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Atlas of Nearshore Fishes of Alaska:

A Synthesis of Marine Surveys from 1998 to 2011

by
S. W. Johnson, A. D. Neff,
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Sampling fishes with a seine in nearshore waters of western Prince William Sound, Alaska, in April 2006.

ABSTRACT

Information on the distribution, abundance, species composition, habitat use, and life-stage of 121 fish species caught in nearshore marine waters of Alaska is synthesized in this atlas. Data were collected by scientists from the Alaska Fisheries Science Center, Auke Bay Laboratories over a 14-year period (1998-2011). Fish were captured with a beach seine mostly in summer in four different habitat types (bedrock outcrops, eelgrass meadows, understory kelp beds, and sand or gravel beaches) at 93 locations and 555 unique sites within nine regions of Alaska spanning from the Arctic to southeastern Alaska. Data on species assemblages are summarized among regions and habitat types. Distribution maps, graphs of abundance and length frequency, and photos are presented for each species. This atlas is unique because the same methods were used to sample fish and habitat over a large extent of coastal Alaska, and the core group of researchers doing the work remained the same throughout all years.

This synthesis reveals a wealth of information about nearshore fishes of Alaska. Our major findings include:

1. Nearshore marine waters support an abundant and diverse array of fishes; we captured an estimated 718,345 fish representing at least 121 species from 29 families.
2. Four commercially important species (walleye pollock, *Theragra chalcogramma*; Pacific herring, *Clupea pallasii*; pink salmon, *Oncorhynchus gorbuscha*; and chum salmon, *O. keta*) accounted for 55% of our total overall catch.
3. Species distribution patterns varied greatly among regions; only two species (pink salmon and threespine stickleback, *Gasterosteus aculeatus*) were caught in all nine regions.
4. Abundance and species richness varied by region; mean catch-per-unit-effort (CPUE) ranged from 124 fish in Southcentral Alaska to 1,202 fish in the Aleutian Islands, and species richness ranged from 17 species in Bristol Bay to 67 species in Southeast – Northern Inside.
5. Species assemblages differed among habitat types in most regions, and mean CPUE and species richness were usually greatest in eelgrass or kelp.

6. Species composition by habitat type was unique in some regions (e.g., sand, Bristol Bay), largely the result of the presence of a few species (e.g., rainbow smelt, *Osmerus mordax*) that were absent in other regions.
7. Most fishes captured were juveniles, highlighting the importance of the nearshore to critical early life-history stages of managed and ecologically important species.
8. Forage species (e.g., Pacific herring and Pacific sand lance, *Ammodytes hexapterus*) may be the most susceptible fishes to shoreline disturbance because of their use of nearshore habitats for feeding and shelter as juveniles and for spawning as adults.
9. The high abundance and diversity of fishes in eelgrass and kelp warrant special protection of these habitats in the event of an oil spill or other shoreline disturbance, especially if these habitats are known spawning areas (e.g., Pacific herring).
10. Our nearshore dataset is extremely important to managers responsible for oil spill response, natural resource damage assessment, essential fish habitat identification, and long-term monitoring.

Resource managers in Alaska need information on fish use of shallow-water, marine habitats to protect areas critical to fisheries and to assess anthropogenic actions that may adversely affect fish habitat. The spatially explicit information in this atlas shows managers, scientists, and the public the statewide importance of nearshore marine habitats to fishery resources, and will provide a valuable baseline in the event of a major human or natural disturbance.

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INTRODUCTION

The National Marine Fisheries Service (NMFS) is mandated to identify and protect essential fish habitat (EFH) for all life stages of species included in a fishery management plan (FMP) (Minello 1999). Identifying EFH requires basic information on fish distribution, abundance, and habitat use. For many FMP species in Alaska this information is limited or absent, especially for early life stages. It is generally known, however, that juvenile life stages of many commercially and ecologically important fishes use nearshore marine habitats (Thayer et al. 1978, Beck et al. 2003). Nonetheless, traditional fishery surveys by resource agencies largely ignore the nearshore environment. To address this information gap, scientists from Auke Bay Laboratories (ABL) have led the effort on nearshore research for the Alaska Fisheries Science Center since 1998.

Nearshore marine habitats (< 6 m deep, < 20 m offshore) are some of the most productive in Alaska (Robards et al. 1999a, Dean et al. 2000). The rugged and extensive coastline of Alaska (about 70,000 km; ADNR 2012) provides a variety of nearshore habitats (e.g., sheltered and exposed rocky shores, eelgrass (*Zostera marina*) meadows, kelp forests, and sand beaches) for over 100 fish species (NMFS 2012a). Many species that use the nearshore (includes estuaries), contribute directly to Alaska's economy. From 2000 to 2004, about 15% of the total landed weight (25 billion pounds) and 32% of the total dollar value ($4.7 billion) from commercial landings in Alaska were attributed to estuarine (i.e., nearshore) fish and shellfish (Lellis-Dibble et al. 2008). In addition, ecologically important species such as forage fishes (e.g., Pacific herring, *Clupea pallasii*, and Pacific sand lance, *Ammodytes hexapterus*) use the nearshore for spawning and nursery habitat (Cooney 2007, Johnson et al. 2008). Forage fishes are abundant, schooling species preyed upon by many other fishes, seabirds, and marine mammals (Springer and Speckman 1997).

Nearshore habitats are susceptible to human and natural disturbance (Schmitten 1999, Harris et al. 2008). Thus, resource managers need information on fish use of shallow, nearshore habitats to protect areas critical to fisheries and to assess anthropogenic actions that may adversely affect EFH. Providing managers with a comprehensive synthesis of our nearshore surveys of coastal Alaska was our focus in preparing this publication. Specific objectives of this paper were to 1) interpret and synthesize data from 14 years (1998 to 2011)

of nearshore surveys across the state on fish distribution, catch, habitat use, and size; 2) provide detailed comparisons on fish distribution and species composition among different regions and habitat types; and 3) present distribution maps and photos of all fish species captured. The information presented in this synthesis will help managers, scientists, and the public better understand the statewide importance of nearshore habitats to fishery resources and will provide a valuable baseline for routine monitoring (e.g., every 5 or 10 years) and natural resource damage assessment.

BACKGROUND

Nearshore surveys were initiated by ABL scientists in 1998 when NOAA's EFH funds first became available. Now with 14 years (1998 to 2011) of standardized sampling of coastal habitats across Alaska, we have one of the most complete and valuable datasets available to managers. The dataset described herein encompasses a suite of studies, but the sampling methods and core group of researchers remained the same throughout all years. Some surveys were based on opportunistic sampling, whereas others were funded studies (e.g., EFH and North Pacific Research Board) that focused on specific habitat types (i.e., eelgrass) (Murphy et al. 2000, Johnson et al. 2003a, Johnson and Thedinga 2005, Harris et al. 2008), nearshore prey of Steller sea lions (*Eumetopias jubatus*) (Thedinga et al. 2006a), forage fish ecology (Thedinga et al. 2006b, Johnson et al. 2008), or specific areas of the state such as the Aleutian Islands (Thedinga et al. 2008) or Prince William Sound (Johnson et al. 2010a).

In 2005, we published an atlas on nearshore fishes of southeastern Alaska (Johnson et al. 2005); the atlas contains information on distribution and catch data from beach seine surveys in a variety of nearshore habitat types sampled from 1998 to 2004. Beginning in 2005, however, we expanded our nearshore surveys into other areas of Alaska including the Arctic, Aleutian Islands, Bristol Bay, Southcentral, and Prince William Sound. As we continued to survey throughout the state, it became clear that an easily updatable, online atlas was warranted. The first edition of our dynamic, online fish atlas was launched in October 2006, and was recently updated in 2012 (NMFS 2012a). This interactive, online database is the primary source of information for managers at the NMFS Alaska Regional Office on

issues related to EFH and shoreline development. As designed, the online atlas is data rich and shows fish catch by region, site, species, and habitat, but offers no interpretation or synthesis of the data. Consequently, there was a need for a comprehensive written synthesis of our entire 14-year dataset. The intention of this synthesis is to provide a comprehensive data analysis across all regions of Alaska.

GEOGRAPHIC COVERAGE AND SAMPLING PROTOCOL

The nearshore fish and habitat information described in this atlas is from nine regions of Alaska: Arctic (AR), Aleutian Islands (AI), Bristol Bay (BB), Southcentral (SC), Prince William Sound (PWS), Southeast – Northern Outside (SENO), Southeast – Northern Inside (SENI), Southeast – Southern Outside (SESO), and Southeast – Southern Inside (SESI) (Fig. 1). Most regions are identified by the general geographic location of sampling areas within the state. We did, however, divide the complex archipelago of southeastern Alaska into four separate regions (SENO, SENI, SESO, and SESI); boundaries were loosely drawn along gradients of oceanographic conditions and species distributions (e.g., shiner perch, *Cymatogaster aggregata*, and black rockfish, *Sebastes melanops*; Johnson et al. 2005). Marine waters of southeastern Alaska are characterized by a north-south temperature gradient (Quast 1968) and an inshore-offshore salinity gradient (Murphy and Orsi 1999). For our southeast regions, northern-southern divisions were made at Frederick Sound, and outside-inside divisions were based on general proximity to the outer coast or major ocean entrances. Similar geographic divisions of southeastern Alaska waters are reported in the literature (Quast 1968; Johnson et al. 2003a, b). Overall, our region boundaries match reasonably well with the classification of marine ecoregions of Alaska described in Piatt and Springer (2007).

Within our nine defined regions, we sampled fish with a beach seine at 93 general locations (e.g., specific bay or island). At each location, between 1 and 25 sites were sampled with a seine, and at least one seine haul was made at each site. At some locations, sites were sampled more than once in the same year (e.g., Benjamin Island in SENI) or across several years (e.g., Chukchi Sea in AR) (Appendix). A total of 1,009 seine hauls were made at 555

unique sites (Table 1, Appendix). All sites were sampled during daylight hours and within 2 hours of low tide (range: +1.0 m to −1.5 m below mean lower low water, MLLW). A geographic position was obtained in the middle of each seine site with a hand-held global positioning system (GPS). Inclusive of all regions and years, most sampling effort (75%) was in summer (Fig. 2).

Individual sampling sites within each location were selected based on habitat type and had to be approachable by skiff and free of seining obstructions (e.g., large boulders). Habitat type was determined by the visual observation of the dominant substrate present and the presence or absence of attached vegetation. Up to four habitat types were sampled at each location: bedrock outcrops, eelgrass meadows, understory kelp beds, and sand or gravel beaches with no attached vegetation (Fig. 3). Bedrock outcrops (hereafter referred to as bedrock) are steep (> 20% gradient) and usually located in semi-exposed to semi-protected areas near the entrance of bays. Vegetation on bedrock walls is often dominated by patchy to lush kelps (Laminariales) (e.g., *Agarum clathratum*, *Alaria marginata*, and *Saccharina latissima*; Lindeberg and Lindstrom 2010). Eelgrass meadows are typically located inside protected coves or bays with flat to moderate gradient (5-10%) and predominantly fine-grained sediments. Relative to MLLW, eelgrass occupies areas of the lower intertidal and subtidal zones from +1 m to −6 m. Understory kelp beds sampled were located in semi-exposed to semi-protected areas with moderate gradient (10-20%) and predominantly cobble substrates. Relative to MLLW, understory kelps occupy lower intertidal and subtidal areas from 0 m to −30 m. Understory kelps typically form low-lying mats that, unlike canopy kelps, do not reach the water's surface at high tide. Understory kelps (hereafter referred to as kelp) are dominated by patchy to lush Laminariales (e.g., *A. marginata*, *Cymathaere triplicata*, and *S. latissima*). Sand or gravel beaches (hereafter referred to as sand) are generally "pocket" beaches found inside semi-protected to protected bays with flat to moderate gradient (5-10%) and no attached vegetation. Algal mats (e.g., *Cladophora seriacea* and *Pylaiella* spp.) are sometimes present on sand beaches. Of the 555 unique sites sampled, 127 were bedrock, 144 were eelgrass, 149 were kelp, and 135 were sand. Of the three habitat types with attached vegetation (i.e., bedrock, eelgrass, and kelp), cover was usually greatest in eelgrass and least in bedrock. The habitats we sampled do not represent all

nearshore habitats available to fish, but are common in Alaska and can be effectively sampled with a beach seine.

The number of sites, time of sampling, and habitat types sampled varied among our regions. A brief description of our defined regions and sampling efforts within each follows.

Arctic (AR): Survey area extended from Skull Cliffs in the Chukchi Sea east to Cooper Island in the Beaufort Sea; 81 hauls were made among two locations and 31 sites, mostly in August from 2004 to 2009 (Table 1; Fig. 4; Appendix). Sites in the Chukchi Sea (n = 19) were exposed, with no barrier islands or lagoons. Sites in the Beaufort Sea (n = 12) were spread along the Plover Islands, a group of barrier islands that separates the western Beaufort Sea from Elson Lagoon; fish were sampled on the Beaufort Sea side and Elson Lagoon side of some islands (e.g., Cooper Island) within this group. All sample sites in our AR region were sand habitat; sand or gravel beaches are the predominant nearshore habitat type in the Arctic. Our AR region is within the Beaufort-Chukchi Sea, Barrier Island-Lagoon System ecoregion (Piatt and Springer 2007). More detailed descriptions of our sampling in the Chukchi and Beaufort seas are provided in Johnson et al. (2010b) and Thedinga et al. (in press).

Aleutian Islands (AI): Survey area was limited to Unalaska, Akutan, and Akun islands; 70 hauls were made among six locations and 70 sites in June 2005 (Table 1; Fig. 5; Appendix). Habitat types sampled were bedrock, kelp, and sand; we did not observe or sample any eelgrass. Our AI region is within the Eastern Aleutians ecoregion (Piatt and Springer 2007). A more detailed description of our sampling in the Aleutian Islands is provided in Thedinga et al. (2008).

Bristol Bay (BB): Survey area was limited to Nushagak Bay, a large estuary that opens into Bristol Bay; eight hauls were made at one location and eight sites in July 2009 (Table 1; Fig. 6; Appendix). All sample sites in our BB region were sand habitat, as sand beaches and mud flats are the predominant nearshore habitats in Nushagak Bay. Our BB region is within the Eastern Bering Sea – Alaska Coastal ecoregion (Piatt and Springer 2007).

Southcentral (SC): Survey area extended from upper Cook Inlet near Anchorage to Resurrection Bay near Seward; 23 hauls were made among five locations and 22 sites in July 2008, August 2009, and July 2010 (Table 1: Fig. 7; Appendix). All habitat types were

sampled in SC; only one eelgrass site was sampled, however, and this was in Resurrection Bay. Our SC region spans three ecoregions (Piatt and Springer 2007): our Knik Arm and Fire Island sites (locations 10 and 11; Fig. 7) are within the Western Cook Inlet – Shelikof Strait ecoregion; our Inner Kachemak Bay and Outer Kachemak Bay sites (locations 12 and 13; Fig. 7) are within the Southeastern Cook Inlet – Kodiak Upwelling ecoregion; and our Resurrection Bay sites (location 14; Fig. 7) are within the Northern Gulf of Alaska Shelf ecoregion.

Prince William Sound (PWS): Survey area extended from waters near Latouche Island east to Valdez; 133 hauls were made among 13 locations and 50 sites, mostly in summer in 1999, 2006, 2007, 2009, and 2010 (Table 1; Fig. 8; Appendix). All habitat types were sampled in PWS. Our PWS region is within the Prince William Sound Inside Waters ecoregion (Piatt and Springer 2007). A more detailed description of our sampling in Prince William Sound is provided in Johnson et al. (2010a).

Southeast - Northern Outside (SENO): Survey area extended from Cross Sound south to southern Sitka Sound, mostly on or near the outer coasts of Chichagof and Baranof islands; 164 hauls were made among 17 locations and 127 sites, mostly in summer in 1998, 1999, 2001-2003, 2006, 2008, and 2010 (Table 1; Fig. 9; Appendix). All habitat types were sampled in SENO. Our SENO region is almost entirely within the Chichagof Shelf and Inside Waters ecoregion (Piatt and Springer 2007). More detailed descriptions of our sampling in northern outside waters of southeastern Alaska are provided in Johnson et al. (2003a, 2005).

Southeast - Northern Inside (SENI): Survey area extended from Haines south to Frederick Sound; 382 hauls were made among 27 locations and 153 sites, mostly in summer from 1998 to 2006 and 2008 to 2011 (Table 1; Fig. 10; Appendix). All habitat types were sampled in SENI. Our SENI region is within the Chichagof Shelf and Inside Waters ecoregion (Piatt and Springer 2007). More detailed descriptions of our sampling in northern inside waters of southeastern Alaska are provided in Harris et al. (2005, 2008), Johnson et al. (2003a, 2005), Johnson and Thedinga (2005), and Thedinga et al. (2006a).

Southeast - Southern Outside (SESO): Survey area extended from southern Chatham Strait south to Dixon Entrance; 114 hauls were made among 12 locations and 60 sites, mostly in

summer from 1998 to 2000 and in 2007 (Table 1; Fig. 11; Appendix). All habitat types were sampled in SESO. Our SESO region is within the Prince of Wales Shelf and Inside Waters ecoregion (Piatt and Springer 2007). More detailed descriptions of our sampling in southern outside waters of southeastern Alaska are provided in Johnson et al. (2003a, 2005) and Murphy et al. (2000).

Southeast - Southern Inside (SESI): Survey area extended from Frederick Sound south to near Ketchikan; 34 hauls were made among 10 locations and 34 sites in summer 2000 and 2007 (Table 1; Fig. 12; Appendix). Habitat types sampled were bedrock, eelgrass, and kelp; no sand was sampled. Our SESI region is almost entirely within the Prince of Wales Shelf and Inside Waters ecoregion (Piatt and Springer 2007). More detailed descriptions of our sampling in southern inside waters of southeastern Alaska are provided in Johnson et al. (2003a, 2005).

Fish Capture and Processing

At each site, fish were captured with a beach seine within 20 m of shore in waters usually < 6 m deep. The seine is 37-m long with variable mesh that tapers from 5-m wide at the center to 1-m wide at the ends (Fig. 13). Outer panels are each 10-m of 32-mm stretch mesh, intermediate panels are each 4-m of 6-mm square mesh, and the bunt is 9-m of 3.2-mm square mesh. The seine has a leadline and a floatline so that the bottom contacts the substrate and the top floats on the surface. We set the seine as a "round haul" by holding one end on the beach, backing around in a skiff with the other end to the beach about 18 m from the start, and pulling the seine onto shore (Fig. 13).

After retrieval of the seine, the entire catch was sorted, identified to species, and counted. A subsample (up to 50 fish) of each species was measured either to the nearest millimeter fork length (FL), or, in species without a distinct fork in caudal fin, to total length (TL). Fish were briefly anesthetized in a mixture of 1 part carbonated water to 2 parts seawater for identification and measurement. Smaller individuals (< 50 mm length) of some families of fish (e.g., Cottidae, Gadidae, and Hexagrammidae) that could not be easily identified in the field were grouped and recorded as juvenile sculpin, juvenile cod, or juvenile greenling. Misidentification problems with some *Myoxocephalus* species (i.e., frog sculpin,

M. stelleri; great sculpin, *M. polyacanthocephalus*; shorthorn sculpin, *M. scorpius*) in areas where their distribution overlaps (Mecklenburg et al. 2002), prompted us to combine these three species and refer to them collectively as *Myoxocephalus* spp. in most tables and figures. Similarly, we combine the northern rock sole (*Lepidopsetta polyxystra*) and southern rock sole (*L. bilineata*) and refer to them collectively as rock sole (*Lepidopsetta* spp.).

The number of fish in large catches was estimated gravimetrically. To achieve this, a random subsample of approximately 500 fish was removed from the total catch, and the remaining fish were collectively weighed to the nearest 0.1 kg. Fish in the sub-sample were counted and weighed to the nearest gram. A mean weight of fish determined from the subsample was used to estimate the number of fish in the total catch. The proportion of each species in the subsample was also used to determine the species composition of the total catch. During processing, fish were held in buckets with aerators, and when data collection was complete, fish were released at the site of capture.

Temperature and Salinity

Surface water temperature and salinity (practical salinity scale, PSS) were measured at most seine sites each site visit. Temperature and salinity were measured at about 10-cm depth with a thermometer and hand-held refractometer.

Data Analysis

From our seine catches we determined relative abundance, frequency of occurrence, and species richness. Abundance is expressed in absolute numbers (i.e., number of individual fish captured) and catch-per-unit-effort (CPUE; i.e., number of fish captured per seine haul). Frequency of occurrence (FO) was determined for each species; FO is calculated as the number of seine hauls in which a species was captured divided by the total number of seine hauls and multiplied by 100. Calculated FO is expressed as percentages (0-100%) and as categories: abundant (≥ 50%), common (25-49%), occasional (10-24%), uncommon (5-9%), rare (< 5%), and absent. Species richness refers to the total number of fish species captured. Individuals identified only to family (e.g., juvenile sculpin, Cottidae) were counted in the total catch, but were only considered as a separate species for species richness calculations if

no other species from the same family were captured. In all tables, the values for total catch, CPUE, FO, species richness, and fish length are calculated cumulatively across all sampling efforts.

Species composition was compared among regions for each habitat type and among habitat types within each region. An analysis of similarity (ANOSIM) was conducted using a Bray-Curtis similarity index; a fourth-root transformation of the catch data was used to reduce the influence of very abundant species. The resulting similarity matrices are presented using non-metric, multi-dimensional scaling (nMDS) ordination plots (Clarke and Warwick 2001). These plots show a configuration of the data; the more similar samples are to each other, the closer they are to each other on the plot (Clarke and Warwick 2001). Stress values associated with each plot represent the dimensionality of the data; stress values < 0.1 correspond to good ordination (Clarke and Warwick 2001). We restricted the ANOSIM analyses to summer data only (June-September), which encompassed the majority of our sampling effort. Species contributing most to either the similarity or dissimilarity among and within regions by habitat type were identified using a similarity percentage analysis (SIMPER; Clarke and Warwick 2001). Species that contributed at least 5% to the cumulative, within-group dissimilarity were selected as good discriminators among regions (for each habitat type) or habitat types (within regions). Species composition could not be compared among all regions by habitat type or among habitat types within all regions because not all habitat types were sampled in each region: bedrock was not sampled in the AR or BB; eelgrass was not sampled in the AR, BB, or AI, and only one eelgrass site was sampled in SC (omitted in ANOSIM analyses); kelp was not sampled in the AR or BB; and sand was not sampled in SESI.

From our length-frequency data collected for each species, we determined the approximate percentage of juvenile versus adult life stages. We compared our species-specific, length-frequency distributions to species-specific, length-at-maturity estimates reported online (life-history tool; FishBase 2012). Length frequency data for pink salmon (*Oncorhynchus gorbuscha*) and sockeye salmon (*O. nerka*) do not include adults; we did capture a few adults of these species, but they were released without measuring and were considered insignificant in our catches.

Caveats

Our sampling represents only a "snapshot", temporally and spatially, of fish distribution and habitat use. The patchy distribution of some fish species and differences in water temperature, salinity, proximity to spawning areas, life stage, sampling effort, gear type, and time of sampling can determine the presence or absence of any given species at any given time. For example, the fact that we did not capture rainbow smelt (*Osmerus mordax*) in the Arctic with a beach seine does not mean that they are not present in the Arctic; we did catch rainbow smelt with a small trawl farther offshore, but those data are not included in this paper. In addition, the absence of a particular habitat type from any given region (e.g., sand in SESI) represents a lack of sampling of that habitat type and not necessarily the absence of that habitat type.

SUMMARIES

Statewide

Nearshore marine waters in Alaska support an abundant and diverse assemblage of fishes. An estimated 718,345 fish representing at least 121 species from 29 families were captured in 1,009 beach seine hauls from 1998 to 2011 (Table 2). Four commercially important species accounted for 55% of the total catch: walleye pollock (*Theragra chalcogramma*), Pacific herring, pink salmon, and chum salmon (*Oncorhynchus keta*) (Table 2). Many species (33%) were captured in only small or incidental numbers (< 10 fish); 14 species were represented by a total catch of one fish (Table 2).

Species distribution patterns varied greatly among regions. Only two species were captured in all nine regions of Alaska: pink salmon and threespine stickleback (*Gasterosteus aculeatus*) (Table 2). Juvenile sculpins (Cottidae) were also present in all nine regions, but were likely comprised of several different species. Forty-one species were captured in only one region of Alaska; for example, pond smelt (*Hypomesus olidus*) was captured only in Bristol Bay (BB) (Table 2). Most species were present in multiple, but not all regions of Alaska; for example, saffron cod (*Eleginus gracilis*) was frequent in Southcentral (SC)

(FO = 61%), common in Prince William Sound (PWS) (FO = 49%), occasional in Arctic (AR) (FO = 11%), but absent in Aleutian Islands (AI), BB, and all Southeast (SE) regions (Table 2). The only species categorized as frequent across all regions of Alaska was the crescent gunnel (*Pholis laeta*, FO = 55%); this species was captured frequently in most regions (Table 2), but usually in small numbers (mean CPUE = 12 fish; all Alaska regions combined) (Table 3). Conversely, the three most abundant species based on total catch (walleye pollock, Pacific sand lance, Pacific herring) were categorized as only occasional (FO = 10-24%; Table 2); these species were captured infrequently, but often in large numbers (mean CPUE = ~116 fish for all three species; all Alaska regions combined) (Table 3).

Catch-per-unit-effort and species richness varied by region and habitat type (Tables 3 and 4). Mean CPUE (all taxa) was lowest in SC (124 fish) and greatest in AI (1,202 fish), whereas species richness was lowest in BB (17 species) and greatest in Southeast - Northern Inside (SENI) (67 species) (Table 3). Dominant species by region based on CPUE were capelin in the AR (178 fish); Pacific sand lance in AI (506 fish); rainbow smelt in BB (640 fish); Pacific herring in SC (34 fish), PWS (186 fish), Southeast - Northern Outside (SENO) (125 fish), and Southeast - Southern Inside (SESI) (148 fish); walleye pollock in SENI (323 fish), and pink salmon in Southeast - Southern Outside (SESO) (112 fish) (Table 3). Mean CPUE by habitat type (across all regions) was lowest in sand (478 fish) and greatest in eelgrass (890 fish), whereas cumulative species richness was lowest in bedrock (57 species) and greatest in sand (87 species) (Table 4). Dominant species by habitat type based on mean CPUE were Pacific herring in bedrock (180 fish); chum salmon in eelgrass (190 fish); walleye pollock in kelp (313 fish); and Pacific sand lance in sand (175 fish) (Table 4). Across all regions and habitat types, mean CPUE was 712 fish and cumulative species richness was 121 (Table 3).

Species composition differed significantly ($P < 0.001$) among regions grouped by habitat type: (ANOSIM: bedrock, Global $R = 0.268$; eelgrass, $R = 0.363$; kelp, $R = 0.347$; and sand, $R = 0.486$). Most regional bedrock assemblages (sample size in parentheses; AI (10), SC (4), PWS (31), SENO (70), SENI (67), SESO (9), and SESI (4)) differed significantly ($0.180 \leq R \leq 0.574$, $P < 0.001$) except SC versus SENO ($R = 0.066$, $P > 0.05$),

SC versus SENI ($R = 0.110$, $P > 0.05$), SC versus SESI ($R = 0.396$, $P > 0.05$), SENO versus SESI ($R = 0.132$, $P > 0.05$), and SESI versus SESO ($R = 0.077$, $P > 0.05$) (Fig. 14). Species composition in bedrock was unique in AI and PWS; species in these regions were very different from each other and from all other regions (Fig. 14). Based on pairwise SIMPER analysis, taxa that were good discriminators among regional bedrock assemblages were chum salmon, coho salmon (*O. kisutch*), crescent gunnel, kelp perch (*Brachyistius frenatus*), Pacific cod (*Gadus macrocephalus*), Pacific herring, Pacific sandfish (*Trichodon trichodon*), Pacific sand lance, pink salmon, rock greenling (*Hexagrammos lagocephalus*), shiner perch, silverspotted sculpin (*Blepsias cirrhosus*), unidentified cod, unidentified fish larvae, unidentified greenling, and walleye pollock. All regional eelgrass assemblages (sample size in parentheses; PWS (50), SENO (57), SENI (120), SESO (54), and SESI (13)) differed significantly ($0.187 \leq R \leq 0.743$, $P < 0.001$), except SENI versus SESI ($R = 0.068$, $P > 0.05$) (Fig. 14). Species composition in PWS eelgrass was most unlike any other region, largely due to the presence of saffron cod in PWS and their absence in all SE regions (Fig. 14). In addition, species composition in eelgrass differed between outside (SENO, SESO) and inside (SENI and SESI) regions of SE (Fig. 14). Species that were good discriminators among regional eelgrass assemblages were bay pipefish (*Syngnathus leptorhynchus*), chum salmon, saffron cod, shiner perch, threespine stickleback, snake prickleback (*Lumpenus sagitta*), and tubesnout (*Aulorhynchus flavidus*). All regional kelp assemblages (sample size in parentheses; AI (27), SC (8), PWS (45), SENO (26), SENI (117), SESO (34), and SESI (17)) differed significantly ($0.116 \leq R \leq 0.916$, $P < 0.001$), except SC versus SENI ($R = 0.11$, $P > 0.05$) (Fig. 14). Species composition in AI kelp was most unlike any other region (Fig. 14), partially due to the large number of unidentified cod and unidentified sculpin in our catches. Taxa that were good discriminators among regional kelp assemblages were chum salmon, crescent gunnel, Pacific cod, Pacific herring, Pacific sandfish, pink salmon, saffron cod, shiner perch, unidentified cod, unidentified sculpin, and walleye pollock. Most regional sand assemblages (sample size in parentheses; AR (81), AI (33), BB (8), SC (10), PWS (7), SENO (11), SENI (78), and SESO (17)) differed significantly ($0.232 \leq R \leq 0.999$, $P < 0.001$) except SENI versus SESO ($R = 0.055$, $P > 0.05$) and SENI versus PWS ($R = 0.093$, $P > 0.05$) (Fig. 14). Species composition in sand was most unique in AI and BB, partially due to the

high abundance of Pacific sand lance in AI and rainbow smelt and pond smelt in BB (Fig. 14). Taxa that were good discriminators among regional sand assemblages were capelin (*Mallotus villosus*), crescent gunnel, *Myoxocephalus* spp., northern sculpin (*Icelinus borealis*), Pacific herring, Pacific sand lance, Pacific staghorn sculpin (*Leptocottus armatus*), pink salmon, pond smelt, rainbow smelt, rock sole, saffron cod, shiner perch, threespine stickleback, unidentified cod, unidentified greenling, and unidentified sculpin.

Based on estimated size at maturity, juvenile life stages dominated our catches for most species, particularly those included in a FMP for Alaska (Table 5). For example, all chum salmon, coho salmon, Pacific cod, pink salmon, and walleye pollock were juveniles; mean size (FL or TL) ranged from 52 mm to 96 mm (Table 5). For forage fishes, all Pacific herring and Pacific sandfish and most capelin (97%) and Pacific sand lance (83%) were also juveniles; mean FL ranged from 56 mm to 91 mm (Table 5). We captured a higher percentage of adults than juveniles for only a few species, including bay goby (*Lepidogobius lepidus*; 67%), least cisco (*Coregonus sardinella*; 100%), and northern sculpin (80%) (Table 5).

Water temperature and salinity varied by region and were influenced by location, time of sampling, seasonal rainfall, and proximity to freshwater streams. Across all regions, temperature at time of sampling ranged from 0º C to 20º C, and salinity ranged from 0 PSS to 35 PSS (Table 6). The coldest water temperature that we encountered was 0º C in AR, and the warmest water temperature was 20º C in PWS (Table 6). Similarly, the lowest salinity that we encountered was 0 PSS in SESI and the highest salinity was 35 PSS in AR and SENI (Table 6). More detailed temperature and salinity information from our survey locations and individual sites are available online (NMFS 2012a).

Of the 121 species captured, 14 are a target or potential target (e.g., Arctic cod, *Boreogadus saida* and saffron cod) species in either a groundfish or salmon FMP in Alaska (Table 2) (NPFMC 2012). We also captured multiple forage fish species from several families (e.g., Ammodytidae, Osmeridae, and Trichodontidae) that are included in a groundfish FMP for Alaska; these species are included in a FMP because of their ecological importance. Target species captured include walleye pollock, pink salmon, chum salmon, Pacific cod, and coho salmon (Table 2), and important forage species captured include

capelin, Pacific sandfish, and Pacific sand lance. Pacific herring are an important commercial and forage species that we captured routinely, but are managed by the state and are not a target FMP species.

In 14 years of surveys, we identified seven range extensions (not all have been published) and a dramatic increase in abundance of one species. Range extensions include bay goby, blackeye goby (*Rhinogobiops nicholsii*), brightbelly sculpin (*Microcottus sellaris*), kelp perch, roughback sculpin (*Chitonotus pugetensis*), saddleback sculpin (*Oligocottus rimensis*), and shiner perch; most of these extensions were north of their reported range (Csepp and Wing 1999, Mecklenburg et al. 2002). Some of the observed range extensions were relatively short distances (saddleback sculpin, ~ 60 km north) and likely the result of sampling in areas not sampled before. The dramatic increase in abundance was for saffron cod in nearshore habitats of western PWS (Johnson et al. 2009).

Arctic (AR)

A total of 20,803 fish representing 23 species were captured in 81 seine hauls from 2004 to 2009 (Table 7). Mean CPUE was 257 fish for our AR region. Three taxa accounted for 88% of the total catch: capelin, juvenile sculpin, and Pacific sand lance. Capelin were abundant and often captured in large numbers (mean CPUE = 178 fish; FO = 51%), whereas juvenile sculpin were also abundant but usually captured in small numbers (mean CPUE = 26 fish; FO = 64%) (Table 7). Thirteen species were captured in only small or incidental numbers (< 10 fish); six species were represented by a total catch of one fish (Table 7). More detailed descriptions of our catches in the Arctic are provided in Johnson et al. (2010b) and Thedinga et al. (in press).

Catch and species richness varied between the Chukchi and Beaufort seas. Mean CPUE and species richness was 401 fish and 21 species in the Chukchi Sea (n = 47 hauls) and 58 fish and 15 species in the Beaufort Sea (n = 34 hauls). Within the Beaufort Sea location, there were also differences in catch and species richness between the Beaufort Sea side and the Elson Lagoon side of the Plover Islands group (e.g., Cooper Island); mean CPUE and species richness was 82 fish and 14 species on the Beaufort Sea side and 14 fish and 9 species on the Elson Lagoon side. Most (99%) capelin were captured in open waters of

the Chukchi (FO = 62%) and Beaufort seas (FO = 50%), and most (90%) whitefishes (Salmonidae, Coregoninae) were captured in Elson Lagoon (FO = 75%). Capelin were uncommon (FO = 8%) in Elson Lagoon, and whitefishes were rare (FO < 3%) in open waters of the Chukchi and Beaufort seas. Eleven species were unique to our AR region: Arctic cod, Arctic cisco (*Coregonus autumnalis*), Arctic sculpin (*Myoxocephalus scorpioides*), Arctic staghorn sculpin (*Gymnocanthus tricuspis*), Atlantic poacher (*Leptagonus decagonus*), fourhorn sculpin (*M. quadricornis*), fourline snakeblenny (*Eumesogrammus praecisus*), least cisco, longhead dab (*Limanda proboscidea*), variegated snailfish (*Liparis gibbus*), and veteran poacher (*Podothecus veternus*) (Table 2).

Because sand was the only habitat type sampled in AR, species composition could not be compared to other habitat types. From regional comparisons of species composition within sand, however, the sand assemblage of fish in AR had an overall within-group, Bray-Curtis similarity of 23.3% and consisted mainly of unidentified sculpin and capelin, which together accounted for 53% of the cumulative, within-group similarity.

Aleutian Islands (AI)

An estimated 84,118 fish representing 27 species were captured in 70 seine hauls in 2005 (Table 8). Mean CPUE was 1,202 fish for our AI region. Four taxa accounted for 95% of the total catch: Pacific sand lance, juvenile cod, pink salmon, and Pacific sandfish (Table 8). Juvenile cod (mostly larvae) were likely a combination of Pacific cod and walleye pollock. Ten species were captured in only small or incidental numbers (< 10 fish); three species were represented by a total catch of one fish (Table 8). A more detailed description of our catches in the Aleutian Islands is provided in Thedinga et al. (2008).

Catch-per-unit effort and species richness varied among habitat types. Mean CPUE was 98 fish in bedrock, 1,648 fish in kelp, and 1,171 fish in sand. The most abundant taxa by habitat type were pink salmon and juvenile cod (CPUE = 34 fish each) in bedrock, juvenile cod (CPUE = 755 fish) in kelp, and Pacific sand lance (CPUE = 1,056 fish) in sand; FO ranged from 30 to 94% for these taxa (Table 8). Cumulative species richness was 14 in bedrock, 22 in kelp, and 17 in sand. Five species were captured in all habitat types, and 10

species were captured in only one habitat type (Table 8). No species were unique to our AI region (Table 2).

Species composition differed significantly among habitat types in our AI region (ANOSIM: Global R = 0.503, P < 0.001). All habitat types (sample size in parentheses; bedrock (10), kelp (27), and sand (33)) differed significantly ($0.280 \leq R \leq 0.651$, P < 0.001); each habitat type was unique based on species composition (Fig. 15). The AI bedrock assemblage had an overall within-group, Bray-Curtis similarity of 25.4% and consisted mainly of unidentified cod and unidentified fish larvae, which together accounted for 64% of the cumulative, within-group similarity. The AI kelp assemblage had an overall within-group similarity of 37.0% and consisted mainly of unidentified cod, unidentified sculpin, and pink salmon, which together accounted for 61% of the cumulative, within-group similarity. The AI sand assemblage had an overall within-group similarity of 33.6% and consisted mainly of Pacific sand lance that accounted for 57% of the cumulative, within-group similarity. Taxa that were good discriminators among AI habitat types were Pacific sandfish, Pacific sand lance, pink salmon, rock greenling, rock sole, silverspotted sculpin, unidentified cod, unidentified fish larvae, and unidentified sculpin.

Bristol Bay (BB)

A total of 6,775 fish representing 17 species were captured in 8 seine hauls in 2009 (Table 9). Mean CPUE was 847 fish for our BB region. Two species accounted for 95% of the total catch: rainbow smelt and pond smelt. Both of these species were abundant (FO = 100%) and often captured in large numbers (rainbow smelt, CPUE = 640 fish; pond smelt, CPUE =166 fish) (Table 9). Ten species were captured in only small or incidental numbers (< 10 fish); two species were represented by a total catch of one fish (Table 9). Six species were unique to our BB region: Arctic lamprey (*Lampetra camtschatica*), belligerent sculpin (*Megalocottus platycephalus*), Bering poacher (*Occella dodecahedron*), blackline prickleback (*Acantholumpenus mackayi*), pond smelt, and rainbow smelt (Table 2).

Because sand was the only habitat type sampled in BB, species composition could not be compared to other habitat types. From regional comparisons of species composition within sand, however, the sand assemblage of fish in BB had an overall within-group, Bray-

Curtis similarity of 56.3% and consisted mainly of rainbow smelt and pond smelt, which together accounted for 67% of the cumulative, within-group similarity.

Southcentral (SC)

A total of 2,858 fish representing 42 species were captured in 23 seine hauls from 2008 to 2010 (Table 10). Mean CPUE was 124 fish for our SC region. Six taxa accounted for 81% of the total catch: Pacific herring, pink salmon, walleye pollock, juvenile sculpin, saffron cod, and Pacific sand lance (Table 10). Twenty-four species were captured in only small or incidental numbers (< 10 fish); 12 species were represented by a total catch of one fish (Table 10).

Catch-per-unit effort and species richness varied among habitat types. Mean CPUE was 69 fish in bedrock, 78 fish in eelgrass, 177 fish in kelp, and 108 fish in sand (Table 10). The most abundant species captured by habitat type were Pacific sand lance in bedrock (CPUE = 31 fish), masked greenling (*H. octogrammus*) in eelgrass (CPUE = 18 fish), pink salmon in kelp (CPUE = 48 fish), and Pacific herring in sand (CPUE = 78 fish); FO ranged from 20 to 100% for these species (Table 10). Cumulative species richness was 12 in bedrock, 17 in eelgrass, 21 in kelp, and 26 in sand (Table 10). Pacific cod and whitespotted greenling (*H. stelleri*) were the only species captured in all habitat types, and 21 species were captured in only one habitat type (Table 10). Three species were unique to our SC region: longfin smelt (*Spirinchus thaleichthys*), prowfish (*Zaprora silenus*), and spotted snailfish (*Liparis callydon*) (Table 2).

Species composition differed significantly among habitat types in our SC region (ANOSIM: Global $R = 0.331$, $P < 0.001$). All habitat types (bedrock, kelp, and sand) differed significantly ($0.309 \leq R \leq 0.571$, $P < 0.001$); species composition differed most between bedrock and kelp (Fig. 15). The SC bedrock assemblage had an overall within-group, Bray-Curtis similarity of 11.9% and consisted mainly of unidentified greenling that accounted for 70% of the cumulative, within-group similarity. The SC kelp assemblage had an overall within-group similarity of 42.2% and consisted mainly of saffron cod, crescent gunnel, and Pacific cod, which together accounted for 60% of the cumulative, within-group similarity. The SC sand assemblage had an overall within-group similarity of 17.1% and consisted

mainly of saffron cod, pink salmon, and sockeye salmon, which together accounted for 55% of the cumulative, within-group similarity. Taxa that were good discriminators among SC habitat types were coho salmon, crescent gunnel, masked greenling, Pacific cod, Pacific sand lance, pink salmon, saffron cod, silverspotted sculpin, sockeye salmon, unidentified greenling, and whitespotted greenling.

Prince William Sound (PWS)

A total of 61,423 fish representing 54 species were captured in 133 seine hauls between 1999 and 2010 (Table 11). Mean CPUE was 462 fish for our PWS region. Four species accounted for 90% of the total catch: Pacific herring, saffron cod, pink salmon, and capelin (Table 11). Twenty-five species were captured in only small or incidental numbers (< 10 fish); seven species were represented by a total catch of one fish (Table 11). A more detailed description of our catches in Prince William Sound is provided in Johnson et al. (2010a).

Catch-per-unit-effort and species richness varied among habitat types. Mean CPUE was 110 fish in bedrock, 739 fish in eelgrass, 283 fish in kelp, and 1,190 fish in sand (Table 11). The most abundant species captured by habitat type were pink salmon in bedrock (CPUE = 72 fish), saffron cod in eelgrass (CPUE = 329 fish), capelin in kelp (CPUE = 148 fish), and Pacific herring in sand (CPUE = 1,161 fish); FO ranged from 13 to 74% for these species (Table 11). Cumulative species richness was 25 in bedrock, 41 in eelgrass, 43 in kelp, and 21 in sand (Table 11). Ten species were captured in all habitat types, and 18 species were captured in only one habitat type (Table 11). Three species were unique to our PWS region: brightbelly sculpin (*Microcottus sellaris*), searcher (*Bathymaster signatus*), and smallmouth ronquil (*B. leurolepis*) (Table 2).

Species composition differed significantly among habitat types in our PWS region (ANOSIM: Global $R = 0.408$, $P < 0.001$). Most habitat types (sample size in parentheses; bedrock (31), eelgrass (50), kelp (45), and sand (7)) differed significantly ($0.164 \leq R \leq 0.823$, $P < 0.001$), except bedrock versus sand ($R = 0.11$, $P > 0.05$); species composition in eelgrass was most unlike all other habitat types (Fig. 15). The PWS bedrock assemblage had an overall within-group, Bray-Curtis similarity of 18.2% and consisted mainly of crescent gunnel and Pacific herring, which together accounted for 56% of the cumulative, within-

group similarity. The PWS eelgrass assemblage had an overall within-group similarity of 44.8% and consisted mainly of saffron cod, crescent gunnel, and tubesnout, which together accounted for 55% of the cumulative, within-group similarity. The PWS kelp assemblage had an overall within-group similarity of 27.4% and consisted mainly of crescent gunnel, Pacific herring, padded sculpin (*Artedius fenestralis*), and Arctic shanny (*Stichaeus punctatus*), which together accounted for 55% of the cumulative, within-group similarity. The PWS sand assemblage had an overall within-group similarity of 34.2% and consisted mainly of Pacific herring and crescent gunnel, which together accounted for 54% of the cumulative, within-group similarity. Species that were good discriminators among PWS habitat types were bay pipefish, crescent gunnel, Pacific herring, padded sculpin, pink salmon, saffron cod, and tubesnout.

Southeast - Northern Outside (SENO)

A total of 89,687 fish representing 62 species were captured in 164 seine hauls between 1998 and 2010 (Table 12). Mean CPUE was 547 fish for our SENO region. Four species accounted for 79% of the total catch: Pacific herring, shiner perch, pink salmon, and chum salmon (Table 12). Nineteen species were captured in only small or incidental numbers (< 10 fish); eight species were represented by a total catch of one fish (Table 12). More detailed descriptions of our catches in northern outside waters of southeastern Alaska are provided in Johnson et al. (2003a, 2005).

Catch-per-unit-effort and species richness varied among habitat types. Mean CPUE was 536 fish in bedrock, 614 fish in eelgrass, 551 fish in kelp, and 256 fish in sand (Table 12). The most abundant species captured by habitat type were pink salmon in bedrock (CPUE = 233 fish), shiner perch in eelgrass (CPUE = 308 fish), and Pacific herring in kelp and sand (CPUE = 416 fish and 76 fish); FO ranged from 27 to 75% for these species (Table 12). Cumulative species richness was 40 in bedrock, 51 in eelgrass, 39 in kelp, and 27 in sand (Table 12). Fifteen species were captured in all habitat types, and 20 species were captured in only one habitat type (Table 12). Six species were unique to our SENO region: China rockfish (*Sebastes nebulosus*), Dover sole (*Microstomus pacificus*), kelp clingfish (*Rimicola*

muscarum), pygmy poacher (*Odontopyxis trispinosa*), saddleback sculpin, and wolf-eel (*Anarrhichthys ocellatus*) (Table 2).

Species composition differed significantly among habitat types in our SENO region (ANOSIM: Global R = 0.326, P < 0.001). The eelgrass assemblage differed significantly from all other habitat types (sample size in parentheses; bedrock (70), eelgrass (57), kelp (26), sand (11)) ($0.437 \leq R \leq 0.700$, P < 0.001); all other habitat comparisons were not significant ($R \leq 0.122$, P > 0.05) (Fig. 15). The SENO bedrock assemblage had an overall within-group, Bray-Curtis similarity of 12.2% and consisted mainly of shiner perch and unidentified greenling, which together accounted for 51% of the cumulative, within-group similarity. The SENO eelgrass assemblage had an overall within-group similarity of 41.7% and consisted mainly of shiner perch, crescent gunnel, bay pipefish, and unidentified greenling, which together accounted for 58% of the cumulative, within-group similarity. The SENO kelp assemblage had an overall within-group similarity of 21.3% and consisted mainly of kelp greenling (*H. decagrammus*), unidentified greenling, crescent gunnel, copper rockfish (*S. caurinus*), and shiner perch, which together accounted for 58% of the cumulative, within-group similarity. The SENO sand assemblage had an overall within-group similarity of 23.7% and consisted mainly of unidentified greenling and crescent gunnel, which together accounted for 53% of the cumulative, within-group similarity. Taxa that were good discriminators among SENO habitat types were bay pipefish, crescent gunnel, kelp greenling, Pacific cod, Pacific herring, Pacific sand lance, shiner perch, and unidentified greenling.

Southeast - Northern Inside (SENI)

A total of 399,648 fish representing 67 species were captured in 382 seine hauls between 1998 and 2011 (Table 13). Mean CPUE was 1,046 fish for our SENI region. Five species accounted for 87% of the total catch: walleye pollock, Pacific sand lance, chum salmon, Pacific herring, and pink salmon (Table 13). Twenty-one species were captured in only small or incidental numbers (< 10 fish); six species were represented by a total catch of one fish (Table 13). More detailed descriptions of our catches in northern inside waters of southeastern Alaska are provided in Johnson et al. (2003a, 2005).

Catch-per-unit-effort and species richness varied among habitat types. Mean CPUE was 1,363 fish in bedrock, 1,313 fish in eelgrass, 980 fish in kelp, and 463 fish in sand (Table 13). The most abundant species captured by habitat type were walleye pollock in bedrock (CPUE = 468 fish), Pacific sand lance in eelgrass (CPUE = 439 fish), walleye pollock in kelp (CPUE = 729 fish), and pink salmon in sand (CPUE = 227 fish); FO ranged from 16 to 28% for these species (Table 13). Cumulative species richness was 31 in bedrock, 55 in eelgrass, 52 in kelp, and 50 in sand (Table 13). Twenty-six species were captured in all habitat types, and 15 species were captured in only one habitat type (Table 13). Six species were unique to our SENI region: antlered sculpin (*Enophrys diceraus*), butter sole (*Isopsetta isolepis*), eulachon (*Thaleichthys pacificus*), ribbon snailfish (*L. cyclopus*), showy snailfish (*L. pulchellus*), and soft sculpin (*Psychrolutes sigalutes*) (Table 2).

Species composition differed significantly among habitat types in our SENI region (ANOSIM: Global $R = 0.363$, $P < 0.001$). All habitat types (sample size in parentheses; bedrock (67), eelgrass (120), kelp (117), and sand (78)) differed significantly ($0.131 \leq R \leq 0.663$, $P < 0.001$); species composition in eelgrass was most unlike all other habitat types (Fig. 15). The SENI bedrock assemblage had an overall within-group, Bray-Curtis similarity of 15.2% and consisted mainly of crescent gunnel, silverspotted sculpin, and northern sculpin, which together accounted for 51% of the cumulative, within-group similarity. The SENI eelgrass assemblage had an overall within-group similarity of 35.6% and consisted mainly of crescent gunnel, Pacific staghorn sculpin, *Myoxocephalus* spp., and threespine stickleback, which together accounted for 51% of the cumulative, within-group similarity. The SENI kelp assemblage had an overall within-group similarity of 21.7% and consisted mainly of crescent gunnel, walleye pollock, silverspotted sculpin, Pacific cod, and Pacific herring, which together accounted for 54% of the cumulative, within-group similarity. The SENI sand assemblage had an overall within-group similarity of 20.9% and consisted mainly of crescent gunnel, rock sole, *Myoxocephalus* spp., and unidentified sculpin, which together accounted for 52% of the cumulative, within-group similarity. Species that were good discriminators among SENI habitat types were chum salmon, crescent gunnel, Pacific cod, Pacific herring, Pacific sand lance, Pacific staghorn sculpin, threespine stickleback, and walleye pollock.

Southeast - Southern Outside (SESO)

A total of 39,772 fish representing 62 species were captured in 114 seine hauls between 1998 and 2011 (Table 14). Mean CPUE was 349 fish for our SESO region. Five species accounted for 77% of the total catch: pink salmon, Pacific sand lance, shiner perch, bay pipefish, and threespine stickleback (Table 14). Twenty-four species were captured in only small or incidental numbers (< 10 fish); seven species were represented by a total catch of one fish (Table 14). More detailed descriptions of our catches in southern outside waters of southeastern Alaska are provided in Johnson et al. (2003a, 2005) and Murphy et al. (2000).

Catch-per-unit-effort and species richness varied among habitat types. Mean CPUE was 649 fish in bedrock, 492 fish in eelgrass, 144 fish in kelp, and 147 fish in sand (Table 14). The most abundant species captured by habitat type were Pacific sand lance in bedrock (CPUE = 390 fish), pink salmon in eelgrass and kelp (CPUE = 177 fish and 45 fish), and Pacific herring in sand (CPUE = 34 fish); FO ranged from 24 to 38% for these species (Table 14). Cumulative species richness was 18 in bedrock, 53 in eelgrass, 51 in kelp, and 27 in sand (Table 14). Twelve species were captured in all habitat types, and 18 species were captured in only one habitat type (Table 14). Five species were unique to our SESO region: bocaccio (*S. paucispinis*), brown rockfish (*S. auriculatus*), roughback sculpin, sablefish (*Anoplopoma fimbria*), and yellowtail rockfish (*S. flavidus*) (Table 2).

Species composition differed significantly among habitat types in our SESO region (ANOSIM: Global $R = 0.493$, $P < 0.001$). All habitat types (sample size in parentheses; bedrock (9), eelgrass (54), kelp (34), and sand (17)) differed significantly ($0.181 \leq R \leq 0.913$, $P < 0.001$); species composition differed most between bedrock and eelgrass (Fig. 15). The SESO bedrock assemblage had an overall within-group, Bray-Curtis similarity of 26.0% and consisted mainly of pink salmon that accounted for 70% of the cumulative, within-group similarity. The SESO eelgrass assemblage had an overall within-group similarity of 52.3% and consisted mainly of bay pipefish, crescent gunnel, and shiner perch, which together accounted for 53% of the cumulative, within-group similarity. The SESO kelp assemblage had an overall within-group similarity of 36.9% and consisted mainly of shiner perch, crescent gunnel, and copper rockfish, which together accounted for 60% of the cumulative, within-group similarity. The SESO sand assemblage had an overall within-group similarity

of 45.5% and consisted mainly of crescent gunnel, shiner perch, and Pacific staghorn sculpin, which together accounted for 59% of the cumulative, within-group similarity. Taxa that were good discriminators among SESO habitat types were bay pipefish, chum salmon, copper rockfish, crescent gunnel, *Myoxocephalus* spp., northern sculpin, pink salmon, shiner perch, snake prickleback, Pacific staghorn sculpin, and threespine stickleback.

Southeast - Southern Inside (SESI)

A total of 13,261 fish representing 47 species were captured in 34 seine hauls between 1998 and 2011 (Table 15). Mean CPUE was 390 fish for our SESI region. Three species accounted for 72% of the total catch: Pacific herring, shiner perch, and bay pipefish (Table 15). Twenty species were captured in only small or incidental numbers (< 10 fish); four species were represented by a total catch of one fish (Table 15). More detailed descriptions of our catches in southern inside waters of southeastern Alaska are provided in Johnson et al. (2003a, 2005).

Catch-per-unit-effort and species richness varied among habitat types. Mean CPUE was 19 fish in bedrock, 490 fish in eelgrass, and 401 fish in kelp (Table 15). The most abundant species captured by habitat type were shiner perch in bedrock and eelgrass (CPUE = 11 fish and 206 fish), and Pacific herring in kelp (CPUE = 296 fish); FO ranged from 12 to 85% for these species (Table 15). Cumulative species richness was 9 in bedrock, 39 in eelgrass, and 36 in kelp (Table 15). Seven species were captured in all habitat types, and 17 species were captured in only one habitat type (Table 15). Cabezon (*Scorpaenichthys marmoratus*) was the only species unique to our SESI region.

Species composition differed significantly among habitat types in our SESI region (ANOSIM: Global $R = 0.347$, $P < 0.001$). All habitat types (sample size in parentheses; bedrock (4), eelgrass (13), and kelp (17)) differed significantly ($0.169 \leq R \leq 0.864$, $P < 0.001$); species composition differed most between bedrock and eelgrass (Fig. 15). The SESI bedrock assemblage had an overall within-group, Bray-Curtis similarity of 32.1% and consisted mainly of pink salmon that accounted for 80% of the cumulative, within-group similarity. The SESI eelgrass assemblage had an overall within-group similarity of 46.2% and consisted mainly of crescent gunnel, shiner perch, bay pipefish, and Pacific staghorn

sculpin, which together accounted for 57% of the cumulative, within-group similarity. The SESI kelp assemblage had an overall within-group similarity of 28.3% and consisted mainly of crescent gunnel and shiner perch, which together accounted for 54% of the cumulative, within-group similarity. Species that were good discriminators among SESI habitat types were bay pipefish, chum salmon, crescent gunnel, northern sculpin, pink salmon, shiner perch, snake prickleback, Pacific staghorn sculpin, threespine stickleback, and tubesnout.

DISCUSSION

Nearshore marine waters of Alaska provide a mosaic of habitat types that support a diverse assemblage of fishes. It is clear that shallow, nearshore habitats are used extensively by fishes, given that we captured 121 species and our mean CPUE was 712 fish. All nearshore habitats are used, but some provide more complexity and quality habitat than others (vegetated vs. nonvegetated). In addition, the importance of a species cannot be limited to commercial value only; many species that we captured provide ecological value as forage for other species. For example, we did not capture crescent gunnel in large numbers and they are not commercially important, but they are prey for river otter (*Lutra canadensis*), pigeon guillemot (*Cepphus columba*), and several fishes (Golet et al. 2000, Jewett et al. 2002) including the commercially important lingcod (Beaudreau and Essington 2007). Because our knowledge of the nearshore environment has increased dramatically over the last 14 years, we can now provide spatially explicit information on the distribution, relative abundance, species composition, habitat use, and size of fishes in shallow, marine waters of Alaska.

Distribution

A wide range of species distribution patterns were evident from our surveys. Some of the more ubiquitous species were Pacific sand lance, pink salmon, and threespine stickleback; these species were captured from the Arctic to southeastern Alaska and appear to be adapted to a broad range of marine environments. Conversely, about a third of the species that we captured were restricted to one region (e.g., pond smelt in Bristol Bay) and could be

good indicator species to track changes in fish assemblages that may occur with climate change (Johnson and Thedinga 2005). Our catch data did not always agree with the reported distribution of some species. For example, Pacific herring is reported in nearshore waters of the Arctic (Mecklenburg et al. 2002), but we never captured Pacific herring in the Arctic in 81 seine hauls. Low abundance of Pacific herring in the Arctic is likely the reason we captured none.

Our survey data provides a finer-scale of distribution information than can be found most anywhere else. For example, copper rockfish is reported throughout coastal waters of northern southeastern Alaska (Mecklenburg et al. 2002). In our nearshore surveys, however, copper rockfish was widely distributed and common (FO = 27%) in outside waters (SENO), but were absent in inside waters (SENI). Similarly, least cisco is reported in nearshore waters of the Arctic (Mecklenburg et al. 2002), yet we captured least cisco only inside Elson Lagoon and not on the Beaufort Sea side of the lagoon.

Northward range extensions of short distance were observed for a few species. Major poleward shifts in marine species are predicted with a warming climate (Lubchenco et al. 1993); northern shifts are already documented for several marine fish species in the North Sea (Perry et al. 2005). The appearance of new species in marine ecosystems, including those of Alaska, could have deleterious effects on existing fish stocks and food webs. Baseline species distributions, like those presented in this synthesis, can help scientists, resource managers, and the public to recognize, identify, and monitor changes in Alaska's nearshore fish assemblages.

Abundance and Diversity

Abundance (CPUE) varied greatly among regions, whereas species richness generally increased along a north to south gradient. Variability in catch among regions was likely due to the unique physical and biological characteristics of each region (e.g., SC), sampling only a single habitat type (sand) in some regions (AR and BB), and the sometimes large catches of schooling species such as Pacific sand lance in AI and walleye pollock in SENI. Poor habitat quality (e.g., fast current, turbid water, and no cover) in parts of our SC region (Cook Inlet) likely accounted for this region having the lowest mean CPUE. On a smaller geographic

scale, differing biological and physical conditions among individual bays within a region (e.g., PWS) can cause spatial variation in the relative densities of juvenile Pacific herring (Norcross et al. 2001). Similarly, within Cook Inlet, gradients in physical oceanography influence the distribution and abundance of some zooplankton and fish species (Speckman et al. 2005). Diversity gradients of increasing species richness from high latitudes towards the equator have been shown for many taxonomic groups (Krebs 1972, Cardillo 2002, Parmesan 2006). In our surveys, species richness increased from the Arctic (23) to southeastern Alaska (67, SENI). Bristol Bay had the lowest species richness (17) of any region, probably due to our limited sampling (n = 8 hauls) in only one habitat type (sand).

Abundance and diversity of fishes can vary not only by region, but also by season and time of day. Two limited studies that we did were a seasonal (summer/winter) study in SENI and a diel study in PWS. At two locations in our SENI region, catch and species richness were much lower in winter than in summer (Thedinga et al. 2006a). Higher abundance and diversity of fishes in summer versus winter has also been reported in other nearshore studies (Allen and Horn 1975, Orth and Heck 1980, Methven et al. 2001). In our PWS region, abundance of fish during day and night was similar in eelgrass and kelp, but species composition and mean size of some fish changed; for example, mean size of saffron cod was similar between day and night in eelgrass, but was greatest during the day in kelp (Thedinga et al. 2011). More fish were captured in vegetated and nonvegetated habitats at night than during the day in Chesapeake Bay (Orth and Heck 1980). In a diel study in Morro Bay, California, larger numbers of individuals and greater biomass of fishes were collected at night, but nearly equal numbers of species were captured during the day and night (Horn 1980).

Three or fewer species comprised 55% to 76% of the total fish catch in all regions of Alaska. Taxa that dominated the total catch in our regions collectively included capelin, chum salmon, Pacific herring, Pacific sand lance, pink salmon, rainbow smelt, saffron cod, shiner perch, unidentified cod, and walleye pollock. With the exception of Pacific herring and shiner perch, all of these taxa are included in a FMP for Alaska, highlighting the extensive spatial use of nearshore habitats by managed and forage fish species. Dominance of a few species in fish catches has been reported in other nearshore studies in California,

Canada, and Maine (Allen and Horn 1975, Allen 1982, Methven et al. 2001, Lazzari and Tupper 2002).

Based on our 14 years of sampling throughout coastal Alaska, we consider some areas to be noteworthy. Due to factors such as high species abundance, diversity, and susceptibility to disturbance, two regions and one location deserve special consideration. First, the Arctic is an ecologically fragile area experiencing rapid changes in climate (warming) and loss of sea ice (Moline et al. 2008). Loss of sea ice from climate change threatens marine life and habitat (e.g., beach erosion) and has the potential to open up formerly inaccessible areas to oil and gas development, vessel traffic, and commercial fishing. Disturbance of the nearshore Arctic environment may have consequences for many species, particularly capelin that use this area for spawning and rearing (George et al. 2007). Capelin is an important forage species in the Arctic and was the most abundant species in our catches. Second, the Aleutian Islands are noteworthy because of the extremely high abundance (CPUE = 1,056 fish) and frequency (FO = 94%) of Pacific sand lance in sand habitats. Nowhere else in Alaska did we witness such high and consistent catches of such an ecologically important species. Pacific sand lance is a major prey species for 40 species of birds, 12 species of marine mammals, and 45 species of fish (Field 1988, Willson et al. 1999). Third, The Brothers Islands in SENI (Appendix) is unique because of the abundance and diversity of commercially important and forage fish species. The six most abundant species in summer, based on total catch at The Brothers Islands, were walleye pollock, Pacific herring, Pacific sand lance, Pacific cod, chum salmon, and Pacific sandfish (Thedinga et al. 2006a); all of these species are commercially important or forage fish species. Our catches of walleye pollock at The Brothers Islands were greater than anywhere else in Alaska. In addition, The Brothers Islands is an important year-round, haul-out for about 1,500 Steller sea lions (Thedinga et al. 2006a).

Species Composition and Habitat Use

Species composition by habitat type was similar among some regions and unique in others. Regions with similar species composition were usually close spatially and restricted to the Gulf of Alaska, whereas regions with unique species assemblages were more spatially isolated (e.g., AI, AR, and BB). Species composition was similar among several regions in

bedrock, but only between a few regions in eelgrass, kelp, and sand. Small sample sizes may have influenced some of our results, especially in bedrock (n = 4 for SC and SESI). Regions with unique species assemblages by habitat type (e.g., BB sand) were largely the result of the presence of a few species (e.g., rainbow smelt) in large numbers that were absent in other regions. Our AI region had a species composition that was consistently unique across all habitat types sampled (bedrock, kelp, and sand); small boundaries based on bottom topography and current flow in the Eastern Aleutians ecoregion may determine the distribution of some taxa (Piatt and Springer 2007). Species composition was notably different in eelgrass and kelp among most SE regions. Inside waters of southeastern Alaska are more estuarine, more protected from wave action, and have more extreme seasonal temperature and salinity fluctuations than outside waters (Johnson et al. 2008), which likely affects fish distribution.

In most regions that we sampled with more than one habitat type, species generally segregated by habitat. Eelgrass and kelp usually supported higher numbers of fish and more species than bedrock or sand; mean CPUE and species richness were greatest in eelgrass or kelp in most regions. Higher fish abundance and species richness in vegetated versus sparsely vegetated habitats has been reported elsewhere (Orth and Heck 1980, Bloomfield and Gillanders 2005, Franco et al. 2006). Submerged vegetation provides increased structure and complexity, prey availability, and protection from predators compared to bare or sparsely vegetated habitats (Heck and Orth 1980, Rozas and Odum 1988, Lazzari and Tupper 2002, Hamilton and Konar 2007). In addition, some species were largely restricted to one vegetation type; for example, 98% of the total catch of saffron cod in PWS was in eelgrass. Similarly at Kodiak Island, Alaska, saffron cod were almost exclusively restricted to eelgrass (Laurel et al. 2007).

Fish Life Stages

Nearshore ecosystems are considered nurseries for juvenile life stages of many marine species (Thayer et al. 1978, Beck et al. 2003, Lellis-Dibble 2008). Most commercially important and forage fish species that we captured (e.g., Pacific herring and walleye pollock) were early juveniles (e.g., larvae and young-of-the-year), and were likely using the nearshore

for foraging and refuge habitat (Johnson et al. 2008). We also know that the shallow nearshore is used for spawning, particularly by forage fishes: capelin and Pacific sand lance spawn on fine gravel or sandy beaches (Pahlke 1985, Robards et al. 1999b), Pacific herring spawn on intertidal and shallow, subtidal vegetation (Cooney 2007), and Pacific sandfish spawn on rocky intertidal areas (Marliave 1981). Because many commercially important and forage fish species depend on the nearshore environment for shelter, food, and spawning habitat, disturbance of the nearshore from shoreline development, oil spills, or natural catastrophes (e.g., earthquake) are of great concern. The *Exxon Valdez* oil spill in Alaska in 1989 is a clear example of the susceptibility of coastal habitats and biota to disturbance. The spill occurred in March just prior to the time that Pacific herring spawn inshore and juvenile salmon and other fish species enter the nearshore marine environment (Spies et al. 1996).

One of the more difficult tasks of nearshore sampling is the correct identification of fishes. The capture of sometimes thousands of fish of different species and life stages can be challenging even to the trained eye. Identifying juveniles in the field can be especially difficult for some species, including pink and chum salmon; Pacific cod, Pacific tomcod, and saffron cod; black and yellowtail rockfish; copper and quillback rockfish; frog, great, and shorthorn sculpin; and juvenile greenlings. Field guides that we commonly used to help identify fish include Kramer et al. (1995), Mecklenburg et al. (2002), and Lamb and Edgell (2010). All three of these guides cover mostly adult life stages, however, and we are now in the process of compiling a pictorial field guide that includes photos, including early life-history stages, of all species that we have captured.

Forage Fishes

Forage fishes, as a group, probably best characterize the shallow nearshore in Alaska in terms of overall distribution, abundance, and habitat use. Eight forage fish species (capelin, longfin smelt, Pacific herring, Pacific sandfish, Pacific sand lance, pond smelt, rainbow smelt, and surf smelt (*Hypomesus pretiosus*)) accounted for 39% of our total overall catch and were collectively captured in 43% of our seine hauls. In seven of the nine regions that we sampled, capelin, Pacific herring, Pacific sand lance, or rainbow smelt was the most abundant species. Of all the forage fishes, Pacific sand lance was the most abundant and

ubiquitous (CPUE = 120 fish, FO = 23%; all Alaska). From an ecosystem perspective, it is well established that forage fishes are of particular importance as prey to other fishes, seabirds, and marine mammals (Springer and Speckman 1997, Mundy and Hollowed 2005). Our consistent catches of forage fishes throughout much of coastal Alaska, and the reliance of most species on the nearshore for spawning, clearly identifies the nearshore as important habitat for forage fish populations.

Essential Fish Habitat

Identification of nearshore EFH is difficult because some species and life stages use certain habitats for only a short time (e.g., spawning) and then leave. Bedrock may be an example of a transitional habitat; fish may use this habitat type only short-term as they migrate from sheltered bays toward the open ocean (Wertheimer and Celewycz 1996), whereas eelgrass and kelp may be used as foraging areas for several weeks (Johnson et al. 2008). Eelgrass and kelp should be considered high-value fish habitat based on the high abundance and diversity of fishes in our surveys. Eelgrass has long been recognized worldwide as valuable fish habitat (Green and Short 2003), and our knowledge of understory kelps as important fish habitat is increasing (Dean et al. 2000, Hamilton and Konar 2007, Johnson et al. 2005). The mere presence of large numbers of fish or species is not enough, however, to label certain coastal habitats as essential. More information is needed on the function (e.g., spawning sites) of these habitats to individual species to warrant special protection. Pacific herring is one of the few nearshore species in Alaska that we have sufficient information to identify EFH; spawning beaches are well documented from years of aerial surveys (Carls et al. 2008).

The shallow nearshore should be included in any ecosystem-based marine study. Different species and life stages can use the nearshore at any time and can be vastly different from offshore fish assemblages. For example, some of the species that we routinely captured in the nearshore Beaufort Sea (e.g., capelin, least cisco, and saffron cod) were sparse or absent in bottom trawl surveys in deeper waters (>30 m) of the Beaufort Sea (Rand and Logerwell 2010).

Environmental Assessment

This synthesis is the most comprehensive summary available on the nearshore environment of Alaska, and provides a baseline for long-term monitoring. Sites can be revisited over time to track changes in fish and habitat that may result from global climate change or shoreline development. In addition, Alaska's coastline is being imaged and mapped with *ShoreZone*, an aerial-based, mapping protocol that classifies coastal environments into different along-shore, biotic and coastal features (e.g., continuous eelgrass and very protected shoreline), and quantifies the linear extents of habitats (e.g., ~6,000 km of eelgrass in southeastern Alaska). Since 2003, over 69% (51,745 km) of Alaska's coastline has been imaged with *ShoreZone* (NMFS 2012b), including 85% of our fish survey sites. In the future, our nearshore fish survey dataset and *ShoreZone* imagery may be the most important tools available to managers for oil spill response, natural resource damage assessment, EFH identification, shoreline development evaluation, and long-term biological monitoring. Both of these datasets are available online (NMFS 2012a, 2012b) and will continue to be updated as more areas of the state are surveyed and imaged.

CONCLUSIONS

A summary of our major findings from 14 years (1998 to 2011) of nearshore fish surveys throughout Alaska (nine regions) are as follows:

1. Nearshore, marine waters support an abundant and diverse array of fishes; we captured an estimated 718,345 fish representing at least 121 species from 29 families.
2. Four commercially important species (walleye pollock, Pacific herring, pink salmon, and chum salmon) accounted for 55% of our total overall catch.
3. Species distribution patterns varied greatly among regions; only two species (pink salmon and threespine stickleback) were caught in all nine regions.
4. Abundance and species richness varied by region; mean CPUE ranged from 124 fish in Southcentral Alaska to 1,202 fish in the Aleutian Islands, and species

richness ranged from 17 species in Bristol Bay to 67 species in Southeast – Northern Inside.

5. Species assemblages differed among habitat types in most regions, and mean CPUE and species richness were usually greatest in eelgrass or kelp.
6. Species composition by habitat type was unique in some regions (e.g., sand, Bristol Bay), largely the result of the presence of a few species (e.g., rainbow smelt) that were absent in other regions.
7. Most fishes captured were juveniles, highlighting the importance of the nearshore to critical, early life-history stages of managed and ecologically important species.
8. Forage species (e.g., Pacific herring and Pacific sand lance) may be the most susceptible fishes to shoreline disturbance because of their use of nearshore habitats for feeding and shelter as juveniles and for spawning as adults.
9. The high abundance and diversity of fishes in eelgrass and kelp warrant special protection of these habitats in the event of an oil spill or other shoreline disturbance, especially if these habitats are known spawning areas (e.g., Pacific herring).
10. Our nearshore dataset is extremely important to managers responsible for oil spill response, natural resource damage assessment, EFH identification, and long-term monitoring.

THE ATLAS

Individual species pages and photos are presented for 121 fish species that we captured with a beach seine in nearshore waters of Alaska from 1998 to 2011. Species page and photo sections are arranged alphabetically by family first, and then by scientific name within family. Species pages are designed to quickly show distribution, abundance, habitat use, and length frequency information for each given species. The photo section provides a high resolution photo of every species captured; most were of actual fish that we caught. Length (millimeters) and life stage (juvenile, adult) information are provided for each photo; FL is fork length and TL is total length.

Each species page is standardized with the same layout: name banner, photo, graphs, and distribution maps. The name banner lists the species family name, common name, and scientific name from left to right. The fish photo shows the species overall appearance; a larger image is available on the page listed. Directly below the photo are graphs showing abundance and length frequency data. The large panel on the right side of each species page displays maps of the geographic distribution of the species by region.

Abundance and length frequency graphs represent data from all nearshore surveys (1998 to 2011) encompassing a total of 1,009 seine hauls. Two abundance indices – mean catch-per-unit-effort (CPUE), where unit of effort = seine haul and percent frequency of occurrence (FO) – are shown by region (top graph) and habitat type (middle graph). First, mean CPUE by region is the species total catch by region, across all habitat types, divided by the total number of seine hauls by region (Table 3). Mean CPUE by habitat type is the species total catch by habitat type, across all regions, divided by the total number of seine hauls by habitat type (Table 4). Mean CPUE ranges from 0.1 fish to 1,000 fish (Y-axis, logarithmic scale). Second, percent FO by region is the total number of seine hauls in which the species was captured by region, across all habitat types, divided by the total number of seine hauls by region and multiplied by 100 (Table 3). Percent FO by habitat type is the total number of seine hauls in which the species was captured by habitat type, across all regions, divided by the total number of seine hauls by habitat type and multiplied by 100 (Table 4). Percent FO ranges from 0 to 100% (Y2-axis). The "n" represents the total catch of each species across all regions, habitat types, and sampling periods. Region acronyms (top graph, X-axis) are labeled and defined (e.g., AR, Arctic) in the distribution panel. Habitat types (middle graph, X-axis) are bedrock, eelgrass, kelp, and sand. The bottom graph displays length frequency data across all regions and habitat types. Percent frequency (0-100%, Y-axis) represents the number of fish measured within the different length classes (X-axis), ranging from < 50 mm to ≥ 400 mm, divided by the total number of fish measured. Length in millimeters is either fork length (FL) or total length (TL), depending on species (Table 5). The "n" represents the total number of fish measured across all regions, habitat types, and sampling periods.

Distribution maps show each of the nine regions that we sampled and are labeled accordingly (e.g., Arctic, AR and Aleutian Islands, AI). Within each regional map, sampling locations are shown as solid circles; large blue circles indicate species presence, and small black circles indicate species absence. The “n” represents the total number of seine hauls in each region. Maps of each region with key landmarks and individual sampling sites are shown in Figures 4-12.

Species List

Family	Taxon	Common name	Page*
Agonidae	*Agonopsis vulsa*	Northern spearnose poacher	40, **160**
	Leptagonus decagonus	Atlantic poacher	41, **160**
	Occella dodecaedron	Bering poacher	42, **160**
	Odontopyxis trispinosa	Pygmy poacher	43, **160**
	Pallasina barbata	Tubenose poacher	44, **160**
	Podothecus accipenserinus	Sturgeon poacher	45, **160**
	Podothecus veternus	Veteran poacher	46, **160**
Ammodytidae	*Ammodytes hexapterus*	Pacific sand lance	47, **160**
Anarhichadidae	*Anarrhichthys ocellatus*	Wolf-eel	48, **161**
Anoplopomatidae	*Anoplopoma fimbria*	Sablefish	49, **161**
Aulorhynchidae	*Aulorhynchus flavidus*	Tubesnout	50, **161**
Bathymasteridae	*Bathymaster caeruleofasciatus*	Alaskan ronquil	51, **161**
	Bathymaster leurolepis	Smallmouth ronquil	52, **161**
	Bathymaster signatus	Searcher	53, **161**
	Ronquilus jordani	Northern ronquil	54, **161**
Clupeidae	*Clupea pallasii*	Pacific herring	55, **161**
Cottidae	*Artedius fenestralis*	Padded sculpin	56, **162**
	Artedius harringtoni	Scalyhead sculpin	57, **162**
	Artedius lateralis	Smoothhead sculpin	58, **162**
	Chitonotus pugetensis	Roughback sculpin	59, **162**
	Enophrys bison	Buffalo sculpin	60, **162**
	Enophrys diceraus	Antlered sculpin	61, **162**
	Enophrys lucasi	Leister sculpin	62, **162**
	Gymnocanthus galeatus	Armorhead sculpin	63, **162**
	Gymnocanthus tricuspis	Arctic staghorn sculpin	64, **163**
	Hemilepidotus hemilepidotus	Red Irish lord	65, **163**
	Hemilepidotus spinosus	Brown Irish lord	66, **163**
	Icelinus borealis	Northern sculpin	67, **163**
	Leptocottus armatus	Pacific staghorn sculpin	68, **163**
	Megalocottus platycephalus	Belligerent sculpin	69, **163**
	Microcottus sellaris	Brightbelly sculpin	70, **163**
	Myoxocephalus jaok	Plain sculpin	71, **163**
	Myoxocephalus polyacanthocephalus	Great sculpin	74, **164**
	Myoxocephalus quadricornis	Fourhorn sculpin	72, **164**
	Myoxocephalus scorpioides	Arctic sculpin	73, **164**
	Myoxocephalus scorpius	Shorthorn sculpin	74, **164**
	Myoxocephalus stelleri	Frog sculpin	74, **164**
	Oligocottus maculosus	Tidepool sculpin	75, **164**
	Oligocottus rimensis	Saddleback sculpin	76, **164**
	Oligocottus snyderi	Fluffy sculpin	77, **164**
	Scorpaenichthys marmoratus	Cabezon	78, **165**
	Synchirus gilli	Manacled sculpin	79, **165**

*species page, **species photo**

Family	Taxon	Common name	Page*
Cyclopteridae	*Eumicrotremus orbis*	Pacific spiny lumpsucker	80, **165**
Embiotocidae	*Brachyistius frenatus*	Kelp perch	81, **165**
	Cymatogaster aggregata	Shiner perch	82, **165**
Gadidae	*Boreogadus saida*	Arctic cod	83, **165**
	Eleginus gracilis	Saffron cod	84, **165**
	Gadus macrocephalus	Pacific cod	85, **165**
	Microgadus proximus	Pacific tomcod	86, **166**
	Theragra chalcogramma	Walleye pollock	87, **166**
Gasterosteidae	*Gasterosteus aculeatus*	Threespine stickleback	88, **166**
	Pungitius pungitius	Ninespine stickleback	89, **166**
Gobiesocidae	*Rimicola muscarum*	Kelp clingfish	90, **166**
Gobiidae	*Lepidogobius lepidus*	Bay goby	91, **166**
	Rhinogobiops nicholsii	Blackeye goby	92, **166**
Hemitripteridae	*Blepsias bilobus*	Crested sculpin	93, **166**
	Blepsias cirrhosus	Silverspotted sculpin	94, **167**
	Nautichthys oculofasciatus	Sailfin sculpin	95, **167**
Hexagrammidae	*Hexagrammos decagrammus*	Kelp greenling	96, **167**
	Hexagrammos lagocephalus	Rock greenling	97, **167**
	Hexagrammos octogrammus	Masked greenling	98, **167**
	Hexagrammos stelleri	Whitespotted greenling	99, **167**
	Ophiodon elongatus	Lingcod	100, **167**
	Oxylebius pictus	Painted greenling	101, **167**
Liparidae	*Liparis callyodon*	Spotted snailfish	102, **168**
	Liparis cyclopus	Ribbon snailfish	103, **168**
	Liparis florae	Tidepool snailfish	104, **168**
	Liparis gibbus	Variegated snailfish	105, **168**
	Liparis pulchellus	Showy snailfish	106, **168**
Osmeridae	*Hypomesus olidus*	Pond smelt	107, **168**
	Hypomesus pretiosus	Surf smelt	108, **168**
	Mallotus villosus	Capelin	109, **168**
	Osmerus mordax	Rainbow smelt	110, **169**
	Spirinchus thaleichthys	Longfin smelt	111, **169**
	Thaleichthys pacificus	Eulachon	112, **169**
Paralichthyidae	*Citharichthys sordidus*	Pacific sanddab	113, **169**
	Citharichthys stigmaeus	Speckled sanddab	114, **169**
Petromyzontidae	*Lampetra camtschatica*	Arctic lamprey	115, **169**
Pholidae	*Apodichthys flavidus*	Penpoint gunnel	116, **169**
	Pholis laeta	Crescent gunnel	117, **169**
Pleuronectidae	*Isopsetta isolepis*	Butter sole	118, **170**
	Lepidopsetta spp.	Rock sole	119, **170**
	Limanda aspera	Yellowfin sole	120, **170**
	Limanda proboscidea	Longhead dab	121, **170**

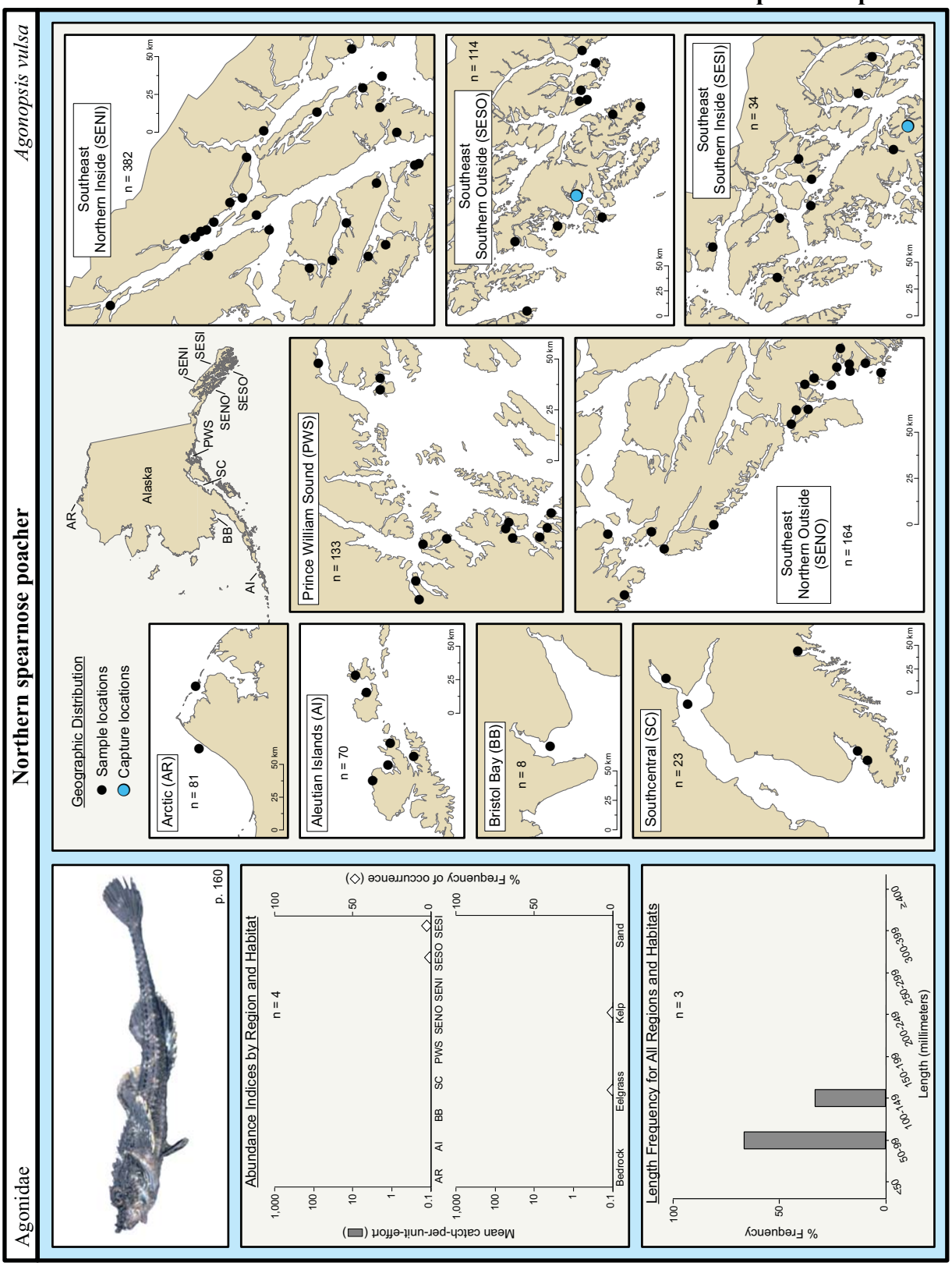
*species page, **species photo**

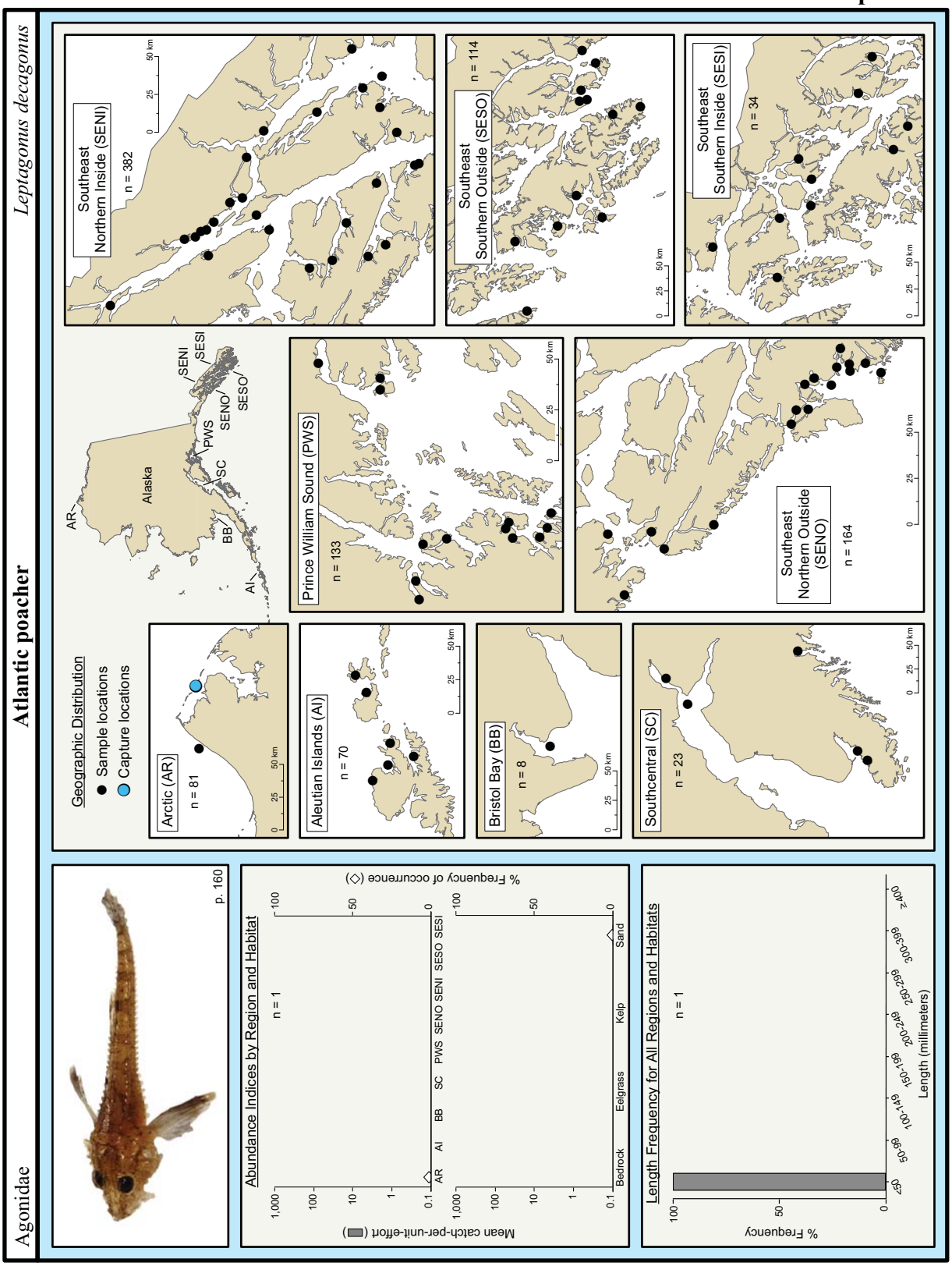
Family	Taxon	Common name	Page*
	Microstomus pacificus	Dover sole	122, **170**
	Parophrys vetulus	English sole	123, **170**
	Platichthys stellatus	Starry flounder	124, **170**
	Pleuronectes glacialis	Arctic flounder	125, **170**
	Pleuronectes quadrituberculatus	Alaska plaice	126, **171**
	Pleuronichthys coenosus	C-O sole	127, **171**
	Psettichthys melanostictus	Sand sole	128, **171**
Psychrolutidae	*Psychrolutes paradoxus*	Tadpole sculpin	129, **171**
	Psychrolutes sigalutes	Soft sculpin	130, **171**
Salmonidae	*Coregonus autumnalis*	Arctic cisco	131, **171**
	Coregonus sardinella	Least cisco	132, **171**
	Oncorhynchus clarkii	Cutthroat trout	133, **172**
	Oncorhynchus gorbuscha	Pink salmon	134, **172**
	Oncorhynchus keta	Chum salmon	135, **172**
	Oncorhynchus kisutch	Coho salmon	136, **172**
	Oncorhynchus mykiss	Steelhead trout	137, **172**
	Oncorhynchus nerka	Sockeye salmon	138, **172**
	Oncorhynchus tshawytscha	Chinook salmon	139, **172**
	Salvelinus malma	Dolly Varden	140, **172**
Scorpaenidae	*Sebastes auriculatus*	Brown rockfish	141, **173**
	Sebastes caurinus	Copper rockfish	142, **173**
	Sebastes ciliatus	Dark rockfish[1]	143, **173**
	Sebastes flavidus	Yellowtail rockfish	144, **173**
	Sebastes maliger	Quillback rockfish	145, **173**
	Sebastes melanops	Black rockfish	146, **173**
	Sebastes nebulosus	China rockfish	147, **173**
	Sebastes paucispinis	Bocaccio	148, **173**
Stichaeidae	*Acantholumpenus mackayi*	Blackline prickleback	149, **174**
	Anoplarchus insignis	Slender cockscomb	150, **174**
	Eumesogrammus praecisus	Fourline snakeblenny	151, **174**
	Lumpenus fabricii	Slender eelblenny	152, **174**
	Lumpenus sagitta	Snake prickleback	153, **174**
	Stichaeus punctatus	Arctic shanny	154, **174**
	Xiphister atropurpureus	Black prickleback	155, **174**
Syngnathidae	*Syngnathus leptorhynchus*	Bay pipefish	156, **174**
Trichodontidae	*Trichodon trichodon*	Pacific sandfish	157, **175**
Zaproridae	*Zaprora silenus*	Prowfish	158, **175**

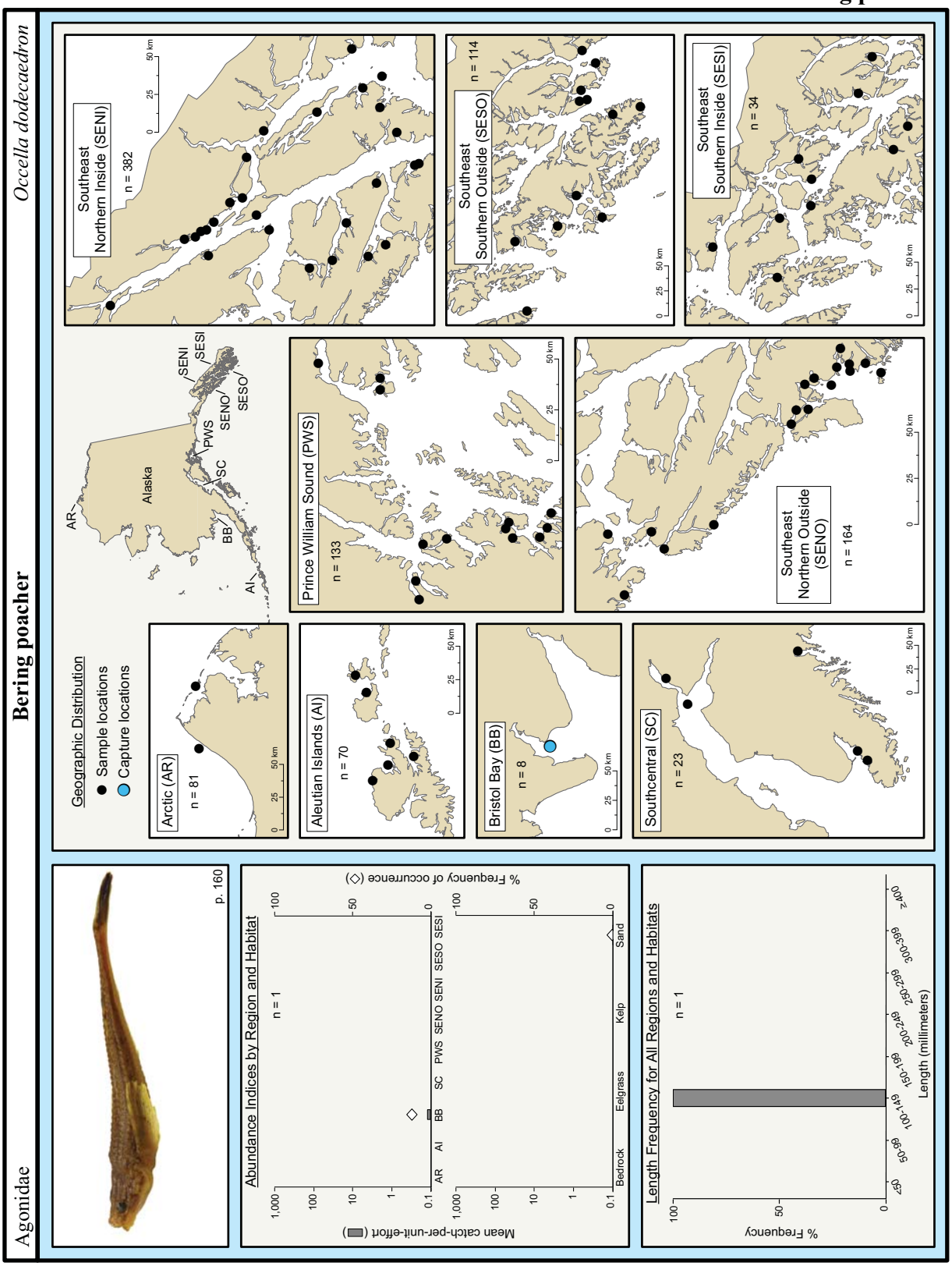
*species page, **species photo**

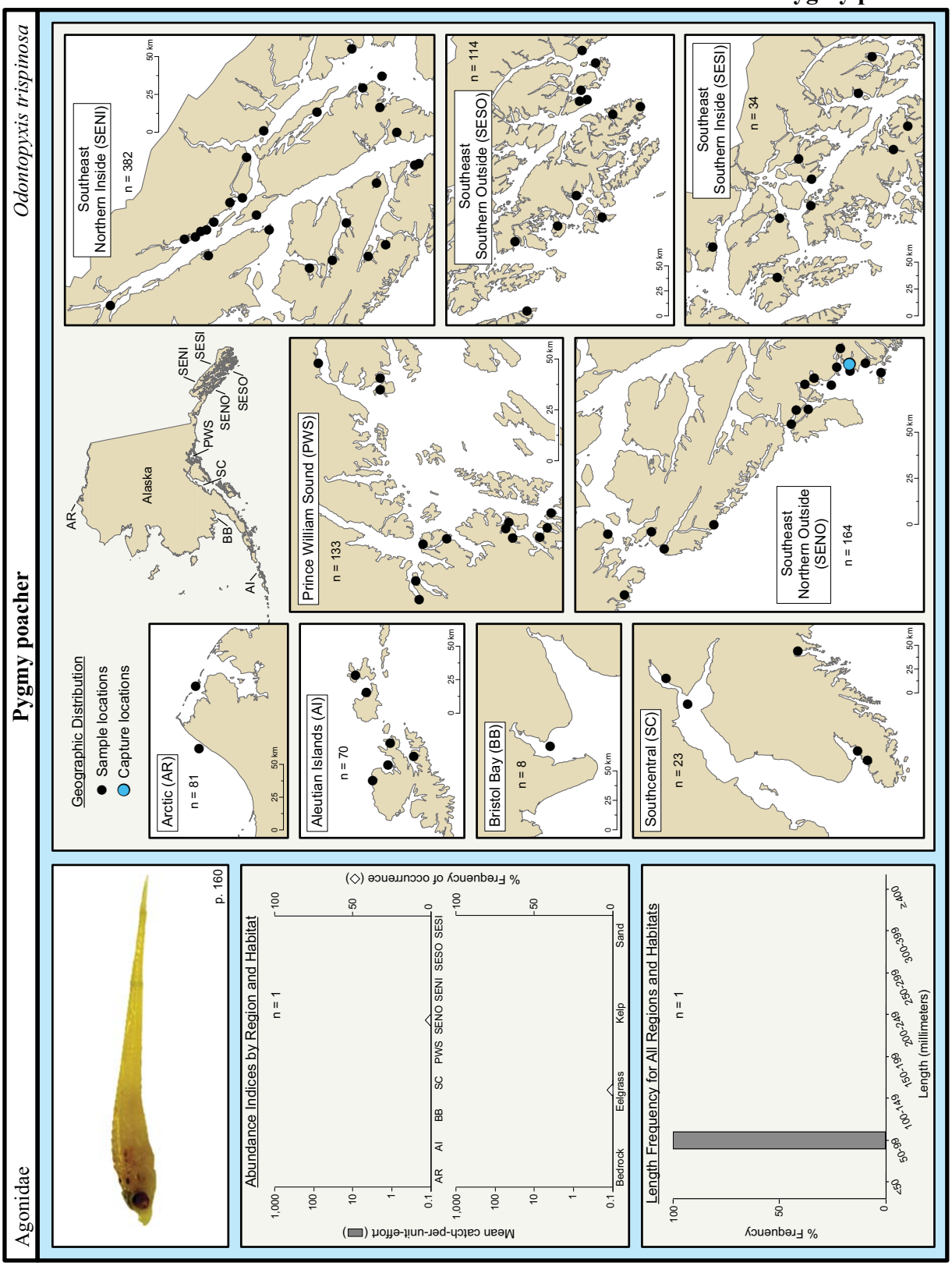
[1]formerly the dark form of the dusky rockfish (Orr and Blackburn 2004)

