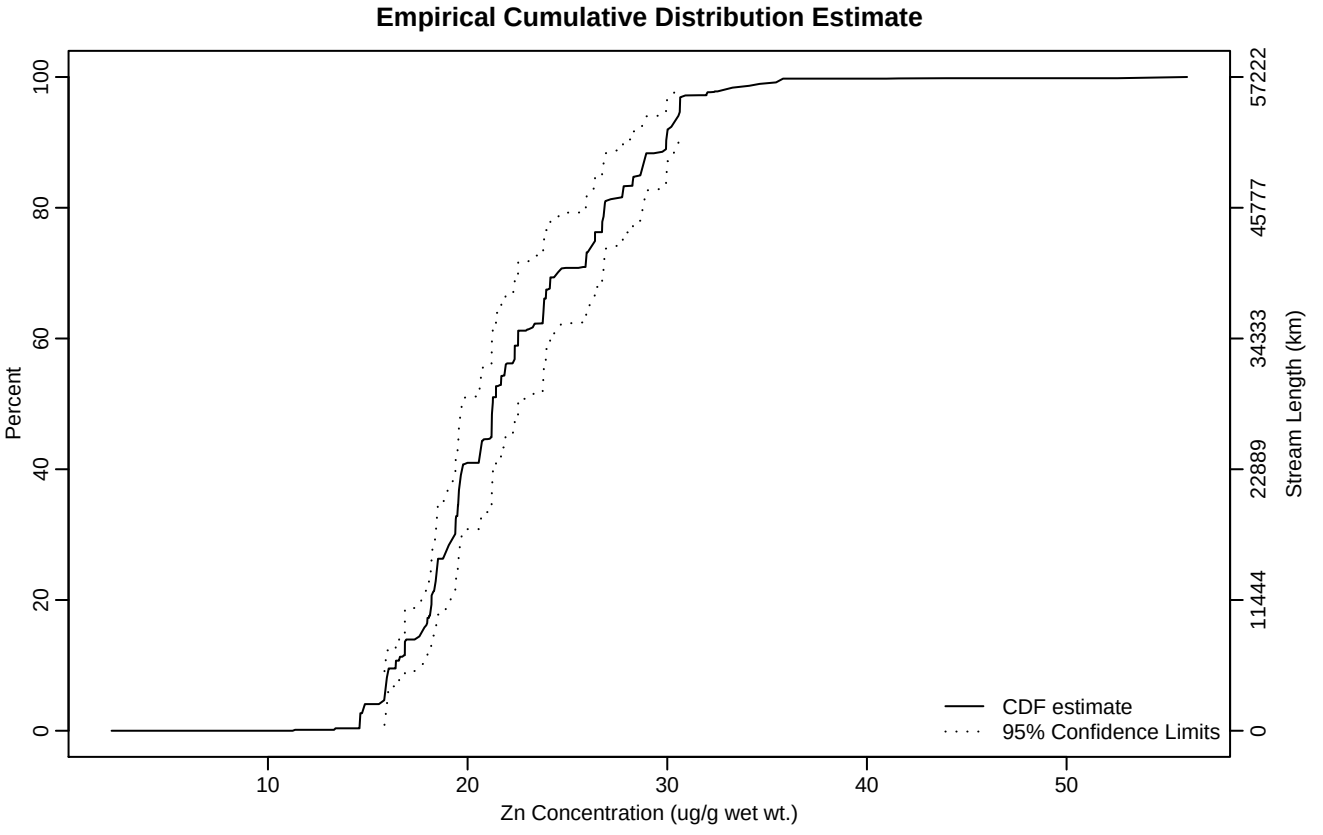


Figure FT Mtl NP−30 Indicator: Zn_NonPiscivore Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	15.84	14.60	16.01
10Pct	16.40	15.88	16.92
25Pct	18.47	17.99	19.48
50Pct	21.26	19.64	22.97
75Pct	26.38	23.93	28.08
90Pct	29.95	28.48	30.63
95Pct	30.63	29.98	34.66
Mean	22.45	21.61	23.28
Std Dev	3.97	3.56	4.38

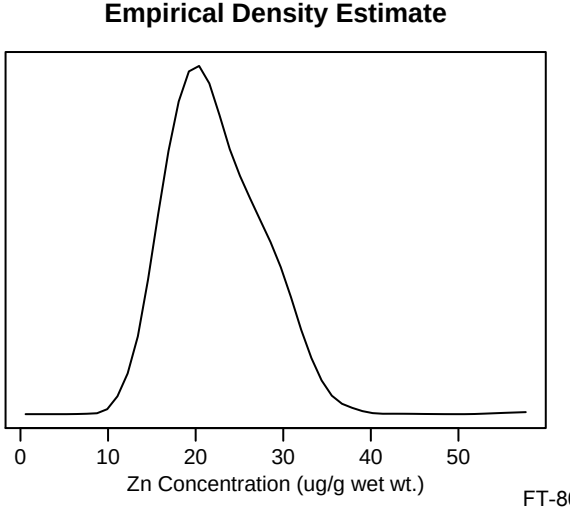
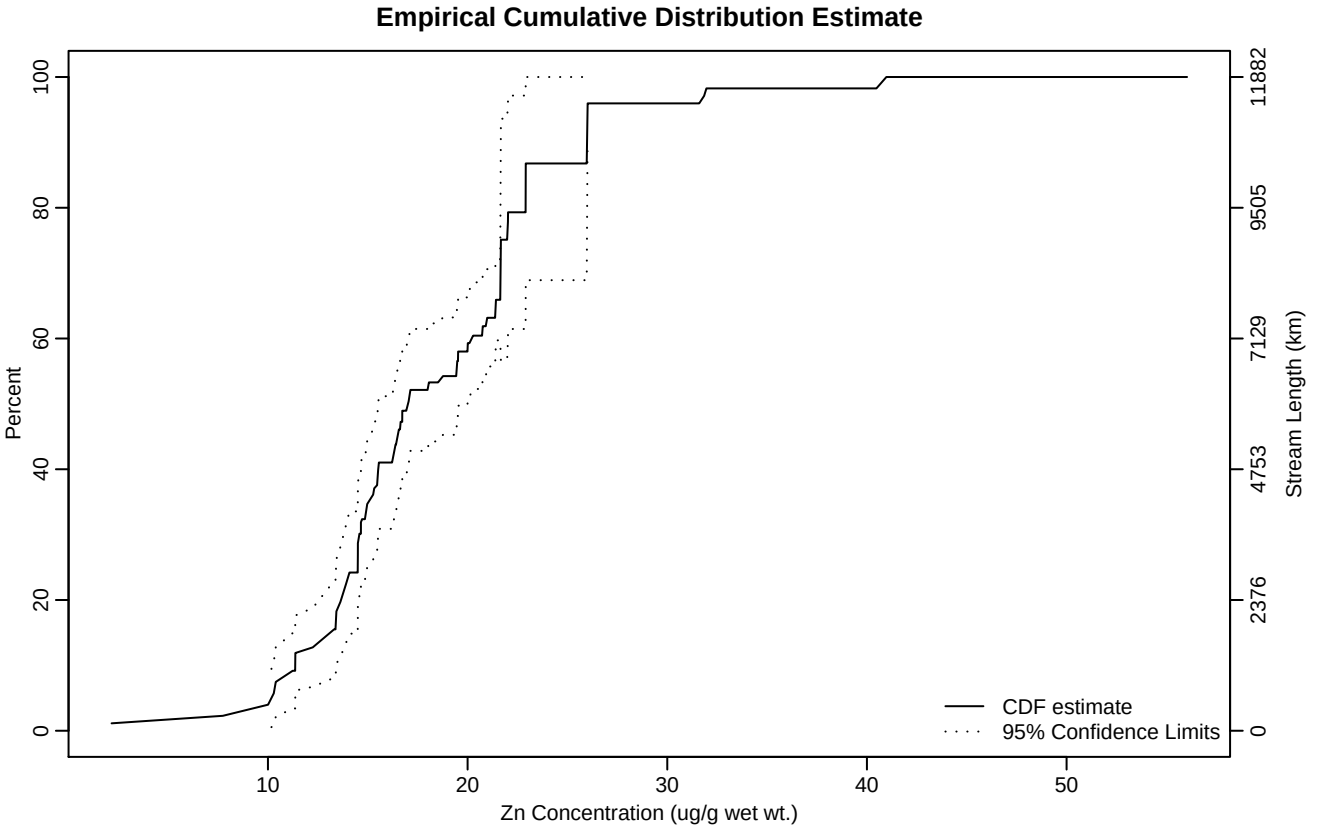


Figure FT Mtl NP−31 Indicator: Zn_NonPiscivore Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.17	2.64	11.04
10Pct	11.37	10.07	13.39
25Pct	14.50	13.26	14.97
50Pct	17.01	15.51	20.25
75Pct	21.67	21.64	22.91
90Pct	25.98	21.65	40.97
95Pct	26.01	22	40.97
Mean	18.42	17.11	19.72
Std Dev	4.88	3.44	6.32

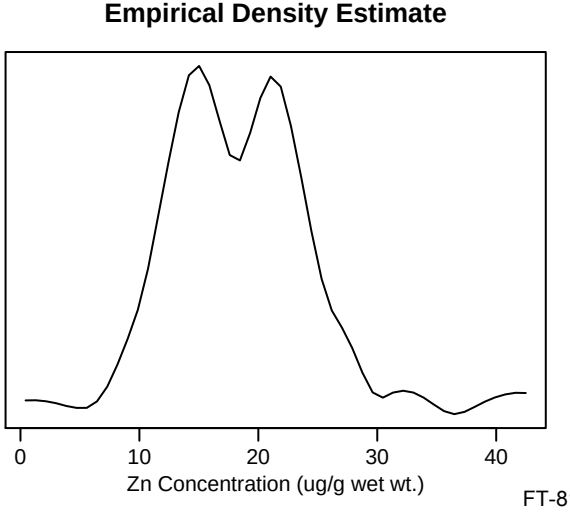
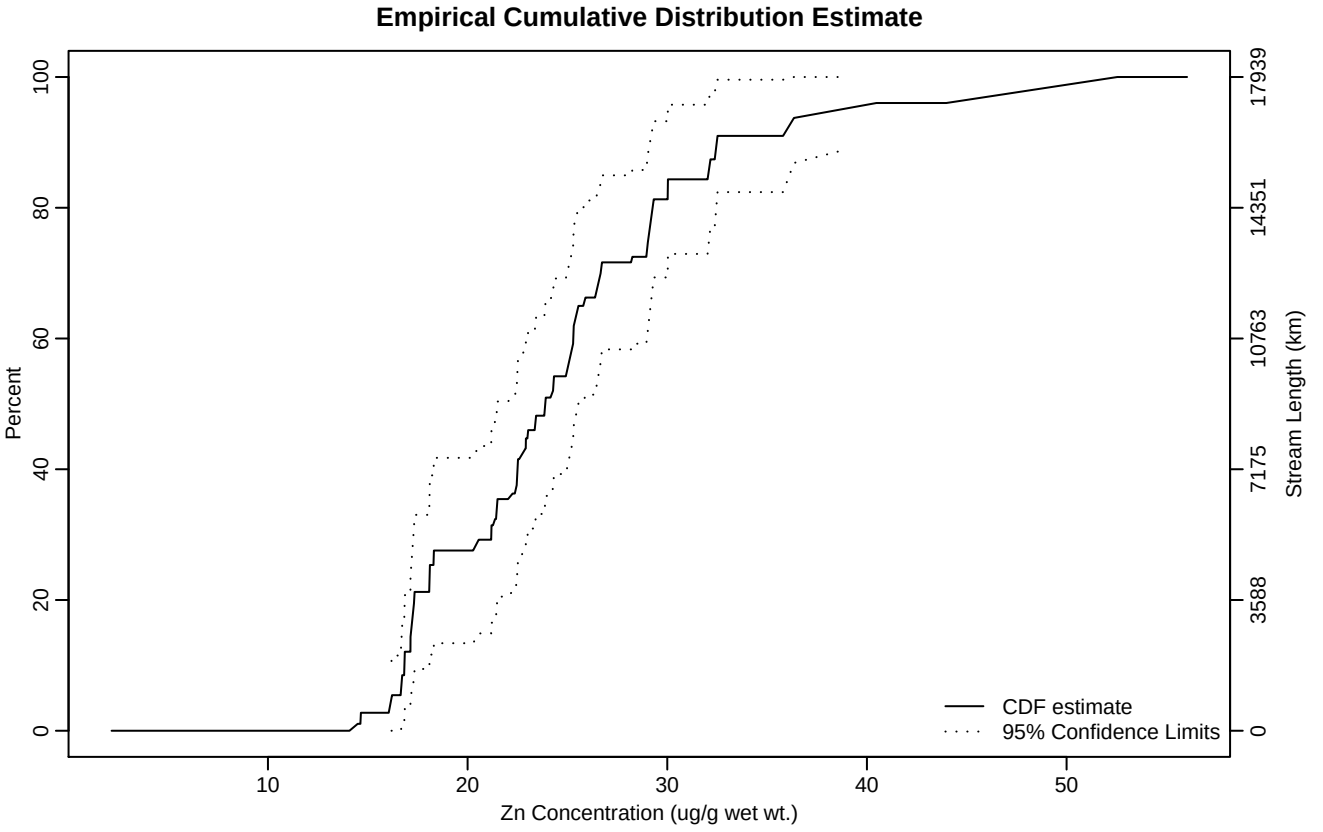


Figure FT Mtl NP−32 Indicator: Zn_NonPiscivore Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	16.19	14.63	16.82
10Pct	16.83	14.65	17.25
25Pct	18.11	17.14	22.42
50Pct	23.89	21.48	25.81
75Pct	29.04	25.30	32.45
90Pct	32.48	29.25	52.54
95Pct	38.63	32.39	52.54
Mean	25.11	22.72	27.50
Std Dev	7.32	5.56	9.07

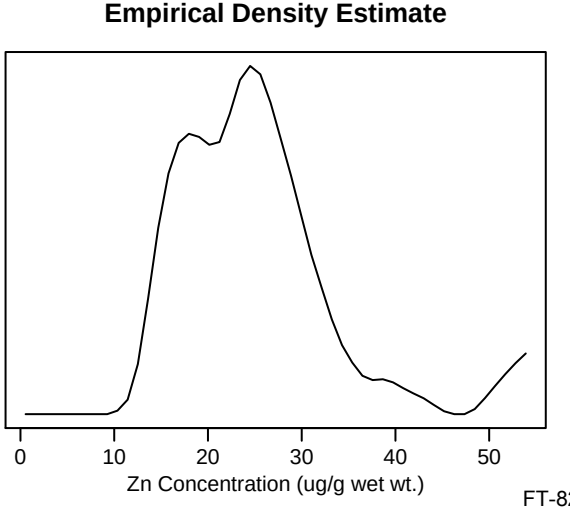
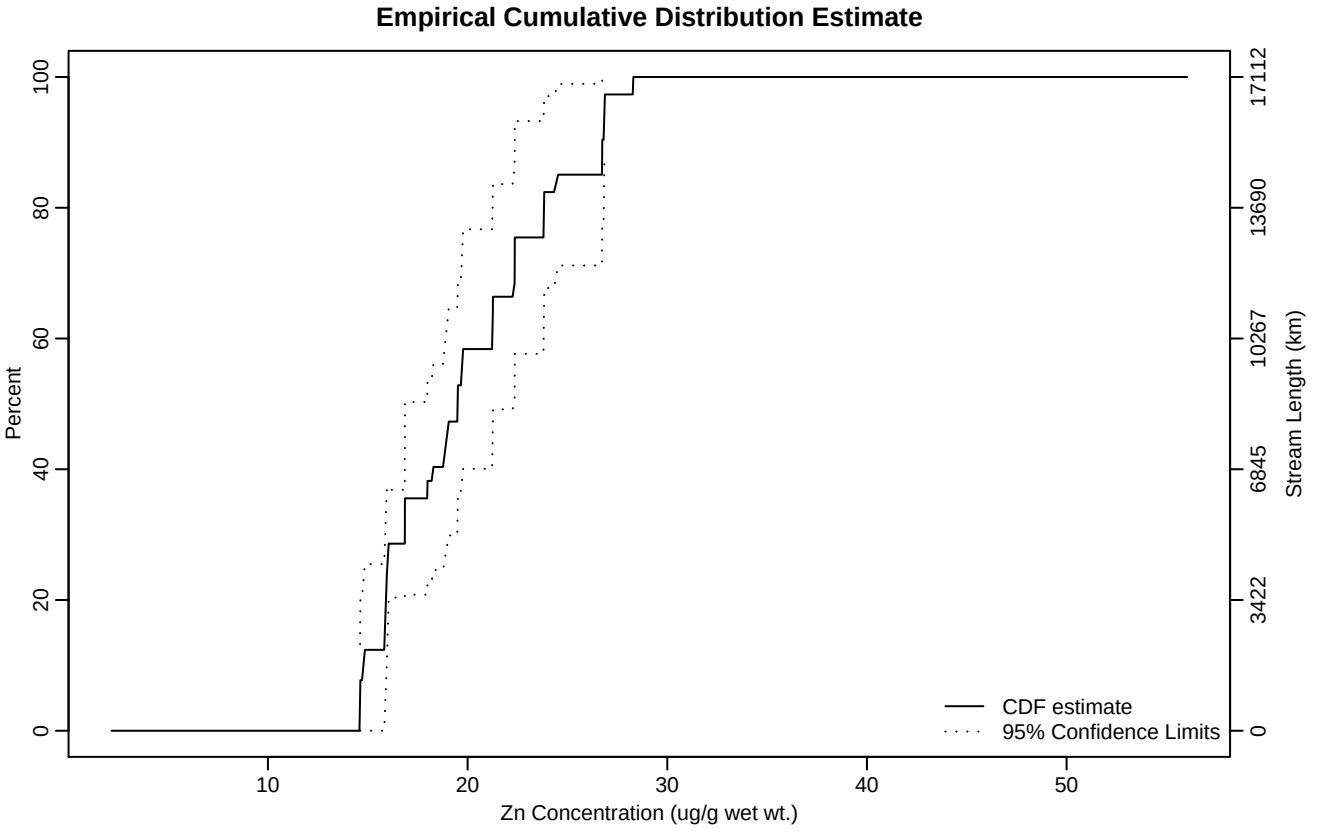


Figure FT Mtl NP−33 Indicator: Zn_NonPiscivore Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.61	14.61	14.62
10Pct	14.78	2.17	15.94
25Pct	15.98	14.78	18.28
50Pct	19.50	16.86	22.30
75Pct	22.36	19.75	26.84
90Pct	26.74	23.80	28.30
95Pct	26.86	23.84	28.30
Mean	20.04	18.73	21.35
Std Dev	3.88	3.14	4.63

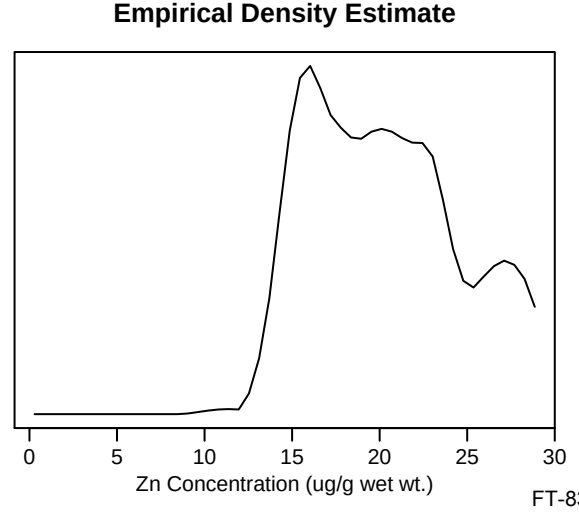
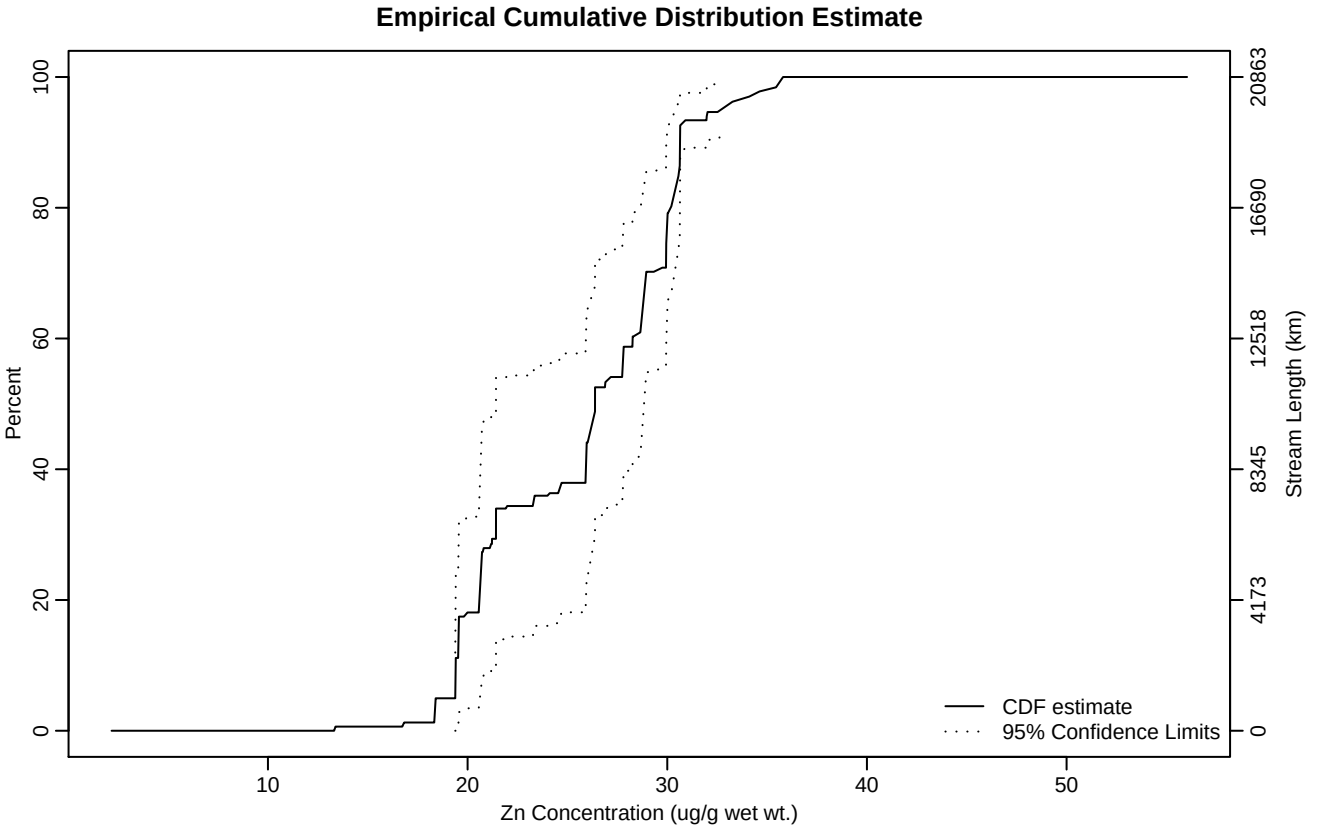


Figure FT Mtl NP−34 Indicator: Zn_NonPiscivore Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	19.38	2.17	19.53
10Pct	19.40	18.36	19.57
25Pct	20.68	19.40	25.93
50Pct	26.38	21.42	28.93
75Pct	29.96	28.26	30.64
90Pct	30.64	30.03	
95Pct	32.69	30.64	35.63
Mean	25.85	24.06	27.63
Std Dev	4.66	3.97	5.35

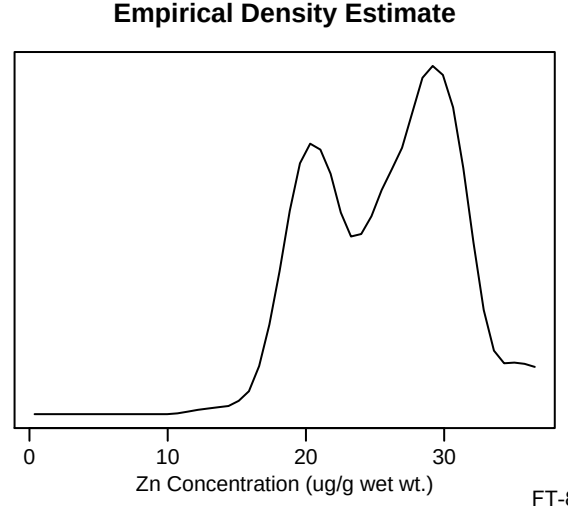
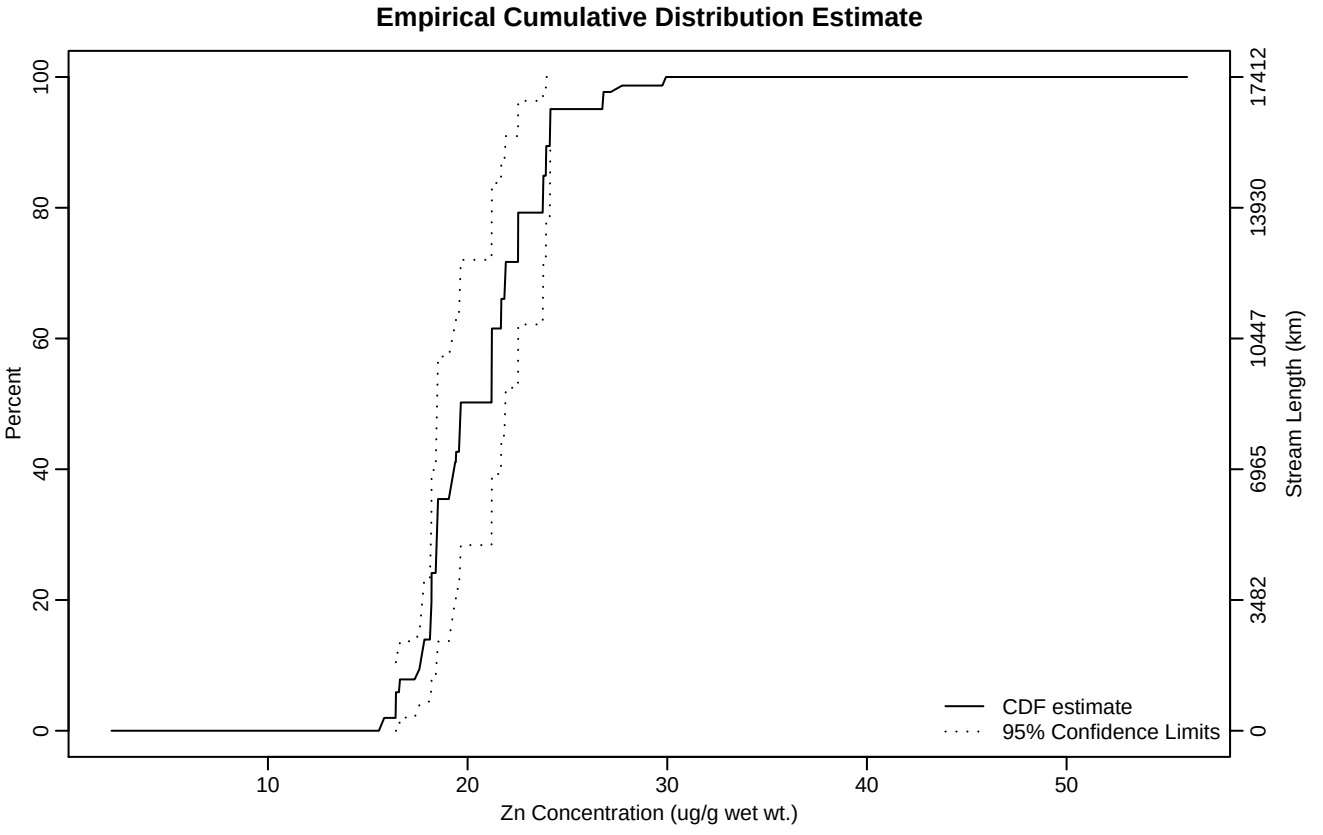


Figure FT Mtl NP−35 Indicator: Zn_NonPiscivore Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	16.41	15.75	17.46
10Pct	17.62	16.40	18.16
25Pct	18.41	17.43	19.41
50Pct	19.66	18.45	21.91
75Pct	22.53	21.21	24.14
90Pct	24.12	23.76	29.94
95Pct	24.15	23.80	29.94
Mean	20.68	19.64	21.72
Std Dev	2.62	2.18	3.05

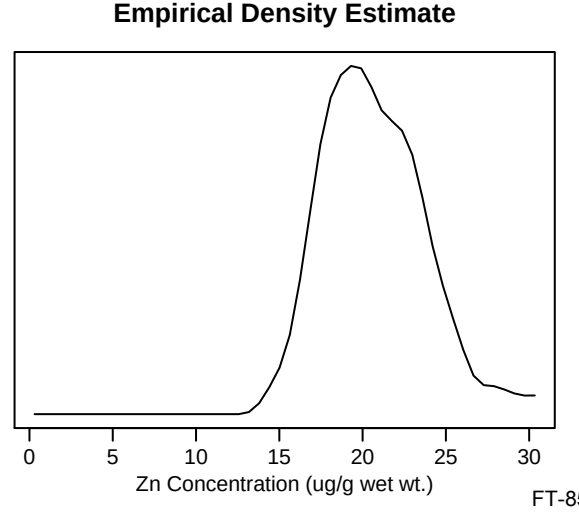
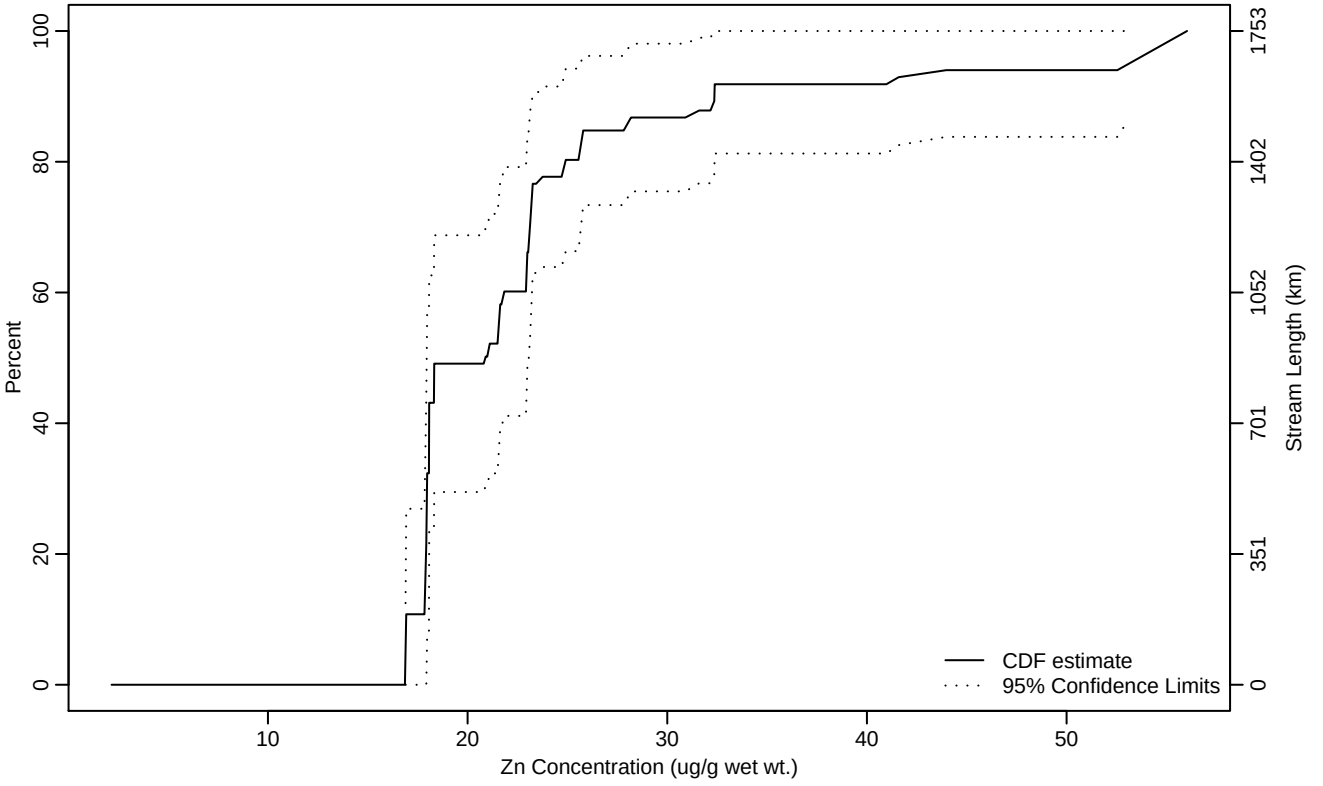


Figure FT Mtl NP−36 Indicator: Zn_NonPiscivore Subpopulation: MT−SWEST

Empirical Cumulative Distribution Estimate



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	16.89	16.89	16.90
10Pct	16.92	16.91	17.84
25Pct	17.94	16.88	18.32
50Pct	20.89	17.96	23.14
75Pct	23.23	21.62	41.37
90Pct	32.36	24.79	56.03
95Pct	53.12	27.84	56.03
Mean	23.46	19.43	27.49
Std Dev	9.27	3.47	15.07

Empirical Density Estimate

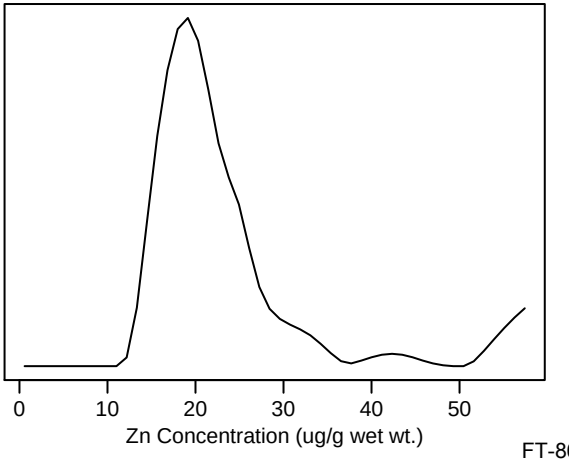
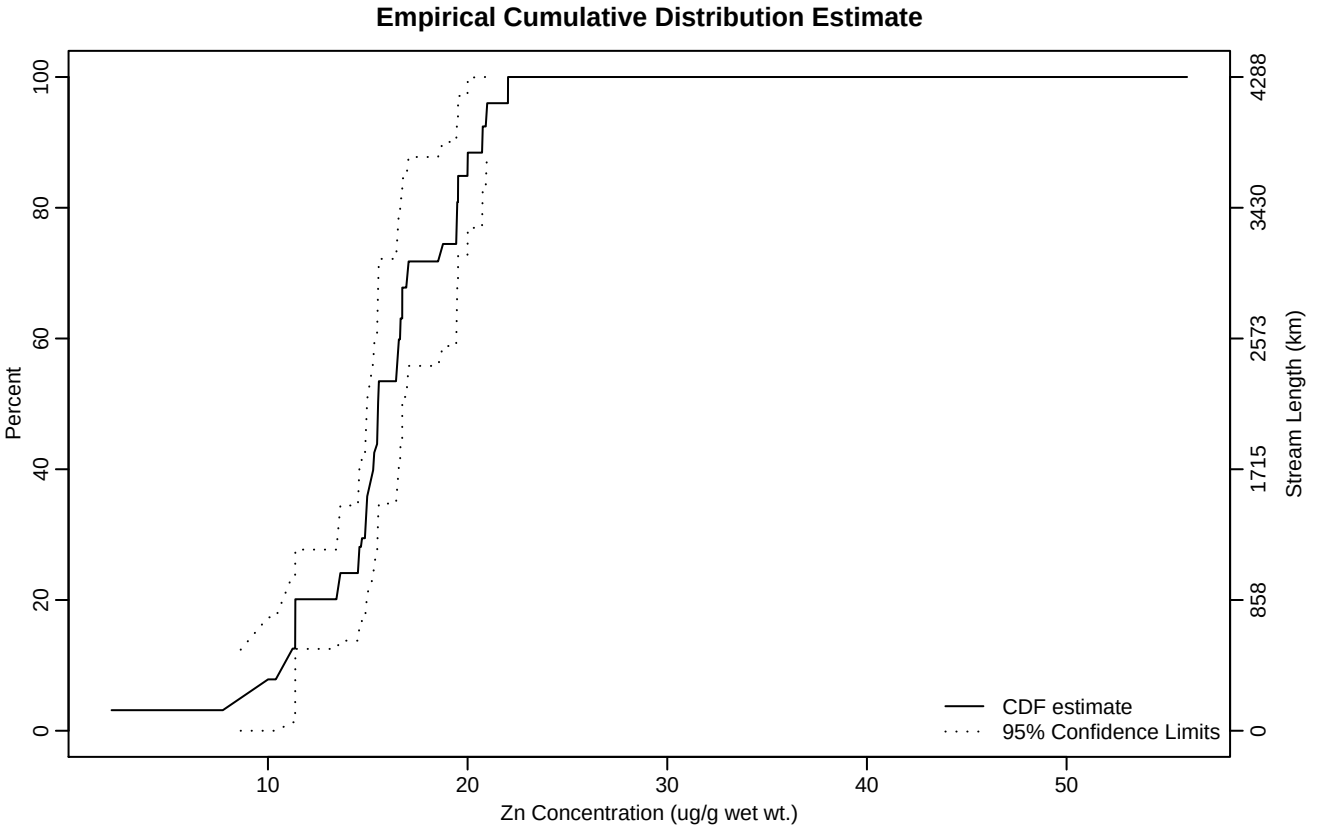


Figure FT Mtl NP−37 Indicator: Zn_NonPiscivore Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	8.63	2.17	10.91
10Pct	10.78	2.17	11.37
25Pct	14.52	11.36	15.03
50Pct	15.52	14.91	16.73
75Pct	19.43	16.55	20.74
90Pct	20.74	19.46	
95Pct	20.96	20	
Mean	15.70	14.60	16.79
Std Dev	2.80	2.10	3.50

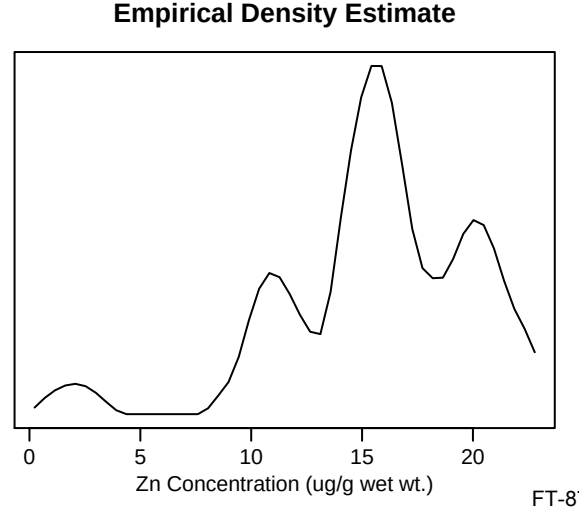
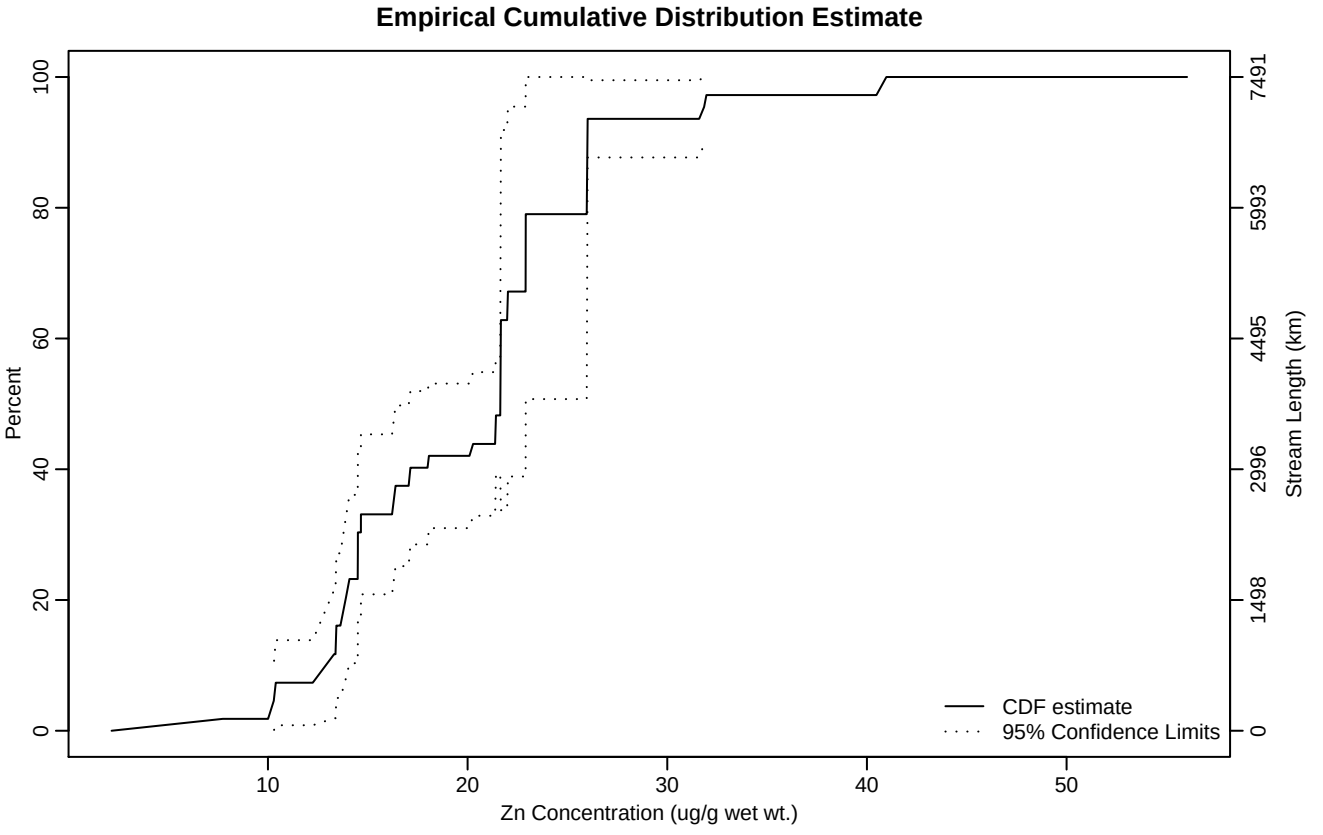


Figure FT Mtl NP−38 Indicator: Zn_NonPiscivore Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.31	2.17	13.03
10Pct	12.89	10.16	13.67
25Pct	14.50	13.39	17.07
50Pct	21.64	17.13	21.66
75Pct	22.91	21.41	40.97
90Pct	26	21.66	40.97
95Pct	31.79	26	40.97
Mean	20.06	18.10	22.01
Std Dev	4.99	3.50	6.48

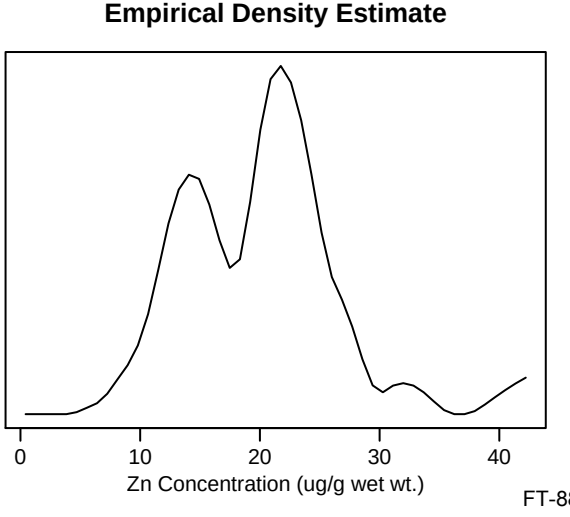
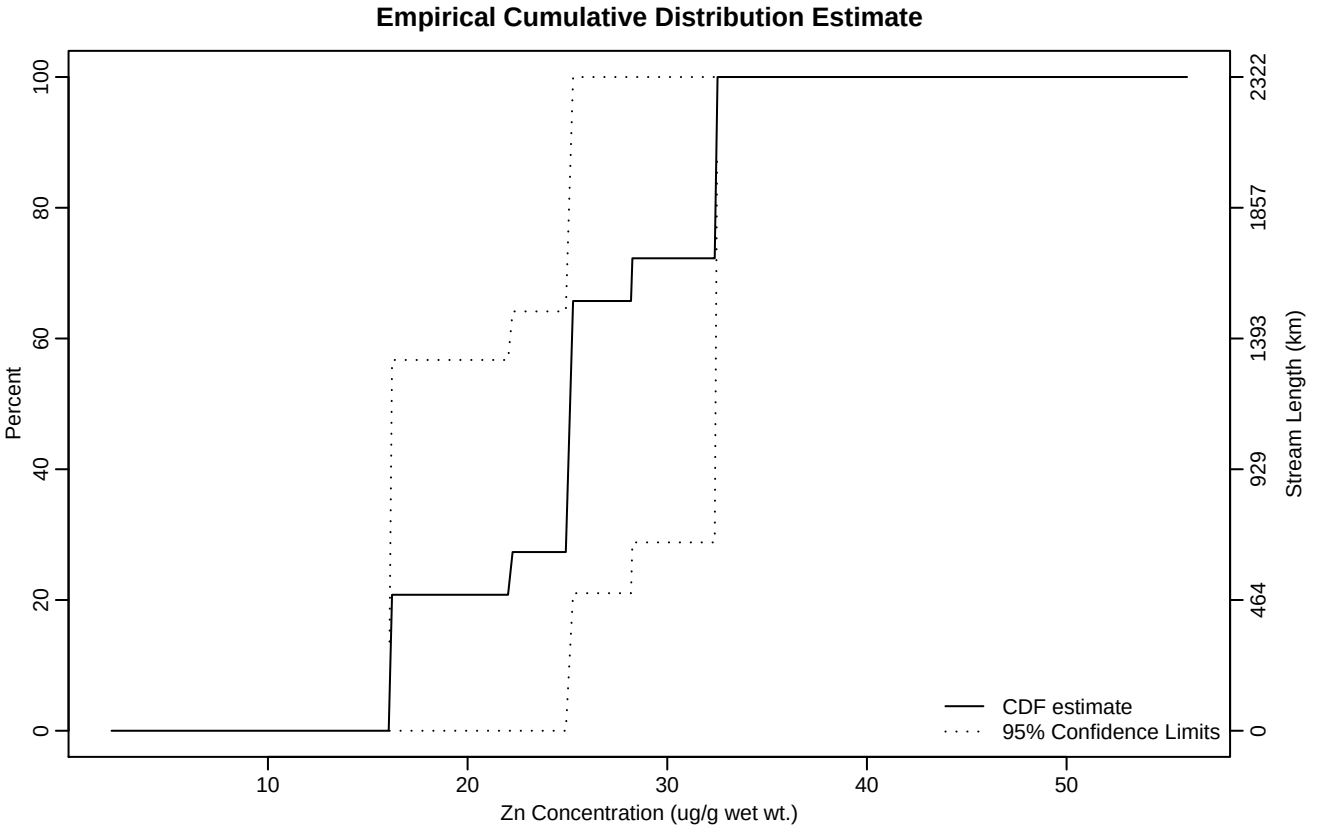


Figure FT Mtl NP−39 Indicator: Zn_NonPiscivore Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	16.09	16.07	16.11
10Pct	16.13	16.09	16.17
25Pct	22.17	2.17	25.24
50Pct	25.13	16.11	32.48
75Pct	32.39	24.96	32.52
90Pct	32.47	25.10	32.52
95Pct	32.49	25.14	32.52
Mean	25.40	20.41	30.39
Std Dev	5.73	2.82	8.63

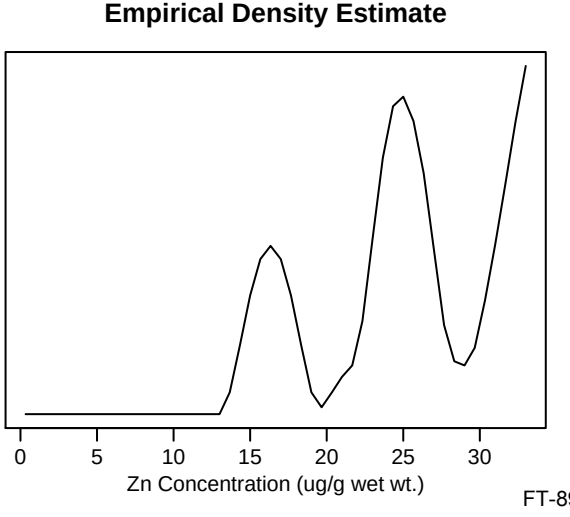
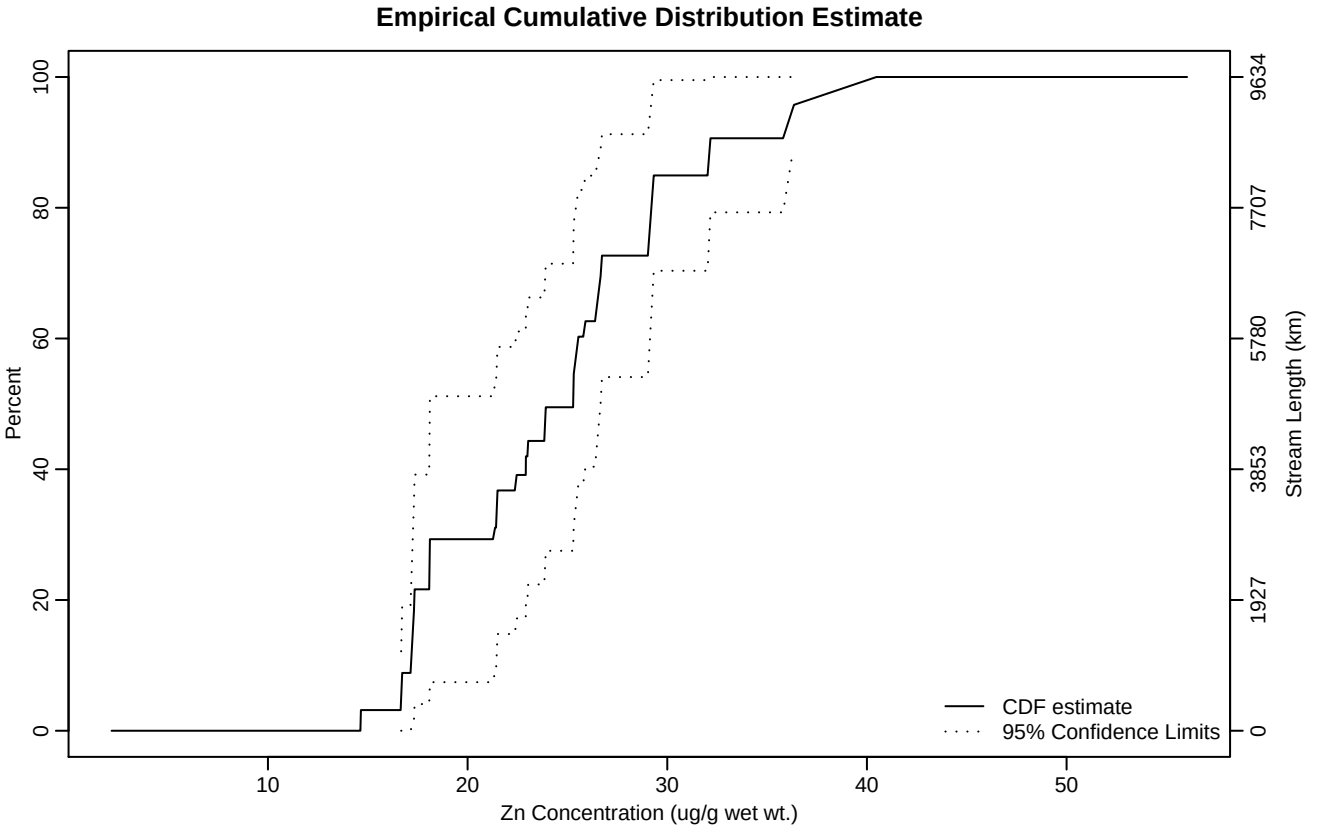


Figure FT Mtl NP−40 Indicator: Zn_NonPiscivore Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	16.67	2.17	17.17
10Pct	17.16	2.17	17.33
25Pct	18.09	16.70	23.01
50Pct	25.29	18.10	26.72
75Pct	29.08	25.32	36.34
90Pct	32.15	29.10	40.48
95Pct	36.27	29.30	40.48
Mean	24.62	21.87	27.37
Std Dev	6	4.70	7.30

