NOAA Technical Memorandum NMFS-NWFSC-70

The 2000 U.S. West Coast Upper Continental Slope Trawl Survey of Groundfish Resources

off Washington, Oregon, and California: Estimates of Distribution, Abundance, and Length Composition

December 2005

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The 2000 U.S. West Coast Upper Continental Slope Trawl Survey of Groundfish Resources

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Executive Summary

The Northwest Fisheries Science Center's Fishery Resource Analysis and Monitoring Division conducted the third in a series of groundfish bottom trawl surveys along the West Coast upper continental slope from 28 June 2000 to 24 September 2000. The survey targeted the commercial groundfish resources inhabiting depths of 183 m to 1,280 m (100 fathoms to 700 fathoms) from the area off Cape Flattery, Washington (lat. 48°10′N), to Morro Bay, California (lat. 35°N), using chartered West Coast trawlers. This survey was the third year of a relatively new annual series of surveys designed to monitor long-term trends in distribution and abundance of West Coast groundfish species. The objectives of this report are to document the survey design and analogous field procedures and provide data summaries.

Sampling locations were established along 80 east-west tracklines, separated by 10′ of latitude. These lines spanned the distance along the coast between survey endpoints. Five stations were selected along each transect from two bathymetric strata: shallow (183–549 m) and deep (550–1,280 m). Three stations were randomly assigned to the stratum with the greater linear distance along a transect, while two stations were randomly selected from the stratum with the lesser linear distance. In 2000, a total of 330 successful tows were completed out of 370 attempts. Simrad Integrated Trawl Instrumentation net mensuration data, as well as global positioning system navigation data, were obtained from 321 of the successful tows. Bottom contact sensor data, detailing the ability of the net to tend bottom, were obtained from 329 of the successful tows.

An Aberdeen-style net with a small mesh (2" stretched measure or less) liner in the codend (to retain smaller specimens) was used to sample fish biomass. Target duration of each tow was 15 minutes. Tow duration was the time between touchdown and liftoff of the trawl net from the seafloor based on bottom contact sensors.

Catches were sorted to species, aggregate, or other appropriate taxonomic level, then weighed using an electronic, motion-compensated scale. A total of 201 species or families were identified within the survey area. Biological sampling effort was concentrated on Dover sole (*Microstomus pacificus*), shortspine thornyhead (*Sebastolobus alascanus*), longspine thornyhead (*Sebastolobus altivelis*), and sablefish (*Anoplopoma fimbria*). Up to 125 length measurements were collected per haul from each of these species. Dover sole and sablefish were sexed; maturity information was recorded for sablefish.

Acknowledgments

We thank the captains and crew of the fishing vessels (FVs) *Captain Jack*, *Coast Pride*, *Excalibur*, and *Sea Eagle* for their effort during the Northwest Fisheries Science Center's 2000 West Coast groundfish slope survey. We also thank the biologists who participated in the survey, including John Cusick, John Fields, Caroline Gibson, John Harms, Larry Hufnagle, Heather Munro, Kevin Piner, Victor Simon, Teresa Turk, Waldo Wakefield, and Bill West. Scott McEntire of the Alaska Fisheries Science Center designed the bottom contact sensors. Andrea Cook provided assistance in data analysis. We also express our appreciation to Herb Sanborn, Mary Breaker, and Mary Craig for their shoreside logistical support.

Introduction

The Fishery Resource Analysis and Monitoring Division (FRAM) of the Northwest Fisheries Science Center (NWFSC) conducted the third in a series of annual bottom trawl surveys of commercial groundfish resources off the U.S. West Coast between 28 June 2000 and 24 September 2000. The West Coast groundfish fishery includes about 80 commercially fished stocks off Washington, Oregon, and California. The fishery operates from the Canadian to the Mexican border in nearshore to offshore waters. Multiple vessel types, ranging in size from kayaks to trawlers, participate in the fishery. The vessels use various gear including bottom trawls, midwater trawls, pots, longlines, and other hook and line gear. Trawlers take the majority of groundfish. The catch can be very diverse, with fish size and overall catch volume varying widely. Active management of the fishery began in the early 1980s with the establishment of optimal yields (OYs) and trip limits for several managed species. Commercial management measures include landings limits, size limits, gear restrictions, and time/area closures. The objectives of the management measures are to prevent overfishing and to rebuild overfished stocks.

The goal of the 2000 NWFSC groundfish slope survey (hereafter referred to as the 2000 NWFSC slope survey) is to provide fishery-independent data for managers to regulate commercially valuable fish species inhabiting the upper continental slope. The survey area extended along the upper continental slope from northern Washington (Cape Flattery) to Morro Bay, California, in waters ranging from 183 m to 1,280 m (300 fathoms to 700 fathoms [fm]). The objective of the 2000 NWFSC slope survey is to continue the relatively new NWFSC slope survey time series, initiated in 1998 (Turk et al. 2001, Builder Ramsey et al. 2002). Prior to 1998, the Alaska Fisheries Science Center (AFSC) surveys were the principal source for fishery-independent data used in stock assessments of groundfish resources along the upper continental slope of the U.S. West Coast (Methot et al. 2000). The AFSC conducted these surveys from 1984 to 2001, with annual coverage beginning in 1988. The AFSC survey used the NOAA research vessel RV *Miller Freeman* to undertake standardized hauls with a bottom trawl. Spatial coverage over the survey period varied because of constraints imposed by expense and availability of ship time (Lauth 2001).

The mid-1990s determination that additional data were necessary to support stock assessments of slope groundfish species prompted the initiation of the NWFSC slope survey in 1998. Assessments are a critical tool fishery managers use to set biologically sustainable harvest levels for healthy fish stocks and to identify, monitor, and rebuild overfished stocks. The decline in abundance of five groundfish species to a depleted state drove the need to reduce uncertainty in assessments of slope species (Methot et al. 2000). The NWFSC slope survey was designed to cover the same depths and latitudes of the AFSC slope survey and was impelled in part by the projected termination of the AFSC slope survey in 2001.

The NWFSC slope survey employs fishing vessels from the West Coast commercial fishing industry. This feature uses the skills of fishing captains familiar with the challenges of fishing in the deep waters off the West Coast and fulfills the cooperative research provisions of

the Magnuson-Stevens Sustainable Fisheries Act.[1] The data collected provide indicators of the change in relative abundance, distribution, and condition of groundfish stocks over time, which are of interest to fisheries managers, fishermen, and concerned citizens. The 2000 NWFSC slope survey complements and extends the historical data the AFSC slope survey collected.

The NWFSC slope survey geographically spans the area from Washington (lat. 48°10′N) to California (lat. 35°00′N) and is subdivided into the five International North Pacific Fisheries Commission (INPFC) statistical areas: U.S-Vancouver, Columbia, Eureka, Monterey, and Conception (Figure 1). During the 2000 survey, NWFSC scientists collected information about distribution, abundance, and age structure of groundfish populations throughout the study area. The objectives of this report are to document the survey design and analogous field procedures. Data summaries are provided for species composition, catch, distribution, relative density, biomass estimates, and size composition of selected species. The results are summarized by depth strata (183–549 m and 550–1,280 m, or 100–300 fm and 301–700 fm) and INPFC area.

[1] The Pacific Fishery Management Council is one of eight regional fishery management councils established by the Magnuson Fishery Conservation and Management Act of 1976 for the purpose of managing fisheries 3–200 miles offshore of the United States. The Pacific Council develops and recommends harvest specifications and management measures to the National Marine Fisheries Service (NMFS) for fisheries off the coasts of California, Oregon, and Washington.

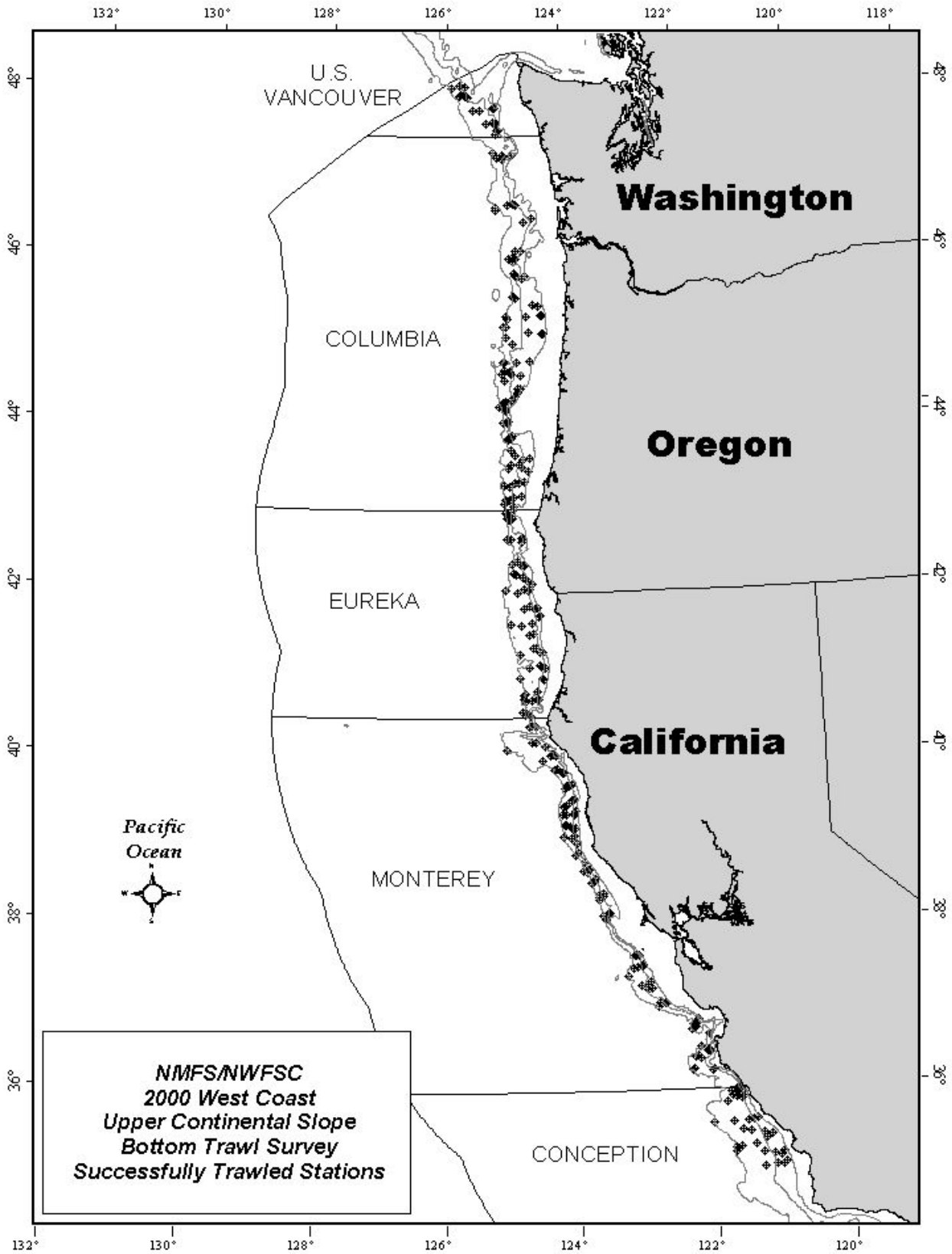


Figure 1. Map showing the extent of the 2000 NWFSC slope survey and location of successful tows.

Survey Methods

Survey Period and Sampling Area

The NWFSC slope survey was conducted between 28 June 2000 and 24 September 2000 from the areas off Cape Flattery, Washington (lat. 48°10′N), to Morro Bay, California (lat. 35°00′N). Four chartered West Coast bottom trawlers were used during the survey periods—the fishing vessels FV *Captain Jack* and FV *Coast Pride* from 28 June 2000 to 28 July 2000 and FV *Excalibur* and FV *Sea Eagle* from 24 August 2000 to 24 September 2000. All vessels started the survey off Cape Flattery and then progressed south, finishing in Morro Bay.

Vessels and Sampling Gear

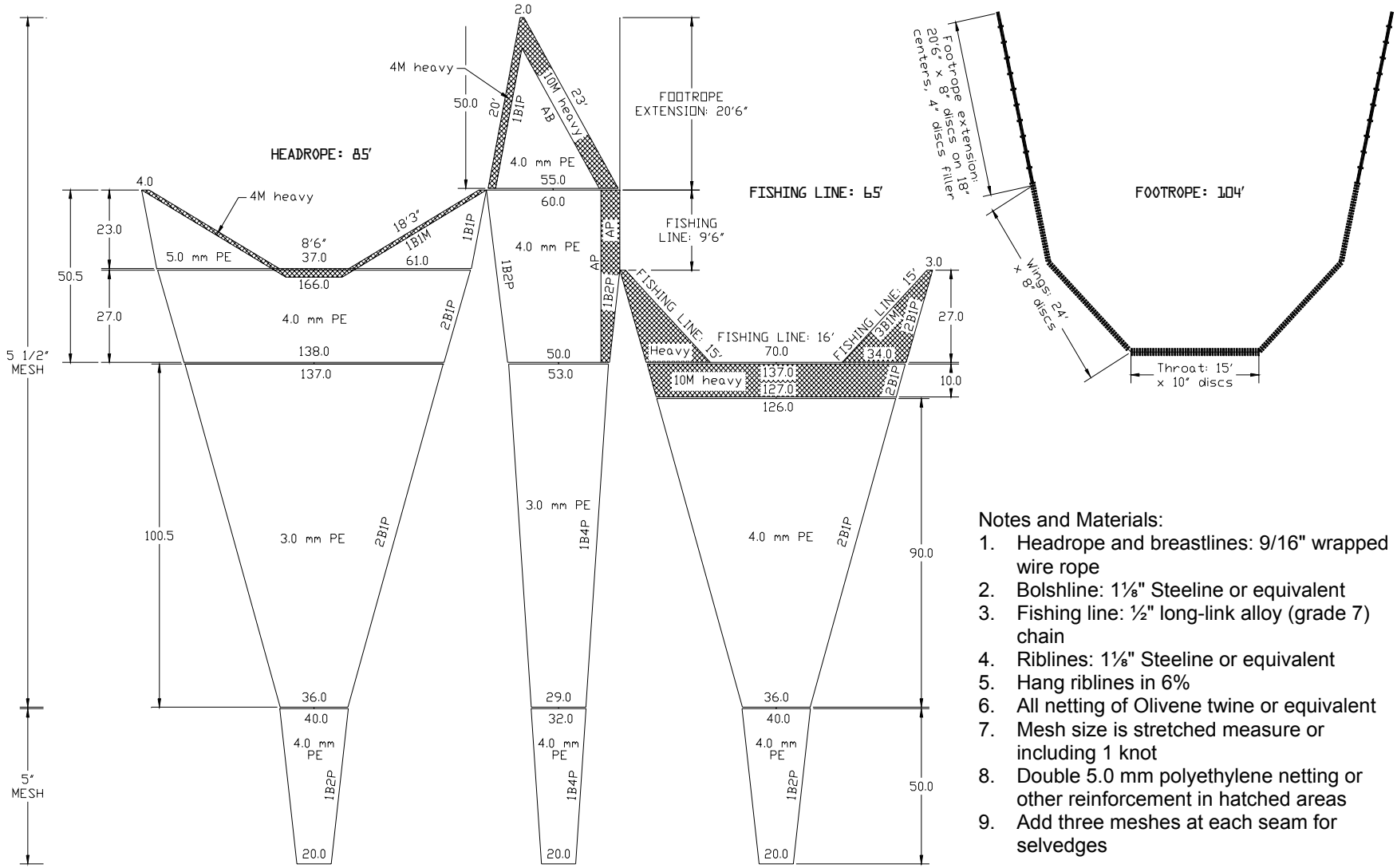
All vessels fished with an Aberdeen-style net (Figures 2 and 3). Each net was outfitted with a small-mesh liner (2" stretched measure or less) in the codend to retain smaller fish. The Aberdeen-style trawl was chosen as the standard sampling gear because it demonstrates relatively stable performance over the range of conditions expected during the survey (West et al. 1998). Various aspects of the mechanical performance of the nets (e.g., spread between net wings, vertical distance from the center of the headrope to the bottom, distance from the headrope to the footrope, and clearance, if any, between the footrope and bottom) were recorded using acoustic and bottom contact instruments hung from the net during each deployment. Data were recorded on operational conditions such as depth, amount of towing cable deployed, towing speed, tow duration, and weather conditions. The target duration for each haul was 15 minutes.

Trawl Station Allocation

The 2000 NWFSC slope survey combined fixed and random sampling strategies. Station locations were randomly arranged along fixed east-west transects separated by 10′ of latitude. Fishing operations were carried out at depths ranging from 183 m to 1,280 m on a variety of bottom types. A total of 80 transects extended along the coast between the survey endpoints. Five stations in each transect were selected from two depth strata: shallow (183–549 m, or 100–300 fm) and deep (550–1,280 m, or 300–700 fm). The stratum with the greatest linear distance was assigned three randomly selected stations to sample, while the stratum with the least linear distance was assigned two randomly selected stations. Each of the four vessels occupied a different subset of 20 transects separated by 40′ of latitude. By the end of the survey all 80 transects were sampled.

Trawling Protocol

The goal of trawling operations was to maintain constant sampling (fishing) efficiency across the range of conditions encountered during the survey and over time. Trawling operations



Notes and Materials:

1. Headrope and breastlines: 9/16" wrapped wire rope
2. Bolshline: 1⅛" Steeline or equivalent
3. Fishing line: ½" long-link alloy (grade 7) chain
4. Riblines: 1⅛" Steeline or equivalent
5. Hang riblines in 6%
6. All netting of Olivene twine or equivalent
7. Mesh size is stretched measure or including 1 knot
8. Double 5.0 mm polyethylene netting or other reinforcement in hatched areas
9. Add three meshes at each seam for selvedges

Figure 2. Detailed diagram of the NWFSC Aberdeen-style sampling trawl, including descriptions of dimensions, materials, mesh sizes, and mesh counts. See Figure 3 for a detail of the footrope.

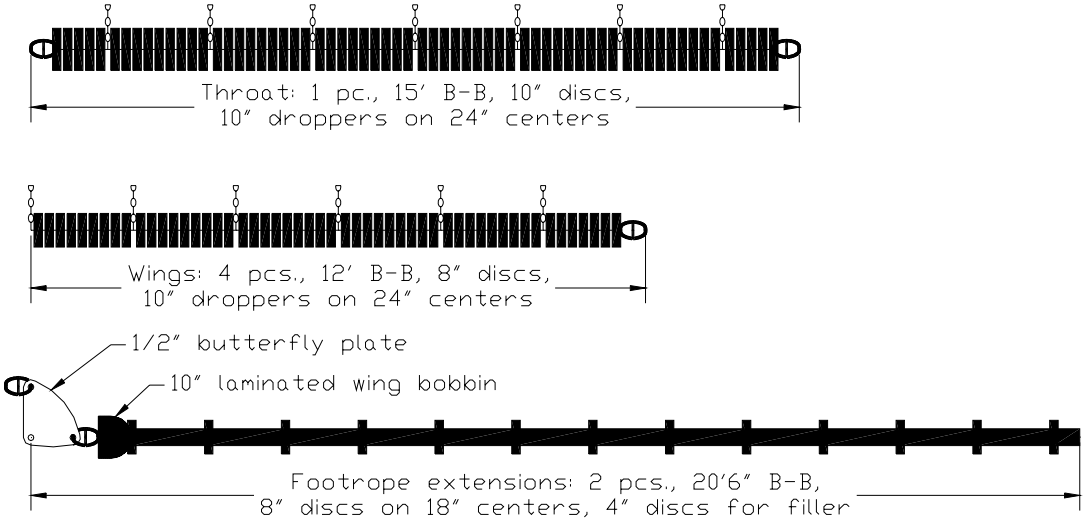


Figure 3. Footrope for the NWFSC Aberdeen-style sampling trawl composed of seven sections with an overall length of 104'. A single section of each component of the footrope is shown in the figure. Notes: Footrope composed of ½" long-link alloy (grade 7) chain, with rubber discs (8–10") and dropper chains (10") strung along length, and section lengths (measured bearing point to bearing point, B-B) connected by ½" Campbell hammerlocks and stainless pins and spacers.

were limited to the daylight period. The initial tow each day began (net on seafloor) following sunrise, and the last tow of the day ended (net off seafloor) before sunset. Once a vessel was in the area of a station, the captain was instructed to observe the following search rules: 1) search within the specified depth range, 2) remain within an area bounded by 5′ north or south of the transect latitude, and 3) complete the search for "trawlable" ground within 2 hours. If no "trawlable" site was found within the 2-hour limit, the station was noted in the log as "untrawlable" and the vessel proceeded to the next station. An exception to the 2-hour search limit was permitted if a station was the last one scheduled for the day or transect, and sufficient daylight hours remained to continue the search and complete a tow before sunset. The decision to abandon a station was final and no return to sample the site was attempted.

The chief scientist, or Field Party Chief (FPC), was responsible for oversight of all fishing operations, including vessel operations and gear performance based on the trawl instrumentation systems. The target towing speed for each survey haul was 2.2 knots (speed over ground) as determined by the NWFSC-supplied differential global positioning system (GPS) navigation unit, Northstar 500 (Northstar Technologies, Acton, Massachusetts), or the vessel's speed indicators. If gear was severely damaged during a tow such that it might affect catch composition, the haul was classified as unsatisfactory. Moreover, if gear performance was deemed unacceptable (e.g., large quantities of mud or jellyfish, lost or abandoned fishing gear ensnared in the net, off bottom for an extended period during the tow, etc.), the tow was also rated as unsatisfactory. Unsuccessful hauls were not used in the following analyses, but are included in Appendix A.

For each tow, the captain determined the initial scope (amount of wire deployed) for each station based on past experience and judgment. Trawl performance was monitored using the

Simrad Integrated Trawl Instrumentation, or ITI (Kongsberg Simrad Mesotech Ltd., Port Coquitlam, BC, Canada). Sensors from the ITI trawl system were placed on the net prior to setting the gear. Two instruments were placed in the middle of the net headrope. The first was the trawl eye, which provided an image of the vertical opening of the trawl and its height above the bottom. The second instrument was a temperature and depth sensor, which recorded ambient temperature and the depth of the trawl headrope. A pair of wing units (one master and one slave) was placed on the port and starboard wings of the net to measure wing spread. A bottom contact sensor (BCS) was placed in the middle of the footrope portion of the net. The BCS recorded the angle of incline of the net, indicating when the net landed on and lifted off bottom. Information gathered from the trawl monitoring system was used to adjust scope if necessary.

Tow duration was targeted at 15 minutes in length. While gear was being set, vessel speeds varied from 2.2 knots to 5 knots. After the net made contact with the bottom, vessel speed was targeted at 2.2 knots. The haul officially began when the net was in proper fishing configuration and maintained steady contact with the bottom. The haul ended when the net lifted off the bottom after the start of haul back. The Simrad ITI trawl eye was used to monitor ground-gear contact during a haul, but the actual bottom time was determined using data from the BCS. Position data were collected at 2-second intervals for each haul using a GPS. These data, in addition to the real-time net mensuration information, were automatically stored in an onboard data logging system, known as Flipper (Scientific Fisheries Systems, Inc., Anchorage, Alaska). In addition to storing the GPS and ITI trawl information, Flipper also provided an electronic means to download and save information from the BCS and the fish meter board (used to collect data from the catch, as discussed in the following subsection).

Sampling Procedures and Biological Data Collection

Catches were sorted to species or other appropriate taxonomic levels and then weighed using an electronic, motion-compensated scale (Ryco, Inc., Riviera Beach, Florida). Biological sampling was concentrated on Dover sole (*Microstomus pacificus*), shortspine thornyhead (*Sebastolobus alascanus*), longspine thornyhead (*Sebastolobus altivelis*), and sablefish (*Anoplopoma fimbria*). All Dover sole and sablefish were sorted by sex and a total of up to 125 lengths (to the nearest cm) were measured per haul from each species for both sexes combined. Up to 125 length measurements were also collected for longspine and shortspine thornyheads, but sex was not determined. For all other species, only total counts and weights were recorded, except when additional information was requested for special projects.

Otoliths were collected primarily from Dover sole, shortspine thornyhead, longspine thornyhead, and sablefish. Fish targeted for otolith removal were randomly selected from the subset of fish chosen for length determination. Otoliths were extracted from up to 15 Dover sole and sablefish per tow. Similarly, up to five otoliths were collected per haul from a random subset of shortspine and longspine thornyheads. When other important commercial species were encountered, such as bocaccio (*Sebastes paucispinis*) or shortbelly rockfish (*Sebastes jordani*), length measurements and otoliths were collected from these species as well. Any unidentified species were labeled, frozen or preserved in formalin, and retained for later identification. After all scientific data were collected, marketable fish were placed in the hold of the vessel, iced, and then delivered to a shoreside processing facility within 5 days. Species with no commercial value or those with catch prohibitions were returned to sea as soon as possible.

Survey Analysis

Sensor Data

Three sensors—BCS, ITI, and GPS—provided the data for effort-related estimations. All sensor streams were reviewed for spurious readings. In particular, because the computer system receiving the ITI sensor signals often recorded readings at a rate exceeding the delivery rate of new readings, the computer recorded some sensor readings multiple times. This persistence of a single sensor reading through several records appears in the data stream as strings of varying lengths with constant values.

A variety of techniques were used to remove persistent strings that greatly distorted the overall signal pattern. The techniques included objective statistical trimming methods and more subjective manual removal of data points. In particular, persistent strings that originated before and extended into the time intervals bounding subsamples used for estimation were routinely removed manually prior to analysis. But, for the most part, the phenomena under observation varied little during the on-bottom time period of interest, so moderate periods of data repetition did not substantially distort the overall pattern of sensor readings. Therefore, it was assumed that treating the members of a persistent string as independent samples within the sample set would not substantially affect the mean estimate. However, it would result in unacceptable underestimation of the standard error of the mean and, accordingly, standard error estimates were not reported for mean estimates.

Because ITI sensor readings should never be zero during a tow, zeros were treated as missing values and filtered prior to estimation of depth, net dimensions, and temperature. Exclusion of extreme points was more problematic. Large spikes in the depth, net dimension, and temperature signals were assumed to be the result of acoustic or electronic noise and were removed prior to processing. Such data points were even more questionable when multiple isolated occurrences were identical, as apparent for various points in the gear depth data set. In contrast, sensor data streams also indicate that there can be large swings in the net during a tow over sloping and bumpy substrates. Trawl execution problems also produce highly variable data sets. Extreme points that appeared as part of a contiguous variation in magnitude, or a particularly variable stretch of readings, were consequently not excluded prior to analysis.

Sensor readings used to estimate depth, net width, and height were limited to the center 80% of the tow duration to ensure only on-bottom readings were included. In the vast majority of tows, this boundary did not appreciably reduce the number of observations, but did effectively exclude small timing offsets between the BCS and ITI sensor systems and noise introduced by net touchdown and liftoff.

For some tows, few depth, net dimension, and temperature sensor readings fell within the estimation time interval and were satisfactorily unaffected by persistent data strings. The extent to which these single or few point subsamples were representative of the entire tow was

necessarily a subjective judgment. If the points seemed to align with the trajectory of points outside the subset time interval, they were used as the basis for estimation. Paper records, hand recorded at sea from real-time displays, offered a certain level of data redundancy. These records were subsequently entered into electronic format and, in some cases, provided an alternate sample set for depth and net dimension estimation when the above criteria could not be met.

Dimensions of the Tow

Tow duration was measured as the simple difference between the times marking touchdown and liftoff of the trawl net. Wherever possible, these times were determined from BCS traces of tow progression from net deployment to retrieval. Gaps left by unrecorded or otherwise suspect BCS information were filled using either patterns in ITI sensor readings or FPC observations of net touchdown and liftoff times.

In general, mean net width and height were calculated from trawl sensor readings of wingspread and headrope height from bottom, respectively. Although electronically recorded sensor readings provided the preferred basis for estimation, hand-recorded sensor readings were substituted when necessary. When neither data set provided sufficient information, estimates were calculated from linear regressions based on relationships developed using data from other tows. Each dimension (width and height) was regressed against tow depth, with vessel identification incorporated as an indicator variable. Net height predictions were made using robust linear regression (S-Plus 1999). Although the interaction between vessel identification and depth proved to be significant based on analysis of variance, it neither added appreciably to the proportion of explained variation nor produced coefficients that were significantly different from zero. Therefore, it was not included in the net height predictions. Similar regression for net width failed the default S-Plus test for bias, so prediction by simple linear regression was used instead. Two tows were designated outliers based on Cook's distance. Although their distances were less than 0.2, they were markedly higher than the rest, so these two tows were removed from the fit. All estimates in the database were tagged with qualifying information indicating estimation method.

To estimate distance fished, the period of time a net was dragged over the seafloor was split into two distinct phases. The first phase, defined as normal towing, started when the net began fishing as it reached the seafloor and ended when net haul back was initiated. The FPC controlled the length of the first phase and, unless problems occurred, maintained the first phase for 15 minutes. The second phase followed sequentially and represented the time required for the net to lift off the seafloor in response to the haul-back operation. Labeled liftoff lag, the length of this phase varied by vessel and depth.

Smoothing of the trackline yielded a reasonable estimate of the location of the net and an estimate of towing distance for the normal towing phase. However, typically the vessel was not moving forward during the liftoff lag phase, and consequently the GPS sent erroneous bearing information to the ITI. The ITI in turn calculated an invalid geographical position for the trawl net. To correct this situation, a fluxgate compass was set up onboard the vessels and its electronic information was input into the main ITI system (Wallace 2000a). The fluxgate compass generally worked well, but occasionally was unusable. When the fluxgate compass

worked properly, the liftoff lag phase was smoothed along with the normal towing phase. However, if the fluxgate compass provided inadequate information, or if the ITI system worked poorly, the distance and direction the net moved during the liftoff lag phase needed to be determined via extrapolation.

The extrapolation technique began by fixing the trawl's bearing at the average bearing from the last 5 minutes of normal towing. This measurement was combined with the range information (the distance between the vessel and the net) and the geographic location of the vessel to obtain the extrapolated location and distance covered by the net during the liftoff lag phase. This extrapolated trackline was connected to the end of the normal towing trackline, and the combined trackline was then smoothed with a two-dimensional simple exponential smoother. Visual examination was used to determine the appropriate smoothness required for each haul. A default value for the smoothing parameter worked in a majority of cases, including but not limited to tows done in a relative straight line with good signals from the ITI system. The percent of tows for which the default smoothing parameter worked varied by vessel, but all vessels had extreme cases for which the default value was not used. Details of this procedure can be found in Wallace (2000b).

The trigonometric method, developed for the 1998 survey analysis (Wallace and West in press, Turk et al. 2001), was used when there was insufficient information for the above procedure. Within the database, all estimates were tagged with qualifying information indicating which estimation method was employed.

Gear Depth and Bottom Depth

Wherever possible, gear depth and bottom depth were estimated from electronically recorded trawl sensor readings of headrope depth and distance from bottom. Gear depth was taken as the headrope depth sensor reading, and bottom depth was taken as the sum of headrope depth and headrope distance from bottom. Hand-recorded data sets were substituted as needed. For cases with sufficient high quality data, mean estimates were calculated using a subsample limited to the center 80% of the tow duration to ensure only on-bottom readings were included. In a few cases, no acceptable data existed within the center 80% of the tow duration in either the electronically or hand-recorded sets of gear depth readings. For these tows, mean gear depths and bottom depths were estimated from observations just outside of the center 80% of tow duration. These estimates most likely fell within the limits of net touchdown and liftoff. For some tows, few to no coincident records of headrope depth and distance from bottom existed. In these cases, if gear depth and net height were available for a tow, bottom depth was estimated as the sum of these two endpoints, regardless of how the separate estimates had been derived. In cases where no reasonable observation of gear depth was recorded, bottom depth was estimated from the vessel's navigational equipment records, if available. Within the database, all estimates were tagged with qualifying information indicating estimation method.

Area Estimates

Area estimates were calculated using digital-bathymetry points acquired from Naval Oceanographic Office DBDB-V Version 2.0 (Digital Bathymetric Data Base–Variable resolution) (Naval Oceanographic Office unpubl. data). The input data had variable resolutions

of 5.0′, 1.0′, and 0.5′. The data points were gridded at 1′ pixel resolution and contour lines for the survey depth zones were created from this grid. The contour lines were created at 100, 140, 180, 220, 260, 300, 380, 460, 540, 620, and 700 fm. Then contour lines were combined with INPFC area boundaries and with the maximum latitudinal extent of the survey (Point Conception in the south, and lat. 48°10′N or the extended economic zone [EEZ] in the north) to make polygons of each depth zone. Bathymetry data were projected to Albers Equal Area projection, and the total area of the seafloor in two depth zones (100−300 fm, and 300−700 fm) and the five INPFC areas were calculated. Note that any areas westward of the primary 700-fm contour or eastward of the primary 100-fm contour were not included in the area calculations, even if they were between a 100-fm and 700-fm depth.

Temperature

Water temperature was recorded during each tow using a Simrad ITI temperature sensor (accuracy $\pm$0.2°C) mounted in the mouth of the net. The output data indicated that the sensor required the full duration of the tow to acclimate. Therefore, bottom temperature was estimated as the mean of sensor readings from the final 10% of the tow duration. Surface temperature was recorded using a thermometer in the surface water at the start of each tow.

Relative Density and Biomass Estimates

Relative density was calculated as catch-per-unit effort (CPUE) for individual species in each INPFC area and depth stratum by dividing total catch weight (kg) per species by area fished (hectare or ha) per tow. Mean estimates were initially calculated for each depth stratum within an INPFC area by averaging all tows, including those with zero catch, by species. To estimate mean CPUE by species for the total area (all INPFC areas combined), depth strata (shallow and deep for all areas combined), and the individual INPFC areas (depth strata combined within areas), the initial means were weighted using the appropriate area within each stratum. Mean biomass estimates (metric ton or mt) were similarly calculated by multiplying the mean CPUE for each tow by the total area of the stratum. Coefficients of variation (CV) were calculated (%) for biomass estimates using the standard error (standard deviation/number sampled) divided by the mean CPUE.

Results

Haul, Catch, and Biological Data

The 2000 NWFSC slope survey was designed to incorporate 400 potential sampling locations, with sampling subsequently attempted at 370 sites. At stations where sampling was attempted, 330 tows were successful. Simrad ITI net mensuration data and GPS positional data were obtained from 321 of the successful tows (Figure 1). Bottom contact sensor data were obtained from 329 of the successful tows. Table 1 (p. 14) shows the latitude boundaries, depth stratum areas (km^2), and sampling densities by INPFC statistical area based on successful tows.

The mean net widths and distances fished were calculated for each haul. When net mensuration instrumentation gave estimates of net width, the mean net width for each tow was calculated for 80% of the tow duration, excluding the initial and final 10% of the tow duration. Distances fished were calculated by estimating the length that the net traveled on the seafloor from the point where it touched down to the point where it lifted off. An overall mean width of 14.6 m was calculated using data from the 325 hauls that both exhibited good trawl performance and had available net mensuration estimates. The mean net widths ranged from 11.7 m to 16.2 m with a standard deviation of 0.81 m. When the net mensuration instrumentation was not functioning properly, the mean net width was calculated using linear regressions as a function of trawl depth for the individual chartered vessel (Figure 4, p. 15).

The number of lengths and age structures that were collected from groundfish species are summarized in Table 2 (p. 15). A total of 201 species or families were identified over the entire survey area. The frequency of occurrence, depth range, mean depth, and the latitudinal range in decimal degrees (dd) for all of the identified organisms are listed in Table 3 (p. 16–24). Unidentified species or groups are referred to as "unident." in tables and figures. Appendix A provides detailed station information for each haul, as well as the associated catch weights of the major fish species and the total weights of invertebrates. Tables 4–9 (p. 25–26) list the number of individual fish lengths collected by species and by depth strata for all INPFC areas combined and for the individual INPFC areas.

Temperature Data

Bottom temperatures ranged from 3.2°C to 8.6°C during the June–July 2000 portion of the survey, and from 3.2°C to 9.9°C during the August–September 2000 portion of the survey (Figure 5, p. 27). The mean bottom temperature was 5.6°C. Sea surface temperatures ranged from 9.4°C to 17.0°C during the June–July 2000 portion of the survey, and from 10.0°C to 17.8°C during the August–September 2000 portion of the survey (Figure 6, p. 28). The mean sea-surface temperature was 13.3°C.

Table 1. Latitudinal boundaries, depth stratum areas (km^2), and sampling densities by INPFC statistical area based on successful tows during the 2000 NWFSC slope survey.

	Stratum 1 (183–549 m)			**Stratum 2 (550–1,280 m)**			**All strata (183–1,280 m)**		
INPFC area/ Latitude bounds	Area (km^2)	No. of hauls	Hauls/ 1,000km^2	Area (km^2)	No. of hauls	Hauls/ 1,000km^2	Area (km^2)	No. of hauls	Hauls/ 1,000km^2
U.S.-Vancouver									
47°30′–Border	2,853	9	3.2	2,286	11	4.8	5,139	20	3.9
Columbia									
43°00′–47°30′	8,621	52	6.0	9,804	54	5.5	18,425	106	5.8
Eureka									
40°30′–43°00′	2,034	27	13.3	6,365	39	6.1	8,398	66	7.9
Monterey									
36°00′–40°30′	3,650	53	14.5	8,646	51	5.9	12,297	104	8.5
Conception									
34°30′–36°00′	2,882	17	5.9	7,703	17	2.2	10,584	34	3.2
Entire Survey Area									
34°30′–Border	20,040	158	7.9	34,803	172	4.9	54,843	330	6.0

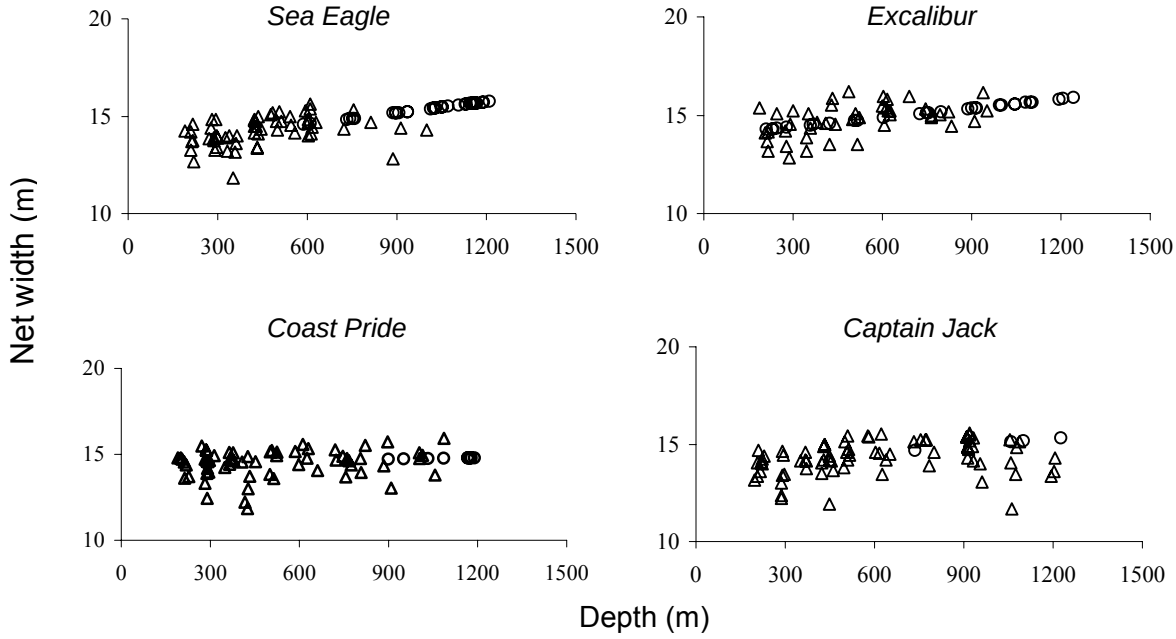


Figure 4. Estimates of mean net width for trawls conducted as part of the 2000 NWFSC slope survey. Estimates are grouped by vessel and plotted relative to trawl depth. Prediction from robust linear regression of width against trawl depth and factored by vessel was used to estimate net widths for tows lacking direct width observations. (FV *Sea Eagle*: Net width = 13.4351 + 0.0019 × Depth; FV *Captain Jack*: Net width = 13.7233 + 0.0013 × Depth; FV *Coast Pride*: Net width = 14.4844 + 0.0003 × Depth; FV *Excalibur*: Net width = 13.9396 + 0.0016 × Depth.) ○ = Estimated by regression. Δ = Estimated by observation.

Table 2. Biological data collected during the 2000 NWFSC slope survey.

Common name	Number of lengths	Number of age structures
Longspine thornyhead	26,540	517
Shortspine thornyhead	8,949	729
Aurora rockfish	9	9
Bocaccio	30	30
Darkblotched rockfish	325	325
Shortbelly rockfish	242	242
Lingcod	35	0
Dover sole	21,577	2,199
Pacific halibut	9	0
Petrale sole	40	39
Sablefish	3,535	1,424

Table 3. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Myxinidae							
Eptatretus sp.	Hagfish unident.	142	228	1,241	758	35.20	48.09
Petromyzontidae							
Lampetra tridentata	Pacific lamprey	1	411	411	411	42.32	42.32
Chimaeridae							
Hydrolagus colliei	Spotted ratfish	84	186	720	331	35.09	48.11
Scyliorhinidae							
Apristurus brunneus	Brown cat shark	212	205	1,241	683	35.09	48.09
Parmaturus xaniurus	Filetail cat shark	22	287	754	517	35.18	37.63
Apristurus kampae	Longnose cat shark	12	246	1,086	673	36.80	43.61
Squalidae							
Squalus acanthias	Spiny dogfish	42	186	614	304	35.44	47.83
Somniosus pacificus	Pacific sleeper shark	2	604	720	662	35.89	39.68
Hexanchidae							
Hexanchus griseus	Sixgill shark	1	287	287	287	36.84	36.84
Rajidae							
Raja sp.	Skate unident.	1	212	212	212	38.68	38.68
Bathyraja abyssicola	Aleutian skate	2	216	352	284	48.11	48.11
Bathyraja aleutica	Deepsea skate	5	805	1,192	1,089	36.73	43.08
Bathyraja interrupta	Bering skate	129	200	962	378	35.18	47.97
Raja rhina	Longnose skate	156	186	1,133	401	35.18	48.11
Bathyraja trachura	Roughtail skate	70	205	1,241	971	35.28	48.09
Torpedinidae							
Torpedo californica	Pacific electric ray	2	215	217	216	37.31	37.62
Nemichthyidae							
Nemichthyidae	Snipe eel unident.	1	1,192	1,192	1,192	35.59	35.59
Nemichthys scolopaceus	Slender snipe eel	2	766	962	864	44.25	44.98
Serrivomeridae							
Serrivomer sector	Sawtooth eel	1	1,012	1,012	1,012	36.74	36.74
Clupeidae							
Alosa sapidissima	American shad	1	190	190	190	47.27	47.27

Table 3 continued. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Argentinidae							
Argentina sialis	Pacific argentine	2	200	217	209	35.22	35.63
Engraulidae							
Engraulis mordax	Northern anchovy	1	291	291	291	36.46	36.46
Bathylagidae							
Bathylagidae	Deepsea smelt unident.	125	507	1,241	930	35.22	48.09
Bathylagus sp.	Blacksmelt unident.	1	1,086	1,086	1,086	47.81	47.81
Opisthoproctidae							
Macropinna microstoma	Barreleye	5	624	1,205	967	39.47	43.51
Alepocephalidae							
Alepocephalus tenebrosus	California slickhead	139	479	1,241	904	35.22	48.09
Talismania bifurcata	Threadfin slickhead	46	720	1,103	871	35.32	48.09
Alepisauridae							
Alepisaurus ferox	Longnose lancetfish	1	884	884	884	35.90	35.90
Platytroctidae							
Sagamichthys abei	Shining tubeshoulder	2	211	314	263	43.47	43.47
Platytroctidae	Tubeshoulder unident.	3	770	920	868	39.43	41.50
Cryptacanthodidae							
Cryptacanthodes giganteus	Giant wrymouth	1	314	314	314	47.83	47.83
Sternoptychidae							
Sternoptychidae	Hatchetfish unident.	5	615	910	762	35.22	42.93
Argyropelecus sp.	Hatchetfish unident.	1	917	917	917	35.50	35.50
Argyropelecus affinis	Slender hatchetfish	2	884	1,014	949	35.84	35.90
Stichaeidae							
Plectobranchus evides	Bluebarred prickleback	1	210	210	210	43.33	43.33
Stomiidae							
Chauliodus macouni	Pacific viperfish	64	292	1,205	834	35.29	48.00
Idiacanthus antrostomus	Pacific blackdragon	10	368	1,082	691	35.22	44.98
Tactostoma macropus	Longfin dragonfish	58	222	1,241	795	35.50	47.99
Bathophilus flemingi	Highfin dragonfish	3	586	1,173	834	39.19	39.19

Table 3 continued. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Stomiidae (continued)							
Aristostomias scintillans	Shining loosejaw	9	523	1,056	806	35.29	44.56
Osmeridae							
Thaleichthys pacificus	Eulachon	10	186	608	291	41.82	45.81
Scopelarchidae							
Benthalbella sp.	Pearleye unident.	15	595	1,188	881	35.29	46.60
Benthalbella dentata	Northern pearleye	2	109	912	551	47.27	48.00
Myctophidae							
Myctophidae	Lanternfish unident.	55	359	1,241	777	35.22	47.66
Diaphus theta	California headlightfish	14	222	1,077	540	41.10	46.11
Tarletonbeania crenularis	Blue lanternfish	1	285	1,226	828	35.22	48.09
Lampanyctus sp.	Lampfish unident.	55	918	918	918	43.51	43.51
Macrouridae							
Nezumia stelgidolepis	California grenadier	14	433	1,046	570	35.20	41.81
Nezumia liolepis	Smooth grenadier	3	661	932	834	38.10	42.24
Coryphaenoides acrolepis	Pacific grenadier	137	423	1,241	910	35.22	48.09
Albatrossia pectoralis	Giant grenadier	150	508	1,241	889	35.22	48.09
Coryphaenoides cinereus	Popeye grenadier	6	746	1,167	982	43.86	47.81
Malacocephalus laevis	Softhead grenadier	1	297	297	297	36.23	36.23
Macrouridae	Grenadier unident.	1	424	424	424	42.67	42.67
Moridae							
Antimora microlepis	Pacific flatnose	176	368	1,241	828	35.22	48.09
Physiculus rastrelliger	Hundred fathom codling	1	297	297	297	35.90	35.90
Gadidae							
Merluccius productus	Pacific hake	160	186	1,241	421	35.09	48.11
Gadus macrocephalus	Pacific cod	4	190	286	227	46.67	47.27
Melanocetidae							
Melanocetus johnsonii	Common blackdevil	3	933	1,241	1,073	42.89	42.96

Table 3 continued. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Ophidiidae							
Chilara taylori	Spotted cusk-eel	2	197	271	234	37.52	37.52
Lamprogrammus niger	Paperbone cusk-eel	1	934	934	934	44.67	44.67
Dicrolene filamentosa	Threadfin cusk-eel	1	1,107	1,107	1,107	36.73	36.73
Oneirodidae							
Oneirodidae	Dreamer unident.	2	952	1,193	1,072	45.56	45.56
Centrolophidae							
Icichthys lockingtoni	Medusafish	4	625	1,166	838	35.22	42.89
Trachipteridae							
Trachipterus altivelis	King-of-the-salmon	1	1,205	1,205	1,205	40.11	40.11
Anoplogastridae							
Anoplogaster cornuta	Fangtooth	12	630	1,174	969	35.22	44.56
Melamphaidae							
Poromitra crassiceps	Crested bigscale	8	499	1,226	902	36.23	45.30
Scorpaenidae							
Sebastolobus alascanus	Shortspine thornyhead	287	186	1,208	634	35.18	48.11
Sebastolobus altivelis	Longspine thornyhead	194	358	1,241	817	35.20	48.09
Sebastes sp.	Rockfish unident.	4	186	339	240	35.63	37.31
Sebastes aleutianus	Rougheye rockfish	14	186	515	361	36.84	48.11
Sebastes alutus	Pacific ocean perch	28	190	428	322	40.97	48.11
Sebastes aurora	Aurora rockfish	55	221	629	436	35.18	48.00
Sebastes brevispinis	Silvergray rockfish	1	208	208	208	48.11	48.11
Sebastes chlorostictus	Greenspotted rockfish	10	211	291	236	37.62	40.95
Sebastes crameri	Darkblotched rockfish	54	186	424	276	35.22	48.11
Sebastes diploproa	Splitnose rockfish	99	186	618	306	35.09	48.11
Sebastes elongatus	Greenstriped rockfish	33	186	326	239	36.84	47.27
Sebastes entomelas	Widow rockfish	10	186	507	269	36.84	44.46
Sebastes flavidus	Yellowtail rockfish	2	186	190	188	47.27	47.27
Sebastes goodei	Chilipepper	22	197	332	241	35.22	41.72

Table 3 continued. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Scorpaenidae (continued)							
Sebastes helvomaculatus	Rosethorn rockfish	24	186	367	280	35.22	48.11
Sebastes jordani	Shortbelly rockfish	12	197	291	242	35.22	40.52
Sebastes levis	Cowcod	1	200	200	200	35.22	35.22
Sebastes melanostomus	Blackgill rockfish	26	277	496	390	35.38	47.58
Sebastes paucispinis	Bocaccio	7	200	295	232	35.22	38.77
Sebastes pinniger	Canary rockfish	6	186	274	229	38.98	45.34
Sebastes proriger	Redstripe rockfish	1	286	286	286	46.67	46.67
Sebastes ruberrimus	Yelloweye rockfish	1	407	407	407	47.22	47.22
Sebastes babcocki	Redbanded rockfish	50	186	379	290	35.90	48.11
Sebastes saxicola	Stripetail rockfish	45	186	347	251	35.09	48.11
Sebastes semicinctus	Halfbanded rockfish	1	295	295	295	35.98	35.98
Sebastes variegatus	Harlequin rockfish	1	298	298	298	44.07	44.07
Sebastes zacentrus	Sharpchin rockfish	26	186	372	264	35.44	48.11
Sebastes rufus	Bank rockfish	9	286	449	346	36.23	39.07
Sebastes borealis	Shortraker rockfish	1	289	289	289	43.01	43.01
Sebastes reedi	Yellowmouth rockfish	1	210	210	210	46.95	46.95
Anoplopomatidae							
Anoplopoma fimbria	Sablefish	293	190	1,241	637	35.09	48.11
Hexagrammidae							
Ophiodon elongatus	Lingcod	21	186	525	258	35.63	47.27
Cottidae							
Zesticelus profundorum	Flabby sculpin	1	1,193	1,193	1,193	45.56	45.56
Icelinus filamentosus	Threadfin sculpin	14	186	433	264	36.23	45.81
Icelinus borealis	Northern sculpin	1	220	220	220	38.06	38.06
Icelinus tenuis	Spotfin sculpin	2	220	291	256	38.06	38.06
Psychrolutes phrictus	Blob sculpin	4	1,057	1,241	1,156	36.24	43.08
Agonidae							
Agonidae	Poacher unident.	1	219	219	219	45.11	45.11
Xeneretmus latifrons	Blacktip poacher	4	186	515	288	46.11	46.11

Table 3 continued. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Agonidae (continued)							
Bathyagonus pentacanthus	Bigeye poacher	9	210	1,082	357	43.03	46.11
Bathyagonus nigripinnis	Blackfin poacher	15	289	766	527	38.15	46.67
Liparidae							
Liparididae	Snailfish unident.	6	228	1,056	709	36.78	46.50
Elassodiscus caudatus	Humpback snailfish	7	424	784	535	36.78	43.88
Careproctus sp.	Snailfish unident.	1	918	918	918	37.00	37.00
Careproctus melanurus	Blacktail snailfish	132	221	1,191	579	35.09	48.00
Careproctus cypselurus	Blackfin snailfish	5	511	1,241	1,008	35.22	35.22
Careproctus gilberti	Smalldisk snailfish	4	372	1,004	616	36.78	42.90
Careproctus colletti	Alaska snailfish	9	292	1,188	819	35.96	44.90
Paraliparis cephalus	Swellhead snailfish	7	626	1,095	886	39.04	45.54
Icosteidae							
Icosteus aenigmaticus	Ragfish	1	578	578	578	42.19	42.19
Zoarcidae							
Zoarcidae	Eelpout unident.	2	301	518	409	35.09	38.37
Bothrocara brunneum	Twoline eelpout	121	281	1,241	835	35.22	48.09
Bothrocara remigerum	Longfin eelpout	2	1,174	1,188	1,181	43.08	43.08
Lycenchelyscrotalinus	Snakehead eelpout	99	211	1,193	897	35.32	48.09
Lycodes cortezianus	Bigfin eelpout	146	186	756	385	35.18	48.11
Lycodapus sp.	Eelpout unident.	3	511	1,166	762	35.22	35.99
Lycodapus endemoscotus	Deepwater eelpout	3	350	496	426	35.62	35.22
Lycodapus fierasfer	Blackmouth eelpout	4	509	1,085	854	44.21	46.12
Lycodapus mandibularis	Pallid eelpout	4	288	1,241	804	46.50	47.66
Lycodes palearis	Wattled eelpout	1	217	217	217	37.62	37.62
Lycodes diapterus	Black eelpout	122	190	1,103	493	35.09	48.11
Lycodes brevipes	Shortfin eelpout	1	276	276	276	38.37	38.37
Lycodes pacificus	Blackbelly eelpout	13	216	805	434	35.44	46.50

Table 3 continued. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Bothidae							
Citharichthys sordidus	Pacific sanddab	1	217	217	217	35.63	35.63
Pleuronectidae							
Atheresthes stomias	Arrowtooth flounder	70	186	626	358	39.52	48.11
Hippoglossus stenolepis	Pacific halibut	7	190	428	273	43.01	48.11
Hippoglossoides elassodon	Flathead sole	1	186	186	186	45.67	45.67
Lyopsetta exilis	Slender sole	107	186	611	319	35.09	48.11
Eopsetta jordani	Petrale sole	19	186	382	256	35.63	45.11
Parophrys vetulus	English sole	38	197	372	271	35.22	46.67
Microstomus pacificus	Dover sole	288	186	1,241	581	35.09	48.11
Embassichthys bathybius	Deepsea sole	134	423	1,241	902	35.22	48.09
Glyptocephalus zachirus	Rex sole	173	186	1,032	393	35.09	48.11
Crustacea (subphylum)	Crustacean unident.	1	428	428	428	39.84	39.84
Euphausiacea (order)	Euphausiid unident.	3	501	501	501	39.06	39.68
Malacostraca (subclass)							
Malacostraca	Shrimp unident.	2	751	1,057	904	39.33	45.56
Gnathophausia ingens	Red mysid	11	748	1,173	949	35.29	42.90
Sergestes sp.	Sergestid shrimp unident.	22	277	908	535	35.45	47.66
Decapoda (order)							
Decapoda	Crab unident.	1	220	220	220	38.06	38.06
Cancer sp.	Cancer crab unident.	1	215	215	215	37.31	37.31
Cancer magister	Dungeness crab	23	210	930	287	37.04	46.50
Cancer productus	Red rock crab	3	211	297	242	35.63	39.37
Mursia gaudichaudii	Armed boxed crab	2	197	290	243	37.52	37.52
Chorilia longipes	Longhorned decorator crab	7	211	1,103	725	35.50	43.47
Chionoecetes tanneri	Grooved tanner crab	197	222	1,241	790	35.22	48.09
Hyas lyratus	Pacific lyre crab	3	742	1,012	856	36.74	36.74
Paguridae	Hermit crab unident.	6	349	586	462	39.17	41.81
Lopholithodes sp.	Box crab unident.	6	210	432	278	37.62	38.08
Lopholithodes foraminatus	Box crab	5	229	423	296	38.15	44.79

Table 3 continued. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Decapoda (order) (continued)							
Acantholithodes hispidus	Fuzzy crab	1	222	222	222	46.80	46.80
Lithodes couesi	Scarlet king crab	9	423	1,145	894	39.21	47.25
Paralithodes rathbuni	–	6	200	297	249	35.22	39.69
Paralomis verrilli	–	2	932	1,057	994	36.24	38.10
Paralomis multispina	–	19	746	1,241	124	36.24	47.81
Munida quadrispina	Pinchbug	4	216	1,103	616	36.78	40.82
Stereomastis sculpta	–	10	888	1,193	1,083	35.22	45.56
Pandalidae							
Pandalus sp.	Pandalid shrimp unident.	4	211	293	247	38.68	45.33
Pandalus jordani	Ocean shrimp	23	186	735	261	35.22	48.11
Pandalus borealis	Northern shrimp	1	219	219	219	45.11	45.11
Pandalus platyceros	Spot shrimp	17	190	362	251	35.22	47.27
Pandalopsis dispar	Sidestripe shrimp	4	277	367	306	44.46	47.58
Pandalopsis ampla	Deepwater bigeye	9	1,001	1,226	1,121	35.22	40.11
Eualus sp.	Eualid unident.	11	367	1,173	687	39.04	47.58
Eualus macrophthalmus	Bigeye eualid	16	424	1,174	572	40.38	47.66
Crangon communis	Twospine crangon	2	200	359	280	35.22	35.22
Pasiphaea pacifica	Pacific glass shrimp	45	359	918	539	35.22	48.00
Pasiphaea tarda	Crimson pasiphaeid	70	296	1,226	913	35.22	47.97
Notostomus japonicus	Spinyridge shrimp	1	1,226	1,226	1,226	36.23	36.23
Acanthephyra curtirostris	Peaked shrimp	4	913	1,241	1,101	39.43	42.96
Heteropoda (order)							
Heteropoda	–	2	603	905	754	35.29	37.27
Bivalvia (class)							
Bivalvia	Bivalve unident.	1	208	208	208	48.11	48.11
Acharax johnsoni	–	2	515	735	625	43.55	46.11
Pectinid	Scallop unident.	1	908	908	908	46.12	46.12

Table 3 continued. Frequency of occurrence, depth, and latitudinal ranges for fish and invertebrate species or groups caught during the 2000 NWFSC slope survey.