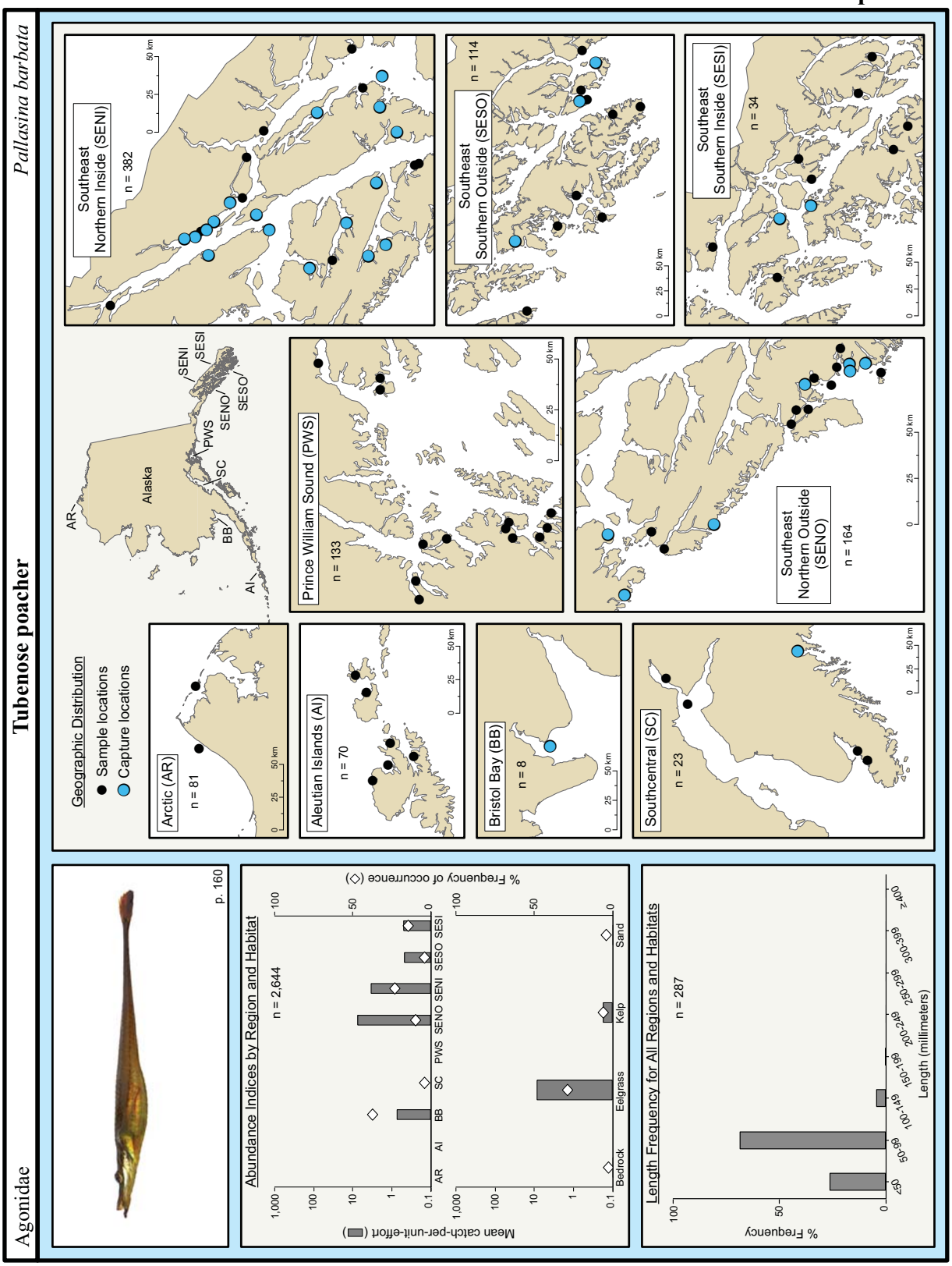
Species Pages

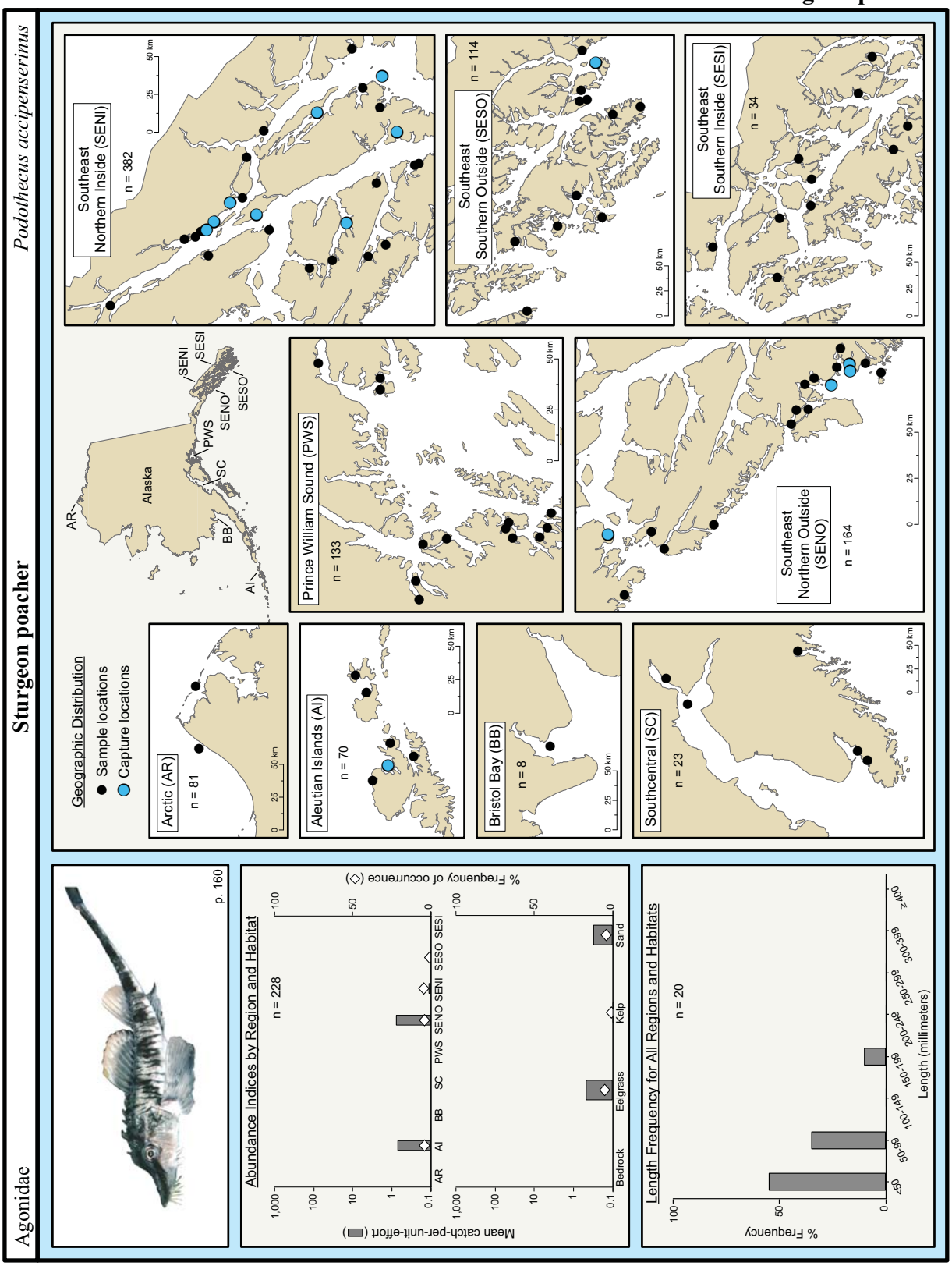

Agonidae
Northern spearnose poacher
Agonopsis vulsa
p. 160
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 4
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 3
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 >400

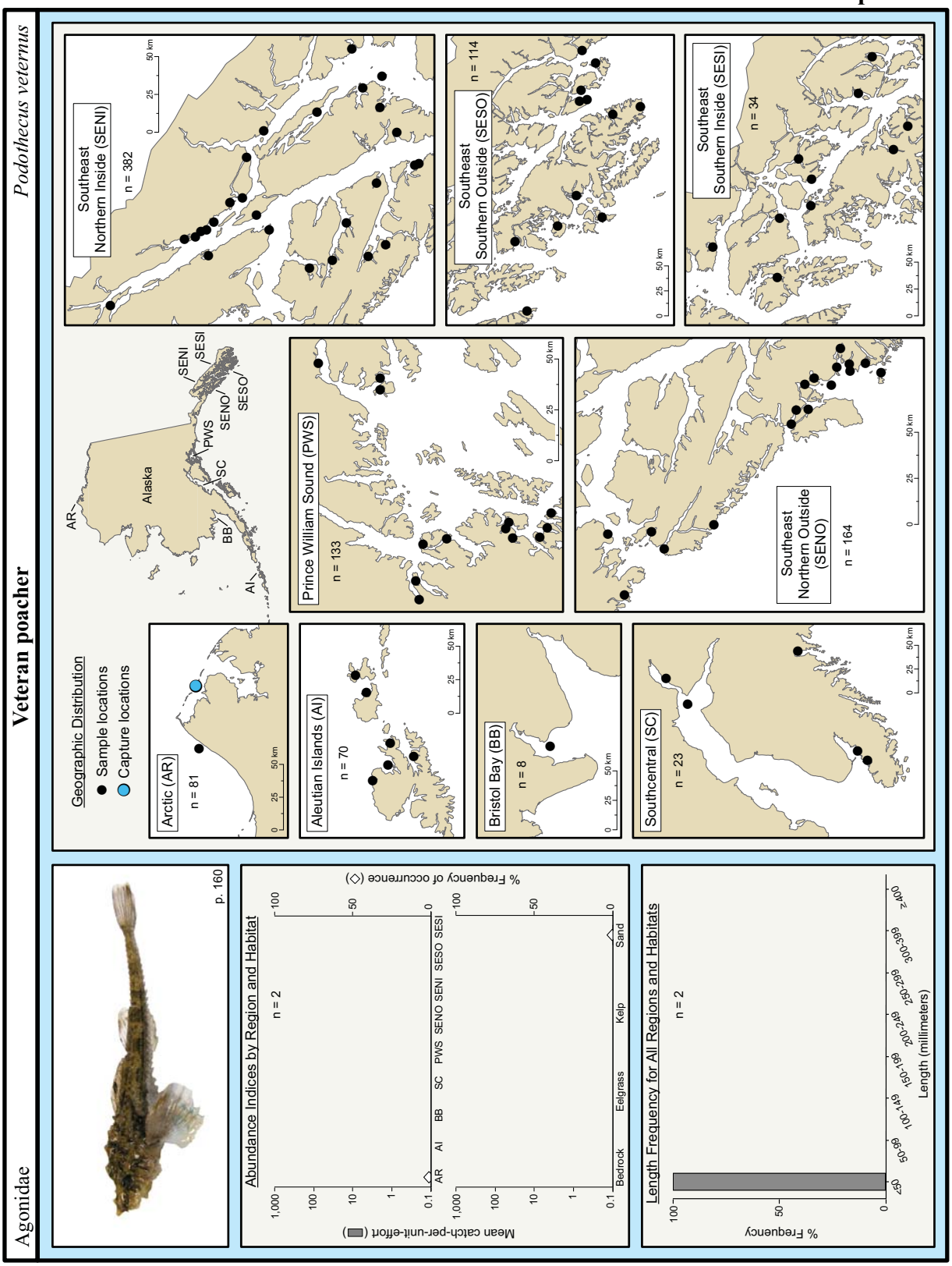

Agonidae
Atlantic poacher
Leptagonus decagonus
p. 160
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (◇)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

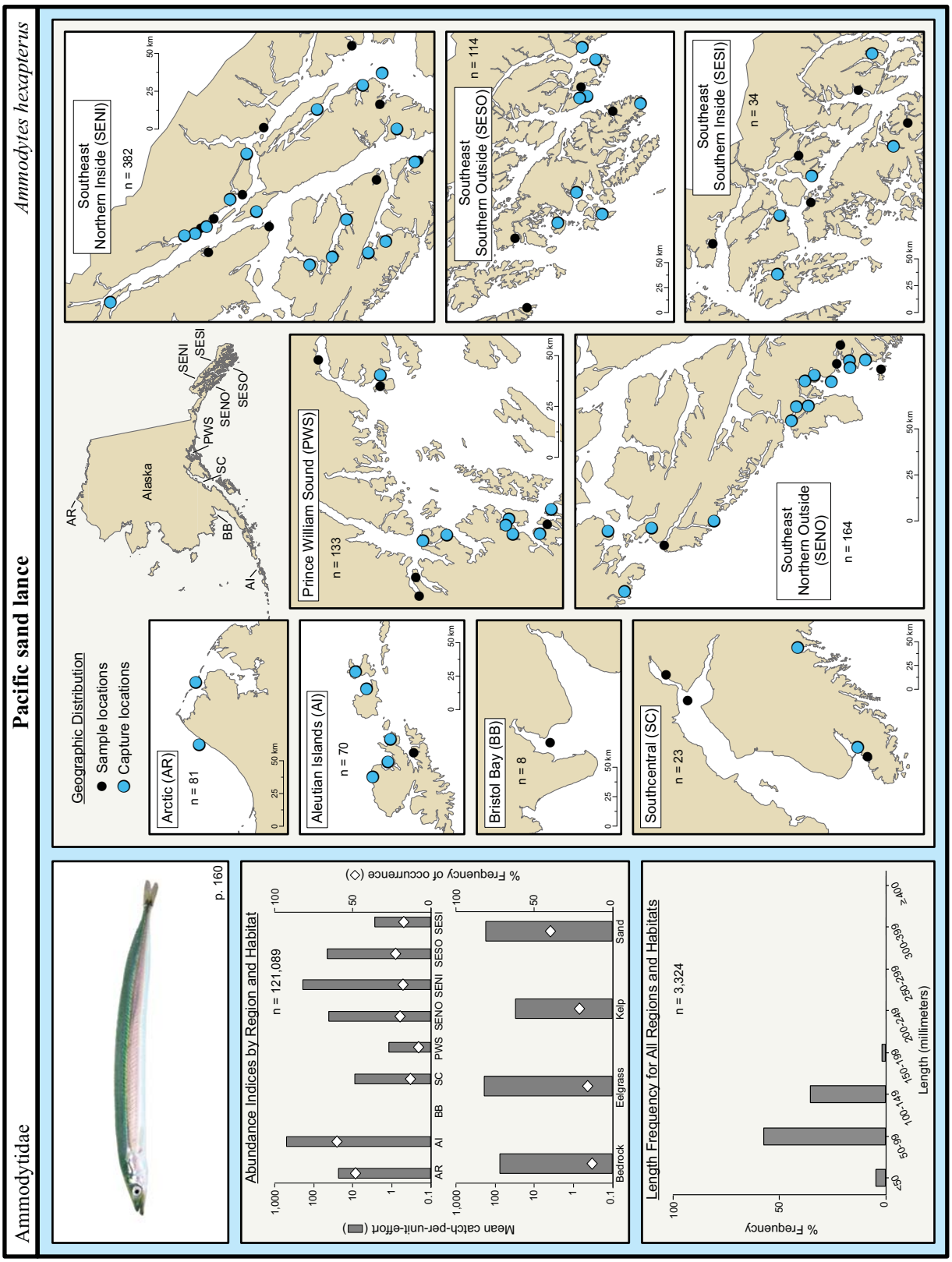

Agonidae
Bering poacher
Occella dodecaedron
p. 160
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

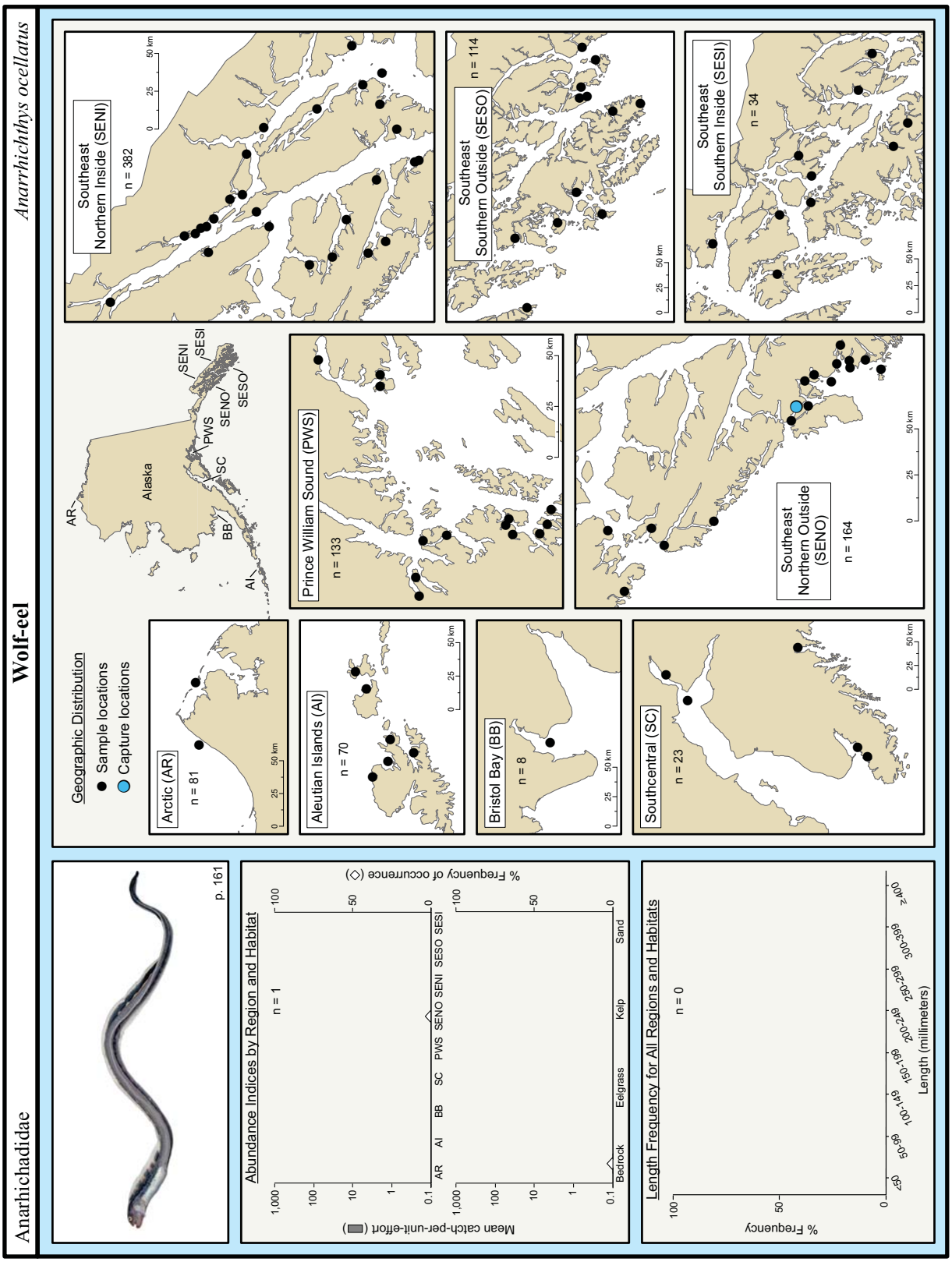

Agonidae
Pygmy poacher
Odontopyxis trispinosa
p. 160
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

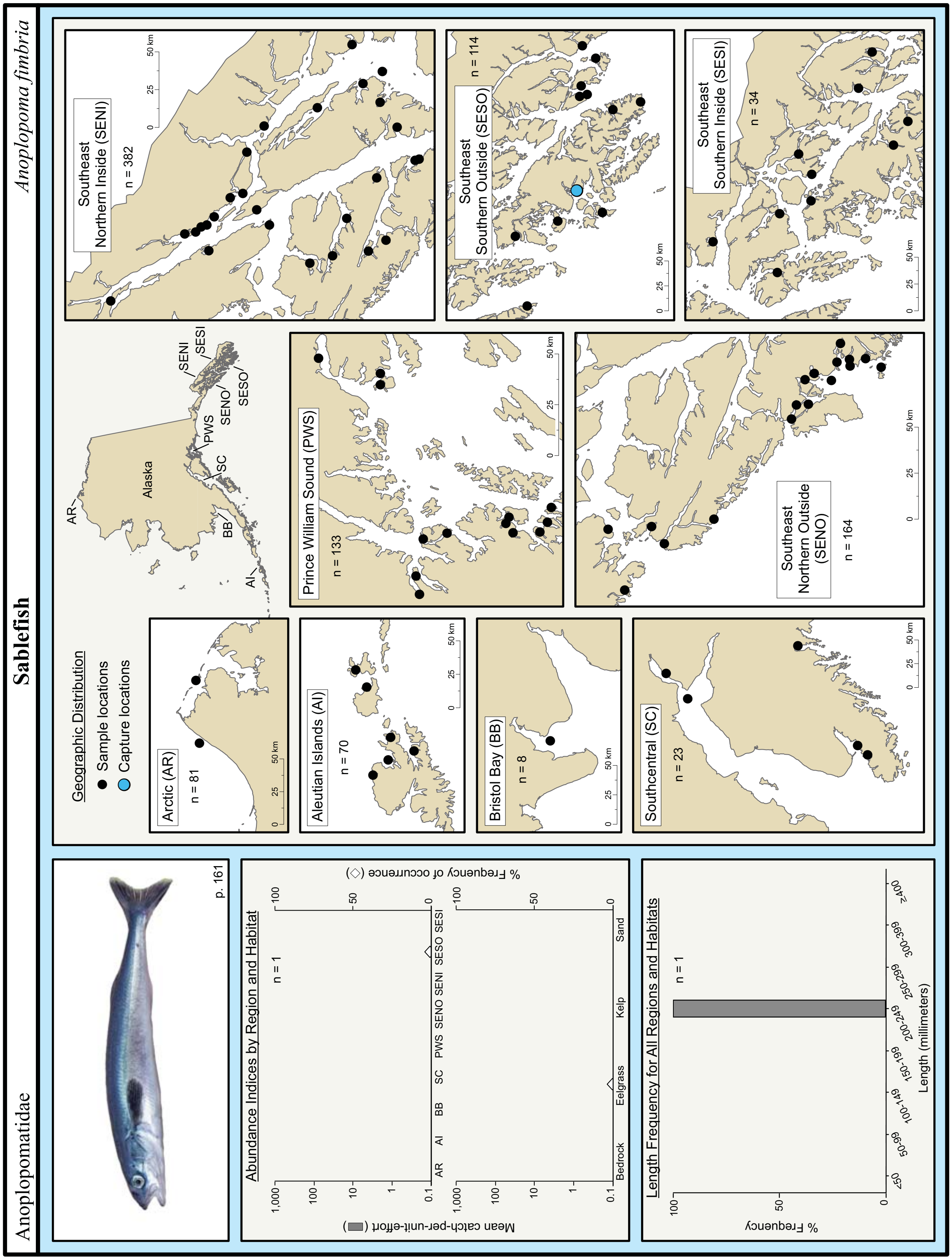

Agonidae
Tubenose poacher
Pallasina barbata
p. 160
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 2,644
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
1,000
100
10
1
0.1
100
50
0
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 287
% Frequency
100
50
0
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400
Length (millimeters)

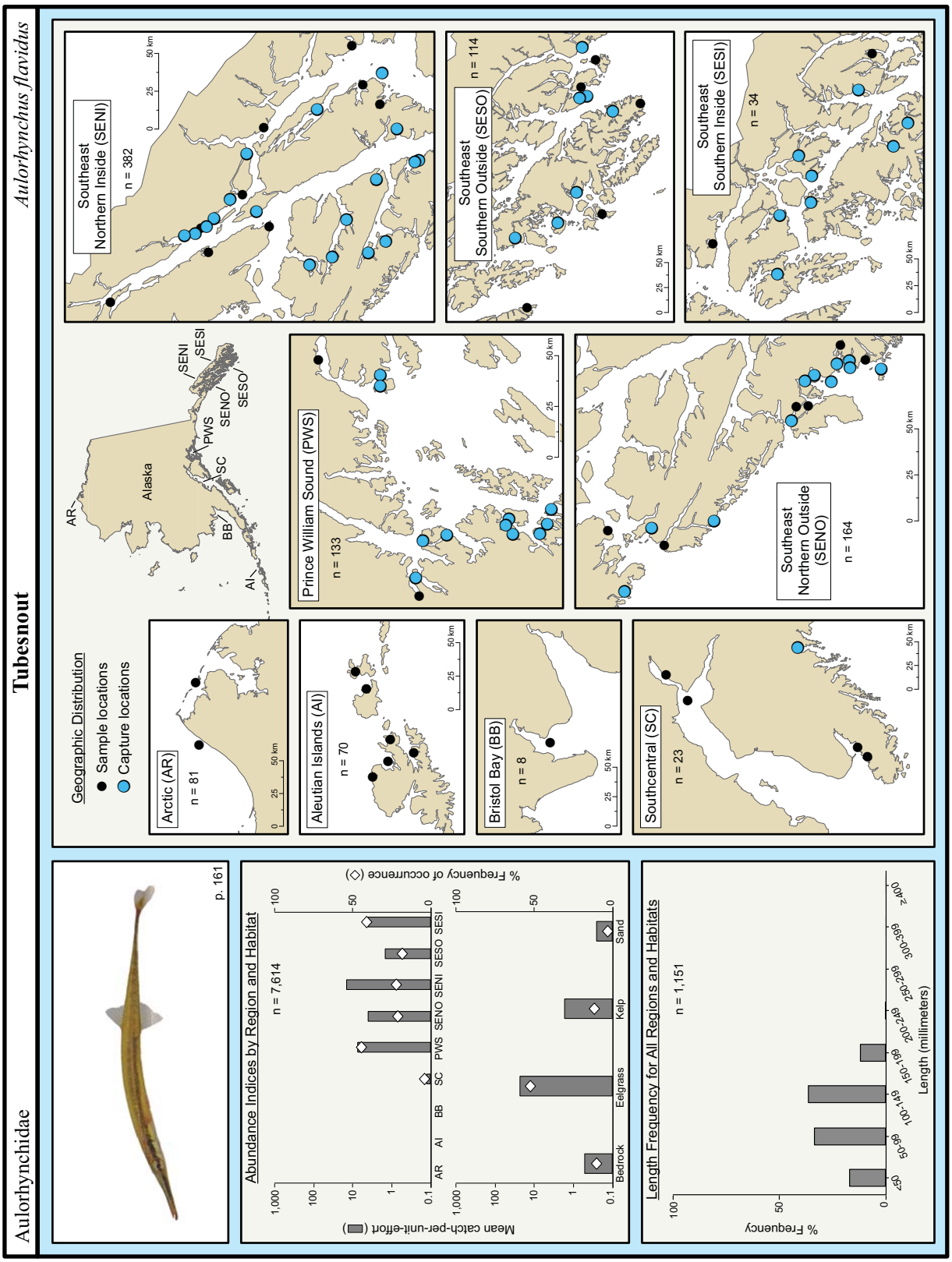

Agonidae
Sturgeon poacher
Podothecus accipenserinus
p. 160
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 228
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
1,000
100
10
1
0.1
100
50
0
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 20
% Frequency
100
50
0
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400
Length (millimeters)

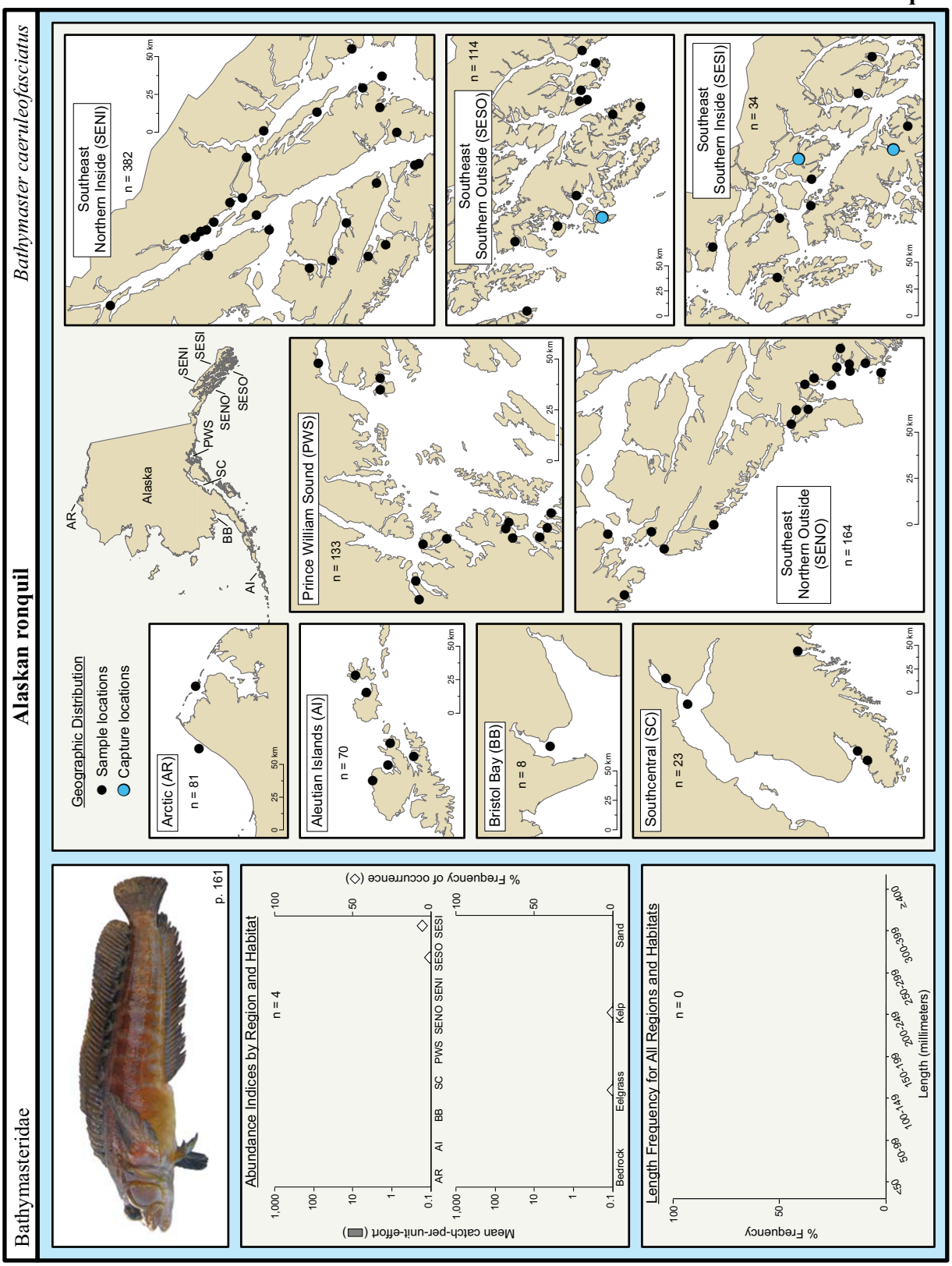

Agonidae
Veteran poacher
Podothecus veternus
p. 160
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 2
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

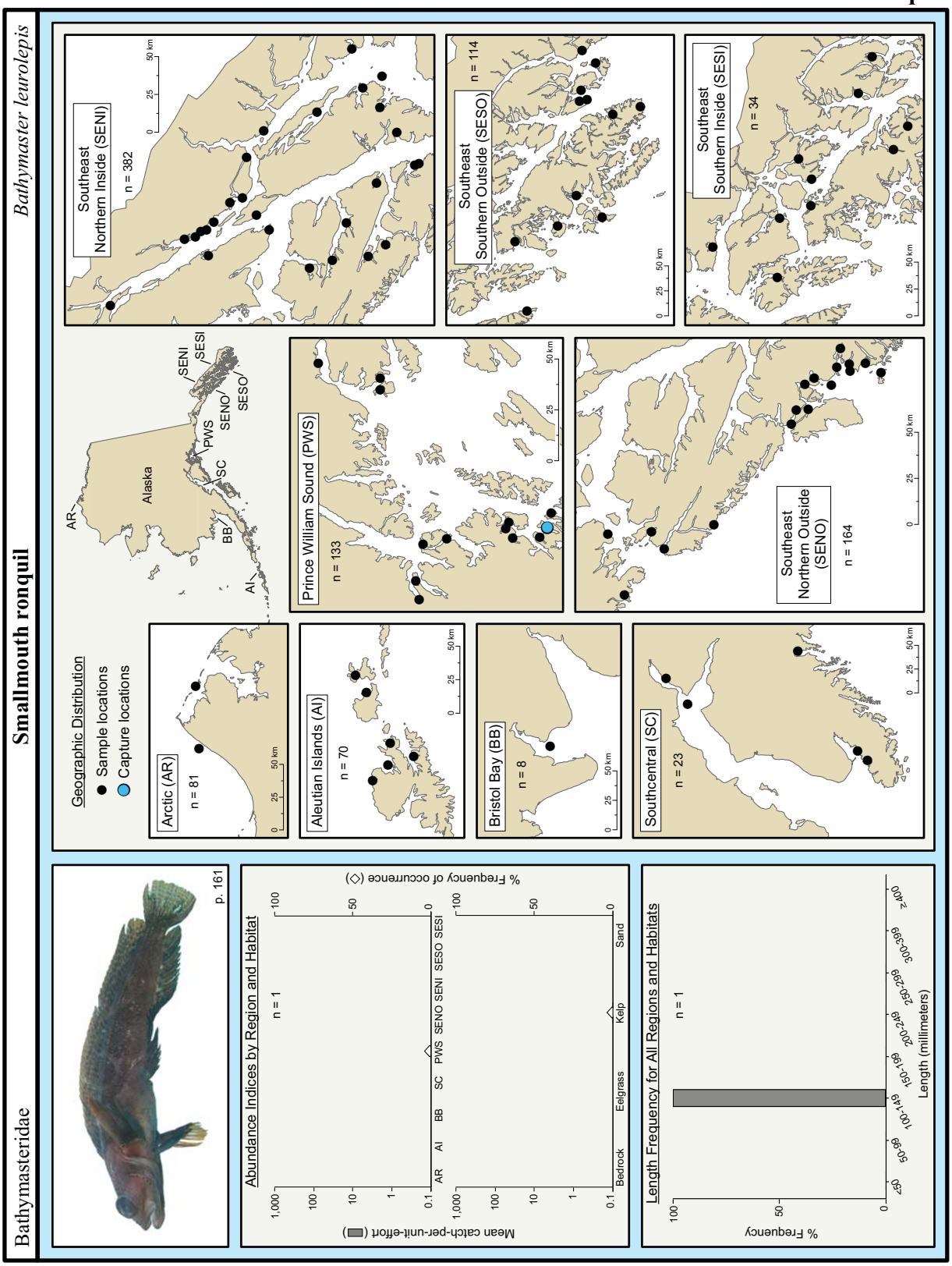

Ammodytidae
Pacific sand lance
Ammodytes hexapterus
p. 160
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 121,089
Mean catch-per-unit-effort (▭)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 3,324
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 >400

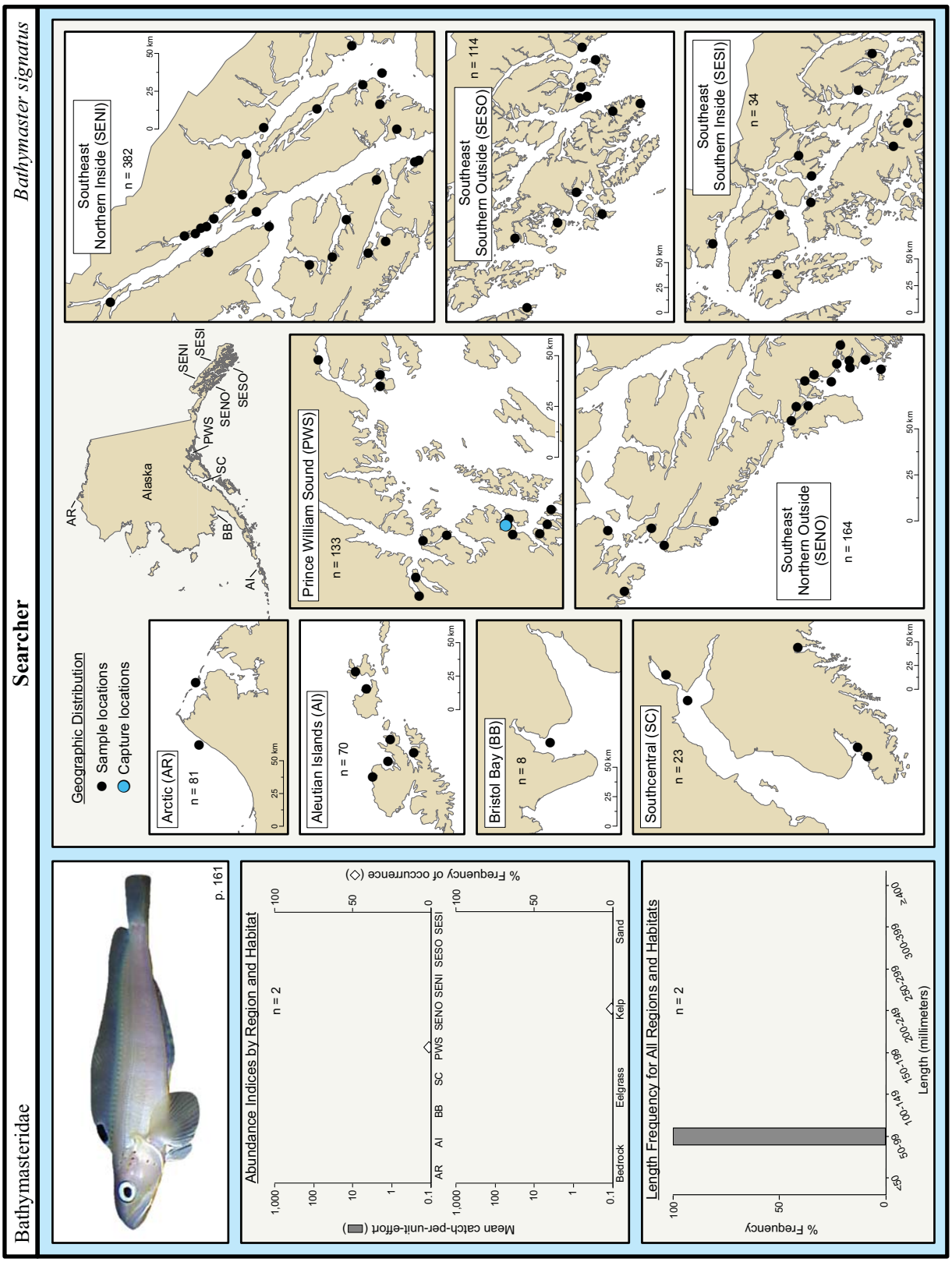

Anarhichadidae
Wolf-eel
Anarrhichthys ocellatus
p. 161
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 0
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

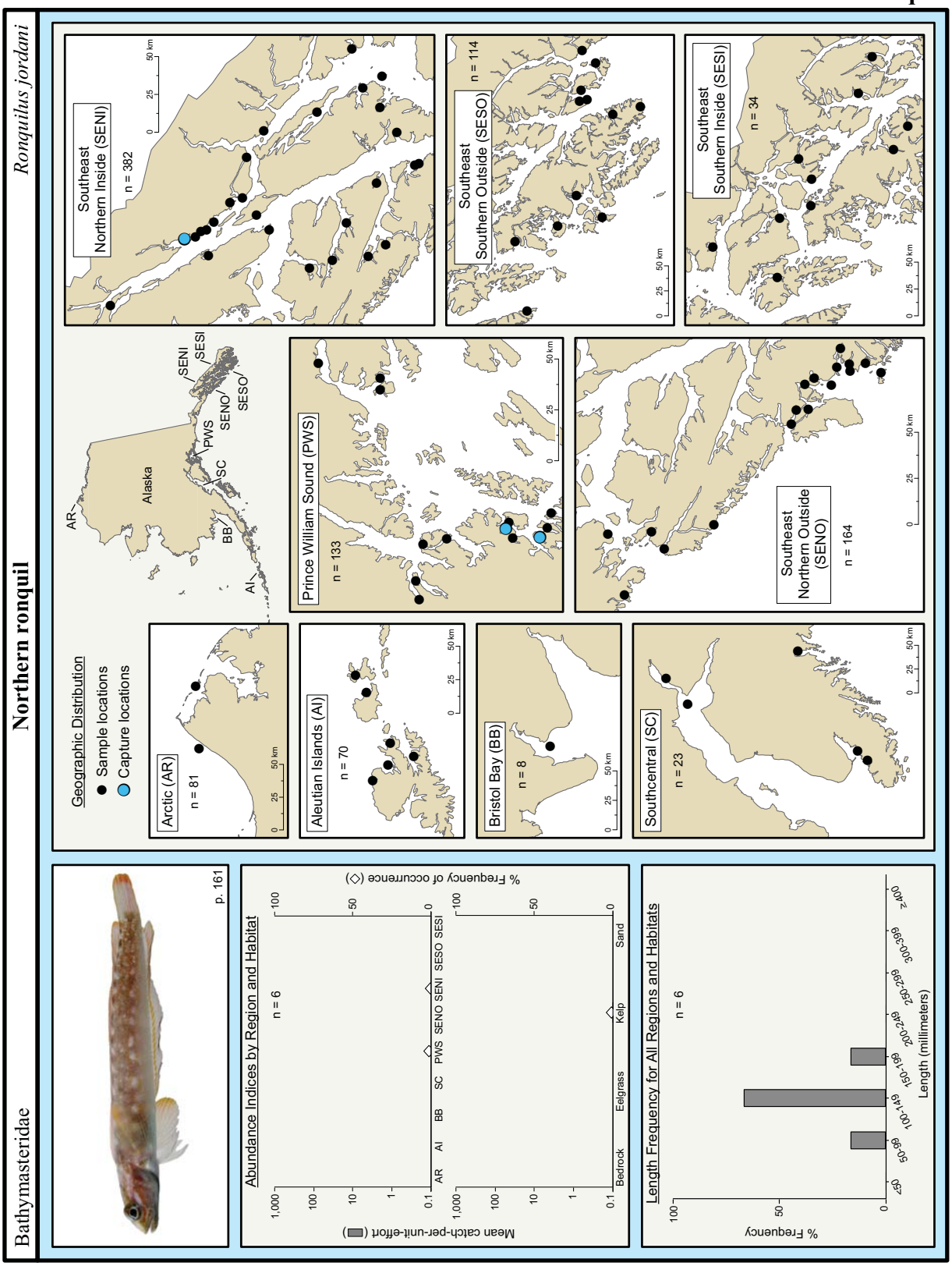

Anoplopomatidae
Sablefish
Anoplopoma fimbria
p. 161
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
AI
BB
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort
% Frequency of occurrence
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
% Frequency
Length (millimeters)
0-49 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

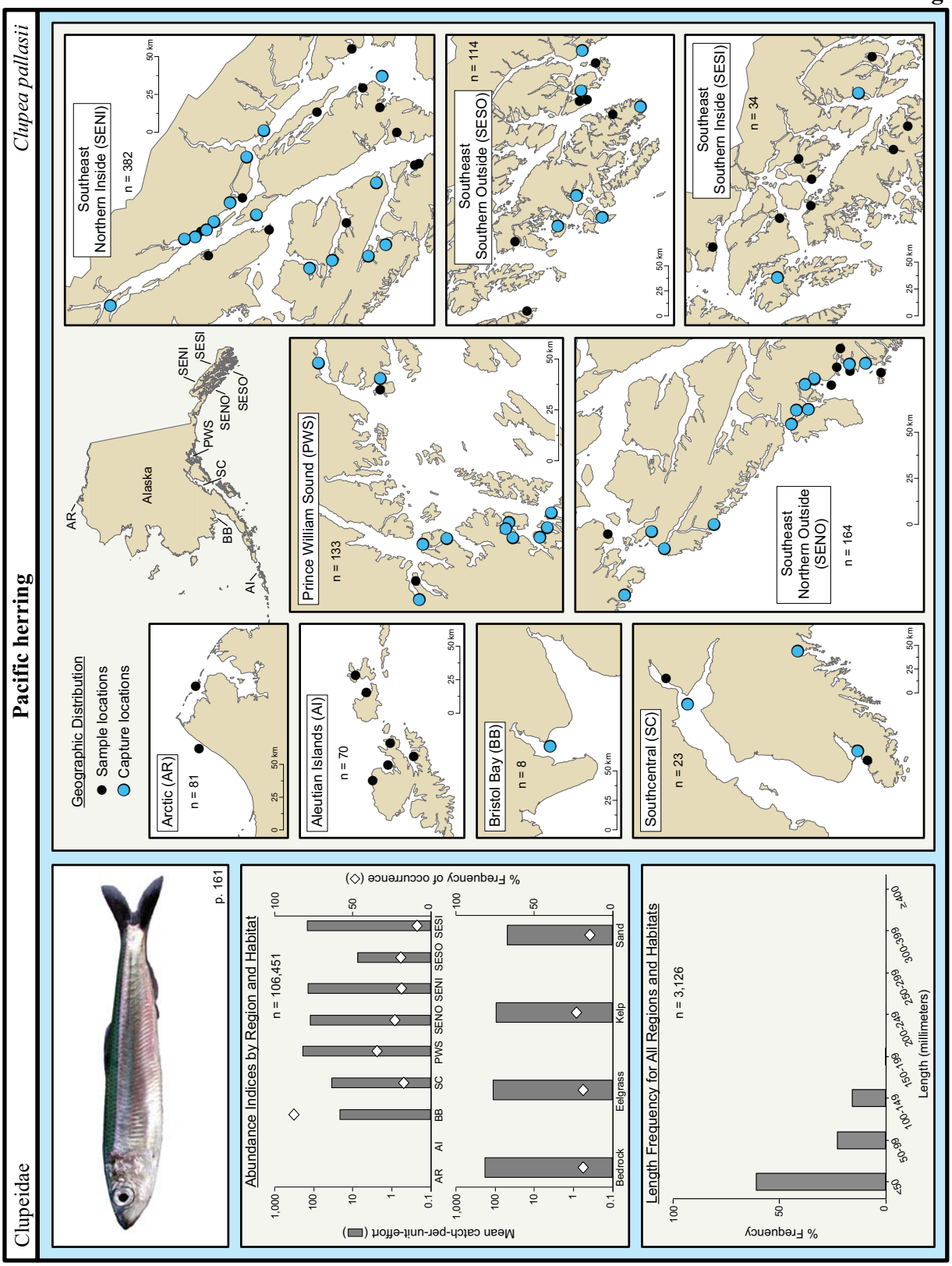

Aulorhynchidae
Tubesnout
Aulorhynchus flavidus
p. 161
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 7,614
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1,151
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

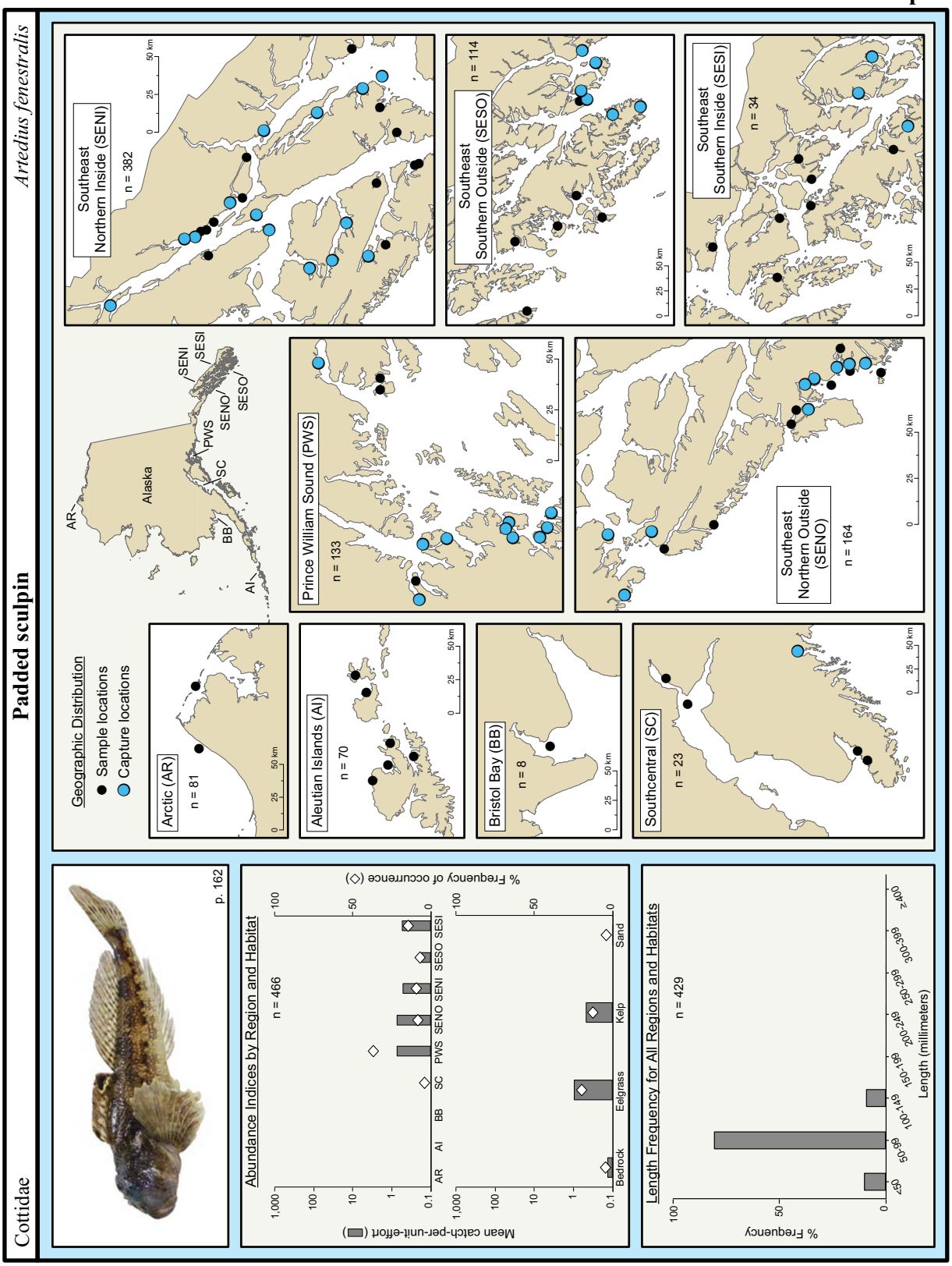

Bathymasteridae
Alaskan ronquil
Bathymaster caeruleofasciatus
p. 161
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 4
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 0
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

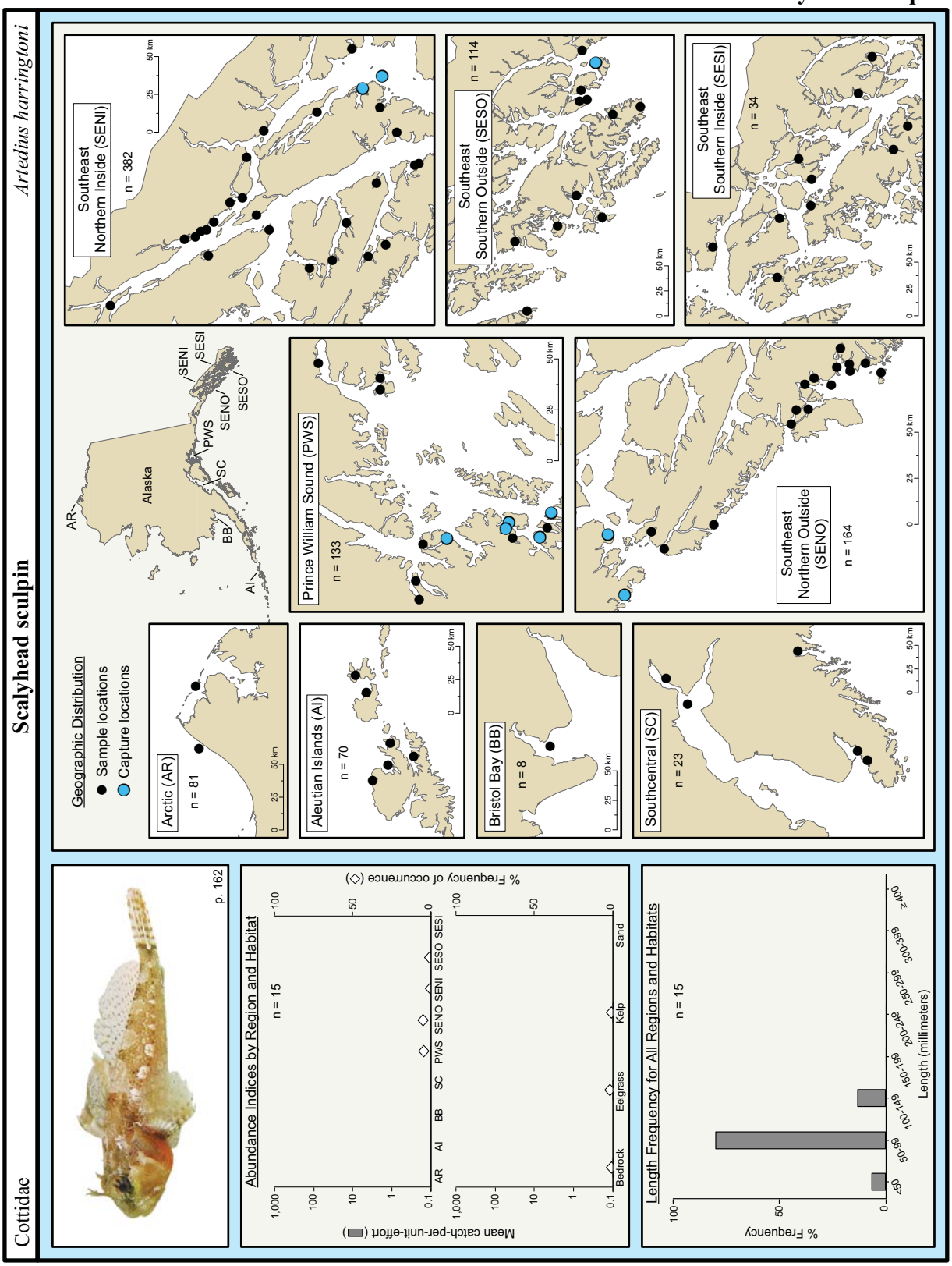

Bathymasteridae
Smallmouth ronquil
Bathymaster leurolepis
p. 161
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

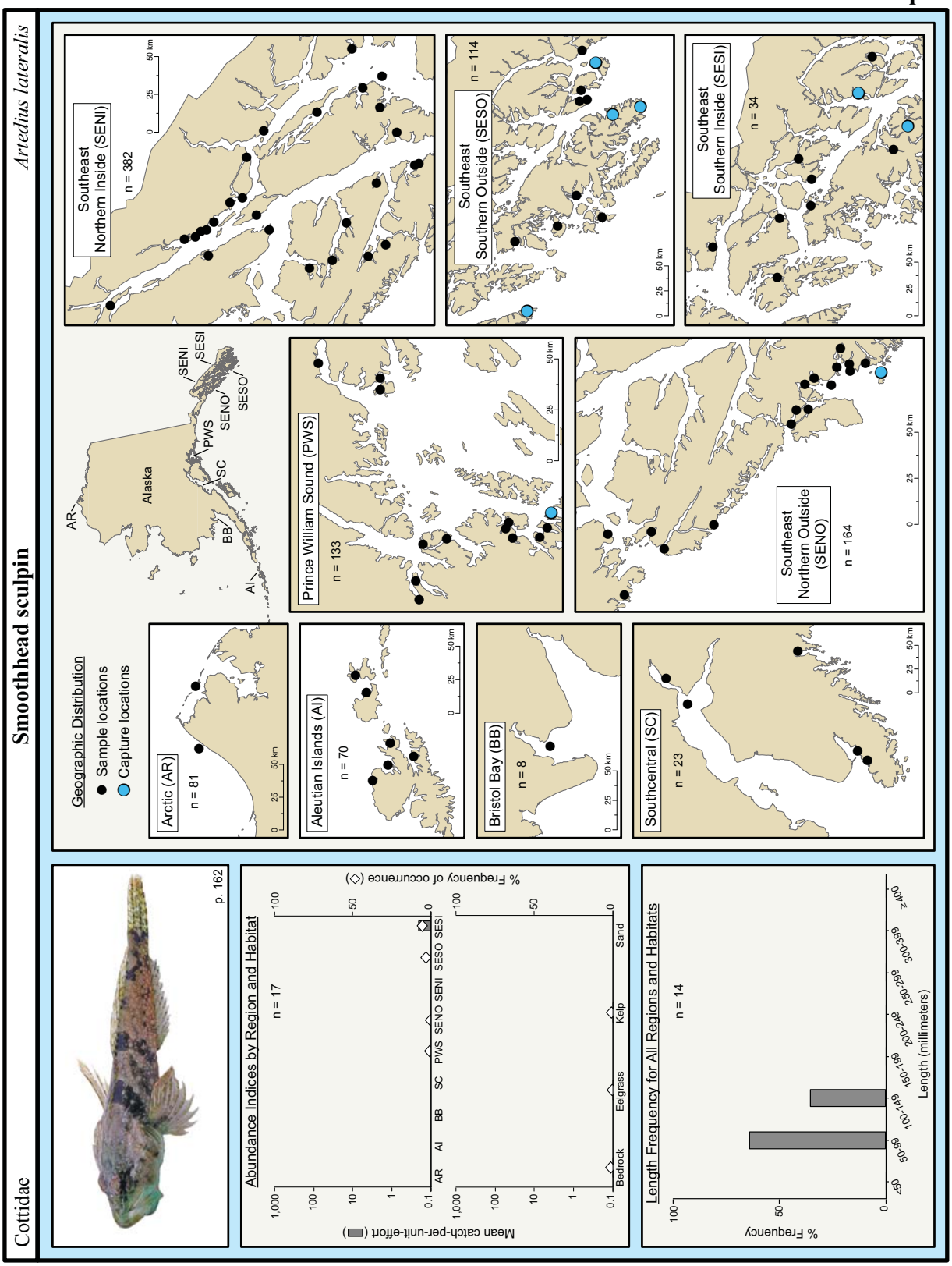

Bathymasteridae
Searcher
Bathymaster signatus
p. 161
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 2
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

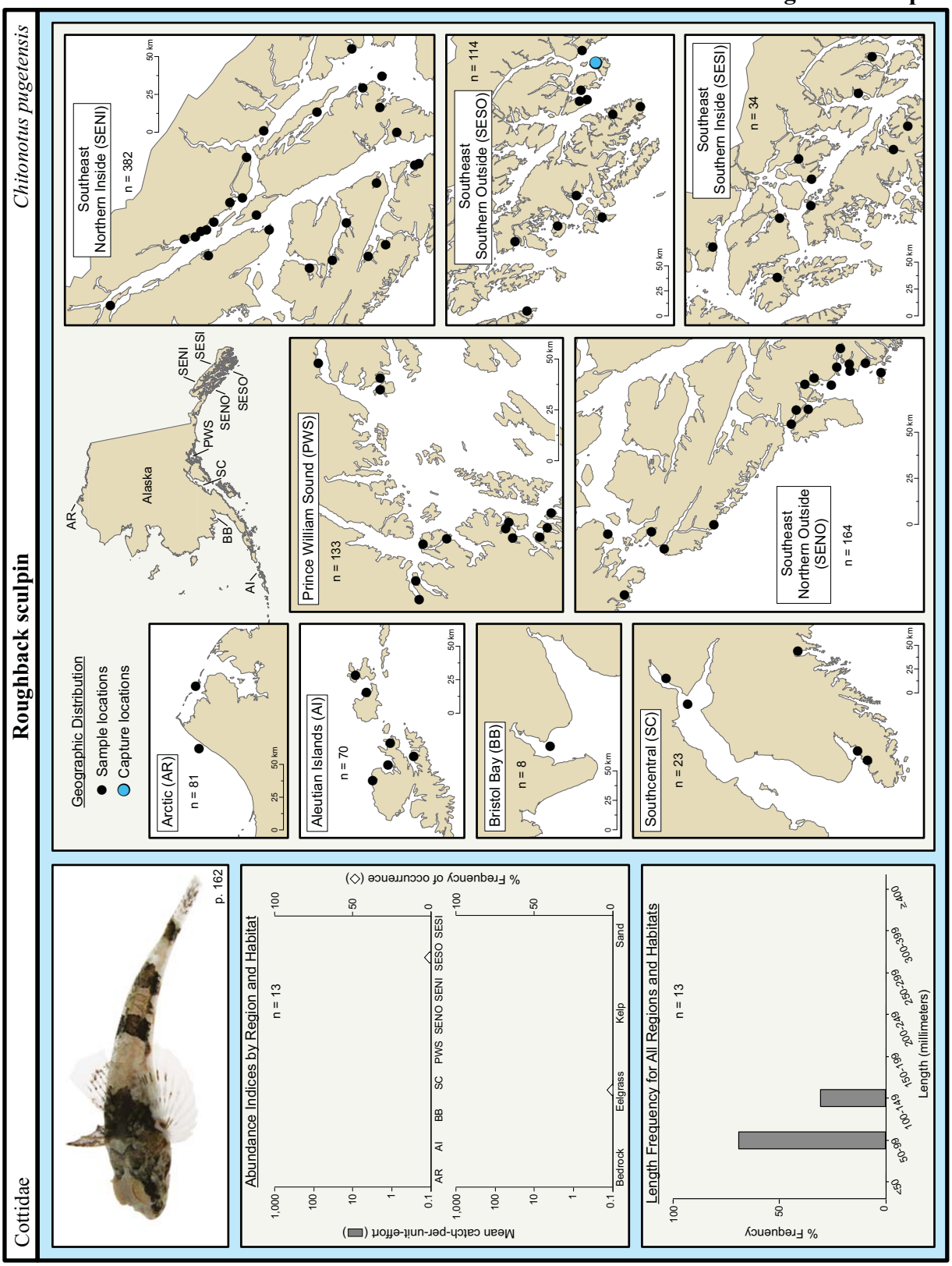

Bathymasteridae
Northern ronquil
Ronquilus jordani
p. 161
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 6
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 6
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

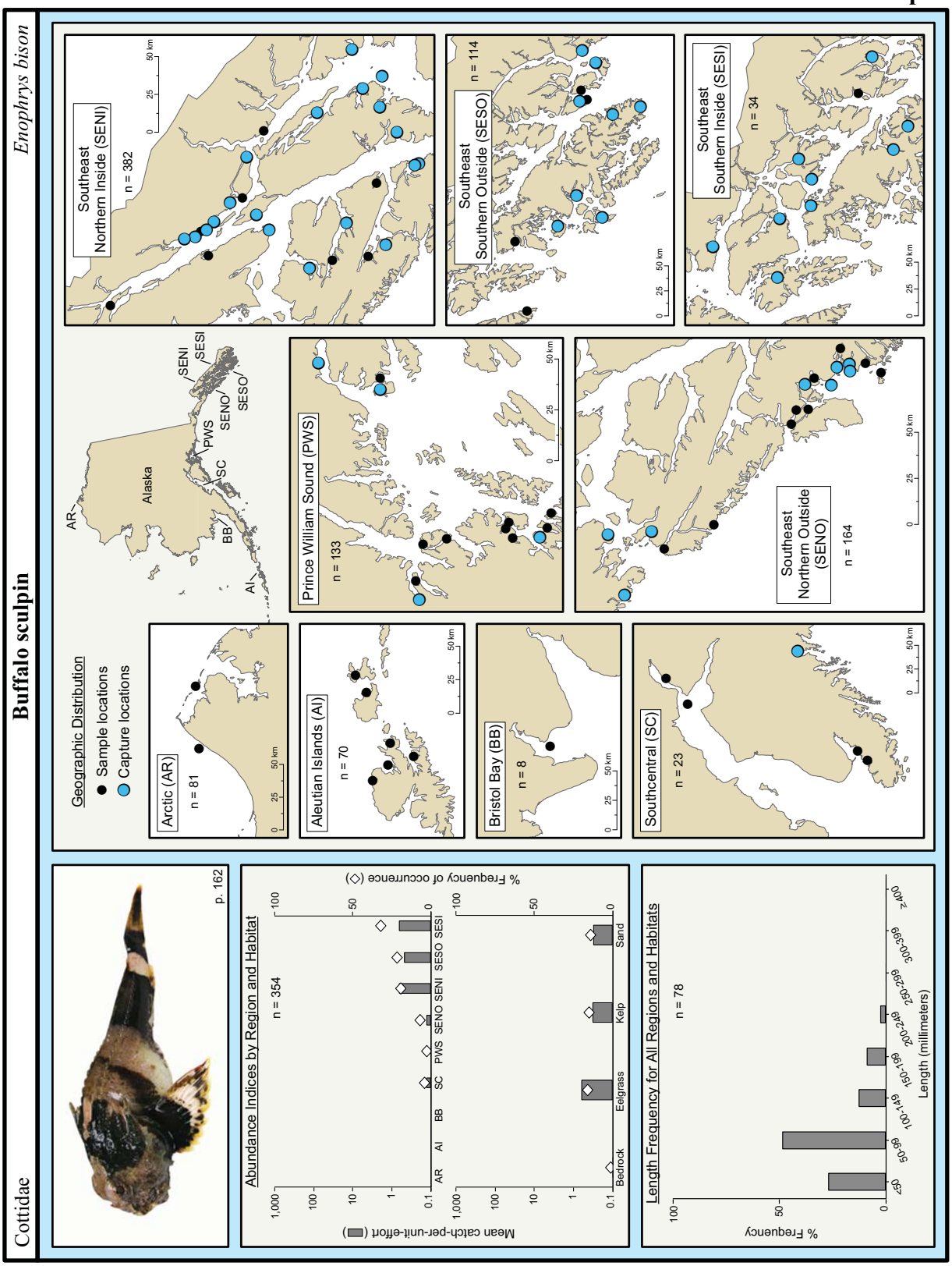

Clupeidae
Pacific herring
Clupea pallasii
p. 161
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 106,451
Mean catch-per-unit-effort (◇)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 3,126
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

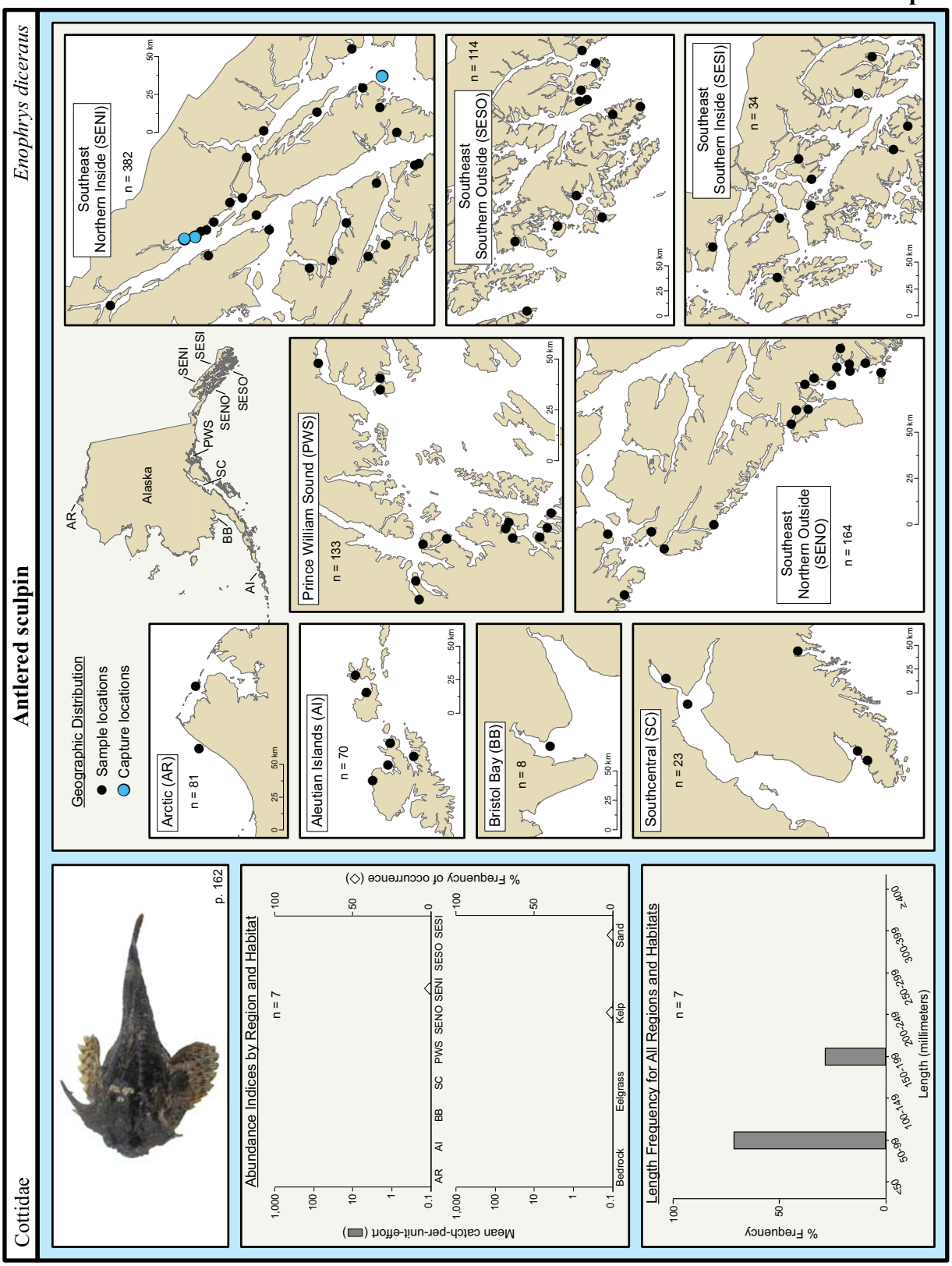

Cottidae
Padded sculpin
Artedius fenestralis
p. 162
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 466
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 429
% Frequency
Length (millimeters)

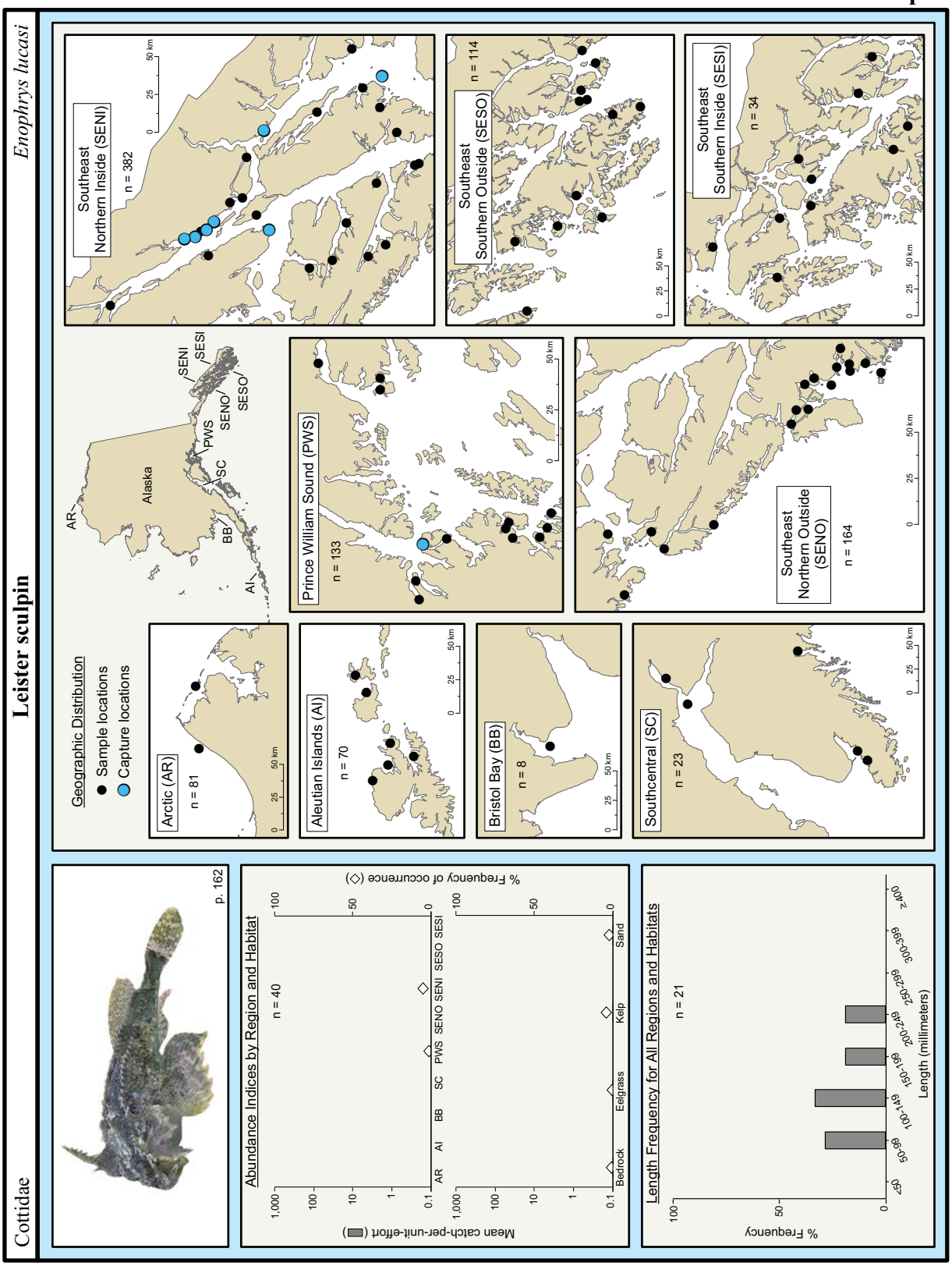

Cottidae
Scalyhead sculpin
Artedius harringtoni
p. 162
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 15
Mean catch-per-unit-effort (◇)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 15
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

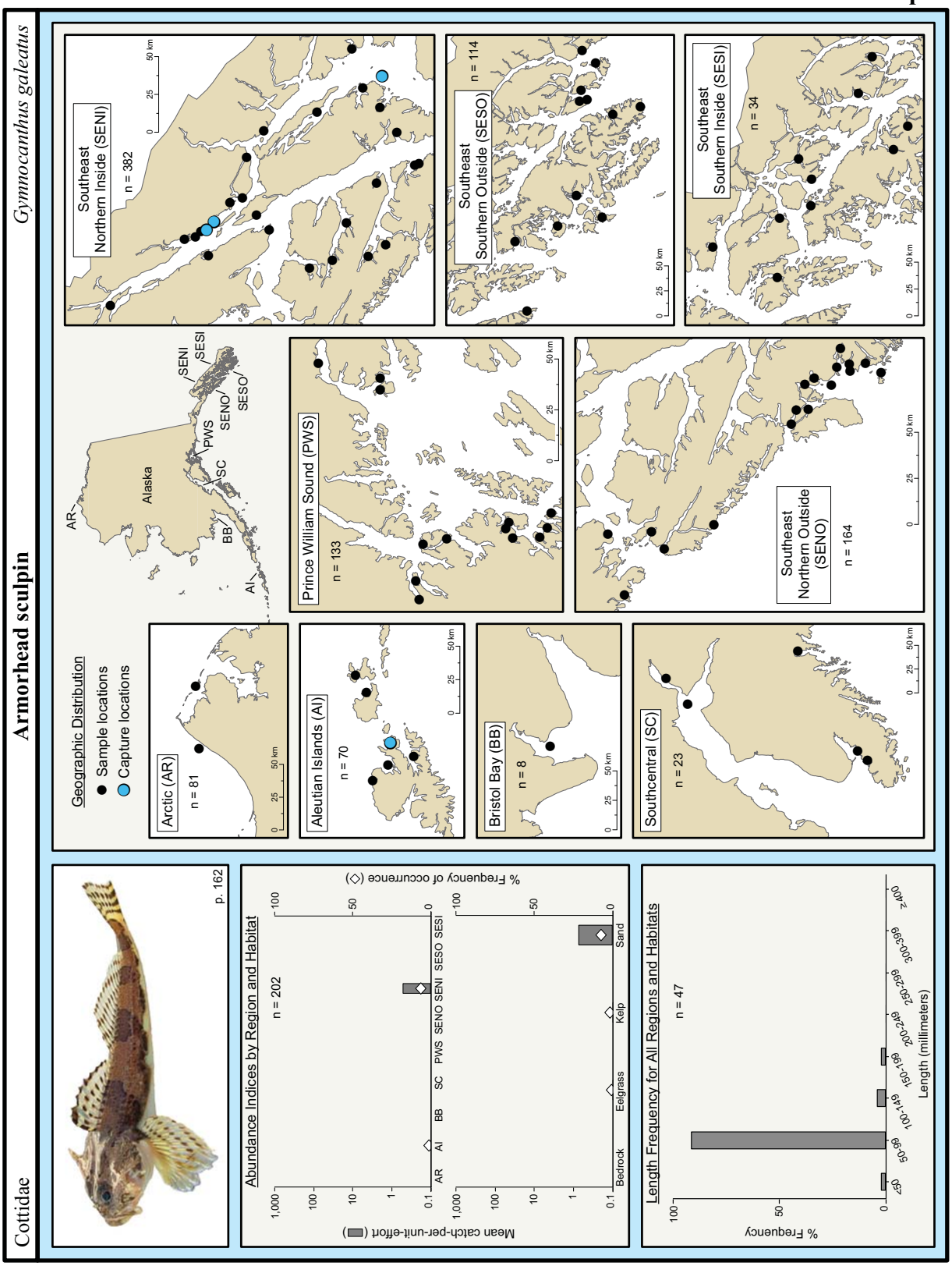

Cottidae
Smoothhead sculpin
Artedius lateralis
p. 162
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 17
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 14
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

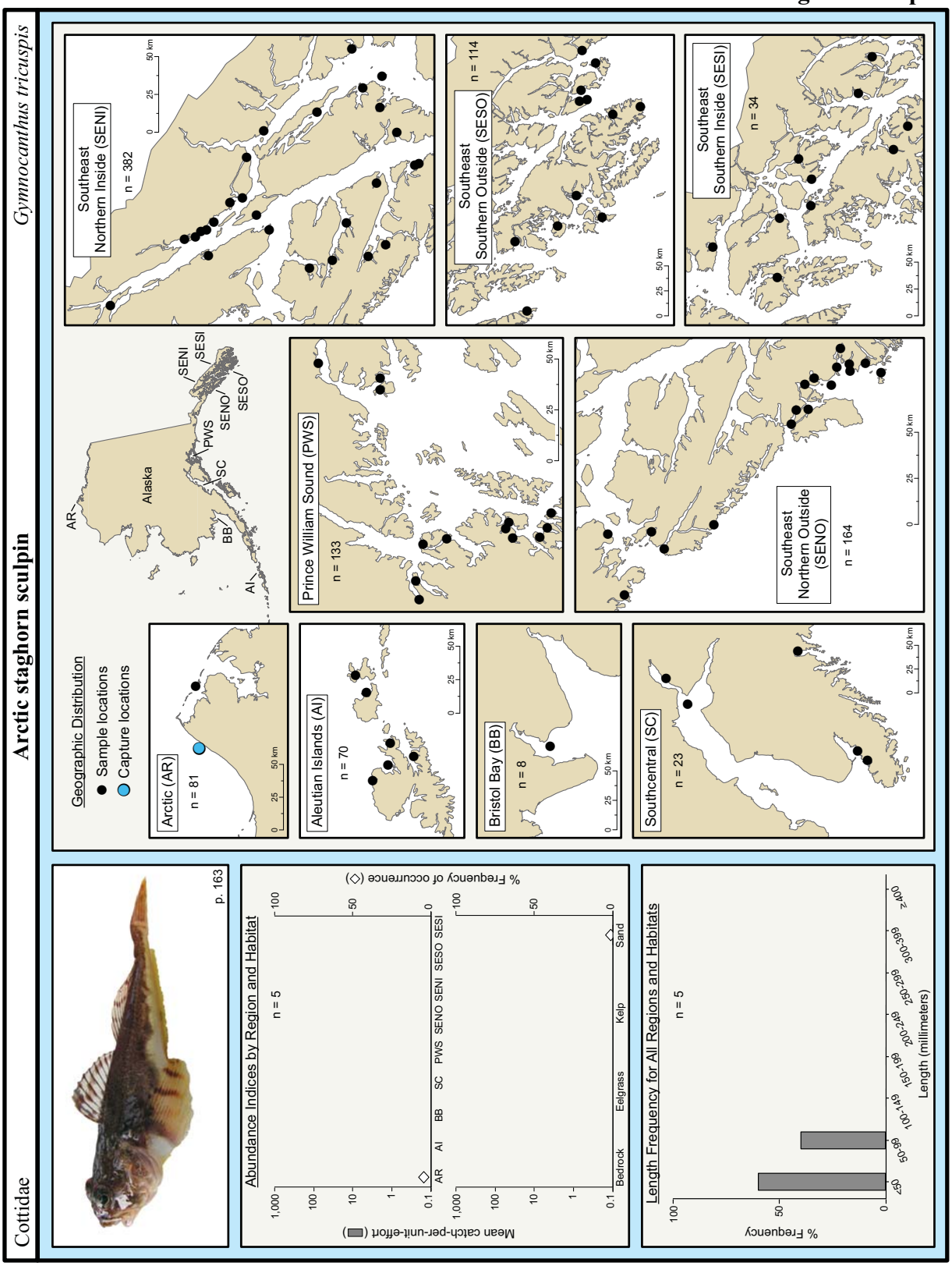

Cottidae
Roughback sculpin
Chitonotus pugetensis
p. 162
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 13
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 13
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

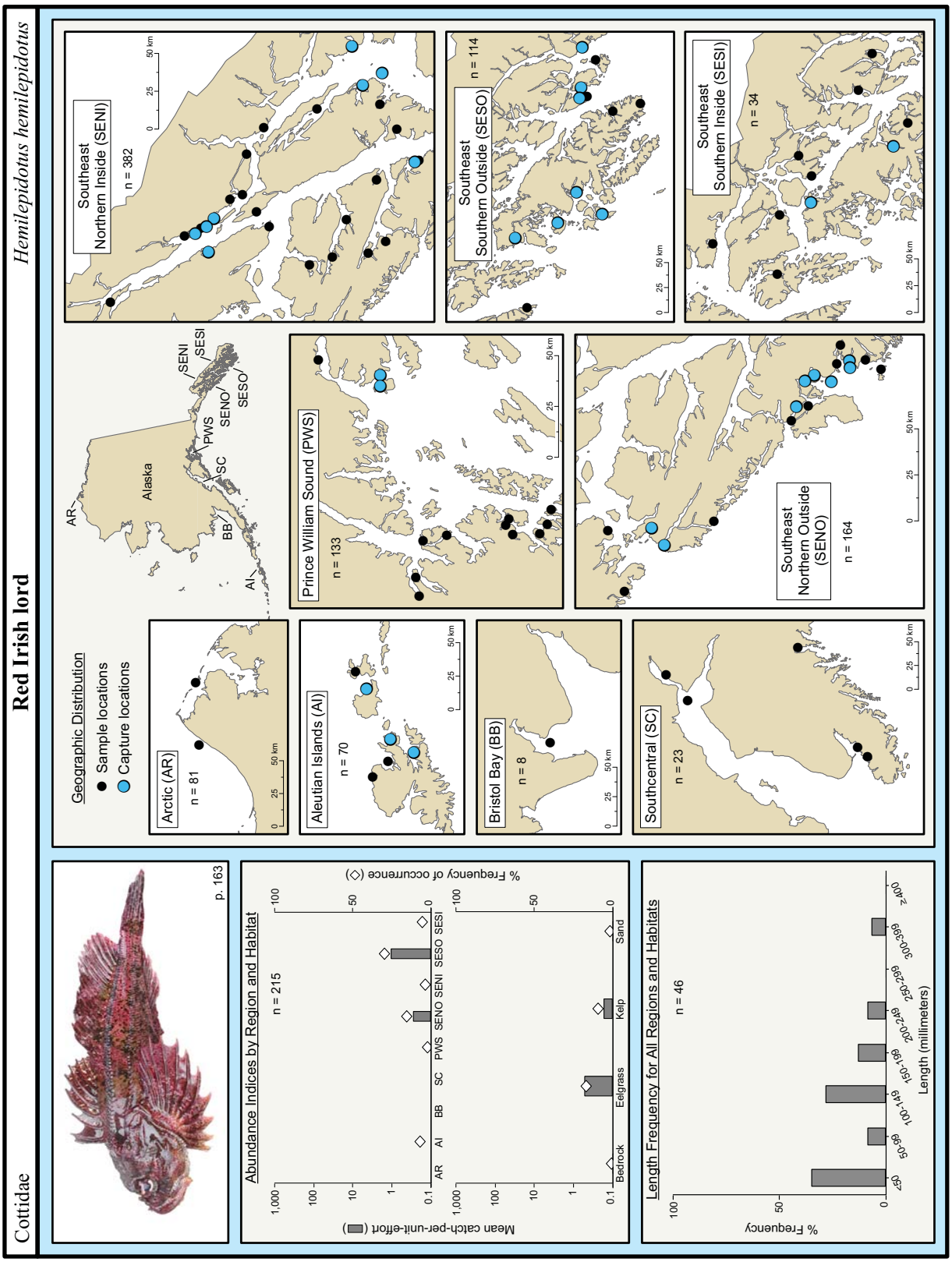

Cottidae
Buffalo sculpin
Enophrys bison
p. 162
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 354
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 78
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

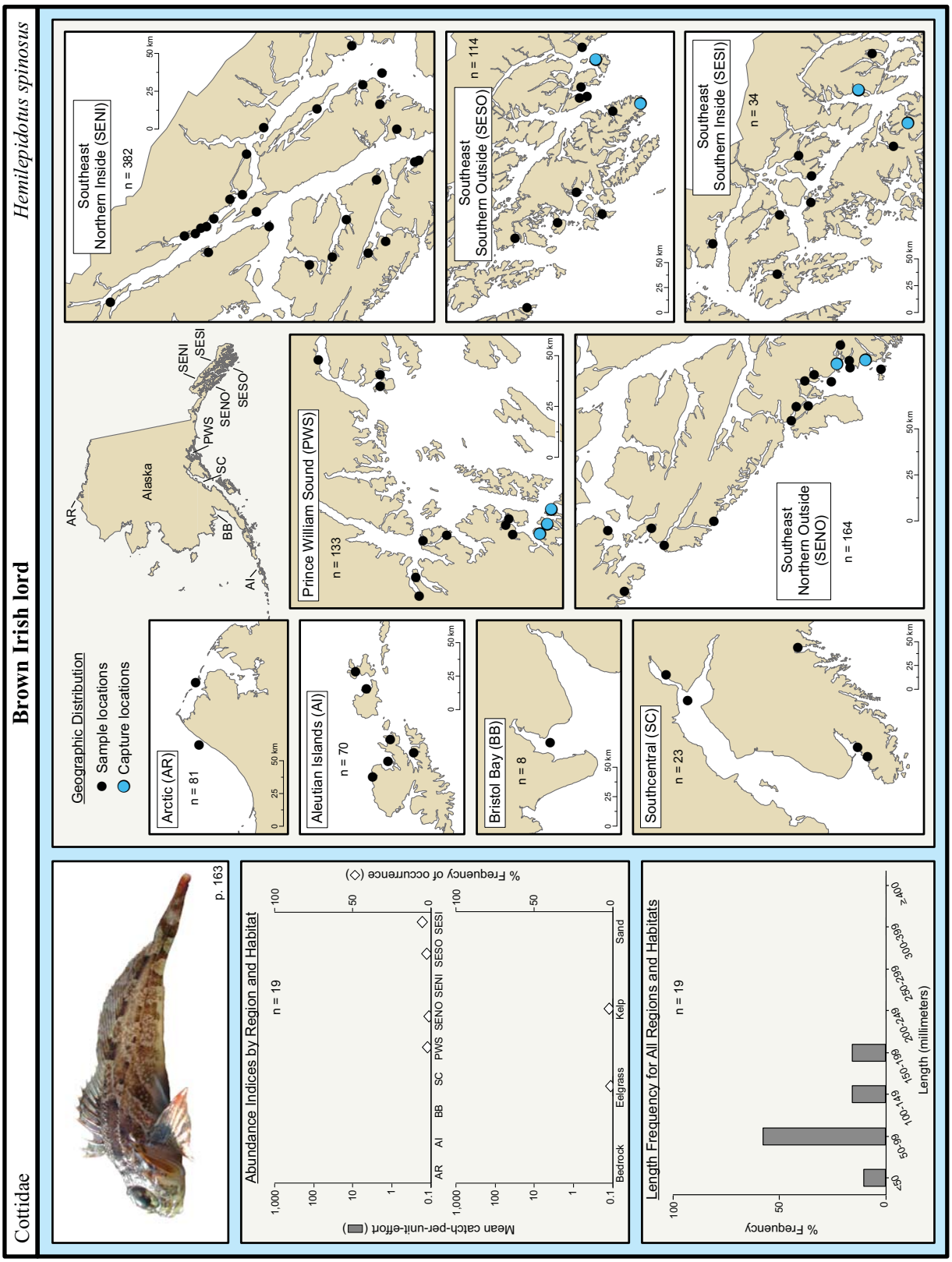

Cottidae
Antlered sculpin
Enophrys diceraus
p. 162
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 7
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 7
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

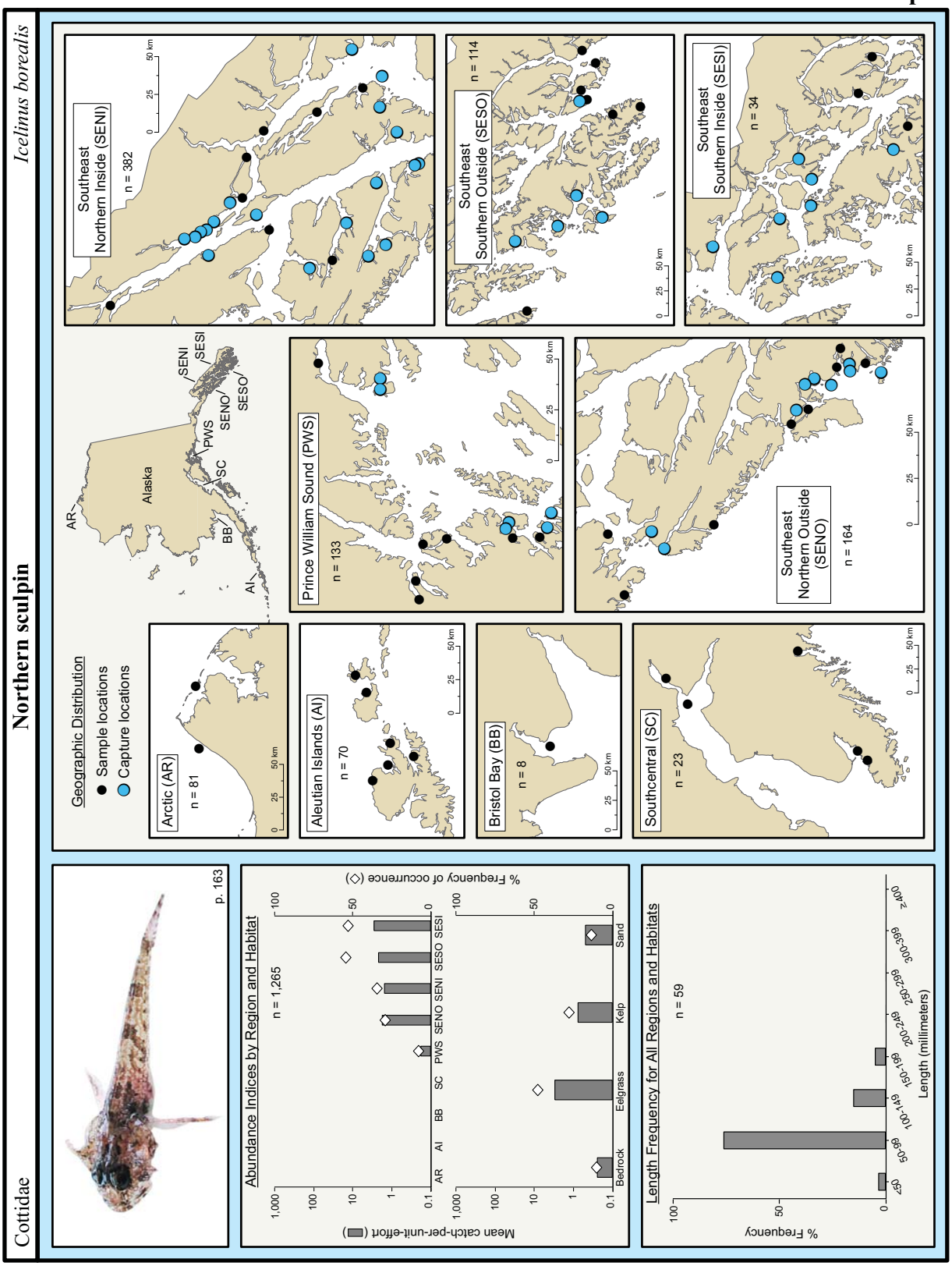

Cottidae
Leister sculpin
Enophrys lucasi
p. 162
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 40
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 21
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

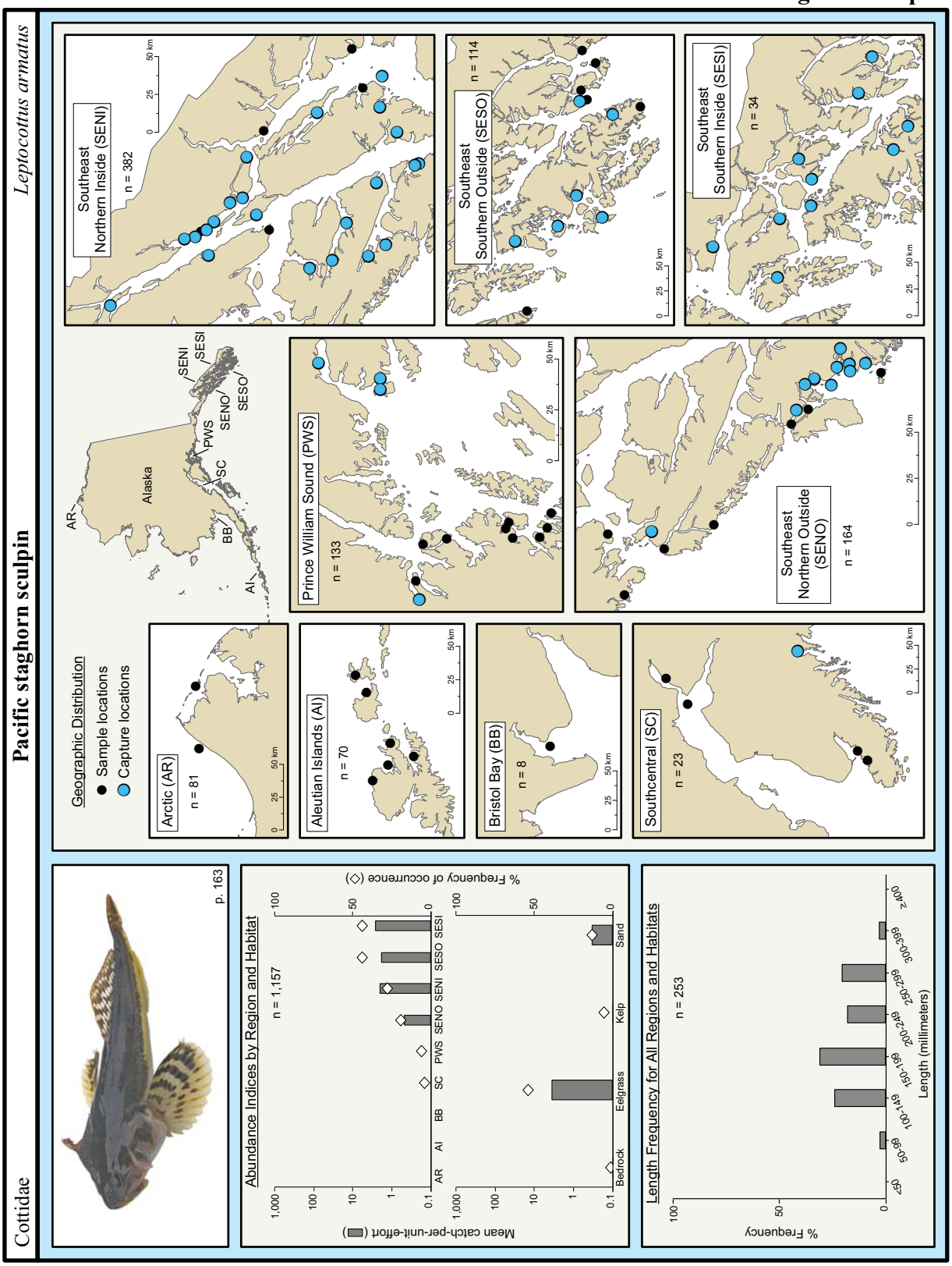

Cottidae
Armorhead sculpin
Gymnocanthus galeatus
p. 162
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 202
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 47
% Frequency
Length (millimeters)