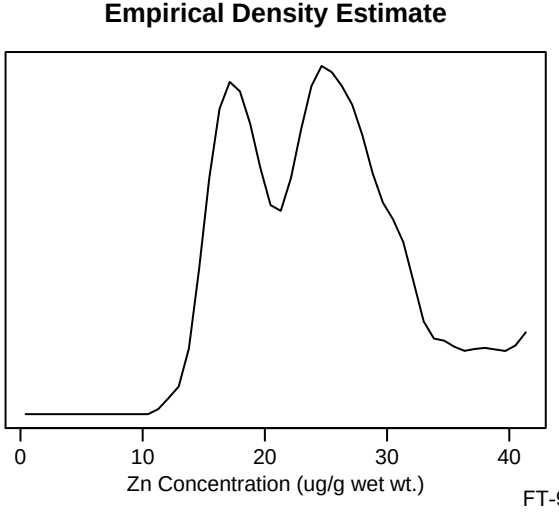
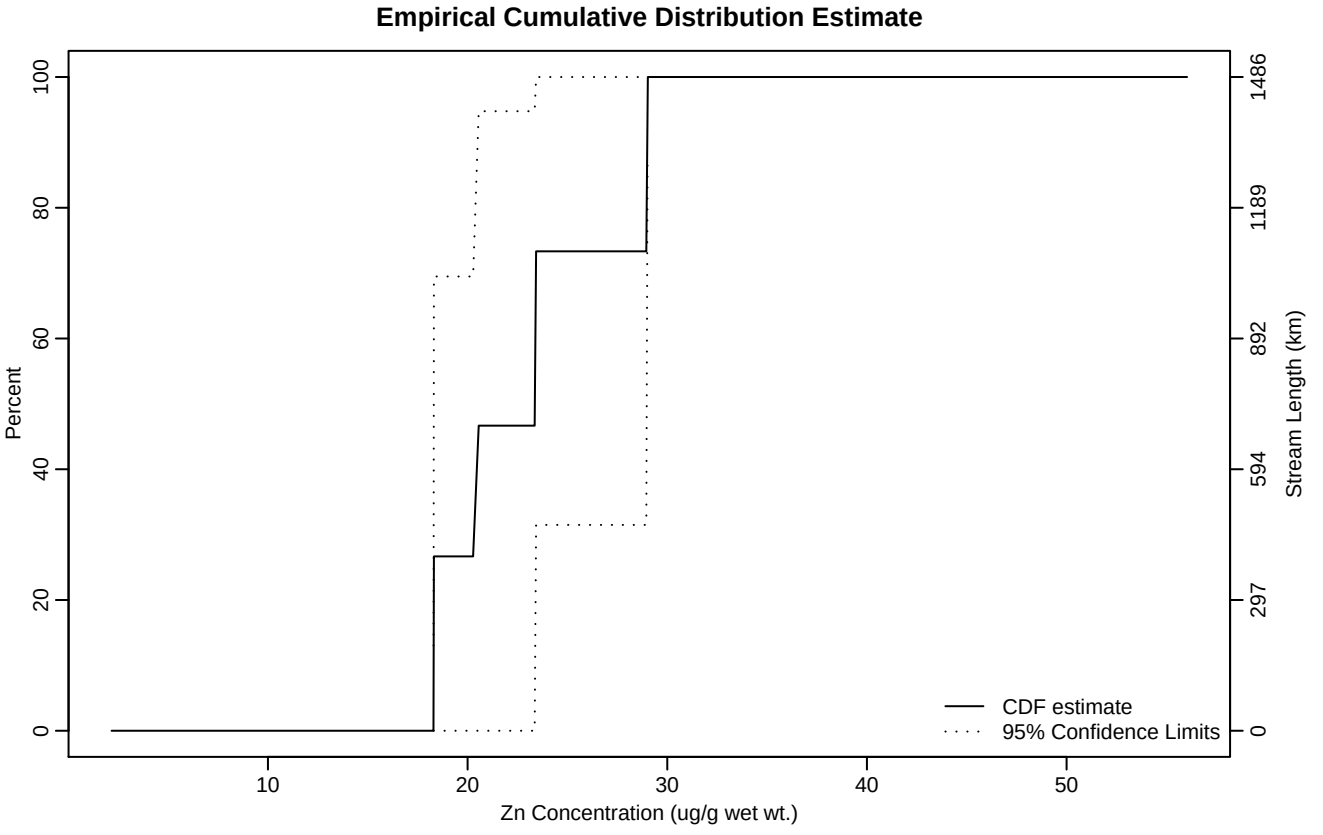


Figure FT Mtl NP−41 Indicator: Zn_NonPiscivore Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	18.29	18.29	18.29
10Pct	18.30	18.30	18.30
25Pct	18.31	18.31	20.29
50Pct	23.37	18.29	29.02
75Pct	28.96	20.37	29.03
90Pct	29	23.36	29.03
95Pct	29.01	23.37	29.03
Mean	22.98	19.08	26.89
Std Dev	4.10	2.41	5.79

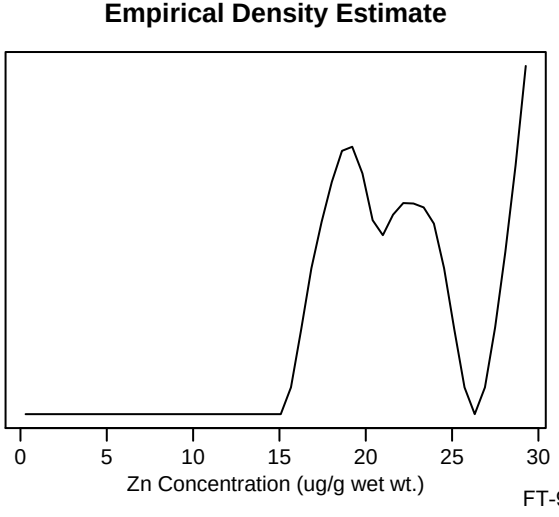
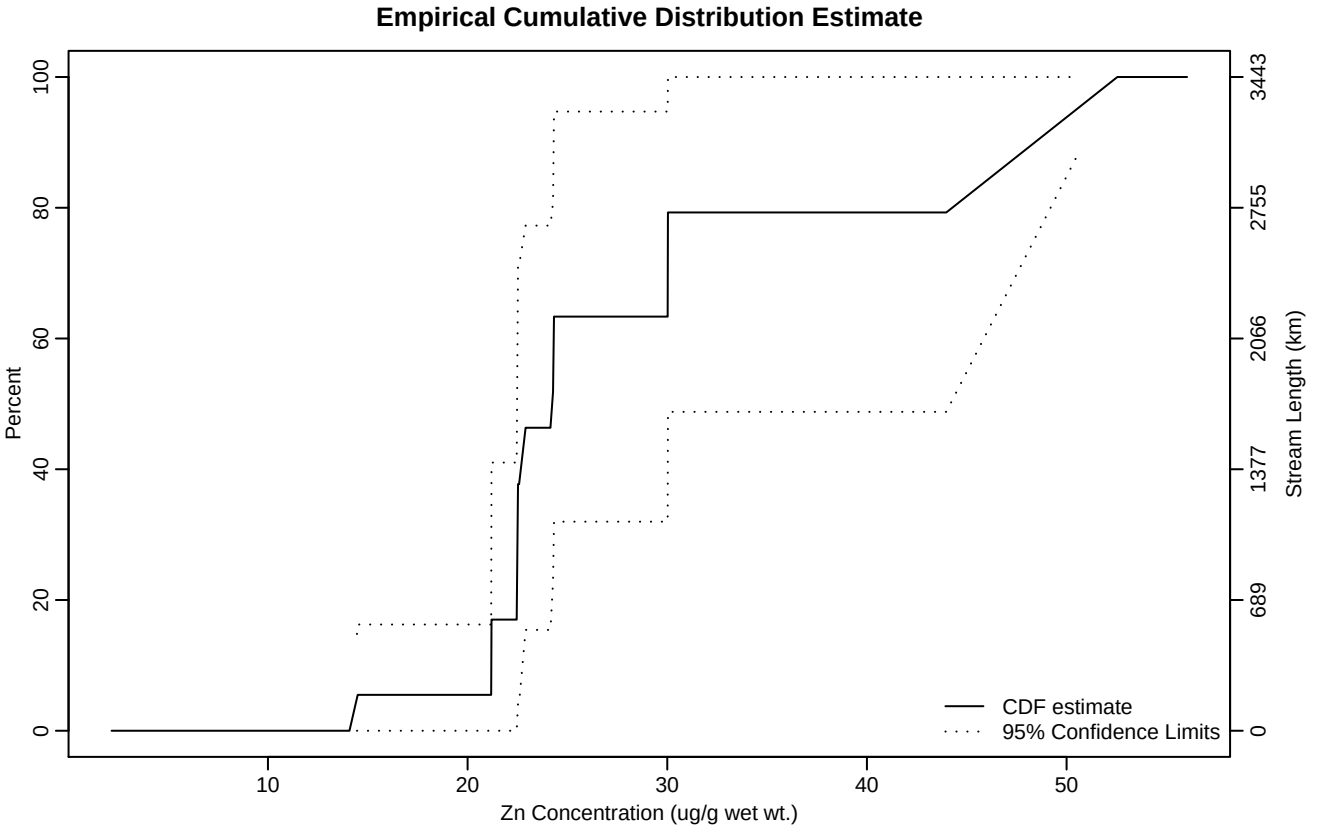


Figure FT Mtl NP−42 Indicator: Zn_NonPiscivore Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	14.46	14.38	21.18
10Pct	21.19	2.17	22.47
25Pct	22.48	2.17	24.24
50Pct	24.24	22.46	44.67
75Pct	30.03	22.75	52.54
90Pct	48.41	24.31	52.54
95Pct	50.48	24.32	52.54
Mean	29.68	21.16	38.21
Std Dev	11.42	6.08	16.76

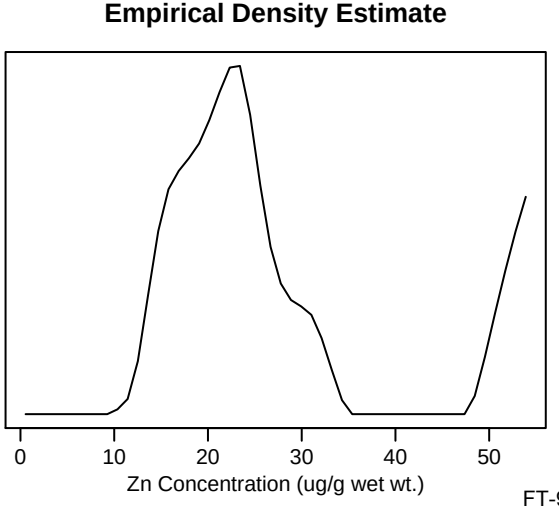
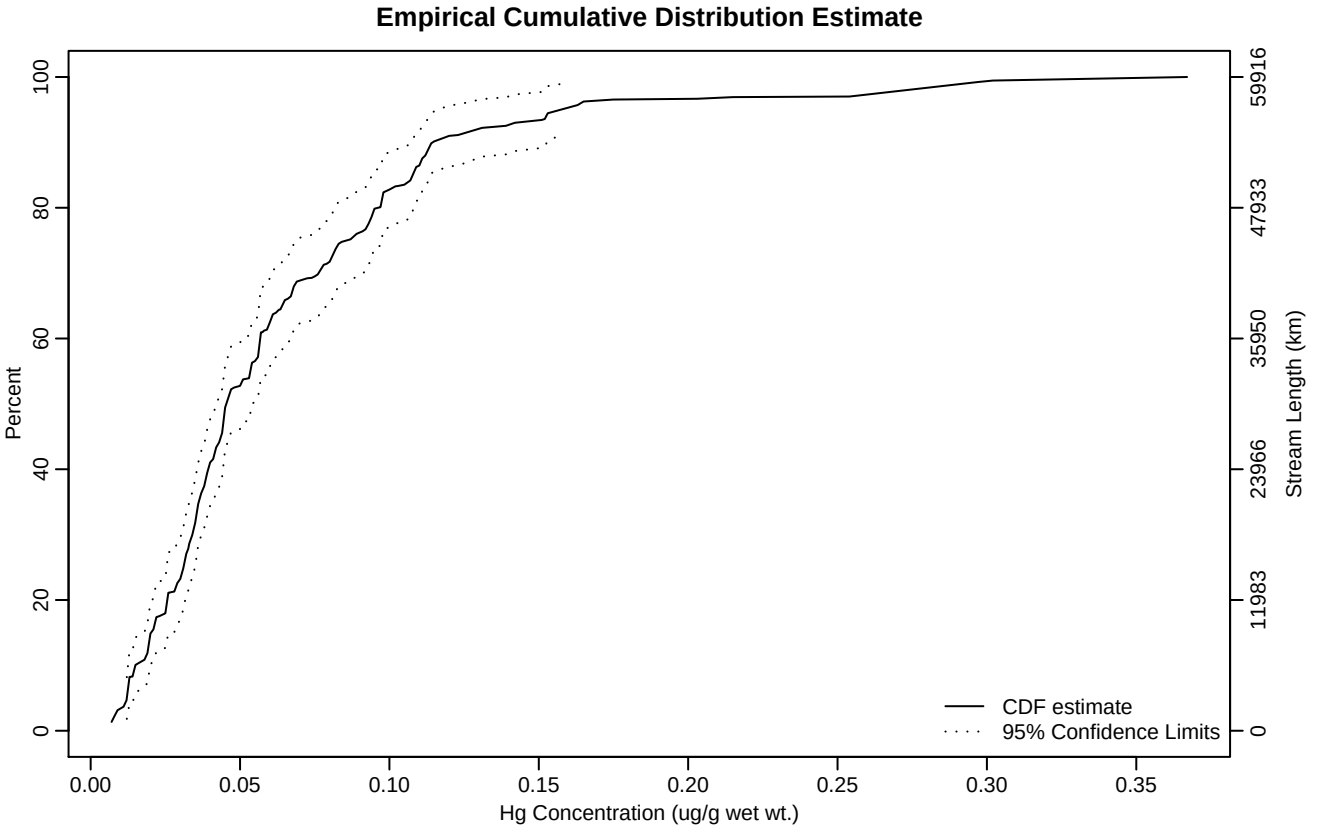


Figure FT Hg S−1 Indicator: Hg_Small_Fish Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.02
25Pct	0.03	0.03	0.03
50Pct	0.05	0.04	0.06
75Pct	0.09	0.07	0.10
90Pct	0.11	0.11	0.16
95Pct	0.16	0.12	0.30
Mean	0.07	0.06	0.08
Std Dev	0.04	0.04	0.05

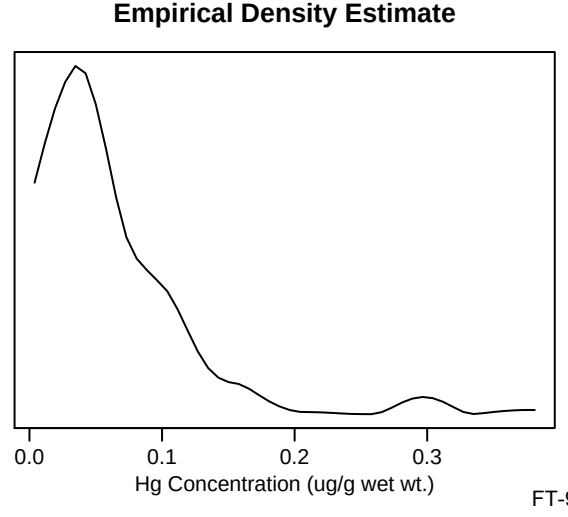
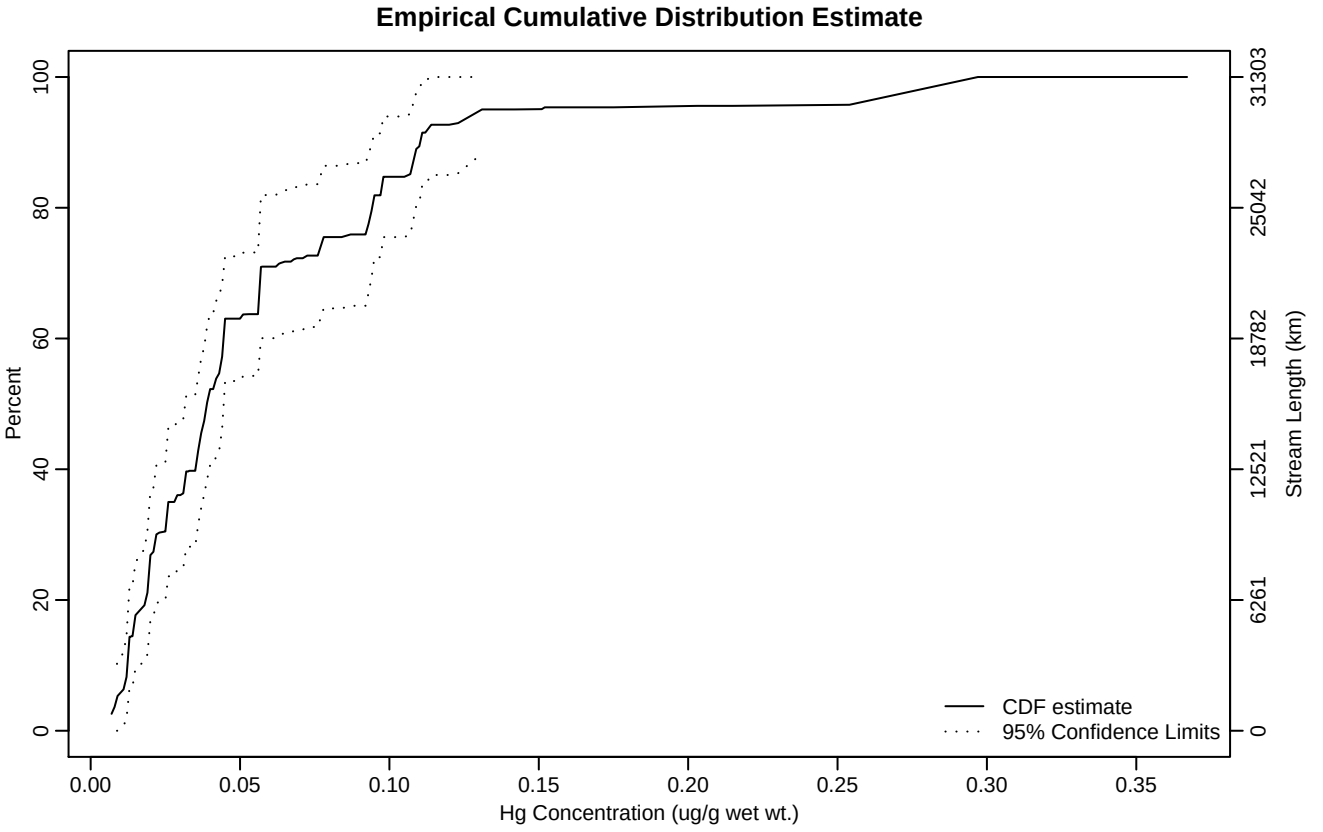


Figure FT Hg S−2 Indicator: Hg_Small_Fish Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.02	0.01	0.03
50Pct	0.04	0.03	0.04
75Pct	0.08	0.05	0.11
90Pct	0.11	0.09	0.29
95Pct	0.13	0.11	
Mean	0.06	0.04	0.08
Std Dev	0.05	0.03	0.06

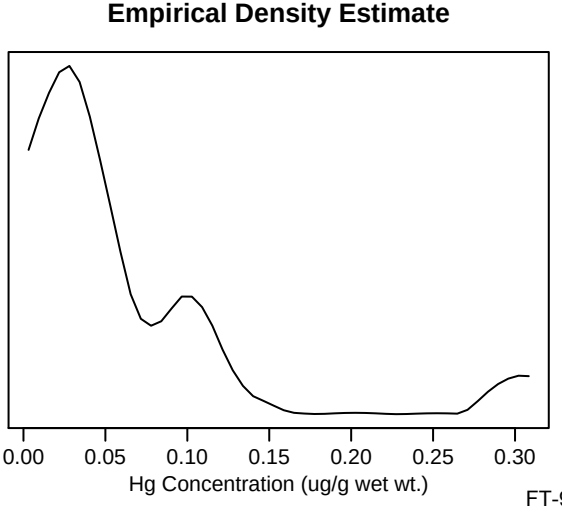
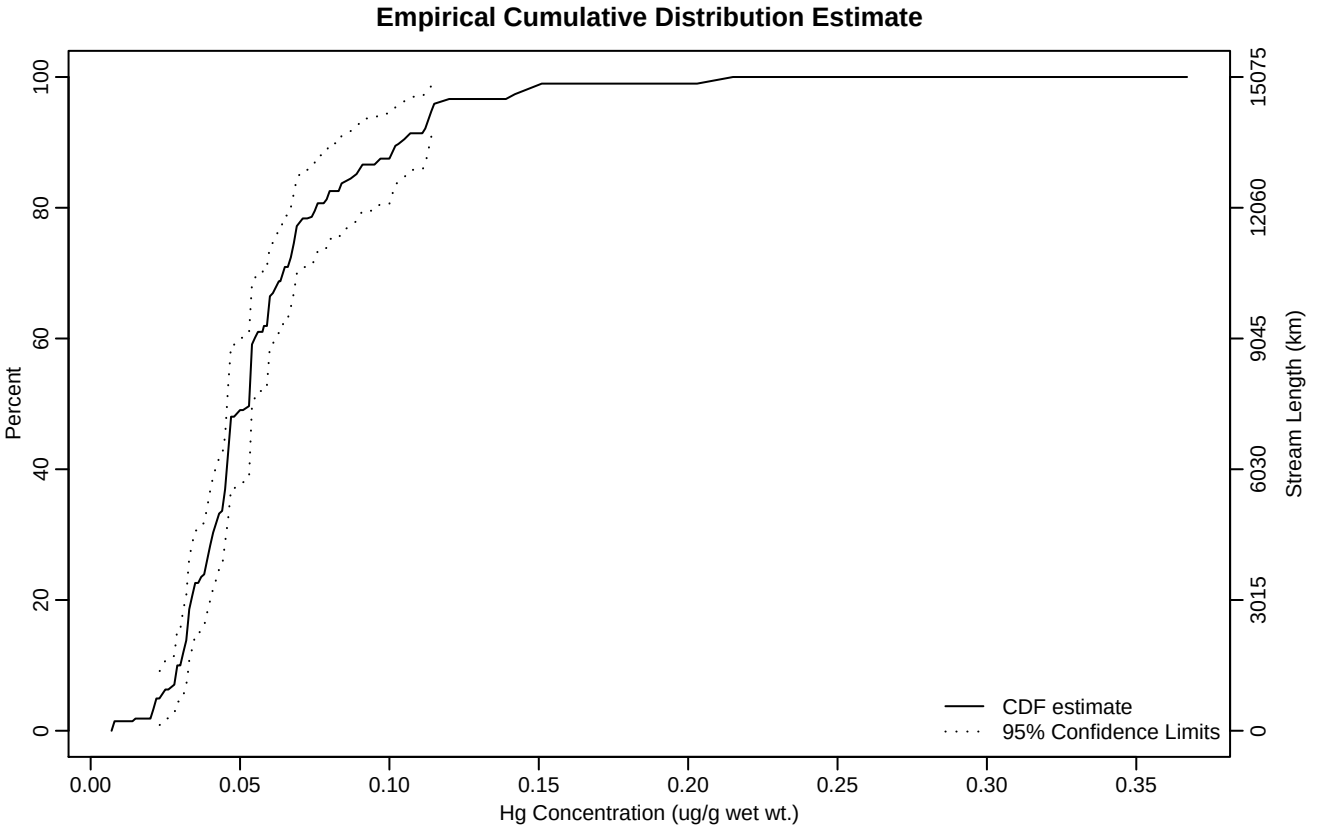


Figure FT Hg S−3 Indicator: Hg_Small_Fish Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.03
10Pct	0.03	0.02	0.03
25Pct	0.04	0.03	0.04
50Pct	0.05	0.05	0.06
75Pct	0.07	0.06	0.08
90Pct	0.10	0.08	0.12
95Pct	0.11	0.11	0.15
Mean	0.06	0.05	0.06
Std Dev	0.03	0.02	0.03

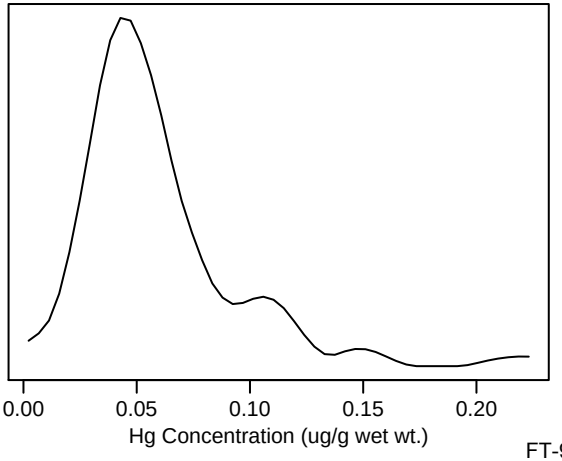
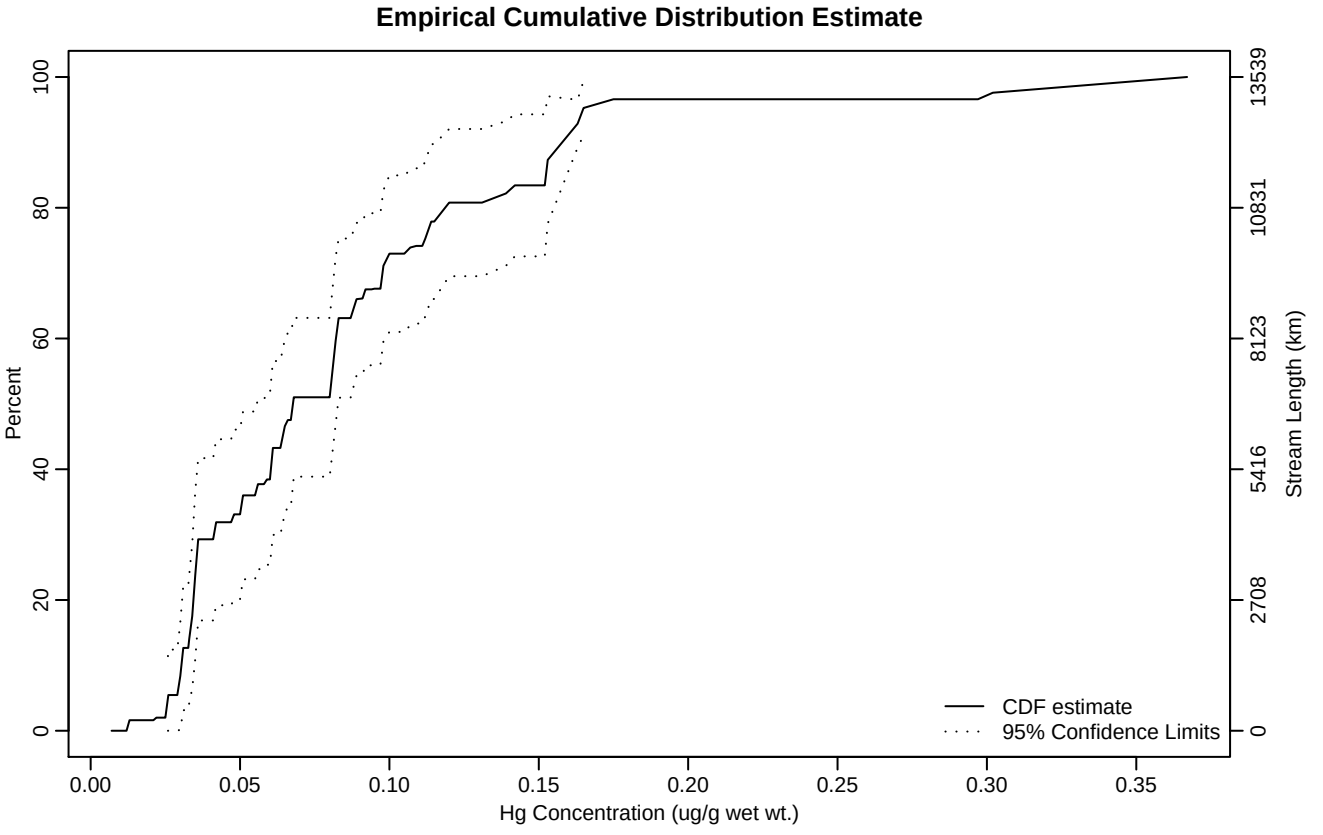


Figure FT Hg S−4 Indicator: Hg_Small_Fish Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.03	0.03
10Pct	0.03	0.02	0.03
25Pct	0.04	0.03	0.06
50Pct	0.07	0.06	0.09
75Pct	0.11	0.08	0.15
90Pct	0.16	0.12	0.37
95Pct	0.16	0.16	0.36
Mean	0.09	0.07	0.10
Std Dev	0.05	0.04	0.05

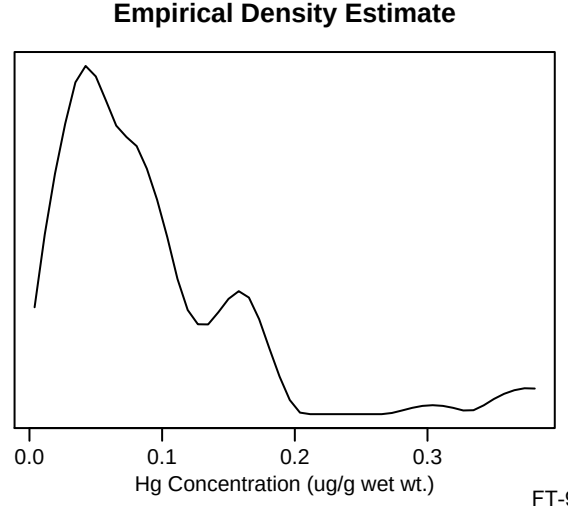
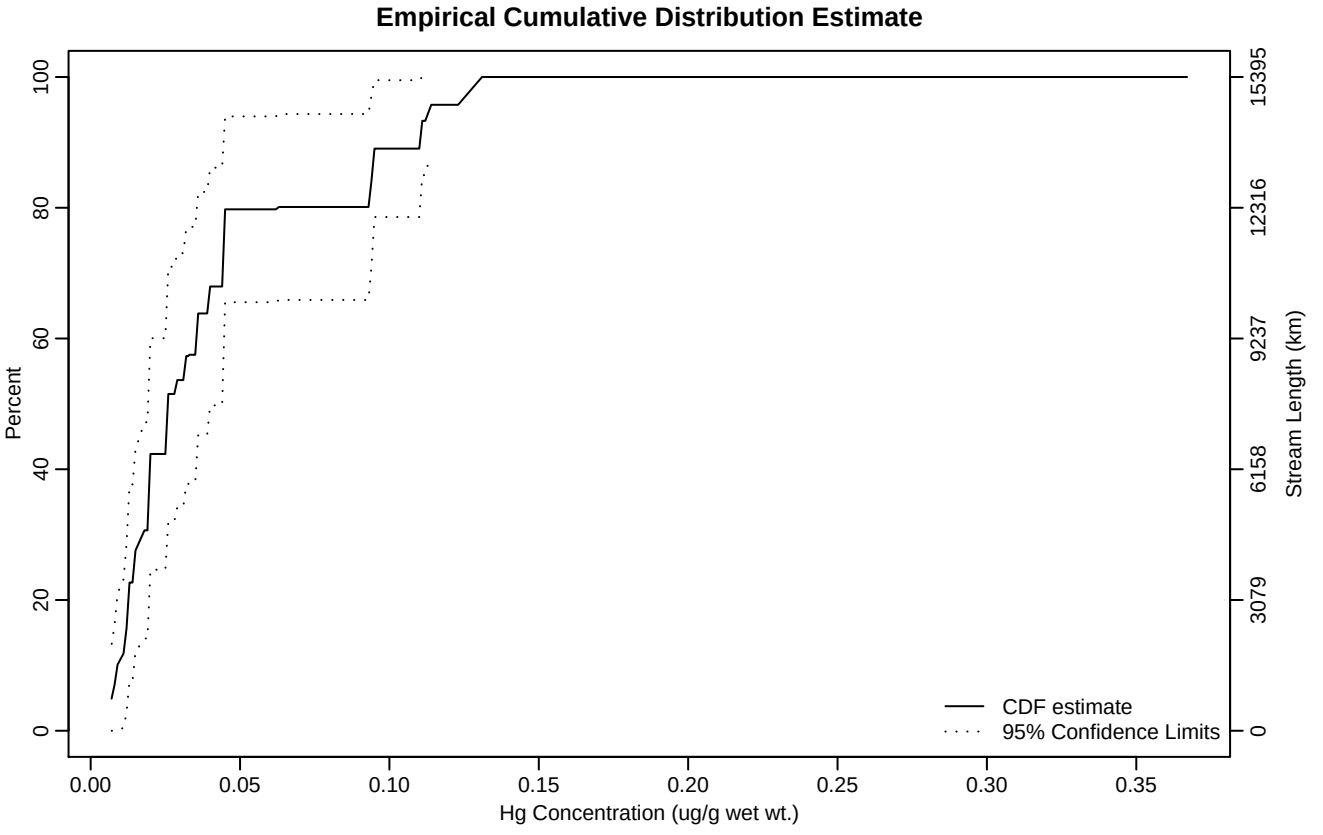


Figure FT Hg S−5 Indicator: Hg_Small_Fish Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.02
50Pct	0.03	0.02	0.04
75Pct	0.04	0.03	0.11
90Pct	0.11	0.04	0.13
95Pct	0.11	0.09	0.13
Mean	0.04	0.03	0.05
Std Dev	0.03	0.03	0.04

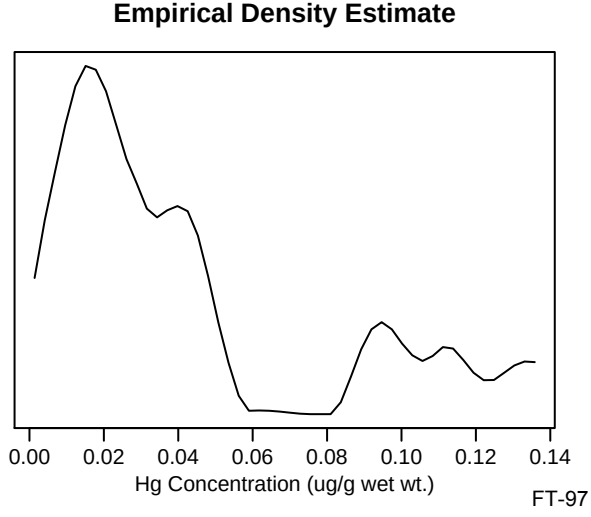
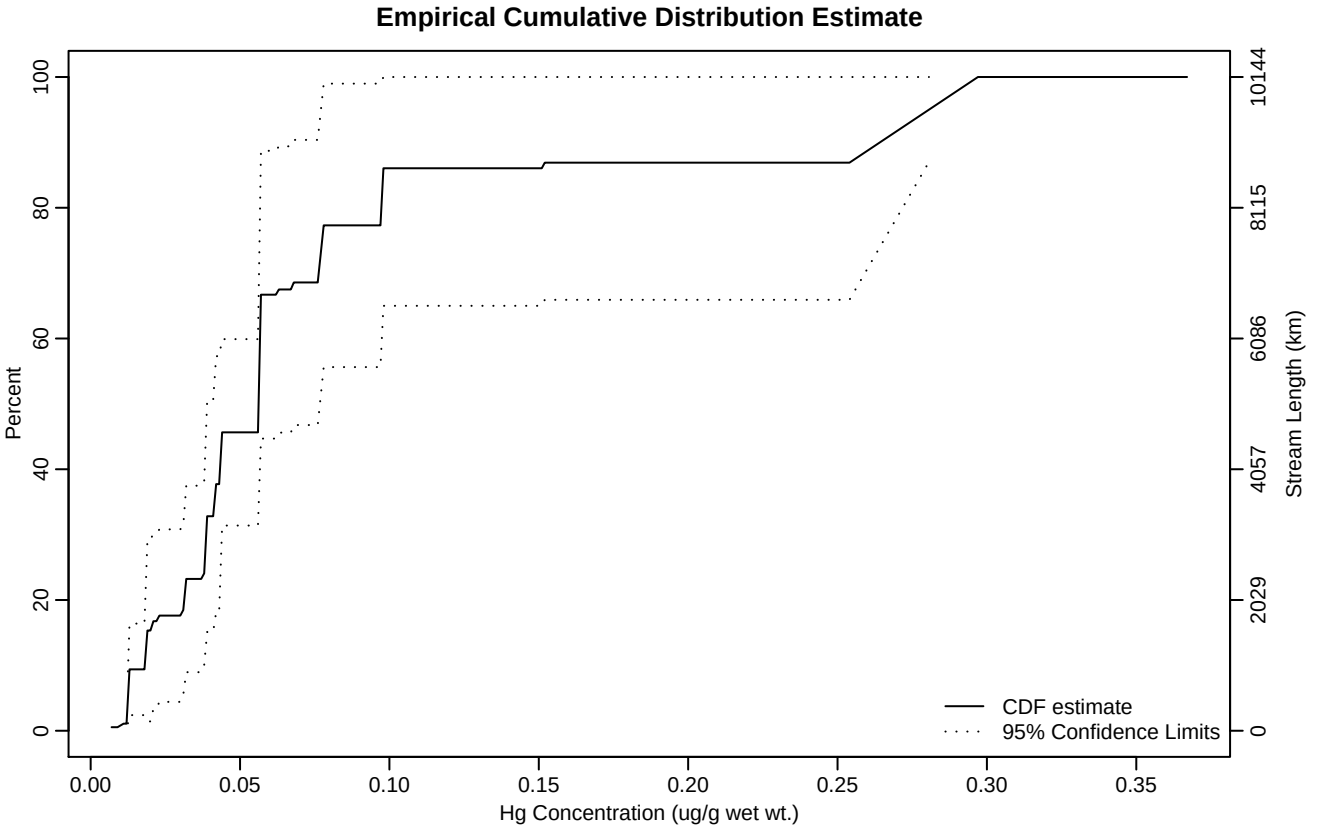


Figure FT Hg S−6 Indicator: Hg_Small_Fish Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.02	0.01	0.03
25Pct	0.04	0.01	0.04
50Pct	0.06	0.04	0.06
75Pct	0.08	0.06	0.30
90Pct	0.26	0.07	0.30
95Pct	0.28	0.08	0.30
Mean	0.08	0.03	0.13
Std Dev	0.07	0.03	0.11

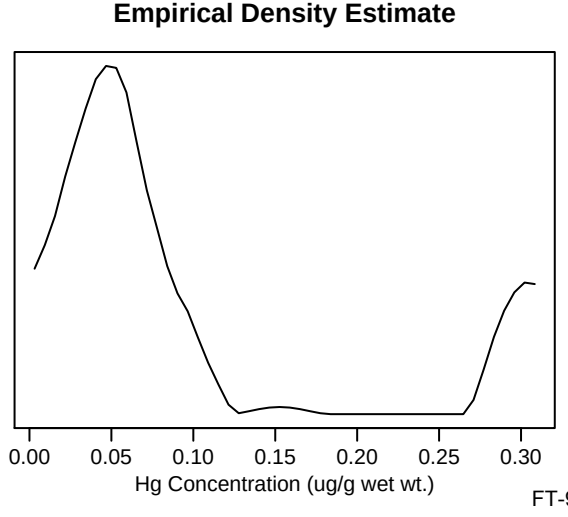
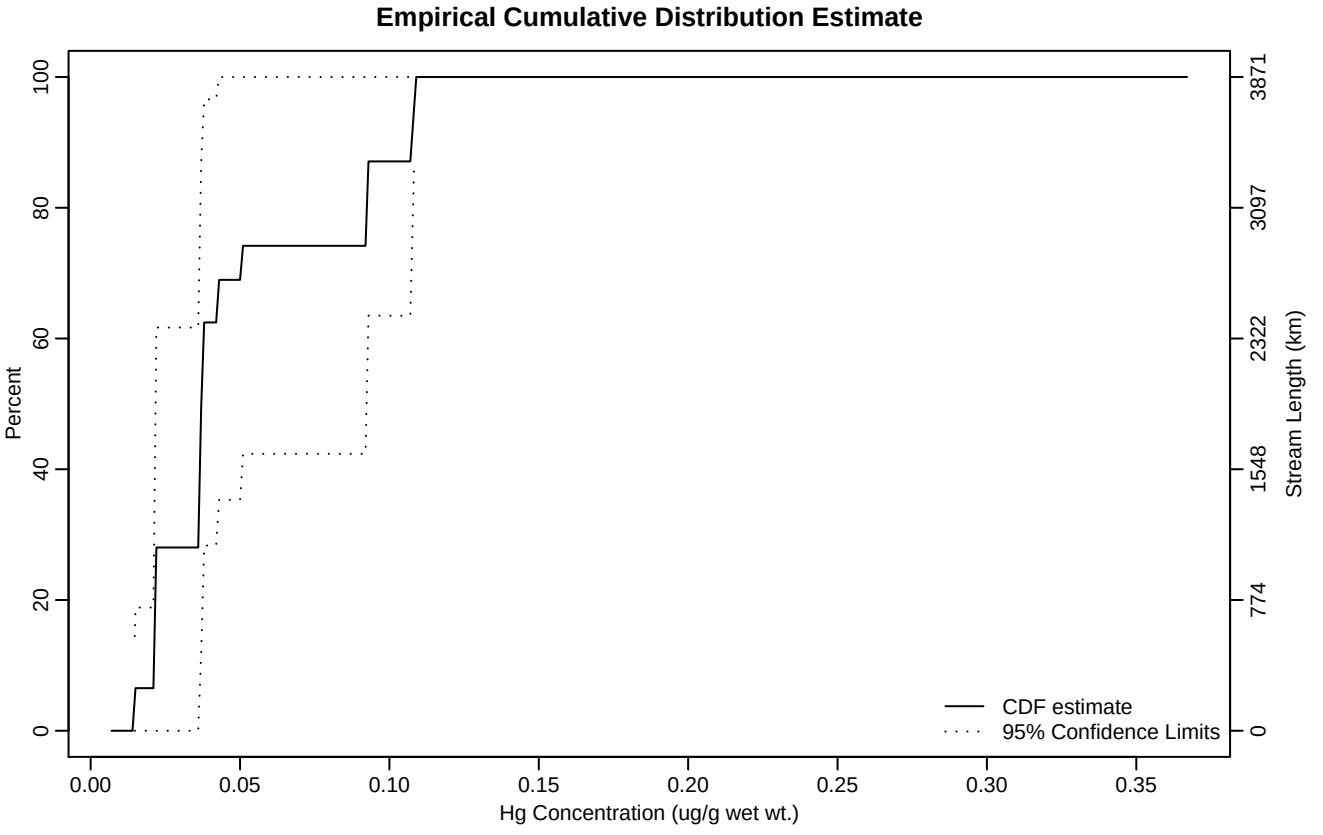


Figure FT Hg S−7 Indicator: Hg_Small_Fish Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.02	0.01	0.02
25Pct	0.02	0.02	0.04
50Pct	0.04	0.02	0.11
75Pct	0.09	0.04	0.11
90Pct	0.11	0.04	0.11
95Pct	0.11	0.05	0.11
Mean	0.05	0.03	0.07
Std Dev	0.03	0.02	0.04

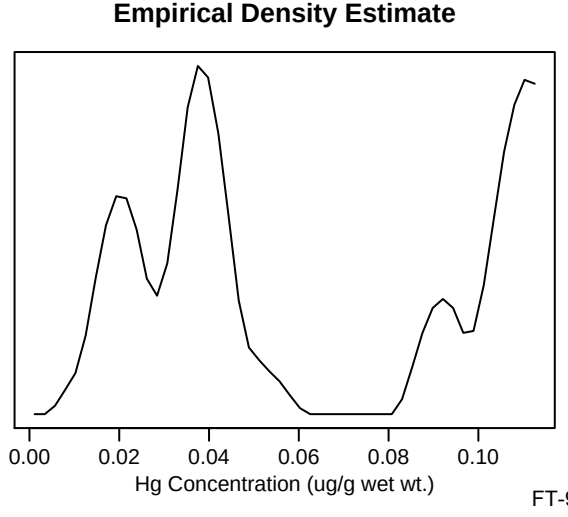
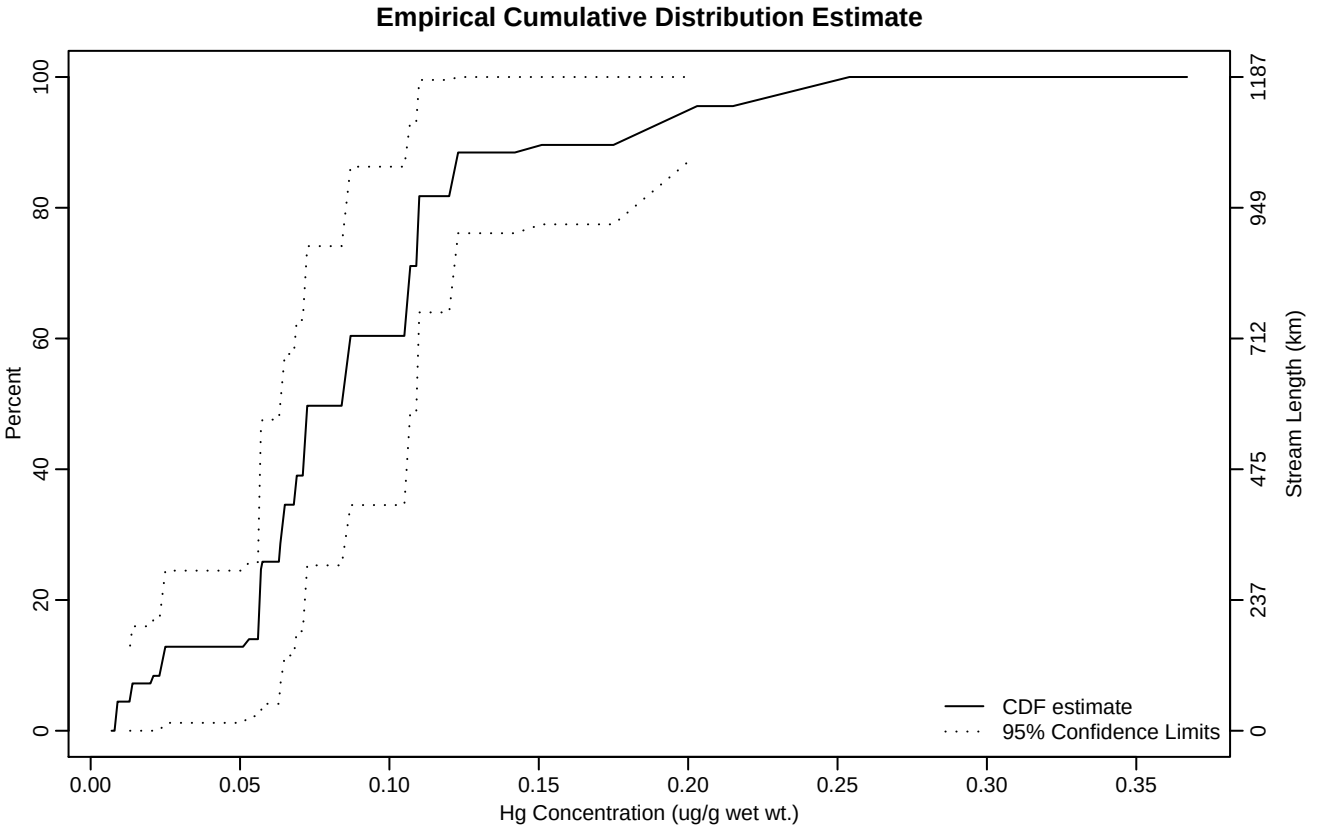


Figure FT Hg S−8 Indicator: Hg_Small_Fish Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.02
10Pct	0.02	0.01	0.06
25Pct	0.06	0.01	0.07
50Pct	0.08	0.06	0.11
75Pct	0.11	0.08	0.23
90Pct	0.18	0.11	0.25
95Pct	0.20	0.12	0.25
Mean	0.09	0.07	0.12
Std Dev	0.05	0.04	0.07

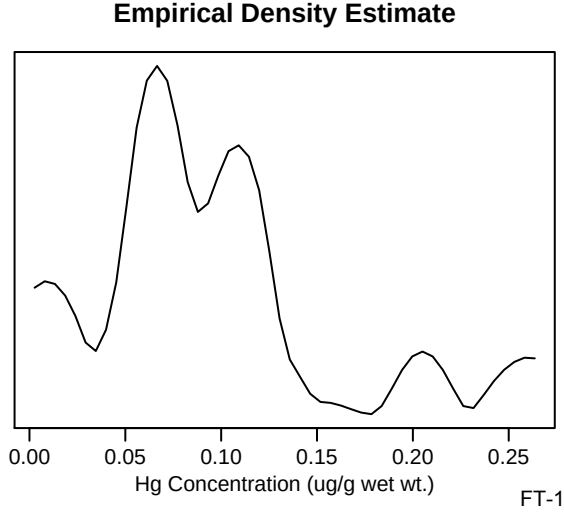
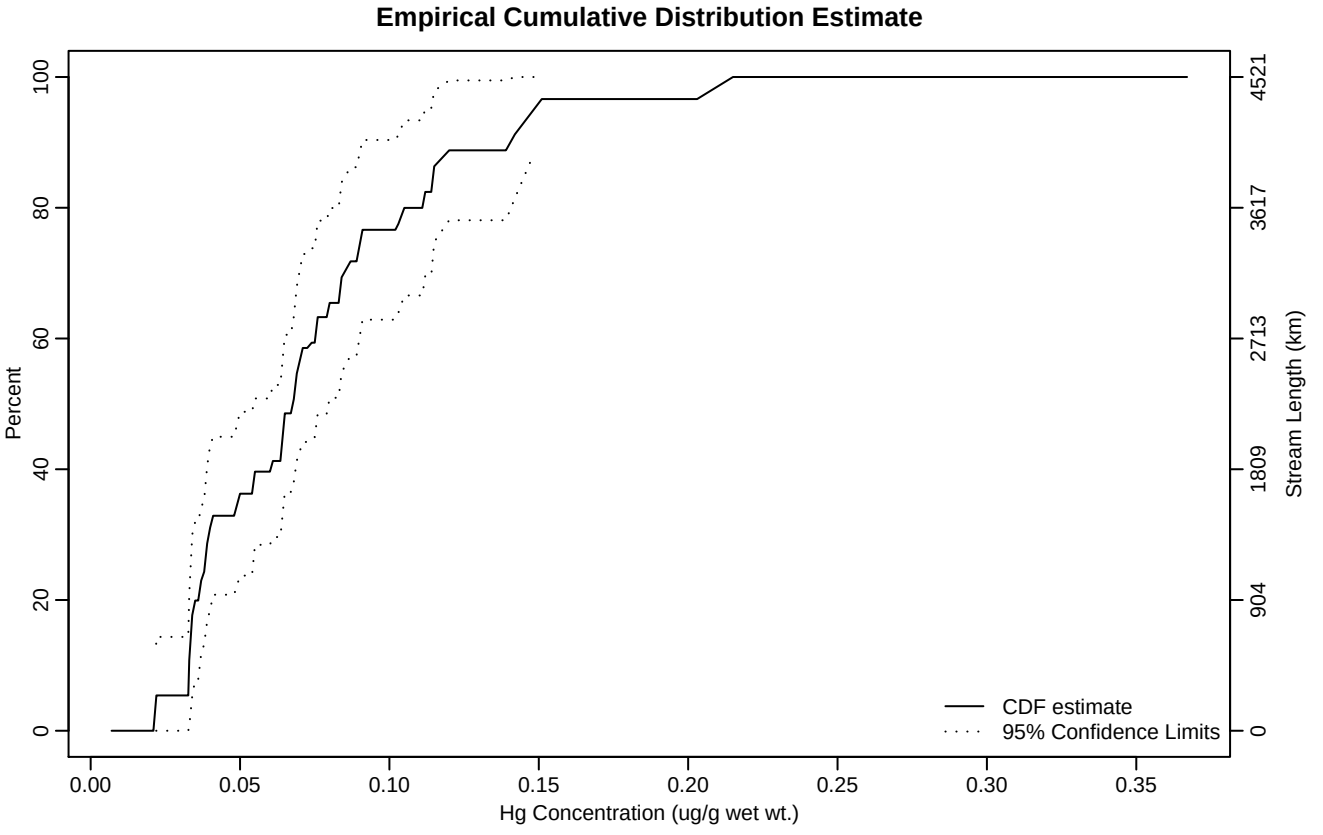


Figure FT Hg S−9 Indicator: Hg_Small_Fish Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.02	0.03
10Pct	0.03	0.02	0.03
25Pct	0.04	0.03	0.05
50Pct	0.07	0.05	0.08
75Pct	0.09	0.08	0.14
90Pct	0.14	0.10	0.21
95Pct	0.15	0.11	0.21
Mean	0.08	0.06	0.09
Std Dev	0.04	0.03	0.05

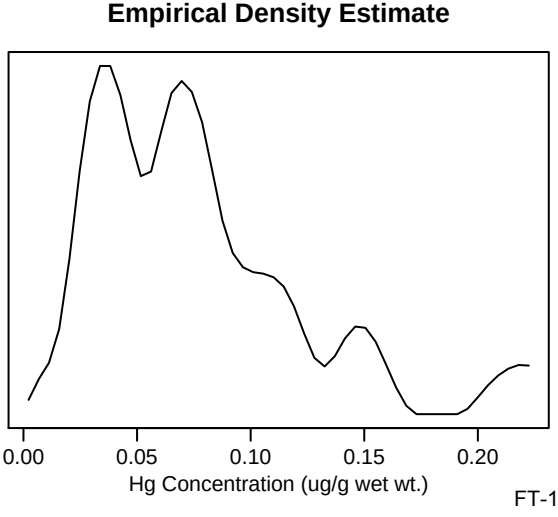
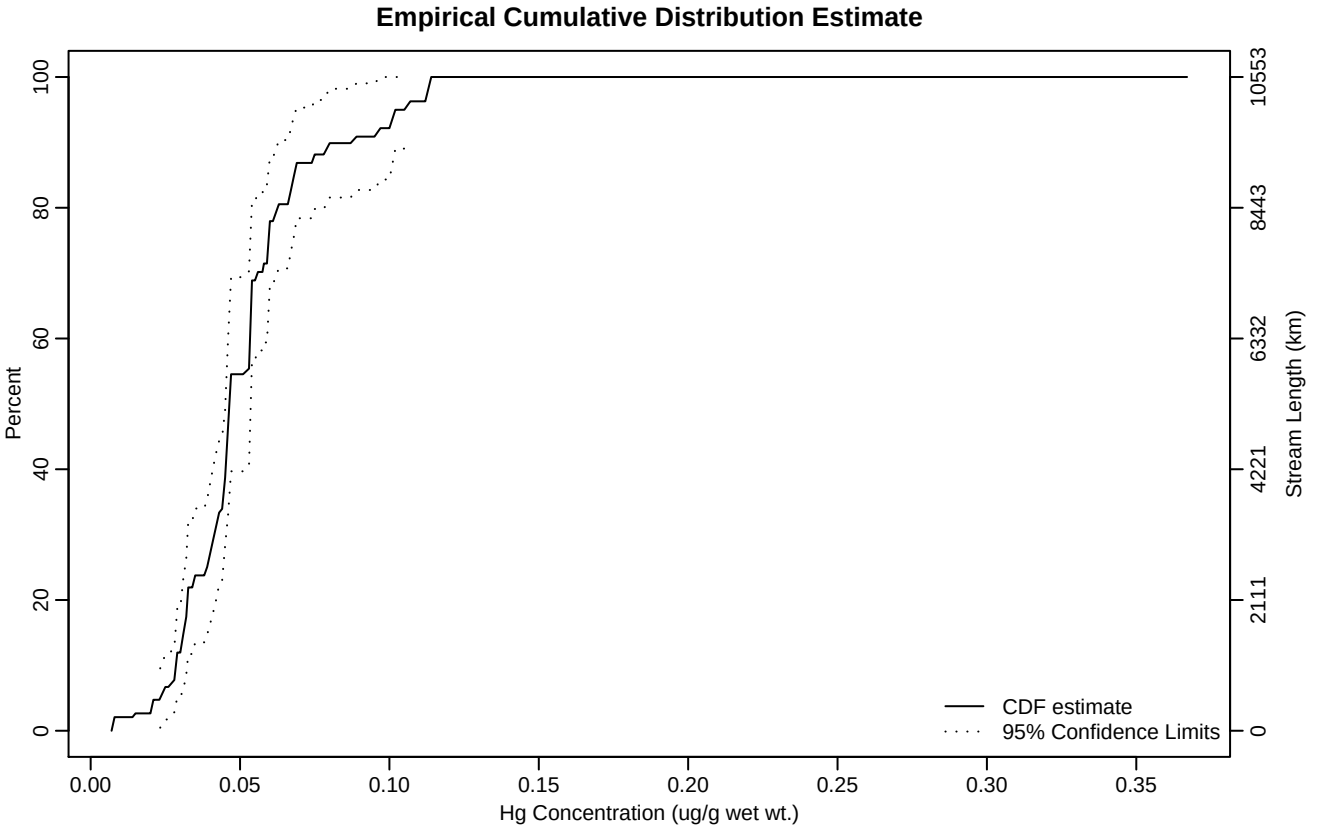


