NOAA Technical Memorandum NMFS-AFSC-204

Results of the 2009 Eastern Bering Sea Continental Shelf Bottom Trawl Survey of Groundfish and Invertebrate Resources

by
R. R. Lauth

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Alaska Fisheries Science Center

January 2010

NOAA Technical Memorandum NMFS-AFSC-204

Results of the 2009 Eastern Bering Sea Continental Shelf Bottom Trawl Survey of Groundfish and Invertebrate Resources

by
R. R. Lauth

Alaska Fisheries Science Center
7600 Sand Point Way NE
Seattle, WA 98115
www.afsc.noaa.gov

U.S. DEPARTMENT OF COMMERCE
Gary F. Locke, Secretary
National Oceanic and Atmospheric Administration
Jane Lubchenco, Under Secretary and Administrator
National Marine Fisheries Service
James W. Balsiger, Acting Assistant Administrator for Fisheries

January 2010

NOAA Technical Memorandum NMFS

The National Marine Fisheries Service's Alaska Fisheries Science Center uses the NOAA Technical Memorandum series to issue informal scientific and technical publications when complete formal review and editorial processing are not appropriate or feasible. Documents within this series reflect sound professional work and may be referenced in the formal scientific and technical literature.

The NMFS-AFSC Technical Memorandum series of the Alaska Fisheries Science Center continues the NMFS-F/NWC series established in 1970 by the Northwest Fisheries Center. The NMFS-NWFSC series is currently used by the Northwest Fisheries Science Center.

This document should be cited as follows:

> Lauth, R. R. 2010. Results of the 2009 eastern Bering Sea continental shelf bottom trawl survey of groundfish and invertebrate resources. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-204, 228 p.

Reference in this document to trade names does not imply endorsement by the National Marine Fisheries Service, NOAA.

This document is available to the public through:

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

www.ntis.gov

Abstract

The Resource Assessment and Conservation Engineering Division of the Alaska Fisheries Science Center conducts annual bottom trawl surveys to monitor the condition of the demersal fish and crab stocks of the eastern Bering Sea continental shelf. The standard study area encompasses a major portion of the eastern Bering Sea shelf between the 20-m and the 200-m isobaths and from the Alaska Peninsula north to approximately the latitude of St. Matthew Island (60°50'N). In 2009, two chartered trawlers, the 40-m FV *Arcturus* and the 40-m FV *Aldebaran,* surveyed this area. Demersal populations were sampled by trawling for 30 minutes at stations centered within 37.04 × 37.04 km (20 × 20 nautical mile) grids covering the survey area. At each station, species composition of the catch was determined, and length distributions and age structure samples were collected from ecologically and commercially important species.

Three hundred seventy-six standard survey stations were sampled successfully. A total of 94 species of fishes representing 21 families and 62 genera, as well as 168 species of invertebrates representing 13 phyla, were identified in the catches from the entire survey area. The combined biomass of walleye pollock *(Theragra chalcogramma)*, yellowfin sole *(Limanda aspera)*, and rock sole *(Lepidopsetta* spp.*)* was 5.6 million metric tons (t) which was 63% of the total fish biomass. The biomass of invertebrates was composed primarily of echinoderms (1.5 million t) and crustaceans (0.71 million t).

Survey results presented in this report include abundance estimates for fishes and invertebrates, geographic distributions and size composition of the more common fish species, and contour plots of surface and bottom temperatures during the survey sampling period. Appendices provide station data, summarized catch data by station, species listings, and detailed analyses of abundance and biological data of the sampled populations.

Contents

Introduction

The eastern Bering Sea continental shelf supports one of the most productive groundfish and crab fisheries in the world (Bakkala 1993). Since 1970, groundfish such as walleye pollock (*Theragra chalcogramma*), yellowfin sole (*Limanda aspera*), and Pacific cod (*Gadus macrocephalus*) have been the primary target species among commercial catches. Although many species of groundfish are caught commercially, walleye pollock is the most abundant with catches ranging from 0.8 million to 1.5 million metric tons (t) per year for the past 30 years, and marketed products represent 40% of the global whitefish market (Ianelli et al. 2008).

Since 1971, the National Marine Fisheries Service (NMFS) Resource Assessment and Conservation Engineering (RACE) Division of the Alaska Fisheries Science Center (AFSC) has conducted an annual bottom trawl survey in the eastern Bering Sea to determine the distribution and abundance of groundfish and crab resources.

The first large-scale survey of the eastern Bering Sea shelf was conducted in 1975 under contract from the U.S. Bureau of Land Management in response to a need for baseline data to assess the potential impact of proposed offshore oil exploration and development on fishery resources (Pereyra et al. 1976). During this baseline survey, sampling was conducted over the eastern Bering Sea shelf between the 20-m and 200-m isobaths from the Alaska Peninsula north to approximately 62°N.

In subsequent years, the area coverage of the annual surveys was reduced until 1979 when the most comprehensive survey of the Bering Sea shelf was undertaken in cooperation with the Japan Fisheries Agency (Bakkala and Wakabayashi 1985). That survey encompassed the entire region sampled in the 1975 baseline study plus the continental slope waters between

St. Matthew and St. Lawrence Islands. A hydroacoustic survey was also conducted in 1979 to assess the midwater component of the walleye pollock population.

Subsequent annual bottom trawl surveys have essentially resampled the stations established during the 1975 survey, with slight modifications each year. This region encompasses the major portion of economically important eastern Bering Sea groundfish and crab populations, except those primarily located in the deep continental slope waters. Commercial crab stocks managed by the Alaska Department of Fish and Game (ADF&G) are covered by the North Pacific Fishery Management Council's (NPFMC) fishery management plan for the commercial king and Tanner crab fisheries in the Bering Sea and Aleutian Islands Regions. Crab species of interest include Tanner crab (*Chionoecetes bairdi*), snow crab (*C. opilio*), two stocks of blue king crab (*Paralithodes platypus*), red king crab (*P. camtschaticus*), and hair crab (*Erimacrus isenbeckii*). Detailed results from the analysis of crab data from this survey are available in Chilton et al. (2009).

Begining in 1979 and on a triennial basis through 1991, the survey was extended to include bottom trawl sampling of the continental slope and in the region between St. Matthew and St. Lawrence Islands. After a hiatus from 1992 to 1999, the survey was resumed in 2000 as an independent bottom trawl survey series conducted on a biennial basis (Hoff and Britt 2009).

The groundfish information gathered by the annual biological surveys serves to 1) provide annual fishery-independent estimates of abundance and biological condition of commercially exploited stocks to the NPFMC; 2) provide updates on the distribution and abundance information to commercial fishermen; and 3) continue a time-series database critical to our improved understanding of the population dynamics and interactions of groundfish species. This report presents information collected by the AFSC on the eastern Bering Sea shelf

during the 2009 bottom trawl survey, which represents the twenty-eighth contribution to the time series. For results from the 2008 bottom trawl survey, please refer to Lauth and Acuna (2009).

Methods

Survey Area and Sampling Design

The standardized eastern Bering Sea bottom trawl survey is based on a systematic design with a fixed sampling station at the center of each 37.04 × 37.04 km (20 × 20 nautical mile) grid square (Fig. 1). In areas surrounding St. Matthew and the Pribilof Islands, a high-density sampling of "corner stations" was implemented to better assess local blue king crab concentrations (Fig. 1). The original sampling design included 356 sampling stations that were sampled annually starting in 1982. Beginning in 1987, 20 additional stations in Strata 82 and 90 were added to the survey (Fig. 2) to investigate the distribution and abundance of opilio crabs and the northern distribution of walleye pollock. All results reported herein include data analyses for all 376 stations combined.

Sampling Logistics and Stratification Scheme

Survey trawl sampling began in Bristol Bay and stations were sampled along alternate, longitudinal columns (Fig. 2). When possible, using two vessels, this pattern of sampling proceeded westward to the shelf edge. This practice was designed to balance the coverage of the survey area between vessels. The progression from east to west was established in response to movements by yellowfin sole and perhaps other species, which may be migrating eastward during the course of the survey (Smith and Bakkala 1982).

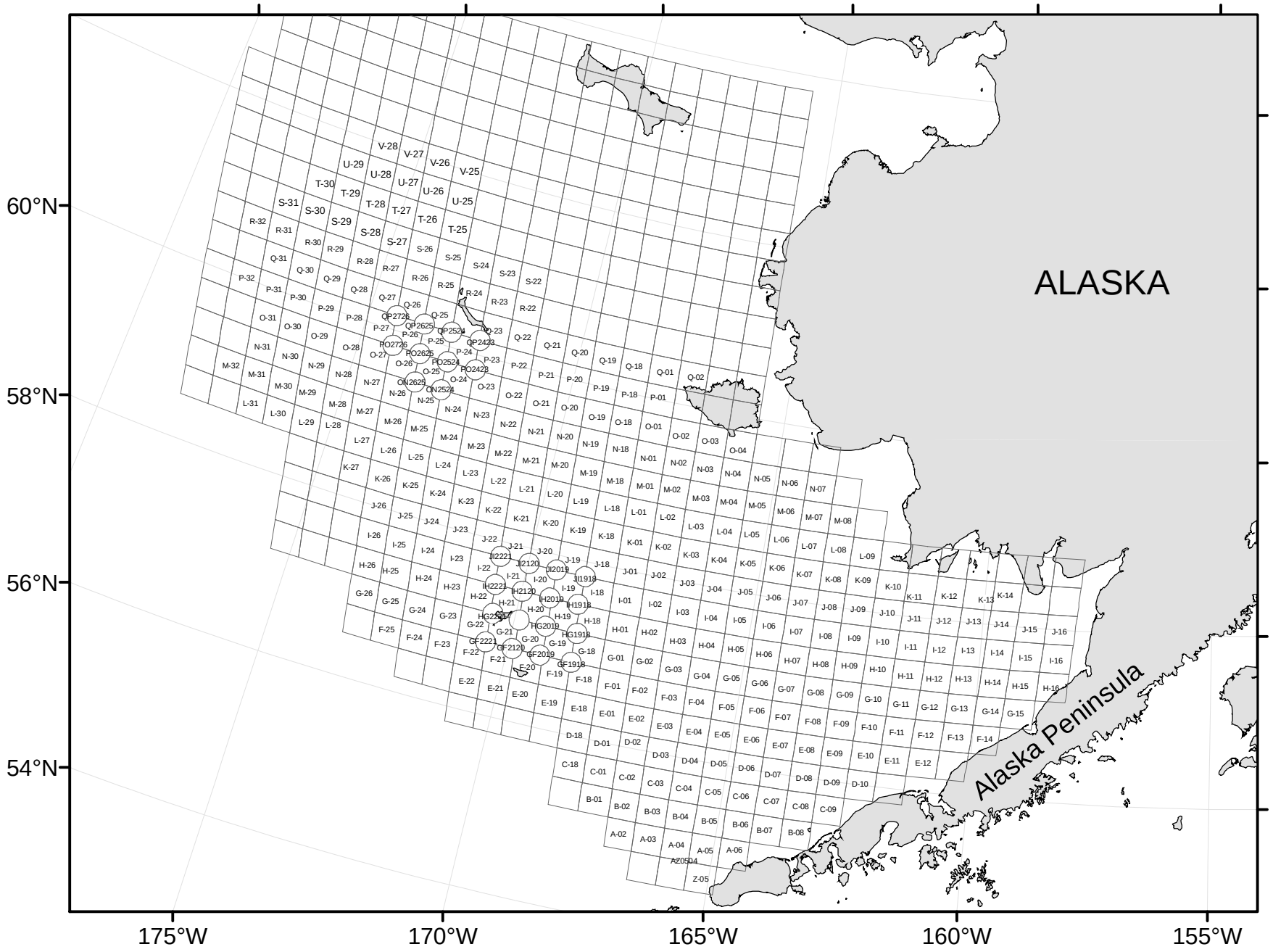


Figure 1. -- Grid map of sample stations for the 2009 eastern Bering Sea continental shelf bottom trawl survey.

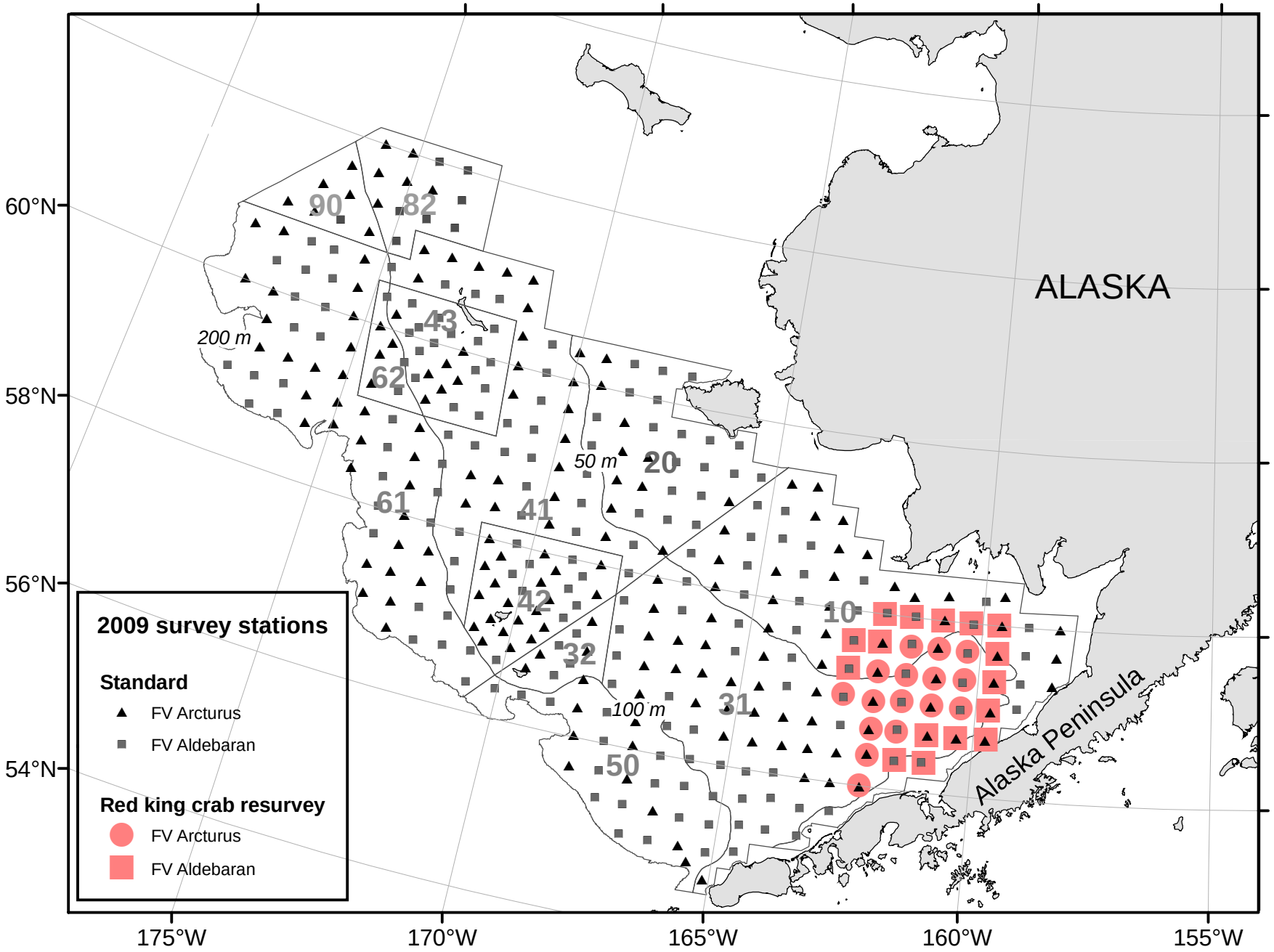


Figure 2. -- Sampled survey stations by vessel and the stratification scheme used for data analysis of the 2009 eastern Bering Sea bottom trawl survey.

For catch analysis, the survey region was divided into six strata bounded by the 50-m, 100-m, and 200-m isobaths, and into two geographic strata that separate the northwest and southeast portions of the study area (Fig. 2). This stratification scheme best reflects the differences observed in Bering Sea groundfish across the different oceanographic domains, and the intention of the design was to reduce the variances of population and biomass estimates (Bakkala 1993). Localized high-density sampling for blue king crab in Strata 30, 40, and 60 necessitated a further subdivision into high-density and standard-density sample strata, resulting in a total of 12 strata.

The overall sampling density for the entire survey area was one station per 1,322 km^2 (Table 1). However, because of the high-density sampling in Strata 30, 40, and 60, and the irregular stratum boundaries, sampling density within the subdivided strata varied from one station per 775 km^2 (Stratum 42) to one per 1,721 km^2 (Stratum 82).

Survey Vessels and Sampling Gear

From 30 May to 28 July 2009, the survey was conducted aboard the chartered commercial stern-trawlers FV *Arcturus* and FV *Aldebaran*. All fishing operations were conducted in strict compliance to national and regional protocols detailed in Stauffer (2004). Both vessels were equipped with standard 83-112 Eastern otter trawls, which have 25.3-m (83 ft) headropes and 34.1-m (112 ft) footropes (Fig. 3). These nets were attached to tail chains with 54.9-m (30-fathom) paired dandylines. Each lower dandyline had a 0.61-m chain extension connected to the lower wing edge to improve bottom-tending characteristics. Steel "V"-doors measuring 1.8 × 2.7 m and weighing 816 kg each were used.

Table 1. -- Stratum areas and sampling densities for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Stratum subdivisions	Representative area (km^2)	Stations successfully sampled	Sampling density (km^2 / station)
10	--	77,871	58	1,343
20	--	41,027	31	1,323
30	--	103,300	77	1,342
	31	94,526	69	1,370
	32	8,774	8	1,097
40	--	107,822	97	1,112
	41	62,703	44	1,425
	42	24,011	31	775
	43	21,108	22	959
50	--	38,792	26	1,492
60	--	94,562	67	1,411
	61	88,134	60	1,469
	62	6,429	7	918
82	--	20,655	12	1,721
90	--	11,568	8	1,446
Strata combined		495,599	376	1,318

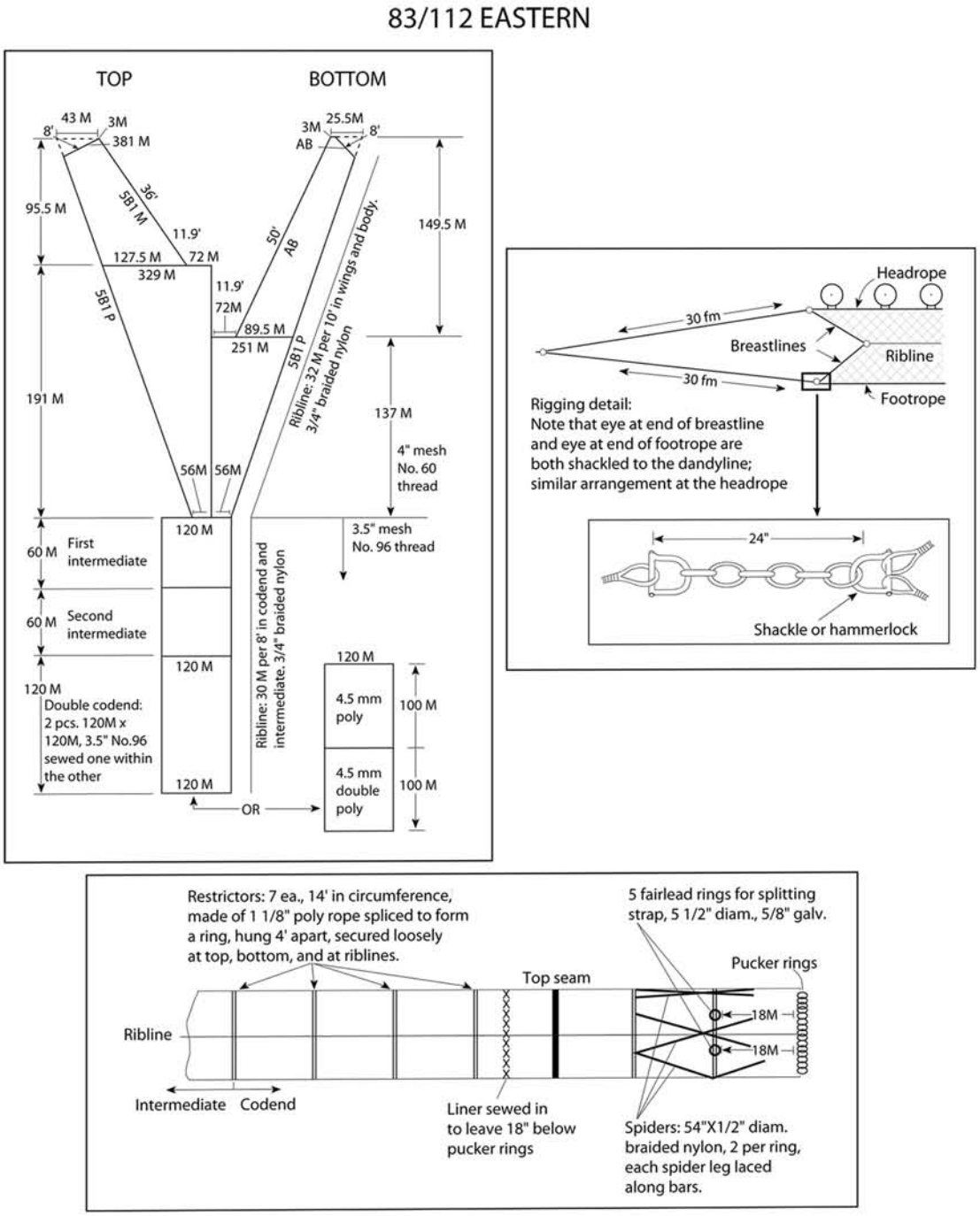


Figure 3. -- Schematic diagram of the 83/112 Eastern otter trawl gear used during the 2009 eastern Bering Sea bottom trawl survey

Netmind net mensuration systems (Northstar Technical Inc., St. John's, Newfoundland) were used aboard each vessel to monitor and record net height and width during fishing operations. Net width was measured as the distance between two sensors attached immediately forward of the connection of the upper breastline to the dandyline, and net height was measured from the headrope to the seafloor bottom. Estimates of mean net width were used in calculations of the area swept per tow (Rose and Walters 1990). For tows without observed net width values, a mean net width-inverse scope regression (Zar 1999) was used because it accounts for a majority of the variation for the eastern Bering Sea standard survey trawl (Rose and Walters 1990; Fig. 4).

Catch Sampling Procedures

Detailed sampling procedures used in RACE eastern Bering Sea assessment surveys are described in detail by Wakabayashi et al. (1985) and Stauffer (2004). A brief summary of these procedures is described below.

Samples were collected by trawling near the center of each grid square (or corner station, in the case of high-density strata) for a target fishing time of 30 minutes at a speed of 1.54 m/sec (3 knots). If the seafloor appeared to be untrawlable at the specified location, the nearest trawlable site within the same grid square was used. If the net was damaged or impacted by bottom structure during the trawl, the catch was discarded and a new sample obtained.

Catches estimated to be less than approximately 1,150 kg (2,500 lb) were typically enumerated entirely, while larger catches were subsampled. After sorting the subsample, individual species were weighed in aggregate and counted, and these weights and numbers were expanded to the total catch.

Fishes and invertebrates were identified and sorted to the lowest taxonomic level practicable. Similar morphological features between flathead sole (*Hippoglossoides elassodon*) and Bering flounder (*H. robustus*) make accurate identification of these species difficult in areas where the two species overlap; thus, in the analysis for this report these species are grouped by genus (*Hippoglossoides* spp.). Due to low abundance (believed to be < 1%) of southern rock sole (*Lepidopsetta bilineata*) and its morphological similarities to northern rock sole (*L. polyxystra*; Orr and Matarese 2000), these species were also grouped by genus (*Lepidopsetta* spp.) for this report.

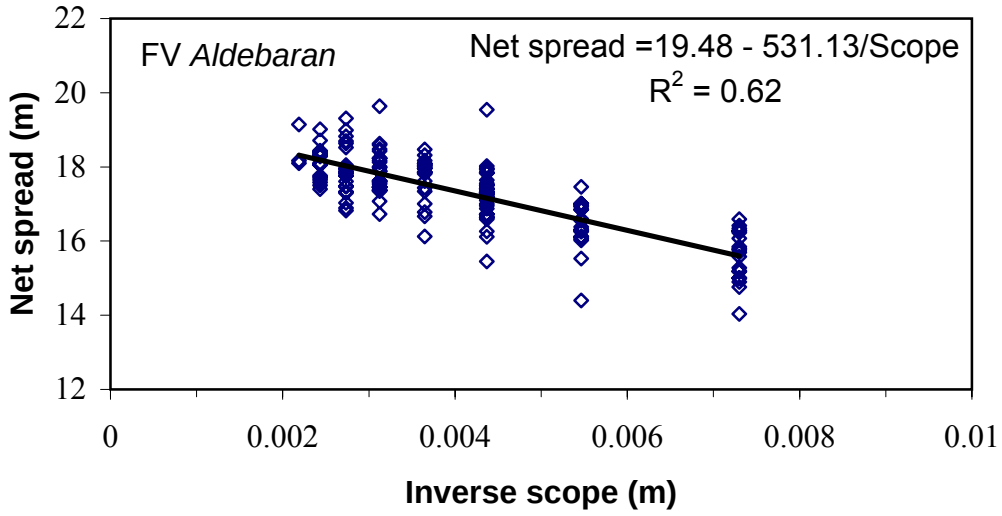
Catch weights and numbers by species or species group were either estimated directly when subsampled, or estimated by extrapolating the proportion in the subsample to that of the entire catch weight. All Pacific halibut (*Hippoglossus stenolepis*), Greenland turbot (*Reinhardtius hippoglossoides*), skates, and commercial crab species were weighed and enumerated from each catch. Additional fish or invertebrate species (e.g., large sculpins, sharks, or octopus) were also completely sorted from the catch in some cases.

Random samples of each fish species retained for length measurements were representative of the sex and size composition in the catch. The greater the size range of a fish species in the sample, the greater the number that were retained in the random subsample for length measurements by sex, up to a maximum of about 300 fish. Size composition data were collected for each commercially important groundfish species and many co-occurring species (Table 2). The sex of each fish from a sample was determined and then fish from the sample were measured to the nearest centimeter (fork or total length). Unless retained for sampling by the International Pacific Halibut Commission (IPHC) for management purposes, Pacific halibut

were measured upon capture and immediately returned to the sea in an effort to reduce mortality; weights were estimated using an IPHC length-weight regression.

Sagittal otoliths were collected from 13 fish species in both the northwestern and southeastern divisions of the survey area (Table 3). Three otolith pairs per sex centimeter interval per vessel (six pairs total) were collected for Pacific cod, Alaska plaice (*Pleuronectes quadrituberculatus*), arrowtooth flounder (*Atheresthes stomias*), northern rock sole, flathead sole, Greenland turbot, and yellow Irish lord (*Hemilepidotus jordani*). The great sculpin (*Myoxocephalus polyacanthocephalus*) was also collected at three otolith pairs per sex centimeter interval, but on only one vessel. Five otolith pairs per sex centimeter interval by vessel (10 pairs total) were collected for starry flounder (*Platichthys stellatus*) and yellowfin sole. Pacific halibut otoliths were collected aboard the FV *Arcturus* by the IPHC for population and growth analyses, and Alaska skate (*Bathyraja parmifera*) vertebrae were collected aboard the FV *Aldebaran*. For walley pollock otolith sampling, the eastern Bering Sea was divided into low- and high-density strata based on historical density data and a depth contour of approximately 70 m. Otoliths were collected from all hauls in which the total number of walleye pollock was 20 or more. Walleye pollock samples for otolith collection were selected at random from fish samples prior to sex determination. Six pairs of otoliths were collected in high-density strata and four in low-density strata. If walleye pollock length samples were stratified by size (i.e., separated into juveniles and adults before measuring), two of either the four or six otolith pairs were taken from juveniles.

Individual fish weights were collected for all species for which age structures were taken. Otoliths for roundfish were preserved in 50% glycerol-thymol solution, and skate age structures (vertebrae) were frozen.



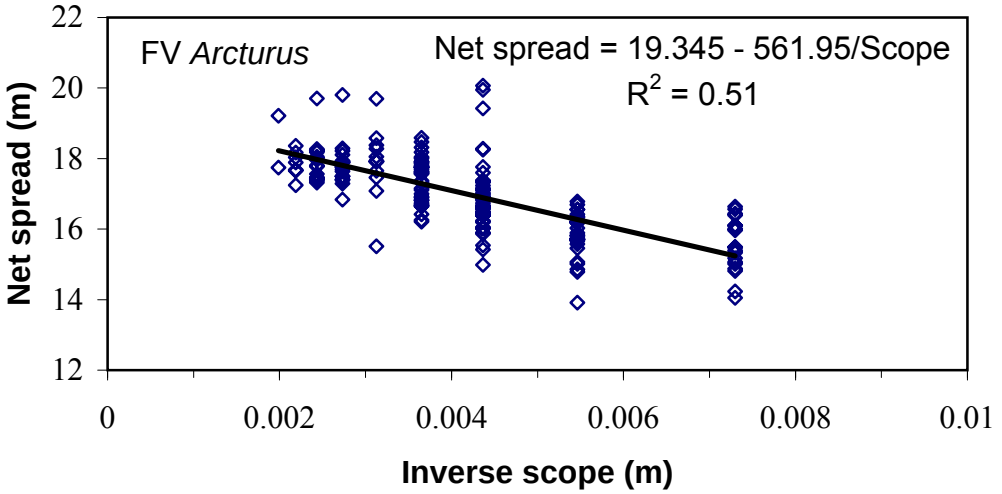


Figure 4 . -- Net spread-inverse scope (wire-out) relationship for each vessel participating in the 2009 eastern Bering Sea trawl survey.

Table 2. -- Number of length measurements by species and stratum made during the 2009 eastern Bering Sea bottom trawl survey.

	Stratum								
Common name	**10**	**20**	**30**	**40**	**50**	**60**	**82**	**90**	**Total**
Alaska plaice	5,000	3,324	2,482	2,706	0	23	12	0	13,547
Alaska skate	184	478	1,243	1,314	96	1,058	86	125	4,584
Aleutian skate	0	0	0	0	1	6	0	0	7
Arctic cod	2	110	1	64	0	0	297	1	475
arrowtooth flounder	61	0	2,161	576	3,227	3,576	0	10	9,611
Atka mackerel	0	0	2	0	1	0	0	0	3
Bering flounder	0	26	3	855	0	269	486	395	2,034
Bering skate	0	0	29	9	198	108	0	9	353
big skate	0	0	0	0	2	0	0	0	2
bigmouth sculpin	0	0	22	27	20	105	0	1	175
blackspotted rockfish	0	0	0	0	9	0	0	0	9
butter sole	3	0	31	0	0	0	0	0	34
butterfly sculpin	1	2	1	270	0	0	35	0	309
chinook salmon	2	0	0	0	0	0	0	0	2
chum salmon	2	0	0	2	1	0	0	0	5
Dover sole	0	0	2	0	9	0	0	0	11
dusky rockfish	0	0	0	0	1	1	0	0	2
flathead sole	96	4	4,022	1,623	2,936	5,185	0	23	13,889
great sculpin	106	14	196	239	2	98	1	29	685
Greenland turbot	0	0	4	353	0	278	49	172	856
Kamchatka flounder	0	0	200	156	538	1,105	0	75	2,074
longhead dab	912	234	0	0	0	0	0	0	1,146
marbled eelpout	0	1	0	94	0	0	115	0	210
northern rock sole	8,384	3,506	9,301	6,191	36	528	16	16	27,978
northern rockfish	0	0	0	0	5	0	0	0	5
Pacific cod	2,733	1,605	4,809	5,032	383	2,109	9	184	16,864
Pacific halibut	532	338	1,960	644	56	188	3	4	3,725
Pacific ocean perch	0	0	0	0	5	17	0	0	22
plain sculpin	1,502	769	21	81	0	0	0	0	2,373
prowfish	0	0	0	0	0	1	0	0	1
rex sole	0	0	74	4	567	369	0	0	1,014
saffron cod	28	9	0	1	0	0	0	0	38
Sakhalin sole	0	0	0	12	0	0	7	0	19
searcher	0	0	0	0	0	89	0	0	89
shortfin eelpout	0	0	0	231	0	1,046	0	175	1,452
southern rock sole	1	0	62	0	0	0	0	0	63
spiny dogfish	0	0	0	0	1	0	0	0	1
spinyhead sculpin	0	0	1	0	0	0	0	0	1
starry flounder	780	180	119	0	0	0	0	0	1,079
walleye pollock	662	897	3,837	4,772	997	8,724	151	609	20,649
warty sculpin	3	8	16	285	0	11	0	0	323
wattled eelpout	0	0	0	204	0	131	62	63	460
whiteblotched skate	0	0	0	0	1	0	0	0	1
yellow Irish lord	0	0	192	677	10	59	0	0	938
yellowfin sole	8,440	4,424	5,423	3,713	0	0	18	0	22,018
Total	29,434	15,929	36,214	30,135	9,102	25,084	1,347	1,891	149,136

Table 3. -- Number of fish from which age structures (otoliths) were collected by species and stratum during the 2009 eastern Bering Sea bottom trawl survey.

	Stratum								
Common name	**10**	**20**	**30**	**40**	**50**	**60**	**82**	**90**	**Total**
Alaska plaice	249	145	109	116	0	1	0	0	620
Alaska skate[a]	34	41	76	112	15	57	12	3	350
arrowtooth flounder	24	0	102	46	204	311	0	4	691
flathead sole	3	0	227	50	107	286	0	0	673
great sculpin	4	2	31	71	0	17	0	24	149
Greenland turbot	0	0	4	74	0	200	2	71	351
northern rock sole	188	167	97	116	0	26	2	3	599
Pacific cod	191	123	382	473	62	165	0	31	1,427
Pacific halibut[b]	189	115	1,112	206	23	103	1	3	1,752
starry flounder	249	46	19	0	0	0	0	0	314
walleye pollock	53	92	267	406	66	400	18	40	1,342
yellow Irish lord	0	0	28	154	3	27	0	0	212
yellowfin sole	252	199	147	183	0	0	3	0	784

[a]Skate vertebrae were collected for ageing.

[b]International Pacific Halibut Commission (IPHC) manages and analyzes age structure collection.

Surface and bottom water temperatures, as well as temperature and depth profiles, were recorded at 1-second intervals at each station using a Sea-Bird SBE-39 datalogger (Sea-Bird Electronics Inc., Bellevue, WA) attached to the headrope of the trawl. Depth to bottom was obtained by adding net height to headrope depth.

Catch Data Analysis

Trawl survey catch data were used to estimate 1) relative abundance; 2) population biomass; 3) population numbers, and 4) population abundance by size class. A brief description of the procedures used in the analysis of RACE Bering Sea survey data follows (for a detailed description see Wakabayashi et al. 1985). Note: some of the species collected were grouped by family for catch data analysis because of their limited commercial value or uncertain identification.

Mean catch per unit effort (CPUE) values for each species were calculated in kilograms per hectare (1 ha = 10,000 m^2) and number per hectare for each stratum; area swept (hectares) was computed as the distance towed multiplied by the mean net width (Alverson and Pereyra 1969). Mean CPUE values were calculated for individual strata and for the overall survey area. Biomass and population estimates were derived for each stratum by multiplying the stratum mean CPUE by the stratum area. Stratum totals were then summed to produce estimates for each of the six main strata and the total survey area.

For size composition estimates, the proportion of fish at each length interval (from subsamples at each station), weighted by CPUE (number of fish/ha), was expanded to the stratum population. Stratum estimates were summed to derive the estimated size composition for each of the six main strata and for the overall survey area.

Except for Pacific halibut, otolith samples collected during the survey were read for age estimates by staff of the Age and Growth Program of the AFSC's Resource Ecology and Fisheries Management (REFM) Division. Age, growth, and population analyses will be presented in separate reports (e.g., Ianelli et al. 2008).

Additional Research Projects

In addition to the survey operations, there were numerous research projects undertaken during 2009 (Table 4). Seven projects were collection requests for fish or crab specimens for educational outreach, reference material, and observer training. Projects conducted for the RACE Division included studies of 1) acoustic data collection for augmenting the midwater assessment of walleye pollock; 2) cooperative study with the Bering Sea Fisheries Research Foundation (BSFRF) to estimate the efficiency of the EBS survey trawl for snow crab; 3) derelict crab pot habitat characterization at crab pot dump sites; 4) summer zooplankton biomass; 5) snailfish genetics and food habits; 6) snailfish visual ecology; 7) characterization of the benthic infauna community; 8) collection of *in situ* light intensity measurements; 9) visual monitoring for bitter crab and black mat syndromes; 10) reproductive potential of Bristol Bay red king crabs; and 11) Tanner crab genetics. The REFM Division special study projects included 1) trophic interactions and feeding ecology of commercial fishes (Table 5); 2) a short-tailed albatross survey; 3) shortraker rockfish genetics; 4) Alaska skate tagging, and 5) octopus specimen data. Projects from outside the AFSC included 1) halibut otolith, tag and size collections by the IPHC; 2) collection of biological and oceanographic data for the Bering Sea Integrated Ecosystem Research Program (BSIERP) and the Pacific Marine Environmental

Table 4. -- Research projects and collections undertaken during the 2009 eastern Bering Sea bottom trawl survey.

Project title	Principal Investigator(s)	Agency
Summer zooplankton biomass on the EBS[1] shelf	J. Napp	AFSC[2] RACE[3]
Pollock biomass acoustic data collection	T.Honkalehto, P. Ressler	AFSC RACE
Food habits reference collection	J. Thomason	AFSC NMML[4]
Observer training program specimen collections	D. Stevenson, M. Vechter	AFSC RACE/FMA[5], UAA[6]
BSIERP[7] oceanographic sampling	N. Cokelet	PMEL[8]
Characterization of benthic infauna community for modeling essential fish habitat in the EBS	C. Yeung, M.S. Yang	AFSC RACE/REFM[9]
Visual ecology of snailfishes (*Careproctus* sp.)	L. Britt	AFSC RACE
Outreach/Fall Fishermen's Festival fish collection	J. Conner	AFSC RACE
Assessing the effect of light intensity and penetration on the distribution and behavior of walleye pollock	S. Kotwicki	AFSC RACE
Crab and survey operations photos	J. Haaga	AFSC RACE
Habitat characterization of commercial crab pot dump sites in the EBS shelf	R. Lauth	AFSC RACE
Snailfish taxonomy and food habits	J. Orr	AFSC RACE
Trawl selectivity of opilio crab	K. Weinberg	AFSC RACE, BSFRF[10]
Alaska skate vertebrae and maturity collection	O. Ormseth	AFSC REFM
Alaska skate tagging	O. Ormseth, J. Hoff	AFSC RACE/REFM
Octopus identification and biological data collection	E. Conners	AFSC REFM
Shortraker rockfish (*Sebastes borealis*) identification	C. Hutchinson	AFSC REFM
Short-tailed albatross sightings	S. Fitzgerald	AFSC REFM
Trophic interactions and feeding ecology of EBS shelf fishes	K. Aydin, T. Buckley	AFSC REFM
Visual monitoring for bitter crab and black mat syndrome in North Pacific Ocean *Chionoecetes* sp.	F. Morado, R. Foy	AFSC RACE
Reproductive potential of snow and tanner crabs	L. Slater, J. Webb	ADF&G[11]
Reproductive potential of Bristol Bay red king crabs	K. Swiney	AFSC RACE
Pathological specimen vouchers	P. Jensen, F. Morado	AFSC RACE
Reproductive indices of male snow crabs from the EBS	S. Tamone	UAS[12]
Crab mount collections	J. Haaga	AFSC RACE
Tanner crab genetics	F. Morado, J.M. Sevigny	AFSC RACE, DFO[13]
Pacific halibut biological data collection	Lauri Sadorus	IPHC[14]

[1]Eastern Bering Sea; [2]Alaska Fisheries Science Center, Seattle, Washington;

[3]Resource Assessment and Conservation Engineering Division; [4]National Marine Mammal Laboratory;

[5]Fisheries Monitoring and Analysis Division; [6]University of Alaska Anchorage;

[7]Bering Sea Integrated Ecosystem Research Program;[8]Pacific Marine Environmental Laboratory, Seattle, Washington;

[9]Resource Ecology and Fisheries Management Division; [10] Bering Sea Fisheries Research Foundation, Seattle, Washington;

[11]Alaska Department of Fish and Wildlife, Kodiak, Alaska; [12]University of Alaska Southeast, Juneau, Alaska;

[13]Department of Fisheries and Oceans, Quebec, Canada; [14]International Pacific Halibut Commission, Seattle, Washington

Table 5. -- Stomach samples collected and scanned onboard during the 2009 eastern Bering Sea bottom trawl survey.

Species	Stomachs collected
Alaska plaice	264
Arctic cod	112
arrowtooth flounder	413
capelin	403
eulachon	199
flathead sole	231
greenling	27
longhead dab	32
northern rock sole	295
Pacific cod	1,390
Pacific herring	293
Pacific sand lance	18
prickelback	78
rainbow smelt	1
saffron cod	16
searcher	83
spinyhead sculpin	80
walleye pollock	1,424
yellowfin sole	263
Total	5,622

Laboratory (PMEL); 3) reproductive potential of snow and Tanner crabs for ADF&G, and 4) reproductive indices of male snow crab for the University of Alaska, Juneau.

Results and Discussion

A total of 376 stations were successfully sampled in 2009 (Fig. 2). Any hauls that sustained significant gear damage or contained debris such as discarded crab pots were resampled immediately following the unsucessful haul. Haul data for successfully trawled stations used in the analyses are listed in Appendix A along with the relevant information about each station, such as position, tow parameters (net width, depth, distance fished, and duration of haul), time, and environmental measurements (surface and gear temperatures) for each vessel.

After standard survey sampling was completed on 18 July, both vessels participated for 6 days in the cooperative project with the BSFRF (see above), after which they returned to Bristol Bay to resample 32 stations for female red king crab (Fig. 2). It was necessary to resample the stations because the female red king crab had not yet molted and extruded their eggs when the stations were first sampled in early June. An accurate estimate of the abundance of molted and spawned female red king crab is critical to managers for determining if the red king crab population is overfished.

Ocean Conditions

Sea surface temperatures recorded during the survey ranged from 1.1° to 7.3°C (Fig. 5). As in most previous surveys, surface temperature increased from east to west across the shelf. Sea bottom temperatures ranged from –1.7° to 6.3°C (Fig. 6) with warmer bottom temperatures

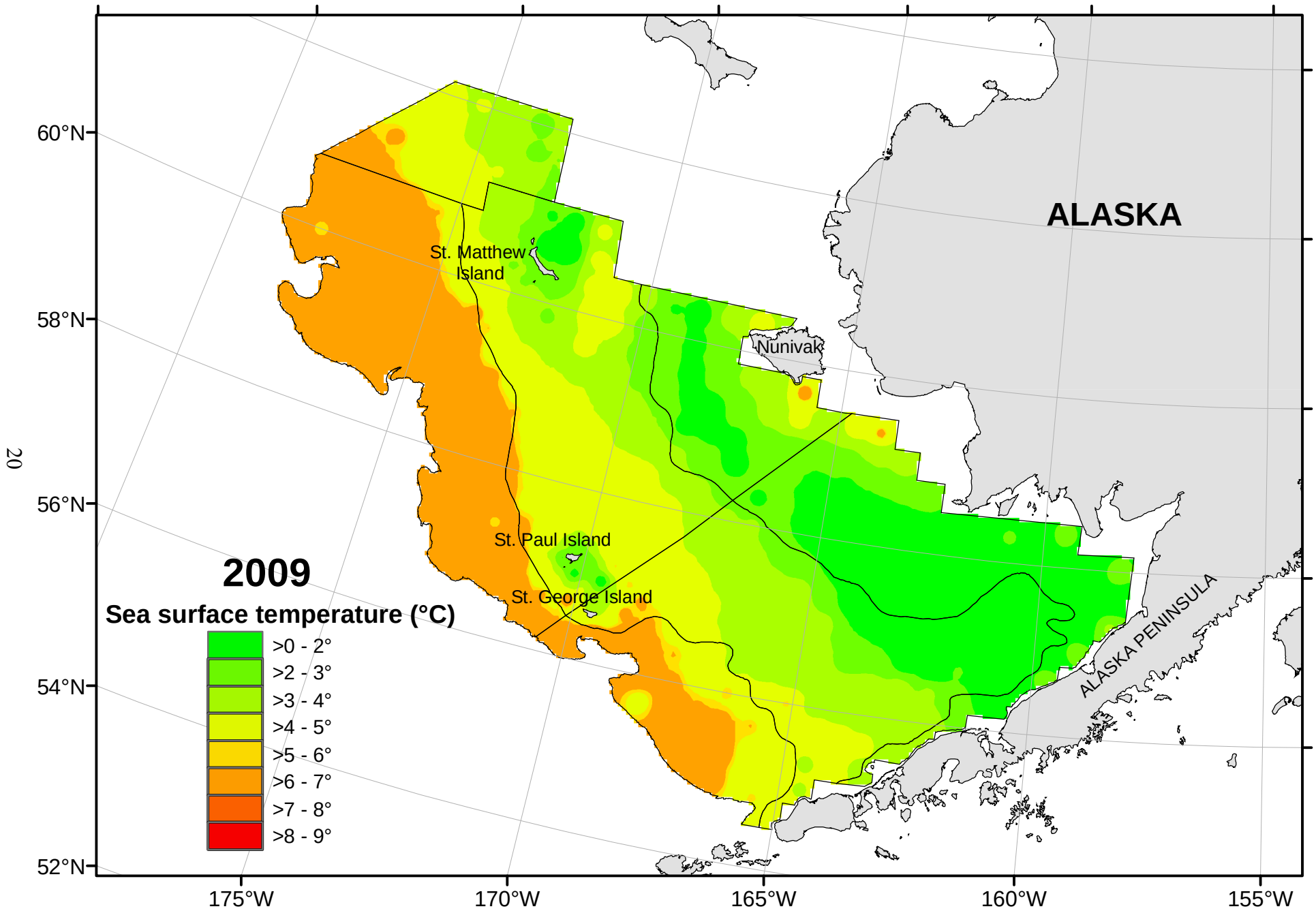


Figure 5. -- Distribution of sea surface water temperatures (°C) observed during the 2009 eastern Bering Sea bottom trawl survey.

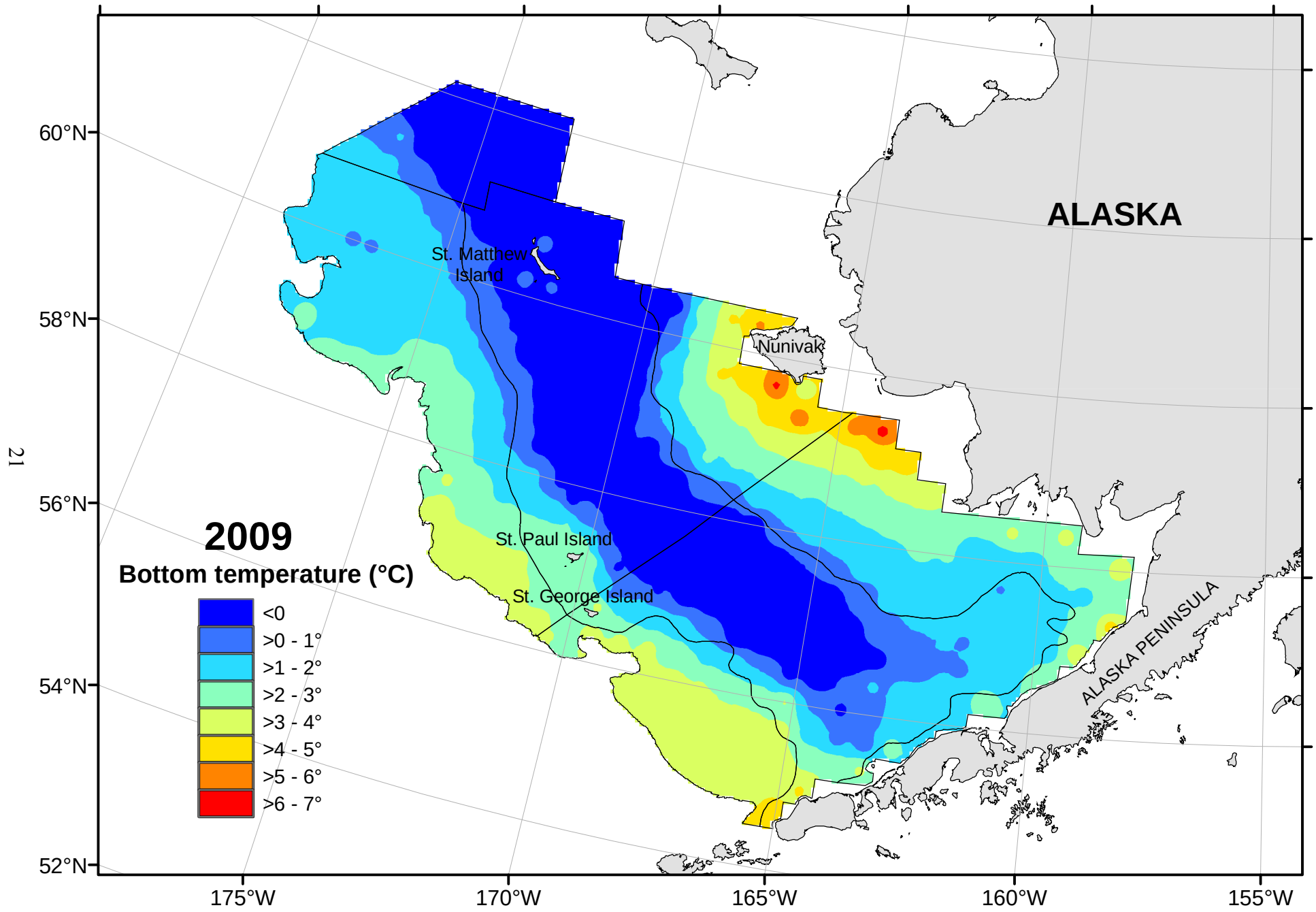


Figure 6. -- Distribution of bottom water temperatures (°C) observed during the 2009 eastern Bering Sea bottom trawl survey.

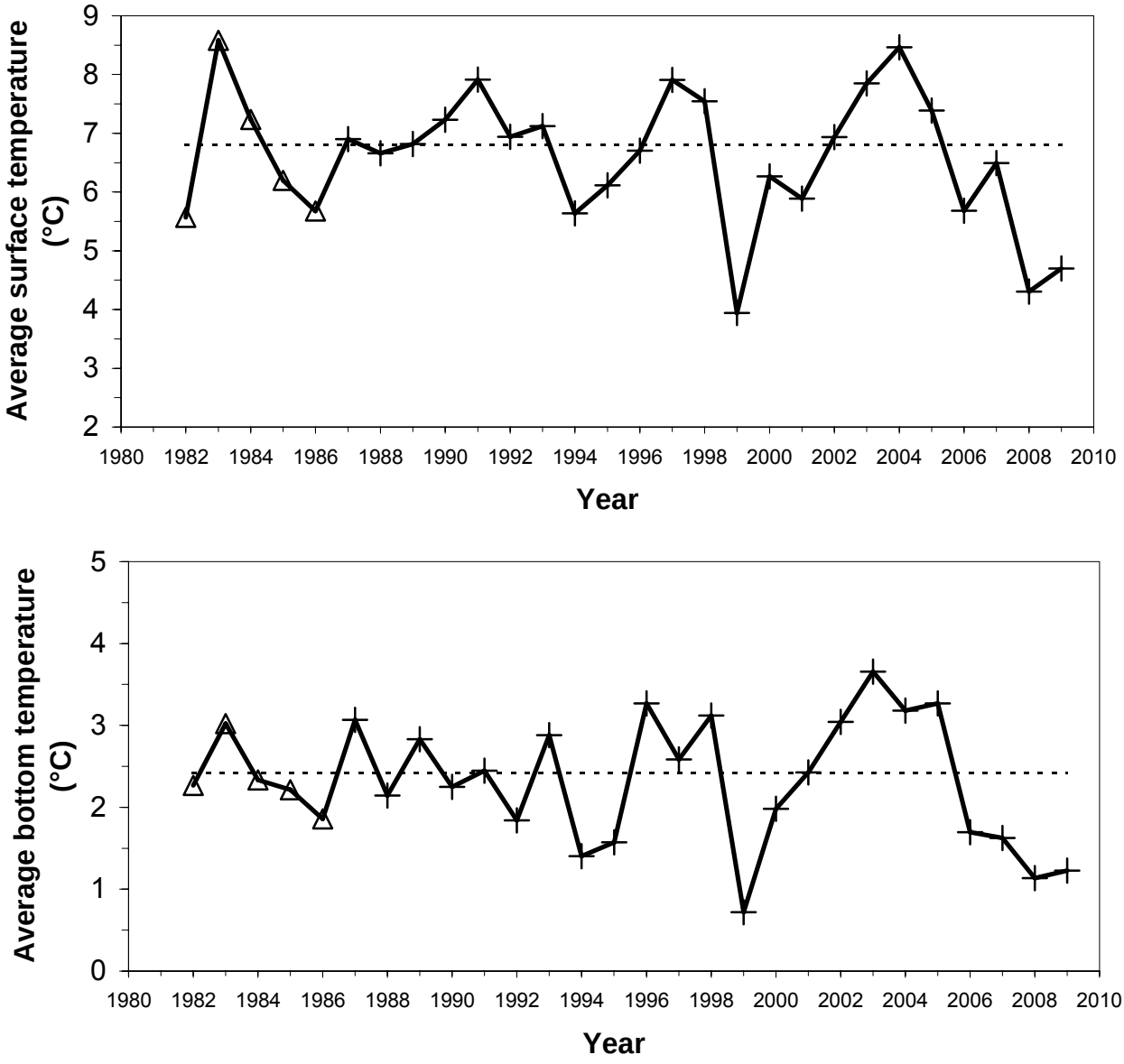


Figure 7. -- Mean surface and bottom temperatures weighted by stratum based on expendable bathythermograph casts or digital dataloggers attached to the headrope during the eastern Bering Sea bottom trawl surveys from 1982 to 2009. The 1982-1986 means (triangles) are based on the standard survey area (see Fig. 1) and the 1987-2009 means are based on the expanded survey area. The dashed lines represent the grand mean water temperatures for 1982-2008.

(> 3.0°C) occurring along the inner shelf from the northern portion of Bristol Bay to Nunivak Island, and on the outer shelf south of latitude 58°N. A cold pool, usually defined as an area with temperatures < 2°C, occupied most of the mid-shelf at depths between 50 and 100 m, and extended south to the Alaska Peninsula and into Bristol Bay.

Average surface (4.7°C) and bottom (1.2°C) water temperatures were slightly higher than in 2008, but well below the long-term means from 1982 to 2008 for the surface (6.8°C) and for the bottom (2.4°C; Fig. 7).

Relative Fishing Powers of Survey Vessels

Historically, two vessels have been used to conduct the eastern Bering Sea shelf bottom-trawl survey, and fishing power corrections (FPC) have been applied when statistical differences of mean CPUE values were detected between the two vessels (Kappenman 1992). In 2006, application of an FPC was discontinued because of concerns that it was not correcting for vessel effect but was increasing the overall error in CPUE estimates. The underlying assumption for using an FPC was that one survey vessel was less efficient at sampling than the other survey vessel and that systematic error caused by vessel effects warranted correction (Munro 1998). Table 6 lists the calculated FPCs, by fish species, which were applied to CPUE estimates for the less-efficient survey vessel for survey years 1982-2005. Concerns about using an FPC were raised by studies showing that overall error in CPUE estimates can actually increase unless there are substantial differences between vessels (Munro 1998). Survey gear research done by the AFSC (Somerton and Weinberg 2001, Weinberg 2003, Kotwicki and Weinberg 2005, Kotwicki et al. 2006, Weinberg and Somerton 2006, Weinberg and Kotwicki 2007), and real-time monitoring and data collection of trawl and vessel performance (Zimmerman et al. 2003), has

Table 6. -- Calculated fishing power corrections (FPC) applied to CPUE estimates by fish species for the "less-efficient" survey vessel for survey years 1982-2005.

Year	Rajidae	Alaska skate	Arrowtooth flounder	Kamchatka flounder	*Atheresthes* spp.	Pacific halibut	*Hippoglossoides* spp.	Yellowfin sole	*Lepidopsetta* spp.	Alaska plaice	Pacific cod	Walleye pollock
1982	--	--	--	--	--	0.952	--	--	--	--	--	--
1983	--	--	0.787	--	--	0.826	--	0.943	--	0.741	--	0.885
1984	--	--	--	--	--	--	0.73	--	--	0.943	0.901	0.807
1985	--	--	--	--	--	--	0.909	0.901	0.935	--	--	0.971
1986	--	--	0.952	--	--	--	--	--	0.98	0.98	--	0.98
1987	--	--	0.901	--	--	--	--	0.926	--	0.935	0.87	--
1988	0.723	--	--	--	--	--	0.957	0.776	0.977	0.907	--	0.969
1989	--	--	--	--	0.877	0.685	0.949	--	0.976	0.907	--	--
1990	0.776	--	--	--	--	0.951	0.869	--	--	0.898	--	0.994
1991	--	--	--	--	--	0.902	--	--	--	--	--	--
1992	--	--	--	--	0.781	0.847	0.877	0.901	0.909	0.943	0.917	0.971
1993	--	--	0.787	--	--	--	--	--	0.885	--	0.917	0.87
1994	0.862	--	0.855	--	--	0.97	0.909	0.99	0.877	--	0.99	--
1995	0.787	--	--	--	--	--	--	--	--	--	--	--
1996	0.893	--	--	--	--	0.926	--	0.926	0.885	--	--	0.833
1997	0.98	--	--	--	--	0.877	0.943	--	0.926	0.971	--	0.877
1998	--	--	--	--	--	0.962	0.98	0.901	--	--	0.909	0.93
1999	0.807	--	--	--	--	--	0.994	0.921	0.916	0.77	0.945	--
2000	--	--	--	--	--	--	0.982	--	0.944	--	--	0.898
2001	--	--	--	--	--	0.91	--	0.767	0.922	--	0.951	--
2002	--	0.733	--	--	0.906	--	0.92	0.883	0.952	0.979	0.901	0.972
2003	--	--	--	--	0.941	--	--	0.913	--	--	0.989	--
2004	--	0.96	--	--	--	--	--	--	--	0.939	0.874	--
2005	--	0.765	0.829	--	--	0.881	--	--	--	0.979	--	0.815

increased awareness and helped reduce possible systematic errors associated with "vessel effects".

One reason why the overall error of FPC-adjusted CPUE estimates was probably artificially high was nonrandom selection of stations from alternate columns for calculating the FPC. Without random selection of stations, it is possible that observed differences between vessels are actually real differences in fish distribution and abundance. For example, the location and timing of the cold pool on the eastern Bering Sea shelf has a dramatic effect on fish distribution, so if one vessel is sampling a column inside the cold pool and the other is sampling in the adjacent column outside the cold pool, differences in catch rates between the two vessels may be due to the effect of the cold pool on fish distribution rather than a vessel-effect.

The RACE Groundfish Assessment Program is continuing to investigate sources of systematic error and to devise methods for minimizing systematic error in area-swept calculations (Stan Kotwicki, AFSC; personal communication). Before these new methods can be implemented, it will be necessary to reconcile historical data and complete the development of a new relational database for accessing stream data for doing area-swept calculations. Until this can be accomplished, application of an FPC adjustment will not be done; however, so as not to affect the historical time series, FPC adjustments made to catches prior to 2006 will remain unchanged.

Relative Abundance

The relative abundance of the 11 most abundant fishes are presented in Figure 8. These taxa accounted for 66% (160 kg/ha) of total catch mean CPUE (240 kg/ha) and 93% of total fish mean CPUE (172 kg/ha). The walleye pollock mean CPUE for all areas combined was

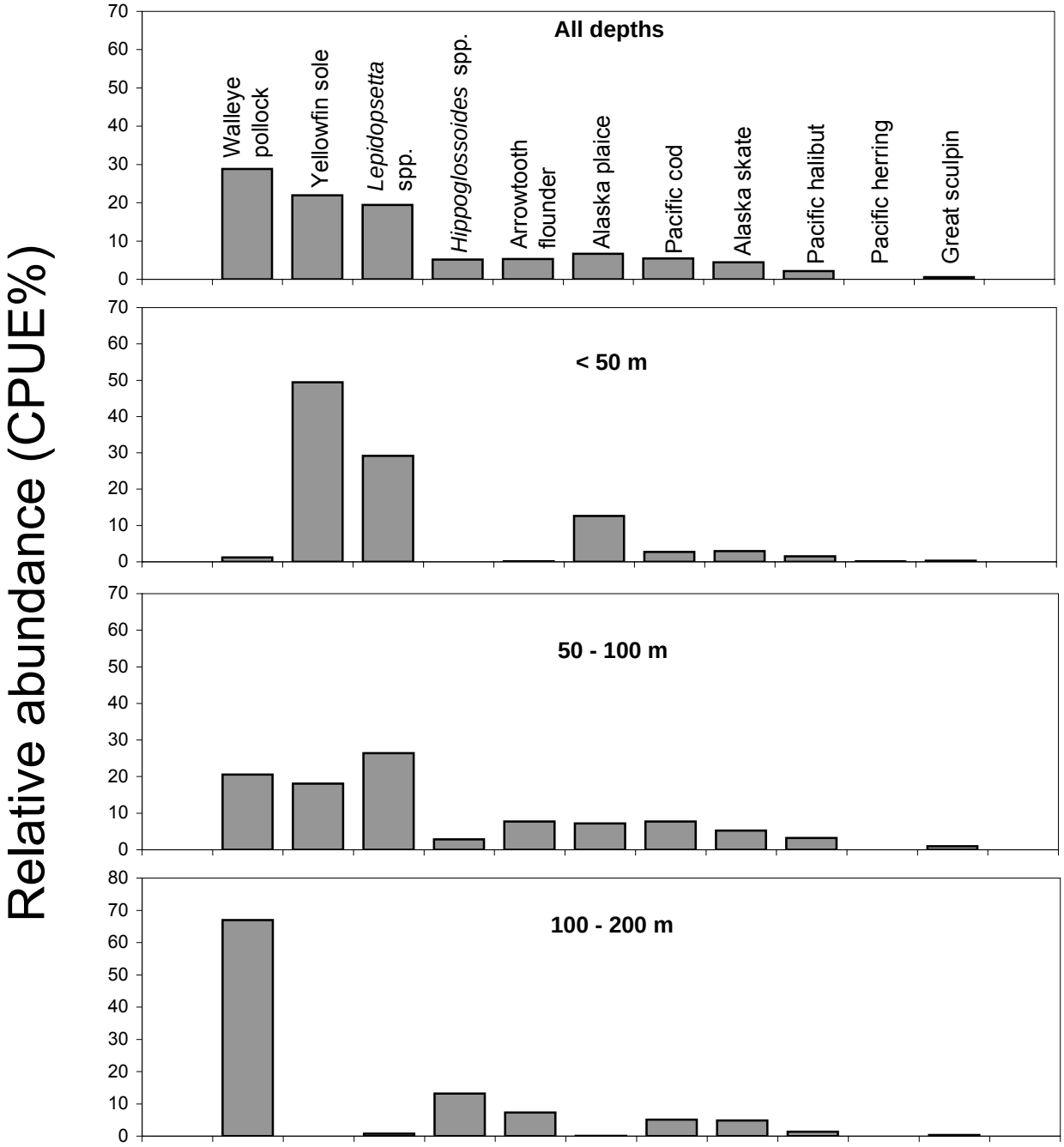


Figure 8. -- Relative abundance (%CPUE in kg/ha) of principal groundfish species (top 11 for all depths combined) by depth zones and for all depths combined for the 2009 eastern Bering Sea bottom trawl survey.

46.1 kg/ha. Walleye pollock was the dominant groundfish species at depths between 50 and 200 m. This species was encountered at nearly all sampling stations, with the largest mean catches observed in the outer shelf stations. Pacific cod catch rates were at similar levels across all three depth zones with an overall mean CPUE of 8.7 kg/ha. Rock sole, as well as yellowfin sole, with overall mean catch rates of 31.1 and 35.1 kg/ha, respectively, were abundant in water depths less than 100 m. See Appendix B for a descending rank of all organisms caught.

Biomass, Abundance, Distribution, CPUE, and Size Composition of Principal Species and Species Groups

A total of 94 species of fishes representing 21 families and 62 genera were identified in the catches from the entire survey area (Appendix C1). In addition, a total of 266 individual invertebrate taxa were identified from 13 phyla, with 168 identified to the species level (Appendix C2).

Total demersal animal biomass for the standard survey area was estimated at 12.1 million t, of which fish species accounted for 72% (8.8 million t; Table 7) and invertebrates 28% (3.3 million t; Table 8). The greatest concentrations of fish biomass were located in Bristol Bay, along the Alaska Peninsula, around the Pribilof Islands, and in the outer shelf northwest of the Pribilof Islands (Fig. 9). The fish biomass was dominated by pleuronectids (5.5 million t) and gadids (2.7 million t; Table 7). The biomass of invertebrates was composed primarily of echinoderms (1.5 million t) and crustaceans (0.71 million t; Table 8).

Geographic distributions, population numbers, biomass estimates, and size composition are presented in Figures 9-48 and Tables 9-28 for each of the following eastern Bering Sea groundfish: walleye pollock, Pacific cod, yellowfin sole, northern and southern rock sole

Table 7. -- Biomass estimates (t) for major fish species and groups taken during the 2009 eastern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence	Proportion of total animal biomass[b]	Estimated biomass by stratum (t)							
			10	20	30	40	50	60	82	90
Gadidae (cods)										
Walleye pollock	2,282,418 ± 24%	0.1882	20,865	7,043	329,628	316,732	142,475	1,414,483	67	51,126
Pacific cod	430,087 ± 16%	0.0355	40,031	24,163	120,024	123,137	18,631	95,303	28	8,769
Other cods	509 ± 54%	0.0000	99	46	2	36	1	0	324	1
Total cods	**2,713,014 ± 21%**	**0.2237**	**60,994**	**31,252**	**449,654**	**439,905**	**161,107**	**1,509,786**	**419**	**59,896**
Anoplopomatidae										
Sablefish	0 ± 0%	0.0000	0	0	0	0	0	0	0	0
Scorpaenidae (rockfish)										
Pacific ocean perch	188 ± 23%	0.0000	0	0	0	0	89	99	0	0
Other rockfish	461 ± 82%	0.0000	0	0	0	0	430	31	0	0
Total rockfish	**649 ± 73%**	**0.0001**	**0**	**0**	**0**	**0**	**519**	**130**	**0**	**0**
Pleuronectidae (flatfishes)										
Yellowfin sole	1,739,363 ± 17%	0.1434	933,450	238,168	462,595	105,025	0	0	102	23
Rock sole	1,541,493 ± 20%	0.1271	623,252	67,741	447,372	384,056	1,055	17,644	202	173
Hippoglossoides spp.	421,626 ± 23%	0.0348	3,293	434	136,077	104,959	49,954	124,095	1,063	1,751
Alaska plaice	529,729 ± 19%	0.0437	181,194	118,289	86,038	141,176	0	2,735	298	0
Arrowtooth flounder	406,854 ± 20%	0.0336	623	0	74,598	14,479	158,197	158,410	0	548
Kamchatka flounder	49,516 ± 20%	0.0041	0	0	3,868	3,673	5,504	34,206	0	2,264
Greenland turbot	10,956 ± 38%	0.0009	0	0	31	742	0	9,175	22	986
Pacific halibut	168,522 ± 14%	0.0139	15,011	19,936	78,463	23,218	6,617	25,002	68	206
Other flatfish	633,326 ± 17%	0.0522	248,280	127,963	97,276	141,263	10,609	7,618	316	0
Total flatfish	**5,501,387 ± 22%**	**0.4537**	**2,005,103**	**572,531**	**1,386,319**	**918,592**	**231,937**	**378,884**	**2,071**	**5,950**
Clupeidae (Pacific herring)	2,440 ± 47%	0.0002	630	785	50	929	0	45	0	0
Cottidae (sculpins)	151,153 ± 19%	0.0125	35,668	16,570	34,763	36,272	3,895	22,011	64	1,909
Zoarcidae (eelpouts)	19,211 ± 32%	0.0016	0	5	666	2,368	195	13,535	680	1,763
Osmeridae (smelts)	2,980 ± 34%	0.0002	1,387	262	250	120	899	30	29	2
Agonidae (poachers)	19,306 ± 33%	0.0016	2,845	2,441	5,217	8,303	458	39	0	3
Cyclopteridae (snailfishes)	2,665 ± 33%	0.0002	23	51	369	1,505	10	347	258	101
Alaska skate	350,907 ± 13%	0.0289	25,193	43,876	87,933	72,429	11,881	97,512	5,154	6,930
Other skates	20,514 ± 35%	0.0017	0	1	5,087	372	6,609	7,927	0	518
Other fish	6,828 ± 46%	0.0006	1,385	350	972	682	1,641	1,797	1	0
Total fish	**8,791,053 ± 10%**	**0.7249**	**2,133,229**	**668,126**	**1,971,281**	**1,481,476**	**419,150**	**2,032,044**	**8,676**	**77,072**

[a]Differences in sums of estimates and totals are due to rounding.

[b]Proportion of total estimated biomass, fish and invertebrates combined, for the total survey area = 12,126,596 t.

Table 8. -- Biomass estimates (t) for major invertebrate species and groups taken during the 2009 eastern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence			Proportion of total animal biomass[b]	Estimated biomass by stratum (t)							
					10	20	30	40	50	60	82	90
Crustacea												
Crabs	700,896	±	13%	0.0578	37,037	21,805	183,751	248,348	31,810	142,948	22,223	12,974
Shrimps	4,795	±	63%	0.0004	20	31	93	393	483	3,481	25	270
Other crustaceans	1,061	±	63%	0.0001	287	25	147	331	54	217	0	0
Total crustaceans	**706,752**	**±**	**13%**	**0.0583**	**37,344**	**21,860**	**183,991**	**249,071**	**32,347**	**146,646**	**22,248**	**13,244**
Mollusca												
Gastropoda (snails)	255,549	±	15%	0.0211	11,463	6,972	90,001	60,352	5,830	73,207	3,060	4,664
Pelecypoda (bivalves)	7,151	±	46%	0.0006	726	444	3,641	1,721	318	254	18	29
Squids	642	±	195%	0.0001	0	0	0	0	628	14	0	0
Octopuses	1,031	±	106%	0.0001	0	0	58	92	731	124	21	4
Other mollusks	7,950	±	27%	0.0007	200	197	1,592	3,418	22	886	640	996
Total mollusks	**272,323**	**±**	**14%**	**0.0225**	**12,389**	**7,613**	**95,292**	**65,583**	**7,530**	**74,485**	**3,739**	**5,693**
Echinodermata												
Asteroidea (starfish)	1,211,835	±	11%	0.0999	297,737	153,619	177,457	187,116	450	89,065	2,828	4,408
Ophiuroidea (brittle stars)	264,472	±	34%	0.0218	9,340	2,695	45,024	49,116	467	153,645	3,252	931
Echinoidea (sea urchin)	26,029	±	78%	0.0021	107	0	7,329	14,292	3,304	958	7	32
Holothuroidea (sea cucumbers)	8,654	±	78%	0.0007	914	0	3,176	4,561	2	0	2	0
Total echinoderms	**1,510,990**	**±**	**11%**	**0.1246**	**308,098**	**156,315**	**232,987**	**255,085**	**4,222**	**243,668**	**6,090**	**5,371**
Ascidiacea	452,309	±	35%	0.0373	76,134	25,475	170,607	180,032	1	50	2	7
Porifera (sponges)	146,492	±	92%	0.0121	973	173	142,023	2,265	243	814	0	0
Coelenterata	239,009	±	35%	0.0197	22,298	3,072	123,525	51,017	25,903	8,162	3,204	1,827
Other invertebrates	7,667	±	53%	0.0006	878	127	2,483	1,293	612	2,257	7	10
Total invertebrates	**3,335,542**	**±**	**9%**	**0.2751**	**458,114**	**214,635**	**950,909**	**804,348**	**70,858**	**476,081**	**35,290**	**26,152**

[a]Differences in sums of estimates and totals are due to rounding.

[b]Proportion of total estimated biomass, fish and invertebrates combined, for the total survey area = 12,126,596 t.

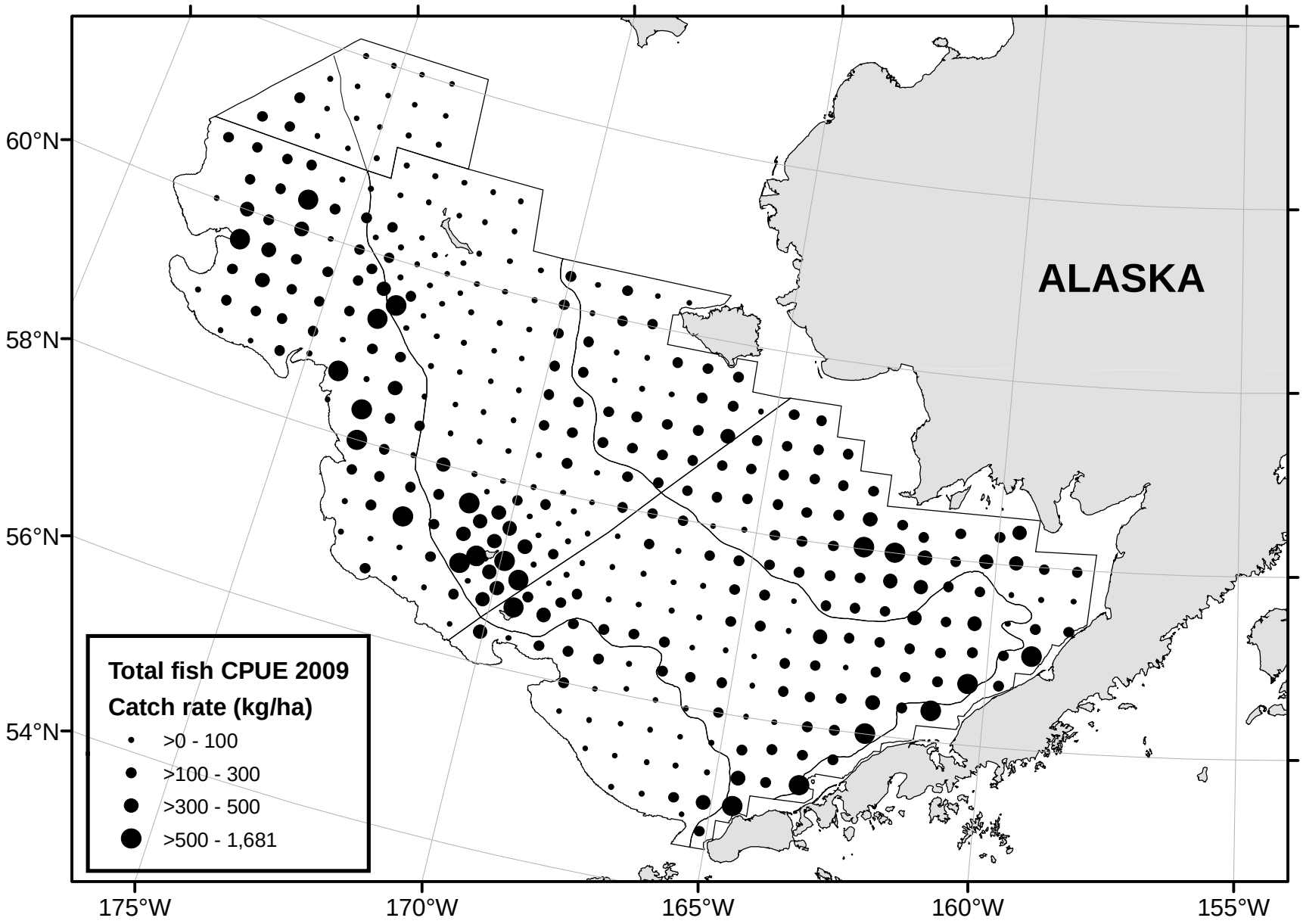


Figure 9. -- Distribution and relative abundance (kg/ha) of **total fish** caught during the 2009 eastern Bering Sea bottom trawl survey.

grouped, flathead sole and Bering flounder grouped, Alaska plaice, Greenland turbot, arrowtooth flounder, Kamchatka flounder (*Atheresthes evermanni*), Pacific halibut, starry flounder, Bering skate (*Bathyraja interrupta*), Alaska skate, warty sculpin (*Myoxocephalus verrucosus*), great sculpin (*M. polyacanthocephalus*), plain sculpin (*M. jaok*), bigmouth sculpin, wattled eelpout (*Lycodes palearis*), shortfin eelpout (*L. brevipes*), and marbled eelpout (*L. raridens*). Estimated biomass and population numbers are given separately for each of the 12 geographic strata used in the analysis (see Table 1) and for the entire survey area. Size compositions are illustrated in histograms relating the population percentage by 1-cm length interval for each stratum and in population numbers for the total survey area. Catch per unit effort (CPUE), population, and biomass estimates and associated variances and confidence limits are listed for each species by stratum. All results except size composition are presented for sturgeon poacher (*Podothecus accipenserinus*), Bering poacher (*Occella dodecaedron*), butterfly sculpin (*Hemilepidotus papilio*), eulachon (*Thaleichthys pacificus*), capelin (*Mallotus villosus*), Pacific herring (*Clupea pallasi*), and Arctic cod (*Boreogadus saida*) in Figures 49-56 and Tables 29-35.

Appendices to this report contain detailed results of the survey including population estimates by sex and size class, and rank of fish and invertebrate taxa by weighted total CPUE (kg/ha). A more detailed explanation of results follows for the 10 fish species (or grouped species) that are commercially exploited on the eastern Bering Sea shelf.

Summary of results for commercially exploited groundfish species

Walleye Pollock (*Theragra chalcogramma*)

Walleye pollock were captured at 92% of the standard survey stations (Fig. 10). Catch rates were lower on the inner and middle shelf compared to the outer shelf. The highest densities

were north of the Alaska Peninsula, around the Pribilof Islands, and along the northwest outer shelf west of St. Matthew Island (Fig. 10). The total biomass and abundance of walleye pollock for the entire survey area was 2.28 million t and 3.46 billion fish with an average weight per walleye pollock of 0.66 kg (Tables 10a and 10b) and average length of 38.64 cm (Fig. 11). The 2009 biomass estimate was 25% lower than the 2008 estimate of 3.03 million t. Besides general year-class variability, relatively lower estimates may in part be due to a shift of the population to the shelf edge or a change in the vertical distribution pattern of pollock caused by the colder than average water temperatures on the Bering Sea shelf (Ianelli et al. 2008, Kotwicki et al. 2005). One-year-olds, represented by the modal length of 10-15 cm, had the highest relative abundance on the inner and middle shelf compared to the outer shelf, where larger pollock had higher relative abundance (Fig. 11). The mode for the population of 1-year-olds peaked at about 150 million in 2009, compared to a little over 100 million in 2008, and 400 million in 2007. Age-2 and age-3 pollock (length range of 15-35 cm) are generally underrepresented in survey trawl catches; however, modes for both year classes can be seen in the plot of population abundance at length (Fig. 11).