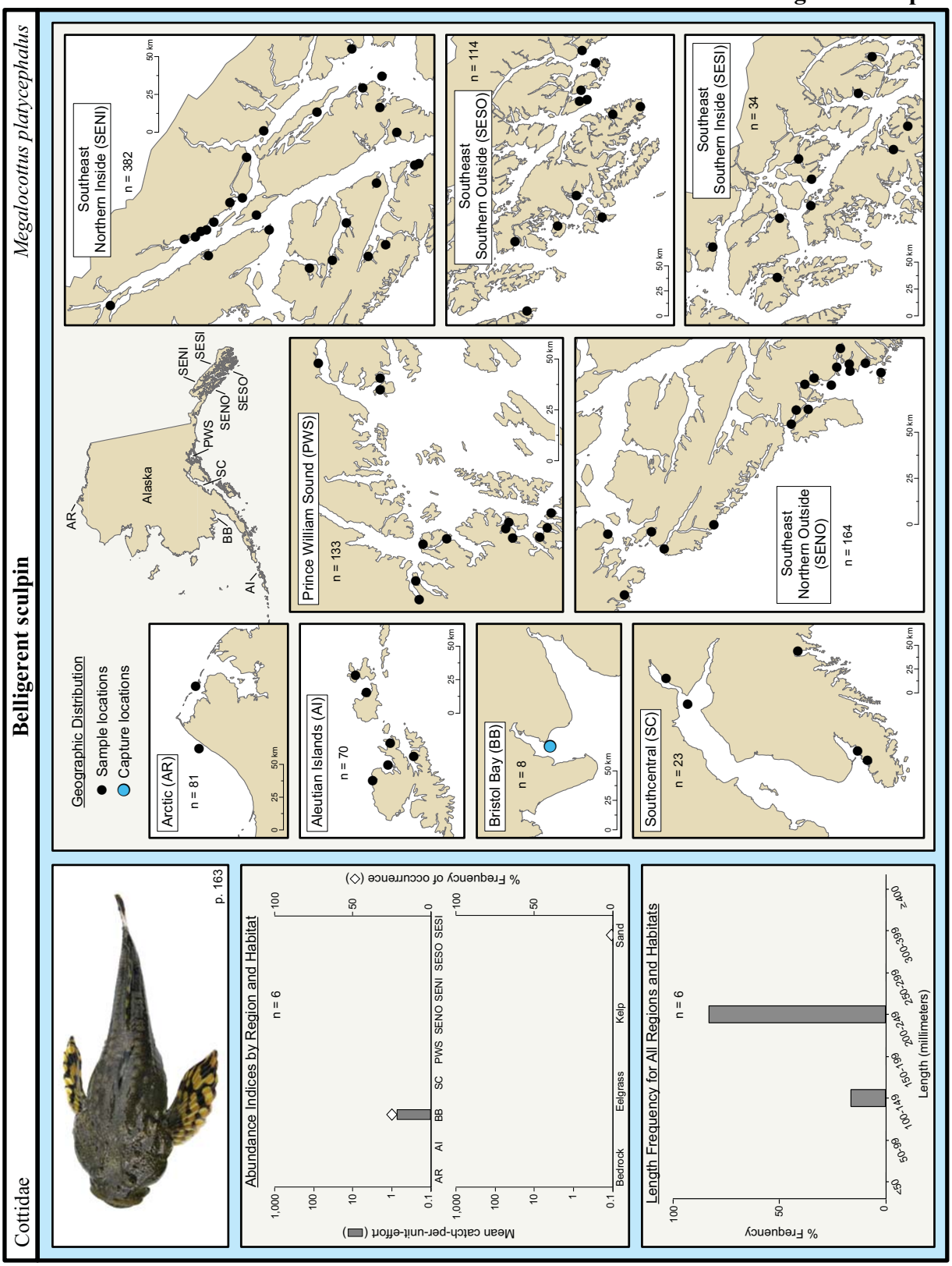

Cottidae
Arctic staghorn sculpin
Gymnocanthus tricuspis
p. 163
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 5
Mean catch-per-unit-effort
% Frequency of occurrence
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 5
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

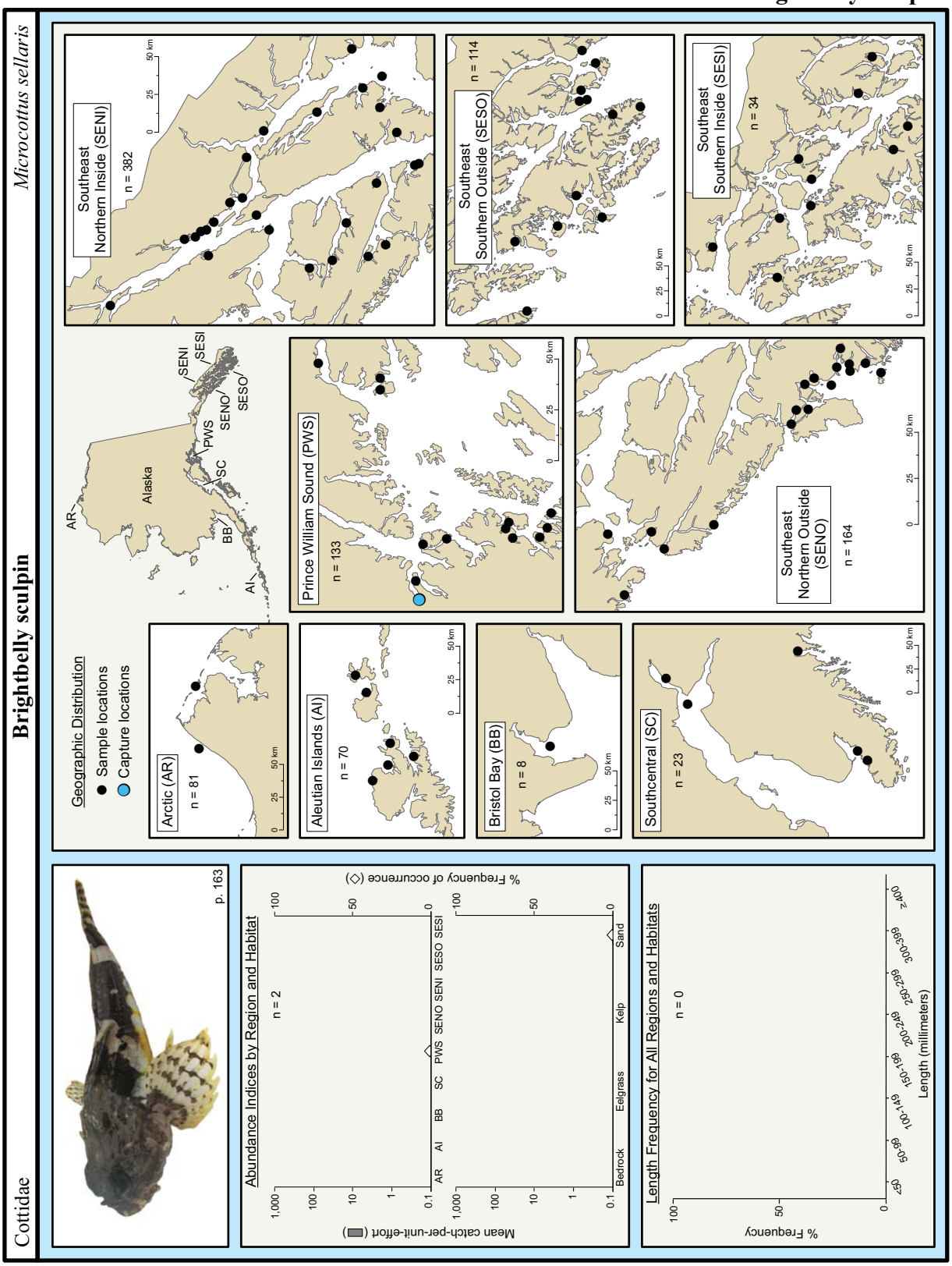

Cottidae
Red Irish lord
Hemilepidotus hemilepidotus
p. 163
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 215
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 46
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

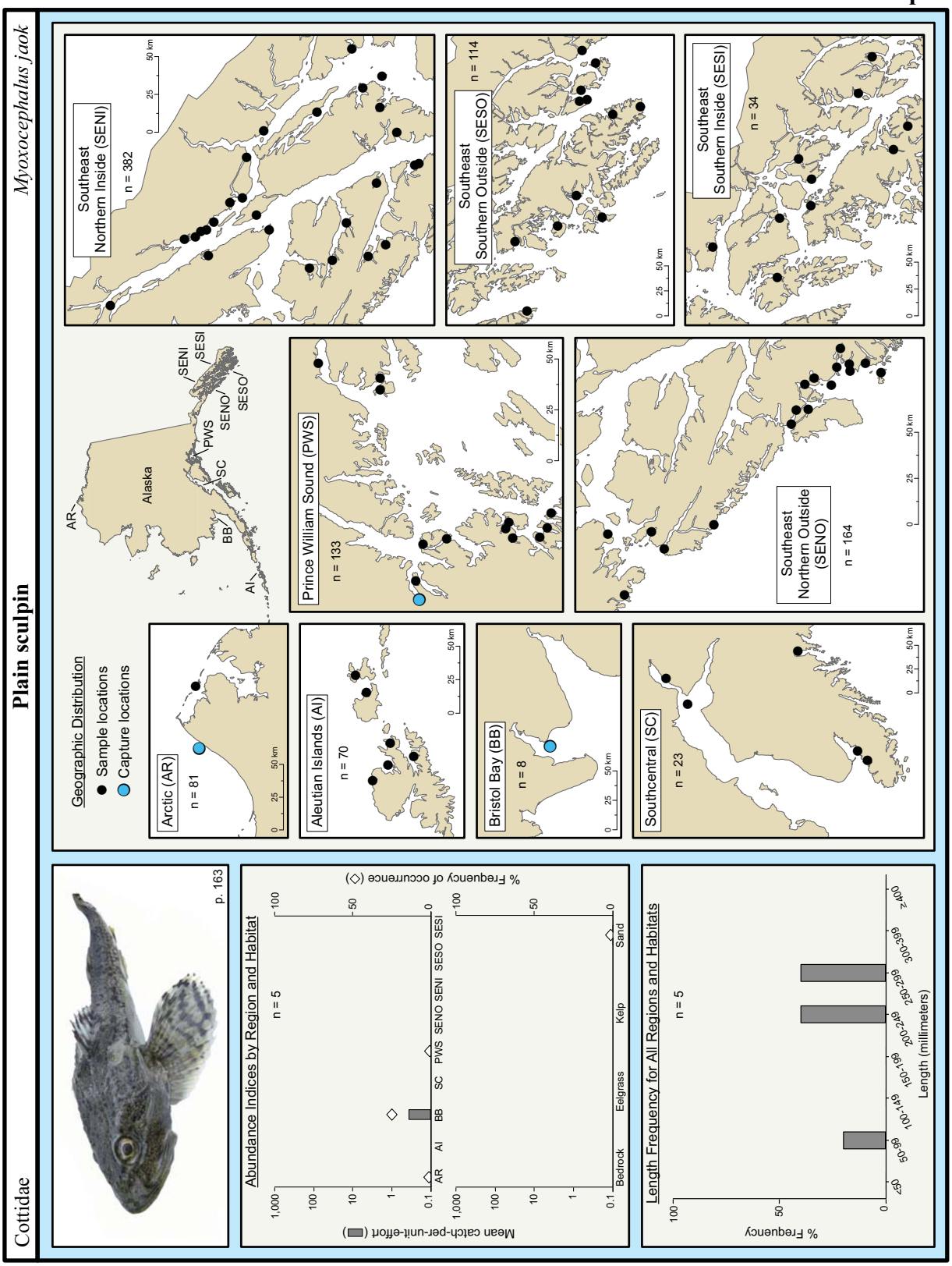

Cottidae
Brown Irish lord
Hemilepidotus spinosus
p. 163
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 19
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 19
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

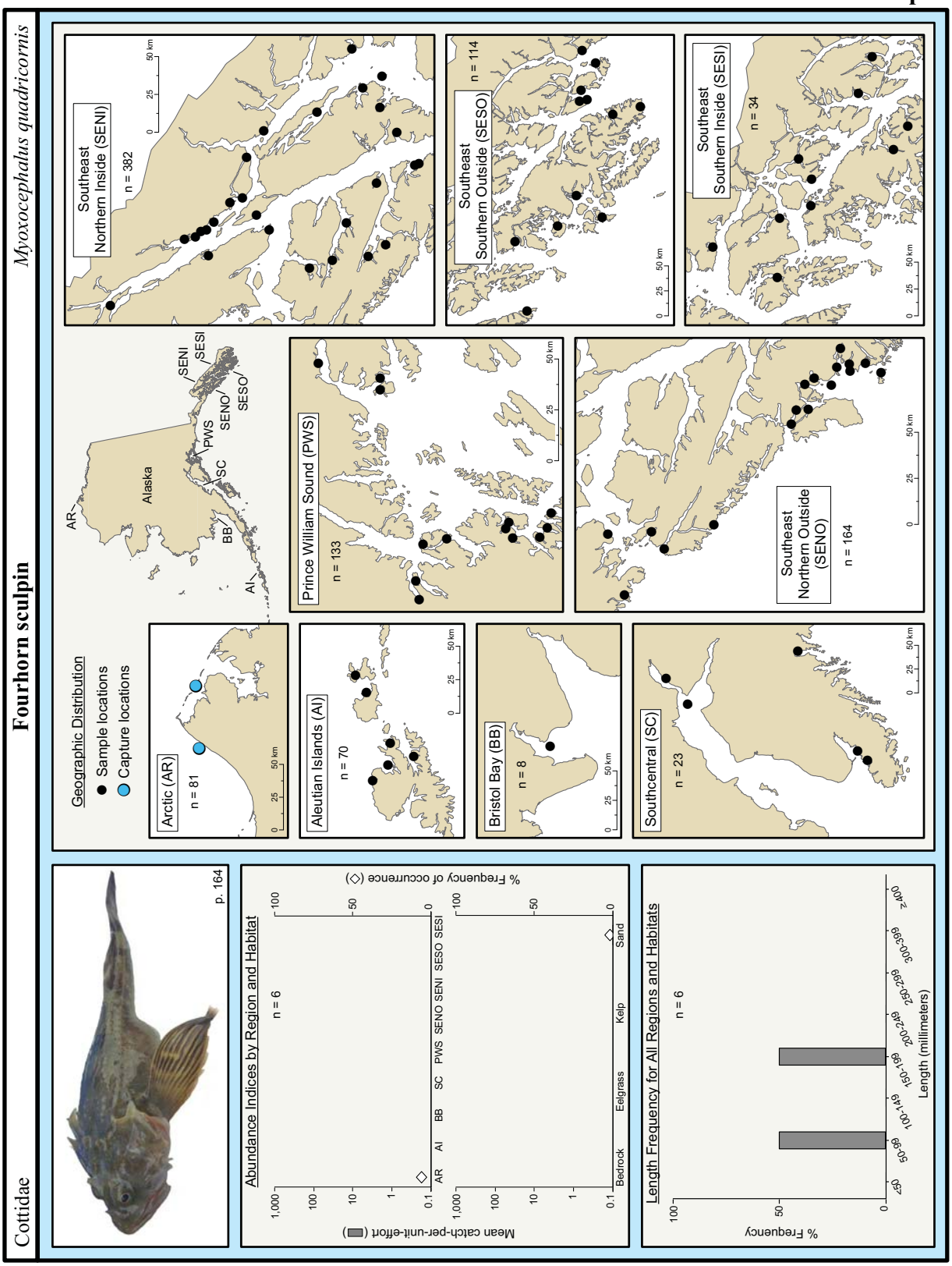

Cottidae
Northern sculpin
Icelinus borealis
p. 163
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 1,265
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 59
% Frequency
Length (millimeters)

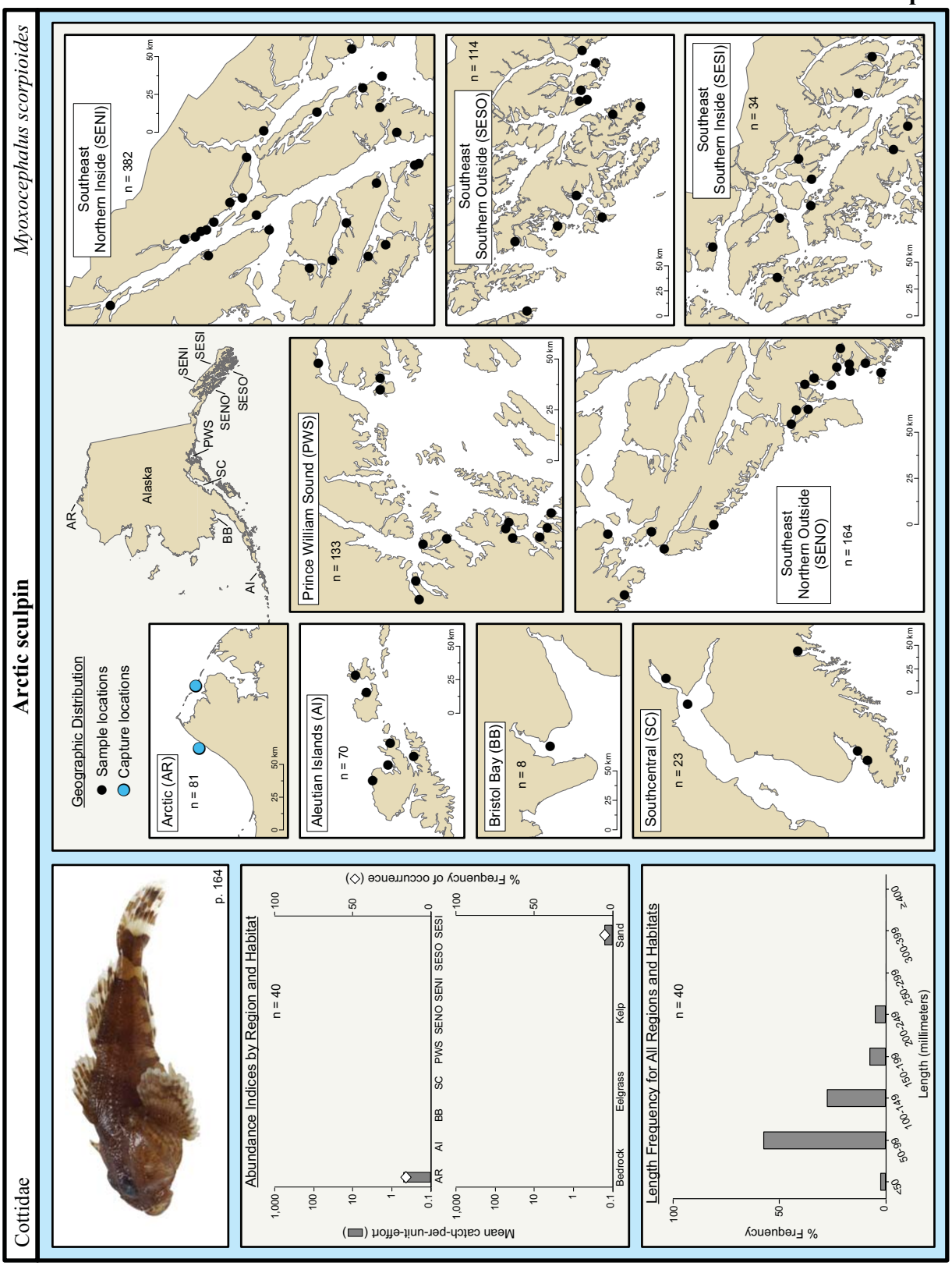

Cottidae
Pacific staghorn sculpin
Leptocottus armatus
p. 163
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 1,157
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 253
% Frequency
Length (millimeters)

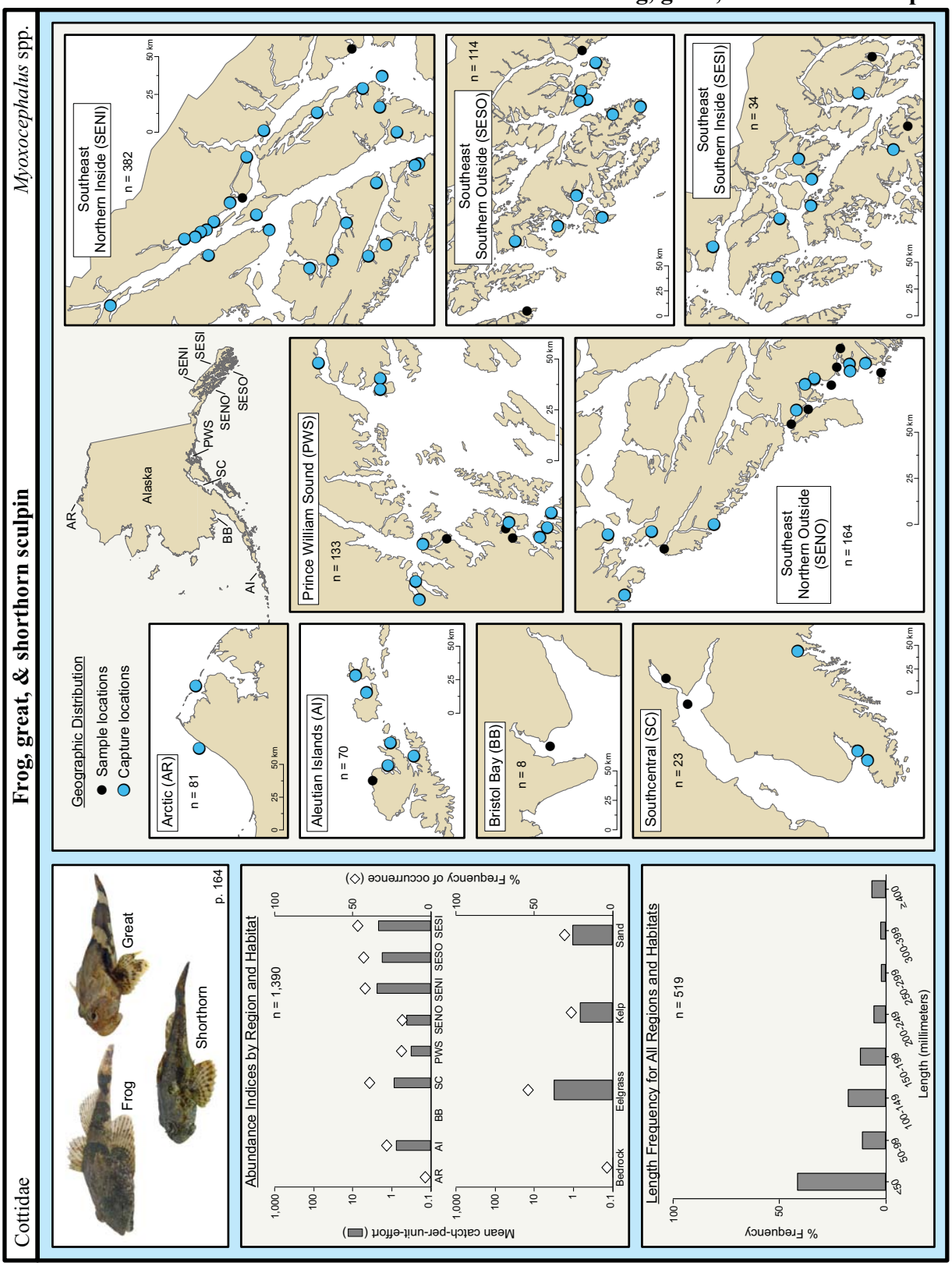

Cottidae
Belligerent sculpin
Megalocottus platycephalus
p. 163
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 6
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 6
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

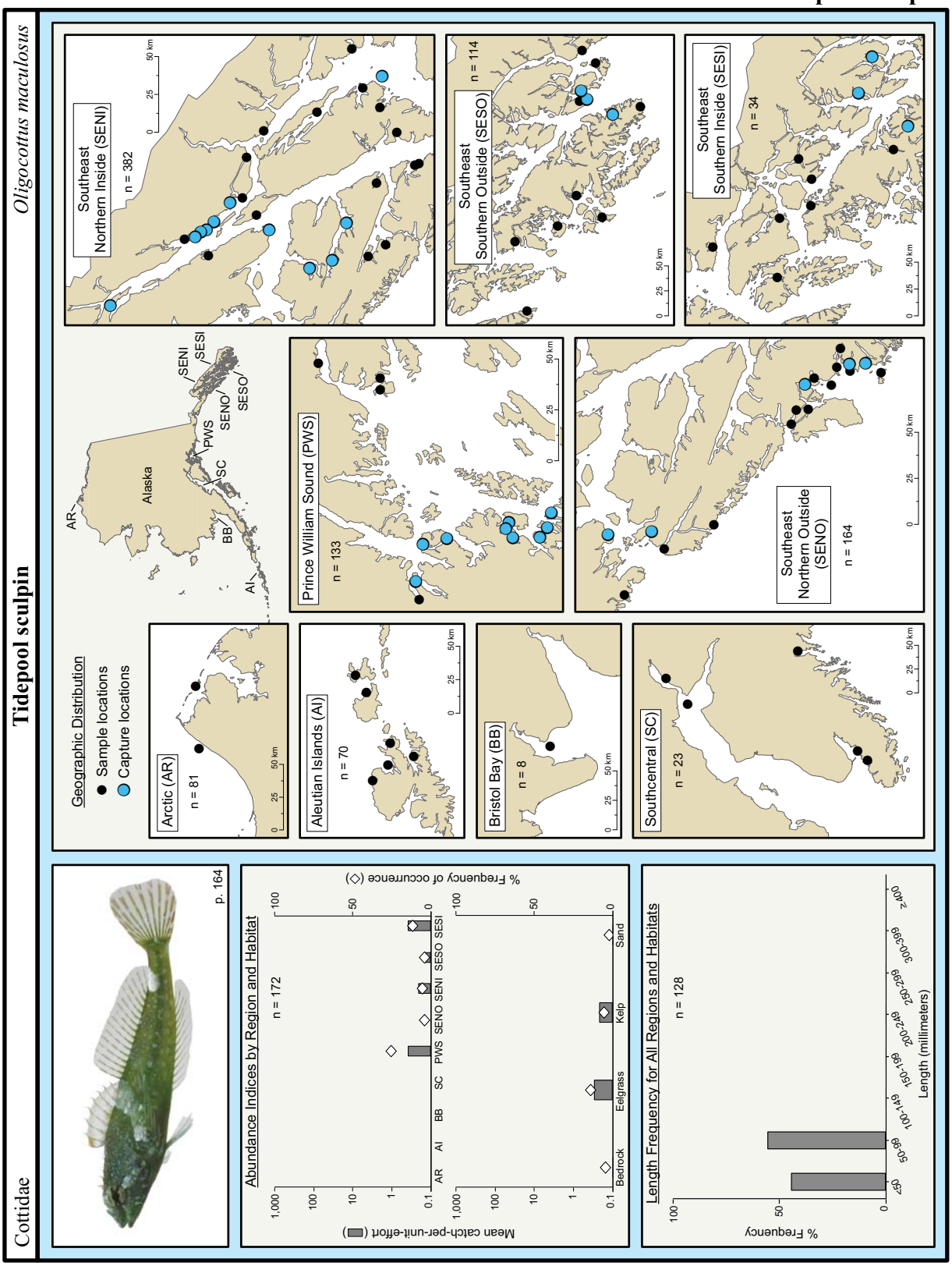

Cottidae
Brightbelly sculpin
Microcottus sellaris
p. 163
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 2
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 0
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

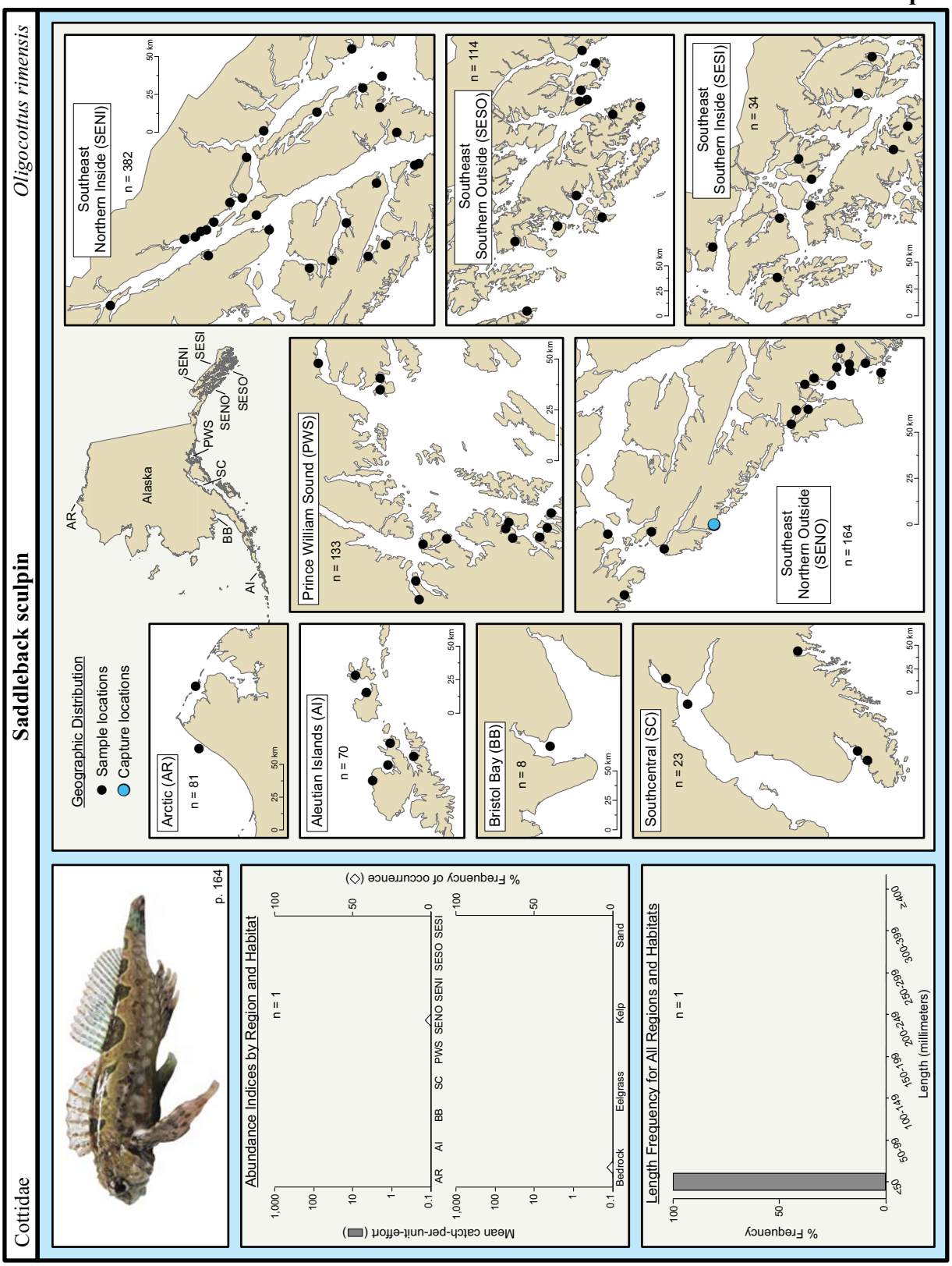

Cottidae
Plain sculpin
Myoxocephalus jaok
p. 163
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 5
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 5
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

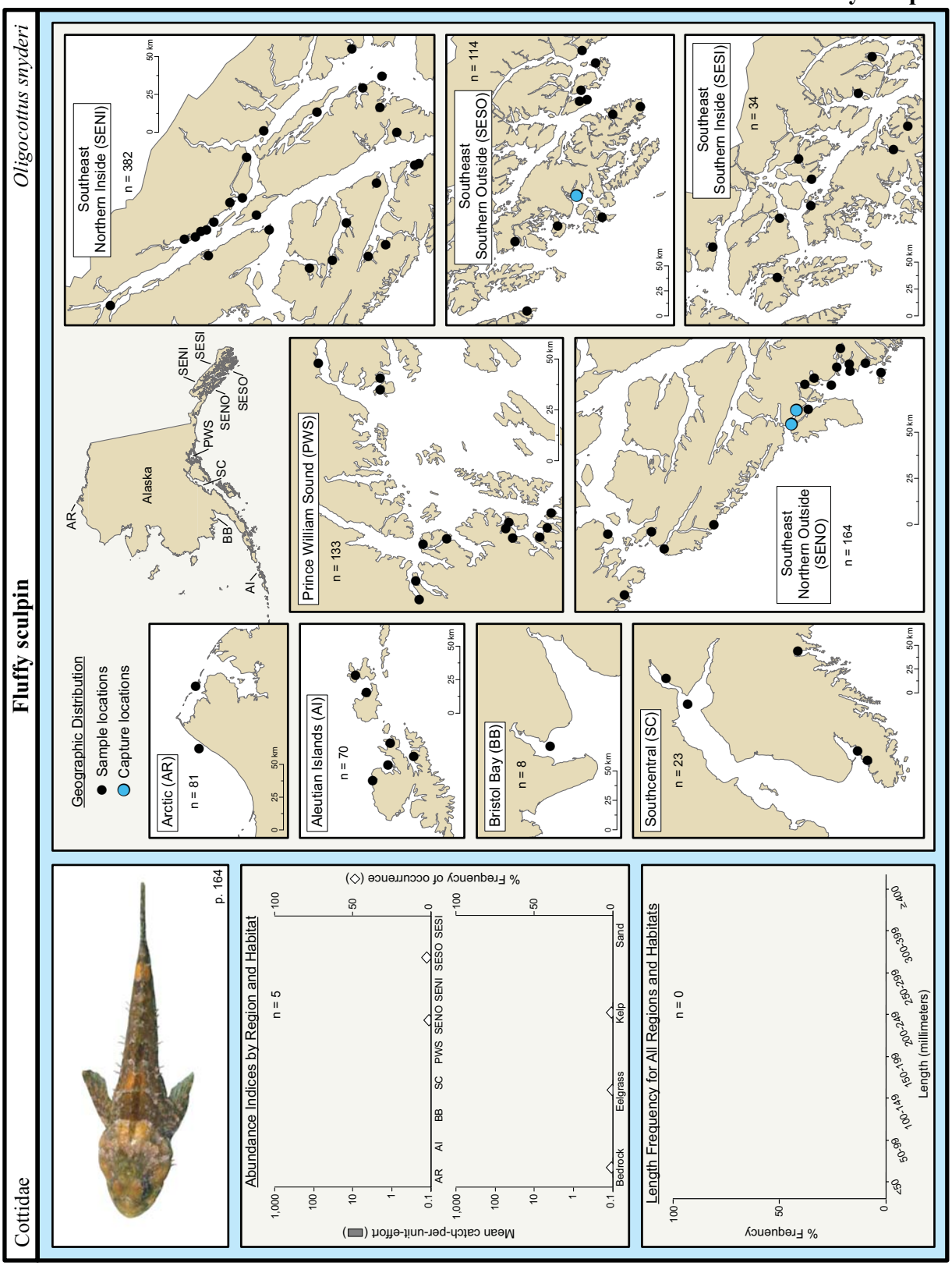

Cottidae
Fourhorn sculpin
Myoxocephalus quadricornis
p. 164
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 6
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 6
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

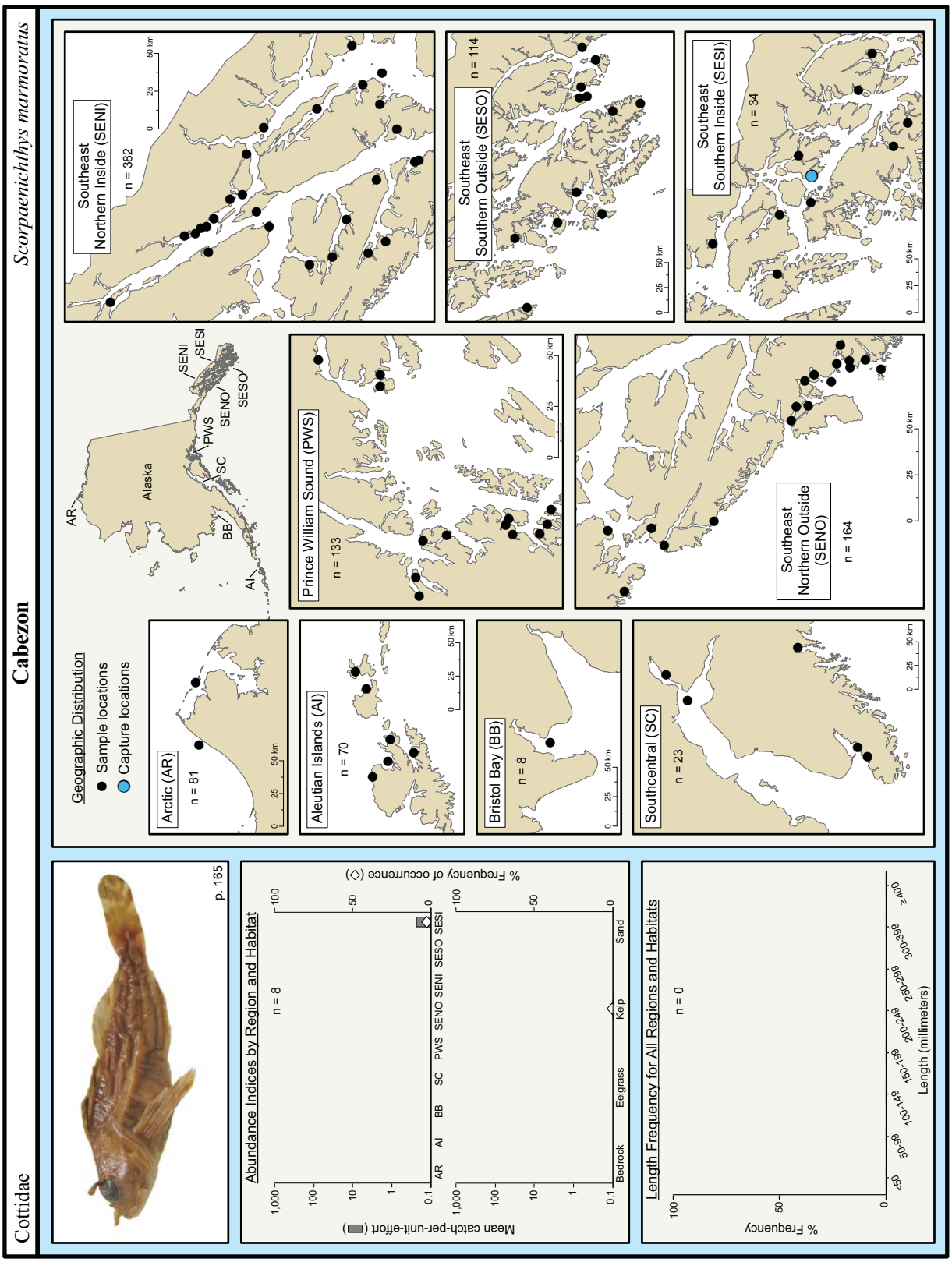

Cottidae
Arctic sculpin
Myoxocephalus scorpioides
p. 164
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 40
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 40
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

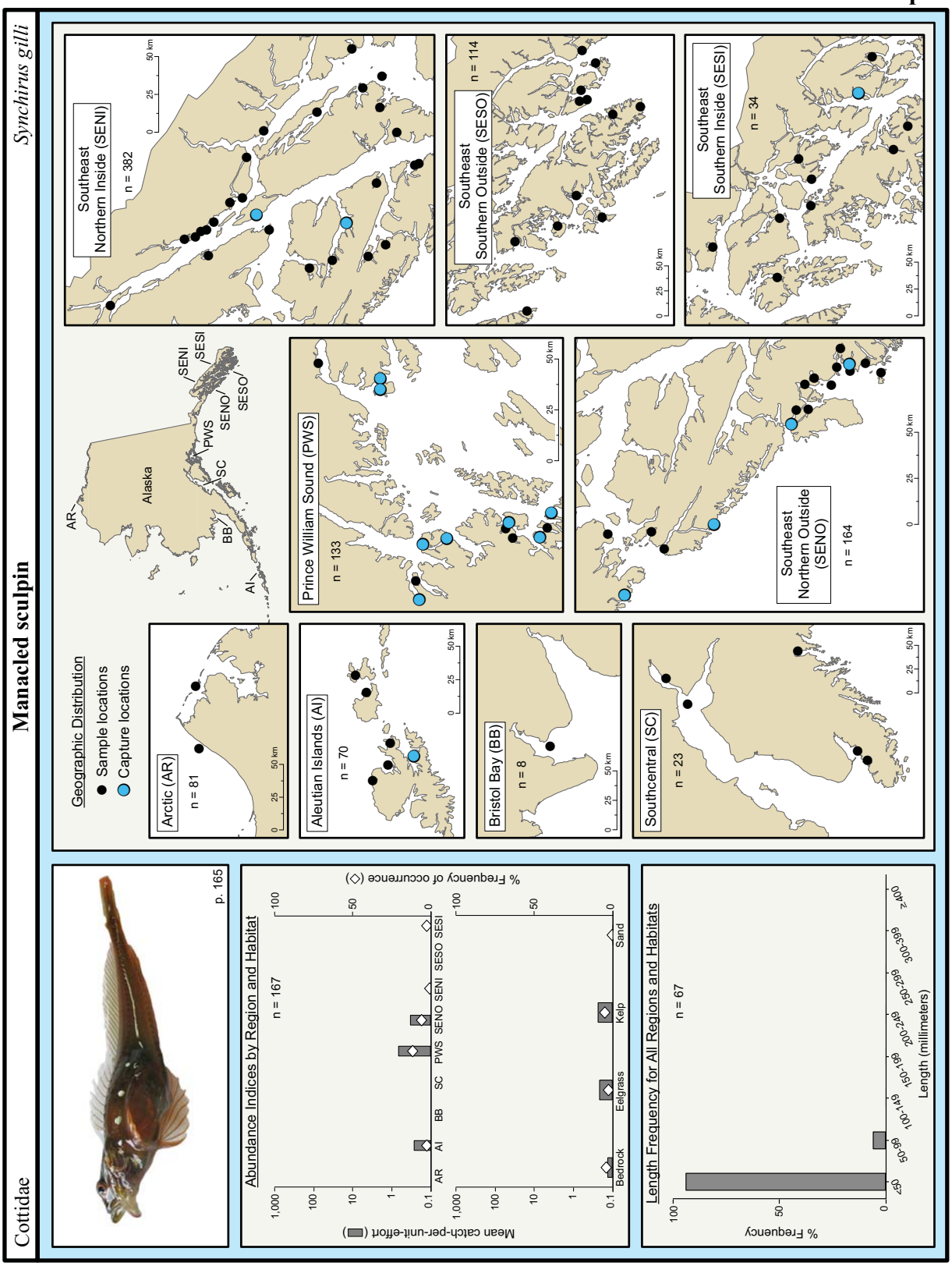

Cottidae
Frog, great, & shorthorn sculpin
Myoxocephalus spp.
Great
Frog
Shorthorn
p. 164
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1,390
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 519
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

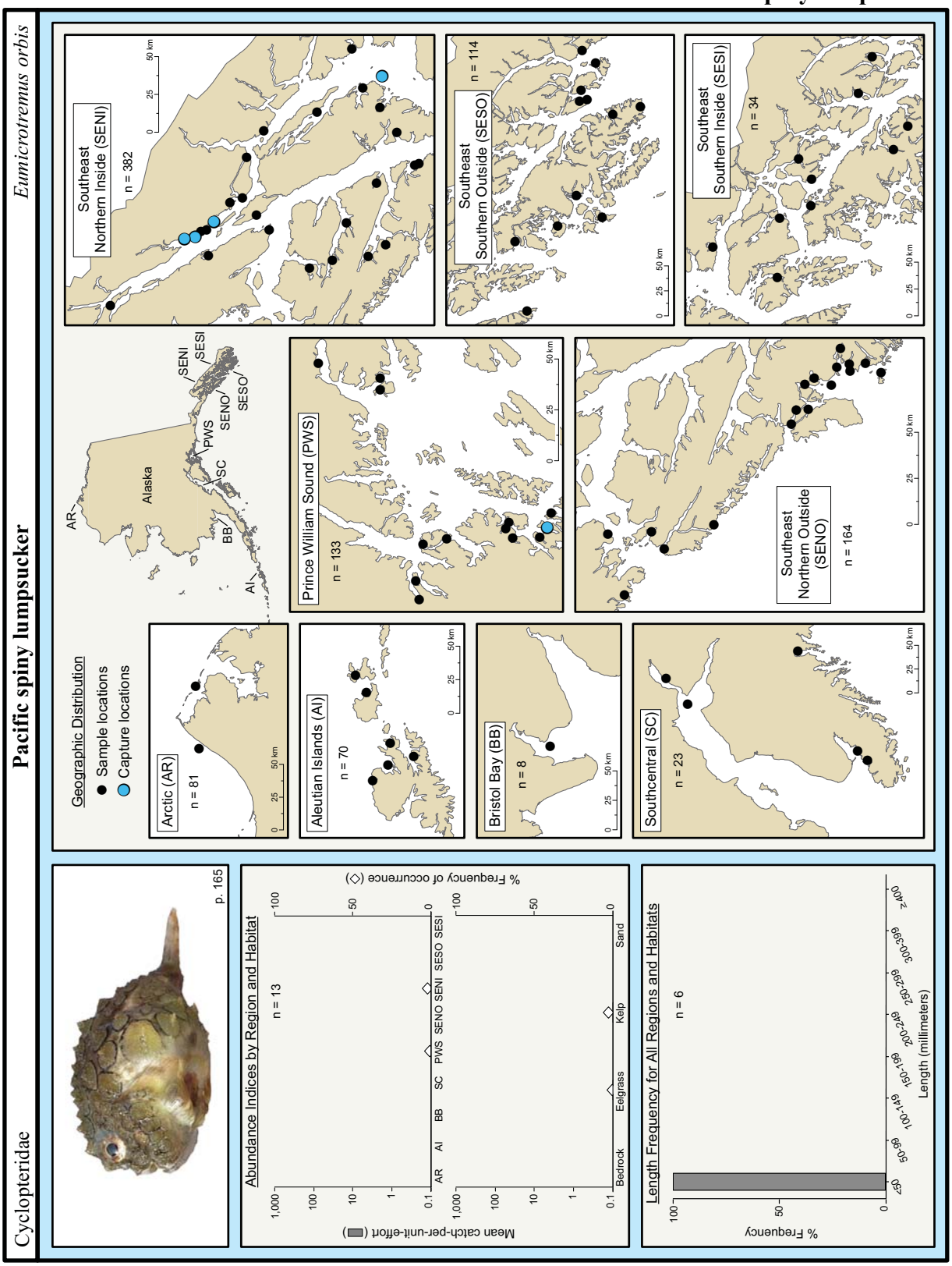

Cottidae
Tidepool sculpin
Oligocottus maculosus
p. 164
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 172
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 128
% Frequency
Length (millimeters)

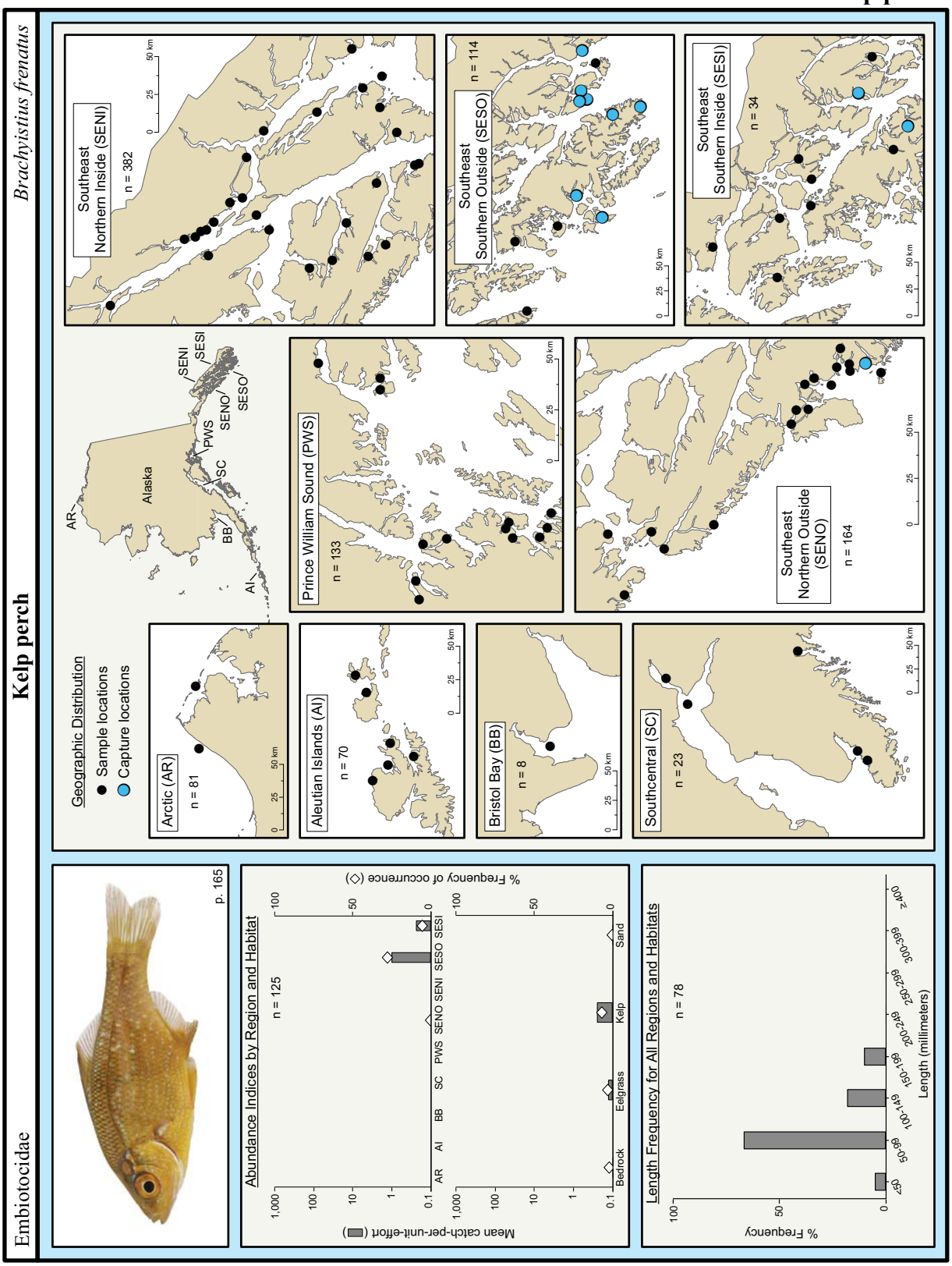

Cottidae
Saddleback sculpin
Oligocottus rimensis
p. 164
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

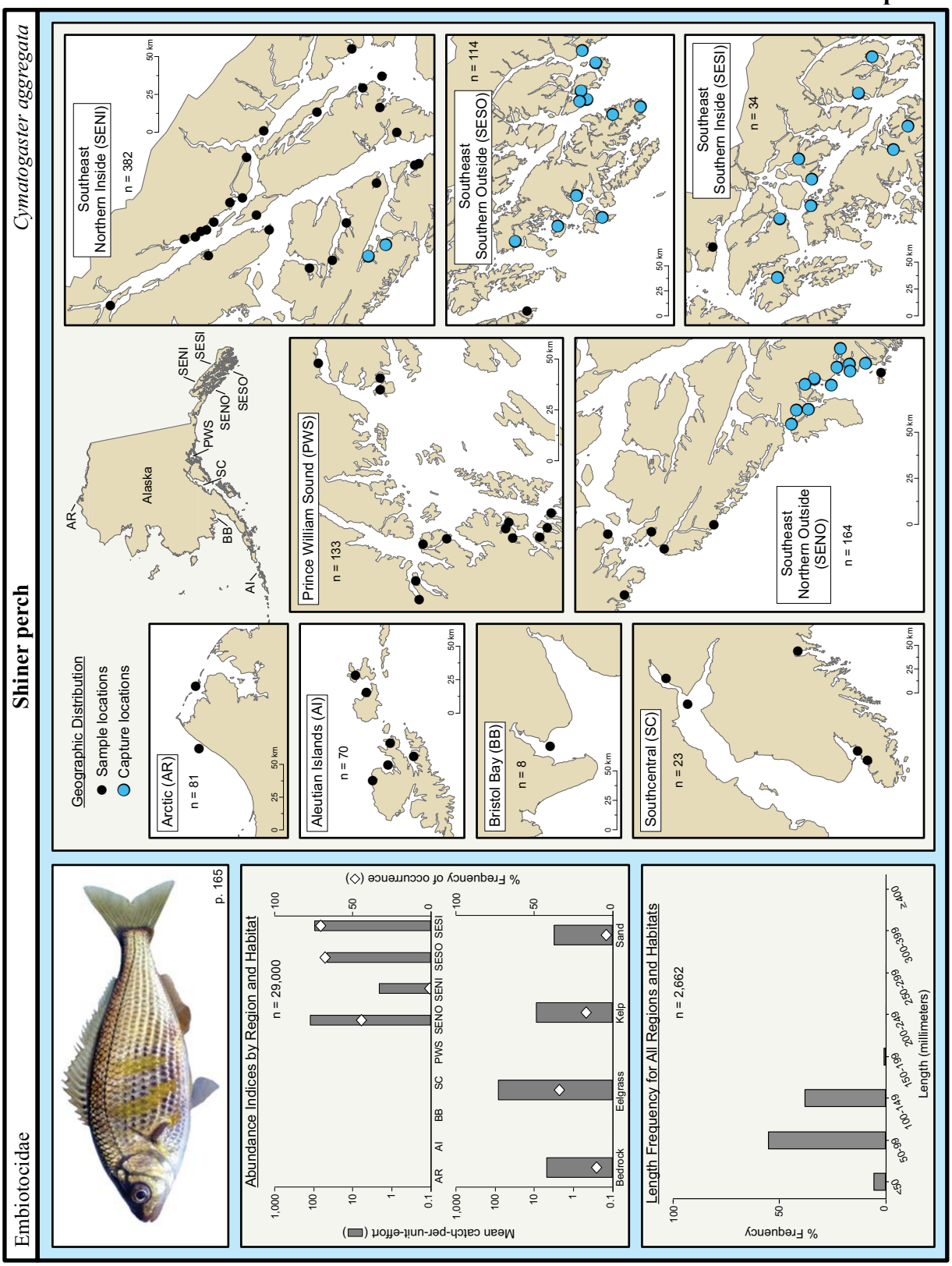

Cottidae
Fluffy sculpin
Oligocottus snyderi
p. 164
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 5
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 0
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

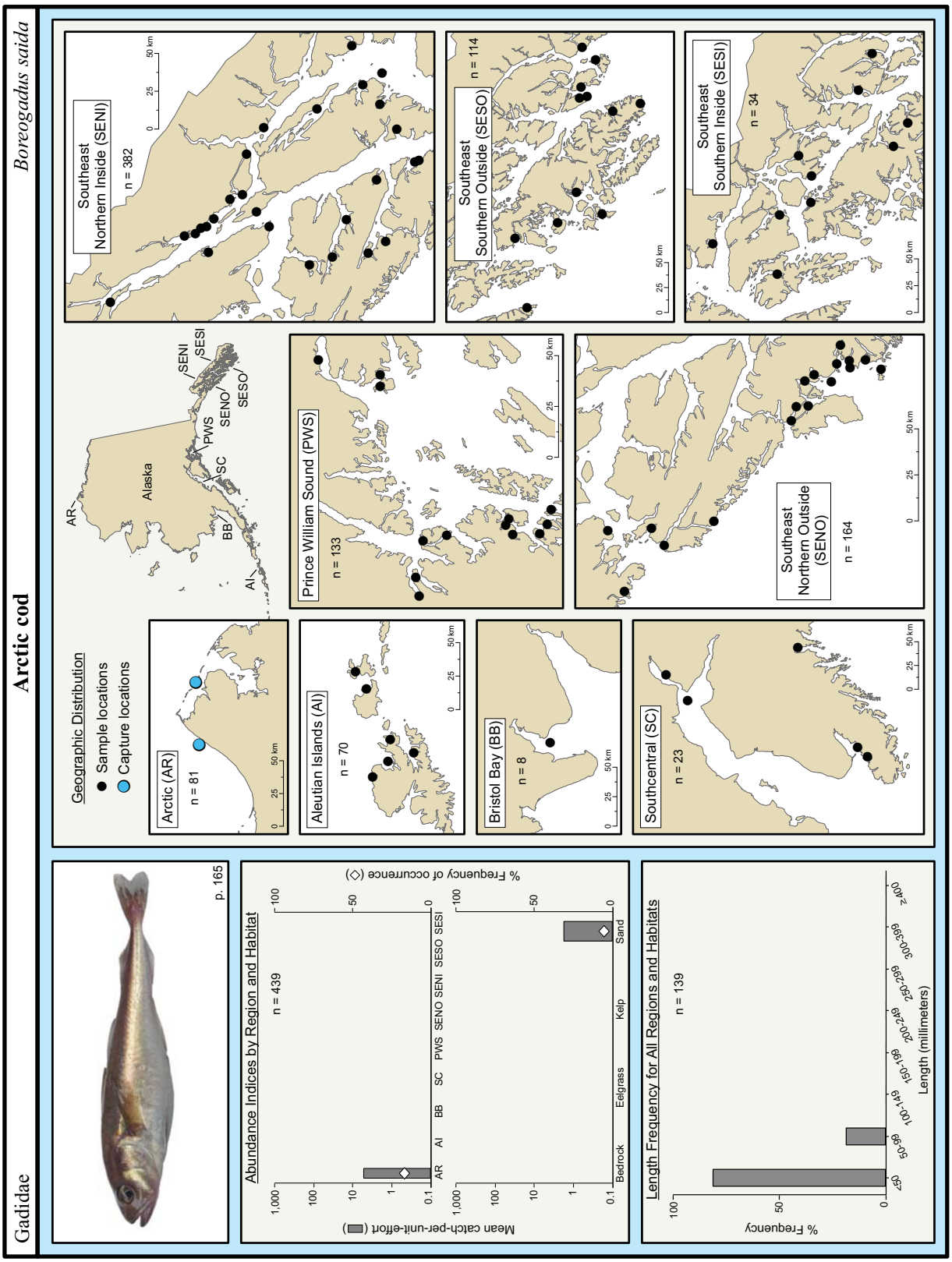

Cottidae
Cabezon
Scorpaenichthys marmoratus
p. 165
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 8
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 0
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

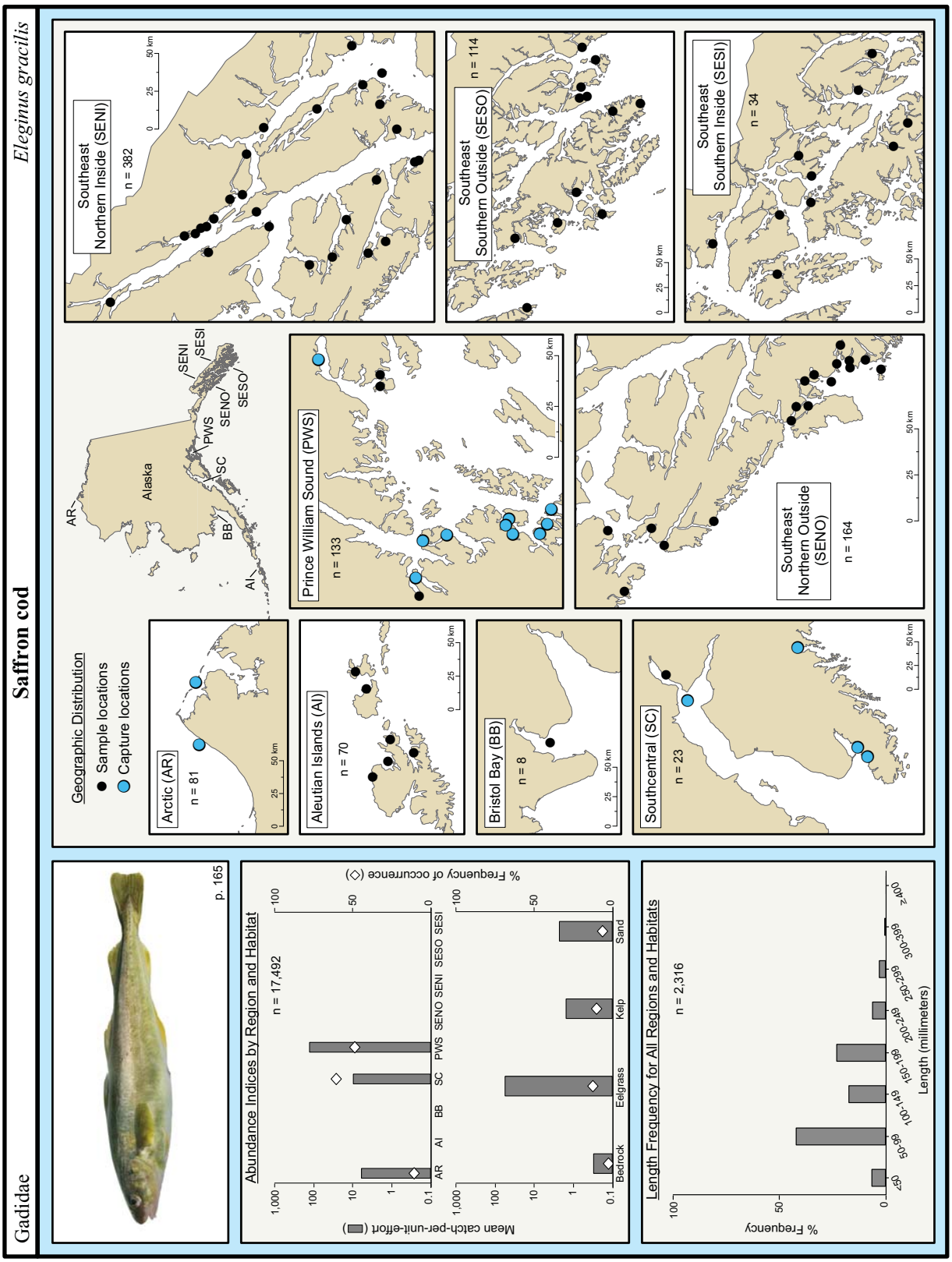

Cottidae
Manacled sculpin
Synchirus gilli
p. 165
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 167
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 67
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 >400

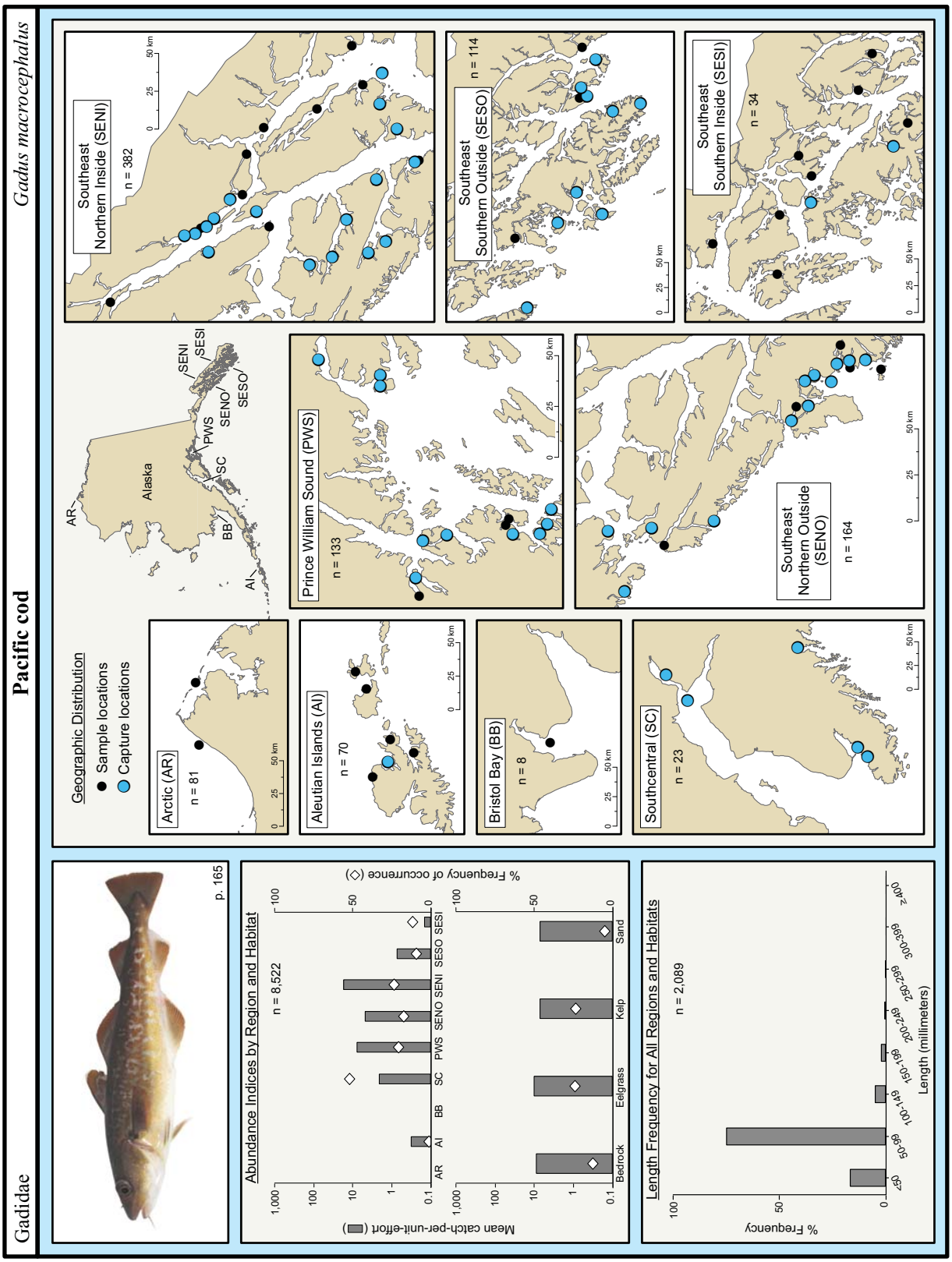

Cyclopteridae
Pacific spiny lumpsucker
Eumicrotremus orbis
p. 165
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Alaska
AR
AI
BB
SC
PWS
SENO
SESO
SENI
SESI
0 25 50 km
Abundance Indices by Region and Habitat
n = 13
Mean catch-per-unit-effort
% Frequency of occurrence
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 6
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

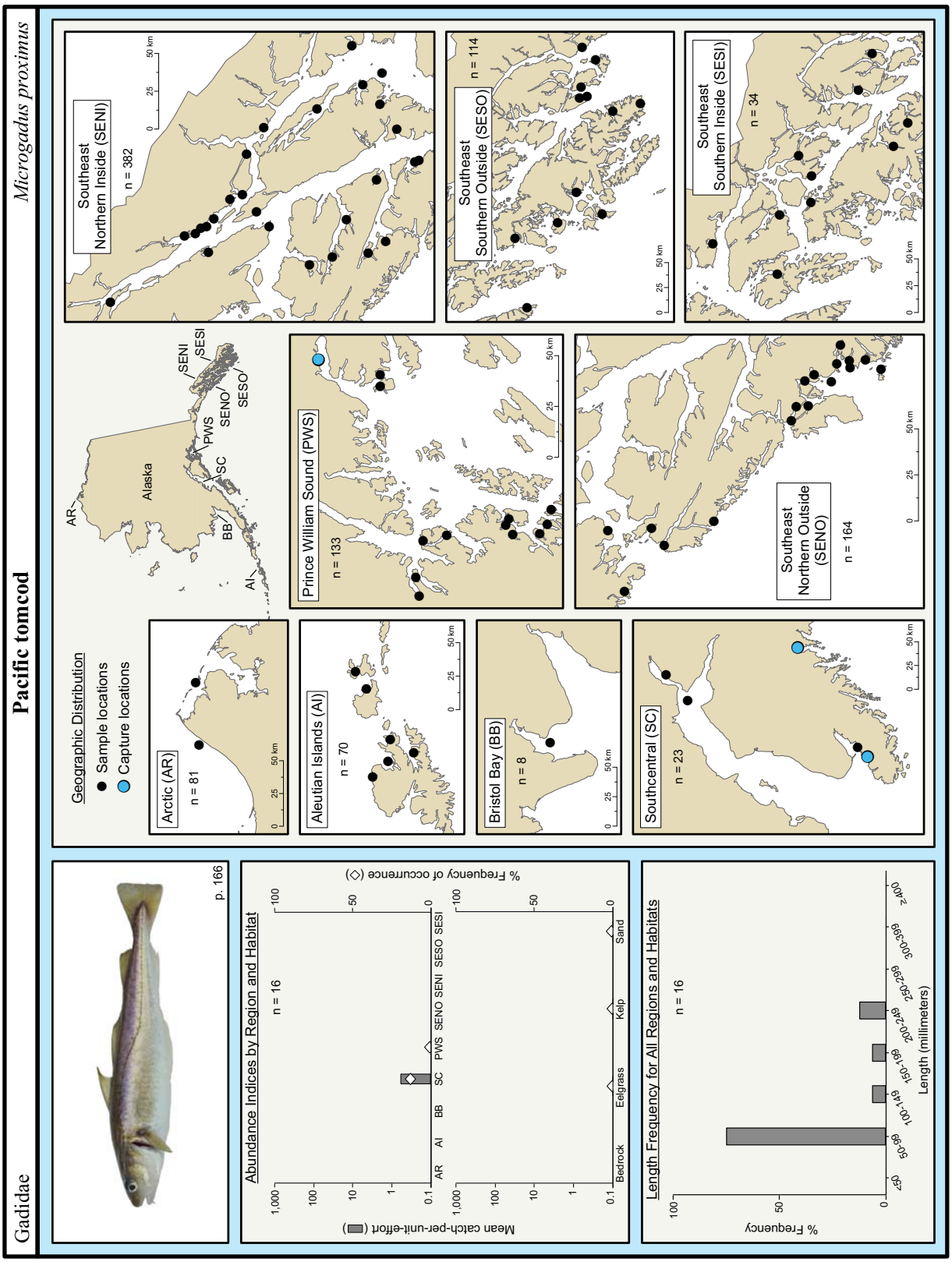

Embiotocidae
Kelp perch
Brachyistius frenatus
p. 165
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 125
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 78
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 >400

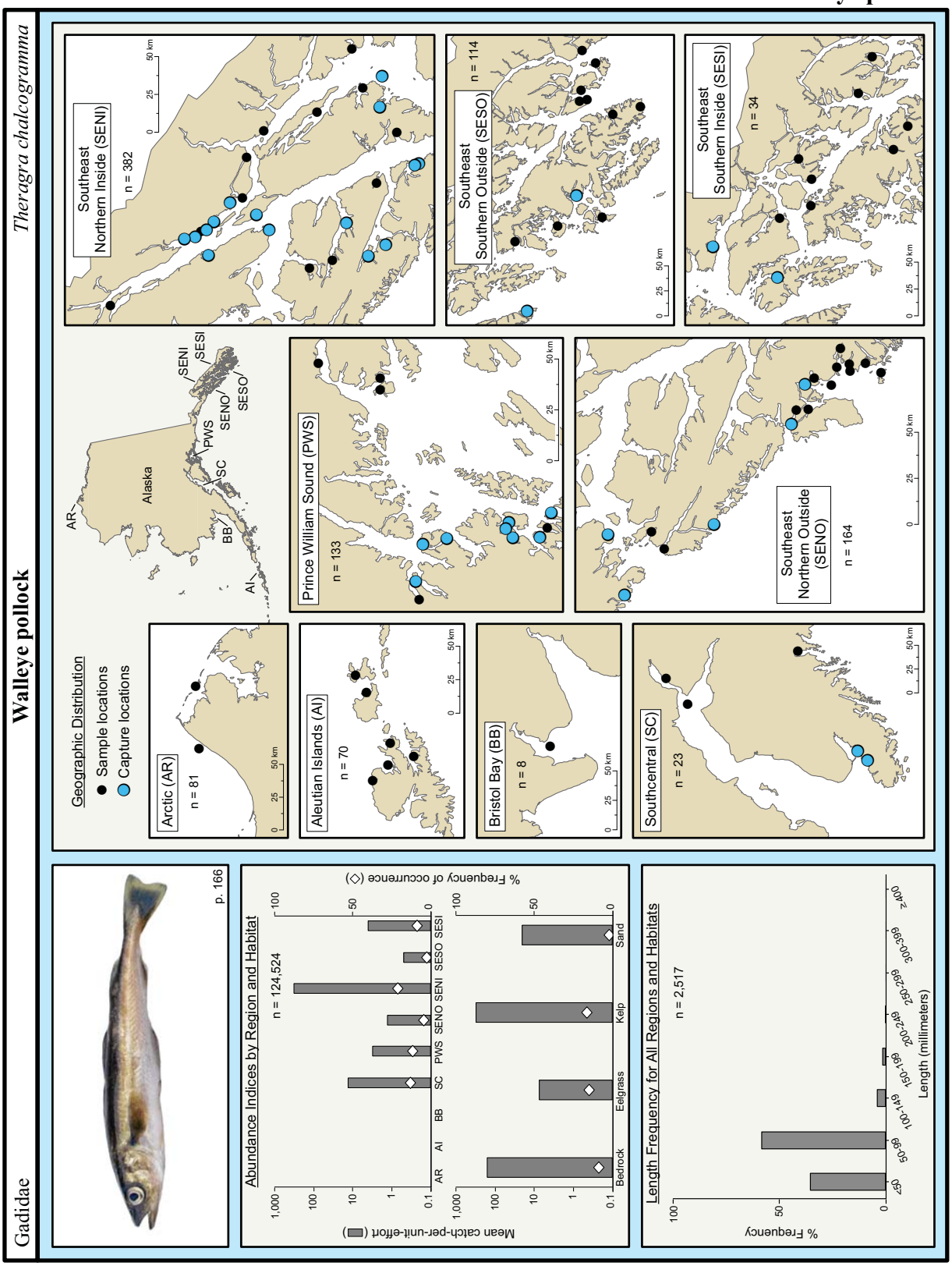

Embiotocidae
Shiner perch
Cymatogaster aggregata
p. 165
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 29,000
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2,662
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

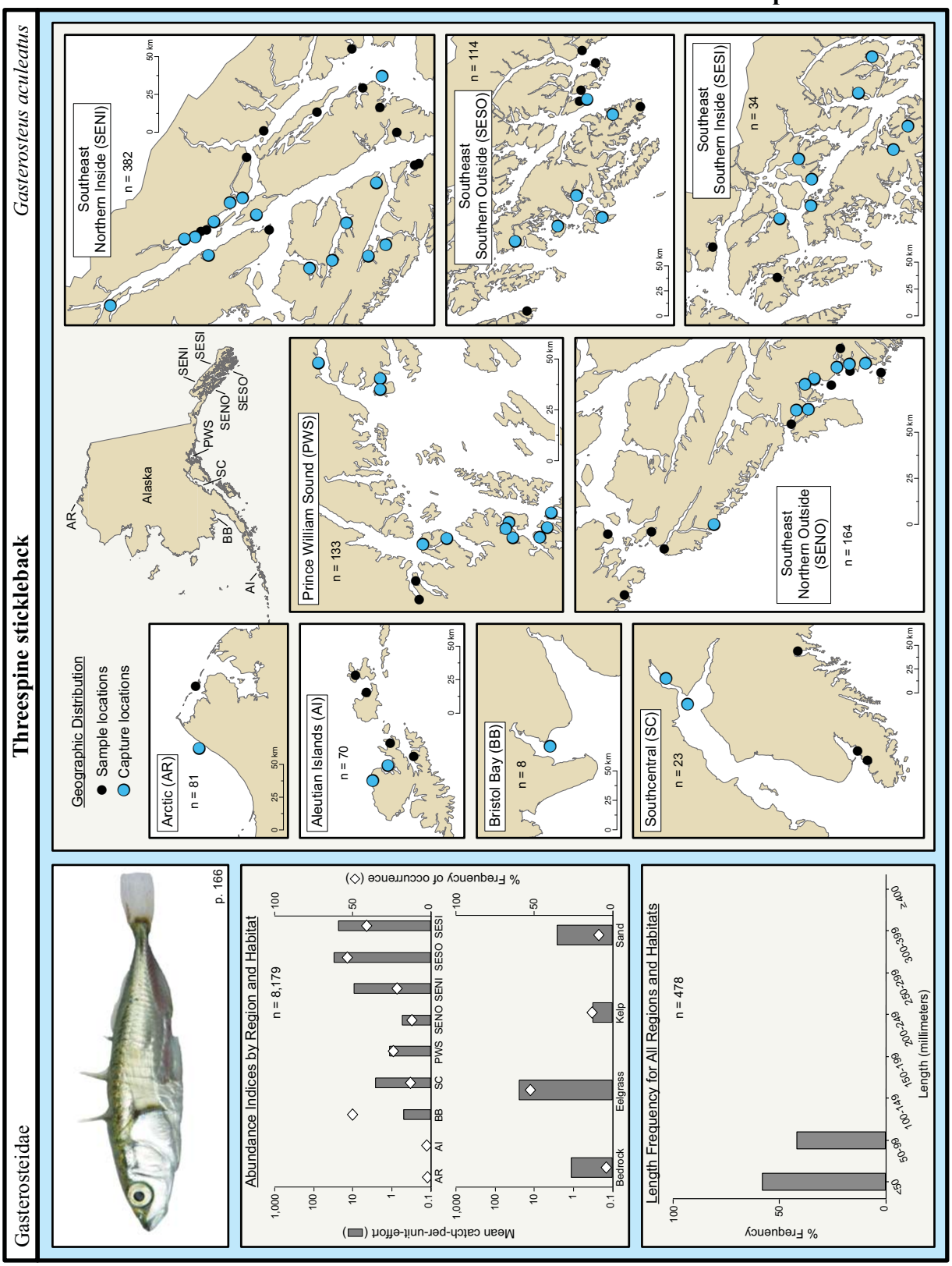

Gadidae
Arctic cod
Boreogadus saida
p. 165
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
AR
BB
AI
SC
PWS
SENO
SENI
SESO
SESI
Alaska
0 25 50 km
Abundance Indices by Region and Habitat
n = 439
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 139
% Frequency
Length (millimeters)
<50
50-99
100-149
150-199
200-249
250-299
300-399
>400

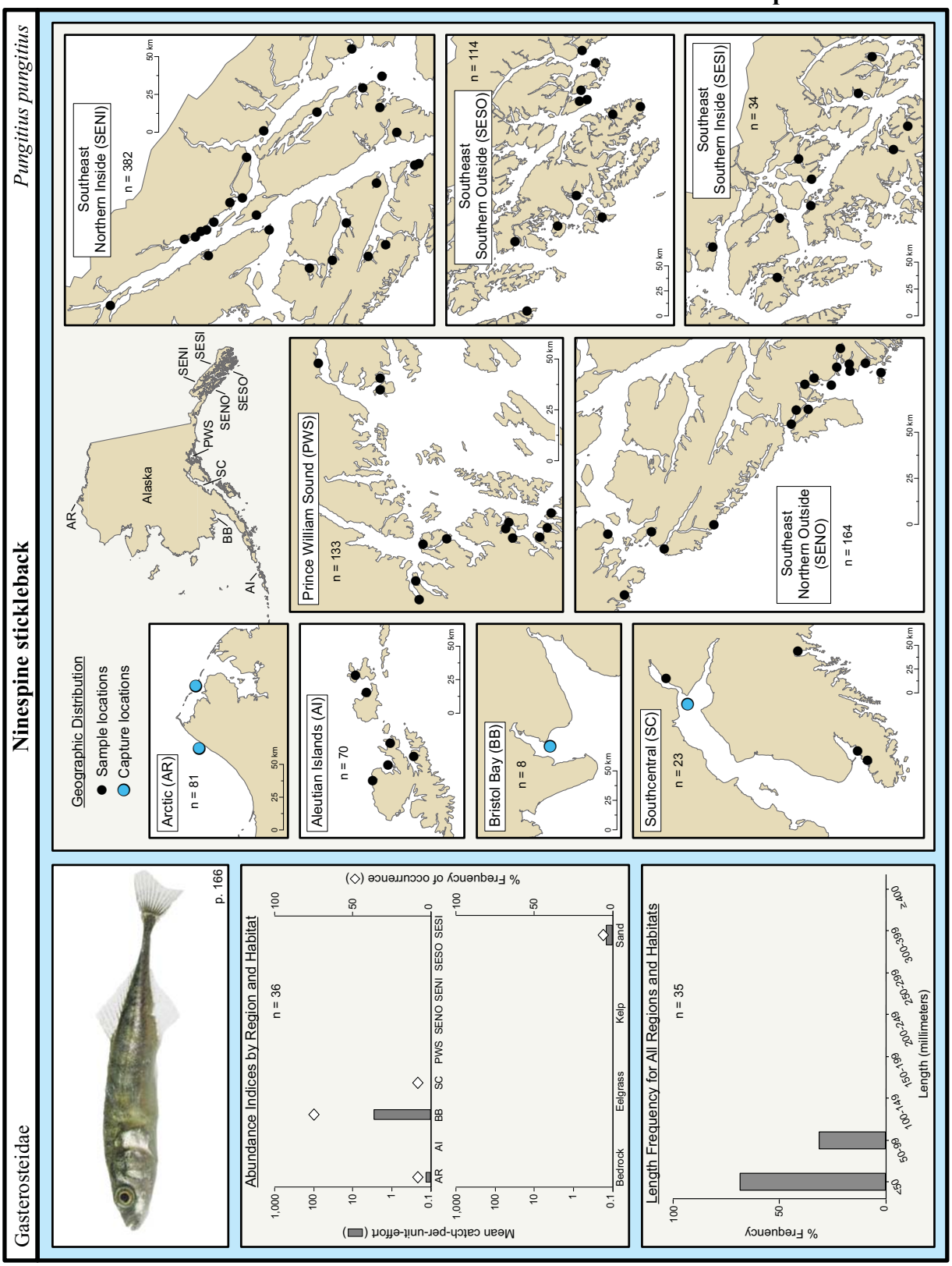

Gadidae
Saffron cod
Eleginus gracilis
p. 165
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 17,492
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2,316
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

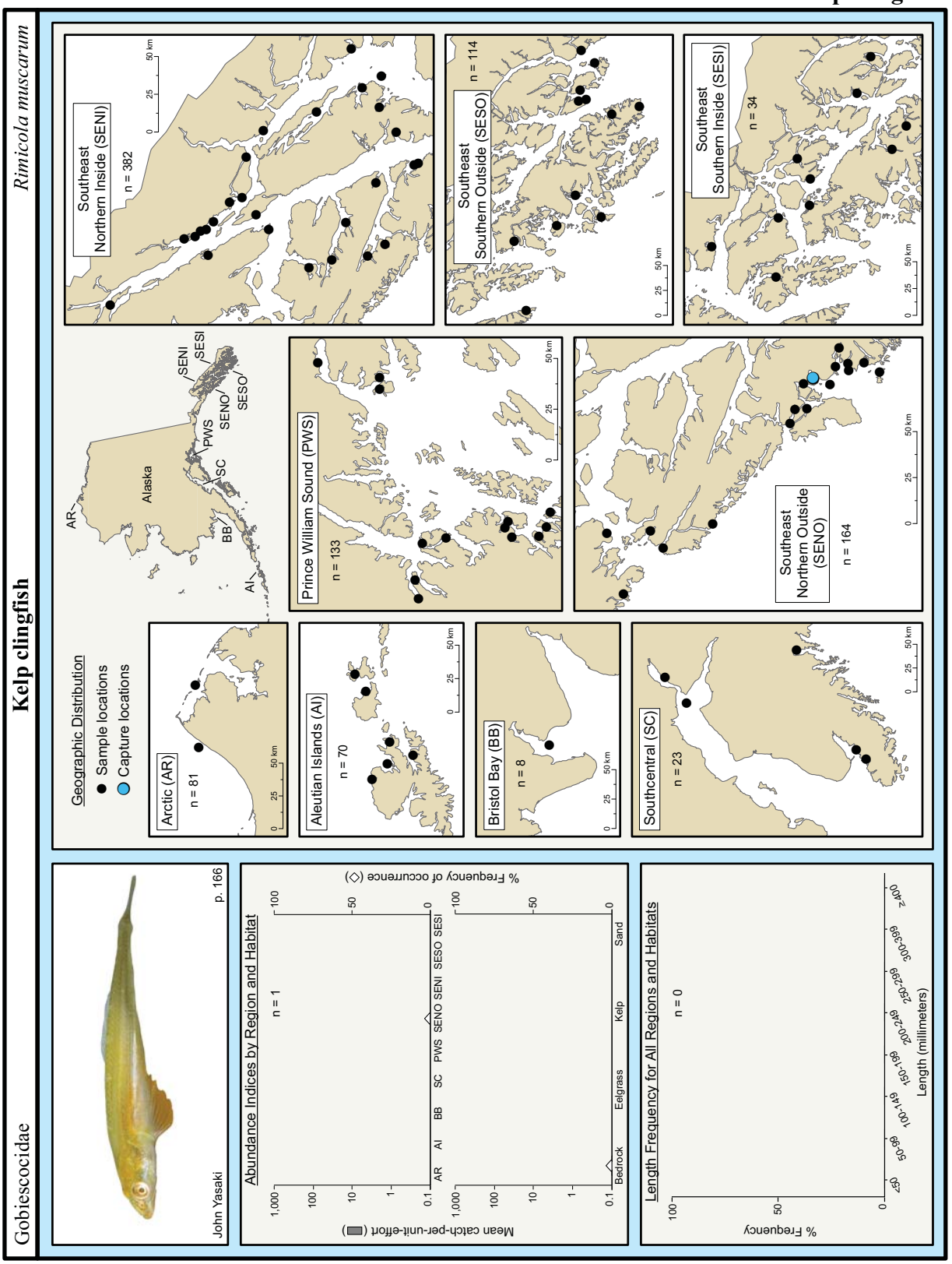

Gadidae
Pacific cod
Gadus macrocephalus
p. 165
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 8,522
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
1,000
100
10
1
0.1
100
50
0
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2,089
% Frequency
100
50
0
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400
Length (millimeters)

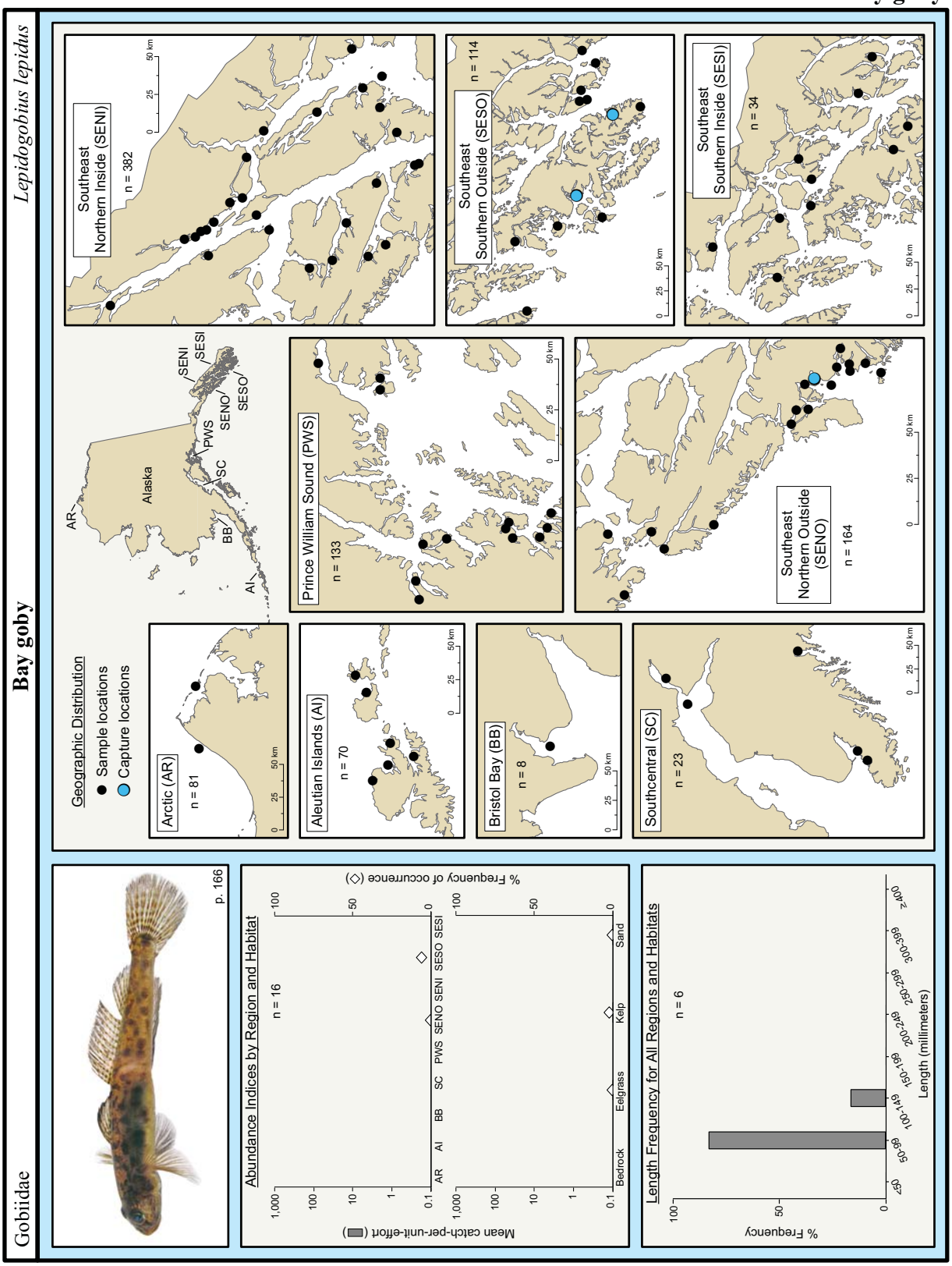

Gadidae
Pacific tomcod
Microgadus proximus
p. 166
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 16
Mean catch-per-unit-effort (▭)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 16
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

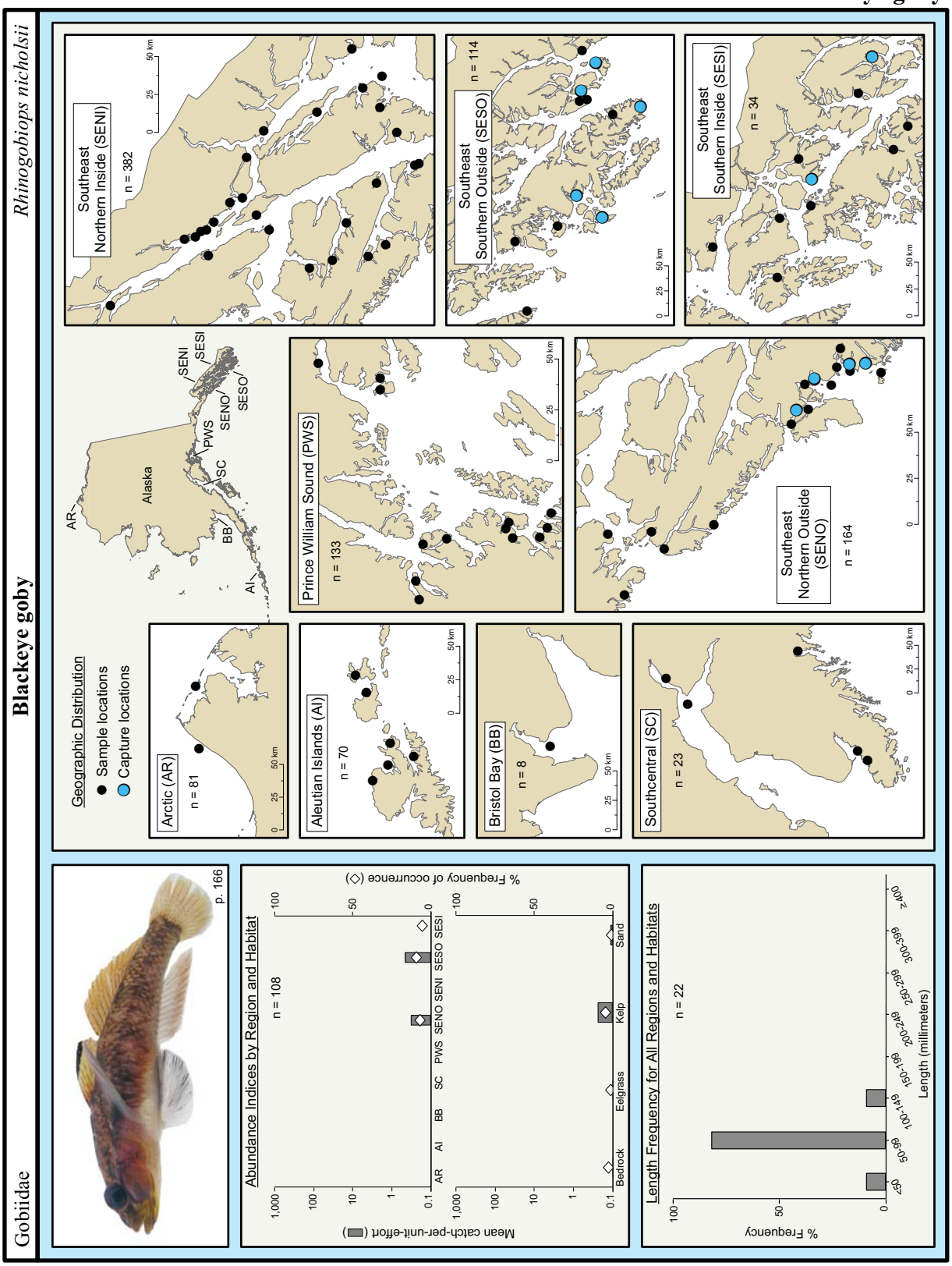

Gadidae
Walleye pollock
Theragra chalcogramma
p. 166
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 124,524
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 2,517
% Frequency
Length (millimeters)

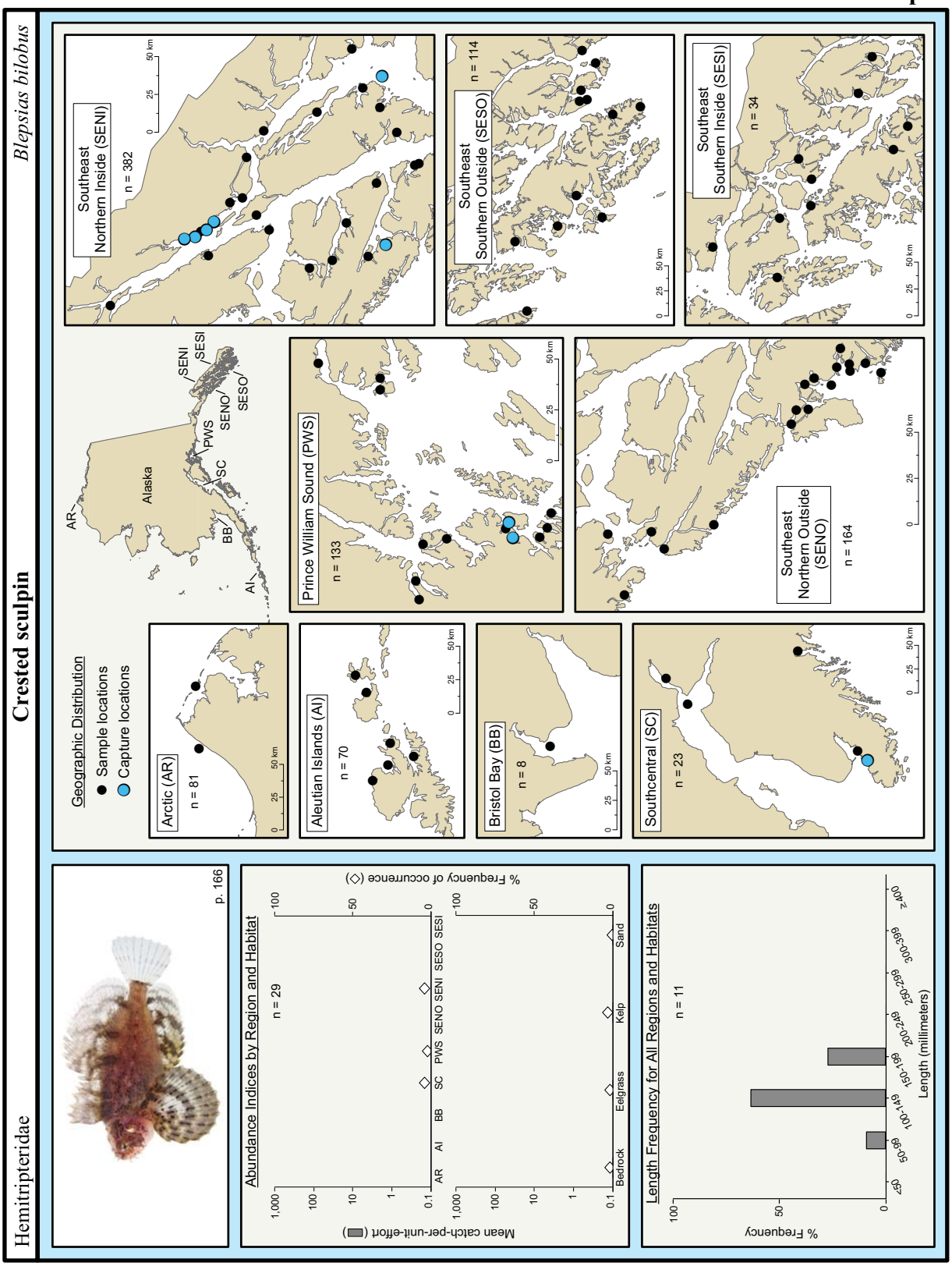

Gasterosteidae
Threespine stickleback
Gasterosteus aculeatus
p. 166
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 8,179
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 478
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

