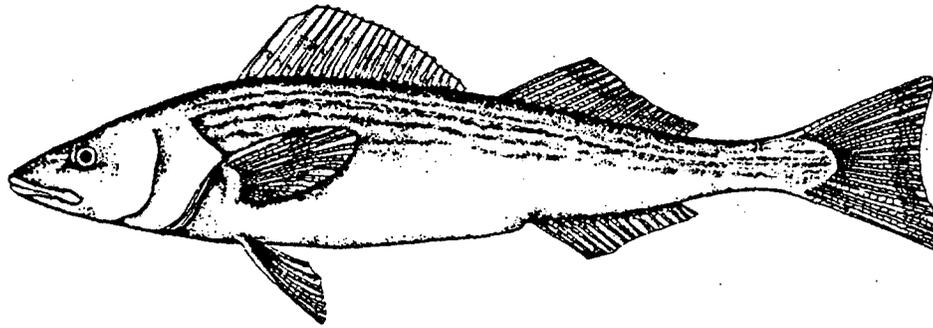


Relative Abundance of Sablefish and Other Groundfish Caught on Longline Gear in Prince William Sound, Alaska, 1996.



By
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ABSTRACT

The Alaska Department of Fish and Game has actively managed a commercial fishery for sablefish *Anoplopoma fimbria* in Prince William Sound since the 1980s. The harvest guidelines for this fishery was developed by applying a yield-per-habitat model using mean values from Clarence Strait in Southeast Alaska. There has been little additional analysis of the suitability of a relatively fixed annual harvest level for the PWS sablefish resource. A multi-year study was initiated in 1996 to determine the relative abundance and composition of groundfish caught on longline gear in PWS sablefish habitat. Fishing effort was standardized as 45 hooks, spaced 2 m apart, attached to a 100 m skate; fifteen skates were attached to make a 1500 m long set with 675 hooks. A single set was placed in a randomly selected station. A total of 31 sets, involving nearly 21,000 hooks, were made in depths ranging from 202-761 m. Upon retrieval, 2% of the hooks (n= 369) were unbaited, 6% were ineffective by being bent, tangled, or missing, and 75% were baited; the remaining hooks held fish. Arrowtooth flounder *Atheresthes stomias*, Pacific halibut *Hippoglossus stenolepis*, walleye pollock *Theragra chalcogramma*, Pacific sleeper shark *Somniosus pacificus*, and sablefish were the only species caught in all depth strata. Sablefish were the most abundant species in the catch with catch rates ranging from 1.79 fish per longline skate in the 301-400 m depth stratum to 5.71 fish per longline skate in the 701-800 m depth. Pacific halibut yielded the next largest catch rates, generally decreasing with depth from 2.62 halibut per skate in the 201-300 m depth to 0.60 halibut per skate in the 701-800 m depth. Skate species, genera *Raja* and *Bathyraja*, produced the third greatest catch rates among all strata but declined with greater depth from 1.96 fish per skate at 201-300 m to 0.37 fish per skate at 701-800 m. Catches of most other fish groups declined with depth or exhibited relatively minor changes with depth. Changes in fish size with depth varied by species. The mean length of both sablefish and Pacific cod increased with depth, although neither species were caught deeper than 500 m. For other species or fish groups, either no major trends were apparent or too few fish were caught to provide meaningful comparisons.

Survey results are critical to monitoring long-term changes in the sablefish and other fisheries resources. However, this data provides only an index and is not an absolute measure of abundance. It will be important that survey data be correlated with biological data from commercial fisheries, particularly harvest, age, and length data. Only by examining these relationships over an extended time series will meaningful data be available to evaluate annual harvest levels.

KEY WORDS: Sablefish, *Anoplopoma fimbria*, groundfish, longline, survey, distribution, relative abundance, length

INTRODUCTION

The Alaska Department of Fish and Game (ADF&G) has management responsibility for groundfish resources in the Prince William Sound (PWS) area. Groundfish are defined to include all marine finfish except halibut, salmon, herring, and osmerids. Prior to the late 1980s, the groundfish fisheries in Prince William Sound were prosecuted year-round at relatively low annual harvest levels (Bechtol 1995; Trowbridge 1996). Biological and economic declines in fisheries such as salmon, combined with diversification by much of the fishing fleet, have increased effort in the groundfish fisheries and raised concerns about sustainable yields from the groundfish resources. Marked improvements in both fishing technology and market conditions have exacerbated these concerns. Fishery changes have been particularly pronounced for sablefish *Anoplopoma fimbria*. In 1995 an Individual Fishing Quota (IFQ) program was implemented for sablefish in the federal waters adjacent to PWS to cap the rapidly increasing effort (Strickland 1995). Increasing effort in the PWS fishery compromised management and in 1996 a limited entry program adopted by the Commercial Fisheries Entry Commission was implemented for PWS sablefish (Trowbridge 1996). The PWS sablefish fishery is primarily prosecuted with longline gear.