Family name / Scientific name	Common name	Frequency of occurrence (No. hauls)	Depth (m)			Latitudinal range (dd)	
			Min.	Max.	Mean	South	North
Cephalopoda (order)							
Octopodidae	Octopus unident.	28	186	1,226	636	35.18	46.64
Japatella heathi	Yellowring octopus	12	748	1,188	988	41.10	48.09
Opisthoteuthis californiana	Flapjack devilfish	42	297	1,164	689	35.18	48.00
Octopus dofleini	Giant octopus	1	424	424	424	38.86	38.86
Benthoctopus sp.	–	7	190	1,192	643	35.63	47.27
Vampyroteuthis infernalis	Vampire squid	31	630	1,226	1,010	35.22	47.31
Squid unident.	–	23	219	1,191	699	35.29	47.58
Taningia danae	Rhomboid squid	3	217	362	265	35.63	38.67
Rossia pacifica	Eastern Pacific bobtail	3	200	433	287	35.22	44.79
Loligo opalescens	California market squid	9	200	1,057	489	35.09	46.01
Gonatus onyx	Clawed armhook squid	25	229	1,103	597	37.49	47.66
Berryteuthis magister	Magistrate armhook squid	31	205	1,241	608	36.46	47.66
Moroteuthis robusta	Robust clubhook squid	11	205	814	434	35.38	42.35
Onychoteuthis borealijaponicus	Boreal clubhook squid	2	502	950	726	41.81	41.81
Galiteuthis phyllura	–	1	1,077	1,077	1,077	47.43	47.43
Chiroteuthis sp.	–	4	433	1,241	776	36.78	44.77
Chiroteuthis calyx	–	8	450	1,057	740	39.20	45.56
Cranchiidae	–	1	1,046	1,046	1,046	35.03	35.03
Octopoteuthis deletron	Octopus squid	65	295	1,207	768	35.22	47.66
Histioteuthis heteropsis	Cockeyed squid	18	430	1,205	583	35.20	47.58
Histioteuthis hoylei	Cockeyed squid	2	485	1,167	826	42.61	47.85

Table 4. Number of length-frequency measurements collected by stratum during the 2000 NWFSC slope survey for all the INPFC areas combined.

Species	Stratum 1 (183–549 m)	Stratum 2 (550–1,280 m)	Total
Longspine thornyhead	1,149	22,080	23,229
Shortspine thornyhead	6,180	1,875	8,055
Aurora rockfish	0	9	9
Bocaccio	15	0	15
Darkblotched rockfish	325	0	325
Shortbelly rockfish	242	0	242
Lingcod	31	0	31
Dover sole	13,886	6,112	19,998
Pacific halibut	9	0	9
Petrale sole	40	0	40
Sablefish	1,543	1,683	3,226

Table 5. Number of length-frequency measurements collected by stratum during the 2000 NWFSC slope survey for the INPFC Conception area.

Species	Stratum 1 (183–549 m)	Stratum 2 (550–1,280 m)	Total
Longspine thornyhead	174	1,979	2,153
Shortspine thornyhead	215	243	458
Aurora rockfish	0	0	0
Bocaccio	3	0	3
Darkblotched rockfish	0	0	0
Shortbelly rockfish	13	0	13
Lingcod	1	0	1
Dover sole	1,034	620	1,654
Pacific halibut	0	0	0
Petrale sole	3	0	3
Sablefish	159	188	347

Table 6. Number of length-frequency measurements collected by stratum during the 2000 NWFSC slope survey for the INPFC Monterey area.

Species	Stratum 1 (183–549 m)	Stratum 2 (550–1,280 m)	Total
Longspine thornyhead	431	6,780	7,211
Shortspine thornyhead	1,073	665	1,738
Aurora rockfish	0	9	9
Bocaccio	12	0	12
Darkblotched rockfish	25	0	25
Shortbelly rockfish	228	0	228
Lingcod	6	0	6
Dover sole	4,662	3,170	7,832
Pacific halibut	0	0	0
Petrale sole	35	0	35
Sablefish	565	445	1,010

Table 7. Number of length-frequency measurements collected by stratum during the 2000 NWFSC slope survey for the INPFC Eureka area.

Species	Stratum 1 (183–549 m)	Stratum 2 (550–1,280 m)	Total
Longspine thornyhead	109	4,395	4,504
Shortspine thornyhead	1,203	204	1,407
Aurora rockfish	0	0	0
Bocaccio	0	0	0
Darkblotched rockfish	40	0	40
Shortbelly rockfish	1	0	1
Lingcod	9	0	9
Dover sole	2,476	1,158	3,634
Pacific halibut	0	0	0
Petrale sole	0	0	0
Sablefish	211	351	562

Table 8. Number of length-frequency measurements collected by stratum during the 2000 NWFSC slope survey for the INPFC Columbia area.

Species	Stratum 1 (183–549 m)	Stratum 2 (550–1,280 m)	Total
Longspine thornyhead	358	7,458	7,816
Shortspine thornyhead	2,980	499	3,479
Aurora rockfish	0	0	0
Bocaccio	0	0	0
Darkblotched rockfish	260	0	260
Shortbelly rockfish	0	0	0
Lingcod	15	0	15
Dover sole	4,782	838	5,620
Pacific halibut	5	0	5
Petrale sole	2	0	2
Sablefish	583	627	1,210

Table 9. Number of length-frequency measurements collected by stratum during the 2000 NWFSC slope survey for the INPFC U.S.-Vancouver area.

Species	Stratum 1 (183–549 m)	Stratum 2 (550–1,280 m)	Total
Longspine thornyhead	77	1,468	1,545
Shortspine thornyhead	709	264	973
Aurora rockfish	0	0	0
Bocaccio	0	0	0
Darkblotched rockfish	0	0	0
Shortbelly rockfish	0	0	0
Lingcod	0	0	0
Dover sole	932	326	1,258
Pacific halibut	4	0	4
Petrale sole	0	0	0
Sablefish	25	72	97

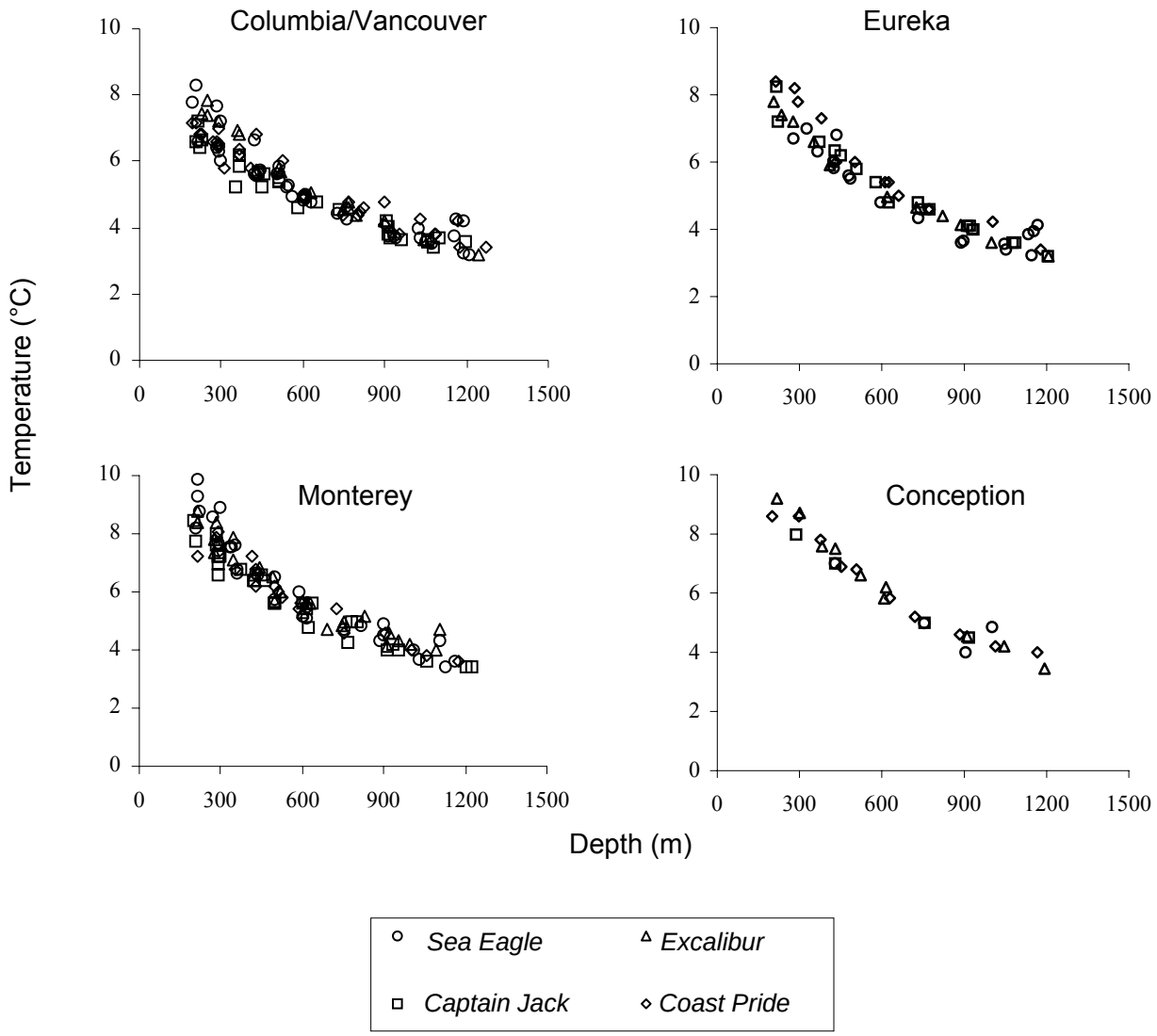


Figure 5. Near bottom temperature recorded at the mouth of the net for each tow conducted during the 2000 NWFSC slope survey. Observations are grouped by INPFC area, plotted relative to haul depth.

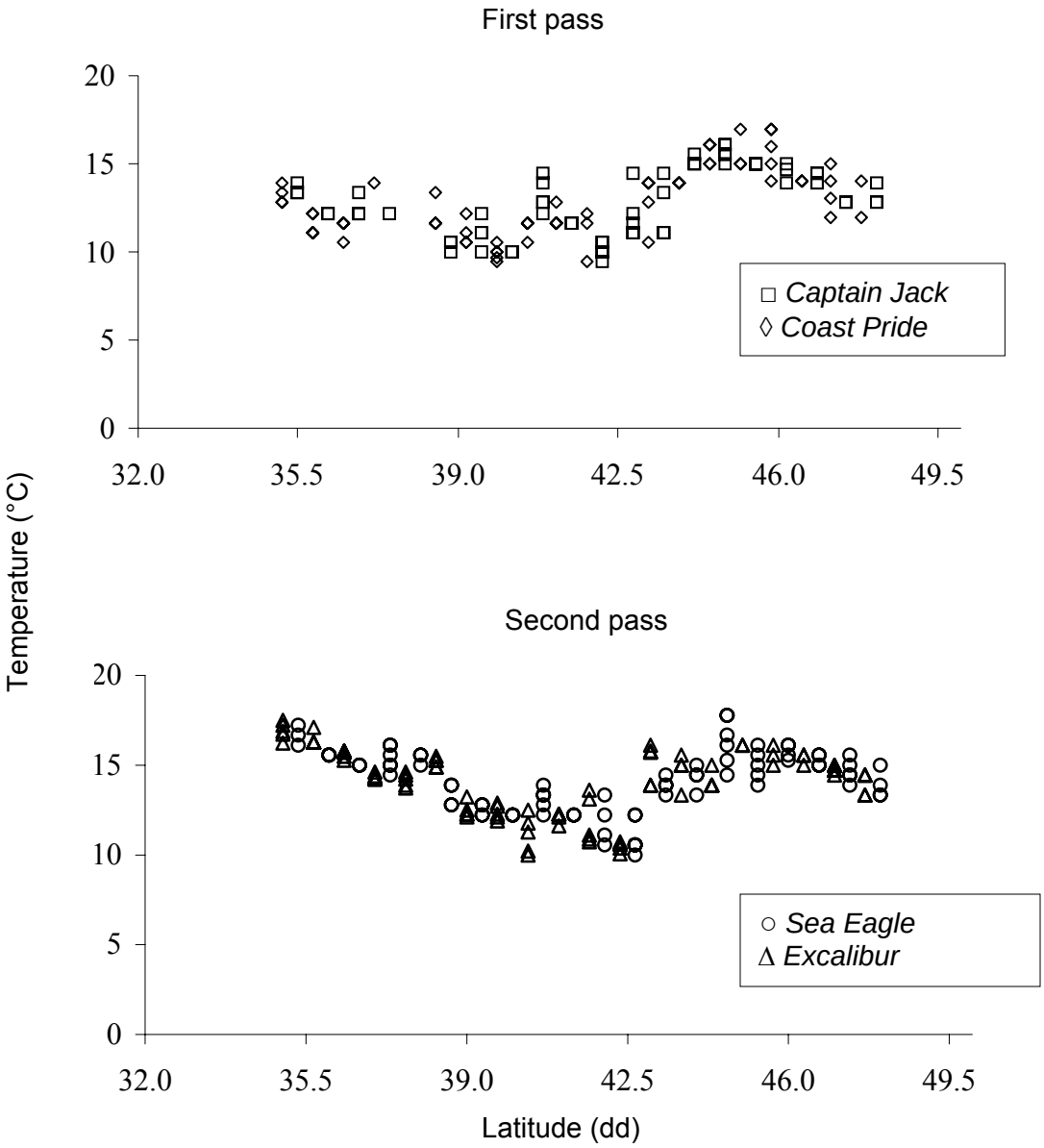


Figure 6. Sea surface temperature observed at the start of each tow during the 2000 NWFSC slope survey, plotted relative to latitude. Observations are grouped by date (first pass from 28 June 2000 to 28 July 2000; second pass from 24 August 2000 to 24 September 2000).

Relative Density and Distribution of Species

Information on the relative density and distribution of the 20 most abundant groundfish and selected crab species are reported in several ways: 1) for all depth strata and INPFC areas combined (Table 10, p. 30), 2) by depth strata for all INPFC areas combined (Table 11, p. 31), and 3) by depth stratum within each individual INPFC area (Tables 12–16, p. 31–33). Dover sole had the highest catch rates in the U.S.-Vancouver, Columbia, and Monterey INPFC areas for all depth strata combined, and also for all INPFC areas and depth strata combined (i.e., survey-wide). Longspine thornyheads had the highest catch rates in the Eureka and Conception INPFC areas for all depth strata combined (Table 10). Note that with the exception of the Columbia INPFC area, Dover sole and longspine thornyhead were the two most abundant species when depth strata were combined for the remaining INPFC areas. When all INPFC areas were separated into depth strata, Dover sole had the highest catch rates in the shallow stratum and longspine thornyhead had the highest catch rates in the deep stratum (Table 11).

Catch rates varied with depth stratum by INPFC areas (Tables 12–16). Dover sole was the predominant species in the shallow stratum in the U.S.-Vancouver, Columbia, Eureka, and Conception INPFC areas, while splitnose rockfish was the predominant species in the Monterey INPFC area. The high catch rate for splitnose rockfish at shallow depths in the Monterey INPFC area was attributable to one haul with an excessively large catch. For the deep stratum, longspine thornyhead was the dominant species in the U.S.-Vancouver, Columbia, Eureka, and Conception INPFC areas, and Dover sole was the dominant species in the Monterey INPFC area.

Figures 7–19 (p. 34–46) are maps showing the geographical distributions and relative abundances of selected groundfish species. These maps show the location of the hauls where the species were caught. Catch rates were categorized as follows: 1) no catch, 2) greater than zero but less than or equal to the mean CPUE, 3) greater than the mean CPUE but less than or equal to one standard deviation from the mean, 4) between one and two standard deviations greater than the mean CPUE, and 5) over two standard deviations greater than the mean CPUE.

Biomass and Population Estimates

Abundance estimates of biomass in metric tons along with CV are presented for the 20 most abundant groundfish and crab species for all areas combined by depth strata and INFPC areas in Tables 17–22 (p. 47–52). The total number of hauls—by depth strata where weight, number of fish, and lengths were collected for the 30 most abundant groundfish and selected invertebrate species—are shown in Tables 23–28 (p. 53–58) by stratum and INPFC area for each fish species.

The calculated biomass estimates are not absolute estimates. Herding caused by doors and bridles, as well as escapement from underneath the trawl footrope, around the net opening, and through the net mesh may affect the trawl catches (Gunderson 1993). Abundance calculations are based on the assumption that all of the fish that are in front of the trawl and between the wingtips have an equal chance of being caught. The ability of a fish to avoid the net depends on the species, fish shape, size, speed, and its reaction to the part of the net it encounters (Lauth 1999). Furthermore, the survey does not cover the entire geographic range of many of the species caught.

Table 10. Mean CPUE (kg/ha) of the 20 most abundant groundfish and selected crab species caught in each INPFC area for all depth strata (183–1,280 m) combined during the 2000 NWFSC slope survey.

All areas **Total hauls = 330**		**U.S.-Vancouver area** **Total hauls = 20**		**Columbia area** **Total hauls = 106**	
Dover sole	23.29	Dover sole	26.74	Dover sole	19.18
Longspine thornyhead	16.22	Longspine thornyhead	9.33	Sablefish	12.52
Sablefish	9.31	Arrowtooth flounder	7.57	Longspine thornyhead	11.56
Pacific grenadier	7.70	Sablefish	5.30	Darkblotched rockfish	6.39
Shortspine thornyhead	5.70	Shortspine thornyhead	4.56	Shortspine thornyhead	6.20
Splitnose rockfish	5.26	Pacific ocean perch	3.33	Giant grenadier	6.09
Giant grenadier	5.19	Grooved tanner crab	3.31	Pacific grenadier	4.82
Pacific hake	4.15	Giant grenadier	2.59	Arrowtooth flounder	4.24
Grooved tanner crab	4.13	Longnose skate	2.56	Grooved tanner crab	4.06
Rex sole	2.78	Rex sole	2.19	Rex sole	3.69
Longnose skate	2.48	Rougheye rockfish	1.68	Splitnose rockfish	3.40
Darkblotched rockfish	2.28	Pacific grenadier	1.61	Pacific hake	3.35
Arrowtooth flounder	2.16	Pacific halibut	1.27	Longnose skate	2.56
California slickhead	1.56	Pacific hake	1.10	Pacific ocean perch	1.40
Stripetail rockfish	1.43	Deepsea sole	0.79	Spotted ratfish	0.94
Brown cat shark	1.21	Bering skate	0.73	Brown cat shark	0.86
Spotted ratfish	1.04	Twoline eelpout	0.67	Bering skate	0.83
Deepsea sole	0.97	Bigfin eelpout	0.47	Bigfin eelpout	0.83
Pacific ocean perch	0.79	Giant wrymouth	0.38	Widow rockfish	0.82
Bering skate	0.69	Darkblotched rockfish	0.35	Deepsea sole	0.64

Eureka area **Total hauls = 66**		**Monterey area** **Total hauls = 104**		**Conception area** **Total hauls = 34**	
Longspine thornyhead	23.04	Dover sole	34.91	Longspine thornyhead	21.48
Dover sole	19.86	Longspine thornyhead	16.89	Dover sole	18.02
Pacific grenadier	17.08	Splitnose rockfish	14.47	Sablefish	9.25
Giant grenadier	10.62	Pacific grenadier	11.69	Shortspine thornyhead	6.44
Grooved tanner crab	9.09	Sablefish	6.93	Pacific hake	5.09
Sablefish	8.31	Shortspine thornyhead	6.55	Splitnose rockfish	4.03
Pacific hake	5.34	Pacific hake	5.02	Pacific grenadier	3.58
Rex sole	3.64	Giant grenadier	4.61	Longnose skate	3.18
Shortspine thornyhead	3.12	Grooved tanner crab	4.35	California slickhead	3.11
Brown cat shark	1.58	Stripetail rockfish	3.69	Stripetail rockfish	1.70
Longnose skate	1.47	Rex sole	2.84	Brown cat shark	1.44
Deepsea sole	1.45	California slickhead	2.51	Giant grenadier	1.23
California slickhead	1.29	Longnose skate	2.40	Filetail cat shark	1.16
Stripetail rockfish	1.26	Spotted ratfish	2.23	Aurora rockfish	1.14
Black eelpout	0.98	Brown cat shark	1.65	Spotted ratfish	0.90
Pacific flatnose	0.97	Deepsea sole	1.28	Deepsea sole	0.87
Chilipepper	0.90	Shortbelly rockfish	0.96	Twoline eelpout	0.85
Splitnose rockfish	0.57	Spiny dogfish	0.91	Rex sole	0.74
Bigfin eelpout	0.55	Bigfin eelpout	0.87	Bering skate	0.60
Roughtail skate	0.54	Pacific flatnose	0.77	Grooved tanner crab	0.47

Table 11. Mean CPUE (kg/ha) of the 20 most abundant groundfish and selected crab species caught by depth strata in all INPFC areas combined during the 2000 NWFSC slope survey.

Stratum 1 (183–549 m) Total hauls = 158		**Stratum 2 (550–1,280 m) Total hauls = 172**	
Dover sole	33.06	Longspine thornyhead	25.33
Splitnose rockfish	14.39	Dover sole	17.67
Pacific hake	10.89	Pacific grenadier	12.12
Sablefish	8.76	Sablefish	9.63
Rex sole	7.16	Giant grenadier	8.14
Darkblotched rockfish	6.25	Grooved tanner crab	6.39
Longnose skate	6.23	Shortspine thornyhead	6.08
Arrowtooth flounder	5.82	California slickhead	2.46
Shortspine thornyhead	5.04	Deepsea sole	1.52
Stripetail rockfish	3.92	Brown cat shark	1.39
Spotted ratfish	2.83	Pacific flatnose	0.91
Pacific ocean perch	2.15	Twoline eelpout	0.90
Bering skate	1.78	Roughtail skate	0.72
Bigfin eelpout	1.61	Longnose skate	0.32
Spiny dogfish	0.99	Snakehead eelpout	0.29
Aurora rockfish	0.94	Pacific hake	0.28
Brown cat shark	0.90	Rex sole	0.26
Pacific halibut	0.81	Black eelpout	0.22
Slender sole	0.78	Hagfish unident.	0.17
Widow rockfish	0.77	Filetail cat shark	0.15

Table 12. Mean CPUE (kg/ha) of the 20 most abundant groundfish and selected crab species caught by depth strata in the Conception INPFC area during the 2000 NWFSC slope survey.

Stratum 1 (183–549 m) Total hauls = 17		**Stratum 2 (550–1,280 m) Total hauls = 17**	
Dover sole	24.68	Longspine thornyhead	29.00
Pacific hake	17.63	Dover sole	15.53
Splitnose rockfish	14.79	Sablefish	10.54
Longnose skate	10.65	Shortspine thornyhead	7.55
Stripetail rockfish	6.25	Pacific grenadier	4.91
Sablefish	5.80	California slickhead	4.27
Aurora rockfish	4.19	Giant grenadier	1.69
Shortspine thornyhead	3.47	Brown cat shark	1.42
Spotted ratfish	3.27	Deepsea sole	1.19
Filetail cat shark	2.76	Twoline eelpout	1.17
Rex sole	2.70	Grooved tanner crab	0.63
Bering skate	1.94	Filetail cat shark	0.56
Brown cat shark	1.49	Pacific hake	0.40
Longspine thornyhead	1.38	Longnose skate	0.38
Spiny dogfish	1.04	Black skate	0.37
Rockfish unident.	0.88	Pacific flatnose	0.34
Bigfin eelpout	0.67	Snakehead eelpout	0.20
Blackgill rockfish	0.63	Black eelpout	0.18
Black eelpout	0.48	Deepsea smelt	0.18
Bocaccio rockfish	0.26	Deepsea skate	0.14

Table 13. Mean CPUE (kg/ha) of the 20 most abundant groundfish and selected crab species caught by depth strata in the Monterey INPFC area during the 2000 NWFSC slope survey.

Stratum 1 (183–549 m) Total hauls = 53		**Stratum 2 (550–1,280 m) Total hauls = 51**	
Splitnose rockfish	48.72	Dover sole	33.59
Dover sole	38.06	Longspine thornyhead	23.83
Pacific hake	16.62	Pacific grenadier	16.58
Stripetail rockfish	12.42	Shortspine thornyhead	8.33
Rex sole	9.53	Sablefish	7.59
Spotted ratfish	7.51	Giant grenadier	6.56
Longnose skate	6.86	Grooved tanner crab	6.15
Sablefish	5.34	California slickhead	3.57
Shortbelly rockfish	3.25	Brown cat shark	1.86
Spiny dogfish	3.04	Deepsea sole	1.82
Bigfin eelpout	2.62	Pacific flatnose	1.08
English sole	2.41	Black skate	1.00
Shortspine thornyhead	2.35	Twoline eelpout	0.79
Bering skate	2.01	Longnose skate	0.53
Darkblotched rockfish	1.18	Pacific sleeper shark	0.30
Aurora rockfish	1.13	Snakehead eelpout	0.26
Brown cat shark	1.13	Bigfin eelpout	0.13
Blackgill rockfish	0.74	Blacktail snailfish	0.13
Slender sole	0.70	Bering skate	0.13
Lingcod	0.66	Hagfish unident.	0.12

Table 14. Mean CPUE (kg/ha) of the 20 most abundant groundfish and selected crab species caught by depth strata in the Eureka INPFC area during the 2000 NWFSC slope survey.

Stratum 1 (183–549 m) Total hauls =27		**Stratum 2 (550–1,280 m) Total hauls = 39**	
Dover sole	29.26	Longspine thornyhead	30.35
Pacific hake	21.94	Pacific grenadier	22.54
Rex sole	12.33	Dover sole	16.85
Sablefish	6.01	Giant grenadier	14.02
Stripetail rockfish	5.19	Grooved tanner crab	11.96
Longnose skate	4.80	Sablefish	9.05
Chilipepper	3.72	Shortspine thornyhead	3.39
Splitnose rockfish	2.37	Deepsea sole	1.91
Black eelpout	2.34	California slickhead	1.70
Shortspine thornyhead	2.25	Brown cat shark	1.60
Bering skate	2.06	Pacific flatnose	1.28
Bigfin eelpout	1.68	Rex sole	0.87
Brown cat shark	1.53	Black skate	0.71
Spiny dogfish	1.03	Black eelpout	0.54
Spotted ratfish	0.87	Snakehead eelpout	0.51
Lingcod	0.87	Twoline eelpout	0.43
Arrowtooth flounder	0.73	Longnose skate	0.41
Aurora rockfish	0.64	Ragfish	0.27
Darkblotched rockfish	0.62	Bigfin eelpout	0.19
Greenstriped rockfish	0.40	Skate unident.	0.17

Table 15. Mean CPUE (kg/ha) of the 20 most abundant groundfish and selected crab species caught by depth strata in the Columbia INPFC area during the 2000 NWFSC slope survey.

Stratum 1 (183–549 m) Total hauls = 52		**Stratum 2 (550–1,280 m) Total hauls = 54**	
Dover sole	34.23	Longspine thornyhead	21.53
Darkblotched rockfish	13.67	Sablefish	11.63
Sablefish	13.53	Giant grenadier	11.32
Arrowtooth flounder	8.87	Pacific grenadier	9.05
Rex sole	7.53	Grooved tanner crab	7.32
Shortspine thornyhead	7.28	Dover sole	5.94
Splitnose rockfish	7.26	Shortspine thornyhead	5.25
Pacific hake	6.56	Deepsea sole	1.19
Longnose skate	5.46	California slickhead	1.11
Pacific ocean perch	2.99	Pacific flatnose	1.03
Spotted ratfish	2.02	Brown cat shark	0.99
Widow rockfish	1.75	Twoline eelpout	0.95
Bigfin eelpout	1.74	Black skate	0.82
Bering skate	1.73	Pacific hake	0.52
Slender sole	1.30	Rex sole	0.31
Sharpchin rockfish	1.15	Snakehead eelpout	0.25
Pacific halibut	1.12	Hagfish unident.	0.24
Greenstriped rockfish	0.87	Black eelpout	0.19
Lingcod	0.79	Arrowtooth flounder	0.18
Brown cat shark	0.72	Blob sculpin	0.11

Table 16. Mean CPUE (kg/ha) of the 20 most abundant groundfish and selected crab species caught by depth strata in the U.S.-Vancouver INPFC area during the 2000 NWFSC slope survey.

Stratum 1 (183–549 m) Total hauls = 9		**Stratum 2 (550–1,280 m) Total hauls = 11**	
Dover sole	34.28	Longspine thornyhead	20.98
Arrowtooth flounder	13.51	Dover sole	17.31
Pacific ocean perch	6.00	Sablefish	7.32
Shortspine thornyhead	5.30	Grooved tanner crab	7.14
Longnose skate	4.32	Giant grenadier	5.83
Rex sole	3.85	Shortspine thornyhead	3.65
Sablefish	3.68	Pacific grenadier	3.62
Rougheye rockfish	3.03	Deepsea sole	1.78
Pacific halibut	2.29	Twoline eelpout	1.52
Pacific hake	1.95	Pacific flatnose	0.65
Bering skate	1.25	Brown cat shark	0.59
Bigfin eelpout	0.81	Black skate	0.51
Giant wrymouth	0.68	Longnose skate	0.36
Darkblotched rockfish	0.62	Black eelpout	0.31
Rosethorn rockfish	0.41	Hagfish unident.	0.24
Spiny dogfish	0.37	Snakehead eelpout	0.22
Black eelpout	0.36	Blacktail snailfish	0.21
Hagfish unident.	0.35	Arrowtooth flounder	0.16
Redbanded rockfish	0.33	Skate unident.	0.13
Grooved tanner crab	0.25	California slickhead	0.13

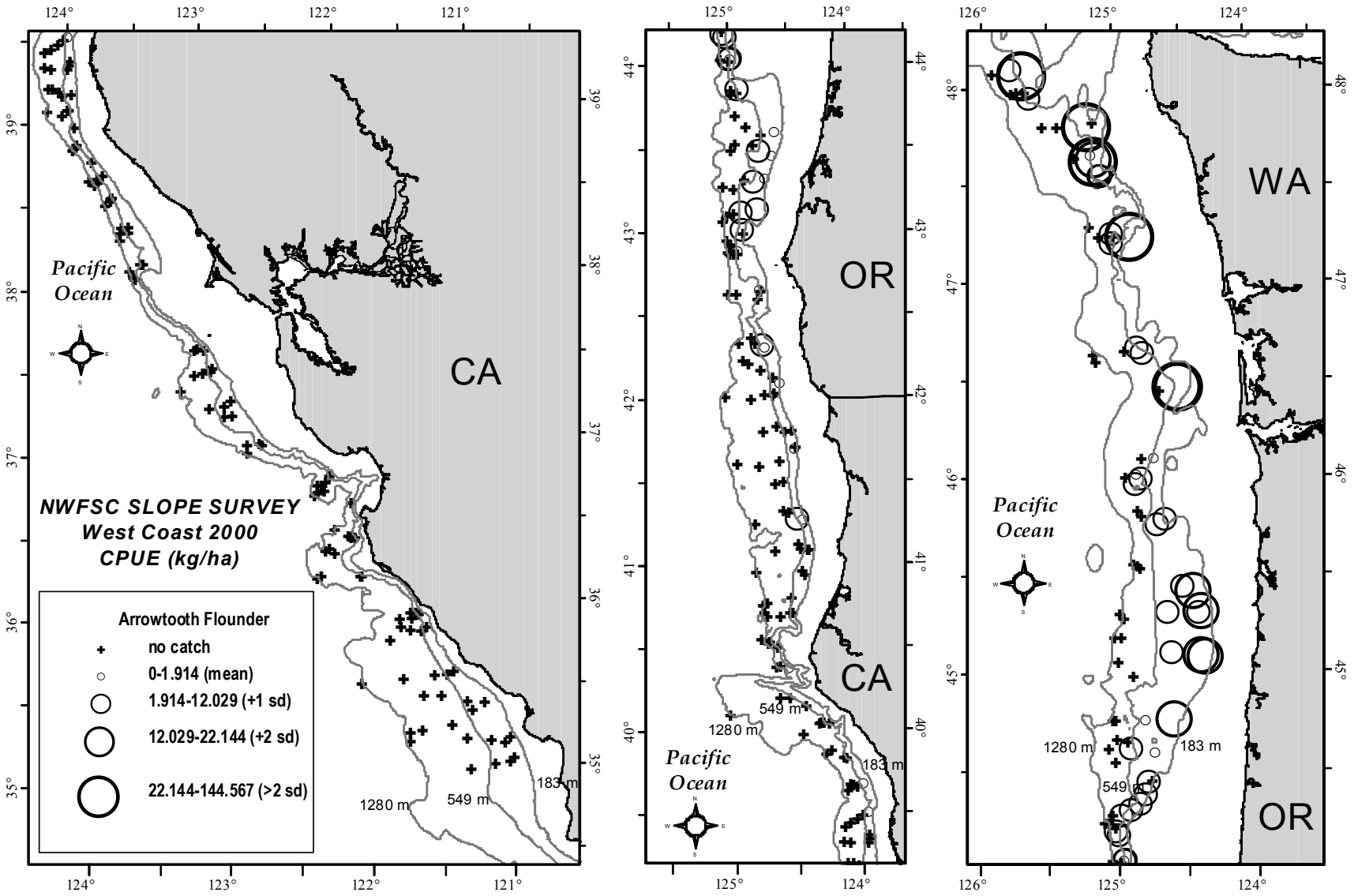


Figure 7. Arrowtooth flounder distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

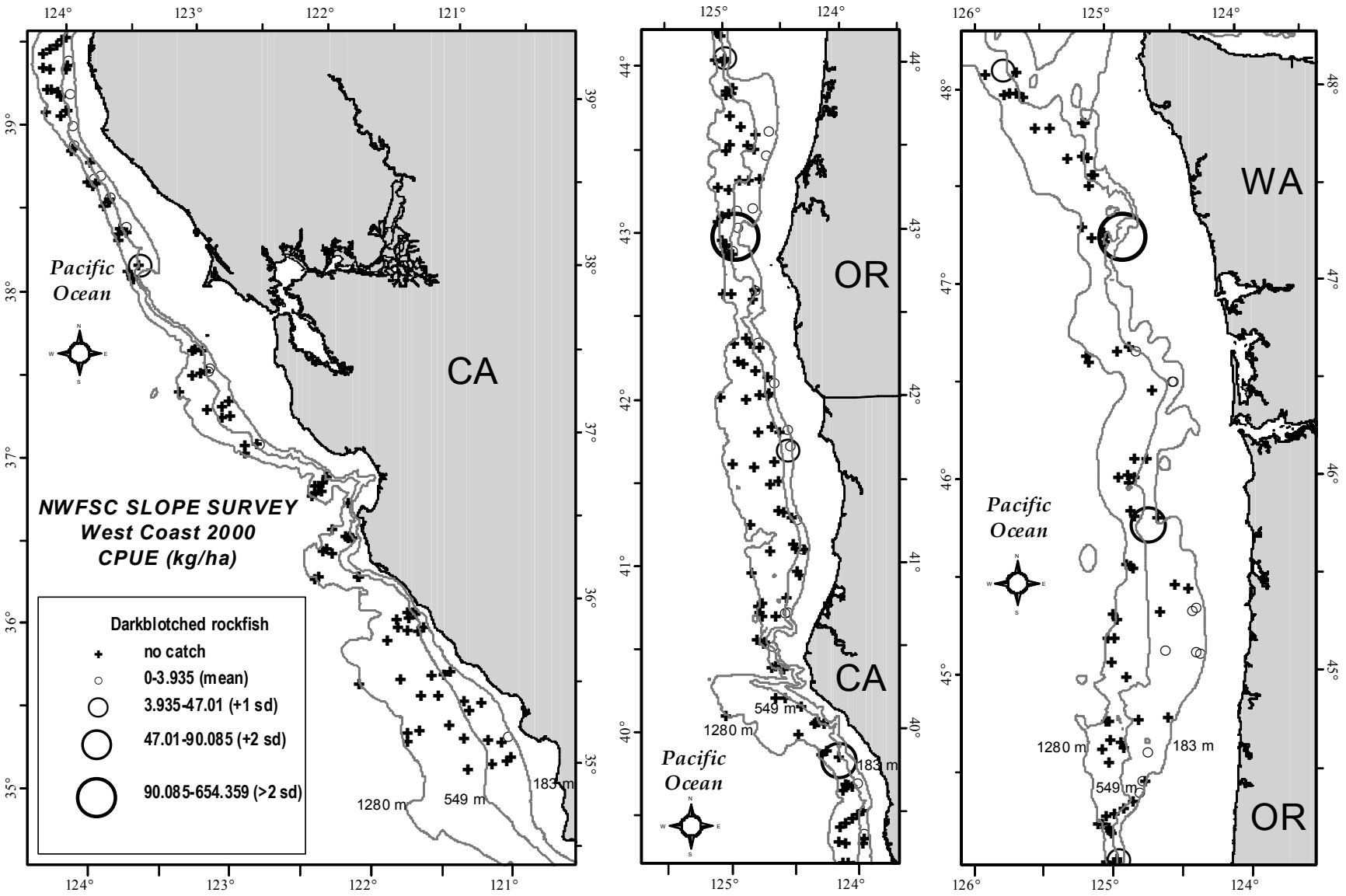


Figure 8. Darkblotched rockfish distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

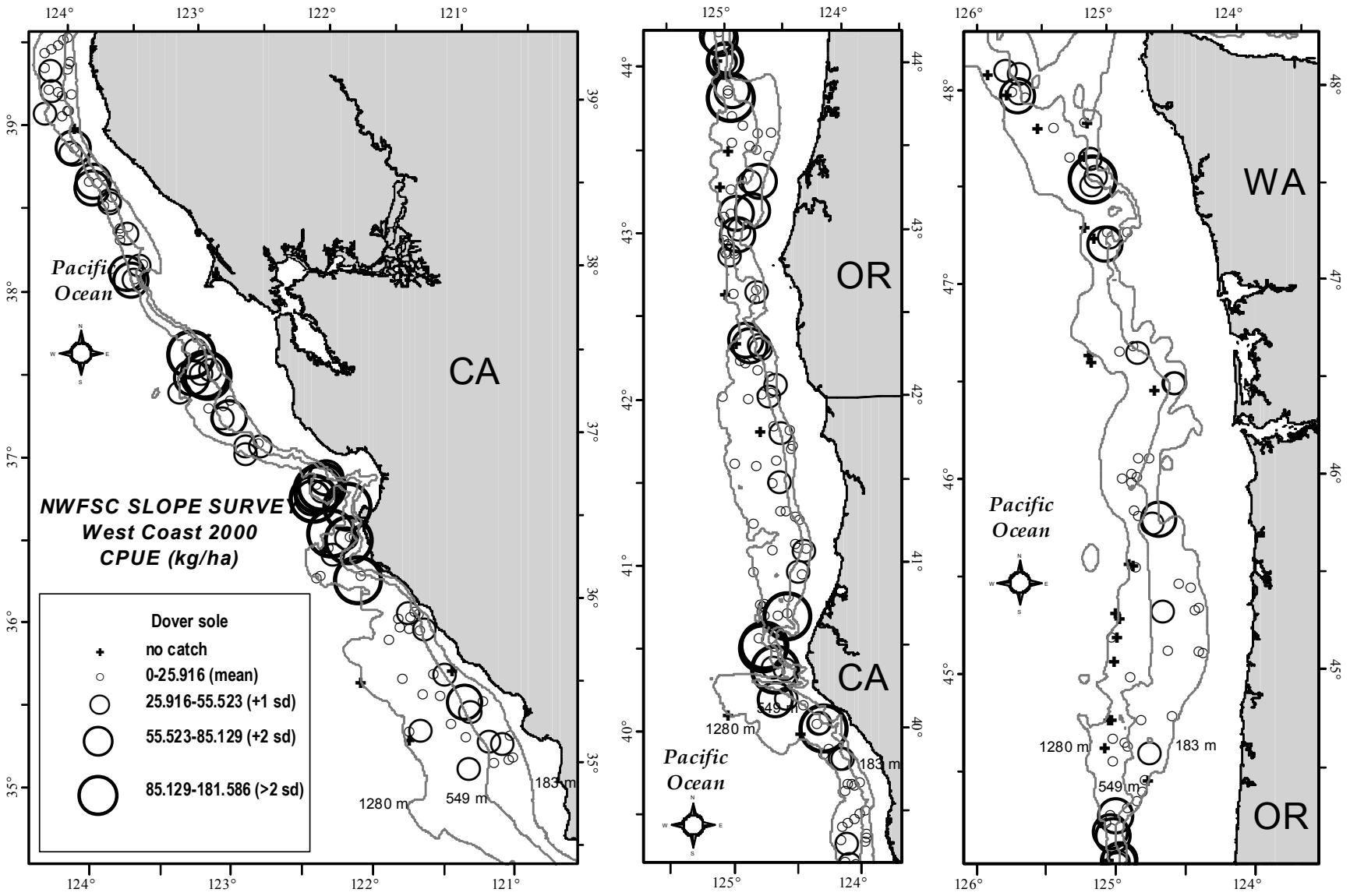


Figure 9. Dover sole distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

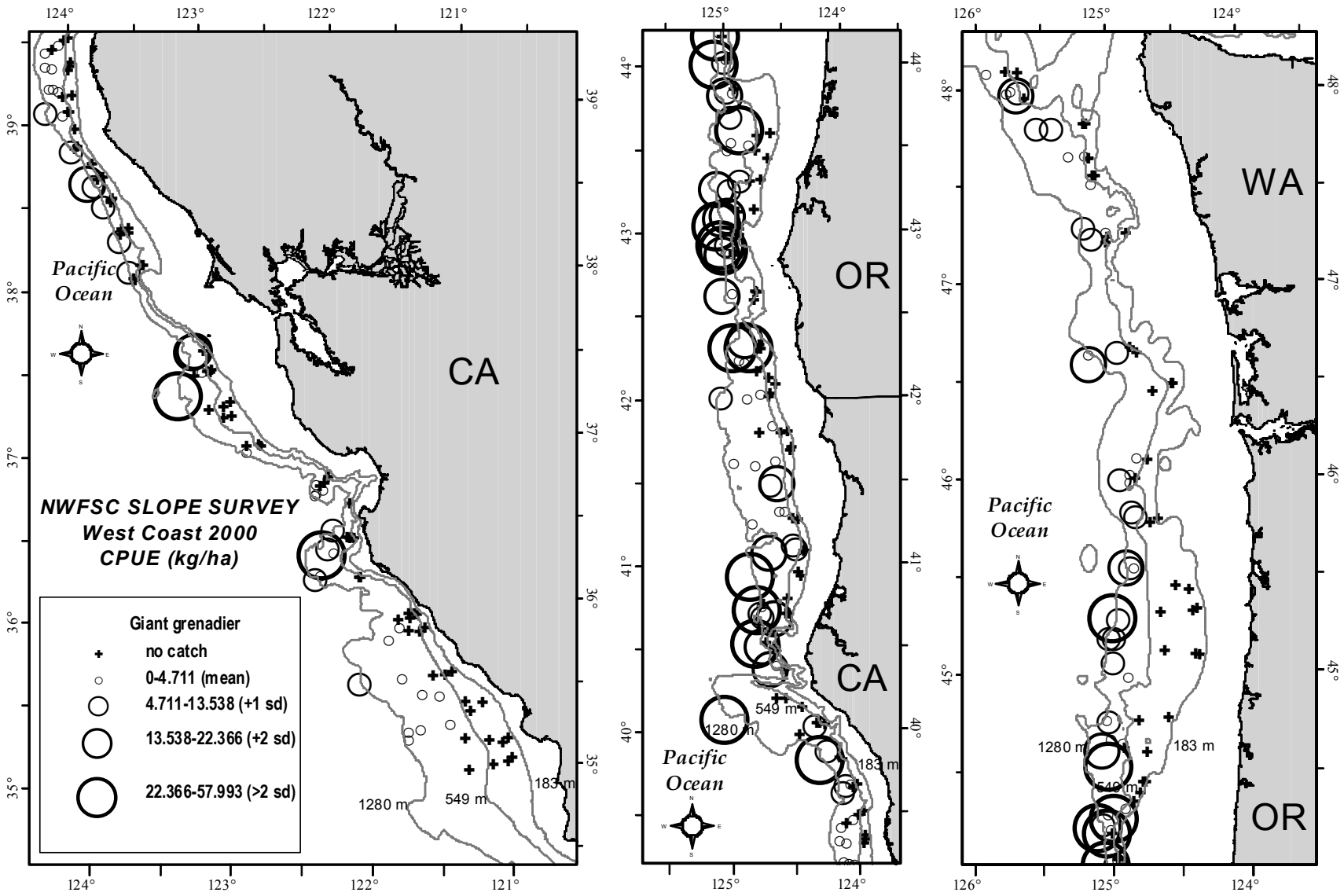


Figure 10. Giant grenadier distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