Pacific Cod (*Gadus macrocephalus*)

Like walleye pollock, Pacific cod were broadly distributed across the shelf, being observed in 96% of the trawls (Fig. 12). The 2009 biomass was 0.43 million t which was the same as 2008; however, population numbers increased by 47% to 0.72 billion due to the prevalence of several smaller year classes (Fig. 13). Several length modes < 50 cm were evident, suggesting strong 2006-2008 year classes (Fig. 13). The highest catch rates of Pacific cod were

observed in the middle and outer shelf, especially between St. Matthew Island and the Pribilof Islands and north of the Alaska Peninsula (Tables 10a and 10b; Fig. 12).

Yellowfin Sole (*Limanda aspera*)

Yellowfin sole catch rates were highest on the inner shelf and decreased to little or nothing on the outer middle shelf, except in the vicinity of St. Matthew Island and the Pribilof Islands (Tables 11a and 11b; Fig. 14). From 2008 to 2009, the biomass decreased from 2.1 to 1.7 million t and the population size decreased slightly from 8.9 billion to 8.4 billion. Smaller-sized yellowfin sole < 20 cm were only found on the inner shelf, with larger sizes up to 40 cm inhabiting both the inner and middle shelf (Fig. 15). Yellowfin sole undergo a spring migration from the shelf-slope break onto the inner shelf each year for spawning and feeding, and there are higher proportions of male yellowfin sole with decreasing depth (Nichol 1998). The group of smaller yellowfin sole on the inner shelf probably represent the juveniles less than 6 years of age that overwinter in the nearshore (Nichol 1997).

Northern and Southern Rock Sole (*Lepidopsetta* spp.)

The highest concentrations of rock sole were found around the Pribilof Islands and in the inner middle shelf in the southeastern half of the EBS (Tables 12a and 12b; Fig. 16). Estimated biomass decreased by 24% from 2008 to 1.74 million t and estimated population numbers decreased by 22% to 8.2 billion (Tables 12a and 12b). Size increased with increasing depth (Fig. 17). Spawning and feeding migrations for rock soles are poorly understood, but in general they migrate from relatively shallow feeding grounds in the summer to deeper spawning grounds in the winter (Fadeev 1965, Shubnikov and Lisovenko 1964).

Flathead Sole and Bering Flounder (*Hippoglossoides* spp.)

Although age structures were taken for each of the two *Hippoglossoides* species, they were combined in the presentation of results because they are managed as a two-species complex by the NPFMC (Stockhausen et al. 2008) and it facilitates comparisons with previous surveys. Bering flounder are typically more arctic in their distribution compared to flathead sole, which is generally distributed in the southeastern half of the shelf. The combined "flathead sole" were distributed on the middle and outer eastern Bering Sea shelf. The highest CPUEs were in the northwest outer shelf, near the Pribilof Islands, and in the southern middle shelf region (Tables 13a and 13b; Fig. 18). Estimated biomass (0.42 million t) and population number (1.4 billion) were about a 25% decrease from 2008 (Tables 12a and 12b). A similar size range of flathead sole (10-50 cm) was observed across the entire shelf (Fig. 19).

Alaska Plaice (*Pleuronectes quadrituberculatus*)

Alaska plaice was most abundant on the inner and middle shelf in waters < 100 m, with the highest concentrations bordering the 50 m contour (Fig. 20). From 2008 to 2009, the estimated biomass increased slightly from 0.51 million t to 0.53 million t, and the population increased from 0.94 billion to 1.02 billion (Tables 14a and 14b). The increase in population was due to increased numbers of plaice in the 25-40 cm size range. The size range was from 15-60 cm with smaller sizes of Alaska plaice (< 20 cm) only occurring at depths < 50 m (Fig. 21).

Greenland Turbot (*Reinhardtius hippoglossoides*)

Greenland turbot typically inhabit the upper continental slope, although juveniles may spend several years on the continental shelf before moving to deeper water (Alton et al. 1988). Greenland turbot were captured at 28% of the survey stations with all but a few found in the northwest part of the middle and outer shelf (Fig. 22). Biomass estimates decreased for the sixth consecutive year from 31,700 t in 2003 to 11,000 t in 2009 (Table 15a); however, the estimated population number increased from 15.3 million in 2008 to 22.5 million in 2009 and was 48% higher than the 6 year mean of 15.2 million (Tables 15a and 15b) due to a high abundance of 10-15 cm juveniles (Fig. 23).

Arrowtooth Flounder (*Atheresthes stomias*)

Arrowtooth flounder were observed all along the outer shelf with a patchy distribution in the middle and inner shelf (Fig. 24), and they ranged in size from 8 to 75 cm (Fig. 25). Catch rates were generally higher at the deeper, more southern stations, with few found in strata along the inner shelf and northern middle shelf (Tables 16a and 16b; Fig. 24). Estimates of both biomass and population size decreased from 2009 to 2008; biomass decreased from 0.53 million to 0.41 million t and population from 1.2 billion to 0.9 billion (Tables 16a and 16b).

Kamchatka Flounder (*Atheresthes evermanni*)

Kamchatka flounder were mostly observed around the Pribilof Islands and along the northwestern outer shelf with the highest catch rates and largest mean size occurring in the northwest (Figs. 26 and 27). From 2008 to 2009, the biomass decreased from 58,000 to 50,000 t and the population decreased from 120 million to 84 million fish (Tables 17a and 17b).

Pacific Halibut (*Hippoglossus stenolepis*)

Pacific halibut were widely distributed across the shelf and captured at 79% of the stations with decreasing catches farther north (Fig. 28). The estimated biomass increased slightly from 140 thousand t in 2008 to 169 thousand t in 2009 and the population decreased from 108 million to 102 million in the same time period. A broad size range of halibut was distributed across the entire shelf (Fig. 29).

This page was intentionally left blank.

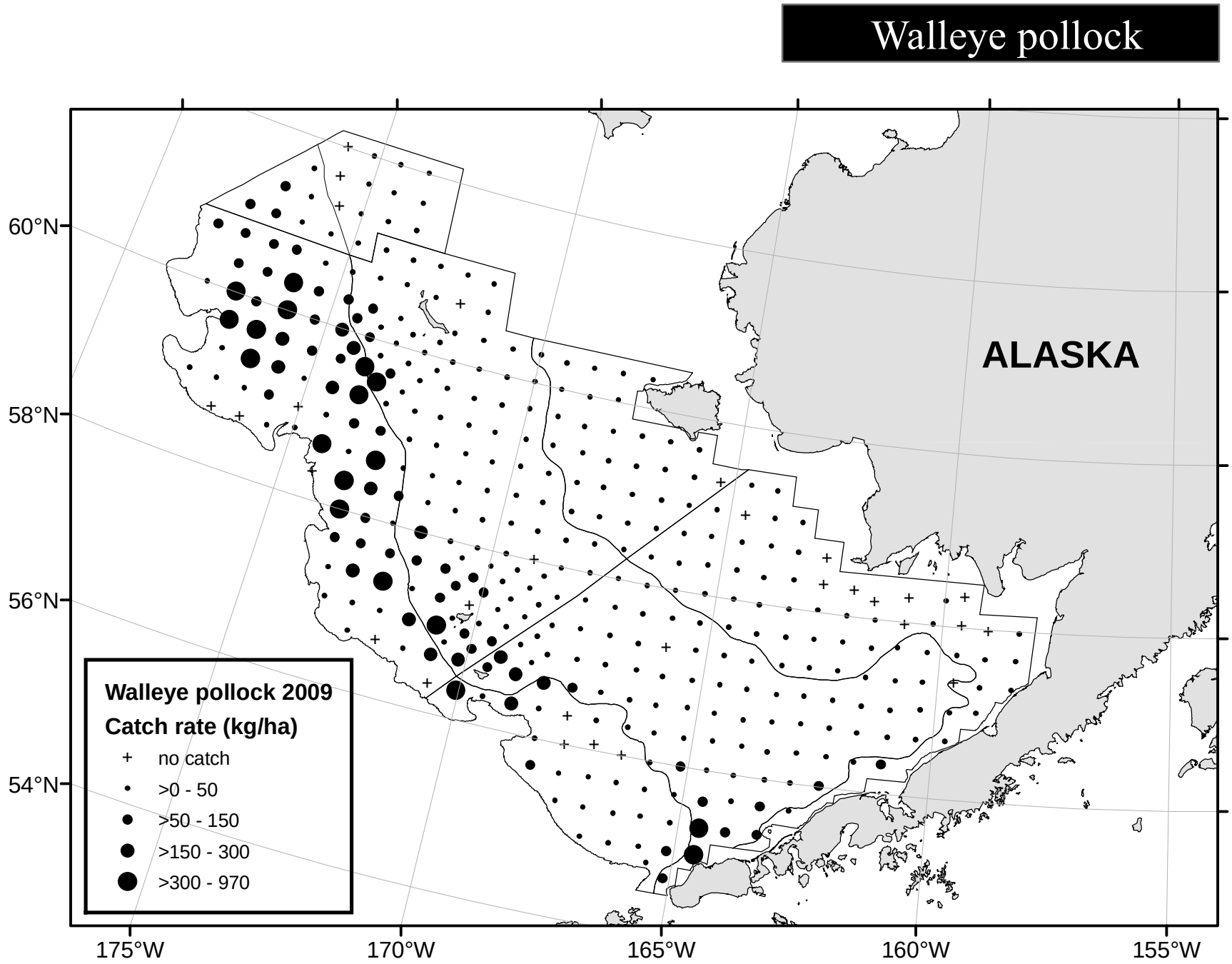


Figure 10. -- Distribution and relative abundance (kg/ha) of **walleye pollock** (*Theragra chalcogramma*) for the 2009 eastern Bering Sea bottom trawl survey.

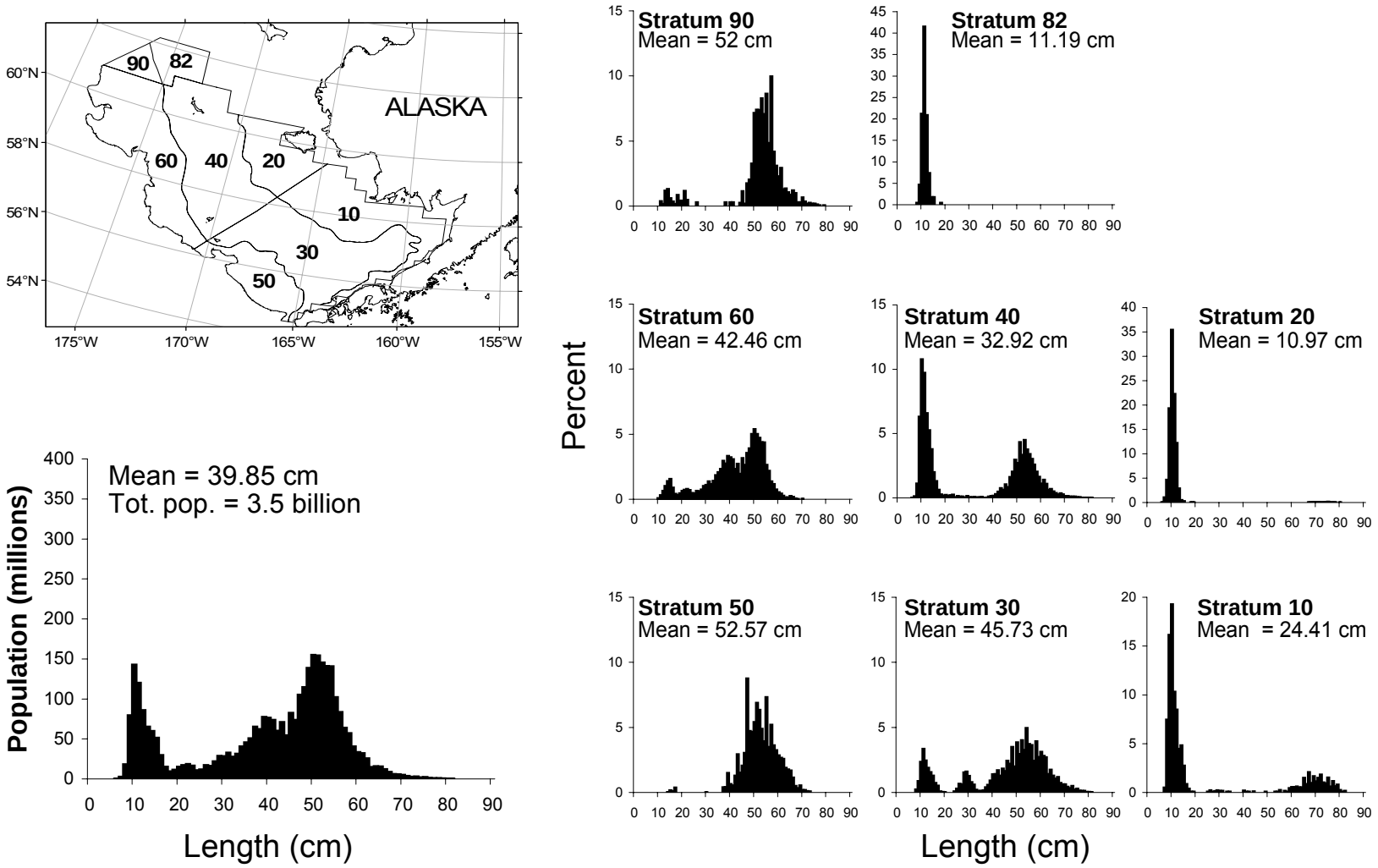


Figure 11. -- Estimated relative size distributions (sexes combined) of **walleye pollock** (*Theragra chalcogramma*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 9a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **walleye pollock** (*Theragra chalcogramma*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	2.68	1.36E+00	20,865	1.06E+04	0	42,207	58	47	47	47
20	1.72	3.09E-01	7,043	1.27E+03	4,456	9,629	31	30	30	30
Subtotal	2.35	8.95E-01	27,907	1.06E+04	6,411	49,403	89	77	77	77
31	27.04	9.37E+00	255,624	8.86E+04	78,509	432,738	69	68	68	67
32	84.34	3.92E+01	74,004	3.44E+04	0	155,266	8	8	8	8
41	8.55	4.67E+00	53,637	2.93E+04	0	112,815	44	43	43	43
42	55.01	1.91E+01	132,075	4.58E+04	38,490	225,659	31	29	29	29
43	62.07	4.37E+01	131,020	9.21E+04	0	322,683	22	22	22	21
82	0.03	1.19E-02	67	2.47E+01	12	121	12	10	10	10
Subtotal	27.89	6.17E+00	646,427	1.43E+05	360,312	932,542	186	180	180	178
50	36.73	1.64E+01	142,475	6.37E+04	10,998	273,951	26	22	22	22
61	141.89	2.51E+01	1,250,520	2.21E+05	803,067	1,697,972	60	54	54	54
62	255.05	8.05E+01	163,963	5.17E+04	37,335	290,591	7	7	7	7
90	44.20	1.75E+01	51,126	2.02E+04	3,301	98,952	8	7	7	7
Subtotal	110.96	1.64E+01	1,608,084	2.37E+05	1,134,109	2,082,060	101	90	90	90
Total	46.05	5.59E+00	2,282,418	2.77E+05	1,733,912	2,830,924	376	347	347	345

*Differences in sums of estimates and totals are due to rounding.

Table 9b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **walleye pollock** (*Theragra chalcogramma*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	4.62	1.36E+00	36,014,148	1.06E+07	14,610,595	57,417,701	58	47	47	47
20	44.80	1.47E+01	183,784,864	6.02E+07	60,843,510	306,726,218	31	30	30	30
Subtotal	18.49	5.14E+00	219,799,012	6.11E+07	96,253,840	343,344,184	89	77	77	77
31	29.91	8.89E+00	282,709,947	8.40E+07	114,647,673	450,772,220	69	68	68	67
32	86.01	3.98E+01	75,464,140	3.49E+07	0	158,076,778	8	8	8	8
41	30.54	7.79E+00	191,497,183	4.88E+07	92,777,756	290,216,609	44	43	43	43
42	89.15	2.48E+01	214,067,717	5.96E+07	92,226,561	335,908,873	31	29	29	29
43	68.31	4.37E+01	144,195,842	9.22E+07	0	335,977,167	22	22	22	21
82	3.53	1.39E+00	7,284,416	2.86E+06	981,863	13,586,969	12	10	10	10
Subtotal	39.49	6.50E+00	915,219,244	1.51E+08	613,711,471	1,216,727,018	186	180	180	178
50	32.38	1.68E+01	125,610,202	6.50E+07	0	259,873,444	26	22	22	22
61	219.89	4.20E+01	1,937,985,537	3.70E+08	1,189,314,268	2,686,656,805	60	54	54	54
62	334.13	9.78E+01	214,799,214	6.29E+07	60,983,592	368,614,835	7	7	7	7
90	39.77	1.77E+01	46,009,319	2.05E+07	0	94,457,671	8	7	7	7
Subtotal	160.39	2.64E+01	2,324,404,271	3.82E+08	1,560,643,569	3,088,164,973	101	90	90	90
Total	69.80	8.38E+00	3,459,422,527	4.15E+08	2,637,552,453	4,281,292,601	376	347	347	345

*Differences in sums of estimates and totals are due to rounding.

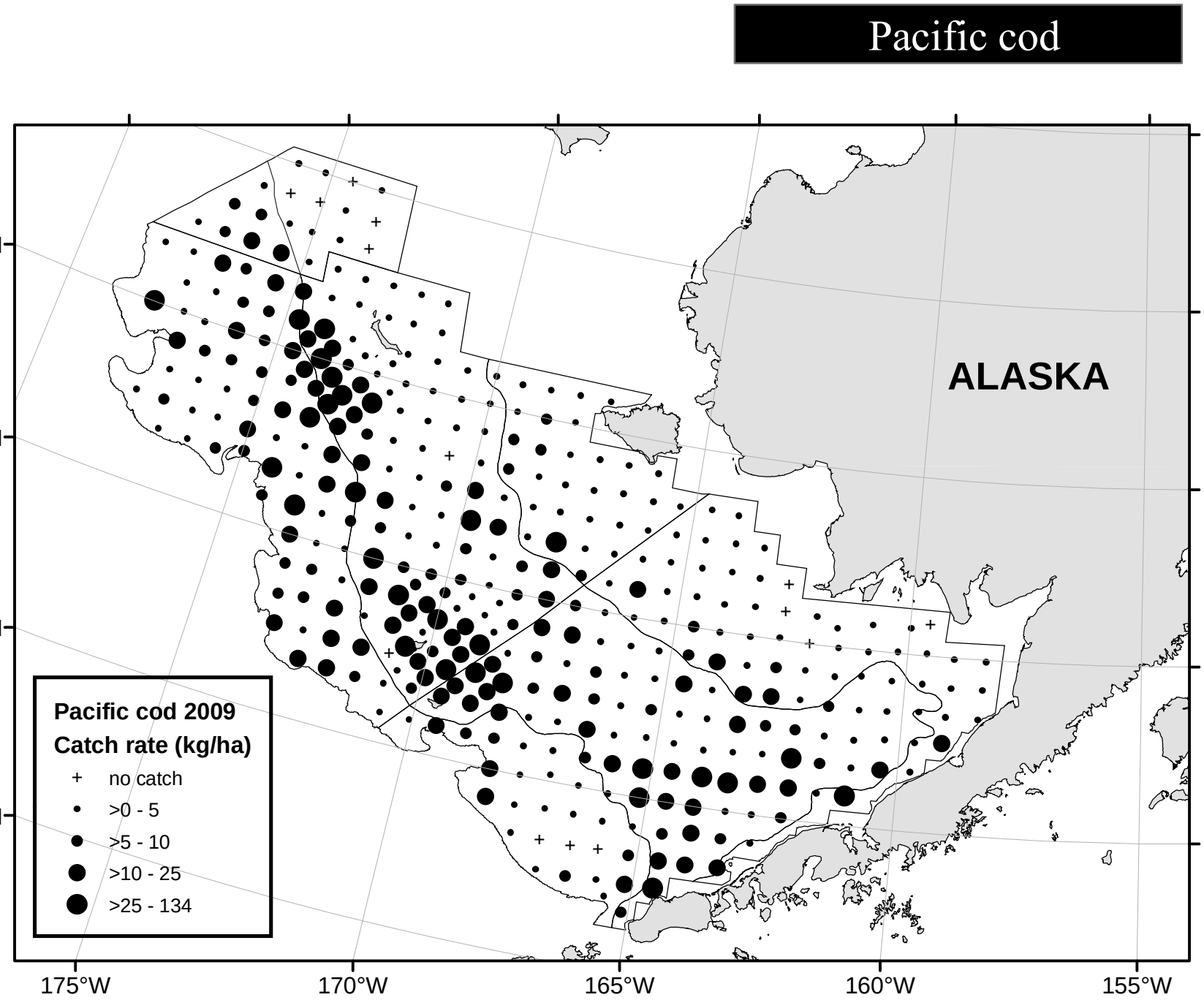


Figure 12. -- Distribution and relative abundance (kg/ha) of **Pacific cod** (*Gadus macrocephalus*) for the 2009 eastern Bering Sea bottom trawl survey.

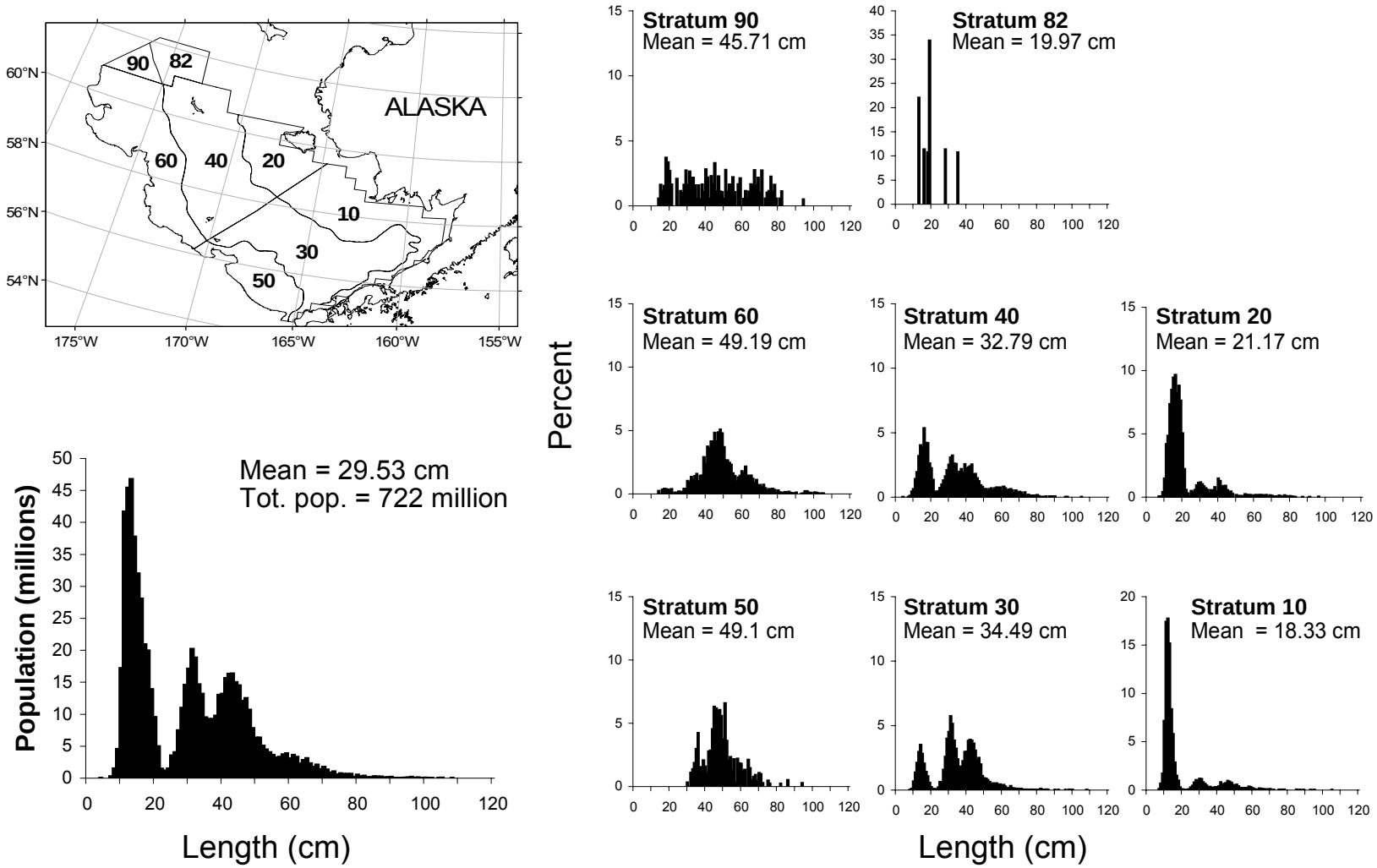


Figure 13. -- Estimated relative size distributions (sexes combined) of **Pacific cod** (*Gadus macrocephalus*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 10a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Pacific cod** (*Gadus macrocephalus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	5.14	2.34E+00	40,031	1.82E+04	3,211	76,852	58	54	54	54
20	5.89	3.09E+00	24,163	1.27E+04	0	50,082	31	31	31	31
Subtotal	5.40	1.87E+00	64,194	2.22E+04	19,786	108,603	89	85	85	85
31	11.04	1.74E+00	104,324	1.65E+04	71,395	137,252	69	69	69	69
32	17.89	4.66E+00	15,700	4.09E+03	5,695	25,706	8	8	8	8
41	6.60	1.43E+00	41,358	8.96E+03	23,255	59,461	44	43	43	43
42	19.10	5.16E+00	45,860	1.24E+04	20,500	71,221	31	30	30	30
43	17.02	4.30E+00	35,918	9.08E+03	17,024	54,812	22	22	22	22
82	0.01	6.90E-03	28	1.43E+01	0	60	12	7	7	7
Subtotal	10.49	1.06E+00	243,189	2.46E+04	194,514	291,864	186	179	179	179
50	4.80	9.98E-01	18,631	3.87E+03	10,654	26,609	26	23	23	21
61	9.42	1.17E+00	83,008	1.03E+04	62,204	103,812	60	60	60	60
62	19.13	3.30E+00	12,295	2.12E+03	7,100	17,490	7	7	7	7
90	7.58	2.19E+00	8,769	2.54E+03	2,766	14,771	8	8	8	8
Subtotal	8.47	7.93E-01	122,703	1.15E+04	99,733	145,674	101	98	98	96
Total	8.68	7.07E-01	430,087	3.51E+04	360,666	499,508	376	362	362	360

*Differences in sums of estimates and totals are due to rounding.

Table 10b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Pacific cod** (*Gadus macrocephalus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers[a]	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	24.08	5.96E+00	187,487,363	4.64E+07	93,649,605	281,325,121	58	54	54	54
20	23.54	4.38E+00	96,598,176	1.80E+07	59,900,919	133,295,433	31	31	31	31
Subtotal	23.89	4.19E+00	284,085,539	4.98E+07	184,509,729	383,661,349	89	85	85	85
31	18.59	2.69E+00	175,689,403	2.55E+07	124,746,642	226,632,163	69	69	69	69
32	22.43	6.47E+00	19,680,613	5.67E+06	5,799,811	33,561,416	8	8	8	8
41	8.32	2.08E+00	52,184,779	1.30E+07	25,838,149	78,531,408	44	43	43	43
42	31.88	8.75E+00	76,545,386	2.10E+07	33,564,385	119,526,386	31	30	30	30
43	19.83	4.83E+00	41,866,589	1.02E+07	20,672,184	63,060,994	22	22	22	22
82	0.14	4.09E-02	292,981	8.44E+04	107,121	478,841	12	7	7	7
Subtotal	15.80	1.61E+00	366,259,750	3.74E+07	292,267,782	440,251,719	186	179	179	179
50	3.11	7.47E-01	12,047,815	2.90E+06	6,074,976	18,020,654	26	23	23	21
61	5.13	7.54E-01	45,198,315	6.64E+06	31,774,677	58,621,953	60	60	60	60
62	14.45	2.91E+00	9,292,047	1.87E+06	4,711,888	13,872,207	7	7	7	7
90	4.25	1.16E+00	4,920,122	1.35E+06	1,735,127	8,105,116	8	8	8	8
Subtotal	4.93	5.25E-01	71,458,298	7.61E+06	56,247,643	86,668,954	101	98	98	96
Total	14.56	1.27E+00	721,803,588	6.27E+07	597,627,914	845,979,261	376	362	362	360

[*] Differences in sums of estimates and totals are due to rounding.

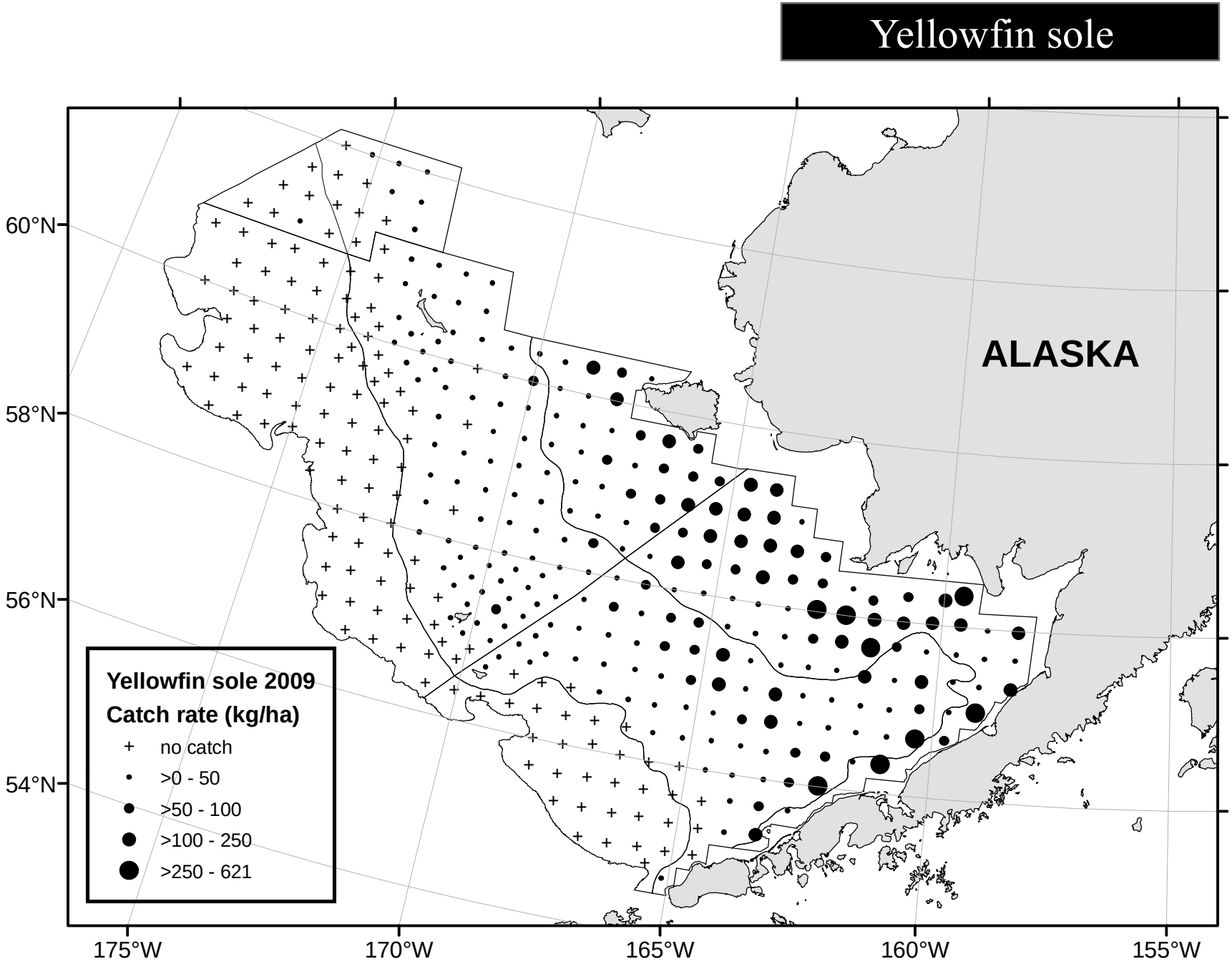


Figure 14. -- Distribution and relative abundance (kg/ha) of **yellowfin sole** (*Limanda aspera*) for the 2009 eastern Bering Sea bottom trawl survey.

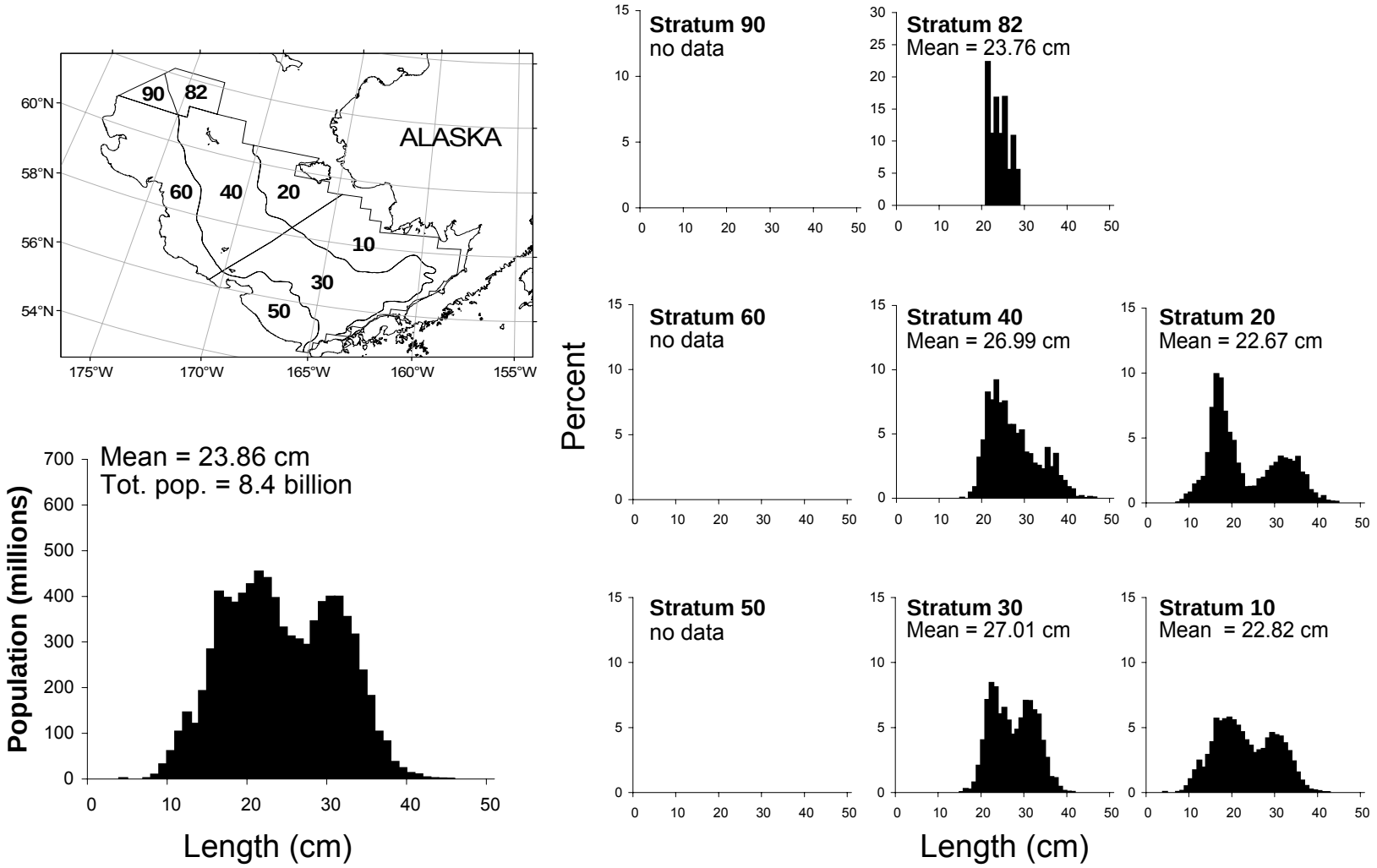


Figure 15. -- Estimated relative size distributions (sexes combined) of **yellowfin sole** (*Limanda aspera*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 11a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **yellowfin sole** (*Limanda aspera*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	119.87	1.62E+01	933,450	1.26E+05	679,084	1,187,816	58	58	58	58
20	58.05	7.54E+00	238,168	3.09E+04	175,041	301,295	31	31	31	31
Subtotal	98.54	1.09E+01	1,171,618	1.30E+05	912,413	1,430,823	89	89	89	89
31	48.83	8.10E+00	461,524	7.65E+04	308,468	614,579	69	61	61	61
32	1.22	3.49E-01	1,072	3.06E+02	347	1,796	8	7	7	7
41	11.86	3.25E+00	74,390	2.04E+04	33,170	115,609	44	35	35	35
42	12.21	2.68E+00	29,311	6.43E+03	16,184	42,438	31	26	26	26
43	0.63	4.47E-01	1,324	9.43E+02	0	3,286	22	12	12	11
82	0.05	2.23E-02	102	4.60E+01	1	203	12	6	6	6
Subtotal	24.49	3.43E+00	567,722	7.95E+04	408,791	726,653	186	147	147	146
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.02	1.97E-02	23	2.27E+01	0	77	8	1	1	0
Subtotal	0.00	1.57E-03	23	2.27E+01	0	68	101	1	1	0
Total	35.10	3.07E+00	1,739,363	1.52E+05	1,435,313	2,043,413	376	237	237	235

*Differences in sums of estimates and totals are due to rounding.

Table 11b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **yellowfin sole** (*Limanda aspera*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	656.23	8.03E+01	5,110,106,482	6.25E+08	3,846,111,138	6,374,101,827	58	58	58	58
20	283.24	3.36E+01	1,162,031,636	1.38E+08	880,815,507	1,443,247,764	31	31	31	31
Subtotal	527.52	5.39E+01	6,272,138,118	6.40E+08	4,991,311,506	7,552,964,731	89	89	89	89
31	187.38	3.23E+01	1,771,251,057	3.06E+08	1,159,905,351	2,382,596,764	69	61	61	61
32	2.73	8.88E-01	2,394,831	7.79E+05	551,738	4,237,924	8	7	7	7
41	43.74	1.20E+01	274,287,455	7.52E+07	122,256,586	426,318,324	44	35	35	35
42	33.87	7.85E+00	81,336,641	1.89E+07	42,836,909	119,836,373	31	26	26	26
43	2.96	2.21E+00	6,257,780	4.67E+06	0	15,978,663	22	12	12	11
82	0.28	1.31E-01	584,605	2.71E+05	0	1,182,067	12	6	6	6
Subtotal	92.16	1.36E+01	2,136,112,369	3.15E+08	1,505,326,280	2,766,898,457	186	147	147	146
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.07	6.78E-02	78,417	7.84E+04	0	263,873	8	1	1	0
Subtotal	0.01	5.41E-03	78,417	7.84E+04	0	235,251	101	1	1	0
Total	169.66	1.44E+01	8,408,328,904	7.14E+08	6,980,600,664	9,836,057,143	376	237	237	235

*Differences in sums of estimates and totals are due to rounding.

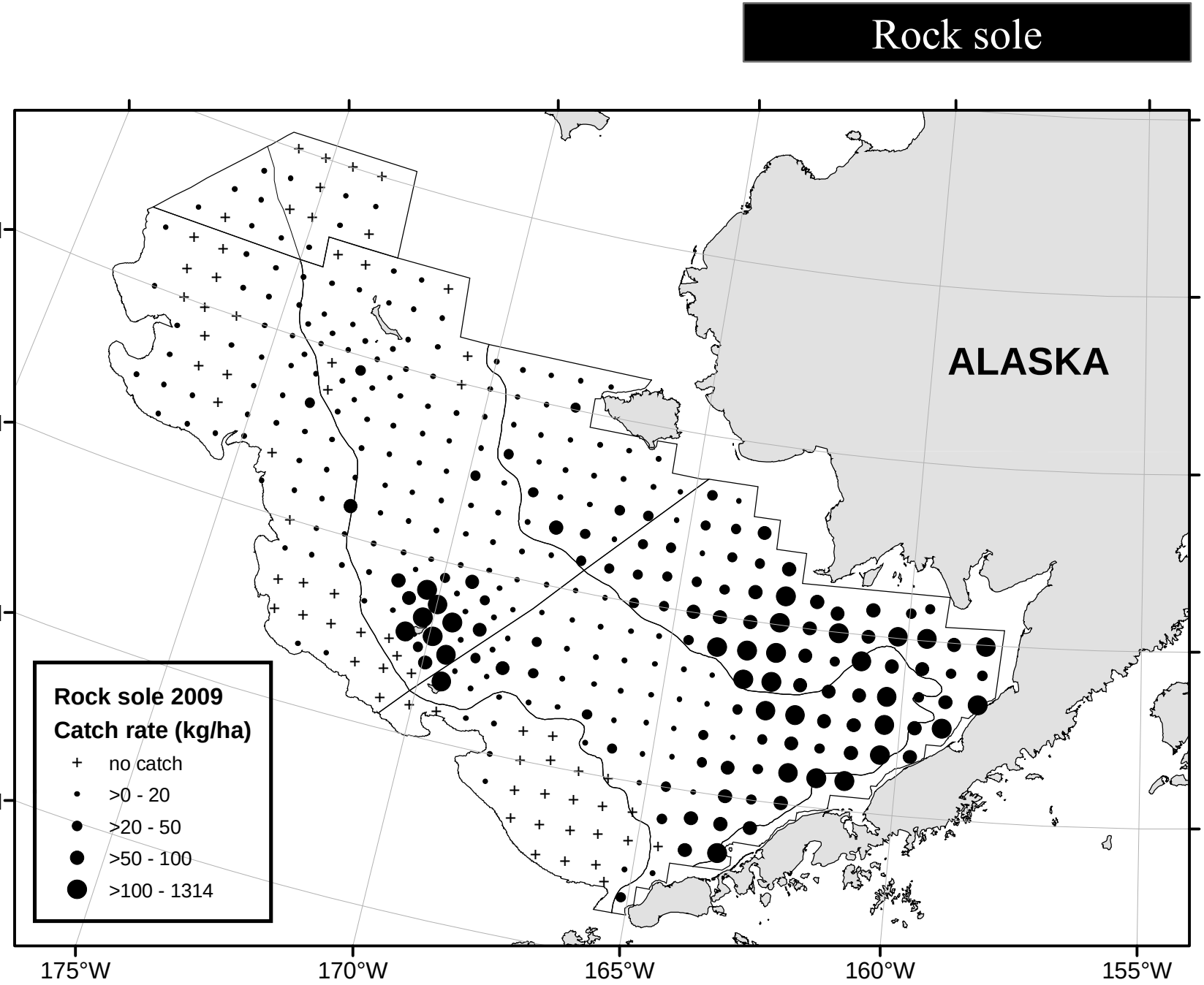


Figure 16. -- Distribution and relative abundance (kg/ha) of **northern** and **southern rock sole** (*Lepidopsetta* spp.) for the 2009 eastern Bering Sea bottom trawl survey.

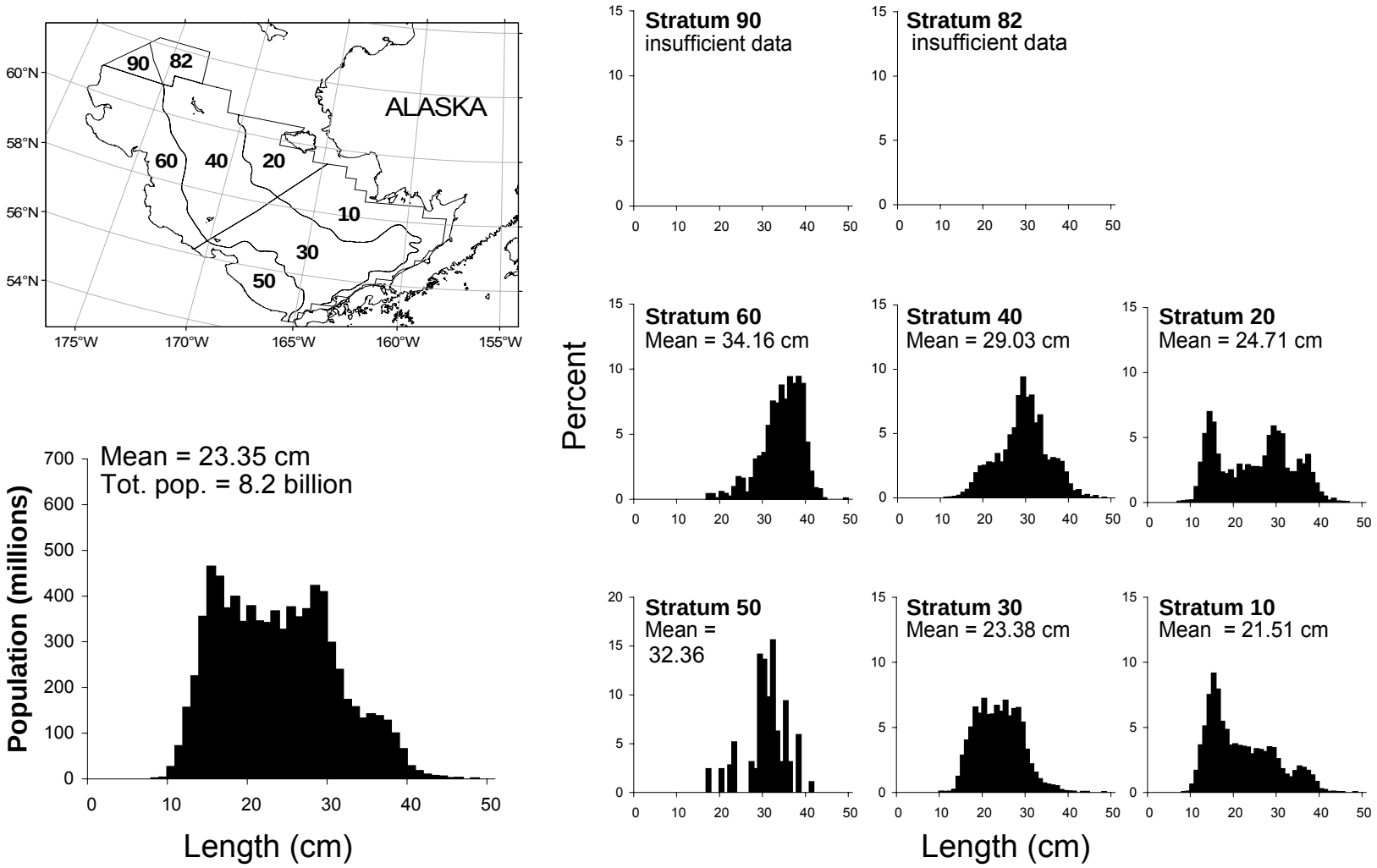


Figure 17. -- Estimated relative size distributions (sexes combined) of **northern** and **southern rock sole** (*Lepidopsetta* spp.) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 12a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **northern** and **southern rock sole** (*Lepidopsetta* spp.) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	80.04	8.75E+00	623,252	6.81E+04	485,587	760,917	58	58	58	58
20	16.51	2.23E+00	67,741	9.16E+03	49,042	86,439	31	31	31	31
Subtotal	58.12	5.78E+00	690,993	6.87E+04	552,089	829,896	89	89	89	89
31	44.05	6.75E+00	416,343	6.38E+04	288,712	543,974	69	66	66	66
32	35.36	1.85E+01	31,029	1.63E+04	0	70,851	8	8	8	8
41	4.39	9.53E-01	27,527	5.98E+03	15,451	39,604	44	39	39	38
42	144.83	5.29E+01	347,753	1.27E+05	88,548	606,959	31	28	28	28
43	4.16	1.52E+00	8,775	3.21E+03	2,103	15,447	22	20	20	20
82	0.10	6.38E-02	202	1.32E+02	0	492	12	5	5	5
Subtotal	35.88	6.18E+00	831,630	1.43E+05	542,293	1,120,967	186	166	166	165
50	0.27	2.13E-01	1,055	8.26E+02	0	2,760	26	6	6	6
61	1.62	9.12E-01	14,238	8.04E+03	0	30,478	60	37	37	37
62	5.30	3.52E+00	3,405	2.26E+03	0	8,943	7	7	7	7
90	0.15	4.53E-02	173	5.24E+01	49	297	8	6	6	6
Subtotal	1.30	5.79E-01	18,871	8.39E+03	2,093	35,649	101	56	56	56
Total	31.10	3.21E+00	1,541,493	1.59E+05	1,223,433	1,859,553	376	311	311	310

*Differences in sums of estimates and totals are due to rounding.

Table 12b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **northern** and **southern rock sole** (*Lepidopsetta* spp.) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	513.63	5.26E+01	3,999,659,896	4.10E+08	3,171,296,244	4,828,023,548	58	58	58	58
20	69.04	1.03E+01	283,245,050	4.22E+07	197,149,810	369,340,291	31	31	31	31
Subtotal	360.22	3.47E+01	4,282,904,946	4.12E+08	3,450,170,262	5,115,639,631	89	89	89	89
31	276.41	4.69E+01	2,612,754,981	4.43E+08	1,725,978,982	3,499,530,979	69	66	66	66
32	123.13	5.20E+01	108,039,785	4.56E+07	0	219,602,969	8	8	8	8
41	20.10	5.19E+00	126,003,582	3.26E+07	60,199,495	191,807,670	44	39	39	38
42	416.14	1.66E+02	999,203,642	3.98E+08	186,048,995	1,812,358,288	31	28	28	28
43	10.41	3.66E+00	21,975,398	7.72E+06	5,913,128	38,037,668	22	20	20	20
82	0.25	1.52E-01	506,929	3.14E+05	0	1,197,115	12	5	5	5
Subtotal	166.91	2.58E+01	3,868,484,317	5.99E+08	2,658,638,591	5,078,330,042	186	166	166	165
50	0.73	5.30E-01	2,818,113	2.06E+06	0	7,060,940	26	6	6	6
61	2.97	1.64E+00	26,218,395	1.45E+07	0	55,425,886	60	37	37	37
62	9.20	5.74E+00	5,911,866	3.69E+06	0	14,936,215	7	7	7	7
90	0.37	1.36E-01	431,498	1.57E+05	59,391	803,605	8	6	6	6
Subtotal	2.44	1.04E+00	35,379,872	1.51E+07	5,265,991	65,493,754	101	56	56	56
Total	165.19	1.47E+01	8,186,769,135	7.27E+08	6,732,986,635	9,640,551,635	376	311	311	310

*Differences in sums of estimates and totals are due to rounding.

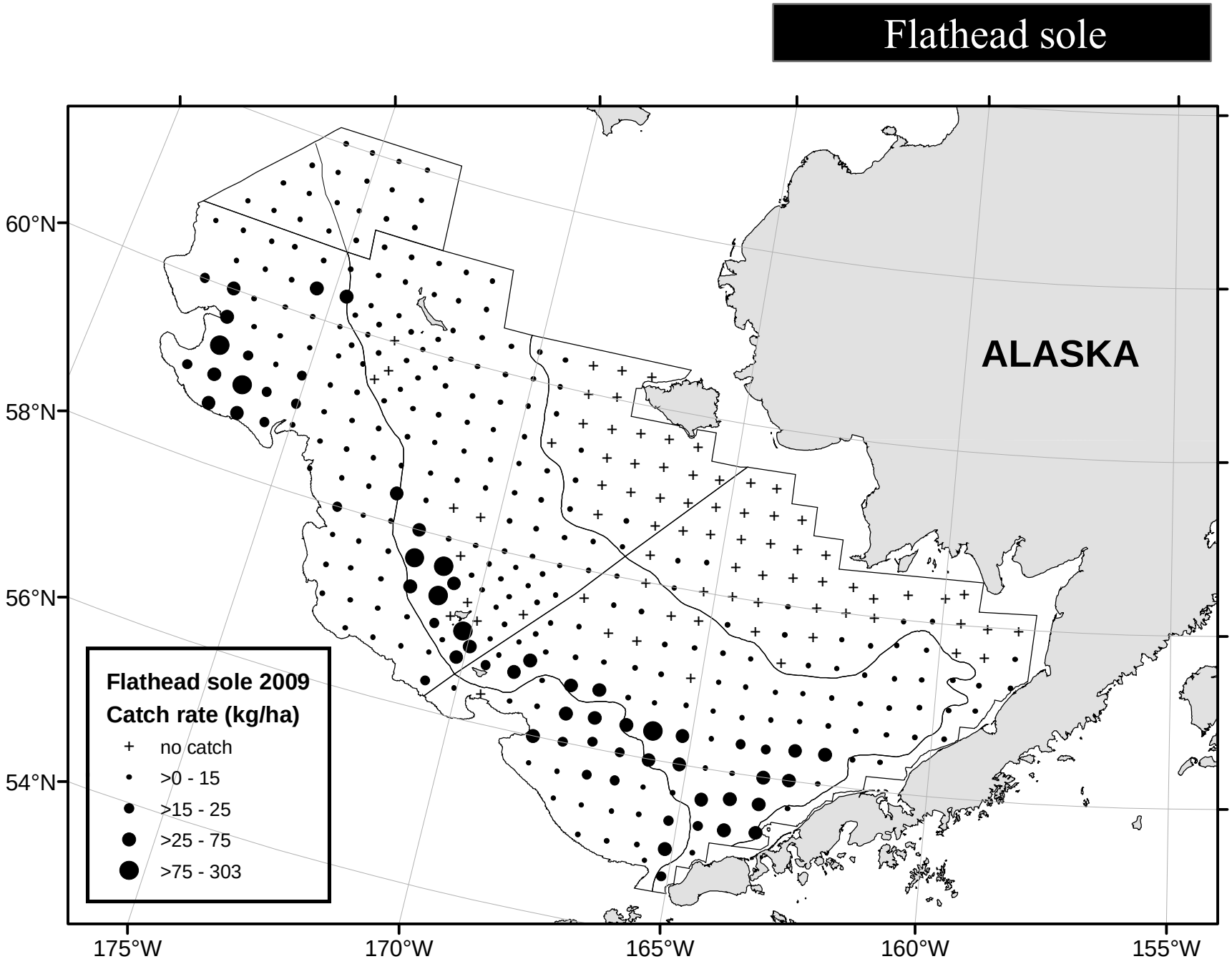


Figure 18. -- Distribution and relative abundance (kg/ha) of **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) for the 2009 eastern Bering Sea bottom trawl survey.

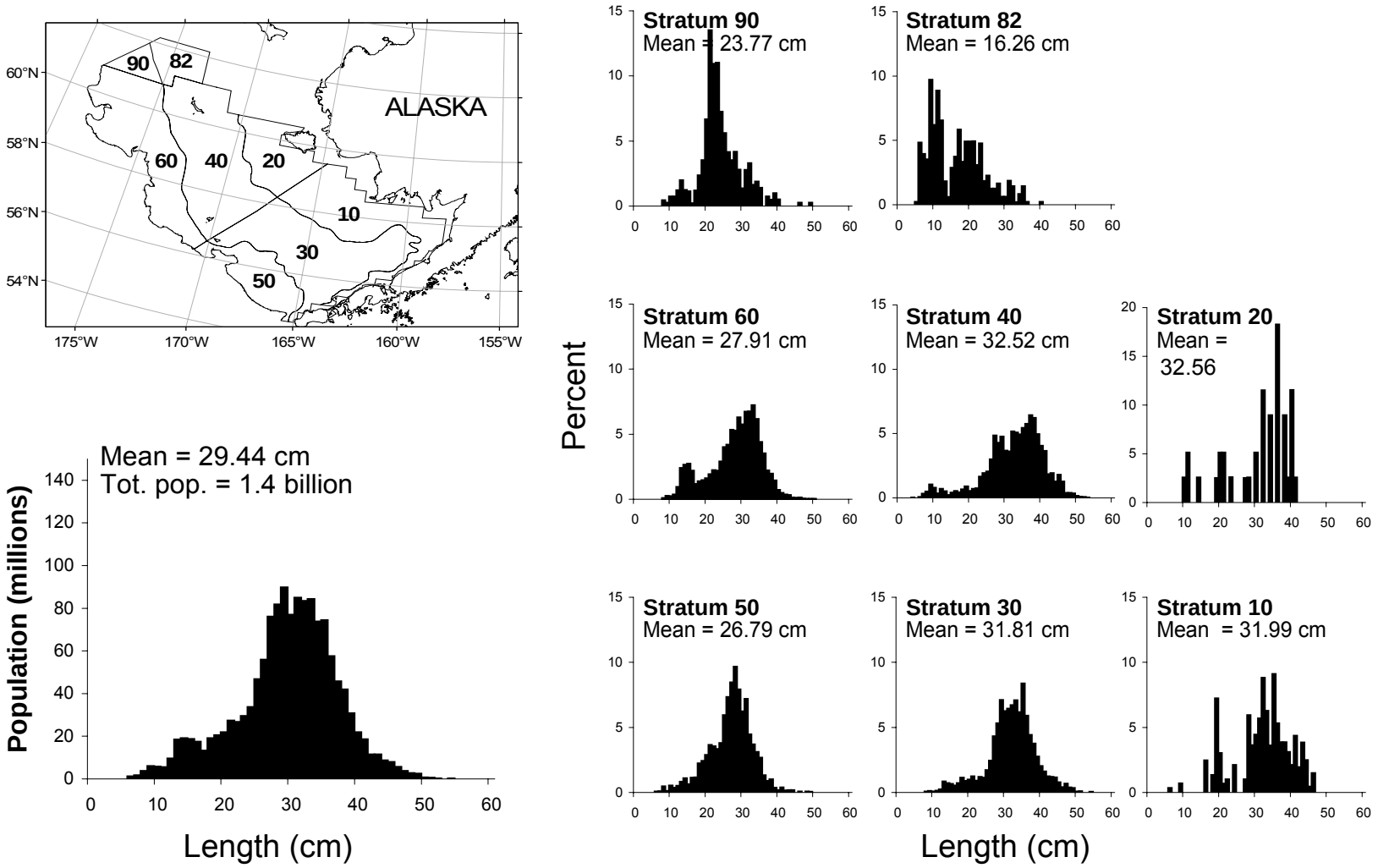


Figure 19. -- Estimated relative size distributions (sexes combined) of **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 13a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.42	1.70E-01	3,293	1.33E+03	613	5,973	58	22	22	22
20	0.11	4.36E-02	434	1.79E+02	69	799	31	9	9	9
Subtotal	0.31	1.13E-01	3,727	1.34E+03	1,023	6,431	89	31	31	31
31	12.91	2.41E+00	122,007	2.28E+04	76,377	167,637	69	62	62	62
32	16.04	6.30E+00	14,070	5.53E+03	550	27,590	8	8	8	8
41	5.56	3.20E+00	34,876	2.01E+04	0	75,399	44	42	42	42
42	28.40	1.27E+01	68,183	3.05E+04	5,752	130,614	31	26	26	26
43	0.90	2.58E-01	1,901	5.46E+02	766	3,036	22	19	19	19
82	0.51	8.04E-02	1,063	1.66E+02	698	1,428	12	12	12	12
Subtotal	10.45	1.87E+00	242,099	4.34E+04	155,256	328,942	186	169	169	169
50	12.88	1.99E+00	49,954	7.72E+03	34,049	65,860	26	25	25	24
61	13.54	2.46E+00	119,337	2.17E+04	75,537	163,136	60	60	60	60
62	7.40	4.34E+00	4,759	2.79E+03	0	11,587	7	7	7	7
90	1.51	6.64E-01	1,751	7.68E+02	0	3,630	8	8	8	8
Subtotal	12.13	1.60E+00	175,801	2.32E+04	129,425	222,176	101	100	100	99
Total	8.51	9.94E-01	421,626	4.92E+04	324,125	519,128	376	300	300	299

*Differences in sums of estimates and totals are due to rounding.

Table 13b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	1.14	5.27E-01	8,881,778	4.10E+06	595,202	17,168,354	58	22	22	22
20	0.28	1.03E-01	1,146,968	4.24E+05	280,459	2,013,478	31	9	9	9
Subtotal	0.84	3.47E-01	10,028,746	4.12E+06	1,697,911	18,359,582	89	31	31	31
31	37.48	6.29E+00	354,299,758	5.95E+07	235,389,834	473,209,682	69	62	62	62
32	34.54	1.47E+01	30,306,659	1.29E+07	0	61,931,951	8	8	8	8
41	16.20	8.08E+00	101,576,911	5.07E+07	0	204,028,926	44	42	42	42
42	55.76	2.41E+01	133,896,219	5.79E+07	15,474,920	252,317,518	31	26	26	26
43	3.20	9.41E-01	6,760,156	1.99E+06	2,630,146	10,890,166	22	19	19	19
82	7.58	1.55E+00	15,665,017	3.20E+06	8,611,449	22,718,585	12	12	12	12
Subtotal	27.72	4.24E+00	642,504,719	9.82E+07	446,144,886	838,864,553	186	169	169	169
50	65.06	8.73E+00	252,389,288	3.39E+07	182,587,940	322,190,636	26	25	25	24
61	53.04	9.84E+00	467,483,793	8.67E+07	292,211,370	642,756,216	60	60	60	60
62	20.12	1.10E+01	12,932,264	7.09E+06	0	30,284,733	7	7	7	7
90	9.87	4.65E+00	11,423,325	5.38E+06	0	24,592,878	8	8	8	8
Subtotal	51.35	6.45E+00	744,228,670	9.35E+07	557,159,528	931,297,812	101	100	100	99
Total	28.18	2.74E+00	1,396,762,136	1.36E+08	1,128,145,350	1,665,378,922	376	300	300	299

*Differences in sums of estimates and totals are due to rounding.

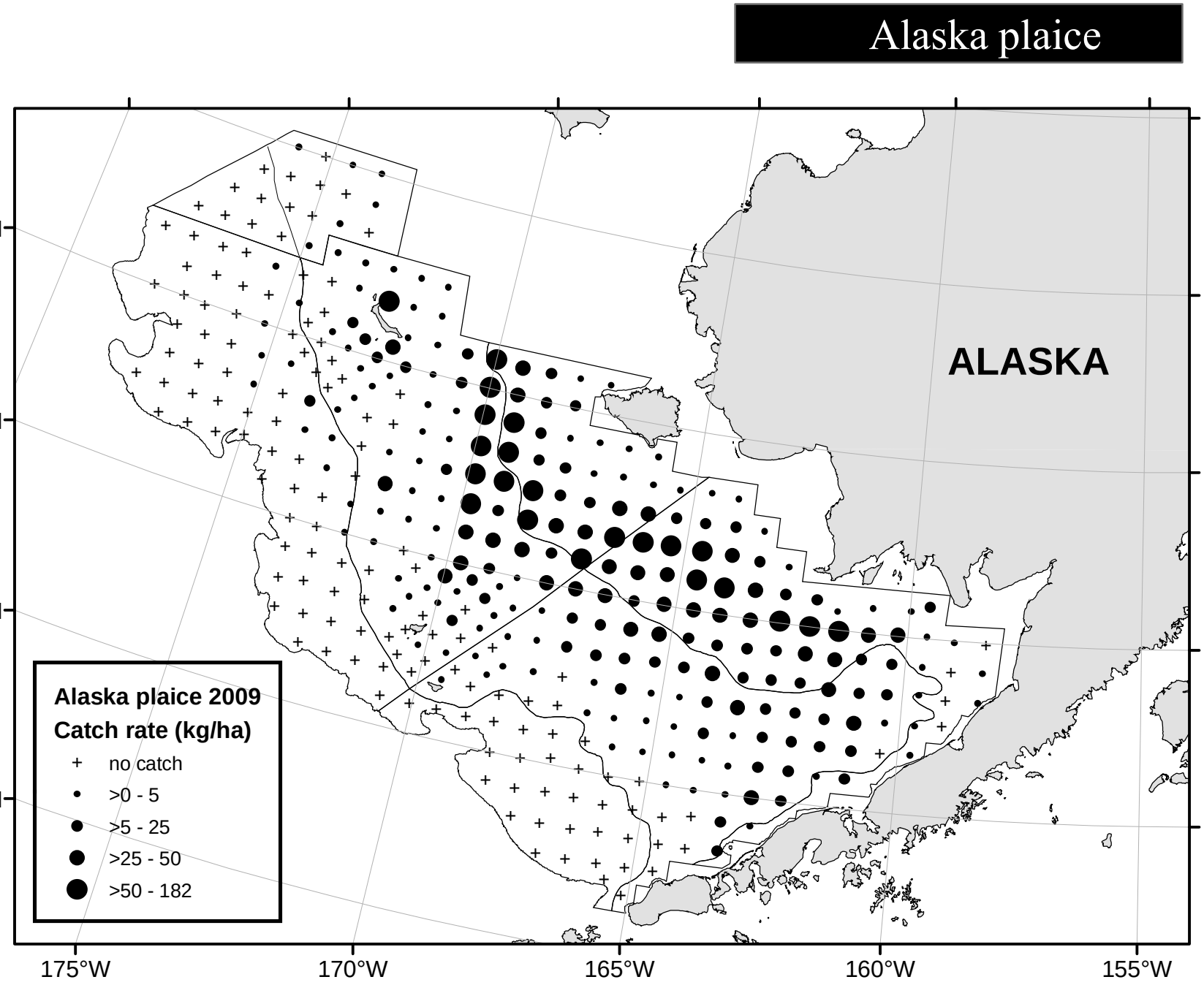


Figure 20. -- Distribution and relative abundance (kg/ha) of **Alaska plaice** (*Pleuronectes quadrituberculatus*) for the 2009 eastern Bering Sea bottom trawl survey.

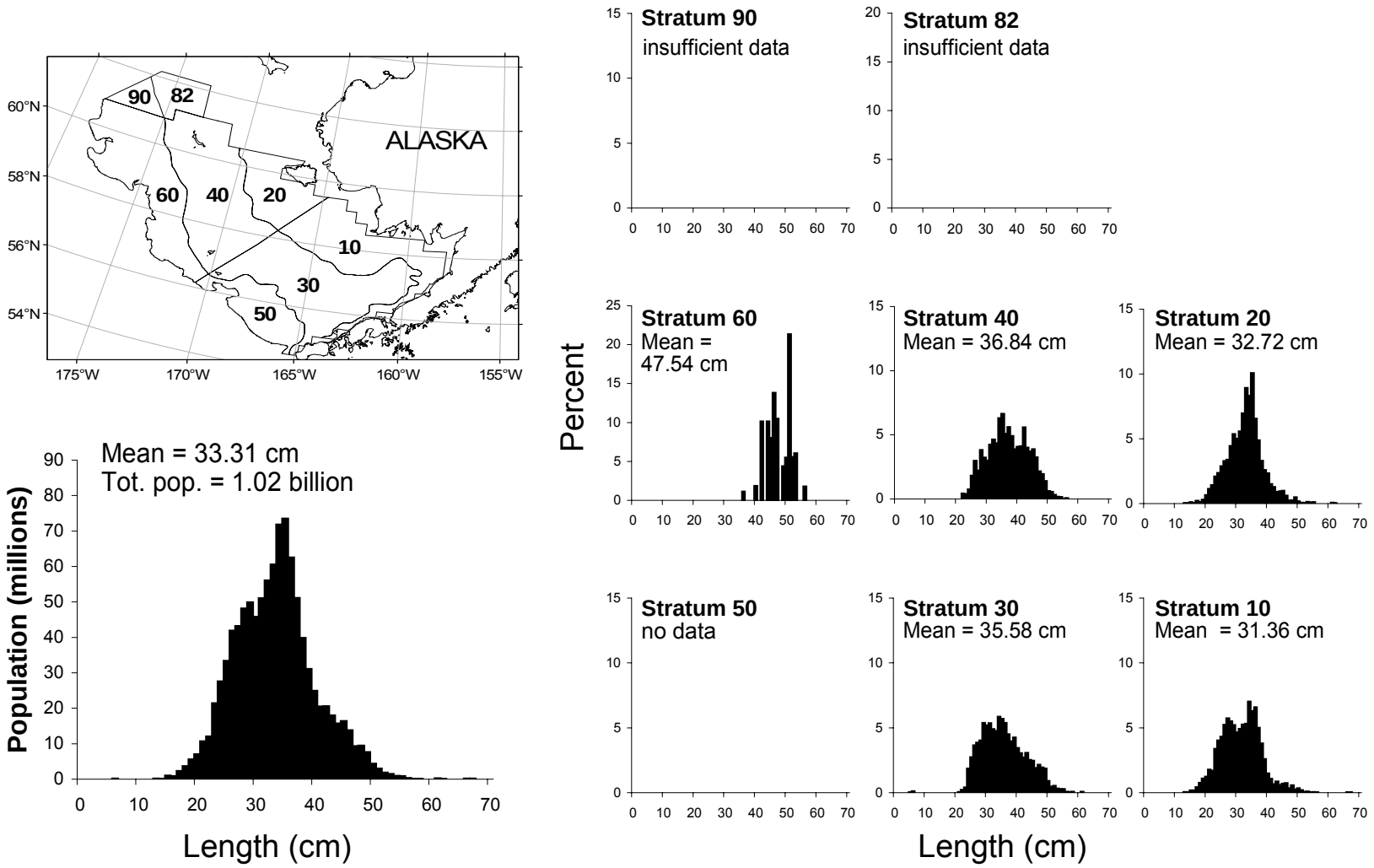


Figure 21. -- Estimated relative size distributions (sexes combined) of **Alaska plaice** (*Pleuronectes quadrituberculatus*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 14a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Alaska plaice** (*Pleuronectes quadrituberculatus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	23.27	4.00E+00	181,194	3.11E+04	118,276	244,112	58	54	54	54
20	28.83	5.28E+00	118,289	2.17E+04	74,072	162,507	31	31	31	30
Subtotal	25.19	3.19E+00	299,483	3.79E+04	223,638	375,328	89	85	85	84
31	9.07	1.31E+00	85,701	1.24E+04	60,867	110,534	69	55	55	55
32	0.38	1.54E-01	337	1.35E+02	17	657	8	5	5	5
41	19.44	4.83E+00	121,877	3.03E+04	60,623	183,130	44	39	39	39
42	5.30	1.61E+00	12,724	3.87E+03	4,806	20,642	31	20	20	20
43	3.12	1.36E+00	6,575	2.88E+03	592	12,559	22	13	13	12
82	0.14	7.58E-02	298	1.57E+02	0	642	12	6	6	6
Subtotal	9.82	1.43E+00	227,511	3.31E+04	161,297	293,726	186	138	138	137
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.17	7.70E-02	1,510	6.79E+02	138	2,881	60	9	9	9
62	1.91	1.84E+00	1,225	1.18E+03	0	4,115	7	3	3	3
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.19	9.40E-02	2,735	1.36E+03	0	5,597	101	12	12	12
Total	10.69	1.02E+00	529,729	5.04E+04	430,018	629,441	376	235	235	233

*Differences in sums of estimates and totals are due to rounding.

Table 14b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Alaska plaice** (*Pleuronectes quadrituberculatus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	56.54	9.86E+00	440,319,820	7.68E+07	285,111,889	595,527,750	58	54	54	54
20	61.33	1.03E+01	251,628,749	4.24E+07	165,077,583	338,179,916	31	31	31	30
Subtotal	58.20	7.38E+00	691,948,569	8.77E+07	516,513,117	867,384,022	89	85	85	84
31	14.16	2.04E+00	133,860,555	1.93E+07	95,265,002	172,456,108	69	55	55	55
32	0.42	1.71E-01	364,370	1.50E+05	10,304	718,436	8	5	5	5
41	26.43	6.42E+00	165,739,870	4.03E+07	84,363,393	247,116,346	44	39	39	39
42	7.68	2.35E+00	18,431,445	5.63E+06	6,915,035	29,947,855	31	20	20	20
43	4.24	2.09E+00	8,944,488	4.42E+06	0	18,139,348	22	13	13	12
82	0.19	9.35E-02	385,634	1.93E+05	0	810,710	12	6	6	6
Subtotal	14.14	1.95E+00	327,726,361	4.52E+07	237,282,435	418,170,287	186	138	138	137
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.10	4.63E-02	890,514	4.08E+05	65,906	1,715,122	60	9	9	9
62	1.03	9.69E-01	662,526	6.23E+05	0	2,186,700	7	3	3	3
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.11	5.14E-02	1,553,040	7.45E+05	0	3,117,478	101	12	12	12
Total	20.61	1.99E+00	1,021,227,971	9.87E+07	825,819,124	1,216,636,817	376	235	235	233

*Differences in sums of estimates and totals are due to rounding.

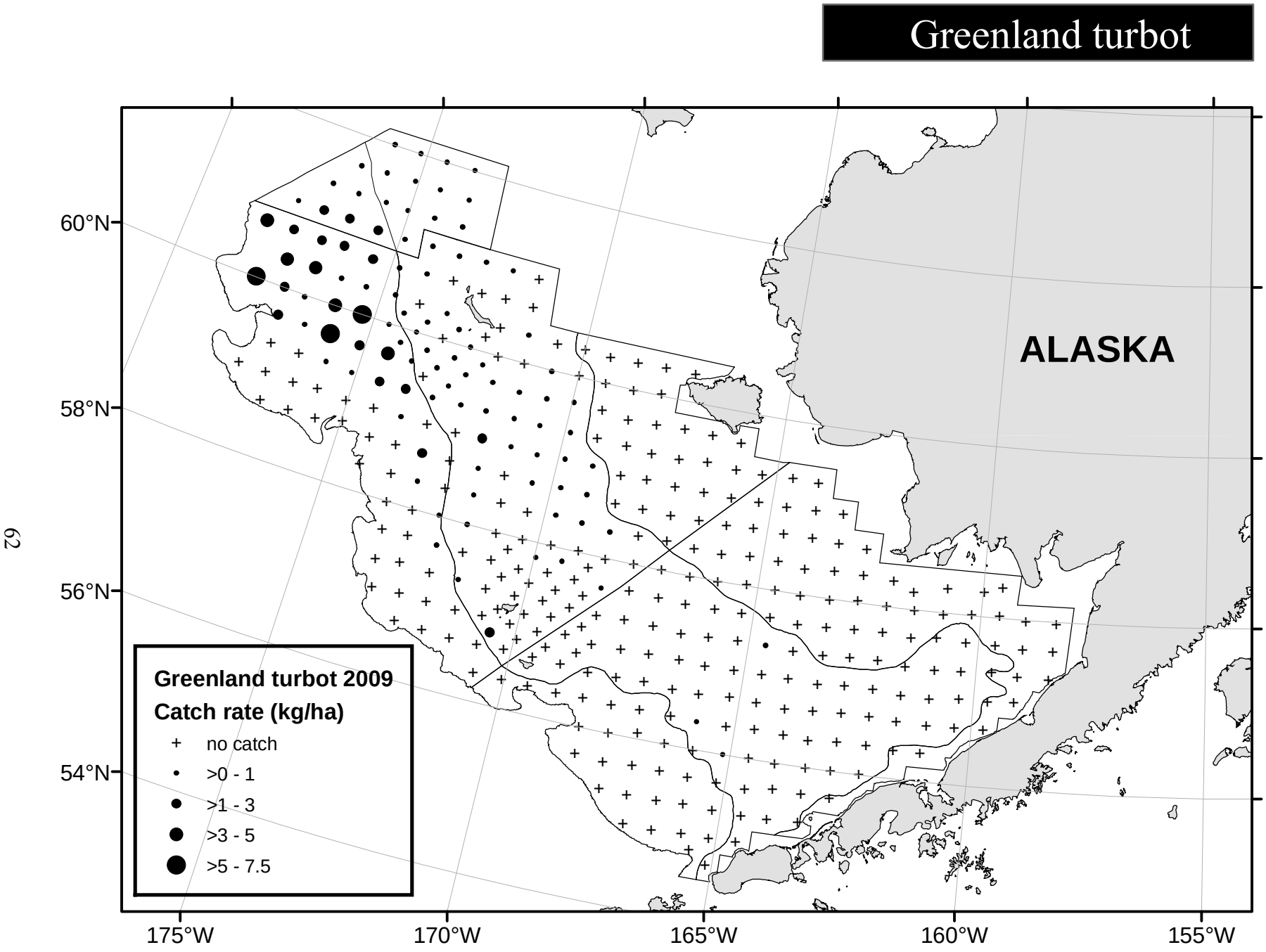


Figure 22. -- Distribution and relative abundance (kg/ha) of **Greenland turbot** (*Reinhardtius hippoglossoides*) for the 2009 eastern Bering Sea bottom trawl survey.

