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Results of the 2006 Eastern Bering Sea Continental Shelf Bottom Trawl Survey of Groundfish and Invertebrate Resources

by
R. R. Lauth and E. Acuna

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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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, surveyed each year since 1979, 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 2006, two chartered trawlers, the 40-m FV *Arcturus* and the 49-m FV *Northwest Explorer* surveyed this area.

Demersal populations were sampled by trawling for 30 minutes at stations centered within 20 × 20 nautical mile grids covering the survey area. At each station, species composition of the catch was determined. Length distributions and age structure samples were collected from ecologically and commercially important species.

All 356 standard survey stations were sampled successfully. Walleye pollock, yellowfin sole, and rock sole dominated fish biomass estimates (7.2 million metric tons combined). A total of 156 invertebrate species were identified to the species levels in the survey.

Survey results presented in this report include relative fishing powers of the survey vessels, abundance estimates for fish and invertebrates, geographic distributions of important fish species and size composition of principal fish species. Surface and bottom temperatures recorded at each sampling station are also presented.

Appendices provide station data, species listings, and detailed results of 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 fishery catches ranging from 1.2 to 1.5 million metric tons (t) for the past 30 years and marketed products representing 40% of the global whitefish market (Ianelli et al. 2006).

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 (EBS) 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 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 and 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. Crab stocks that the Alaska Department of Fish and Game (ADF&G) are responsible for assessing are covered by the North Pacific Fishery Management Council's 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 most recent crab survey are available in Rugolo et al. (2006).

Begininning in 1979 and on a triennial basis through 1991, the survey was extended to include bottom trawl sampling of the continental slope and bottom trawl sampling in the region between St. Matthew and St. Lawrence Islands. The continental slope was not surveyed in 1994 or 1997 but was resumed in 2000 as an independent biennial bottom trawl survey series. The most recent continental slope survey was from 3 June to 11 August 2004 (Hoff and Britt 2005).

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 North Pacific Fishery Management Council; 2) provide updates on the distribution and abundance information to commercial fishermen, and 3) continue a time-series database necessary to our improved understanding of the population dynamics and

interactions of groundfish species. This report presents information collected by the AFSC in the eastern Bering Sea shelf during the 2006 bottom trawl survey, which represents the twenty-fifth year in the time-series.

Methods

Survey area and sampling design

The standard station pattern for the eastern Bering Sea survey is based on 356 systematic 37.04 × 37.04 km (20 × 20 nautical mile) grids with a fixed sampling station at the center of each 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.

An additional 49 stations were sampled northwest of the standard area primarily to investigate the distribution and abundance of opilio crabs and the northern distribution of pollock (Fig. 2). For all 405 stations, there is a general description of the fish and invertebrate species caught by trawl in the results and a detailed list in Appendix A. Other than relative abundance for the top 25 fish species in the 49 northwest stations, all data analyses presented in the results include only the 356 standard survey stations.

Sampling logistics and stratification scheme

The *Arcturus* and *Northwest Explorer* started in Bristol Bay and sampled alternate, longitudinal columns of stations. When possible, the vessels continued this pattern of sampling while proceeding westward to the shelf edge. This practice is 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).

For catch analysis, the survey region was divided into six bathymetric 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 groundfishes 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 division into high-density and standard-density sample strata, resulting in a total of 10 strata.

The overall sampling density for the entire survey area was one station per 1,313 km^2 (Table 1). However, because of the high-density sampling in Strata 30, 40, and 60, and the irregular stratum boundaries, sampling density among the six main strata varied from one station per 1,147 km^2 (Stratum 40) to one per 1,492 km^2 (Stratum 50).

Survey vessels and sampling gear

From 30 May to 28 July 2006, the eastern Bering Sea bottom trawl survey was conducted aboard the chartered commercial stern-trawlers FV *Arcturus* and FV *Northwest Explorer* (Table 2). 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 fathoms) paired dandylines. Each lower dandyline

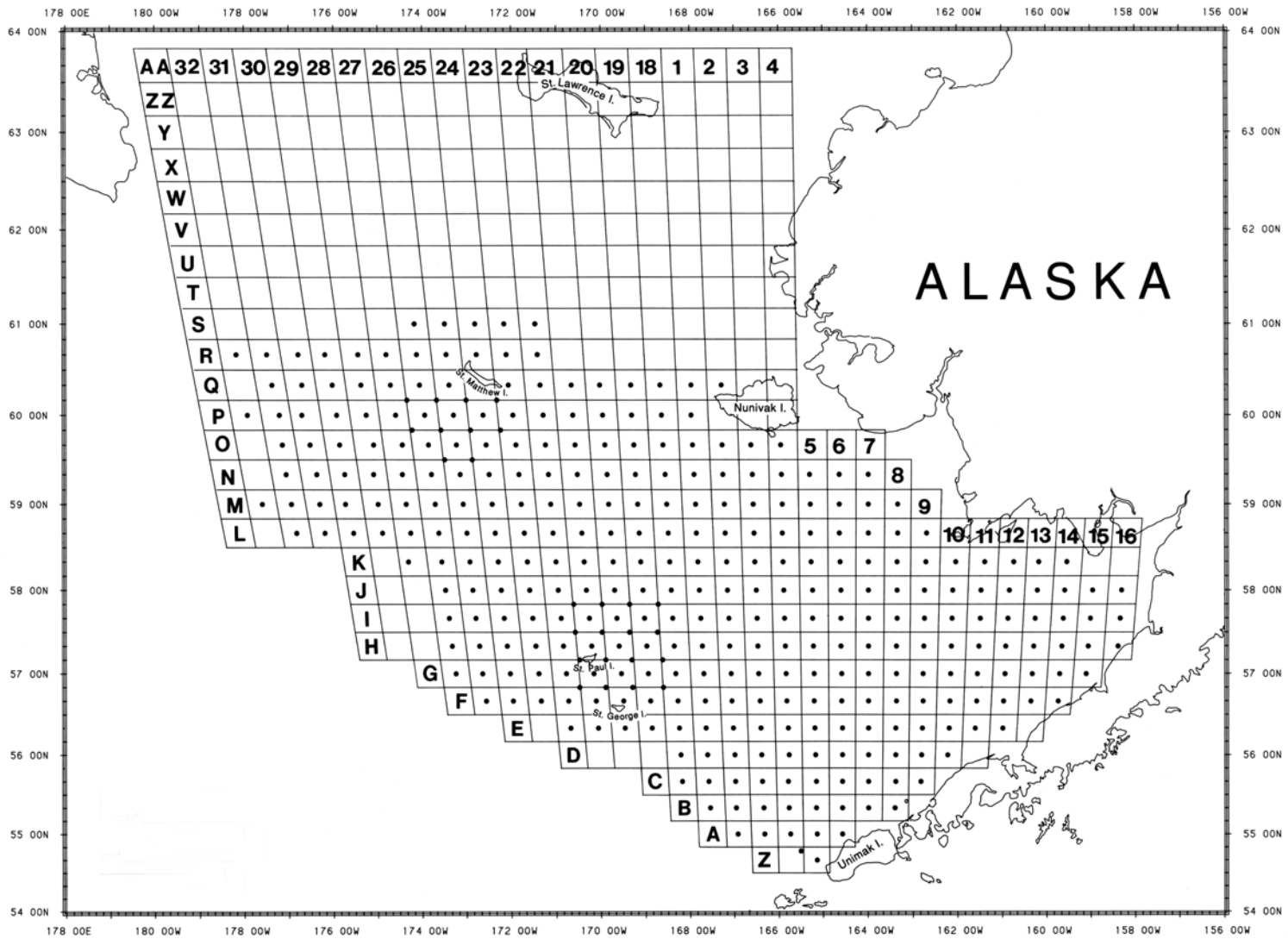


Figure 1. -- Eastern Bering Sea survey grid map of sampled stations.

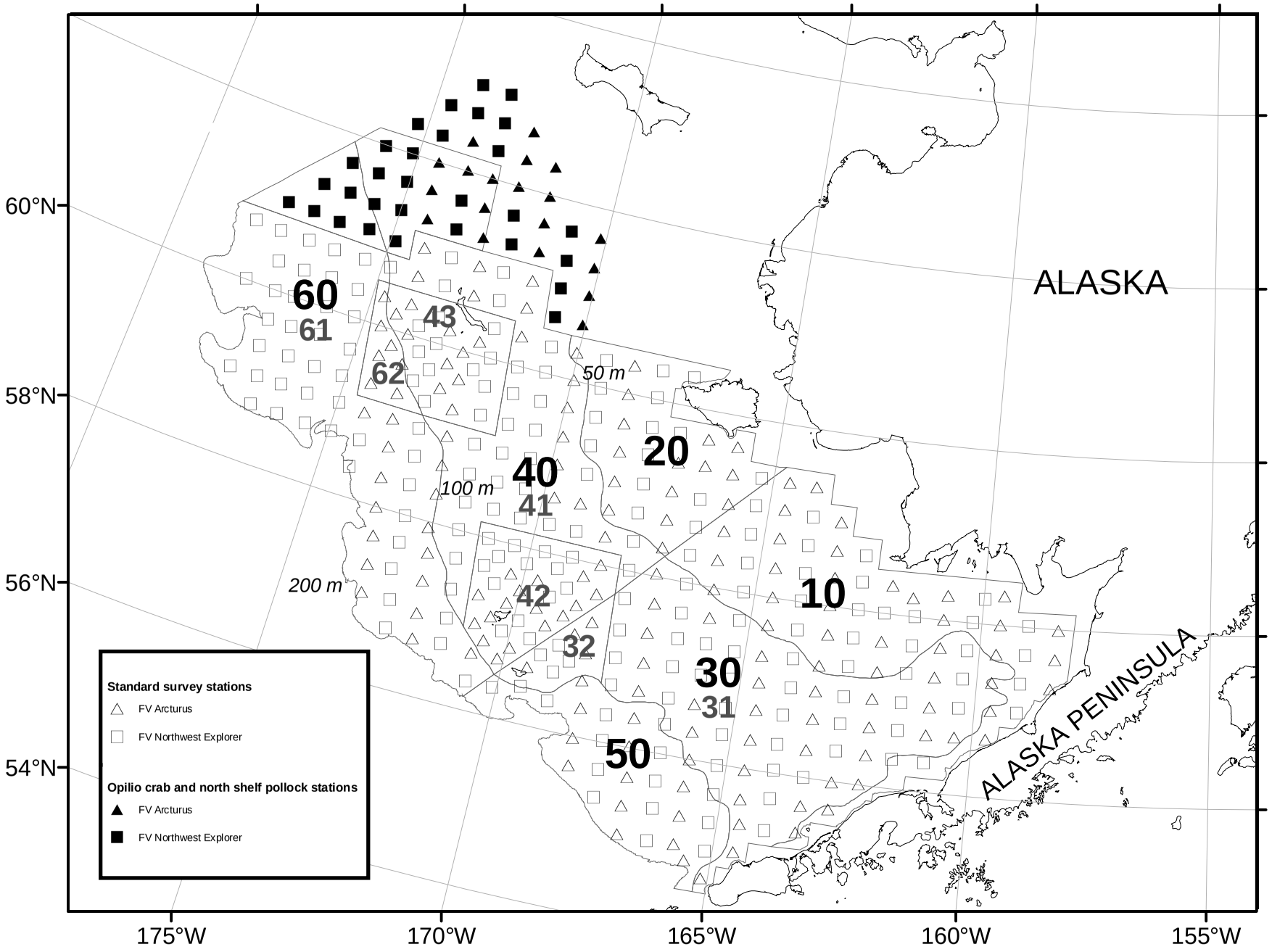


Figure 2. --Standard and special study stations sampled during the 2006 eastern Bering Sea bottom trawl survey, and stratifications used for analysis of data (large numbers = strata, small numbers = substrata).

Table 1.--Stratum areas and sampling densities for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	High density stratum	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	94	1,147
	41	62,703	43	1,458
	42	24,011	31	775
	43	21,108	20	1,055
50	--	38,792	26	1,492
60	--	94,562	67	1,411
	61	88,134	59	1,494
	62	6,429	8	804
Strata Combined		463,374	353	1,313

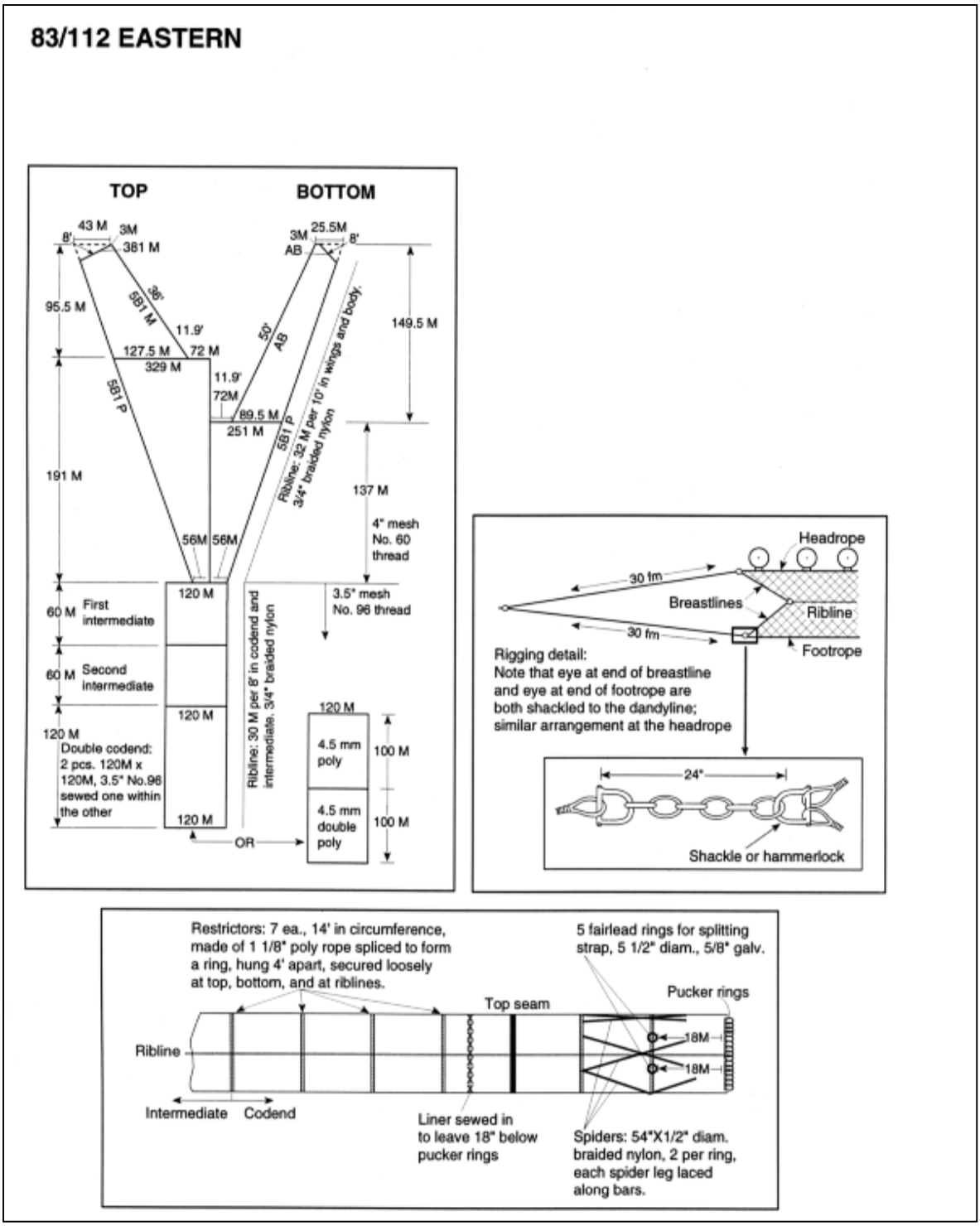


Figure 3. -- Schematic diagram of 83/112 Eastern otter trawl net used during the 2005 Eastern Bering Sea bottom trawl survey.

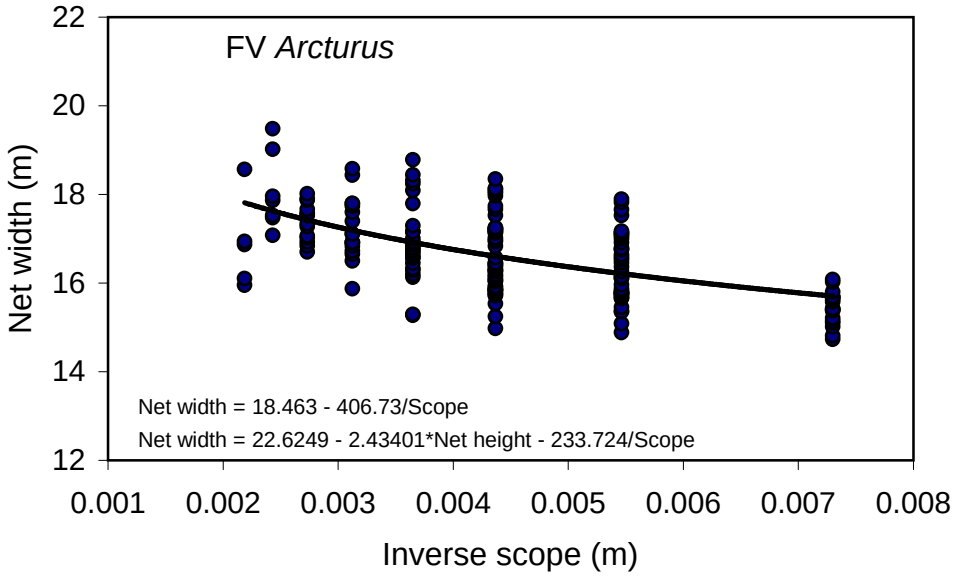
had a 0.61-m chain extension connected to the lower wing edge to improve bottom-tending characteristics. Steel "V"-doors measuring 1.8 × 2.7 m and weighing 816 kg were used.

Table 2. –Charter vessel characteristics during the 2006 eastern Bering Sea bottom trawl survey.

Vessel	Overall length (m)	Horsepower	Survey dates
FV *Arcturus*	39.6	1,525	30 May – 28 July
FV *Northwest Explorer*	49.4	1,800	30 May – 28 July

Netmind[1] net mensuration systems were used aboard each vessel to monitor and record net heights and net widths during fishing operations. Net width was measured as the distance between two sensors attached to the upper starboard and port dandylines, about 0.61 m in front of the net, and net height was measured from the headrope to the seafloor bottom. Estimates of mean net width were needed for each tow for estimating area-swept. For the EBS standard survey trawl, inverse scope is the best predictor of mean net width and an additional 5% of the net width variation is accounted for with the addition of net height to the net width regression (Rose and Walters 1990). For tows without observed net width values, inverse scope (wire-out) and mean net height were the dependent variables for predicting net width using multiple regression (Zar 1999). However, if net height observations were not available for a given haul, a simple mean net width-inverse scope regression was adequate because it accounts for a majority of the variation (Rose and Walters 1990; Fig. 4).

[1] Reference to trade names does not imply endorsement by the National Marine Fisheries Service, NOAA.



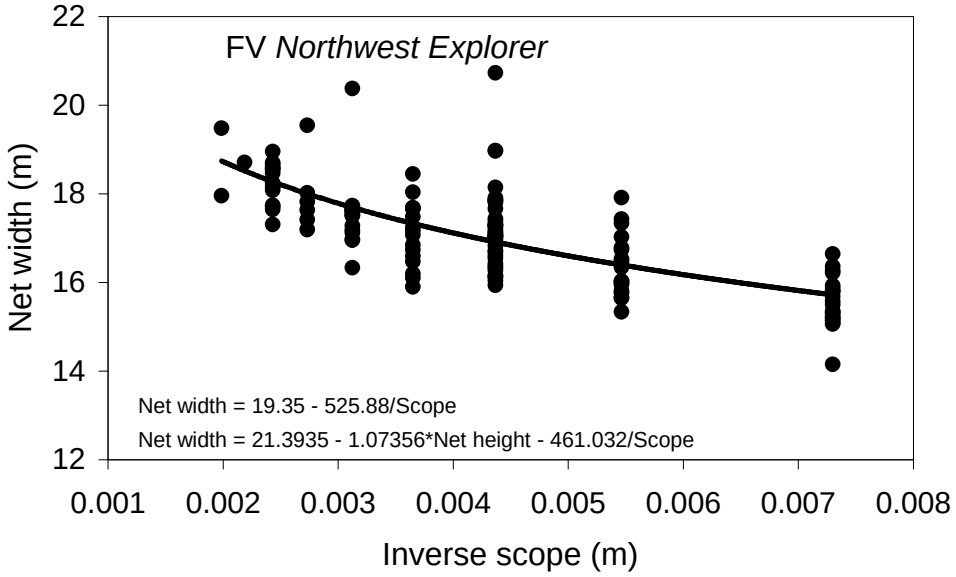


Figure 4.--Net width-inverse scope (wire-out) relationship for each vessel participating in the 2006 eastern Bering Sea trawl survey. The regression formula using both net height and inverse scope is also presented for each vessel.

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 follows.

Samples were collected by trawling at the center of each 37.04 × 37.04 km grid square (or corner station, in the case of high-density strata) for 30 minutes (timed after the net had settled on the bottom), towing 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 ripped or "hung up" on the bottom during the tow, the catch was discarded and a new sample obtained.

Catches of less than approximately 1,150 kg (2,500 lb) were processed entirely and 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.

Fish and invertebrates were identified and sorted to species to the extent possible. 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.

Minor species of fish and invertebrates were sorted to the lowest taxonomic level practicable. 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. Pacific halibut (*Hippoglossus stenolepis*) and commercial crab species were usually weighed and enumerated from the entire catch.

A random sample of up to 200 fish of each commercially important species was set aside for length measurements. Size composition data were collected for each commercially important groundfish species and many co-occurring species (Table 3). Length measurements were collected from randomly chosen samples of each species. These specimens were sexed and measured to the nearest centimeter from the tip of the snout to the end of the middle rays of the caudal fin (fork length measurement). Unless sampled by the International Pacific Halibut Commission (IPHC) for management purposes, Pacific halibut were measured immediately upon capture and returned to the sea in an effort to reduce sampling mortality.

Sagittal otoliths were collected from 20 fish species in both the northwestern and southeastern divisions of the survey area (Table 4). Three otolith pairs per sex/centimeter interval per vessel (six pair total) were collected for Pacific cod, Greenland turbot (*Reinhardtius hippoglossoides*), great sculpin (*Myoxocephalus polyacanthocephalus*), plain sculpin (*M. jaok*), warty sculpin (*M. verrucosus*), and yellow Irish lord (*Hemilepidotus jordani*). Five otolith pairs per sex/centimeter interval per vessel (10 pairs total) were collected for walleye pollock and yellowfin sole. Northern rock sole (*Lepidopsetta polyxystra*), flathead sole (*Hippoglossoides elassodon*), Alaska plaice (*Pleuronectes quadrituberculatus*), and arrowtooth flounder were also collected at five otolith pairs per sex/centimeter interval but only on one vessel. Pacific halibut otoliths were collected by the IPHC for population and growth analyses.

Individual fish weight data were collected for all species for which age structures were taken. Age structures for roundfish were preserved in 50% ethanol; flatfish otoliths were preserved in 50% glycerol-thymol solution.

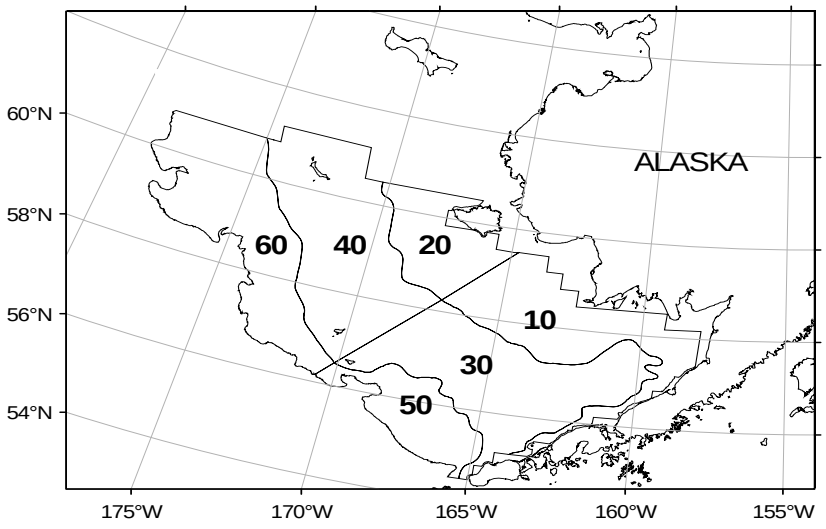
Table 3.--Number of length measurements by stratum taken during the 2006 eastern Bering Sea bottom trawl survey.

	Stratum						
Common name	10	20	30	40	50	60	Total
Alaska plaice	1,398	976	1,367	1,309	3	25	5,078
Alaska skate	502	259	1,143	1,399	155	879	4,337
Aleutian skate	--	--	--	--	8	11	19
Arctic cod	1	--	--	28	--	--	29
arrowtooth flounder	78	--	2,224	498	1,292	1,750	5,842
Atka mackerel	1	--	1	1	4	--	7
Bering flounder	2	21	--	414	--	38	475
Bering skate	--	--	37	10	55	98	200
big skate	--	--	4	--	--	--	4
bigmouth sculpin	--	--	24	71	10	102	207
butter sole	12	--	20	--	1	--	33
butterfly sculpin	--	--	--	63	--	--	63
chum salmon	--	3	--	1	1	3	8
Dover sole	--	--	3	--	--	--	3
dusky rockfish	--	--	2	--	6	--	8
flathead sole	337	3	2,443	1,091	1,006	2,280	7,160
great sculpin	139	40	225	208	4	156	772
Greenland turbot	--	--	--	34	--	239	273
Kamchatka flounder	--	--	268	92	502	1,066	1,928
longhead dab	479	186	1	1	--	--	667
marbled eelpout	--	--	--	46	--	--	46
mud skate	--	--	--	--	--	1	1
northern rock sole	2,843	1,110	3,042	2,439	67	435	9,936
northern rockfish	--	--	--	--	4	3	7
Pacific cod	955	639	1,900	3,132	138	1,392	8,156
Pacific halibut	883	293	694	377	52	205	2,504
Pacific ocean perch	--	--	1	--	6	45	52
Pacific sleeper shark	--	--	--	2	--	--	2
plain sculpin	748	658	16	225	--	2	1,649
rex sole	7	--	103	3	373	226	712
rougheye rockfish	--	--	--	--	2	--	2
sablefish	--	--	3	--	--	--	3
saffron cod	2	--	--	--	--	--	2
rockfish unidentified	--	--	--	14	--	--	14
searcher	--	--	--	--	1	--	1
shortfin eelpout	--	--	40	179	62	462	743
southern rock sole	--	--	52	--	--	--	52
spinyhead sculpin	--	--	--	--	20	--	20
starry flounder	357	64	26	--	--	--	447
walleye pollock	775	384	2,674	2,662	437	2,483	9,415
warty sculpin	12	14	9	312	--	16	363
wattled eelpout	--	--	207	373	10	93	683
whiteblotched skate	--	--	--	--	--	1	1
yellow Irish lord	--	1	76	328	4	81	490
yellowfin sole	2,753	1,285	2,284	1,497	3	--	7,822

Table 4.--Number of fish from which age structures (otoliths) were collected by species and by stratum during the 2006 eastern Bering Sea bottom trawl survey.

	Stratum						
Common name	10	20	30	40	50	60	Total
walleye pollock	80	108	384	450	78	342	1,442
Pacific cod	172	151	366	442	50	142	1,323
Pacific halibut[b]	---	---	---	---	---	---	2,955
arrowtooth flounder	12	--	166	51	121	254	604
northern rock sole	253	58	44	152	--	33	540
flathead sole	30	--	116	76	143	151	516
yellowfin sole	208	100	75	57	--	--	440
plain sculpin	232	159	1	18	--	--	410
Alaska plaice	100	89	134	40	2	--	365
great sculpin	97	36	108	85	--	36	362
Greenland turbot	--	--	--	39	--	163	202
warty sculpin	11	10	10	147	--	--	178
yellow Irish lord	--	1	34	92	6	36	169
Bering flounder	--	--	--	77	--	--	77
starry flounder	66	--	--	--	--	--	66
marbled eelpout	--	--	--	56	--	--	56
shortfin eelpout	--	--	--	--	--	44	44
Arctic cod	--	--	--	38	--	--	38
wattled eelpout	--	--	16	7	--	--	23
Pacific sleeper shark	--	--	--	1	--	--	1

[b]Age structure collection analyzed and managed by the International Pacific Halibut Commission (IPHC); data were not tallied by strata.



Surface and bottom water temperatures, as well as temperature and depth profiles, were taken at each station using a Seabird SBE-39 datalogger attached to the headrope of the net. Depth to bottom was obtained by adding net height and headrope depth.

Data analysis

Several analyses were performed on RACE survey data including: 1) estimation of relative abundance; 2) estimation of population biomass; 3) estimation of population numbers, and 4) estimation of the population's size composition. 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). Some of the species collected were grouped by family for data analysis because of their insignificant commercial value or questionable identification.

Mean catch per unit effort (CPUE) values for each species were calculated in kilograms per hectare (1 hectare = 10,000 m^2) and number per hectare for each of the 10 strata; 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 added together to produce estimates for each of the six main strata and the total survey area.

In estimating the population size composition of principal commercial species, the proportion of fish at each length interval (from subsamples at each station) was weighted by CPUE (number of fish/ha) and then extrapolated 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 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. 2006).

Special studies

In addition to the core sampling operations, there were 22 special projects and collections undertaken during the 2006 survey (Table 5). RACE Division projects included studies of: 1) gear performance and monitoring; 2) fish behavior in response to light and vessel noise; 3) fish and crab pathology; 4) summer zooplankton biomass; 5) octopus populations, and 5) additional biological sampling of Bering flounder, eelpouts, and miscellaneous fish species. The REFM Division and the Auke Bay Laboratories (ABL) special studies projects included: 1) fish stomach scans and collections (Table 6); 2) a seabird survey; 3) biological sampling of sculpins and forage fish; 4) collections of fish prey for stable isotope analaysis, and 5) tissue collections for a DNA-based identification library. The two projects from outside the agency involved halibut otolith, tag and size collections by the International Pacific Halibut Commission (IPHC), and collection of fish specimens for stable isotope analysis of fur seal prey by the University of Alaska Fairbanks (UAF).

Results and Discussion

A total of 405 stations were successfully sampled in 2006, including 356

n (Fig. 2). Twenty-nine of these 49 northwest stations were sampled annually for only the second time, and a majority of

Table 5.--Special projects and collections undertaken during the 2006 eastern Bering Sea bottom trawl survey.

Project title	Principle Investigator	Agency
Trawl speed through water / Door spread and tilt monitoring	Ken Weinberg	AFSC[1] - RACE[2]
ES-60 transects at cruising speeds	Paul G. von Szalay	AFSC - RACE
Bottom contact sensor tests	Craig Rose	AFSC - RACE
Use of EBS bottom trawl survey acoustic data	Chris Wilson	AFSC - RACE
Light intensity on the distribution of walleye pollock	Stan Kotwicki	AFSC - RACE
Net swapping procedures on survey trawl performance	Stan Kotwicki	AFSC - RACE
Stationary seabird surveys	Shannon Fitzgerald	AFSC - REFM[3]
Bering flounder ovary and otolith collection	Jim Stark	AFSC - RACE
Size composition of the eelpouts of the Bering Sea	Jason Conner	AFSC - RACE
Length-weight parameters	Gerald R. Hoff	AFSC - RACE
Bering Sea shelf *Enteroctopus dofleini* population study	Elaina Jorgensen	AFSC - RACE
Ovary, otolith, and stomach collections for sculpins	Kerim Aydin, Anne Hollowed	AFSC - REFM
Consequences of fur seal foraging strategies (COFFS)	Alison Banks	UAF[4]
Stable isotope analysis	Kerim Aydin and Katie Dodd	AFSC - REFM
Parasites as indicators of ecosystem change	Frank Morado	AFSC - RACE
Bitter Crab Syndrome in North Pacific *Chionoecetes* spp.	Frank Morado	AFSC - RACE
Ichthyophonus in walleye pollock	Frank Morado	AFSC - RACE
DNA-based identification library of prey items	Frank Morado and Kerim Aydin	AFSC - RACE/REFM
IPHC sampler aboard one vessel to collect halibut data	Lauri Sadorus	IPHC[5]
Forage fish collection	Ron Heintz and J.J. Vollenweider	AFSC - ABL[6]
Summer zooplankton biomass on the eastern Bering Sea shelf	Jeff Napp	AFSC - RACE

[1]Alaska Fisheries Science Center, Seattle, Washington
[2]Resource Assessment and Conservation Engineering Division, Seattle, Washington
[3]Resource Ecology and Fisheries Management Division, Seattle, Washington
[4]University of Alaska Fairbanks, Fairbanks, Alaska
[5]International Halibut Commission, Seattle, Washington
[6]Auke Bay Laboratories, Juneau, Alaska

Table 6.--Stomachs samples collected during the 2006 eastern Bering Sea bottom trawl survey.

Species	Stomachs collected	Stomachs scanned
Walleye pollock	536	217
Pacific cod	751	-
Northern rock sole	208	-
Flathead sole/Bering flounder	-	132
Pacific halibut	79	171
Alaska plaice	157	-
Arrowtooth flounder/Kamchatka flounder	324	-
Greenland turbot	161	7
Plain sculpin	169	-
Great sculpin	167	-
Warty sculpin	53	-
Yellow Irish lord	83	-
Alaska skate	-	253
Total	2,688	780

the remaining 20 in Strata 80 and 90 have been sampled annually since 1987. In order to maintain the time series for the longest possible period, none of the 49 northwest stations are considered to be part of the standard survey area. Data from all 405 stations from the 2006 survey are listed in Appendix B. Relevant information such as position, tow parameters (net width, depth, distance fished, and duration of tow), time, and environmental measurements (surface and gear temperatures) are listed for each vessel for all standard bottom trawl stations used in the analyses.

Any tows that experienced significant gear damage or debris such as discarded crab pots were re-sampled immediately following the original tow. There were no stations skipped in 2006; however, 30 stations in Bristol Bay were resampled by the FV *Arcturus* for crab only at the end of the survey to allow additional time for female red king crab to molt successfully and develop clutches. A minimum threshold population of 8.4 million female red king crab ≥ 90 mm carapace length must be present for the fishery to remain open. The delayed molting and spawning may have been in response to lower water temperatures at the onset of the survey (Dew in review).

Environmental conditions

Sea surface temperatures recorded during the survey ranged from 1.1° to 9.4°C (Fig. 5). As in most previous surveys, surface temperature increased from east to west across the shelf, probably reflecting the progression of summer warming as the survey proceeded from east to west.

Sea bottom temperatures ranged from –1.7° to 5.6°C (Fig. 6). Warmer bottom temperatures (above 3.0° C) occurred in shallow waters along the northern portion of Bristol Bay

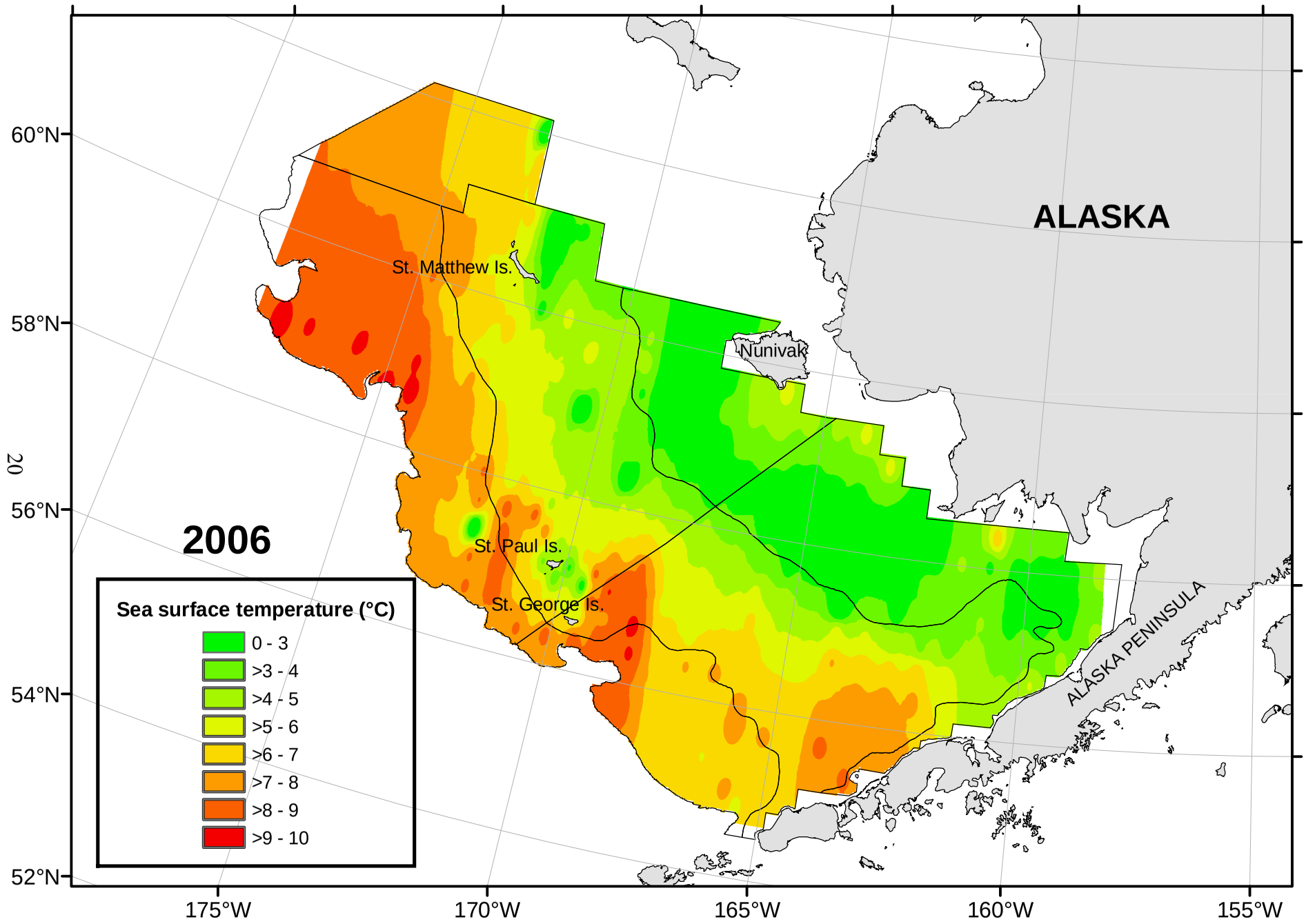


Figure 5.--Distribution of sea surface water temperatures (°C) observed during the 2006 eastern Bering Sea bottom trawl survey.

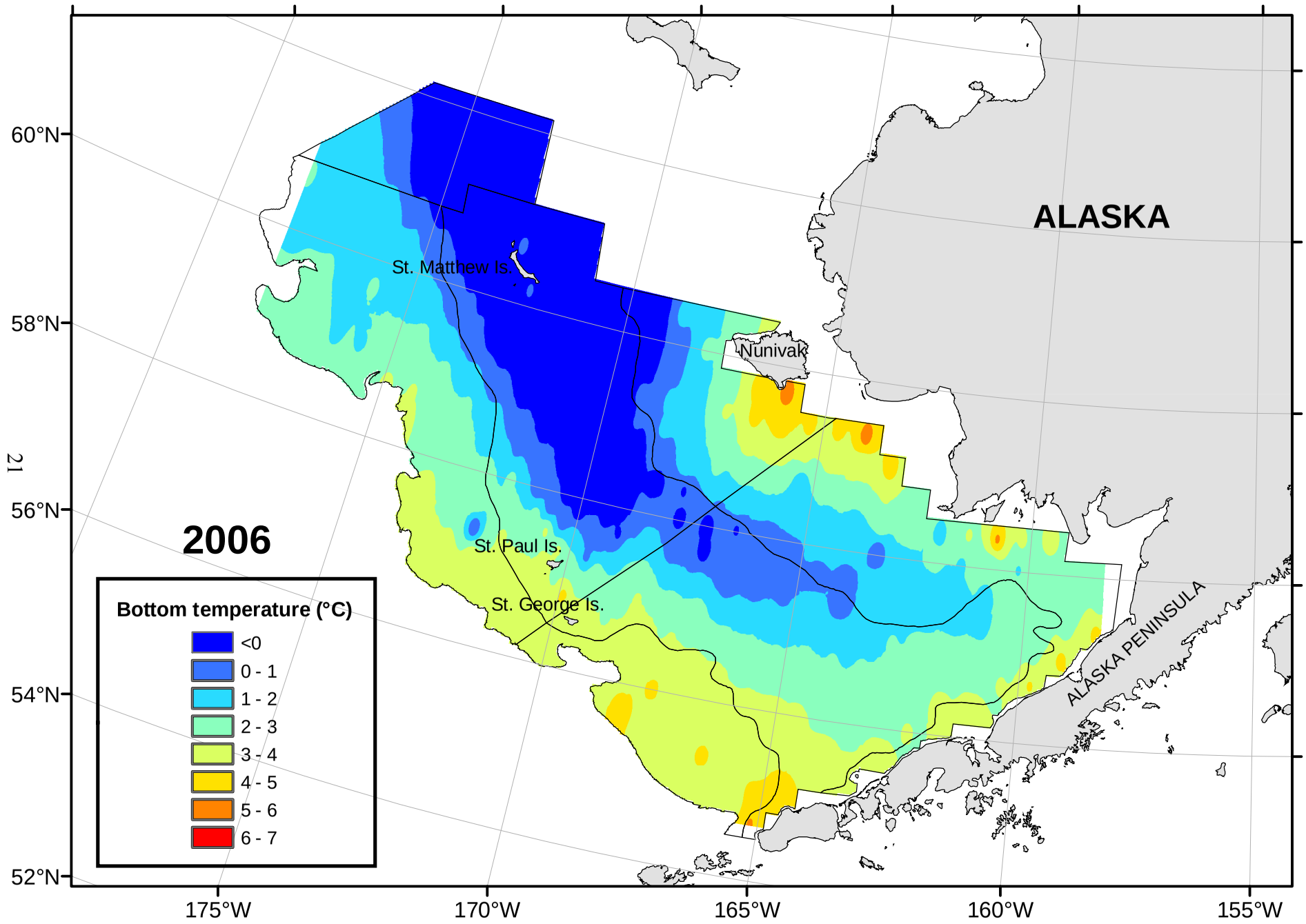


Figure 6.--Distribution of bottom temperatures (°C) observed during the 2006 eastern Bering Sea bottom trawl survey.

to Nunivak Island, and on the outer shelf from the Pribilof Islands down to along the Alaska Peninsula. The cold pool (<2°C) occupied most of the mid-shelf at depths between 50 and 100 m and extended into Bristol Bay.

In general, water temperatures were much colder than the long-term mean from 1982-2006. The 2006 sea surface temperature averaged 5.59°C; lower than the long-term mean of 6.71 ^{o}C. Mean bottom temperature was 1-2°C lower than 2005 with an average of 1.87 ^{o}C (Fig. 7), and approximately 0.7°C cooler than the long-term average of 2.58 ^{o}C.

Relative fishing powers of survey vessels

Due to uncertainties of the fishing power corrections (FPC), they were not calculated or applied to CPUE estimates in 2006. Historically, two vessels have always been used to conduct the EBS shelf bottom-trawl survey, and fishing power corrections (FPC) were applied when there were statistical differences detected in estimates of the mean CPUE between the two vessels (Kappenman 1992). The underlying assumption for using an FPC was that there was a consistent systematic error of one survey vessel being less efficient at catching fish than the other survey vessel (e.g., speed effects, operator effects, fishing gear effects). For survey years from 1982 to 2005, the Kappenman technique (Kappenman 1992) was used for calculating an FPC for each fish species (Table 7). We recognize that applying an FPC may have corrected for systematic bias; however, it did not guarantee a lower overall error, even when the differences between mean CPUE values were statistically significant (Munro 1998). Furthermore, application of an FPC to the EBS trawl survey data does not take into account recent advances in the EBS bottom trawl survey to reduce systematic errors between vessels using improved monitoring of survey trawls (Somerton and Weinberg 2001, Zimmerman et al. 2003), and recent

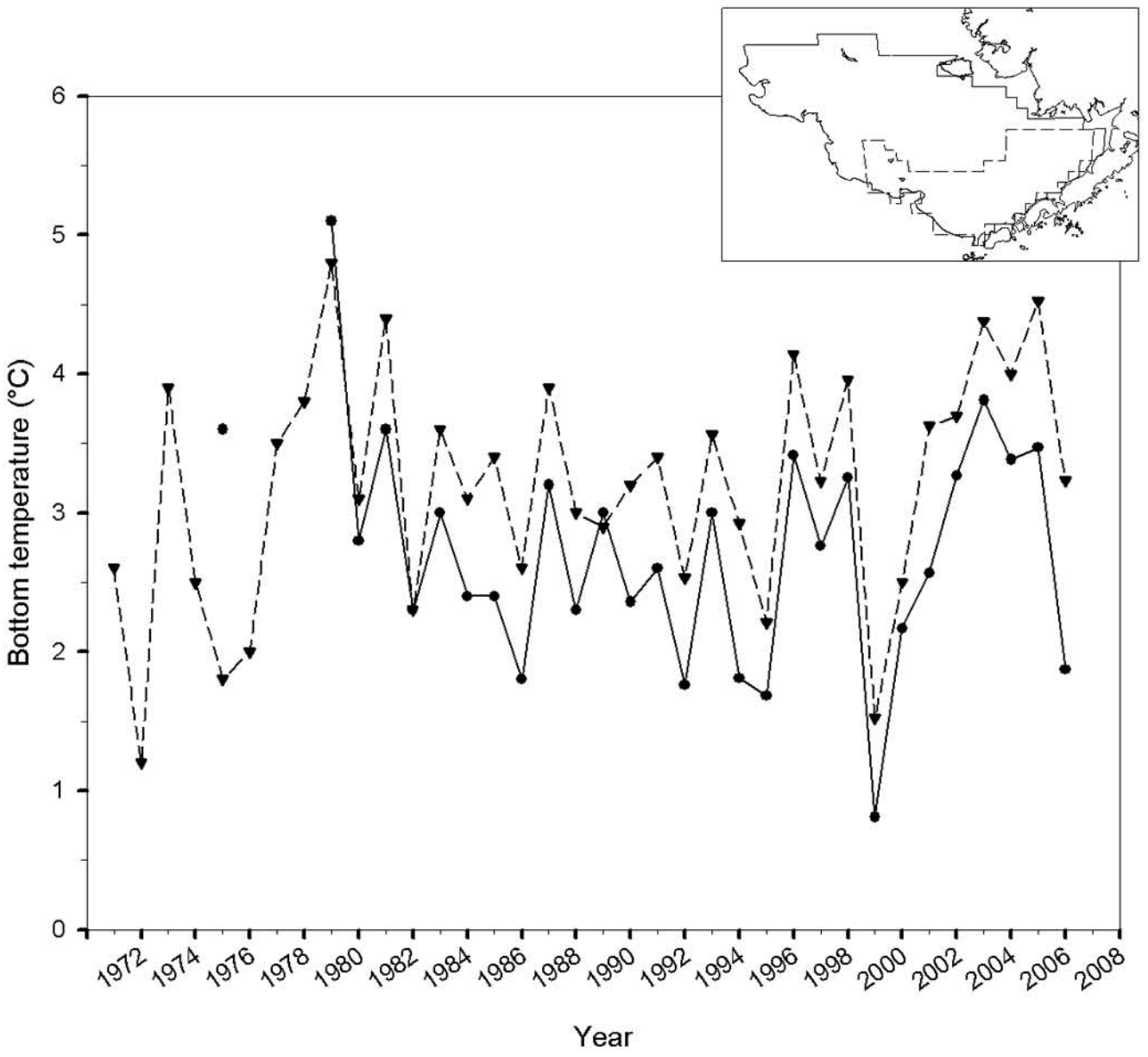


Figure 7.--Mean summer bottom temperatures based on expendable bathythermograph casts or dataloggers attached to the net headrope during the Alaska Fisheries Science Center bottom trawl surveys. The 1971-2006 means (dashed line) are from southeast Bering Sea (see insert) and the 1975 and 1979-2006 means (solid line) are from the larger survey area outlined on the inset. The 1975 data point for the overall survey area is based on data collected from August through September, while those in all other years and areas were collected from May through early August.

Table 7.--Calculated fishing power corrections (FPC), by fish species, that were applied to CPUE estimates 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

knowledge from scientific studies regarding gear performance and survey trawl catching efficiency (Weinberg and Kotwicki in prep, Weinberg 2003, Kotwicki and Weinberg 2005, Kotwicki et al. 2006, Somerton et al. 2007, Weinberg and Somerton 2006). Moreover, the sampling pattern of vessels (alternate, longitudinal columns of stations) may result in real spatial and temporal differences in fish distribution (i.e., catch) because of the similar alignment of the grid columns with bathymetry features and environmental factors such as the cold pool. It was felt that not applying a FPC as an adjustment to the between-survey vessel CPUEs was the best course of action until there is a thorough scientific review that the application of an FPC does not actually increase overall error in the mean CPUE estimate. For years prior to 2006, FPC adjustments to catch will remain in place and will not be upgraded to an uncorrected form until such review has taken place.

Relative abundance

The relative abundance of the 11 most abundant species and species groups of fish are presented in Figure 8. These taxa accounted for 70.6% (223.1 kg/ha) of total animal mean CPUE (316.1 kg/ha) and 94.0% of total fish mean CPUE (304.3 kg/ha). The walleye pollock mean CPUE for all areas combined was 61.4 kg/ha. Walleye pollock was the dominant groundfish species at depths between 50 and 200 m. They were encountered at nearly all sampling stations, with the largest mean catches observed in the outer shelf stations. Pacific cod were also mostly caught in the 50-200 m-depth zone with an overall mean CPUE of 11.2 kg/ha. Both rock sole and yellowfin sole, with overall mean catch rates of 47.8 and 46.0 kg/ha, respectively, were abundant in water less than 70 m. Snow crab was the most abundant commercially important crab species encountered, with a total average catch rate of 5.0 kg/ha.

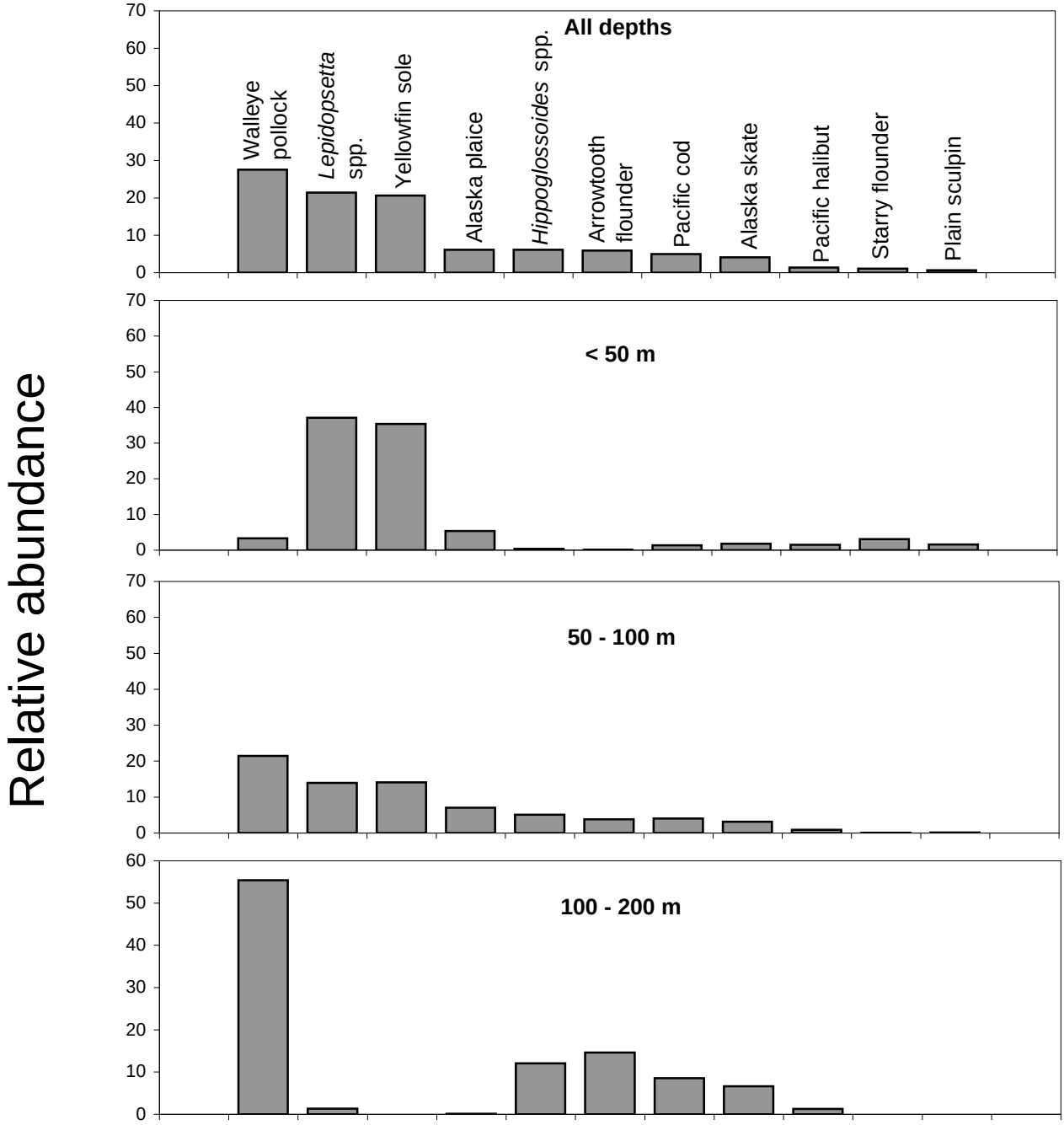


Figure 8.-- Relative abundance (%CPUE in kg/ha) of principle groundfish species (top 11 for all depths combined) by depth zones and for all depths combined for the 2006 eastern Bering Sea bottom trawl survey.