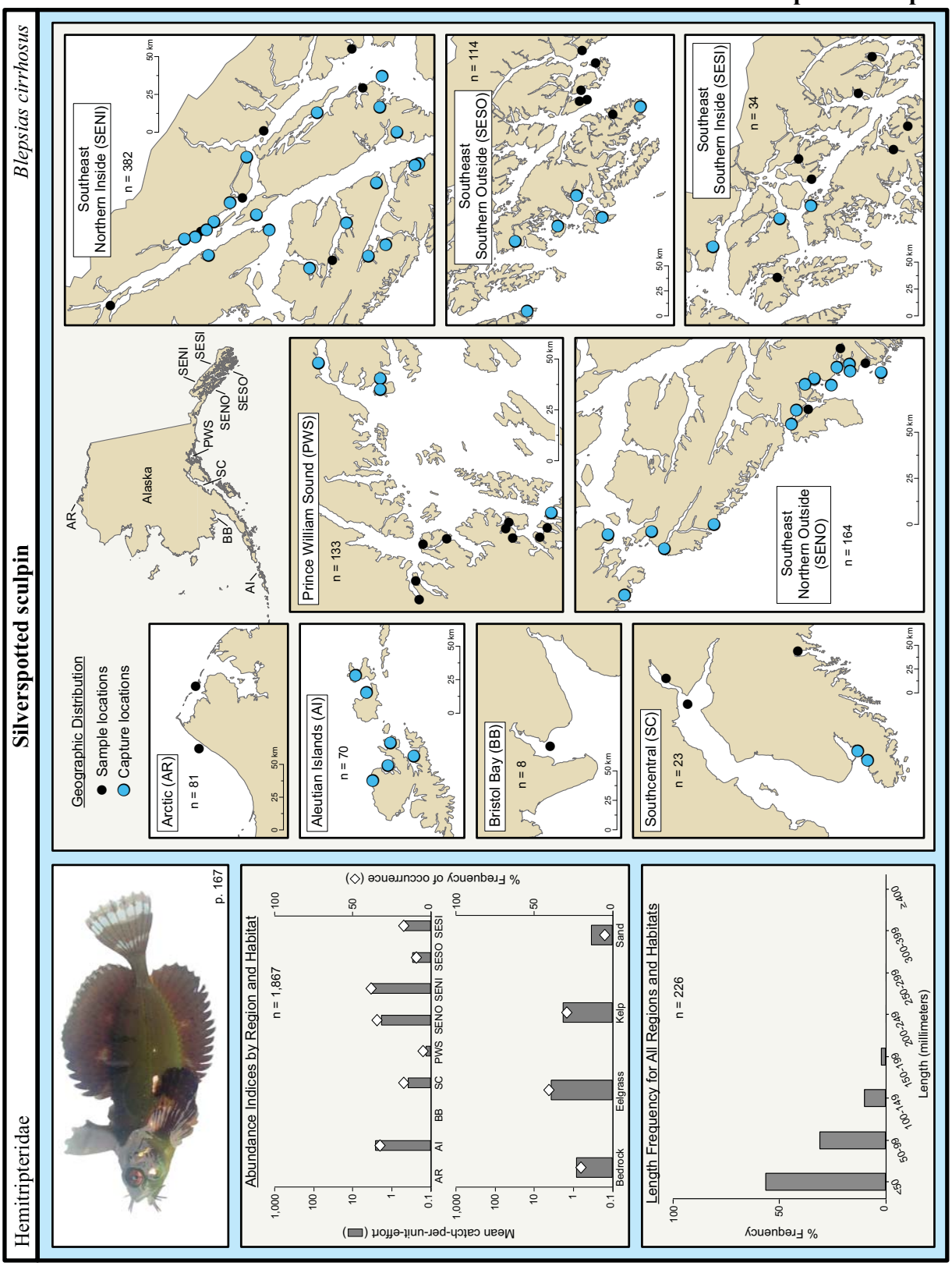

Gasterosteidae
Ninespine stickleback
Pungitius pungitius
p. 166
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 36
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 35
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

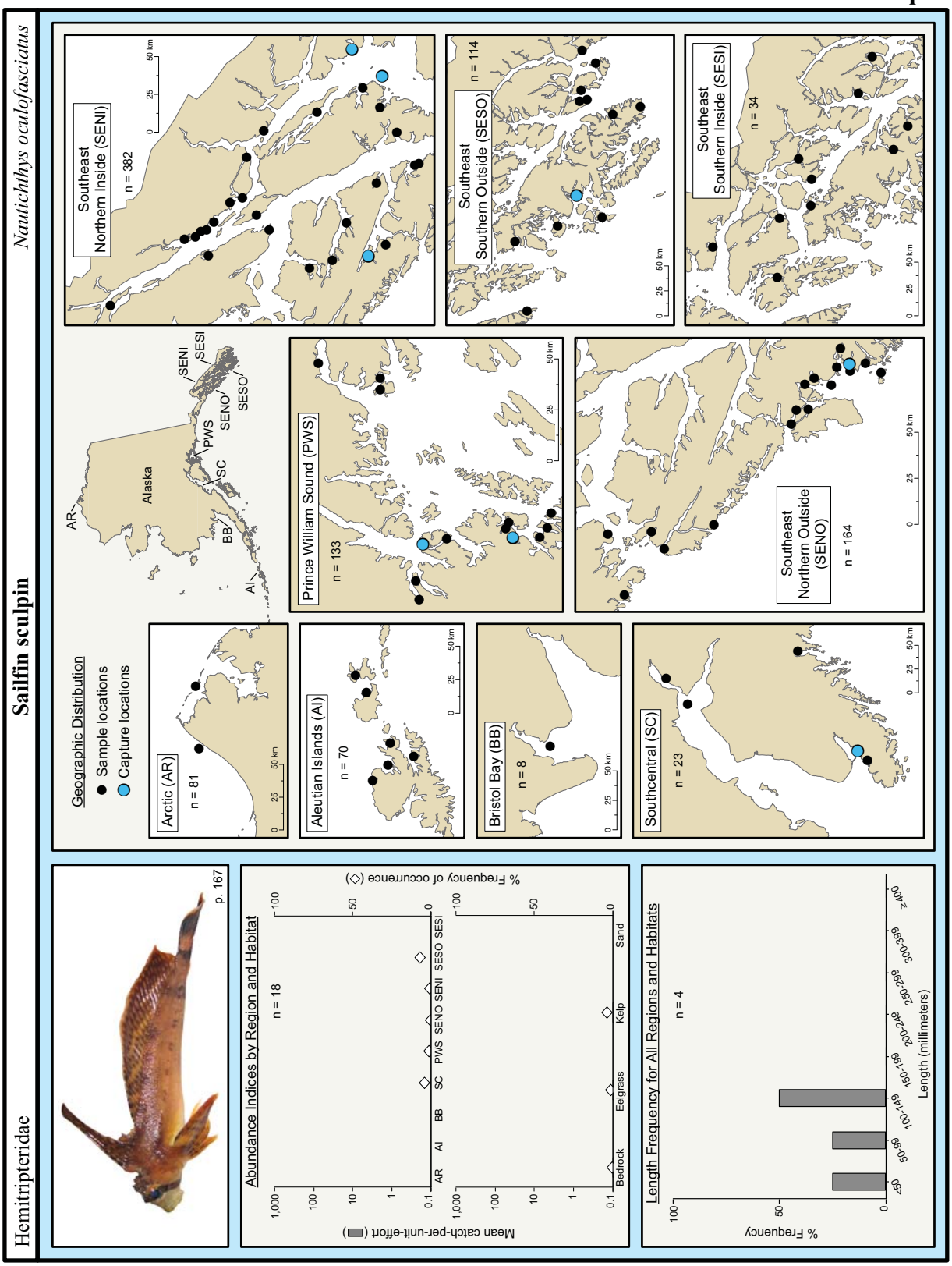

Gobiescocidae
Kelp clingfish
Rimicola muscarum
John Yasaki
p. 166
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 0
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

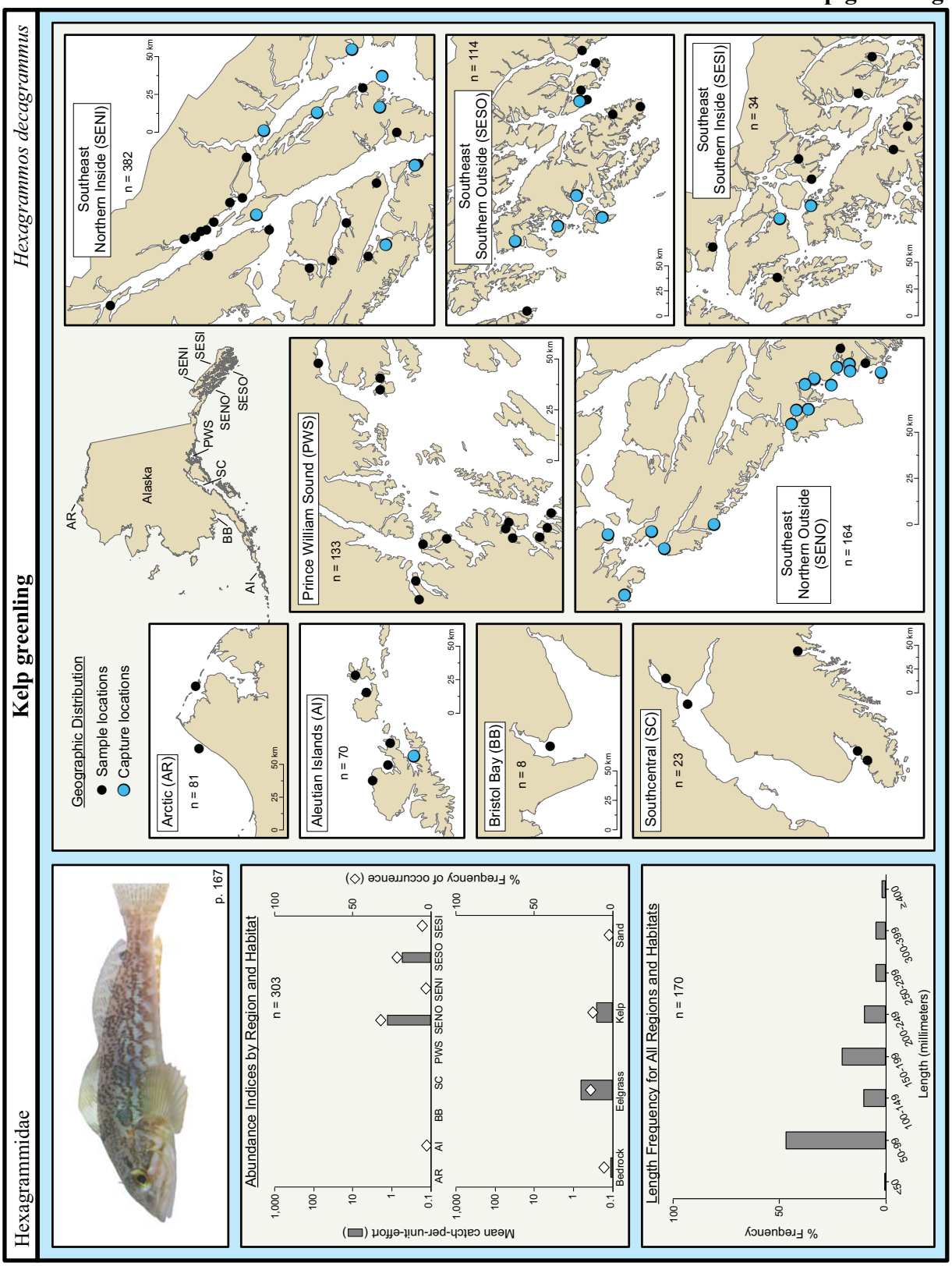

Gobiidae
Bay goby
Lepidogobius lepidus
p. 166
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 16
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 6
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

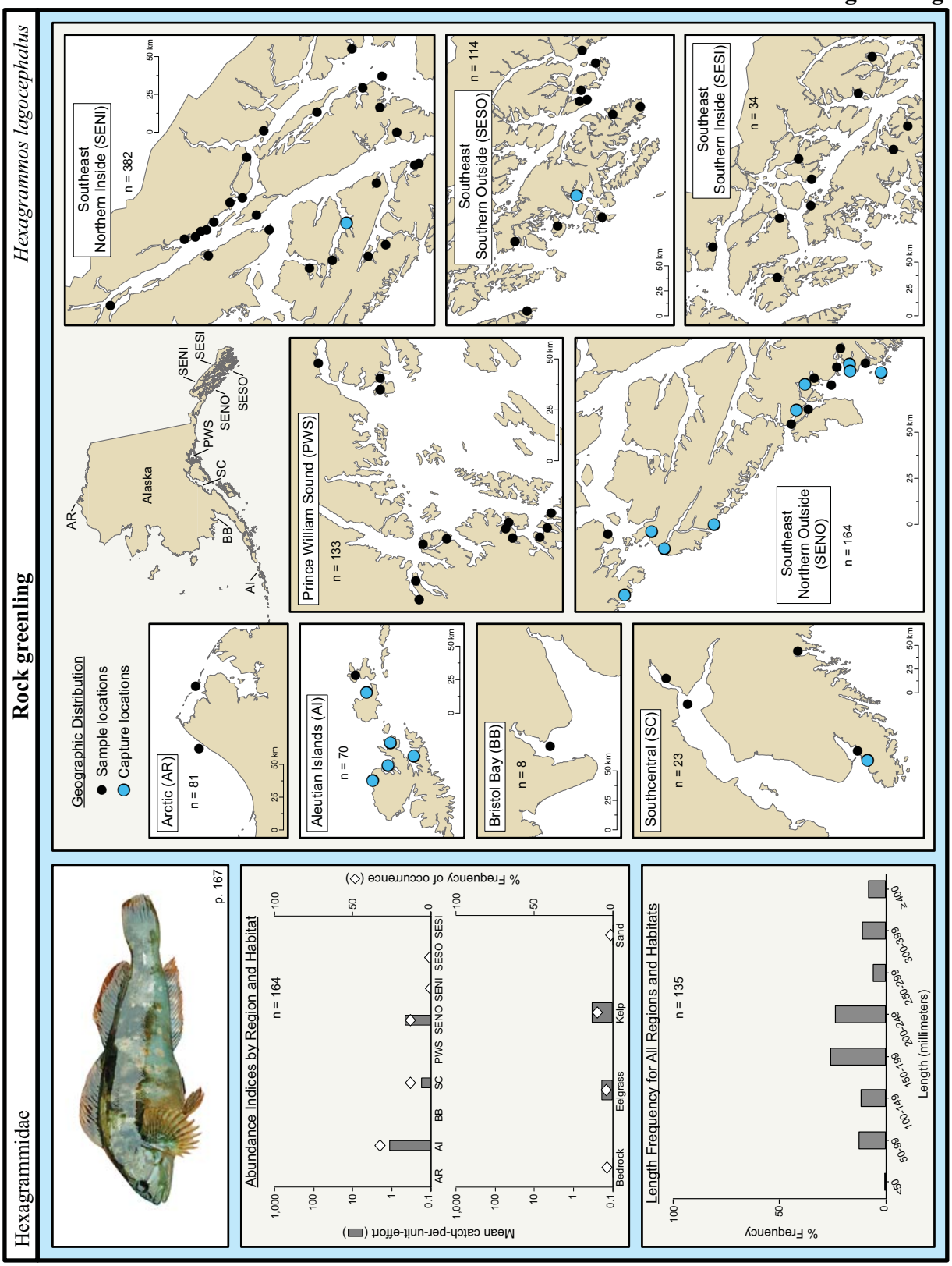

Gobiidae
Blackeye goby
Rhinogobiops nicholsii
p. 166
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 108
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 22
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

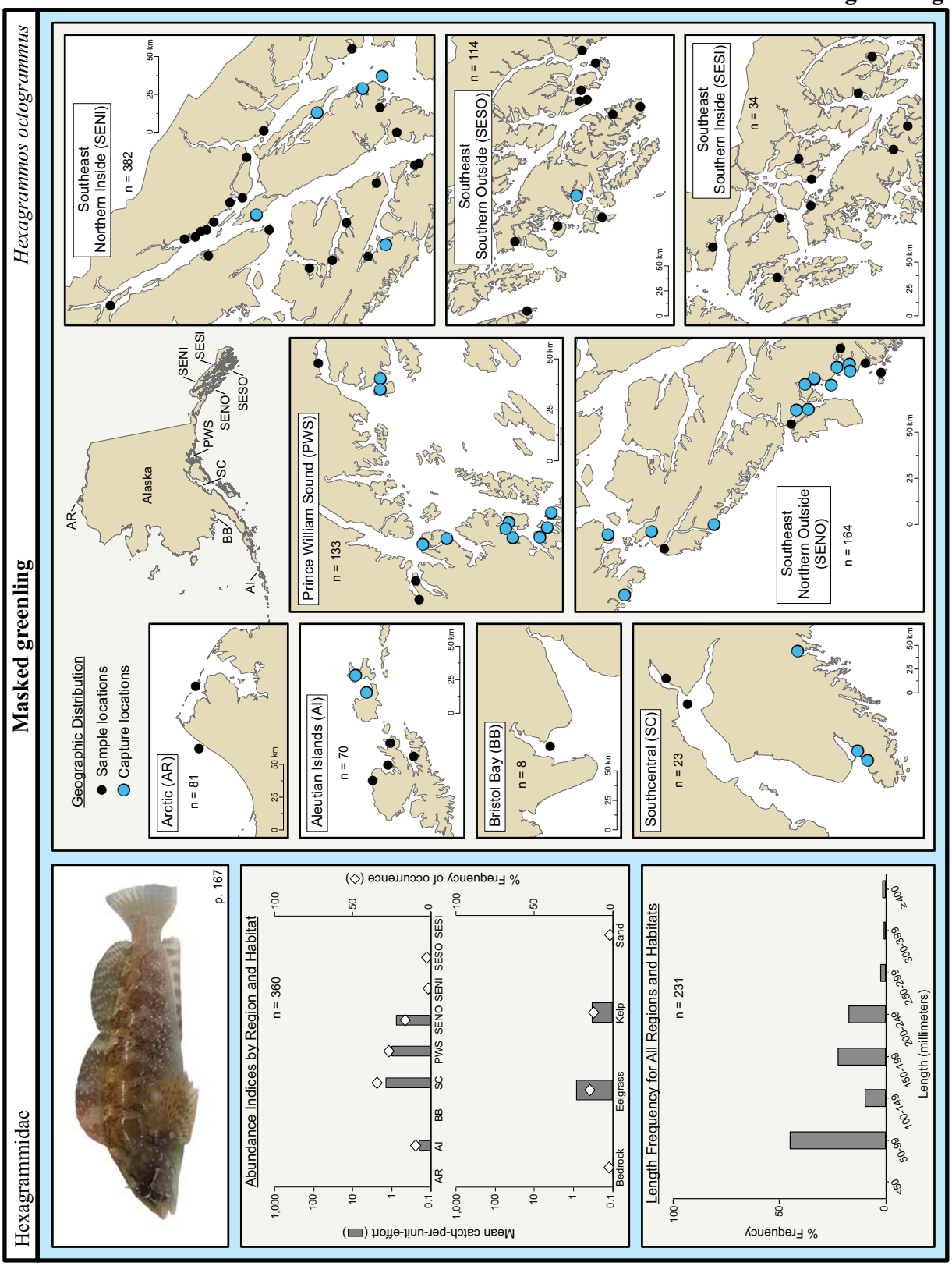

Hemitripteridae
Crested sculpin
Blepsias bilobus
p. 166
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 29
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 11
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

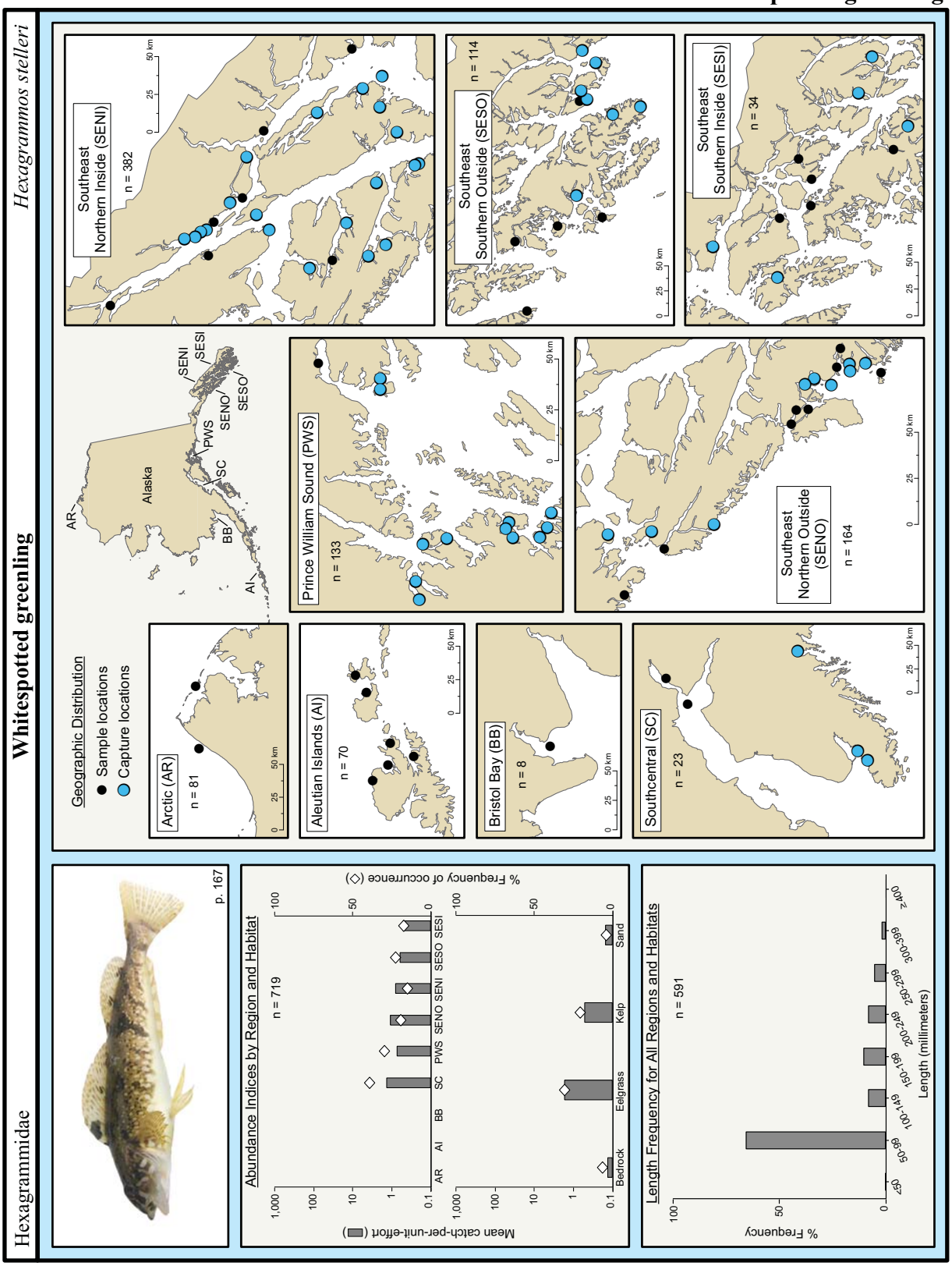

Hemitripteridae
Silverspotted sculpin
Blepsias cirrhosus
p. 167
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 1,867
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 226
% Frequency
Length (millimeters)


Hemitripteridae
Sailfin sculpin
Nautichthys oculofasciatus
p. 167
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 18
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 4
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Hexagrammidae
Kelp greenling
Hexagrammos decagrammus
p. 167
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 303
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 170
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Hexagrammidae
Rock greenling
Hexagrammos lagocephalus
p. 167
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Southern Outside (SESO)
n = 114
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Inside (SESI)
n = 34
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
0 25 50 km
Abundance Indices by Region and Habitat
n = 164
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 135
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Hexagrammidae
Masked greenling
Hexagrammos octogrammus
p. 167
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 360
Mean catch-per-unit-effort ( )
% Frequency of occurrence ( )
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 231
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Hexagrammidae
Whitespotted greenling
Hexagrammos stelleri
p. 167
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 719
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 591
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

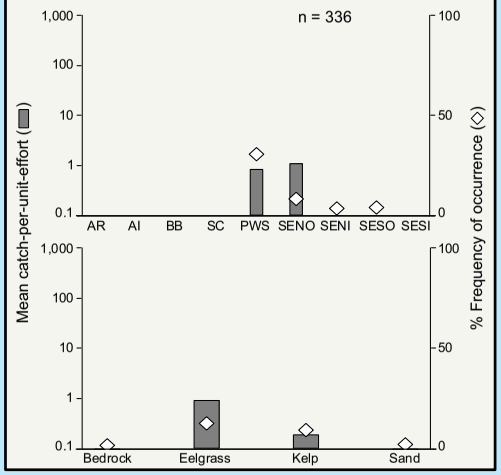
Hexagrammidae

Lingcod

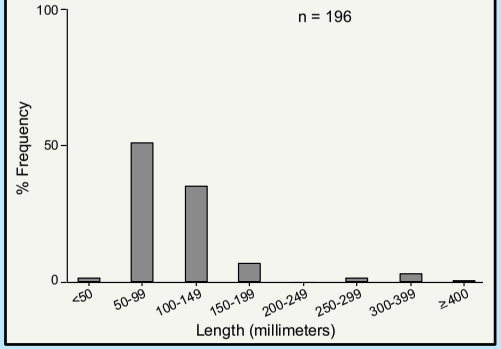
Ophiodon elongatus

p. 167

Abundance Indices by Region and Habitat

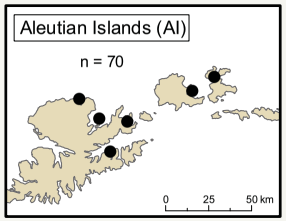


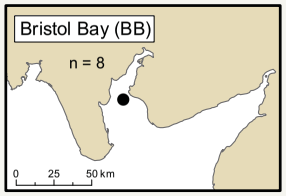
Length Frequency for All Regions and Habitats

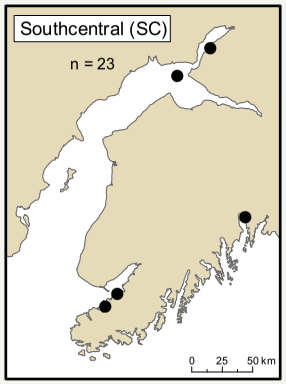


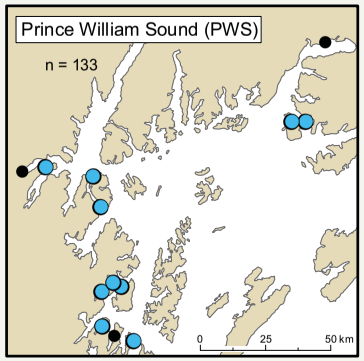
Geographic Distribution

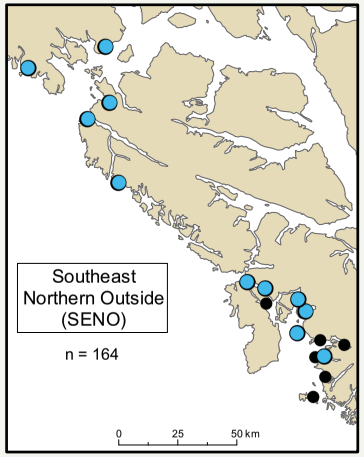
- Sample locations
- Capture locations

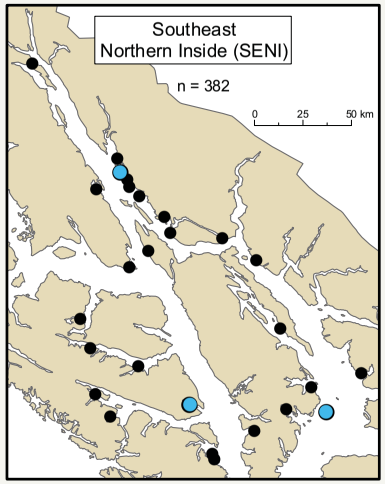


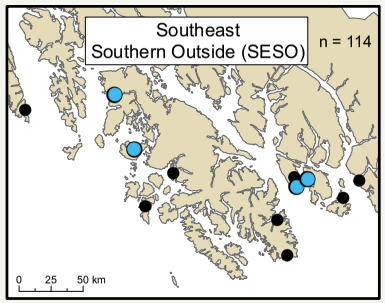


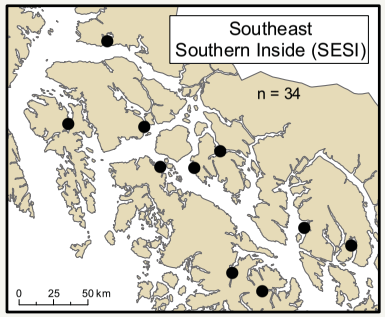


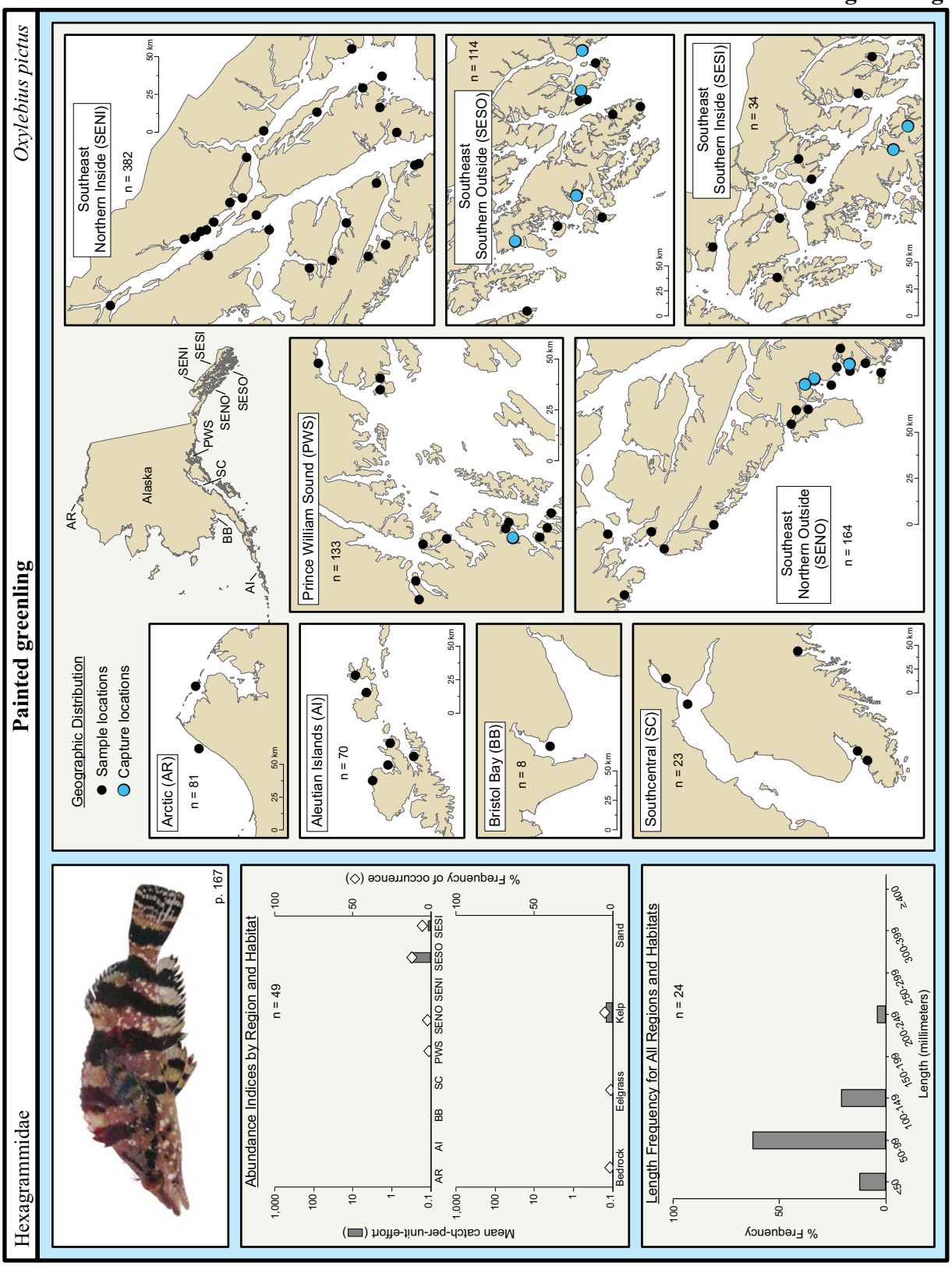


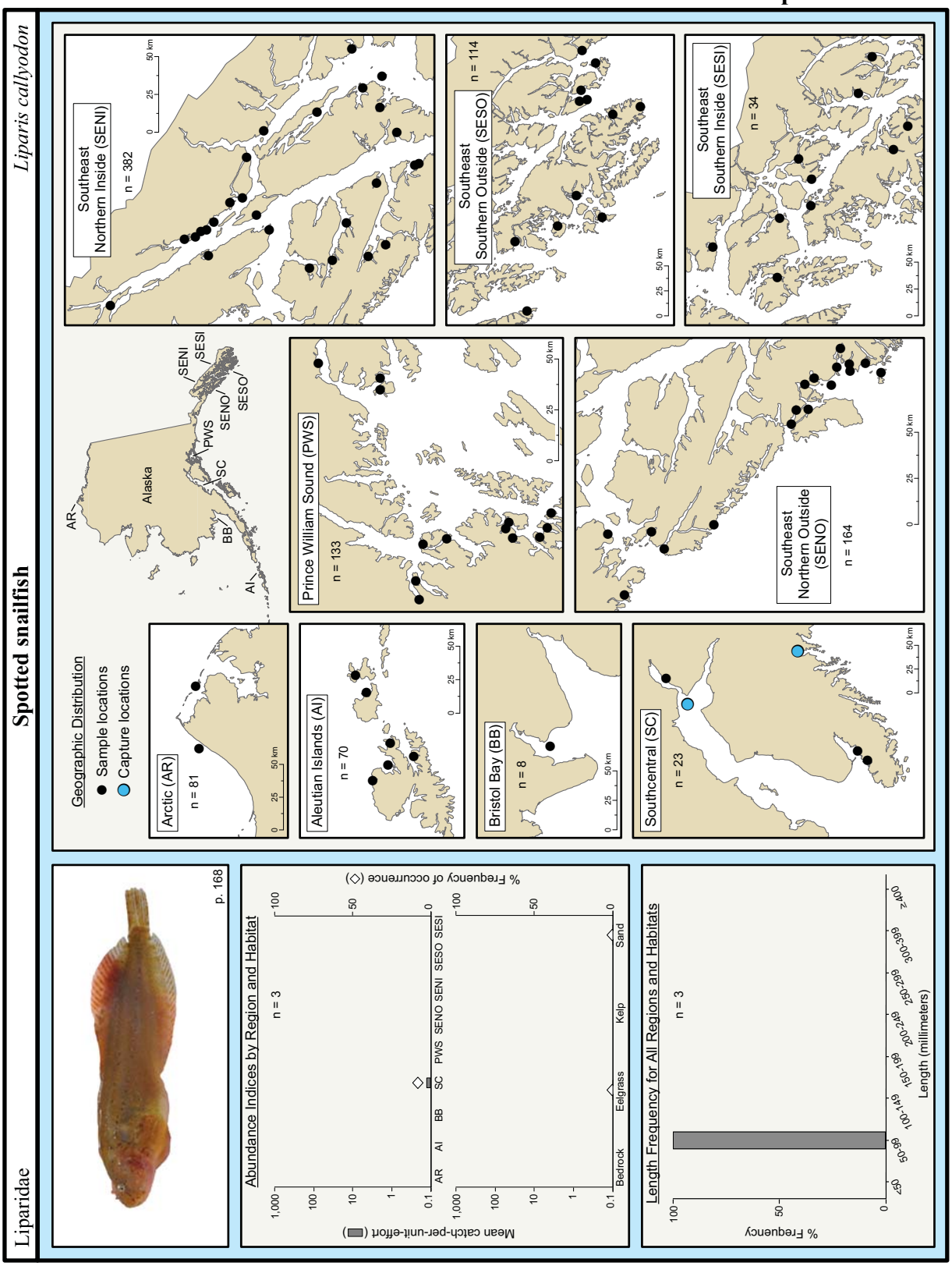


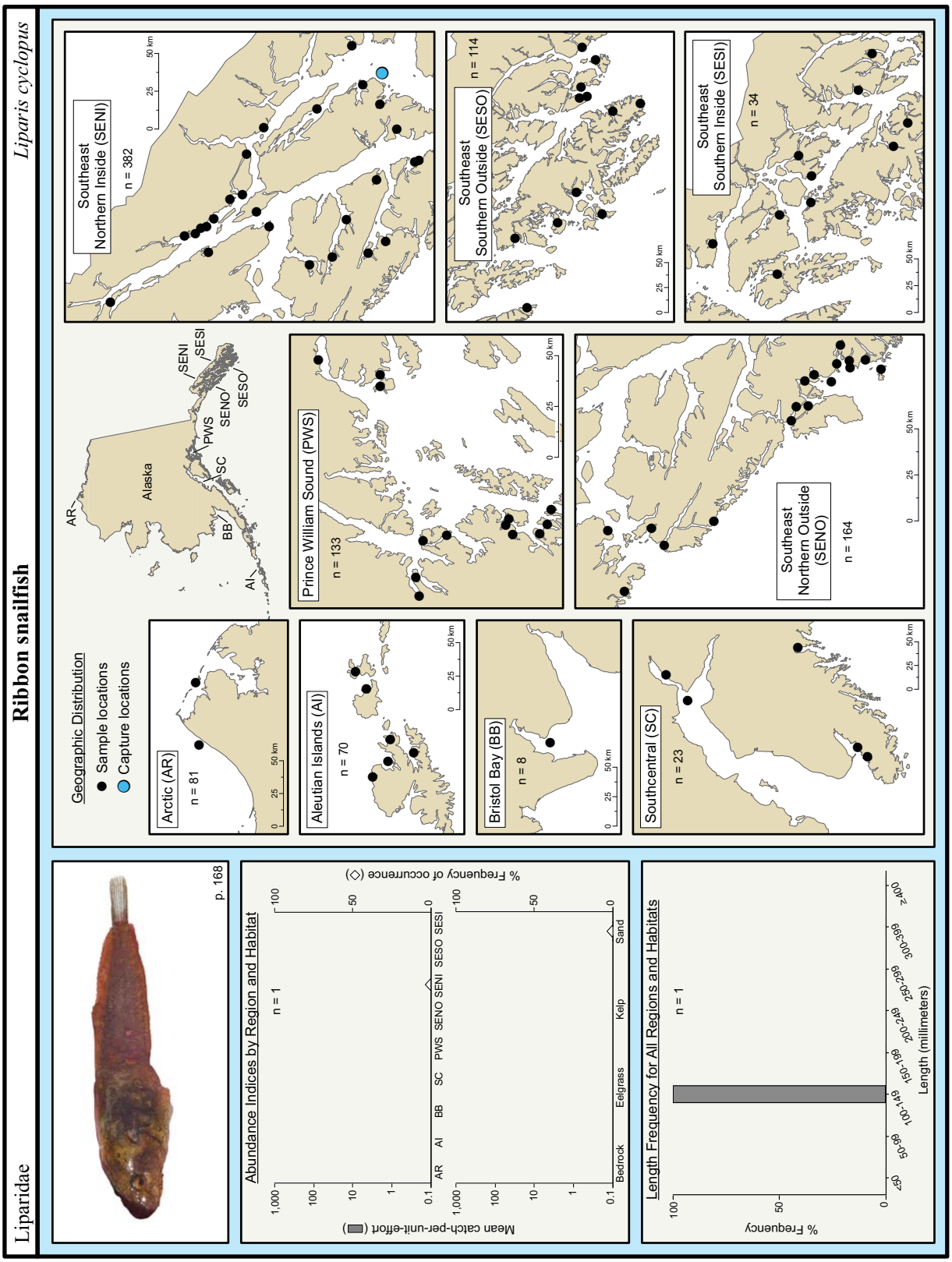


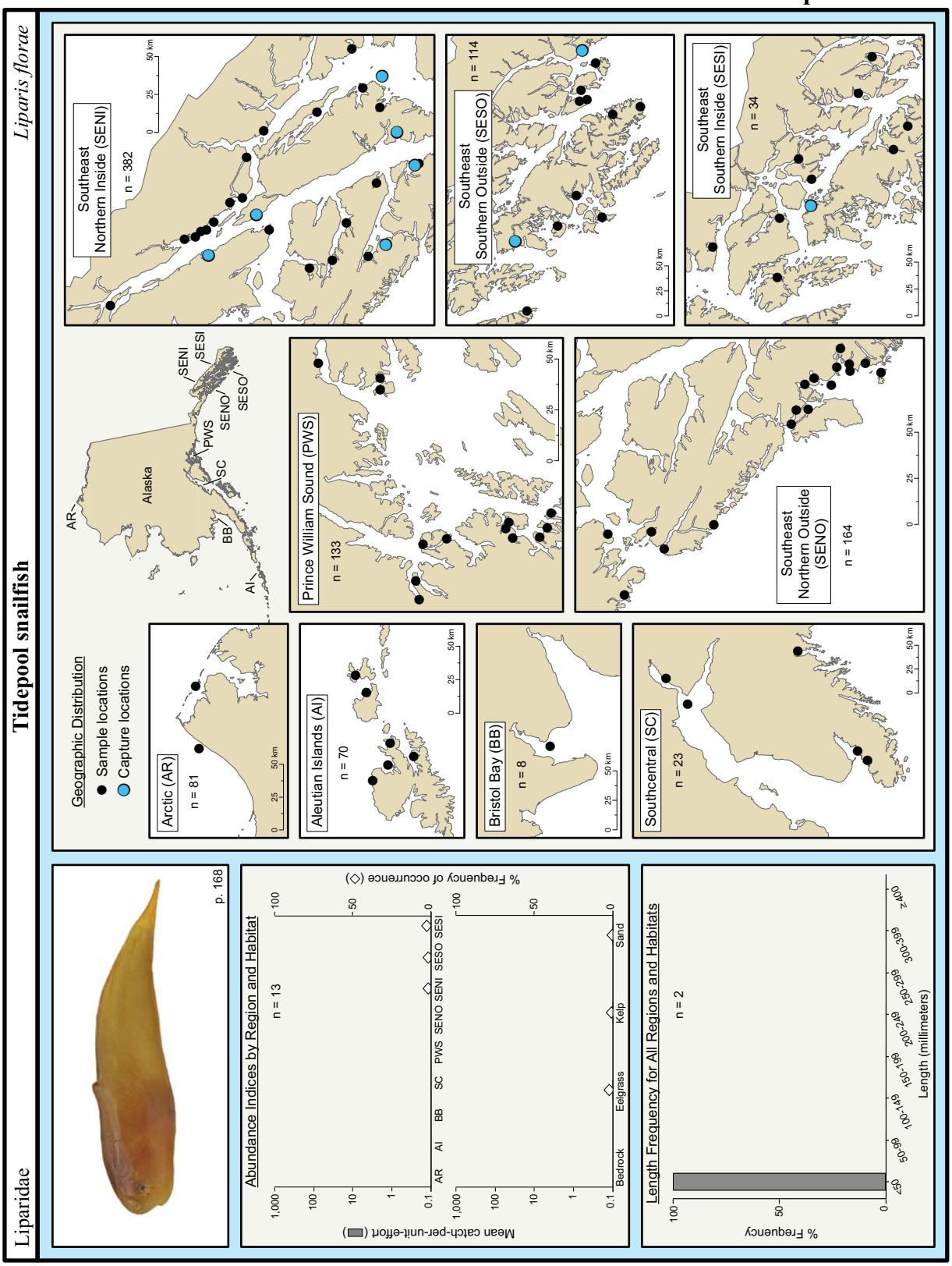


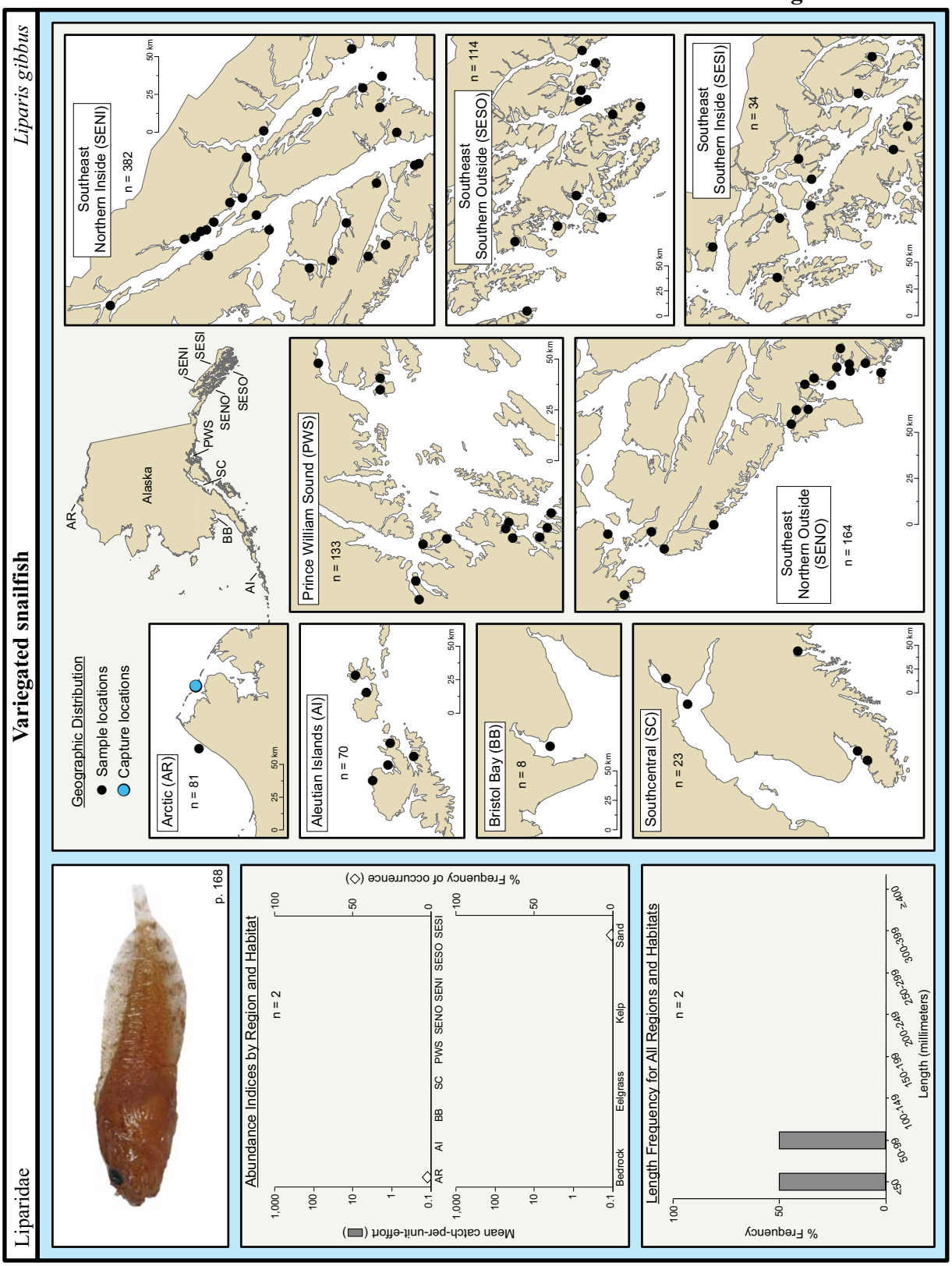


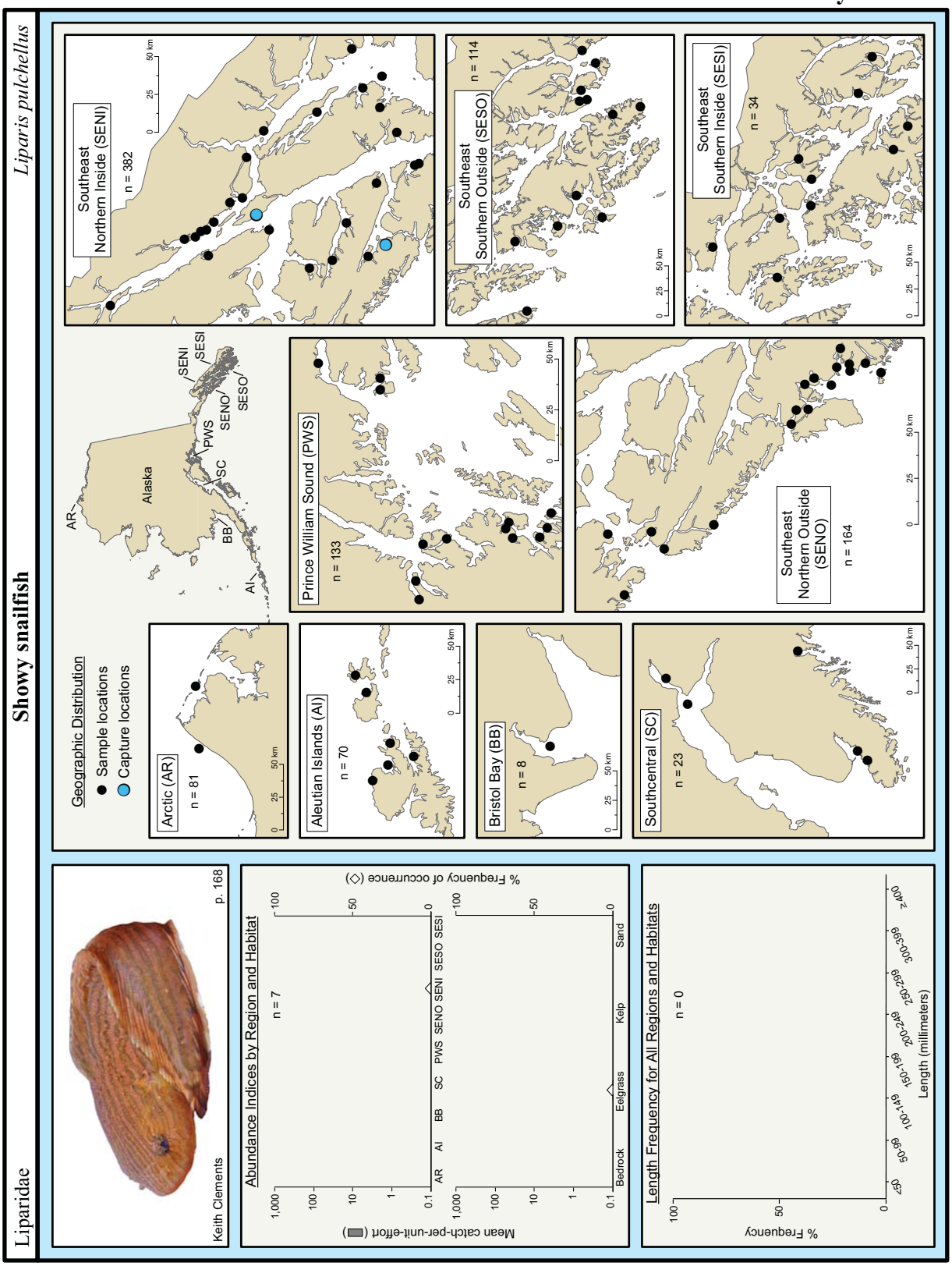

Hexagrammidae
Painted greenling
Oxylebius pictus
p. 167
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 49
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 24
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

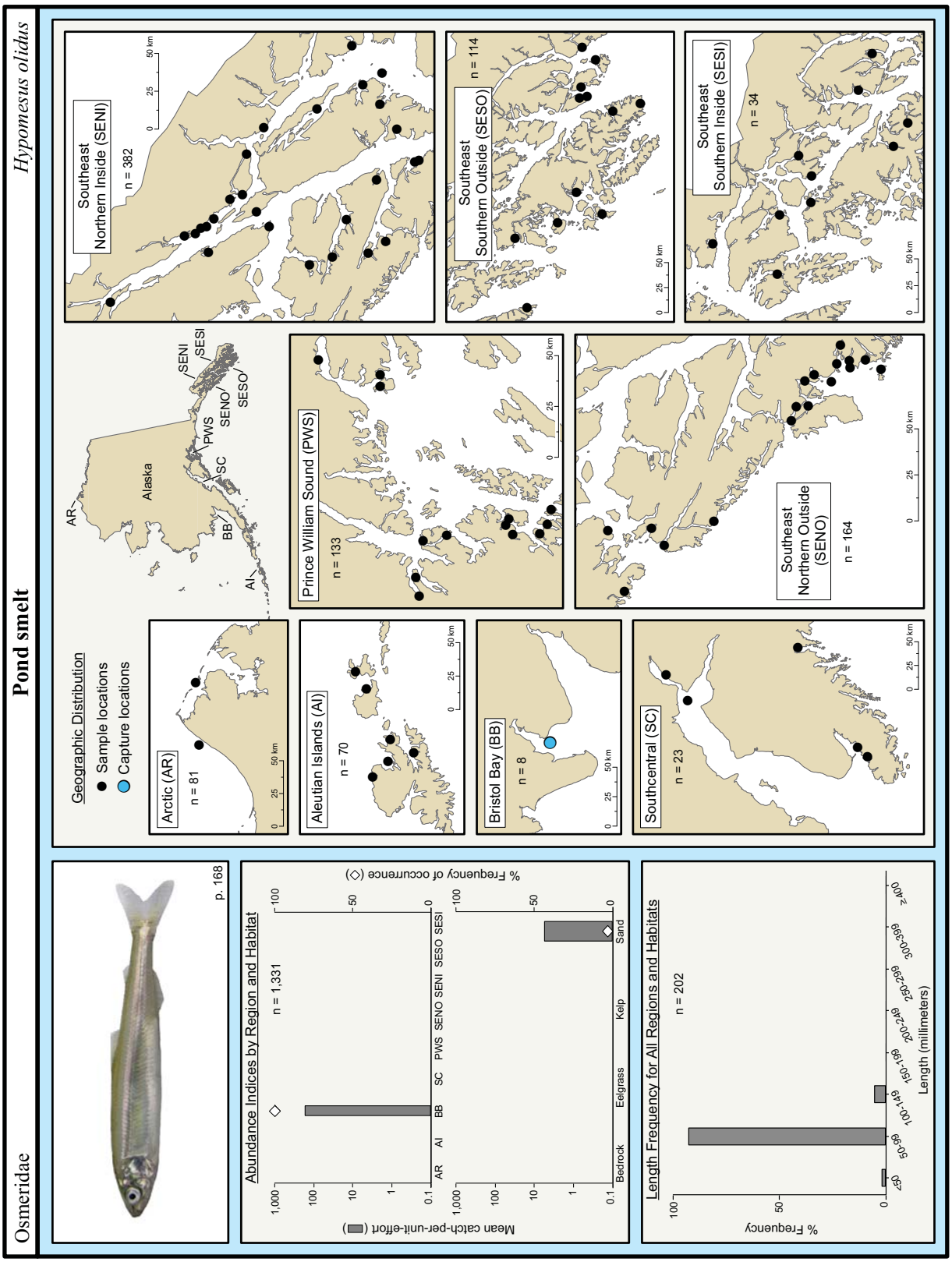

Liparidae
Spotted snailfish
Liparis callyodon
p. 168
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 3
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 3
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

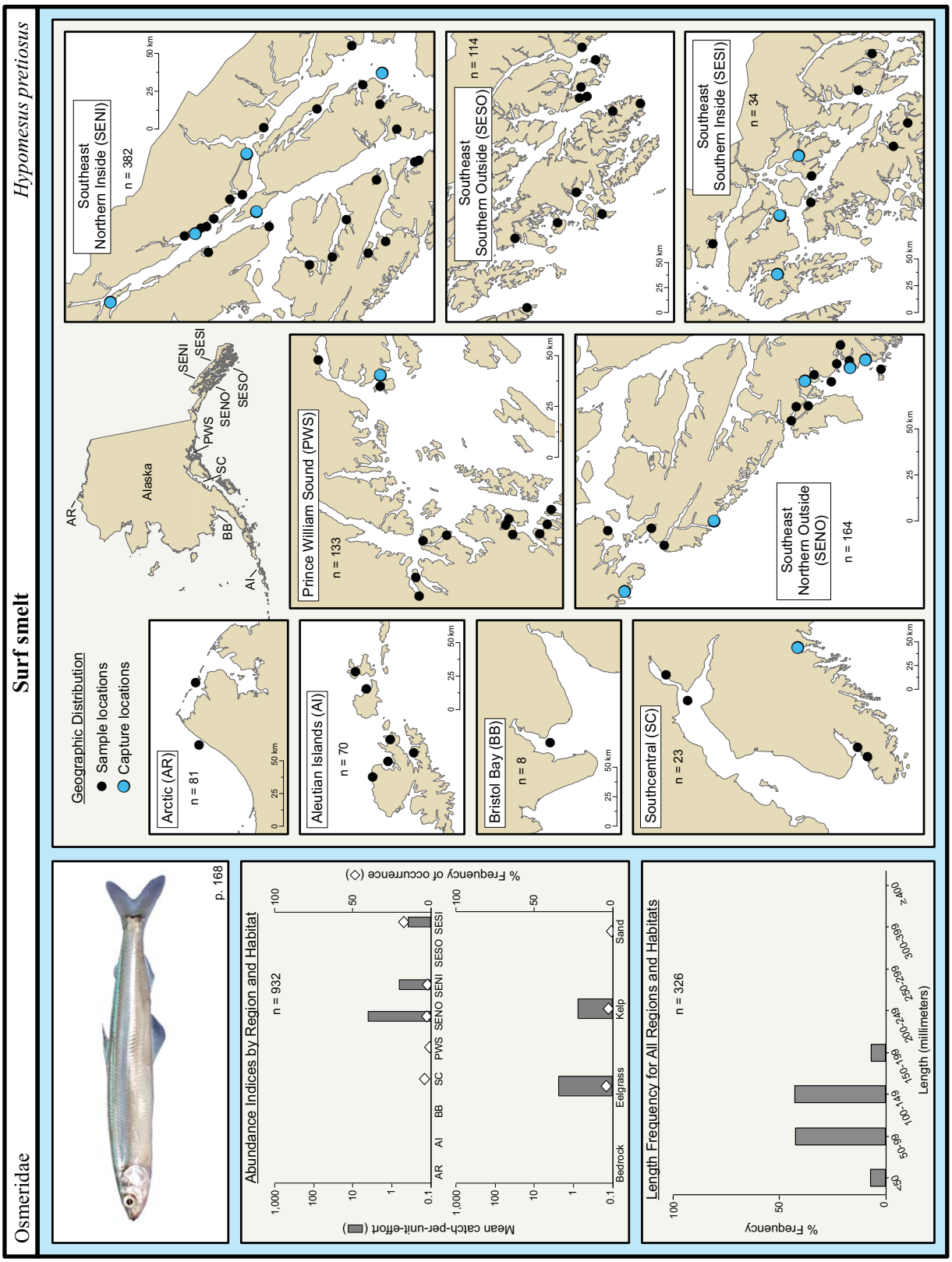

Liparidae
Ribbon snailfish
Liparis cyclopus
p. 168
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

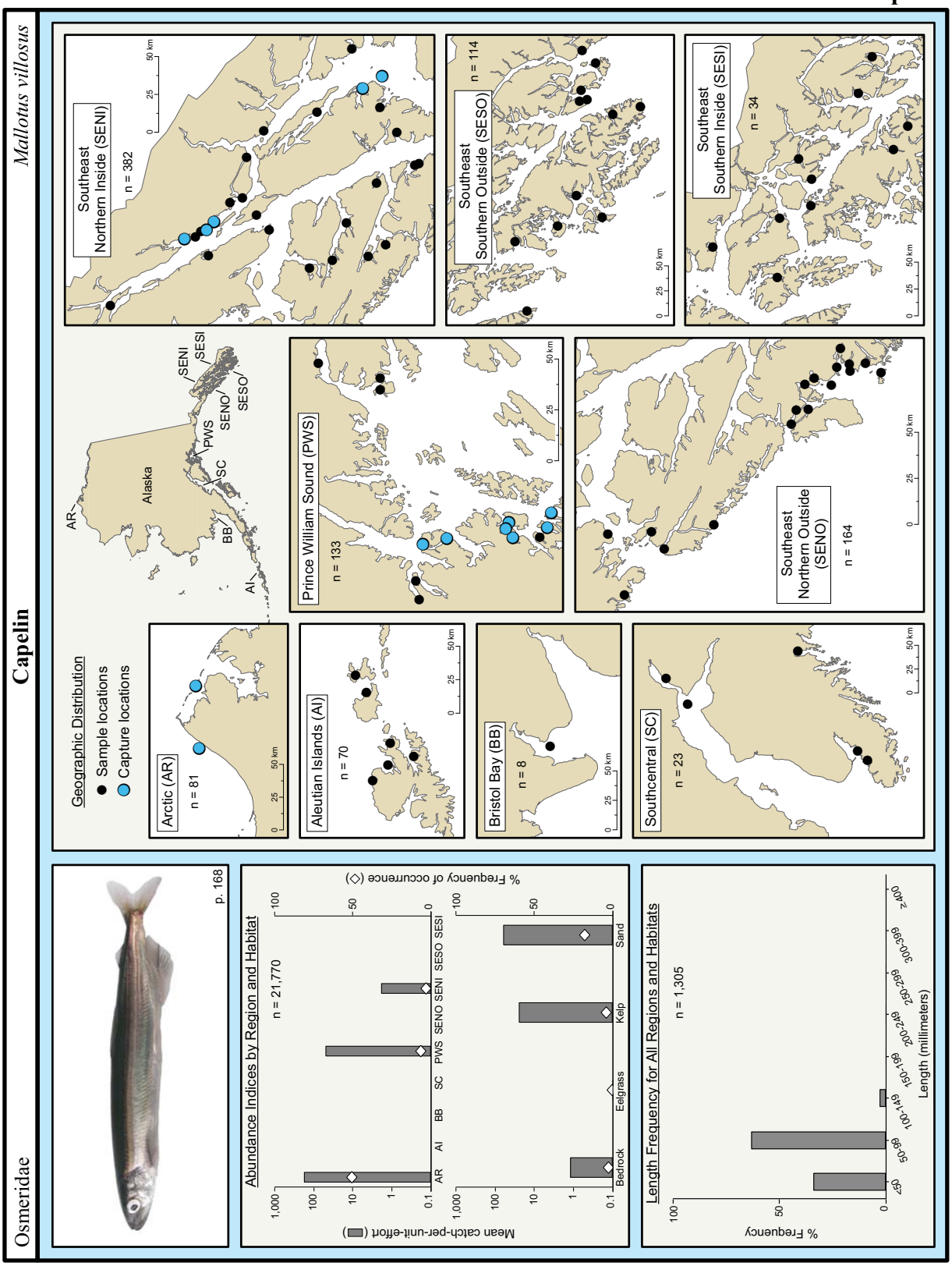

Liparidae
Tidepool snailfish
Liparis florae
p. 168
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 13
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

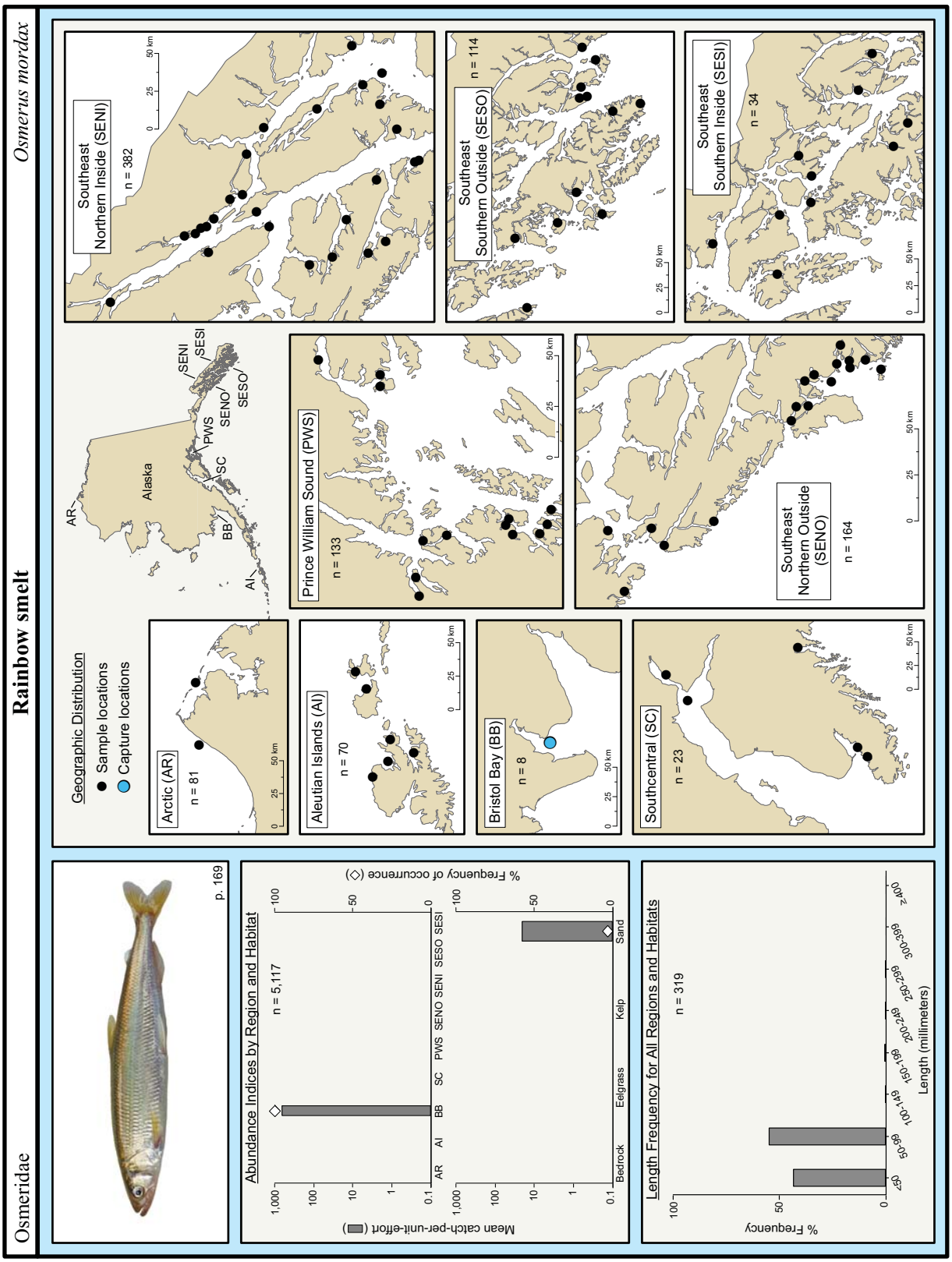

Liparidae
Variegated snailfish
Liparis gibbus
p. 168
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 2
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

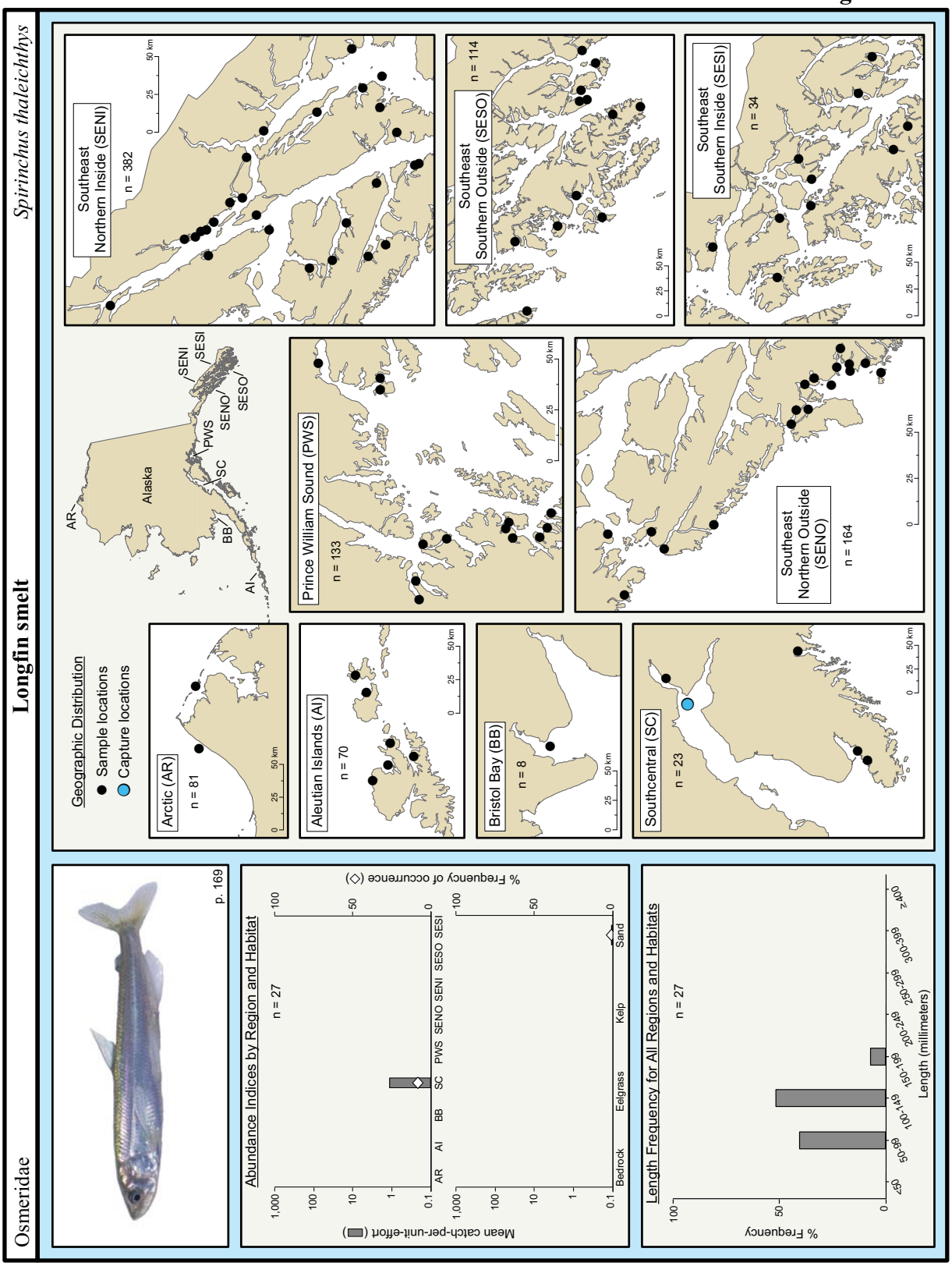

Liparidae
Showy snailfish
Liparis pulchellus
Keith Clements
p. 168
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 7
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 0
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

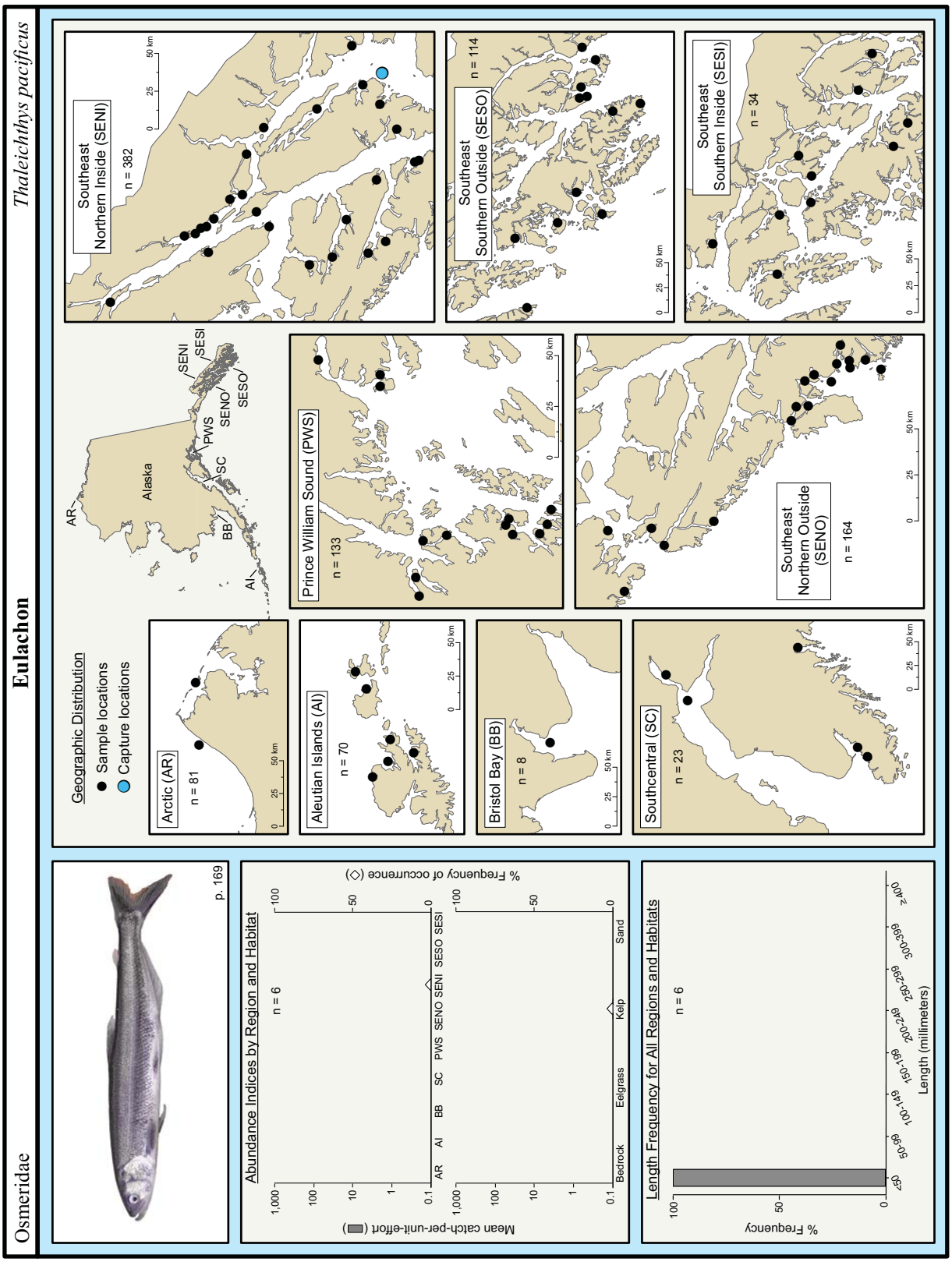

Osmeridae
Pond smelt
Hypomesus olidus
p. 168
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 1,331
Mean catch-per-unit-effort (◇)
% Frequency of occurrence (◇)
Length Frequency for All Regions and Habitats
n = 202
% Frequency
Length (millimeters)

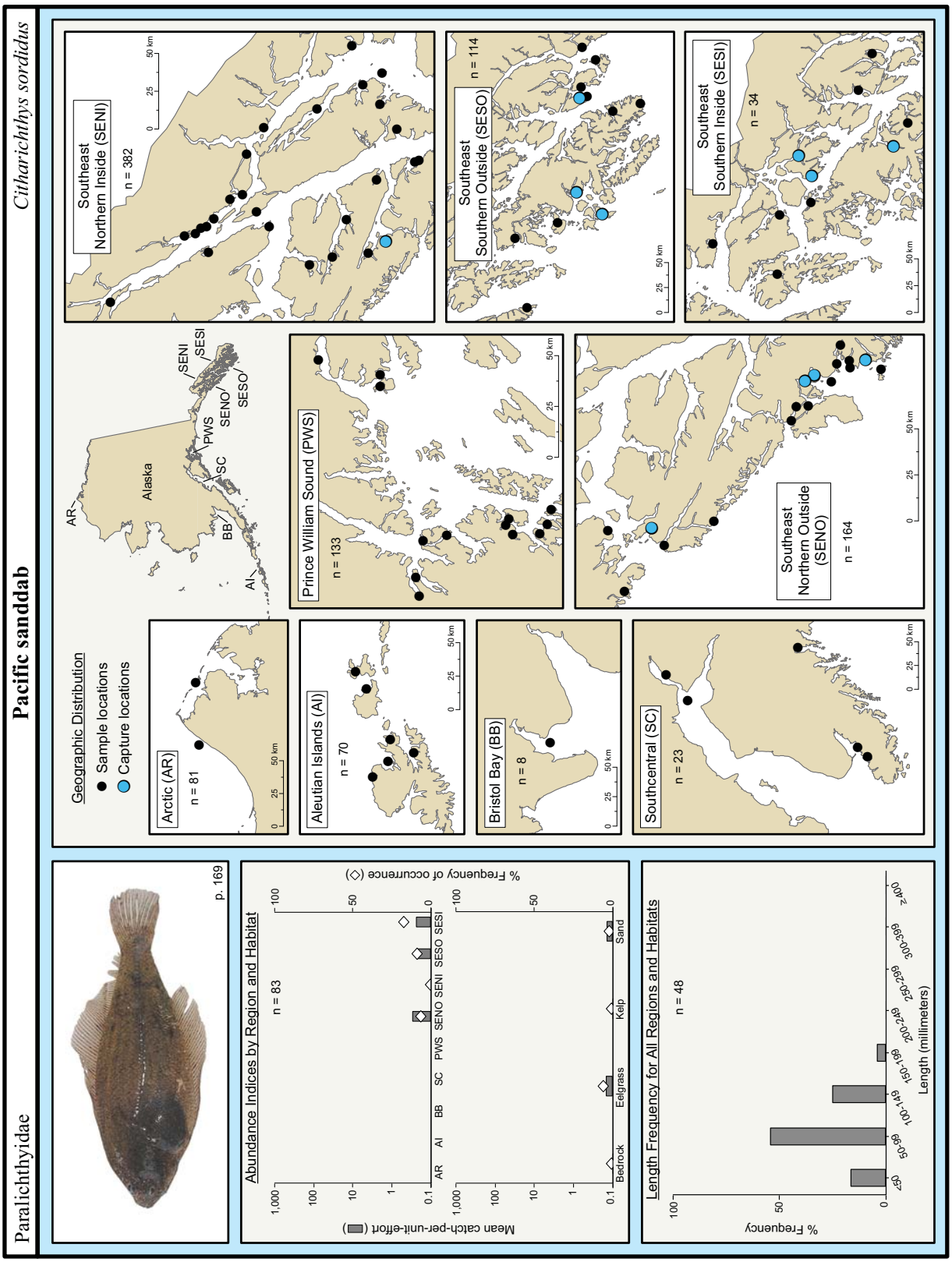

Osmeridae
Surf smelt
Hypomesus pretiosus
p. 168
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 932
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 326
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 >400

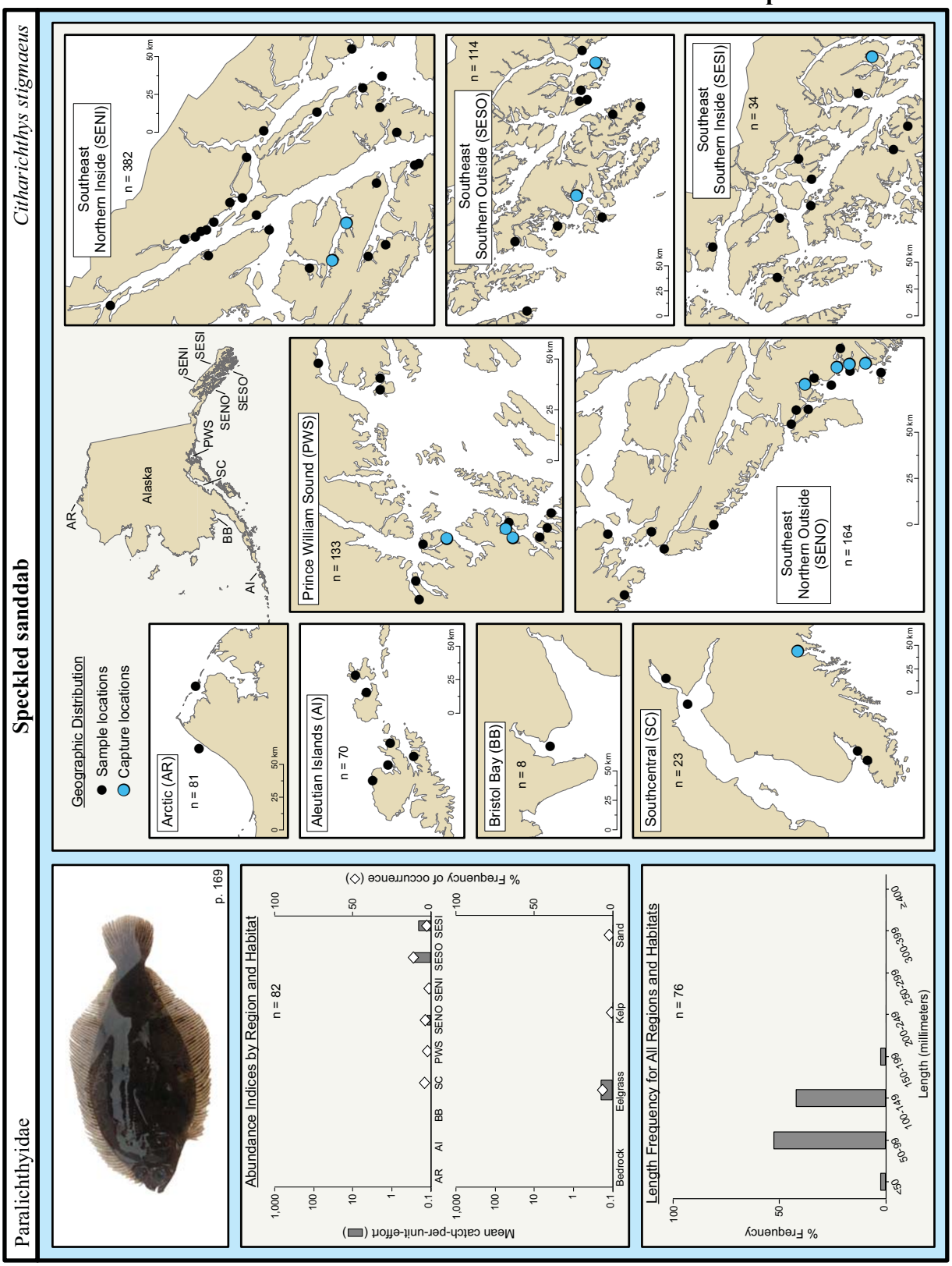

Osmeridae
Capelin
Mallotus villosus
p. 168
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 21,770
Mean catch-per-unit-effort (▭)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1,305
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

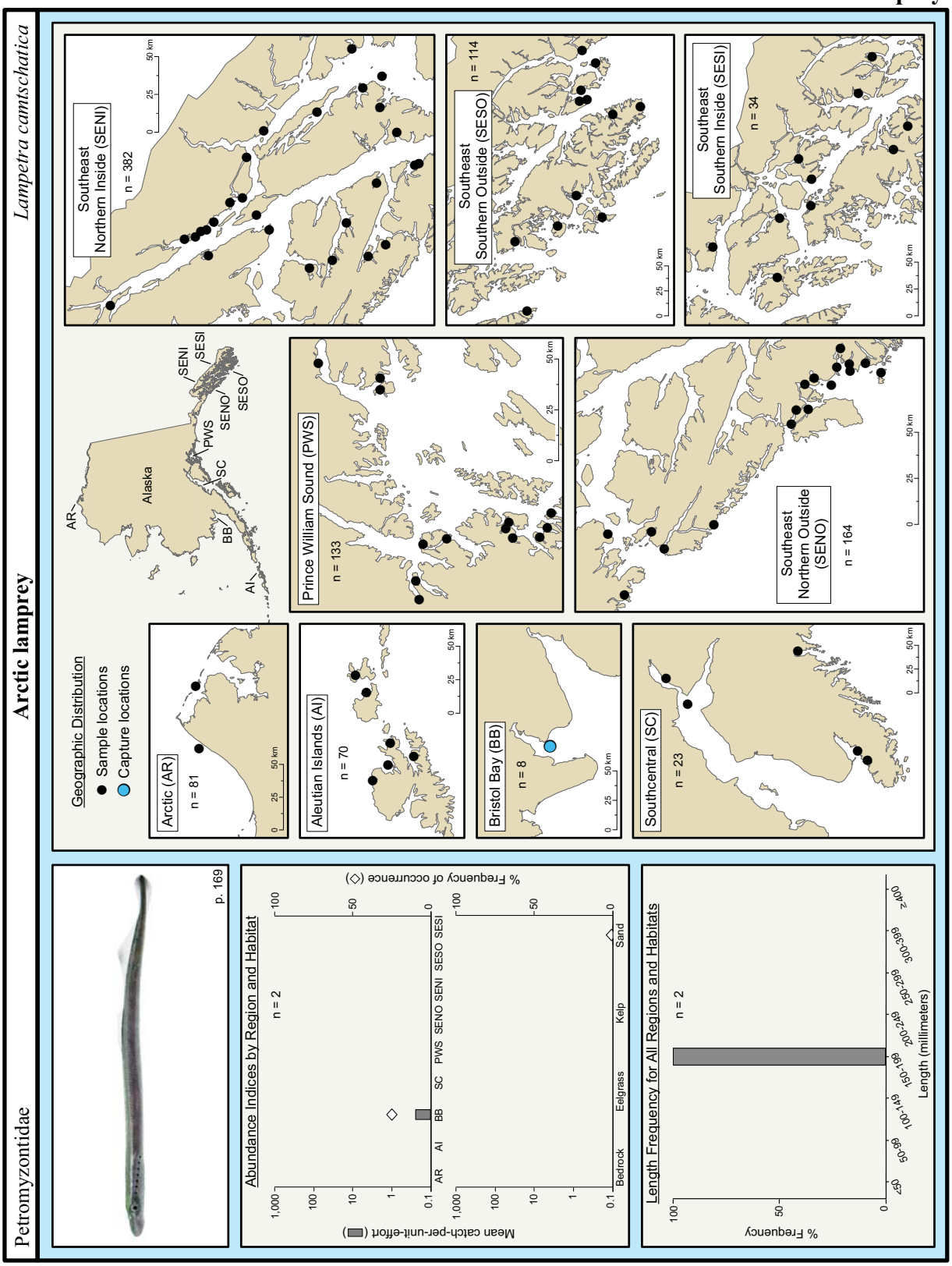

Osmeridae
Rainbow smelt
Osmerus mordax
p. 169
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 5,117
Mean catch-per-unit-effort (▭)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 319
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

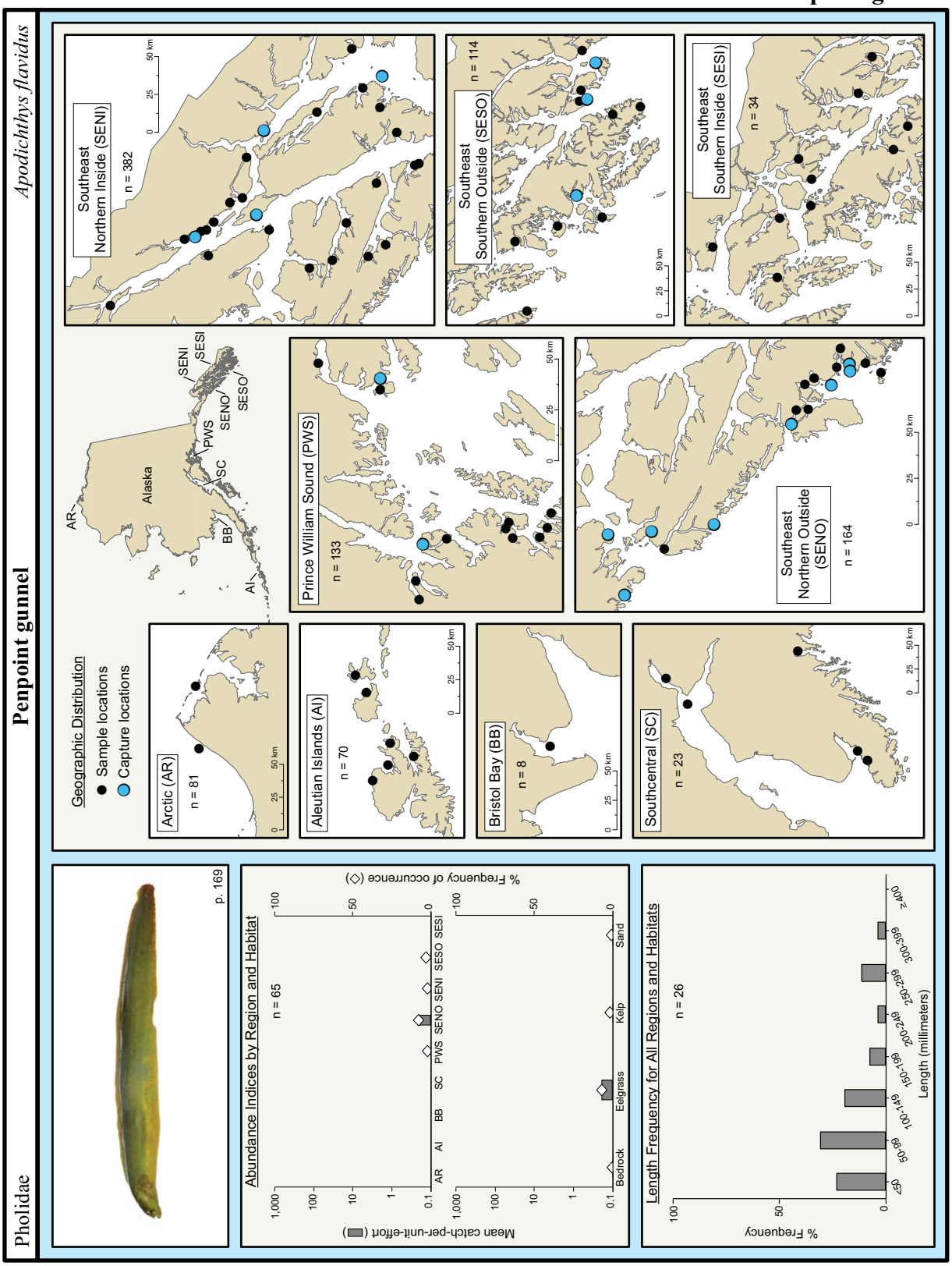

Osmeridae
Longfin smelt
Spirinchus thaleichthys
p. 169
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 27
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 27
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

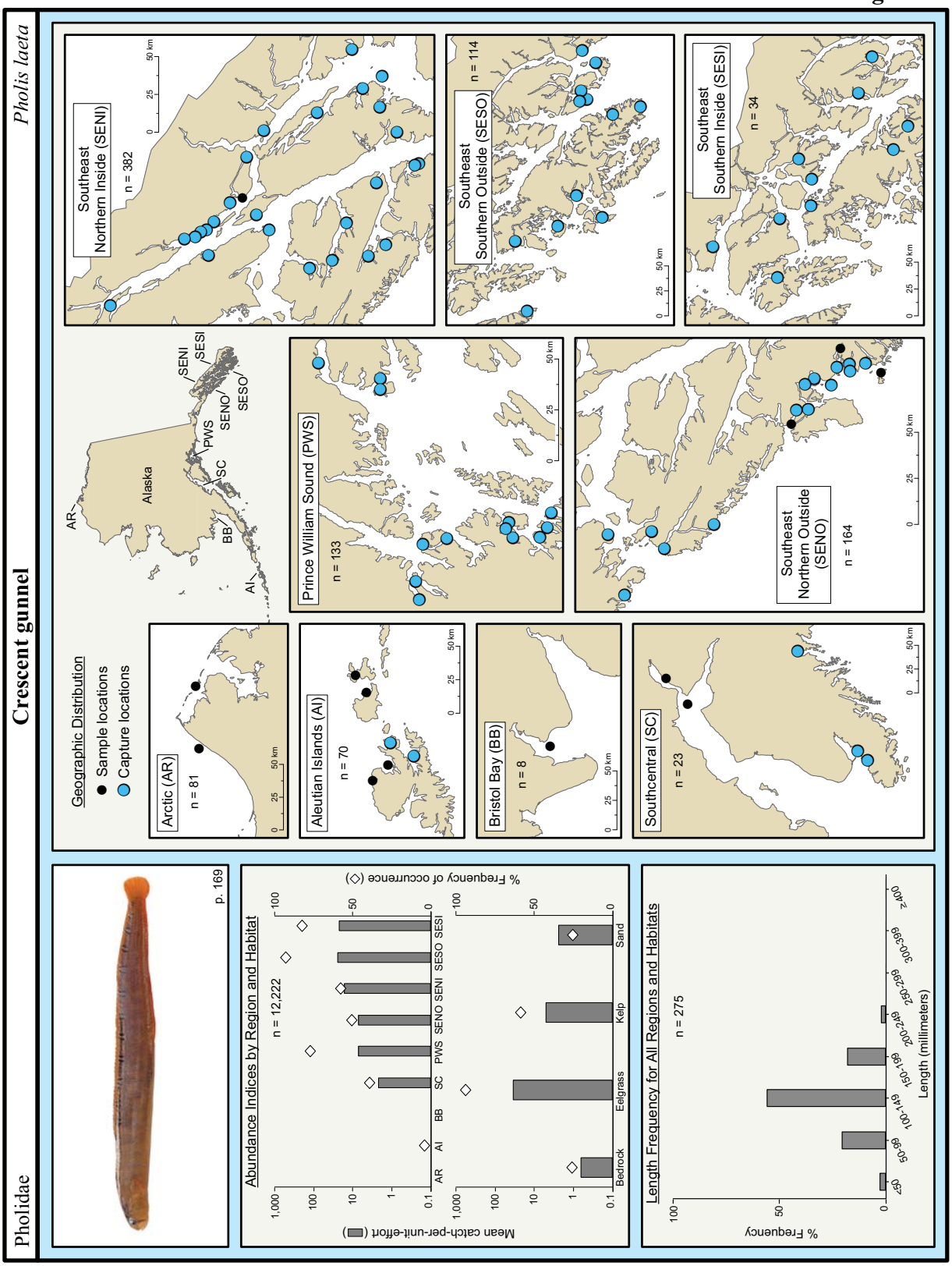

Osmeridae
Eulachon
Thaleichthys pacificus
p. 169
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
AR
BB
AI
SC
PWS
SENO
SENI
SESO
SESI
Alaska
0 25 50 km
Abundance Indices by Region and Habitat
n = 6
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 6
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Paralichthyidae
Pacific sanddab
Citharichthys sordidus
p. 169
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 83
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 48
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400


Paralichthyidae
Speckled sanddab
Citharichthys stigmaeus
p. 169
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 82
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
1,000
100
10
1
0.1
100
50
0
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 76
% Frequency
100
50
0
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400
Length (millimeters)


Petromyzontidae
Arctic lamprey
Lampetra camtschatica
p. 169
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 2
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Pholidae
Penpoint gunnel
Apodichthys flavidus
p. 169
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 65
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 26
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Pholidae
Crescent gunnel
Pholis laeta
p. 169
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Abundance Indices by Region and Habitat
n = 12,222
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 275
% Frequency
Length (millimeters)

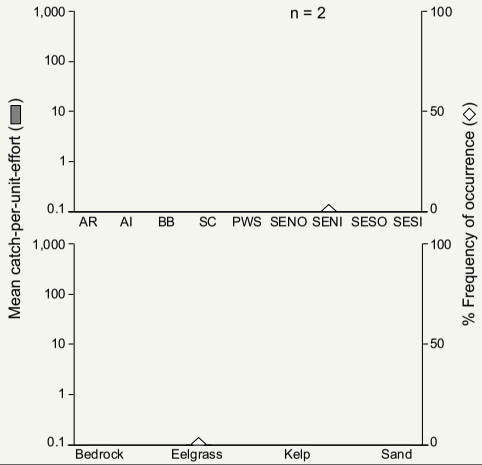
Pleuronectidae

Butter sole

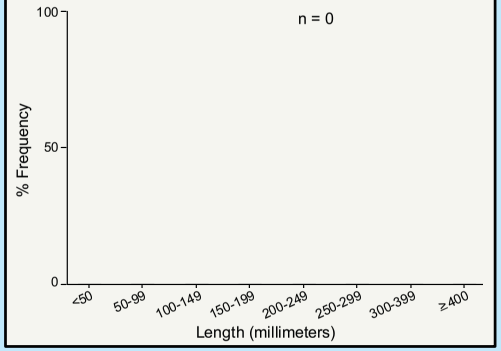
Isopsetta isolepis

p. 170

Abundance Indices by Region and Habitat

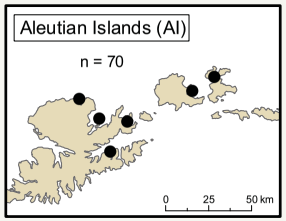


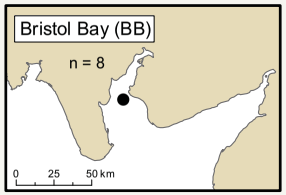
Length Frequency for All Regions and Habitats