Management of PWS sablefish has been based on a yield-per-habitat model developed for similar habitat in Clarence Strait in Southeast Alaska (Bechtol and Morrison *in press*). With an estimated yield ranging from 0.06 to 0.25 metric tons per square nautical mile (mt/nm²), a guideline harvest level (GHL) of 40-140 mt was applied from 1986 to 1992. However, due to improved bathymetric mapping techniques, the area deemed as suitable sablefish habitat was increased by 26% in 1993 with the GHL modified to 44-175 mt. Management has typically targeted the GHL midpoint (Bechtol 1995).

While managers have attempted to maintain a relatively fixed annual harvest, there has been little additional analysis of the suitability of this GHL for the PWS sablefish resource. Fisheries performance data has primarily been limited to ADF&G fish ticket harvest records. The refinement of management strategies for PWS sablefish will require better stock assessment information, particularly data on species composition, distribution, and productivity. Collection of this data requires fisheries-independent surveys.

A study was initiated in 1996 to determine the relative abundance and composition of groundfish caught on longline gear in PWS sablefish habitat. The main emphasis was to develop a fishery-independent index of sablefish abundance to serve as a baseline for monitoring changes in the sablefish resource. Specific objectives of the project in PWS were to:

- 1) Determine the relative abundance and size composition of commercially important species caught on longline gear in waters deeper than 100 fathoms.

- 2) Compare the relative abundance and size composition of commercially important groundfish species in PWS to surveys conducted in the Gulf of Alaska.

METHODS

Study Area and Sample Stations

The PWS sablefish fishery occurs only in the Inside District, delineated by lines from Point Whitted to Point Bentinck, from Cape Hinchinbrook to Zaikof Point, and from Cape Cleare to Cape Puget (Figure 1). The Inside District was divided into three sampling areas by delineation at 147°00' W longitude and 60° 30'N latitude (Figure 1). The sampling areas were further divided into 2.5 nm x 2.5 nm square grids. A square was considered a potential sampling station if the maximum water depth was ≥ 183 m (100 fathoms), the surface area exceeded 50% water, and the square largely excluded areas with a high probability of gear loss such as water designated as a vessel traffic lane or charted as containing underground cables.

Monte Carlo simulations indicated that variability in area-weighted longline CPUE declined with greater sample size when sample size was varied from two to 26 sample stations and two to 20 skates per set (Mike Sigler, National Marine Fisheries Service, personal communication). However, increasing the sample size above 12 stations per area or 12 longline skates per set usually produced only small reductions in the sample variance. Thus, the minimum sample size was determined to be 12 longline skates per set or 12 sample stations per area. For simplification and to provide for potential gear loss or problems, each longline set in the PWS study consisted of 15 longline skates of 100 m each, tied together for a total of 1,500 m.

The eastern portion of PWS contained approximately 30% of the potential sample stations but yielded only 7% of the commercial harvests since 1987 (Table 2). Due to this minor contribution and limitations on sampling time, no sampling effort was expended in eastern PWS in 1996. At a potential of three stations per day, a total of 48 stations would be sampled during the available survey period. The preliminary survey design allocated sample stations to the two areas in western PWS approximately proportional to the commercial harvest contribution between these two areas. The minimum sample size of 12 stations, or 25% of the total survey effort, was allocated to the southwest area and 75%, or 36 stations, to the northwest area. Within an area, survey stations were randomly selected from all potential stations meeting the criteria of depth and a minimum potential of gear loss.

Vessel and Gear

Survey operations were conducted with the ADF&G research vessel *Montague*, which has an overall length of 17.7 m (58 ft), a displacement of 81.6 metric tons, and is powered by a 335 hp diesel engine. Gear setting began about 0800 hours daily with retrieval of a given gear set following a soak time of at least three hours. Gear setting and retrieval continued throughout the day until about 1700 hours. After collection of biological data, the marketable catch was processed into either a bled or an "Eastern cut" condition and the catch iced in the vessel hold. Every three to five days the iced catch was offloaded to a shoreside processor or a tender vessel and the catch sold to offset survey costs.

Gear configuration was similar to that used by the National Marine Fisheries Service for annual longline surveys of sablefish in the Gulf of Alaska and the Aleutian Islands/Bering Sea areas (Sigler and Zenger 1994; Michael Sigler, Scientific operations plan: NMFS sablefish longline survey, Unpublished manuscript, 31 October 1995 National Marine Fisheries Service, AFSC-Seattle). Longline skates were 100 m (55 fathom) long and contained forty-five size 13/0 circle hooks. An entire set comprised of 15 skates totaling 1,500 m contained 675 hooks. Hooks were attached to 38 cm gangions (15 inch tied length; 74 cm [29 inch] untied length) secured to 46 cm (18 inch) beackets tied into the groundline at 2 m (6.5 ft) intervals. Gangion eyes were tied 10 cm (4 inch) long. Each groundline was marked with flagging and ink at the first and forty-fifth beackets and with ink at the remaining forty-three beackets. The groundlines were bare for the first five meters (16 ft) at each end. Gangions and beackets were medium lay #60 thread and medium lay #72 thread, respectively. All groundline skates and buoylines were medium-lay 9.5 mm (3/8 in) American Line SSR 100¹.

