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2005 Bottom Trawl Survey of the Eastern Bering Sea Continental Shelf

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2005 BOTTOM TRAWL SURVEY OF THE EASTERN BERING SEA CONTINENTAL SHELF

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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 2005, two chartered trawlers, the 40-m FV *Arcturus* and the 40-m FV *Aldebaran*, again surveyed this area.

Demersal populations were sampled by trawling for 30 minutes at stations centered in a 20 × 20 nautical mile grid 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.

Three-hundred and fifty-three of the 356 standard survey stations were sampled. Walleye pollock, yellowfin sole, and rock sole dominated fish biomass estimates (10.1 metric tons combined). A total of 219 invertebrate species were identified 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, the most abundant has been the walleye pollock with catches ranging from 0.9 to 1.5 million metric tons (t) for the past 30 years (North Pacific Fishery Management Council 2002).

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 *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 (*Chionoecetes opilio*), two stocks of blue king crab (*Paralithodes platypus*), red king crab (*Paralithodes camtschaticus*), and hair crab (*Erimacrus isenbeckii*). Detailed information on results of the crab survey (Rugolo et al. 2006) can be obtained by contacting Dr. Lou Rugolo (NOAA / NMFS / AFSC / Kodiak Fisheries Research Center 301 Research Court, Kodiak, AK 99615).

Every third year through 1991 (1979, 1982, 1985, 1988, 1991) an extended survey was conducted, including a midwater echo integration trawl survey for pollock, 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 and is subsequently sampled biennially independently of the shelf. In 2004 the continental slope was surveyed from 3 June to 11 August. For results of the 2004 eastern Bering Sea Slope Survey contact Gerald Hoff (NOAA/NMFS/AFSC/RACE 7600 Sand Point Way NE, Seattle, WA 98115).

The information gathered by the annual surveys serves to 1) provide the North Pacific Fishery Management Council with annual fishery-independent estimates of abundance and biological condition of commercially exploited stocks, 2) provide distribution and abundance information to commercial fishermen, and 3) develop a time-series database contributing to our understanding of the population dynamics and interactions of groundfish and crab species.
In 2005, the crab and groundfish survey was conducted from 30 May to 25 July by two U.S. vessels. This report presents information collected by the AFSC in the eastern Bering Sea during the 2005 bottom trawl survey

METHODS

Survey Area and Sampling Design

The standard station pattern for the eastern Bering Sea survey is based on a systematic 20 × 20 nautical mile grid with a sampling station at the center of each grid (Fig. 1).

In areas surrounding St. Matthew and the Pribilof Islands, a high-density sampling of corner

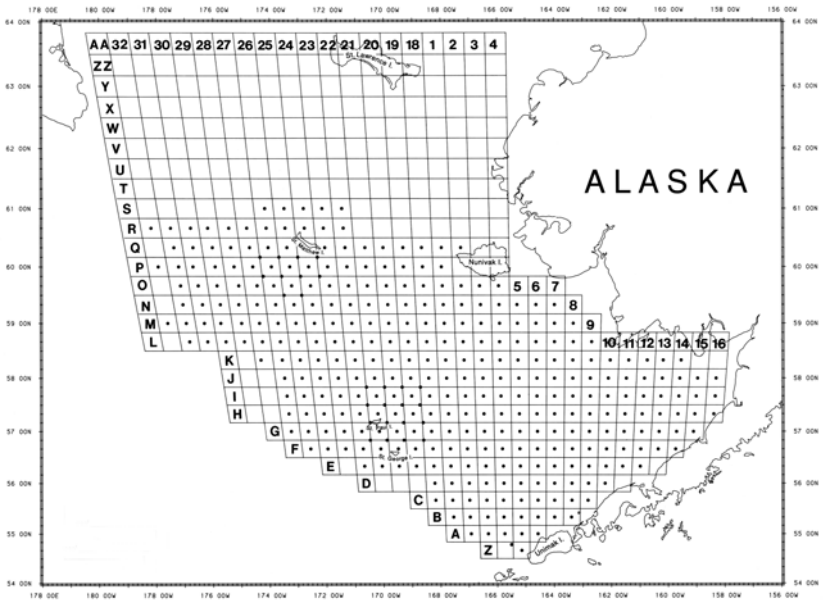


Figure 1. -- Eastern Bering Sea survey grid map of stations.

stations has been implemented to better assess blue king crab concentrations. The survey design pattern calls for 356 standard stations. For the purposes of the data analysis reported in this publication, only the data from these standard survey stations are included in this report. A list of species encountered at all these stations are in Appendix A.

Survey Station Sampling Design

Starting with the easternmost stations, the FV *Arcturus* and FV *Aldebaran* fished alternate north/south lines of stations such that coverage of the survey area was similar for each vessel. This sampling design facilitates the computation of relative fishing powers (or catch efficiencies) of the two vessels. The progression from east to west was established to prevent multiple encounters of yellowfin sole and perhaps other species, which may be migrating eastward during the course of the survey (Smith and Bakkala 1982).

Tows were usually 30 minutes in duration and fishing was limited to daylight hours. For data analysis, the survey region was divided into six strata bounded by the 50-m, 100-m, and 200-m isobaths and by a line separating the northwest and southeast portions of the study area (Fig. 2). This stratification scheme was designed to reduce the variances of population and biomass estimates by conforming to oceanographic domains, which seem related to distributions of Bering Sea fishes (Bakkala 1993). The presence of high-density sampling for blue king crab in Strata 3, 4, and 6 necessitated a further division of these strata into high-density and standard-density sample strata, resulting in a total of 10 geographic 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 3, 4, and 6, and the irregular stratum boundaries, sampling density among the six strata varied from one station per 1,147 km^2 (Stratum 40) to one per 1,492 km^2 (Stratum 50).

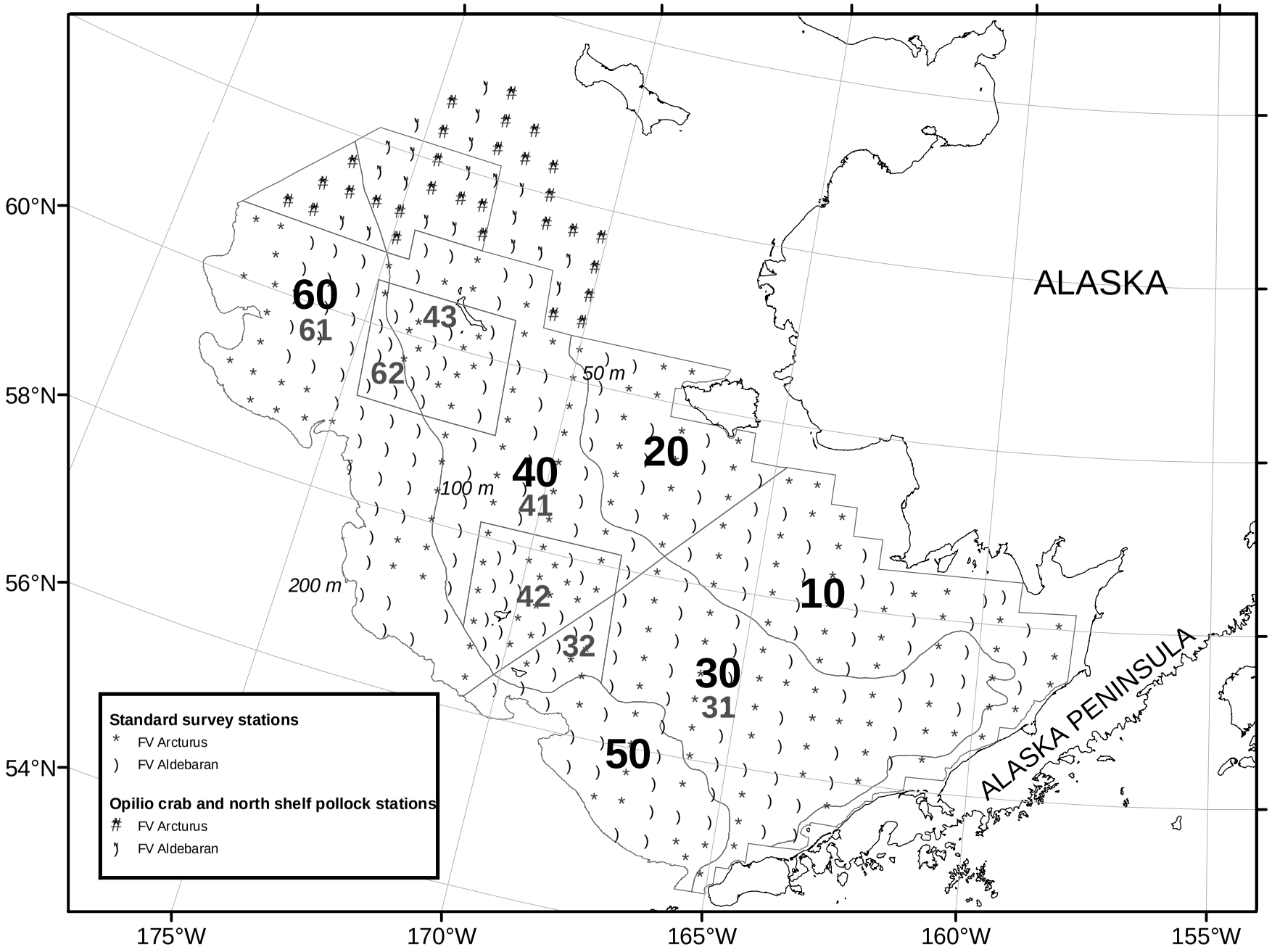


Figure 2. --Standard and special study stations sampled during the 2005 eastern Bering Sea bottom trawl survey, and stratifications used for analysis of data (large numbers = strata, small numbers = substrata).

Table 1.--Size of stratum and substratum areas and sampling densities for the 2005 eastern Bering Sea bottom trawl survey.

Stratum	Substratum	Area (km^2)	Stations successfully sampled	Sampling density (km^2 / stn)
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**

Survey Vessels and Sampling Gear

The 2005 eastern Bering Sea bottom trawl survey was conducted aboard the 40-m fishing vessels FV *Arcturus* and FV *Aldebaran* (Table 2). As in previous years, both vessels were equipped with 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 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. --Vessel characteristics during the 2005 eastern Bering Sea bottom trawl survey.

Vessel	Overall length (m)	Horsepower	Survey dates
FV *Arcturus*	40	1,525	30 May – 25 July
FV *Aldebaran*	45	1,525	30 May – 25 July

NETMIND[1] net mensuration systems were used aboard each vessel to measure net height and width. Net width was measured by the distance between two sensors attached to the upper starboard and port dandylines, about 0.61 m in front of the net. Mean net widths were calculated from observations recorded within each tow. These data were then used to establish a net width-scope (wire-out) relationship for each vessel to enable prediction of net width for tows where net width data were not available (Fig. 4) as described by Rose and Walters (1990). Estimates of net width were used in area-swept calculations.

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

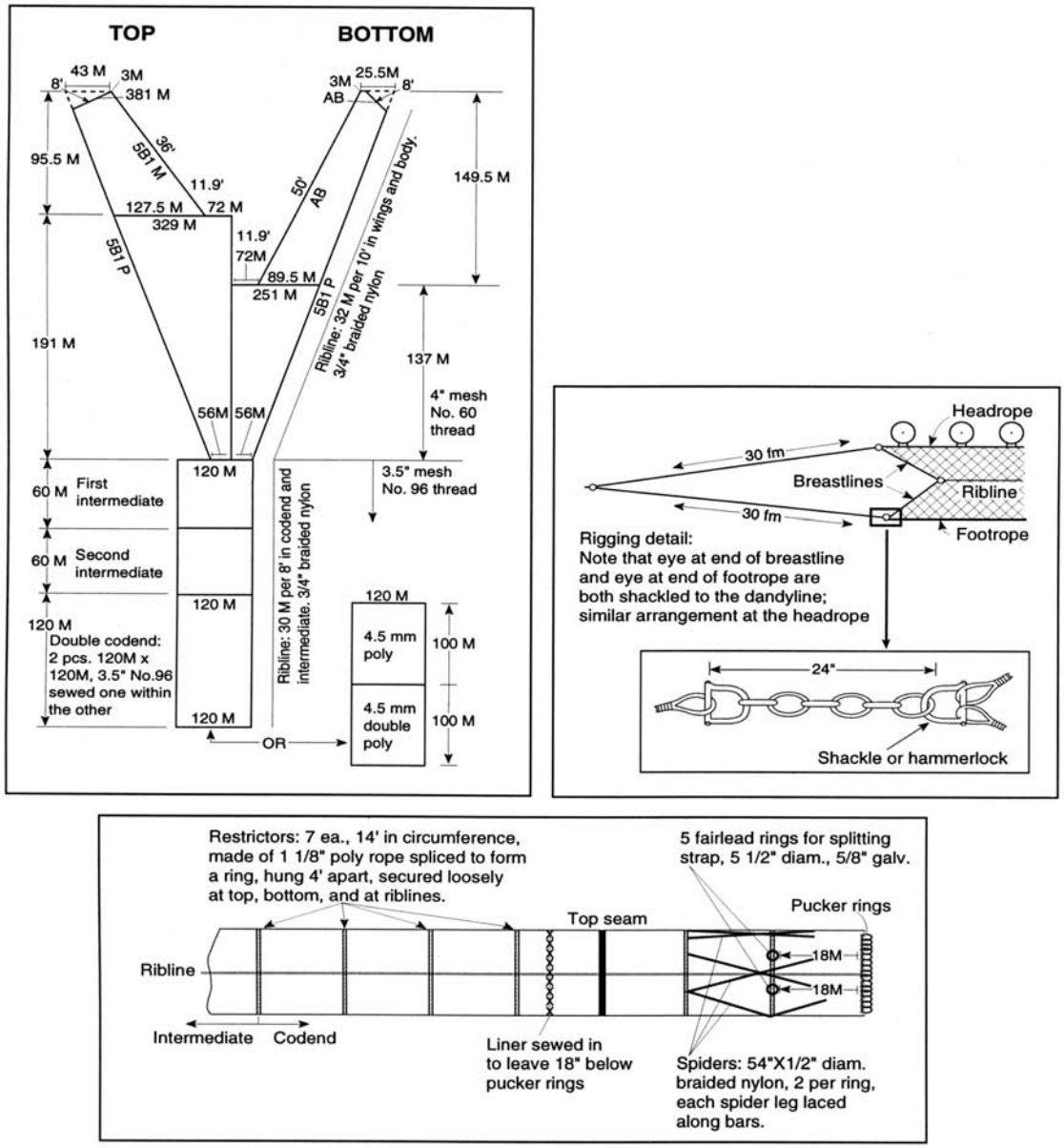
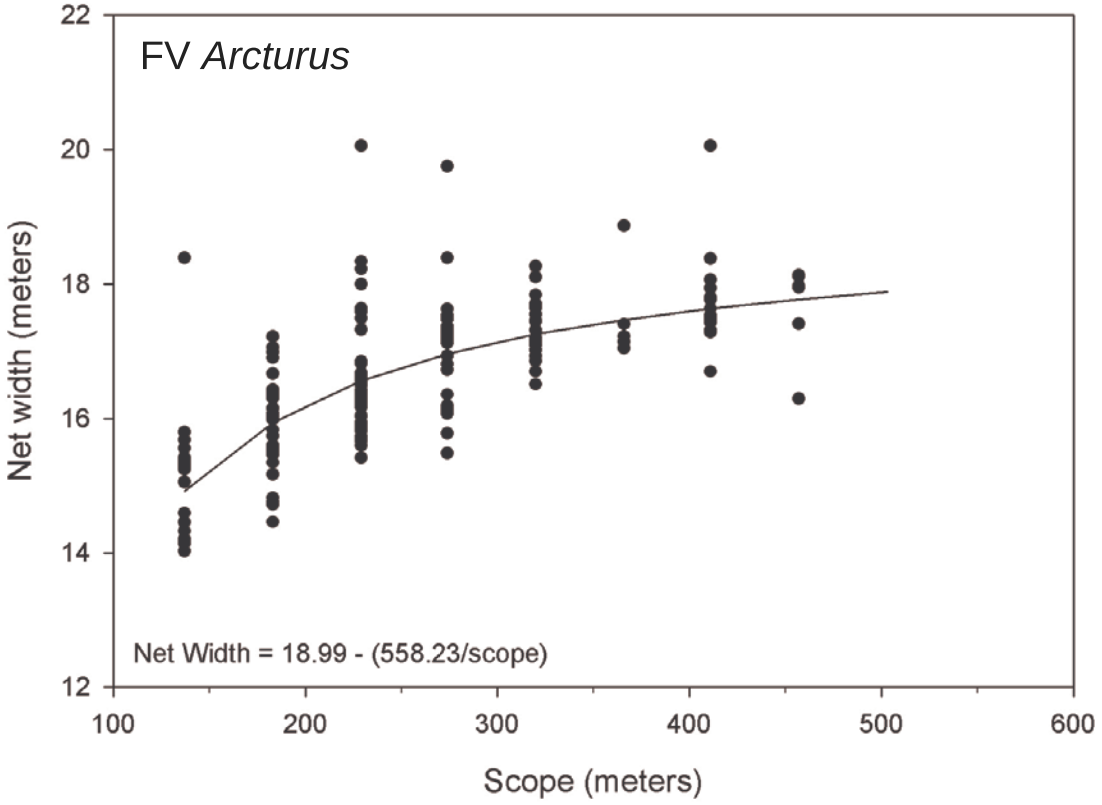


Figure 3. -- Schematic diagram of 83/112 Eastern otter trawl net used during the 2005 Eastern Bering Sea bottom trawl survey.



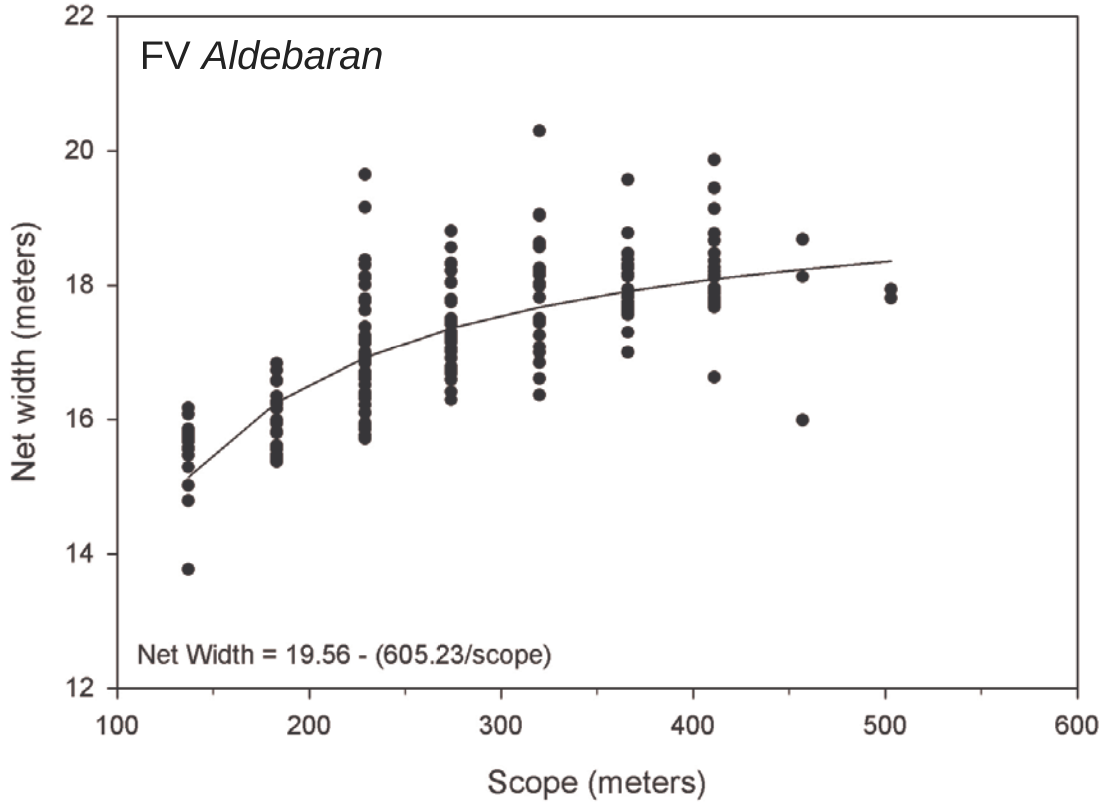


Figure 4.--Relationship between net-width and scope (wire-out) for vessels participating in the 2005 eastern Bering Sea survey.

Data Collection

Sampling procedures used in RACE eastern Bering Sea assessment surveys are described in detail by Wakabayashi et al. (1985). A brief summary follows.

Samples were collected by trawling at the center of each 20 × 20 nautical mile grid block (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 some object 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. Onboard the *Arcturus*, a prototype of a conveyor belt system for moving and sorting catches directly from the bin, rather than sorting it on the table, was used during the first half of the cruise. After sorting the subsample, individual species were weighed and counted and these weights and numbers were expanded to the total catch. A random sample of up to 300 fish of each commercially important species was set aside for length measurements.

Economically important fish and invertebrates were sorted to species. Similar features between flathead sole (*Hippoglossoides elassodon*) and Bering flounder (*H. robustus*) make identification of these species in text and tables difficult within the time constraints of the survey; thus, for the purpose of 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 crab species of the genera *Paralithodes* (red and blue king crabs, *P. camtschaticus* and *P. platypus*, respectively), *Chionoecetes* (snow and Tanner crabs, *C. opilio* and *C. bairdi*, respectively), and *Erimacrus isenbeckii* (hair crab) were usually weighed and enumerated from the entire catch.

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 approximately 150-200 individuals per species (200-300 in the case of walleye pollock). 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 sea in an effort to reduce sampling mortality for this species.

Sagittal otoliths were collected from 16 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. Two otolith pairs per sex/centimeter interval per vessel (four pairs total) were collected for marbled eelpout (*Lycodes raridens*) and butterfly sculpin (*Hemilepidotus papilio*). 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.

Temperature profiles were taken at each station using a Seabird micro-bathythermograph (MBT) attached to the headrope of the net; surface temperatures were taken using a bucket thermometer.

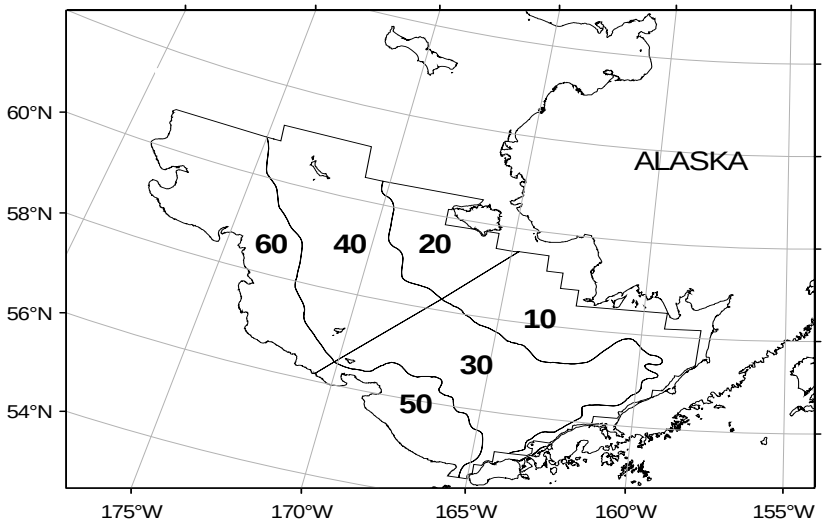
Table 3.--Number of length measurements by stratum taken during the 2005 eastern Bering Sea bottom trawl survey.

	Stratum						
Species	**10**	**20**	**30**	**40**	**50**	**60**	**Total**
Alaska plaice	898	745	1,034	1,148	---	56	3,881
Alaska skate	523	464	699	1,261	118	670	3,735
Aleutian skate	1	---	---	---	3	7	11
Arctic cod	---	2	---	16	---	---	18
arrowtooth flounder	153	18	2,648	1,180	1,301	1,748	7,048
Atka mackerel	1	---	3	---	13	---	17
Bering flounder	---	10	---	341	---	9	360
Bering skate	---	---	5	8	44	52	109
bigmouth sculpin	---	---	39	28	10	110	187
butter sole	7	---	21	---	---	---	28
butterfly sculpin	---	---	---	54	---	---	54
Canadian eelpout	---	1	---	---	---	---	1
chinook salmon	---	---	---	---	1	---	1
chum salmon	1	---	4	2	---	1	8
Dover sole	---	---	4	1	2	---	7
dusky rockfish	---	---	---	---	---	1	1
flathead sole	284	11	2,046	1,193	1,058	2,233	6,825
great sculpin	103	18	284	184	4	101	694
Greenland turbot	---	---	1	46	---	100	147
Kamchatka flounder	3	1	228	243	341	1,045	1,861
longhead dab	449	193	9	---	---	---	651
marbled eelpout	---	---	---	77	---	---	77
mud skate	---	---	---	1	---	3	4
northern rock sole	2,315	1,099	2,183	2,433	81	468	8,579
northern rockfish	---	---	---	---	1	---	1
Okhotsk skate	---	---	---	---	---	2	2
Pacific cod	1,182	794	1,380	2,613	196	1,036	7,201
Pacific halibut	650	330	231	268	41	110	1,630
Pacific ocean perch	---	---	---	---	2	50	52
Pacific sleeper shark	---	---	---	1	---	1	2
pink salmon	---	---	---	1	---	---	1
plain sculpin	963	609	63	106	---	---	1,741
rex sole	20	---	159	2	374	153	708
rockfish unidentified	---	---	---	---	7	---	7
sablefish	---	---	14	1	---	---	15
saffron cod	13	3	---	---	---	---	16
Sakhalin sole	---	---	---	2	---	---	2
shortfin eelpout	---	---	10	276	78	514	878
southern rock sole	---	---	22	---	---	---	22
starry flounder	320	65	49	---	---	---	434
walleye pollock	675	743	2,523	3,247	473	2,389	10,050
warty sculpin	6	12	12	248	---	6	284
wattled eelpout	---	1	208	585	7	199	1,000
whiteblotched skate	---	---	---	---	2	---	2
yellow Irish lord	1	8	85	437	10	58	599
yellowfin sole	2,147	1,142	1,647	1,455	11	23	6,425

Table 4.--Number of fish from which age structures (otoliths) were collected by species and by stratum during the 2005 eastern Bering Sea bottom trawl survey.

	Stratum						
Species	**10**	**20**	**30**	**40**	**50**	**60**	**Total**
walleye pollock	95	100	365	579	105	299	1,543
Pacific cod	238	108	245	476	33	141	1,241
Pacific halibut[b]	---	---	---	---	---	---	883
yellowfin sole	232	191	101	147	---	---	671
arrowtooth flounder	---	---	218	124	105	108	555
flathead sole	39	---	112	40	69	205	465
northern rock sole	105	61	64	195	---	---	425
great sculpin	47	5	121	125	---	65	363
plain sculpin	202	62	---	79	---	---	343
Alaska plaice	82	126	67	66	---	---	341
yellow Irish lord	---	3	56	143	7	13	222
warty sculpin	1	12	7	150	---	5	175
Greenland turbot	---	---	---	39	---	87	126
starry flounder	119	---	---	---	---	---	119
shortfin eelpout	---	---	---	48	---	---	48
marbled eelpout	---	---	---	32	---	---	32
wattled eelpout	---	---	---	29	---	---	29
butterfly sculpin	---	---	---	14	---	---	14

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



Data Analysis

A total of 402 standard station tows were used in the comparison of vessel catch rates (fishing powers) with the methods developed by Kappenman (1992). Based on this analysis (see Appendix B), the value for the vessel with the least efficient catch rate for a particular species is mathematically brought up to match the value for the catch rate of the more efficient vessel for that species.

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 substratum by multiplying the substratum mean CPUE by the substratum area. Substratum totals were then added together to produce estimates for each subarea and for the total survey area. Biomass is reported throughout this document in metric tons (t).

In estimating the size composition of populations 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 substratum population. Substratum

estimates were summed to derive the estimated size composition by subarea 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 subsequent publications.

Special Studies

Several institutions requested special collections, which were fulfilled during the 2005 survey. Among the in-house special collections were stomach scans of multiple groundfish species (Table 5) and samples for the RACE pathology lab consisting of parasite samples, blood samples and DNA tissue samples (Table 5). In addition, collections were made of skate egg cases for identification of skate nursery grounds, hermit crab voucher specimens for identification and distributional studies, and seabird sighting observations were made to determine distribution, relative densities, and to observe any interaction with fishery operations as required under the Biological Opinion on the endangered short-tailed albatross (*Phoebastria albatrus*; U.S. Fish and Wildlife Service 1989).

Table 5.--Biological fish samples collected for special studies during the 2005 eastern Bering sea bottom trawl survey.

Scientific name	Common name	Stomach samples scanned[a]	Parasite samples[b]	Blood samples[b]	Tissue samples[b,c]
Theragra chalcogramma	Walleye pollock	707	5	---	---
Gadus macrocephalus	Pacific cod	494	4	---	---
Reinhardtius hippoglossoides	Greenland turbot	29	1	---	10
Hippoglossoides stenolepis	Pacific halibut	41	1	---	---
Atheresthes stomias	arrowtooth flounder	20	4	---	7
Lepidopsetta polyxystra	Northern rock sole	37	3	---	1
Bathyraja parmifera	Alaska skate	35	---	---	---
Bathyraja interrupta	Bering skate	2	---	---	---
Clupea pallasi	Pacific herring	190	3	---	---
Mallotus villosus	capelin	106	1	---	---
Thaleichthys pacificus	eulachon	45	2	---	2
Ammodytes hexapterus	Pacific sand lance	3	---	---	---
Sebastes alutus	Pacific ocean perch	---	1	---	1
Anoplopoma fimbria	sablefish	---	1	---	---
Eleginus gracilis	saffron cod	---	1	---	---
Lycodes palearis	waddled eelpout	---	3	---	---
Limanda aspera	yellowfin sole	---	3	---	---
Hippoglossoides elassodon	flathead sole	---	3	---	---
Atheresthes evermanni	Kamchatka flounder	---	3	---	---
Chionoecetes bairdi	Tanner crab	---	---	381	---
Chionoecetes opilio	snow crab	---	---	636	---
Hyas coarctatus	lyre crab	---	---	60	---
Paralithodes platypus	blue king crab	---	---	31	---

[a]Detailed information on species collected for food habit studies can be obtained from P. Livingston (NOAA/NMFS/AFSC 7600 Sand Point Way NE, Seattle, WA 98115).

[b]Detailed information on species collected for pathology studies can be obtained from F. Morado (NOAA/NMFS/AFSC 7600 Sand Point Way NE, Seattle, WA 98115).

[c]Scientific names for the other fish and invertebrates species for which tissue samples were taken:
Aforia circinata, Amphipoda, *Bathymaster signatus, Boreogadus saida, Buccinum angulosum, Buccinum plectrum, Clinocardium ciliatum, Colus herendeenii, Ctenodiscus crispatus, Dasycottus setiger, Echinarachnius parma, Eleginus gracilis, Erimacrus isenbeckii, Eunoe nodosa, Fusitriton oregonensis,* Gammaridae, *Glyptocephalus zachirus, Gorgonocephalus eucnemis, Hemilepidotus jordani, Hemilepidotus papilio, Hemitripterus bolini, Hippoglossoides robustus, Hyas coarctatus, Hyas lyratus, Isopsetta isolepis, Labidochirus splendescens, Leptagonus frenatus, Leptasterias arctica, Leptasterias polaris, Limanda sakhalinensis, Liparis gibbus, Lumpenus maculatus, Lycodes brevipes, Lycodes palearis, Lycodes raridens, Mallotus villosus, Myoxocephalus polyacanthocephalus, Myoxocephalus verrucosus, Natica russa, Neptunea borealis, Neptunea heros, Neptunea lyrata, Neptunea magna, Neptunea pribiloffensis, Nuculana fossa, Ophiura sarsi, Pagurus aleuticus, Pagurus beringanus, Pagurus capillatus, Pagurus confragosus, Pagurus cornutus, Pagurus rathbuni, Pagurus trigonocheirus,* Pandalidae, *Pleurogrammus monopterygius, Plicifusus* (=*Colus*) *kroyeri,* Polychaeta (class), *Poroclinus rothrocki, Sebastes ciliatus,* shrimp unident., *Trichodon trichodon, Triglops scepticus.*

RESULTS

Station Data

In 2005 a total of 402 stations were successfully sampled, which included 353 of the standard stations plus 49 additional stations northwest of the standard pattern (Fig. 2). Twenty-nine of these 49 northwest stations were sampled for the first time in 2005, and the remaining 20 have been sampled annually since 1987. In order to maintain a data time-line series for the longest possible period, none of these 49 stations in the northwest are considered to be part of the standard survey area. All station data from the 2005 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. Three stations were deemed invalid after survey completion due to poor performance or gear damage.

Environmental Conditions

Sea surface temperatures recorded during the survey ranged from 3.3° to 11.0°C (Fig. 5). As in most previous years, 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 –1.5° to 7.8°C (Fig. 6). The warmest bottom temperatures (above 3.0° C) occurred in shallow waters along the northern portion of Bristol Bay

to Nunivak Island, and the southern central shelf. The coldest bottom sea temperatures observed were in the northern portion of the mid-shelf at depths between 50 and 100 m.

In general, water temperatures were warmer than the long-term mean from 1982. The average sea surface temperature was lower for 2005 with an average of 7.42°C. but it was higher than the long-term mean of 6.75 ^{o}C. Mean bottom temperature was one tenth of a degree warmer than 2004 with an average of 3.47 ^{o}C (Fig. 7), and more than one degree warmer than the long-term average of 2.61 ^{o}C.

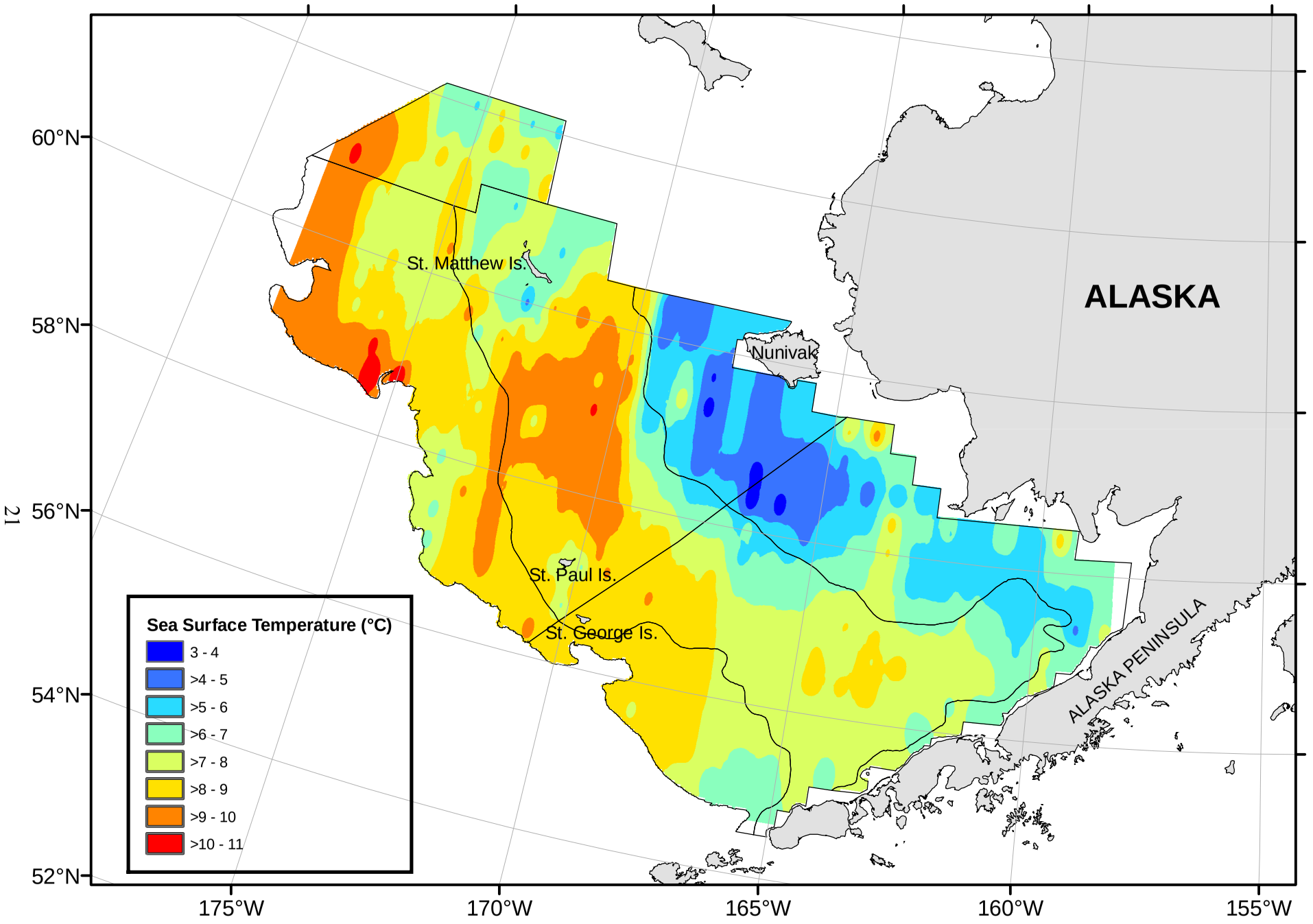


Figure 5.--Distribution of surface water temperatures (°C) observed during the 2005 eastern Bering Sea bottom trawl survey.

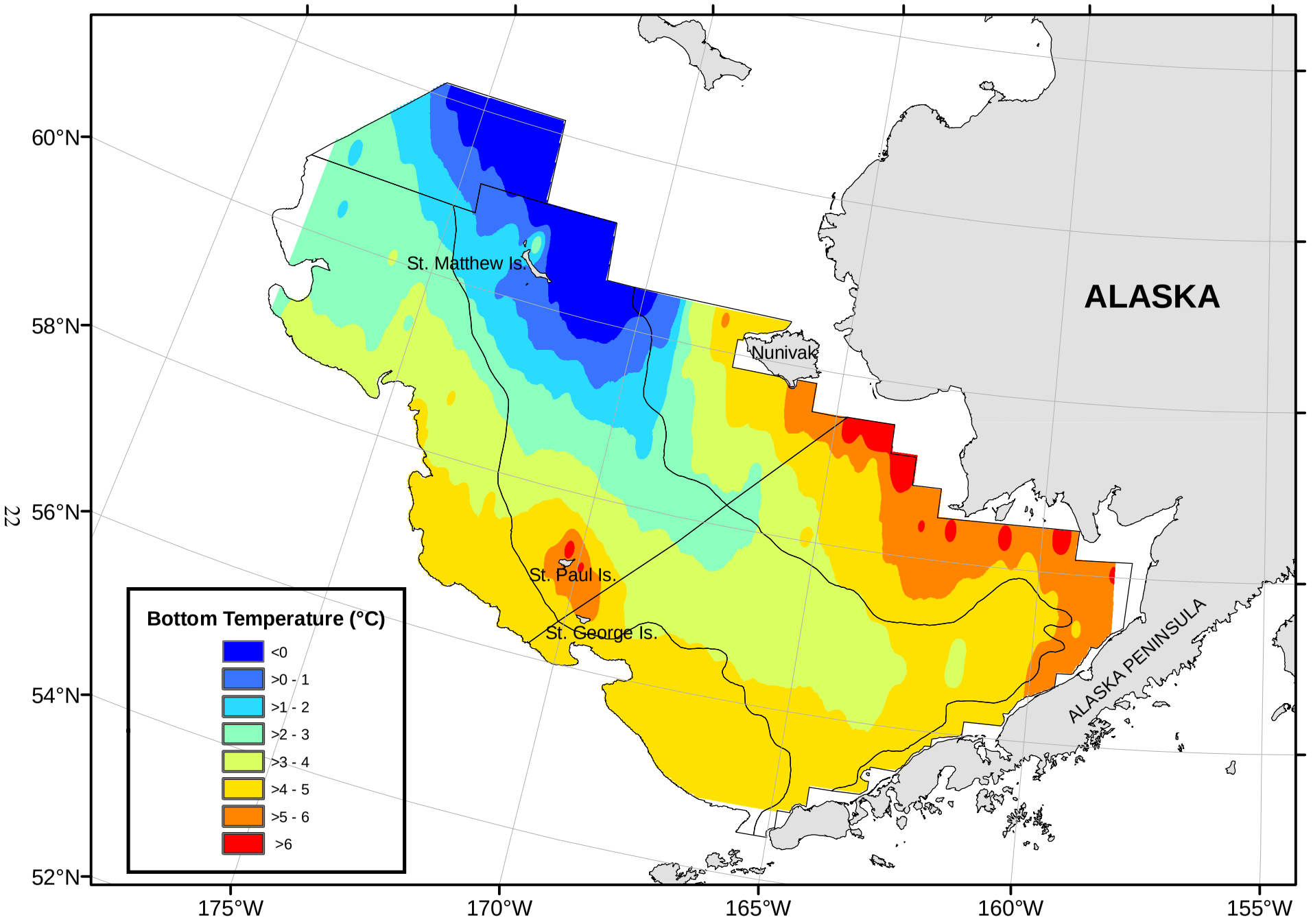


Figure 6.--Distribution of bottom water temperatures (°C) observed during the 2005 eastern Bering Sea bottom trawl survey.

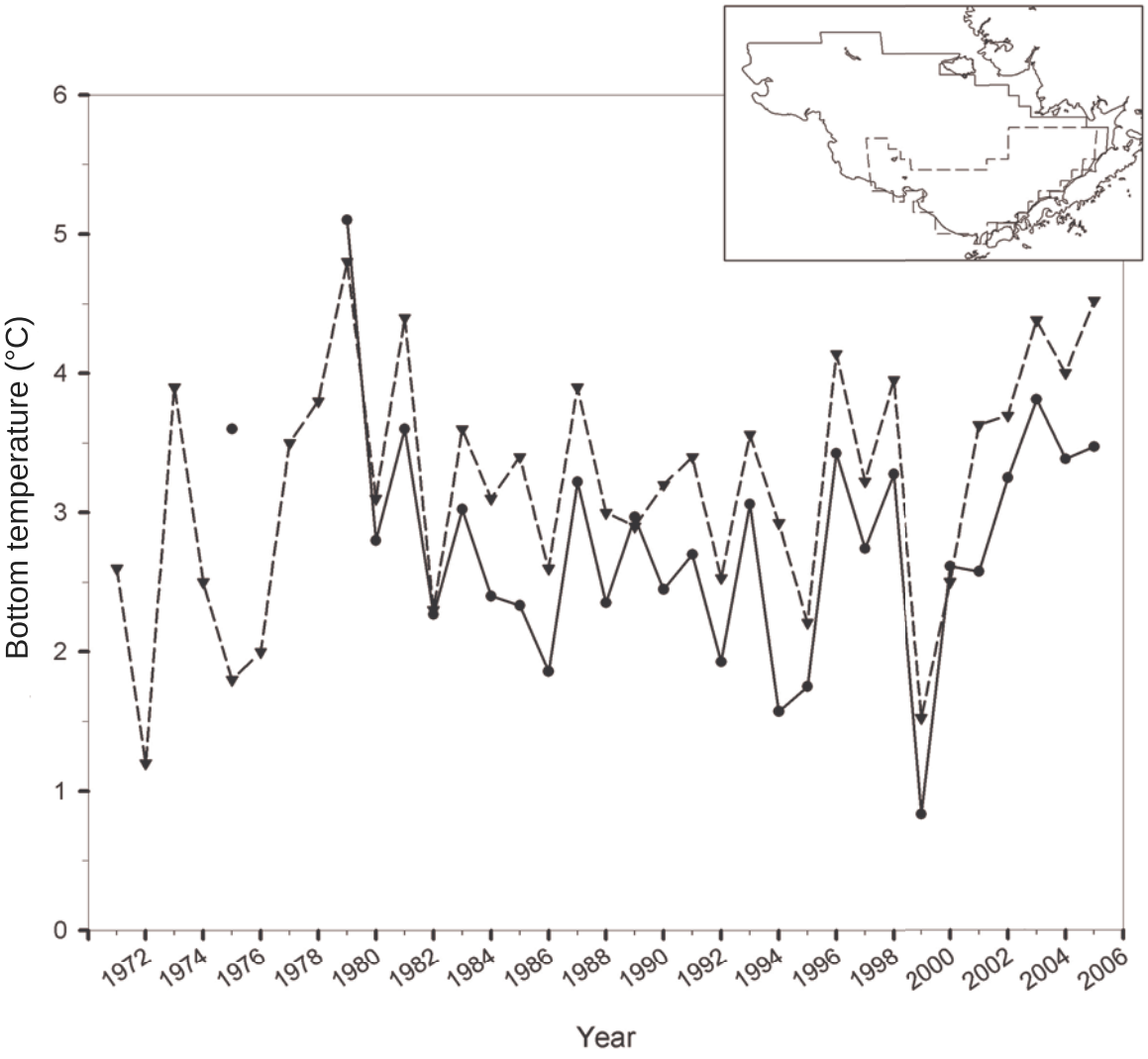


Figure 7.--Mean summer bottom temperatures based on expendable bathythermograph casts or microbathythermographs attached to the net headrope during Alaska Fisheries Science Center bottom trawl surveys. The 1971-2005 means (dashed line) are from the southeast Bering sea (see insert) and the 1975 and 1979-2005 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.

Relative Fishing Powers of Survey Vessels

A total of 402 standard station tows were used in the comparison of vessel catch rates (fishing powers). Based on this analysis, the value for the vessel with the least efficient catch rate for a particular species is mathematically brought up to match the value for the catch rate of the more efficient vessel for that species. Based on our analysis, in 2005 the FV *Arcturus* was slightly more efficient than the FV *Aldebaran* at capturing arrowtooth flounder (*Atheresthes stomias*) and Alaska skate (*Bathyraja parmifera*). Conversely, the FV *Aldebaran* was more efficient at catching Pacific halibut, Kamchatka flounder, Alaska plaice, walleye pollock, and Tanner crab. Therefore, fishing power corrections were applied to catches of the less- efficient vessel by species (Table 6).

Table 6.--Species for which fishing power corrections were applied in 2005, and scaling factors determined by the method of Kappenman (1992) based on 401 total hauls.

Species	Hauls with catch*		Catch multiplier	
	FV *Arcturus*	FV *Aldebaran*	FV *Arcturus*	FV *Aldebaran*
Pacific halibut	140	138	1.14	1
Alaska skate	153	172	1	1.31
arrowtooth flounder	120	135	1	1.21
Kamchatka flounder	77	101	1.07	1
Alaska plaice	124	124	1.02	1
walleye pollock	163	179	1.23	1
Tanner crab	129	138	1.34	1

*Standard survey area only.

Relative Abundance of Individual Fish Species

Relative abundance (not weighted by area) of the 11 most abundant species and species groups of fish are presented in Figure 8. These taxa accounted for 75.5% (292.8 kg/ha) of total animal mean CPUE (387.9 kg/ha) and 96.2% of total fish mean CPUE (304.3 kg/ha). The walleye pollock mean CPUE for all areas combined was 111.3 kg/ha. Walleye pollock was the dominant roundfish 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 13.4 kg/ha. Yellowfin sole with overall mean catch rate of 60.1 kg/ha were abundant in water depths less than 70 m. Snow crab (*Chionoecetes opilio*) was the most abundant commercially important crab species encountered, with a total average catch rate of 6.2 kg/ha. Red king crab (*Paralithodes camtschatica*) and Bairdi Tanner crab (*Chionoecetes bairdi*) had similar overall mean CPUEs of 2.3 kg/ha and 2.4 kg/ha, while blue king crab (*P. platypus*) had overall catch rates of less than 0.1 kg/ha. See Appendix C for a descending rank of all organisms caught.

Estimated Biomass of Major Fish and Invertebrate Groups

Total demersal animal biomass for the overall survey area was estimated at 16.4 million t, of which fish species accounted for 86% (14.1 million t) (Table 7), and invertebrates 14% (2.3 million t) (Table 8). Concentrations of fish biomass were located in Bristol Bay and along the Alaska Peninsula, around the Pribilof Islands, northwest of the Pribilofs, and north of St. Matthew Island (Fig. 9). Although 19 families, 57 genera, and 102 species of fish were

identified in the catches (Appendix A), the fish biomass was dominated by gadids (5.7 million t), and pleuronectids (7.4 million t) (Table 7). The biomass of invertebrates was composed primarily of the echinoderms (0.91 million t), crustaceans (0.60 million t), and molluscs (0.72 million t) (Table 8). A total of 219 invertebrate individual taxa from 10 phyla were identified in the survey.

Northwest Stations

The 49 northwest non-standard survey stations were sampled in the same manner as the standard survey stations. Species diversity consisted of 147 distinct species similar in composition as the fish and invertebrate species in the standard stations. Table 9 shows the relative abundance of 25 fish species for comparison purposes to the rest of this document.