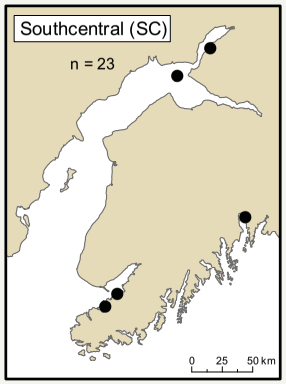


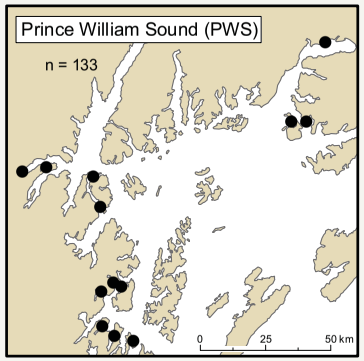
Geographic Distribution

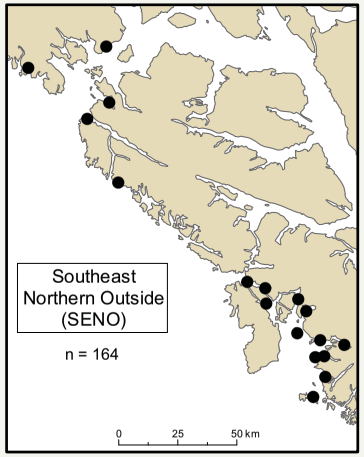
- Sample locations
- Capture locations

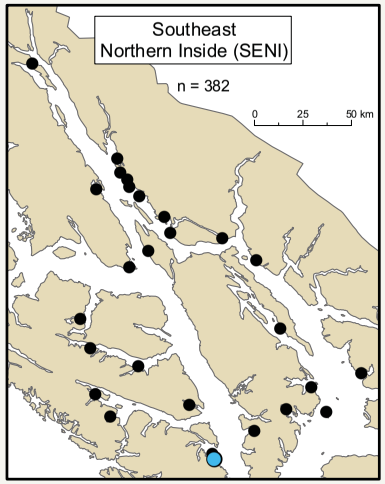


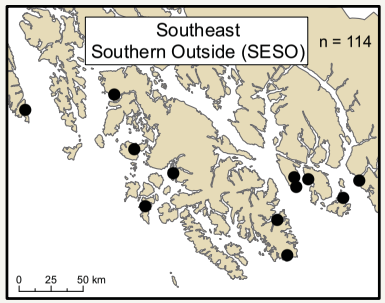


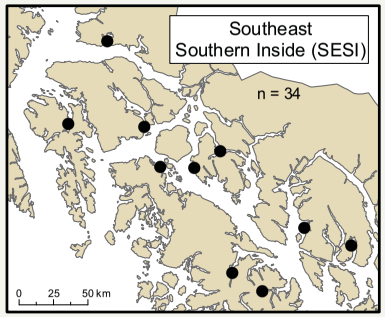


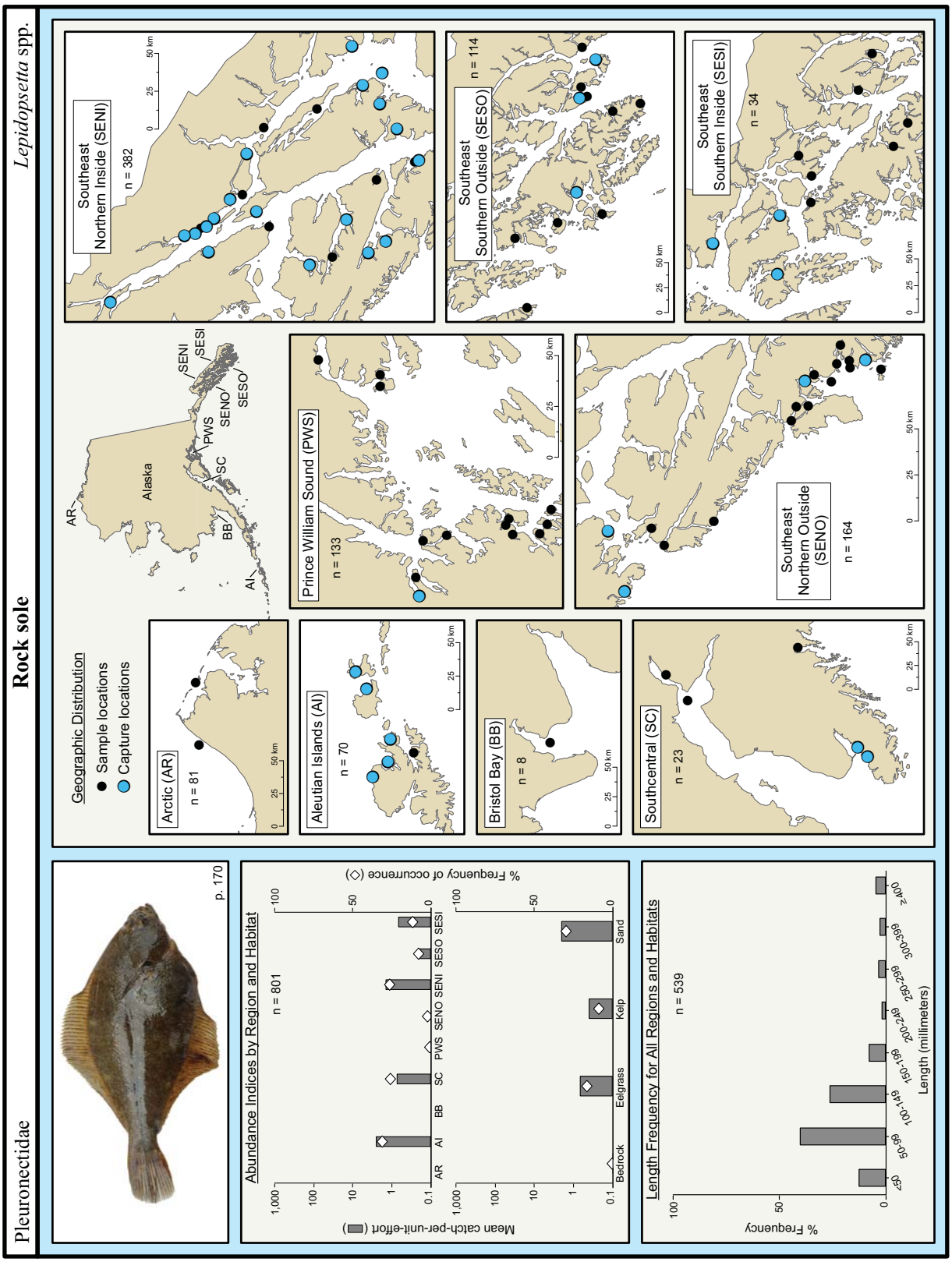


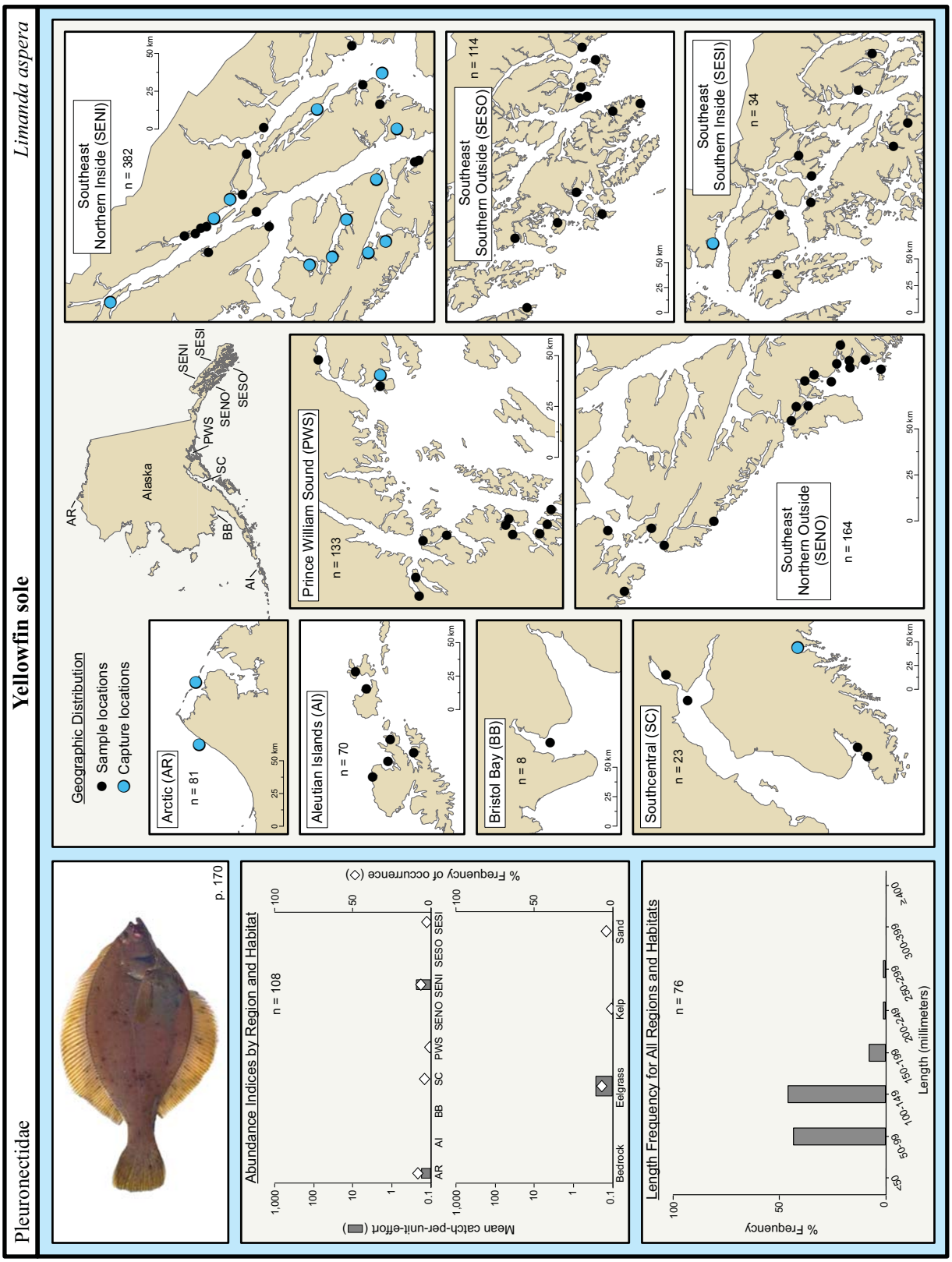


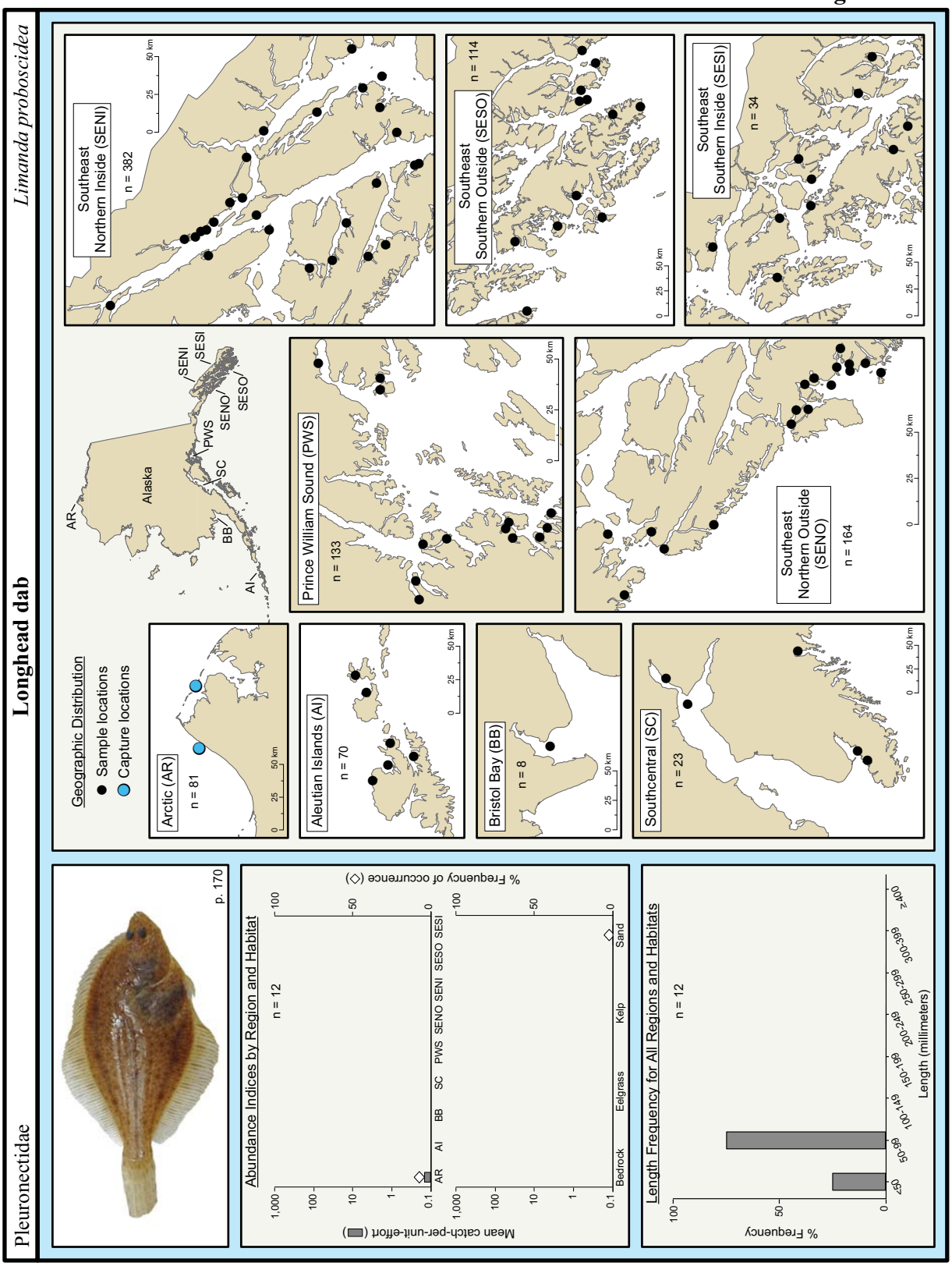


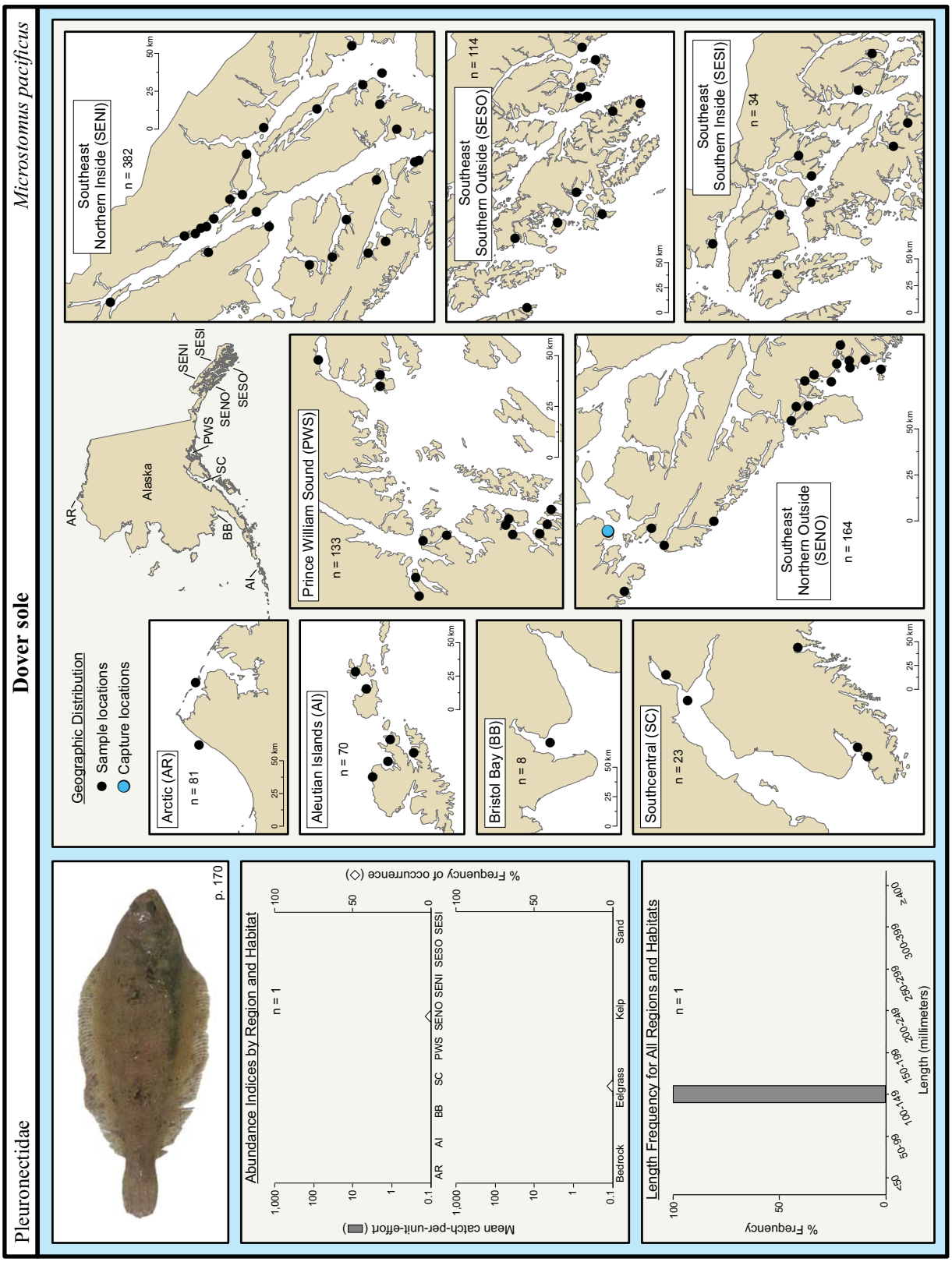


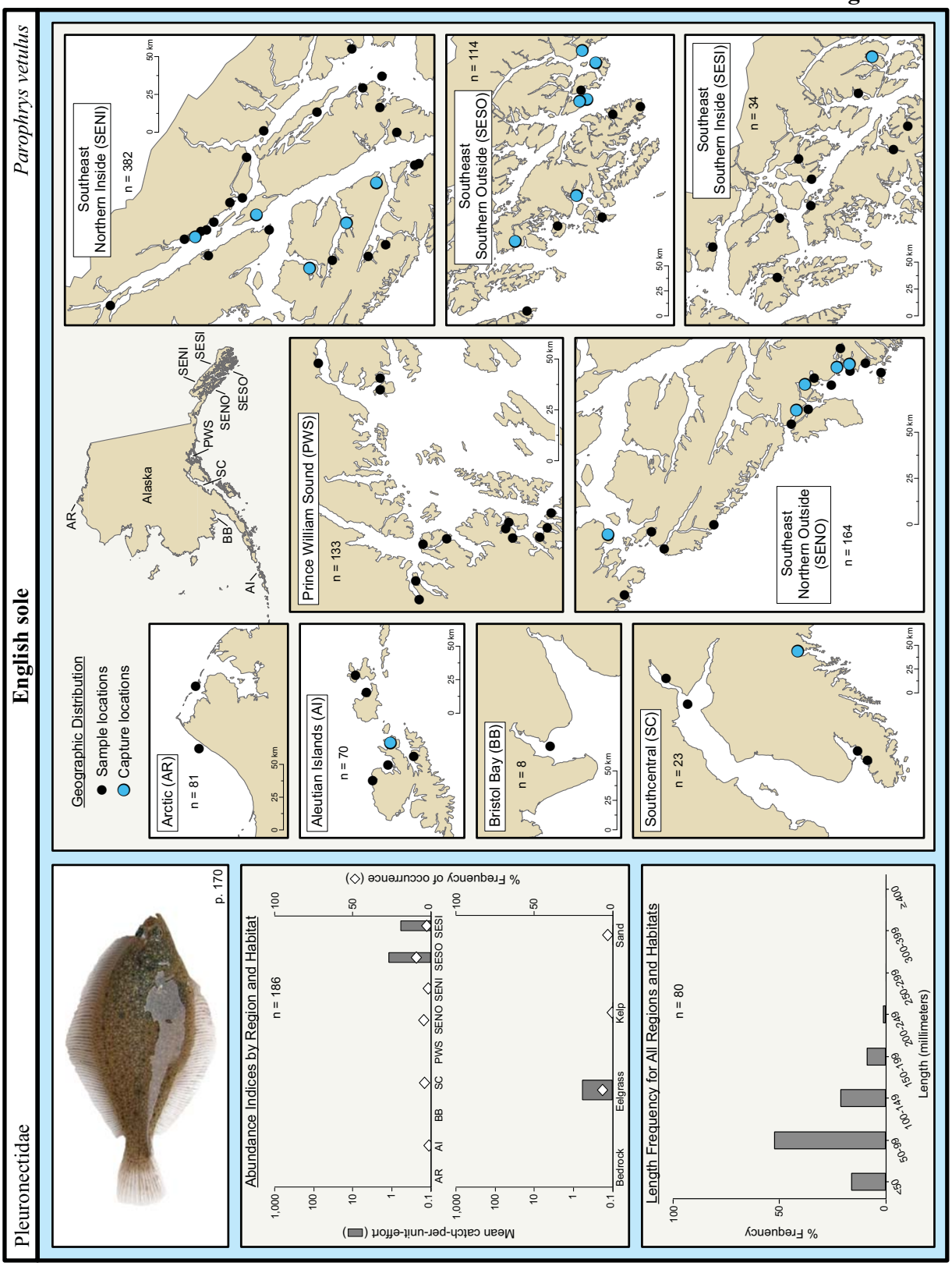


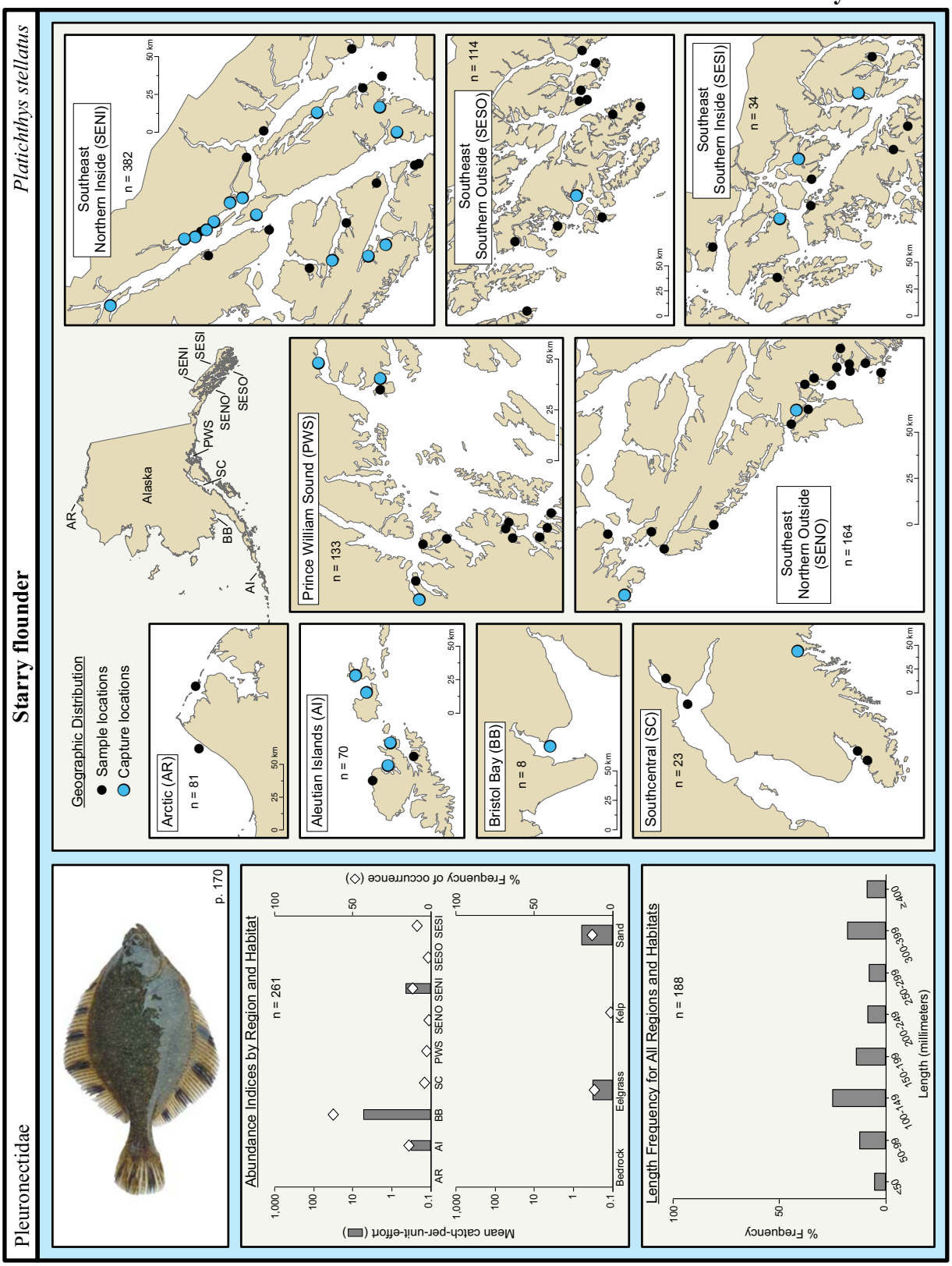

Pleuronectidae
Rock sole
Lepidopsetta spp.
p. 170
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 801
Mean catch-per-unit-effort ( )
% Frequency of occurrence ( )
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 539
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

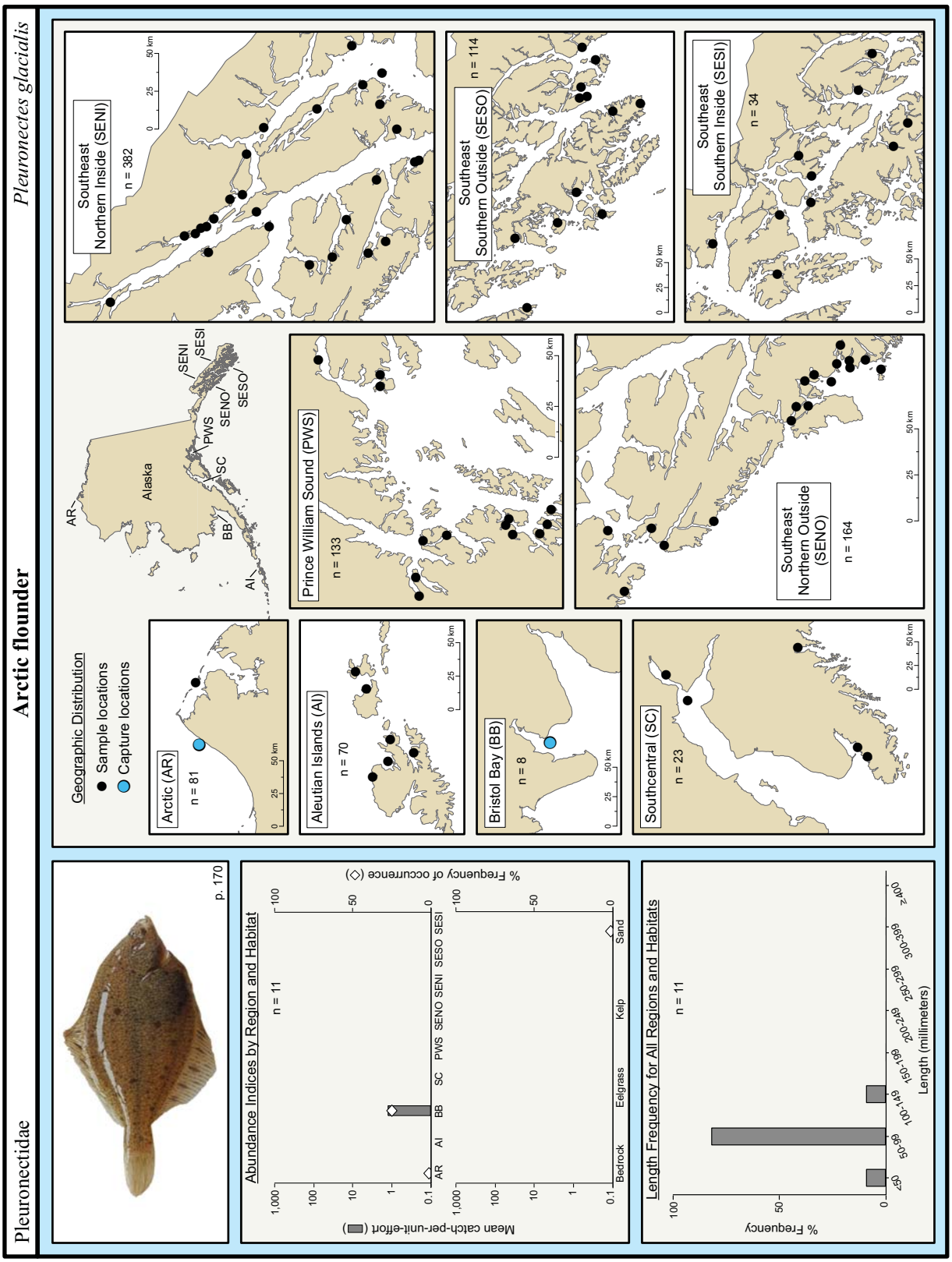

Pleuronectidae
Yellowfin sole
Limanda aspera
p. 170
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 108
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 76
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

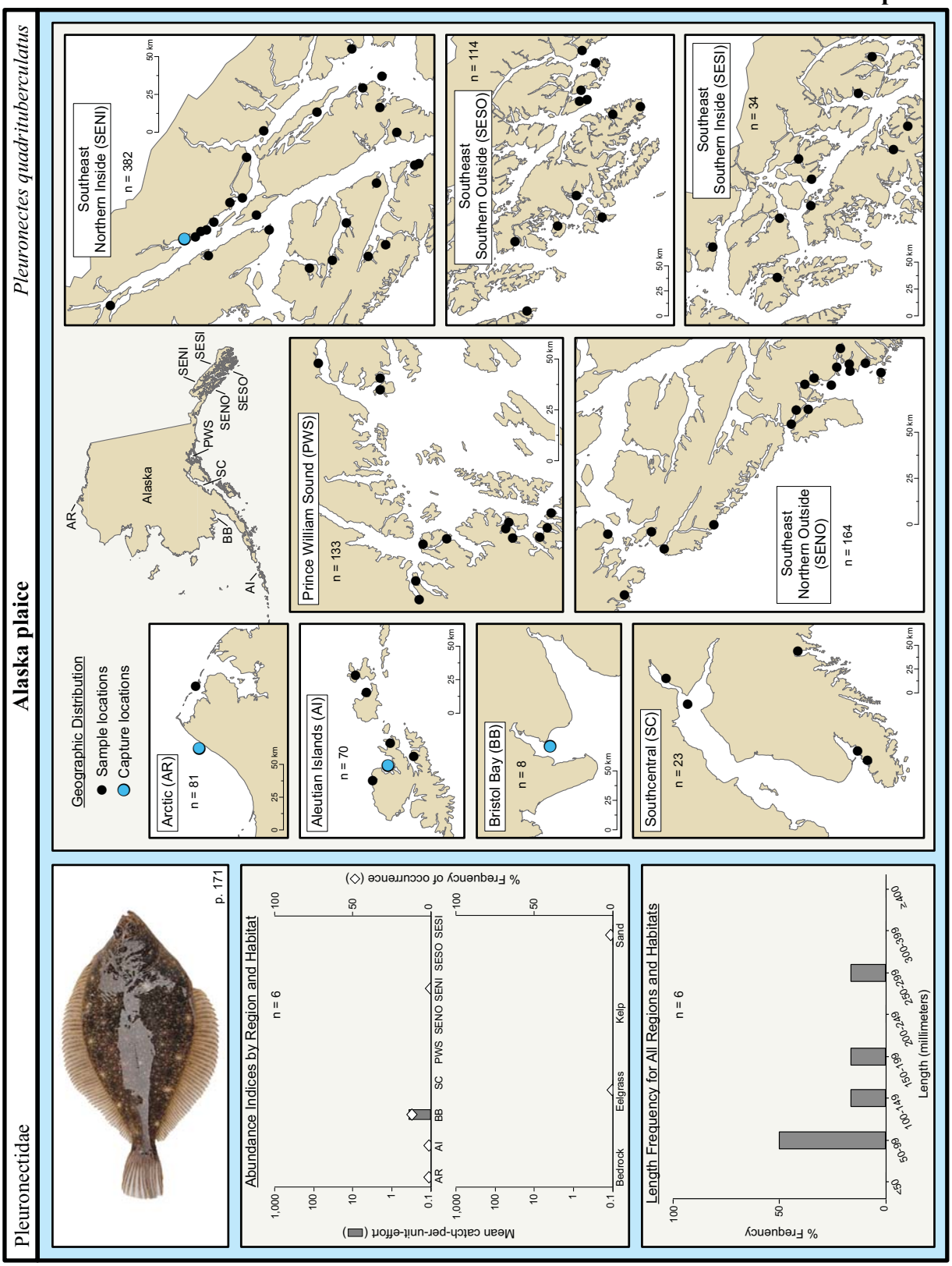

Pleuronectidae
Longhead dab
Limanda proboscidea
p. 170
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 12
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 12
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Pleuronectidae
Dover sole
Microstomus pacificus
p. 170
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SENI
SESI
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Pleuronectidae
English sole
Parophrys vetulus
p. 170
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 186
Mean catch-per-unit-effort (◇)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 80
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400


Pleuronectidae
Starry flounder
Platichthys stellatus
p. 170
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 261
Mean catch-per-unit-effort (◇)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 188
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Pleuronectidae
Arctic flounder
Pleuronectes glacialis
p. 170
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 11
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 11
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Pleuronectidae
Alaska plaice
Pleuronectes quadrituberculatus
p. 171
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Southern Outside (SESO)
n = 114
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Inside (SESI)
n = 34
AR
AI
BB
SC
PWS
SENO
SESO
SENI
SESI
Alaska
0 25 50 km
Abundance Indices by Region and Habitat
n = 6
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 6
% Frequency
Length (millimeters)
<50
50-99
100-149
150-199
200-249
250-299
300-399
>400

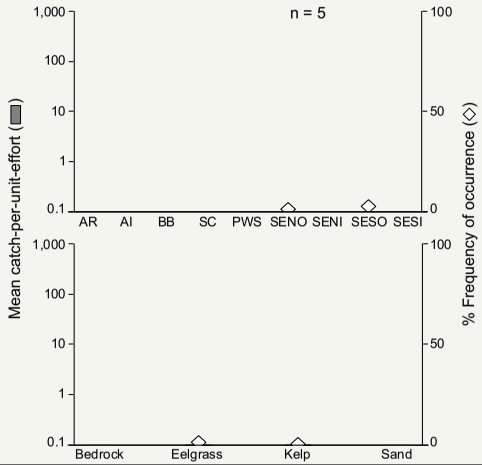
Pleuronectidae

C-O sole

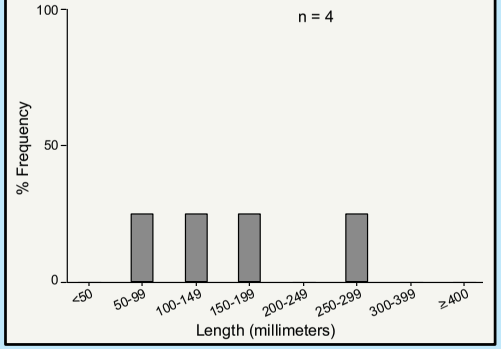
Pleuronichthys coenosus

p. 171

Abundance Indices by Region and Habitat

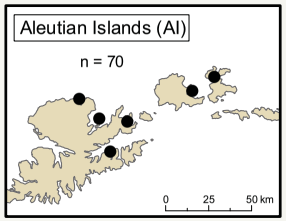


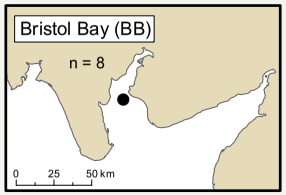
Length Frequency for All Regions and Habitats

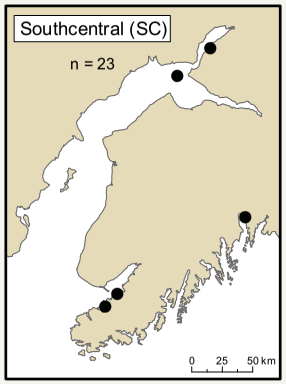


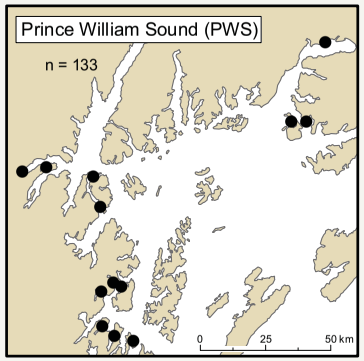
Geographic Distribution

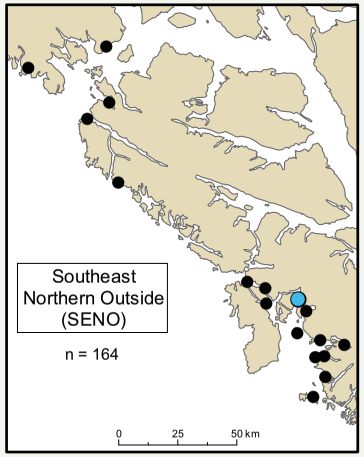
- Sample locations
- Capture locations

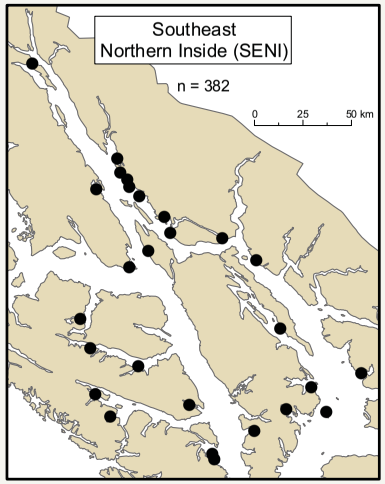


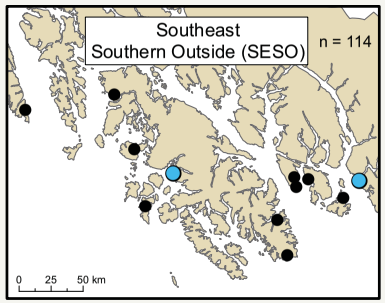


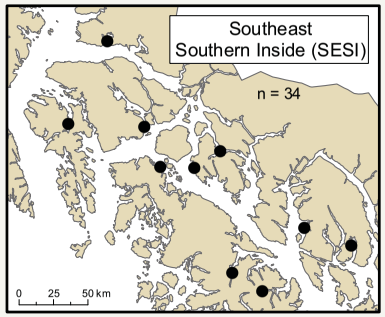


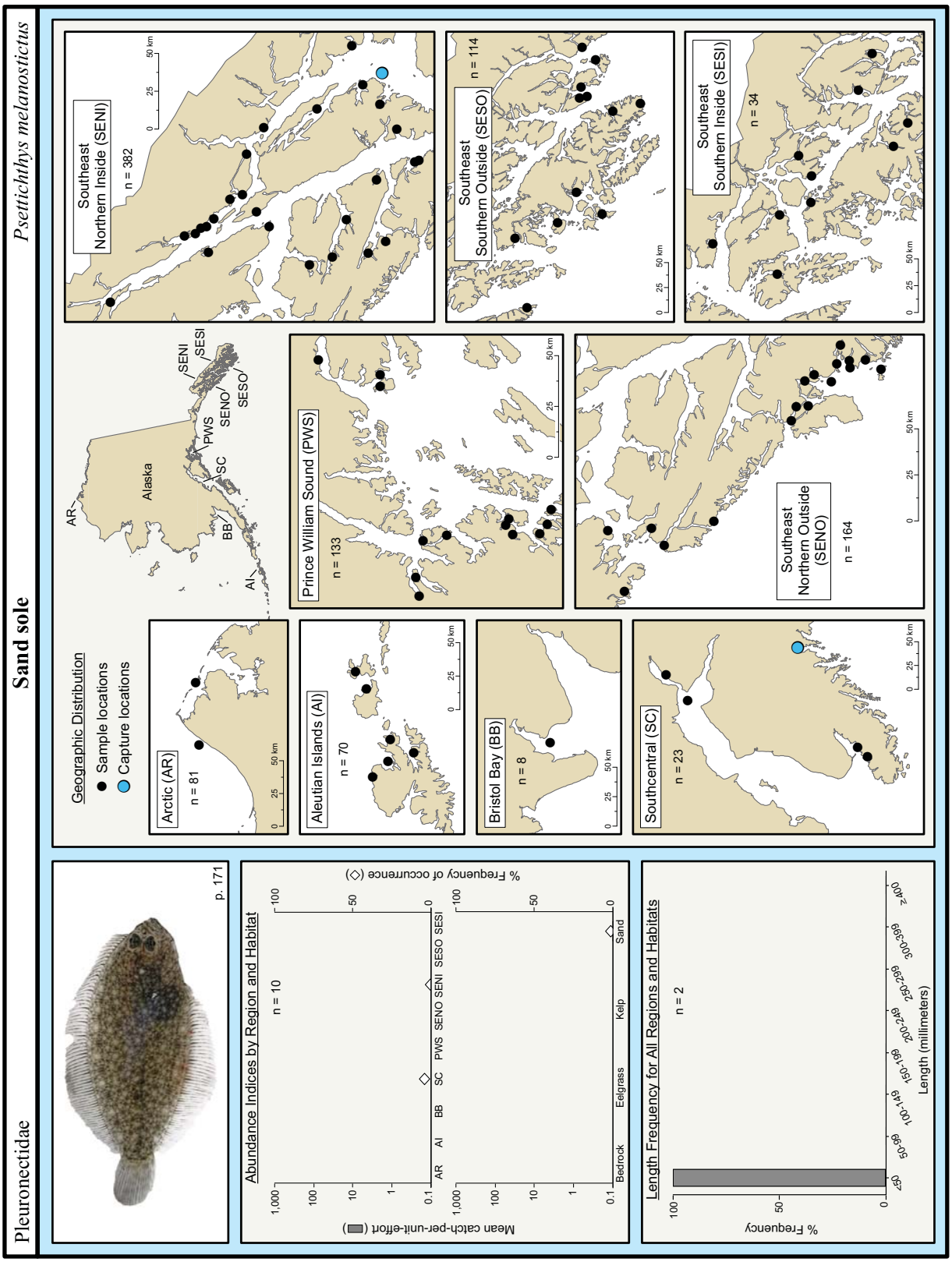


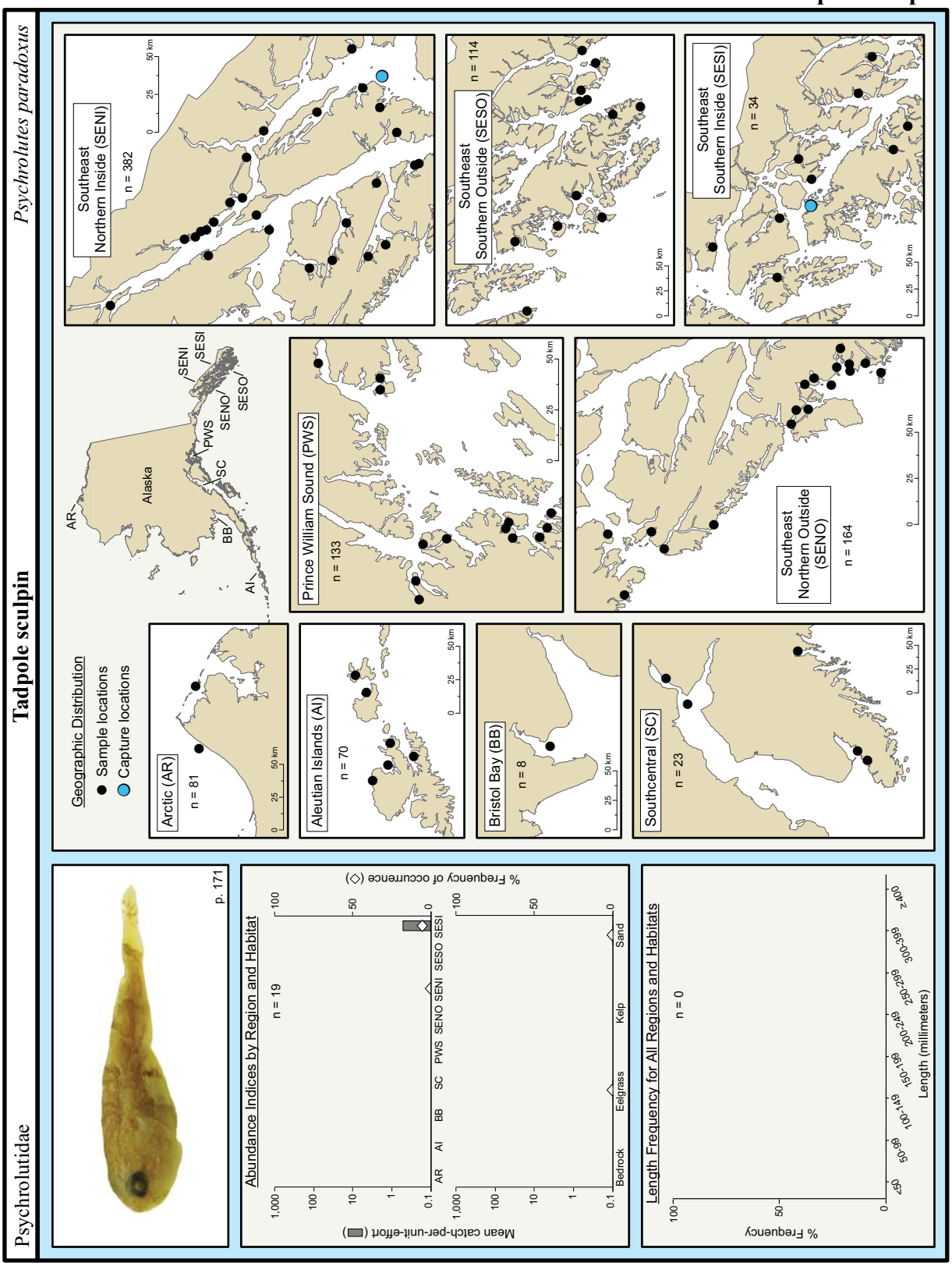


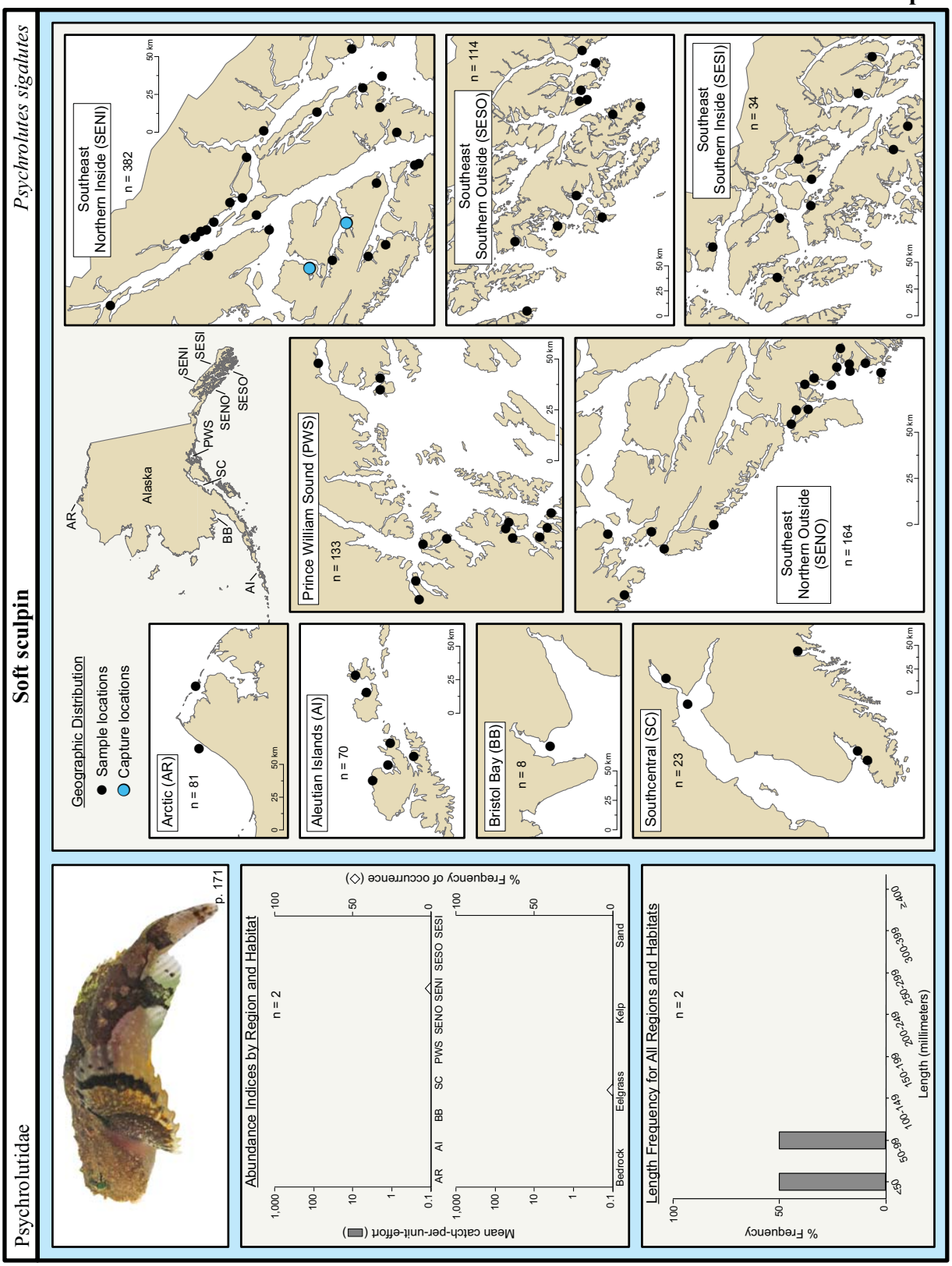







Pleuronectidae
Sand sole
Psettichthys melanostictus
p. 171
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 10
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Psychrolutidae
Tadpole sculpin
Psychrolutes paradoxus
p. 171
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 19
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 0
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Psychrolutidae
Soft sculpin
Psychrolutes sigalutes
p. 171
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 2
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

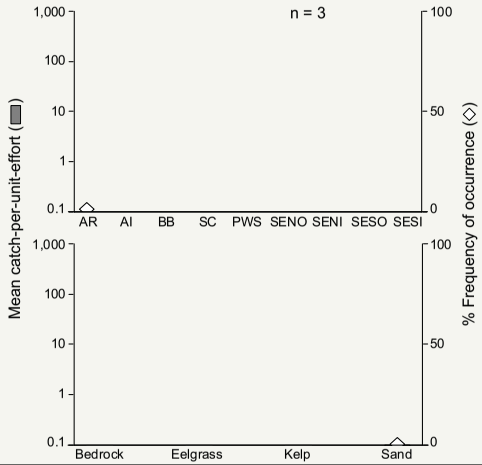
Salmonidae

Arctic cisco

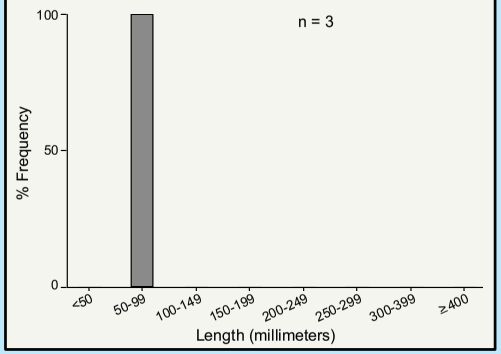
Coregonus autumnalis

p. 171

Abundance Indices by Region and Habitat

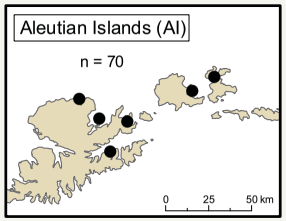


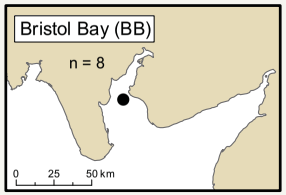
Length Frequency for All Regions and Habitats

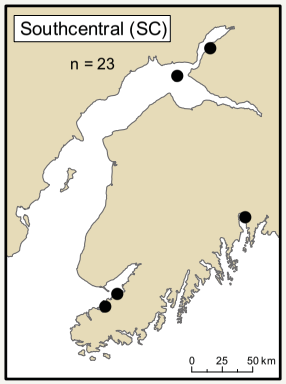


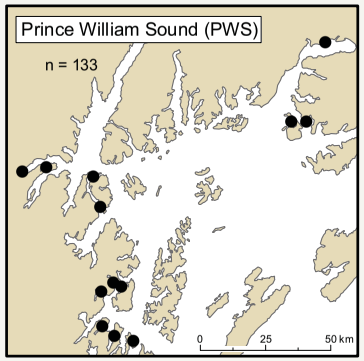
Geographic Distribution

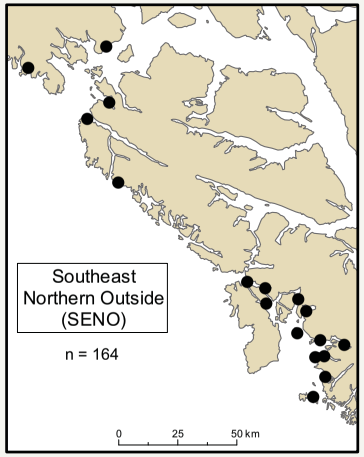
- Sample locations
- Capture locations

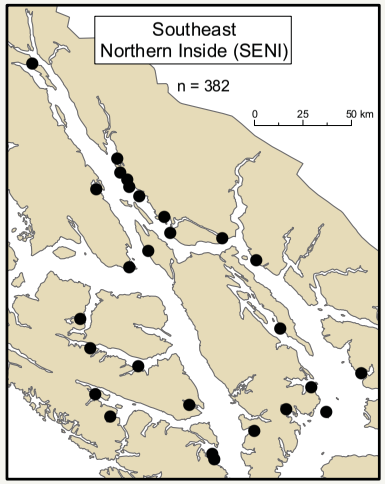


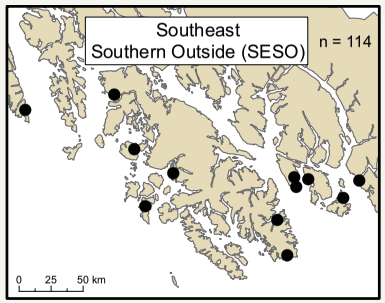


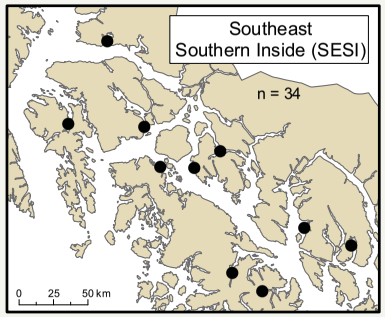












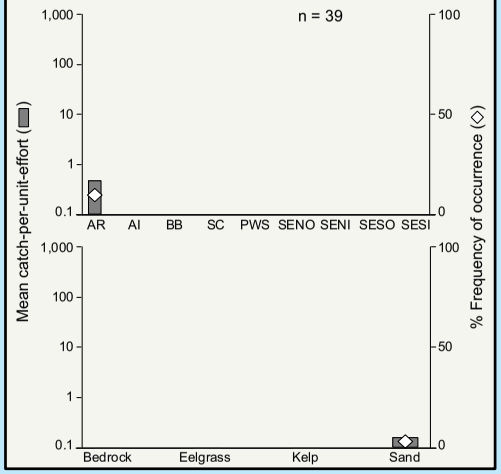
Salmonidae

Least cisco

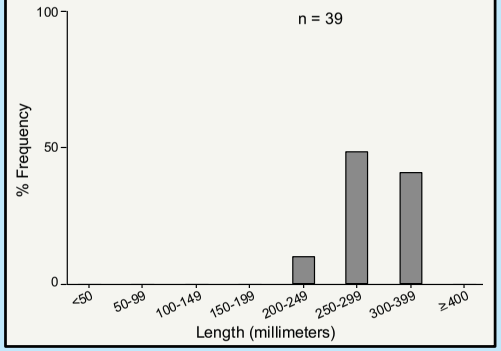
Coregonus sardinella

p. 171

Abundance Indices by Region and Habitat

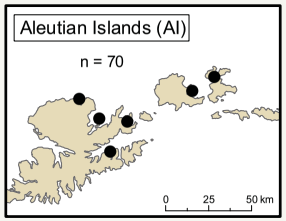


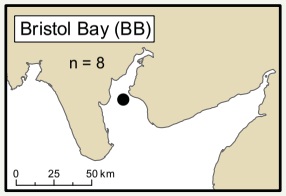
Length Frequency for All Regions and Habitats

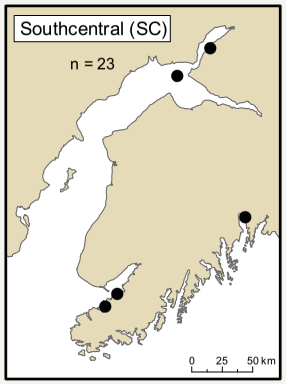


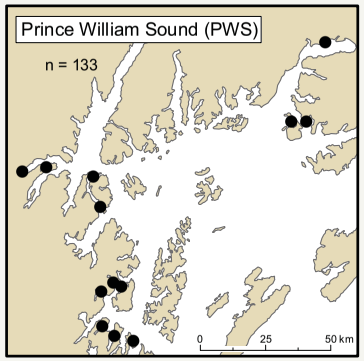
Geographic Distribution

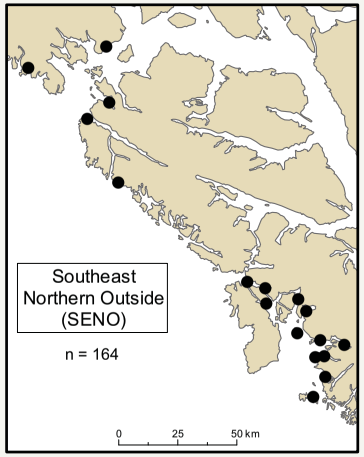
- Sample locations
- Capture locations

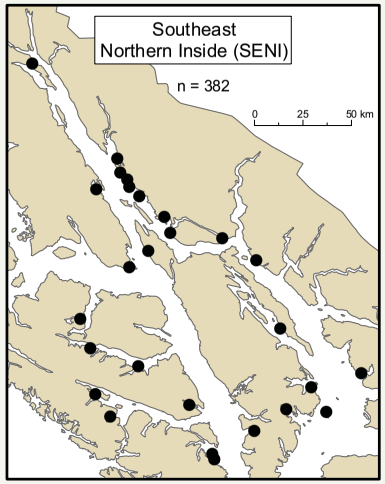


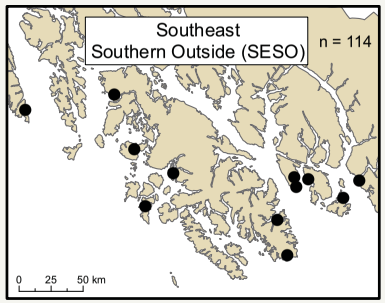


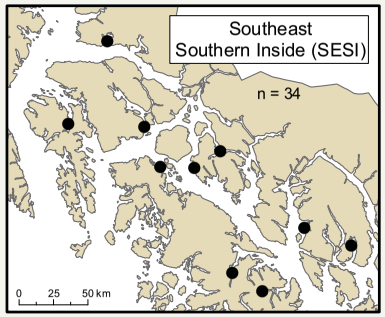


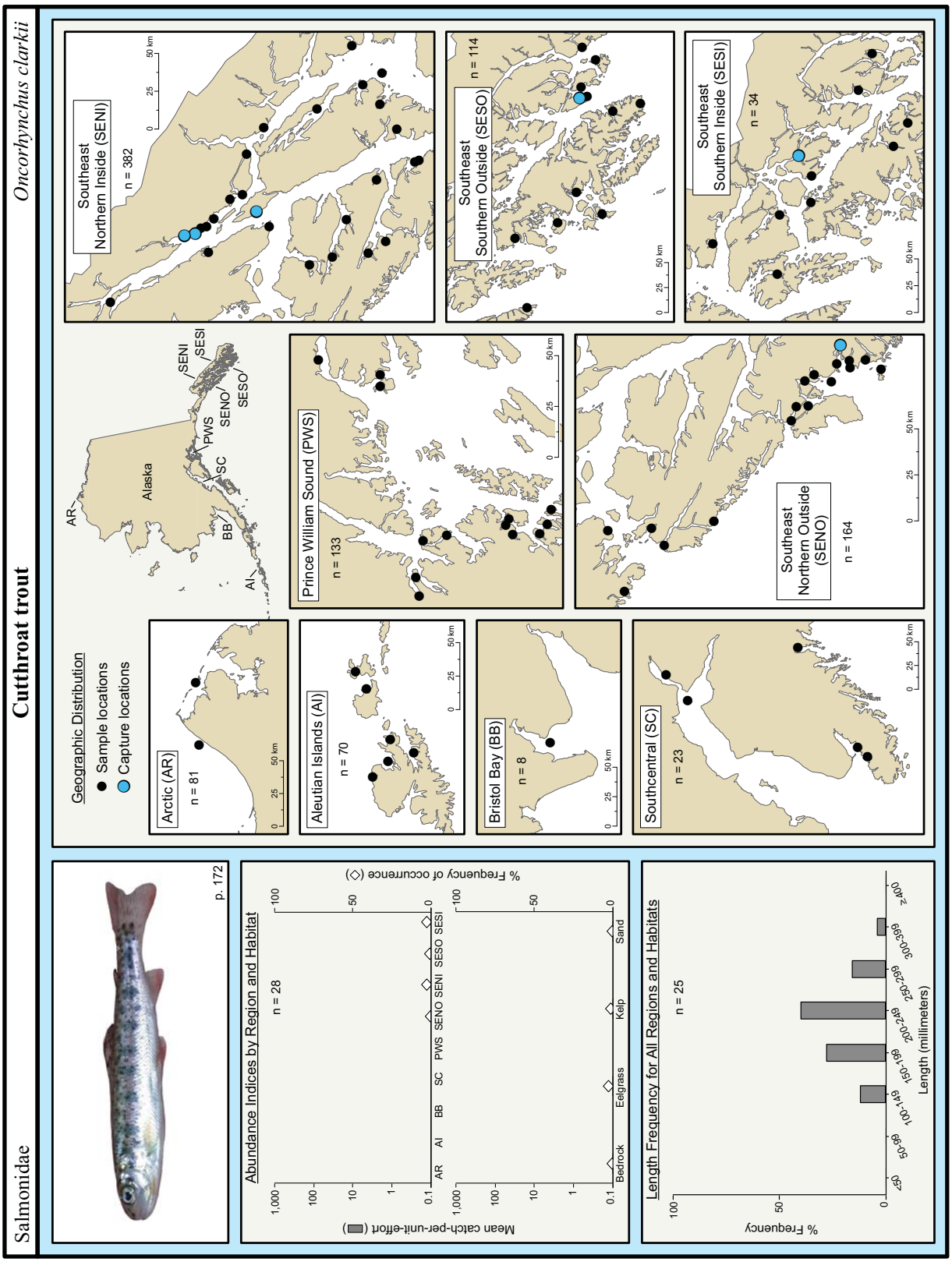


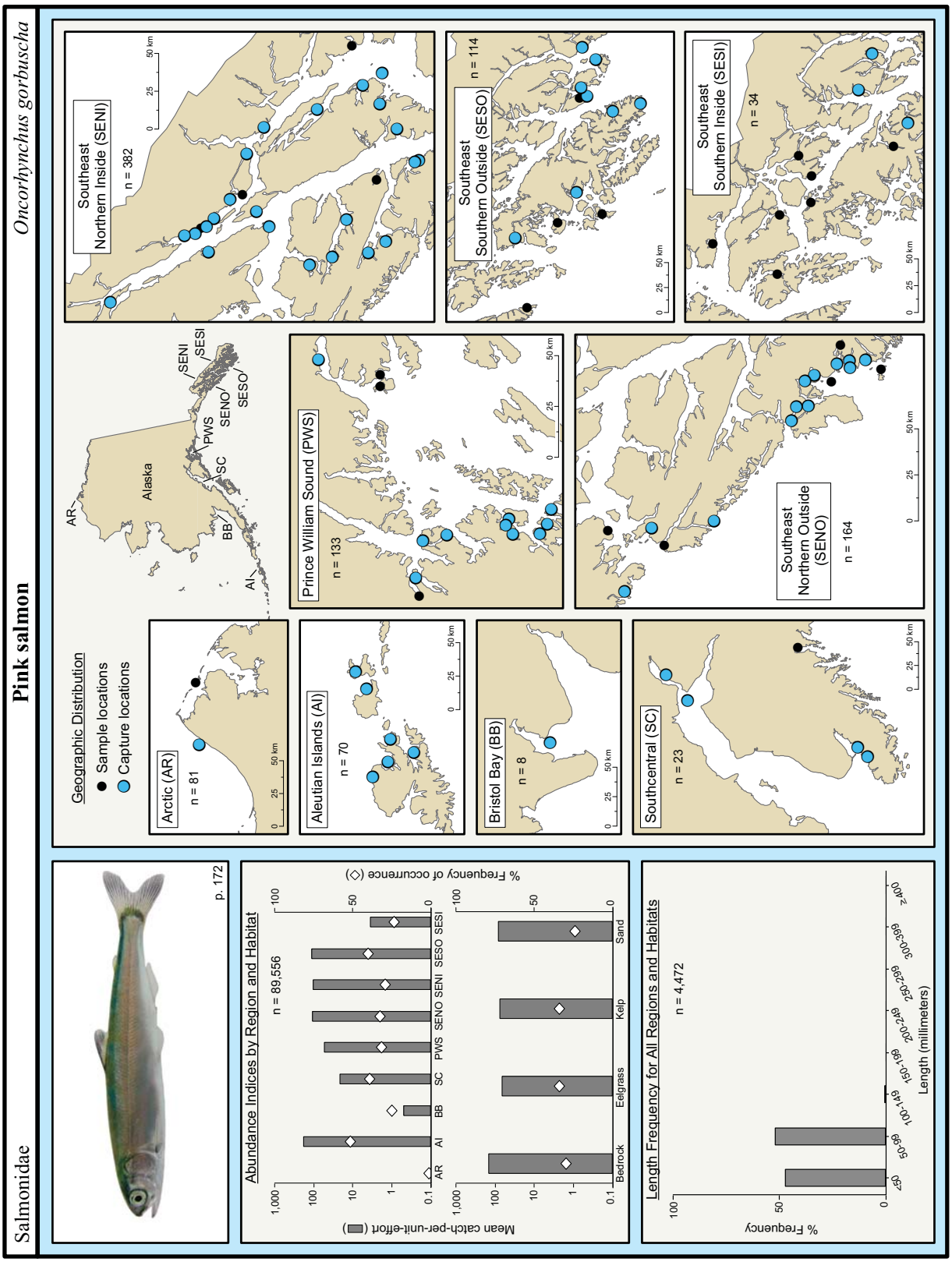


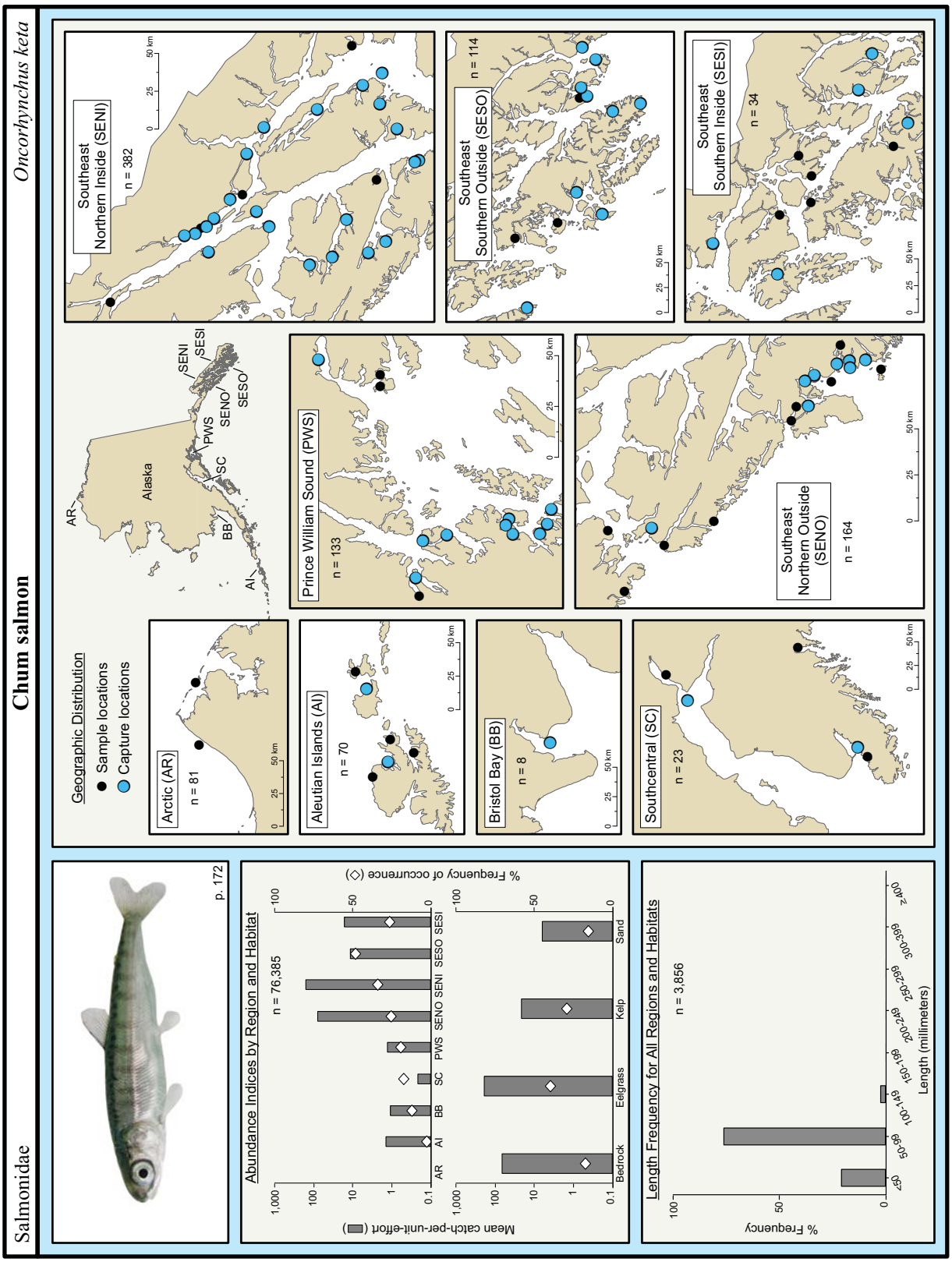


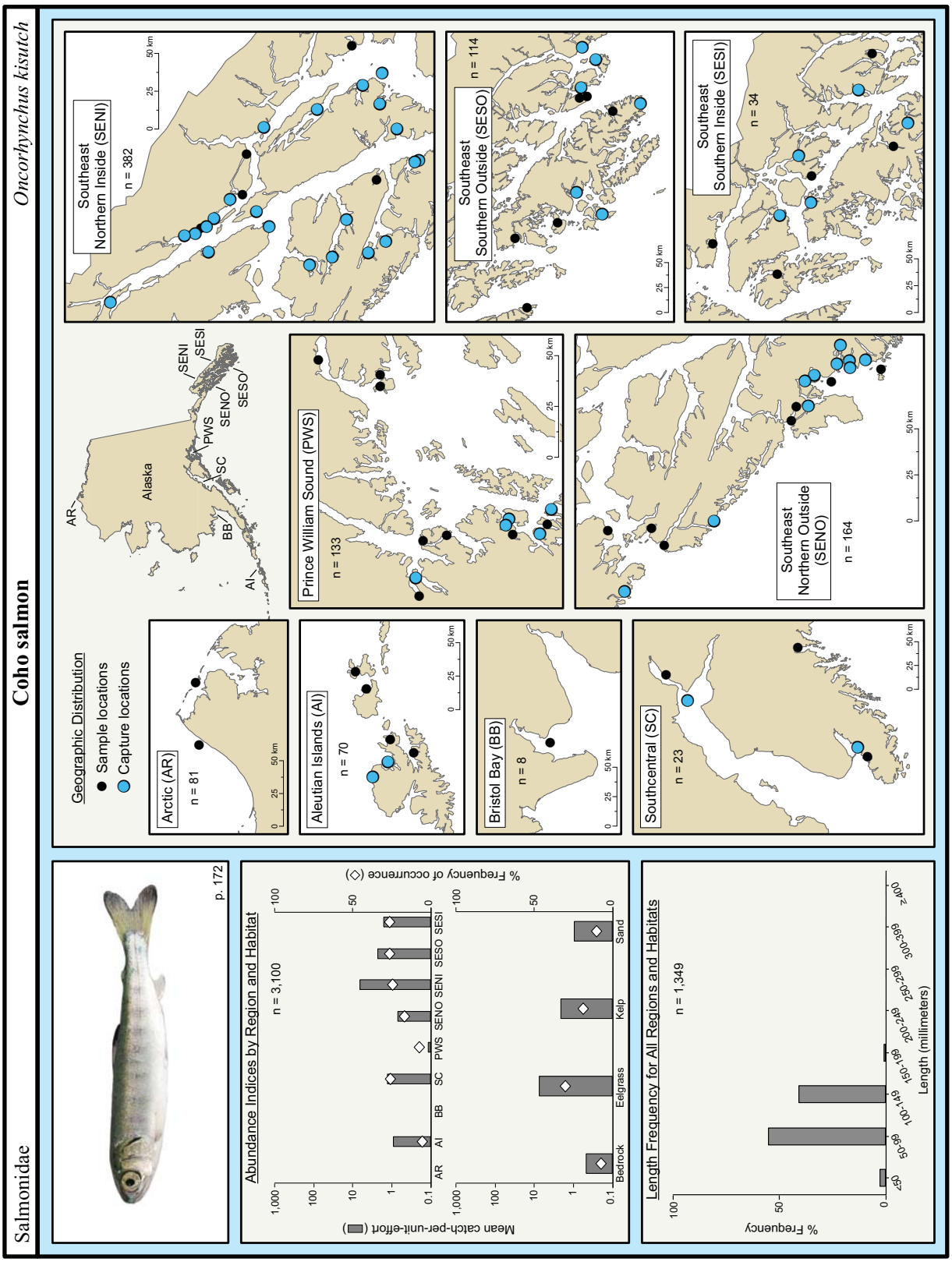


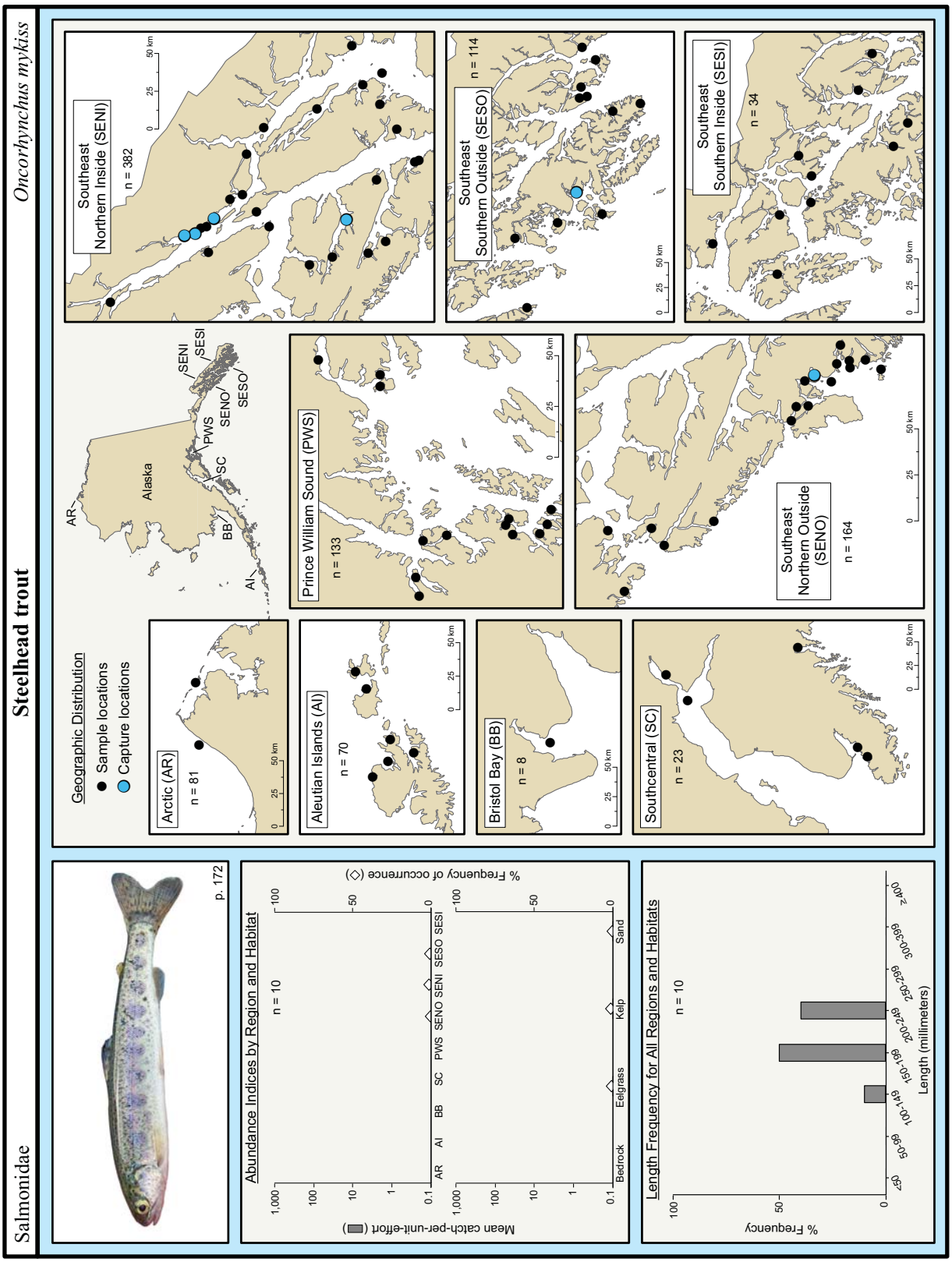


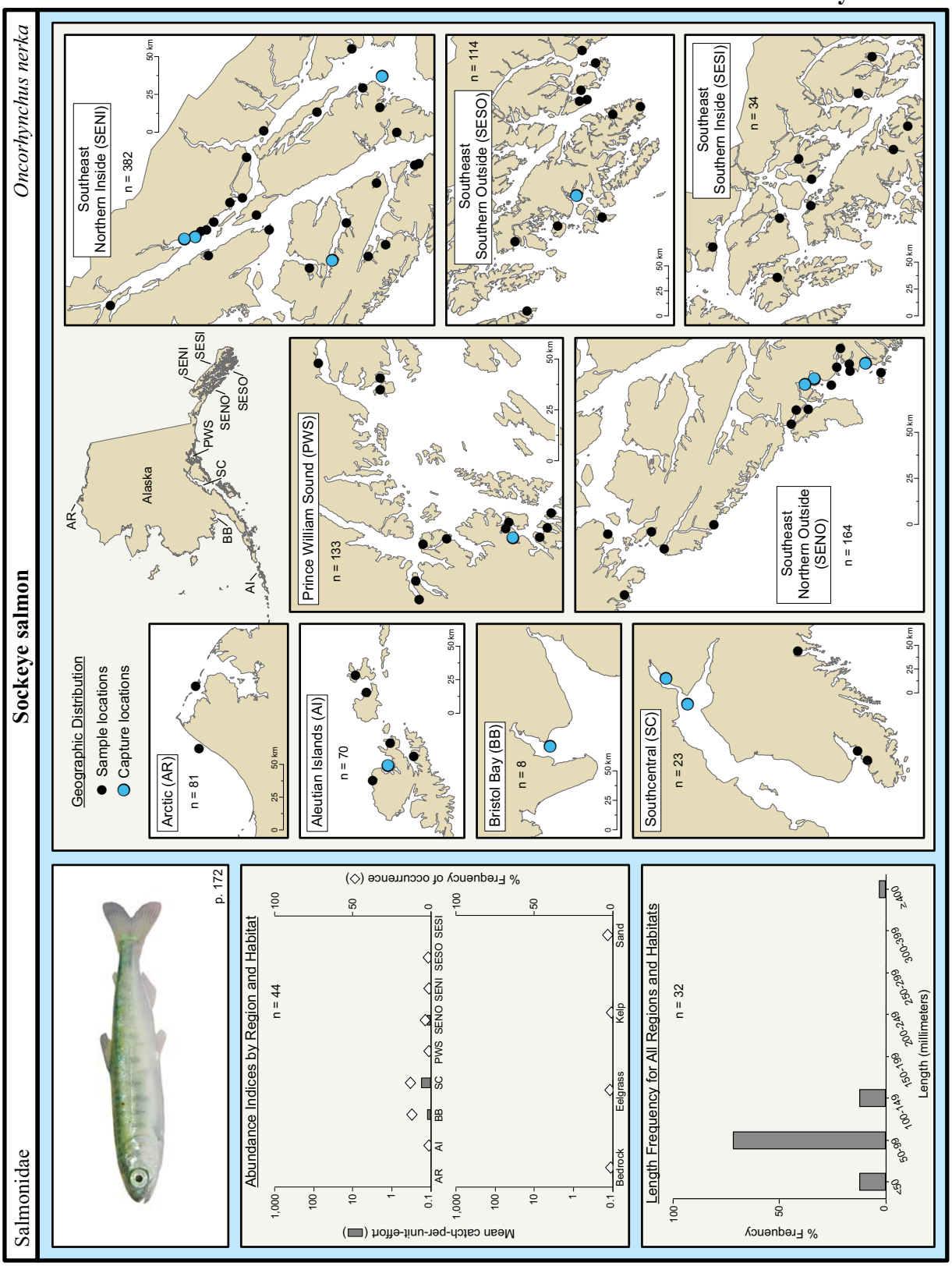

Salmonidae
Cutthroat trout
Oncorhynchus clarkii
p. 172
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 28
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 25
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

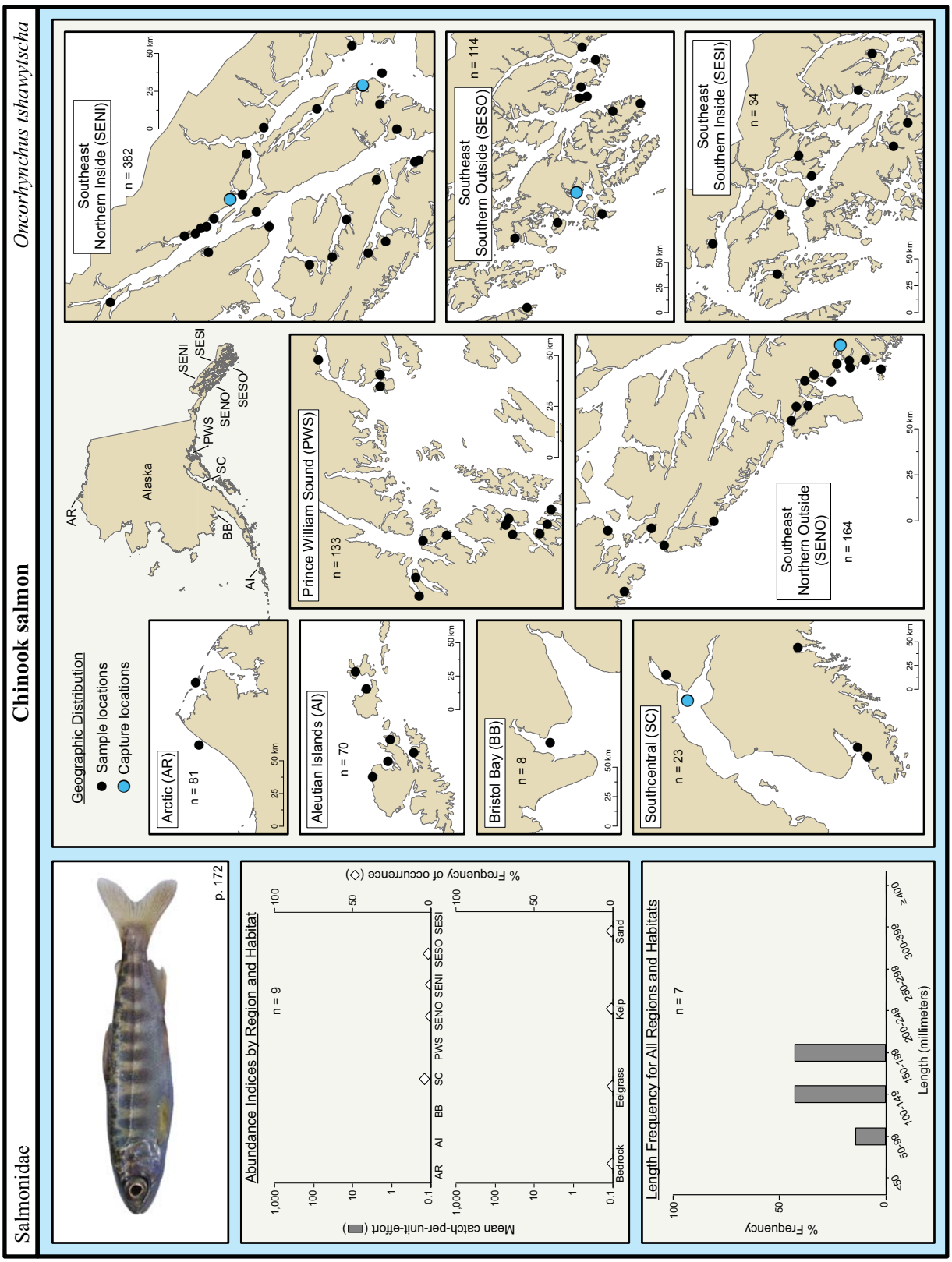

Salmonidae
Pink salmon
Oncorhynchus gorbuscha
p. 172
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 89,556
Mean catch-per-unit-effort (▭)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 4,472
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

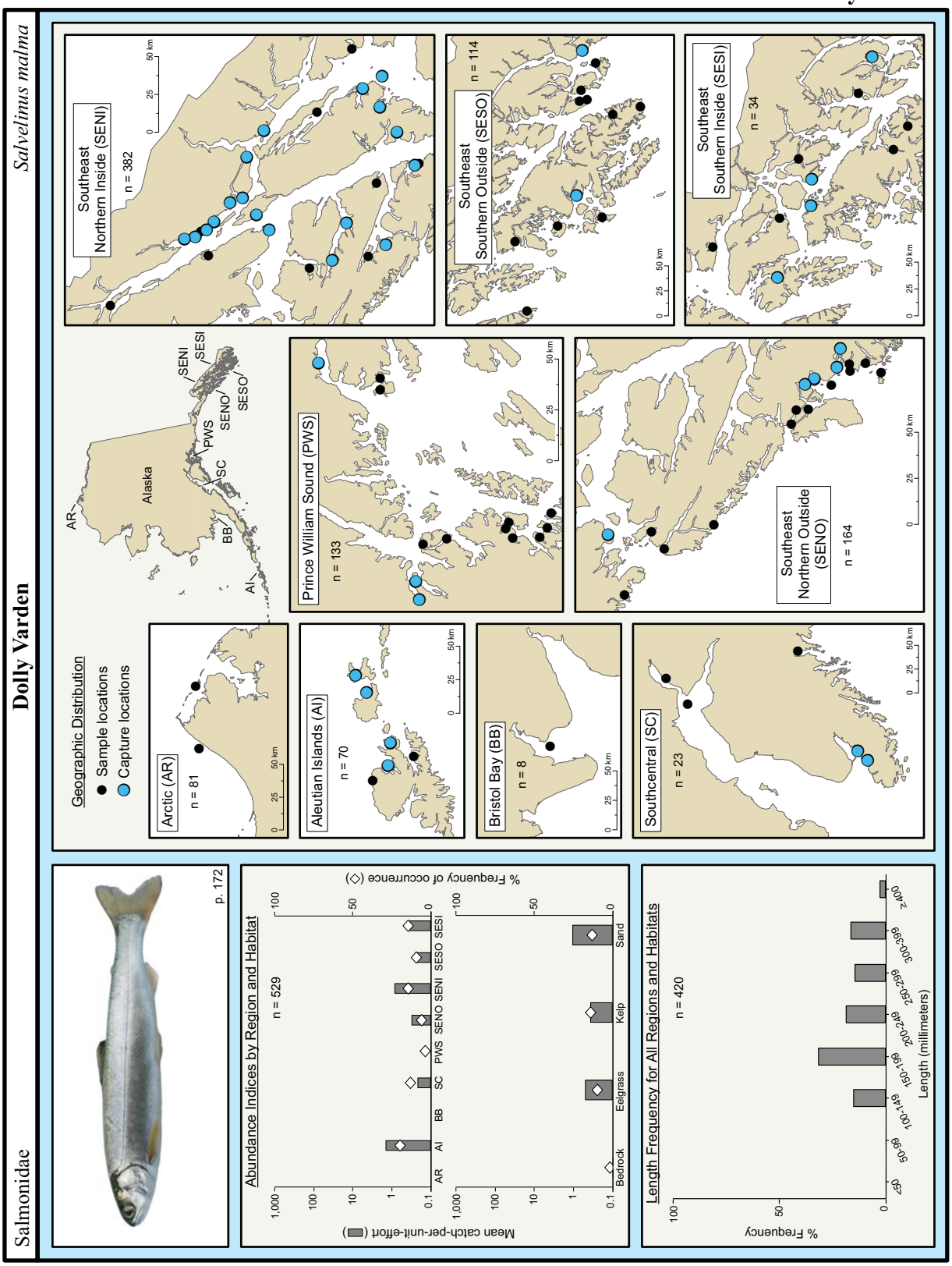

Salmonidae
Chum salmon
Oncorhynchus keta
p. 172
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
AR
Alaska
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
0 25 50 km
Abundance Indices by Region and Habitat
n = 76,385
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 3,856
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 >400

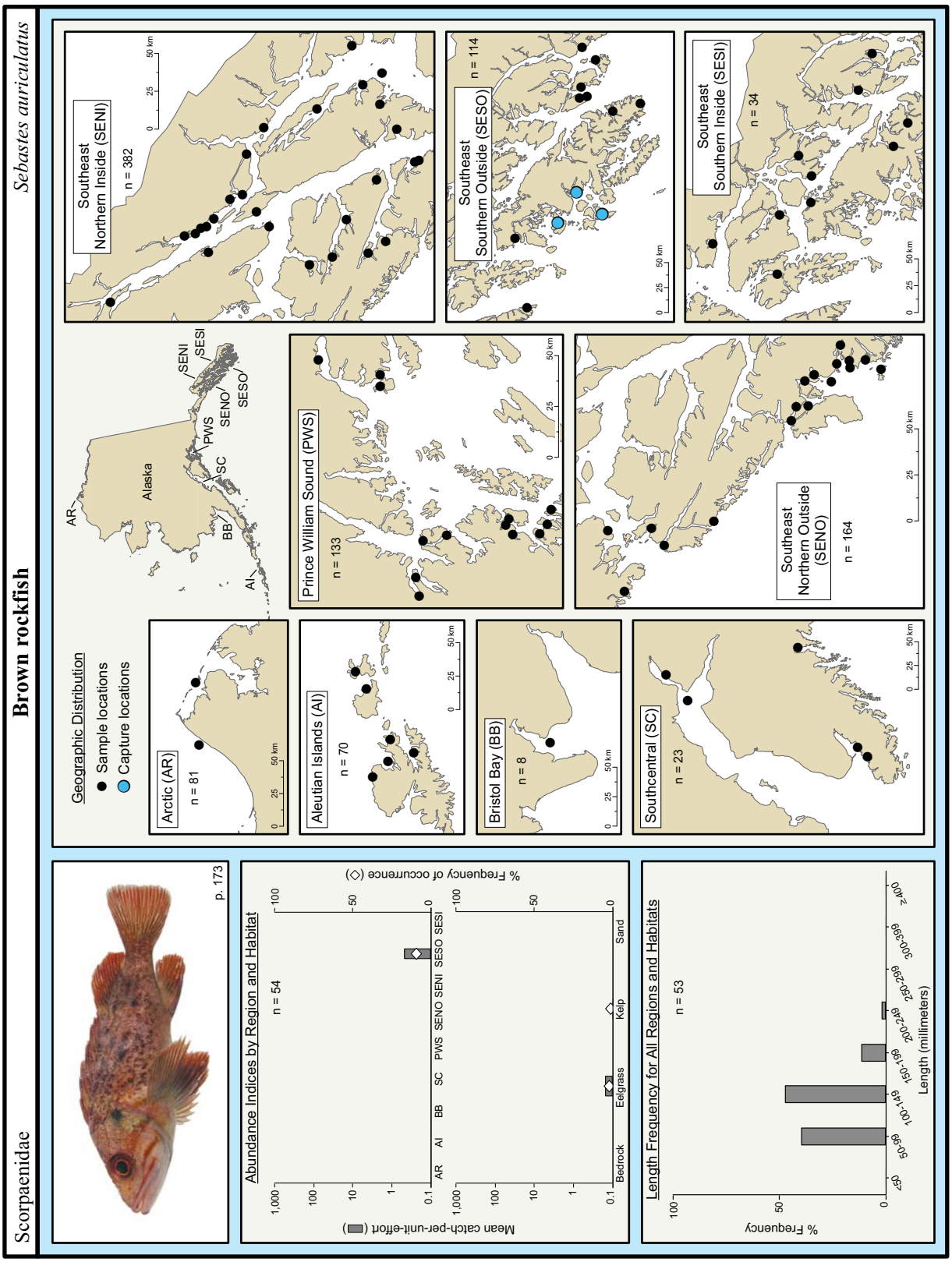

Salmonidae
Coho salmon
Oncorhynchus kisutch
p. 172
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 3,100
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1,349
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 ≥400

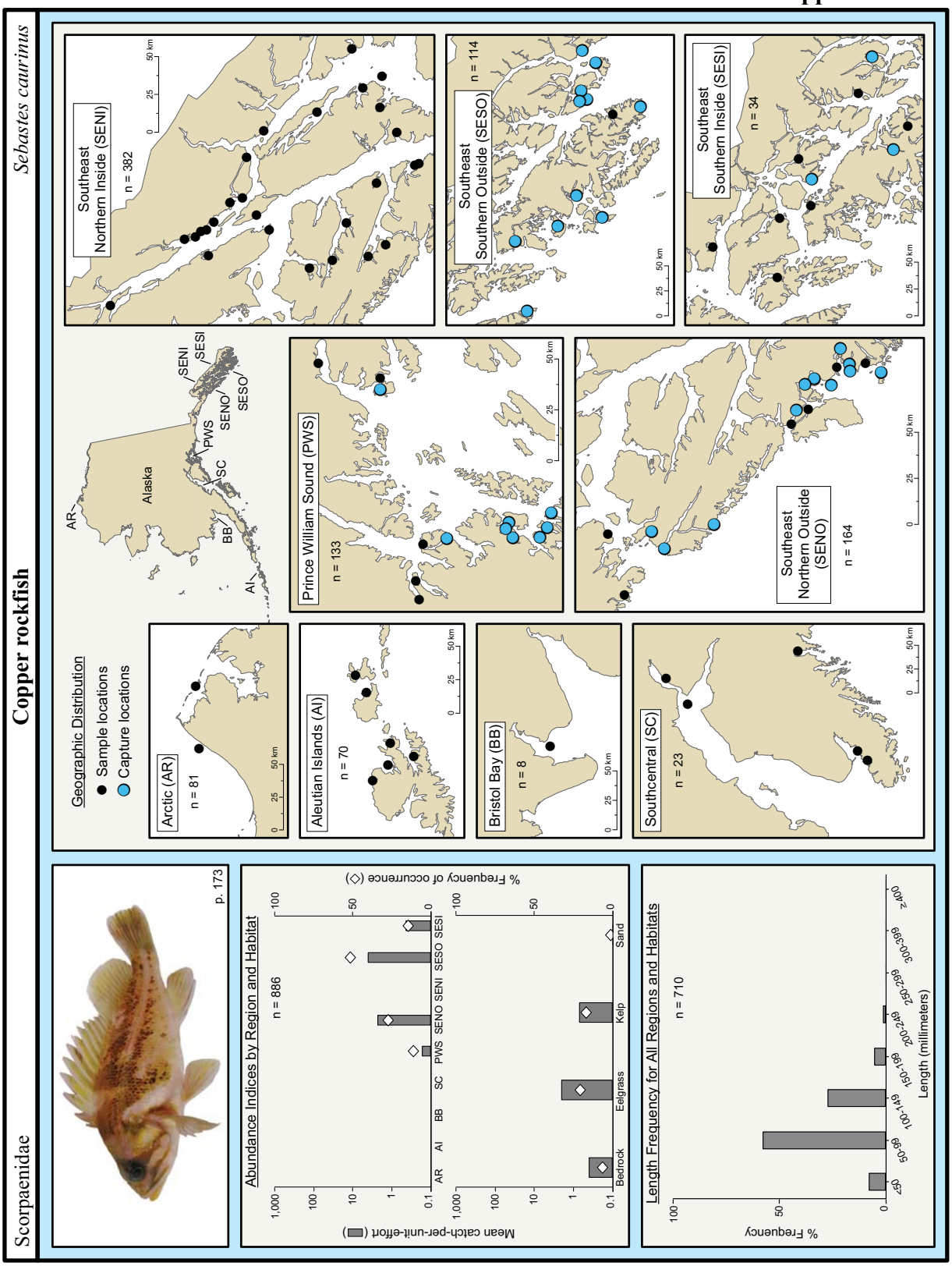

Salmonidae
Steelhead trout
Oncorhynchus mykiss
p. 172
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 10
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 10
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