Each end of a longline set was marked with a flag and buoy array, followed by a buoyline, a 27 kg (60 lb) halibut anchor, and 183 m (100 fm) of bare groundline, that was attached to the groundline skates. A 2.3 kg (5 lb) lead ball was snapped onto both ends of each 1,500 m set and between each 100 m longline skate.

Each hook was hand baited with chopped *Illex* squid at the rate of 5.5 kg (12 lb) per 100 hooks. Only the mantle, and not the head or legs, was used for bait. For baiting, the mantle was cut into 4-5 cm (1 1/2-2 inch) long pieces, yielding 3-4 bait pieces from each 15-23 cm (6-9 inch) mantle.

Given wind and sea currents at each station, the gear was set in a location and direction determined by the vessel skipper and the project leader. The gear was typically set and retrieved in the same direction such that the first buoy set was the first buoy retrieved. Soak time was defined as the difference between the time the last anchor went over at setting and the time the

¹ Product names are provided to document methods and do not constitute an endorsement by ADF&G.

first anchor was brought aboard at retrieval. Soak time was at least 3 hours based on NMFS experiments showing that the catch rate on sablefish longline gear is asymptotic with about 90% of the total catch occurring in the first 3 hours (Michael F. Sigler, National Marine Fisheries Service, Juneau, Alaska, personal communication).

Data Collection

Station Data

The station number, date, time, latitude and longitude coordinates (from GPS), and depth were recorded at each anchor deployment and retrieval. The vessel skipper also recorded the set direction, wind velocity, surface temperature (°C), and sea conditions when the gear was set. The time and depth when the last anchor was deployed during setting was treated as the start of the soak; the time and depth that the first anchor was brought aboard during set retrieval was treated as the end of the soak.

Catch Data

Data recorded as each hook was brought aboard included: (1) fish species or major fish group (Hart 1973; Kessler 1985; Kramer and O'Connell 1988); (2) if an unoccupied hook was functional or ineffective, with the latter defined as absent, bent, broken, or tangled; and (3) whether bait remained on a functional, but otherwise, unoccupied bait. Fish observed as being caught, but lost while being brought aboard the vessel were counted as a catch and not as an empty hook. After being documented, Pacific halibut *Hippoglossus stenolepis*, salmon shark *Lamna ditropis*, and Pacific sleeper shark *Somniosus pacificus* were released without being brought aboard. All other fish species were brought aboard and measured for total length (1.0 mm measured from tip of snout to tip of tail). Fish observed hooked but lost while being brought aboard were documented according to species only.

Target species during this survey included sablefish, Pacific cod *Gadus macrocephalus*, walleye pollock *Theragra chalcogramma*, and all rockfish (*Sebastes* and *Sebastolobus* genera). Every tenth fish within a target species was sampled for total length (1.0 mm), sex, and gonad maturity; an otolith was removed for aging. Morphometric data were recorded on an electronic measuring board or on field forms and later transferred to computer files.

Data Analysis

All potential stations were assigned to a depth stratum based on the deepest depth within a survey station as identified visually on NOAA nautical chart #16700. Strata were defined according to

100 m increments, e.g., 101-200 m. Survey catch data were post-stratified by depth with the catch for a survey station assigned to a stratum according to the average of the depths at the first and last anchor deployment. Catch-per-unit-of effort (CPUE) was then calculated for each species as mean catch per longline skate within stratum i (\bar{C}_i) with standard deviation, s^2 , according to:

$$\bar{C}_i = \frac{\sum_{j=1}^{n_i} C_{ij}}{n_i}$$

$$s_i^2 = \frac{\sum_{j=1}^{n_i} (C_{ij} - \bar{C}_i)^2}{n_i - 1}$$

where C_{ij} = catch on longline skate j in stratum i
 n_i = number of skates fished in stratum i

The relative population number, or RPN (Sigler and Zenger 1994), for each species was calculated by weighting the mean catch rate in a stratum with the total available area of that stratum, A_i , measured in square nautical miles:

$$RPN = \sum_{i=1}^k \bar{C}_i \times A_i$$

Length frequency distributions, summarized in 20 mm increments, and mean lengths were computed for each species and each stratum. These statistics were not calculated for species groups, such as skates, or for fish that were not accurately measured, such as Pacific sleeper sharks. For length distributions, the counts in 20 mm increment of a frequency distribution were weighted by the total number of stations available in a stratum relative to the number actually fished, F_i . The weighted counts were then summed across strata to obtain a weighted cumulative distribution using:

$$L_k = \sum_{i=1}^n \frac{l_{ik} \times F_i}{A_i}$$

where l_{ik} = the abundance in increment k and stratum i , and
 L_k = the weighted abundance in increment k among all strata in the northwest area.