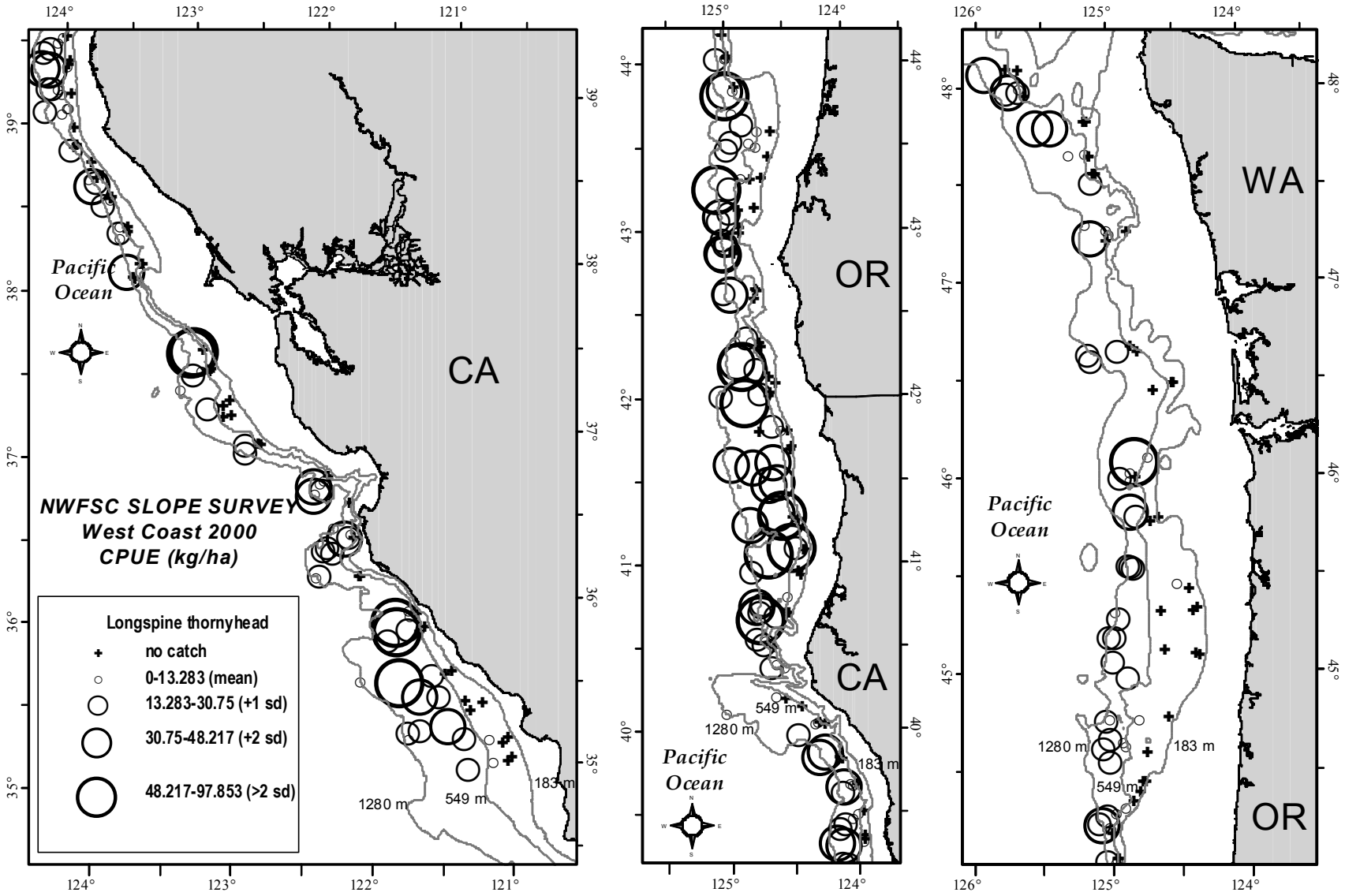


Figure 11. Longspine thornyhead distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

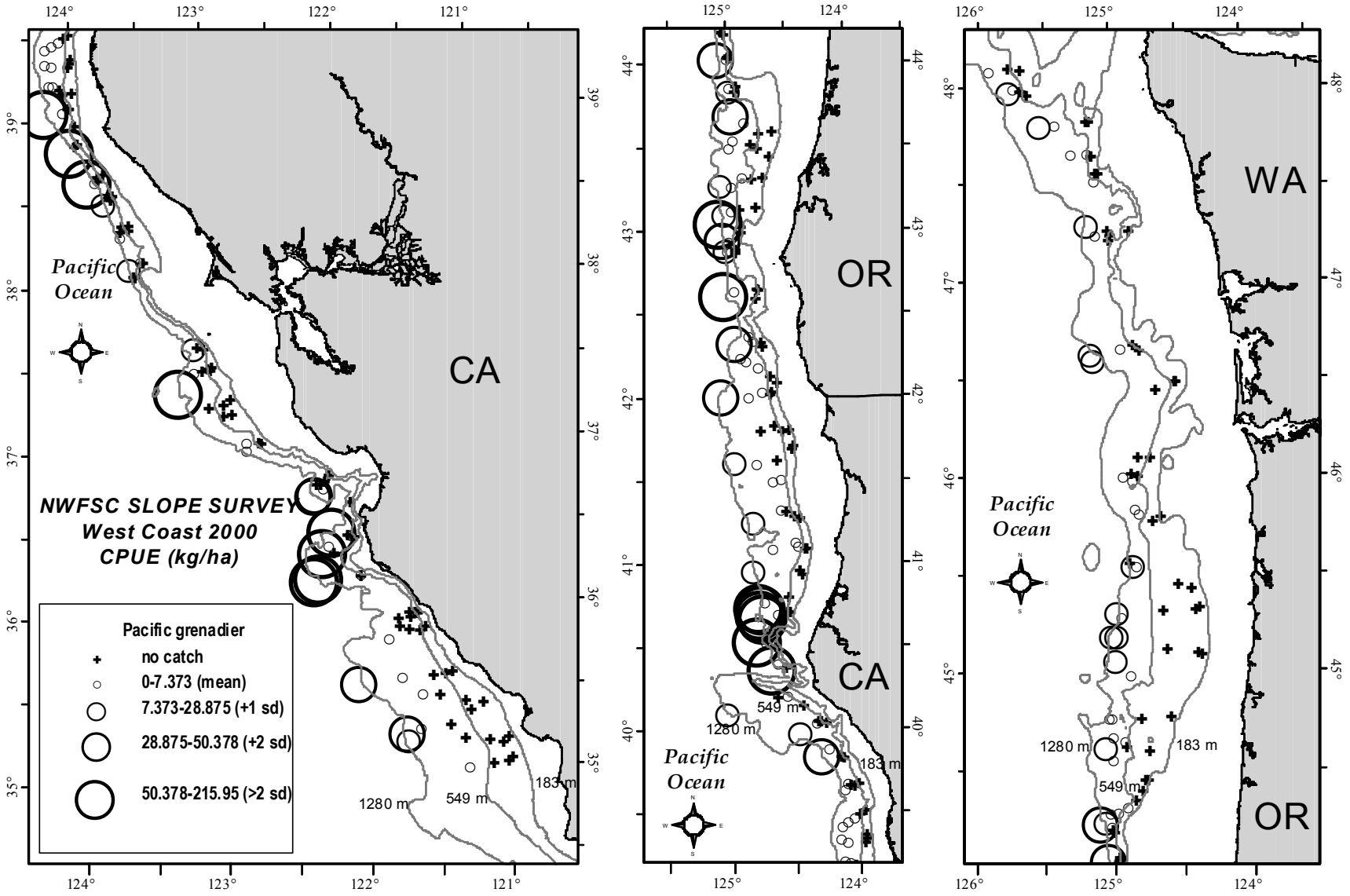


Figure 12. Pacific grenadier distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

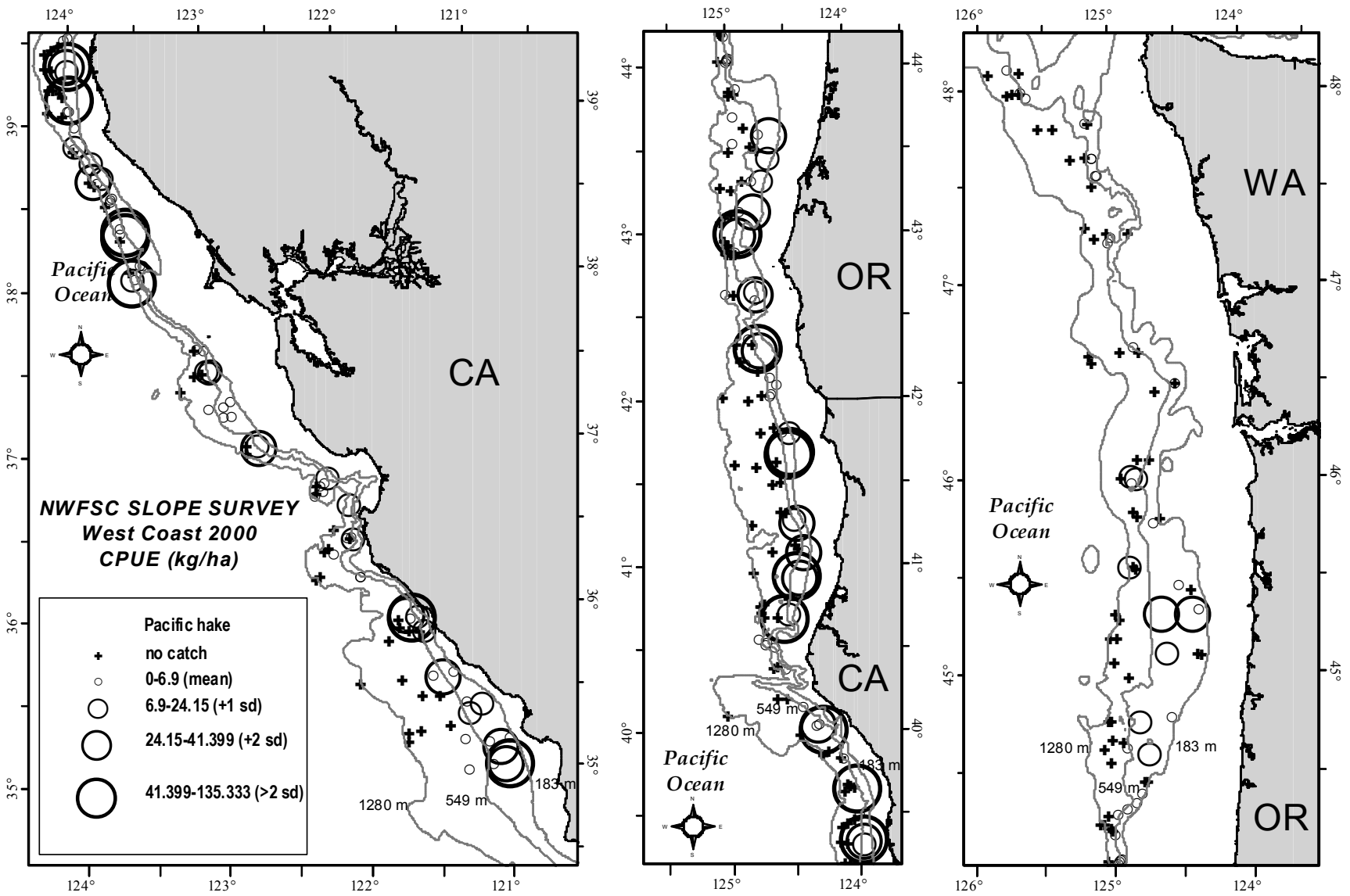


Figure 13. Pacific hake distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

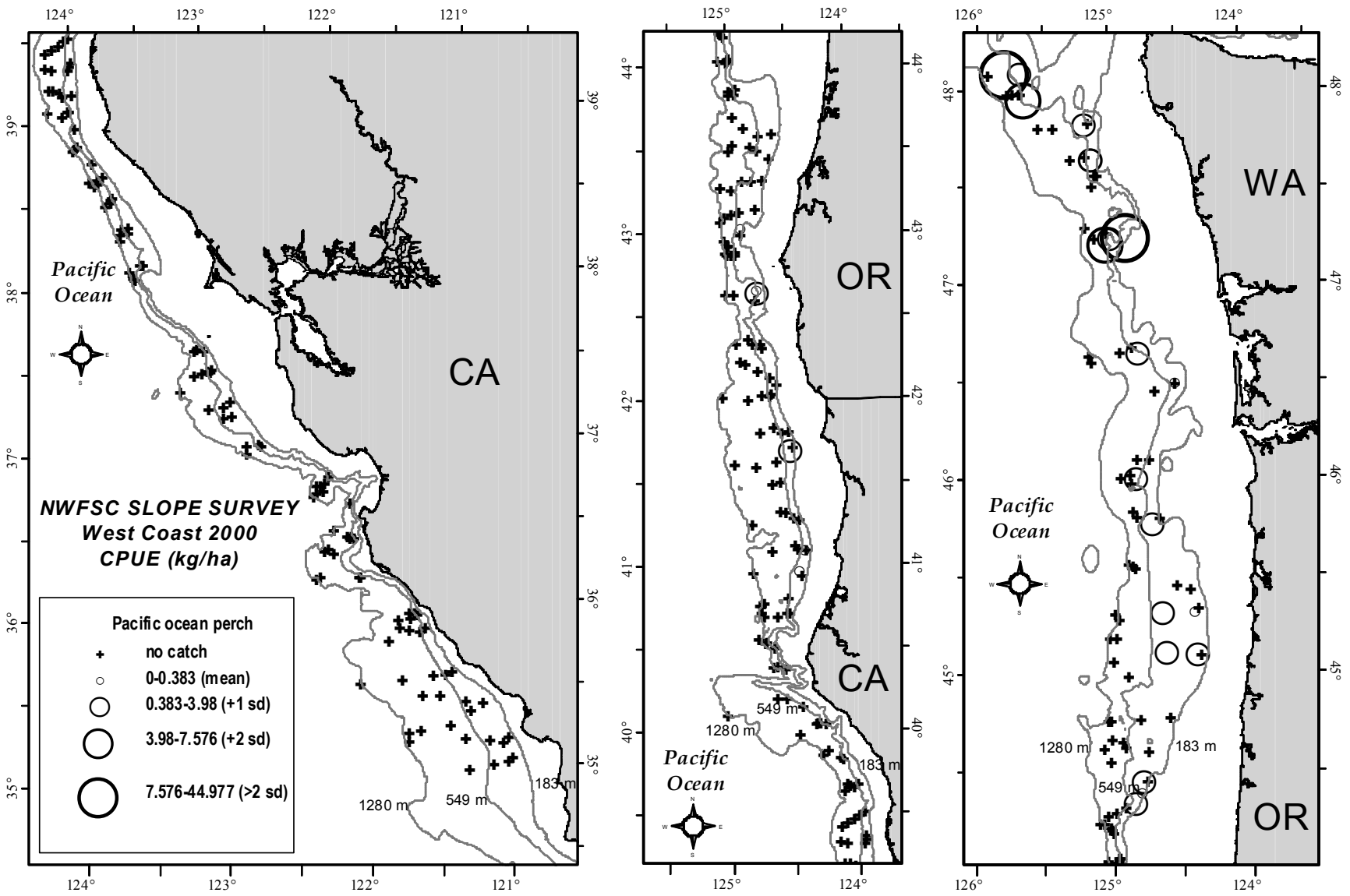


Figure 14. Pacific ocean perch distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

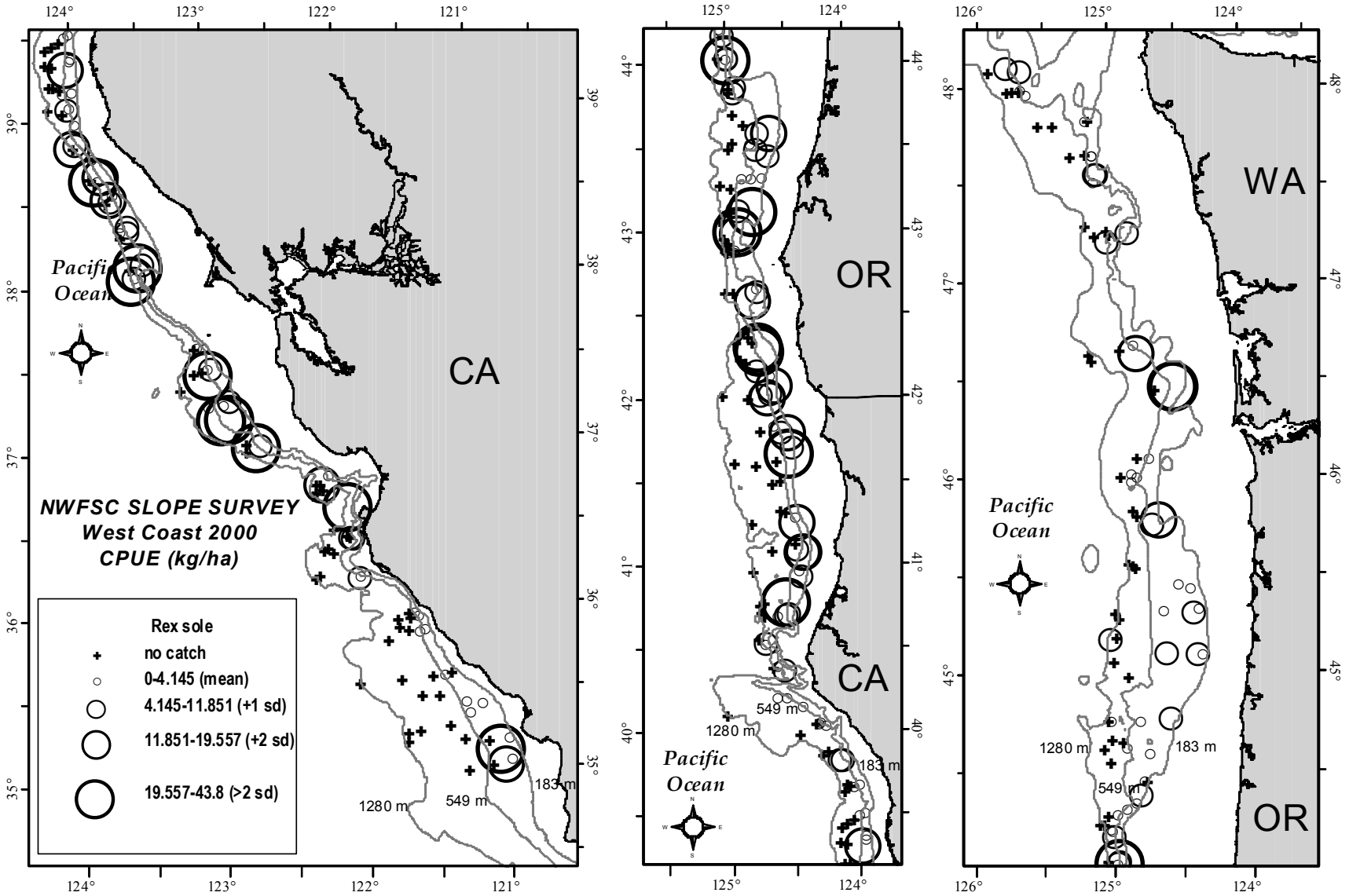


Figure 15. Rex sole distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

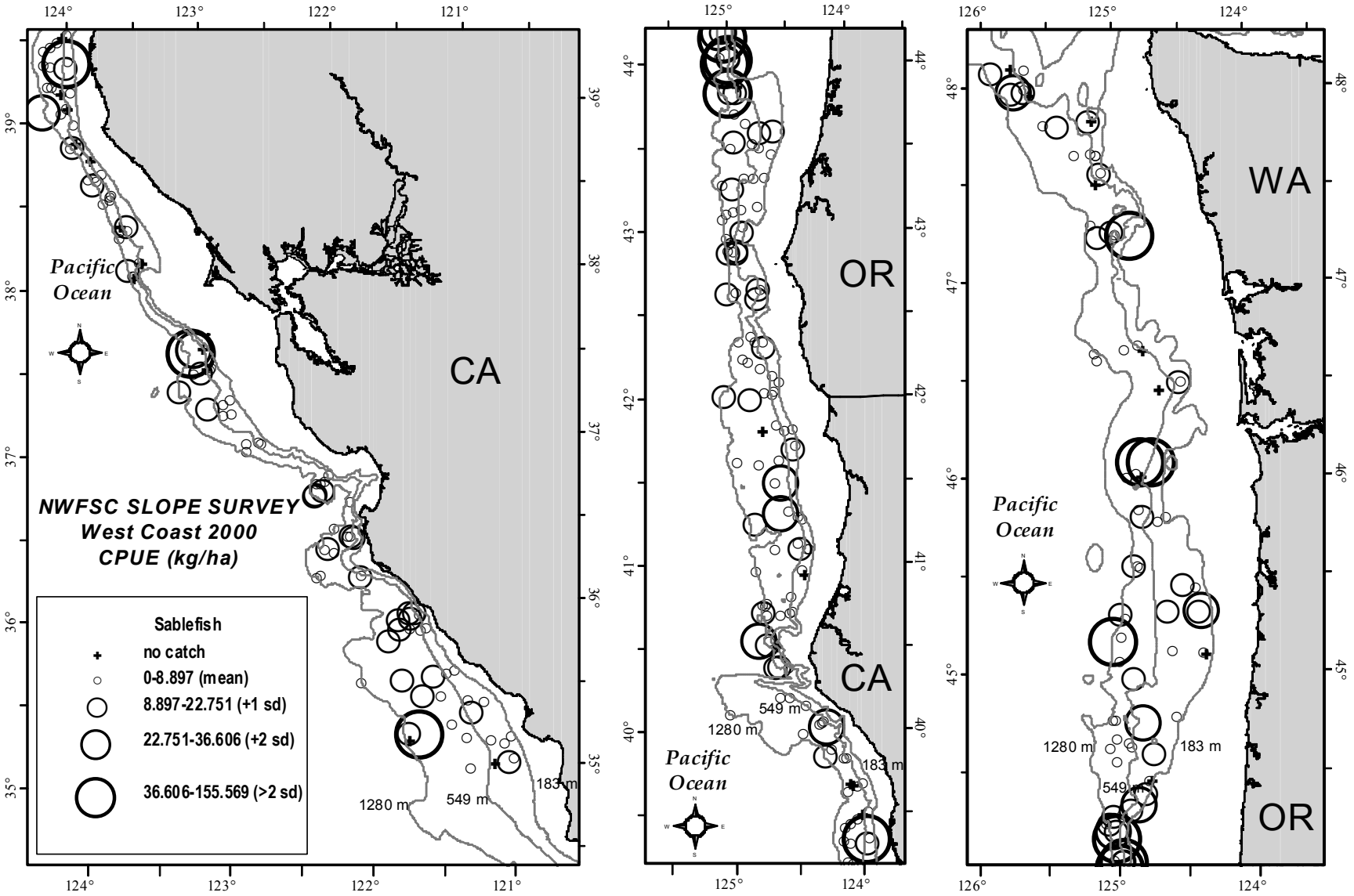


Figure 16. Sablefish distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

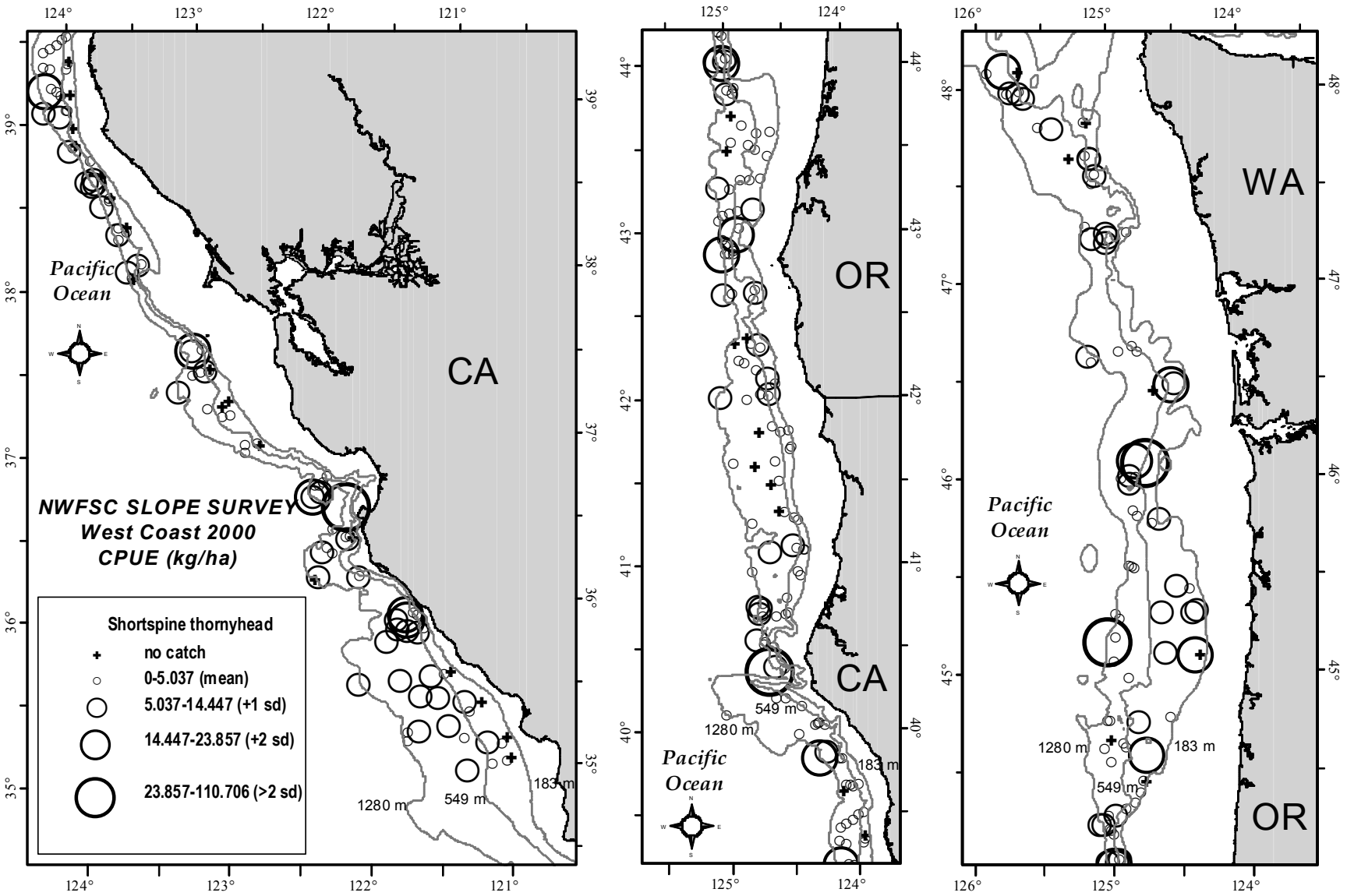


Figure 17. Shortspine thornyhead distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

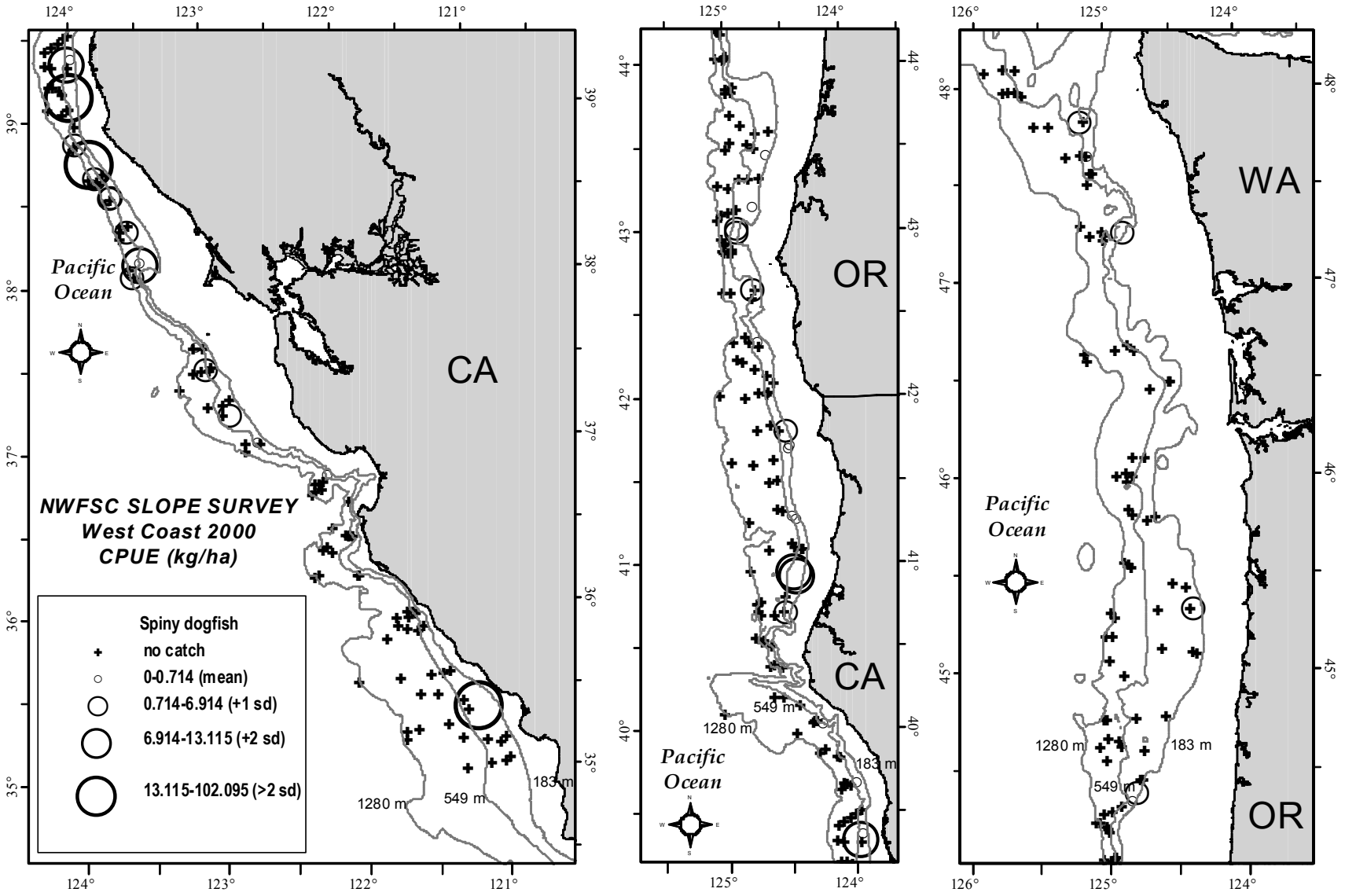


Figure 18. Spiny dogfish distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

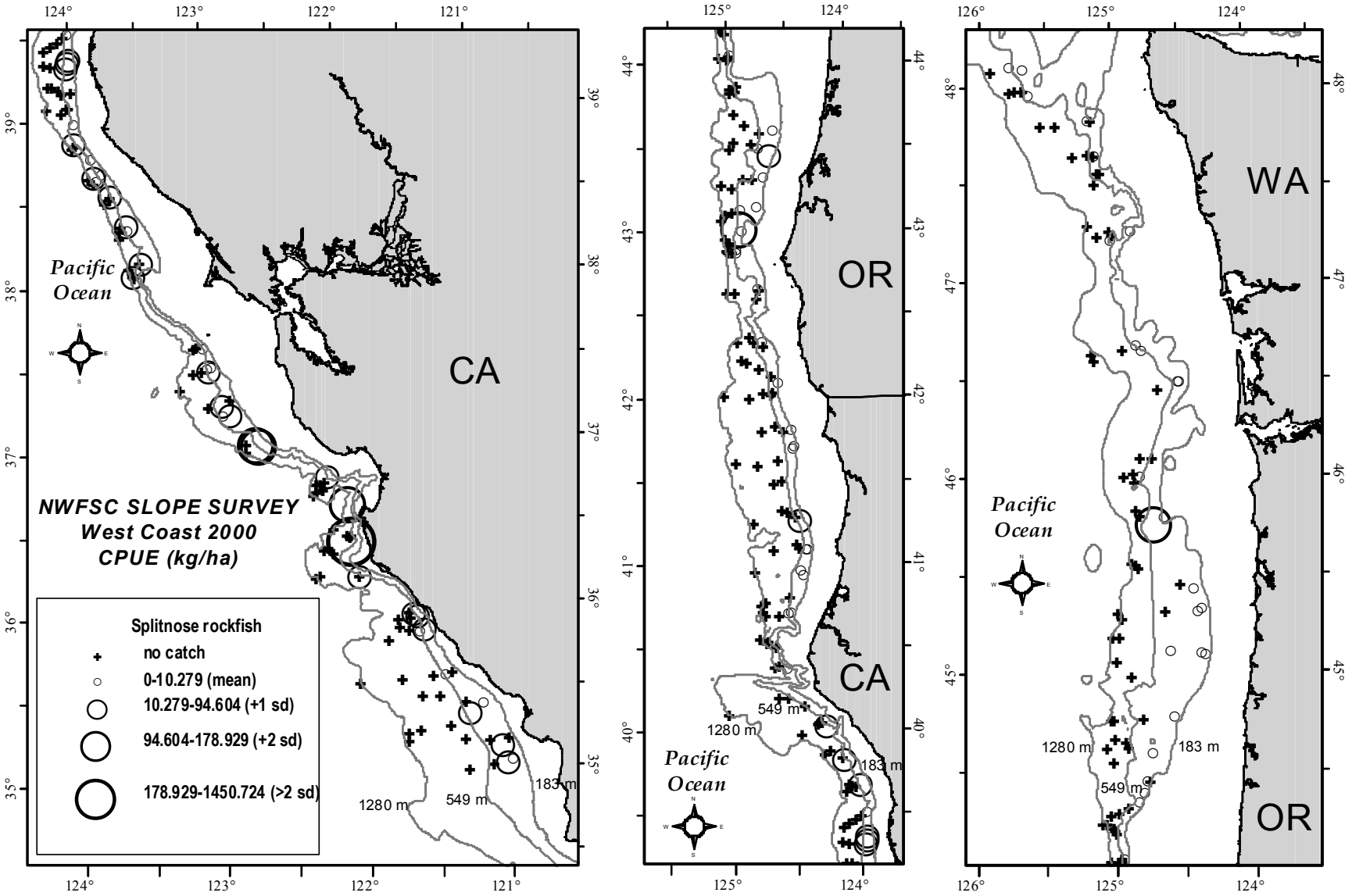


Figure 19. Splitnose rockfish distribution and relative abundance (kg/ha) from the 2000 NWFSC slope survey.

Table 17. Estimates of fish biomass (mt) and CV by stratum for the combined INPFC areas (U.S.-Vancouver, Columbia, Eureka, Monterey, and Conception) from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m		**Stratum 2 550–1,280 m**		**All strata 183–1,280 m**	
	Biomass	CV	Biomass	CV	Biomass	CV
Species	(mt)	%	(mt)	%	(mt)	%
Dover sole	66,252	16	61,502	22	127,754	20
Longspine thornyhead	777	81	88,165	12	88,942	13
Sablefish	17,556	25	33,516	19	51,072	22
Pacific grenadier	42	217	42,166	34	42,208	39
Shortspine thornyhead	10,100	23	21,154	25	31,254	24
Splitnose rockfish	28,841	112	5	219	28,846	212
Giant grenadier	129	62	28,322	20	28,451	22
Pacific hake	21,819	33	959	81	22,778	60
Grooved tanner crab	438	41	22,230	18	22,668	20
Rex sole	14,356	20	895	80	15,252	36
Longnose skate	12,486	21	1,105	54	13,591	37
Darkblotched rockfish	12,519	76	0	–	12,519	145
Arrowtooth flounder	11,659	33	208	94	11,867	61
California slickhead	2	318	8,577	24	8,579	27
Stripetail rockfish	7,859	70	0	–	7,859	133
Brown cat shark	1,801	39	4,824	20	6,625	26
Spotted ratfish	5,668	52	15	133	5,683	97
Deepsea sole	25	118	5,286	17	5,311	20
Pacific ocean perch	4,310	75	0	–	4,310	142
Bering skate	3,563	23	243	75	3,806	40

Table 18. Estimates of fish biomass (mt) and CV by stratum for the INPFC Conception area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m		**Stratum 2 550–1,280 m**		**All strata 183–1,280 m**	
	Biomass	CV	Biomass	CV	Biomass	CV
Species	(mt)	%	(mt)	%	(mt)	%
Dover sole	7,113	21	11,960	20	19,072	24
Longspine thornyhead	397	64	22,336	19	22,734	18
Sablefish	1,672	19	8,117	24	9,789	21
Pacific grenadier	0	–	3,786	53	3,786	51
Shortspine thornyhead	1,000	32	5,813	11	6,812	15
Splitnose rockfish	4,261	37	0	–	4,261	96
Giant grenadier	0	–	1,300	30	1,300	29
Pacific hake	5,080	23	305	71	5,386	57
Grooved tanner crab	10	100	488	18	498	18
Rex sole	779	57	0	–	779	148
Longnose skate	3,068	26	293	51	3,361	61
Darkblotched rockfish	4	100	0	–	4	260
Arrowtooth flounder	0	–	0	–	0	–
California slickhead	0	–	3,292	33	3,292	32
Stripetail rockfish	1,802	55	0	–	1,802	142
Brown cat shark	430	35	1,094	27	1,524	32
Spotted ratfish	942	33	14	100	955	84
Deepsea sole	0	–	919	29	919	28
Pacific ocean perch	0	–	0	–	0	–
Bering skate	558	22	74	100	632	51

Table 19. Estimates of fish biomass (mt) and CV by stratum for the INPFC Monterey area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m		**Stratum 2 550–1,280 m**		**All strata 183–1,280 m**	
	Biomass	CV	Biomass	CV	Biomass	CV
Species	(mt)	%	(mt)	%	(mt)	%
Dover sole	13,893	14	29,040	14	42,933	15
Longspine thornyhead	158	37	20,607	11	20,765	11
Sablefish	1,950	24	6,566	19	8,516	20
Pacific grenadier	41	70	14,335	22	14,377	22
Shortspine thornyhead	858	32	7,199	26	8,057	24
Splitnose rockfish	17,783	56	5	100	17,788	135
Giant grenadier	0	–	5,674	17	5,674	17
Pacific hake	6,066	21	107	40	6,173	50
Grooved tanner crab	32	49	5,318	15	5,350	15
Rex sole	3,480	16	13	48	3,494	39
Longnose skate	2,503	16	454	27	2,957	34
Darkblotched rockfish	431	77	–	–	431	185
Arrowtooth flounder	13	65	0	–	13	156
California slickhead	2	100	3,084	17	3,087	17
Stripetail rockfish	4,533	29	0	–	4,533	70
Brown cat shark	413	34	1,612	15	2,025	20
Spotted ratfish	2,742	29	0	–	2,742	70
Deepsea sole	4	100	1,576	16	1,580	16
Pacific ocean perch	0	–	0	–	0	–
Bering skate	733	17	110	47	844	36

Table 20. Estimates of fish biomass (mt) and CV by stratum for the INPFC Eureka area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m		**Stratum 2 550–1,280 m**		**All strata 183–1,280 m**	
	Biomass	CV	Biomass	CV	Biomass	CV
Species	(mt)	%	(mt)	%	(mt)	%
Dover sole	5,951	16	10,725	26	16,676	23
Longspine thornyhead	34	59	19,315	7	19,349	7
Sablefish	1,221	15	5,761	14	6,983	14
Pacific grenadier	0	–	14,345	31	14,345	31
Shortspine thornyhead	458	18	2,160	17	2,618	16
Splitnose rockfish	482	52	0	–	482	138
Giant grenadier	0	–	8,920	18	8,920	18
Pacific hake	4,461	27	26	48	4,487	72
Grooved tanner crab	19	42	7,613	15	7,632	15
Rex sole	2,507	14	552	41	3,059	31
Longnose skate	975	18	259	61	1,235	40
Darkblotched rockfish	125	36	0	–	125	94
Arrowtooth flounder	148	50	0	–	148	133
California slickhead	0	–	1,081	18	1,081	18
Stripetail rockfish	1,055	65	0	–	1,055	171
Brown cat shark	311	24	1,016	22	1,326	22
Spotted ratfish	178	73	0	–	178	194
Deepsea sole	1	100	1,216	14	1,217	14
Pacific ocean perch	17	48	0	–	17	127
Bering skate	419	26	6	100	425	68

Table 21. Estimates of fish biomass (mt) and CV by stratum for the INPFC Columbia area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m		**Stratum 2 550–1,280 m**		**All strata 183–1,280 m**	
	Biomass	CV	Biomass	CV	Biomass	CV
Species	(mt)	%	(mt)	%	(mt)	%
Dover sole	29,512	11	5,821	28	35,333	15
Longspine thornyhead	188	47	21,111	10	21,299	13
Sablefish	11,664	26	11,397	18	23,062	23
Pacific grenadier	1	100	8,873	23	8,874	31
Shortspine thornyhead	6,273	22	5,148	29	11,422	25
Splitnose rockfish	6,260	52	0	–	6,260	78
Giant grenadier	129	46	11,097	12	11,226	16
Pacific hake	5,655	26	511	69	6,167	37
Grooved tanner crab	307	36	7,179	10	7,486	13
Rex sole	6,493	14	300	67	6,793	20
Longnose skate	4,706	15	17	100	4,723	23
Darkblotched rockfish	11,781	60	0	–	11,781	90
Arrowtooth flounder	7,644	31	173	50	7,816	45
California slickhead	0	–	1,089	20	1,089	26
Stripetail rockfish	467	63	0	–	467	94
Brown cat shark	620	34	966	22	1,586	27
Spotted ratfish	1,737	49	1	100	1,738	73
Deepsea sole	19	100	1,169	14	1,188	18
Pacific ocean perch	2,581	65	0	–	2,581	97
Bering skate	1,495	20	37	100	1,532	30

Table 22. Estimates of fish biomass (mt) and CV by stratum for the INPFC U.S.-Vancouver area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m		**Stratum 2 550–1,280 m**		**All strata 183–1,280 m**	
	Biomass	CV	Biomass	CV	Biomass	CV
Species	(mt)	%	(mt)	%	(mt)	%
Dover sole	9,783	28	3,957	39	13,739	31
Longspine thornyhead	0	–	4,796	23	4,796	39
Sablefish	1,049	38	1,674	33	2,723	38
Pacific grenadier	0	–	827	41	827	68
Shortspine thornyhead	1,511	29	833	23	2,345	26
Splitnose rockfish	56	62	0	–	56	74
Giant grenadier	0	–	1,331	30	1,331	50
Pacific hake	557	37	9	100	566	44
Grooved tanner crab	70	65	1,631	20	1,702	33
Rex sole	1,098	32	30	87	1,128	37
Longnose skate	1,234	40	81	81	1,315	47
Darkblotched rockfish	178	100	0	–	178	121
Arrowtooth flounder	3,854	34	36	68	3,890	41
California slickhead	0	–	30	37	30	61
Stripetail rockfish	3	100	0	–	3	121
Brown cat shark	28	74	136	25	164	38
Spotted ratfish	70	62	0	–	70	74
Deepsea sole	–	–	406	20	406	34
Pacific ocean perch	1,712	82	0	–	1,712	99
Bering skate	357	37	17	100	374	43

Table 23. Number of hauls by depth strata where weight (Wt.), number of fish (No.), and lengths (Len.) were collected for the 30 most abundant groundfish and selected invertebrate species in the INPFC U.S.-Vancouver, Columbia, Eureka, Monterey, and Conception areas from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m Total hauls = 158			**Stratum 2 550–1,280 m Total hauls = 172**		
	Hauls with:			Hauls with:		
Species	Wt.	No.	Len.	Wt.	No.	Len.
Arrowtooth flounder	66	65	0	4	4	0
Aurora rockfish	52	52	0	3	3	1
Bering skate	119	119	0	10	10	0
Bigfin eelpout	131	131	0	14	14	0
Black eelpout	87	87	0	35	35	0
Brown cat shark	79	79	0	133	133	0
California slickhead	1	1	0	138	138	0
Chilipepper	22	22	0	0	0	0
Darkblotched rockfish	53	54	26	0	0	0
Deepsea sole	4	4	0	130	130	0
Dover sole	154	154	151	133	132	133
English sole	38	38	0	0	0	0
Giant grenadier	6	6	0	144	144	0
Grooved tanner crab	43	43	0	154	154	0
Longnose skate	134	133	0	22	22	0
Longspine thornyhead	32	31	30	162	161	162
Pacific flatnose	29	29	0	147	147	0
Pacific grenadier	4	4	0	133	132	0
Pacific hake	134	132	1	26	26	0
Pacific ocean perch	28	27	0	0	0	0
Rex sole	151	149	0	22	22	0
Roughtail skate	2	2	0	68	68	0
Sablefish	136	136	134	156	156	156
Shortbelly rockfish	11	12	10	0	0	0
Shortspine thornyhead	136	137	135	150	150	150
Spiny dogfish	41	41	0	1	1	0
Splitnose rockfish	98	97	0	1	1	0
Spotted ratfish	82	82	0	2	2	0
Stripetail rockfish	45	45	0	0	0	0
Twoline eelpout	17	17	0	104	103	0

Table 24. Number of hauls by depth strata where weight (Wt.), number of fish (No.), and lengths (Len.) were collected for the 30 most abundant groundfish and selected invertebrate species in the INPFC U.S.-Vancouver area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m Total hauls = 9			**Stratum 2 550–1,280 m Total hauls = 11**		
	Hauls with:			Hauls with:		
Species	Wt.	No.	Len.	Wt.	No.	Len.
Arrowtooth flounder	8	8	0	1	1	0
Aurora rockfish	1	1	0	1	1	0
Bering skate	7	7	0	0	0	0
Bigfin eelpout	6	6	0	1	1	0
Black eelpout	5	5	0	3	3	0
Brown cat shark	2	2	0	9	9	0
California slickhead	0	0	0	7	7	0
Chilipepper	0	0	0	0	0	0
Darkblotched rockfish	1	2	0	0	0	0
Deepsea sole	0	0	0	9	9	0
Dover sole	8	8	8	6	6	6
English sole	0	0	0	0	0	0
Giant grenadier	0	0	0	11	11	0
Grooved tanner crab	3	3	0	10	10	0
Longnose skate	7	7	0	2	2	0
Longspine thornyhead	0	0	0	11	11	11
Pacific flatnose	1	1	0	9	9	0
Pacific grenadier	0	0	0	9	9	0
Pacific hake	7	7	0	1	1	0
Pacific ocean perch	6	6	0	0	0	0
Rex sole	8	8	0	1	1	0
Roughtail skate	0	0	0	6	6	0
Sablefish	6	6	6	9	9	9
Shortbelly rockfish	0	0	0	0	0	0
Shortspine thornyhead	7	7	7	9	9	9
Spiny dogfish	2	2	0	0	0	0
Splitnose rockfish	5	5	0	0	0	0
Spotted ratfish	3	3	0	0	0	0
Stripetail rockfish	1	1	0	0	0	0
Twoline eelpout	0	0	0	9	8	0

Table 25. Number of hauls by depth strata where weight (Wt.), number of fish (No.), and lengths (Len.) were collected for the 30 most abundant groundfish and selected invertebrate species in the INPFC Columbia area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m Total hauls = 52			**Stratum 2 550–1,280 m Total hauls = 54**		
	Hauls with:			Hauls with:		
Species	Wt.	No.	Len.	Wt.	No.	Len.
Arrowtooth flounder	46	45	0	3	3	0
Aurora rockfish	6	6	0	0	0	0
Bering skate	35	35	0	1	1	0
Bigfin eelpout	42	41	0	2	2	0
Black eelpout	29	29	0	12	12	0
Brown cat shark	22	22	0	39	39	0
California slickhead	0	0	0	41	41	0
Chilipepper	0	0	0	0	0	0
Darkblotched rockfish	24	24	12	0	0	0
Deepsea sole	2	2	0	44	44	0
Dover sole	52	52	51	33	32	32
English sole	7	7	0	0	0	0
Giant grenadier	6	6	0	50	50	0
Grooved tanner crab	22	22	0	49	49	0
Longnose skate	41	40	0	1	1	0
Longspine thornyhead	14	14	14	50	50	50
Pacific flatnose	15	15	0	48	48	0
Pacific grenadier	1	1	0	46	46	0
Pacific hake	38	38	0	6	6	0
Pacific ocean perch	17	16	0	0	0	0
Rex sole	51	50	0	8	8	0
Roughtail skate	2	2	0	20	20	0
Sablefish	47	47	47	49	49	49
Shortbelly rockfish	0	0	0	0	0	0
Shortspine thornyhead	51	51	51	47	47	47
Spiny dogfish	10	10	0	0	0	0
Splitnose rockfish	34	33	0	0	0	0
Spotted ratfish	18	18	0	1	1	0
Stripetail rockfish	9	9	0	0	0	0
Twoline eelpout	8	8	0	35	35	0

Table 26. Number of hauls by depth strata where weight (Wt.), number of fish (No.), and lengths (Len.) were collected for the 30 most abundant groundfish and selected invertebrate species in the INPFC Eureka area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m Total hauls = 27			**Stratum 2 550–1,280 m Total hauls = 39**		
	Hauls with:			Hauls with:		
Species	Wt.	No.	Len.	Wt.	No.	Len.
Arrowtooth flounder	9	9	0	0	0	0
Aurora rockfish	15	15	0	0	0	0
Bering skate	20	20	0	1	1	0
Bigfin eelpout	24	24	0	2	2	0
Black eelpout	21	21	0	8	8	0
Brown cat shark	21	21	0	27	27	0
California slickhead	0	0	0	28	28	0
Chilipepper	3	3	0	0	0	0
Darkblotched rockfish	13	13	7	0	0	0
Deepsea sole	1	1	0	30	30	0
Dover sole	27	26	26	32	32	32
English sole	3	3	0	0	0	0
Giant grenadier	0	0	0	32	32	0
Grooved tanner crab	7	7	0	33	33	0
Longnose skate	22	22	0	4	4	0
Longspine thornyhead	3	3	3	34	33	33
Pacific flatnose	3	3	0	33	33	1
Pacific grenadier	0	0	0	31	31	0
Pacific hake	25	24	1	5	5	0
Pacific ocean perch	5	5	0	0	0	0
Rex sole	27	26	0	7	7	0
Roughtail skate	0	0	0	14	14	0
Sablefish	25	25	25	34	34	34
Shortbelly rockfish	1	1	1	0	0	0
Shortspine thornyhead	27	27	27	29	29	29
Spiny dogfish	10	10	0	0	0	0
Splitnose rockfish	16	16	0	0	0	0
Spotted ratfish	7	7	0	0	0	0
Stripetail rockfish	6	6	0	0	0	0
Twoline eelpout	2	2	0	18	18	0

Table 27. Number of hauls by depth strata where weight (Wt.), number of fish (No.), and lengths (Len.) were collected for the 30 most abundant groundfish and selected invertebrate species in the INPFC Monterey area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m Total hauls = 53			**Stratum 2 550–1,280 m Total hauls = 51**		
	Hauls with:			Hauls with:		
Species	Wt.	No.	Len.	Wt.	No.	Len.
Arrowtooth flounder	3	3	0	0	0	0
Aurora rockfish	22	22	0	2	2	1
Bering skate	46	46	0	8	8	0
Bigfin eelpout	50	51	0	9	9	0
Black eelpout	21	21	0	10	10	0
Brown cat shark	26	26	0	47	47	0
California slickhead	1	1	0	48	48	0
Chilipepper	16	16	0	0	0	0
Darkblotched rockfish	14	14	7	0	0	0
Deepsea sole	1	1	0	34	34	0
Dover sole	53	53	53	51	51	51
English sole	27	27	0	0	0	0
Giant grenadier	0	0	0	40	40	0
Grooved tanner crab	10	10	0	50	50	0
Longnose skate	53	53	0	13	13	0
Longspine thornyhead	13	12	12	52	52	52
Pacific flatnose	10	10	0	48	48	0
Pacific grenadier	3	3	0	38	38	0
Pacific hake	52	51	0	11	11	0
Pacific ocean perch	0	0	0	0	0	0
Rex sole	53	53	0	8	8	0
Roughtail skate	0	0	0	23	23	0
Sablefish	46	46	45	50	50	50
Shortbelly rockfish	7	8	8	0	0	0
Shortspine thornyhead	42	43	42	50	50	50
Spiny dogfish	18	18	0	1	1	0
Splitnose rockfish	33	33	0	1	1	0
Spotted ratfish	43	43	0	0	0	0
Stripetail rockfish	24	24	0	0	0	0
Twoline eelpout	7	7	0	33	33	0

Table 28. Number of hauls by depth strata where weight (Wt.), number of fish (No.), and lengths (Len.) were collected for the 30 most abundant groundfish and selected invertebrate species in the INPFC Conception area from the 2000 NWFSC slope survey.

	Stratum 1 183–549 m Total hauls = 17			**Stratum 2 550–1,280 m Total hauls = 17**		
	Hauls with:			Hauls with:		
Species	Wt.	No.	Len.	Wt.	No.	Len.
Arrowtooth flounder	0	0	0	0	0	0
Aurora rockfish	8	8	0	0	0	0
Bering skate	11	11	0	0	0	0
Bigfin eelpout	9	9	0	0	0	0
Black eelpout	11	11	0	2	2	0
Brown cat shark	8	8	0	11	11	0
California slickhead	0	0	0	14	14	0
Chilipepper	3	3	0	0	0	0
Darkblotched rockfish	1	1	0	0	0	0
Deepsea sole	0	0	0	13	13	0
Dover sole	12	12	12	13	13	13
English sole	1	1	0	0	0	0
Giant grenadier	0	0	0	11	11	0
Grooved tanner crab	1	1	0	12	12	0
Longnose skate	10	10	0	3	3	0
Longspine thornyhead	2	2	2	15	15	15
Pacific flatnose	0	0	0	9	9	0
Pacific grenadier	0	12	0	9	8	0
Pacific hake	12	0	0	3	3	0
Pacific ocean perch	0	0	0	0	0	0
Rex sole	10	10	0	0	0	0
Roughtail skate	0	0	0	5	5	0
Sablefish	12	12	12	14	14	14
Shortbelly rockfish	3	3	1	0	0	0
Shortspine thornyhead	9	9	9	15	15	15
Spiny dogfish	1	1	0	0	0	0
Splitnose rockfish	10	10	0	0	0	0
Spotted ratfish	11	11	0	1	1	0
Stripetail rockfish	5	5	0	0	0	0
Twoline eelpout	0	0	0	9	9	0

Size Compositions

Figures 20–43 (p. 60–83) show the estimated population length frequencies for Dover sole, shortspine thornyhead, longspine thornyhead, and sablefish. Results are presented by depth stratum for all INPFC areas combined, and for individual INPFC areas. Note that the length frequencies are the sum of all measured fish and are not adjusted for subsampling, area swept, or stratum size.