Table 7.--Biomass estimates (t) for major fish species and groups taken during the 2005 eastern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence interval			Proportion of total animal biomass[b]	10	20	30	40	50	60
					Estimated biomass by stratum (t)					
Gadidae (cods)										
Walleye pollock	5,133,606	±	18%	0.2303	82,909	50,219	1,324,615	1,160,765	322,799	2,192,299
Pacific cod	603,788	±	14%	0.0271	45,380	28,183	105,413	233,351	19,315	172,146
Other cods	60	±	59%	0.0000	20	12	0	28	0	0
Total cods	**5,737,454**	±	**16%**	**0.2574**	**128,309**	**78,414**	**1,430,027**	**1,394,144**	**342,114**	**2,364,446**
Anoplopomatidae										
Sablefish	1,224	±	198%	0.0001	10	0	1,211	3	0	0
Scorpaenidae (rockfish)										
Pacific ocean perch	303,194	±	200%	0.0136	0	0	0	0	25	303,169
Other rockfish	144	±	91%	0.0000	0	0	0	0	108	36
Total rockfish	**303,338**	±	**200%**	**0.0136**	**0**	**0**	**0**	**0**	**133**	**303,205**
Pleuronectidae (flatfishes)										
Yellowfin sole	2,823,519	±	19%	0.1267	1,446,935	296,152	784,723	293,778	862	1,069
Rock sole	2,114,914	±	36%	0.0949	901,180	297,718	478,995	413,769	3,954	24,072
Hippoglossoides spp.	612,427	±	31%	0.0275	32,873	477	238,031	99,050	68,403	171,690
Alaska plaice	500,341	±	51%	0.0224	69,232	44,393	153,442	228,291	0	8,503
Arrowtooth flounder	708,819	±	60%	0.0318	12,051	506	239,220	56,298	156,901	243,844
Kamchatka flounder	46,058	±	37%	0.0021	26	4	4,482	6,165	6,801	28,581
Greenland turbot	16,040	±	18%	0.0007	0	0	185	2,530	0	13,325
Pacific halibut	139,876	±	55%	0.0063	37,791	16,101	25,273	29,605	8,843	22,264
Other flatfish	611,805	±	21%	0.0274	140,875	51,555	165,585	228,770	12,355	12,666
Total flatfish	**7,573,799**	±	**13%**	**0.3398**	**2,640,963**	**706,905**	**2,089,935**	**1,358,255**	**258,119**	**526,013**
Clupeidae (Pacific herring)	116,417	±	41%	0.0052	15,827	16,777	48,100	35,261	0	452
Cottidae (sculpins)	226,488	±	18%	0.0102	46,711	29,262	47,088	68,572	2,677	32,177
Zoarcidae (eelpouts)	47,854	±	25%	0.0021	0	168	4,181	18,896	448	24,162
Osmeridae (smelts)	2,208	±	42%	0.0001	493	279	165	12	1,255	4
Agonidae (poachers)	31,014	±	27%	0.0014	4,467	8,463	8,946	8,801	253	84
Cyclopteridae (snailfishes)	1,981	±	81%	0.0001	3	32	69	1,564	99	213
Rajidae (skates)	534,859	±	10%	0.0240	72,766	56,589	88,492	124,566	34,868	157,577
Other fish	14,800	±	38%	0.0007	2,883	1,040	1,323	1,310	2,132	6,112
Total fish	**14,591,436**	**±**	**10%**	**0.6546**	**2,912,432**	**897,928**	**3,719,537**	**3,011,385**	**642,099**	**3,414,445**

[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 8.--Biomass estimates (t) for major invertebrate species and groups taken during the 2005 eastern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence interval			Proportion of total animal biomass[b]	10	20	30	40	50	60
					Estimated biomass by stratum (t)					
Crustacea										
Chionoecetes sp. (snow crab)	99,479	±	21%	0.0045	2,285	130	25,940	32,944	26,860	11,321
Lithodes sp. (king crab)	38	±	196%	0.0000	0	0	0	0	0	38
Paralithodes sp. (king crab)	111,163	±	32%	0.0050	38,569	1,059	64,323	7,212	0	0
Erimacrus isenbeckii (hair crab)	890	±	43%	0.0000	143	156	295	195	96	5
Paguridae (hermit crab)	377,099	±	15%	0.0169	20,073	20,411	128,036	139,598	7,835	61,145
Other crab	875,946	±	10%	0.0393	65,140	30,833	236,896	387,784	36,428	118,865
Total crab	**1,464,615**	**±**		**0.0657**	**126,210**	**52,589**	**455,489**	**567,733**	**71,219**	**191,375**
Shrimps	2,931	±	40%	0.0001	38	80	8	523	96	2,186
Other crustaceans	117,721	±	30%	0.0053	38,952	2,351	65,821	10,311	195	91
Total crustaceans	**1,585,267**	**±**	**10%**	**0.0711**	**165,200**	**55,021**	**521,319**	**578,567**	**71,509**	**193,651**
Mollusca										
Gastropoda (snails)	345,742	±	15%	0.0155	10,911	14,329	136,443	85,683	7,532	90,844
Pelecypoda (bivalves)	5,433	±	74%	0.0002	360	127	3,478	842	228	398
Squids	0	±	196%	0.0000	0	0	0	0	0	0
Octopuses	10,124	±	57%	0.0005	405	0	4,480	1,807	1,740	1,691
Other mollusks	7,954	±	42%	0.0004	471	437	2,616	2,549	48	1,834
Total mollusks	**369,266**	**±**	**15%**	**0.0166**	**12,147**	**14,892**	**147,018**	**90,881**	**9,549**	**94,780**
Echinodermata										
Asteroidea (starfish)	1,101,696	±	16%	0.0494	380,782	172,064	230,296	236,126	1,151	81,276
Ophiuroidea (brittle stars)	272,998	±	29%	0.0122	7,996	2,864	79,100	49,356	764	132,918
Echinoidea (sea urchin)	44,921	±	98%	0.0020	9	11	30,853	6,846	5,908	1,294
Holothuroidea (sea cucumbers)	9,576	±	96%	0.0004	670	0	7,581	1,324	1	0
Total echinoderms	**1,429,192**	**±**	**16%**	**0.0641**	**389,458**	**174,939**	**347,831**	**293,652**	**7,824**	**215,488**
Ascidiacea	525,478	±	32%	0.0236	71,722	98,087	120,207	235,344	9	108
Porifera (sponges)	158,921	±	86%	0.0071	769	46	156,217	288	290	1,311
Coelenterata	3,624,987	±	9%	0.1626	566,611	324,697	1,108,514	1,092,382	83,044	449,739
Other invertebrates	4,756	±	67%	0.0002	456	43	569	329	47	3,312
Total invertebrates	**7,697,866**	**±**	**9%**	**0.3453**	**1,206,362**	**667,725**	**2,401,674**	**2,291,444**	**172,272**	**958,389**

[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.--Relative abundance of fish species from the 20 northwest non-standard survey stations collected during the 2005 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*	27,104	13,241,353
Alaska skate	*Bathyraja parmifera*	1,789,309	711,063,392
arrowtooth flounder	*Atheresthes stomias*	484,120	688,569,871
Kamchatka flounder	*Atheresthes evermanni*	64,239	72,274,838
Greenland turbot	*Reinhardtius hippoglossoides*	248,427	427,320,643
Pacific halibut	*Hippoglossus stenolepis*	21,424	7,372,631
flathead sole (grouped)	*Hippoglossoides* sp.	1,411,716	6,957,638,600
yellowfin sole	*Limanda aspera*	1,597,333	5,399,075,798
rock sole (grouped)	*Lepidopsetta* sp.	769,181	2,684,080,415
Alaska plaice	*Pleuronectes quadrituberculatus*	5,884,240	8,082,766,862
sturgeon poacher	*Podothecus acipenserinus*	9,019	233,613,723
Bering poacher	*Ocella dodecaedron*	0	0
Pacific herring	*Clupea pallasi*	223,853	1,046,867,798
butterfly sculpin	*Hemilepidotus papilio*	65,060	192,015,132
warty sculpin	*Myoxocephalus verrucosus*	40,659	49,998,063
great sculpin	*Myoxocephalus polyacanthocephalus*	161,124	106,691,743
plain sculpin	*Myoxocephalus jaok*	131,403	113,413,338
bigmouth sculpin	*Hemitripterus bolini*	0	0
Pacific cod	*Gadus macrocephalus*	2,045,000	905,940,313
walleye pollock	*Theragra chalcogramma*	8,310,700	15,859,637,397
eulachon	*Thaleichthys pacificus*	43	1,540,853
capelin	*Mallotus villosus*	2,825	352,205,715
marbled eelpout	*Lycodes raridens*	403,959	353,726,921
wattled eelpout	*Lycodes palearis*	207,885	1,389,691,576
shortfin eelpout	*Lycodes brevipes*	253,748	3,268,037,682

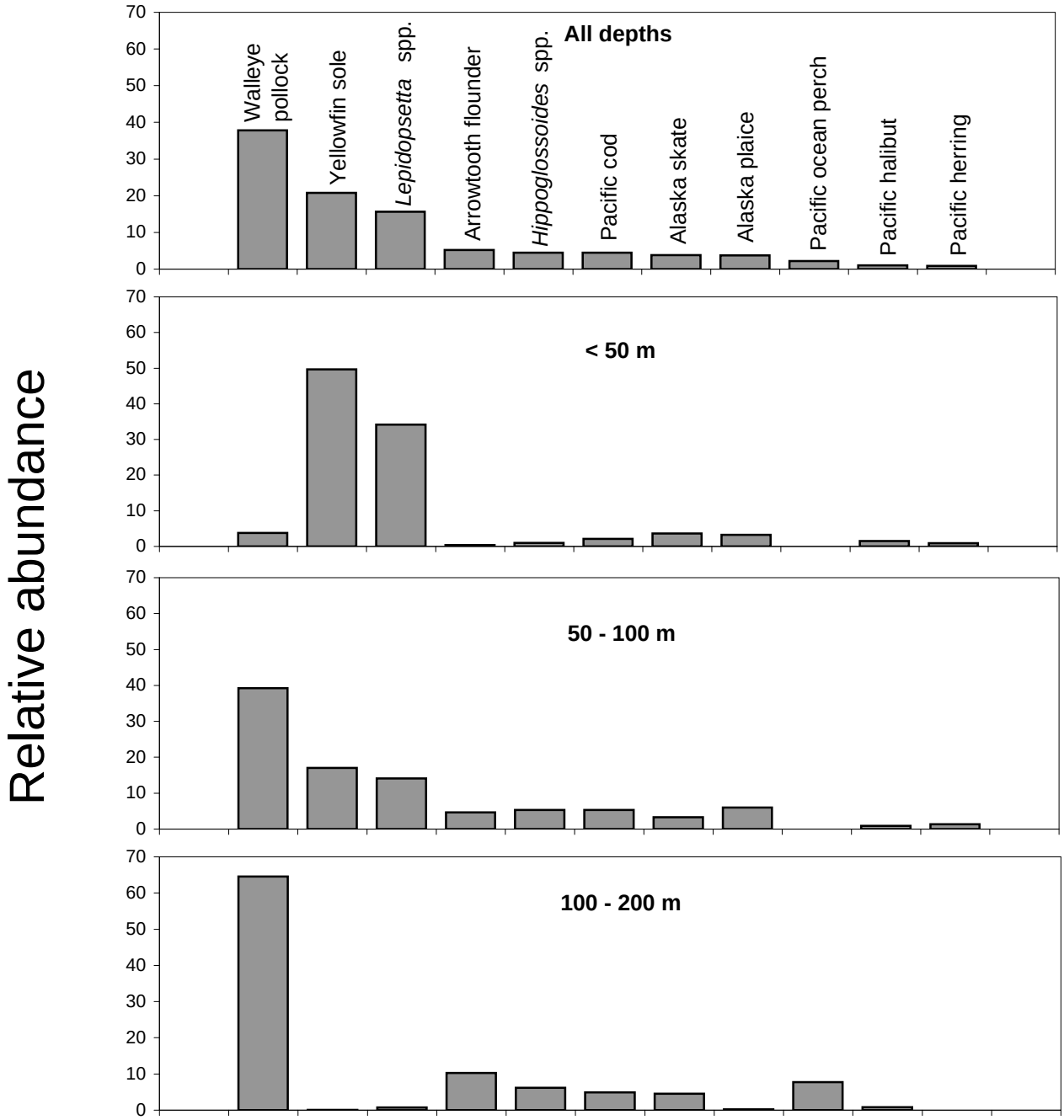


Figure 8.-- Relative abundance (%CPUE in kg/ha) of principle groundfish species (top 11 for all depths combined) by depth zones and for all depths combined for the 2005 eastern Bering Sea bottom trawl survey.

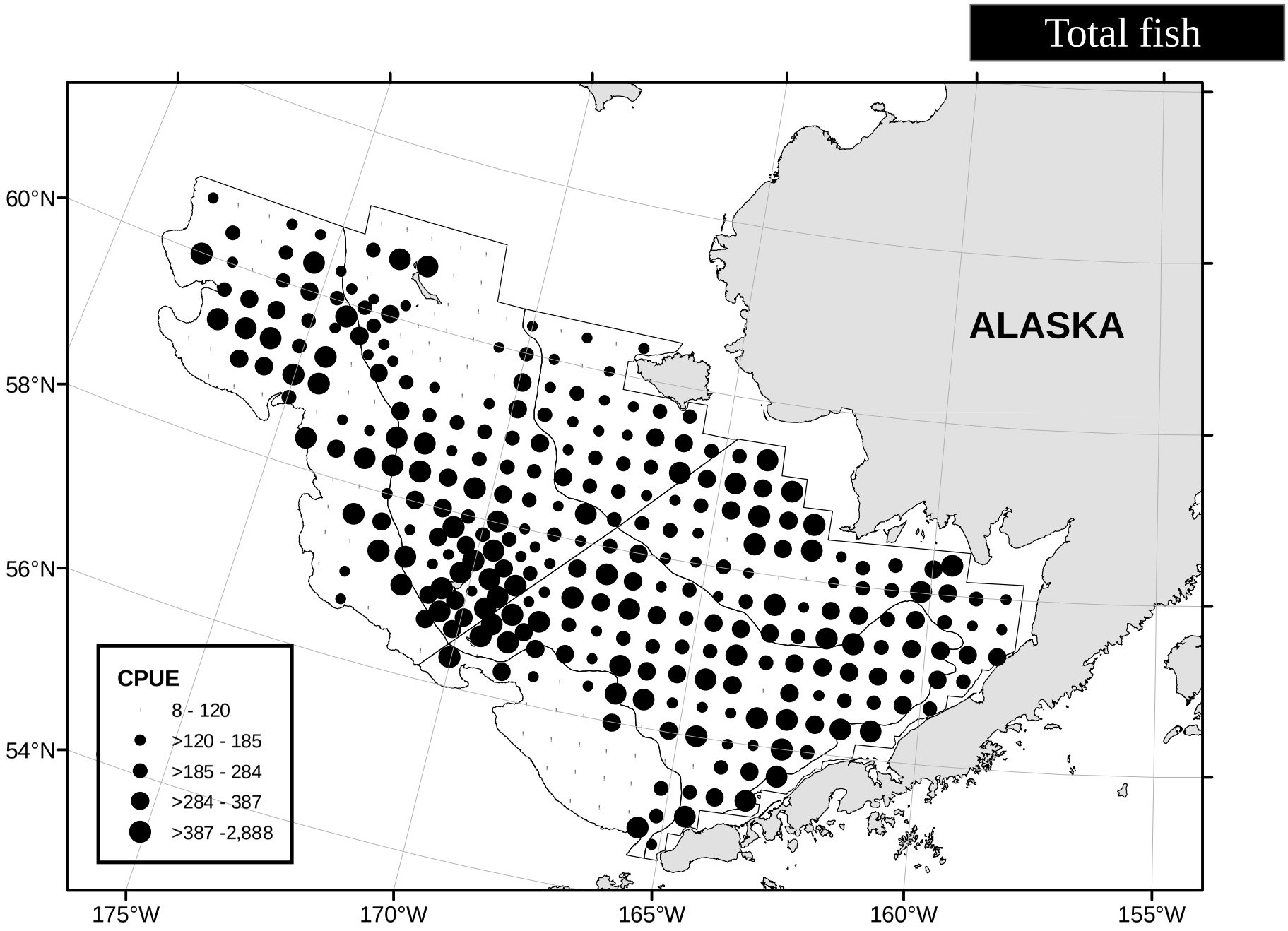


Figure 9.--Distribution and relative abundance in kg/ha of **total fish** caught during the 2005 eastern Bering Sea bottom trawl survey.

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

Geographical distributions, population numbers, biomass estimates, and size composition are presented in the following figures and tables for each of the following commercially important eastern Bering Sea groundfish: walleye pollock, Pacific cod, yellowfin sole, rock sole grouped (*Lepidopsetta* spp.), flathead sole grouped (*Hippoglossoides* spp.), Alaska plaice, Greenland turbot, arrowtooth flounder, Kamchatka flounder (*Atheresthes evermanni*), and Pacific halibut. Estimates of variance and confidence intervals do not incorporate variation associated with fishing power corrections (FPC) or measurement efforts. Estimates are given separately for each of the 10 geographic strata used in our analysis, which are specified in Table 10.

Table 10. -- Stratum codes used to sample in the eastern Bering Sea survey 2005.

Stratum	Sub-stratum	Sampling Protocol for Stratum
10	--	Inner southeast standard sampling
20	--	Inner northwest standard sampling
30	31	Middle southeast standard sampling
	32	Pribilof Islands southeast high-density sampling
40	41	Middle northwest standard sampling
	42	Pribilof Islands northwest high-density sampling
	43	St. Matthew Island northwest high-density sampling
50	--	Outer southwest standard sampling
60	61	Outer northwest standard sampling
	62	St. Matthew Island high-density sampling

Estimated biomass, population numbers, and mean size (by length and weight) are summarized by subarea 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 subarea and in population numbers for the total survey area. Age data and growth parameters will be presented at a later date in separate reports. Catch-per-unit-effort (CPUE), population, and biomass estimates as well as the variances and confidence limits for each species are listed by stratum. Geographical distributions for some common, but generally noncommercial fish species, are also presented. 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 subarea 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.

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).

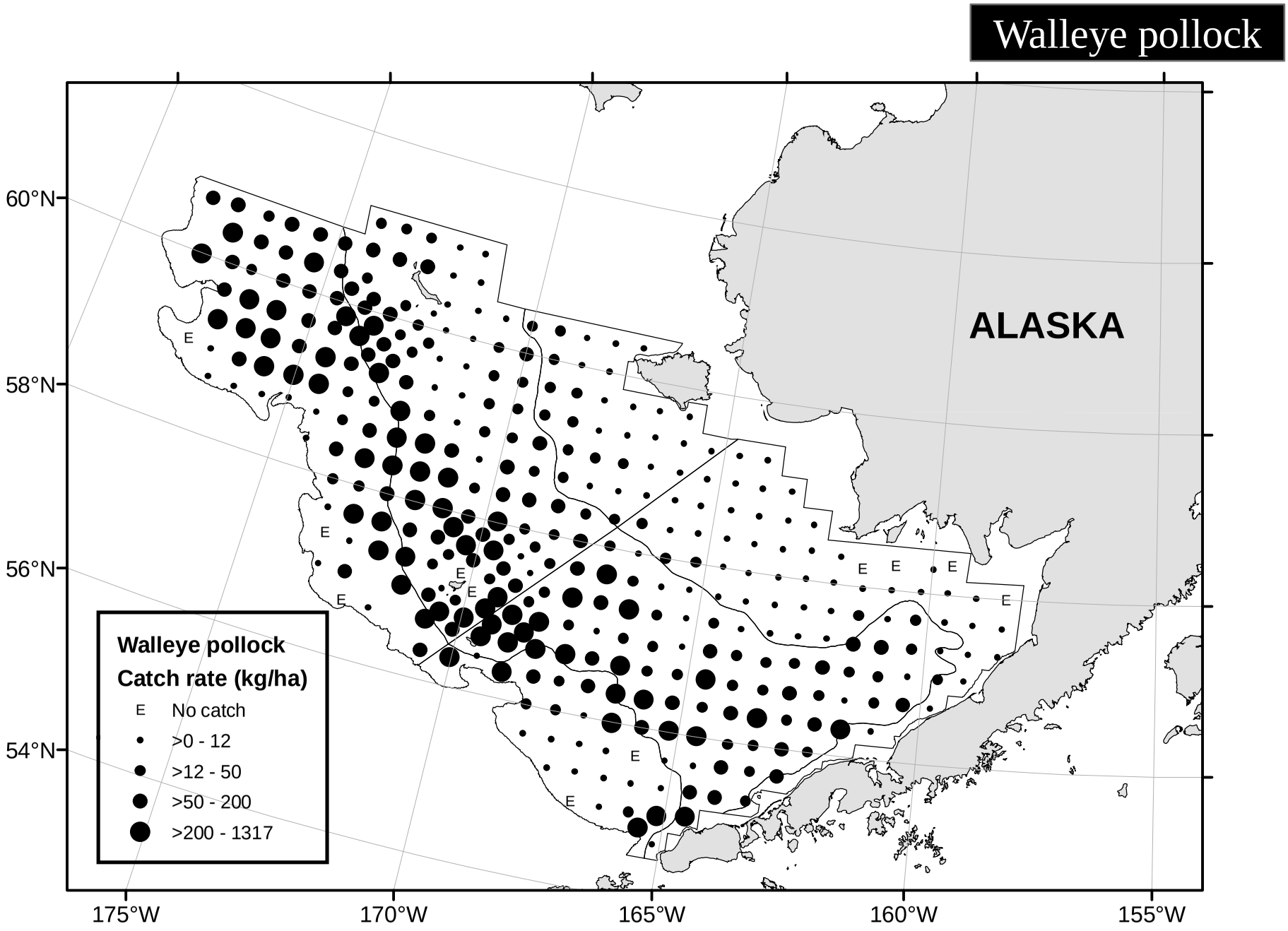


Figure 10.--Distribution and relative abundance in kg/ha of **walleye pollock** (*Theragra chalcogramma*) for the 2005 eastern Bering Sea bottom trawl survey.

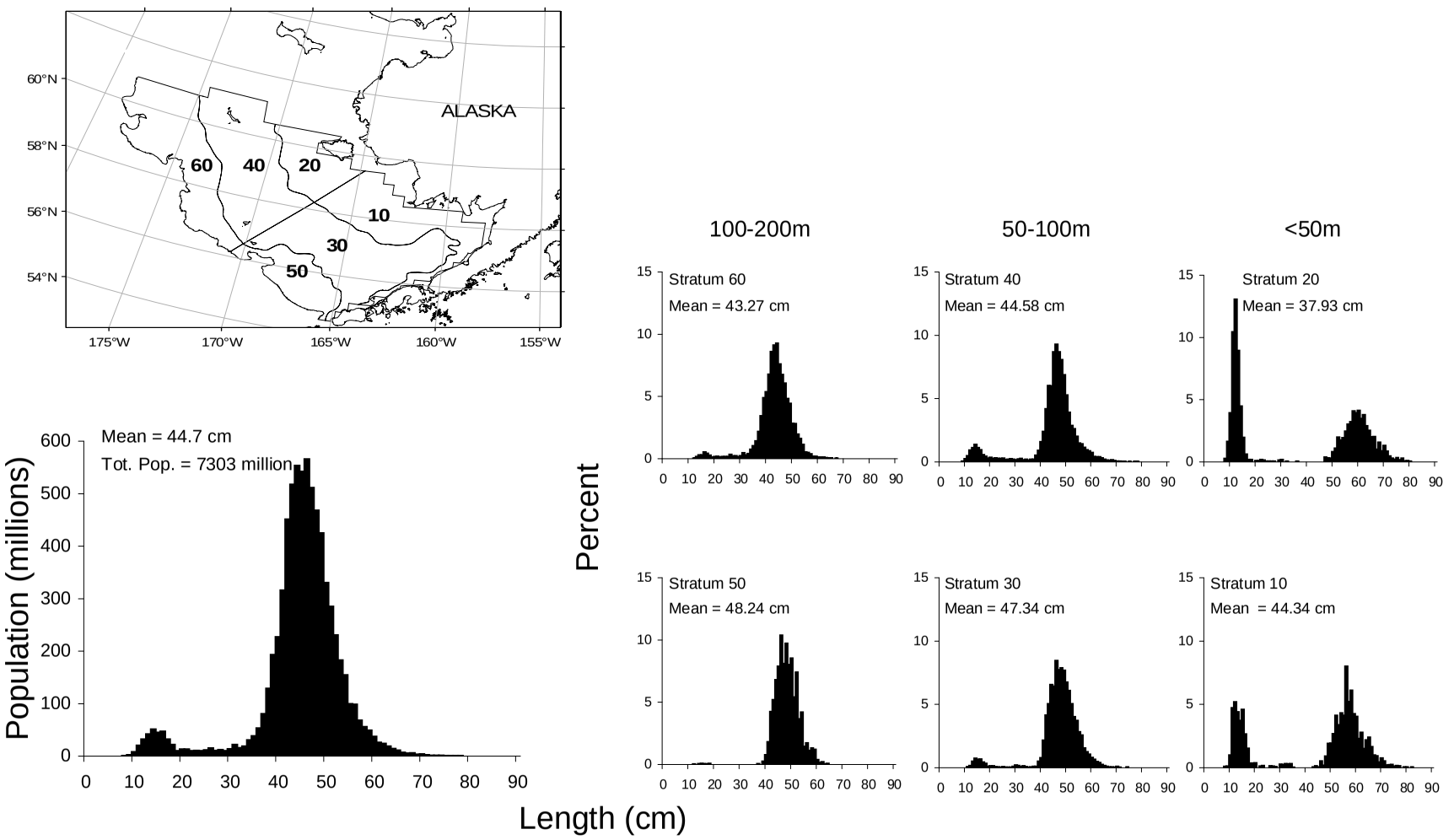


Figure 11.--Estimated relative size distributions (sexes combined) of **walleye pollock** (*Theragra chalcogramma*) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Walleye pollock

Table 11a.--Abundance estimates and mean size of **walleye pollock** (*Theragra chalcogramma*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	10.65	82,909	0.016	11.79	91,790,965	0.013	0.903	44.3
2	12.24	50,219	0.010	16.67	68,377,550	0.009	0.734	37.9
3	128.23	1,324,615	0.258	158.02	1,632,302,460	0.224	0.812	47.3
4	107.66	1,160,765	0.226	154.57	1,666,580,882	0.228	0.696	44.6
5	83.21	322,799	0.063	98.88	383,589,249	0.053	0.842	48.2
6	231.84	2,192,299	0.427	365.94	3,460,416,629	0.474	0.634	43.3
All Strata	110.79	5,133,606	1.000	157.61	7,303,057,735	1.000	0.703	44.7
95% confidence interval		± 950,948			± 1,447,569,758			

[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**.

CPUE

Substratum	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	54	54	53	10.65	19.26	11.79	16.71
20	31	31	31	31	12.24	2.10	16.67	10.90
Subtotal	89	85	85	84	11.20	8.51	13.47	8.47
31	69	69	69	69	99.43	313.17	114.86	440.21
32	8	8	8	8	438.50	13,870.13	622.89	28,272.03
41	43	43	43	43	102.12	854.94	139.00	1,692.88
42	31	29	29	29	141.31	718.95	209.11	1,446.72
43	20	20	20	20	85.82	326.18	138.77	1,004.05
Subtotal	171	169	169	169	117.72	174.71	156.25	315.15
50	26	24	24	24	83.21	852.80	98.88	1,225.34
61	59	56	56	56	236.96	1,775.57	372.73	4,794.86
62	8	8	8	8	161.65	2,024.27	272.85	4,708.87
Subtotal	93	88	88	88	188.60	852.41	288.25	2,208.95
Total	353	342	342	341	110.79	107.43	157.61	248.93

Table 11b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	91,790,965	1.01322E+15	57.00	27,460,145	156,121,785
20	68,377,550	1.83524E+14	30.00	40,714,376	96,040,724
Subtotal	160,168,515	1.19675E+15	74.85	90,980,422	229,356,607
31	1,085,764,181	3.93331E+16	68.00	689,112,665	1,482,415,698
32	546,538,279	2.17655E+16	7.00	197,626,419	895,450,138
41	871,557,361	6.65593E+16	42.00	350,157,575	1,392,957,146
42	502,102,043	8.34082E+15	30.00	315,610,135	688,593,950
43	292,921,479	4.47341E+15	19.00	152,934,258	432,908,699
Subtotal	3,298,883,342	1.40472E+17	99.02	2,549,290,910	4,048,475,773
50	383,589,249	1.84395E+16	25.00	103,857,495	663,321,004
61	3,285,013,608	3.72443E+17	58.00	2,051,635,265	4,518,391,951
62	175,403,021	1.94604E+15	7.00	71,073,624	279,732,418
Subtotal	3,844,005,878	3.92829E+17	64.14	2,590,484,919	5,097,526,838
Total	7,303,057,735	5.34501E+17	109.66	5,855,487,976	8,750,627,493

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	82,909	1.16799E+09	57.00	13,839	151,978
20	50,219	3.53384E+07	30.00	38,080	62,357
Subtotal	133,127	1.20333E+09	60.40	63,749	202,505
31	939,870	2.79824E+10	68.00	605,311	1,274,429
32	384,745	1.06781E+10	7.00	140,358	629,131
41	640,326	3.36138E+10	42.00	269,795	1,010,858
42	339,296	4.14496E+09	30.00	207,829	470,762
43	181,144	1.45324E+09	19.00	101,356	260,932
Subtotal	2,485,380	7.78725E+10	109.48	1,927,267	3,043,493
50	322,799	1.28334E+10	25.00	89,433	556,165
61	2,088,381	1.37919E+11	58.00	1,337,834	2,838,927
62	103,919	8.36572E+08	7.00	35,515	172,323
Subtotal	2,515,099	1.51589E+11	68.67	1,736,411	3,293,786
Total	5,133,606	2.30666E+11	136.40	4,182,658	6,084,554

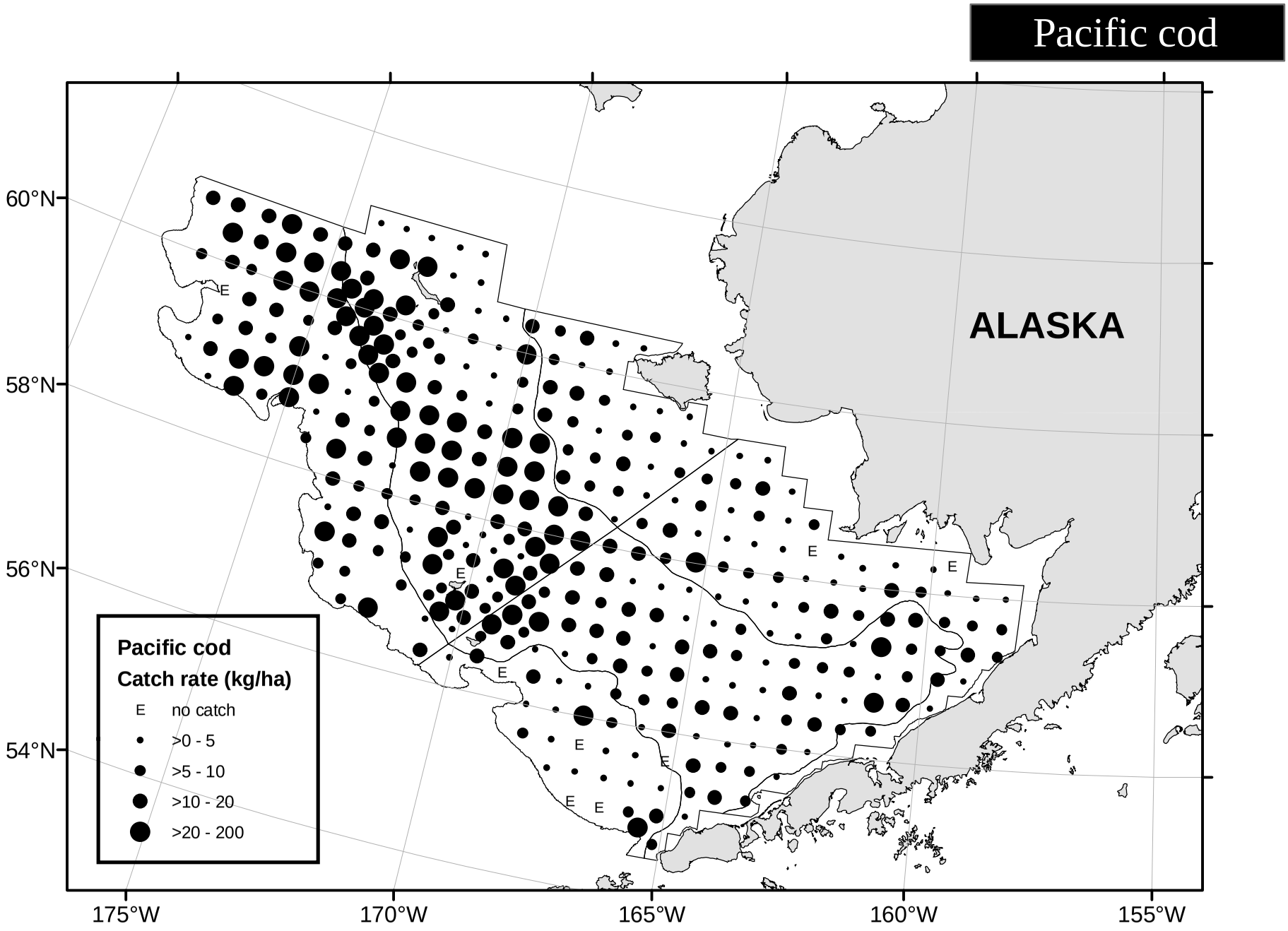


Figure 12.--Distribution and relative abundance in kg/ha of **Pacific cod** (*Gadus macrocephalus*) for the 2005 eastern Bering Sea bottom trawl survey.

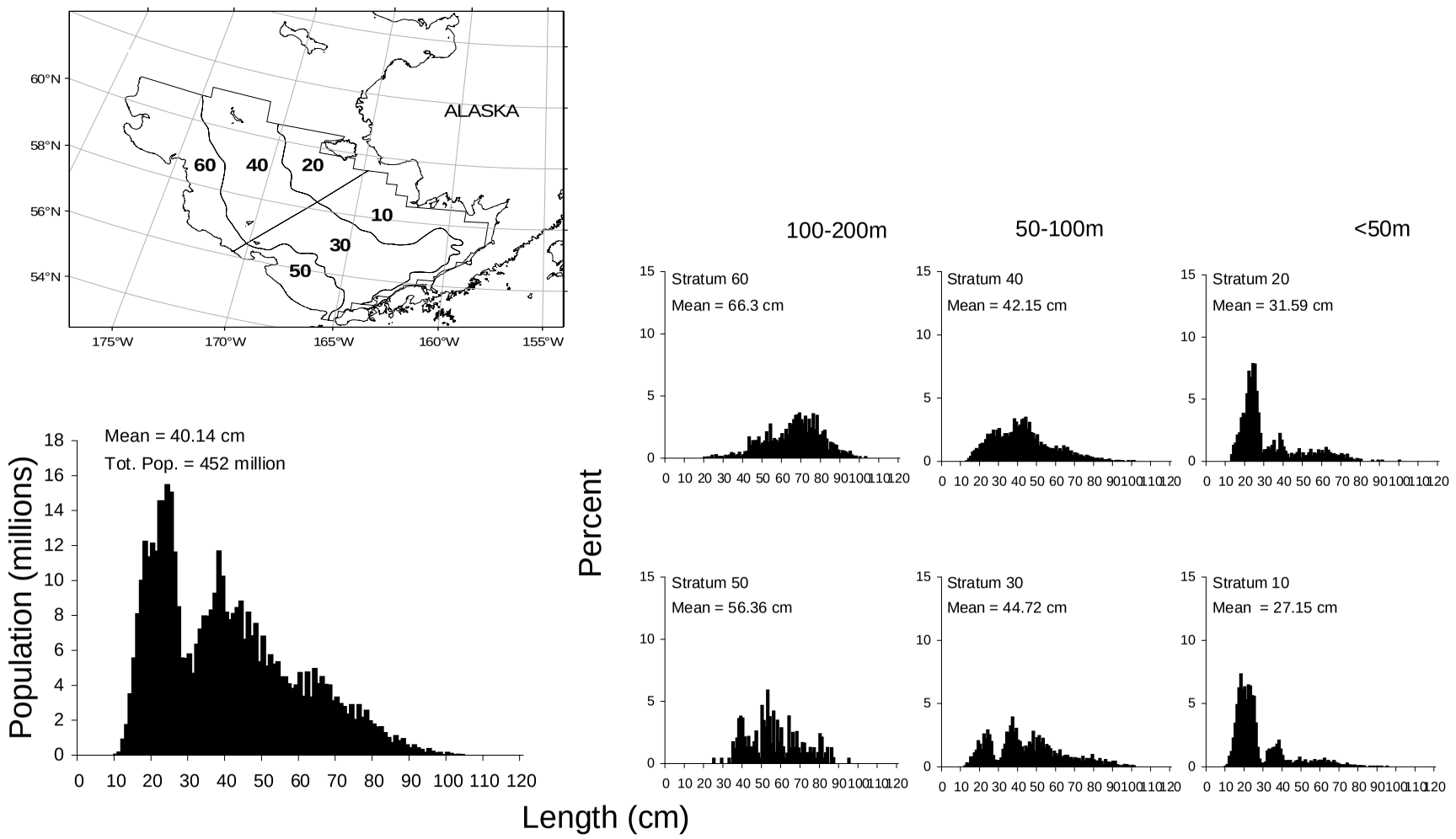


Figure 13.--Estimated relative size distributions (sexes combined) of **Pacific cod** (*Gadus macrocephalus*) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Table 12a.--Abundance estimates and mean size of **Pacific cod** (*Gadus macrocephalus*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	5.83	45,380	0.075	14.08	109,632,706	0.243	0.414	27.2
2	6.87	28,183	0.047	10.91	44,755,577	0.099	0.630	31.6
3	10.20	105,413	0.175	6.10	62,985,767	0.139	1.674	44.7
4	21.64	233,351	0.386	17.47	188,343,221	0.417	1.239	42.1
5	4.98	19,315	0.032	1.85	7,195,197	0.016	2.684	56.4
6	18.20	172,146	0.285	4.14	39,163,371	0.087	4.396	66.3
All Strata	13.03	603,788	1.000	9.76	452,075,840	1.000	1.336	40.1
95% confidence interval		± 86,301			± 128,146,093			

[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**.

CPUE

Substratum	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	56	56	55	5.83	0.66	14.08	29.27
20	31	31	31	31	6.87	0.60	10.91	3.02
Subtotal	89	87	87	86	6.19	0.36	12.98	12.91
31	69	68	68	68	8.61	0.48	5.97	0.85
32	8	8	8	8	27.39	156.56	7.45	4.93
41	43	43	43	42	23.89	24.81	20.92	52.43
42	31	30	30	30	17.71	11.82	8.08	3.19
43	20	20	20	20	19.44	8.25	17.89	22.76
Subtotal	171	169	169	168	16.05	2.79	11.90	5.07
50	26	22	22	22	4.98	1.45	1.85	0.23
61	59	58	58	58	17.47	6.77	3.80	0.18
62	8	8	8	8	28.27	49.63	8.76	3.99
Subtotal	93	88	88	88	14.36	3.19	3.48	0.11
Total	353	344	344	342	13.03	0.87	9.76	1.91

Table 12b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	109,632,706	1.77467E+15	57.00	24,494,376	194,771,037
20	44,755,577	5.08202E+13	30.00	30,198,507	59,312,647
Subtotal	154,388,284	1.82549E+15	60.22	68,936,770	239,839,798
31	56,449,288	7.56879E+13	68.00	39,049,530	73,849,045
32	6,536,479	3.79186E+12	7.00	1,931,189	11,141,770
41	131,170,942	2.06153E+15	42.00	39,409,217	222,932,666
42	19,407,671	1.84180E+13	30.00	10,644,178	28,171,164
43	37,764,608	1.01408E+14	19.00	16,607,236	58,921,980
Subtotal	251,328,988	2.26084E+15	50.19	156,232,414	346,425,561
50	7,195,197	3.53616E+12	25.00	3,321,433	11,068,962
61	33,532,050	1.38130E+13	58.00	26,020,820	41,043,281
62	5,631,321	1.64954E+12	7.00	2,593,846	8,668,796
Subtotal	46,358,568	1.89987E+13	86.38	37,641,057	55,076,079
Total	452,075,840	4.10536E+15	107.23	323,929,747	580,221,933

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	45,380	4.02055E+07	57.00	32,565	58,195
20	28,183	1.00626E+07	30.00	21,706	34,661
Subtotal	73,564	5.02682E+07	79.63	59,384	87,744
31	81,381	4.26956E+07	68.00	68,313	94,450
32	24,031	1.20527E+08	7.00	0	49,995
41	149,786	9.75428E+08	42.00	86,667	212,906
42	42,524	6.81472E+07	30.00	25,667	59,381
43	41,041	3.67410E+07	19.00	28,306	53,776
Subtotal	338,764	1.24354E+09	61.90	268,236	409,291
50	19,315	2.17750E+07	25.00	9,702	28,928
61	153,970	5.25845E+08	58.00	107,626	200,315
62	18,176	2.05123E+07	7.00	7,465	28,887
Subtotal	191,461	5.68132E+08	66.60	143,790	239,132
Total	603,788	1.86195E+09	116.10	517,488	690,089

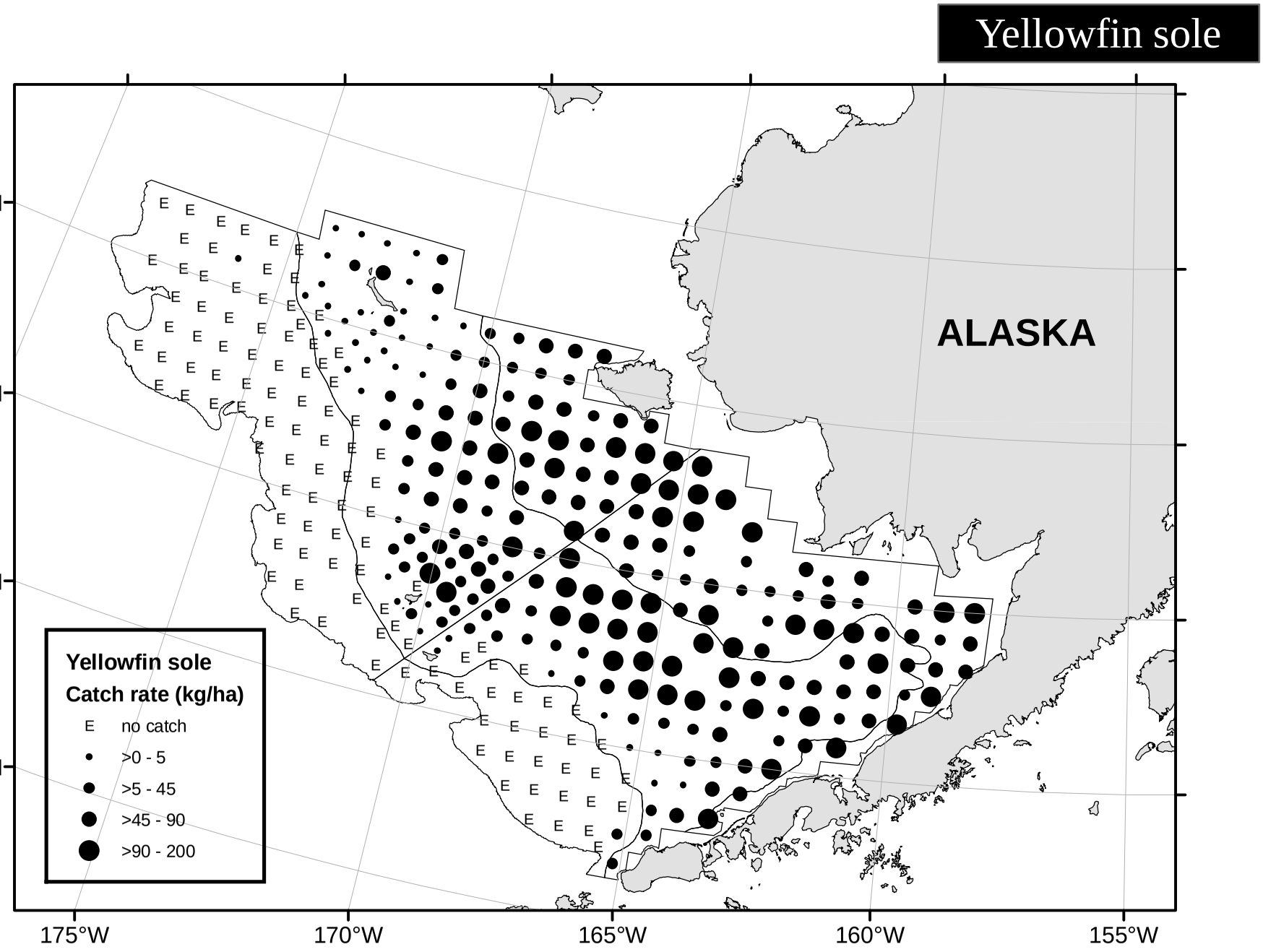


Figure 14.--Distribution and relative abundance in kg/ha of **yellowfin sole** (*Limanda aspera*) for the 2005 eastern Bering Sea bottom trawl survey.

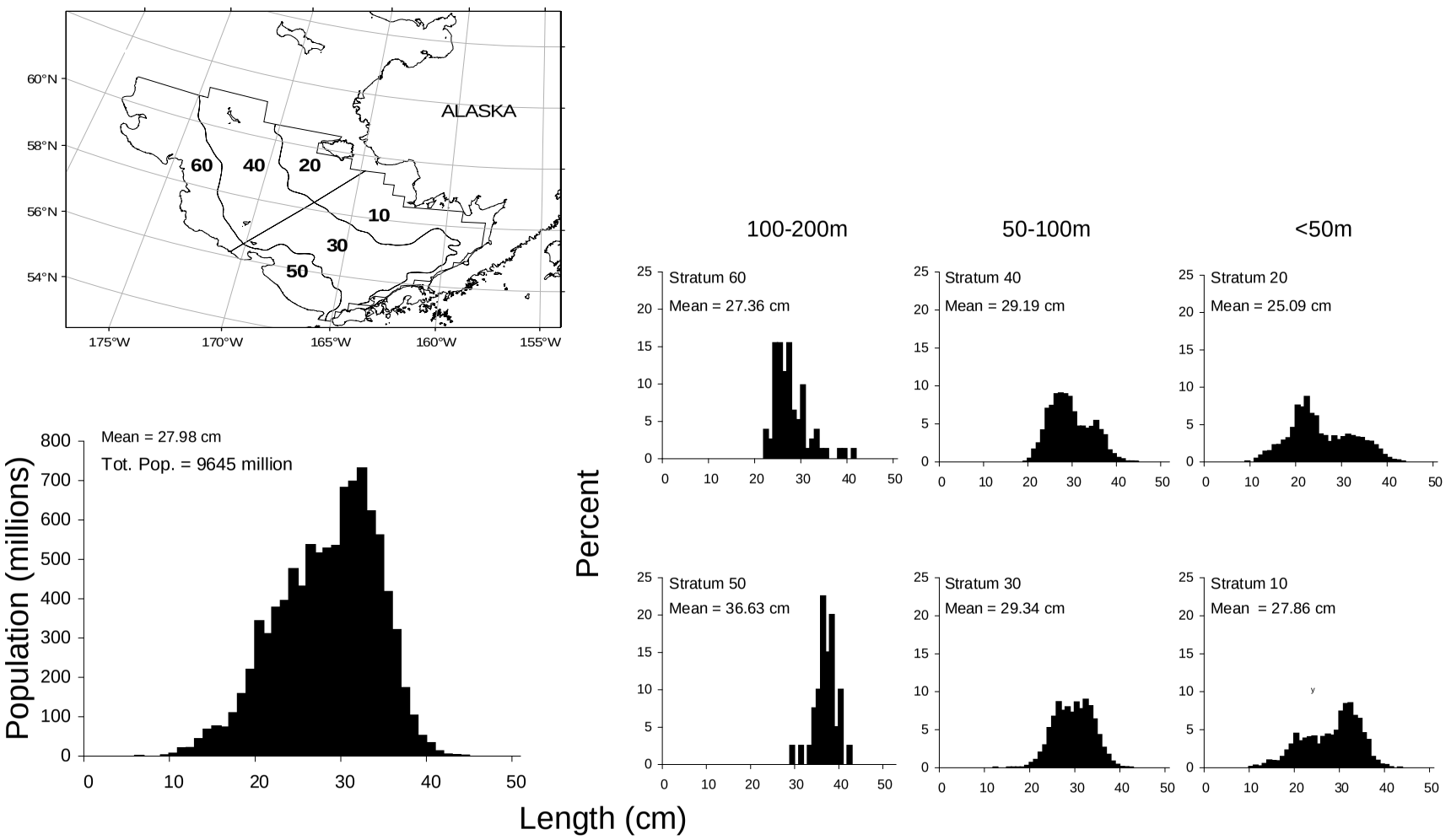


Figure 15.--Estimated relative size distributions (sexes combined) of **yellowfin sole** (*Limanda aspera*) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Table 13a.--Abundance estimates and mean size of **yellowfin sole** (*Limanda aspera*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	185.81	1,446,935	0.512	645.05	5,023,098,659	0.521	0.288	27.9
2	72.18	296,152	0.105	321.25	1,317,977,402	0.137	0.225	25.1
3	75.97	784,723	0.278	236.16	2,439,556,623	0.253	0.322	29.3
4	27.25	293,778	0.104	79.75	859,907,970	0.089	0.342	29.2
5	0.22	862	0.000	0.32	1,235,937	0.000	0.698	36.6
6	0.11	1,069	0.000	0.38	3,582,001	0.000	0.299	27.4
All Strata	60.93	2,823,519	1.000	208.15	9,645,358,593	1.000	0.293	28.0
95% confidence interval		± 728,919			± 2,101,445,172			

[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**.