RESULTS

Sampling Effort

The survey target rate of three stations per day was not consistently realized and the study design was modified to sample stations in the northwest area. However, toward the end of the available allotted time, it became apparent that weather was going to inhibit fishing in some of the more exposed stations along the southern portion of the northwest area. In order to sample as many stations as possible while minimizing the limited travel time, two northern stations off the randomly selected list for the southwest area were substituted for the exposed northwest area stations. The substituted stations appeared to be similar in habitat and depth and were geographically within 10 nmi of the canceled stations, and were thus treated as a proxy for the canceled stations.

During the survey a total of 31 sets were made in depths ranging from 202-761 m (Table 3; Figure 2). Given the criteria specified for sample station selection, these stations represented 23% of the potential sablefish habitat in the northwest area of PWS (Table 4). Fifteen skates of gear were fished on most sets; because one extra skate was fished on set number 9602 due to an error during set preparation, a total of 466 skates were fished. The number of skates per stratum ranged from 60-105 skates, with the greatest number, 105 skates, fished in the 301-400 m stratum and the least effort, 60 skates, fished in both the 401-500 m and the 501-600 m strata.

The total fishing effort resulted in the setting of 20,970 hooks (Table 5). Upon retrieval, 2% of the hooks (n= 369) were unbaited, 6% (n=1,360) were ineffective by being bent, tangled, or missing, and 75% (n=15,674) were baited; the remaining hooks held fish.

Catch By Depth

Arrowtooth flounder, Pacific halibut, Pacific sleeper shark, walleye pollock, and sablefish were the only individual species caught in all depth strata (Table 6). The skate species group was also caught in all strata.

Sablefish yielded the greatest relative catch of all species from all depth strata in the survey area (Table 7). The number of sablefish caught per longline skate generally increased with depth, ranging from 1.79 fish per skate in the 301-400 m stratum to 5.71 fish per skate in the 701-800 m depth. The average catch among all depths was 3.55 sablefish per longline skate. Pacific halibut averaged 1.80 fish per longline skate, the second greatest mean catch rate for all strata. Halibut catch rates generally decreased with depth from 2.62 halibut per skate in the 201-300 m depth to 0.60 halibut per skate in

the 701-800 m depth. However, halibut catches peaked at 3.48 halibut per longline skate in the 401-500 m depth. Skate species, primarily longnose skate (*Raja rhina*), big skate (*Raja binoculata*), and Aleutian skate (*Bathyraja aleutica*), produced the third greatest catch rate, 0.97 fish per longline skate, among all strata. Skate catches declined with greater depth from 1.96 fish per longline skate at 201-300 m to 0.37 fish per longline skate at 701-800 m. Catches of most other fish groups declined with depth or exhibited relatively minor changes with depth. For example, Pacific cod was caught at 2.16 fish per skate in the 201-300 m depth, but no fish were caught in the three strata encompassing 501-800 m. In contrast to most species with catch rates that decreased with depth, shortraker rockfish were not found shallower than 301 m (Table 6).

Relative Population Number

Depth strata 1, 2, and 9 were excluded from calculations of relative population numbers because stations shallower than 201 m nor deeper than 800 m were not sampled (Tables 4 and 8). More sablefish were caught than any other species during the survey, representing 41% of all fish caught with an aggregate RPN of 426 fish among all stations in the northwest area. This RPN was nearly twice the 262 fish (25% of the total) calculated for Pacific halibut among all northwest stations. Skate species ranked third with an RPN of 148 fish (14%), followed by an RPN of 87 (8%) for Pacific cod. The five remaining species groups in aggregate comprised 12% of the total RPN.

Fish Size

Changes in fish size with depth varied by species (Table 9). Sablefish mean length increased with depth from 547.6 mm in the 201-300 m depth to 688.2 mm in the 701-800 m depth stratum. The sablefish weighted mean was 627.5 mm. The weighted sablefish length distribution was bimodal with major modes centered at 540 and 680 mm (Figure 3). The largest mode at 680 mm represented about 12% of the sampled sablefish.

Pacific cod, although not caught deeper than 500 m, also increased in size with depth from 707.0 mm (n=185) in the 201-300 m depth stratum to 769.0 mm (n=3) in the 401-500 m stratum. Among all strata, Pacific cod averaged 711.7 mm (n=247). Numerous modes were present in the Pacific cod length distribution with the largest component of the sampled fish in the 680-840 mm size range (Figure 4).

The length of rougheye rockfish also tended to increase with depth from 491 mm in the 201-300 m depth to 608 mm in the 501-600 m depth averaging 528.5 mm among all survey strata. Rougheye rockfish lengths exhibited several modes, including at 460 and 600 mm (Figure 5).