Analysis Approach and Data Requests

Population parameters were estimated using statistical procedures similar to those used by Lauth (1999) for the comparable survey conducted on the RV *Miller Freeman*. This approach does not consider possible differences between vessels, treating each tow as both independent and random. A statistical analysis that explicitly considers vessel effects, the probability distribution of catch per tow, and alternative stratifications is under development (Helser et al. 2004). The results from this analysis may lead to a better understanding of the slope survey data and may require an updating of the results and analysis presented in this document at a later date.

This document only includes information for commercially important species. For information on other species that are not listed in this document or more detailed information, please contact the senior author, Aimee Keller, at (206) 860-3460 or aimee.keller@noaa.gov.

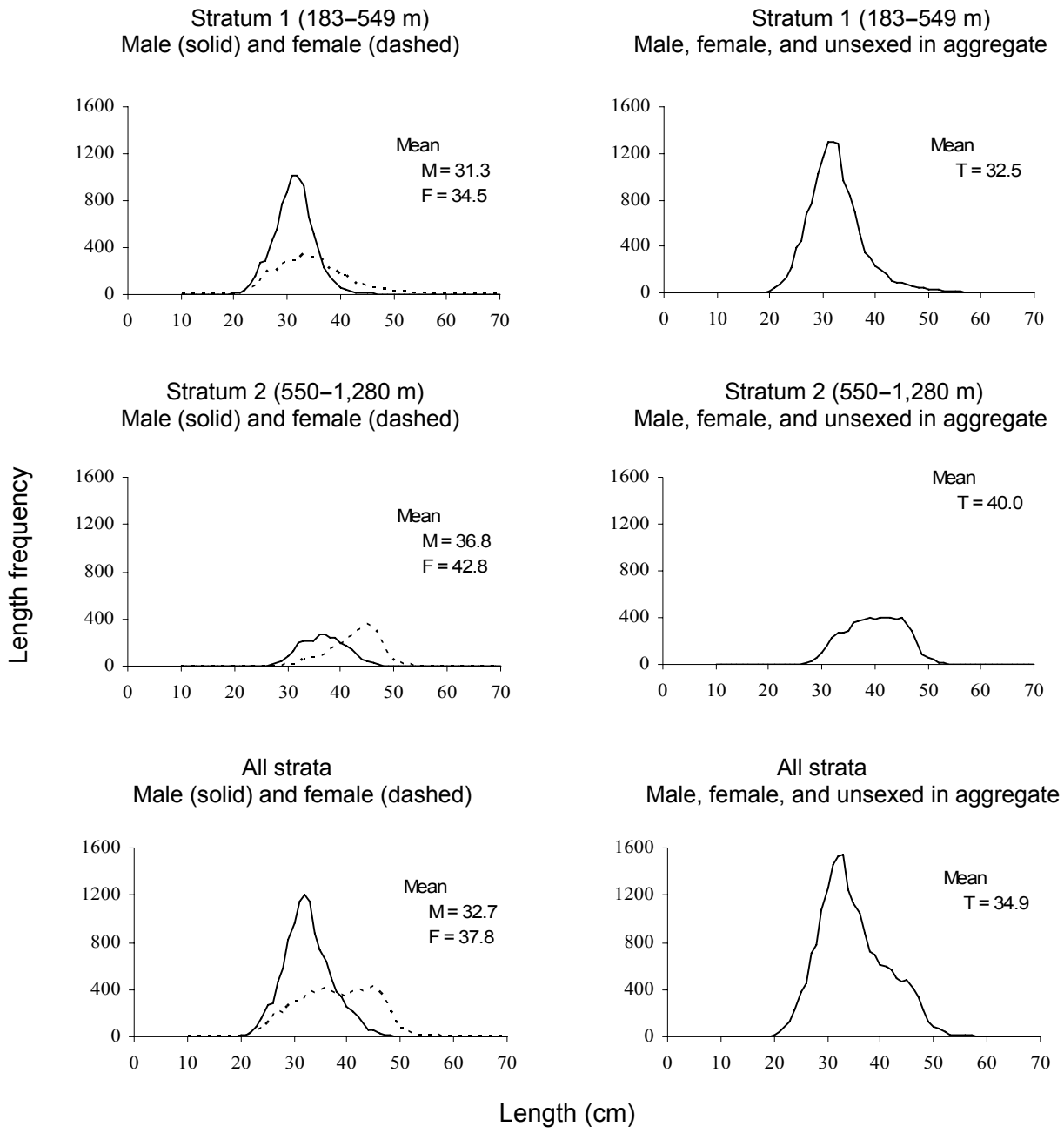


Figure 20. Unweighted length-frequency data and mean lengths (cm) of Dover sole by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for all INPFC areas sampled during the 2000 NWFSC slope survey.

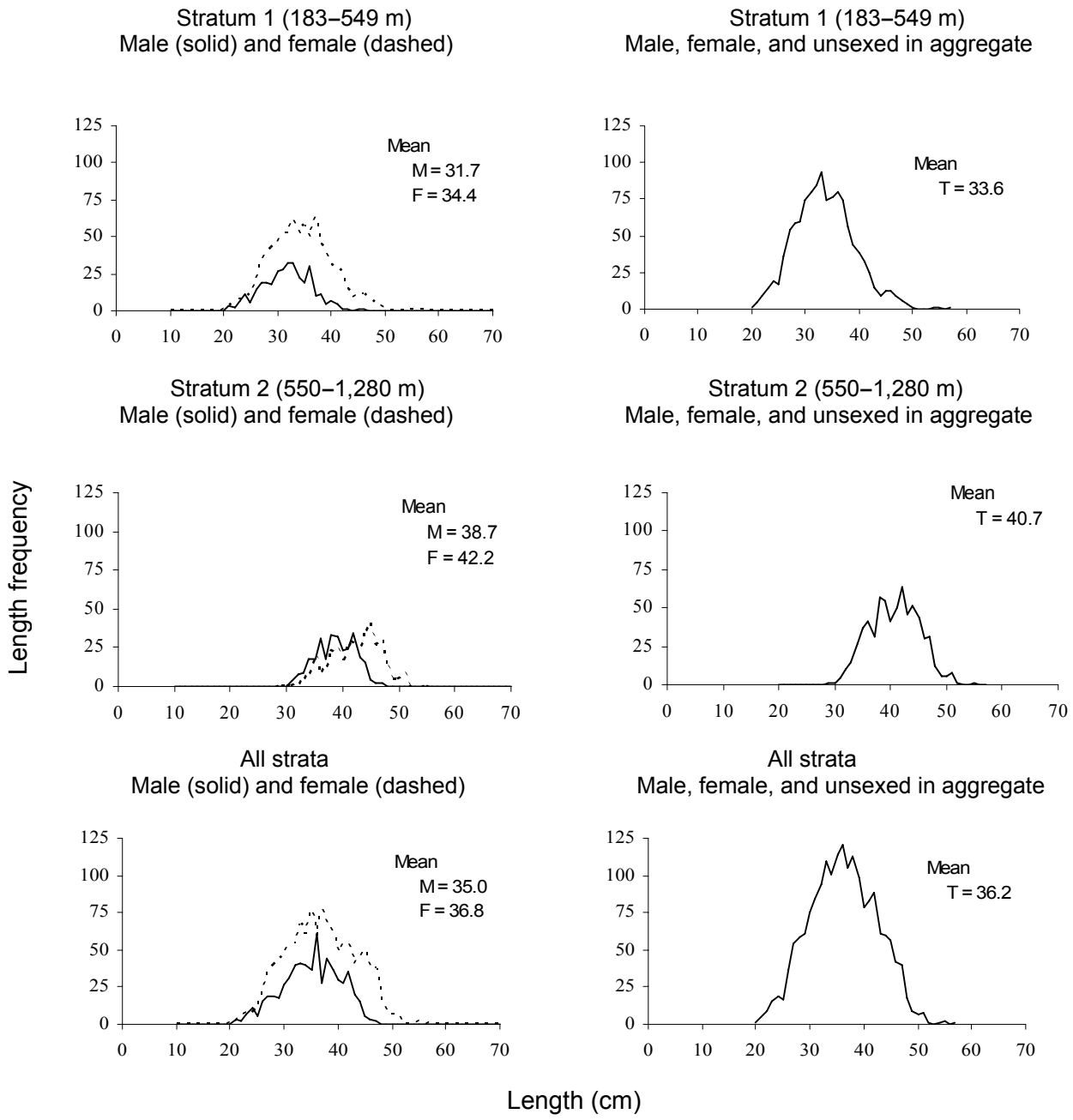


Figure 21. Unweighted length-frequency data and mean lengths (cm) of Dover sole by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC Conception area from the 2000 NWFSC slope survey.

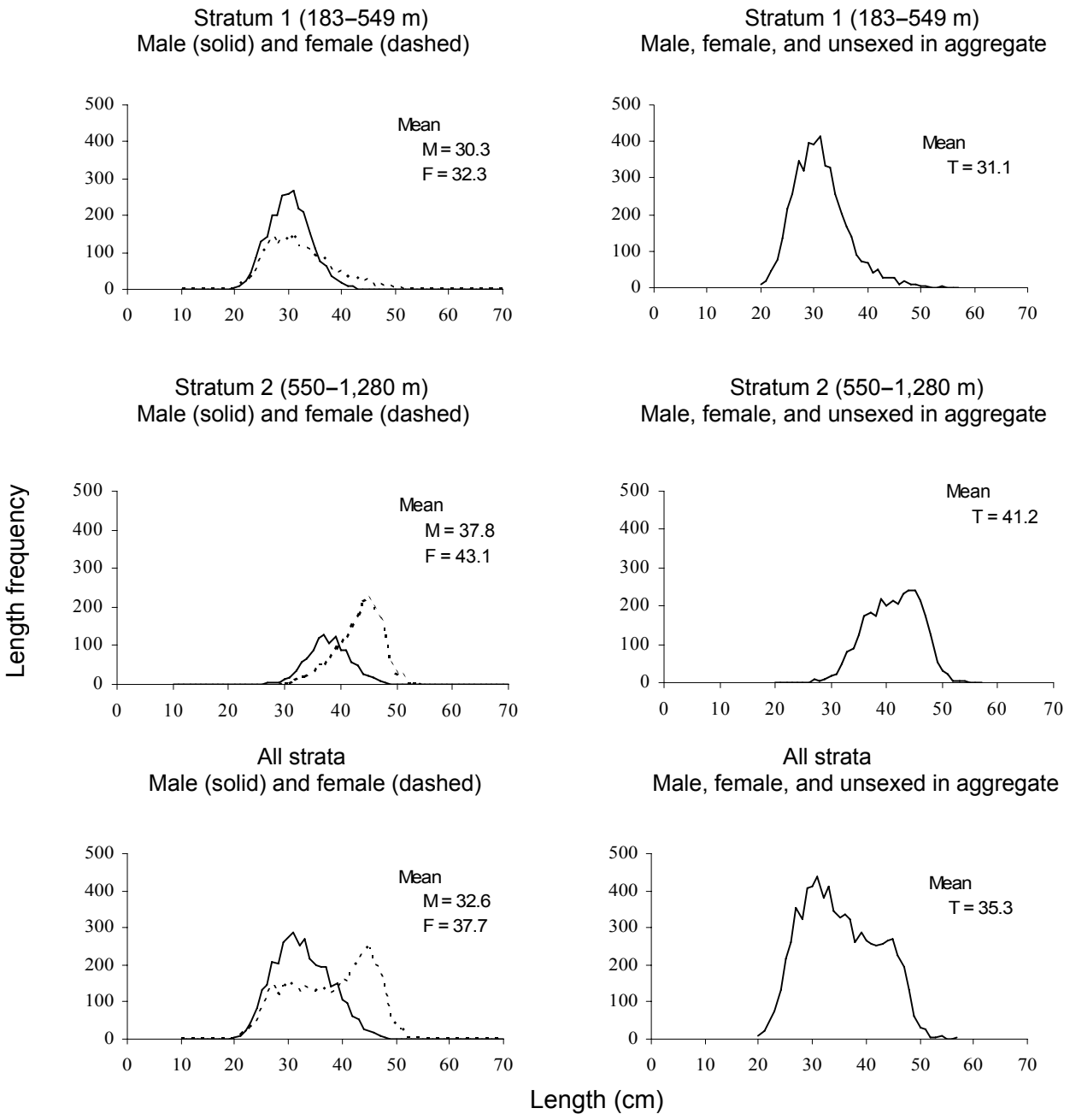


Figure 22. Unweighted length-frequency data and mean lengths (cm) of Dover sole by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC Monterey area from the 2000 NWFSC slope survey.

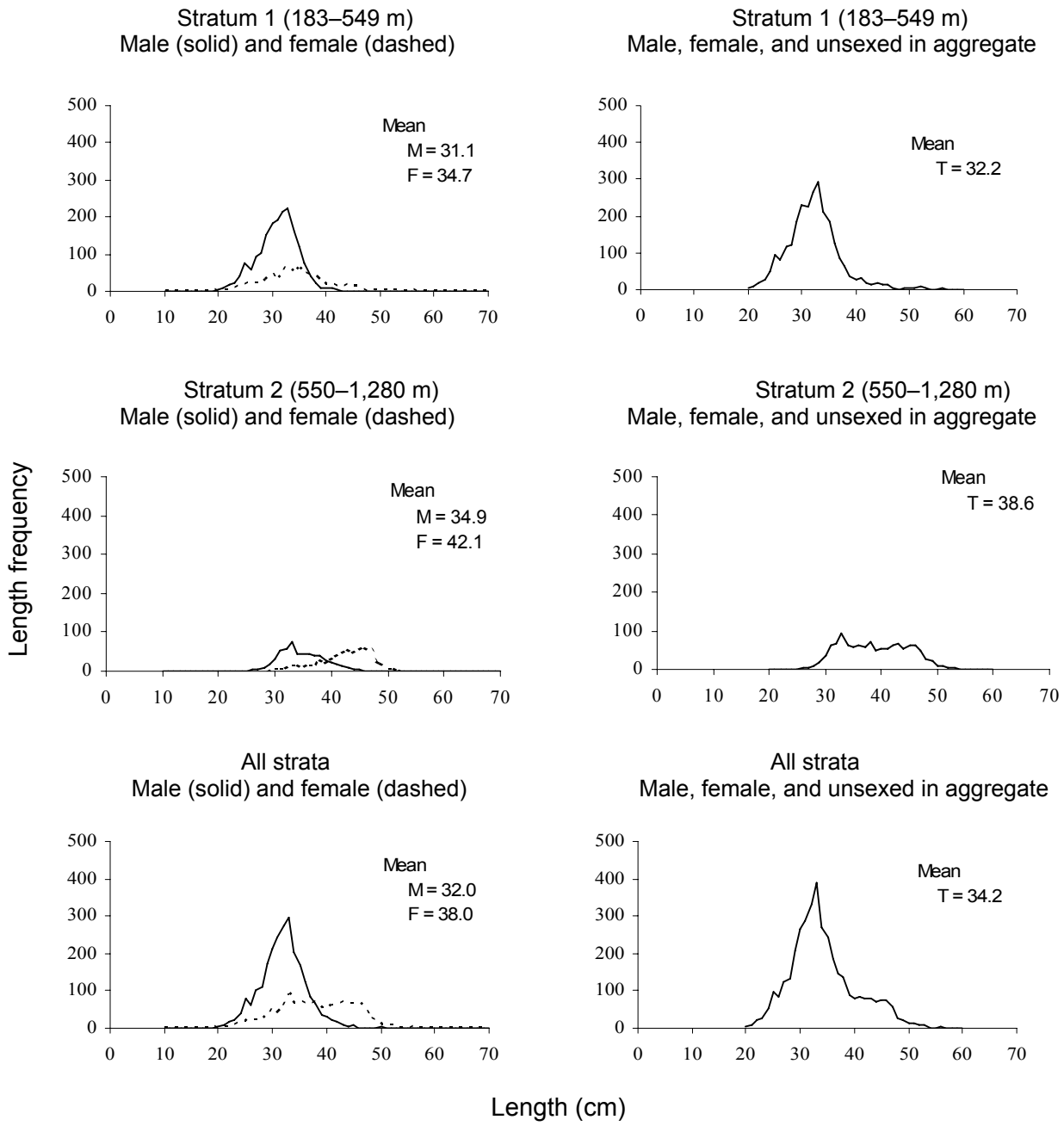


Figure 23. Unweighted length-frequency data and mean lengths (cm) of Dover sole by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC Eureka area from the 2000 NWFSC slope survey.

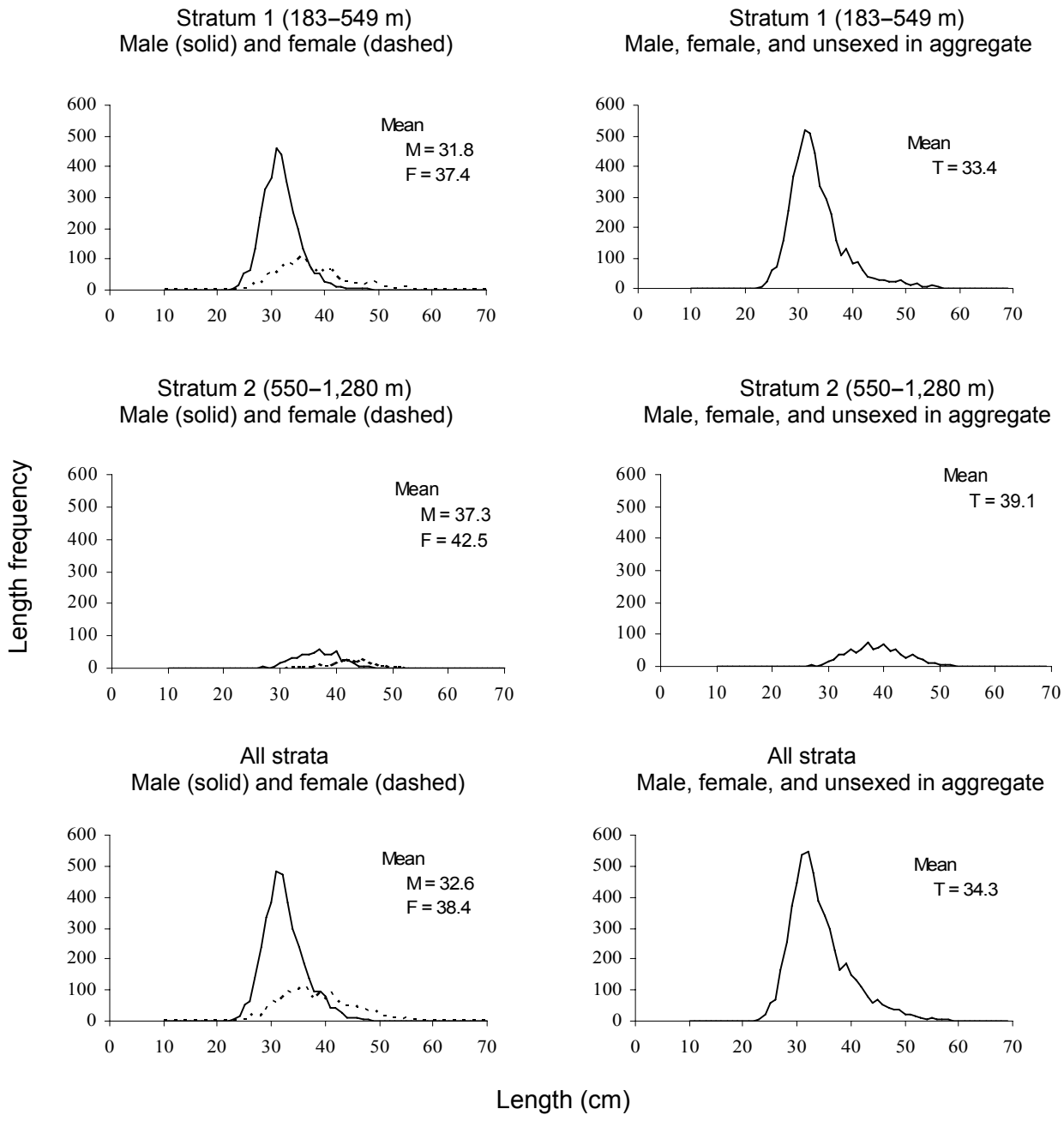


Figure 24. Unweighted length-frequency data and mean lengths (cm) of Dover sole by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC Columbia area from the 2000 NWFSC slope survey.

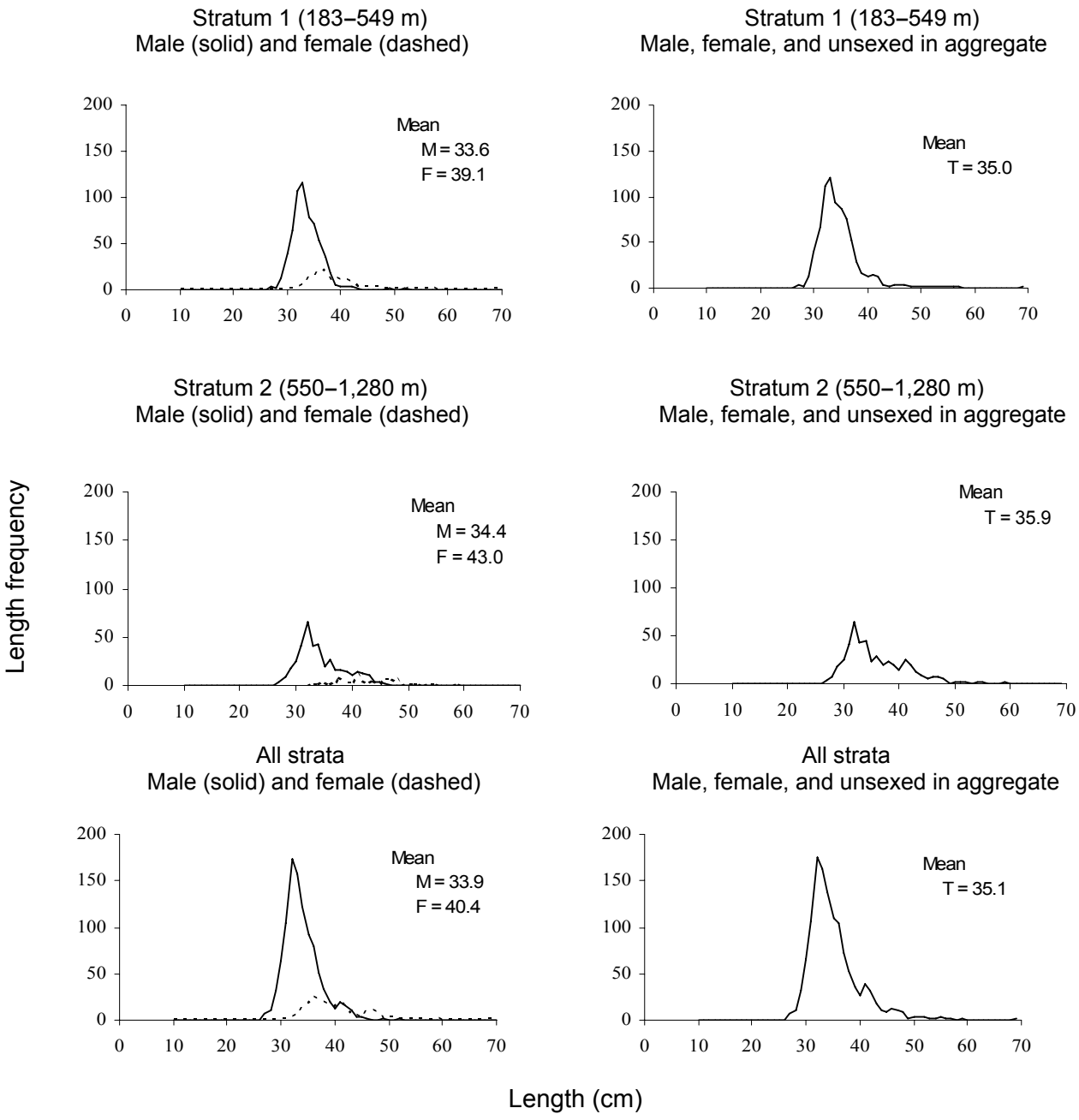


Figure 25. Unweighted length-frequency data and mean lengths (cm) of Dover sole by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC U.S.-Vancouver area from the 2000 NWFSC slope survey.

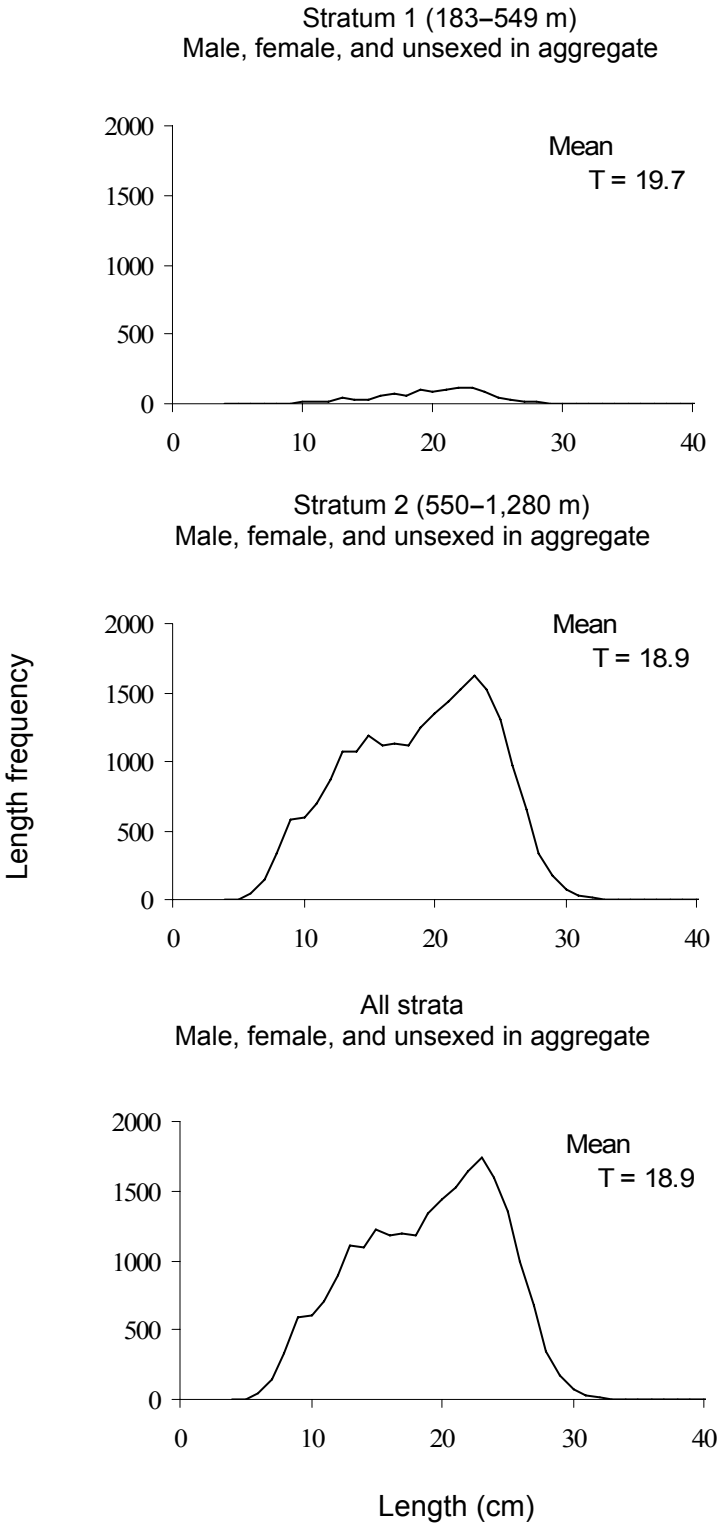


Figure 26. Unweighted length-frequency data and mean lengths (cm) of longspine thornyhead by depth stratum (m) for all INPFC areas from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

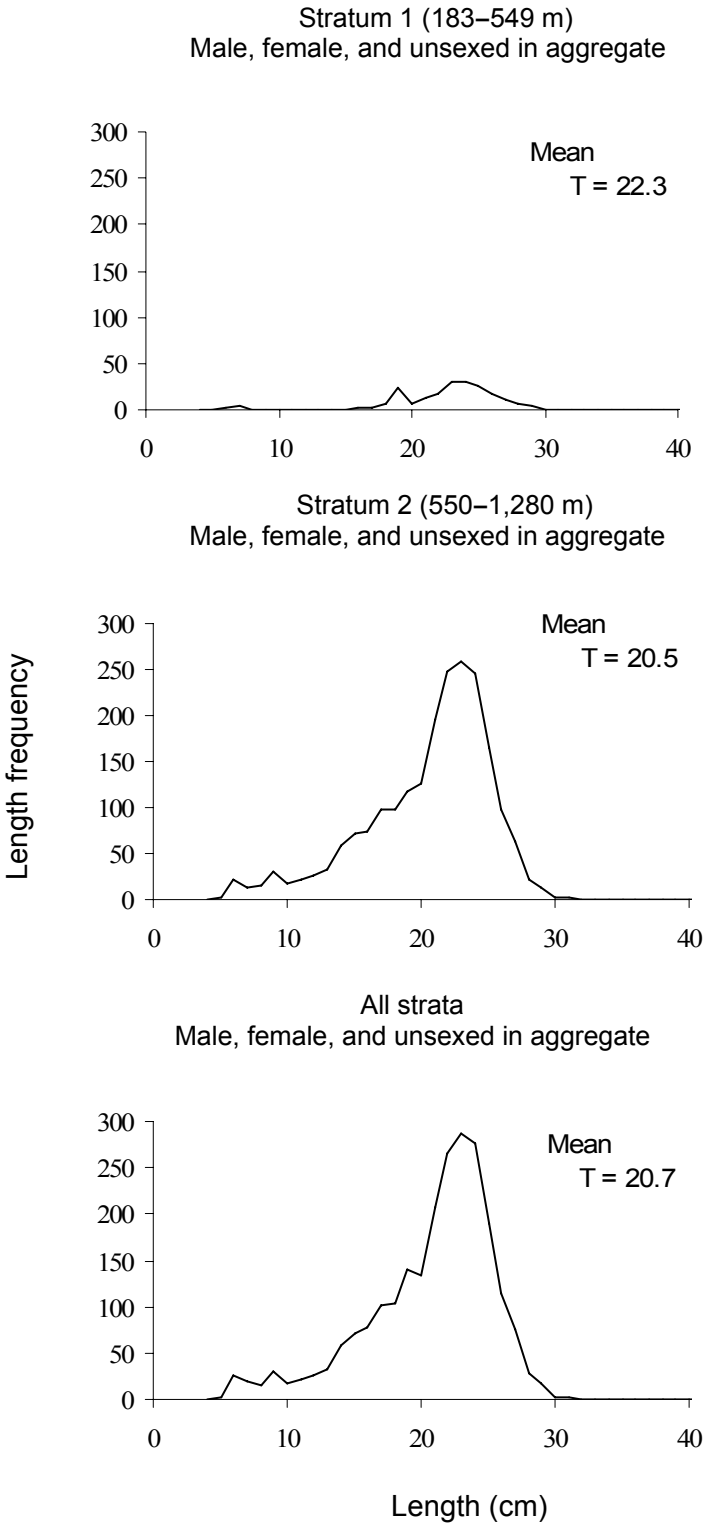


Figure 27. Unweighted length-frequency data and mean lengths (cm) of longspine thornyhead by depth stratum (m) for INPFC Conception area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

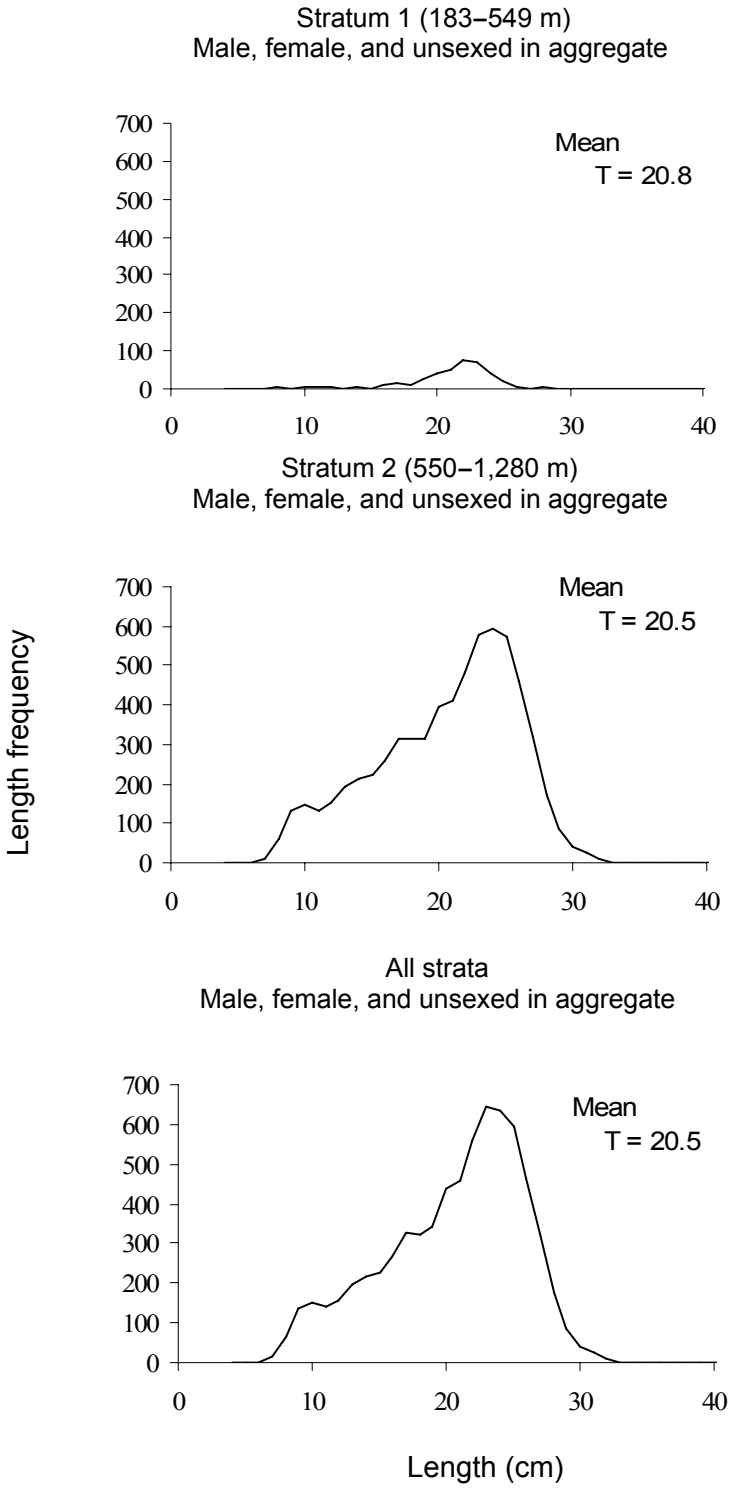


Figure 28. Unweighted length-frequency data and mean lengths (cm) of longspine thornyhead by depth stratum (m) for INPFC Monterey area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

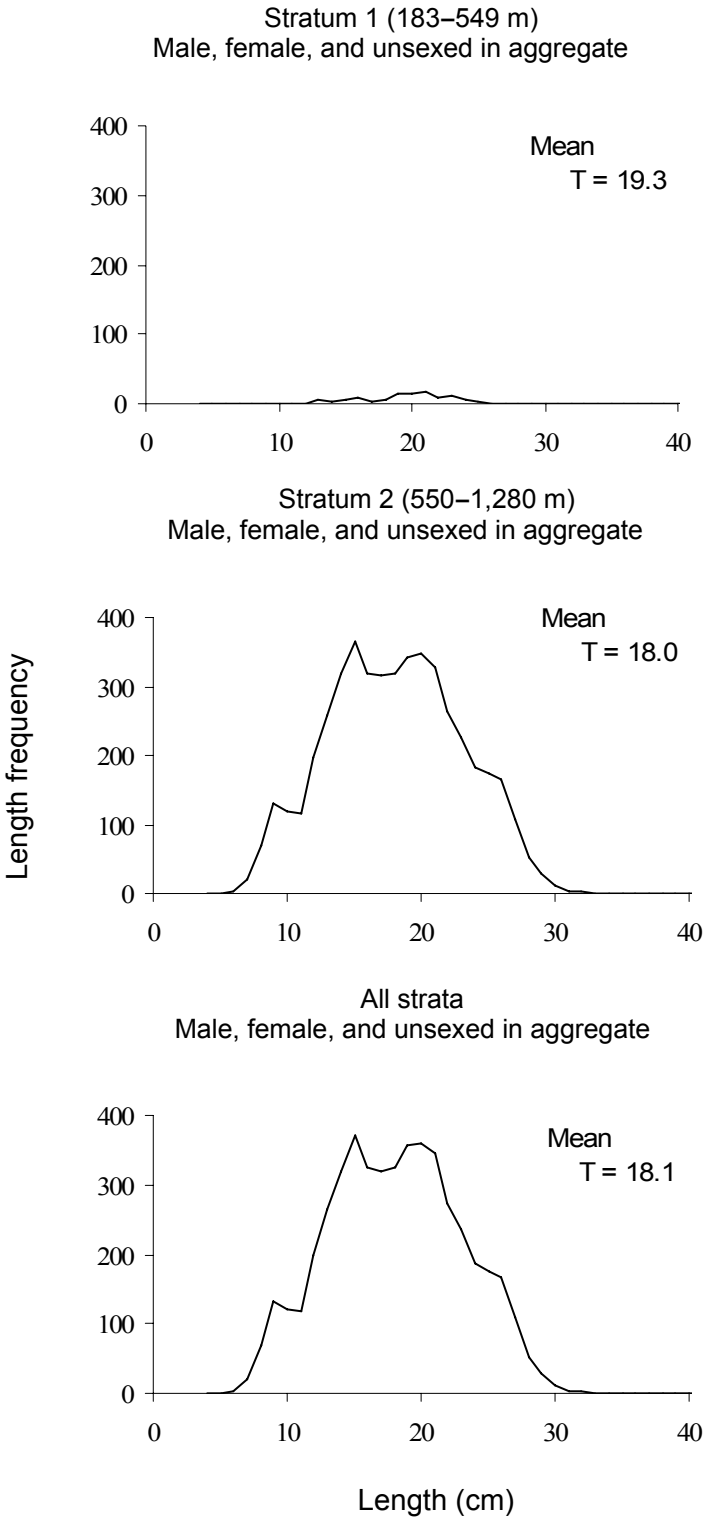


Figure 29. Unweighted length-frequency data and mean lengths (cm) of longspine thornyhead by depth stratum (m) for INPFC Eureka area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

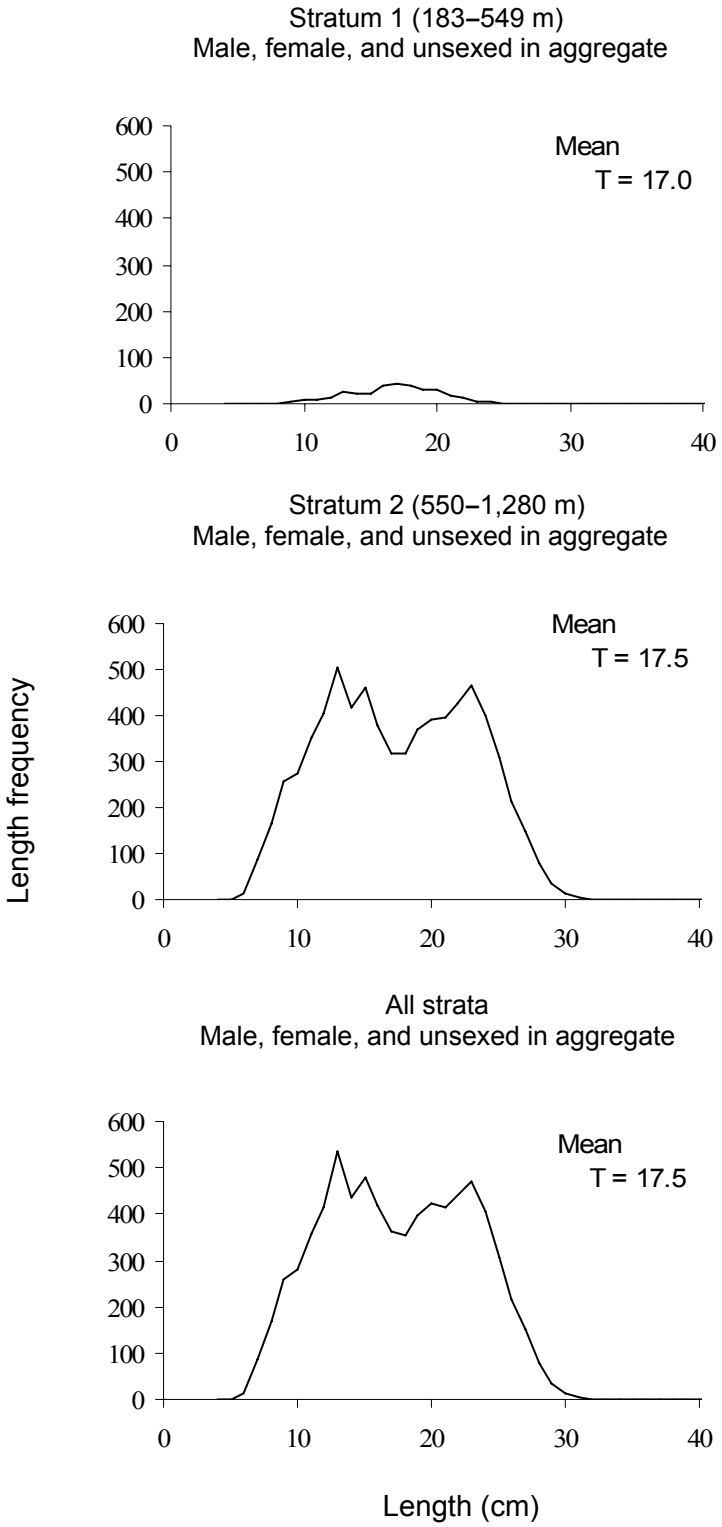


Figure 30. Unweighted length-frequency data and mean lengths (cm) of longspine thornyhead by depth stratum (m) for INPFC Columbia area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

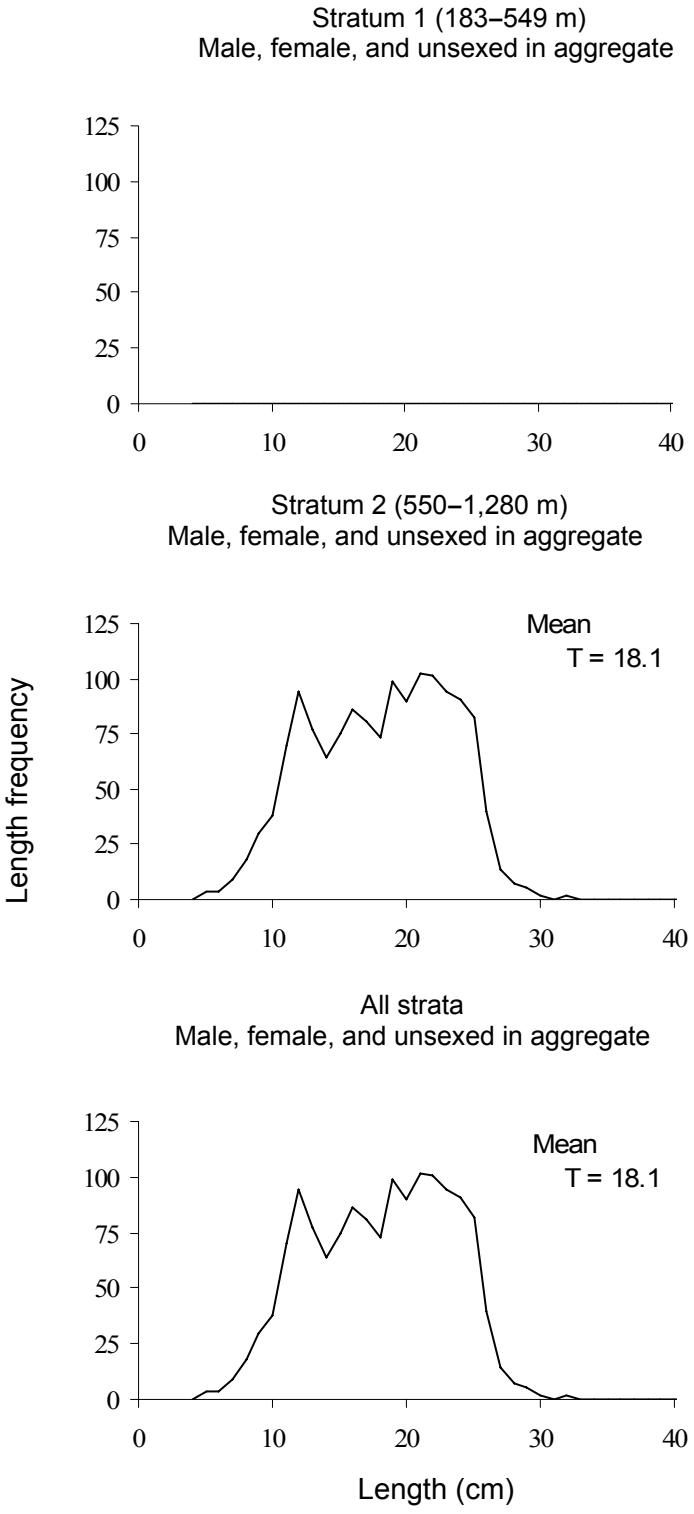


Figure 31. Unweighted length-frequency data and mean lengths (cm) of longspine thornyhead by depth stratum (m) for INPFC U.S.-Vancouver area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate). Because no data were collected in the shallow stratum, the lower graph for length frequency in both strata combined (183–1,280 m) is the same as seen in stratum 2.

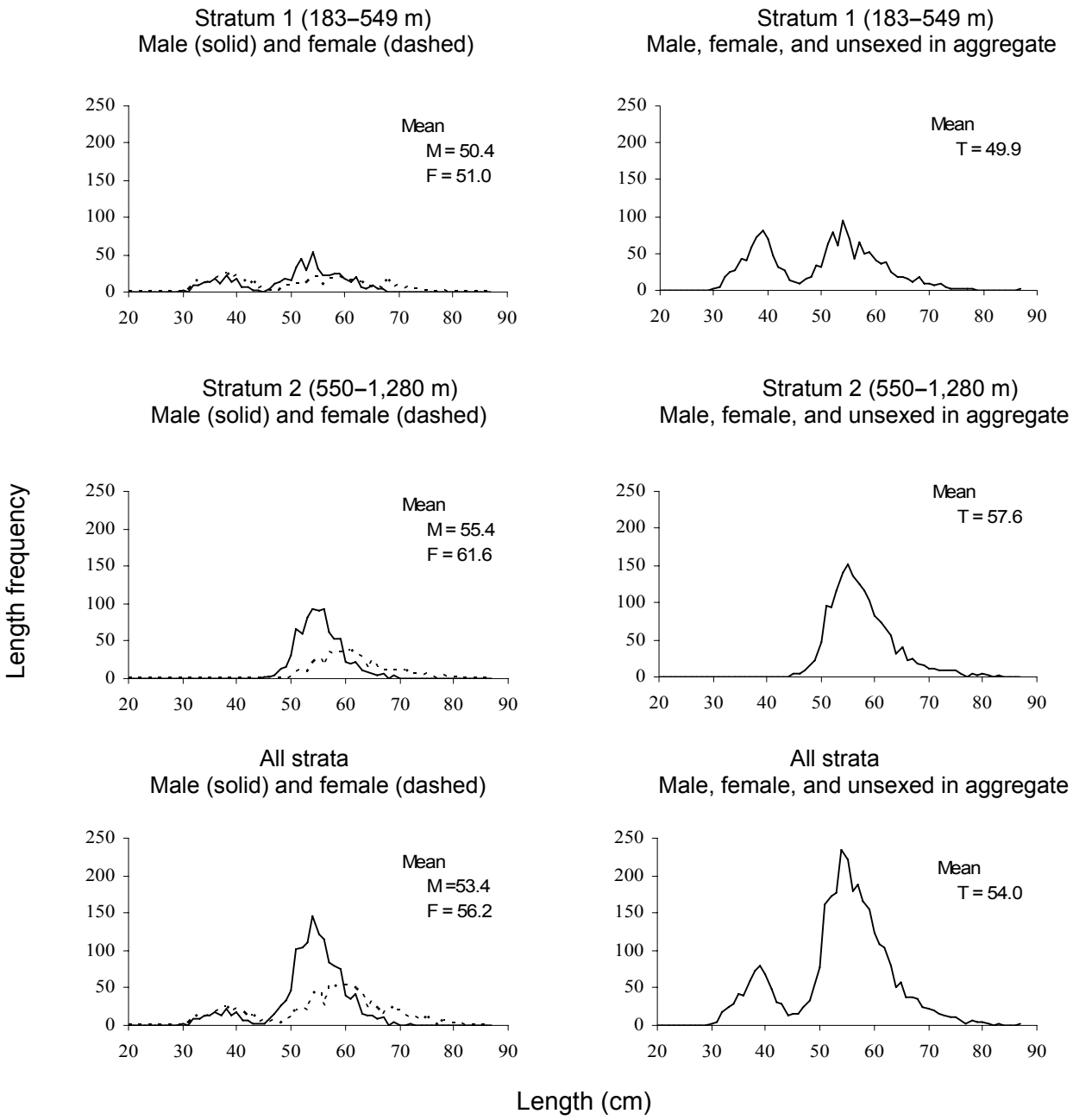


Figure 32. Unweighted length-frequency data and mean lengths (cm) of sablefish by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for all INPFC areas from the 2000 NWFSC slope survey.

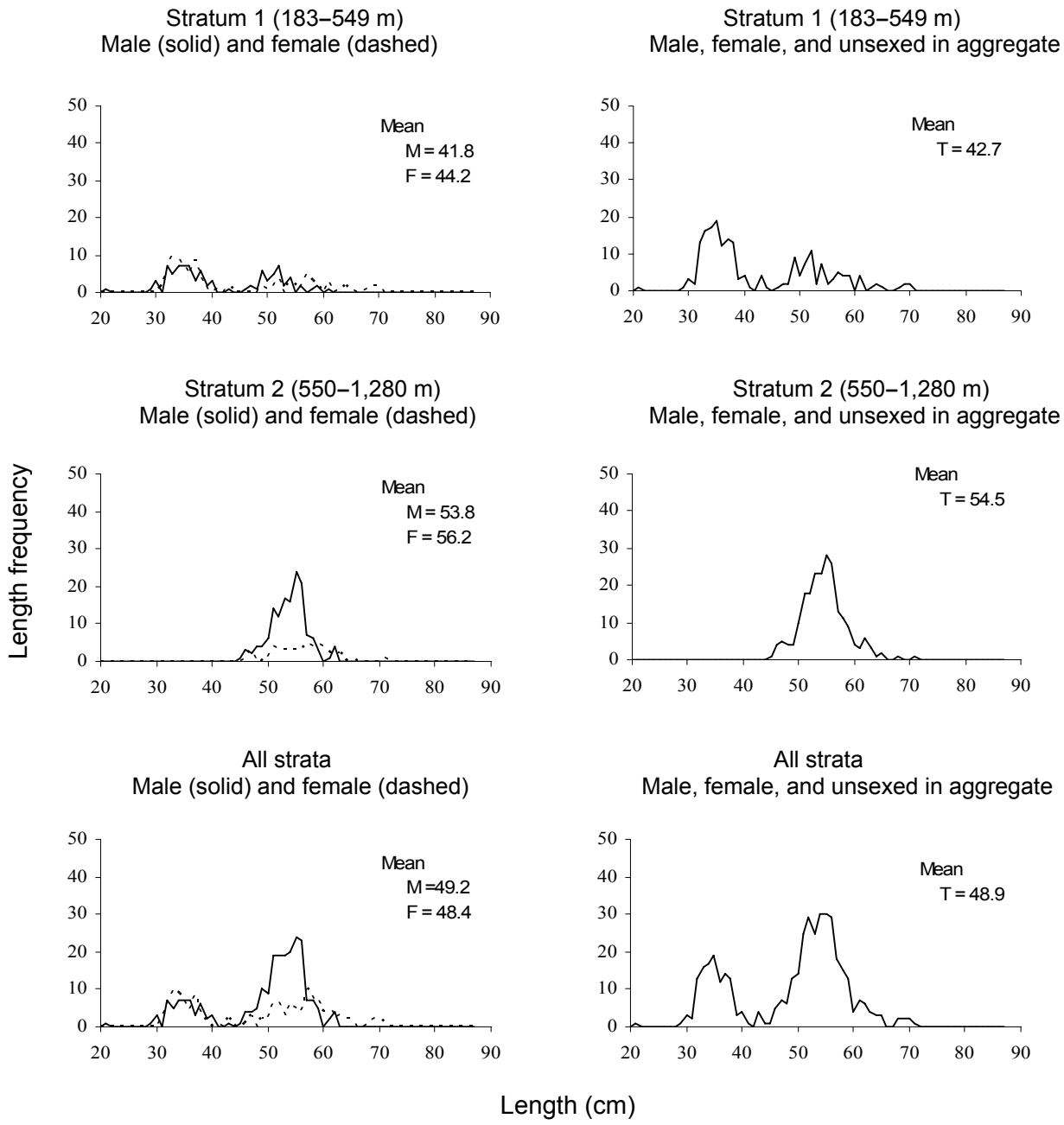


Figure 33. Unweighted length-frequency data and mean lengths (cm) of sablefish by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC Conception area from the 2000 NWFSC slope survey.