Figure FT Hg S−10 Indicator: Hg_Small_Fish Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.01	0.03
10Pct	0.03	0.02	0.03
25Pct	0.04	0.03	0.04
50Pct	0.05	0.04	0.05
75Pct	0.06	0.05	0.07
90Pct	0.09	0.07	0.11
95Pct	0.11	0.08	
Mean	0.05	0.05	0.06
Std Dev	0.02	0.02	0.02

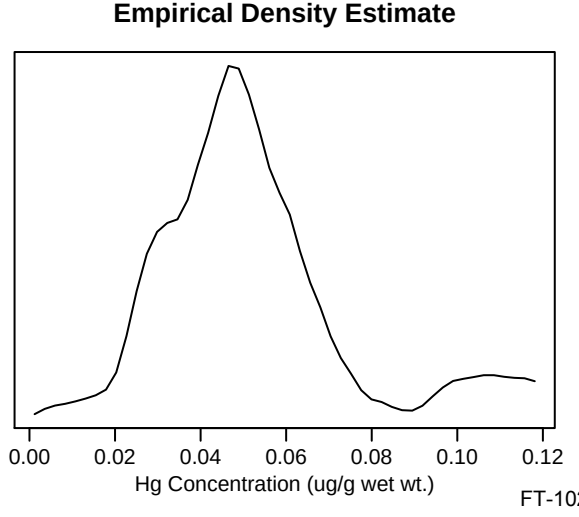
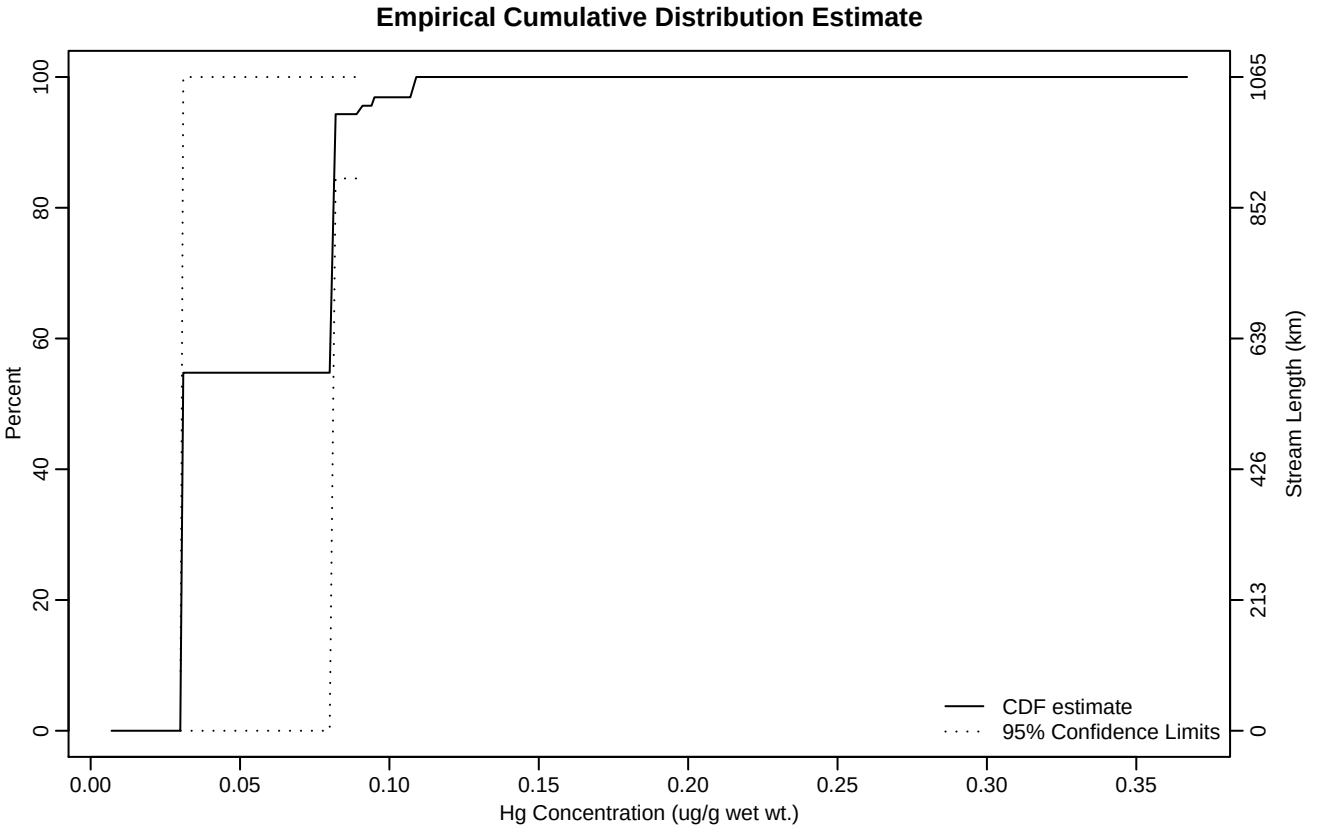


Figure FT Hg S−11 Indicator: Hg_Small_Fish Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.03	0.03
10Pct	0.03	0.03	0.03
25Pct	0.03	0.03	0.03
50Pct	0.03	0.03	0.11
75Pct	0.08	0.03	0.11
90Pct	0.08	0.03	0.11
95Pct	0.09	0.08	0.11
Mean	0.06	0.02	0.09
Std Dev	0.03	0.02	0.03

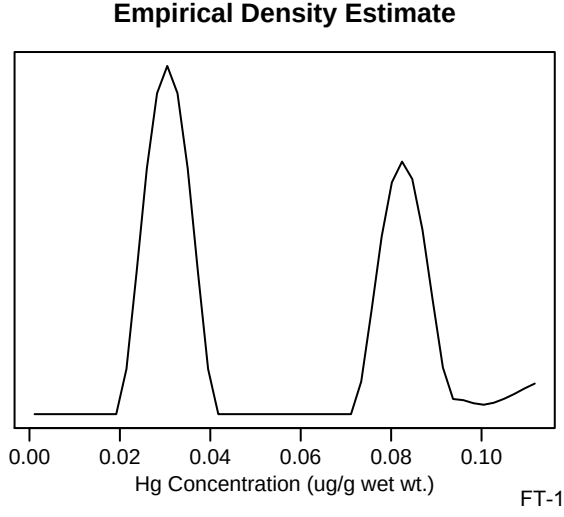
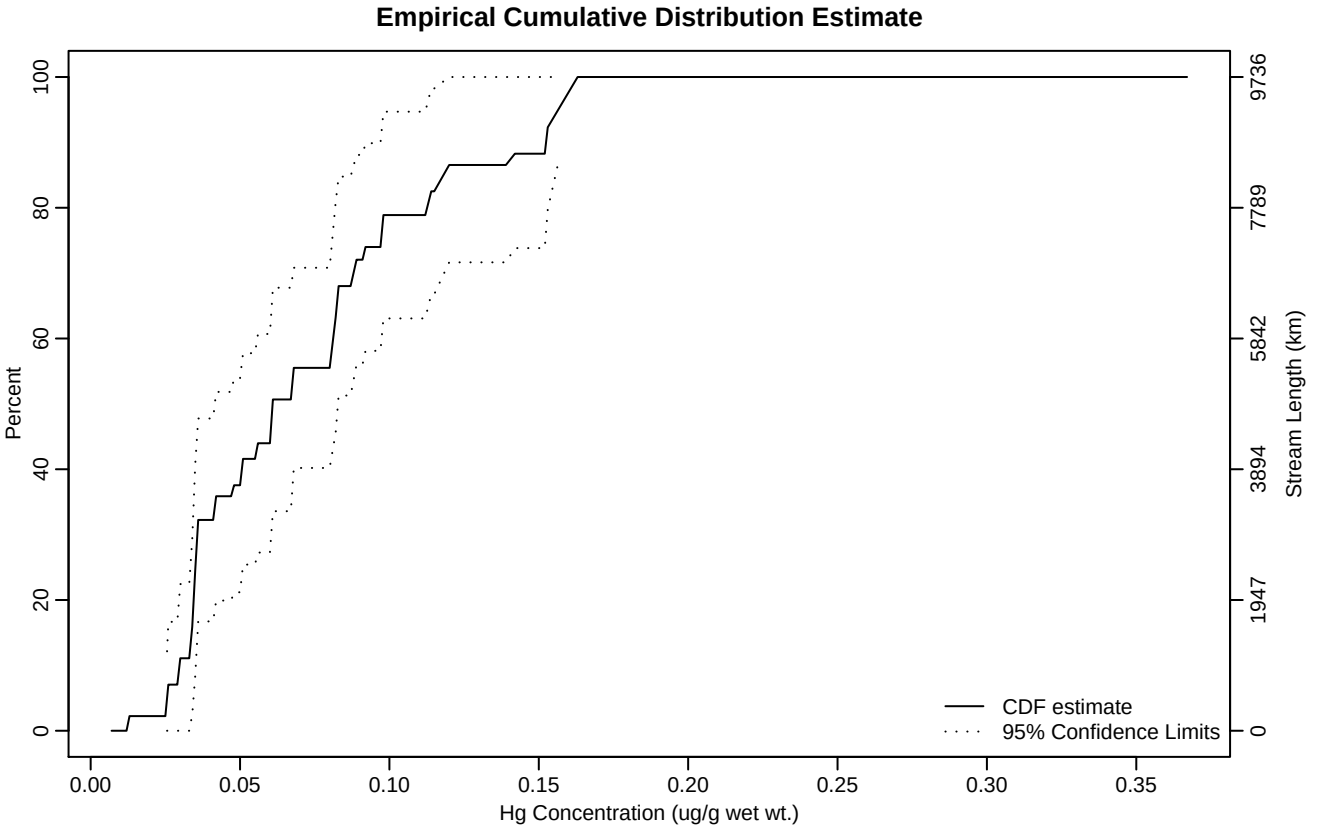


Figure FT Hg S−12 Indicator: Hg_Small_Fish Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.01	0.03
10Pct	0.03	0.01	0.03
25Pct	0.04	0.03	0.05
50Pct	0.06	0.04	0.08
75Pct	0.10	0.08	0.15
90Pct	0.15	0.10	0.16
95Pct	0.16	0.11	0.16
Mean	0.07	0.06	0.09
Std Dev	0.04	0.03	0.05

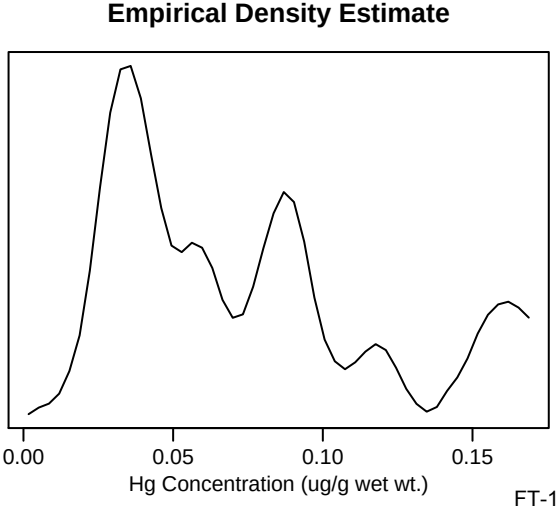
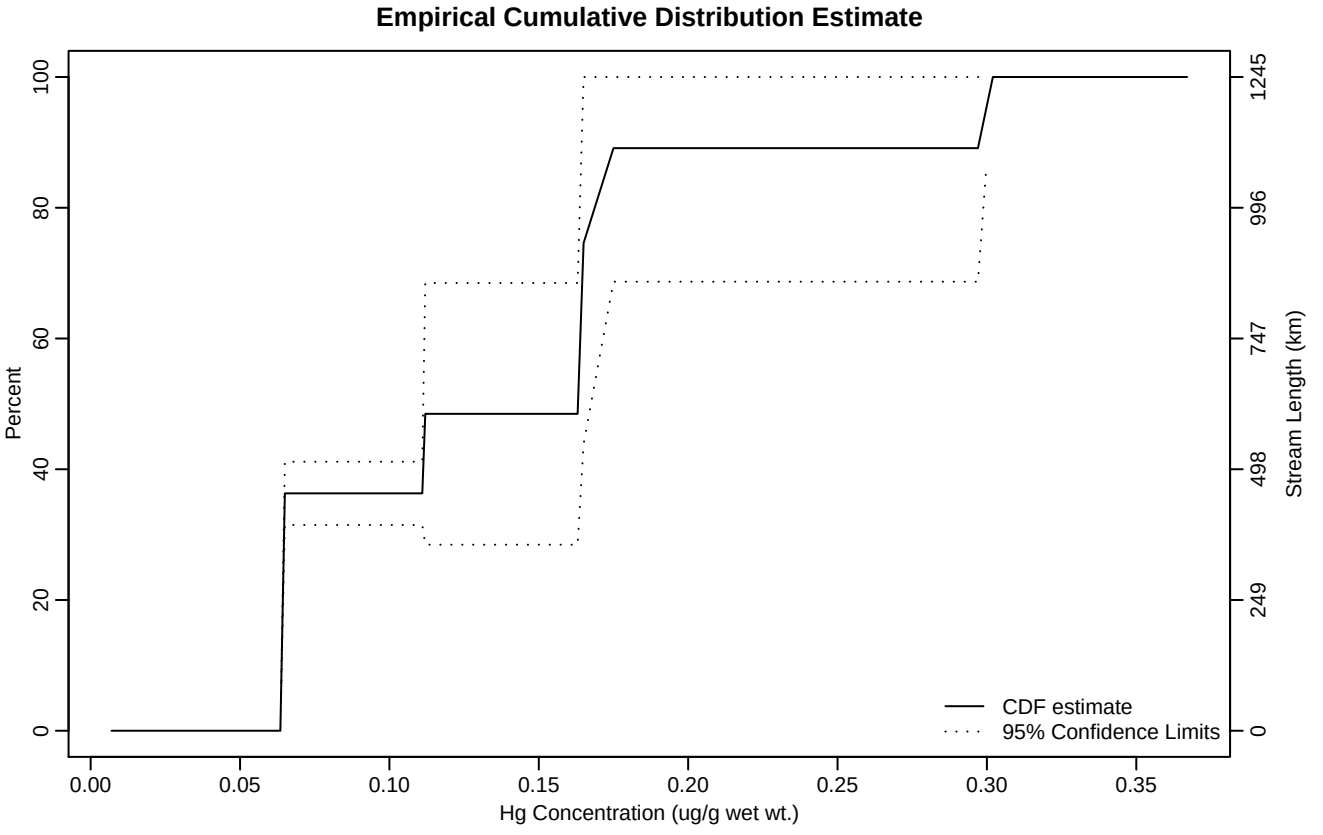


Figure FT Hg S−13 Indicator: Hg_Small_Fish Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.06	0.06	0.06
10Pct	0.06	0.06	0.06
25Pct	0.06	0.06	0.11
50Pct	0.16	0.06	0.30
75Pct	0.17	0.11	
90Pct	0.30	0.16	
95Pct	0.30	0.17	
Mean	0.14	0.11	0.17
Std Dev	0.04	0.01	0.07

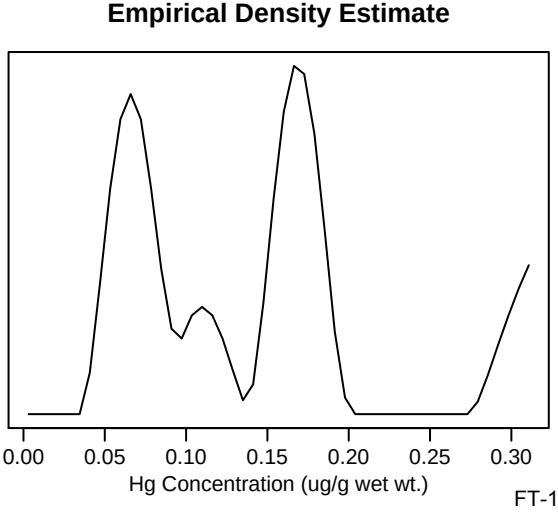
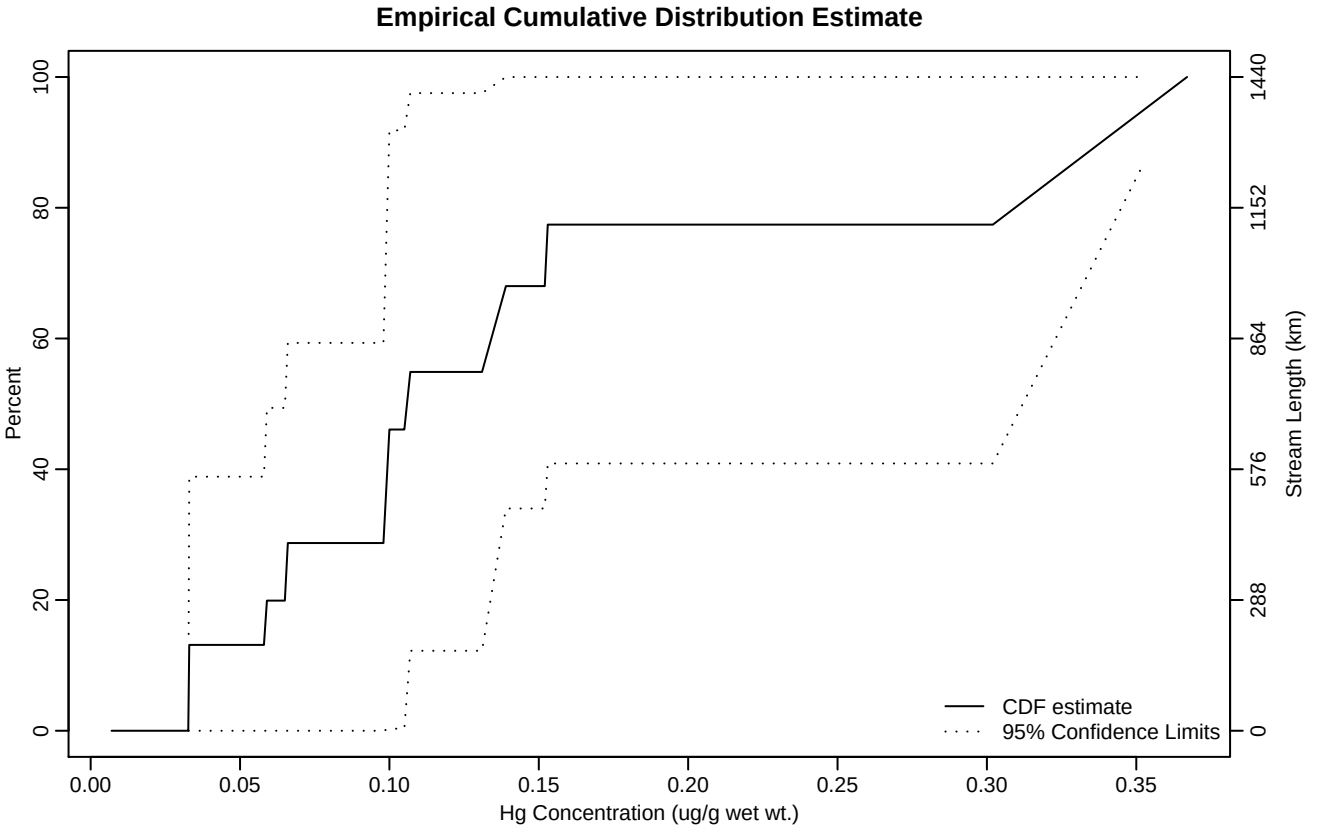


Figure FT Hg S−14 Indicator: Hg_Small_Fish Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.03	0.03
10Pct	0.03	0.03	0.03
25Pct	0.07	0.01	0.13
50Pct	0.11	0.03	0.36
75Pct	0.15	0.10	0.37
90Pct	0.34	0.11	0.37
95Pct	0.35	0.11	0.37
Mean	0.16	0.06	0.25
Std Dev	0.08	0.07	0.09

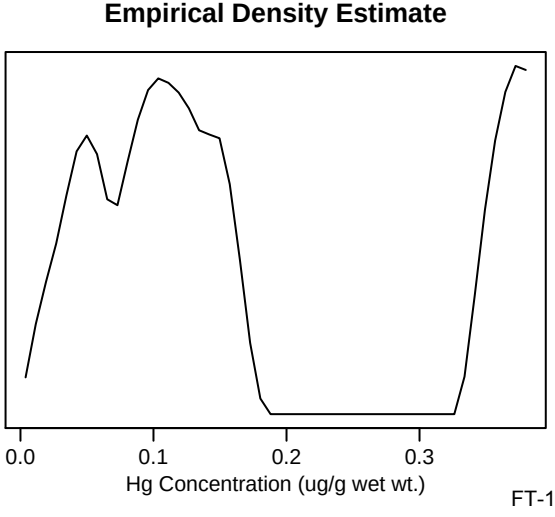
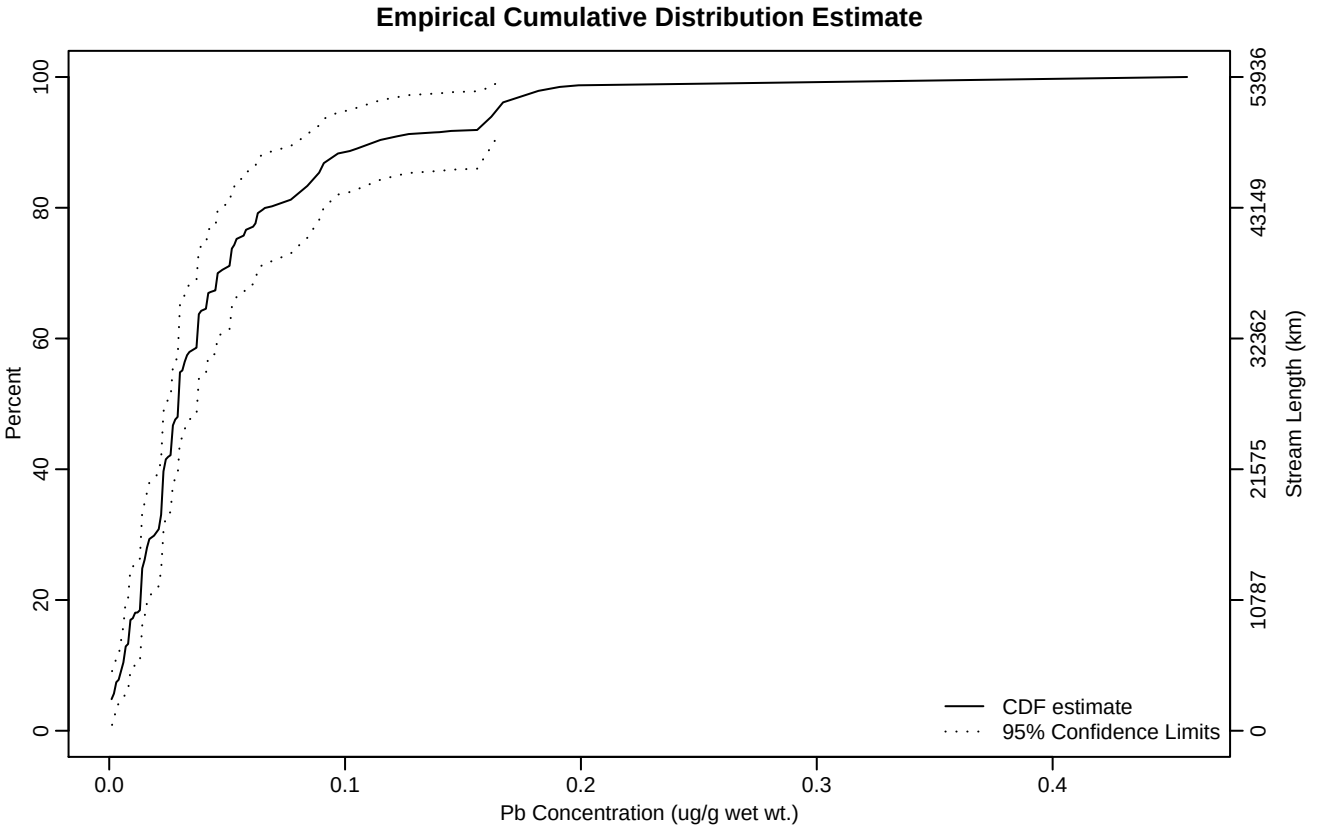


Figure FT Mtl S−1 Indicator: Pb_Small_Fish Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0.01	0	0.01
25Pct	0.01	0.01	0.02
50Pct	0.03	0.02	0.04
75Pct	0.05	0.04	0.09
90Pct	0.11	0.08	0.17
95Pct	0.16	0.12	0.37
Mean	0.05	0.04	0.06
Std Dev	0.05	0.04	0.07

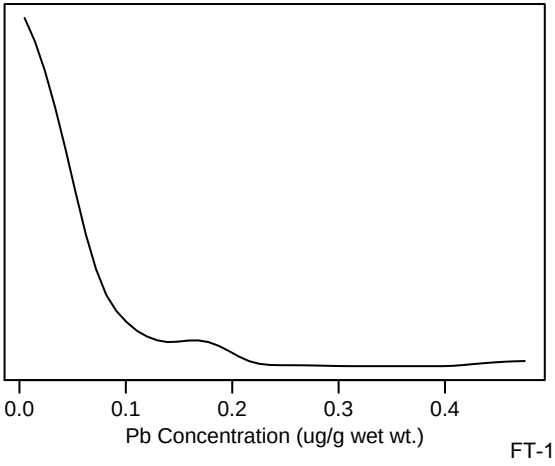
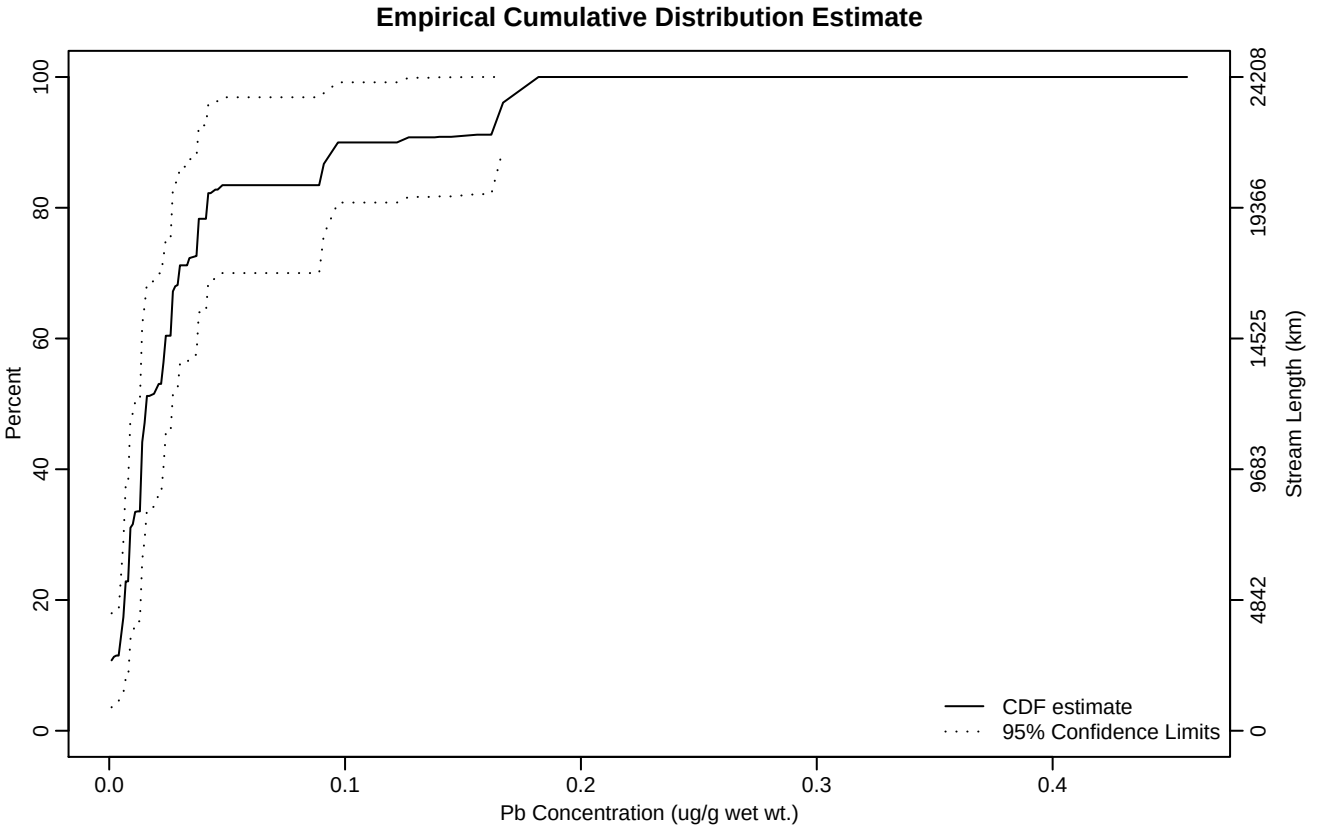


Figure FT Mtl S−2 Indicator: Pb_Small_Fish Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.01
10Pct	0	0	0.01
25Pct	0.01	0	0.01
50Pct	0.02	0.01	0.03
75Pct	0.04	0.02	0.12
90Pct	0.12	0.04	0.18
95Pct	0.17	0.09	0.18
Mean	0.04	0.02	0.05
Std Dev	0.04	0.03	0.05

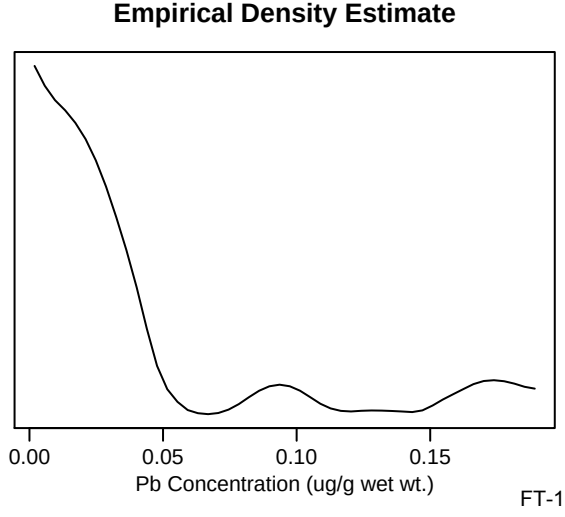
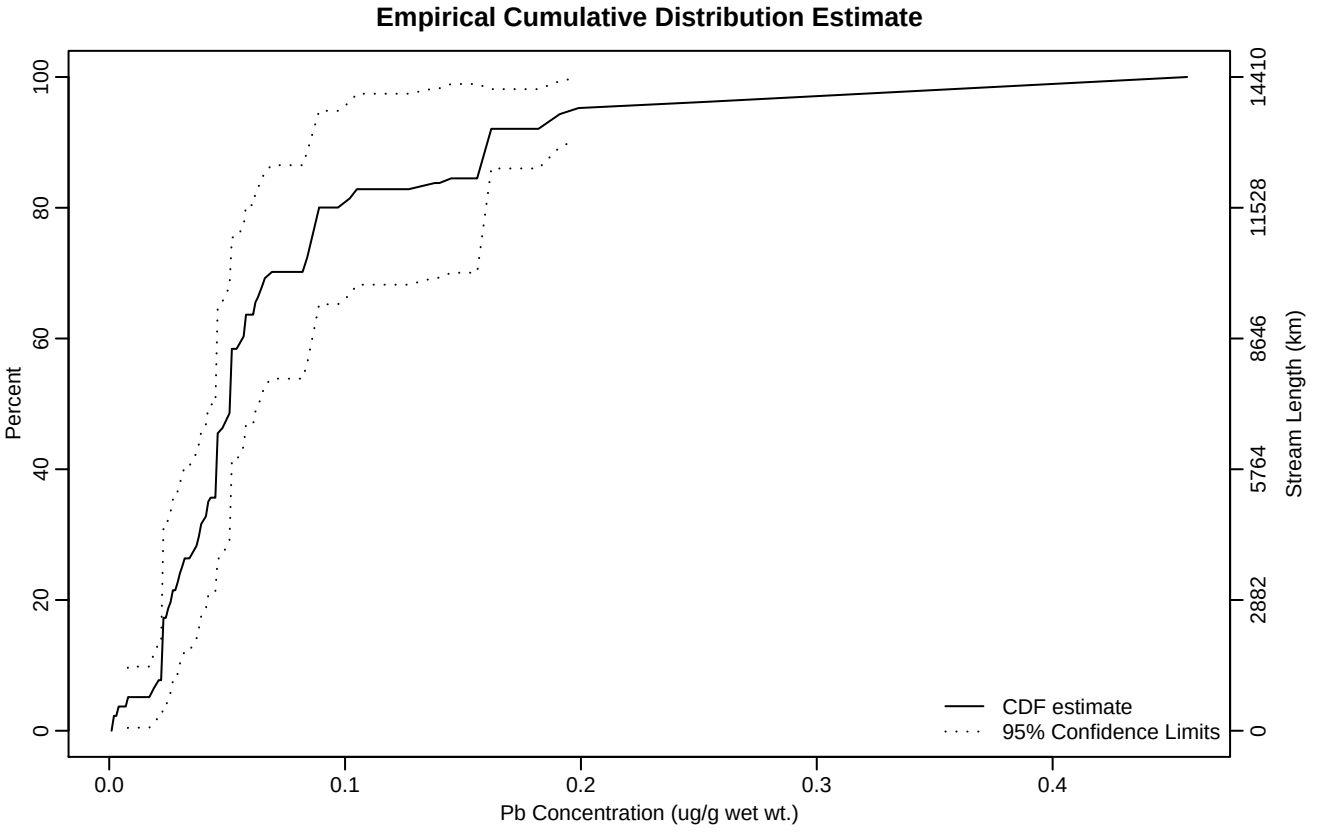


Figure FT Mtl S−3 Indicator: Pb_Small_Fish Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.02
10Pct	0.02	0.01	0.02
25Pct	0.03	0.02	0.05
50Pct	0.05	0.04	0.07
75Pct	0.09	0.05	0.16
90Pct	0.16	0.09	0.46
95Pct	0.20	0.16	0.46
Mean	0.08	0.05	0.11
Std Dev	0.05	0.04	0.07

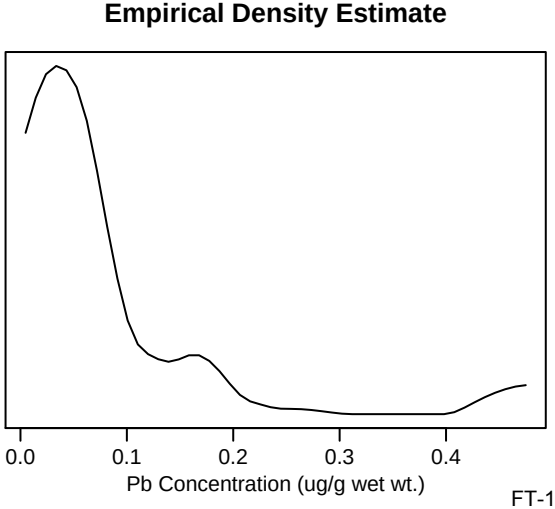
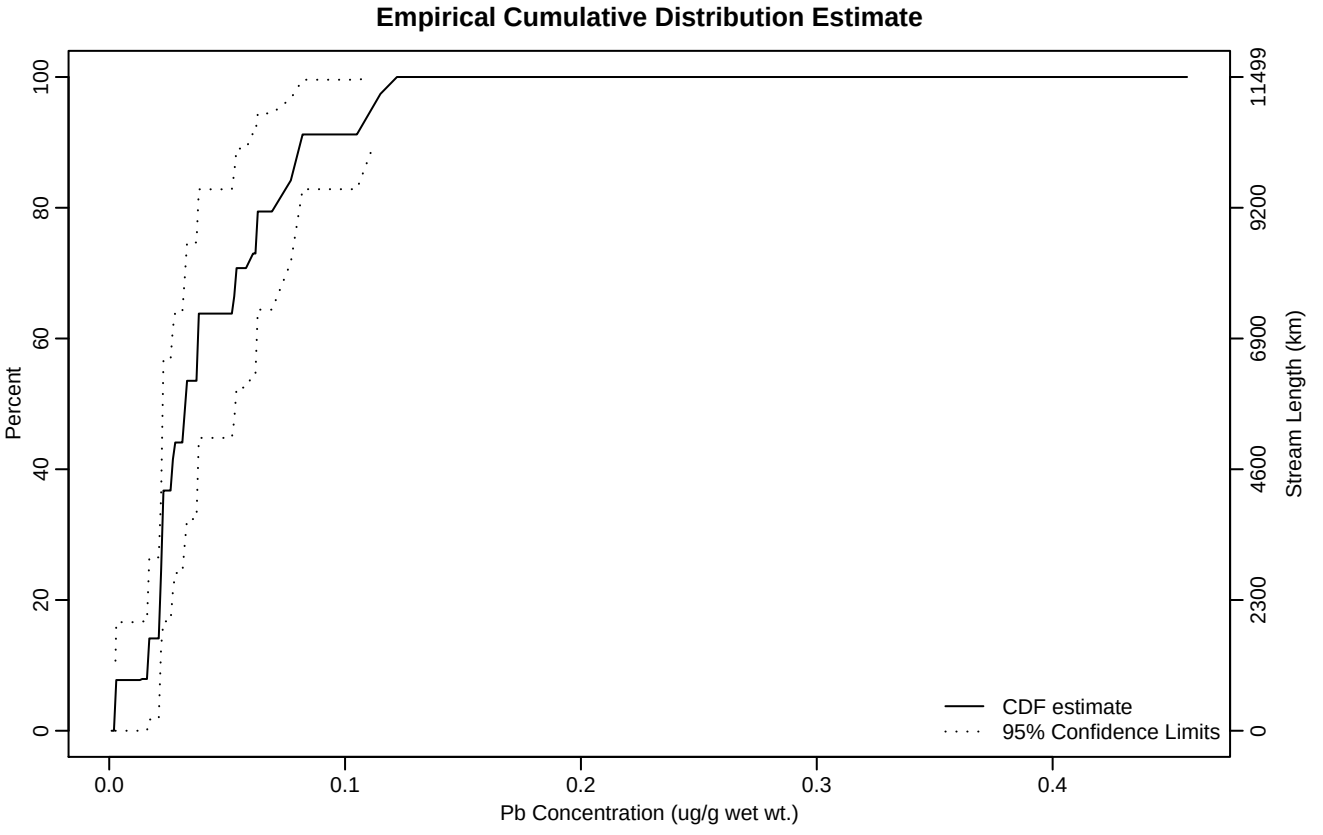


Figure FT Mtl S−4 Indicator: Pb_Small_Fish Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.02	0	0.02
25Pct	0.02	0.02	0.03
50Pct	0.03	0.02	0.06
75Pct	0.06	0.04	0.11
90Pct	0.08	0.06	
95Pct	0.11	0.08	
Mean	0.04	0.03	0.06
Std Dev	0.02	0.02	0.03

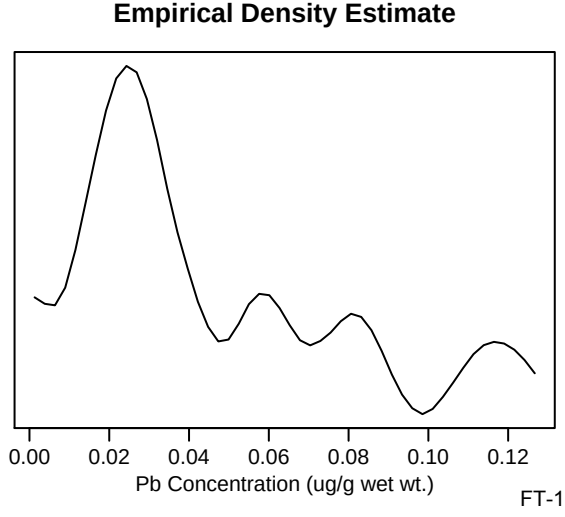
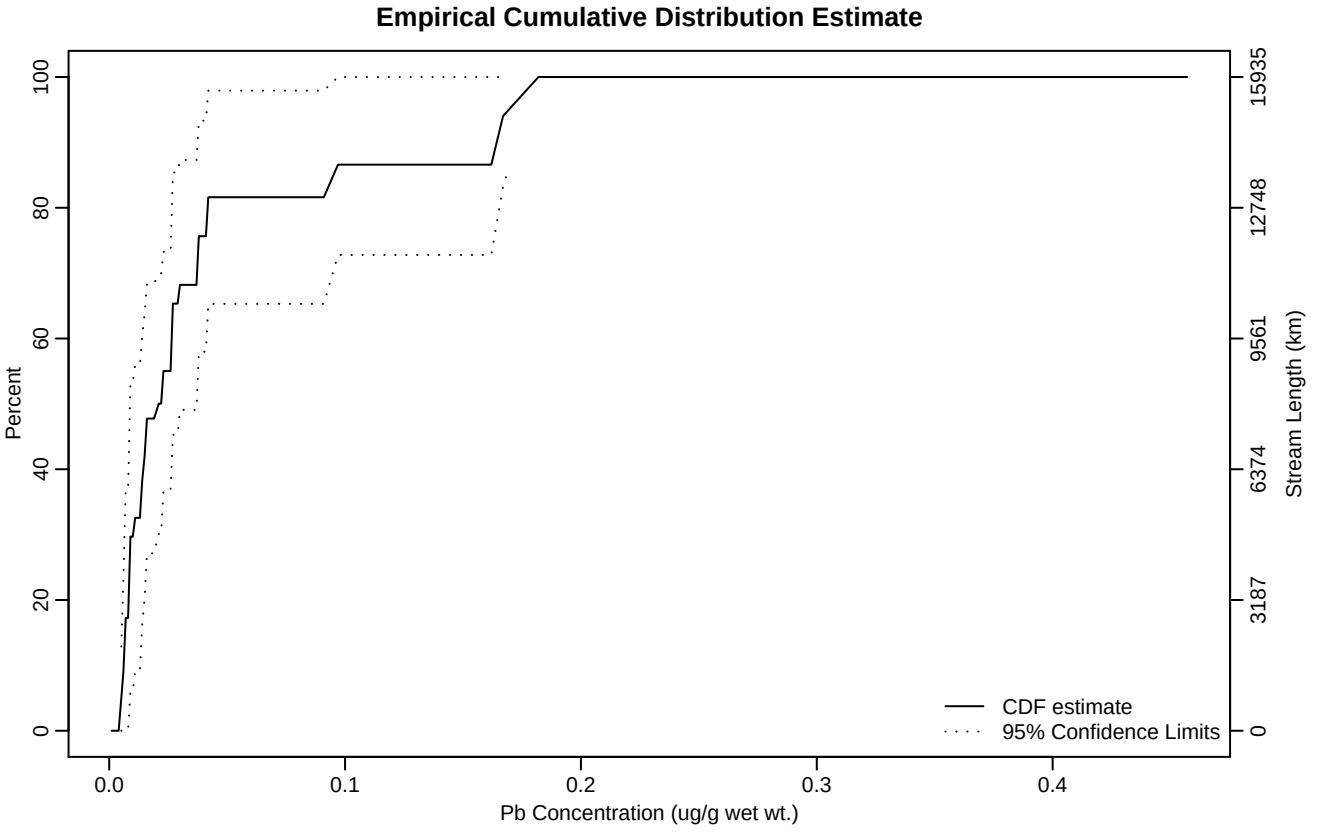


Figure FT Mtl S−5 Indicator: Pb_Small_Fish Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0	0.01
25Pct	0.01	0.01	0.02
50Pct	0.02	0.01	0.04
75Pct	0.04	0.03	0.17
90Pct	0.16	0.04	0.18
95Pct	0.17	0.09	0.18
Mean	0.04	0.02	0.07
Std Dev	0.05	0.03	0.06

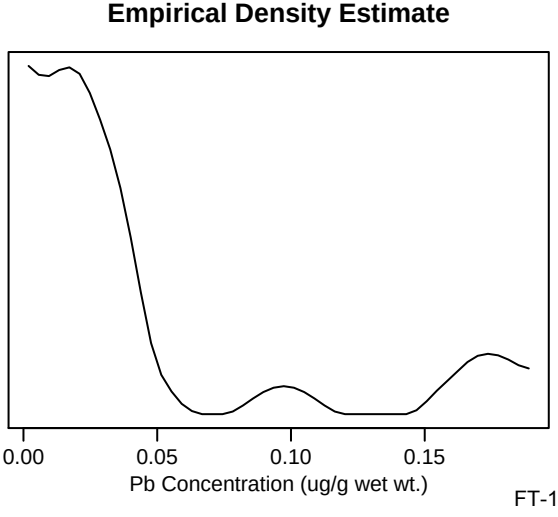
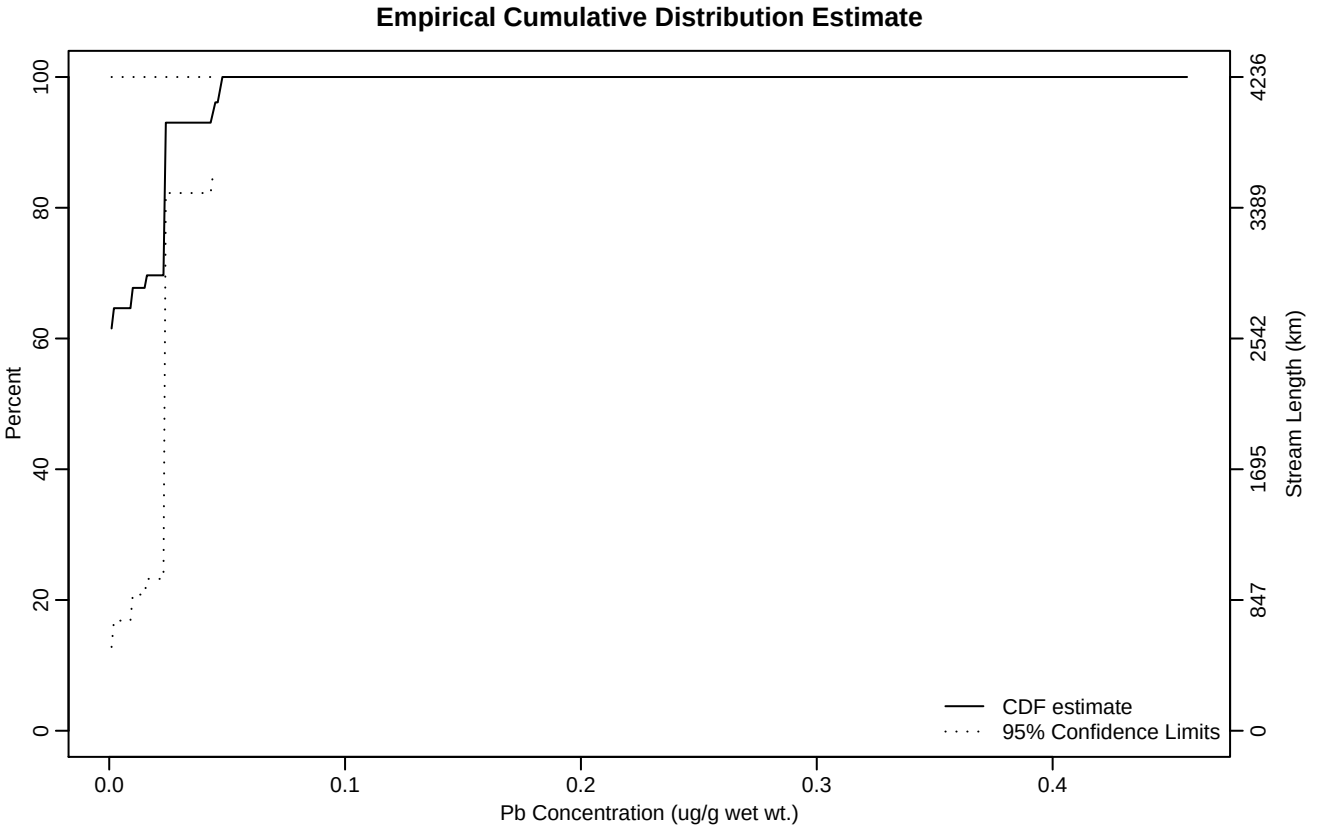


Figure FT Mtl S−6 Indicator: Pb_Small_Fish Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.02
10Pct	0	0	0.02
25Pct	0	0	0.02
50Pct	0	0	0.05
75Pct	0.02	0	0.05
90Pct	0.02	0	0.05
95Pct	0.04	0.02	0.05
Mean	0.01	0	0.02
Std Dev	0.01	0.01	0.02

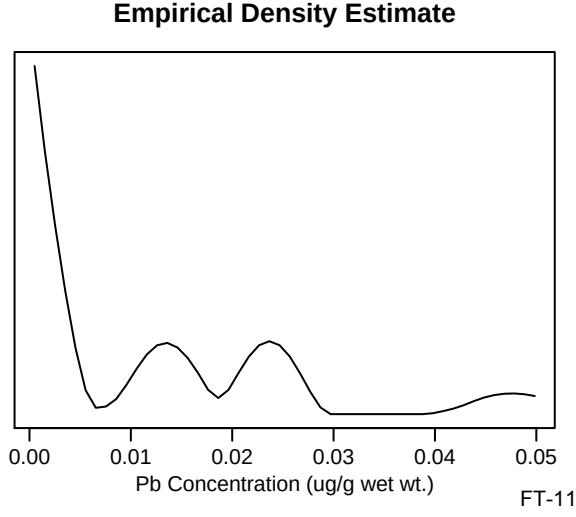
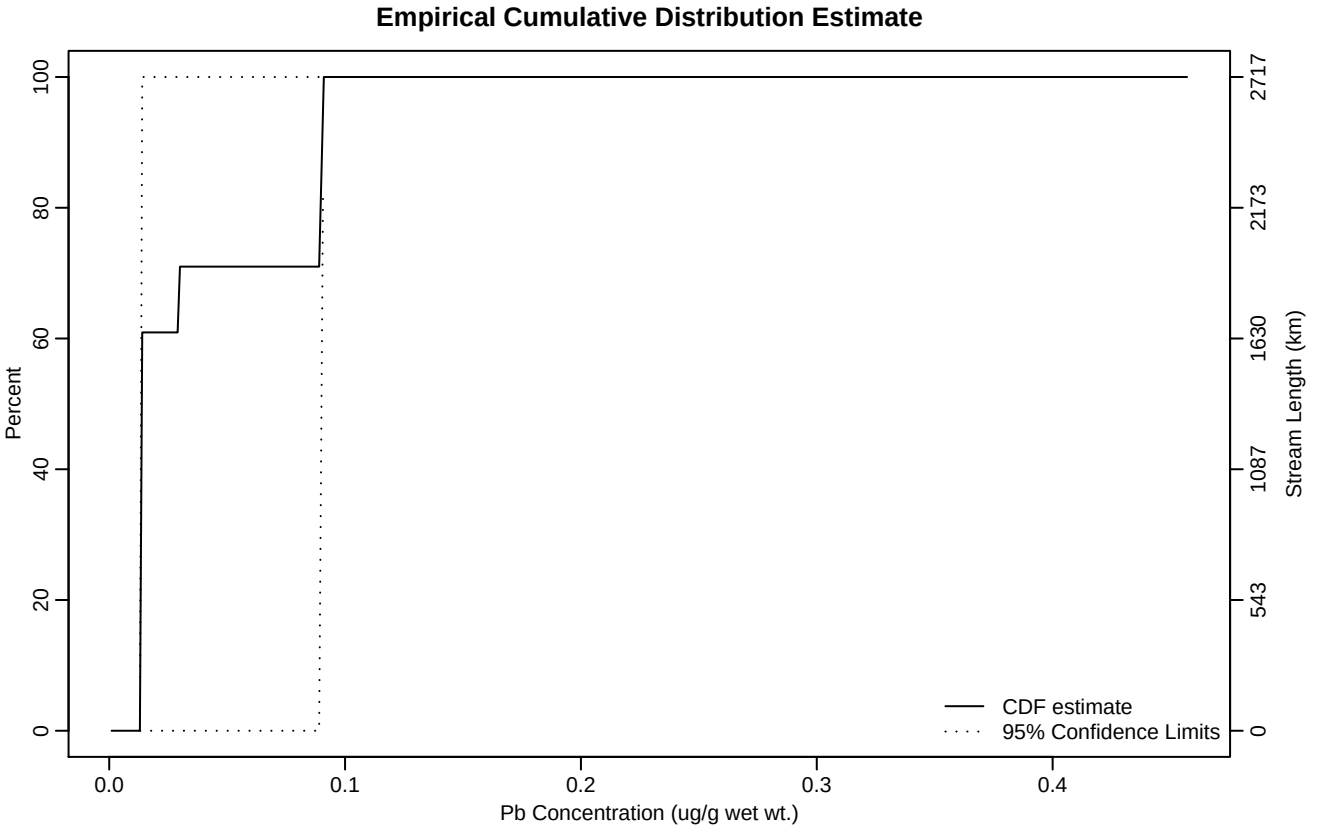


Figure FT Mtl S−7 Indicator: Pb_Small_Fish Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.01
50Pct	0.01	0.01	0.03
75Pct	0.09	0.01	
90Pct	0.09	0.01	
95Pct	0.09	0.01	
Mean	0.04	−0.02	0.09
Std Dev	0.03	0.02	0.04