Red king crab and Bairdi Tanner crab mean CPUEs were slightly less at 1.9 kg/ha and 2.9 kg/ha, while blue king crab had the lowest overall catch rates of 0.2 kg/ha. See Appendix C for a descending rank of all organisms caught.

Biomass, abundance, distribution, CPUE, and size composition of principal species and species groups

From the entire survey area, including the 49 northwest stations, a total of 20 families, 63 genera, and 103 species of fish were identified in the catches (Appendix A1). For invertebrates, there were 259 individual invertebrate taxa identified from 14 phyla (Appendix A2). Among the invertebrate taxa, 156 were identified to species level.

Total demersal animal biomass for the standard survey area was estimated at 18.6 million t, of which fish species accounted for 61% (11.4 million t; Table 8) and invertebrates 39% (7.2 million t; Table 9). Concentrations of fish biomass were located in Bristol Bay, along the Alaska Peninsula, around the Pribilof Islands, and in the outer shelf north of the Pribilofs (Fig. 9). The fish biomass was dominated by gadids (7.3 million t) and pleuronectids (3.4 million t; Table 8). The biomass of invertebrates was composed primarily of coelenterates (3.4 million t), echinoderms (1.45 million t), crustaceans (1.4 million t), and ascideans (0.52 million t; Table 9).

Groundfish catches at the 49 northwest stations were similar in composition to the standard stations being dominated by pleuronectids and gadids (Table 10). Plots of CPUE and size composition for principal species for the northwest stations can be found in Lauth (2007).

Geographical distributions, population numbers, biomass estimates, and size composition are presented in Figures 10 to 28 and Tables 11 to 20 for each of the following commercially

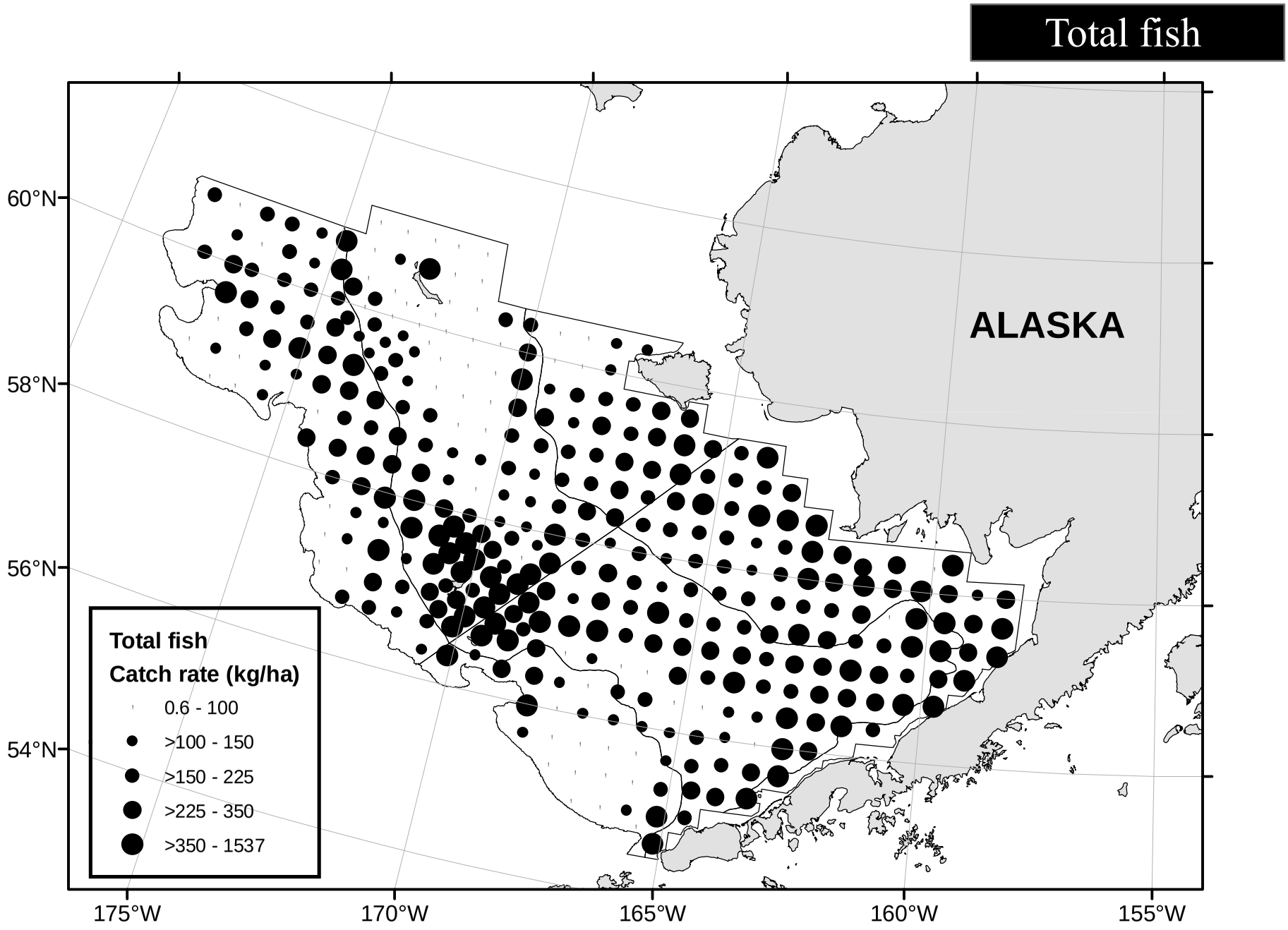


Figure 9.--Distribution and relative abundance in kg/ha of **total fish** caught during the 2006 eastern Bering Sea bottom trawl survey.

Table 8.--Biomass estimates (t) for major fish species and groups taken during the 2006 eastern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence interval			Proportion of total animal biomass[b]	Estimated biomass by stratum (t)					
					10	20	30	40	50	60
Gadidae (cods)										
Walleye pollock	2,845,507	±	19%	0.1528	81,408	34,112	679,440	680,728	235,128	1,134,692
Pacific cod	517,698	±	11%	0.0278	31,001	16,816	89,441	168,139	20,833	191,468
Other cods	3,459	±	83%	0.0002	14	797	0	2,648	0	0
Total cods	**3,366,663**	±	**17%**	**0.1808**	**112,423**	**51,724**	**768,881**	**851,515**	**255,960**	**1,326,160**
Anoplopomatidae										
Sablefish	40	±	138%	0.0000	0	0	40	0	0	0
Scorpaenidae (rockfish)										
Pacific ocean perch	34,287	±	192%	0.0018	0	0	19	0	126	34,142
Other rockfish	571	±	142%	0.0000	0	0	61	0	424	86
Total rockfish	**34,857**	±	**189%**	**0.0019**	**0**	**0**	**80**	**0**	**550**	**34,228**
Pleuronectidae (flatfishes)										
Yellowfin sole	2,133,074	±	25%	0.1146	911,404	328,853	724,348	168,348	122	0
Rock sole	2,216,606	±	29%	0.1190	1,015,693	285,635	475,539	406,523	8,031	25,185
Hippoglossoides spp.	635,738	±	65%	0.0341	12,915	897	204,537	119,693	87,964	209,731
Alaska plaice	636,966	±	27%	0.0342	93,230	96,165	148,609	295,494	207	3,261
Arrowtooth flounder	608,165	±	61%	0.0327	2,523	0	212,482	31,149	182,627	179,383
Kamchatka flounder	60,436	±	44%	0.0032	0	0	10,985	2,869	11,406	35,176
Greenland turbot	17,493	±	18%	0.0009	0	0	0	896	0	16,597
Pacific halibut	156,456	±	69%	0.0084	30,947	11,460	47,644	28,003	10,144	28,258
Other flatfish	787,392	±	38%	0.0423	207,766	106,087	157,662	295,623	12,534	7,720
Total flatfish	**7,252,326**	±	**8%**	**0.3895**	**2,274,477**	**829,097**	**1,981,807**	**1,348,598**	**313,036**	**505,312**
Clupeidae (Pacific herring)	22,977	±	43%	0.0012	9,572	4,911	2,121	4,477	0	1,897
Cottidae (sculpins)	209,072	±	18%	0.0112	43,559	25,392	44,710	61,199	3,874	30,337
Zoarcidae (eelpouts)	44,612	±	27%	0.0024	0	20	3,357	14,436	292	26,507
Osmeridae (smelts)	4,490	±	31%	0.0002	1,034	802	807	383	1,457	6
Agonidae (poachers)	21,042	±	24%	0.0011	3,146	3,550	7,774	5,874	596	102
Cyclopteridae (snailfishes)	1,271	±	43%	0.0001	11	31	5	657	56	510
Rajidae (skates)	442,934	±	10%	0.0238	39,010	24,561	102,837	98,350	38,969	139,208
Other fish	14,733	±	49%	0.0008	507	868	564	4,598	1,313	6,883
Total fish	**11,415,017**	±	**8%**	**0.6130**	**2,483,740**	**940,955**	**2,912,983**	**2,390,087**	**616,103**	**2,071,149**

[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 = 16,392,091 t.

Table 9.--Biomass estimates (t) for major invertebrate species and groups taken during the 2006 eastern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence interval			Proportion of total animal biomass[b]	Estimated biomass by stratum (t) 10	20	30	40	50	60
Crustacea										
Chionoecetes sp. (snow crab)	123,822	±	27%	0.0066	1,323	542	35,050	41,561	30,248	15,099
Lithodes sp. (king crab)	104	±	196%	0.0000	0	0	0	0	0	104
Paralithodes sp. (king crab)	91,508	±	29%	0.0049	27,374	1,753	50,047	12,239	0	95
Erimacrus isenbeckii (hair crab)	1,876	±	90%	0.0001	198	208	1,132	283	25	31
Paguridae (hermit crab)	303,613	±	15%	0.0163	15,993	14,542	120,765	89,358	4,925	58,030
Other crab	780,683	±	12%	0.0419	51,572	32,496	221,147	321,990	36,836	116,642
Total crab	**1,301,606**	**±**		**0.0699**	**96,459**	**49,541**	**428,141**	**465,430**	**72,034**	**190,000**
Shrimps	2,984	±	33%	0.0002	40	83	92	435	307	2,027
Other crustaceans	95,292	±	28%	0.0051	27,804	1,961	51,305	13,872	108	242
Total crustaceans	**1,399,882**	**±**	**12%**	**0.0752**	**124,303**	**51,586**	**479,538**	**479,738**	**72,448**	**192,269**
Mollusca										
Gastropoda (snails)	278,906	±	18%	0.0150	9,301	9,739	120,957	59,176	8,134	71,600
Pelecypoda (bivalves)	9,092	±	36%	0.0005	592	1,308	3,523	3,104	310	255
Squids	0	±	0%	0.0000	0	0	0	0	0	0
Octopuses	1,877	±	69%	0.0001	0	0	840	129	1	907
Other mollusks	8,428	±	55%	0.0005	157	192	2,257	4,599	109	1,114
Total mollusks	**298,361**	**±**	**18%**	**0.0160**	**10,051**	**11,239**	**127,577**	**67,008**	**8,602**	**73,885**
Echinodermata										
Asteroidea (starfish)	1,117,967	±	19%	0.0600	377,962	199,189	284,370	198,644	1,243	56,558
Ophiuroidea (brittle stars)	277,524	±	24%	0.0149	10,303	2,188	87,265	56,996	1,794	118,979
Echinoidea (sea urchin)	45,256	±	105%	0.0024	37	1	7,513	22,141	14,323	1,241
Holothuroidea (sea cucumbers)	9,106	±	67%	0.0005	939	0	6,370	1,777	19	1
Total echinoderms	**1,449,853**	**±**	**19%**	**0.0779**	**389,241**	**201,378**	**385,518**	**279,558**	**17,380**	**176,779**
Ascidiacea	521,428	±	33%	0.0280	69,011	71,456	135,744	245,183	0	35
Porifera (sponges)	126,225	±	90%	0.0068	209	31	123,810	828	299	1,047
Coelenterata	3,406,014	±	10%	0.1829	526,998	320,203	1,057,197	994,405	114,237	392,976
Other invertebrates	3,587	±	73%	0.0002	85	27	348	322	28	2,777
Total invertebrates	**7,205,349**	**±**	**10%**	**0.3870**	**1,119,897**	**655,919**	**2,309,732**	**2,067,042**	**212,993**	**839,767**

[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 = 16,392,091 t.

Table 10.--Relative abundance of fish species from the 20 northwest non-standard survey stations collected during the 2006 eastern Bering sea bottom trawl survey. These 25 species are presented here to provide comparison between the same principal species presented in other sections of the report.

Common name	Scientific name	Biomass (t)	Population numbers
Bering skate	*Bathyraja interrupta*	25,393	10,225,664
Alaska skate	*Bathyraja parmifera*	726,945	277,703,272
arrowtooth flounder	*Atheresthes stomias*	17,436	20,835,671
Kamchatka flounder	*Atheresthes evermanni*	65,297	59,458,399
Greenland turbot	*Reinhardtius hippoglossoides*	185,833	191,273,304
Pacific halibut	*Hippoglossus stenolepis*	30,803	16,747,424
flathead sole (grouped)	*Hippoglossoides* sp.	331,453	2,342,163,247
yellowfin sole	*Limanda aspera*	4,897,423	14,565,000,000
rock sole (grouped)	*Lepidopsetta* sp.	58,789	142,507,659
Alaska plaice	*Pleuronectes quadrituberculatus*	13,021,171	19,634,000,000
sturgeon poacher	*Podothecus accipenserinus*	2,272	54,638,167
Bering poacher	*Ocella dodecaedron*	0	0
Pacific herring	*Clupea pallasi*	581,053	6,692,613,113
butterfly sculpin	*Hemilepidotus papilio*	52,954	120,658,538
warty sculpin	*Myoxocephalus verrucosus*	21,117	44,546,063
great sculpin	*Myoxocephalus polyacanthocephalus*	174,000	105,396,376
plain sculpin	*Myoxocephalus jaok*	1,951,507	2,551,756,590
bigmouth sculpin	*Hemitripterus bolini*	122	1,523,033
Pacific cod	*Gadus macrocephalus*	1,423,049	743,037,934
walleye pollock	*Theragra chalcogramma*	10,808,672	21,059,000,000
eulachon	*Thaleichthys pacificus*	0	0
capelin	*Mallotus villosus*	8,460	809,025,481
marbled eelpout	*Lycodes raridens*	147,524	131,633,316
wattled eelpout	*Lycodes palearis*	128,949	685,256,818
shortfin eelpout	*Lycodes brevipes*	194,478	1,963,264,829

important eastern Bering Sea groundfish: walleye pollock; Pacific cod; yellowfin sole; northern and southern rock sole grouped (*Lepidopsetta* spp.); flathead sole and Bering flounder grouped (*Hippoglossoides* spp.); Alaska plaice; Greenland turbot; arrowtooth flounder; Kamchatka flounder (*Atheresthes evermanni*); and Pacific halibut. Estimates are given separately for each of the 10 geographic strata used in the analysis (Table 1).

Estimated biomass, population numbers, and mean size (by length and weight) are summarized by stratum and for the entire survey area. Size composition data are illustrated in histograms relating the population percentage by 1 cm interval of length for each stratum and in population numbers for the total survey area. Catch-per-unit-effort (CPUE), population, and biomass estimates as well as the variances and confidence limits for each species are listed by stratum.

Appendices to the report contain detailed results of the survey including population estimates by sex and size classes, and rank of fish and invertebrate taxa by unweighted total CPUE (kg/ha).

Walleye pollock

Walleye pollock were captured at 96% of the standard survey stations (Table 11b; Fig. 10). Catch rates were lowest on the inner shelf compared to the middle and outer shelves and the highest densities were south of the Pribilof Islands and in the northwest corner of the shelf (Table 11a; Fig. 10). A higher proportion of smaller pollock were observed in Strata 10 and 20 compared to the outer shelf strata (Fig. 11). The total biomass and abundance of pollock for the entire survey area was 2.85 million t and 818 million fish. Pollock had an average weight of 0.66 kg and mean length of 41.4 cm (Table 11a). The 2006 biomass estimate was almost half

that of the 2005 estimate of 5.13 million t (Lauth and Acuna 2007; Note – hereafter, discussion of comparisons to the 2005 bottom trawl survey estimates are from this citation; numbering for the referenced figures and tables are the same for both reports). The lower estimates may in part be due to a change in distribution of pollock caused by the colder than average water temperatures on the Bering Sea shelf during the 2006 survey (Ianelli et al. 2006, Kotwick et al. 2005).

Pacific cod

Like pollock, Pacific cod were also broadly distributed across the shelf being observed in 97% of the trawl tows (Table 12b; Fig. 12). The highest catch rates of cod were observed in the northwest corner of the shelf and in the high-density sampling areas south of St. Matthew Island and around the Pribilof Islands (Table 12b; Fig. 12). Larger catches also occurred at stations along the Alaska Peninsula. Similar to pollock, the highest proportions of juvenile Pacific cod were observed in Strata 10 and 20 (Fig. 13). Compared to 2005, there was a slight decline in Pacific cod biomass (0.60 to 0.52 million t), population size (452 to 394 million), mean weight 1.34 to 1.31 kg), and mean length (40.1 to 37.9 cm; Table 12).

Yellowfin sole

High catch rates of yellowfin sole occurred shoreward of the inner middle shelf (Table 13a; Fig. 14). The lowest catch rates were in the vicinity of St. Matthew and Pribilof Islands. Yellowfin sole were observed in only one tow in Stratum 50 and no tows from Stratum 60 (Table 13b). Yellowfin sole in the 10-20 cm length range were found on the inner shelf and were mostly absent from the middle shelf strata (Fig. 15). Among all the principal flatfish species,

yellowfin sole and arrowtooth flounder were the only two that saw a decline in biomass from 2005. The biomass of yellowfin sole declined from 2.82 to 2.13 million t, and the population from 9.65 to 8.45 billion (Table 13a). Likewise, the mean weight of yellowfin sole decreased by 0.04 kg and the length decreased by 1.5 cm.

Northern and southern rock sole

The distribution of rock sole was very similar to the yellowfin sole except rock sole occurred at higher densities around the St. Matthew and Pribilof Islands and lower densities on the outer shelf (Fig. 16). The size composition and mean length of rock sole increased moving from the inshore to offshore strata (Table 14a; Fig. 17). Biomass and population size increased slightly from 2.11 million t and 11.4 billion in 2005 to 2.22 million t and 15.1 billion in 2006 (Table 14a). Biomass increased in the outer shelf strata, and abundance increased in both the inner and outer shelf strata (Table 14b). Compared to 2005, mean weight and mean length decreased from 0.185 to 0.147 kg, and from 22.3 to 20.8 cm (Table 14a).

Flathead and Bering sole

Flathead and Bering sole (*Hippoglossoides* spp.) are 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 lower middle shelf region (Fig. 18). The size range of flathead was similar across all strata and size compositions were bimodal with one size group centering on 20 cm and another at about 33 cm (Fig. 19). Biomass increased 13% from 2005 to 0.61 million t, and population increased 4% to 2.093 billion (Table 15a). The overall mean length and mean weight did not change from 2005 to 2006 (Table 15a).

Alaska plaice

Alaska plaice was most abundant on the inner and middle shelf along the 50 m contour with lower densities occurring on the shallow inner shelf stations and deeper middle shelf stations (Fig. 20). Smaller Alaska plaice, less than 20 cm, only occurred in Strata 10 and 20 compared to the deeper strata which had a higher percentage of plaice >40 cm (Fig. 21). Biomass and population estimates increased considerably compared to 2005. Biomass increased from 0.50 million t to 0.64 million t, and population from 0.75 to 1.03 billion (Table 16a) with increases occurring in both the inner and middle shelf strata (Table 16b). The mean length of 35.1 cm was the same as 2005 and weight decreased 0.05 kg to 0.62 kg (Table 16a).

Greenland turbot

Greenland turbot is an arctic flatfish species inhabiting the upper continental slope, although juveniles may spend several years on the continental shelf (Alton et al. 1988). Greenland turbot were captured in 46 out of 356 tows, and most of these tows were in the northwest part of the outer shelf (Table 17b; Fig. 22). Biomass estimates in 2006 were up slightly from 16.04 thousand t in 2005 to 17.49 thousand t in 2006 (Table 17a). Population numbers showed a more dramatic rise from 4.9 to 7.9 million but the turbot were smaller with a mean length and weight decreasing from 61.5 to 54.8 cm and 3.25 to 2.21 kg, respectively (Table 17b).

Arrowtooth flounder

Arrowtooth flounder were observed all along the outer shelf and on the middle shelf below latitude 58°N (Fig. 24). Catch rates were generally higher in the deeper stations in the

more southern latitudes (Fig. 24). Estimates of both biomass and population size decreased in 2006 compared to 2005; biomass decreased from 0.71 to 0.61 milliton t and population from 1.61 to 1.31 billion (Table 18a). Both mean weight and size increased during the same time period from 0.44 to 0.47 kg and from 32.8 to 34.0 cm (Table 15a; Fig. 25).

Kamchatka flounder

Kamchatcka flounder were observed at 100% of the outer shelf stations and at 25% of the middle shelf stations (Table 19b; Fig. 26). The highest catch rates on the outer shelf were observed north of latitude 56°N (Fig. 26). Compared to last year, the biomass increased from 46 to 60 thousand t and the population from 181 to 187 million fish, and there was an increase in both mean weight (0.25 to 0.32 kg) and length (27.8 to 31.3 cm; Table 19a).

Pacific halibut

Pacific halibut were caught in 90% of the tows and were observed throughout the shelf (Table 20b; Fig. 28). Estimated biomass and population increased from 139 thousand t and 69 million halibut in 2005 to 156 thousand t and 134 million in 2006. There were five relatively large catches of juvenile halibut (>100 fish), around 20 cm in size, in Bristol Bay (Fig. 28 and 29). The largest halibut were observed on the outer shelf (Fig. 29). The large catches of smaller halibut in Bristol Bay resulted in a decrease of mean weight and length compared to 2005, from 2.0 to 1.2 kg and 47.8 to 36.8 cm (Fig. 20a).

Other fishes

Geographical distributions for some common, but generally noncommercial fish species are presented in Figures 30 to 44 and Tables 21 to 31. These species are Bering skate (*Bathyraja interrupta*), Alaska skate, warty sculpin, great sculpin, plain sculpin, bigmouth sculpin, wattled eelpout (*Lycodes palearis*), shortfin eelpout (*L. brevipes*), marbled eelpout, sturgeon poacher, Bering poacher (*Occella dodecaedron*), butterfly sculpin, eulachon (*Thaleichthys pacificus*), capelin (*Mallotus villosus*), and Pacific herring (*Clupea pallasi*).

Biomass and population estimates as well as mean weight per individual are given by stratum and total area. These tables are not provided for the pelagic species such as eulachon, capelin, and Pacific herring due to the bottom sampling nature of the survey. We do not believe these species are adequately represented in the samples; however, plots are shown to give some idea of geographic distribution.

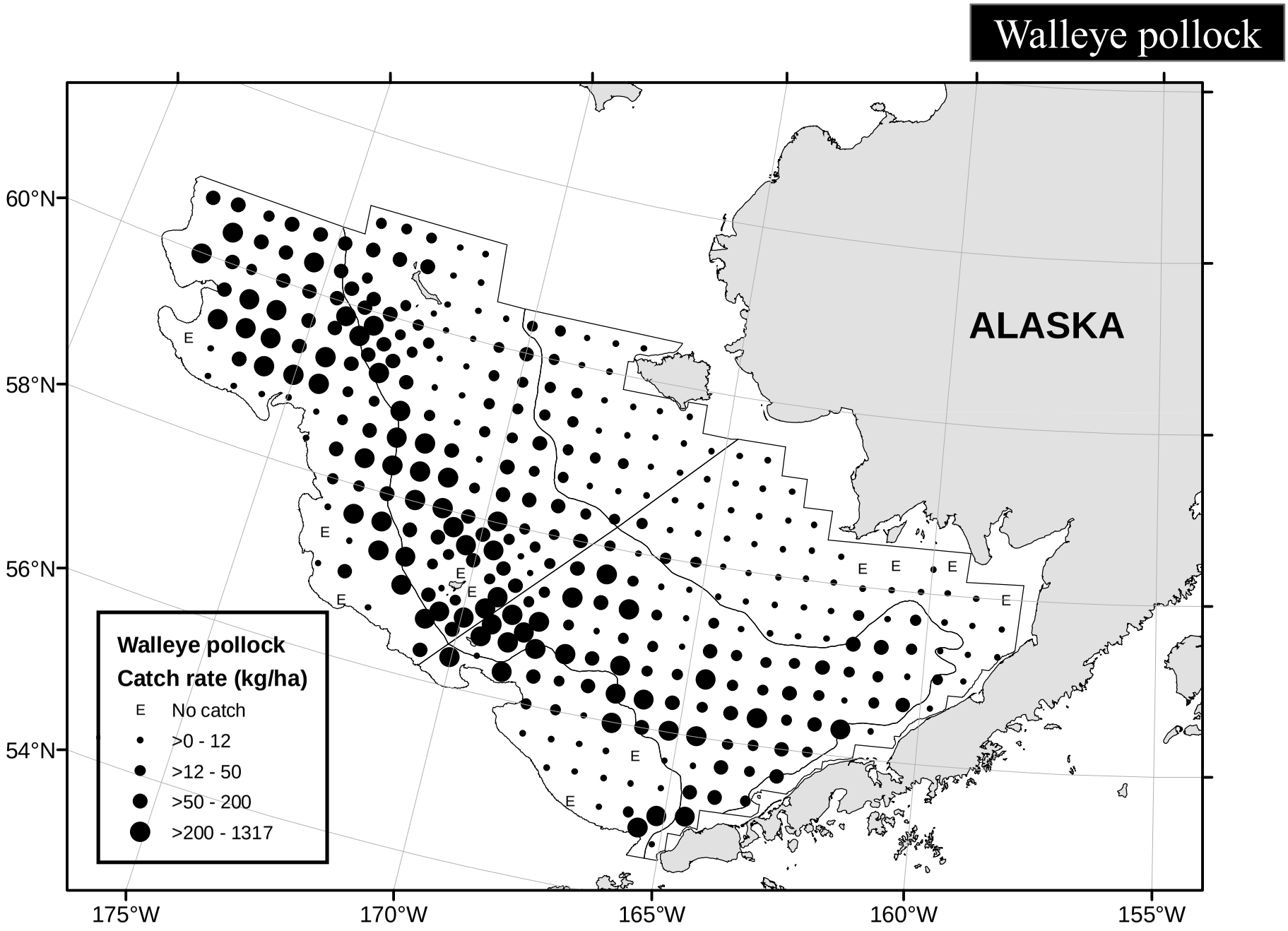


Figure 10.--Distribution and relative abundance in kg/ha of **walleye pollock** (*Theragra chalcogramma*) for the 2005 eastern Bering Sea bottom trawl survey.

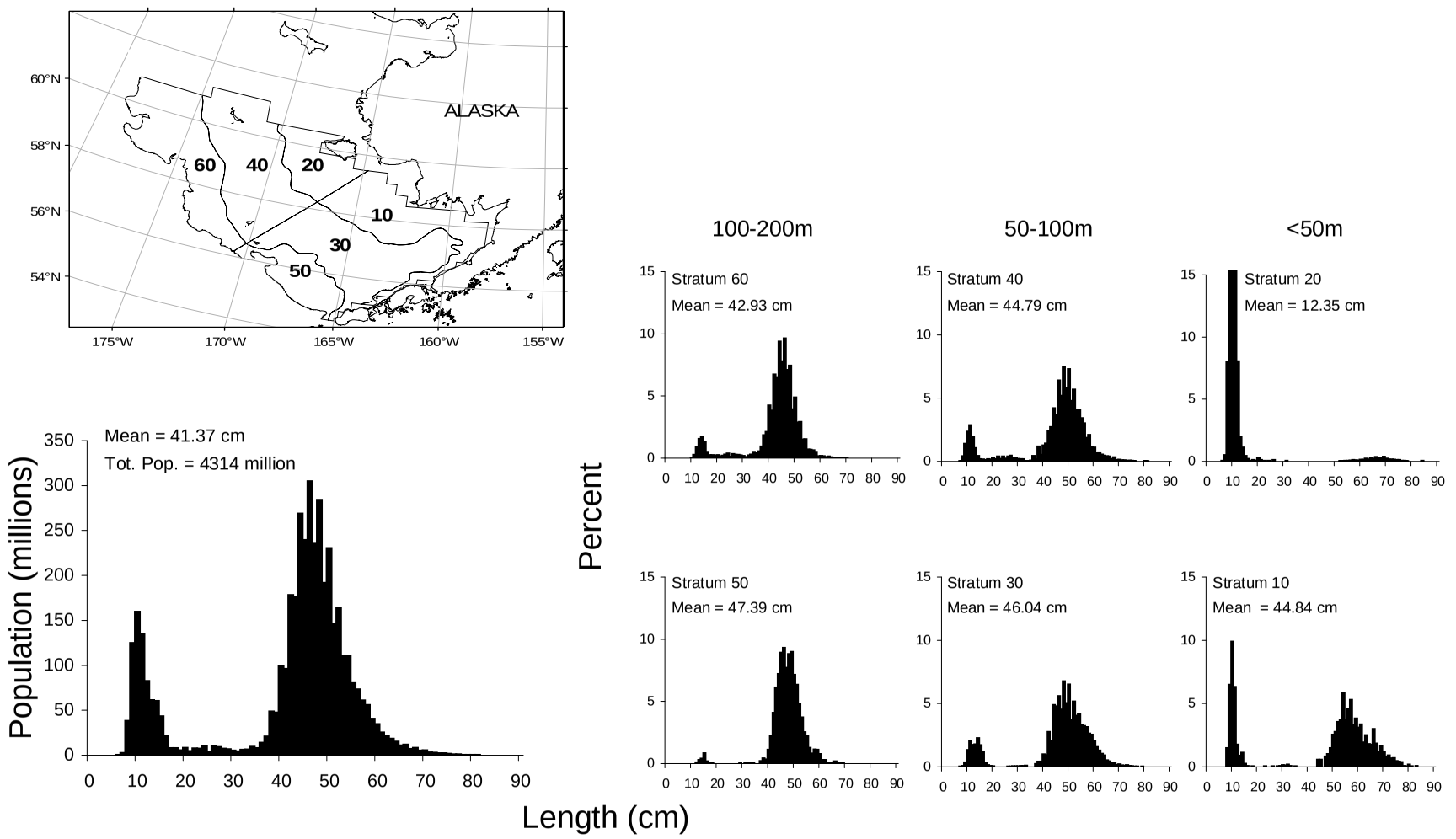


Figure 11.-- Estimated relative size distributions (sexes combined) of **walleye pollock** (*Theragra chalcogramma*) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 11a.--Abundance estimates and mean size of **walleye pollock** (*Theragra chalcogramma*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	10.45	81,408	0.029	10.39	80,898,501	0.019	1.006	44.8
20	8.31	34,112	0.012	98.72	405,001,041	0.094	0.084	12.4
30	65.77	679,440	0.239	78.12	806,986,852	0.187	0.842	46.0
40	63.13	680,728	0.239	85.79	925,041,451	0.214	0.736	44.8
50	60.61	235,128	0.083	71.92	278,978,585	0.065	0.843	47.4
60	119.99	1,134,692	0.399	192.18	1,817,311,308	0.421	0.624	42.9
All Strata	61.41	2,845,507	1.000	93.10	4,314,217,738	1.000	0.660	41.4
95% confidence interval		± 554,210			± 817,904,898			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 11b.--CPUE, population, and biomass estimates for **walleye pollock**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length meas	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	50	50	50	10.45	23.50	10.39	18.98
20	31	30	30	30	8.31	2.98	98.72	698.85
Subtotal	89	80	80	80	9.72	10.43	40.87	91.35
31	69	69	69	69	45.91	70.51	47.46	83.08
32	8	8	8	8	279.77	6,764.21	408.43	15,271.02
41	44	44	44	44	39.68	153.08	58.24	346.96
42	31	31	31	31	151.19	1,266.27	191.58	2,323.59
43	22	22	22	22	32.64	49.69	47.30	103.23
Subtotal	174	174	174	174	64.43	56.20	82.04	104.72
50	26	25	25	24	60.61	551.71	71.92	765.49
61	60	57	57	57	117.76	552.58	188.28	1,257.11
62	7	7	7	7	150.58	1,447.17	245.73	4,546.07
Subtotal	93	89	89	88	102.72	291.41	157.20	624.43
Total	356	343	343	342	61.41	36.49	93.10	79.47

Table 11b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	80,898,501	1.15000E+15	57.00	12,333,385	149,463,617
20	405,001,041	1.18000E+16	30.00	183,203,667	626,798,415
Subtotal	485,899,542	1.29000E+16	36.62	258,618,088	713,180,996
31	448,624,764	7.42000E+15	68.00	276,304,293	620,945,234
32	358,362,089	1.18000E+16	7.00	93,039,596	623,684,582
41	365,186,800	1.36000E+16	43.00	129,141,268	601,232,332
42	460,006,980	1.34000E+16	30.00	223,314,212	696,699,748
43	99,847,672	4.60000E+14	21.00	55,111,238	144,584,105
Subtotal	1,732,028,303	4.67000E+16	65.68	1,299,927,713	2,164,128,894
50	278,978,585	1.15000E+16	25.00	57,881,453	500,075,717
61	1,659,343,042	9.76000E+16	59.00	1,027,811,951	2,290,874,132
62	157,968,266	1.88000E+15	6.00	51,903,949	264,032,583
Subtotal	2,096,289,893	1.11000E+17	74.05	1,429,822,357	2,762,757,429
Total	4,314,217,738	1.71000E+17	149.30	3,496,312,840	5,132,122,637

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	81,408	1.42490E+09	57.00	5,119	157,696
20	34,112	5.02428E+07	30.00	19,616	48,607
Subtotal	115,520	1.47515E+09	60.58	38,704	192,335
31	433,969	6.30053E+09	68.00	275,218	592,721
32	245,471	5.20750E+09	7.00	68,888	422,054
41	248,813	6.01876E+09	43.00	92,022	405,603
42	363,029	7.30048E+09	30.00	188,299	537,760
43	68,886	2.21382E+08	21.00	37,848	99,923
Subtotal	1,360,168	2.50000E+10	83.28	1,043,633	1,676,703
50	235,128	8.30241E+09	25.00	47,426	422,830
61	1,037,890	4.29000E+10	59.00	619,189	1,456,592
62	96,801	5.98071E+08	6.00	36,958	156,644
Subtotal	1,369,819	5.18000E+10	79.37	914,530	1,825,109
Total	2,845,507	7.83000E+10	154.55	2,291,296	3,399,717

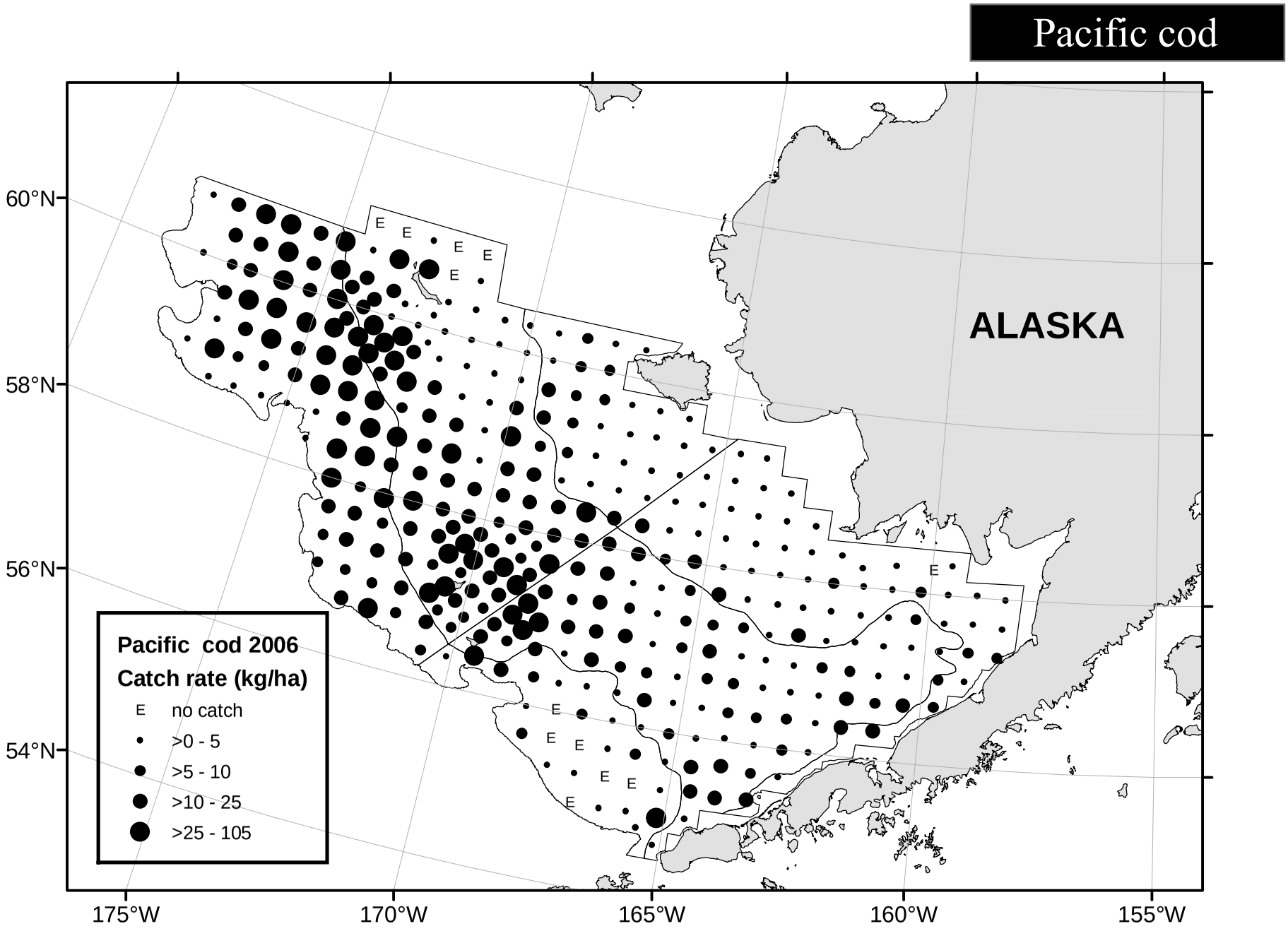


Figure 12.--Distribution and relative abundance in kg/ha of **Pacific cod** (*Gadus macrocephalus*) for the 2006 eastern Bering Sea bottom trawl survey.

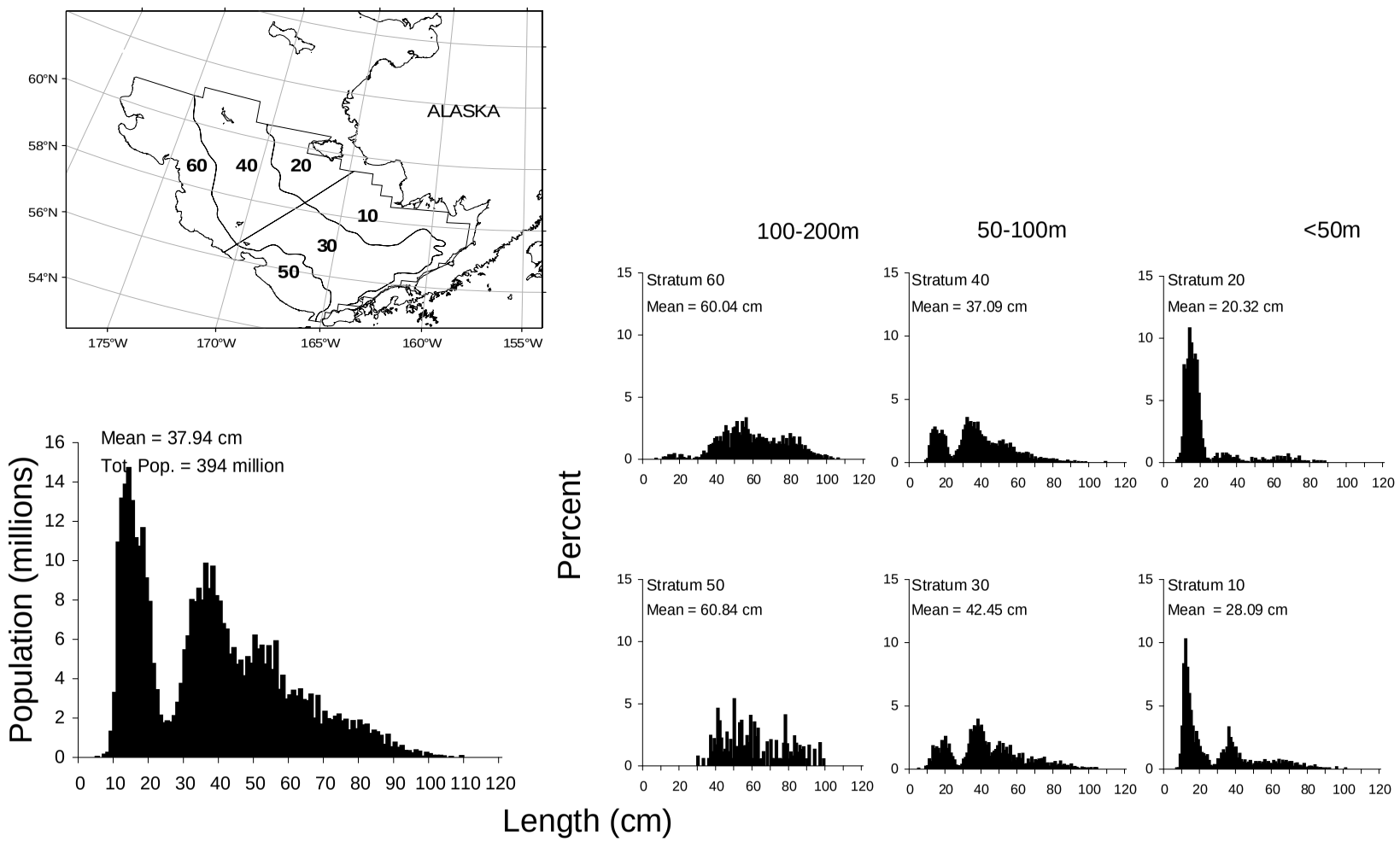


Figure 13.--Estimated relative size distributions (sexes combined) of **Pacific cod** (*Gadus macrocephalus*) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 12a.--Abundance estimates and mean size of **Pacific cod** (*Gadus macrocephalus*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
1	3.98	31,001	0.060	5.70	44,373,470	0.113	0.699	28.1
2	4.10	16,816	0.032	13.81	56,675,861	0.144	0.297	20.3
3	8.66	89,441	0.173	5.75	59,433,442	0.151	1.505	42.5
4	15.59	168,139	0.325	16.16	174,291,803	0.442	0.965	42.1
5	5.37	20,833	0.040	1.49	5,786,576	0.015	3.600	60.8
6	20.25	191,468	0.370	5.66	53,490,246	0.136	3.579	60.0
All Strata	11.17	517,698	1.000	8.50	394,051,399	1.000	1.314	37.9
95% confidence interval		± 56,115			± 47,093,246			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 12b.--CPUE, population, and biomass estimates for **Pacific cod**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	57	57	57	3.98	0.41	5.70	0.73
20	31	31	31	31	4.10	0.60	13.81	6.15
Subtotal	89	88	88	88	4.02	0.25	8.50	1.04
31	69	69	69	69	7.62	0.57	5.66	0.36
32	8	8	8	8	19.82	15.29	6.81	2.56
41	44	39	39	39	12.21	3.86	11.87	3.68
42	31	31	31	31	21.25	11.95	19.43	10.99
43	22	22	22	22	19.20	17.12	25.20	33.10
Subtotal	174	169	169	169	12.20	0.81	11.07	0.87
50	26	20	20	20	5.37	2.81	1.49	0.13
61	60	60	60	60	19.45	4.65	5.07	0.32
62	7	7	7	7	31.13	12.72	13.66	4.52
Subtotal	93	87	87	87	15.92	2.30	4.45	0.16
Total	356	344	344	344	11.17	0.37	8.50	0.26

Table 12b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	44,373,470	4.40590E+13	57.00	30,958,707	57,788,234
20	56,675,861	1.03460E+14	30.00	35,905,329	77,446,394
Subtotal	101,049,332	1.47520E+14	58.13	76,757,640	125,341,023
31	53,460,044	3.24120E+13	68.00	42,073,751	64,846,336
32	5,973,399	1.97020E+12	7.00	2,653,810	9,292,987
41	74,437,912	1.44560E+14	43.00	50,138,666	98,737,158
42	46,652,251	6.33780E+13	30.00	30,395,809	62,908,692
43	53,201,641	1.47480E+14	21.00	27,941,573	78,461,708
Subtotal	233,725,245	3.89800E+14	87.08	194,633,157	272,817,334
50	5,786,576	2.00960E+12	25.00	2,866,329	8,706,824
61	44,711,038	2.44930E+13	59.00	34,709,041	54,713,034
62	8,779,208	1.86820E+12	6.00	5,434,594	12,123,823
Subtotal	59,276,823	2.83710E+13	74.12	48,623,989	69,929,656
Total	394,051,399	5.65700E+14	151.46	346,958,153	441,144,646

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	31,001	2.49000E+07	57.00	20,917	41,086
20	16,816	1.00987E+07	30.00	10,327	23,305
Subtotal	47,817	3.49987E+07	84.80	35,985	59,649
31	72,053	5.09890E+07	68.00	57,772	86,334
32	17,388	1.17707E+07	7.00	9,274	25,502
41	76,587	1.51850E+08	43.00	51,683	101,492
42	51,021	6.89179E+07	30.00	34,069	67,973
43	40,531	7.62597E+07	21.00	22,367	58,695
Subtotal	257,580	3.59787E+08	126.74	220,023	295,137
50	20,833	4.23205E+07	25.00	7,431	34,234
61	171,453	3.60849E+08	59.00	133,062	209,844
62	20,015	5.25621E+06	6.00	14,404	25,625
Subtotal	212,300	4.08425E+08	73.48	171,881	252,719
Total	517,698	8.03216E+08	204.80	461,582	573,813

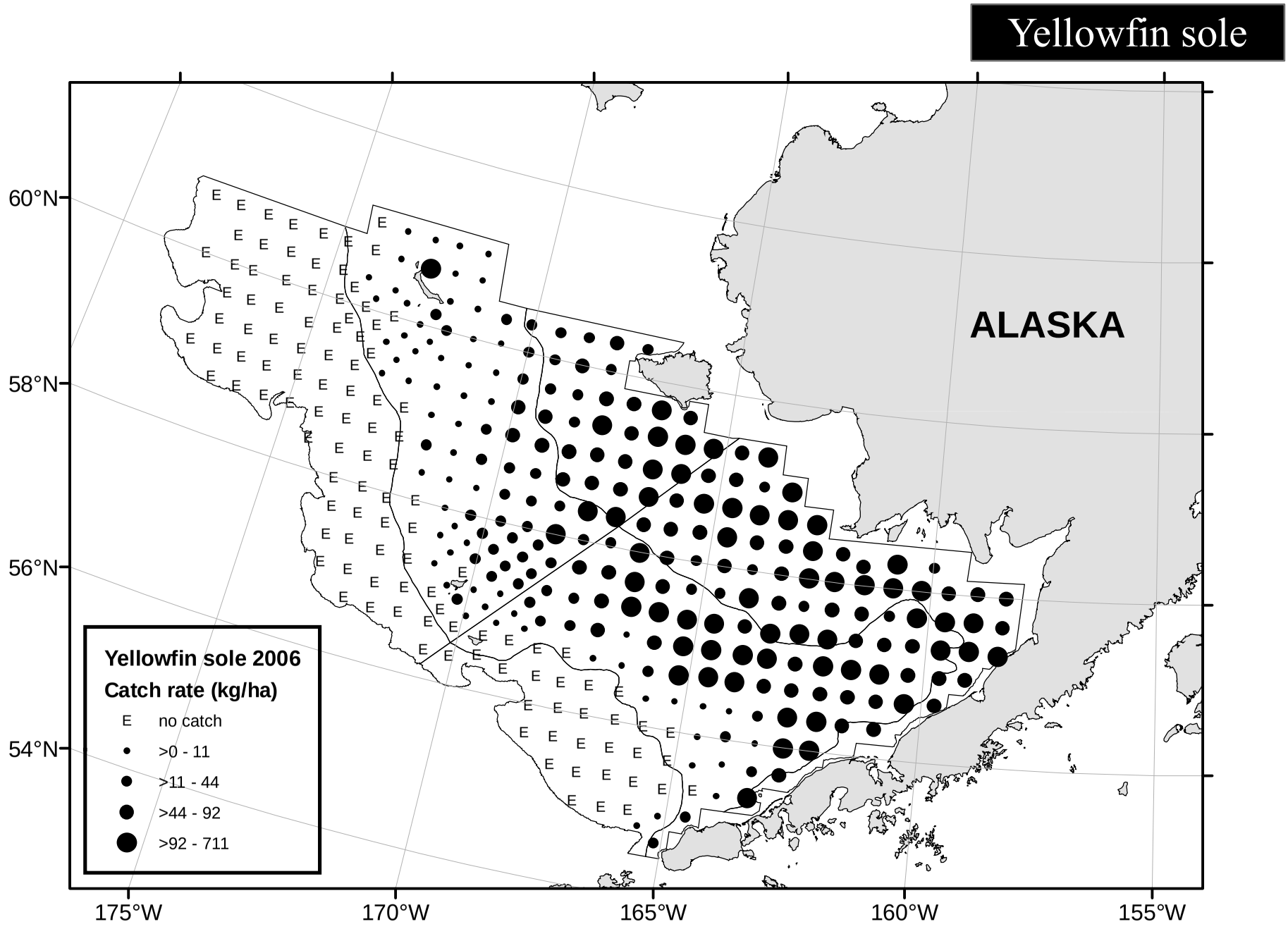


Figure 14.--Distribution and relative abundance in kg/ha of **yellowfin sole** (*Limanda aspera*) for the 2006 eastern Bering Sea bottom trawl survey.