For other species or fish groups, either no major trends were apparent or too few fish were caught to provide meaningful comparisons. For example, walleye pollock averaged 604.0 mm (n=120) in

length among all strata, but mean length was quite similar in the deepest and shallowest strata. This occurrence for pollock, a semi-pelagic species, may result from pollock being captured in the water column while the gear is being deployed or retrieved. The pollock length distribution exhibited a primary mode at 580 mm and a second mode at 700 mm (Figure 6). Arrowtooth flounder averaged 600.1 mm among all depth strata, but changes were inconsistent between depths. The aggregate length distribution exhibited a variety of modes, with the primary mode at 760 mm (Figure 7). For shortraker rockfish, the mean length among all strata was 702.0 mm, with larger mean lengths observed in the 401-500 m and 501-600 m depths and smaller mean lengths in other strata. The weighted length distributed indicated a primary mode at 720 mm, although a variety of modes were present suggesting this long-lived species is represented by numerous age classes (Figure 8). Redbanded rockfish, giant wrymouth, flathead sole, and roughscale rattail were each caught in only a single stratum. Due to the small sample size, weighted length distributions were not calculated for these latter four species.

DISCUSSION

For the area and depths of northeast PWS surveyed with longline in 1996, sablefish yielded the greatest relative population number (RPN) both within and among all depths, comprising an average of 41% of the aggregate RPN for all catches (Table 8). Pacific halibut yielded the second greatest aggregate RPN, followed sequentially by skates and then Pacific cod. Although sablefish also had the greatest RPN in offshore federal surveys of the upper continental slope during 1988 and 1989, the aggregate RPN ranking differed substantially for other species (Sigler and Zenger 1994). Grenadiers as a species group yielded the second greatest RPN in offshore surveys, followed by rougheye and shortraker rockfish (pooled in federal analysis), Pacific cod, and thornyhead rockfish. Rougheye rockfish and shortraker rockfish were pooled in the federal analysis. In contrast, the PWS study caught only a single grenadier, a roughscale rattail, and all rockfish pooled as a group comprised only 3.7% of all aggregate RPNs. Some of these differences may be due to variation in species distributions and differences in the available depth strata and habitat between PWS and offshore waters. For example, the strata making the largest single contribution to grenadier RPN in offshore waters was the 801-1000 m depth, a habitat relatively unavailable in PWS (Table 4). Nonetheless, it is apparent that the relative species composition in PWS is substantially different from the offshore federal waters. Although sablefish had the greatest RPN in both areas, previous analysis of size compositions in the commercial fisheries suggested different recruitment trends between PWS and adjacent offshore waters (Bechtol and Morrison *in press*). Only by monitoring of sablefish recruitment in PWS will managers be able to adapt to changes in this resource.

The primarily goal of this survey was to develop a quantifiable, repeatable index of the sablefish resource in Prince William Sound, Alaska. This survey targeted a habitat that is not assessed through other ADF&G surveys but has produced a vast component of the sablefish, as well as

Pacific halibut, harvest in Prince William Sound. Data collected included catch-per-unit-of-effort for sablefish and other species, and length, for most captured species. After further laboratory analysis, age, sex, and maturity data will also be analyzed for most species.

To improve the utility of this survey, greater efforts should be made to identify all the catch to species. In addition, all species should be measured to length. Of particular note, this survey caught a total of 63 sharks including 32 Pacific sleeper, 1 salmon, and 30 spiny dogfish. Although there continues to be interest expressed in shark resources off the coast of Alaska, there is very little information on which to base management decisions. This survey provides a unique opportunity to tag and release captured sharks, with subsequent recapture data applied to age, growth, and migration models.

Survey results will be critical to monitoring long-term changes in the sablefish resource, as well as other species for which there is no established monitoring program. However, this data provides only an index and not an absolute measure of abundance, and it will be important that survey data be correlated with biological data from the commercial fishery, particularly harvest levels and age and length data. Only by examining these correlations over an extended time series will meaningful data be available to modify, if appropriate, annual harvest levels.

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Table 1. Commercial sablefish landings from Prince William Sound, Alaska, 1984-1996.

Year	Vessels	Landings	Harvest - Round weight		Price	Exvessel Value	Lb per Vessel	Lb per Landing	Season Dates ^{a/}	
			(lb)	(mt)					Opened	Closed
1984	20	37	109,920	50	\$0.46	\$50,563	5,496	2,971	1/1	12/31
1985	29	108	383,290	174	\$0.60	\$229,974	13,217	3,549	1/1	11/20
1986	32	36	189,850	86	\$0.64	\$121,504	5,933	5,274	4/1	6/21
1987	71	120	205,350	93	\$0.66	\$135,531	2,892	1,711	4/1	6/25
1988	53	147	226,206	103	\$1.00	\$226,206	4,268	1,539	4/1	7/21
1989	26	98	190,633	86	\$0.85	\$162,038	7,332	1,945	6/12	12/31
1990	70	257	213,974	97	\$0.71	\$151,922	3,057	833	4/1	8/7
1991	72	147	331,314	150	\$0.93	\$308,122	4,602	2,254	5/15	6/22
1992	54	119	438,301	199	\$1.14	\$499,663	8,117	3,683	5/15	6/1
1993	55	87	313,976	142	\$1.03	\$323,395	5,709	3,609	5/17	6/12
1994	55	92	279,292	127	\$1.45	\$404,973	5,078	3,036	5/23	6/8
1995	124	135	574,195	260	\$2.24	\$1,286,197	4,631	4,253	5/1	5/3
1996	65	68	251,394	114	\$1.86	\$467,593	3,868	3,697	5/1	5/2

^{a/} Beginning in the mid-1990s, the season for many fishing years involved multiple openings, each of short duration.