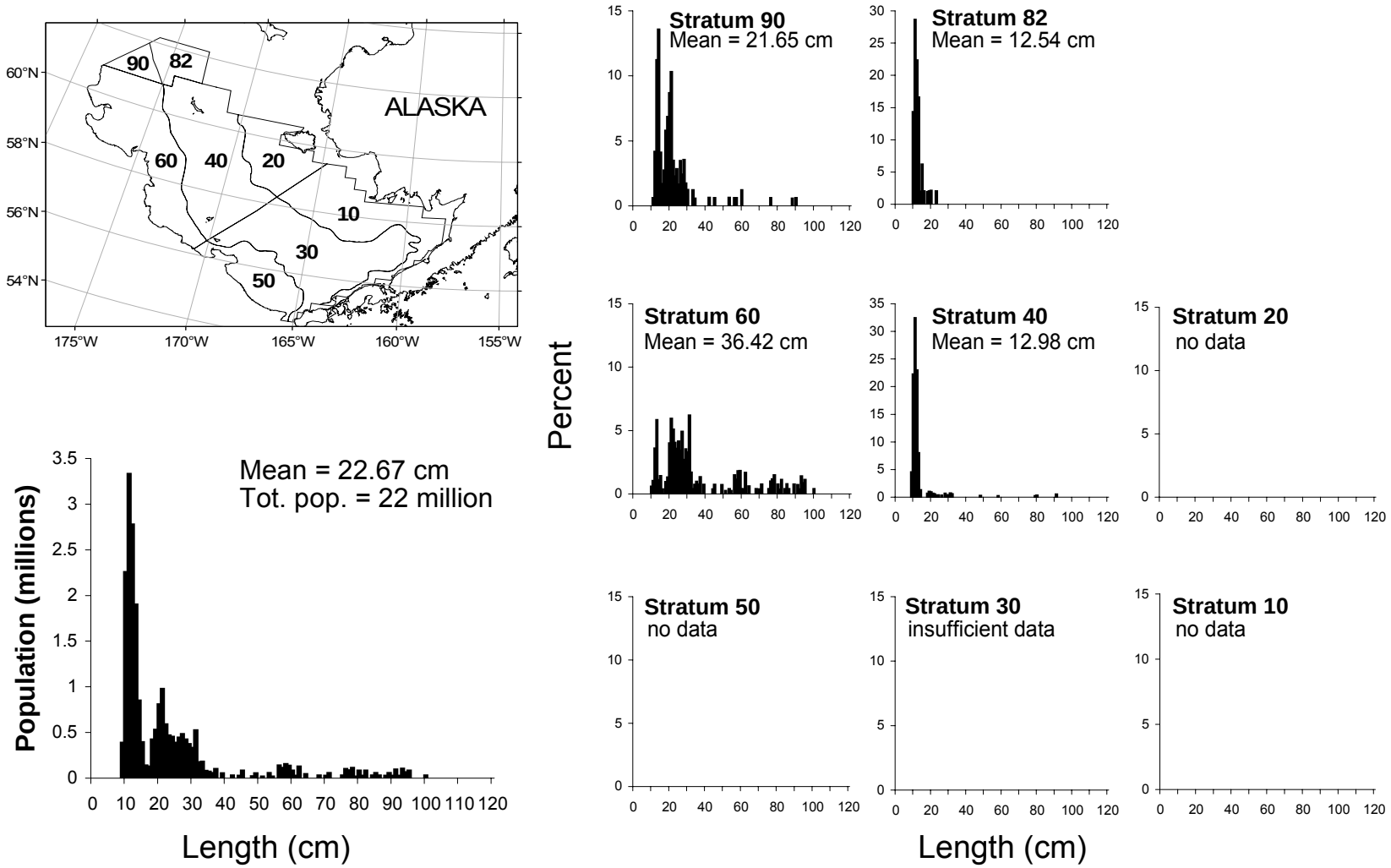


Figure 23. -- Estimated relative size distributions (sexes combined) of **Greenland turbot** (*Reinhardtius hippoglossoides*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 15a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Greenland turbot** (*Reinhardtius hippoglossoides*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.00	2.38E-03	31	2.25E+01	0	76	69	3	3	3
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.07	5.58E-02	440	3.50E+02	0	1,147	44	29	29	29
42	0.06	5.65E-02	137	1.36E+02	0	414	31	4	4	4
43	0.08	3.71E-02	166	7.83E+01	3	329	22	16	16	15
82	0.01	2.16E-03	22	4.46E+00	12	32	12	12	12	12
Subtotal	0.03	1.66E-02	795	3.84E+02	11	1,579	186	64	64	63
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.95	2.31E-01	8,368	2.04E+03	4,249	12,487	60	25	25	25
62	1.26	5.15E-01	807	3.31E+02	0	1,618	7	7	7	7
90	0.85	2.51E-01	986	2.90E+02	299	1,673	8	8	8	8
Subtotal	0.70	1.44E-01	10,161	2.09E+03	5,991	14,331	101	40	40	40
Total	0.22	4.28E-02	10,956	2.12E+03	6,758	15,154	376	104	104	103

*Differences in sums of estimates and totals are due to rounding.

Table 15b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Greenland turbot** (*Reinhardtius hippoglossoides*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.02	1.28E-02	209,544	1.21E+05	0	452,372	69	3	3	3
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.84	1.82E-01	5,274,273	1.14E+06	2,962,837	7,585,709	44	29	29	29
42	0.05	2.52E-02	114,265	6.05E+04	0	237,823	31	4	4	4
43	1.50	4.08E-01	3,158,334	8.61E+05	1,363,272	4,953,396	22	16	16	15
82	0.77	1.70E-01	1,589,574	3.51E+05	817,713	2,361,434	12	12	12	12
Subtotal	0.45	6.38E-02	10,345,990	1.48E+06	7,324,132	13,367,848	186	64	64	63
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.74	1.71E-01	6,539,530	1.50E+06	3,498,753	9,580,307	60	25	25	25
62	1.55	3.89E-01	996,606	2.50E+05	384,134	1,609,079	7	7	7	7
90	3.99	8.86E-01	4,615,538	1.02E+06	2,192,630	7,038,446	8	8	8	8
Subtotal	0.84	1.27E-01	12,151,674	1.84E+06	8,476,890	15,826,459	101	40	40	40
Total	0.45	4.76E-02	22,497,664	2.36E+06	17,826,386	27,168,943	376	104	104	103

*Differences in sums of estimates and totals are due to rounding.

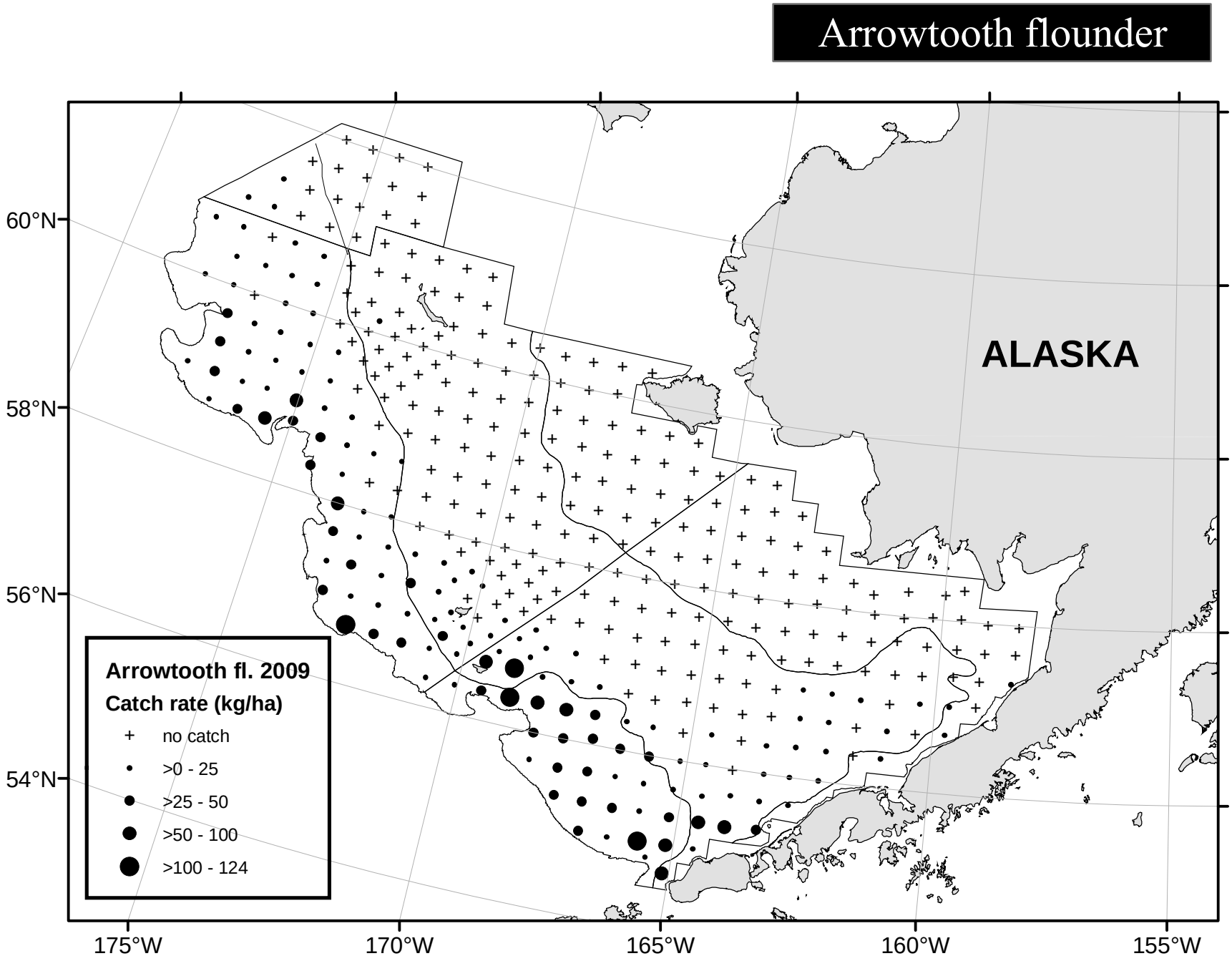


Figure 24. -- Distribution and relative abundance (kg/ha) of **Arrowtooth flounder** (*Atheresthes stomias*) for the 2009 eastern Bering Sea bottom trawl survey.

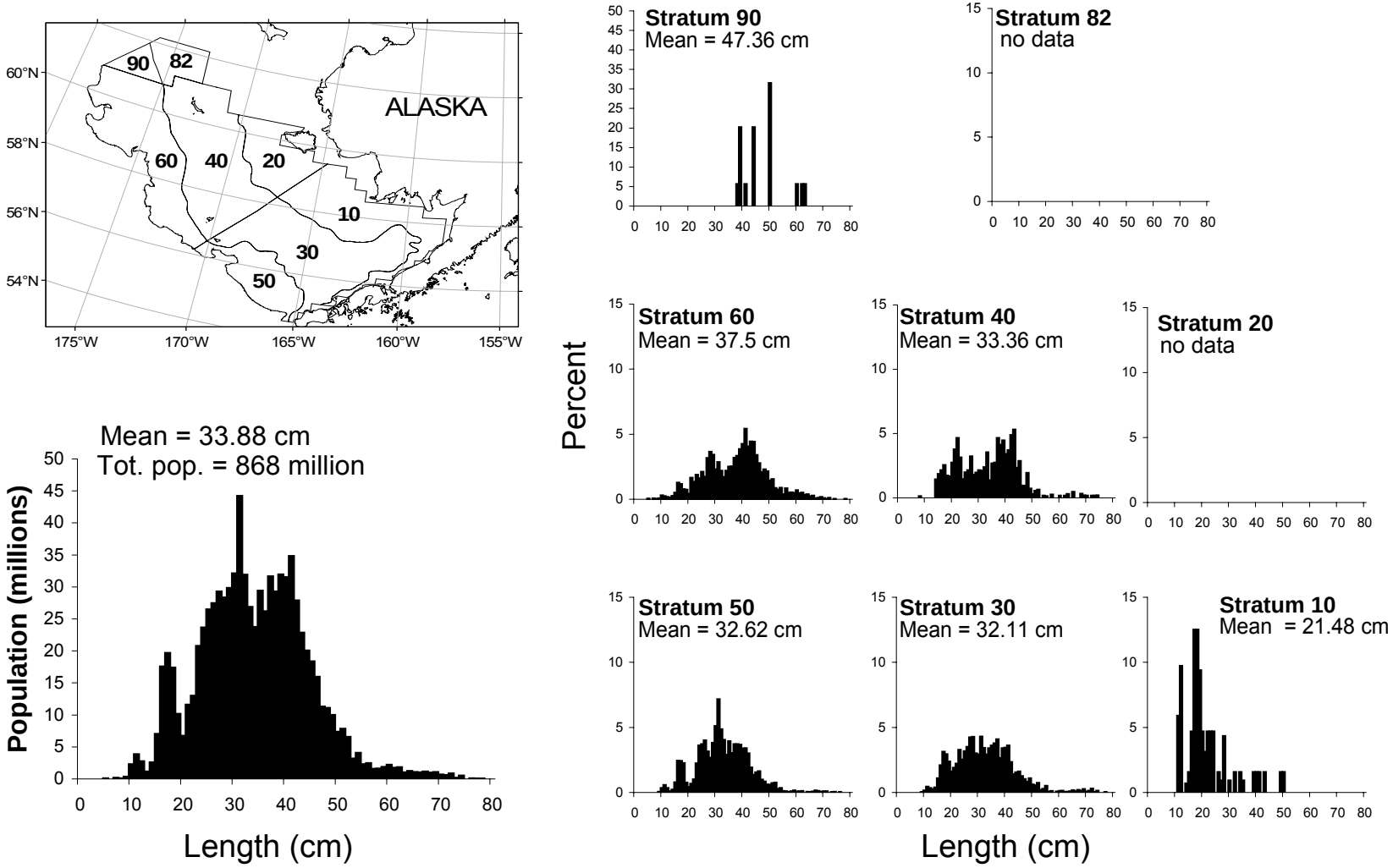


Figure 25. -- Estimated relative size distributions (sexes combined) of **arrowtooth flounder** (*Atheresthes stomias*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 16a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **arrowtooth flounder** (*Atheresthes stomias*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.08	7.05E-02	623	5.49E+02	0	1,733	58	5	5	5
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.05	4.62E-02	623	5.49E+02	0	1,722	89	5	5	5
31	5.64	1.70E+00	53,303	1.60E+04	21,222	85,384	69	31	31	30
32	24.27	1.47E+01	21,295	1.29E+04	0	52,892	8	7	7	7
41	0.91	8.54E-01	5,727	5.36E+03	0	16,550	44	2	2	2
42	3.64	1.21E+00	8,742	2.91E+03	2,799	14,684	31	13	13	13
43	0.00	4.82E-03	10	1.02E+01	0	31	22	1	1	1
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	3.84	9.27E-01	89,077	2.15E+04	45,676	132,477	186	54	54	53
50	40.78	5.46E+00	158,197	2.12E+04	114,536	201,858	26	26	26	26
61	17.93	3.06E+00	158,010	2.69E+04	103,547	212,473	60	55	55	55
62	0.62	4.41E-01	400	2.83E+02	0	1,128	7	2	2	2
90	0.47	2.59E-01	548	3.00E+02	0	1,281	8	3	3	3
Subtotal	21.88	2.37E+00	317,155	3.43E+04	248,580	385,729	101	86	86	86
Total	8.21	8.16E-01	406,854	4.05E+04	326,742	486,967	376	145	145	144

*Differences in sums of estimates and totals are due to rounding.

Table 16b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **arrowtooth flounder** (*Atheresthes stomias*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.55	4.60E-01	4,287,228	3.59E+06	0	11,533,308	58	5	5	5
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.36	3.02E-01	4,287,228	3.59E+06	0	11,458,014	89	5	5	5
31	15.19	4.65E+00	143,540,183	4.40E+07	55,626,495	231,453,871	69	31	31	30
32	48.36	2.88E+01	42,432,128	2.53E+07	0	104,295,379	8	7	7	7
41	1.27	1.16E+00	7,952,047	7.25E+06	0	22,594,643	44	2	2	2
42	9.62	3.33E+00	23,092,124	7.99E+06	6,771,913	39,412,336	31	13	13	13
43	0.01	8.60E-03	18,152	1.82E+04	0	56,016	22	1	1	1
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	9.36	2.24E+00	217,034,634	5.18E+07	112,259,547	321,809,721	186	54	54	53
50	102.89	1.33E+01	399,142,837	5.17E+07	292,628,735	505,656,939	26	26	26	26
61	28.01	5.59E+00	246,840,722	4.93E+07	147,276,593	346,404,851	60	55	55	55
62	0.74	5.70E-01	473,210	3.66E+05	0	1,415,010	7	2	2	2
90	0.43	2.68E-01	501,716	3.10E+05	0	1,260,198	8	3	3	3
Subtotal	44.64	4.93E+00	646,958,485	7.14E+07	504,119,461	789,797,510	101	86	86	86
Total	17.52	1.78E+00	868,280,348	8.83E+07	693,396,708	1,043,163,988	376	145	145	144

*Differences in sums of estimates and totals are due to rounding.

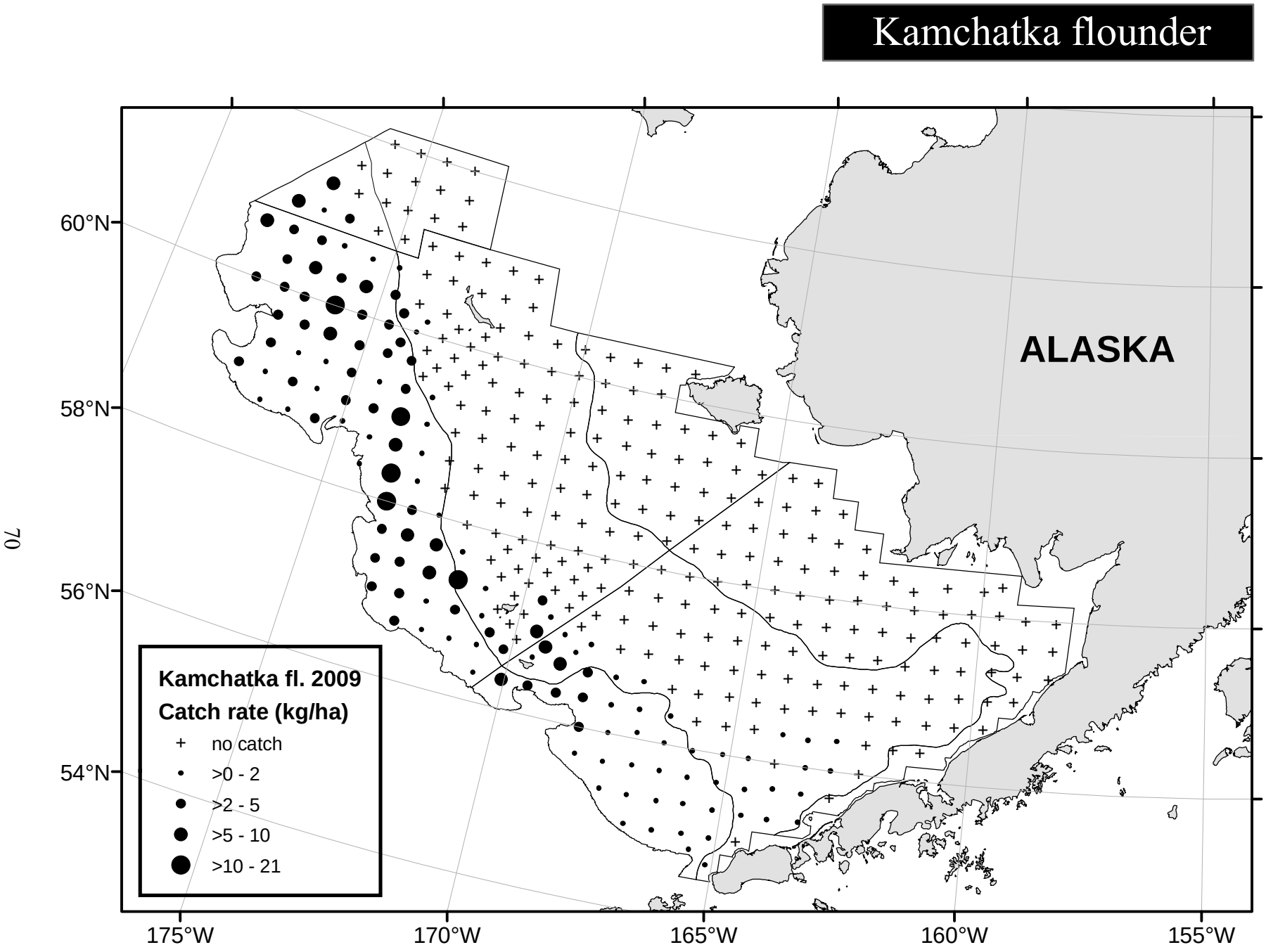


Figure 26. -- Distribution and relative abundance (kg/ha) of **Kamchatka flounder** (*Atheresthes evermanni*) for the 2009 eastern Bering Sea bottom trawl survey.

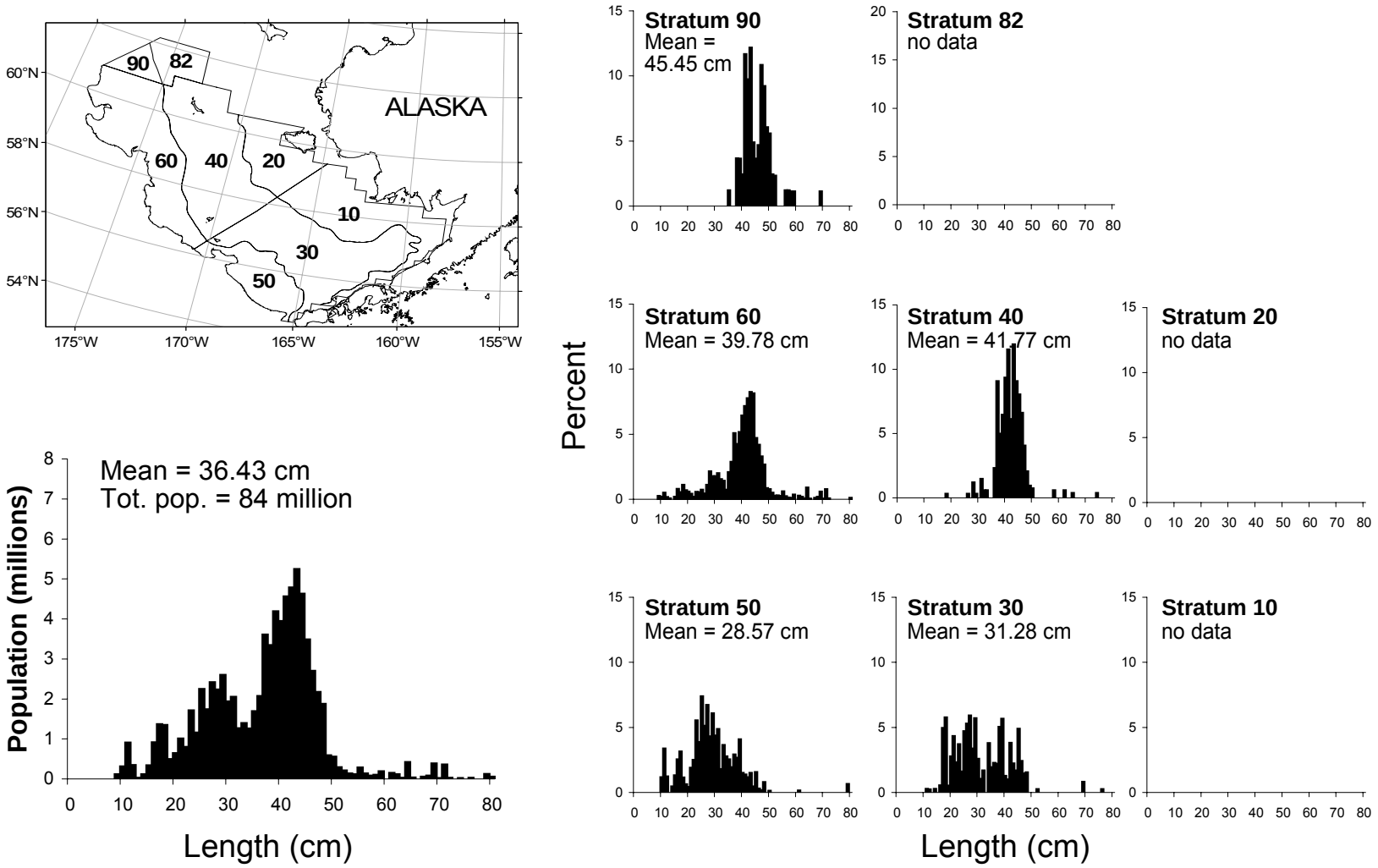


Figure 27. -- Estimated relative size distributions (sexes combined) of **Kamchatka flounder** (*Atheresthes evermanni*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 17a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Kamchatka flounder** (*Atheresthes evermanni*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.17	4.54E-02	1,640	4.29E+02	781	2,498	69	19	19	19
32	2.54	1.24E+00	2,229	1.09E+03	0	4,812	8	6	6	6
41	0.35	3.38E-01	2,182	2.12E+03	0	6,466	44	3	3	2
42	0.46	2.22E-01	1,111	5.33E+02	23	2,199	31	7	7	7
43	0.18	1.11E-01	381	2.35E+02	0	869	22	4	4	4
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.33	1.08E-01	7,542	2.49E+03	2,558	12,526	186	39	39	38
50	1.42	2.74E-01	5,504	1.06E+03	3,312	7,696	26	26	26	25
61	3.67	4.66E-01	32,345	4.11E+03	24,044	40,646	60	58	58	58
62	2.90	4.11E-01	1,861	2.64E+02	1,181	2,541	7	7	7	7
90	1.96	8.85E-01	2,264	1.02E+03	0	4,769	8	4	4	4
Subtotal	2.90	3.02E-01	41,975	4.37E+03	33,229	50,720	101	95	95	94
Total	1.00	1.02E-01	49,516	5.03E+03	39,551	59,481	376	134	134	132

*Differences in sums of estimates and totals are due to rounding.

Table 17b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Kamchatka flounder** (*Atheresthes evermanni*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.59	1.58E-01	5,609,644	1.49E+06	2,622,331	8,596,957	69	19	19	19
32	5.33	3.12E+00	4,676,375	2.74E+06	0	11,144,817	8	6	6	6
41	0.47	4.55E-01	2,936,597	2.86E+06	0	8,707,359	44	3	3	2
42	0.71	3.68E-01	1,702,471	8.83E+05	0	3,505,947	31	7	7	7
43	0.13	1.04E-01	273,265	2.19E+05	0	728,656	22	4	4	4
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.66	1.87E-01	15,198,352	4.32E+06	6,551,298	23,845,406	186	39	39	38
50	4.96	7.23E-01	19,235,737	2.80E+06	13,457,810	25,013,665	26	26	26	25
61	5.13	6.91E-01	45,192,196	6.09E+06	32,890,244	57,494,147	60	58	58	58
62	2.60	5.03E-01	1,672,649	3.24E+05	840,658	2,504,641	7	7	7	7
90	2.01	1.03E+00	2,323,073	1.19E+06	0	5,224,731	8	4	4	4
Subtotal	4.72	4.70E-01	68,423,655	6.81E+06	54,795,717	82,051,594	101	95	95	94
Total	1.69	1.63E-01	83,622,007	8.07E+06	67,643,633	99,600,381	376	134	134	132

*Differences in sums of estimates and totals are due to rounding.

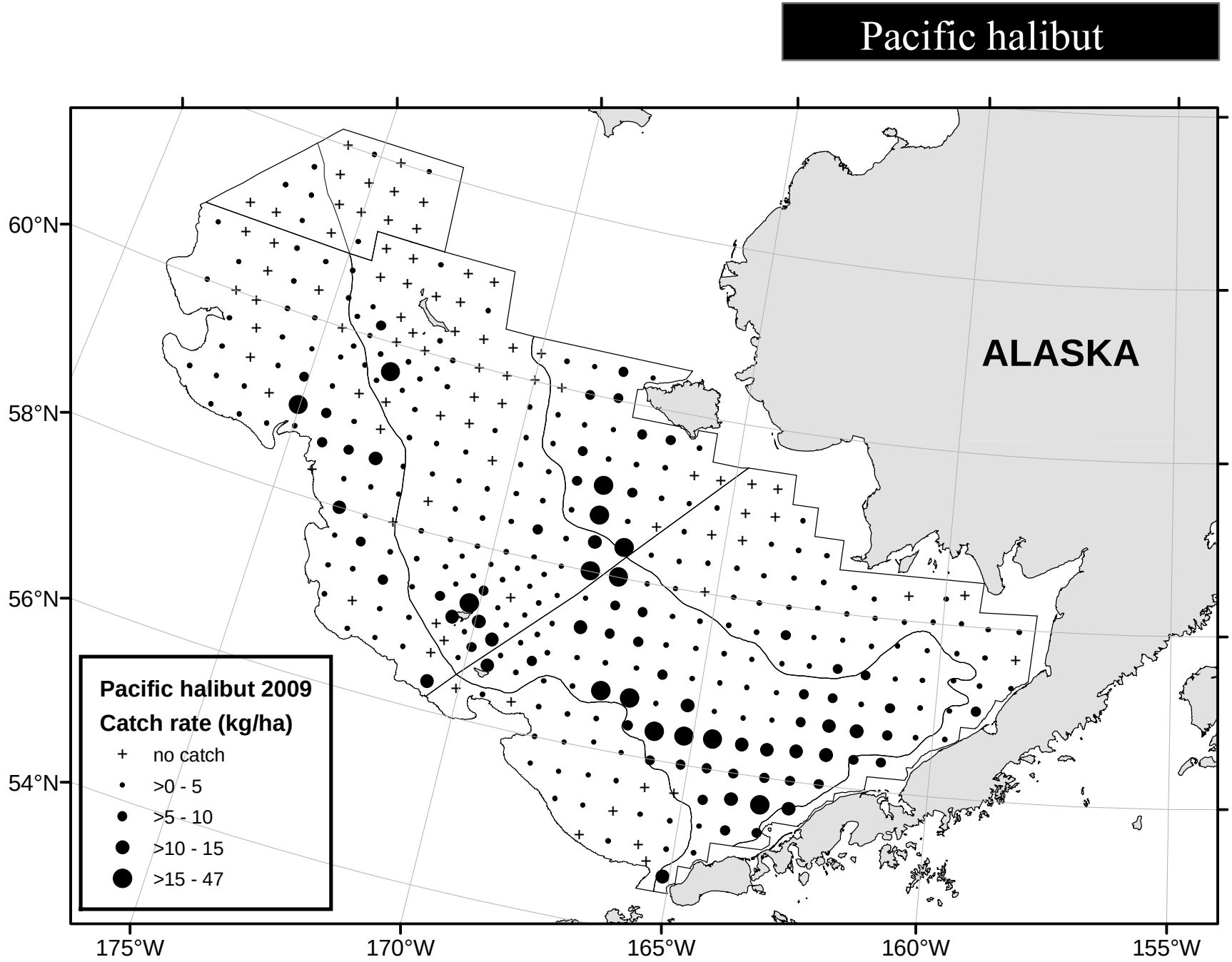


Figure 28. -- Distribution and relative abundance (kg/ha) of **Pacific halibut** (*Hippoglossus stenolepis*) for the 2009 eastern Bering Sea bottom trawl survey.

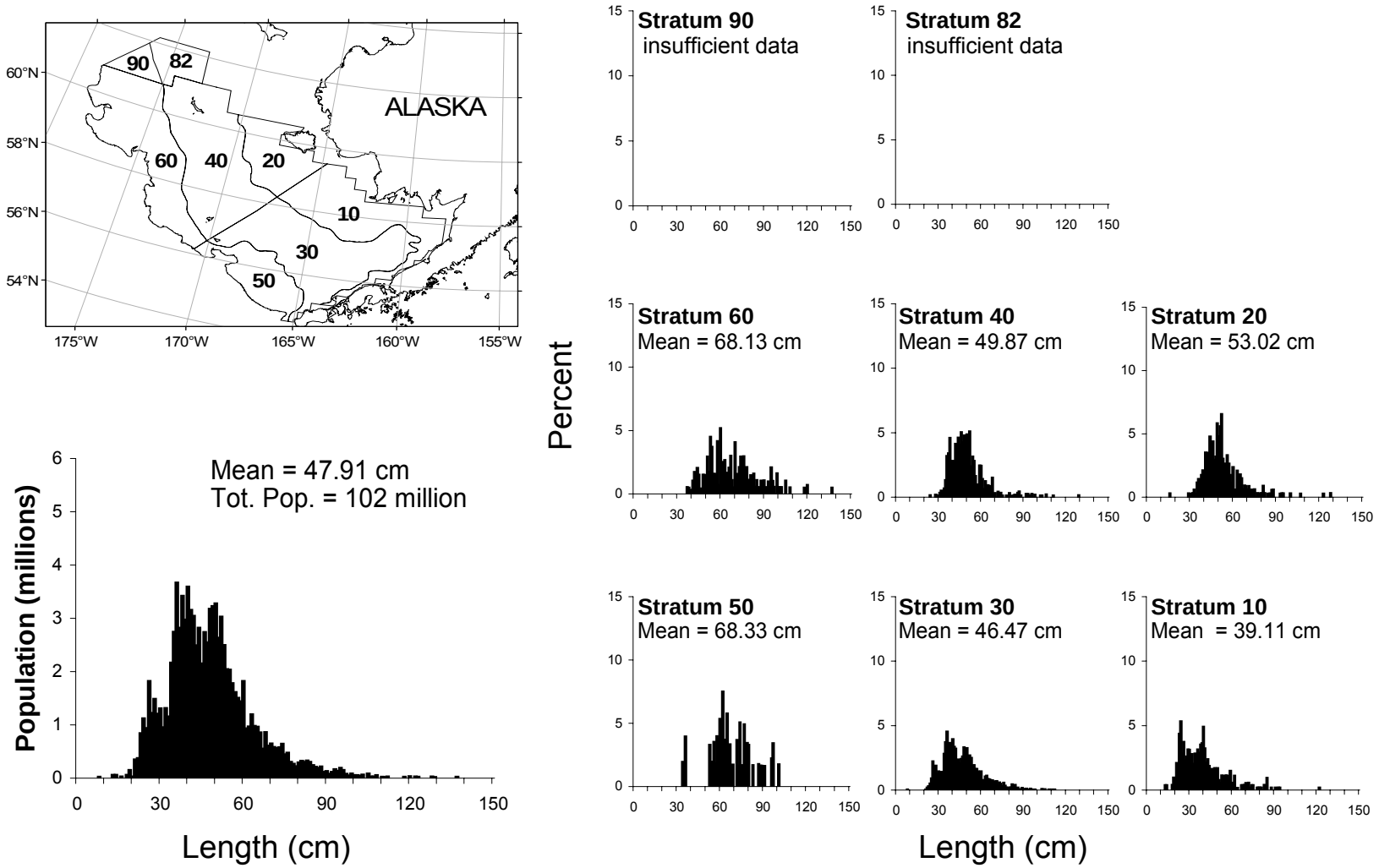


Figure 29. -- Estimated relative size distributions (sexes combined) of **Pacific halibut** (*Hippoglossus stenolepis*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 18a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Pacific halibut** (*Hippoglossus stenolepis*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	1.93	3.39E-01	15,011	2.64E+03	9,672	20,350	58	48	48	47
20	4.86	9.36E-01	19,936	3.84E+03	12,096	27,776	31	26	26	26
Subtotal	2.94	3.92E-01	34,947	4.66E+03	25,529	44,366	89	74	74	73
31	7.97	9.54E-01	75,328	9.02E+03	57,297	93,358	69	68	68	68
32	3.57	1.43E+00	3,135	1.25E+03	169	6,102	8	8	8	8
41	1.69	7.09E-01	10,608	4.45E+03	1,618	19,598	44	26	26	26
42	3.91	7.85E-01	9,383	1.89E+03	5,532	13,234	31	28	28	28
43	1.53	8.47E-01	3,227	1.79E+03	0	6,945	22	15	15	15
82	0.03	1.73E-02	68	3.58E+01	0	146	12	3	3	3
Subtotal	4.39	4.51E-01	101,749	1.05E+04	80,831	122,667	186	148	148	148
50	1.71	2.86E-01	6,617	1.11E+03	4,324	8,911	26	19	19	19
61	2.80	5.09E-01	24,687	4.48E+03	15,624	33,750	60	46	46	46
62	0.49	1.67E-01	315	1.07E+02	53	577	7	5	5	5
90	0.18	7.34E-02	206	8.50E+01	5	407	8	4	4	4
Subtotal	2.20	3.19E-01	31,825	4.62E+03	22,581	41,069	101	74	74	74
Total	3.40	2.49E-01	168,522	1.23E+04	144,073	192,971	376	296	296	295

*Differences in sums of estimates and totals are due to rounding.

Table 18b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Pacific halibut** (*Hippoglossus stenolepis*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	1.98	3.38E-01	15,406,463	2.63E+06	10,093,334	20,719,591	58	48	48	47
20	2.41	4.20E-01	9,873,395	1.72E+06	6,355,656	13,391,134	31	26	26	26
Subtotal	2.13	2.64E-01	25,279,858	3.14E+06	18,927,645	31,632,071	89	74	74	73
31	5.78	5.57E-01	54,661,328	5.26E+06	44,133,368	65,189,289	69	68	68	68
32	1.71	4.99E-01	1,500,032	4.38E+05	464,747	2,535,316	8	8	8	8
41	1.09	4.65E-01	6,850,577	2.92E+06	952,287	12,748,867	44	26	26	26
42	2.55	5.87E-01	6,133,767	1.41E+06	3,256,103	9,011,430	31	28	28	28
43	0.29	7.29E-02	620,092	1.54E+05	299,989	940,195	22	15	15	15
82	0.05	2.46E-02	97,334	5.08E+04	0	209,241	12	3	3	3
Subtotal	3.01	2.67E-01	69,863,130	6.20E+06	57,464,585	82,261,675	186	148	148	148
50	0.41	8.10E-02	1,603,277	3.14E+05	954,548	2,252,005	26	19	19	19
61	0.58	9.17E-02	5,095,327	8.08E+05	3,461,921	6,728,732	60	46	46	46
62	0.27	9.83E-02	173,344	6.32E+04	18,727	327,960	7	5	5	5
90	0.09	3.41E-02	104,116	3.95E+04	10,768	197,463	8	4	4	4
Subtotal	0.48	6.01E-02	6,976,063	8.70E+05	5,235,313	8,716,813	101	74	74	74
Total	2.06	1.41E-01	102,119,050	7.00E+06	88,249,488	115,988,613	376	296	296	295

*Differences in sums of estimates and totals are due to rounding.

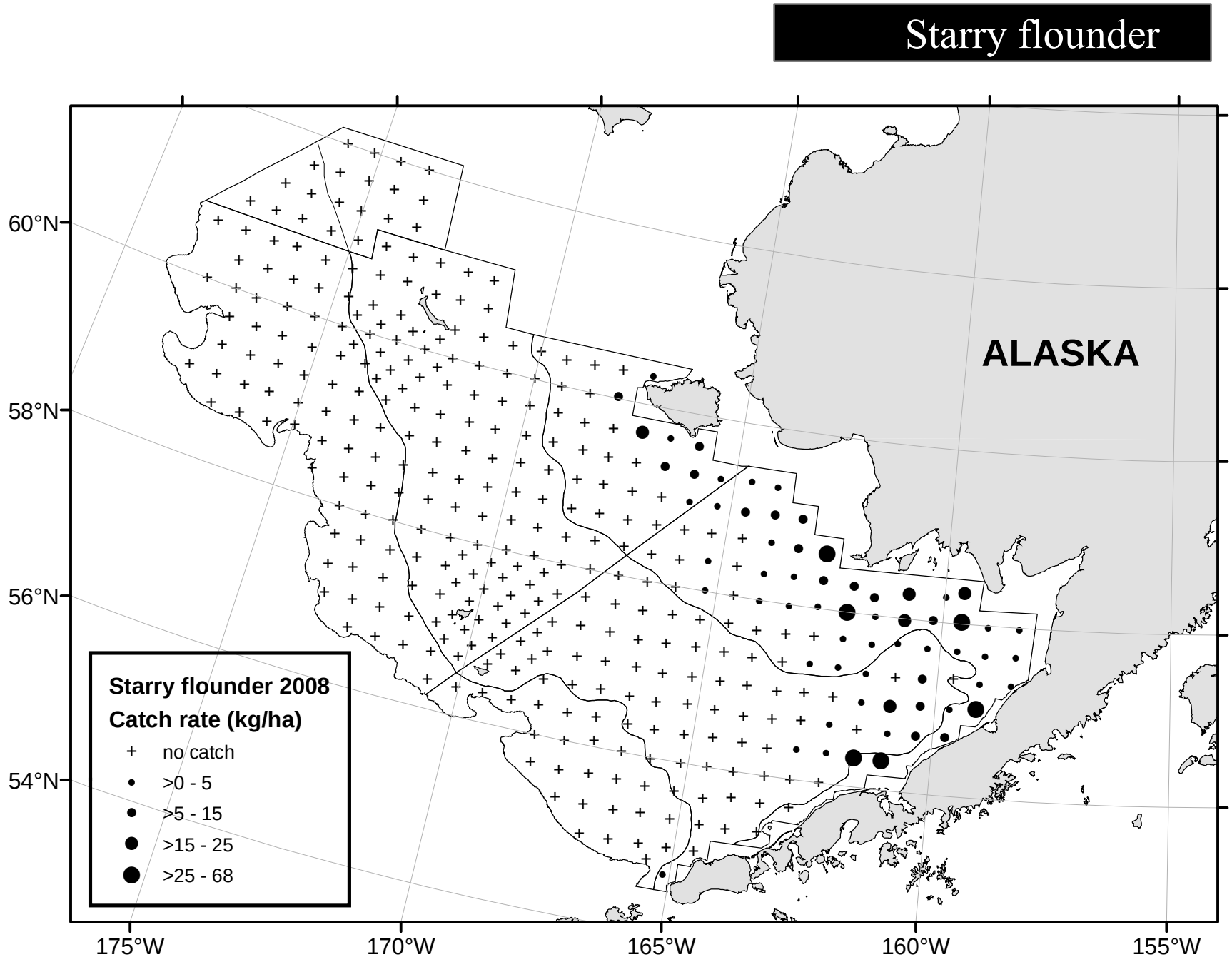


Figure 30. -- Distribution and relative abundance (kg/ha) of **starry flounder** (*Platichthys stellatus*) for the 2009 eastern Bering Sea bottom trawl survey.

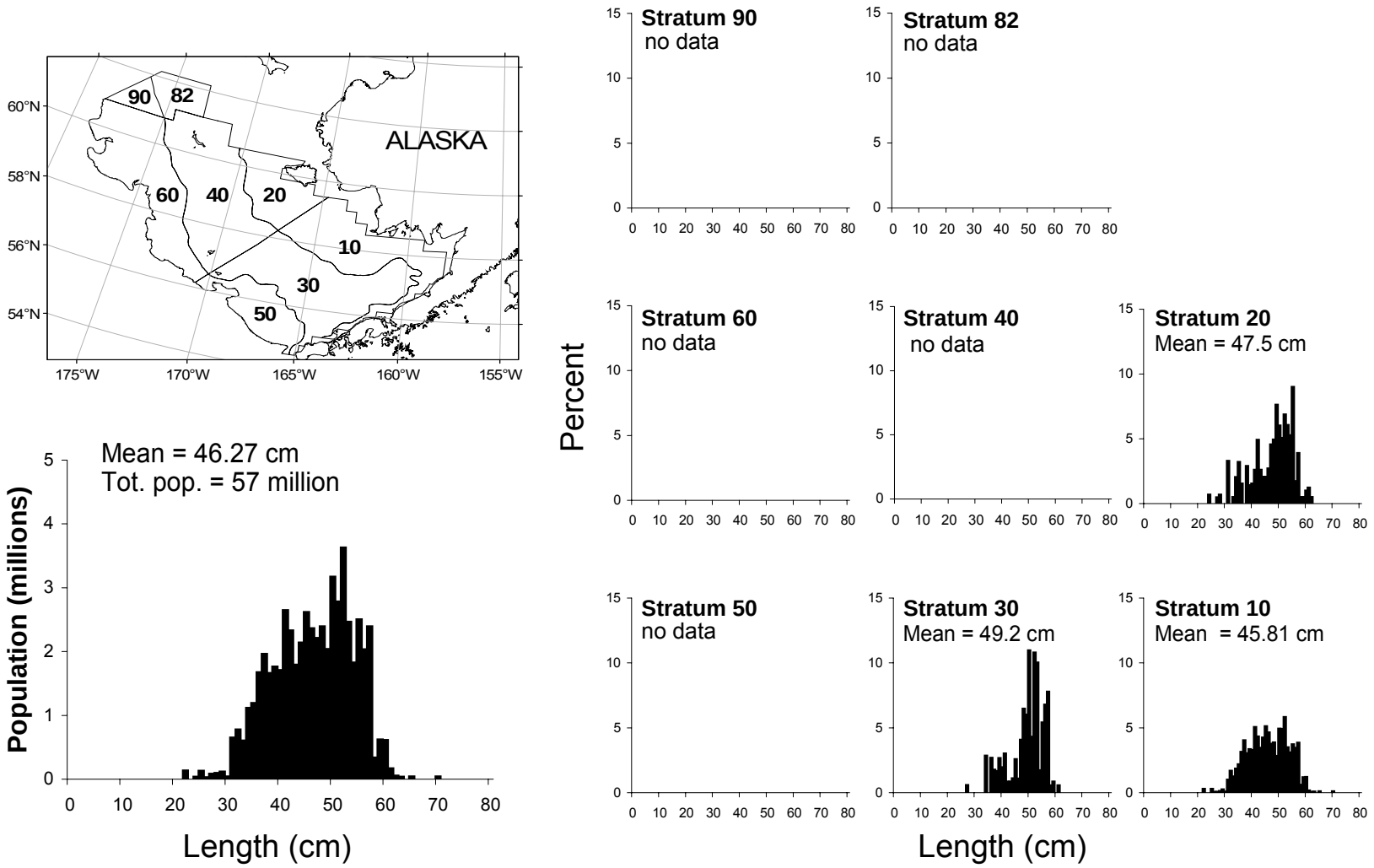


Figure 31. -- Estimated relative size distributions (sexes combined) of **starry flounder** (*Platichthys stellatus*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 19a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **starry flounder** (*Platichthys stellatus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	7.99	1.89E+00	62,223	1.47E+04	32,479	91,967	58	43	43	43
20	2.25	8.13E-01	9,212	3.34E+03	2,399	16,025	31	9	9	9
Subtotal	6.01	1.27E+00	71,435	1.51E+04	41,254	101,617	89	52	52	52
31	0.84	3.41E-01	7,931	3.23E+03	1,480	14,381	69	13	13	13
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.00	0.00E+00	0	0.00E+00	0	0	44	0	0	0
42	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
43	0.00	0.00E+00	0	0.00E+00	0	0	22	0	0	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.34	1.39E-01	7,931	3.23E+03	1,480	14,381	186	13	13	13
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	1.60	3.11E-01	79,366	1.54E+04	48,503	110,229	376	65	65	65

*Differences in sums of estimates and totals are due to rounding.

Table 19b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **starry flounder** (*Platichthys stellatus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	5.97	1.49E+00	46,489,324	1.16E+07	23,070,909	69,907,740	58	43	43	43
20	1.37	4.70E-01	5,636,171	1.93E+06	1,698,109	9,574,232	31	9	9	9
Subtotal	4.38	9.88E-01	52,125,495	1.17E+07	28,631,642	75,619,348	89	52	52	52
31	0.52	2.20E-01	4,956,939	2.08E+06	795,650	9,118,228	69	13	13	13
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.00	0.00E+00	0	0.00E+00	0	0	44	0	0	0
42	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
43	0.00	0.00E+00	0	0.00E+00	0	0	22	0	0	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.21	8.98E-02	4,956,939	2.08E+06	795,650	9,118,228	186	13	13	13
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	1.15	2.41E-01	57,082,434	1.19E+07	33,222,898	80,941,970	376	65	65	65

*Differences in sums of estimates and totals are due to rounding.

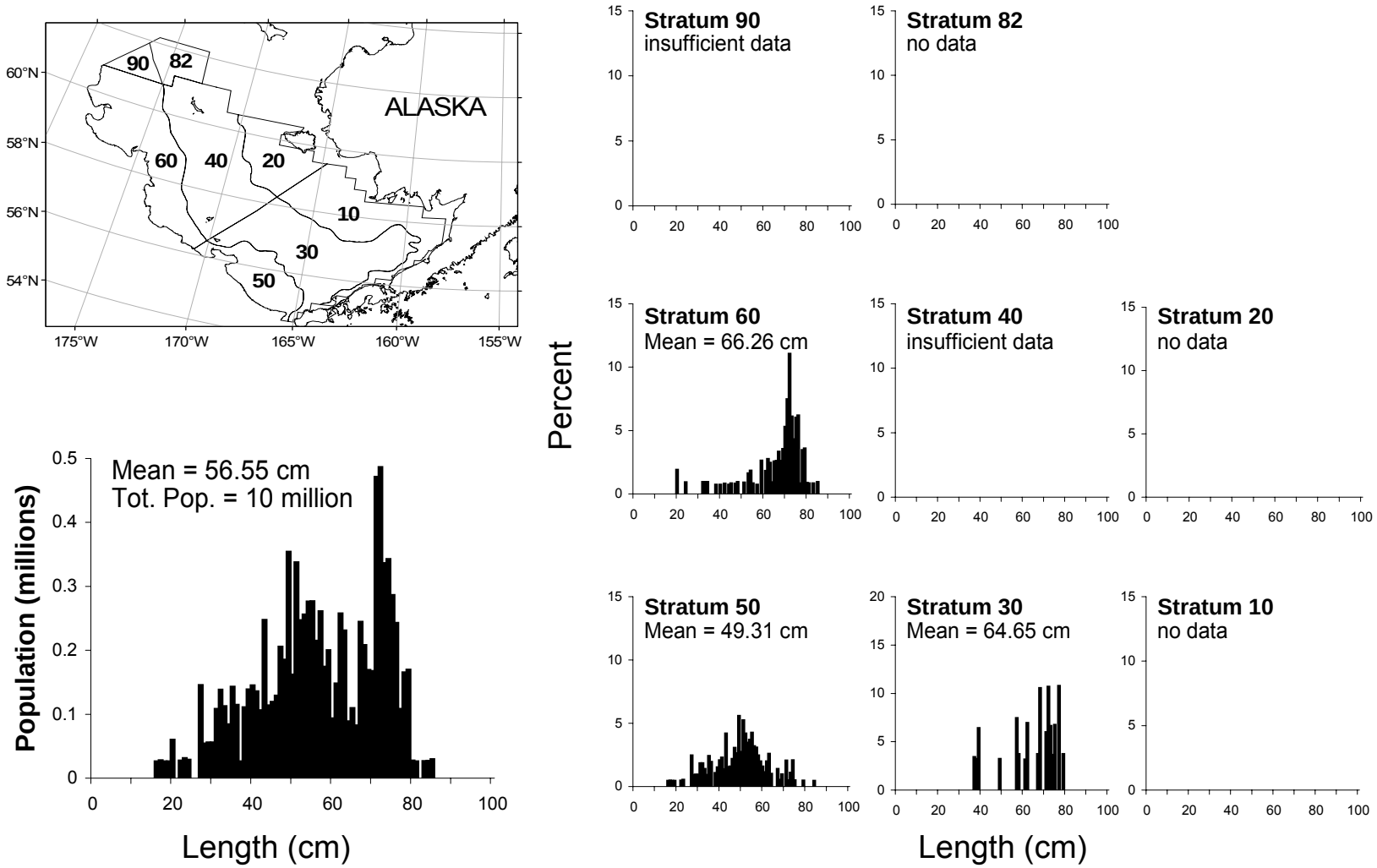


Figure 33. -- Estimated relative size distributions (sexes combined) of **Bering skate** (*Bathyraja interrupta*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

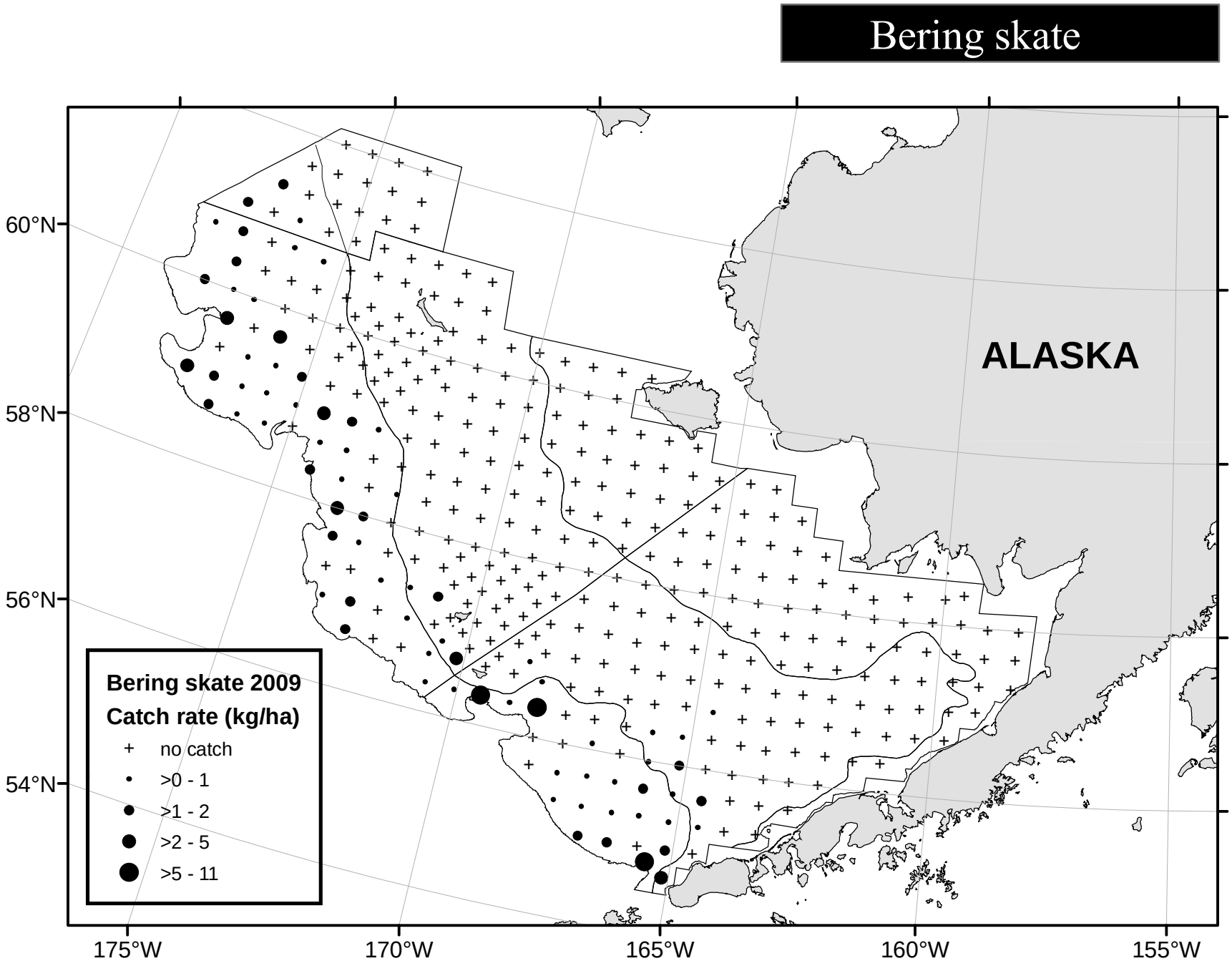


Figure 32. -- Distribution and relative abundance (kg/ha) of **Bering skate** (*Bathyraja interrupta*) for the 2009 eastern Bering Sea bottom trawl survey.

Table 20a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Bering skate** (*Bathyraja interrupta*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.13	0.00E+00	1,262	0.00E+00	176	2,347	69	9	9	9
32	0.05	0.00E+00	46	0.00E+00	0	155	8	1	1	1
41	0.01	0.00E+00	60	0.00E+00	0	183	44	1	1	1
42	0.12	0.00E+00	293	0.00E+00	0	686	31	3	3	3
43	0.00	0.00E+00	0	0.00E+00	0	0	22	0	0	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.07	0.00E+00	1,661	0.00E+00	499	2,823	186	14	14	14
50	1.29	0.00E+00	5,000	0.00E+00	728	9,272	26	19	19	19
61	0.69	0.00E+00	6,095	0.00E+00	4,213	7,977	60	40	40	40
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.45	0.00E+00	518	0.00E+00	0	1,145	8	3	3	3
Subtotal	0.80	0.00E+00	11,613	0.00E+00	6,940	16,286	101	62	62	62
Total	0.27	0.00E+00	13,274	0.00E+00	8,552	17,997	376	76	76	76

*Differences in sums of estimates and totals are due to rounding.

Table 20b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Bering skate** (*Bathyraja interrupta*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.08	0.00E+00	745,156	0.00E+00	123,389	1,366,923	69	9	9	9
32	0.02	0.00E+00	19,327	0.00E+00	0	65,034	8	1	1	1
41	0.00	0.00E+00	28,006	0.00E+00	0	84,607	44	1	1	1
42	0.05	0.00E+00	118,539	0.00E+00	0	275,906	31	3	3	3
43	0.00	0.00E+00	0	0.00E+00	0	0	22	0	0	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.04	0.00E+00	911,028	0.00E+00	266,837	1,555,219	186	14	14	14
50	1.52	0.00E+00	5,910,362	0.00E+00	1,575,618	10,245,106	26	19	19	19
61	0.36	0.00E+00	3,165,177	0.00E+00	2,145,503	4,184,852	60	40	40	40
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.21	0.00E+00	248,002	0.00E+00	0	552,208	8	3	3	3
Subtotal	0.64	0.00E+00	9,323,541	0.00E+00	4,897,085	13,749,998	101	62	62	62
Total	0.21	0.00E+00	10,234,569	0.00E+00	5,851,558	14,617,580	376	76	76	76

*Differences in sums of estimates and totals are due to rounding.

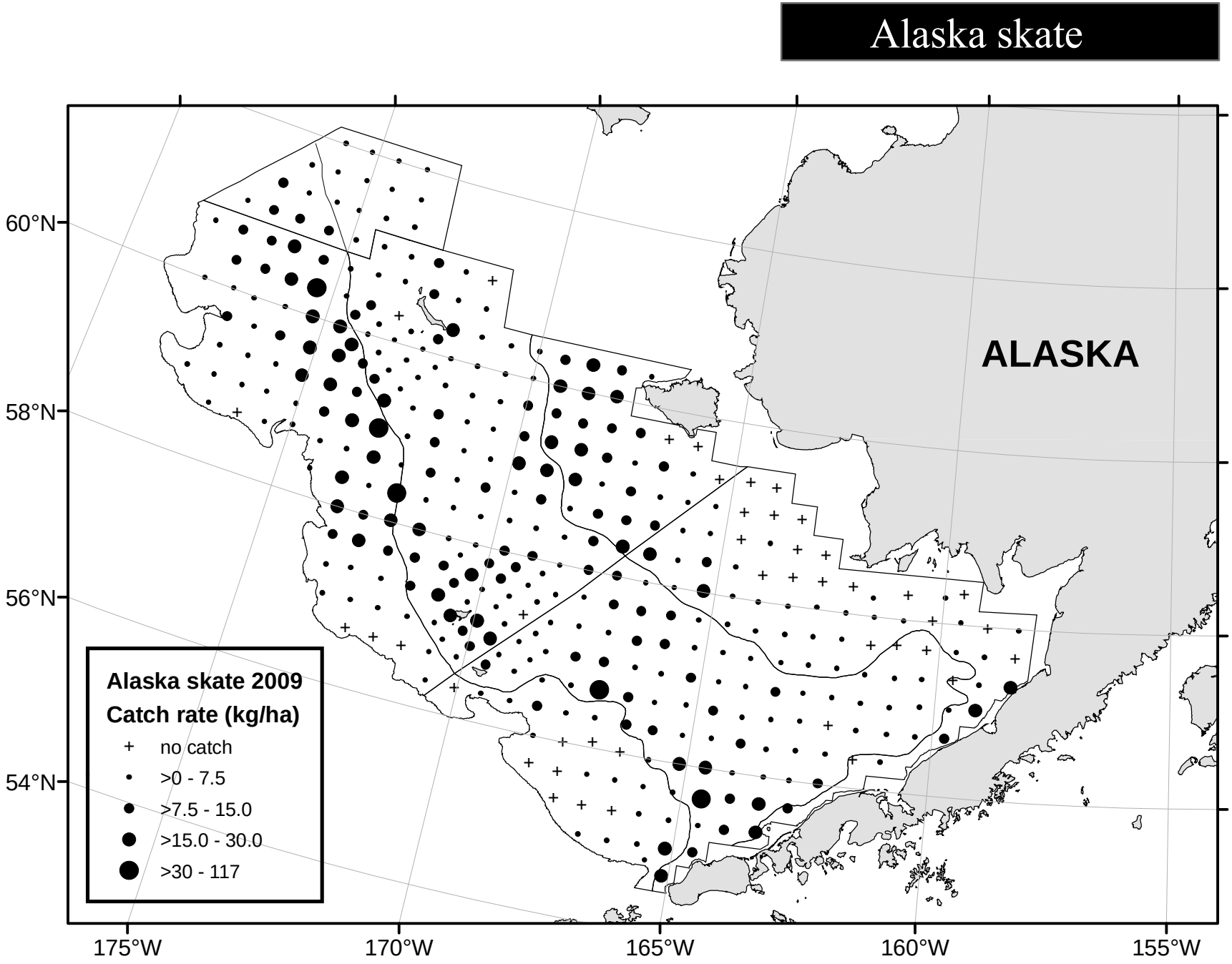


Figure 34. -- Distribution and relative abundance (kg/ha) of **Alaska skate** (*Bathyraja parmifera*) for the 2009 eastern Bering Sea bottom trawl survey.

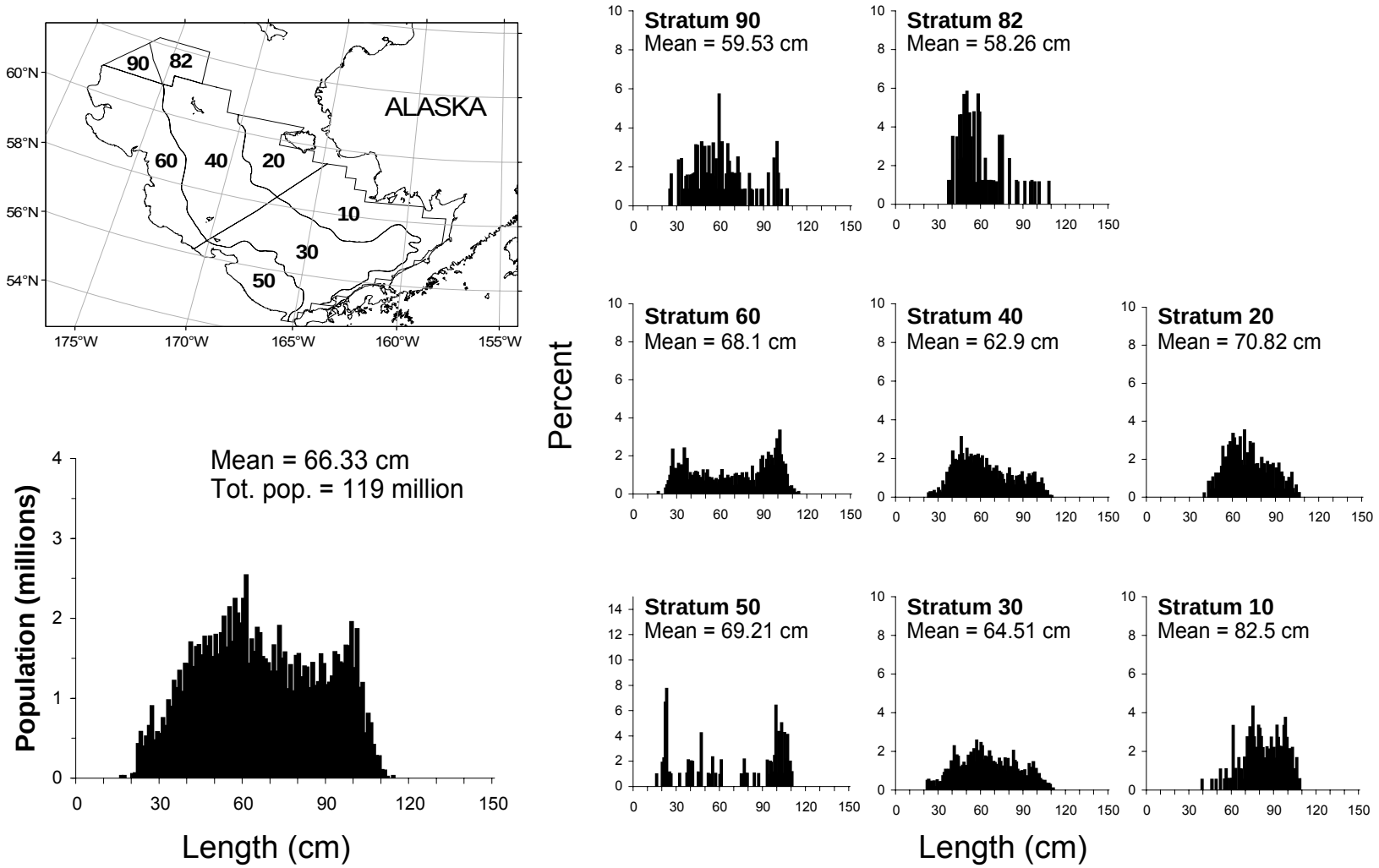


Figure 35. -- Estimated relative size distributions (sexes combined) of **Alaska skate** (*Bathyraja parmifera*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 21a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Alaska skate** (*Bathyraja parmifera*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	3.24	6.21E-01	25,193	4.83E+03	15,423	34,963	58	38	38	38
20	10.69	1.29E+00	43,876	5.30E+03	33,047	54,705	31	28	28	28
Subtotal	5.81	6.03E-01	69,069	7.17E+03	54,729	83,409	89	66	66	66
31	9.03	1.74E+00	85,317	1.64E+04	52,461	118,173	69	66	66	66
32	2.98	1.21E+00	2,616	1.06E+03	11	5,221	8	8	8	8
41	6.32	8.25E-01	39,635	5.18E+03	29,175	50,094	44	43	43	43
42	8.40	1.35E+00	20,160	3.23E+03	13,553	26,767	31	30	30	30
43	5.99	1.26E+00	12,634	2.65E+03	7,118	18,150	22	21	21	21
82	2.50	5.79E-01	5,154	1.20E+03	2,491	7,816	12	12	12	12
Subtotal	7.14	7.68E-01	165,515	1.78E+04	129,923	201,107	186	180	180	180
50	3.06	9.97E-01	11,881	3.87E+03	3,896	19,866	26	17	17	17
61	9.85	1.20E+00	86,770	1.06E+04	65,314	108,225	60	56	56	56
62	16.71	2.66E+00	10,742	1.71E+03	6,564	14,920	7	7	7	7
90	5.99	1.67E+00	6,930	1.93E+03	2,361	11,499	8	8	8	8
Subtotal	8.03	8.00E-01	116,323	1.16E+04	93,144	139,502	101	88	88	88
Total	7.08	4.52E-01	350,907	2.24E+04	306,525	395,288	376	334	334	334

*Differences in sums of estimates and totals are due to rounding.

Table 21b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Alaska skate** (*Bathyraja parmifera*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.68	1.23E-01	5,319,923	9.61E+05	3,378,041	7,261,805	58	38	38	38
20	3.38	4.83E-01	13,866,210	1.98E+06	9,812,667	17,919,752	31	28	28	28
Subtotal	1.61	1.85E-01	19,186,132	2.20E+06	14,780,570	23,591,695	89	66	66	66
31	3.45	5.82E-01	32,600,120	5.50E+06	21,591,176	43,609,065	69	66	66	66
32	1.58	4.46E-01	1,386,366	3.91E+05	429,272	2,343,461	8	8	8	8
41	2.46	3.19E-01	15,450,118	2.00E+06	11,411,119	19,489,117	44	43	43	43
42	3.11	4.38E-01	7,471,655	1.05E+06	5,319,035	9,624,275	31	30	30	30
43	2.83	4.02E-01	5,969,108	8.49E+05	4,204,133	7,734,084	22	21	21	21
82	1.34	2.65E-01	2,772,572	5.47E+05	1,554,689	3,990,454	12	12	12	12
Subtotal	2.83	2.61E-01	65,649,940	6.05E+06	53,554,798	77,745,081	186	180	180	180
50	0.72	2.20E-01	2,775,991	8.54E+05	1,013,507	4,538,475	26	17	17	17
61	2.78	3.47E-01	24,515,358	3.06E+06	18,331,172	30,699,543	60	56	56	56
62	5.48	6.62E-01	3,521,800	4.25E+05	2,480,857	4,562,742	7	7	7	7
90	2.91	7.99E-01	3,367,684	9.25E+05	1,180,864	5,554,505	8	8	8	8
Subtotal	2.36	2.30E-01	34,180,833	3.34E+06	27,508,950	40,852,715	101	88	88	88
Total	2.40	1.46E-01	119,016,905	7.25E+06	104,663,085	133,370,725	376	334	334	334

*Differences in sums of estimates and totals are due to rounding.

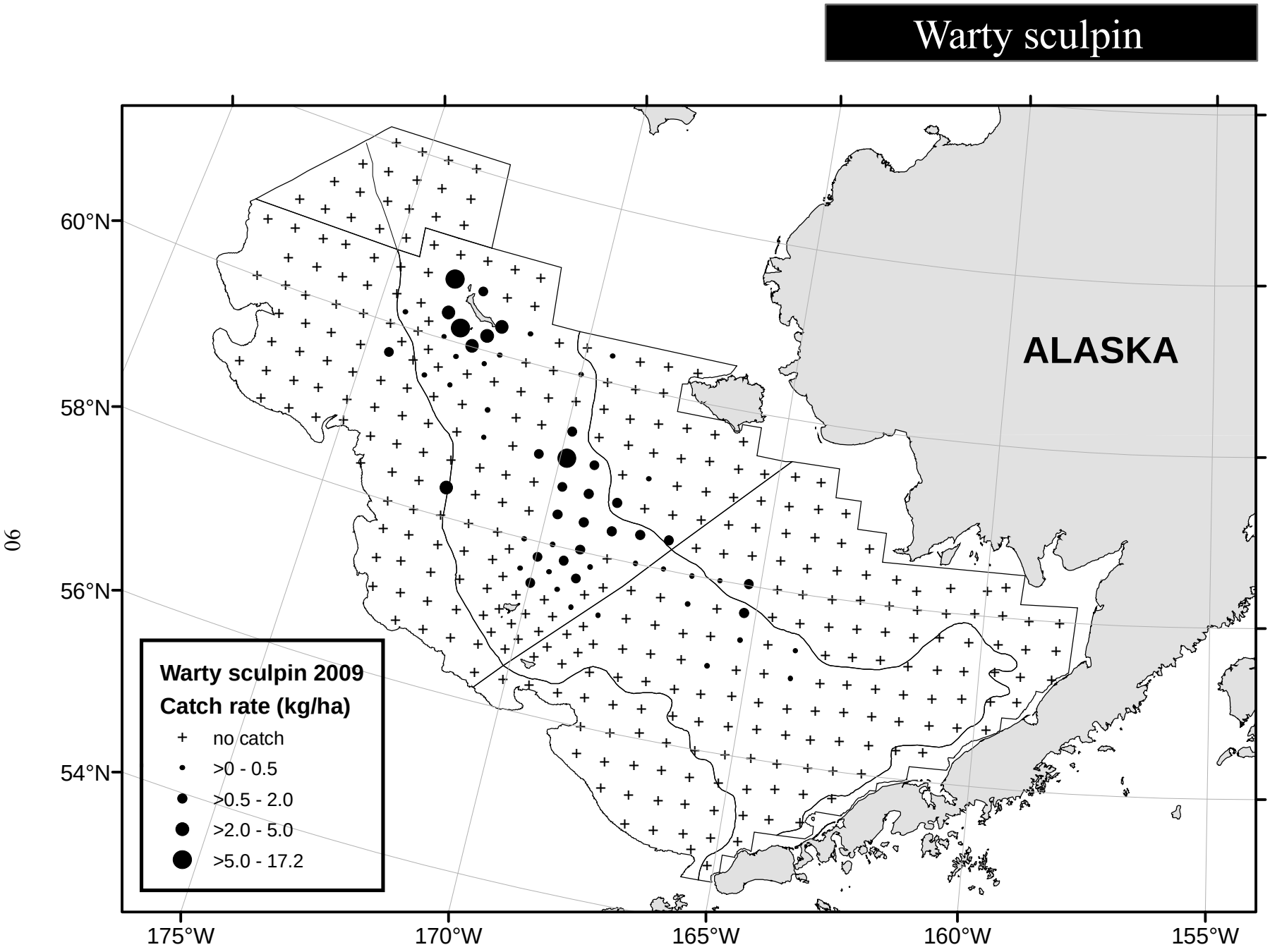


Figure 36. -- Distribution and relative abundance (kg/ha) of **warty sculpin** (*Myoxocephalus verrucosus*) for the 2009 eastern Bering Sea bottom trawl survey.

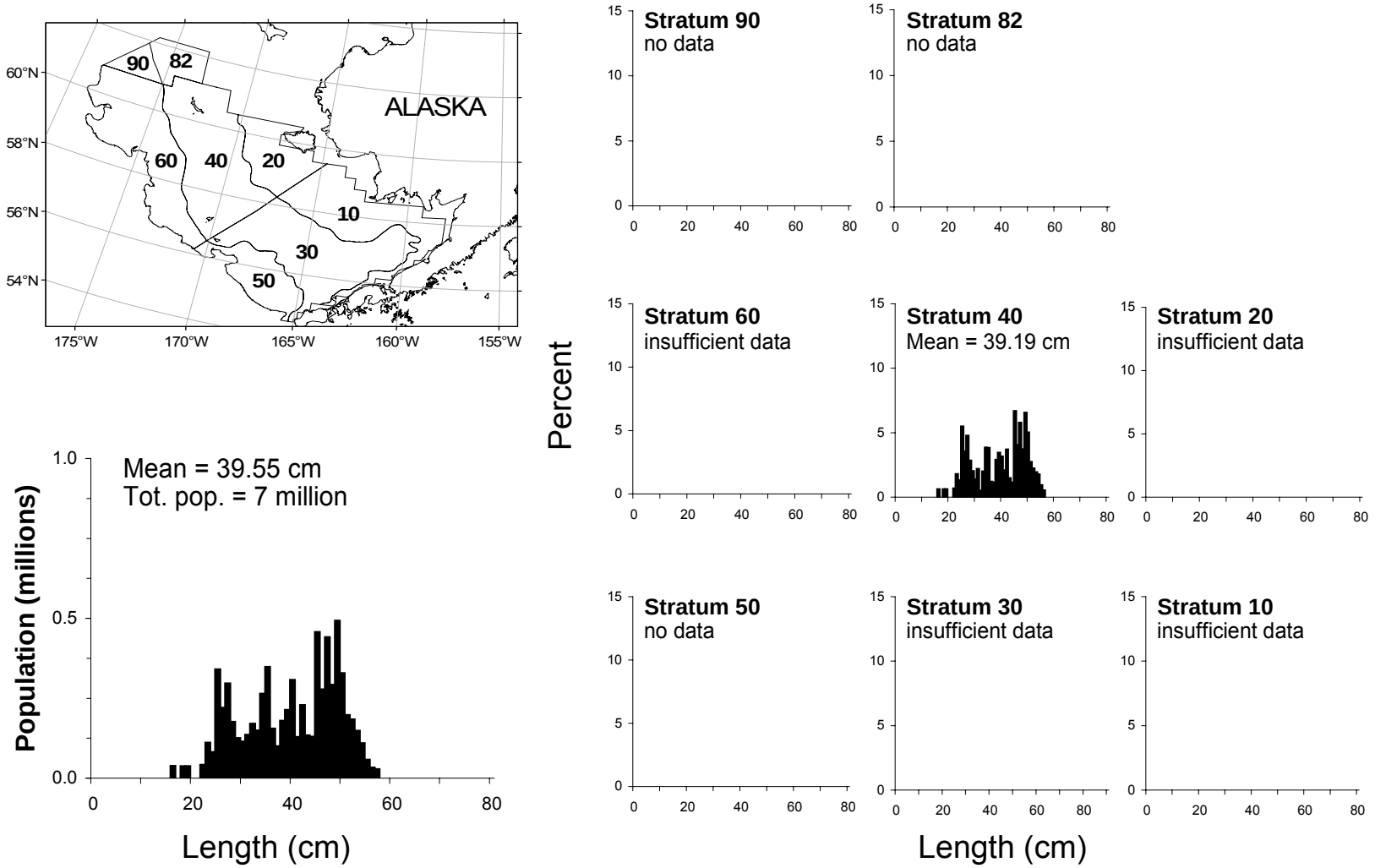


Figure 37. -- Estimated relative size distributions (sexes combined) of **warty sculpin** (*Myoxocephalus verrucosus*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 22a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **warty sculpin** (*Myoxocephalus verrucosus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.01	9.92E-03	102	7.73E+01	0	258	58	2	2	2
20	0.08	4.89E-02	322	2.00E+02	0	732	31	4	4	4
Subtotal	0.04	1.81E-02	425	2.15E+02	0	863	89	6	6	6
31	0.03	1.34E-02	312	1.26E+02	60	565	69	8	8	8
32	0.03	2.63E-02	23	2.31E+01	0	78	8	1	1	1
41	0.49	1.69E-01	3,051	1.06E+03	911	5,191	44	16	16	16
42	0.24	7.64E-02	576	1.83E+02	201	951	31	12	12	12
43	1.45	7.89E-01	3,053	1.67E+03	0	6,518	22	13	13	13
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.30	8.57E-02	7,015	1.99E+03	3,000	11,030	186	50	50	50
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.05	4.94E-02	435	4.35E+02	0	1,314	60	1	1	1
62	0.12	1.20E-01	77	7.71E+01	0	275	7	1	1	1
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.04	3.05E-02	512	4.42E+02	0	1,405	101	2	2	2
Total	0.16	4.13E-02	7,952	2.05E+03	3,859	12,045	376	58	58	58

*Differences in sums of estimates and totals are due to rounding.

Table 22b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **warty sculpin** (*Myoxocephalus verrucosus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.01	1.05E-02	116,326	8.16E+04	0	281,239	58	2	2	2
20	0.07	3.68E-02	269,286	1.51E+05	0	577,584	31	4	4	4
Subtotal	0.03	1.44E-02	385,613	1.72E+05	35,168	736,057	89	6	6	6
31	0.04	1.55E-02	380,512	1.47E+05	87,306	673,719	69	8	8	8
32	0.05	5.26E-02	46,193	4.62E+04	0	155,440	8	1	1	1
41	0.37	1.18E-01	2,312,587	7.38E+05	822,001	3,803,173	44	16	16	16
42	0.27	8.43E-02	655,299	2.02E+05	241,970	1,068,629	31	12	12	12
43	1.53	8.96E-01	3,234,265	1.89E+06	0	7,167,505	22	13	13	13
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.29	8.83E-02	6,628,857	2.05E+06	2,494,746	10,762,967	186	50	50	50
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.03	2.87E-02	252,938	2.53E+05	0	764,125	60	1	1	1
62	0.05	5.40E-02	34,745	3.47E+04	0	124,074	7	1	1	1
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.02	1.76E-02	287,683	2.55E+05	0	803,670	101	2	2	2
Total	0.15	4.17E-02	7,302,152	2.07E+06	3,164,993	11,439,311	376	58	58	58

*Differences in sums of estimates and totals are due to rounding.