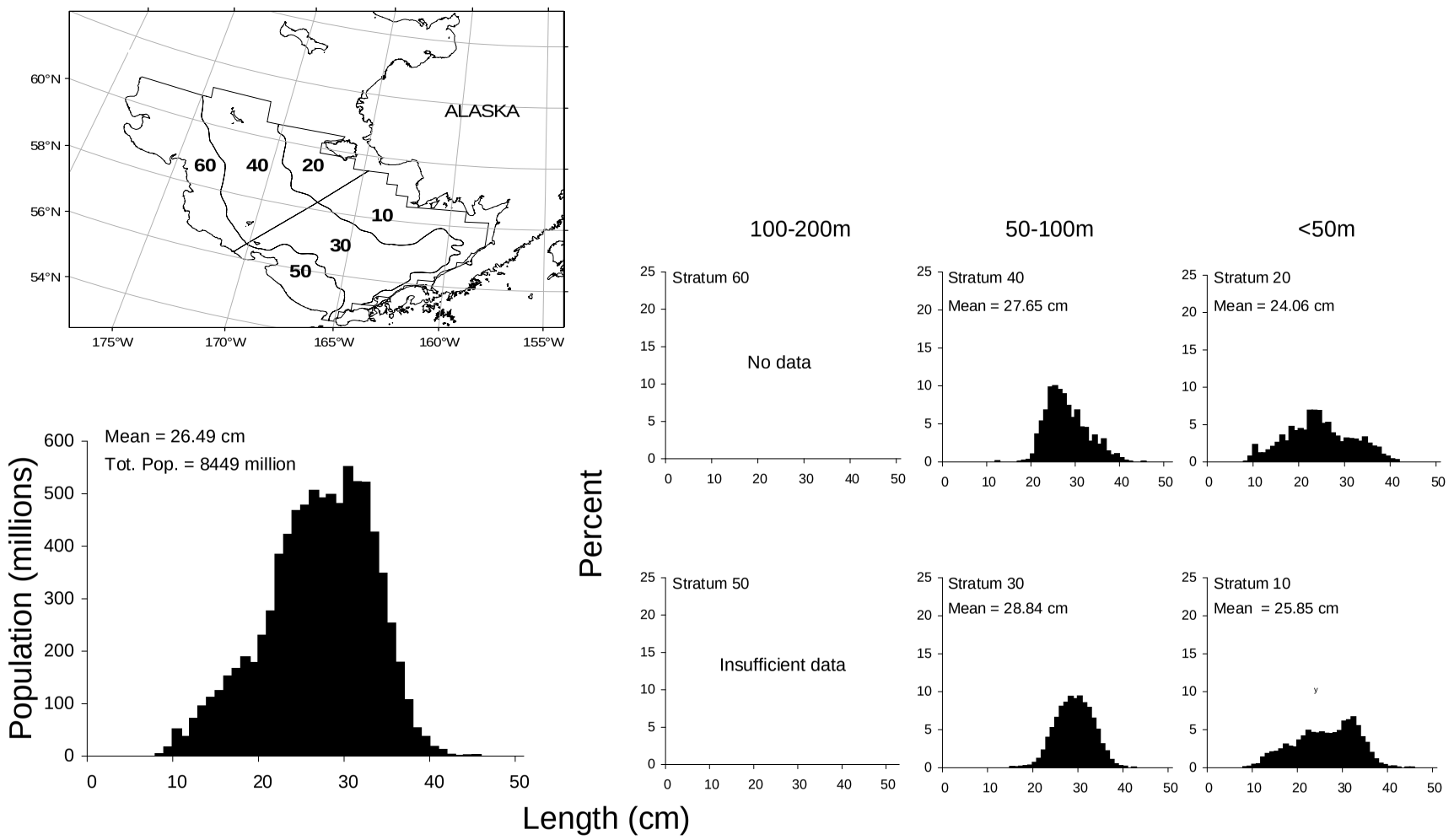


Figure 15.--Estimated relative size distributions (sexes combined) of **yellowfin sole** (*Limanda aspera*) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 13a.--Abundance estimates and mean size of **yellowfin sole** (*Limanda aspera*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	117.04	911,404	0.427	495.25	3,856,604,984	0.456	0.236	25.9
20	80.16	328,853	0.154	388.90	1,595,553,165	0.189	0.206	24.1
30	70.12	724,348	0.340	233.24	2,409,368,676	0.285	0.301	28.8
40	15.61	168,348	0.079	54.42	586,754,028	0.069	0.287	27.7
50	0.03	122	0.000	0.07	256,891	0.000	0.474	33.3
60	0.00	0	0.000	0.00	0	0.000	0.000	
All Strata	46.03	2,133,074	1.000	182.33	8,448,537,744	1.000	0.252	26.5
95% confidence interval		± 314,842			± 1,149,250,831			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 13b.--CPUE, population, and biomass estimates for **yellowfin sole**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	58	58	58	117.04	209.30	495.25	2,862.63
20	31	31	31	31	80.16	107.67	388.90	2,039.53
Subtotal	89	89	89	89	104.31	102.60	458.56	1,470.75
31	69	63	63	62	75.37	107.98	251.77	1,263.94
32	8	6	6	6	13.55	27.69	33.65	184.33
41	44	37	37	37	19.44	25.81	71.61	385.38
42	31	27	27	27	17.31	15.51	48.87	109.17
43	22	17	17	17	2.32	1.38	9.65	26.99
Subtotal	174	150	150	149	42.28	24.19	141.91	289.37
50	26	2	2	2	0.03	0.00	0.07	0.00
61	60	0	0	0	0.00	0.00	0.00	0.00
62	7	0	0	0	0.00	0.00	0.00	0.00
Subtotal	93	2	2	2	0.01	0.00	0.02	0.00
Total	356	241	241	240	46.03	11.78	182.33	156.90

Table 13b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	3,856,604,984	1.74000E+17	57.00	3,014,579,047	4,698,630,920
20	1,595,553,165	3.43000E+16	30.00	1,216,649,462	1,974,456,868
Subtotal	5,452,158,149	2.08000E+17	74.67	4,540,199,312	6,364,116,985
31	2,379,840,039	1.13000E+17	68.00	1,707,721,987	3,051,958,092
32	29,528,637	1.42000E+14	7.00	1,355,553	57,701,720
41	449,046,822	1.52000E+16	43.00	200,275,205	697,818,439
42	117,341,163	6.29000E+14	30.00	66,111,942	168,570,385
43	20,366,044	1.20000E+14	21.00	0	43,174,331
Subtotal	2,996,122,704	1.29000E+17	85.00	2,277,849,267	3,714,396,142
50	256,891	5.11000E+10	25.00	0	723,564
61	0	0.00000E+00	59.00	0	0
62	0	0.00000E+00	6.00	0	0
Subtotal	256,891	5.11000E+10	68.10	0	709,093
Total	8,448,537,744	3.37000E+17	139.68	7,299,286,913	9,597,788,575

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	911,404	1.27000E+10	57.00	683,721	1,139,087
20	328,853	1.81235E+09	30.00	241,794	415,912
Subtotal	1,240,257	1.45000E+10	70.44	999,389	1,481,124
31	712,461	9.64857E+09	68.00	516,007	908,915
32	11,887	2.13211E+07	7.00	967	22,807
41	121,878	1.01460E+09	43.00	57,503	186,252
42	41,570	8.94400E+07	30.00	22,258	60,882
43	4,900	6.16156E+06	21.00	0	10,063
Subtotal	892,696	1.08000E+10	82.41	685,041	1,100,350
50	122	1.29675E+04	25.00	0	357
61	0	0.00000E+00	59.00	0	0
62	0	0.00000E+00	6.00	0	0
Subtotal	122	1.29675E+04	64.57	0	350
Total	2,133,074	2.53000E+10	139.51	1,818,232	2,447,917

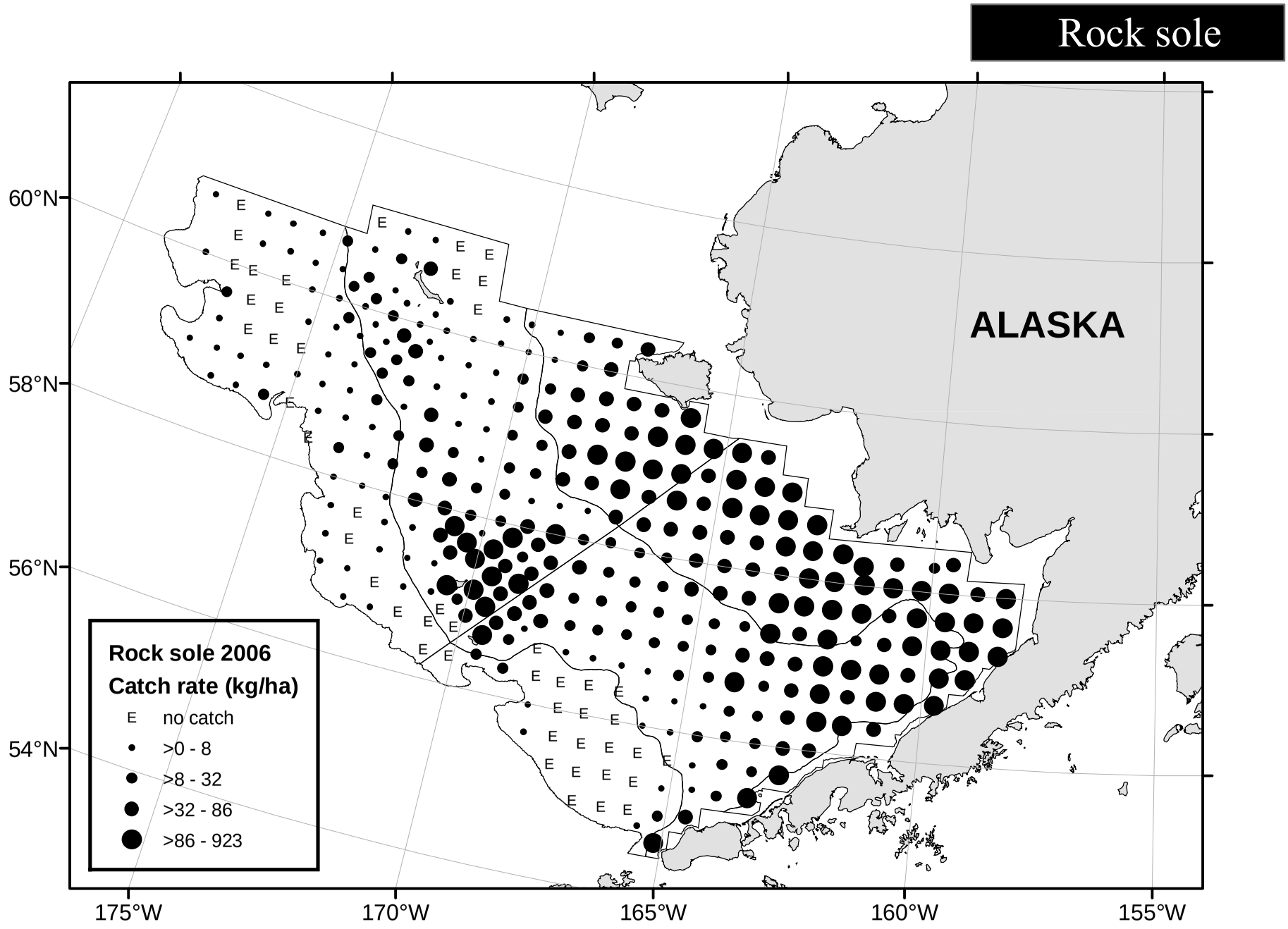


Figure 16.--Distribution and relative abundance in kg/ha of **northern** and **southern rock sole** (*Lepidopsetta* spp.) for the 2006 eastern Bering Sea bottom trawl survey.

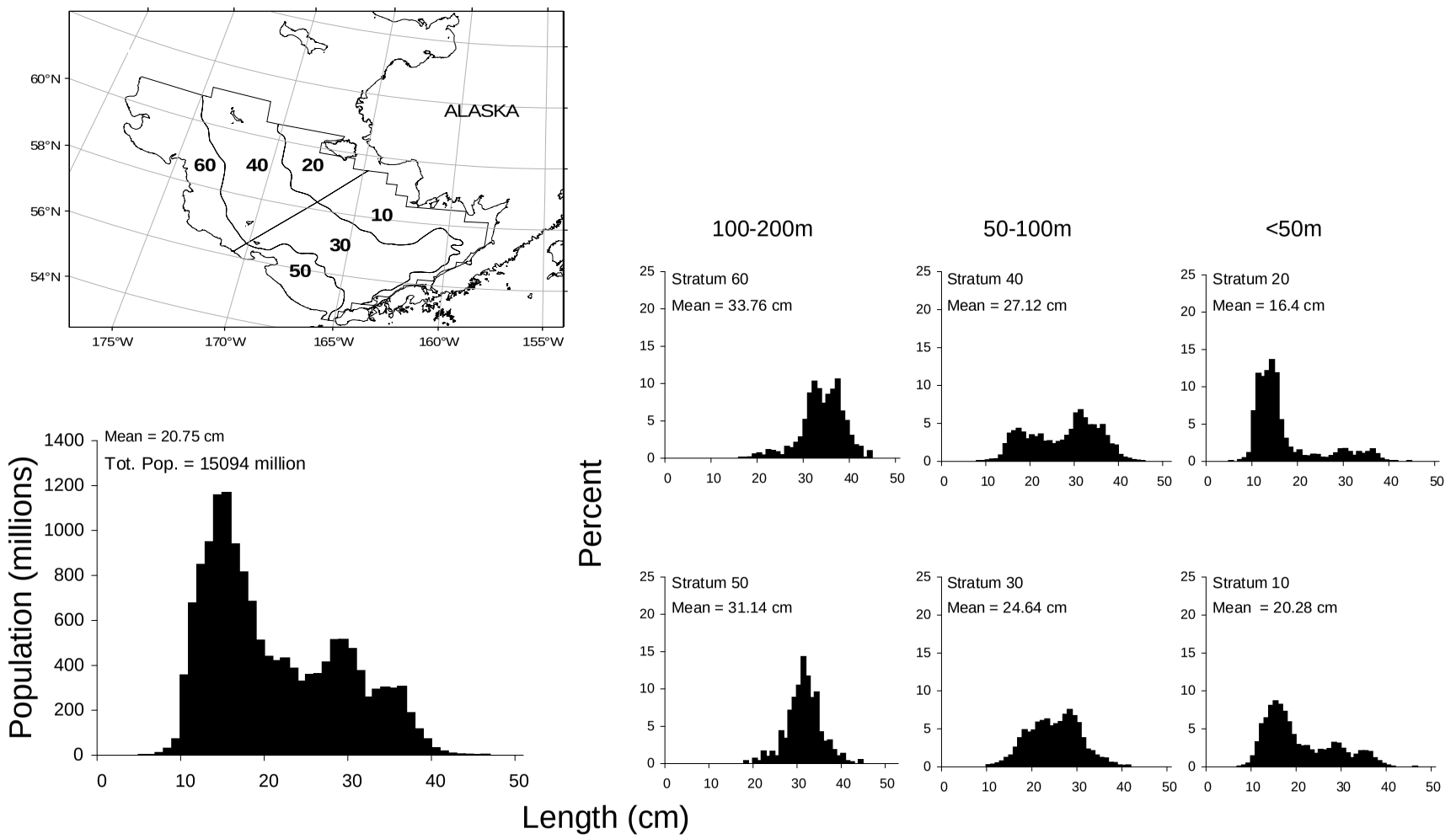


Figure 17.--Estimated relative size distributions (sexes combined) of **northern** and **southern rock sole** (*Lepidopsetta* spp.) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 14a.--Abundance estimates and mean size of **northern** and **southern rock sole** (*Lepidopsetta* spp.) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	130.43	1,015,693	0.458	980.97	7,638,959,159	0.506	0.133	20.3
20	69.62	285,635	0.129	868.92	3,564,917,397	0.236	0.080	16.4
30	46.03	475,539	0.215	235.46	2,432,320,165	0.161	0.196	24.6
40	37.70	406,523	0.183	128.94	1,390,295,121	0.092	0.292	27.1
50	2.07	8,031	0.004	4.97	19,266,925	0.001	0.417	31.1
60	2.66	25,185	0.011	5.14	48,583,799	0.003	0.518	33.8
All Strata	47.84	2,216,606	1.000	325.75	15,094,000,000	1.000	0.147	20.8
95% confidence interval		± 296,881			± 1,983,000,000			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 14b.--CPUE, population, and biomass estimates for **northern** and **southern rock sole**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	58	58	58	130.43	146.95	980.97	7,637.96
20	31	31	31	30	69.62	86.95	868.92	22,038.12
Subtotal	89	89	89	88	109.45	73.39	942.31	5,900.28
31	69	67	67	67	45.39	46.28	241.39	1,333.68
32	8	8	8	8	52.94	221.60	171.59	1,875.08
41	44	38	38	38	11.72	5.61	54.05	194.04
42	31	29	29	29	128.79	1,300.70	412.93	7,025.77
43	22	22	22	21	11.28	7.40	28.37	43.91
Subtotal	174	164	164	163	41.78	27.05	181.06	379.02
50	26	7	7	6	2.07	1.30	4.97	8.54
61	60	42	42	42	2.44	0.37	4.61	1.23
62	7	7	7	7	5.77	3.72	12.35	20.36
Subtotal	93	56	56	55	2.49	0.28	5.09	1.31
Total	356	309	309	306	47.84	10.47	325.75	467.26

Table 14b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	7,638,959,159	4.63160E+17	57.00	6,263,550,290	9,014,368,028
20	3,564,917,397	3.70950E+17	30.00	2,319,396,300	4,810,438,495
Subtotal	11,204,000,000	8.34110E+17	84.88	9,377,283,970	13,030,000,000
31	2,281,767,987	1.19170E+17	68.00	1,591,358,656	2,972,177,319
32	150,552,177	1.44360E+15	7.00	60,696,168	240,408,187
41	338,915,225	7.62910E+15	43.00	162,391,582	515,438,869
42	991,494,262	4.05060E+16	30.00	580,519,962	1,402,468,562
43	59,885,633	1.95620E+14	21.00	30,794,043	88,977,223
Subtotal	3,822,615,286	1.68940E+17	107.16	3,000,568,120	4,644,662,451
50	19,266,925	1.28490E+14	25.00	0	42,662,996
61	40,644,360	9.59080E+13	59.00	20,852,225	60,436,496
62	7,939,439	8.41420E+12	6.00	841,359	15,037,519
Subtotal	67,850,724	2.32810E+14	64.50	37,334,440	98,367,008
Total	15,094,000,000	1.00330E+18	114.86	13,111,000,000	17,078,000,000

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	1,015,693	8.91083E+09	57.00	824,916	1,206,470
20	285,635	1.46352E+09	30.00	207,402	363,869
Subtotal	1,301,328	1.03740E+10	72.16	1,097,619	1,505,037
31	429,086	4.13483E+09	68.00	300,480	557,691
32	46,454	1.70602E+08	7.00	15,563	77,344
41	73,459	2.20666E+08	43.00	43,438	103,481
42	309,245	7.49894E+09	30.00	132,415	486,075
43	23,818	3.29597E+07	21.00	11,877	35,760
Subtotal	882,062	1.20580E+10	67.58	662,444	1,101,680
50	8,031	1.95288E+07	25.00	0	17,152
61	21,474	2.84551E+07	59.00	10,694	32,255
62	3,711	1.53551E+06	6.00	679	6,743
Subtotal	33,216	4.95193E+07	82.89	19,142	47,290
Total	2,216,606	2.24820E+10	140.12	1,919,725	2,513,488

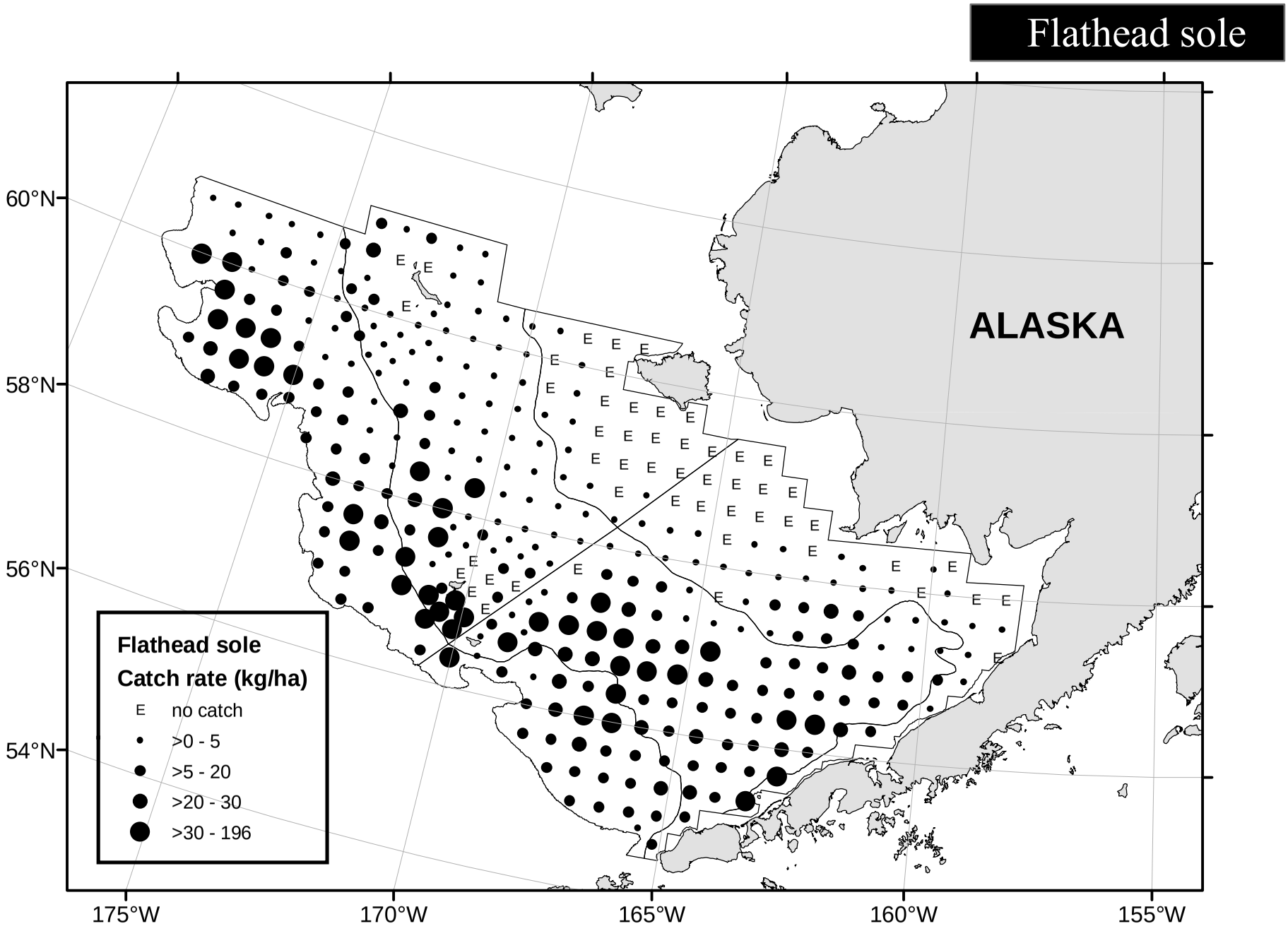


Figure 18.--Distribution and relative abundance in kg/ha of **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) for the 2006 eastern Bering Sea bottom trawl survey.

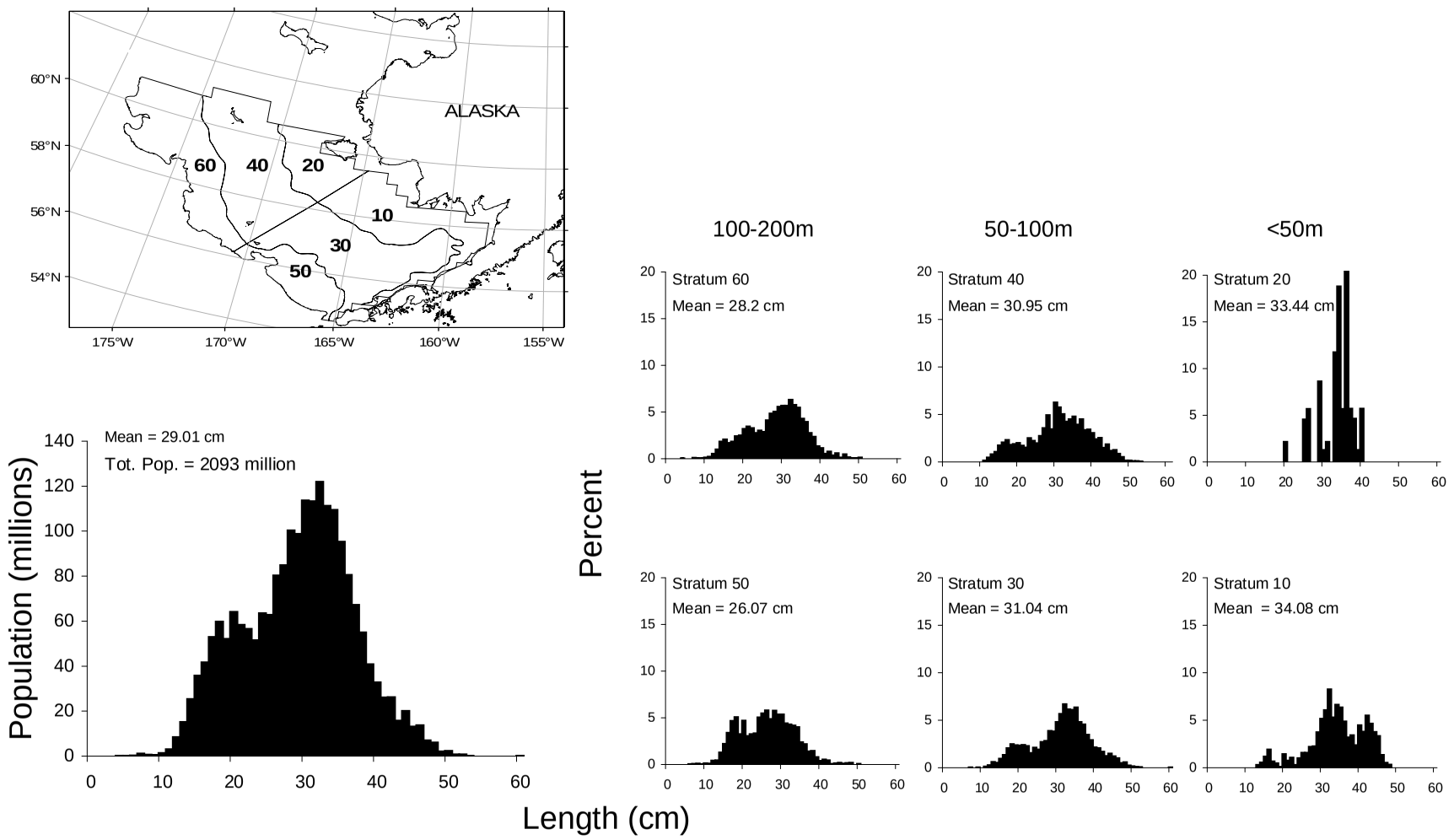


Figure 19.--Estimated relative size distributions (sexes combined) of **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Flathead sole

Table 15a.--Abundance estimates and mean size of **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	1.66	12,915	0.020	3.69	28,711,177	0.014	0.450	34.1
20	0.22	897	0.001	0.57	2,349,035	0.001	0.382	33.4
30	19.80	204,537	0.322	56.93	588,088,272	0.281	0.348	31.0
40	11.10	119,693	0.188	26.50	285,698,590	0.137	0.419	31.0
50	22.68	87,964	0.138	112.55	436,594,633	0.209	0.201	26.1
60	22.18	209,731	0.330	79.46	751,380,003	0.359	0.279	28.2
All Strata	13.72	635,738	1.000	45.16	2,092,821,710	1.000	0.304	29.0
95% confidence interval		± 119,743			± 330,563,090			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 15b.--CPUE, population, and biomass estimates for **flathead sole** and **Bering flounder**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	25	25	25	1.66	0.24	3.69	1.74
20	31	12	12	11	0.22	0.01	0.57	0.05
Subtotal	89	37	37	36	1.16	0.10	2.61	0.75
31	69	68	68	68	20.25	5.55	57.73	48.22
32	8	7	7	7	15.00	46.64	48.27	560.77
41	44	41	41	41	9.74	19.51	25.68	105.14
42	31	24	24	24	17.40	32.48	37.02	117.86
43	22	20	20	20	7.97	33.38	16.96	108.77
Subtotal	174	160	160	160	15.36	3.67	41.39	22.52
50	26	26	26	26	22.68	12.32	112.55	249.54
61	60	60	60	60	18.82	4.91	73.05	69.10
62	7	7	7	7	68.21	3,132.75	167.30	18,113.37
Subtotal	93	93	93	93	22.32	10.47	89.08	93.39
Total	356	290	290	289	13.72	1.63	45.16	12.46

Table 15b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	Upper
10	28,711,177	1.06000E+14	57.00	7,950,285	49,472,069
20	2,349,035	9.05000E+11	30.00	406,370	4,291,700
Subtotal	31,060,212	1.06000E+14	57.88	10,210,479	51,909,945
31	545,733,621	4.31000E+15	68.00	414,454,125	677,013,116
32	42,354,652	4.32000E+14	7.00	0	91,493,858
41	161,009,922	4.13000E+15	43.00	31,068,516	290,951,328
42	88,889,989	6.80000E+14	30.00	35,659,848	142,120,131
43	35,798,679	4.85000E+14	21.00	0	81,718,779
Subtotal	873,786,862	1.00000E+16	143.10	675,407,781	1,072,165,943
50	436,594,633	3.76000E+15	25.00	310,113,646	563,075,621
61	643,831,402	5.37000E+15	59.00	495,768,093	791,894,712
62	107,548,601	7.49000E+15	6.00	0	319,263,278
Subtotal	1,187,974,636	1.66000E+16	25.92	907,160,038	1,468,789,234
Total	2,092,821,710	2.68000E+16	66.04	1,762,258,620	2,423,384,800

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	Upper
10	12,915	1.44600E+07	57.00	5,230	20,600
20	897	1.69461E+05	30.00	57	1,738
Subtotal	13,813	1.46295E+07	58.20	6,083	21,543
31	191,374	4.95651E+08	68.00	146,848	235,900
32	13,163	3.59041E+07	7.00	0	27,334
41	61,079	7.66975E+08	43.00	5,109	117,049
42	41,785	1.87255E+08	30.00	13,842	69,728
43	16,829	1.48717E+08	21.00	0	42,268
Subtotal	324,231	1.63450E+09	141.70	244,181	404,280
50	87,964	1.85424E+08	25.00	59,859	116,070
61	165,880	3.81266E+08	59.00	126,418	205,342
62	43,851	1.29467E+09	6.00	0	131,898
Subtotal	297,695	1.86136E+09	12.03	203,685	391,705
Total	635,738	3.51052E+09	42.31	515,995	755,482

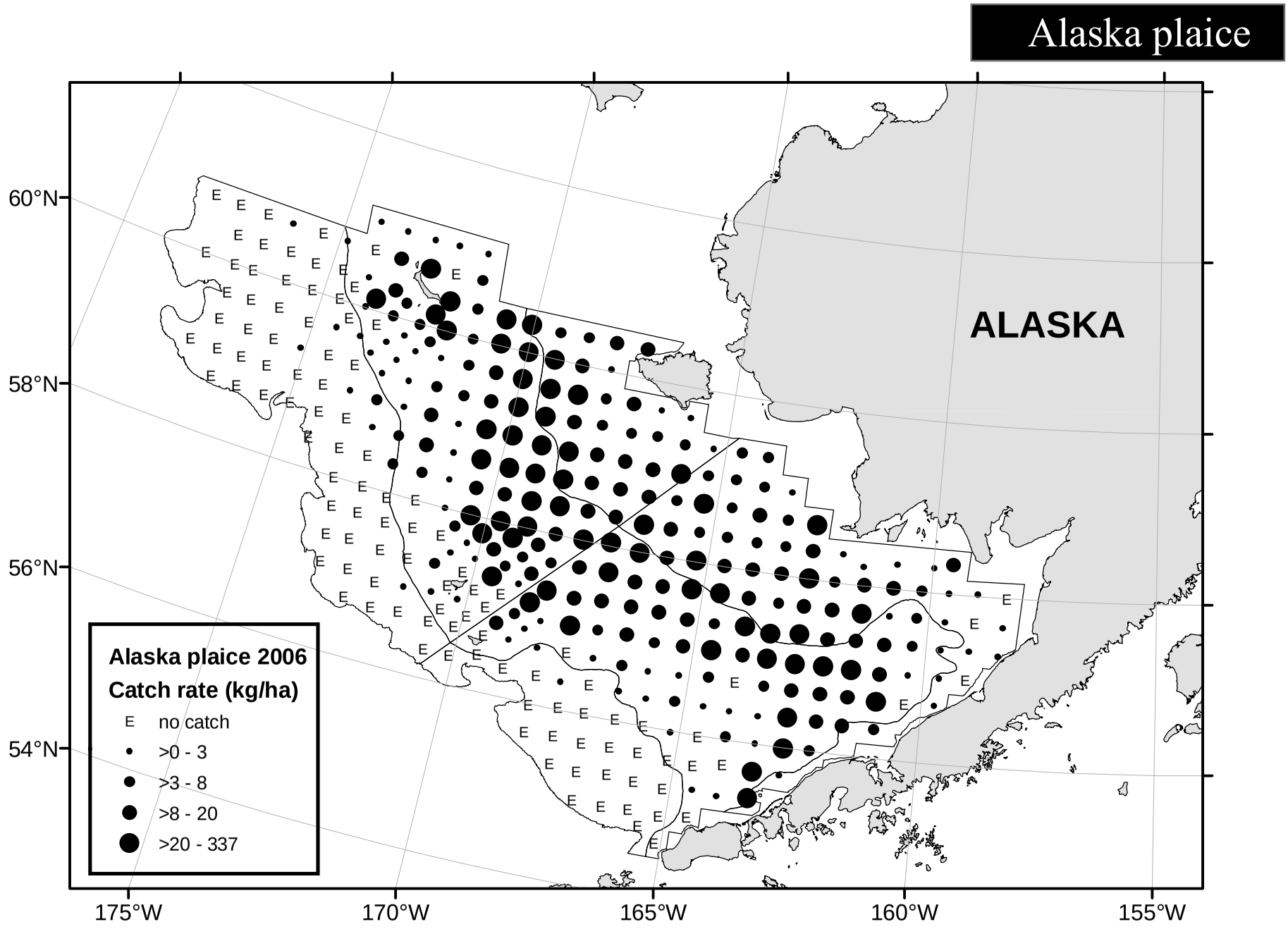


Figure 20.--Distribution and relative abundance in kg/ha of **Alaska plaice** (*Pleuronectes quadrituberculatus*) for the 2006 eastern Bering Sea bottom trawl survey.

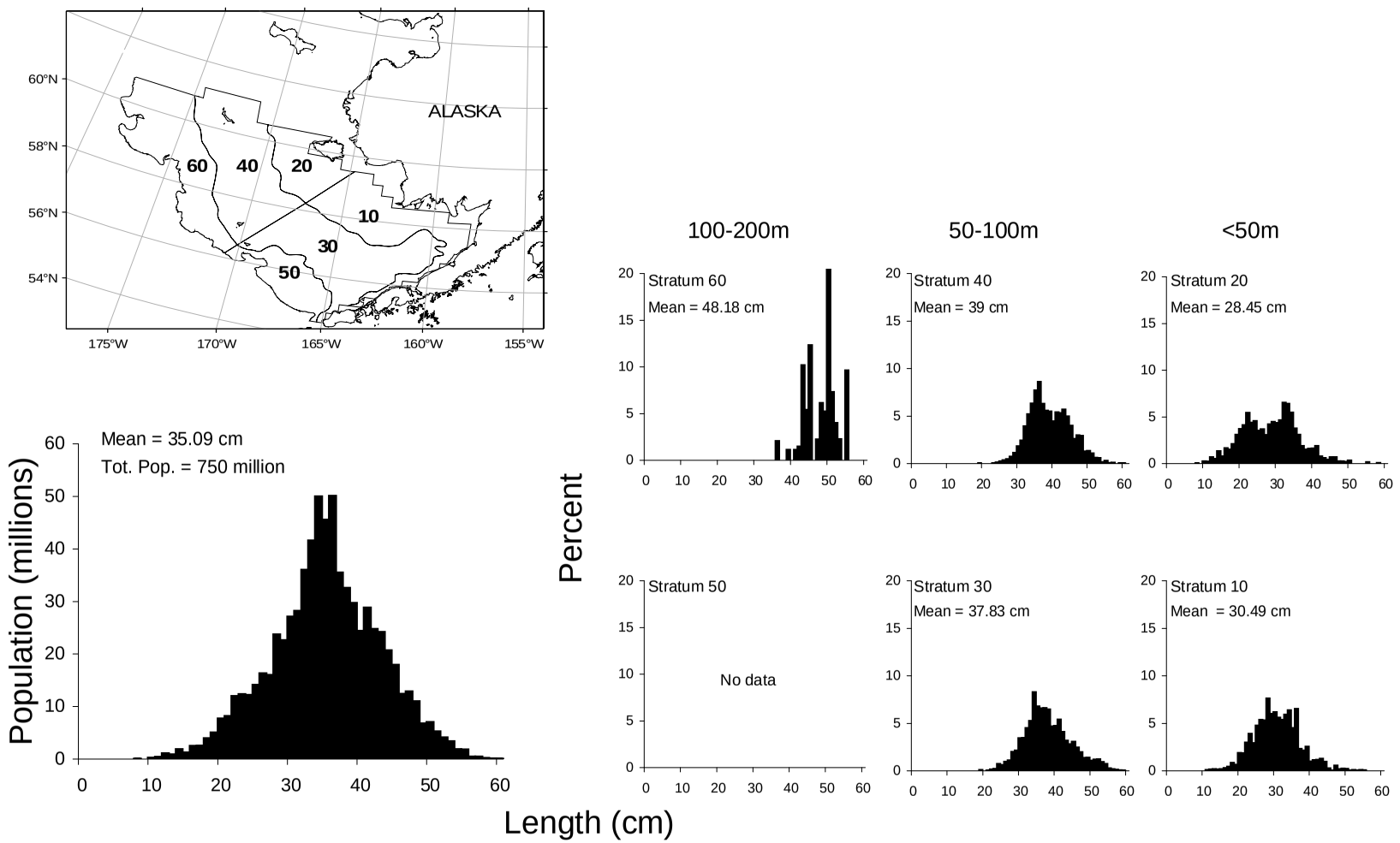


Figure 21.--Estimated relative size distributions (sexes combined) of **Alaska plaice** (*Pleuronectes quadrituberculatus*) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 16a.--Abundance estimates and mean size of **Alaska plaice** (*Pleuronectes quadrituberculatus*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	11.97	93,230	0.146	32.31	251,609,882	0.244	0.371	30.5
20	23.44	96,165	0.151	63.50	260,522,393	0.253	0.369	28.5
30	14.39	148,609	0.233	19.03	196,577,154	0.191	0.756	37.8
40	27.41	295,494	0.464	29.65	319,695,444	0.310	0.924	39.0
50	0.05	207	0.000	0.05	180,213	0.000	1.150	0.0
60	0.34	3,261	0.005	0.22	2,042,867	0.002	1.596	48.2
All Strata	13.75	636,966	1.000	22.24	1,030,627,954	1.000	0.618	35.1
95% confidence interval		± 163,095			± 239,393,394			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 16b.--CPUE, population, and biomass estimates for **Alaska plaice**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	55	55	55	11.97	11.02	32.31	77.02
20	31	31	31	31	23.44	28.43	63.50	204.30
Subtotal	89	86	86	86	15.93	8.11	43.07	57.36
31	69	59	59	59	14.67	6.97	19.82	13.29
32	8	7	7	7	11.34	22.63	10.52	22.04
41	44	39	38	38	39.96	121.01	43.27	124.53
42	31	22	22	21	9.58	5.78	10.16	6.09
43	22	20	20	20	10.38	15.61	11.36	18.36
Subtotal	174	147	146	145	21.04	12.34	24.45	13.95
50	26	2	2	2	0.05	0.00	0.05	0.00
61	60	8	8	8	0.36	0.02	0.23	0.01
62	7	2	2	2	0.16	0.02	0.08	0.00
Subtotal	93	12	12	12	0.26	0.01	0.17	0.00
Total	356	245	244	243	13.75	3.10	22.24	6.67

Table 16b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	251,609,882	4.67020E+15	57.00	113,497,342	389,722,421
20	260,522,393	3.43880E+15	30.00	140,776,632	380,268,154
Subtotal	512,132,275	8.10900E+15	85.86	332,032,361	692,232,190
31	187,347,839	1.18750E+15	68.00	118,427,261	256,268,416
32	9,229,316	1.69650E+13	7.00	0	19,308,246
41	271,316,341	4.89600E+15	43.00	129,903,706	412,728,977
42	24,394,467	3.50980E+13	30.00	12,279,222	36,509,712
43	23,984,635	8.17990E+13	21.00	5,172,513	42,796,757
Subtotal	516,272,598	6.21740E+15	69.02	356,915,747	675,629,449
50	180,213	2.34690E+10	25.00	0	495,800
61	1,988,742	7.85930E+11	59.00	197,073	3,780,411
62	54,125	1.41423E+09	6.00	0	146,147
Subtotal	2,223,080	8.10810E+11	62.78	422,179	4,023,982
Total	1,030,627,954	1.43270E+16	152.67	791,234,560	1,270,021,347

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	93,230	6.68190E+08	57.00	40,988	145,471
20	96,165	4.78561E+08	30.00	51,494	140,836
Subtotal	189,395	1.14675E+09	86.11	121,667	257,122
31	138,660	6.23163E+08	68.00	88,733	188,586
32	9,950	1.74190E+07	7.00	0	20,162
41	250,590	4.75793E+09	43.00	111,186	389,994
42	22,997	3.32999E+07	30.00	11,196	34,798
43	21,907	6.95489E+07	21.00	4,560	39,253
Subtotal	444,103	5.50136E+09	58.20	294,203	594,003
50	207	3.11878E+04	25.00	0	571
61	3,160	1.78368E+06	59.00	461	5,859
62	101	6.48914E+03	6.00	0	298
Subtotal	3,468	1.82136E+06	61.55	769	6,167
Total	636,966	6.64998E+09	88.01	473,871	800,061

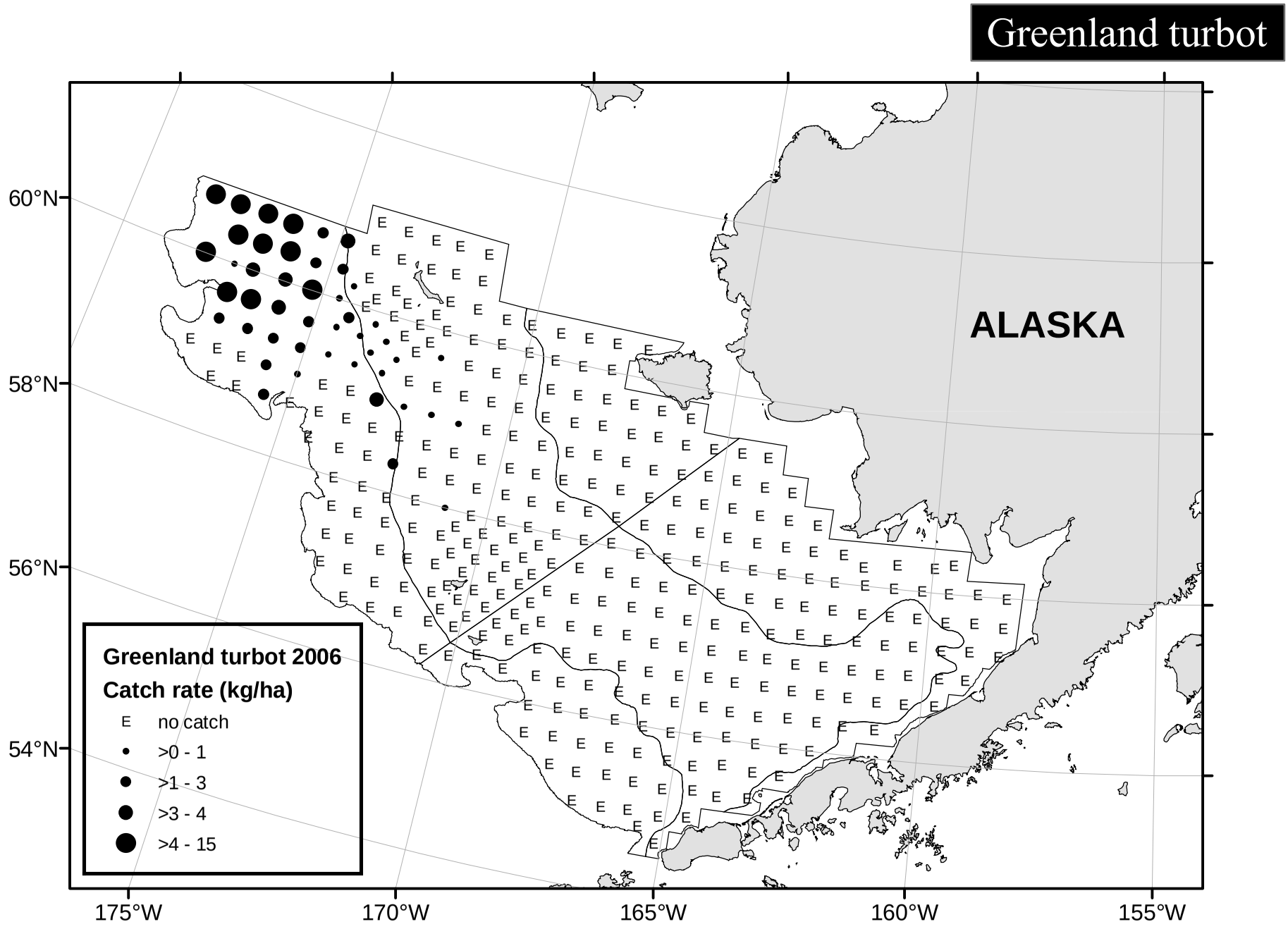


Figure 22.--Distribution and relative abundance in kg/ha of **Greenland turbot** (*Reinhardtius hippoglossoides*) for the 2006 eastern Bering Sea bottom trawl survey.

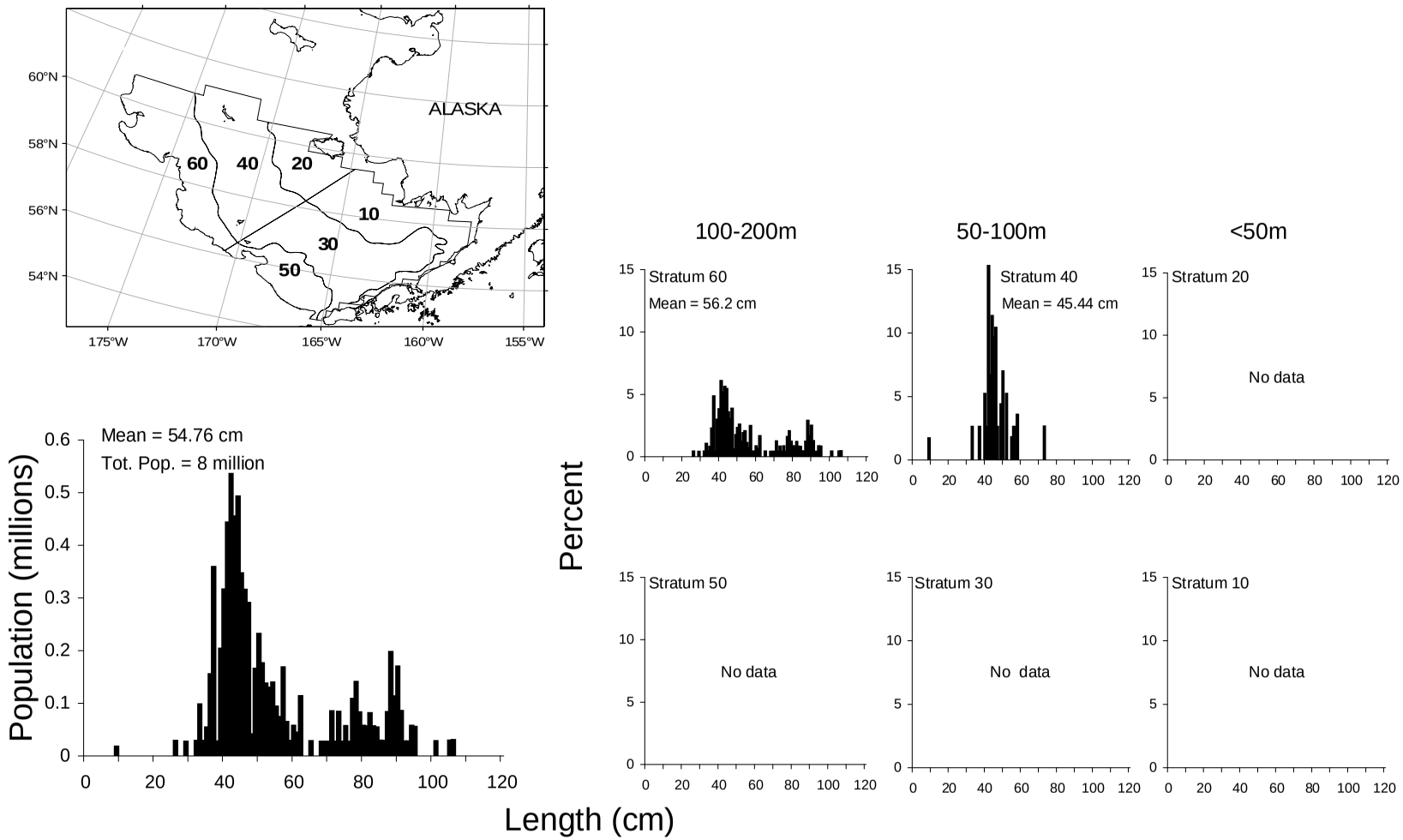


Figure 23.--Estimated relative size distributions (sexes combined) of **Greenland turbot** (*Reinhardtius hippoglossoides*) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 17a.--Abundance estimates and mean size of **Greenland turbot** (*Reinhardtius hippoglossoides*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.00	0	0.000	0.00	0	0.000	0.000	0.0
20	0.00	0	0.000	0.00	0	0.000	0.000	0.0
30	0.00	0	0.000	0.00	0	0.000	0.000	0.0
40	0.08	896	0.051	0.10	1,055,916	0.134	0.849	45.4
50	0.00	0	0.000	0.00	0	0.000	0.000	0.0
60	1.76	16,597	0.949	0.72	6,849,027	0.866	2.423	56.2
All Strata	0.38	17,493	1.000	0.17	7,904,944	1.000	2.213	54.8
95% confidence interval		± 6,582			± 2,984,552			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 17b.--CPUE, population, and biomass estimates for **Greenland turbot**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	0	0	0	0.00	0.00	0.00	0.00
20	31	0	0	0	0.00	0.00	0.00	0.00
Subtotal	89	0	0	0	0.00	0.00	0.00	0.00
31	69	0	0	0	0.00	0.00	0.00	0.00
32	8	0	0	0	0.00	0.00	0.00	0.00
41	44	4	4	4	0.11	0.01	0.13	0.01
42	31	1	1	1	0.00	0.00	0.01	0.00
43	22	7	7	7	0.10	0.00	0.11	0.00
Subtotal	174	12	12	12	0.04	0.00	0.05	0.00
50	26	0	0	0	0.00	0.00	0.00	0.00
61	60	27	27	27	1.83	0.14	0.71	0.02
62	7	7	7	7	0.78	0.06	0.93	0.07
Subtotal	93	34	34	34	1.24	0.06	0.51	0.01
Total	356	46	46	46	0.38	0.01	0.17	0.00

Table 17b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	0	0.00000E+00	57.00	0	0
20	0	0.00000E+00	30.00	0	0
Subtotal	0	0.00000E+00	86.75	0	0
31	0	0.00000E+00	68.00	0	0
32	0	0.00000E+00	7.00	0	0
41	798,736	4.74340E+11	43.00	0	2,190,643
42	14,898	2.21960E+08	30.00	0	45,365
43	242,282	8.55137E+09	21.00	49,937	434,627
Subtotal	1,055,916	4.83110E+11	111.03	0	2,446,040
50	0	0.00000E+00	25.00	0	0
61	6,252,656	1.71320E+12	59.00	3,607,408	8,897,903
62	596,372	3.05940E+10	6.00	168,362	1,024,382
Subtotal	6,849,027	1.74380E+12	85.49	4,207,995	9,490,059
Total	7,904,944	2.22690E+12	276.30	4,920,392	10,889,496

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	0	0.00000E+00	57.00	0	0
20	0	0.00000E+00	30.00	0	0
Subtotal	0	0.00000E+00	86.75	0	0
31	0	0.00000E+00	68.00	0	0
32	0	0.00000E+00	7.00	0	0
41	675	2.83436E+05	43.00	0	1,751
42	10	1.05675E+02	30.00	0	31
43	211	8.97537E+03	21.00	14	408
Subtotal	896	2.92517E+05	100.24	0	1,978
50	0	0.00000E+00	25.00	0	0
61	16,095	1.05135E+07	59.00	9,542	22,648
62	502	2.33978E+04	6.00	128	876
Subtotal	16,597	1.05369E+07	65.69	10,105	23,089
Total	17,493	1.08295E+07	115.38	10,911	24,075

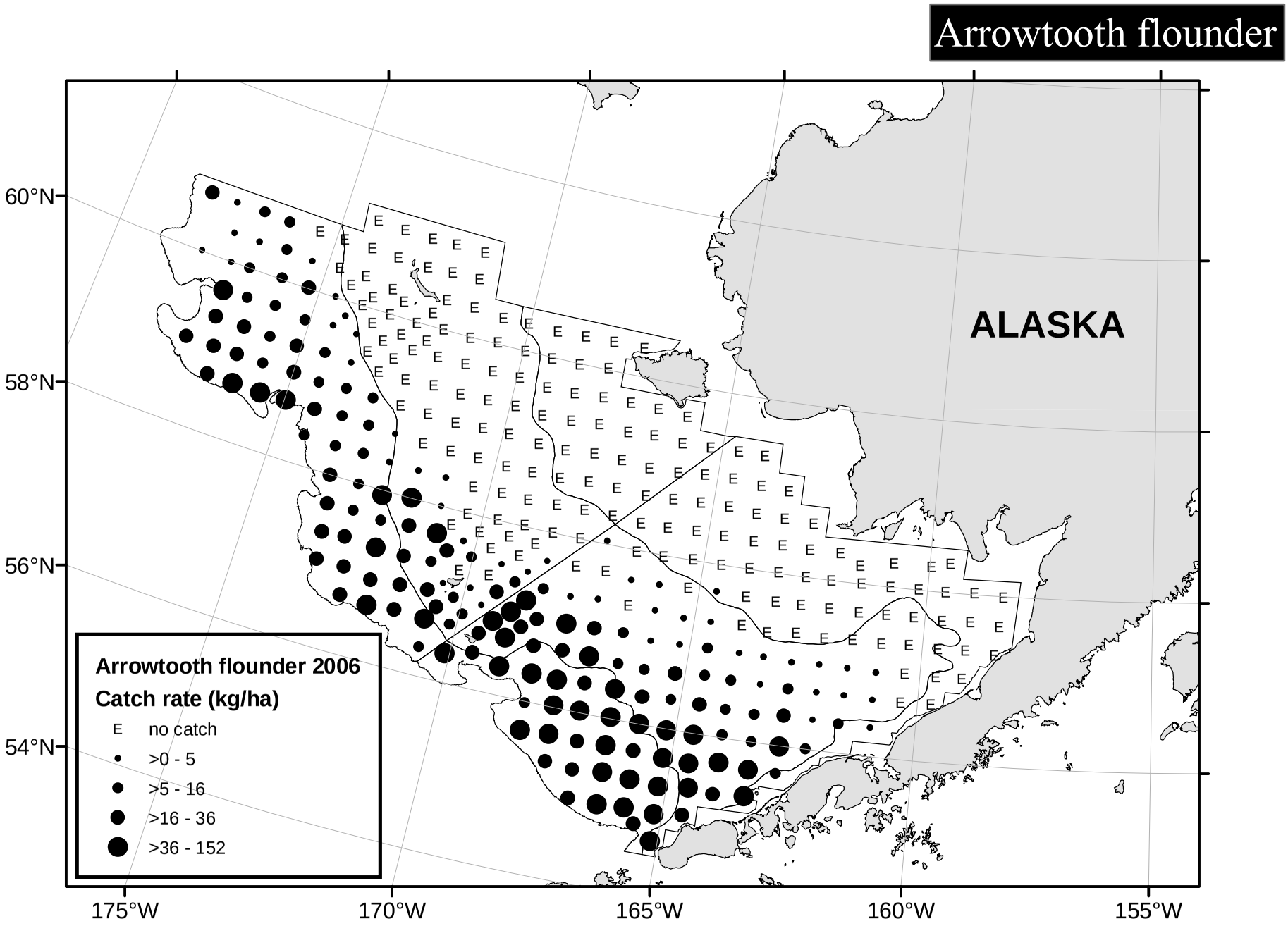


Figure 24.--Distribution and relative abundance in kg/ha of **arrowtooth flounder** (*Atheresthes stomias*) for the 2006 eastern Bering Sea bottom trawl survey.