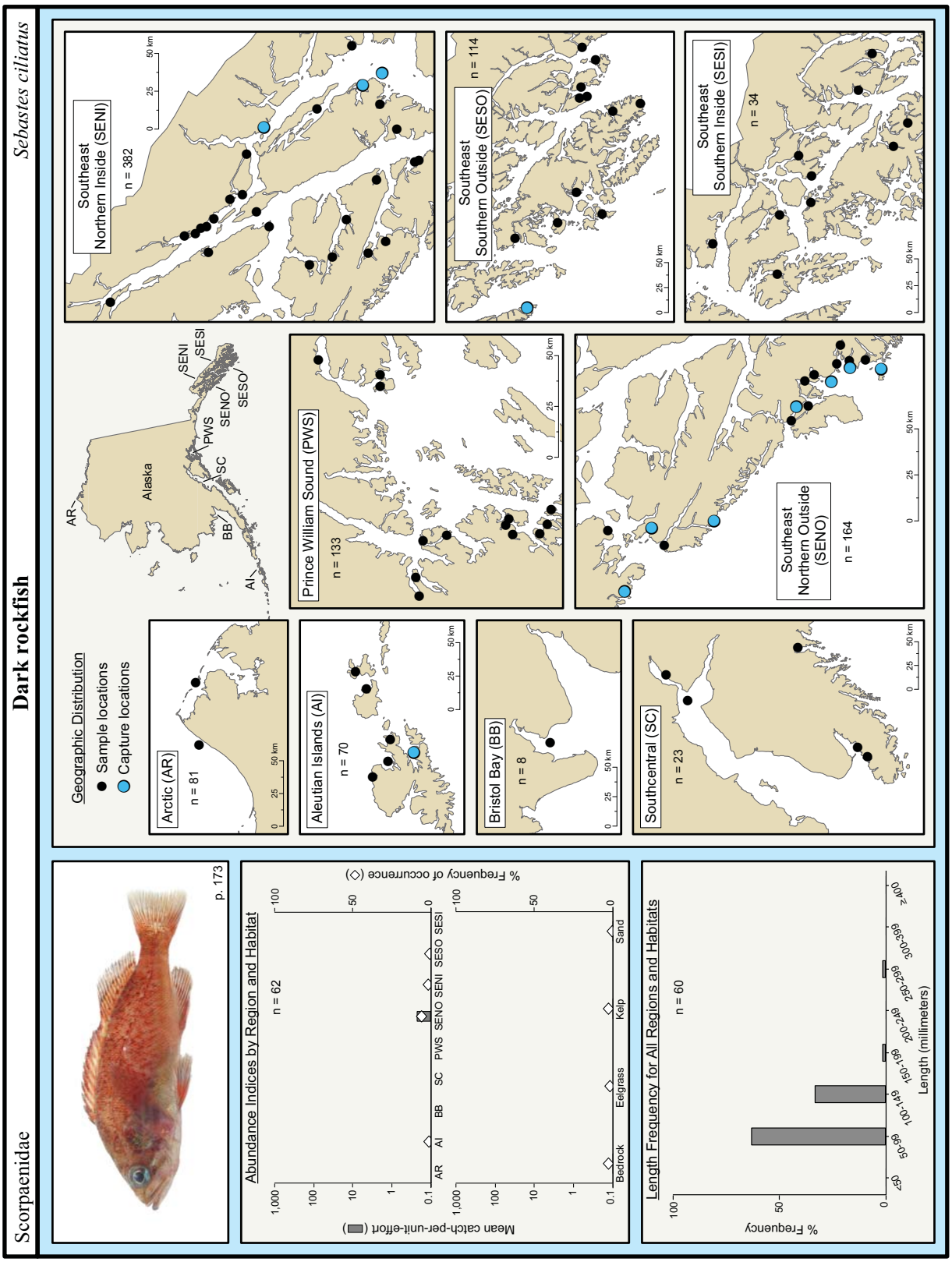

Salmonidae
Sockeye salmon
Oncorhynchus nerka
p. 172
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 44
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 32
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 >400

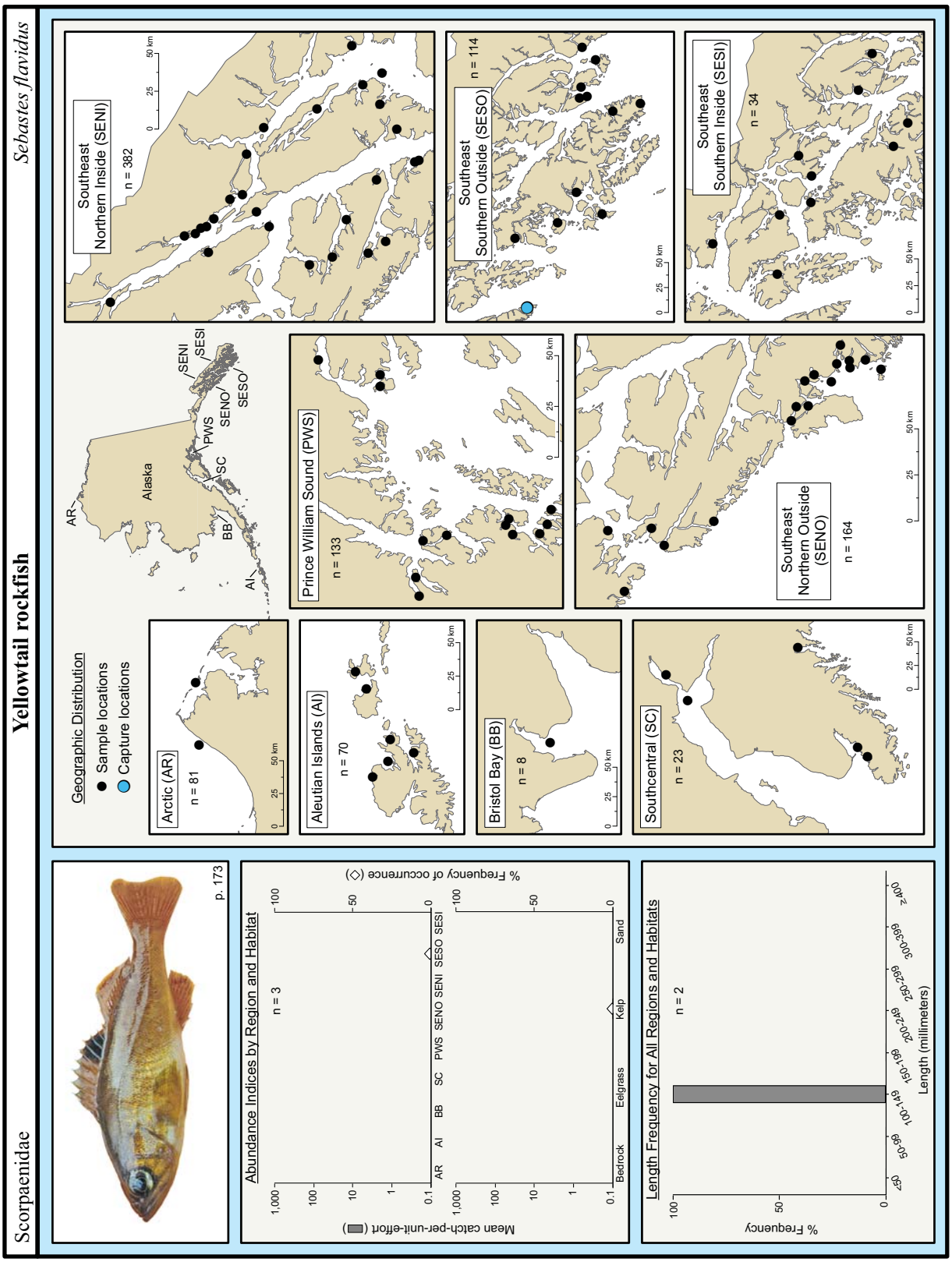

Salmonidae
Chinook salmon
Oncorhynchus tshawytscha
p. 172
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 9
Mean catch-per-unit-effort (◇)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 7
% Frequency
Length (millimeters)
<450 450-499 500-549 550-599 600-649 650-699 700-749 750-799 800-849 850-899 900-949 950-999 >1000


Salmonidae
Dolly Varden
Salvelinus malma
p. 172
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 529
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 420
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Scorpaenidae
Brown rockfish
Sebastes auriculatus
p. 173
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 54
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 53
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Scorpaenidae
Copper rockfish
Sebastes caurinus
p. 173
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 886
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 710
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Scorpaenidae
Dark rockfish
Sebastes ciliatus
p. 173
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENI
SESI
SENO
SESO
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 62
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 60
% Frequency
Length (millimeters)

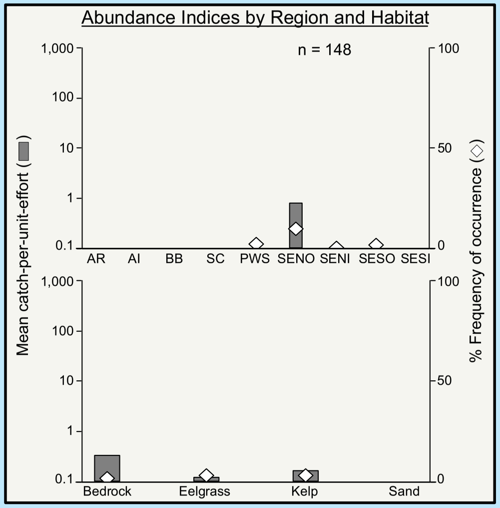

Scorpaenidae
Yellowtail rockfish
Sebastes flavidus
p. 173
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 3
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 2
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

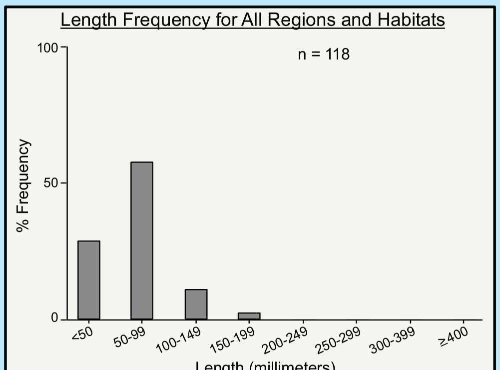
Scorpaenidae

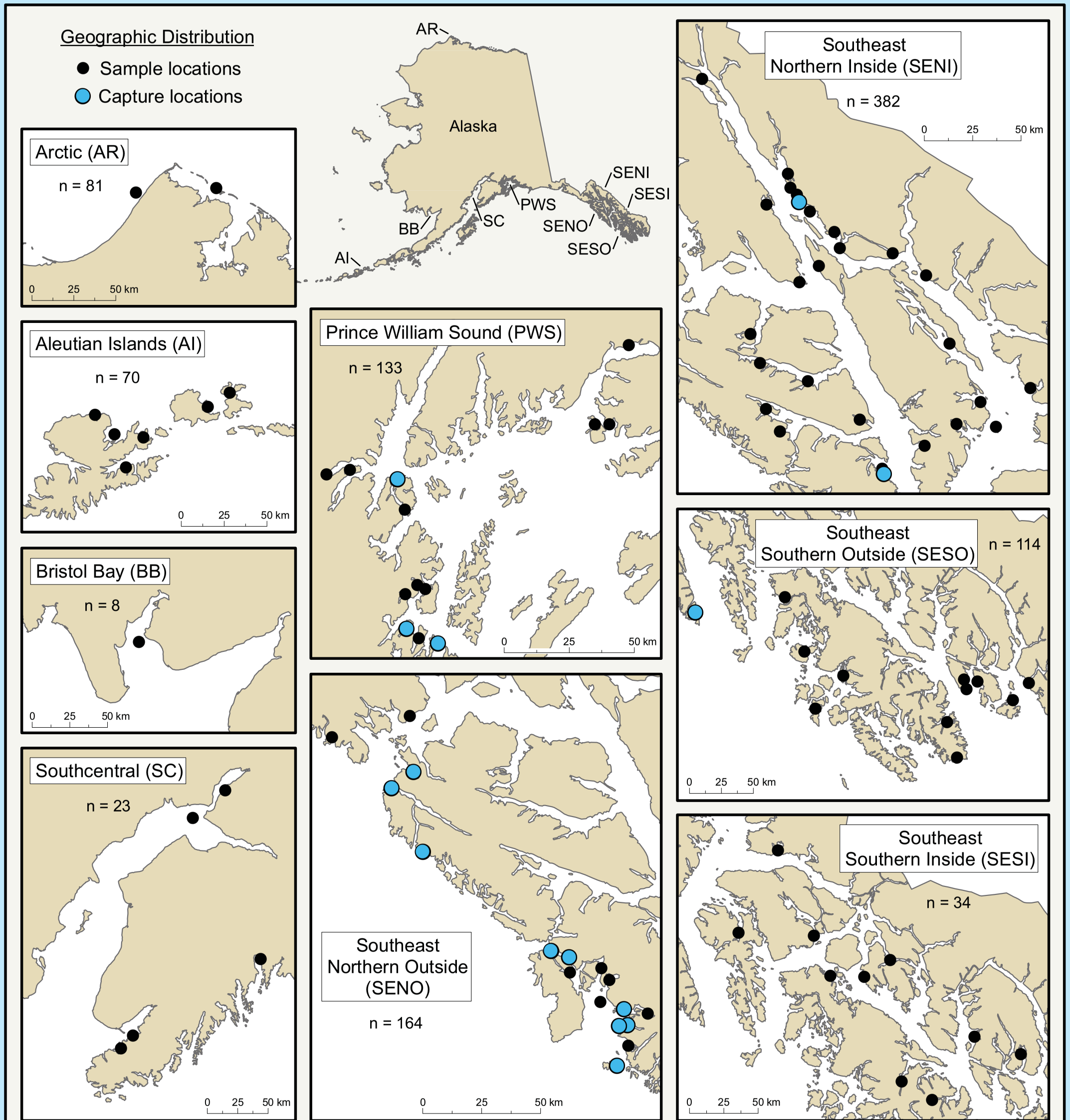
Quillback rockfish

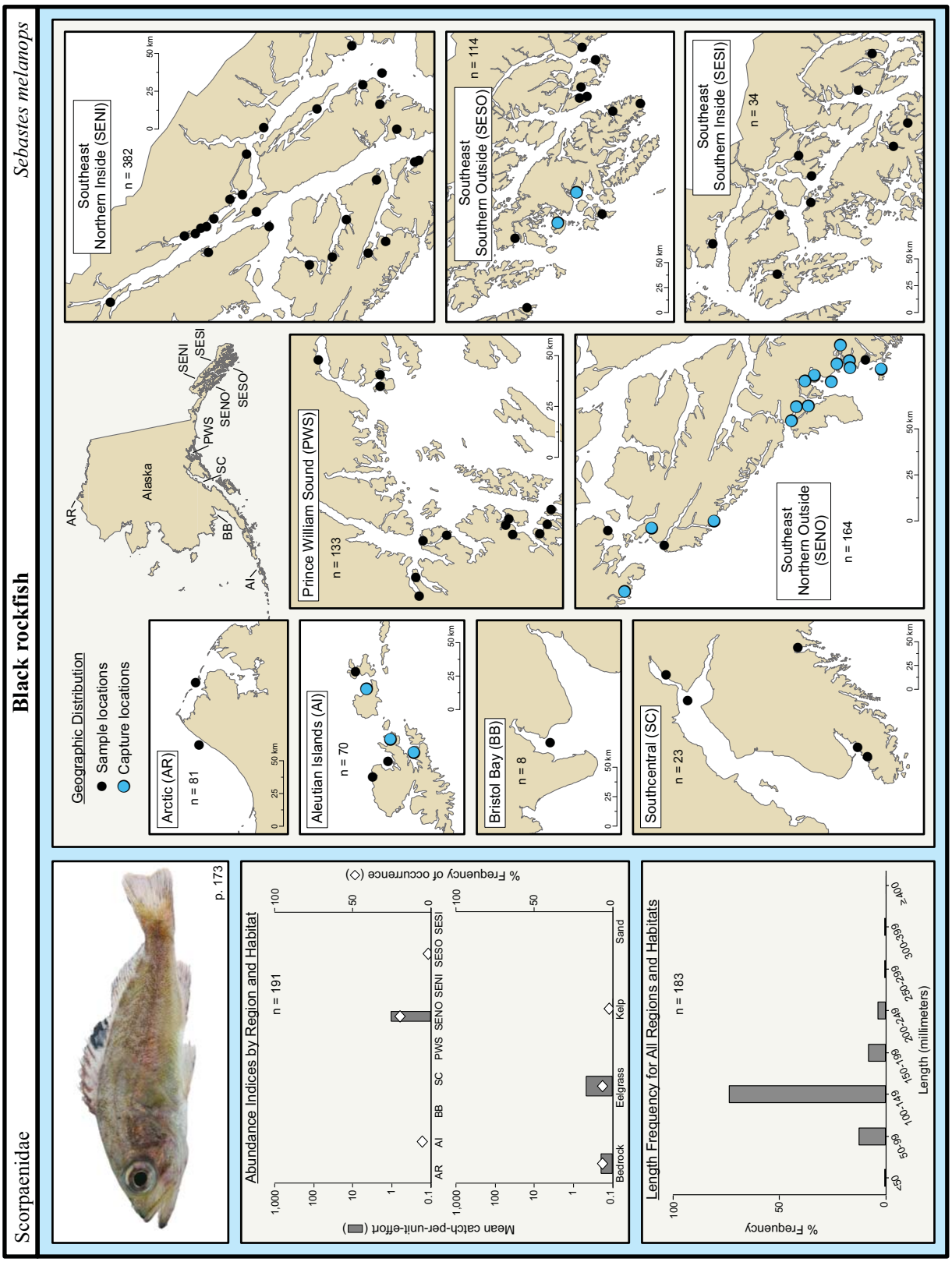
Sebastes maliger

p. 173



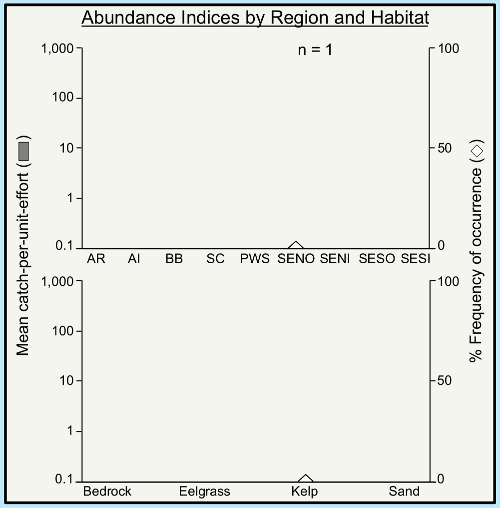


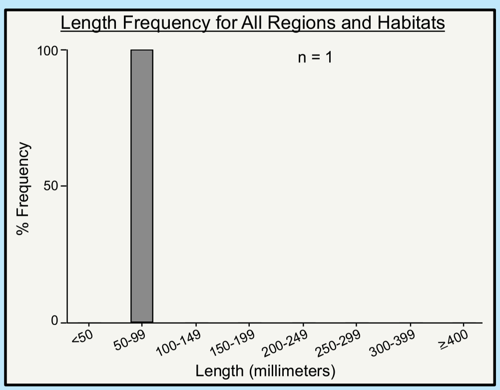


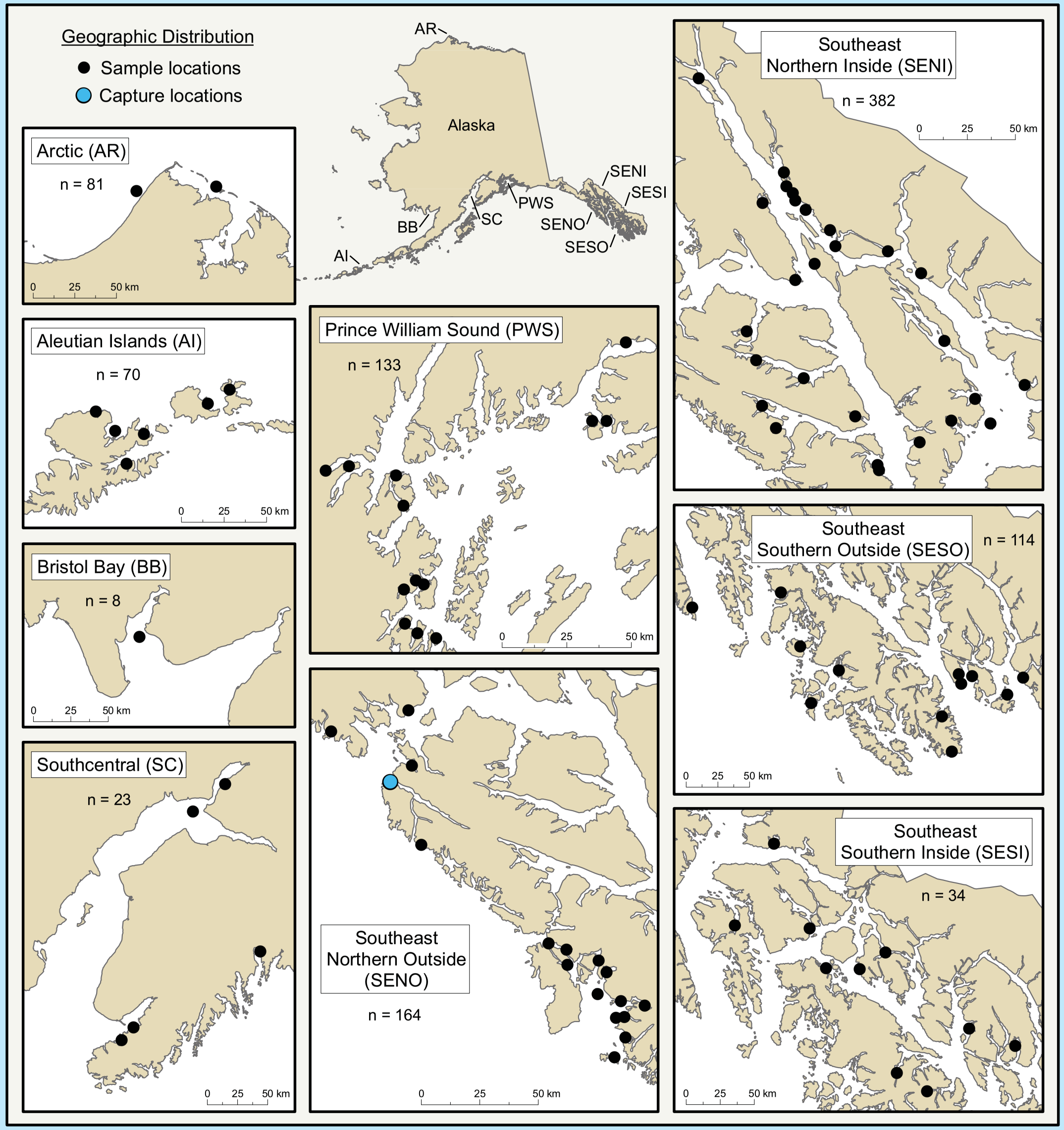

Scorpaenidae
Black rockfish
Sebastes melanops
p. 173
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 191
Mean catch-per-unit-effort (◻)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 183
% Frequency
Length (millimeters)

Scorpaenidae | **China rockfish** | *Sebastes nebulosus*

p. 173







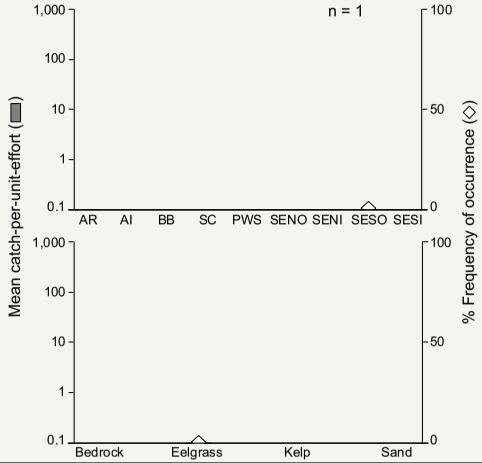
Scorpaenidae

Bocaccio

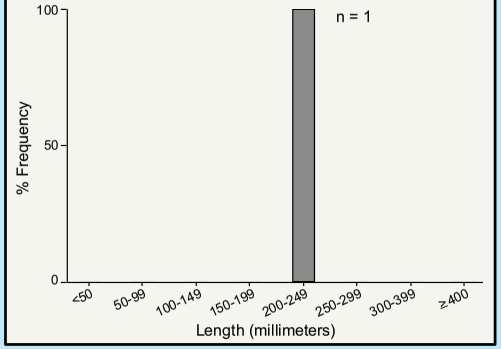
Sebastes paucispinis

p. 173

Abundance Indices by Region and Habitat

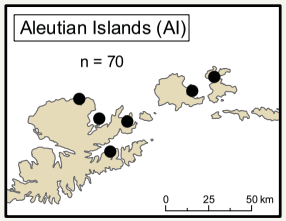


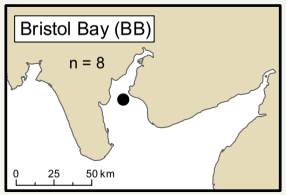
Length Frequency for All Regions and Habitats

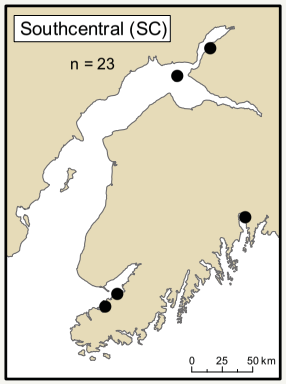


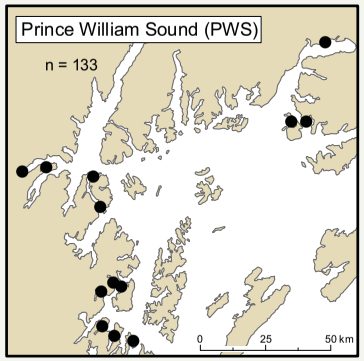
Geographic Distribution

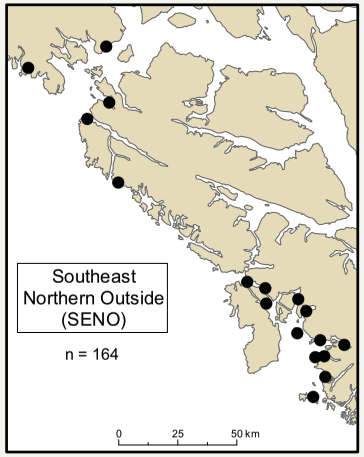
- Sample locations
- Capture locations

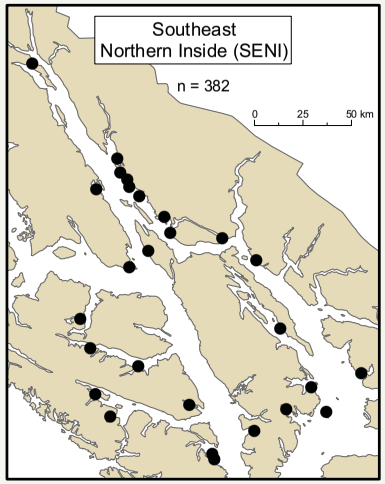


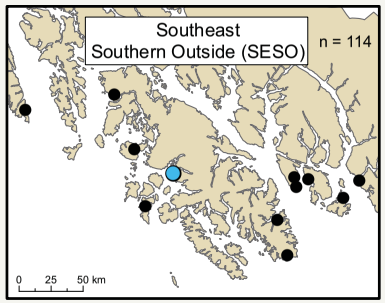


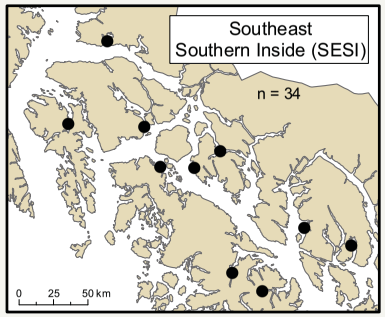


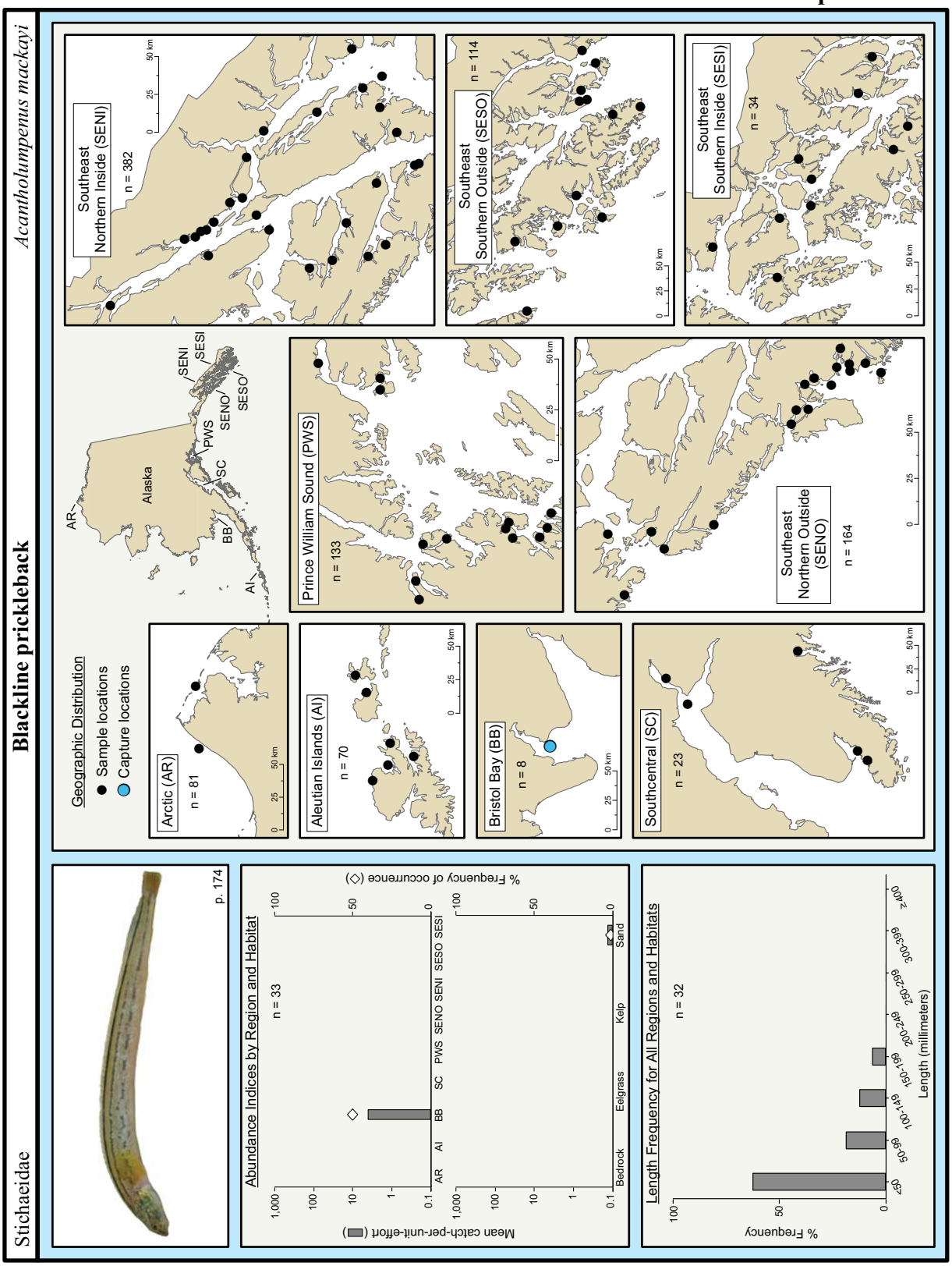


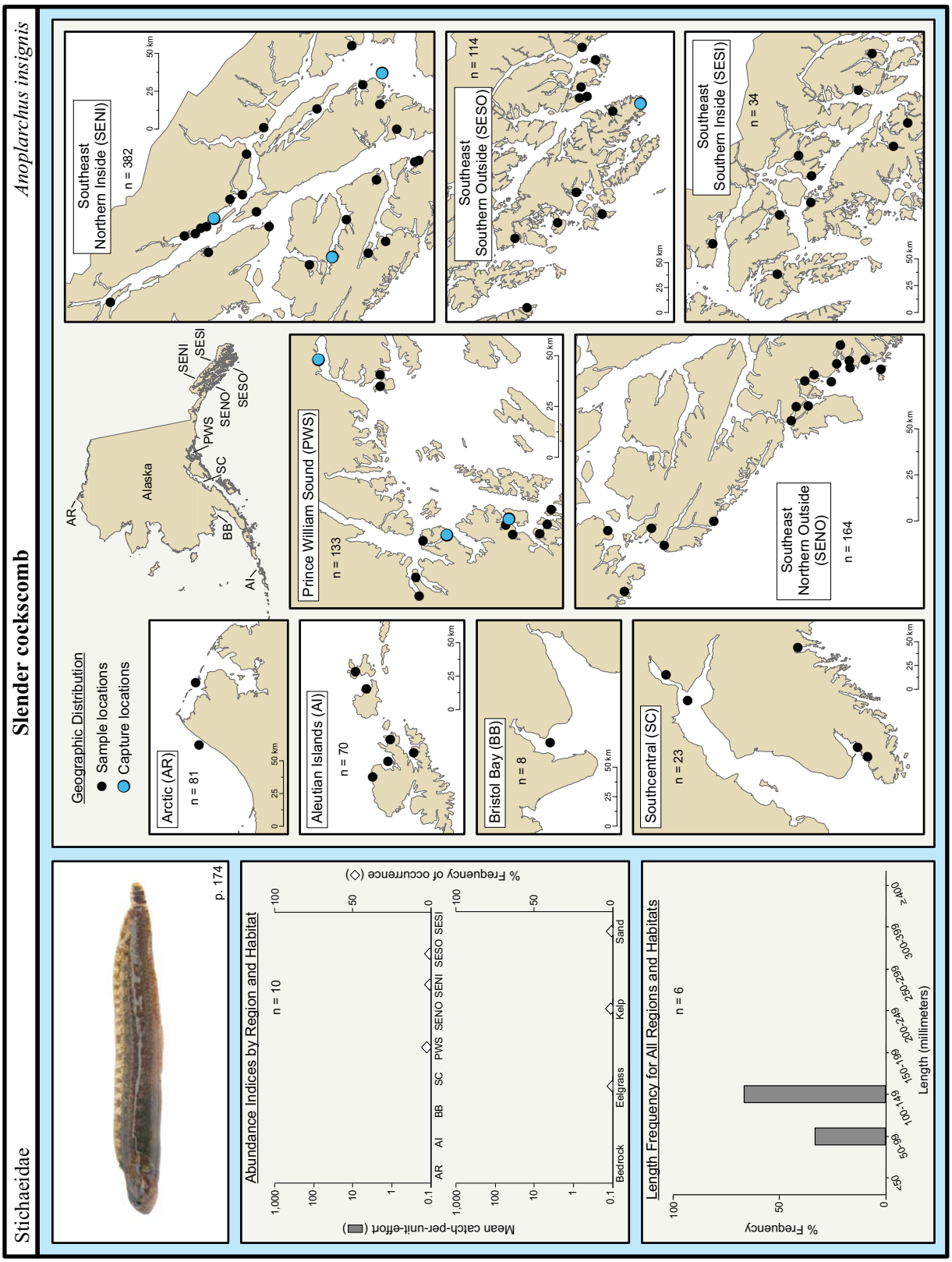


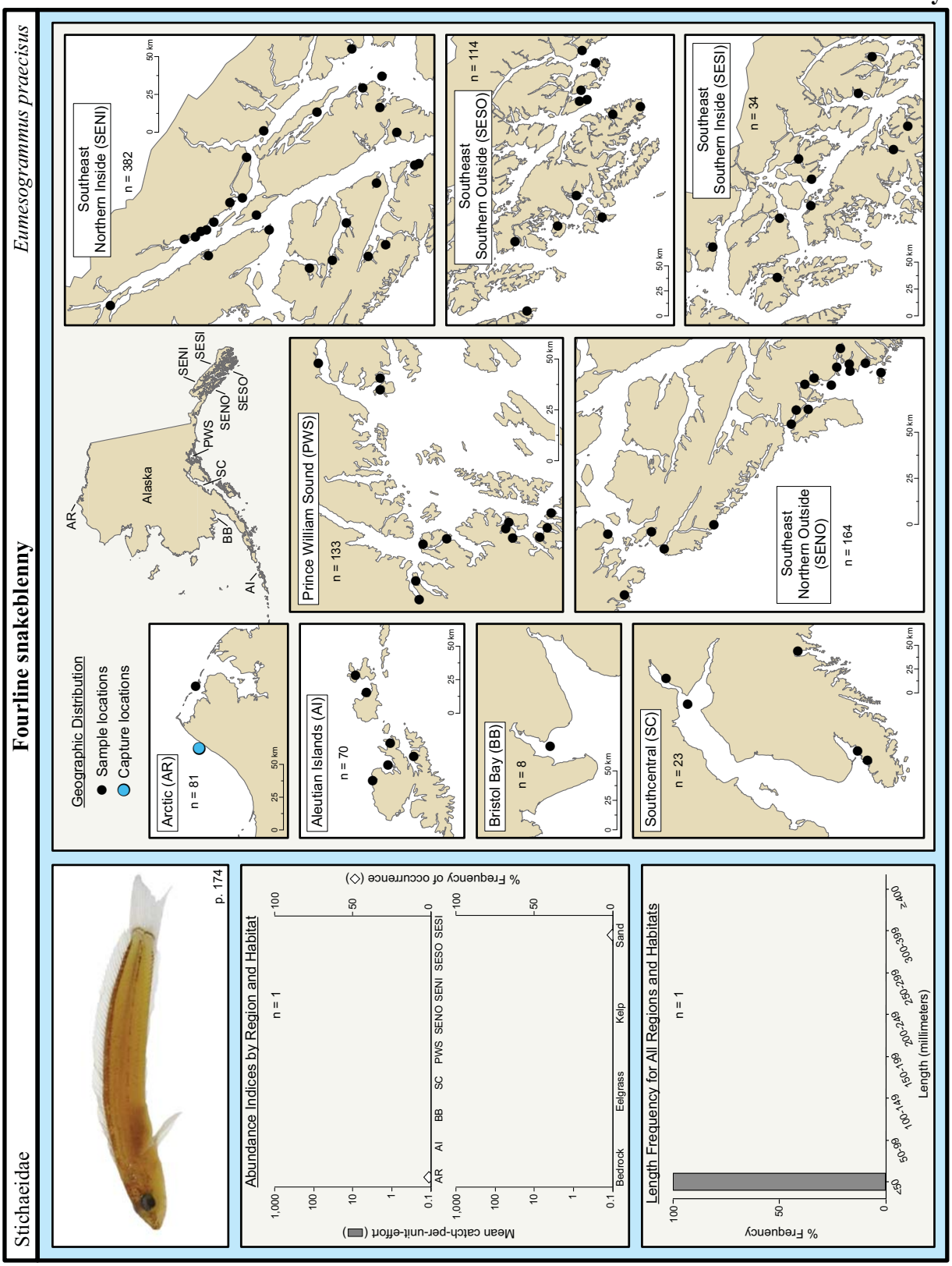


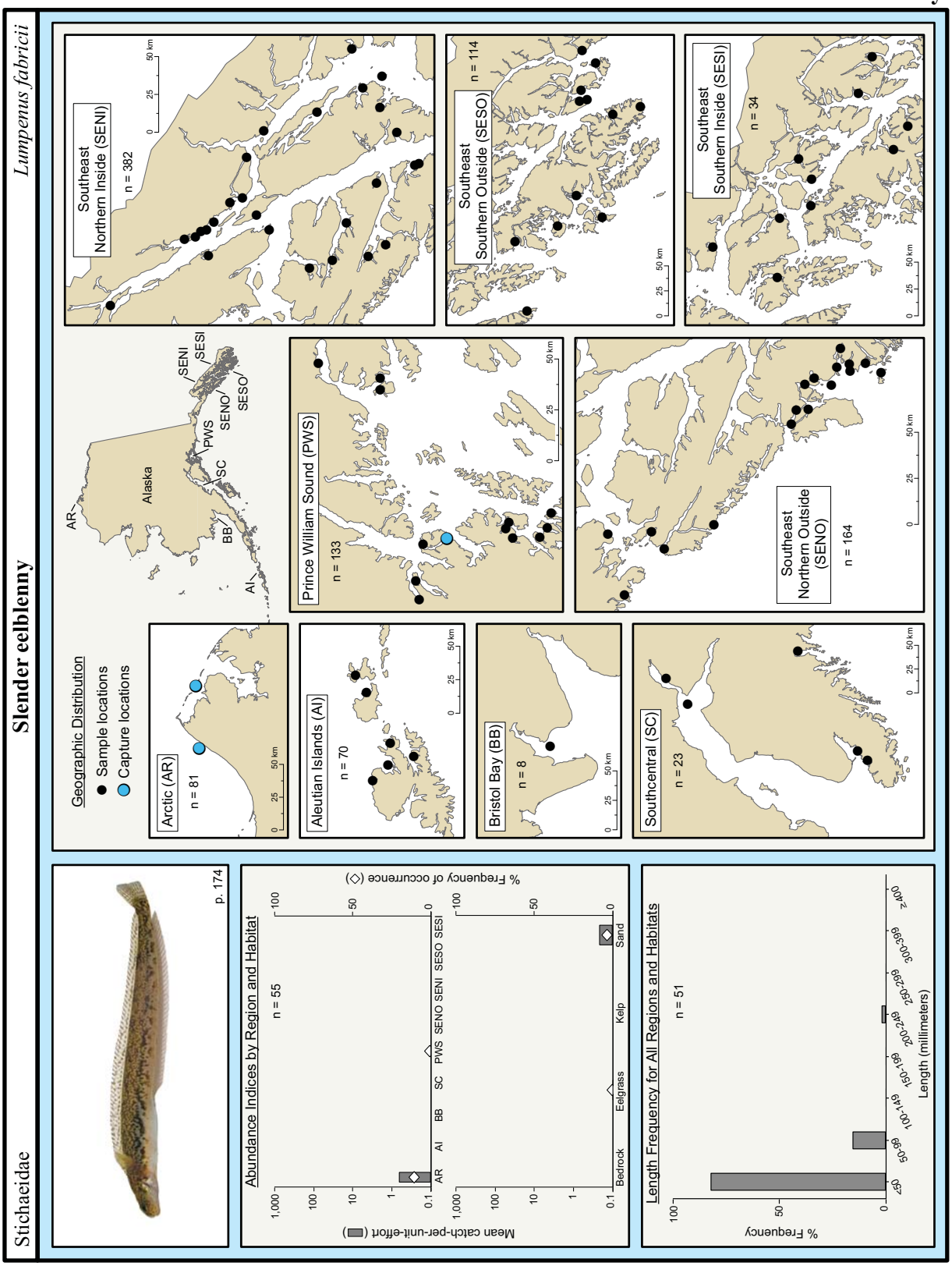


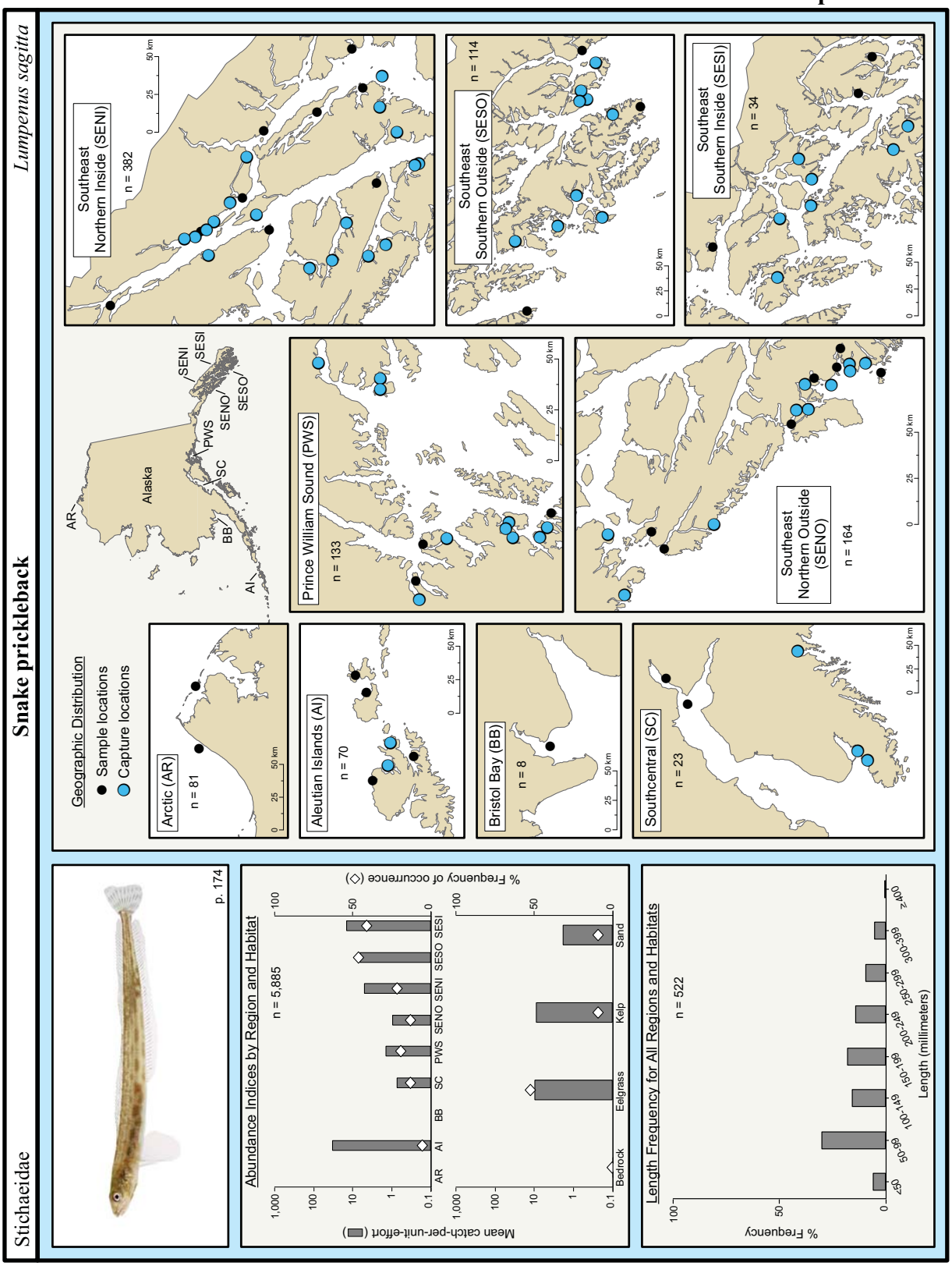


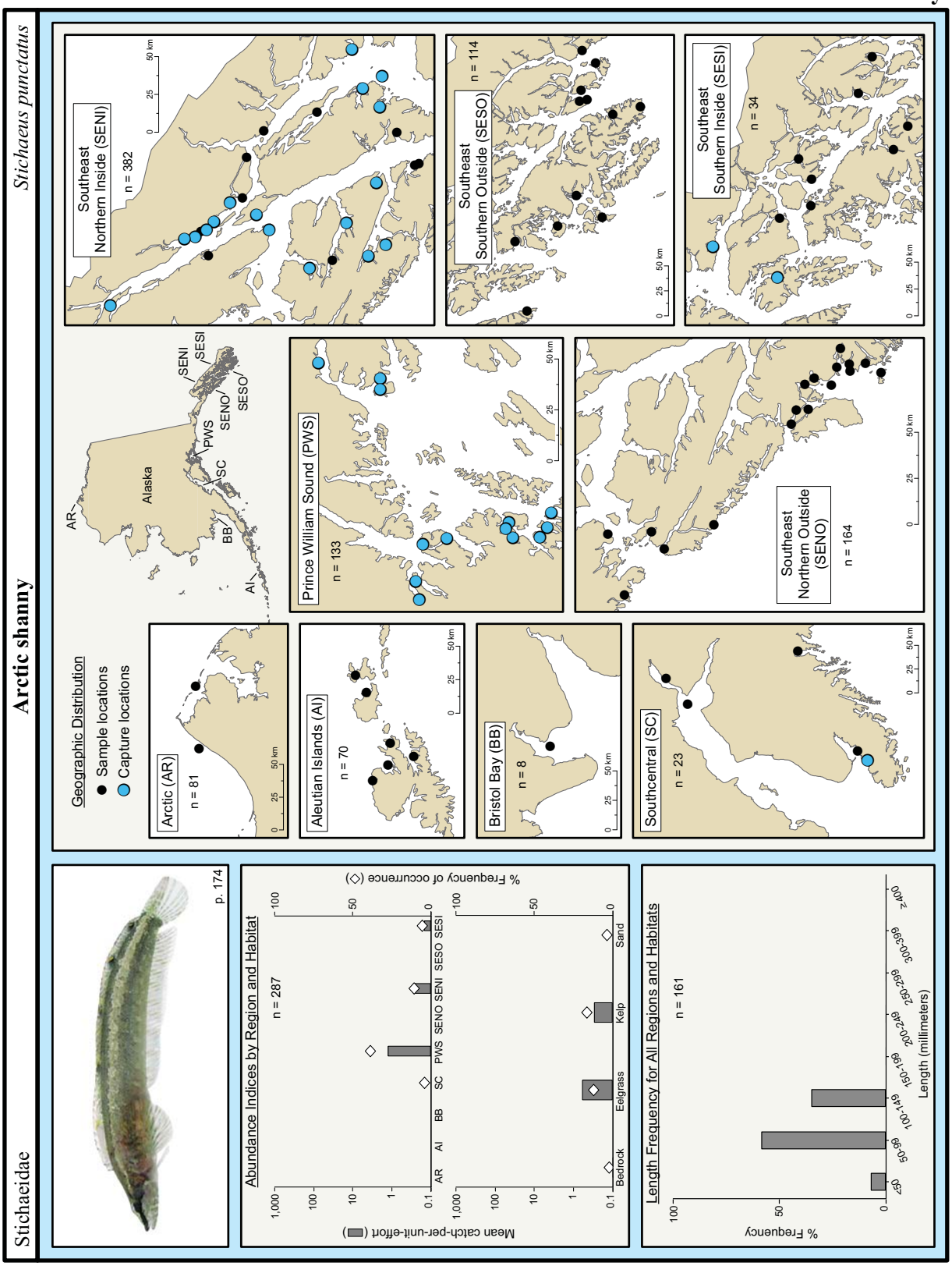

Stichaeidae
Blackline prickleback
Acantholumpenus mackayi
p. 174
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 33
Mean catch-per-unit-effort (◇)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 32
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

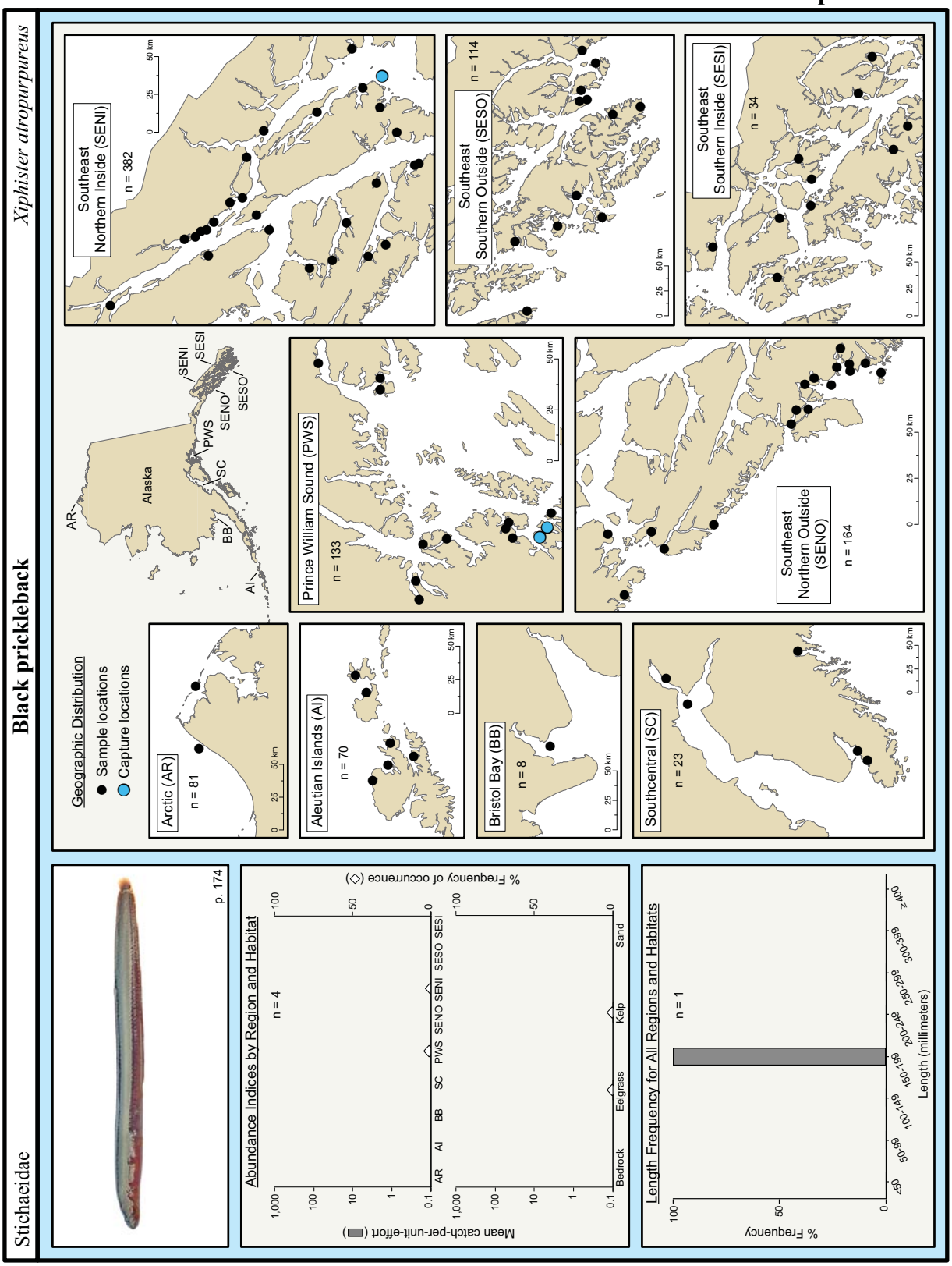

Stichaeidae
Slender cockscomb
Anoplarchus insignis
p. 174
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 10
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 6
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

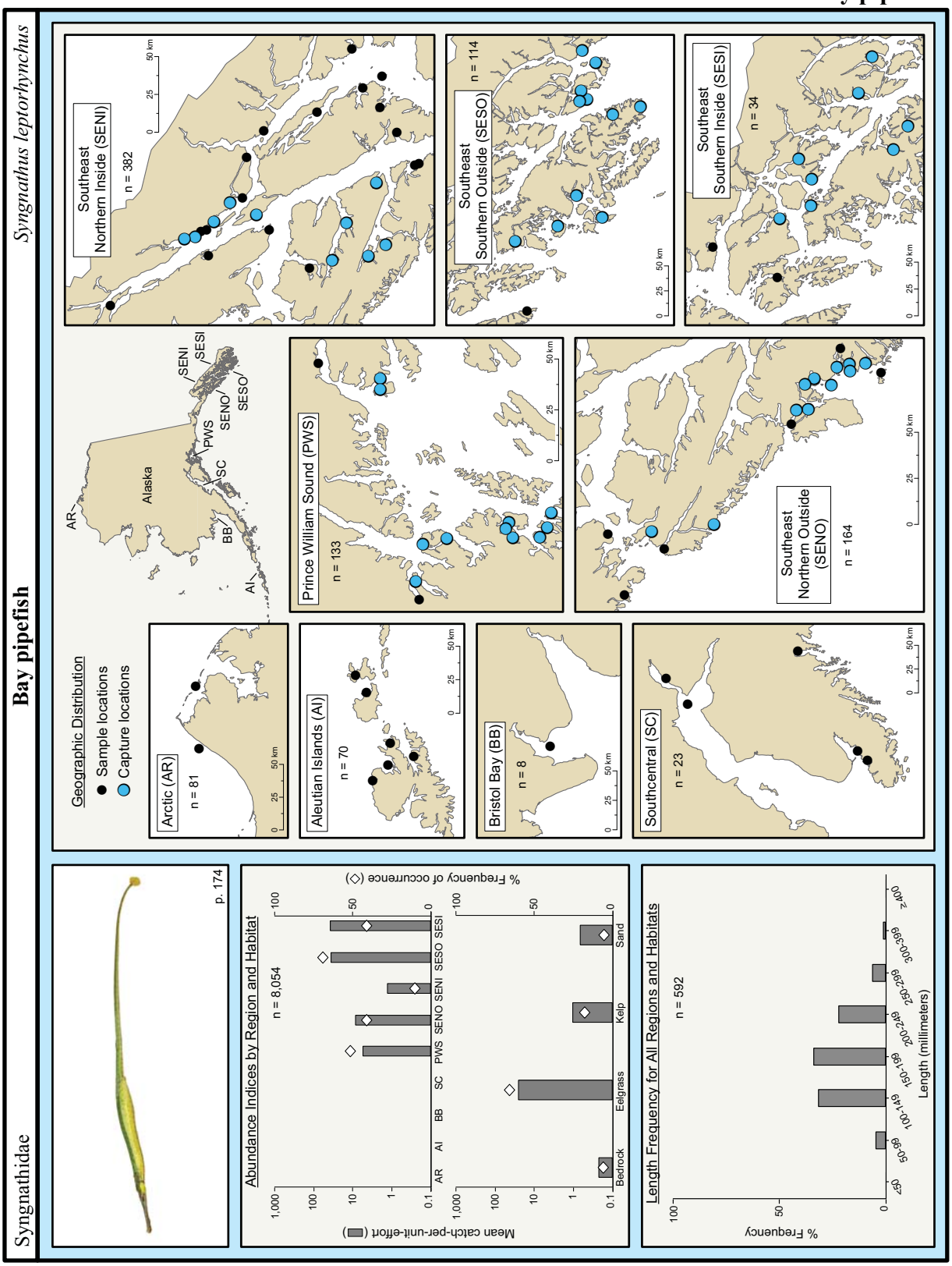

Stichaeidae
Fourline snakeblenny
Eumesogrammus praecisus
p. 174
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

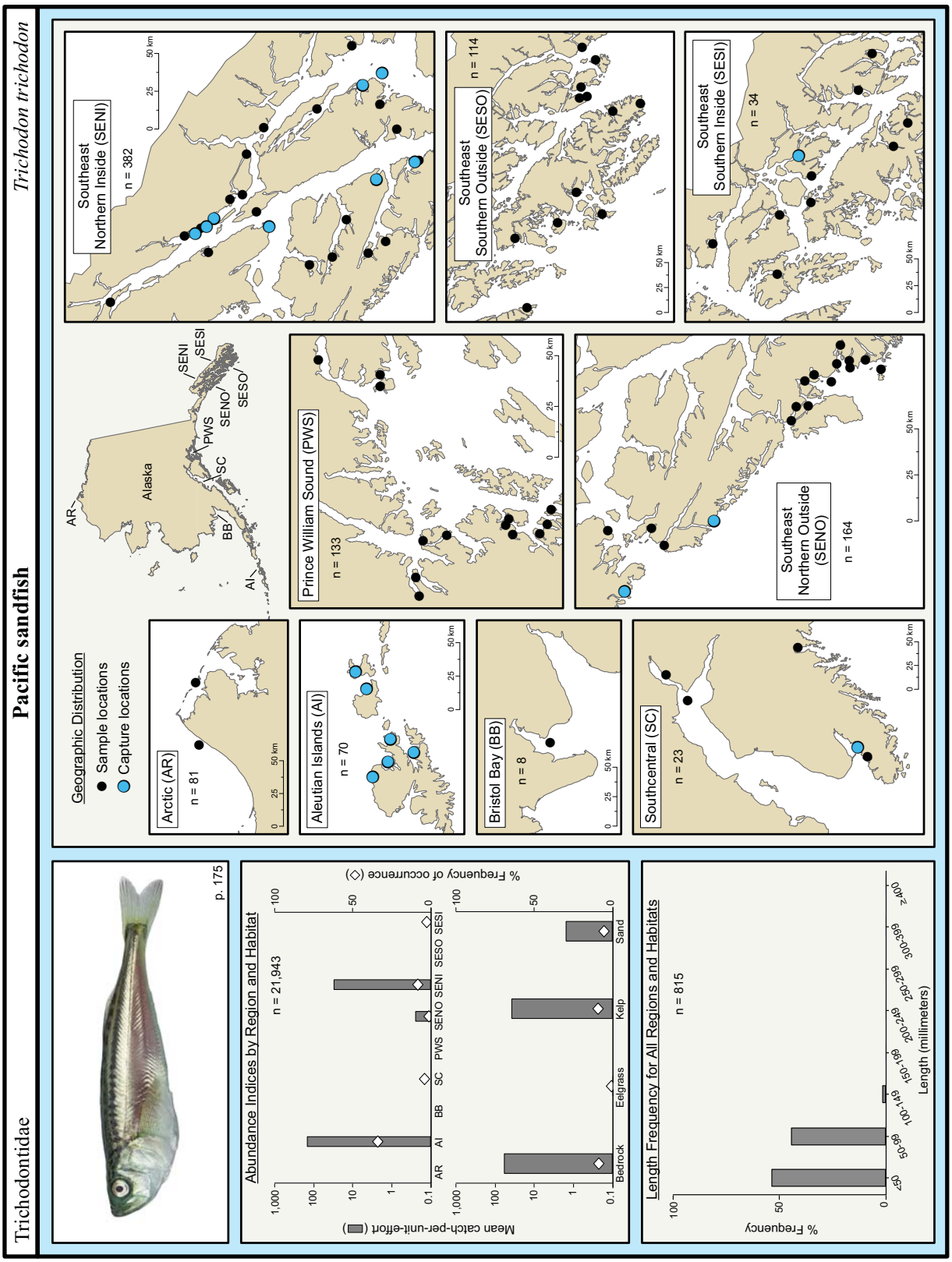

Stichaeidae
Slender eelblenny
Lumpenus fabricii
p. 174
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 55
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 51
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

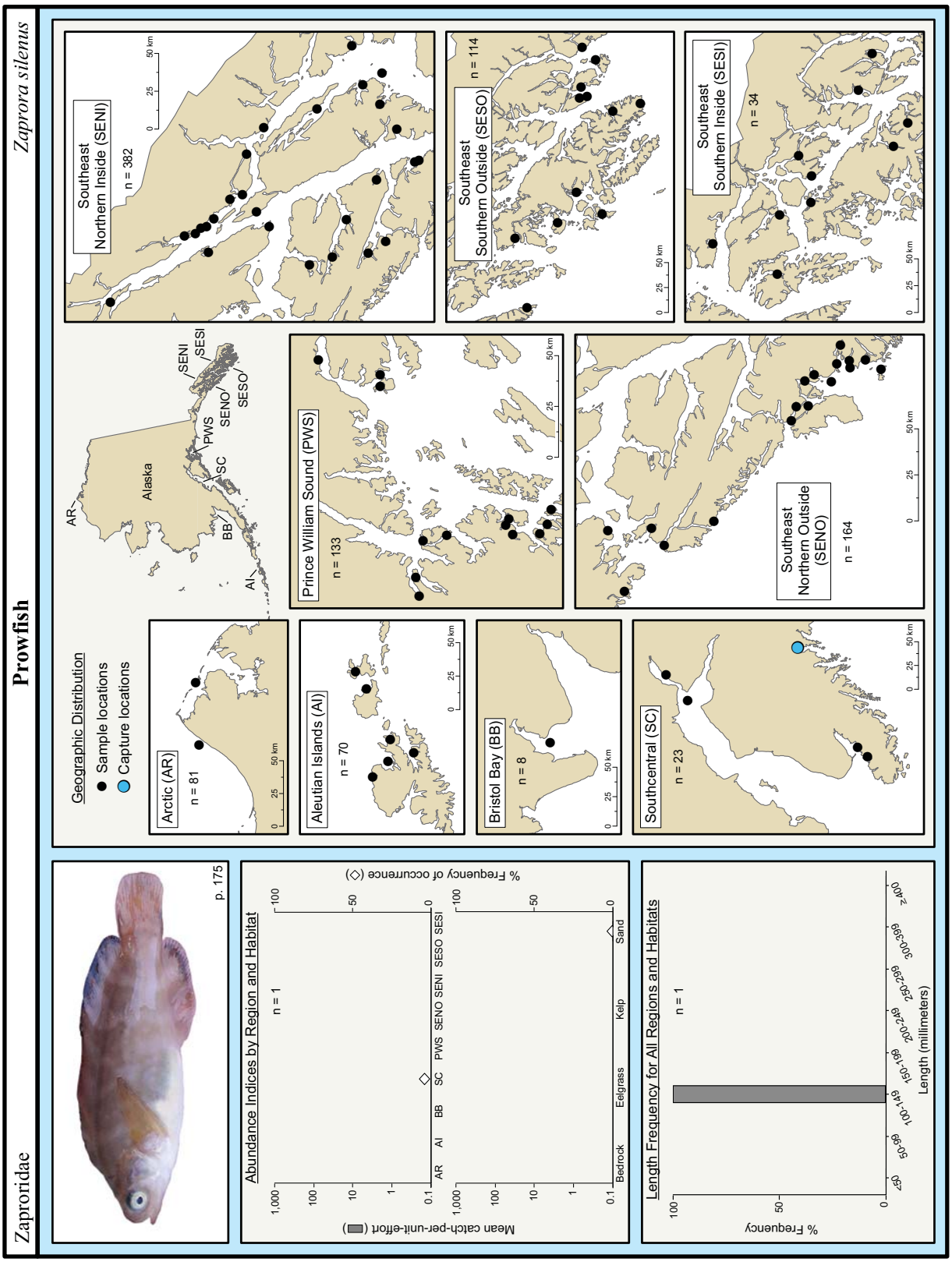

Stichaeidae
Snake prickleback
Lumpenus sagitta
p. 174
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
PWS
SC
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Abundance Indices by Region and Habitat
n = 5,885
Mean catch-per-unit-effort (▭)
% Frequency of occurrence (◇)
Bedrock
Eelgrass
Kelp
Sand
Length Frequency for All Regions and Habitats
n = 522
% Frequency
Length (millimeters)


Stichaeidae
Arctic shanny
Stichaeus punctatus
p. 174
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Alaska
AR
AI
BB
SC
PWS
SENO
SESO
SENI
SESI
0 25 50 km
Abundance Indices by Region and Habitat
n = 287
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SESO SENI SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 161
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

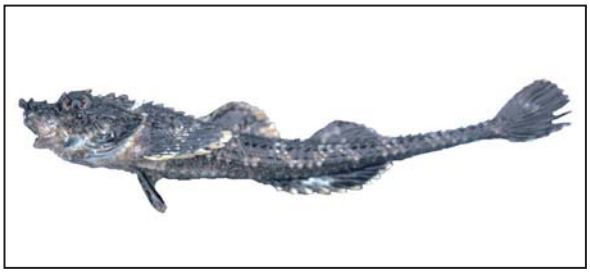

Stichaeidae
Black prickleback
Xiphister atropurpureus
p. 174
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 4
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400


Syngnathidae
Bay pipefish
Syngnathus leptorhynchus
p. 174
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Alaska
AR
AI
BB
SC
PWS
SENO
SENI
SESO
SESI
0 25 50 km
Abundance Indices by Region and Habitat
n = 8,054
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 592
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

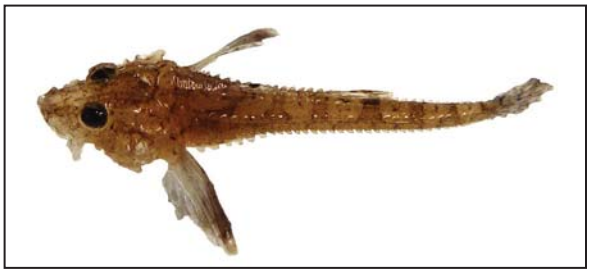

Trichodontidae
Pacific sandfish
Trichodon trichodon
p. 175
Geographic Distribution
Sample locations
Capture locations
Alaska
AR
BB
AI
SC
PWS
SENO
SESO
SENI
SESI
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Prince William Sound (PWS)
n = 133
Southcentral (SC)
n = 23
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
0 25 50 km
Abundance Indices by Region and Habitat
n = 21,943
Mean catch-per-unit-effort (▭)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 815
% Frequency
Length (millimeters)
<49 50-99 100-149 150-199 200-249 250-299 300-399 >400


Zaproridae
Prowfish
Zaprora silenus
p. 175
Geographic Distribution
Sample locations
Capture locations
Arctic (AR)
n = 81
Aleutian Islands (AI)
n = 70
Bristol Bay (BB)
n = 8
Southcentral (SC)
n = 23
Prince William Sound (PWS)
n = 133
Southeast Northern Outside (SENO)
n = 164
Southeast Northern Inside (SENI)
n = 382
Southeast Southern Outside (SESO)
n = 114
Southeast Southern Inside (SESI)
n = 34
Alaska
AR
AI
BB
SC
PWS
SENO
SENI
SESO
SESI
0 25 50 km
Abundance Indices by Region and Habitat
n = 1
Mean catch-per-unit-effort (▬)
% Frequency of occurrence (◇)
AR AI BB SC PWS SENO SENI SESO SESI
Bedrock Eelgrass Kelp Sand
Length Frequency for All Regions and Habitats
n = 1
% Frequency
Length (millimeters)
<50 50-99 100-149 150-199 200-249 250-299 300-399 >400

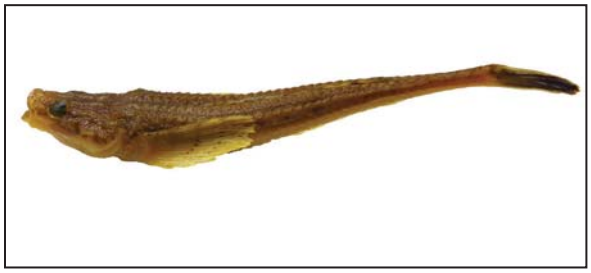
Species Photos



Northern spearnose poacher – Juvenile, 115 mm TL
Agonidae: *Agonopsis vulsa*



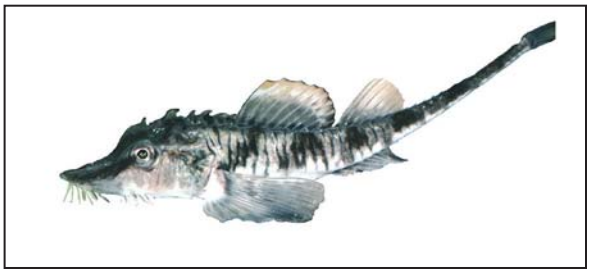
Atlantic poacher – Juvenile, 28 mm TL
Agonidae: *Leptagonus decagonus*



Bering poacher – Juvenile, 110 mm TL
Agonidae: *Occella dodecaedron*

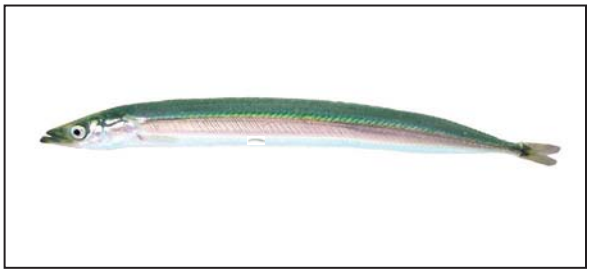
Pygmy poacher – Adult, 72 mm TL
Agonidae: *Odontopyxis trispinosa*

Tubenose poacher – Adult, 138 mm TL
Agonidae: *Pallasina barbata*

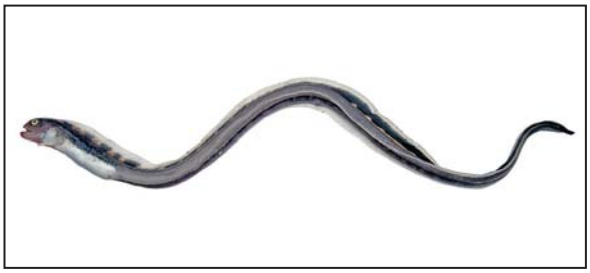


Sturgeon poacher – Adult, 196 mm TL
Agonidae: *Podothecus accipenserinus*

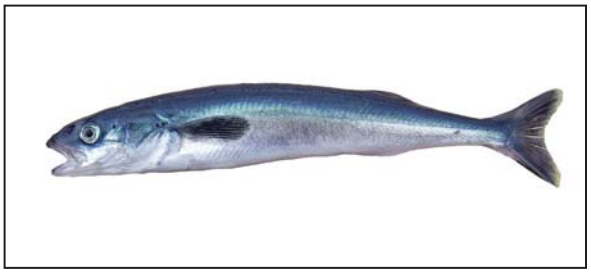
Veteran poacher – Juvenile, 43 mm TL
Agonidae: *Podothecus veternus*



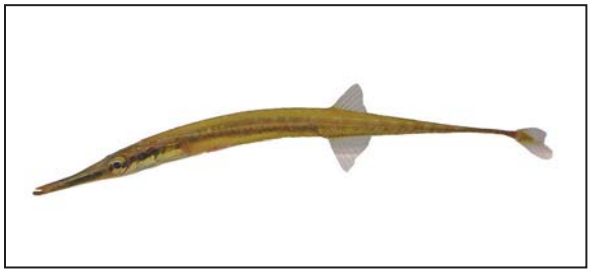
Pacific sand lance – Adult, 132 mm FL
Ammodytidae: *Ammodytes hexapterus*



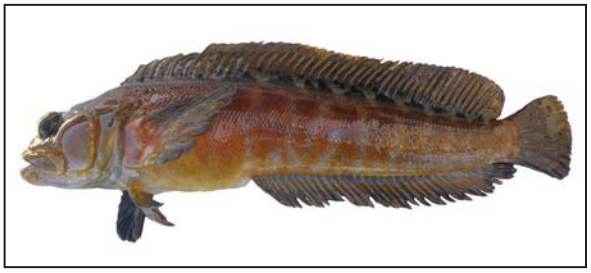
Wolf-eel – Juvenile
Anarhichadidae: *Anarrhichthys ocellatus*



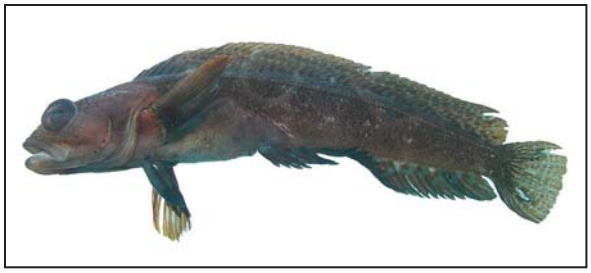
Sablefish – Juvenile, 130 mm FL
Anoplopomatidae: *Anoplopoma fimbria*



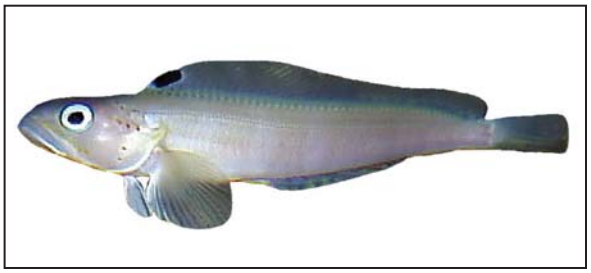
Tubesnout – Adult, 165 mm TL
Aulorhynchidae: *Aulorhynchus flavidus*



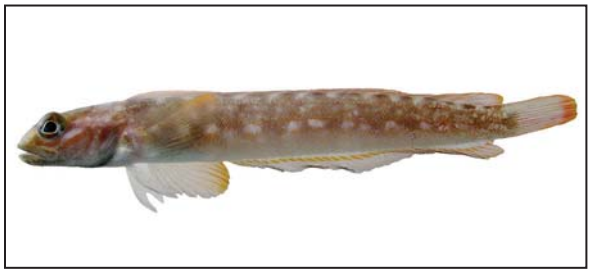
Alaskan ronquil – Adult, 256 mm TL
Bathymasteridae: *Bathymaster caeruleofasciatus*



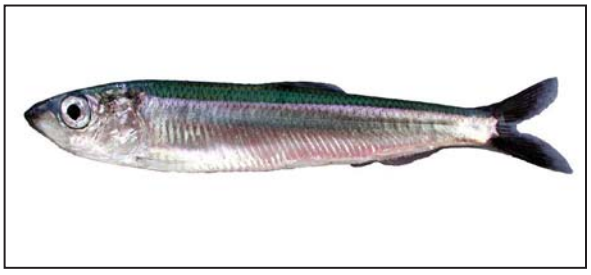
Smallmouth ronquil – Juvenile, 123 mm TL
Bathymasteridae: *Bathymaster leurolepis*



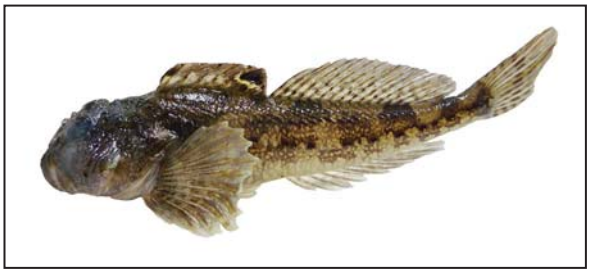
Searcher – Adult
Bathymasteridae: *Bathymaster signatus*



Northern ronquil – Juvenile, 108 mm TL
Bathymasteridae: *Ronquilus jordani*

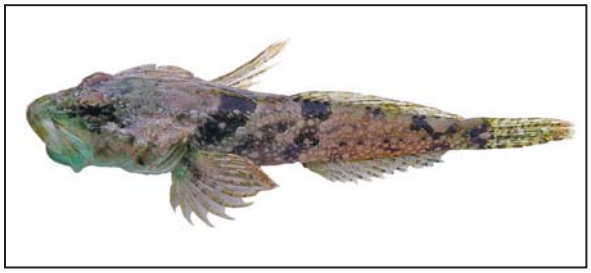


Pacific herring – Juvenile, 95 mm FL
Clupeidae: *Clupea pallasii*



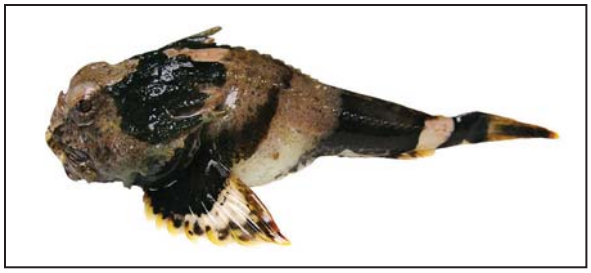
Padded sculpin – Juvenile, 77 mm TL
Cottidae: *Artedius fenestralis*

Scalyhead sculpin – Adult, 75 mm TL
Cottidae: *Artedius harringtoni*



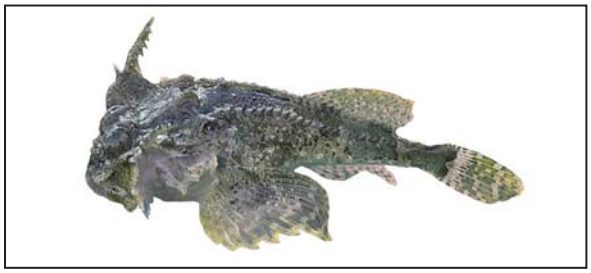
Smoothhead sculpin – Juvenile, 87 mm TL
Cottidae: *Artedius lateralis*

Roughback sculpin – Juvenile, ~70 mm TL
Cottidae: *Chitonotus pugetensis*

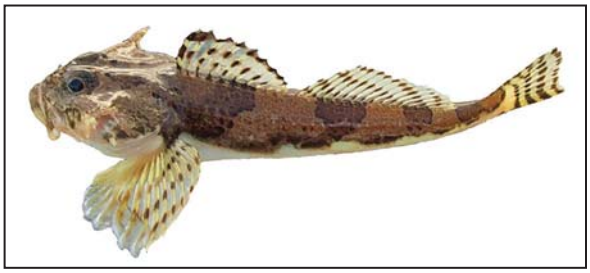


Buffalo sculpin – Juvenile, 100 mm TL
Cottidae: *Enophrys bison*

Antlered sculpin – Juvenile, ~100 mm TL
Cottidae: *Enophrys diceraus*

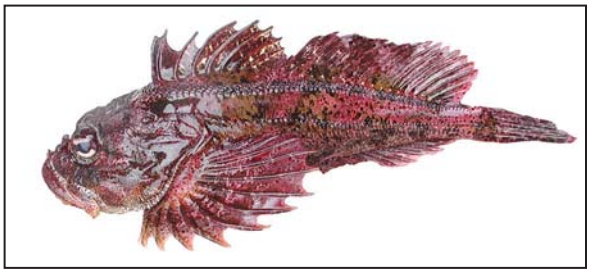


Leister sculpin – Adult, ~150 mm TL
Cottidae: *Enophrys lucasi*

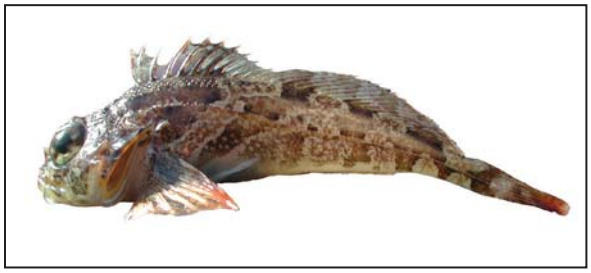


Armorhead sculpin – Adult, 250 mm TL
Cottidae: *Gymnocanthus galeatus*

Arctic staghorn sculpin – Juvenile, 110 mm TL
Cottidae: *Gymnocanthus tricuspis*

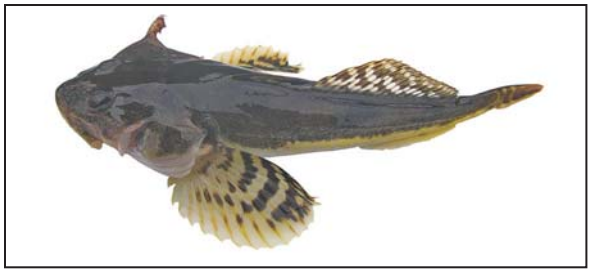


Red Irish lord – Adult, 378 mm TL
Cottidae: *Hemilepidotus hemilepidotus*

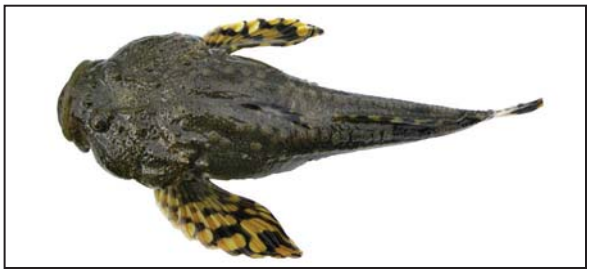


Brown Irish lord – Juvenile, 81 mm TL
Cottidae: *Hemilepidotus spinosus*

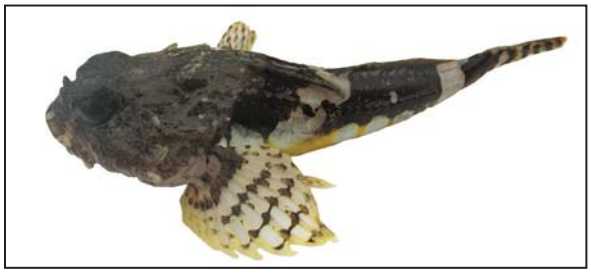
Northern sculpin – Juvenile, 57 mm TL
Cottidae: *Icelinus borealis*



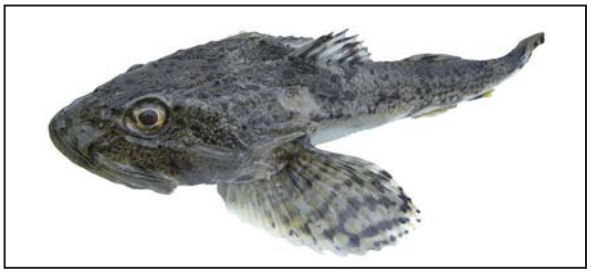
Pacific staghorn sculpin – Juvenile, ~180 mm TL
Cottidae: *Leptocottus armatus*



Belligerent sculpin – Juvenile, 235 mm TL
Cottidae: *Megalocottus platycephalus*

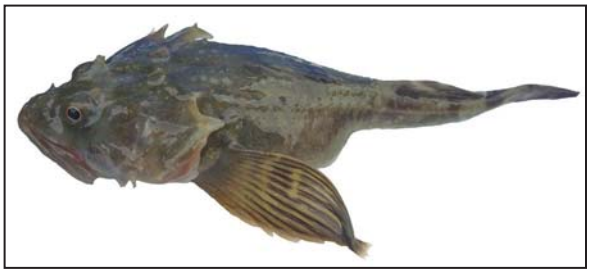


Brightbelly sculpin – Adult, 110 mm TL
Cottidae: *Microcottus sellaris*



Plain sculpin – Juvenile, 296 mm TL
Cottidae: *Myoxocephalus jaok*

Great sculpin – Juvenile, 136 mm TL
Cottidae: *Myoxocephalus polyacanthocephalus*



Fourhorn sculpin – Adult, 190 mm TL
Cottidae: *Myoxocephalus quadricornis*

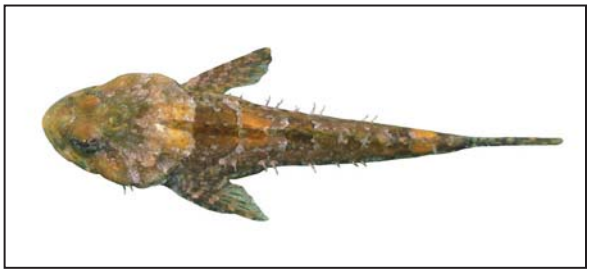
Arctic sculpin – Juvenile, 72 mm TL
Cottidae: *Myoxocephalus scorpioides*

Shorthorn sculpin – Juvenile, 135 mm TL
Cottidae: *Myoxocephalus scorpius*

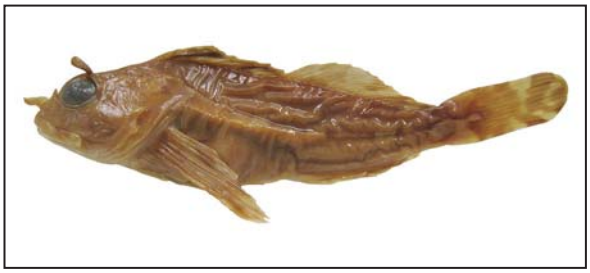
Frog sculpin – Juvenile, 136 mm TL
Cottidae: *Myoxocephalus stelleri*

Tidepool sculpin – Juvenile, 41 mm TL
Cottidae: *Oligocottus maculosus*

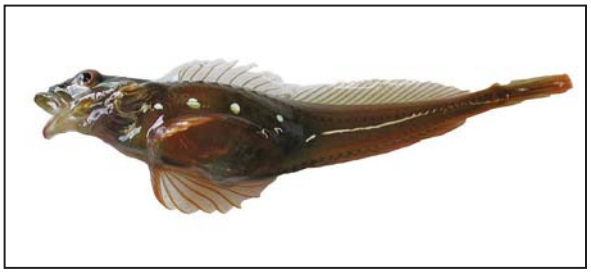
Saddleback sculpin – Juvenile, 47 mm TL
Cottidae: *Oligocottus rimensis*



Fluffy sculpin – Adult
Cottidae: *Oligocottus snyderi*



Cabezon – Juvenile, 112 mm TL
Cottidae: *Scorpaenichthys marmoratus*

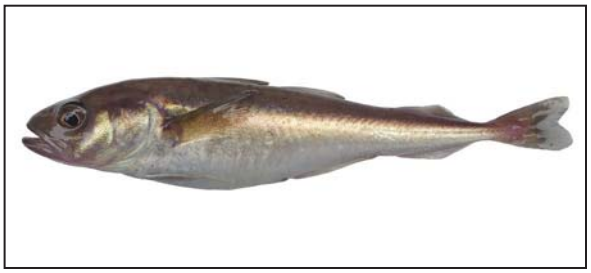


Manacled sculpin – Adult, 55 mm TL
Cottidae: *Synchirus gilli*

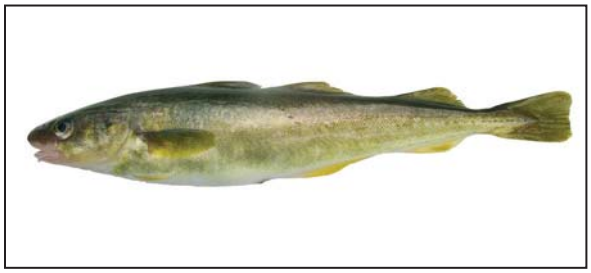
Pacific spiny lumpsucker – Juvenile, 38 mm TL
Cyclopteridae: *Eumicrotremus orbis*

Kelp perch – Juvenile, ~80 mm FL
Embiotocidae: *Brachyistius frenatus*

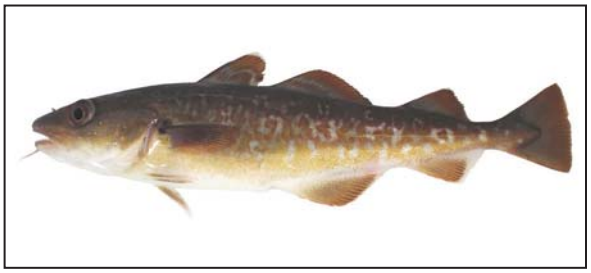
Shiner perch – Adult, 155 mm FL
Embiotocidae: *Cymatogaster aggregata*



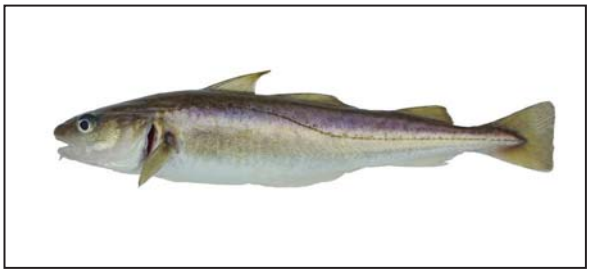
Arctic cod – Adult, 180 mm FL
Gadidae: *Boreogadus saida*



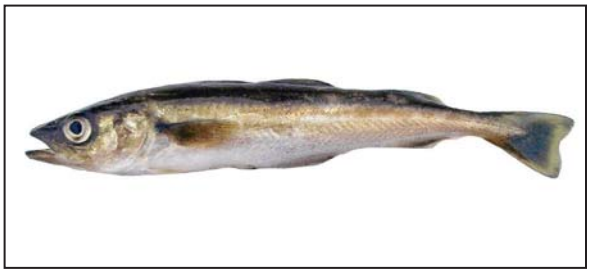
Saffron cod – Juvenile, 265 mm TL
Gadidae: *Eleginus gracilis*



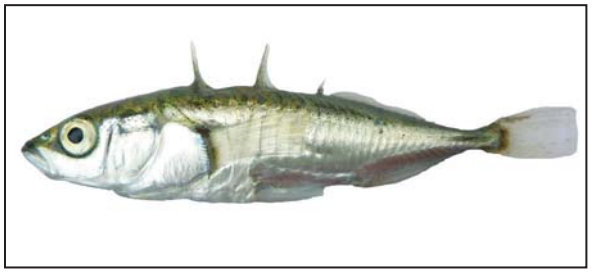
Pacific cod – Juvenile
Gadidae: *Gadus macrocephalus*



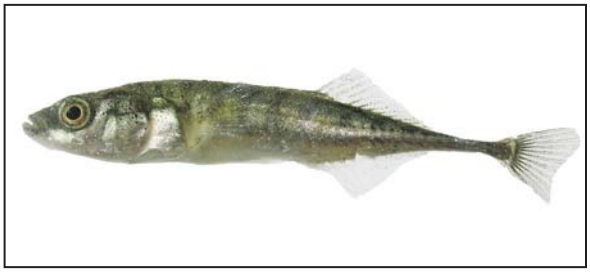
Pacific tomcod – Adult, 220 mm TL
Gadidae: *Microgadus proximus*



Walleye pollock – Juvenile, ~200 mm TL
Gadidae: *Theragra chalcogramma*



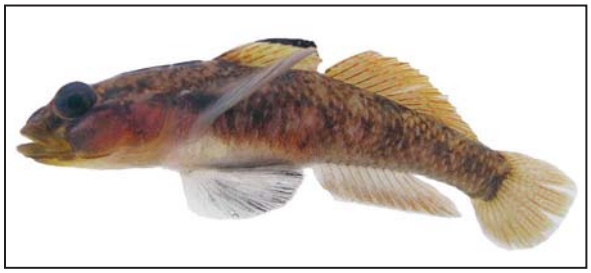
Threespine stickleback – Adult, 59 mm TL
Gasterosteidae: *Gasterosteus aculeatus*



Ninespine stickleback – Juvenile, 46 mm TL
Gasterosteidae: *Pungitius pungitius*

Kelp clingfish – Juvenile, ~30 mm TL
Gobiescocidae: *Rimicola muscarum*

Bay goby – Adult, 87 mm TL
Gobiidae: *Lepidogobius lepidus*



Blackeye goby – Juvenile, 79 mm TL
Gobiidae: *Rhinogobiops nicholsii*

Crested sculpin – Juvenile, 106 mm TL
Hemitripteridae: *Blepsias bilobus*

Silverspotted sculpin – Adult, 135 mm TL
Hemitripteridae: *Blepsias cirrhosus*

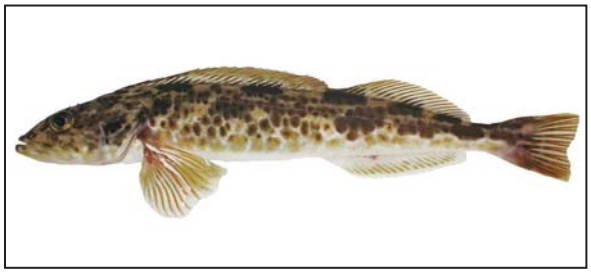
Sailfin sculpin – Adult, ~150 mm TL
Hemitripteridae: *Nautichthys oculofasciatus*

Kelp greenling – Juvenile, 122 mm TL
Hexagrammidae: *Hexagrammos decagrammus*

Rock greenling – Juvenile, 200 mm TL
Hexagrammidae: *Hexagrammos lagocephalus*

Masked greenling – Juvenile, 207 mm TL
Hexagrammidae: *Hexagrammos octogrammus*

Whitespotted greenling – Juvenile, 163 mm TL
Hexagrammidae: *Hexagrammos stelleri*

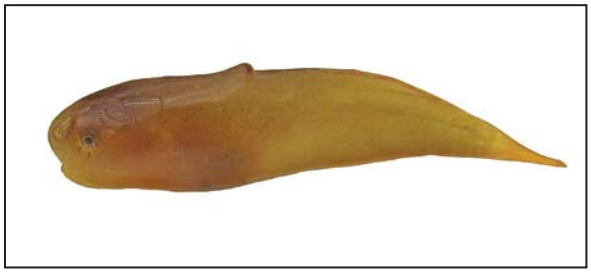


Lingcod – Juvenile, 250 mm TL
Hexagrammidae: *Ophiodon elongatus*

Painted greenling – Juvenile, 118 mm TL
Hexagrammidae: *Oxylebius pictus*

Spotted snailfish – Adult, 89 mm TL
Liparidae: *Liparis callyodon*

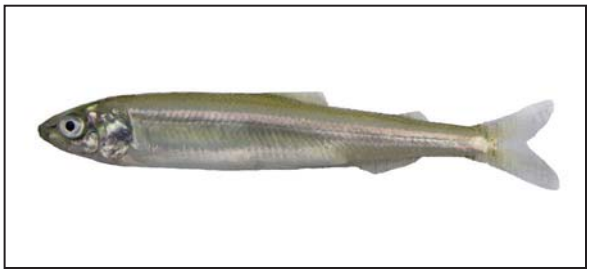
Ribbon snailfish – Adult, 103 mm TL
Liparidae: *Liparis cyclopus*



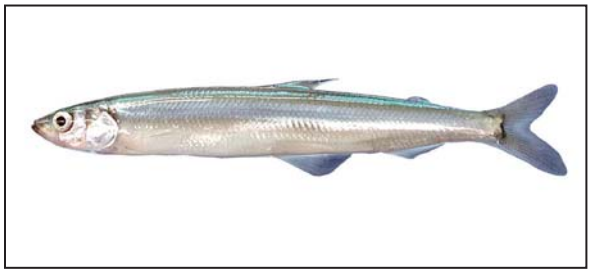
Tidepool snailfish – Juvenile, 24 mm TL
Liparidae: *Liparis florae*

Variegated snailfish – Juvenile, 61 mm TL
Liparidae: *Liparis gibbus*

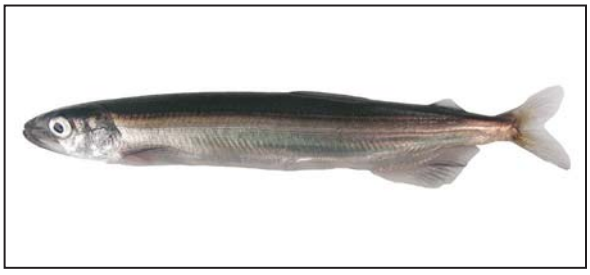
Showy snailfish – Juvenile
Liparidae: *Liparis pulchellus*



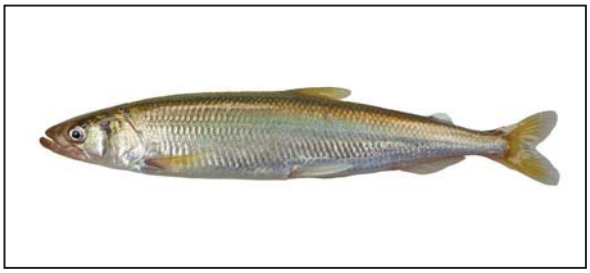
Pond smelt – Juvenile, 73 mm FL
Osmeridae: *Hypomesus olidus*



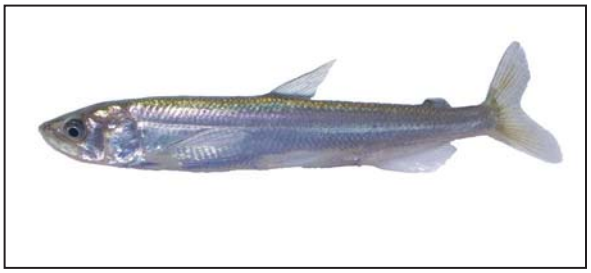
Surf smelt – Juvenile, 100 mm FL
Osmeridae: *Hypomesus pretiosus*



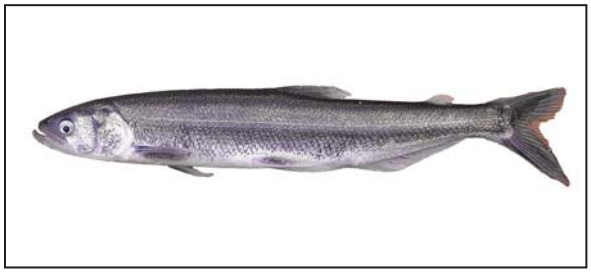
Capelin – Adult, 135 mm FL
Osmeridae: *Mallotus villosus*



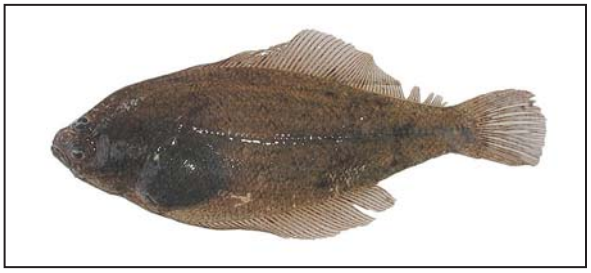
Rainbow smelt – Juvenile, 212 mm FL
Osmeridae: *Osmerus mordax*



Longfin smelt – Adult, 131 mm FL
Osmeridae: *Spirinchus thaleichthys*

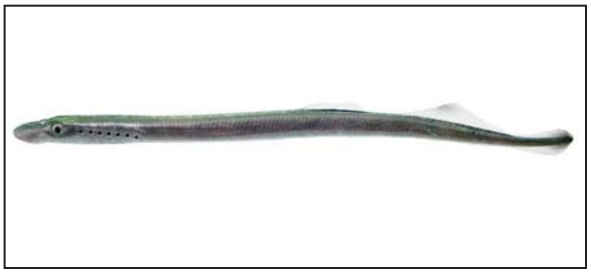


Eulachon – Adult, 200 mm FL
Osmeridae: *Thaleichthys pacificus*

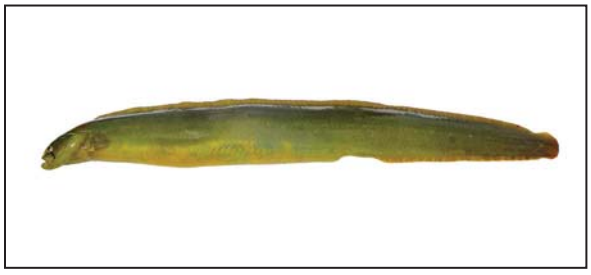


Pacific sanddab – Juvenile, 87 mm TL
Paralichthyidae: *Citharichthys sordidus*

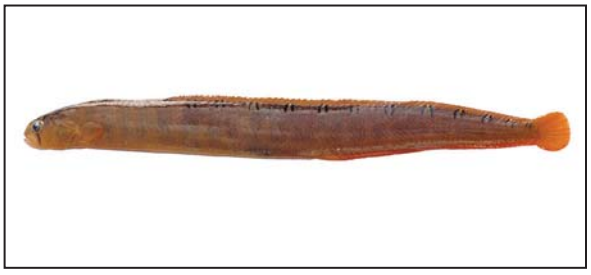
Speckled sanddab – Adult, 123 mm TL
Paralichthyidae: *Citharichthys stigmaeus*



Arctic lamprey – Juvenile, 161 mm TL
Petromyzontidae: *Lampetra camtschatica*

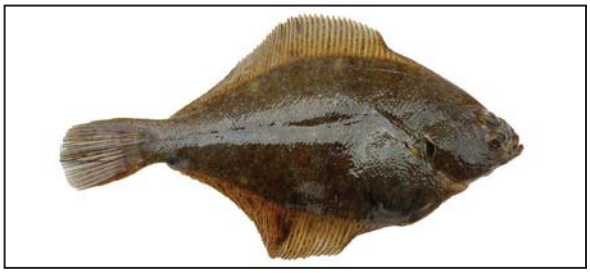


Penpoint gunnel – Adult, 293 mm TL
Pholidae: *Apodichthys flavidus*



Crescent gunnel – Adult, 160 mm TL
Pholidae: *Pholis laeta*

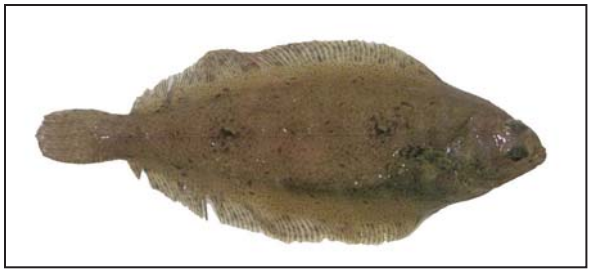
Butter sole – Juvenile, 180 mm TL
Pleuronectidae: *Isopsetta isolepis*



Rock sole – Juvenile, 137 mm TL
Pleuronectidae: *Lepidopsetta* spp.