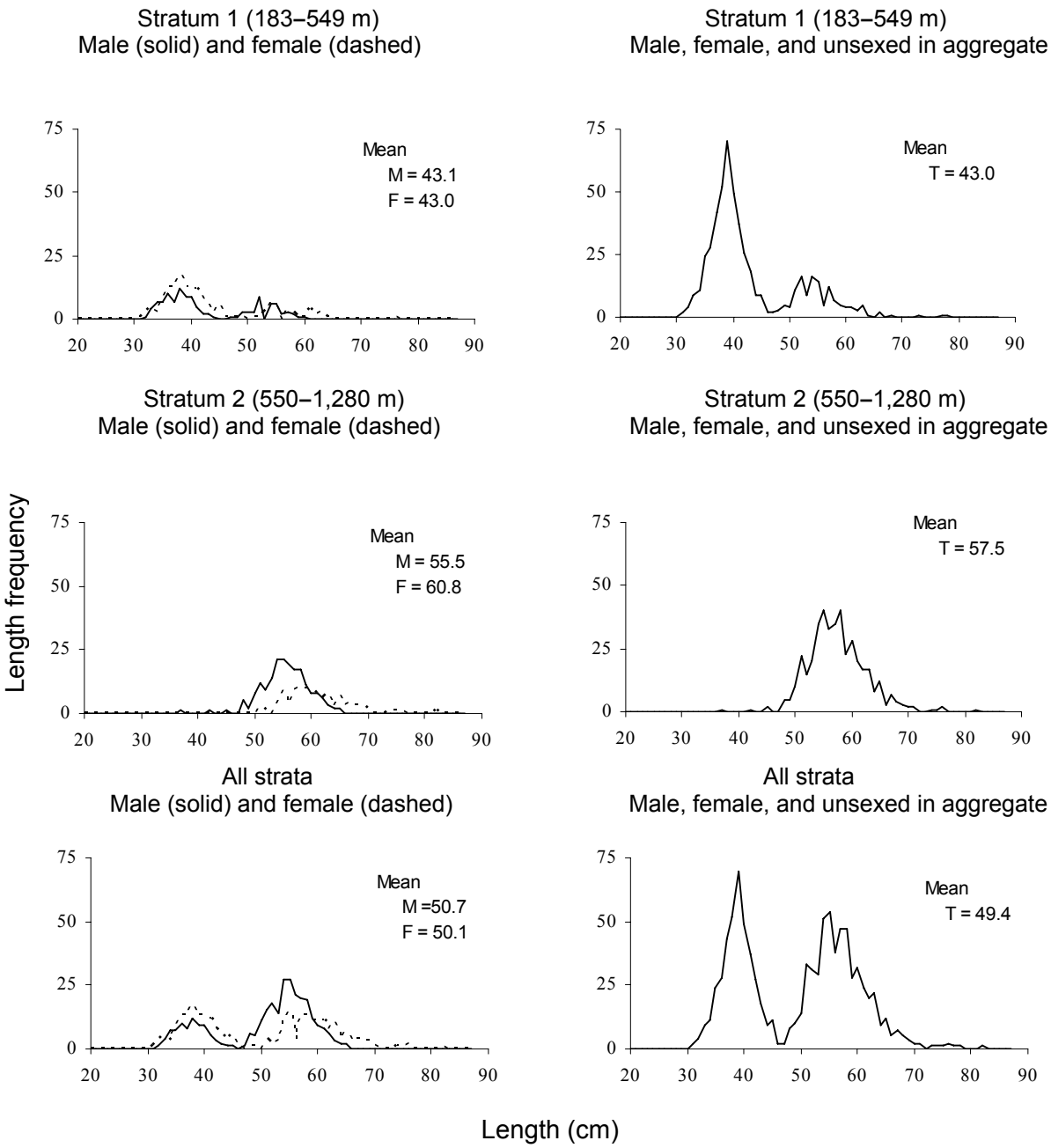


Figure 34. Unweighted length-frequency data and mean lengths (cm) of sablefish by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC Monterey area from the 2000 NWFSC slope survey.

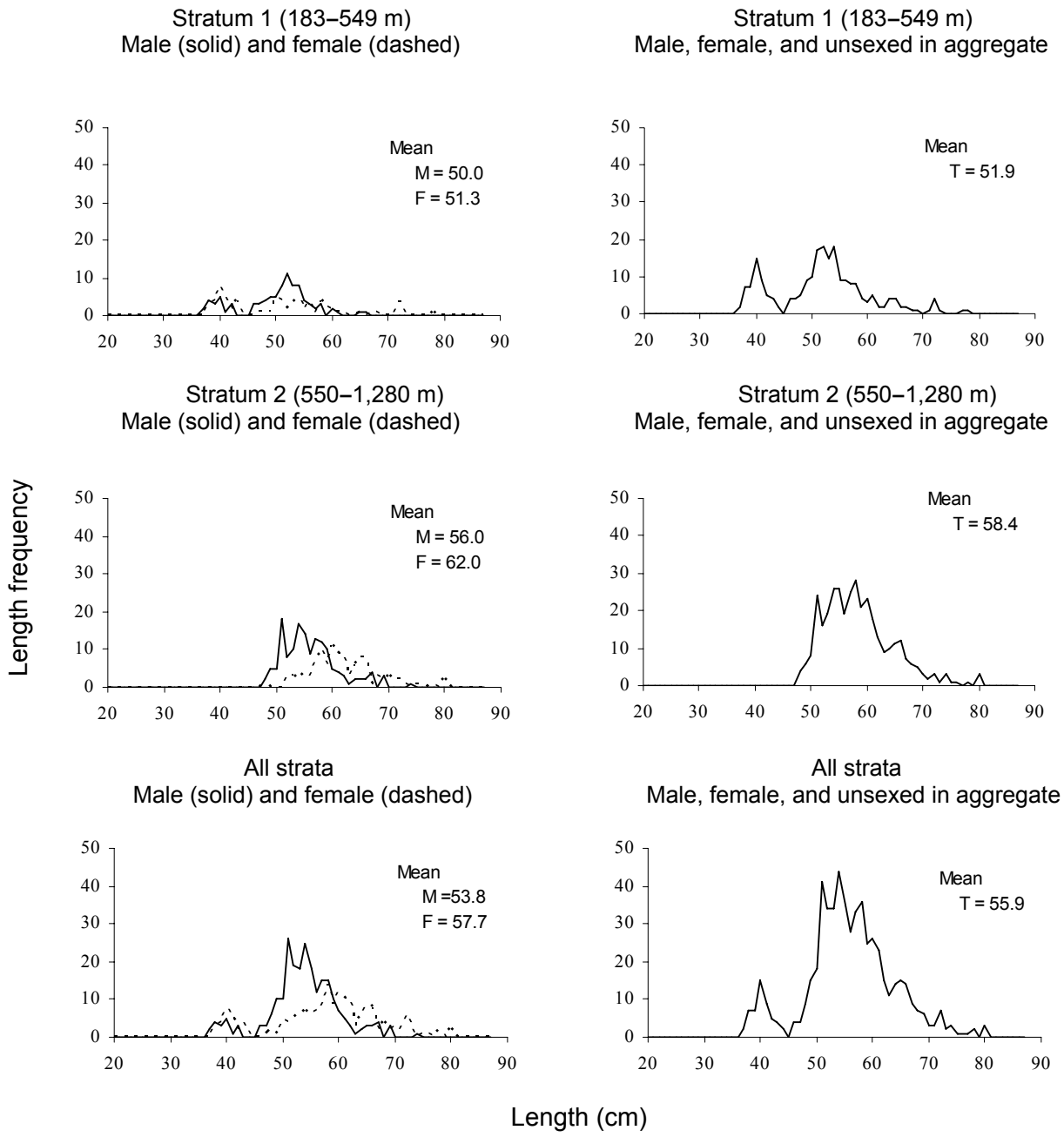


Figure 35. Unweighted length-frequency data and mean lengths (cm) of sablefish by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC Eureka area from the 2000 NWFSC slope survey.

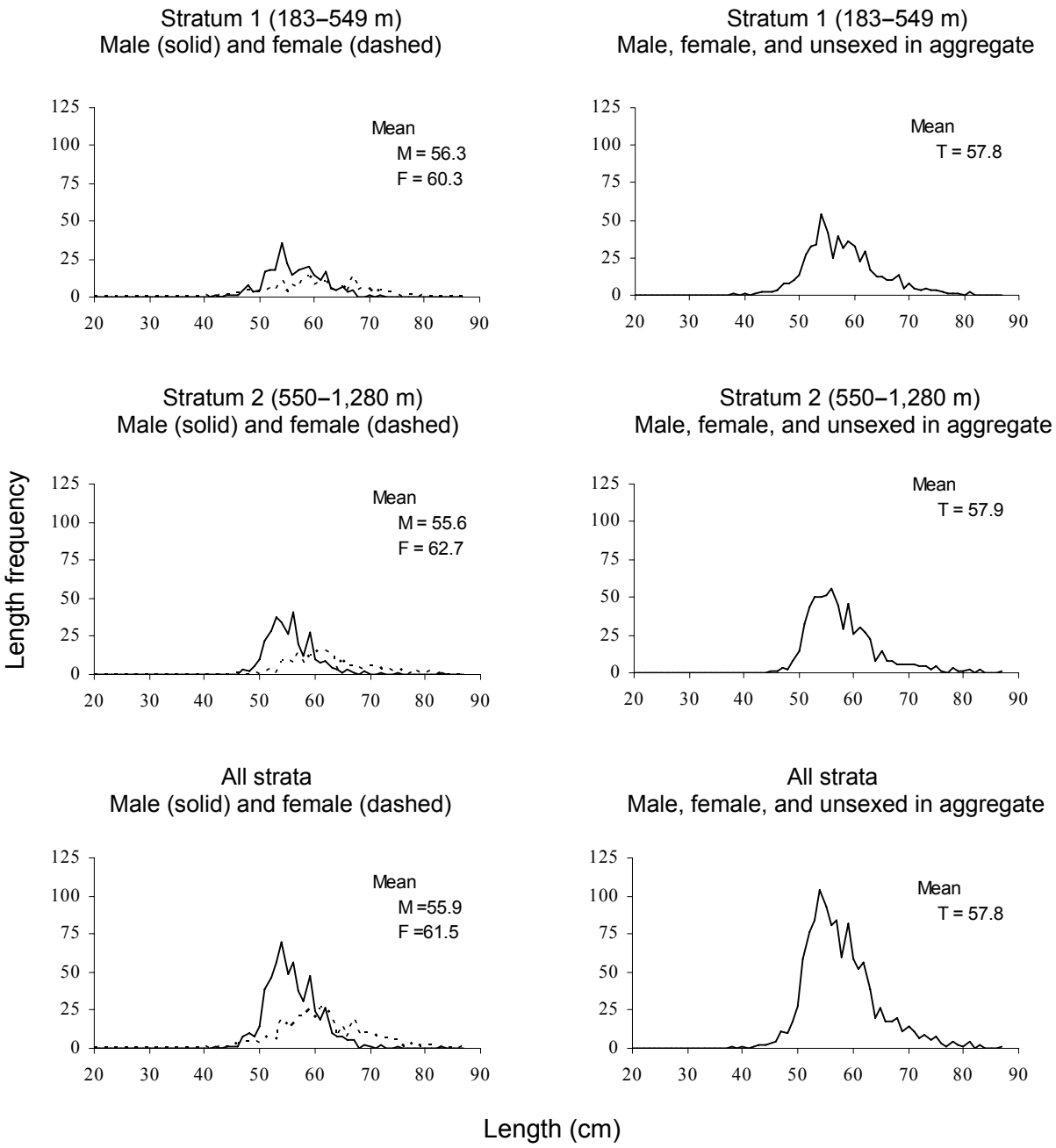


Figure 36. Unweighted length-frequency data and mean lengths (cm) of sablefish by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC Columbia area from the 2000 NWFSC slope survey.

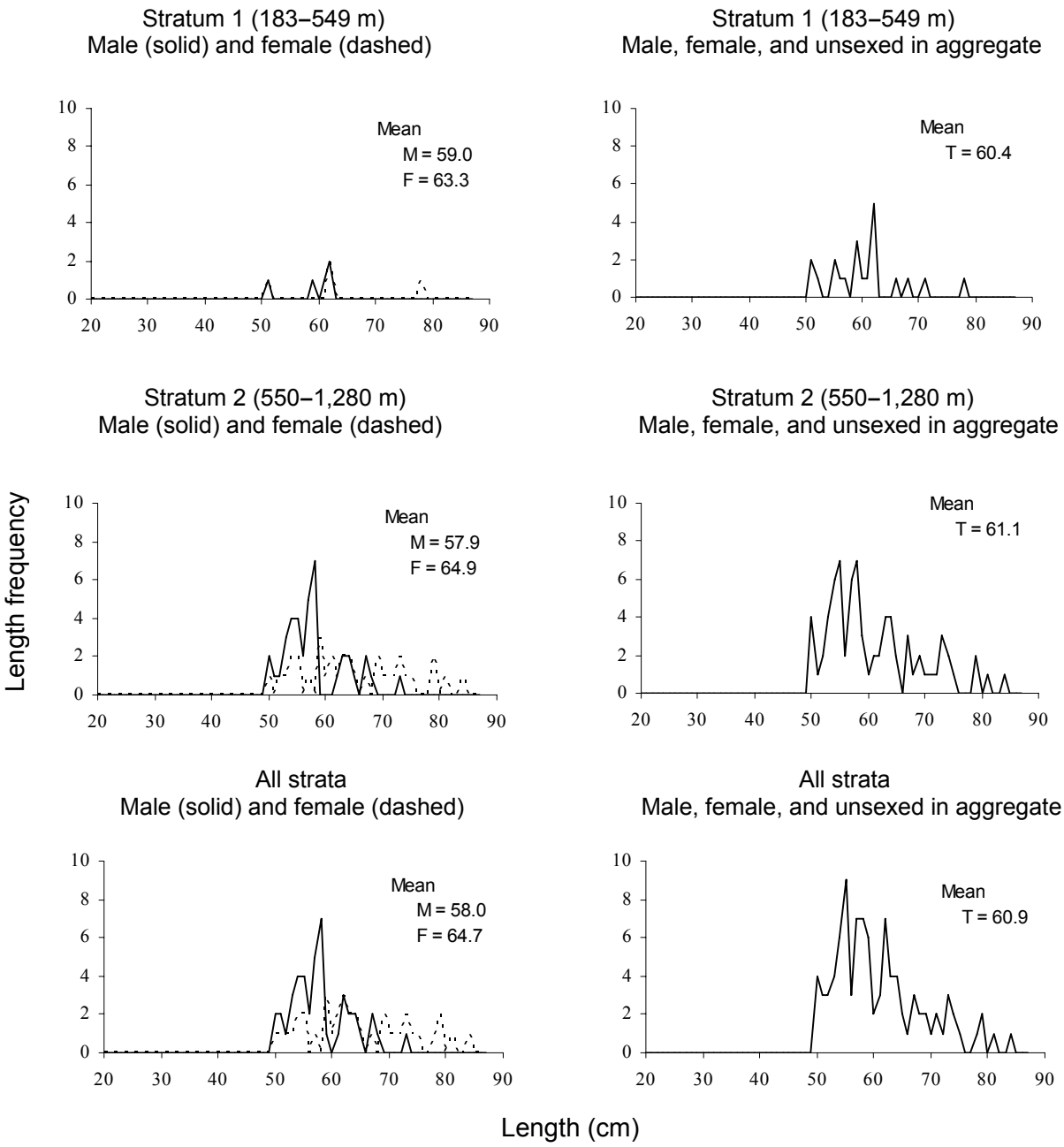


Figure 37. Unweighted length-frequency data and mean lengths (cm) of sablefish by depth stratum (m) and by sex (M = males, F = females, and T = males, females, and unsexed in aggregate) for the INPFC U.S.-Vancouver area from the 2000 NWFSC slope survey.

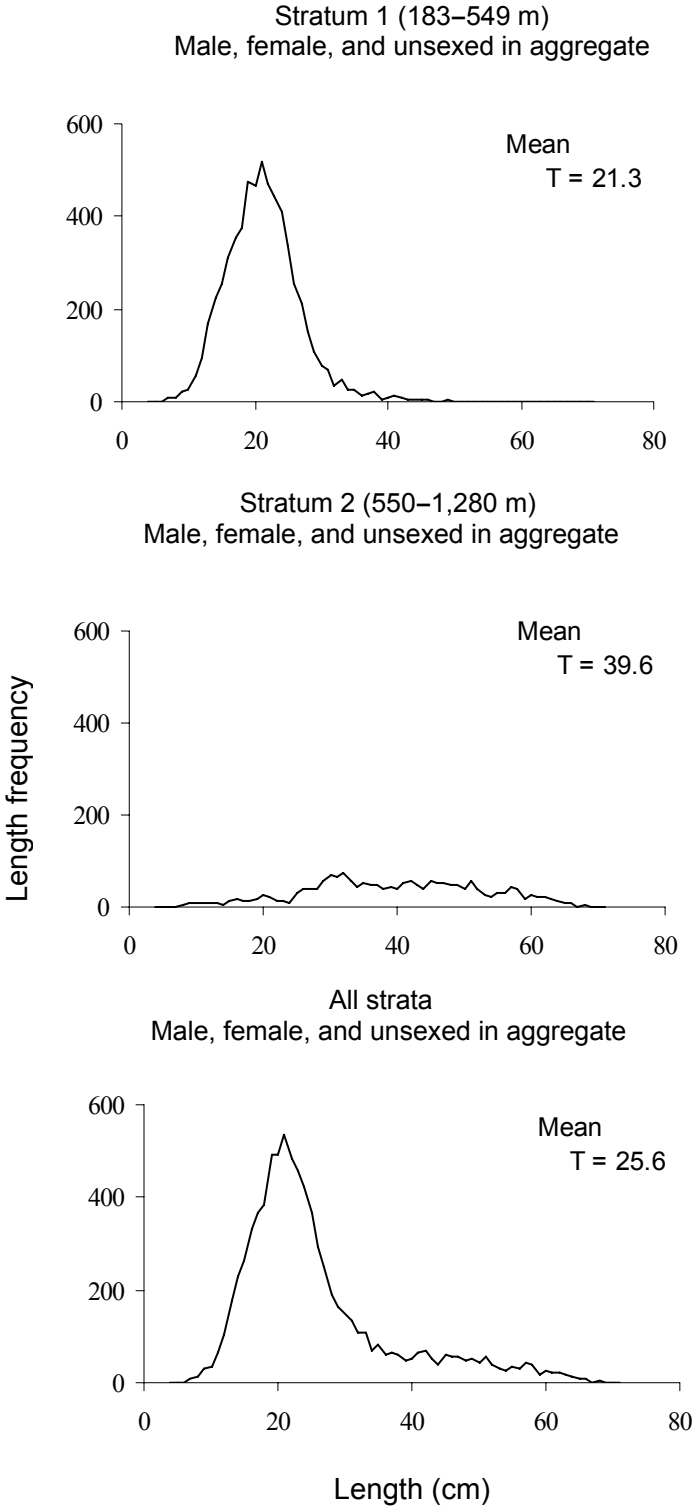


Figure 38. Unweighted length-frequency data and mean lengths (cm) of shortspine thornyhead by depth stratum (m) for all INPFC areas from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

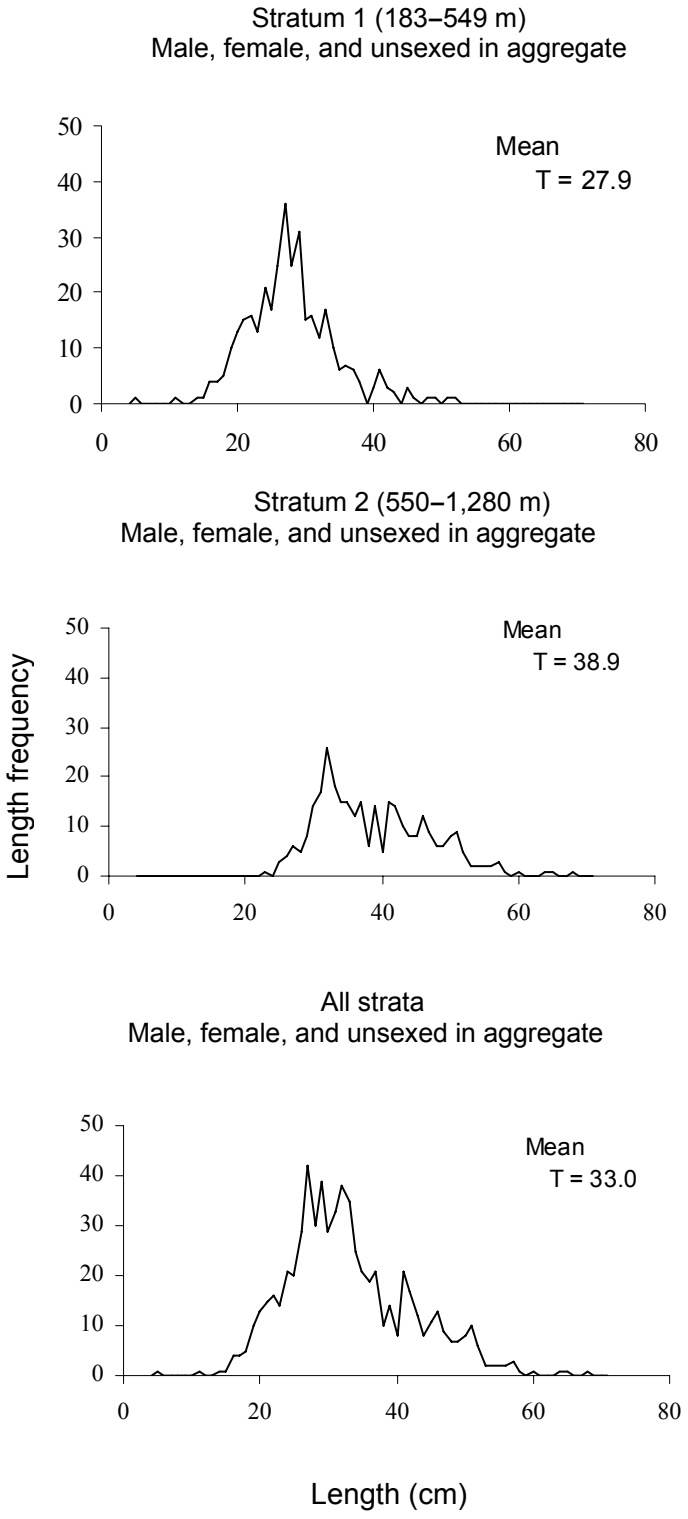


Figure 39. Unweighted length-frequency data and mean lengths (cm) of shortspine thornyhead by depth stratum (m) for the INPFC Conception area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

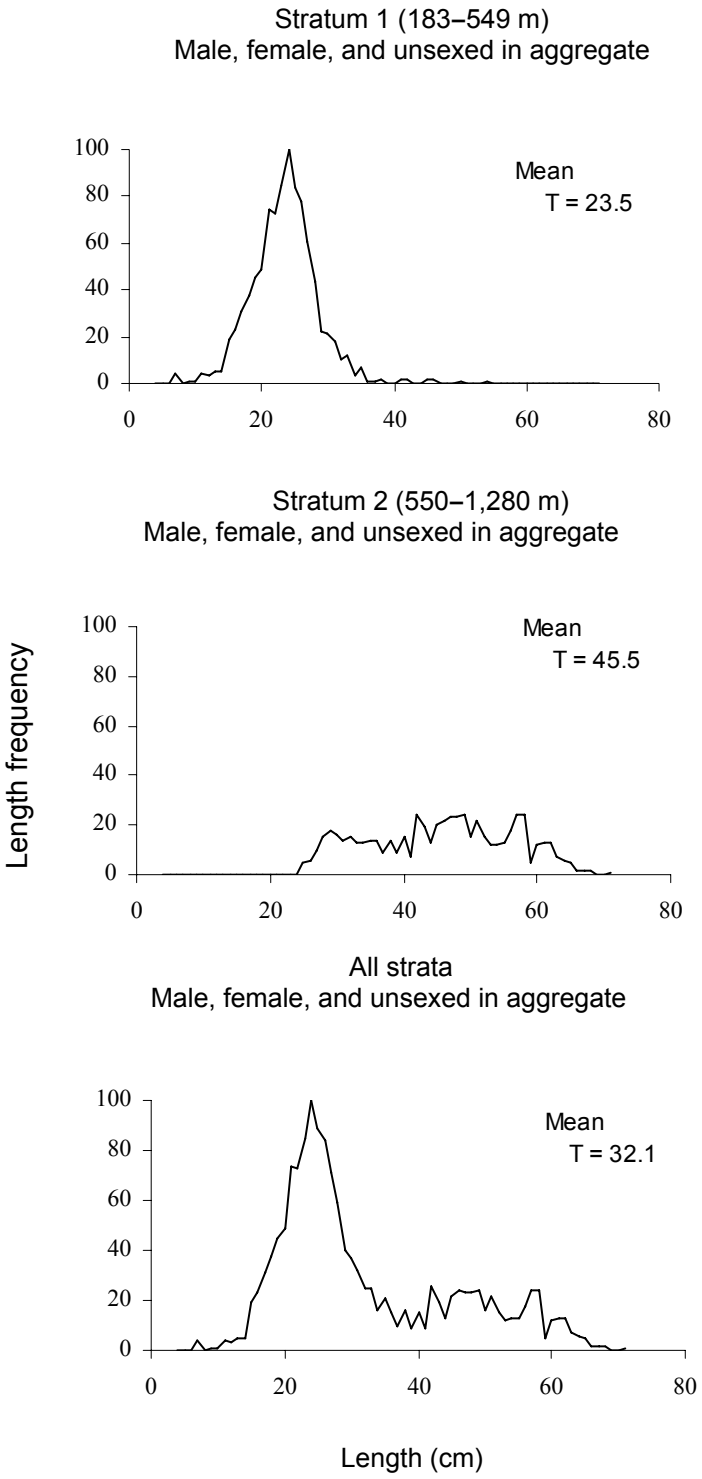


Figure 40. Unweighted length-frequency data and mean lengths (cm) of shortspine thornyhead by depth stratum (m) for the INPFC Monterey area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

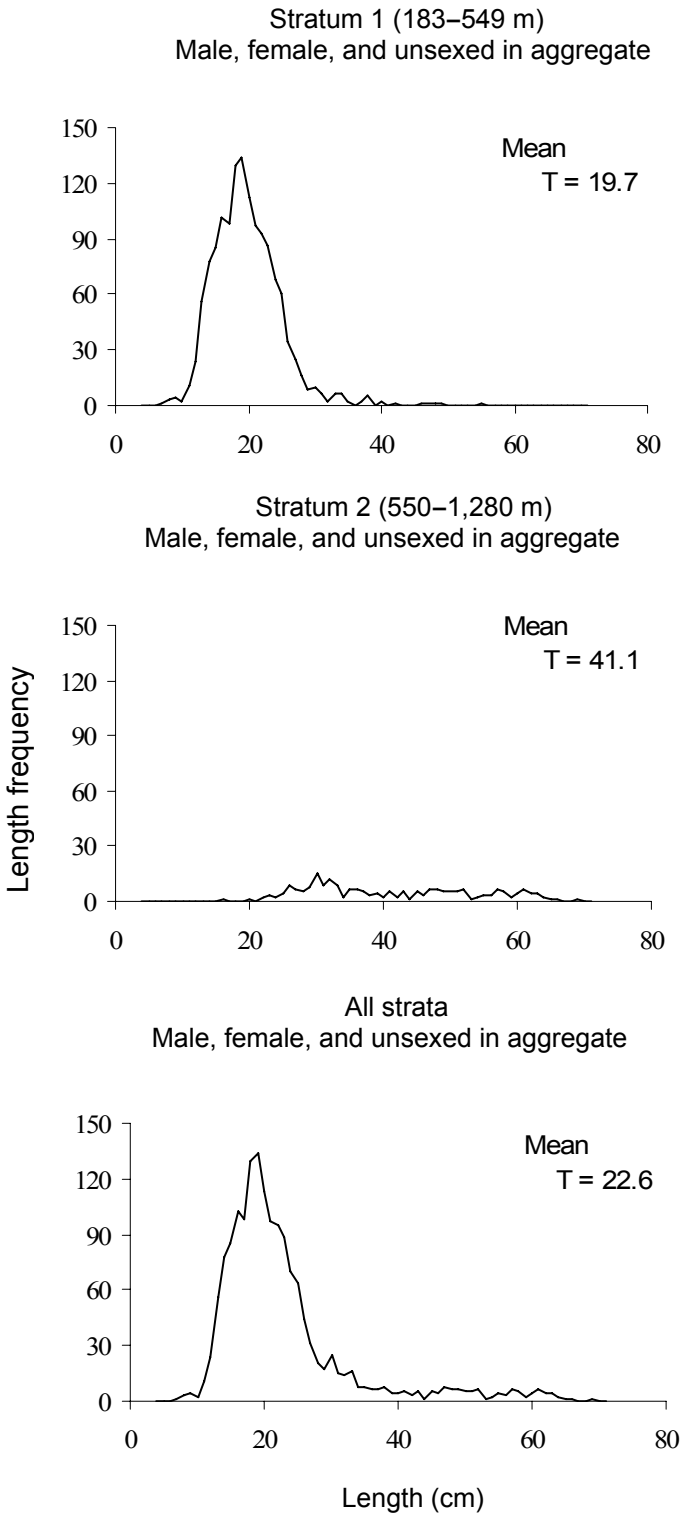


Figure 41. Unweighted length-frequency data and mean lengths (cm) of shortspine thornyhead by depth stratum (m) for the INPFC Eureka area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

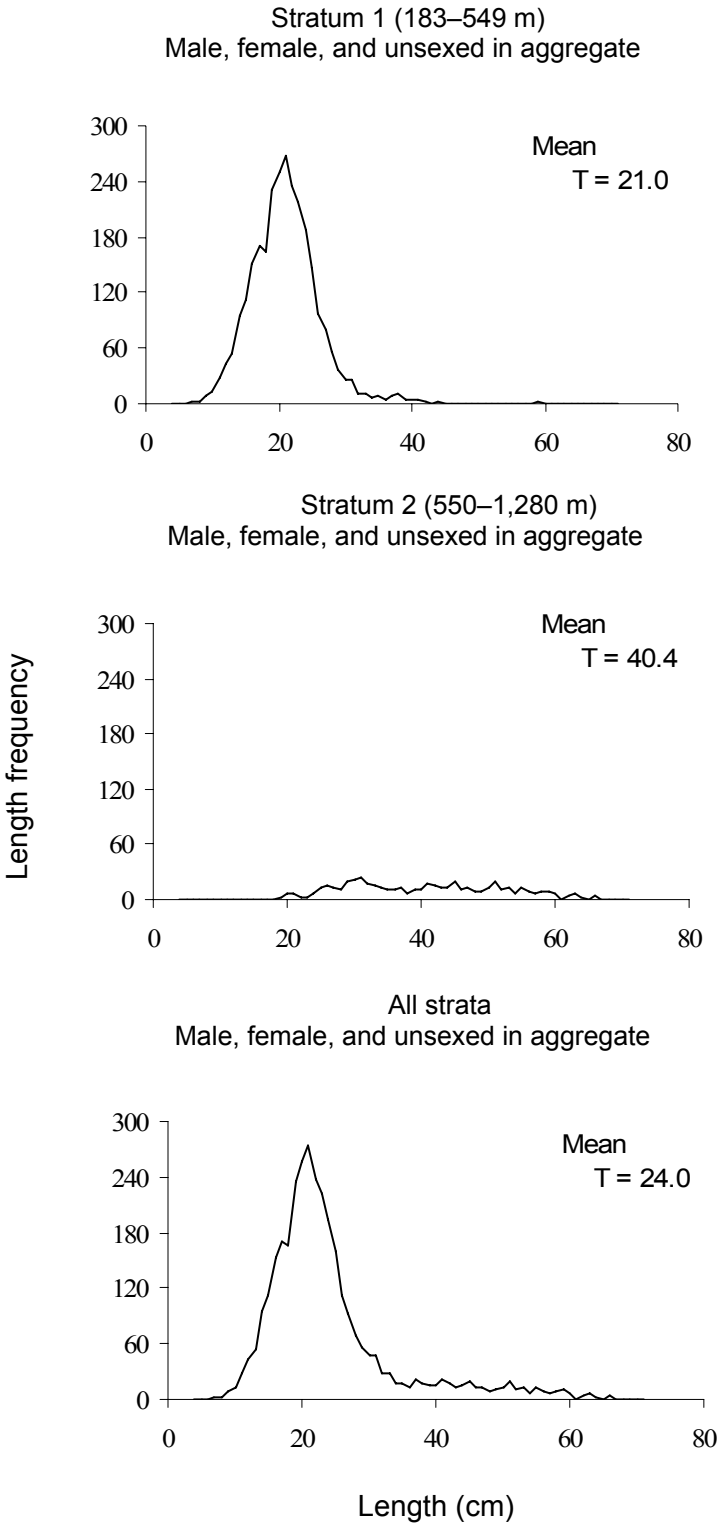


Figure 42. Unweighted length-frequency data and mean lengths (cm) of shortspine thornyhead by depth stratum (m) for the INPFC Columbia area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

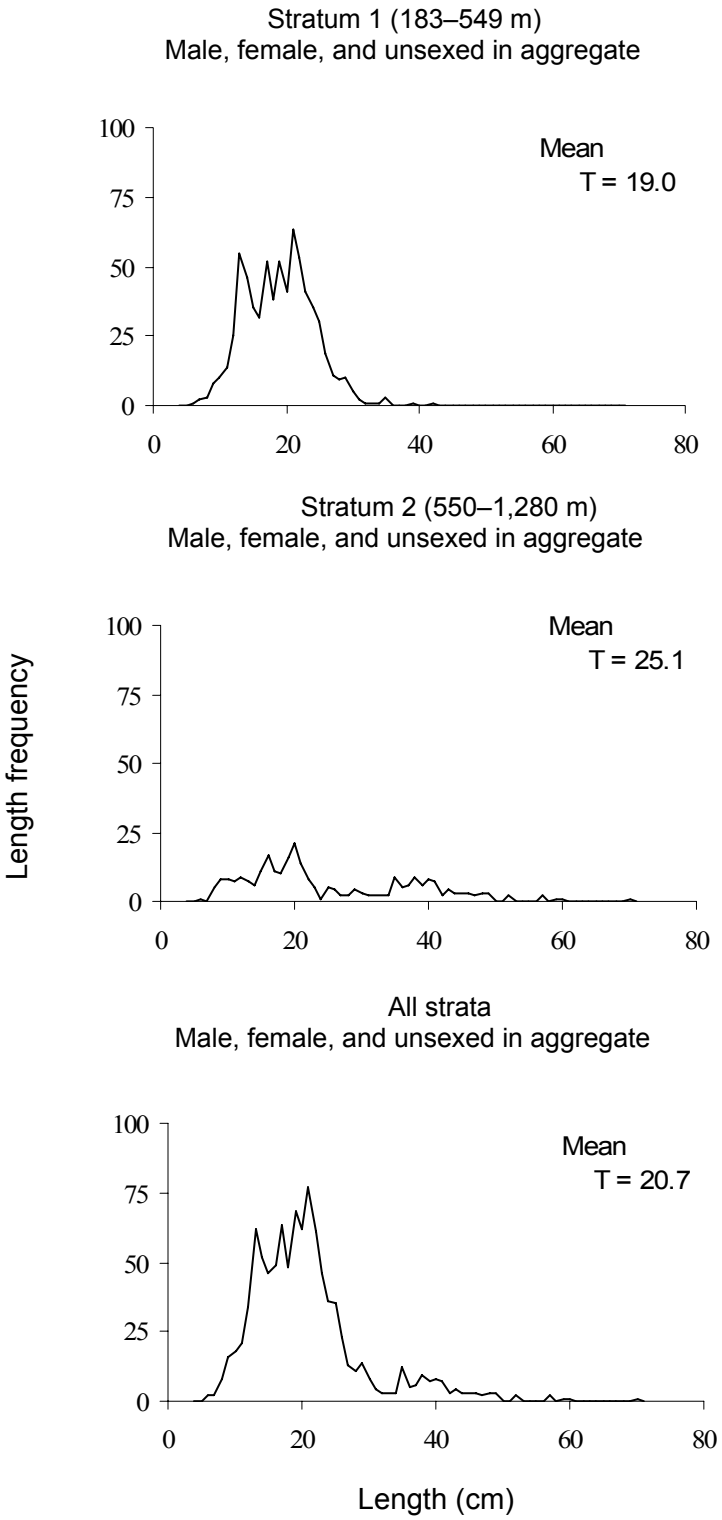


Figure 43. Unweighted length-frequency data and mean lengths (cm) of shortspine thornyhead by depth stratum (m) for the INPFC U.S.-Vancouver area from the 2000 NWFSC slope survey (T = males, females, and unsexed in aggregate).

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Appendix A:
Haul and Catch Information

Appendix A consists of Table A-1, listing station and catch data for all hauls from the 2000 NWFSC slope survey of the INPFC statistical areas—U.S.-Vancouver, Columbia, Eureka, Monterey, and Conception. Depths are reported in meters (m), distances fished in kilometers (km), and catch weights are in kilograms (kg). Geodetic positions are displayed in the table as decimal degrees (dd)—for example, 45.3350 corresponds to lat. 45°20′30″N. Only catches from hauls with performance codes greater than or equal to zero were used for data analyses. Hauls that yielded unsatisfactory performance or no catch of the listed species are left blank.

A superscript a ([a]) indicates that the latitude and longitude were taken from the vessel position and superscript b ([b]) indicates that the latitude and longitude were taken from the Field Party Chief data sheets. An asterisk (*) indicates species appearance in the catch, but no weights were recorded. Performance codes that appear in the appendix follow:

Code	Explanation
0.00	Good performance
1.10	Satisfactory performance, minor hangs
1.11	Satisfactory performance, completed tow
5.10	Satisfactory performance, net came off bottom
–7.10	Unsatisfactory performance, fish meter file lost
–6.30	Unsatisfactory performance, unspecified mechanical problems
–6.00	Unsatisfactory performance, unspecified problems
–5.42	Unsatisfactory performance, doors crossed
–5.23	Unsatisfactory performance, headrope/footrope tangled
–5.10	Unsatisfactory performance, net came off bottom
–5.00	Unsatisfactory performance, unspecified gear performance problem
–4.10	Unsatisfactory performance, caught large rock
–2.00	Unsatisfactory performance, unspecified gear damage
–1.12	Unsatisfactory performance, hauled back early due to hangs
–1.00	Unsatisfactory performance, hung up

Table A-1. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001001	200001001002	200001001003	200001001004	200001001005
Start date and time	8/27/00 7:18	8/27/00 10:58	8/27/00 14:38	8/27/00 17:14	8/27/00 19:21
Start gear latitude (dd)	48.0086	48.0159	48.0084	48.0089	47.9807
Start gear longitude (dd)	–125.7399	–125.7329	–125.6669	–125.6639	–125.6187
End gear latitude (dd)	47.9931	48.0011	47.9973	47.9999	47.9695
End gear longitude (dd)	–125.7453	–125.7147	–125.6617	–125.6558	–125.6127
Station	2I	2H	2F	2E	2B
Avg. bottom depth (m)	1,024.98	914.24	633.48	561.42	301.18
Duration (hr)	0.44	0.51	0.32	0.30	0.32
Distance fished (km)	1.79	1.89	1.33	1.20	1.40
Net width (m)	15.41	14.40	14.68	14.15	13.38
Performance	0	0	5.1	5.1	0
Species by weight					
Hagfish	0.30	2.09			
Brown cat shark	0.96	1.25	0.92	0.50	
Spiny dogfish					
Skates	4.03	0.10	4.98	5.33	8.44
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole		40.58	108.10	82.12	44.56
Deepsea sole	5.14	8.52	2.39	1.05	
Rex sole				2.11	1.09
Other flatfish					9.02
Sablefish	33.28	69.96	22.22	7.48	
Pacific grenadier	39.71	5.72			
Giant grenadier	8.26	8.69	39.84	9.00	
Other grenadier					
Pacific flatnose	3.33		2.98	2.23	
Slickheads	0.74	0.50			
Eelpouts	2.81	4.12	8.91		2.33
Snailfish	0.10	1.18	0.70	1.53	1.14
Pacific whiting				0.70	3.16
Other roundfish	0.44	1.14	0.10	4.05	
Shortspine thornyhead	8.53	15.35	15.73	3.97	10.71
Longspine thornyhead	52.21	107.79	30.27	6.68	
Rougheye rockfish					
Pacific ocean perch					10.33
Aurora rockfish			0.72		
Darkblotched rockfish					
Splitnose rockfish					0.21
Shortbelly rockfish					
Other rockfish					1.94
Grooved tanner crab	26.65	18.00	17.75	14.65	
Other invertebrates	7.68	5.01	3.90	7.97	2.68
Total catch weight (kg)	194.17	290.00	259.51	149.37	95.61

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001006	200001001007	200001001008	200001001009	200001001010
Start date and time	8/28/00 6:50	8/28/00 10:34	8/28/00 12:39	8/28/00 14:58	8/28/00 17:59
Start gear latitude (dd)	47.2775	47.2458	47.2637	47.3021[a]	47.3153
Start gear longitude (dd)	–124.8448	–124.9937	–125.0203	–125.0553[a]	–125.1463
End gear latitude (dd)	47.2677	47.2513	47.2664	47.29733[a]	47.3099
End gear longitude (dd)	–124.8452	–124.9793	–125.0054	–125.0664[a]	–125.1532
Station	6A	6D	6F	6I	6J
Avg. bottom depth (m)	195.29	427.89	615.76		1,213.68
Duration (hr)	0.31	0.32	0.33	0.30	0.23
Distance fished (km)	1.09	1.28	1.20	0.94	0.81
Net width (m)	14.25	14.76	15.62		15.77
Performance	0	0	0	–5.1	1.11
Species by weight					
Hagfish					
Brown cat shark		0.95	3.68		0.20
Spiny dogfish	10.59				
Skates	15.08	3.74	3.40		4.96
Other elasmobranchs	1.36				
Arrowtooth flounder					
Petrale sole					
Dover sole	26.99	64.96	13.39		
Deepsea sole		2.22	3.35		1.17
Rex sole	10.03				
Other flatfish	231.14		5.33		
Sablefish	67.67	5.46	25.19		9.91
Pacific grenadier					23.76
Giant grenadier			5.79		11.93
Other grenadier					
Pacific flatnose			4.64		1.68
Slickheads			2.67		
Eelpouts	1.52	4.78			1.33
Snailfish					
Pacific whiting		0.61			
Other roundfish	22.75				0.20
Shortspine thornyhead	2.58	9.95	11.33		1.96
Longspine thornyhead		9.31	20.83		11.14
Rougheye rockfish					
Pacific ocean perch	69.05	1.27			
Aurora rockfish					
Darkblotched rockfish	300.17				
Splitnose rockfish	2.70				
Shortbelly rockfish					
Other rockfish	8.81				
Grooved tanner crab			18.73		1.46
Other invertebrates	3.21	4.81	14.23		9.34
Total catch weight (kg)	773.65	108.06	132.56		79.04

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001011	200001001012	200001001013	200001001014	200001001015
Start date and time	8/29/00 7:12	8/29/00 9:46	8/29/00 12:33	8/29/00 15:09	8/29/00 16:51
Start gear latitude (dd)	46.6014	46.6406	46.6685	46.6972	46.6568
Start gear longitude (dd)	–125.1442	–125.1680	–124.8916	–124.8276	–124.7690
End gear latitude (dd)	46.6001	46.6373	46.6642	46.6873	46.6655
End gear longitude (dd)	–125.1313	–125.1533	–124.9073	–124.8176	–124.7805
Station	10J	10I	10G	10D	10B
Avg. bottom depth (m)	1,193.83	1,031.20	731.04	439.93	291.10
Duration (hr)	0.29	0.33	0.33	0.33	0.31
Distance fished (km)	1.01	1.19	1.45	1.36	1.31
Net width (m)	15.73	15.42	14.33	14.08	13.91
Performance	0	0	0	0	0
Species by weight					
Hagfish		0.63	0.14		
Brown cat shark		0.66	1.45	3.12	
Spiny dogfish					
Skates	6.03			17.44	2.68
Other elasmobranchs					1.93
Arrowtooth flounder				3.74	7.29
Petrale sole					
Dover sole			10.12	32.15	53.06
Deepsea sole	2.39	0.36	0.37		
Rex sole				1.64	21.83
Other flatfish					5.42
Sablefish	13.85	3.30	17.92	1.31	
Pacific grenadier	45.46	21.03	6.63		
Giant grenadier	22.05	2.22	10.35		
Other grenadier					
Pacific flatnose	7.51	2.13	1.61	0.53	
Slickheads	1.44	1.52	2.05		
Eelpouts		1.08	0.20	5.56	3.91
Snailfish			0.10	1.02	0.27
Pacific whiting				6.13	
Other roundfish	0.20	0.20	0.12	0.01	1.81
Shortspine thornyhead	6.59	13.99	7.03	5.53	6.31
Longspine thornyhead	21.75	39.40	51.63		
Rougheye rockfish					
Pacific ocean perch					5.54
Aurora rockfish					
Darkblotched rockfish					4.48
Splitnose rockfish				0.21	0.28
Shortbelly rockfish					
Other rockfish					1.50
Grooved tanner crab	2.30	6.73	12.84	2.35	
Other invertebrates	5.56	13.98	4.93	36.14	43.85
Total catch weight (kg)	135.13		127.49	116.88	160.16

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001016	200001001017	200001001018	200001001019	200001001020
Start date and time	8/30/00 6:58	8/30/00 8:55	8/30/00 10:31	8/30/00 12:44	8/30/00 15:37
Start gear latitude (dd)	46.0042	46.0423	45.9771	46.0324	46.0232[a]
Start gear longitude (dd)	–124.7839	–124.8412	–124.8274	–124.9127	–124.9913[a]
End gear latitude (dd)	46.0123	46.0354	45.9880	46.0204	46.0161[a]
End gear longitude (dd)	–124.7949	–124.8405	–124.8318	–124.9106	–124.9892[a]
Station	14D	14E	14F	14H	14J
Avg. bottom depth (m)	427.56	550.18	608.42	940.50	
Duration (hr)	0.31	0.20	0.33	0.39	0.22
Distance fished (km)	1.25	0.77	1.28	1.36	1.44
Net width (m)	14.81	14.52	13.98	15.24	
Performance	0	1.11	0	0	–5.1
Species by weight					
Hagfish			0.47		
Brown cat shark		9.59	4.86	0.10	
Spiny dogfish					
Skates	15.24		1.69	4.05	
Other elasmobranchs	0.48				
Arrowtooth flounder	11.47	1.65	3.93		
Petrale sole					
Dover sole	36.75	18.80	10.09	3.11	
Deepsea sole		1.22	1.61	2.04	
Rex sole	6.97	1.05	0.58		
Other flatfish	0.10				
Sablefish		4.47	11.28	11.21	
Pacific grenadier			0.10	14.01	
Giant grenadier		3.16	7.28	25.65	
Other grenadier					
Pacific flatnose			2.49	0.89	
Slickheads				2.54	
Eelpouts	4.43	3.66	10.72	2.17	
Snailfish			1.36	0.10	
Pacific whiting	15.19	7.90	2.93		
Other roundfish		0.01	0.91	0.23	
Shortspine thornyhead	7.34	6.13	9.46	7.01	
Longspine thornyhead		2.73	6.63	54.48	
Rougheye rockfish					
Pacific ocean perch	1.44				
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish	0.30				
Shortbelly rockfish					
Other rockfish	2.36				
Grooved tanner crab	0.10	6.51	15.28	22.77	
Other invertebrates	56.63	9.90	10.42	5.73	
Total catch weight (kg)	158.80	76.78	102.09	156.09	

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001021	200001001022	200001001023	200001001024	200001001025
Start date and time	8/30/00 17:24	8/31/00 7:16	8/31/00 10:20	8/31/00 13:34	8/31/00 15:49
Start gear latitude (dd)	46.021[a]	45.3388	45.3070	45.3395	45.3407
Start gear longitude (dd)	–124.9879[a]	–124.9610	–124.9323	–124.6219	–124.3890
End gear latitude (dd)	46.0293[a]	45.3264	45.2969	45.3299	45.3298
End gear longitude (dd)	–124.9926[a]	–124.9619	–124.9328	–124.6167	–124.3867
Station	14J	18J	18I	18D	18B
Avg. bottom depth (m)		1,169.45	1,074.16	430.78	297.83
Duration (hr)	0.28	0.36	0.30	0.30	0.30
Distance fished (km)	1.20	1.40	1.15	1.15	1.22
Net width (m)		15.68	15.50	14.76	14.84
Performance	–2	0	0	0	0
Species by weight					
Hagfish					
Brown cat shark			0.53		
Spiny dogfish					
Skates					7.62
Other elasmobranchs					
Arrowtooth flounder				6.17	13.45
Petrale sole					
Dover sole				51.32	23.73
Deepsea sole					
Rex sole				0.24	15.34
Other flatfish				0.10	2.87
Sablefish		21.10	11.60	23.06	36.64
Pacific grenadier		39.48	12.82		
Giant grenadier		60.73	12.88		
Other grenadier					
Pacific flatnose		3.11	0.74		
Slickheads		1.63	0.47		
Eelpouts		1.11	1.19	1.34	3.10
Snailfish					
Pacific whiting				46.34	58.98
Other roundfish		8.50	0.51		
Shortspine thornyhead		4.33	5.22	19.70	19.18
Longspine thornyhead		17.39	47.70		
Rougheye rockfish					
Pacific ocean perch				6.35	0.54
Aurora rockfish				2.10	
Darkblotched rockfish					2.38
Splitnose rockfish					2.12
Shortbelly rockfish					
Other rockfish					0.10
Grooved tanner crab		7.41	12.90	1.47	
Other invertebrates		73.73	26.07	12.78	17.35
Total catch weight (kg)		238.52	132.10	170.97	203.40