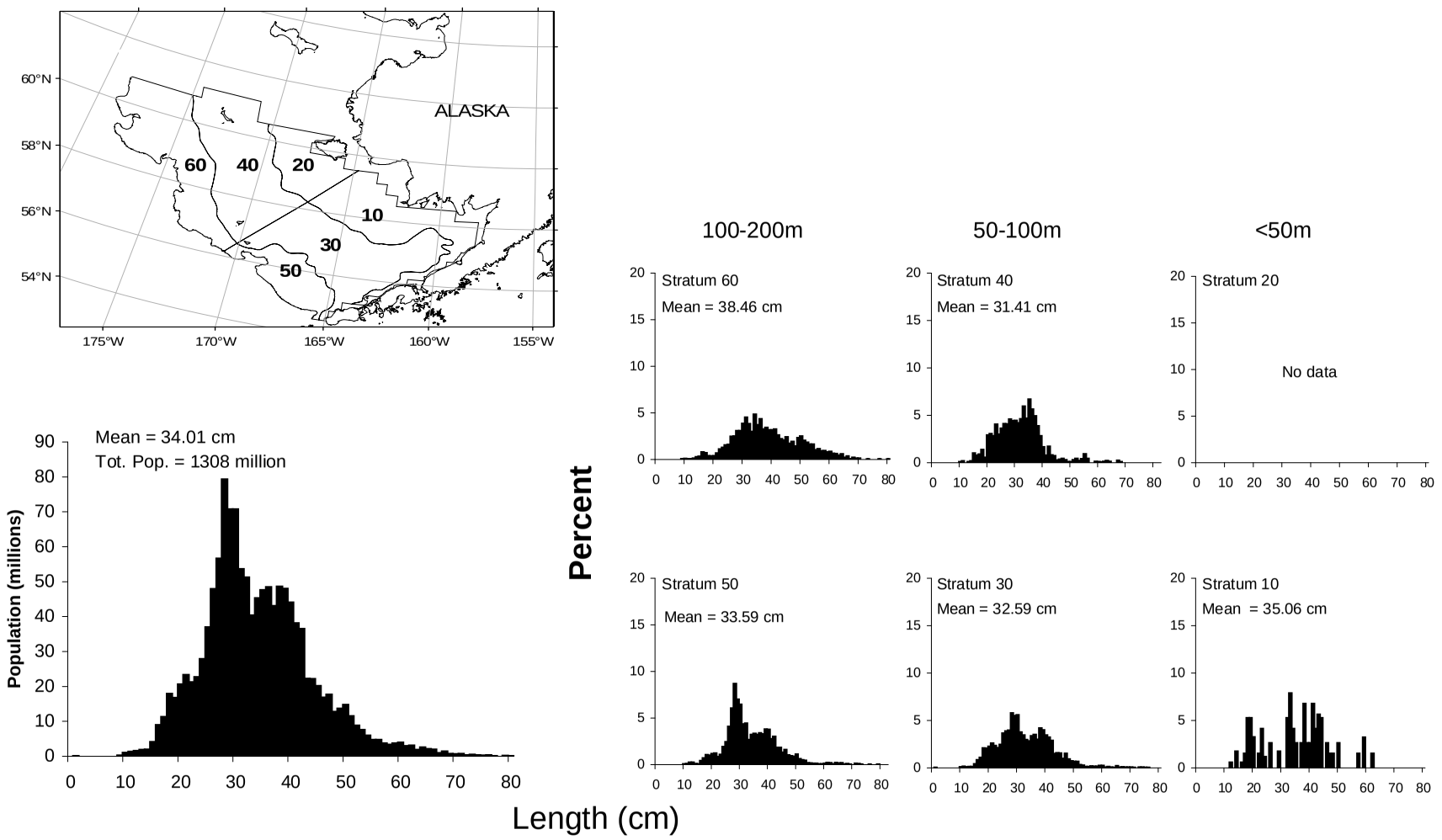


Figure 25.--Estimated relative size distributions (sexes combined) of **arrowtooth flounder** (*Atheresthes stomias*) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 18a.--Abundance estimates and mean size of **arrowtooth flounder** (*Atheresthes stomias*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.32	2,523	0.004	0.63	4,897,409	0.004	0.515	35.1
20	0.00	0	0.000	0.00	0	0.000	0.000	0.0
30	20.57	212,482	0.349	51.76	534,661,164	0.409	0.397	32.6
40	2.89	31,149	0.051	8.11	87,493,314	0.067	0.356	31.4
50	47.08	182,627	0.300	108.23	419,866,252	0.321	0.435	33.6
60	18.97	179,383	0.295	27.60	261,010,502	0.200	0.687	38.5
All Strata	13.12	608,165	1.000	28.23	1,307,928,641	1.000	0.465	34.0
95% confidence interval		± 92,176			± 191,457,347			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 18b.--CPUE, population, and biomass estimates for arrowtooth flounder.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	4	4	4	0.32	0.06	0.63	0.21
20	31	0	0	0	0.00	0.00	0.00	0.00
Subtotal	89	4	4	4	0.21	0.02	0.41	0.09
31	69	56	56	56	18.71	11.35	45.48	61.78
32	8	8	8	8	40.59	83.37	119.37	703.25
41	44	5	5	5	2.23	1.79	4.78	7.24
42	31	19	19	19	7.15	4.84	23.95	45.24
43	22	0	0	0	0.00	0.00	0.00	0.00
Subtotal	174	88	88	88	11.54	2.64	29.47	14.82
50	26	26	26	26	47.08	26.16	108.23	127.81
61	60	59	59	59	20.19	7.64	29.38	10.37
62	7	6	6	6	2.18	1.26	3.25	3.18
Subtotal	93	91	91	91	27.15	5.55	51.06	15.35
Total	356	183	183	183	13.12	1.01	28.23	4.35

Table 18b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	4,897,409	1.29990E+13	57.00	0	12,183,813
20	0	0.00000E+00	30.00	0	0
Subtotal	4,897,409	1.29990E+13	61.22	0	12,108,101
31	429,927,297	5.52010E+15	68.00	281,333,052	578,521,541
32	104,733,868	5.41400E+14	7.00	47,796,944	161,670,791
41	29,984,467	2.84460E+14	43.00	0	64,070,822
42	57,508,847	2.60800E+14	30.00	24,531,859	90,485,835
43	0	0.00000E+00	21.00	0	0
Subtotal	622,154,478	6.60670E+15	87.82	459,590,877	784,718,080
50	419,866,252	1.92330E+15	25.00	329,524,471	510,208,034
61	258,918,828	8.05660E+14	59.00	201,554,576	316,283,080
62	2,091,675	1.31620E+12	6.00	0	4,899,029
Subtotal	680,876,755	2.73030E+15	46.20	576,373,081	785,380,429
Total	1,307,928,641	9.35000E+15	131.44	1,116,471,294	1,499,385,989

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	2,523	3.49707E+06	57.00	0	6,302
20	0	0.00000E+00	30.00	0	0
Subtotal	2,523	3.49707E+06	71.45	0	6,263
31	176,868	1.01398E+09	68.00	113,182	240,554
32	35,614	6.41864E+07	7.00	16,010	55,219
41	13,971	7.04349E+07	43.00	0	30,933
42	17,177	2.78819E+07	30.00	6,395	27,960
43	0	0.00000E+00	21.00	0	0
Subtotal	243,631	1.17648E+09	86.86	175,031	312,231
50	182,627	3.93602E+08	25.00	141,758	223,497
61	177,984	5.93117E+08	59.00	128,765	227,204
62	1,399	5.20636E+05	6.00	0	3,165
Subtotal	362,011	9.87241E+08	79.55	299,170	424,851
Total	608,165	2.16723E+09	165.64	515,989	700,340

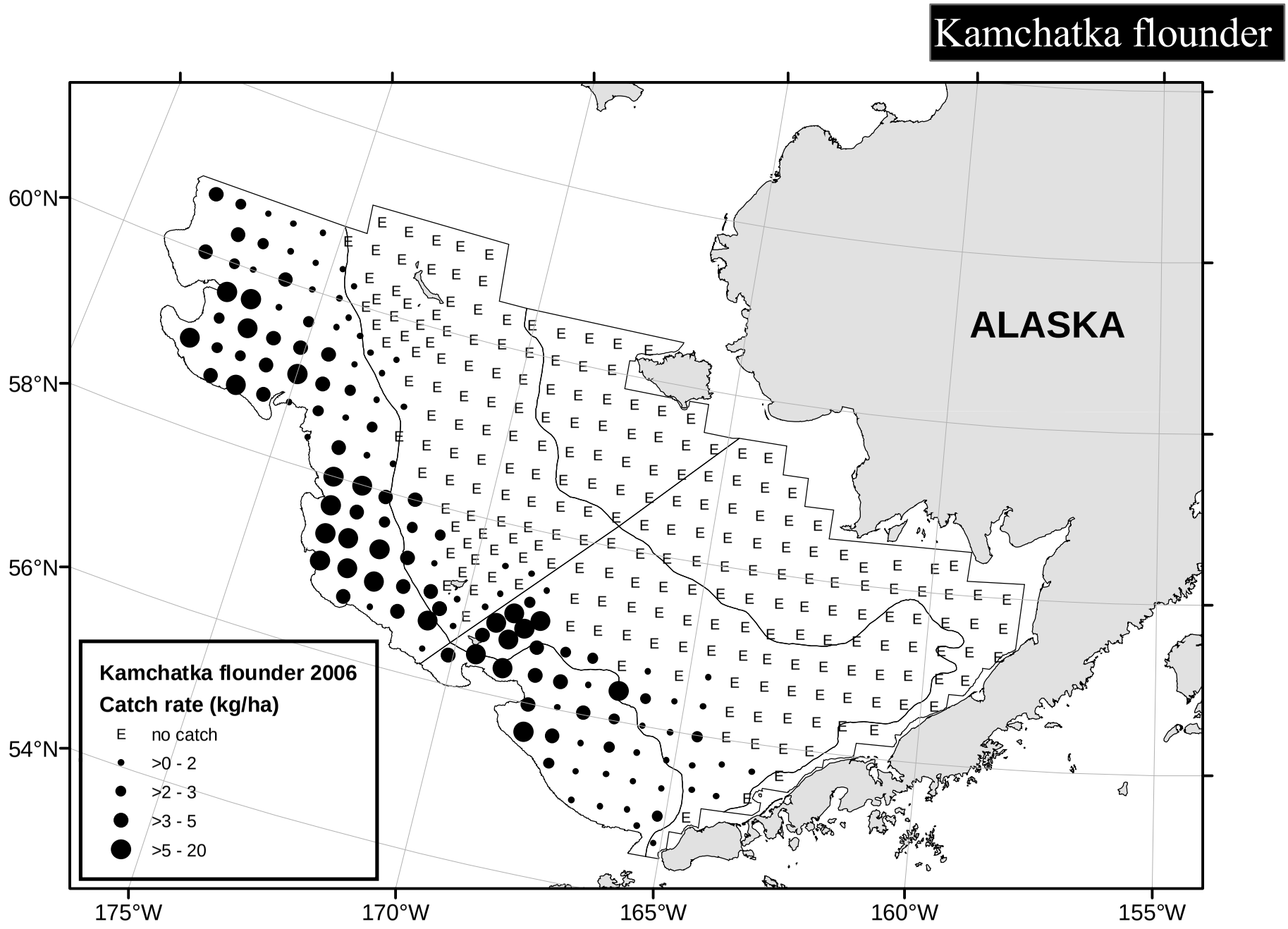


Figure 26.--Distribution and relative abundance in kg/ha of **Kamchatka flounder** (*Atheresthes evermanni*) for the 2006 eastern Bering Sea bottom trawl survey.

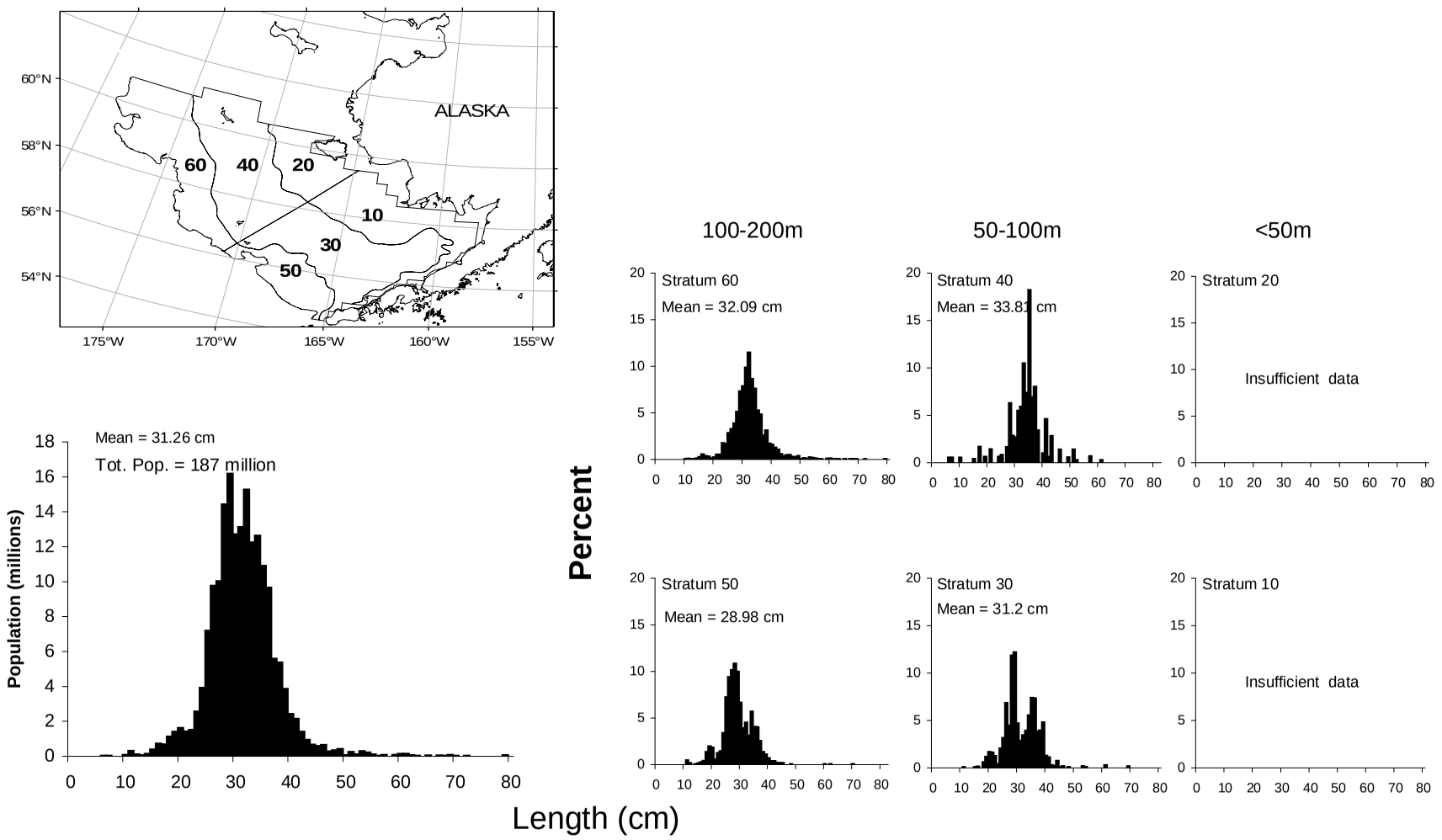


Figure 27.--Estimated relative size distributions (sexes combined) of **Kamchatka flounder** (*Atheresthes evermanni*) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 19a.--Abundance estimates and mean size of **Kamchatka flounder** (*Atheresthes evermanni*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.00	0	0.000	0.00	0	0.000	0.000	0.0
20	0.00	0	0.000	0.00	0	0.000	0.000	0.0
30	1.06	10,985	0.182	3.30	34,140,384	0.183	0.322	31.2
40	0.27	2,869	0.047	0.63	6,766,194	0.036	0.424	33.8
50	2.94	11,406	0.189	11.24	43,585,467	0.233	0.262	29.0
60	3.72	35,176	0.582	10.82	102,280,690	0.548	0.344	32.1
All Strata	1.30	60,436	1.000	4.03	186,772,735	1.000	0.324	31.3
95% confidence interval		± 9,942			± 37,548,862			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 19b.--CPUE, population, and biomass estimates for **Kamchatka flounder**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	0	0	0	0.00	0.00	0.00	0.00
20	31	0	0	0	0.00	0.00	0.00	0.00
Subtotal	89	0	0	0	0.00	0.00	0.00	0.00
31	69	18	18	18	0.58	0.09	1.99	1.26
32	8	8	8	8	6.28	3.21	17.49	25.95
41	44	4	4	4	0.23	0.02	0.54	0.10
42	31	10	10	10	0.46	0.04	1.28	0.27
43	22	4	4	4	0.14	0.01	0.13	0.01
Subtotal	174	44	44	44	0.66	0.02	1.94	0.31
50	26	26	26	26	2.94	0.25	11.24	4.34
61	60	59	59	59	3.90	0.13	11.51	2.01
62	7	7	7	7	1.29	0.13	1.36	0.12
Subtotal	93	92	92	92	3.49	0.08	10.94	1.24
Total	356	136	136	136	1.30	0.01	4.03	0.17

Table 19b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	0	0.00000E+00	57.00	0	0
20	0	0.00000E+00	30.00	0	0
Subtotal	0	0.00000E+00	86.75	0	0
31	18,790,034	1.13000E+14	68.00	0	40,050,037
32	15,350,350	1.99770E+13	7.00	4,779,822	25,920,877
41	3,411,485	3.74990E+12	43.00	0	7,325,094
42	3,072,561	1.57360E+12	30.00	507,287	5,637,835
43	282,148	3.76840E+10	21.00	0	687,088
Subtotal	40,906,578	1.38340E+14	76.83	17,383,388	64,429,769
50	43,585,467	6.52570E+13	25.00	26,944,395	60,226,538
61	101,404,574	1.55990E+14	59.00	76,162,890	126,646,258
62	876,116	4.87920E+10	6.00	335,601	1,416,631
Subtotal	145,866,157	2.21300E+14	84.03	116,113,943	175,618,370
Total	186,772,735	3.59640E+14	159.92	149,223,873	224,321,597

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	0	0.00000E+00	57.00	0	0
20	0	0.00000E+00	30.00	0	0
Subtotal	0	0.00000E+00	86.75	0	0
31	5,475	7.65007E+06	68.00	0	11,006
32	5,510	2.47109E+06	7.00	1,793	9,228
41	1,455	6.31076E+05	43.00	0	3,060
42	1,115	2.08973E+05	30.00	180	2,050
43	299	3.93672E+04	21.00	0	713
Subtotal	13,854	1.10006E+07	66.46	7,220	20,487
50	11,406	3.69903E+06	25.00	7,444	15,368
61	34,348	1.04606E+07	59.00	27,812	40,885
62	828	5.43549E+04	6.00	258	1,399
Subtotal	46,582	1.42140E+07	84.29	39,042	54,122
Total	60,436	2.52147E+07	172.61	50,493	70,378

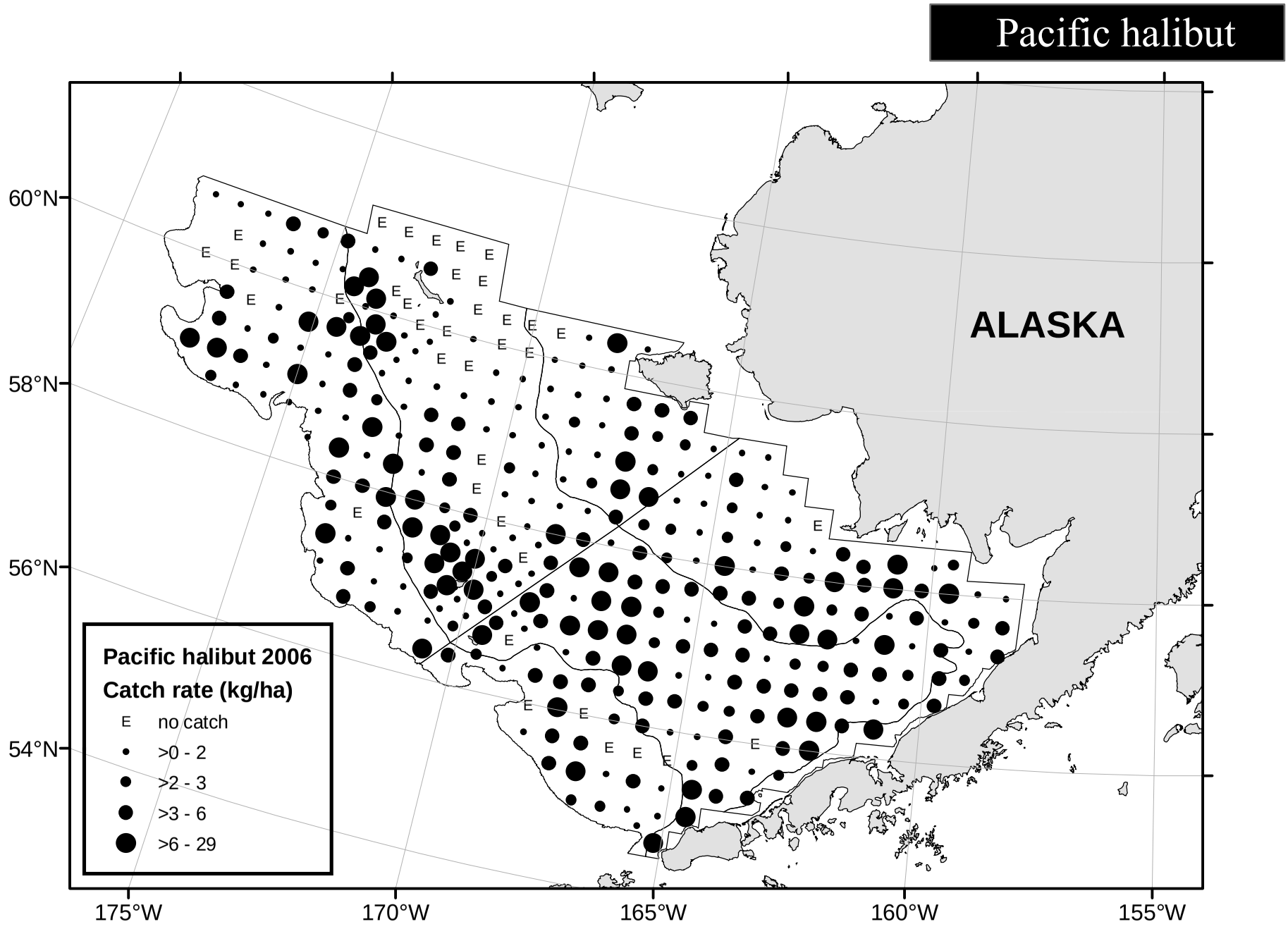


Figure 28.--Distribution and relative abundance in kg/ha of **Pacific halibut** (*Hippoglossus stenolepis*) for the 2006 eastern Bering Sea bottom trawl survey.

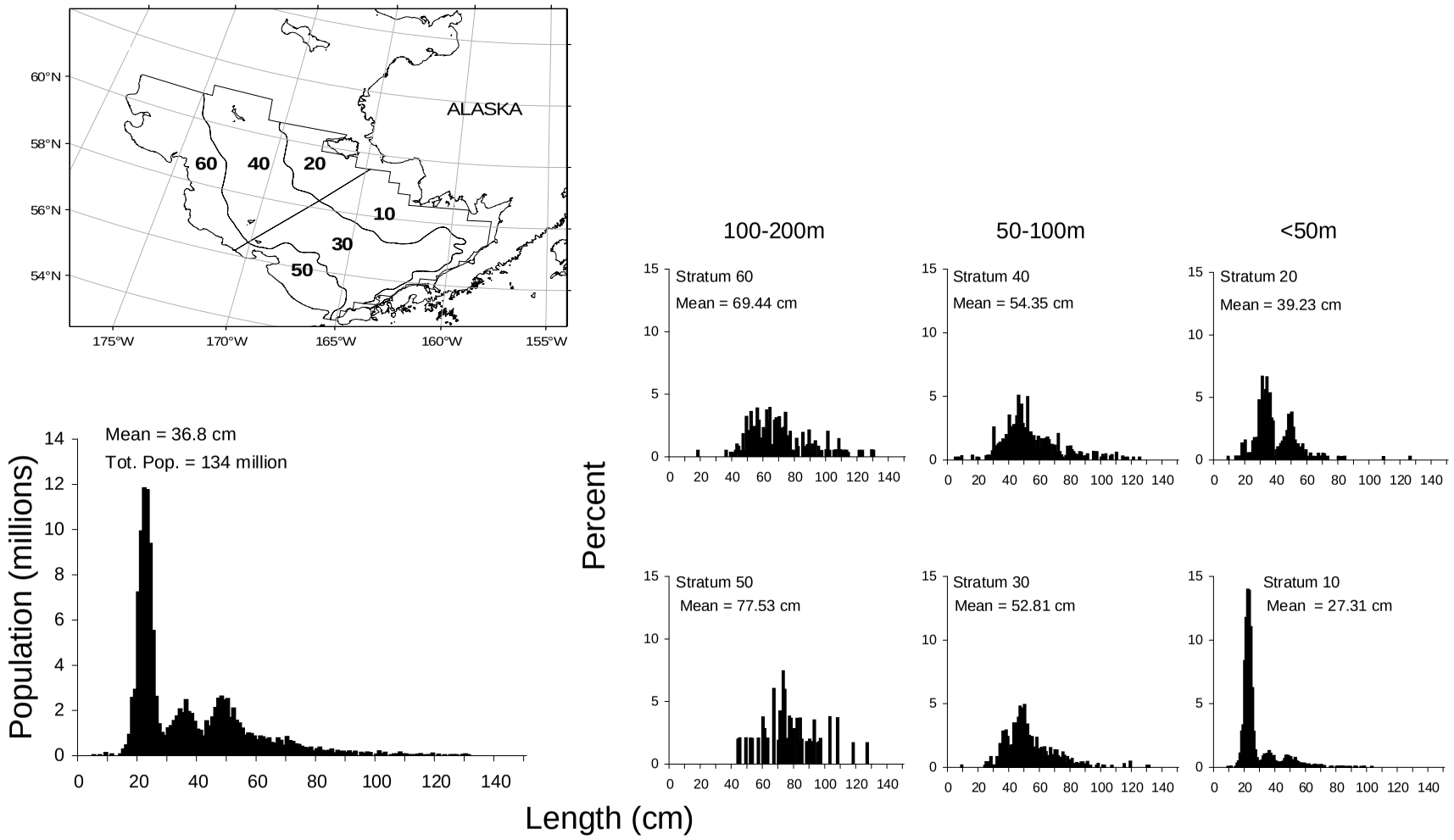


Figure 29.--Estimated relative size distributions (sexes combined) of **Pacific halibut** (*Hippoglossus stenolepis*) in terms of population numbers and percent by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Table 20a.--Abundance estimates and mean size of **Pacific halibut** (*Hippoglossus stenolepis*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	3.97	30,947	0.198	10.82	84,230,772	0.628	0.367	27.3
20	2.79	11,460	0.073	2.72	11,151,560	0.083	1.028	39.2
30	4.61	47,644	0.305	2.08	21,474,646	0.160	2.219	52.8
40	2.60	28,003	0.179	0.91	9,827,401	0.073	2.850	54.4
50	2.62	10,144	0.065	0.40	1,556,405	0.012	6.518	77.5
60	2.99	28,258	0.181	0.62	5,890,881	0.044	4.797	69.4
All Strata	3.38	156,456	1.000	2.89	134,131,666	1.000	1.166	36.8
95% confidence interval		± 18,688		±	71,172,662			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

Table 20b.--CPUE, population, and biomass estimates for **Pacific halibut**.

Stratum	Total hauls	Hauls with catch	Hauls with numbers	Hauls with meas.	Mean CPUE (kg/ha)	Variance CPUE (kg/ha)	Mean CPUE (no./ha)	Variance CPUE (no./ha)
10	58	57	57	57	3.97	0.40	10.82	21.10
20	31	29	29	29	2.79	0.33	2.72	0.26
Subtotal	89	86	86	86	3.57	0.21	8.02	9.08
31	69	67	67	67	4.65	0.26	2.16	0.05
32	8	7	7	7	4.22	1.54	1.25	0.14
41	44	30	30	30	1.67	0.13	0.60	0.02
42	31	29	29	29	4.76	1.19	2.00	0.38
43	22	17	17	17	2.90	0.93	0.61	0.02
Subtotal	174	150	150	150	3.58	0.09	1.48	0.02
50	26	22	22	22	2.62	0.20	0.40	0.00
61	60	55	55	55	2.95	0.20	0.60	0.01
62	7	6	6	6	3.57	1.40	0.89	0.04
Subtotal	93	83	83	83	2.88	0.11	0.56	0.00
Total	356	319	319	319	3.38	0.04	2.89	0.60

Table 20b.--Continued.

Population

Stratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	84,230,772	1.28000E+15	57.00	11,941,302	156,520,243
20	11,151,560	4.36000E+12	30.00	6,888,942	15,414,178
Subtotal	95,382,332	1.28000E+15	57.35	23,722,293	167,042,371
31	20,378,031	4.70000E+12	68.00	16,040,571	24,715,491
32	1,096,615	1.05000E+11	7.00	305,287	1,887,942
41	3,736,375	6.94000E+11	43.00	2,052,195	5,420,555
42	4,797,048	2.22000E+12	30.00	1,751,377	7,842,718
43	1,293,978	8.08000E+10	21.00	702,897	1,885,059
Subtotal	31,302,047	7.80000E+12	119.95	25,771,759	36,832,336
50	1,556,405	4.07000E+10	25.00	1,140,632	1,972,179
61	5,320,399	4.42000E+11	59.00	3,976,283	6,664,516
62	570,482	1.67000E+10	6.00	254,192	886,772
Subtotal	7,447,287	5.00000E+11	73.26	6,033,402	8,861,172
Total	134,131,666	1.29000E+15	57.97	62,959,005	205,304,328

Biomass

Stratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	30,947	2.41207E+07	57.00	21,021	40,873
20	11,460	5.54790E+06	30.00	6,650	16,269
Subtotal	42,406	2.96686E+07	76.86	31,513	53,300
31	43,941	2.31165E+07	68.00	34,325	53,557
32	3,703	1.18644E+06	7.00	1,037	6,368
41	10,451	5.21221E+06	43.00	5,837	15,065
42	11,441	6.84325E+06	30.00	6,091	16,790
43	6,112	4.14447E+06	21.00	1,878	10,346
Subtotal	75,647	4.05028E+07	147.24	63,046	88,248
50	10,144	2.98759E+06	25.00	6,584	13,705
61	25,963	1.53484E+07	59.00	18,045	33,880
62	2,296	5.77345E+05	6.00	436	4,155
Subtotal	38,402	1.89134E+07	81.73	29,705	47,100
Total	156,456	8.90854E+07	279.76	137,768	175,144

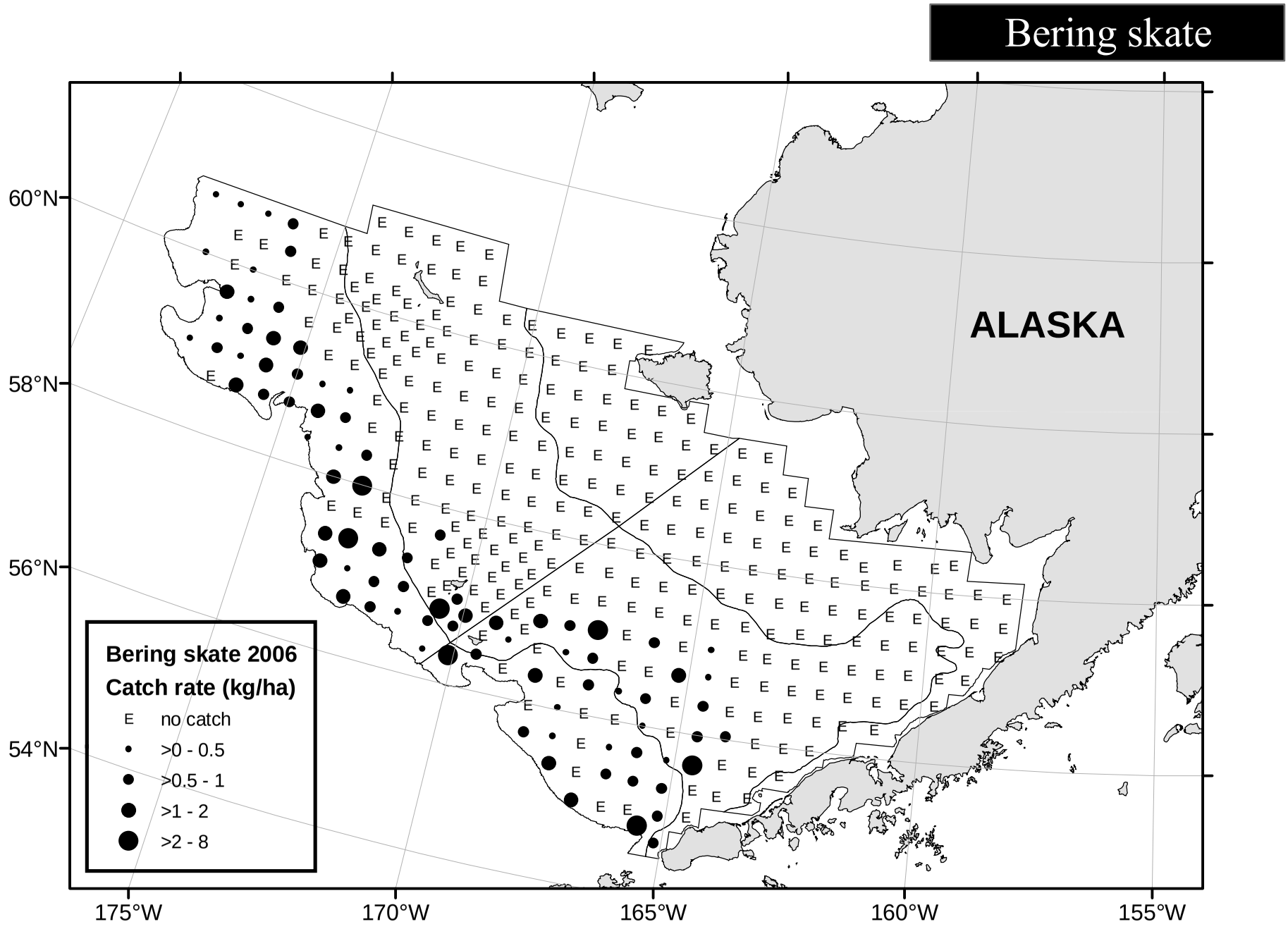


Figure 30.--Distribution and relative abundance in kg/ha of **Bering skate** (*Bathyraja interrupta*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 21.--Abundance estimates and mean size of **Bering skate** (*Bathyraja interrupta*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.00	0	0.000	0.00	0	0.000	0.000	0.0
20	0.00	0	0.000	0.00	0	0.000	0.000	0.0
30	0.20	2,055	0.183	0.10	1,012,951	0.166	2.029	54.0
40	0.06	623	0.056	0.02	258,853	0.042	2.407	71.0
50	0.79	3,059	0.273	0.52	2,002,194	0.328	1.528	62.2
60	0.58	5,467	0.488	0.30	2,830,788	0.464	1.931	66.6
All Strata	0.24	11,204	1.000	0.13	6,104,786	1.000	1.835	64.9
95% confidence interval		± 2,877		±	1,677,648			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

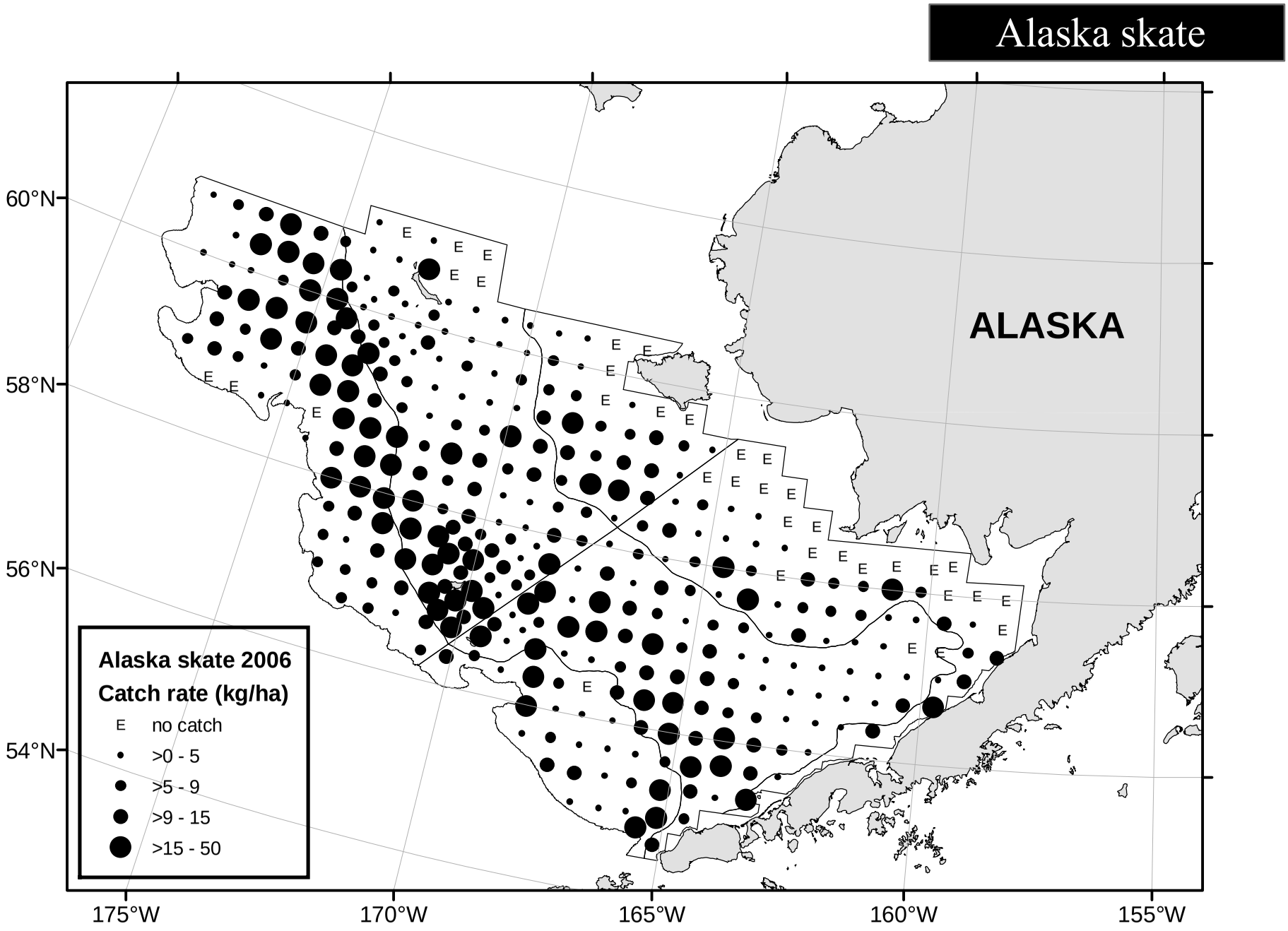


Figure 31.--Distribution and relative abundance in kg/ha of **Alaska skate** (*Bathyraja parmifera*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 22.--Abundance estimates and mean size of **Alaska skate** (*Bathyraja parmifera*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	5.01	39,006	0.092	1.37	10,693,761	0.088	3.648	73.5
20	5.99	24,561	0.058	2.06	8,450,868	0.070	2.906	70.0
30	9.65	99,721	0.235	3.18	32,875,158	0.271	3.033	67.4
40	9.06	97,717	0.230	3.34	36,015,634	0.297	2.713	61.7
50	8.62	33,447	0.079	1.43	5,550,627	0.046	6.026	84.3
60	13.75	130,058	0.306	2.92	27,583,810	0.228	4.715	79.2
All Strata	9.16	424,511	1.000	2.61	121,169,858	1.000	3.503	69.5
95% confidence interval		± 44,862		±	11,857,656			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

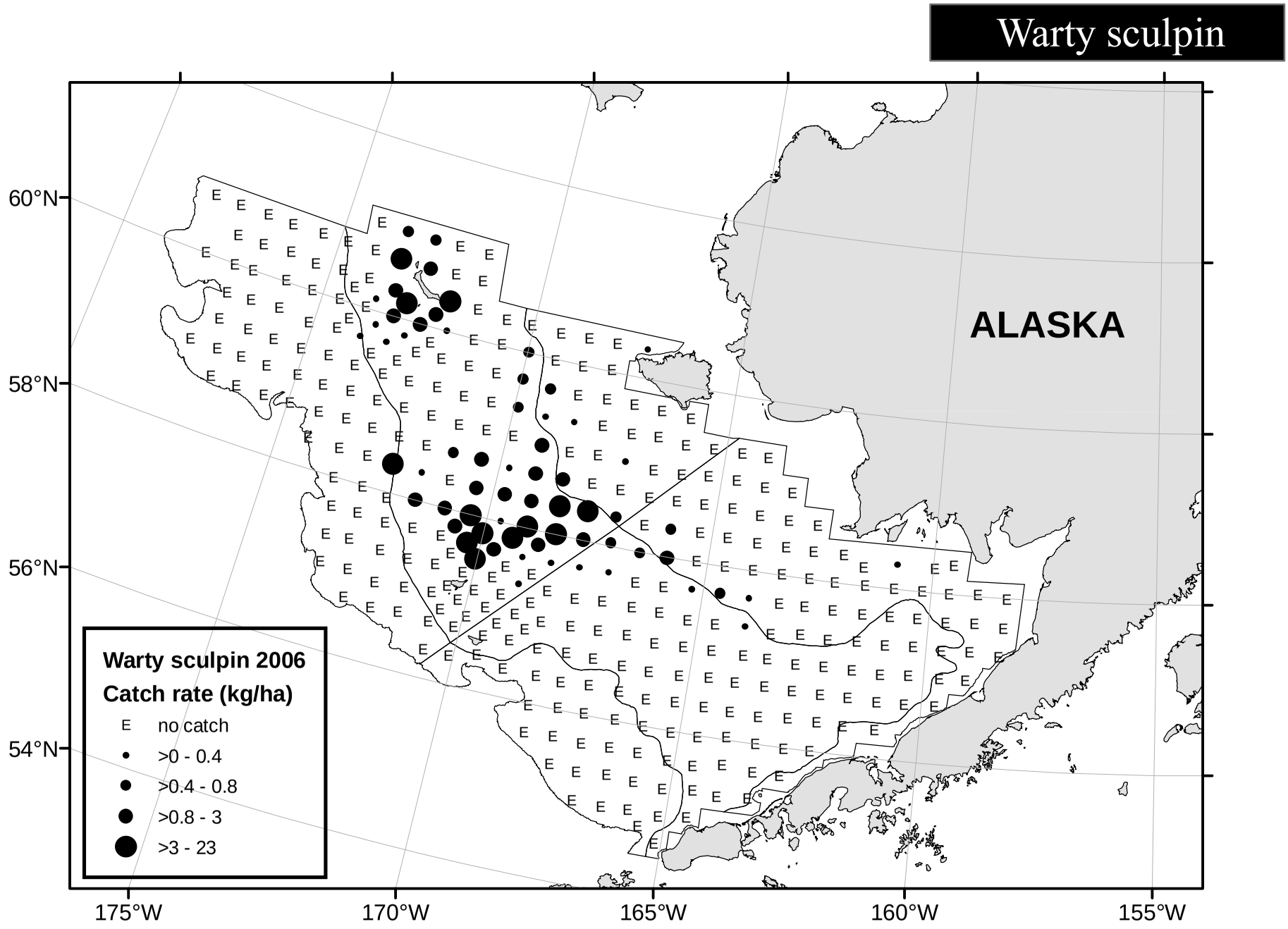


Figure 32.--Distribution and relative abundance in kg/ha of **warty sculpin** (*Myoxocephalus verrucosus*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 23.--Abundance estimates and mean size of **warty sculpin** (*Myoxocephalus verrucosus*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.05	360	0.022	0.06	431,972	0.032	0.834	41.0
20	0.13	533	0.033	0.11	458,163	0.034	1.162	37.7
30	0.03	308	0.019	0.03	277,657	0.021	1.109	42.4
40	1.28	13,776	0.856	1.07	11,543,723	0.864	1.193	42.4
50	0.00	0	0.000	0.00	0	0.000	0.000	0.0
60	0.12	1,122	0.070	0.07	652,313	0.049	1.720	53.3
All Strata	0.35	16,099	1.000	0.29	13,363,828	1.000	1.205	42.4
95% confidence interval		± 7,911			± 7,130,167			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

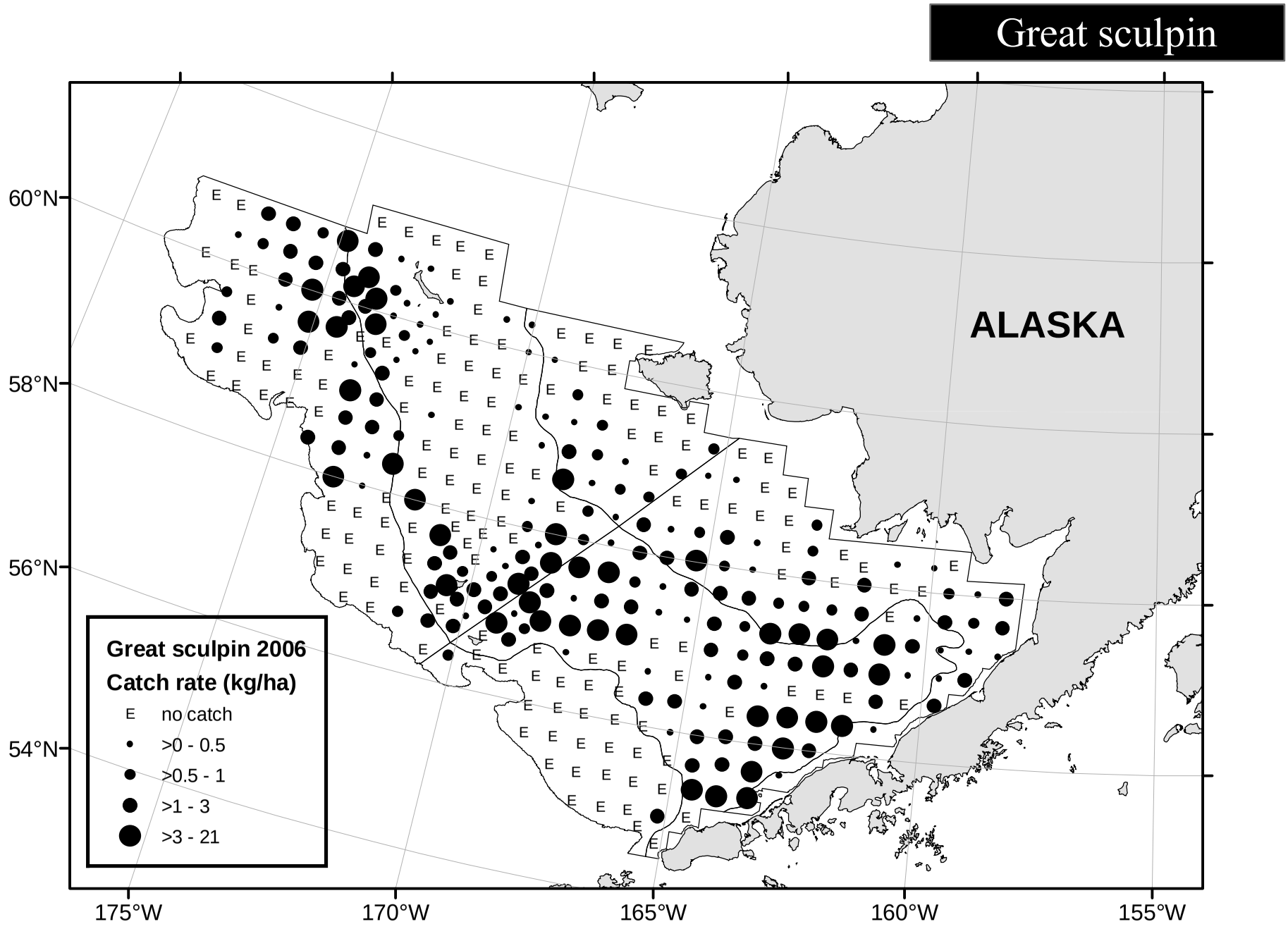


Figure 33.--Distribution and relative abundance in kg/ha of **great sculpin** (*Myoxocephalus polyacanthocephalus*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 24.--Abundance estimates and mean size of **great sculpin** (*Myoxocephalus polyacanthocephalus*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	1.03	8,029	0.147	0.64	4,999,539	0.212	1.606	39.0
20	0.37	1,516	0.028	0.31	1,281,093	0.054	1.183	39.0
30	2.04	21,066	0.387	0.74	7,675,560	0.325	2.745	51.4
40	0.94	10,164	0.187	0.42	4,539,885	0.192	2.239	46.8
50	0.13	495	0.009	0.03	126,576	0.005	3.909	46.1
60	1.39	13,185	0.242	0.53	5,006,262	0.212	2.634	54.5
All Strata	1.18	54,456	1.000	0.51	23,628,913	1.000	2.305	48.2
95% confidence interval		± 11,071			± 4,130,791			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

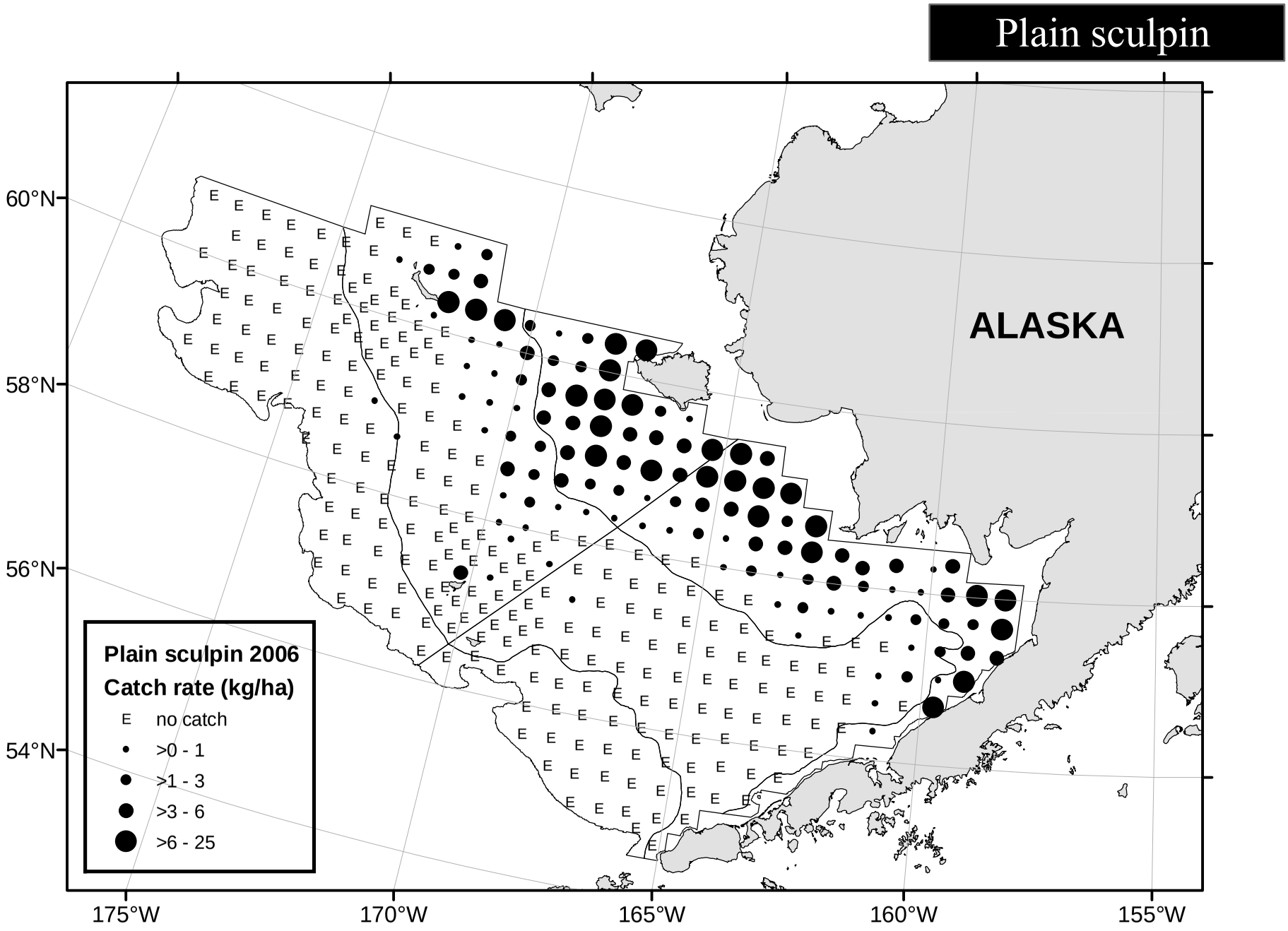


Figure 34.--Distribution and relative abundance in kg/ha of **plain sculpin** (*Myoxocephalus jaok*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 25.--Abundance estimates and mean size of **plain sculpin** (*Myoxocephalus jaok*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	4.21	32,791	0.491	8.70	67,755,943	0.560	0.484	34.3
20	5.61	23,033	0.345	10.11	41,488,980	0.343	0.555	33.1
30	0.07	738	0.011	0.05	513,764	0.004	1.436	40.7
40	0.94	10,135	0.152	1.03	11,141,575	0.092	0.910	45.2
50	0.00	0	0.000	0.00	0	0.000	0.000	0.0
60	0.01	122	0.002	0.01	58,739	0.000	2.070	0.0
All Strata	1.44	66,819	1.000	2.61	120,959,000	1.000	0.552	34.4
95% confidence interval		± 13,881		±	28,787,046			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