Yellowfin sole – Juvenile, 220 mm TL
Pleuronectidae: *Limanda aspera*

Longhead dab – Juvenile, 88 mm TL
Pleuronectidae: *Limanda proboscidea*



Dover sole – Juvenile, 107 mm TL
Pleuronectidae: *Microstomus pacificus*

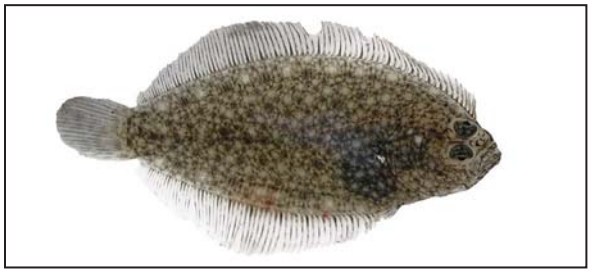
English sole – Juvenile, ~75 mm TL
Pleuronectidae: *Parophrys vetulus*

Starry flounder – Juvenile, 101 mm TL
Pleuronectidae: *Platichthys stellatus*

Arctic flounder – Juvenile, 70 mm TL
Pleuronectidae: *Pleuronectes glacialis*

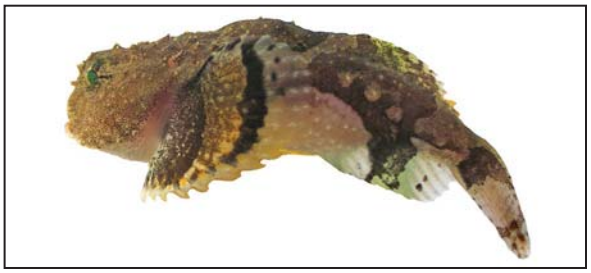
Alaska plaice – Juvenile, 120 mm TL
Pleuronectidae: *Pleuronectes quadrituberculatus*

C-O sole – Juvenile, 190 mm TL
Pleuronectidae: *Pleuronichthys coenosus*

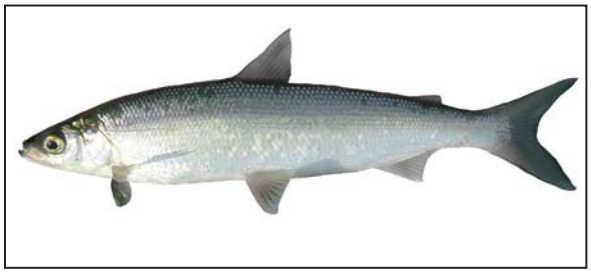


Sand sole – Juvenile, 38 mm TL
Pleuronectidae: *Psettichthys melanostictus*

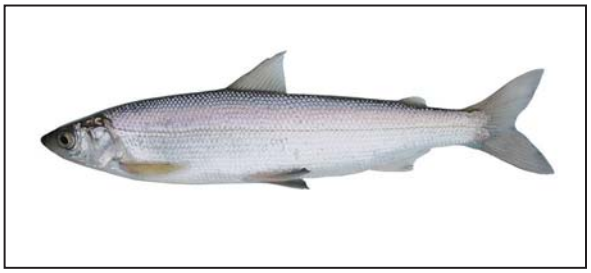
Tadpole sculpin – Juvenile, 51 mm TL
Psychrolutidae: *Psychrolutes paradoxus*



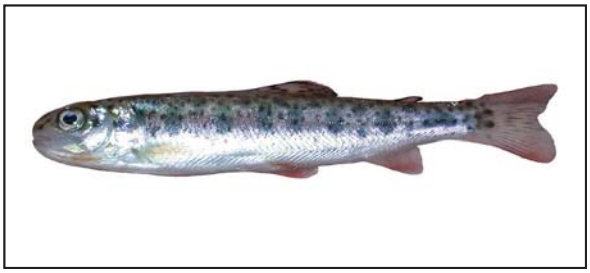
Soft sculpin – Juvenile, 51 mm TL
Psychrolutidae: *Psychrolutes sigalutes*



Arctic cisco – Adult, 275 mm FL
Salmonidae: *Coregonus autumnalis*

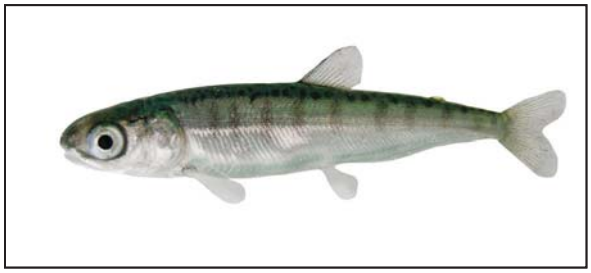


Least cisco – Adult, 265 mm FL
Salmonidae: *Coregonus sardinella*

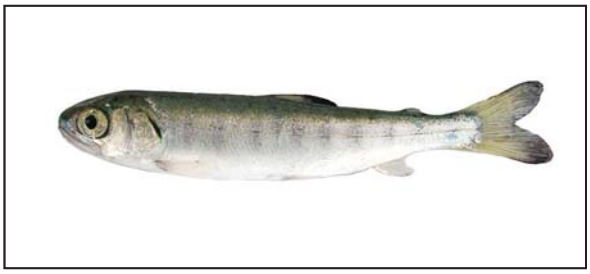


Cutthroat trout – Juvenile, 85 mm FL
Salmonidae: *Oncorhynchus clarkii*

Pink salmon – Juvenile, 75 mm FL
Salmonidae: *Oncorhynchus gorbuscha*



Chum salmon – Juvenile, 55 mm FL
Salmonidae: *Oncorhynchus keta*

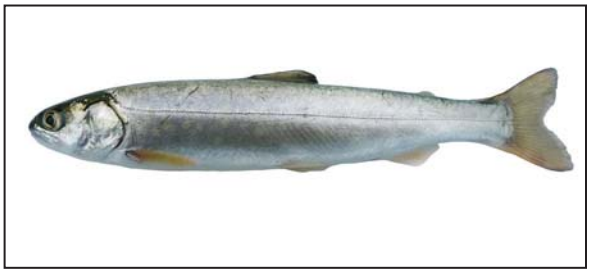


Coho salmon – Juvenile, 83 mm FL
Salmonidae: *Oncorhynchus kisutch*

Steelhead trout – Juvenile, ~150 mm FL
Salmonidae: *Oncorhynchus mykiss*

Sockeye salmon – Juvenile, 65 mm FL
Salmonidae: *Oncorhynchus nerka*

Chinook salmon – Juvenile, 77 mm FL
Salmonidae: *Oncorhynchus tshawytscha*



Dolly Varden – Juvenile, 157 mm FL
Salmonidae: *Salvelinus malma*

Brown rockfish – Juvenile, 106 mm TL
Scorpaenidae: *Sebastes auriculatus*

Copper rockfish – Juvenile, ~160 mm TL
Scorpaenidae: *Sebastes caurinus*

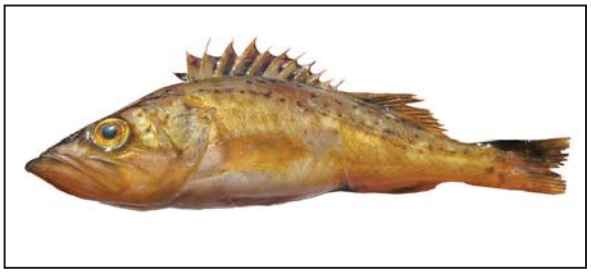
Dark rockfish – Juvenile, 84 mm TL
Scorpaenidae: *Sebastes ciliatus*

Yellowtail rockfish – Juvenile, 89 mm TL
Scorpaenidae: *Sebastes flavidus*

Quillback rockfish – Juvenile, ~75 mm TL
Scorpaenidae: *Sebastes maliger*

Black rockfish – Juvenile, 110 mm TL
Scorpaenidae: *Sebastes melanops*

China rockfish – Juvenile, 125 mm TL
Scorpaenidae: *Sebastes nebulosus*

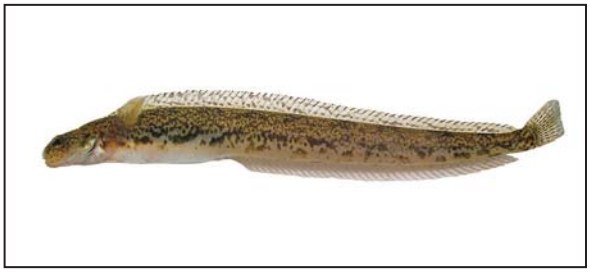


Bocaccio – Juvenile, ~165 mm TL
Scorpaenidae: *Sebastes paucispinis*

Blackline prickleback – Juvenile, 170 mm TL
Stichaeidae: *Acantholumpenus mackayi*

Slender cockscomb – Adult, 100 mm TL
Stichaeidae: *Anoplarchus insignis*

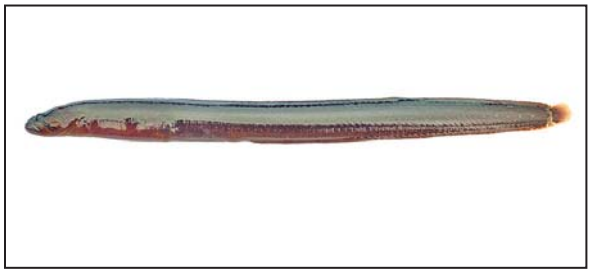
Fourline snakeblenny – Juvenile, 35 mm TL
Stichaeidae: *Eumesogrammus praecisus*



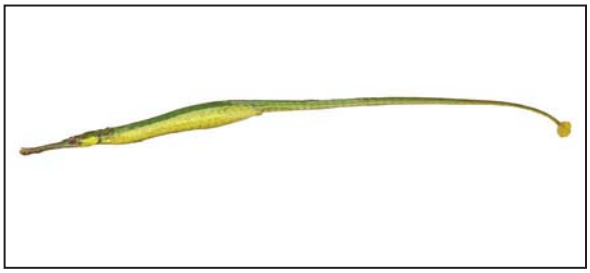
Slender eelblenny – Adult, 232 mm TL
Stichaeidae: *Lumpenus fabricii*

Snake prickleback – Juvenile, 73 mm TL
Stichaeidae: *Lumpenus sagitta*

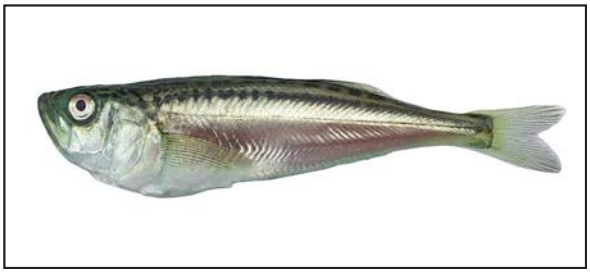
Arctic shanny – Adult, 97 mm TL
Stichaeidae: *Stichaeus punctatus*



Black prickleback – Adult, 170 mm TL
Stichaeidae: *Xiphister atropurpureus*



Bay pipefish – Adult, ~290 mm TL
Syngnathidae: *Syngnathus leptorhynchus*



Pacific sandfish – Juvenile, 90 mm FL
Trichodontidae: *Trichodon trichodon*

Prowfish – Juvenile, 106 mm TL
Zaproridae: *Zaprora silenus*

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Table 1. -- Number of locations, sample sites, beach seine hauls, and total catch of nearshore, marine fishes by region in Alaska from 1998 to 2011. See Figure 1 for regions and sample sites.

Region	Locations	Sites	Hauls	Catch
Arctic	2	31	81	20,803
Aleutian Islands	6	70	70	84,118
Bristol Bay	1	8	8	6,775
Southcentral	5	22	23	2,858
Prince William Sound	13	50	133	61,423
Southeast - Northern Outside	17	127	164	89,687
Southeast - Northern Inside	27	153	382	399,648
Southeast - Southern Outside	12	60	114	39,772
Southeast - Southern Inside	10	34	34	13,261
Total	93	555	1,009	718,345

Table 2. -- Total catch and percent frequency of occurrence (FO) category by fish taxa for all regions of Alaska combined; FO also shown for each individual region. Fish were captured with a beach seine from 1998 to 2011. Categorical FO: A = abundant (≥ 50% of seine hauls), C = common (25-49%), O = occasional (10-24%), U = uncommon (5-9%), R = rare (< 5%). Blanks indicate a species was not captured. Regions: AR = Arctic, BB = Bristol Bay, SC = Southcentral, PWS = Prince William Sound, SENO and SENI = Southeast northern outside and inside, SESO and SESI = Southeast southern outside and inside. *Major or potential (Arctic) target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. See Figure 1 for regions. The Appendix lists spatial and temporal information on fish catch by region and habitat type.

				Region								
Common name	Scientific name	Catch	Alaska	AR	AI	BB	SC	PWS	SENO	SENI	SESO	SESI
Walleye pollock*	*Theragra chalcogramma*	124,524	O				O	O	U	O	R	U
Pacific sand lance	*Ammodytes hexapterus*	121,089	O	C	F		O	U	O	O	O	O
Pacific herring	*Clupea pallasii*	106,451	O			F	O	C	O	O	O	U
Pink salmon*	*Oncorhynchus gorbuscha*	89,556	C	R	F	C	C	C	C	C	C	O
Chum salmon*	*Oncorhynchus keta*	76,385	C		R	O	O	O	C	C	C	C
Shiner perch	*Cymatogaster aggregata*	29,000	O						C	R	F	F
Juvenile cod	Gadidae	22,438	O	C	C		O	R	U	U	U	
Pacific sandfish	*Trichodon trichodon*	21,943	U		C		R		R	U		R
Capelin	*Mallotus villosus*	21,770	U	F				U		R		
Saffron cod*	*Eleginus gracilis*	17,492	U	O			F	C				
Crescent gunnel	*Pholis laeta*	12,222	F		R		C	F	F	F	F	F
Pacific cod*	*Gadus macrocephalus*	8,522	O		R		F	O	O	O	O	O
Threespine stickleback	*Gasterosteus aculeatus*	8,179	O	R	R	F	O	O	O	O	F	C
Bay pipefish	*Syngnathus leptorhynchus*	8,054	C					F	C	O	F	C
Tubesnout	*Aulorhynchus flavidus*	7,614	O				R	C	O	O	O	C
Snake prickleback	*Lumpenus sagitta*	5,885	O		U		O	O	O	O	C	C
Rainbow smelt	*Osmerus mordax*	5,117	R			F						
Juvenile sculpin	Cottidae	4,705	C	F	F	O	O	O	O	C	O	O
Coho salmon*	*Oncorhynchus kisutch*	3,100	O		U		C	U	O	C	C	C

Table 2. -- (Cont.).

Common name	Scientific name	Catch	Alaska	Region								
				AR	AI	BB	SC	PWS	SENO	SENI	SESO	SESI
Tubenose poacher	*Pallasina barbata*	2,644	O			C	R		O	O	R	O
Silverspotted sculpin	*Blepsias cirrhosus*	1,867	C		C		O	U	C	C	O	O
Fish larvae	Division Teleostei	1,692	U	O	O		U	R	R	R		
Juvenile greenling	*Hexagrammidae*	1,573	C		O		C	O	F	O	C	O
Myoxocephalus spp.[a]	*Myoxocephalus* spp.	1,390	C	R	C		C	O	O	C	C	C
Pond smelt	*Hypomesus olidus*	1,331	R			F						
Northern sculpin	*Icelinus borealis*	1,265	C					U	C	C	F	F
Pacific staghorn sculpin	*Leptocottus armatus*	1,157	O				R	U	O	C	C	C
Surf smelt	*Hypomesus pretiosus*	932	R				R	R	R	R		O
Copper rockfish	*Sebastes caurinus*	886	O					O	C		F	O
Rock sole*[b]	*Lepidopsetta* spp.	801	O		C		C	R	R	C	U	O
Whitespotted greenling	*Hexagrammos stelleri*	719	O				C	C	O	O	O	O
Juvenile rockfish	Scorpaenidae	667	U				O	U	O	R	O	
Dolly Varden	*Salvelinus malma*	529	O		O		O	R	U	O	O	O
Juvenile flatfish	Pleuronectidae	502	U	R	C		U	R	R	U	R	
Padded sculpin	*Artedius fenestralis*	466	O				R	C	U	U	U	O
Arctic cod*	*Boreogadus saida*	439	R	O								
Masked greenling	*Hexagrammos octogrammus*	360	U		O		C	C	O	R	R	
Buffalo sculpin	*Enophrys bison*	354	O				R	R	U	O	O	C
Lingcod	*Ophiodon elongatus*	336	U					C	U	R	R	
Kelp greenling	*Hexagrammos decagrammus*	303	U		R				C	R	O	U
Arctic shanny	*Stichaeus punctatus*	287	O				R	C		O		U
Starry flounder	*Platichthys stellatus*	261	U		O	F	R	R	R	O	R	U
Sturgeon poacher	*Podothecus accipenserinus*	228	R		R				R	U	R	
Red Irish lord	*Hemilepidotus hemilepidotus*	215	U		U			R	O	R	C	U

Table 2. -- (Cont.).

Common name	Scientific name	Catch	Alaska	Region								
				AR	AI	BB	SC	PWS	SENO	SENI	SESO	SESI
Armorhead sculpin	*Gymnocanthus galeatus*	202	R		R					U		
Black rockfish	*Sebastes melanops*	191	R		U				O		R	
English sole	*Parophrys vetulus*	186	R		R		R		U	R	O	R
Juvenile prickleback	Stichaeidae	174	R	C						R		
Tidepool sculpin	*Oligocottus maculosus*	172	U					C	R	U	R	O
Manacled sculpin	*Synchirus gilli*	167	R		R			O	U	R		R
Rock greenling	*Hexagrammos lagocephalus*	164	U		C		O		O	R	R	
Quillback rockfish	*Sebastes maliger*	148	R					R	O	R	R	
Kelp perch	*Brachyistius frenatus*	125	R						R		C	U
Blackeye goby	*Rhinogobiops nicholsii*	108	R						U		O	U
Yellowfin sole*	*Limanda aspera*	108	R	U			R	R		U		R
Pacific sanddab	*Citharichthys sordidus*	83	R						U	R	U	O
Speckled sanddab	*Citharichthys stigmaeus*	82	R				R	R	R	R	O	R
Juvenile smelt	Osmeridae	79	R				R	R	R	R		
Juvenile snailfish	Liparidae	67	R	O	U		U			R	R	
Penpoint gunnel	*Apodichthys flavidus*	65	R					R	U	R	R	
Dark rockfish	*Sebastes ciliatus*	62	R		R				U	R	R	
Slender eelblenny	*Lumpenus fabricii*	55	R	O				R				
Brown rockfish	*Sebastes auriculatus*	54	R								O	
Juvenile poacher	Agonidae	49	R	O	U	O	R					
Painted greenling	*Oxylebius pictus*	49	R					R	R		O	U
Sockeye salmon*	*Oncorhynchus nerka*	44	R		R	O	O	R	R	R	R	
Arctic sculpin	*Myoxocephalus scorpioides*	40	R	O								
Leister sculpin	*Enophrys lucasi*	40	R					R		U		
Least cisco	*Coregonus sardinella*	39	R	O								
Ninespine stickleback	*Pungitius pungitius*	36	R	U		F	U					

Table 2. -- (Cont.).

Common name	Scientific name	Catch	Alaska	Region								
				AR	AI	BB	SC	PWS	SENO	SENI	SESO	SESI
Blackline prickleback	*Acantholumpenus mackayi*	33	R			F						
Crested sculpin	*Blepsias bilobus*	29	R				R	R		R		
Cutthroat trout	*Oncorhynchus clarkii*	28	R						R	R	R	R
Longfin smelt	*Spirinchus thaleichthys*	27	R				U					
Brown Irish lord	*Hemilepidotus spinosus*	19	R					R	R		R	U
Juvenile Irish lord	*Hemilepidotus* spp.	19	R					R	R	R	R	
Tadpole sculpin	*Psychrolutes paradoxus*	19	R							R		U
Sailfin sculpin	*Nautichthys oculofasciatus*	18	R				R	R	R	R	U	
Smoothhead sculpin	*Artedius lateralis*	17	R					R	R		R	U
Bay goby	*Lepidogobius lepidus*	16	R						R		U	
Pacific tomcod	*Microgadus proximus*	16	R				O	R				
Scalyhead sculpin	*Artedius harringtoni*	15	R					U	R	R	R	
Pacific spiny lumpsucker	*Eumicrotremus orbis*	13	R					R		R		
Roughback sculpin	*Chitonotus pugetensis*	13	R								R	
Tidepool snailfish	*Liparis florae*	13	R							R	R	R
Longhead dab	*Limanda proboscidea*	12	R	U								
Arctic flounder	*Pleuronectes glacialis*	11	R	R		C						
Sand sole	*Psettichthys melanostictus*	10	R				R			R		
Slender cockscomb	*Anoplarchus insignis*	10	R					R		R	R	
Steelhead trout	*Oncorhynchus mykiss*	10	R						R	R	R	
Chinook salmon*	*Oncorhynchus tshawytscha*	9	R				R		R	R	R	
Cabezon	*Scorpaenichthys marmoratus*	8	R									R
Antlered sculpin	*Enophrys diceraus*	7	R							R		
Showy snailfish	*Liparis pulchellus*	7	R							R		
Alaska plaice*	*Pleuronectes quadrituberculatus*	6	R	R	R	O				R		
Belligerent sculpin	*Megalocottus platycephalus*	6	R			C						

Table 2. -- (Cont.).

Common name	Scientific name	Catch	Alaska	Region								
				AR	AI	BB	SC	PWS	SENO	SENI	SESO	SESI
Eulachon	*Thaleichthys pacificus*	6	R							R		
Fourhorn sculpin	*Myoxocephalus quadricornis*	6	R	U								
Juvenile gunnel	Pholidae	6	R					R	R	R		R
Juvenile lumpsucker	Cyclopteridae	6	R					R		R		
Northern ronquil	*Ronquilus jordani*	6	R					R		R		
Unidentified cisco	*Coregonus* spp.	6	R	U								
Arctic staghorn sculpin	*Gymnocanthus tricuspis*	5	R	U								
C-O sole	*Pleuronichthys coenosus*	5	R						R		R	
Fluffy sculpin	*Oligocottus snyderi*	5	R						R		R	
Plain sculpin	*Myoxocephalus jaok*	5	R	R		C		R				
Alaskan ronquil	*Bathymaster caeruleofasciatus*	4	R								R	U
Black prickleback	*Xiphister atropurpureus*	4	R					R		R		
Juvenile ronquil	Bathymasteridae	4	R							R		
Juvenile salmon*	*Oncorhynchus* spp.	4	R			O	R		R			
Northern spearnose poacher	*Agonopsis vulsa*	4	R								R	R
Arctic cisco	*Coregonus autumnalis*	3	R	R								
Spotted snailfish	*Liparis callyodon*	3	R				U					
Yellowtail rockfish	*Sebastes flavidus*	3	R								R	
Arctic lamprey	*Lampetra camtschatica*	2	R			C						
Brightbelly sculpin	*Microcottus sellaris*	2	R					R				
Butter sole	*Isopsetta isolepis*	2	R							R		
Searcher	*Bathymaster signatus*	2	R					R				
Soft sculpin	*Psychrolutes sigalutes*	2	R							R		
Variegated snailfish	*Liparis gibbus*	2	R	R								
Veteran poacher	*Podothecus veternus*	2	R	R								
Atlantic poacher	*Leptagonus decagonus*	1	R	R								

Table 2. -- (Cont.).

Common name	Scientific name	Catch	Alaska	Region								
				AR	AI	BB	SC	PWS	SENO	SENI	SESO	SESI
Bering poacher	*Occella dodecaedron*	1	R			O						
Bocaccio	*Sebastes paucispinis*	1	R								R	
China rockfish	*Sebastes nebulosus*	1	R						R			
Dover sole*	*Microstomus pacificus*	1	R						R			
Fourline snakeblenny	*Eumesogrammus praecisus*	1	R	R								
Juvenile clingfish	Gobiescocidae	1	R							R		
Juvenile trout	*Oncorhynchus* spp.	1	R							R		
Kelp clingfish	*Rimicola muscarum*	1	R						R			
Prowfish	*Zaprora silenus*	1	R				R					
Pygmy poacher	*Odontopyxis trispinosa*	1	R						R			
Ribbon snailfish	*Liparis cyclopus*	1	R							R		
Sablefish*	*Anoplopoma fimbria*	1	R								R	
Saddleback sculpin	*Oligocottus rimensis*	1	R						R			
Smallmouth ronquil	*Bathymaster leurolepis*	1	R					R				
Wolf-eel	*Anarrhichthys ocellatus*	1	R						R			
Total		718,435										

Table 3. -- Mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa for all of Alaska (AK) and by region. Fish were captured with a beach seine from 1998 to 2011. Subscript = number of seine hauls. Blanks indicate a species was not captured. Regions: AR = Arctic, BB = Bristol Bay, SC = Southcentral, PWS = Prince William Sound, SENO and SENI = Southeast northern outside and inside, SESO and SESI = Southeast southern outside and inside. *Major or potential (Arctic) target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. See Figure 1 for regions. The Appendix lists spatial and temporal information on fish catch by region and habitat type.

			Region															
	$AK_{1,009}$		AR_{81}		AI_{70}		BB_{8}		SC_{23}		PWS_{133}		$SENO_{164}$		$SENI_{382}$		$SESO_{114}$		$SESI_{34}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Walleye pollock*	123.4	11							13.4	13	3.2	12	1.3	5	323.0	21	0.5	3	4.1	9
Pacific sand lance	120.0	23	23.5	48	506.4	60			8.8	13	1.2	8	42.0	20	186.4	18	45.4	23	2.8	18
Pacific herring	105.5	19					21.9	88	34.2	17	186.3	35	125.0	23	142.2	19	7.7	19	147.9	9
Pink salmon*	88.8	31	<0.1	1	182.4	51	0.5	25	21.2	39	53.3	32	107.1	33	101.5	30	111.8	40	3.6	24
Chum salmon*	75.7	27			1.4	3	1.1	13	0.2	17	1.3	20	78.8	26	160.5	34	11.6	48	16.2	26
Shiner perch	28.7	18											121.0	45	2.1	1	44.9	68	94.4	71
Juvenile cod	22.2	11	12.1	40	299.1	47			0.2	17	<0.1	<1	0.2	6	1.2	5	0.2	9		
Pacific sandfish	21.7	6			149.7	34			<0.1	4			0.3	1	29.9	9			<0.1	3
Capelin	21.6	6	177.6	51							50.2	7			1.9	3				
Saffron cod*	17.3	9	6.1	11					9.8	61	126.1	49								
Crescent gunnel	12.1	55			0.1	4			2.2	39	7.3	77	7.2	51	16.9	58	24.9	93	22.0	82
Pacific cod*	8.4	17			0.3	1			2.1	52	7.8	21	4.8	18	17.1	24	0.7	10	0.2	12
Threespine stickleback	8.1	22	0.1	2	<0.1	3	0.5	50	2.6	13	1.2	24	0.5	12	9.3	22	30.8	54	23.9	41
Bay pipefish	8.0	27									5.5	52	8.4	41	1.3	10	36.2	69	38.6	41
Tubesnout	7.5	21							0.1	4	7.4	44	4.2	21	14.8	22	1.5	18	4.1	41
Snake prickleback	5.8	20			33.9	6			0.7	13	1.4	20	1.0	13	5.0	22	6.5	46	14.4	41
Rainbow smelt	5.1	<1					639.6	100												
Juvenile sculpin	4.7	27	25.6	64	10.9	50	0.1	13	13.3	13	0.6	24	0.7	20	3.4	26	0.7	14	0.2	12
Coho salmon*	3.1	18			0.9	6			1.3	26	0.1	8	0.7	17	6.7	25	2.3	26	1.6	26

Table 3. -- (Cont.).

	Region																	
	$AK_{1,009}$		AR_{81}		AI_{70}		BB_{8}		SC_{23}		PWS_{133}		$SENO_{164}$		$SENI_{382}$		$SESO_{114}$		$SESI_{34}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Tubenose poacher	2.6	12					0.8	38	<0.1	4			7.5	10	3.5	23	0.5	4	0.5	15
Silverspotted sculpin	1.9	25			2.7	33			0.4	17	0.1	5	1.9	35	3.4	38	0.3	10	0.5	18
Fish larvae	1.7	5	1.0	23	3.0	17			1.4	9	<0.1	2	6.1	2	0.9	3				
Juvenile greenling	1.6	25			0.3	13			2.7	39	1.3	17	4.8	50	1.0	22	1.4	36	0.3	18
Myoxocephalus spp.[a]	1.4	31	0.1	4	0.8	29			0.9	39	0.3	19	0.4	18	2.4	42	1.8	43	2.2	47
Pond smelt	1.3	<1					166.4	100												
Northern sculpin	1.3	27									0.2	8	1.8	29	1.6	35	2.2	54	2.9	53
Pacific staghorn sculpin	1.1	21							<0.1	4	0.1	6	0.5	20	2.0	28	1.9	44	2.6	44
Surf smelt	0.9	2							<0.1	4	<0.1	<1	4.1	3	0.7	2			0.4	18
Copper rockfish	0.9	12									0.2	11	2.3	27			4.1	52	0.4	15
Rock sole*[b]	0.8	15			2.6	31			0.7	26	<0.1	<1	0.1	2	1.4	27	0.2	8	0.7	12
Whitespotted greenling	0.7	17							1.4	39	0.8	30	1.1	20	0.8	15	0.6	23	0.5	18
Juvenile rockfish	0.7	8							0.6	17	0.1	5	2.7	20	0.1	2	1.3	20		
Dolly Varden	0.5	10			1.4	20			0.2	13	0.1	4	0.3	6	0.8	15	0.3	10	0.4	15
Juvenile flatfish	0.5	6	<0.1	1	2.4	29			0.4	9	0.1	2	0.1	2	0.5	8	1.0	3		
Padded sculpin	0.5	11							<0.1	4	0.8	37	0.7	9	0.5	9	0.2	7	0. 6	15
Arctic cod*	0.4	1	5.4	17																
Masked greenling	0.4	9			0.2	10			1.4	35	1.0	27	0.8	16	0.1	2	0.1	3		
Buffalo sculpin	0.4	13							0.1	4	<0.1	3	0.1	7	0.7	20	0.5	22	0.7	32
Lingcod	0.3	7									0.8	31	1.1	9	0.1	4	<0.1	4		
Kelp greenling	0.3	9			<0.1	3							1.3	32	0.1	3	0.6	22	0.1	6
Arctic shanny	0.3	10							0.1	4	1.3	39			0.3	11			0.2	6
Starry flounder	0.3	7			0.3	14	5.4	63	<0.1	4	0.1	3	<0.1	1	0.5	12	<0.1	2	0.1	9
Sturgeon poacher	0.2	3			0.7	4							0.8	4	0.1	5	0.1	<1		
Red Irish lord	0.2	8			0.1	7					0.1	2	0.3	16	0.1	4	1.1	30	0.1	6

Table 3. -- (Cont.).

	Region																	
	$AK_{1,009}$		AR_{81}		AI_{70}		BB_{8}		SC_{23}		PWS_{133}		$SENO_{164}$		$SENI_{382}$		$SESO_{114}$		$SESI_{34}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Armorhead sculpin	0.2	3			<0.1	1									0.5	7				
Black rockfish	0.2	4			0.1	6							1.1	20			0.1	2		
English sole	0.2	3			<0.1	1			0.1	4			0.1	5	<0.1	2	1.2	10	0.6	3
Juvenile prickleback	0.2	2	2.1	27											<0.1	<1				
Tidepool sculpin	0.2	7									0.4	26	0.1	4	0.2	6	0.2	4	0.4	12
Manacled sculpin	0.2	3			0.3	3					0.7	12	0.3	6	<0.1	<1			<0.1	3
Rock greenling	0.2	5			1.2	33			0.2	13			0.5	13	<0.1	<1	<0.1	<1		
Quillback rockfish	0.1	2									<0.1	2	0.8	10	<0.1	<1	<0.1	2		
Kelp perch	0.1	3											<0.1	<1			1.0	28	0.2	6
Blackeye goby	0.1	2											0.3	7			0.5	10	0.1	6
Yellowfin sole*	0.1	3	0.2	9					<0.1	4	<0.1	<1			0.2	7			<0.1	3
Pacific sanddab	0.1	3											0.3	7	<0.1	<1	0.2	9	0.2	18
Speckled sanddab	0.1	3							<0.1	4	<0.1	2	0.1	4	0.1	1	0.3	11	0.2	3
Juvenile smelt	0.1	1							0.1	4	0.1	2	0.4	4	<0.1	2				
Juvenile snailfish	0.1	3	0.3	15	0.3	9			0.5	9					<0.1	1	<0.1	<1		
Penpoint gunnel	0.1	3									0.1	2	0.2	8	<0.1	2	0.1	4		
Dark rockfish	0.1	2			<0.1	1							0.2	6	0.1	2	<0.1	<1		
Slender eelblenny	0.1	<1	0.7	11							<0.1	<1								
Brown rockfish	0.1	1															0.5	10		
Juvenile poacher	<0.1	2	0.5	15	0.1	6	0.1	13	<0.1	4										
Painted greenling	<0.1	2									<0.1	2	<0.1	2			0.3	12	0.1	6
Sockeye salmon*	<0.1	2			<0.1	1	0.1	13	0.2	13	0.1	2	0.1	4	<0.1	1	<0.1	2		
Arctic sculpin	<0.1	1	0.5	16																
Leister sculpin	<0.1	2									<0.1	2			0.1	5				
Least cisco	<0.1	<1	0.5	10																

Table 3. -- (Cont.).

	Region																	
	$AK_{1,009}$		AR_{81}		AI_{70}		BB_{8}		SC_{23}		PWS_{133}		$SENO_{164}$		$SENI_{382}$		$SESO_{114}$		$SESI_{34}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Ninespine stickleback	<0.1	1	0.1	9			2.9	75	0.1	9										
Blackline prickleback	<0.1	<1					4.1	50												
Crested sculpin	<0.1	2							<0.1	4	0.1	2			0.1	4				
Cutthroat trout	<0.1	1											<0.1	<1	<0.1	3	0.1	<1	0.1	3
Longfin smelt	<0.1	<1							1.2	9										
Brown Irish lord	<0.1	<1									<0.1	2	<0.1	1			0.1	3	0.1	6
Juvenile Irish lord	<0.1	<1									<0.1	<1	0.1	4	<0.1	<1	<0.1	<1		
Tadpole sculpin	<0.1	<1													<0.1	<1			0.5	6
Sailfin sculpin	<0.1	2							<0.1	4	<0.1	2	<0.1	<1	<0.1	1	0.1	7		
Smoothhead sculpin	<0.1	<1									<0.1	<1	<0.1	<1			0.1	4	0.2	6
Bay goby	<0.1	<1											<0.1	<1			0.1	6		
Pacific tomcod	<0.1	<1							0.6	13	<0.1	<1								
Scalyhead sculpin	<0.1	1									0.1	5	<0.1	2	<0.1	<1	<0.1	<1		
Pacific spiny lumpsucker	<0.1	<1									<0.1	<1			<0.1	2				
Roughback sculpin	<0.1	<1															0.1	<1		
Tidepool snailfish	<0.1	1													<0.1	2	<0.1	2	<0.1	3
Longhead dab	<0.1	<1	0.2	7																
Arctic flounder	<0.1	<1	<0.1	1			1.3	25												
Sand sole	<0.1	<1							0.1	4					<0.1	<1				
Slender cockscomb	<0.1	<1									0.1	3			<0.1	<1	<0.1	<1		
Steelhead trout	<0.1	<1											<0.1	<1	<0.1	2	<0.1	<1		
Chinook salmon*	<0.1	<1							<0.1	4			<0.1	<1	<0.1	<1	<0.1	2		
Cabezon	<0.1	<1																	0.2	3
Antlered sculpin	<0.1	<1													<0.1	<1				
Showy snailfish	<0.1	<1													<0.1	<1				

Table 3. -- (Cont.).

	Region																	
	$AK_{1,009}$		AR_{81}		AI_{70}		BB_{8}		SC_{23}		PWS_{133}		$SENO_{164}$		$SENI_{382}$		$SESO_{114}$		$SESI_{34}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Alaska plaice*	<0.1	<1	<0.1	1	<0.1	1	0.4	13							<0.1	<1				
Belligerent sculpin	<0.1	<1					0.8	25												
Eulachon	<0.1	<1													<0.1	<1				
Fourhorn sculpin	<0.1	<1	0.1	6																
Juvenile gunnel	<0.1	<1									<0.1	<1	<0.1	1	<0.1	<1			<0.1	3
Juvenile lumpsucker	<0.1	<1									<0.1	2			<0.1	<1				
Northern ronquil	<0.1	<1									<0.1	2			<0.1	<1				
Unidentified cisco	<0.1	<1	0.1	7																
Arctic staghorn sculpin	<0.1	<1	0.1	5																
C-O sole	<0.1	<1											<0.1	1			<0.1	3		
Fluffy sculpin	<0.1	<1											<0.1	1			<0.1	3		
Plain sculpin	<0.1	<1	<0.1	1			0.4	25			<0.1	<1								
Alaskan ronquil	<0.1	<1															<0.1	<1	0.1	6
Black prickleback	<0.1	<1									<0.1	2			<0.1	<1				
Juvenile ronquil	<0.1	<1													<0.1	<1				
Juvenile salmon*	<0.1	<1					0.3	13	<0.1	4			<0.1	<1						
Northern spearnose poacher	<0.1	<1															<0.1	<1	0.1	3
Arctic cisco	<0.1	<1	<0.1	1																
Spotted snailfish	<0.1	<1							0.1	9										
Yellowtail rockfish	<0.1	<1															<0.1	<1		
Arctic lamprey	<0.1	<1					0.3	25												
Brightbelly sculpin	<0.1	<1									<0.1	<1								
Butter sole	<0.1	<1													<0.1	<1				
Searcher	<0.1	<1									<0.1	2								
Soft sculpin	<0.1	<1													<0.1	<1				

Table 3. -- (Cont.).

			Region									
	$AK_{1,009}$		AR_{81}		AI_{70}		BB_{8}		SC_{23}		PWS_{133}		$SENO_{164}$		$SENI_{382}$		$SESO_{114}$		$SESI_{34}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Variegated snailfish	<0.1	<1	<0.1	2																
Veteran poacher	<0.1	<1	<0.1	1																
Atlantic poacher	<0.1	<1	<0.1	1																
Bering poacher	<0.1	<1					0.1	13												
Bocaccio	<0.1	<1															<0.1	<1		
China rockfish	<0.1	<1											<0.1	<1						
Dover sole*	<0.1	<1											<0.1	<1						
Fourline snakeblenny	<0.1	<1	<0.1	1																
Juvenile clingfish	<0.1	<1													<0.1	<1				
Juvenile trout	<0.1	<1													<0.1	<1				
Kelp clingfish	<0.1	<1											<0.1	<1						
Prowfish	<0.1	<1							<0.1	4										
Pygmy poacher	<0.1	<1											<0.1	<1						
Ribbon snailfish	<0.1	<1													<0.1	<1				
Sablefish*	<0.1	<1															<0.1	<1		
Saddleback sculpin	<0.1	<1											<0.1	<1						
Smallmouth ronquil	<0.1	<1									<0.1	<1								
Wolf-eel	<0.1	<1											<0.1	<1						
Catch	718,345		20,803		84,118		6,775		2,858		61,423		89,687		399,648		39,772		13,261	
Number of species	121		23		27		17		42		54		62		67		62		47	
Mean CPUE	712		257		1,202		847		124		462		547		1,046		349		390	

Table 4. -- Mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type for all of Alaska. Fish were captured with a beach seine from 1998 to 2011. Subscript = number of seine hauls. Blanks indicate a species was not captured. *Major or potential (Arctic) target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. The Appendix lists spatial and temporal information on fish catch by region in Alaska and habitat type.

	Habitat type							
	$Bedrock_{195}$		$Eelgrass_{295}$		$Kelp_{274}$		$Sand_{245}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Walleye pollock*	160.9	9	7.4	15	313.3	16	20.9	2
Pacific sand lance	75.3	13	186.9	16	30.2	21	175.4	40
Pacific herring	180.2	19	113.4	19	93.8	23	49.6	15
Pink salmon*	145.8	30	66.6	34	75.6	34	84.8	24
Chum salmon*	66.4	17	190.2	40	21.0	29	6.4	16
Shiner perch	4.8	10	84.4	34	8.8	17	3.1	4
Juvenile cod	2.1	6	1.3	9	74.5	10	5.1	18
Pacific sandfish	58.4	9	<0.1	1	37.1	9	1.6	6
Capelin	1.2	3	<0.1	<1	24.6	4	60.4	18
Saffron cod*	0.3	3	55.7	13	1.6	10	2.3	7
Crescent gunnel	0.7	26	34.3	94	5.0	59	2.4	26
Pacific cod*	9.0	13	10.3	24	7.2	24	7.2	5
Threespine stickleback	1.1	4	24.5	53	0.3	13	2.6	9
Bay pipefish	0.2	6	25.6	66	1.0	18	0.7	6
Tubesnout	0.5	10	23.7	53	1.7	12	0.3	3
Snake prickleback	<0.1	<1	9.9	53	9.1	9	1.9	9
Rainbow smelt							20.9	3
Juvenile sculpin	0.2	7	3.7	29	3.4	30	10.8	38
Coho salmon*	0.5	8	7.4	30	2.1	19	1.0	11
Tubenose poacher	0.1	3	8.7	29	0.2	6	0.1	4
Silverspotted sculpin	0.8	21	3.7	41	1.9	30	0.4	5
Fish larvae	2.3	5	<0.1	1	4.1	4	0.5	11
Juvenile greenling	0.3	12	3.5	47	1.2	24	0.6	11
Myoxocephalus spp.[a]	<0.1	4	3.2	54	0.7	27	1.0	31
Pond smelt							5.4	3
Northern sculpin	0.2	10	3.0	48	0.8	28	0.5	14
Pacific staghorn sculpin	<0.1	2	3.5	54	0.1	6	0.3	13
Surf smelt			2.4	4	0.8	3	<0.1	<1

Table 4. -- (Cont.).

	Habitat type							
	$Bedrock_{195}$		$Eelgrass_{295}$		$Kelp_{274}$		$Sand_{245}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Copper rockfish	0.4	7	2.0	21	0.7	17	<0.1	1
Rock sole*[b]	<0.1	<1	0.7	17	0.4	9	2.0	30
Whitespotted greenling	0.1	7	1.7	31	0.5	21	0.2	4
Juvenile rockfish	1.4	10	1.0	13	0.4	6	<0.1	1
Dolly Varden	0.1	2	0.5	10	0.4	14	1.1	13
Juvenile flatfish	<0.1	1	0.6	6	0.2	3	1.1	13
Padded sculpin	0.1	5	1.0	20	0.5	13	0.1	4
Arctic cod*							1.8	6
Masked greenling	<0.1	3	0.9	15	0.3	12	<0.1	2
Buffalo sculpin	<0.1	2	0.6	16	0.3	15	0.3	14
Lingcod	<0.1	2	0.9	13	0.2	9	<0.1	2
Kelp greenling	0.1	6	0.7	14	0.3	13	0.1	2
Arctic shanny	<0.1	3	0.6	12	0.3	17	0.1	4
Starry flounder			0.3	12	<0.1	1	1.0	13
Sturgeon poacher			0.5	5	<0.1	1	0.3	4
Red Irish lord	<0.1	1	0.5	17	0.2	9	<0.1	2
Armorhead sculpin			<0.1	1	<0.1	2	0.7	7
Black rockfish	0.2	7	0.5	7	<0.1	2		
English sole			0.6	7	<0.1	<1	<0.1	3
Juvenile prickleback			<0.1	<1			0.7	9
Tidepool sculpin	0.1	5	0.3	14	0.2	5	<0.1	2
Manacled sculpin	0.1	4	0.2	3	0.2	5	<0.1	<1
Rock greenling	<0.1	4	0.2	4	0.3	10	<0.1	2
Quillback rockfish	0.3	2	0.1	3	0.2	3		
Kelp perch	0.1	3	0.1	3	0.3	7	<0.1	<1
Blackeye goby	<0.1	3	<0.1	1	0.2	5	0.1	<1
Yellowfin sole*			0.3	7	<0.1	1	0.1	4
Pacific sanddab	<0.1	1	0.1	6	<0.1	<1	0.1	2
Speckled sanddab			0.2	7	<0.1	1	0.1	2
Juvenile smelt	0.3	2	<0.1	1	<0.1	<1	0.1	2
Juvenile snailfish	<0.1	1	<0.1	1	0.1	3	0.1	5
Penpoint gunnel	<0.1	<1	0.2	7	<0.1	2	<0.1	<1
Dark rockfish	0.1	3	0.1	2	0.1	3	<0.1	<1
Slender eelblenny			<0.1	<1			0.2	4
Brown rockfish			0.2	2	<0.1	1		
Juvenile poacher							0.2	7

Table 4. -- (Cont.).

	Habitat type							
	Bedrock$_{195}$		Eelgrass$_{295}$		Kelp$_{274}$		Sand$_{245}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Painted greenling	<0.1	2	<0.1	1	0.1	5		
Sockeye salmon*	<0.1	2	0.1	2	<0.1	1	0.1	3
Arctic sculpin							0.2	5
Leister sculpin	<0.1	1	<0.1	<1	0.1	4	<0.1	2
Least cisco							0.2	3
Ninespine stickleback							0.1	6
Blackline prickleback							0.1	2
Crested sculpin	<0.1	2	<0.1	2	<0.1	3	<0.1	<1
Cutthroat trout	<0.1	<1	0.1	3	<0.1	1	<0.1	<1
Longfin smelt							0.1	<1
Brown Irish lord			<0.1	1	<0.1	2		
Juvenile Irish lord			0.1	3			<0.1	<1
Tadpole sculpin			0.1	<1			<0.1	<1
Sailfin sculpin	<0.1	<1	<0.1	1	<0.1	4		
Smoothhead sculpin	<0.1	2	<0.1	<1	<0.1	1		
Bay goby			<0.1	<1	<0.1	2	<0.1	<1
Pacific tomcod			<0.1	<1	<0.1	<1	<0.1	<1
Pacific spiny lumpsucker			<0.1	<1	<0.1	3		
Roughback sculpin			<0.1	<1				
Scalyhead sculpin	<0.1	1	<0.1	2	<0.1	1		
Tidepool snailfish			<0.1	2	<0.1	1	<0.1	<1
Longhead dab							<0.1	2
Arctic flounder							<0.1	1
Sand sole							<0.1	1
Slender cockscomb			<0.1	<1	<0.1	1	<0.1	<1
Steelhead trout			<0.1	1	<0.1	1	<0.1	<1
Cabezon					<0.1	<1		
Chinook salmon*	<0.1	<1	<0.1	<1	<0.1	<1	<0.1	<1
Antlered sculpin					<0.1	<1	<0.1	<1
Showy snailfish			<0.1	<1				
Alaska plaice*			<0.1	<1			<0.1	1
Belligerent sculpin							<0.1	<1
Eulachon					<0.1	<1		
Fourhorn sculpin							<0.1	2
Juvenile gunnel	<0.1	1	<0.1	<1	<0.1	<1	<0.1	<1
Juvenile lumpsucker	<0.1	<1	<0.1	<1	<0.1	<1		

Table 4. -- (Cont.).

	Habitat type							
	$Bedrock_{195}$		$Eelgrass_{295}$		$Kelp_{274}$		$Sand_{245}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Northern ronquil					<0.1	1		
Unidentified cisco							<0.1	2
Arctic staghorn sculpin							<0.1	2
C-O sole			<0.1	1	<0.1	<1		
Fluffy sculpin	<0.1	1	<0.1	<1	<0.1	<1		
Plain sculpin							<0.1	2
Alaskan ronquil			<0.1	<1	<0.1	<1		
Black prickleback			<0.1	<1	<0.1	<1		
Juvenile ronquil					<0.1	<1		
Juvenile salmon*			<0.1	<1	<0.1	<1	<0.1	<1
Northern spearnose poacher			<0.1	<1	<0.1	<1		
Arctic cisco							<0.1	<1
Spotted snailfish			<0.1	<1			<0.1	<1
Yellowtail rockfish					<0.1	<1		
Arctic lamprey							<0.1	<1
Brightbelly sculpin							<0.1	<1
Butter sole			<0.1	<1				
Searcher					<0.1	<1		
Soft sculpin			<0.1	<1				
Variegated snailfish							<0.1	<1
Veteran poacher							<0.1	<1
Atlantic poacher							<0.1	<1
Bering poacher							<0.1	<1
Bocaccio			<0.1	<1				
China rockfish					<0.1	<1		
Dover sole*			<0.1	<1				
Fourline snakeblenny							<0.1	<1
Juvenile clingfish	<0.1	<1						
Juvenile trout					<0.1	<1		
Kelp clingfish	<0.1	<1						
Prowfish							<0.1	<1
Pygmy poacher			<0.1	<1				
Ribbon snailfish							<0.1	<1
Sablefish*			<0.1	<1				
Saddleback sculpin	<0.1	<1						

Table 4. -- (Cont.).

	Habitat type							
	Bedrock$_{195}$		Eelgrass$_{295}$		Kelp$_{274}$		Sand$_{245}$	
Common name	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO
Smallmouth ronquil					<0.1	<1		
Wolf-eel	<0.1	<1						
Catch	139,453		262,521		199,312		117,059	
Number of species	57		83		79		87	
Mean CPUE	715		890		727		478	

Table 5. -- Total catch by species, number measured (n), mean length in millimeters (fork length (FL) or total length (TL) depending on species), standard deviation (SD), range, and the proportion (%) of each species estimated to be mature. Fish were captured with a beach seine in Alaska from 1998 to 2011. Percent mature is based on estimated size at first maturity from FishBase (www.fishbase.org). *Major or potential (Arctic) target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole.

		Length				
Common name	Catch	n	Mean	SD	Range	%
Walleye pollock*	124,524	2,517	58.9 TL	24.9	25-242	0
Pacific sand lance	121,089	3,324	90.9 FL	29.5	24-190	17
Pacific herring	106,451	3,126	56.8 FL	29.9	24-212	0
Pink salmon*	89,556	4,472	52.2 FL	16.0	23-123	0
Chum salmon*	76,385	3,856	64.5 FL	16.6	31-125	0
Shiner perch	29,000	2,662	90.6 FL	26.4	40-170	8
Pacific sandfish	21,943	815	56.2 FL	28.4	16-150	0
Capelin	21,770	1,305	57.6 FL	17.4	27-160	3
Saffron cod*	17,492	2,316	118.3 TL	62.1	22-365	<1
Crescent gunnel	12,222	275	124.3 TL	34.8	22-240	17
Pacific cod*	8,522	2,089	71.3 TL	29.0	21-270	0
Threespine stickleback	8,179	478	42.5 TL	21.6	11-93	37
Bay pipefish	8,054	592	171.4 TL	50.1	53-315	29
Tubesnout	7,614	1,151	97.5 TL	43.4	13-261	35
Snake prickleback	5,885	522	152.8 TL	85.9	37-420	7
Rainbow smelt	5,117	319	53.6 FL	26.8	20-270	<1
Coho salmon*	3,100	1,349	96.3 FL	22.0	32-191	0
Tubenose poacher	2,644	287	61.1 TL	19.3	25-155	5
Silverspotted sculpin	1,867	226	57.8 TL	31.2	19-165	7
Myoxocephalus spp.[a]	1,390	519	121.4 TL	113.2	17-485	13
Pond smelt	1,331	202	77.4 FL	13.1	32-111	0
Northern sculpin	1,265	59	87.8 TL	28.9	29-179	80
Pacific staghorn sculpin	1,157	253	193.3 TL	60.2	64-349	13
Surf smelt	932	326	94.6 FL	32.6	39-183	0
Copper rockfish	886	710	88.4 TL	37.3	19-235	0
Rock sole*[b]	801	539	124.7 TL	99.2	30-522	8
Whitespotted greenling	719	591	110.3 TL	71.6	48-360	3
Dolly Varden	529	420	224.5 FL	79.4	100-535	3
Padded sculpin	466	429	73.3 TL	19.7	18-133	13

Table 5. -- (Cont.).

Common name	Catch	Length n	Mean	SD	Range	%
Arctic cod*	439	139	40.1 FL	11.5	25-83	0
Masked greenling	360	231	140.6 TL	78.5	51-480	6
Buffalo sculpin	354	78	78.7 TL	49.6	13-220	0
Lingcod	336	196	115.2 TL	54.5	27-405	0
Kelp greenling	303	170	142.3 TL	86.8	49-500	3
Arctic shanny	287	161	88.2 TL	22.5	25-134	48
Starry flounder	261	188	207.8 TL	122.1	17-560	2
Sturgeon poacher	228	20	67.0 TL	46.6	25-196	5
Red Irish lord	215	46	120.4 TL	85.6	31-378	7
Armorhead sculpin	202	47	82.1 TL	15.9	48-151	0
Black rockfish	191	183	123.3 TL	35.8	42-329	0
English sole	186	80	89.0 TL	40.4	36-212	0
Tidepool sculpin	172	128	52.3 TL	11.7	24-96	11
Manacled sculpin	167	67	31.4 TL	10.6	7-55	4
Rock greenling	164	135	214.1 TL	102.5	44-495	16
Quillback rockfish	148	118	63.5 TL	35.5	17-195	0
Kelp perch	125	78	93.8 FL	34.2	43-181	13
Blackeye goby	108	22	79.5 TL	15.3	45-106	9
Yellowfin sole*	108	76	108.0 TL	37.1	60-285	1
Pacific sanddab	83	48	80.0 TL	31.0	35-160	0
Speckled sanddab	82	76	93.1 TL	28.4	35-163	30
Penpoint gunnel	65	26	119.1 TL	88.5	32-300	12
Dark rockfish	62	60	94.2 TL	33.9	58-280	0
Slender eelblenny	55	51	49.3 TL	26.8	35-232	2
Brown rockfish	54	53	111.4 TL	35.8	55-200	0
Painted greenling	49	24	85.1 TL	38.9	27-211	4
Sockeye salmon*	44	32	79.7 FL	78.9	29-498	3
Arctic sculpin	40	40	97.7 TL	41.9	18-221	8
Leister sculpin	40	21	131.6 TL	53.9	56-235	43
Least cisco	39	39	288.8 FL	28.8	229-341	100
Ninespine stickleback	36	35	46.9 TL	14.0	26-78	11
Blackline prickleback	33	32	61.6 TL	34.5	34-165	0
Crested sculpin	29	11	140.3 TL	27.3	88-190	27
Cutthroat trout	28	25	207.4 FL	46.0	139-306	0
Longfin smelt	27	27	107.0 FL	26.1	63-155	37

Table 5. -- (Cont.).

Common name	Catch	Length n	Mean	SD	Range	%
Brown Irish lord	19	19	96.4 TL	45.3	35-199	5
Tadpole sculpin	19	0				
Sailfin sculpin	18	4	96.8 TL	50.8	28-138	50
Smoothhead sculpin	17	14	94.2 TL	19.8	72-133	50
Bay goby	16	6	74.3 TL	19.7	52-100	67
Pacific tomcod	16	16	109.3 TL	53.0	72-235	13
Scalyhead sculpin	15	15	71.0 TL	22.7	42-132	27
Pacific spiny lumpsucker	13	6	26.3 TL	13.6	10-47	0
Roughback sculpin	13	13	85.3 TL	21.2	60-123	0
Tidepool snailfish	13	2	32.0 TL	0.0	32	0
Longhead dab	12	12	66.6 TL	18.9	44-91	0
Arctic flounder	11	11	62.5 TL	16.7	46-110	0
Sand sole	10	2	38.0 TL	5.7	34-42	0
Slender cockscomb	10	6	94.5 TL	19.1	70-117	67
Steelhead trout	10	10	188.3 FL	31.9	149-234	0
Chinook salmon*	9	7	131.9 FL	33.7	77-170	0
Cabezon	8	0				
Antlered sculpin	7	7	112.6 TL	36.9	88-169	0
Showy snailfish	7	0				
Alaska plaice*	6	6	135.2 TL	77.8	69-269	0
Belligerent sculpin	6	6	209.8 TL	46.9	118-247	0
Eulachon	6	6	40.5 FL	2.1	38-44	0
Fourhorn sculpin	6	6	122.2 TL	56.2	60-183	0
Northern ronquil	6	6	116.2 TL	37.0	55-170	0
Arctic staghorn sculpin	5	5	41.6 TL	12.2	30-56	0
C-O sole	5	4	166.5 TL	76.4	98-265	25
Fluffy sculpin	5	0				
Plain sculpin	5	5	225.0 TL	89.5	76-296	0
Alaskan ronquil	4	0				
Black prickleback	4	1	160.0 TL	0.0	160	0
Northern spearnose poacher	4	3	81.0 TL	31.1	54-115	0
Arctic cisco	3	3	83.0 FL	3.6	79-86	0
Spotted snailfish	3	3	77.0 TL	13.9	61-86	33
Yellowtail rockfish	3	2	116.5 TL	2.1	115-118	0
Arctic lamprey	2	2	163.0 TL	2.8	161-165	0

Table 5. -- (Cont.).

Common name	Catch	Length n	Mean	SD	Range	%
Brightbelly sculpin	2	0				
Butter sole	2	0				
Searcher	2	2	92.0 TL	1.4	91-93	0
Soft sculpin	2	2	38.5 TL	17.7	26-51	0
Variegated snailfish	2	2	50.5 TL	27.6	31-70	0
Veteran poacher	2	2	28.0 TL	4.2	25-31	0
Atlantic poacher	1	1	25.0 TL	0.0	25	0
Bering poacher	1	1	104.0 TL	0.0	104	0
Bocaccio	1	1	245.0 TL	0.0	245	0
China rockfish	1	1	80.0 TL	0.0	80	0
Dover sole*	1	1	107.0 TL	0.0	107	0
Fourline snakeblenny	1	1	29.0 TL	0.0	29	0
Kelp clingfish	1	0				
Prowfish	1	1	106.0 TL	0.0	106	0
Pygmy poacher	1	1	71.0 TL	0.0	71	100
Ribbon snailfish	1	1	103.0 TL	0.0	103	100
Sablefish*	1	1	215.0 FL	0.0	215	0
Saddleback sculpin	1	1	47.0 TL	0.0	47	100
Smallmouth ronquil	1	1	123.0 TL	0.0	123	0
Wolf-eel	1	0				0
Total	686,351	38,720				

Table 6. -- Range in surface water temperature and salinity (practical salinity scale, PSS) by region in Alaska where nearshore fishes were captured with a beach seine from 1998 to 2011. Sampling spanned from January to September; most sampling, however, was from June to August. Blank indicates missing data. See Figure 1 for regions.

Region	Temperature (º C)	Salinity (PSS)
Arctic	0.0-11.0	10-35
Aleutian Islands	5.0-10.0	22-33
Bristol Bay	11.0-14.5	
Southcentral	6.0-14.5	5-29
Prince William Sound	1.0-20.0	2-33
Southeast - Northern Outside	6.5-18.0	3-33
Southeast - Northern Inside	2.5-16.0	4-35
Southeast - Southern Outside	6.0-15.5	12-33
Southeast - Southern Inside	8.0-16.0	0-33

Table 7. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Arctic (AR) region of Alaska. Subscript = number of hauls. Page = species page. Fish were captured with a beach seine from 2004 to 2009. *Potential target species in a fisheries management plan. [a]*Myoxocephalus* spp. = shorthorn sculpin. See Figure 4 for the AR region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type		
		$Sand_{81}$		
Common name	Catch	CPUE	FO	Page
Capelin	14,383	177.6	51	109
Juvenile sculpin	2,072	25.6	64	
Pacific sand lance	1,906	23.5	48	47
Juvenile cod*	983	12.1	40	
Saffron cod*	492	6.1	11	84
Arctic cod*	439	5.4	17	83
Juvenile prickleback	173	2.1	27	
Fish larvae	84	1.0	23	
Slender eelblenny	54	0.7	11	152
Juvenile poacher	41	0.5	15	
Arctic sculpin	40	0.5	16	73
Least cisco	39	0.5	10	132
Juvenile snailfish	20	0.3	15	
Yellowfin sole	14	0.2	9	120
Longhead dab	12	0.2	7	121
Ninespine stickleback	11	0.1	9	89
Fourhorn sculpin	6	0.1	6	72
Unidentified cisco	6	0.1	7	
Arctic staghorn sculpin	5	0.1	5	64
Threespine stickleback	5	0.1	2	88
Myoxocephalus spp.[a]	4	0.1	4	74
Arctic cisco	3	<0.1	1	131
Variegated snailfish	2	<0.1	2	105
Veteran poacher	2	<0.1	1	46
Alaska plaice	1	<0.1	1	126
Arctic flounder	1	<0.1	1	125
Atlantic poacher	1	<0.1	1	41
Fourline snakeblenny	1	<0.1	1	151
Juvenile flatfish	1	<0.1	1	

Table 7. -- (Cont.).

		Habitat type		
		$Sand_{81}$		
Common name	Catch	CPUE	FO	Page
Pink salmon	1	<0.1	1	134
Plain sculpin	1	<0.1	1	71
Catch	20,803	20,803		
Number of species	23	23		
Mean CPUE	257	257		

Table 8. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Aleutian Islands (AI) region of Alaska. Subscript = number of hauls. Page = species page. Fish were captured with a beach seine in 2005. Blanks indicate a species was not captured. *Major target species in a fisheries management plan. [a]Rock sole = northern or southern rock sole. [b]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. See Figure 5 for the AI region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type						
		$Bedrock_{10}$		$Kelp_{27}$		$Sand_{33}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	Page
Pacific sand lance	35,451	0.2	20	21.8	33	1,056.4	94	47
Juvenile cod*	20,934	34.0	70	755.1	74	6.3	18	
Pink salmon*	12,770	34.1	30	379.2	63	66.4	48	134
Pacific sandfish	10,478	3.4	30	373.4	48	11.0	24	157
Snake prickleback	2,374			87.0	11	0.8	3	153
Juvenile sculpin	761	1.4	30	12.4	81	12.5	30	
Fish larvae	208	19.7	50	0.3	15	0.1	9	
Silverspotted sculpin	186	2.5	50	6.0	67			94
Rock sole[a]	179			1.0	15	4.6	55	119
Juvenile flatfish	168	0.1	10	1.1	22	4.2	39	
Chum salmon*	100			3.2	4	0.4	3	135
Dolly Varden	99			0.3	15	2.8	30	140
Rock greenling	81	0.4	30	2.8	67	0.1	6	97
Coho salmon*	64			0.3	4	1.7	9	136
Myoxocephalus spp.[b]	55	0.1	10	0.4	19	1.3	42	74
Sturgeon poacher	51					1.6	9	45
Juvenile greenling	24			0.9	30	<0.1	3	
Pacific cod*	23			0.9	4			85
Starry flounder	23			<0.1	4	0.7	27	124
Juvenile snailfish	21	0.1	10	0.7	19			
Manacled sculpin	19	1.9	20					79
Masked greenling	14	0.1	10	0.3	15	0.2	6	98
Red Irish lord	7	0.1	10	0.2	15			65
Black rockfish	6			0.2	15			146
Juvenile poacher	6					0.2	12	
Crescent gunnel	4			0.2	11			117
Sockeye salmon*	3					0.1	3	138
Armorhead sculpin	2			0.1	4			63
Kelp greenling	2	0.1	10	<0.1	4			96

Table 8. -- (Cont.).

		Habitat type						
		$Bedrock_{10}$		$Kelp_{27}$		$Sand_{33}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	Page
Threespine stickleback	2	0.1	10	<0.1	4			88
Alaska plaice*	1					<0.1	3	126
Dark rockfish	1			<0.1	4			143
English sole	1					<0.1	3	123
Catch	84,118	983		44,485		38,650		
Number of species	27	14		22		17		
Mean CPUE	1,202	98		1,648		1,171		

Table 9. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Bristol Bay (BB) region of Alaska. Subscript = number of hauls. Page = species page. Fish were captured with a beach seine in 2009. *Major target species in a fisheries management plan. See Figure 6 for the BB region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type		
		$Sand_8$		
Common name	Catch	CPUE	FO	Page
Rainbow smelt	5,117	639.6	100	110
Pond smelt	1,331	166.4	100	107
Pacific herring	175	21.9	88	55
Starry flounder	43	5.4	63	124
Blackline prickleback	33	4.1	50	149
Ninespine stickleback	23	2.9	75	89
Arctic flounder	10	1.3	25	125
Chum salmon*	9	1.1	13	135
Belligerent sculpin	6	0.8	25	69
Tubenose poacher	6	0.8	38	44
Pink salmon*	4	0.5	25	134
Threespine stickleback	4	0.5	50	88
Alaska plaice*	3	0.4	13	126
Plain sculpin	3	0.4	25	71
Arctic lamprey	2	0.3	25	115
Juvenile salmon*	2	0.3	13	
Bering poacher	1	0.1	13	42
Juvenile poacher	1	0.1	13	
Juvenile sculpin	1	0.1	13	
Sockeye salmon*	1	0.1	13	138
Catch	6,775	6,775		
Number of species	17	17		
Mean CPUE	847	847		

Table 10. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Southcentral (SC) region of Alaska. Subscript = number of hauls. Page = species page. Fish were captured with a beach seine from 2008 to 2010. Blanks indicate a species was not captured. *Major target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. See Figure 7 for the SC region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type								
		$Bedrock_4$		$Eelgrass_1$		$Kelp_8$		$Sand_{10}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Pacific herring	786	0.3	25	3.0	100			78.2	20	55
Pink salmon*	488	22.8	25			47.6	38	1.6	50	134
Walleye pollock*	309					38.6	38			87
Juvenile sculpin	306					37.5	13	0.6	20	
Saffron cod	225			10.0	100	25.1	100	1.4	50	84
Pacific sand lance	202	31.3	25					7.7	20	47
Juvenile greenling	63	4.8	75			5.4	63	0.1	10	
Threespine stickleback	60							6.0	30	88
Crescent gunnel	51	0.5	25	3.0	100	5.8	88			117
Pacific cod*	48	1.3	50	3.0	100	4.1	75	0.7	30	85
Masked greenling	33			18.0	100	1.8	75	0.1	10	98
Whitespotted greenling	32	1.0	25	4.0	100	2.6	63	0.3	20	99
Fish larvae	31	0.8	25					2.8	10	
Coho salmon*	30	5.3	25			0.3	13	0.7	40	136
Longfin smelt	27							2.7	20	111
Myoxocephalus spp.[a]	20			1.0	100	0.6	50	1.4	40	74
Rock sole*[b]	17					1.8	50	0.3	20	119
Snake prickleback	17			13.0	100	0.5	25			153
Pacific tomcod	14			12.0	100	0.1	13	0.1	10	86
Juvenile rockfish	13	0.3	25			1.5	38			
Juvenile snailfish	11	0.3	25			1.3	13			
Juvenile flatfish	9							0.9	20	
Silverspotted sculpin	9	0.5	25			0.9	38			94
Chum salmon*	5	0.3	25			0.1	13	0.3	20	135
Dolly Varden	5					0.4	25	0.2	10	140
Juvenile cod	5					0.5	38	0.1	10	
Rock greenling	4					0.4	25	0.1	10	97
Sockeye salmon*	4							0.4	30	138
Buffalo sculpin	3							0.3	10	60
Juvenile smelt	3							0.3	10	

Table 10. -- (Cont.).

		Habitat type								
		Bedrock$_4$		Eelgrass$_1$		Kelp$_8$		Sand$_{10}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Spotted snailfish	3			1.0	100			0.2	10	102
Tubesnout	3			3.0	100					50
Arctic shanny	2					0.3	13			154
English sole	2			2.0	100					123
Ninespine stickleback	2							0.2	20	89
Sand sole	2							0.2	10	128
Chinook salmon*	1							0.1	10	139
Crested sculpin	1					0.1	13			93
Juvenile poacher	1							0.1	10	
Juvenile salmon*	1					0.1	13			
Pacific sandfish	1	0.3	25							157
Pacific staghorn sculpin	1			1.0	100					68
Padded sculpin	1			1.00	100					56
Prowfish	1							0.1	10	158
Sailfin sculpin	1					0.1	13			95
Speckled sanddab	1							0.1	10	114
Starry flounder	1							0.1	10	124
Surf smelt	1			1.0	100					108
Tubenose poacher	1			1.0	100					44
Yellowfin sole*	1			1.0	100					120
Catch	2,858	277		78		1,419		1,084		
Number of species	42	12		17		21		26		
Mean CPUE	124	69		78		177		108		

Table 11. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Prince William Sound (PWS) region of Alaska. Fish were captured with a beach seine in 1999, 2006, 2007, 2009, and 2010. Subscript = number of hauls. Page = species page. Blanks indicate a species was not captured. *Major target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. See Figure 8 for the PWS region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type								
		$Bedrock_{31}$		$Eelgrass_{50}$		$Kelp_{45}$		$Sand_{7}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Pacific herring	24,780	30.8	29	295.2	22	20.9	47	1160.6	71	55
Saffron cod	16,775	2.0	19	328.5	74	5.1	44	8.1	29	84
Pink salmon*	7,092	72.1	32	21.0	24	83.3	42	8.1	14	134
Capelin	6,670	0.3	10			148.0	13			109
Pacific cod*	1,041	0.4	13	19.1	32	1.6	18			85
Tubesnout	983	0.8	10	14.8	84	4.9	31			50
Crescent gunnel	967	1.0	48	15.3	94	3.6	82	1.3	57	117
Bay pipefish	731	0.3	13	12.9	88	1.8	47			156
Walleye pollock*	423	0.3	6	7.5	24	0.9	4			87
Snake prickleback	188	<0.1	3	3.6	44	0.1	2	0.4	29	153
Chum salmon*	176	0.3	19	0.8	22	2.9	20			135
Arctic shanny	169	0.2	13	2.3	44	0.9	51	1.1	43	154
Juvenile greenling	167	0.1	6	2.7	30	0.6	13			
Pacific sand lance	162	0.1	6	1.9	8	1.5	11			47
Threespine stickleback	156	<0.1	3	2.8	46	0.3	18			88
Masked greenling	133	0.1	6	1.5	40	1.2	31			98
Lingcod	111	0.1	6	1.8	46	0.4	33	0.1	14	100
Padded sculpin	101	0.2	16	0.8	40	1.0	42	1.3	71	56
Whitespotted greenling	101	0.1	10	1.3	40	0.7	36	0.1	14	99
Manacled sculpin	89	0.1	10	1.1	6	0.4	20	1.4	14	79
Juvenile sculpin	75	0.2	10	0.3	22	1.2	31	0.7	57	
Tidepool sculpin	51	0.4	26	0.6	40	0.2	13			75
Myoxocephalus spp.[a]	43			0.6	30	0.2	16	0.6	43	74
Northern sculpin	25			0.4	16	0.1	7			67
Copper rockfish	22	0.2	13	0.1	6	0.3	18			142
Silverspotted sculpin	18			0.3	12	<0.1	2			94
Coho salmon*	16	<0.1	3	0.2	10	0.1	9			136

Table 11. -- (Cont.).

		Habitat type								
		Bedrock$_{31}$		Eelgrass$_{50}$		Kelp$_{45}$		Sand$_{7}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Dolly Varden	13			<0.1	4	<0.1	2	1.4	29	140
Red Irish lord	12			0.2	4	<0.1	2			65
Pacific staghorn sculpin	11			0.1	8	<0.1	2	0.6	43	68
Starry flounder	10			<0.1	2	0.2	4	0.1	14	124
Juvenile flatfish	9							1.3	29	
Juvenile rockfish	9			0.1	10	<0.1	4			
Scalyhead sculpin	7	0.1	6	0.1	4	<0.1	4			57
Crested sculpin	6			0.1	6					93
Juvenile smelt	6							0.9	29	
Penpoint gunnel	6			0.1	4	<0.1	2			116
Slender cockscomb	6			<0.1	2	<0.1	4	0.3	14	150
Sockeye salmon*	6			0.1	4					138
Juvenile lumpsucker	5	0.1	3			0.1	2			
Northern ronquil	5					0.1	4			54
Quillback rockfish	5			<0.1	2	0.1	4			145
Buffalo sculpin	4					0.1	7	0.1	14	60
Black prickleback	3			0.1	4					155
Brown Irish lord	3			<0.1	2	<0.1	4			66
Fish larvae	3							0.4	29	
Leister sculpin	3			<0.1	2	<0.1	2			62
Painted greenling	3					0.1	4			101
Speckled sanddab	3			<0.1	4	<0.1	2			114
Brightbelly sculpin	2							0.3	14	70
Pacific tomcod	2							0.3	14	86
Sailfin sculpin	2					<0.1	4			95
Searcher	2					<0.1	4			53
Surf smelt	2			<0.1	2					108
Juvenile Irish lord	1			<0.1	2					
Juvenile cod	1	<0.1	3							
Juvenile gunnel	1	<0.1	3							
Pacific spiny lumpsucker	1					<0.1	2			80
Plain sculpin	1							0.1	14	71
Rock sole*[b]	1							0.1	14	119
Slender eelblenny	1			<0.1	2					152
Smallmouth ronquil	1					<0.1	2			52

Table 11. -- (Cont.).

		Habitat type								
		$Bedrock_{31}$		$Eelgrass_{50}$		$Kelp_{45}$		$Sand_{7}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Smoothhead sculpin	1	<0.1	3							58
Yellowfin sole*	1			<0.1	2					120
Catch	61,423	3,410		36,936		12,747		8,330		
Number of species	54	25		41		43		21		
Mean CPUE	462	110		739		283		1,190		

Table 12. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Southeast Northern Outside (SENO) region of Alaska. Subscript = number of hauls. Page = species page. Fish were captured with a beach seine in 1998, 1999, 2001 to 2003, 2006, 2008, and 2010. Blanks indicate a species was not captured. *Major target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. See Figure 9 for the SENO region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type								
		$Bedrock_{70}$		$Eelgrass_{57}$		$Kelp_{26}$		$Sand_{11}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Pacific herring	20,497	87.8	20	47.1	23	416.5	31	76.0	27	55
Shiner perch	19,851	9.9	24	307.9	75	38.9	38	54.2	27	82
Pink salmon*	17,563	232.7	30	6.7	44	11.3	19	54.5	27	134
Chum salmon*	12,918	120.9	17	73.1	42	7.2	15	9.6	18	135
Pacific sand lance	6,887	73.6	11	22.3	23	1.0	35	39.8	27	47
Bay pipefish	1,380	0.5	10	23.2	89	0.4	27	0.8	27	156
Tubenose poacher	1,230			21.3	19	0.6	15	0.1	9	44
Crescent gunnel	1,172	0.3	13	18.9	96	2.0	46	1.7	64	117
Fish larvae	1,006	<0.1	1	<0.1	2	38.6	8			
Pacific cod*	789	0.4	3	8.1	32	11.5	35			85
Juvenile greenling	785	0.5	23	9.9	79	4.6	50	5.6	73	
Tubesnout	681	0.8	14	10.0	35	2.0	19			50
Surf smelt	669			11.7	9					108
Juvenile rockfish	443	3.5	20	3.0	28	0.9	8	0.3	9	
Copper rockfish	379	0.8	7	4.8	47	1.6	42	0.5	18	142
Silverspotted sculpin	308	0.2	13	4.6	63	1.0	38	0.6	18	94
Northern sculpin	297	0.1	7	4.8	60	0.4	27	0.4	18	67
Walleye pollock*	216	0.1	3	3.4	7	0.8	8			87
Kelp greenling	212	0.3	14	2.3	40	1.9	62	1.0	36	96
Lingcod	183	<0.1	1	3.0	18	0.3	8	0.1	9	100
Whitespotted greenling	180	<0.1	4	2.9	44	0.4	15			99
Black rockfish	176	0.6	19	2.3	32	0.2	8			146
Snake prickleback	161			2.8	35			0.4	18	153
Quillback rockfish	136	0.9	6	0.6	14	1.4	15			145
Masked greenling	127			2.0	35	0.5	27			98
Sturgeon poacher	125			2.2	12					45
Padded sculpin	121	<0.1	1	2.1	21	<0.1	4			56
Coho salmon*	118	0.4	6	1.4	35	0.4	15			136
Juvenile sculpin	109	0.1	7	1.4	30	0.4	23	1.0	36	

Table 12. -- (Cont.).

		Habitat type								
		Bedrock$_{70}$		Eelgrass$_{57}$		Kelp$_{26}$		Sand$_{11}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Threespine stickleback	89	<0.1	1	1.5	32	<0.1	4			88
Pacific staghorn sculpin	80	<0.1	1	1.2	47	0.1	8	0.6	18	68
Rock greenling	77	0.1	6	1.0	21	0.6	23			97
Myoxocephalus spp.[a]	70	<0.1	1	1.0	40	0.1	4	0.6	45	74
Juvenile smelt	62	0.8	3	<0.1	2	0.2	8	0.3	9	
Manacled sculpin	55	<0.1	3	0.1	5	1.8	19			79
Blackeye goby	54	0.1	7	<0.1	4	0.7	12	2.6	18	92
Dolly Varden	50	0.3	4	0.5	7	0.1	8	0.1	9	140
Pacific sanddab	48	<0.1	1	0.4	12			2.0	27	113
Red Irish lord	47			0.7	35	0.2	12	0.5	27	65
Pacific sandfish	41					1.6	8			157
Juvenile cod*	39			0.7	18					
Dark rockfish	37	0.1	3	0.5	9	0.2	12			143
Penpoint gunnel	34	<0.1	1	0.6	21					116
Buffalo sculpin	21			0.3	18			0.2	18	60
Sockeye salmon*	20	0.1	4	0.2	4	0.2	4			138
Speckled sanddab	20			0.4	11					114
Juvenile Irish lord	16			0.3	9			0.1	9	
English sole	16			0.1	5			0.7	45	123
Rock sole*[b]	16			0.3	5			0.1	9	119
Juvenile flatfish	15	<0.1	1	0.1	4			1.0	9	
Tidepool sculpin	12			0.2	9	0.1	4	0.1	9	75
Starry flounder	7			0.1	2			0.4	9	124
Bay goby	6							0.6	9	91
Painted greenling	4	<0.1	3	<0.1	2	<0.1	4			101
Scalyhead sculpin	4			0.1	5					57
Brown Irish lord	3			<0.1	2	<0.1	4			66
Chinook salmon*	3	<0.1	1							139
Cutthroat trout	3	<0.1	1							133
C-O sole	2			<0.1	4					127
Fluffy sculpin	2	<0.1	3							77
Juvenile gunnel	2	<0.1	1	<0.1	2					
Kelp perch	2					0.1	4			81
Smoothhead sculpin	2	<0.1	1							58
China rockfish	1					<0.1	4			147
Dover sole*	1			<0.1	2					122

Table 12. -- (Cont.).

		Habitat type								
		Bedrock$_{70}$		Eelgrass$_{57}$		Kelp$_{26}$		Sand$_{11}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Juvenile salmon*	1			<0.1	2					
Kelp clingfish	1	<0.1	1							90
Pygmy poacher	1			<0.1	2					43
Saddleback sculpin	1	<0.1	1							76
Sailfin sculpin	1			<0.1	2					95
Steelhead trout	1			<0.1	2					137
Wolf-eel	1	<0.1	1							48
Catch	89,687	37,551		35,003		14,318		2,815		
Number of species	62	40		51		39		27		
Mean CPUE	547	536		614		551		256		

Table 13. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Southeast Northern Inside (SENI) region of Alaska. Fish were captured with a beach seine from 1998 to 2006 and 2008 to 2011. Subscript = number of hauls. Page = species page. Blanks indicate a species was not captured. *Major target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. See Figure 10 for the SENI region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type								
		$Bedrock_{67}$		$Eelgrass_{120}$		$Kelp_{117}$		$Sand_{78}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Walleye pollock*	123,381	468.0	21	13.6	23	728.8	28	65.7	8	87
Pacific sand lance	71,213	87.8	15	439.4	16	59.9	19	71.8	22	47
Chum salmon*	61,304	61.1	16	428.3	47	39.1	35	16.0	29	135
Pacific herring	54,306	418.5	18	131.3	18	75.8	21	21.2	19	55
Pink salmon*	38,773	119.2	19	72.1	37	37.8	29	227.1	28	134
Pacific sandfish	11,422	169.4	21	<0.1	3	0.4	9	0.3	8	157
Pacific cod*	6,532	25.5	25	13.2	24	12.6	29	22.5	13	85
Crescent gunnel	6,437	1.0	31	46.7	89	3.5	49	4.7	45	117
Tubesnout	5,635	0.3	9	45.2	56	1.3	5	0.5	8	50
Threespine stickleback	3,539	0.1	4	29.3	54	0.1	9	0.1	6	88
Coho salmon*	2,556	0.6	10	16.5	41	4.2	23	0.6	15	136
Snake prickleback	1,912			11.9	53	0.7	6	5.3	17	153
Tubenose poacher	1,336	0.2	9	10.7	54	0.2	9	0.2	9	44
Juvenile sculpin	1,301	0.1	4	7.9	39	1.9	26	1.7	23	
Silverspotted sculpin	1,296	1.8	37	6.6	57	2.6	36	1.0	14	94
Myoxocephalus spp.[a]	919	<0.1	4	5.8	71	0.9	32	1.6	47	74
Shiner perch	817			6.8	3					82
Pacific staghorn sculpin	766	<0.1	1	5.9	69	<0.1	3	0.6	24	68
Capelin	717	3.4	4	<0.1	1	0.7	5	5.3	4	109
Northern sculpin	591	0.6	22	2.9	47	1.0	35	1.1	26	67
Rock sole*[b]	541	<0.1	1	1.4	34	0.4	9	4.2	63	119
Bay pipefish	508			3.8	28			0.6	6	156
Juvenile cod*	450	0.9	6	2.8	10	0.1	2	0.6	3	
Juvenile greenling	363	<0.1	3	1.8	39	0.6	19	0.9	17	
Fish larvae	360	3.7	4	<0.1	3	0.9	4	<0.1	1	
Dolly Varden	322	<0.1	1	1.0	18	0.6	19	1.8	17	140
Whitespotted greenling	316	0.2	7	1.8	24	0.5	16	0.4	6	99
Buffalo sculpin	249	0.1	4	1.2	18	0.4	22	0.7	31	60
Surf smelt	247			0.3	3	1.8	3	<0.1	3	108

Table 13. -- (Cont.).

		Habitat type								
		Bedrock$_{67}$		Eelgrass$_{120}$		Kelp$_{117}$		Sand$_{78}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Padded sculpin	204	0.3	3	0.8	15	0.7	9	0.1	6	56
Armorhead sculpin	200			0.1	3	0.1	3	2.3	23	63
Juvenile flatfish	186			0.6	13	0.2	3	1.2	15	
Starry flounder	172			0.7	23	<0.1	1	1.1	21	124
Arctic shanny	111	<0.1	1	0.5	12	0.3	17	0.2	8	154
Yellowfin sole*	91			0.7	16	<0.1	2	0.1	5	120
Tidepool sculpin	79			0.3	10	0.3	4	0.1	6	75
Juvenile rockfish	54	<0.1	1	0.2	4	0.2	2	<0.1	1	
Masked greenling	45	<0.1	3	0.3	2	<0.1	2	<0.1	1	98
Sturgeon poacher	44			0.1	7	0.1	3	0.3	9	45
Leister sculpin	37	<0.1	3	<0.1	1	0.2	9	0.2	8	62
Lingcod	37			0.1	3	0.2	6	0.1	5	100
Red Irish lord	25	<0.1	1	0.1	3	0.1	7	0.1	3	65
Kelp greenling	24			0.1	3	0.1	7	<0.1	1	96
Dark rockfish	23	0.1	6			0.1	3	<0.1	1	143
Crested sculpin	22	0.1	6	<0.1	3	0.1	7	0.1	1	93
Speckled sanddab	19			0.1	3			0.1	3	114
Penpoint gunnel	16			0.1	4	<0.1	2	<0.1	3	116
Cutthroat trout	13			0.1	5	<0.1	3	<0.1	1	133
Juvenile snailfish	13			0.1	3	<0.1	2			
Pacific spiny lumpsucker	12			<0.1	2	0.1	6			80
English sole	10			0.1	6					123
Tidepool snailfish	10			0.1	5	<0.1	1	<0.1	1	104
Juvenile smelt	8	<0.1	1	<0.1	3			<0.1	3	
Sand sole	8							0.1	3	128
Sockeye salmon*	8			<0.1	1	<0.1	1	0.1	4	138
Steelhead trout	8			<0.1	2	<0.1	3	<0.1	1	137
Antlered sculpin	7					<0.1	2	0.1	1	61
Showy snailfish	7			0.1	2					106
Eulachon	6					0.1	1			112
Juvenile ronquil	4					<0.1	1			
Sailfin sculpin	4					<0.1	3			95
Chinook salmon*	3			<0.1	1	<0.1	1			139
Manacled sculpin	3	<0.1	1	<0.1	2					79
Slender cockscomb	3			<0.1	1	<0.1	1	<0.1	1	150
Butter sole	2			<0.1	1					118

Table 13. -- (Cont.).

		Habitat type								
		Bedrock$_{67}$		Eelgrass$_{120}$		Kelp$_{117}$		Sand$_{78}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Juvenile gunnel	2					<0.1	1	<0.1	1	
Pacific sanddab	2	<0.1	1							113
Quillback rockfish	2			<0.1	1	<0.1	1			145
Scalyhead sculpin	2			<0.1	1	<0.1	1			57
Soft sculpin	2			<0.1	2					130
Alaska plaice*	1			<0.1	1					126
Black prickleback	1					<0.1	1			155
Juvenile Irish lord	1			<0.1	1					
Juvenile clingfish	1	<0.1	1							
Juvenile lumpsucker	1			<0.1	1					
Juvenile prickleback	1			<0.1	1					
Juvenile trout	1					<0.1	1			
Northern ronquil	1					<0.1	1			54
Ribbon snailfish	1							<0.1	1	103
Rock greenling	1							<0.1	1	97
Tadpole sculpin	1							<0.1	1	129
Catch	399,648	91,318		157,590		114,633		36,107		
Number of species	67	31		55		52		50		
Mean CPUE	1,046	1,363		1,313		980		463		

Table 14. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Southeast Southern Outside (SESO) region of Alaska. Subscript = number of hauls. Page = species page. Fish were captured with a beach seine from 1998 to 2000 and 2007. Blanks indicate a species was not captured. *Major target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. See Figure 11 for the SESO region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type								
		Bedrock$_9$		Eelgrass$_{54}$		Kelp$_{34}$		Sand$_{17}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Pink salmon*	12,744	164.1	78	176.5	31	45.0	38	11.9	53	134
Pacific sand lance	5,174	390.1	33	19.6	15	14.8	29	6.1	29	47
Shiner perch	5,121	22.2	11	71.1	78	26.9	76	9.8	47	82
Bay pipefish	4,122			70.8	100	5.6	56	6.4	35	156
Threespine stickleback	3,513	23.3	22	50.0	72	1.3	35	32.8	47	88
Crescent gunnel	2,842	0.7	44	39.6	100	14.6	91	12.1	100	117
Chum salmon*	1,321	42.2	33	8.3	46	8.7	53	11.5	53	135
Pacific herring	877	0.1	11	4.8	17	1.2	24	34.0	24	55
Snake prickleback	745			13.1	72	0.8	26	0.7	29	153
Copper rockfish	470	1.8	44	6.0	56	3.9	71	0.1	6	142
Coho salmon*	261	0.7	22	1.5	20	1.3	29	7.5	41	136
Northern sculpin	254			3.2	67	1.4	41	1.8	71	67
Pacific staghorn sculpin	211	0.2	11	3.3	63	0.2	18	1.5	53	68
Myoxocephalus spp.[a]	203	0.2	22	2.0	48	0.8	35	3.7	53	74
Tubesnout	174			2.1	28	0.9	12	1.6	12	50
Juvenile greenling	161			2.0	52	1.4	29	0.3	18	
Juvenile rockfish	148	1.7	33	1.7	20	1.2	24	0.1	6	
English sole	137			2.5	15	<0.1	3	0.1	12	123
Red Irish lord	122			1.9	44	0.6	29			65
Kelp perch	115	0.6	33	0.7	19	2.0	53	0.2	6	81
Juvenile flatfish	114			2.1	4			0.1	6	
Pacific cod*	84			0.3	13	1.9	12			85
Juvenile sculpin	74			0.8	15	0.7	18	0.5	12	
Whitespotted greenling	72	0.1	11	0.8	26	0.7	26	0.2	12	99
Kelp greenling	63			0.9	28	0.4	26	0.1	6	96
Walleye pollock*	57			<0.1	2	1.7	6			87
Buffalo sculpin	55			0.3	20	0.7	21	0.9	41	60
Brown rockfish	54			0.9	13	0.2	12			141
Tubenose poacher	54			1.0	9					44

Table 14. -- (Cont.).

		Habitat type								
		Bedrock$_{9}$		Eelgrass$_{54}$		Kelp$_{34}$		Sand$_{17}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Blackeye goby	52	0.1	11	0.1	4	1.4	24			92
Painted greenling	38	0.3	22	0.1	6	0.9	26			101
Silverspotted sculpin	34			0.5	15	0.3	9			94
Speckled sanddab	32			0.4	15	0.1	6	0.4	18	114
Dolly Varden	28			<0.1	4	0.2	12	1.1	29	140
Juvenile cod*	26			0.4	11	0.1	6	0.3	12	
Pacific sanddab	25			0.2	13			0.7	18	113
Rock sole*[b]	24			0.2	7	0.2	9	0.2	12	119
Padded sculpin	20			0.3	9	0.1	9			56
Tidepool sculpin	17	0.1	11	0.2	4	0.2	6			75
Roughback sculpin	13			0.2	2					59
Bay goby	10			<0.1	2	0.3	18			91
Brown Irish lord	10			0.2	2	0.1	6			66
Sailfin sculpin	10	0.1	11	0.1	6	0.2	12			95
Black rockfish	9			0.2	4					146
Cutthroat trout	9			0.2	2					133
Penpoint gunnel	9			0.1	4	0.1	6			116
Masked greenling	8			0.1	2	<0.1	3	0.1	6	98
Sturgeon poacher	8			0.2	2					45
Smoothhead sculpin	7			0.1	2	0.1	9			58
Lingcod	5	0.1	11	<0.1	4	0.1	6			100
Quillback rockfish	5					0.2	6			145
C-O sole	3			<0.1	4	<0.1	3			127
Fluffy sculpin	3			<0.1	2	0.1	6			77
Yellowtail rockfish	3					0.1	3			144
Alaskan ronquil	2			<0.1	2					51
Chinook salmon*	2					<0.1	3	0.1	6	139
Juvenile snailfish	2					0.1	3			
Scalyhead sculpin	2			<0.1	2					57
Sockeye salmon*	2			<0.1	2	<0.1	3			138
Starry flounder	2			<0.1	4					124
Tidepool snailfish	2					0.1	6			104
Bocaccio	1			<0.1	2					148
Juvenile Irish lord	1			<0.1	2					
Dark rockfish	1					<0.1	3			143
Northern spearnose poacher	1					<0.1	3			40

Table 14. -- (Cont.).