CPUE

Substratum	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	58	58	58	185.81	2,005.85	645.05	16,027.32
20	31	31	30	30	72.18	60.29	321.25	1,372.01
Subtotal	89	89	88	88	146.60	867.58	533.32	7,038.22
31	69	65	65	64	82.11	83.07	256.03	911.93
32	8	6	6	6	9.73	29.27	22.06	157.02
41	43	37	37	37	35.58	63.78	106.34	653.68
42	31	27	27	27	28.26	39.34	76.69	295.88
43	20	16	16	16	1.33	0.22	4.24	1.91
Subtotal	171	151	151	150	51.08	22.84	156.28	244.59
50	26	1	1	1	0.22	0.05	0.32	0.10
61	59	1	1	1	0.00	0.00	0.00	0.00
62	8	1	1	1	1.65	2.72	5.53	30.55
Subtotal	93	3	3	3	0.14	0.01	0.36	0.08
Total	353	243	242	241	60.93	61.86	208.15	514.17

Table 13b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	5,023,098,659	9.71884E+17	57.00	3,030,712,179	7,015,485,140
20	1,317,977,402	2.30939E+16	30.00	1,007,205,019	1,628,749,786
Subtotal	6,341,076,062	9.94978E+17	59.68	4,325,156,973	8,356,995,150
31	2,420,197,668	8.14822E+16	68.00	1,849,295,823	2,991,099,512
32	19,358,955	1.20883E+14	7.00	0	46,262,968
41	666,811,504	2.57009E+16	42.00	342,814,780	990,808,228
42	184,144,155	1.70587E+15	30.00	99,805,106	268,483,204
43	8,952,311	8.53103E+12	19.00	2,815,728	15,088,895
Subtotal	3,299,464,593	1.09018E+17	104.75	2,639,105,813	3,959,823,373
50	1,235,937	1.52754E+12	25.00	0	3,786,912
61	29,048	8.43806E+08	58.00	0	87,755
62	3,552,953	1.26235E+13	7.00	0	12,247,029
Subtotal	4,817,939	1.41519E+13	8.76	0	12,755,539
Total	9,645,358,593	1.10402E+18	72.97	7,543,913,421	11,746,803,765

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	1,446,935	1.21633E+11	57.00	742,093	2,151,778
20	296,152	1.01486E+09	30.00	231,004	361,299
Subtotal	1,743,087	1.22648E+11	57.95	1,035,310	2,450,864
31	776,184	7.42207E+09	68.00	603,881	948,486
32	8,539	2.25354E+07	7.00	0	20,155
41	223,115	2.50768E+09	42.00	121,910	324,320
42	67,862	2.26805E+08	30.00	37,109	98,615
43	2,801	9.90793E+05	19.00	710	4,892
Subtotal	1,078,500	1.01801E+10	107.77	876,708	1,280,293
50	862	7.43158E+05	25.00	0	2,641
61	10	9.63998E+01	58.00	0	30
62	1,059	1.12244E+06	7.00	0	3,652
Subtotal	1,931	1.86569E+06	17.23	0	4,813
Total	2,823,519	1.32831E+11	67.72	2,094,600	3,552,438

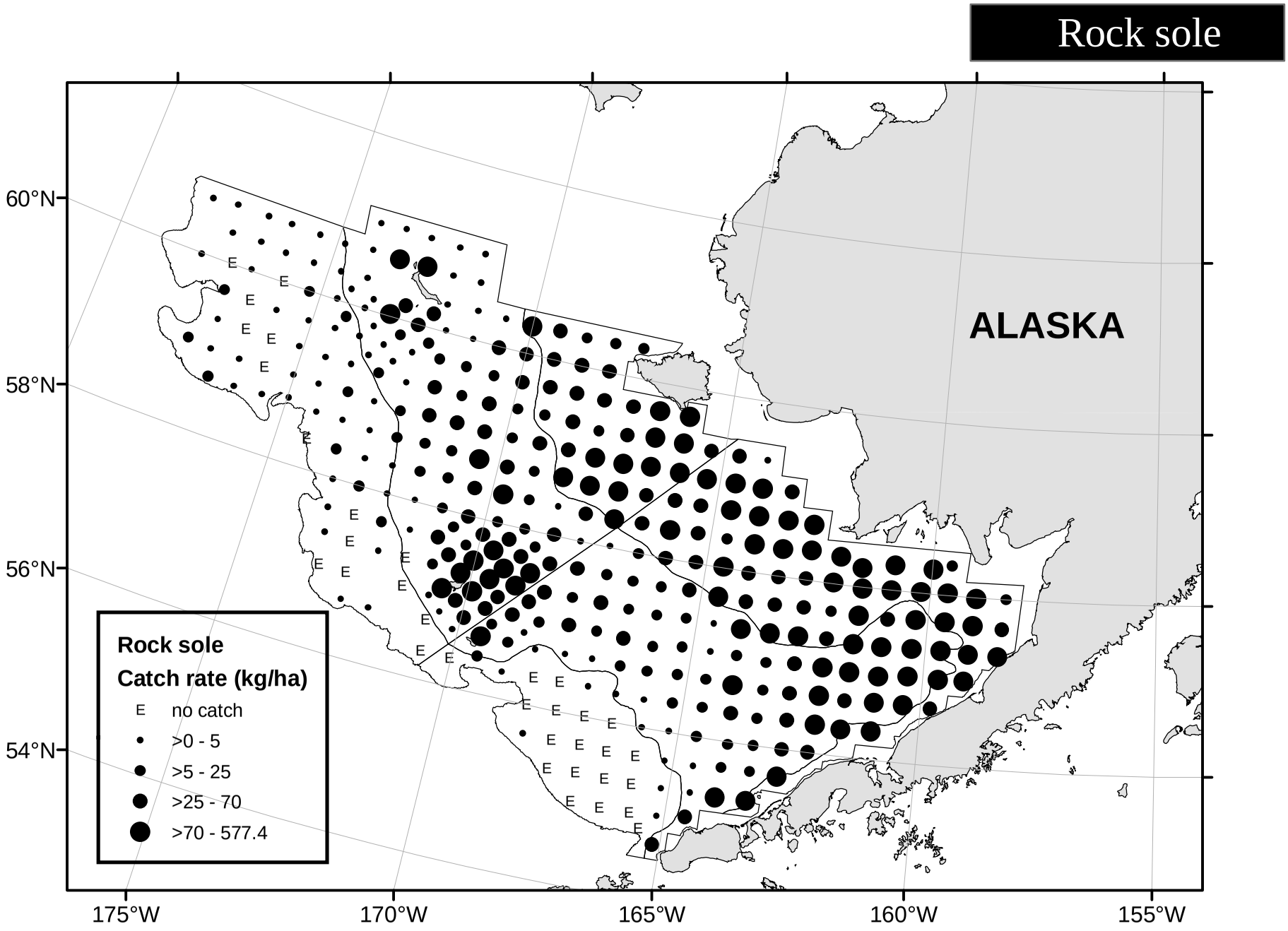


Figure 16.--Distribution and relative abundance in kg/ha of **northern** and **southern rock sole** (*Lepidopsetta* spp.) for the 2005 eastern Bering Sea bottom trawl survey.

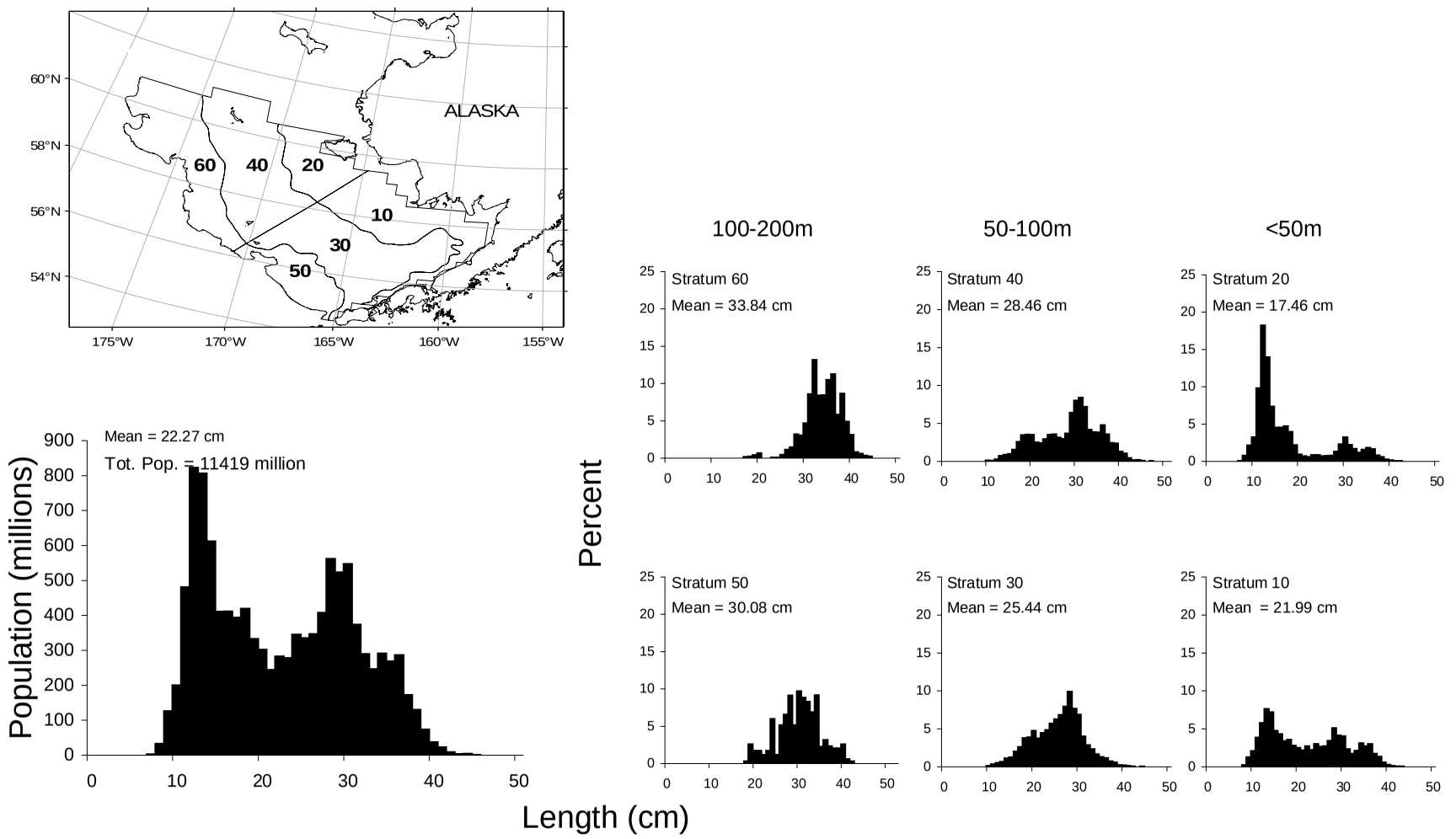


Figure 17.--Estimated relative size distributions (sexes combined) of **northern** and **southern rock sole** (*Lepidopsetta* spp.) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Table 14a.--Abundance estimates and mean size of **northern** and **southern rock sole** (*Lepidopsetta* spp.) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	115.73	901,180	0.426	665.79	5,184,584,948	0.454	0.174	22.0
2	72.57	297,718	0.141	682.10	2,798,451,831	0.245	0.106	17.5
3	46.37	478,995	0.226	210.22	2,171,584,609	0.190	0.221	25.4
4	38.23	412,190	0.195	112.80	1,216,197,398	0.107	0.339	28.5
5	1.02	3,954	0.002	2.80	10,865,494	0.001	0.364	30.1
6	2.21	20,876	0.010	4.00	37,801,561	0.003	0.552	33.8
All Strata	45.64	2,114,914	1.000	246.44	11,419,485,841	1.000	0.185	22.3
95% confidence interval		± 297,717			± 1,700,846,678			

[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**.

CPUE

Substratum	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	58	58	58	115.73	167.98	665.79	7,268.65
20	31	31	31	31	72.57	91.90	682.10	8,401.73
Subtotal	89	89	89	89	100.83	83.00	671.42	4,118.22
31	69	69	69	69	47.16	62.43	218.56	1,452.51
32	8	8	8	8	37.84	208.29	120.33	1,894.14
41	44	43	43	43	28.51	61.74	92.33	333.53
42	31	31	30	30	81.74	435.52	228.82	1,793.64
43	21	21	21	21	17.60	41.35	41.61	208.34
Subtotal	173	172	171	171	42.21	24.37	160.47	349.15
50	26	7	7	7	1.02	0.43	2.80	4.12
61	58	44	44	44	2.17	0.10	3.77	0.34
62	7	7	7	7	2.75	0.35	7.09	3.22
Subtotal	91	58	58	58	1.86	0.08	3.65	0.50
Total	353	638	636	954	45.64	10.53	246.44	343.66

Table 14b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	5,184,584,948	4.40770E+17	57.00	3,842,840,057	6,526,329,838
20	2,798,451,831	1.41420E+17	30.00	2,030,541,131	3,566,362,530
Subtotal	7,983,036,778	5.82180E+17	82.24	6,457,015,950	9,509,057,607
31	2,066,004,840	1.29780E+17	68.00	1,345,493,313	2,786,516,368
32	105,579,769	1.45820E+15	7.00	12,136,951	199,022,588
41	578,928,379	1.31130E+16	43.00	347,496,499	810,360,260
42	549,429,553	1.03410E+16	30.00	341,777,722	757,081,384
43	87,839,466	9.28240E+14	20.00	24,285,261	151,393,670
Subtotal	3,387,782,008	1.55620E+17	95.33	2,606,685,256	4,168,878,759
50	10,865,494	6.19390E+13	25.00	0	27,109,500
61	33,243,317	2.62240E+13	57.00	22,893,930	43,592,703
62	4,558,244	1.33110E+12	6.00	1,735,023	7,381,466
Subtotal	48,667,055	8.94940E+13	51.46	29,746,761	67,587,348
Total	11,419,485,841	7.37900E+17	119.85	9,718,639,163	13,120,000,000

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	901,180	1.01860E+10	57.00	697,208	1,105,153
20	297,718	1.54685E+09	30.00	217,406	378,030
Subtotal	1,198,899	1.17330E+10	71.57	982,261	1,415,536
31	445,792	5.57818E+09	68.00	296,417	595,166
32	33,203	1.60354E+08	7.00	2,217	64,190
41	178,771	2.42753E+09	43.00	79,196	278,345
42	196,274	2.51094E+09	30.00	93,950	298,597
43	37,146	1.84244E+08	20.00	8,832	65,461
Subtotal	891,186	1.08610E+10	144.56	684,835	1,097,536
50	3,954	6.41073E+06	25.00	0	9,180
61	19,109	7.93445E+06	57.00	13,416	24,802
62	1,767	1.45757E+05	6.00	832	2,701
Subtotal	24,829	1.44909E+07	79.15	17,216	32,443
Total	2,114,914	2.26090E+10	177.75	1,817,196	2,412,631

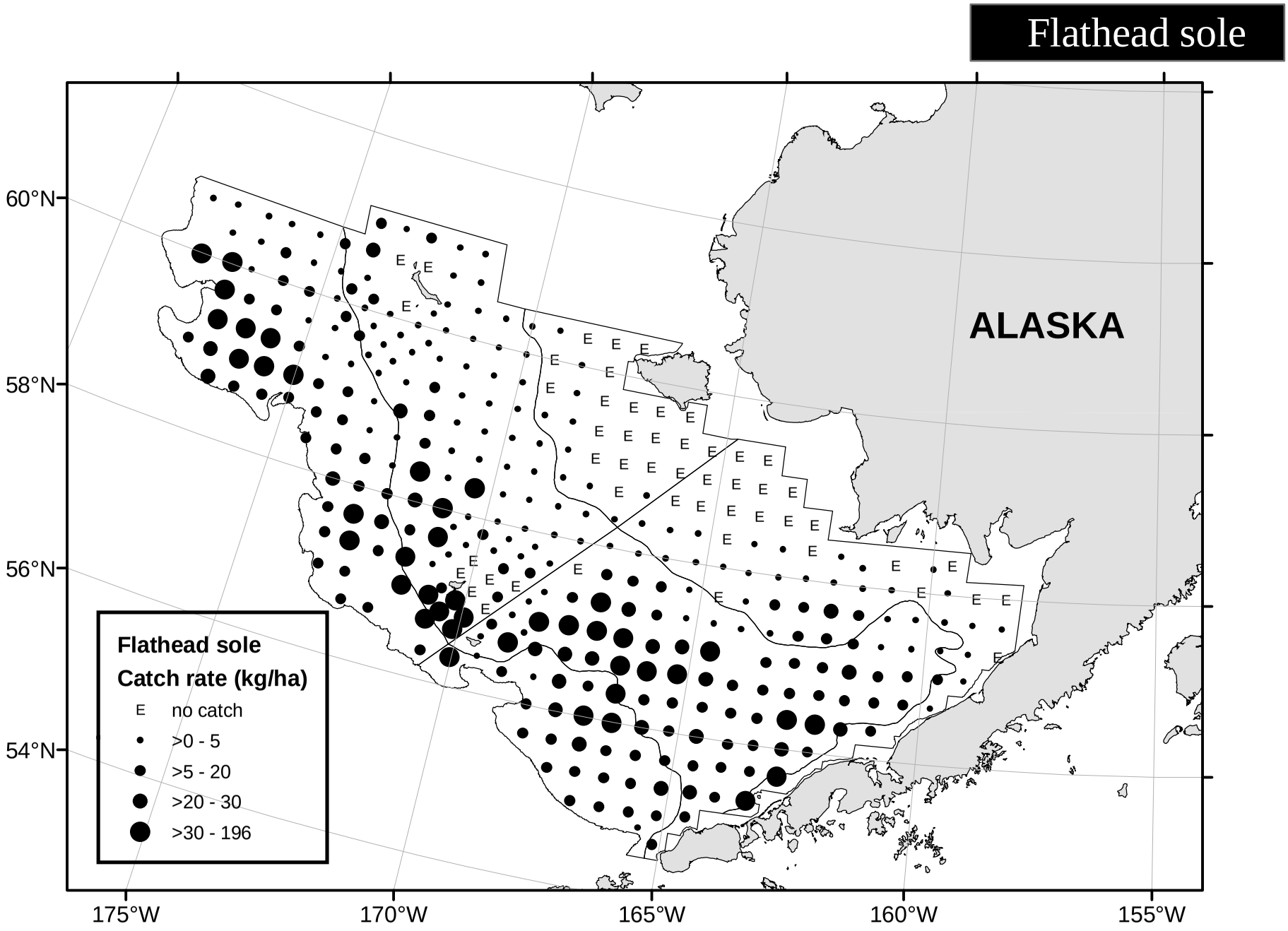


Figure 18.--Distribution and relative abundance in kg/ha of **flathead sole** (*Hippoglossoides* spp.) for the 2005 eastern Bering Sea bottom trawl survey.

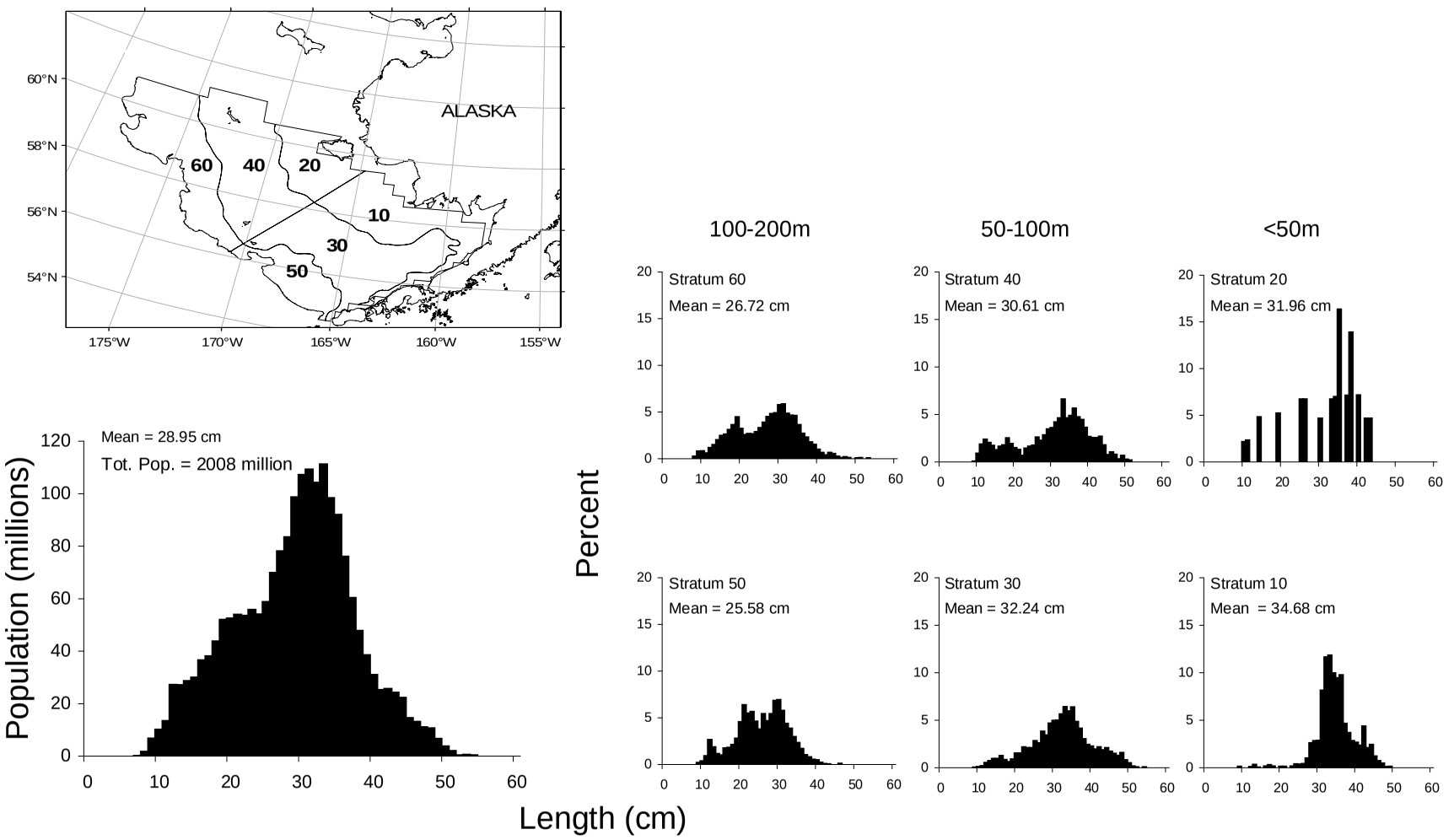


Figure 19.--Estimated relative size distributions (sexes combined) of **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Flathead sole

Table 15a.--Abundance estimates and mean size of **flathead sole** and **Bering flounder** (*Hippoglossoides* spp.) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	4.22	32,873	0.054	9.66	75,227,086	0.037	0.437	34.7
2	0.12	477	0.001	0.30	1,220,236	0.001	0.391	32.0
3	23.04	238,031	0.389	57.34	592,278,154	0.295	0.402	32.2
4	9.48	102,193	0.167	24.36	262,612,987	0.131	0.389	30.6
5	17.63	68,403	0.112	95.31	369,736,229	0.184	0.185	25.6
6	18.03	170,451	0.278	74.71	706,447,086	0.352	0.241	26.7
All Strata	13.22	612,427	1.000	43.32	2,007,521,778	1.000	0.305	29.0
95% confidence interval		± 103,687			± 289,087,123			

[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** .

CPUE

Substratum	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	37	37	36	4.22	2.89	9.66	23.24
20	31	11	11	11	0.12	0.00	0.30	0.01
Subtotal	89	48	48	47	2.80	1.24	6.43	9.97
31	69	68	68	68	23.82	15.69	59.41	74.42
32	8	8	8	8	14.64	63.09	35.00	360.99
41	44	42	42	42	7.15	3.13	19.64	14.19
42	31	25	25	25	21.48	45.62	51.58	326.03
43	21	20	20	19	2.73	0.90	7.41	5.58
Subtotal	173	163	163	162	16.12	4.13	40.49	21.07
50	26	26	26	26	17.63	4.87	95.31	133.74
61	58	58	58	58	19.03	8.37	79.29	109.43
62	7	7	7	7	4.31	5.06	11.81	12.30
Subtotal	91	91	91	91	17.91	4.08	80.70	59.14
Total	353	604	604	900	13.22	1.28	43.32	9.93

Table 15b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	75,227,086	1.40940E+15	57.00	0	151,100,694
20	1,220,236	2.20100E+11	30.00	262,231	2,178,242
Subtotal	76,447,322	1.40970E+15	57.02	567,789	152,326,855
31	561,565,570	6.64960E+15	68.00	398,475,655	724,655,484
32	30,712,585	2.77910E+14	7.00	0	70,138,647
41	123,133,392	5.57950E+14	43.00	75,395,401	170,871,383
42	123,840,889	1.87970E+15	30.00	35,309,650	212,372,129
43	15,638,706	2.48690E+13	20.00	5,236,095	26,041,317
Subtotal	854,891,142	9.39000E+15	113.25	661,087,327	1,048,694,956
50	369,736,229	2.01250E+15	25.00	277,322,026	462,150,432
61	698,852,278	8.49960E+15	57.00	512,529,132	885,175,423
62	7,594,808	5.08310E+12	6.00	2,077,849	13,111,767
Subtotal	1,076,183,315	1.05170E+16	75.69	871,075,880	1,281,290,750
Total	2,007,521,778	2.13170E+16	206.44	1,718,434,655	2,296,608,902

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	32,873	1.75534E+08	57.00	6,096	59,649
20	477	3.61918E+04	30.00	88	865
Subtotal	33,349	1.75570E+08	57.02	6,570	60,128
31	225,186	1.40230E+09	68.00	150,291	300,081
32	12,845	4.85693E+07	7.00	0	29,327
41	44,840	1.22964E+08	43.00	22,429	67,250
42	51,583	2.63037E+08	30.00	18,465	84,701
43	5,770	4.02293E+06	20.00	1,586	9,954
Subtotal	340,224	1.84090E+09	107.61	254,413	426,036
50	68,403	7.32530E+07	25.00	50,772	86,034
61	167,678	6.50500E+08	57.00	116,132	219,223
62	2,773	2.09284E+06	6.00	0	6,313
Subtotal	238,854	7.25846E+08	67.63	184,971	292,737
Total	612,427	2.74233E+09	190.09	508,740	716,114

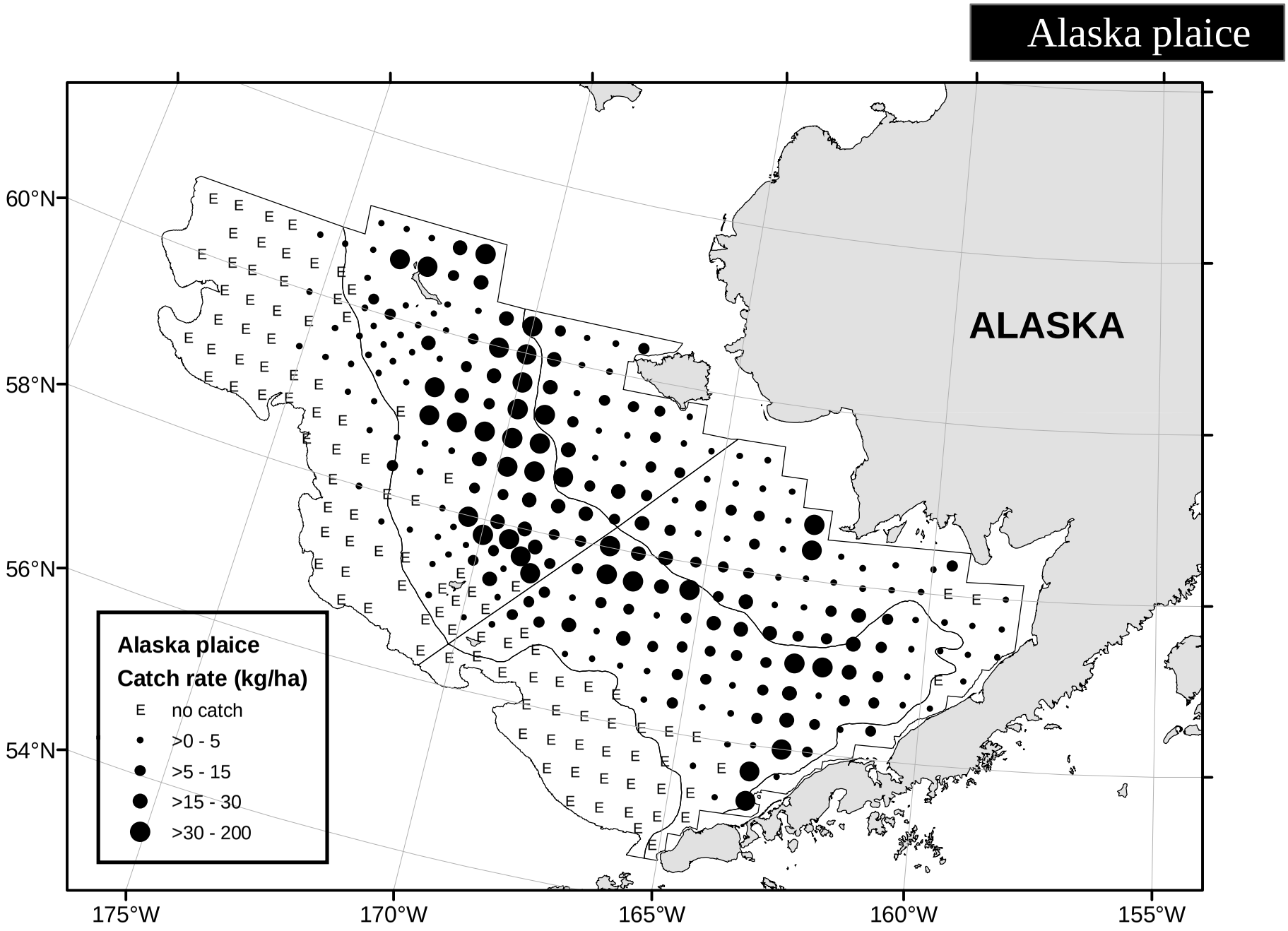


Figure 20.--Distribution and relative abundance in kg/ha of **Alaska plaice** (*Pleuronectes quadrituberculatus*) for the 2005 eastern Bering Sea bottom trawl survey.

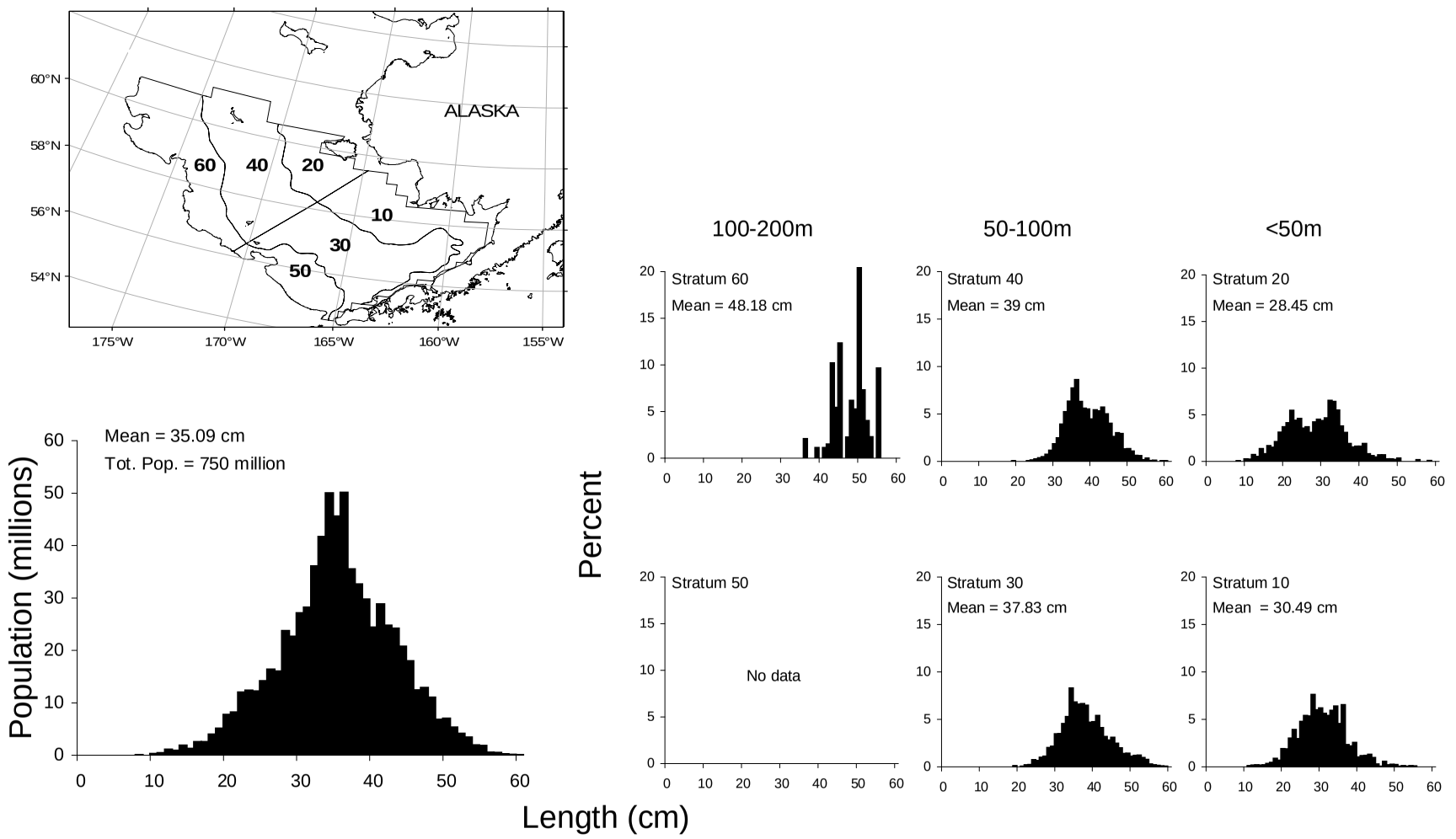


Figure 21.--Estimated relative size distributions (sexes combined) of **Alaska plaice** (*Pleuronectes quadratuberculatus*) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Table 16a.--Abundance estimates and mean size of **Alaska plaice** (*Pleuronectes quadrituberculatus*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	8.89	69,232	0.138	21.72	169,149,411	0.226	0.409	30.5
2	10.82	44,393	0.089	29.75	122,053,929	0.163	0.364	28.5
3	14.85	153,442	0.307	18.74	193,573,461	0.258	0.793	37.8
4	21.24	228,974	0.458	24.37	262,778,913	0.350	0.871	39.0
5	0.00	0	0.000	0.00	0	0.000#DIV/0!		
6	0.45	4,300	0.009	0.27	2,535,882	0.003	1.695	48.2
All Strata	10.80	500,341	1.000	16.19	750,091,596	1.000	0.667	35.1
95% confidence interval		± 110,596		±	153,071,641			

[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**.

CPUE

Substratum	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	55	55	0	8.89	7.26	21.72	37.09
20	31	31	31	0	10.82	5.05	29.75	15.05
Subtotal	89	86	86	0	9.56	3.72	24.49	17.70
31	69	60	60	0	15.84	11.02	20.19	15.71
32	8	5	5	0	4.28	2.18	3.08	1.38
41	44	40	40	0	30.21	38.77	35.92	50.87
42	31	23	23	0	11.27	8.31	11.28	8.90
43	21	20	20	0	5.93	7.59	4.96	3.91
Subtotal	173	148	148	0	18.11	5.82	21.62	7.79
50	26	0	0	0	0.00	0.00	0.00	0.00
61	58	10	10	0	0.41	0.02	0.25	0.01
62	7	4	4	0	1.06	0.22	0.51	0.04
Subtotal	91	14	14	0	0.32	0.01	0.19	0.00
Total	353	496	496	0	10.80	1.45	16.19	2.78

Table 16b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	169,149,411	2.24880E+15	57.00	73,309,596	264,989,225
20	122,053,929	2.53310E+14	30.00	89,554,080	154,553,779
Subtotal	291,203,340	2.50220E+15	68.18	191,160,285	391,246,395
31	190,872,813	1.40390E+15	68.00	115,936,182	265,809,445
32	2,700,648	1.06050E+12	7.00	265,124	5,136,172
41	225,215,733	2.00000E+15	43.00	134,834,585	315,596,881
42	27,085,550	5.13160E+13	30.00	12,436,218	41,734,881
43	10,477,630	1.74320E+13	20.00	1,768,182	19,187,078
Subtotal	456,352,374	3.47370E+15	100.32	338,476,997	574,227,751
50	0	0.00000E+00	25.00	0	0
61	2,208,153	8.07000E+11	57.00	392,628	4,023,679
62	327,729	1.73700E+10	6.00	5,227	650,231
Subtotal	2,535,882	8.24370E+11	81.42	719,988	4,351,775
Total	750,091,596	5.97670E+15	166.60	597,019,955	903,163,237

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	69,232	4.40500E+08	57.00	26,815	111,649
20	44,393	8.49666E+07	30.00	25,570	63,215
Subtotal	113,625	5.25466E+08	74.77	67,779	159,471
31	149,684	9.84864E+08	68.00	86,919	212,449
32	3,758	1.68124E+06	7.00	692	6,825
41	189,402	1.52440E+09	43.00	110,495	268,309
42	27,065	4.79145E+07	30.00	12,910	41,221
43	12,507	3.38237E+07	20.00	375	24,639
Subtotal	382,416	2.59268E+09	99.77	280,579	484,253
50	0	0.00000E+00	25.00	0	0
61	3,617	1.68856E+06	57.00	991	6,243
62	683	9.02447E+04	6.00	0	1,418
Subtotal	4,300	1.77880E+06	84.50	1,632	6,967
Total	500,341	3.11995E+09	142.23	389,745	610,937

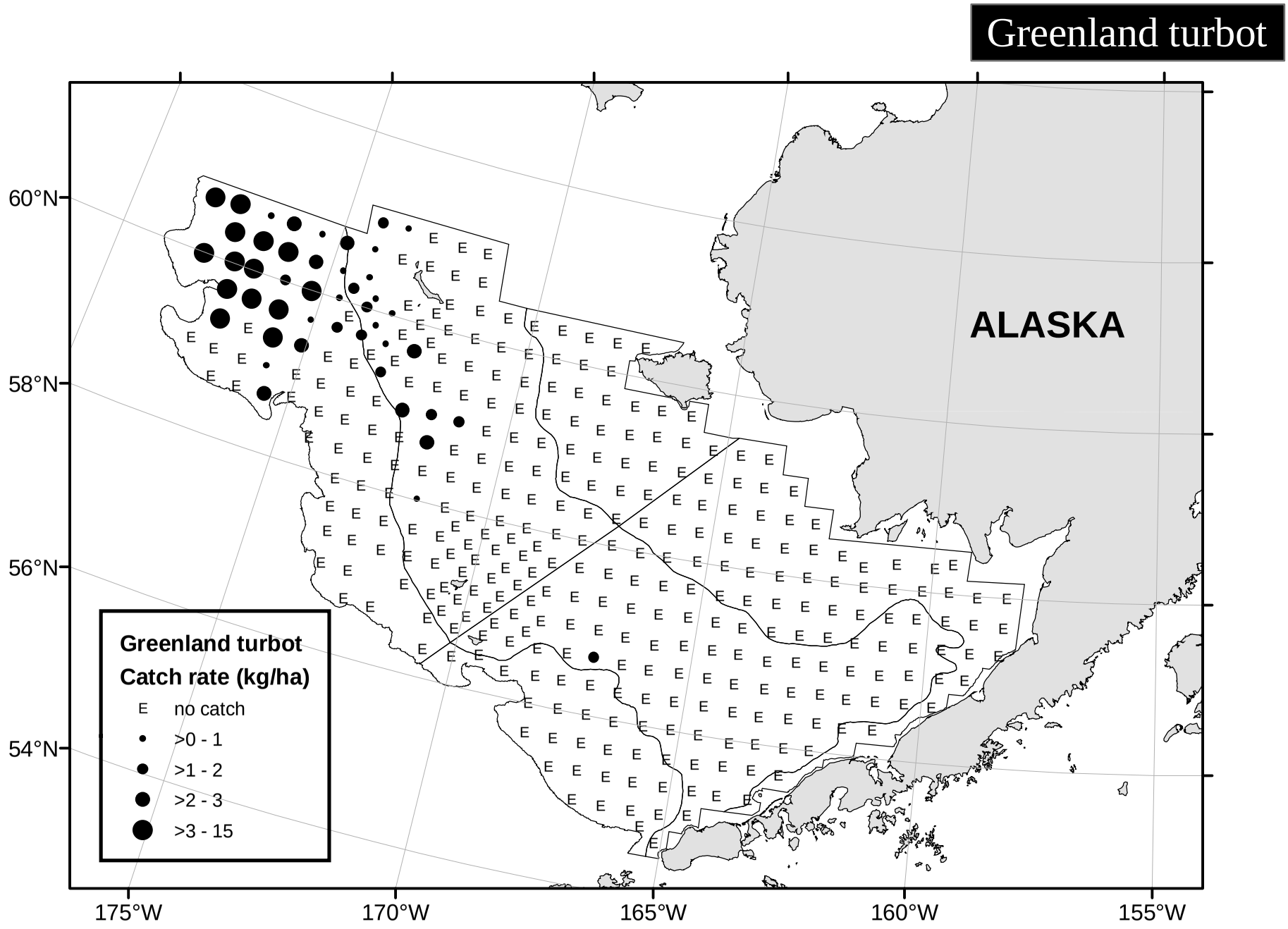


Figure 22.--Distribution and relative abundance in kg/ha of **Greenland turbot** (*Reinhardtius hippoglossoides*) for the 2005 eastern Bering Sea bottom trawl survey.

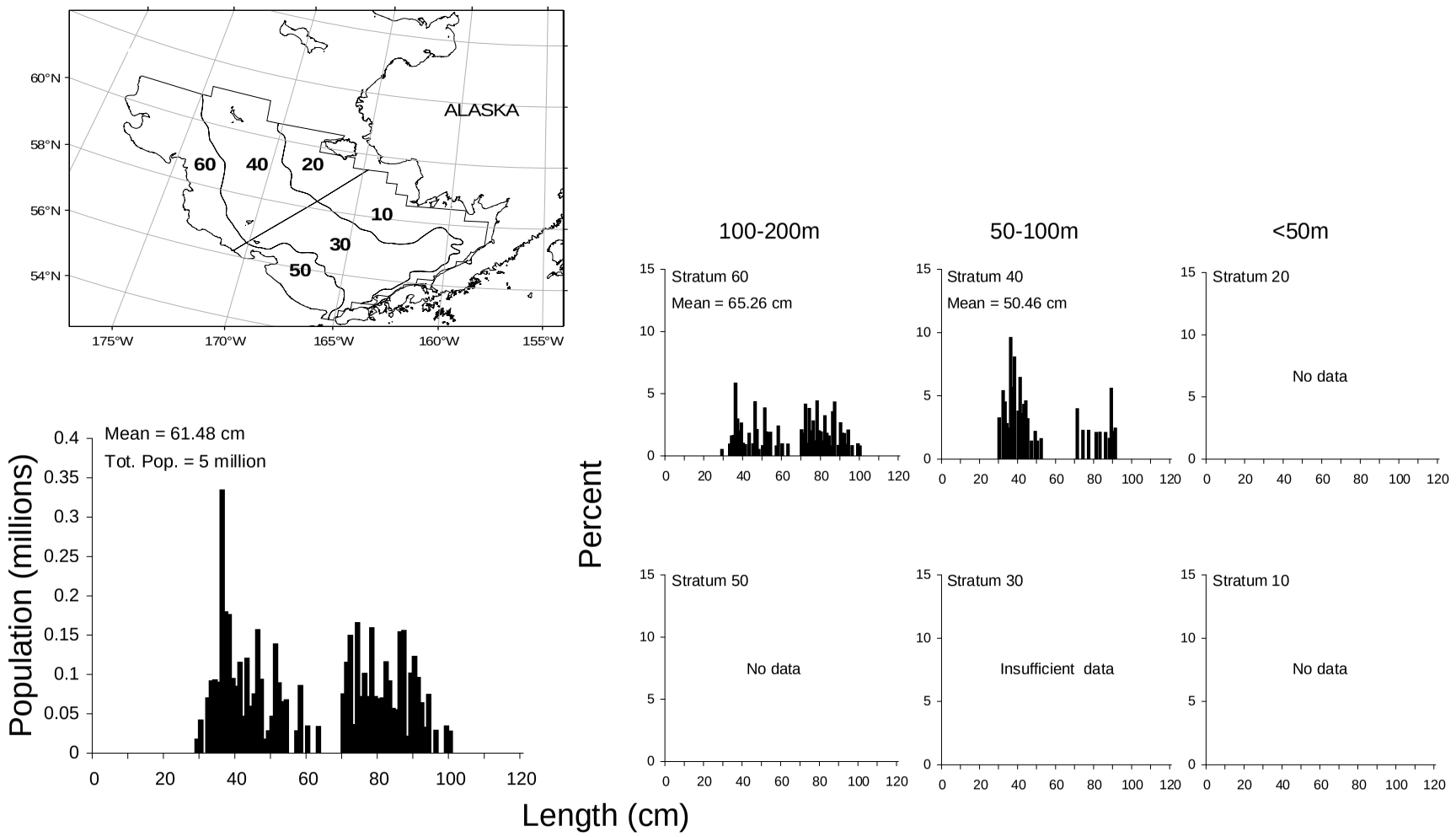


Figure 23.--Estimated relative size distributions (sexes combined) of **Greenland turbot** (*Reinhardtius hippoglossoides*) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Greenland turbot

Table 17a.--Abundance estimates and mean size of **Greenland turbot** (*Reinhardtius hippoglossoides*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0	0	0.000	0	0	0.000	0.000	0.0
2	0	0	0.000	0	0	0.000	0.000	0.0
3	0.02	185	0.012	0.00	26,635	0.005	0.000	85.0
4	0.23	2,530	0.158	0.12	1,296,064	0.262	1.952	50.5
5	0	0	0.000	0	0	0.000	0.000	0.0
6	1.41	13,325	0.831	0.38	3,615,340	0.732	3.686	65.3
All Strata	0.35	16,040	1.000	0.11	4,938,039	1.000	3.248	61.5
95% confidence interval		± 5,943		±	1,818,245			

[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**.