Table 2. Annual commercial harvest of sablefish from subareas in Prince William Sound, Alaska, 1987-1995.

Year	Percent of total Harvest by Subarea			Harvest Weight (Round lb)
	East	Northwest	Southwest	
1987	2%	87%	11%	205,350
1988	2%	84%	14%	226,206
1989	0%	91%	9%	190,633
1990	1%	69%	30%	213,974
1991	24%	58%	18%	331,314
1992	13%	51%	36%	438,301
1993	2%	82%	16%	313,976
1994	1%	79%	20%	279,292
1995	6%	82%	12%	574,195
Average	7%	74%	19%	308,138

Table 3. Date, time, location, and water temperature for longline sets made during the Prince William Sound sablefish survey, 6-23 September 1996.

Set Number	Date	Station	Soak Start		Soak End		Soak Time		Heading (deg.)	Length (nm)	Depth (m)		Temp (°C)
			latitude	longitude	latitude	longitude	Set	Pull			Shallow	Deep	
9601	09/06/96	N19	60°43.7'	147°08.60'	60°43.90'	147°06.87'	17:24	20:29	55	0.9	388	427	12.2
9602	09/07/96	O18	60°41.3'	147°11.85'	60°42.0'	147°11.00'	09:26	12:45	10	0.9	219	267	10.6
9603	09/07/96	P18	60°37.8'	147°11.84'	60°38.5'	147°11.03'	10:24	14:55	15	0.8	240	257	10.6
9604	09/08/96	Q17	60°35.8'	147°16.63'	60°36.5'	147°16.00'	07:39	10:55	10	0.9	203	215	9.7
9605	09/08/96	R17	60°33.8'	147°18.93'	60°34.6'	147°18.28'	08:19	12:45	10	0.9	202	223	10.9
9606	09/08/96	S19	60°31.8'	147°6.49'	60°31.0'	147°07.23'	09:57	15:50	180	0.9	216	237	11.7
9607	09/09/96	K20	60°51.0'	147°4.20'	60°50.3'	147°04.69'	10:12	13:50	165	0.8	370	411	8.2
9608	09/09/96	M18	60°46.4'	147°12.40'	60°47.1'	147°11.91'	11:21	15:52	360	0.9	370	383	12.0
9609	09/10/96	O13	60°40.6'	147°39.28'	60°41.4'	147°39.31'	08:49	13:05	340	0.8	724	733	13.3
9610	09/10/96	P13	60°38.2'	147°39.23'	60°39.0'	147°39.23'	09:44	14:43	345	0.8	663	724	13.4
9611	09/11/96	P12	60°39.0'	147°43.57'	60°38.3'	147°43.64'	10:11	13:41	155	0.8	750	754	13.6
9612	09/11/96	O12	60°42.1'	147°41.05'	60°41.3'	147°41.07'	11:13	15:56	155	0.8	710	737	13.3
9613	09/12/96	M12	60°46.4'	147°41.20'	60°45.6'	147°41.87'	09:20	13:20	165	0.9	540	550	13.3
9614	09/12/96	N11	60°44.3'	147°45.89'	60°43.5'	147°46.58'	10:03	15:20	165	0.9	519	538	13.3
9615	09/13/96	H14	60°58.9'	147°38.47'	60°58.0'	147°34.56'	09:23	13:05	155	0.9	231	271	11.6
9616	09/13/96	J15	60°54.2'	147°28.30'	60°53.4'	147°28.82'	10:30	15:10	170	0.9	428	430	12.8
9617	09/14/96	M14	60°45.5'	147°34.52'	60°46.4'	147°34.54'	09:50	12:58	335	0.9	549	573	13.1
9618	09/14/96	N13	60°44.1'	147°38.00'	60°43.3'	147°37.98'	10:55	15:10	155	0.8	636	651	13.2
9619	09/15/96	J07	60°54.7'	148°7.94'	60°54.0'	147°08.87'	07:58	11:17	185	0.8	393	402	11.1
9620	09/15/96	M07	60°46.6'	148°9.27'	60°46.2'	148°07.91'	09:29	13:08	95	0.8	432	433	12.6
9621	09/19/96	Q09	60°35.5'	147°57.30'	60°36.2'	147°58.54'	10:29	13:58	300	0.9	596	614	12.3
9622	09/19/96	Q08	60°35.3'	148°01.48'	60°35.8'	148°02.80'	11:32	15:57	295	0.9	610	615	12.7
9623	09/19/96	Q07	60°36.7'	148°06.83'	60°36.2'	148°08.33'	12:33	17:42	215	0.9	381	404	12.1
9624	09/20/96	L03	60°49.3'	148°29.53'	60°49.4'	148°27.83'	09:11	12:26	90	0.9	343	345	10.7
9625	09/20/96	M02	60°45.5'	148°33.59'	60°46.1'	148°32.09'	10:14	14:18	999	0.9	365	366	6.7
9626	09/21/96	R06	60°33.3'	148°13.40'	60°34.1'	148°13.00'	09:31	12:55	350	0.9	622	622	11.3
9627	09/21/96	S05	60°31.2'	148°17.19'	60°32.0'	148°16.73'	10:24	14:52	350	0.9	529	531	11.4
9628	09/22/96	U10	60°26.9'	147°50.89'	60°26.0'	147°51.27'	09:50	13:12	165	0.9	370	412	11.6
9629	09/22/96	T10	60°29.4'	147°50.51'	60°28.5'	147°50.71'	10:45	14:49	999	1.0	450	489	11.4
9630	09/23/96	R12	60°33.6'	147°42.69'	60°34.5'	147°41.96'	08:29	12:08	360	0.9	740	746	10.6
9631	09/23/96	R11	60°33.3'	147°46.39'	60°34.0'	147°45.52'	09:15	13:52	360	0.8	753	761	11.2