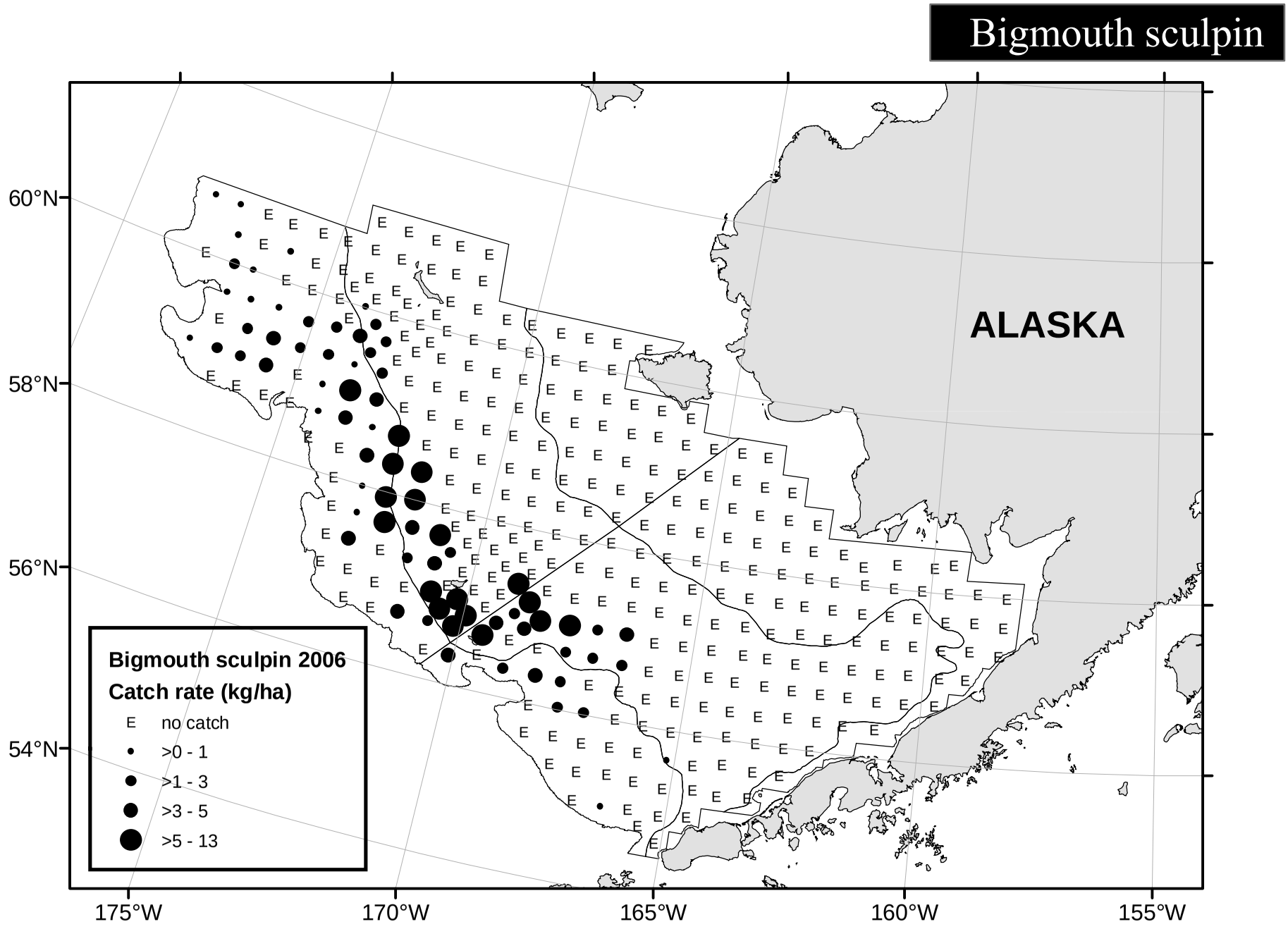


Figure 35.--Distribution and relative abundance in kg/ha of **bigmouth sculpin** (*Hemitripterus bolini*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 26.--Abundance estimates and mean size of **bigmouth sculpin** (*Hemitripterus bolini*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.00	0	0.000	0.00	0	0.000	0.000	0.0
20	0.00	0	0.000	0.00	0	0.000	0.000	0.0
30	0.65	6,749	0.224	0.10	1,056,749	0.166	6.387	62.082
40	0.78	8,360	0.278	0.13	1,423,996	0.224	5.871	58.759
50	0.60	2,346	0.078	0.18	710,368	0.112	3.303	62.068
60	1.34	12,660	0.420	0.33	3,156,152	0.497	4.011	53.932
All Strata	0.65	30,116	1.000	0.14	6,347,264	1.000	4.745	56.567
95% confidence interval		± 7,841			± 1,732,311			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

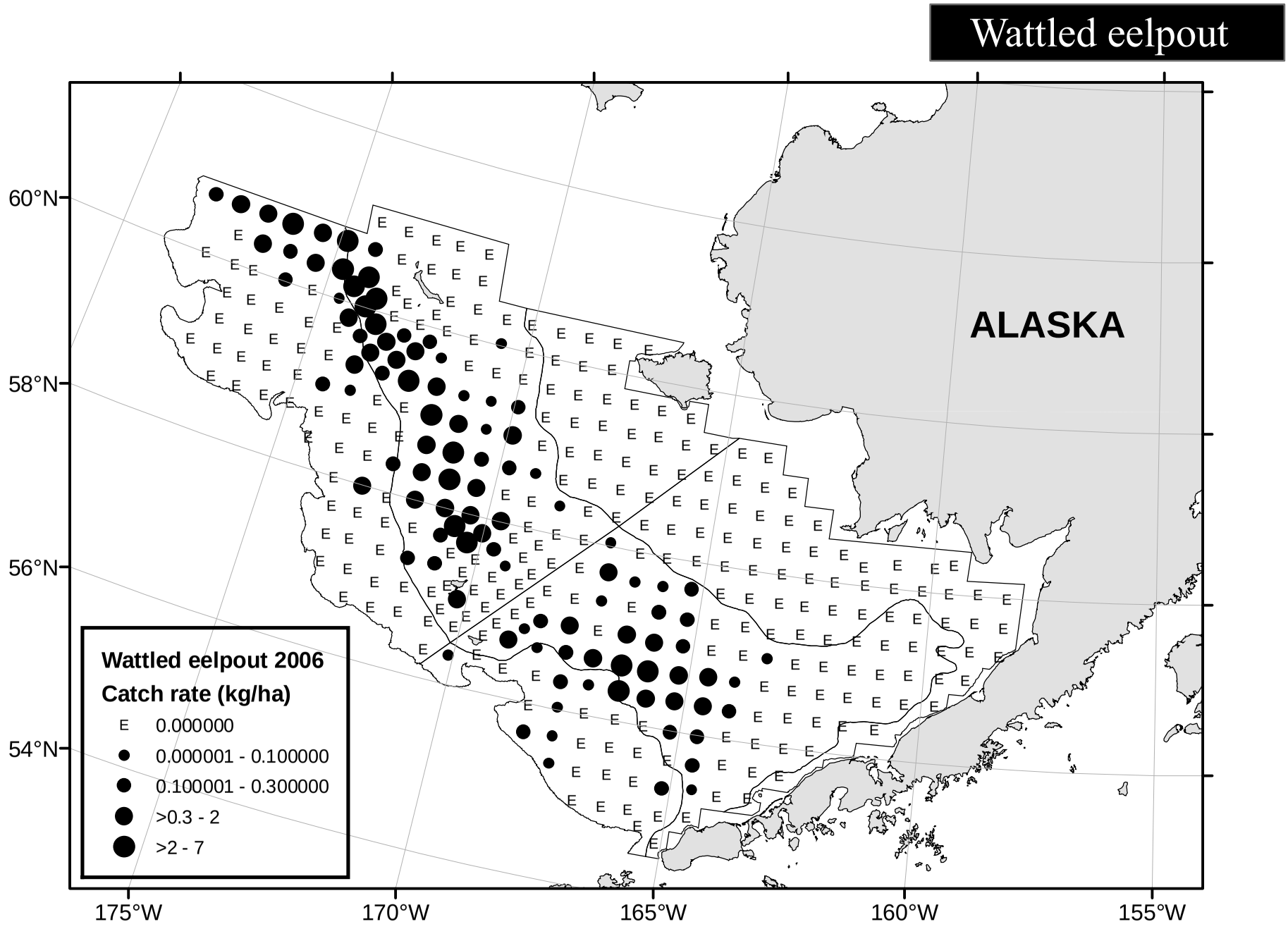


Figure 36.--Distribution and relative abundance in kg/ha of **wattled eelpout** (*Lycodes palearis*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 27.--Abundance estimates and mean size of **wattled eelpout** (*Lycodes palearis*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.00	0	0.000	0.00	0	0.000	0.000	0.0
20	0.00	0	0.000	0.00	0	0.000	0.000	41.0
30	0.29	2,951	0.261	1.68	17,351,065	0.306	0.170	39.2
40	0.62	6,731	0.594	2.89	31,157,523	0.549	0.216	36.2
50	0.03	116	0.010	0.21	808,522	0.014	0.143	46.6
60	0.16	1,526	0.135	0.78	7,408,412	0.131	0.206	37.6
All Strata	0.24	11,324	1.000	1.22	56,725,523	1.000	0.200	37.0
95% confidence interval		± 3,358			± 16,025,707			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

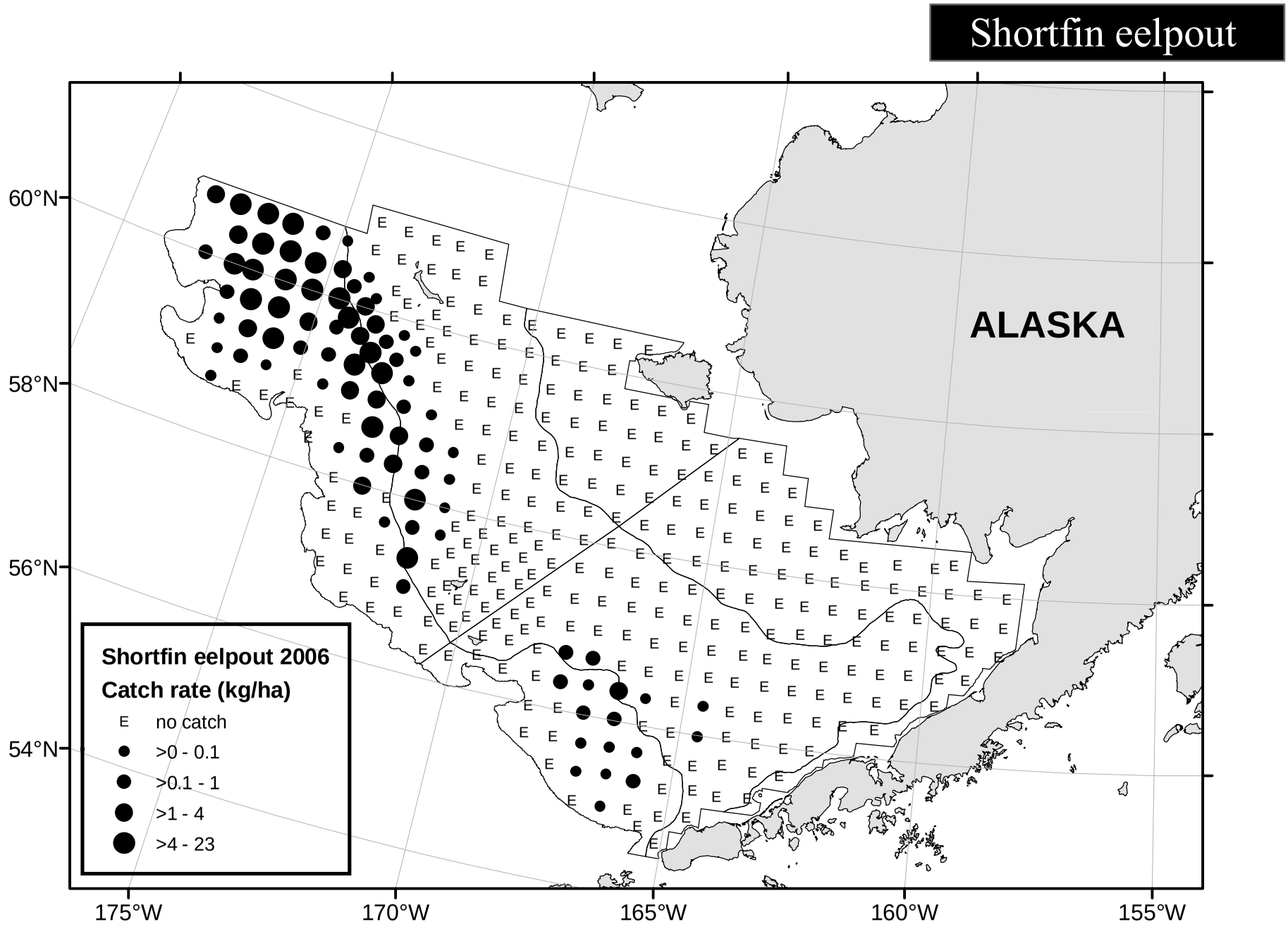


Figure 37.--Distribution and relative abundance in kg/ha of **shortfin eelpout** (*Lycodes brevipes*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 28.--Abundance estimates and mean size of **shortfin eelpout** (*Lycodes brevipes*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.00	0	0.000	0.00	0	0.000	0.000	0.0
20	0.00	0	0.000	0.00	0	0.000	0.000	0.0
30	0.04	406	0.013	0.79	8,156,463	0.018	0.050	21.5
40	0.56	6,010	0.191	9.66	104,188,285	0.235	0.058	23.0
50	0.05	176	0.006	0.99	3,855,120	0.009	0.046	23.0
60	2.64	24,950	0.791	34.59	327,100,976	0.738	0.076	25.8
All Strata	0.68	31,542	1.000	9.57	443,300,844	1.000	0.071	25.2
95% confidence interval		± 11,045			± 151,926,095			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

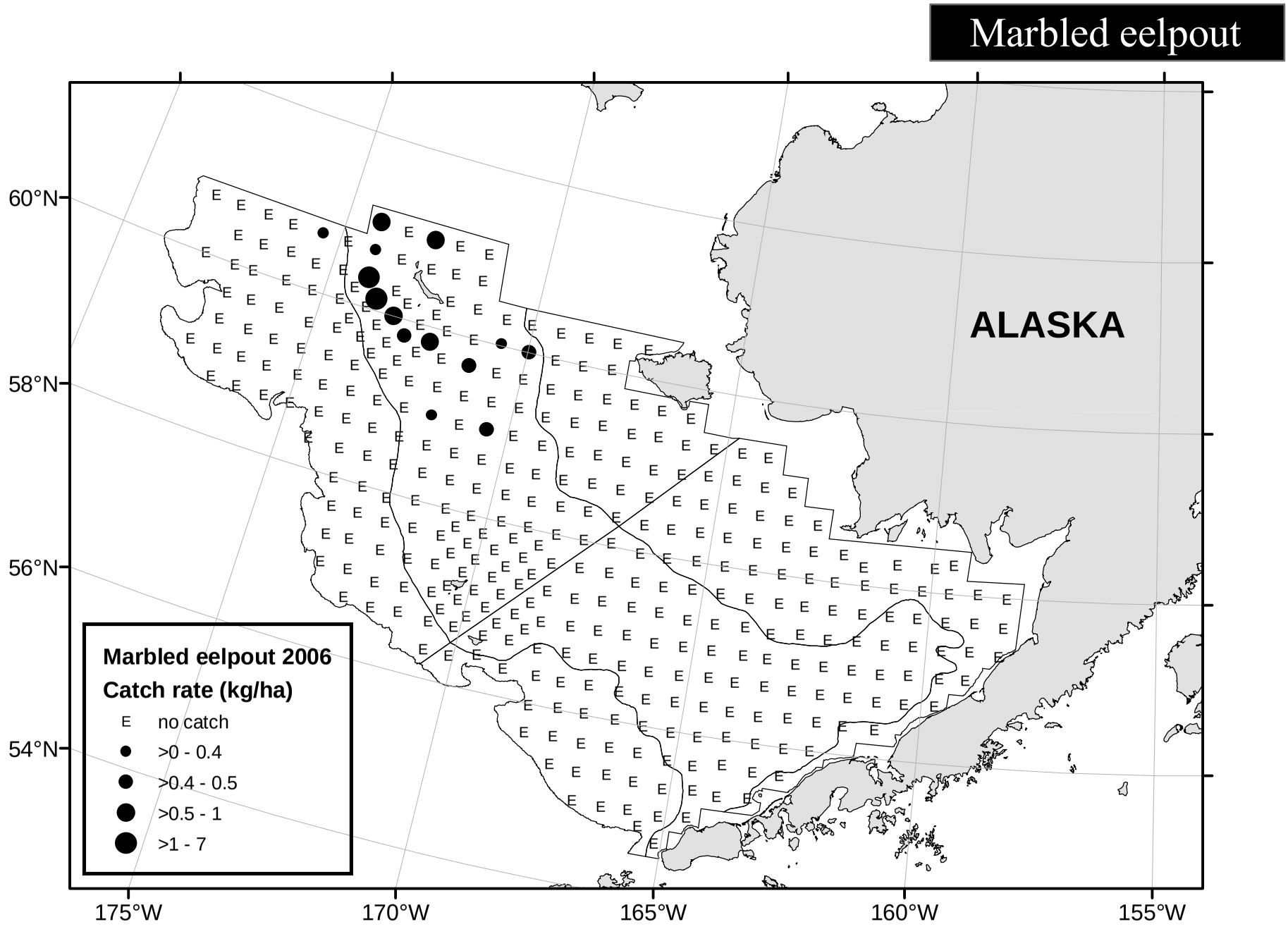


Figure 38.--Distribution and relative abundance in kg/ha of **marbled eelpout** (*Lycodes raridens*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 29.--Abundance estimates and mean size of **marbled eelpout** (*Lycodes raridens*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)		Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.00		0	0.000	0.00	0	0.000	0.000	0.0
20	0.00		0	0.000	0.00	0	0.000	0.000	0.0
30	0.00		0	0.000	0.00	0	0.000	0.000	0.0
40	0.16		1,694	0.982	0.12	1,267,424	0.978	1.337	59.0
50	0.00		0	0.000	0.00	0	0.000	0.000	0.0
60	0.00		31	0.018	0.00	28,770	0.022	1.092	0.0
All Strata	0.04		1,726	1.000	0.03	1,296,194	1.000	1.331	59.0
95% confidence interval		±	1,492		±	1,112,781			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

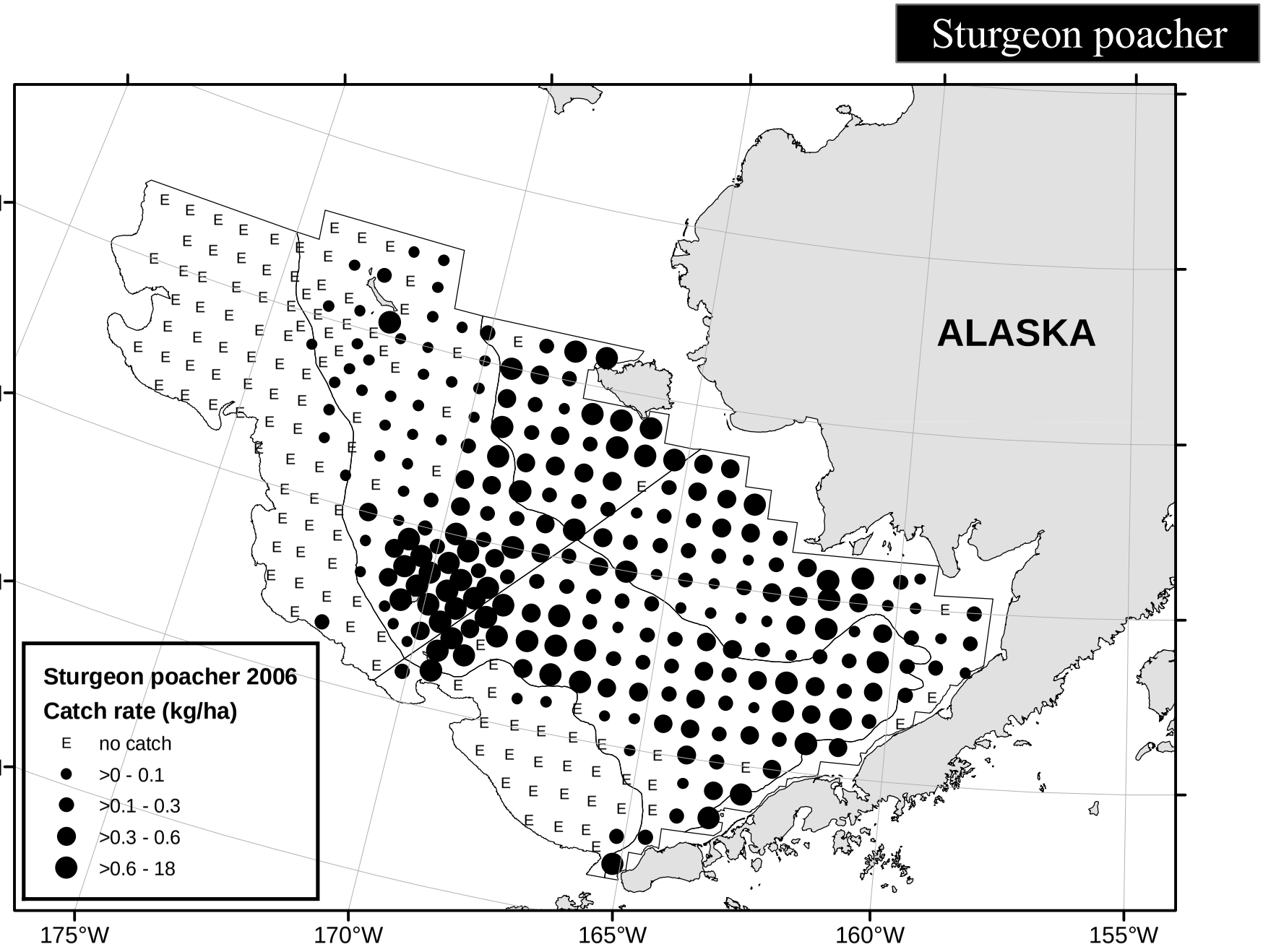


Figure 39.--Distribution and relative abundance in kg/ha of **sturgeon poacher** (*Podothecus acipserinus*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 30.--Abundance estimates and mean size of **sturgeon poacher** (*Podothecus acipenserinus*) stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.35	2,705	0.136	4.58	35,680,653	0.122	0.076	-
20	0.85	3,490	0.176	14.31	58,716,926	0.201	0.059	-
30	0.73	7,545	0.380	10.80	111,520,859	0.382	0.068	-
40	0.54	5,820	0.293	7.64	82,388,788	0.282	0.071	-
50	0.07	257	0.013	0.69	2,674,584	0.009	0.096	-
60	0.00	41	0.002	0.07	660,802	0.002	0.062	-
All Strata	0.43	19,857	1.000	6.29	291,642,611	1.000	0.068	-
95% confidence interval		± 5,235			± 65,706,452			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

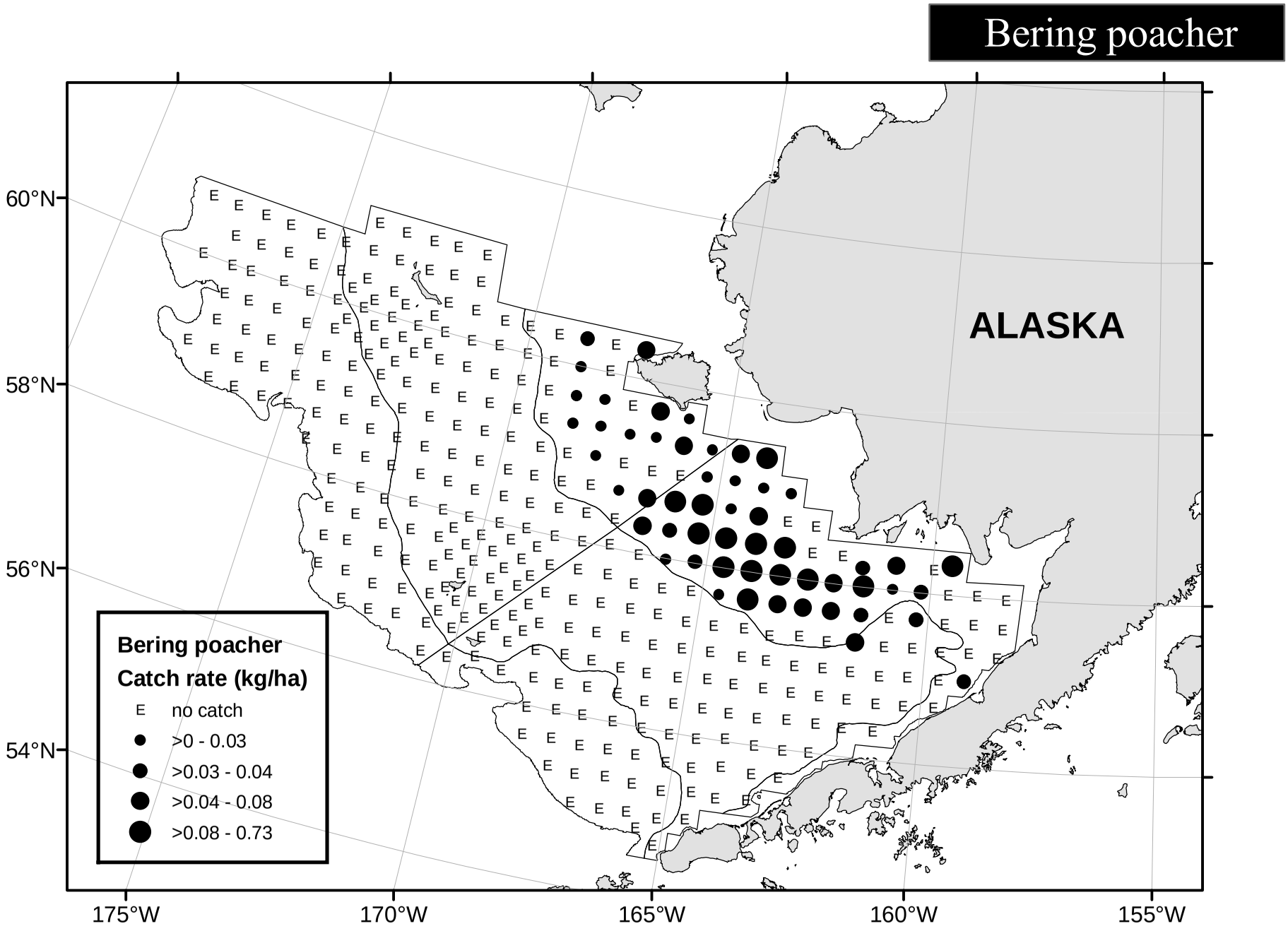


Figure 40.--Distribution and relative abundance in kg/ha of **Bering poacher** (*Ocella dodecaedron*) for the 2006 eastern Bering Sea bottom trawl survey.

Table 31.--Abundance estimates and mean size of **Bering poacher** (*Ocella dodecaerdron*) by stratum for the 2006 eastern Bering Sea bottom trawl survey.

Stratum	Mean CPUE (kg/ha)	Estimated biomass (t)[a]	Proportion of estimated biomass	Mean CPUE (no./ha)	Estimated population numbers[b]	Proportion of estimated population	Mean weight (kg)	Mean length (cm)
10	0.06	440	0.845	2.24	17,416,912	0.873	0.025	-
20	0.01	58	0.111	0.50	2,062,210	0.103	0.028	-
30	0.00	23	0.045	0.05	473,588	0.024	0.049	-
40	0.00	0	0.000	0.00	0	0.000	0.000	-
50	0.00	0	0.000	0.00	0	0.000	0.000	-
60	0.00	0	0.000	0.00	0	0.000	0.000	-
All Strata	0.01	521	1.000	0.43	19,952,710	1.000	0.026	-
95% confidence interval		± 215		±	9,416,518			

[a]Variances and abundance estimates are given in Appendix D.
[b]Differences in sums of estimates and totals are due to rounding.

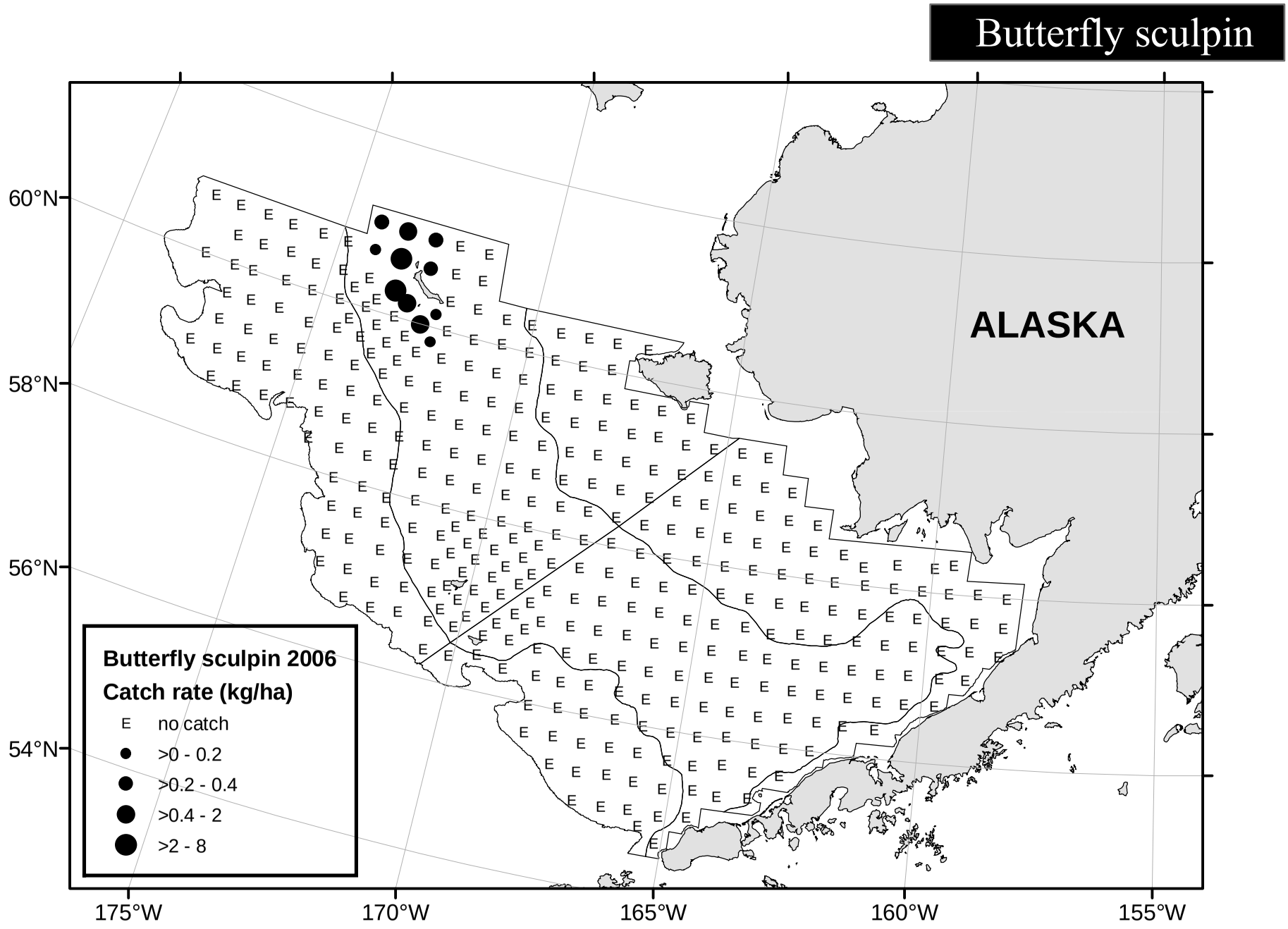


Figure 41.--Distribution and relative abundance in kg/ha of **butterfly sculpin** (*Hemilepidotus papilio*) for the 2006 eastern Bering Sea bottom trawl survey.

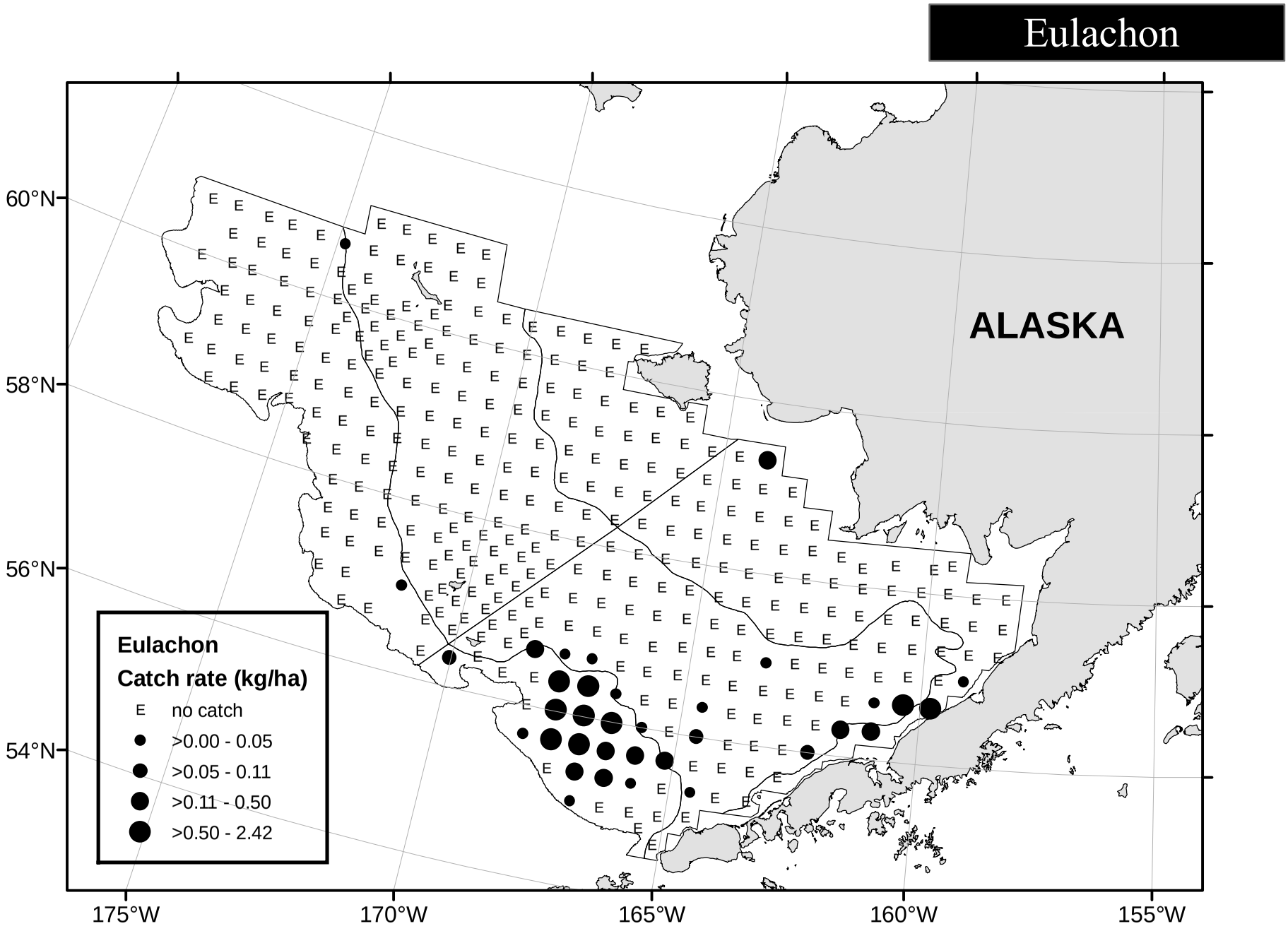


Figure 42.--Distribution and relative abundance in kg/ha of **eulachon** (*Thaleichthys pacificus*) for the 2006 eastern Bering Sea bottom trawl survey.

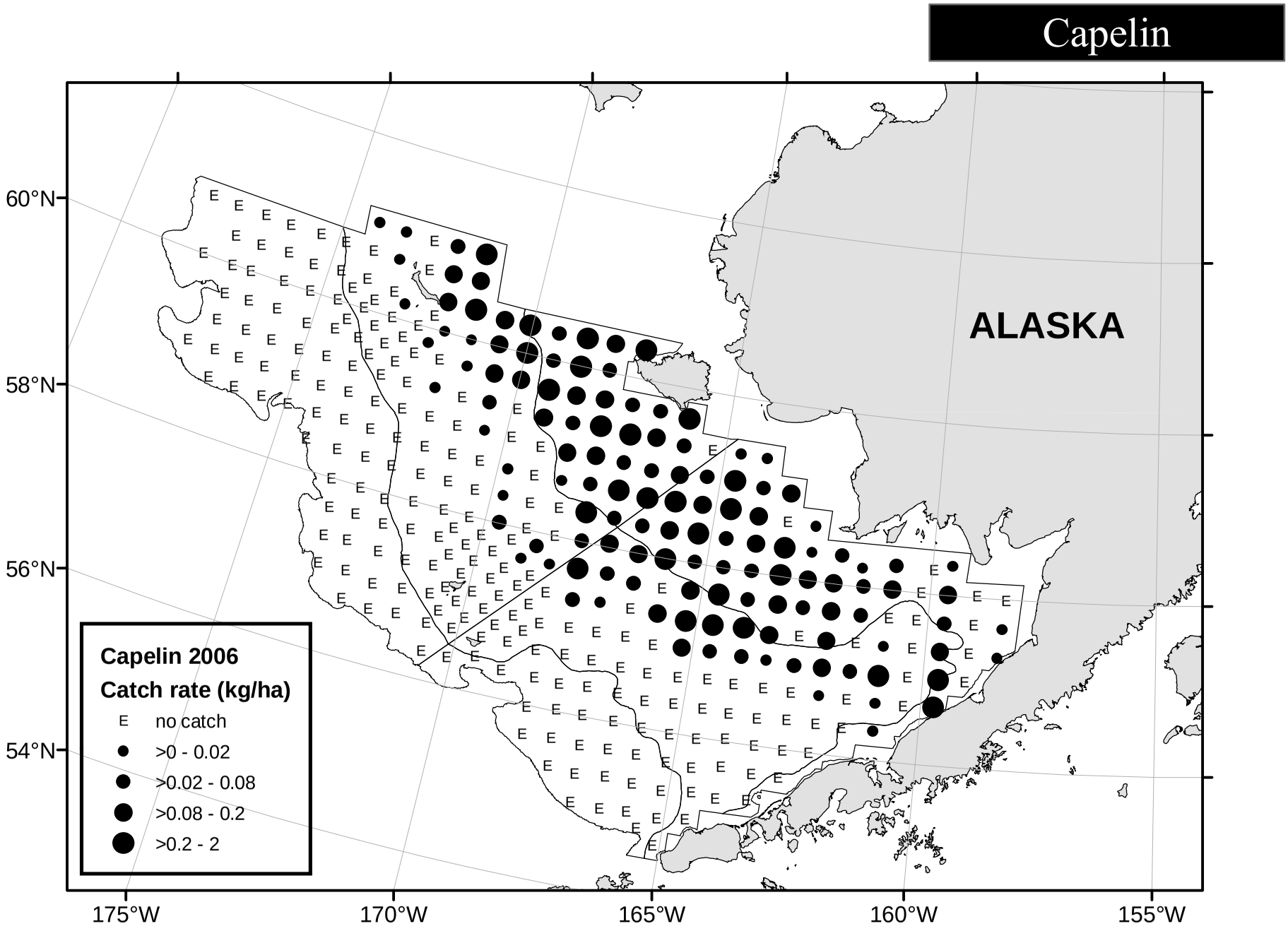


Figure 43.--Distribution and relative abundance in kg/ha of **capelin** (*Mallotus villosus*) for the 2006 eastern Bering Sea bottom trawl survey.

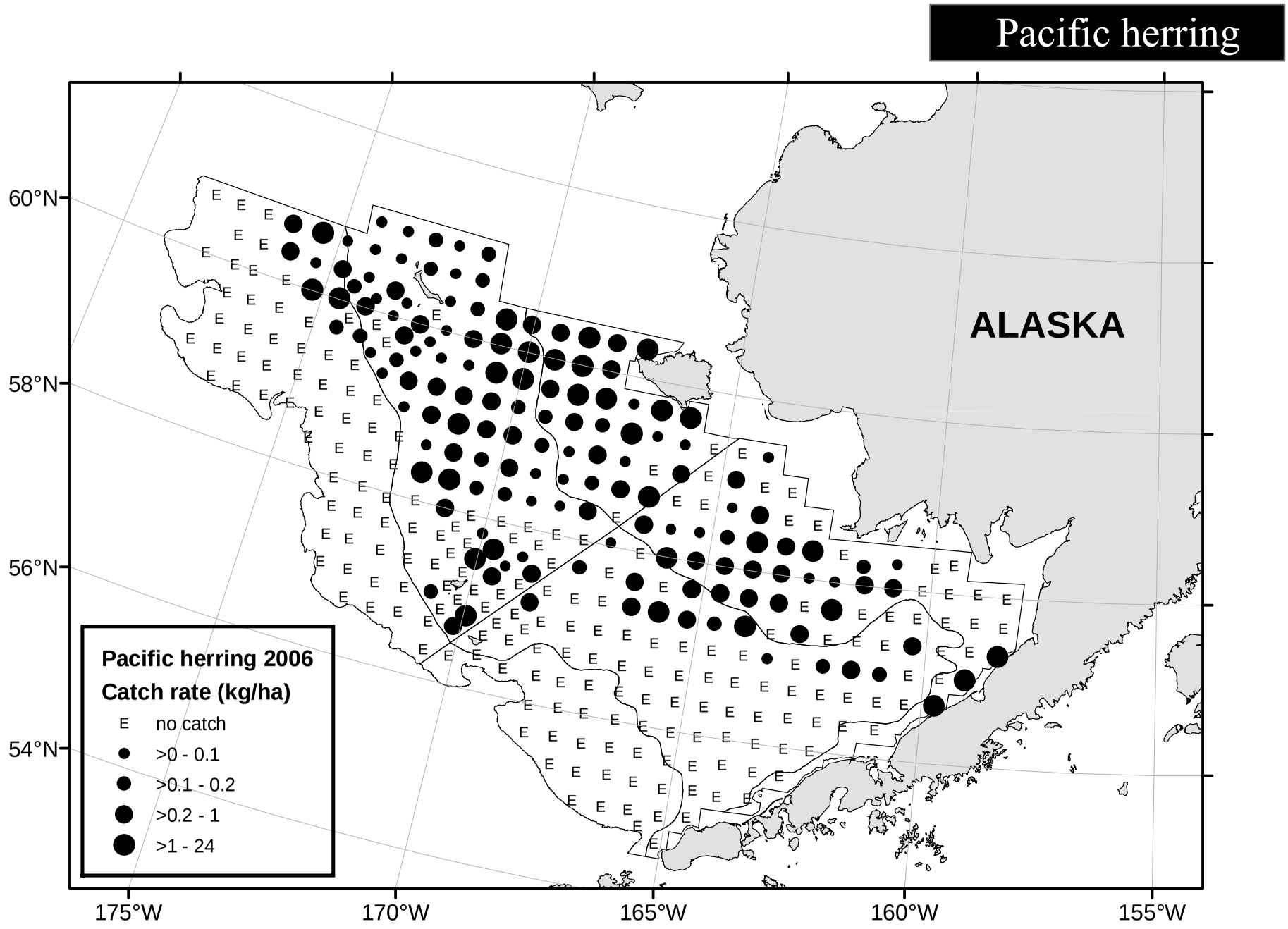


Figure 44.--Distribution and relative abundance in kg/ha of **Pacific herring** (*Clupea pallasi*) for the 2006 eastern Bering Sea bottom trawl survey.

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Appendix A: List of Species Encountered

Appendix A lists all fish and invertebrate species taken during the AFSC's 2006 eastern Bering Sea bottom trawl survey.

List of Tables

Appendix A Table 1.--Fish species encountered during the 2006 eastern Bering Sea bottom trawl survey.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Agonidae	*Aspidophoroides bartoni*	Aleutian alligatorfish	53	47	157	85	56.3225	62.3065
	Aspidophoroides olriki	Arctic alligatorfish	5	47	64	54	62.0031	62.6532
	Bathyagonus alascanus	gray starsnout	4	87	173	127	56.0048	58.6765
	Leptagonus frenatus	sawback poacher	66	67	207	108	54.8385	62.3402
	Leptagonus leptorhynchus	longnose poacher	3	69	78	73	56.9804	57.3473
	Occella dodecaedron	Bering poacher	55	21	96	40	56.8386	60.3384
	Odontopyxis trispinosa	pygmy poacher	1	111	111	111	54.9856	54.9856
	Pallasina barbata	tubenose poacher	5	25	46	32	58.3344	60.3384
	Percis japonicus	dragon poacher	1	148	148	148	60.3271	60.3271
	Podothecus acipenserinus	sturgeon poacher	252	21	128	63	54.6643	62.6532
Ammodytidae	*Ammodytes hexapterus*	Pacific sand lance	12	25	49	38	56.6780	59.6420
Anarhichadidae	*Anarrhichthys ocellatus*	wolf-eel	2	63	88	76	56.3418	58.0390
	Anarhichas orientalis	Bering wolffish	8	31	111	69	54.6643	60.3384
Anopiopomatidae	*Anoplopoma fimbria*	sablefish	2	94	96	95	55.6410	55.7058
Bathymasteridae	*Bathymaster signatus*	searcher	71	69	174	122	54.8385	60.6781
Clupeidae	*Clupea pallasi*	Pacific herring	186	22	135	64	56.6780	62.9865
Cottidae	*Artediellus pacificus*	hookhorn sculpin	3	71	74	72	56.6742	57.4872
	Blepsias bilobus	crested sculpin	5	25	58	41	56.6780	61.3173
	Dasycottus setiger	spinyhead sculpin	77	74	155	111	54.8385	60.6698
	Enophrys lucasi	leister sculpin	1	78	78	78	59.6775	59.6775
	Gymnocanthus detrisus	purplegray sculpin	1	121	121	121	60.3501	60.3501
	Gymnocanthus galeatus	armorhead sculpin	7	51	127	78	56.6540	61.9858
	Gymnocanthus pistilliger	threaded sculpin	54	21	62	38	56.6780	62.6532
	Gymnocanthus tricuspis	Arctic staghorn sculpin	2	44	45	45	60.3127	61.6564
	Hemilepidotus jordani	yellow Irish lord	80	31	136	89	54.6643	61.9858
	Hemilepidotus papilio	butterfly sculpin	32	45	95	70	59.8262	63.0001
	Hemitripterus bolini	bigmouth sculpin	76	69	174	111	54.9840	61.3449

Appendix A Table 1.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Cottidae (cont.)	*Icelus spatula*	spatulate sculpin	42	47	150	78	56.3356	62.3288
	Icelus spiniger	thorny sculpin	72	64	173	123	54.9840	61.6750
	Leptocottus armatus	Pacific staghorn sculpin	2	42	49	46	57.3473	58.2869
	Myoxocephalus sp.		2	31	36	34	59.6772	60.3384
	M. jaok	plain sculpin	145	21	107	49	56.3397	62.6532
	M. polyacanthocephalus	great sculpin	226	22	174	76	54.9856	62.6662
	M. verrucosus	warty sculpin	78	31	105	65	57.3412	62.6532
	Malacocottus zonurus	darkfin sculpin	3	136	173	150	58.3492	60.0094
	Psychrolutes paradoxus	tadpole sculpin	2	51	59	55	57.1296	60.1873
	Triglops forficata	scissortail sculpin	1	79	79	79	56.6590	56.6590
	Triglops macellus	roughspine sculpin	8	81	150	123	54.6643	57.0076
	Triglops metopias	crescent-tail sculpin	1	72	72	72	56.6742	56.6742
	Triglops pingeli	ribbed sculpin	52	22	104	54	55.9924	60.6624
	Triglops scepticus	spectacled sculpin	10	119	207	151	54.8385	59.3334
Cyclopteridae	*Careproctus rastrinus*	salmon snailfish	41	73	161	115	54.9840	62.6662
	Careproctus sp.		8	80	108	94	59.8137	61.0099
	Crystallichthys cyclospilus	blotched snailfish	2	149	150	150	54.8385	56.3356
	Liparis gibbus	variegated snailfish	54	36	85	61	57.3347	62.9865
	Liparis sp.		4	42	59	48	58.0123	60.1873
Gadidae	*Boreogadus saida*	Arctic cod	93	24	107	62	57.3218	63.0001
	Eleginus gracilis	saffron cod	21	22	59	37	58.0160	60.3448
	Gadus macrocephalus	Pacific cod	392	21	207	78	54.6643	62.0031
	Theragra chalcogramma	walleye pollock	418	21	174	78	54.6643	62.9865
Hexagrammidae	*Hexagrammos decagrammus*	kelp greenling	1	104	104	104	56.4264	56.4264
	Hexagrammos stelleri	whitespotted greenling	29	21	60	34	56.6780	60.9922
	Pleurogrammus monopterygius	Atka mackerel	6	46	149	98	54.6643	58.0054
Osmeridae	*Mallotus villosus*	capelin	170	21	97	54	56.3397	63.0001
	Osmerus mordax	rainbow smelt	1	31	31	31	60.3384	60.3384
	Thaleichthys pacificus	eulachon	37	36	146	98	55.3313	58.0200

Appendix A Table 1.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Pleuronectidae	*Atheresthes evermanni*	Kamchatka flounder	142	61	207	115	54.6643	61.3409
	Atheresthes stomias	arrowtooth flounder	211	46	207	99	54.6643	61.0066
	Microstomus pacificus	Dover sole	7	71	150	100	54.9856	56.6772
	Hippoglossoides elassodon	flathead sole	297	27	207	90	54.6643	61.6750
	Hippoglossus stenolepis	Pacific halibut	354	21	207	79	54.6643	61.9858
	Isopsetta isolepis	butter sole	6	48	149	80	54.6643	57.6776
	Lepidopsetta bilineata	southern rock sole	2	65	79	72	55.0304	55.3263
	Lepidopsetta polyxystra	northern rock sole	357	21	174	74	54.6643	62.9865
	Glyptocephalus zachirus	rex sole	84	49	207	114	54.6643	59.6403
	Limanda aspera	yellowfin sole	305	21	149	61	54.6643	62.9865
	Limanda proboscidea	longhead dab	66	21	64	38	56.6780	62.3288
	Hippoglossoides robustus	Bering flounder	116	28	146	75	58.3252	63.0001
	Limanda sakhalinensis	Sakhalin sole	34	25	78	60	58.3110	63.0001
	Platichthys stellatus	starry flounder	62	21	81	42	54.6643	60.3384
	Pleuronectes quadrituberculatus	Alaska plaice	315	21	133	64	55.3263	63.0001
	Reinhardtius hippoglossoides	Greenland turbot	56	74	174	116	57.9951	62.0031
	P. stellatus / P. quadrituberculatus	hybrid starry flounder/ Alaska plaice	1	65	65	65	60.0193	60.0193
Rajidae	*Bathyraja aleutica*	Aleutian skate	9	127	207	153	54.9935	59.6530
	Bathyraja interrupta	Bering skate	89	69	207	118	54.6643	61.3449
	Bathyraja interrupta		10	34	207	123	54.9935	59.3402
	Bathyraja maculata	whiteblotched skate	1	174	174	174	59.6530	59.6530
	Bathyraja parmifera	Alaska skate	382	22	207	82	54.6643	63.0001
	Bathyraja parmifera	Alaska skate egg case	19	45	144	99	54.9840	61.9868
	Bathyraja taranetzi	mud skate	1	173	173	173	58.3492	58.3492
	Raja binoculata	big skate	3	81	93	85	54.6643	55.9849
	Skate egg case unident.	skate egg case unident.	13	65	157	115	54.8385	58.6765
Salmonidae	*Onchoryncus keta*	chum salmon	8	25	136	93	56.0230	59.3264

Appendix A Table 1.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Scorpaenidae	*Sebastes aleutianus*	rougheye rockfish	2	133	139	136	55.3313	56.0232
	Sebastes melanostictus	black-spotted rockfish	1	136	136	136	56.6864	56.6864
	Sebastes alutus	Pacific ocean perch	8	107	173	127	54.9856	58.3492
	Sebastes variabilis	dusky rockfish	2	107	118	113	55.6825	56.0001
	Sebastes polyspinis	northern rockfish	3	118	136	125	55.6825	56.6864
Squalidae	*Somniosus pacificus*	Pacific sleeper shark	2	74	100	87	57.5075	59.3216
Stichaeidae	*Acantholumpenus mackayi*	pighead prickleback	1	31	31	31	60.3384	60.3384
	Eumesogrammus praecisus	fourline snakeblenny	1	50	50	50	62.6532	62.6532
	Lumpenus fabricii	slender eelblenny	3	25	34	30	58.9728	59.6420
	Lumpenus maculatus	daubed shanny	40	68	150	104	55.6610	61.6719
	Lumpenus medius	stout eelblenny	2	59	64	62	62.3238	62.6517
	Lumpenus sagitta	snake prickleback	6	31	96	54	55.3610	60.3384
	Poroclinus rothrocki	whitebarred prickleback	2	116	119	118	56.6834	58.3410
Trichodontidae	*Trichodon trichodon*	Pacific sandfish	13	32	82	47	55.6711	58.3351
Zaproridae	*Zaprora silenus*	prowfish	2	173	207	190	58.3492	58.6749
Zoarcidae	*Lycodes* sp.		1	50	50	50	62.6532	62.6532
	Lycodes brevipes	shortfin eelpout	93	80	174	114	54.9840	61.9858
	Lycodes palearis	wattled eelpout	122	59	161	92	55.3160	62.3478
	Lycodes polaris	Canadian eelpout	1	31	31	31	60.3384	60.3384
	Lycodes raridens	marbled eelpout	39	50	116	79	59.0070	62.9865
	Lycodes turneri	polar eelpout	1	64	64	64	62.6517	62.6517
Other	fish eggs unident.	fish eggs unident.		32	55	47	60.0037	60.3371
	roundfish unident.	roundfish unident.	1	93	93	93	55.9849	55.9849