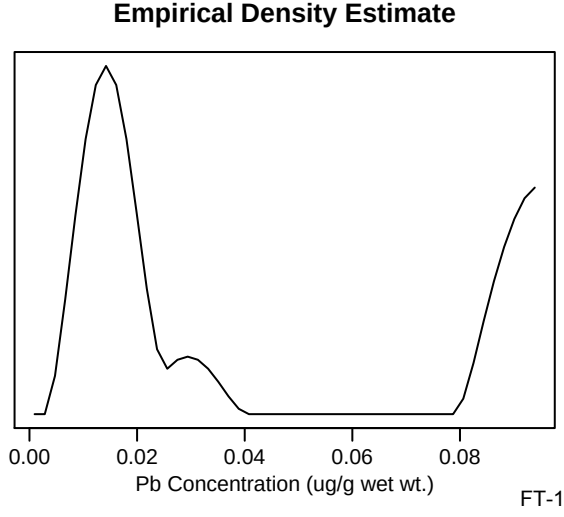
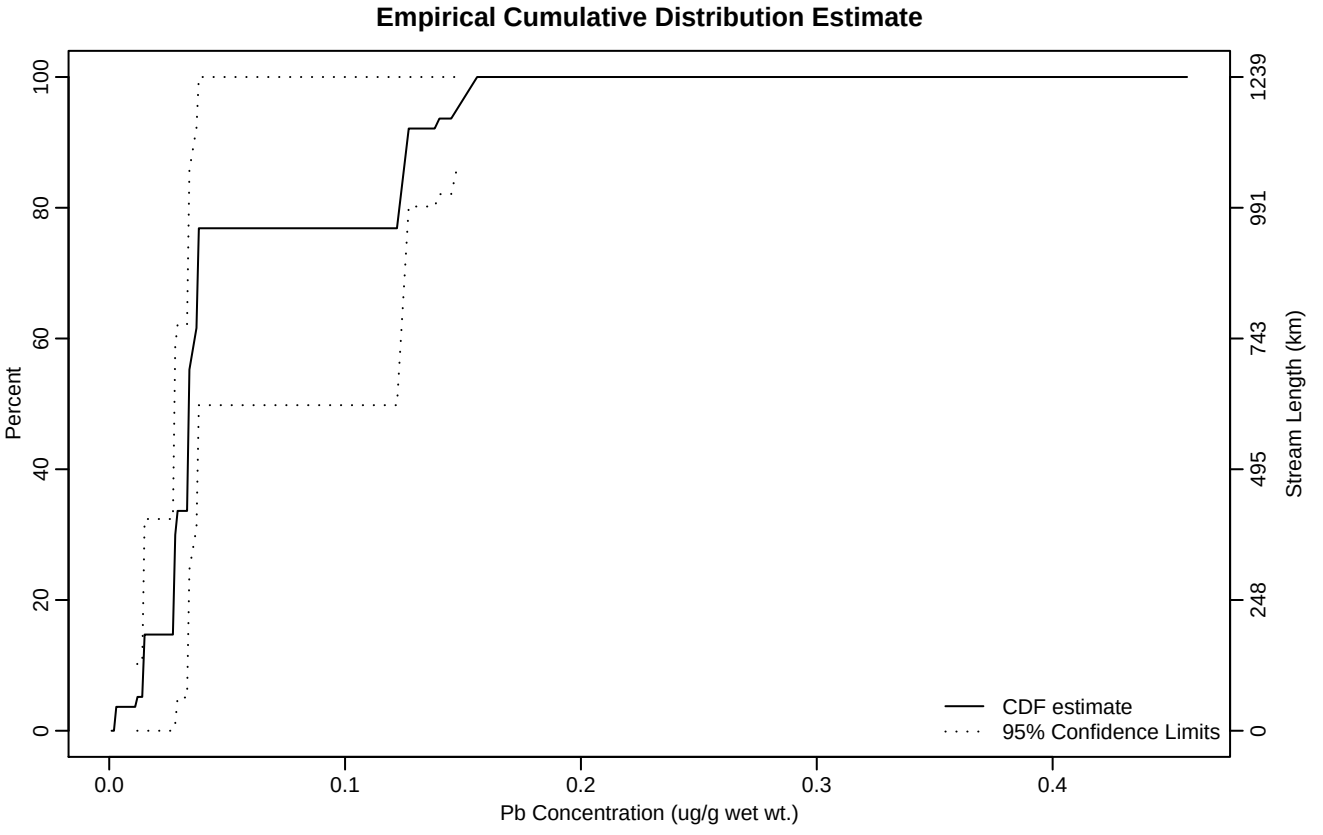


Figure FT Mtl S−8 Indicator: Pb_Small_Fish Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0.01	0.03
25Pct	0.03	0.01	0.03
50Pct	0.03	0.03	0.12
75Pct	0.04	0.03	
90Pct	0.13	0.04	
95Pct	0.15	0.12	
Mean	0.05	0.03	0.08
Std Dev	0.05	0.03	0.06

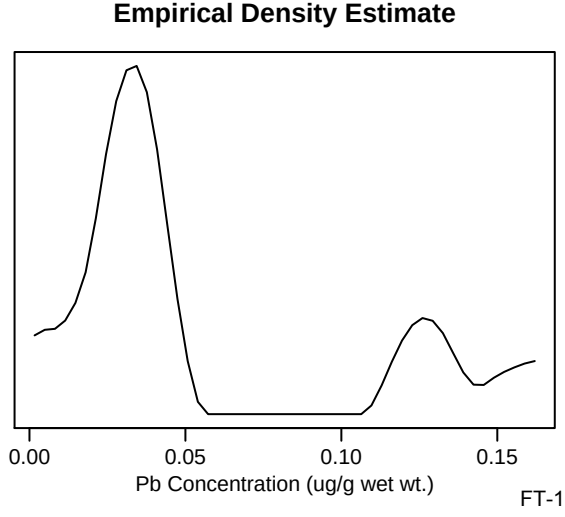
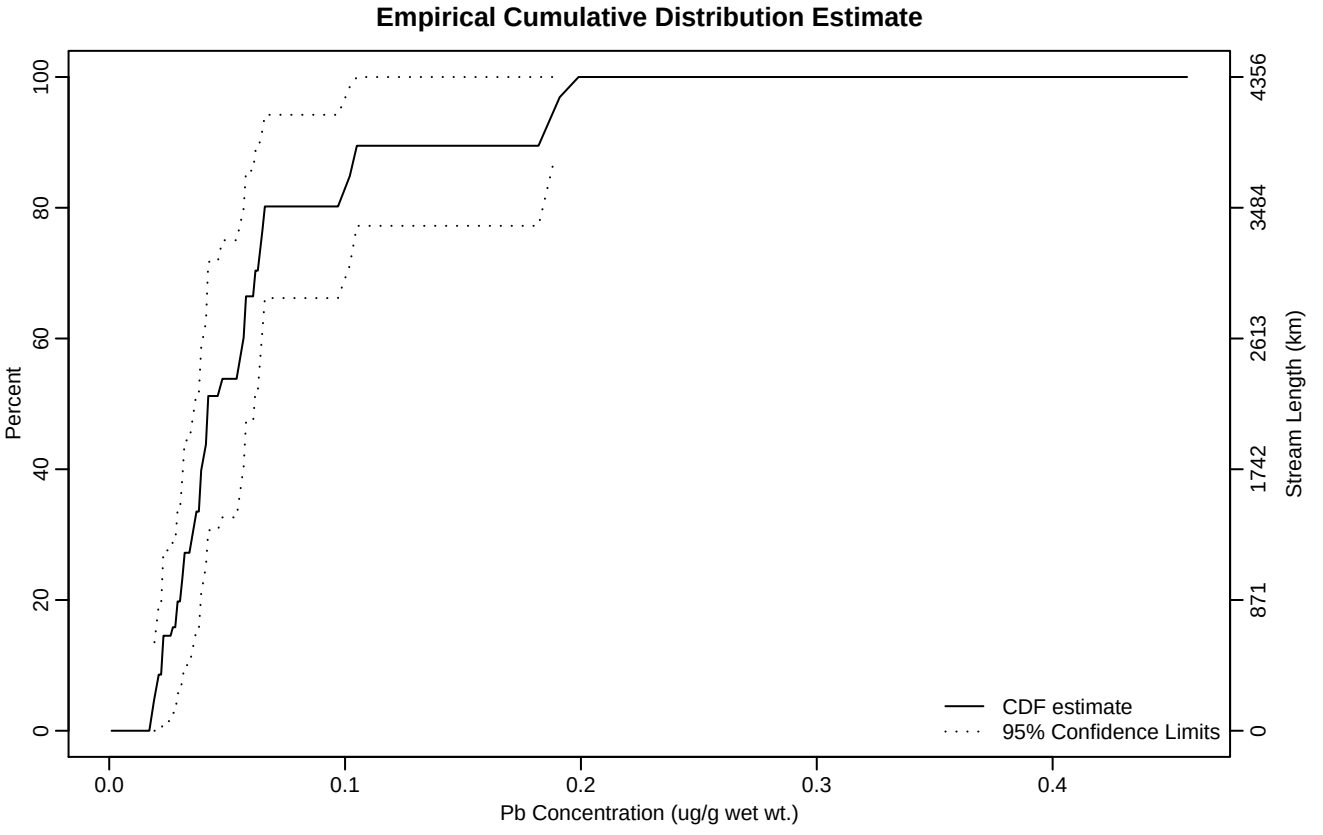


Figure FT Mtl S−9 Indicator: Pb_Small_Fish Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0	0.02
10Pct	0.02	0	0.03
25Pct	0.03	0.02	0.04
50Pct	0.04	0.04	0.06
75Pct	0.06	0.06	0.19
90Pct	0.18	0.07	0.20
95Pct	0.19	0.10	0.20
Mean	0.06	0.04	0.08
Std Dev	0.03	0.03	0.04

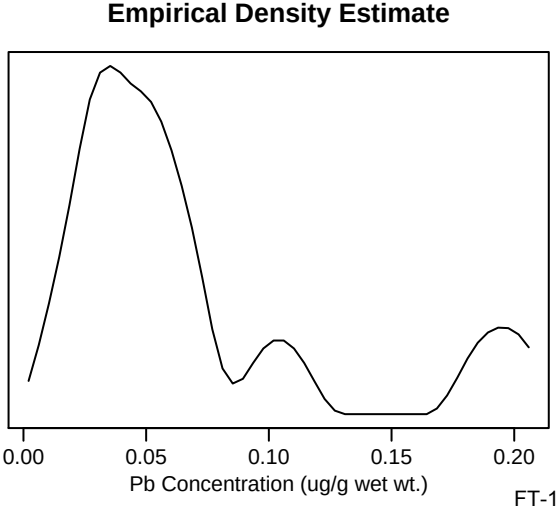
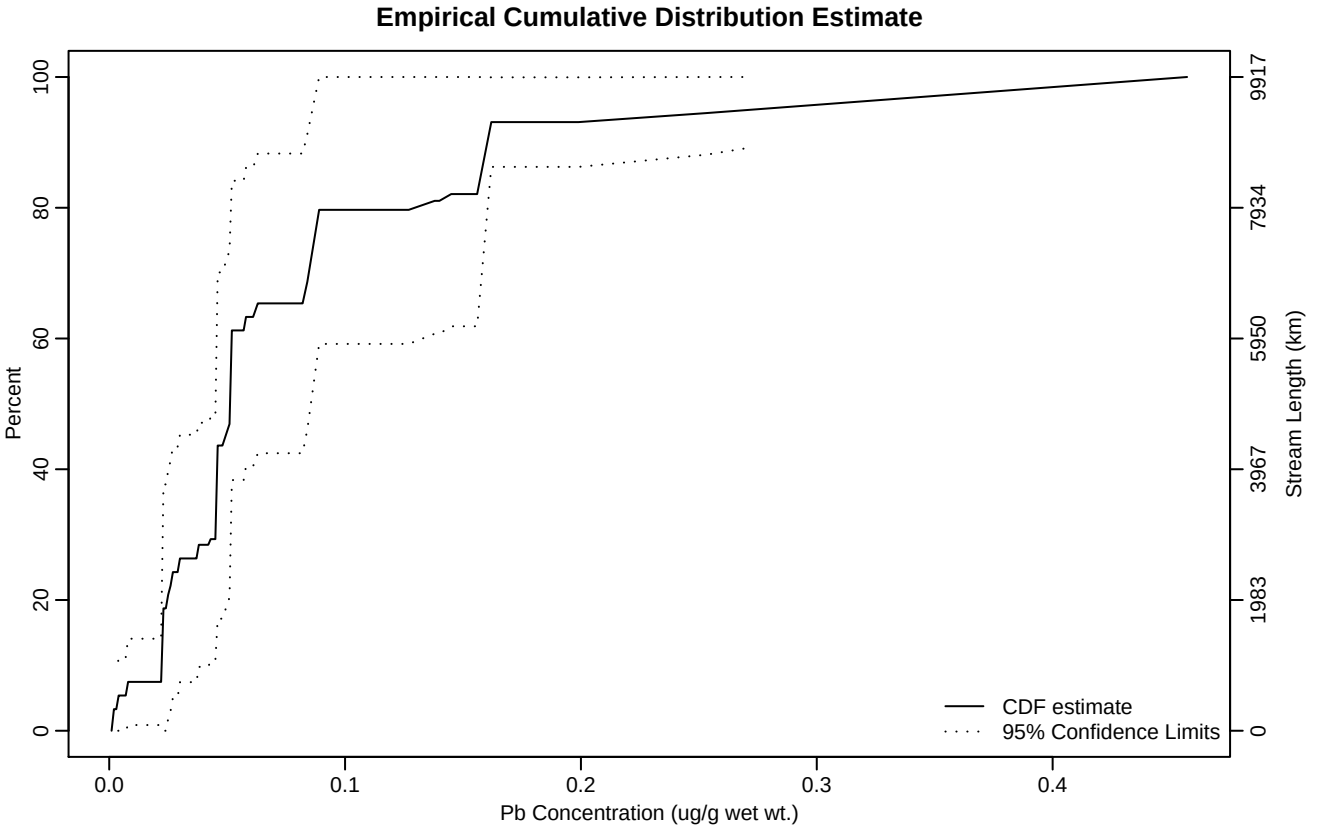


Figure FT Mtl S−10 Indicator: Pb_Small_Fish Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0.02
10Pct	0.02	0	0.02
25Pct	0.03	0	0.05
50Pct	0.05	0.03	0.09
75Pct	0.09	0.05	0.39
90Pct	0.16	0.08	0.46
95Pct	0.27	0.16	0.46
Mean	0.09	0.05	0.12
Std Dev	0.06	0.04	0.08

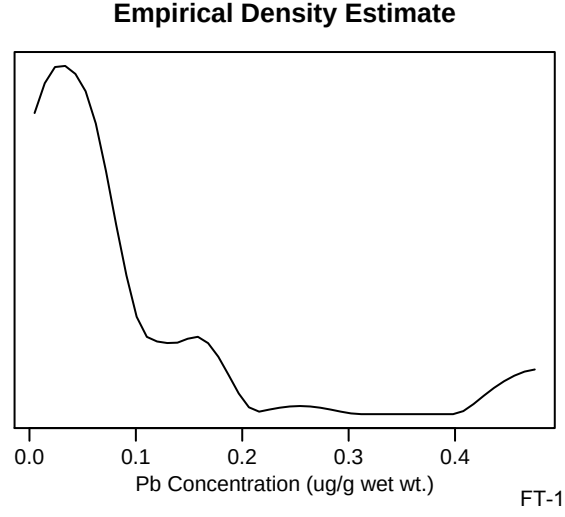
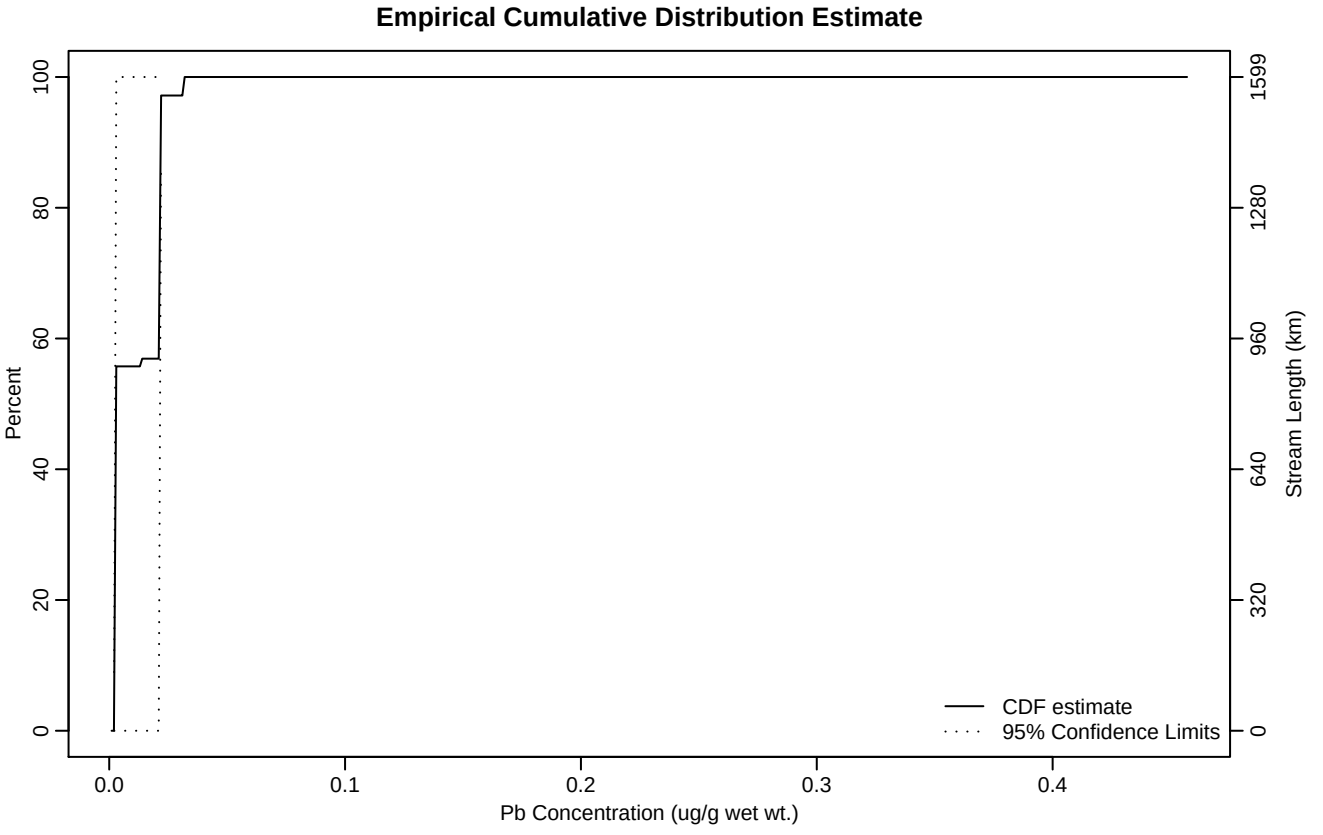


Figure FT Mtl S−11 Indicator: Pb_Small_Fish Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0
50Pct	0	0	0.02
75Pct	0.02	0	0.03
90Pct	0.02	0	0.03
95Pct	0.02	0	0.03
Mean	0.01	0	0.02
Std Dev	0.01	0.01	0.01

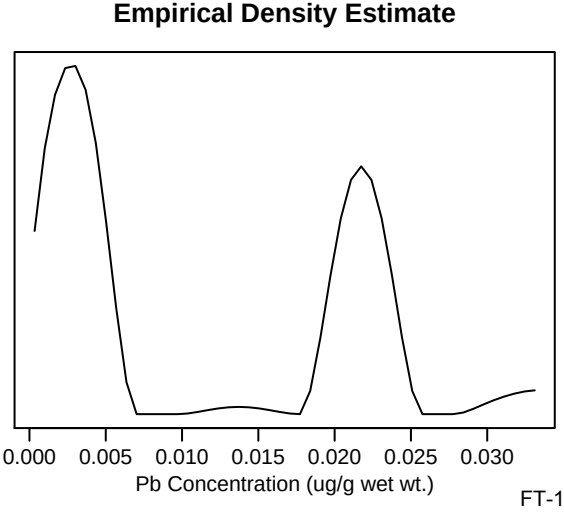
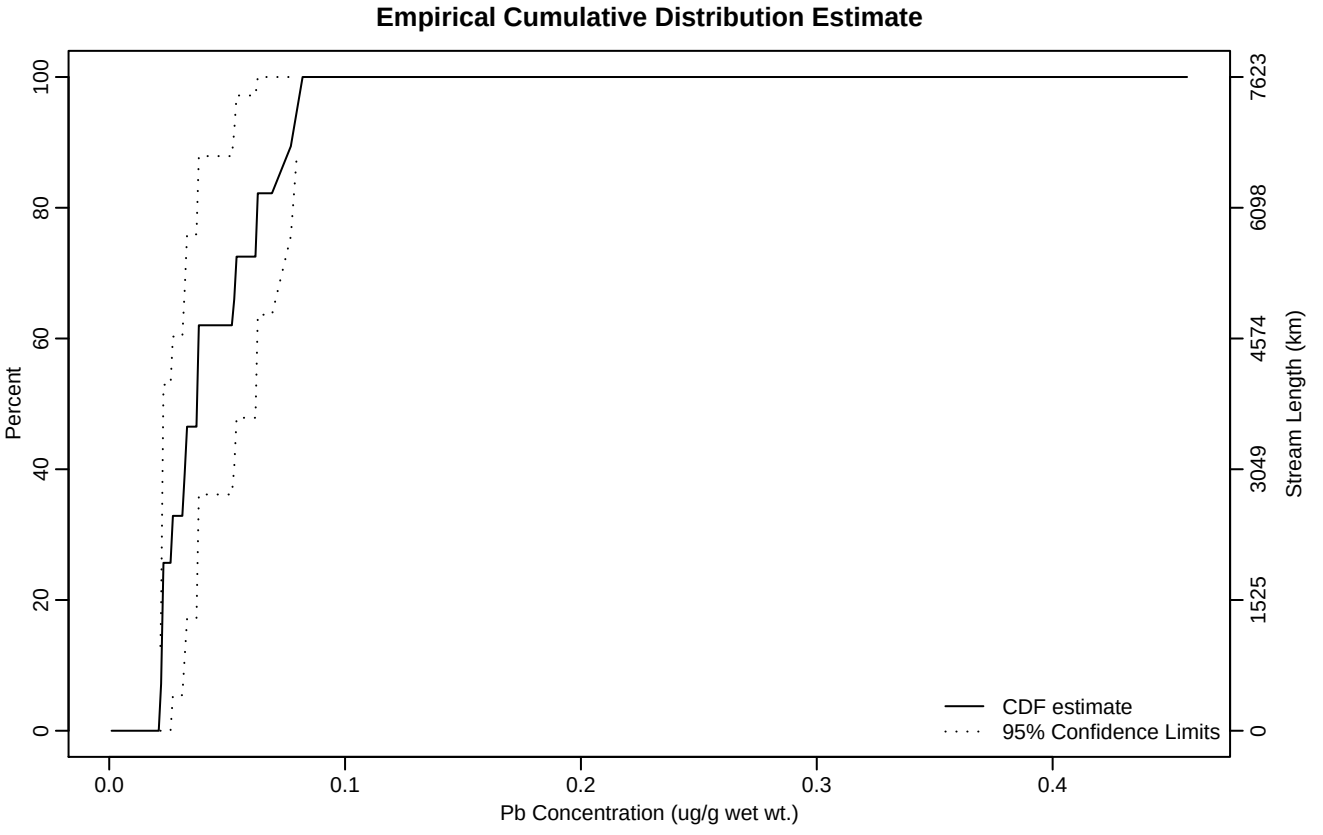


Figure FT Mtl S−12 Indicator: Pb_Small_Fish Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.02	0.02
10Pct	0.02	0	0.02
25Pct	0.02	0.02	0.03
50Pct	0.04	0.02	0.06
75Pct	0.06	0.04	0.08
90Pct	0.08	0.06	0.08
95Pct	0.08	0.06	0.08
Mean	0.04	0.03	0.06
Std Dev	0.02	0.02	0.03

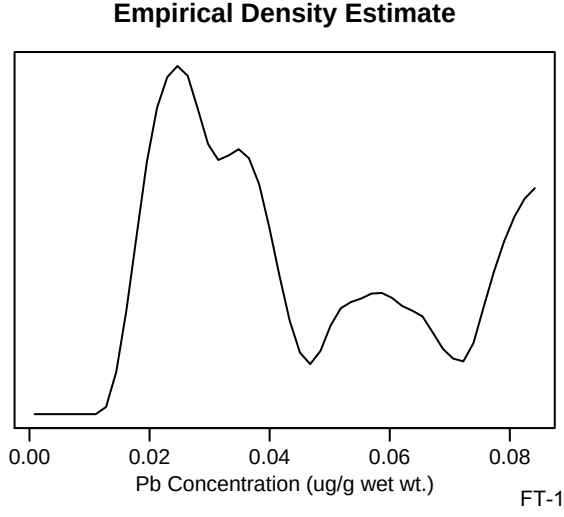
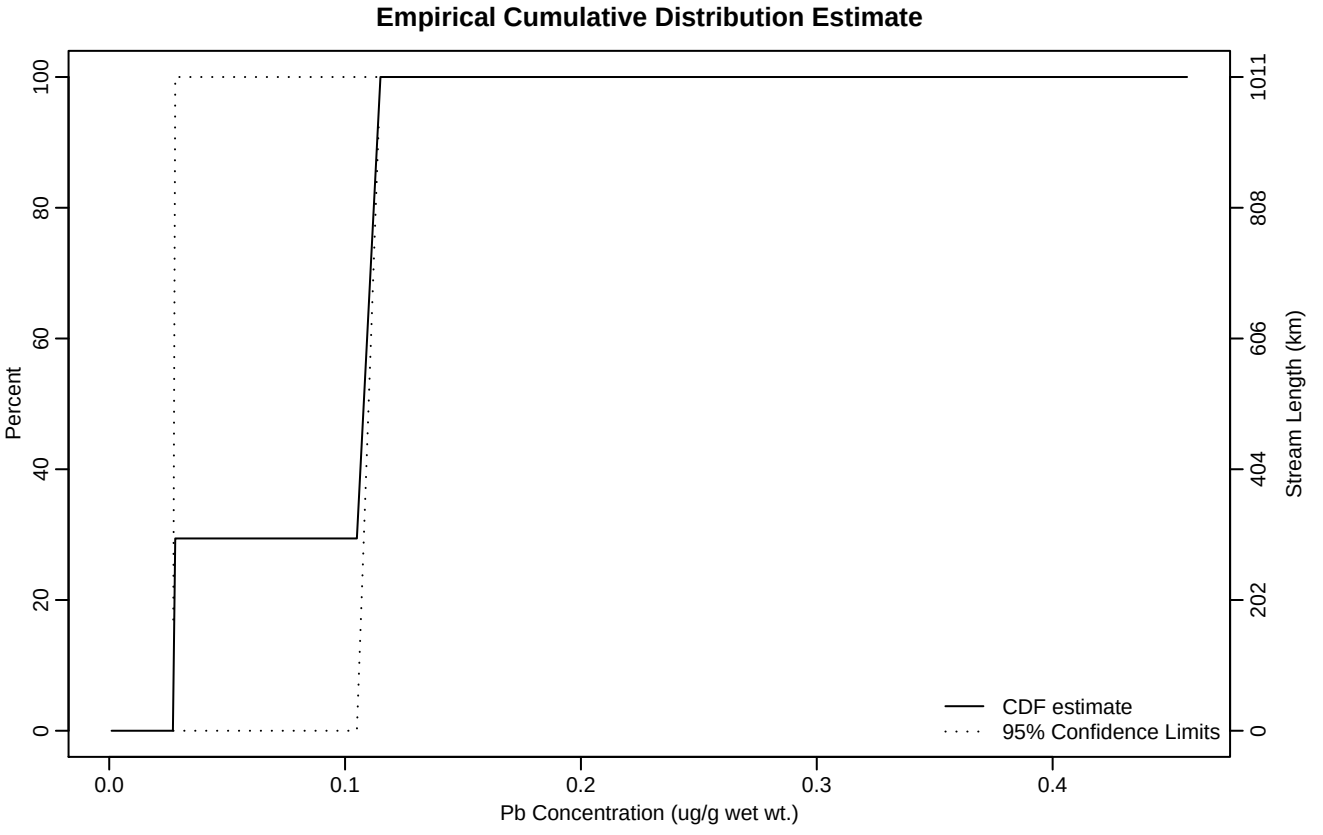


Figure FT Mtl S−13 Indicator: Pb_Small_Fish Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.03	0.03
10Pct	0.03	0.03	0.03
25Pct	0.03	0.03	0.11
50Pct	0.11	0	0.12
75Pct	0.11	0	0.12
90Pct	0.11	0	0.12
95Pct	0.11	0	0.12
Mean	0.09	0.02	0.16
Std Dev	0.04	0.01	0.07

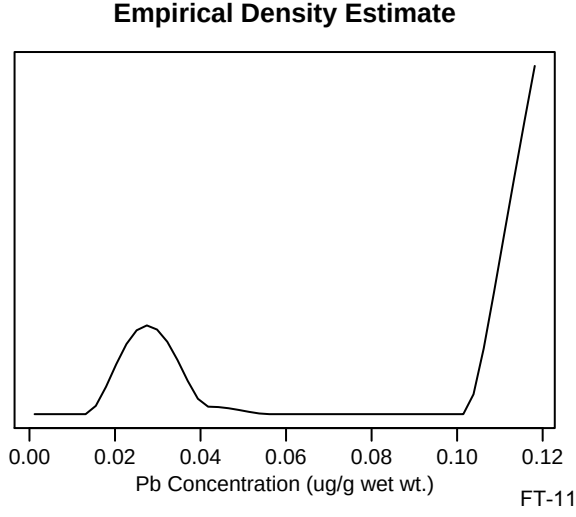
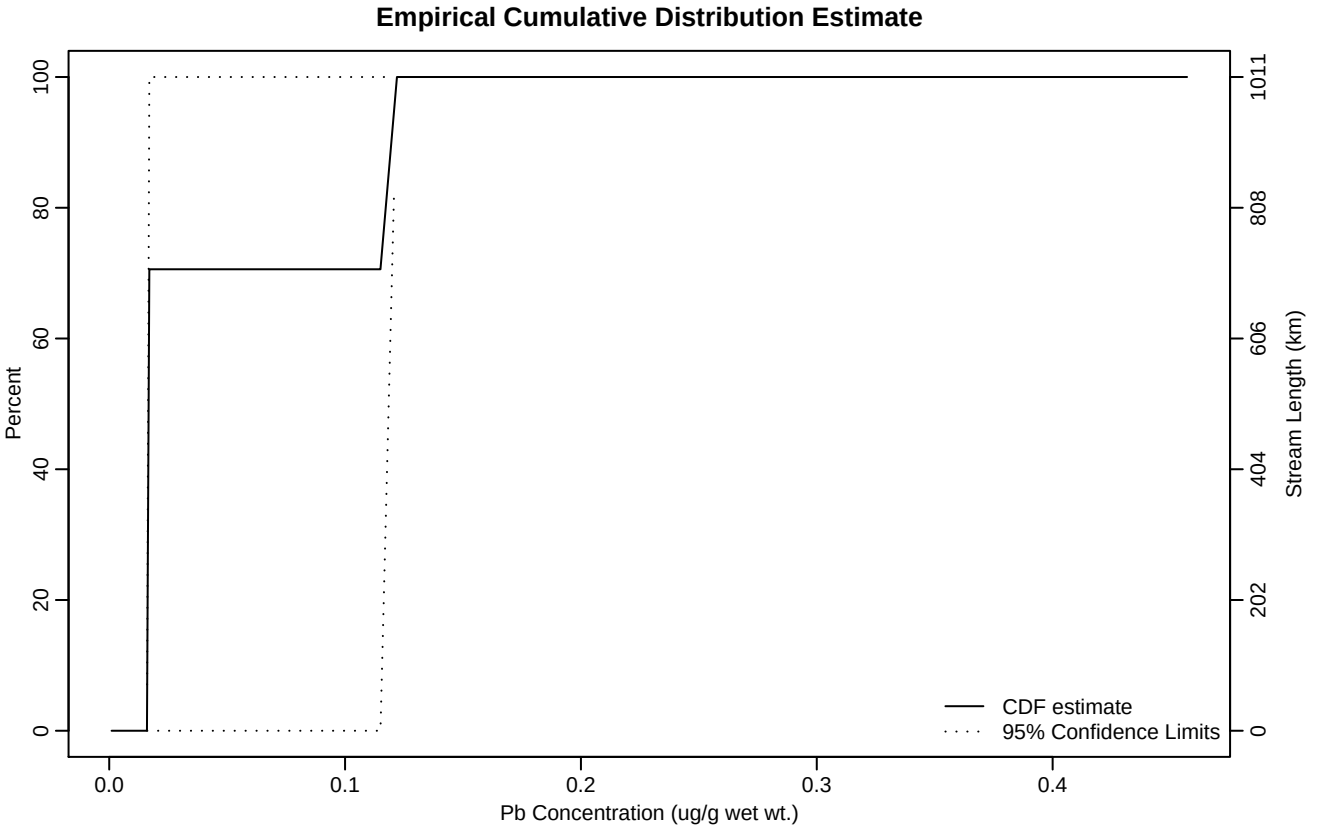


Figure FT Mtl S−14 Indicator: Pb_Small_Fish Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.02	0.02
10Pct	0.02	0.02	0.02
25Pct	0.02	0.02	0.02
50Pct	0.02	0.02	0.12
75Pct	0.12	0	0.12
90Pct	0.12	0.02	0.12
95Pct	0.12	0.02	0.12
Mean	0.05	−0.04	0.13
Std Dev	0.05	0.01	0.09

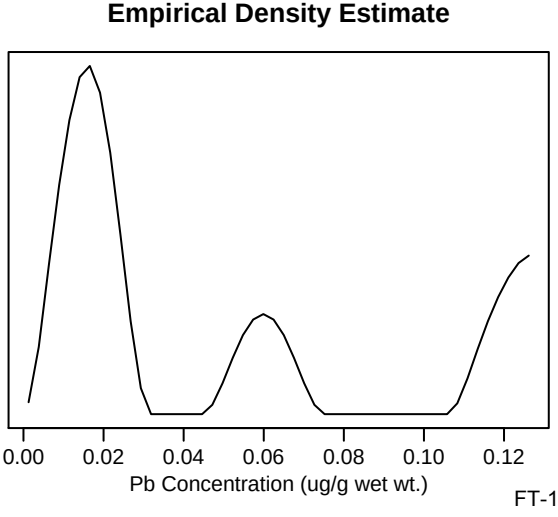
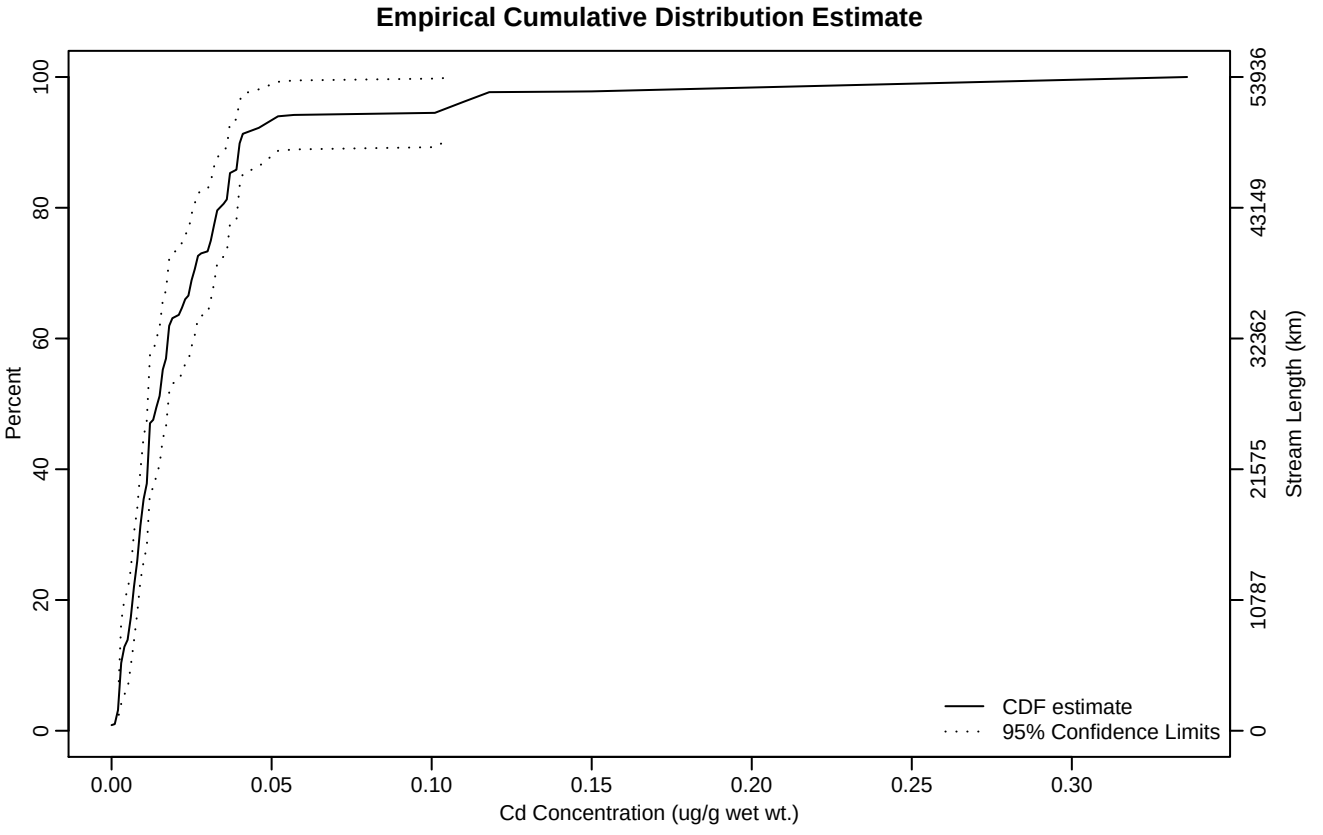


Figure FT Mtl S−15 Indicator: Cd_Small_Fish Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0.01	0.01
50Pct	0.01	0.01	0.02
75Pct	0.03	0.02	0.04
90Pct	0.04	0.04	0.11
95Pct	0.10	0.04	0.34
Mean	0.03	0.02	0.04
Std Dev	0.03	0.02	0.04

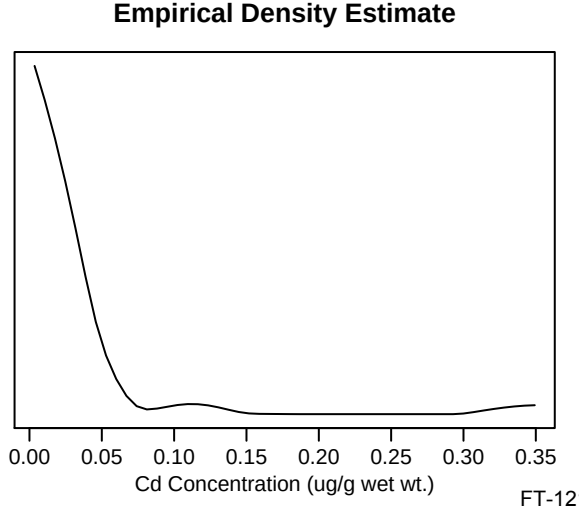
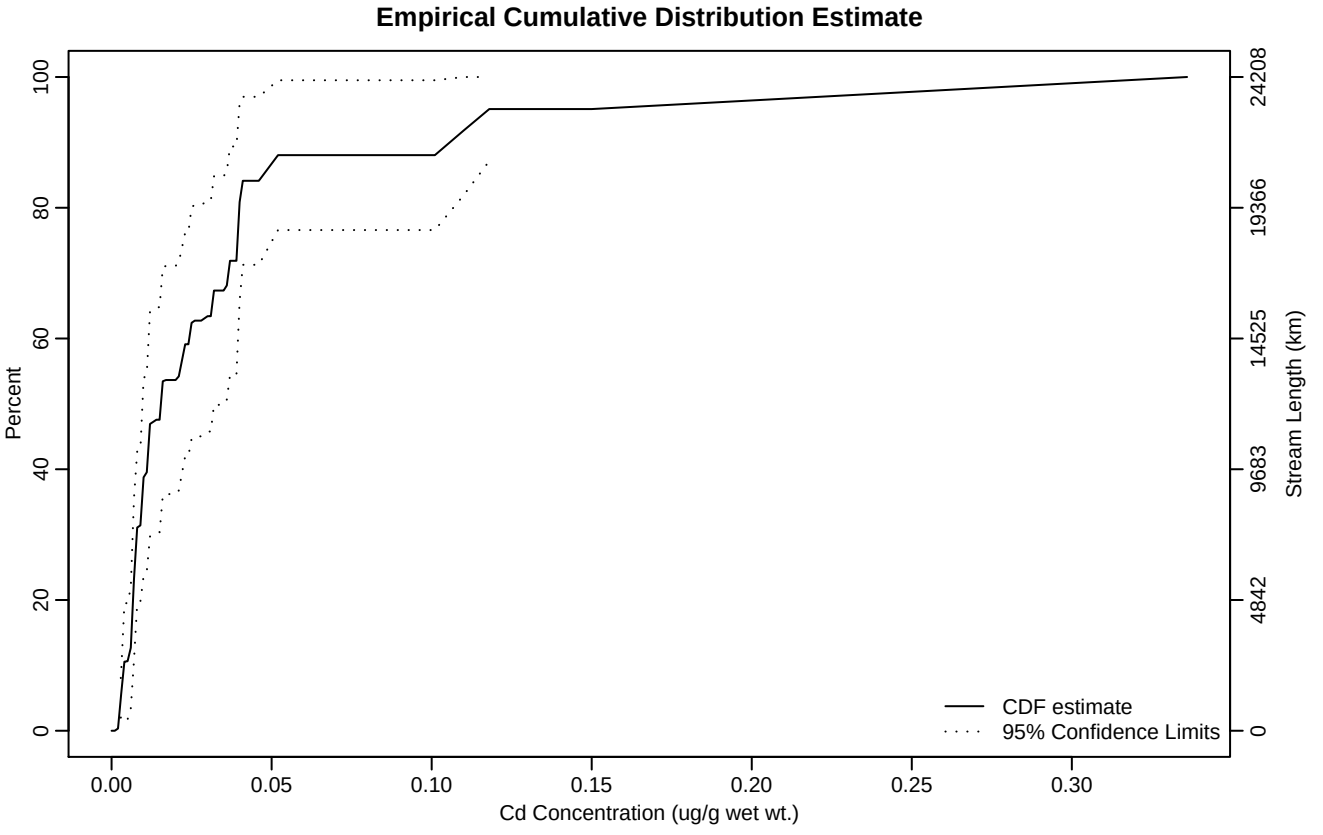


Figure FT Mtl S−16 Indicator: Cd_Small_Fish Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0.01
25Pct	0.01	0	0.01
50Pct	0.02	0.01	0.04
75Pct	0.04	0.02	0.11
90Pct	0.11	0.04	0.34
95Pct	0.12	0.05	0.34
Mean	0.04	0.01	0.07
Std Dev	0.05	0.03	0.08

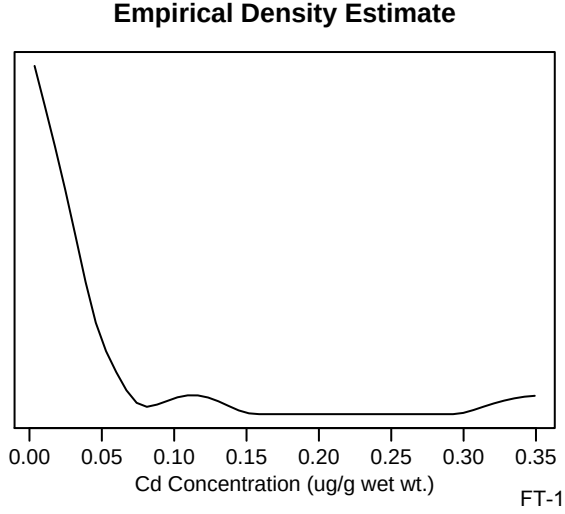
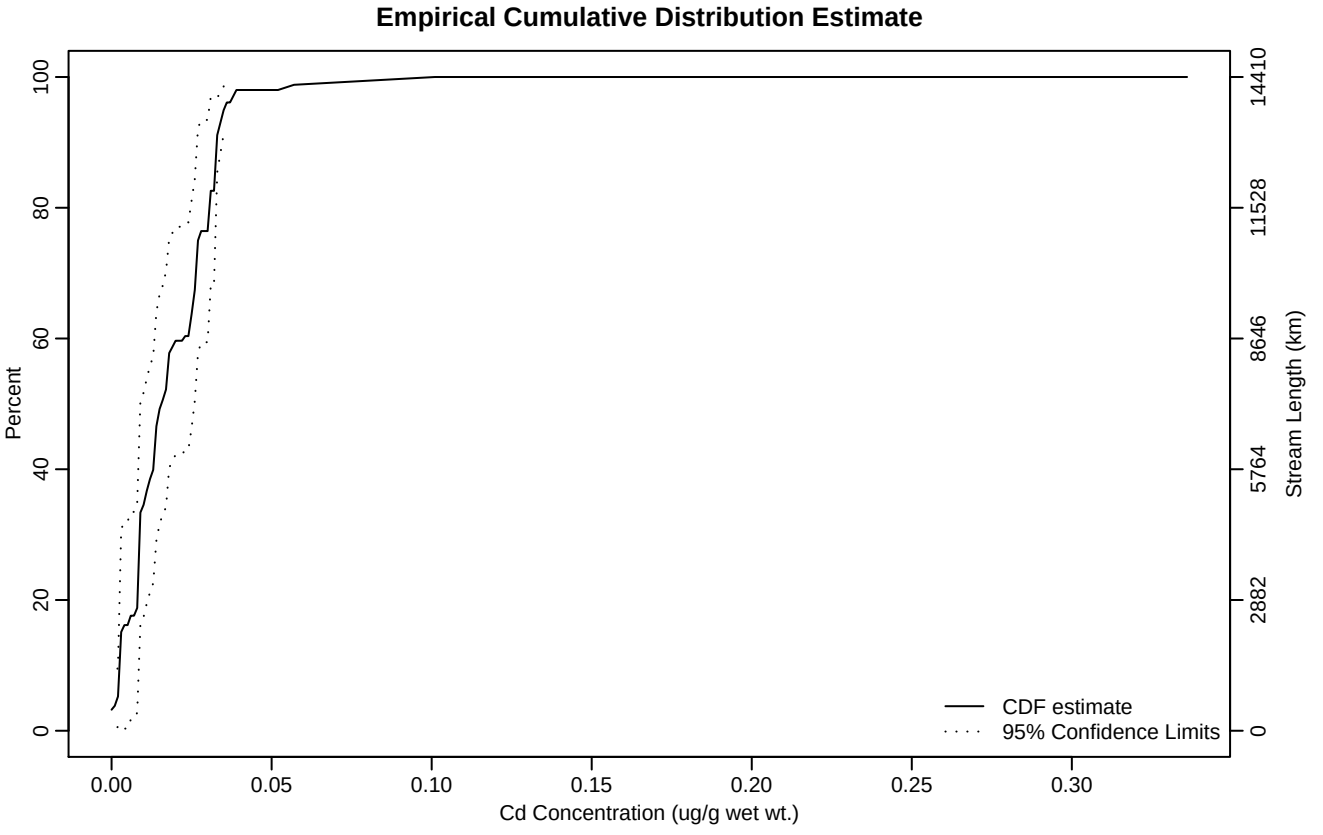


Figure FT Mtl S−17 Indicator: Cd_Small_Fish Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.01
50Pct	0.02	0.01	0.03
75Pct	0.03	0.02	0.03
90Pct	0.03	0.03	0.10
95Pct	0.04	0.03	0.06
Mean	0.02	0.01	0.02
Std Dev	0.01	0.01	0.02

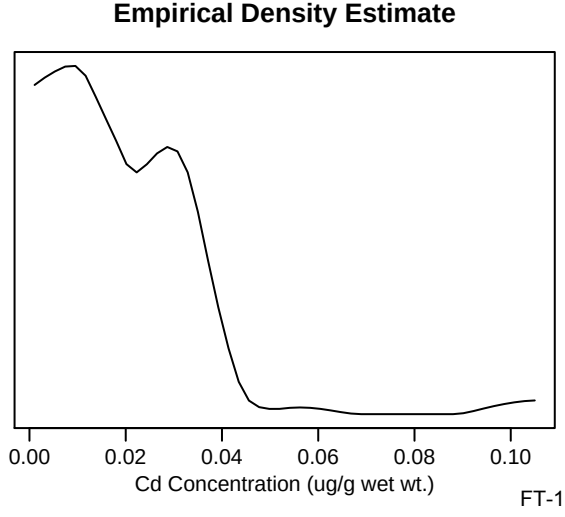
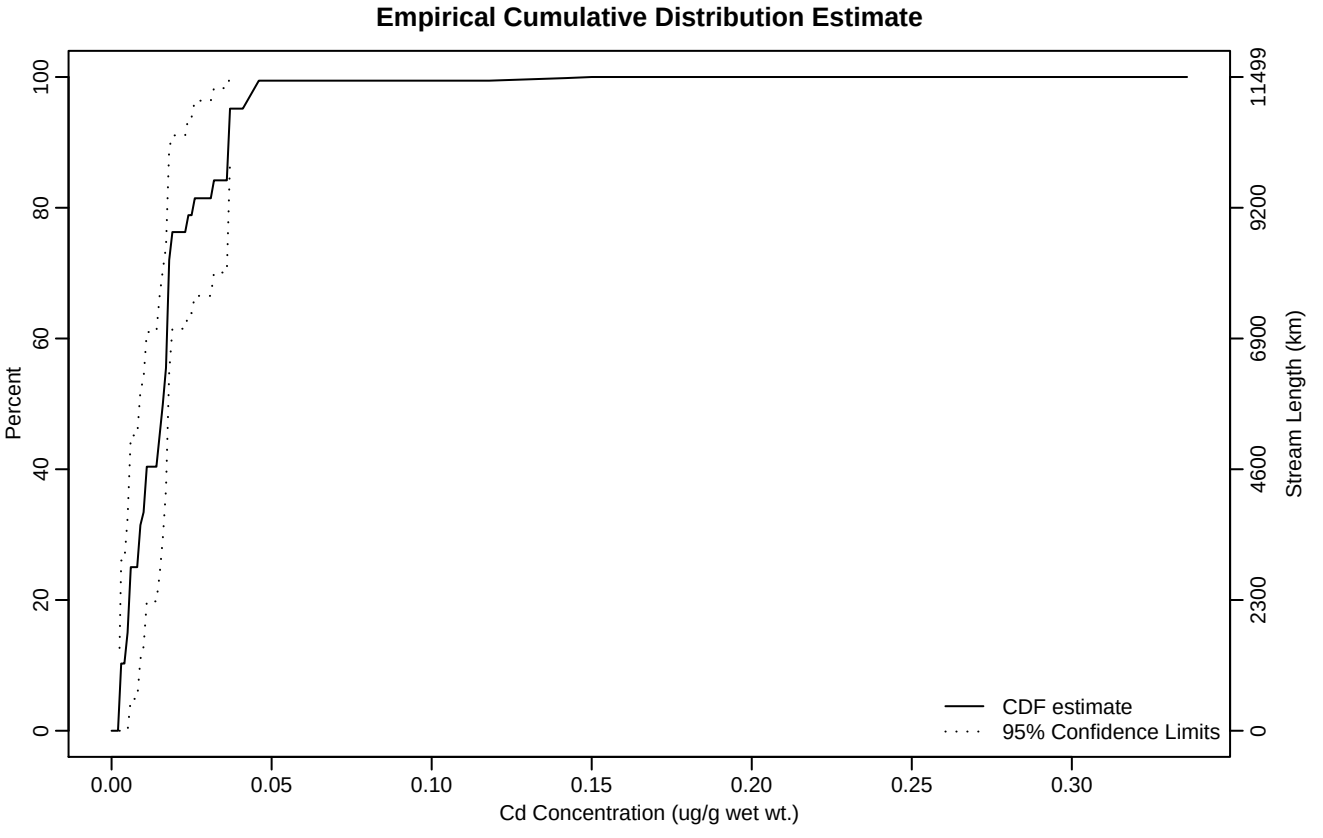


Figure FT Mtl S−18 Indicator: Cd_Small_Fish Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.01
50Pct	0.02	0.01	0.02
75Pct	0.02	0.02	0.04
90Pct	0.04	0.02	
95Pct	0.04	0.03	
Mean	0.02	0.01	0.02
Std Dev	0.01	0.01	0.02

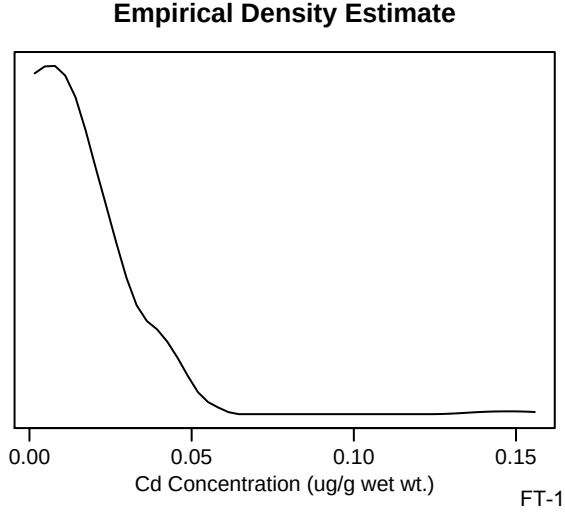
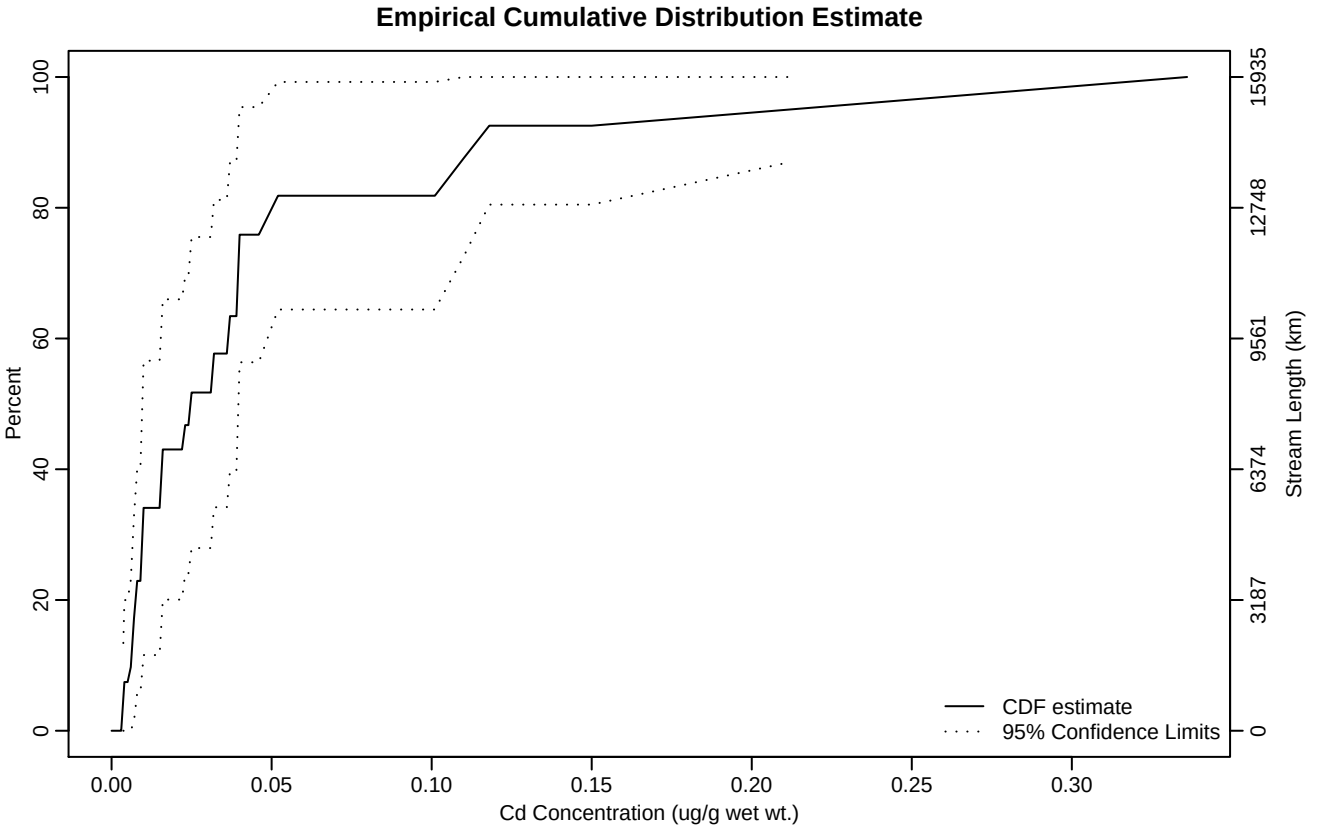