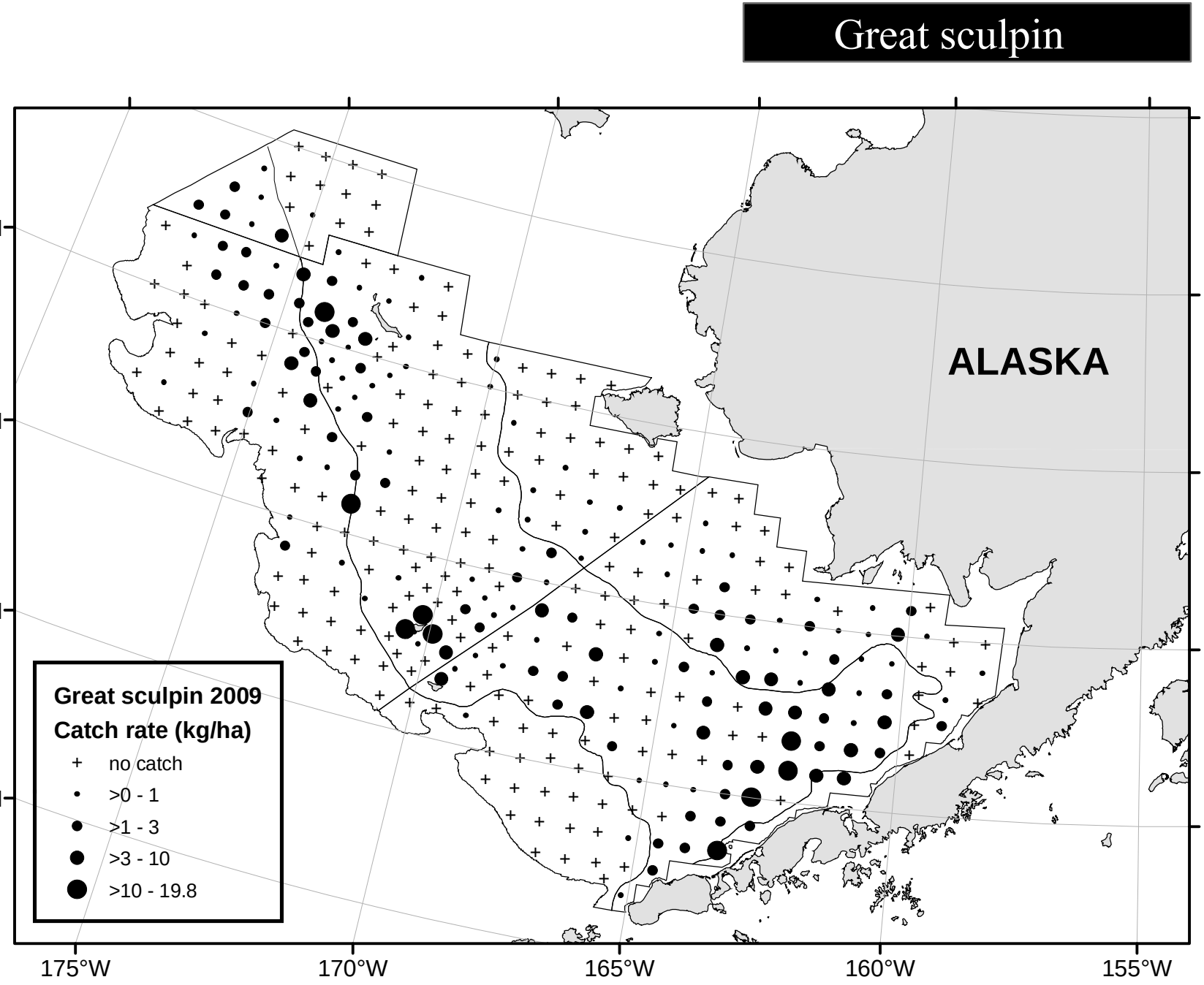


Figure 38. -- Distribution and relative abundance (kg/ha) of **great sculpin** (*Myoxocephalus polyacanthocephalus*) for the 2009 eastern Bering Sea bottom trawl survey.

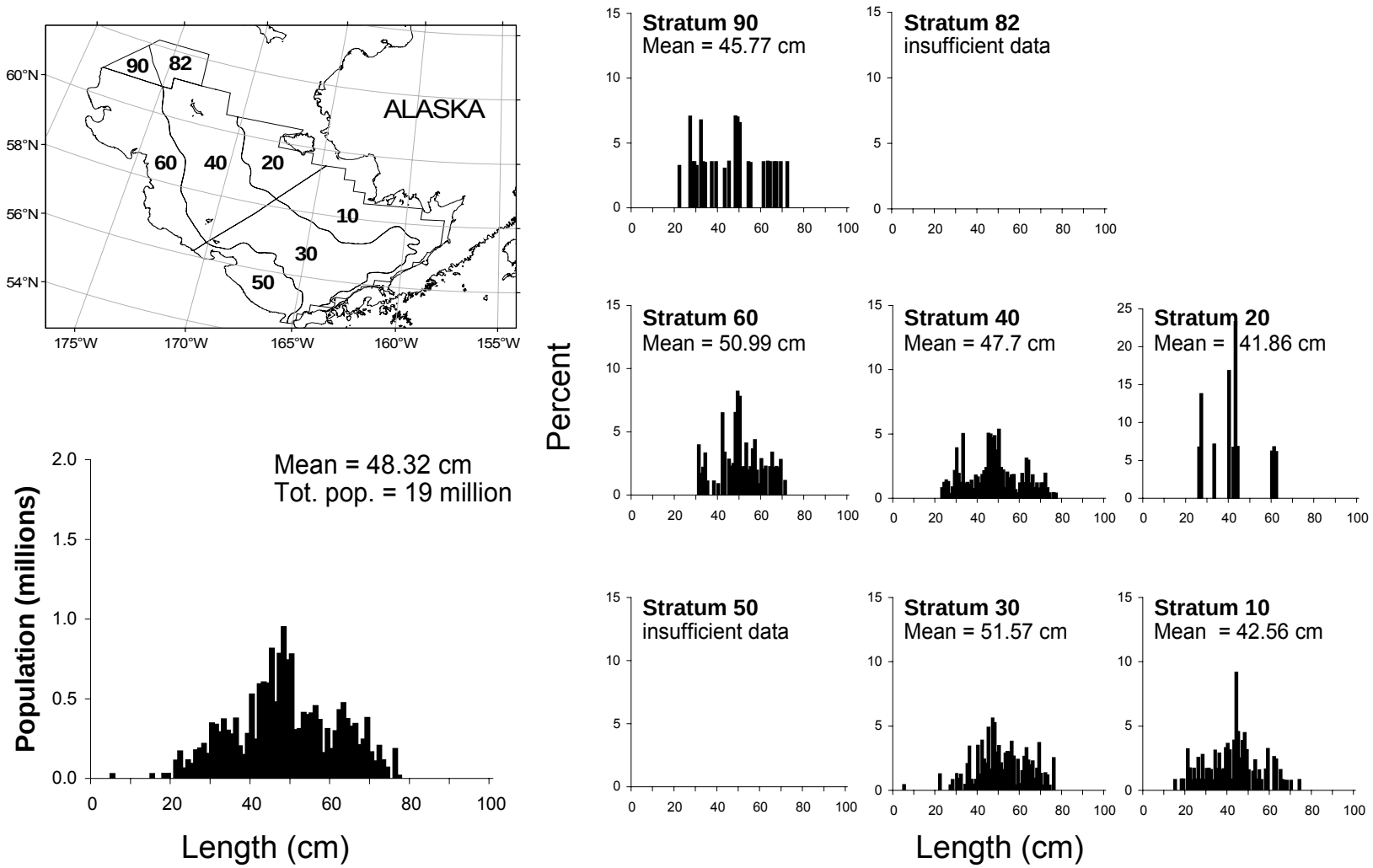


Figure 39. -- Estimated relative size distributions (sexes combined) of **great sculpin** (*Myoxocephalus polyacanthocephalus*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 23a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **great sculpin** (*Myoxocephalus polyacanthocephalus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.77	1.60E-01	5,964	1.25E+03	3,446	8,481	58	33	33	33
20	0.17	5.58E-02	691	2.29E+02	224	1,159	31	9	9	9
Subtotal	0.56	1.07E-01	6,655	1.27E+03	4,122	9,188	89	42	42	42
31	1.97	4.01E-01	18,607	3.79E+03	11,019	26,196	69	46	46	46
32	0.86	5.30E-01	757	4.65E+02	0	1,857	8	4	4	4
41	0.25	1.02E-01	1,597	6.40E+02	304	2,891	44	14	14	14
42	2.05	8.73E-01	4,919	2.10E+03	639	9,198	31	13	13	13
43	1.83	8.98E-01	3,866	1.90E+03	0	7,809	22	17	17	17
82	0.01	7.01E-03	14	1.45E+01	0	46	12	1	1	1
Subtotal	1.28	2.07E-01	29,761	4.80E+03	20,264	39,258	186	95	95	95
50	0.04	3.01E-02	150	1.17E+02	0	391	26	2	2	2
61	0.63	2.63E-01	5,565	2.32E+03	873	10,256	60	22	22	22
62	1.65	6.11E-01	1,064	3.93E+02	102	2,026	7	5	5	5
90	1.47	7.28E-01	1,706	8.42E+02	0	3,699	8	7	7	6
Subtotal	0.59	1.73E-01	8,485	2.50E+03	3,478	13,492	101	36	36	35
Total	0.91	1.12E-01	44,901	5.56E+03	33,898	55,903	376	173	173	172

*Differences in sums of estimates and totals are due to rounding.

Table 23b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **great sculpin** (*Myoxocephalus polyacanthocephalus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.45	8.75E-02	3,520,029	6.82E+05	2,142,404	4,897,653	58	33	33	33
20	0.11	3.54E-02	438,206	1.45E+05	141,834	734,578	31	9	9	9
Subtotal	0.33	5.86E-02	3,958,235	6.97E+05	2,564,365	5,352,105	89	42	42	42
31	0.68	1.11E-01	6,471,459	1.05E+06	4,377,721	8,565,197	69	46	46	46
32	0.23	1.30E-01	204,988	1.14E+05	0	474,821	8	4	4	4
41	0.13	4.42E-02	825,757	2.77E+05	265,660	1,385,855	44	14	14	14
42	0.75	2.67E-01	1,810,247	6.41E+05	501,460	3,119,034	31	13	13	13
43	0.91	3.11E-01	1,913,672	6.56E+05	549,438	3,277,906	22	17	17	17
82	0.02	1.62E-02	33,373	3.34E+04	0	106,826	12	1	1	1
Subtotal	0.49	6.14E-02	11,259,496	1.42E+06	8,439,925	14,079,066	186	95	95	95
50	0.01	9.36E-03	52,391	3.63E+04	0	127,167	26	2	2	2
61	0.24	9.45E-02	2,143,965	8.33E+05	460,871	3,827,059	60	22	22	22
62	0.64	2.26E-01	408,730	1.45E+05	52,739	764,721	7	5	5	5
90	0.71	2.79E-01	825,306	3.23E+05	62,313	1,588,298	8	7	7	6
Subtotal	0.24	6.25E-02	3,430,391	9.06E+05	1,619,176	5,241,607	101	36	36	35
Total	0.38	3.68E-02	18,648,122	1.83E+06	15,032,959	22,263,285	376	173	173	172

*Differences in sums of estimates and totals are due to rounding.

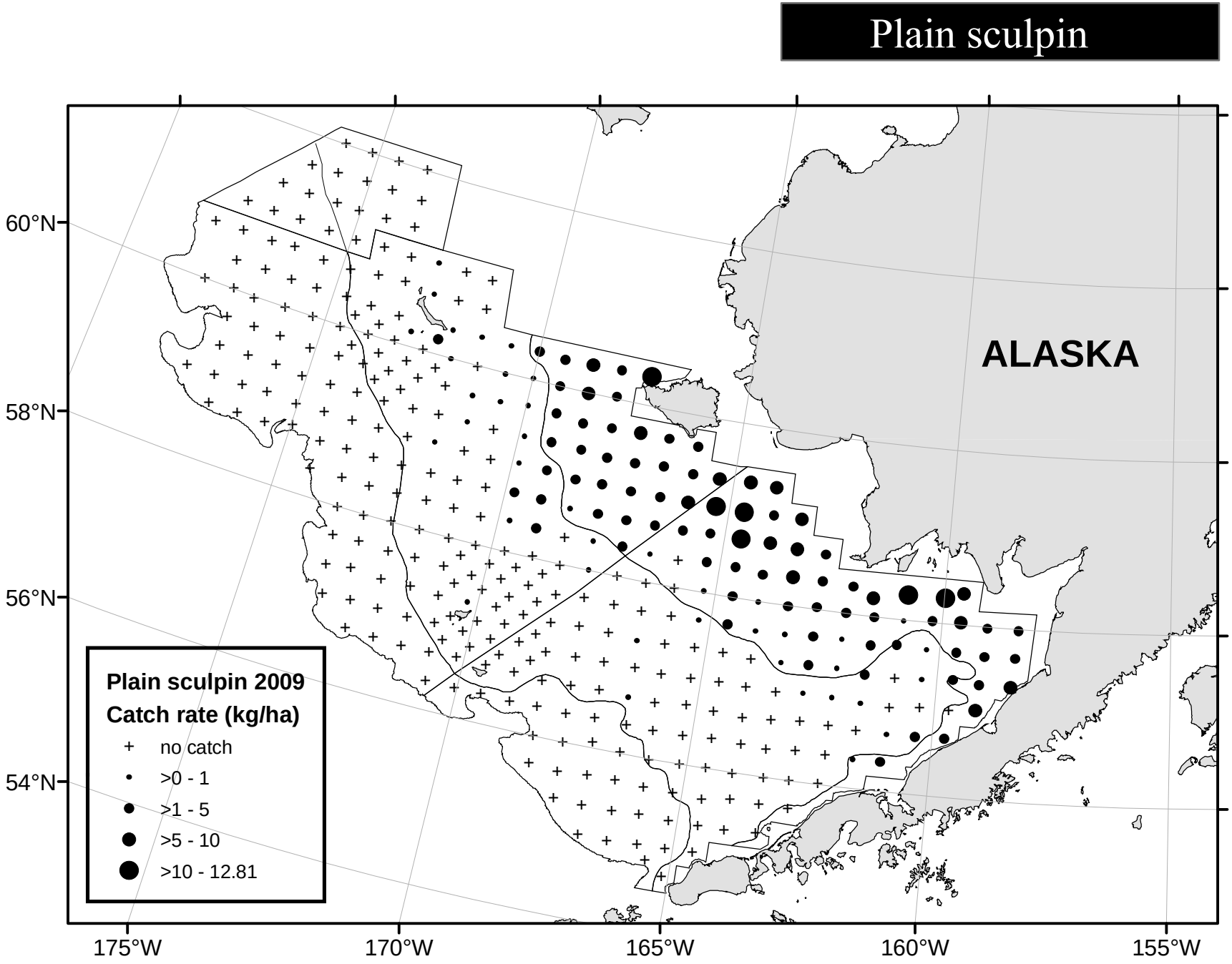


Figure 40. -- Distribution and relative abundance (kg/ha) of **plain sculpin** (*Myoxocephalus jaok*) for the 2009 eastern Bering Sea bottom trawl survey.

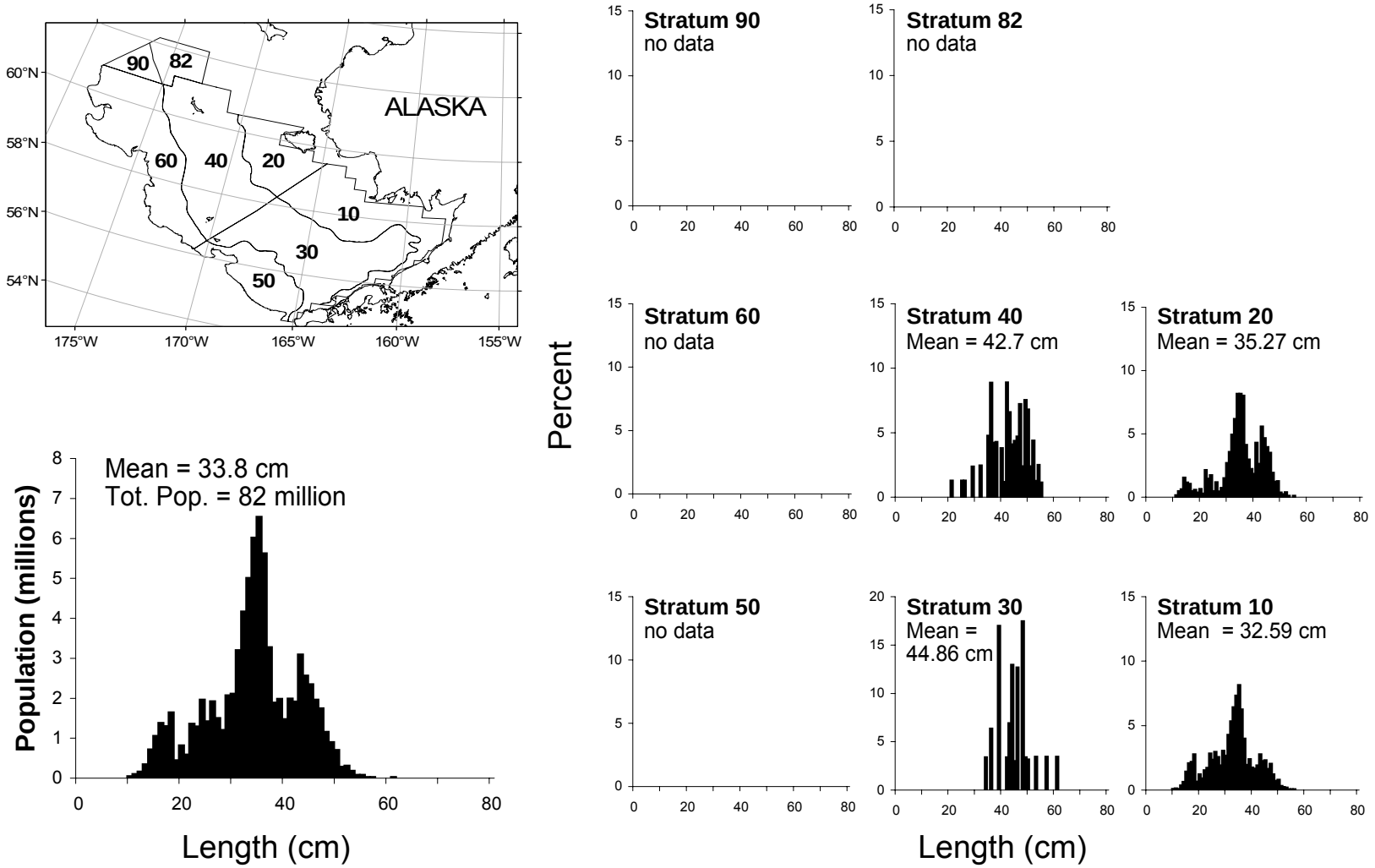


Figure 41. -- Estimated relative size distributions (sexes combined) of **plain sculpin** (*Myoxocephalus jaok*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 24a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **plain sculpin** (*Myoxocephalus jaok*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	3.65	4.61E-01	28,455	3.59E+03	21,193	35,717	58	54	54	54
20	3.78	4.38E-01	15,510	1.80E+03	11,842	19,178	31	31	31	31
Subtotal	3.70	3.38E-01	43,965	4.02E+03	35,930	52,000	89	85	85	85
31	0.11	4.52E-02	1,071	4.27E+02	217	1,925	69	12	12	12
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.33	9.51E-02	2,041	5.97E+02	836	3,247	44	20	20	20
42	0.01	9.30E-03	22	2.23E+01	0	68	31	1	1	1
43	0.11	7.33E-02	223	1.55E+02	0	545	22	4	4	4
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.14	3.24E-02	3,357	7.50E+02	1,857	4,858	186	37	37	37
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	0.95	8.25E-02	47,322	4.09E+03	39,149	55,496	376	122	122	122

*Differences in sums of estimates and totals are due to rounding.

Table 24b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **plain sculpin** (*Myoxocephalus jaok*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	6.97	9.80E-01	54,247,233	7.63E+06	38,825,995	69,668,471	58	54	54	54
20	6.03	9.04E-01	24,750,513	3.71E+06	17,178,592	32,322,435	31	31	31	31
Subtotal	6.64	7.14E-01	78,997,747	8.48E+06	62,030,196	95,965,298	89	85	85	85
31	0.09	3.10E-02	845,610	2.93E+05	259,670	1,431,549	69	12	12	12
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.32	1.02E-01	1,983,102	6.37E+05	695,551	3,270,652	44	20	20	20
42	0.01	7.04E-03	16,914	1.69E+04	0	51,452	31	1	1	1
43	0.10	7.06E-02	221,359	1.49E+05	0	532,320	22	4	4	4
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.13	3.09E-02	3,066,984	7.17E+05	1,632,805	4,501,163	186	37	37	37
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	1.66	1.72E-01	82,064,731	8.51E+06	65,036,675	99,092,786	376	122	122	122

*Differences in sums of estimates and totals are due to rounding.

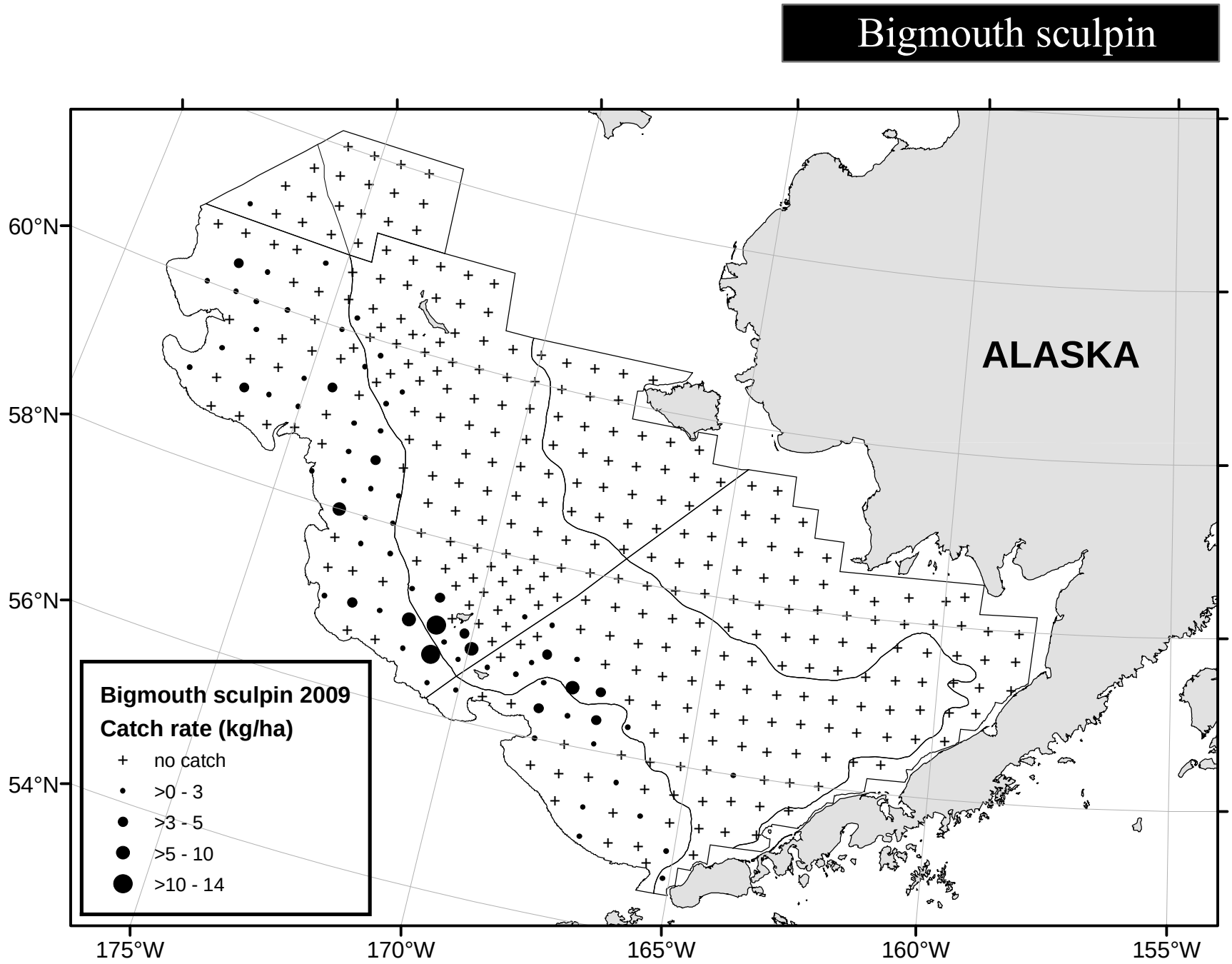


Figure 42. -- Distribution and relative abundance (kg/ha) of **bigmouth sculpin** (*Hemitripterus bolini*) for the 2009 eastern Bering Sea bottom trawl survey.

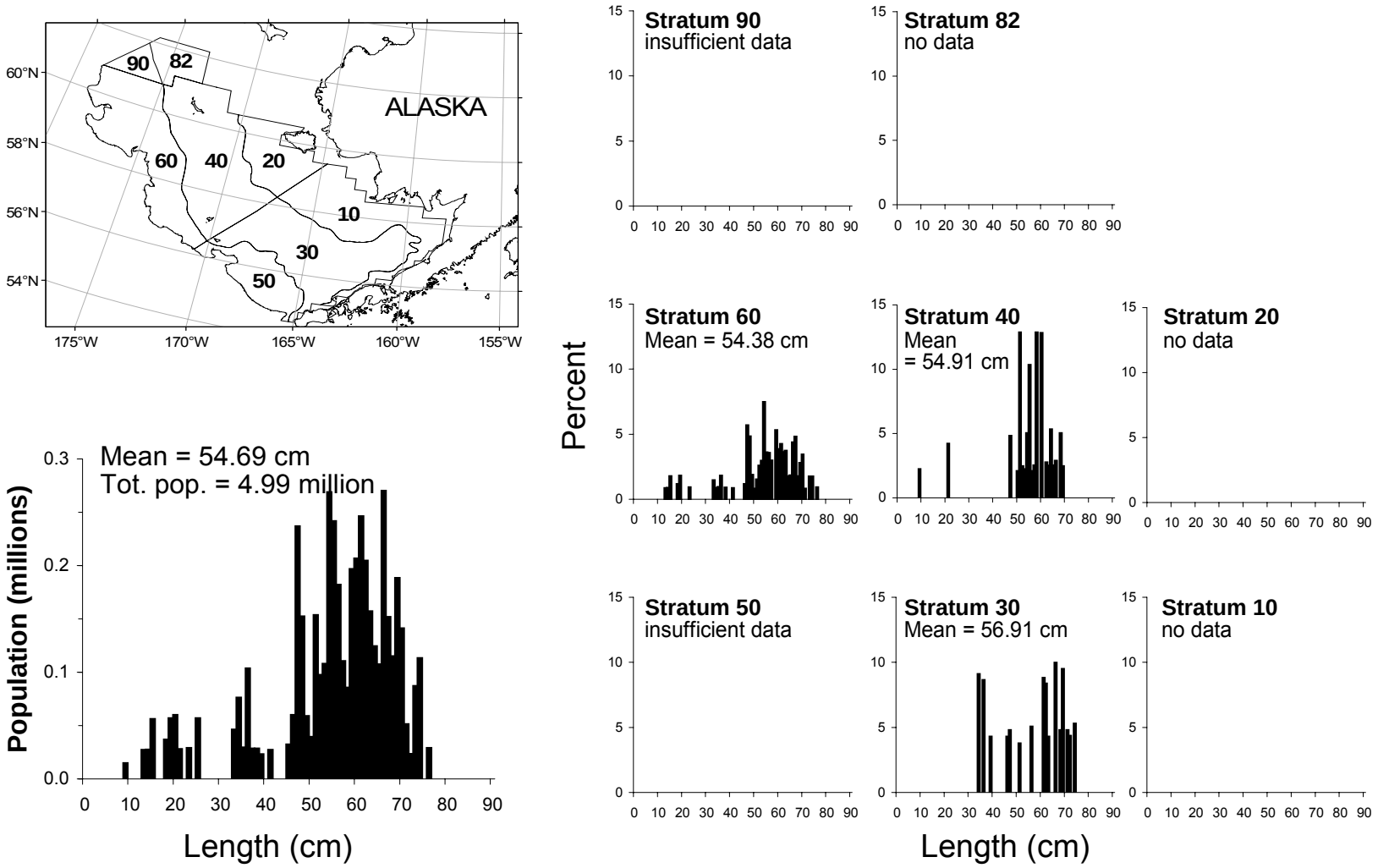


Figure 43. -- Estimated relative size distributions (sexes combined) of **bigmouth sculpin** (*Hemitripterus bolini*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 25a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **bigmouth sculpin** (*Hemitripterus bolini*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.17	9.46E-02	1,572	8.94E+02	0	3,360	69	6	6	6
32	0.91	4.42E-01	799	3.88E+02	0	1,717	8	5	5	5
41	0.00	9.20E-04	6	5.77E+00	0	17	44	1	1	1
42	0.89	4.87E-01	2,138	1.17E+03	0	4,530	31	7	7	7
43	0.20	9.46E-02	429	2.00E+02	13	846	22	4	4	4
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.21	6.63E-02	4,944	1.54E+03	1,873	8,016	186	23	23	23
50	0.73	2.55E-01	2,831	9.88E+02	792	4,870	26	12	12	11
61	1.33	3.02E-01	11,692	2.66E+03	6,320	17,065	60	34	34	34
62	0.99	5.28E-01	635	3.40E+02	0	1,508	7	3	3	3
90	0.08	8.01E-02	93	9.27E+01	0	312	8	1	1	1
Subtotal	1.05	1.97E-01	15,252	2.86E+03	9,536	20,967	101	50	50	49
Total	0.41	6.55E-02	20,196	3.24E+03	13,772	26,619	376	73	73	72

*Differences in sums of estimates and totals are due to rounding.

Table 25b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **bigmouth sculpin** (*Hemitripterus bolini*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.03	1.68E-02	320,885	1.59E+05	2,403	639,367	69	6	6	6
32	0.25	1.05E-01	217,003	9.24E+04	0	435,543	8	5	5	5
41	0.00	4.47E-03	28,006	2.80E+04	0	84,607	44	1	1	1
42	0.24	1.23E-01	564,716	2.95E+05	0	1,168,217	31	7	7	7
43	0.03	1.60E-02	72,797	3.37E+04	2,421	143,172	22	4	4	4
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.05	1.51E-02	1,203,407	3.51E+05	502,238	1,904,575	186	23	23	23
50	0.16	4.67E-02	611,320	1.81E+05	237,481	985,159	26	12	12	11
61	0.34	6.59E-02	2,991,097	5.80E+05	1,818,068	4,164,125	60	34	34	34
62	0.25	1.26E-01	160,007	8.12E+04	0	368,648	7	3	3	3
90	0.02	2.45E-02	28,349	2.83E+04	0	95,395	8	1	1	1
Subtotal	0.26	4.24E-02	3,790,773	6.14E+05	2,562,632	5,018,913	101	50	50	49
Total	0.10	1.43E-02	4,994,180	7.07E+05	3,594,120	6,394,239	376	73	73	72

*Differences in sums of estimates and totals are due to rounding.

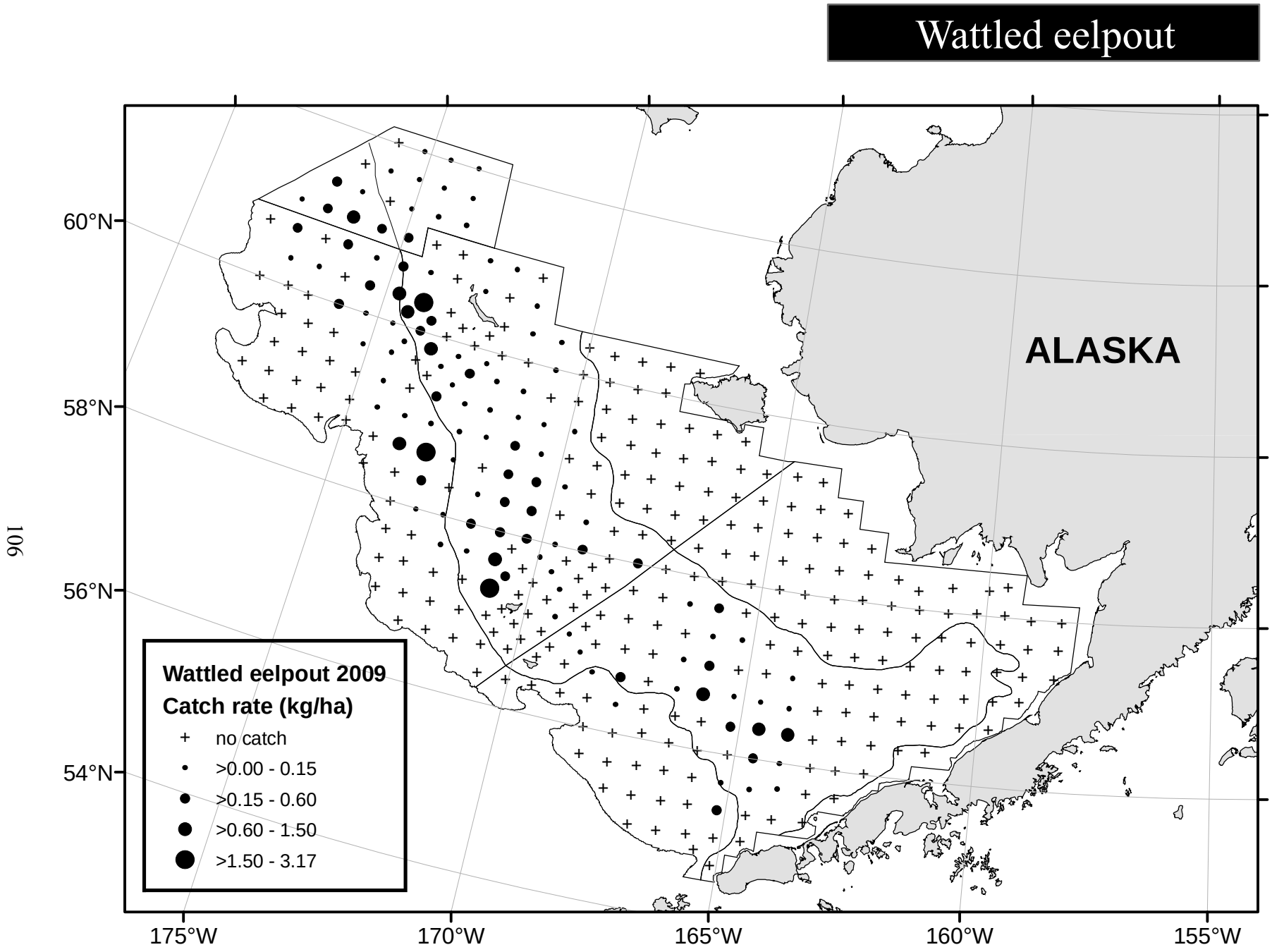


Figure 44. -- Distribution and relative abundance (kg/ha) of **wattled eelpout** (*Lycodes palearis*) for the 2009 eastern Bering Sea bottom trawl survey.

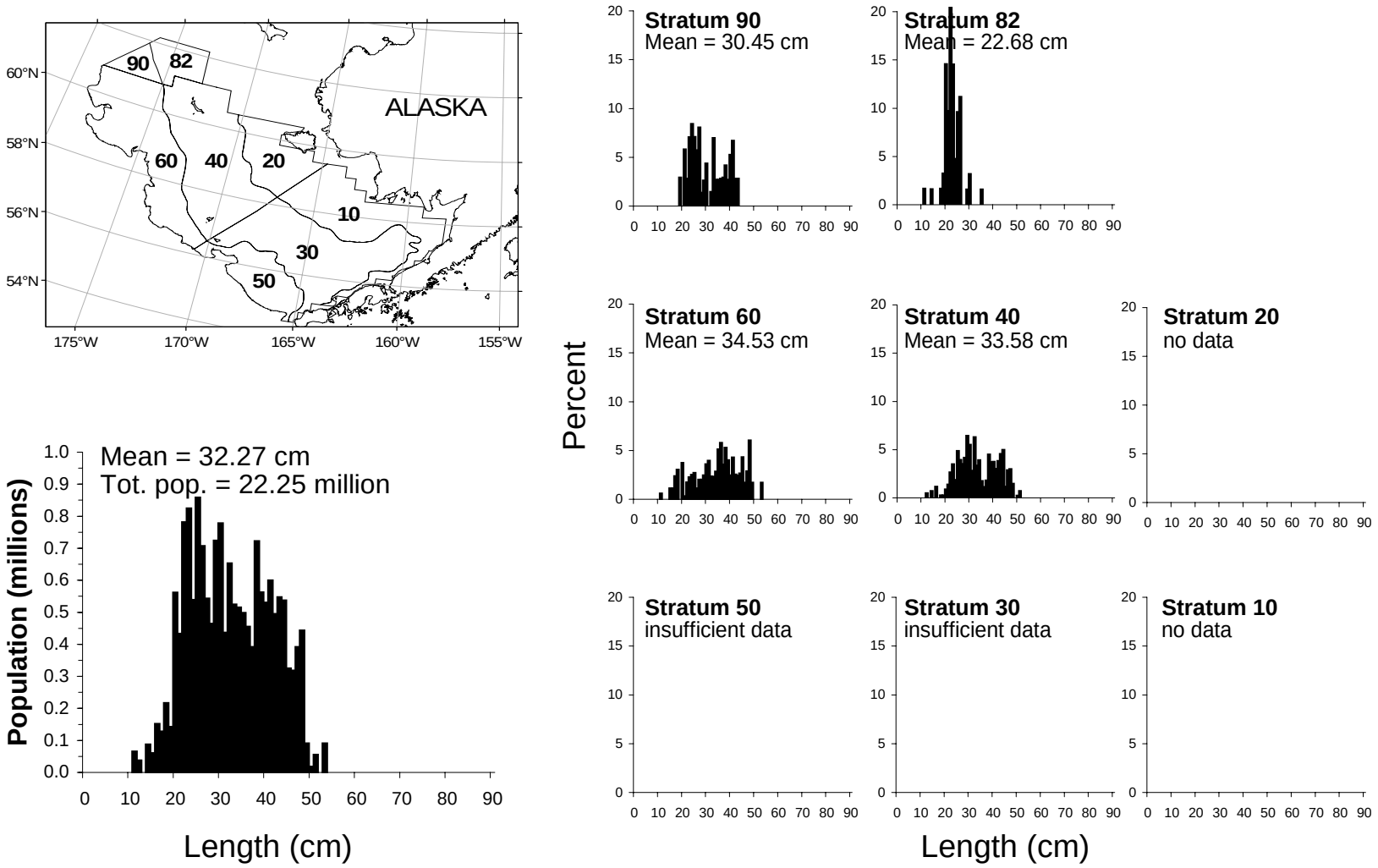


Figure 45. -- Estimated relative size distributions (sexes combined) of **wattled eelpout** (*Lycodes palearis*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 26a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **wattled eelpout** (*Lycodes palearis*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.07	2.08E-02	641	1.97E+02	248	1,035	69	21	42	0
32	0.00	3.40E-03	4	2.98E+00	0	11	8	2	4	0
41	0.08	2.05E-02	498	1.28E+02	238	757	44	27	54	13
42	0.19	1.02E-01	451	2.44E+02	0	950	31	11	22	9
43	0.24	9.86E-02	504	2.08E+02	70	938	22	14	28	10
82	0.04	2.16E-02	88	4.47E+01	0	186	12	11	22	11
Subtotal	0.09	1.73E-02	2,186	4.00E+02	1,385	2,987	186	86	86	43
50	0.01	8.69E-03	52	3.37E+01	0	122	26	3	6	0
61	0.10	5.40E-02	859	4.76E+02	0	1,822	60	19	38	16
62	0.26	1.92E-01	170	1.24E+02	0	472	7	5	10	5
90	0.23	8.37E-02	269	9.68E+01	40	498	8	6	12	6
Subtotal	0.09	3.47E-02	1,350	5.02E+02	345	2,355	101	33	33	27
Total	0.07	1.30E-02	3,536	6.42E+02	2,264	4,808	376	119	119	70

*Differences in sums of estimates and totals are due to rounding.

Table 26b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **wattled eelpout** (*Lycodes raridens*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.49	2.00E-01	4,673,720	1.89E+06	889,940	8,457,501	69	21	42	0
32	0.07	4.68E-02	59,194	4.11E+04	0	156,395	8	2	4	0
41	0.52	1.45E-01	3,282,796	9.07E+05	1,450,678	5,114,914	44	27	54	13
42	0.75	3.09E-01	1,799,198	7.42E+05	283,800	3,314,595	31	11	22	9
43	1.36	4.96E-01	2,870,418	1.05E+06	687,443	5,053,393	22	14	28	10
82	0.97	3.65E-01	1,995,956	7.55E+05	334,893	3,657,018	12	11	22	11
Subtotal	0.63	1.11E-01	14,681,282	2.57E+06	9,536,119	19,826,445	186	86	86	43
50	0.06	3.78E-02	230,194	1.46E+05	0	531,869	26	3	6	0
61	0.49	1.96E-01	4,316,507	1.73E+06	821,904	7,811,111	60	19	38	16
62	1.70	1.08E+00	1,091,551	6.92E+05	0	2,784,932	7	5	10	5
90	1.67	6.44E-01	1,934,997	7.45E+05	171,917	3,698,076	8	6	12	6
Subtotal	0.52	1.39E-01	7,573,249	2.01E+06	3,550,295	11,596,203	101	33	33	27
Total	0.45	6.59E-02	22,254,531	3.27E+06	15,788,621	28,720,441	376	119	119	70

*Differences in sums of estimates and totals are due to rounding.

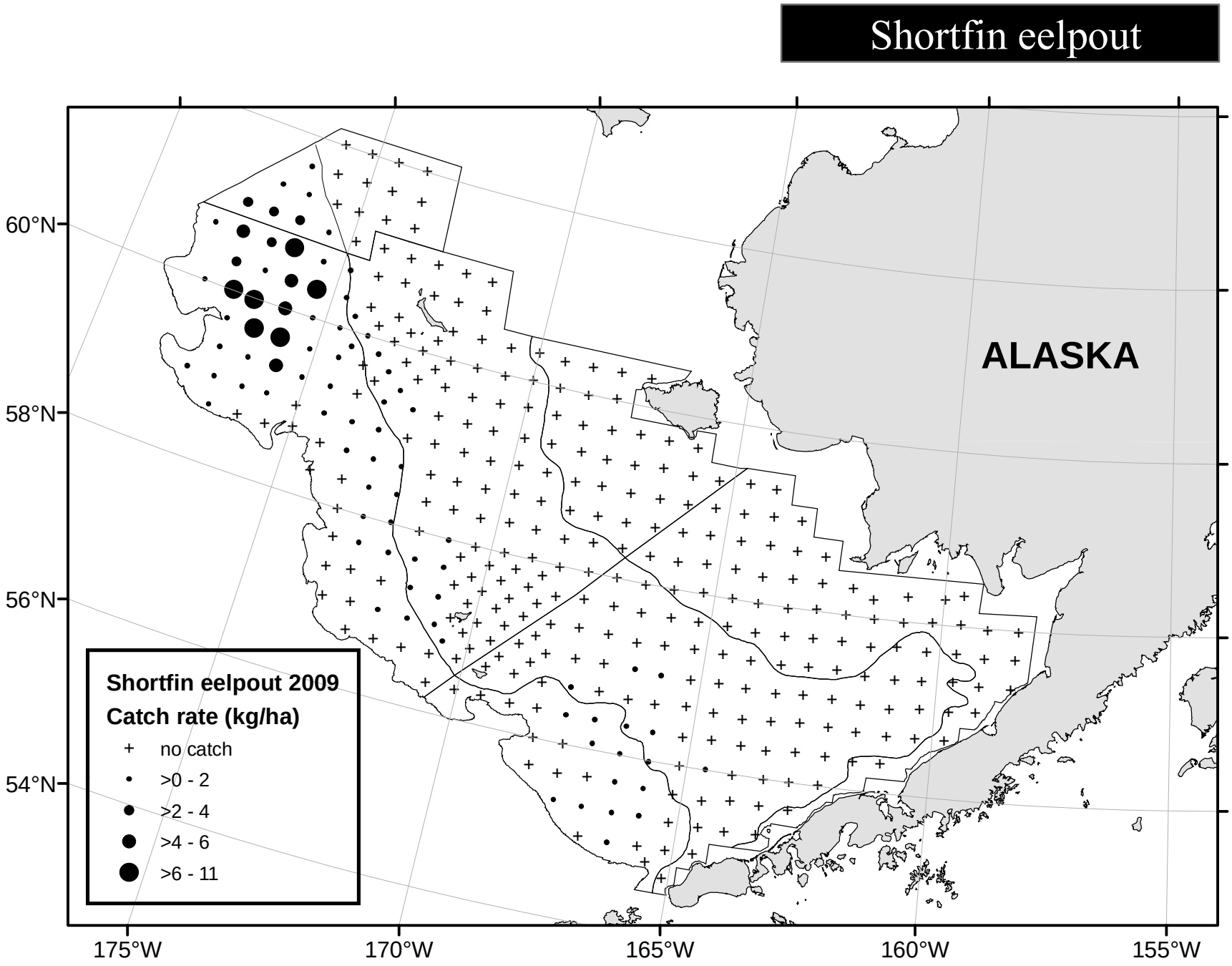


Figure 46. -- Distribution and relative abundance (kg/ha) of **shortfin eelpout** (*Lycodes brevipes*) for the 2009 eastern Bering Sea bottom trawl survey.

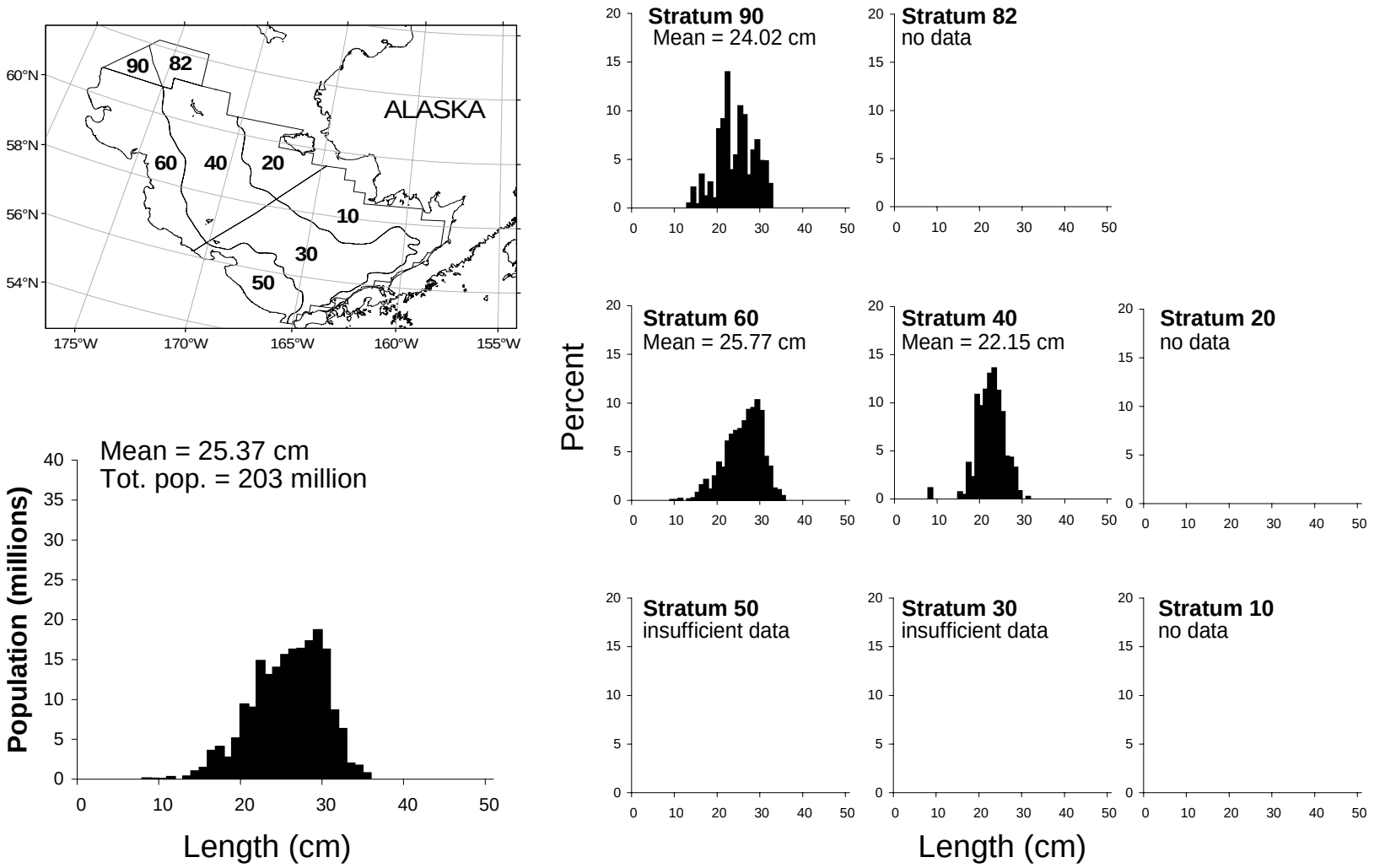


Figure 47. -- Estimated relative size distributions (sexes combined) of **shortfin eelpout** (*Lycodes brevipes*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 27a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **shortfin eelpout** (*Lycodes brevipes*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.00	1.05E-03	20	9.92E+00	1	40	69	7	7	0
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.01	4.03E-03	37	2.53E+01	0	88	44	3	3	1
42	0.07	4.67E-02	175	1.12E+02	0	404	31	5	5	5
43	0.07	3.84E-02	157	8.10E+01	0	325	22	7	7	6
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.02	6.09E-03	389	1.41E+02	91	686	186	22	22	12
50	0.04	1.55E-02	142	6.02E+01	18	266	26	11	11	0
61	1.38	3.26E-01	12,189	2.87E+03	6,380	17,999	60	41	41	35
62	0.49	1.68E-01	317	1.08E+02	52	581	7	5	5	5
90	1.29	5.27E-01	1,494	6.10E+02	52	2,936	8	7	7	7
Subtotal	0.98	2.03E-01	14,142	2.94E+03	8,260	20,025	101	64	64	47
Total	0.29	5.94E-02	14,531	2.94E+03	8,642	20,420	376	86	86	59

*Differences in sums of estimates and totals are due to rounding.

Table 27b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **shortfin eelpout** (*Lycodes brevipes*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	57	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	30	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	87	0	0	89	0	0	0
31	0.07	3.36E-02	631,119	3.18E+05	68	0	1,266,553	69	7	7	0
32	0.00	0.00E+00	0	0.00E+00	7	0	0	8	0	0	0
41	0.11	7.38E-02	698,036	4.63E+05	43	0	1,632,987	44	3	3	1
42	1.69	1.12E+00	4,067,468	2.69E+06	30	0	9,567,575	31	5	5	5
43	1.42	7.31E-01	2,988,713	1.54E+06	21	0	6,198,811	22	7	7	6
82	0.00	0.00E+00	0	0.00E+00	11	0	0	12	0	0	0
Subtotal	0.36	1.36E-01	8,385,336	3.15E+06	51	1,729,073	15,041,600	186	22	22	12
50	0.94	3.82E-01	3,643,752	1.48E+06	25	594,749	6,692,755	26	11	11	0
61	17.76	3.90E+00	156,546,566	3.44E+07	59	87,042,971	226,050,161	60	41	41	35
62	7.81	2.63E+00	5,022,656	1.69E+06	6	884,693	9,160,620	7	5	5	5
90	25.19	1.18E+01	29,139,661	1.37E+07	7	0	61,519,450	8	7	7	7
Subtotal	13.41	2.56E+00	194,352,635	3.71E+07	66	120,184,708	268,520,562	101	64	64	47
Total	4.09	7.51E-01	202,737,971	3.72E+07	67	128,302,173	277,173,770	376	86	86	59

*Differences in sums of estimates and totals are due to rounding.

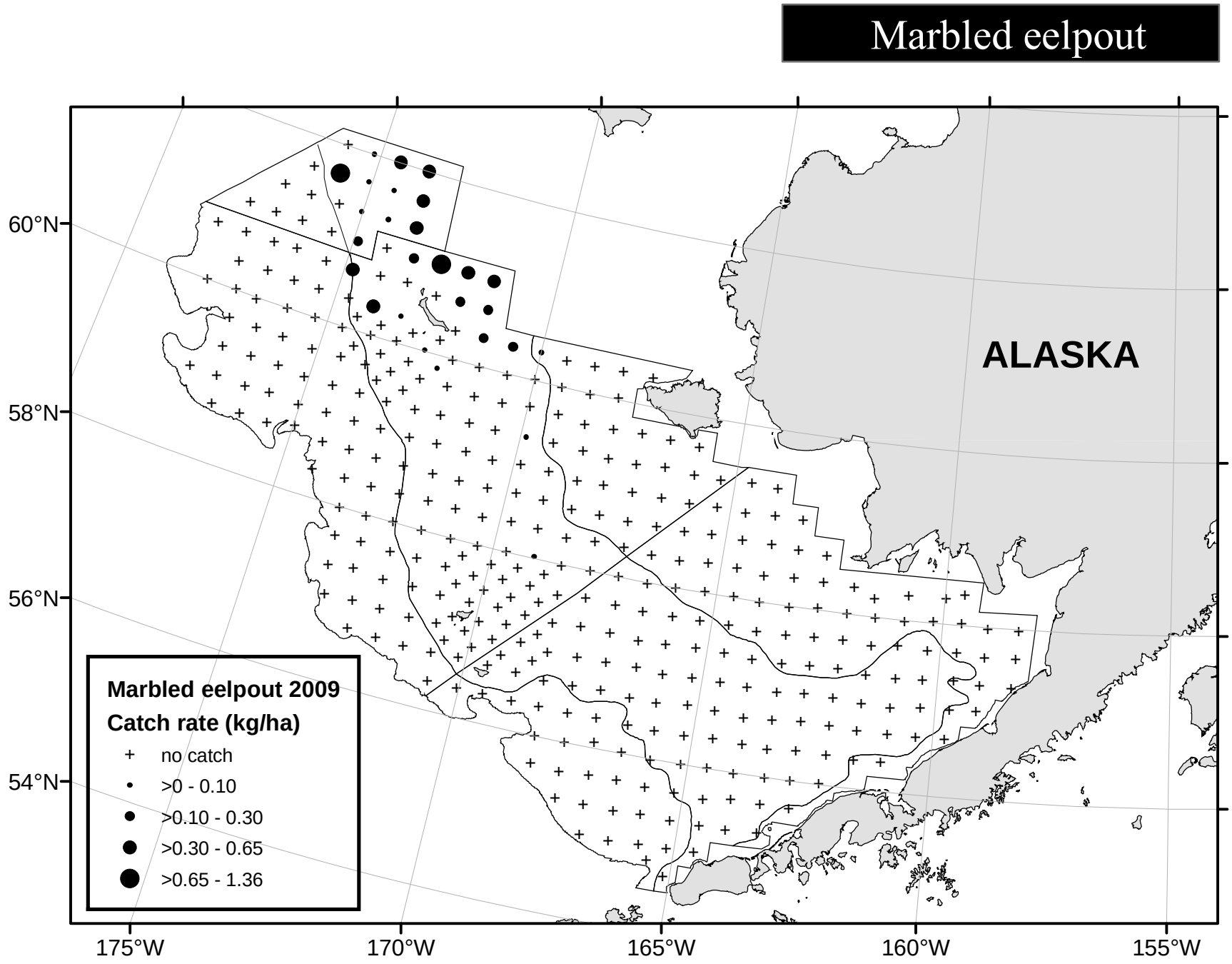


Figure 48. -- Distribution and relative abundance (kg/ha) of **marbled eelpout** (*Lycodes raridens*) for the 2009 eastern Bering Sea bottom trawl survey.

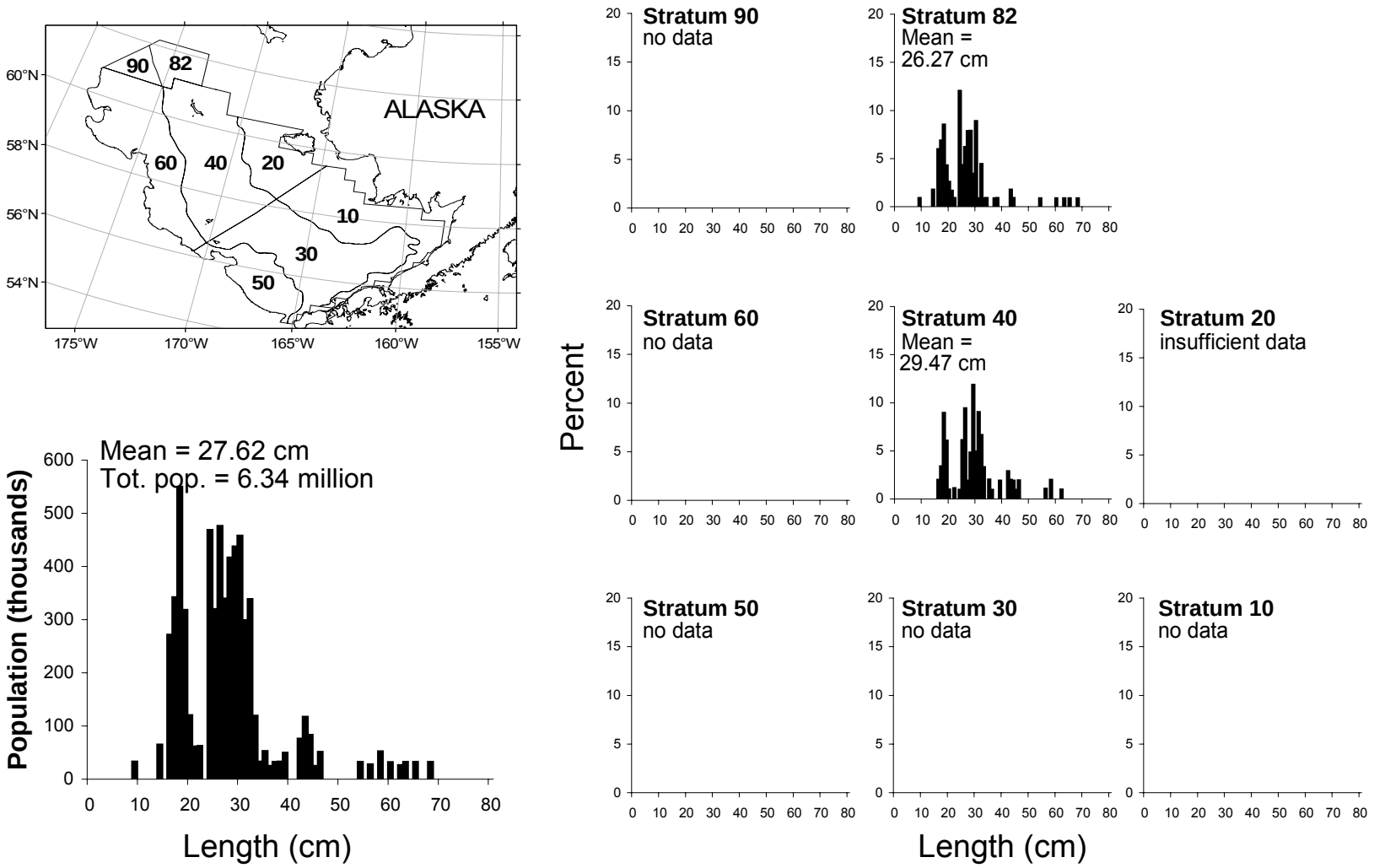


Figure 49. -- Estimated relative size distributions (sexes combined) of **marbled eelpout** (*Lycodes raridens*) in terms of population numbers and percent by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Table 28a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **marbled eelpout** (*Lycodes raridens*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	1.33E-03	5	5.47E+00	0	17	31	1	1	1
Subtotal	0.00	4.60E-04	5	5.47E+00	0	17	89	1	1	1
31	0.00	0.00E+00	0	0.00E+00	0	0	69	0	0	0
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.08	3.38E-02	477	2.12E+02	49	906	44	10	10	10
42	0.00	8.46E-04	2	2.03E+00	0	6	31	1	1	1
43	0.03	2.75E-02	67	5.80E+01	0	188	22	4	4	4
82	0.29	1.07E-01	592	2.21E+02	105	1,079	12	11	11	10
Subtotal	0.05	1.35E-02	1,138	3.12E+02	514	1,762	186	26	26	25
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	0.02	6.29E-03	1,144	3.12E+02	526	1,761	376	27	27	26

*Differences in sums of estimates and totals are due to rounding.

Table 28b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **marbled eelpout** (*Lycodes raridens*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.01	7.16E-03	29,385	2.94E+04	0	89,477	31	1	1	1
Subtotal	0.00	2.47E-03	29,385	2.94E+04	0	88,772	89	1	1	1
31	0.00	0.00E+00	0	0.00E+00	0	0	69	0	0	0
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.40	1.60E-01	2,483,425	1.00E+06	455,492	4,511,358	44	10	10	10
42	0.01	1.22E-02	29,243	2.92E+04	0	88,958	31	1	1	1
43	0.06	2.91E-02	119,148	6.15E+04	0	247,473	22	4	4	4
82	1.78	6.45E-01	3,683,331	1.33E+06	750,195	6,616,467	12	11	11	10
Subtotal	0.27	7.20E-02	6,315,147	1.67E+06	2,976,024	9,654,270	186	26	26	25
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	0.13	3.37E-02	6,344,532	1.67E+06	3,038,288	9,650,776	376	27	27	26

*Differences in sums of estimates and totals are due to rounding.

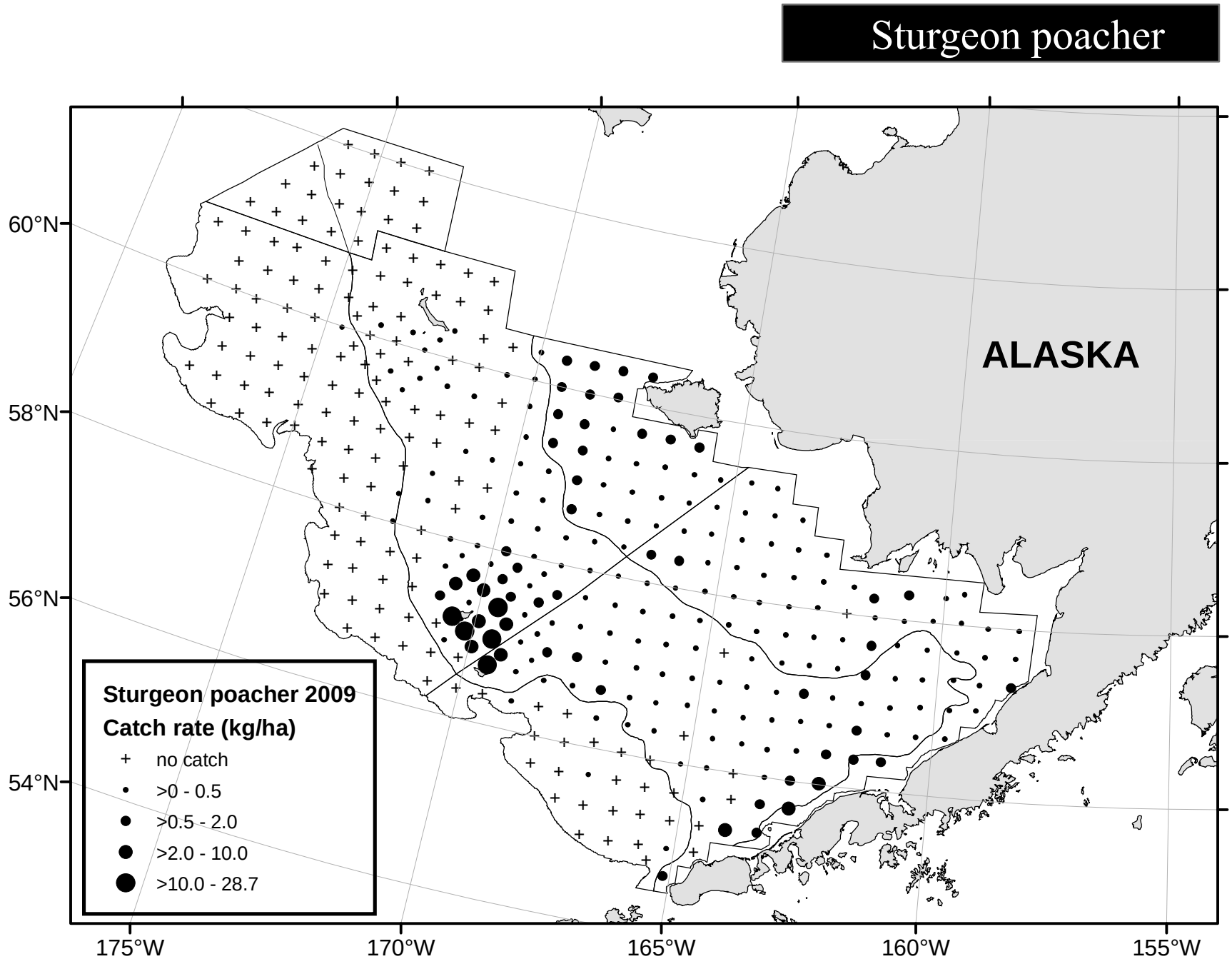


Figure 50. -- Distribution and relative abundance (kg/ha) of **sturgeon poacher** (*Podothecus accipenserinus*) for the 2009 eastern Bering Sea bottom trawl survey.

This page was intentionally left blank.

Table 29a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **sturgeon poacher** (*Podothecus accipenserinus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.33	4.70E-02	2,587	3.66E+02	1,847	3,328	58	57	57	0
20	0.59	8.71E-02	2,405	3.57E+02	1,675	3,135	31	31	31	0
Subtotal	0.42	4.30E-02	4,992	5.12E+02	3,969	6,016	89	88	88	0
31	0.31	5.99E-02	2,942	5.66E+02	1,809	4,075	69	61	61	0
32	2.44	1.75E+00	2,144	1.53E+03	0	5,771	8	8	8	0
41	0.06	1.78E-02	352	1.12E+02	126	578	44	19	19	0
42	3.29	1.13E+00	7,902	2.72E+03	2,344	13,460	31	29	29	0
43	0.01	5.43E-03	25	1.15E+01	1	49	22	10	10	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.58	1.37E-01	13,365	3.18E+03	6,945	19,786	186	127	127	0
50	0.01	3.85E-03	25	1.49E+01	0	56	26	5	5	0
61	0.00	6.48E-04	7	5.71E+00	0	18	60	2	2	0
62	0.00	2.83E-03	2	1.82E+00	0	6	7	1	1	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	1.11E-03	34	1.61E+01	0	72	101	8	8	0
Total	0.37	6.49E-02	18,391	3.22E+03	11,888	24,895	376	223	223	0

*Differences in sums of estimates and totals are due to rounding.

Table 29b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **sturgeon poacher** (*Podothecus accipenserinus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	5.36	8.66E-01	41,730,306	6.74E+06	28,108,201	55,352,411	58	57	57	0
20	11.46	1.99E+00	47,027,658	8.17E+06	30,354,299	63,701,017	31	31	31	0
Subtotal	7.47	8.90E-01	88,757,964	1.06E+07	67,582,316	109,933,613	89	88	88	0
31	5.24	8.38E-01	49,538,205	7.93E+06	33,687,075	65,389,336	69	61	61	0
32	25.40	1.68E+01	22,286,500	1.48E+07	0	57,191,236	8	8	8	0
41	1.70	5.85E-01	10,639,979	3.67E+06	3,222,384	18,057,574	44	19	19	0
42	33.43	1.05E+01	80,265,406	2.51E+07	29,023,565	131,507,247	31	29	29	0
43	0.23	1.20E-01	482,655	2.53E+05	0	1,008,878	22	10	10	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	7.04	1.31E+00	163,212,744	3.04E+07	101,783,654	224,641,835	186	127	127	0
50	0.09	4.70E-02	360,977	1.82E+05	0	737,192	26	5	5	0
61	0.01	1.01E-02	113,206	8.87E+04	0	292,391	60	2	2	0
62	0.08	8.01E-02	51,481	5.15E+04	0	177,455	7	1	1	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.04	1.44E-02	525,664	2.09E+05	31,071	1,020,256	101	8	8	0
Total	5.09	6.49E-01	252,496,372	3.22E+07	187,445,731	317,547,013	376	223	223	0

*Differences in sums of estimates and totals are due to rounding.

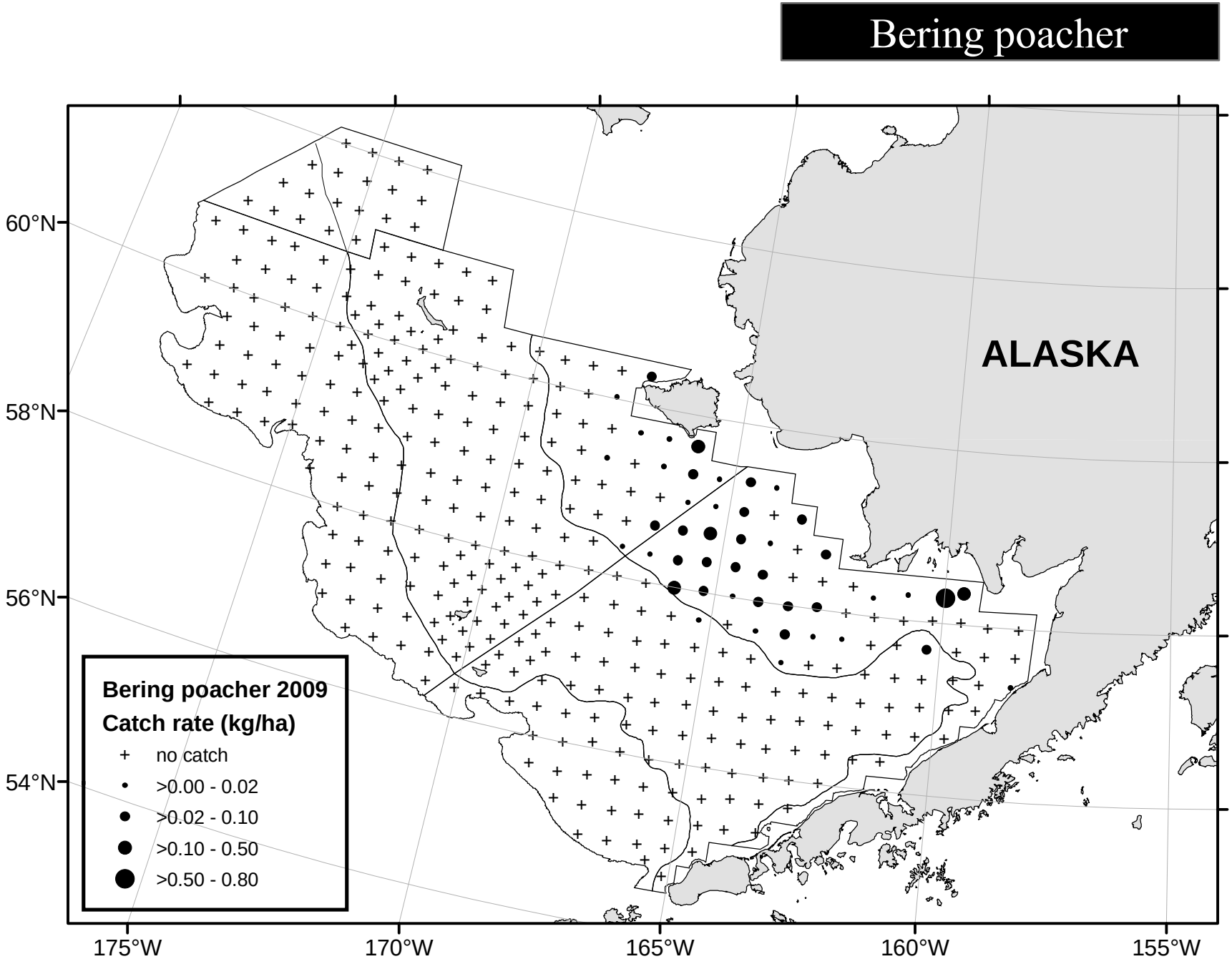


Figure 51. -- Distribution and relative abundance (kg/ha) of **Bering poacher** (*Occella dodecaedron*) for the 2009 eastern Bering Sea bottom trawl survey.

Table 30a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Bering poacher** (*Occella dodecaedron*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.03	1.40E-02	257	1.09E+02	37	478	58	31	31	0
20	0.01	4.24E-03	35	1.74E+01	0	71	31	12	12	0
Subtotal	0.02	9.31E-03	293	1.11E+02	69	517	89	43	43	0
31-43, 82	0.0002	1.88E-04	5	4.36E+00	0	14	186	2	2	0
50-92	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	0.01	2.23E-03	298	1.11E+02	79	517	376	45	45	0

Table 30b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Bering poacher** (*Occella dodecaedron*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	1.05	3.43E-01	8,163,196	2.67E+06	2,764,327	13,562,066	58	31	31	0
20	0.42	2.05E-01	1,727,999	8.43E+05	6,840	3,449,158	31	12	12	0
Subtotal	0.83	2.36E-01	9,891,195	2.80E+06	4,229,962	15,552,428	89	43	43	0
31-43, 82	0.005	3.35E-03	110,458	7.76E+04	0	265,643	186	2	2	0
50-90	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	0.20	5.65E-02	10,001,653	2.80E+06	4,453,142	15,550,164	376	45	45	0

*Differences in sums of estimates and totals are due to rounding.

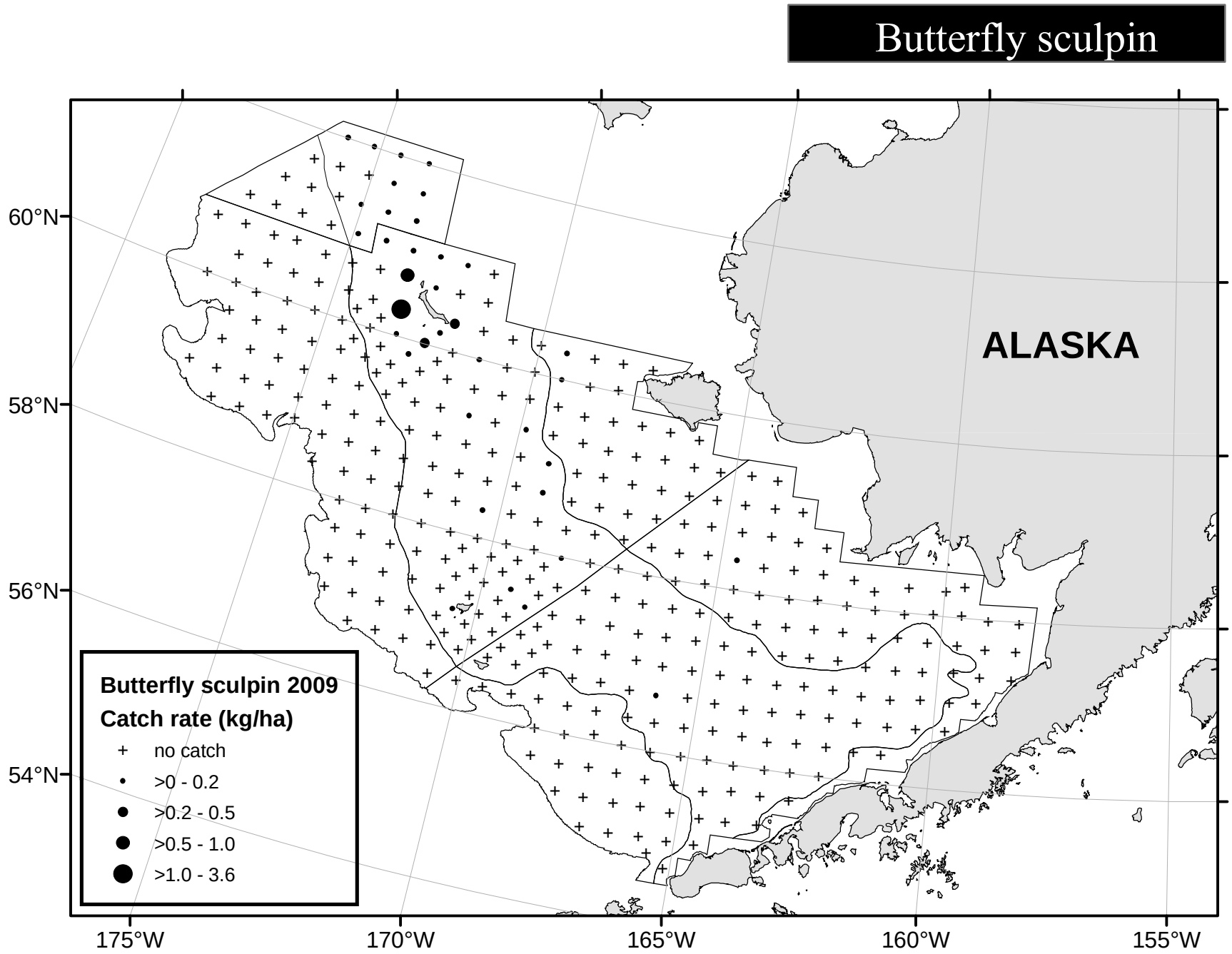


Figure 52. -- Distribution and relative abundance (kg/ha) of **butterfly sculpin** (*Hemilepidotus papilio*) for the 2009 eastern Bering Sea bottom trawl survey.

Table 31a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **butterfly sculpin** (*Hemilepidotus papilio*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10, 20	0.0003	2.07E-04	4	2.46E+00	0	9	89	3	3	3
31,32,42	0.0003	3.27E-04	3	3.09E+00	0	9	108	1	1	1
41	0.02	1.26E-02	120	7.93E+01	0	280	44	12	12	11
43	0.29	1.86E-01	618	3.93E+02	0	1,438	22	7	7	7
82	0.02	5.17E-03	43	1.07E+01	20	67	12	10	10	10
Subtotal	0.03	1.73E-02	795	4.01E+02	0	1,620	186	34	34	33
50-90	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	0.02	8.09E-03	799	4.01E+02	0	1,602	376	37	37	36

Table 31b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **butterfly sculpin** (*Hemilepidotus papilio*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10,20	0.01	6.26E-03	120,466	7.44E+04	0	269,304	89	3	3	3
42	0.00	3.27E-03	30,898	3.09E+04	0	92,695	108	1	1	1
41	0.16	5.64E-02	999,934	3.54E+05	285,233	1,714,634	44	12	12	11
43	2.25	1.23E+00	4,757,106	2.59E+06	0	10,155,089	22	7	7	7
82	0.55	1.43E-01	1,125,905	2.96E+05	467,255	1,784,556	12	10	10	10
Subtotal	0.31	1.14E-01	7,101,849	2.63E+06	1,692,636	12,511,061	186	34	34	33
50-90	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total	0.15	5.31E-02	7,222,315	2.63E+06	1,958,330	12,486,299	376	37	37	36

*Differences in sums of estimates and totals are due to rounding.