Appendix A Table 2.--Fish species encountered during the 2006 eastern Bering Sea bottom trawl survey.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Annelida	*Aphrodita negligens*	sea mouse	4	107	143	124	57.0076	58.6986
	Aphrodita sp.	sea mouse	21	111	174	138	55.3594	61.0066
	Aphroditidae	sea mouse	3	103	111	108	54.9856	56.3484
	Eunoe depressa	depressed scale worm	52	42	173	91	56.6414	62.3065
	Eunoe nodosa	giant scale worm	57	46	146	94	56.3337	62.6662
	Eunoe sp.	scale worm	5	62	150	85	56.3356	57.6777
	Hirudinea unident.	leech unident.	2	55	66	61	60.3433	61.3412
	Notostombdella cyclostomum	striped sea leech	8	54	97	69	59.9917	62.3478
	Polychaeta	polychaete worm unident.	9	34	76	62	56.6810	63.0001
	Polynoidae	scale worm unident.	3	69	85	75	56.6516	57.3473
	tube worm unident.	tube worm unident.	4	73	161	135	58.6765	60.6781
	worm unident.	worm unident.	12	61	119	84	55.3160	63.0001
Arthropoda	Amphipoda	amphipod unident.	3	50	63	57	60.6777	62.6532
	Argis dentata	Arctic argid	17	36	133	59	56.0232	62.6532
	Argis levior	Nelson's argid	1	59	59	59	60.1873	60.1873
	Argis sp.		83	36	207	89	54.8385	63.0001
	Balanus evermanni	giant barnacle	3	79	150	116	55.6825	56.6590
	Cancer oregonensis	Oregon rock crab	27	54	123	81	55.3580	57.5075
	Chionoecetes bairdi	Tanner crab	302	27	207	88	54.6643	61.3449
	Chionoecetes hybrid	hybrid Tanner crab	28	42	144	79	54.9840	59.3220
	Chionoecetes opilio	snow crab	292	42	174	86	54.8385	63.0001
	Crangon abyssorum	abyssal crangon	1	71	71	71	62.3065	62.3065
	Crangon dalli	ridged crangon	8	28	59	43	57.0117	58.9904
	Crangon septemspinosa	sevenspine bay shrimp	6	78	120	99	59.3416	61.3403
	Crangon sp.		129	21	207	83	55.3160	63.0001
	Crangonidae	crangonid shrimp unident.	1	144	144	144	54.9840	54.9840
	Elassochirus cavimanus	purple hermit	24	69	207	129	54.8385	59.6530
	Elassochirus tenuimanus	widehand hermit crab	6	49	82	66	55.0304	56.3399
	Erimacrus isenbeckii	horsehair crab	58	39	150	65	55.6740	60.6488

Appendix A Table 2.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Arthropoda (cont.)	*Eualus barbatus*	barbed eualid	3	115	150	133	56.0232	59.6770
	Gammaridae	gammarid amphipod unident.	1	69	69	69	62.6732	62.6732
	Hippolytidae	hippolytid shrimp unident.	2	59	67	63	60.0064	60.3448
	Hyas coarctatus	circumboreal toad crab	180	25	135	65	56.3225	62.9865
	Hyas lyratus	Pacific lyre crab	162	31	173	88	54.8385	60.6698
	Labidochirus splendescens	splendid hermit	166	25	174	75	54.6643	62.3288
	Lebbeus sp.		1	64	64	64	60.2905	60.2905
	Lithodes aequispina	golden king crab	1	173	173	173	58.3492	58.3492
	Oregonia gracilis	graceful decorator crab	69	32	173	65	55.8435	59.6490
	Paguridae	hermit crab unident.	2	65	149	107	54.8385	57.0080
	Pagurus aleuticus	Aleutian hermit	143	45	173	100	54.8385	60.6488
	Pagurus brandti	sponge hermit	9	135	207	150	58.3492	59.3334
	Pagurus capillatus	hairy hermit crab	107	25	131	76	54.6643	61.3173
	Pagurus confragosus	knobbyhand hermit	99	62	207	109	54.6643	59.6530
	Pagurus ochotensis	Alaskan hermit	107	21	88	48	54.6643	61.3412
	Pagurus rathbuni	longfinger hermit	127	45	174	95	57.3287	62.9865
	Pagurus sp.	hermit crab	14	25	84	48	56.8341	61.3173
	Pagurus trigonocheirus	fuzzy hermit crab	229	28	174	73	54.8385	62.6532
	Pandalus borealis	northern shrimp	102	53	174	116	54.8385	61.6750
	Pandalus goniurus	humpy shrimp	128	31	142	73	56.6590	63.0001
	Pandalus hypsinotus	coonstripe shrimp	1	31	31	31	60.3384	60.3384
	Pandalus jordani	ocean shrimp	3	126	144	134	54.9840	55.6830
	Pandalus tridens	yellowleg pandalid	1	150	150	150	56.3356	56.3356
	Paralithodes camtschaticus	red king crab	137	25	88	56	55.3610	60.3384
	Paralithodes platypus	blue king crab	33	45	136	79	56.8215	62.3402
	Phyllolithodes papillosus	flatspine triangle crab	1	76	76	76	63.0001	63.0001
	Spirontocaris arcuata	Rathbun blade shrimp	1	59	59	59	60.1873	60.1873
	Telmessus cheiragonus	helmet crab	29	21	51	34	56.6780	60.3384
	Thoracica	barnacle unident.	16	32	173	74	55.3610	59.8262

Appendix A Table 2.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Brachiopoda	brachiopod unident.	lampshell unident.	1	59	59	59	60.3448	60.3448
Bryozoa	Bryozoa unident.	bryozoan unident.	29	21	149	65	54.8385	61.6656
	Flustra serrulata	leafy bryozoan	6	36	94	57	57.6625	59.5153
	Rhamphostomella costata	ribbed bryozoan	10	32	88	64	55.6711	60.3252
Chordata	Compound ascidian unident.		29	35	107	56	56.3397	60.6760
	Aplidium sp.	sea glob	41	31	86	57	56.0052	60.9922
	Ascidian unident.	tunicate unident.	9	44	173	76	56.6772	60.3448
	Boltenia ovifera		111	24	127	54	56.3397	61.6656
	Halocynthia aurantium	sea peach	29	45	78	67	57.1781	61.6564
	Halocynthia sp.	sea peach unident.	12	48	71	66	57.4872	60.9922
	Molgula grifithsii	sea grape	2	79	148	114	60.3271	62.3402
	Molgula retortiformis	sea clod	1	134	134	134	59.0031	59.0031
	Styela rustica	sea potato	103	25	87	60	56.6414	62.6532
	Thaliacea unident.	salp unident.	1	56	56	56	62.0031	62.0031
Cnidaria	*Actinauge verrillii*	reticulate anemone	1	173	173	173	58.3492	58.3492
	Actiniaria	sea anemone unident.	63	40	150	91	54.8385	62.6532
	Actinostolidae		5	45	149	107	55.3594	61.6574
	Aurelia sp.	moon jelly	3	73	88	79	59.9976	60.9923
	Chrysaora melanaster	lion's mane jellyfish	219	41	174	85	54.9935	63.0001
	Chrysaora sp.	chrysaora jellyfish	1	95	95	95	59.8456	59.8456
	Cribrinopsis fernaldi	chevron-tentacled anemone	9	60	155	101	54.9935	58.6559
	Cyanea capillata	lion's mane	1	42	42	42	58.6462	58.6462
	Gersemia rubiformis	sea raspberry	25	28	81	54	58.3252	62.9865
	Gersemia sp.	sea raspberry	65	32	113	59	56.3397	62.6532
	Gorgonacea	gorgonian coral unident.	1	71	71	71	62.3065	62.3065
	Halipteris sp.	sea whip	1	142	142	142	60.0094	60.0094
	Halipteris willemoesi	sea whip	2	117	123	120	57.0127	57.3580
	Hydrozoa		3	57	66	63	59.9917	60.9895

Appendix A Table 2.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Cnidaria (cont.)	*Hydroid* sp.	champagne flute hydroid	13	25	173	76	56.9498	61.3173
	hydroid unident.	hydroid unident.	3	59	67	64	59.6785	60.3448
	Liponema brevicornis	tentacle-shedding anemone	53	74	207	120	54.9840	59.6530
	Metridium farcimen	gigantic anemone	37	31	143	81	55.3160	60.3384
	Metridium senile	clonal plumose anemone	1	84	84	84	57.6788	57.6788
	Metridium sp.	sea anemone	40	32	207	89	54.6643	60.6624
	Pennatulacea	sea pen or sea whip unident.	3	118	145	128	57.3357	57.9941
	Phacellophora camtchatica		2	136	146	141	55.3594	59.6900
	Scyphozoa	jellyfish unident.	67	25	150	85	54.9840	62.3224
	Stomphia coccinea	swimming anemone	1	102	102	102	56.6746	56.6746
	Stomphia didemon	cowardly anemone	1	102	102	102	56.6746	56.6746
	Stomphia sp.	sea anemone	77	32	174	98	54.6643	62.6662
	Urticina crassicornis	mottled anemone	17	31	113	76	55.0304	60.3384
	Urticina sp.	sea anemone	2	106	118	112	57.9941	61.3449
	Virgularidae	sea whip	8	94	135	113	55.3580	57.6530
Echinodermata	*Allocentrotus fragilis*	orange-pink sea urchin	1	145	145	145	57.6686	57.6686
	Asteroidea unident.	starfish unident.	3	120	149	135	54.8385	59.3416
	Asterias amurensis	purple-orange sea star	270	21	150	67	54.6643	61.6691
	Asteronyx loveni	serpent sea star	2	136	173	155	56.6864	58.3492
	Ceramaster japonicus	red bat star	3	139	155	148	54.8385	55.3313
	Crossaster borealis	grooved sea star	2	66	157	112	58.6765	60.3433
	Crossaster papposus	rose sea star	25	45	161	82	54.8385	61.3242
	Crossaster sp.		1	136	136	136	56.6864	56.6864
	Ctenodiscus crispatus	common mud star	72	88	174	123	54.8385	61.6750
	Cucumaria fallax	sea football	35	32	96	71	55.3263	58.2862
	Cucumaria frondosa		1	48	48	48	57.6792	57.6792
	Cucumaria sp.		2	64	76	70	60.2905	63.0001
	Diplopteraster multipes	pincushion sea star	8	87	207	140	55.8435	58.6749
	Diplopteraster sp.		2	135	157	146	58.6765	58.9994

Appendix A Table 2.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Echinodermata (cont.)	*Dipsacaster borealis*	northern sea star	1	143	143	143	57.0076	57.0076
	Dipsacaster sp.		1	173	173	173	58.3492	58.3492
	Echinarachnius parma	parma sand dollar	12	48	157	86	54.6643	60.1538
	Evasterias echinosoma	giant sea star	15	51	79	67	55.3610	58.0155
	Evasterias sp.		1	78	78	78	56.6414	56.6414
	Evasterias troschelii	mottled sea star	9	32	78	53	56.3397	58.2869
	Gorgonocephalus eucnemis	basketstar	250	31	173	80	54.9856	62.6532
	Henricia sp.		48	42	207	101	54.8385	60.6781
	Henricia tumida	tumid sea star	1	67	67	67	60.6624	60.6624
	Holothuroidea unident.	sea cucumber unident.	8	59	173	81	56.9804	60.3448
	Leptasterias arctica		108	36	157	71	56.6414	62.9865
	Leptasterias hylodes	Aleutian sea star	2	59	107	83	57.6530	60.1873
	Leptasterias polaris		162	42	174	88	56.3418	62.9865
	Leptasterias sp.		3	67	78	73	59.6775	60.0064
	Leptychaster anomalus		6	87	136	110	55.7058	57.9897
	Leptychaster arcticus	North Pacific sea star	1	123	123	123	57.0127	57.0127
	Lethasterias nanimensis	blackspined sea star	76	51	157	86	55.3580	60.6747
	Molpadia intermedia	sweet sea potato	2	55	61	58	59.3464	60.0037
	Molpadia sp.		3	126	133	130	55.3648	56.0232
	Ophiolebes sp.		1	135	135	135	58.9994	58.9994
	Ophiopholis aculeata	ubiquitous brittle star	1	67	67	67	60.6624	60.6624
	Ophiura sarsi	notched brittlestar	90	45	149	84	54.8385	63.0001
	Ophiuroid unident.	brittlestarfish unident.	3	62	94	74	57.3149	59.5153
	Pentamera lissoplaca	crescent sea cucumber	2	60	61	61	57.9832	58.3434
	Pentamera sp.		1	70	70	70	58.0036	58.0036
	Pseudarchaster parelii	scarlet sea star	12	99	207	137	54.8385	58.6749
	Psolus sp.		2	59	64	62	60.2905	60.3448
	Pteraster militaris	wrinkled star	1	64	64	64	57.6512	57.6512
	Pteraster obscurus	obscure sea star	63	44	161	105	55.7058	62.3402

Appendix A Table 2.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Echinodermata (cont.)	*Pteraster* sp.		3	69	150	123	54.8385	57.3412
	Pteraster tesselatus		2	79	104	92	56.4264	56.6590
	Sand dollar unident.	sand dollar unident.	3	75	111	89	54.9856	59.8137
	Solaster sp.		4	51	149	92	54.8385	60.2905
	Strongylocentrotus droebachiensis	green sea urchin	107	32	173	98	54.8385	62.0031
	Strongylocentrotus pallidus	white sea urchin	3	107	135	120	55.6610	56.9498
	Strongylocentrotus sp.		9	69	150	115	55.3160	59.3416
Echiura	Echiura	echiuroid worm unident.	5	32	127	70	56.6540	62.3402
Mollusca	*Admete regina*	noble admete	1	69	69	69	58.0082	58.0082
	Aforia circinata	keeled aforia	33	81	161	121	56.0150	61.0066
	Aforia sp.		14	100	136	115	55.3648	59.5090
	Amicula vestita	chiton	1	59	59	59	60.3448	60.3448
	Arctomelon sp.		3	132	149	142	54.8385	55.3648
	Arctomelon stearnsii	Alaska volute	2	173	207	190	58.3492	58.6749
	Arctomelon tamikoae		1	126	126	126	55.6830	55.6830
	Astarte borealis	boreal astarte	1	108	108	108	55.6496	55.6496
	Astarte sp.		3	62	67	65	57.3149	60.0064
	Benthoctopus leioderma	smoothskin octopus	9	79	161	117	56.3231	62.3402
	Benthoctopus sp.		1	95	95	95	59.8456	59.8456
	Beringius beringii		15	47	128	84	56.0150	60.3448
	Beringius sp.		63	34	173	107	54.8385	61.3409
	Beringius stimpsoni		3	59	68	65	57.3464	60.3448
	Berryteuthis magister	magistrate armhook squid	1	155	155	155	54.9935	54.9935
	Boreotrophon pacificus		1	135	135	135	58.9994	58.9994
	Boreotrophon alaskanus	Alaskan trophon	1	103	103	103	56.3484	56.3484
	Boreotrophon sp.		8	66	111	88	56.6553	62.3402
	Buccinum angulosum	angular whelk	90	42	146	90	56.3477	61.9858
	Buccinum oedematum	swollen whelk	24	51	144	88	54.9840	60.3448
	Buccinum plectrum	sinuous whelk	37	38	157	112	55.3263	61.3449

Appendix A Table 2.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Mollusca (cont.)	*Buccinum polare*	polar whelk	71	36	123	75	56.6702	62.9865
	Buccinum scalariforme	ladder whelk	83	48	174	99	54.8385	62.6662
	Buccinum sp.		84	36	150	79	54.9856	62.6532
	Buccinum tricarinatum		1	42	42	42	59.0142	59.0142
	Chlamys rubida	reddish scallop	1	74	74	74	57.0182	57.0182
	Chlamys sp.		8	59	94	80	55.7058	60.3448
	Clinocardium californiense	California cockle	1	85	85	85	61.6719	61.6719
	Clinocardium ciliatum	hairy cockle	16	75	136	102	56.4264	61.9858
	Clinocardium sp.		8	66	92	81	57.3149	61.0099
	cockle unident.	cockle unident.	1	70	70	70	57.5081	57.5081
	Colus halli	shrew whelk	1	92	92	92	61.9858	61.9858
	Colus herendeenii	thin-ribbed whelk	6	112	140	129	57.3580	59.0031
	Colus hypolispus		2	72	74	73	56.9804	57.0182
	Colus sp.		41	45	135	96	54.9856	62.0031
	Colus spitzbergensis	thick-ribbed whelk	2	59	110	85	56.9835	60.3448
	Crepidula sp.	slipper shell	1	78	78	78	56.6414	56.6414
	Cryptonatica aleutica	Aleutian moonsnail	2	48	79	64	55.3263	57.6792
	Cryptonatica affinis	Arctic moonsnail	2	68	68	68	57.3464	57.6941
	Cryptonatica sp.		4	56	66	61	60.3433	61.6691
	Cyclocardia crebricostata	many-rib cyclocardia	1	32	32	32	57.3095	57.3095
	Cyclocardia sp.		2	39	59	49	58.6845	60.3448
	Dendronotus sp.	nudibranch	13	59	174	101	56.6864	62.6662
	Euspira sp.		28	57	95	75	57.8481	62.9865
	Euspira pallidus	pale moonsnail	11	36	135	75	55.8435	61.6564
	Fusitriton oregonensis	Oregon triton	89	54	207	115	54.6643	59.9932
	Gastropod eggs	snail eggs	185	31	174	75	54.9840	63.0001
	Gastropod unident.	snail unident.	2	112	113	113	56.3526	60.9833
	Hiatella arctica	Arctic hiatella	14	48	92	70	56.9885	61.3173
	Lamellaria sp.		1	67	67	67	60.0064	60.0064

Appendix A Table 2.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Mollusca (cont.)	*Macoma nasuta*	bent-nose macoma	1	42	42	42	58.6462	58.6462
	Macoma sp.		10	28	85	47	56.9890	61.6719
	Mactromeris polynyma	Arctic surfclam	50	22	87	51	55.8435	59.6678
	Modiolus modiolus	northern horsemussel	1	61	61	61	57.3513	57.3513
	Musculus discors	discordant mussel	41	42	73	60	57.3149	62.6732
	Mya sp.		4	42	51	48	57.1296	58.0200
	Mytilidae	mussel unident.	4	59	73	66	57.3473	60.9995
	Natica russa	rusty moonsnail	9	57	123	79	54.6643	61.6569
	Natica sp.		42	36	146	81	57.6745	63.0001
	Naticidae		1	88	88	88	59.3220	59.3220
	Naticidae eggs	moonsnail eggs unid.	12	42	92	66	57.6429	61.6569
	Neptunea borealis		53	42	136	74	56.9835	62.3402
	Neptunea heros		135	25	107	62	56.6547	62.6532
	Neptunea lyrata	lyre whelk	123	45	161	100	54.6643	61.0036
	Neptunea magna	helmet whelk	68	52	136	92	56.3188	61.9868
	Neptunea pribiloffensis	Pribilof whelk	137	54	207	113	54.9840	61.3449
	Neptunea smirnia		1	144	144	144	54.9840	54.9840
	Neptunea sp.		28	32	149	64	54.8385	61.6691
	Neptunea tabulata	tabled whelk	1	144	144	144	54.9840	54.9840
	Neptunea ventricosa	fat whelk	129	25	135	65	54.6643	61.6691
	Nudibranchia unident.	nudibranch unident.	48	47	146	81	55.3580	63.0001
	Octopodidae	octopus unident.	1	50	50	50	62.6532	62.6532
	Octopus dofleini	giant octopus	19	64	161	122	56.0360	62.3478
	Onchidiopsis sp.		4	67	80	75	59.3447	60.0064
	Patinopecten caurinus	weathervane scallop	11	65	123	102	55.0304	57.0127
	Plicifusus griseus	gray whelk	2	74	133	104	56.0232	57.3157
	Plicifusus kroyeri		42	59	155	116	54.9935	61.3409
	Plicifusus sp.		18	59	150	96	56.3356	60.1873
	Pododesmus macroschisma	Alaska falsejingle	1	69	69	69	57.3412	57.3412

Appendix A Table 2.--Continued.

Family	Scientific name	Common name	Number stations present	Bottom depth (m)			Position	
				Min. depth	Max. depth	Avg. depth	Start lat.	End lat.
Mollusca (cont.)	*Pyrulofusus deformis*	warped whelk	48	53	173	93	54.8385	60.3448
	Pyrulofusus melonis		31	62	155	100	54.9840	59.6609
	Rossia pacifica	eastern Pacific bobtail	4	108	150	122	55.6496	59.3359
	Serripes groenlandicus	Greenland cockle	41	36	161	94	54.9935	61.9858
	Serripes laperousii	broad cockle	12	34	78	50	55.3610	61.3403
	Serripes sp.		27	31	146	77	55.0053	61.6569
	Siliqua alta	Alaska razor	11	25	46	31	58.0077	60.0238
	Tachyrhynchus erosus	eroded turretsnail	1	43	43	43	57.6765	57.6765
	Tellina lutea	Alaska great-tellin	14	21	74	42	55.6740	59.9901
	Trichotropis bicarinata	two-keel hairysnail	1	59	59	59	60.3448	60.3448
	Tritonia diomedea	rosy tritonia	18	46	117	76	57.6625	61.6656
	Tritonia sp.	nudibranch	22	45	121	72	57.3149	62.0124
	Velutina sp.		1	59	59	59	60.3448	60.3448
	Volutopsius fragilis	fragile whelk	10	66	173	119	57.8481	61.0066
	Volutopsius middendorffii	tulip whelk	3	102	136	120	56.6746	57.0127
	Volutopsius sp.		66	55	174	117	55.0053	61.9975
	Volutopsius stefanssoni	shouldered whelk	7	59	117	78	56.9885	60.3448
	Yoldia seminuda	crisscrossed yoldia	1	46	46	46	58.6783	58.6783
	Yoldia sp.		5	29	95	57	58.0123	62.6732
Nematoda	Nematoda	roundworm unident.	1	161	161	161	60.6781	60.6781
Nemertea	Nemertea	ribbon worm unid.	3	79	85	82	61.6719	62.3402
Porifera	Porifera	sponge unident.	1	64	64	64	60.2905	60.2905
	Phakellia cribrosa		62	42	207	93	54.8385	60.9895
	Stone sponge		1	88	88	88	56.6807	56.6807
	Suberites sp.		1	54	54	54	56.3397	56.3397
	Vase sponge	vase sponge	4	70	100	80	57.5081	59.3216
Priapulida	Priapula	priapulid worm unident.	2	79	111	95	60.3157	62.3402
Sipuncula	Sipuncula	peanut worm unid.	6	40	131	74	55.0053	63.0001

Appendix B: Station Data, 2006 Eastern Bering Sea Trawl Survey

Appendix B contains station data by vessel for the 405 successfully completed standard survey stations. In using the tables, the following should be noted:

1. Time represents the nearest hour at the start of the tow.
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. Geodetic positions are displayed as degrees and decimal minutes.
4. Net width codes are as follows:

   M = Net width was measured by net mensuration gear.

   F = Net width was estimated from a function of wire out or wire out and net height.

List of Tables

Appendix B Table 1.--Haul data for stations sampled by the FV *Arcturus* during the 2006 eastern Bering Sea bottom trawl survey.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
1	6/2/2006	57.30946	-158.42700	30	09	0.5	2.774	10	4.4	4.3	15.097	M
2	6/2/2006	57.64913	-158.36230	33	12	0.5	2.756	10	3.1	2.8	15.391	F
3	6/2/2006	57.98961	-158.32249	31	14	0.5	2.753	10	5.0	2.4	15.668	M
4	6/3/2006	58.34343	-159.55130	23	06	0.5	2.853	10	3.4	3.4	15.450	F
5	6/3/2006	58.00415	-159.60130	40	09	0.5	2.828	10	2.5	2.2	16.145	M
6	6/3/2006	57.66298	-159.63940	48	12	0.5	2.782	10	2.5	2.4	15.664	M
7	6/3/2006	57.33544	-159.67500	54	15	0.5	2.844	10	2.6	2.5	15.785	M
8	6/3/2006	57.00812	-159.65849	53	18	0.5	2.756	10	3.9	2.9	15.756	M
9	6/4/2006	56.67802	-159.71350	35	06	0.5	2.788	10	5.1	4.1	15.411	M
10	6/4/2006	56.66714	-160.36290	57	09	0.5	2.906	31	4.2	3.1	15.529	M
11	6/4/2006	56.66050	-160.95959	67	12	0.5	2.839	31	4.9	2.8	15.844	M
13	6/4/2006	56.98559	-160.94710	63	16	0.5	2.807	31	4.1	2.0	16.359	M
14	6/4/2006	57.33472	-160.90891	63	19	0.5	2.812	31	4.1	1.7	16.160	M
15	6/5/2006	57.67764	-160.86130	55	06	0.5	2.745	31	3.9	1.7	16.212	F
16	6/5/2006	58.00773	-160.83701	44	09	0.5	2.834	10	2.7	2.2	16.207	F
17	6/5/2006	58.28623	-160.80161	29	12	0.2	1.426	10	6.7	5.2	14.806	M
18	6/5/2006	58.21690	-161.55009	36	15	0.3	1.858	10	3.4	3.1	15.011	M
19	6/5/2006	58.33443	-162.02679	44	17	0.5	2.912	10	2.2	1.9	15.952	F
20	6/6/2006	57.67445	-162.13251	45	06	0.5	2.874	10	3.8	1.9	15.653	M
21	6/6/2006	57.32176	-162.14760	48	09	0.5	2.815	10	3.0	1.5	15.728	F
22	6/6/2006	57.00824	-162.17500	58	12	0.5	2.852	31	3.7	2.4	15.857	M
23	6/6/2006	56.67721	-162.17290	69	14	0.5	2.796	31	6.9	2.5	15.822	M
24	6/6/2006	56.35352	-162.17171	76	17	0.5	2.843	31	7.4	2.5	16.194	M
25	6/7/2006	56.00519	-162.24960	72	06	0.5	2.921	31	7.0	3.1	16.692	M
26	6/7/2006	55.99238	-162.79810	77	08	0.5	2.973	31	7.9	2.9	16.899	M
28	6/7/2006	55.67399	-162.80949	47	13	0.5	2.846	10	7.8	3.6	15.787	M
29	6/7/2006	55.67112	-163.37939	80	15	0.5	2.850	31	8.0	3.0	17.156	M
30	6/7/2006	55.36098	-163.39470	52	18	0.5	2.856	31	8.1	3.5	15.934	F
31	6/8/2006	56.32246	-163.41560	84	06	0.5	2.859	31	7.2	2.4	17.004	M
32	6/8/2006	56.68671	-163.37440	73	09	0.5	2.973	31	6.6	2.1	17.291	M

Appendix B Table 1.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
33	6/8/2006	57.00799	-163.39529	63	12	0.5	2.912	31	5.2	1.5	17.154	M
34	6/8/2006	57.30469	-163.40150	52	15	0.5	2.912	10	3.9	1.1	16.993	M
35	6/8/2006	57.67444	-163.30850	45	19	0.5	2.921	10	2.4	1.5	16.494	F
36	6/9/2006	58.01602	-163.34160	40	07	0.5	2.885	10	-	-	16.636	M
37	6/9/2006	58.33508	-163.32260	34	11	0.5	2.917	10	2.6	2.5	16.078	M
38	6/9/2006	58.64662	-163.35741	29	14	0.5	2.806	10	3.1	3.1	15.688	M
39	6/9/2006	58.97653	-163.35480	19	17	0.5	3.035	10	5.5	4.7	15.374	M
40	6/10/2006	59.33939	-164.01160	20	06	0.5	3.159	10	5.5	5.6	14.727	M
41	6/10/2006	59.34303	-164.62550	21	09	0.5	2.968	10	4.3	4.3	15.143	M
42	6/10/2006	59.02133	-164.65840	26	12	0.5	2.830	10	3.6	3.6	16.143	F
43	6/10/2006	58.68889	-164.65430	35	15	0.5	2.819	10	2.4	2.4	16.024	M
44	6/11/2006	58.34549	-164.65480	42	06	0.5	2.900	10	1.8	1.8	17.126	M
45	6/11/2006	58.00535	-164.61411	44	09	0.5	2.784	10	1.7	1.7	16.761	M
46	6/11/2006	57.68254	-164.61690	51	11	0.5	2.881	10	2.6	0.5	16.530	M
47	6/11/2006	57.31820	-164.63280	63	14	0.5	2.902	31	3.9	1.1	16.938	M
48	6/11/2006	57.00940	-164.61040	68	17	0.5	2.812	31	5.0	2.0	16.969	M
49	6/12/2006	56.69070	-164.58180	73	06	0.5	2.850	31	5.2	2.1	16.856	M
50	6/12/2006	56.34175	-164.58850	86	09	0.5	2.875	31	6.0	2.4	16.794	M
51	6/12/2006	55.98489	-164.61020	91	12	0.5	2.949	31	6.4	3.3	17.732	F
53	6/12/2006	55.64097	-164.61771	94	17	0.5	2.929	31	6.5	3.8	16.916	M
54	6/13/2006	55.35802	-164.54570	100	06	0.5	2.888	31	6.7	4.0	16.495	M
55	6/13/2006	55.03043	-164.59300	63	09	0.5	2.837	31	6.9	4.6	15.974	F
56	6/13/2006	54.66428	-165.14880	79	13	0.5	2.911	31	6.4	5.1	16.388	F
57	6/13/2006	54.83847	-165.53529	147	15	0.5	2.946	50	5.6	3.7	15.948	M
58	6/13/2006	55.00525	-165.78870	129	18	0.5	3.027	50	7.5	3.7	17.076	M
59	6/14/2006	55.33934	-165.77350	118	06	0.5	2.813	50	6.5	3.9	16.943	F
60	6/14/2006	55.68246	-165.80141	116	09	0.5	2.684	50	7.3	3.9	17.563	M
61	6/14/2006	56.00005	-165.78000	105	12	0.5	3.014	31	7.3	3.9	16.699	M
62	6/14/2006	56.31878	-165.81720	90	14	0.5	2.876	31	6.7	2.5	16.651	M
63	6/14/2006	56.64143	-165.87270	76	17	0.5	2.891	31	6.2	2.3	16.932	M

Appendix B Table 1.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
64	6/15/2006	57.34658	-167.14040	69	06	0.5	2.840	31	5.3	1.3	15.760	M
65	6/15/2006	57.00238	-167.09061	72	10	0.5	2.984	31	5.4	2.6	16.729	M
66	6/15/2006	56.67020	-167.07550	94	13	0.5	2.853	31	5.8	2.7	16.918	M
67	6/15/2006	56.35257	-167.06149	111	15	0.5	2.856	50	7.1	3.9	17.270	M
68	6/15/2006	56.02296	-167.05280	132	18	0.5	2.895	50	6.9	4.0	17.602	F
69	6/18/2006	54.99348	-166.94640	153	07	0.5	2.817	50	6.5	3.6	18.563	M
70	6/18/2006	55.33125	-166.96780	137	09	0.5	2.935	50	6.6	4.0	19.480	M
71	6/18/2006	55.66595	-166.97701	133	12	0.5	2.926	50	6.4	4.0	19.016	M
72	6/19/2006	57.65120	-165.88220	62	06	0.5	2.888	31	3.7	0.2	16.118	M
73	6/19/2006	57.98264	-165.89990	54	09	0.5	2.894	10	2.8	0.0	16.363	M
74	6/19/2006	58.32521	-165.93250	42	12	0.5	3.027	10	2.2	1.9	15.957	M
75	6/19/2006	58.66417	-165.91330	35	15	0.5	2.897	10	2.6	2.4	15.626	M
76	6/19/2006	58.98282	-165.92081	29	17	0.5	2.855	20	4.0	3.9	15.203	M
77	6/20/2006	59.32644	-165.94980	23	06	0.5	2.937	20	4.6	4.7	15.367	F
78	6/20/2006	59.64197	-165.93649	22	09	0.5	3.067	20	5.5	5.5	16.687	F
79	6/20/2006	59.66781	-166.63409	25	11	0.5	3.078	20	4.5	4.3	15.800	M
80	6/20/2006	59.36201	-166.60629	26	14	0.5	2.903	20	4.3	4.3	16.687	F
81	6/20/2006	59.34015	-167.21449	30	16	0.5	2.946	20	3.2	3.1	16.240	F
82	6/21/2006	59.00443	-167.23460	38	06	0.5	2.892	20	2.8	2.6	15.442	F
83	6/21/2006	58.67047	-167.21820	41	09	0.5	2.931	20	2.3	2.2	15.696	M
84	6/21/2006	58.34340	-167.19470	49	11	0.5	2.889	20	2.3	1.1	16.421	F
85	6/21/2006	58.03903	-167.18970	61	14	0.5	2.877	31	4.1	-0.4	16.778	F
86	6/21/2006	57.69410	-167.10400	66	17	0.5	2.904	31	4.8	-0.4	16.828	M
87	6/22/2006	58.97729	-168.53560	45	06	0.5	2.892	20	2.5	1.4	16.099	M
88	6/22/2006	59.32711	-168.55600	40	09	0.5	2.776	20	1.5	1.2	15.679	M
89	6/22/2006	59.64904	-168.61540	37	12	0.5	2.932	20	1.5	0.6	15.422	M
90	6/22/2006	59.99006	-168.65691	36	14	0.5	2.868	20	1.1	0.4	15.387	M
91	6/22/2006	60.32522	-168.64960	34	17	0.5	2.965	20	1.5	1.4	15.573	M
92	6/23/2006	60.32209	-170.04250	51	06	0.5	2.791	20	3.2	-1.4	16.749	M
93	6/23/2006	60.64735	-170.06900	48	09	0.5	2.623	70	1.9	-1.4	15.861	M

Appendix B Table 1.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
94	6/23/2006	60.99221	-170.08490	46	12	0.5	2.985	70	2.7	-1.4	17.137	F
95	6/23/2006	61.31732	-170.12770	45	14	0.5	2.876	70	1.9	-1.4	16.553	F
96	6/23/2006	61.66560	-170.14560	44	17	0.5	2.889	70	4.1	-1.4	15.976	F
97	6/24/2006	61.66910	-171.57800	54	06	0.5	2.915	81	4.0	-1.2	17.821	M
98	6/24/2006	61.34119	-171.51089	53	09	0.5	2.891	81	4.0	-1.3	17.892	M
99	6/24/2006	60.99689	-171.47681	57	12	0.5	3.070	41	2.8	-1.6	17.216	M
100	6/24/2006	60.67773	-171.44530	61	15	0.5	2.928	41	3.6	-1.6	18.032	M
101	6/24/2006	60.34330	-171.38570	64	17	0.5	2.907	41	4.2	-1.6	17.125	M
102	6/25/2006	60.00370	-169.96809	53	06	0.5	2.756	41	4.6	-1.3	16.909	M
103	6/25/2006	59.68368	-169.95100	56	09	0.5	2.977	41	4.9	-1.1	17.201	M
104	6/25/2006	59.34643	-169.89101	60	11	0.5	2.840	41	5.0	-0.7	18.350	M
105	6/25/2006	59.01715	-169.87050	61	14	0.5	2.785	41	4.5	-0.7	17.244	M
106	6/26/2006	58.63867	-169.76880	65	06	0.5	2.865	41	4.2	-1.0	17.735	M
107	6/26/2006	58.64101	-169.16040	61	12	0.5	2.793	41	4.0	-1.0	17.522	M
108	6/26/2006	58.64389	-168.52440	52	17	0.5	2.770	20	3.1	0.3	16.250	M
109	6/27/2006	58.33210	-168.46899	63	06	0.5	2.850	41	4.2	-0.7	17.660	M
110	6/27/2006	58.00360	-168.42571	68	09	0.5	2.782	42	4.7	0.6	17.150	M
111	6/27/2006	57.83397	-168.74440	68	13	0.5	2.620	42	5.5	0.2	17.215	M
112	6/27/2006	57.66246	-168.38980	68	15	0.5	2.976	42	6.1	1.8	16.443	M
113	6/27/2006	57.48715	-168.75650	69	18	0.5	2.850	42	6.0	1.8	16.420	M
114	6/29/2006	56.65895	-169.48750	77	07	0.4	1.990	32	5.2	4.0	16.785	M
115	6/29/2006	56.83409	-169.93179	70	09	0.5	2.845	42	5.6	4.4	16.261	M
118	6/29/2006	57.12964	-170.49020	49	17	0.5	2.759	42	3.8	3.3	15.755	M
119	6/30/2006	57.33978	-170.86040	82	06	0.5	2.823	42	6.2	2.9	17.330	F
120	6/30/2006	57.01231	-170.78720	93	09	0.5	2.912	42	6.1	3.1	17.058	F
121	6/30/2006	56.84026	-170.51430	100	11	0.5	2.900	42	6.7	3.5	17.937	F
122	6/30/2006	56.67924	-170.13890	95	14	0.5	2.873	42	6.6	3.7	17.764	F
123	6/30/2006	56.66810	-170.69769	111	17	0.5	3.023	61	7.0	3.6	17.797	F
124	7/1/2006	57.66864	-170.29060	70	07	0.5	2.846	42	5.5	0.2	16.979	F
125	7/1/2006	57.66614	-169.68600	68	09	0.5	2.901	42	5.8	0.7	16.190	M

Appendix B Table 1.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
126	7/1/2006	57.50357	-170.02609	67	12	0.5	2.508	42	5.3	1.8	15.905	M
127	7/1/2006	57.34950	-169.58110	63	15	0.5	2.875	42	6.4	0.7	16.458	M
129	7/1/2006	57.32861	-170.23450	53	18	0.5	2.747	42	4.6	3.2	15.809	M
130	7/2/2006	58.33764	-172.32370	101	06	0.5	2.843	61	6.5	1.6	17.104	M
131	7/2/2006	58.67054	-172.36560	100	09	0.5	2.873	61	6.5	1.3	17.396	M
132	7/2/2006	59.00998	-172.43761	97	12	0.5	2.891	41	5.4	0.6	17.730	M
133	7/2/2006	59.32200	-172.48940	86	15	0.5	2.747	43	5.3	-0.2	17.793	M
134	7/2/2006	59.51532	-172.89571	92	17	0.5	2.956	43	5.2	-0.3	17.796	M
135	7/3/2006	59.82914	-174.24760	105	07	0.5	2.819	62	6.1	1.0	16.830	M
136	7/3/2006	59.66090	-173.86850	103	09	0.5	2.875	62	5.9	0.7	17.792	M
137	7/3/2006	59.32234	-173.79900	108	12	0.5	3.021	62	7.1	1.7	17.333	M
138	7/3/2006	59.02057	-173.72290	115	15	0.5	2.912	61	7.2	2.2	17.514	M
139	7/3/2006	58.69864	-173.63429	124	18	0.5	2.849	61	7.7	2.5	17.664	M
140	7/4/2006	58.34103	-173.58321	114	07	0.5	2.869	61	7.1	2.7	17.871	M
141	7/4/2006	57.99413	-173.51320	116	09	0.5	2.838	61	7.1	2.8	17.565	M
142	7/4/2006	57.66864	-173.38910	143	12	0.5	2.948	61	7.0	3.3	17.959	M
143	7/4/2006	57.33565	-173.32381	119	16	0.5	2.635	61	7.4	3.1	18.013	M
144	7/4/2006	57.00755	-173.26680	141	19	0.5	2.849	61	7.3	3.7	17.473	M
145	7/9/2006	55.66100	-168.19051	133	07	0.5	2.700	50	8.7	4.2	17.522	M
146	7/9/2006	55.98307	-168.22380	147	10	0.5	2.885	50	8.0	4.0	16.938	M
148	7/9/2006	56.33563	-168.20210	148	15	0.5	2.833	50	9.2	4.0	16.098	M
149	7/9/2006	56.65467	-168.29370	105	18	0.5	2.906	50	9.4	3.4	16.927	M
150	7/10/2006	56.96877	-168.34180	81	07	0.5	2.711	32	8.8	3.1	16.288	M
151	7/10/2006	57.15688	-168.65370	74	10	0.5	2.826	32	8.7	3.0	16.627	M
152	7/10/2006	57.33325	-168.35040	71	12	0.5	3.142	32	8.3	2.2	15.268	M
153	7/10/2006	57.34122	-168.98219	67	15	0.5	2.638	42	8.0	1.2	15.726	M
154	7/10/2006	57.17809	-169.31190	70	18	0.5	2.837	42	8.4	2.9	16.399	M
155	7/11/2006	56.65395	-171.96730	125	07	0.3	1.609	61	8.1	4.0	17.190	M
156	7/11/2006	56.94980	-172.02750	115	10	0.5	2.797	61	8.2	3.7	16.840	M
157	7/11/2006	57.32871	-172.09489	102	13	0.5	2.938	61	-	-	17.058	M

Appendix B Table 1.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
158	7/11/2006	57.65298	-172.15970	105	16	0.5	3.088	61	8.1	2.6	17.016	M
159	7/11/2006	57.93802	-172.27290	103	19	0.5	2.819	61	8.2	2.6	17.105	M
160	7/12/2006	59.67211	-172.52730	82	08	0.3	1.732	43	6.9	-1.1	16.891	M
161	7/12/2006	59.81371	-172.88640	78	10	0.5	2.863	43	6.2	-0.5	17.158	M
162	7/12/2006	59.99174	-172.60181	63	13	0.4	2.453	43	5.9	-1.3	16.291	M
163	7/12/2006	60.15380	-172.30440	55	15	0.5	3.158	43	4.8	0.4	16.300	M
164	7/12/2006	60.18734	-173.03680	57	18	0.5	2.926	43	5.2	-1.1	16.572	M
165	7/13/2006	60.64884	-172.72610	43	07	0.5	2.927	41	5.5	0.4	16.107	M
166	7/13/2006	60.98948	-172.79770	64	10	0.5	2.958	41	6.4	-1.3	17.249	M
167	7/13/2006	61.32421	-172.90700	66	13	0.5	2.786	81	6.4	-1.6	18.118	M
168	7/13/2006	61.65739	-173.06920	64	16	0.5	2.864	81	7.0	-1.3	17.020	M
169	7/13/2006	62.00305	-173.09810	54	19	0.5	2.952	81	-	-	17.965	M
170	7/14/2006	61.99748	-172.41760	53	07	0.5	2.858	81	6.6	-1.3	16.789	M
171	7/14/2006	61.98677	-171.60930	50	10	0.5	2.943	70	6.5	-1.1	17.080	M
172	7/14/2006	62.32883	-171.66650	45	13	0.5	2.961	81	6.9	-1.2	17.128	M
173	7/14/2006	62.32235	-172.40210	52	16	0.5	2.855	81	6.6	-1.4	17.521	M
174	7/14/2006	62.65316	-172.41580	48	18	0.5	2.863	81	-	-	17.168	M
175	7/15/2006	62.34781	-173.82491	62	07	0.5	2.998	81	6.6	-1.6	18.133	M
176	7/15/2006	62.01237	-173.73039	60	10	0.5	2.843	82	6.9	-1.4	18.062	M
177	7/15/2006	62.00313	-174.47459	72	13	0.5	2.891	82	6.5	-1.6	18.442	M
178	7/15/2006	61.67458	-174.43810	75	15	0.5	3.057	82	6.5	-1.7	18.780	M
179	7/15/2006	61.34034	-174.32770	76	18	0.5	2.923	82	6.8	-1.6	18.235	M
180	7/16/2006	61.00989	-174.18660	81	07	0.5	2.857	41	6.7	-1.6	18.311	M
181	7/16/2006	60.68025	-174.13490	85	10	0.5	2.796	41	7.1	-1.2	18.086	M
183	7/16/2006	60.34826	-174.07220	89	13	0.5	2.628	43	7.3	-0.9	18.431	M
184	7/16/2006	60.19317	-174.35120	98	16	0.5	2.883	43	7.5	0.6	17.593	M
185	7/16/2006	60.01189	-173.95171	95	18	0.5	2.887	43	7.8	0.2	18.576	M
186	7/17/2006	60.34281	-174.72600	100	07	0.5	2.804	62	7.5	0.8	16.905	M
187	7/17/2006	60.00970	-174.60330	106	10	0.5	2.928	62	8.1	1.0	17.901	M
188	7/17/2006	59.67699	-174.44850	113	12	0.5	2.840	62	8.0	1.8	17.880	F

Appendix B Table 1.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
189	7/17/2006	59.34157	-174.43460	118	16	0.5	2.851	62	8.4	2.3	17.953	F
190	7/17/2006	58.99471	-174.36630	125	18	0.5	3.023	61	9.2	2.5	17.862	M
183	7/16/2006	60.34826	-174.07220	89	13	0.5	2.628	43	7.3	-0.9	18.431	M
184	7/16/2006	60.19317	-174.35120	98	16	0.5	2.883	43	7.5	0.6	17.593	M
185	7/16/2006	60.01189	-173.95171	95	18	0.5	2.887	43	7.8	0.2	18.576	M
186	7/17/2006	60.34281	-174.72600	100	07	0.5	2.804	62	7.5	0.8	16.905	M
187	7/17/2006	60.00970	-174.60330	106	10	0.5	2.928	62	8.1	1.0	17.901	M
188	7/17/2006	59.67699	-174.44850	113	12	0.5	2.840	62	8.0	1.8	17.880	F
189	7/17/2006	59.34157	-174.43460	118	16	0.5	2.851	62	8.4	2.3	17.953	F
190	7/17/2006	58.99471	-174.36630	125	18	0.5	3.023	61	9.2	2.5	17.862	M
191	7/19/2006	57.66661	-163.35410	45	08	0.5	2.806	10	6.3	5.0	16.131	M
192	7/19/2006	57.66559	-162.75800	41	11	0.5	2.953	10	6.7	5.8	16.577	M
193	7/19/2006	57.66571	-162.14079	44	14	0.5	3.024	10	7.1	5.5	15.742	M
194	7/19/2006	57.66576	-161.49440	24	17	0.5	2.990	10	-	-	15.355	M
195	7/19/2006	57.97768	-161.49510	52	20	0.5	2.852	10	9.7	4.8	15.450	M
196	7/20/2006	57.65565	-160.88570	55	06	0.5	2.953	31	8.7	3.2	16.059	M
197	7/20/2006	57.98365	-160.84419	43	10	0.5	2.924	10	8.7	4.5	15.436	F
198	7/20/2006	58.00238	-160.24850	48	12	0.5	2.874	10	7.4	4.9	16.037	F
199	7/20/2006	57.67962	-160.25970	50	15	0.5	2.862	31	8.2	4.9	15.085	M
200	7/20/2006	57.34356	-160.27451	59	18	0.5	2.851	31	7.5	5.0	16.208	F
201	7/21/2006	57.34167	-160.93719	62	07	0.5	2.886	31	7.7	4.4	15.768	M
202	7/21/2006	57.01081	-160.94720	63	09	0.5	2.900	31	8.5	4.1	16.067	M
203	7/21/2006	57.01150	-160.33690	60	12	0.5	2.948	31	9.0	4.5	15.711	M
204	7/21/2006	56.66841	-160.35761	54	15	0.5	2.962	31	9.1	4.9	14.975	M
205	7/21/2006	56.65957	-160.95219	67	17	0.5	2.846	31	9.3	4.3	15.925	M
206	7/21/2006	56.35046	-160.99719	52	20	0.5	2.828	10	8.8	5.5	15.971	F
207	7/22/2006	56.31040	-161.63229	62	07	0.5	2.863	10	9.8	3.8	15.243	M
208	7/22/2006	56.65963	-161.61011	86	09	0.5	2.918	31	9.1	3.3	15.869	M
209	7/22/2006	56.98998	-161.58640	66	12	0.5	2.813	31	9.3	3.8	16.184	F
210	7/22/2006	57.32048	-161.52980	54	15	0.5	2.902	31	8.9	4.6	17.053	M

Appendix B Table 1.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
211	7/22/2006	57.35007	-162.15260	48	18	0.5	2.823	10	7.9	5.5	15.365	F
212	7/23/2006	57.01203	-162.16730	58	07	0.5	2.918	31	9.1	4.0	15.856	M
213	7/23/2006	56.67753	-162.16251	70	09	0.5	2.867	31	9.2	3.2	16.266	M
214	7/23/2006	56.35162	-162.17810	76	12	0.5	2.938	31	9.7	3.4	15.289	M
215	7/23/2006	56.00223	-162.25549	68	15	0.5	2.904	31	9.3	3.7	15.834	M
216	7/23/2006	56.31929	-162.79849	76	18	0.5	2.938	31	10.6	2.9	16.571	M
217	7/24/2006	56.66329	-162.80730	70	07	0.5	2.978	31	9.8	2.8	16.325	M
218	7/24/2006	56.99148	-162.78300	59	09	0.5	2.950	31	9.6	3.4	16.031	M
219	7/24/2006	57.33224	-162.75970	46	12	0.5	2.941	10	8.0	4.8	14.880	M
220	7/24/2006	57.34615	-163.38651	50	15	0.5	2.826	10	9.0	3.1	15.350	M
221	7/24/2006	57.00143	-163.38229	63	17	0.5	2.841	31	9.9	2.6	15.677	F

Appendix B Table 2.--Haul data for stations sampled by the FV *Northwest Explorer* during the 2006 eastern Bering Sea bottom trawl survey.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
2	6/2/2006	57.01168	-159.10260	33	06	0.5	2.828	10	4.3	4.3	15.497	M
3	6/2/2006	57.34725	-159.06171	47	10	0.4	2.503	10	2.7	2.8	15.807	M
4	6/2/2006	57.67924	-159.00481	45	13	0.5	2.917	10	2.6	2.6	16.032	M
5	6/2/2006	58.02003	-158.96719	39	16	0.5	2.780	10	2.9	2.4	15.356	F
6	6/3/2006	58.28686	-159.97240	40	06	0.4	1.981	10	4.0	3.1	15.505	F
7	6/3/2006	58.00908	-160.20580	49	08	0.5	2.882	10	2.3	1.9	16.541	F
8	6/3/2006	57.68000	-160.26010	52	11	0.5	2.868	31	2.6	2.4	16.735	M
9	6/3/2006	57.35133	-160.30071	59	14	0.5	3.050	31	2.7	2.4	17.054	F
10	6/3/2006	57.00927	-160.33170	60	17	0.5	2.936	31	3.0	2.4	16.951	F
11	6/4/2006	56.33973	-160.94910	52	06	0.5	2.856	10	4.5	3.7	16.490	F
12	6/4/2006	56.33992	-161.61819	62	09	0.5	2.985	10	6.0	3.5	16.983	F
13	6/4/2006	56.68072	-161.57750	86	13	0.5	2.851	31	5.8	2.7	17.575	F
14	6/4/2006	57.00538	-161.56590	66	16	0.5	2.918	31	3.4	2.4	16.957	F
15	6/4/2006	57.34594	-161.53230	53	19	0.5	2.839	31	3.1	1.5	16.519	F
16	6/5/2006	57.66882	-161.46570	51	06	0.5	2.866	10	3.4	1.8	15.657	M
17	6/5/2006	58.00672	-161.48250	53	09	0.5	2.880	10	4.2	1.9	15.333	M
18	6/5/2006	58.00453	-162.14180	35	12	0.5	2.858	10	2.4	2.1	15.343	F
19	6/5/2006	58.32893	-162.70720	29	15	0.5	2.952	10	2.5	2.4	15.062	M
20	6/5/2006	58.63506	-162.69670	22	18	0.5	2.988	10	3.0	3.0	15.619	F
21	6/6/2006	58.00790	-162.72479	39	06	0.5	2.844	10	2.3	1.9	14.153	M
22	6/6/2006	57.67646	-162.74980	41	09	0.5	2.821	10	2.1	1.7	15.350	M
23	6/6/2006	57.34236	-162.76810	46	11	0.5	2.917	10	2.2	1.4	15.950	M
24	6/6/2006	56.98899	-162.77811	58	14	0.5	2.965	31	4.4	2.1	16.685	M
26	6/6/2006	56.67417	-162.78050	70	18	0.5	2.901	31	6.5	2.0	17.246	F
27	6/7/2006	56.35553	-162.79469	76	06	0.5	2.998	31	7.3	2.4	16.192	M
28	6/7/2006	56.00478	-163.39510	85	10	0.5	2.878	31	7.4	2.6	16.468	M
29	6/7/2006	56.03603	-164.02760	88	13	0.5	2.862	31	7.6	2.4	15.900	M
30	6/7/2006	55.70575	-164.00929	92	16	0.5	3.004	31	8.5	3.5	17.946	F
31	6/7/2006	55.32625	-164.03360	77	19	0.5	2.977	31	7.6	3.7	17.165	M
32	6/8/2006	56.33545	-164.02870	84	06	0.5	2.871	31	6.9	2.1	17.065	M
33	6/8/2006	56.68104	-164.01151	72	09	0.5	2.807	31	7.1	2.1	16.145	M