CPUE

Substratum	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	0	0	0	0	0.00	0.00	0.00	0.00
20	0	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	1	1	1	0.02	0.00	0.00	0.00
32	0	0	0	0	0.00	0.00	0.00	0.00
41	43	8	8	8	0.24	0.01	0.11	0.00
42	0	0	0	0	0.00	0.00	0.00	0.00
43	20	9	9	8	0.49	0.03	0.30	0.01
Subtotal	171	18	18	17	0.13	0.00	0.06	0.00
50	0	0	0	0	0.00	0.00	0.00	0.00
61	59	24	24	23	1.48	0.11	0.40	0.01
62	8	4	4	4	0.40	0.04	0.18	0.01
Subtotal	93	28	28	27	1.00	0.05	0.27	0.00
Total	353	46	46	44	0.35	0.00	0.11	0.00

Table 17b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	0	0.00000E+00	0.00	0	0
20	0	0.00000E+00	0.00	0	0
Subtotal	0	0.00000E+00	87.00	0	0
31	26,635	7.09421E+08	68.00	0	79,905
32	0	0.00000E+00	0.00	0	0
41	666,940	6.88349E+10	42.00	136,703	1,197,178
42	0	0.00000E+00	0.00	0	0
43	629,124	5.03020E+10	19.00	157,909	1,100,338
Subtotal	1,322,699	1.19846E+11	59.39	630,323	2,015,076
50	0	0.00000E+00	0.00	0	0
61	3,496,904	7.03595E+11	58.00	1,801,678	5,192,130
62	118,436	3.05739E+09	7.00	0	249,206
Subtotal	3,615,340	7.06652E+11	75.32	1,934,088	5,296,593
Total	4,938,039	8.26504E+11	199.98	3,119,794	6,756,285

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	0	0.00000E+00	0.00	0	0
20	0	0.00000E+00	0.00	0	0
Subtotal	0	0.00000E+00	87.00	0	0
31	185	3.40699E+04	68.00	0	554
32	0	0.00000E+00	0.00	0	0
41	1,492	3.89276E+05	42.00	231	2,753
42	0	0.00000E+00	0.00	0	0
43	1,038	1.30173E+05	19.00	280	1,796
Subtotal	2,714	5.53519E+05	99.88	1,226	4,202
50	0	0.00000E+00	0.00	0	0
61	13,065	8.26020E+06	58.00	7,257	18,874
62	260	1.61488E+04	7.00	0	560
Subtotal	13,325	8.27635E+06	65.90	7,571	19,079
Total	16,040	8.82993E+06	103.78	10,097	21,983

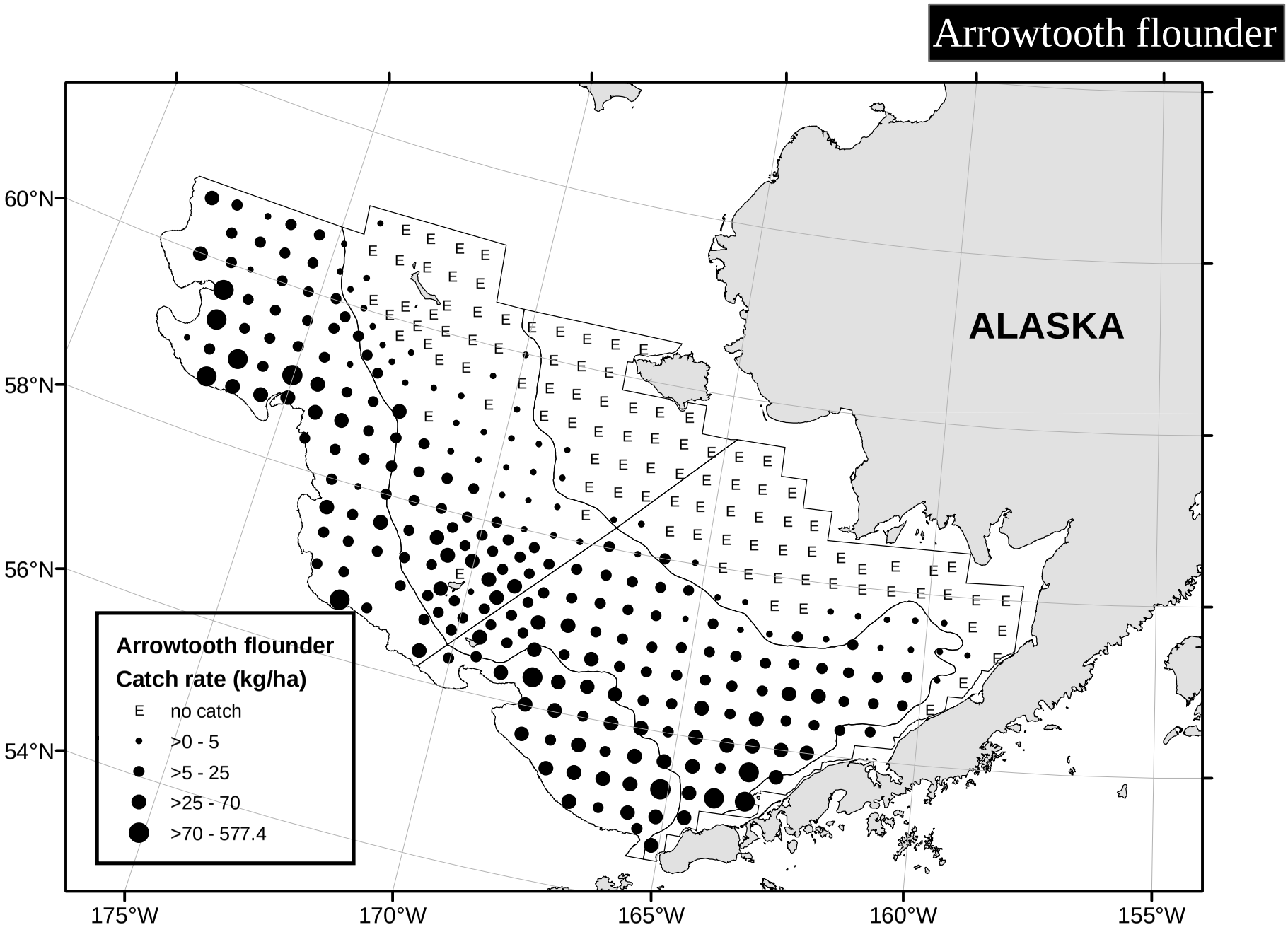


Figure 24.--Distribution and relative abundance in kg/ha of **arrowtooth flounder** (*Atheresthes stomias*) for the 2005 eastern Bering Sea bottom trawl survey.

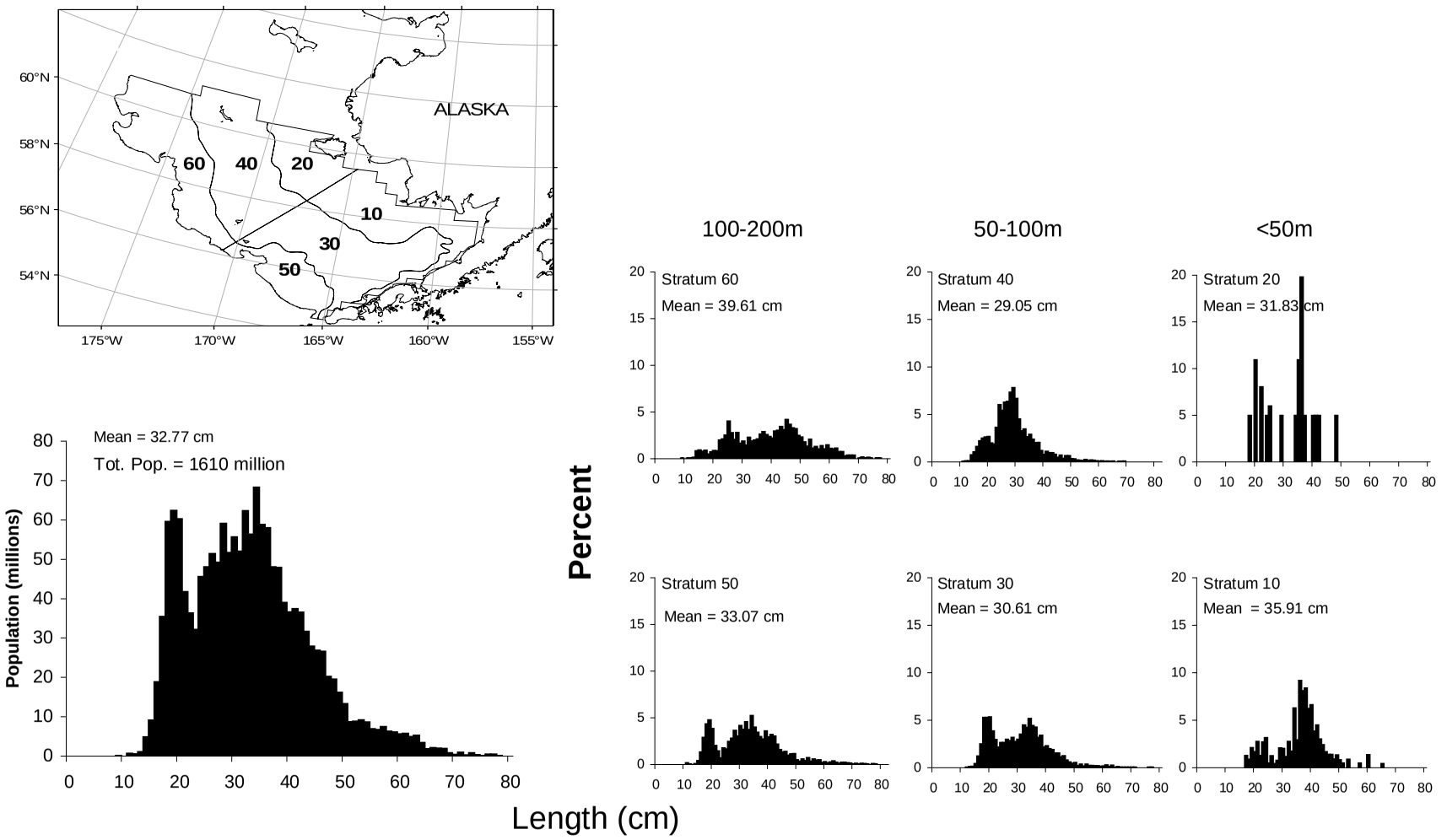


Figure 25.--Estimated relative size distributions (sexes combined) of **arrowtooth flounder** (*Atheresthes stomias*) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Table 18a.--Abundance estimates and mean size of **arrowtooth flounder** (*Atherestes stomias*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	1.55	12,051	0.017	3.21	24,995,934	0.016	0.482	35.9
2	0.12	506	0.001	0.34	1,377,781	0.001	0.367	31.8
3	23.16	239,220	0.337	69.50	717,937,008	0.446	0.333	30.6
4	5.22	56,298	0.079	18.88	203,547,066	0.126	0.277	29.1
5	40.45	156,901	0.221	90.84	352,383,082	0.219	0.445	33.1
6	25.79	243,844	0.344	32.71	309,337,551	0.192	0.788	39.6
All Strata	15.30	708,819	1.000	34.74	1,609,578,422	1.000	0.440	32.8
95% confidence interval		± 97,873			± 220,546,630			

[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.

CPUE

Substratum	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	17	17	16	1.55	0.39	3.21	1.74
20	31	3	3	3	0.12	0.01	0.34	0.07
Subtotal	89	20	20	19	1.06	0.17	2.22	0.75
31	69	69	69	69	23.23	7.40	69.04	84.61
32	8	8	8	8	22.41	14.46	74.44	207.31
41	43	25	25	25	2.15	0.40	7.22	4.17
42	31	30	30	30	16.36	4.40	64.17	101.67
43	20	10	10	10	1.69	0.88	1.99	1.13
Subtotal	171	142	142	142	14.00	1.61	43.65	19.01
50	26	26	26	26	40.45	49.17	90.84	204.90
61	59	59	59	59	26.76	12.33	33.75	9.43
62	8	8	8	8	12.40	11.16	18.55	24.08
Subtotal	93	93	93	93	30.05	9.57	49.62	21.51
Total	353	255	255	254	15.30	1.14	34.74	5.78

Table 18b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	24,995,934	1.05431E+14	57.00	4,244,392	45,747,477
20	1,377,781	1.12725E+12	30.00	0	3,545,815
Subtotal	26,373,715	1.06558E+14	58.21	5,511,532	47,235,899
31	652,626,458	7.55977E+15	68.00	478,732,609	826,520,307
32	65,310,550	1.59604E+14	7.00	35,432,481	95,188,619
41	45,278,189	1.63827E+14	42.00	19,410,399	71,145,979
42	154,070,440	5.86180E+14	30.00	104,558,613	203,582,268
43	4,198,436	5.01569E+12	19.00	0	8,885,866
Subtotal	921,484,074	8.47439E+15	83.87	737,371,124	1,105,597,023
50	352,383,082	3.08350E+15	25.00	237,992,790	466,773,373
61	297,409,903	7.32620E+14	58.00	242,707,591	352,112,214
62	11,927,649	9.95250E+12	7.00	4,466,643	19,388,654
Subtotal	661,720,633	3.82607E+15	37.58	538,010,132	785,431,134
Total	1,609,578,422	1.24071E+16	123.54	1,389,031,792	1,830,125,051

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	12,051	2.39239E+07	57.00	2,165	21,936
20	506	2.01221E+05	30.00	0	1,421
Subtotal	12,556	2.41251E+07	57.96	2,629	22,483
31	219,561	6.60939E+08	68.00	168,143	270,978
32	19,659	1.11328E+07	7.00	11,768	27,550
41	13,451	1.55687E+07	42.00	5,477	21,426
42	39,273	2.53864E+07	30.00	28,969	49,577
43	3,574	3.91561E+06	19.00	0	7,716
Subtotal	295,518	7.16942E+08	79.44	241,967	349,070
50	156,901	7.39934E+08	25.00	100,866	212,937
61	235,873	9.57781E+08	58.00	173,327	298,419
62	7,971	4.61033E+06	7.00	2,893	13,049
Subtotal	400,745	1.70233E+09	76.83	318,226	483,263
Total	708,819	2.44341E+09	135.07	610,946	806,692

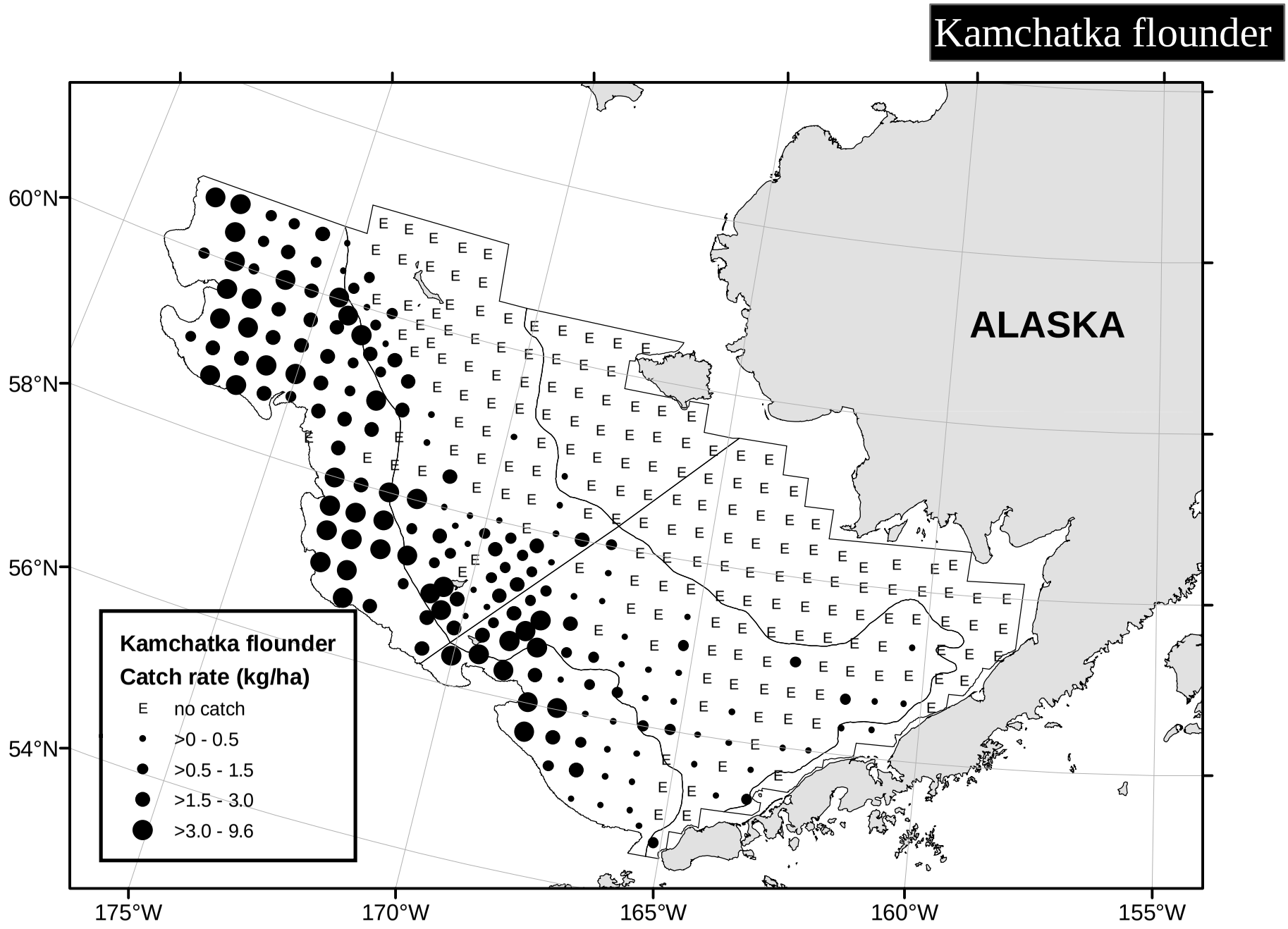


Figure 26.--Distribution and relative abundance in kg/ha of **Kamchatka flounder** (*Atheresthes evermanni*) for the 2005 eastern Bering Sea bottom trawl survey.

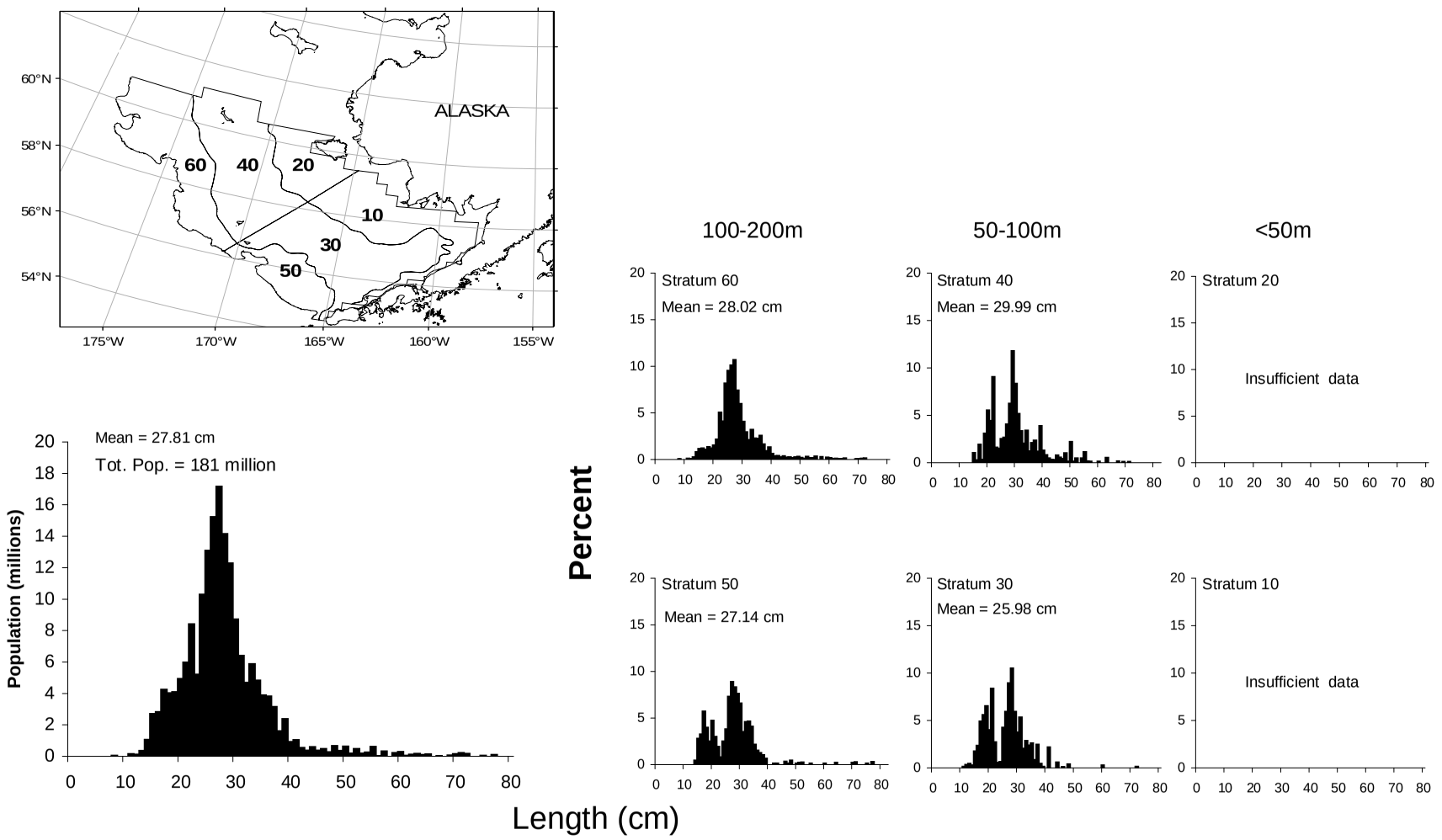


Figure 27.--Estimated relative size distributions (sexes combined) of **Kamchatka flounder** (*Atheresthes evermanni*) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Kamchatka flounder

Table 19a.--Abundance estimates and mean size of **Kamchatka flounder** (*Atheresthes evermanni*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.00	26	0.001	0.03	270,703	0.001	0.097	21.8
2	0.00	4	0.000	0.01	59,585	0.000	0.063	18.0
3	0.43	4,482	0.097	2.25	23,288,832	0.129	0.192	26.0
4	0.57	6,165	0.134	1.69	18,247,849	0.101	0.338	30.0
5	1.75	6,801	0.148	7.17	27,820,599	0.154	0.244	27.1
6	3.02	28,581	0.621	11.78	111,368,370	0.615	0.257	28.0
All Strata	0.99	46,058	1.000	3.91	181,055,938	1.000	0.254	27.8
95% confidence interval		± 6,753			± 33,149,844			

[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**.

CPUE

Substratum	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	2	2	2	0.00	0.00	0.03	0.00
20	31	1	1	1	0.00	0.00	0.01	0.00
Subtotal	89	3	3	3	0.00	0.00	0.03	0.00
31	69	33	33	32	0.23	0.00	1.03	0.07
32	8	8	8	8	2.60	0.40	15.48	17.41
41	43	10	10	10	0.30	0.02	0.66	0.12
42	31	28	28	28	1.33	0.07	5.46	2.34
43	20	10	10	9	0.52	0.03	0.46	0.03
Subtotal	171	89	89	87	0.50	0.00	1.97	0.08
50	26	24	24	23	1.75	0.18	7.17	3.94
61	59	55	55	55	3.07	0.09	12.40	2.28
62	8	7	7	6	2.40	0.61	3.19	0.97
Subtotal	93	86	86	84	2.65	0.05	10.44	1.33
Total	353	178	178	174	0.99	0.01	3.91	0.13

Table 19b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	270,703	4.05964E+10	57.00	0	677,905
20	59,585	3.55040E+09	30.00	0	181,437
Subtotal	330,288	4.41468E+10	66.44	0	754,923
31	9,708,742	5.84159E+12	68.00	4,874,865	14,542,618
32	13,580,091	1.34056E+13	7.00	4,620,730	22,539,452
41	4,156,084	4.86323E+12	42.00	0	8,612,940
42	13,115,480	1.34853E+13	30.00	5,605,756	20,625,204
43	976,285	1.16942E+11	19.00	260,545	1,692,025
Subtotal	41,536,681	3.77127E+13	43.36	29,254,551	53,818,811
50	27,820,599	5.93074E+13	25.00	11,925,472	43,715,726
61	109,315,274	1.77262E+14	58.00	82,407,718	136,222,830
62	2,053,096	3.99966E+11	7.00	557,403	3,548,790
Subtotal	139,188,969	2.36969E+14	82.28	108,401,347	169,976,592
Total	181,055,938	2.74728E+14	105.51	147,906,095	214,205,782

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	26	5.80093E+02	57.00	0	75
20	4	1.40467E+01	30.00	0	11
Subtotal	30	5.94139E+02	59.73	0	79
31	2,200	2.56095E+05	68.00	1,188	3,212
32	2,282	3.04228E+05	7.00	932	3,631
41	1,878	6.39218E+05	42.00	262	3,493
42	3,185	4.07945E+05	30.00	1,879	4,491
43	1,102	1.40772E+05	19.00	316	1,887
Subtotal	10,646	1.74826E+06	100.19	8,002	13,291
50	6,801	2.71464E+06	25.00	3,400	10,201
61	27,039	6.68534E+06	58.00	21,813	32,264
62	1,542	2.51235E+05	7.00	357	2,728
Subtotal	35,381	9.65121E+06	86.70	29,168	41,595
Total	46,058	1.14001E+07	117.62	39,305	52,811

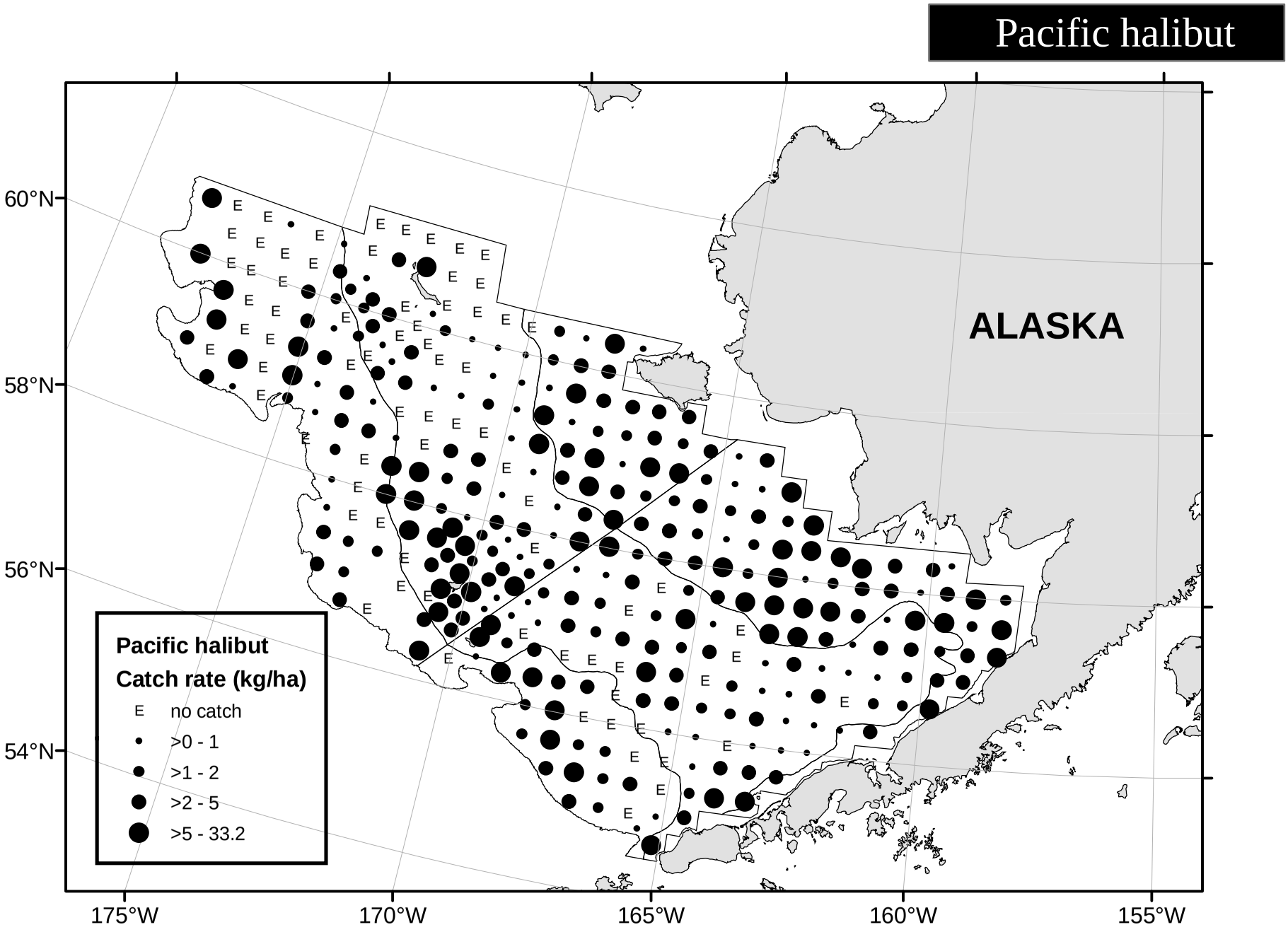


Figure 28.--Distribution and relative abundance in kg/ha of **Pacific halibut** (*Hippoglossus stenolepis*) for the 2005 eastern Bering Sea bottom trawl survey.

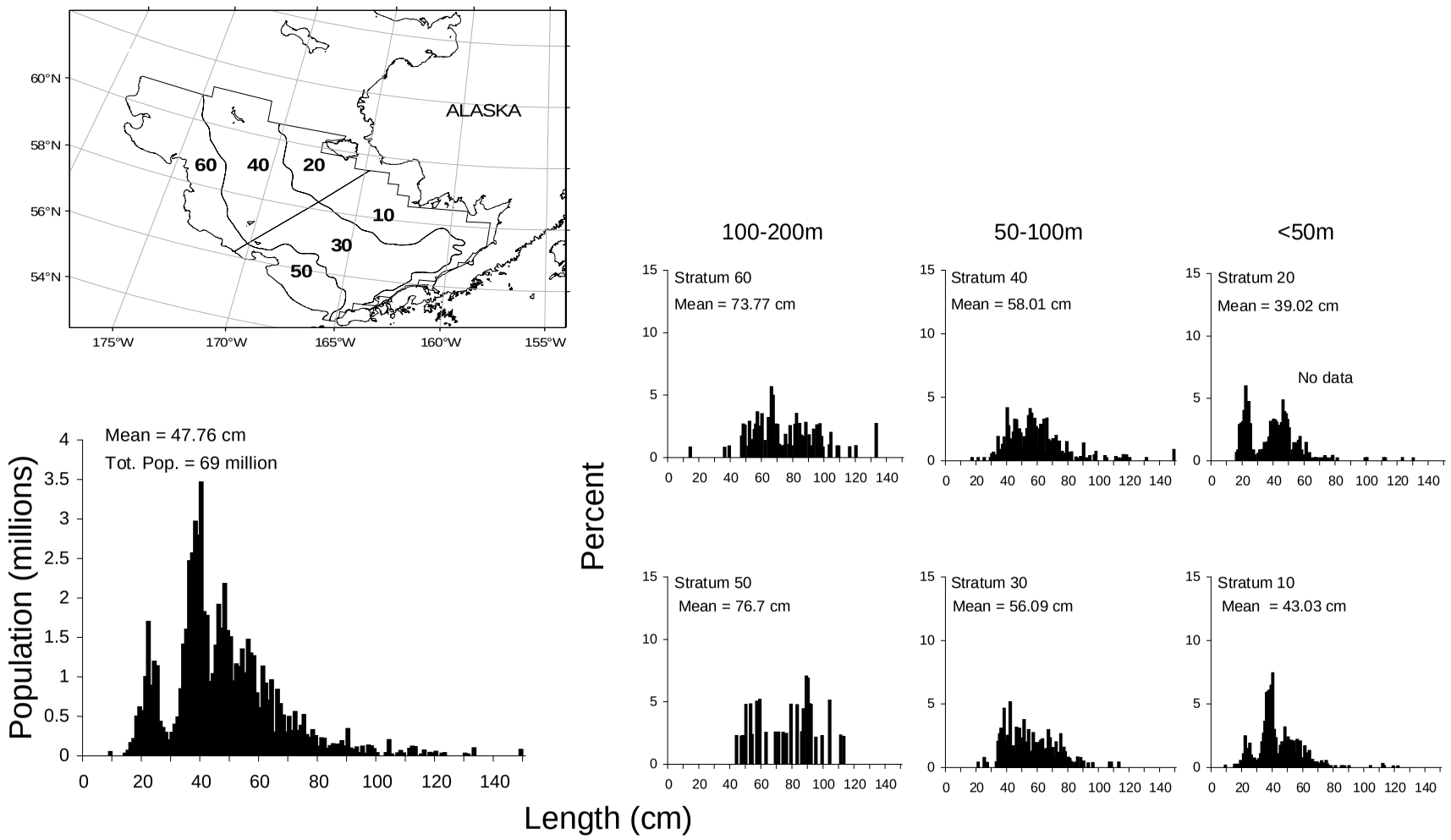


Figure 29.--Estimated relative size distributions (sexes combined) of **Pacific halibut** (*Hippoglossus stenolepis*) in terms of population numbers and percent by stratum for the 2005 eastern Bering Sea bottom trawl survey.

Table 20a.--Abundance estimates and mean size of **Pacific halibut** (*Hippoglossus stenolepis*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	4.85	37,791	0.270	4.15	32,291,737	0.466	1.170	43.0
2	3.92	16,101	0.115	3.71	15,240,291	0.220	1.057	39.0
3	2.45	25,273	0.181	0.78	8,047,285	0.116	3.141	56.1
4	2.75	29,605	0.212	0.82	8,894,934	0.128	3.328	58.0
5	2.28	8,843	0.063	0.32	1,245,068	0.018	7.103	76.7
6	2.35	22,264	0.159	0.37	3,525,490	0.051	6.315	73.8
All Strata	3.02	139,876	1.000	1.49	69,244,806	1.000	2.020	47.8
95% confidence interval		± 21,700		±	11,464,084			

[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**.

CPUE

Substratum	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	58	58	58	4.85	0.42	4.15	0.30
20	31	30	30	30	3.92	0.49	3.71	0.39
Subtotal	89	88	88	88	4.53	0.24	4.00	0.18
31	69	56	56	56	2.45	0.25	0.77	0.01
32	8	7	7	6	2.37	1.19	0.92	0.20
41	43	25	25	25	2.51	0.80	0.73	0.14
42	31	29	29	29	4.74	1.25	1.59	0.21
43	20	13	13	13	1.17	0.08	0.23	0.00
Subtotal	171	130	130	129	2.60	0.14	0.80	0.02
50	26	20	20	20	2.28	0.19	0.32	0.00
61	59	34	34	34	2.44	0.27	0.37	0.00
62	8	6	6	6	1.25	0.18	0.37	0.02
Subtotal	93	60	60	60	2.33	0.13	0.36	0.00
Total	353	278	278	277	3.02	0.06	1.49	0.02

Table 20b.--Continued.

Population

Substratum	Population	Variance population	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	32,291,737	1.83082E+13	57.00	23,644,266	40,939,208
20	15,240,291	6.52576E+12	30.00	10,023,884	20,456,698
Subtotal	47,532,028	2.48340E+13	84.48	37,565,291	57,498,766
31	7,237,867	1.32757E+12	68.00	4,933,465	9,542,268
32	809,419	1.57558E+11	7.00	0	1,748,173
41	4,588,735	5.65008E+12	42.00	0	9,392,630
42	3,825,067	1.19506E+12	30.00	1,592,777	6,057,358
43	481,132	9.57104E+09	19.00	276,370	685,894
Subtotal	16,942,220	8.33983E+12	83.07	11,166,466	22,717,973
50	1,245,068	3.90490E+10	25.00	837,205	1,652,932
61	3,286,813	3.00069E+11	58.00	2,179,739	4,393,887
62	238,677	1.02910E+10	7.00	0	486,912
Subtotal	4,770,558	3.49409E+11	74.96	3,588,342	5,952,775
Total	69,244,806	3.35234E+13	138.08	57,780,722	80,708,890

Biomass

Substratum	Biomass (t)	Variance biomass	Eff. deg. freedom	95% Confidence limit Lower	95% Confidence limit Upper
10	37,791	2.55369E+07	57.00	27,578	48,004
20	16,101	8.16882E+06	30.00	10,265	21,938
Subtotal	53,892	3.37057E+07	83.14	42,281	65,503
31	23,193	2.26609E+07	68.00	13,673	32,714
32	2,079	9.13863E+05	7.00	0	4,340
41	15,739	3.15439E+07	42.00	4,388	27,090
42	11,388	7.21166E+06	30.00	5,904	16,872
43	2,477	3.55488E+05	19.00	1,229	3,725
Subtotal	54,877	6.26858E+07	118.70	39,042	70,712
50	8,843	2.93372E+06	25.00	5,308	12,379
61	21,461	2.07159E+07	58.00	12,263	30,660
62	802	7.55891E+04	7.00	130	1,475
Subtotal	31,107	2.37252E+07	72.68	21,365	40,849
Total	139,876	1.20118E+08	264.67	118,176	161,577

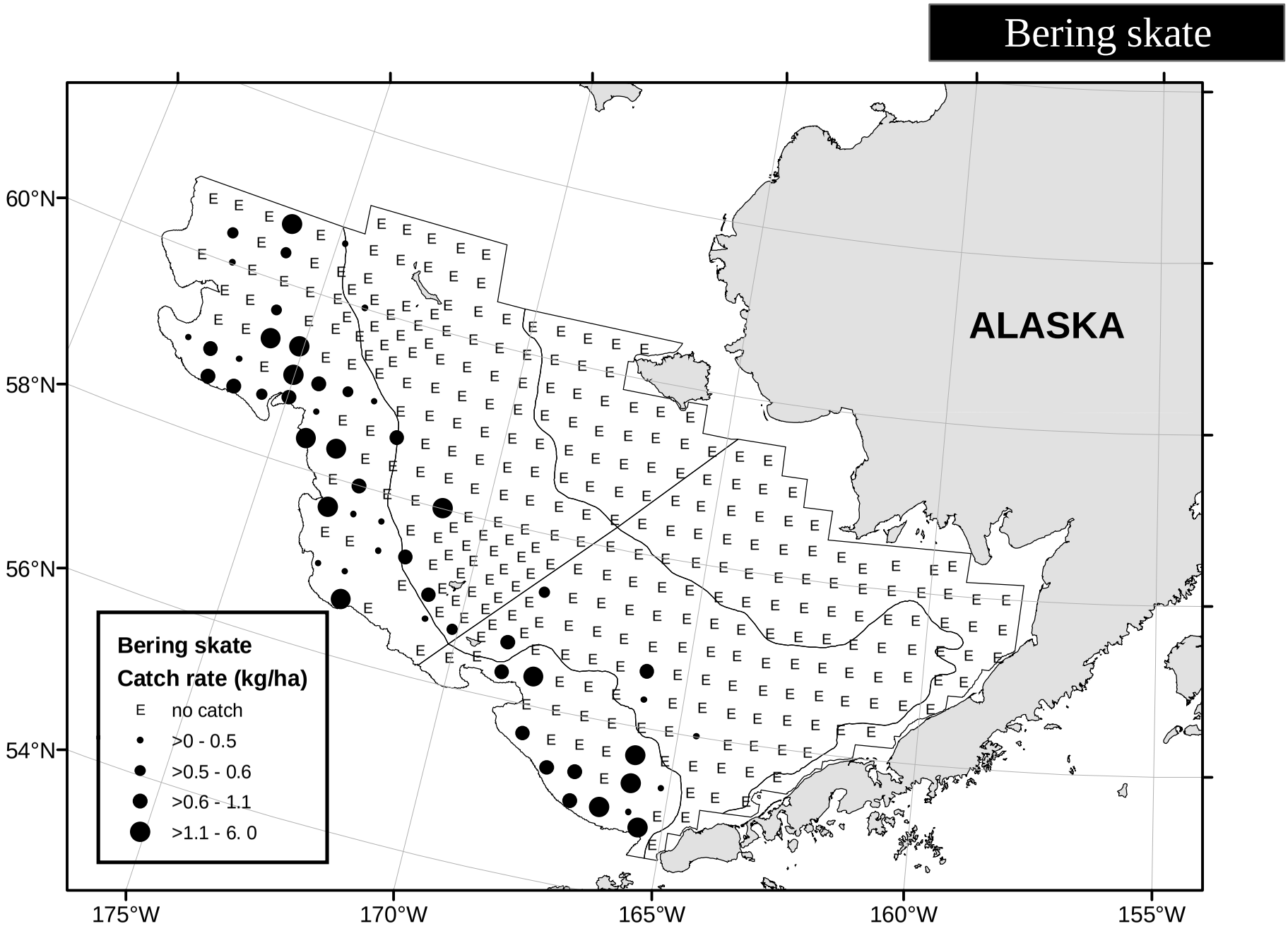


Figure 30.--Distribution and relative abundance in kg/ha of **Bering skate** (*Bathyraja interrupta*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 21.--Abundance estimates and mean size of **Bering skate** (*Bathyraja interrupta*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.00	0	0.000	0.00	0	0.000	0.000	0.0
2	0.00	0	0.000	0.00	0	0.000	0.000	0.0
3	0.02	247	0.031	0.01	124,724	0.029	1.980	54.0
4	0.04	444	0.055	0.02	182,188	0.043	2.438	71.0
5	0.63	2,434	0.304	0.38	1,477,196	0.349	1.648	62.2
6	0.52	4,881	0.610	0.26	2,452,122	0.579	1.991	66.6
All Strata	0.17	8,007	1.000	0.09	4,236,229	1.000	1.890	64.9
95% confidence interval		± 2,808		±	1,789,074			

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

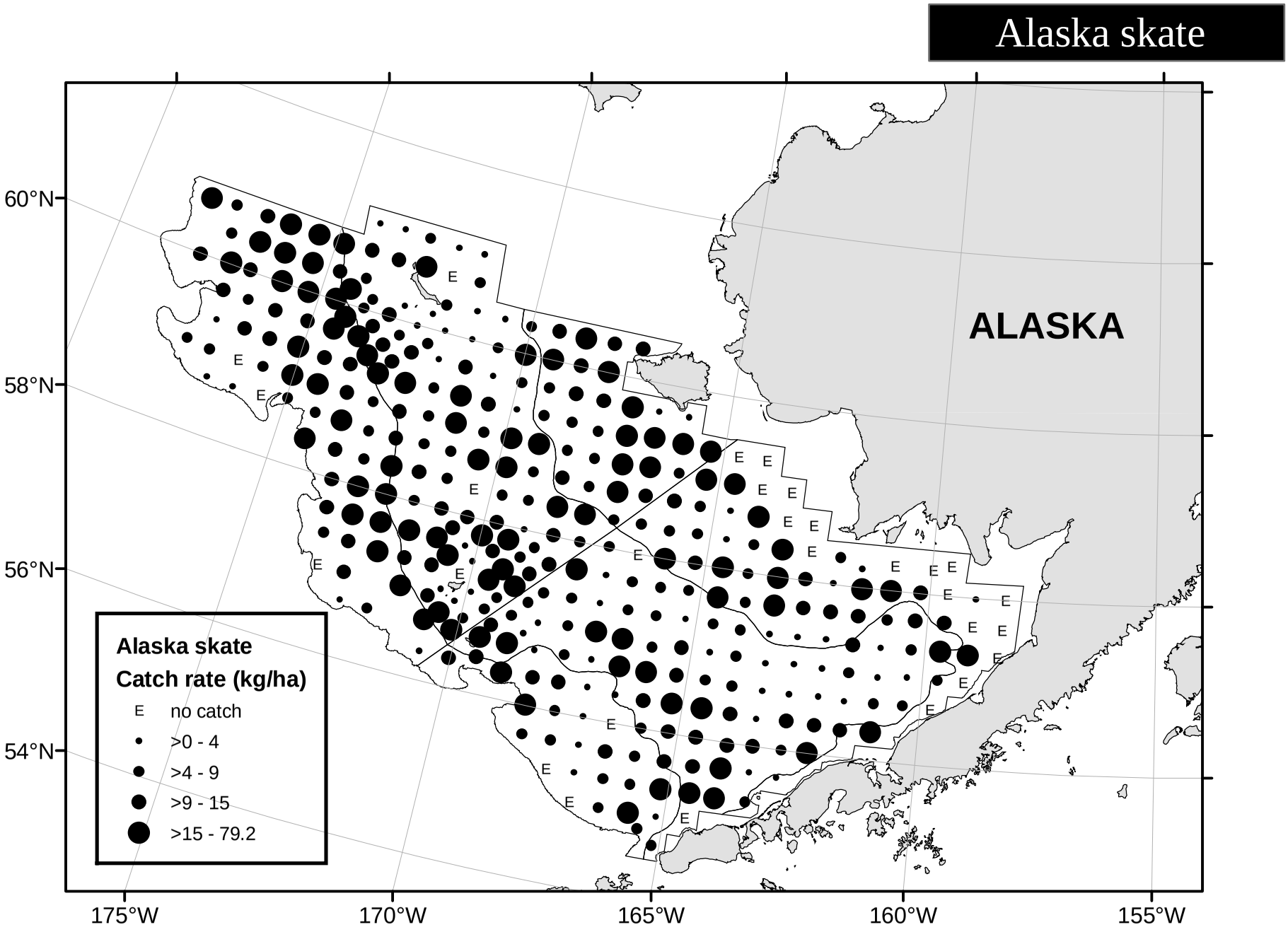


Figure 31.--Distribution and relative abundance in kg/ha of **Alaska skate** (*Bathyraja parmifera*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 22.--Abundance estimates and mean size of **Alaska skate** (*Bathyraja parmifera*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	9.08	70,703	0.137	2.64	20,556,751	0.141	3.439	73.5
2	13.79	56,582	0.110	4.57	18,756,552	0.128	3.017	70.0
3	8.54	88,227	0.171	2.55	26,372,560	0.181	3.345	67.4
4	11.40	122,948	0.239	4.44	47,890,313	0.328	2.567	61.7
5	7.85	30,471	0.059	1.19	4,615,890	0.032	6.601	84.3
6	15.40	145,617	0.283	2.95	27,895,128	0.191	5.220	79.2
All Strata	11.10	514,548	1.000	3.15	146,087,194	1.000	3.522	69.5
95% confidence interval		± 51,213		±	15,009,635			

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

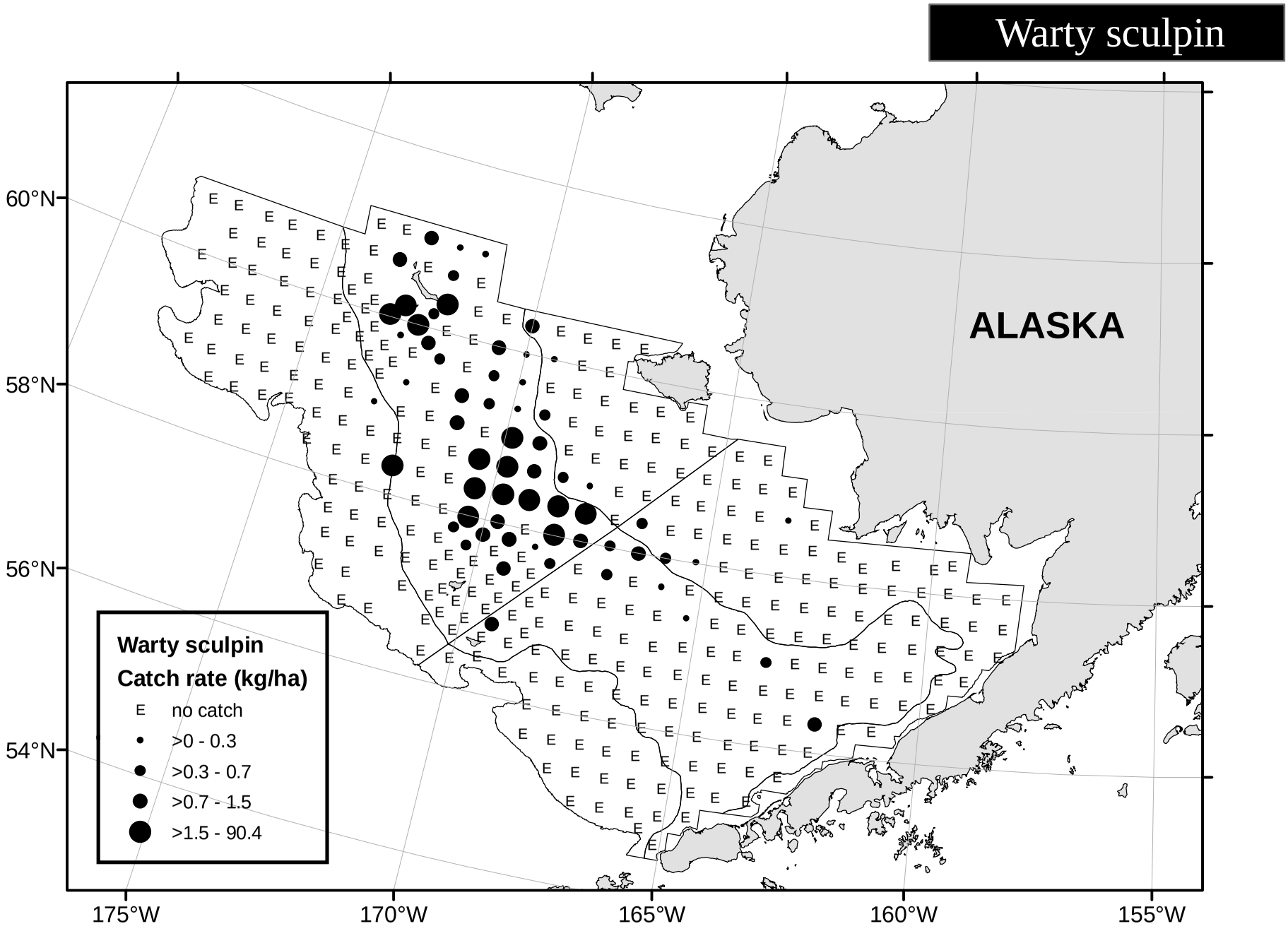


Figure 32.--Distribution and relative abundance in kg/ha of **warty sculpin** (*Myoxocephalus verrucosus*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 23.--Abundance estimates and mean size of **warty sculpin** (*Myoxocephalus verrucosus*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.02	181	0.007	0.02	175,652	0.009	1.030	41.0
2	0.09	354	0.014	0.10	394,598	0.021	0.896	37.7
3	0.06	634	0.024	0.04	392,478	0.020	1.615	42.4
4	2.24	24,174	0.933	1.67	18,016,320	0.939	1.342	42.4
5	0.00	0	0.000	0.00	0	0.000	0.000	0.0
6	0.06	555	0.021	0.02	200,738	0.010	2.763	53.3
All Strata	0.56	25,897	1.000	0.41	19,179,787	1.000	1.350	42.4
95% confidence interval		± 25,897		±	18,165,212			