Figure FT Mtl S−19 Indicator: Cd_Small_Fish Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0.01	0	0.01
25Pct	0.01	0	0.02
50Pct	0.02	0.01	0.04
75Pct	0.04	0.02	0.34
90Pct	0.11	0.04	0.34
95Pct	0.21	0.10	0.34
Mean	0.06	0.02	0.10
Std Dev	0.07	0.04	0.11

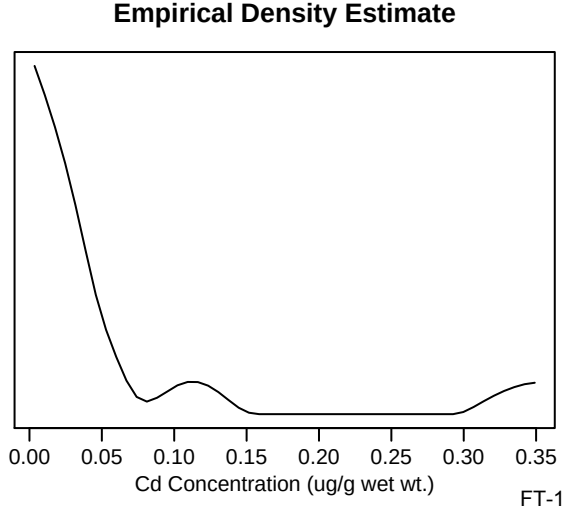
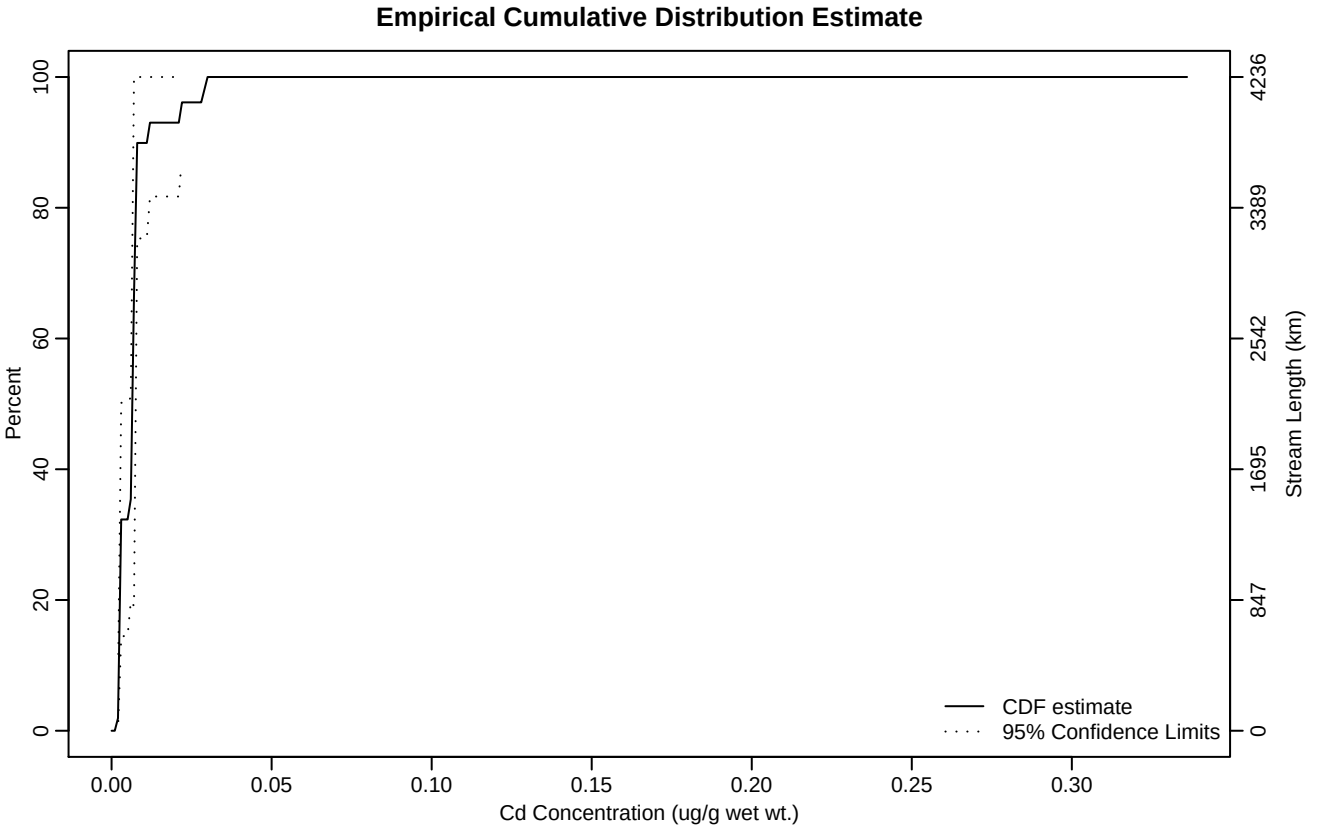


Figure FT Mtl S−20 Indicator: Cd_Small_Fish Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0	0	0.01
50Pct	0.01	0	0.01
75Pct	0.01	0	0.03
90Pct	0.01	0.01	0.03
95Pct	0.02	0.01	0.03
Mean	0.01	0	0.01
Std Dev	0	0	0.01

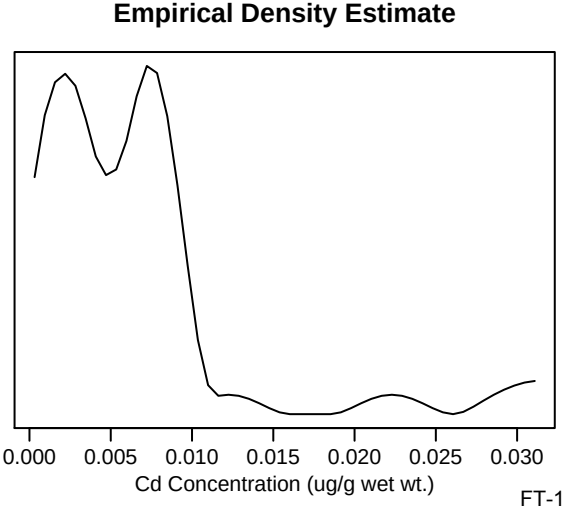
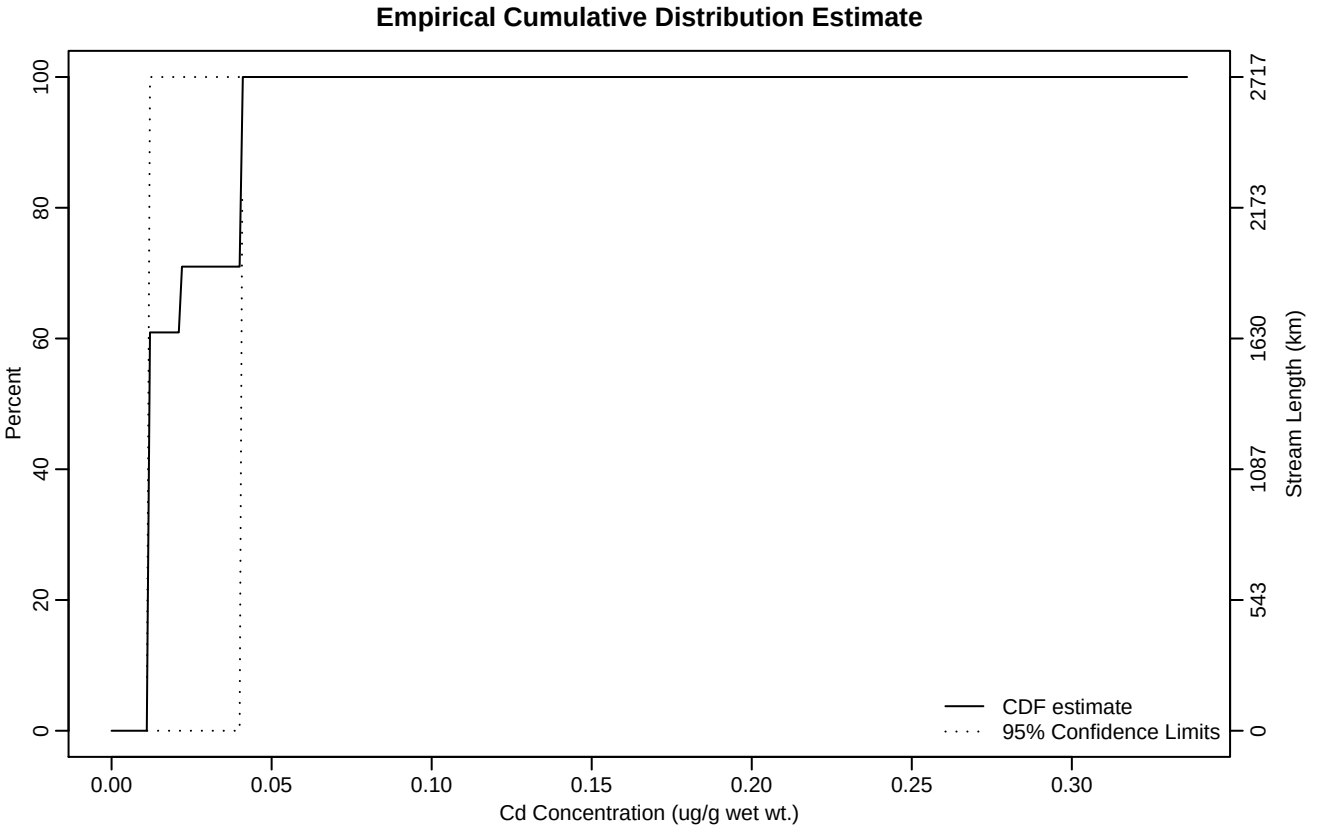


Figure FT Mtl S−21 Indicator: Cd_Small_Fish Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.01
50Pct	0.01	0.01	0.02
75Pct	0.04	0.01	
90Pct	0.04	0.01	
95Pct	0.04	0.01	
Mean	0.02	0	0.04
Std Dev	0.01	0.01	0.02

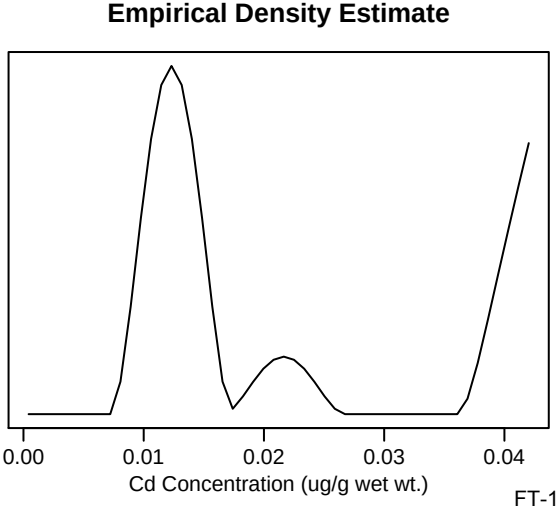
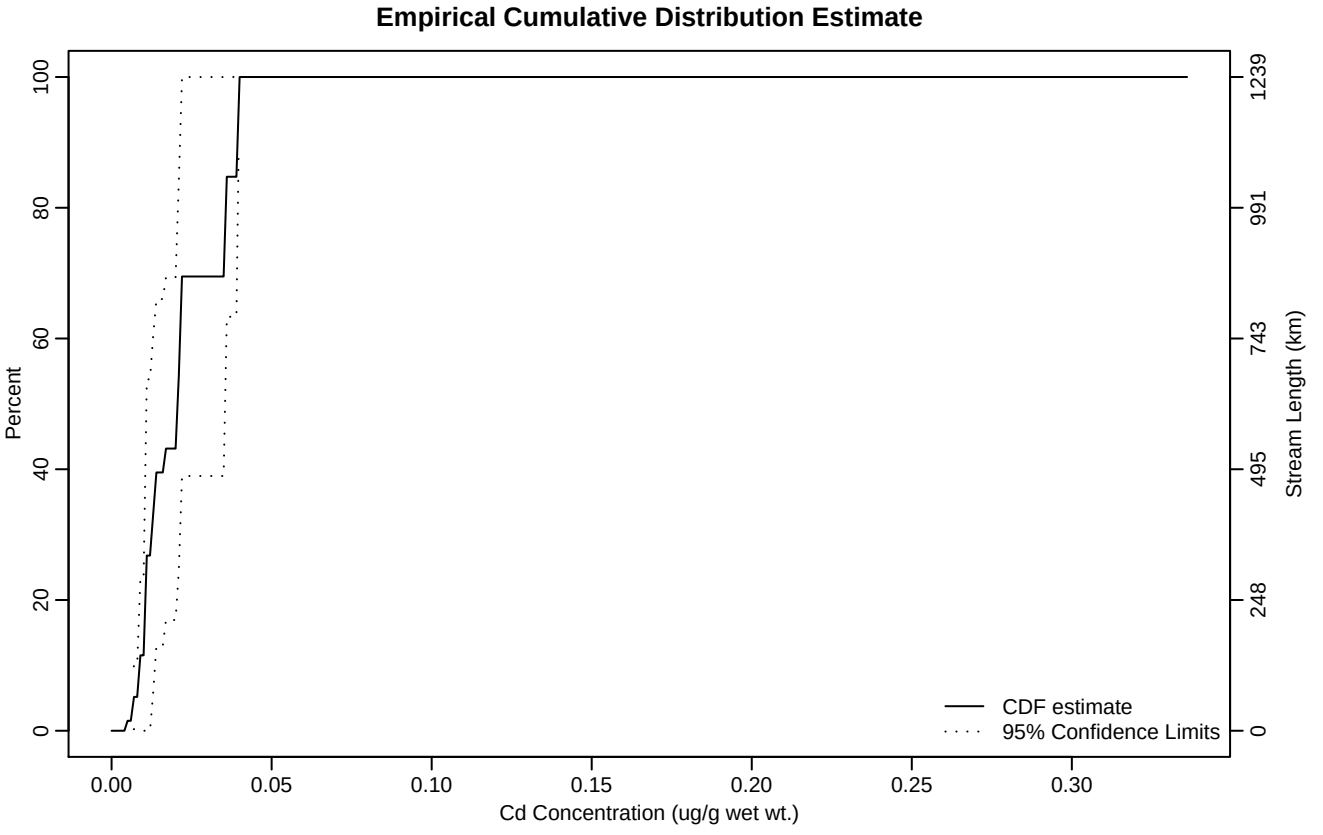


Figure FT Mtl S−22 Indicator: Cd_Small_Fish Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.01
50Pct	0.02	0.01	0.04
75Pct	0.04	0.02	
90Pct	0.04	0.02	
95Pct	0.04	0.04	
Mean	0.02	0.02	0.03
Std Dev	0.01	0.01	0.01

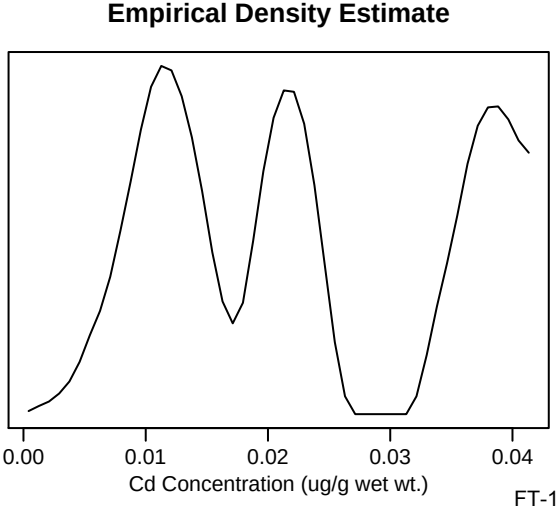
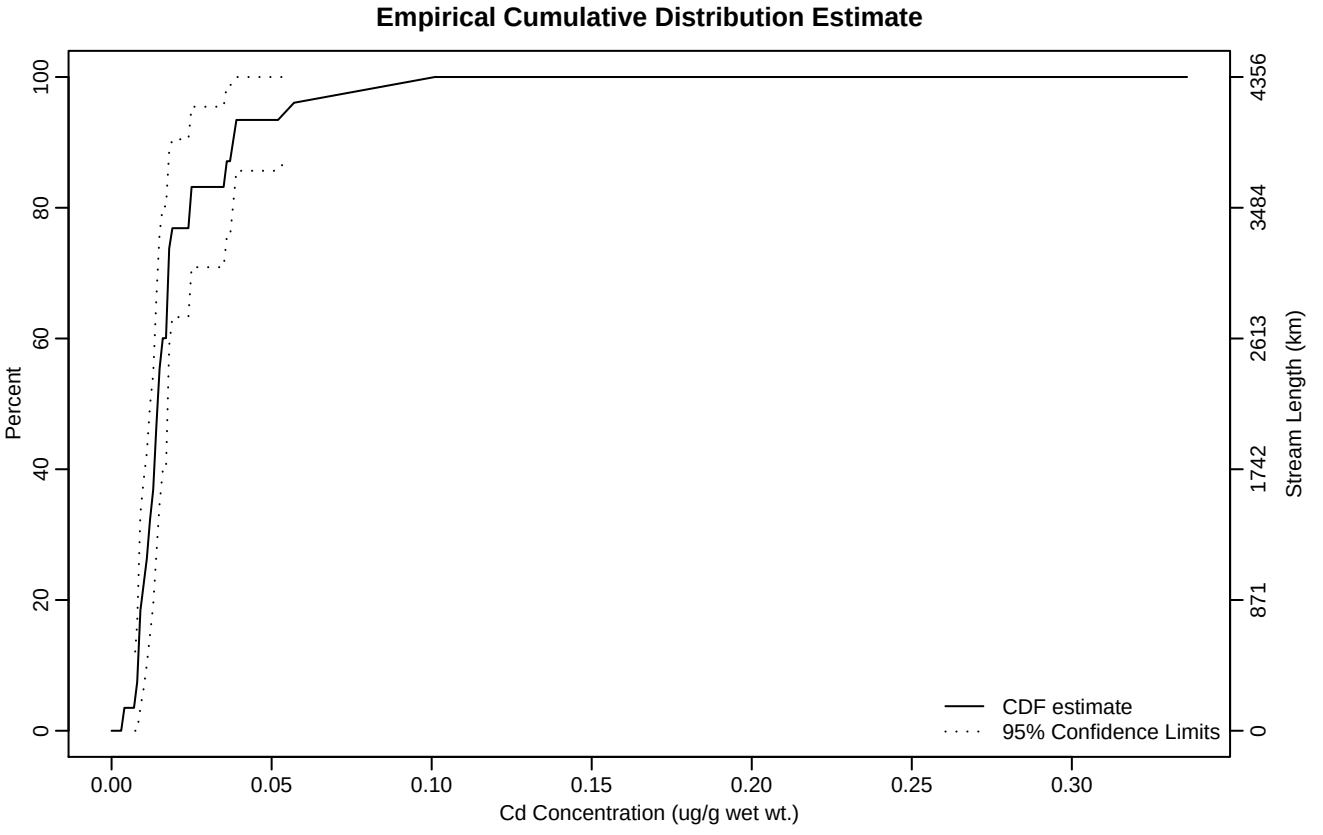


Figure FT Mtl S−23 Indicator: Cd_Small_Fish Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0	0.01
10Pct	0.01	0	0.01
25Pct	0.01	0.01	0.01
50Pct	0.01	0.01	0.02
75Pct	0.02	0.02	0.04
90Pct	0.04	0.02	0.10
95Pct	0.05	0.04	0.10
Mean	0.02	0.01	0.03
Std Dev	0.02	0.01	0.02

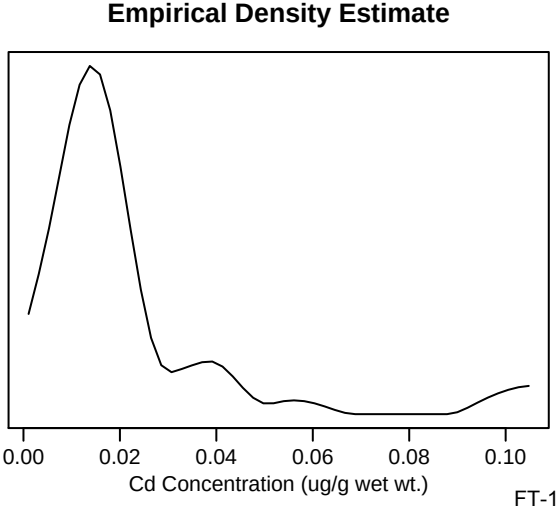
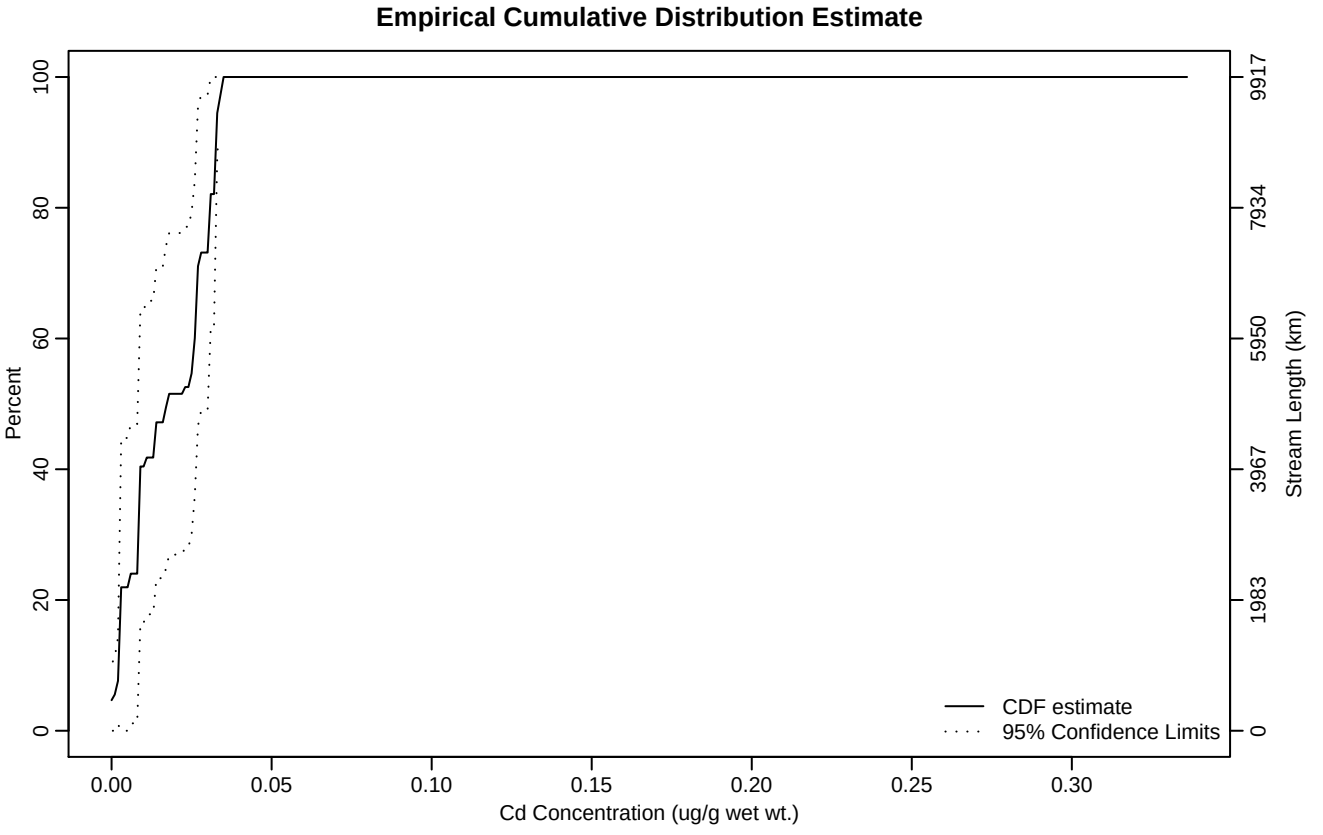


Figure FT Mtl S−24 Indicator: Cd_Small_Fish Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.02
50Pct	0.02	0.01	0.03
75Pct	0.03	0.02	0.03
90Pct	0.03	0.03	0.04
95Pct	0.03	0.03	0.04
Mean	0.02	0.01	0.02
Std Dev	0.01	0.01	0.01

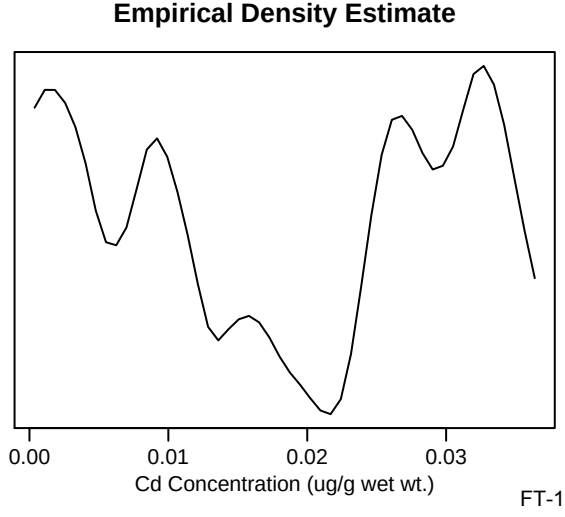
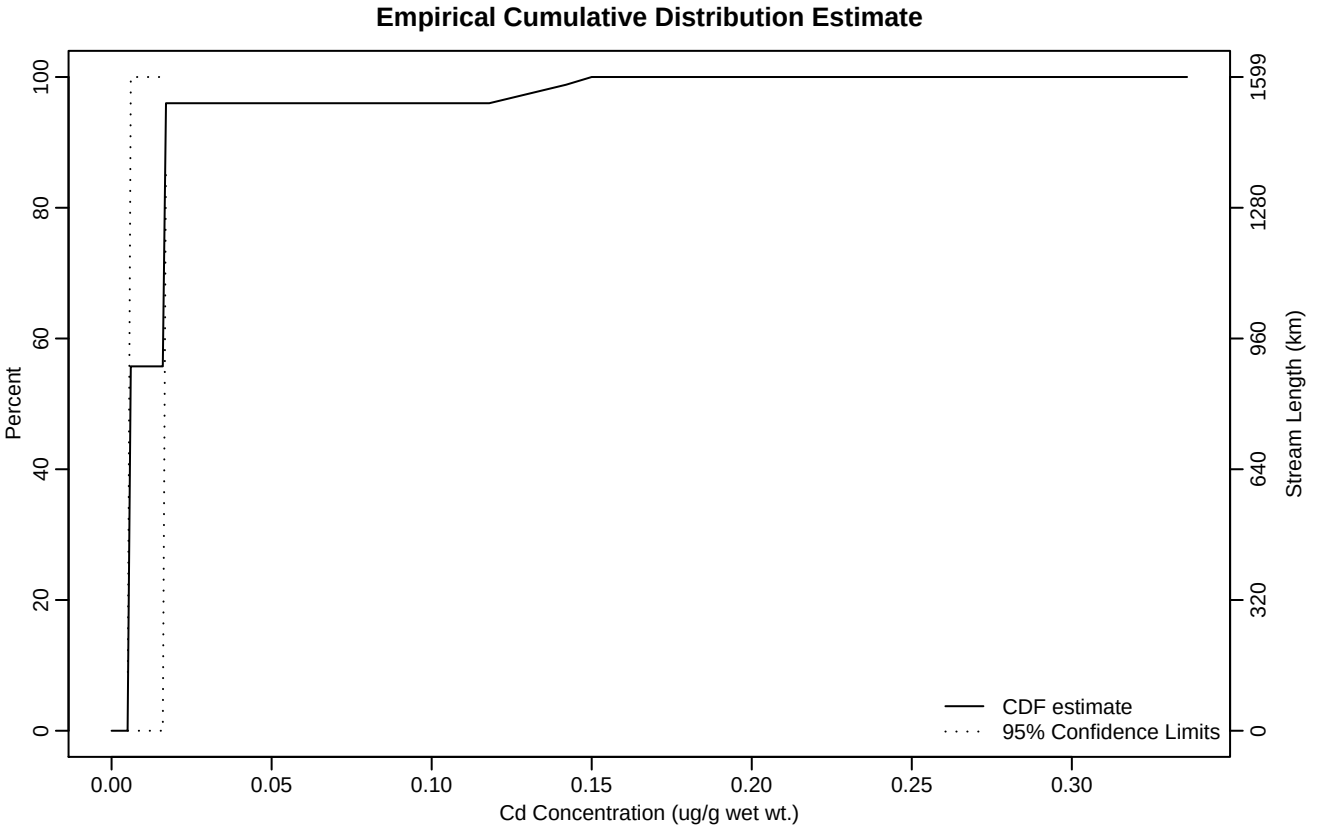


Figure FT Mtl S−25 Indicator: Cd_Small_Fish Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.01	0.01	0.01
10Pct	0.01	0.01	0.01
25Pct	0.01	0.01	0.01
50Pct	0.01	0.01	0.12
75Pct	0.02	0.01	0.15
90Pct	0.02	0.01	0.15
95Pct	0.02	0.01	0.15
Mean	0.02	0	0.03
Std Dev	0.03	0	0.05

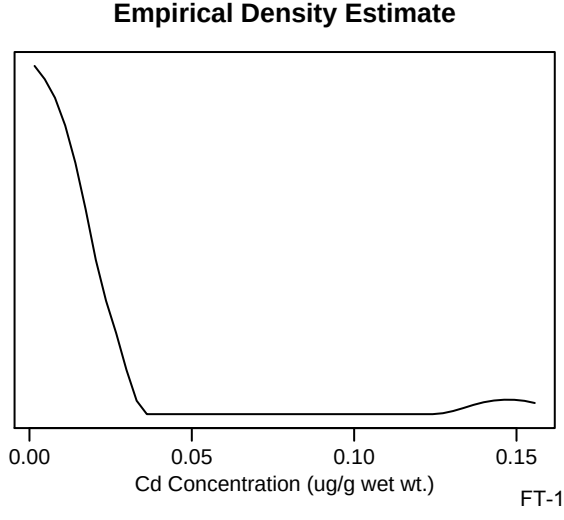
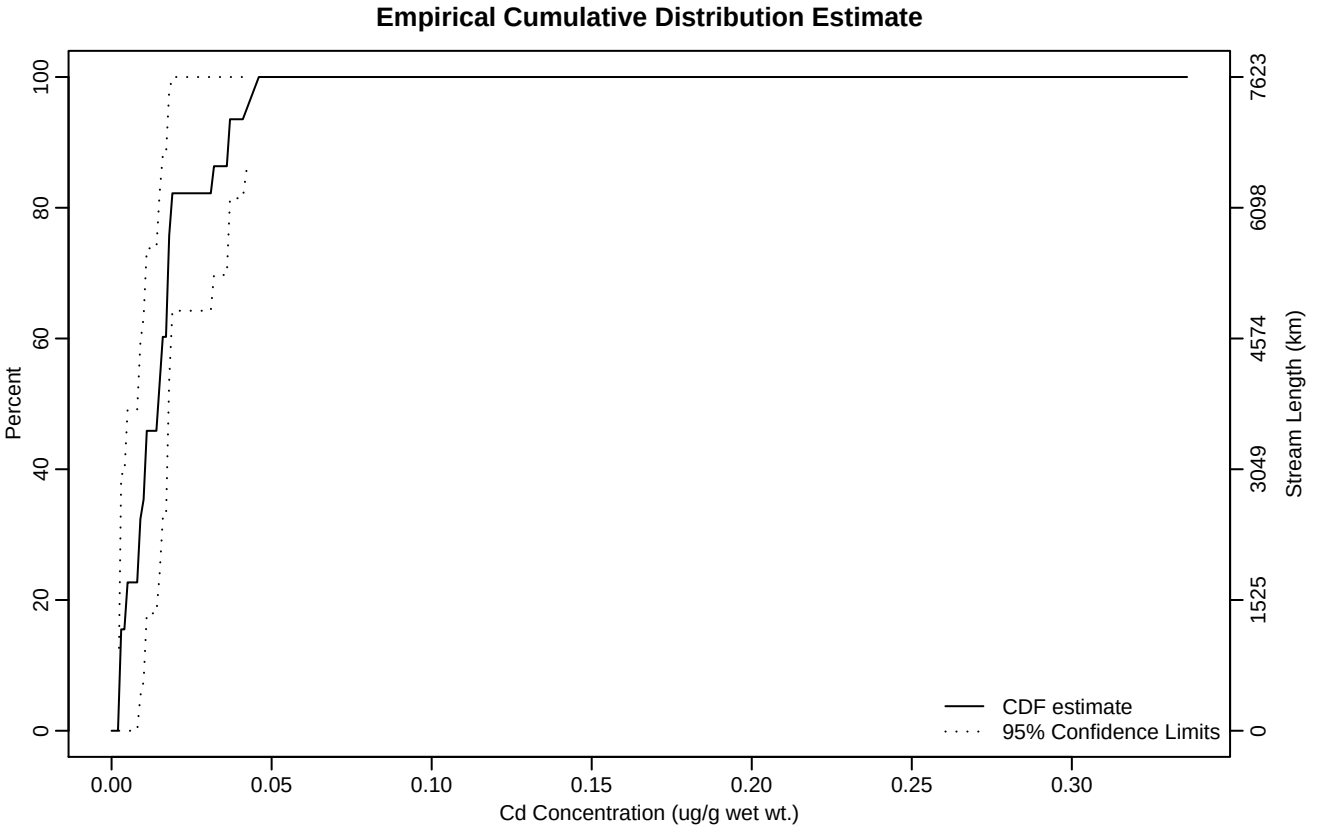


Figure FT Mtl S−26 Indicator: Cd_Small_Fish Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0	0	0
10Pct	0	0	0
25Pct	0.01	0	0.01
50Pct	0.01	0	0.02
75Pct	0.02	0.01	0.05
90Pct	0.04	0.02	0.05
95Pct	0.04	0.03	0.05
Mean	0.02	0.01	0.02
Std Dev	0.01	0.01	0.02

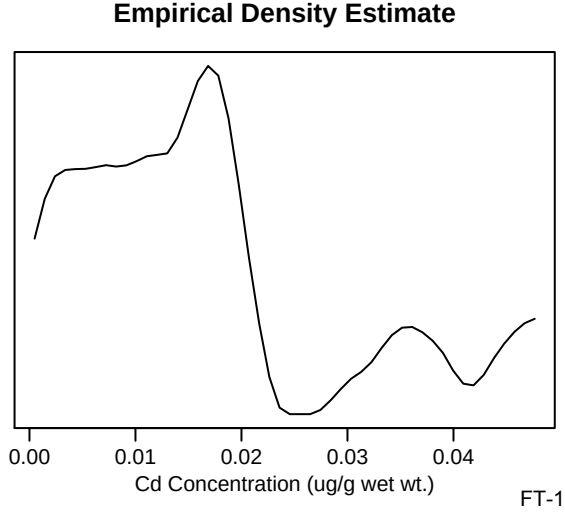
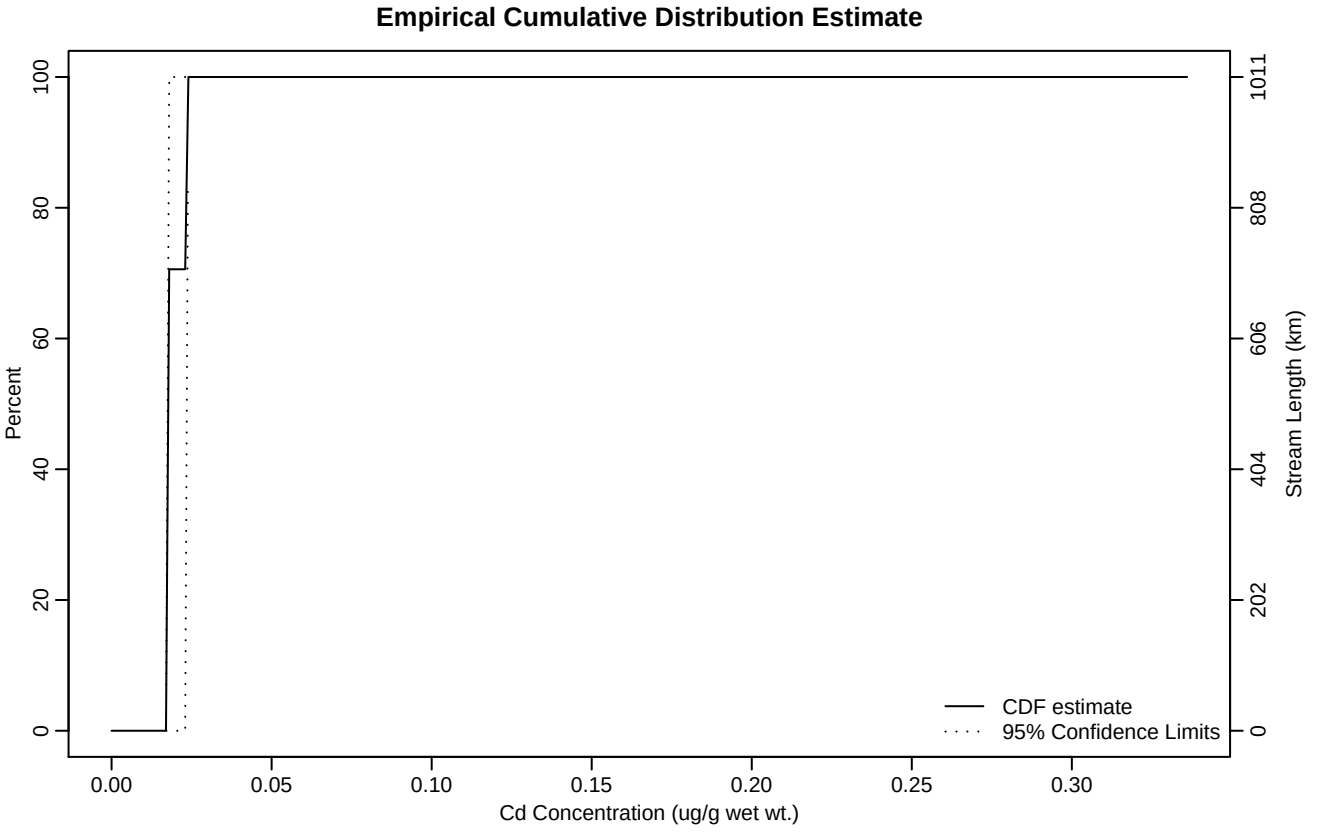


Figure FT Mtl S−27 Indicator: Cd_Small_Fish Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.02	0.02	0.02
10Pct	0.02	0.02	0.02
25Pct	0.02	0.02	0.02
50Pct	0.02	0.02	0.02
75Pct	0.02	0	0.02
90Pct	0.02	0.02	0.02
95Pct	0.02	0.02	0.02
Mean	0.02	0.01	0.02
Std Dev	0	0	0

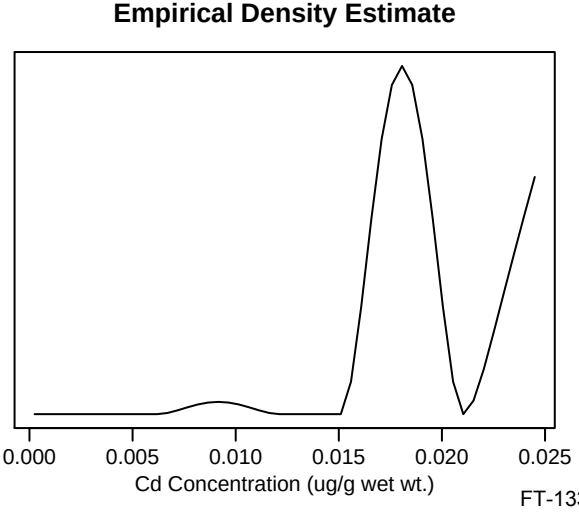
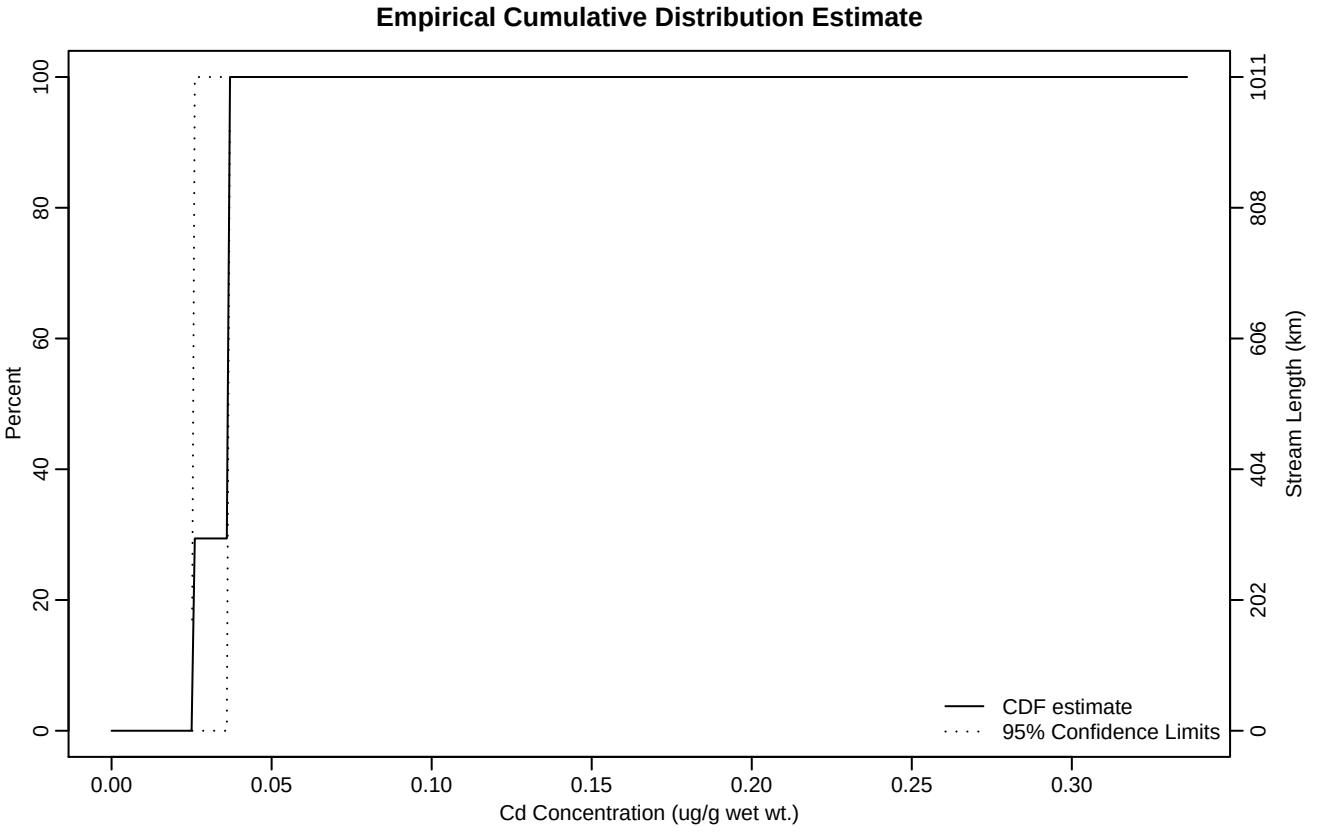


Figure FT Mtl S−28 Indicator: Cd_Small_Fish Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	0.03	0.03	0.03
10Pct	0.03	0.03	0.03
25Pct	0.03	0.03	0.04
50Pct	0.04	0	0.04
75Pct	0.04	0	0.04
90Pct	0.04	0	0.04
95Pct	0.04	0	0.04
Mean	0.03	0.02	0.04
Std Dev	0.01	0	0.01

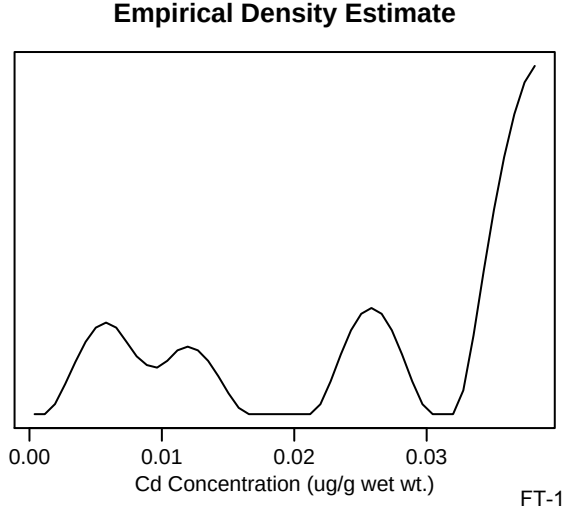
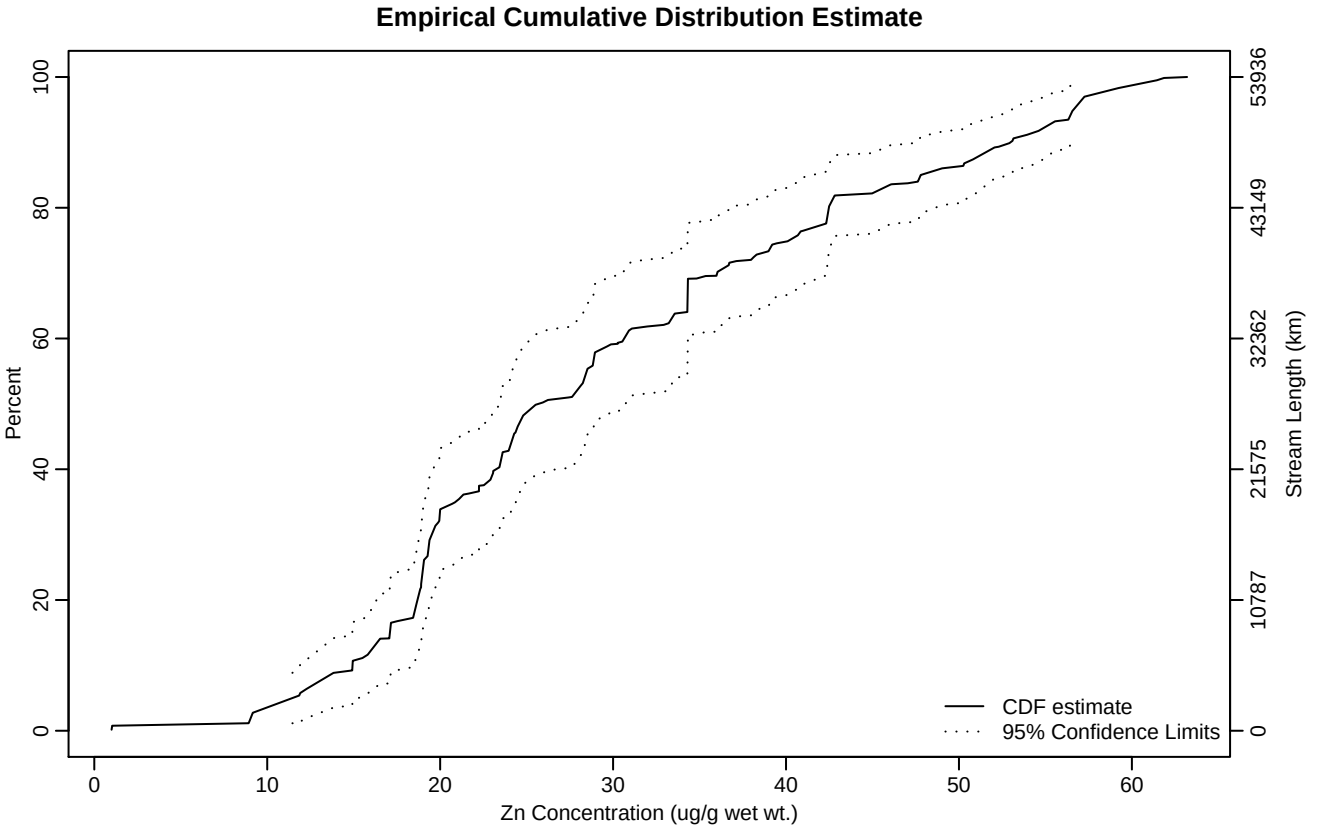


Figure FT Mtl S−29 Indicator: Zn_Small_Fish Subpopulation: West−wide



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	11.46	9.02	13.44
10Pct	14.93	9.77	17.37
25Pct	19.02	17.12	20.50
50Pct	25.68	22.97	30.90
75Pct	40.17	34.31	45.96
90Pct	52.97	47.74	56.72
95Pct	56.62	53.07	61.81
Mean	30.13	27.52	32.73
Std Dev	10.81	9.77	11.86

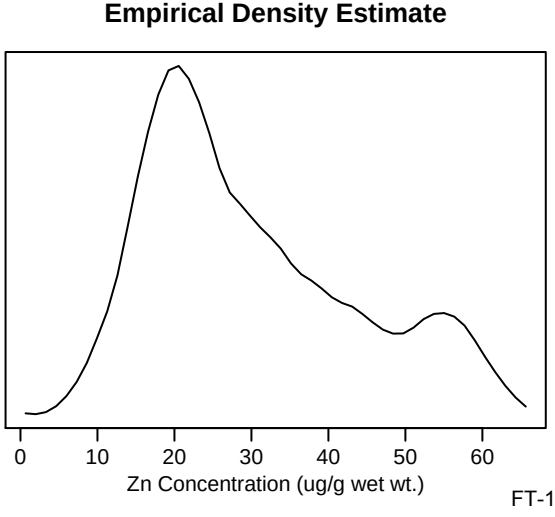
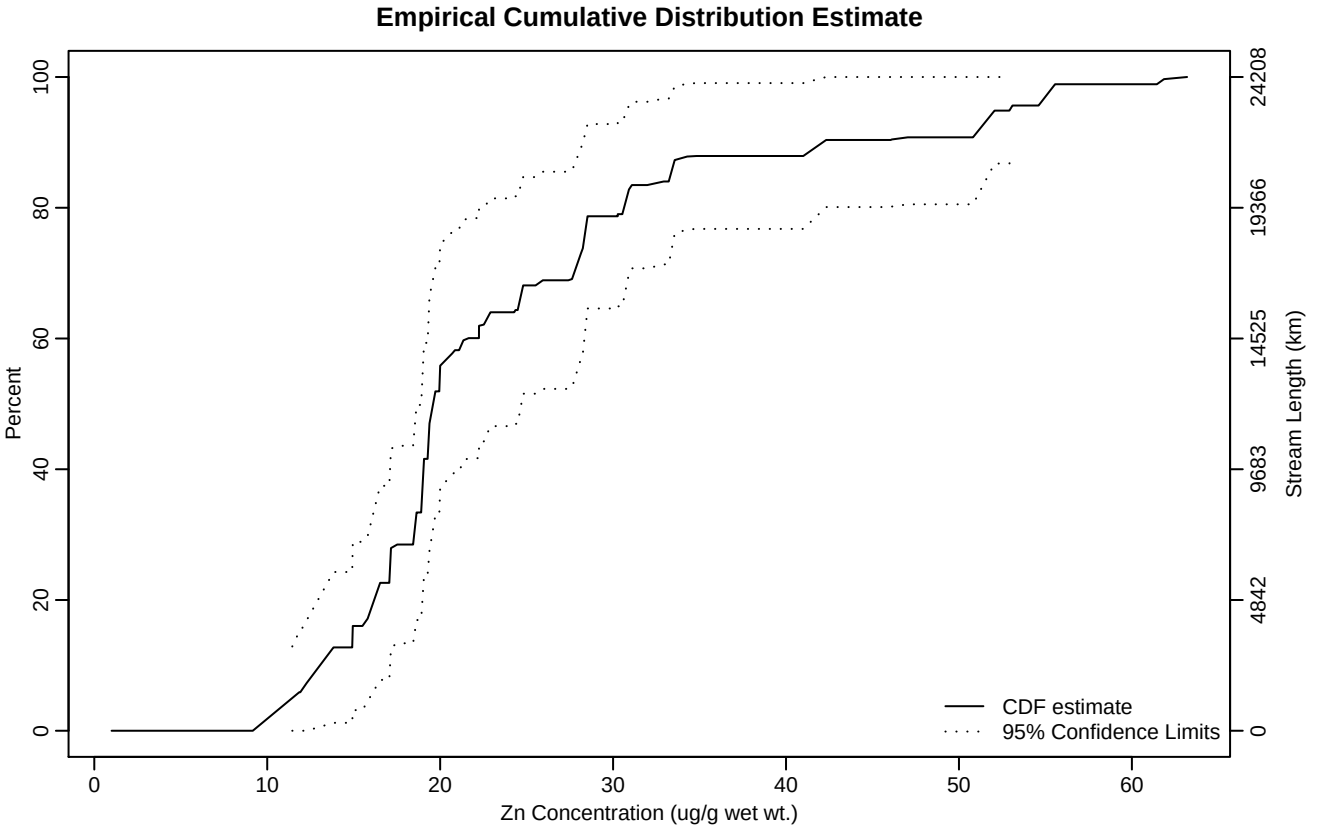


Figure FT Mtl S−30 Indicator: Zn_Small_Fish Subpopulation: MT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	11.45	11.05	11.84
10Pct	13.05	1	16.19
25Pct	17.10	12.94	19.04
50Pct	19.59	18.51	27.70
75Pct	28.32	21.23	50.87
90Pct	42.12	30.57	63.19
95Pct	52.95	41.15	63.19
Mean	24.49	20.15	28.84
Std Dev	9.29	7.77	10.81