		Habitat type								
		Bedrock$_{9}$		Eelgrass$_{54}$		Kelp$_{34}$		Sand$_{17}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	CPUE	FO	Page
Rock greenling	1					<0.1	3			97
Sablefish*	1			<0.1	2					49
Slender cockscomb	1					<0.1	3			150
Steelhead trout	1					<0.1	3			137
Catch	39,772	5,839		26,545		4,893		2,495		
Number of species	62	18		53		51		27		
Mean CPUE	349	649		492		144		147		

Table 15. -- Total catch, mean catch-per-unit-effort (CPUE, unit = seine haul), and percent frequency of occurrence (FO) by fish taxa and habitat type in the Southeast Southern Inside (SESI) region of Alaska. Subscript = number of hauls. Page = species page. Fish were captured with a beach seine in 2000 and 2007. Blanks indicate a species was not captured. *Major target species in a fisheries management plan. [a]*Myoxocephalus* spp. = frog, great, or shorthorn sculpin. [b]Rock sole = northern or southern rock sole. See Figure 12 for the SESI region map. The Appendix lists spatial and temporal information on fish catch by habitat type.

		Habitat type						
		Bedrock$_4$		Eelgrass$_{13}$		Kelp$_{17}$		
Common name	Catch	CPUE	FO	CPUE	FO	CPUE	FO	Page
Pacific herring	5,030			0.1	8	295.8	12	55
Shiner perch	3,211	11.3	50	206.2	85	28.6	65	82
Bay pipefish	1,313	0.3	25	100.3	85	0.5	12	156
Threespine stickleback	811			61.2	77	0.9	24	88
Crescent gunnel	749	0.3	25	41.9	100	12.0	82	117
Chum salmon*	552	0.3	25	4.7	15	28.8	35	135
Snake prickleback	488			35.2	77	1.8	24	153
Tubesnout	138	0.8	25	9.9	77	0.4	18	50
Walleye pollock*	138					8.1	18	87
Pink salmon*	121	3.5	75	1.1	15	5.5	18	134
Northern sculpin	98			4.8	54	2.1	65	67
Pacific sand lance	94			0.5	23	5.2	18	47
Pacific staghorn sculpin	88			6.1	85	0.5	24	68
Myoxocephalus spp.[a]	76			4.1	69	1.4	41	74
Coho salmon*	55			2.5	31	1.4	29	136
Rock sole*[b]	23			0.1	8	1.3	18	119
Buffalo sculpin	22			0.8	38	0.7	35	60
English sole	20			1.5	8			123
Padded sculpin	19	0.3	25	1.1	23	0.2	6	56
Tadpole sculpin	18			1.4	15			129
Whitespotted greenling	18			0.9	15	0.4	24	99
Tubenose poacher	17			0.5	23	0.7	12	44
Silverspotted sculpin	16			0.5	15	0.6	24	94
Copper rockfish	15			0.2	8	0.8	24	142
Surf smelt	13			0.7	15	0.2	24	108
Tidepool sculpin	13			0.5	23	0.4	6	75
Dolly Varden	12			0.1	8	0.7	24	140
Juvenile greenling	10			0.6	31	0.1	12	

Table 15. -- (Cont.).

Common name	Catch	Habitat type: Bedrock$_4$ CPUE	Bedrock$_4$ FO	Eelgrass$_{13}$ CPUE	Eelgrass$_{13}$ FO	Kelp$_{17}$ CPUE	Kelp$_{17}$ FO	Page
Cabezon	8					0.5	6	78
Kelp perch	8	2.0	50					81
Pacific sanddab	8			0.4	31	0.2	12	113
Smoothhead sculpin	7	0.3	25	0.5	8			58
Speckled sanddab	7			0.5	8			114
Juvenile sculpin	6			0.2	15	0.2	12	
Arctic shanny	5					0.3	12	154
Pacific cod*	5			0.1	8	0.2	18	85
Painted greenling	4					0.2	12	101
Brown Irish lord	3			0.1	8	0.1	6	66
Cutthroat trout	3			0.2	8			133
Northern spearnose poacher	3			0.2	8			40
Starry flounder	3			0.2	23			124
Alaskan ronquil	2			0.1	8	0.1	6	51
Blackeye goby	2					0.1	12	92
Kelp greenling	2			0.1	8	0.1	6	96
Red Irish lord	2			0.2	15			65
Juvenile gunnel	1					0.1	6	
Manacled sculpin	1			0.1	8			79
Pacific sandfish	1					0.1	6	157
Tidepool snailfish	1			0.1	8			104
Yellowfin sole*	1					0.1	6	120
Catch subtotal	13,261	75		6,369		6,817		
Number of species	47	9		39		36		
Mean CPUE	390	19		490		401		

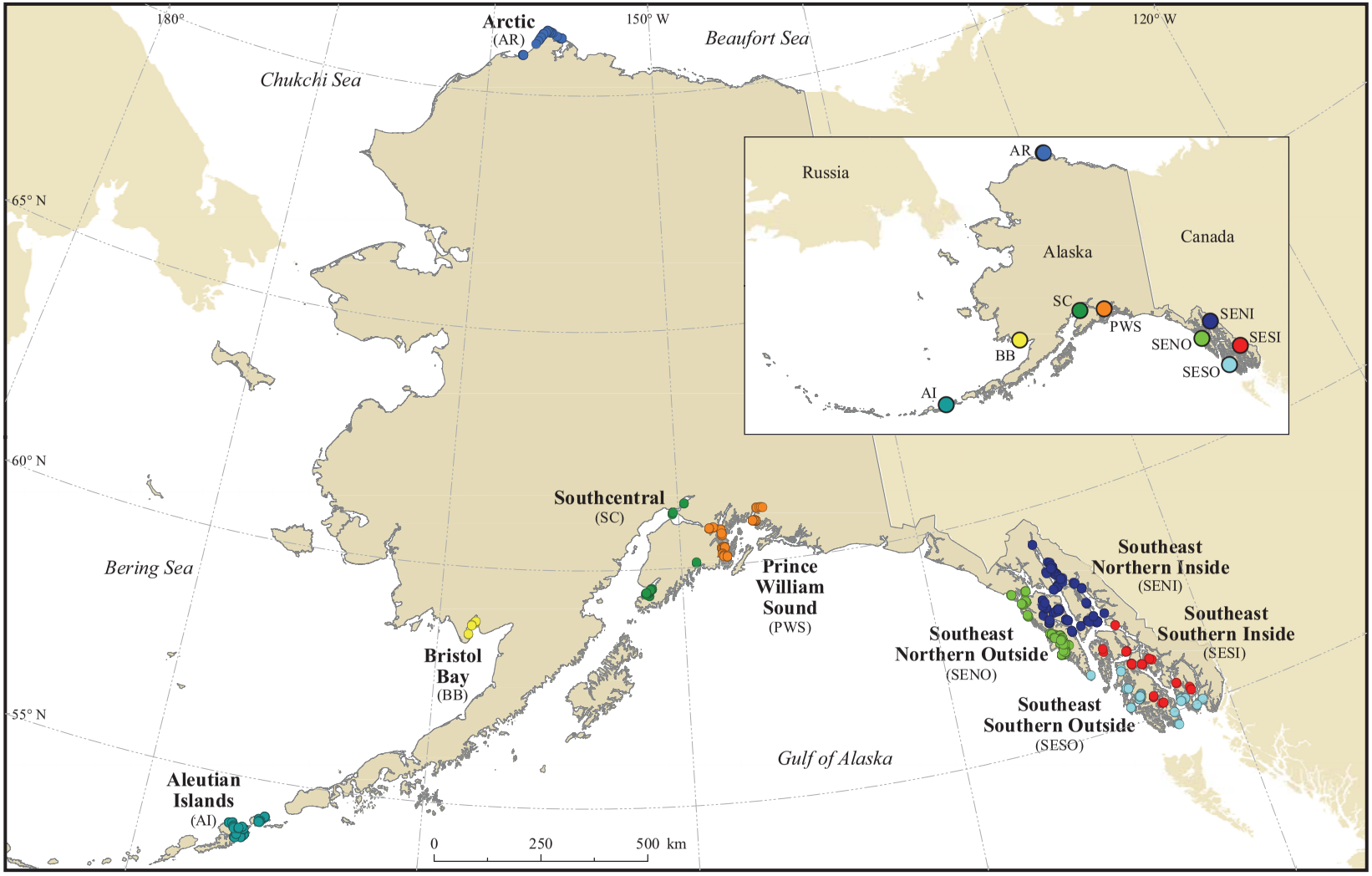

Figure 1. -- Regions and sites sampled for nearshore fishes in Alaska from 1998 to 2011. Fish were sampled with a beach seine in nine regions (inset) encompassing 555 sites (solid circles in full-scale map). See the Appendix for spatial and temporal site information on fish catch by habitat type (i.e., bedrock, eelgrass, kelp, and sand).

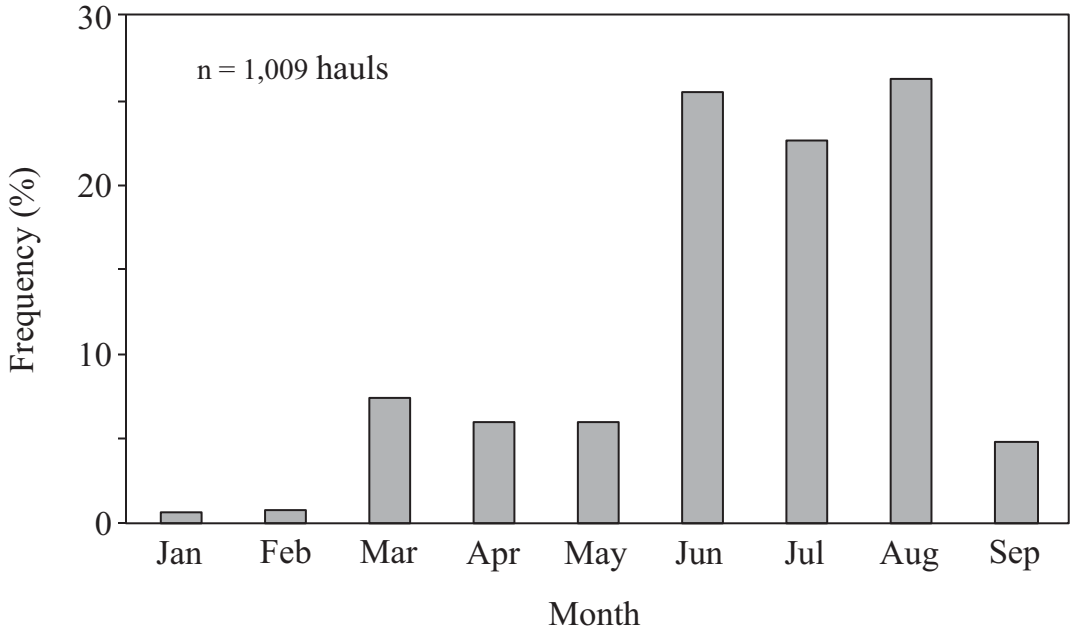

Figure 2. -- Percent frequency of beach seine hauls by month from 1998 to 2011 in nearshore, marine waters of Alaska.

Figure 3. -- Examples of the four habitat types sampled with a beach seine for nearshore, marine fishes in Alaska from 1998 to 2011. Clockwise from upper left: bedrock outcrop, eelgrass meadow, understory kelp bed, and sand or gravel beach.

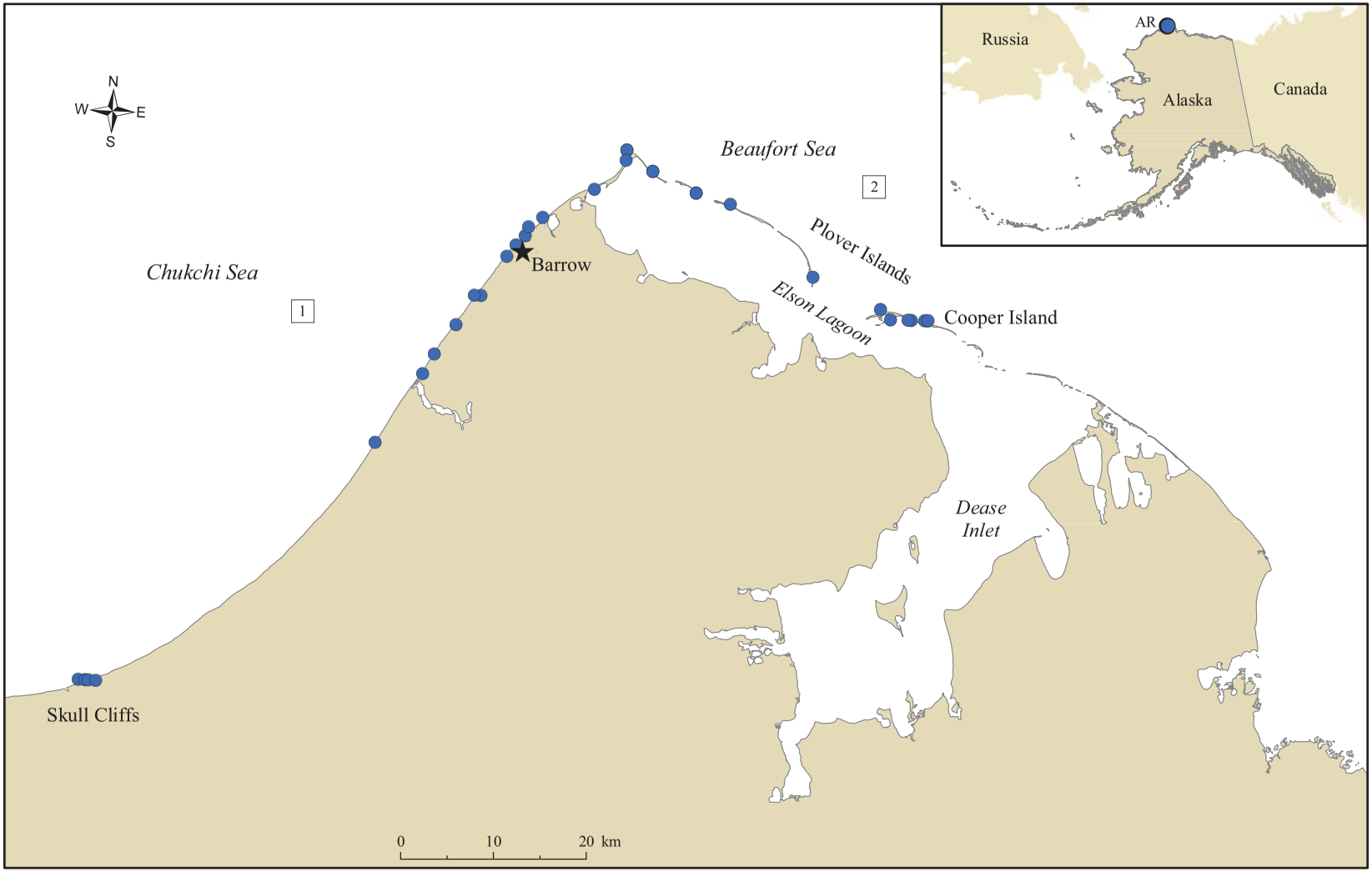

Figure 4. -- Locations and sites sampled for nearshore fishes in the Arctic (AR) region of Alaska from 2004 to 2009. Fish were sampled with a beach seine at two locations (numbered boxes) encompassing 31 sites (solid circles). Sites sampled were all sand beaches. See the Appendix for spatial and temporal site information on fish catch by habitat type.

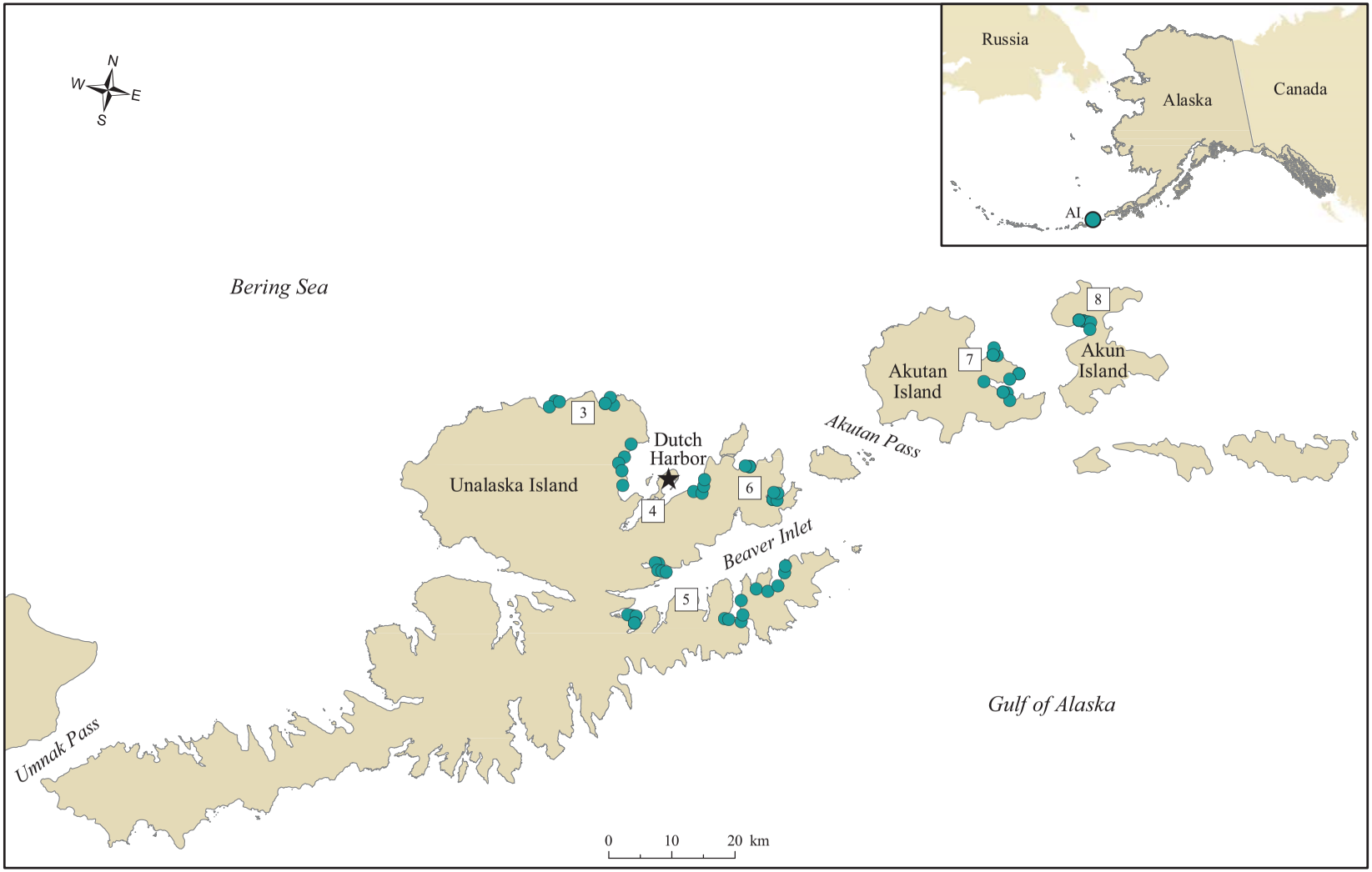

Figure 5. -- Locations and sites sampled for nearshore fishes in the Aleutian Islands (AI) region of Alaska in 2005. Fish were sampled with a beach seine at six locations (numbered boxes) encompassing 70 sites (solid circles). Sites sampled were bedrock, kelp, and sand habitat types. See the Appendix for spatial and temporal site information on fish catch by habitat.

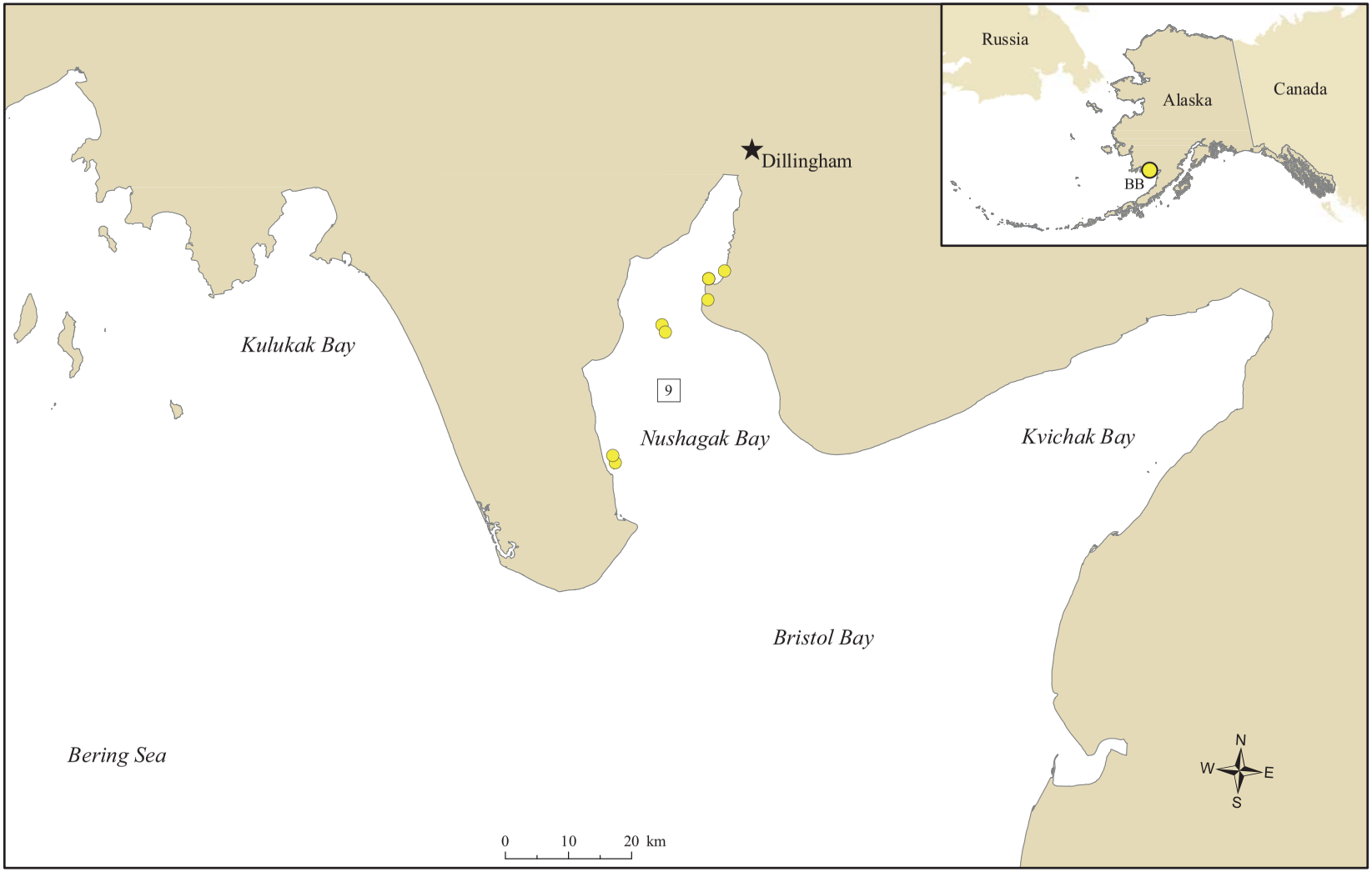

Figure 6. -- Location and sites sampled for nearshore fishes in the Bristol Bay (BB) region of Alaska in 2009. Fish were sampled with a beach seine at one location (numbered box) encompassing eight sites (solid circles). Sites sampled were all sand beaches. See the Appendix for spatial and temporal site information on fish catch by habitat type.

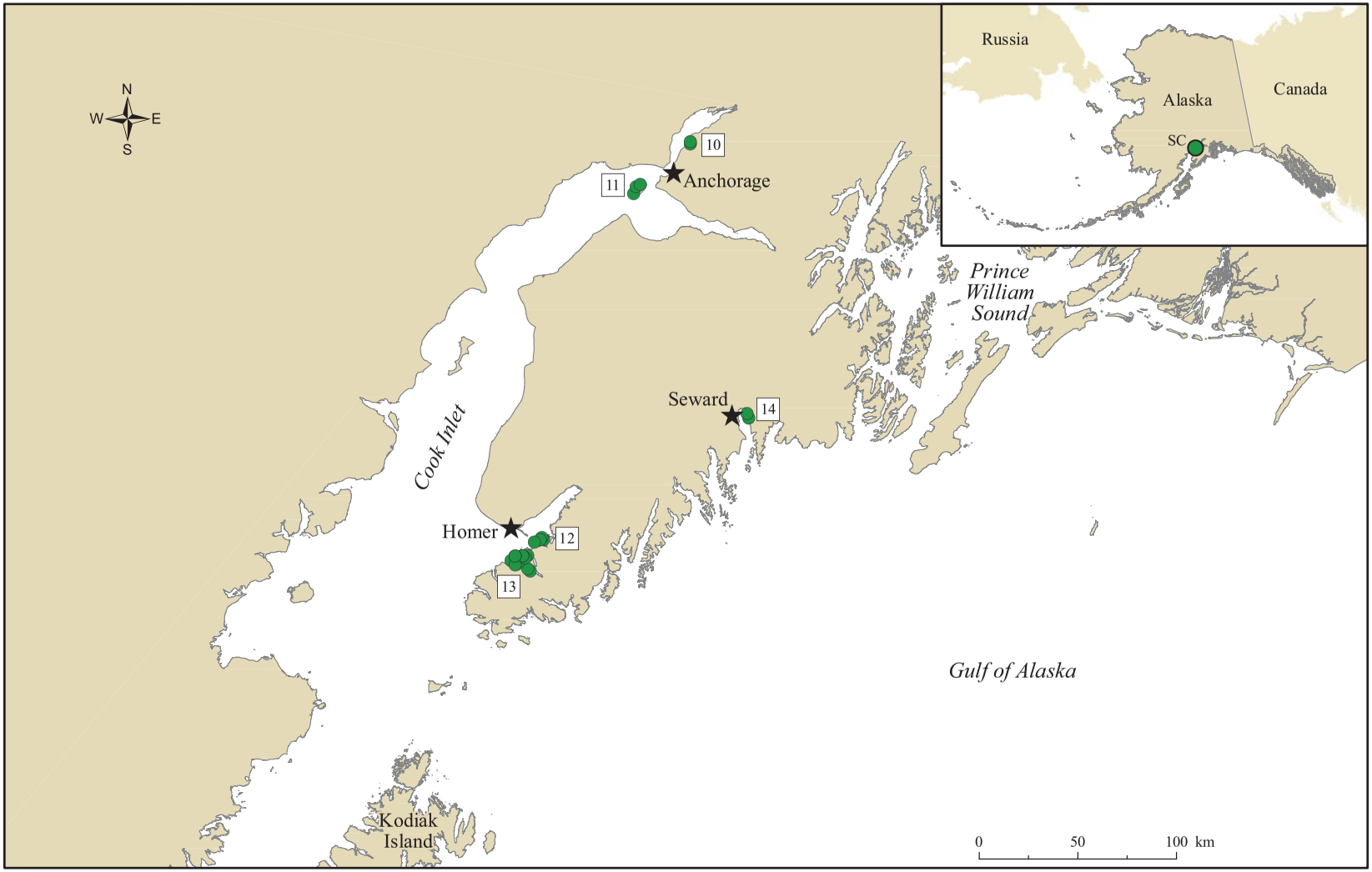

Figure 7. -- Locations and sites sampled for nearshore fishes in the Southcentral (SC) region of Alaska from 2008 to 2010. Fish were sampled with a beach seine at five locations (numbered boxes) encompassing 22 sites (solid circles). Sites sampled were bedrock, eelgrass, kelp, and sand habitat types. See the Appendix for spatial and temporal site information on fish catch by habitat.

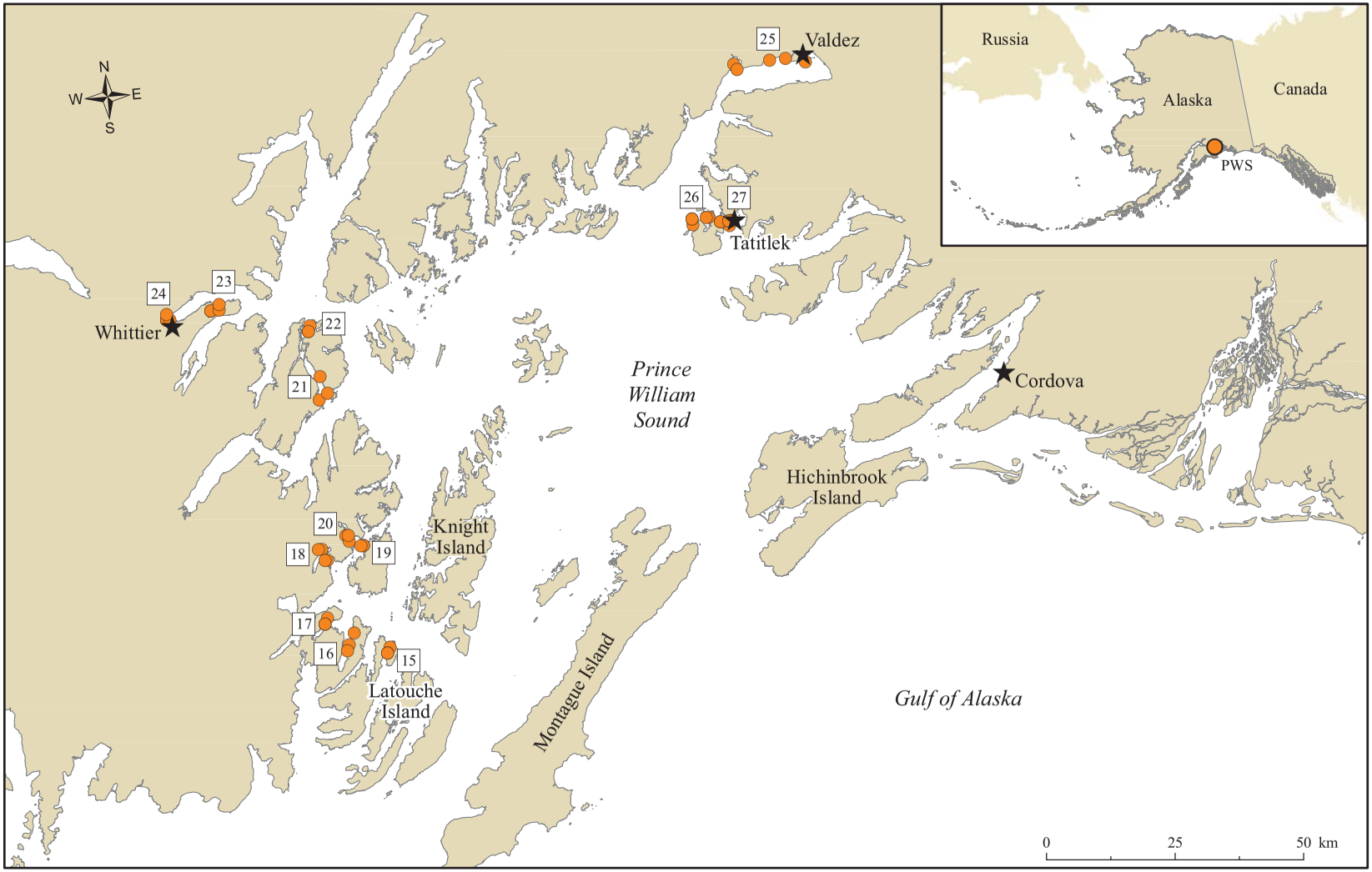

Figure 8. -- Locations and sites sampled for nearshore fishes in the Prince William Sound (PWS) region of Alaska in 1999, 2006, 2007, 2009, and 2010. Fish were sampled with a beach seine at 13 locations (numbered boxes) encompassing 50 sites (solid circles). Sites sampled were bedrock, eelgrass, kelp, and sand habitat types. See the Appendix for spatial and temporal site information on fish catch by habitat.

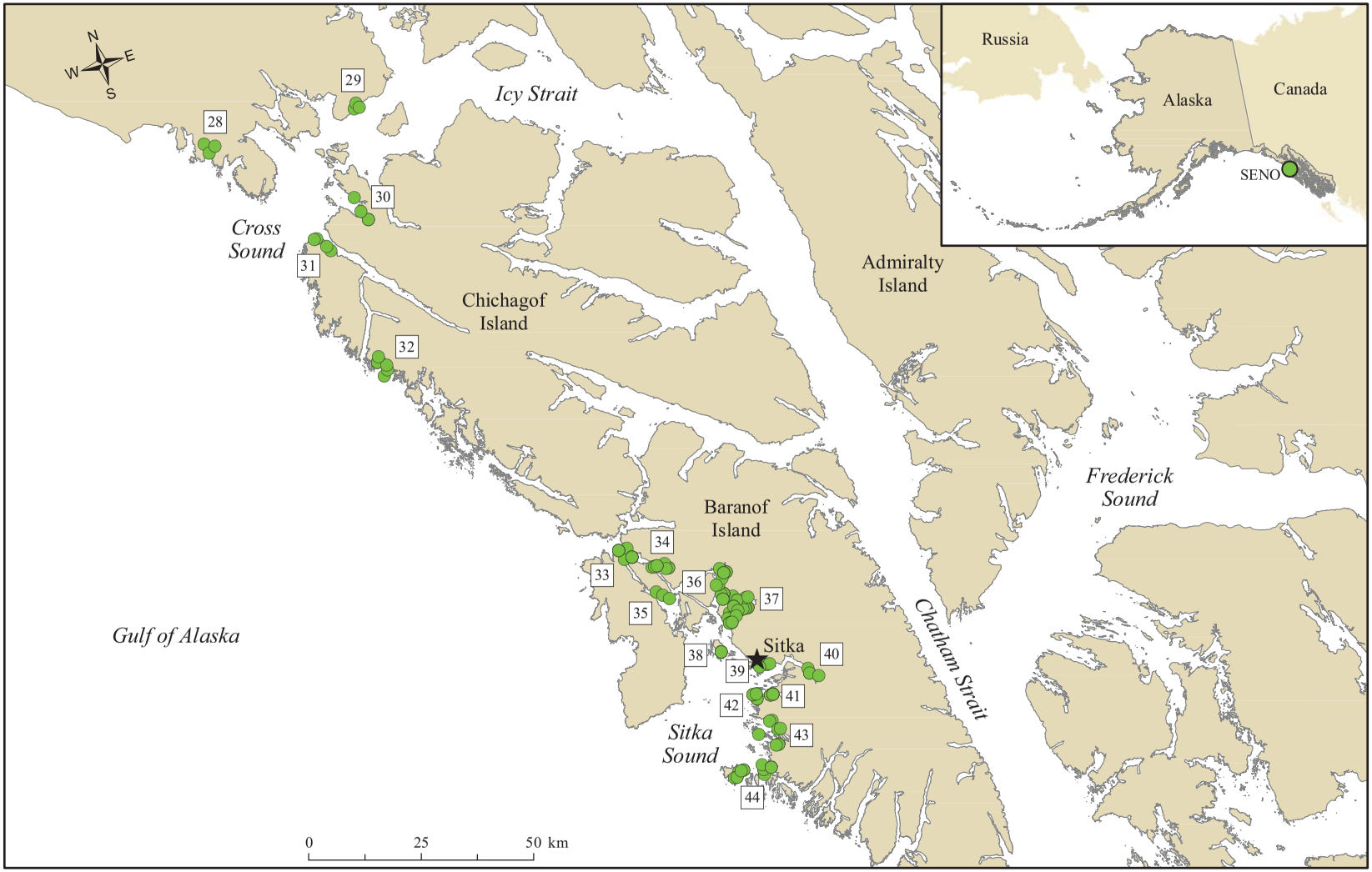

Figure 9. -- Locations and sites sampled for nearshore fishes in the Southeast Northern Outside (SENO) region of Alaska in 1998, 1999, 2001 to 2003, 2006, 2008, and 2010. Fish were sampled with a beach seine at 17 locations (numbered boxes) encompassing 127 sites (solid circles). Sites sampled were bedrock, eelgrass, kelp, and sand habitat types. See the Appendix for spatial and temporal site information on fish catch by habitat.

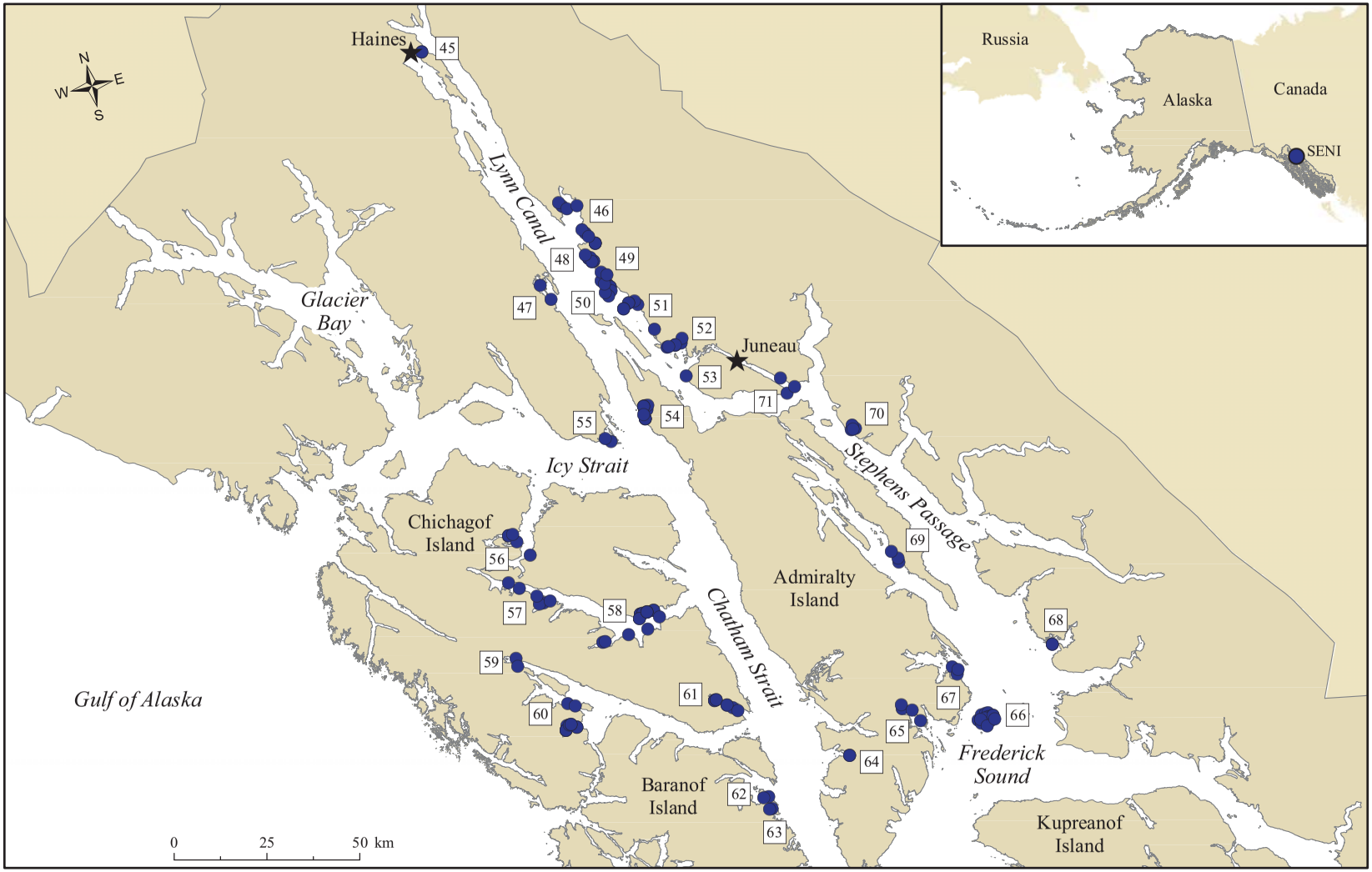

Figure 10. -- Locations and sites sampled for nearshore fishes in the Southeast Northern Inside (SENI) region of Alaska from 1998 to 2006 and 2008 to 2011. Fish were sampled with a beach seine at 27 locations (numbered boxes) encompassing 153 sites (solid circles). Sites sampled were bedrock, eelgrass, kelp, and sand habitat types. See the Appendix for spatial and temporal site information on fish catch by habitat.

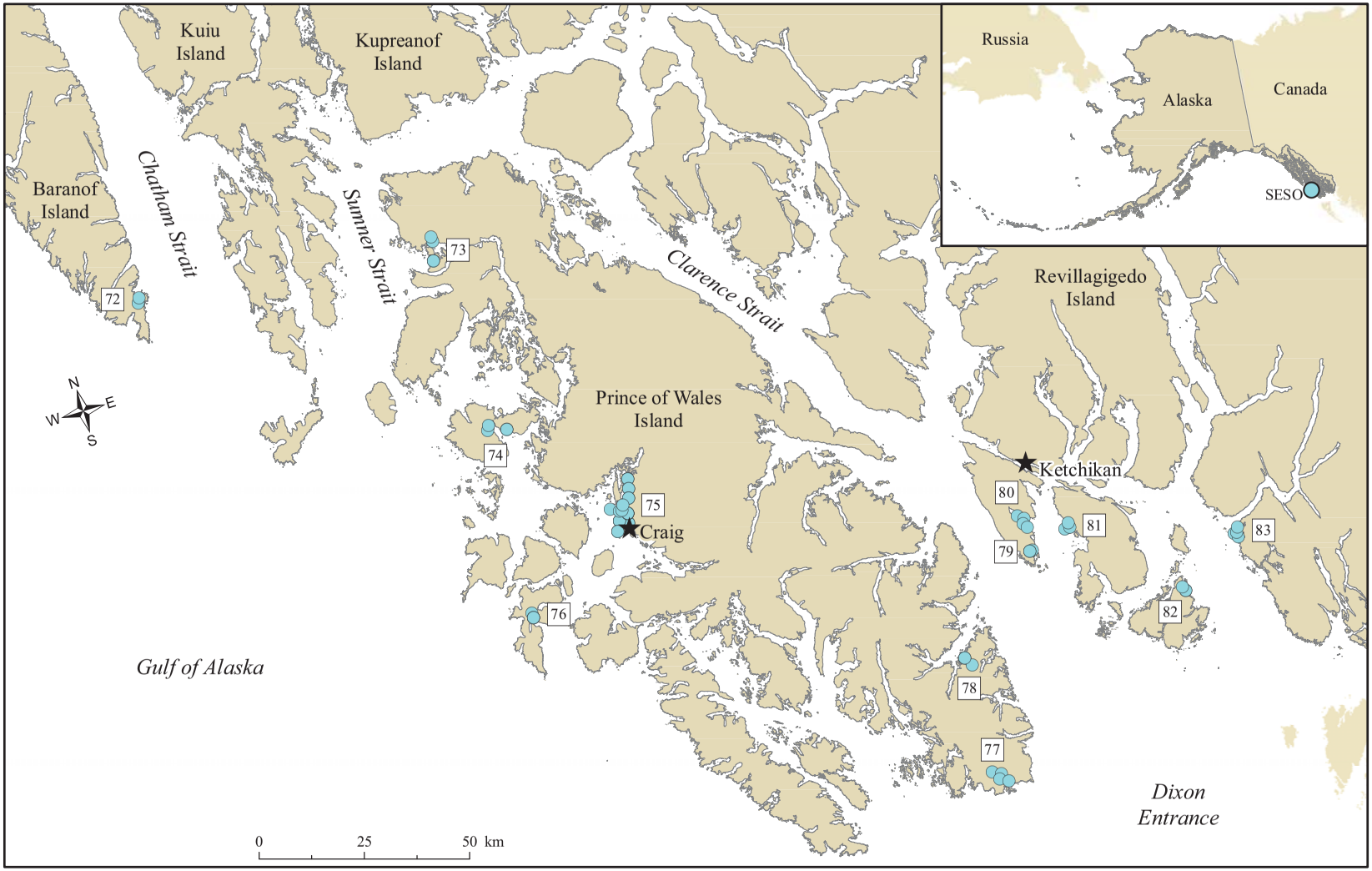

Figure 11. -- Locations and sites sampled for nearshore fishes in the Southeast Southern Outside (SESO) region of Alaska from 1998 to 2000 and 2007. Fish were sampled with a beach seine at 12 locations (numbered boxes) encompassing 60 sites (solid circles). Sites sampled were bedrock, eelgrass, kelp, and sand habitat types. See the Appendix for spatial and temporal site information on fish catch by habitat.

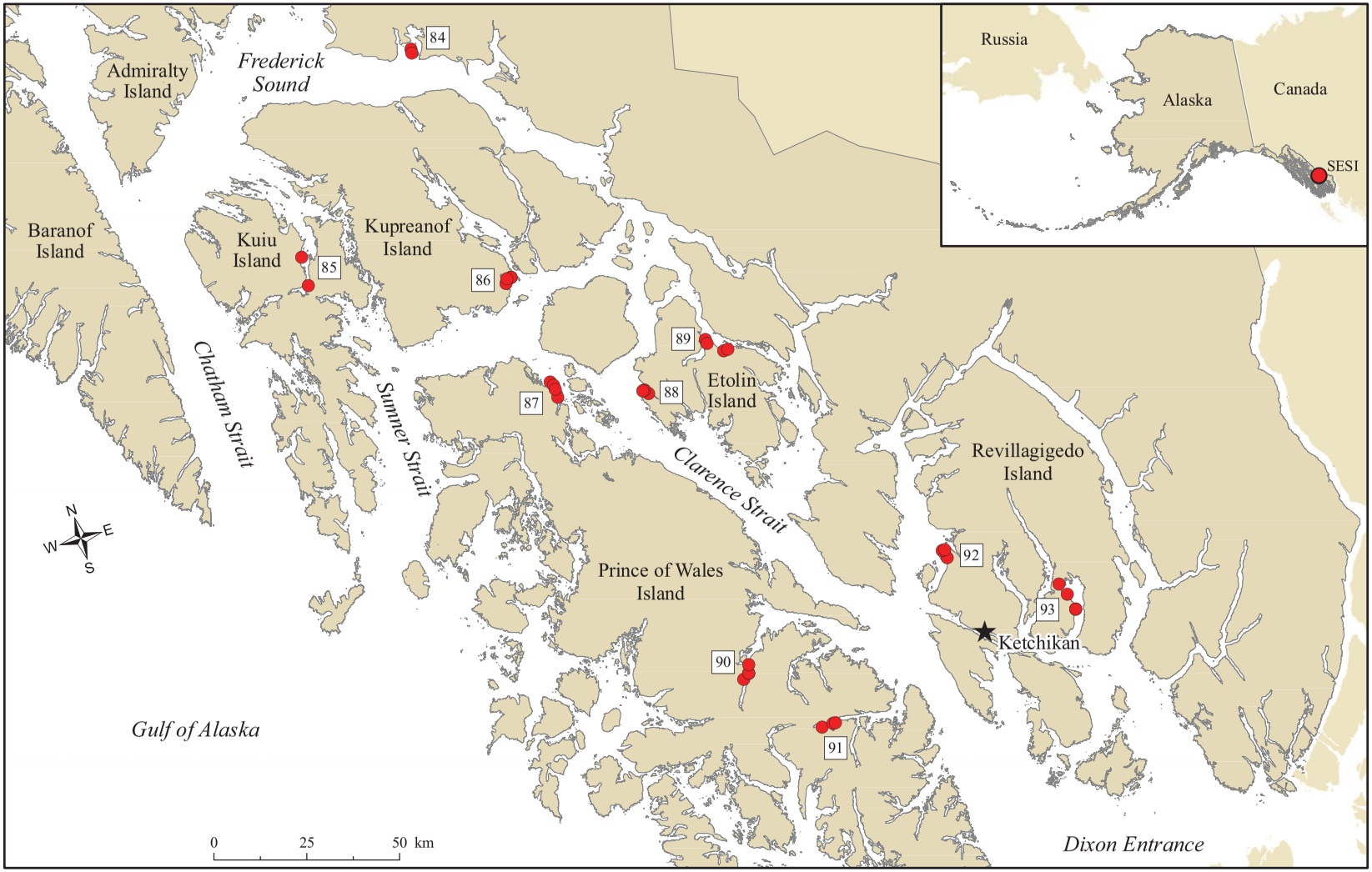

Figure 12. -- Locations and sites sampled for nearshore fishes in the Southeast Southern Inside (SESI) region of Alaska in 2000 and 2007. Fish were sampled with a beach seine at 10 locations (numbered boxes) encompassing 34 sites (solid circles). Sites sampled were bedrock, eelgrass, and kelp habitat types. See the Appendix for spatial and temporal site information on fish catch by habitat.

Figure 13. -- The 37-m long variable mesh beach seine used to sample nearshore fishes in nine regions of Alaska (top), and setting the seine from a small boat in bedrock habitat (bottom).

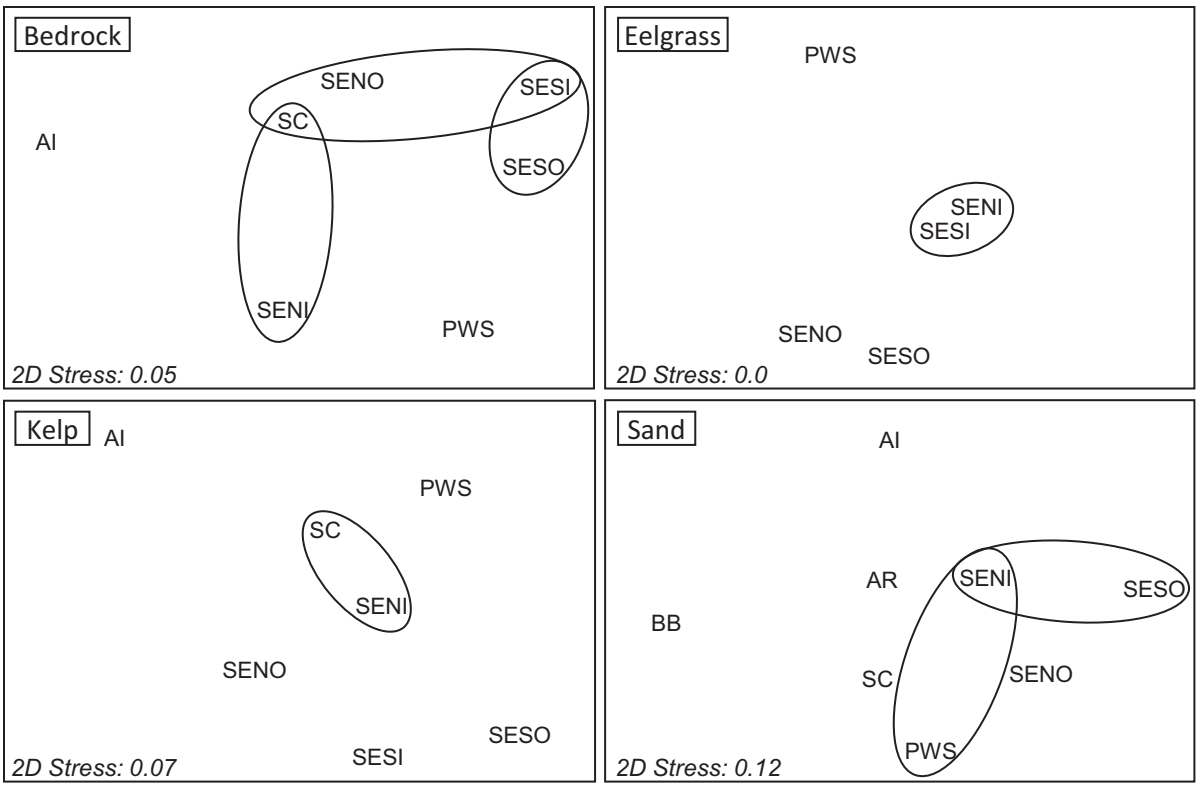

Figure 14. -- Relative similarities of nearshore fish assemblages among seven different regions of Alaska, grouped within four different habitat types. The 2nd stage nMDS plots show the centroid locations (ANOSIM R value) of fish assemblages by region within each habitat type (bedrock, eelgrass, kelp, and sand). The closer each region is to each other in the plot indicates more similarity among regional species assemblages; regions within circles are not significantly different, $P > 0.05$. A stress value < 0.1 corresponds to good 2-D representation of the nMDS ordination. Regions are Aleutian Islands (AI), Southcentral (SC), Prince William Sound (PWS), Southeast northern outside (SENO) and inside (SENI), and Southeast southern outside (SESO) and inside (SESI). See Figure 1 for region boundaries.

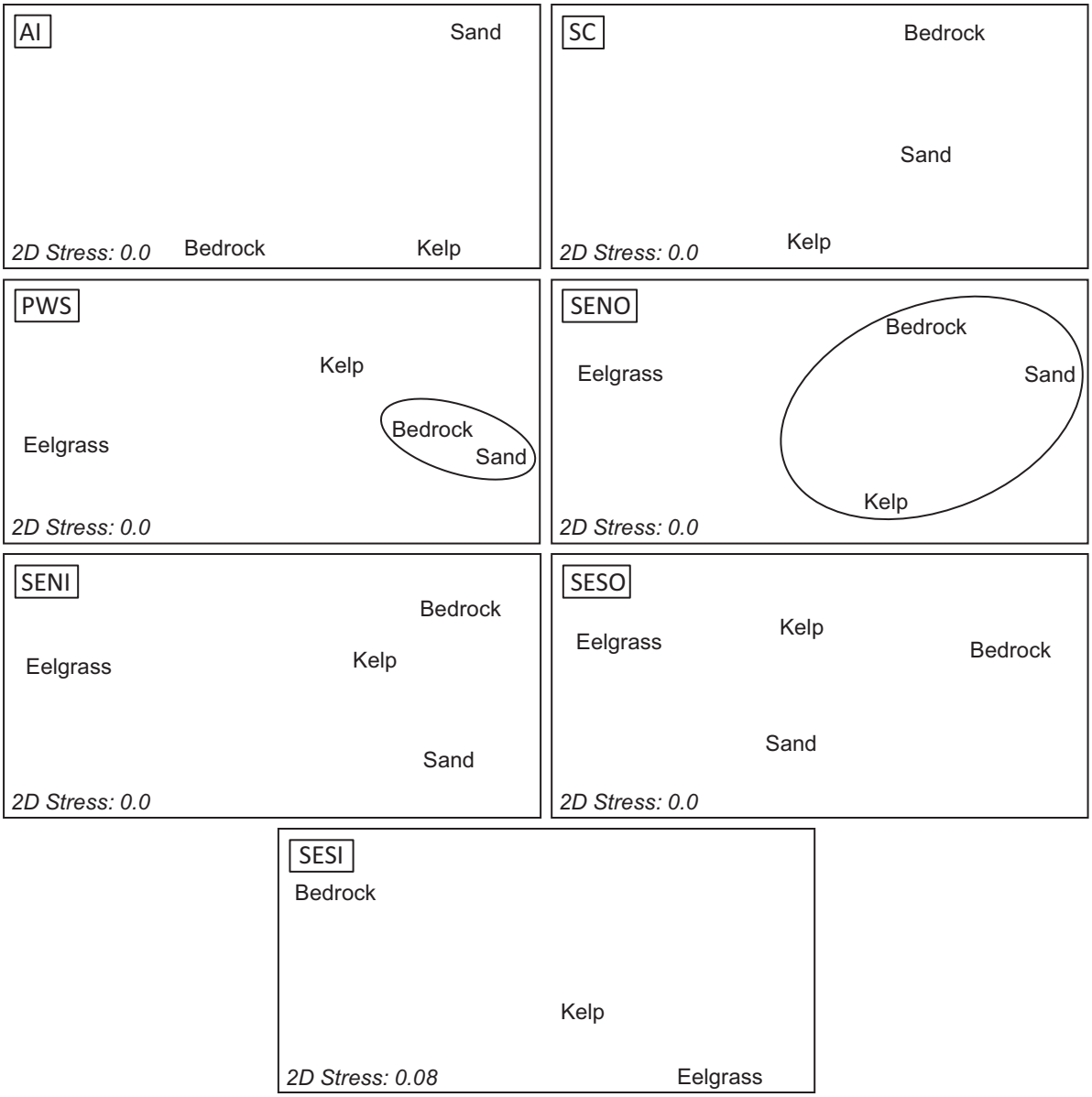

Figure 15. -- Relative similarities of nearshore fish assemblages by habitat type, grouped within seven different regions of Alaska. The 2nd stage nMDS plots show the centroid locations (ANOSIM R value) of fish assemblages by habitat type (bedrock, eelgrass, kelp, and sand) within each region; not all habitats were sampled in each region. The closer each habitat is to each other in the plot indicates more similarity among habitat-specific species assemblages; habitats within circles are not significantly different, $P > 0.05$. A stress value < 0.1 corresponds to good 2-D representation of the nMDS ordination. Regions are Aleutian Islands (AI), Southcentral (SC), Prince William Sound (PWS), Southeast northern outside (SENO) and inside (SENI), and Southeast southern outside (SESO) and inside (SESI). See Figure 1 for region boundaries.

Appendix. -- Spatial and temporal site information on fish catch (all species) by habitat type in nearshore waters of Alaska from 1998 to 2011. Regions are in bold, and locations are numbered from 1 to 93 in parentheses. Sites sampled were bedrock, eelgrass, kelp, and sand habitat types. Coordinates = N latitude and W longitude. Hauls are number of beach seine hauls. Regions are shown in Figure 1, and locations and sites by region are shown in Figures 4-12.

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Arctic				
Chukchi Sea (1)				
sand	71.3883,156.4773	8/05, 8/06	2	1,592
sand	71.3869,156.4804	8/05	1	5
sand	71.3816,156.4802	8/05, 8/06, 8/07, 8/08, 8/09, 9/09	6	1,049
sand	71.3510,156.5706	8/07, 8/08, 8/09, 9/09	4	4,231
sand	71.3155,156.7221	8/05, 8/06	2	64
sand	71.3056,156.7550	8/07, 8/08, 8/09, 9/09	4	1,246
sand	71.3023,156.7646	8/05, 8/06	2	117
sand	71.2930,156.7907	8/05, 8/06	2	142
sand	71.2805,156.8216	8/05, 8/06	2	163
sand	71.2440,156.8947	8/05, 8/06	2	259
sand	71.2375,156.9101	8/07, 8/08, 8/09, 9/09	4	508
sand	71.2143,156.9565	8/05, 8/06	2	92
sand	71.1816,157.0179	8/05, 8/06	2	24
sand	71.1644,157.0481	8/07, 8/08, 8/09, 9/09	4	7,575
sand	71.0897,157.1791	8/07, 8/08, 8/09, 9/09	4	1,682
sand	70.8432,157.9452	8/05	1	30
sand	70.8399,157.9678	8/05	1	19
sand	70.8377,157.9835	8/05	1	20
sand	70.8355,158.0004	8/05	1	10
Beaufort Sea (2)				
sand	71.3685,156.4014	8/05, 8/06	2	283
sand	71.3681,156.4025	8/05, 8/06	2	81
sand	71.3484,156.2742	8/05	1	17
sand	71.3472,156.2710	8/05	1	10
sand	71.3381,156.1677	8/05	1	9
sand	71.2721,155.9245	8/05, 8/06	2	4
sand	71.2372,155.7178	8/04, 8/05, 8/06, 8/07, 8/09, 9/09	6	210
sand	71.2322,155.6858	8/04, 8/05, 8/06	3	11
sand	71.2322,155.6350	8/04, 8/05, 8/06, 8/07, 9/09	5	1,054
sand	71.2313,155.6347	8/04, 8/05, 8/06	3	39
sand	71.2272,155.5817	8/04, 8/05, 8/06, 8/07, 9/09	5	242
sand	71.2261,155.5880	8/04, 8/05, 8/06	3	15

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Aleutian Islands				
Reese Bay (3)				
bedrock	54.0079,166.6954	6/05	1	202
bedrock	54.0031,166.6931	6/05	1	1
bedrock	53.9928,166.8219	6/05	1	16
sand	53.9994,166.7126	6/05	1	6
sand	53.9991,166.7055	6/05	1	18
sand	53.9927,166.8258	6/05	1	3,993
sand	53.9793,166.8372	6/05	1	1,663
Unalaska Bay (4)				
kelp	53.9321,166.6410	6/05	1	2,051
kelp	53.9194,166.4380	6/05	1	197
sand	53.9498,166.6264	6/05	1	8,166
sand	53.9226,166.6480	6/05	1	168
sand	53.9146,166.6409	6/05	1	1,095
sand	53.9122,166.4387	6/05	1	1,454
sand	53.9017,166.4449	6/05	1	29
sand	53.8989,166.4647	6/05	1	2,037
sand	53.8857,166.6299	6/05	1	16,181
Beaver Inlet (5)				
bedrock	53.7808,166.5109	6/05	1	8
bedrock	53.7785,166.4858	6/05	1	263
bedrock	53.7774,166.5000	6/05	1	373
bedrock	53.7316,166.2934	6/05	1	9
bedrock	53.7104,166.5582	6/05	1	50
bedrock	53.7019,166.5399	6/05	1	21
kelp	53.8204,166.2117	6/05	1	12,215
kelp	53.7924,166.5065	6/05	1	253
kelp	53.7885,166.2176	6/05	1	4,994
kelp	53.7825,166.2737	6/05	1	458
kelp	53.7770,166.2363	6/05	1	326
kelp	53.7590,166.2991	6/05	1	173
kelp	53.7394,166.2909	6/05	1	18
kelp	53.7313,166.3202	6/05	1	873
kelp	53.7306,166.3269	6/05	1	926
kelp	53.7131,166.5377	6/05	1	154
kelp	53.7088,166.5541	6/05	1	98
kelp	53.7019,166.5413	6/05	1	354

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
sand	53.8092,166.2087	6/05	1	150
sand	53.7893,166.5201	6/05	1	17
Unalga Pass (6)				
kelp	53.9178,166.2621	6/05	1	203
kelp	53.9169,166.2675	6/05	1	944
kelp	53.9141,166.2577	6/05	1	65
kelp	53.9130,166.2657	6/05	1	288
sand	53.9465,166.3480	6/05	1	72
sand	53.9457,166.3405	6/05	1	9
sand	53.9457,166.3427	6/05	1	48
sand	53.9456,166.3388	6/05	1	8
sand	53.9129,166.2703	6/05	1	121
sand	53.9123,166.2711	6/05	1	113
Akutan Island (7)				
bedrock	54.1200,165.7696	6/05	1	40
kelp	54.1751,165.8075	6/05	1	15,149
kelp	54.1743,165.8080	6/05	1	3,143
kelp	54.1674,165.8041	6/05	1	34
kelp	54.1363,165.7577	6/05	1	626
kelp	54.1141,165.7463	6/05	1	329
sand	54.1703,165.8081	6/05	1	105
sand	54.1696,165.8074	6/05	1	23
sand	54.1681,165.8054	6/05	1	298
sand	54.1455,165.7354	6/05	1	61
sand	54.1450,165.7385	6/05	1	660
sand	54.1286,165.8230	6/05	1	217
sand	54.1180,165.7657	6/05	1	31
sand	54.1172,165.7622	6/05	1	1,419
Akun Island (8)				
kelp	54.2392,165.6227	6/05	1	18
kelp	54.2379,165.6246	6/05	1	35
kelp	54.2373,165.6248	6/05	1	483
kelp	54.2365,165.6248	6/05	1	78
sand	54.2445,165.6114	6/05	1	87
sand	54.2439,165.6088	6/05	1	326
sand	54.2430,165.6055	6/05	1	6
sand	54.2412,165.5976	6/05	1	17
sand	54.2388,165.5917	6/05	1	43
sand	54.2334,165.5852	6/05	1	9

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Bristol Bay				
Nushagak Bay (9)				
sand	58.8565,158.4909	7/09	1	261
sand	58.8465,158.5545	7/09	1	2,443
sand	58.8460,158.5545	7/09	1	1,761
sand	58.8218,158.5503	7/09	1	89
sand	58.7848,158.6676	7/09	1	923
sand	58.7725,158.6598	7/09	1	203
sand	58.5895,158.7789	7/09	1	873
sand	58.5783,158.7734	7/09	1	222
Southcentral				
Knik Arm (10)				
sand	61.3451,149.7154	7/10	1	4
sand	61.3442,149.7229	7/10	1	1
Fire Island (11)				
sand	61.1713,150.2225	8/09, 7/10	2	123
sand	61.1569,150.2605	8/09	1	0
sand	61.1282,150.2847	8/09	1	4
Inner Kachemak Bay (12)				
bedrock	59.5945,151.2793	7/08	1	259
kelp	59.5782,151.2687	7/08	1	163
sand	59.5795,151.2974	7/08	1	20
sand	59.5670,151.3511	7/08	1	8
Outer Kachemak Bay (13)				
bedrock	59.5122,151.4627	7/08	1	9
bedrock	59.5065,151.5331	7/08	1	2
bedrock	59.4830,151.5001	7/08	1	7
kelp	59.5133,151.4581	7/08	1	29
kelp	59.5130,151.4231	7/08	1	671
kelp	59.5052,151.5308	7/08	1	33
kelp	59.5036,151.4380	7/08	1	8
kelp	59.4684,151.5319	7/08	1	354
kelp	59.4516,151.4207	7/08	1	121
kelp	59.4368,151.3989	7/08	1	40
sand	59.4860,151.5711	7/08	1	23
Resurrection Bay (14)				
eelgrass	60.1026,149.3644	8/09	1	78
sand	60.0783,149.3474	8/09	1	901

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Prince William Sound				
Flemming Island (15)				
bedrock	60.1824,148.0297	4/06, 7/06, 7/07	3	24
eelgrass	60.1684,148.0407	4/06, 7/06, 9/06, 7/07, 8/07	5	899
kelp	60.1671,148.0437	4/06, 7/06, 9/06, 7/07, 8/07	5	412
Whale Bay, East Arm (16)				
bedrock	60.1835,148.1755	4/06, 7/06, 9/06, 7/07	4	256
eelgrass	60.2091,148.1528	4/06, 7/06, 9/06, 7/07, 8/07	5	1,935
kelp	60.1868,148.1726	4/06, 7/06, 9/06, 7/07, 8/07	5	856
Whale Bay, West Arm (17)				
bedrock	60.2258,148.2537	4/06, 7/06, 9/06, 7/07	4	46
eelgrass	60.2287,148.2502	4/06, 7/06, 9/06, 7/07, 8/07	5	1,101
kelp	60.2358,148.2372	4/06, 7/06, 9/06, 7/07, 8/07	5	699
Jackpot Bay (18)				
bedrock	60.3442,148.2315	4/06, 7/06, 9/06, 7/07	4	24
eelgrass	60.3593,148.2377	4/06, 7/06, 9/06, 7/07, 8/07	5	13,901
kelp	60.3400,148.2222	4/06, 7/06, 9/06, 7/07, 8/07	5	1,743
sand	60.3605,148.2483	4/06	1	59
Chenega Island (19)				
bedrock	60.3584,148.0958	4/06, 7/06, 9/06, 7/07	4	38
eelgrass	60.3601,148.0894	4/06, 7/06, 9/06, 7/07, 8/07	5	14,865
kelp	60.3629,148.0902	4/06, 7/06, 9/06, 7/07, 8/07	5	379
Ewan Bay (20)				
bedrock	60.3763,148.1379	4/06, 7/06, 9/06, 7/07	4	1,985
eelgrass	60.3812,148.1538	4/06, 7/06, 9/06, 7/07, 8/07	5	390
kelp	60.3728,148.1377	4/06, 7/06, 9/06, 7/07, 8/07	5	225
Culross Passage (21)				
bedrock	60.6573,148.1863	5/06, 7/06, 9/06, 7/07	4	1,028
eelgrass	60.6244,148.2018	5/06, 7/06, 9/06, 7/07	4	574
kelp	60.6343,148.1719	5/06, 7/06, 9/06, 7/07	4	5,466
Culross Island (22)				
bedrock	60.7446,148.2206	5/06, 7/06, 9/06, 7/07	4	9
eelgrass	60.7447,148.2189	5/06, 7/06, 9/06, 7/07	4	807
kelp	60.7455,148.2143	5/06, 7/06, 9/06, 7/07	4	2,027
Shotgun Cove (23)				
eelgrass	60.7944,148.5332	7/06	1	127
eelgrass	60.7854,148.5623	7/06	1	29
eelgrass	60.7851,148.5623	7/06	1	63
kelp	60.7963,148.5337	7/06	1	122

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Whittier (24)				
sand	60.7855,148.7176	8/09	1	444
sand	60.7831,148.7171	8/09	1	3,062
sand	60.7798,148.7153	8/09	1	67
sand	60.7778,148.7140	8/09	1	4,612
Valdez (25)				
eelgrass	61.1288,146.4705	7/10	1	305
kelp	61.1228,146.3402	7/10	1	142
kelp	61.1156,146.5863	7/10	1	367
sand	61.1259,146.6034	7/10	1	25
sand	61.1257,146.4099	7/10	1	61
Bligh Island (26)				
eelgrass	60.8689,146.7561	7/99	1	232
eelgrass	60.8678,146.7536	7/99	1	88
eelgrass	60.8636,146.8069	7/99	1	243
kelp	60.8650,146.8072	7/99	1	20
kelp	60.8650,146.8072	7/99	1	16
Tatitlek (27)				
eelgrass	60.8647,146.6844	7/99	1	285
eelgrass	60.8622,146.6794	7/99	1	173
eelgrass	60.8617,146.6669	7/99	1	313
eelgrass	60.8603,146.6742	7/99	1	175
eelgrass	60.8586,146.7083	7/99	1	431
kelp	60.8592,146.6711	7/99	1	46
kelp	60.8592,146.7092	7/99	1	227
Southeastern - Northern Outside				
Torch Bay (28)				
eelgrass	58.3306,136.7715	7/10	1	1,897
kelp	58.3403,136.8075	7/10	1	54
kelp	58.3227,136.8020	7/10	1	808
Dundas Point (29)				
eelgrass	58.3355,136.2052	7/10	1	419
kelp	58.3341,136.2046	7/10	1	9
sand	58.3266,136.2154	7/10	1	6
Port Althorp (30)				
eelgrass	58.1111,136.2789	8/99, 6/08	2	162
eelgrass	58.1094,136.2750	8/99	1	134
kelp	58.1553,136.3081	8/99	1	58
kelp	58.1297,136.3000	8/99, 6/08	2	317

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Yakobi Island (31)				
kelp	58.0989,136.4950	8/99	1	10,049
kelp	58.0964,136.4947	8/99	1	11
kelp	58.0775,136.4553	8/99	1	18
kelp	58.0742,136.4511	8/99	1	33
Islas Bay (32)				
bedrock	57.8093,136.3622	7/10	1	4
eelgrass	57.8437,136.3763	7/10	1	215
eelgrass	57.8310,136.3945	7/10	1	136
kelp	57.8297,136.3916	7/10	1	61
kelp	57.8223,136.3610	7/10	1	1,119
kelp	57.8026,136.3774	7/10	1	69
Neva Strait (33)				
bedrock	57.3439,135.6750	4/98	1	351
bedrock	57.3403,135.7094	4/98	1	10
bedrock	57.3400,135.7061	4/98, 8/98	2	2,084
bedrock	57.3358,135.7111	8/98	1	1,049
bedrock	57.3244,135.6689	4/98	1	43
bedrock	57.3231,135.6706	4/98	1	16
bedrock	57.3225,135.6694	4/98, 8/98	2	17
bedrock	57.3193,135.6979	8/98	1	1,194
bedrock	57.3186,135.6719	4/98	1	11
St. John Baptist Bay (34)				
bedrock	57.2925,135.6050	8/98	1	510
bedrock	57.2922,135.6044	8/98	1	41
bedrock	57.2922,135.6036	4/98	1	14
bedrock	57.2903,135.5874	4/98, 8/98	2	13
bedrock	57.2900,135.5883	4/98, 8/98	2	30
eelgrass	57.2834,135.5501	8/98	1	141
eelgrass	57.2834,135.5502	4/98, 8/98	2	171
sand	57.2858,135.5576	4/98, 8/98	2	52
sand	57.2847,135.5630	8/98	1	23
Krestof Sound (35)				
bedrock	57.2211,135.5762	6/06	1	1,983
eelgrass	57.2417,135.6227	6/06	1	2,572
kelp	57.2299,135.5985	6/06	1	31
Nakwasina Sound (36)				
bedrock	57.2497,135.3686	8/98	1	10
bedrock	57.2422,135.3519	8/98	1	13

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
bedrock	57.2422,135.3519	5/98, 8/98	2	59
bedrock	57.2372,135.3647	5/98	1	136
bedrock	57.2372,135.3647	5/98	1	1
bedrock	57.2364,135.3550	5/98, 8/98	2	3,207
bedrock	57.2319,135.3708	5/98, 8/98	2	6,122
bedrock	57.2203,135.3964	5/98	1	4,300
bedrock	57.2197,135.3942	8/98	1	36
eelgrass	57.1975,135.3833	6/01, 6/02, 1/03, 6/03, 6/08	5	1,329
eelgrass	57.1975,135.3842	5/98, 8/98	2	559
eelgrass	57.1964,135.3847	6/01, 6/02, 1/03, 6/03, 6/08	5	4,921
eelgrass	57.1964,135.3853	8/98	1	486
sand	57.1939,135.3878	5/98, 8/98	2	471
sand	57.1938,135.3891	8/98	1	32
Katlian Bay (37)				
bedrock	57.1803,135.3378	8/98	1	64
bedrock	57.1803,135.3378	5/98	1	7
bedrock	57.1772,135.3078	8/98	1	393
bedrock	57.1768,135.2965	5/98	1	196
bedrock	57.1661,135.3586	5/98, 8/98	2	2,055
bedrock	57.1652,135.3627	5/98	1	3,000
bedrock	57.1639,135.3294	8/98	1	53
bedrock	57.1588,135.3781	5/98	1	2
bedrock	57.1564,135.3533	5/98, 8/98	2	18
bedrock	57.1473,135.3763	5/98	1	4,000
bedrock	57.1469,135.3902	5/98	1	0
bedrock	57.1442,135.3939	5/98	1	3,001
bedrock	57.1440,135.3937	5/98	1	128
bedrock	57.1424,135.3758	6/06	1	0
bedrock	57.1419,135.3773	5/98	1	1
eelgrass	57.1859,135.3478	5/98, 8/98	2	1,121
eelgrass	57.1645,135.3112	8/99	1	129
eelgrass	57.1644,135.3104	8/99	1	96
eelgrass	57.1640,135.3144	5/98, 8/98	2	1,311
eelgrass	57.1529,135.3610	6/06	1	1,597
kelp	57.1647,135.3222	8/99	1	19
kelp	57.1646,135.3231	8/99	1	21
kelp	57.1551,135.3535	6/06	1	302
sand	57.1606,135.3419	5/98, 8/98	2	1,750
sand	57.1602,135.3423	8/98	1	473

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Middle Island (38)				
eelgrass	57.0931,135.4494	8/99	1	163
eelgrass	57.0923,135.4481	8/99	1	532
eelgrass	57.0889,135.4504	8/99	1	188
kelp	57.0916,135.4493	8/99	1	28
Sitka (39)				
bedrock	57.0375,135.2929	6/06	1	67
eelgrass	57.0436,135.3037	6/06	1	358
kelp	57.0429,135.3001	6/06	1	298
kelp	57.0389,135.3276	6/06	1	63
Silver Bay (40)				
bedrock	57.0094,135.1639	8/98	1	10
bedrock	57.0044,135.1569	8/98	1	1
bedrock	56.9972,135.1644	8/98	1	121
bedrock	56.9858,135.1333	8/98	1	7
Sandy Cove (41)				
eelgrass	56.9788,135.3172	8/99	1	2,561
eelgrass	56.9786,135.3108	6/01, 6/02, 1/03, 6/03, 6/08	5	5,256
eelgrass	56.9782,135.3117	8/99	1	1,993
eelgrass	56.9781,135.3119	6/01, 6/02, 1/03, 6/03, 6/08	5	3,134
kelp	56.9792,135.3205	8/99	1	318
kelp	56.9786,135.3108	8/99	1	409
Pirate Cove (42)				
eelgrass	56.9853,135.3753	6/02	1	1,870
eelgrass	56.9852,135.3753	8/99	1	168
eelgrass	56.9849,135.3713	6/01, 5/03	2	493
eelgrass	56.9844,135.3717	6/01, 6/02, 5/03	3	322
kelp	56.9856,135.3712	8/99	1	45
kelp	56.9850,135.3739	8/99	1	22
Redoubt Bay (43)				
bedrock	56.9258,135.3524	6/06	1	2
bedrock	56.8828,135.3469	6/06	1	3,061
eelgrass	56.9110,135.3260	6/06	1	120
eelgrass	56.9106,135.3246	6/06	1	85
eelgrass	56.8788,135.3411	6/06	1	364
kelp	56.9253,135.3450	6/06	1	141
kelp	56.8772,135.3383	6/06	1	15
sand	56.9090,135.4002	6/06	1	8

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Biorka Channel (44)				
bedrock	56.8475,135.4964	8/98	1	3
bedrock	56.8472,135.4178	8/98	1	2
bedrock	56.8472,135.5089	8/98	1	0
bedrock	56.8456,135.4944	8/98	1	7
bedrock	56.8450,135.4933	8/98	1	0
bedrock	56.8433,135.3931	8/98	1	6
bedrock	56.8433,135.3931	8/98	1	54
bedrock	56.8419,135.5172	8/98	1	1
bedrock	56.8394,135.4239	8/98	1	21
bedrock	56.8378,135.5247	8/98	1	0
bedrock	56.8378,135.5322	8/98	1	3
bedrock	56.8364,135.4142	8/98	1	6
bedrock	56.8364,135.4175	8/98	1	5
bedrock	56.8303,135.4247	8/98	1	2
Southeastern - Northern Inside				
Haines (45)				
sand	59.2348,135.4384	8/10	1	38
sand	59.2307,135.4394	8/10	1	23
Berners Bay (46)				
eelgrass	58.6719,134.9148	6/04, 7/05, 8/06	3	663
eelgrass	58.6693,134.9127	6/04, 7/05, 8/06	3	434
eelgrass	58.6686,134.9121	6/04, 7/05, 8/06	3	596
kelp	58.7057,134.9464	6/04, 7/05, 8/06	4	3,093
kelp	58.6954,134.9356	6/04, 7/05, 8/06	4	395
kelp	58.6941,134.9342	6/04, 7/05, 8/06	4	122
sand	58.7852,135.0202	5/01	1	2
sand	58.7778,135.0078	5/01	1	192
sand	58.7738,134.9353	5/01	1	1,098
sand	58.7735,134.9862	5/01	1	46
St. James Bay (47)				
eelgrass	58.6100,135.2094	7/00	1	233
eelgrass	58.5731,135.1825	7/00	1	164
Bridget Cove (48)				
bedrock	58.6492,134.9689	7/05	1	3
eelgrass	58.6421,134.9556	6/04, 7/05, 8/06	3	3,439
eelgrass	58.6348,134.9480	6/04, 7/05, 8/06, 7/09	4	6,318
eelgrass	58.6303,134.9449	6/04, 7/05, 8/06	3	3,584
eelgrass	58.6285,134.9425	6/98, 8/98, 8/99	4	5,174

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
eelgrass	58.6274,134.9453	6/98, 8/98, 8/99	4	104
kelp	58.6419,134.9581	6/04, 7/05, 8/06	4	1,017
kelp	58.6405,134.9551	6/04, 7/05, 8/06	4	1,148
kelp	58.6386,134.9545	6/04, 7/05, 8/06	3	734
Yankee Cove (49)				
sand	58.6013,134.9187	4/01	1	4
sand	58.5902,134.9045	4/01	1	5
Benjamin Island (50)				
bedrock	58.5611,134.8996	7/01, 3/02, 7/02, 3/03, 7/03, 3/04	6	538
bedrock	58.5481,134.9256	8/01, 3/02, 7/02, 3/03, 7/03, 3/04	6	451
bedrock	58.5444,134.9206	8/01, 3/02, 3/03, 7/03, 3/04	5	218
kelp	58.5752,134.9263	4/01, 7/01, 3/02, 7/02, 3/03, 7/03, 3/04	7	120
kelp	58.5675,134.9150	4/01, 7/01, 3/02, 7/02, 3/03, 7/03, 3/04	7	4,707
kelp	58.5631,134.9017	4/01, 7/01, 3/02, 7/02, 3/03, 7/03, 3/04	7	934
sand	58.5717,134.9242	4/01	1	83
sand	58.5644,134.9102	7/01, 3/02, 7/02, 3/03, 7/03, 3/04	6	4,734
sand	58.5547,134.9061	4/01, 8/01, 3/02, 7/02, 3/03, 7/03, 3/04	7	271
sand	58.5547,134.8983	4/01, 8/01, 3/02, 7/02, 3/03, 7/03, 3/04	7	201
Favorite Channel (51)				
eelgrass	58.4309,134.7648	7/05	1	1,470
kelp	58.5031,134.8669	4/01, 8/01, 3/02, 7/02, 3/03, 6/03, 3/04	7	215
kelp	58.5019,134.8664	4/01, 8/01, 3/02, 7/02, 3/03, 6/03, 3/04	7	1,405
sand	58.5131,134.8419	4/01, 8/01, 3/02, 7/02, 3/03, 6/03, 3/04	7	934
sand	58.5119,134.8356	4/01, 8/01, 3/02, 7/02, 3/03, 6/03, 3/04	7	140
sand	58.5053,134.8106	4/01, 8/01	2	87
sand	58.5008,134.7994	4/01, 8/01	2	92
Auke Bay (52)				
eelgrass	58.3853,134.6517	6/05	1	328
eelgrass	58.3819,134.6603	6/05, 8/06	2	2,097
eelgrass	58.3811,134.6924	4/99, 5/99, 6/99, 7/99	4	4,739
eelgrass	58.3809,134.6918	6/05, 8/06	3	1,090
eelgrass	58.3801,134.6918	8/06	1	364
eelgrass	58.3756,134.7255	7/10	1	218
sand	58.3777,134.7200	7/10	1	29
Peterson Creek (53)				
eelgrass	58.3018,134.6813	6/05	2	54
Funter Bay (54)				
bedrock	58.2436,134.9178	8/98	1	1
bedrock	58.2336,134.9156	8/98	1	216

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
bedrock	58.2311,134.9203	8/98	1	3
bedrock	58.2283,134.9164	8/98	1	15
eelgrass	58.2569,134.9003	8/99, 6/01, 6/02, 2/03, 6/03, 6/08, 6/09, 6/10	8	1,482
eelgrass	58.2553,134.9106	8/98	1	2,088
eelgrass	58.2553,134.9097	8/99, 6/01, 6/02, 2/03, 6/03, 6/08, 6/10	7	1,105
eelgrass	58.2550,134.9058	8/98	1	65
kelp	58.2550,134.8881	8/99	1	42
kelp	58.2503,134.8953	8/99	1	19
sand	58.2495,134.9075	8/98	1	9
sand	58.2483,134.9081	8/98	1	40
Couverden (55)				
eelgrass	58.2103,135.1178	6/08	1	886
kelp	58.1992,135.1045	6/08	1	121
Neka Bay (56)				
eelgrass	58.0500,135.6725	8/99	1	89
eelgrass	58.0497,135.6706	8/99, 6/08	2	684
eelgrass	57.9894,135.5976	6/08	1	183
kelp	58.0522,135.6458	8/99	1	40
kelp	58.0328,135.6422	8/99, 6/08	2	51
Tenakee Inlet (57)				
bedrock	57.8734,135.5983	6/06	1	128
eelgrass	57.9445,135.7302	6/06	1	294
eelgrass	57.8936,135.6225	6/06	1	157
eelgrass	57.8714,135.6157	6/06	1	188
sand	57.9171,135.6881	6/06	1	1,155
sand	57.8716,135.5700	6/06	1	86
Tenakee Springs (58)				
bedrock	57.7789,135.1319	8/98	1	1
bedrock	57.7775,135.1272	8/98	1	2
bedrock	57.7766,135.1565	6/06	1	1
bedrock	57.7742,135.1981	8/98	1	0
bedrock	57.7742,135.1981	8/98	1	10
bedrock	57.7550,135.1129	6/06	1	809
eelgrass	57.7758,135.1911	8/98	1	119
eelgrass	57.7756,135.1914	8/98	1	81
eelgrass	57.7387,135.2709	6/06	1	815
eelgrass	57.7367,135.3836	6/01, 6/02, 1/03, 6/03, 6/08, 6/09, 6/10	7	4,207
eelgrass	57.7364,135.3875	6/01, 6/02, 1/03, 6/03, 6/08, 6/09, 6/10	7	1,367

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
kelp	57.7775,135.1560	6/06	1	1,110
kelp	57.7390,135.1819	6/06	1	52
sand	57.7798,135.1562	6/06	1	11,076
sand	57.7764,135.1817	8/98	1	47
sand	57.7758,135.1828	8/98	1	42
Hoonah Sound (59)				
eelgrass	57.7597,135.7931	8/02	1	438
eelgrass	57.7431,135.7931	8/02	1	562
eelgrass	57.6166,135.6247	6/08	1	727
kelp	57.6131,135.5884	6/08	1	138
Ushk Bay (60)				
bedrock	57.5675,135.6381	8/98	1	5
bedrock	57.5667,135.6256	8/98	1	10,124
bedrock	57.5667,135.6255	8/98	1	124
bedrock	57.5647,135.6106	8/98	1	3
eelgrass	57.5705,135.6400	8/02, 2/03, 5/03, 8/03	4	5,381
eelgrass	57.5656,135.6544	8/98	1	140
eelgrass	57.5628,135.6572	8/98	1	92
eelgrass	57.5618,135.6116	8/02, 2/03, 5/03, 8/03	4	48,520
sand	57.5617,135.6606	8/98	1	44
sand	57.5617,135.6617	8/98	1	33
Sitkoh Bay (61)				
bedrock	57.5108,134.9272	8/98	1	137
bedrock	57.5050,134.9269	8/98	1	656
bedrock	57.5031,134.9111	8/98	1	18
bedrock	57.4922,134.8919	8/98	1	5
eelgrass	57.5325,134.9761	8/98	1	97
eelgrass	57.5303,134.9767	8/98	1	742
sand	57.5264,134.9675	8/98	1	33
sand	57.5253,134.9669	8/98	1	1,052
Kelp Bay (62)				
kelp	57.2697,134.8683	6/00	1	2,026
kelp	57.2656,134.8858	6/00	1	433
Cosmos Cove (63)				
eelgrass	57.2428,134.8811	6/00	1	567
eelgrass	57.2425,134.8717	6/00	1	414
Chaik Bay (64)				
eelgrass	57.3142,134.4711	6/01, 6/02, 6/03	3	26,721
eelgrass	57.3133,134.4728	6/01, 6/02, 6/03	3	14,614

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Pybus Bay (65)				
eelgrass	57.3872,134.1761	6/00	1	242
eelgrass	57.3764,134.1836	6/00	1	77
kelp	57.3672,134.1378	6/00	1	260
kelp	57.3378,134.1222	6/00	1	68
Brothers Islands (66)				
bedrock	57.3037,133.8433	7/01, 7/02, 3/03, 7/03, 3/04	5	2,049
bedrock	57.3033,133.8630	3/02, 7/02, 3/03, 7/03, 8/03, 3/04, 6/11	7	12,456
bedrock	57.3026,133.8045	7/01, 3/02, 7/02, 7/03, 3/04	5	32,855
bedrock	57.2987,133.7964	3/02, 7/02, 7/03, 8/03, 3/04	5	23,458
bedrock	57.2910,133.7950	3/03	1	2
bedrock	57.2829,133.8417	3/02, 7/02, 3/03, 7/03, 3/04	5	6,979
eelgrass	57.2928,133.8150	7/01, 3/02, 7/02, 3/03, 7/03, 8/03, 3/04, 6/11	8	12,679
kelp	57.3092,133.8161	7/01, 7/02, 3/03, 7/03, 8/03, 3/04, 6/11	7	35,528
kelp	57.3086,133.8314	7/01, 2/02, 7/02, 3/03, 7/03, 8/03, 3/04	7	9,510
kelp	57.3078,133.8497	7/01, 2/02, 7/02, 3/03, 7/03, 3/04	6	6,486
kelp	57.3036,133.8603	7/01, 2/02, 7/02, 3/03, 7/03, 3/04	6	13,812
kelp	57.2997,133.8250	7/01, 3/02, 7/02, 3/03, 7/03, 3/04	6	2,366
kelp	57.2894,133.8633	7/01, 3/02, 7/02, 3/03, 7/03, 3/04	6	25,595
sand	57.2989,133.8233	7/01, 3/02, 7/02, 3/03, 7/03, 8/03, 3/04	7	6,989
sand	57.2958,133.8656	7/01, 3/02, 7/02, 3/03, 7/03, 8/03, 3/04, 6/11	8	7,002
Gambier Bay (67)				
bedrock	57.4235,133.8961	6/11	1	18
kelp	57.4372,133.9068	6/11	1	1,345
kelp	57.4322,133.8924	6/11	1	799
Hobart Bay (68)				
kelp	57.4233,133.4525	5/00	1	14
kelp	57.4222,133.4536	5/00	1	19
Seymour Canal (69)				
bedrock	57.7468,134.0170	6/11	1	33
eelgrass	57.7299,133.9961	6/11	1	698
kelp	57.7190,133.9986	6/11	1	211
Taku Harbor (70)				
kelp	58.0714,134.0232	6/11	1	7
sand	58.0645,134.0142	6/11	1	22
sand	58.0631,134.0240	6/11	1	30
sand	58.0612,134.0265	6/11	1	22

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Gastineau Channel (71)				
kelp	58.2047,134.2155	7/05	1	395
kelp	58.1926,134.2638	7/05	1	296
sand	58.2282,134.2659	7/05	1	446
Southeastern - Southern Outside				
Port Conclusion (72)				
kelp	56.2553,134.6633	7/00	1	119
kelp	56.2536,134.6653	7/00	1	35
Shakan Bay (73)				
eelgrass	56.1950,133.5167	7/00	1	298
eelgrass	56.1936,133.5169	7/00	1	301
kelp	56.1483,133.5378	7/00	1	39
kelp	56.1453,133.5408	7/00	1	38
Warm Chuck Inlet (74)				
eelgrass	55.7758,133.5319	7/99	1	265
eelgrass	55.7708,133.5361	7/99	1	629
eelgrass	55.7581,133.4708	7/99	1	370
eelgrass	55.7564,133.4711	7/99	1	433
Klawock Inlet (75)				
bedrock	55.5289,133.1900	5/98	1	3,564
bedrock	55.5258,133.1407	6/98	1	235
bedrock	55.5186,133.1489	5/98	1	255
eelgrass	55.5778,133.0941	4/98, 5/98, 6/98, 9/98	4	4,145
eelgrass	55.5772,133.0944	4/98, 5/98, 6/98, 9/98	4	1,030
eelgrass	55.5361,133.1056	4/98, 5/98, 6/98, 9/98, 7/99	5	1,856
eelgrass	55.5358,133.1053	4/98, 5/98, 6/98, 9/98, 7/99	5	1,323
eelgrass	55.5208,133.1617	5/98	1	116
eelgrass	55.5003,133.1647	4/98, 5/98, 6/98, 9/98, 7/99	5	2,475
eelgrass	55.5000,133.1644	4/98, 5/98, 6/98, 9/98, 7/99	5	3,002
eelgrass	55.4875,133.1414	4/98, 5/98, 6/98, 9/98	4	2,162
eelgrass	55.4872,133.1414	4/98, 5/98, 6/98, 9/98	4	3,443
eelgrass	55.4764,133.1881	5/98	1	21
kelp	55.5125,133.1297	5/98, 6/98, 9/98, 7/99	4	302
kelp	55.5072,133.1339	5/98, 6/98, 9/98, 7/99	4	267
kelp	55.5011,133.1675	4/98, 5/98, 6/98, 9/98, 7/99	5	1,791
kelp	55.5008,133.1672	4/98, 5/98, 6/98, 9/98, 7/99	5	470
sand	55.5622,133.0994	4/98, 5/98, 6/98, 9/98	4	342
sand	55.5619,133.0997	4/98, 5/98, 6/98, 9/98	4	1,503

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
sand	55.5125,133.1297	4/98, 5/98, 6/98, 9/98	4	307
sand	55.5072,133.1339	4/98, 5/98, 6/98, 9/98	4	258
sand	55.4819,133.1881	5/98	1	85
Port San Antonio (76)				
eelgrass	55.3658,133.5856	7/99	1	310
eelgrass	55.3575,133.5869	7/99	1	105
kelp	55.3597,133.5883	7/99	1	85
kelp	55.3597,133.5878	7/99	1	91
Nichols Bay (77)				
bedrock	54.7211,132.1257	6/07	1	5
eelgrass	54.7401,132.1536	6/07	1	1,781
kelp	54.7259,132.1241	6/07	1	74
kelp	54.7051,132.1005	6/07	1	146
Moira Sound (78)				
bedrock	54.9869,132.1050	6/07	1	1,028
eelgrass	54.9711,132.0924	6/07	1	254
kelp	54.9856,132.1098	6/07	1	121
Dall Bay (79)				
bedrock	55.1562,131.7453	6/07	1	217
eelgrass	55.1561,131.7498	6/07	1	686
kelp	55.1551,131.7421	6/07	1	64
Bostwick Inlet (80)				
eelgrass	55.2364,131.7500	8/00	1	509
eelgrass	55.2342,131.7300	8/00	1	130
kelp	55.2200,131.7361	8/00	1	592
kelp	55.2078,131.7278	8/00	1	107
Sylburn Harbor (81)				
bedrock	55.1872,131.5824	6/07	1	31
eelgrass	55.1782,131.5791	6/07	1	267
kelp	55.1760,131.5972	6/07	1	153
Reef Harbor (82)				
bedrock	54.9776,131.2560	6/07	1	451
eelgrass	54.9684,131.2492	6/07	1	550
kelp	54.9744,131.2538	6/07	1	27
Kah Shakes Cove (83)				
bedrock	55.0479,130.9951	6/07	1	53
eelgrass	55.0426,130.9995	6/07	1	84
kelp	55.0635,130.9917	6/07	1	182
kelp	55.0470,131.0105	6/07	1	190

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Southeastern - Southern Inside				
Farragut Bay (84)				
kelp	57.1244,133.2053	6/00	1	198
kelp	57.1144,133.2050	6/00	1	58
Port Camden (85)				
kelp	56.7160,133.9523	6/00	1	177
kelp	56.6525,133.9569	6/00	1	5,235
Kah Sheets Bay (86)				
eelgrass	56.5183,133.0969	8/00	1	157
eelgrass	56.5167,133.0958	8/00	1	203
kelp	56.5153,133.1208	8/00	1	68
kelp	56.5119,133.1269	8/00	1	43
Exchange Cove (87)				
eelgrass	56.2478,133.0781	7/00	1	51
eelgrass	56.2111,133.0683	7/00	1	281
kelp	56.2400,133.0719	7/00	1	24
kelp	56.2336,133.0733	7/00	1	42
Steamer Bay (88)				
eelgrass	56.1575,132.6978	7/00	1	96
eelgrass	56.1531,132.6911	7/00	1	190
kelp	56.1625,132.7100	7/00	1	54
kelp	56.1581,132.6967	7/00	1	51
Zimovia Strait (89)				
eelgrass	56.1917,132.3033	8/00	1	196
eelgrass	56.1886,132.3164	8/00	1	1,010
kelp	56.2269,132.3778	8/00	1	71
kelp	56.2236,132.3825	8/00	1	40
Twelve Mile Arm (90)				
eelgrass	55.4283,132.6594	8/00	1	1,517
eelgrass	55.4156,132.6881	8/00	1	515
kelp	55.4486,132.6539	8/00	1	73
kelp	55.4286,132.6594	8/00	1	106
Cholmondeley Sound (91)				
bedrock	55.2516,132.3874	6/07	1	53
eelgrass	55.2541,132.4418	6/07	1	240
kelp	55.2515,132.3815	6/07	1	160
Clover Passage (92)				
bedrock	55.5599,131.7041	6/07	1	13
eelgrass	55.5446,131.7032	6/07	1	1,013
kelp	55.5565,131.7058	6/07	1	312

Appendix -- (Cont.).

Region, Location, Site, Coordinates		Dates sampled	Hauls	Catch
Thorne Arm (93)				
bedrock	55.3572,131.2667	6/07	1	2
bedrock	55.3190,131.2580	6/07	1	7
eelgrass	55.3868,131.2886	6/07	1	900
kelp	55.3209,131.2566	6/07	1	105

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