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

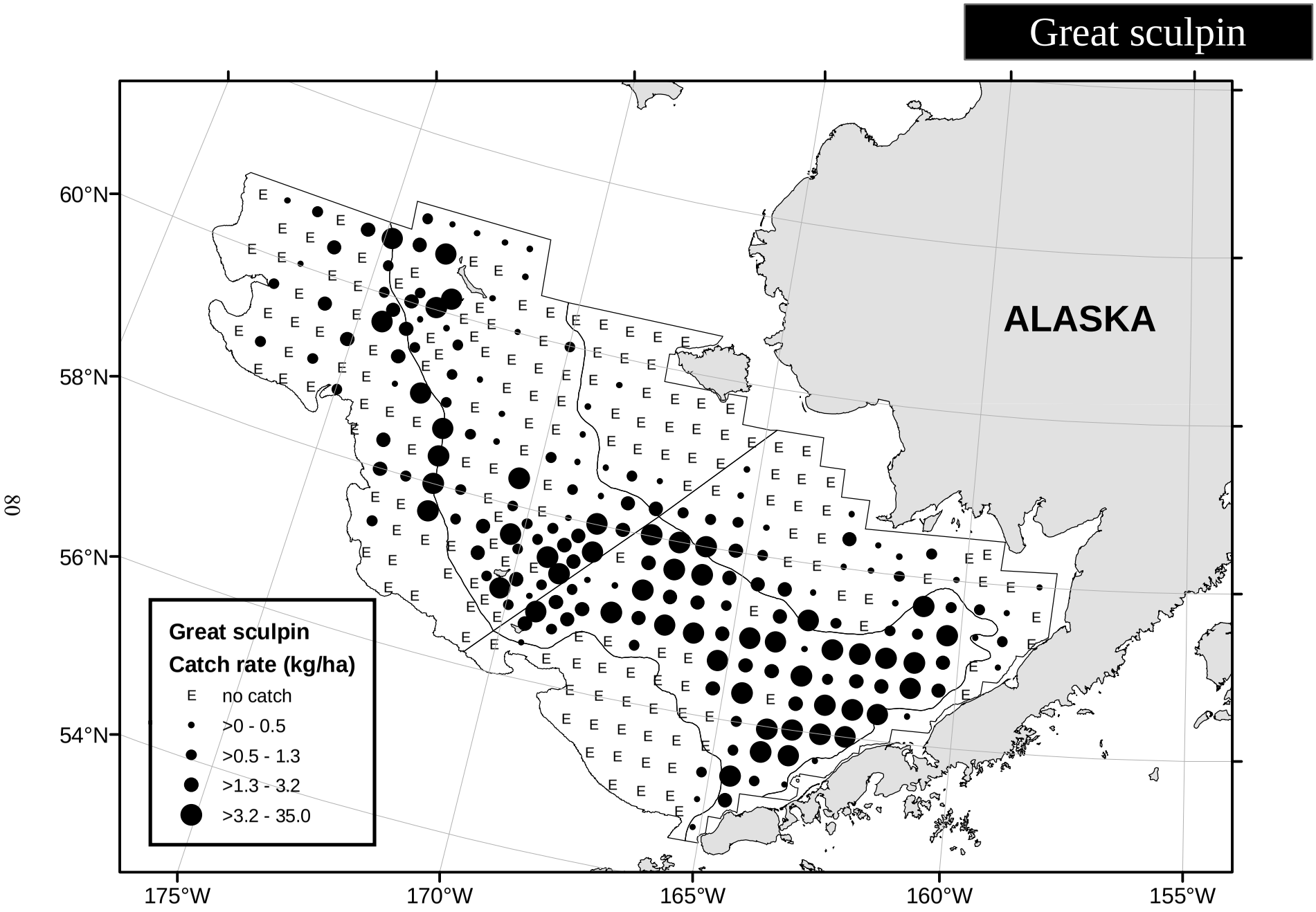


Figure 33.--Distribution and relative abundance in kg/ha of **great sculpin** (*Myoxocephalus polyacanthocephalus*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 24.--Abundance estimates and mean size of **great sculpin** (*Myoxocephalus polyacanthocephalus*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.61	4,731	0.085	0.56	4,347,139	0.185	1.088	39.0
2	0.13	537	0.010	0.13	519,073	0.022	1.035	39.0
3	2.65	27,361	0.489	0.94	9,691,671	0.411	2.823	51.4
4	1.18	12,736	0.228	0.50	5,428,784	0.230	2.346	46.8
5	0.05	213	0.004	0.03	118,848	0.005	0.000	46.1
6	1.10	10,380	0.185	0.37	3,454,575	0.147	3.005	54.5
All Strata	1.21	55,957	1.000	0.51	23,560,089	1.000	2.375	48.2
95% confidence interval		± 10,827		±	4,294,035			

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

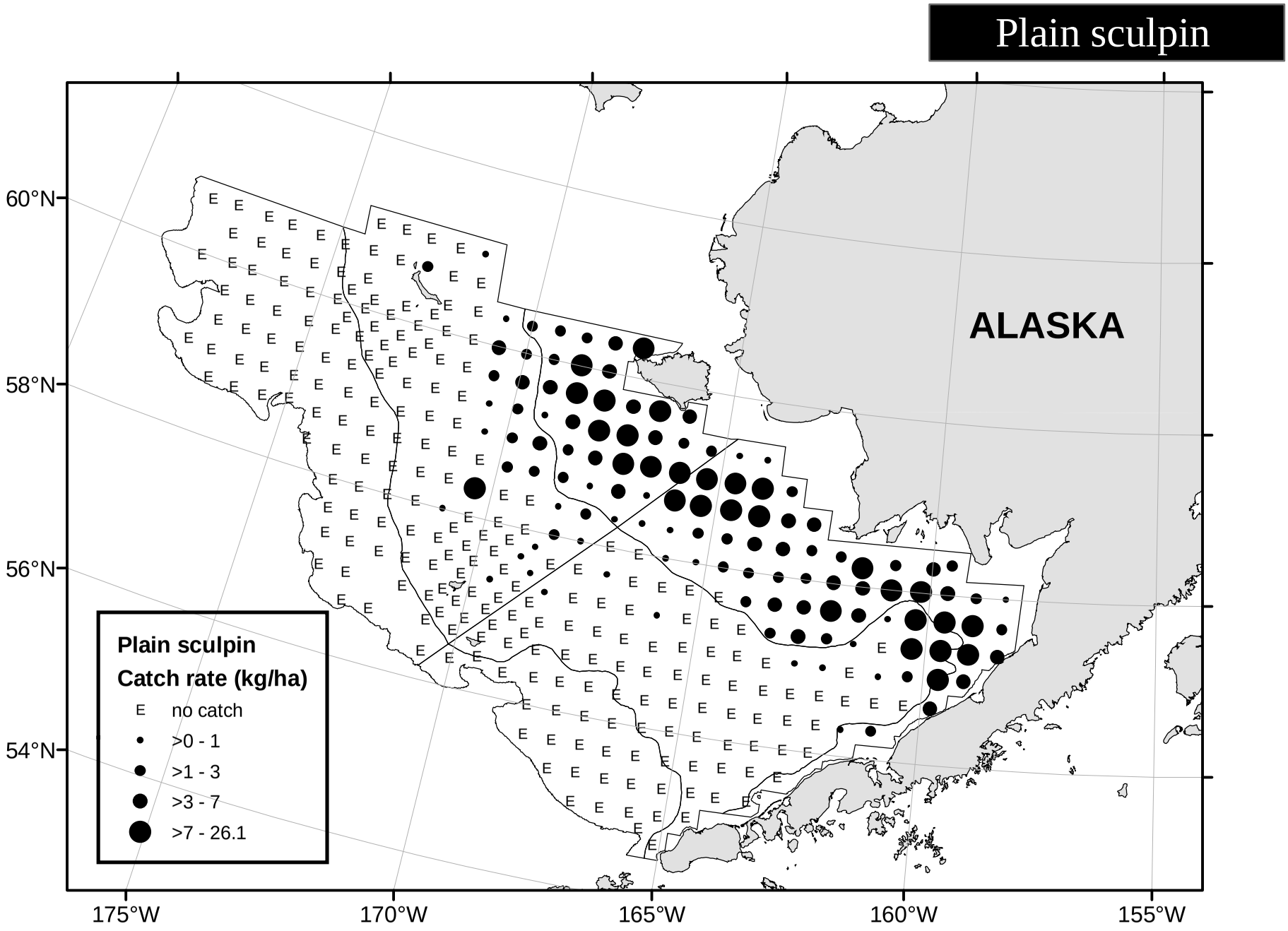


Figure 34.--Distribution and relative abundance in kg/ha of **plain sculpin** (*Myoxocephalus jaok*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 25.--Abundance estimates and mean size of **plain sculpin** (*Myoxocephalus jaok*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	5.10	39,726	0.519	9.29	72,334,505	0.534	0.549	34.3
2	6.87	28,174	0.368	13.48	55,295,518	0.408	0.510	33.1
3	0.28	2,898	0.038	0.30	3,065,888	0.023	0.945	40.7
4	0.53	5,741	0.075	0.44	4,785,282	0.035	1.200	45.2
5	0.00	0	0.000	0.00	0	0.000	0.000	0.0
6	0.00	0	0.000	0.00	0	0.000	0.000	0.0
All Strata	1.65	76,540	1.000	2.92	135,481,192	1.000	0.565	34.4
95% confidence interval		± 14,588		±	29,329,731			

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

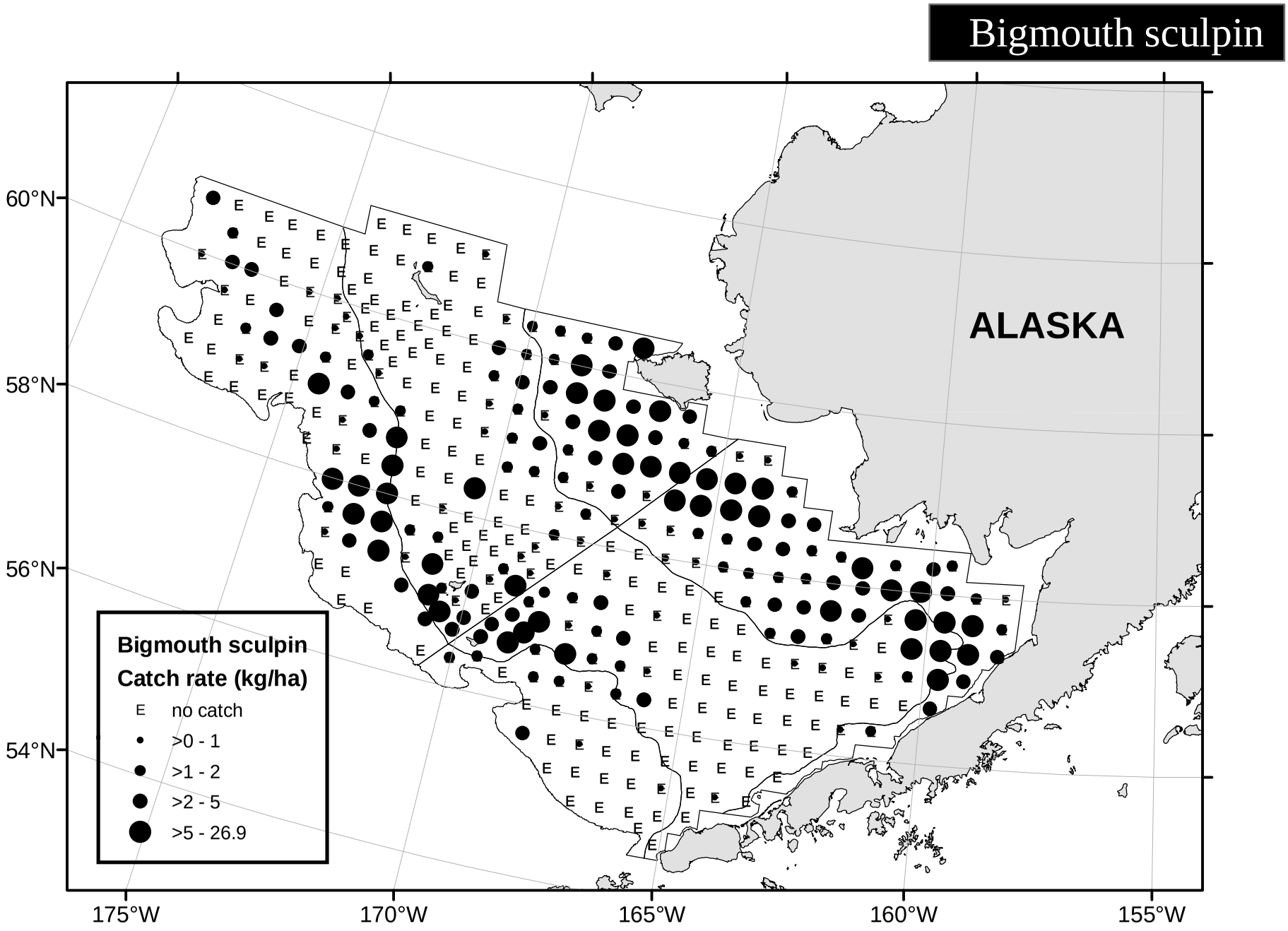


Figure 35.--Distribution and relative abundance in kg/ha of **bigmouth sculpin** (*Hemitripterus bolini*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 26.--Abundance estimates and mean size of **bigmouth sculpin** (*Hemitripterus bolini*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.00	0	0.000	0.00	0	0.000	0.000	0.0
2	0.00	0	0.000	0.00	0	0.000	0.000	0.0
3	0.71	7,328	0.236	0.12	1,216,128	0.182	6.026	62.082
4	0.48	5,217	0.168	0.10	1,083,711	0.162	4.814	58.759
5	0.47	1,815	0.059	0.08	300,500	0.045	6.041	62.068
6	1.76	16,642	0.537	0.43	4,074,767	0.610	4.084	53.932
All Strata	0.67	31,002	1.000	0.14	6,675,105	1.000	4.644	56.567
95% confidence interval		± 8,238		±	1,548,079			

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

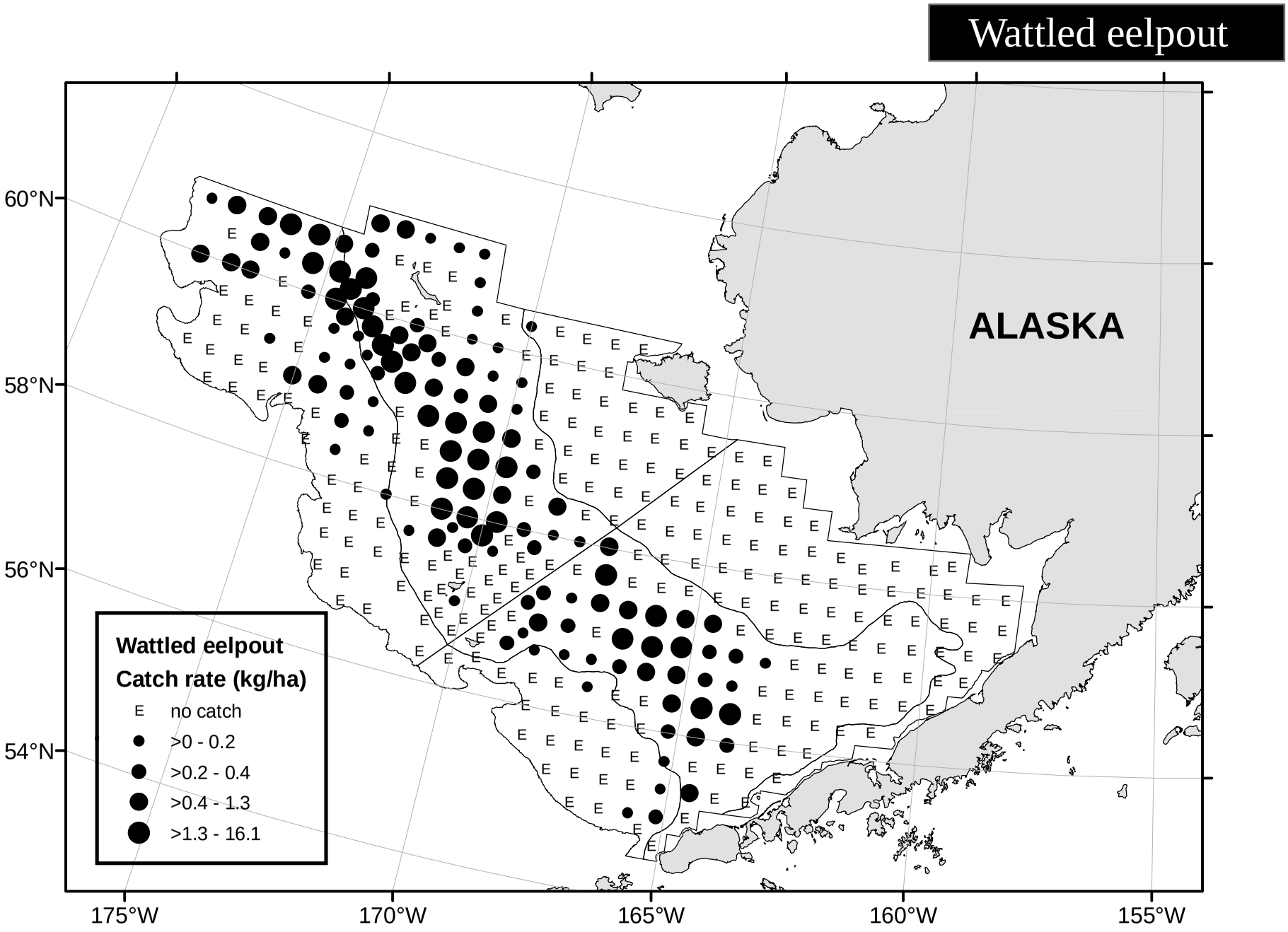


Figure 36.--Distribution and relative abundance in kg/ha of **wattled eelpout** (*Lycodes palearis*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 27.--Abundance estimates and mean size of **wattled eelpout** (*Lycodes palearis*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.00	0	0.000	0.00	0	0.000	0.000	0.0
2	0.01	25	0.001	0.02	81,934	0.001	0.304	41.0
3	0.40	4,163	0.234	1.56	16,136,889	0.205	0.258	39.2
4	1.02	11,034	0.620	4.70	50,673,934	0.644	0.218	36.2
5	0.03	118	0.007	0.07	269,844	0.003	0.437	46.6
6	0.26	2,459	0.138	1.22	11,557,388	0.147	0.213	37.6
All Strata	0.38	17,800	1.000	1.70	78,719,987	1.000	0.226	37.0
95% confidence interval		± 5,552		±	23,138,231			

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

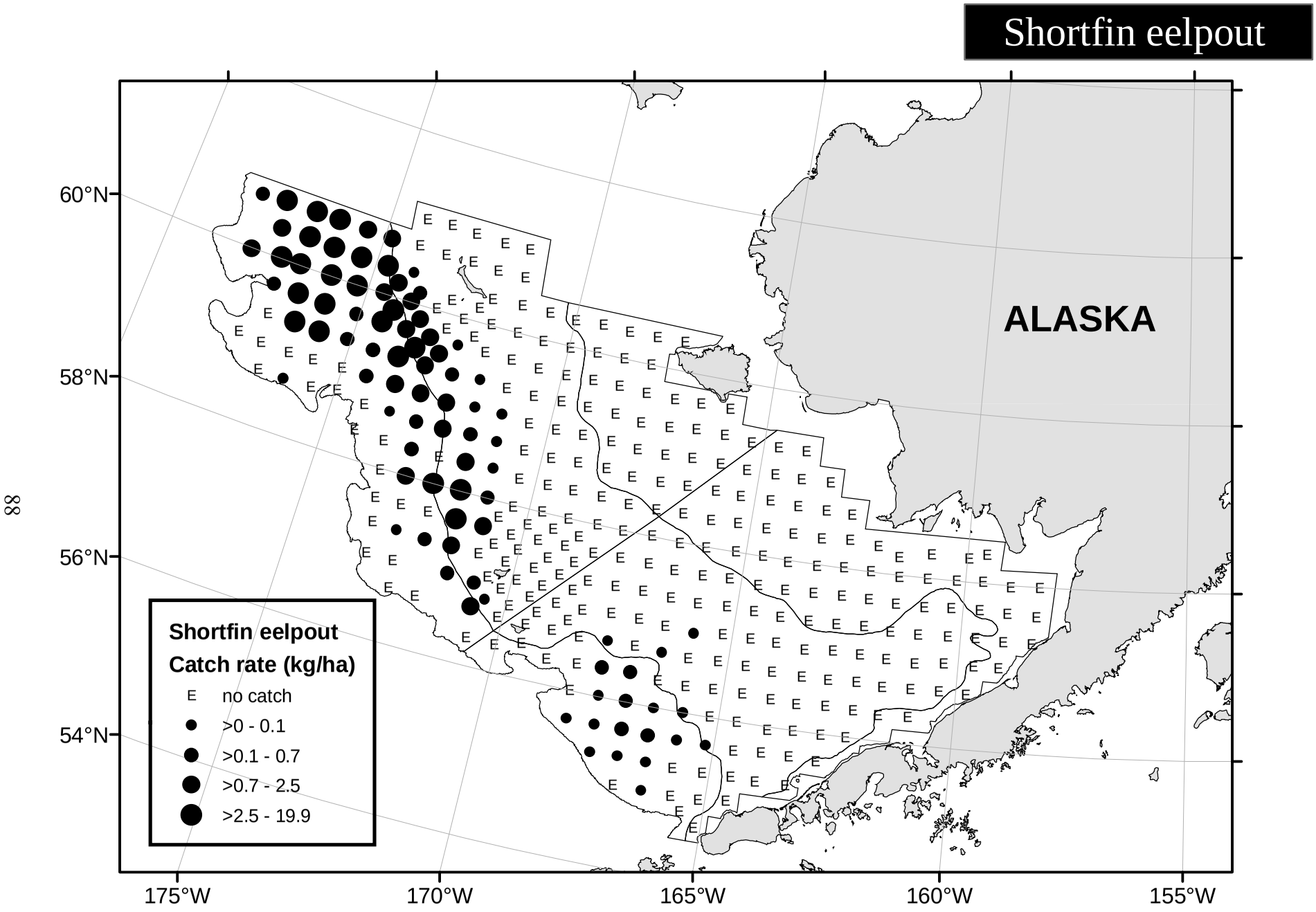


Figure 37.--Distribution and relative abundance in kg/ha of **shortfin eelpout** (*Lycodes brevipes*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 28.--Abundance estimates and mean size of **shortfin eelpout** (*Lycodes brevipes*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.00	0	0.000	0.00	0	0.000	0.000	0.0
2	0.00	0	0.000	0.00	0	0.000	0.000	0.0
3	0.002	18	0.001	0.04	377,331	0.001	0.048	21.5
4	0.35	3,801	0.147	6.06	65,375,418	0.187	0.058	23.0
5	0.09	330	0.013	1.65	6,416,686	0.018	0.051	23.0
6	2.30	21,703	0.840	29.27	276,746,529	0.793	0.078	25.8
All Strata	0.56	25,851	1.000	7.53	348,915,965	1.000	0.074	25.2
95% confidence interval		± 9,448			± 115,574,727			

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

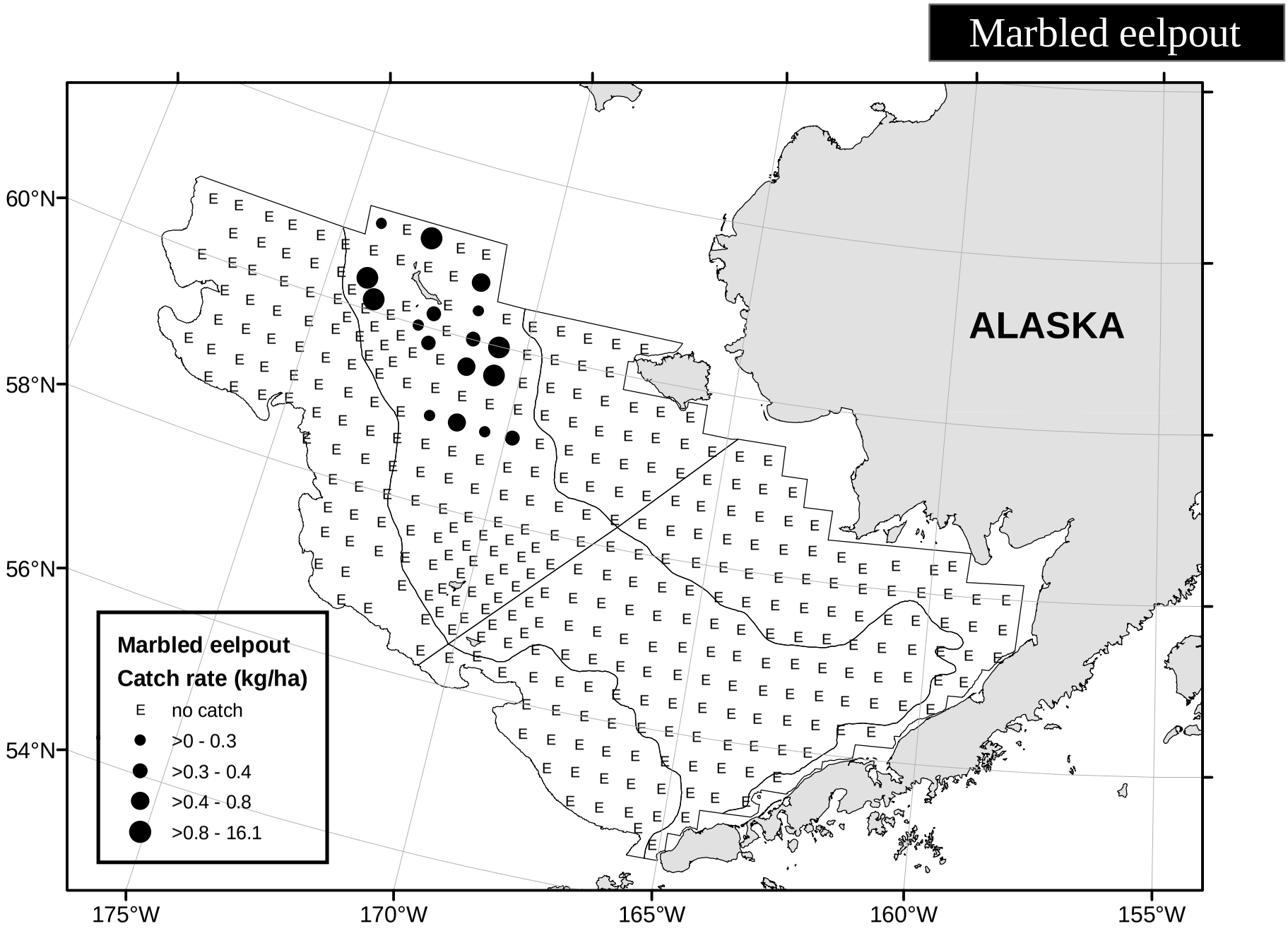


Figure 38.--Distribution and relative abundance in kg/ha of **marbled eelpout** (*Lycodes raridens*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 29.--Abundance estimates and mean size of **marbled eelpout** (*Lycodes raridens*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.00	0	0.000	0.00	0	0.000	0.000	0.0
2	0.00	0	0.000	0.00	0	0.000	0.000	0.0
3	0.00	0	0.000	0.00	0	0.000	0.000	0.0
4	0.38	4,061	1.000	0.26	2,794,477	1.000	0.000	59.0
5	0.00	0	0.000	0.00	0	0.000	0.000	0.0
6	0.00	0	0.000	0.00	0	0.000	0.000	0.0
All Strata	0.09	4,061	1.000	0.06	2,794,477	1.000	1.453	59.0
95% confidence interval		± 4,061			± 2,716,581			

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

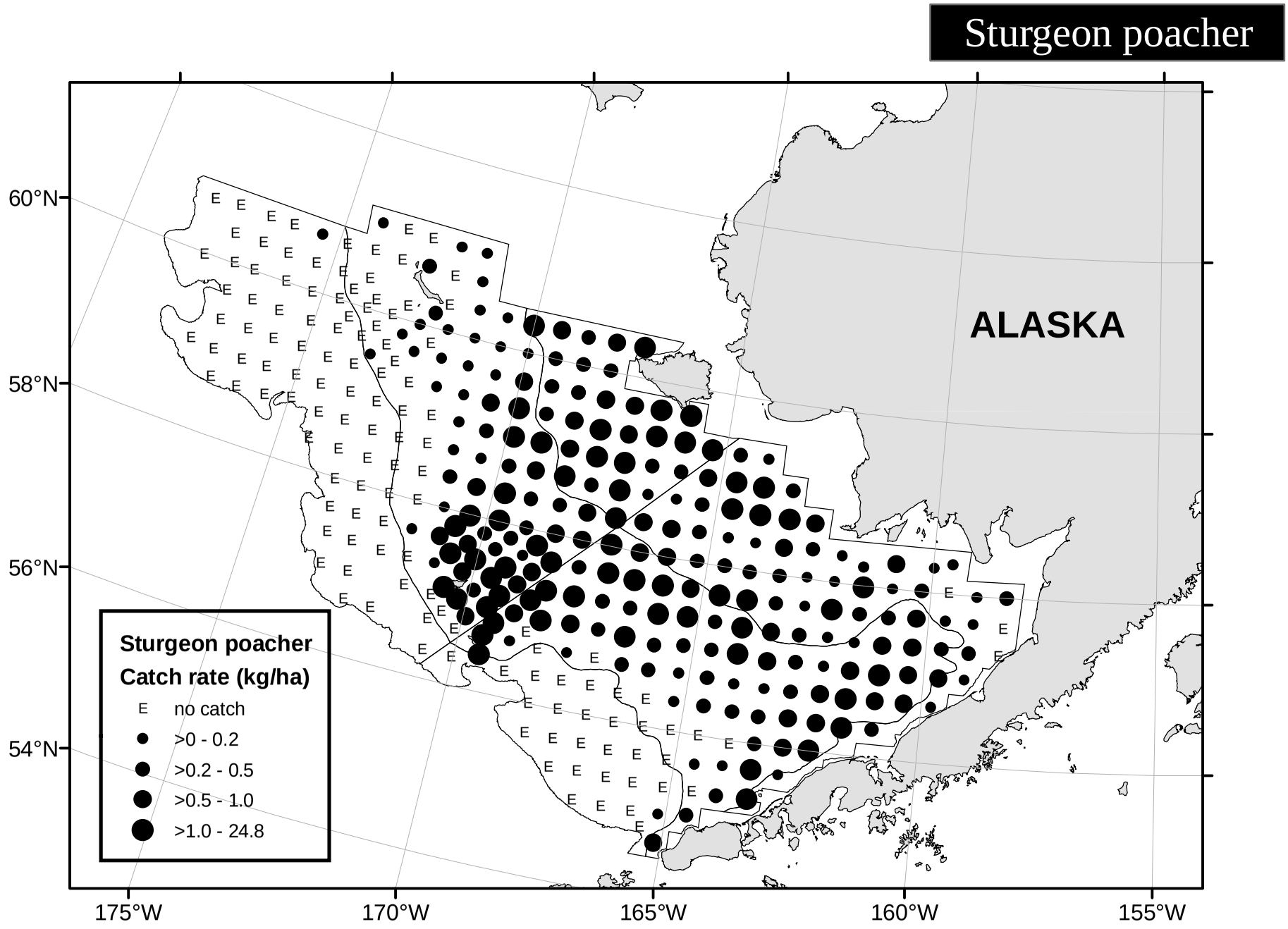


Figure 39.--Distribution and relative abundance in kg/ha of **sturgeon poacher** (*Podothecus acipserinus*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 30.--Abundance estimates and mean size of **sturgeon poacher** (*Podothecus acipenserinus*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.53	4,150	0.138	6.89	53,672,875	0.126	0.077	-
2	2.01	8,252	0.274	28.68	117,661,015	0.276	0.070	-
3	0.85	8,774	0.292	12.09	124,839,306	0.293	0.070	-
4	0.81	8,723	0.290	11.90	128,316,370	0.301	0.068	-
5	0.04	167	0.006	0.41	1,606,381	0.004	0.104	-
6	0.001	6	0.000	0.01	115,277	0.000	0.051	-
All Strata	0.65	30,071	1.000	9.20	426,211,223	1.000	0.071	-
95% confidence interval		± 8,395			± 102,972,404			

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

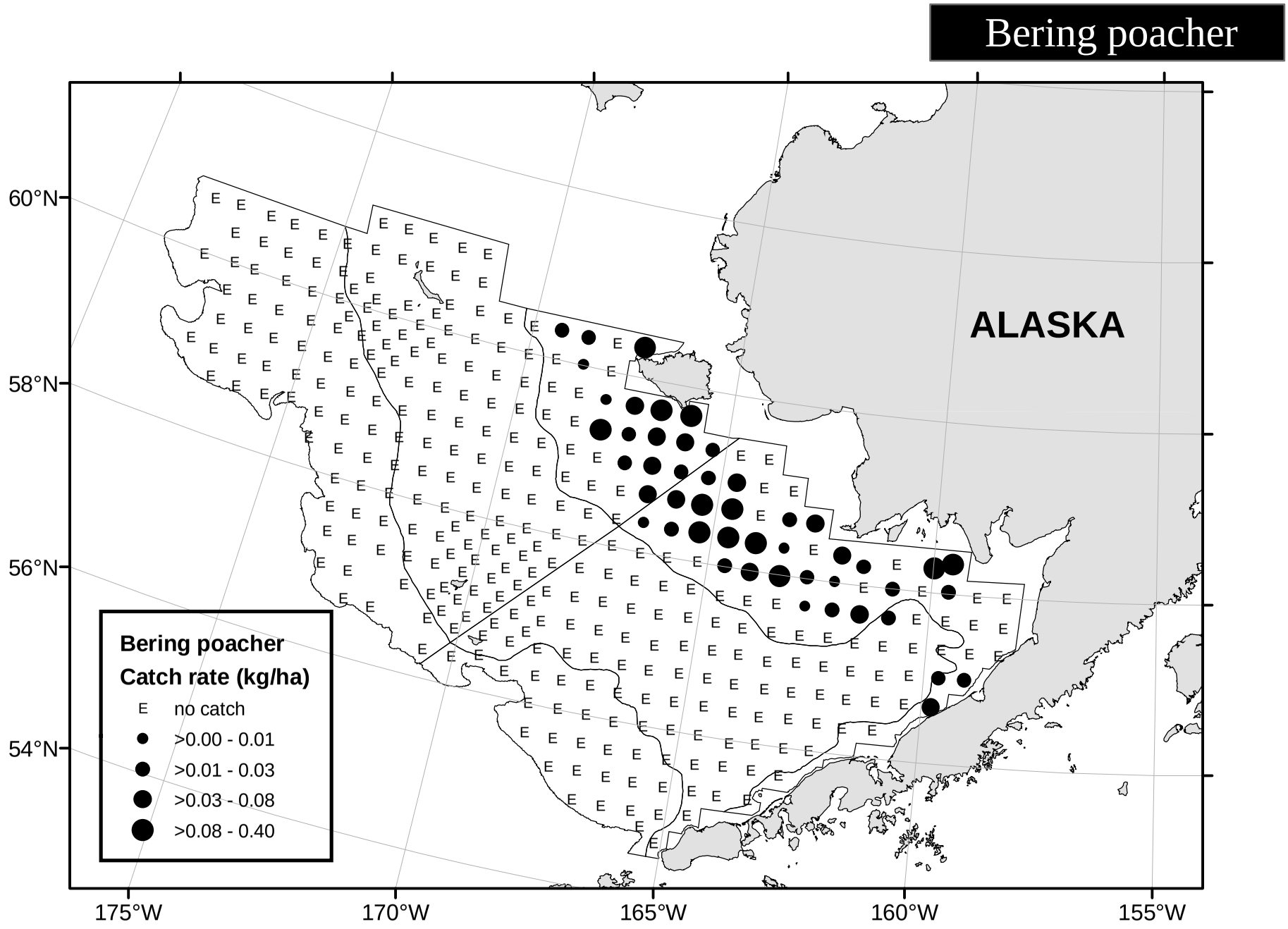


Figure 40.--Distribution and relative abundance in kg/ha of **Bering poacher** (*Ocella dodecaedron*) for the 2005 eastern Bering Sea bottom trawl survey.

Table 31.--Abundance estimates and mean size of **Bering poacher** (*Ocella dodecaedron*) by stratum for the 2005 eastern Bering Sea bottom trawl survey.

	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	0.04	316	0.599	1.42	11,084,358	0.643	0.029	-
2	0.05	209	0.397	1.48	6,079,402	0.353	0.034	-
3	0.00	2	0.004	0.01	61,871	0.004	0.033	-
4	0.00	0	0.000	0.00	0	0.000	0.000	-
5	0.00	0	0.000	0.00	0	0.000	0.000	-
6	0.00	0	0.000	0.00	0	0.000	0.000	-
All Strata	0.01	528	1.000	0.37	17,225,630	1.000	0.031	-
95% confidence interval		± 227		±	7,795,357			

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

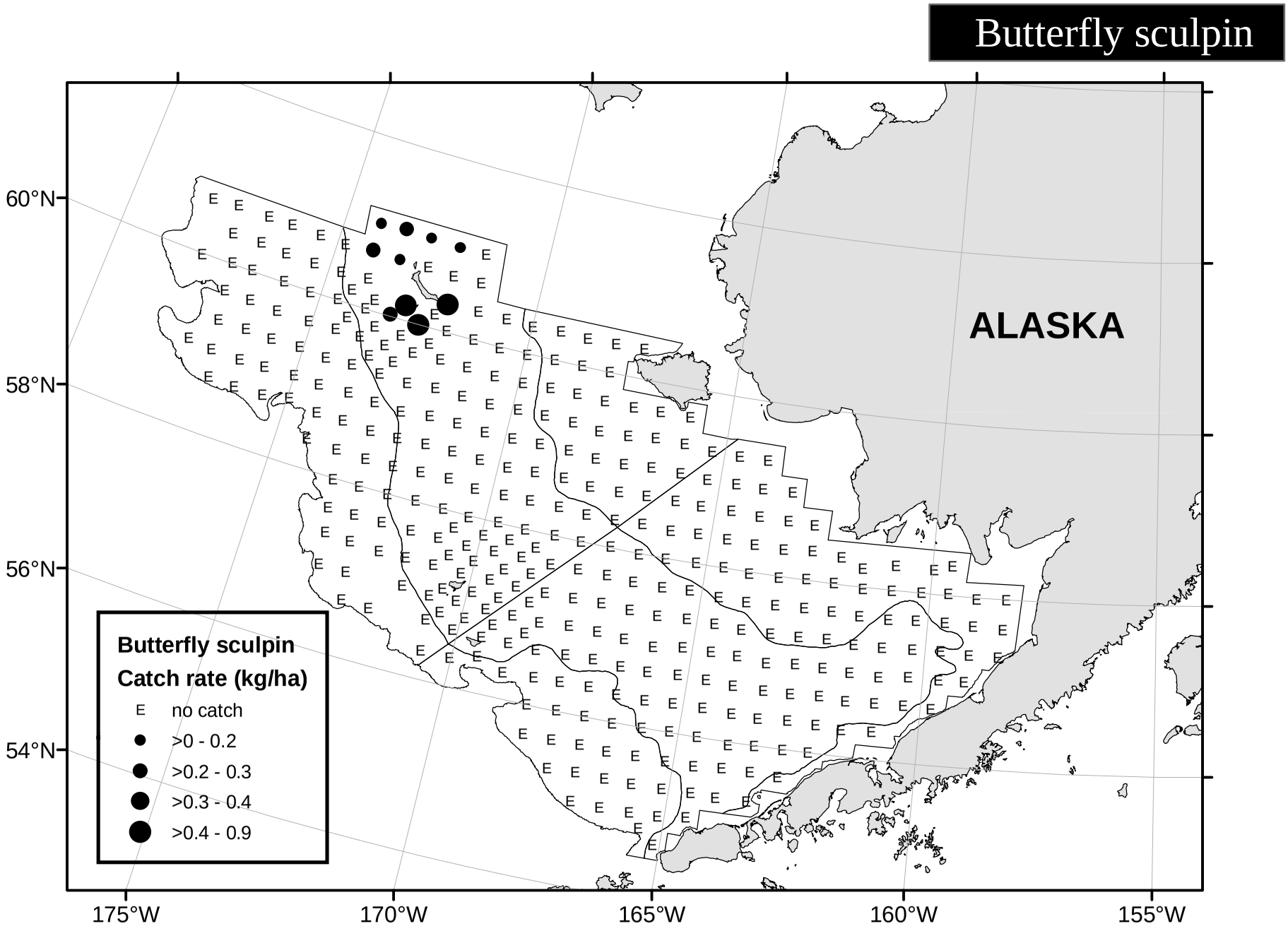


Figure 41.--Distribution and relative abundance in kg/ha of **butterfly sculpin** (*Hemilepidotus papilio*) for the 2005 eastern Bering Sea bottom trawl survey.

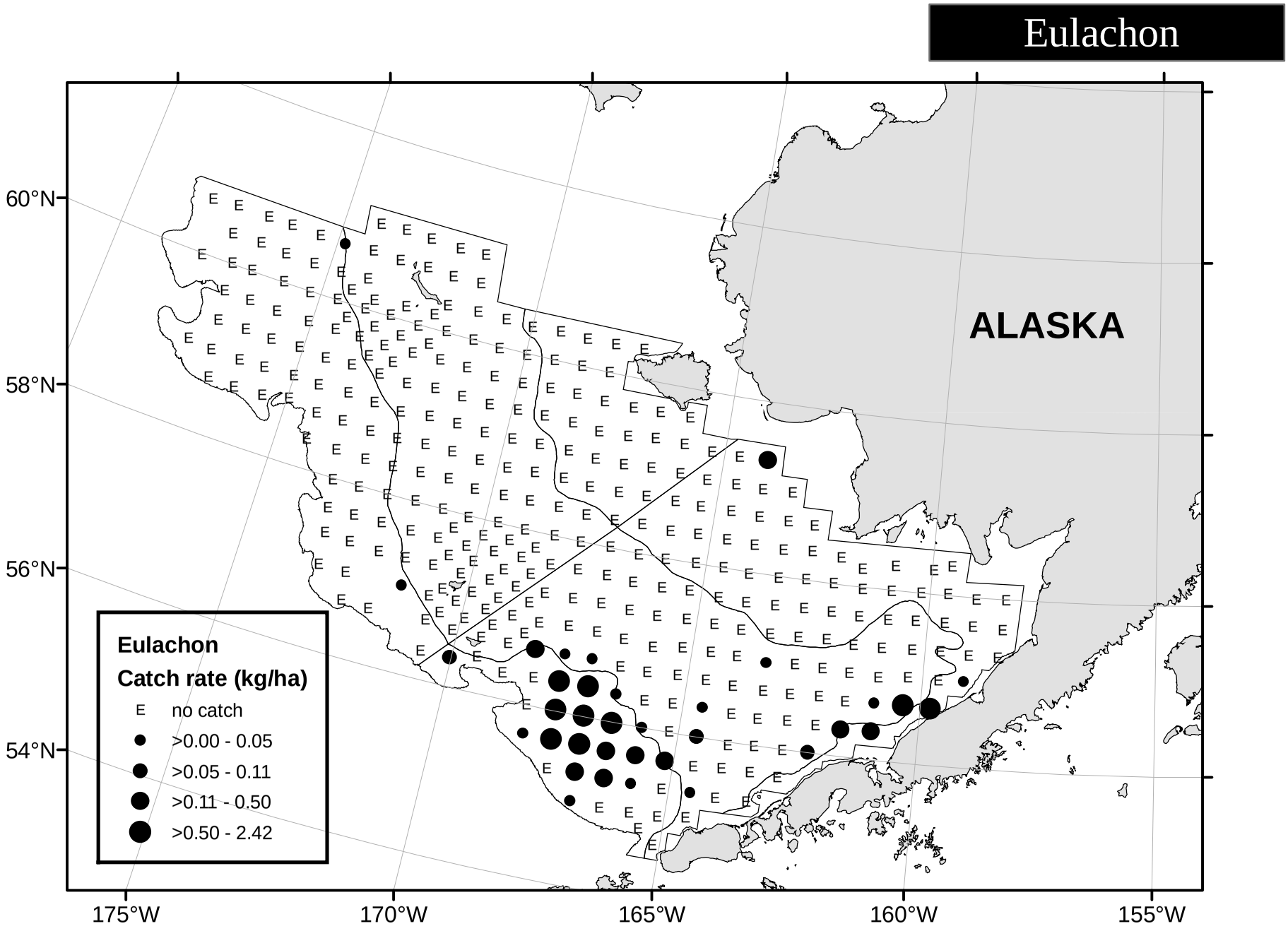


Figure 42.--Distribution and relative abundance in kg/ha of **eulachon** (*Thaleichthys pacificus*) for the 2005 eastern Bering Sea bottom trawl survey.

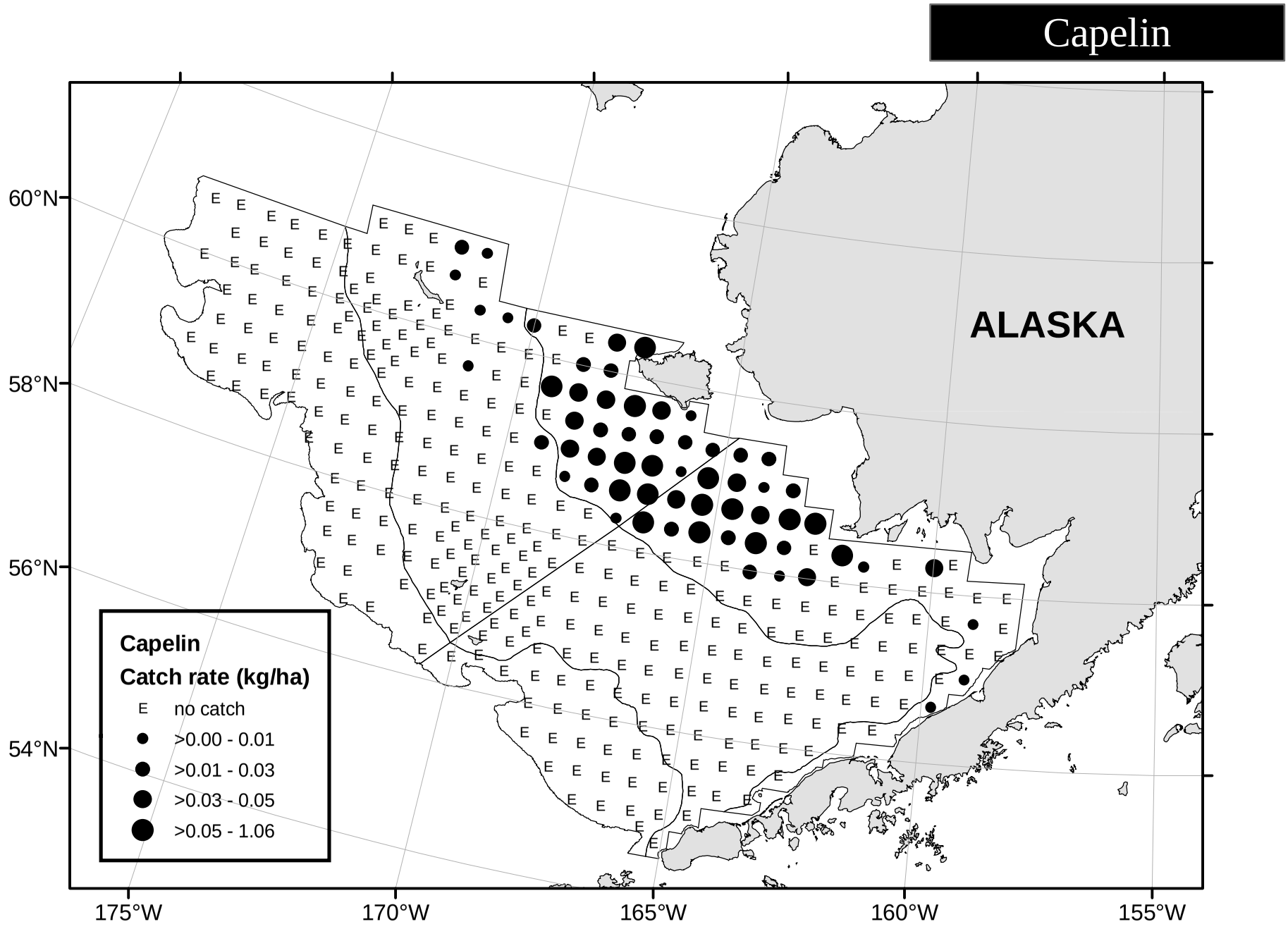


Figure 43.--Distribution and relative abundance in kg/ha of **capelin** (*Mallotus villosus*) for the 2005 eastern Bering Sea bottom trawl survey.