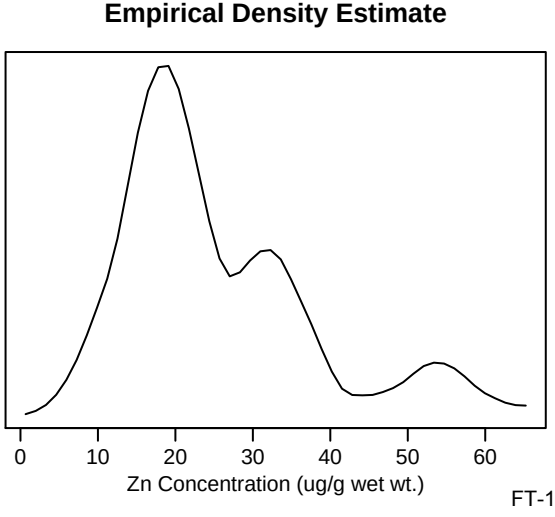
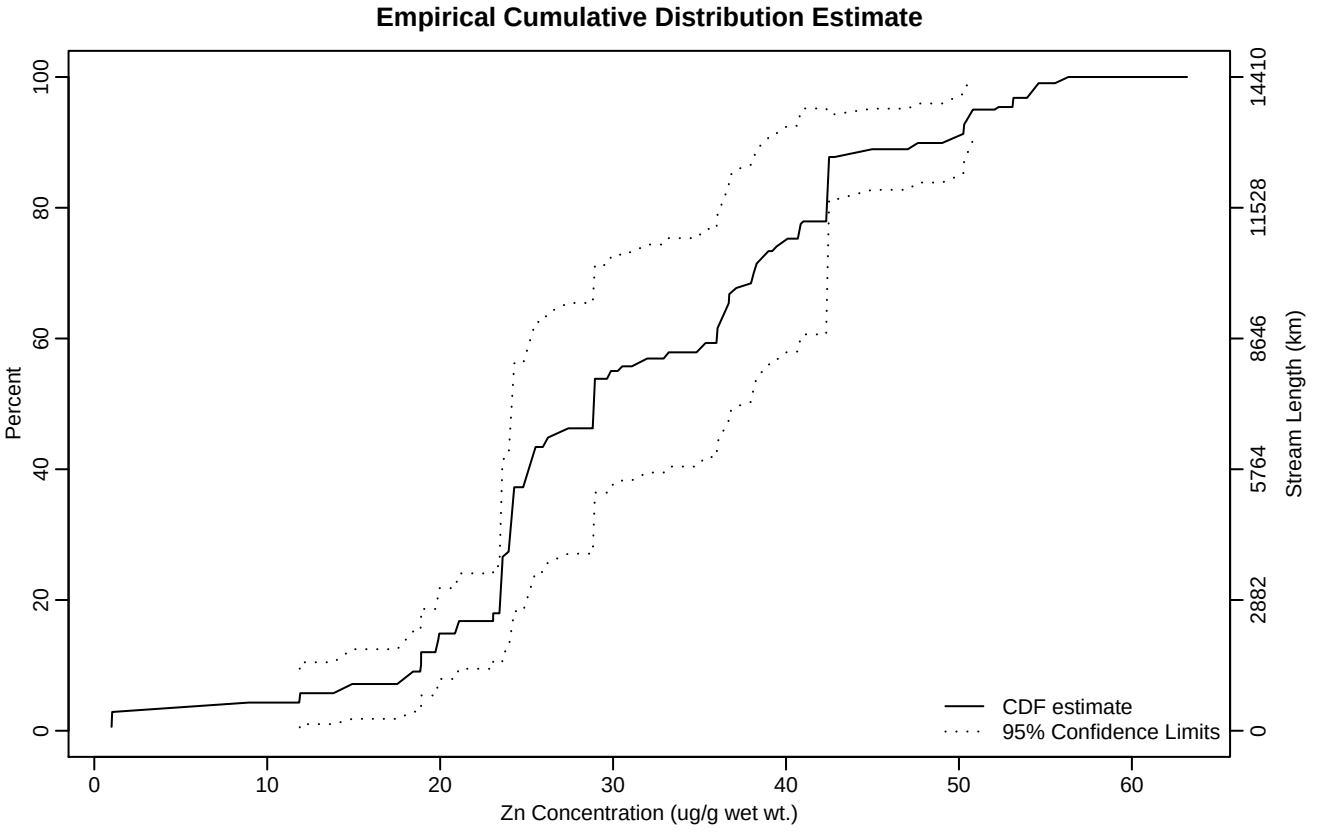


Figure FT Mtl S−31 Indicator: Zn_Small_Fish Subpopulation: PL



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	11.88	1	18.86
10Pct	18.89	6.20	21.02
25Pct	23.58	23.06	24.13
50Pct	28.89	24.07	38.05
75Pct	39.95	33.12	50.29
90Pct	49.11	42.42	53.13
95Pct	50.81	47.19	56.33
Mean	31.17	27.51	34.83
Std Dev	10.37	8.31	12.44

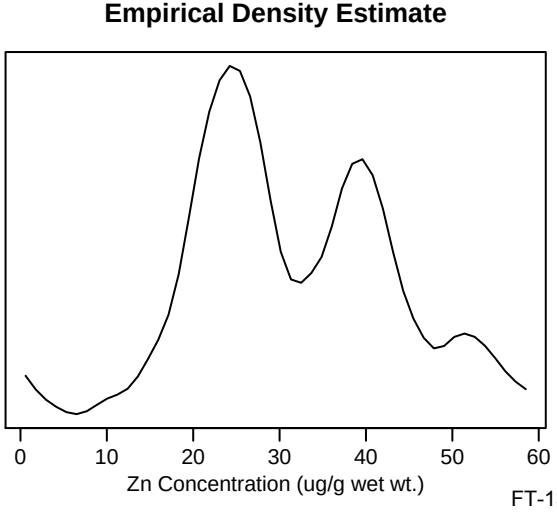
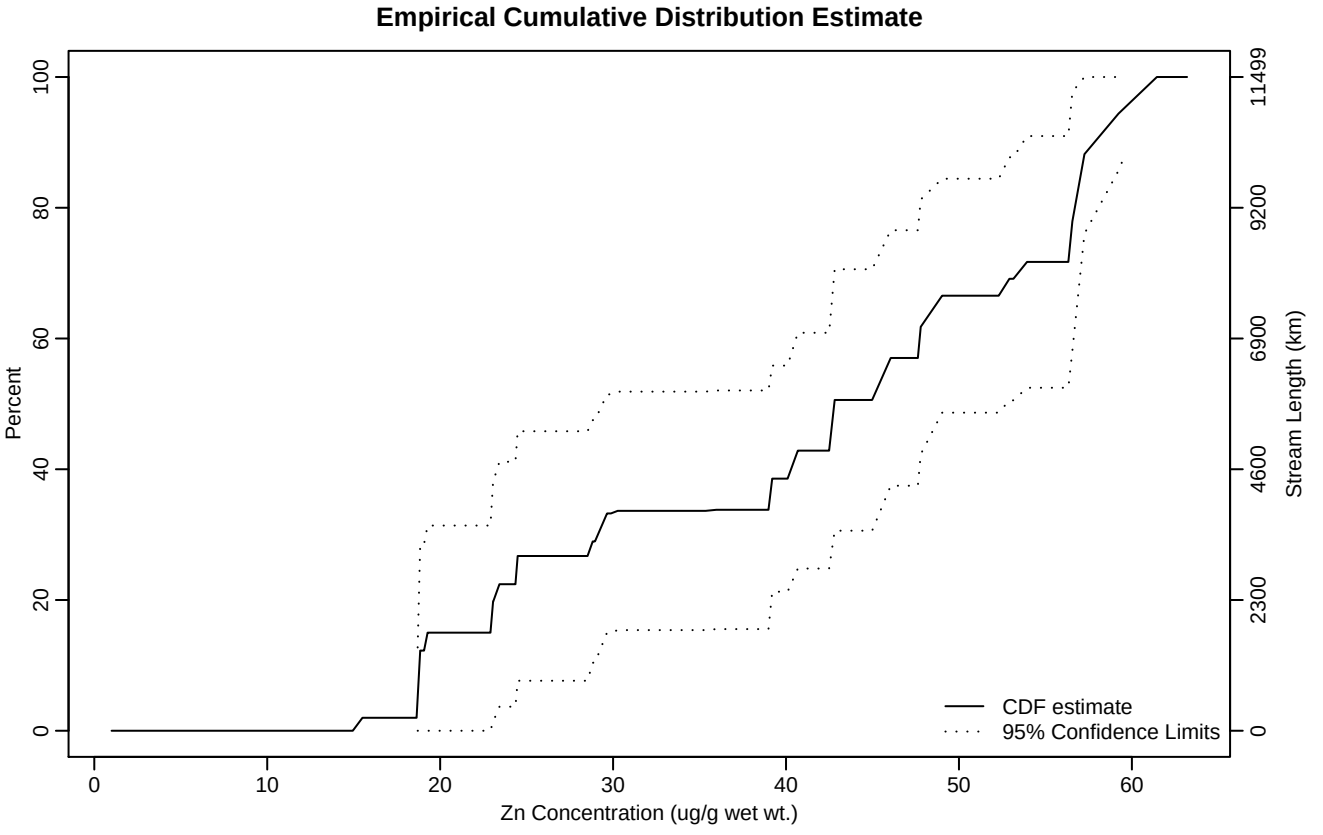


Figure FT Mtl S−32 Indicator: Zn_Small_Fish Subpopulation: XE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	18.70	15.22	18.78
10Pct	18.80	18.71	19.23
25Pct	24.43	18.71	42.55
50Pct	42.79	29.20	53.27
75Pct	56.45	45.59	59.77
90Pct	57.83	56.53	
95Pct	59.46	57.10	
Mean	41.41	35.44	47.37
Std Dev	10.51	8.71	12.31

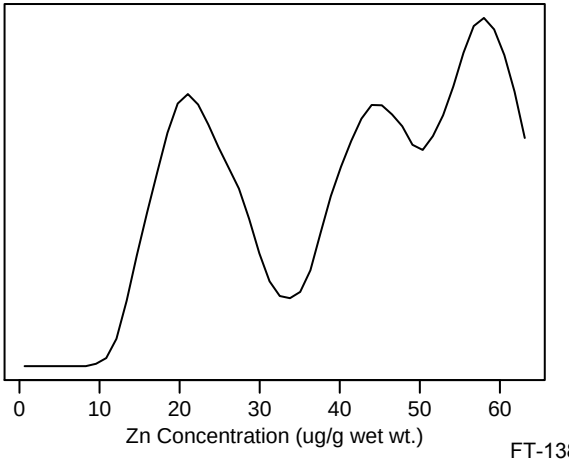
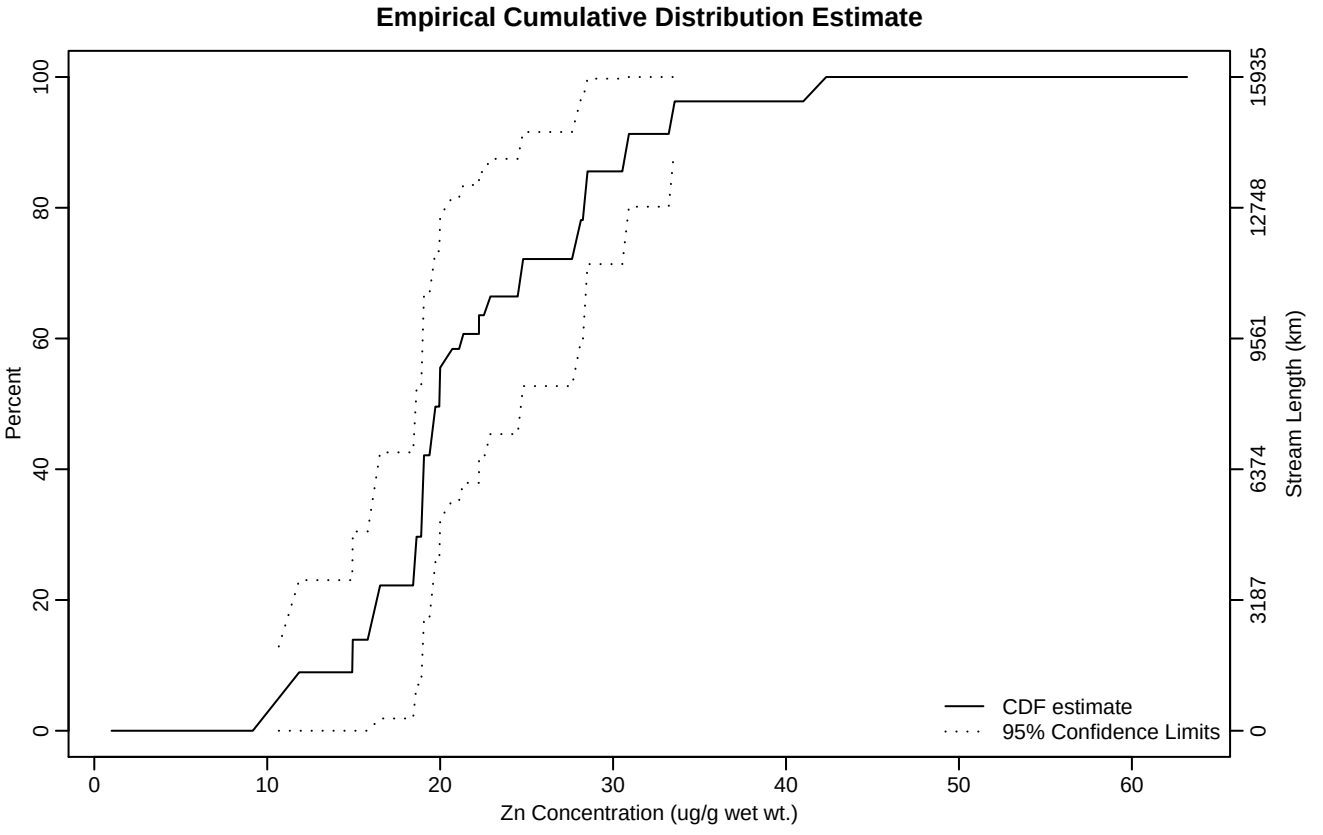


Figure FT Mtl S−33 Indicator: Zn_Small_Fish Subpopulation: MT−NROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	10.67	10.38	10.95
10Pct	14.92	1	18.50
25Pct	18.51	10.62	19.52
50Pct	19.95	18.55	27.75
75Pct	27.87	20.04	33.43
90Pct	30.83	27.96	42.32
95Pct	33.47	28.47	42.32
Mean	22.22	19.05	25.39
Std Dev	6.91	5.05	8.77

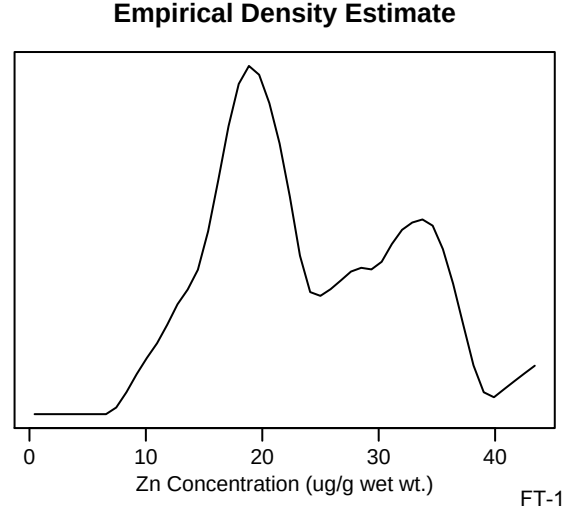
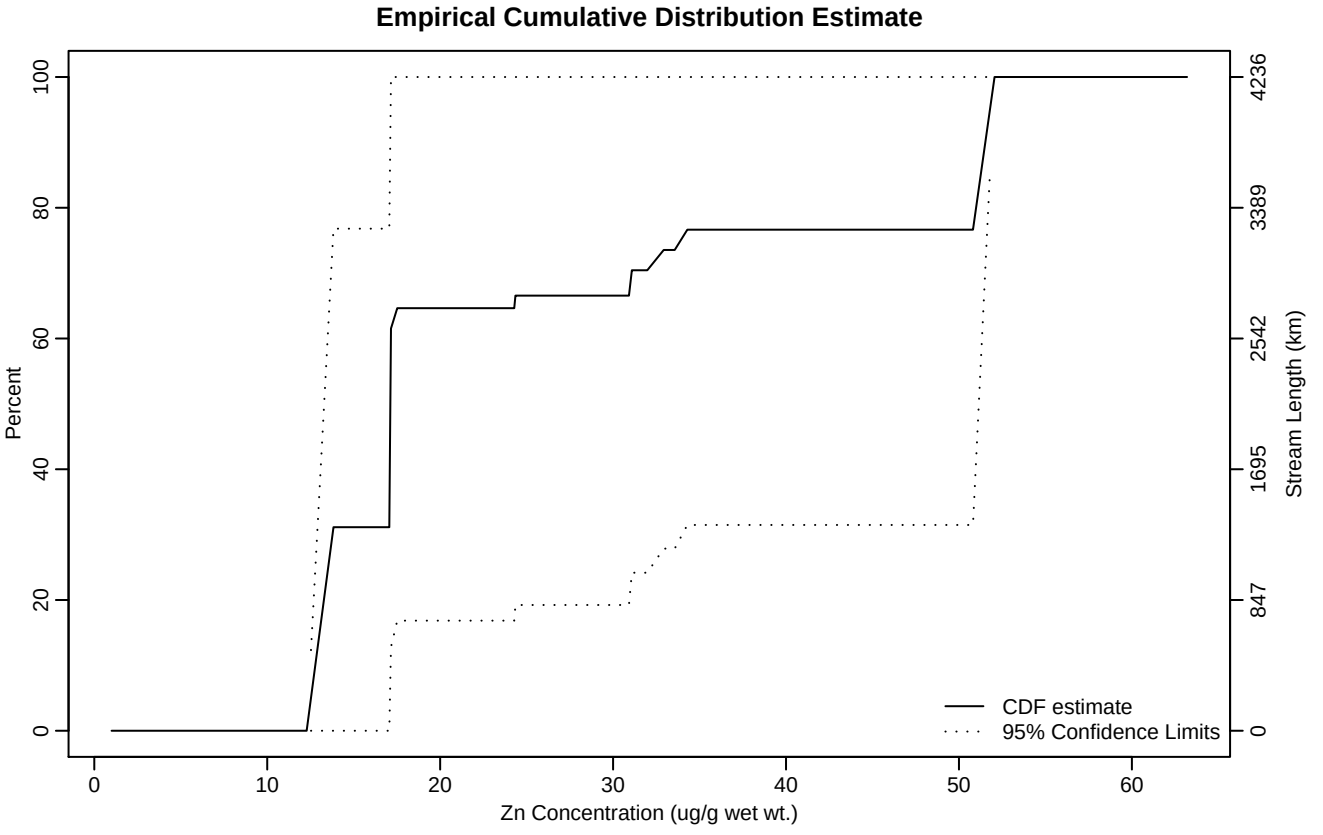


Figure FT Mtl S−34 Indicator: Zn_Small_Fish Subpopulation: MT−PNW



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	12.53	12.37	12.69
10Pct	12.78	12.45	13.10
25Pct	13.53	12.72	17.09
50Pct	17.12	1	52.06
75Pct	33.91	13.73	52.06
90Pct	51.52	17.10	52.06
95Pct	51.79	17.12	52.06
Mean	25.98	8.55	43.41
Std Dev	13.36	10.29	16.44

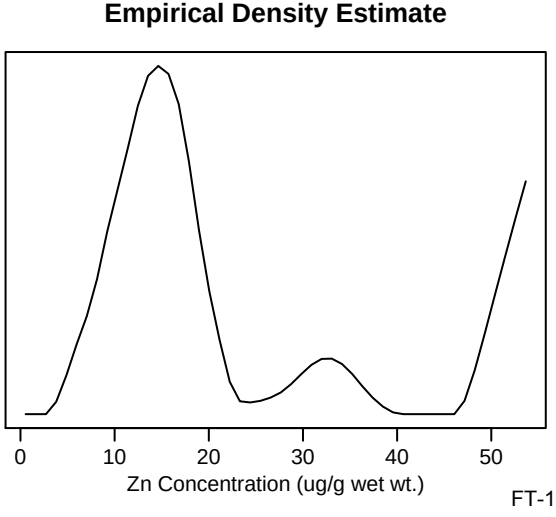
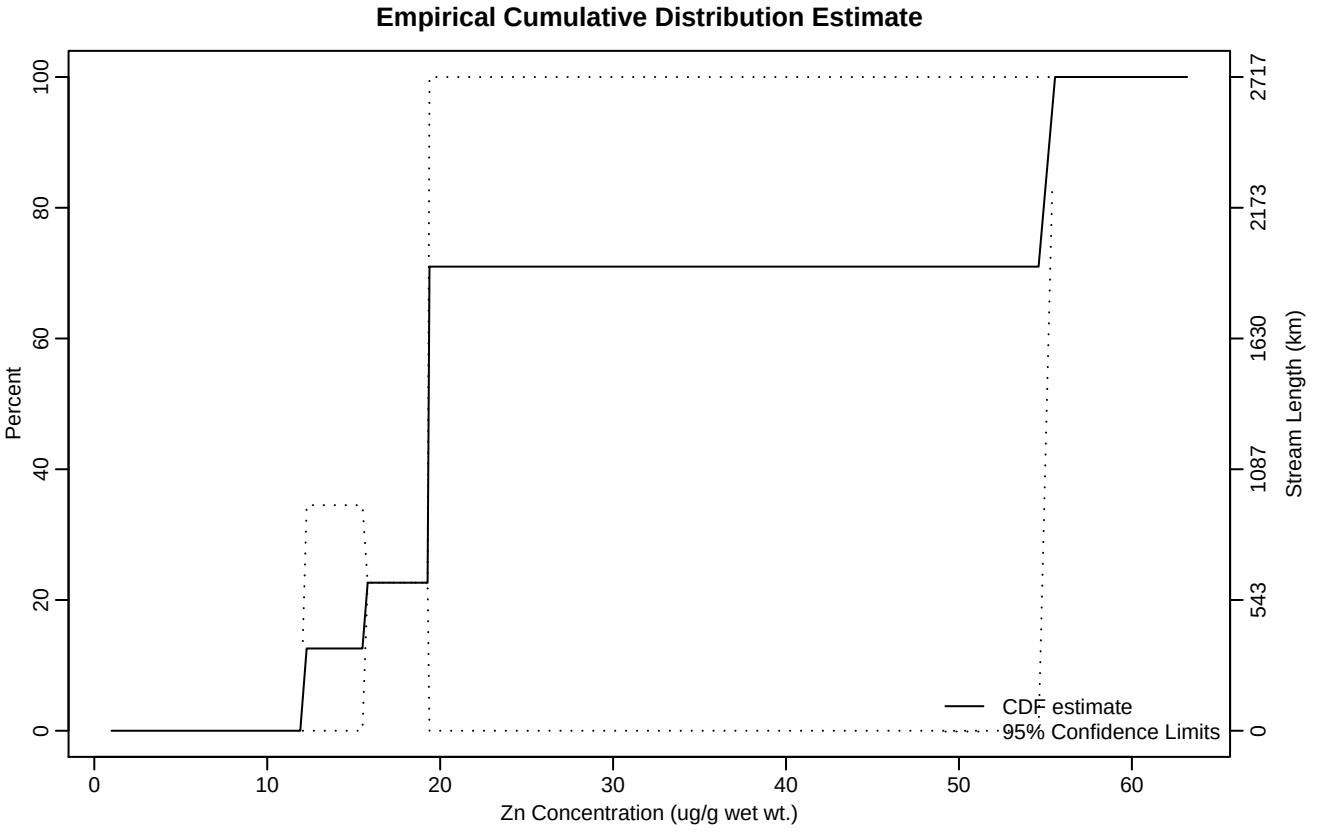


Figure FT Mtl S−35 Indicator: Zn_Small_Fish Subpopulation: MT−SROCK



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	12.06	12	12.11
10Pct	12.20	12.09	15.54
25Pct	19.28	15.57	19.30
50Pct	19.34	19.29	19.38
75Pct	54.74	12.17	
90Pct	55.23	19.29	
95Pct	55.39	19.30	
Mean	28.62	2.90	54.34
Std Dev	13.95	7.31	20.59

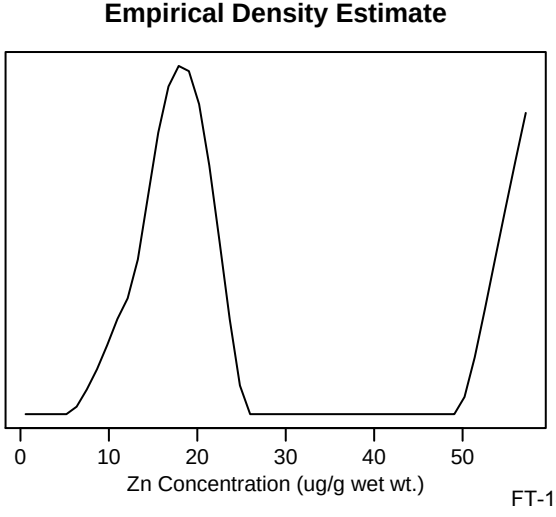
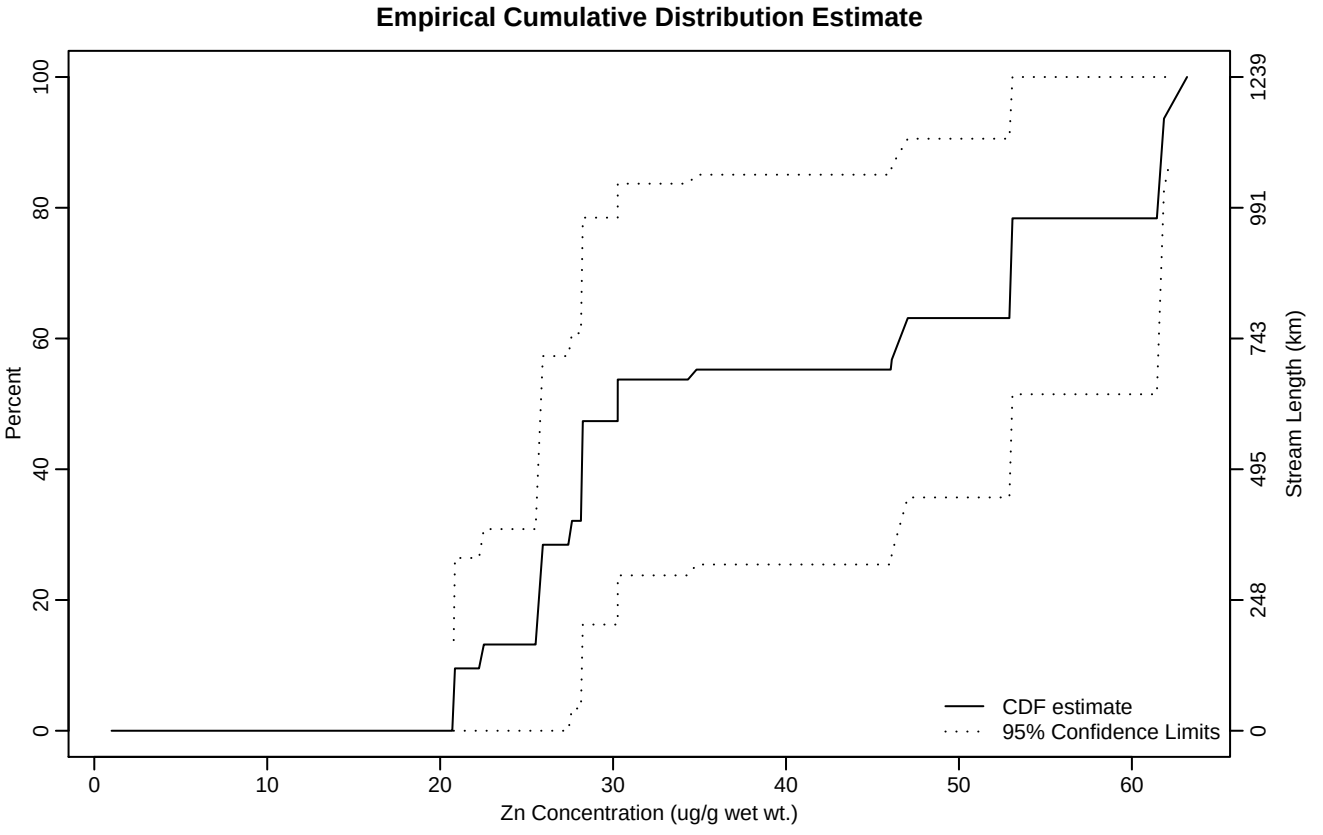


Figure FT Mtl S−36 Indicator: Zn_Small_Fish Subpopulation: MT−SWEST



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	20.78	20.77	20.80
10Pct	22.28	1	25.89
25Pct	25.84	20.80	28.23
50Pct	30.27	25.68	61.51
75Pct	53.05	28.25	
90Pct	61.76	52.92	
95Pct	62.14	61.61	
Mean	39.80	30.12	49.47
Std Dev	15.12	12.66	17.58

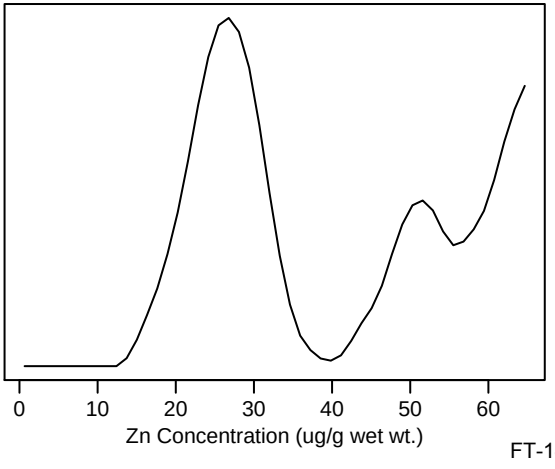
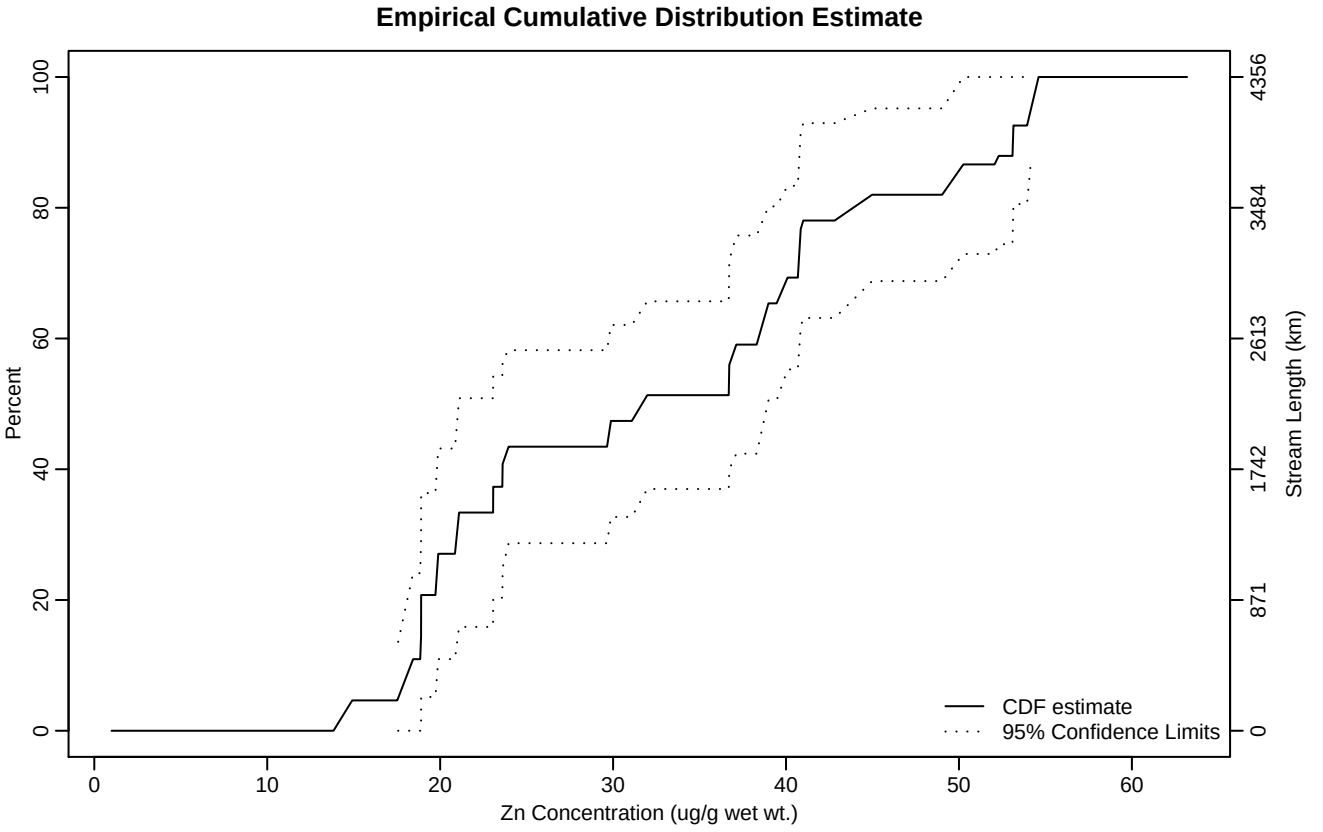


Figure FT Mtl S−37 Indicator: Zn_Small_Fish Subpopulation: PL−NCULT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	17.57	1	18.88
10Pct	18.30	14.22	18.90
25Pct	19.84	18.18	23.61
50Pct	31.68	23.06	39.53
75Pct	40.81	37.06	53.14
90Pct	53.12	40.83	54.60
95Pct	54.15	49.15	54.60
Mean	32.87	28.94	36.80
Std Dev	10.65	8	13.29

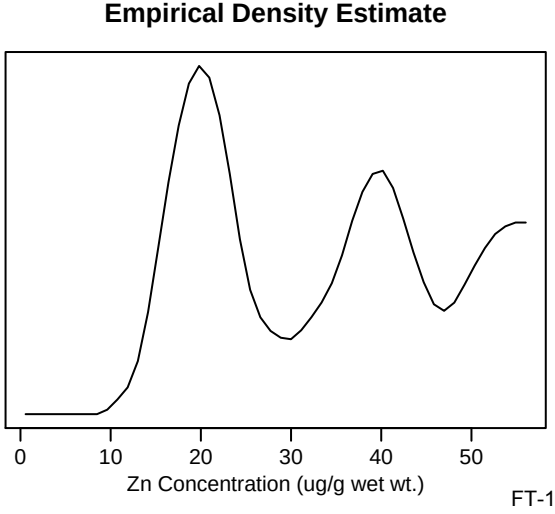
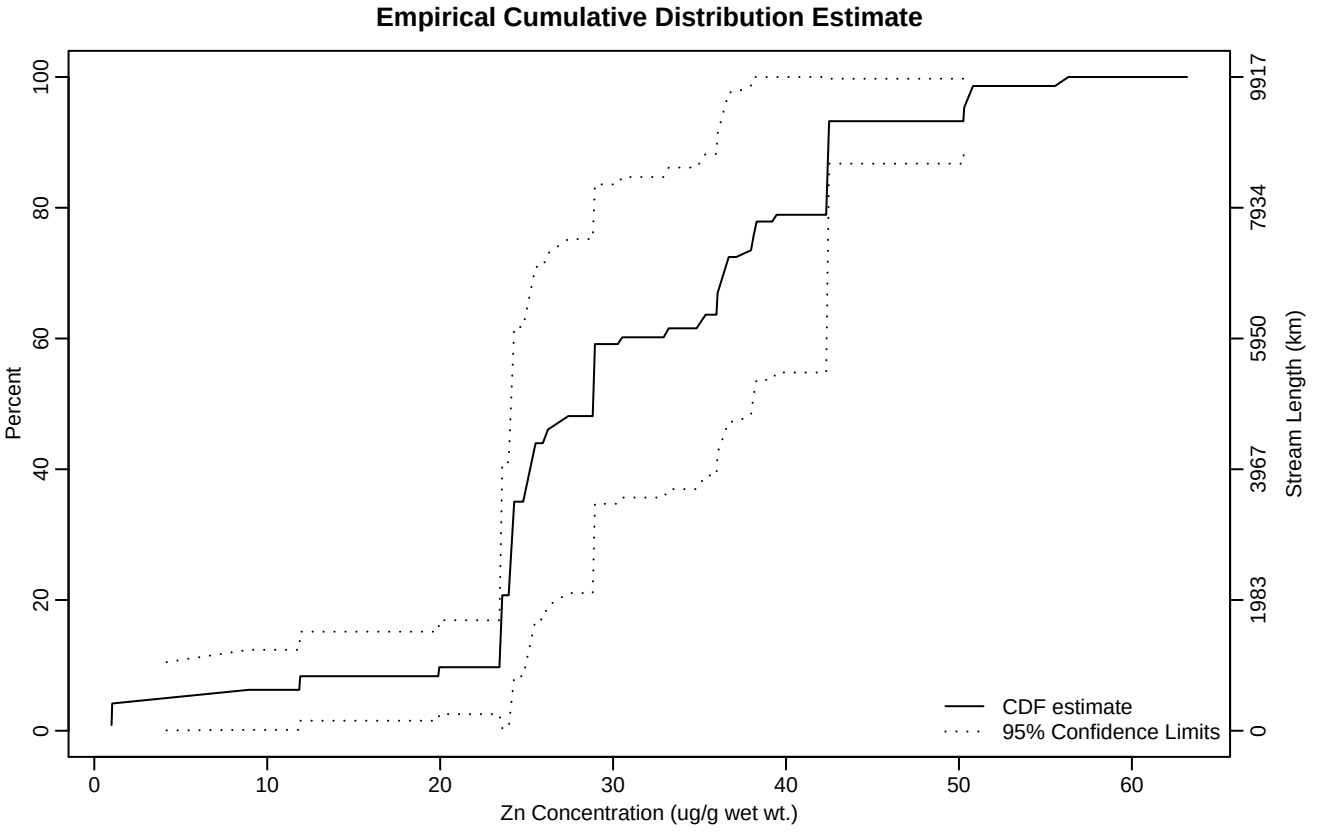


Figure FT Mtl S−38 Indicator: Zn_Small_Fish Subpopulation: PL−RANGE



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	4.18	1	23.44
10Pct	23.43	1.02	23.54
25Pct	24.06	2.26	26.15
50Pct	28.84	24.01	38.24
75Pct	38.08	28.84	56.33
90Pct	42.45	36.01	56.33
95Pct	50.29	42.43	56.33
Mean	30.20	25.21	35.18
Std Dev	9.68	7.17	12.20

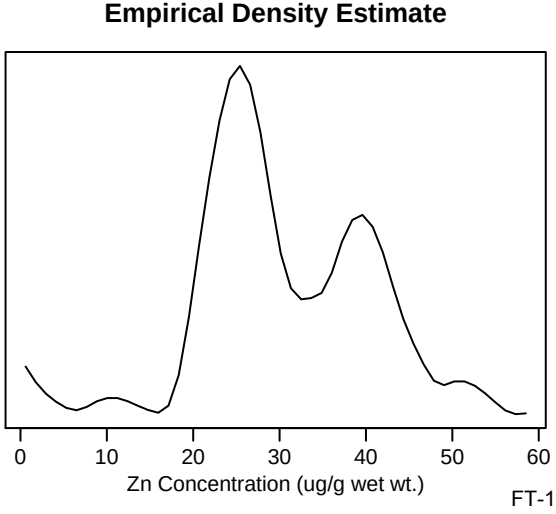
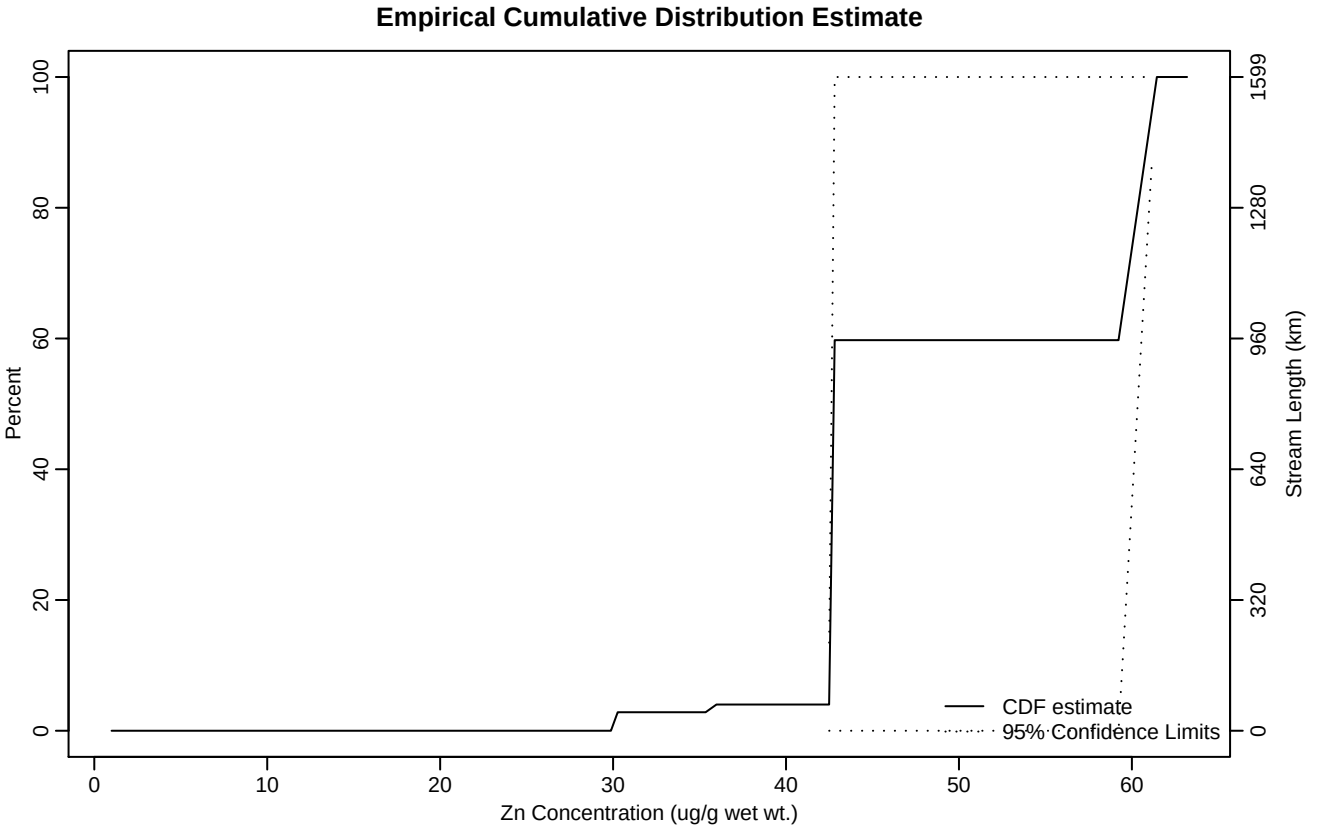


Figure FT Mtl S−39 Indicator: Zn_Small_Fish Subpopulation: XE−CALIF



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	42.50	1	42.55
10Pct	42.53	1	42.60
25Pct	42.61	1	42.77
50Pct	42.76	1	61.44
75Pct	60.07	42.55	61.44
90Pct	60.89	42.62	61.44
95Pct	61.17	42.64	61.44
Mean	49.88	38.23	61.52
Std Dev	9.74	6.71	12.77

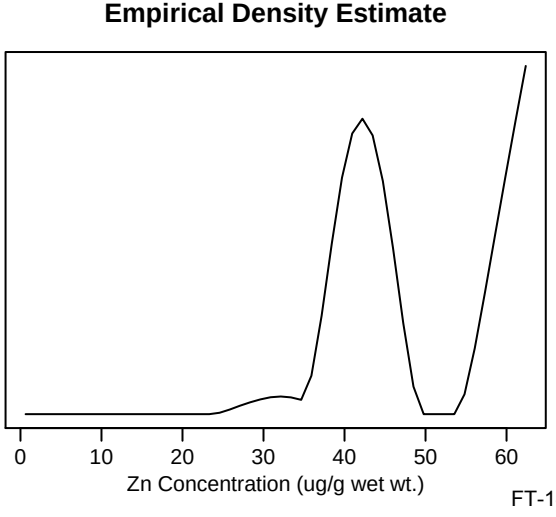
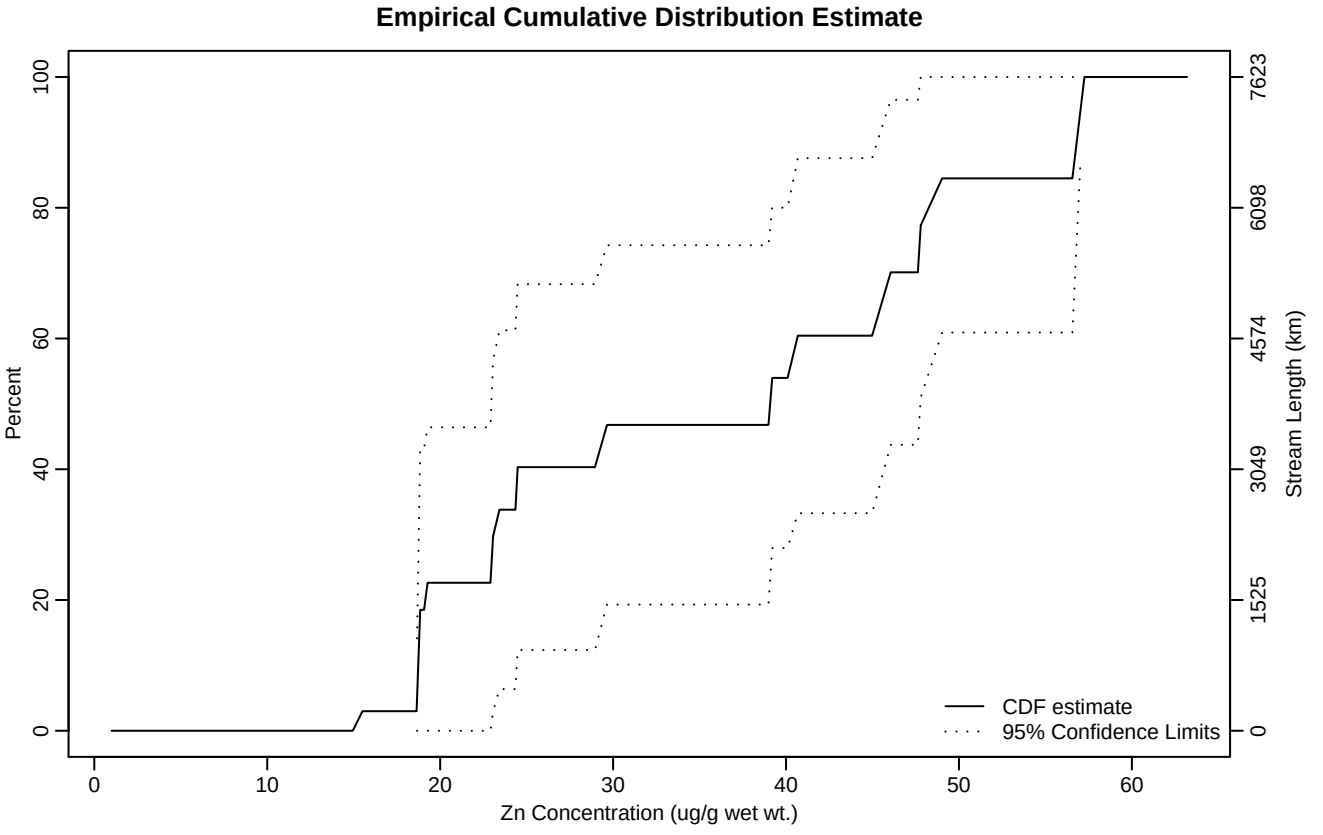


Figure FT Mtl S−40 Indicator: Zn_Small_Fish Subpopulation: XE−EPLAT



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	18.66	1	18.75
10Pct	18.73	18.64	18.82
25Pct	22.96	15.10	39.06
50Pct	39.08	19.27	47.81
75Pct	47.74	39.03	57.26
90Pct	56.81	45.46	57.26
95Pct	57.03	45.96	57.26
Mean	36.03	27.42	44.64
Std Dev	12.75	10.14	15.36

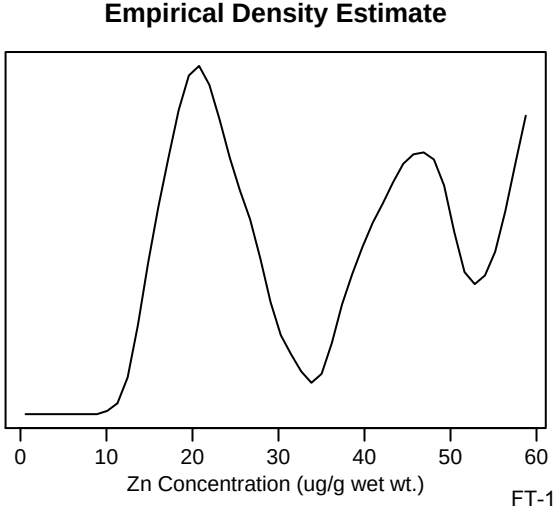
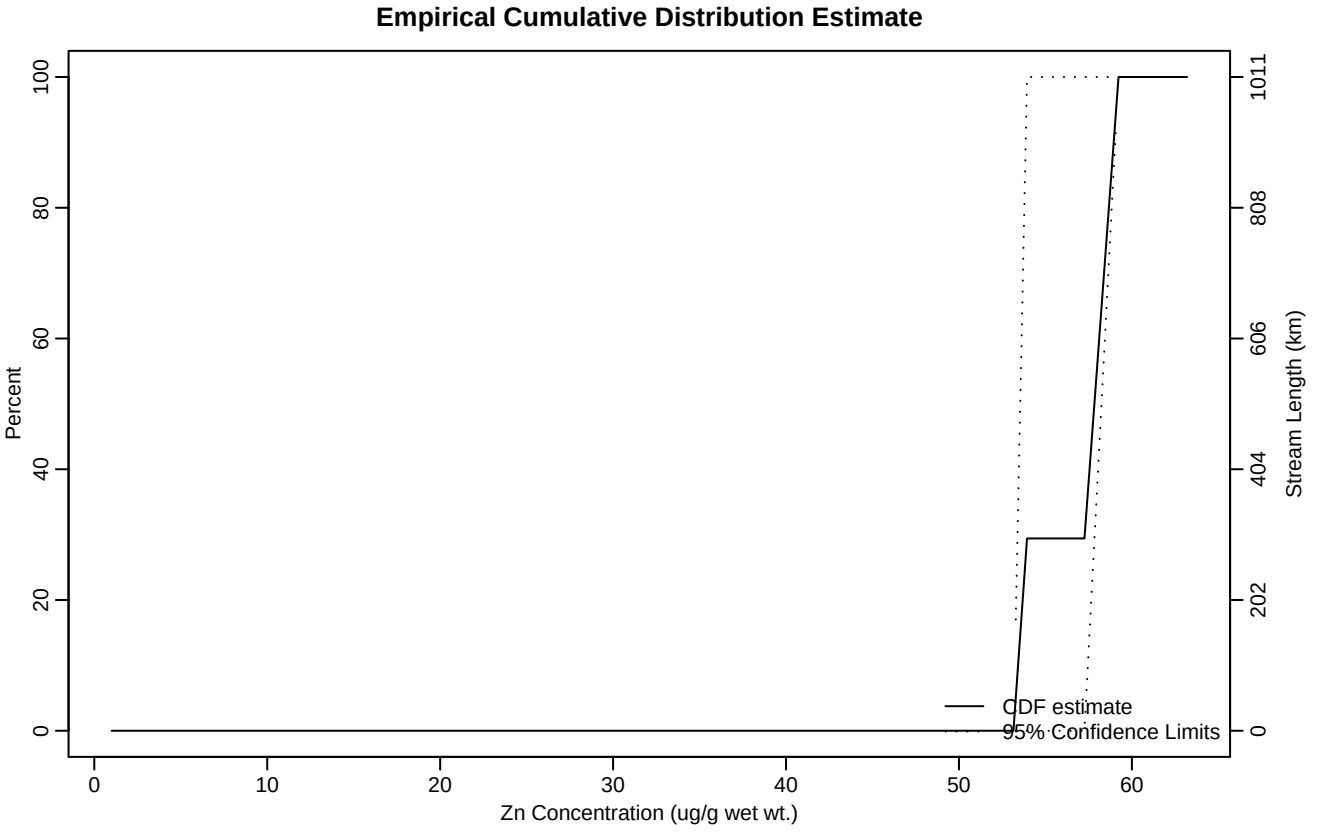


Figure FT Mtl S−41 Indicator: Zn_Small_Fish Subpopulation: XE−NORTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	53.28	53.18	53.39
10Pct	53.42	53.20	53.63
25Pct	53.82	53.28	57.70
50Pct	57.83	1	59.23
75Pct	58.53	1	59.23
90Pct	58.95	1	59.23
95Pct	59.09	1	59.23
Mean	57.67	53.36	61.98
Std Dev	2.41	0.46	4.36

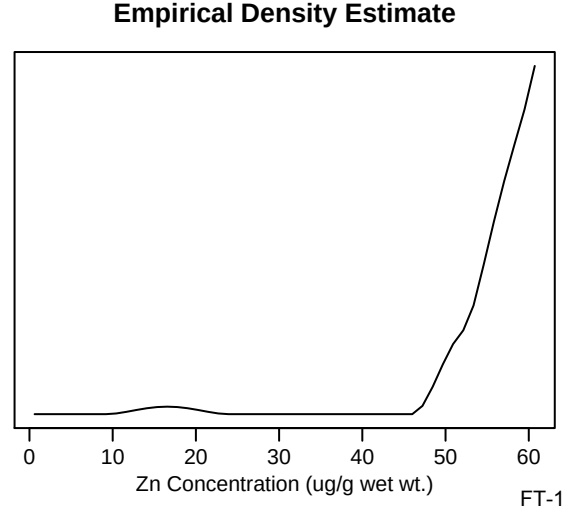
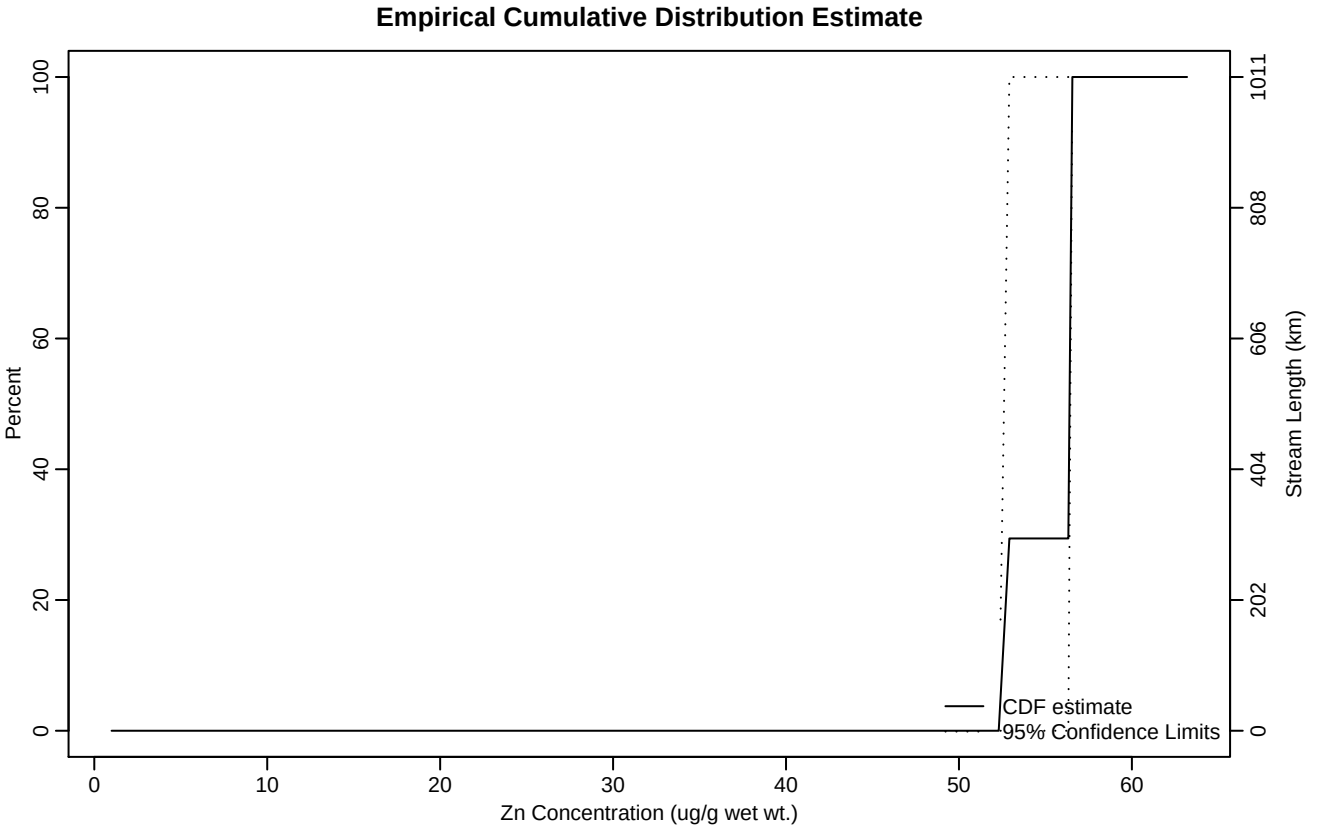
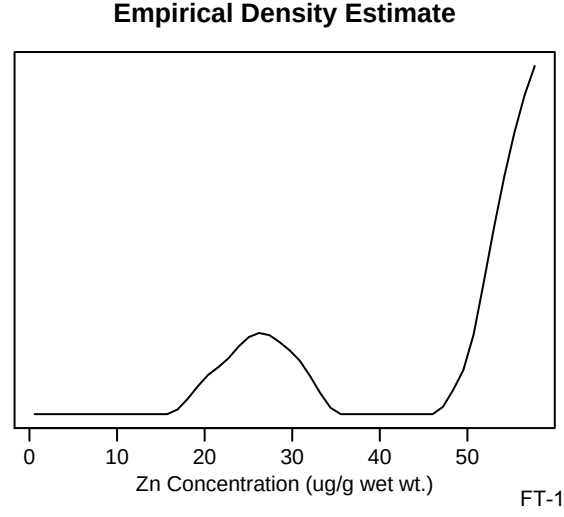


Figure FT Mtl S−42 Indicator: Zn_Small_Fish Subpopulation: XE−SOUTH



Summary Statistics

Statistic	Est	LCB	UCB
5Pct	52.40	52.32	52.49
10Pct	52.51	52.34	52.68
25Pct	52.82	52.40	56.38
50Pct	56.39	1	56.56
75Pct	56.47	1	56.56
90Pct	56.52	1	56.56
95Pct	56.54	1	56.56
Mean	55.49	52.52	58.45
Std Dev	1.66	0.32	3



Invasive Riparian Plants

Introduction and Rationale:

Numerous alien plant taxa populate our landscape. Some of these taxa have the capacity to alter ecosystems dramatically or degrade the economic value of the land they occupy (Pimentel et al. 2005). In this report we refer to these disruptive plant taxa as invasives; others (e.g. (Richardson et al. 2000) would refer to the most intrusive of invasive plants as transformers. “Transformers” is appropriate, because these species alter fire, nutrient and hydrologic regimes, and patterns of plant and animal distribution (Busch and Smith 1995; Hamilton 2004; Mack et al. 2000; Pimentel et al. 2000; Richardson et al. 2000; U.S. Congress -- Office of Technology Assessment 1993; Vitousek 1990; Weber 2003; Whitson et al. 1999) Riparian areas are of special interest for evaluating the extent of invasive plants for three reasons.