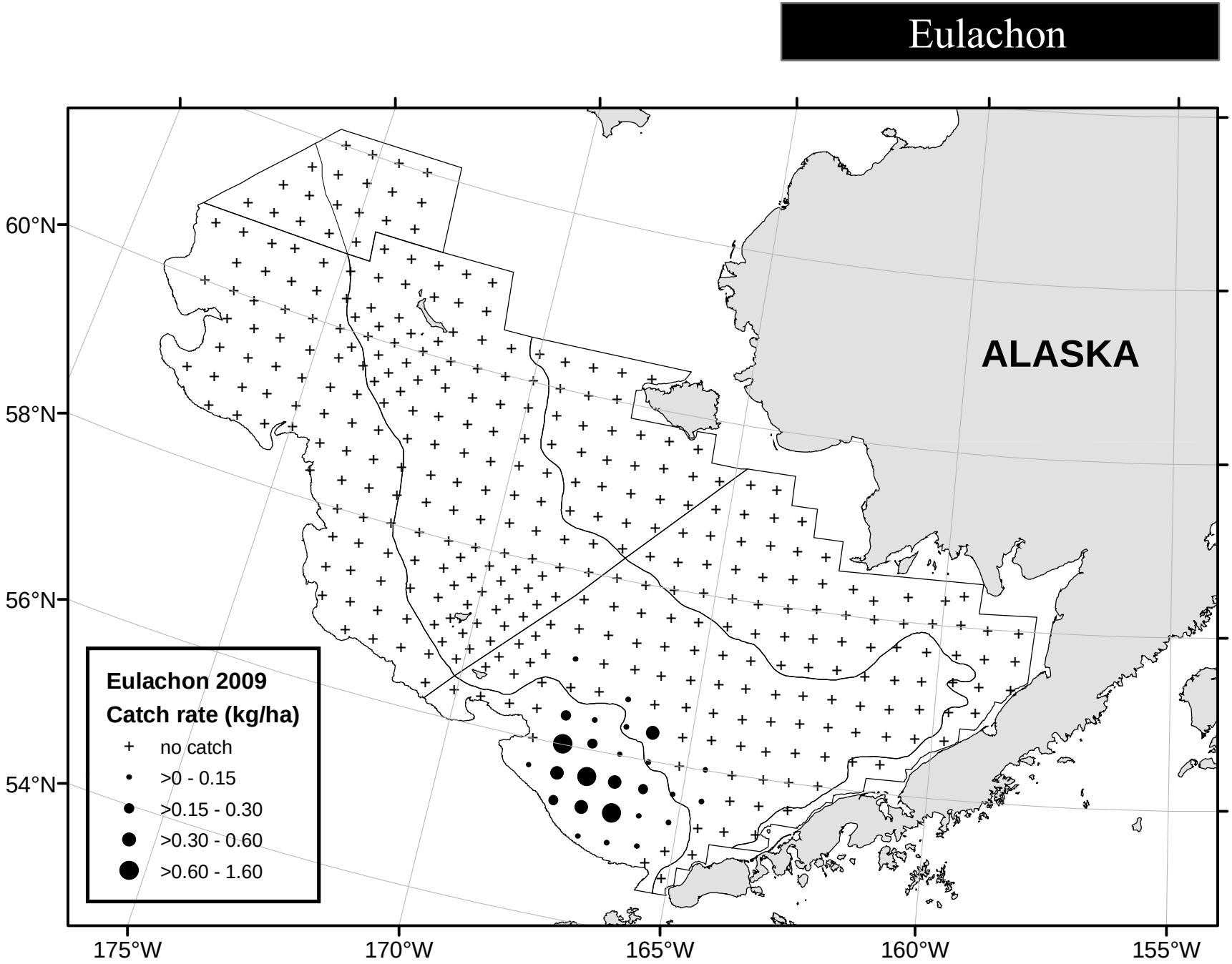


Figure 53. -- Distribution and relative abundance (kg/ha) of **eulachon** (*Thaleichthys pacificus*) for the 2009 eastern Bering Sea bottom trawl survey.

This page was intentionally left blank.

Table 32a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **eulachon** (*Thaleichthys pacificus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.02	7.95E-03	144	7.52E+01	0	294	69	8	8	0
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.00	0.00E+00	0	0.00E+00	0	0	44	0	0	0
42	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
43	0.00	0.00E+00	0	0.00E+00	0	0	22	0	0	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.01	3.24E-03	144	7.52E+01	0	294	186	8	8	0
50	0.23	7.34E-02	899	2.85E+02	313	1,485	26	18	18	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.06	1.96E-02	899	2.85E+02	330	1,468	101	18	18	0
Total	0.02	5.94E-03	1,043	2.94E+02	460	1,626	376	26	26	0

*Differences in sums of estimates and totals are due to rounding.

Table 32b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **eulachon** (*Thaleichthys pacificus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	89	0	0	0
31	0.20	9.38E-02	1,883,052	8.87E+05	109,005	3,657,098	69	8	8	0
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.00	0.00E+00	0	0.00E+00	0	0	44	0	0	0
42	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
43	0.00	0.00E+00	0	0.00E+00	0	0	22	0	0	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.08	3.83E-02	1,883,052	8.87E+05	109,005	3,657,098	186	8	8	0
50	12.75	5.35E+00	49,452,348	2.07E+07	6,714,421	92,190,276	26	18	18	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	3.41	1.43E+00	49,452,348	2.07E+07	7,959,215	90,945,482	101	18	18	0
Total	1.04	4.19E-01	51,335,400	2.08E+07	10,219,670	92,451,130	376	26	26	0

*Differences in sums of estimates and totals are due to rounding.

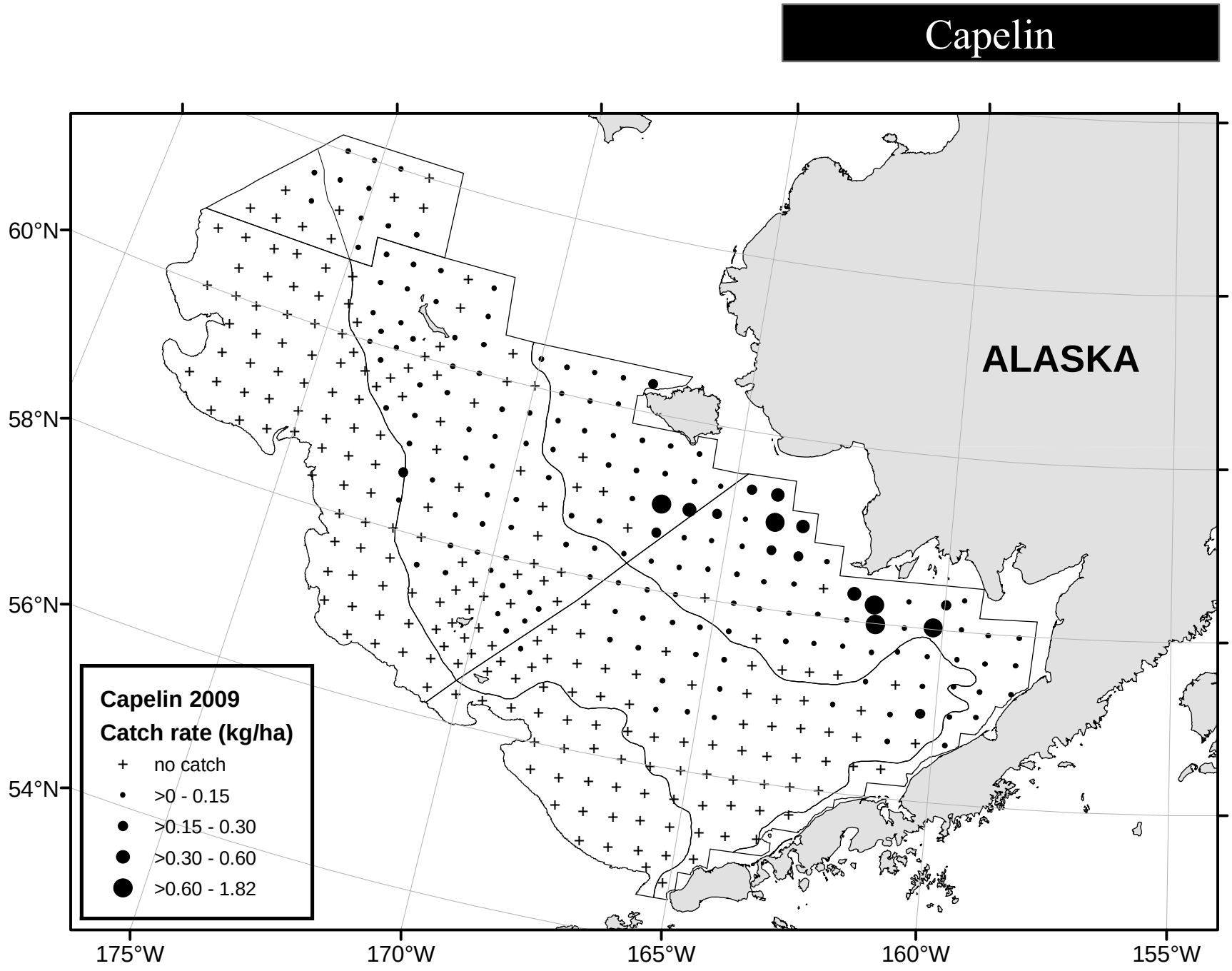


Figure 54. -- Distribution and relative abundance (kg/ha) of **capelin** (*Mallotus villosus*) for the 2009 eastern Bering Sea bottom trawl survey.

This page was intentionally left blank.

Table 33a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **capelin** (*Mallotus villosus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.18	5.07E-02	1,386	3.95E+02	587	2,184	58	49	49	0
20	0.06	2.56E-02	262	1.05E+02	48	477	31	27	27	0
Subtotal	0.14	3.44E-02	1,648	4.09E+02	830	2,466	89	76	76	0
31	0.01	3.41E-03	106	3.22E+01	42	171	69	23	23	0
32	0.00	5.62E-04	0	4.93E-01	0	2	8	1	1	0
41	0.01	4.36E-03	84	2.73E+01	29	139	44	29	29	0
42	0.01	2.26E-03	17	5.44E+00	5	28	31	11	11	0
43	0.01	3.05E-03	19	6.43E+00	6	33	22	13	13	0
82	0.01	4.30E-03	29	8.89E+00	9	48	12	9	9	0
Subtotal	0.01	1.90E-03	255	4.40E+01	168	342	186	86	86	0
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	3.12E-03	30	2.75E+01	0	86	60	2	2	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	9.82E-04	2	1.14E+00	0	4	8	2	2	0
Subtotal	0.00	1.90E-03	32	2.76E+01	0	88	101	4	4	0
Total	0.04	8.32E-03	1,935	4.12E+02	1,103	2,768	376	166	166	0

*Differences in sums of estimates and totals are due to rounding.

Table 33b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **capelin** (*Mallotus villosus*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	8.02	2.28E+00	62,423,461	1.77E+07	26,571,641	98,275,282	58	49	49	0
20	2.98	1.13E+00	12,240,356	4.63E+06	2,762,151	21,718,561	31	27	27	0
Subtotal	6.28	1.54E+00	74,663,817	1.83E+07	37,993,584	111,334,051	89	76	76	0
31	0.56	1.56E-01	5,302,818	1.48E+06	2,349,673	8,255,963	69	23	23	0
32	0.02	2.34E-02	20,541	2.05E+04	0	70,805	8	1	1	0
41	0.80	2.65E-01	4,991,759	1.66E+06	1,637,249	8,346,269	44	29	29	0
42	0.37	1.25E-01	888,142	2.99E+05	276,050	1,500,233	31	11	11	0
43	0.53	1.66E-01	1,119,599	3.50E+05	389,383	1,849,814	22	13	13	0
82	0.64	2.29E-01	1,320,477	4.74E+05	277,238	2,363,716	12	9	9	0
Subtotal	0.59	1.00E-01	13,643,335	2.32E+06	9,053,961	18,232,709	186	86	86	0
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.20	1.75E-01	1,728,244	1.54E+06	0	4,842,176	60	2	2	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.07	4.65E-02	75,695	5.38E+04	0	207,228	8	2	2	0
Subtotal	0.12	1.06E-01	1,803,939	1.54E+06	0	4,956,766	101	4	4	0
Total	1.82	3.74E-01	90,111,091	1.85E+07	52,631,161	127,591,021	376	166	166	0

*Differences in sums of estimates and totals are due to rounding.

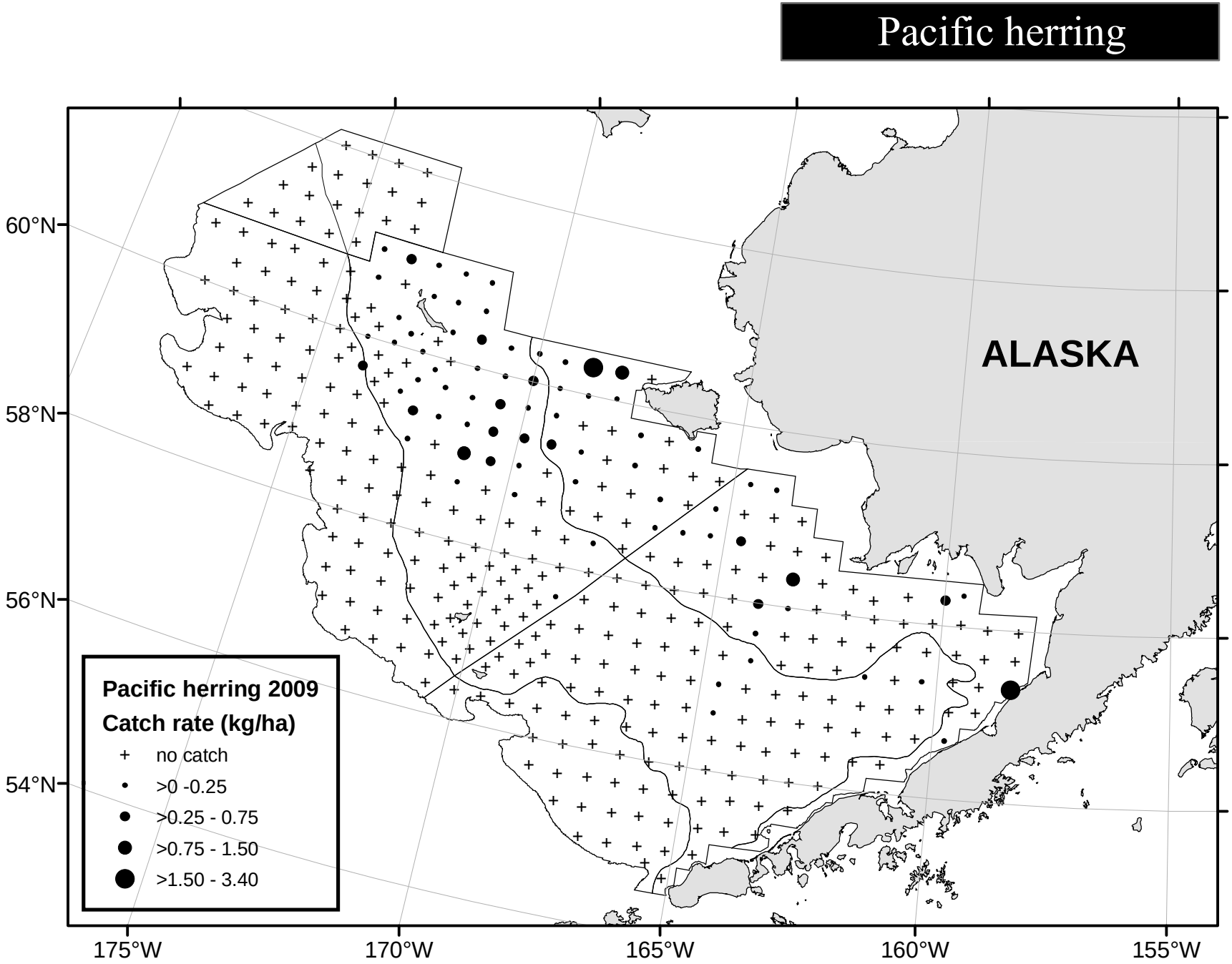


Figure 55. -- Distribution and relative abundance (kg/ha) of **Pacific herring** (*Clupea pallasi*) for the 2009 eastern Bering Sea bottom trawl survey.

This page was intentionally left blank.

Table 34a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Pacific herring** (*Clupea pallasi*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.08	3.66E-02	630	2.85E+02	54	1,206	58	14	14	0
20	0.19	1.09E-01	785	4.49E+02	0	1,702	31	16	16	0
Subtotal	0.12	4.47E-02	1,415	5.32E+02	340	2,490	89	30	30	0
31	0.01	2.61E-03	50	2.46E+01	1	100	69	5	5	0
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.14	3.47E-02	847	2.17E+02	408	1,287	44	27	27	0
42	0.00	2.65E-03	6	6.36E+00	0	19	31	1	1	0
43	0.04	1.96E-02	76	4.14E+01	0	162	22	12	12	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.04	9.61E-03	980	2.23E+02	515	1,444	186	45	45	0
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.07	7.02E-02	45	4.51E+01	0	161	7	1	1	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.003	3.11E-03	45	4.51E+01	0	135	101	1	1	0
Total	0.05	1.17E-02	2,440	5.78E+02	1,295	3,585	376	76	76	0

*Differences in sums of estimates and totals are due to rounding.

Table 34b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Pacific herring** (*Clupea pallasi*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.63	2.70E-01	4,937,695	2.11E+06	681,146	9,194,243	58	14	14	0
20	4.27	2.71E+00	17,507,853	1.11E+07	0	40,198,423	31	16	16	0
Subtotal	1.89	9.51E-01	22,445,548	1.13E+07	0	45,302,601	89	30	30	0
31	0.03	1.62E-02	315,642	1.53E+05	9,996	621,288	69	5	5	0
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	3.13	7.94E-01	19,634,852	4.98E+06	9,568,327	29,701,377	44	27	27	0
42	0.02	2.30E-02	55,336	5.53E+04	0	168,332	31	1	1	0
43	0.69	4.23E-01	1,464,779	8.94E+05	0	3,323,375	22	12	12	0
82	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Subtotal	0.93	2.18E-01	21,470,609	5.06E+06	10,909,010	32,032,207	186	45	45	0
50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.19	1.89E-01	121,558	1.22E+05	0	434,084	7	1	1	0
90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.01	8.39E-03	121,558	1.22E+05	0	364,674	101	1	1	0
Total	0.89	2.50E-01	44,037,714	1.24E+07	19,501,638	68,573,790	376	76	76	0

*Differences in sums of estimates and totals are due to rounding.

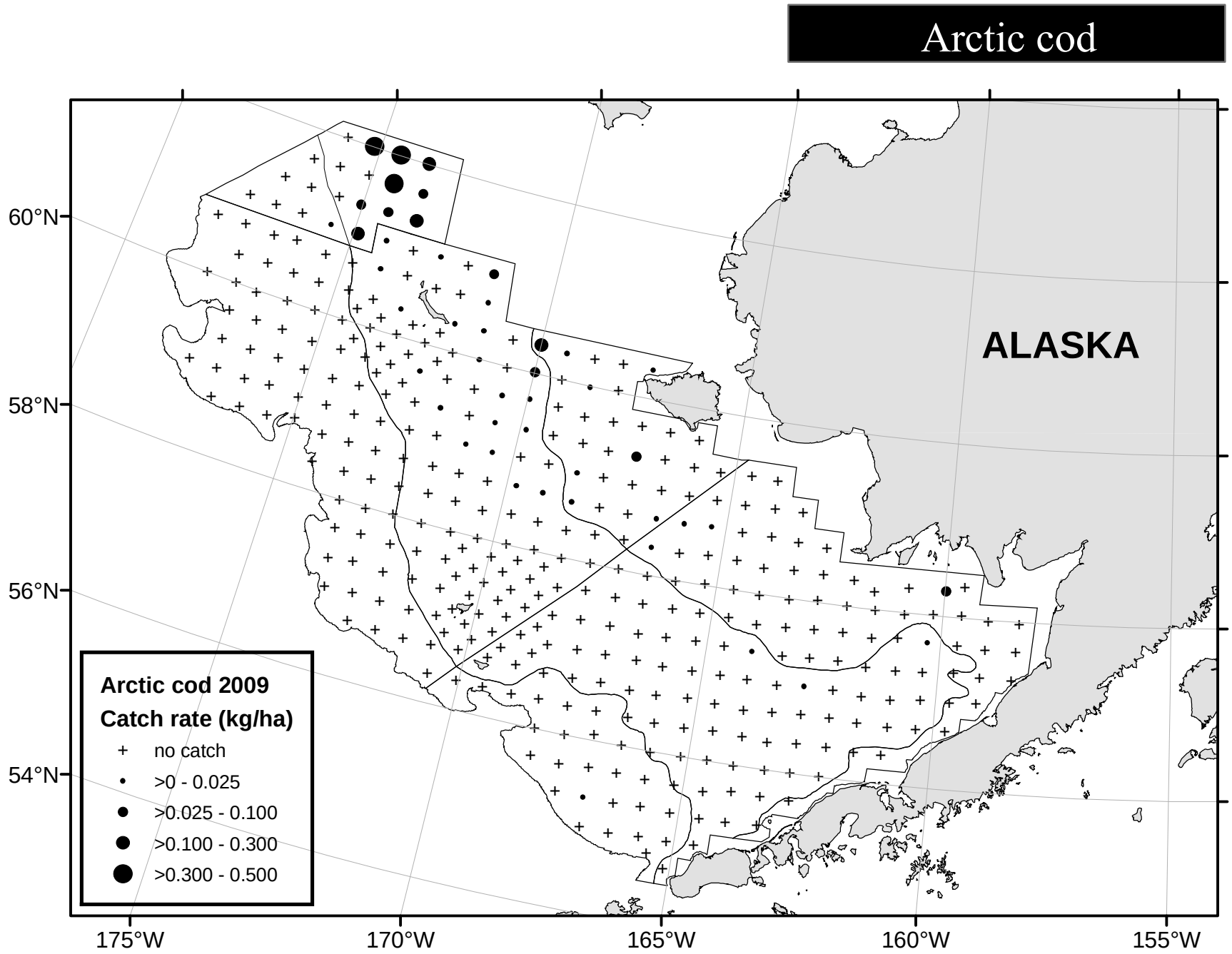


Figure 56. -- Distribution and relative abundance (kg/ha) of **Arctic cod** (*Boreogadus saida*) for the 2009 eastern Bering Sea bottom trawl survey.

This page was intentionally left blank.

Table 35a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Arctic cod** (*Boreogadus saida*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.00	5.53E-04	6	4.31E+00	0	15	58	4	4	2
20	0.01	6.73E-03	39	2.76E+01	0	96	31	8	8	4
Subtotal	0.00	2.35E-03	45	2.79E+01	0	102	89	12	12	6
31	0.00	1.26E-04	2	1.19E+00	0	4	69	3	3	1
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.00	1.62E-03	30	1.02E+01	10	51	44	16	16	16
42	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
43	0.00	1.09E-03	3	2.29E+00	0	8	22	4	4	4
82	0.16	5.17E-02	324	1.07E+02	86	562	12	9	9	9
Subtotal	0.02	4.63E-03	360	1.07E+02	141	579	186	32	32	30
50	0.00	1.76E-04	1	6.81E-01	0	2	26	1	1	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.00	8.74E-04	1	1.01E+00	0	3	8	1	1	1
Subtotal	0.00	8.41E-05	2	1.22E+00	0	4	101	2	2	1
Total	0.01	2.24E-03	407	1.11E+02	185	629	376	92	92	37

*Differences in sums of estimates and totals are due to rounding.

Table 35b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Arctic cod** (*Boreogadus saida*) by stratum for the 2009 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
10	0.02	9.79E-03	147,315	7.63E+04	0	301,457	58	4	4	2
20	0.83	6.93E-01	3,411,246	2.84E+06	0	9,228,921	31	8	8	4
Subtotal	0.30	2.39E-01	3,558,561	2.85E+06	0	9,369,788	89	12	12	6
31	0.01	4.85E-03	80,431	4.58E+04	0	172,050	69	3	3	1
32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
41	0.32	1.06E-01	2,035,241	6.65E+05	690,687	3,379,796	44	16	16	16
42	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
43	0.08	4.74E-02	159,441	1.00E+05	0	367,759	22	4	4	4
82	6.84	1.98E+00	14,128,266	4.09E+06	5,016,529	23,240,003	12	9	9	9
Subtotal	0.71	1.79E-01	16,403,380	4.14E+06	7,939,551	24,867,209	186	32	32	30
50	0.01	6.76E-03	26,205	2.62E+04	0	80,187	26	1	1	0
61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
90	0.02	2.43E-02	28,094	2.81E+04	0	94,536	8	1	1	1
Subtotal	0.00	2.65E-03	54,299	3.84E+04	0	131,135	101	2	2	1
Total	0.40	1.01E-01	20,016,240	5.03E+06	9,960,334	30,072,145	376	92	92	37

*Differences in sums of estimates and totals are due to rounding.

Acknowledgments

Recognition and appreciation is extended to the captains and crew of the FV *Aldebaran* and FV *Arcturus*. Without their expertise, goodwill, and sacrifice, this survey would not be possible. Thank you to the Trident Corporation for making the vessels available and always maintaining safety as a top priority. Great appreciation is also extended to all the scientists, researchers, and interns who worked tirelessly aboard each vessel to complete the survey in a safe and successful manner. We also thank the survey support team who provided us with technical and scientific equipment. Finally, appreciation is extended to the reviewers of this document whose excellent comments and suggestions greatly improved it.

Citations

Alton, M. S., R. G. Bakkala, G. E. Walters, and P. T. Munro. 1988. Greenland turbot *Reinhardtius hippoglossoides* of the eastern Bering Sea and Aleutian Islands region. U.S. Dep. Commer., NOAA Tech. Rep. NMFS 71, 31 p.

Alverson, D. L., and W. T. Pereyra. 1969. Demersal fish explorations in the northeast Pacific Ocean--An evaluation of exploratory fishing methods and analytical approaches to stock size and yield forecasts. J. Fish. Res. Board Can. 26:1985-2001.

Bakkala, R. G., and K. Wakabayashi (editors). 1985. Results of cooperative U.S.-Japan groundfish investigations in the Bering Sea during May-August 1979. Int. North Pac. Fish. Comm. Bull. 44, 252 p.

Bakkala, R. G. 1993. Structure and historical changes in the groundfish complex of the eastern Bering Sea. U.S. Dep. Commer., NOAA Tech. Rep. NMFS-114, 91 p.

Chilton, E. A., C. E. Armistead, and R. J. Foy. 2009. The 2009 Eastern Bering Sea continental shelf bottom trawl survey: Results for commercial crab species. U. S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-201, 101 p.

Fadeev, N.S. 1965. Comparative outline of the biology of flatfishes in the southeastern part of the Bering Sea and condition of their resources, p. 112-129. Translated by Isr. Prog. Sci. Trans., 1968. *In* P.A. Moiseev (editor), Soviet fisheries investigations in the northeast Pacific, Part 4. [Available from U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA, as TT 67-51206].

Hoff, G. R., and L. L. Britt. 2009. Results of the 2008 Eastern Bering Sea upper continental slope survey of groundfish and invertebrate resources. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-197, 294 p.

Ianelli, J. N., S. Barbeaux, T. Honkalehto, S. Kotwicki, K. Aydin, and N. Williamson. 2008. Chapter 1. Eastern Bering Sea Walleye Pollock p. 47-136. *In* Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council, Anchorage, AK.

Kappenman, R. F. 1992. Robust estimation of the ratio of scale parameters for positive random variables. AFSC Processed Rep. 92-01, 10 p. Alaska Fish. Sci. Cent., Natl. Mar. Fish. Serv., NOAA, 7600 Sand Point Way NE, Seattle, WA 98115-6349.

Kotwicki, S., and K. L. Weinberg. 2005. Estimating capture probability of a survey bottom trawl for Bering Sea skates (*Bathyraja* spp.) and other fish. Alaska Fish. Res. Bull. 11:135-145.

Kotwicki, S., K. L. Weinberg, and D. A. Somerton. 2006. The effect of autotrawl systems on the performance of a survey trawl. Fish. Bull., U.S. 104:35-45.

Kotwicki, S., T. W. Buckley, T. Honkalehto, and G. Walters. 2005. Variation in the distribution of walleye pollock (*Theragra chalcogramma*) with temperature and implications for seasonal migration. Fish. Bull., U.S. 103:574-587.

Lauth, R. R. and E. Acuna. 2009. Results of the 2008 Eastern Bering Sea continental shelf bottom trawl survey of groundfish and invertebrate resources. U.S. Dep. Commer. NOAA Tech. Memo. NMFS-AFSC-195, 229 p.

Munro, P. T. 1998. A decision rule based on the mean square error for correcting relative fishing power differences in trawl survey data. Fish. Bull., U.S. 96:538-546.

Nichol, D. G. 1997. Effects of geography and bathymetry on growth and maturity of yellowfin sole, *Pleuronectes asper*, in the eastern Bering Sea. Fish. Bull., U.S. 95:494-503.

Nichol, D. G. 1998. Annual and between-sex variability of yellowfin sole, *Pleuronectes asper*, spring-summer distributions in the eastern Bering Sea. Fish. Bull., U.S. 96:547-561.

Orr, J. W., and A. C. Matarese. 2000. Revision of the genus *Lepidopsetta* Gill, 1862 (Teleostei: Pleuronectidae) based on larval and adult morphology, with a description of a new species from the North Pacific Ocean and Bering Sea. Fish. Bull., U.S. 98:539-582.

Pereyra, W. T., J. E. Reeves, and R. G. Bakkala. 1976. Demersal fish and shellfish resources of the eastern Bering Sea in the baseline year 1975. NWAFC Processed Rep., 619 p. Available from Alaska Fish. Sci. Cent., NOAA, Natl. Mar. Fish. Serv., 7600 Sand Point Way NE, Seattle, WA 98115-6349.

Rose, C. S., and G. E. Walters. 1990. Trawl width variation during bottom trawl surveys: causes and consequences, p. 57-67. *In* L-L. Low (editor), Proceedings of the symposium on application of stock assessment techniques to gadids. Int. North Pac. Fish. Comm. Bull. 50.

Shubnikov, D.A., and L.A. Lisovenko. 1964. Data on the biology of rock sole of the southeastern Bering Sea, p. 220-226. Translated by Isr. Prog. Sci. Trans., 1968. *In* P.A. Moiseev, (editor), Soviet fisheries investigations in the northeast Pacific, Part 2.. [Available from U.S. Dep. Commer., Natl. Tech. Inf. Serv., Springfield, VA, as TT 67-51204].

Somerton, D.A., and K. L. Weinberg. 2001. The affect of speed through the water on footrope contact of a survey trawl. Fish Res. 53:17-24.

Smith, G. B., and R. G. Bakkala. 1982. Demersal fish resources of the eastern Bering Sea: Spring 1976. U.S. Dep. Commer., NOAA Tech. Rep. NMFS SSRF-754, 129 p.

Stauffer, G. (compiler). 2004. NOAA protocols for groundfish bottom trawl surveys of the nation's fishery resources. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-F/SPO-65, 205 p.

Stockhausen, W. T., P. D. Spencer, and D. G. Nichol. 2008. Chapter 8. Flathead sole, p.777-864. *In* Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council, 605 W. 4th Ave., Anchorage, AK 99501.

Wakabayashi, K., R. G. Bakkala, and M. S. Alton. 1985. Methods of the U.S.-Japan demersal trawl surveys, p. 7-29. *In* R. G. Bakkala and K. Wakabayashi (editors), Results of cooperative U.S.-Japan groundfish investigations in the Bering Sea during May-August 1979. Int. North Pac. Fish. Comm. Bull. 44.

Weinberg, K. L. 2003. Changes in the performance of a Bering Sea survey trawl due to varied trawl speed. Alaska Fish. Res. Bull. 10:42-49.

Weinberg, K. L., and S. Kotwicki. 2007. Factors influencing net width and sea floor contact of a survey bottom trawl. Fish. Res. 94:265-279.

Weinberg, K. L., and D. A Somerton. 2006. Variation in trawl geometry due to unequal warp length. Fish. Bull., U.S., 104:21-34.

Zar, J. H. 1999. Biostatistical analysis, 4th ed., Prentice-Hall, Inc., Englewood Cliffs, NJ. 663 p.

Zimmermann, M., M. E. Wilkins, K. L. Weinberg, R. R. Lauth, and F. R. Shaw. 2003. Influence of improved performance monitoring on the consistency of a bottom trawl survey. ICES J. Mar. Sci. 60:618-826.

Appendix A: Station Data, 2009 Eastern Bering Sea Trawl Survey

Appendix A contains station data by vessel for the 376 successfully completed standard survey stations. In using the tables, the following should be noted:

1. Time represents the nearest hour and minute at the start of the haul.
2. Haul numbers are not always sequential because unsatisfactory hauls were omitted.
3. All longitudes are in the Western Hemisphere and latitudes in the Northern Hemisphere. Starting and ending positions for each haul are displayed as degrees and decimal minutes.
4. Net measured codes are as follows:

   Y = Net width was measured by net mensuration gear.

   N = Net width was estimated from a function of wire out or wire out.
5. Catch weights are displayed in total kilograms

List of Tables

Appendix A Table 1. -- Haul and catch data for successfully completed tows by FV*Arcturus* during the 2009 eastern Bering Sea bottom trawl survey.

Station	H-16	I-16	J-16	K-14	J-14	I-14	H-14	G-14	F-14	F-13	F-12
Start date and time	6/2/09 9:29	6/2/09 12:37	6/2/09 15:32	6/3/09 6:26	6/3/09 9:02	6/3/09 11:44	6/3/09 14:06	6/3/09 16:44	6/4/09 6:28	6/4/09 9:10	6/4/09 11:56
Haul number	2	3	4	5	6	7	8	9	10	11	12
Start latitude	5719.07	5739.28	5758.55	5821.35	5801.41	5740.45	5721.34	5700.44	5640.47	5639.85	5639.58
Start longitude	15935.20	15938.73	15940.82	16026.05	16024.94	16021.93	16020.56	16018.65	16015.59	16138.75	16102.68
End latitude	5720.59	5740.29	5800.01	5819.97	5759.95	5738.92	5720.44	5659.99	5640.03	5639.88	5639.83
End longitude	15935.74	15936.69	15940.94	16027.54	16024.60	16021.37	16018.48	16021.20	16013.04	16135.97	16259.92
Bottom depth (m)	32	36	35	25	43	50	55	54	38	60	69
Duration (h)	0.53	0.51	0.52	0.54	0.50	0.51	0.50	0.51	0.51	0.51	0.51
Distance fished (km)	2.86	2.77	2.70	2.95	2.73	2.90	2.67	2.72	2.74	2.86	2.87
Net width (m)	15.96	16.40	16.56	14.05	16.44	15.70	15.46	16.34	16.64	16.19	16.63
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0.00	0	0	0	0	0	0.00
Alaska skates	80.15	--	8.42	--	5.78	2.52	--	7.33	44.51	21.67	14.10
Skates	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**80.15**	**--**	**8.42**	**--**	**5.78**	**2.52**	**--**	**7.33**	**44.51**	**21.67**	**14.10**
Alaska plaice	2.75	0.07	--	66.42	19.88	0.12	0.35	0.42	0.51	--	44.77
Arrowtooth flounder	1.15	--	--	--	--	--	--	0.02	0.02	--	0.02
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	11.66	--	3.02	--	1.54	1.38	0.90	8.51	2.46	3.50	36.10
Rock sole	460.83	189.26	555.18	190.51	558.37	296.30	178.84	285.90	345.63	1229.72	356.69
Yellowfin sole	645.14	190.01	568.01	1418.80	786.35	116.84	55.82	157.98	382.43	1632.99	131.95
Other flatfish	22.38	8.98	5.89	99.35	207.70	3.18	--	17.37	61.14	43.41	12.21
Total flatfish	**1143.92**	**388.32**	**1132.10**	**1775.09**	**1573.85**	**417.83**	**235.91**	**470.20**	**792.20**	**2909.63**	**581.72**
Walleye pollock	0.99	0.07	2.85	--	--	3.12	--	6.17	0.22	75.11	44.85
Pacific cod	13.20	0.41	0.28	--	0.02	11.23	0.92	0.77	5.11	93.38	8.32
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	--	--	--
Pacific herring	6.98	--	--	0.32	--	--	--	--	0.15	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	51.89	20.23	10.91	42.60	26.72	8.13	5.28	0.83	9.66	16.44	44.37
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	4.49	3.24	2.05	7.10	1.21	2.84	2.13	2.16	1.39	1.97	1.53
Total roundfish	**77.54**	**23.95**	**16.10**	**50.03**	**27.94**	**25.31**	**8.33**	**9.92**	**16.53**	**186.90**	**99.06**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	6.10	--	7.41	3.58	17.82	46.30	45.18	11.17	117.13	87.56
Tanner crab, bairdi	--	--	--	--	--	--	--	1.49	--	1.78	12.52
Tanner crab, opilio	--	--	--	--	--	--	0.51	--	--	--	--
Other crab	0.09	0.31	0.69	0.16	0.95	3.24	2.69	7.46	1.43	2.54	1.89
Shrimp	--	0.03	--	0.00	--	0.00	0.00	0.01	0.00	--	--
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	1.17	--	--	--	--	1.81	--	0.52	--	--	0.49
Starfish	86.55	82.41	26.05	125.00	192.68	409.38	176.08	227.81	52.46	253.03	111.66
Other invertebrates	13.65	10.00	6.28	0.29	13.12	48.60	54.62	29.90	18.91	76.46	43.97
Total invertebrates	**101.46**	**98.85**	**33.02**	**132.85**	**210.33**	**480.86**	**280.21**	**312.35**	**83.97**	**450.95**	**258.09**
Miscellaneous	0.23	1.31	0.40	0.03	0.10	0.52	0.32	0.19	--	0.24	0.13
Total catch	**1406.00**	**512.65**	**1190.04**	**1958.00**	**1818.00**	**927.03**	**524.80**	**800.00**	**937.26**	**3576.00**	**968.00**

Appendix A Table 1. -- Continued.

Station	G-12	H-12	I-12	J-12	K-12	K-11	K-10	I-10	H-10	G-10	F-10	E-10	D-10
Start date and time	6/4/09 14:41	6/4/09 17:34	6/5/09 7:57	6/5/09 10:27	6/5/09 12:52	6/5/09 15:39	6/5/09 17:49	6/6/09 6:24	6/6/09 9:08	6/6/09 11:50	6/6/09 14:22	6/6/09 18:16	6/7/09 6:40
Haul number	13.00	14.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	26.00	27.00
Start latitude	5658.33	5718.91	5742.11	5758.73	5817.03	5812.37	5818.74	5741.43	5721.15	5700.76	5641.10	5621.03	5600.18
Start longitude	16102.68	16105.90	16104.26	16109.78	16112.15	16227.25	16359.22	16352.41	16350.65	16348.82	16348.49	16349.30	16344.72
End latitude	5659.87	5719.52	5740.93	5800.32	5817.22	5813.84	5819.88	5739.97	5719.66	5659.17	5639.60	5622.44	5559.31
End longitude	16102.32	16103.37	16106.41	16109.76	16110.12	16226.71	16357.23	16351.64	16350.69	16348.44	16347.68	16350.52	16342.60
Bottom depth (m)	65	64	56	46	31	39	46	48	52	59	69	82	73
Duration (h)	0.52	0.52	0.54	0.52	0.35	0.51	0.52	0.52	0.51	0.53	0.51	0.53	0.50
Distance fished (km)	2.88	2.80	3.07	2.95	2.02	2.78	2.88	2.82	2.76	2.98	2.90	2.92	2.73
Net width (m)	17.38	16.89	16.66	16.19	16.10	16.10	16.78	16.69	16.55	18.25	17.34	17.11	16.39
Net measured?	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	9.48	11.62	--	4.65	--	8.10	--	12.52	21.27	25.62	--	20.32	43.31
Skates	--	--	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**9.48**	**11.62**	**--**	**4.65**	**--**	**8.10**	**--**	**12.52**	**21.27**	**25.62**	**--**	**20.32**	**43.31**
Alaska plaice	147.51	39.26	116.65	140.97	11.60	9.86	43.09	124.68	61.74	82.84	49.23	116.29	27.82
Arrowtooth flounder	--	--	--	--	--	--	--	--	--	0.09	2.52	5.09	47.18
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	39.30	9.50	10.11	6.27	--	12.73	2.77	21.06	30.80	33.75	55.17	56.22	41.13
Rock sole	440.20	380.22	814.38	464.37	259.21	350.38	472.28	448.43	235.83	567.57	377.01	926.71	303.65
Yellowfin sole	91.97	158.09	466.21	658.04	170.15	299.09	231.31	962.76	191.74	89.52	168.07	418.92	1,307.40
Other flatfish	93.16	--	17.96	102.65	84.06	55.84	41.10	2.50	1.66	--	1.45	6.16	3.72
Total flatfish	**812.14**	**587.07**	**1,425.31**	**1,372.30**	**525.02**	**727.90**	**790.55**	**1,559.42**	**521.77**	**773.77**	**653.45**	**1,529.39**	**1,730.90**
Walleye pollock	49.03	8.96	9.45	--	--	--	--	28.15	2.90	9.93	23.71	56.21	419.48
Pacific cod	3.10	11.70	11.69	1.56	0.34	0.44	0.08	22.44	8.57	47.52	249.87	66.80	24.72
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	--	--	--	--	--
Pacific herring	--	--	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	1.29	1.08	10.08	3.65	42.63	30.33	15.07	5.96	5.07	36.93	58.61	59.75	0.30
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	1.94	0.98	0.79	0.99	2.32	9.33	4.41	2.49	0.48	1.89	2.91	3.48	12.52
Total roundfish	**55.36**	**22.72**	**32.01**	**6.19**	**45.30**	**40.10**	**19.56**	**59.05**	**17.01**	**96.27**	**335.10**	**186.25**	**457.02**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	58.98	74.02	28.03	18.93	6.33	2.82	7.30	16.40	0.52	7.44	--	5.41	244.76
Tanner crab, bairdi	0.92	0.29	--	--	--	--	--	--	--	0.58	2.81	5.90	3.23
Tanner crab, opilio	--	--	--	--	--	--	--	--	--	--	--	--	2.86
Other crab	4.92	5.53	6.00	0.52	3.31	6.16	5.95	4.99	10.21	3.64	0.29	7.25	3.78
Shrimp	--	--	0.01	--	0.01	--	--	--	--	--	--	0.10	--
Octopus	--	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--	--
Snails	0.52	0.46	8.42	1.24	0.11	--	6.00	1.92	5.99	--	1.10	6.67	1.28
Starfish	121.63	312.14	195.85	142.87	44.92	172.80	142.53	51.01	336.56	31.65	6.01	70.43	22.59
Other invertebrates	78.56	124.03	48.73	5.35	3.21	4.82	2.55	19.67	22.39	12.25	25.34	942.36	117.84
Total invertebrates	**265.53**	**516.47**	**287.03**	**168.91**	**57.89**	**186.60**	**164.33**	**93.98**	**375.67**	**55.57**	**35.55**	**1,038.11**	**396.33**
Miscellaneous	0.09	0.25	4.44	0.86	0.08	0.18	0.33	0.15	0.39	0.13	0.33	1.86	0.09
Total catch	**1,152.00**	**1,142.00**	**1,752.00**	**1,556.00**	**628.29**	**962.89**	**974.78**	**1,726.00**	**938.00**	**965.10**	**1,067.52**	**2,940.00**	**2,688.00**

Appendix A Table 1. -- Continued.

Station	D-09	D-08	E-09	E-08	E-07	F-07	F-08	G-08	H-08	I-08	J-08	K-08
Start date and time	6/7/09 11:11	6/7/09 13:57	6/7/09 18:27	6/8/09 6:40	6/8/09 9:14	6/8/09 11:53	6/8/09 14:35	6/8/09 17:14	6/9/09 6:29	6/9/09 9:01	6/9/09 11:22	6/9/09 14:01
Haul number	29.00	30.00	32.00	33.00	34.00	35.00	36.00	37.00	38.00	39.00	40.00	41.00
Start latitude	5559.84	5559.73	5621.04	5619.29	5620.35	5638.67	5640.05	5659.25	5719.89	5739.76	5759.27	5819.80
Start longitude	16308.36	16436.69	16311.22	16434.89	16402.68	16559.59	16435.88	16436.81	16438.18	16437.84	16437.26	16438.08
End latitude	5559.89	5601.04	5620.55	5620.79	5620.47	5639.91	5640.08	5700.75	5720.31	5741.29	5800.81	5821.18
End longitude	16310.97	16438.00	16313.81	16434.87	16559.97	16400.31	16438.66	16436.72	16435.55	16437.47	16437.01	16439.35
Bottom depth (m)	79	87	77	86	87	76	74	65	54	47	44	37
Duration (h)	0.50	0.50	0.50	0.50	0.51	0.43	0.51	0.51	0.50	0.52	0.52	0.52
Distance fished (km)	2.72	2.78	2.82	2.78	2.81	2.40	2.85	2.78	2.75	2.86	2.87	2.84
Net width (m)	16.69	17.29	17.00	16.21	16.65	17.29	17.33	16.42	16.42	16.03	15.83	15.50
Net measured?	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	32.18	24.39	27.65	21.28	41.61	9.49	20.76	35.75	11.51	13.49	20.71	--
Skates	--	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**32.18**	**24.39**	**27.65**	**21.28**	**41.61**	**9.49**	**20.76**	**35.75**	**11.51**	**13.49**	**20.71**	--
Alaska plaice	135.38	11.92	55.03	16.51	6.37	26.40	9.40	191.77	91.99	110.44	115.43	133.55
Arrowtooth flounder	52.31	26.20	27.79	42.53	1.43	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	22.93	33.86	49.81	60.97	55.05	7.62	16.89	21.02	16.21	31.73	7.68	6.44
Rock sole	172.76	359.59	161.59	295.55	218.94	135.19	32.88	201.50	599.36	657.90	335.11	428.65
Yellowfin sole	387.85	26.60	465.35	127.39	45.81	329.51	894.41	964.57	116.99	206.61	181.24	406.39
Other flatfish	3.10	3.00	3.67	0.40	1.43	--	--	--	--	--	4.58	5.47
Total flatfish	**774.32**	**461.17**	**763.23**	**543.34**	**329.04**	**498.72**	**953.58**	**1,378.86**	**824.56**	**1,006.68**	**644.03**	**980.49**
Walleye pollock	74.35	8.70	36.31	127.28	18.22	5.35	12.64	5.19	4.44	2.44	2.75	2.35
Pacific cod	19.97	6.95	113.82	345.79	178.68	5.60	19.06	46.87	83.46	9.03	12.28	0.92
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	4.33	0.58	--	--	--	--	--	--
Pacific herring	--	--	--	--	--	--	--	--	--	--	0.47	6.26
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	54.66	12.22	21.91	5.90	0.08	13.82	0.03	0.35	20.90	3.08	13.31	28.98
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	2.88	0.98	2.05	1.87	0.67	0.56	0.26	1.88	0.66	1.86	0.77	0.84
Total roundfish	**151.87**	**28.85**	**174.09**	**480.85**	**201.98**	**25.91**	**31.99**	**54.29**	**109.45**	**16.41**	**29.56**	**39.35**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	81.60	1.81	24.27	11.84	--	--	--	2.17	4.22	20.48	4.38	4.49
Tanner crab, bairdi	6.50	19.99	6.51	12.97	22.84	6.21	2.39	1.19	--	--	--	--
Tanner crab, opilio	7.57	5.26	1.17	2.04	7.41	1.54	0.93	0.49	0.19	--	--	--
Other crab	2.89	29.51	3.94	57.00	95.58	52.71	12.87	7.38	5.64	13.64	7.81	19.75
Shrimp	--	0.11	--	0.13	0.00	--	--	0.01	0.01	--	--	--
Octopus	--	--	--	--	1.99	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	5.15	35.31	4.39	21.62	109.51	63.71	22.56	43.46	13.51	4.48	2.70	0.93
Starfish	6.81	3.08	--	3.72	4.77	38.68	6.36	13.58	18.41	162.57	383.61	180.03
Other invertebrates	172.87	154.62	56.26	1,060.75	65.77	119.52	43.55	151.20	161.46	95.04	25.49	1.47
Total invertebrates	**283.40**	**249.70**	**96.54**	**1,170.07**	**307.86**	**282.36**	**88.66**	**219.47**	**203.43**	**296.21**	**424.00**	**206.66**
Miscellaneous	--	7.54	--	9.08	181.52	29.65	6.01	0.65	5.05	3.33	8.37	1.50
Total catch	**1,380.49**	**921.74**	**1,346.80**	**2,303.40**	**1,151.43**	**867.10**	**1,120.56**	**1,698.00**	**1,154.00**	**1,338.00**	**1,128.00**	**1,228.00**

Appendix A Table 1. -- Continued.

Station	L-09	L-08	M-08	M-07	N-07	N-06	K-06	J-06	I-06	H-06	G-06	G-05
Start date and time	6/9/09 17:32	6/10/09 6:30	6/10/09 9:04	6/10/09 11:29	6/10/09 13:55	6/10/09 16:28	6/11/09 6:29	6/11/09 9:04	6/11/09 11:39	6/11/09 14:15	6/11/09 16:48	6/12/09 6:33
Haul number	42.00	43.00	44.00	45.00	46.00	47.00	48.00	49.00	50.00	51.00	52.00	53.00
Start latitude	5838.23	5839.23	5900.18	5900.26	5919.05	5920.08	5820.55	5800.46	5740.77	5720.73	5700.32	5700.10
Start longitude	16317.58	16439.21	16439.17	16401.24	16559.29	16523.42	16521.14	16523.33	16522.76	16522.86	16523.20	16647.11
End latitude	5839.49	5840.58	5900.38	5900.39	5920.71	5919.97	5819.07	5758.92	5739.29	5719.21	5658.82	5658.56
End longitude	16315.61	16437.46	16435.83	16558.13	16559.52	16521.55	16521.31	16522.91	16522.51	16522.35	16523.03	16646.76
Bottom depth (m)	25	31	22	29	23	22	44	45	54	66	69	71
Duration (h)	0.53	0.52	0.54	0.53	0.54	0.29	0.50	0.53	0.50	0.51	0.50	0.52
Distance fished (km)	3.01	3.02	3.23	3.00	3.09	1.79	2.74	2.89	2.74	2.86	2.77	2.88
Net width (m)	15.07	15.24	15.02	15.17	15.33	14.24	15.66	14.86	15.80	16.82	16.91	17.03
Net measured?	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	--	--	--	--	--	--	23.91	11.00	26.24	34.14	18.35	58.61
Skates	--	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	--	--	--	--	--	--	**23.91**	**11.00**	**26.24**	**34.14**	**18.35**	**58.61**
Alaska plaice	10.00	46.48	23.61	32.00	11.45	8.70	216.24	135.44	43.52	51.81	12.16	18.56
Arrowtooth flounder	--	--	--	--	--	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	0.02	--	--
Pacific halibut	9.58	2.90	1.74	--	--	--	7.35	6.52	8.20	12.08	21.58	9.40
Rock sole	419.56	202.08	389.93	141.42	7.96	52.74	162.63	264.75	145.86	89.12	55.24	25.54
Yellowfin sole	361.66	596.01	171.59	676.11	837.88	298.31	421.26	187.33	181.62	563.11	547.15	453.44
Other flatfish	137.62	69.26	40.09	65.58	23.56	17.86	--	--	--	--	--	--
Total flatfish	**938.42**	**916.73**	**626.95**	**915.11**	**880.85**	**377.61**	**807.47**	**594.04**	**379.19**	**716.14**	**636.13**	**506.93**
Walleye pollock	--	0.27	0.08	3.42	2.27	0.12	18.12	12.77	6.72	3.03	6.41	0.23
Pacific cod	--	1.17	0.20	0.29	1.31	0.27	11.19	23.86	23.91	84.93	8.80	43.01
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	--	--	--	--
Pacific herring	--	--	--	--	0.25	0.03	--	--	--	--	0.31	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	16.19	37.36	26.56	23.05	39.46	17.49	13.77	19.59	5.76	9.41	0.06	0.03
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	9.30	1.53	3.21	6.35	23.36	1.55	1.71	1.61	1.33	0.52	0.62	0.20
Total roundfish	**25.49**	**40.33**	**30.06**	**33.10**	**66.64**	**19.47**	**44.78**	**57.83**	**37.72**	**97.88**	**16.19**	**43.46**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	--	7.50	2.60	--	--	3.46	--
Tanner crab, bairdi	--	--	--	--	--	--	--	0.21	--	0.82	0.84	1.92
Tanner crab, opilio	--	--	--	--	--	--	--	--	--	0.76	0.73	0.55
Other crab	2.05	5.18	0.30	1.98	0.54	0.80	12.40	21.88	41.66	138.89	13.69	82.44
Shrimp	--	0.00	0.24	--	0.01	0.00	--	--	0.05	0.51	0.07	0.61
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	0.05	0.04	0.00	--	--	--	7.57	36.88	40.41	55.45	25.51	158.90
Starfish	173.40	231.24	100.20	129.71	189.97	71.98	234.53	165.42	69.07	374.36	55.15	112.18
Other invertebrates	0.14	0.26	0.02	0.09	--	0.00	59.24	97.06	465.42	230.46	193.68	246.37
Total invertebrates	**175.65**	**236.73**	**100.76**	**131.77**	**190.51**	**72.79**	**321.24**	**324.05**	**616.61**	**801.25**	**293.13**	**602.98**
Miscellaneous	0.45	0.22	0.45	0.01	--	0.10	6.61	31.07	65.14	30.12	3.20	80.02
Total catch	**1,140.00**	**1,194.00**	**758.23**	**1,080.00**	**1,138.00**	**469.96**	**1,204.00**	**1,018.00**	**1,126.00**	**1,680.00**	**968.00**	**1,292.00**

Appendix A Table 1. -- Continued.

Station	F-05	F-06	E-06	E-05	F-04	G-04	G-03	H-03	H-04	I-04	J-04	K-04
Start date and time	6/12/09 9:04	6/12/09 11:41	6/12/09 14:25	6/12/09 17:14	6/13/09 6:55	6/13/09 9:33	6/13/09 12:09	6/13/09 14:37	6/13/09 17:17	6/14/09 6:35	6/14/09 9:20	6/14/09 11:41
Haul number	54.00	55.00	56.00	57.00	58.00	59.00	60.00	61.00	62.00	63.00	64.00	65.00
Start latitude	5640.89	5640.13	5621.03	5619.50	5638.63	5659.22	5700.46	5718.73	5719.77	5740.04	5759.58	5818.64
Start longitude	16647.51	16522.22	16525.35	16649.24	16607.42	16608.98	16735.12	16730.79	16606.71	16608.41	16605.89	16604.47
End latitude	5639.37	5640.09	5619.53	5620.70	5639.81	5700.69	5700.73	5720.16	5720.48	5739.80	5801.06	5820.18
End longitude	16648.02	16525.11	16525.27	16647.65	16608.58	16609.27	16732.66	16731.57	16609.62	16605.56	16605.80	16604.97
Bottom depth (m)	76	76	87	86	79	72	74	70	68	64	56	45
Duration (h)	0.51	0.53	0.50	0.50	0.47	0.50	0.48	0.51	0.59	0.53	0.50	0.52
Distance fished (km)	2.85	2.96	2.78	2.77	2.49	2.74	2.55	2.77	3.22	2.88	2.74	2.89
Net width (m)	17.86	17.37	17.65	17.70	17.81	17.33	17.57	16.91	16.97	16.89	16.17	15.89
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	31.94	46.57	31.63	32.60	2.59	21.46	23.80	60.95	52.71	58.85	19.64	11.04
Skates	--	2.60	--	2.65	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**31.94**	**49.17**	**31.63**	**35.25**	**2.59**	**21.46**	**23.80**	**60.95**	**52.71**	**58.85**	**19.64**	**11.04**
Alaska plaice	5.08	16.40	7.12	21.27	3.14	37.12	9.86	32.52	35.85	164.80	49.98	206.81
Arrowtooth flounder	--	--	0.56	--	--	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	74.94	21.34	166.52	98.03	12.70	36.68	19.17	46.62	24.92	23.01	5.04	13.81
Rock sole	22.36	29.04	10.61	71.23	15.11	27.48	8.95	37.03	26.06	29.60	92.85	180.51
Yellowfin sole	33.72	92.50	15.70	12.90	7.98	234.48	77.28	70.92	375.25	384.10	154.30	518.77
Other flatfish	--	--	--	--	--	--	--	--	--	--	--	--
Total flatfish	**136.10**	**159.28**	**200.50**	**203.43**	**38.93**	**335.76**	**115.26**	**187.10**	**462.07**	**601.50**	**302.17**	**919.89**
Walleye pollock	2.95	6.32	14.06	28.69	0.10	0.09	2.95	2.26	--	0.18	3.28	5.05
Pacific cod	2.13	4.89	69.62	245.79	1.81	20.40	33.70	32.38	5.87	8.58	8.82	58.76
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	0.51	0.56	3.74	1.25	3.17	1.04	0.68	--	0.22	0.75	--	--
Pacific herring	--	0.04	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	--	2.33	0.37	--	0.23	2.98	--	17.42	0.06	0.09	1.03	0.01
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	0.26	1.79	0.11	--	0.71	0.27	0.65	0.33	0.10	0.75	1.71	4.55
Total roundfish	**5.85**	**15.92**	**87.90**	**275.73**	**6.02**	**24.77**	**37.98**	**52.40**	**6.25**	**10.35**	**14.84**	**68.36**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	--	--	--	--	2.76	--	5.70
Tanner crab, bairdi	5.18	6.93	4.20	5.69	9.05	--	2.88	0.26	1.14	0.87	0.79	0.13
Tanner crab, opilio	11.96	2.87	2.11	0.55	31.69	--	21.81	14.83	4.40	3.06	5.57	--
Other crab	35.02	60.54	75.37	51.37	102.74	30.68	50.24	52.26	54.89	104.62	76.59	23.06
Shrimp	--	0.13	--	0.07	--	--	0.26	--	--	--	0.07	--
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	107.58	82.52	59.32	53.31	41.22	79.61	52.75	250.38	152.24	56.58	45.17	19.74
Starfish	57.79	16.52	16.28	29.36	70.97	64.25	50.78	59.44	344.06	213.75	154.51	240.83
Other invertebrates	102.24	74.15	82.80	81.63	55.71	103.43	107.11	621.09	204.88	204.18	280.45	57.74
Total invertebrates	**319.77**	**243.65**	**240.08**	**221.97**	**311.38**	**277.97**	**285.81**	**998.26**	**761.62**	**585.83**	**563.16**	**347.19**
Miscellaneous	60.77	85.88	92.69	25.64	62.35	7.37	23.57	95.29	73.24	59.47	44.18	2.30
Total catch	**556.83**	**562.96**	**687.93**	**1,004.00**	**421.58**	**667.66**	**486.44**	**1,394.00**	**1,356.00**	**1,316.00**	**944.00**	**1,349.00**

Appendix A Table 1. -- Continued.

Station	L-04	M-04	K-02	J-02	I-02	H-02	G-02	F-02	E-02	D-02	C-02	Z-05
Start date and time	6/14/09 14:09	6/14/09 16:32	6/15/09 6:28	6/15/09 8:54	6/15/09 11:24	6/15/09 14:14	6/15/09 16:57	6/16/09 6:44	6/16/09 9:32	6/16/09 11:47	6/16/09 14:45	6/19/09 7:16
Haul number	66.00	67.00	68.00	69.00	70.00	71.00	72.00	73.00	74.00	75.00	76.00	77.00
Start latitude	5839.51	5858.97	5820.62	5800.22	5740.23	5720.53	5659.90	5640.16	5620.66	5604.19	5540.94	5441.01
Start longitude	16604.29	16604.12	16849.15	16849.87	16852.71	16852.90	16854.95	16855.76	16857.34	16700.11	16701.29	16652.26
End latitude	5841.00	5900.50	5819.14	5758.68	5738.72	5719.05	5658.28	5638.66	5619.20	5602.92	5539.47	5439.77
End longitude	16604.73	16604.47	16848.32	16849.38	16852.60	16852.70	16854.51	16855.86	16856.78	16701.43	16701.05	16650.65
Bottom depth (m)	38	31	52	64	68	71	74	95	113	132	135	81
Duration (h)	0.51	0.52	0.51	0.53	0.52	0.50	0.54	0.50	0.50	0.50	0.50	0.53
Distance fished (km)	2.81	2.85	2.86	2.89	2.80	2.75	3.03	2.79	2.77	2.72	2.74	2.89
Net width (m)	16.01	15.24	16.27	16.67	17.16	17.13	18.59	17.59	17.50	19.21	19.71	16.67
Net measured?	Y	N	N	Y	Y	Y	Y	N	Y	Y	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.41	5.41	0.00
Alaska skates	22.50	28.95	85.74	70.88	71.41	23.97	63.16	571.09	26.42	--	7.87	107.32
Skates	--	--	--	--	--	--	--	--	--	0.64	2.83	15.92
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**22.50**	**28.95**	**85.74**	**70.88**	**71.41**	**23.97**	**63.16**	**571.09**	**26.42**	**0.64**	**10.70**	**123.24**
Alaska plaice	357.76	206.43	377.07	157.12	93.27	25.80	--	--	--	--	--	--
Arrowtooth flounder	--	--	--	--	--	--	--	8.56	172.44	237.24	186.52	301.34
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	2.69	1.38	71.98	74.85	24.36	35.84	19.46	226.62	3.76	6.54	14.76	51.20
Rock sole	180.24	163.10	110.23	26.86	36.48	34.84	67.74	75.43	--	--	--	116.60
Yellowfin sole	236.90	954.92	199.62	140.85	270.29	30.85	42.32	0.49	--	--	--	12.43
Other flatfish	0.25	21.91	--	--	--	--	--	2.77	9.19	6.48	5.94	18.87
Total flatfish	**777.84**	**1,347.75**	**758.90**	**399.68**	**424.40**	**127.33**	**129.52**	**313.88**	**185.38**	**250.26**	**207.22**	**500.45**
Walleye pollock	0.15	0.05	5.47	2.82	24.38	6.73	13.53	112.97	3.00	--	1.16	499.44
Pacific cod	18.45	12.40	30.67	31.78	57.06	4.68	66.47	11.97	12.96	1.66	6.91	27.63
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	3.40
Eelpouts	--	--	--	--	--	--	--	--	0.89	0.47	--	--
Pacific herring	0.40	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	20.53	34.66	15.47	1.09	5.24	--	7.20	23.58	17.58	7.22	0.52	10.70
Other rockfish	--	--	--	--	--	--	--	--	--	1.96	4.24	--
Other roundfish	2.21	2.48	2.49	0.41	1.13	9.37	1.66	2.69	0.59	1.19	8.67	11.50
Total roundfish	**41.74**	**49.58**	**54.09**	**36.09**	**87.82**	**20.77**	**88.86**	**151.21**	**35.02**	**12.50**	**21.50**	**552.67**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	5.61	1.64	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	--	--	1.18	4.00	4.65	4.41	10.26	10.87	25.22	9.48	5.95	1.41
Tanner crab, opilio	--	--	3.46	8.38	39.84	25.36	136.99	1.44	7.27	1.06	0.78	--
Other crab	8.70	6.19	29.13	91.52	24.92	141.65	118.11	57.31	16.68	2.74	0.67	0.94
Shrimp	--	--	0.09	--	--	--	--	--	--	0.66	0.33	0.04
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	2.09	--	42.48	28.05	39.66	163.84	285.68	65.97	10.18	0.82	1.11	16.53
Starfish	143.39	252.65	82.41	162.76	70.26	26.40	80.53	--	0.04	1.02	0.14	--
Other invertebrates	8.53	--	83.35	226.26	214.02	768.06	56.52	55.81	93.51	93.52	27.05	30.15
Total invertebrates	**168.32**	**260.49**	**242.10**	**520.97**	**393.36**	**1,129.72**	**688.09**	**191.41**	**152.90**	**109.29**	**36.04**	**49.07**
Miscellaneous	1.52	1.23	26.33	38.30	9.92	170.21	128.05	31.11	1.92	0.58	0.04	4.27
Total catch	**1,011.92**	**1,688.00**	**1,168.00**	**1,066.00**	**990.00**	**1,472.00**	**1,100.00**	**1,534.77**	**582.46**	**471.62**	**394.85**	**1,302.39**

Appendix A Table 1. -- Continued.

Station	AZ0504	A-04	B-03	C-18	D-18	E-18	F-18	G-18	H-18	I-18	J-18	K-18
Start date and time	6/19/09 9:58	6/19/09 13:13	6/19/09 17:05	6/20/09 7:16	6/20/09 10:14	6/20/09 14:31	6/20/09 17:10	6/20/09 19:51	6/21/09 7:10	6/21/09 9:43	6/21/09 12:19	6/21/09 14:44
Haul number	78.00	79.00	80.00	81.00	82.00	84.00	85.00	86.00	87.00	88.00	89.00	90.00
Start latitude	5449.91	5459.93	5519.65	5541.04	5559.78	5620.66	5638.76	5658.58	5719.14	5738.67	5759.05	5818.72
Start longitude	16629.25	16616.84	16739.37	16948.17	16946.06	16943.26	16942.67	16939.53	16937.93	16936.11	16933.59	16931.60
End latitude	5450.27	5500.31	5520.89	5539.56	5601.10	5620.24	5640.26	5700.13	5720.65	5740.08	5800.51	5820.20
End longitude	16626.66	16614.20	16739.53	16948.79	16944.87	16945.77	16942.77	16939.87	16938.22	16935.76	16933.80	16931.39
Bottom depth (m)	154	130	133	136	151	152	108	83	75	71	70	66
Duration (h)	0.51	0.52	0.42	0.52	0.50	0.52	0.50	0.54	0.52	0.49	0.50	0.50
Distance fished (km)	2.86	2.91	2.30	2.81	2.73	2.71	2.79	2.90	2.81	2.64	2.71	2.75
Net width (m)	18.17	18.01	18.23	18.06	17.25	17.68	17.08	16.42	16.89	15.91	16.48	16.74
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0.00	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	27.32	13.68	--	--	27.55	40.99	20.88	22.63	9.99	24.87	4.12	9.60
Skates	43.65	0.06	0.65	--	0.08	62.26	0.31	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**70.97**	**13.74**	**0.65**	**--**	**27.63**	**103.25**	**21.19**	**22.63**	**9.99**	**24.87**	**4.12**	**9.60**
Alaska plaice	--	--	--	--	--	--	--	4.69	3.95	11.77	11.05	139.13
Arrowtooth flounder	131.83	563.59	109.96	79.46	186.24	452.60	96.13	2.40	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	0.01	--	0.01
Pacific halibut	--	--	--	19.70	0.71	9.00	16.78	15.20	6.77	10.16	6.92	10.18
Rock sole	--	--	--	1.05	0.34	0.33	3.09	304.26	21.89	21.29	16.32	17.34
Yellowfin sole	--	--	--	--	--	--	--	8.68	13.70	50.78	60.41	133.64
Other flatfish	19.53	8.28	7.60	20.52	67.74	15.00	11.02	1.78	--	--	--	--
Total flatfish	**151.36**	**571.88**	**117.57**	**120.73**	**255.03**	**476.93**	**127.02**	**337.01**	**46.31**	**94.01**	**94.69**	**300.30**
Walleye pollock	68.00	145.97	1.31	293.63	9.60	10.78	877.37	61.74	30.28	31.18	2.49	1.02
Pacific cod	20.72	9.61	--	66.79	69.90	24.64	55.33	204.00	15.94	22.71	29.51	42.27
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	1.70	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	0.14	--	--	--	0.62	--	--	--	--	--
Pacific herring	--	--	--	--	--	--	--	--	--	0.35	--	--
Pacific ocean perch	1.16	--	--	--	--	--	--	--	--	--	--	--
Sculpins	0.04	0.75	0.61	0.08	7.89	24.13	15.12	39.30	1.70	1.93	7.11	5.15
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	8.56	0.30	4.25	0.28	3.72	--	0.54	6.27	1.38	3.92	1.05	0.46
Total roundfish	**98.48**	**158.33**	**6.31**	**360.77**	**91.11**	**59.55**	**948.99**	**311.31**	**49.31**	**60.09**	**40.15**	**48.90**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	130.64	113.21	25.40	2.78	24.18	26.77	3.56	73.51	3.19	2.00	0.73	2.51
Tanner crab, opilio	6.84	3.32	2.03	--	2.00	13.34	84.92	53.76	5.45	26.60	3.31	20.40
Other crab	2.67	1.46	1.33	0.64	3.40	2.93	16.63	16.22	19.08	135.55	107.81	71.73
Shrimp	0.70	1.09	0.36	0.11	0.02	0.78	--	--	0.01	--	0.24	0.00
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	0.05	0.02	--	--	--	--	--	--	--
Snails	13.11	10.44	2.95	6.80	4.81	1.03	20.86	3.55	0.79	1.75	57.08	35.89
Starfish	1.62	0.29	--	0.02	3.66	0.61	0.25	49.58	38.66	49.40	155.03	111.78
Other invertebrates	36.62	12.42	9.13	29.51	33.19	37.30	44.02	28.08	129.39	649.76	990.32	62.41
Total invertebrates	**192.19**	**142.24**	**41.20**	**39.89**	**71.28**	**82.76**	**170.23**	**224.70**	**196.58**	**865.06**	**1,314.51**	**304.72**
Miscellaneous	1.81	0.05	--	1.37	0.79	0.60	0.70	13.47	8.93	70.55	46.85	9.90
Total catch	**515.06**	**910.83**	**193.70**	**534.03**	**593.91**	**724.70**	**1,284.66**	**963.54**	**315.48**	**1,120.00**	**1,501.00**	**676.71**

Appendix A Table 1. -- Continued.

Station	L-18	M-18	M-01	N-01	N-18	O-18	P-19	Q-19	Q-20	P-20	O-20	N-20
Start date and time	6/21/09 17:07	6/22/09 7:51	6/22/09 10:32	6/22/09 13:11	6/22/09 15:38	6/22/09 17:59	6/23/09 7:04	6/23/09 9:27	6/23/09 12:03	6/23/09 14:34	6/23/09 17:03	6/24/09 7:07
Haul number	91.00	92.00	93.00	94.00	95.00	96.00	97.00	98.00	99.00	100.00	101.00	102.00
Start latitude	5838.85	5859.16	5900.09	5918.67	5920.20	5938.47	5959.83	6018.57	6019.96	6000.76	5941.70	5920.61
Start longitude	16930.25	16929.12	16805.06	16804.73	16928.32	16922.72	17040.18	17038.59	17000.82	17001.36	17003.56	17008.61
End latitude	5840.32	5900.40	5859.69	5920.15	5920.31	5939.98	6001.32	6020.10	6019.71	5959.28	5940.26	5919.74
End longitude	16930.20	16927.36	16807.76	16804.43	16925.40	16923.13	17039.76	17039.02	17157.88	17001.37	17003.88	17007.99
Bottom depth (m)	55	47	42	41	42	40	47	45	53	55	57	61
Duration (h)	0.50	0.52	0.49	0.51	0.50	0.50	0.52	0.52	0.50	0.50	0.49	0.35
Distance fished (km)	2.73	2.84	2.70	2.77	2.78	2.83	2.79	2.86	2.76	2.73	2.69	1.72
Net width (m)	15.70	15.71	15.48	15.40	14.88	14.81	16.22	16.22	16.34	16.27	15.01	17.36
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12
Alaska skates	24.55	108.47	6.08	36.84	85.95	50.50	78.73	41.53	24.54	3.26	53.37	37.01
Skates	0.04	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**24.59**	**108.47**	**6.08**	**36.84**	**85.95**	**50.50**	**78.73**	**41.53**	**24.54**	**3.26**	**53.37**	**37.01**
Alaska plaice	270.08	292.46	86.16	47.24	36.65	28.10	148.58	166.02	366.46	658.80	238.32	219.58
Arrowtooth flounder	--	--	--	--	--	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	0.01	0.01
Pacific halibut	16.46	23.75	95.54	17.72	25.98	20.82	--	0.52	--	--	1.18	2.57
Rock sole	74.66	218.83	82.04	25.60	66.49	29.60	85.79	37.83	1.66	5.57	5.27	18.80
Yellowfin sole	202.83	122.49	136.14	237.14	98.66	117.66	97.72	85.94	61.98	271.79	168.76	53.67
Other flatfish	--	--	--	--	--	--	--	--	--	0.60	0.14	0.02
Total flatfish	**564.03**	**657.53**	**399.88**	**327.70**	**227.78**	**196.18**	**332.09**	**290.31**	**430.10**	**936.77**	**413.67**	**294.65**
Walleye pollock	11.67	19.72	1.39	4.39	16.03	9.69	4.82	10.47	7.01	0.02	1.16	1.89
Pacific cod	6.32	12.19	15.50	1.55	18.74	39.30	12.52	3.80	0.64	4.38	5.01	8.17
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	0.19	--	--	0.11
Pacific herring	--	0.27	--	--	0.33	--	0.84	0.11	0.35	2.10	0.71	1.64
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	9.51	20.26	12.03	13.74	19.94	18.08	8.84	12.93	6.13	5.62	3.34	5.40
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	7.95	2.98	0.13	0.87	2.90	2.21	5.15	2.96	1.42	1.01	0.57	4.50
Total roundfish	**35.45**	**55.42**	**29.05**	**20.56**	**57.94**	**69.28**	**32.18**	**30.26**	**15.74**	**13.12**	**10.79**	**21.71**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	10.25	2.24	6.12	3.78	6.24	--	--	--	--	1.25	--
Tanner crab, bairdi	2.69	1.39	--	--	--	--	--	--	--	--	0.61	2.66
Tanner crab, opilio	14.14	3.72	--	--	0.40	--	0.19	1.17	104.31	41.73	53.47	27.98
Other crab	38.60	15.45	5.85	10.36	7.39	12.03	64.89	77.84	33.88	18.63	18.82	21.33
Shrimp	--	--	--	--	--	0.00	0.02	0.00	0.01	--	0.00	0.01
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	27.49	9.27	6.32	6.56	11.06	19.48	--	16.16	23.87	18.74	19.70	43.55
Starfish	327.21	93.33	127.01	175.42	60.48	390.49	112.66	110.08	68.98	27.85	148.93	309.79
Other invertebrates	111.32	22.96	8.58	6.80	8.74	10.10	244.16	168.09	66.71	113.20	231.81	57.92
Total invertebrates	**521.45**	**156.36**	**150.00**	**205.26**	**91.86**	**438.33**	**421.93**	**373.34**	**297.76**	**220.15**	**474.59**	**463.24**
Miscellaneous	17.30	5.72	1.23	2.27	1.49	4.75	53.36	41.17	35.00	24.29	1.09	12.70
Total catch	**1,166.00**	**983.61**	**586.24**	**592.63**	**465.28**	**759.04**	**920.34**	**778.29**	**804.12**	**1,206.00**	**956.22**	**834.01**

Appendix A Table 1. -- Continued.

Station	M-20	L-20	K-20	J-20	JI2019	I-20	IH2019	H-20	HG2019	G-21	GF2120	F-20
Start date and time	6/24/09 9:37	6/24/09 12:16	6/24/09 14:53	6/25/09 7:05	6/25/09 9:14	6/25/09 11:22	6/25/09 13:23	6/25/09 15:50	6/25/09 18:00	6/26/09 7:16	6/26/09 9:54	6/26/09 12:20
Haul number	103.00	104.00	105.00	106.00	107.00	108.00	109.00	110.00	111.00	112.00	113.00	114.00
Start latitude	5901.32	5840.92	5821.36	5800.47	5751.21	5740.84	5730.34	5721.05	5711.09	5659.76	5650.15	5640.40
Start longitude	17009.76	17013.39	17015.37	17018.25	17037.85	17022.01	17038.09	17025.14	17040.12	17150.57	17003.76	17028.92
End latitude	5859.85	5839.46	5819.89	5759.03	5749.74	5739.58	5728.92	5719.58	5709.71	5700.25	5650.29	5639.59
End longitude	17009.88	17013.30	17015.11	17018.80	17038.36	17020.51	17038.81	17024.35	17041.11	17147.96	17006.42	17031.31
Bottom depth (m)	64	67	70	70	68	71	71	64	73	70	73	80
Duration (h)	0.50	0.50	0.49	0.50	0.51	0.50	0.50	0.51	0.52	0.52	0.50	0.52
Distance fished (km)	2.72	2.69	2.72	2.72	2.77	2.78	2.73	2.83	2.75	2.79	2.73	2.88
Net width (m)	16.05	16.89	16.01	16.55	17.10	16.89	16.89	16.39	16.03	16.87	16.88	16.25
Net measured?	Y	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
Performance	0.00	0.00	6.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	70.40	23.38	21.01	38.19	51.16	35.78	18.91	15.60	0.58	59.53	50.20	49.16
Skates	--	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**70.40**	**23.38**	**21.01**	**38.19**	**51.16**	**35.78**	**18.91**	**15.60**	**0.58**	**59.53**	**50.20**	**49.16**
Alaska plaice	374.52	391.14	132.06	113.73	67.66	18.30	--	67.39	--	9.07	--	4.12
Arrowtooth flounder	--	--	--	--	--	--	--	9.39	2.56	27.20	57.40	349.81
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	0.03	0.06	0.03	--	0.02	--	--	--	--	--	--	--
Pacific halibut	19.40	4.56	10.68	19.55	17.52	3.65	--	3.94	5.66	21.84	23.26	56.40
Rock sole	96.60	79.76	40.14	64.89	308.76	50.62	49.67	1,667.77	45.40	183.18	343.22	725.88
Yellowfin sole	185.03	199.78	39.50	43.20	169.66	115.30	8.41	234.18	20.56	209.05	--	3.49
Other flatfish	--	--	--	--	--	--	--	9.39	2.49	--	--	7.25
Total flatfish	**675.57**	**675.29**	**222.41**	**241.37**	**563.62**	**187.87**	**58.08**	**1,992.05**	**76.67**	**450.33**	**423.87**	**1,146.95**
Walleye pollock	34.07	32.31	17.91	6.63	8.67	9.98	7.90	83.35	112.02	280.46	635.24	619.37
Pacific cod	80.65	137.19	29.76	25.78	17.57	9.69	62.14	50.80	96.43	69.33	110.41	72.44
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	0.39	--	0.29	--	0.49	0.19	--	0.49	--	--	--
Pacific herring	0.40	0.98	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	26.28	15.81	4.60	1.69	12.85	0.86	21.55	27.53	0.68	98.11	117.68	460.40
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	2.19	1.86	0.21	2.73	6.31	5.45	3.33	52.00	10.04	135.09	10.99	68.44
Total roundfish	**143.60**	**188.55**	**52.49**	**37.11**	**45.41**	**26.46**	**95.11**	**213.68**	**219.66**	**582.98**	**874.32**	**1,220.65**
Blue king crab	--	--	--	--	--	--	3.57	--	0.01	--	--	--
Red king crab	--	--	--	--	--	--	--	14.54	--	97.13	--	--
Tanner crab, bairdi	0.21	0.63	0.46	1.18	1.91	2.40	9.20	5.14	24.83	40.08	64.97	4.93
Tanner crab, opilio	29.56	108.69	23.15	82.41	18.24	25.97	43.94	16.81	59.84	14.54	8.31	2.67
Other crab	92.15	16.90	48.86	233.82	266.70	166.08	152.70	9.83	78.25	49.71	7.53	102.51
Shrimp	--	0.01	--	--	--	0.01	0.27	--	0.31	0.02	--	--
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	124.79	13.04	16.30	95.54	53.13	6.46	3.31	--	0.16	18.40	11.32	47.06
Starfish	599.11	118.44	44.34	203.03	130.64	115.52	94.08	333.55	49.14	216.10	50.16	190.93
Other invertebrates	187.89	433.35	236.08	130.14	123.25	128.36	651.41	46.92	260.08	300.17	9.48	107.19
Total invertebrates	**1,033.72**	**691.06**	**369.19**	**746.11**	**593.87**	**444.79**	**958.47**	**426.79**	**472.62**	**736.15**	**151.78**	**455.29**
Miscellaneous	59.69	9.75	11.04	57.17	48.71	94.06	153.69	5.18	123.75	84.87	4.80	66.41
Total catch	**1,990.00**	**1,594.00**	**678.00**	**1,122.00**	**1,304.00**	**790.89**	**1,288.00**	**2,683.39**	**897.60**	**2,402.00**	**1,824.00**	**3,011.25**

Appendix A Table 1. -- Continued.