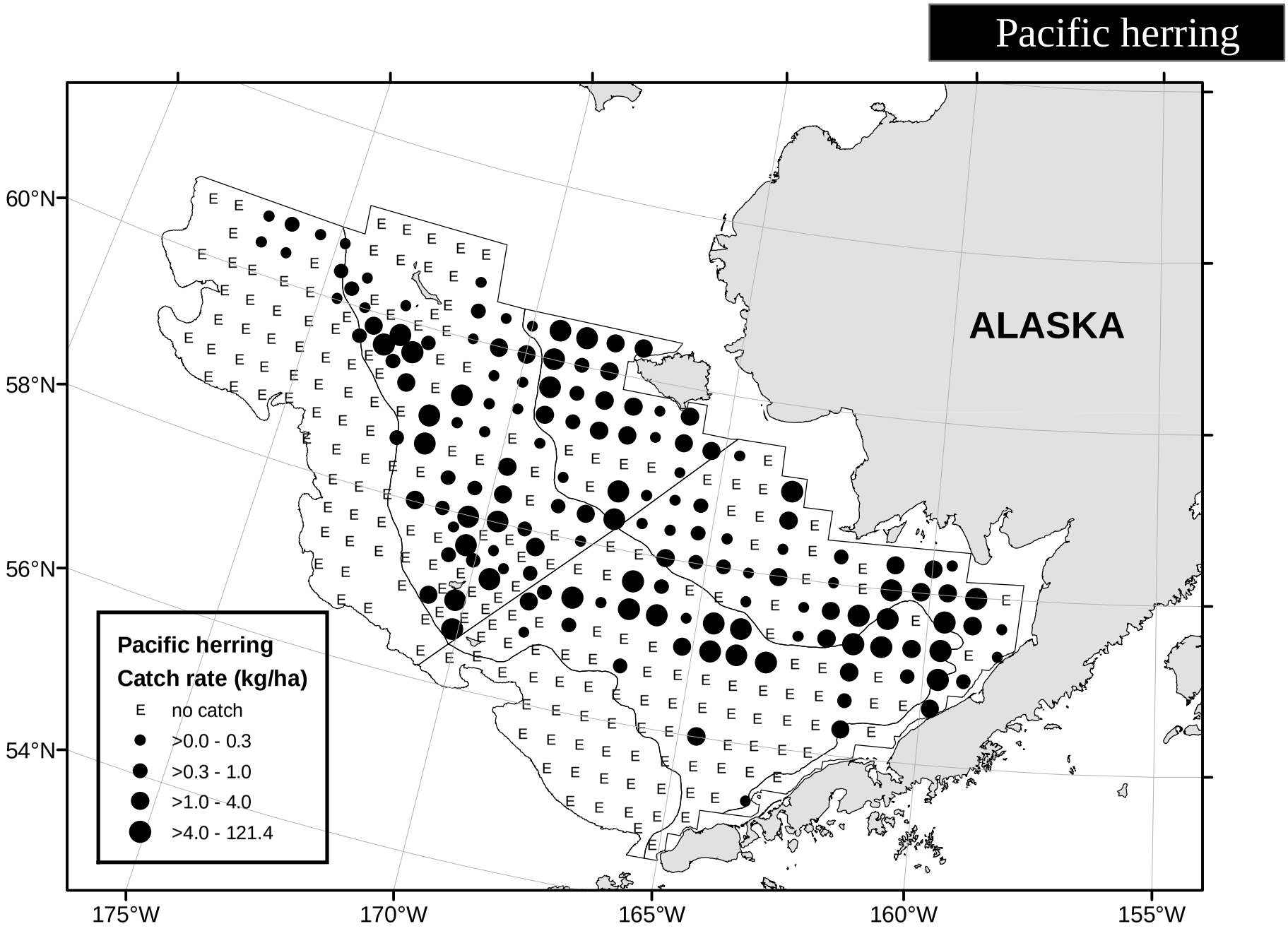


Figure 44.--Distribution and relative abundance in kg/ha of **Pacific herring** (*Clupea pallasi*) for the 2005 eastern Bering Sea bottom trawl survey.

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Appendix A: List of Species Encountered

Appendix A lists all fish and invertebrate species taken during the AFSC's 2005 eastern Bering Sea bottom trawl survey.

List of Tables

Appendix A Table 1.--Fish species encountered during the 2005 eastern Bering Sea bottom trawl survey.

Family	Scientific name	Common name
Squalidae	*Somniosus pacificus*	Pacific sleeper shark
Rajidae	*Raja binoculata*	big skate
	Bathyraja interrupta	Bering skate
	Bathyraja parmifera	Alaska skate
	Bathyraja aleutica	Aleutian skate
	Bathyraja taranetzi	Mud skate
	Bathyraja maculata	Whiteblotched skate
	Bathyraja violacea	Okhotsk skate
Pleuronectidae	*Atheresthes stomias*	arrowtooth flounder
	Atheresthes evermanni	Kamchatka flounder
	Reinhardtius hippoglossoides	Greenland turbot
	Hippoglossus stenolepis	Pacific halibut
	Hippoglossoides elassodon	flathead sole
	Hippoglossoides robustus	Bering flounder
	Microstomus pacificus	Dover sole
	Glyptocephalus zachirus	rex sole
	Limanda aspera	yellowfin sole
	Limanda proboscidea	longhead dab
	Limanda sakhalinensis	Sakhalin sole
	Platichthys stellatus	starry flounder
	Lepidopsetta polyxystra	northern rock sole
	Lepidopsetta bilineata	southern rock sole
	Isopsetta isolepis	butter sole
	Pleuronectes quadrituberculatus	Alaska plaice

Appendix A Table 1.--Continued.

Family	Scientific name	Common name
Agonidae	*Pallasina barbata*	tubenose poacher
	Leptagonus sp.	
	Leptagonus leptorhynchus	longnose poacher
	Leptagonus frenatus	sawback poacher
	Bathyagonus sp.	poacher unidentified
	Bathyagonus alascanus	gray starsnout
	Bathyagonus infraspinatus	spinycheek starsnout
	Bathyagonus pentacanthus	bigeye poacher
	Podothecus acipenserinus	sturgeon poacher
	Podothecus veternus	veteran poacher
	Aspidophoroides bartoni	Aleutian alligatorfish
	Aspidophoroides olriki	Arctic alligatorfish
	Occella dodecaedron	Bering poacher
Ammodytidae	*Ammodytes hexapterus*	Pacific sand lance
Anarhichadidae	*Anarhichas orientalis*	Bering wolffish
Anoplopomatidae	*Anoplopoma fimbria*	sablefish
Bathymasteridae	*Bathymaster signatus*	searcher
Clupeidae	*Clupea pallasi*	Pacific herring
Cottidae	Cottidae	sculpin unident.
	Gymnocanthus sp.	
	Gymnocanthus pistilliger	threaded sculpin
	Gymnocanthus tricuspis	Arctic staghorn sculpin
	Gymnocanthus galeatus	armorhead sculpin
	Gymnocanthus detrisus	purplegray sculpin
	Artediellus pacificus	Pacific hookear sculpin
	Malacocottus zonurus	darkfin sculpin
	Hemilepidotus hemilepidotus	red Irish lord

Appendix A Table 1.--Continued.

Family	Scientific name	Common name
Cottidae (cont.)	*Hemilepidotus jordani*	yellow Irish lord
	Hemilepidotus papilio	butterfly sculpin
	Triglops sp.	
	Triglops forficata	scissortail sculpin
	Triglops scepticus	spectacled sculpin
	Triglops pingeli	ribbed sculpin
	Triglops macellus	roughspine sculpin
	Myoxocephalus verrucosus	warty sculpin
	Myoxocephalus polyacanthocephalus	great sculpin
	Myoxocephalus jaok	plain sculpin
	Leptocottus armatus	Pacific staghorn sculpin
	Dasycottus setiger	spinyhead sculpin
	Nautichthys pribilovius	eyeshade sculpin
	Hemitripterus bolini	bigmouth sculpin
	Icelus spiniger	thorny sculpin
	Icelus spatula	spatulate sculpin
	Icelus euryops	wide-eye sculpin
Trichodontidae	*Trichodon trichodon*	Pacific sandfish
Gadidae	*Gadus macrocephalus*	Pacific cod
	Boreogadus saida	Arctic cod
	Eleginus gracilis	saffron cod
	Theragra chalcogramma	walleye pollock
Hexagrammidae	*Pleurogrammus monopterygius*	Atka mackerel
	Hexagrammos stelleri	whitespotted greenling
	Hexagrammos decagrammus	kelp greenling
Cyclopteridae	*Aptocyclus ventricosus*	smooth lumpsucker
	Liparis sp.	

Appendix A Table 1.--Continued.

Family	Scientific name	Common name
Cyclopteridae (cont.)	*Liparis gibbus*	variegated snailfish
	Crystallichthys cyclospilus	blotched snailfish
	Careproctus gilberti	smalldisk snailfish
	Careproctus rastrinus	salmon snailfish
Osmeridae	*Thaleichthys pacificus*	eulachon
	Mallotus villosus	capelin
Salmonidae	*Oncorhynchus tshawytscha*	chinook salmon
	Oncorhynchus gorbuscha	pink salmon
	Oncorhynchus keta	chum salmon
Stichaeidae	*Lumpenus* sp.	
	Eumesogrammus praecisus	fourline snakeblenny
	Lumpenus maculatus	daubed shanny
	Lumpenus medius	stout eelblenny
	Lumpenus fabricii	slender eelblenny
	Lumpenella longirostris	longsnout prickleback
	Poroclinus rothrocki	whitebarred prickleback
Zoarcidae	*Lycodes* sp.	
	Lycodes raridens	marbled eelpout
	Lycodes palearis	wattled eelpout
	Lycodes polaris	Canadian eelpout
	Lycodes brevipes	shortfin eelpout
Scorpaenidae	*Sebastes alutus*	Pacific ocean perch
	Sebastes polyspinis	dusky rockfish
	Sebastes polyspinis	northern rockfish

Appendix A Table 2.-- Invertebrate species encountered during the 2005 eastern Bering Sea bottom trawl survey.

Phylum	Scientific name	Common name
Cnidaria	Scyphozoa	jellyfish unident.
	Chrysaora sp.	chrysaora jellyfish
	Chrysaora melanaster	
	Aequorea sp.	
	Aurelia labiata	
	Gersemia sp.	sea raspberry
	Gersemia rubiformis	
	Virgularidae	sea whip unident.
	Actiniaria	sea anemone unident.
	Metridium sp.	
	Metridium senile	clonal plumose anemone
	Metridium farcimen	gigantic anemone
	Stomphia sp.	
	Stomphia coccinea	swimming anemone
	Urticina sp.	
	Urticina crassicornis	mottled anemone
	Urticina lofotensis	
	Cribrinopsis fernaldi	chevron-tentacled anemone
	Liponema brevicornis	tentacle-shedding anemone
	Amphilaphis sp.	
	Beroe sp.	
Annelida	Polychaeta	polychaete worm unident.
	Aphroditidae	sea mouse unident.
	Aphrodita sp.	
	Polynoidae	scale worm unident.
	Eunoe nodosa	giant scale worm
	Eunoe depressa	depressed scale worm
Arthropoda	*Notostombdella cyclostomum*	striped sea leech
	Amphipoda	amphipod unident.
	Gammaridae	gammarid amphipod unident.
	Isopoda	isopod unident.
	Cirripedia	
	Thoracica	barnacle unident.
	Balanus sp.	
	Balanus evermanni	giant barnacle
	Balanus hesperius	crab barnacle
	Balanus rostratus	beaked barnacle

Appendix A Table 2.--Continued.

Phylum	Scientific name	Common name
	Pandalidae	pandalid shrimp unident.
	Pandalus sp.	
	Pandalus borealis	northern shrimp
	Pandalus goniurus	humpy shrimp
	Hippolytidae	hippolytid shrimp unident.
	Eualus sp.	
	Eualus fabricii	Arctic eualid
	Eualus gaimardii	
	Lebbeus groenlandicus	spiny lebbeid
	Crangon sp.	
	Crangon communis	twospine crangon
	Crangon dalli	ridged crangon
	Argis sp.	
	Argis dentata	Arctic argid
	Argis lar	kuro argid
	Cancer oregonensis	Oregon rock crab
	Oregonia gracilis	graceful decorator crab
	Chionoecetes bairdi	Tanner crab
	Hyas coarctatus	circumboreal toad crab
	Hyas lyratus	Pacific lyre crab
	Chionoecetes opilio	snow crab
	Chionoecetes hybrid	hybrid Tanner crab
	Telmessus cheiragonus	helmet crab
	Pagurus sp.	
	Pagurus brandti	sponge hermit
	Pagurus aleuticus	Aleutian hermit
	Labidochirus splendescens	splendid hermit
	Pagurus confragosus	knobbyhand hermit
	Pagurus trigonocheirus	fuzzy hermit crab
	Pagurus ochotensis	Alaskan hermit
	Pagurus rathbuni	longfinger hermit
	Elassochirus tenuimanus	widehand hermit crab
	Pagurus capillatus	hairy hermit crab
	Elassochirus cavimanus	purple hermit
	Lithodes aequispina	golden king crab
	Hapalogaster grebnitzkii	
	Paralithodes camtschaticus	red king crab
	Paralithodes platypus	blue king crab

Appendix A Table 2.--Continued.

Phylum	Scientific name	Common name
	Placetron wosnessenskii	scaled crab
	Erimacrus isenbeckii	horsehair crab
Mollusca	Nudibranchia unident.	nudibranch unident.
	Dendronotus sp.	
	Tritonia sp.	
	Tritonia diomedea	rosy tritonia
	Chlamylla sp.	
	Gastropod unident.	snail unident.
	Natica sp.	
	Natica clausa	
	Natica russa	rusty moonsnail
	Euspira sp.	
	Euspira pallidus	pale moonsnail
	Crepidula grandis	great slippersnail
	Colus sp.	
	Colus herendeenii	thin-ribbed whelk
	Colus spitzbergensis	thick-ribbed whelk
	Colus halli	shrew whelk
	Volutopsius sp.	
	Pyrulofusus deformis	warped whelk
	Pyrulofusus harpa	left-hand whelk
	Volutopsius fragilis	fragile whelk
	Volutopsius filosus	threaded whelk
	Pyrulofusus melonis	
	Volutopsius stefanssoni	shouldered whelk
	Volutopsius middendorffii	tulip whelk
	Beringius sp.	
	Beringius beringii	
	Neptunea sp.	
	Neptunea pribiloffensis	Pribilof whelk
	Neptunea borealis	
	Neptunea lyrata	lyre whelk
	Neptunea ventricosa	fat whelk
	Neptunea heros	
	Neptunea magna	helmet whelk
	Plicifusus sp.	
	Plicifusus kroyeri	
	Aforia sp.	

Appendix A Table 2.--Continued.

Phylum	Scientific name	Common name
	Aforia circinata	keeled aforia
	Trichotropidae	
	Boreotrophon coronatus	
	Boreotrophon sp.	
	Fusitriton oregonensis	Oregon triton
	Buccinum sp.	
	Buccinum angulosum	angular whelk
	Buccinum oedematum	
	Buccinum plectrum	sinuous whelk
	Buccinum scalariforme	ladder whelk
	Buccinum polare	polar whelk
	Arctomelon stearnsii	Alaska volute
	Bivalvia unident.	bivalve unident.
	Mytilidae	mussel unident.
	Mytilus sp.	
	Mytilus edulis	blue mussel
	Chlamys rubida	reddish scallop
	Patinopecten caurinus	weathervane scallop
	Hiatella sp.	
	Hiatella arctica	Arctic hiatella
	Yoldia sp.	
	Yoldia seminuda	crisscrossed yoldia
	Yoldia thraciaeformis	broad yoldia
	Nuculana sp.	
	Nuculana fossa	trenched nutclam
	Musculus discors	discordant mussel
	Cyclocardia sp.	
	Clinocardium sp.	
	Clinocardium ciliatum	hairy cockle
	Protothaca staminea	Pacific littleneck
	Mactromeris polynyma	Arctic surfclam
	Tellina sp.	
	Tellina lutea	Alaska great-tellin
	Macoma sp.	
	Siliqua sp.	
	Siliqua alta	Alaska razor
	Serripes sp.	
	Serripes groenlandicus	Greenland cockle

Appendix A Table 2.--Continued.

Phylum	Scientific name	Common name
	Serripes laperousii	broad cockle
	Pododesmus macroschisma	Alaska falsejingle
	Octopodidae	octopus unident.
	Octopus sp.	
	Benthoctopus leioderma	smoothskin octopus
	Octopus dofleini	giant octopus
	Teuthoidea	squid unident.
	Rossia pacifica	eastern Pacific bobtail
Echinodermata	*Evasterias troschelii*	mottled sea star
	Evasterias echinosoma	giant sea star
	Lethasterias nanimensis	blackspined sea star
	Pedicellaster magister	majestic sea star
	Henricia sp.	
	Henricia tumida	tumid sea star
	Leptasterias polaris	
	Leptasterias arctica	
	Leptasterias sp.	
	Gephyreaster swifti	Swift's sea star
	Pseudarchaster parelii	scarlet sea star
	Ceramaster sp.	
	Ceramaster japonicus	red bat star
	Solaster sp.	
	Solaster endeca	northern sun sea star
	Crossaster sp.	
	Crossaster papposus	rose sea star
	Pteraster sp.	
	Pteraster tesselatus	
	Pteraster obscurus	obscure sea star
	Diplopteraster multipes	pincushion sea star
	Asterias amurensis	purple-orange sea star
	Ctenodiscus crispatus	common mud star
	Leptychaster sp.	
	Dipsacaster sp.	
	Dipsacaster borealis	northern sea star
	Strongylocentrotus droebachiensis	green sea urchin
	Strongylocentrotus sp.	
	Strongylocentrotus pallidus	white sea urchin
	Allocentrotus fragilis	orange-pink sea urchin

Appendix A Table 2.--Continued.

Phylum	Scientific name	Common name
	Echinoidea	sand dollar unident.
	Echinarachnius parma	parma sand dollar
	Ophiuroid unident.	brittlestarfish unident.
	Gorgonocephalus eucnemis	basketstar
	Ophiura sarsi	notched brittlestar
	Ophiopholis aculeata	ubiquitous brittle star
	Holothuroidea unident.	sea cucumber unident.
	Molpadia sp.	
	Cucumaria sp.	
	Cucumaria fallax	sea football
	Psolus sp.	
Porifera	Porifera	sponge unident.
	Suberites sp.	
	Mycale loveni	tree sponge
	stone sponge	
Sipuncula	Sipuncula	peanut worm unid.
Echiura	Echiura	echiuroid worm unident.
Bryozoa	Bryozoa unident.	bryozoan unident.
	Flustra serrulata	leafy bryozoan
	Rhamphostomella costata	ribbed bryozoan
Chordata	Ascidian unident.	tunicate unident.
	Thaliacea unident.	salps unident.
	Styela rustica	sea potato
	Boltenia sp.	
	Boltenia ovifera	sea onion
	Halocynthia sp.	sea peach unident.
	Halocynthia aurantium	sea peach
	Aplidium sp.	sea glob
	Molgula grifithsii	sea grape

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

Appendix B contains station data by vessel for the 402 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.
5. Hauls marked with an "*" were used for the Fishing Powers Correction (FPC) analysis.

List of Tables

Appendix B Table 1.--Haul data for stations sampled by the FV *Arcturus* during the 2005 eastern Bering Sea bottom trawl survey.

FPC	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	6/3/2005	56.98956	-159.1299		06	0.5	3.002	10				
	2	6/3/2005	56.99882	-159.1153	35	08	0.1	0.428	10	6.4	5.8	15.416	M
*	3	6/3/2005	57.01122	-159.1176	37	09	0.4	1.929	10	6.4	5.8	14.919	F
*	4	6/3/2005	57.32173	-158.4225	33	12	0.5	2.908	10	7.4	6.0	14.919	F
*	5	6/3/2005	57.6445	-158.3656	35	15	0.5	2.825	10	6.1	5.4	14.919	F
*	6	6/3/2005	57.99622	-158.3165	33	18	0.5	2.936	10	6.7	6.1	14.919	F
*	7	6/4/2005	58.0192	-159.6097	43	06	0.4	2.122	10	6.5	5.3	15.943	F
*	8	6/4/2005	57.67842	-159.62939	51	09	0.5	2.864	10	5.4	4.9	15.943	F
*	9	6/4/2005	57.34671	-159.6667	57	11	0.5	2.778	10	6.1	4.8	14.819	M
	10	6/4/2005	57.00743	-159.7153	57	14	0.5	2.861	10	7.1	5.0	15.943	F
*	11	6/4/2005	57.00697	-159.6743	55	16	0.5	2.818	10	7.3	5.1	15.943	F
*	12	6/5/2005	56.66058	-159.7842	39	06	0.5	2.848	10	7.4	6.0	14.919	F
*	13	6/5/2005	56.67272	-160.36279	61	09	0.5	2.852	31	6.9	4.3	16.556	F
*	14	6/5/2005	56.33094	-160.9852	54	12	0.5	2.877	10	6.6	5.0	15.943	F
*	15	6/5/2005	56.66389	-160.9863	67	15	0.5	2.87	31	7.8	4.1	16.556	F
*	16	6/5/2005	56.97869	-160.9567	67	18	0.5	2.897	31	7.0	4.2	15.893	M
*	17	6/6/2005	57.65564	-160.8848	59	06	0.5	2.801	31	5.5	4.5	15.81	M
*	18	6/6/2005	57.99345	-160.85741	47	09	0.5	2.829	10	5.5	4.8	15.742	M
*	19	6/6/2005	58.28856	-160.82249	33	12	0.3	1.555	10	6.8	6.6	15.055	M
*	20	6/6/2005	58.2184	-161.54849	40	15	0.3	1.493	10	5.2	5.3	15.415	M
	21	6/6/2005	58.33372	-162.07539	48	17	0.5	2.984	10	6.6	6.0	16.051	M
*	22	6/7/2005	58.00651	-162.14639	40	06	0.5	2.845	10	5.5	5.4	15.35	M
*	23	6/7/2005	57.67725	-162.1331	49	09	0.5	2.869	10	5.3	5.1	15.943	F
*	24	6/7/2005	57.34634	-162.15379	53	12	0.5	2.84	10	6.3	4.8	15.598	M
*	25	6/7/2005	57.00545	-162.1664	62	14	0.5	2.946	31	7.3	4.1	15.679	M
*	26	6/7/2005	56.67673	-162.1665	70	17	0.3	1.437	31	7.8	4.1	16.317	M
*	27	6/8/2005	56.33442	-162.17551	79	06	0.3	1.964	31	7.4	4.0	15.776	M
*	28	6/8/2005	56.00365	-162.25349	74	09	0.5	2.792	31	6.3	4.5	16.556	F
*	29	6/8/2005	55.67566	-162.8278	53	12	0.4	2.504	10	7.3	4.6	14.46	M
	30	6/9/2005	55.98493	-163.4008	89	06	0.5	2.783	31	7.8	4.0	15.694	M

Appendix B Table 1.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	31	6/9/2005	55.99834	-163.39751	90	08	0.5	2.786	31	7.9	4.0	16.353	M
*	32	6/9/2005	56.3177	-163.41161	86	10	0.5	2.807	31	8.5	3.7	16.13	M
*	33	6/9/2005	56.65833	-162.7982	73	14	0.5	2.796	31	8.8	3.9	16.556	F
	34	6/9/2005	56.67787	-163.37891	75	16	0.2	1.026	31	7.8	3.6	15.763	M
*	35	6/9/2005	56.65455	-163.3651	76	18	0.5	2.843	31	8.4	3.6	16.072	M
*	36	6/10/2005	56.9799	-163.3835	68	06	0.5	2.816	31	8.1	3.4	15.664	M
*	37	6/10/2005	57.32322	-163.3839	55	09	0.5	2.771	10	7.7	4.4	15.481	M
*	38	6/10/2005	57.66005	-163.3687	49	11	0.5	2.936	10	7.0	4.9	14.757	M
*	39	6/10/2005	57.98552	-163.3721	46	13	0.5	2.904	10	8.1	5.1	15.943	F
*	40	6/10/2005	58.31978	-163.36591	35	16	0.5	2.799	10	8.5		14.919	F
*	41	6/11/2005	58.65768	-163.3326	27	06	0.5	2.928	10	5.1		15.378	M
*	42	6/11/2005	58.99433	-163.3446	23	09	0.5	3.074	10	7.0	7.0	14.135	M
*	43	6/11/2005	58.98523	-164.0094	30	11	0.4	2.189	10	5.5	4.7	14.591	M
*	44	6/11/2005	59.31983	-164.00101	24	14	0.5	2.845	10	9.4	7.8	14.137	M
*	45	6/11/2005	59.31514	-164.646	24	17	0.5	3.038	10	8.1	6.8	15.282	M
*	46	6/12/2005	59.67236	-165.936	23	06	0.5	3.009	20	6.0	5.9	14.148	M
*	47	6/12/2005	59.3516	-165.95441	25	09	0.5	2.858	20	5.9	5.8	14.323	M
*	48	6/12/2005	59.00848	-165.9308	32	12	0.5	2.853	20	4.8	4.4	14.919	F
*	49	6/12/2005	58.67794	-165.9324	39	14	0.5	2.801	10	4.1	3.7	15.557	M
*	50	6/12/2005	58.32442	-165.9173	46	16	0.5	2.903	10	3.5	3.0	15.464	M
*	51	6/13/2005	58.67807	-164.6503	38	06	0.5	2.812	10	4.4	4.1	14.203	M
*	52	6/13/2005	58.34198	-164.63499	40	08	0.5	2.898	10	5.1		15.943	F
*	53	6/13/2005	58.0118	-164.6189	42	11	0.5	2.867	10	5.8		15.164	M
	54	6/13/2005	57.68036	-164.6174	49	13	0.5	2.853	10	6.0		16.548	M
*	55	6/13/2005	57.65952	-164.6152	51	15	0.5	2.763	10	6.1		15.528	M
*	56	6/13/2005	57.34159	-164.61971	62	17	0.3	1.874	31	7.6		16.029	M
*	57	6/14/2005	57.00966	-164.0269	66	09	0.5	2.736	31	7.8		15.412	M
*	58	6/14/2005	57.01094	-164.6013	68	11	0.5	2.736	31	7.7		16.203	M
*	59	6/14/2005	56.67731	-164.59891	71	14	0.5	2.845	31	8.1		16.927	M
*	60	6/14/2005	56.34903	-164.5869	84	16	0.5	2.745	31	8.5		17.247	M

Appendix B Table 1.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	61	6/15/2005	55.65617	-164.58141	95	06	0.5	2.781	31	7.3		17.441	M
*	62	6/15/2005	55.34405	-164.5515	99	09	0.5	2.781	31	7.6		17.308	M
*	63	6/15/2005	55.05336	-164.5737	62	12	0.5	2.775	31	7.3		15.821	M
*	64	6/15/2005	55.00986	-165.1539	110	15	0.5	2.775	50	6.5		17.401	M
*	65	6/15/2005	54.67282	-165.1467	81	18	0.5	2.916	31	6.5		16.719	M
*	66	6/18/2005	54.8338	-165.495	154	14	0.5	2.921	50	6.8	4.2	18.131	M
*	67	6/18/2005	54.99784	-165.7307	131	18	0.5	3.007	50	6.7	4.4	18.379	M
*	68	6/19/2005	55.6657	-165.79939	117	07	0.5	2.734	50	7.4	4.5	18.864	M
*	69	6/19/2005	56.00261	-165.7684	106	10	0.5	2.759	31	7.5	4.2	18.262	M
*	70	6/19/2005	56.32483	-165.82581	91	13	0.5	2.961	31	7.5	4.0	17.7	M
*	71	6/19/2005	56.65513	-165.8663	79	17	0.5	2.989	31	7.8	3.7	17.185	M
*	72	6/20/2005	56.95627	-165.83611	74	06	0.5	2.903	31	7.6	3.4	17.309	M
*	73	6/20/2005	57.32311	-165.8694	69	09	0.5	2.846	31	6.6	3.1	16.511	M
*	74	6/20/2005	57.65989	-165.8828	64	12	0.5	2.943	31	6.2	3.1	16.648	M
*	75	6/20/2005	57.99292	-165.9036	57	15	0.5	2.863	10	5.8	3.1	15.831	M
*	76	6/21/2005	58.32682	-167.1844	53	06	0.5	2.913	20	5.5	3.0	16.008	M
*	77	6/21/2005	58.65663	-167.2196	45	09	0.5	2.941	20	4.5	3.2	16.059	M
*	78	6/21/2005	58.98602	-167.2372	41	12	0.5	2.865	20	5.6	3.7	15.337	M
*	79	6/21/2005	59.32316	-167.2715	33	14	0.5	2.996	20	5.5	4.6	14.456	M
*	80	6/21/2005	59.66069	-167.26781	33	17	0.5	2.922	20	5.5	5.0	14.021	M
*	81	6/22/2005	60.34981	-167.3	33	06	0.2	0.994	20	5.2	4.9	15.8	M
*	82	6/22/2005	60.34025	-167.979	33	08	0.5	2.893	20	5.6	5.2	15.793	M
*	83	6/22/2005	60.0066	-167.98711	27	11	0.5	2.975	20	5.1	4.3	15.238	M
*	84	6/22/2005	60.00901	-168.653	39	13	0.5	2.85	20	4.5	3.0	18.388	M
*	85	6/22/2005	59.67771	-168.6201	41	16	0.5	2.825	20	6.6	3.2	15.678	M
*	86	6/23/2005	59.3417	-168.56731	44	06	0.5	2.79	20	7.9	2.4	14.919	F
*	87	6/23/2005	59.01276	-168.5233	48	09	0.5	2.922	20	5.9	3.0	15.983	M
*	88	6/23/2005	58.68734	-168.50259	55	11	0.5	2.856	20	5.5	2.8	15.554	M
*	89	6/23/2005	58.34122	-168.4731	66	14	0.5	2.857	41	6.6	2.1	16.546	M
*	90	6/23/2005	58.00779	-168.4174	70	17	0.5	2.833	42	7.1	2.2	15.938	M

Appendix B Table 1.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	91	6/24/2005	58.01332	-167.1683	64	06	0.5	2.794	31	6.9	2.8	16.295	M
*	92	6/24/2005	57.67958	-167.1143	69	09	0.5	2.801	31	7.3	2.6	16.552	M
*	93	6/24/2005	57.34341	-167.1161	71	12	0.5	2.811	31	8.3	3.0	16.344	M
*	94	6/24/2005	57.01047	-167.08369	74	15	0.5	2.822	31	8.6	3.6	16.376	M
*	95	6/24/2005	56.68091	-167.0654	96	17	0.5	2.909	31	8.8	4.0	17.681	M
*	96	6/25/2005	56.35736	-167.035	114	06	0.5	2.816	50	8.6	4.2	17.468	F
*	97	6/25/2005	56.00741	-167.00909	136	09	0.5	2.756	50	8.6	4.3	17.635	F
*	98	6/25/2005	55.67496	-166.9823	136	11	0.5	2.661	50	8.6	4.3	20.052	M
*	99	6/25/2005	55.34333	-166.9675	139	14	0.5	2.721	50	9.0	4.2	20.047	M
*	100	6/25/2005	55.32698	-167.541	148	16	0.5	2.948	50	8.8	4.3	17.408	M
*	101	6/26/2005	56.33577	-168.20711	152	07	0.5	2.899	50	9.0	4.3	16.294	M
*	102	6/26/2005	56.65515	-168.2952	108	10	0.5	2.809	50	9.0	3.8	16.926	M
*	103	6/26/2005	56.81846	-168.6069	98	13	0.5	2.888	32	8.9	3.7	16.505	M
*	104	6/26/2005	56.9734	-168.33881	83	15	0.4	2.119	32	9.1	3.7	16.185	M
*	105	6/27/2005	57.66679	-168.38	71	06	0.3	1.952	42	8.9	3.3	16.277	M
*	106	6/27/2005	57.50747	-168.7496	72	09	0.5	2.795	42	9.0	3.4	16.041	M
*	107	6/29/2005	56.65833	-169.4874	80	07	0.5	2.842	32	9.0	5.7	15.48	M
*	108	6/29/2005	56.82978	-169.92889	73	09	0.3	1.816	42	8.8	5.0	16.556	F
*	109	6/29/2005	56.9877	-169.535	62	12	0.5	2.931	42	9.0	5.4	15.597	M
*	110	6/29/2005	57.14872	-169.89481	51	14	0.5	2.735	42	6.9	6.2	14.72	M
*	111	6/29/2005	57.33377	-169.5847	66	16	0.5	2.803	42	9.1	4.2	15.73	M
*	112	6/30/2005	57.49062	-169.34	71	07	0.5	2.757	42	8.8	3.7	16.619	M
*	113	6/30/2005	57.67618	-169.0359	69	10	0.5	2.723	42	9.0	3.2	16.226	M
*	114	6/30/2005	57.83872	-169.3718	67	12	0.5	2.773	42	9.4	3.2	15.858	M
*	115	6/30/2005	57.66705	-169.6469	72	15	0.5	2.815	42	9.7	3.6	16.67	M
*	116	6/30/2005	57.82178	-169.95979	73	17	0.5	2.824	42	10.0	3.4	16.586	M
*	117	7/1/2005	58.00665	-169.70889	71	06	0.5	2.87	42	9.3	3.0	15.826	M
*	118	7/1/2005	58.33355	-169.7325	70	09	0.5	2.736	41	9.8	2.6	16.17	M
*	119	7/1/2005	58.6557	-169.78999	67	12	0.5	2.853	41	9.3	2.1	16.415	M
*	120	7/1/2005	58.99738	-169.834	63	15	0.5	2.825	41			16.217	M

Appendix B Table 1.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	121	7/1/2005	59.34184	-169.87331	62	17	0.5	2.869	41	9.7	1.1	17.489	M
*	122	7/2/2005	59.65638	-169.89729	58	06	0.5	2.863	41	9.1	0.9	17.049	M
*	123	7/2/2005	59.98381	-169.965	56	10	0.5	2.746	41	8.7	0.7	17.217	M
*	124	7/2/2005	60.31725	-169.98869	53	12	0.5	2.853	20	8.6	-0.5	16.985	M
*	125	7/2/2005	60.33104	-170.63409	62	15	0.4	1.94	41	8.8	-1.2	17.995	M
*	126	7/2/2005	60.33675	-171.3293	68	17	0.5	2.849	41	8.7	-1.4	18.333	M
*	127	7/3/2005	59.67679	-171.25349	74	06	0.5	2.823	41	8.5	0.0	17.633	M
*	128	7/3/2005	59.33347	-171.1861	76	09	0.5	2.864	41	9.3	1.6	17.127	M
*	129	7/3/2005	59.01148	-171.13741	78	11	0.5	2.958	41	9.7	2.1	16.956	F
*	130	7/3/2005	58.68018	-171.0882	84	14	0.5	2.743	41	9.9	2.6	16.956	F
*	131	7/3/2005	58.36514	-171.0213	85	17	0.5	2.731	41	9.5	3.0	17.488	M
*	132	7/4/2005	58.0073	-170.963	88	07	0.5	2.763	42	8.9	3.6	17.121	M
*	133	7/4/2005	57.6679	-170.89751	86	09	0.5	2.559	42	8.9	4.4	17.232	M
*	134	7/4/2005	57.34428	-170.8622	84	12	0.5	2.806	42	8.2	4.8	17.3	M
	135	7/4/2005	57.01075	-170.8009	96	15	0.5	2.78	42	8.3	4.6	17.168	M
*	136	7/4/2005	56.98581	-170.7834	97	16	0.5	2.906	42	9.1	4.7	17.459	M
*	137	7/4/2005	56.70033	-170.72628	114	19	0.5	2.782	61	8.3	4.3	17.219	M
*	138	7/8/2005	56.33295	-170.66991	121	09	0.5	2.782	61	9.3	4.3	17.468	F
	139	7/8/2005	56.99018	-171.97099	117	15	0.2	1.005	61	9.3	4.1	17.468	F
*	140	7/9/2005	57.33327	-172.0759	108	07	0.5	2.756	61	9.3	4.1	17.468	F
*	141	7/9/2005	57.35229	-172.7475	117	10	0.5	2.745	61	8.8	4.1	17.468	F
*	142	7/9/2005	57.66156	-172.81461	118	13	0.5	2.403	61	9.2	4.1	17.468	F
*	143	7/9/2005	57.66951	-172.18021	106	16	0.5	2.594	61	9.1	4.1	17.249	F
*	144	7/10/2005	57.99827	-172.2364	104	07	0.5	2.635	61	9.1	3.4	17.839	M
*	145	7/10/2005	58.33135	-172.2861	102	10	0.5	2.561	61	9.4	3.2	16.854	M
*	146	7/10/2005	58.66002	-172.36	100	13	0.5	2.529	61	9.8	3.0	17.67	M
*	147	7/10/2005	58.96814	-172.451	98	16	0.5	2.704	61	9.7	2.7	17.642	M
*	148	7/10/2005	59.30865	-172.49879	87	19	0.5	2.649	43	9.4	1.8	17.474	M
*	149	7/11/2005	59.50368	-172.9292	93	07	0.5	2.589	43	9.1	1.8	17.549	M
*	150	7/11/2005	59.66957	-172.5645	84	09	0.4	2.239	43	8.3	1.5	17.365	M

Appendix B Table 1.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	181	7/17/2005	60.00435	-173.91631	96	12	0.5	2.858	43	9.0	1.6	17.17	M
*	182	7/17/2005	59.83516	-173.5892	94	14	0.5	2.804	43	8.8	1.7	17.015	M
*	183	7/17/2005	59.6763	-173.84261	104	17	0.5	2.676	62	9.6	2.7	16.695	M
*	184	7/18/2005	60.32844	-174.7081	102	07	0.5	2.725	62	9.3	2.0	17.165	M
*	185	7/18/2005	60.64849	-174.81911	97	09	0.5	2.729	41	8.5	1.3	17.133	M
*	186	7/18/2005	61.01127	-174.88741	91	12	0.5	2.629	82	8.8	1.0	18.1	M
*	187	7/18/2005	61.31377	-174.9953	87	15	0.5	2.612	82	8.3	0.9	16.956	F
*	188	7/18/2005	61.33255	-175.6058	96	17	0.5	2.569	90	8.5	1.0	17.151	M
*	189	7/19/2005	61.6781	-176.4809	105	07	0.5	2.672	90	8.5	1.2	17.093	M
*	190	7/19/2005	61.33595	-176.2998	105	10	0.5	2.764	90	8.8	1.4	17.199	M
*	191	7/19/2005	61.33118	-176.97591	116	12	0.5	2.693	90	9.3	2.0	17.044	M
*	192	7/19/2005	61.01139	-176.96761	121	15	0.5	2.707	90	9.8	2.7	17.14	M
*	193	7/19/2005	61.00292	-177.62531	135	18	0.5	2.715	90	10.2	1.9	17.307	M
*	194	7/20/2005	60.64299	-178.1562	160	07	0.5	2.647	61	9.5	2.5	18.11	M
*	195	7/20/2005	60.66821	-177.5381	146	10	0.5	2.635	61	9.8	2.0	17.279	M
*	196	7/20/2005	60.34106	-177.4353	144	12	0.5	2.533	61	9.7	1.9	16.695	M
*	197	7/20/2005	60.01532	-177.2038	136	15	0.5	2.584	61	9.8	2.2	17.276	M
	198	7/20/2005	59.99575	-177.9429	141	19	0.3	1.752	61	9.3	2.4	17.318	M
*	199	7/20/2005	59.9853	-177.95171	141	20	0.3	1.262	61	9.3	2.2	17.434	M
*	200	7/21/2005	59.6835	-177.15739	169	07	0.5	2.626	61	9.4	3.0	17.967	M
*	201	7/21/2005	59.33693	-177.0661	149	10	0.2	1.315	61	9.3	2.8	17.949	M
*	202	7/21/2005	59.01962	-177.5638	134	13	0.5	2.706	61	9.1	3.4	17.426	M
*	203	7/21/2005	58.98165	-176.9942	134	16	0.5	2.615	61	9.6	3.1	17.942	M
*	204	7/21/2005	58.66991	-176.8389	137	18	0.5	2.742	61	9.4	3.3	17.526	M
*	205	7/22/2005	58.65949	-176.2175	144	07	0.5	2.686	61	9.8	3.7	17.799	M
*	206	7/22/2005	58.97964	-176.3116	134	10	0.5	2.772	61	9.9	3.2	18.062	M
*	207	7/22/2005	58.99691	-175.7197	132	13	0.5	2.71	61	10.3	2.8	17.768	M
*	208	7/22/2005	58.67778	-175.5692	134	16	0.5	2.651	61	10.7	3.9	17.629	M
*	209	7/22/2005	58.74092	-174.9581	142	18	0.5	2.815	61	11.1	4.0	17.475	M

Appendix B Table 2.--Haul data for stations sampled by the FV *Aldebaran* during the 2005 eastern Bering Sea bottom trawl survey.

FPC	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	6/3/2005	57.32582	-159.0643	50	06	0.5	2.836	10	4.8	4.8	16.253	F
*	2	6/3/2005	57.6622	-159.0087	50	10	0.5	2.826	10	5.2	5.0	15.469	M
*	3	6/3/2005	57.98577	-158.9787	43	13	0.5	2.767	10	6.6	5.5	14.786	M
*	4	6/3/2005	58.34573	-159.5697	26	17	0.5	3.024	10	8.2	6.8	13.764	M
*	5	6/4/2005	58.28496	-159.9718	43	06	0.5	2.891	10	5.2	5.7	15.428	M
*	6	6/4/2005	58.01018	-160.21021	52	09	0.5	2.795	10	4.6	4.5	15.601	M
*	7	6/4/2005	57.67807	-160.2681	56	12	0.5	2.833	31	5.2	4.8	15.567	M
*	8	6/4/2005	57.33667	-160.29449	61	15	0.5	2.911	31	6.0	4.5	15.711	M
*	9	6/4/2005	57.01126	-160.32851	64	18	0.5	2.681	31	6.7	4.6	16.084	M
*	10	6/5/2005	56.31405	-161.629	65	06	0.5	2.795	10	7.0	4.5	15.759	M
*	11	6/5/2005	56.65631	-161.61079	91	09	0.3	1.524	31	7.8	3.7	16.359	M
*	12	6/5/2005	56.99107	-161.5791	70	12	0.5	2.767	31	8.2	3.7	15.887	M
*	13	6/5/2005	57.3224	-161.563	55	14	0.5	2.792	31	7.0	4.6	15.541	M
*	14	6/5/2005	57.32052	-160.9556	61	17	0.5	2.854	31	6.4	4.3	16.508	M
*	15	6/6/2005	57.65813	-161.5153	55	07	0.5	2.855	10	5.6	4.7	16.567	M
*	16	6/6/2005	57.98267	-161.4946	57	09	0.5	2.927	10	5.0	5.2	17	M
*	17	6/6/2005	58.31854	-162.0509	48	13	0.5	2.774	10	5.8	6.3	16.341	M
*	18	6/6/2005	58.64851	-162.7406	28	16	0.5	2.958	10	5.6	5.5	15.719	M
*	19	6/6/2005	58.34925	-162.7173	32	19	0.5	2.903	10	5.8	6.1	15.545	M
*	20	6/7/2005	58.01261	-162.76379	42	09	0.5	2.891	10	4.9	5.2	15.816	M
*	21	6/7/2005	57.67703	-162.73151	45	12	0.5	2.879	10	5.0	5.3	15.565	M
*	22	6/7/2005	57.33183	-162.77609	49	15	0.5	2.836	10	6.0	4.9	15.367	M
*	23	6/7/2005	57.00997	-162.77789	61	17	0.5	2.86	31	7.0	4.1	16.324	M
*	24	6/8/2005	56.34817	-162.7782	79	06	0.5	2.845	31	6.6	4.1	17.352	F
*	25	6/8/2005	55.99764	-162.80341	80	09	0.5	2.749	31	6.8	4.0	16.68	M
*	26	6/8/2005	55.68788	-163.3996	77	13	0.5	2.815	31	6.5		17.352	F
*	27	6/9/2005	55.34223	-163.39481	49	06	0.5	2.923	31	6.2		15.412	M
*	28	6/9/2005	55.33253	-164.032	79	10	0.5	2.796	31	6.0	4.8	16.401	M
*	29	6/9/2005	55.6862	-163.9953	95	13	0.5	2.85	31	8.2	4.1	16.993	M
*	30	6/9/2005	55.96333	-163.93919	92	15	0.5	2.877	31	6.8	4.1	16.839	M
*	31	6/9/2005	56.33037	-163.96809	86	18	0.5	2.759	31	8.0	3.8	17.05	M
*	32	6/10/2005	56.65912	-164.0193	76	07	0.5	2.914	31	7.4	3.6	17.27	M

Appendix B Table 2.--Continued.

FPC	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	6/10/2005	57.03375	-164.0396	69	09	0.2	1.013	31	7.6	3.2	17.466	M
*	34	6/10/2005	57.32447	-164.01691	63	11	0.5	2.837	31	7.7	3.4	16.346	M
*	35	6/10/2005	57.65219	-164.0038	52	14	0.5	2.768	10	6.0	4.4	15.793	M
*	36	6/10/2005	57.98166	-164.0356	48	17	0.5	2.857	10	6.4	4.6	16.264	M
*	37	6/11/2005	58.32753	-164.01089	41	06	0.5	2.852	10	4.9	5.0	15.576	M
*	38	6/11/2005	58.65695	-164.0032	36	09	0.5	2.828	10	4.2	4.1	15.461	M
*	39	6/11/2005	58.9891	-164.63989	30	13	0.5	2.846	10	4.8	4.9	15.283	M
*	40	6/11/2005	58.98771	-165.30099	29	15	0.5	2.937	10	4.4	4.4	15.662	M
*	41	6/11/2005	59.31808	-165.3084	23	18	0.5	3.001	20	5.6	5.7	15.554	M
*	42	6/12/2005	59.67081	-166.64439	29	06	0.5	2.991	20	3.7	4.2	15.849	M
*	43	6/12/2005	59.35626	-166.62579	29	09	0.5	2.953	20	4.2	4.6	16.163	M
*	44	6/12/2005	59.01011	-166.5984	35	12	0.5	2.871	20	3.7	3.5	16.07	M
*	45	6/12/2005	58.67636	-166.5813	43	14	0.5	3.012	20	3.4	2.7	16.726	M
*	46	6/12/2005	58.34413	-166.5656	49	17	0.5	2.88	10	3.0	2.8	16.833	M
*	47	6/13/2005	58.67103	-165.3391	40	07	0.5	2.806	10	3.8	4.2	15.803	M
*	48	6/13/2005	58.34754	-165.29559	46	09	0.5	2.91	10	3.9	3.8	16.58	M
*	49	6/13/2005	58.00913	-165.2366	52	12	0.5	2.827	10	4.6	4.2	16.224	M
*	50	6/13/2005	57.6776	-165.26649	62	15	0.5	2.898	31	5.8	3.6	16.917	F
*	51	6/13/2005	57.34646	-165.2308	68	18	0.5	2.892	31	6.4	3.4	17.749	M
*	52	6/14/2005	57.01085	-165.2188	72	07	0.5	2.615	31	6.7	3.2	17.797	M
*	53	6/14/2005	56.67986	-165.2186	77	09	0.5	2.928	31	7.1	3.5	18.038	M
*	54	6/14/2005	56.34557	-165.2175	87	12	0.5	2.889	31	7.1		18.215	M
*	55	6/14/2005	56.01217	-165.1993	98	15	0.5	2.94	31	7.0	4.1	18.597	M
*	56	6/14/2005	56.00222	-164.60851	94	17	0.5	2.902	31	6.2	4.2	18.166	M
	57	6/15/2005	55.68143	-165.1852	110	07	0.2	0.816	31			19.087	M
*	58	6/15/2005	55.66303	-165.1804	110	07	0.5	2.909	31	6.1	4.4	18.459	M
*	59	6/15/2005	55.33484	-165.1552	112	10	0.5	2.786	50	6.7	4.6	18.772	M
*	60	6/15/2005	55.33324	-165.78571	121	13	0.5	2.759	50	6.4	4.3	19.568	M
*	61	6/15/2005	55.33624	-166.3555	133	16	0.5	2.828	50	6.2	4.2	19.858	M
*	62	6/18/2005	55.00316	-166.9514	154	15	0.5	2.748	50	7.2	4.1	19.416	M
*	63	6/18/2005	54.99457	-166.3401	143	18	0.5	2.718	50	6.7	4.3	18.678	M

Appendix B Table 2.--Continued.