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001026	200001001027	200001001028	200001001029	200001001030
Start date and time	8/31/00 17:17	9/4/00 6:59	9/4/00 9:15	9/4/00 11:10	9/4/00 12:59
Start gear latitude (dd)	45.3516	44.6130	44.6386[a]	44.6605[a]	44.6647[a]
Start gear longitude (dd)	–124.3598	–124.7280	–124.8965[a]	–124.9147[a]	–124.9876[a]
End gear latitude (dd)	45.3414	44.6022	44.6294[a]	44.6506[a]	44.6517[a]
End gear longitude (dd)	–124.3562	–124.7304	–124.8917[a]	–124.9127[a]	–124.9840[a]
Station	18A	22B	22E	22F	22H
Avg. bottom depth (m)	222.77	285.71	546.09	615.86	
Duration (hr)	0.30	0.34	0.31	0.32	0.45
Distance fished (km)	1.17	1.24	1.35	1.28	1.43
Net width (m)	14.57	14.84	14.96	14.61	
Performance	0	0	0	0	–4.1
Species by weight					
Hagfish					
Brown cat shark			1.67	0.50	
Spiny dogfish	2.27				
Skates	1.88	7.98	18.87	0.10	
Other elasmobranchs		6.85	1.35	0.10	
Arrowtooth flounder	26.83	3.48	5.27	5.27	
Petrale sole					
Dover sole	17.96	59.64	32.67	1.74	
Deepsea sole					
Rex sole	0.64	2.58	0.19		
Other flatfish	1.51	2.25	0.17	0.01	
Sablefish	38.88	18.41	7.99	12.21	
Pacific grenadier				0.30	
Giant grenadier				3.63	
Other grenadier					
Pacific flatnose			0.69	0.66	
Slickheads					
Eelpouts	0.87	7.99	3.46	2.38	
Snailfish			0.90	0.20	
Pacific whiting	9.29	18.57	1.34		
Other roundfish		0.10			
Shortspine thornyhead	9.47	38.78	5.70	1.54	
Longspine thornyhead			2.60	3.45	
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish	2.02	1.09			
Splitnose rockfish	13.08	10.35			
Shortbelly rockfish					
Other rockfish	7.06	9.43			
Grooved tanner crab			3.60	3.85	
Other invertebrates	35.40	6.83	23.84	3.61	
Total catch weight (kg)	167.16	194.33	110.31	39.55	

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001031	200001001032	200001001033	200001001034	200001001035
Start date and time	9/4/00 14:54	9/4/00 17:20	9/5/00 7:31	9/5/00 10:21	9/5/00 13:08
Start gear latitude (dd)	44.6690[a]	44.6209[a]	44.0583[a]	44.0348[a]	44.0444[a]
Start gear longitude (dd)	–124.9961[a]	–125.0525[a]	–125.0320[a]	–124.9711[a]	–124.9597[a]
End gear latitude (dd)	44.6799[a]	44.6306[a]	44.0476[a]	44.0448[a]	44.0552[a]
End gear longitude (dd)	–124.9980[a]	–125.0525[a]	–125.0354[a]	–124.9741[a]	–124.9599[a]
Station	22H	22J	26J	26F	26E
Avg. bottom depth (m)	939.35	1,195.66	1,161.84	615.19	512.58
Duration (hr)	0.31	0.28	0.37	0.31	0.34
Distance fished (km)	1.34	1.21	1.67	1.35	1.51
Net width (m)	15.24	15.73	15.67	15.35	15.24
Performance	0	0	0	0	0
Species by weight					
Hagfish	0.70		0.10	0.64	0.82
Brown cat shark	1.36			1.57	0.57
Spiny dogfish					
Skates		1.16	4.35		20.21
Other elasmobranchs					
Arrowtooth flounder					1.66
Petrale sole					
Dover sole	2.08			86.04	124.18
Deepsea sole	0.78	0.69	14.02	1.15	
Rex sole				2.00	13.51
Other flatfish					2.53
Sablefish	5.14	8.68	17.78	142.55	30.31
Pacific grenadier	0.17	16.28	129.33	1.09	
Giant grenadier	7.76	30.40	102.78	11.32	4.80
Other grenadier					
Pacific flatnose	0.11	1.11	9.05	2.53	1.81
Slickheads	0.20	1.83	4.78		
Eelpouts	0.19	0.34	2.18	16.24	14.79
Snailfish		0.26		0.66	0.92
Pacific whiting				0.66	4.49
Other roundfish	0.66	1.62	0.10	0.20	0.20
Shortspine thornyhead		4.56	26.90	30.28	15.60
Longspine thornyhead	36.72	48.00	66.03	21.63	0.86
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	30.48	4.42	6.71	2.71	1.19
Other invertebrates	4.81	28.81	114.00	7.71	11.25
Total catch weight (kg)	91.16	148.16	498.11	328.98	249.70

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001036	200001001037	200001001038	200001001039	200001001040
Start date and time	9/5/00 15:37	9/5/00 17:33	9/6/00 7:07	9/6/00 9:16	9/6/00 11:56
Start gear latitude (dd)	44.0550	44.0615[a]	43.3294[a]	43.3185[a]	43.3264[a]
Start gear longitude (dd)	–124.9579	–124.9414[a]	–124.6870[a]	–124.7718[a]	–124.8514[a]
End gear latitude (dd)	44.0655	44.0713[a]	43.3388[a]	43.3291[a]	43.3240[a]
End gear longitude (dd)	–124.9578	–124.9433[a]	–124.6826[a]	–124.7711[a]	–124.8375[a]
Station	26D	26B	30A	30E	30F
Avg. bottom depth (m)	448.63	302.77	215.37	516.48	606.70
Duration (hr)	0.29	0.29	0.30	0.32	0.33
Distance fished (km)	1.15	1.17	1.14	1.36	1.31
Net width (m)	14.34	13.87	14.18	14.73	14.70
Performance	0	0	0	0	0
Species by weight					
Hagfish		1.55			0.15
Brown cat shark		0.10		2.82	9.42
Spiny dogfish					
Skates	20.94	64.24	17.21	3.37	
Other elasmobranchs		52.47	2.51		
Arrowtooth flounder	7.36	10.48	1.67	4.97	
Petrale sole					
Dover sole	111.35	129.88	109.80	52.48	31.11
Deepsea sole					
Rex sole	19.63	38.49	6.18	5.31	2.03
Other flatfish	1.20	4.19	6.80		
Sablefish	28.69	258.57	9.66	9.98	3.89
Pacific grenadier					0.10
Giant grenadier					26.21
Other grenadier					
Pacific flatnose	0.29			0.14	3.25
Slickheads					0.47
Eelpouts	3.90	13.07	3.16	3.18	4.16
Snailfish	1.72	1.96		0.61	0.10
Pacific whiting	1.99	2.70	13.25	0.96	
Other roundfish		0.20	4.12		0.01
Shortspine thornyhead	4.27	10.77	6.55	0.87	0.78
Longspine thornyhead					2.02
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	0.51				
Darkblotched rockfish		10.38			
Splitnose rockfish		6.02	0.65		
Shortbelly rockfish					
Other rockfish		3.21	48.69		
Grooved tanner crab					1.79
Other invertebrates	14.70	350.67	46.70	9.06	7.21
Total catch weight (kg)	216.55	958.95	276.95	93.75	92.70

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001041	200001001042	200001001043	200001001044	200001001045
Start date and time	9/6/00 14:07	9/6/00 15:30	9/6/00 18:02	9/7/00 7:33	9/7/00 10:33
Start gear latitude (dd)	43.2886[a]	43.2660[a]	43.2918[a]	42.6516[a]	42.6504[a]
Start gear longitude (dd)	–124.9511[a]	–124.9355[a]	–124.0254[a]	–124.9918[a]	–124.9273[a]
End gear latitude (dd)	43.2836[a]	43.2766[a]	43.2820[a]	42.6418[a]	42.6391[a]
End gear longitude (dd)	–124.9467[a]	–124.9386[a]	–124.0240[a]	–124.9950[a]	–124.9295[a]
Station	30G	30G	30I	34J	34H
Avg. bottom depth (m)		764.13	1,057.77	1,157.67	901.33
Duration (hr)	0.19	0.34	0.32	0.31	0.39
Distance fished (km)	0.74	1.24	1.28	1.21	1.58
Net width (m)		14.90	15.46	15.66	15.16
Performance	–5.1	0	0	0	0
Species by weight					
Hagfish			0.20		0.64
Brown cat shark		2.78	1.72		1.45
Spiny dogfish					
Skates				1.00	
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole		13.95			51.23
Deepsea sole		4.46	4.98	6.48	4.23
Rex sole					
Other flatfish					
Sablefish		33.57	13.85	30.01	20.32
Pacific grenadier		0.54	28.96	112.26	12.97
Giant grenadier		15.56	30.32	26.60	11.00
Other grenadier					
Pacific flatnose		0.10	2.90	3.43	1.16
Slickheads		1.27	5.17	2.70	10.43
Eelpouts		0.10	1.52	0.20	5.77
Snailfish					
Pacific whiting				0.70	
Other roundfish		0.40	0.34	7.90	0.40
Shortspine thornyhead		7.28	11.30	15.53	4.15
Longspine thornyhead		48.64	93.41	39.95	81.40
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab		41.72	19.61	1.30	27.37
Other invertebrates		6.12	17.02	38.82	6.51
Total catch weight (kg)		176.49	231.30	286.88	239.03

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001046	200001001047	200001001048	200001001049	200001001050
Start date and time	9/7/00 13:16	9/7/00 15:36	9/7/00 16:57	9/7/00 18:37	9/8/00 7:16
Start gear latitude (dd)	42.6132[a]	42.6267[a]	42.6611[a]	42.6614[a]	42.0437[a]
Start gear longitude (dd)	–124.7525[a]	–124.7312[a]	–124.7355[a]	–124.7306[a]	–124.6336[a]
End gear latitude (dd)	42.6047[a]	42.6178[a]	42.6694[a]	42.6526[a]	42.0543[a]
End gear longitude (dd)	–124.7581[a]	–124.7357[a]	–124.7454[a]	–124.7249[a]	–124.6344[a]
Station	34E	34D	34D	34C	38D
Avg. bottom depth (m)	490.25		428.22	370.87	439.62
Duration (hr)	0.30	0.31	0.32	0.28	0.31
Distance fished (km)	1.18	1.12	1.47	1.07	1.30
Net width (m)	15.16		14.49	14.00	14.95
Performance	0	–1	0	0	0
Species by weight					
Hagfish	0.46		0.79		0.50
Brown cat shark	1.20		6.57	2.48	3.90
Spiny dogfish			2.44		
Skates	10.31		14.07	2.67	4.00
Other elasmobranchs					
Arrowtooth flounder			2.33		
Petrale sole					
Dover sole	32.12		43.76	51.57	49.12
Deepsea sole					
Rex sole	18.91		6.67	15.00	11.75
Other flatfish					0.80
Sablefish	28.46		18.07	5.50	9.28
Pacific grenadier					
Giant grenadier					
Other grenadier					
Pacific flatnose					
Slickheads					
Eelpouts	6.62	6.72	7.71	12.51	16.93
Snailfish	0.88		0.30	2.03	0.10
Pacific whiting	8.03		22.72	50.89	4.90
Other roundfish					
Shortspine thornyhead	1.06		6.71	9.57	10.83
Longspine thornyhead					
Rougheye rockfish				2.39	
Pacific ocean perch			0.64	0.90	
Aurora rockfish	0.40		1.49	0.47	10.79
Darkblotched rockfish				1.82	
Splitnose rockfish			0.20		
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	0.63				
Other invertebrates	21.43		155.85	59.83	139.94
Total catch weight (kg)	130.51	6.72	290.32	217.63	262.84

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001051	200001001052	200001001053	200001001054	200001001055
Start date and time	9/8/00 9:38	9/8/00 11:37	9/8/00 13:57	9/8/00 17:24	9/9/00 7:18
Start gear latitude (dd)	42.0393[a]	42.0483[a]	42.0100[a]	42.0344[a]	41.2652[a]
Start gear longitude (dd)	–124.6459[a]	–124.7102[a]	–124.8244[a]	–125.0193[a]	–124.7972[a]
End gear latitude (dd)	42.0295[a]	42.0383[a]	42.0011[a]	42.0254[a]	41.2554[a]
End gear longitude (dd)	–124.6470[a]	–124.7086[a]	–124.8161[a]	–125.0219[a]	–124.7985[a]
Station	38E	38F	38H	38J	42J
Avg. bottom depth (m)	483.36	599.72	895.96	1,149.40	1,137.68
Duration (hr)	0.32	0.31	0.36	0.28	0.30
Distance fished (km)	1.32	1.24	1.78	1.08	1.16
Net width (m)	15.08	15.25	15.15	15.64	15.62
Performance	0	0	0	1.11	0
Species by weight					
Hagfish			0.10		
Brown cat shark	6.28	0.74	2.17		
Spiny dogfish					
Skates	22.85			2.73	17.86
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	98.29	5.83	24.47	35.56	1.80
Deepsea sole		0.40	4.50	4.91	5.59
Rex sole	27.78	13.60			
Other flatfish	0.10				
Sablefish	16.19	1.56	27.17	27.57	33.66
Pacific grenadier		0.41	3.39	74.80	38.11
Giant grenadier		5.88	3.08	14.60	4.10
Other grenadier					
Pacific flatnose		0.89	0.94	13.86	1.50
Slickheads			7.41		0.90
Eelpouts	17.85	2.48			0.10
Snailfish	1.22	0.20			
Pacific whiting	6.57				
Other roundfish		0.50	0.30	0.48	0.30
Shortspine thornyhead	7.56	2.66	3.38	8.73	5.92
Longspine thornyhead		27.54	113.30	47.23	56.54
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	2.05				
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab		40.11	9.15	0.35	3.80
Other invertebrates	46.36	9.92	4.42	21.38	10.21
Total catch weight (kg)	253.10	112.72	203.78	252.20	180.39

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001056	200001001057	200001001058	200001001059	200001001060
Start date and time	9/9/00 10:57	9/9/00 13:10	9/9/00 15:24	9/9/00 16:49	9/12/00 7:29
Start gear latitude (dd)	41.3389[a]	41.3378[a]	41.2996[a]	41.2884[a]	40.7346[a]
Start gear longitude (dd)	–124.5770[a]	–124.5380[a]	–124.4713[a]	–124.4374[a]	–124.7385[a]
End gear latitude (dd)	41.3290[a]	41.3281[a]	41.2908[a]	41.2792[a]	40.7253[a]
End gear longitude (dd)		–124.5362[a]	–124.4652[a]	–124.4329[a]	–124.7351[a]
Station	42I	42G	42D	42B	46J
Avg. bottom depth (m)	1,060.50	741.85	428.86	282.21	1,171.76
Duration (hr)	0.30	0.30	0.29	0.30	0.29
Distance fished (km)	1.18	1.20	1.16	1.13	1.07
Net width (m)	15.46	14.85	14.74	14.37	15.69
Performance	0	1.11	0	0	0
Species by weight					
Hagfish	0.50	0.40	0.30		
Brown cat shark	2.02	4.49	3.95		
Spiny dogfish			1.11	0.30	
Skates	2.75		12.17	8.61	9.27
Other elasmobranchs					
Arrowtooth flounder			16.06	1.10	
Petrale sole					
Dover sole	6.80	15.76	40.02	38.35	4.66
Deepsea sole	1.78	4.12			9.28
Rex sole			6.18	30.85	
Other flatfish					
Sablefish	42.39	13.83	12.67	13.97	15.66
Pacific grenadier	6.97				100.36
Giant grenadier	2.14	4.08			17.26
Other grenadier					
Pacific flatnose	2.46				3.60
Slickheads	7.43	1.63			1.32
Eelpouts	2.17	4.19	4.42	2.16	
Snailfish			0.30		
Pacific whiting			21.49	48.78	
Other roundfish	0.10	0.30			1.84
Shortspine thornyhead		5.66	0.90	1.90	13.66
Longspine thornyhead	65.19	105.54			39.80
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish			3.06		
Darkblotched rockfish				5.93	
Splitnose rockfish				51.66	
Shortbelly rockfish					
Other rockfish				0.50	
Grooved tanner crab	13.46	20.75			27.75
Other invertebrates	7.56	6.50	18.74	15.43	64.62
Total catch weight (kg)	163.72	187.25	141.37	219.54	309.08

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001061	200001001062	200001001063	200001001064	200001001065
Start date and time	9/12/00 10:23	9/12/00 12:52	9/12/00 15:11	9/12/00 16:59	9/13/00 7:14
Start gear latitude (dd)	40.7056[a]	40.7048[a]	40.7264[a]	40.7297[a]	40.0531[a]
Start gear longitude (dd)	–124.7244[a]	–124.6093[a]	–124.5375[a]	–124.5187[a]	–124.2609[a]
End gear latitude (dd)	40.6962[a]	40.7063[a]	40.7168[a]	40.7202[a]	40.0455[a]
End gear longitude (dd)	–124.7232[a]	–124.6227[a]	–124.5368[a]	–124.5201[a]	–124.2524[a]
Station	46I	46G	46D	46B	50B
Avg. bottom depth (m)	1,052.02	746.49	428.93	330.95	277.26
Duration (hr)	0.30	0.30	0.28	0.32	0.28
Distance fished (km)	1.13	1.19	1.10	1.20	1.17
Net width (m)	15.45	14.87	14.14	13.92	13.87
Performance	0	0	0	0	0
Species by weight					
Hagfish					
Brown cat shark	0.84	5.73	13.54	1.22	
Spiny dogfish				2.32	0.26
Skates	4.24		20.52	26.10	12.14
Other elasmobranchs					13.00
Arrowtooth flounder					
Petrale sole					
Dover sole	20.45	21.67	4.43	187.15	166.47
Deepsea sole	3.20	1.03			
Rex sole		2.23	12.68	19.02	2.87
Other flatfish			0.10	0.12	1.36
Sablefish	5.90	13.99	11.59	0.74	42.94
Pacific grenadier	211.20	0.84			
Giant grenadier	22.10	37.99			
Other grenadier					
Pacific flatnose	1.90	0.80	0.10		
Slickheads		2.92			
Eelpouts	1.30	6.18	6.37	11.66	6.46
Snailfish	0.10	0.10	0.30		
Pacific whiting			129.18	26.76	125.15
Other roundfish	0.94	0.60			0.10
Shortspine thornyhead	4.83	2.55	1.37	1.30	6.34
Longspine thornyhead	93.10	49.33			
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish			0.49		
Darkblotched rockfish			0.71	0.74	
Splitnose rockfish			0.10	0.23	74.38
Shortbelly rockfish					
Other rockfish				1.02	6.60
Grooved tanner crab	38.06	31.72	0.96		
Other invertebrates	9.63	17.85	60.66	53.11	5.08
Total catch weight (kg)	417.79	195.53	263.10	331.49	463.15

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001066	200001001067	200001001068	200001001069	200001001070
Start date and time	9/13/00 10:00	9/13/00 11:32	9/13/00 13:28	9/13/00 15:56	9/14/00 7:31
Start gear latitude (dd)	40.0734	40.0714	40.0650	39.9872	39.3202
Start gear longitude (dd)	–124.3065	–124.3162	–124.3315	–124.4786	–124.1499
End gear latitude (dd)	40.0644	40.0614	40.0545	39.9833	39.3347
End gear longitude (dd)	–124.3011	–124.3120	–124.3301	–124.4655	–124.1526
Station	50D	50E	50F	50I	54H
Avg. bottom depth (m)	435.49	506.20	617.81	1,034.30	901.83
Duration (hr)	0.28	0.29	0.31	0.30	0.38
Distance fished (km)	1.10	1.16	1.17	1.24	1.65
Net width (m)	13.38	14.31	14.11	15.42	15.16
Performance	0	0	0	0	0
Species by weight					
Hagfish		0.23	0.63		0.18
Brown cat shark	9.89	16.96	8.32	0.72	0.49
Spiny dogfish					
Skates		1.17		5.67	3.59
Other elasmobranchs	1.40				
Arrowtooth flounder					
Petrale sole					
Dover sole	39.08	50.29	31.13		22.66
Deepsea sole				6.85	10.98
Rex sole	5.47	3.29			
Other flatfish	0.41				
Sablefish	5.91	9.02	12.12	2.43	14.93
Pacific grenadier			1.38	20.40	6.77
Giant grenadier			19.87		8.52
Other grenadier			0.10		
Pacific flatnose	0.10	1.05	1.31	0.90	0.44
Slickheads				3.26	7.71
Eelpouts	7.80	0.75	0.61	2.06	1.70
Snailfish	0.69	0.45	0.10		
Pacific whiting	37.99	10.33	2.04		
Other roundfish				0.22	0.86
Shortspine thornyhead	0.65	4.22	2.25	1.23	9.62
Longspine thornyhead		0.39	10.07	30.77	88.19
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	1.28	1.15			
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	1.36			18.28	20.69
Other invertebrates	17.96	11.61	9.42	35.82	6.23
Total catch weight (kg)	129.99	110.91	99.35	128.61	203.56

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001071	200001001072	200001001073	200001001074	200001001075
Start date and time	9/14/00 9:44	9/14/00 11:56	9/14/00 13:24	9/14/00 15:08	9/15/00 7:07
Start gear latitude (dd)	39.3440	39.3396	39.3586	39.3802	38.6875
Start gear longitude (dd)	–124.1093	–123.9795	–123.9709	–123.9645	–123.7513
End gear latitude (dd)	39.3340	39.3302	39.3485	39.3702	38.6789
End gear longitude (dd)	–124.1089	–123.9801	–123.9703	–123.9642	–123.7451
Station	54G	54C	54B	54A	58A
Avg. bottom depth (m)	755.56	362.51	292.38	215.65	217.01
Duration (hr)	0.31	0.28	0.31	0.29	0.30
Distance fished (km)	1.12	1.05	1.13	1.11	1.10
Net width (m)	14.88	13.16	13.75	13.25	13.69
Performance	0	0	0	0	0
Species by weight					
Hagfish	0.45				
Brown cat shark	2.46				
Spiny dogfish		0.79	15.28	0.52	
Skates		16.65	10.07	13.52	7.58
Other elasmobranchs			13.41	4.51	1.72
Arrowtooth flounder					
Petrale sole				0.59	3.52
Dover sole	57.98	6.80	17.18	6.76	4.06
Deepsea sole	3.24				
Rex sole		25.22	4.20	1.50	28.82
Other flatfish		0.75	4.73	24.11	18.93
Sablefish	1.94	18.66	5.08	91.53	3.54
Pacific grenadier	0.15				
Giant grenadier	4.85				
Other grenadier					
Pacific flatnose	0.20				
Slickheads	3.68				
Eelpouts	1.15	4.61	1.83	2.49	0.10
Snailfish					
Pacific whiting		30.07	46.52	106.89	10.86
Other roundfish	0.71		1.90		
Shortspine thornyhead	2.09	4.95	3.25		
Longspine thornyhead	65.35	0.15			
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish				0.10	1.96
Splitnose rockfish		30.19	35.01	18.59	1.35
Shortbelly rockfish					
Other rockfish		2.11	0.63	37.60	82.09
Grooved tanner crab	10.20	2.80	0.10		
Other invertebrates	12.00	20.16	25.19	4.82	8.99
Total catch weight (kg)	166.45	163.91	184.38	313.53	173.52

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001076	200001001077	200001001079	200001001080	200001001081
Start date and time	9/15/00 9:10	9/15/00 11:56	9/15/00 15:52	9/15/00 18:27	9/16/00 6:58
Start gear latitude (dd)	38.6577	38.6308	38.6470	38.6707	38.0283[b]
Start gear longitude (dd)	–123.7782	–123.7719	–123.8154	–123.8604	–123.5507[a]
End gear latitude (dd)	38.6670	38.6392	38.6382	38.6593	38.0191[b]
End gear longitude (dd)	–123.7878	–123.7810	–123.8106	–123.8558	–123.5463[a]
Station	58C	58F	58H	58J	62I
Avg. bottom depth (m)	364.74	621.46	891.84	1,166.43	
Duration (hr)	0.31	0.30	0.29	0.32	0.34
Distance fished (km)	1.34	1.23	1.08	1.41	1.26
Net width (m)	13.60	14.43	12.81	15.68	
Performance	0	0	0	0	–5.1
Species by weight					
Hagfish		0.10	0.87	0.27	
Brown cat shark		7.85	2.47		
Spiny dogfish	1.94				
Skates	2.44	9.51	4.09	2.95	
Other elasmobranchs	11.75				
Arrowtooth flounder					
Petrale sole					
Dover sole	132.93	5.69	104.89	26.24	
Deepsea sole			4.68	8.36	
Rex sole	56.55	0.19			
Other flatfish	8.19				
Sablefish	1.54	9.34	16.39	3.44	
Pacific grenadier			1.47	119.68	
Giant grenadier		6.36	10.19	31.14	
Other grenadier					
Pacific flatnose		0.98	1.35	7.07	
Slickheads		0.73	5.59	6.52	
Eelpouts	20.20	5.28	1.17		
Snailfish	0.31	0.98			
Pacific whiting	55.31	3.26			
Other roundfish	6.73	0.10	0.13	0.44	
Shortspine thornyhead	20.96	21.26	17.30	28.24	
Longspine thornyhead		27.45	43.91	27.74	
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	1.86				
Darkblotched rockfish	1.08				
Splitnose rockfish	154.33	0.52			
Shortbelly rockfish					
Other rockfish	9.50				
Grooved tanner crab		0.92	18.26	22.28	
Other invertebrates	36.68	6.77	10.07	52.25	
Total catch weight (kg)	522.30	107.29	242.83	336.62	

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001082	200001001083	200001001084	200001001085	200001001086
Start date and time	9/16/00 9:34	9/16/00 12:01	9/16/00 13:40	9/16/00 15:02	9/20/00 7:17
Start gear latitude (dd)	38.0553[b]	38.0839	38.0701	38.0659[a]	37.3021
Start gear longitude (dd)	–123.5508[a]	–123.5316	–123.5269	–123.5237[a]	–122.8548
End gear latitude (dd)	38.0455[b]	38.0750	38.0611	38.0561[a]	37.3121
End gear longitude (dd)	–123.5476[a]	–123.5328	–123.5274	–123.5231[a]	–122.8606
Station	62H	62D	62B	62A	66A
Avg. bottom depth (m)		436.64	296.31	225.25	220.56
Duration (hr)	0.40	0.28	0.29	0.31	0.31
Distance fished (km)	0.00	1.00	1.01	1.11	1.23
Net width (m)		13.37	13.23	12.67	13.75
Performance	–5.1	0	0	0	1.11
Species by weight					
Hagfish					
Brown cat shark		1.29			
Spiny dogfish		1.49			
Skates		14.19	3.93	1.96	0.20
Other elasmobranchs		22.26	77.69	68.40	
Arrowtooth flounder					
Petrale sole					1.77
Dover sole		105.94	46.67	5.73	2.36
Deepsea sole					
Rex sole		58.55	9.81	1.67	13.50
Other flatfish		0.75	17.55	4.69	11.78
Sablefish		4.74	1.52		6.67
Pacific grenadier					
Giant grenadier					
Other grenadier					
Pacific flatnose					
Slickheads					
Eelpouts		5.40	11.05		1.19
Snailfish		0.30			
Pacific whiting		9.62	82.87	2.64	0.50
Other roundfish			3.90	31.30	
Shortspine thornyhead		4.59			
Longspine thornyhead					
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish		5.42			
Darkblotched rockfish					
Splitnose rockfish			110.81		
Shortbelly rockfish				72.95	108.02
Other rockfish		8.86	11.36	116.42	22.98
Grooved tanner crab					
Other invertebrates		14.08	2.01	2.12	4.09
Total catch weight (kg)		257.48	379.17	307.88	173.06

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001087	200001001088	200001001089	200001001090	200001001091
Start date and time	9/20/00 9:56	9/20/00 11:48	9/20/00 14:18	9/20/00 15:51	9/20/00 18:37
Start gear latitude (dd)	37.2752	37.2551	37.3920[a]	37.3877[a]	37.3579
Start gear longitude (dd)	–122.9023	–123.0162	–123.1502[a]	–123.1447[a]	–123.2089
End gear latitude (dd)	37.2851	37.2682	37.3838[a]	37.3789[a]	37.3689
End gear longitude (dd)	–122.9096	–123.0153	–123.1434[a]	–123.1433[a]	–123.2075
Station	66C	66F	66H	66H	66J
Avg. bottom depth (m)	344.12	606.69			1,132.93
Duration (hr)	0.31	0.34	0.37	0.42	0.36
Distance fished (km)	1.29	1.49	0.00	0.89	1.26
Net width (m)	13.97	14.84			15.61
Performance	1.11	0	–5.1	–5.1	1.11
Species by weight					
Hagfish					0.20
Brown cat shark		5.30			2.83
Spiny dogfish					
Skates	4.98	5.08			13.12
Other elasmobranchs	1.80				
Arrowtooth flounder					
Petrale sole	0.60				
Dover sole	37.60	55.61			96.07
Deepsea sole					10.33
Rex sole	6.87	0.20			
Other flatfish	1.35				
Sablefish	8.08	21.89			23.77
Pacific grenadier					183.31
Giant grenadier					64.75
Other grenadier					
Pacific flatnose		0.10			5.49
Slickheads		0.92			16.34
Eelpouts	5.15	1.78			
Snailfish	0.10	0.77			
Pacific whiting	7.43	1.86			
Other roundfish		0.10			0.10
Shortspine thornyhead		9.32			18.13
Longspine thornyhead		53.19			16.01
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish	68.26				
Shortbelly rockfish					
Other rockfish	0.40				
Grooved tanner crab		5.69			3.79
Other invertebrates	11.68	3.01			11.14
Total catch weight (kg)	154.30	164.82			465.38

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001092	200001001093	200001001094	200001001095	200001001096
Start date and time	9/21/00 7:42	9/21/00 10:25	9/21/00 13:04	9/21/00 16:34	9/22/00 7:21
Start gear latitude (dd)	36.7406	36.7482	36.7451	36.6578	35.9726
Start gear longitude (dd)	–122.2928	–122.2808	–122.2373	–122.0195	–121.5642
End gear latitude (dd)	36.7343	36.7375	36.7437	36.6685	35.9807
End gear longitude (dd)	–122.2821	–122.2732	–122.2217	–122.0137	–121.5741
Station	70J	70I	70G	70C	74B
Avg. bottom depth (m)	1,112.18	1,017.35	816.85	336.54	300.13
Duration (hr)	0.36	0.36	0.33	0.34	0.31
Distance fished (km)	1.20	1.42	1.42	1.31	1.26
Net width (m)	15.57	15.39	14.70	13.22	14.01
Performance	0	0	0	5.1	1.11
Species by weight					
Hagfish		0.30	0.10		
Brown cat shark		0.77	0.90		0.40
Spiny dogfish					
Skates	17.79	2.02		69.11	44.56
Other elasmobranchs				75.15	27.45
Arrowtooth flounder					
Petrale sole					
Dover sole	126.10	212.01	89.34	157.92	20.43
Deepsea sole	9.76	12.59			
Rex sole				70.58	2.01
Other flatfish				2.52	2.14
Sablefish	20.78	23.53	18.61	11.86	15.06
Pacific grenadier	70.30	103.02	2.44		
Giant grenadier	5.07	8.37	2.91		
Other grenadier					
Pacific flatnose	8.04	4.27	1.12		
Slickheads	28.95	8.68	22.55		
Eelpouts	0.95	2.12	6.22	18.96	1.01
Snailfish		0.72	1.45		
Pacific whiting	0.91		0.10	35.17	33.33
Other roundfish	0.62	0.20	0.20		
Shortspine thornyhead	14.98	48.08	15.08	66.48	7.33
Longspine thornyhead	21.86	93.03	48.61		
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish				295.11	148.86
Shortbelly rockfish					
Other rockfish				8.03	111.56
Grooved tanner crab	10.61	5.85	32.23	0.30	
Other invertebrates	8.20	21.11	14.59	50.00	94.63
Total catch weight (kg)	344.92	546.67	256.45	861.19	508.77

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001097	200001001098	200001001099	200001001100	200001001101
Start date and time	9/22/00 9:26	9/22/00 11:11	9/22/00 13:23	9/22/00 15:52	9/23/00 7:12
Start gear latitude (dd)	35.9825	35.9868	35.9484	35.9776	35.2949
Start gear longitude (dd)	–121.5849	–121.6237	–121.6138	–121.7196	–121.6861
End gear latitude (dd)	35.9905	35.9938	35.9571	35.9690	35.2843
End gear longitude (dd)	–121.5918	–121.6342	–121.6212	–121.7188	–121.6842
Station	74C	74E	74F	74H	78I
Avg. bottom depth (m)	355.20	500.30	593.36	902.52	1,005.41
Duration (hr)	0.27	0.31	0.30	0.37	0.32
Distance fished (km)	1.09	1.23	1.18	1.41	1.20
Net width (m)	11.82	14.75	14.57	15.17	14.30
Performance	1.11	0	0	0	0
Species by weight					
Hagfish			0.10	0.40	
Brown cat shark	6.30	12.08	2.32	3.75	
Spiny dogfish					
Skates	21.55	9.79	4.00		3.47
Other elasmobranchs	11.61	27.77	11.84		
Arrowtooth flounder					
Petrale sole	0.81				
Dover sole	25.94	52.65	33.64	15.43	17.48
Deepsea sole				3.72	0.50
Rex sole	0.20				
Other flatfish					
Sablefish	12.15	29.52	17.73	30.34	26.08
Pacific grenadier					56.50
Giant grenadier					2.68
Other grenadier					
Pacific flatnose				0.50	2.40
Slickheads				10.29	3.25
Eelpouts	0.41	1.66		5.17	
Snailfish		0.10	0.01	0.10	0.10
Pacific whiting	63.96	65.56	8.10		
Other roundfish	2.30		0.04	0.30	1.53
Shortspine thornyhead	1.36	31.60	26.00	10.48	5.40
Longspine thornyhead		6.12	5.99	143.57	23.54
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	5.10	37.36			
Darkblotched rockfish					
Splitnose rockfish	53.93				
Shortbelly rockfish					
Other rockfish	0.96	3.90			
Grooved tanner crab			1.43	1.86	2.34
Other invertebrates	39.52	50.99	9.41	113.87	4.34
Total catch weight (kg)	246.10	329.10	120.61	339.78	149.61

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001001102	200001001103	200001001104	200001001105	200001001106
Start date and time	9/23/00 9:10	9/23/00 10:44	9/23/00 13:58	9/23/00 16:05	9/23/00 17:47
Start gear latitude (dd)	35.2784[a]	35.3067	35.3264	35.3855	35.2245[b]
Start gear longitude (dd)	–121.6251[a]	–121.6013	–121.3927	–121.2492	–121.0356[b]
End gear latitude (dd)	35.2881[a]	35.2934	35.3154	35.3792	35.2193[b]
End gear longitude (dd)	–121.6189[a]	–121.6012	–121.3900	–121.2384	–121.0343[b]
Station	78H	78H	78G	78D	78A
Avg. bottom depth (m)		909.24	758.28	433.85	
Duration (hr)	0.39	0.38	0.34	0.30	0.30
Distance fished (km)	1.41	1.51	1.25	1.24	1.00
Net width (m)		15.18	15.33	14.50	
Performance	–5.1	0	0	0	0
Species by weight					
Hagfish		0.10			
Brown cat shark			4.86	1.51	
Spiny dogfish					1.16
Skates	0.60	2.36	4.86	24.43	4.67
Other elasmobranchs			0.81	3.42	6.04
Arrowtooth flounder					
Petrale sole					
Dover sole		87.51	24.11	68.37	0.20
Deepsea sole		0.72	1.18		
Rex sole				3.19	0.10
Other flatfish					1.18
Sablefish		105.99	12.85	25.34	
Pacific grenadier		2.41			
Giant grenadier		2.83	1.42		
Other grenadier					
Pacific flatnose	0.39				
Slickheads		5.93	43.07		
Eelpouts			2.04	7.63	2.28
Snailfish		0.10	0.10		0.10
Pacific whiting				30.03	16.31
Other roundfish		1.59	0.10		
Shortspine thornyhead		15.76	17.45	6.27	
Longspine thornyhead		58.89	81.73		
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish				12.82	
Darkblotched rockfish					
Splitnose rockfish				22.06	
Shortbelly rockfish					
Other rockfish				0.69	0.87
Grooved tanner crab		2.55	0.63	1.07	
Other invertebrates		7.60	77.57	135.51	13.13
Total catch weight (kg)	0.99	294.34	272.78	342.34	46.04

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006001	200001006002	200001006003	200001006004	200001006005
Start date and time	7/3/00 6:06	7/3/00 11:33	7/3/00 14:27	7/3/00 16:59	7/4/00 6:05
Start gear latitude (dd)	48.0976	48.1017	48.1097[a]	48.1251	47.5678
Start gear longitude (dd)	–125.6503	–125.8825	–125.8803[a]	–125.7603	–125.0699
End gear latitude (dd)	48.1058	48.0948	48.1081[a]	48.1146	47.5767
End gear longitude (dd)	–125.6553	–125.8953	–121.8904[a]	–125.7568	–125.0772
Station	1A	1H	1I	1C	5C
Avg. bottom depth (m)	211.68	922.11		356.68	371.00
Duration (hr)	0.31	0.44	0.21	0.30	0.32
Distance fished (km)	1.03	1.35	1.11	1.21	1.15
Net width (m)	13.33	15.49		14.14	14.19
Performance	0	0	–5.1	0	0
Species by weight					
Hagfish		1.37			0.21
Brown cat shark		0.66			
Spiny dogfish					
Skates	1.78				
Other elasmobranchs	0.43				0.92
Arrowtooth flounder	54.26			8.92	8.67
Petrale sole					
Dover sole	61.52			64.97	46.88
Deepsea sole		3.93			
Rex sole	7.24			9.61	16.67
Other flatfish	8.79			0.28	0.32
Sablefish	1.67	19.67			1.92
Pacific grenadier		0.94			
Giant grenadier		2.49			
Other grenadier					
Pacific flatnose		0.10			
Slickheads		0.27			
Eelpouts	1.18	1.66		3.22	1.65
Snailfish					
Pacific whiting				1.18	10.42
Other roundfish		0.10			
Shortspine thornyhead		10.37		25.83	12.46
Longspine thornyhead		95.79			
Rougheye rockfish				7.24	22.72
Pacific ocean perch	1.89			77.02	
Aurora rockfish					
Darkblotched rockfish				9.62	
Splitnose rockfish	0.02			1.85	
Shortbelly rockfish					
Other rockfish	1.95			8.19	
Grooved tanner crab		16.63			2.04
Other invertebrates	0.56	4.61		3.83	40.66
Total catch weight (kg)	141.29	158.59		221.76	165.54

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006006	200001006007	200001006008	200001006009	200001006010
Start date and time	7/4/00 8:20	7/4/00 10:31	7/4/00 13:08	7/4/00 18:30	7/5/00 7:47
Start gear latitude (dd)	47.5669	47.5132	47.4931	47.4345[a]	46.8368[a]
Start gear longitude (dd)	–125.0844	–125.1085	–125.0711	–125.2635[a]	–125.2183[a]
End gear latitude (dd)	47.5756	47.5242	47.5021	47.4248[a]	46.8281[a]
End gear longitude (dd)	–125.0917	–125.1074	–125.0757	–125.2640[a]	–125.2147[a]
Station	5D	5F	5H	5I	9I
Avg. bottom depth (m)	453.40	596.71		1,080.70	1,065.00
Duration (hr)	0.32	0.37	0.36	0.45	0.43
Distance fished (km)	1.12	1.24	1.08	1.85	1.71
Net width (m)	14.17	14.15		14.82	11.69
Performance	0	0	–5.1	0	0
Species by weight					
Hagfish	0.20				0.14
Brown cat shark	0.40	1.70			0.35
Spiny dogfish					
Skates					4.47
Other elasmobranchs					
Arrowtooth flounder	3.79	1.35			
Petrale sole					
Dover sole	163.74	85.39		0.58	
Deepsea sole		2.38			2.81
Rex sole	12.81	0.32			
Other flatfish					
Sablefish	14.40				
Pacific grenadier		0.55		7.34	16.33
Giant grenadier		3.75		6.78	24.24
Other grenadier				0.19	
Pacific flatnose	1.08	1.57		0.53	0.22
Slickheads				0.21	
Eelpouts	4.10	0.20			1.13
Snailfish	0.49	0.08		0.00	
Pacific whiting	0.95				
Other roundfish	0.12	0.07		0.29	0.07
Shortspine thornyhead	7.86	1.65			4.84
Longspine thornyhead		34.23		8.13	19.93
Rougheye rockfish	5.52				
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish	3.47				
Grooved tanner crab	1.44	5.53		3.82	5.43
Other invertebrates	43.50	7.40		13.09	26.75
Total catch weight (kg)	263.87	146.17		40.96	106.71

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006011	200001006012	200001006013	200001006014	200001006015
Start date and time	7/15/00 11:27	7/15/00 14:20	7/15/00 16:15	7/6/00 6:09	7/6/00 10:37
Start gear latitude (dd)	46.5213[b]	46.4917[b]	46.4774[b]	46.1310	46.1199
Start gear longitude (dd)	–125.1014[b]	–124.5672[b]	–124.5180[b]	–124.7820	–124.6982
End gear latitude (dd)	46.5264[b]	46.4972[b]	46.4827[b]	46.1206	46.1112
End gear longitude (dd)	–125.1002[b]	–124.5678[b]	–124.5214[b]	–124.7919	–124.7070
Station	9G	9E	9A	13H	13E
Avg. bottom depth (m)		516.54	226.05	913.40	519.17
Duration (hr)	–11.45	0.35	0.31	0.40	0.32
Distance fished (km)	0.00	1.48	1.23	1.51	1.21
Net width (m)		14.75	14.00	15.37	14.44
Performance	0	0	0	5.1	5.1
Species by weight					
Hagfish		0.11		0.10	0.25
Brown cat shark	3.70	3.46		1.22	0.38
Spiny dogfish					
Skates		0.60	10.40		4.33
Other elasmobranchs			6.50		
Arrowtooth flounder		3.79	15.00		1.81
Petrale sole					
Dover sole	1.25	143.01	13.60	5.21	10.22
Deepsea sole	1.55			5.87	
Rex sole		4.09	37.86		1.42
Other flatfish			2.71		
Sablefish	10.46	8.38	4.02	137.24	139.12
Pacific grenadier	1.65				
Giant grenadier	2.77	1.53		5.28	
Other grenadier					
Pacific flatnose	0.92	0.87			
Slickheads	4.01			2.17	
Eelpouts	3.50	5.56	0.17	4.82	0.62
Snailfish		0.44			0.95
Pacific whiting		0.28	0.77		
Other roundfish	0.09		3.24	0.22	0.02
Shortspine thornyhead	5.16	2.46	4.90	51.77	111.51
Longspine thornyhead	39.00	2.87		217.45	0.52
Rougheye rockfish					1.67
Pacific ocean perch			1.59		
Aurora rockfish					
Darkblotched rockfish			8.07		
Splitnose rockfish			65.14		
Shortbelly rockfish					
Other rockfish			45.82		
Grooved tanner crab	35.38	2.00	0.03	11.68	10.15
Other invertebrates	9.24	15.83	61.17	8.24	24.07
Total catch weight (kg)	118.68	195.28	280.99	451.27	307.04

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006016	200001006017	200001006018	200001006019	200001006020
Start date and time	7/6/00 16:02	7/7/00 5:49	7/7/00 8:12	7/7/00 10:38	7/7/00 13:29
Start gear latitude (dd)	46.2228[a]	45.5470	45.5402	45.5272	45.4743
Start gear longitude (dd)	–124.5311[a]	–124.8711	–124.8396	–124.8099	–124.5126
End gear latitude (dd)	46.2263[a]	45.5601	45.5561	45.5434	45.4637
End gear longitude (dd)	–124.5183[a]	–124.8626	–124.8388	–124.8096	–124.5064
Station	13F	17J	17I	17H	17D
Avg. bottom depth (m)		1,196.93	1,061.64	916.93	459.58
Duration (hr)	0.35	0.43	0.48	0.46	0.30
Distance fished (km)	0.00	1.67	1.89	1.94	1.28
Net width (m)		13.34	14.05	14.28	14.13
Performance	–6.3	0	0	0	0
Species by weight					
Hagfish		0.27	0.10	0.32	
Brown cat shark			0.35	1.12	1.31
Spiny dogfish					
Skates		2.23	8.69		1.05
Other elasmobranchs					
Arrowtooth flounder					5.15
Petrale sole					
Dover sole				10.77	17.21
Deepsea sole			3.27	4.05	
Rex sole					0.56
Other flatfish					
Sablefish		25.90	5.91	15.97	29.44
Pacific grenadier			35.89	1.60	
Giant grenadier		38.92	13.36	7.99	
Other grenadier			0.22		
Pacific flatnose		2.91	1.13	0.28	
Slickheads		0.74	0.42	1.10	
Eelpouts		0.36	1.42	1.50	3.48
Snailfish				0.00	0.19
Pacific whiting		40.39			2.63
Other roundfish		0.39	0.44	0.24	0.00
Shortspine thornyhead		7.16	0.81	4.10	24.97
Longspine thornyhead		29.69	57.42	55.98	0.25
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab		10.19	21.80	10.39	0.84
Other invertebrates		134.83	58.32	5.17	21.67
Total catch weight (kg)		293.99	209.55	120.58	108.76

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006021	200001006022	200001006023	200001006024	200001006025
Start date and time	7/7/00 14:46	7/9/00 6:10	7/9/00 8:45	7/9/00 11:47	7/9/00 15:21
Start gear latitude (dd)	45.4523	44.7978	44.7840	44.7887	44.7899
Start gear longitude (dd)	–124.4180	–124.5664	–124.7908	–125.0107	–125.0271
End gear latitude (dd)	45.4416	44.7877	44.7724	44.7743	44.7777
End gear longitude (dd)	–124.4121	–124.5724	–124.7921	–125.0090	–125.0280
Station	17A	21A	21D	21H	21I
Avg. bottom depth (m)	222.68	232.99	437.00	917.91	1,057.81
Duration (hr)	0.29	0.29	0.32	0.45	0.39
Distance fished (km)	1.28	1.22	1.30	1.63	1.41
Net width (m)	14.09	14.40	14.99	14.82	15.21
Performance	0	0	0	0	0
Species by weight					
Hagfish				0.70	0.32
Brown cat shark			1.12	3.65	0.85
Spiny dogfish					
Skates	9.20	23.81	10.17		
Other elasmobranchs			0.39		
Arrowtooth flounder	25.97	37.95	2.87		
Petrale sole					
Dover sole	24.45	37.47	18.76		
Deepsea sole				1.98	0.60
Rex sole	1.72	8.23	1.08	0.10	
Other flatfish	1.28	2.73	0.22		
Sablefish	2.97	1.42	55.20	10.04	1.73
Pacific grenadier				1.12	6.56
Giant grenadier				13.46	7.90
Other grenadier					
Pacific flatnose				0.09	1.16
Slickheads				4.57	1.30
Eelpouts	0.30	1.67	9.63	6.90	17.14
Snailfish			0.34		0.00
Pacific whiting		2.42	17.26		
Other roundfish	2.28	4.27	0.32	0.02	0.05
Shortspine thornyhead	3.22	0.73	10.06	2.70	7.60
Longspine thornyhead			0.16	31.01	33.90
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish			8.47		
Darkblotched rockfish					
Splitnose rockfish	3.93	0.27			
Shortbelly rockfish					
Other rockfish	7.06	1.55			
Grooved tanner crab			0.34	9.10	25.21
Other invertebrates	104.81	5.13	10.72	5.29	55.22
Total catch weight (kg)	187.19	127.65	147.11	90.73	159.54

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006026	200001006027	200001006028	200001006029	200001006030
Start date and time	7/9/00 18:12	7/10/00 7:15	7/10/00 9:34	7/10/00 12:32	7/10/00 14:48
Start gear latitude (dd)	44.7660[a]	44.2346	44.2366	44.2049	44.1970
Start gear longitude (dd)	–125.0660[a]	–125.0607	–125.0316	–125.0116	–125.0031
End gear latitude (dd)	44.7582	44.2445	44.2480	44.2160	44.2096
End gear longitude (dd)	–125.0704[a]	–125.0739	–125.0479	–125.0136	–125.0034
Station	21J	25I	25H	25F	25E
Avg. bottom depth (m)		1,104.63	966.25	653.93	513.28
Duration (hr)	0.34	0.43	0.47	0.37	0.34
Distance fished (km)	0.00	1.59	1.94	1.43	1.43
Net width (m)		15.17	13.07	14.47	14.21
Performance	–5.1	5.1	0	0	0
Species by weight					
Hagfish			0.73	0.50	0.10
Brown cat shark				8.12	12.90
Spiny dogfish					
Skates		3.26	5.17	4.02	1.68
Other elasmobranchs					
Arrowtooth flounder					4.27
Petrale sole					
Dover sole			5.65	50.12	121.44
Deepsea sole		2.42	3.44	0.62	
Rex sole				4.58	3.20
Other flatfish					0.03
Sablefish		17.50	25.49	55.66	19.20
Pacific grenadier		116.57	21.14	0.69	
Giant grenadier		54.72	32.19	76.83	2.07
Other grenadier					
Pacific flatnose		2.82	1.05	4.19	1.81
Slickheads		3.59	11.16	0.25	
Eelpouts		1.76	1.97	9.91	1.65
Snailfish				0.86	1.69
Pacific whiting					
Other roundfish		0.10	0.07	1.04	0.01
Shortspine thornyhead		19.47	27.24	6.59	3.32
Longspine thornyhead		57.46	109.13	21.16	0.41
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab		29.14	19.87	41.14	4.80
Other invertebrates		9.14	8.96	24.75	17.26
Total catch weight (kg)		317.95	273.26	311.03	195.84

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006031	200001006032	200001006033	200001006034	200001006035
Start date and time	7/10/00 16:37	7/12/00 6:53	7/12/00 9:33	7/12/00 12:19	7/12/00 15:33
Start gear latitude (dd)	44.1813	43.4551	43.4978	43.5183	43.5635
Start gear longitude (dd)	–124.9852	–124.6255	–124.7234	–124.7689	–124.9084
End gear latitude (dd)	44.1920	43.4659	43.5104	43.5325	43.5521
End gear longitude (dd)	–124.9857	–124.6202	–124.7182	–124.7701	–124.9136
Station	25C	29A	29E	29F	29G
Avg. bottom depth (m)	372.58	215.59	514.11	586.04	739.65
Duration (hr)	0.30	0.30	0.33	0.36	0.34
Distance fished (km)	1.26	1.28	1.50	1.65	1.39
Net width (m)	14.58	14.69	15.42	15.36	14.69
Performance	0	0	0	0	0
Species by weight					
Hagfish				0.20	0.96
Brown cat shark			1.44	0.82	2.24
Spiny dogfish		0.23			
Skates	18.11	13.42	10.46	3.50	0.20
Other elasmobranchs	8.52				
Arrowtooth flounder	10.17	2.88	5.83		
Petrale sole		0.92			
Dover sole	144.95	29.40	37.26	43.72	35.14
Deepsea sole					3.21
Rex sole	11.15	16.50	20.01	0.15	
Other flatfish	0.02	2.22	0.34		
Sablefish	81.27	6.64	1.29	20.67	28.59
Pacific grenadier					0.65
Giant grenadier				0.20	5.56
Other grenadier					
Pacific flatnose	0.06		0.79	0.24	0.10
Slickheads					
Eelpouts	9.54	0.11	8.81	4.16	0.33
Snailfish			1.58	0.34	
Pacific whiting	9.54	32.27			0.58
Other roundfish	0.03	0.03	0.02	0.13	0.51
Shortspine thornyhead	2.10	6.48	2.96	9.33	1.23
Longspine thornyhead			2.91	31.44	44.25
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish		1.17			
Splitnose rockfish		25.58	0.08		
Shortbelly rockfish					
Other rockfish		1.84			
Grooved tanner crab	3.13		0.85		18.12
Other invertebrates	22.38	34.25	29.21	7.32	8.02
Total catch weight (kg)	320.97	173.94	123.84	122.22	149.69