Station	GF2019	G-20	HG2221	G-22	GF2221	HG2120	H-21	H-22	IH2221	I-22	JI2221	J-22
Start date and time	6/26/09 14:42	6/26/09 16:42	6/27/09 7:08	6/27/09 9:25	6/27/09 11:35	6/27/09 14:49	6/27/09 17:11	6/28/09 7:33	6/28/09 9:41	6/28/09 11:44	6/28/09 14:15	6/28/09 16:25
Haul number	115.00	116.00	117.00	118.00	119.00	120.00	121.00	122.00	123.00	124.00	125.00	126.00
Start latitude	5649.41	5658.88	5707.81	5700.23	5650.36	5708.82	5719.77	5719.53	5730.04	5739.89	5750.05	5759.36
Start longitude	17042.26	17027.21	17130.78	17112.85	17127.83	17005.18	17147.14	17108.73	17124.97	17106.10	17123.96	17103.58
End latitude	5650.91	5659.92	5706.74	5658.74	5650.42	5710.13	5720.73	5721.00	5731.57	5741.33	5750.23	5800.30
End longitude	17041.82	17025.16	17132.56	17113.06	17130.58	17006.39	17145.03	17108.17	17124.85	17105.56	17121.14	17101.48
Bottom depth (m)	80	60	52	96	102	50	56	84	74	86	78	86
Duration (h)	0.52	0.51	0.51	0.51	0.52	0.51	0.50	0.51	0.52	0.49	0.52	0.50
Distance fished (km)	2.82	2.84	2.69	2.77	2.81	2.71	2.77	2.78	2.82	2.70	2.81	2.69
Net width (m)	17.62	16.60	16.27	17.29	17.66	15.07	16.56	16.74	16.83	17.29	17.15	17.74
Net measured?	Y	Y	N	N	Y	Y	Y	Y	Y	N	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	7.62	128.61	72.62	23.37	0.66	121.89	31.47	89.22	70.28	59.20	27.40	23.83
Skates	--	--	--	--	2.21	--	--	5.08	0.77	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**7.62**	**128.61**	**72.62**	**23.37**	**2.87**	**121.89**	**31.47**	**94.30**	**71.05**	**59.20**	**27.40**	**23.83**
Alaska plaice	--	22.44	--	--	--	--	--	7.23	3.20	4.50	--	--
Arrowtooth flounder	103.45	76.88	7.75	48.35	159.16	--	--	75.43	41.40	6.44	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	8.70	--	--	--	--	--	--	--
Pacific halibut	2.13	62.76	46.43	--	--	58.34	77.01	38.83	15.86	3.42	9.68	5.58
Rock sole	74.92	6,185.41	2,003.99	--	--	3,877.05	1,767.59	75.70	427.56	424.46	3.73	22.00
Yellowfin sole	9.72	86.04	37.26	--	--	16.56	1.81	--	160.50	4.97	0.56	3.68
Other flatfish	46.94	28.24	--	6.34	13.07	--	--	0.52	--	--	--	--
Total flatfish	**237.16**	**6,461.76**	**2,095.43**	**54.69**	**180.93**	**3,951.95**	**1,846.41**	**197.70**	**648.51**	**443.80**	**13.96**	**31.26**
Walleye pollock	1,097.09	605.47	0.27	2,500.91	81.05	0.13	--	454.50	642.34	489.33	179.25	30.03
Pacific cod	70.80	499.53	136.40	--	5.86	32.22	14.74	97.36	93.67	558.21	33.41	31.22
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	1.68	2.65	--	--	20.38	2.01	4.25	--	2.91
Pacific herring	--	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	13.07	156.10	294.18	70.24	4.45	75.18	74.18	64.57	29.24	16.35	--	--
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	14.85	76.04	63.24	0.57	21.84	28.85	0.47	5.42	12.76	9.38	0.72	0.42
Total roundfish	**1,195.81**	**1,337.14**	**494.08**	**2,573.40**	**115.85**	**136.38**	**89.39**	**642.23**	**780.02**	**1,077.52**	**213.38**	**64.58**
Blue king crab	--	13.18	--	--	--	1.27	--	--	--	--	--	--
Red king crab	1.07	5.66	40.66	--	--	8.84	--	--	--	--	--	--
Tanner crab, bairdi	3.06	21.41	224.10	20.47	32.43	2.51	0.67	34.35	7.21	30.24	2.43	4.08
Tanner crab, opilio	5.69	11.12	0.76	377.89	4.91	--	0.11	--	65.60	302.82	69.62	81.67
Other crab	79.73	5.07	16.13	--	99.56	1.35	--	158.41	468.36	14.73	243.20	79.09
Shrimp	--	--	--	--	0.57	--	--	--	--	--	--	0.24
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	23.30	--	20.58	--	14.91	0.75	--	69.42	103.18	34.94	62.27	24.89
Starfish	68.39	179.90	115.01	25.03	106.65	342.84	590.72	4.74	137.45	5.57	137.99	111.98
Other invertebrates	53.38	38.19	8.55	9.10	27.14	126.20	15.09	216.88	365.64	331.83	22.93	17.90
Total invertebrates	**234.62**	**274.53**	**425.79**	**432.48**	**286.18**	**483.76**	**606.59**	**483.81**	**1,147.43**	**720.13**	**538.45**	**319.85**
Miscellaneous	85.80	6.96	2.09	--	25.93	1.02	0.15	178.71	872.60	67.17	224.81	15.03
Total catch	**1,820.94**	**8,221.23**	**3,090.00**	**3,191.06**	**679.70**	**4,695.00**	**2,574.00**	**2,770.52**	**3,784.00**	**3,780.00**	**1,018.00**	**455.41**

Appendix A Table 1. -- Continued.

Station	K-22	L-22	L-23	K-23	J-25	K-25	L-25	M-25	N-25	O-22	P-22	Q-22
Start date and time	6/29/09 9:57	6/29/09 12:22	6/29/09 15:06	6/29/09 17:55	7/1/09 7:14	7/1/09 9:43	7/1/09 12:16	7/1/09 15:40	7/1/09 18:14	7/2/09 7:13	7/2/09 9:54	7/2/09 12:33
Haul number	128.00	129.00	130.00	131.00	132.00	133.00	134.00	135.00	136.00	137.00	138.00	139.00
Start latitude	5820.75	5839.86	5839.72	5820.92	5759.19	5819.60	5839.38	5859.65	5919.19	5938.89	5959.22	6019.41
Start longitude	17259.63	17254.92	17218.20	17221.55	17307.91	17303.86	17459.29	17454.61	17451.20	17245.24	17241.66	17237.39
End latitude	5822.28	5841.16	5839.22	5819.40	5800.01	5821.00	5840.74	5901.13	5920.74	5940.37	6000.68	6020.80
End longitude	17259.51	17253.69	17215.43	17221.33	17307.57	17302.34	17457.67	17453.30	17451.13	17244.16	17240.72	17235.97
Bottom depth (m)	83	83	93	96	109	109	112	107	100	73	69	66
Duration (h)	0.51	0.50	0.52	0.52	0.29	0.54	0.54	0.57	0.52	0.54	0.51	0.52
Distance fished (km)	2.83	2.69	2.84	2.82	1.57	3.00	2.96	3.02	2.88	2.92	2.84	2.89
Net width (m)	17.59	18.05	17.59	17.59	18.29	17.29	17.50	17.93	18.05	17.76	17.76	17.60
Net measured?	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	15.27	5.68	70.19	19.86	39.31	25.47	97.92	163.43	125.34	29.69	0.84	11.91
Skates	--	--	--	--	4.34	--	--	3.06	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**15.27**	**5.68**	**70.19**	**19.86**	**43.65**	**25.47**	**97.92**	**166.49**	**125.34**	**29.69**	**0.84**	**11.91**
Alaska plaice	0.70	2.34	144.99	3.18	--	--	6.00	16.39	2.58	3.76	14.04	13.91
Arrowtooth flounder	--	--	--	--	19.31	5.75	7.84	4.82	5.01	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	0.24	0.30	--	2.74	14.43	--	2.60	0.11	--	0.00
Pacific halibut	3.32	2.54	3.94	--	7.20	2.17	64.32	--	--	--	--	--
Rock sole	0.16	1.12	88.72	17.68	1.32	6.84	36.54	8.46	8.53	1.04	1.00	0.53
Yellowfin sole	--	1.07	5.84	0.34	--	--	--	--	--	1.32	--	0.32
Other flatfish	--	--	--	--	13.30	5.75	6.03	4.82	5.01	--	--	--
Total flatfish	**4.18**	**7.07**	**243.73**	**21.50**	**41.13**	**23.24**	**135.15**	**34.49**	**23.73**	**6.23**	**15.04**	**14.76**
Walleye pollock	5.79	3.70	41.81	91.88	302.99	802.14	1,675.82	806.56	82.49	0.02	0.07	0.03
Pacific cod	0.71	12.27	54.78	38.77	6.83	21.93	74.54	91.69	65.37	0.04	0.02	6.14
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	1.60	0.86	--	0.50	1.21	2.28	21.02	0.93	2.55	0.14	--	1.14
Pacific herring	--	0.18	--	--	--	--	--	--	--	0.02	0.28	2.66
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	0.08	--	6.06	--	7.40	10.18	18.30	9.69	9.13	1.03	0.03	3.68
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	1.21	0.09	0.10	0.05	--	0.09	6.20	0.10	0.20	0.84	0.09	0.16
Total roundfish	**9.40**	**17.09**	**102.75**	**131.20**	**318.44**	**836.63**	**1,795.88**	**908.97**	**159.75**	**2.09**	**0.49**	**13.81**
Blue king crab	--	--	--	--	--	--	--	--	6.99	--	--	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	0.96	--	0.27	2.16	2.78	0.48	20.15	5.59	16.55	0.09	--	--
Tanner crab, opilio	50.84	35.12	50.51	59.56	33.31	72.48	97.50	50.42	36.71	65.34	45.88	97.68
Other crab	21.41	7.11	9.82	24.25	29.30	130.02	35.94	109.49	45.76	57.64	30.46	4.39
Shrimp	0.02	0.02	--	0.16	1.51	0.38	4.23	--	1.63	0.02	0.02	0.01
Octopus	--	--	--	--	--	0.01	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	40.22	23.11	19.15	100.43	25.04	72.42	23.59	44.51	32.88	35.33	12.85	10.99
Starfish	22.51	40.51	94.92	75.29	11.55	1.97	14.62	23.97	27.93	15.06	14.38	7.51
Other invertebrates	75.87	59.97	85.93	19.80	7.59	44.40	103.85	98.88	93.44	11.32	3.10	5.65
Total invertebrates	**211.84**	**165.84**	**260.60**	**281.65**	**111.07**	**322.16**	**299.88**	**332.86**	**261.89**	**184.80**	**106.70**	**126.22**
Miscellaneous	12.01	2.93	4.55	4.61	11.88	41.67	23.43	45.80	19.51	11.73	5.53	2.96
Total catch	**252.69**	**198.63**	**719.49**	**463.12**	**539.41**	**1,271.75**	**2,418.03**	**1,516.82**	**599.61**	**235.24**	**128.94**	**172.94**

Appendix A Table 1. -- Continued.

Station	R-22	S-22	S-23	S-24	S-25	S-26	R-26	P-24	PO2524	O-24	ON2524	O-25
Start date and time	7/2/09 15:00	7/2/09 17:28	7/4/09 7:13	7/4/09 9:54	7/4/09 12:42	7/4/09 15:24	7/4/09 18:19	7/5/09 7:21	7/5/09 10:08	7/5/09 12:57	7/5/09 15:09	7/5/09 17:53
Haul number	140.00	141.00	142.00	143.00	144.00	145.00	146.00	147.00	148.00	149.00	150.00	151.00
Start latitude	6039.28	6059.26	6100.27	6100.81	6059.53	6100.92	6040.75	6000.53	5950.14	5940.75	5930.02	5940.00
Start longitude	17233.67	17230.85	17351.55	17310.80	17430.44	17549.01	17552.66	17322.75	17304.85	17326.73	17308.34	17445.18
End latitude	6040.76	6100.30	6100.76	6059.30	6059.95	6059.43	6039.25	5959.86	5948.89	5939.54	5931.02	5938.52
End longitude	17232.75	17230.26	17348.55	17310.19	17427.20	17549.23	17552.59	17320.50	17306.58	17324.76	17306.02	17445.86
Bottom depth (m)	63	61	64	67	75	83	87	66	80	84	93	96
Duration (h)	0.52	0.36	0.52	0.52	0.53	0.52	0.51	0.44	0.52	0.52	0.52	0.51
Distance fished (km)	2.87	1.99	2.86	2.85	3.03	2.78	2.78	2.44	2.84	2.91	2.87	2.81
Net width (m)	19.95	19.42	18.28	20.07	18.47	18.31	18.18	17.24	17.90	17.92	17.46	17.94
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0.00	5.40	0.00	3.30	0.00	0.00	0.00	1.12	4.10	0.00	0.00	0.00
Alaska skates	25.10	--	8.40	43.04	2.75	38.01	28.28	6.57	22.78	11.97	9.93	31.78
Skates	--	--	--	--	--	--	--	--	--	--	--	0.04
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**25.10**	**--**	**8.40**	**43.04**	**2.75**	**38.01**	**28.28**	**6.57**	**22.78**	**11.97**	**9.93**	**31.82**
Alaska plaice	8.02	3.78	7.04	17.21	0.76	1.16	--	46.73	1.76	0.49	1.13	--
Arrowtooth flounder	--	--	--	--	--	--	--	--	--	--	--	0.02
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	0.10	0.03	0.13	0.16	0.25	0.01	0.10	0.42	1.48	0.04
Pacific halibut	1.01	--	--	2.24	--	--	--	--	2.28	0.82	2.21	86.91
Rock sole	0.00	--	0.16	4.04	--	--	12.26	13.61	164.00	35.06	2.99	0.33
Yellowfin sole	1.68	1.23	0.85	31.66	1.21	--	--	1.28	0.55	0.31	--	--
Other flatfish	--	--	--	0.01	--	--	0.03	--	--	--	--	0.02
Total flatfish	**10.71**	**5.01**	**8.14**	**55.20**	**2.10**	**1.32**	**12.54**	**61.63**	**168.69**	**37.10**	**7.81**	**87.33**
Walleye pollock	0.02	0.07	0.07	0.24	0.09	0.10	10.98	0.04	0.05	17.02	74.38	256.27
Pacific cod	0.02	0.11	0.25	4.45	0.22	0.03	23.90	2.69	72.06	134.69	95.16	230.82
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	0.94	1.56	1.80	7.80	0.97	--	0.16	0.13	0.24	0.91	0.54	0.30
Pacific herring	0.37	0.37	0.45	0.19	2.04	0.79	0.26	0.13	--	0.13	0.24	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	0.03	--	0.63	2.84	0.82	0.60	6.78	14.41	10.96	5.00	12.00	1.80
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	0.26	0.41	0.21	1.14	0.45	0.50	0.08	3.17	2.66	0.15	0.30	0.58
Total roundfish	**1.64**	**2.52**	**3.40**	**16.66**	**4.60**	**2.01**	**42.16**	**20.58**	**85.97**	**157.90**	**182.61**	**489.77**
Blue king crab	1.76	--	--	--	1.48	4.63	2.32	3.53	5.28	7.62	12.82	19.00
Red king crab	--	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	--	--	--	--	--	--	--	0.09	0.01	0.34	0.16	0.22
Tanner crab, opilio	316.28	355.83	30.80	55.05	24.79	81.83	71.71	52.92	32.39	32.44	136.05	44.77
Other crab	1.43	2.18	1.83	0.93	2.24	0.24	0.47	58.90	44.63	52.94	9.45	4.28
Shrimp	0.00	--	0.07	0.01	0.01	0.05	0.05	0.09	--	0.03	1.19	0.96
Octopus	--	--	--	--	--	--	--	--	0.84	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	1.38	6.18	4.33	1.11	0.61	0.53	0.02	21.20	29.00	6.10	25.48	18.49
Starfish	7.19	4.07	58.43	35.49	9.28	12.02	4.74	5.56	8.84	24.89	36.92	5.61
Other invertebrates	3.84	9.12	3.59	24.09	1.06	5.11	16.07	14.67	57.58	105.83	28.98	22.11
Total invertebrates	**331.89**	**377.37**	**99.05**	**116.68**	**39.46**	**104.43**	**95.38**	**156.97**	**178.57**	**230.19**	**251.05**	**115.43**
Miscellaneous	0.19	0.86	0.42	0.17	0.46	0.23	0.05	25.14	17.37	23.52	4.00	1.84
Total catch	**369.79**	**386.24**	**122.05**	**251.51**	**52.42**	**148.21**	**183.29**	**275.40**	**482.82**	**468.81**	**456.83**	**726.19**

Appendix A Table 1. -- Continued.

Station	I-24	I-25	H-25	H-24	F-25	G-25	G-26	H-26	K-27	L-27	M-27	N-27
Start date and time	7/6/09 7:28	7/6/09 10:32	7/6/09 13:33	7/6/09 17:15	7/11/09 7:35	7/11/09 10:17	7/11/09 13:04	7/11/09 15:43	7/12/09 7:34	7/12/09 10:18	7/12/09 13:10	7/13/09 7:17
Haul number	152.00	153.00	154.00	155.00	156.00	157.00	158.00	159.00	160.00	161.00	162.00	163.00
Start latitude	5740.10	5741.19	5721.69	5720.01	5640.67	5700.27	5659.24	5719.28	5819.42	5839.56	5859.69	5918.83
Start longitude	17351.22	17311.32	17311.14	17352.10	17325.35	17321.63	17445.26	17439.10	17542.41	17544.33	17537.58	17534.49
End latitude	5740.85	5739.70	5720.19	5719.18	5642.13	5700.48	5700.66	5720.77	5820.88	5841.07	5901.09	5920.32
End longitude	17348.58	17310.64	17310.44	17354.65	17324.59	17318.91	17444.35	17438.35	17541.20	17543.39	17536.05	17533.85
Bottom depth (m)	108	119	117	109	134	122	141	122	162	157	126	120
Duration (h)	0.53	0.52	0.53	0.54	0.51	0.51	0.50	0.51	0.52	0.53	0.53	0.52
Distance fished (km)	2.97	2.85	2.87	3.00	2.82	2.79	2.78	2.86	2.95	2.95	2.98	2.81
Net width (m)	17.41	17.89	17.81	17.81	17.45	17.39	17.37	16.84	18.03	17.65	17.77	17.69
Net measured?	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	42.34	139.46	23.95	31.73	--	18.04	5.14	15.35	21.11	38.75	67.40	88.79
Skates	--	2.07	--	2.32	33.97	5.95	2.41	--	12.44	4.03	12.10	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**42.34**	**141.53**	**23.95**	**34.05**	**33.97**	**24.00**	**7.55**	**15.35**	**33.55**	**42.78**	**79.50**	**88.79**
Alaska plaice	--	--	--	--	--	--	--	--	--	--	--	--
Arrowtooth flounder	64.02	145.27	150.15	141.73	620.42	91.36	143.67	67.21	197.15	140.53	94.39	22.51
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	0.55	--	--	--	--	--	--	--	--	--	--	5.82
Pacific halibut	13.81	42.92	15.61	47.66	19.37	--	2.43	14.30	--	37.89	32.06	1.56
Rock sole	0.63	1.24	--	--	7.77	--	--	--	3.08	--	1.97	15.50
Yellowfin sole	--	--	--	--	--	--	--	--	--	--	--	--
Other flatfish	29.01	26.41	19.38	28.11	41.45	14.27	28.89	16.53	13.60	3.07	23.68	7.54
Total flatfish	**108.03**	**215.83**	**185.15**	**217.50**	**689.01**	**105.63**	**174.99**	**98.04**	**213.83**	**181.49**	**152.10**	**52.93**
Walleye pollock	429.87	753.07	1,125.14	2,433.95	0.01	1.90	0.03	6.70	--	4,546.71	220.15	767.86
Pacific cod	9.66	34.98	36.90	106.32	59.66	6.58	49.44	37.32	46.12	159.22	22.38	59.50
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	1.88	1.92	--	--	--	--	--	--	--	--	0.77	2.36
Pacific herring	--	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	2.81	--	--	--	--	--	--	--
Sculpins	12.34	11.34	0.03	--	1.02	22.71	5.66	0.03	6.22	1.02	5.29	20.62
Other rockfish	--	--	--	--	1.05	--	--	--	--	--	--	--
Other roundfish	3.27	1.45	--	--	0.01	0.03	0.29	0.05	4.06	2.59	2.01	0.47
Total roundfish	**457.02**	**802.75**	**1,162.07**	**2,540.27**	**64.56**	**31.22**	**55.42**	**44.10**	**56.40**	**4,709.54**	**250.61**	**850.82**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	1.55	0.78	0.35	0.40	2.47	0.96	1.05	5.33	2.79	4.11	5.22	1.18
Tanner crab, opilio	184.33	40.35	1.48	75.84	--	5.79	--	0.54	--	--	9.72	46.50
Other crab	140.06	54.17	7.26	3.99	5.46	6.62	14.71	43.27	7.40	16.07	96.18	51.54
Shrimp	0.43	0.93	0.07	2.03	0.05	0.97	0.22	0.10	0.01	0.22	0.46	3.40
Octopus	--	--	--	--	0.06	0.03	0.01	--	--	0.28	0.03	0.36
Squids	--	--	--	--	0.03	--	--	--	--	--	--	--
Snails	54.69	27.68	12.45	2.70	21.74	12.08	32.62	62.38	7.74	7.43	36.00	13.95
Starfish	27.58	3.98	2.29	--	4.09	0.36	16.16	0.29	2.12	0.11	5.99	6.33
Other invertebrates	52.24	12.67	41.13	40.11	298.22	248.37	285.91	854.70	84.34	2.05	60.06	47.60
Total invertebrates	**460.88**	**140.56**	**65.03**	**125.07**	**332.12**	**275.20**	**350.67**	**966.62**	**104.39**	**30.27**	**213.65**	**170.86**
Miscellaneous	54.90	6.85	3.06	0.48	6.52	3.03	2.84	12.36	1.04	3.18	12.70	10.34
Total catch	**1,149.01**	**1,324.41**	**1,444.12**	**2,920.11**	**1,151.27**	**458.62**	**639.02**	**1,152.99**	**443.28**	**4,989.08**	**723.58**	**1,181.54**

Appendix A Table 1. -- Continued.

Station	O-27	PO2726	P-27	QP2726	O-28	P-28	Q-28	R-28	S-28	T-28	T-29	U-29
Start date and time	7/13/09 9:57	7/13/09 12:20	7/13/09 14:45	7/13/09 16:51	7/14/09 7:15	7/14/09 11:25	7/14/09 17:39	7/15/09 7:14	7/15/09 9:58	7/15/09 13:23	7/15/09 16:14	7/15/09 18:45
Haul number	164.00	165.00	166.00	167.00	168.00	169.00	170.00	171.00	172.00	173.00	174.00	175.00
Start latitude	5939.55	5949.50	5958.93	6009.60	5938.65	5959.77	6019.38	6039.16	6059.56	6119.99	6119.58	6138.84
Start longitude	17533.26	17545.68	17522.90	17538.40	17652.61	17642.79	17635.43	17632.33	17626.41	17624.37	17741.97	17731.94
End latitude	5941.17	5951.13	6000.34	6011.16	5940.02	6001.11	6020.80	6040.56	6101.09	6119.71	6121.21	6140.37
End longitude	17532.98	17546.11	17524.50	17538.91	17654.18	17644.49	17636.70	17633.92	17626.89	17621.20	17742.17	17732.18
Bottom depth (m)	115	107	108	100	126	117	112	107	102	97	106	105
Duration (h)	0.53	0.55	0.55	0.52	0.53	0.52	0.53	0.54	0.52	0.53	0.54	0.52
Distance fished (km)	3.00	3.04	3.01	2.93	2.94	2.94	2.88	2.97	2.87	2.88	3.03	2.85
Net width (m)	17.63	17.81	17.77	17.91	18.23	18.11	17.75	18.22	17.92	18.38	19.81	19.69
Net measured?	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alaska skates	125.07	139.68	106.19	49.74	106.79	119.30	175.92	55.79	42.83	3.08	11.03	2.60
Skates	--	--	--	--	--	--	--	2.52	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**125.07**	**139.68**	**106.19**	**49.74**	**106.79**	**119.30**	**175.92**	**58.31**	**42.83**	**3.08**	**11.03**	**2.60**
Alaska plaice	0.69	--	--	--	2.81	1.44	--	1.43	--	--	--	--
Arrowtooth flounder	28.86	16.96	24.11	11.86	68.30	19.54	30.14	4.72	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	20.96	0.83	2.11	0.12	14.16	27.60	4.78	6.21	10.60	0.04	1.43	2.07
Pacific halibut	2.63	6.46	--	4.31	0.78	2.62	--	3.13	--	--	1.18	2.78
Rock sole	8.81	1.51	4.72	0.90	3.72	3.14	4.88	1.79	1.60	--	0.85	0.32
Yellowfin sole	--	--	--	--	--	--	--	--	--	--	--	--
Other flatfish	21.73	16.96	24.11	11.86	19.08	14.80	27.71	3.64	--	--	--	--
Total flatfish	**83.68**	**42.71**	**55.06**	**29.05**	**108.85**	**69.14**	**67.51**	**20.92**	**12.20**	**0.04**	**3.45**	**5.18**
Walleye pollock	496.27	1,079.00	1,021.68	320.42	532.88	264.14	313.59	209.15	106.17	--	4.10	2.83
Pacific cod	47.69	109.03	82.86	55.92	32.06	47.03	37.78	82.11	98.60	0.49	47.16	19.10
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	2.13	6.21	6.13	11.40	2.41	10.16	55.21	2.33	3.00	--	0.40	0.07
Pacific herring	--	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	25.90	6.35	12.56	15.14	0.37	7.71	10.83	2.31	32.49	0.05	3.42	1.17
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	--	--	0.11	0.55	0.20	1.06	0.01	0.52	0.06	0.29	0.02	0.04
Total roundfish	**571.99**	**1,200.59**	**1,123.33**	**403.43**	**567.92**	**330.09**	**417.42**	**296.42**	**240.32**	**0.82**	**55.10**	**23.21**
Blue king crab	1.03	0.56	5.50	7.60	--	--	--	0.78	--	--	0.60	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	0.60	0.01	0.01	0.06	2.73	1.54	2.52	0.10	--	0.01	0.03	--
Tanner crab, opilio	66.04	44.75	15.29	14.59	29.56	24.79	39.55	67.89	63.71	15.48	29.40	26.95
Other crab	50.42	72.56	22.88	7.44	12.77	28.43	14.47	0.29	5.53	0.26	0.82	0.38
Shrimp	0.56	3.04	0.56	0.44	2.10	0.35	0.45	0.05	0.18	0.03	0.13	0.01
Octopus	--	--	0.12	--	--	--	--	--	0.01	--	--	--
Squids	--	--	--	--	0.13	--	--	--	--	--	--	--
Snails	107.66	148.05	63.93	18.34	38.51	76.19	60.18	28.46	32.74	0.29	1.85	0.63
Starfish	16.62	295.45	48.94	23.65	6.51	8.62	37.09	19.14	7.47	0.96	0.31	0.30
Other invertebrates	18.46	9.40	14.55	16.77	18.87	10.70	21.12	5.95	26.73	8.40	12.07	10.10
Total invertebrates	**261.39**	**573.81**	**171.77**	**88.89**	**111.18**	**150.62**	**175.37**	**122.67**	**136.37**	**25.43**	**45.21**	**38.38**
Miscellaneous	19.81	8.04	9.05	1.00	3.88	3.22	4.69	1.41	3.01	0.12	0.31	0.07
Total catch	**1,071.10**	**1,998.96**	**1,472.11**	**584.89**	**921.18**	**681.42**	**1,045.26**	**502.61**	**464.38**	**29.68**	**125.84**	**82.28**

Appendix A Table 2. -- Haul and catch data for successfully completed tows by FV*Aldebaran* during the 2009 eastern Bering Sea bottom trawl survey.

Station	G-15	H-15	I-15	J-15	K-13	J-13	I-13	H-13	G-13	E-12	E-11
Start date and time	6/2/09 6:53	6/2/09 9:53	6/2/09 12:30	6/2/09 15:12	6/3/09 6:25	6/3/09 8:49	6/3/09 11:27	6/3/09 13:54	6/3/09 16:43	6/4/09 7:43	6/4/09 10:48
Haul number	2	3	4	5	6	7	8	9	10	12	13
Start latitude	5701.50	5719.43	5738.97	5758.67	5817.28	5800.85	5740.60	5719.85	5700.68	5620.14	5619.97
Start longitude	16052.43	16054.64	16058.60	16059.99	16001.48	16147.68	16143.52	16140.72	16140.88	16258.22	16224.07
End latitude	5703.12	5720.92	5740.46	5800.17	5815.77	5759.41	5739.06	5718.54	5659.75	5621.20	5619.95
End longitude	16052.40	16055.54	16057.50	15900.52	16001.42	16146.44	16142.80	16138.90	16138.47	16100.31	16221.13
Bottom depth (m)	35	50	47	39	41	51	55	62	63	55	64
Duration (h)	0.52	0.53	0.54	0.52	0.51	0.53	0.53	0.54	0.55	0.53	0.54
Distance fished (km)	3.00	2.90	2.97	2.83	2.79	2.94	2.93	3.03	2.99	2.91	3.04
Net width (m)	15.60	16.85	16.92	15.60	16.28	16.58	16.31	15.45	16.72	16.58	17.16
Net measured?	N	Y	Y	N	Y	N	Y	Y	Y	N	N
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	90.25	6.50	11.51	--	2.82	--	--	9.68	3.68	14.20	--
Skates	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**90.25**	**6.50**	**11.51**	**--**	**2.82**	**--**	**--**	**9.68**	**3.68**	**14.20**	**--**
Alaska plaice	--	--	--	0.18	18.88	239.17	46.08	27.62	8.76	56.79	13.34
Arrowtooth flounder	--	--	--	--	--	--	--	--	0.08	1.43	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	24.26	2.12	0.29	1.82	3.78	0.38	15.17	7.56	17.81	36.97	42.10
Rock sole	2,136.82	342.54	103.12	416.53	147.52	548.01	400.76	1,041.31	613.32	536.90	705.88
Yellowfin sole	2,030.75	157.26	78.54	179.22	589.67	712.50	171.05	660.43	338.47	1,481.26	213.73
Other flatfish	259.13	10.91	11.95	21.61	23.77	35.29	3.61	43.31	31.94	231.42	141.54
Total flatfish	**4,450.96**	**512.83**	**193.90**	**619.36**	**783.61**	**1,535.34**	**636.66**	**1,780.23**	**1,010.38**	**2,344.77**	**1,116.58**
Walleye pollock	0.04	3.56	0.06	--	0.08	0.71	14.93	2.86	9.96	372.03	38.73
Pacific cod	66.96	1.22	1.82	0.13	16.88	0.93	7.76	4.90	5.03	645.63	9.98
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	--	--	--
Pacific herring	--	--	--	--	1.88	--	--	0.48	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	37.57	14.90	7.32	17.86	56.46	25.07	2.99	9.94	15.17	27.54	26.78
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	1.40	1.73	6.54	0.52	6.91	10.41	2.36	1.62	2.36	6.12	2.72
Total roundfish	**105.98**	**21.41**	**15.75**	**18.51**	**82.21**	**37.12**	**28.04**	**19.80**	**32.52**	**1,051.32**	**78.21**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	2.40	42.31	--	--	2.08	4.92	44.01	40.08	93.12	48.25	111.03
Tanner crab, bairdi	--	--	--	--	--	--	--	--	1.52	1.07	3.66
Tanner crab, opilio	--	--	--	--	--	--	--	--	--	--	2.40
Other crab	3.07	1.80	0.69	0.19	1.09	3.13	8.84	6.49	11.50	16.78	2.03
Shrimp	--	0.01	--	--	0.07	--	0.01	--	0.00	0.01	--
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	--	0.90	0.22	--	--	1.28	4.34	9.11	1.11	9.57	1.69
Starfish	170.17	273.50	91.55	29.15	62.38	338.52	492.59	344.47	274.52	393.33	154.19
Other invertebrates	3.78	11.48	31.40	13.13	3.82	11.94	93.64	170.87	67.61	69.09	320.18
Total invertebrates	**179.41**	**330.00**	**123.87**	**42.47**	**69.43**	**359.79**	**643.43**	**571.02**	**449.39**	**538.12**	**595.18**
Miscellaneous	3.27	0.77	0.30	0.06	3.93	0.31	0.74	4.05	1.72	8.73	0.42
Total catch	**4,834.00**	**871.71**	**345.32**	**680.41**	**942.00**	**1,934.00**	**1,312.00**	**2,386.00**	**1,502.00**	**3,992.00**	**1,820.00**

Appendix A Table 2. -- Continued.

Station	F-11	G-11	H-11	I-11	J-11	J-10	K-09	J-09	I-09	H-09	G-09
Start date and time	6/4/09 13:42	6/4/09 16:20	6/5/09 6:47	6/5/09 9:22	6/5/09 11:55	6/5/09 15:03	6/5/09 18:10	6/6/09 6:41	6/6/09 10:23	6/6/09 12:53	6/6/09 15:23
Haul number	14	15	16	17	18	19	20	21	22	23	24
Start latitude	5639.90	5659.07	5719.18	5739.80	5759.22	5800.12	5819.66	5801.34	5740.75	5720.86	5701.04
Start longitude	16223.83	16225.42	16227.14	16230.34	16231.45	16353.54	16317.84	16314.87	16315.07	16313.90	16311.75
End latitude	5641.48	5700.63	5720.68	5741.38	5800.75	5800.87	5821.01	5759.82	5739.22	5719.26	5659.41
End longitude	16224.11	16224.92	16227.67	16230.43	16230.92	16351.02	16316.15	16314.80	16314.95	16313.28	16311.21
Bottom depth (m)	87	68	57	54	55	37	32	42	44	49	60
Duration (h)	0.53	0.53	0.52	0.53	0.52	0.52	0.54	0.52	0.51	0.55	0.56
Distance fished (km)	2.93	2.94	2.83	2.91	2.89	2.87	3.00	2.82	2.84	3.02	3.06
Net width (m)	17.00	17.16	16.58	16.58	16.29	15.76	16.23	16.07	16.42	16.60	17.34
Net measured?	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	12.90	4.22	16.88	--	7.02	11.26	--	3.56	13.76	15.40	19.12
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**12.90**	**4.22**	**16.88**	**--**	**7.02**	**11.26**	**--**	**3.56**	**13.76**	**15.40**	**19.12**
Alaska plaice	60.29	63.64	143.90	170.65	256.33	820.08	71.02	245.97	72.65	71.21	92.38
Arrowtooth flounder	--	0.28	--	--	--	--	--	--	--	--	0.68
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	53.36	22.47	34.19	22.83	5.45	14.87	2.60	5.73	10.85	16.43	26.96
Rock sole	152.35	382.19	455.11	237.05	565.81	401.64	1,014.72	613.40	692.34	775.04	672.20
Yellowfin sole	217.27	152.45	658.40	1,527.49	590.20	2,404.60	429.54	2,813.17	312.03	119.81	116.32
Other flatfish	--	2.76	12.59	8.32	10.15	304.71	39.77	9.76	--	9.06	--
Total flatfish	**483.26**	**623.79**	**1,304.18**	**1,966.33**	**1,427.94**	**3,945.89**	**1,557.65**	**3,688.03**	**1,087.87**	**991.55**	**908.54**
Walleye pollock	60.52	13.25	66.56	22.12	0.02	3.90	--	15.63	4.82	17.43	22.96
Pacific cod	44.48	2.58	30.28	8.21	0.78	--	--	17.50	31.88	119.20	38.76
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	--	--	--
Pacific herring	--	--	0.52	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	9.42	16.74	33.14	19.25	15.75	15.12	14.77	9.84	12.01	21.88	19.14
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	5.59	1.13	3.01	2.51	10.12	0.61	1.69	2.64	1.59	1.24	3.76
Total roundfish	**120.00**	**33.70**	**133.51**	**52.08**	**26.66**	**19.63**	**16.46**	**45.61**	**50.30**	**159.75**	**84.62**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	3.70	3.52	33.19	32.20	27.21	19.31	2.32	5.62	24.32	12.35	2.26
Tanner crab, bairdi	1.88	0.81	0.55	--	--	--	--	--	--	--	--
Tanner crab, opilio	1.70	--	--	--	--	--	--	--	--	--	0.45
Other crab	5.33	3.58	10.26	2.83	8.06	1.55	10.81	6.75	6.09	12.28	0.95
Shrimp	0.01	0.00	--	0.01	0.01	--	--	--	--	--	--
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	1.88	--	0.47	4.80	10.00	7.50	2.67	2.97	3.34	4.36	2.14
Starfish	5.72	79.17	16.21	342.14	249.17	201.98	236.89	72.21	33.30	157.96	33.49
Other invertebrates	1,547.57	41.06	96.05	105.16	39.90	0.72	0.45	3.36	31.02	23.24	21.21
Total invertebrates	**1,567.79**	**128.14**	**156.73**	**487.13**	**334.35**	**231.06**	**253.14**	**90.92**	**98.07**	**210.18**	**60.50**
Miscellaneous	0.84	0.69	0.15	3.46	2.03	2.16	0.76	0.89	--	1.32	0.53
Total catch	**2,236.00**	**804.19**	**1,620.00**	**2,520.00**	**1,798.00**	**4,210.00**	**1,828.00**	**3,829.00**	**1,250.00**	**1,386.00**	**1,083.08**

Appendix A Table 2. -- Continued.

Station	F-09	C-09	C-08	B-08	B-07	A-06	B-06	C-06	C-07	D-07	G-07
Start date and time	6/6/09 17:54	6/7/09 6:50	6/7/09 9:28	6/7/09 11:56	6/7/09 16:09	6/8/09 6:38	6/8/09 9:04	6/8/09 11:31	6/8/09 14:24	6/8/09 16:46	6/9/09 6:52
Haul number	25	26	27	28	29	30	31	32	33	34	35
Start latitude	5641.38	5540.53	5540.58	5520.74	5519.51	5500.95	5519.71	5538.10	5541.54	5559.33	5700.02
Start longitude	16312.25	16311.63	16435.66	16436.40	16557.89	16524.14	16525.78	16525.01	16559.24	16557.62	16558.18
End latitude	5639.81	5540.04	5539.00	5519.85	5521.04	5502.45	5521.28	5539.69	5543.12	5600.88	5701.58
End longitude	16312.30	16309.08	16435.17	16434.16	16558.83	16525.15	16526.15	16524.95	16558.78	16557.56	16558.34
Bottom depth (m)	71	51	82	53	78	63	100	96	93	90	69
Duration (h)	0.53	0.52	0.54	0.52	0.55	0.54	0.53	0.54	0.55	0.52	0.53
Distance fished (km)	2.91	2.83	2.98	2.90	3.00	2.97	2.94	2.95	2.98	2.88	2.90
Net width (m)	17.42	16.58	16.67	14.40	16.13	16.95	17.82	16.73	17.82	17.54	16.11
Net measured?	Y	N	Y	Y	Y	Y	N	Y	N	N	Y
Performance	0	0	0	5	0	0	0	0	0	0	0
Alaska skates	31.96	54.04	90.64	86.12	49.67	73.69	25.58	152.30	64.96	36.78	23.76
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**31.96**	**54.04**	**90.64**	**118.12**	**103.67**	**73.69**	**71.85**	**159.23**	**64.96**	**36.78**	**23.76**
Alaska plaice	29.68	2.25	122.03	78.49	--	--	--	--	--	3.21	23.71
Arrowtooth flounder	0.05	19.13	22.78	136.58	312.20	30.87	328.83	60.56	22.72	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	39.81	65.01	139.04	30.42	30.48	15.33	13.24	43.28	67.05	35.24	15.22
Rock sole	195.93	458.46	263.90	751.45	321.60	34.59	--	102.58	345.10	31.48	22.72
Yellowfin sole	128.98	156.69	253.69	546.31	36.83	--	--	--	4.74	3.76	145.33
Other flatfish	--	0.49	8.57	20.67	37.37	--	34.43	5.97	9.95	0.47	--
Total flatfish	**394.46**	**702.02**	**810.01**	**1,563.92**	**738.47**	**80.79**	**376.50**	**212.39**	**449.56**	**74.15**	**206.98**
Walleye pollock	1.69	85.60	294.35	466.29	346.82	2,648.09	1,768.80	307.08	120.21	28.06	0.12
Pacific cod	21.63	21.61	31.23	104.21	88.28	217.80	56.26	43.26	86.42	113.00	19.14
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	0.13	0.42	0.57	0.40
Pacific herring	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	0.18	9.84	6.19	70.84	8.83	14.72	6.94	0.46	6.46	2.98	13.17
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	0.30	9.40	4.49	4.66	13.41	16.87	--	0.60	0.03	0.12	0.13
Total roundfish	**23.80**	**126.45**	**336.26**	**645.99**	**457.34**	**2,897.48**	**1,832.00**	**351.54**	**213.54**	**144.72**	**32.96**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	1.64	38.77	6.15	756.91	--	--	--	--	--	--	--
Tanner crab, bairdi	3.54	6.59	17.53	52.17	6.82	--	93.62	5.92	21.36	13.36	0.00
Tanner crab, opilio	2.68	0.52	3.86	8.98	4.47	--	5.00	4.71	4.32	4.32	0.92
Other crab	5.01	2.20	26.00	25.51	1.03	0.02	32.85	37.98	116.25	101.25	13.85
Shrimp	0.00	--	0.02	--	--	--	0.01	0.02	0.02	0.13	0.06
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	6.42	42.96	48.16	19.84	20.36	2.60	23.99	63.92	116.32	113.89	33.50
Starfish	10.23	262.45	29.51	188.11	81.92	--	0.02	--	0.41	5.33	17.94
Other invertebrates	27.77	136.45	180.13	182.44	1,547.49	225.45	22.41	104.27	262.69	1,530.76	105.15
Total invertebrates	**57.29**	**489.94**	**311.37**	**1,233.96**	**1,662.10**	**228.07**	**177.89**	**216.81**	**521.36**	**1,769.03**	**171.42**
Miscellaneous	3.36	1.29	1.18	22.09	1.22	0.21	11.26	13.55	88.05	70.99	7.08
Total catch	**527.11**	**1,390.00**	**1,689.68**	**3,692.65**	**3,111.64**	**3,288.00**	**2,563.78**	**1,154.08**	**1,676.84**	**2,131.00**	**443.40**

Appendix A Table 2. -- Continued.

Station	H-07	I-07	J-07	K-07	L-07	L-06	M-06	M-05	N-05	L-05	K-05
Start date and time	6/9/09 9:16	6/9/09 11:38	6/9/09 14:08	6/9/09 16:35	6/10/09 6:29	6/10/09 8:58	6/10/09 11:11	6/10/09 13:49	6/10/09 16:12	6/11/09 6:32	6/11/09 9:04
Haul number	36	37	38	39	40	41	42	43	44	45	46
Start latitude	5719.67	5739.00	5759.16	5818.36	5840.64	5840.22	5859.06	5859.79	5918.95	5840.74	5820.87
Start longitude	16559.03	16559.58	16557.67	16558.08	16401.90	16522.74	16520.82	16642.19	16640.77	16640.89	16642.23
End latitude	5721.34	5740.52	5800.72	5819.39	5839.75	5841.46	5900.65	5901.33	5920.59	5839.28	5819.28
End longitude	16558.80	16559.01	16557.53	16558.37	16559.43	16520.90	16520.30	16641.29	16640.00	16639.98	16642.47
Bottom depth (m)	63	53	47	42	34	38	29	29	22	39	46
Duration (h)	0.55	0.52	0.53	0.35	0.52	0.52	0.54	0.54	0.55	0.52	0.54
Distance fished (km)	3.10	2.87	2.88	1.94	2.90	2.91	3.00	2.98	3.12	2.84	2.96
Net width (m)	17.10	16.58	16.58	15.60	15.60	15.18	14.04	15.28	15.60	15.60	16.58
Net measured?	Y	N	N	N	N	Y	Y	Y	N	N	N
Performance	0	0.00	0	0	0	0	0	0	0	0	0
Alaska skates	14.23	31.95	8.26	--	13.91	--	--	15.52	--	5.48	55.29
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**14.23**	**31.95**	**8.26**	**--**	**13.91**	**--**	**--**	**15.52**	**--**	**5.48**	**55.29**
Alaska plaice	143.76	115.25	144.53	155.17	150.09	305.26	56.03	79.54	1.38	419.82	198.65
Arrowtooth flounder	--	--	--	--	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	4.62	7.68	3.16	3.69	2.04	--	--	5.80	--	--	1.59
Rock sole	84.56	542.93	422.91	138.48	138.35	85.43	171.47	48.62	37.55	91.48	189.66
Yellowfin sole	218.71	212.22	207.10	574.73	596.62	789.09	778.38	792.59	334.86	491.75	334.74
Other flatfish	--	--	2.10	1.41	12.84	0.26	41.85	5.53	22.93	--	0.78
Total flatfish	**451.65**	**878.08**	**779.80**	**873.47**	**899.94**	**1,180.04**	**1,047.74**	**932.08**	**396.72**	**1,003.06**	**725.42**
Walleye pollock	12.35	17.82	8.59	0.02	0.01	2.98	--	0.06	--	5.68	22.31
Pacific cod	23.30	55.67	11.70	13.48	0.47	1.51	0.38	11.16	0.89	19.27	15.64
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	--	--	--
Pacific herring	0.43	0.77	1.51	--	--	1.24	--	0.18	--	0.70	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	3.47	19.40	11.87	8.44	46.17	48.54	51.08	58.52	34.70	17.12	11.51
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	1.94	1.32	0.27	0.96	1.73	0.91	1.25	2.10	1.87	2.12	1.04
Total roundfish	**41.49**	**94.98**	**33.93**	**22.90**	**48.39**	**55.18**	**52.70**	**72.02**	**37.46**	**44.88**	**50.50**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	5.41	4.77	15.54	6.29	--	--	4.13	--	4.37	1.84
Tanner crab, bairdi	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, opilio	0.10	--	--	--	--	--	--	--	--	--	--
Other crab	26.27	23.71	13.44	7.84	19.21	16.83	6.81	5.92	8.96	13.12	13.91
Shrimp	0.14	0.02	0.01	--	0.00	0.01	0.03	0.02	0.03	--	0.00
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	23.08	13.52	16.59	2.81	0.15	0.12	--	0.01	0.03	1.95	28.25
Starfish	46.55	408.04	89.07	121.64	226.55	215.98	121.77	186.08	142.19	372.97	181.53
Other invertebrates	125.36	309.70	151.16	11.52	2.24	0.14	0.65	0.79	21.56	2.96	30.82
Total invertebrates	**221.50**	**760.40**	**275.04**	**159.36**	**254.45**	**233.07**	**129.25**	**196.96**	**172.77**	**395.36**	**256.36**
Miscellaneous	11.94	18.59	26.82	4.73	2.47	1.72	0.32	0.28	2.25	1.23	10.44
Total catch	**741.11**	**1,784.00**	**1,123.84**	**1,060.45**	**1,219.16**	**1,470.00**	**1,230.00**	**1,216.85**	**609.21**	**1,450.00**	**1,098.93**

Appendix A Table 2. -- Continued.

Station	J-05	I-05	H-05	D-06	D-05	C-05	B-05	A-05	C-04	D-04	E-04
Start date and time	6/11/09 11:38	6/11/09 14:16	6/11/09 16:39	6/12/09 6:45	6/12/09 9:35	6/12/09 12:33	6/12/09 15:05	6/12/09 17:41	6/13/09 6:39	6/13/09 9:08	6/13/09 11:42
Haul number	47	48	49	50	51	52	53	54	55	56	57
Start latitude	5800.85	5740.34	5721.05	5600.21	5559.82	5539.65	5519.95	5500.32	5539.91	5559.07	5619.56
Start longitude	16644.89	16644.59	16645.66	16524.19	16651.59	16649.02	16649.61	16650.92	16611.90	16612.82	16611.30
End latitude	5759.29	5738.72	5719.46	5558.64	5600.15	5538.00	5518.27	5458.67	5541.50	5600.78	5621.27
End longitude	16644.95	16644.01	16645.85	16524.50	16648.84	16648.35	16650.17	16651.23	16611.38	16612.95	16611.18
Bottom depth (m)	51	62	66	93	96	109	111	110	118	108	92
Duration (h)	0.53	0.54	0.53	0.54	0.55	0.56	0.56	0.57	0.55	0.57	0.57
Distance fished (km)	2.90	3.06	2.96	2.93	2.94	3.14	3.16	3.07	2.99	3.18	3.18
Net width (m)	16.58	16.88	17.25	17.45	17.58	18.03	17.84	17.33	18.53	17.47	18.17
Net measured?	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	75.84	29.12	30.10	110.00	79.59	1.58	27.20	132.60	0.13	33.36	85.40
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**75.84**	**29.12**	**30.10**	**110.00**	**86.57**	**5.62**	**29.72**	**138.99**	**7.81**	**36.73**	**89.60**
Alaska plaice	148.55	151.89	56.79	1.51	--	--	--	--	--	--	24.18
Arrowtooth flounder	--	--	--	3.65	114.73	110.39	211.50	511.80	60.75	187.94	4.85
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	0.36	--	--	--	--	--	0.87
Pacific halibut	--	9.31	6.16	38.10	46.50	--	23.41	15.43	--	50.62	132.08
Rock sole	107.93	56.29	51.76	106.80	37.71	--	--	29.40	--	--	241.77
Yellowfin sole	110.04	378.75	369.21	0.40	--	--	--	--	--	--	3.08
Other flatfish	2.54	--	--	1.08	1.87	5.88	9.14	188.69	1.53	12.89	--
Total flatfish	**369.05**	**596.24**	**483.92**	**151.54**	**201.16**	**116.27**	**244.05**	**745.32**	**62.28**	**251.45**	**406.82**
Walleye pollock	2.84	0.15	3.69	51.22	226.35	17.82	54.39	568.29	3.90	32.90	34.52
Pacific cod	8.42	17.14	9.51	71.90	259.91	4.82	30.32	71.00	8.42	19.74	92.37
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	0.22	1.55	--	0.04	1.07	--	0.10	0.02	0.34
Pacific herring	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	1.15	--	--	--
Sculpins	6.71	5.92	3.01	2.14	2.40	0.66	2.23	19.26	1.68	2.22	7.51
Other rockfish	--	--	--	--	--	--	--	1.43	1.86	--	--
Other roundfish	0.98	4.25	0.67	0.86	0.71	0.53	0.97	12.72	1.59	0.57	5.43
Total roundfish	**18.95**	**27.46**	**17.10**	**127.67**	**489.37**	**23.87**	**88.98**	**673.85**	**17.54**	**55.45**	**140.17**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	2.08	2.86	--	--	--	--	--	--	--	--
Tanner crab, bairdi	--	1.15	0.48	10.72	18.57	4.04	86.23	13.47	16.47	58.86	6.09
Tanner crab, opilio	--	0.62	0.54	3.60	2.46	1.07	1.93	1.78	1.93	1.96	2.56
Other crab	75.28	50.37	30.07	103.09	52.21	33.68	5.88	19.68	15.70	18.82	53.41
Shrimp	0.04	--	0.01	0.10	0.06	0.12	0.08	0.09	0.11	0.03	0.05
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	36.04	45.67	70.70	26.46	24.14	19.81	15.03	41.12	2.49	14.38	59.87
Starfish	67.43	194.09	224.95	--	--	0.01	0.08	1.68	--	--	0.02
Other invertebrates	1,004.43	262.16	107.63	179.71	38.28	74.37	26.57	17.00	104.89	128.09	151.93
Total invertebrates	**1,183.22**	**556.13**	**437.23**	**323.68**	**135.71**	**133.10**	**135.80**	**94.81**	**141.59**	**222.13**	**273.93**
Miscellaneous	58.94	13.05	9.47	84.26	38.60	3.60	2.15	3.47	1.36	5.95	46.38
Total catch	**1,706.00**	**1,222.00**	**978.90**	**861.80**	**1,184.71**	**332.41**	**600.23**	**1,808.89**	**286.88**	**713.48**	**1,552.00**

Appendix A Table 2. -- Continued.

Station	E-03	F-03	I-03	J-03	K-03	L-03	M-03	K-01	J-01	I-01	H-01
Start date and time	6/13/09 14:18	6/13/09 16:54	6/14/09 6:43	6/14/09 9:13	6/14/09 11:38	6/14/09 14:01	6/14/09 16:27	6/15/09 6:32	6/15/09 9:00	6/15/09 11:30	6/15/09 16:44
Haul number	58	59	60	61	62	63	64	65	66	67	68
Start latitude	5620.13	5639.22	5739.37	5759.41	5819.22	5839.30	5859.17	5820.26	5800.30	5741.04	5720.81
Start longitude	16737.46	16733.31	16729.32	16728.19	16726.60	16726.33	16725.56	16809.83	16811.43	16813.13	16814.67
End latitude	5620.43	5640.79	5740.97	5801.05	5820.83	5840.84	5900.72	5818.63	5758.71	5739.49	5719.33
End longitude	16734.65	16733.05	16728.77	16728.06	16726.56	16726.50	16725.09	16809.44	16811.12	16813.12	16815.70
Bottom depth (m)	103	84	67	61	49	43	35	60	67	69	73
Duration (h)	0.54	0.54	0.54	0.54	0.53	0.51	0.53	0.54	0.53	0.53	0.53
Distance fished (km)	2.95	2.93	3.01	3.03	2.98	2.85	2.90	3.05	2.95	2.87	2.93
Net width (m)	17.98	17.54	17.16	17.01	16.06	15.69	15.60	17.28	17.84	17.16	17.01
Net measured?	Y	N	N	Y	Y	Y	N	Y	Y	N	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	48.64	52.06	45.60	15.19	80.11	58.28	9.85	47.55	60.90	32.36	11.40
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**48.64**	**52.06**	**45.60**	**15.19**	**80.11**	**58.28**	**9.85**	**47.55**	**60.90**	**32.36**	**11.40**
Alaska plaice	--	2.21	26.44	165.21	204.94	440.74	180.41	98.83	256.97	9.19	5.28
Arrowtooth flounder	61.74	--	--	--	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	28.11	108.79	46.63	5.00	18.99	--	10.70	64.79	149.95	12.64	62.05
Rock sole	2.44	234.61	19.42	14.75	181.64	89.33	99.79	78.75	66.48	27.81	135.52
Yellowfin sole	--	4.28	92.20	318.10	178.13	292.32	251.83	507.26	205.49	128.63	26.11
Other flatfish	4.51	--	--	--	--	--	0.80	--	--	--	--
Total flatfish	**96.79**	**349.90**	**184.69**	**503.05**	**583.70**	**822.39**	**543.53**	**749.63**	**678.88**	**178.28**	**228.96**
Walleye pollock	154.50	17.47	2.83	4.43	6.69	3.40	5.98	3.37	18.63	0.89	5.44
Pacific cod	31.38	98.60	25.44	8.60	4.12	9.43	9.58	125.13	123.02	74.26	25.15
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	0.06	0.74	0.49	--	--	--	--	--	0.98	--	--
Pacific herring	--	--	--	--	--	0.48	0.34	0.26	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	1.10	21.98	2.29	1.49	1.98	9.46	18.06	12.77	5.62	37.87	1.49
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	2.08	0.95	0.54	0.38	7.37	2.09	3.35	4.72	0.30	1.18	1.57
Total roundfish	**189.12**	**139.75**	**31.60**	**14.90**	**20.17**	**24.85**	**37.31**	**146.25**	**148.55**	**114.20**	**33.66**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	4.87	12.09	--	--	--	--
Tanner crab, bairdi	7.39	3.16	0.61	2.00	--	--	--	3.13	1.50	11.74	11.90
Tanner crab, opilio	3.00	76.88	5.28	20.42	1.26	--	--	4.31	7.65	63.05	44.66
Other crab	25.78	98.15	20.09	143.21	14.03	6.28	5.70	69.91	61.67	77.87	78.29
Shrimp	0.07	--	0.03	0.04	0.01	0.00	0.01	0.09	--	0.04	0.00
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	26.51	17.84	49.30	19.30	13.85	9.66	0.01	48.25	75.97	241.97	21.44
Starfish	--	33.04	115.40	480.95	110.08	173.81	222.04	111.19	105.64	34.54	99.98
Other invertebrates	92.58	35.08	101.38	503.62	49.42	25.54	3.80	202.54	364.54	2,118.82	87.10
Total invertebrates	**155.33**	**264.15**	**292.09**	**1,169.55**	**188.65**	**220.16**	**243.64**	**439.44**	**616.97**	**2,548.03**	**343.37**
Miscellaneous	11.09	40.37	6.37	37.31	4.94	3.89	0.96	19.20	24.63	43.14	22.35
Total catch	**725.47**	**850.87**	**561.57**	**1,740.00**	**877.56**	**1,129.57**	**835.30**	**1,406.00**	**1,532.00**	**2,916.00**	**643.93**

Appendix A Table 2. -- Continued.

Station	D-03	C-03	B-04	A-03	A-02	B-02	B-01	C-01	D-01	E-01	F-01
Start date and time	6/16/09 7:00	6/16/09 9:30	6/16/09 13:04	6/19/09 7:04	6/19/09 10:06	6/19/09 12:49	6/19/09 16:01	6/20/09 6:58	6/20/09 9:39	6/20/09 12:16	6/20/09 14:45
Haul number	69	70	71	72	73	74	75	76	77	78	79
Start latitude	5600.76	5541.17	5520.78	5458.77	5459.41	5519.92	5520.66	5539.56	5600.15	5619.98	5639.56
Start longitude	16736.09	16736.17	16612.38	16739.82	16704.27	16701.90	16827.01	16824.81	16823.68	16820.44	16819.43
End latitude	5559.14	5539.54	5519.43	5500.34	5501.02	5521.53	5522.36	5541.19	5601.79	5621.72	5641.21
End longitude	16736.07	16736.61	16613.88	16739.62	16703.43	16702.11	16827.02	16824.83	16823.28	16820.13	16819.21
Bottom depth (m)	124	127	120	143	155	139	146	136	132	128	101
Duration (h)	0.55	0.57	0.54	0.55	0.57	0.54	0.57	0.55	0.55	0.58	0.55
Distance fished (km)	2.99	3.06	2.96	2.91	3.11	2.99	3.15	3.02	3.07	3.24	3.07
Net width (m)	17.76	19.31	18.64	18.40	18.17	19.02	18.10	18.06	18.36	18.06	17.37
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	--	8.62	12.57	8.74	20.52	--	--	--	--	28.38	6.92
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**--**	**19.64**	**16.60**	**14.32**	**32.53**	**3.67**	**2.19**	**1.83**	**0.07**	**46.80**	**6.92**
Alaska plaice	--	--	--	--	--	--	--	--	--	--	--
Arrowtooth flounder	182.94	155.22	129.91	105.83	191.18	159.95	210.19	143.30	229.90	429.22	83.41
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	12.85	11.92	11.70	2.86	--	14.03	13.82	5.18	15.69	20.79	1.32
Rock sole	--	--	--	--	--	--	--	--	--	--	23.19
Yellowfin sole	--	--	--	--	--	--	--	--	--	--	--
Other flatfish	10.88	12.58	4.43	5.58	9.23	8.05	11.79	14.36	15.90	6.14	10.64
Total flatfish	**206.67**	**179.72**	**146.04**	**114.27**	**200.41**	**182.03**	**235.80**	**162.84**	**261.49**	**456.15**	**118.56**
Walleye pollock	--	1.16	6.86	63.43	27.40	1.31	14.82	2.22	--	--	756.48
Pacific cod	11.33	1.86	--	37.50	5.26	--	24.86	9.84	10.50	19.38	18.38
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	1.82	0.95	0.08	0.15	--	0.32	0.06	--	--	0.27	1.58
Pacific herring	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	0.92	4.27	1.98	4.23	4.81	5.62	0.06	0.48	1.17	5.58	28.70
Other rockfish	--	--	--	--	--	--	--	--	--	0.89	--
Other roundfish	0.21	2.95	0.39	0.68	0.35	2.45	0.99	2.82	3.60	1.07	0.60
Total roundfish	**14.28**	**11.19**	**9.32**	**105.99**	**37.82**	**9.70**	**40.78**	**15.37**	**15.27**	**27.18**	**805.74**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	29.74	54.00	15.85	37.10	82.91	22.71	26.01	12.46	4.56	7.17	8.89
Tanner crab, opilio	3.41	2.29	1.14	0.78	0.12	1.51	0.13	0.13	0.17	2.99	11.84
Other crab	5.96	4.34	2.75	4.30	1.33	2.75	0.66	1.38	2.90	4.54	76.47
Shrimp	0.28	0.34	2.45	2.88	1.22	2.13	0.92	0.87	0.94	0.78	--
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	0.01	23.70	--	--	--	--	--	--
Snails	2.64	0.89	1.42	3.02	36.95	2.62	9.36	3.41	3.41	7.15	15.48
Starfish	1.27	0.14	--	--	0.66	0.16	0.11	0.04	0.01	0.06	--
Other invertebrates	84.86	27.47	28.23	10.12	19.30	63.40	77.50	34.16	32.18	108.31	173.55
Total invertebrates	**128.16**	**89.47**	**51.85**	**58.20**	**166.20**	**95.28**	**114.69**	**52.45**	**44.18**	**131.00**	**286.23**
Miscellaneous	0.46	0.07	0.42	0.14	0.25	--	0.40	0.14	0.10	0.47	56.04
Total catch	**430.49**	**393.45**	**254.42**	**347.50**	**505.04**	**353.56**	**431.28**	**298.74**	**426.05**	**826.80**	**1,464.80**

Appendix A Table 2. -- Continued.

Station	G-01	L-01	L-02	M-02	N-02	N-03	N-04	O-04	O-03	O-02	O-01
Start date and time	6/20/09 17:11	6/21/09 6:40	6/21/09 9:30	6/21/09 12:01	6/21/09 14:25	6/21/09 17:10	6/22/09 6:27	6/22/09 8:48	6/22/09 11:33	6/22/09 13:54	6/22/09 16:15
Haul number	80	81	82	83	84	85	86	87	88	89	90
Start latitude	5659.44	5839.36	5838.77	5859.01	5918.96	5920.65	5919.15	5938.46	5939.86	5940.12	5939.14
Start longitude	16818.04	16808.08	16846.99	16845.37	16843.10	16722.38	16604.08	16604.07	16723.11	16843.01	16803.10
End latitude	5701.06	5840.87	5840.37	5900.56	5920.58	5920.84	5920.20	5940.09	5939.89	5940.06	5940.71
End longitude	16818.04	16808.92	16846.52	16845.23	16842.68	16725.54	16603.14	16604.10	16719.96	16839.74	16802.41
Bottom depth (m)	77	45	45	41	33	29	25	25	29	32	36
Duration (h)	0.55	0.53	0.55	0.51	0.53	0.54	0.39	0.54	0.52	0.53	0.53
Distance fished (km)	3.00	2.93	2.99	2.88	3.03	3.02	2.13	3.02	2.97	3.09	2.98
Net width (m)	16.78	16.58	16.58	15.60	15.19	15.60	15.58	15.00	14.90	15.00	14.76
Net measured?	Y	N	N	N	Y	N	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	1	0	0	0	0
Alaska skates	38.89	49.33	50.84	43.90	24.49	50.52	14.54	--	--	42.40	45.41
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**38.89**	**49.33**	**50.84**	**43.90**	**24.49**	**50.52**	**14.54**	**--**	**--**	**42.40**	**45.41**
Alaska plaice	6.34	229.36	211.74	69.91	17.61	6.78	10.10	3.46	2.90	16.20	14.26
Arrowtooth flounder	0.77	--	--	--	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	15.75	79.65	23.50	27.55	9.13	22.56	--	12.61	27.57	31.90	20.87
Rock sole	162.83	253.03	150.18	70.94	44.00	47.38	46.94	49.60	39.72	45.30	21.10
Yellowfin sole	14.75	122.40	174.57	242.66	195.00	345.10	264.72	351.82	455.19	461.94	216.03
Other flatfish	--	--	--	0.33	0.71	54.08	29.12	58.04	18.57	83.37	--
Total flatfish	**200.43**	**684.44**	**559.99**	**411.39**	**266.45**	**475.90**	**350.88**	**475.53**	**543.95**	**638.71**	**272.26**
Walleye pollock	84.48	20.40	0.16	3.59	1.81	1.88	0.16	6.56	0.05	2.10	0.03
Pacific cod	28.20	474.30	9.40	17.18	7.26	7.00	2.00	3.04	9.56	2.90	15.01
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	--	--	--
Pacific herring	--	--	--	--	0.11	--	--	0.17	--	0.94	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	10.88	18.62	11.28	17.07	12.78	14.37	14.74	13.16	9.72	28.11	18.52
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	3.08	0.47	1.23	1.29	1.07	1.44	0.86	7.07	4.39	8.35	2.09
Total roundfish	**126.64**	**513.79**	**22.07**	**39.13**	**23.03**	**24.69**	**17.76**	**30.01**	**23.72**	**42.40**	**35.65**
Blue king crab	--	--	--	--	--	0.33	--	--	--	--	--
Red king crab	--	--	1.43	--	6.05	1.84	--	--	--	2.80	4.41
Tanner crab, bairdi	23.30	--	--	--	--	--	--	--	--	--	--
Tanner crab, opilio	19.22	1.32	--	--	--	--	--	--	--	--	--
Other crab	56.87	17.43	8.58	5.38	10.41	6.71	3.31	3.67	3.06	1.39	4.75
Shrimp	0.13	--	0.00	0.01	0.02	0.01	0.01	0.08	0.01	0.00	0.05
Octopus	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	3.37	22.43	16.80	4.45	0.12	--	--	--	--	0.14	1.56
Starfish	121.58	262.54	126.42	186.54	122.85	85.35	132.12	277.01	85.02	112.47	306.73
Other invertebrates	43.98	11.89	10.48	3.34	2.04	0.83	0.67	3.07	0.39	0.12	0.49
Total invertebrates	**268.45**	**315.61**	**163.72**	**199.71**	**141.49**	**95.07**	**136.11**	**283.83**	**88.48**	**116.92**	**317.98**
Miscellaneous	18.24	12.83	3.17	1.02	1.19	1.00	0.40	2.04	1.17	0.15	0.82
Total catch	**708.61**	**1,576.00**	**800.66**	**695.15**	**456.65**	**647.19**	**519.69**	**791.41**	**657.32**	**840.59**	**672.12**

Appendix A Table 2. -- Continued.

Station	P-01	P-18	Q-18	Q-01	Q-02	O-19	N-19	M-19	L-19	K-19	J-19	JI1918
Start date and time	6/23/09 6:24	6/23/09 9:06	6/23/09 11:32	6/23/09 14:20	6/23/09 16:56	6/24/09 6:30	6/24/09 9:06	6/24/09 11:36	6/24/09 14:06	6/24/09 16:38	6/25/09 6:34	6/25/09 8:40
Haul number	91	92	93	94	95	96	97	98	99	100	101	102
Start latitude	6001.24	5959.34	6018.97	6020.05	6019.89	5940.90	5920.98	5901.03	5840.56	5820.48	5800.99	5750.96
Start longitude	16800.83	16920.99	16918.88	16959.62	16842.20	17044.00	17046.32	17048.96	17050.23	17052.21	17055.68	16913.70
End latitude	5959.61	6000.81	6020.52	6020.09	6020.19	5939.30	5919.39	5859.44	5838.92	5818.74	5759.40	5749.85
End longitude	16800.40	16920.02	16918.53	16802.78	16844.53	17043.73	17046.48	17048.91	17050.00	17052.01	17055.88	16915.82
Bottom depth (m)	26	39	37	32	31	48	50	54	63	67	70	71
Duration (h)	0.55	0.52	0.53	0.54	0.39	0.54	0.53	0.53	0.55	0.60	0.54	0.53
Distance fished (km)	3.05	2.87	2.89	2.92	2.22	2.97	2.94	2.96	3.04	3.23	2.95	2.93
Net width (m)	15.60	15.60	16.34	15.60	15.60	16.58	16.26	17.01	17.16	17.64	17.96	17.56
Net measured?	N	N	Y	N	N	N	Y	Y	N	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	93.15	83.22	100.92	64.10	15.94	67.14	116.73	133.04	39.46	41.52	41.91	35.68
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**93.15**	**83.22**	**100.92**	**64.10**	**15.94**	**67.14**	**116.73**	**133.04**	**39.46**	**41.52**	**41.91**	**35.68**
Alaska plaice	41.19	70.31	87.43	10.21	9.22	298.80	333.55	344.25	116.90	193.27	78.97	23.94
Arrowtooth flounder	--	--	--	--	--	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	0.01	0.01	0.01	--	--
Pacific halibut	26.40	37.41	6.87	30.80	1.32	14.46	22.73	24.68	4.31	38.51	24.73	14.68
Rock sole	118.93	47.30	80.76	17.54	0.34	61.83	106.72	45.67	76.81	83.59	11.71	5.56
Yellowfin sole	516.08	165.53	624.93	287.03	84.48	220.79	135.18	94.85	243.94	267.42	27.95	23.63
Other flatfish	33.84	--	--	--	1.87	--	--	--	--	--	--	--
Total flatfish	**736.44**	**320.55**	**799.99**	**345.58**	**97.22**	**595.87**	**598.18**	**509.47**	**441.97**	**582.80**	**143.35**	**67.81**
Walleye pollock	6.69	16.60	18.12	12.02	0.22	30.65	22.39	25.41	6.49	8.85	--	2.87
Pacific cod	9.63	28.27	18.42	1.66	4.86	33.55	37.80	22.89	53.74	26.00	7.78	9.36
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	--	--	--	--	--	0.16	0.95	--
Pacific herring	0.57	1.02	15.60	4.73	--	0.42	1.34	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	19.70	28.26	45.78	9.80	36.88	10.08	9.45	21.96	19.58	11.12	5.87	0.98
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	3.33	3.08	4.77	2.90	12.11	7.52	3.35	1.72	1.31	3.02	1.31	1.42
Total roundfish	**39.91**	**77.24**	**102.68**	**31.11**	**54.06**	**82.22**	**74.33**	**71.97**	**81.11**	**49.14**	**15.91**	**14.64**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	6.20	1.48	2.60	3.70	--	--	4.35	--	--	--	--	--
Tanner crab, bairdi	--	--	--	--	--	--	3.25	19.07	1.97	0.47	1.35	4.64
Tanner crab, opilio	--	0.02	0.25	--	--	1.52	6.08	59.38	10.22	3.81	30.26	26.46
Other crab	4.64	12.38	11.07	--	1.88	52.16	52.44	62.03	133.88	37.05	90.66	67.55
Shrimp	0.00	0.00	--	--	0.53	0.01	0.00	--	--	--	--	--
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	--	3.17	3.90	--	--	4.57	15.92	15.77	47.35	31.59	17.93	18.67
Starfish	28.66	122.89	183.65	21.07	25.91	503.60	285.34	300.96	152.58	167.78	133.20	237.04
Other invertebrates	0.36	6.88	48.97	0.42	0.34	56.65	180.45	269.10	403.02	126.42	1,122.46	627.79
Total invertebrates	**39.86**	**146.83**	**250.44**	**25.19**	**28.66**	**618.52**	**547.84**	**726.31**	**749.03**	**367.13**	**1,395.86**	**982.15**
Miscellaneous	0.15	7.12	3.98	--	0.43	45.08	66.93	60.76	35.90	20.01	158.23	53.70
Total catch	**909.51**	**634.96**	**1,258.00**	**465.99**	**196.32**	**1,414.00**	**1,404.00**	**1,508.00**	**1,352.00**	**1,061.28**	**1,758.00**	**1,154.00**

Appendix A Table 2. -- Continued.

Station	I-19	IH1918	H-19	HG1918	G-19	GF1918	F-19	E-19	E-20	E-21	E-22	F-22
Start date and time	6/25/09 10:49	6/25/09 13:19	6/25/09 15:56	6/26/09 6:44	6/26/09 9:10	6/26/09 11:30	6/26/09 14:21	6/26/09 17:07	6/27/09 6:49	6/27/09 9:29	6/27/09 12:13	6/27/09 14:59
Haul number	103	104	105	106	107	108	109	110	111	112	113	114
Start latitude	5740.63	5730.74	5720.46	5709.40	5701.15	5650.48	5640.46	5620.06	5620.20	5620.06	5619.96	5639.83
Start longitude	17059.12	16914.55	16900.89	16922.09	16903.63	16922.78	16905.88	16908.50	17031.42	17157.46	17119.78	17115.68
End latitude	5739.06	5729.14	5718.89	5710.42	5659.52	5648.87	5638.82	5620.28	5620.32	5620.39	5620.28	5641.48
End longitude	17058.61	16914.27	16901.05	16919.65	16903.56	16922.07	16905.42	16905.44	17029.27	17154.65	17116.88	17115.62
Bottom depth (m)	69	71	69	77	80	97	100	128	145	110	122	113
Duration (h)	0.53	0.53	0.53	0.56	0.55	0.56	0.55	0.55	0.41	0.53	0.56	0.56
Distance fished (km)	2.95	2.96	2.91	3.10	3.03	3.07	3.08	3.19	2.24	2.96	3.05	3.06
Net width (m)	17.40	17.17	17.93	18.04	17.62	18.48	17.54	18.05	18.71	18.63	18.99	18.83
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	4	0	0	0
Alaska skates	4.40	3.33	--	4.36	2.80	20.35	0.33	2.20	8.46	--	21.50	4.61
Sharks	--	--	--	--	--	--	--	--	2.02	--	--	--
Sharks	--	--	--	--	--	--	--	--	2.02	--	--	--
Total elasmobranch	**4.40**	**3.33**	**--**	**4.36**	**2.80**	**22.73**	**0.33**	**6.17**	**43.22**	**1.05**	**22.31**	**4.97**
Alaska plaice	117.89	19.65	5.94	--	0.94	1.13	--	--	--	--	--	--
Arrowtooth flounder	--	--	--	0.03	5.78	23.72	611.69	607.05	126.20	160.52	89.38	82.60
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	--	--	--	--
Pacific halibut	8.32	8.62	2.50	11.72	6.13	40.97	5.52	--	16.11	--	69.29	--
Rock sole	120.21	27.88	418.25	21.18	140.69	69.80	9.14	3.08	--	--	--	--
Yellowfin sole	80.61	31.97	13.50	6.20	6.52	0.16	--	--	--	--	--	--
Other flatfish	--	--	--	--	5.61	7.27	36.15	38.25	14.35	41.91	51.96	3.59
Total flatfish	**327.03**	**88.12**	**440.19**	**39.13**	**165.68**	**143.05**	**662.51**	**648.38**	**156.66**	**202.43**	**210.63**	**86.19**
Walleye pollock	9.53	10.16	16.79	16.81	75.19	53.30	1,490.01	922.77	1.50	2,024.54	--	1,212.59
Pacific cod	15.14	21.13	356.09	56.32	176.55	72.62	60.84	40.93	72.55	19.87	6.02	9.31
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	--	0.05	0.15	--	--	--	--	--	--
Pacific herring	--	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	0.67	--	--	0.11
Sculpins	8.55	3.70	82.30	2.71	6.21	8.94	3.80	4.39	2.19	0.30	10.93	69.31
Other rockfish	--	--	--	--	--	--	--	--	4.04	--	--	--
Other roundfish	6.94	3.56	1.64	0.79	3.59	1.97	1.10	0.76	33.01	--	0.00	1.24
Total roundfish	**40.15**	**38.55**	**456.83**	**76.63**	**261.59**	**136.98**	**1,555.75**	**968.85**	**113.96**	**2,044.71**	**16.95**	**1,292.56**
Blue king crab	--	1.11	58.85	--	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	6.58	1.59	19.47	7.10	3.44	65.94	22.47	37.57	4.49	21.71	9.44	24.74
Tanner crab, opilio	63.09	6.08	13.17	9.51	23.07	140.50	24.28	5.42	--	0.87	0.01	46.88
Other crab	89.34	23.86	14.24	19.45	19.96	36.90	13.93	8.82	5.21	0.44	6.39	36.58
Shrimp	--	0.02	0.86	0.25	0.01	--	--	0.10	0.20	0.05	0.20	0.07
Octopus	--	--	--	--	--	--	--	--	7.07	17.73	0.02	0.27
Squids	--	--	--	--	--	--	--	--	--	--	0.03	--
Snails	--	--	1.63	--	2.16	1.47	14.06	0.91	4.26	--	34.93	19.26
Starfish	126.45	18.79	43.49	51.22	65.26	44.16	3.64	0.91	1.88	0.40	0.09	0.48
Other invertebrates	813.74	643.84	1,181.72	37.04	52.76	12.94	61.63	34.94	4.81	17.20	389.71	69.37
Total invertebrates	**1,099.20**	**695.30**	**1,333.44**	**124.56**	**166.66**	**301.91**	**140.01**	**88.67**	**27.92**	**58.39**	**440.82**	**197.65**
Miscellaneous	76.87	43.61	37.55	9.14	15.56	7.38	5.41	--	1.51	0.05	1.82	4.59
Total catch	**1,554.00**	**874.65**	**2,268.01**	**254.22**	**633.10**	**906.22**	**2,539.74**	**1,751.72**	**343.27**	**2,356.95**	**817.97**	**1,605.59**

Appendix A Table 2. -- Continued.