Table 4. Depth stratification, available and fished habitat, and the number of longline skates fished in 1996 in the northwest area of Prince William Sound, 1996.

Depth Strata	Depth Range (m)	Habitat (nm ²)		Percent Fished	Skates Fished
		Available	Fished		
1	0 - 100	21	0	0%	0
2	101 - 200	12	0	0%	0
3	201 - 300	34	6	18%	91
4	301 - 400	36	7	19%	105
5	401 - 500	9	4	44%	60
6	501 - 600	35	4	11%	60
7	601 - 700	7	5	71%	75
8	701 - 800	10	5	50%	75
9	801 - 900	1	0	0%	0
Total ^{a/}		131	31	23%	466

^{a/} Depth strata 1, 2, and 9 were not sampled and were excluded from summary data.

Table 5. Catch and empty hook status by set during the sablefish longline survey in Prince William Sound, 1996.

Set Number	Sablefish	Pacific		Walleye		Arrowtooth				Hooks Without Fish			Total Hooks
		Cod	Pollock	Halibut	Flounder	Rockfish	Skate	Shark	Other	Baited	Unbaited	Ineffective	
9601	32	0	11	30	1	2	8	2	2	543	11	33	675
9602	39	9	9	45	4	21	23	4	0	504	11	51	720
9603	47	14	10	47	1	2	38	3	0	464	16	33	675
9604	12	52	15	41	7	0	40	9	0	451	8	40	675
9605	5	89	11	55	19	4	36	2	0	406	9	39	675
9606	101	3	6	31	12	2	35	16	0	425	16	28	675
9607	11	16	6	44	5	4	23	2	0	518	5	41	675
9608	53	3	6	54	2	0	19	5	3	465	22	43	675
9609	53	0	1	7	1	2	7	2	0	494	14	94	675
9610	72	0	0	9	0	0	5	1	0	473	14	101	675
9611	138	0	0	5	1	3	3	0	2	450	13	60	675
9612	73	0	1	18	1	2	9	1	0	507	5	58	675
9613	69	0	2	41	0	5	16	2	0	497	5	38	675
9614	78	0	1	44	3	1	11	2	0	511	8	16	675
9615	9	30	17	19	2	3	6	0	0	561	1	27	675
9616	17	3	1	128	4	2	21	0	0	433	7	59	675
9617	81	0	2	17	0	4	18	0	0	472	15	66	675
9618	81	0	1	17	0	3	9	0	0	477	15	72	675
9619	8	1	5	17	1	6	0	2	0	601	18	16	675
9620	87	4	0	34	1	0	2	2	0	452	36	57	675
9621	83	0	3	6	0	7	5	1	0	518	10	42	675
9622	59	0	0	4	1	3	3	1	0	495	28	81	675
9623	82	11	11	19	0	11	35	0	1	472	16	17	675
9624	14	2	4	12	0	0	5	0	0	627	5	6	675
9625	5	2	1	22	2	1	3	0	0	601	10	28	675
9626	64	0	0	10	0	0	8	1	0	548	11	33	675
9627	47	0	1	11	1	14	4	0	0	541	8	48	675
9628	26	0	3	22	1	4	27	1	0	568	2	21	675
9629	42	0	1	17	0	4	23	2	0	568	2	16	675
9630	103	0	0	9	0	0	8	0	1	500	10	44	675
9631	61	0	0	6	0	3	1	2	0	532	18	52	675
Total	1,652	239	129	841	70	113	451	63	9	15,674	369	1,360	20,970

Table 6. Depth strata where fish species were captured during the 1996 Prince William Sound longline survey.