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006036	200001006037	200001006038	200001006039	200001006040
Start date and time	7/12/00 17:47	7/13/00 6:05	7/13/00 7:51	7/13/00 10:09	7/13/00 12:29
Start gear latitude (dd)	43.5203	42.8926	42.8723	42.9040	42.9081
Start gear longitude (dd)	–124.9570	–124.8984	–124.9061	–124.9393	–124.9708
End gear latitude (dd)	43.5072	42.9048	42.8853	42.8911	42.8941
End gear longitude (dd)	–124.9541	–124.9047	–124.9077	–124.9403	–124.9734
Station	29H	33C	33D	33F	33H
Avg. bottom depth (m)	922.91	376.59	453.94	629.60	937.70
Duration (hr)	0.39	0.32	0.32	0.34	0.38
Distance fished (km)	1.49	1.46	1.50	1.45	1.61
Net width (m)	15.18	14.16	14.37	13.46	15.30
Performance	0	0	0	1.11	5.1
Species by weight					
Hagfish	0.60		0.54	0.02	1.00
Brown cat shark	1.91	2.03	0.98	1.02	1.53
Spiny dogfish					
Skates	20.15	19.89			
Other elasmobranchs		3.51	0.17		1.12
Arrowtooth flounder		0.84			
Petrale sole					
Dover sole		51.42	37.01	100.32	18.72
Deepsea sole	3.62				5.47
Rex sole		5.08	6.96	7.32	
Other flatfish		2.63	0.01		
Sablefish	6.79	24.47	32.32	12.07	42.38
Pacific grenadier	12.76			0.47	0.82
Giant grenadier	7.73		1.44	1.83	38.60
Other grenadier					
Pacific flatnose	0.82			1.25	0.10
Slickheads	6.78			2.20	5.76
Eelpouts	1.62	3.25	9.98	5.29	0.53
Snailfish		0.02	0.20		
Pacific whiting		3.14			
Other roundfish	0.39	0.01		0.05	0.49
Shortspine thornyhead		0.61	0.75	9.40	5.34
Longspine thornyhead	32.98			9.58	83.84
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish			0.64		
Darkblotched rockfish		0.88			
Splitnose rockfish		0.67	0.05		
Shortbelly rockfish					
Other rockfish		0.28			
Grooved tanner crab	28.56	0.01	1.24	3.88	46.68
Other invertebrates	5.52	29.24	31.77	10.77	10.16
Total catch weight (kg)	130.24	147.98	124.07	165.47	262.55

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006041	200001006042	200001006043	200001006044	200001006045
Start date and time	7/13/00 15:11	7/14/00 7:54	7/14/00 11:02	7/14/00 13:47	7/14/00 16:26
Start gear latitude (dd)	42.9133	42.2223	42.2120	42.1767	42.1311
Start gear longitude (dd)	–124.9883	–124.8711	–124.8279	–124.7214	–124.6341
End gear latitude (dd)	42.9026	42.2379	42.2247	42.1874	42.1422
End gear longitude (dd)	–124.9888	–124.8728	–124.8335	–124.7322	–124.6363
Station	33I	37H	37G	37F	37D
Avg. bottom depth (m)	1,090.31	914.01	777.24	581.20	432.30
Duration (hr)	0.30	0.44	0.39	0.35	0.33
Distance fished (km)	1.21	1.80	1.50	1.56	1.28
Net width (m)	15.13	15.36	15.23	15.43	14.89
Performance	5.1	0	0	0	0
Species by weight					
Hagfish	1.56	0.67	0.41	0.21	
Brown cat shark	0.63	7.45	2.48	0.97	0.97
Spiny dogfish					
Skates	3.79	3.30		2.37	
Other elasmobranchs	0.90	1.53	0.36	0.57	0.60
Arrowtooth flounder					
Petrale sole					
Dover sole	10.78	29.60	17.59	55.04	11.16
Deepsea sole	8.78	6.26	5.98	1.58	
Rex sole				21.31	2.56
Other flatfish				0.01	
Sablefish	10.70	22.70	19.36	5.20	4.12
Pacific grenadier	43.90	4.39	1.23	0.24	
Giant grenadier	12.49	6.65			
Other grenadier		0.20			
Pacific flatnose	4.17	0.01	0.05	1.27	
Slickheads	11.36	7.78	4.71		
Eelpouts	3.53	1.38	1.05	16.67	6.02
Snailfish			0.05	0.55	0.22
Pacific whiting			0.58		1.35
Other roundfish	1.12	0.07	0.40	25.54	
Shortspine thornyhead	29.68	5.07	6.54	7.05	11.62
Longspine thornyhead	75.33	128.41	130.51	33.26	
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					2.68
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	13.14	35.42	24.71	4.77	
Other invertebrates	11.59	8.24	13.44	15.92	135.31
Total catch weight (kg)	243.45	269.13	229.45	192.53	176.61

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006046	200001006047	200001006048	200001006049	200001006050
Start date and time	7/14/00 18:33	7/15/00 9:43	7/15/00 12:27	7/15/00 15:32	7/18/00 6:15
Start gear latitude (dd)	42.0948	41.4954	41.4979	41.4944[b]	40.814[b]
Start gear longitude (dd)	–124.5881	–124.6093	–124.5680	–124.5443[b]	–124.4435[b]
End gear latitude (dd)	42.1053	41.5030	41.5114	41.5035[b]	40.8058[b]
End gear longitude (dd)	–124.5890	–124.6250	–124.5717	–124.5485[b]	–124.4502[b]
Station	37A	41H	41G	41E	45A
Avg. bottom depth (m)	226.00	924.34	734.65		220.50
Duration (hr)	0.29	0.41	0.39	0.32	0.28
Distance fished (km)	1.18	1.63	1.59	1.14	1.12
Net width (m)	14.25	15.57	15.12		13.62
Performance	0	0	0	–5.1	0
Species by weight					
Hagfish		0.17	0.38		
Brown cat shark		8.63	11.44		
Spiny dogfish					
Skates	24.84		10.18		9.07
Other elasmobranchs	3.64	2.36	5.89		0.57
Arrowtooth flounder	1.43				2.17
Petrale sole					
Dover sole	66.71	13.74	88.96		27.72
Deepsea sole		7.13	2.67		
Rex sole	26.64				22.08
Other flatfish	2.25				6.55
Sablefish	5.10	12.19	75.02		3.94
Pacific grenadier		3.77	0.03		
Giant grenadier		23.57	49.86		
Other grenadier					
Pacific flatnose		0.14	0.15		
Slickheads		0.94	2.90		
Eelpouts	3.71	5.86	3.97		0.10
Snailfish	0.11	0.04			
Pacific whiting	6.66				3.87
Other roundfish	14.30	0.24	0.15		
Shortspine thornyhead	0.12		0.49		0.41
Longspine thornyhead		84.22	101.53		
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	0.43				
Darkblotched rockfish	1.38				1.85
Splitnose rockfish	5.13				2.91
Shortbelly rockfish					
Other rockfish	2.62				37.26
Grooved tanner crab		19.57	81.92		
Other invertebrates	160.87	16.28	3.18		40.93
Total catch weight (kg)	325.94	198.85	438.72		159.43

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006051	200001006052	200001006053	200001006054	200001006055
Start date and time	7/18/00 8:48	7/18/00 11:56	7/18/00 14:19	7/18/00 17:27	7/19/00 6:35
Start gear latitude (dd)	40.8288	40.7988	40.7848	40.7872	40.1288
Start gear longitude (dd)	–124.5212	–124.7096	–124.7344	–124.7537	–125.0280
End gear latitude (dd)	40.8168	40.7855	40.7693	40.7729	40.1139
End gear longitude (dd)	–124.5232	–124.7159	–124.7346	–124.7528	–125.0215
Station	45E	45H	45I	45J	49J
Avg. bottom depth (m)	511.22	934.44	1,079.73	1,207.49	1,208.61
Duration (hr)	0.33	0.40	0.45	0.41	0.43
Distance fished (km)	1.38	1.61	1.74	1.60	1.78
Net width (m)	14.59	14.87	13.46	13.60	14.28
Performance	0	0	1.1	0	0
Species by weight					
Hagfish	0.14	0.22			
Brown cat shark					
Spiny dogfish	3.38	1.36			
Skates	12.03		17.24	9.00	9.93
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	27.53	53.45	20.94	3.65	
Deepsea sole		4.92	9.41	11.70	0.77
Rex sole	44.21				
Other flatfish					
Sablefish	9.71	12.23	14.76	14.24	22.32
Pacific grenadier		9.88	215.69	196.84	57.09
Giant grenadier			5.08	52.11	61.84
Other grenadier					
Pacific flatnose	0.18	1.09	1.48	8.48	18.79
Slickheads		12.45	1.04	1.04	6.65
Eelpouts	18.50	3.79	3.70		1.11
Snailfish		0.16			
Pacific whiting					
Other roundfish	0.04	0.21	0.28	0.21	3.09
Shortspine thornyhead	5.30	5.38	12.37	16.87	6.97
Longspine thornyhead	2.30	71.75	70.74	74.63	22.55
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish	1.17				
Grooved tanner crab		125.20	41.67	6.92	11.64
Other invertebrates	85.01	6.91	85.72	123.45	29.80
Total catch weight (kg)	209.50	309.00	500.12	519.14	252.55

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006056	200001006057	200001006058	200001006059	200001006060
Start date and time	7/19/00 11:34	7/19/00 13:51	7/19/00 16:06	7/20/00 6:54	7/20/00 9:02
Start gear latitude (dd)	40.2081	40.2089	40.1589	39.5068	39.4874
Start gear longitude (dd)	–124.6065	–124.5391	–124.4100	–123.9734	–124.0071
End gear latitude (dd)	40.2144	40.2137	40.1642	39.5187	39.4987
End gear longitude (dd)	–124.6219	–124.5539	–124.4230	–123.9727	–124.0110
Station	49F	49E	49D	53B	53E
Avg. bottom depth (m)	621.01	502.11	437.52	294.37	503.40
Duration (hr)	0.35	0.33	0.31	0.32	0.34
Distance fished (km)	1.54	1.41	1.35	1.33	1.42
Net width (m)	14.53	13.78	14.96	14.63	15.13
Performance	0	0	0	0	0
Species by weight					
Hagfish					
Brown cat shark	1.87	2.83	4.31		3.14
Spiny dogfish					
Skates	11.63	5.63	5.80	30.00	3.45
Other elasmobranchs		3.02	0.32	3.22	
Arrowtooth flounder				2.06	
Petrale sole					
Dover sole	158.98	94.95	24.05	18.31	24.17
Deepsea sole					
Rex sole	0.71	2.24	5.37	5.52	0.75
Other flatfish					
Sablefish	16.57	15.48	13.39	7.36	
Pacific grenadier		0.01			
Giant grenadier					
Other grenadier					0.01
Pacific flatnose	1.34	0.56	0.54		
Slickheads	2.72	0.68			
Eelpouts	15.78	7.54	4.79	1.59	4.27
Snailfish	0.17	0.18	0.47		0.02
Pacific whiting			1.85	3.17	1.42
Other roundfish		0.01	0.01		0.00
Shortspine thornyhead	2.10	2.01	1.28	2.15	1.95
Longspine thornyhead	6.94				11.03
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish		1.81	1.37		1.21
Darkblotched rockfish					
Splitnose rockfish				4.41	
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	0.46		0.20		
Other invertebrates	14.36	5.08	25.45	15.75	16.62
Total catch weight (kg)	233.63	142.03	89.20	93.54	68.05

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006061	200001006062	200001006063	200001006064	200001006065
Start date and time	7/20/00 11:03	7/20/00 13:13	7/20/00 16:02	7/21/00 6:21	7/21/00 9:37
Start gear latitude (dd)	39.4573	39.4326	39.4451	38.8380[b]	38.8311
Start gear longitude (dd)	–124.0484	–124.0977	–124.1563	–123.9759[b]	–123.9410
End gear latitude (dd)	39.4697	39.4448	39.4326	38.8414[b]	38.8404
End gear longitude (dd)	–124.0475	–124.1045	–124.1521	–123.9859[b]	–123.9585
Station	53F	53G	53H	57I	57H
Avg. bottom depth (m)	628.57	773.88	917.03		958.25
Duration (hr)	0.38	0.40	0.38	0.43	0.42
Distance fished (km)	1.39	1.52	1.47	1.07	1.91
Net width (m)	15.51	15.23	14.88		13.97
Performance	0	0	0	–5.1	0
Species by weight					
Hagfish		0.10	0.30		0.62
Brown cat shark	5.22	4.95	3.51		5.03
Spiny dogfish					
Skates	0.75				5.27
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	18.07	31.74	14.88		116.53
Deepsea sole		3.57	4.49		9.26
Rex sole					
Other flatfish					
Sablefish	2.32	9.37	7.71		18.16
Pacific grenadier	0.53	1.84	1.38		147.49
Giant grenadier	1.01		3.58		21.15
Other grenadier					
Pacific flatnose	0.44	0.86	0.45		4.63
Slickheads	3.57	4.48	1.74		10.37
Eelpouts	0.49	0.75	1.75		13.66
Snailfish	0.10				
Pacific whiting					
Other roundfish	0.32	0.17	0.16		0.01
Shortspine thornyhead	2.53	3.24	5.05		24.28
Longspine thornyhead	23.93	60.71	61.15		60.29
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	26.93	46.57	8.96		37.46
Other invertebrates	5.34	31.79	10.49		8.10
Total catch weight (kg)	91.55	200.14	125.60		482.31

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006066	200001006067	200001006068	200001006069	200001006070
Start date and time	7/21/00 11:53	7/21/00 13:58	7/21/00 16:21	7/22/00 6:46	7/22/00 9:45
Start gear latitude (dd)	38.8491	38.8668	38.7609	38.0941	38.1373
Start gear longitude (dd)	–123.9328	–123.9225	–123.8166	–123.5537	–123.4777
End gear latitude (dd)	38.8578	38.8752	38.7698	38.1033	38.1483
End gear longitude (dd)	–123.9421	–123.9332	–123.8238	–123.5646	–123.4814
Station	57D	57B	57A	61H	61D
Avg. bottom depth (m)	428.35	296.69	210.49	934.39	428.87
Duration (hr)	0.31	0.31	0.31	0.39	0.32
Distance fished (km)	1.31	1.37	1.24	1.51	1.34
Net width (m)	14.06	14.43	14.03	14.16	13.50
Performance	0	0	0	0	0
Species by weight					
Hagfish				0.20	
Brown cat shark	7.77			3.30	0.40
Spiny dogfish		2.04	177.47		0.78
Skates	23.51	22.76	2.19	2.81	23.23
Other elasmobranchs	8.90	19.05	0.63		4.74
Arrowtooth flounder					
Petrale sole					
Dover sole	29.28	115.93	6.51	147.56	70.12
Deepsea sole				6.49	
Rex sole	22.33	16.02	0.26		74.97
Other flatfish	0.92	3.22	1.97		0.38
Sablefish	17.08			21.38	8.03
Pacific grenadier				40.20	5.19
Giant grenadier				17.83	
Other grenadier				0.10	
Pacific flatnose				1.85	
Slickheads				9.54	
Eelpouts	11.02	4.62	0.36	8.29	10.03
Snailfish					
Pacific whiting	3.63	25.50	14.02		2.12
Other roundfish		0.03		0.12	
Shortspine thornyhead	1.96		0.47	23.65	12.35
Longspine thornyhead				72.02	
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	2.89				10.95
Darkblotched rockfish		2.69			
Splitnose rockfish		53.72	9.32		
Shortbelly rockfish					
Other rockfish	2.28	7.25	30.39		8.81
Grooved tanner crab	0.50			18.41	
Other invertebrates	39.30	39.54	7.10	13.33	16.84
Total catch weight (kg)	171.37	312.37	250.69	387.08	248.94

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006071	200001006072	200001006073	200001006074	200001006075
Start date and time	7/22/00 11:44	7/26/00 7:07	7/26/00 9:33	7/26/00 12:12	7/26/00 14:30
Start gear latitude (dd)	38.1357	37.5059	37.4897	37.4925	37.4719
Start gear longitude (dd)	–123.4568	–122.9766	–122.9821	–123.0022	–123.0553
End gear latitude (dd)	38.1454	37.5153	37.4972	37.5020	37.4851
End gear longitude (dd)	–123.4610	–122.9830	–122.9910	–123.0083	–123.0533
Station	61B	65A	65B	65C	65F
Avg. bottom depth (m)	293.86	201.68	290.94	374.40	606.16
Duration (hr)	0.30	0.28	0.29	0.29	0.35
Distance fished (km)	1.20	1.21	1.21	1.25	1.48
Net width (m)	13.38	13.16	12.20	13.75	14.58
Performance	1.11	0	0	0	0
Species by weight					
Hagfish					
Brown cat shark				0.20	2.83
Spiny dogfish	12.05			1.53	
Skates	0.14	1.33	4.63	17.77	10.43
Other elasmobranchs	2.24	3.25	0.56	5.97	
Arrowtooth flounder					
Petrale sole		1.95			
Dover sole	20.23	46.96	162.88	161.23	73.40
Deepsea sole					1.06
Rex sole	9.43	15.75	33.36	1.78	
Other flatfish	1.21	4.03	0.90		
Sablefish		1.49	7.72		30.05
Pacific grenadier					
Giant grenadier					1.71
Other grenadier					
Pacific flatnose					0.05
Slickheads					0.43
Eelpouts		0.14	8.15	10.10	6.04
Snailfish					
Pacific whiting	3.11	25.80	26.83	32.08	
Other roundfish	0.41	0.26			
Shortspine thornyhead	2.33		2.26	9.68	8.91
Longspine thornyhead					25.74
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish				10.91	
Darkblotched rockfish	8.44	0.10	0.45		
Splitnose rockfish	129.64	1.71	90.21	6.08	
Shortbelly rockfish		2.74			
Other rockfish	10.04	96.22	16.27	0.36	
Grooved tanner crab					
Other invertebrates	4.01	2.05	8.22	11.43	7.88
Total catch weight (kg)	203.28	203.78	362.44	269.12	168.53

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006076	200001006077	200001006078	200001006079	200001006080
Start date and time	7/26/00 17:00	7/27/00 7:06	7/27/00 10:49	7/27/00 13:21	7/27/00 15:57
Start gear latitude (dd)	37.4556	36.9049[b]	36.7701	36.7744	36.7929
Start gear longitude (dd)	–123.1077	–122.5020[b]	–122.2523	–122.2190	–122.1825
End gear latitude (dd)	37.4682	36.9046[b]	36.7819	36.7842	36.8002
End gear longitude (dd)	–123.1104	–122.5130[b]	–122.2581	–122.2282	–122.1922
Station	65G	69I	69G	69F	69D
Avg. bottom depth (m)	805.71		787.83	641.94	464.78
Duration (hr)	0.38	0.35	0.37	0.34	0.29
Distance fished (km)	1.44	1.10	1.43	1.42	1.23
Net width (m)	14.58		13.91	14.21	13.65
Performance	1.11	–5.1	0	0	0
Species by weight					
Hagfish	0.15				
Brown cat shark	3.37		10.91	17.27	5.35
Spiny dogfish					
Skates				2.91	42.37
Other elasmobranchs					3.47
Arrowtooth flounder					
Petrale sole					
Dover sole	135.03		37.37	231.67	196.62
Deepsea sole	5.87				
Rex sole					25.59
Other flatfish					
Sablefish	12.26		7.60	7.48	4.27
Pacific grenadier	0.49				
Giant grenadier			1.86		
Other grenadier					
Pacific flatnose	0.56		0.10	0.30	
Slickheads	14.38		1.31	2.14	
Eelpouts	1.59				7.34
Snailfish	0.10		1.64	5.40	
Pacific whiting				0.17	5.35
Other roundfish	0.11			0.10	
Shortspine thornyhead	8.89		8.92	8.13	0.56
Longspine thornyhead	63.17		63.83	19.49	2.57
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					4.98
Grooved tanner crab	7.46		67.38	18.44	0.82
Other invertebrates	13.82		11.41	9.59	10.70
Total catch weight (kg)	267.25		212.33	323.09	309.99

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006081	200001006082	200001006083	200001006084	200001006085
Start date and time	7/27/00 18:11	7/28/00 7:28	7/28/00 9:55	7/28/00 13:58	7/28/00 16:08
Start gear latitude (dd)	36.8336	36.2170	36.2312	36.2260	36.2249[b]
Start gear longitude (dd)	–122.1603	–122.2630	–122.2451	–121.9608	–121.9630[b]
End gear latitude (dd)	36.8433	36.2263	36.2403	36.2293	36.2285[b]
End gear longitude (dd)	–122.1644	–122.2745	–122.2563	–121.9733	–121.9746[b]
Station	69B	73J	73I	73D	73C
Avg. bottom depth (m)	290.90	1,229.97	1,057.76	454.58	
Duration (hr)	0.29	0.38	0.42	0.30	0.30
Distance fished (km)	1.14	1.50	1.49	1.22	1.23
Net width (m)	13.02	15.34	15.12	11.91	
Performance	0	0	0	0	–5.1
Species by weight					
Hagfish			0.14		
Brown cat shark	0.10	6.36	3.51	2.13	
Spiny dogfish	0.18				
Skates	42.00	0.71	0.01	18.73	
Other elasmobranchs	3.08			25.31	
Arrowtooth flounder					
Petrale sole					
Dover sole	106.98	1.24	1.09	207.03	
Deepsea sole		1.53			
Rex sole	4.54			8.97	
Other flatfish	8.53				
Sablefish	8.69	3.41	4.64	16.13	
Pacific grenadier		125.40	137.57	4.54	
Giant grenadier		17.43	2.85		
Other grenadier					
Pacific flatnose		11.96	2.43		
Slickheads		10.75	9.15		
Eelpouts	5.13	1.19		2.36	
Snailfish					
Pacific whiting	16.25			9.95	
Other roundfish		0.53	7.99		
Shortspine thornyhead	1.24		24.12	4.62	
Longspine thornyhead		4.58	37.14		
Rougheye rockfish	0.20				
Pacific ocean perch					
Aurora rockfish				26.84	
Darkblotched rockfish					
Splitnose rockfish	93.64				
Shortbelly rockfish					
Other rockfish	15.62			10.09	
Grooved tanner crab		0.18	4.73		
Other invertebrates	60.46	32.74	9.06	10.91	
Total catch weight (kg)	366.64	218.01	244.43	347.61	

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001006086	200001006087	200001006088	200001006089	200001006090
Start date and time	7/28/00 18:15	7/29/00 7:12	7/29/00 9:56	7/29/00 12:06	7/29/00 14:00
Start gear latitude (dd)	36.2305	35.4913	35.4749	35.4583	35.4259
Start gear longitude (dd)	–121.9603	–121.5545	–121.4374	–121.2727	–121.1368
End gear latitude (dd)	36.2337	35.4974	35.4834	35.4488	35.4351
End gear longitude (dd)	–121.9723	–121.5682	–121.4472	–121.2671	–121.1478
Station	73B	77H	77G	77D	77B
Avg. bottom depth (m)	301.63	921.42	759.32	434.19	298.46
Duration (hr)	0.28	0.37	0.35	0.28	0.33
Distance fished (km)	1.15	1.46	1.39	1.18	1.46
Net width (m)	13.44	14.75	15.22	14.19	12.38
Performance	0	0	0	0	1.11
Species by weight					
Hagfish		0.04	0.28		
Brown cat shark		2.17	3.11	3.96	
Spiny dogfish					30.39
Skates	11.88	2.25		21.98	8.99
Other elasmobranchs	77.87			21.10	1.48
Arrowtooth flounder					
Petrale sole	0.86				
Dover sole	25.26	55.85	13.69	115.47	19.97
Deepsea sole		8.91			
Rex sole	6.33			2.91	1.02
Other flatfish	33.64				1.11
Sablefish	1.09	23.58	4.15	11.29	3.91
Pacific grenadier		1.43			
Giant grenadier		9.96	2.78		
Other grenadier	0.17				
Pacific flatnose			0.04		
Slickheads		19.92	3.11		
Eelpouts	2.74	23.56	1.07	0.89	3.55
Snailfish	0.36	0.75	0.10	0.10	
Pacific whiting	0.25			2.66	27.54
Other roundfish	1.19	0.42	0.01		
Shortspine thornyhead	11.19	24.29	19.64	12.90	
Longspine thornyhead		94.25	61.56		
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish				18.01	
Darkblotched rockfish					
Splitnose rockfish	57.31				18.05
Shortbelly rockfish					0.14
Other rockfish	36.75			1.79	35.98
Grooved tanner crab		1.62	0.41		
Other invertebrates	8.86	7.12	57.75	43.55	29.05
Total catch weight (kg)	275.75	276.12	167.70	256.61	181.18

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007001	200001007002	200001007003	200001007004	200001007005
Start date and time	7/3/00 7:10	7/3/00 11:55	7/3/00 15:36	7/3/00 19:16	7/3/00 20:39
Start gear latitude (dd)	47.8532[b]	47.7943	47.7970	47.8354	47.8401
Start gear longitude (dd)	–125.7208[b]	–125.5312	–125.4188	–125.1292	–125.1747
End gear latitude (dd)	47.8496[b]	47.8077	47.8083	47.8416	47.8333
End gear longitude (dd)	–125.7228[b]	–125.5181	–125.4090	–125.1379	–125.1598
Station	3J	3I	3G	3B	3B
Avg. bottom depth (m)	1,171.29	1,088.84	752.06	275.23	319.08
Duration (hr)	0.58	0.47	0.47	0.26	0.31
Distance fished (km)	0.00	1.82	1.57	0.96	1.37
Net width (m)	14.79	15.93	14.89	15.49	14.93
Performance	1.11	5.1	0	0	0
Species by weight					
Hagfish		0.62	0.88		5.85
Brown cat shark		2.80	3.86		5.51
Spiny dogfish					
Skates	1.43	7.05	0.96	0.80	23.93
Other elasmobranchs					
Arrowtooth flounder					46.41
Petrale sole					
Dover sole			43.10		22.15
Deepsea sole	6.31	12.76	2.35		
Rex sole					1.58
Other flatfish					0.42
Sablefish		2.81	30.02		21.41
Pacific grenadier	31.56	22.86	3.62		
Giant grenadier	9.66	36.04	15.52		
Other grenadier	0.27	0.86	1.44		
Pacific flatnose		1.39	0.88		
Slickheads		0.74	0.61		
Eelpouts		3.25	18.89		4.74
Snailfish					
Pacific whiting					5.73
Other roundfish		0.02	0.10		12.57
Shortspine thornyhead	1.61	13.67	18.42		4.14
Longspine thornyhead	3.41	118.63	74.22		
Rougheye rockfish					1.62
Pacific ocean perch					2.01
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					0.86
Shortbelly rockfish					
Other rockfish					0.36
Grooved tanner crab		19.89	43.01		
Other invertebrates	29.16	17.98	6.86		84.94
Total catch weight (kg)	83.41	261.37	264.74		244.23

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007006	200001007007	200001007008	200001007009	200001007010
Start date and time	7/4/00 8:11	7/4/00 11:29	7/4/00 14:17	7/4/00 17:58	7/5/00 10:42
Start gear latitude (dd)	47.1268[b]	47.2206[b]	47.2381[b]	47.2320[b]	46.4446[b]
Start gear longitude (dd)	–124.9875[b]	–124.9941[b]	–125.1025[b]	–125.1532[b]	–124.7902[b]
End gear latitude (dd)	47.1139[b]	47.2302[b]	47.2545[b]	47.2402[b]	46.4471[b]
End gear longitude (dd)	–124.9819[b]	–125.0023[b]	–125.0931[b]	–125.1602[b]	–124.7996[b]
Station	7C	7D	7G	7H	11I
Avg. bottom depth (m)		415.62	810.93		
Duration (hr)	0.40	0.38	0.62	0.36	0.54
Distance fished (km)	1.52	1.52	2.54	1.11	1.16
Net width (m)		14.55	14.77		
Performance	–5.1	0	0	–5.1	–5.1
Species by weight					
Hagfish			1.02		
Brown cat shark			3.51		
Spiny dogfish					
Skates		14.07	6.59		
Other elasmobranchs					
Arrowtooth flounder		6.88			
Petrale sole					
Dover sole		165.46			
Deepsea sole			4.36		
Rex sole		16.16			
Other flatfish		0.42			
Sablefish		4.51	50.15		
Pacific grenadier			4.81		
Giant grenadier			20.69		
Other grenadier					
Pacific flatnose		0.31	0.67		
Slickheads			4.31		
Eelpouts		16.57	1.64		
Snailfish					
Pacific whiting		2.22			
Other roundfish					
Shortspine thornyhead		20.91	43.28		
Longspine thornyhead			174.21		
Rougheye rockfish					
Pacific ocean perch		13.28			
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish		2.69			
Shortbelly rockfish					
Other rockfish		17.66			
Grooved tanner crab		0.32	36.53		
Other invertebrates		20.08	67.05		
Total catch weight (kg)		301.54	418.82		

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007011	200001007012	200001007013	200001007014	200001007015
Start date and time	7/5/00 14:17	7/5/00 17:42	7/5/00 19:35	7/6/00 6:50	7/6/00 9:04
Start gear latitude (dd)	46.4686	46.5092	46.4877	45.7989	45.7736
Start gear longitude (dd)	–124.6301	–124.5092	–124.5110	–124.6238	–124.6842
End gear latitude (dd)	46.4601	46.4972	46.4983	45.8079	45.7843
End gear longitude (dd)	–124.6466	–124.5070	–124.5021	–124.6297	–124.6894
Station	11H	11A	11B	15A	15B
Avg. bottom depth (m)	928.26	231.39	290.88	210.09	294.23
Duration (hr)	0.46	0.36	0.37	0.32	0.33
Distance fished (km)	1.83	1.43	1.81	1.11	1.27
Net width (m)	14.73	13.69	13.88	14.72	14.63
Performance	–6	0	5.1	0	0
Species by weight					
Hagfish		0.17			
Brown cat shark		0.11		1.63	0.91
Spiny dogfish					
Skates		13.17	54.02	32.71	11.60
Other elasmobranchs				0.21	0.29
Arrowtooth flounder		62.50	193.55	14.95	4.39
Petrale sole					
Dover sole		63.37	97.92	133.42	52.61
Deepsea sole					
Rex sole		44.75	59.28	20.29	9.77
Other flatfish		12.03	3.32	7.98	3.80
Sablefish		4.04	39.54	5.40	4.60
Pacific grenadier					
Giant grenadier					
Other grenadier					
Pacific flatnose					
Slickheads					
Eelpouts		14.26	14.29	0.53	3.58
Snailfish					
Pacific whiting			15.64		0.38
Other roundfish		0.04		0.85	
Shortspine thornyhead		22.84	39.46	9.74	9.08
Longspine thornyhead					
Rougheye rockfish			3.07		
Pacific ocean perch			0.68		0.83
Aurora rockfish					
Darkblotched rockfish		1.30	2.31		149.66
Splitnose rockfish		2.45	2.69	0.40	202.08
Shortbelly rockfish					
Other rockfish			1.07	4.14	4.22
Grooved tanner crab			0.11		
Other invertebrates		82.90	88.31	188.09	17.34
Total catch weight (kg)		323.93	615.26	420.34	475.14

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007016	200001007017	200001007018	200001007019	200001007020
Start date and time	7/6/00 11:36	7/6/00 14:29	7/6/00 17:56	7/6/00 21:07	7/7/00 7:17
Start gear latitude (dd)	45.8381	45.8452[a]	45.7959[a]	45.7977[a]	45.1732
Start gear longitude (dd)	–124.8080	–124.8289[a]	–124.8800[a]	–124.8806[a]	–125.0061
End gear latitude (dd)	45.8201	45.8373[a]	45.7928[a]	45.7975[a]	45.1837
End gear longitude (dd)	–124.7990	–124.8165[a]	–124.8724[a]	–124.8812[a]	–125.0058
Station	15G	15H	15J	15J	19I
Avg. bottom depth (m)	812.61	900.35		1,273.12	1,036.85
Duration (hr)	0.60	0.49	0.38	0.24	0.31
Distance fished (km)	2.15	1.67	0.00	0.00	1.25
Net width (m)	13.93	15.72		14.82	14.76
Performance	0	0	–5.1	–5.1	5.1
Species by weight					
Hagfish	0.51	0.82			
Brown cat shark					
Spiny dogfish					
Skates					
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	45.13	22.84			34.01
Deepsea sole	7.16	5.16			1.33
Rex sole					20.14
Other flatfish					
Sablefish	27.28	20.82			99.11
Pacific grenadier	1.23	5.41			47.01
Giant grenadier	17.97	23.27			20.68
Other grenadier					
Pacific flatnose	0.97	1.33			1.05
Slickheads	3.79	3.94			1.05
Eelpouts	5.19	5.55			3.33
Snailfish					
Pacific whiting					
Other roundfish	0.55	0.20			0.18
Shortspine thornyhead	5.42	1.97			146.26
Longspine thornyhead	66.27	95.57			39.15
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	52.77	17.48			7.39
Other invertebrates	11.07	3.63			8.32
Total catch weight (kg)	245.31	207.99			429.01

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007021	200001007022	200001007023	200001007024	200001007025
Start date and time	7/7/00 10:30	7/7/00 13:57	7/7/00 16:18	7/7/00 17:30	7/9/00 6:44
Start gear latitude (dd)	45.1738	45.1308[a]	45.1017	45.0963	44.5732
Start gear longitude (dd)	–124.9654	–124.5930[a]	–124.3740	–124.3366	–125.0132
End gear latitude (dd)	45.1856	45.1200[a]	45.1122	45.1075	44.5644
End gear longitude (dd)	–124.9587	–124.5903[a]	–124.3645	–124.3336	–125.0136
Station	19H	19C	19B	19A	23H
Avg. bottom depth (m)		371.46	290.00	224.27	903.65
Duration (hr)	0.43	0.35	0.35	0.32	0.29
Distance fished (km)	1.44	1.34	1.41	1.30	1.00
Net width (m)	14.74	14.73	15.26	14.39	14.72
Performance	0	0	0	0	1.11
Species by weight					
Hagfish	0.82		0.14		0.56
Brown cat shark	1.34				1.17
Spiny dogfish					
Skates		0.74	3.67	21.14	2.77
Other elasmobranchs					
Arrowtooth flounder		7.73	25.88	35.48	
Petrale sole				0.45	
Dover sole		50.48	20.98	11.65	0.34
Deepsea sole	4.51				1.79
Rex sole		8.31	11.22	4.40	
Other flatfish		0.37	12.71	29.96	
Sablefish	4.90	11.04	9.92		
Pacific grenadier	20.99				0.24
Giant grenadier	10.46				47.08
Other grenadier					
Pacific flatnose	2.50				0.14
Slickheads	5.35				0.11
Eelpouts	6.23	2.53	1.79		1.46
Snailfish					
Pacific whiting		14.01			
Other roundfish	0.48	0.01	0.33	6.02	0.63
Shortspine thornyhead	3.35	17.44	35.64		3.96
Longspine thornyhead	44.31				29.13
Rougheye rockfish					
Pacific ocean perch		3.64	1.39		
Aurora rockfish					
Darkblotched rockfish		0.89	5.94	0.06	
Splitnose rockfish		0.23	16.28	0.46	
Shortbelly rockfish					
Other rockfish		0.22	0.23	5.23	
Grooved tanner crab	25.96	0.58			8.87
Other invertebrates	11.22	45.77	15.37	33.95	2.60
Total catch weight (kg)	142.42	163.99	161.49	148.80	100.85

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007026	200001007027	200001007028	200001007029	200001007030
Start date and time	7/9/00 9:00	7/9/00 11:50	7/9/00 14:54	7/9/00 16:55	7/10/00 6:51
Start gear latitude (dd)	44.5508[a]	44.5713	44.4481	44.4540	43.8694
Start gear longitude (dd)	–124.9575[a]	–124.8159	–124.7742	–124.7497	–124.8853
End gear latitude (dd)	44.5619[a]	44.5580	44.4593	44.4631	43.8828
End gear longitude (dd)	–124.9563[a]	–124.8081	–124.7654	–124.7420	–124.8887
Station	23G	23C	23B	23A	27D
Avg. bottom depth (m)	770.46	368.48	297.07	195.12	430.97
Duration (hr)	0.44	0.36	0.34	0.35	0.38
Distance fished (km)	1.75	1.63	1.48	1.28	1.52
Net width (m)	14.63	15.12	14.58	14.80	14.88
Performance	0	0	0	0	0
Species by weight					
Hagfish	3.35	0.09			0.43
Brown cat shark	1.76				15.66
Spiny dogfish					
Skates		3.67	25.23		30.84
Other elasmobranchs		1.01	2.16		
Arrowtooth flounder			5.43		5.73
Petrale sole					
Dover sole	15.85	55.18	47.85		147.47
Deepsea sole	2.85				
Rex sole		23.93	7.32		22.75
Other flatfish		1.10	0.10		0.52
Sablefish	4.09	54.91	17.41	9.35	
Pacific grenadier	1.13				
Giant grenadier	25.74				
Other grenadier					
Pacific flatnose	0.10				
Slickheads	6.17				
Eelpouts	5.06	22.88	4.53		3.54
Snailfish					
Pacific whiting		7.91	0.16		2.71
Other roundfish	0.61				
Shortspine thornyhead	5.90	35.15	2.87	1.58	5.24
Longspine thornyhead	72.91	0.01			
Rougheye rockfish					2.81
Pacific ocean perch			0.91		
Aurora rockfish		1.51			0.67
Darkblotched rockfish		6.35	3.75		
Splitnose rockfish		0.69	10.88		
Shortbelly rockfish					
Other rockfish		0.63	3.51		
Grooved tanner crab	34.00				
Other invertebrates	9.25	8.52	25.08		33.98
Total catch weight (kg)	188.78	223.54	157.19	10.93	272.35

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007036	200001007037	200001007038	200001007039	200001007040
Start date and time	7/12/00 10:23	7/12/00 12:37	7/12/00 16:01	7/12/00 18:24	7/13/00 8:01
Start gear latitude (dd)	43.1395[a]	43.1204[a]	43.1063[a]	43.1018	42.4242[a]
Start gear longitude (dd)	–124.8749[a]	–124.9371[a]	–124.9947[a]	–125.0274	–124.8394[a]
End gear latitude (dd)	43.1504[a]	43.1295[a]	43.1146[a]	43.0831	42.4151[a]
End gear longitude (dd)	–124.8764[a]	–124.9377[a]	–125.0011[a]	–125.0305	–124.8415[a]
Station	31C	31G	31I	31J	35G
Avg. bottom depth (m)	370.00	825.62	1,089.96	1,177.94	
Duration (hr)	0.38	0.41	0.46	0.57	0.37
Distance fished (km)	1.53	1.53	1.43	2.17	1.24
Net width (m)	14.43	15.52	14.77	14.80	
Performance	0	5.1	0	0	–5
Species by weight					
Hagfish		0.81	0.89	0.43	
Brown cat shark		2.53	2.69		
Spiny dogfish					
Skates	15.51		8.58	6.27	
Other elasmobranchs	1.52				
Arrowtooth flounder	8.84				
Petrale sole					
Dover sole	125.96	8.79	1.32	3.45	
Deepsea sole		4.69	13.30	0.53	
Rex sole	43.83	9.43			
Other flatfish	0.01				
Sablefish	12.93	12.35	14.11	11.58	
Pacific grenadier		2.11	23.84	247.71	
Giant grenadier		32.87	30.73	75.03	
Other grenadier					
Pacific flatnose		1.16	4.11	14.89	
Slickheads		7.43	4.56	3.02	
Eelpouts	6.58	1.58	1.62	1.71	
Snailfish					
Pacific whiting	12.06				
Other roundfish	0.01	1.35	0.16	11.11	
Shortspine thornyhead	3.66	8.80	2.37		
Longspine thornyhead		68.77	68.27	45.34	
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	0.91				
Darkblotched rockfish	1.23				
Splitnose rockfish	2.31				
Shortbelly rockfish					
Other rockfish	1.03				
Grooved tanner crab		36.83	28.99	17.74	
Other invertebrates	22.64	12.58	36.11	45.35	
Total catch weight (kg)	259.03	212.08	241.65	484.16	

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007041	200001007042	200001007043	200001007044	200001007045
Start date and time	7/15/00 7:20	7/15/00 9:48	7/15/00 12:35	7/15/00 15:14	7/19/00 6:56
Start gear latitude (dd)	41.8043	41.7927	41.8266	41.8178[a]	41.1174
Start gear longitude (dd)	–124.4925	–124.5530	–124.6160	–124.7315[a]	–124.6328
End gear latitude (dd)	41.8169	41.8093	41.8415	41.8079[a]	41.1048
End gear longitude (dd)	–124.4973	–124.5487	–124.6251	–124.7208[a]	–124.6491
Station	39B	39E	39F	39G	43I
Avg. bottom depth (m)	287.55	506.57	616.09	772.22	1,007.30
Duration (hr)	0.34	0.45	0.44	0.51	0.50
Distance fished (km)	1.50	1.91	2.00	1.95	2.06
Net width (m)	14.73	15.15	15.58	15.23	15.10
Performance	0	0	0	–7.1	0
Species by weight					
Hagfish	0.21	0.44	0.23		4.25
Brown cat shark	8.75	10.57	27.05		4.44
Spiny dogfish	7.71				
Skates	52.85				0.06
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	51.48	84.52	31.03		11.13
Deepsea sole					0.97
Rex sole	37.20	28.08	6.77		
Other flatfish	0.18				
Sablefish	6.73	1.42	16.85		19.18
Pacific grenadier					13.22
Giant grenadier			3.40		63.50
Other grenadier		0.32			
Pacific flatnose			0.30		0.66
Slickheads			0.37		23.08
Eelpouts	13.78	18.20	6.69		5.91
Snailfish					
Pacific whiting	24.56	1.28			
Other roundfish	0.08	0.03	0.34		0.71
Shortspine thornyhead	4.42	3.47	4.17		16.49
Longspine thornyhead		3.15	61.63		158.08
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish	1.03				
Splitnose rockfish	4.78				
Shortbelly rockfish					
Other rockfish	1.15				
Grooved tanner crab	0.27	1.75	43.14		27.21
Other invertebrates	142.21	1.60	6.41		24.85
Total catch weight (kg)	357.39	154.83	208.38		373.75

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007046	200001007047	200001007048	200001007049	200001007050
Start date and time	7/19/00 10:50	7/19/00 13:39	7/19/00 15:55	7/19/00 18:24	7/20/00 7:09
Start gear latitude (dd)	41.1179	41.0950	41.0914	41.0915	40.5092
Start gear longitude (dd)	–124.4695	–124.4520	–124.3973	–124.3821	–124.6295
End gear latitude (dd)	41.1322	41.1048	41.1036	41.1034	40.5178
End gear longitude (dd)	–124.4562	–124.4449	–124.3958	–124.3817	–124.6376
Station	43G	43F	43C	43B	47A
Avg. bottom depth (m)	780.31	629.64	384.34	299.83	219.02
Duration (hr)	0.53	0.37	0.35	0.32	0.30
Distance fished (km)	2.04	1.35	1.42	1.34	1.23
Net width (m)	14.38	14.77	14.63	13.97	13.60
Performance	0	0	0	0	5.1
Species by weight					
Hagfish	2.17	0.50		0.62	
Brown cat shark	6.84	5.03	1.95	0.97	
Spiny dogfish					
Skates		2.24	11.10	27.01	9.03
Other elasmobranchs					28.87
Arrowtooth flounder					
Petrale sole					
Dover sole	7.67	11.18	61.44	27.34	19.27
Deepsea sole	2.31	0.60			
Rex sole		14.54	38.61	33.83	5.74
Other flatfish				0.36	0.10
Sablefish	17.54	32.61	11.88	16.39	
Pacific grenadier	0.66	10.83			
Giant grenadier	14.02	25.78			
Other grenadier					
Pacific flatnose	0.03	0.35			
Slickheads	8.04	0.36			
Eelpouts	2.81	4.64	19.75	13.04	
Snailfish					
Pacific whiting			0.10	53.53	0.01
Other roundfish	0.31	0.69	0.03	0.01	15.20
Shortspine thornyhead	23.29	7.48	8.71	4.81	0.10
Longspine thornyhead	172.56	54.44			
Rougheye rockfish					
Pacific ocean perch			0.64		
Aurora rockfish			1.83		
Darkblotched rockfish			0.50		2.47
Splitnose rockfish			0.01	4.46	
Shortbelly rockfish					0.20
Other rockfish			3.16	0.33	331.57
Grooved tanner crab	49.39	61.65	0.45		
Other invertebrates	226.07	20.45	304.84	217.40	1.63
Total catch weight (kg)	533.71	253.37	465.01	400.10	414.19

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007051	200001007052	200001007053	200001007054	200001007055
Start date and time	7/20/00 9:41	7/20/00 11:24	7/20/00 14:16	7/20/00 17:27	7/21/00 7:13
Start gear latitude (dd)	40.5433	40.5375	40.5435[a]	40.5466	39.8267[a]
Start gear longitude (dd)	–124.7003	–124.6990	–124.7164[a]	–124.7631	–124.1166[a]
End gear latitude (dd)	40.3277[b]	40.5520	40.5346[a]	40.5585	39.8202[a]
End gear longitude (dd)	–124.4206[b]	–124.7038	–124.7153[a]	–124.7584	–124.1068[a]
Station	47D	47D	47F	47J	51C
Avg. bottom depth (m)		439.74	669.24	1,182.94	
Duration (hr)		0.40	0.28	0.35	0.36
Distance fished (km)	1.48	1.80	1.03	1.49	1.06
Net width (m)		13.72	14.05	14.80	
Performance	–1.12	0	0	1.11	–5.1
Species by weight					
Hagfish					
Brown cat shark		0.30	2.55	0.32	
Spiny dogfish					
Skates		13.56		12.98	
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole		227.59	201.60	14.75	
Deepsea sole		0.49	0.88	11.64	
Rex sole		17.53	4.12		
Other flatfish					
Sablefish		3.78	19.39	79.54	
Pacific grenadier			0.97	475.80	
Giant grenadier			29.82	87.33	
Other grenadier		0.10	0.03		
Pacific flatnose		1.77	0.88	22.01	
Slickheads			0.66	0.47	
Eelpouts		5.86	1.39	8.04	
Snailfish					
Pacific whiting		0.40	0.83	0.69	
Other roundfish			0.11	0.01	
Shortspine thornyhead		6.37	5.05	29.30	
Longspine thornyhead		5.50	20.20	38.78	
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish		6.41			
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab			0.90	68.16	
Other invertebrates		23.26	3.78	6.71	
Total catch weight (kg)		312.92	293.16	856.53	

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007056	200001007057	200001007058	200001007059	200001007060
Start date and time	7/21/00 8:46	7/21/00 10:41	7/21/00 13:38	7/21/00 15:55	7/21/00 19:06
Start gear latitude (dd)	39.8365[a]	39.8311	39.8949[a]	39.8903[a]	39.8457
Start gear longitude (dd)	–124.1246[a]	–124.1351	–124.2454[a]	–124.2481[a]	–124.2900
End gear latitude (dd)	39.8439[a]	39.8449	39.8987[a]	39.8921[a]	39.8559
End gear longitude (dd)	–124.1298[a]	–124.1452	–124.2350[a]	–124.2287[a]	–124.2726
Station	51C	51D	51H	51H	51I
Avg. bottom depth (m)	354.20	433.50		882.87	1,064.19
Duration (hr)	0.28	0.45	0.39	0.56	0.59
Distance fished (km)	1.14	1.79	0.92	1.92	2.15
Net width (m)	14.24	12.99		14.50	13.80
Performance	1.11	0	–5.1	0	0
Species by weight					
Hagfish		0.10		1.93	0.20
Brown cat shark		2.81		4.18	2.55
Spiny dogfish					
Skates	42.85	30.40			11.99
Other elasmobranchs	5.20				
Arrowtooth flounder					
Petrale sole					
Dover sole	57.40	73.43		54.79	29.29
Deepsea sole				16.55	10.71
Rex sole	17.34	17.01			
Other flatfish	0.75	0.10			
Sablefish	7.32	15.48		21.22	39.59
Pacific grenadier				6.00	136.09
Giant grenadier				13.28	69.05
Other grenadier					
Pacific flatnose				1.53	7.02
Slickheads				3.57	2.83
Eelpouts	10.75			3.77	3.15
Snailfish					
Pacific whiting	0.51				
Other roundfish	20.22			0.02	0.11
Shortspine thornyhead	0.64	1.50		15.56	55.34
Longspine thornyhead				122.26	135.54
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	0.10	5.56			
Darkblotched rockfish	78.31				
Splitnose rockfish	17.50				
Shortbelly rockfish					
Other rockfish	7.51				
Grooved tanner crab		0.10		33.45	23.92
Other invertebrates	9.46	48.33		15.62	84.76
Total catch weight (kg)	275.86	194.82		313.73	612.14

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007061	200001007062	200001007063	200001007064	200001007065
Start date and time	7/22/00 7:50	7/22/00 10:54	7/22/00 13:35	7/22/00 15:49	7/22/00 17:50
Start gear latitude (dd)	39.1908	39.1889	39.1774	39.1541	39.1859
Start gear longitude (dd)	–124.1250	–124.0901	–124.0484	–124.0237	–123.9581
End gear latitude (dd)	39.2096	39.2048	39.1922	39.1684	39.1737
End gear longitude (dd)	–124.1308	–124.0992	–124.0546	–124.0287	–123.9580
Station	55H	55G	55F	55E	55A
Avg. bottom depth (m)	914.32	761.61	591.17	529.48	216.31
Duration (hr)	0.62	0.53	0.48	0.45	0.33
Distance fished (km)	2.17	2.09	1.77	1.67	1.37
Net width (m)	13.04	13.68	15.18	15.13	14.55
Performance	1.11	0	0	0	0
Species by weight					
Hagfish		0.41	0.54	0.20	
Brown cat shark	4.12	2.49	18.37	6.12	0.10
Spiny dogfish					63.04
Skates	5.60			1.51	28.39
Other elasmobranchs					3.20
Arrowtooth flounder					
Petrale sole					2.24
Dover sole	91.65	88.63	16.99	35.64	50.96
Deepsea sole	3.80	8.27	3.79		
Rex sole				2.52	1.41
Other flatfish					2.40
Sablefish	16.79	7.77	7.56		3.28
Pacific grenadier	10.98	3.28			
Giant grenadier	5.85	5.48	2.72		
Other grenadier				0.51	
Pacific flatnose	3.02	1.72	1.11	0.46	
Slickheads	6.94	12.60	7.43		
Eelpouts	0.98	1.03	2.46	5.22	
Snailfish					
Pacific whiting					167.44
Other roundfish	0.41	0.84	0.05	2.51	
Shortspine thornyhead	53.45	9.31	9.51	1.53	
Longspine thornyhead	74.97	50.79	32.08	12.15	
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish			4.64		
Darkblotched rockfish					3.48
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					127.55
Grooved tanner crab	4.92	14.18	1.49		
Other invertebrates	10.56	10.71	18.53	27.80	7.34
Total catch weight (kg)	294.04	217.51	127.27	96.17	460.83

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007066	200001007067	200001007068	200001007069	200001007070
Start date and time	7/23/00 7:17	7/23/00 9:33	7/23/00 11:48	7/23/00 16:39	7/23/00 19:18
Start gear latitude (dd)	38.5429	38.5376[a]	38.5156	38.4931	38.5108[a]
Start gear longitude (dd)	–123.6673	–123.6850[a]	–123.6758	–123.7259	–123.7110[a]
End gear latitude (dd)	38.5535	38.5486[a]	38.5301	38.5062	38.5227[a]
End gear longitude (dd)	–123.6737	–123.6857[a]	–123.6858	–123.7326	–123.7056[a]
Station	59B	59D	59E	59I	59G
Avg. bottom depth (m)	287.27	431.43	520.23	1,008.75	748.06
Duration (hr)	0.35	0.49	0.48	0.53	0.56
Distance fished (km)	1.41	1.81	1.87	1.92	1.87
Net width (m)	13.30	11.84	13.60	14.76	14.59
Performance	0	5.1	0	0	0
Species by weight					
Hagfish			0.41	1.38	1.01
Brown cat shark		1.39	11.43	4.98	6.40
Spiny dogfish	2.94	1.66			
Skates	17.80	9.48	32.64	7.65	3.66
Other elasmobranchs	8.37	5.53	1.92		
Arrowtooth flounder					
Petrale sole					
Dover sole	43.78	118.77	102.64	47.53	79.61
Deepsea sole				25.31	3.21
Rex sole	7.65	38.46	14.38		
Other flatfish	16.91	0.46			
Sablefish	1.36	3.81	8.66	20.41	10.54
Pacific grenadier				46.73	1.11
Giant grenadier				35.32	9.66
Other grenadier			0.20		
Pacific flatnose			0.70	3.79	1.29
Slickheads				7.98	10.06
Eelpouts		10.20	11.52	10.00	3.30
Snailfish					
Pacific whiting	11.38	0.79	1.21		
Other roundfish			0.00	0.10	0.11
Shortspine thornyhead		2.06	6.18	17.61	3.24
Longspine thornyhead			3.67	75.77	104.55
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish		7.85			
Darkblotched rockfish	4.40				
Splitnose rockfish	105.68				
Shortbelly rockfish					
Other rockfish	2.93	4.78			
Grooved tanner crab				50.53	46.67
Other invertebrates	7.41	32.98	42.90	37.97	19.24
Total catch weight (kg)	230.61	238.22	238.46	393.06	303.66