Station	F-21	IH2120	I-21	JI2120	J-21	K-21	L-21	M-21	M-22	M-23	K-24	L-24
Start date and time	6/27/09 17:47	6/28/09 6:43	6/28/09 9:52	6/28/09 15:50	6/28/09 18:12	6/29/09 6:42	6/29/09 9:18	6/29/09 11:45	6/29/09 14:28	6/29/09 17:15	7/1/09 6:51	7/1/09 10:26
Haul number	115	116	117	119	120	121	122	123	124	125	126	127
Start latitude	5640.99	5730.52	5738.69	5749.30	5759.39	5819.25	5839.65	5859.64	5900.56	5900.86	5820.02	5839.60
Start longitude	17150.80	17001.67	17144.30	17002.92	17139.85	17136.96	17134.09	17131.29	17253.72	17212.96	17342.35	17337.88
End latitude	5639.85	5730.45	5740.24	5749.38	5800.93	5820.78	5841.20	5901.23	5900.54	5859.37	5821.32	5841.26
End longitude	17152.91	17158.66	17144.91	17000.00	17139.70	17136.65	17133.70	17130.90	17250.54	17211.74	17340.63	17337.23
Bottom depth (m)	97	69	73	72	74	74	73	71	78	87	102	102
Duration (h)	0.56	0.54	0.53	0.53	0.52	0.53	0.52	0.53	0.55	0.55	0.53	0.55
Distance fished (km)	3.02	3.02	2.94	2.91	2.87	2.86	2.90	2.98	3.06	3.00	2.93	3.15
Net width (m)	18.43	17.19	17.49	17.16	17.16	17.16	17.41	17.31	17.96	18.08	17.82	18.59
Net measured?	Y	Y	Y	N	N	N	Y	Y	Y	Y	N	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	14.80	34.48	83.76	37.70	14.74	15.94	40.81	10.10	9.87	55.26	157.47	35.51
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**27.30**	**34.48**	**83.76**	**37.70**	**14.74**	**15.94**	**40.81**	**10.10**	**10.04**	**55.26**	**160.43**	**35.51**
Alaska plaice	--	3.89	25.13	184.26	5.36	3.04	11.76	43.33	4.85	3.91	16.12	--
Arrowtooth flounder	86.34	10.96	11.16	--	--	--	--	--	--	--	--	0.61
Flathead sole	--	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	0.02	--	--	0.27	0.05	0.12	13.37	--	--
Pacific halibut	12.61	30.67	17.35	11.27	3.92	4.21	0.45	--	6.98	5.84	1.70	9.83
Rock sole	--	1,068.49	1,240.25	135.54	10.27	2.12	0.99	3.62	6.77	17.91	284.56	11.18
Yellowfin sole	--	202.44	155.87	47.78	6.22	0.91	5.82	2.99	2.01	1.46	--	--
Other flatfish	11.68	--	--	--	--	--	--	--	--	--	--	--
Total flatfish	**110.63**	**1,316.44**	**1,449.76**	**378.87**	**25.77**	**10.28**	**19.30**	**49.99**	**20.73**	**42.49**	**302.38**	**21.62**
Walleye pollock	1,482.39	341.09	258.59	41.24	11.68	0.05	0.63	3.90	4.53	8.56	283.97	101.45
Pacific cod	51.38	217.46	96.72	33.34	26.28	8.08	10.74	35.67	13.41	26.30	30.84	194.58
Sablefish	--	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	--	0.70	1.29	0.93	2.54	0.17	2.66	0.53	6.32	1.92
Pacific herring	--	--	--	--	--	--	--	3.14	5.34	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--	--
Sculpins	5.52	48.19	16.96	4.48	2.20	0.17	0.02	4.54	0.02	6.65	120.27	8.33
Other rockfish	--	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	0.24	18.60	27.25	2.85	0.70	1.24	0.02	0.15	1.49	--	0.35	1.09
Total roundfish	**1,539.53**	**625.34**	**399.51**	**82.61**	**42.15**	**10.47**	**13.95**	**47.57**	**27.46**	**42.04**	**441.74**	**307.37**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	1.64	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	24.55	7.93	1.55	1.24	2.12	0.36	0.33	0.24	--	0.45	39.76	1.94
Tanner crab, opilio	0.97	9.24	95.09	26.40	42.63	63.30	24.51	21.14	31.14	79.68	807.52	272.15
Other crab	32.91	68.48	151.25	80.13	133.45	94.22	14.45	20.09	15.88	9.14	41.48	12.87
Shrimp	0.13	--	--	--	--	0.02	0.02	--	0.01	0.05	0.08	0.14
Octopus	--	--	--	--	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--	--
Snails	8.36	22.36	20.78	5.82	18.64	9.08	9.26	98.79	58.87	21.79	356.24	9.92
Starfish	0.85	624.56	174.15	87.35	93.26	87.07	77.74	86.07	61.87	47.55	104.56	14.00
Other invertebrates	134.70	256.86	363.63	205.33	93.53	52.60	237.89	105.94	41.06	49.86	52.26	115.94
Total invertebrates	**202.47**	**991.07**	**806.45**	**406.27**	**383.63**	**306.65**	**364.20**	**332.27**	**208.82**	**208.52**	**1,401.90**	**426.95**
Miscellaneous	5.23	104.82	330.16	38.18	32.11	18.58	3.66	24.42	26.49	6.03	33.76	2.89
Total catch	**2,049.68**	**3,080.00**	**3,138.00**	**946.44**	**498.44**	**361.93**	**442.02**	**464.90**	**294.84**	**361.15**	**2,473.00**	**809.99**

Appendix A Table 2. -- Continued.

Station	M-24	N-24	N-23	N-22	N-21	O-21	P-21	Q-21	Q-23	R-23	R-24
Start date and time	7/1/09 13:05	7/1/09 15:30	7/1/09 18:19	7/2/09 6:35	7/2/09 9:06	7/2/09 11:42	7/2/09 14:05	7/2/09 16:28	7/4/09 6:37	7/4/09 10:21	7/4/09 12:48
Haul number	128	129	130	131	132	133	134	135	136	137	138
Start latitude	5859.78	5919.34	5920.35	5920.30	5919.86	5939.42	5959.00	6018.89	6019.15	6039.76	6039.08
Start longitude	17334.82	17331.40	17207.61	17247.87	17124.92	17125.18	17122.03	17120.57	17356.09	17352.01	17316.49
End latitude	5901.45	5920.93	5920.03	5919.79	5920.02	5940.94	6000.53	6020.50	6020.76	6041.36	6040.31
End longitude	17334.13	17331.10	17210.75	17250.96	17127.95	17124.19	17121.31	17120.27	17356.06	17351.91	17314.26
Bottom depth (m)	98	88	81	75	68	66	64	62	60	61	44
Duration (h)	0.55	0.54	0.56	0.56	0.53	0.53	0.54	0.54	0.54	0.54	0.54
Distance fished (km)	3.17	2.97	3.05	3.10	2.90	2.96	2.92	2.99	2.99	2.97	3.05
Net width (m)	19.63	17.96	17.86	18.32	17.32	17.51	17.85	18.02	16.59	19.55	16.12
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	14.44	12.47	48.98	23.98	24.50	14.89	22.02	18.67	83.56	16.50	67.54
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**14.44**	**12.47**	**48.98**	**23.98**	**24.50**	**14.89**	**22.02**	**18.67**	**83.56**	**16.50**	**67.54**
Alaska plaice	--	--	--	0.39	16.20	16.96	31.70	127.48	4.95	10.16	254.19
Arrowtooth flounder	--	--	--	--	--	--	--	--	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	0.01	0.14	0.04	0.05	0.09	0.01	--	--	--	--
Pacific halibut	2.38	4.28	--	--	4.77	--	--	--	--	--	--
Rock sole	2.52	9.99	3.95	1.83	2.37	1.23	--	--	1.96	0.37	71.04
Yellowfin sole	--	--	0.87	--	2.80	1.15	5.54	9.81	4.62	0.72	61.58
Other flatfish	--	--	--	--	--	--	--	0.11	--	--	0.21
Total flatfish	**4.90**	**14.28**	**4.96**	**2.26**	**26.19**	**19.43**	**37.25**	**137.40**	**11.53**	**11.25**	**387.02**
Walleye pollock	126.26	130.57	0.02	0.04	2.94	2.29	0.01	0.00	0.03	--	2.47
Pacific cod	152.29	39.96	3.81	5.18	--	0.05	0.28	0.08	9.87	0.03	1.64
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	0.36	0.41	0.38	0.56	0.07	--	0.14	0.92	--	0.89	0.27
Pacific herring	0.03	2.32	0.23	0.03	2.38	3.48	0.12	0.39	0.05	0.32	0.18
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	0.01	5.67	1.95	0.46	0.01	0.39	3.06	1.71	18.94	--	5.44
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	0.89	0.55	5.38	6.63	0.57	0.85	0.09	0.37	5.52	--	0.07
Total roundfish	**279.83**	**179.48**	**11.76**	**12.90**	**5.97**	**7.06**	**3.70**	**3.49**	**34.40**	**1.24**	**10.07**
Blue king crab	--	1.92	--	--	--	--	--	--	19.62	0.41	51.91
Red king crab	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	0.23	0.01	0.28	0.16	0.31	--	41.66	37.04	0.14	--	0.34
Tanner crab, opilio	36.00	82.84	93.30	57.33	29.71	15.83	--	--	7.56	88.41	2.89
Other crab	5.86	14.76	11.35	41.88	40.73	15.40	15.60	8.21	535.19	2.04	50.70
Shrimp	0.06	0.56	0.01	0.00	0.01	0.01	--	--	2.67	--	0.00
Octopus	--	--	0.43	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	5.93	28.32	74.84	56.11	54.90	9.78	12.72	15.14	73.36	1.97	126.28
Starfish	9.46	44.60	42.36	15.16	24.97	16.58	13.50	5.72	8.05	48.09	66.88
Other invertebrates	124.11	125.52	111.08	20.54	50.16	105.37	39.30	12.99	414.97	9.00	8.15
Total invertebrates	**181.66**	**298.52**	**333.66**	**191.19**	**200.78**	**162.97**	**122.77**	**79.11**	**1,061.56**	**149.92**	**307.14**
Miscellaneous	3.36	16.16	19.19	40.89	37.36	9.53	3.91	3.02	159.85	0.37	14.40
Total catch	**484.62**	**521.35**	**418.86**	**271.84**	**295.74**	**214.76**	**190.23**	**242.11**	**1,351.75**	**181.18**	**790.56**

Appendix A Table 2. -- Continued.

Station	R-25	Q-25	QP2524	QP2423	P-23	PO2423	O-23	J-24	J-23	I-23	H-23
Start date and time	7/4/09 15:36	7/4/09 18:48	7/5/09 6:31	7/5/09 9:56	7/5/09 12:28	7/5/09 14:17	7/5/09 16:38	7/6/09 6:59	7/6/09 10:20	7/6/09 13:20	7/6/09 16:32
Haul number	139	140	141	142	143	144	145	146	147	148	149
Start latitude	6042.07	6018.33	6010.01	6010.23	5959.44	5950.67	5940.67	5800.75	5759.93	5740.42	5720.51
Start longitude	17432.05	17437.34	17459.95	17339.07	17203.35	17346.10	17205.86	17344.16	17223.51	17227.23	17231.28
End latitude	6040.48	6017.16	6009.00	6009.30	5957.83	5949.78	5939.07	5759.80	5759.10	5738.80	5719.17
End longitude	17431.78	17437.19	17302.55	17341.76	17203.23	17343.27	17205.80	17346.54	17226.12	17226.41	17232.82
Bottom depth (m)	67	64	61	58	67	74	77	105	97	99	100
Duration (h)	0.54	0.39	0.55	0.55	0.54	0.56	0.55	0.55	0.56	0.56	0.55
Distance fished (km)	2.96	2.17	3.06	3.04	2.99	3.13	2.98	2.93	3.01	3.10	2.92
Net width (m)	16.73	16.64	16.72	17.30	17.30	17.44	17.54	17.35	17.62	17.07	17.45
Net measured?	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Performance	0	4	0	0	0	0	0	0	0	0	0
Alaska skates	13.96	--	30.00	51.55	7.78	4.21	7.56	82.16	95.68	40.83	46.27
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**13.96**	**--**	**30.00**	**51.55**	**7.78**	**4.21**	**7.56**	**82.16**	**95.68**	**40.83**	**48.45**
Alaska plaice	10.40	19.31	39.75	140.06	61.14	13.52	--	1.03	6.46	--	--
Arrowtooth flounder	--	--	--	--	--	--	--	14.41	--	15.64	266.77
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	0.03	0.06	--	--	0.13	0.39	0.68	0.22	--	0.48
Pacific halibut	--	--	--	9.80	2.78	1.87	1.32	--	1.38	9.61	1.90
Rock sole	15.91	9.54	55.90	46.83	4.33	24.27	3.01	4.10	66.75	2.66	2.06
Yellowfin sole	4.69	3.59	2.67	52.12	2.22	1.67	0.22	--	3.06	--	--
Other flatfish	--	--	0.04	0.06	--	--	--	1.63	--	1.65	76.39
Total flatfish	**31.00**	**32.47**	**98.41**	**248.87**	**70.47**	**41.46**	**4.94**	**21.85**	**77.88**	**29.56**	**347.60**
Walleye pollock	2.89	1.92	3.55	1.43	0.07	0.09	0.24	194.93	1,066.17	251.74	96.88
Pacific cod	20.09	8.89	6.24	4.89	3.53	0.06	0.07	12.51	215.39	86.11	22.16
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	0.21	--	--	--	0.06	0.31	3.49	1.39	0.76	0.41
Pacific herring	--	0.02	0.35	--	--	0.04	0.28	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	28.40	29.23	135.90	23.30	4.24	1.90	--	11.40	1.41	1.21	4.50
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	1.83	7.07	3.16	0.60	0.32	1.64	1.68	0.09	--	0.21	2.01
Total roundfish	**53.21**	**47.35**	**149.20**	**30.22**	**8.16**	**3.80**	**2.57**	**222.42**	**1,284.35**	**340.03**	**125.96**
Blue king crab	12.24	11.55	65.08	18.54	0.18	3.42	1.08	--	--	--	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	0.61	--	0.02	0.09	0.36	0.01	--	5.14	5.49	10.32	12.00
Tanner crab, opilio	79.07	5.13	0.97	0.68	9.79	41.28	60.04	155.96	68.72	52.62	10.99
Other crab	18.51	24.11	37.94	24.55	61.86	135.49	46.48	28.36	42.71	56.06	44.28
Shrimp	0.06	1.01	6.12	1.64	--	--	0.01	1.02	--	0.10	0.18
Octopus	--	--	--	--	--	--	--	--	--	--	0.00
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	27.10	72.53	63.20	9.09	25.46	34.25	10.04	72.37	40.10	54.52	22.20
Starfish	17.68	11.52	105.11	35.87	19.24	18.47	22.54	11.06	52.44	19.34	3.63
Other invertebrates	16.57	168.12	79.86	19.64	13.43	14.12	43.85	134.21	28.41	17.59	10.42
Total invertebrates	**171.84**	**293.97**	**358.29**	**110.09**	**130.31**	**247.04**	**184.04**	**408.12**	**237.87**	**210.55**	**103.71**
Miscellaneous	2.46	5.23	22.80	1.59	21.22	53.31	30.52	8.39	1.06	6.61	10.59
Total catch	**276.78**	**379.61**	**659.76**	**446.29**	**238.65**	**353.64**	**230.34**	**780.16**	**1,830.00**	**1,325.65**	**895.16**

Appendix A Table 2. -- Continued.

Station	F-24	F-23	G-23	G-24	I-26	J-26	K-26	L-26	M-26	N-26	ON2625
Start date and time	7/11/09 7:17	7/11/09 10:11	7/11/09 13:03	7/11/09 16:04	7/12/09 7:02	7/12/09 9:41	7/12/09 12:15	7/13/09 8:34	7/13/09 11:08	7/13/09 13:53	7/13/09 16:51
Haul number	150	151	152	153	154	155	156	158	159	160	161
Start latitude	5639.88	5639.04	5659.42	5659.93	5740.19	5759.62	5819.72	5839.87	5859.49	5919.54	5931.43
Start longitude	17202.69	17239.38	17237.01	17358.49	17436.62	17431.81	17426.74	17421.34	17416.86	17412.55	17429.89
End latitude	5638.78	5640.67	5700.98	5701.53	5741.97	5800.81	5821.37	5841.49	5901.11	5920.85	5932.79
End longitude	17204.74	17238.87	17236.73	17358.49	17435.93	17431.54	17425.93	17421.40	17416.51	17412.74	17431.65
Bottom depth (m)	126	119	108	116	146	117	115	126	117	110	101
Duration (h)	0.54	0.55	0.53	0.54	0.60	0.40	0.57	0.54	0.55	0.45	0.55
Distance fished (km)	2.94	3.05	2.92	2.97	3.38	2.21	3.15	3.00	3.02	2.43	3.01
Net width (m)	16.89	17.03	17.47	16.83	19.14	17.85	17.61	18.69	17.97	17.48	17.62
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0.00	0	0	4	0	0	0	4	0
Alaska skates	--	--	15.73	27.17	93.89	118.04	114.95	38.68	107.30	45.50	64.32
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**--**	**--**	**19.87**	**27.17**	**106.54**	**130.30**	**117.23**	**41.39**	**114.41**	**45.50**	**64.32**
Alaska plaice	--	--	--	--	--	--	--	--	1.45	54.80	--
Arrowtooth flounder	169.00	188.81	98.47	65.99	185.63	458.12	107.70	162.12	112.68	8.63	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	--	--	--	--	--	0.79	8.86	--
Pacific halibut	11.19	15.43	8.45	22.14	12.78	49.83	22.45	37.88	10.77	--	2.44
Rock sole	2.04	--	--	--	1.10	--	12.42	1.51	3.97	111.21	--
Yellowfin sole	--	--	--	--	--	--	--	--	--	--	--
Other flatfish	15.90	11.34	24.89	9.71	24.75	83.79	81.26	40.13	70.27	8.63	--
Total flatfish	**198.13**	**215.58**	**131.81**	**97.83**	**224.26**	**591.73**	**223.84**	**241.64**	**199.92**	**192.13**	**2.44**
Walleye pollock	--	0.52	793.93	8.62	364.28	2,190.02	4,615.22	32.70	581.57	2,735.54	5,134.57
Pacific cod	96.72	38.04	63.81	96.92	52.68	94.58	267.81	1.31	12.43	138.05	211.64
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	--	0.04	0.00	--	--	--	3.62	1.70	--	--
Pacific herring	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	0.21	--	0.19	--	--	--	--	--	--	--	--
Sculpins	0.03	9.08	47.29	13.79	17.08	40.30	6.99	11.47	9.19	15.38	1.55
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	1.22	0.51	21.38	0.12	0.12	--	--	--	0.03	--	--
Total roundfish	**98.18**	**48.15**	**926.65**	**119.45**	**434.15**	**2,324.90**	**4,890.02**	**49.11**	**604.93**	**2,888.96**	**5,347.76**
Blue king crab	--	--	--	--	--	--	--	--	1.50	2.47	13.66
Red king crab	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	0.75	10.05	11.26	1.65	3.42	5.77	1.62	0.78	10.52	1.18	0.21
Tanner crab, opilio	0.20	143.20	40.10	30.42	6.51	1.74	6.85	13.03	40.58	198.90	28.00
Other crab	3.54	14.58	56.18	20.00	2.41	13.75	41.99	85.37	204.63	37.33	3.05
Shrimp	0.01	0.01	0.02	0.21	0.11	0.06	--	0.31	9.17	--	--
Octopus	--	--	0.02	0.01	0.01	0.14	--	--	0.05	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	8.56	7.24	22.93	29.26	32.90	2.39	9.63	26.28	22.76	23.40	--
Starfish	0.06	1.17	0.96	1.02	1.71	3.61	--	2.45	2.98	3.12	23.23
Other invertebrates	441.01	78.67	27.87	1,031.72	0.66	16.15	3.06	6.83	8.56	5.75	15.96
Total invertebrates	**454.13**	**254.91**	**159.34**	**1,114.28**	**47.72**	**43.62**	**63.15**	**135.05**	**300.75**	**272.14**	**84.10**
Miscellaneous	7.36	5.77	14.54	6.36	3.49	2.78	3.94	--	15.17	8.49	1.39
Total catch	**767.70**	**545.36**	**1,265.71**	**1,372.30**	**862.97**	**3,189.48**	**5,341.26**	**490.42**	**1,279.93**	**3,418.64**	**5,500.00**

Appendix A Table 2. -- Continued.

Station	O-26	PO2625	P-25	P-26	QP2625	Q-26	Q-27	R-27	S-27	T-27	T-26
Start date and time	7/13/09 19:46	7/14/09 7:32	7/14/09 10:06	7/14/09 13:43	7/14/09 16:12	7/15/09 7:06	7/15/09 10:04	7/15/09 12:44	7/15/09 15:18	7/15/09 17:57	7/16/09 7:08
Haul number	162	163	164	165	166	167	168	169	170	171	172
Start latitude	5939.31	5949.80	6001.17	5959.66	6008.49	6019.53	6020.13	6039.10	6059.22	6119.36	6119.92
Start longitude	17408.79	17424.88	17441.01	17403.71	17413.66	17555.74	17518.86	17512.23	17507.15	17658.64	17538.71
End latitude	5940.93	5951.43	5959.50	6001.32	6006.93	6021.16	6020.21	6040.70	6100.87	6120.92	6119.87
End longitude	17409.29	17425.79	17440.64	17403.95	17412.95	17555.87	17515.58	17512.57	17507.19	17658.65	17542.10
Bottom depth (m)	104	94	74	96	88	90	102	97	92	88	78
Duration (h)	0.55	0.57	0.56	0.56	0.54	0.56	0.55	0.54	0.57	0.53	0.55
Distance fished (km)	3.04	3.14	3.11	3.08	2.97	3.03	3.03	2.99	3.05	2.89	3.04
Net width (m)	17.39	18.01	18.47	18.12	17.82	18.23	17.90	18.24	17.87	17.86	18.01
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	4.10	0	0	0	0	0	0	0	0
Alaska skates	65.43	31.00	3.21	20.37	22.59	42.89	36.48	14.09	31.93	33.96	4.55
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**65.43**	**31.00**	**3.21**	**20.37**	**22.59**	**42.89**	**36.48**	**14.09**	**31.93**	**33.96**	**4.55**
Alaska plaice	--	--	1.91	--	4.34	--	1.54	--	1.14	--	0.19
Arrowtooth flounder	13.06	--	--	0.73	3.80	--	13.56	0.64	--	--	--
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	3.37	3.67	--	0.01	0.03	--	2.07	0.33	0.04	0.10	0.03
Pacific halibut	4.69	1.00	--	1.69	46.66	5.19	2.91	1.23	0.64	--	--
Rock sole	6.04	--	31.84	1.97	48.00	2.04	20.41	9.95	4.22	--	1.08
Yellowfin sole	--	--	0.13	--	--	--	--	--	--	--	--
Other flatfish	13.06	--	--	0.73	3.24	--	13.56	0.64	--	--	--
Total flatfish	**40.21**	**4.67**	**33.88**	**5.13**	**106.07**	**7.23**	**54.05**	**12.80**	**6.04**	**0.10**	**1.30**
Walleye pollock	2,361.02	194.00	4.58	635.40	53.98	360.82	300.15	107.01	0.13	0.46	0.03
Pacific cod	83.04	296.77	36.79	234.89	111.24	376.56	157.41	90.65	0.02	0.05	0.39
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	--	6.37	--	3.53	1.06	12.52	11.55	5.78	2.83	0.22	0.12
Pacific herring	2.60	--	0.01	0.34	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	12.62	8.60	3.33	4.04	22.70	108.80	9.16	21.76	0.11	0.57	0.21
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	--	1.16	3.09	0.62	0.14	0.26	0.31	--	0.72	0.30	0.40
Total roundfish	**2,459.27**	**506.91**	**47.80**	**878.82**	**189.12**	**858.95**	**478.58**	**225.20**	**3.81**	**1.61**	**1.15**
Blue king crab	16.72	22.11	4.63	8.37	3.92	6.48	0.92	--	1.91	--	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	0.21	0.62	--	0.25	--	--	--	0.08	--	--	--
Tanner crab, opilio	29.26	24.33	8.69	30.75	40.70	133.79	6.40	32.53	58.95	38.34	59.57
Other crab	2.04	6.42	63.22	2.69	10.03	2.50	8.68	1.41	0.60	0.39	0.35
Shrimp	0.61	--	0.09	0.19	--	--	0.17	0.02	0.03	0.03	0.02
Octopus	--	3.28	0.79	--	--	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--	--	--	--
Snails	6.47	31.89	38.21	27.39	6.61	1.35	22.41	1.86	0.47	0.43	1.40
Starfish	29.65	10.10	7.30	17.64	5.27	2.47	29.15	1.66	1.18	1.54	4.61
Other invertebrates	11.37	21.02	157.81	17.86	42.29	13.34	33.65	14.70	15.08	8.81	53.23
Total invertebrates	**96.34**	**119.76**	**280.73**	**105.13**	**108.83**	**159.93**	**101.37**	**52.25**	**78.22**	**49.55**	**119.18**
Miscellaneous	0.38	2.39	13.07	--	1.69	0.58	1.32	0.07	0.13	0.18	0.12
Total catch	**2,689.05**	**667.81**	**378.70**	**1,013.76**	**455.62**	**1,080.00**	**851.23**	**334.71**	**123.92**	**85.88**	**128.50**

Appendix A Table 2. -- Continued.

Station	T-25	U-25	V-25	V-26	S-29	R-29	R-30	Q-30	Q-31	M-32	M-31
Start date and time	7/16/09 10:23	7/16/09 13:14	7/16/09 16:00	7/16/09 18:42	7/17/09 7:02	7/17/09 9:38	7/17/09 12:05	7/17/09 15:26	7/17/09 19:47	7/18/09 7:26	7/18/09 10:08
Haul number	173	174	175	176	177	178	179	180	182	183	184
Start latitude	6119.94	6139.28	6200.18	6200.29	6100.68	6041.52	6040.06	6020.24	6019.24	5859.92	5859.81
Start longitude	17422.14	17419.98	17415.37	17531.58	17741.57	17747.22	17713.58	17718.65	17836.31	17822.45	17700.89
End latitude	6119.88	6140.90	6201.60	6159.98	6059.15	6039.86	6040.14	6020.20	6019.46	5859.91	5859.60
End longitude	17425.44	17419.01	17413.60	17528.07	17742.95	17747.15	17710.16	17715.34	17839.32	17825.63	17704.07
Bottom depth (m)	73	70	62	73	111	118	128	136	146	134	135
Duration (h)	0.54	0.55	0.54	0.56	0.56	0.56	0.56	0.56	0.51	0.55	0.55
Distance fished (km)	2.95	3.12	3.05	3.13	3.10	3.08	3.14	3.06	2.81	3.06	3.07
Net width (m)	18.09	17.35	17.21	18.17	17.85	17.77	17.92	18.28	17.76	18.44	18.32
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	6.84	3.92	2.37	10.55	61.07	99.10	65.45	66.15	41.42	16.36	9.27
Sharks	--	--	--	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--	--	--	--
Total elasmobranch	**6.84**	**3.92**	**2.37**	**10.55**	**65.97**	**101.49**	**65.45**	**66.15**	**47.00**	**33.49**	**17.84**
Alaska plaice	--	0.26	4.73	1.72	--	--	--	--	--	--	--
Arrowtooth flounder	--	--	--	--	12.61	13.29	20.79	61.45	52.01	117.96	207.96
Flathead sole	--	--	--	--	--	--	--	--	--	--	--
Greenland turbot	0.08	0.01	0.08	0.05	7.75	10.16	10.09	26.17	21.64	--	--
Pacific halibut	--	--	0.81	--	1.79	3.13	--	--	0.81	12.91	16.28
Rock sole	--	0.24	--	--	0.90	1.86	--	--	--	1.91	18.44
Yellowfin sole	0.92	0.28	1.24	0.22	0.87	--	--	--	--	--	--
Other flatfish	--	--	0.36	0.21	12.61	10.45	20.79	44.01	24.44	22.45	5.73
Total flatfish	**1.00**	**0.79**	**7.22**	**2.20**	**36.53**	**38.89**	**51.66**	**131.64**	**98.90**	**155.23**	**248.41**
Walleye pollock	0.01	0.20	0.03	0.07	179.44	372.80	595.40	564.10	492.32	0.05	35.07
Pacific cod	--	--	0.03	--	75.25	38.82	57.79	17.86	24.54	25.85	43.39
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--	--	--	--
Eelpouts	1.84	3.19	3.45	1.78	16.47	35.05	20.72	9.97	17.21	0.03	0.39
Pacific herring	--	--	--	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--	--	--	--
Sculpins	0.05	0.29	0.33	0.16	1.88	14.91	8.42	25.27	23.76	3.73	4.09
Other rockfish	--	--	--	--	--	--	--	--	--	--	--
Other roundfish	1.03	0.72	2.00	3.31	0.45	0.37	1.05	0.62	1.51	0.25	0.17
Total roundfish	**2.91**	**4.39**	**5.84**	**5.32**	**273.48**	**461.95**	**683.39**	**617.82**	**559.34**	**29.90**	**83.11**
Blue king crab	--	--	--	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	--	--	--	--	--	--
Tanner crab, bairdi	--	--	--	--	--	0.37	1.38	0.86	0.69	6.66	2.54
Tanner crab, opilio	41.99	115.34	35.79	98.51	69.24	29.60	60.11	79.08	21.00	0.01	0.32
Other crab	0.24	0.64	6.88	0.74	8.57	8.39	15.08	39.55	3.26	7.20	7.92
Shrimp	0.00	0.03	--	0.14	0.33	0.81	1.41	3.03	1.38	0.01	--
Octopus	--	--	--	--	--	--	--	--	2.84	0.01	0.02
Squids	--	--	--	--	--	--	--	--	--	0.20	--
Snails	1.38	6.33	82.71	3.77	27.84	57.81	87.34	63.07	6.06	8.79	19.89
Starfish	4.71	16.83	7.00	15.37	13.82	94.34	176.90	120.63	69.38	0.14	0.92
Other invertebrates	12.02	10.05	45.31	18.93	16.07	23.64	11.99	0.26	190.42	14.46	14.54
Total invertebrates	**60.34**	**149.22**	**177.69**	**137.46**	**135.86**	**214.95**	**354.20**	**306.49**	**295.02**	**37.49**	**46.16**
Miscellaneous	--	0.01	2.63	0.04	1.17	--	3.87	0.81	7.51	2.69	2.22
Total catch	**73.12**	**160.26**	**199.99**	**159.30**	**517.79**	**822.79**	**1,158.79**	**1,140.01**	**1,013.79**	**356.01**	**633.85**

Appendix A Table 2. -- Continued.

Station	L-31	L-30	M-30	O-29	O-30	P-30	P-29	Q-29
Start date and time	7/18/09 12:59	7/18/09 15:46	7/18/09 18:45	7/19/09 7:07	7/19/09 9:47	7/19/09 12:34	7/19/09 15:42	7/19/09 18:36
Haul number	185	186	187	188	189	190	191	192
Start latitude	5840.18	5840.10	5859.36	5940.09	5939.97	5958.54	6000.02	6019.51
Start longitude	17707.21	17747.11	17741.60	17608.62	17730.19	17717.20	17602.09	17758.22
End latitude	5839.89	5840.22	5901.01	5940.00	5939.96	6000.16	6000.02	6020.66
End longitude	17710.28	17750.35	17741.72	17605.29	17726.92	17716.98	17605.42	17757.91
Bottom depth (m)	135	139	135	136	135	140	129	121
Duration (h)	0.55	0.56	0.56	0.58	0.55	0.54	0.56	0.39
Distance fished (km)	3.04	3.14	3.06	3.14	3.08	3.00	3.10	2.15
Net width (m)	17.71	18.11	17.58	17.65	17.41	18.19	17.50	17.30
Net measured?	Y	Y	Y	Y	Y	N	Y	Y
Performance	0	0	0	0	0	0	0	4
Alaska skates	4.91	--	0.73	53.39	36.00	33.62	37.63	107.51
Sharks	--	--	--	--	--	--	--	--
Sharks	--	--	--	--	--	--	--	--
Total elasmobranch	**10.76**	**2.14**	**4.82**	**68.41**	**36.00**	**35.72**	**37.63**	**107.51**
Alaska plaice	--	--	--	--	--	--	--	--
Arrowtooth flounder	124.01	252.84	103.37	40.84	61.93	12.59	71.30	20.10
Flathead sole	--	--	--	--	--	--	--	--
Greenland turbot	--	--	--	35.82	0.24	2.43	23.56	0.98
Pacific halibut	9.78	7.13	1.59	3.40	--	--	6.80	6.52
Rock sole	1.70	7.62	3.15	1.68	--	--	--	0.39
Yellowfin sole	--	--	--	--	--	--	--	--
Other flatfish	12.22	19.69	15.98	33.26	24.77	12.59	59.02	10.48
Total flatfish	**147.71**	**287.28**	**124.09**	**114.99**	**86.93**	**27.60**	**160.68**	**38.46**
Walleye pollock	--	--	122.69	1,216.47	1,990.75	592.41	2,336.39	1,729.43
Pacific cod	17.10	14.68	11.10	52.89	38.82	19.82	93.22	36.60
Sablefish	--	--	--	--	--	--	--	--
Atka mackerel	--	--	--	--	--	--	--	--
Eelpouts	0.02	--	0.22	39.37	38.03	38.46	30.90	17.24
Pacific herring	--	--	--	--	--	--	--	--
Pacific ocean perch	--	--	--	--	--	--	--	--
Sculpins	--	--	18.02	2.76	12.33	12.48	9.04	6.36
Other rockfish	--	--	--	--	--	--	--	--
Other roundfish	--	--	0.37	0.10	2.15	1.08	0.30	0.04
Total roundfish	**17.12**	**14.68**	**152.41**	**1,311.58**	**2,082.07**	**664.25**	**2,469.86**	**1,789.67**
Blue king crab	--	--	--	--	--	--	--	--
Red king crab	--	--	--	--	--	--	--	--
Tanner crab, bairdi	0.83	0.90	1.11	2.08	0.02	0.91	1.98	1.77
Tanner crab, opilio	0.18	--	--	1.32	1.22	12.38	21.84	13.99
Other crab	15.38	10.67	0.50	52.91	1.57	29.36	54.99	34.32
Shrimp	--	--	0.41	7.29	16.59	12.94	3.06	3.51
Octopus	0.03	0.02	--	--	--	--	--	--
Squids	--	--	--	--	--	--	--	--
Snails	8.48	10.37	23.17	111.19	3.77	89.89	101.78	80.97
Starfish	0.87	2.32	2.56	260.92	127.50	508.86	417.73	71.41
Other invertebrates	1.76	5.82	19.49	81.29	18.45	12.62	32.31	20.01
Total invertebrates	**27.52**	**30.09**	**47.24**	**517.00**	**169.12**	**666.96**	**633.67**	**225.98**
Miscellaneous	8.07	5.41	2.41	17.98	--	2.04	32.96	11.38
Total catch	**373.42**	**560.01**	**748.24**	**2,043.26**	**2,412.77**	**1,432.59**	**3,351.02**	**2,189.48**

Appendix B: Rank Order of Relative Abundance of Fishes and Invertebrates

Appendix B ranks all fishes and invertebrates identified during the 2009 eastern Bering Sea bottom trawl survey by descending unweighted CPUE (kg/ha).

Appendix B Table 1. -- Rank of fish and invertebrate taxa by weighted total CPUE (kg/ha) from the 2009 eastern Bering Sea bottom trawl survey.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
1	21740	46.0538	13.3827	38.8836	53.2239	0.2000	0.2000	*Theragra chalcogramma*
2	10210	35.0962	3.7684	31.2914	38.9010	0.1524	0.3524	*Limanda aspera*
3	10260	30.7705	2.6015	27.6092	33.9318	0.1336	0.4861	*Lepidopsetta* sp.
4	81742	15.4073	0.4132	14.1474	16.6672	0.0669	0.5530	*Asterias amurensis*
5	10285	10.6887	0.5341	9.2562	12.1211	0.0464	0.5994	*Pleuronectes quadrituberculatus*
6	21720	8.6781	0.2751	7.6501	9.7062	0.0377	0.6371	*Gadus macrocephalus*
7	10110	8.2094	0.4234	6.9340	9.4847	0.0357	0.6727	*Atheresthes stomias*
8	10130	7.7250	0.2177	6.8105	8.6395	0.0335	0.7063	*Hippoglossoides elassodon*
9	471	7.0805	0.1038	6.4489	7.7120	0.0307	0.7370	*Bathyraja parmifera*
10	68580	5.2241	0.1934	4.3622	6.0861	0.0227	0.7597	*Chionoecetes opilio*
11	83020	5.0152	0.2238	4.0879	5.9425	0.0218	0.7815	*Gorgonocephalus eucnemis*
12	98082	3.9281	0.2240	3.0005	4.8557	0.0171	0.7986	*Styela rustica*
13	10120	3.4004	0.0231	3.1026	3.6981	0.0148	0.8133	*Hippoglossus stenolepis*
14	40504	3.3034	0.1687	2.4983	4.1085	0.0143	0.8277	*Chrysaora melanaster*
15	99994	3.1533	0.0331	2.7969	3.5097	0.0137	0.8414	empty gastropod shells
16	98205	2.9822	0.2110	2.0819	3.8825	0.0130	0.8543	*Halocynthia aurantium*
17	91000	2.9478	0.4266	1.6677	4.2279	0.0128	0.8671	Porifera
18	69086	2.0557	0.0121	1.8404	2.2710	0.0089	0.8760	*Pagurus trigonocheirus*
19	10220	1.6014	0.0433	1.1935	2.0093	0.0070	0.8830	*Platichthys stellatus*
20	81780	1.5921	0.0770	1.0483	2.1359	0.0069	0.8899	*Ctenodiscus crispatus*
21	69322	1.5743	0.0670	1.0670	2.0817	0.0068	0.8967	*Paralithodes camtschaticus*
22	98105	1.4364	0.0434	1.0278	1.8449	0.0062	0.9030	*Boltenia ovifera*
23	68560	1.3211	0.0188	1.0525	1.5897	0.0057	0.9087	*Chionoecetes bairdi*
24	69060	1.2618	0.0053	1.1196	1.4039	0.0055	0.9142	*Pagurus aleuticus*
25	71820	1.1876	0.0224	0.8941	1.4810	0.0052	0.9194	*Neptunea pribiloffensis*
26	10112	0.9991	0.0110	0.7934	1.2049	0.0043	0.9237	*Atheresthes evermanni*
27	71884	0.9968	0.0209	0.7136	1.2800	0.0043	0.9280	*Neptunea heros*
28	21371	0.9549	0.0041	0.8294	1.0803	0.0041	0.9322	*Myoxocephalus jaok*
29	21370	0.9060	0.0083	0.7273	1.0847	0.0039	0.9361	*Myoxocephalus polyacanthocephalus*
30	80590	0.8800	0.0046	0.7464	1.0137	0.0038	0.9399	*Leptasterias polaris*
31	69120	0.6156	0.0055	0.4698	0.7613	0.0027	0.9426	*Pagurus capillatus*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
32	43090	0.5814	0.0067	0.4210	0.7418	0.0025	0.9451	*Liponema brevicornis*
33	71882	0.5786	0.0046	0.4456	0.7116	0.0025	0.9476	*Neptunea ventricosa*
34	68577	0.5442	0.0061	0.3909	0.6975	0.0024	0.9500	*Hyas coarctatus*
35	71870	0.5386	0.0018	0.4559	0.6212	0.0023	0.9523	*Neptunea lyrata*
36	43021	0.4724	0.0073	0.3046	0.6402	0.0021	0.9544	*Metridium farcimen*
37	21347	0.4652	0.0092	0.2774	0.6530	0.0020	0.9564	*Hemilepidotus jordani*
38	98310	0.4109	0.0022	0.3190	0.5028	0.0018	0.9582	*Aplidium* sp.
39	71753	0.4107	0.0047	0.2764	0.5451	0.0018	0.9600	*Pyrulofusus deformis*
40	21420	0.4075	0.0017	0.3261	0.4889	0.0018	0.9618	*Hemitripterus bolini*
41	82510	0.3855	0.0081	0.2086	0.5625	0.0017	0.9634	*Strongylocentrotus droebachiensis*
42	72500	0.3837	0.0021	0.2945	0.4728	0.0017	0.9651	*Fusitriton oregonensis*
43	20040	0.3711	0.0010	0.3095	0.4327	0.0016	0.9667	*Podothecus accipenserinus*
44	10200	0.3661	0.0159	0.1187	0.6135	0.0016	0.9683	*Glyptocephalus zachirus*
45	69095	0.3437	0.0012	0.2755	0.4119	0.0015	0.9698	*Pagurus rathbuni*
46	83320	0.3189	0.0017	0.2383	0.3995	0.0014	0.9712	*Ophiura sarsi*
47	24191	0.2932	0.0037	0.1738	0.4126	0.0013	0.9724	*Lycodes brevipes*
48	71750	0.2808	0.0016	0.2017	0.3600	0.0012	0.9737	*Volutopsius* sp.
49	43010	0.2707	0.0032	0.1602	0.3812	0.0012	0.9748	*Metridium* sp.
50	435	0.2678	0.0035	0.1517	0.3840	0.0012	0.9760	*Bathyraja interrupta*
51	69070	0.2260	0.0004	0.1876	0.2643	0.0010	0.9770	*Pagurus confragosus*
52	10115	0.2211	0.0011	0.1555	0.2866	0.0010	0.9779	*Reinhardtius hippoglossoides*
53	98200	0.2144	0.0080	0.0386	0.3901	0.0009	0.9789	*Halocynthia* sp.
54	99993	0.2011	0.0006	0.1515	0.2507	0.0009	0.9798	empty bivalve shells
55	80200	0.1808	0.0002	0.1513	0.2103	0.0008	0.9805	*Lethasterias nanimensis*
56	69090	0.1738	0.0002	0.1442	0.2035	0.0008	0.9813	*Pagurus ochotensis*
57	69323	0.1738	0.0004	0.1337	0.2138	0.0008	0.9820	*Paralithodes platypus*
58	80020	0.1737	0.0010	0.1106	0.2368	0.0008	0.9828	*Evasterias echinosoma*
59	69042	0.1731	0.0008	0.1184	0.2279	0.0008	0.9836	*Pagurus brandti*
60	21368	0.1605	0.0004	0.1219	0.1990	0.0007	0.9842	*Myoxocephalus verrucosus*
61	71761	0.1574	0.0024	0.0613	0.2534	0.0007	0.9849	*Pyrulofusus melonis*
62	71001	0.1518	0.0038	0.0305	0.2731	0.0007	0.9856	gastropod eggs
63	98300	0.1393	0.0005	0.0940	0.1846	0.0006	0.9862	compound ascidian unident.

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
64	85201	0.1202	0.0005	0.0763	0.1640	0.0005	0.9867	*Cucumaria fallax*
65	80594	0.1103	0.0003	0.0771	0.1434	0.0005	0.9872	*Leptasterias arctica*
66	10211	0.1011	0.0002	0.0716	0.1306	0.0004	0.9876	*Limanda proboscidea*
67	82511	0.0996	0.0011	0.0336	0.1656	0.0004	0.9881	*Strongylocentrotus* sp.
68	420	0.0908	0.0006	0.0417	0.1399	0.0004	0.9885	*Raja binoculata*
69	66031	0.0840	0.0002	0.0539	0.1141	0.0004	0.9888	*Pandalus eous*
70	72743	0.0826	0.0004	0.0434	0.1218	0.0004	0.9892	*Buccinum angulosum*
71	72755	0.0813	<0.0001	0.0678	0.0949	0.0004	0.9895	*Buccinum polare*
72	68590	0.0811	<0.0001	0.0659	0.0963	0.0004	0.9899	*Chionoecetes hybrid*
73	69061	0.0810	0.0002	0.0545	0.1075	0.0004	0.9902	*Labidochirus splendescens*
74	69035	0.0805	0.0008	0.0245	0.1366	0.0003	0.9906	*Pagurus* sp.
75	69400	0.0794	<0.0001	0.0615	0.0972	0.0003	0.9909	*Erimacrus isenbeckii*
76	71915	0.0780	0.0002	0.0518	0.1041	0.0003	0.9913	*Neptunea* sp.
77	72752	0.0773	0.0004	0.0394	0.1151	0.0003	0.9916	*Buccinum scalariforme*
78	24185	0.0714	0.0001	0.0502	0.0925	0.0003	0.9919	*Lycodes palearis*
79	20720	0.0650	0.0006	0.0164	0.1137	0.0003	0.9922	*Bathymaster signatus*
80	99997	0.0629	0.0002	0.0356	0.0901	0.0003	0.9925	unsorted catch and debris
81	74120	0.0545	0.0003	0.0226	0.0863	0.0002	0.9927	*Patinopecten caurinus*
82	68578	0.0539	<0.0001	0.0466	0.0612	0.0002	0.9929	*Hyas lyratus*
83	95036	0.0535	0.0003	0.0172	0.0898	0.0002	0.9932	*Alcyonidium pedunculatum*
84	85219	0.0533	0.0005	0.0076	0.0989	0.0002	0.9934	*Psolus fabricii*
85	69121	0.0498	0.0002	0.0256	0.0740	0.0002	0.9936	*Elassochirus cavimanus*
86	21110	0.0492	0.0001	0.0262	0.0722	0.0002	0.9938	*Clupea pallasi*
87	71756	0.0489	0.0001	0.0271	0.0707	0.0002	0.9941	*Volutopsius fragilis*
88	71886	0.0473	0.0002	0.0180	0.0765	0.0002	0.9943	*Clinopegma* (=*Neptunea*) *magna*
89	472	0.0438	0.0002	0.0160	0.0716	0.0002	0.9944	*Bathyraja aleutica*
90	43000	0.0415	0.0002	0.0168	0.0662	0.0002	0.9946	Actiniaria
91	82740	0.0395	0.0002	0.0098	0.0693	0.0002	0.9948	*Echinarachnius parma*
92	22205	0.0393	<0.0001	0.0309	0.0476	0.0002	0.9950	*Liparis gibbus*
93	23041	0.0391	<0.0001	0.0278	0.0503	0.0002	0.9951	*Mallotus villosus*
94	21316	0.0375	0.0001	0.0171	0.0579	0.0002	0.9953	*Gymnocanthus galeatus*
95	50192	0.0359	<0.0001	0.0243	0.0475	0.0002	0.9955	*Aphrodita negligens*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
96	72751	0.0335	<0.0001	0.0215	0.0454	0.0001	0.9956	*Buccinum plectrum*
97	71800	0.0328	0.0001	0.0096	0.0560	0.0001	0.9957	*Neptunea* sp.
98	21390	0.0320	<0.0001	0.0230	0.0410	0.0001	0.9959	*Dasycottus setiger*
99	71769	0.0303	<0.0001	0.0169	0.0438	0.0001	0.9960	*Beringius* sp.
100	20322	0.0296	0.0002	0.0041	0.0551	0.0001	0.9961	*Anarhichas orientalis*
101	81355	0.0294	<0.0001	0.0202	0.0386	0.0001	0.9963	*Pteraster obscurus*
102	43042	0.0259	<0.0001	0.0147	0.0372	0.0001	0.9964	*Urticina crassicornis*
103	43032	0.0259	<0.0001	0.0145	0.0373	0.0001	0.9965	*Stomphia coccinea*
104	42000	0.0243	0.0004	0.0000	0.0636	0.0001	0.9966	Pennatulacea
105	21314	0.0235	<0.0001	0.0147	0.0324	0.0001	0.9967	*Gymnocanthus pistilliger*
106	21438	0.0234	<0.0001	0.0158	0.0310	0.0001	0.9968	*Icelus spiniger*
107	24184	0.0231	0.0001	0.0017	0.0445	0.0001	0.9969	*Lycodes raridens*
108	75111	0.0211	<0.0001	0.0164	0.0257	<0.0001	0.9970	*Mactromeris polynyma*
109	23010	0.0210	<0.0001	0.0066	0.0355	<0.0001	0.9971	*Thaleichthys pacificus*
110	95000	0.0205	<0.0001	0.0112	0.0298	<0.0001	0.9972	Bryozoa unident.
111	68781	0.0199	<0.0001	0.0108	0.0289	<0.0001	0.9973	*Telmessus cheiragonus*
112	71890	0.0186	<0.0001	0.0143	0.0229	<0.0001	0.9973	*Plicifusus* sp.
113	41221	0.0179	<0.0001	0.0089	0.0268	<0.0001	0.9974	*Gersemia rubiformis*
114	71772	0.0178	<0.0001	0.0122	0.0235	<0.0001	0.9975	*Beringius beringii*
115	78403	0.0168	0.0002	0.0000	0.0437	<0.0001	0.9976	*Octopus dofleini*
116	21348	0.0161	<0.0001	0.0088	0.0235	<0.0001	0.9976	*Hemilepidotus papilio*
117	72740	0.0151	<0.0001	0.0071	0.0231	<0.0001	0.9977	*Buccinum* sp.
118	40500	0.0140	<0.0001	0.0000	0.0322	<0.0001	0.9978	Scyphozoa
119	22236	0.0133	<0.0001	0.0000	0.0276	<0.0001	0.9978	*Careproctus rastrinus*
120	50010	0.0131	<0.0001	0.0000	0.0285	<0.0001	0.9979	tube worm unident.
121	23220	0.0129	<0.0001	0.0000	0.0258	<0.0001	0.9979	*Oncorhynchus tshawytscha*
122	79210	0.0126	0.0003	0.0000	0.0440	<0.0001	0.9980	*Berryteuthis magister*
123	72063	0.0125	<0.0001	0.0089	0.0162	<0.0001	0.9981	*Aforia circinata*
124	75287	0.0125	<0.0001	0.0077	0.0173	<0.0001	0.9981	*Serripes notabilis*
125	23235	0.0122	<0.0001	0.0040	0.0204	<0.0001	0.9982	*Oncorhynchus keta*
126	20006	0.0121	<0.0001	0.0000	0.0268	<0.0001	0.9982	*Leptagonus frenatus*
127	40011	0.0120	<0.0001	0.0006	0.0234	<0.0001	0.9983	hydroid unident.

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
128	71891	0.0118	<0.0001	0.0083	0.0153	<0.0001	0.9983	*Plicifusus kroyeri*
129	21355	0.0117	<0.0001	0.0049	0.0185	<0.0001	0.9984	*Triglops pingeli*
130	98070	0.0117	<0.0001	0.0010	0.0223	<0.0001	0.9984	Thaliacea unident.
131	81870	0.0115	<0.0001	0.0025	0.0204	<0.0001	0.9985	*Dipsacaster borealis*
132	74562	0.0108	<0.0001	0.0063	0.0153	<0.0001	0.9985	*Musculus discors*
133	10270	0.0107	<0.0001	0.0031	0.0184	<0.0001	0.9986	*Isopsetta isolepis*
134	41201	0.0101	<0.0001	0.0068	0.0134	<0.0001	0.9986	*Gersemia* sp.
135	65201	0.0098	<0.0001	0.0044	0.0152	<0.0001	0.9986	*Balanus* sp.
136	75285	0.0096	<0.0001	0.0059	0.0133	<0.0001	0.9987	*Serripes groenlandicus*
137	21592	0.0096	<0.0001	0.0045	0.0147	<0.0001	0.9987	*Trichodon trichodon*
138	56311	0.0095	<0.0001	0.0079	0.0112	<0.0001	0.9988	*Eunoe nodosa*
139	10180	0.0095	0.0001	0.0000	0.0320	<0.0001	0.9988	*Microstomus pacificus*
140	74060	0.0083	<0.0001	0.0008	0.0158	<0.0001	0.9989	*Modiolus modiolus*
141	21725	0.0082	<0.0001	0.0000	0.0184	<0.0001	0.9989	*Boreogadus saida*
142	50161	0.0070	<0.0001	0.0002	0.0139	<0.0001	0.9989	*Aphrodita* sp.
143	65203	0.0070	<0.0001	0.0022	0.0117	<0.0001	0.9989	*Balanus evermanni*
144	71763	0.0068	<0.0001	0.0015	0.0122	<0.0001	0.9990	*Volutopsius stefanssoni*
145	71835	0.0067	<0.0001	0.0045	0.0090	<0.0001	0.9990	*Neptunea borealis*
146	81360	0.0066	<0.0001	0.0018	0.0113	<0.0001	0.9990	*Diplopteraster multipes*
147	66045	0.0066	<0.0001	0.0038	0.0093	<0.0001	0.9991	*Pandalus goniurus*
148	68510	0.0063	<0.0001	0.0046	0.0079	<0.0001	0.9991	*Oregonia gracilis*
149	20061	0.0060	<0.0001	0.0031	0.0089	<0.0001	0.9991	*Occella dodecaedron*
150	81095	0.0060	<0.0001	0.0047	0.0072	<0.0001	0.9991	*Crossaster papposus*
151	436	0.0059	<0.0001	0.0000	0.0150	<0.0001	0.9992	*Bathyraja interrupta*
152	71537	0.0058	<0.0001	0.0022	0.0093	<0.0001	0.9992	*Cryptonatica* (=*Natica*) *russa*
153	74983	0.0055	<0.0001	0.0026	0.0083	<0.0001	0.9992	*Clinocardium ciliatum*
154	75205	0.0054	<0.0001	0.0041	0.0068	<0.0001	0.9992	*Tellina lutea*
155	40511	0.0052	<0.0001	0.0016	0.0089	<0.0001	0.9993	*Aurelia* sp.
156	75600	0.0050	<0.0001	0.0016	0.0085	<0.0001	0.9993	*Pododesmus macrochisma*
157	95070	0.0047	<0.0001	0.0026	0.0067	<0.0001	0.9993	*Rhamphostomella costata*
158	43100	0.0046	<0.0001	0.0026	0.0066	<0.0001	0.9993	Actinostolidae
159	95030	0.0046	<0.0001	0.0022	0.0070	<0.0001	0.9993	*Flustra serrulata*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
160	65100	0.0045	<0.0001	0.0025	0.0066	<0.0001	0.9994	Thoracica
161	21354	0.0045	<0.0001	0.0000	0.0092	<0.0001	0.9994	*Triglops scepticus*
162	81060	0.0044	<0.0001	0.0011	0.0076	<0.0001	0.9994	*Solaster* sp.
163	480	0.0044	<0.0001	0.0000	0.0153	<0.0001	0.9994	*Bathyraja maculata*
164	78012	0.0038	<0.0001	0.0012	0.0065	<0.0001	0.9994	*Benthoctopus leioderma*
165	30060	0.0038	<0.0001	0.0007	0.0069	<0.0001	0.9995	*Sebastes alutus*
166	42012	0.0037	<0.0001	0.0001	0.0073	<0.0001	0.9995	*Halipteris willemoesi*
167	98000	0.0036	<0.0001	0.0011	0.0060	<0.0001	0.9995	Ascidian unident.
168	30420	0.0035	<0.0001	0.0000	0.0108	<0.0001	0.9995	*Sebastes polyspinis*
169	71010	0.0034	<0.0001	0.0021	0.0048	<0.0001	0.9995	Nudibranchia unident.
170	91015	0.0034	<0.0001	0.0002	0.0067	<0.0001	0.9995	*Suberites* sp.
171	30052	0.0034	<0.0001	0.0000	0.0086	<0.0001	0.9995	*Sebastes melanostictus*
172	81310	0.0032	<0.0001	0.0003	0.0061	<0.0001	0.9996	*Pteraster* sp.
173	43030	0.0031	<0.0001	0.0017	0.0044	<0.0001	0.9996	*Stomphia* sp.
174	71025	0.0030	<0.0001	0.0015	0.0046	<0.0001	0.9996	*Tritonia* sp.
175	80540	0.0030	<0.0001	0.0018	0.0042	<0.0001	0.9996	*Henricia* sp.
176	74104	0.0030	<0.0001	0.0013	0.0047	<0.0001	0.9996	*Chlamys* sp.
177	21921	0.0029	<0.0001	0.0000	0.0060	<0.0001	0.9996	*Pleurogrammus monopterygius*
178	43040	0.0027	<0.0001	0.0010	0.0043	<0.0001	0.9996	*Urticina* sp.
179	30152	0.0025	<0.0001	0.0000	0.0057	<0.0001	0.9996	*Sebastes variabilis*
180	80110	0.0023	<0.0001	0.0011	0.0035	<0.0001	0.9997	*Leptasterias groenlandica*
181	66502	0.0023	<0.0001	0.0009	0.0037	<0.0001	0.9997	*Crangon* sp.
182	72790	0.0023	<0.0001	0.0000	0.0045	<0.0001	0.9997	*Arctomelon stearnsii*
183	42003	0.0023	<0.0001	0.0008	0.0037	<0.0001	0.9997	Virgularidae
184	71710	0.0022	<0.0001	0.0014	0.0031	<0.0001	0.9997	*Colus* sp.
185	83310	0.0021	<0.0001	0.0001	0.0042	<0.0001	0.9997	*Ophiura* sp.
186	21346	0.0021	<0.0001	0.0001	0.0042	<0.0001	0.9997	*Hemilepidotus hemilepidotus*
187	56312	0.0021	<0.0001	0.0017	0.0025	<0.0001	0.9997	*Eunoe depressa*
188	21735	0.0021	<0.0001	0.0000	0.0042	<0.0001	0.9997	*Eleginus gracilis*
189	74065	0.0019	<0.0001	0.0000	0.0051	<0.0001	0.9997	*Mytilus* sp.
190	69310	0.0019	<0.0001	0.0000	0.0068	<0.0001	0.9998	*Lithodes aequispinus*
191	71030	0.0019	<0.0001	0.0010	0.0028	<0.0001	0.9998	*Tritonia diomedea*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
192	71771	0.0017	<0.0001	0.0000	0.0034	<0.0001	0.9998	*Beringius frielei*
193	74311	0.0017	<0.0001	0.0010	0.0024	<0.0001	0.9998	*Hiatella arctica*
194	80660	0.0017	<0.0001	0.0004	0.0029	<0.0001	0.9998	*Pseudarchaster parelii*
195	21352	0.0016	<0.0001	0.0000	0.0030	<0.0001	0.9998	*Triglops forficata*
196	72747	0.0016	<0.0001	0.0008	0.0023	<0.0001	0.9998	*Buccinum oedematum*
197	71580	0.0015	<0.0001	0.0008	0.0022	<0.0001	0.9998	*Euspira* (=*Polinices*) *pallidus*
198	310	0.0015	<0.0001	0.0000	0.0051	<0.0001	0.9998	*Squalus acanthias*
199	66570	0.0014	<0.0001	0.0000	0.0030	<0.0001	0.9998	*Argis* sp.
200	91074	0.0014	<0.0001	0.0000	0.0037	<0.0001	0.9998	*Polymastia* sp.
201	21356	0.0013	<0.0001	0.0000	0.0037	<0.0001	0.9998	*Triglops macellus*
202	57409	0.0013	<0.0001	0.0000	0.0039	<0.0001	0.9998	Serpulidae
203	71511	0.0013	<0.0001	0.0008	0.0017	<0.0001	0.9998	Naticidae eggs
204	21935	0.0012	<0.0001	0.0006	0.0018	<0.0001	0.9998	*Hexagrammos decagrammus*
205	21441	0.0012	<0.0001	0.0007	0.0017	<0.0001	0.9998	*Icelus spatula*
206	75381	0.0012	<0.0001	0.0002	0.0022	<0.0001	0.9999	Shipworm unident.
207	10212	0.0011	<0.0001	0.0000	0.0024	<0.0001	0.9999	*Limanda sakhalinensis*
208	91040	0.0011	<0.0001	0.0000	0.0039	<0.0001	0.9999	*Mycale loveni*
209	74106	0.0011	<0.0001	0.0000	0.0021	<0.0001	0.9999	*Chlamys rubida*
210	97120	0.0010	<0.0001	0.0001	0.0020	<0.0001	0.9999	*Hemithiris psittacea*
211	66020	0.0010	<0.0001	0.0000	0.0021	<0.0001	0.9999	*Pandalus* sp.
212	74980	0.0010	<0.0001	0.0000	0.0020	<0.0001	0.9999	*Clinocardium* sp.
213	91050	0.0010	<0.0001	0.0000	0.0021	<0.0001	0.9999	*Halichondria panicea*
214	43082	0.0009	<0.0001	0.0000	0.0022	<0.0001	0.9999	*Cribrinopsis fernaldi*
215	85169	0.0008	<0.0001	0.0004	0.0013	<0.0001	0.9999	*Pentamera lissoplaca*
216	80591	0.0008	<0.0001	0.0000	0.0018	<0.0001	0.9999	*Leptasterias katharinae*
217	69080	0.0007	<0.0001	0.0000	0.0014	<0.0001	0.9999	*Pagurus cornutus*
218	71500	0.0007	<0.0001	0.0000	0.0026	<0.0001	0.9999	Gastropod unident.
219	474	0.0007	<0.0001	0.0004	0.0011	<0.0001	0.9999	*Bathyraja parmifera*
220	75240	0.0007	<0.0001	0.0002	0.0012	<0.0001	0.9999	*Macoma* sp.
221	66030	0.0007	<0.0001	0.0000	0.0019	<0.0001	0.9999	*Pandalus jordani*
222	21932	0.0007	<0.0001	0.0000	0.0014	<0.0001	0.9999	*Hexagrammos stelleri*
223	22226	0.0007	<0.0001	0.0000	0.0033	<0.0001	0.9999	*Careproctus phasma*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
224	80595	0.0007	<0.0001	0.0002	0.0012	<0.0001	0.9999	*Leptasterias* sp.
225	72758	0.0007	<0.0001	0.0000	0.0013	<0.0001	0.9999	*Buccinum glaciale*
226	24001	0.0006	<0.0001	0.0000	0.0013	<0.0001	0.9999	*Zaprora silenus*
227	21329	0.0006	<0.0001	0.0000	0.0011	<0.0001	0.9999	*Gymnocanthus detrisus*
228	82530	0.0006	<0.0001	0.0000	0.0017	<0.0001	0.9999	*Allocentrotus fragilis*
229	1	0.0005	<0.0001	0.0001	0.0009	<0.0001	0.9999	fish eggs unident.
230	91030	0.0005	<0.0001	0.0000	0.0017	<0.0001	0.9999	*Aphrocallistes vastus*
231	68040	0.0005	<0.0001	0.0003	0.0006	<0.0001	0.9999	*Cancer oregonensis*
232	23805	0.0005	<0.0001	0.0003	0.0006	<0.0001	0.9999	*Lumpenus maculatus*
233	97000	0.0005	<0.0001	0.0000	0.0009	<0.0001	0.9999	brachiopod unident.
234	71774	0.0005	<0.0001	0.0001	0.0008	<0.0001	0.9999	*Beringius stimpsoni*
235	401	0.0004	<0.0001	0.0001	0.0007	<0.0001	0.9999	skate egg case unident.
236	10221	0.0004	<0.0001	0.0000	0.0010	<0.0001	0.9999	*Platichthys stellatus*
237	71726	0.0004	<0.0001	0.0000	0.0008	<0.0001	0.9999	*Colus spitzbergensis*
238	71525	0.0004	<0.0001	0.0001	0.0007	<0.0001	1.0000	*Natica* sp.
239	75267	0.0004	<0.0001	0.0002	0.0006	<0.0001	1.0000	*Siliqua alta*
240	79020	0.0004	<0.0001	0.0002	0.0006	<0.0001	1.0000	*Rossia pacifica*
241	21	0.0004	<0.0001	0.0000	0.0013	<0.0001	1.0000	*Lampetra tridentata*
242	95020	0.0004	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Eucratea loricata*
243	71747	0.0004	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Pyrulofusus* sp.
244	91053	0.0004	<0.0001	0.0000	0.0013	<0.0001	1.0000	*Rhabdocalyptus* sp.
245	66203	0.0003	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Lebbeus groenlandicus*
246	91093	0.0003	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Neoesperiopsis digitata*
247	71575	0.0003	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Euspira* (=*Polinices*) sp.
248	80729	0.0003	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Ceramaster japonicus*
249	71530	0.0003	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Natica clausa*
250	40561	0.0003	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Cyanea capillata*
251	85000	0.0003	<0.0001	0.0001	0.0005	<0.0001	1.0000	Holothuroidea unident.
252	22175	0.0003	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Aptocyclus ventricosus*
253	81315	0.0003	<0.0001	0.0000	0.0010	<0.0001	1.0000	*Pteraster tesselatus*
254	50001	0.0003	<0.0001	0.0000	0.0005	<0.0001	1.0000	worm unident.
255	80728	0.0003	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Ceramaster* sp.

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
256	20050	0.0002	<0.0001	0.0002	0.0003	<0.0001	1.0000	*Aspidophoroides bartoni*
257	72305	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Trichotropis bicarinata*
258	71722	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Colus hypolispus*
259	72420	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Boreotrophon* sp.
260	81320	0.0002	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Pteraster militaris*
261	71012	0.0002	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Tochuina tetraquetra*
262	80730	0.0002	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Ceramaster patagonicus*
263	69110	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Elassochirus tenuimanus*
264	74656	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Cyclocardia* sp.
265	66515	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Crangon communis*
266	81092	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Crossaster borealis*
267	75284	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Serripes* sp.
268	78452	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Benthoctopus* sp.
269	22206	0.0002	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Crystallichthys cyclospilus*
270	21333	0.0002	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Artediellus pacificus*
271	50000	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	Polychaeta
272	81829	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Leptychaster anomalus*
273	40506	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Aequorea* sp.
274	80015	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Evasterias troschelii*
275	80537	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Henricia* sp.
276	75286	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Serripes laperousii*
277	21397	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Blepsias bilobus*
278	83400	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Ophiopholis aculeata*
279	98219	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Aplidium californicum*
280	71583	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	Lamellaridae unident.
281	20202	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Ammodytes hexapterus*
282	71535	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Cryptonatica* (=*Natica*) *aleutica*
283	81820	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Leptychaster* sp.
284	74000	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	Bivalvia unident.
285	74414	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Yoldia* sp.
286	40012	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Bonneviella* sp.
287	71681	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Crepidula grandis*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
288	92500	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	Nemertea
289	85222	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Psolus japonicus*
290	43043	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Urticina lofotensis*
291	21341	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Malacocottus zonurus*
292	69520	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Hyas* sp.
293	66163	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Spirontocaris lamellicornis*
294	71760	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Volutopsius castaneus*
295	80546	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Henricia tumida*
296	71792	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Beringius* sp.
297	66179	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus macilentus*
298	72541	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Solariella obscura*
299	60100	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Amphipoda
300	22177	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eumicrotremus birulai*
301	94000	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	Sipuncula
302	56310	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eunoe* sp.
303	72802	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Velutina plicatilis*
304	99998	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Polychaete tubes
305	85120	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Molpadia intermedia*
306	80230	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pedicellaster magister*
307	66613	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Argis levior*
308	71230	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Anisodoris nobilis*
309	23055	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Osmerus mordax*
310	43045	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyphelia australis*
311	91069	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Tethya* sp.
312	83070	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Asteronyx loveni*
313	71260	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Archidoris odhneri*
314	83345	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Ophiacantha cataleimmoida*
315	66050	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pandalus hypsinotus*
316	20036	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyagonus infraspinatus*
317	66170	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus* sp.
318	50160	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Aphroditidae
319	20035	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyagonus alascanus*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
320	70100	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Polyplacophora unident.
321	21379	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Trichocottus brashnikovi*
322	20051	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Ulcina olriki*
323	20700	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Bathymasteridae
324	20041	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Podothecus veternus*
325	81835	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Leptychaster arcticus*
326	94500	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Echiura
327	10111	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Atheresthes* sp.
328	20005	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Leptagonus leptorhynchus*
329	23807	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lumpenus fabricii*
330	71631	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Tachyrhynchus* sp.
331	85200	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Cucumaria* sp.
332	66171	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus barbatus*
333	62000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Isopoda
334	78020	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Octopus* sp.
335	24193	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Gymnelus* sp.
336	64000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Mysidacea
337	21353	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Triglops metopias*
338	24192	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Gymnelus viridis*
339	71634	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Tachyrhynchus erosus*
340	23850	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Poroclinus rothrocki*
341	71731	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Colus halli*
342	66193	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus suckleyi*
343	456	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyraja taranetzi*
344	83000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Ophiuroid unident.
345	3	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	fish unident.
346	66302	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Heptacarpus flexus*
347	81312	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pteraster temnochiton*
348	75201	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Tellina* sp.
349	66614	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Argis ovifer*
350	10150	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lyopsetta exilis*
351	71721	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Colus herendeenii*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
352	23803	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eumesogrammus praecisus*
353	21406	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Nautichthys oculofasciatus*
354	83390	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Ophiopholis longispina*
355	20000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Agonidae
356	20001	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pallasina barbata*
357	99990	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	invertebrate unident.
358	74436	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Nuculana pernula*
359	66000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	shrimp unident.
360	66204	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lebbeus polaris*

This page was intentionally left blank.

Appendix C: List of Species Encountered

Appendix C lists all fish and invertebrate species taken during the AFSC's 2009 eastern Bering Sea bottom trawl survey.

List of Tables

Appendix C Table 1. -- Fish species encountered during the 2009 eastern Bering Sea bottom trawl survey.

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Agonidae	Agonidae	poacher unident.	1	36	36	36	59.65241	59.65241
	Aspidophoroides bartoni	Aleutian alligatorfish	33	50	146	83	56.3215	60.32071
	Bathyagonus alascanus	gray starsnout	1	96	96	96	55.63505	55.63505
	Bathyagonus infraspinatus	spinycheek starsnout	1	93	93	93	55.69225	55.69225
	Leptagonus frenatus	sawback poacher	42	70	154	108	54.83187	61.34161
	Leptagonus leptorhynchus	longnose poacher	1	80	80	80	57.0192	57.0192
	Occella dodecaedron	Bering poacher	45	22	62	38	57.31789	60.33153
	Pallasina barbata	tubenose poacher	1	25	25	25	59.64108	59.64108
	Podothecus accipenserinus	sturgeon poacher	223	22	135	61	54.68347	60.33419
	Podothecus veternus	veteran poacher	1	44	44	44	60.65132	60.65132
	Ulcina olriki	Arctic alligatorfish	3	53	142	87	57.85353	60.33268
Ammodytidae	*Ammodytes hexapterus*	Pacific sand lance	10	22	53	34	57.02502	60.33268
Anarrhichadidae	*Anarhichas orientalis*	Bering wolffish	6	31	110	67	54.68347	60.33153
Bathymasteridae	*Bathymaster signatus*	searcher	40	69	162	121	54.83187	60.32071
	Bathymasteridae	ronquil unident.	1	80	80	80	59.83571	59.83571
Clupeidae	*Clupea pallasi*	Pacific herring	76	22	104	57	56.66877	61.01538
Cottidae	*Artediellus pacificus*	hookhorn sculpin	11	69	112	76	56.68972	58.6563
	Blepsias bilobus	crested sculpin	2	37	47	42	57.98601	60.31624
	Dasycottus setiger	spinyhead sculpin	53	80	155	118	54.68347	60.67192
	Gymnocanthus detrisus	purplegray sculpin	3	63	69	65	57.34098	60.65464
	Gymnocanthus galeatus	armorhead sculpin	11	60	96	71	55.01582	60.16682
	Gymnocanthus pistilliger	threaded sculpin	42	22	88	39	56.67446	62.00484
	Hemilepidotus hemilepidotus	red Irish lord	1	53	53	53	55.34574	55.34574
	Hemilepidotus jordani	yellow Irish lord	55	50	157	86	55.00525	60.16682
	Hemilepidotus papilio	butterfly sculpin	37	44	92	68	56.64382	62.00888
	Hemitripterus bolini	bigmouth sculpin	73	69	162	113	54.68347	61.01022
	Icelus spatula	spatulate sculpin	58	56	112	77	56.33911	62.00888
	Icelus spiniger	thorny sculpin	78	70	173	121	54.83187	61.64729
	Malacocottus zonurus	darkfin sculpin	2	132	152	142	56.00244	56.3444
	Myoxocephalus jaok	plain sculpin	122	22	87	47	56.33291	61.01342
	Myoxocephalus polyacanthocephalus	great sculpin	173	29	146	76	54.68347	61.64729

Appendix C Table 1. -- Continued.

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Cottidae (continued)	*Myoxocephalus verrucosus*	warty sculpin	58	42	115	68	56.98693	60.70124
	Nautichthys oculofasciatus	sailfin sculpin	1	71	71	71	57.50568	57.50568
	Trichocottus brashnikovi	hairhead sculpin	1	44	44	44	60.65132	60.65132
	Triglops forficata	scissortail sculpin	1	80	80	80	56.67339	56.67339
	Triglops macellus	roughspine sculpin	6	81	146	115	54.68347	56.66473
	Triglops metopias	crescent-tail sculpin	1	74	74	74	60.01942	60.01942
	Triglops pingeli	ribbed sculpin	60	22	154	56	54.68347	60.65267
	Triglops scepticus	spectacled sculpin	10	128	162	146	54.83187	58.67157
Cyclopterinae	*Aptocyclus ventricosus*	smooth lumpsucker	1	74	74	74	59.84449	59.84449
	Eumicrotremus birulai	round lumpsucker	1	74	74	74	57.98979	57.98979
Gadidae	*Boreogadus saida*	Arctic cod	46	31	139	65	55.33194	62.00484
	Eleginus gracilis	saffron cod	6	22	60	30	59.00304	60.33153
	Gadus macrocephalus	Pacific cod	362	22	173	81	54.68347	62.00888
	Theragra chalcogramma	walleye pollock	347	22	173	81	54.68347	62.00484
Hexagrammidae	*Hexagrammos decagrammus*	kelp greenling	6	25	84	49	56.65361	58.35588
	Hexagrammos stelleri	whitespotted greenling	6	22	41	28	58.28793	60.33153
	Pleurogrammus monopterygius	Atka mackerel	2	81	130	105	54.68347	54.99879
Liparidinae	*Careproctus phasma*	monster snailfish	4	92	121	104	60.65267	62.00888
	Careproctus rastrinus	salmon snailfish	33	74	146	112	54.97957	62.00888
	Crystallichthys cyclospilus	blotched snailfish	1	154	154	154	54.83187	54.83187
	Liparis gibbus	variegated snailfish	75	22	105	66	56.64382	62.00888
Osmeridae	*Mallotus villosus*	capelin	166	22	106	58	56.64382	62.00888
	Osmerus mordax	rainbow smelt	1	25	25	25	58.6372	58.6372
	Thaleichthys pacificus	eulachon	26	77	155	120	54.97957	56.99063
Petromyzontidae	*Lampetra tridentata*	Pacific lamprey	1	110	110	110	55.00525	55.00525
Pleuronectidae	*Atheresthes evermanni*	Kamchatka flounder	134	53	173	116	54.68347	61.34161
	Atheresthes sp.		1	96	96	96	59.66666	59.66666
	Atheresthes stomias	arrowtooth flounder	145	32	173	108	54.68347	61.34161
	Glyptocephalus zachirus	rex sole	68	53	162	118	54.68347	59.34365
	Hippoglossoides elassodon	flathead sole	241	32	173	94	54.68347	61.34161
	Hippoglossoides robustus	Bering flounder	105	42	136	80	56.68147	62.00888

Appendix C Table 1. -- Continued.

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
	Hippoglossus stenolepis	Pacific halibut	296	22	173	80	54.68347	62.00348
	Isopsetta isolepis	butter sole	5	51	81	69	54.68347	56.33291
	Lepidopsetta bilineata	southern rock sole	2	51	78	64	55.32518	55.67551
	Lepidopsetta polyxystra	northern rock sole	311	22	173	73	54.68347	61.66692
	Limanda aspera	yellowfin sole	237	22	111	60	54.68347	62.00484
	Limanda proboscidea	longhead dab	40	22	55	33	56.67446	60.33153
	Limanda sakhalinensis	Sakhalin sole	11	44	87	62	59.34347	62.00484
	Lyopsetta exilis	slender sole	1	73	73	73	57.18486	57.18486
	Microstomus pacificus	Dover sole	3	96	110	103	55.00525	56.33547
	Platichthys stellatus	starry flounder	65	22	82	43	54.68347	60.33153
	Platichthys stellatus X Pleuronectes quadrituberculatus	Hybrid starry flounder X Alaska plaice	1	47	47	47	57.98601	57.98601
	Pleuronectes quadrituberculatus	Alaska plaice	235	22	133	62	55.34574	62.00888
	Reinhardtius hippoglossoides	Greenland turbot	104	54	173	95	55.99698	62.00888
Rajidae	*Bathyraja aleutica*	Aleutian skate	5	130	173	150	56.3444	59.67188
	Bathyraja interrupta	Bering skate	76	76	173	123	54.68347	61.34161
	Bathyraja interrupta egg case		10	96	155	136	54.97957	56.33666
	Bathyraja maculata	whiteblotched skate	1	145	145	145	56.33666	56.33666
	Bathyraja parmifera	Alaska skate	334	25	173	82	54.68347	62.00888
	Bathyraja parmifera egg case	Alaska skate egg case	14	55	155	117	54.83187	59.66666
	Bathyraja taranetzi egg case	mud skate egg case	1	145	145	145	56.33666	56.33666
	Raja binoculata	big skate	5	53	128	97	55.32518	56.33301
Salmonidae	*Oncorhynchus keta*	chum salmon	5	25	151	64	55.99634	59.34347
	Oncorhynchus tshawytscha	chinook salmon	2	23	25	24	58.6372	59.31751
Scorpaenidae	*Sebastes alutus*	Pacific ocean perch	7	108	154	127	54.83187	56.99026
	Sebastes melanostictus	blackspotted rockfish	3	128	135	131	55.6824	56.33301
	Sebastes polyspinis	northern rockfish	2	135	145	140	55.6824	56.33666
	Sebastes variabilis	dusky rockfish	3	110	134	120	55.00525	56.67777
Squalidae	*Squalus acanthias*	spiny dogfish	1	145	145	145	56.33666	56.33666
Stichaeidae	*Eumesogrammus praecisus*	fourline snakeblenny	1	61	61	61	60.16682	60.16682
	Lumpenus fabricii	slender eelblenny	3	29	38	32	58.65382	58.98425

Appendix C Table 1. -- Continued.