First, riparian areas may be more likely to be invaded than upland ecosystems (Brown and Peet 2003; Fornwalt et al. 2003; Planty-Tabacchi et al. 1996). Invasive taxa are often thought to be more likely to invade disturbed areas (Hobbs and Huenneke 1992; Mack et al. 2000). Riparian areas are disturbed not only by the anthropogenic disturbance applicable to the landscape as a whole, but also by the disturbance associated with the varying flow of the adjacent stream (Gregory et al. 1991; Naiman and Decamps 1997; Nilsson and Svedmark 2002; Tickner et al. 2001). In addition, the longitudinal connectivity afforded by the stream network and in some instance by intact riparian ecosystems provides a pathway for invasion (Andersson et al. 2000; Johansson et al. 1996; Merritt and Wohl 2002; Nilsson and Svedmark 2002).

Second, some invasive species alter stream ecosystems (Zavaleta 2000).

Third, although the “minimally-disturbed” condition for most other physical, chemical, and biological indicators is difficult or impossible to define with any certainty, it is a simple matter to define the “minimally-disturbed” condition for any alien taxa – by definition, they are absent. Thus, the quantification of riparian plant invasion status provides us with some perspective on the extent to which “least-disturbed” stream ecosystems differ from “minimally-disturbed” ecosystems in the form of a biotic indicator. [1]

Design

Although a large number of alien plant taxa occur in western riparian ecosystems, we wished to minimize the data collection burden on EMAP field crews, whose expertise generally did not include advanced botanical skills. To allow crews to complete other data collection tasks and still obtain useful vegetation information, we provided field crews with a short well-defined list of invasive taxa. This focus on a few select species

[1] The terms “minimally disturbed” and “least disturbed” are defined in the Reference Condition section of this Report. “Minimally disturbed” is the biotic condition in the absence of anthropogenic disturbance; “least disturbed” is the biotic condition that can be currently observed within an area of interest, thus it accepts some level of anthropogenic disturbance.

is in contrast to the approach used with fish, macroinvertebrates, and periphyton, where the analysis is built on an evaluation of an entire assemblage. Thus, this analysis is mainly on individual invasive species rather than on metrics that describe the assemblage as a whole.

The criteria we balanced in developing the list of taxa to be evaluated included: ease of identification, ecological or economic intrusiveness, riparian preference, lack of toxicity to the touch, regional rather than local interest, and ecological variety within the set of species. In addition, to reflect the different documented distributions of species and to minimize the burden on field crews, we tailored the list of invasive species for each state The final list of taxa comprised 12 species to be collected in different combinations in each state as described in Table IP-1.

The species list and recording protocol changed from 2000 to later years. In 2000 the reporting methodology was to ask field crews to write out the names of the invasive species they observed. In analyzing the year 2000 data, we found that rather than receiving a small number of discrete reports that the field crews had provided us with 159 discrete responses including alien species not on the search list. Although some responses (e.g. *Arundo*) could confidently be recoded into our targeted list of taxa, others (e.g. Blackberry, and Thistle) could not be recoded into our targeted list of taxa. While these extensive lists demonstrated the enthusiasm of the field crews for this component of the protocol, they did not provide us with the information necessary for an assessment. In addition, we noted that two of the species on the list in 2000 --- Whitetop (*Cardaria draba*), and Perennial Pepperweed (*Lepidium latifolium*) – were reported with very low frequency. Thus starting in 2001 we revised the protocol so that field crews needed only to check a box on a field form denoting the presence of a targeted invasive. In addition, we replaced the two infrequently reported species with English Ivy and Common Burdock. As a result of the limitations of our design in 2000, we have not to use data collected in 2000; our report in this summary is built only around records for 2001 through 2004.

Sampling and Data Analysis Methods

Riparian invasive plants were identified as part of the characterization of the riparian environment as described in the EMAP-West Field Manuals (Peck et al. 2005a, Peck et al. 205b). On wadeable streams these plots are located at the ends of 11 transects placed 4 channel widths apart (with a minimum distance of 15 m apart). Field crews reported on the presence of the targeted invasive taxa within the 10m x 10m riparian plots on either bank of the stream. On non-wadeable streams these plots are located at the ends of 11 transects placed 10 channel widths apart. Field crews reported on the presence of the targeted invasive taxa within the 10 m x 20 m riparian plots on either bank of the stream. Thus on wadeable streams the total area examined was identical at 220 m^2., and on non-wadeable streams it was 440m^2. The reach length over which this area was sampled could vary from 150 m to several km.

Field crews were trained in the classroom and in the field on plant identification and were provided with plant identification guides. These guides are also included as Appendix B in the Field Manuals (Peck et al. 2005a, Peck et al. 205b).

Data Storage and Management

Raw observations report on the presence of each species reported by the field crews at each transect. These observations are summarized into two sets of variables:

- The percentage of transects where each species and any targeted species were observed at each reach
    - with eleven reaches this is an ordinal variable with discrete values of 0, 1/11, 2/11, 3/11….11/11 as well as no data (where the field crew should have reported on the presence of invasive plants, but didn't), and not assessed (where the field crew was not supposed to search for a particular plant as noted in Table IP-1).
- the presence of each species and any targeted species along each reach
    - recorded as absent, present, no data (where the field crew should have reported on the presence of invasive plants, but didn't), and not assessed (where the field crew was not supposed to search for a particular plant as noted in Table IP-1.

While the data sheets and the raw observations include records of species that field crews were not directed to look for in their state, the summary observations delete these references and replace the record of presence or absence with a record of not assessed.

Indicator Selection

The target alien plants are aggressive invaders – if they are present anywhere along the reach they have the capacity to spread extensively in a relatively short period of time -- if they have not already invaded the full reach. Thus, their presence anywhere along the reach is of ecological and societal interest, therefore, we have chosen to use the presence indicator for our reporting focus in this report, rather than the frequency indicator.

The assumption that these species have the capacity to extend along the full reach is borne out by an examination of the frequency data for the stream reaches where the species are present (See Table IP-2). When a single taxon is reported as present, it is found at 57% of all transects. When any targeted taxon is present, then targeted aliens are found at 106% of the transects, this means simply that on average when a targeted alien is present on a reach that there are multiple targeted taxa on the reach. Remarkably, when eight of the twelve species are present, their most frequent record of occurrence (the modal value) is to be found at all transects.

Reporting Format

The observations are reported in stacked bar charts for each of the sets of ecoregions shown in Figure 1 (in Introduction to this Report).. Because these ecoregions are not coincident with state boundaries – the spatial unit of the design – there is often a large extent of the stream population which is not assessed. For example, the Northern Rockies ecoregion covers parts of the states of OR, WA, ID, MT, WY, and SD. However field crews not asked to look for Russian Olive in OR, WA and ID. Therefore, stream

miles in those three states were not assessed for Russian Olive. Thus, the bar charts show three elements – the percent of the stream length where each taxon is present, the percent of the stream length where the taxon was looked for but was reported as absent, and the percent of the stream length that was not assessed. In addition to providing information on presence for each taxon we provide this information for any of the listed taxa. The bar chart also shows the 95% upper confidence boundary (UCB) for the presence of the taxa.

Limitations of the Data

One of the most significant limitations of this data set is that it focuses on a select set of species rather than on a full assemblage. The result is that the focus of the analysis is best placed on the status of the species rather than on the invasion status of the riparian community at a reach. There are a number of other species that are as ecologically and economically as intrusive as the ones we have targeted that are not included in this analysis. Examples of these species are: yellow star-thistle (*Centaurea solstitialis.*), spotted knapweed (*Centaurea maculosa*), Poison hemlock (*Conium maculatum*), St. Johnswort (*Hypericum performatum*), Scotch Broom (*Cytisus scoparius*), Japanese knotweed (*Polygonum cuspidatum*), Sulfur cinquefoil (*Potentilla recta*), Dalmation toadflax (*Linaria genistifolia*), or Common mullein (*Verbascum thapsus*). More complete lists can be found on Federal, regional, state and NGO lists of invasive species -- http://www.invasivespecies.gov/geog/lists.shtml

In addition, comparisons across spatial units must be viewed with circumspection. Specifically, while reaches in one region may have a different level of taxa present than in another region, this reflects not only the invasion status of reaches within each region, but also the prevalence of the invasive species that we selected for evaluation within the two regions. If we had picked a different set of species or asked the field crews to identify all alien species, the cross-region picture could be very different.

Data Quality

There are two issues in evaluating the quality of the observations. The first is their precision, or repeatability, the second is their accuracy, or conformance to the true observations of plant presence.

Measures of Repeatability

To evaluate the repeatability of measures of plant presence and absence along the reach we evaluated records of presence and absence during the index visit against records in the first subsequent visit in a 2 x 2 contingency table. Compilation of this information allows us to evaluate the level of agreement between the two visits. This is done by calculating the percent agreement between the two visits. When there are records of presence and absence during both visits we can also calculate Cohen's kappa. Cohen's kappa varies from 0 (no agreement) to 1 (perfect agreement) and tests the hypothesis that the agreement found is purely by chance. Table IP-3 presents these results.

Comparison to Expert Field Crews

Expert crews identified the presence of our target species at the sample reaches at 19 sites in two states. In Oregon, the expert crew preceded the EMAP crew and examined a stream reach of 1 km. The EMAP crew used flagging left by the expert crew to ensure their sampling in the same general reach, although not necessarily in the same riparian plots. In Montana, the expert crew followed the EMAP crew and examined riparian plots flagged by the EMAP crew. The results of this comparison are summarized in Table IP-IP-4. At these 19 sites there are no instances in which the EMAP crew identified a targeted species not identified by the expert crew. While this is neither a complete nor representative sample of all EMAP crew visits, it suggests that the EMAP crews, and therefore the data summarized in this report, are underestimates of the actual extent of the invasion of these plants.

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Table IP-1. Targeted List of Riparian Invasive Plants by State in which information on their presence was collected.

Common Name	Scientific Name	AZ	CA	CO	ID	MT	ND	NV	OR	SD	UT	WA	WY
Common Burdock	*Arctium minus*	X	X	X	X	X	X	X	X	X	X	X	X
Giant Reed	*Arundo donax*	X	X					X			X		
Cheatgrass	*Bromus tectorum*	X	X	X	X	X	X	X	X	X	X	X	X
Musk Thistle	*Carduus nutans*		X	X	X	X	X		X	X		X	X
Canada Thistle	*Cirsium arvense*		X	X	X	X	X		X	X		X	X
Teasel	*Dipsacus fullonum*		X	X		X			X			X	
Russian-olive	*Elaeagnus angustifolia*	X	X	X		X	X	X		X	X		X
Leafy Spurge	*Euphorbia esula*			X		X	X			X			X
English Ivy	*Hedera helix*	X	X	X	X	X	X	X	X	X	X	X	X
Reed Canarygrass	*Phalaris arundinacea*		X		X				X			X	
Himalayan Blackberry	*Rubus discolor*		X		X				X			X	
Salt Cedar	*Tamarix* spp.	X	X	X		X	X	X		X	X		X

X On the list for this state

Not on the list for this state

Table IP-2. Percentage of Transects Where the Taxon is Reported When the Taxon is Present at a Stream Reach.

(Based on west-wide occurrences without population weights. “Average for Individual Taxon” is the average weighting each taxon equally. The average non-zero frequency independent of taxon is 63%. For Common Burdock there is a second mode at 27%. For all taxa, when present or absent, the modal value is always 0)

	Percentage of Transects Where the Taxon is Reported When Taxon is Present at a Stream Reach			
	Mean	S.D.	Median	Mode
English Ivy	32%	25%	27%	9%
Common Burdock	40%	31%	27%	9%
Leafy Spurge	45%	34%	36%	9%
Musk Thistle	49%	35%	36%	18%
Canada Thistle	51%	36%	45%	100%
Teasel	55%	39%	45%	100%
Russian Olive	59%	37%	64%	100%
Himalayan Blackberry	59%	37%	64%	100%
Reed Canarygrass	71%	36%	100%	100%
Salt Cedar	74%	36%	100%	100%
Giant Reed	74%	35%	100%	100%
Cheatgrass	81%	30%	100%	100%
Average for Individual Taxon	57%	34%	62%	70%
Any Targeted Invasive	106%	72%	100%	100%

Table IP-3. Measures of the repeatability of presence/absence observations by taxon.

(Landis and Koch (1977) describe the level of agreement between repeat visits embodied by values of kappa as: 0.21-0.40, "Fair"; 0.41-0.60,"Moderate"; 0.61-0.80, "Substantial"; 0.81-1.00 "Almost perfect". The p values are the exact p values testing the hypothesis that the association between visits is purely at random)

	% Agreement Between Visits	Kappa	p
English Ivy	98%	---	---
Common Burdock	100%	---	---
Leafy Spurge	95%	0.64	0.100
Musk Thistle	100%	1.00	0.002
Canada Thistle	92%	0.72	0.000
Teasel	95%	---	---
Russian Olive	97%	0.79	0.005
Himalayan Blackberry	88%	---	---
Reed Canarygrass	94%	---	---
Salt Cedar	92%	0.68	0.001
Giant Reed	94%	---	---
Cheatgrass	79%	0.33	0.030

Table IP-4. Summary of comparison between expert crew results and EMAP crew results.

		No. Reaches with Target Taxon Present		
		Montana	Oregon	Total
Number of Reaches Examined:		6	13	19
Common Burdock	Expert Crew	0	1	1
	EMAP Crew	0	0	0
Cheatgrass	Expert Crew	0	7	7
	EMAP Crew	0	0	0
Canada Thistle	Expert Crew	2	4	6
	EMAP Crew	0	0	0
Teasel	Expert Crew	0	4	4
	EMAP Crew	0	0	0
Reed Canarygrass	Expert Crew	.	2	2
	EMAP Crew	.	0	0
Himalayan Blackberry	Expert Crew	.	0	0
	EMAP Crew	.	0	0
Leafy Spurge	Expert Crew	0	.	0
	EMAP Crew	0	.	0
Musk Thistle	Expert Crew	0	0	0
	EMAP Crew	0	0	0
English Ivy	Expert Crew	0	0	0
	EMAP Crew	0	0	0
Russian Olive	Expert Crew	0	.	0
	EMAP Crew	0	.	0
Salt Cedar	Expert Crew	0	.	0
	EMAP Crew	0	.	0

Presentation of Results

Unlike all of the indicators presented previously, invasive plants results cannot be presented as empirical cumulative distributions. We report instead on the presence/absence of targeted invasive species in the following histograms, presented at three scales of geographic resolution: (1) for all of the EMAP-West study region (12 states); (2) for three climatic/topographic regions; and (3) for ten aggregate ecological regions.

The histograms report:

1. the estimated percent of stream length where each individual targeted species was found and the estimated percent of stream length where any one of the targeted species was found (dark bars);
2. confidence limits around the length estimates (whiskers);
3. the percentage of stream length where the targeted species was absent (grey bars); and
4. the percentage of stream length where that species was not assessed (due to the use of different lists of targeted species in each state) (clear portions of bars).

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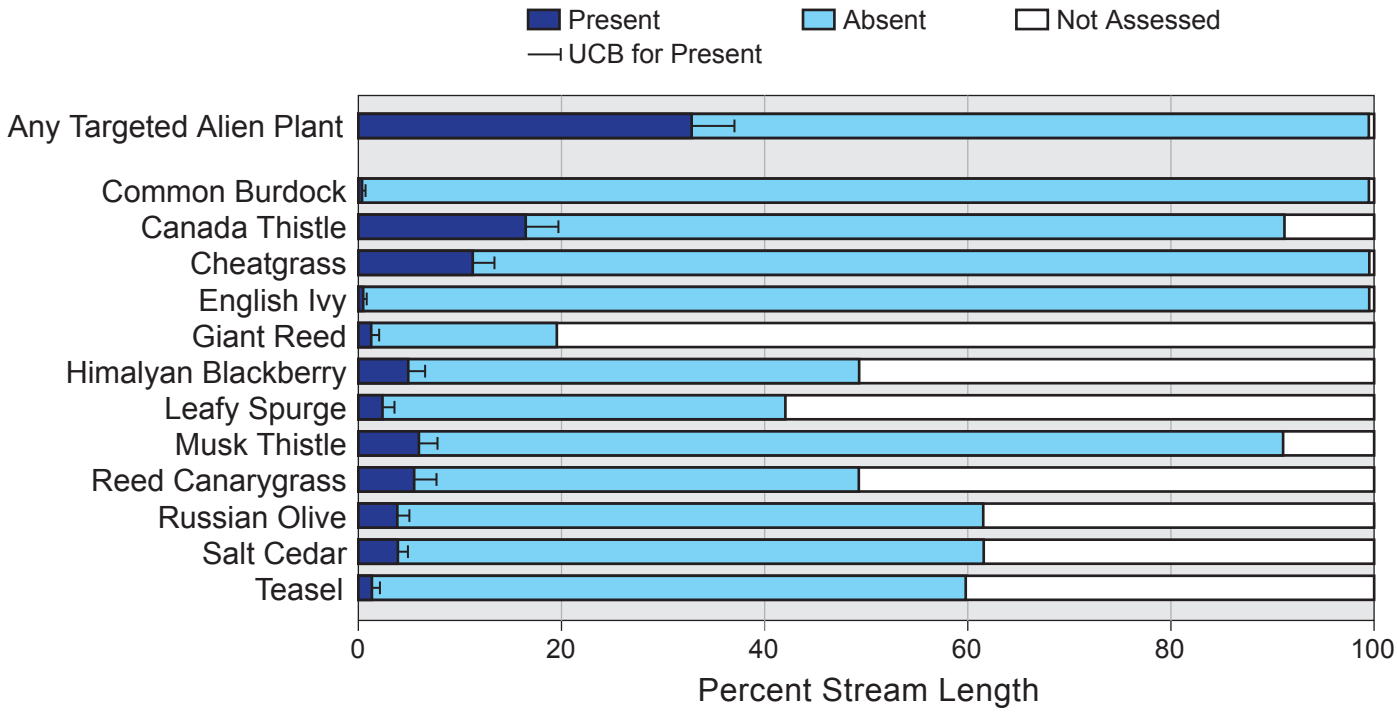
Special terms used in these report are:

UCB – the 95% upper confidence boundary

LCB – the 95% lower confidence boundary

Any targeted alien – any one of the targeted taxa for the assessment region

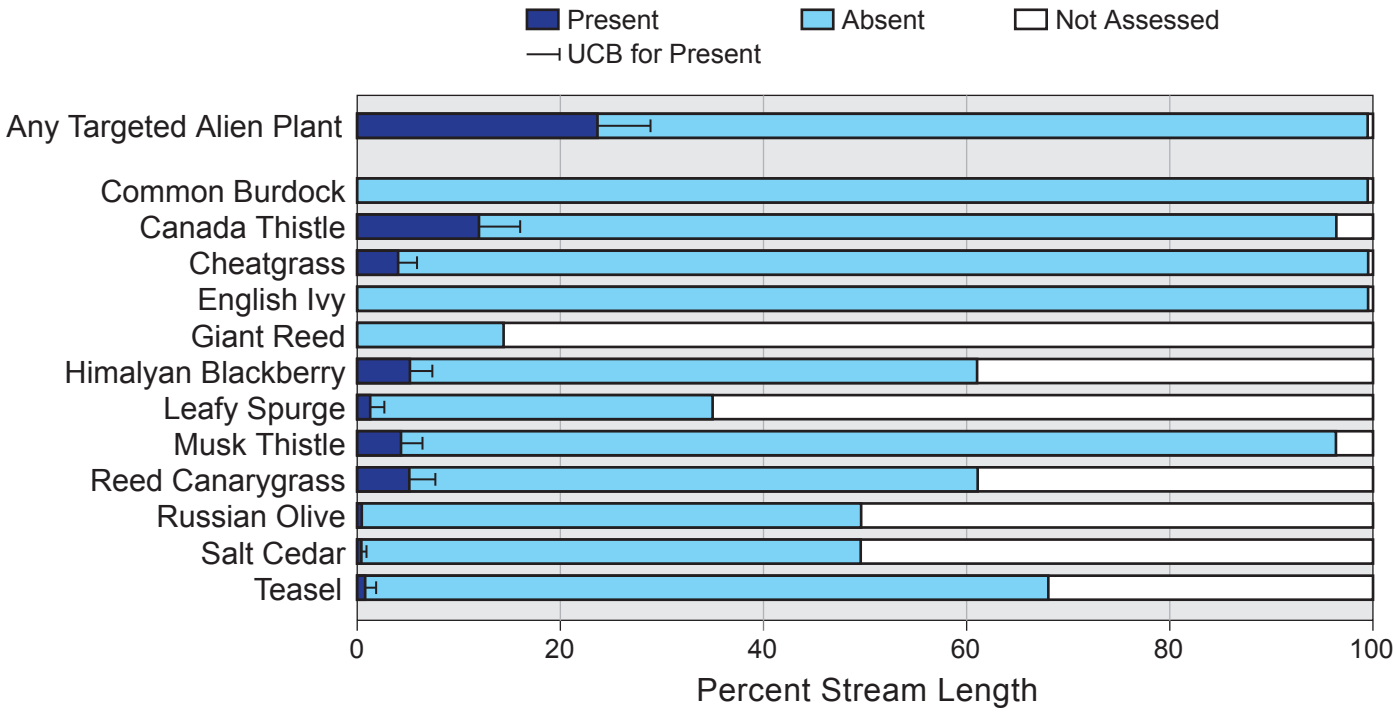
Subpopulation: West-wide Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	32.8	37.0	28.6	100237	87412	113062
		Absent	66.9	71.1	62.7	204504	187757	221252
	Common Burdock	Present	.3	.5	.0	797	36	1558
		Absent	99.4	99.9	98.9	303944	290625	317264
	Canada Thistle	Present	16.3	19.5	13.0	49688	39662	59714
		Absent	75.0	78.3	71.7	229362	213681	245043
	Cheatgrass	Present	11.0	13.4	8.7	33702	26510	40894
		Absent	88.7	91.1	86.3	271039	256538	285541
	English Ivy	Present	.3	.6	.0	819	0	1966
		Absent	99.4	100.0	98.9	303922	290582	317263
	Giant Reed	Present	1.1	2.0	.3	3450	857	6043
		Absent	18.4	19.2	17.6	56279	51320	61238
	Himalyan Blackberry	Present	4.8	6.5	3.0	14523	9048	19999
		Absent	44.5	46.3	42.7	135979	124448	147511
	Leafy Spurge	Present	2.2	3.4	1.0	6782	3099	10465
		Absent	39.8	41.0	38.6	121765	113627	129904
	Musk Thistle	Present	5.8	7.7	3.8	17576	11799	23353
		Absent	85.5	87.5	83.6	261474	246754	276194
	Reed Canarygrass	Present	5.5	7.7	3.4	16845	10297	23393
		Absent	43.7	45.9	41.6	133658	121283	146034
	Russian Olive	Present	3.7	4.9	2.5	11260	7624	14896
		Absent	57.9	59.1	56.7	177016	167356	186676
	Salt Cedar	Present	3.7	4.8	2.6	11352	7968	14737
		Absent	57.9	59.0	56.8	176923	167526	186321
	Teasel	Present	1.1	1.9	.2	3216	491	5941
		Absent	58.8	59.8	57.8	179648	168236	191059

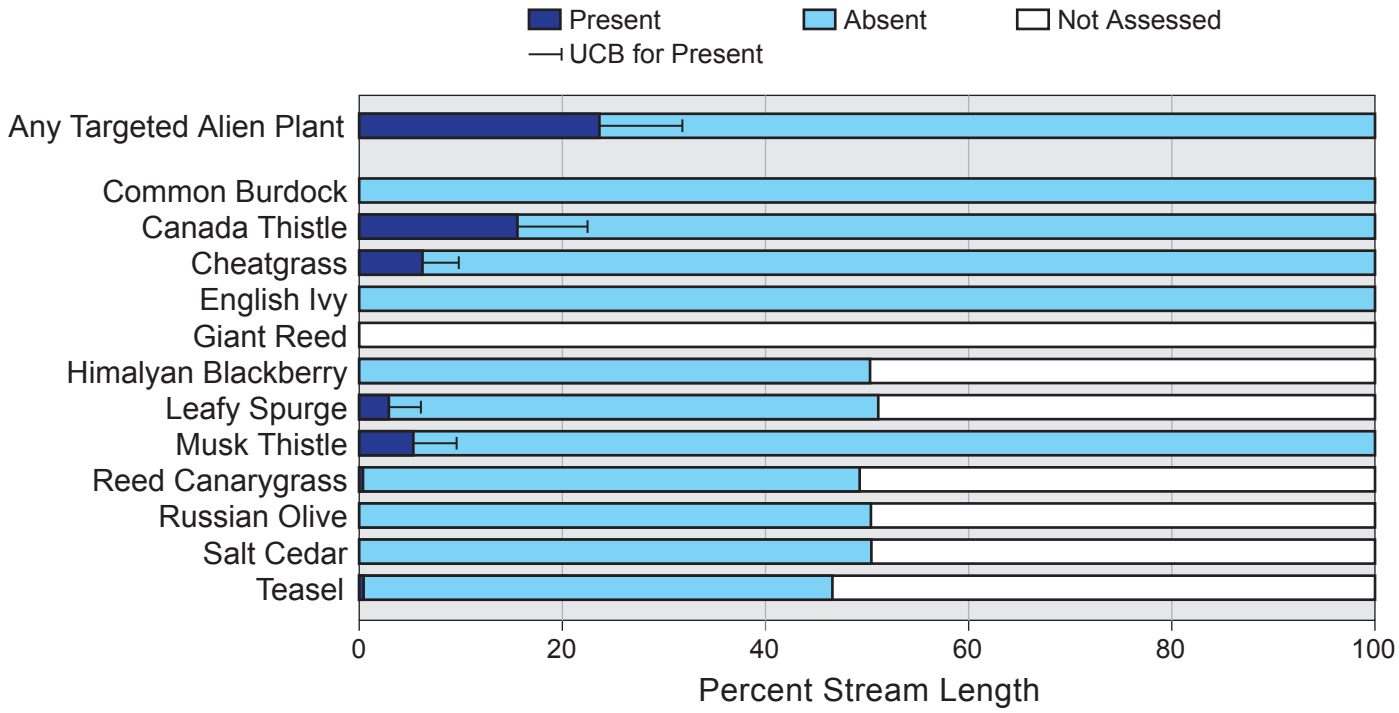
Subpopulation: MT Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	23.8	29.0	18.7	51186	39867	62506
		Absent	75.8	80.9	70.6	162781	147579	177982
	Common Burdock	Present	.0	.1	.0	48	0	130
		Absent	99.5	100.0	98.9	213919	201201	226637
	Canada Thistle	Present	12.1	16.2	7.9	25905	16827	34983
		Absent	84.3	88.4	80.1	181080	166741	195418
	Cheatgrass	Present	4.1	6.0	2.2	8773	4672	12874
		Absent	95.5	97.5	93.5	205194	191952	218437
	English Ivy	Absent	99.6	100.0	98.9	213967	201249	226685
	Giant Reed	Present	.0	.1	.0	103	0	237
		Absent	14.5	14.6	14.4	31093	26973	35212
	Himalyan Blackberry	Present	5.3	7.5	3.1	11403	6746	16061
		Absent	55.9	58.1	53.6	120062	108618	131506
	Leafy Spurge	Present	1.4	2.9	.0	2961	0	6264
		Absent	33.8	35.3	32.2	72559	65359	79760
	Musk Thistle	Present	4.3	6.5	2.0	9135	4353	13917
		Absent	92.1	94.4	89.7	197850	184120	211580
	Reed Canarygrass	Present	5.2	7.7	2.7	11198	5828	16568
		Absent	56.0	58.4	53.5	120267	108881	131653
	Russian Olive	Present	.2	.4	.0	370	0	817
		Absent	49.5	49.7	49.3	106346	98544	114147
	Salt Cedar	Present	.4	.6	.1	835	276	1395
		Absent	49.3	49.5	49.0	105880	98076	113685
	Teasel	Present	.9	2.0	.0	2004	0	4384
		Absent	67.2	68.5	65.9	144391	133624	155158

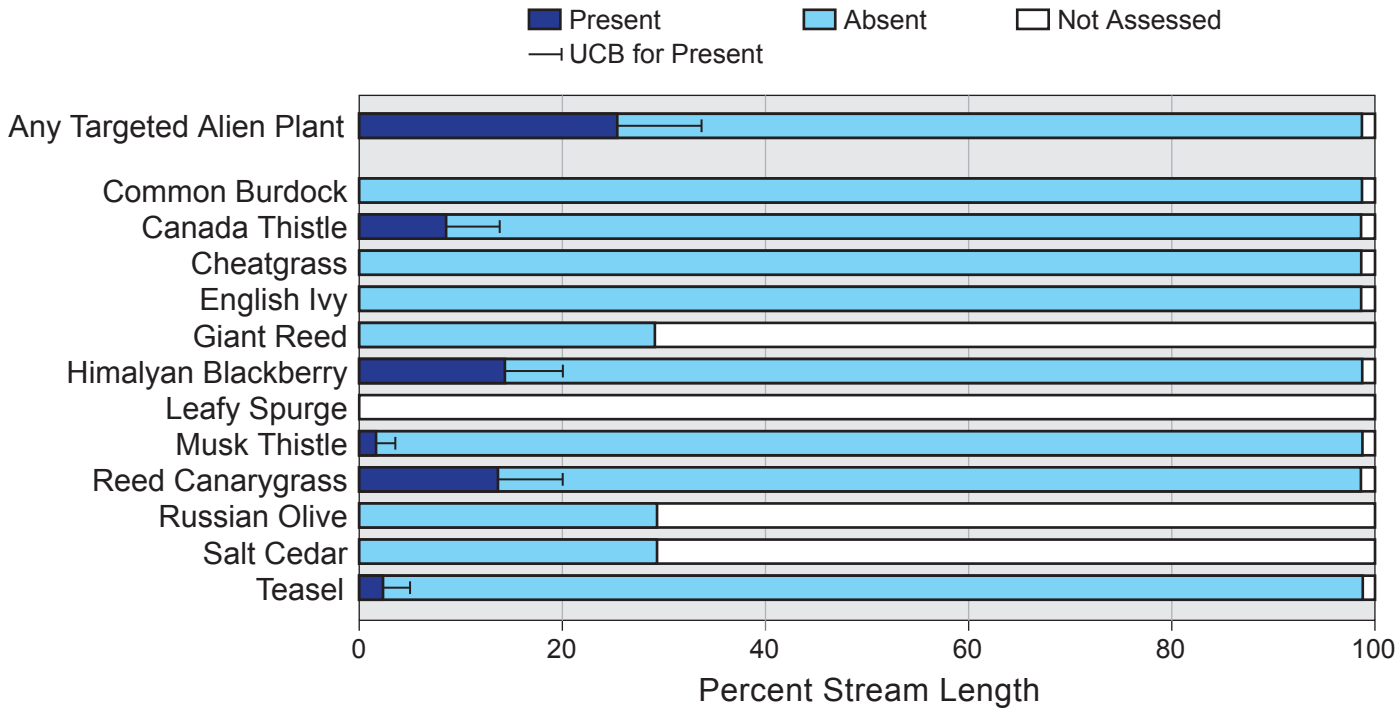
Subpopulation: MT-NROCK Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	23.7	31.9	15.5	24304	15711	32896
		Absent	76.3	84.5	68.1	78349	67081	89618
	Common Burdock	Present	.0	.1	.0	48	0	130
		Absent	99.9	100.0	99.8	102605	93764	111446
	Canada Thistle	Present	15.7	22.7	8.8	16138	8690	23586
		Absent	84.2	91.2	77.3	86515	76088	96941
	Cheatgrass	Present	6.2	9.8	2.6	6344	2651	10038
		Absent	93.8	97.4	90.2	96308	86807	105810
	English Ivy	Absent	100.0	100.0	99.9	102653	93813	111493
	Himalyan Blackberry	Present	.0	.1	.0	48	0	130
		Absent	49.4	49.5	49.3	50728	44314	57143
	Leafy Spurge	Present	2.9	6.1	.0	2961	0	6264
		Absent	47.6	50.8	44.4	48916	42188	55644
	Musk Thistle	Present	5.4	9.5	1.2	5502	1304	9701
		Absent	94.6	98.8	90.4	97151	87067	107234
	Reed Canarygrass	Present	.4	.6	.2	374	208	540
		Absent	49.1	49.3	48.9	50402	43980	56824
	Russian Olive	Absent	50.5	50.5	50.5	51877	45793	57960
	Salt Cedar	Absent	50.5	50.5	50.5	51877	45793	57960
	Teasel	Present	.5	.7	.2	495	274	715
		Absent	46.4	46.7	46.1	47650	41681	53619

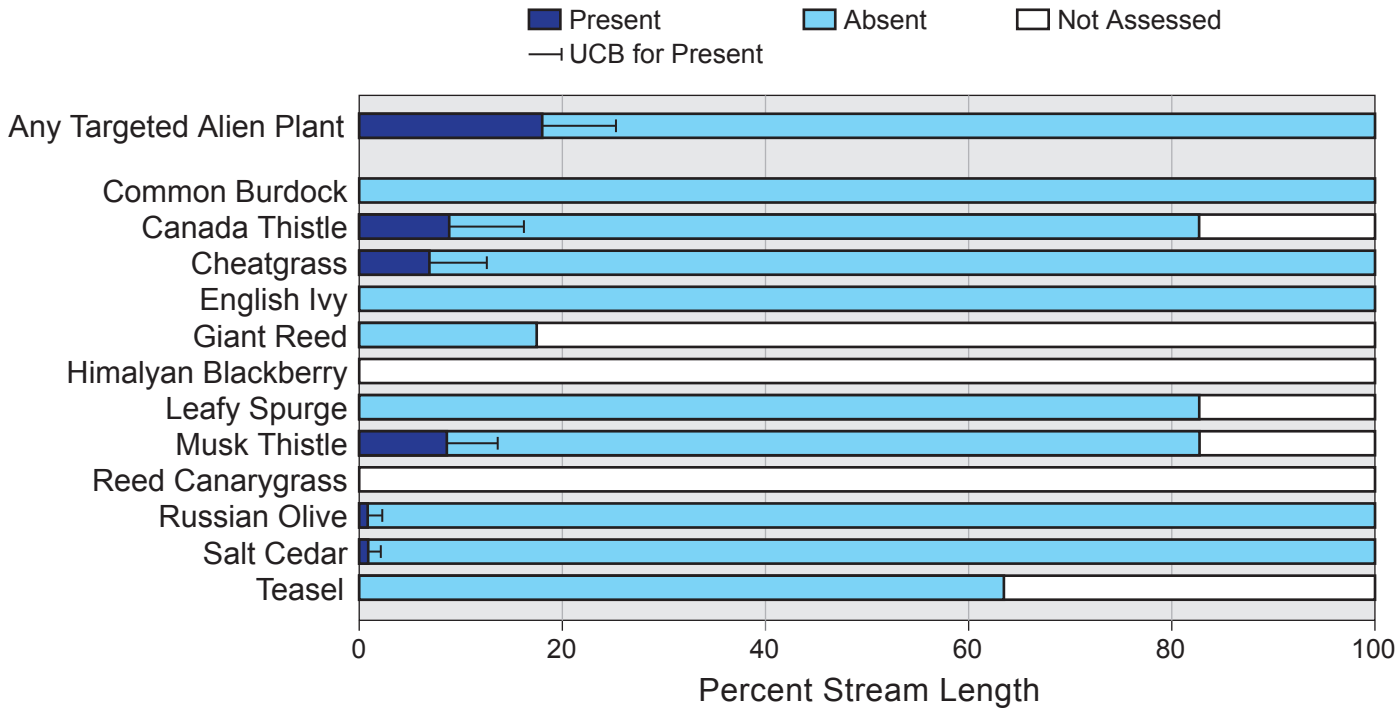
Subpopulation: MT-PNW Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	25.3	33.6	16.9	20212	13435	26990
		Absent	73.8	82.2	65.4	59021	49667	68375
	Common Burdock	Absent	99.0	100.0	97.4	79234	71291	87176
	Canada Thistle	Present	8.3	13.7	2.8	6623	2299	10947
		Absent	90.8	96.5	85.0	72611	63653	81568
	Cheatgrass	Present	.0	.1	.0	23	0	59
		Absent	99.0	100.0	97.3	79211	71268	87153
	English Ivy	Absent	99.0	100.0	97.4	79234	71291	87176
	Giant Reed	Absent	29.2	29.2	29.2	23345	19630	27061
	Himalyan Blackberry	Present	14.1	19.9	8.2	11265	6562	15967
		Absent	85.0	91.1	78.8	67969	59171	76767
	Musk Thistle	Present	1.5	3.5	.0	1169	0	2790
		Absent	97.6	100.0	94.9	78065	69935	86194
	Reed Canarygrass	Present	13.5	20.1	6.9	10824	5456	16192
		Absent	85.5	92.1	78.9	68410	59710	77109
	Russian Olive	Absent	29.2	29.2	29.2	23345	19630	27061
	Salt Cedar	Absent	29.2	29.2	29.2	23345	19630	27061
	Teasel	Present	1.9	4.8	.0	1509	0	3878
		Absent	97.2	100.0	93.8	77724	69723	85726

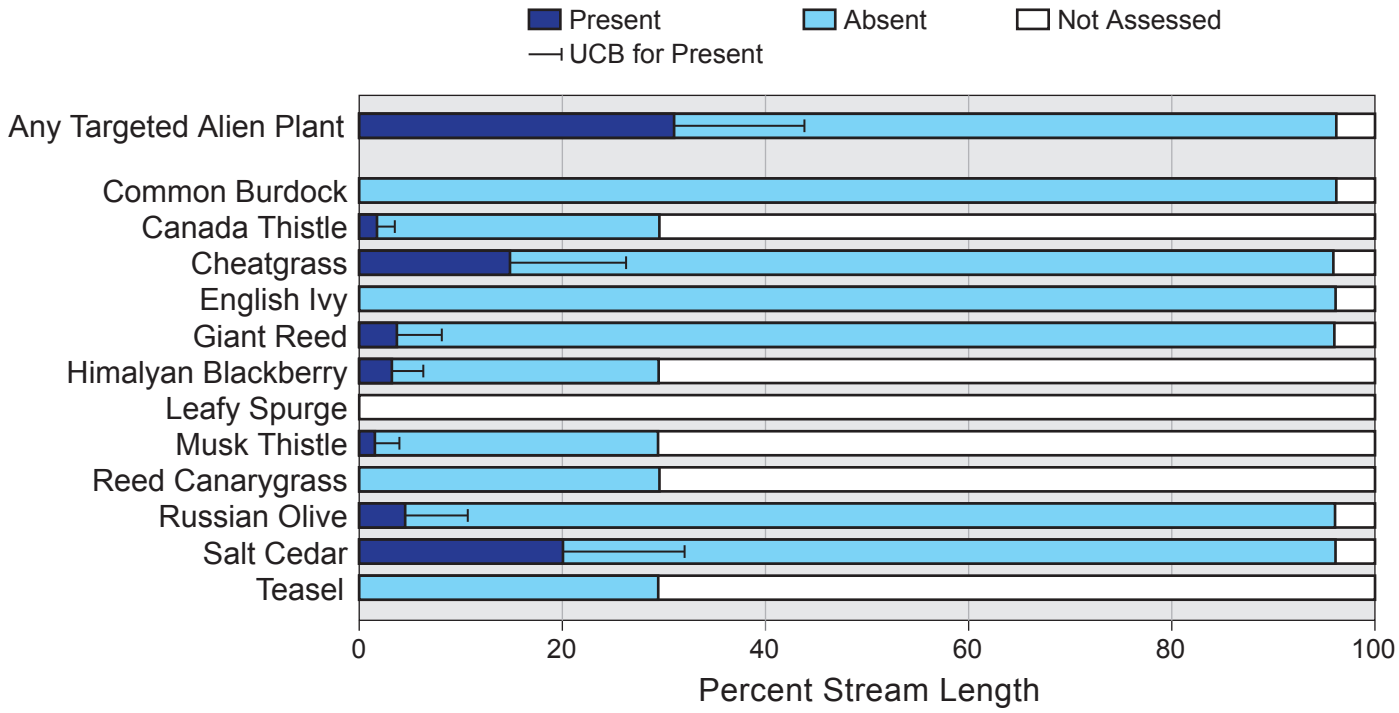
Subpopulation: MT-SROCK Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	18.1	25.1	11.0	5174	2734	7614
		Absent	81.9	89.0	74.9	23488	20123	26854
	Common Burdock	Absent	100.0	100.0	100.0	28662	25948	31376
	Canada Thistle	Present	8.8	16.1	1.4	2510	264	4756
		Absent	73.7	81.1	66.4	21133	17935	24331
	Cheatgrass	Present	6.9	12.5	1.2	1972	250	3695
		Absent	93.1	98.8	87.5	26690	23683	29697
	English Ivy	Absent	100.0	100.0	100.0	28662	25948	31376
	Giant Reed	Absent	17.5	17.5	17.5	5019	4008	6030
	Leafy Spurge	Absent	82.5	82.5	82.5	23643	21125	26162
	Musk Thistle	Present	8.4	13.7	3.2	2420	833	4008
		Absent	74.0	79.3	68.8	21223	18417	24028
	Russian Olive	Present	.8	2.3	.0	243	0	647
		Absent	99.2	100.0	97.7	28419	25646	31192
	Salt Cedar	Present	.8	2.3	.0	243	0	647
		Absent	99.2	100.0	97.7	28419	25646	31192
	Teasel	Absent	63.3	63.3	63.3	18148	15842	20455

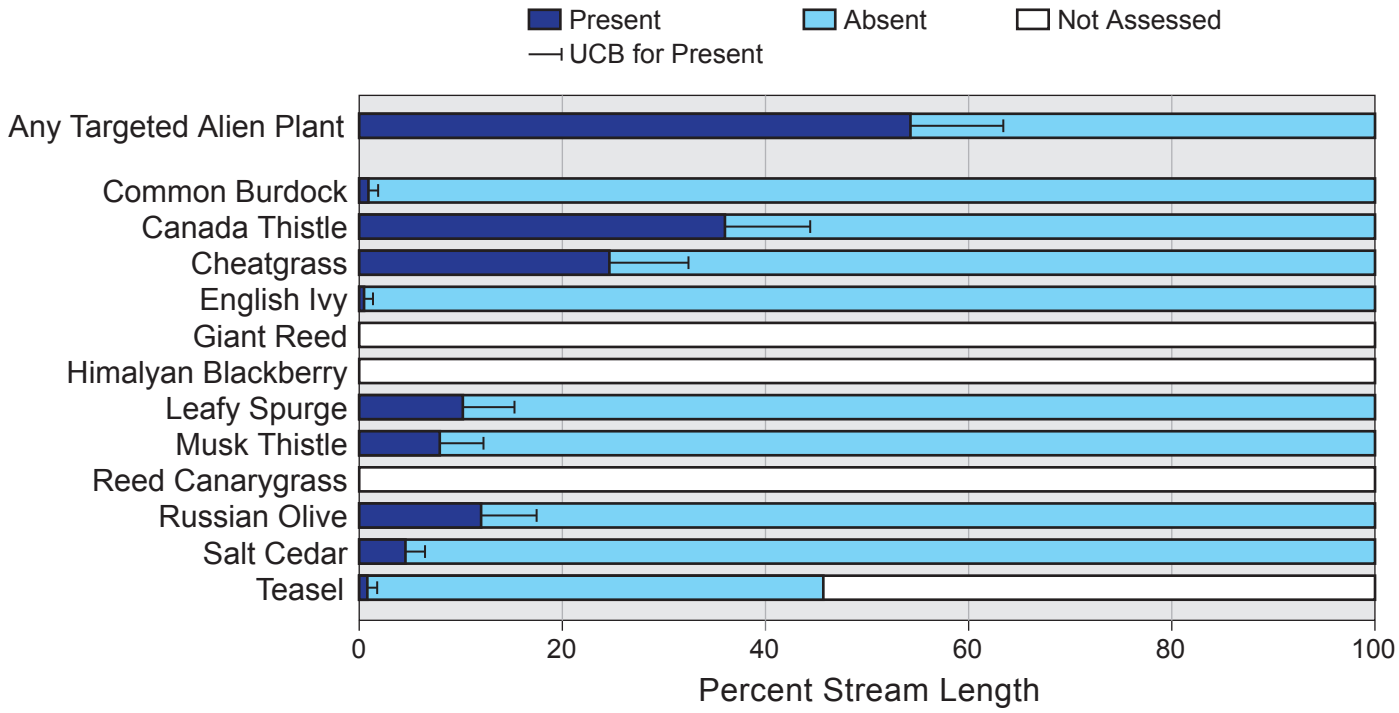
Subpopulation: MT-SWEST Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	30.9	43.7	18.0	910	482	1338
		Absent	65.2	78.8	51.7	1922	1529	2314
	Common Burdock	Absent	96.1	100.0	91.2	2831	2509	3154
	Canada Thistle	Present	1.6	3.6	.0	47	0	105
		Absent	27.9	31.0	24.7	821	675	967
	Cheatgrass	Present	14.7	26.2	3.2	434	67	800
		Absent	81.4	93.8	69.1	2398	2038	2758
	English Ivy	Absent	96.1	100.0	91.2	2831	2509	3154
	Giant Reed	Present	3.5	8.0	.0	103	0	237
		Absent	92.6	99.3	86.0	2729	2390	3067
	Himalyan Blackberry	Present	3.1	6.2	.0	91	0	182
		Absent	26.4	30.1	22.7	777	631	924
	Musk Thistle	Present	1.5	4.0	.0	44	0	118
		Absent	28.0	31.2	24.8	825	697	952
	Reed Canarygrass	Absent	29.5	31.9	27.1	868	751	985
	Russian Olive	Present	4.3	10.6	.0	127	0	317
		Absent	91.8	99.7	84.0	2705	2387	3022
	Salt Cedar	Present	20.1	32.1	8.2	592	205	979
		Absent	76.0	88.8	63.2	2239	1861	2618
	Teasel	Absent	29.5	31.9	27.1	868	751	985

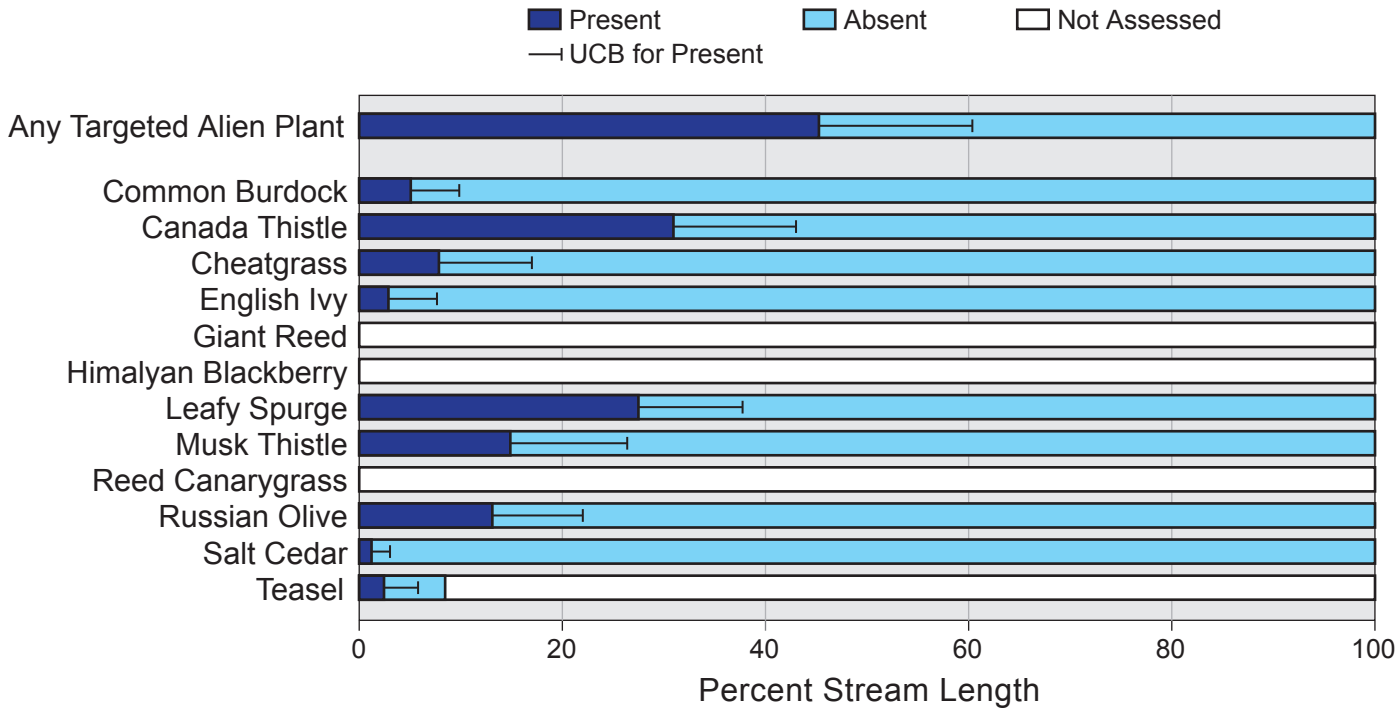
Subpopulation: PL Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	54.4	63.5	45.4	19907	16391	23422
		Absent	45.6	54.6	36.5	16667	13218	20117
	Common Burdock	Present	1.0	1.9	.1	360	33	687
		Absent	99.0	99.9	98.1	36214	34016	38411
	Canada Thistle	Present	36.0	44.5	27.5	13172	9902	16442
		Absent	64.0	72.5	55.5	23402	20071	26733
	Cheatgrass	Present	24.5	32.5	16.4	8951	5867	12036
		Absent	75.5	83.6	67.5	27622	24687	30557
	English Ivy	Present	.5	1.4	.0	192	0	513
		Absent	99.5	100.0	98.6	36381	34160	38603
	Leafy Spurge	Present	10.4	15.4	5.5	3821	1990	5652
		Absent	89.6	94.5	84.6	32752	30178	35327
	Musk Thistle	Present	7.9	12.3	3.6	2900	1279	4520
		Absent	92.1	96.4	87.7	33674	31121	36227
	Russian Olive	Present	12.1	17.6	6.6	4430	2394	6467
		Absent	87.9	93.4	82.4	32143	29197	35089
	Salt Cedar	Present	4.5	6.5	2.4	1637	887	2388
		Absent	95.5	97.6	93.5	34936	32642	37231
	Teasel	Present	.9	1.9	.0	336	0	710
		Absent	44.9	45.9	43.9	16415	14630	18201