Appendix B Table 2.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
34	6/8/2006	57.00999	-163.92081	65	12	0.5	2.878	31	5.7	1.9	16.037	M
35	6/8/2006	57.34153	-163.97000	57	16	0.5	2.885	31	-	-	16.930	F
36	6/8/2006	57.67747	-163.96730	49	19	0.5	2.954	10	1.8	0.8	15.646	M
37	6/9/2006	58.01233	-163.98170	44	06	0.5	2.844	10	1.9	1.2	16.023	M
38	6/9/2006	58.33612	-163.98090	39	11	0.5	2.858	10	2.6	1.5	15.158	M
39	6/9/2006	58.65860	-164.01230	32	14	0.5	2.974	10	2.6	2.6	15.224	M
40	6/9/2006	58.99035	-163.99370	25	17	0.5	2.979	10	3.8	3.6	15.294	M
41	6/10/2006	59.33591	-165.28810	19	06	0.5	2.962	20	4.4	4.3	15.075	M
42	6/10/2006	59.01573	-165.30409	26	10	0.5	2.903	10	3.3	3.2	15.331	M
43	6/10/2006	58.68445	-165.30161	37	12	0.5	2.827	10	1.8	1.2	15.138	M
44	6/10/2006	58.34759	-165.28461	42	15	0.5	2.739	10	1.6	1.3	15.209	M
45	6/10/2006	58.01303	-165.25191	48	18	0.5	2.882	10	1.9	1.0	16.083	F
46	6/11/2006	57.67771	-165.24820	59	09	0.5	2.991	31	2.7	0.1	16.773	F
47	6/11/2006	57.31491	-165.23300	64	12	0.5	2.956	31	4.3	0.8	17.050	M
48	6/11/2006	56.99573	-165.22031	68	15	0.5	2.878	31	4.9	1.5	16.714	M
49	6/11/2006	56.65534	-165.21201	73	18	0.5	2.833	31	5.8	2.1	16.147	M
50	6/12/2006	56.34766	-165.20110	85	06	0.5	2.887	31	6.0	2.3	16.848	M
51	6/12/2006	55.98264	-165.18871	94	09	0.5	2.958	31	6.8	3.8	16.951	M
52	6/12/2006	55.64964	-165.16800	106	12	0.5	2.821	31	7.3	3.8	17.605	M
53	6/12/2006	55.31598	-165.16740	108	15	0.5	2.870	50	6.2	3.8	17.736	M
54	6/12/2006	54.98562	-165.15269	109	18	0.5	2.841	50	6.1	4.1	16.329	M
55	6/13/2006	54.98404	-166.33830	142	06	0.5	2.895	50	6.9	3.8	18.953	M
56	6/13/2006	55.36481	-166.34700	130	09	0.5	2.983	50	5.9	4.1	19.482	M
57	6/13/2006	55.68304	-166.38200	124	12	0.5	2.865	50	6.8	3.9	19.545	M
58	6/13/2006	56.01500	-166.39510	121	15	0.5	2.905	50	6.8	3.8	17.192	M
59	6/13/2006	56.34842	-166.41200	101	18	0.5	2.921	31	7.3	3.2	16.966	M
60	6/14/2006	56.65163	-166.43890	83	06	0.5	2.933	31	6.1	2.4	17.562	F
61	6/14/2006	57.01824	-166.46590	72	09	0.5	2.891	31	5.9	1.9	17.356	F
62	6/14/2006	56.98035	-165.85010	70	12	0.5	2.841	31	6.2	1.8	16.264	M
63	6/14/2006	57.34640	-165.86710	66	15	0.5	2.975	31	5.2	0.7	16.545	M
64	6/14/2006	57.34734	-166.47830	67	17	0.5	2.930	31	4.8	0.6	15.936	M

Appendix B Table 2.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
65	6/15/2006	57.68139	-167.76250	67	06	0.5	2.896	31	5.4	0.2	17.053	M
66	6/15/2006	57.31566	-167.73360	72	09	0.5	2.864	31	5.7	1.2	17.117	M
67	6/15/2006	56.98863	-167.70261	76	12	0.5	3.004	31	5.3	2.8	16.594	M
68	6/15/2006	56.67459	-167.66969	100	14	0.5	2.938	31	6.2	2.9	17.275	M
69	6/15/2006	56.32310	-167.65300	126	17	0.5	2.899	50	6.7	3.9	18.024	M
70	6/18/2006	55.35941	-167.55240	144	09	0.5	2.841	50	6.8	3.7	17.715	M
71	6/18/2006	55.68353	-167.58749	133	12	0.5	2.967	50	6.8	3.9	18.573	M
73	6/18/2006	56.02319	-167.61391	131	16	0.5	3.007	50	6.6	4.1	18.245	F
74	6/19/2006	57.64294	-166.50490	65	06	0.5	2.937	31	4.3	0.0	17.098	F
75	6/19/2006	57.98321	-166.51700	59	09	0.5	2.972	31	3.8	-0.1	17.047	M
76	6/19/2006	58.31684	-166.54750	45	11	0.5	3.014	10	2.3	1.6	16.488	F
77	6/19/2006	58.64624	-166.55260	40	15	0.5	2.852	20	2.5	2.2	15.797	M
78	6/19/2006	58.97278	-166.57291	33	18	0.5	2.956	20	3.5	3.3	15.859	M
79	6/20/2006	60.33839	-167.23219	29	06	0.5	2.963	20	2.3	2.4	16.644	M
80	6/20/2006	60.33705	-167.97130	29	09	0.5	2.996	20	2.0	1.9	15.572	M
81	6/20/2006	60.02377	-167.98360	23	11	0.5	3.048	20	2.2	2.2	15.926	M
82	6/20/2006	59.67717	-167.95110	34	14	0.5	2.880	20	2.2	1.8	16.268	M
83	6/20/2006	59.67722	-167.29800	30	17	0.5	2.938	20	2.9	2.8	16.362	M
84	6/21/2006	59.35869	-167.91800	38	06	0.5	2.861	20	2.0	1.9	16.214	M
85	6/21/2006	59.01417	-167.88319	39	08	0.5	2.848	20	2.0	1.8	15.790	M
86	6/21/2006	58.67827	-167.86881	44	11	0.5	2.969	20	2.4	1.9	15.986	M
87	6/21/2006	58.34341	-167.83141	58	13	0.5	2.798	41	3.0	-0.1	17.335	M
88	6/21/2006	58.00728	-167.80200	65	16	0.5	2.917	41	4.3	-0.3	17.159	M
89	6/22/2006	58.98240	-169.17329	52	06	0.5	2.865	41	3.2	0.1	16.338	M
90	6/22/2006	59.31324	-169.23100	48	09	0.5	2.895	20	2.9	0.2	16.530	M
91	6/22/2006	59.64675	-169.27000	45	11	0.5	2.938	20	4.4	-0.5	16.476	M
92	6/22/2006	59.98495	-169.31850	43	14	0.5	3.008	20	4.1	-1.0	16.780	M
93	6/22/2006	60.31267	-169.33290	41	16	0.5	2.806	20	3.7	-0.8	15.682	M
94	6/23/2006	60.31420	-170.65860	60	06	0.5	2.972	41	3.6	-1.6	17.440	M
95	6/23/2006	60.65372	-170.75281	57	09	0.5	3.015	81	2.7	-1.5	17.323	F
96	6/23/2006	60.99195	-170.78690	51	11	0.5	2.900	81	2.4	-1.5	17.915	M

Appendix B Table 2.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
97	6/23/2006	61.31733	-170.80180	46	14	0.5	2.944	81	4.1	-1.1	17.432	M
98	6/23/2006	61.65638	-170.86501	43	16	0.5	2.884	81	-	-	17.026	M
99	6/24/2006	61.65691	-172.34660	55	06	0.5	2.994	81	-	-	17.145	F
100	6/24/2006	61.33229	-172.20790	61	09	0.5	3.048	81	3.6	-1.6	17.398	F
101	6/24/2006	60.99954	-172.19949	62	12	0.5	2.937	41	1.4	-1.7	17.455	F
102	6/24/2006	60.67360	-172.11670	59	14	0.5	2.884	41	1.4	-1.6	17.484	F
103	6/24/2006	60.34482	-172.06790	57	17	0.5	2.966	43	2.5	-1.6	17.051	F
104	6/25/2006	60.01930	-170.63451	63	06	0.5	2.910	41	4.3	-1.6	17.306	F
105	6/25/2006	59.67849	-170.58240	65	09	0.5	2.940	41	5.6	-1.5	18.147	M
106	6/25/2006	59.34051	-170.53690	66	11	0.5	2.874	41	4.9	-1.5	18.965	M
107	6/25/2006	59.00756	-170.48630	65	14	0.5	2.774	41	-	-	17.435	F
108	6/25/2006	58.65585	-170.43010	71	17	0.5	2.859	41	4.6	-1.2	16.983	M
109	6/26/2006	58.31100	-170.37900	73	09	0.5	2.926	41	4.6	-0.9	17.362	F
110	6/26/2006	58.32372	-169.72890	67	14	0.5	2.899	41	4.3	-0.8	17.277	M
111	6/26/2006	58.31662	-169.11639	61	18	0.5	2.928	41	-	-	17.042	M
113	6/27/2006	58.01554	-169.06860	68	09	0.5	2.856	42	5.1	-0.7	17.803	M
114	6/27/2006	57.84808	-169.33260	64	11	0.5	2.964	42	5.1	-0.6	17.376	M
115	6/27/2006	57.65408	-169.02980	66	14	0.5	2.888	42	5.5	-0.2	17.287	M
116	6/27/2006	57.50808	-169.35420	68	16	0.5	2.876	42	5.6	0.8	16.820	M
117	6/28/2006	58.00824	-169.67650	68	06	0.5	2.936	42	4.9	-0.8	17.105	M
118	6/28/2006	57.82063	-170.00940	71	09	0.5	2.866	42	5.1	-0.9	17.295	M
119	6/28/2006	57.98797	-170.35260	73	12	0.5	2.848	42	4.9	-0.7	17.202	F
120	6/28/2006	57.82354	-170.63341	76	14	0.5	2.965	42	4.7	0.3	17.512	F
121	6/29/2006	56.98854	-169.57010	59	07	0.5	2.978	42	2.1	2.3	16.606	M
122	6/29/2006	57.15623	-169.89500	48	09	0.5	2.913	42	2.8	2.7	15.759	M
125	6/29/2006	56.99892	-170.19420	67	17	0.5	2.884	42	3.4	2.8	16.371	M
126	6/30/2006	58.00218	-171.63181	96	07	0.5	2.934	41	5.3	2.2	17.176	M
127	6/30/2006	57.99509	-170.95020	85	09	0.5	2.883	42	5.3	0.2	18.033	M
128	6/30/2006	58.33407	-171.01089	82	12	0.5	2.934	41	5.1	0.3	17.659	M
129	6/30/2006	58.33012	-171.64990	94	15	0.5	2.859	41	5.7	0.9	17.528	M
130	6/30/2006	58.65682	-171.71449	90	18	0.5	2.995	41	5.5	0.2	17.519	M

Appendix B Table 2.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
131	7/1/2006	58.65157	-171.08220	81	06	0.5	2.896	41	5.3	-0.3	17.535	F
132	7/1/2006	58.98600	-171.13240	76	09	0.5	2.958	41	4.9	-1.2	17.642	F
133	7/1/2006	59.32519	-171.18120	73	11	0.5	2.772	41	5.1	-1.4	17.229	M
134	7/1/2006	59.68024	-171.24850	70	14	0.5	2.857	41	4.9	-1.5	17.836	M
135	7/1/2006	59.98927	-171.29860	67	17	0.5	2.901	41	5.3	-1.6	17.865	M
137	7/2/2006	60.00644	-171.96069	64	07	0.5	2.945	43	2.4	-1.3	17.018	M
138	7/2/2006	59.82620	-172.27100	73	10	0.5	3.028	43	5.4	-1.5	17.479	M
139	7/2/2006	59.67753	-171.90829	76	12	0.5	3.036	43	5.6	-1.4	17.639	F
140	7/2/2006	59.34473	-171.83330	78	14	0.5	2.921	43	5.2	-1.2	17.679	M
141	7/2/2006	59.00695	-171.78430	85	17	0.5	2.905	41	5.1	-0.3	17.680	M
142	7/3/2006	59.50901	-173.52220	100	07	0.5	2.918	43	6.7	0.9	17.670	M
143	7/3/2006	59.32159	-173.13600	98	09	0.5	2.878	43	5.5	0.5	17.616	M
144	7/3/2006	59.00430	-173.08250	105	12	0.5	2.860	61	7.2	2.0	17.500	M
145	7/3/2006	58.68070	-173.00340	110	14	0.5	2.979	61	7.5	2.2	17.415	M
146	7/3/2006	58.34723	-172.93410	107	17	0.5	2.844	61	7.0	2.3	17.616	M
147	7/4/2006	57.98974	-172.84399	107	07	0.5	2.940	61	7.0	2.4	17.707	M
148	7/4/2006	57.67911	-172.80170	117	10	0.5	2.917	61	7.1	2.8	17.739	F
149	7/4/2006	57.35797	-172.81281	115	13	0.5	2.959	61	6.9	2.9	17.743	F
150	7/4/2006	57.01272	-172.65581	120	15	0.5	2.936	61	7.2	3.9	17.384	F
151	7/4/2006	56.68642	-172.56779	133	18	0.5	2.938	61	7.9	3.8	18.070	F
152	7/9/2006	56.33580	-168.91080	128	07	0.5	2.992	50	9.0	4.0	17.737	M
153	7/9/2006	56.67376	-168.92340	97	11	0.5	2.945	32	7.8	2.9	17.122	M
154	7/9/2006	56.83863	-168.64819	94	13	0.5	3.025	32	8.9	2.9	17.656	F
155	7/9/2006	56.99064	-168.92860	77	15	0.5	2.957	32	9.1	3.0	16.736	M
156	7/9/2006	56.83326	-169.26109	78	17	0.5	2.903	32	8.6	3.0	17.064	F
157	7/10/2006	56.42642	-169.53040	101	07	0.4	2.011	50	8.8	3.7	17.087	F
158	7/10/2006	56.33920	-170.09660	107	10	0.5	2.855	50	8.6	3.7	17.368	F
159	7/10/2006	56.33374	-170.66110	118	12	0.5	2.881	61	8.2	4.0	17.913	F
161	7/10/2006	56.68343	-171.37399	117	18	0.5	2.826	61	8.4	4.0	17.667	F
162	7/10/2006	56.98345	-171.38730	108	20	0.5	2.834	61	8.7	3.4	17.551	F
163	7/11/2006	57.31830	-171.46300	99	07	0.5	2.913	41	8.5	3.1	17.646	M

Appendix B Table 2.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
164	7/11/2006	57.50746	-170.58780	72	11	0.5	2.816	42	7.7	3.2	16.935	M
165	7/11/2006	57.67883	-170.89410	82	13	0.5	2.882	42	8.6	2.4	17.269	F
166	7/11/2006	57.67884	-171.52800	97	16	0.5	2.921	41	8.5	2.5	17.506	F
167	7/12/2006	59.68530	-173.24620	93	07	0.5	2.991	43	6.6	0.1	17.323	F
168	7/12/2006	59.84562	-173.60291	93	09	0.5	2.930	43	6.5	0.5	17.510	F
172	7/12/2006	59.99761	-173.26340	72	16	0.3	1.463	43	7.0	-1.4	17.906	M
173	7/12/2006	60.13350	-173.76210	86	18	0.5	2.863	43	7.0	-1.1	17.558	F
174	7/13/2006	60.29051	-173.37790	61	07	0.2	1.216	43	5.3	-1.0	16.712	F
175	7/13/2006	60.66244	-173.46730	64	09	0.5	2.864	41	6.8	-0.9	16.553	F
176	7/13/2006	60.99232	-173.50160	73	12	0.5	2.935	41	6.5	-1.5	17.284	F
177	7/13/2006	61.31839	-173.57980	71	14	0.5	2.807	82	6.5	-1.6	16.968	F
178	7/13/2006	61.65293	-173.66650	68	17	0.5	2.853	82	6.9	-1.7	16.987	F
179	7/14/2006	62.32375	-173.13510	57	06	0.5	2.950	81	6.6	-1.5	16.945	F
180	7/14/2006	62.65171	-173.18500	62	09	0.5	2.957	81	6.5	-1.7	17.016	F
181	7/14/2006	62.98652	-173.23730	66	11	0.5	2.844	81	7.1	-1.7	20.732	M
182	7/14/2006	63.00010	-173.98550	72	14	0.5	2.828	81	6.5	-1.7	17.054	F
183	7/14/2006	62.67323	-173.91071	67	17	0.5	2.893	81	6.3	-1.7	18.975	M
184	7/14/2006	62.66623	-174.61861	71	19	0.5	2.827	81	6.0	-1.7	16.900	F
185	7/15/2006	62.30651	-174.58850	69	06	0.5	2.825	81	6.9	-1.6	17.853	M
186	7/15/2006	62.34023	-175.26871	77	09	0.5	3.029	81	6.3	-1.7	18.451	M
187	7/15/2006	62.00482	-175.15150	79	12	0.5	2.928	82	6.3	-1.6	17.369	F
188	7/15/2006	61.67190	-175.07040	83	14	0.5	2.909	82	6.5	-1.7	17.344	F
189	7/15/2006	61.34398	-174.98880	85	17	0.5	2.907	82	6.5	-1.7	17.265	F
190	7/16/2006	60.97783	-174.88850	90	07	0.5	2.986	82	7.0	-1.5	17.545	F
191	7/16/2006	60.67910	-174.81960	96	09	0.5	2.910	41	7.4	-0.1	17.793	F
192	7/16/2006	60.67596	-175.44650	105	12	0.5	2.869	61	7.3	0.6	17.796	F
193	7/16/2006	60.31570	-175.37959	109	15	0.5	3.001	61	7.9	1.3	17.817	M
194	7/16/2006	60.00572	-175.26700	115	18	0.5	3.012	61	8.2	1.6	17.749	F
195	7/17/2006	59.64030	-175.11070	123	07	0.5	2.896	61	8.7	1.9	17.711	F
196	7/17/2006	59.31498	-175.10291	131	10	0.5	2.967	61	9.0	2.0	17.771	F
199	7/17/2006	59.01463	-174.97800	128	15	0.5	3.073	61	8.8	2.3	17.106	F

Appendix B Table 2.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
200	7/17/2006	59.00010	-175.72031	131	18	0.5	3.065	61	9.1	1.9	17.919	F
201	7/18/2006	59.32013	-175.76050	134	07	0.5	2.965	61	9.0	2.0	18.070	F
202	7/18/2006	59.68999	-175.87219	134	10	0.5	2.913	61	8.9	2.1	18.261	F
203	7/18/2006	60.01928	-175.93359	127	13	0.5	2.973	61	8.6	1.9	18.149	F
204	7/18/2006	60.35009	-176.03830	119	16	0.5	2.838	61	8.2	1.6	18.033	F
205	7/18/2006	60.66289	-176.19870	117	19	0.5	2.934	61	7.9	1.7	17.630	M
206	7/19/2006	60.98328	-176.30389	110	07	0.5	2.997	90	7.8	0.8	18.142	F
207	7/19/2006	61.01732	-175.56490	100	10	0.5	2.964	90	7.6	-0.5	17.707	F
208	7/19/2006	61.30980	-175.64920	95	12	0.5	2.984	90	7.7	-1.4	17.940	F
209	7/19/2006	61.66033	-175.77879	93	15	0.5	3.030	82	7.6	-1.6	20.379	M
210	7/19/2006	61.98577	-175.83350	91	17	0.5	3.075	82	7.5	-1.6	17.707	F
211	7/20/2006	61.67500	-176.46550	103	07	0.5	2.932	90	7.5	0.1	17.821	F
212	7/20/2006	61.34488	-176.28169	104	09	0.5	2.891	90	7.2	0.3	17.741	F
213	7/20/2006	61.34092	-176.94971	114	12	0.5	3.014	90	7.2	1.0	18.346	F
214	7/20/2006	61.00656	-176.95430	120	15	0.5	2.895	90	7.6	1.5	18.092	F
215	7/20/2006	61.00356	-177.60390	133	18	0.5	2.971	90	7.5	1.3	18.168	F
216	7/21/2006	60.67814	-178.17999	159	07	0.5	2.932	61	8.3	2.1	18.641	F
217	7/21/2006	60.66977	-177.53900	144	10	0.5	2.820	61	8.4	1.7	18.360	F
218	7/21/2006	60.67466	-176.83440	127	12	0.5	2.941	61	8.0	1.9	18.369	F
219	7/21/2006	60.32565	-176.71780	135	15	0.5	2.933	61	8.0	1.9	17.305	M
220	7/21/2006	60.32711	-177.34509	146	18	0.5	2.966	61	8.3	1.7	18.348	F
221	7/22/2006	60.00938	-177.91890	140	07	0.5	2.788	61	8.5	1.9	18.280	F
222	7/22/2006	59.99316	-177.19160	134	10	0.3	1.911	61	8.5	1.7	18.595	M
223	7/22/2006	60.00190	-176.73151	139	13	0.5	2.867	61	8.4	1.7	18.534	M
224	7/22/2006	59.66821	-176.55701	134	16	0.5	2.957	61	8.4	1.7	18.489	F
225	7/22/2006	59.65295	-177.12630	172	18	0.5	2.789	61	8.5	2.6	17.956	M
226	7/23/2006	59.33590	-177.09590	148	07	0.5	2.916	61	8.6	2.0	18.134	F
227	7/23/2006	59.33344	-176.39909	133	10	0.5	2.952	61	8.5	1.7	18.154	M
228	7/23/2006	59.00313	-176.34750	132	13	0.5	2.983	61	9.0	1.8	18.459	M
229	7/23/2006	58.99718	-176.91299	134	15	0.5	3.041	61	9.1	2.8	18.079	M
230	7/23/2006	58.99944	-177.56371	133	18	0.5	2.787	61	9.2	2.9	18.701	M

Appendix B Table 2.--Continued.

Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface temp. (°C)	Bottom temp. (°C)	Net width (m)	Width code
231	7/24/2006	58.67253	-176.83890	133	07	0.5	3.027	61	8.9	2.5	18.657	M
232	7/24/2006	58.66506	-176.22170	138	10	0.5	2.907	61	9.0	2.8	18.241	M
233	7/24/2006	58.66555	-175.56480	132	12	0.5	2.978	61	8.8	2.3	17.645	M
234	7/24/2006	58.67493	-174.95740	205	15	0.5	2.910	61	9.1	3.3	18.392	F
235	7/25/2006	58.67651	-174.28101	155	07	0.5	3.030	61	9.4	3.1	18.708	M
236	7/25/2006	58.34924	-174.31799	171	10	0.5	3.012	61	9.0	3.6	18.047	F

Appendix C: Rank Order of Relative Abundance of Fish and Invertebrates

Appendix C ranks all fish and invertebrates caught during the 2006 eastern Bering Sea bottom trawl survey by descending unweighted CPUE (kg/ha).

Appendix C Table 1.-- Rank of fish and invertebrate taxa by unweighted total CPUE (kg/ha) from the 2006 eastern Bering Sea bottom trawl survey.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
1	21740	64.9344	46.0714	51.6307	78.2381	0.2054	0.2054	*Theragra chalcogramma*
2	10260	51.0496	22.8018	41.6904	60.4088	0.1615	0.3670	*Lepidopsetta* sp.
3	10210	45.0168	16.2677	37.1115	52.9221	0.1424	0.5094	*Limanda aspera*
4	81742	21.7978	6.2381	16.9025	26.6931	0.0690	0.5783	*Asterias amurensis*
5	10285	13.5718	3.0830	10.1303	17.0132	0.0429	0.6213	*Pleuronectes quadrituberculatus*
6	10130	12.6203	1.8920	9.9242	15.3163	0.0399	0.6612	*Hippoglossoides elassodon*
7	10110	12.3745	1.3993	10.0560	14.6930	0.0392	0.7004	*Atheresthes stomias*
8	21720	11.7579	0.5450	10.3110	13.2049	0.0372	0.7376	*Gadus macrocephalus*
9	471	9.2665	0.2499	8.2867	10.2463	0.0293	0.7669	*Bathyraja parmifera*
10	98082	6.9765	1.7236	4.4033	9.5498	0.0221	0.7890	*Styela rustica*
11	68580	4.9850	0.5167	3.5761	6.3938	0.0158	0.8047	*Chionoecetes opilio*
12	83020	4.7488	0.4882	3.3794	6.1182	0.0150	0.8197	*Gorgonocephalus eucnemis*
13	99994	4.2068	0.2835	3.1633	5.2503	0.0133	0.8331	empty gastropod shells
14	10120	3.4440	0.0472	3.0184	3.8697	0.0109	0.8440	*Hippoglossus stenolepis*
15	69086	2.9117	0.0955	2.3058	3.5175	0.0092	0.8532	*Pagurus trigonocheirus*
16	68560	2.9115	0.2291	1.9733	3.8496	0.0092	0.8624	*Chionoecetes bairdi*
17	10220	2.3496	0.8278	0.5663	4.1329	0.0074	0.8698	*Platichthys stellatus*
18	69060	2.1098	0.0943	1.5080	2.7117	0.0067	0.8765	*Pagurus aleuticus*
19	98205	2.0954	0.5912	0.5884	3.6024	0.0066	0.8831	*Halocynthia aurantium*
20	69322	1.8972	0.0931	1.2992	2.4952	0.0060	0.8891	*Paralithodes camtschaticus*
21	91000	1.8435	0.8203	0.0683	3.6187	0.0058	0.8949	Porifera
22	98200	1.7747	0.6753	0.1641	3.3854	0.0056	0.9006	*Halocynthia* sp.
23	71820	1.7208	0.0855	1.1477	2.2940	0.0054	0.9060	*Neptunea pribiloffensis*
24	21371	1.4178	0.0333	1.0600	1.7756	0.0045	0.9105	*Myoxocephalus jaok*
25	83320	1.2525	0.0767	0.7095	1.7955	0.0040	0.9145	*Ophiura sarsi*
26	10112	1.2282	0.0178	0.9666	1.4897	0.0039	0.9183	*Atheresthes evermanni*
27	21370	1.2270	0.0163	0.9766	1.4773	0.0039	0.9222	*Myoxocephalus polyacanthocephalus*
28	98105	0.9915	0.0919	0.3972	1.5857	0.0031	0.9254	*Boltenia ovifera*
29	81780	0.9900	0.0713	0.4667	1.5133	0.0031	0.9285	*Ctenodiscus crispatus*
30	82511	0.9709	0.5947	0.0000	2.4823	0.0031	0.9316	*Strongylocentrotus* sp.
31	21347	0.9573	0.1499	0.1985	1.7162	0.0030	0.9346	*Hemilepidotus jordani*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
32	80590	0.9331	0.0264	0.6145	1.2517	0.0030	0.9375	*Leptasterias polaris*
33	71884	0.8920	0.0157	0.6462	1.1377	0.0028	0.9404	*Neptunea heros*
34	91087	0.8245	0.6798	0.0000	2.4405	0.0026	0.9430	stone sponge
35	40504	0.7900	0.0095	0.5991	0.9810	0.0025	0.9455	*Chrysaora melanaster*
36	68577	0.7659	0.0423	0.3629	1.1688	0.0024	0.9479	*Hyas coarctatus*
37	71882	0.7588	0.0148	0.5205	0.9970	0.0024	0.9503	*Neptunea ventricosa*
38	21420	0.7028	0.0102	0.5046	0.9010	0.0022	0.9525	*Hemitripterus bolini*
39	69120	0.6837	0.0271	0.3609	1.0064	0.0022	0.9547	*Pagurus capillatus*
40	24191	0.6749	0.0171	0.4184	0.9313	0.0021	0.9568	*Lycodes brevipes*
41	30060	0.6557	0.3959	0.0000	1.8889	0.0021	0.9589	*Sebastes alutus*
42	71870	0.6531	0.0146	0.4159	0.8902	0.0021	0.9610	*Neptunea lyrata*
43	43090	0.5661	0.0148	0.3274	0.8048	0.0018	0.9628	*Liponema brevicornis*
44	20040	0.5044	0.0067	0.3444	0.6644	0.0016	0.9643	*Podothecus acipenserinus*
45	21110	0.5043	0.0122	0.2881	0.7205	0.0016	0.9659	*Clupea pallasi*
46	71753	0.5031	0.0371	0.1258	0.8804	0.0016	0.9675	*Pyrulofusus deformis*
47	69070	0.4986	0.0094	0.3083	0.6889	0.0016	0.9691	*Pagurus confragosus*
48	43020	0.4440	0.1971	0.0000	1.3142	0.0014	0.9705	*Metridium senile*
49	10200	0.4166	0.0148	0.1782	0.6550	0.0013	0.9718	*Glyptocephalus zachirus*
50	21368	0.4014	0.0087	0.2188	0.5839	0.0013	0.9731	*Myoxocephalus verrucosus*
51	69095	0.4011	0.0050	0.2628	0.5394	0.0013	0.9744	*Pagurus rathbuni*
52	43021	0.3999	0.0513	0.0000	0.8438	0.0013	0.9756	*Metridium farcimen*
53	72500	0.3967	0.0071	0.2313	0.5622	0.0013	0.9769	*Fusitriton oregonensis*
54	10115	0.3430	0.0052	0.2014	0.4846	0.0011	0.9780	*Reinhardtius hippoglossoides*
55	80200	0.3319	0.0062	0.1776	0.4861	0.0010	0.9790	*Lethasterias nanimensis*
56	10211	0.3197	0.0075	0.1505	0.4889	0.0010	0.9800	*Limanda proboscidea*
57	43010	0.3169	0.0103	0.1182	0.5155	0.0010	0.9810	*Metridium* sp.
58	24185	0.2743	0.0021	0.1854	0.3632	0.0009	0.9819	*Lycodes palearis*
59	69090	0.2664	0.0014	0.1944	0.3384	0.0008	0.9828	*Pagurus ochotensis*
60	435	0.2261	0.0010	0.1638	0.2884	0.0007	0.9835	*Bathyraja interrupta*
61	81315	0.2071	0.0428	0.0000	0.6127	0.0007	0.9841	*Pteraster tesselatus*
62	98310	0.2035	0.0025	0.1050	0.3020	0.0006	0.9848	*Aplidium* sp.
63	99993	0.1918	0.0004	0.1503	0.2333	0.0006	0.9854	empty bivalve shells

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
64	85201	0.1841	0.0043	0.0561	0.3121	0.0006	0.9860	*Cucumaria fallax*
65	82510	0.1814	0.0038	0.0604	0.3024	0.0006	0.9865	*Strongylocentrotus droebachiensis*
66	71761	0.1771	0.0057	0.0288	0.3255	0.0006	0.9871	*Pyrulofusus melonis*
67	80020	0.1680	0.0053	0.0249	0.3110	0.0005	0.9876	*Evasterias echinosoma*
68	71750	0.1678	0.0018	0.0839	0.2518	0.0005	0.9882	*Volutopsius* sp.
69	80594	0.1676	0.0029	0.0616	0.2736	0.0005	0.9887	*Leptasterias arctica*
70	71001	0.1544	0.0021	0.0643	0.2444	0.0005	0.9892	gastropod eggs
71	69323	0.1508	0.0023	0.0569	0.2446	0.0005	0.9897	*Paralithodes platypus*
72	68578	0.1370	0.0007	0.0853	0.1886	0.0004	0.9901	*Hyas lyratus*
73	71800	0.1197	0.0018	0.0354	0.2040	0.0004	0.9905	*Neptunea* sp.
74	20720	0.1132	0.0009	0.0555	0.1708	0.0004	0.9908	*Bathymaster signatus*
75	472	0.1058	0.0020	0.0191	0.1926	0.0003	0.9912	*Bathyraja aleutica*
76	72755	0.1016	0.0018	0.0184	0.1847	0.0003	0.9915	*Buccinum polare*
77	69061	0.0997	0.0004	0.0617	0.1378	0.0003	0.9918	*Labidochirus splendescens*
78	320	0.0917	0.0048	0.0000	0.2274	0.0003	0.9921	*Somniosus pacificus*
79	82740	0.0917	0.0064	0.0000	0.2480	0.0003	0.9924	*Echinarachnius parma*
80	72740	0.0836	0.0007	0.0308	0.1365	0.0003	0.9926	*Buccinum* sp.
81	74562	0.0790	0.0010	0.0179	0.1401	0.0002	0.9929	*Musculus discors*
82	21725	0.0680	0.0009	0.0101	0.1259	0.0002	0.9931	*Boreogadus saida*
83	69121	0.0667	0.0010	0.0037	0.1297	0.0002	0.9933	*Elassochirus cavimanus*
84	71769	0.0656	0.0003	0.0327	0.0985	0.0002	0.9935	*Beringius* sp.
85	98300	0.0623	0.0003	0.0259	0.0987	0.0002	0.9937	*compound ascidian unident.*
86	74120	0.0555	0.0006	0.0090	0.1020	0.0002	0.9939	*Patinopecten caurinus*
87	72743	0.0552	<0.0001	0.0368	0.0736	0.0002	0.9941	*Buccinum angulosum*
88	21316	0.0543	0.0008	0.0000	0.1106	0.0002	0.9942	*Gymnocanthus galeatus*
89	21390	0.0541	<0.0001	0.0359	0.0723	0.0002	0.9944	*Dasycottus setiger*
90	23041	0.0538	<0.0001	0.0393	0.0683	0.0002	0.9948	*Mallotus villosus*
91	71886	0.0536	<0.0001	0.0350	0.0722	0.0002	0.9949	*Neptunea magna*
92	72752	0.0522	0.0002	0.0272	0.0772	0.0002	0.9951	*Buccinum scalariforme*
93	50161	0.0500	0.0006	0.0021	0.0978	0.0002	0.9952	*Aphrodita* sp.
94	21314	0.0499	0.0002	0.0238	0.0761	0.0002	0.9955	*Gymnocanthus pistilliger*
95	66031	0.0488	<0.0001	0.0295	0.0681	0.0002	0.9957	*Pandalus borealis*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
96	99997	0.0488	0.0006	0.0007	0.0968	0.0002	0.9958	unsorted catch and debris
97	42003	0.0487	0.0007	0.0000	0.1014	0.0002	0.9960	Virgularidae
98	80540	0.0474	0.0020	0.0000	0.1355	0.0001	0.9961	*Henricia* sp.
99	20322	0.0462	0.0004	0.0058	0.0867	0.0001	0.9963	*Anarhichas orientalis*
100	24184	0.0455	0.0005	0.0014	0.0896	0.0001	0.9964	*Lycodes raridens*
101	24001	0.0422	0.0014	0.0000	0.1146	0.0001	0.9965	*Zaprora silenus*
102	71772	0.0420	0.0003	0.0101	0.0740	0.0001	0.9967	*Beringius beringii*
103	69400	0.0417	0.0003	0.0074	0.0759	0.0001	0.9968	*Erimacrus isenbeckii*
104	65100	0.0400	0.0003	0.0049	0.0752	0.0001	0.9969	Thoracica
105	21348	0.0381	0.0005	0.0000	0.0807	0.0001	0.9970	*Hemilepidotus papilio*
106	23010	0.0368	0.0002	0.0116	0.0619	0.0001	0.9971	*Thaleichthys pacificus*
107	71756	0.0341	0.0007	0.0000	0.0854	0.0001	0.9972	*Volutopsius fragilis*
108	78403	0.0337	0.0002	0.0066	0.0608	0.0001	0.9973	*Octopus dofleini*
109	81355	0.0336	0.0002	0.0084	0.0588	0.0001	0.9974	*Pteraster obscurus*
110	23235	0.0311	0.0002	0.0067	0.0555	<0.0001	0.9975	*Oncorhynchus keta*
111	43030	0.0275	<0.0001	0.0114	0.0435	<0.0001	0.9976	*Stomphia* sp.
112	71891	0.0264	<0.0001	0.0116	0.0412	<0.0001	0.9977	*Plicifusus kroyeri*
113	43000	0.0260	0.0001	0.0044	0.0475	<0.0001	0.9977	Actiniaria
114	72751	0.0259	<0.0001	0.0114	0.0404	<0.0001	0.9978	*Buccinum plectrum*
115	85210	0.0250	0.0006	0.0000	0.0731	<0.0001	0.9979	*Psolus* sp.
116	68510	0.0250	<0.0001	0.0096	0.0403	<0.0001	0.9980	*Oregonia gracilis*
117	10270	0.0246	0.0003	0.0000	0.0566	<0.0001	0.9980	*Isopsetta isolepis*
118	40500	0.0221	<0.0001	0.0076	0.0367	<0.0001	0.9981	*Scyphozoa*
119	68781	0.0220	<0.0001	0.0100	0.0341	<0.0001	0.9982	*Telmessus cheiragonus*
120	420	0.0212	0.0002	0.0000	0.0498	<0.0001	0.9982	*Raja binoculata*
121	75111	0.0210	<0.0001	0.0110	0.0310	<0.0001	0.9983	*Mactromeris polynyma*
122	98000	0.0205	0.0003	0.0000	0.0570	<0.0001	0.9983	Ascidian unident.
123	69035	0.0193	0.0001	0.0000	0.0403	<0.0001	0.9984	*Pagurus* sp.
124	80015	0.0191	<0.0001	0.0040	0.0342	<0.0001	0.9985	*Evasterias troschelii*
125	72747	0.0191	<0.0001	0.0077	0.0305	<0.0001	0.9985	*Buccinum oedematum*
126	41201	0.0165	<0.0001	0.0069	0.0261	<0.0001	0.9986	*Gersemia* sp.
127	43042	0.0159	<0.0001	0.0046	0.0272	<0.0001	0.9986	*Urticina crassicornis*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
128	69042	0.0158	<0.0001	0.0022	0.0294	<0.0001	0.9987	*Pagurus brandti*
129	41221	0.0146	<0.0001	0.0000	0.0295	<0.0001	0.9987	*Gersemia rubiformis*
130	81095	0.0141	<0.0001	0.0051	0.0231	<0.0001	0.9987	*Crossaster papposus*
131	22205	0.0135	<0.0001	0.0041	0.0229	<0.0001	0.9988	*Liparis gibbus*
132	42008	0.0129	0.0002	0.0000	0.0381	<0.0001	0.9988	*Halipteris* sp.
133	20006	0.0128	<0.0001	0.0058	0.0199	<0.0001	0.9989	*Leptagonus frenatus*
134	75284	0.0128	<0.0001	0.0042	0.0214	<0.0001	0.9989	*Serripes* sp.
135	71890	0.0126	<0.0001	0.0049	0.0202	<0.0001	0.9989	*Plicifusus* sp.
136	21438	0.0125	<0.0001	0.0073	0.0176	<0.0001	0.9990	*Icelus spiniger*
137	71030	0.0124	<0.0001	0.0000	0.0263	<0.0001	0.9990	*Tritonia diomedea*
138	83000	0.0122	<0.0001	0.0000	0.0294	<0.0001	0.9990	*Ophiuroid unident.*
139	75285	0.0111	<0.0001	0.0046	0.0177	<0.0001	0.9991	*Serripes groenlandicus*
140	20061	0.0110	<0.0001	0.0061	0.0159	<0.0001	0.9991	*Occella dodecaedron*
141	22236	0.0106	<0.0001	0.0037	0.0175	<0.0001	0.9991	*Careproctus rastrinus*
142	40501	0.0105	0.0001	0.0000	0.0311	<0.0001	0.9992	*Chrysaora* sp.
143	74104	0.0104	<0.0001	0.0000	0.0246	<0.0001	0.9992	*Chlamys* sp.
144	21355	0.0101	<0.0001	0.0024	0.0178	<0.0001	0.9992	*Triglops pingeli*
145	68590	0.0098	<0.0001	0.0034	0.0162	<0.0001	0.9993	*Chionoecetes* hybrid
146	71010	0.0095	<0.0001	0.0000	0.0200	<0.0001	0.9993	Nudibranchia unident.
147	71835	0.0095	<0.0001	0.0042	0.0147	<0.0001	0.9993	*Neptunea borealis*
148	95000	0.0087	<0.0001	0.0022	0.0152	<0.0001	0.9993	Bryozoa unident.
149	21932	0.0072	<0.0001	0.0032	0.0112	<0.0001	0.9994	*Hexagrammos stelleri*
150	71025	0.0071	<0.0001	0.0012	0.0130	<0.0001	0.9994	*Tritonia* sp.
151	21354	0.0070	<0.0001	0.0000	0.0178	<0.0001	0.9994	*Triglops scepticus*
152	75286	0.0069	<0.0001	0.0002	0.0136	<0.0001	0.9994	*Serripes laperousii*
153	30152	0.0068	<0.0001	0.0000	0.0180	<0.0001	0.9994	*Sebastes variabilis*
154	81360	0.0062	<0.0001	0.0002	0.0122	<0.0001	0.9995	*Diplopteraster multipes*
155	78012	0.0061	<0.0001	0.0002	0.0120	<0.0001	0.9995	*Benthoctopus leioderma*
156	72063	0.0060	<0.0001	0.0024	0.0096	<0.0001	0.9995	*Aforia circinata*
157	66045	0.0059	<0.0001	0.0017	0.0102	<0.0001	0.9995	*Pandalus goniurus*
158	21592	0.0055	<0.0001	0.0005	0.0106	<0.0001	0.9995	*Trichodon trichodon*
159	436	0.0054	<0.0001	0.0000	0.0115	<0.0001	0.9995	*Bathyraja interrupta*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
160	81060	0.0049	<0.0001	0.0000	0.0135	<0.0001	0.9996	*Solaster* sp.
161	71774	0.0048	<0.0001	0.0000	0.0117	<0.0001	0.9996	*Beringius stimpsoni*
162	66502	0.0047	<0.0001	0.0025	0.0069	<0.0001	0.9996	*Crangon* sp.
163	65203	0.0045	<0.0001	0.0000	0.0108	<0.0001	0.9996	*Balanus evermanni*
164	21921	0.0043	<0.0001	0.0006	0.0080	<0.0001	0.9996	*Pleurogrammus monopterygius*
165	69010	0.0036	<0.0001	0.0000	0.0102	<0.0001	0.9996	Paguridae
166	30420	0.0036	<0.0001	0.0000	0.0080	<0.0001	0.9996	*Sebastes polyspinis*
167	81310	0.0035	<0.0001	0.0000	0.0084	<0.0001	0.9996	*Pteraster* sp.
168	480	0.0035	<0.0001	0.0000	0.0103	<0.0001	0.9997	*Bathyraja maculata*
169	71710	0.0035	<0.0001	0.0015	0.0054	<0.0001	0.9997	*Colus* sp.
170	71763	0.0034	<0.0001	0.0005	0.0062	<0.0001	0.9997	*Volutopsius stefanssoni*
171	91056	0.0032	<0.0001	0.0000	0.0096	<0.0001	0.9997	*Phakellia cribrosa*
172	80595	0.0032	<0.0001	0.0000	0.0092	<0.0001	0.9997	*Leptasterias* sp.
173	21356	0.0032	<0.0001	0.0000	0.0078	<0.0001	0.9997	*Triglops macellus*
174	99998	0.0031	<0.0001	0.0000	0.0073	<0.0001	0.9997	polychaete tubes
175	71525	0.0029	<0.0001	0.0006	0.0052	<0.0001	0.9997	*Natica* sp.
176	80660	0.0028	<0.0001	0.0000	0.0059	<0.0001	0.9997	*Pseudarchaster parelii*
177	72059	0.0024	<0.0001	0.0003	0.0045	<0.0001	0.9997	*Aforia* sp.
178	81870	0.0022	<0.0001	0.0000	0.0066	<0.0001	0.9997	*Dipsacaster borealis*
179	22219	0.0022	<0.0001	0.0003	0.0041	<0.0001	0.9997	*Careproctus* sp.
180	95070	0.0021	<0.0001	0.0002	0.0040	<0.0001	0.9998	*Rhamphostomella costata*
181	56311	0.0020	<0.0001	0.0010	0.0030	<0.0001	0.9998	*Eunoe nodosa*
182	74050	0.0020	<0.0001	0.0000	0.0057	<0.0001	0.9998	Mytilidae
183	72789	0.0020	<0.0001	0.0000	0.0052	<0.0001	0.9998	*Arctomelon* sp.
184	69310	0.0020	<0.0001	0.0000	0.0059	<0.0001	0.9998	*Lithodes aequispina*
185	21735	0.0019	<0.0001	0.0000	0.0043	<0.0001	0.9998	*Eleginus gracilis*
186	68040	0.0019	<0.0001	0.0007	0.0031	<0.0001	0.9998	*Cancer oregonensis*
187	21380	0.0019	<0.0001	0.0000	0.0045	<0.0001	0.9998	*Leptocottus armatus*
188	56312	0.0019	<0.0001	0.0007	0.0030	<0.0001	0.9998	*Eunoe depressa*
189	10180	0.0018	<0.0001	0.0000	0.0036	<0.0001	0.9998	*Microstomus pacificus*
190	74311	0.0018	<0.0001	0.0000	0.0035	<0.0001	0.9998	*Hiatella arctica*
191	66030	0.0017	<0.0001	0.0000	0.0048	<0.0001	0.9998	*Pandalus jordani*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
192	69110	0.0016	<0.0001	0.0001	0.0032	<0.0001	0.9998	*Elassochirus tenuimanus*
193	75205	0.0016	<0.0001	0.0002	0.0030	<0.0001	0.9998	*Tellina lutea*
194	43082	0.0015	<0.0001	0.0003	0.0027	<0.0001	0.9998	*Cribrinopsis fernaldi*
195	91015	0.0014	<0.0001	0.0000	0.0041	<0.0001	0.9998	*Suberites* sp.
196	42012	0.0014	<0.0001	0.0000	0.0036	<0.0001	0.9998	*Halipteris willemoesi*
197	91005	0.0013	<0.0001	0.0000	0.0031	<0.0001	0.9998	vase sponge
198	56310	0.0013	<0.0001	0.0000	0.0038	<0.0001	0.9998	*Eunoe* sp.
199	21341	0.0013	<0.0001	0.0000	0.0034	<0.0001	0.9999	*Malacocottus zonurus*
200	93500	0.0013	<0.0001	0.0000	0.0039	<0.0001	0.9999	Nematoda
201	40011	0.0013	<0.0001	0.0000	0.0030	<0.0001	0.9999	hydroid unident.
202	81850	0.0013	<0.0001	0.0000	0.0039	<0.0001	0.9999	*Dipsacaster* sp.
203	50160	0.0012	<0.0001	0.0000	0.0032	<0.0001	0.9999	Aphroditidae
204	85000	0.0012	<0.0001	0.0000	0.0027	<0.0001	0.9999	Holothuroidea unident.
205	10212	0.0011	<0.0001	0.0002	0.0020	<0.0001	0.9999	*Limanda sakhalinensis*
206	81320	0.0011	<0.0001	0.0000	0.0033	<0.0001	0.9999	*Pteraster militaris*
207	21352	0.0011	<0.0001	0.0000	0.0032	<0.0001	0.9999	*Triglops forficata*
208	455	0.0011	<0.0001	0.0000	0.0031	<0.0001	0.9999	*Bathyraja taranetzi*
209	21441	0.0011	<0.0001	0.0006	0.0015	<0.0001	0.9999	*Icelus spatula*
210	22206	0.0010	<0.0001	0.0000	0.0028	<0.0001	0.9999	*Crystallichthys cyclospilus*
211	72790	0.0010	<0.0001	0.0000	0.0024	<0.0001	0.9999	*Arctomelon stearnsii*
212	20320	0.0010	<0.0001	0.0000	0.0027	<0.0001	0.9999	*Anarrhichthys ocellatus*
213	474	0.0009	<0.0001	0.0002	0.0016	<0.0001	0.9999	*Bathyraja parmifera* egg case
214	401	0.0009	<0.0001	0.0003	0.0015	<0.0001	0.9999	skate egg case unident.
215	1	0.0009	<0.0001	0.0000	0.0025	<0.0001	0.9999	fish eggs unident.
216	79210	0.0009	<0.0001	0.0000	0.0026	<0.0001	0.9999	*Berryteuthis magister*
217	71764	0.0009	<0.0001	0.0000	0.0019	<0.0001	0.9999	*Volutopsius middendorffii*
218	74980	0.0009	<0.0001	0.0001	0.0016	<0.0001	0.9999	*Clinocardium* sp.
219	56300	0.0008	<0.0001	0.0000	0.0021	<0.0001	0.9999	Polynoidae
220	95030	0.0008	<0.0001	0.0000	0.0020	<0.0001	0.9999	*Flustra serrulata*
221	20510	0.0008	<0.0001	0.0000	0.0019	<0.0001	0.9999	*Anoplopoma fimbria*
222	50000	0.0008	<0.0001	0.0000	0.0019	<0.0001	0.9999	Polychaeta
223	50010	0.0008	<0.0001	0.0000	0.0019	<0.0001	0.9999	tube worm unident.

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
224	66570	0.0008	<0.0001	0.0005	0.0011	<0.0001	0.9999	*Argis* sp.
225	43100	0.0008	<0.0001	0.0000	0.0019	<0.0001	0.9999	Actinostolidae
226	75240	0.0008	<0.0001	0.0001	0.0014	<0.0001	0.9999	*Macoma* sp.
227	85169	0.0007	<0.0001	0.0000	0.0022	<0.0001	0.9999	*Pentamera lissoplaca*
228	75600	0.0007	<0.0001	0.0000	0.0021	<0.0001	0.9999	*Pododesmus macroschisma*
229	74640	0.0006	<0.0001	0.0000	0.0016	<0.0001	0.9999	*Astarte* sp.
230	20050	0.0006	<0.0001	0.0004	0.0009	<0.0001	0.9999	*Aspidophoroides bartoni*
231	71726	0.0006	<0.0001	0.0000	0.0016	<0.0001	0.9999	*Colus spitzbergensis*
232	71584	0.0006	<0.0001	0.0000	0.0019	<0.0001	0.9999	*Lamellaria* sp.
233	75267	0.0006	<0.0001	0.0001	0.0011	<0.0001	0.9999	*Siliqua alta*
234	23805	0.0005	<0.0001	0.0002	0.0008	<0.0001	0.9999	*Lumpenus maculatus*
235	71580	0.0005	<0.0001	0.0002	0.0008	<0.0001	0.9999	*Euspira* (=*Polinices*) *pallidus*
236	42000	0.0005	<0.0001	0.0000	0.0014	<0.0001	0.9999	Pennatulacea
237	74983	0.0005	<0.0001	0.0000	0.0010	<0.0001	1.0000	*Clinocardium ciliatum*
238	71018	0.0005	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Dendronotus* sp.
239	71511	0.0005	<0.0001	0.0000	0.0010	<0.0001	1.0000	Naticidae eggs
240	21397	0.0005	<0.0001	0.0000	0.0010	<0.0001	1.0000	*Blepsias bilobus*
241	81361	0.0005	<0.0001	0.0000	0.0011	<0.0001	1.0000	*Diplopteraster* sp.
242	50192	0.0005	<0.0001	0.0000	0.0011	<0.0001	1.0000	*Aphrodita negligens*
243	40505	0.0005	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Phacellophora camtchatica*
244	30051	0.0004	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Sebastes aleutianus*
245	23808	0.0004	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Lumpenus sagitta*
246	24188	0.0004	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Lycodes polaris*
247	72420	0.0004	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Boreotrophon* sp.
248	85170	0.0004	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Pentamera* sp.
249	85120	0.0004	<0.0001	0.0000	0.0010	<0.0001	1.0000	*Molpadia intermedia*
250	75330	0.0004	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Mya* sp.
251	71721	0.0004	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Colus herendeenii*
252	71722	0.0004	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Colus hypolispus*
253	71900	0.0004	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Plicifusus griseus*
254	85115	0.0004	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Molpadia* sp.
255	40010	0.0004	<0.0001	0.0000	0.0010	<0.0001	1.0000	Hydrozoa

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
256	71575	0.0003	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Euspira* (=*Polinices*) sp.
257	20002	0.0003	<0.0001	0.0000	0.0010	<0.0001	1.0000	*Percis japonicus*
258	71537	0.0003	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Natica russa*
259	74656	0.0003	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Cyclocardia* sp.
260	82730	0.0003	<0.0001	0.0000	0.0006	<0.0001	1.0000	sand dollar unident.
261	21935	0.0003	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Hexagrammos decagrammus*
262	99904	0.0003	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Molgula retortiformis*
263	71500	0.0003	<0.0001	0.0000	0.0007	<0.0001	1.0000	Gastropod unident.
264	80729	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Ceramaster japonicus*
265	71516	0.0002	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Euspira* sp.
266	20202	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Ammodytes hexapterus*
267	20005	0.0002	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Leptagonus leptorhynchus*
268	50001	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	worm unident.
269	10221	0.0002	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Platichthys stellatus*
270	74106	0.0002	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Chlamys rubida*
271	22201	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Liparis* sp.
272	74060	0.0002	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Modiolus modiolus*
273	78452	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Benthoctopus* sp.
274	82530	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Allocentrotus fragilis*
275	79020	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Rossia pacifica*
276	72305	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Trichotropis bicarinata*
277	81090	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Crossaster* sp.
278	72402	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Boreotrophon alaskanus*
279	21315	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Gymnocanthus tricuspis*
280	85200	0.0001	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Cucumaria* sp.
281	71589	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Onchidiopsis* sp.
282	66580	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Argis dentata*
283	43001	0.0001	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Actinauge verrillii*
284	82526	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Strongylocentrotus pallidus*
285	71526	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Cryptonatica affinis*
286	74641	0.0001	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Astarte borealis*
287	81092	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Crossaster borealis*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
288	83070	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Asteronyx loveni*
289	81829	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Leptychaster anomalus*
290	66548	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Crangon septemspinosa*
291	71535	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Cryptonatica aleutica*
292	66033	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Pandalus tridens*
293	74981	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	cockle unident.
294	43029	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Stomphia didemon*
295	75241	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Macoma nasuta*
296	85202	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Cucumaria frondosa*
297	20001	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Pallasina barbata*
298	40511	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Aurelia sp.*
299	21329	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Gymnocanthus detrisus*
300	94500	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	Echiura
301	40561	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Cyanea capillata*
302	94000	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	Sipuncula
303	71811	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Neptunea smirnia*
304	72785	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Buccinum tricarinatum*
305	23809	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Acantholumpenus mackayi*
306	71524	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Cryptonatica* sp.
307	23807	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Lumpenus fabricii*
308	66530	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Crangon dalli*
309	43032	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Stomphia coccinea*
310	66613	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Argis levior*
311	72792	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Arctomelon tamikoae*
312	29999	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	roundfish unident.
313	73186	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Admete regina*
314	30052	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Sebastes melanostictus*
315	71510	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	Naticidae
316	20035	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyagonus alascanus*
317	72421	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Boreotrophon pacificus*
318	21387	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Enophrys lucasi*
319	80010	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Evasterias* sp.