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
	Lumpenus maculatus	daubed shanny	48	29	146	93	56.3327	62.00484
	Poroclinus rothrocki	whitebarred prickleback	1	119	119	119	56.65073	56.65073
Tichodontidae	*Trichodon trichodon*	Pacific sandfish	14	32	127	48	55.34574	58.20613
Zaproridae	*Zaprora silenus*	prowfish	1	112	112	112	58.6563	58.6563
Zoarcidae	*Gymnelus* sp.		1	84	84	84	56.65361	56.65361
	Gymnelus viridis	fish doctor	1	96	96	96	59.66666	59.66666
	Lycodes brevipes	shortfin eelpout	86	72	173	116	54.97957	61.64729
	Lycodes palearis	wattled eelpout	119	44	146	90	55.3325	62.00484
	Lycodes raridens	marbled eelpout	27	53	97	72	58.01645	62.00484
other		fish eggs unident.	2	84	86	85	56.65361	57.98937
other		fish unident.	1	74	74	74	60.01942	60.01942
other		skate egg case unident.	4	122	157	138	56.67777	58.65938

Appendix C Table 2. -- Invertebrate species encountered during the 2009 eastern Bering Sea bottom trawl survey.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Annelida		worm unident.	6	29	143	74	54.97957	61.33232
		tube worm unident.	33	37	160	94	54.99018	62.00888
	Aphrodita negligens		19	100	173	137	56.98739	60.66665
	Aphrodita sp.		2	110	133	121	55.00525	59.31296
	Aphroditidae	sea mouse unident.	2	139	146	142	55.33194	55.34435
	Eunoe depressa	depressed scale worm	54	43	146	95	56.34441	60.69207
	Eunoe nodosa	giant scale worm	82	38	157	82	55.99553	62.00348
	Eunoe sp.		1	107	107	107	59.82505	59.82505
	Polychaeta	polychaete worm unident.	6	38	92	64	57.66341	61.01342
	Serpulidae	serpulid worm	2	122	151	136	55.99634	57.00449
Arthropoda		shrimp unident.	1	77	77	77	57.1566	57.1566
	Amphipoda	amphipod unident.	3	61	110	80	55.00525	60.16682
	Argis levior	Nelson's argid	2	58	61	59	60.16682	60.17046
	Argis ovifer	split-eye argid	1	136	136	136	55.65928	55.65928
	Argis sp.		77	22	155	89	54.68347	62.00888
	Balanus evermanni	giant barnacle	6	31	152	97	55.99634	58.74099
	Balanus sp.		8	44	73	55	56.00307	60.33268
	Cancer oregonensis	Oregon rock crab	14	53	103	88	55.32846	56.67339
	Chionoecetes bairdi	Tanner crab	252	44	173	94	54.68347	61.33315
	Chionoecetes hybrid	hybrid tanner crab	123	45	152	85	54.97957	60.66762
	Chionoecetes opilio	snow crab	276	37	173	91	54.83187	62.00888
	Crangon communis	twospine crangon	24	22	127	65	55.00525	59.31584
	Crangon sp.		107	22	162	87	54.68347	62.00484
	Elassochirus cavimanus	purple hermit	26	74	173	123	54.83187	59.67188
	Elassochirus tenuimanus	widehand hermit crab	2	51	53	52	55.34574	55.67551
	Erimacrus isenbeckii	horsehair crab	70	31	145	58	55.34574	60.65132
	Eualus barbatus	barbed eualid	3	139	155	146	54.99018	55.34435
	Eualus macilentus	Greenland shrimp	9	64	107	83	59.64814	62.00888
	Eualus sp.		4	73	120	94	55.34632	62.00484
	Eualus suckleyi	shortscale eualid	2	64	98	81	58.99628	60.30543

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Arthropoda (cont.)	*Heptacarpus flexus*	slenderbeak coastal shrimp	2	31	64	47	60.30543	60.33153
	Hyas coarctatus	circumboreal toad crab	178	32	146	70	56.3215	62.00484
	Hyas lyratus	Pacific lyre crab	145	31	162	91	54.68347	61.34161
	Hyas sp.		1	47	47	47	57.64949	57.64949
	Isopoda	isopod unident.	2	127	128	127	55.68624	56.33301
	Labidochirus splendescens	splendid hermit	152	26	160	70	54.83187	62.00888
	Lebbeus groenlandicus	spiny lebbeid	4	60	67	63	60.16682	60.70124
	Lebbeus polaris		1	77	77	77	57.1566	57.1566
	Lithodes aequispinus	golden king crab	1	128	128	128	56.33432	56.33432
	Mysidacea	mysid unident.	1	22	22	22	59.33473	59.33473
	Oregonia gracilis	graceful decorator crab	58	29	140	71	54.68347	61.01132
	Pagurus aleuticus	Aleutian hermit	144	35	157	98	54.83187	59.99619
	Pagurus brandti	sponge hermit	19	52	141	74	56.64382	58.34367
	Pagurus capillatus	hairy hermit crab	102	26	154	86	54.83187	60.33153
	Pagurus confragosus	knobbyhand hermit	104	65	162	108	54.68347	59.65921
	Pagurus cornutus		1	77	77	77	56.99063	56.99063
	Pagurus ochotensis	Alaskan hermit	101	22	136	45	54.68347	60.33153
	Pagurus rathbuni	longfinger hermit	104	44	173	97	56.98693	62.00888
	Pagurus sp.		5	40	136	86	54.68347	59.64117
	Pagurus trigonocheirus	fuzzy hermit crab	219	29	173	79	55.00525	62.00298
	Pandalus eous (= P. borealis)	Alaskan pink (=northern) shrimp	118	60	173	116	54.83187	61.34161
	Pandalus goniurus	humpy shrimp	92	25	121	74	55.32846	62.00888
	Pandalus hypsinotus	coonstripe shrimp	2	31	53	42	57.65004	60.33153
	Pandalus jordani	ocean shrimp	4	130	154	138	54.83187	55.68395
	Pandalus sp.		1	107	107	107	59.82505	59.82505
	Paralithodes camtschaticus	red king crab	95	25	87	51	55.34574	60.33419
	Paralithodes platypus	blue king crab	46	29	133	82	56.98127	61.32629
	Spirontocaris lamellicornis		4	61	136	81	55.65928	60.30543
	Telmessus cheiragonus	helmet crab	28	22	77	34	56.99063	60.33153

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Arthropoda (cont.)	Thoracica	barnacle unident.	10	61	145	96	55.65928	60.16682
Ascididae	Ascidian unident.	tunicate unident.	10	39	135	76	56.33291	61.33205
	Thaliacea unident.	salp unident.	30	40	150	83	56.98739	61.64729
	Styela rustica	sea potato	94	33	87	61	56.64382	61.00445
	Boltenia ovifera		110	25	136	56	55.65928	60.70124
	Halocynthia sp.	sea peach unident.	5	57	71	63	57.6445	59.69501
	Halocynthia aurantium	sea peach	44	37	87	67	56.83575	61.00445
	Aplidium californicum		1	69	69	69	56.65964	56.65964
		compound ascidian unident.	41	22	162	60	54.68347	61.01342
	Aplidium sp. A (Clark, 2006)	sea glob	56	38	142	61	56.35062	60.33268
Brachiopoda	brachiopod unident.	lampshell unident.	2	71	152	111	56.3444	57.34224
	Hemithiris psittacea	black brachiopod	1	60	60	60	60.31919	60.31919
Bryozoa	*Alcyonidium pedunculatum*		7	39	63	51	57.01127	58.28793
	Bryozoa unident.	bryozoan unident.	44	39	152	73	56.3444	61.67258
	Eucratea loricata	feathery bryozoan	4	38	74	51	57.00768	58.65843
	Flustra serrulata	leafy bryozoan	26	39	92	59	56.32593	62.00888
	Rhamphostomella costata	ribbed bryozoan	18	44	96	68	55.63505	58.34779
Cnidaria		hydroid unident.	41	22	111	54	55.3325	61.32231
	Actiniaria	sea anemone unident.	65	31	157	94	55.00525	62.00026
	Actinostolidae		15	60	162	108	56.67777	60.34048
	Aequorea sp.		2	122	133	127	57.00449	60.99626
	Aurelia sp.		18	35	79	57	56.64382	56.00022
	Bathyphelia australis	hot dog sea anemone	2	151	162	156	55.99634	58.66684
	Bonneviella sp. A (Clark, 2006)	champagne flute hydroid	2	93	96	94	59.5003	58.34685
	Chrysaora melanaster		264	31	154	80	54.68347	62.00076
	Cribrinopsis fernaldi	chevron-tentacled anemone	7	41	155	108	54.99018	57.00459
	Cyanea capillata	lion's mane	1	36	36	36	57.65466	57.65531
	Gersemia rubiformis		49	25	111	59	56.64382	58.67876
	Gersemia sp.	sea raspberry	54	25	78	56	56.33291	60.33048

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Cnidaria (cont.)	*Halipteris willemoesi*		4	113	155	132	54.99018	62.00076
	Liponema brevicornis	tentacle-shedding anemone	50	75	173	118	54.97957	57.35653
	Metridium farcimen (=M. giganteum)	gigantic anemone	49	22	119	72	55.01582	56.99824
	Metridium sp.		29	31	130	60	54.68347	59.33041
	Pennatulacea	sea pen or sea whip unident.	5	109	141	129	55.68395	58.34514
	Scyphozoa	jellyfish unident.	33	26	155	75	54.99018	60.33934
	Stomphia coccinea	swimming anemone	38	58	160	109	54.99018	55.32735
	Stomphia sp.		16	64	151	102	55.99634	57.67501
	Urticina crassicornis	mottled anemone	14	31	130	76	54.99879	61.67003
	Urticina lofotensis		1	61	61	61	60.16682	58.676
	Urticina sp.		6	64	160	115	54.68347	61.99196
	Virgularidae	sea whip unident.	7	93	134	107	55.00525	62.00043
Echinodermata	*Allocentrotus fragilis*	orange-pink sea urchin	2	136	151	143	55.68395	55.99634
	Asterias amurensis	purple-orange sea star	245	22	152	64	55.00525	60.98772
	Asteronyx loveni	serpent sea star	1	151	151	151	55.99634	55.99634
	Ceramaster japonicus	red bat star	3	139	155	146	54.99018	55.34435
	Ceramaster patagonicus	orange bat sea star	1	151	151	151	55.99634	55.99634
	Ceramaster sp.		1	154	154	154	54.83187	54.83187
	Crossaster borealis	grooved sea star	2	67	71	69	57.50568	59.99068
	Crossaster papposus	rose sea star	27	44	154	82	54.83187	60.70124
	Ctenodiscus crispatus	common mud star	78	83	173	119	54.99879	61.66663
	Cucumaria fallax	sea football	33	47	109	69	55.66082	57.98702
	Cucumaria sp.		1	52	52	52	57.35253	57.35253
	Diplopteraster multipes	pincushion sea star	5	93	151	134	55.69225	58.74099
	Dipsacaster borealis	northern sea star	3	134	162	145	56.67777	58.32361
	Echinarachnius parma	parma sand dollar	22	32	110	70	54.68347	61.01538
	Evasterias echinosoma	giant sea star	26	41	100	67	55.34574	58.28793
	Evasterias troschelii	mottled sea star	1	71	71	71	57.51229	57.51229
	Gorgonocephalus eucnemis	basketstar	231	32	162	83	54.99018	62.00484

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Echinodermata (cont.)	*Henricia* sp.		44	53	162	101	54.83187	60.70124
	Henricia sp. C (Clark, 2006)	mottled Henricia	1	61	61	61	60.16682	60.16682
	Henricia tumida	tumid sea star	2	52	56	54	57.99304	58.34367
	Holothuroidea unident.	sea cucumber unident.	10	60	92	72	56.98444	62.00888
	Leptasterias arctica		92	39	146	69	56.64382	62.00888
	Leptasterias groenlandica		12	58	126	79	57.00166	61.67258
	Leptasterias katharinae		1	55	55	55	57.98702	57.98702
	Leptasterias polaris		143	44	173	92	56.325	62.00888
	Leptasterias sp.		3	61	139	111	58.66833	60.16682
	Leptychaster anomalus		8	100	157	128	55.32846	58.74099
	Leptychaster arcticus	North Pacific sea star	1	154	154	154	54.83187	54.83187
	Leptychaster sp.		2	128	151	139	55.99634	56.33432
	Lethasterias nanimensis	blackspined sea star	80	58	152	84	55.99634	60.31919
	Molpadia intermedia	sweet sea potato	1	127	127	127	55.68624	55.68624
	Ophiacantha cataleimmoida		1	71	71	71	57.8493	57.8493
	Ophiopholis aculeata	ubiquitous brittle star	2	73	134	103	57.18486	58.9986
	Ophiopholis longispina		1	152	152	152	56.3444	56.3444
	Ophiura sarsi	notched brittlestar	93	44	154	85	54.83187	62.00888
	Ophiura sp.		1	72	72	72	56.98693	56.98693
	Ophiuroid unident.	brittlestarfish unident.	1	77	77	77	57.1566	57.1566
	Pedicellaster magister	majestic sea star	2	142	154	148	54.83187	58.74099
	Pentamera lissoplaca	crescent sea cucumber	5	64	71	68	57.00166	57.66739
	Pseudarchaster parelii	scarlet sea star	12	110	162	140	54.83187	58.98357
	Psolus fabricii	brownscaled sea cucumber	4	60	74	64	60.01942	60.31919
	Psolus japonicus		1	80	80	80	59.83571	59.83571
	Pteraster militaris	wrinkled star	1	154	154	154	54.83187	54.83187
	Pteraster obscurus	obscure sea star	65	61	160	102	55.99553	62.00484
	Pteraster sp.		5	62	162	115	54.99879	58.32361
	Pteraster temnochiton	cushion sea star	1	154	154	154	54.83187	54.83187

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Echinodermata (cont.)	*Pteraster tesselatus*		1	145	145	145	56.33666	56.33666
	Solaster sp.		4	60	162	110	54.83187	60.31919
	Strongylocentrotus droebachiensis	green sea urchin	111	31	162	97	54.83187	62.00298
	Strongylocentrotus sp.		8	41	96	71	55.01582	58.28793
Echiura	Echiura	echiuroid worm unident.	1	64	64	64	57.35088	57.35088
Mollusca	*Aforia circinata*	keeled aforia	41	80	173	120	55.34632	61.34161
	Anisodoris nobilis	Pacific sea lemon	1	63	63	63	55.01582	55.01582
	Archidoris odhneri	white night doris	1	136	136	136	55.68395	55.68395
	Arctomelon stearnsii	Alaska volute	4	145	162	154	54.83187	58.65938
	Benthoctopus leioderma	smoothskin octopus	15	74	146	115	56.33911	61.67258
	Benthoctopus sp.		2	81	108	94	56.99026	59.33912
	Beringius beringii		18	55	150	100	55.33194	60.70124
	Beringius frielei		2	126	155	140	54.99018	58.99479
	Beringius sp.		38	43	173	110	54.83187	61.34161
	Beringius sp. J (McLean & Clark)		1	98	98	98	58.99628	58.99628
	Beringius stimpsoni		3	43	62	51	57.67239	58.65499
	Berryteuthis magister	magistrate armhook squid	2	143	155	149	54.97957	54.99018
	Bivalvia unident.	bivalve unident.	1	40	40	40	59.64117	59.64117
	Boreotrophon sp.		5	70	136	92	57.8342	61.66692
	Buccinum angulosum	angular whelk	80	54	146	90	56.65361	62.00888
	Buccinum glaciale	glacial whelk	1	67	67	67	60.70124	60.70124
	Buccinum oedematum	swollen whelk	5	78	102	90	58.65992	59.32225
	Buccinum plectrum	sinuous whelk	24	40	136	76	55.00525	60.33554
	Buccinum polare	polar whelk	79	47	146	78	56.98693	62.00888
	Buccinum scalariforme	ladder whelk	117	43	173	100	54.68347	62.00888
	Buccinum sp.		21	37	134	81	55.32758	62.00348
	Chlamys rubida	reddish scallop	2	87	145	116	55.99553	56.33666
	Chlamys sp.		7	42	90	67	55.01582	60.31919
	Clinocardium ciliatum	hairy cockle	24	43	106	73	57.1566	61.64729

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Mollusca (cont.)	*Clinocardium* sp.		10	78	135	93	54.68347	61.33205
	Clinopegma (=*Neptunea*) *magna*	helmet whelk	57	66	141	96	56.325	62.00888
	Colus halli	shrew whelk	1	111	111	111	55.3325	55.3325
	Colus herendeenii	thin-ribbed whelk	1	139	139	139	55.33194	55.33194
	Colus hypolispus		3	62	78	69	59.00941	60.31486
	Colus sp.		19	64	150	100	54.99879	61.66692
	Colus spitzbergensis	thick-ribbed whelk	1	74	74	74	57.00768	57.00768
	Crepidula grandis	great slippersnail	2	73	75	74	57.18486	57.31897
	Cryptonatica (=*Natica*) *aleutica*	Aleutian moonsnail	1	82	82	82	55.67636	55.67636
	Cryptonatica (=*Natica*) *russa*	rusty moonsnail	32	61	140	90	56.64599	62.00888
	Cyclocardia sp.		2	67	103	85	56.33547	57.65619
	Euspira (=*Polinices*) *pallidus*	pale moonsnail	23	61	97	76	58.66432	62.00888
	Euspira (=*Polinices*) sp.		2	66	67	66	57.35089	57.65619
	Fusitriton oregonensis	Oregon triton	85	32	173	113	54.68347	59.67188
	gastropod eggs	snail eggs	182	25	173	79	54.68347	62.00888
	gastropod unident.	snail unident.	5	62	108	78	57.64481	62.00298
	Hiatella arctica	Arctic hiatella	16	25	78	61	57.1566	59.99721
	Lamellaridae unident.	lamellaride	8	66	93	75	56.68147	60.00884
	Macoma sp.		7	39	106	64	58.0078	61.66692
	Mactromeris polynyma	Arctic surfclam	56	22	73	48	55.67551	60.33419
	Modiolus modiolus	northern horsemussel	2	53	63	58	55.34574	57.01127
	Musculus discors	discordant mussel	24	32	87	64	57.31789	61.65467
	Mytilus sp.		6	25	33	28	59.31599	59.66866
	Natica clausa		1	70	70	70	57.98415	57.98415
	Natica sp.		3	71	74	72	56.98693	57.00768
	Naticidae eggs	moonsnail eggs unid.	19	22	98	52	57.33077	60.66264
	Neptunea borealis		29	55	128	77	56.99026	62.00298
	Neptunea heros		121	31	102	61	55.67551	62.00484
	Neptunea lyrata	lyre whelk	108	32	157	99	54.68347	60.69207

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Mollusca (cont.)	*Neptunea pribiloffensis*	Pribilof whelk	122	65	173	113	54.97957	61.34161
	Neptunea sp.		7	47	106	69	55.98878	61.32629
	Neptunea sp. *D* (Clark & McLean)		18	39	92	55	56.32593	58.67899
	Neptunea ventricosa	fat whelk	135	32	154	63	54.68347	61.66692
	Nuculana pernula	northern nutclam	1	67	67	67	61.01342	61.01342
	Nudibranchia unident.	nudibranch unident.	39	60	160	93	55.01582	62.00348
	Octopus dofleini	giant octopus	19	80	157	124	56.3327	59.98216
	Octopus sp.		1	109	109	109	58.32661	58.32661
	Patinopecten caurinus	weathervane scallop	11	73	122	101	55.32846	57.36145
	Plicifusus kroyeri		17	60	151	96	55.99634	60.65267
	Plicifusus sp.		38	66	173	113	56.66473	60.9927
	Pododesmus macrochisma	Alaska falsejingle	5	63	80	72	57.01127	59.83571
	Polyplacophora unident.	chiton unident.	1	64	64	64	60.30543	60.30543
	Pyrulofusus deformis	warped whelk	42	32	162	94	54.83187	60.31919
	Pyrulofusus melonis		30	69	155	124	54.97957	61.34161
	Pyrulofusus sp.		2	42	160	101	58.30596	60.66665
	Rossia pacifica	eastern Pacific bobtail	8	122	155	136	54.99018	59.64416
	Serripes groenlandicus	Greenland cockle	18	39	111	66	55.3325	62.00348
	Serripes laperousii	broad cockle	1	150	150	150	59.33692	59.33692
	Serripes notabilis	oblique smoothcockle	34	40	162	95	54.99879	61.32271
	Serripes sp.		2	100	141	120	59.31977	60.00468
	shipworm unident.		4	96	111	104	55.00525	55.63505
	Siliqua alta	Alaska razor	13	22	41	30	58.3277	59.66866
	Solariella obscura	obscure solarelle	1	67	67	67	60.70124	60.70124
	Tachyrhynchus erosus	eroded turretsnail	1	103	103	103	56.33547	56.33547
	Tachyrhynchus sp.		1	44	44	44	58.34243	58.34243
	Tellina lutea	Alaska great-tellin	37	22	67	42	55.67551	59.98901
	Tellina sp.		1	82	82	82	55.67636	55.67636
	Tochuina tetraquetra	giant orange tochui	1	77	77	77	61.66692	61.66692

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Mollusca (cont.)	*Trichotropis bicarinata*	two-keel hairysnail	1	67	67	67	60.70124	60.70124
	Tritonia diomedea	rosy tritonia	9	61	93	78	56.9983	61.33205
	Tritonia sp.		5	73	122	109	56.3327	60.65267
	Velutina plicatilis	oblique lamellaria	1	64	64	64	60.30543	60.30543
	Volutopsius castaneus	volute whelk	1	122	122	122	56.3327	56.3327
	Volutopsius fragilis	fragile whelk	17	54	151	78	55.6652	59.32225
	Volutopsius sp.		68	52	152	101	55.99634	61.34161
	Volutopsius stefanssoni	shouldered whelk	3	69	73	70	57.34098	57.68399
	Yoldia sp.		2	64	71	67	57.00166	58.00367
Nemertea	Nemertea	nemertean worm unident.	5	64	126	86	57.66739	62.00888
Other		empty bivalve shells	252	22	162	75	54.68347	62.00888
		empty gastropod shells	323	22	173	82	54.68347	62.00888
		invertebrate unident.	1	134	134	134	58.67157	58.67157
		unidentified worm tubes	41	41	41	58.288	58.28793	
		unsorted catch and debris	10	32	110	67	56.33441	60.31919
Porifera	*Aphrocallistes vastus*	clay pipe sponge	1	152	152	152	56.3444	56.3444
	Halichondria panicea	barrel sponge	1	47	47	47	57.64949	57.64949
	Mycale loveni	tree sponge	1	145	145	145	56.33666	56.33666
	Neoesperiopsis digitata		1	152	152	152	56.3444	56.3444
	Polymastia sp.		2	152	154	153	54.83187	56.3444
	Porifera	sponge unident.	99	25	162	82	54.68347	60.31919
	Rhabdocalyptus sp.	cloud sponge	1	152	152	152	56.3444	56.3444
	Suberites sp.		1	53	53	53	55.34574	55.34574
	Tethya sp.	ball sponge	1	152	152	152	56.3444	56.3444
Sipuncula	Sipuncula	peanut worm unid.	3	65	141	95	56.98739	62.00348
Tunicata		compound ascidian unident.	25	33	91	58	56.3253	60.34048
	Amaroucium soldatovi	ascidian	12	68	77	71	57.34849	58.65915
	Aplidium californicum	tunicate unident.	1	46	46	46	58.32026	58.32026
	Aplidium sp.	sea glob	55	34	79	55	56.00937	60.33048
	Boltenia ovifera	tunicate unident.	109	26	110	56	55.0516	60.66801
	Halocynthia aurantium	sea peach	44	41	77	68	56.68611	60.66801

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Tunicata (cont.)	*Molgula grifithsii*	sea grape	5	67	149	125	58.66736	60.66801
	Thaliacea unident.	salp unident.	36	53	174	115	56.99805	61.66207

This page was intentionally left blank.

Appendix D: Population Estimates by Sex and Size Groups for Principal Fish Species

Appendix D presents estimates of the numbers of individuals within the overall survey area by sex and size group for principal fish species.

List of Tables

Population estimates by sex and size group from the 2009 eastern Bering Sea bottom trawl survey.

Appendix D Table 1. -- Population estimates by sex and size for **walleye pollock** (*Theragra chalcogramma*) from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
60	0	0	178,782	178,782	0.0001	0.0001
70	0	0	2,810,779	2,810,779	0.0008	0.0009
80	0	0	18,287,505	18,287,505	0.0053	0.0062
90	0	0	79,578,992	79,578,992	0.0230	0.0292
100	0	0	142,823,018	142,823,018	0.0413	0.0704
110	0	0	120,179,066	120,179,066	0.0347	0.1052
120	0	0	85,976,519	85,976,519	0.0249	0.1300
130	0	0	65,441,672	65,441,672	0.0189	0.1489
140	0	0	59,989,423	59,989,423	0.0173	0.1663
150	10,741,730	8,328,993	32,307,958	51,378,682	0.0149	0.1811
160	12,336,486	6,777,036	10,562,487	29,676,010	0.0086	0.1897
170	7,368,178	4,089,596	3,711,991	15,169,764	0.0044	0.1941
180	3,001,330	4,808,797	1,519,390	9,329,518	0.0027	0.1968
190	5,263,331	5,542,659	570,477	11,376,466	0.0033	0.2001
200	6,682,399	8,234,135	452,008	15,368,542	0.0044	0.2045
210	9,203,255	7,868,199	55,711	17,127,165	0.0050	0.2095
220	11,943,316	6,620,484	81,263	18,645,063	0.0054	0.2149
230	8,445,835	8,019,153	253,723	16,718,711	0.0048	0.2197
240	5,321,157	5,438,112	0	10,759,269	0.0031	0.2228
250	6,357,152	5,472,281	0	11,829,433	0.0034	0.2262
260	7,011,965	10,124,009	0	17,135,974	0.0050	0.2312
270	8,149,584	8,004,877	0	16,154,461	0.0047	0.2359
280	11,484,500	10,444,861	0	21,929,361	0.0063	0.2422
290	14,204,704	14,472,698	0	28,677,401	0.0083	0.2505
300	17,679,324	10,898,183	0	28,577,508	0.0083	0.2587
310	18,193,442	14,515,630	0	32,709,072	0.0095	0.2682
320	13,132,247	14,710,101	0	27,842,348	0.0080	0.2763
330	17,489,266	13,869,887	0	31,359,153	0.0091	0.2853
340	16,661,383	24,066,430	0	40,727,813	0.0118	0.2971
350	23,264,525	22,465,590	0	45,730,115	0.0132	0.3103
360	27,845,315	23,033,454	0	50,878,769	0.0147	0.3250
370	34,503,298	30,836,568	113,012	65,452,878	0.0189	0.3439
380	32,960,776	29,470,892	0	62,431,668	0.0180	0.3620
390	38,089,236	39,241,712	113,012	77,443,960	0.0224	0.3844
400	39,230,909	36,892,585	226,023	76,349,517	0.0221	0.4064
410	36,842,357	36,506,149	339,035	73,687,541	0.0213	0.4277
420	33,250,478	26,525,712	593,311	60,369,502	0.0175	0.4452
430	40,184,018	30,763,445	226,023	71,173,487	0.0206	0.4658
440	32,193,131	21,922,347	251,940	54,367,418	0.0157	0.4815
450	41,968,227	40,407,531	339,035	82,714,794	0.0239	0.5054
460	46,372,842	27,077,556	452,047	73,902,445	0.0214	0.5268
470	64,532,201	39,942,281	706,323	105,180,805	0.0304	0.5572
480	69,265,241	44,624,308	819,335	114,708,884	0.0332	0.5903
490	79,550,359	58,213,077	932,346	138,695,783	0.0401	0.6304
500	80,837,427	72,839,790	1,158,370	154,835,586	0.0448	0.6752
510	80,706,780	72,397,580	1,158,370	154,262,731	0.0446	0.7198

Appendix D Table 1. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
520	59,885,724	84,812,239	932,346	145,630,309	0.0421	0.7619
530	64,022,129	76,024,893	932,346	140,979,368	0.0408	0.8026
540	58,994,667	80,472,348	1,384,393	140,851,409	0.0407	0.8433
550	40,928,074	59,929,742	1,271,382	102,129,197	0.0295	0.8728
560	28,779,383	54,152,705	593,311	83,525,399	0.0241	0.8970
570	24,797,548	38,596,732	452,047	63,846,327	0.0185	0.9154
580	19,941,262	36,934,176	226,023	57,101,461	0.0165	0.9319
590	12,675,988	27,573,362	452,047	40,701,396	0.0118	0.9437
600	12,223,260	21,017,698	339,035	33,579,993	0.0097	0.9534
610	9,300,061	22,869,167	113,012	32,282,240	0.0093	0.9628
620	8,771,670	16,939,689	0	25,711,359	0.0074	0.9702
630	4,788,849	9,947,684	0	14,736,534	0.0043	0.9744
640	5,329,839	10,718,756	0	16,048,595	0.0046	0.9791
650	4,718,890	10,872,325	113,012	15,704,227	0.0045	0.9836
660	2,918,403	9,174,591	0	12,092,994	0.0035	0.9871
670	2,562,602	6,200,546	0	8,763,148	0.0025	0.9897
680	1,645,990	4,463,465	0	6,109,455	0.0018	0.9914
690	1,435,646	4,199,753	0	5,635,399	0.0016	0.9930
700	1,376,751	3,724,503	0	5,101,254	0.0015	0.9945
710	899,205	2,746,790	0	3,645,995	0.0011	0.9956
720	573,758	2,249,764	0	2,823,522	0.0008	0.9964
730	1,127,393	2,054,280	0	3,181,673	0.0009	0.9973
740	433,049	1,723,085	0	2,156,134	0.0006	0.9979
750	441,787	1,868,607	0	2,310,394	0.0007	0.9986
760	239,178	1,034,454	0	1,273,631	0.0004	0.9990
770	110,655	965,627	0	1,076,283	0.0003	0.9993
780	88,206	904,970	0	993,176	0.0003	0.9996
790	40,501	571,666	0	612,167	0.0002	0.9997
800	29,679	398,892	0	428,572	0.0001	0.9999
810	27,267	210,817	0	238,084	0.0001	0.9999
820	0	123,086	0	123,086	0.0000	1.0000
830	0	29,270	0	29,270	0.0000	1.0000
840	0	26,206	0	30,919	0.0000	1.0000
850	0	30,919	0	0	0.0000	1.0000
Total	**1,381,375,120**	**1,439,029,508**	**639,017,900**	**3,459,422,527**	**1.0000**	**1.0000**

Appendix D Table 2. -- Population estimates by sex and size for **Pacific cod** (*Gadus macrocephalus*) from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
40	0	0	25,016	25,016	0.0000	0.0000
60	0	19,592	0	19,592	0.0000	0.0001
70	0	0	296,127	296,127	0.0004	0.0005
80	0	27,091	1,512,893	1,539,984	0.0021	0.0026
90	59,778	0	4,498,723	4,558,501	0.0063	0.0089
100	0	129,011	17,089,749	17,218,761	0.0239	0.0328
110	329,725	166,775	41,210,249	41,706,748	0.0578	0.0906
120	707,457	511,847	44,224,187	45,443,492	0.0630	0.1535
130	1,487,978	1,907,410	43,373,520	46,768,908	0.0648	0.2183
140	4,676,938	3,870,335	29,223,100	37,770,373	0.0523	0.2706
150	7,194,275	5,244,869	19,602,396	32,041,540	0.0444	0.3150
160	13,374,829	11,281,919	3,427,241	28,083,989	0.0389	0.3539
170	9,847,650	8,870,971	2,211,694	20,930,315	0.0290	0.3829
180	9,900,976	9,203,923	866,742	19,971,642	0.0277	0.4106
190	7,754,477	5,912,651	255,764	13,922,892	0.0193	0.4299
200	4,968,086	4,242,193	363,105	9,573,384	0.0133	0.4432
210	3,377,663	1,485,660	118,740	4,982,062	0.0069	0.4501
220	808,309	687,823	0	1,496,132	0.0021	0.4521
230	511,192	684,601	0	1,195,793	0.0017	0.4538
240	764,659	757,351	0	1,522,010	0.0021	0.4559
250	1,711,412	1,825,153	0	3,536,565	0.0049	0.4608
260	2,353,220	1,723,314	0	4,076,534	0.0056	0.4664
270	3,929,683	3,547,566	0	7,477,249	0.0104	0.4768
280	5,748,852	5,246,202	0	10,995,053	0.0152	0.4920
290	6,814,667	7,776,965	0	14,591,633	0.0202	0.5123
300	9,478,578	7,643,203	0	17,121,781	0.0237	0.5360
310	9,874,108	10,347,238	0	20,221,346	0.0280	0.5640
320	9,964,569	8,888,678	0	18,853,248	0.0261	0.5901
330	7,694,463	6,988,618	0	14,683,082	0.0203	0.6104
340	6,818,990	6,393,975	0	13,212,965	0.0183	0.6288
350	5,183,348	4,325,800	27,067	9,536,215	0.0132	0.6420
360	5,020,222	4,247,091	0	9,267,314	0.0128	0.6548
370	4,780,518	4,466,993	0	9,247,511	0.0128	0.6676
380	4,282,967	5,480,288	0	9,763,255	0.0135	0.6811
390	6,827,319	6,184,860	0	13,012,179	0.0180	0.6992
400	6,673,188	6,506,924	0	13,180,113	0.0183	0.7174
410	7,785,173	7,850,196	0	15,635,369	0.0217	0.7391
420	8,449,478	7,897,539	0	16,347,017	0.0226	0.7617
430	9,170,589	7,218,162	0	16,388,751	0.0227	0.7844
440	7,679,293	7,317,931	0	14,997,224	0.0208	0.8052
450	7,431,270	7,095,779	0	14,527,049	0.0201	0.8253
460	5,712,670	6,372,789	0	12,085,459	0.0167	0.8421
470	5,804,967	6,728,871	0	12,533,837	0.0174	0.8595
480	5,515,034	5,166,832	0	10,681,867	0.0148	0.8743
490	3,546,477	4,267,023	0	7,813,500	0.0108	0.8851
500	3,090,509	3,238,348	0	6,328,858	0.0088	0.8938
510	3,814,974	2,510,018	0	6,324,993	0.0088	0.9026

Appendix D Table 2. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
520	2,647,712	2,425,271	0	5,072,983	0.0070	0.9096
530	2,286,354	2,199,206	0	4,485,560	0.0062	0.9159
540	1,912,220	2,147,275	0	4,059,495	0.0056	0.9215
550	1,768,770	1,880,730	0	3,649,500	0.0051	0.9265
560	1,696,681	1,575,817	0	3,272,499	0.0045	0.9311
570	1,781,341	1,580,170	0	3,361,511	0.0047	0.9357
580	1,714,135	2,022,151	0	3,736,286	0.0052	0.9409
590	2,224,697	1,667,997	0	3,892,693	0.0054	0.9463
600	1,689,421	1,388,511	0	3,077,932	0.0043	0.9506
610	1,549,881	2,106,017	0	3,655,898	0.0051	0.9556
620	1,714,609	1,641,318	0	3,355,927	0.0046	0.9603
630	1,247,791	1,044,287	0	2,292,078	0.0032	0.9634
640	1,367,676	1,460,913	0	2,828,588	0.0039	0.9674
650	1,559,301	1,563,096	0	3,122,398	0.0043	0.9717
660	1,137,128	1,192,464	0	2,329,592	0.0032	0.9749
670	744,278	1,012,148	0	1,756,427	0.0024	0.9774
680	1,156,229	973,519	0	2,129,748	0.0030	0.9803
690	792,821	606,148	0	1,398,970	0.0019	0.9822
700	835,001	926,428	0	1,761,429	0.0024	0.9847
710	619,452	751,508	0	1,370,961	0.0019	0.9866
720	355,139	546,252	0	901,391	0.0012	0.9878
730	434,789	627,696	0	1,062,485	0.0015	0.9893
740	299,870	295,838	0	595,708	0.0008	0.9901
750	425,953	354,237	0	780,190	0.0011	0.9912
760	306,776	387,818	0	694,594	0.0010	0.9922
770	305,200	382,621	0	687,821	0.0010	0.9931
780	263,022	409,391	0	672,413	0.0009	0.9941
790	72,751	143,099	0	215,850	0.0003	0.9944
800	222,191	344,514	0	566,705	0.0008	0.9951
810	147,692	156,713	0	304,405	0.0004	0.9956
820	33,471	345,019	0	378,490	0.0005	0.9961
830	40,838	141,061	0	181,900	0.0003	0.9963
840	110,537	59,838	0	170,376	0.0002	0.9966
850	59,666	251,125	0	310,791	0.0004	0.9970
860	205,562	46,037	0	251,599	0.0003	0.9974
870	128,719	120,177	0	248,896	0.0003	0.9977
880	32,695	110,959	0	143,654	0.0002	0.9979
890	114,941	55,761	0	170,702	0.0002	0.9981
900	105,830	98,870	0	204,701	0.0003	0.9984
910	28,053	0	0	28,053	0.0000	0.9985
920	16,653	27,846	0	44,498	0.0001	0.9985
930	0	45,608	0	45,608	0.0001	0.9986
940	16,945	84,724	0	101,669	0.0001	0.9987
950	0	141,548	0	141,548	0.0002	0.9989
960	82,957	116,924	0	199,881	0.0003	0.9992
970	45,039	56,045	0	101,084	0.0001	0.9993
980	71,943	59,562	0	131,505	0.0002	0.9995
990	0	23,441	0	23,441	0.0000	0.9995
1000	58,087	28,726	0	86,812	0.0001	0.9997
1010	0	58,144	0	58,144	0.0001	0.9997
1020	37,240	0	0	37,240	0.0001	0.9998
1040	0	28,726	0	28,726	0.0000	0.9998
1050	28,679	56,717	0	85,395	0.0001	1.0000
1080	0	29,615	0	29,615	0.0000	1.0000
Total	**265,417,267**	**248,060,005**	**208,326,316**	**721,803,588**	**1.0000**	**1.0000**

Appendix D Table 3. -- Population estimates by sex and size for **yellowfin sole** (*Limanda aspera*) from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
40	0	1,668,239	0	1,668,239	0.0002	0.0002
60	0	294,147	0	294,147	0.0000	0.0002
70	332,174	1,668,239	0	2,000,413	0.0002	0.0005
80	4,632,242	4,852,903	0	9,485,145	0.0011	0.0016
90	13,878,561	10,529,463	7,659,208	32,067,232	0.0038	0.0054
100	27,464,431	32,244,482	1,276,535	60,985,448	0.0073	0.0127
110	46,948,845	56,577,640	0	103,526,486	0.0123	0.0250
120	74,499,563	71,019,868	0	145,519,431	0.0173	0.0423
130	59,667,384	61,029,252	0	120,696,636	0.0144	0.0566
140	100,899,259	91,769,536	0	192,668,794	0.0229	0.0796
150	134,405,209	148,995,104	0	283,400,312	0.0337	0.1133
160	213,292,282	197,028,541	0	410,320,823	0.0488	0.1621
170	183,370,892	213,334,566	0	396,705,457	0.0472	0.2092
180	189,798,547	196,444,352	0	386,242,900	0.0459	0.2552
190	212,022,032	193,237,932	225,673	405,485,638	0.0482	0.3034
200	221,650,285	203,418,667	1,579,713	426,648,665	0.0507	0.3541
210	205,553,903	246,704,319	2,031,060	454,289,282	0.0540	0.4082
220	210,715,667	226,578,870	2,933,753	440,228,290	0.0524	0.4605
230	199,348,589	194,880,766	1,805,387	396,034,742	0.0471	0.5076
240	144,347,324	186,443,781	677,020	331,468,125	0.0394	0.5471
250	128,863,487	182,376,902	677,020	311,917,409	0.0371	0.5841
260	149,653,934	155,313,724	902,693	305,870,351	0.0364	0.6205
270	154,498,042	137,716,846	1,354,040	293,568,928	0.0349	0.6554
280	177,655,174	167,085,938	677,020	345,418,133	0.0411	0.6965
290	211,545,654	174,368,783	1,128,367	387,042,804	0.0460	0.7426
300	220,844,474	177,804,755	677,020	399,326,249	0.0475	0.7900
310	196,064,845	201,278,200	1,579,713	398,922,758	0.0474	0.8375
320	160,769,341	193,032,614	677,020	354,478,975	0.0422	0.8796
330	128,032,684	187,536,662	451,347	316,020,692	0.0376	0.9172
340	80,750,570	156,225,204	225,673	237,201,447	0.0282	0.9454
350	34,720,334	145,210,145	1,805,387	181,735,866	0.0216	0.9671
360	10,545,560	92,433,459	677,020	103,656,038	0.0123	0.9794
370	6,159,480	75,775,366	451,347	82,386,192	0.0098	0.9892
380	1,190,537	35,431,202	451,347	37,073,085	0.0044	0.9936
390	1,684,709	22,269,973	0	23,954,682	0.0028	0.9964
400	0	12,636,072	225,673	12,861,746	0.0015	0.9980
410	0	10,236,266	0	10,236,266	0.0012	0.9992
420	0	3,043,655	225,673	3,269,328	0.0004	0.9996
430	0	1,790,991	0	1,790,991	0.0002	0.9998
440	0	952,923	0	952,923	0.0001	0.9999
450	0	448,992	0	448,992	0.0001	1.0000
460	0	260,599	0	260,599	0.0000	1.0000
500	0	119,826	0	119,826	0.0000	1.0000
Total	**3,905,806,013**	**4,472,069,766**	**30,374,708**	**8,408,250,487**	**1.0000**	**1.0000**

Appendix D Table 4. -- Population estimates by sex and size for **northern** and **southern rock sole** (*Lepidopsetta* spp.) from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
60	142,550	0	0	142,550	0.0000	0.0000
70	0	97,825	81,533	179,358	0.0000	0.0000
80	279,336	59,721	625,059	964,116	0.0001	0.0002
90	906,417	1,523,368	729,350	3,159,135	0.0004	0.0005
100	14,165,078	9,605,074	2,297,988	26,068,141	0.0032	0.0037
110	28,931,057	39,935,883	3,004,600	71,871,540	0.0088	0.0125
120	73,343,960	81,197,793	1,087,053	155,628,806	0.0190	0.0315
130	107,556,603	116,314,054	471,077	224,341,734	0.0274	0.0589
140	192,115,716	154,020,682	8,451,673	354,588,070	0.0433	0.1022
150	223,238,033	225,801,961	15,306,275	464,346,269	0.0567	0.1590
160	218,673,594	199,747,167	23,947,147	442,367,908	0.0540	0.2130
170	165,146,695	173,557,545	34,270,019	372,974,259	0.0456	0.2585
180	205,882,990	173,372,764	19,516,669	398,772,424	0.0487	0.3073
190	170,034,955	151,413,745	22,286,018	343,734,718	0.0420	0.3492
200	206,214,810	155,492,070	16,240,708	377,947,588	0.0462	0.3954
210	165,303,478	160,722,043	18,878,762	344,904,283	0.0421	0.4375
220	166,554,754	156,540,662	18,312,717	341,408,133	0.0417	0.4792
230	187,331,528	154,145,284	25,330,233	366,807,045	0.0448	0.5240
240	177,088,756	133,497,489	15,599,732	326,185,977	0.0398	0.5639
250	187,125,937	158,000,529	30,363,070	375,489,536	0.0459	0.6098
260	202,261,459	143,168,005	7,828,417	353,257,882	0.0431	0.6529
270	193,924,261	156,537,788	20,988,544	371,450,593	0.0454	0.6983
280	268,579,570	142,537,274	11,007,037	422,123,881	0.0516	0.7498
290	250,202,212	150,369,402	7,810,698	408,382,312	0.0499	0.7997
300	193,599,241	100,033,657	4,347,078	297,979,976	0.0364	0.8361
310	146,195,132	90,754,456	1,657,297	238,606,885	0.0291	0.8653
320	81,406,958	88,857,596	2,769,349	173,033,904	0.0211	0.8864
330	68,947,043	86,994,733	1,087,350	157,029,125	0.0192	0.9056
340	19,118,119	112,437,906	616,272	132,172,297	0.0161	0.9217
350	6,428,858	134,829,932	543,675	141,802,464	0.0173	0.9390
360	1,954,835	134,723,812	543,675	137,222,322	0.0168	0.9558
370	1,821,531	124,285,297	1,087,350	127,194,177	0.0155	0.9713
380	1,295,135	97,742,887	217,792	99,255,814	0.0121	0.9835
390	1,218,036	63,660,126	217,792	65,095,954	0.0080	0.9914
400	725,599	26,726,538	145,195	27,597,332	0.0034	0.9948
410	0	16,959,790	0	16,959,790	0.0021	0.9969
420	54,582	9,055,710	72,597	9,182,890	0.0011	0.9980
430	26,102	6,358,422	0	6,384,524	0.0008	0.9988
440	0	5,042,780	0	5,042,780	0.0006	0.9994
450	0	1,618,873	0	1,618,873	0.0002	0.9996
460	61,941	2,011,314	0	2,073,255	0.0003	0.9998
480	492,245	893,748	0	1,385,992	0.0002	1.0000
490	16,930	0	0	16,930	0.0000	1.0000
Total	**3,928,366,038**	**3,940,645,702**	**317,739,801**	**8,186,751,541**	**1.0000**	**1.0000**

Appendix D Table 5. -- Population estimates by sex and size for **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
40	0	0	27,233	27,233	0.0000	0.0000
50	0	0	32,954	32,954	0.0000	0.0000
60	62,097	0	1,053,688	1,115,785	0.0008	0.0008
70	202,600	0	1,399,163	1,601,763	0.0011	0.0020
80	1,508,458	157,319	1,951,123	3,616,899	0.0026	0.0046
90	1,098,917	431,788	4,488,067	6,018,772	0.0043	0.0089
100	1,423,969	1,028,259	3,244,512	5,696,740	0.0041	0.0130
110	1,501,468	1,245,230	2,666,161	5,412,859	0.0039	0.0168
120	2,486,320	2,030,848	4,940,125	9,457,293	0.0068	0.0236
130	5,084,788	3,461,314	9,901,397	18,447,499	0.0132	0.0368
140	5,694,345	6,005,933	7,274,020	18,974,298	0.0136	0.0504
150	7,904,850	6,956,062	3,821,299	18,682,210	0.0134	0.0638
160	9,218,161	6,854,931	1,367,815	17,440,907	0.0125	0.0763
170	7,533,317	5,542,985	140,597	13,216,899	0.0095	0.0857
180	10,065,290	8,925,421	0	18,990,711	0.0136	0.0993
190	10,545,563	9,945,103	0	20,490,666	0.0147	0.1140
200	12,767,348	9,068,662	0	21,836,010	0.0156	0.1296
210	14,106,876	13,145,694	0	27,252,570	0.0195	0.1491
220	12,800,496	13,836,584	0	26,637,080	0.0191	0.1682
230	14,857,609	14,586,520	0	29,444,129	0.0211	0.1893
240	17,292,331	16,376,184	0	33,668,515	0.0241	0.2134
250	27,335,544	19,374,628	0	46,710,172	0.0334	0.2468
260	31,520,566	24,308,636	0	55,829,203	0.0400	0.2868
270	45,405,651	30,565,080	0	75,970,731	0.0544	0.3412
280	44,809,160	36,888,556	0	81,697,716	0.0585	0.3997
290	47,475,602	42,200,849	0	89,676,451	0.0642	0.4639
300	38,217,634	38,699,890	0	76,917,524	0.0551	0.5190
310	51,522,438	33,367,735	0	84,890,173	0.0608	0.5797
320	46,984,080	36,415,853	0	83,399,932	0.0597	0.6394
330	48,621,673	35,635,774	0	84,257,448	0.0603	0.6998
340	38,799,704	34,984,231	0	73,783,935	0.0528	0.7526
350	38,840,847	35,463,808	0	74,304,655	0.0532	0.8058
360	27,767,419	29,674,721	0	57,442,140	0.0411	0.8469
370	18,011,920	27,717,228	0	45,729,147	0.0327	0.8797
380	16,294,751	25,574,919	0	41,869,670	0.0300	0.9096
390	9,098,399	21,625,540	0	30,723,939	0.0220	0.9316
400	6,942,713	14,838,482	0	21,781,195	0.0156	0.9472
410	3,911,722	14,675,789	0	18,587,511	0.0133	0.9605
420	1,280,545	10,086,808	0	11,367,353	0.0081	0.9687
430	696,708	10,738,393	0	11,435,102	0.0082	0.9769
440	122,463	8,547,635	0	8,670,098	0.0062	0.9831
450	162,271	7,677,900	0	7,840,171	0.0056	0.9887
460	444,031	5,091,823	0	5,535,855	0.0040	0.9926
470	0	3,655,226	0	3,655,226	0.0026	0.9953
480	0	2,626,777	0	2,626,777	0.0019	0.9971
490	0	2,375,646	0	2,375,646	0.0017	0.9988
500	0	661,942	0	661,942	0.0005	0.9993

Appendix D Table 5. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
510	0	547,056	0	547,056	0.0004	0.9997
520	0	179,156	0	179,156	0.0001	0.9998
530	0	55,687	0	55,687	0.0000	0.9999
540	0	178,734	0	178,734	0.0001	1.0000
Total	**680,420,644**	**674,033,337**	**42,308,154**	**1,396,762,136**	**1.0000**	**1.0000**

Appendix D Table 6. -- Population estimates by sex and size for **Alaska plaice** (*Pleuronectes quadrituberculatus)* from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
50	0	31,272	0	31,272	0.0000	0.0000
60	0	132,733	0	132,733	0.0001	0.0002
110	0	27,958	0	27,958	0.0000	0.0002
130	102,348	77,223	0	179,572	0.0002	0.0004
140	50,368	29,272	0	79,640	0.0001	0.0004
150	623,413	359,475	0	982,888	0.0010	0.0014
160	494,364	370,729	0	865,092	0.0008	0.0023
170	1,178,085	1,120,002	0	2,298,087	0.0023	0.0045
180	1,977,951	1,661,536	0	3,639,487	0.0036	0.0081
190	3,105,515	2,418,206	0	5,523,721	0.0054	0.0135
200	4,134,659	2,869,016	0	7,003,676	0.0069	0.0203
210	6,434,238	4,200,591	0	10,634,829	0.0104	0.0307
220	6,273,391	5,754,112	0	12,027,503	0.0118	0.0425
230	11,631,117	9,737,114	0	21,368,231	0.0209	0.0634
240	14,853,772	12,683,815	0	27,537,587	0.0270	0.0904
250	19,020,836	14,335,856	0	33,356,692	0.0327	0.1231
260	22,346,319	19,508,749	0	41,855,068	0.0410	0.1641
270	26,053,597	17,094,343	0	43,147,941	0.0423	0.2063
280	28,072,687	20,068,903	0	48,141,590	0.0471	0.2535
290	30,418,647	19,424,977	0	49,843,625	0.0488	0.3023
300	28,107,014	17,645,521	0	45,752,535	0.0448	0.3471
310	33,273,079	17,772,921	0	51,046,000	0.0500	0.3970
320	39,222,529	16,823,600	0	56,046,129	0.0549	0.4519
330	45,275,465	15,267,472	0	60,542,937	0.0593	0.5112
340	54,727,277	17,079,651	0	71,806,928	0.0703	0.5815
350	57,274,971	16,169,787	0	73,444,758	0.0719	0.6534
360	49,856,587	12,625,514	0	62,482,101	0.0612	0.7146
370	36,258,949	14,816,267	0	51,075,216	0.0500	0.7646
380	25,628,282	14,217,544	0	39,845,826	0.0390	0.8037
390	13,645,897	17,390,488	0	31,036,385	0.0304	0.8341
400	6,464,928	18,373,412	54,575	24,892,915	0.0244	0.8584
410	2,984,137	17,487,735	0	20,471,872	0.0200	0.8785
420	1,757,521	18,832,431	0	20,589,952	0.0202	0.8986
430	442,692	17,450,638	54,575	17,947,905	0.0176	0.9162
440	312,427	15,368,188	0	15,680,615	0.0154	0.9316
450	107,742	16,294,741	0	16,402,483	0.0161	0.9476
460	155,086	13,589,255	0	13,744,341	0.0135	0.9611
470	60,808	9,265,112	0	9,325,920	0.0091	0.9702
480	0	9,467,480	0	9,467,480	0.0093	0.9795
490	78,502	7,502,893	0	7,581,395	0.0074	0.9869
500	373,681	3,936,528	0	4,310,209	0.0042	0.9911
510	203,770	2,738,748	0	2,942,518	0.0029	0.9940
520	0	1,836,922	0	1,836,922	0.0018	0.9958
530	36,906	1,410,319	0	1,447,226	0.0014	0.9972
540	0	939,748	0	939,748	0.0009	0.9981
550	186,841	656,980	0	843,821	0.0008	0.9990
560	0	332,074	0	332,074	0.0003	0.9993

Appendix D Table 6. -- Continued

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
570	0	92,674	0	92,674	0.0001	0.9994
580	0	82,320	0	82,320	0.0001	0.9995
610	0	213,740	0	213,740	0.0002	0.9997
620	0	65,267	0	65,267	0.0001	0.9997
660	130,284	0	0	130,284	0.0001	0.9999
670	0	130,284	0	130,284	0.0001	1.0000
Total	**573,336,683**	**447,782,137**	**109,151**	**1,021,227,971**	**1.0000**	**1.0000**

Appendix D Table 7. -- Population estimates by sex and size for **Greenland turbot** (*Reinhardtius hippoglossoides)* from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
90	47,671	0	339,222	386,893	0.0172	0.0172
100	297,907	18,503	1,941,042	2,257,452	0.1003	0.1175
110	166,780	78,614	3,084,805	3,330,199	0.1480	0.2656
120	261,567	0	2,516,687	2,778,255	0.1235	0.3891
130	236,153	77,905	1,586,889	1,900,947	0.0845	0.4735
140	193,094	110,869	545,876	849,839	0.0378	0.5113
150	79,865	80,514	232,969	393,348	0.0175	0.5288
160	113,745	0	24,071	137,816	0.0061	0.5349
170	25,812	28,094	72,214	126,119	0.0056	0.5405
180	154,364	189,883	78,451	422,698	0.0188	0.5593
190	353,093	153,610	24,071	530,775	0.0236	0.5829
200	539,337	268,890	0	808,227	0.0359	0.6188
210	557,108	421,276	0	978,384	0.0435	0.6623
220	409,017	179,850	0	588,868	0.0262	0.6885
230	260,147	206,886	0	467,034	0.0208	0.7093
240	357,570	96,411	0	453,981	0.0202	0.7294
250	262,545	125,069	0	387,614	0.0172	0.7467
260	324,920	79,567	39,582	444,069	0.0197	0.7664
270	343,249	138,015	0	481,264	0.0214	0.7878
280	191,689	190,836	39,582	422,106	0.0188	0.8066
290	227,380	146,290	0	373,670	0.0166	0.8232
300	134,463	157,021	39,582	331,066	0.0147	0.8379
310	368,607	154,938	0	523,545	0.0233	0.8612
320	91,919	82,591	0	174,510	0.0078	0.8689
330	97,637	84,016	0	181,653	0.0081	0.8770
340	80,609	0	0	80,609	0.0036	0.8806
350	0	72,067	0	72,067	0.0032	0.8838
360	28,893	26,863	0	55,757	0.0025	0.8863
370	72,026	28,440	0	100,466	0.0045	0.8907
390	27,607	26,863	0	54,470	0.0024	0.8931
420	28,349	0	0	28,349	0.0013	0.8944
440	26,863	0	0	26,863	0.0012	0.8956
450	55,251	26,863	0	82,114	0.0036	0.8993
480	19,349	0	0	19,349	0.0009	0.9001
490	53,438	0	0	53,438	0.0024	0.9025
510	17,160	0	0	17,160	0.0008	0.9032
530	28,710	28,349	0	57,060	0.0025	0.9058
540	16,930	0	0	16,930	0.0008	0.9065
560	83,316	54,764	0	138,080	0.0061	0.9127
570	58,201	54,957	0	113,158	0.0050	0.9177
580	26,281	127,865	0	154,147	0.0069	0.9246
590	26,281	110,280	0	136,561	0.0061	0.9306
600	27,617	56,399	0	84,016	0.0037	0.9344
610	0	27,157	0	27,157	0.0012	0.9356
620	18,449	107,771	0	126,220	0.0056	0.9412
640	0	44,973	0	44,973	0.0020	0.9432

Appendix D Table 7. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
680	0	29,477	0	29,477	0.0013	0.9445
700	27,082	0	0	27,082	0.0012	0.9457
710	56,125	0	0	56,125	0.0025	0.9482
750	0	28,396	0	28,396	0.0013	0.9494
760	28,094	73,554	0	101,648	0.0045	0.9540
770	86,037	0	0	86,037	0.0038	0.9578
780	28,396	83,198	0	111,594	0.0050	0.9628
790	17,140	0	0	17,140	0.0008	0.9635
800	28,211	53,887	0	82,097	0.0036	0.9672
810	26,281	0	0	26,281	0.0012	0.9683
820	83,198	0	0	83,198	0.0037	0.9720
840	0	28,343	0	28,343	0.0013	0.9733
850	0	57,535	0	57,535	0.0026	0.9758
860	0	29,418	0	29,418	0.0013	0.9772
880	0	26,139	0	26,139	0.0012	0.9783
890	0	55,720	0	55,720	0.0025	0.9808
900	0	28,094	0	28,094	0.0012	0.9820
910	0	95,635	0	95,635	0.0043	0.9863
920	0	27,607	0	27,607	0.0012	0.9875
930	0	104,398	0	104,398	0.0046	0.9922
940	0	64,163	0	64,163	0.0029	0.9950
950	0	83,536	0	83,536	0.0037	0.9987
1000	0	28,726	0	28,726	0.0013	1.0000
Total	**7,171,537**	**4,761,086**	**10,565,042**	**22,497,664**	**1.0000**	**1.0000**

Appendix D Table 8. -- Population estimates by sex and size for **arrowtooth flounder** (*Atheresthes stomias)* from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
50	0	77,715	0	77,715	0.0001	0.0001
70	83,226	0	94,569	177,795	0.0002	0.0003
80	40,661	0	53,459	94,120	0.0001	0.0004
90	0	178,566	156,944	335,510	0.0004	0.0008
100	783,162	357,977	1,137,760	2,278,900	0.0026	0.0034
110	1,222,351	862,123	1,763,292	3,847,767	0.0044	0.0078
120	975,367	617,435	1,159,857	2,752,658	0.0032	0.0110
130	517,457	550,886	83,439	1,151,782	0.0013	0.0123
140	849,633	1,547,300	177,524	2,574,457	0.0030	0.0153
150	3,345,535	3,550,609	106,919	7,003,064	0.0081	0.0234
160	8,258,361	9,239,920	53,459	17,551,740	0.0202	0.0436
170	9,407,835	10,165,644	106,919	19,680,398	0.0227	0.0663
180	5,790,538	11,527,326	53,459	17,371,323	0.0200	0.0863
190	3,484,266	6,651,328	0	10,135,594	0.0117	0.0979
200	2,559,193	4,170,073	0	6,729,266	0.0078	0.1057
210	3,632,420	7,948,842	0	11,581,263	0.0133	0.1190
220	4,525,482	8,480,909	0	13,006,392	0.0150	0.1340
230	7,910,334	12,856,705	0	20,767,040	0.0239	0.1579
240	8,663,765	14,984,716	0	23,648,481	0.0272	0.1852
250	8,796,974	17,676,258	0	26,473,232	0.0305	0.2156
260	8,661,586	18,790,443	0	27,452,029	0.0316	0.2473
270	8,325,144	20,954,797	0	29,279,941	0.0337	0.2810
280	10,827,288	17,515,461	0	28,342,749	0.0326	0.3136
290	9,406,524	20,429,217	0	29,835,742	0.0344	0.3480
300	7,694,181	24,432,776	0	32,126,957	0.0370	0.3850
310	12,385,379	31,818,749	0	44,204,128	0.0509	0.4359
320	8,765,846	23,140,958	0	31,906,804	0.0367	0.4726
330	8,425,292	18,440,757	0	26,866,049	0.0309	0.5036
340	7,309,428	16,428,610	0	23,738,038	0.0273	0.5309
350	10,893,052	18,519,451	0	29,412,504	0.0339	0.5648
360	7,662,810	18,506,789	0	26,169,598	0.0301	0.5949
370	11,316,102	20,333,616	0	31,649,718	0.0365	0.6314
380	9,936,493	19,317,955	0	29,254,448	0.0337	0.6651
390	11,108,561	20,848,880	0	31,957,441	0.0368	0.7019
400	10,679,235	20,819,517	0	31,498,752	0.0363	0.7382
410	7,872,868	26,932,270	0	34,805,137	0.0401	0.7782
420	6,599,398	21,260,409	0	27,859,806	0.0321	0.8103
430	4,491,734	18,353,487	0	22,845,221	0.0263	0.8366
440	3,042,207	16,993,431	0	20,035,639	0.0231	0.8597
450	1,820,531	16,558,326	0	18,378,857	0.0212	0.8809
460	1,773,579	14,159,660	0	15,933,239	0.0184	0.8992
470	1,070,369	10,211,062	0	11,281,430	0.0130	0.9122
480	40,397	11,049,630	0	11,090,027	0.0128	0.9250
490	192,306	9,795,994	0	9,988,300	0.0115	0.9365

Appendix D Table 8. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
510	295,982	7,520,913	0	7,816,894	0.0090	0.9540
520	299,846	6,277,391	0	6,577,237	0.0076	0.9616
530	145,620	3,044,064	0	3,189,685	0.0037	0.9652
540	776,816	3,287,385	0	4,064,201	0.0047	0.9699
550	112,257	2,170,364	0	2,282,621	0.0026	0.9725
560	28,893	2,439,256	0	2,468,150	0.0028	0.9754
570	55,102	1,512,523	0	1,567,625	0.0018	0.9772
580	54,045	1,572,749	0	1,626,794	0.0019	0.9791
590	0	1,870,764	0	1,870,764	0.0022	0.9812
600	0	2,190,950	0	2,190,950	0.0025	0.9837
610	55,102	1,669,387	0	1,724,489	0.0020	0.9857
620	149,626	1,675,573	0	1,825,199	0.0021	0.9878
630	0	1,031,811	0	1,031,811	0.0012	0.9890
640	0	1,231,626	0	1,231,626	0.0014	0.9904
650	0	1,076,694	0	1,076,694	0.0012	0.9917
660	0	998,893	0	998,893	0.0012	0.9928
670	0	1,123,774	0	1,123,774	0.0013	0.9941
680	0	986,505	0	986,505	0.0011	0.9953
690	0	1,047,455	0	1,047,455	0.0012	0.9965
700	0	696,633	0	696,633	0.0008	0.9973
710	0	571,725	0	571,725	0.0007	0.9979
720	0	855,263	0	855,263	0.0010	0.9989
730	0	185,300	0	185,300	0.0002	0.9991
740	0	500,111	0	500,111	0.0006	0.9997
760	0	95,581	0	95,581	0.0001	0.9998
770	0	36,810	0	36,810	0.0000	0.9998
780	0	40,397	0	40,397	0.0000	0.9999
810	0	94,120	0	94,120	0.0001	1.0000
Total	**243,336,606**	**619,996,141**	**4,947,601**	**868,280,348**	**1.0000**	**1.0000**

Appendix D Table 9. -- Population estimates by sex and size for **Kamchatka flounder** (*Atheresthes evermanni*) from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
90	30,291	82,690	0	112,982	0.0014	0.0014
100	125,530	35,922	151,686	313,138	0.0037	0.0051
110	240,894	91,142	575,852	907,887	0.0109	0.0160
120	139,582	90,020	113,924	343,527	0.0041	0.0201
130	25,351	0	0	25,351	0.0003	0.0204
140	116,645	0	0	116,645	0.0014	0.0218
150	198,781	141,109	0	339,890	0.0041	0.0258
160	410,340	448,742	54,136	913,217	0.0109	0.0367
170	631,482	704,691	28,754	1,364,928	0.0163	0.0531
180	643,524	616,670	86,432	1,346,627	0.0161	0.0692
190	357,223	137,793	0	495,016	0.0059	0.0751
200	363,969	218,196	59,959	642,124	0.0077	0.0828
210	661,860	346,069	0	1,007,928	0.0121	0.0948
220	276,777	463,817	59,959	800,553	0.0096	0.1044
230	961,421	630,410	119,917	1,711,749	0.0205	0.1249
240	616,185	484,220	59,959	1,160,364	0.0139	0.1387
250	1,195,020	871,025	179,876	2,245,921	0.0269	0.1656
260	486,167	956,321	299,794	1,742,281	0.0208	0.1864
270	1,156,892	776,542	479,670	2,413,104	0.0289	0.2153
280	1,121,661	873,978	239,835	2,235,474	0.0267	0.2420
290	1,386,382	1,030,937	179,876	2,597,195	0.0311	0.2731
300	934,092	883,070	119,917	1,937,080	0.0232	0.2962
310	655,716	1,392,877	0	2,048,594	0.0245	0.3207
320	523,379	622,966	119,917	1,266,263	0.0151	0.3359
330	784,509	610,590	0	1,395,098	0.0167	0.3526
340	557,104	523,607	179,876	1,260,587	0.0151	0.3676
350	577,032	1,052,577	59,959	1,689,568	0.0202	0.3879
360	1,151,616	856,903	59,959	2,068,477	0.0247	0.4126
370	2,148,211	1,462,260	0	3,610,470	0.0432	0.4558
380	1,404,874	1,762,111	179,876	3,346,861	0.0400	0.4958
390	1,820,116	2,309,917	59,959	4,189,992	0.0501	0.5459
400	1,549,270	2,399,025	0	3,948,295	0.0472	0.5931
410	2,505,464	2,053,486	0	4,558,950	0.0545	0.6476
420	2,334,848	2,331,034	119,917	4,785,800	0.0572	0.7049
430	2,633,212	2,611,520	0	5,244,732	0.0627	0.7676
440	1,658,510	2,973,844	0	4,632,354	0.0554	0.8230
450	1,147,049	2,340,114	0	3,487,162	0.0417	0.8647
460	911,139	1,666,914	119,917	2,697,970	0.0323	0.8969
470	720,131	1,450,271	0	2,170,402	0.0260	0.9229
480	450,580	1,426,495	0	1,877,074	0.0224	0.9453
490	150,439	438,000	0	588,439	0.0070	0.9524
500	225,927	328,742	0	554,669	0.0066	0.9590
510	0	288,050	0	288,050	0.0034	0.9625
520	51,249	159,052	0	210,300	0.0025	0.9650

Appendix D Table 9. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
530	56,087	78,112	0	134,199	0.0016	0.9666
540	0	113,445	0	113,445	0.0014	0.9679
550	83,828	199,894	0	283,723	0.0034	0.9713
560	54,509	83,241	0	137,750	0.0016	0.9730
570	0	83,777	0	83,777	0.0010	0.9740
580	0	103,502	0	103,502	0.0012	0.9752
590	134,447	54,866	0	189,313	0.0023	0.9775
610	54,509	94,775	0	149,284	0.0018	0.9793
620	0	112,357	0	112,357	0.0013	0.9806
630	0	29,053	0	29,053	0.0003	0.9810
640	0	416,969	0	416,969	0.0050	0.9859
650	0	35,524	0	35,524	0.0004	0.9864
670	0	51,249	0	51,249	0.0006	0.9870
680	0	83,828	0	83,828	0.0010	0.9880
690	0	383,058	0	383,058	0.0046	0.9926
700	0	17,372	0	17,372	0.0002	0.9928
710	0	359,004	0	359,004	0.0043	0.9971
720	0	27,377	0	27,377	0.0003	0.9974
740	0	18,430	0	18,430	0.0002	0.9976
760	0	24,657	0	24,657	0.0003	0.9979
790	0	122,932	0	122,932	0.0015	0.9994
800	0	52,118	0	52,118	0.0006	1.0000
Total	**36,423,824**	**43,489,257**	**3,708,926**	**83,622,007**	**1.0000**	**1.0000**

Appendix D Table 10. -- Population estimates by sex and size for **Pacific halibut** (*Hippoglossus stenolepis)* from the 2009 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
80	0	0	27,154	27,154	0.0003	0.0003
130	29,753	29,753	0	59,506	0.0006	0.0008
140	0	59,506	0	59,506	0.0006	0.0014
160	0	0	29,266	29,266	0.0003	0.0017
180	0	29,753	30,699	60,452	0.0006	0.0023
190	29,753	89,689	30,699	150,141	0.0015	0.0038
200	0	29,753	0	29,753	0.0003	0.0041
210	29,780	148,765	171,073	349,617	0.0034	0.0075
220	176,961	116,653	82,479	376,092	0.0037	0.0112
230	206,714	207,355	426,363	840,431	0.0082	0.0194
240	180,007	358,191	583,341	1,121,538	0.0110	0.0304
250	259,308	177,889	503,926	941,122	0.0092	0.0396
260	257,736	575,471	987,869	1,821,076	0.0178	0.0574
270	398,206	285,888	539,467	1,223,561	0.0120	0.0694
280	303,085	343,069	842,143	1,488,296	0.0146	0.0840
290	338,415	142,979	728,212	1,209,605	0.0118	0.0958
300	214,715	260,398	834,736	1,309,849	0.0128	0.1087
310	257,432	256,249	438,658	952,338	0.0093	0.1180
320	347,476	336,513	631,282	1,315,271	0.0129	0.1309
330	316,656	174,971	667,203	1,158,830	0.0113	0.1422
340	693,903	491,420	982,298	2,167,621	0.0212	0.1634
350	951,016	507,491	1,286,716	2,745,223	0.0269	0.1903
360	855,671	890,181	1,922,718	3,668,570	0.0359	0.2263
370	547,831	629,395	1,645,193	2,822,419	0.0276	0.2539
380	919,529	1,108,509	1,390,889	3,418,927	0.0335	0.2874
390	1,085,492	773,478	1,114,924	2,973,895	0.0291	0.3165
400	922,876	1,239,772	1,428,824	3,591,472	0.0352	0.3517
410	605,083	1,140,141	1,411,056	3,156,280	0.0309	0.3826
420	727,831	554,166	1,765,705	3,047,702	0.0298	0.4124
430	494,875	626,642	1,371,018	2,492,535	0.0244	0.4368
440	807,538	630,490	1,386,125	2,824,152	0.0277	0.4645
450	378,510	500,653	1,271,953	2,151,116	0.0211	0.4855
460	510,346	763,946	1,468,778	2,743,070	0.0269	0.5124
470	766,205	498,563	1,283,120	2,547,889	0.0250	0.5374
480	588,911	698,104	1,889,834	3,176,849	0.0311	0.5685
490	602,619	766,381	1,859,474	3,228,474	0.0316	0.6001
500	767,533	754,832	1,754,959	3,277,324	0.0321	0.6322
510	615,510	628,615	1,391,197	2,635,321	0.0258	0.6580
520	487,799	842,468	1,701,307	3,031,574	0.0297	0.6877
530	627,464	643,182	1,224,448	2,495,094	0.0244	0.7121
540	469,408	559,582	1,018,852	2,047,842	0.0201	0.7322
550	505,929	591,303	938,998	2,036,230	0.0199	0.7521
560	405,816	617,204	758,181	1,781,201	0.0174	0.7695
570	405,236	523,209	686,165	1,614,611	0.0158	0.7853
580	379,597	459,718	666,701	1,506,017	0.0147	0.8001
590	300,461	427,372	713,906	1,441,739	0.0141	0.8142
600	372,937	438,669	1,009,623	1,821,230	0.0178	0.8320

Appendix D Table 10. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
610	162,438	394,791	377,715	934,944	0.0092	0.8412
620	278,917	227,088	463,269	969,274	0.0095	0.8507
630	269,184	409,954	517,000	1,196,138	0.0117	0.8624
640	227,720	110,833	643,101	981,654	0.0096	0.8720
650	190,465	290,605	484,040	965,110	0.0095	0.8815
660	172,324	308,677	377,904	858,904	0.0084	0.8899
670	0	287,604	264,955	552,559	0.0054	0.8953
680	100,972	278,435	485,412	864,818	0.0085	0.9038
690	106,588	256,290	243,758	606,636	0.0059	0.9097
700	88,012	200,629	361,111	649,752	0.0064	0.9161
710	140,561	222,230	219,610	582,401	0.0057	0.9218
720	84,751	258,898	221,706	565,355	0.0055	0.9273
730	27,209	364,606	186,192	578,006	0.0057	0.9330
740	0	341,195	302,322	643,518	0.0063	0.9393
750	28,442	115,980	301,855	446,277	0.0044	0.9436
760	27,990	197,212	252,690	477,893	0.0047	0.9483
770	30,898	114,536	158,076	303,510	0.0030	0.9513
780	0	144,216	124,064	268,280	0.0026	0.9539
790	0	111,117	112,408	223,526	0.0022	0.9561
800	30,559	88,226	174,343	293,128	0.0029	0.9590
810	79,707	115,119	129,554	324,380	0.0032	0.9622
820	31,710	112,713	159,746	304,170	0.0030	0.9651
830	31,287	145,190	151,526	328,002	0.0032	0.9683
840	28,795	110,371	163,561	302,727	0.0030	0.9713
850	28,787	45,108	169,322	243,218	0.0024	0.9737
860	28,474	55,763	131,274	215,510	0.0021	0.9758
870	0	28,594	162,453	191,047	0.0019	0.9777
880	62,146	83,749	73,128	219,023	0.0021	0.9798
890	58,429	30,035	26,443	114,907	0.0011	0.9809
900	28,440	77,980	26,205	132,625	0.0013	0.9822
910	0	27,990	54,290	82,281	0.0008	0.9830
920	27,621	70,944	18,152	116,716	0.0011	0.9842
930	0	45,943	124,065	170,008	0.0017	0.9859
940	0	29,284	105,956	135,240	0.0013	0.9872
950	0	84,852	110,386	195,238	0.0019	0.9891
960	44,617	28,795	79,089	152,501	0.0015	0.9906
970	0	58,105	25,488	83,593	0.0008	0.9914
980	0	0	51,709	51,709	0.0005	0.9919
990	56,591	29,053	0	85,643	0.0008	0.9928
1000	0	57,385	0	57,385	0.0006	0.9933
1010	28,261	0	28,055	56,316	0.0006	0.9939
1020	0	44,642	0	44,642	0.0004	0.9943
1030	23,441	16,914	27,627	67,981	0.0007	0.9950
1050	0	85,772	0	85,772	0.0008	0.9959
1060	0	0	28,316	28,316	0.0003	0.9962
1070	0	28,442	0	28,442	0.0003	0.9964
1080	56,748	0	0	56,748	0.0006	0.9970
1100	0	0	25,798	25,798	0.0003	0.9973

Appendix D Table 10. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
1110	0	0	18,152	18,152	0.0002	0.9975
1120	0	28,481	0	28,481	0.0003	0.9978
1180	0	0	25,351	25,351	0.0002	0.9980
1200	0	0	37,240	37,240	0.0004	0.9984
1220	0	29,618	0	29,618	0.0003	0.9987
1230	0	0	27,290	27,290	0.0003	0.9990
1280	0	31,710	0	31,710	0.0003	0.9993
1290	0	19,055	0	19,055	0.0002	0.9995
1370	0	0	25,351	25,351	0.0002	0.9997
Total	**22,724,006**	**28,220,458**	**51,174,586**	**102,119,050**	**1.0000**	**1.0000**

RECENT TECHNICAL MEMORANDUMS

Copies of this and other NOAA Technical Memorandums are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22167 (web site: *www.ntis.gov)*. Paper and electronic (.pdf) copies vary in price.

AFSC-

203 LAAKE, J., A. PUNT, R. HOBBS, M. FERGUSON, D. RUGH, and J. BREIWICK. 2009. Re-analysis of gray whale southbound migration surveys 1967-2006, 55 p. NTIS number pending.

202 FOWLER, C. W., and L. HOBBS. 2009. Are we asking the right questions in science and management?, 59 p. NTIS number pending.

201 CHILTON, E. A., C. E. ARMISTEAD, and R. J. FOY. 2009. The 2009 eastern Bering Sea continental shelf bottom trawl survey: Results for commercial crab species, 101 p. NTIS number pending.

200 BOVENG, P. L., J. L. BENGTSON, T. W. BUCKLEY, M. F. CAMERON, S. P. DAHLE, B. P. KELLY, B. A. MEGREY, J. E. OVERLAND, and N. J. WILLIAMSON. 2009. Status review of the spotted seal (*Phoca largha*), 153 p. NTIS No. PB2010-101436.

199 CONNERS, M. E., J. CAHALAN, S. GAICHAS, W. A. KARP, T. LOOMIS, and J. WATSON. 2009. Sampling for estimation of catch composition in Bering Sea trawl fisheries, 77 p. NTIS No. PB2010-100895.

198 BARBEAUX, S. J., and D. FRASER. 2009. Aleutian Islands cooperative acoustic survey study for 2006, 90 p. NTIS No. PB2010-100894.

197 HOFF, G. R., and L. L. BRITT. 2009. Results of the 2008 eastern Bering Sea upper continental slope survey of groundfish and invertebrate resources, 294 p. NTIS No. PB2010-100893.

196 BUCKLEY, T. W., A. GREIG, and J. L. BOLDT. 2009. Describing summer pelagic habitat over the continental shelf in the eastern Bering Sea, 1982-2006, 49 p. NTIS No. PB2009-115399.

195 LAUTH, R. R., and E. ACUNA. 2009. Results of the 2008 eastern Bering Sea continental shelf bottom trawl survey of groundfish and invertebrate resources, 219 p. NTIS No. PB2009-113760.

194 HONKALEHTO, T., D. JONES, A. MCCARTHY, D. MCKELVEY, M.GUTTORMSEN, K. WILLIAMS, and N. WILLIAMSON. 2009. Results of the echo integration-trawl survey of walleye pollock (*Theragra chalcogramma*) on the U.S. and Russian Bering Sea shelf in June and July 2008, 56 p. NTIS No. PB2009-110982.

193 ANGLISS, R. P., and B. M. ALLEN. 2009. Alaska marine mammal stock assessments, 2008, 258 p. NTIS No. PB2009-109548.

192 FOWLER, C. W.,T. E. JEWELL and M. V. LEE. 2009. Harvesting young-of-the-year from large mammal populations: An application of systemic management, 65 p. NTIS No. PB2009105146.

191 BOVENG, P. L., J. L. BENGTSON, T. W. BUCKLEY, M. F. CAMERON, S. P. DAHLE. A. MEGREY, J. E. OVERLAND, and N. J. WILLIAMSON. 2008. Status review of the ribbon seal (*Histriophoca fasciata)*, 115 p. NTIS No. PB2006-104582.

190 HONKALEHTO, T., N. WILLIAMSON, D. JONES, A. MCCARTHY, and D. MCKELVEY. 2008. Results of the echo integration-trawl survey of walleye pollock (*Theragra chalcogramma)* on the U.S. and Russian Bering Sea shelf in June and July 2007, 53 p. NTIS No. PB2009-104581.

189 VON SZALAY, P. G., M. E. WILKINS, and M. H. MARTIN. 2008. Data Report: Gulf of Alaska bottom trawl survey, 247 p. NTIS No. PB2009-103242.

188 TESTA, J. W. (editor). 2008. Fur seal investigations, 2006-2007, 76 p. NTIS No. PB2009-103613.