FPC	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	6/19/2005	55.65467	-166.4122	126	07	0.5	2.718	50	7.0	4.2	18.766	M
*	65	6/19/2005	55.98763	-166.40089	123	10	0.5	2.756	50	7.6	4.2	18.359	M
*	66	6/19/2005	56.32926	-166.43159	103	14	0.5	2.736	31	7.7	4.2	18.253	M
*	67	6/19/2005	56.66329	-166.44279	84	18	0.5	2.832	31	7.4	3.5	17.407	M
*	68	6/20/2005	56.98637	-166.48849	73	07	0.5	2.759	31	7.1	3.4	17.146	M
*	69	6/20/2005	57.3312	-166.49249	69	10	0.4	1.95	31	6.9	3.2	16.105	M
*	70	6/20/2005	57.65896	-166.52229	65	12	0.5	2.739	31	5.7	3.0	16.504	M
*	71	6/20/2005	57.99151	-166.51199	57	15	0.5	2.862	31	6.3		16.704	M
*	72	6/21/2005	58.32261	-167.83459	60	06	0.5	2.808	41	5.3	2.5	16.826	M
*	73	6/21/2005	58.65211	-167.8694	46	09	0.5	2.819	20	4.3	3.3	15.991	M
*	74	6/21/2005	58.98852	-167.8851	41	11	0.5	2.869	20	4.5	3.1	15.948	M
*	75	6/21/2005	59.30669	-167.93069	39	14	0.5	2.843	20	3.5	3.1	15.567	M
*	76	6/21/2005	59.66289	-167.952	35	17	0.5	2.897	20	3.9	3.7	15.01	M
*	77	6/22/2005	60.33242	-168.6653	38	06	0.5	2.759	20	4.3	3.7	15.77	M
*	78	6/22/2005	60.34276	-169.3134	45	09	0.5	2.875	20	4.0	0.3	16.155	M
*	79	6/22/2005	60.00296	-169.3076	47	12	0.5	2.884	20	4.3	0.7	15.82	M
*	80	6/22/2005	59.67678	-169.25481	48	14	0.5	2.854	20	5.2	1.3	15.941	M
*	81	6/22/2005	59.34658	-169.22971	51	17	0.5	2.856	20	5.2	1.3	15.936	M
*	82	6/23/2005	59.01177	-169.1931	56	06	0.5	2.835	41	5.1	2.0	15.794	M
*	83	6/23/2005	58.67846	-169.1646	64	09	0.5	2.86	41	6.6	1.7	16.64	M
*	84	6/23/2005	58.34211	-169.12869	68	12	0.5	2.733	41	7.1	2.2	16.312	M
*	85	6/23/2005	58.00081	-169.0818	69	14	0.5	2.824	42	7.8	2.7	16.303	M
*	86	6/23/2005	57.82251	-168.7726	71	17	0.5	2.787	42	7.7	2.8	16.393	M
*	87	6/24/2005	57.99914	-167.8219	68	06	0.5	2.827	41	6.6	2.4	16.393	M
*	88	6/24/2005	57.67823	-167.7646	71	09	0.5	2.749	31	7.3	3.0	16.393	M
*	89	6/24/2005	57.33815	-167.7451	74	12	0.5	2.911	31	8.1	3.1	16.283	M
*	90	6/24/2005	57.01214	-167.7029	77	15	0.5	2.847	31	8.2	3.7	16.786	M
*	91	6/24/2005	56.67157	-167.6528	99	17	0.5	2.82	31	8.6		17.43	M
*	92	6/25/2005	56.3449	-167.65089	130	06	0.5	2.764	50	8.4	4.3	18.199	M
*	93	6/25/2005	56.01091	-167.6082	134	09	0.5	2.72	50	8.4	4.3	19.136	M
*	94	6/25/2005	55.66721	-167.571	136	12	0.5	2.692	50	8.1	4.3	18.771	M

Appendix B Table 2.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	95	6/25/2005	55.6618	-168.18089	135	14	0.5	2.748	50	7.9	4.3	17.719	M
*	96	6/25/2005	56.00614	-168.2301	152	17	0.3	1.454	50	8.3	4.3	15.987	M
*	97	6/26/2005	56.31371	-168.881	131	07	0.5	2.829	50	8.0	4.3	16.622	M
*	98	6/26/2005	56.66505	-168.8945	101	09	0.5	2.764	32	8.5	4.1	17.077	M
*	99	6/26/2005	56.82495	-169.3152	82	12	0.3	1.925	32	8.1	5.0	16.734	M
*	100	6/26/2005	56.98977	-168.93559	80	14	0.3	1.648	32	8.5	4.1	17.01	M
*	101	6/26/2005	57.15145	-169.3228	67	16	0.4	2.141	42	9.1		15.939	M
*	102	6/26/2005	57.32582	-169.008	71	19	0.5	2.795	42	8.2	3.8	16.21	M
*	103	6/27/2005	57.33098	-168.3622	74	07	0.5	2.915	32	8.7	3.4	16.581	M
*	104	6/27/2005	57.17902	-168.6494	77	09	0.5	2.84	32	8.6	3.8	16.77	M
*	105	6/29/2005	56.42803	-169.46809	106	07	0.5	2.909	50	8.9	4.1	16.603	M
*	106	6/29/2005	56.3353	-170.028	109	09	0.5	2.944	50	8.8	4.3	17.553	M
*	107	6/29/2005	56.66206	-170.1154	97	12	0.5	2.925	42	6.9	4.6	17.502	M
*	108	6/29/2005	56.82508	-170.4653	102	14	0.5	2.887	42	8.4	4.4	17.254	M
*	109	6/29/2005	56.99714	-170.202	70	16	0.5	2.935	42	7.4	6.0	15.851	M
*	110	6/30/2005	57.09695	-170.5434	70	06	0.5	2.831	42	7.6	6.0	16.083	M
*	111	6/30/2005	57.32743	-170.23421	56	09	0.4	1.988	42	7.8	6.5	16.083	M
*	112	6/30/2005	57.49684	-170.5778	76	11	0.5	3.039	42	8.6	4.4	17.161	M
*	113	6/30/2005	57.50286	-170.0235	65	14	0.3	1.76	42			16.948	M
*	114	6/30/2005	57.65239	-170.2619	69	16	0.5	3.034	42			17.413	M
*	115	7/1/2005	57.82164	-170.627	79	07	0.5	2.937	42	9.2	4.0	16.91	M
*	116	7/1/2005	57.98359	-170.3598	75	09	0.5	2.958	42	9.1	3.5	17.146	M
*	117	7/1/2005	58.3219	-170.3808	75	11	0.5	3.016	41	9.4	3.0	17.502	M
*	118	7/1/2005	58.66378	-170.4393	75	14	0.5	3.073	41	10.0	2.5	17.454	M
*	119	7/1/2005	58.98999	-170.4743	72	17	0.5	2.935	41	10.1	1.8	17.372	M
*	120	7/2/2005	59.31951	-170.5332	69	06	0.5	2.908	41	8.8	0.8	17.625	M
*	121	7/2/2005	59.65519	-170.58299	68	09	0.5	2.906	41	9.5	0.0	18.108	M
*	122	7/2/2005	59.98331	-170.63071	66	11	0.5	2.984	41	9.1	-0.4	18.38	M
*	123	7/2/2005	60.00523	-171.2733	70	14	0.5	2.987	41	9.3	-0.8	18.299	M
*	124	7/2/2005	60.01626	-171.9369	67	16	0.5	2.952	43	9.1	0.1	18.004	M
*	125	7/3/2005	59.67999	-171.9037	79	06	0.5	3.082	43	8.2	0.5	18.808	M

Appendix B Table 2.--Continued.

FPC	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	7/3/2005	59.3446	-171.8372	81	09	0.5	2.999	62	9.4	1.6	18.326	M
*	127	7/3/2005	59.01316	-171.78661	87	11	0.5	2.942	41	9.6	2.1	17.784	M
*	128	7/3/2005	58.67987	-171.72031	94	14	0.5	2.982	41	7.7	2.4	18.221	M
*	129	7/3/2005	58.35003	-171.65331	97	16	0.4	2.125	41	9.4	2.9	18.146	M
*	130	7/4/2005	58.01265	-171.6001	99	06	0.4	2.147	41	8.7	3.6	18.022	M
*	131	7/4/2005	57.66587	-171.5341	100	09	0.5	2.997	41	8.6	4.0	18.567	M
*	132	7/4/2005	57.34484	-171.4731	101	12	0.3	1.528	41	8.6	4.1	18.632	M
*	133	7/4/2005	57.0168	-171.40511	109	14	0.2	1.34	61	8.4	4.0	18.467	M
	134	7/4/2005	56.6831	-171.3486	120	16	0.3	1.535	61	8.6	4.3	17.907	F
*	135	7/8/2005	56.6599	-171.968	126	12	0.5	3.038	61			18.088	F
*	136	7/8/2005	56.67028	-172.5695	136	15	0.5	2.927	61	8.8	4.0	17.674	M
*	137	7/8/2005	56.98859	-172.6492	117	17	0.5	2.837	61	8.5		17.292	M
*	138	7/9/2005	56.99355	-173.2506	143	07	0.5	2.8	61	6.8	4.2	18.662	M
	139	7/9/2005	57.32481	-173.3344	122	09	0.5	2.784	61	7.0	4.1		F
*	140	7/9/2005	57.36997	-173.31129	122	12	0.6	3.354	61	6.8	4.1	17.907	F
*	141	7/9/2005	57.65683	-173.40379	147	15	0.5	2.998	61	7.0	4.2	18.236	F
*	142	7/9/2005	57.98874	-173.479	118	18	0.5	2.926	61	6.8	3.9	18.302	M
*	143	7/10/2005	57.99437	-172.8737	110	07	0.5	2.964	61	7.1	3.6	17.907	F
*	144	7/10/2005	58.32512	-172.9216	110	10	0.4	1.957	61	9.0	3.7	17.868	M
*	145	7/10/2005	58.65554	-172.9989	113	13	0.5	2.929	61	7.9	3.6	17.938	M
*	146	7/10/2005	58.98981	-173.08099	107	15	0.5	2.969	61	7.8	3.0	18.165	M
*	147	7/10/2005	59.32449	-173.1692	101	18	0.5	2.898	43	7.9	2.7	17.438	M
*	148	7/11/2005	59.49297	-173.51199	103	07	0.5	2.857	43	6.3	2.8	17.939	M
*	149	7/11/2005	59.65797	-173.2484	97	09	0.5	2.947	43	7.1	1.6	18.215	M
*	150	7/11/2005	59.82159	-172.9386	82	11	0.5	2.976	43	6.2	1.2	17.767	M
*	151	7/11/2005	60.01763	-173.3091	76	14	0.5	2.893	43	6.3	0.7	17.215	M
*	152	7/11/2005	60.16951	-173.0083	61	16	0.5	2.957	43	6.2	0.5	17.195	M
*	153	7/12/2005	60.31377	-172.067	60	06	0.5	2.911	43	6.3	-1.3	16.307	M
*	154	7/12/2005	60.65741	-172.1183	62	09	0.3	1.707	41	5.9	-1.4	19.159	M
*	155	7/12/2005	60.9893	-172.1441	64	11	0.5	2.921	41	6.2	-1.5	16.676	M
*	156	7/12/2005	61.00195	-171.50909	61	14	0.4	2.296	41	6.0	-0.9	17.246	M

Appendix B Table 2.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	157	7/12/2005	61.00122	-170.8326	56	16	0.5	3.029	81	6.4	-1.0	16.602	M
*	158	7/13/2005	61.33594	-170.7785	51	06	0.5	2.934	81	5.9	-1.0	15.944	M
*	159	7/13/2005	61.33773	-171.4812	56	09	0.5	2.996	81	6.0	-1.1	16.899	M
*	160	7/13/2005	61.33525	-172.15311	64	11	0.5	2.911	81	5.9	-1.4	19.639	M
*	161	7/13/2005	61.65382	-172.3131	62	14	0.5	2.912	81	6.2	-0.7	17.228	M
*	162	7/13/2005	61.98698	-172.33009	56	16	0.5	2.99	81	6.0	-0.7	16.842	M
*	163	7/14/2005	62.00251	-173.01601	59	06	0.5	2.97	81	5.6	-0.7	17.189	M
*	164	7/14/2005	62.00036	-173.7054	63	09	0.5	2.977	82	5.9	-0.6	17.137	M
*	165	7/14/2005	62.32365	-173.85741	65	12	0.5	2.925	81	6.0	-1.0	16.851	M
*	166	7/14/2005	62.65809	-173.9041	71	14	0.5	3.043	81	5.9	-1.4	18.126	M
*	167	7/14/2005	62.99125	-173.92011	75	16	0.5	2.926	81	6.0	-1.2	18.801	M
*	168	7/15/2005	62.34285	-175.282	79	06	0.5	3.006	81	6.0	-1.4	18.562	M
*	169	7/15/2005	62.00954	-175.1707	82	09	0.5	2.961	82	5.9	-1.4	18.31	M
*	170	7/15/2005	61.99065	-175.7822	92	12	0.4	2.535	82	6.1	-0.4	19.033	M
*	171	7/15/2005	61.68944	-175.7876	96	15	0.5	2.958	82	6.3	0.5	19.054	M
*	172	7/15/2005	61.66699	-175.09309	86	17	0.5	2.996	82	6.2	-0.3	18.04	M
*	173	7/16/2005	61.31895	-174.33569	79	06	0.5	2.91	82	6.0	0.1	17	M
*	174	7/16/2005	61.33522	-173.6385	74	09	0.5	2.975	82	6.1	-0.6	17.302	M
*	175	7/16/2005	61.02285	-173.5089	77	12	0.5	2.981	41	5.9	0.2	17.782	M
*	176	7/16/2005	61.00217	-174.1348	84	15	0.5	3.002	41	6.4	0.7	18.033	M
*	177	7/16/2005	60.68004	-174.1346	88	17	0.5	2.949	41	6.5	0.8	17.748	M
*	178	7/17/2005	60.345	-174.06889	92	07	0.5	2.996	43	6.2	1.2	20.29	M
*	179	7/17/2005	60.17104	-174.3428	101	09	0.5	2.948	43	7.1	1.7	17.809	M
*	180	7/17/2005	60.01316	-174.6051	109	11	0.5	2.967	62	7.8	2.4	17.748	M
*	181	7/17/2005	59.84754	-174.2722	107	13	0.5	2.955	62	7.7	2.6	17.823	M
*	182	7/17/2005	59.67652	-174.436	116	15	0.5	2.918	62	7.9	2.9	17.582	M
*	183	7/17/2005	59.66724	-175.0788	126	18	0.4	2.118	61	7.5	3.3	19.44	M
*	184	7/18/2005	59.9895	-175.2683	119	07	0.5	2.957	61	7.6	3.0	17.653	M
*	185	7/18/2005	60.3282	-175.38091	111	09	0.5	3.004	61	7.7	2.5	17.641	M
*	186	7/18/2005	60.65984	-175.45061	108	12	0.5	2.992	61	7.7	1.9	18.122	M
*	187	7/18/2005	60.98666	-175.54939	103	14	0.5	2.915	90	7.2	1.3	17.984	M

Appendix B Table 1.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	151	7/11/2005	59.82343	-172.25	75	11	0.5	2.655	43	6.9	0.3	16.804	M
*	152	7/11/2005	59.99248	-172.6028	66	14	0.5	2.696	43	4.8	0.1	17.32	M
*	153	7/11/2005	60.16682	-172.3217	58	16	0.4	1.991	43	6.0	0.5	16.556	F
*	154	7/12/2005	60.66602	-171.44141	62	06	0.5	2.736	41	7.7	-1.1	16.556	F
*	155	7/12/2005	60.66912	-170.7926	58	09	0.5	2.734	81	8.0	-1.2	16.828	M
*	156	7/12/2005	60.66906	-170.09531	49	11	0.5	2.735	70	8.2	-0.9	16.031	M
*	157	7/12/2005	60.98016	-170.08569	47	14	0.5	2.733	70	8.4	-0.8	16.368	M
*	158	7/12/2005	61.3143	-170.114	46	16	0.5	2.71	70	8.2	-1.1	16.663	M
*	159	7/13/2005	61.66833	-170.1396	45	07	0.5	2.844	70	7.2	-1.1	16.423	M
*	160	7/13/2005	61.66236	-170.8364	49	09	0.5	2.697	81	7.3	-1.0	16.07	M
*	161	7/13/2005	61.66204	-171.51511	54	11	0.5	2.633	81	7.5	-0.6	16.895	M
*	162	7/13/2005	61.98584	-171.6082	51	14	0.5	2.71	70	7.9	-0.1	16.15	M
*	163	7/13/2005	62.30785	-171.7162	46	17	0.5	2.666	81	8.6	-1.0	15.343	M
*	164	7/14/2005	62.33514	-173.1582	61	06	0.5	2.764	81	7.7	-0.9	16.813	M
*	165	7/14/2005	62.31207	-172.43221	55	09	0.5	2.644	81	7.8	-0.4	16.296	M
*	166	7/14/2005	62.65461	-172.4063	55	12	0.5	2.687	81	8.1	-1.1	16.312	M
*	167	7/14/2005	62.67101	-173.1732	65	15	0.5	2.658	81	7.5	-1.2	17.588	M
*	168	7/14/2005	62.99346	-173.2278	65	17	0.5	2.609	81	7.5		18.222	M
*	169	7/15/2005	62.69551	-174.60361	72	06	0.5	2.694	81	8.5	-1.4	18.388	M
*	170	7/15/2005	62.34245	-174.58611	70	09	0.5	2.79	81	7.3	-1.3	17.622	M
*	171	7/15/2005	62.00964	-174.5018	73	12	0.5	2.662	82	8.1	-1.4	19.75	M
*	172	7/15/2005	61.68023	-174.43581	76	14	0.5	2.731	82	8.8	-1.5	17.526	M
*	173	7/15/2005	61.66877	-173.6796	69	17	0.5	2.716	82	8.5	-1.4	16.846	M
*	174	7/16/2005	61.6619	-173.1375	66	06	0.5	2.642	81	7.9	-1.3	16.556	F
*	175	7/16/2005	61.33777	-172.92349	68	09	0.5	2.578	81	8.9	-1.4	20.052	M
*	176	7/16/2005	61.00908	-172.8676	66	11	0.5	2.641	41	7.9	-1.1	16.556	F
*	177	7/16/2005	60.67542	-172.76649	44	14	0.4	1.907	41	7.3	2.8	15.599	M
*	178	7/16/2005	60.66252	-173.45081	66	17	0.5	2.728	41	7.8	1.8	16.36	M
	179	7/17/2005	60.33259	-173.40131	62	07	0.3	1.901	43	8.2	1.0	16.48	M
*	180	7/17/2005	60.13268	-173.77161	87	10	0.2	1.354	43	7.6	1.1	17.481	M

Appendix B Table 2.--Continued.

FPC	Haul	Date	Latitude	Longitude	Depth (m)	Time (hr)	Duration (hr)	Distance (km)	Stratum	Surface Temp. (°C)	Bottom Temp. (°C)	Net width (m)	Width code
*	188	7/18/2005	61.0022	-176.2428	114	17	0.5	2.983	90	7.4	2.2	16.995	M
*	189	7/19/2005	60.66922	-176.1749	120	07	0.5	2.936	61	7.8	2.8	17.834	M
*	190	7/19/2005	60.66767	-176.76041	129	09	0.5	2.989	61	7.7	2.6	17.771	M
*	191	7/19/2005	60.35487	-176.726	137	12	0.4	1.969	61	7.7	2.5	17.961	M
*	192	7/19/2005	60.33343	-176.0833	123	14	0.5	2.923	61	7.8	3.0	17.593	M
*	193	7/19/2005	60.01343	-175.9344	131	17	0.4	1.996	61	8.1	3.1	17.876	M
*	194	7/20/2005	60.01694	-176.7202	142	07	0.5	2.938	61	7.7	2.0	18.141	M
*	195	7/20/2005	59.6758	-176.5397	136	10	0.5	2.934	61	7.8	2.5	18.477	M
*	196	7/20/2005	59.34466	-176.3941	136	12	0.2	1.215	61	7.8	2.5	18.464	M
*	197	7/20/2005	59.33222	-175.7804	137	15	0.4	2.009	61	7.9	2.8	17.82	M
*	198	7/20/2005	59.65968	-175.8564	138	17	0.4	2.004	61	8.0	2.7	17.913	M
*	199	7/21/2005	59.34594	-175.09891	135	07	0.5	2.968	61	7.9	2.9	18.464	M
*	200	7/21/2005	59.00843	-175.0248	130	10	0.5	2.995	61	8.0	3.3	18.261	M
*	201	7/21/2005	58.99715	-174.4137	127	12	0.5	2.937	61	8.1	3.9	17.755	M
*	202	7/21/2005	59.31792	-174.4496	121	15	0.4	2.011	62	8.1	3.5	18.253	M
*	203	7/21/2005	59.33529	-173.8331	111	17	0.5	2.974	62	8.3	2.9	17.71	M
*	204	7/22/2005	59.00943	-173.71941	120	07	0.5	2.931	61	8.2	3.6	18.14	M
*	205	7/22/2005	58.67982	-173.6438	128	10	0.5	3.041	61	8.2	4.1	18.117	M
*	206	7/22/2005	58.6804	-174.2659	156	12	0.5	2.953	61	8.2	4.0	18.121	M
*	207	7/22/2005	58.35159	-174.3143	171	15	0.5	2.783	61	8.3	4.2	17.805	M
*	208	7/22/2005	58.33464	-173.59081	117	19	0.4	2.088	61	8.2	4.0	18.38	M

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

Appendix C ranks all fish and invertebrates caught during the 2005 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 2005 eastern Bering Sea bottom trawl survey.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
1	21740	111.3053	114.0139	90.3770	132.2337	0.2869	0.2869	*Theragra chalcogramma*
2	10210	60.0856	69.7406	43.7174	76.4537	0.1549	0.4418	*Limanda aspera*
3	10260	47.4594	16.2322	39.5628	55.3561	0.1223	0.5641	*Lepidopsetta* sp.
4	81742	21.9455	6.7974	16.8354	27.0556	0.0566	0.6207	*Asterias amurensis*
5	10110	14.8399	1.4082	12.5141	17.1658	0.0383	0.6589	*Atheresthes stomias*
6	21720	13.3585	0.9496	11.4485	15.2685	0.0344	0.6934	*Gadus macrocephalus*
7	10130	12.1771	1.3647	9.8874	14.4668	0.0314	0.7248	*Hippoglossoides* sp.
8	471	11.2365	0.3374	10.0979	12.3750	0.0290	0.7537	*Bathyraja parmifera*
9	10285	10.7993	1.5632	8.3487	13.2498	0.0278	0.7816	*Pleuronectes quadrituberculatus*
10	98082	7.2699	2.0147	4.4879	10.0519	0.0187	0.8003	*Styela rustica*
11	68580	6.1597	0.6829	4.5400	7.7794	0.0159	0.8162	*Chionoecetes opilio*
12	30060	5.7498	33.0492	0.0000	17.0176	0.0148	0.8310	*Sebastes alutus*
13	83020	4.4452	0.5703	2.9651	5.9254	0.0115	0.8425	*Gorgonocephalus eucnemis*
14	99994	3.9817	0.1713	3.1704	4.7930	0.0103	0.8527	empty gastropod shells
15	98205	3.4216	1.6791	0.8819	5.9613	0.0088	0.8616	*Halocynthia aurantium*
16	10120	3.0673	0.0585	2.5933	3.5413	0.0079	0.8695	*Hippoglossus stenolepis*
17	21110	2.7094	0.3183	1.6035	3.8152	0.0070	0.8764	*Clupea pallasi*
18	69086	2.6943	0.1419	1.9559	3.4327	0.0069	0.8834	*Pagurus trigonocheirus*
19	71820	2.4364	0.0923	1.8410	3.0319	0.0063	0.8897	*Neptunea pribiloffensis*
20	68560	2.3581	0.0864	1.7819	2.9343	0.0061	0.8957	*Chionoecetes bairdi*
21	69060	2.3065	0.0843	1.7373	2.8757	0.0059	0.9017	*Pagurus aleuticus*
22	69322	2.3038	0.1629	1.5128	3.0948	0.0059	0.9076	*Paralithodes camtschaticus*
23	69120	1.9990	0.1605	1.2137	2.7843	0.0052	0.9128	*Pagurus capillatus*
24	91000	1.9931	1.2946	0.0000	4.2232	0.0051	0.9179	Porifera
25	21371	1.6174	0.0401	1.2248	2.0100	0.0042	0.9221	*Myoxocephalus jaok*
26	71884	1.5683	0.0525	1.1190	2.0175	0.0040	0.9261	*Neptunea heros*
27	10220	1.5117	0.1794	0.6814	2.3419	0.0039	0.9300	*Platichthys stellatus*
28	91087	1.4953	1.1600	0.0000	3.6063	0.0039	0.9339	stone sponge
29	40504	1.4656	0.0322	1.1138	1.8174	0.0038	0.9377	*Chrysaora melanaster*
30	21370	1.2934	0.0228	0.9973	1.5895	0.0033	0.9410	*Myoxocephalus polyacanthocephalus*
31	81780	1.2717	0.1355	0.5503	1.9932	0.0033	0.9443	*Ctenodiscus crispatus*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
32	83320	1.1961	0.0683	0.6839	1.7083	0.0031	0.9474	*Ophiura sarsi*
33	98105	1.0769	0.1160	0.4092	1.7445	0.0028	0.9501	*Boltenia ovifera*
34	10112	0.9839	0.0084	0.8037	1.1640	0.0025	0.9527	*Atheresthes evermanni*
35	82510	0.9773	0.2047	0.0905	1.8640	0.0025	0.9552	*Strongylocentrotus droebachiensis*
36	80590	0.9303	0.0237	0.6284	1.2322	0.0024	0.9576	*Leptasterias polaris*
37	21347	0.8785	0.0614	0.3928	1.3642	0.0023	0.9599	*Hemilepidotus jordani*
38	71870	0.8186	0.0262	0.5013	1.1359	0.0021	0.9620	*Neptunea lyrata*
39	71882	0.8081	0.0150	0.5680	1.0483	0.0021	0.9640	*Neptunea ventricosa*
40	20040	0.7437	0.0145	0.5073	0.9800	0.0019	0.9660	*Podothecus acipenserinus*
41	21420	0.7099	0.0136	0.4814	0.9384	0.0018	0.9678	*Hemitripterus bolini*
42	43021	0.7039	0.0447	0.2894	1.1184	0.0018	0.9696	*Metridium farcimen*
43	72500	0.5968	0.0311	0.2510	0.9426	0.0015	0.9711	*Fusitriton oregonensis*
44	21368	0.5698	0.0712	0.0468	1.0928	0.0015	0.9726	*Myoxocephalus verrucosus*
45	24191	0.5294	0.0103	0.3304	0.7284	0.0014	0.9740	*Lycodes brevipes*
46	69070	0.4781	0.0079	0.3036	0.6527	0.0012	0.9752	*Pagurus confragosus*
47	80200	0.4548	0.0106	0.2532	0.6565	0.0012	0.9764	*Lethasterias nanimensis*
48	10200	0.4528	0.0086	0.2705	0.6350	0.0012	0.9776	*Glyptocephalus zachirus*
49	69095	0.4433	0.0068	0.2813	0.6053	0.0011	0.9787	*Pagurus rathbuni*
50	71753	0.4176	0.0409	0.0211	0.8141	0.0011	0.9798	*Pyrulofusus deformis*
51	69090	0.4154	0.0047	0.2808	0.5501	0.0011	0.9808	*Pagurus ochotensis*
52	24185	0.4126	0.0050	0.2745	0.5508	0.0011	0.9819	*Lycodes palearis*
53	68577	0.3871	0.0109	0.1822	0.5920	0.0010	0.9829	*Hyas coarctatus*
54	43090	0.3614	0.0098	0.1673	0.5555	0.0009	0.9838	*Liponema brevicornis*
55	99902	0.3211	0.1031	0.0000	0.9504	0.0008	0.9847	*Molgula grifithsii*
56	10115	0.3176	0.0040	0.1933	0.4419	0.0008	0.9855	*Reinhardtius hippoglossoides*
57	98200	0.3063	0.0935	0.0000	0.9057	0.0008	0.9863	*Halocynthia* sp.
58	10211	0.2443	0.0033	0.1326	0.3561	0.0006	0.9869	*Limanda proboscidea*
59	78403	0.2246	0.0049	0.0880	0.3611	0.0006	0.9875	*Octopus dofleini*
60	71750	0.2168	0.0033	0.1044	0.3292	0.0006	0.9880	*Volutopsius* sp.
61	85201	0.2058	0.0095	0.0148	0.3968	0.0005	0.9886	*Cucumaria fallax*
62	99993	0.1951	0.0006	0.1469	0.2433	0.0005	0.9891	empty bivalve shells
63	69042	0.1777	0.0080	0.0028	0.3525	0.0005	0.9895	*Pagurus brandti*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
64	435	0.1569	0.0009	0.0985	0.2152	0.0004	0.9899	*Bathyraja interrupta*
65	472	0.1558	0.0075	0.0000	0.3258	0.0004	0.9903	*Bathyraja aleutica*
66	71001	0.1442	0.0011	0.0789	0.2095	0.0004	0.9907	gastropod eggs
67	81315	0.1383	0.0182	0.0000	0.4028	0.0004	0.9911	*Pteraster tesselatus*
68	20720	0.1358	0.0013	0.0661	0.2055	0.0004	0.9914	*Bathymaster signatus*
69	43010	0.1302	0.0032	0.0195	0.2409	0.0003	0.9917	*Metridium* sp.
70	72740	0.1278	0.0005	0.0819	0.1738	0.0003	0.9921	*Buccinum* sp. A
71	98310	0.1111	0.0007	0.0575	0.1647	0.0003	0.9924	*Aplidium* sp.
72	80020	0.1033	0.0010	0.0405	0.1662	0.0003	0.9926	*Evasterias echinosoma*
73	24184	0.1019	0.0034	0.0000	0.2157	0.0003	0.9929	*Lycodes raridens*
74	21390	0.1018	0.0009	0.0433	0.1602	0.0003	0.9932	*Dasycottus setiger*
75	69061	0.0997	0.0002	0.0700	0.1293	0.0003	0.9934	*Labidochirus splendescens*
76	69323	0.0988	0.0010	0.0365	0.1612	0.0003	0.9937	*Paralithodes platypus*
77	80594	0.0848	0.0007	0.0331	0.1365	0.0002	0.9939	*Leptasterias arctica*
78	41201	0.0832	0.0003	0.0473	0.1192	0.0002	0.9941	*Gersemia* sp.
79	68578	0.0820	0.0002	0.0533	0.1106	0.0002	0.9943	*Hyas lyratus*
80	69121	0.0805	0.0016	0.0011	0.1599	0.0002	0.9945	*Elassochirus cavimanus*
81	99999	0.0788	0.0062	0.0000	0.2332	0.0002	0.9947	unsorted shab
82	420	0.0663	0.0023	0.0000	0.1609	0.0002	0.9949	*Raja binoculata*
83	69035	0.0635	0.0004	0.0268	0.1002	0.0002	0.9951	*Pagurus* sp.
84	74120	0.0628	0.0017	0.0000	0.1429	0.0002	0.9952	*Patinopecten caurinus*
85	65204	0.0591	0.0009	0.0019	0.1163	0.0002	0.9954	*Balanus hesperius*
86	66031	0.0574	0.0002	0.0331	0.0817	0.0001	0.9955	*Pandalus borealis*
87	320	0.0547	0.0017	0.0000	0.1343	0.0001	0.9957	*Somniosus pacificus*
88	71756	0.0546	0.0007	0.0011	0.1080	0.0001	0.9958	*Volutopsius fragilis*
89	21592	0.0531	0.0011	0.0000	0.1174	0.0001	0.9959	*Trichodon trichodon*
90	72752	0.0508	0.0009	0.0000	0.1103	0.0001	0.9962	*Buccinum scalariforme*
91	50160	0.0475	<0.0001	0.0324	0.0626	0.0001	0.9963	Aphroditidae
92	71886	0.0459	0.0008	0.0000	0.1017	0.0001	0.9964	*Neptunea magna*
93	71761	0.0458	<0.0001	0.0278	0.0638	0.0001	0.9965	*Pyrulofusus melonis*
94	21314	0.0456	0.0007	0.0000	0.0965	0.0001	0.9968	*Gymnocanthus pistilliger*
95	65100	0.0437	0.0010	0.0000	0.1063	0.0001	0.9969	Thoracica

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
96	20322	0.0419	0.0001	0.0186	0.0651	0.0001	0.9970	*Anarhichas orientalis*
97	82740	0.0409	0.0006	0.0000	0.0891	0.0001	0.9971	*Echinarachnius parma*
98	83000	0.0403	0.0003	0.0069	0.0736	0.0001	0.9972	Ophiuroid unident.
99	72743	0.0378	0.0009	0.0000	0.0957	<0.0001	0.9973	*Buccinum angulosum*
100	22205	0.0376	0.0014	0.0000	0.1112	<0.0001	0.9974	*Liparis gibbus*
101	71769	0.0373	<0.0001	0.0187	0.0559	<0.0001	0.9975	*Beringius* sp.
102	80000	0.0367	0.0005	0.0000	0.0795	<0.0001	0.9975	Asteroidea unident.
103	42003	0.0363	0.0001	0.0157	0.0568	<0.0001	0.9976	Virgularidae
104	68781	0.0351	0.0012	0.0000	0.1040	<0.0001	0.9977	*Telmessus cheiragonus*
105	23010	0.0330	0.0003	0.0000	0.0672	<0.0001	0.9978	*Thaleichthys pacificus*
106	43042	0.0330	<0.0001	0.0160	0.0501	<0.0001	0.9979	*Urticina crassicornis*
107	71891	0.0316	<0.0001	0.0132	0.0499	<0.0001	0.9979	*Plicifusus kroyeri*
108	81355	0.0303	0.0001	0.0101	0.0505	<0.0001	0.9980	*Pteraster obscurus*
109	71763	0.0292	<0.0001	0.0178	0.0407	<0.0001	0.9981	*Volutopsius stefanssoni*
110	72751	0.0292	<0.0001	0.0108	0.0476	<0.0001	0.9982	*Buccinum plectrum*
111	98300	0.0290	0.0004	0.0000	0.0669	<0.0001	0.9982	compound ascidian unident.
112	20510	0.0278	<0.0001	0.0120	0.0436	<0.0001	0.9983	*Anoplopoma fimbria*
113	43032	0.0265	<0.0001	0.0120	0.0411	<0.0001	0.9984	*Stomphia coccinea*
114	480	0.0254	0.0006	0.0000	0.0744	<0.0001	0.9984	*Bathyraja maculata*
115	10270	0.0206	<0.0001	0.0062	0.0350	<0.0001	0.9985	*Isopsetta isolepis*
116	69400	0.0203	0.0004	0.0000	0.0601	<0.0001	0.9985	*Erimacrus isenbeckii*
117	40501	0.0199	0.0003	0.0000	0.0515	<0.0001	0.9986	*Chrysaora* sp.
118	68510	0.0199	<0.0001	0.0115	0.0282	<0.0001	0.9986	*Oregonia gracilis*
119	81095	0.0190	0.0002	0.0000	0.0465	<0.0001	0.9987	*Crossaster papposus*
120	71772	0.0188	<0.0001	0.0046	0.0329	<0.0001	0.9987	*Beringius beringii*
121	72755	0.0184	<0.0001	0.0033	0.0336	<0.0001	0.9987	*Buccinum polare*
122	50161	0.0171	<0.0001	0.0026	0.0316	<0.0001	0.9988	*Aphrodita* sp.
123	23235	0.0170	<0.0001	0.0056	0.0284	<0.0001	0.9988	*Oncorhynchus keta*
124	95000	0.0163	<0.0001	0.0000	0.0347	<0.0001	0.9989	Bryozoa unident.
125	75111	0.0155	<0.0001	0.0035	0.0274	<0.0001	0.9989	*Mactromeris polynyma*
126	21921	0.0151	<0.0001	0.0062	0.0241	<0.0001	0.9989	*Pleurogrammus monopterygius*
127	65203	0.0138	<0.0001	0.0044	0.0232	<0.0001	0.9990	*Balanus evermanni*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
128	40011	0.0133	<0.0001	0.0034	0.0233	<0.0001	0.9990	hydroid unident.
129	21932	0.0130	<0.0001	0.0000	0.0286	<0.0001	0.9990	*Hexagrammos stelleri*
130	23041	0.0128	0.0001	0.0000	0.0354	<0.0001	0.9991	*Mallotus villosus*
131	85210	0.0128	<0.0001	0.0009	0.0248	<0.0001	0.9991	*Psolus* sp.
132	78012	0.0124	<0.0001	0.0045	0.0202	<0.0001	0.9991	*Benthoctopus leioderma*
133	20061	0.0114	<0.0001	0.0000	0.0270	<0.0001	0.9992	*Occella dodecaedron*
134	21438	0.0112	<0.0001	0.0000	0.0237	<0.0001	0.9992	*Icelus spiniger*
135	74000	0.0112	<0.0001	0.0061	0.0163	<0.0001	0.9992	Bivalvia unident.
136	71030	0.0110	<0.0001	0.0071	0.0150	<0.0001	0.9992	*Tritonia diomedea*
137	68590	0.0106	<0.0001	0.0000	0.0261	<0.0001	0.9993	*Chionoecetes* hybrid
138	80595	0.0100	<0.0001	0.0032	0.0169	<0.0001	0.9993	*Leptasterias* sp.
139	20006	0.0094	<0.0001	0.0000	0.0199	<0.0001	0.9993	*Leptagonus frenatus*
140	21348	0.0093	<0.0001	0.0000	0.0222	<0.0001	0.9993	*Hemilepidotus papilio*
141	72063	0.0091	<0.0001	0.0038	0.0143	<0.0001	0.9994	*Aforia circinata*
142	50010	0.0088	<0.0001	0.0020	0.0157	<0.0001	0.9994	tube worm unident.
143	22236	0.0087	<0.0001	0.0022	0.0152	<0.0001	0.9994	*Careproctus rastrinus*
144	75284	0.0087	<0.0001	0.0000	0.0216	<0.0001	0.9994	*Serripes* sp.
145	69110	0.0084	<0.0001	0.0019	0.0148	<0.0001	0.9994	*Elassochirus tenuimanus*
146	40500	0.0084	<0.0001	0.0019	0.0148	<0.0001	0.9995	Scyphozoa
147	10221	0.0080	<0.0001	0.0000	0.0197	<0.0001	0.9995	*Platichthys stellatus*
148	71835	0.0079	<0.0001	0.0013	0.0146	<0.0001	0.9995	*Neptunea borealis*
149	71890	0.0079	<0.0001	0.0000	0.0233	<0.0001	0.9995	*Plicifusus* sp.
150	495	0.0077	<0.0001	0.0042	0.0112	<0.0001	0.9995	*Bathyraja violacea*
151	21355	0.0065	<0.0001	0.0017	0.0113	<0.0001	0.9995	*Triglops pingeli*
152	65201	0.0065	<0.0001	0.0000	0.0155	<0.0001	0.9996	*Balanus* sp.
153	80015	0.0064	<0.0001	0.0021	0.0108	<0.0001	0.9996	*Evasterias troschelii*
154	99998	0.0057	<0.0001	0.0000	0.0138	<0.0001	0.9996	*Polychaete tubes*
155	81870	0.0053	<0.0001	0.0000	0.0121	<0.0001	0.9996	*Dipsacaster borealis*
156	71025	0.0053	<0.0001	0.0000	0.0107	<0.0001	0.9996	*Tritonia* sp.
157	91015	0.0052	<0.0001	0.0000	0.0142	<0.0001	0.9996	*Suberites* sp.
158	74980	0.0050	<0.0001	0.0017	0.0083	<0.0001	0.9996	*Clinocardium* sp.
159	74050	0.0049	<0.0001	0.0000	0.0146	<0.0001	0.9997	Mytilidae

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
160	71755	0.0048	<0.0001	0.0002	0.0095	<0.0001	0.9997	*Pyrulofusus harpa*
161	21380	0.0047	<0.0001	0.0000	0.0098	<0.0001	0.9997	*Leptocottus armatus*
162	455	0.0045	<0.0001	0.0000	0.0129	<0.0001	0.9997	*Bathyraja taranetzi*
163	98100	0.0044	<0.0001	0.0000	0.0099	<0.0001	0.9997	*Boltenia* sp.
164	71010	0.0040	<0.0001	0.0000	0.0101	<0.0001	0.9997	Nudibranchia unident.
165	10180	0.0039	<0.0001	0.0000	0.0105	<0.0001	0.9997	*Microstomus pacificus*
166	66502	0.0038	<0.0001	0.0000	0.0078	<0.0001	0.9997	*Crangon* sp.
167	56311	0.0034	<0.0001	0.0000	0.0072	<0.0001	0.9997	*Eunoe nodosa*
168	72747	0.0032	<0.0001	0.0011	0.0052	<0.0001	0.9997	*Buccinum oedematum*
169	24188	0.0031	<0.0001	0.0016	0.0046	<0.0001	0.9997	*Lycodes polaris*
170	98000	0.0031	<0.0001	0.0000	0.0089	<0.0001	0.9998	Ascidian unident.
171	80230	0.0031	<0.0001	0.0000	0.0090	<0.0001	0.9998	*Pedicellaster magister*
172	82511	0.0029	<0.0001	0.0000	0.0063	<0.0001	0.9998	*Strongylocentrotus* sp.
173	82526	0.0028	<0.0001	0.0000	0.0078	<0.0001	0.9998	*Strongylocentrotus pallidus*
174	80540	0.0028	<0.0001	0.0000	0.0083	<0.0001	0.9998	*Henricia* sp.
175	71721	0.0028	<0.0001	0.0000	0.0059	<0.0001	0.9998	*Colus herendeenii*
176	43030	0.0027	<0.0001	0.0008	0.0047	<0.0001	0.9998	*Stomphia* sp.
177	43020	0.0027	<0.0001	0.0000	0.0053	<0.0001	0.9998	*Metridium senile*
178	21356	0.0026	<0.0001	0.0003	0.0048	<0.0001	0.9998	*Triglops macellus*
179	75285	0.0025	<0.0001	0.0000	0.0075	<0.0001	0.9998	*Serripes groenlandicus*
180	21354	0.0022	<0.0001	0.0000	0.0047	<0.0001	0.9998	*Triglops scepticus*
181	75240	0.0022	<0.0001	0.0000	0.0050	<0.0001	0.9998	*Macoma* sp.
182	405	0.0021	<0.0001	0.0000	0.0045	<0.0001	0.9998	*Bathyraja* sp. A
183	75286	0.0021	<0.0001	0.0009	0.0033	<0.0001	0.9998	*Serripes laperousii*
184	78020	0.0020	<0.0001	0.0000	0.0060	<0.0001	0.9998	*Octopus* sp.
185	56300	0.0019	<0.0001	0.0000	0.0041	<0.0001	0.9998	Polynoidae
186	22206	0.0019	<0.0001	0.0000	0.0057	<0.0001	0.9999	*Crystallichthys cyclospilus*
187	68040	0.0019	<0.0001	0.0000	0.0048	<0.0001	0.9999	*Cancer oregonensis*
188	66045	0.0019	<0.0001	0.0000	0.0050	<0.0001	0.9999	*Pandalus goniurus*
189	56312	0.0018	<0.0001	0.0003	0.0034	<0.0001	0.9999	*Eunoe depressa*
190	91005	0.0018	<0.0001	0.0006	0.0031	<0.0001	0.9999	vase sponge
191	71710	0.0018	<0.0001	0.0009	0.0027	<0.0001	0.9999	*Colus* sp.

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
192	23801	0.0017	<0.0001	0.0000	0.0045	<0.0001	0.9999	*Lumpenus* sp.
193	74562	0.0017	<0.0001	0.0000	0.0034	<0.0001	0.9999	*Musculus discors*
194	23220	0.0016	<0.0001	0.0000	0.0048	<0.0001	0.9999	*Oncorhynchus tshawytscha*
195	401	0.0016	<0.0001	0.0000	0.0044	<0.0001	0.9999	skate egg case unident.
196	474	0.0016	<0.0001	0.0000	0.0046	<0.0001	0.9999	*Bathyraja parmifera*
197	71800	0.0015	<0.0001	0.0007	0.0024	<0.0001	0.9999	*Neptunea* sp. A
198	22175	0.0015	<0.0001	0.0000	0.0030	<0.0001	0.9999	*Aptocyclus ventricosus*
199	81360	0.0014	<0.0001	0.0000	0.0029	<0.0001	0.9999	*Diplopteraster multipes*
200	30420	0.0014	<0.0001	0.0000	0.0040	<0.0001	0.9999	*Sebastes polyspinis*
201	85000	0.0013	<0.0001	0.0000	0.0031	<0.0001	0.9999	Holothuroidea unident.
202	80660	0.0012	<0.0001	0.0000	0.0029	<0.0001	0.9999	*Pseudarchaster parelii*
203	80602	0.0011	<0.0001	0.0000	0.0033	<0.0001	0.9999	*Gephyreaster swifti*
204	43082	0.0011	<0.0001	0.0000	0.0025	<0.0001	0.9999	*Cribrinopsis fernaldi*
205	50001	0.0010	<0.0001	0.0000	0.0027	<0.0001	0.9999	worm unident.
206	74080	0.0010	<0.0001	0.0000	0.0024	<0.0001	0.9999	*Mytilus edulis*
207	44094	0.0010	<0.0001	0.0000	0.0027	<0.0001	0.9999	*Amphilaphis* sp.
208	65000	0.0009	<0.0001	0.0000	0.0027	<0.0001	0.9999	Cirripedia
209	71751	0.0009	<0.0001	0.0000	0.0027	<0.0001	0.9999	*Volutopsius* sp.
210	30050	0.0009	<0.0001	0.0000	0.0027	<0.0001	0.9999	rougheye and blackspotted rockfish unid.
211	74311	0.0009	<0.0001	0.0000	0.0025	<0.0001	0.9999	*Hiatella arctica*
212	71525	0.0009	<0.0001	0.0000	0.0023	<0.0001	0.9999	*Natica* sp.
213	74414	0.0008	<0.0001	0.0000	0.0025	<0.0001	0.9999	*Yoldia* sp.
214	23230	0.0008	<0.0001	0.0000	0.0017	<0.0001	0.9999	*Oncorhynchus gorbuscha*
215	69310	0.0008	<0.0001	0.0000	0.0024	<0.0001	0.9999	*Lithodes aequispina*
216	74983	0.0008	<0.0001	0.0000	0.0023	<0.0001	0.9999	*Clinocardium ciliatum*
217	66570	0.0007	<0.0001	0.0000	0.0022	<0.0001	0.9999	*Argis* sp.
218	30152	0.0007	<0.0001	0.0000	0.0016	<0.0001	0.9999	*Sebastes variabilis*
219	21341	0.0007	<0.0001	0.0004	0.0010	<0.0001	1.0000	*Malacocottus zonurus*
220	21725	0.0007	<0.0001	0.0000	0.0020	<0.0001	1.0000	*Boreogadus saida*
221	72059	0.0007	<0.0001	0.0000	0.0015	<0.0001	1.0000	*Aforia* sp.
222	20050	0.0007	<0.0001	0.0002	0.0011	<0.0001	1.0000	*Aspidophoroides bartoni*
223	72790	0.0007	<0.0001	0.0000	0.0015	<0.0001	1.0000	*Arctomelon stearnsii*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
224	23836	0.0006	<0.0001	0.0003	0.0010	<0.0001	1.0000	*Lumpenella longirostris*
225	21735	0.0006	<0.0001	0.0000	0.0017	<0.0001	1.0000	*Eleginus gracilis*
226	43043	0.0006	<0.0001	0.0000	0.0017	<0.0001	1.0000	*Urticina lofotensis*
227	71764	0.0005	<0.0001	0.0000	0.0011	<0.0001	1.0000	*Volutopsius middendorffii*
228	81061	0.0005	<0.0001	0.0000	0.0016	<0.0001	1.0000	*Solaster endeca*
229	10212	0.0005	<0.0001	0.0000	0.0015	<0.0001	1.0000	*Limanda sakhalinensis*
230	95050	0.0005	<0.0001	0.0000	0.0015	<0.0001	1.0000	*Porella compressa*
231	99990	0.0005	<0.0001	0.0000	0.0013	<0.0001	1.0000	invertebrate unident.
232	71511	0.0005	<0.0001	0.0000	0.0014	<0.0001	1.0000	Naticidae eggs
233	71575	0.0005	<0.0001	0.0000	0.0014	<0.0001	1.0000	*Euspira* sp. A
234	21441	0.0005	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Icelus spatula*
235	74416	0.0005	<0.0001	0.0000	0.0010	<0.0001	1.0000	*Yoldia seminuda*
236	94000	0.0005	<0.0001	0.0002	0.0007	<0.0001	1.0000	Sipuncula
237	91069	0.0004	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Tethya* sp.
238	95070	0.0004	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Rhamphostomella costata*
239	82530	0.0004	<0.0001	0.0000	0.0011	<0.0001	1.0000	*Allocentrotus fragilis*
240	75267	0.0004	<0.0001	0.0000	0.0011	<0.0001	1.0000	*Siliqua alta*
241	71537	0.0004	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Natica russa*
242	402	0.0004	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Bathyraja* sp. B
243	50000	0.0004	<0.0001	0.0000	0.0008	<0.0001	1.0000	Polychaeta
244	71681	0.0004	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Crepidula grandis*
245	21346	0.0004	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Hemilepidotus hemilepidotus*
246	71500	0.0004	<0.0001	0.0000	0.0008	<0.0001	1.0000	Gastropod unident.
247	23805	0.0003	<0.0001	0.0000	0.0010	<0.0001	1.0000	*Lumpenus maculatus*
248	75205	0.0003	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Tellina lutea*
249	71018	0.0003	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Dendronotus* sp.
250	21329	0.0003	<0.0001	0.0001	0.0004	<0.0001	1.0000	*Gymnocanthus detrisus*
251	40512	0.0003	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Aurelia labiata*
252	71580	0.0003	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Euspira* sp. B
253	71726	0.0003	<0.0001	0.0000	0.0008	<0.0001	1.0000	*Colus spitzbergensis*
254	75264	0.0002	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Siliqua* sp.
255	20041	0.0002	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Podothecus veternus*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
256	20202	0.0002	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Ammodytes hexapterus*
257	75201	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Tellina* sp.
258	81310	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Pteraster* sp.
259	436	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Bathyraja interrupta*
260	21935	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Hexagrammos decagrammus*
261	74656	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Cyclocardia* sp.
262	71004	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Neptunea* sp. B
263	94500	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	Echiura
264	91040	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Mycale loveni*
265	59111	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Notostombdella* sp.
266	95030	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Flustra serrulata*
267	81850	0.0001	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Dipsacaster* sp.
268	82730	0.0001	<0.0001	0.0000	0.0004	<0.0001	1.0000	sand dollar unident.
269	23807	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Lumpenus fabricii*
270	66530	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Crangon dalli*
271	69336	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Placetron wosnessenskii*
272	66174	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Eualus fabricii*
273	41221	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Gersemia rubiformis*
274	71202	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Chlamylla* sp.
275	21333	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Artediellus pacificus*
276	23850	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Poroclinus rothrocki*
277	81090	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Crossaster* sp.
278	74065	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Mytilus* sp.
279	75030	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Protothaca staminea*
280	66611	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Argis lar*
281	45005	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Beroe* sp.
282	80728	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Ceramaster* sp.
283	80729	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Ceramaster japonicus*
284	74106	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Chlamys rubida*
285	20001	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Pallasina barbata*
286	74419	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Yoldia thraciaeformis*
287	78010	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	Octopodidae

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
288	21423	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Eurymen gyrinus*
289	40506	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Aequorea* sp.
290	66203	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Lebbeus groenlandicus*
291	71759	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Volutopsius filosus*
292	22233	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Careproctus gilberti*
293	71530	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Natica clausa*
294	21315	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Gymnocanthus tricuspis*
295	85115	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Molpadia* sp.
296	80546	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Henricia tumida*
297	85200	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Cucumaria* sp.
298	66515	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Crangon communis*
299	20035	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyagonus alascanus*
300	72403	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Boreotrophon coronatus*
301	21350	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Triglops* sp.
302	23806	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lumpenus medius*
303	69316	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Hapalogaster grebnitzkii*
304	98070	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Thaliacea unident.*
305	81820	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Leptychaster* sp.
306	20005	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Leptagonus leptorhynchus*
307	21440	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Icelus euryops*
308	62000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Isopoda
309	83400	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Ophiopholis aculeata*
310	66150	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Hippolytidae
311	71002	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Buccinum* sp. B
312	21405	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Nautichthys pribilovius*
313	66170	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus* sp.
314	22201	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Liparis* sp.
315	66580	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Argis dentata*
316	20004	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Leptagonus* sp.
317	68000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	crab unident.
318	21352	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Triglops forficata*
319	71731	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Colus halli*

Appendix C Table 1.--Continued.