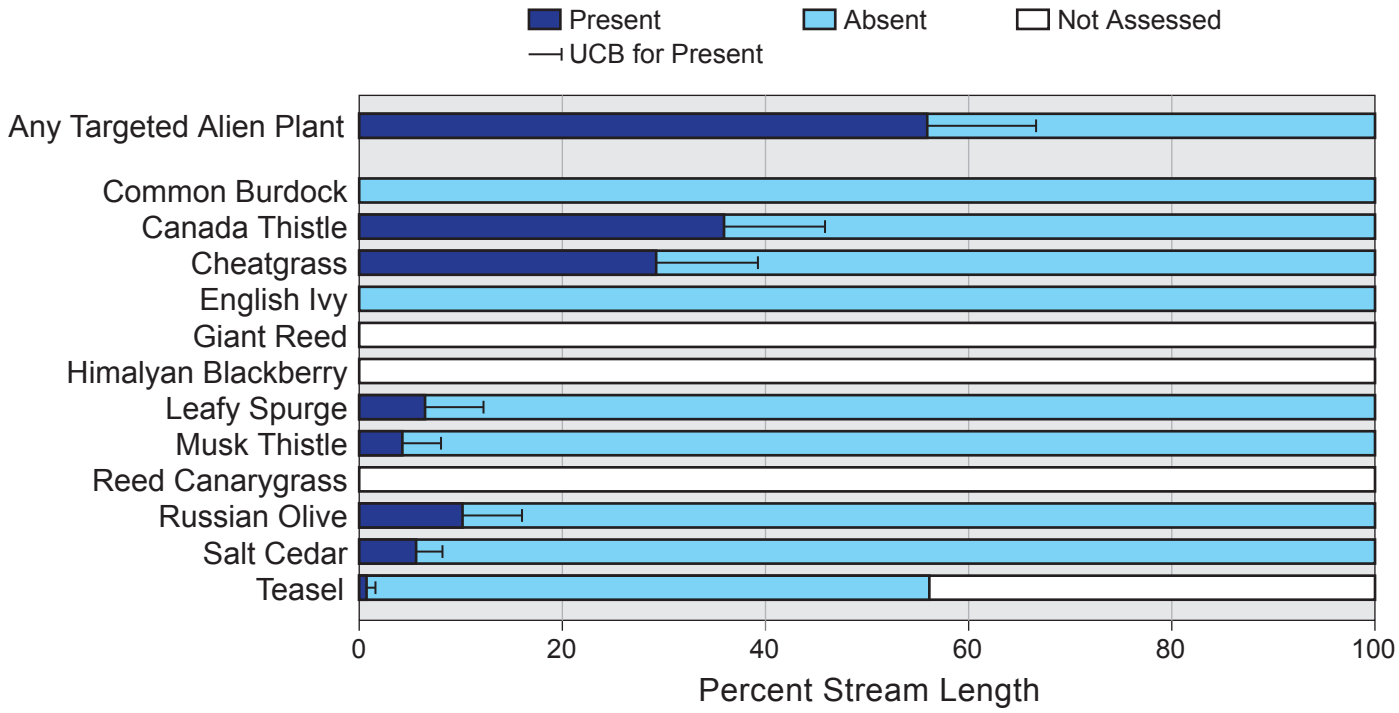
Subpopulation: PL-NCULT Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	45.1	60.3	29.8	3264	2169	4359
		Absent	54.9	70.2	39.7	3976	2709	5243
	Common Burdock	Present	5.0	9.7	.3	360	33	687
		Absent	95.0	99.7	90.3	6880	6077	7682
	Canada Thistle	Present	30.9	43.1	18.8	2240	1341	3140
		Absent	69.1	81.2	56.9	4999	3970	6029
	Cheatgrass	Present	7.7	17.0	.0	561	0	1199
		Absent	92.3	100.0	83.0	6679	5687	7671
	English Ivy	Present	2.7	7.4	.0	192	0	513
		Absent	97.3	100.0	92.6	7047	6181	7914
	Leafy Spurge	Present	27.3	37.8	16.9	1977	1195	2759
		Absent	72.7	83.1	62.2	5263	4321	6205
	Musk Thistle	Present	14.7	26.3	3.1	1065	248	1882
		Absent	85.3	96.9	73.7	6175	5100	7250
	Russian Olive	Present	12.9	22.0	3.9	937	241	1632
		Absent	87.1	96.1	78.0	6303	5419	7188
	Salt Cedar	Present	1.0	2.8	.0	70	0	186
		Absent	99.0	100.0	97.2	7170	6480	7860
	Teasel	Present	2.3	5.7	.0	168	0	439
		Absent	6.0	9.4	2.6	436	216	656

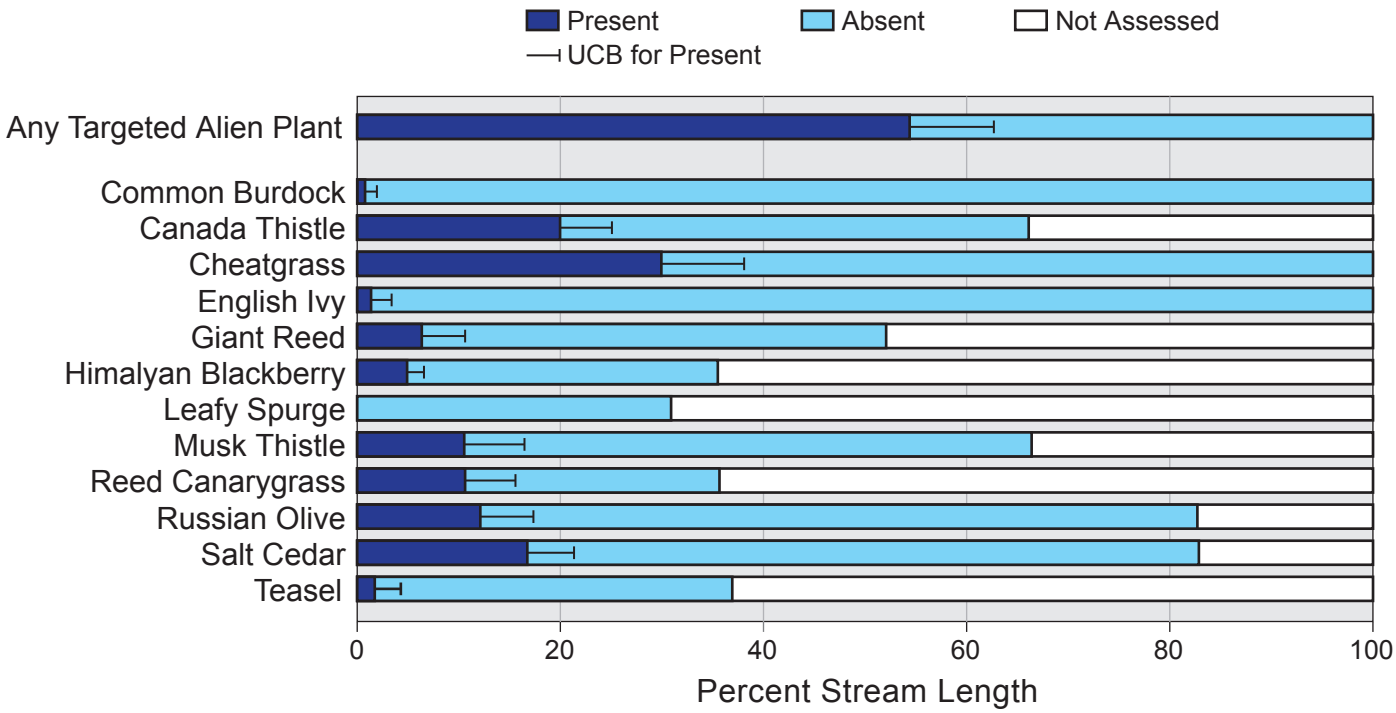
Subpopulation: PL-RANGE Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	55.9	66.7	45.0	16066	12736	19396
		Absent	44.1	55.0	33.3	12691	9461	15922
	Common Burdock	Absent	100.0	100.0	100.0	28758	26698	30817
	Canada Thistle	Present	36.0	45.9	26.1	10355	7351	13359
		Absent	64.0	73.9	54.1	18402	15287	21518
	Cheatgrass	Present	29.2	39.2	19.2	8391	5323	11458
		Absent	70.8	80.8	60.8	20367	17605	23129
	English Ivy	Absent	100.0	100.0	100.0	28758	26698	30817
	Leafy Spurge	Present	6.4	12.1	.7	1845	191	3499
		Absent	93.6	99.3	87.9	26913	24506	29320
	Musk Thistle	Present	4.4	8.0	.8	1258	213	2304
		Absent	95.6	99.2	92.0	27499	25259	29739
	Russian Olive	Present	10.1	16.0	4.2	2918	1243	4592
		Absent	89.9	95.8	84.0	25840	23082	28599
	Salt Cedar	Present	5.5	8.0	2.9	1567	817	2317
		Absent	94.5	97.1	92.0	27190	24978	29403
	Teasel	Present	.6	1.5	.0	168	0	433
		Absent	55.6	56.5	54.7	15979	14213	17746

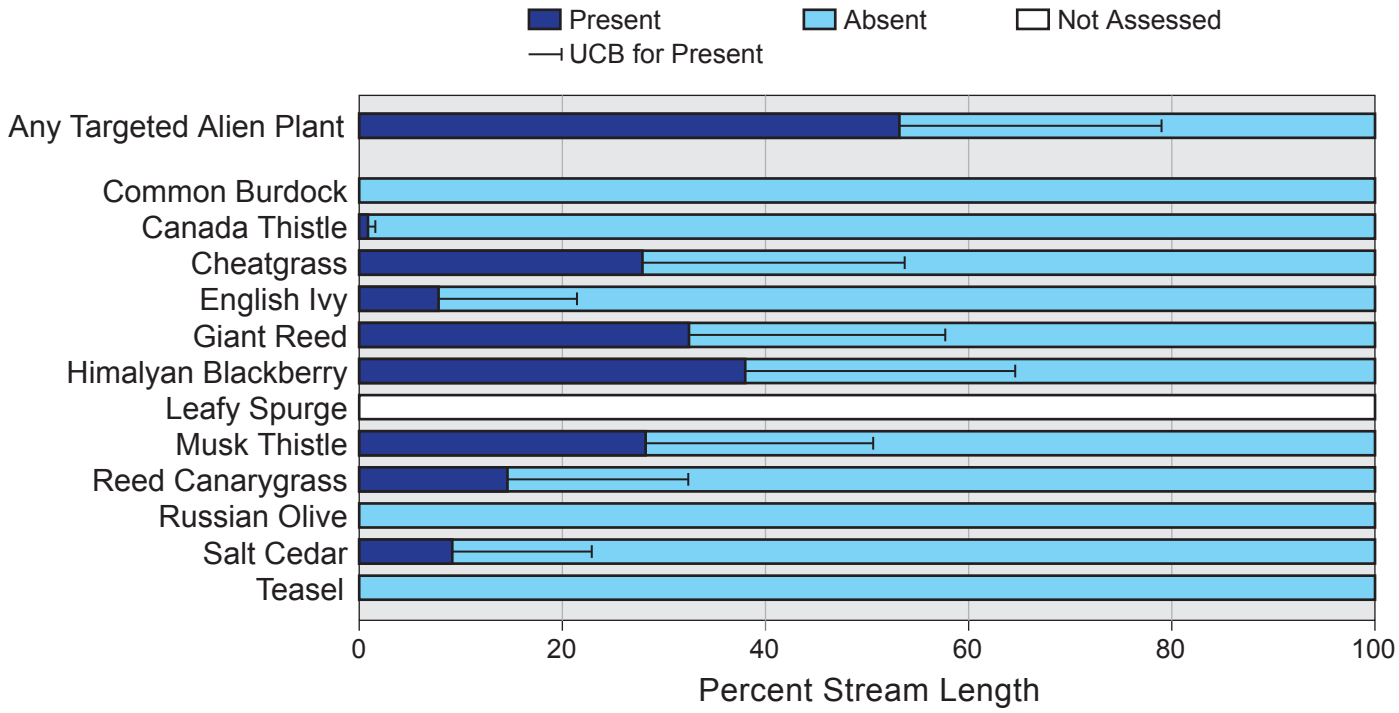
Subpopulation: XE Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	54.5	62.6	46.4	29144	23800	34488
		Absent	45.5	53.6	37.4	24346	20061	28632
	Common Burdock	Present	.7	2.0	.0	389	0	1054
		Absent	99.3	100.0	98.0	53101	49539	56664
	Canada Thistle	Present	19.8	25.1	14.6	10611	7125	14097
		Absent	46.5	51.7	41.3	24880	21190	28570
	Cheatgrass	Present	29.9	38.1	21.7	15978	11105	20851
		Absent	70.1	78.3	61.9	37512	33125	41900
	English Ivy	Present	1.2	3.3	.0	627	0	1749
		Absent	98.8	100.0	96.7	52864	49265	56463
	Giant Reed	Present	6.3	10.6	2.0	3347	802	5892
		Absent	45.8	50.1	41.5	24476	21854	27098
	Himalyan Blackberry	Present	5.8	10.0	1.7	3120	682	5559
		Absent	29.8	33.9	25.6	15918	12946	18890
	Leafy Spurge	Absent	30.8	30.8	30.8	16453	14688	18219
	Musk Thistle	Present	10.4	16.4	4.3	5541	2205	8877
		Absent	56.0	62.0	49.9	29950	25771	34130
	Reed Canarygrass	Present	10.6	15.6	5.5	5647	2596	8697
		Absent	25.0	30.1	20.0	13391	10030	16753
	Russian Olive	Present	12.1	17.3	6.9	6459	3538	9380
		Absent	70.7	75.9	65.5	37817	33952	41681
	Salt Cedar	Present	16.6	21.3	11.9	8880	5819	11941
		Absent	66.2	70.9	61.5	35397	31893	38900
	Teasel	Present	1.6	4.2	.0	876	0	2345
		Absent	35.2	37.8	32.7	18841	15812	21870

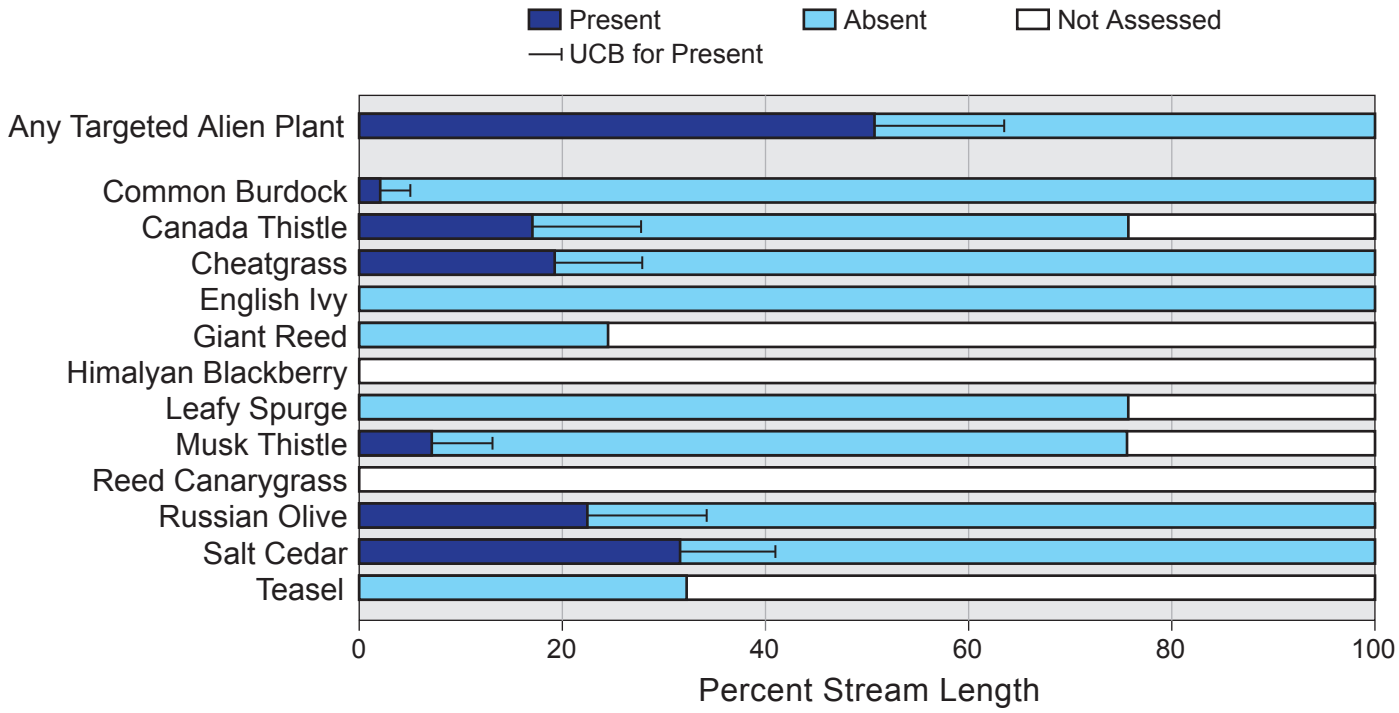
Subpopulation: XE-CALIF Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	53.1	79.1	27.1	4303	1458	7148
		Absent	46.9	72.9	20.9	3798	1829	5767
	Common Burdock	Absent	100.0	100.0	100.0	8101	5717	10485
	Canada Thistle	Present	.7	1.4	.0	55	0	115
		Absent	99.3	100.0	98.6	8046	5661	10431
	Cheatgrass	Present	27.8	53.7	1.9	2255	0	4839
		Absent	72.2	98.1	46.3	5846	4229	7462
	English Ivy	Present	7.7	21.5	.0	627	0	1746
		Absent	92.3	100.0	78.5	7475	4966	9983
	Giant Reed	Present	32.5	57.6	7.3	2630	202	5058
		Absent	67.5	92.7	42.4	5471	3375	7567
	Himalyan Blackberry	Present	38.1	64.7	11.5	3084	590	5578
		Absent	61.9	88.5	35.3	5017	2650	7384
	Musk Thistle	Present	28.0	50.7	5.3	2268	299	4237
		Absent	72.0	94.7	49.3	5833	3343	8324
	Reed Canarygrass	Present	14.5	32.3	.0	1175	0	2558
		Absent	85.5	100.0	67.7	6926	4106	9747
	Russian Olive	Absent	100.0	100.0	100.0	8101	5717	10485
	Salt Cedar	Present	9.0	22.9	.0	728	0	1857
		Absent	91.0	100.0	77.1	7373	4837	9908
	Teasel	Absent	100.0	100.0	100.0	8101	5717	10485

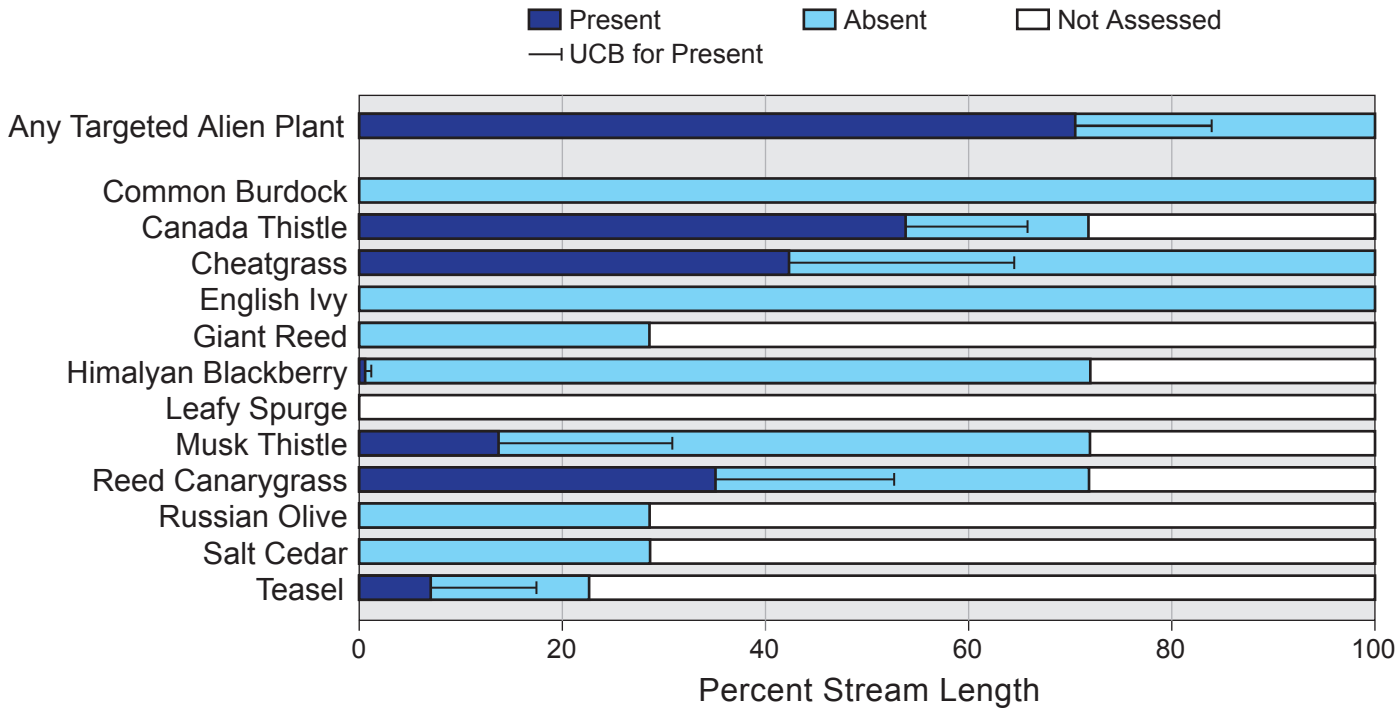
Subpopulation: XE-EPLAT Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	50.7	63.5	37.9	11031	7790	14272
		Absent	49.3	62.1	36.5	10733	7886	13579
	Common Burdock	Present	1.8	4.9	.0	389	0	1066
		Absent	98.2	100.0	95.1	21375	19372	23377
	Canada Thistle	Present	16.9	27.5	6.2	3667	1224	6110
		Absent	58.8	69.4	48.1	12786	10366	15207
	Cheatgrass	Present	19.1	27.8	10.4	4158	2276	6039
		Absent	80.9	89.6	72.2	17606	14932	20280
	English Ivy	Absent	100.0	100.0	100.0	21764	19882	23645
	Giant Reed	Absent	24.4	24.4	24.4	5310	4660	5960
	Leafy Spurge	Absent	75.6	75.6	75.6	16453	14688	18219
	Musk Thistle	Present	7.0	13.0	1.0	1526	279	2773
		Absent	68.6	74.6	62.6	14927	12629	17225
	Russian Olive	Present	22.4	34.1	10.7	4867	2167	7568
		Absent	77.6	89.3	65.9	16896	14103	19689
	Salt Cedar	Present	31.6	40.9	22.4	6888	4237	9538
		Absent	68.4	77.6	59.1	14876	12701	17051
	Teasel	Absent	32.1	32.1	32.1	6993	5659	8327

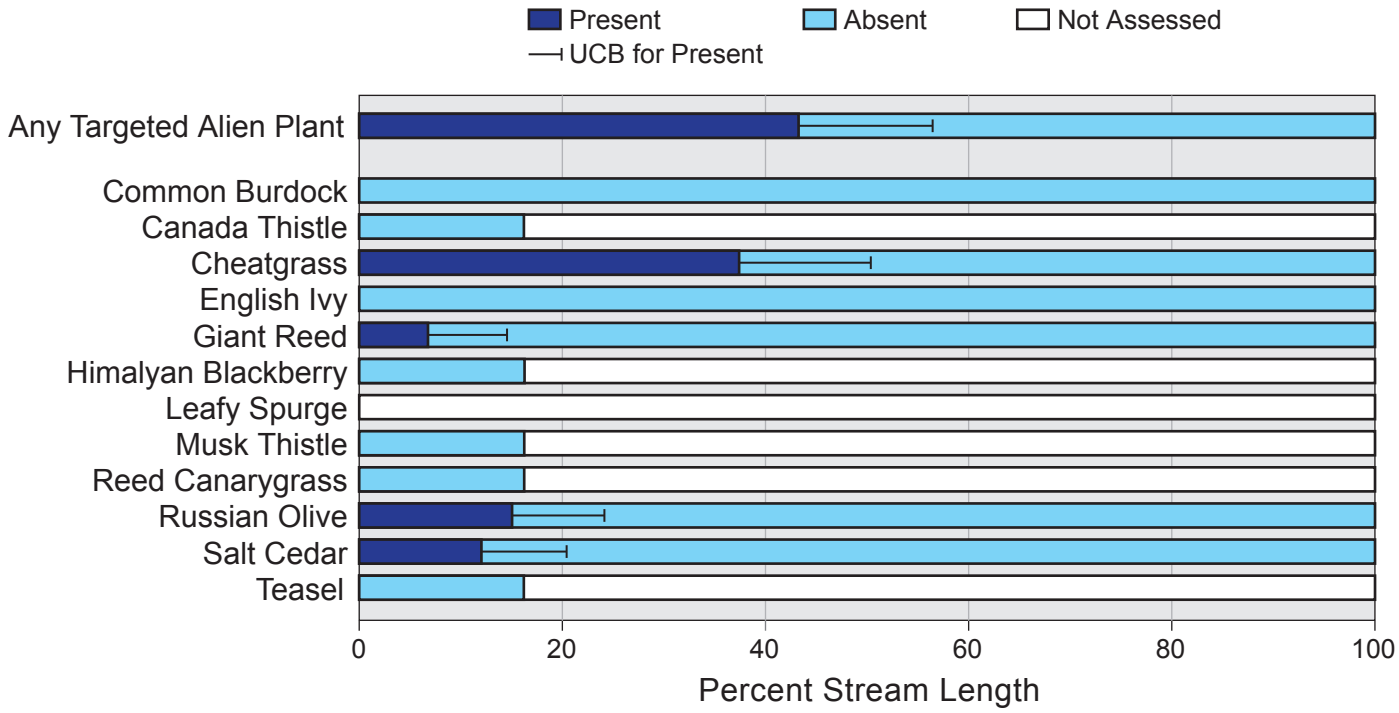
Subpopulation: XE-NORTH Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	70.1	83.6	56.6	9016	6383	11650
		Absent	29.9	43.4	16.4	3849	2146	5552
	Common Burdock	Absent	100.0	100.0	100.0	12865	11222	14509
	Canada Thistle	Present	53.5	65.6	41.5	6889	4402	9375
		Absent	18.1	30.1	6.0	2325	804	3847
	Cheatgrass	Present	42.0	64.2	19.7	5402	2105	8699
		Absent	58.0	80.3	35.8	7463	5012	9915
	English Ivy	Absent	100.0	100.0	100.0	12865	11222	14509
	Giant Reed	Absent	28.4	28.4	28.4	3651	3281	4022
	Himalyan Blackberry	Present	.3	.9	.0	36	0	100
		Absent	71.3	71.9	70.8	9178	7570	10786
	Musk Thistle	Present	13.6	30.6	.0	1747	0	3990
		Absent	58.0	75.0	41.0	7467	5033	9900
	Reed Canarygrass	Present	34.8	52.5	17.1	4472	1755	7189
		Absent	36.9	54.6	19.2	4742	2809	6676
	Russian Olive	Absent	28.4	28.4	28.4	3651	3281	4022
	Salt Cedar	Absent	28.4	28.4	28.4	3651	3281	4022
	Teasel	Present	6.8	17.3	.0	876	0	2345
		Absent	15.7	26.3	5.2	2024	624	3424

Subpopulation: XE-SOUTH Indicator: Selected Invasive Plants



Summary Statistics

			Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
Invasive Plant Taxa	Any Targeted Alien Plant	Present	43.4	56.6	30.3	4578	3074	6082
		Absent	56.6	69.7	43.4	5966	4570	7363
	Common Burdock	Absent	100.0	100.0	100.0	10544	9741	11348
	Canada Thistle	Absent	16.3	16.3	16.3	1723	1416	2030
	Cheatgrass	Present	37.4	50.5	24.4	3946	2489	5404
		Absent	62.6	75.6	49.5	6598	5174	8022
	English Ivy	Absent	100.0	100.0	100.0	10544	9741	11348
	Giant Reed	Present	6.8	14.6	.0	717	0	1578
		Absent	93.2	100.0	85.4	9828	8890	10765
	Himalyan Blackberry	Absent	16.3	16.3	16.3	1723	1416	2030
	Musk Thistle	Absent	16.3	16.3	16.3	1723	1416	2030
	Reed Canarygrass	Absent	16.3	16.3	16.3	1723	1416	2030
	Russian Olive	Present	15.1	24.2	6.0	1592	564	2620
		Absent	84.9	94.0	75.8	8952	7795	10110
	Salt Cedar	Present	12.0	20.4	3.5	1264	348	2179
		Absent	88.0	96.5	79.6	9281	8240	10322
	Teasel	Absent	16.3	16.3	16.3	1723	1416	2030

Other Non-Native Species

The collection of macroinvertebrates and vertebrates, as described in the Benthic Macroinvertebrate and Aquatic Vertebrate sections, also enables estimates of the extent of alien taxa within these categories.

Macroinvertebrates

We compared the taxa reported in the macroinvertebrate database for 2000 to 2003 to the list of 131 nonindigenous aquatic invertebrate species compiled by the USGS (US Geological Survey 2005). We found matches for the following seven species: *Orconectes virilis* (virile crayfish), *Pacifastacus leniusculus* (signal crayfish), *Manayunkia speciosa* (a sabellid worm), *Corbicula fluminea* (Asian clam), *Potamopyrgus antipodarum* (New Zealand mudsnail), *Pseudosuccinna columella* (mimic lymnaea), and *Radix auricularia* (big-ear radix). We then determined the alien status of each species in each reported state.

In addition, to the macroinvertebrate database, "crayfish" collected during sampling for aquatic vertebrates were identified to the finest taxonomic level possible. We compared this list to records on alien distribution developed by three sources (Carnegie Museum of Natural History 2001; NatureServe 2005; US Geological Survey 2005). We used the most limiting of the three sources to determine the alien status of each taxon in each state. As a result of this process we identified *Orconectes virilis*, *Pacifastacus leniusculus leniusculus, and Procambarus clarkii* as species with alien distributions in the EMAP-West sample. Significantly, the process of identifying the "crayfish" collected during the collection of aquatic vertebrates also resulted in the identification of *Eriocheir sinensis* (Chinese mitten crab) at one site. Neither this species, nor this genus had been identified in any of the macroinvertebrate samples.

The result of evaluating these two datasets is that we identified 9 taxa with an alien presence in the western pilot study region – 4 crayfish taxa and 5 taxa from other macroinvertebrate categories.

Four of the alien taxa were found at small numbers of sites -- *Radix auricularia* (big-ear radix) at two sites in Oregon, *Pseudosuccinna columella* (mimic lymnaea) at one site in California, and *Manayunkia speciosa* (a sabellid worm) at two sites in Oregon, and *Potamopyrgus antipodarum* (New Zealand mudsnail) at four sites in Utah. Although these observations are of value, they are so limited that a statistical report on their presence has not been provided.

One limitation to our assessment is that many organisms are not identified to the taxonomic level that would enable a determination of the alien status of the organism. Twenty percent of these records[1] in the macroinvertebrate database are not identified further than family, and 83% are not identified further than genus. One example illustrates the implications of the level of taxonomic resolution used in developing the macroinvertebrate database in the assessment of alien macroinvertebrates. There are

[1] A record is 1 taxon from one sampling method (reach-wide, targeted riffle and shore) from one site visit.

records of *Potamopyrgus antipodarum* (New Zealand mudsnail) at four sites in Utah. However, there are records of Hydrobiidae (the family containing the Potamopyrgus as well as a number of native species and another potential alien – *Gillia altilis*) which were not identified to genus at 163 sites. Thus we have definitive evidence that *Potamopyrgus antipodarum* is present in less than 0.5% of the stream length of the western pilot region. However, if all of the records of Hydrobiidae not identified to genus are in fact *Potamopyrgus antipodarum,* then more than 10% of the stream length of the western pilot region contain this alien species.

After setting aside the aliens with very limited records, we provide detailed statistical summaries for alien crayfish (comprised of 4 taxa) and *Corbicula fluminea*.

Corbicula fluminea is an economic concern because it fouls water intake pipes. *C. fluminea* has fouling characteristics that are especially severe for peak-load power stations and redundant or emergency systems (e.g. fire protection systems) operated intermittently. *C. fluminea* also increases sedimentation which results in higher maintenance costs in water transport canals. (McMahon 1999). The combined outages, reductions in efficiency, capital investment in equipment, labor, and chemical control for *Corbicula* probably far exceed $1 billion annually in the U.S." (Isom 1986). There are few studies of the ecological impacts of *C. fluminea*. The results are mixed some suggesting negative minor and positive effects. (McMahon 1999; Phelps 1994).

A summary of the ecological impacts of alien crayfish is provided by Lodge and his colleagues (Lodge et al. 2000). This summary notes that alien crayfish have led to the extirpation of native crayfish populations, and to changes in freshwater algae, macrophytes, macroinvertebrates, amphibians, fishes and agriculture. In Arizona *Orconectes virilis* feeds upon the eggs of a threatened native minnow and alters stream habitat making the minnow more vulnerable to predation. This crayfish also competes for habitat with other endangered fish in Arizona (Inman 1999).

Vertebrates

Found throughout the study region, alien or nonnative fish and amphibians make up a significant presence in western streams. These proportions are quantified in the Figure on page OTHER-8; cumulative frequency distributions are provided for the number of alien vertebrates in Figure VERT−387. The most frequent alien taxa are listed in Table OTHER-1 on page OTHER-7. The native versus nonnative status of these vertebrates was determined on a site by site basis using historical ranges identified in the literature (Lee et al. 1980; Page and Burr 1991). In a few instances, (for example, if barriers to fish passage were not identified), taxa found upstream from known native range locations were classified as native and judged to represent range extensions. These range extensions for many species are likely due to previous inadequate or under sampling rather than recent fish mobilization or introductions. Vouchers were sent to the National Museum of Natural History-Smithsonian for verification of field species identification.

Non-native fish, in particular, offer a management challenge since scientific research has repeatedly shown negative impacts associated with their release, yet the public and many gamefish managers focus on the positive aspects of recreation and a perceived

notion that the introductions are benign. Despite the well documented costs including competition and predation on native flora and fauna (Baltz and Moyle 1993; Fuller et al. 1999; Marchetti et al. 2004; Moyle et al. 1986; Moyle and Light 1996), fish have and continue to be intentionally introduced (both legally and illegally) into waters outside their native range for aquaculture, as sport fish to increase angler opportunity, and through aquaria dumping. Additional species are released as baitfish to support introduced piscivorous gamefish. Ultimately, introductions of nonnative fish are causing the homogenization of species faunas (Rahel 2000; Rahel 2002) across the US and even worldwide (McKinney and Lockwood 2001; Soulé and Sanjayan 1998). In a survey of fish introductions that have been made across Europe, Australia, North America, and New Zealand, native fish populations were found to be decreasing or disappearing a majority of the time after nonnative fish were introduced (Ross 1991). A number of other negative impacts, including habitat alteration, trophic alteration, spatial alteration, and gene pool alteration have been identified as well (Kohler and Courtenay Jr. 2003; U.S. Congress -- Office of Technology Assessment 1993). Quantifying the degree to which nonnative aquatic vertebrates are found within and throughout the study area provides us with a perspective on the extent of their presence and potential for impact to the ecosystem.

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Presentation of Results

Unlike all of the indicators presented previously, invasive plants results cannot be presented as empirical cumulative distributions. We report instead on the presence/absence of targeted invasive species in the following histograms, presented at three scales of geographic resolution: (1) for all of the EMAP-West study region (12 states); (2) for three climatic/topographic regions; and (3) for ten aggregate ecological regions.

The histograms report:

1. the estimated percent of stream length where each targeted species was found (dark bars);
2. confidence limits around the length estimates (whiskers);
3. the percentage of stream length where the targeted species was absent (grey bars); and
4. the percentage of stream length where that species was not assessed (due to the use of different lists of targeted species in each state) (clear portions of bars).

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Special terms used in these report are:

UCB – the 95% upper confidence boundary

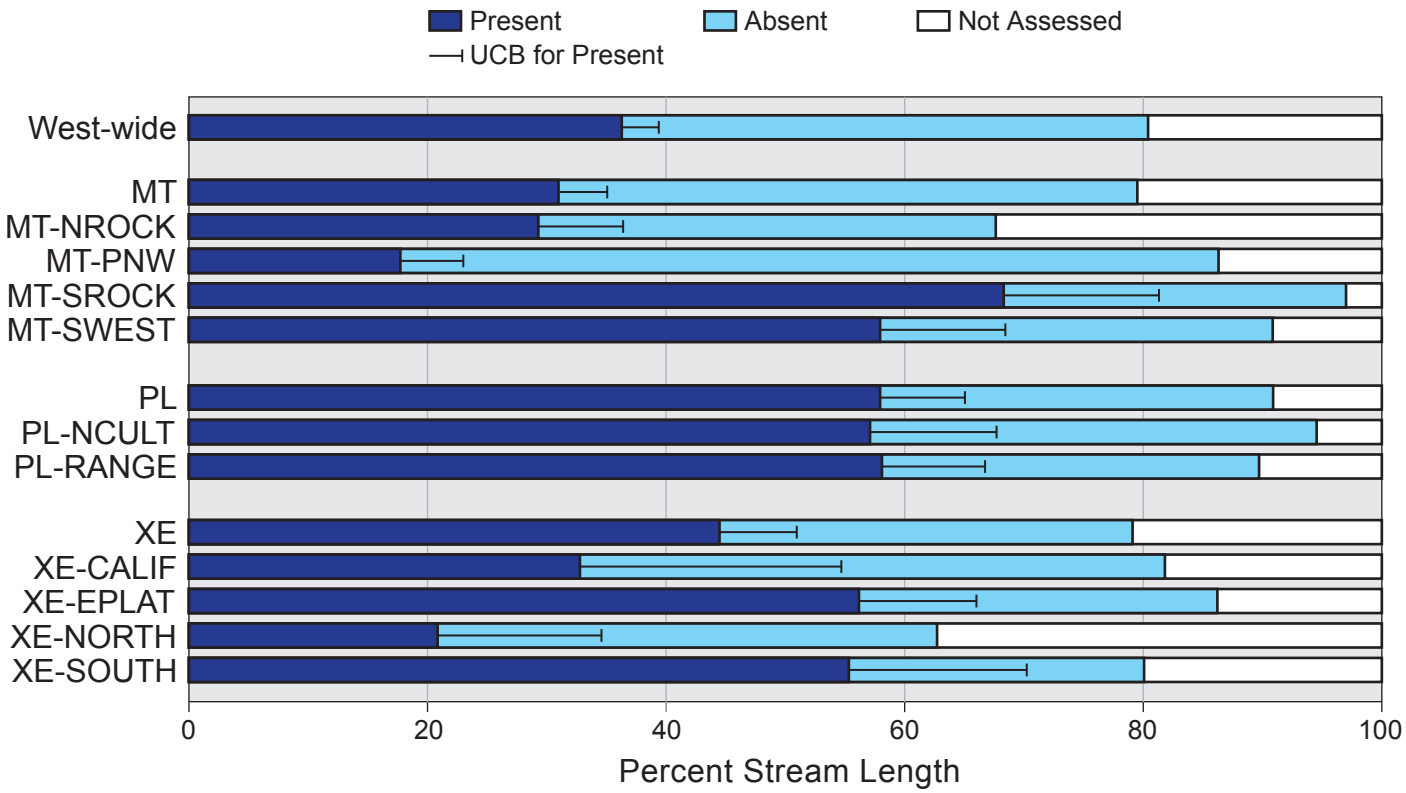
LCB – the 95% lower confidence boundary

Any targeted alien – any one of the targeted taxa for the assessment region

Table OTHER-1. Fifteen most prevalent nonnative aquatic vertebrate taxa, in descending order of stream length occupied. These species have all been intentionally stocked in some portion of the region at one time or another. Forty-one other taxa were each present at a small fraction of sites.

Brown trout	*Salmo trutta*
Brook trout	*Salvelinus fontinalis*
Rainbow trout	*Oncorhynchus mykiss*
Common carp	*Cyprinus carpio*
Smallmouth bass	*Micropterus dolomieu*
Green sunfish	*Lepomis cyanellus*
Largemouth bass	*Micropterus salmoides*
Yellow perch	*Perca flavescens*
Red shiner	*Cyprinella lutrensis*
Yellow bullhead	*Ameiurus natalis*
Northern pike	*Esox lucius*
Pumpkinseed	*Lepomis gibbosus*
Bluegill	*Lepomis macrochirus*
Bullfrog	*Rana catesbeiana*
Western mosquitofish	*Gambusia affinis*

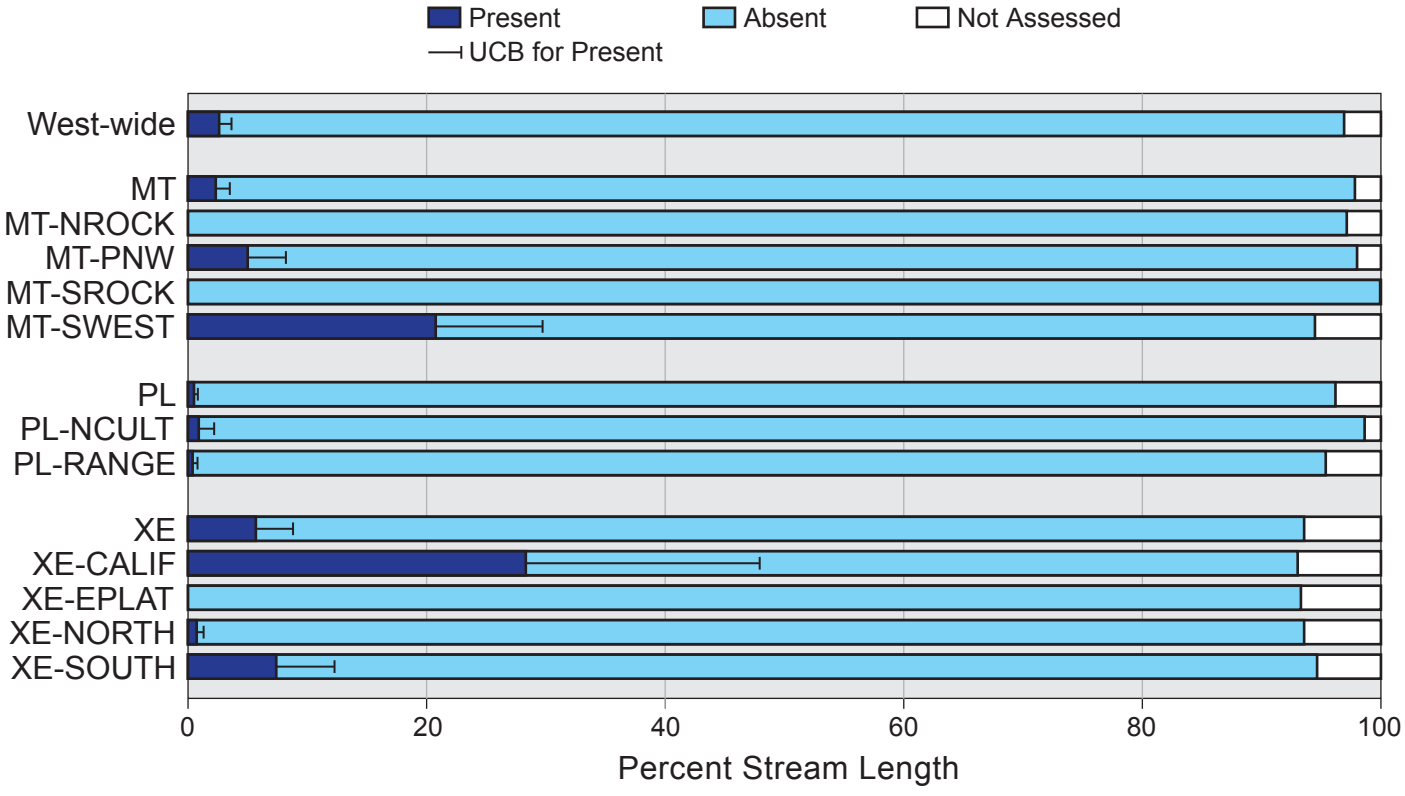
Subpopulation: ALL Indicator: Other Aliens - Vertebrates



Summary Statistics

		Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
West-wide	Present	35.9	39.3	32.5	109416	98895	119938
	Absent	44.3	48.0	40.7	135022	121970	148073
MT	Present	30.7	35.1	26.4	67657	58206	77108
	Absent	48.4	53.1	43.7	106509	94320	118697
MT-NROCK	Present	29.0	36.3	21.8	29311	21986	36636
	Absent	38.4	45.6	31.3	38767	30981	46553
MT-PNW	Present	17.5	22.9	12.1	14752	10327	19178
	Absent	68.5	75.7	61.3	57664	49451	65876
MT-SROCK	Present	68.0	81.1	55.0	21594	17652	25536
	Absent	28.8	41.9	15.7	9139	4616	13663
MT-SWEST	Present	57.6	68.2	46.9	1642	1302	1982
	Absent	32.9	41.9	23.9	939	681	1197
PL	Present	57.6	64.7	50.4	20241	17583	22899
	Absent	33.0	39.8	26.1	11580	9072	14087
PL-NCULT	Present	57.0	67.4	46.6	4564	3725	5403
	Absent	37.2	48.0	26.4	2979	2042	3917
PL-RANGE	Present	57.8	66.5	49.1	15677	13159	18195
	Absent	31.7	39.9	23.5	8600	6280	10920
XE	Present	44.1	50.8	37.4	21518	18064	24972
	Absent	34.7	41.1	28.3	16933	13772	20095
XE-CALIF	Present	32.5	54.4	10.6	2229	574	3884
	Absent	48.9	70.4	27.4	3355	1963	4747
XE-EPLAT	Present	55.9	65.9	46.0	11737	9431	14042
	Absent	30.1	40.1	20.2	6319	4210	8428
XE-NORTH	Present	20.8	34.5	7.2	2389	823	3954
	Absent	41.7	54.0	29.3	4774	3249	6298
XE-SOUTH	Present	55.1	69.9	40.2	5163	3712	6615
	Absent	25.0	37.4	12.5	2343	1202	3485

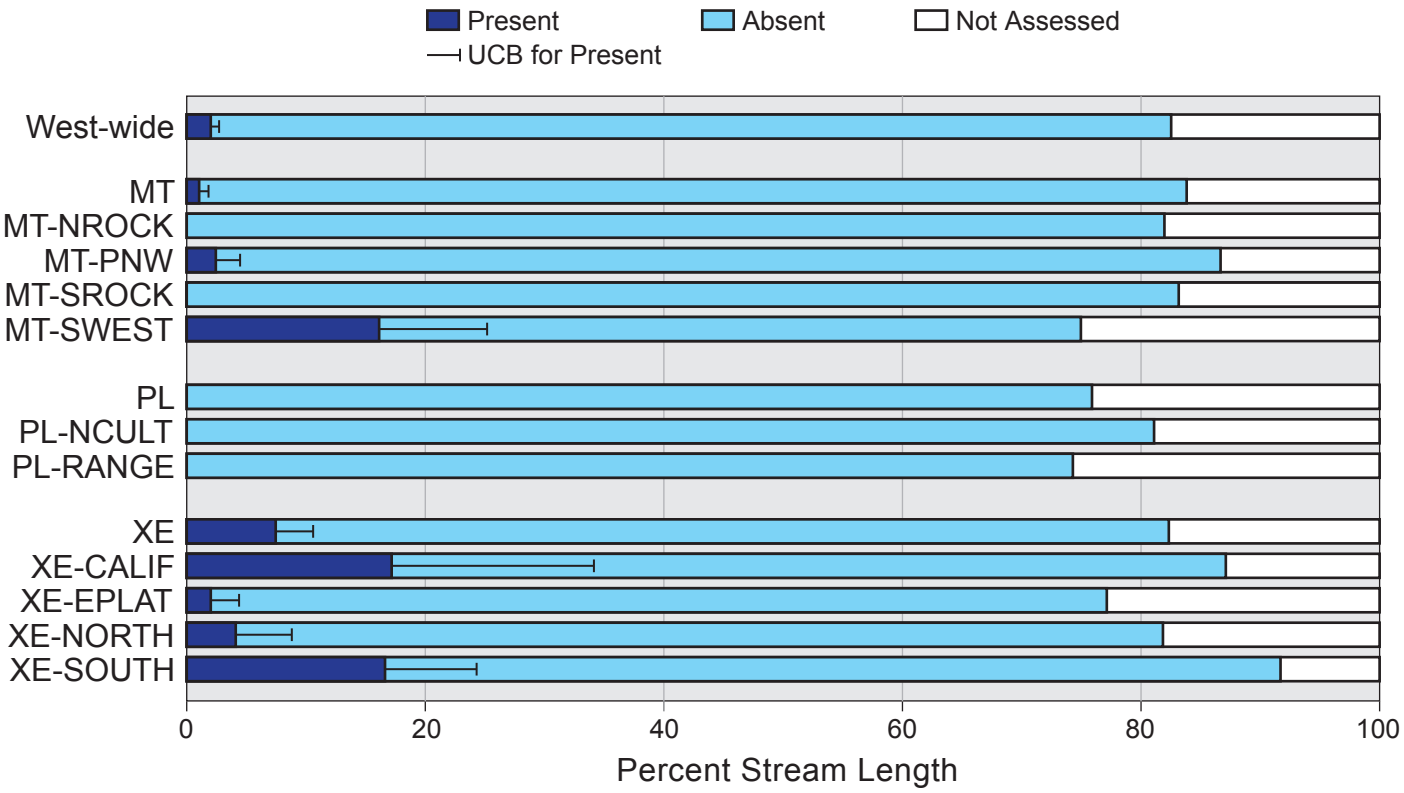
Subpopulation: ALL Indicator: Other Aliens - Asian Clam



Summary Statistics

		Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
West-wide	Present	2.4	3.5	1.4	7431	4250	10612
	Absent	94.5	96.3	92.8	287867	276573	299161
MT	Present	2.1	3.3	.9	4653	2019	7288
	Absent	95.9	98.0	93.9	211089	200763	221416
MT-NROCK	Present	.0	.1	.0	27	0	75
	Absent	97.4	100.0	94.0	98265	91639	104891
MT-PNW	Present	4.8	8.0	1.6	4037	1417	6658
	Absent	93.4	96.9	89.9	78609	71286	85932
MT-SROCK	Absent	100.0	100.0	100.0	31748	28864	34631
MT-SWEST	Present	20.6	29.6	11.6	589	318	859
	Absent	73.9	82.6	65.3	2109	1861	2358
PL	Present	.3	.6	.0	114	11	217
	Absent	95.9	99.6	92.3	33713	31595	35831
PL-NCULT	Present	.7	2.0	.0	57	0	151
	Absent	98.1	100.0	95.6	7851	7247	8455
PL-RANGE	Present	.2	.6	.0	57	0	151
	Absent	95.3	99.9	90.7	25862	23826	27898
XE	Present	5.5	8.6	2.3	2664	917	4412
	Absent	88.2	92.5	84.0	43065	40319	45810
XE-CALIF	Present	28.2	47.9	8.6	1935	272	3598
	Absent	64.9	86.2	43.6	4447	3211	5683
XE-EPLAT	Absent	93.3	97.7	89.0	19585	17768	21401
XE-NORTH	Present	.5	1.1	.0	55	0	115
	Absent	93.2	99.8	86.7	10680	9363	11996
XE-SOUTH	Present	7.2	12.1	2.3	675	205	1144
	Absent	87.6	94.6	80.6	8211	7451	8972

Subpopulation: ALL Indicator: Other Aliens - Crayfish



Summary Statistics

		Proportion of Stream Length	UCB Stream Proportion	LCB Stream Proportion	Stream Length (km)	LCB Length	UCB Length
West-wide	Present	2.0	2.8	1.2	6058	3547	8570
	Absent	80.3	83.4	77.2	244584	232173	256994
MT	Present	1.1	1.9	.3	2468	674	4263
	Absent	82.5	86.4	78.6	181558	170336	192780
MT-NROCK	Absent	81.7	88.0	75.4	82437	74709	90166
MT-PNW	Present	2.4	4.5	.3	2010	236	3785
	Absent	84.0	89.8	78.2	70728	63589	77867
MT-SROCK	Absent	83.0	92.4	73.7	26357	22518	30196
MT-SWEST	Present	16.1	25.0	7.1	458	192	724
	Absent	58.8	68.5	49.1	1677	1390	1965
PL	Absent	75.7	81.8	69.5	26586	24176	28997
PL-NCULT	Absent	80.9	89.5	72.2	6472	5724	7220
PL-RANGE	Absent	74.1	81.7	66.5	20114	17821	22407
XE	Present	7.4	10.5	4.2	3590	1944	5236
	Absent	74.7	80.5	68.8	36439	33024	39855
XE-CALIF	Present	17.1	34.0	.1	1171	0	2467
	Absent	69.9	91.9	47.8	4789	3201	6378
XE-EPLAT	Present	2.0	4.4	.0	416	0	928
	Absent	74.9	83.0	66.9	15724	13477	17972
XE-NORTH	Present	4.0	8.7	.0	461	0	1006
	Absent	77.5	91.2	63.8	8879	7101	10656
XE-SOUTH	Present	16.4	24.4	8.4	1542	749	2334
	Absent	75.2	83.3	67.1	7047	6196	7898