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
320	93100	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	priapulid worm unident.
321	70115	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Amicula vestita*
322	80000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Asteroidea unident.*
323	99902	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Molgula grifithsii*
324	66050	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pandalus hypsinotus*
325	97000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	brachiopod unident.
326	20018	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Odontopyxis trispinosa*
327	40012	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Hydroid* sp.
328	43040	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Urticina* sp.
329	66171	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus barbatus*
330	21333	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Artediellus pacificus*
331	74655	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Cyclocardia crebricostata*
332	71640	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Crepidula* sp.
333	66200	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lebbeus* sp.
334	66500	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Crangonidae
335	66150	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Hippolytidae
336	59111	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Notostombdella cyclostomum*
337	21353	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Triglops metopias*
338	72806	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Velutina* sp.
339	81835	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Leptychaster arcticus*
340	74414	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Yoldia* sp.
341	80112	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Leptasterias hylodes*
342	80546	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Henricia tumida*
343	23055	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Osmerus mordax*
344	21394	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Psychrolutes paradoxus*
345	83411	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Ophiolebes* sp.
346	74416	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Yoldia seminuda*
347	71822	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Neptunea tabulata*
348	71634	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Tachyrhynchus erosus*
349	23850	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.0000	*Poroclinus rothrocki*
350	66161	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.0000	*Spirontocaris arcuata*
351	60100	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.0000	Amphipoda

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
352	59100	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.0000	Hirudinea unident.
353	83400	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.0000	*Ophiopholis aculeata*
354	21375	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.0000	*Myoxocephalus* sp.

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 2006 eastern Bering Sea bottom trawl survey.

Appendix D Table 1.-- Population estimates by sex and size for **walleye pollock** (*Theragra chalcogramma*) from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
40	0	0	102,193	102,193	0.0000	0.0000
60	0	0	205,325	205,325	0.0000	0.0001
70	0	0	2,420,385	2,420,385	0.0006	0.0006
80	0	0	38,011,035	38,011,035	0.0088	0.0094
90	0	0	124,630,885	124,630,885	0.0289	0.0383
100	0	0	159,541,377	159,541,377	0.0370	0.0753
110	0	0	134,255,187	134,255,187	0.0311	0.1064
120	0	0	82,623,450	82,623,450	0.0192	0.1256
130	0	0	61,229,642	61,229,642	0.0142	0.1398
140	0	0	60,277,713	60,277,713	0.0140	0.1537
150	0	0	43,290,147	43,290,147	0.0100	0.1638
160	3,110,491	3,111,506	14,939,951	21,161,948	0.0049	0.1687
170	1,303,016	2,202,553	4,367,266	7,872,835	0.0018	0.1705
180	1,459,748	3,484,884	2,783,445	7,728,078	0.0018	0.1723
190	2,170,271	3,016,842	337,670	5,524,783	0.0013	0.1736
200	3,533,093	3,631,876	1,058,038	8,223,007	0.0019	0.1755
210	2,321,640	1,703,533	469,396	4,494,569	0.0010	0.1765
220	5,494,424	1,886,405	0	7,380,828	0.0017	0.1782
230	3,157,125	4,001,742	0	7,158,867	0.0017	0.1799
240	5,491,159	4,812,765	0	10,303,924	0.0024	0.1823
250	2,041,499	1,981,543	0	4,023,042	0.0009	0.1832
260	3,915,401	5,567,985	469,396	9,952,782	0.0023	0.1855
270	4,172,094	4,794,530	0	8,966,625	0.0021	0.1876
280	3,871,841	3,388,786	0	7,260,627	0.0017	0.1893
290	3,261,018	3,382,191	0	6,643,209	0.0015	0.1908
300	2,461,324	2,693,134	0	5,154,458	0.0012	0.1920
310	1,571,751	2,425,087	147,530	4,144,368	0.0010	0.1930
320	2,533,224	3,525,840	0	6,059,064	0.0014	0.1944
330	3,330,554	3,030,476	0	6,361,030	0.0015	0.1959
340	5,454,784	3,857,224	0	9,312,008	0.0022	0.1980
350	5,592,806	2,257,803	0	7,850,609	0.0018	0.1998
360	8,609,635	5,153,370	0	13,763,004	0.0032	0.2030
370	13,546,252	7,129,101	0	20,675,353	0.0048	0.2078
380	33,492,420	15,195,964	0	48,688,384	0.0113	0.2191
390	26,738,259	20,515,719	0	47,253,978	0.0110	0.2301
400	64,590,568	34,766,604	0	99,357,172	0.0230	0.2531
410	58,308,673	37,638,350	0	95,947,023	0.0222	0.2753
420	110,820,146	67,315,934	0	178,136,081	0.0413	0.3166
430	104,425,339	71,995,835	0	176,421,174	0.0409	0.3575
440	156,350,944	112,419,838	0	268,770,783	0.0623	0.4198
450	140,490,827	98,718,169	0	239,208,996	0.0554	0.4753
460	165,157,316	139,623,352	0	304,780,668	0.0706	0.5459
470	131,105,454	104,136,349	0	235,241,804	0.0545	0.6004
480	148,347,289	135,597,596	0	283,944,885	0.0658	0.6663
490	107,061,027	84,641,309	71,748	191,774,084	0.0445	0.7107
500	124,522,423	105,720,001	0	230,242,424	0.0534	0.7641

Appendix D Table 1.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
510	75,510,055	70,482,593	0	145,992,647	0.0338	0.7979
520	85,683,530	77,836,464	0	163,519,994	0.0379	0.8358
530	52,671,603	57,410,951	0	110,082,554	0.0255	0.8613
540	47,534,201	62,870,862	0	110,405,063	0.0256	0.8869
550	34,346,409	45,819,486	0	80,165,895	0.0186	0.9055
560	30,155,388	43,049,789	0	73,205,176	0.0170	0.9225
570	22,013,131	38,936,126	0	60,949,257	0.0141	0.9366
580	21,203,015	34,619,426	0	55,822,441	0.0129	0.9495
590	14,466,023	26,001,758	0	40,467,781	0.0094	0.9589
600	11,948,942	22,607,886	31,668	34,588,496	0.0080	0.9669
610	8,576,584	16,598,903	63,336	25,238,823	0.0059	0.9728
620	6,243,476	15,296,147	0	21,539,623	0.0050	0.9778
630	5,490,302	12,873,352	0	18,363,654	0.0043	0.9820
640	4,808,696	10,302,599	31,668	15,142,963	0.0035	0.9855
650	2,979,954	7,726,316	63,336	10,769,606	0.0025	0.9880
660	3,599,298	8,043,122	61,005	11,703,425	0.0027	0.9908
670	1,546,334	5,461,208	0	7,007,541	0.0016	0.9924
680	2,325,587	5,654,594	31,668	8,011,849	0.0019	0.9942
690	1,349,632	3,814,736	63,336	5,227,705	0.0012	0.9954
700	1,053,850	4,229,578	63,336	5,346,764	0.0012	0.9967
710	754,322	2,218,655	31,668	3,004,645	0.0007	0.9974
720	579,036	2,174,457	95,004	2,848,498	0.0007	0.9980
730	973,908	1,197,451	0	2,171,360	0.0005	0.9985
740	260,324	1,726,743	31,668	2,018,735	0.0005	0.9990
750	409,445	1,121,523	31,668	1,562,636	0.0004	0.9994
760	260,204	595,085	0	855,289	0.0002	0.9996
770	249,497	544,183	0	793,679	0.0002	0.9998
780	27,264	208,645	0	235,909	0.0001	0.9998
790	0	150,950	0	150,950	0.0000	0.9998
800	0	238,982	60,441	299,422	0.0001	0.9999
810	29,920	122,896	0	152,816	0.0000	1.0000
830	0	55,197	0	55,197	0.0000	1.0000
840	0	147,530	0	147,530	0.0000	1.0000
TOTAL	**1,896,863,767**	**1,685,462,388**	**731,891,583**	**4,314,217,738**	**1.0000**	**1.0000**

Appendix D Table 2.-- Population estimates by sex and size for **Pacific cod** (*Gadus macrocephalus)* from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
50	0	0	27,307	27,307	0.0001	0.0001
60	0	0	0	0	0.0000	0.0001
70	17,954	0	122,429	140,382	0.0004	0.0004
80	0	0	238,054	238,054	0.0006	0.0010
90	276,394	27,340	1,005,150	1,308,884	0.0033	0.0044
100	226,925	160,730	2,885,758	3,273,413	0.0083	0.0127
110	2,205,895	1,231,169	7,483,080	10,920,144	0.0277	0.0404
120	1,694,498	2,061,187	9,391,562	13,147,248	0.0334	0.0737
130	2,411,136	2,431,546	9,021,785	13,864,468	0.0352	0.1089
140	4,383,070	3,612,235	6,707,589	14,702,894	0.0373	0.1462
150	3,751,983	3,934,394	5,343,584	13,029,961	0.0331	0.1793
160	4,244,954	5,025,704	1,863,095	11,133,753	0.0283	0.2076
170	4,331,067	5,416,015	965,168	10,712,250	0.0272	0.2347
180	5,539,804	5,599,970	512,712	11,652,486	0.0296	0.2643
190	4,248,265	4,739,997	114,465	9,102,727	0.0231	0.2874
200	3,933,937	3,856,345	112,991	7,903,272	0.0201	0.3075
210	2,543,382	2,209,345	0	4,752,727	0.0121	0.3195
220	1,820,312	1,593,870	0	3,414,182	0.0087	0.3282
230	1,171,487	948,379	0	2,119,867	0.0054	0.3336
240	919,897	818,736	0	1,738,633	0.0044	0.3380
250	1,069,662	764,104	0	1,833,766	0.0047	0.3426
260	960,759	823,339	0	1,784,098	0.0045	0.3472
270	1,023,199	1,071,483	0	2,094,682	0.0053	0.3525
280	1,316,591	1,465,058	0	2,781,649	0.0071	0.3595
290	1,845,725	1,861,437	30,404	3,737,566	0.0095	0.3690
300	2,786,291	2,660,388	0	5,446,680	0.0138	0.3828
310	3,743,982	2,404,611	0	6,148,593	0.0156	0.3984
320	4,124,258	3,879,036	0	8,003,293	0.0203	0.4188
330	3,684,884	4,198,291	0	7,883,176	0.0200	0.4388
340	4,078,129	4,484,798	0	8,562,926	0.0217	0.4605
350	4,199,236	3,768,157	0	7,967,393	0.0202	0.4807
360	5,044,756	4,800,459	0	9,845,215	0.0250	0.5057
370	4,293,181	4,263,050	0	8,556,231	0.0217	0.5274
380	5,335,419	4,353,116	0	9,688,535	0.0246	0.5520
390	4,457,284	3,744,043	0	8,201,327	0.0208	0.5728
400	4,098,289	3,817,840	0	7,916,128	0.0201	0.5929
410	3,622,031	3,151,555	0	6,773,586	0.0172	0.6101
420	3,025,242	3,470,223	0	6,495,465	0.0165	0.6266
430	2,937,490	2,279,485	0	5,216,975	0.0132	0.6398
440	3,217,444	2,340,243	0	5,557,686	0.0141	0.6539
450	2,322,850	2,380,614	0	4,703,463	0.0119	0.6659
460	2,206,604	2,708,174	0	4,914,778	0.0125	0.6783
470	2,218,799	1,909,754	0	4,128,553	0.0105	0.6888
480	2,463,268	2,632,313	0	5,095,581	0.0129	0.7017
490	2,538,749	2,222,955	0	4,761,704	0.0121	0.7138
500	3,516,211	2,683,347	0	6,199,558	0.0157	0.7296
510	3,063,746	2,423,696	0	5,487,441	0.0139	0.7435

Appendix D Table 2.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
520	3,135,849	2,540,934	0	5,676,783	0.0144	0.7579
530	2,892,123	1,830,770	0	4,722,892	0.0120	0.7699
540	3,143,702	2,512,738	0	5,656,440	0.0144	0.7842
550	2,072,421	2,369,199	0	4,441,620	0.0113	0.7955
560	3,009,670	2,899,028	0	5,908,698	0.0150	0.8105
570	1,563,263	1,861,173	0	3,424,436	0.0087	0.8192
580	2,433,900	1,721,612	0	4,155,512	0.0105	0.8297
590	1,144,518	1,793,963	0	2,938,481	0.0075	0.8372
600	1,724,565	1,428,283	0	3,152,848	0.0080	0.8452
610	1,542,981	1,852,119	0	3,395,100	0.0086	0.8538
620	1,452,114	1,640,268	0	3,092,382	0.0078	0.8616
630	1,337,855	2,115,881	0	3,453,736	0.0088	0.8704
640	1,612,130	1,305,325	0	2,917,455	0.0074	0.8778
650	1,580,103	1,285,744	0	2,865,847	0.0073	0.8851
660	1,698,178	1,496,993	0	3,195,171	0.0081	0.8932
670	877,140	1,092,992	0	1,970,132	0.0050	0.8982
680	1,650,310	1,468,109	0	3,118,418	0.0079	0.9061
690	719,956	942,847	0	1,662,803	0.0042	0.9103
700	1,189,140	1,126,467	0	2,315,607	0.0059	0.9162
710	860,419	1,084,981	0	1,945,401	0.0049	0.9211
720	840,038	1,054,084	0	1,894,122	0.0048	0.9260
730	773,829	1,289,018	0	2,062,847	0.0052	0.9312
740	951,951	1,221,694	0	2,173,645	0.0055	0.9367
750	689,790	1,147,215	0	1,837,004	0.0047	0.9414
760	802,282	1,108,200	0	1,910,483	0.0048	0.9462
770	714,881	665,050	0	1,379,931	0.0035	0.9497
780	812,443	1,036,595	0	1,849,038	0.0047	0.9544
790	519,704	908,776	0	1,428,481	0.0036	0.9580
800	680,864	1,190,349	0	1,871,213	0.0047	0.9628
810	785,120	838,110	0	1,623,229	0.0041	0.9669
820	764,375	902,459	0	1,666,834	0.0042	0.9711
830	289,466	899,533	0	1,188,999	0.0030	0.9741
840	420,636	946,997	0	1,367,634	0.0035	0.9776
850	635,952	639,401	0	1,275,353	0.0032	0.9809
860	403,614	699,260	0	1,102,874	0.0028	0.9837
870	240,274	397,492	0	637,766	0.0016	0.9853
880	271,350	877,447	0	1,148,797	0.0029	0.9882
890	198,089	310,030	0	508,119	0.0013	0.9895
900	194,722	457,600	91,196	743,518	0.0019	0.9914
910	191,245	301,282	0	492,526	0.0012	0.9926
920	326,769	257,368	0	584,137	0.0015	0.9941
930	151,450	175,033	0	326,483	0.0008	0.9949
940	62,146	250,557	0	312,702	0.0008	0.9957
950	99,092	103,032	0	202,124	0.0005	0.9962
960	97,950	256,714	0	354,665	0.0009	0.9971
970	26,718	258,694	0	285,412	0.0007	0.9979
980	0	46,148	0	46,148	0.0001	0.9980
990	83,440	155,721	0	239,160	0.0006	0.9986
1000	0	161,965	0	161,965	0.0004	0.9990

Appendix D Table 2.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
1010	0	84,075	0	84,075	0.0002	0.9992
1020	53,108	27,416	0	80,524	0.0002	0.9994
1030	0	82,662	0	82,662	0.0002	0.9996
1040	0	48,918	0	48,918	0.0001	0.9997
1060	0	29,532	0	29,532	0.0001	0.9998
1090	0	72,019	0	72,019	0.0002	1.0000
TOTAL	**174,636,669**	**173,498,400**	**45,916,331**	**394,051,399**	**1.0000**	**1.0000**

Appendix D Table 3.-- Population estimates by sex and size for **yellowfin sole** (*Limanda aspera)* from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
60	191,885	0	0	191,885	0.0000	0.0000
80	1,551,988	1,621,851	210,984	3,384,822	0.0004	0.0004
90	6,507,652	9,780,901	86,230	16,374,783	0.0019	0.0024
100	24,677,664	25,139,643	1,141,150	50,958,457	0.0060	0.0084
110	14,048,671	18,054,961	4,333,590	36,437,223	0.0043	0.0127
120	33,375,747	34,357,306	3,079,367	70,812,420	0.0084	0.0211
130	51,561,508	41,588,913	1,516,249	94,666,670	0.0112	0.0323
140	51,928,093	56,585,318	2,587,168	111,100,579	0.0132	0.0454
150	65,128,340	57,304,572	1,353,807	123,786,719	0.0147	0.0601
160	73,223,387	77,777,431	689,839	151,690,657	0.0180	0.0780
170	86,308,512	79,395,584	431,149	166,135,246	0.0197	0.0977
180	88,034,692	98,911,437	1,207,218	188,153,346	0.0223	0.1200
190	88,893,961	88,130,851	431,149	177,455,961	0.0210	0.1410
200	114,204,987	114,407,489	776,069	229,388,544	0.0272	0.1681
210	138,044,747	137,153,684	603,609	275,802,040	0.0326	0.2008
220	192,999,044	189,824,814	689,839	383,513,697	0.0454	0.2462
230	224,007,167	196,696,689	689,839	421,393,695	0.0499	0.2961
240	239,507,753	226,606,901	862,298	466,976,953	0.0553	0.3513
250	246,642,201	230,306,364	344,919	477,293,485	0.0565	0.4078
260	245,483,495	259,702,027	431,149	505,616,671	0.0598	0.4677
270	243,489,679	247,167,467	344,919	491,002,066	0.0581	0.5258
280	249,913,315	247,531,100	172,460	497,616,875	0.0589	0.5847
290	248,576,840	231,256,698	172,460	480,005,998	0.0568	0.6415
300	278,239,463	272,144,456	172,460	550,556,378	0.0652	0.7067
310	258,001,391	263,888,359	172,460	522,062,209	0.0618	0.7685
320	249,606,965	270,985,889	344,919	520,937,774	0.0617	0.8301
330	182,417,041	243,100,461	0	425,517,501	0.0504	0.8805
340	91,998,946	255,015,750	431,149	347,445,845	0.0411	0.9216
350	49,132,943	202,804,751	689,839	252,627,533	0.0299	0.9515
360	18,227,625	159,649,830	258,690	178,136,145	0.0211	0.9726
370	9,615,241	96,510,025	258,690	106,383,956	0.0126	0.9852
380	1,124,380	51,545,363	86,230	52,755,973	0.0062	0.9914
390	142,730	36,518,212	0	36,660,941	0.0043	0.9958
400	0	17,176,762	86,230	17,262,992	0.0020	0.9978
410	0	11,858,027	0	11,858,027	0.0014	0.9992
420	0	2,487,642	0	2,487,642	0.0003	0.9995
430	0	665,794	0	665,794	0.0001	0.9996
440	0	1,483,815	0	1,483,815	0.0002	0.9998
450	314,305	1,622,126	0	1,936,431	0.0002	1.0000
TOTAL	**3,867,122,357**	**4,556,759,261**	**24,656,126**	**8,448,537,744**	**1.0000**	**1.0000**

Appendix D Table 4.--Population estimates by sex and size for **northern** and **southern rock sole** (*Lepidopsetta* spp.) from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
50	0	0	785,556	785,556	0.0001	0.0001
60	668,118	0	0	668,118	0.0000	0.0001
70	2,510,184	773,372	6,449,252	9,732,808	0.0006	0.0007
80	8,590,587	7,915,726	12,627,484	29,133,797	0.0019	0.0027
90	26,726,164	19,450,788	25,170,445	71,347,397	0.0047	0.0074
100	126,490,565	92,876,044	135,213,255	354,579,863	0.0235	0.0309
110	275,784,714	196,099,251	203,781,486	675,665,451	0.0448	0.0757
120	389,496,414	298,233,059	159,074,915	846,804,389	0.0561	0.1318
130	401,669,209	361,361,713	184,966,904	947,997,826	0.0628	0.1946
140	501,138,594	452,563,912	202,311,981	1,156,014,487	0.0766	0.2711
150	530,522,488	499,771,131	136,907,649	1,167,201,268	0.0773	0.3485
160	488,326,219	405,780,595	43,664,427	937,771,241	0.0621	0.4106
170	449,903,230	347,818,646	16,000,964	813,722,840	0.0539	0.4645
180	365,093,572	312,323,797	4,966,818	682,384,186	0.0452	0.5097
190	289,981,483	218,749,886	795,893	509,527,262	0.0338	0.5435
200	235,192,232	202,425,480	491,537	438,109,249	0.0290	0.5725
210	218,509,784	200,056,788	283,733	418,850,306	0.0277	0.6002
220	243,824,369	186,729,378	198,613	430,752,361	0.0285	0.6288
230	220,096,857	164,978,374	397,227	385,472,458	0.0255	0.6543
240	190,626,832	136,998,403	255,360	327,880,595	0.0217	0.6760
250	195,398,778	161,207,205	312,107	356,918,090	0.0236	0.6997
260	204,517,535	156,189,861	368,853	361,076,249	0.0239	0.7236
270	278,737,690	133,117,074	397,227	412,251,991	0.0273	0.7509
280	371,666,112	139,856,826	198,613	511,721,552	0.0339	0.7848
290	371,261,084	142,032,034	340,480	513,633,599	0.0340	0.8189
300	346,799,113	125,378,973	510,720	472,688,806	0.0313	0.8502
310	217,125,666	156,462,510	482,347	374,070,522	0.0248	0.8749
320	115,439,741	140,609,664	226,987	256,276,391	0.0170	0.8919
330	64,553,764	226,351,634	170,240	291,075,638	0.0193	0.9112
340	27,287,310	273,295,210	85,120	300,667,641	0.0199	0.9311
350	17,834,377	278,830,237	28,373	296,692,987	0.0197	0.9508
360	11,973,601	292,548,395	28,373	304,550,370	0.0202	0.9710
370	4,170,366	183,107,506	0	187,277,872	0.0124	0.9834
380	3,286,802	112,048,560	0	115,335,362	0.0076	0.9910
390	1,416,065	69,212,726	0	70,628,791	0.0047	0.9957
400	60,022	31,647,497	0	31,707,519	0.0021	0.9978
410	0	16,374,433	0	16,374,433	0.0011	0.9989
420	0	7,214,579	0	7,214,579	0.0005	0.9994
430	126,900	3,955,832	0	4,082,733	0.0003	0.9996
440	0	2,435,057	349,670	2,784,727	0.0002	0.9998
450	0	616,117	0	616,117	0.0000	0.9998
460	1,859,346	0	0	1,859,346	0.0001	1.0000
470	0	145,148	0	145,148	0.0000	1.0000
510	0	24,381	0	24,381	0.0000	1.0000
560	266,264	0	0	266,264	0.0000	1.0000
TOTAL	**7,198,932,153**	**6,757,567,803**	**1,137,842,610**	**15,094,342,566**	**1.0000**	**1.0000**

Appendix D Table 5.-- Population estimates by sex and size for **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
40	0	124,232	0	124,232	0.0001	0.0001
50	0	58,475	49,687	108,162	0.0001	0.0001
60	0	53,108	171,111	224,219	0.0001	0.0002
70	637,729	404,660	74,892	1,117,281	0.0005	0.0008
80	268,835	350,498	0	619,333	0.0003	0.0010
90	109,777	281,104	146,538	537,419	0.0003	0.0013
100	683,914	536,020	157,191	1,377,125	0.0007	0.0020
110	1,545,958	986,022	412,991	2,944,972	0.0014	0.0034
120	5,108,509	2,797,877	540,416	8,446,802	0.0040	0.0074
130	7,432,664	6,025,795	1,620,766	15,079,224	0.0072	0.0146
140	13,701,744	9,884,512	1,752,492	25,338,747	0.0121	0.0267
150	18,792,983	15,363,346	1,551,448	35,707,778	0.0171	0.0438
160	22,097,206	19,475,879	0	41,573,085	0.0199	0.0636
170	28,373,414	24,491,828	0	52,865,242	0.0253	0.0889
180	32,395,126	27,362,611	0	59,757,737	0.0286	0.1175
190	25,680,891	26,350,531	0	52,031,422	0.0249	0.1423
200	32,931,917	31,168,679	0	64,100,595	0.0306	0.1729
210	30,561,667	27,793,967	0	58,355,634	0.0279	0.2008
220	30,821,328	25,718,045	0	56,539,373	0.0270	0.2278
230	30,401,217	21,062,407	0	51,463,624	0.0246	0.2524
240	36,434,619	27,018,882	0	63,453,501	0.0303	0.2828
250	28,930,231	33,763,027	0	62,693,259	0.0300	0.3127
260	38,483,715	41,756,960	0	80,240,675	0.0383	0.3511
270	40,516,115	44,306,026	0	84,822,141	0.0405	0.3916
280	51,147,876	49,113,630	0	100,261,506	0.0479	0.4395
290	57,649,923	41,063,959	0	98,713,881	0.0472	0.4867
300	62,664,633	50,898,846	0	113,563,478	0.0543	0.5409
310	63,377,441	49,814,866	0	113,192,307	0.0541	0.5950
320	73,676,390	48,188,549	0	121,864,939	0.0582	0.6532
330	67,790,392	43,461,274	0	111,251,666	0.0532	0.7064
340	59,435,863	49,933,626	0	109,369,488	0.0523	0.7587
350	53,247,517	42,043,848	0	95,291,366	0.0455	0.8042
360	41,084,862	39,414,309	0	80,499,171	0.0385	0.8427
370	32,208,569	35,017,515	0	67,226,084	0.0321	0.8748
380	20,824,571	34,072,032	0	54,896,603	0.0262	0.9010
390	16,813,778	23,956,292	0	40,770,070	0.0195	0.9205
400	6,700,936	26,100,199	0	32,801,134	0.0157	0.9362
410	6,273,526	19,778,126	0	26,051,652	0.0124	0.9486
420	2,944,771	23,169,332	0	26,114,103	0.0125	0.9611
430	886,082	14,794,120	0	15,680,202	0.0075	0.9686
440	757,160	19,255,016	0	20,012,177	0.0096	0.9781
450	327,961	12,722,970	0	13,050,932	0.0062	0.9844
460	115,064	13,605,092	0	13,720,156	0.0066	0.9909
470	87,318	6,889,064	0	6,976,382	0.0033	0.9943
480	0	5,995,285	0	5,995,285	0.0029	0.9971
490	0	2,027,997	0	2,027,997	0.0010	0.9981
500	0	2,303,431	0	2,303,431	0.0011	0.9992

Appendix D Table 5.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
510	0	759,062	0	759,062	0.0004	0.0004
520	0	701,525	0	701,525	0.0003	0.0003
530	0	115,064	0	115,064	0.0001	0.0001
600	90,466	0	0	90,466	0.0000	0.0000
TOTAL	**1,044,014,659**	**1,042,329,519**	**6,477,532**	**2,092,821,710**	**1.0000**	**1.0000**

Appendix D Table 6.-- Population estimates by sex and size for **Alaska plaice** (*Pleuronectes quadrituberculatus*) from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
80	28,353	0	0	28,353	0.0000	0.0000
100	102,424	176,259	0	278,683	0.0004	0.0004
110	223,697	200,255	0	423,952	0.0006	0.0010
120	854,740	234,431	0	1,089,170	0.0015	0.0024
130	588,109	302,658	0	890,767	0.0012	0.0036
140	1,107,843	758,640	0	1,866,483	0.0025	0.0061
150	849,965	377,412	0	1,227,377	0.0016	0.0077
160	1,066,553	1,441,654	0	2,508,207	0.0033	0.0111
170	1,289,175	1,252,531	0	2,541,706	0.0034	0.0145
180	1,526,163	2,453,990	0	3,980,153	0.0053	0.0198
190	3,159,475	1,912,862	0	5,072,337	0.0068	0.0265
200	3,996,006	3,709,689	0	7,705,695	0.0103	0.0368
210	4,239,977	3,953,517	0	8,193,494	0.0109	0.0477
220	6,404,422	5,591,520	0	11,995,941	0.0160	0.0637
230	5,953,465	6,410,807	0	12,364,272	0.0165	0.0802
240	6,099,549	6,072,684	0	12,172,233	0.0162	0.0964
250	8,081,864	6,042,615	0	14,124,479	0.0188	0.1153
260	9,604,268	6,737,531	0	16,341,799	0.0218	0.1371
270	8,782,057	7,204,551	0	15,986,609	0.0213	0.1584
280	13,783,357	9,917,276	0	23,700,632	0.0316	0.1900
290	13,500,597	9,145,344	0	22,645,941	0.0302	0.2202
300	18,591,850	8,521,351	0	27,113,200	0.0361	0.2563
310	18,491,379	9,707,615	0	28,198,994	0.0376	0.2939
320	27,357,241	8,668,150	0	36,025,391	0.0480	0.3419
330	32,284,277	9,335,464	0	41,619,741	0.0555	0.3974
340	40,637,031	9,351,799	0	49,988,830	0.0666	0.4641
350	36,912,933	8,661,428	0	45,574,362	0.0608	0.5248
360	35,108,512	14,980,100	0	50,088,612	0.0668	0.5916
370	23,139,742	12,355,988	0	35,495,729	0.0473	0.6389
380	16,551,312	16,020,262	0	32,571,574	0.0434	0.6823
390	10,248,160	19,444,154	0	29,692,314	0.0396	0.7219
400	5,026,986	19,350,757	0	24,377,743	0.0325	0.7544
410	3,809,249	24,996,078	0	28,805,327	0.0384	0.7928
420	1,576,711	23,176,567	0	24,753,278	0.0330	0.8258
430	643,275	23,526,726	0	24,170,001	0.0322	0.8580
440	559,675	20,140,495	0	20,700,169	0.0276	0.8856
450	221,729	17,721,900	0	17,943,630	0.0239	0.9096
460	0	12,387,145	0	12,387,145	0.0165	0.9261
470	29,256	12,833,694	0	12,862,950	0.0171	0.9432
480	29,834	10,949,233	0	10,979,068	0.0146	0.9579
490	0	6,785,631	0	6,785,631	0.0090	0.9669
500	90,317	6,927,097	0	7,017,414	0.0094	0.9763
510	73,409	5,211,713	0	5,285,122	0.0070	0.9833
520	98,041	4,034,278	0	4,132,318	0.0055	0.9888
530	0	3,386,901	0	3,386,901	0.0045	0.9933
540	0	1,900,336	0	1,900,336	0.0025	0.9959

Appendix D Table 6.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
550	0	1,805,650	0	1,805,650	0.0024	0.9982
560	0	494,878	0	494,878	0.0007	0.9989
570	0	451,932	0	451,932	0.0006	0.9995
580	0	195,234	0	195,234	0.0003	0.9998
590	0	96,017	0	96,017	0.0001	0.9999
600	0	53,821	0	53,821	0.0001	1.0000
Total	**362,722,977**	**387,368,619**	**0**	**750,091,596**	**1.0000**	**1.0000**

Appendix D Table 7.-- Population estimates by sex and size for **Greenland turbot** (*Reinhardtius hippoglossoides)* from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
90	0	0	17,916	17,916	0.0023	0.0023
260	0	28,702	0	28,702	0.0036	0.0059
290	0	26,876	0	26,876	0.0034	0.0093
320	0	28,702	0	28,702	0.0036	0.0129
330	97,800	0	0	97,800	0.0124	0.0253
340	28,822	0	0	28,822	0.0036	0.0289
350	27,223	27,190	0	54,414	0.0069	0.0358
360	70,038	85,000	0	155,039	0.0196	0.0554
370	209,462	149,306	0	358,768	0.0454	0.1008
380	0	27,472	0	27,472	0.0035	0.1043
390	176,457	27,190	0	203,647	0.0258	0.1301
400	232,590	83,444	0	316,033	0.0400	0.1700
410	272,866	170,169	0	443,034	0.0560	0.2261
420	328,802	206,684	0	535,487	0.0677	0.2938
430	174,678	280,197	0	454,875	0.0575	0.3514
440	297,477	195,070	0	492,547	0.0623	0.4137
450	223,274	123,563	0	346,837	0.0439	0.4576
460	204,253	111,587	0	315,840	0.0400	0.4975
470	150,112	140,760	0	290,872	0.0368	0.5343
480	0	41,337	0	41,337	0.0052	0.5395
490	19,374	146,375	0	165,750	0.0210	0.5605
500	194,039	37,982	0	232,021	0.0294	0.5899
510	45,165	131,024	0	176,189	0.0223	0.6121
520	27,523	110,109	0	137,632	0.0174	0.6296
530	56,012	73,556	0	129,568	0.0164	0.6459
540	84,303	55,389	0	139,692	0.0177	0.6636
550	27,223	66,661	0	93,885	0.0119	0.6755
560	0	74,070	0	74,070	0.0094	0.6849
570	55,362	112,872	0	168,234	0.0213	0.7061
580	37,617	26,876	0	64,493	0.0082	0.7143
590	0	28,702	0	28,702	0.0036	0.7179
600	57,141	0	0	57,141	0.0072	0.7252
610	0	44,397	0	44,397	0.0056	0.7308
620	29,349	84,068	0	113,417	0.0143	0.7451
650	27,943	0	0	27,943	0.0035	0.7487
680	0	27,190	0	27,190	0.0034	0.7521
690	0	26,876	0	26,876	0.0034	0.7555
700	26,992	0	0	26,992	0.0034	0.7589
710	56,014	28,822	0	84,836	0.0107	0.7697
720	0	26,876	0	26,876	0.0034	0.7731
730	54,738	28,941	0	83,679	0.0106	0.7836
740	26,867	0	0	26,867	0.0034	0.7870
750	56,584	0	0	56,584	0.0072	0.7942
760	26,867	0	0	26,867	0.0034	0.7976
770	54,606	53,983	0	108,589	0.0137	0.8113
780	83,964	56,555	0	140,519	0.0178	0.8291

Appendix D Table 7.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
790	82,741	0	0	82,741	0.0105	0.8396
800	0	57,192	0	57,192	0.0072	0.8468
810	27,614	28,702	0	56,316	0.0071	0.8539
820	0	81,475	0	81,475	0.0103	0.8642
830	0	56,231	0	56,231	0.0071	0.8714
840	0	54,222	0	54,222	0.0069	0.8782
850	0	29,331	0	29,331	0.0037	0.8819
860	0	28,702	0	28,702	0.0036	0.8856
870	26,867	56,521	0	83,389	0.0105	0.8961
880	0	197,633	0	197,633	0.0250	0.9211
890	26,867	86,152	0	113,019	0.0143	0.9354
900	0	169,992	0	169,992	0.0215	0.9569
910	0	85,630	0	85,630	0.0108	0.9677
920	0	27,859	0	27,859	0.0035	0.9713
930	0	27,477	0	27,477	0.0035	0.9747
940	0	57,099	0	57,099	0.0072	0.9820
950	0	55,116	0	55,116	0.0070	0.9889
1010	0	27,954	0	27,954	0.0035	0.9925
1050	0	29,331	0	29,331	0.0037	0.9962
1060	0	30,208	0	30,208	0.0038	1.0000
TOTAL	**3,705,630**	**4,181,398**	**17,916**	**7,904,944**	**1.0000**	**1.0000**

Appendix D Table 8.-- Population estimates by sex and size for **arrowtooth flounder** (*Atheresthes stomias*) from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
10	108,840	0	0	108,840	0.0001	0.0001
90	127,392	0	101,884	229,276	0.0002	0.0003
100	590,669	288,118	110,583	989,371	0.0008	0.0010
110	378,095	537,105	365,071	1,280,271	0.0010	0.0020
120	1,078,258	253,883	204,708	1,536,849	0.0012	0.0032
130	673,933	823,967	383,790	1,881,690	0.0014	0.0046
140	788,718	886,852	221,693	1,897,263	0.0015	0.0061
150	1,780,579	1,951,871	322,712	4,055,162	0.0031	0.0092
160	3,022,914	5,847,421	42,610	8,912,945	0.0068	0.0160
170	3,099,343	8,016,264	126,645	11,242,252	0.0086	0.0246
180	7,837,088	10,075,759	0	17,912,847	0.0137	0.0383
190	6,470,828	10,254,959	0	16,725,787	0.0128	0.0511
200	6,320,303	14,238,939	0	20,559,242	0.0157	0.0668
210	7,201,493	16,112,859	0	23,314,352	0.0178	0.0846
220	7,380,096	13,852,599	0	21,232,695	0.0162	0.1008
230	9,660,476	13,013,368	0	22,673,844	0.0173	0.1182
240	11,717,105	16,124,389	0	27,841,494	0.0213	0.1395
250	15,993,607	20,956,958	0	36,950,565	0.0283	0.1677
260	20,066,475	27,813,415	0	47,879,890	0.0366	0.2043
270	22,723,556	33,859,902	0	56,583,458	0.0433	0.2476
280	29,321,109	49,940,570	0	79,261,679	0.0606	0.3082
290	26,026,135	44,665,960	0	70,692,095	0.0540	0.3622
300	22,904,335	47,784,884	0	70,689,219	0.0540	0.4163
310	18,421,802	35,196,147	0	53,617,950	0.0410	0.4573
320	20,647,350	30,558,512	0	51,205,862	0.0392	0.4964
330	14,710,916	25,652,241	0	40,363,157	0.0309	0.5273
340	15,361,882	29,929,463	0	45,291,345	0.0346	0.5619
350	17,790,990	29,828,308	0	47,619,298	0.0364	0.5983
360	18,056,066	30,376,001	0	48,432,068	0.0370	0.6353
370	14,178,224	28,841,081	0	43,019,305	0.0329	0.6682
380	15,756,381	32,865,446	0	48,621,827	0.0372	0.7054
390	15,244,573	32,699,162	0	47,943,735	0.0367	0.7421
400	13,603,463	30,398,645	0	44,002,108	0.0336	0.7757
410	7,482,706	30,610,237	0	38,092,943	0.0291	0.8048
420	6,500,142	29,994,128	0	36,494,270	0.0279	0.8327
430	4,388,083	17,821,705	0	22,209,788	0.0170	0.8497
440	5,172,485	16,979,403	0	22,151,888	0.0169	0.8667
450	4,891,879	15,207,863	0	20,099,743	0.0154	0.8820
460	2,366,896	14,436,209	0	16,803,105	0.0128	0.8949
470	3,475,707	14,174,813	0	17,650,521	0.0135	0.9084
480	668,992	12,036,170	0	12,705,163	0.0097	0.9181
490	660,589	12,975,603	0	13,636,192	0.0104	0.9285
500	440,077	14,306,618	0	14,746,695	0.0113	0.9398
510	685,259	10,828,928	0	11,514,188	0.0088	0.9486
520	62,070	8,767,843	0	8,829,913	0.0068	0.9553
530	66,644	7,483,343	0	7,549,987	0.0058	0.9611

Appendix D Table 8.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
540	128,720	5,809,091	0	5,937,811	0.0045	0.9656
550	28,313	4,695,541	0	4,723,854	0.0036	0.9693
560	0	4,688,575	0	4,688,575	0.0036	0.9728
570	153,089	3,533,721	0	3,686,810	0.0028	0.9757
580	0	3,342,059	0	3,342,059	0.0026	0.9782
590	28,941	3,706,839	0	3,735,779	0.0029	0.9811
600	53,050	3,909,678	0	3,962,728	0.0030	0.9841
610	0	2,915,132	0	2,915,132	0.0022	0.9863
620	96,550	2,998,382	0	3,094,932	0.0024	0.9887
630	28,702	1,846,161	0	1,874,863	0.0014	0.9901
640	0	2,511,249	0	2,511,249	0.0019	0.9920
650	0	2,107,917	0	2,107,917	0.0016	0.9937
660	0	1,936,787	0	1,936,787	0.0015	0.9951
670	0	894,786	0	894,786	0.0007	0.9958
680	0	1,387,492	0	1,387,492	0.0011	0.9969
690	0	732,499	0	732,499	0.0006	0.9974
700	0	647,061	0	647,061	0.0005	0.9979
710	0	722,395	0	722,395	0.0006	0.9985
720	0	319,478	0	319,478	0.0002	0.9987
730	0	500,680	0	500,680	0.0004	0.9991
740	0	307,159	0	307,159	0.0002	0.9994
750	0	209,096	0	209,096	0.0002	0.9995
760	0	299,538	0	299,538	0.0002	0.9997
770	0	91,229	0	91,229	0.0001	0.9998
790	0	147,437	0	147,437	0.0001	0.9999
800	0	99,163	0	99,163	0.0001	1.0000
TOTAL	**406,421,887**	**899,627,059**	**1,879,696**	**1,307,928,641**	**1.0000**	**1.0000**

Appendix D Table 9.-- Population estimates by sex and size for **Kamchatka flounder** (*Atheresthes evermanni*) from the 2006 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
60	0	0	37,360	37,360	0.0002	0.0002
70	0	0	37,360	37,360	0.0002	0.0002
100	32,588	0	37,360	69,948	0.0004	0.0004
110	56,685	173,467	79,874	310,026	0.0017	0.0017
120	0	28,201	79,874	108,075	0.0006	0.0006
130	54,211	0	0	54,211	0.0003	0.0003
140	53,711	85,777	0	139,488	0.0007	0.0007
150	111,115	282,076	0	393,191	0.0021	0.0021
160	302,008	424,626	0	726,634	0.0039	0.0039
170	364,281	313,367	0	677,648	0.0036	0.0036
180	694,204	427,818	0	1,122,022	0.0060	0.0060
190	1,042,539	367,801	0	1,410,340	0.0076	0.0076
200	666,511	953,274	0	1,619,784	0.0087	0.0087
210	866,219	547,419	0	1,413,638	0.0076	0.0076
220	978,020	526,419	0	1,504,440	0.0081	0.0081
230	1,549,329	1,016,210	0	2,565,539	0.0137	0.0137
240	2,160,536	1,756,329	0	3,916,865	0.0210	0.0210
250	4,461,542	2,722,734	0	7,184,276	0.0385	0.0385
260	5,132,219	4,636,483	0	9,768,702	0.0523	0.0523
270	5,562,360	4,468,236	0	10,030,596	0.0537	0.0537
280	8,590,275	5,828,265	0	14,418,540	0.0772	0.0772
290	7,349,114	8,831,696	0	16,180,811	0.0866	0.0866
300	5,828,350	6,877,272	0	12,705,622	0.0680	0.0680
310	7,433,149	5,699,277	0	13,132,426	0.0703	0.0703
320	8,034,012	7,238,816	0	15,272,827	0.0818	0.0818
330	6,573,195	5,673,283	0	12,246,478	0.0656	0.0656
340	6,495,715	6,140,521	0	12,636,236	0.0677	0.0677
350	5,580,052	5,320,888	0	10,900,940	0.0584	0.0584
360	4,922,902	4,735,482	0	9,658,385	0.0517	0.0517
370	2,522,108	3,063,046	0	5,585,154	0.0299	0.0299
380	1,665,009	3,696,910	0	5,361,919	0.0287	0.0287
390	1,192,229	2,665,379	0	3,857,608	0.0207	0.0207
400	1,270,505	1,157,551	0	2,428,056	0.0130	0.0130
410	708,471	1,437,724	0	2,146,195	0.0115	0.0115
420	822,769	578,955	0	1,401,725	0.0075	0.0075
430	413,504	529,803	0	943,307	0.0051	0.0051
440	329,902	336,348	0	666,250	0.0036	0.0036
450	172,966	410,489	0	583,455	0.0031	0.0031
460	420,005	228,995	0	649,000	0.0035	0.0035
470	110,752	173,009	0	283,760	0.0015	0.0015
480	141,027	193,124	0	334,150	0.0018	0.0018
490	137,358	272,185	0	409,543	0.0022	0.0022
500	55,673	0	0	55,673	0.0003	0.0003
510	240,107	0	0	240,107	0.0013	0.0013
520	74,757	28,770	0	103,527	0.0006	0.0006

Appendix D Table 9.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
530	225,557	60,064	0	285,622	0.0015	0.0015
540	28,371	183,049	0	211,419	0.0011	0.0011
550	56,111	53,983	0	110,095	0.0006	0.0006
560	0	28,397	0	28,397	0.0002	0.0002
570	46,727	28,770	0	75,497	0.0004	0.0004
590	47,420	28,314	0	75,734	0.0004	0.0004
600	0	144,305	0	144,305	0.0008	0.0008
610	18,608	123,149	0	141,757	0.0008	0.0008
620	28,387	28,532	0	56,920	0.0003	0.0003
630	0	27,410	0	27,410	0.0001	0.0001
650	0	53,490	0	53,490	0.0003	0.0003
670	0	47,847	0	47,847	0.0003	0.0003
680	0	28,371	0	28,371	0.0002	0.0002
690	0	83,959	0	83,959	0.0004	0.0004
700	0	26,645	0	26,645	0.0001	0.0001
720	0	27,303	0	27,303	0.0001	0.0001
790	0	56,127	0	56,127	0.0003	0.0003
TOTAL	**95,623,165**	**90,877,741**	**271,829**	**186,772,735**	**1.0000**	**1.0000**

Appendix D Table 10.-- Population estimates by sex and size for **Pacific halibut** (*Hippoglossus stenolepis)* from the 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
50	0	0	18,701	18,701	0.0001	0.0001
60	0	0	0	0	0.0000	0.0001
70	0	0	18,701	18,701	0.0001	0.0003
90	0	0	117,266	117,266	0.0009	0.0012
110	0	62,496	0	62,496	0.0005	0.0016
140	30,491	31,652	0	62,143	0.0005	0.0021
150	88,062	31,126	153,176	272,365	0.0020	0.0041
160	57,696	93,795	307,537	459,028	0.0034	0.0075
170	235,709	226,102	459,408	921,219	0.0069	0.0144
180	764,083	683,133	1,102,830	2,550,047	0.0190	0.0334
190	923,118	963,403	1,025,977	2,912,498	0.0217	0.0551
200	2,989,781	2,987,213	1,243,603	7,220,597	0.0538	0.1090
210	4,647,173	4,449,947	823,028	9,920,147	0.0740	0.1829
220	5,974,385	4,964,663	884,205	11,823,252	0.0881	0.2711
230	5,186,642	5,264,105	1,288,567	11,739,314	0.0875	0.3586
240	4,675,474	3,849,612	838,944	9,364,030	0.0698	0.4284
250	2,544,424	2,333,632	643,464	5,521,520	0.0412	0.4696
260	1,462,660	694,524	445,682	2,602,866	0.0194	0.4890
270	544,195	198,936	647,377	1,390,508	0.0104	0.4993
280	367,857	245,157	391,895	1,004,909	0.0075	0.5068
290	336,075	222,643	320,770	879,488	0.0066	0.5134
300	254,672	320,723	630,303	1,205,698	0.0090	0.5224
310	287,552	380,613	643,637	1,311,802	0.0098	0.5322
320	451,302	467,557	615,111	1,533,969	0.0114	0.5436
330	392,531	382,432	966,841	1,741,804	0.0130	0.5566
340	587,716	601,073	857,794	2,046,582	0.0153	0.5718
350	552,670	624,820	704,352	1,881,842	0.0140	0.5859
360	840,464	720,938	902,383	2,463,785	0.0184	0.6042
370	536,193	490,094	909,862	1,936,149	0.0144	0.6187
380	749,608	293,140	809,315	1,852,063	0.0138	0.6325
390	176,329	238,586	1,085,211	1,500,126	0.0112	0.6437
400	342,902	300,780	506,606	1,150,288	0.0086	0.6522
410	162,754	278,956	661,426	1,103,137	0.0082	0.6605
420	163,449	222,856	460,513	846,818	0.0063	0.6668
430	492,651	277,355	756,262	1,526,268	0.0114	0.6782
440	429,890	219,359	651,692	1,300,941	0.0097	0.6878
450	597,668	331,553	761,258	1,690,478	0.0126	0.7005
460	706,143	291,007	1,119,507	2,116,658	0.0158	0.7162
470	750,748	515,333	1,249,273	2,515,354	0.0188	0.7350
480	885,571	539,616	1,195,456	2,620,644	0.0195	0.7545
490	446,235	645,016	1,357,114	2,448,365	0.0183	0.7728
500	500,779	754,262	1,246,700	2,501,741	0.0187	0.7914
510	317,940	679,712	672,153	1,669,806	0.0124	0.8039
520	471,066	732,299	886,453	2,089,818	0.0156	0.8195
530	424,596	440,034	680,951	1,545,581	0.0115	0.8310
540	352,375	490,658	580,738	1,423,771	0.0106	0.8416

Appendix D Table 10.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
550	434,932	395,791	367,513	1,198,237	0.0089	0.8490
560	269,152	302,381	314,847	886,379	0.0066	0.8557
570	319,851	247,421	412,263	979,534	0.0073	0.8630
580	173,241	187,754	597,225	958,219	0.0071	0.8701
590	127,455	229,719	497,878	855,052	0.0064	0.8765
600	134,124	192,150	362,734	689,007	0.0051	0.8816
610	157,531	336,208	355,433	849,171	0.0063	0.8879
620	161,133	184,314	471,671	817,118	0.0061	0.8940
630	243,407	163,735	306,566	713,708	0.0053	0.8994
640	265,510	123,824	379,681	769,015	0.0057	0.9051
650	130,340	77,865	356,679	564,885	0.0042	0.9093
660	146,520	139,457	243,961	529,939	0.0040	0.9133
670	228,366	290,778	244,880	764,024	0.0057	0.9190
680	168,805	303,179	182,684	654,669	0.0049	0.9238
690	84,399	162,693	199,973	447,065	0.0033	0.9272
700	206,388	219,555	397,813	823,757	0.0061	0.9333
710	226,568	192,554	225,809	644,931	0.0048	0.9381
720	113,769	62,690	433,978	610,438	0.0046	0.9427
730	87,698	124,119	289,899	501,715	0.0037	0.9464
740	86,912	235,169	152,312	474,393	0.0035	0.9499
750	58,076	141,099	198,381	397,556	0.0030	0.9529
760	170,981	176,660	0	347,641	0.0026	0.9555
770	43,783	174,570	107,053	325,405	0.0024	0.9579
780	89,635	99,820	172,984	362,439	0.0027	0.9606
790	61,218	86,263	43,317	190,798	0.0014	0.9620
800	27,897	67,598	187,633	283,128	0.0021	0.9642
810	30,229	141,295	187,005	358,529	0.0027	0.9668
820	52,674	73,258	91,595	217,527	0.0016	0.9685
830	59,002	29,231	98,045	186,278	0.0014	0.9698
840	28,607	29,389	162,210	220,205	0.0016	0.9715
850	116,962	110,014	45,642	272,618	0.0020	0.9735
860	18,086	27,943	59,853	105,882	0.0008	0.9743
870	28,373	97,627	84,268	210,269	0.0016	0.9759
880	28,758	61,605	75,346	165,709	0.0012	0.9771
890	27,523	27,943	126,407	181,873	0.0014	0.9785
900	22,863	85,515	27,668	136,046	0.0010	0.9795
910	56,481	62,226	71,845	190,552	0.0014	0.9809
920	0	45,513	58,201	103,713	0.0008	0.9817
940	0	0	0	0	0.0000	0.9817
950	29,467	44,050	62,552	136,068	0.0010	0.9827
960	0	31,652	53,913	85,565	0.0006	0.9833
970	31,305	86,660	31,225	149,190	0.0011	0.9844
990	0	0	0	0	0.0000	0.9844
1000	30,463	0	18,517	48,980	0.0004	0.9848
1010	58,671	69,042	58,419	186,131	0.0014	0.9862
1020	0	55,174	18,517	73,691	0.0005	0.9867
1040	0	0	0	0	0.0000	0.9867
1050	0	28,463	0	28,463	0.0002	0.9870

Appendix D Table 10.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cummulative proportion
1060	30,947	0	27,160	58,108	0.0004	0.9894
1070	28,097	0	37,832	65,930	0.0005	0.9899
1080	56,406	30,090	53,793	140,289	0.0010	0.9910
1090	0	58,161	0	58,161	0.0004	0.9914
1100	0	0	55,616	55,616	0.0004	0.9918
1110	0	0	28,216	28,216	0.0002	0.9920
1120	0	0	28,314	28,314	0.0002	0.9922
1130	28,638	0	0	28,638	0.0002	0.9924
1140	0	17,954	27,505	45,459	0.0003	0.9928
1150	0	28,097	44,353	72,450	0.0005	0.9933
1160	0	16,234	0	16,234	0.0001	0.9934
1170	0	0	19,086	19,086	0.0001	0.9936
1180	0	26,096	0	26,096	0.0002	0.9938
1190	0	0	97,519	97,519	0.0007	0.9945
1210	0	0	46,865	46,865	0.0003	0.9949
1230	0	0	28,397	28,397	0.0002	0.9951
1250	0	0	19,086	19,086	0.0001	0.9952
1260	0	0	29,375	29,375	0.0002	0.9954
1270	0	26,096	0	26,096	0.0002	0.9956
1290	0	30,208	0	30,208	0.0002	0.9958
1300	0	0	57,523	57,523	0.0004	0.9963
1310	0	0	27,740	27,740	0.0002	0.9965
TOTAL	**47,785,874**	**44,999,231**	**41,346,561**	**134,131,666**	**1.0000**	**1.0000**

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