Rank	Species code	Mean CPUE (kg/ha)	Variance	95% Confidence limits		Proportion	Cumulative proportion	Species name
320	20051	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Aspidophoroides olriki*
321	79000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Teuthoidea
322	20036	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyagonus infraspinatus*
323	20037	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyagonus pentacanthus*
324	20034	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyagonus* sp.
325	21300	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Cottidae
326	66175	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus gaimardii*
327	43000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.9961	Actiniaria
328	21316	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.9967	*Gymnocanthus galeatus*
329	98311	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Aplidium* new
330	79020	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Rossia pacifica*
331	21313	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Gymnocanthus* sp.
332	66020	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pandalus* 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 2005 eastern Bering Sea bottom trawl survey.

Appendix D Table 1.--Population estimates by sex and size for walleye pollock (*Theragra chalcogramma*) from the 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
80	30,418	0	376,400	406,817	0.0001	0.0001
90	62,264	0	1,853,188	1,915,451	0.0003	0.0003
100	222,311	120,343	7,155,033	7,497,687	0.0010	0.0013
110	280,475	694,616	19,093,122	20,068,212	0.0027	0.0041
120	1,507,817	1,468,120	29,013,100	31,989,036	0.0044	0.0085
130	4,566,184	3,762,920	33,506,172	41,835,276	0.0057	0.0142
140	6,084,811	5,497,380	39,405,371	50,987,562	0.0070	0.0212
150	4,858,964	4,548,552	35,507,327	44,914,842	0.0062	0.0273
160	6,943,134	10,288,699	29,746,883	46,978,716	0.0064	0.0338
170	6,649,068	8,756,146	16,360,337	31,765,551	0.0043	0.0381
180	6,962,683	6,675,028	8,153,092	21,790,802	0.0030	0.0411
190	3,205,190	3,906,988	2,868,931	9,981,109	0.0014	0.0425
200	5,106,752	5,509,974	2,281,237	12,897,963	0.0018	0.0442
210	5,530,823	6,866,730	240,484	12,638,037	0.0017	0.0460
220	5,475,233	3,813,986	648,234	9,937,453	0.0014	0.0473
230	5,376,234	4,848,851	80,898	10,305,983	0.0014	0.0487
240	6,224,444	3,425,359	0	9,649,803	0.0013	0.0501
250	5,435,382	5,620,592	0	11,055,974	0.0015	0.0516
260	9,499,420	5,471,307	0	14,970,727	0.0020	0.0536
270	5,345,116	4,763,769	0	10,108,885	0.0014	0.0550
280	6,987,801	4,886,974	0	11,874,775	0.0016	0.0566
290	3,578,841	6,013,752	0	9,592,593	0.0013	0.0579
300	8,115,510	5,247,420	0	13,362,930	0.0018	0.0598
310	12,002,904	9,547,959	0	21,550,863	0.0030	0.0627
320	9,078,253	6,278,432	0	15,356,686	0.0021	0.0648
330	9,172,310	9,554,716	0	18,727,025	0.0026	0.0674
340	12,522,874	17,754,824	0	30,277,699	0.0041	0.0715
350	23,717,521	14,176,428	0	37,893,949	0.0052	0.0767
360	29,326,501	23,641,740	0	52,968,241	0.0073	0.0840
370	47,070,884	33,202,421	0	80,273,305	0.0110	0.0950
380	76,892,392	51,834,848	0	128,727,241	0.0176	0.1126
390	112,977,477	79,885,533	0	192,863,011	0.0264	0.1390
400	142,251,720	84,714,999	0	226,966,719	0.0311	0.1701
410	193,377,276	122,441,756	0	315,819,032	0.0432	0.2133
420	277,904,120	172,760,598	0	450,664,718	0.0617	0.2750
430	322,801,146	194,352,535	27,894	517,181,576	0.0708	0.3459
440	327,208,975	226,145,339	0	553,354,314	0.0758	0.4216
450	316,108,548	225,856,934	27,894	541,993,377	0.0742	0.4958
460	335,943,218	229,498,954	0	565,442,172	0.0774	0.5733
470	283,604,231	227,284,770	0	510,889,001	0.0700	0.6432
480	252,545,937	215,210,369	0	467,756,306	0.0640	0.7073
490	230,157,939	194,729,320	0	424,887,259	0.0582	0.7654
500	179,798,017	150,218,100	0	330,016,117	0.0452	0.8106
510	150,612,597	134,139,966	0	284,752,563	0.0390	0.8496
520	114,217,957	116,001,000	0	230,218,956	0.0315	0.8812
530	74,675,300	107,919,172	0	182,594,472	0.0250	0.9062

Appendix D Table 1.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
540	71,209,004	83,204,084	0	154,413,088	0.0211	0.9273
550	42,870,801	56,328,711	0	99,199,512	0.0136	0.9409
560	40,180,967	57,824,626	0	98,005,593	0.0134	0.9543
570	23,573,966	44,341,697	0	67,915,663	0.0093	0.9636
580	19,906,569	35,583,983	0	55,490,553	0.0076	0.9712
590	13,508,230	35,279,193	0	48,787,423	0.0067	0.9779
600	12,696,172	24,345,604	0	37,041,776	0.0051	0.9830
610	7,157,942	18,744,191	0	25,902,133	0.0035	0.9865
620	7,111,987	16,281,486	0	23,393,474	0.0032	0.9897
630	4,945,720	13,340,381	0	18,286,101	0.0025	0.9922
640	3,758,896	10,342,260	0	14,101,156	0.0019	0.9941
650	2,921,252	7,731,281	0	10,652,533	0.0015	0.9956
660	1,897,483	4,595,533	0	6,493,016	0.0009	0.9965
670	1,304,793	3,952,047	0	5,256,840	0.0007	0.9972
680	879,098	4,681,048	0	5,560,146	0.0008	0.9980
690	1,479,689	1,859,829	0	3,339,519	0.0005	0.9984
700	673,555	3,048,046	0	3,721,601	0.0005	0.9989
710	381,545	1,844,323	0	2,225,868	0.0003	0.9992
720	214,562	834,949	0	1,049,511	0.0001	0.9994
730	98,700	997,238	0	1,095,939	0.0002	0.9995
740	753,654	425,162	0	1,178,816	0.0002	0.9997
750	157,449	595,218	0	752,666	0.0001	0.9998
760	66,503	312,026	0	378,529	0.0001	0.9998
770	74,573	474,940	0	549,513	0.0001	0.9999
780	68,966	217,266	0	286,232	0.0000	1.0000
790	0	122,115	0	122,115	0.0000	1.0000
800	0	100,783	0	100,783	0.0000	1.0000
810	0	0	0	0	0.0000	1.0000
820	0	29,628	0	29,628	0.0000	1.0000
830	0	0	0	0	0.0000	1.0000
840	0	0	0	0	0.0000	1.0000
850	0	0	0	0	0.0000	1.0000
860	0	27,222	0	27,222	0.0000	1.0000
Total	**3,899,909,052**	**3,176,803,087**	**226,345,596**	**7,303,057,735**	**1.0000**	**1.0000**

Appendix D Table 2.--Population estimates by sex and size for Pacific cod (*Gadus macrocephalus*) from the 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
100	0	0	32,879	32,879	0.0001	0.0001
110	33,681	31,006	92,503	157,191	0.0003	0.0004
120	340,801	183,392	372,113	896,305	0.0020	0.0024
130	416,690	463,528	840,621	1,720,839	0.0038	0.0062
140	1,071,124	1,396,317	1,023,427	3,490,868	0.0077	0.0139
150	1,961,604	2,258,966	1,318,147	5,538,717	0.0123	0.0262
160	3,788,862	3,474,541	805,889	8,069,292	0.0178	0.0440
170	5,534,061	4,055,372	389,808	9,979,241	0.0221	0.0661
180	6,035,719	5,990,006	190,619	12,216,344	0.0270	0.0931
190	5,595,317	5,672,432	58,450	11,326,199	0.0251	0.1182
200	6,110,933	5,936,448	65,365	12,112,746	0.0268	0.1450
210	5,857,995	5,666,772	119,084	11,643,851	0.0258	0.1707
220	7,392,925	7,130,878	0	14,523,803	0.0321	0.2029
230	6,844,313	7,690,323	0	14,534,637	0.0322	0.2350
240	7,323,385	8,136,999	0	15,460,385	0.0342	0.2692
250	7,792,826	7,234,812	0	15,027,638	0.0332	0.3025
260	6,071,363	5,529,282	0	11,600,645	0.0257	0.3281
270	5,181,228	3,292,859	0	8,474,087	0.0187	0.3469
280	3,147,421	2,389,344	0	5,536,764	0.0122	0.3591
290	3,755,823	1,755,286	0	5,511,109	0.0122	0.3713
300	2,982,478	2,787,199	0	5,769,677	0.0128	0.3841
310	3,403,751	1,257,620	0	4,661,372	0.0103	0.3944
320	2,438,453	3,888,022	0	6,326,475	0.0140	0.4084
330	2,945,145	4,247,973	0	7,193,118	0.0159	0.4243
340	3,728,127	4,211,024	0	7,939,152	0.0176	0.4418
350	4,672,693	3,251,294	0	7,923,988	0.0175	0.4594
360	4,183,210	4,098,812	0	8,282,022	0.0183	0.4777
370	4,939,335	4,299,585	0	9,238,921	0.0204	0.4981
380	5,896,065	5,758,786	0	11,654,851	0.0258	0.5239
390	5,010,126	5,198,571	0	10,208,696	0.0226	0.5465
400	4,297,417	3,866,796	0	8,164,213	0.0181	0.5645
410	4,090,752	3,642,638	0	7,733,391	0.0171	0.5816
420	4,287,355	3,797,277	0	8,084,632	0.0179	0.5995
430	3,948,897	4,471,330	0	8,420,227	0.0186	0.6182
440	4,215,882	4,569,236	0	8,785,118	0.0194	0.6376
450	3,763,458	2,842,569	0	6,606,027	0.0146	0.6522
460	4,921,243	3,231,401	0	8,152,644	0.0180	0.6702
470	3,198,353	3,597,326	0	6,795,679	0.0150	0.6853
480	3,658,981	3,859,420	0	7,518,401	0.0166	0.7019
490	2,526,413	2,794,654	0	5,321,067	0.0118	0.7137
500	3,669,658	3,122,028	0	6,791,686	0.0150	0.7287
510	3,094,165	1,985,761	0	5,079,927	0.0112	0.7399
520	3,143,187	2,578,816	0	5,722,003	0.0127	0.7526
530	3,076,848	2,111,088	0	5,187,937	0.0115	0.7641
540	3,068,454	2,249,828	0	5,318,282	0.0118	0.7758
550	2,556,981	1,894,044	0	4,451,024	0.0098	0.7857
560	2,352,904	2,111,792	0	4,464,696	0.0099	0.7955

Appendix D Table 2.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
570	2,214,960	1,839,195	0	4,054,154	0.0090	0.8045
580	2,081,059	1,706,512	0	3,787,571	0.0084	0.8129
590	2,264,540	1,731,965	0	3,996,505	0.0088	0.8217
600	2,842,734	1,866,361	0	4,709,094	0.0104	0.8322
610	1,697,506	1,648,096	0	3,345,602	0.0074	0.8396
620	2,524,602	2,208,801	0	4,733,404	0.0105	0.8500
630	1,892,742	1,412,553	0	3,305,294	0.0073	0.8573
640	2,534,885	2,394,214	0	4,929,099	0.0109	0.8682
650	2,260,556	1,809,117	0	4,069,673	0.0090	0.8772
660	1,880,097	2,585,477	0	4,465,574	0.0099	0.8871
670	2,070,472	1,949,555	0	4,020,027	0.0089	0.8960
680	2,047,075	1,942,239	0	3,989,314	0.0088	0.9048
690	1,620,300	1,457,572	0	3,077,872	0.0068	0.9116
700	1,363,982	1,940,141	0	3,304,123	0.0073	0.9190
710	1,335,366	1,602,848	0	2,938,214	0.0065	0.9255
720	1,303,878	1,456,519	0	2,760,397	0.0061	0.9316
730	1,003,667	1,327,091	0	2,330,758	0.0052	0.9367
740	1,488,854	1,375,130	0	2,863,983	0.0063	0.9430
750	952,123	1,073,462	0	2,025,585	0.0045	0.9475
760	1,050,159	1,815,747	0	2,865,905	0.0063	0.9539
770	1,201,172	939,110	0	2,140,281	0.0047	0.9586
780	1,162,436	1,389,686	0	2,552,122	0.0056	0.9642
790	1,004,606	935,758	0	1,940,364	0.0043	0.9685
800	718,151	1,035,425	0	1,753,576	0.0039	0.9724
810	432,228	1,149,290	0	1,581,518	0.0035	0.9759
820	866,604	734,001	0	1,600,605	0.0035	0.9795
830	530,189	738,560	0	1,268,748	0.0028	0.9823
840	312,733	669,467	0	982,199	0.0022	0.9844
850	291,712	399,117	0	690,829	0.0015	0.9860
860	696,492	404,992	0	1,101,484	0.0024	0.9884
870	166,923	642,276	0	809,199	0.0018	0.9902
880	290,570	630,271	0	920,842	0.0020	0.9922
890	274,103	288,924	0	563,026	0.0012	0.9935
900	93,833	312,482	0	406,315	0.0009	0.9944
910	210,362	364,436	0	574,798	0.0013	0.9956
920	82,132	313,212	0	395,344	0.0009	0.9965
930	43,118	259,651	0	302,769	0.0007	0.9972
940	31,023	111,984	0	143,006	0.0003	0.9975
950	76,237	285,200	0	361,437	0.0008	0.9983
960	56,353	145,849	0	202,202	0.0004	0.9988
970	53,102	59,430	0	112,532	0.0002	0.9990
980	29,835	113,900	0	143,735	0.0003	0.9993
990	0	17,565	0	17,565	0.0000	0.9994
1000	28,338	115,725	0	144,063	0.0003	0.9997
1010	0	82,685	0	82,685	0.0002	0.9999
1020	15,956	0	0	15,956	0.0000	0.9999
1030	30,366	0	0	30,366	0.0001	1.0000
1040	0	17,361	0	17,361	0.0000	1.0000
Total	**229,454,531**	**60,181**	**5,308,905**	**452,075,840**	**1.0000**	**1.0000**

Appendix D Table 3.--Population estimates by sex and size for yellowfin sole (*Limanda aspera*) from the 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
60	0	379,247	0	379,247	0.0000	0.0000
80	0	0	203,916	203,916	0.0000	0.0001
90	1,568,492	245,874	0	1,814,367	0.0002	0.0002
100	4,272,774	1,566,208	0	5,838,982	0.0006	0.0009
110	8,662,131	11,026,190	0	19,688,321	0.0020	0.0029
120	10,981,913	9,769,262	0	20,751,174	0.0022	0.0050
130	26,277,647	16,980,189	0	43,257,836	0.0045	0.0095
140	36,731,904	30,178,125	0	66,910,029	0.0069	0.0165
150	39,172,730	36,189,028	0	75,361,757	0.0078	0.0243
160	41,093,941	31,654,617	0	72,748,559	0.0075	0.0318
170	48,286,790	60,924,720	0	109,211,510	0.0113	0.0431
180	77,772,044	79,623,780	0	157,395,824	0.0163	0.0595
190	121,390,326	98,213,995	0	219,604,320	0.0228	0.0822
200	163,140,630	179,705,117	0	342,845,747	0.0355	0.1178
210	154,143,528	155,944,259	0	310,087,787	0.0321	0.1499
220	199,982,210	177,037,743	0	377,019,953	0.0391	0.1890
230	185,119,341	208,715,543	0	393,834,884	0.0408	0.2298
240	217,262,900	257,785,738	0	475,048,638	0.0493	0.2791
250	187,097,639	243,120,711	0	430,218,350	0.0446	0.3237
260	283,368,405	252,866,654	0	536,235,060	0.0556	0.3793
270	266,030,970	248,916,453	0	514,947,423	0.0534	0.4327
280	268,915,922	258,579,907	0	527,495,828	0.0547	0.4874
290	296,521,116	237,437,509	0	533,958,624	0.0554	0.5427
300	372,500,991	309,079,419	0	681,580,410	0.0707	0.6134
310	368,961,548	328,550,650	0	697,512,198	0.0723	0.6857
320	323,157,659	407,785,525	0	730,943,184	0.0758	0.7615
330	241,539,594	380,119,004	0	621,658,598	0.0645	0.8259
340	163,963,351	396,740,859	0	560,704,209	0.0581	0.8841
350	81,079,083	335,792,135	0	416,871,218	0.0432	0.9273
360	39,466,064	280,580,709	0	320,046,773	0.0332	0.9605
370	19,159,108	153,630,784	0	172,789,892	0.0179	0.9784
380	2,618,966	99,973,528	0	102,592,494	0.0106	0.9890
390	495,137	51,107,353	0	51,602,490	0.0053	0.9944
400	0	33,136,526	0	33,136,526	0.0034	0.9978
410	191,670	12,363,030	0	12,554,700	0.0013	0.9991
420	131,890	3,955,358	0	4,087,248	0.0004	0.9995
430	0	2,556,695	0	2,556,695	0.0003	0.9998
440	0	1,299,768	0	1,299,768	0.0001	1.0000
Total	**4,251,058,415**	**5,394,096,262**	**203,916**	**9,645,358,593**	**1.0000**	**1.0000**

Appendix D Table 4.--Population estimates by sex and size for northern and southern rock sole (*Lepidopsetta* spp.) from the 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
40	0	307,171	0	307,171	0.0000	0.0000
70	0	0	2,026,589	2,026,589	0.0002	0.0002
80	1,669,455	4,452,036	26,216,879	32,338,370	0.0028	0.0030
90	41,571,396	13,828,500	69,954,488	125,354,385	0.0110	0.0140
100	66,151,768	43,996,810	89,870,285	200,018,862	0.0175	0.0315
110	164,162,950	105,187,488	210,753,506	480,103,944	0.0420	0.0736
120	343,647,816	236,974,600	241,863,294	822,485,710	0.0720	0.1456
130	401,335,641	264,671,306	140,159,071	806,166,018	0.0706	0.2162
140	340,618,101	233,209,991	37,615,119	611,443,211	0.0535	0.2697
150	235,771,208	164,033,566	10,120,267	409,925,040	0.0359	0.3056
160	224,514,763	185,960,822	766,630	411,242,215	0.0360	0.3416
170	217,108,775	176,039,651	0	393,148,425	0.0344	0.3761
180	239,190,242	179,223,854	0	418,414,096	0.0366	0.4127
190	198,829,518	133,441,711	0	332,271,229	0.0291	0.4418
200	184,836,214	116,386,670	0	301,222,884	0.0264	0.4682
210	138,647,392	104,754,526	0	243,401,918	0.0213	0.4895
220	159,969,805	121,957,222	0	281,927,027	0.0247	0.5142
230	165,119,243	112,500,419	0	277,619,662	0.0243	0.5385
240	212,930,369	132,073,202	0	345,003,571	0.0302	0.5687
250	197,860,493	136,801,981	0	334,662,474	0.0293	0.5980
260	220,926,228	125,646,573	0	346,572,801	0.0303	0.6284
270	271,809,408	135,527,282	0	407,336,690	0.0357	0.6640
280	420,004,154	141,474,456	0	561,478,611	0.0492	0.7132
290	404,696,806	117,923,688	0	522,620,494	0.0458	0.7590
300	411,091,390	135,911,753	0	547,003,142	0.0479	0.8069
310	240,892,687	132,428,620	0	373,321,307	0.0327	0.8396
320	122,925,820	166,597,057	0	289,522,876	0.0254	0.8649
330	48,904,021	197,267,463	0	246,171,484	0.0216	0.8865
340	19,944,491	270,920,184	0	290,864,675	0.0255	0.9119
350	9,810,489	258,868,190	0	268,678,679	0.0235	0.9355
360	2,410,877	284,090,302	0	286,501,179	0.0251	0.9606
370	3,736,466	168,098,324	0	171,834,790	0.0150	0.9756
380	473,720	129,419,382	0	129,893,102	0.0114	0.9870
390	87,485	72,963,261	0	73,050,746	0.0064	0.9934
400	936,728	36,392,986	0	37,329,714	0.0033	0.9967
410	505,808	21,703,075	0	22,208,883	0.0019	0.9986
420	27,794	8,105,194	0	8,132,988	0.0007	0.9993
430	0	3,108,741	0	3,108,741	0.0003	0.9996
440	336,743	3,268,625	0	3,605,368	0.0003	0.9999
450	0	884,870	0	884,870	0.0001	1.0000
470	0	281,898	0	281,898	0.0000	1.0000
Total	**5,713,456,262**	**4,876,683,450**	**829,346,128**	**11,419,485,841**	**1.0000**	**1.0000**

Appendix D Table 5.--Population estimates by sex and size for flathead sole and Bering flounder (*Hippoglossoides* spp.) from the 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
40	0	43,621	0	43,621	0.0000	0.0000
70	0	0	93,377	93,377	0.0000	0.0001
80	19,634	0	1,647,126	1,666,760	0.0008	0.0009
90	1,179,962	629,923	4,873,602	6,683,487	0.0033	0.0042
100	3,287,475	1,903,121	4,847,619	10,038,215	0.0050	0.0092
110	5,177,386	3,889,398	4,297,130	13,363,914	0.0067	0.0159
120	11,237,157	8,964,702	6,897,447	27,099,306	0.0135	0.0294
130	12,534,730	10,443,492	4,053,778	27,031,999	0.0135	0.0428
140	11,755,902	12,036,081	4,744,596	28,536,579	0.0142	0.0571
150	16,059,089	10,947,474	2,907,165	29,913,728	0.0149	0.0720
160	18,359,752	15,489,736	2,620,154	36,469,642	0.0182	0.0901
170	18,375,878	18,618,413	1,079,949	38,074,240	0.0190	0.1091
180	23,867,908	19,132,252	658,314	43,658,474	0.0217	0.1308
190	25,409,760	26,165,195	357,801	51,932,756	0.0259	0.1567
200	26,997,835	25,481,806	0	52,479,640	0.0261	0.1829
210	30,371,714	23,512,871	0	53,884,584	0.0268	0.2097
220	27,372,132	25,992,528	60,806	53,425,467	0.0266	0.2363
230	31,987,482	23,700,943	0	55,688,424	0.0277	0.2640
240	29,614,235	24,280,160	60,806	53,955,201	0.0269	0.2909
250	30,194,872	28,501,836	0	58,696,707	0.0292	0.3202
260	40,088,172	29,717,192	0	69,805,365	0.0348	0.3549
270	44,991,342	32,948,225	121,613	78,061,179	0.0389	0.3938
280	49,105,161	34,267,468	0	83,372,629	0.0415	0.4354
290	64,262,948	34,284,136	60,806	98,607,891	0.0491	0.4845
300	68,086,922	38,922,419	182,419	107,191,760	0.0534	0.5379
310	69,534,420	39,647,661	0	109,182,080	0.0544	0.5923
320	62,968,102	41,233,160	0	104,201,262	0.0519	0.6442
330	65,338,695	45,614,126	182,419	111,135,240	0.0554	0.6995
340	55,566,457	42,720,662	60,806	98,347,926	0.0490	0.7485
350	45,385,061	46,282,193	243,225	91,910,479	0.0458	0.7943
360	34,456,529	41,123,246	364,838	75,944,613	0.0378	0.8321
370	26,613,361	33,546,406	121,613	60,281,380	0.0300	0.8621
380	20,460,302	27,175,818	121,613	47,757,733	0.0238	0.8859
390	12,974,121	25,455,441	60,806	38,490,368	0.0192	0.9051
400	8,923,974	21,938,923	60,806	30,923,703	0.0154	0.9205
410	3,803,877	21,356,390	0	25,160,267	0.0125	0.9330
420	2,138,748	23,457,545	0	25,596,294	0.0128	0.9458
430	478,319	23,656,099	0	24,134,419	0.0120	0.9578
440	352,157	21,885,495	0	22,237,652	0.0111	0.9689
450	715,640	13,747,193	0	14,462,833	0.0072	0.9761
460	254,828	12,758,177	0	13,013,004	0.0065	0.9826
470	192,737	10,820,766	0	11,013,503	0.0055	0.9881
480	429,384	10,159,187	0	10,588,571	0.0053	0.9933
490	511,145	6,068,115	0	6,579,260	0.0033	0.9966
500	0	3,752,319	0	3,752,319	0.0019	0.9985
510	286,256	1,651,288	0	1,937,544	0.0010	0.9995

Appendix D Table 5.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
520	0	294,100	0	294,100	0.0001	0.9996
530	0	472,609	0	472,609	0.0002	0.9998
540	0	329,674	0	329,674	0.0002	1.0000
Total	**1,001,721,561**	**965,019,583**	**40,780,634**	**2,007,521,778**	**1.0000**	**1.0000**

Appendix D Table 6.--Population estimates by sex and size for Alaska plaice (*Pleuronectes quadrituberculatus*) from the 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative 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	Cumulative proportion
550	0	1,805,650	0	1,805,650	0.0024	0.9983
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 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
290	17,180	0	0	17,180	0.0035	0.0035
300	0	41,606	0	41,606	0.0084	0.0119
310	0	0	0	0	0.0000	0.0119
320	48,664	20,803	0	69,467	0.0141	0.0260
330	70,789	20,346	0	91,135	0.0185	0.0444
340	92,652	0	0	92,652	0.0188	0.0632
350	58,181	31,188	0	89,369	0.0181	0.0813
360	316,562	17,180	0	333,742	0.0676	0.1489
370	113,851	64,950	0	178,800	0.0362	0.1851
380	147,679	27,861	0	175,540	0.0355	0.2206
390	94,355	0	0	94,355	0.0191	0.2397
400	63,501	20,803	0	84,304	0.0171	0.2568
410	78,723	35,933	0	114,657	0.0232	0.2800
420	46,143	0	0	46,143	0.0093	0.2894
430	119,795	0	0	119,795	0.0243	0.3136
440	27,861	31,188	0	59,049	0.0120	0.3256
450	22,892	51,728	0	74,620	0.0151	0.3407
460	78,257	77,881	0	156,138	0.0316	0.3723
470	51,069	42,241	0	93,310	0.0189	0.3912
480	17,180	0	0	17,180	0.0035	0.3947
490	27,871	0	0	27,871	0.0056	0.4003
500	17,967	28,278	0	46,245	0.0094	0.4097
510	33,103	105,028	0	138,130	0.0280	0.4377
520	88,848	0	0	88,848	0.0180	0.4557
530	35,640	29,308	0	64,948	0.0132	0.4688
540	35,640	31,440	0	67,080	0.0136	0.4824
570	0	27,797	0	27,797	0.0056	0.4880
580	0	85,234	0	85,234	0.0173	0.5053
600	0	33,762	0	33,762	0.0068	0.5121
630	15,260	17,987	0	33,247	0.0067	0.5189
700	42,617	31,944	0	74,561	0.0151	0.5340
710	86,623	28,278	0	114,901	0.0233	0.5572
720	71,490	77,625	0	149,115	0.0302	0.5874
730	35,640	0	0	35,640	0.0072	0.5947
740	165,065	0	0	165,065	0.0334	0.6281
750	35,640	35,640	0	71,280	0.0144	0.6425
760	100,687	0	0	100,687	0.0204	0.6629
770	29,074	42,241	0	71,314	0.0144	0.6773
780	112,277	46,265	0	158,542	0.0321	0.7095
790	71,280	0	0	71,280	0.0144	0.7239
800	0	68,502	0	68,502	0.0139	0.7378
810	42,617	26,838	0	69,455	0.0141	0.7518
820	42,617	72,888	0	115,505	0.0234	0.7752
830	0	91,017	0	91,017	0.0184	0.7936
840	0	56,079	0	56,079	0.0114	0.8050
850	0	54,436	0	54,436	0.0110	0.8160
860	0	153,573	0	153,573	0.0311	0.8471

Appendix D Table 7.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
870	0	155,377	0	155,377	0.0315	0.8786
880	0	20,803	0	20,803	0.0042	0.8828
890	0	101,268	0	101,268	0.0205	0.9033
900	0	122,361	0	122,361	0.0248	0.9281
910	0	95,701	0	95,701	0.0194	0.9475
920	0	63,538	0	63,538	0.0129	0.9603
930	0	32,249	0	32,249	0.0065	0.9669
940	0	74,043	0	74,043	0.0150	0.9819
960	0	28,278	0	28,278	0.0057	0.9876
990	0	33,762	0	33,762	0.0068	0.9944
1000	0	27,502	0	27,502	0.0056	1.0000
Total	**2,555,290**	**2,382,750**	**0**	**4,938,039**	**1.0000**	**1.0000**

Appendix D Table 8.--Population estimates by sex and size for arrowtooth flounder (*Atheresthes stomias*) from the 2005 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
90	0	0	84,987	84,987	0.0001	0.0001
110	192,263	333,361	84,987	610,611	0.0004	0.0004
120	224,359	250,299	0	474,658	0.0003	0.0007
130	515,479	365,935	152,209	1,033,623	0.0006	0.0014
140	2,027,788	2,785,202	0	4,812,990	0.0030	0.0044
150	3,991,616	5,042,110	0	9,033,726	0.0056	0.0100
160	7,626,154	10,768,100	385,200	18,779,454	0.0117	0.0216
170	15,532,147	19,257,309	565,468	35,354,924	0.0220	0.0436
180	24,015,569	33,304,180	2,201,854	59,521,604	0.0370	0.0806
190	21,628,559	38,583,626	2,079,760	62,291,946	0.0387	0.1193
200	20,321,289	38,546,620	1,331,967	60,199,877	0.0374	0.1567
210	16,585,394	24,304,783	798,459	41,688,636	0.0259	0.1826
220	13,138,217	22,532,258	627,543	36,298,018	0.0226	0.2051
230	13,239,518	18,173,277	636,896	32,049,691	0.0199	0.2250
240	18,239,839	26,108,081	1,202,365	45,550,285	0.0283	0.2533
250	19,153,265	28,334,330	501,549	47,989,144	0.0298	0.2832
260	18,921,109	31,511,376	888,593	51,321,078	0.0319	0.3150
270	17,517,320	31,026,720	636,896	49,180,936	0.0306	0.3456
280	19,544,679	38,963,175	484,687	58,992,541	0.0367	0.3823
290	18,232,707	32,582,294	779,753	51,594,753	0.0321	0.4143
300	17,043,564	37,947,512	621,798	55,612,875	0.0346	0.4489
310	19,370,456	31,837,162	747,793	51,955,410	0.0323	0.4811
320	18,908,327	42,409,979	958,177	62,276,482	0.0387	0.5198
330	17,657,922	37,397,080	1,245,734	56,300,736	0.0350	0.5548
340	21,453,246	45,896,449	886,749	68,236,443	0.0424	0.5972
350	19,153,834	39,027,171	595,584	58,776,588	0.0365	0.6337
360	18,912,060	38,440,843	572,977	57,925,880	0.0360	0.6697
370	14,053,011	33,754,225	178,424	47,985,660	0.0298	0.6995
380	14,434,824	33,100,825	291,165	47,826,814	0.0297	0.7292
390	12,048,595	26,604,874	308,027	38,961,496	0.0242	0.7534
400	11,088,809	25,054,710	428,276	36,571,796	0.0227	0.7762
410	11,835,526	25,011,990	531,664	37,379,180	0.0232	0.7994
420	8,407,618	27,849,696	232,990	36,490,304	0.0227	0.8221
430	7,225,472	23,461,815	933,725	31,621,012	0.0196	0.8417
440	5,052,216	22,526,702	281,812	27,860,730	0.0173	0.8590
450	3,537,811	22,624,930	657,659	26,820,400	0.0167	0.8757
460	2,478,519	23,888,655	178,424	26,545,597	0.0165	0.8922
470	1,410,554	18,269,682	443,374	20,123,611	0.0125	0.9047
480	900,844	18,453,753	97,643	19,452,240	0.0121	0.9168
490	1,094,611	14,765,981	281,812	16,142,403	0.0100	0.9268
500	239,372	12,701,617	298,674	13,239,662	0.0082	0.9350
510	339,421	8,273,133	48,821	8,661,375	0.0054	0.9404
520	183,142	8,585,614	0	8,768,756	0.0054	0.9458
530	745,876	8,392,897	0	9,138,772	0.0057	0.9515
540	207,735	8,261,698	80,781	8,550,214	0.0053	0.9568
550	401,597	6,274,391	152,209	6,828,198	0.0042	0.9611

Appendix D Table 8.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
560	109,818	6,563,413	0	6,673,231	0.0041	0.9652
570	58,591	7,159,341	152,209	7,370,142	0.0046	0.9698
580	216,965	5,941,962	48,821	6,207,748	0.0039	0.9737
590	0	5,980,894	48,821	6,029,715	0.0037	0.9774
600	84,429	5,449,593	0	5,534,022	0.0034	0.9808
610	105,725	5,246,629	304,419	5,656,772	0.0035	0.9843
620	0	4,835,928	0	4,835,928	0.0030	0.9874
630	0	5,240,364	0	5,240,364	0.0033	0.9906
640	0	3,345,575	0	3,345,575	0.0021	0.9927
650	298,684	1,513,593	0	1,812,278	0.0011	0.9938
660	0	2,063,828	0	2,063,828	0.0013	0.9951
670	0	1,769,292	152,209	1,921,501	0.0012	0.9963
680	0	1,843,531	0	1,843,531	0.0011	0.9974
690	0	734,935	0	734,935	0.0005	0.9979
700	0	341,962	0	341,962	0.0002	0.9981
710	0	741,292	152,209	893,501	0.0006	0.9987
720	0	213,061	0	213,061	0.0001	0.9988
730	0	736,210	0	736,210	0.0005	0.9992
740	0	240,283	0	240,283	0.0001	0.9994
750	0	92,575	0	92,575	0.0001	0.9995
760	0	395,586	0	395,586	0.0002	0.9997
770	0	421,385	0	421,385	0.0003	1.0000
780	0	58,175	0	58,175	0.0000	1.0000
Total	**479,706,444**	**1,104,515,823**	**25,356,155**	**1,609,578,422**	**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	Cumulative proportion
80	0	0	37,962	37,962	0.0002	0.0002
110	56,665	81,928	0	138,593	0.0008	0.0010
120	107,346	0	0	107,346	0.0006	0.0016
130	252,114	95,376	0	347,490	0.0019	0.0035
140	889,499	149,149	0	1,038,649	0.0057	0.0092
150	1,455,676	1,237,274	0	2,692,950	0.0149	0.0241
160	1,538,441	1,272,630	0	2,811,070	0.0155	0.0396
170	1,849,135	2,253,206	124,026	4,226,367	0.0233	0.0630
180	1,845,648	2,160,792	0	4,006,440	0.0221	0.0851
190	2,348,564	1,728,805	0	4,077,369	0.0225	0.1076
200	2,219,498	2,569,520	124,026	4,913,044	0.0271	0.1347
210	3,492,923	2,341,785	124,026	5,958,733	0.0329	0.1677
220	3,750,759	4,278,728	372,077	8,401,564	0.0464	0.2141
230	2,521,591	2,416,822	248,051	5,186,464	0.0286	0.2427
240	5,835,158	4,195,411	248,051	10,278,620	0.0568	0.2995
250	6,105,666	5,979,802	992,204	13,077,672	0.0722	0.3717
260	6,403,820	8,191,336	620,128	15,215,284	0.0840	0.4557
270	7,012,091	8,525,119	1,612,332	17,149,541	0.0947	0.5505
280	6,700,093	6,564,894	868,179	14,133,165	0.0781	0.6285
290	4,950,453	6,815,980	496,102	12,262,535	0.0677	0.6963
300	3,190,991	5,019,467	496,102	8,706,560	0.0481	0.7443
310	2,697,033	3,578,834	124,026	6,399,893	0.0353	0.7797
320	1,851,217	2,821,902	0	4,673,118	0.0258	0.8055
330	2,985,193	2,748,981	124,026	5,858,200	0.0324	0.8379
340	2,260,427	2,551,275	0	4,811,702	0.0266	0.8644
350	1,735,921	2,143,323	0	3,879,244	0.0214	0.8859
360	1,205,242	2,598,297	0	3,803,538	0.0210	0.9069
370	969,842	2,160,213	0	3,130,055	0.0173	0.9242
380	814,491	781,161	0	1,595,652	0.0088	0.9330
390	696,206	1,672,686	0	2,368,892	0.0131	0.9460
400	157,053	756,909	0	913,962	0.0050	0.9511
410	535,811	497,893	0	1,033,704	0.0057	0.9568
420	186,367	349,141	0	535,508	0.0030	0.9598
430	132,348	229,119	0	361,467	0.0020	0.9618
440	296,115	284,415	0	580,531	0.0032	0.9650
450	236,830	130,532	0	367,361	0.0020	0.9670
460	68,723	393,615	0	462,339	0.0026	0.9695
470	165,085	91,766	0	256,851	0.0014	0.9710
480	130,164	512,859	0	643,023	0.0036	0.9745
490	212,680	137,301	0	349,980	0.0019	0.9765
500	120,949	490,629	0	611,578	0.0034	0.9798
510	27,698	151,269	0	178,967	0.0010	0.9808
520	273,628	192,873	0	466,501	0.0026	0.9834
530	0	172,061	0	172,061	0.0010	0.9843
540	97,453	148,551	0	246,003	0.0014	0.9857
550	296,913	294,665	0	591,578	0.0033	0.9890

Appendix D Table 9.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
560	25,437	0	0	25,437	0.0001	0.9891
570	0	305,284	0	305,284	0.0017	0.9908
590	64,702	145,788	0	210,489	0.0012	0.9920
600	158,777	108,376	0	267,153	0.0015	0.9934
610	0	35,271	0	35,271	0.0002	0.9936
620	0	107,288	0	107,288	0.0006	0.9942
630	0	148,563	0	148,563	0.0008	0.9950
640	0	91,618	0	91,618	0.0005	0.9955
650	0	127,942	0	127,942	0.0007	0.9963
670	0	25,437	0	25,437	0.0001	0.9964
690	0	44,536	0	44,536	0.0002	0.9966
700	0	139,585	0	139,585	0.0008	0.9974
710	0	203,601	0	203,601	0.0011	0.9985
720	0	153,436	0	153,436	0.0008	0.9994
750	0	29,823	0	29,823	0.0002	0.9996
770	0	81,347	0	81,347	0.0004	1.0000
Total	**80,928,435**	**93,516,188**	**6,611,315**	**181,055,938**	**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	Cumulative proportion
90	0	0	46,653	46,653	0.0007	0.0007
140	0	0	28,646	28,646	0.0004	0.0011
150	32,836	32,836	0	65,672	0.0009	0.0020
160	64,244	63,379	33,617	161,240	0.0023	0.0044
170	31,689	67,562	112,519	211,771	0.0031	0.0074
180	64,244	0	433,125	497,369	0.0072	0.0146
190	129,916	97,873	387,295	615,084	0.0089	0.0235
200	97,103	64,244	405,867	567,214	0.0082	0.0317
210	98,747	197,501	701,679	997,927	0.0144	0.0461
220	429,976	390,191	876,575	1,696,742	0.0245	0.0706
230	99,696	289,881	497,782	887,359	0.0128	0.0834
240	324,558	229,854	637,723	1,192,135	0.0172	0.1006
250	257,748	163,955	712,559	1,134,262	0.0164	0.1170
260	31,689	94,950	305,453	432,092	0.0062	0.1232
270	99,184	133,452	118,744	351,381	0.0051	0.1283
280	35,831	95,362	159,213	290,406	0.0042	0.1325
290	0	0	194,588	194,588	0.0028	0.1353
300	30,837	26,588	233,129	290,554	0.0042	0.1395
310	97,982	32,904	264,890	395,776	0.0057	0.1452
320	64,230	35,241	386,927	486,398	0.0070	0.1523
330	68,646	331,888	441,798	842,332	0.0122	0.1644
340	352,817	228,415	828,044	1,409,276	0.0204	0.1848
350	272,027	327,829	996,746	1,596,601	0.0231	0.2078
360	448,275	327,237	1,690,362	2,465,874	0.0356	0.2434
370	617,480	543,978	1,402,329	2,563,787	0.0370	0.2805
380	514,378	411,247	2,037,622	2,963,247	0.0428	0.3233
390	757,915	865,012	1,163,170	2,786,097	0.0402	0.3635
400	621,116	402,202	2,437,839	3,461,157	0.0500	0.4135
410	351,403	465,093	1,003,698	1,820,194	0.0263	0.4398
420	335,501	414,055	1,021,055	1,770,611	0.0256	0.4653
430	67,258	303,559	564,097	934,914	0.0135	0.4788
440	274,333	226,175	534,003	1,034,511	0.0149	0.4938
450	401,130	278,138	714,978	1,394,247	0.0201	0.5139
460	562,774	349,452	1,001,010	1,913,236	0.0276	0.5415
470	432,336	362,285	816,449	1,611,070	0.0233	0.5648
480	487,179	335,353	1,353,323	2,175,854	0.0314	0.5962
490	364,347	423,837	791,098	1,579,282	0.0228	0.6190
500	153,486	225,768	1,121,080	1,500,334	0.0217	0.6407
510	159,161	176,048	607,534	942,744	0.0136	0.6543
520	171,944	298,832	687,366	1,158,142	0.0167	0.6711
530	338,846	70,926	719,238	1,129,010	0.0163	0.6874
540	316,509	123,095	908,157	1,347,761	0.0195	0.7068
550	217,412	137,124	689,763	1,044,299	0.0151	0.7219
560	204,100	308,671	956,071	1,468,841	0.0212	0.7431
570	391,764	222,868	681,481	1,296,113	0.0187	0.7618
580	159,688	141,456	961,591	1,262,734	0.0182	0.7801

Appendix D Table 10.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
590	136,751	132,284	523,113	792,148	0.0114	0.7915
600	187,999	183,759	230,695	602,453	0.0087	0.8002
610	287,551	156,140	686,141	1,129,832	0.0163	0.8165
620	131,379	204,690	579,249	915,318	0.0132	0.8297
630	55,166	129,915	514,091	699,171	0.0101	0.8398
640	48,839	183,133	723,649	955,621	0.0138	0.8536
650	64,388	92,579	136,473	293,440	0.0042	0.8579
660	191,695	146,597	496,969	835,261	0.0121	0.8699
670	209,106	185,838	258,197	653,141	0.0094	0.8794
680	254,410	82,964	172,859	510,233	0.0074	0.8867
690	102,199	67,885	123,967	294,051	0.0042	0.8910
700	129,946	102,399	262,895	495,241	0.0072	0.8981
710	66,933	39,689	208,316	314,938	0.0045	0.9027
720	141,255	52,349	361,660	555,265	0.0080	0.9107
730	62,135	160,152	92,315	314,602	0.0045	0.9152
740	55,061	98,620	228,024	381,704	0.0055	0.9208
750	86,019	197,090	232,951	516,060	0.0075	0.9282
760	0	35,212	228,611	263,823	0.0038	0.9320
770	99,324	0	130,115	229,438	0.0033	0.9353
780	102,197	0	223,224	325,421	0.0047	0.9400
790	154,463	46,069	49,225	249,757	0.0036	0.9436
800	61,405	39,689	15,549	116,644	0.0017	0.9453
810	0	31,215	192,344	223,559	0.0032	0.9486
820	16,824	53,781	145,385	215,989	0.0031	0.9517
830	29,526	29,390	31,661	90,577	0.0013	0.9530
840	0	28,096	94,487	122,582	0.0018	0.9548
850	31,090	34,175	83,762	149,027	0.0022	0.9569
860	46,859	63,788	29,622	140,270	0.0020	0.9589
870	54,611	56,247	31,661	142,518	0.0021	0.9610
880	0	27,162	157,140	184,302	0.0027	0.9637
890	29,252	33,451	58,294	120,997	0.0017	0.9654
900	56,301	61,337	223,221	340,859	0.0049	0.9703
910	29,526	0	61,992	91,519	0.0013	0.9716
920	59,188	0	17,565	76,752	0.0011	0.9728
930	53,291	0	51,788	105,079	0.0015	0.9743
940	0	0	32,673	32,673	0.0005	0.9747
950	26,568	28,096	62,844	117,508	0.0017	0.9764
960	0	0	26,670	26,670	0.0004	0.9768
970	37,687	0	94,027	131,714	0.0019	0.9787
980	27,258	27,162	65,869	120,289	0.0017	0.9805
990	0	28,587	56,345	84,932	0.0012	0.9817
1000	0	33,233	0	33,233	0.0005	0.9822
1030	0	0	34,608	34,608	0.0005	0.9827
1040	0	66,161	132,155	198,316	0.0029	0.9855
1050	0	0	17,565	17,565	0.0003	0.9858
1070	30,305	0	0	30,305	0.0004	0.9862
1080	0	31,090	30,090	61,179	0.0009	0.9871
1090	0	0	31,084	31,084	0.0004	0.9876

Appendix D Table 10.--Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
1110	0	88,059	0	88,059	0.0013	0.9888
1120	0	0	117,707	117,707	0.0017	0.9905
1130	0	61,594	47,143	108,737	0.0016	0.9921
1150	0	0	15,549	15,549	0.0002	0.9923
1160	28,876	39,332	0	68,208	0.0010	0.9933
1180	0	14,661	22,800	37,461	0.0005	0.9938
1190	0	0	29,907	29,907	0.0004	0.9943
1200	0	18,805	31,779	50,584	0.0007	0.9950
1220	0	0	28,999	28,999	0.0004	0.9954
1230	0	33,188	0	33,188	0.0005	0.9959
1300	0	0	28,966	28,966	0.0004	0.9963
1310	0	18,805	0	18,805	0.0003	0.9966
1330	0	0	94,450	94,450	0.0014	0.9980
1490	0	75,503	0	75,503	0.0011	1.0000
Total	**14,217,721**	**13,701,762**	**41,325,324**	**69,244,806**	**1.0000**	**1.0000**