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007071	200001007072	200001007073	200001007074	200001007075
Start date and time	7/27/00 8:06	7/27/00 10:39	7/28/00 7:59	7/28/00 10:48	7/28/00 13:10
Start gear latitude (dd)	37.2217[a]	37.2030	36.5174[a]	36.4517	36.4493
Start gear longitude (dd)	–122.8457[a]	–122.9038	–122.1539[a]	–122.0466	–122.0285
End gear latitude (dd)	37.2330[a]	37.2173	36.5211[a]	36.4675	36.4624
End gear longitude (dd)	–122.8483[a]	–122.9143	–122.1415[a]	–122.0531	–122.0341
Station	67B	67D	71J	71G	71F
Avg. bottom depth (m)	295.61	422.03	1,177.00	727.68	602.22
Duration (hr)	0.36	0.43	0.49	0.51	0.38
Distance fished (km)	1.47	1.86	1.87	1.89	1.62
Net width (m)	12.44	12.21	14.80	14.67	14.40
Performance	5.1	0	0	0	0
Species by weight					
Hagfish				0.73	0.10
Brown cat shark			1.04	4.16	7.91
Spiny dogfish	1.81				
Skates	6.31	92.81	4.47		6.72
Other elasmobranchs		0.48		3.30	8.06
Arrowtooth flounder					
Petrale sole					
Dover sole	137.96	115.57	307.69	118.98	37.01
Deepsea sole			4.25		
Rex sole	49.73	72.76			
Other flatfish	16.73	0.10			
Sablefish	9.55	3.20	3.03	10.80	7.58
Pacific grenadier			153.04		1.64
Giant grenadier			31.79		
Other grenadier					0.10
Pacific flatnose			4.26		
Slickheads			6.50	5.45	1.47
Eelpouts	2.87	3.09	0.92	0.79	1.35
Snailfish					
Pacific whiting	11.22	14.99		0.17	
Other roundfish			0.65	0.01	0.01
Shortspine thornyhead	0.20	7.89	6.06	4.82	14.47
Longspine thornyhead			16.91	98.68	45.88
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish		3.03			
Darkblotched rockfish					
Splitnose rockfish	19.39	1.79			
Shortbelly rockfish	97.31				
Other rockfish	17.37	12.27			
Grooved tanner crab			3.98	1.63	2.37
Other invertebrates	27.06	14.32	23.75	70.48	49.14
Total catch weight (kg)	397.51	342.30	568.34	320.00	183.81

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007076	200001007077	200001007078	200001007079	200001007080
Start date and time	7/28/00 15:09	7/28/00 18:09	7/29/00 7:48	7/29/00 10:03	7/29/00 12:24
Start gear latitude (dd)	36.4840	36.4699	35.8877	35.8673	35.8728
Start gear longitude (dd)	–122.0389	–122.0142	–121.5257	–121.5566	–121.6381
End gear latitude (dd)	36.4702	36.4594	35.8999	35.8810	35.8887
End gear longitude (dd)	–122.0282	–122.0105	–121.5280	–121.5635	–121.6414
Station	71E	71B	75B	75D	75G
Avg. bottom depth (m)	505.34	294.73	301.66	457.12	724.21
Duration (hr)	0.50	0.30	0.36	0.39	0.45
Distance fished (km)	1.84	1.23	1.44	1.67	1.80
Net width (m)	13.83	14.19	14.65	14.58	15.25
Performance	0	0	0	0	0
Species by weight					
Hagfish	0.31				
Brown cat shark	40.03	0.10			
Spiny dogfish				11.44	6.74
Skates	26.33	2.97	60.55	22.91	
Other elasmobranchs	42.35	125.28		21.85	31.94
Arrowtooth flounder					
Petrale sole		1.47	2.68		
Dover sole	463.04	35.36	86.75	61.47	30.30
Deepsea sole					1.14
Rex sole	14.42	12.96	2.12	0.10	
Other flatfish		20.56	0.30		
Sablefish	23.69	37.36	10.03	9.78	3.34
Pacific grenadier					
Giant grenadier					
Other grenadier	0.43				
Pacific flatnose					
Slickheads					2.29
Eelpouts	21.28	3.13	10.86	6.55	0.10
Snailfish					
Pacific whiting	1.10	13.65	23.41		
Other roundfish		0.10	0.22		0.50
Shortspine thornyhead	6.60		4.73	23.32	21.22
Longspine thornyhead	1.91				81.72
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	18.76			24.56	
Darkblotched rockfish					
Splitnose rockfish		2,525.62	31.71	0.65	
Shortbelly rockfish		1.97			
Other rockfish		122.91	11.42	11.60	
Grooved tanner crab					0.70
Other invertebrates	71.46	5.48	94.40	99.18	34.97
Total catch weight (kg)	731.71	2,908.92	339.18	293.41	214.96

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007081	200001007082	200001007083	200001007084	200001007085
Start date and time	7/29/00 14:58	7/29/00 17:55	7/30/00 7:38	7/30/00 11:42	7/30/00 14:13
Start gear latitude (dd)	35.8882	35.8541	35.2077	35.2043	35.1863
Start gear longitude (dd)	–121.7121	–121.7967	–121.6784	–121.2883	–121.1097
End gear latitude (dd)	35.9012	35.8373	35.2220	35.2184	35.2005
End gear longitude (dd)	–121.7072	–121.7934	–121.6762	–121.2825	–121.1096
Station	75H	75I	79J	79F	79E
Avg. bottom depth (m)	888.51	1,018.71	1,171.35	634.55	511.83
Duration (hr)	0.44	0.51	0.51	0.45	0.40
Distance fished (km)	1.53	1.96	1.79	1.66	1.58
Net width (m)	14.33	14.95	14.79	15.34	15.23
Performance	0	0	0	0	0
Species by weight					
Hagfish	0.30	1.41	0.20	0.10	0.10
Brown cat shark					
Spiny dogfish	6.43	0.51		3.94	7.91
Skates				6.20	16.79
Other elasmobranchs	3.82			0.61	12.43
Arrowtooth flounder					
Petrale sole					
Dover sole	39.61	8.83		28.86	132.63
Deepsea sole	1.47	6.77	0.43	0.76	
Rex sole					
Other flatfish					
Sablefish	28.65	31.66		9.27	7.01
Pacific grenadier		2.42	28.60		
Giant grenadier	1.00	7.26	3.63		
Other grenadier					0.30
Pacific flatnose	0.98	1.01	2.64		
Slickheads	8.37	6.78	4.25	5.01	
Eelpouts	2.96	0.59	0.98		2.03
Snailfish					
Pacific whiting				0.34	0.60
Other roundfish	3.41	0.42	1.03	0.13	
Shortspine thornyhead	14.60	28.49	3.52	11.82	14.62
Longspine thornyhead	154.06	79.40	23.47	46.64	14.41
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					16.99
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	2.33	1.65	3.92		
Other invertebrates	145.70	40.39	27.77	35.39	187.46
Total catch weight (kg)	413.69	217.59	100.44	149.07	413.28

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001007086	200001007087	200001008001	200001008002	200001008003
Start date and time	7/30/00 16:05	7/30/00 17:51	8/27/00 7:14	8/27/00 9:01	8/27/00 10:50
Start gear latitude (dd)	35.1692	35.2057	47.6462	47.6465	47.6536
Start gear longitude (dd)	–121.0237	–120.9739	–125.1174	–125.1231	–125.1560
End gear latitude (dd)	35.1809	35.2165	47.6555	47.6559	47.6633
End gear longitude (dd)	–121.0221	–120.9767	–125.1125	–125.1185	–125.1525
Station	79C	79A	4C	4D	4F
Avg. bottom depth (m)	380.68	205.17	372.07	430.99	605.94
Duration (hr)	0.35	0.30	0.27	0.29	0.30
Distance fished (km)	1.32	1.24	1.12	1.12	1.12
Net width (m)	15.09	14.79	14.52	15.49	15.48
Performance	1.11	0	0	0	0
Species by weight					
Hagfish					0.20
Brown cat shark	0.98			1.10	1.70
Spiny dogfish			1.05		
Skates	51.26	1.79	17.71	5.52	
Other elasmobranchs	6.63	5.35	2.15		
Arrowtooth flounder			20.97	50.06	1.67
Petrale sole					
Dover sole	100.07	1.94	51.67	47.53	
Deepsea sole					
Rex sole	46.88	0.20	5.08	1.73	
Other flatfish		2.57	8.60	18.00	
Sablefish	11.76	5.12	12.24	6.24	5.12
Pacific grenadier					1.57
Giant grenadier					7.03
Other grenadier					
Pacific flatnose					1.54
Slickheads					
Eelpouts	2.80	0.75	1.42	1.05	5.05
Snailfish					
Pacific whiting	74.59	1.14	6.83	2.10	
Other roundfish		0.03			0.30
Shortspine thornyhead	2.16		10.46	10.03	3.40
Longspine thornyhead					4.97
Rougheye rockfish			5.58	2.44	
Pacific ocean perch			0.76	1.11	
Aurora rockfish	5.23			0.30	
Darkblotched rockfish		0.42			
Splitnose rockfish	48.85	0.82	0.20		
Shortbelly rockfish		0.10			
Other rockfish		1.31	0.25		
Grooved tanner crab				0.10	10.09
Other invertebrates	69.38	20.23	5.33	26.25	6.28
Total catch weight (kg)	420.59	41.77	150.30	173.56	48.92

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008004	200001008005	200001008006	200001008007	200001008008
Start date and time	8/27/00 12:56	8/27/00 15:25	8/27/00 17:17	8/28/00 7:45	8/28/00 11:10
Start gear latitude (dd)	47.6757	47.6716[a]	47.6662[a]	47.0159[a]	47.0061[b]
Start gear longitude (dd)	–125.2654	–125.3115[a]	–125.3246[a]	–125.0933[a]	–125.0342[b]
End gear latitude (dd)	47.6644	47.6808[a]	47.6721[a]	47.0159[a]	47.0008[b]
End gear longitude (dd)	–125.2700	–125.3157[a]	–125.3369[a]	–125.0933[a]	–125.0305[b]
Station	4H	4I	4I	8J	8G
Avg. bottom depth (m)	944.28				
Duration (hr)	0.31	0.26	0.43	0.00	0.25
Distance fished (km)	1.35	1.14	1.32	0.00	0.00
Net width (m)	16.15				
Performance	0	–5.23	–5.23	–5.23	–5.1
Species by weight					
Hagfish	0.82				
Brown cat shark	0.20				
Spiny dogfish					
Skates					
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	12.26				
Deepsea sole	4.57				
Rex sole					
Other flatfish					
Sablefish	1.63				
Pacific grenadier	4.69				
Giant grenadier	5.76				
Other grenadier					
Pacific flatnose	1.05				
Slickheads	1.55				
Eelpouts	0.93				
Snailfish					
Pacific whiting					
Other roundfish	0.15				
Shortspine thornyhead					
Longspine thornyhead	24.54				
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	5.16				
Other invertebrates	4.79				
Total catch weight (kg)	68.10				

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008009	200001008010	200001008011	200001008012	200001008013
Start date and time	8/28/00 12:53	8/28/00 16:45	8/28/00 18:20	8/29/00 19:37	8/29/00 7:25
Start gear latitude (dd)	47.0106[b]	46.5882[b]	46.5960[b]	46.5755[b]	46.2349[b]
Start gear longitude (dd)	–125.0355[b]	–125.0120[b]	–125.0006[b]	–124.5720[b]	–124.3983[b]
End gear latitude (dd)	47.0161[b]	46.5907[b]	46.5906[b]	46.5697[b]	46.2291[b]
End gear longitude (dd)	–125.0386[b]	–125.0057[b]	–124.5991[b]	–124.5719[b]	–124.3987[b]
Station	8G	8F	8E	8A	12I
Avg. bottom depth (m)				215.10	
Duration (hr)	0.27	0.25	0.28	0.29	0.35
Distance fished (km)	0.00	0.00	0.00	1.15	0.00
Net width (m)				14.27	
Performance	–5.1	–5.1	–5.1	0	–5.1
Species by weight					
Hagfish					
Brown cat shark				0.92	
Spiny dogfish				2.60	
Skates				20.71	
Other elasmobranchs					
Arrowtooth flounder				25.99	
Petrale sole					
Dover sole				34.39	
Deepsea sole					
Rex sole				10.32	
Other flatfish				24.24	
Sablefish				6.09	
Pacific grenadier					
Giant grenadier					
Other grenadier					
Pacific flatnose					
Slickheads					
Eelpouts				0.02	
Snailfish					
Pacific whiting					
Other roundfish				7.12	
Shortspine thornyhead				1.59	
Longspine thornyhead					
Rougheye rockfish					
Pacific ocean perch				150.02	
Aurora rockfish					
Darkblotched rockfish				28.21	
Splitnose rockfish				4.19	
Shortbelly rockfish					
Other rockfish				41.50	
Grooved tanner crab					
Other invertebrates				8.39	
Total catch weight (kg)				366.30	

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008014	200001008015	200001008016	200001008017	200001008018
Start date and time	8/29/00 10:05	8/29/00 12:32	8/29/00 14:59	8/29/00 17:41	8/30/00 6:50
Start gear latitude (dd)	46.1923[b]	46.1736[b]	46.1784[b]	46.1571[b]	45.4052[b]
Start gear longitude (dd)	–124.4561[b]	–124.4007[b]	–124.3988[b]	–124.2830[b]	–124.2839[b]
End gear latitude (dd)	46.1867[b]	46.1733[b]	46.1834[b]	46.157[3b]	45.4009[b]
End gear longitude (dd)	–124.4541[b]	–124.4030[b]	–124.4014[b]	–124.2899[b]	–124.2781[b]
Station	12G	12F	12E	12D	16A
Avg. bottom depth (m)				428.53	190.60
Duration (hr)	0.28	0.30	0.28	0.30	0.36
Distance fished (km)	0.00	0.00	0.00	1.05	0.00
Net width (m)				14.60	15.38
Performance	–5.1	–5.1	–5.1	0	0
Species by weight					
Hagfish				0.10	
Brown cat shark				0.15	
Spiny dogfish					0.80
Skates				7.85	4.24
Other elasmobranchs					7.75
Arrowtooth flounder				4.42	23.45
Petrale sole					0.69
Dover sole				34.12	40.19
Deepsea sole					
Rex sole				19.43	17.55
Other flatfish				0.05	7.10
Sablefish				20.51	
Pacific grenadier					
Giant grenadier					
Other grenadier					
Pacific flatnose					
Slickheads					
Eelpouts				1.14	1.62
Snailfish					
Pacific whiting					15.55
Other roundfish				0.02	13.57
Shortspine thornyhead				75.30	7.06
Longspine thornyhead					
Rougheye rockfish					0.94
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					7.57
Splitnose rockfish				0.15	1.04
Shortbelly rockfish					
Other rockfish					229.05
Grooved tanner crab				0.05	
Other invertebrates				37.39	36.76
Total catch weight (kg)				200.68	414.93

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008019	200001008020	200001008021	200001008022	200001008023
Start date and time	8/30/00 10:39	8/30/00 12:52	8/30/00 15:56	8/31/00 7:09	8/31/00 11:07
Start gear latitude (dd)	45.4153[b]	45.7031[a]	45.6714[a]	45.0623[a]	44.9964[a]
Start gear longitude (dd)	–124.4325[b]	–124.8453[b]	–124.8631[b]	–124.9745[b]	–124.9870[b]
End gear latitude (dd)	45.4187[b]	45.7162[a]	45.6819[a]	45.0754[a]	45.0089[a]
End gear longitude (dd)	–124.4484[b]	–124.8553[b]	–124.8641[b]	–124.9803[b]	–124.9759[b]
Station	16E	16G	16I	20I	20H
Avg. bottom depth (m)	511.20	777.73		1,060.82	952.71
Duration (hr)	0.38	0.45	0.33	0.44	0.48
Distance fished (km)	0.00	1.59	0.00	1.39	1.60
Net width (m)	14.73			14.85	
Performance	0	0	–5.42	0	0
Species by weight					
Hagfish	0.10	0.34		0.50	1.59
Brown cat shark	16.38	1.97		0.30	2.61
Spiny dogfish					
Skates	23.85			3.57	0.10
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	158.69	12.05			
Deepsea sole		4.52		3.25	3.02
Rex sole	9.51				
Other flatfish					
Sablefish	21.78	33.69		11.84	31.13
Pacific grenadier		1.17		34.63	12.06
Giant grenadier		8.09		34.34	24.77
Other grenadier					0.05
Pacific flatnose	1.50	0.58		3.58	0.90
Slickheads		2.88		1.92	24.26
Eelpouts	2.79	2.10		1.71	5.97
Snailfish					
Pacific whiting	7.60				
Other roundfish	0.06	0.15		0.25	0.15
Shortspine thornyhead	2.63	12.19		2.81	7.02
Longspine thornyhead		47.04		53.82	75.20
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	1.45	26.26		28.19	6.48
Other invertebrates	7.31	9.16		37.32	13.24
Total catch weight (kg)	253.65	162.19		218.04	208.55

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008024	200001008025	200001008026	200001008027	200001008028
Start date and time	8/31/00 13:18	8/31/00 16:20	9/4/00 6:52	9/4/00 8:32	9/4/00 10:41
Start gear latitude (dd)	44.9799	45.1011[a]	44.4073[a]	44.3608[a]	44.3228[a]
Start gear longitude (dd)	–124.8892	–125.0224[a]	–124.7878[a]	–124.8327[a]	–124.8960[a]
End gear latitude (dd)	44.9842	45.1063[a]	44.3966[a]	44.3495[a]	44.3189[a]
End gear longitude (dd)	–124.8745	–125.0252[a]	–124.7921[a]	–124.8356[a]	–124.9096[a]
Station	20G	20J	24A	24C	24E
Avg. bottom depth (m)	777.22		232.90	364.56	516.60
Duration (hr)	0.27	0.16	0.28	0.29	0.28
Distance fished (km)	1.27	0.70	1.24	1.31	1.71
Net width (m)	15.00		14.30	14.36	15.09
Performance	0	–5.1	5.1	0	5.1
Species by weight					
Hagfish					0.19
Brown cat shark	1.18				9.73
Spiny dogfish			3.05	0.57	
Skates			6.50	3.94	
Other elasmobranchs					
Arrowtooth flounder			5.89	10.87	3.83
Petrale sole					
Dover sole	1.27		25.56	10.01	34.24
Deepsea sole	0.94				
Rex sole			13.48	2.71	3.45
Other flatfish			3.46	0.78	
Sablefish	21.84		18.41	43.33	17.73
Pacific grenadier	0.40				0.16
Giant grenadier	8.28				4.73
Other grenadier					
Pacific flatnose	0.10				1.83
Slickheads	0.45				
Eelpouts	0.53		1.65	0.98	2.50
Snailfish					
Pacific whiting			2.08	11.39	0.90
Other roundfish	1.89		0.39	0.04	
Shortspine thornyhead	5.09		0.20	2.55	1.24
Longspine thornyhead	52.82				0.01
Rougheye rockfish					
Pacific ocean perch			0.30	0.75	
Aurora rockfish					
Darkblotched rockfish			0.30		
Splitnose rockfish			0.93	0.40	
Shortbelly rockfish					
Other rockfish			25.63	0.53	
Grooved tanner crab	8.21				0.70
Other invertebrates	28.24		2.80	18.27	5.69
Total catch weight (kg)	131.24		110.63	107.12	86.93

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008029	200001008030	200001008031	200001008032	200001008033
Start date and time	9/4/00 13:09	9/4/00 15:17	9/5/00 7:58	9/5/00 10:43	9/5/00 13:16
Start gear latitude (dd)	44.2962[a]	44.2907[a]	43.7154[a]	43.6892[a]	43.6556[a]
Start gear longitude (dd)	–124.9675[a]	–125.0580[a]	–124.9187[a]	–124.8807[a]	–124.8331[a]
End gear latitude (dd)	44.2896[a]	44.2801[a]	43.7061[a]	43.6790[a]	43.6452[a]
End gear longitude (dd)	–124.9782[a]	–125.0282[a]	–124.9092[a]	–124.8774[a]	–124.8330[a]
Station	24F	24G	28J	28H	28G
Avg. bottom depth (m)	631.29	802.30	1246.51	925.47	752.38
Duration (hr)	0.26	0.29	0.36	0.28	0.29
Distance fished (km)	1.29	1.19	1.42	1.43	1.25
Net width (m)	15.01	15.19	15.89	14.73	15.11
Performance	0	0	0	–5.1	0
Species by weight					
Hagfish		0.31	0.20		
Brown cat shark	1.78	11.30	1.64		
Spiny dogfish					
Skates					
Other elasmobranchs					
Arrowtooth flounder	5.76				
Petrale sole					
Dover sole	139.61	8.28	4.23		0.14
Deepsea sole	0.67	0.21	2.71		0.27
Rex sole	0.10				
Other flatfish					
Sablefish	6.02	22.30	14.43		8.01
Pacific grenadier	1.49	0.46	95.38		3.95
Giant grenadier	48.73	7.58	25.62		59.67
Other grenadier					
Pacific flatnose	4.48		12.89		0.27
Slickheads		4.46	0.96		0.47
Eelpouts	1.22	0.50	1.31		0.21
Snailfish					
Pacific whiting	0.67		0.78		
Other roundfish	0.00	0.14	6.73		0.20
Shortspine thornyhead	12.05	4.23			4.84
Longspine thornyhead	10.94	36.91	18.51		38.95
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish				4.39	0.10
Grooved tanner crab	12.01	6.71	1.33		
Other invertebrates	6.59	18.52	14.32		3.32
Total catch weight (kg)	252.13	121.91	201.04	4.39	120.40

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008034	200001008035	200001008036	200001008037	200001008038
Start date and time	9/5/00 15:51	9/5/00 17:59	9/6/00 6:53	9/6/00 10:04	9/6/00 13:56
Start gear latitude (dd)	43.6066[a]	43.6212	43.0431	42.9974	42.9613
Start gear longitude (dd)	–124.7136[a]	–124.6015	–124.8681	–124.8663	–124.9733
End gear latitude (dd)	43.5967[a]	43.6112	43.0335	43.0085	42.9505
End gear longitude (dd)	–124.7117[a]	–124.6011	–124.8642	–124.8666	–124.9736
Station	28E	28A	32A	32B	32G
Avg. bottom depth (m)	522.58	251.14	251.64	294.38	770.55
Duration (hr)	0.27	0.26	0.29	0.31	0.28
Distance fished (km)	1.11	1.13	1.12	1.26	1.22
Net width (m)	14.75	15.09	14.33	14.52	14.87
Performance	0	0	0	0	5.1
Species by weight					
Hagfish				0.10	0.23
Brown cat shark	3.28		0.86		1.11
Spiny dogfish			1.87	2.56	
Skates	2.14	4.04	37.43	35.96	
Other elasmobranchs	0.10	0.05	62.68	18.53	
Arrowtooth flounder		0.10	8.69		
Petrale sole			0.40		
Dover sole	25.44	19.40	87.43	126.87	13.18
Deepsea sole					0.74
Rex sole	11.82	22.27	46.63	34.93	
Other flatfish		2.56	39.30	24.48	
Sablefish	31.27	15.89	5.59	41.36	2.21
Pacific grenadier					0.26
Giant grenadier					22.91
Other grenadier					
Pacific flatnose	0.10				0.30
Slickheads					0.60
Eelpouts	7.13	1.11	6.12	10.98	0.82
Snailfish					
Pacific whiting	11.19	59.51	109.91	48.33	
Other roundfish			0.11	29.36	0.35
Shortspine thornyhead	7.21	6.42	4.35	35.20	2.75
Longspine thornyhead	1.12				43.37
Rougheye rockfish					
Pacific ocean perch			0.55		
Aurora rockfish					
Darkblotched rockfish		2.69	5.54	700.59	
Splitnose rockfish		8.27	264.12	1.98	
Shortbelly rockfish					
Other rockfish		0.42	4.15	15.84	
Grooved tanner crab					7.92
Other invertebrates	5.26	24.51	9.04	12.44	3.48
Total catch weight (kg)	106.06	167.24	694.77	1,139.51	100.23

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008039	200001008040	200001008041	200001008042	200001008043
Start date and time	9/6/00 16:15	9/6/00 18:43	9/7/00 7:48	9/7/00 10:27	9/7/00 12:58
Start gear latitude (dd)	42.9154	42.9430	42.3311	42.3570	42.3318
Start gear longitude (dd)	–124.9660	–124.9881	–124.9289	–124.8167	–124.7713
End gear latitude (dd)	42.9258	42.9563	42.3391	42.3712	42.3424
End gear longitude (dd)	–124.9663	–124.9902	–124.9221	–124.8121	–124.7763
Station	32H	32I	36J	36G	36F
Avg. bottom depth (m)	905.15	1,048.73	1,210.41	823.85	623.90
Duration (hr)	0.30	0.38	0.29	0.38	0.30
Distance fished (km)	1.19	1.52	1.08	1.72	1.27
Net width (m)	15.35	15.58	15.83	15.18	15.24
Performance	5.1	0	1.11	0	0
Species by weight					
Hagfish	0.30	0.65			0.10
Brown cat shark	1.22	0.20		1.14	2.08
Spiny dogfish					
Skates		0.02		0.34	3.14
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	12.48	12.31		205.55	146.34
Deepsea sole	1.97	10.80		3.22	
Rex sole					
Other flatfish					
Sablefish	1.61	1.90	5.71	6.34	6.87
Pacific grenadier	2.25	83.61	82.67	4.26	0.54
Giant grenadier	56.31	137.54	63.78	51.22	61.00
Other grenadier					
Pacific flatnose	0.93	5.81	9.63	0.73	2.02
Slickheads	3.24	11.10		8.79	
Eelpouts	1.35	3.04		0.51	4.27
Snailfish					
Pacific whiting				0.20	
Other roundfish	0.20	0.13	0.68	0.05	0.01
Shortspine thornyhead	1.38	10.15			0.20
Longspine thornyhead	46.22	64.51	14.55	57.93	4.80
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	14.19	12.35		3.96	4.02
Other invertebrates	7.20	18.33	16.58	2.85	17.13
Total catch weight (kg)	150.85	372.45	193.60	347.09	252.52

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008044	200001008045	200001008046	200001008047	200001008048
Start date and time	9/7/00 15:09	9/7/00 17:24	9/8/00 6:56	9/8/00 9:43	9/8/00 12:37
Start gear latitude (dd)	42.3305	42.3580	41.7351	41.7228	41.6506
Start gear longitude (dd)	–124.7232	–124.7319	–124.4728	–124.4859	–124.6099
End gear latitude (dd)	42.3233	42.3488	41.7242	41.7103	41.6380
End gear longitude (dd)	–124.7146	–124.7234	–124.4706	–124.4874	–124.6064
Station	36D	36C	40A	40B	40G
Avg. bottom depth (m)	416.47	357.50	210.62	281.43	730.46
Duration (hr)	0.25	0.26	0.27	0.33	0.33
Distance fished (km)	1.07	1.25	1.23	1.43	1.45
Net width (m)	14.56	15.10	14.11	14.37	15.08
Performance	1.11	0	5.1	5.1	0
Species by weight					
Hagfish					
Brown cat shark	4.31	3.64	2.25		10.19
Spiny dogfish		0.55	1.17	0.71	
Skates	3.48	10.47	0.86	11.42	0.74
Other elasmobranchs		2.45		1.46	
Arrowtooth flounder	1.98	6.53		2.17	
Petrale sole					
Dover sole	70.16	55.55	29.45	27.83	14.14
Deepsea sole					0.66
Rex sole	54.87	48.58	19.86	64.92	
Other flatfish			1.67	0.66	
Sablefish	23.81	14.35	5.04	21.60	18.93
Pacific grenadier					
Giant grenadier					4.06
Other grenadier					
Pacific flatnose					0.10
Slickheads					0.44
Eelpouts	20.95	9.40	0.20	2.94	1.54
Snailfish					
Pacific whiting	39.08	102.89	73.68	102.46	
Other roundfish	0.50		3.70	7.91	0.19
Shortspine thornyhead	2.21	12.65	2.06	9.48	1.32
Longspine thornyhead					67.37
Rougheye rockfish					
Pacific ocean perch				1.78	
Aurora rockfish	0.20	0.20			
Darkblotched rockfish		1.45	1.15	9.88	
Splitnose rockfish		0.51	2.05	20.18	
Shortbelly rockfish					
Other rockfish		0.30	36.11	8.21	
Grooved tanner crab					18.95
Other invertebrates	52.35	24.36	57.26	48.96	5.20
Total catch weight (kg)	273.90	293.88	236.51	342.57	143.83

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008049	200001008050	200001008051	200001008052	200001008053
Start date and time	9/8/00 15:00	9/8/00 17:24	9/9/00 7:17	9/9/00 9:15	9/9/00 12:12
Start gear latitude (dd)	41.5983	41.6008	40.9605[a]	40.9661[a]	40.9765[a]
Start gear longitude (dd)	–124.7379	–124.9198	–124.8068[a]	–124.7893[a]	–124.6043[a]
End gear latitude (dd)	41.6070	41.6137	40.9620[a]	40.9814[a]	40.9847[a]
End gear longitude (dd)	–124.7498	–124.9256	–124.8228[a]	–124.7996[a]	–124.5931[a]
Station	40H	40I	44J	44I	44F
Avg. bottom depth (m)	891.72	1,005.55	1,235.49	1,028.30	650.34
Duration (hr)	0.36	0.38	0.77	0.63	0.33
Distance fished (km)	1.42	1.71	1.04	0.00	1.39
Net width (m)	15.33	15.51	15.00	14.82	
Performance	0	0	–5.1	0	0
Species by weight					
Hagfish	0.27	0.47		0.30	
Brown cat shark	20.36	7.42		1.96	2.69
Spiny dogfish					
Skates		9.41			
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	23.11	47.81		2.47	5.12
Deepsea sole	2.47	5.96		9.21	
Rex sole					0.85
Other flatfish					
Sablefish	13.56	11.50		3.07	26.75
Pacific grenadier	2.82	49.37		30.67	0.01
Giant grenadier	3.28	1.45		146.16	43.80
Other grenadier					
Pacific flatnose	0.45	1.62		4.15	0.10
Slickheads	6.28	5.05		5.77	0.14
Eelpouts	1.65	6.14		6.06	3.00
Snailfish					
Pacific whiting					
Other roundfish	0.50	0.45		0.06	0.44
Shortspine thornyhead		3.52		5.65	6.83
Longspine thornyhead	70.44	82.56		77.54	40.06
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	13.19	9.28		59.84	32.87
Other invertebrates	14.01	24.86		51.40	4.11
Total catch weight (kg)	172.39	266.87		404.31	166.76

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008054	200001008055	200001008056	200001008057	200001008059
Start date and time	9/9/00 14:07	9/9/00 15:42	9/12/00 6:56	9/12/00 10:19	9/12/00 14:24
Start gear latitude (dd)	40.9630	40.9603	40.4017[a]	40.3990[a]	40.3900
Start gear longitude (dd)	–124.4451	–124.4172	–124.6606[a]	–124.6139[a]	–124.5758
End gear latitude (dd)	40.9728	40.9507	40.3915[a]	40.4057[a]	40.3835
End gear longitude (dd)	–124.4403	–124.4221	–124.6532[a]	–124.6255[a]	–124.5630
Station	44C	44A	48I	48G	48D
Avg. bottom depth (m)	364.37	238.42	1,086.72	694.94	445.50
Duration (hr)	0.28	0.25	0.37	0.30	0.28
Distance fished (km)	1.50	1.15	1.52	1.31	1.35
Net width (m)	14.50	14.31	15.64	15.98	14.53
Performance	0	0	0	0	0
Species by weight					
Hagfish					0.10
Brown cat shark	0.20			2.59	0.30
Spiny dogfish	15.82	20.25			
Skates	8.27	5.50	13.54	5.85	20.42
Other elasmobranchs					7.82
Arrowtooth flounder					1.18
Petrale sole					
Dover sole	103.55	13.54	84.45	267.91	86.87
Deepsea sole			3.69		
Rex sole	6.41	11.52		0.30	10.43
Other flatfish	0.36	1.79			
Sablefish	4.42		21.03	22.43	9.35
Pacific grenadier			175.42	2.89	
Giant grenadier			35.21	3.15	
Other grenadier					
Pacific flatnose			2.70	*	0.70
Slickheads			2.06	2.98	
Eelpouts	11.64	0.57			5.44
Snailfish					
Pacific whiting	293.46	64.53			5.17
Other roundfish			1.06	0.06	
Shortspine thornyhead	2.99	0.47	257.36	20.95	1.87
Longspine thornyhead			44.39	24.81	1.98
Rougheye rockfish					
Pacific ocean perch	0.43				
Aurora rockfish	3.56				1.88
Darkblotched rockfish					
Splitnose rockfish	1.36	16.70			0.15
Shortbelly rockfish					
Other rockfish	3.88	12.67			
Grooved tanner crab			17.45	6.89	
Other invertebrates	49.70	9.74	0.77	9.42	51.79
Total catch weight (kg)	506.05	157.28	659.13	370.23	205.45

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008060	200001008061	200001008062	200001008063	200001008064
Start date and time	9/12/00 16:19	9/12/00 18:19	9/13/00 7:25	9/13/00 9:06	9/13/00 10:39
Start gear latitude (dd)	40.3350	40.3472	39.6956	39.6852	39.6660
Start gear longitude (dd)	–124.4845	–124.4883	–124.0125	–124.0540	–124.0688
End gear latitude (dd)	40.3448	40.3377	39.6864	39.6756	39.6772
End gear longitude (dd)	–124.4900	–124.4850	–124.0104	–124.0541	–124.0704
Station	48B	48A	52B	52E	52F
Avg. bottom depth (m)			279.17	504.88	608.74
Duration (hr)	0.25	0.27	0.22	0.27	0.28
Distance fished (km)	1.23	1.14	1.07	1.24	1.87
Net width (m)			14.18	14.76	15.94
Performance	–5.1	–2	0	0	0
Species by weight					
Hagfish					
Brown cat shark				2.02	
Spiny dogfish			0.62		3.12
Skates			18.05	4.21	
Other elasmobranchs			3.28		45.00
Arrowtooth flounder			0.34		
Petrale sole					
Dover sole			25.31	10.70	16.85
Deepsea sole					
Rex sole			0.14	0.21	
Other flatfish					
Sablefish			1.52	8.40	
Pacific grenadier					
Giant grenadier					4.41
Other grenadier				0.18	
Pacific flatnose				0.23	0.42
Slickheads					0.10
Eelpouts			0.63	1.56	1.23
Snailfish					
Pacific whiting			109.28		
Other roundfish			8.90	0.00	0.72
Shortspine thornyhead			3.32	7.21	0.84
Longspine thornyhead				4.41	22.40
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish			1.80		
Splitnose rockfish			51.02		
Shortbelly rockfish					
Other rockfish			2.79		
Grooved tanner crab					0.38
Other invertebrates			17.49	32.72	16.98
Total catch weight (kg)			244.49	71.85	112.45

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008065	200001008066	200001008067	200001008068	200001008069
Start date and time	9/13/00 12:30	9/13/00 14:12	9/14/00 6:59	9/14/00 9:49	9/14/00 11:54
Start gear latitude (dd)	39.6858[a]	39.6631	39.0560	39.0307	39.0739[a]
Start gear longitude (dd)	–124.1043[a]	–124.1181	–124.1685	–124.0380	–123.9885[a]
End gear latitude (dd)	39.6794[a]	39.6491	39.0646	39.0431	39.0834[a]
End gear longitude (dd)	–124.0984[a]	–124.1212	–124.1613	–124.0346	–123.9946[a]
Station	52G	52H	56I	56F	56E
Avg. bottom depth (m)	749.91	917.53	1,100.03	630.91	492.69
Duration (hr)	0.27	0.38	0.35	0.30	0.32
Distance fished (km)	1.15	1.99	1.30	1.88	1.10
Net width (m)	15.32	15.37	15.66	15.24	16.18
Performance	0	0	0	0	0
Species by weight					
Hagfish	0.10	0.99		0.31	0.50
Brown cat shark					
Spiny dogfish	1.62	1.16	3.23	4.89	
Skates		3.68	1.41		13.08
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole	16.30	4.32	74.50	61.52	9.99
Deepsea sole	2.02	8.87		3.25	1.04
Rex sole					4.99
Other flatfish					
Sablefish		8.17	57.69	6.01	3.07
Pacific grenadier	0.35	2.42	129.26	0.97	
Giant grenadier	17.81	34.36	19.25	6.89	
Other grenadier					
Pacific flatnose	0.08	1.57	8.07	0.45	0.31
Slickheads	0.16	6.37	39.86	1.17	
Eelpouts	0.12	2.02	4.93	1.52	2.12
Snailfish					
Pacific whiting					5.51
Other roundfish	0.08		0.58	0.90	
Shortspine thornyhead	4.67		16.21	17.74	2.21
Longspine thornyhead	54.29	66.43	48.80	21.52	2.12
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					2.41
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	8.59	27.09	2.44	41.28	0.73
Other invertebrates	8.59	17.08	5.39	8.81	14.24
Total catch weight (kg)	114.78	184.53	411.63	177.23	62.32

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008070	200001008071	200001008072	200001008073	200001008074
Start date and time	9/14/00 13:51	9/14/00 15:39	9/15/00 6:58	9/15/00 9:31	9/15/00 11:54
Start gear latitude (dd)	39.0832	38.9879	38.3822	38.3333	38.3803
Start gear longitude (dd)	–123.9906	–123.9444	–123.5678	–123.5636	–123.6261
End gear latitude (dd)	39.0734	38.9761	38.3729	38.3459	38.3731
End gear longitude (dd)	–123.9868	–123.9487	–123.5644	–123.5656	–123.6207
Station	56D	56A	60B	60C	60E
Avg. bottom depth (m)	428.60	218.47	281.06	351.94	522.88
Duration (hr)	0.28	0.27	0.27	0.27	0.29
Distance fished (km)	1.17	1.46	1.22	1.54	1.39
Net width (m)	13.54	13.67	13.43	13.86	13.53
Performance	0	0	0	0	0
Species by weight					
Hagfish					0.39
Brown cat shark					3.35
Spiny dogfish	0.18			1.76	
Skates	34.64	2.02	5.11	0.71	11.81
Other elasmobranchs		0.44	7.88	5.40	
Arrowtooth flounder					
Petrale sole		0.34			
Dover sole	3.65		28.10	59.76	20.41
Deepsea sole					
Rex sole	2.32	1.09	15.42	16.75	5.47
Other flatfish		1.19	13.26	6.22	
Sablefish		1.99	14.76	3.42	
Pacific grenadier					
Giant grenadier					
Other grenadier					
Pacific flatnose					0.19
Slickheads					
Eelpouts	1.27		1.76	5.57	12.58
Snailfish					
Pacific whiting	10.53	11.04	187.39	102.63	9.35
Other roundfish	0.01	1.60			
Shortspine thornyhead	0.91			2.99	4.46
Longspine thornyhead	0.05				8.14
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	0.85				2.07
Darkblotched rockfish		0.05	0.20		
Splitnose rockfish		0.29	22.09	17.57	
Shortbelly rockfish			0.25		
Other rockfish	1.55	59.12	203.58	2.33	
Grooved tanner crab					0.25
Other invertebrates	45.68	5.09	81.41	2.67	17.45
Total catch weight (kg)	101.64	84.26	581.21	227.78	95.92

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008075	200001008076	200001008077	200001008078	200001008079
Start date and time	9/15/00 13:56	9/15/00 16:14	9/16/00 7:02	9/16/00 9:59	9/16/00 12:07
Start gear latitude (dd)	38.3508	38.3146	37.6232[a]	37.6167	37.6071
Start gear longitude (dd)	–123.6276	–123.6390	–123.1141[a]	–123.0759	–123.0603
End gear latitude (dd)	38.3408	38.2970	37.6298[a]	37.6260	37.6161
End gear longitude (dd)	–123.6172	–123.6359	–123.1013[a]	–123.0851	–123.0469
Station	60F	60G	64H	64F	64E
Avg. bottom depth (m)	608.77	758.85	998.52	620.94	
Duration (hr)	0.29	0.28	0.41	0.32	0.30
Distance fished (km)	1.52	2.22	1.34	1.64	1.70
Net width (m)	14.89	15.13	15.50	15.38	
Performance	0	0	0	0	–5.1
Species by weight					
Hagfish		0.94	0.27	0.37	
Brown cat shark	19.80	3.31	0.74	0.87	
Spiny dogfish				0.80	
Skates	6.52			6.73	
Other elasmobranchs				1.54	
Arrowtooth flounder					
Petrale sole					
Dover sole	9.65	29.73	240.37	73.20	
Deepsea sole		0.98	7.64		
Rex sole	0.18			0.10	
Other flatfish					
Sablefish	3.24	6.29	141.09	70.55	
Pacific grenadier		0.92	50.38		
Giant grenadier		9.39	58.66	34.31	
Other grenadier	0.11			0.00	
Pacific flatnose	1.10	1.03	0.33		
Slickheads		3.06	28.76		
Eelpouts	2.31	2.15	10.51	0.28	
Snailfish					
Pacific whiting	0.94			2.35	
Other roundfish	0.05	0.95	0.04		
Shortspine thornyhead	13.20	1.11	38.77	55.17	
Longspine thornyhead	36.98	32.40	251.47	143.68	
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish				4.98	
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab	7.98	3.77	3.84	3.38	
Other invertebrates	3.36	2.77	14.93	8.50	
Total catch weight (kg)	105.42	98.80	847.80	406.81	

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008080	200001008081	200001008082	200001008083	200001008084
Start date and time	9/16/00 14:21	9/16/00 15:24	9/20/00 7:42	9/20/00 10:11	9/20/00 12:43
Start gear latitude (dd)	37.6343	37.6168	37.0451	37.0400	37.0617
Start gear longitude (dd)	–123.0684	–123.0380	–122.6584	–122.6600	–122.7536
End gear latitude (dd)	37.6256	37.6225	37.0404	37.0488	37.0448
End gear longitude (dd)	–123.0531	–123.0414	–122.6490	–122.6684	–122.7633
Station	64C	64A	68B	68C	68G
Avg. bottom depth (m)		222.39	292.07	352.45	836.13
Duration (hr)	0.40	0.21	0.27	0.30	0.25
Distance fished (km)	1.76	0.81	1.05	1.33	2.19
Net width (m)		13.17	12.83	13.16	14.44
Performance	–5.1	1.11	1.11	0	0
Species by weight					
Hagfish					0.49
Brown cat shark					
Spiny dogfish				0.26	
Skates		5.76	2.64	19.30	3.00
Other elasmobranchs		0.57	4.33	25.85	
Arrowtooth flounder					
Petrale sole		0.45		6.00	
Dover sole		1.61	40.12	37.34	156.50
Deepsea sole					4.56
Rex sole		2.20	11.37	41.11	
Other flatfish		6.84	16.19	6.63	
Sablefish			2.69	8.78	6.29
Pacific grenadier					0.76
Giant grenadier					
Other grenadier					
Pacific flatnose					0.59
Slickheads					1.07
Eelpouts		0.39	8.41	7.24	2.20
Snailfish					
Pacific whiting		2.07	41.78	14.86	
Other roundfish					0.01
Shortspine thornyhead		1.94		1.57	3.86
Longspine thornyhead					60.09
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish			0.23		
Splitnose rockfish		13.35	131.75	221.09	
Shortbelly rockfish		0.16			
Other rockfish		36.56	127.63	5.77	
Grooved tanner crab					3.72
Other invertebrates		7.42	2.56	36.86	1.59
Total catch weight (kg)		79.32	389.70	432.66	244.73

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008085	200001008086	200001008087	200001008088	200001008089
Start date and time	9/20/00 15:41	9/20/00 18:18	9/21/00 7:04	9/21/00 9:26	9/21/00 11:52
Start gear latitude (dd)	37.0201[a]	37.0189	36.3993[a]	36.4081[a]	36.3789[a]
Start gear longitude (dd)	–122.7658[a]	–122.7696	–122.2237[a]	–122.1887[a]	–122.1572[a]
End gear latitude (dd)	37.0195[a]	37.0005	36.3902[a]	36.3982[a]	36.3697[a]
End gear longitude (dd)	–122.7650[a]	–122.7719	–122.2254[a]	–122.1894[a]	–122.1558[a]
Station	68H	68H	72I	72H	72G
Avg. bottom depth (m)		922.45	1,109.30	957.41	797.33
Duration (hr)	0.19	0.29	0.29	0.28	0.26
Distance fished (km)	0.00	2.13	1.08	1.15	1.19
Net width (m)		15.38	15.67	15.23	15.01
Performance	–5.1	0	0	0	0
Species by weight					
Hagfish		0.74	0.17		0.19
Brown cat shark				2.64	4.88
Spiny dogfish		0.93	4.48		
Skates		0.15	3.78	1.54	
Other elasmobranchs					
Arrowtooth flounder					
Petrale sole					
Dover sole		111.26		10.02	57.81
Deepsea sole		3.90	1.06	7.89	
Rex sole					
Other flatfish					
Sablefish		11.35	1.76	20.20	11.05
Pacific grenadier		17.19	134.90	12.41	
Giant grenadier		13.32	40.61	16.35	6.53
Other grenadier					
Pacific flatnose		0.80	6.28	2.17	0.75
Slickheads		18.57	19.99	25.13	1.96
Eelpouts		0.82	5.49	1.54	3.36
Snailfish					
Pacific whiting					0.70
Other roundfish		0.01	0.55	0.73	0.06
Shortspine thornyhead		9.76	22.73	8.28	2.70
Longspine thornyhead		76.65	34.67	45.20	47.83
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					
Shortbelly rockfish					
Other rockfish					
Grooved tanner crab		1.79	7.51	4.24	5.09
Other invertebrates		2.64	7.59	14.55	14.46
Total catch weight (kg)		269.88	291.57	172.89	157.37

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008090	200001008091	200001008092	200001008093	200001008094
Start date and time	9/21/00 13:47	9/21/00 15:32	9/21/00 16:38	9/21/00 17:23	9/22/00 8:18
Start gear latitude (dd)	36.3247	36.3078	36.3131[a]	36.3050	35.6194
Start gear longitude (dd)	–122.1079	–122.0831	–122.0828[a]	–122.0842	–121.3415
End gear latitude (dd)	36.3135	36.3003	36.3130[a]	36.2993	35.6297
End gear longitude (dd)	–122.1040	–122.0790	–122.0828[a]	–122.0772	–121.3497
Station	72C	72A	72A	72A	76A
Avg. bottom depth (m)					221.96
Duration (hr)	0.27	0.28	0.00	0.27	0.27
Distance fished (km)	1.38	0.97	0.00	0.97	1.41
Net width (m)					14.16
Performance	–5.1	–5.1	–5.1	–5.1	0
Species by weight					
Hagfish					
Brown cat shark					
Spiny dogfish					
Skates					1.01
Other elasmobranchs					4.58
Arrowtooth flounder					
Petrale sole					1.14
Dover sole					
Deepsea sole					
Rex sole					
Other flatfish					0.64
Sablefish					0.73
Pacific grenadier					
Giant grenadier					
Other grenadier					
Pacific flatnose					
Slickheads					
Eelpouts					0.27
Snailfish					
Pacific whiting					1.81
Other roundfish					1.62
Shortspine thornyhead					
Longspine thornyhead					
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish					
Darkblotched rockfish					
Splitnose rockfish					0.01
Shortbelly rockfish					0.67
Other rockfish					50.95
Grooved tanner crab					
Other invertebrates					2.22
Total catch weight (kg)					65.65

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number				
Haul specifications	200001008095	200001008096	200001008097	200001008098	200001008099
Start date and time	9/22/00 10:27	9/22/00 12:19	9/22/00 15:11	9/22/00 18:36	9/23/00 6:57
Start gear latitude (dd)	35.6270	35.6165[a]	35.5949[a]	35.5940[a]	35.0208[a]
Start gear longitude (dd)	–121.4133	–121.4920[a]	–121.7050[a]	–122.0097[a]	–121.5674[a]
End gear latitude (dd)	35.6161	35.6075[a]	35.6038[a]	35.5833[a]	35.0317[a]
End gear longitude (dd)	–121.4124	–121.4906[a]	–121.7115[a]	–122.0105[a]	–121.5695[a]
Station	76D	76F	76H	76J	80I
Avg. bottom depth (m)	435.08	619.19	914.46	1,197.26	1,050.13
Duration (hr)	0.27	0.27	0.33	0.36	0.39
Distance fished (km)	1.38	0.00	1.05	1.55	1.58
Net width (m)	15.83	15.82	14.68	15.81	15.58
Performance	0	0	0	0	0
Species by weight					
Hagfish		0.10	0.64		0.14
Brown cat shark		3.37	0.15	15.16	
Spiny dogfish					
Skates	17.75	4.98		8.11	
Other elasmobranchs	7.82	2.63			
Arrowtooth flounder					
Petrale sole					
Dover sole	95.81	11.42	27.25		89.07
Deepsea sole			7.01	4.78	5.94
Rex sole	3.30				
Other flatfish					
Sablefish	11.83	21.86	24.84	14.99	23.74
Pacific grenadier			0.62	78.95	10.59
Giant grenadier			8.78	15.57	7.08
Other grenadier					0.01
Pacific flatnose			0.08	3.02	2.26
Slickheads			2.00	28.48	22.37
Eelpouts	2.25		2.00	0.05	10.50
Snailfish					
Pacific whiting	53.54	2.97			
Other roundfish		0.11	0.43	0.64	0.83
Shortspine thornyhead	4.68	14.47	17.37	11.78	21.41
Longspine thornyhead		26.60	106.37	7.42	30.32
Rougheye rockfish					
Pacific ocean perch					
Aurora rockfish	11.82				
Darkblotched rockfish					
Splitnose rockfish	4.10				
Shortbelly rockfish					
Other rockfish	3.41				
Grooved tanner crab			1.55	1.14	1.20
Other invertebrates	40.12	4.68	11.43	40.28	25.46
Total catch weight (kg)	256.43	93.19	210.52	230.37	250.92

Table A-1 continued. Station and catch (kg) data from the 2000 NWFSC slope survey.

	Haul number			
Haul specifications	200001008100	200001008101	200001008102	200001008103
Start date and time	9/23/00 10:05	9/23/00 11:59	9/23/00 13:22	9/23/00 14:23
Start gear latitude (dd)	35.0329[a]	35.0558[a]	35.0726[a]	35.0765
Start gear longitude (dd)	–121.2770[a]	–121.1006[a]	–120.9974[a]	–120.9588
End gear latitude (dd)	35.0384[a]	35.0624[a]	35.0656[a]	35.0875
End gear longitude (dd)	–121.2654[a]	–121.0915[a]	–120.9888[a]	–120.9569
Station	80F	80E	80C	80B
Avg. bottom depth (m)	612.89	527.64	386.50	305.69
Duration (hr)	0.29	0.30	0.25	0.30
Distance fished (km)	1.33	1.15	1.37	1.40
Net width (m)	14.49	14.87	14.62	15.20
Performance	0	0	0	0
Species by weight				
Hagfish				
Brown cat shark	2.04	3.02	0.12	0.13
Spiny dogfish				
Skates	4.12	3.17	10.43	
Other elasmobranchs		1.32	2.41	0.57
Arrowtooth flounder				
Petrale sole			0.29	
Dover sole	79.15	23.37	20.77	0.26
Deepsea sole	0.83			
Rex sole			28.43	0.23
Other flatfish			1.50	0.37
Sablefish	5.09		18.32	12.99
Pacific grenadier	0.77			
Giant grenadier				
Other grenadier		0.19		
Pacific flatnose				
Slickheads	0.02			
Eelpouts		0.33	2.84	0.04
Snailfish				
Pacific whiting	0.95	1.77	53.06	100.59
Other roundfish	0.32	0.08		
Shortspine thornyhead	13.36	6.31	0.67	
Longspine thornyhead	31.68	24.07		
Rougheye rockfish				
Pacific ocean perch				
Aurora rockfish		6.02	0.10	
Darkblotched rockfish				
Splitnose rockfish			73.81	51.37
Shortbelly rockfish				
Other rockfish			0.22	32.97
Grooved tanner crab				
Other invertebrates	21.87	117.89	65.08	46.60
Total catch weight (kg)	160.20	187.54	278.05	246.12

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