Common Name	Scientific Name	Depth Strata (m)					
		201-300	301-400	401-500	501-600	601-700	701-800
Pacific cod	<i>Gadus macrocephalus</i>	X	X	X			
Arrowtooth flounder	<i>Atheresthes stomias</i>	X	X	X	X	X	X
Flathead sole	<i>Hippoglossoides elassodon</i>			X			
Dover sole	<i>Microstomus pacificus</i>		X	X			X
Shortspine thornyhead	<i>Sebastolobus alascamus</i>					X	X
Rougheye rockfish	<i>Sebastes aleutianus</i>	X	X		X	X	
Shortraker rockfish	<i>Sebastes borealis</i>		X	X	X	X	X
Redbanded rockfish	<i>Sebastes babcocki</i>	X					
Sculpin	Family Cottidae	X					
Pacific halibut	<i>Hippoglossus stenolepis</i>	X	X	X	X	X	X
Giant wrymouth	<i>Delolepis gigantea</i>			X			
Roughscale rattail	<i>Coryphaenoides acrolepis</i>						X
Walleye pollock	<i>Theragra chalcogramma</i>	X	X	X	X	X	X
Spiny dogfish	<i>Squalus acanthias</i>	X	X				
Pacific sleeper shark	<i>Somniosus pacificus</i>	X	X	X	X	X	X
Salmon Shark	<i>Lamna ditropis</i>	X					
Skate species	Genera <i>Raja</i> and <i>Bathyraja</i>	X	X	X	X	X	X
Sablefish	<i>Anoplopoma fimbria</i>	X	X	X	X	X	X

X - Indicates presence in stratum.

Table 7. Average fish catch per longline skate by depth strata and among strata during the sablefish longline survey in Prince William Sound, 1996.

Depth (m)	Fish per Longline Skate									
	Sablefish	Pacific Cod	Walleye Pollock	Pacific Halibut	Arrowtooth Flounder	Rockfish	Skates Species	Shark Species	Other Species	All Species
201 - 300	2.34	2.16	0.75	2.62	0.49	0.35	1.96	0.37	0.00	12.04
301 - 400	1.90	0.33	0.34	1.81	0.10	0.25	1.07	0.10	0.04	6.93
401 - 500	2.97	0.12	0.22	3.48	0.10	0.13	0.90	0.10	0.03	9.05
501 - 600	4.58	0.00	0.10	1.88	0.07	0.40	0.82	0.07	0.00	8.92
601 - 700	4.79	0.00	0.05	0.61	0.01	0.17	0.40	0.05	0.00	7.09
701 - 800	5.71	0.00	0.03	0.60	0.04	0.13	0.37	0.07	0.04	7.99
Average	3.55	0.51	0.28	1.80	0.15	0.24	0.97	0.14	0.02	8.65

Table 8. Relative population number (RPN) for fish caught during the sablefish longline in Prince William Sound, 1996.

Depth (m)	Habitat (nm ²)	RPN								
		Sablefish	Pacific Cod	Walleye Pollock	Pacific Halibut	Arrowtooth flounder	Rockfish	Skates	Shark species	Other Species
201 - 300	34	79.6	73.6	25.4	88.9	16.8	12.0	66.5	12.7	0.0
301 - 400	36	68.4	12.0	12.3	65.1	3.8	8.9	38.4	3.4	1.4
401 - 500	9	26.7	1.1	2.0	31.4	0.9	1.2	8.1	0.9	0.3
501 - 600	35	160.3	0.0	3.5	65.9	2.3	14.0	28.6	2.3	0.0
601 - 700	7	33.5	0.0	0.4	4.3	0.1	1.2	2.8	0.4	0.0
701 - 800	10	57.1	0.0	0.3	6.0	0.4	1.3	3.7	0.7	0.4
Total	131	426	87	44	262	24	39	148	20	2
Percent		40.5%	8.2%	4.2%	24.9%	2.3%	3.7%	14.1%	1.9%	0.2%

Table 9. Mean fish length by depth strata and weighted by strata surface area.

Species	<u>Depth Strata (m)</u>						Weighted by Area
	201-300	301-400	401-500	501-600	601-700	701-800	
Pacific cod	707.0	732.0	769.0				725.5
Arrowtooth flounder	673.6	591.1	649.2	597.0	660.0	307.0	600.1
Flathead sole			372.0				372.0
Dover sole		501.0	453.0			538.5	528.8
Shortspine thornyhead					548.0	639.7	601.9
Rougheye rockfish	491.4	586.4		608.0	598.0		565.0
Shortraker rockfish		685.2	745.4	711.8	689.9	697.6	702.0
Redbanded rockfish	488.5						488.5
Giant wrymouth			1,240.0				1,240.0
Roughscale grenadier						706.0	706.0
Walleye pollock	596.2	636.9	586.0	579.4	573.3	598.5	601.1
Sablefish	547.6	640.7	639.0	662.7	671.1	688.2	627.5

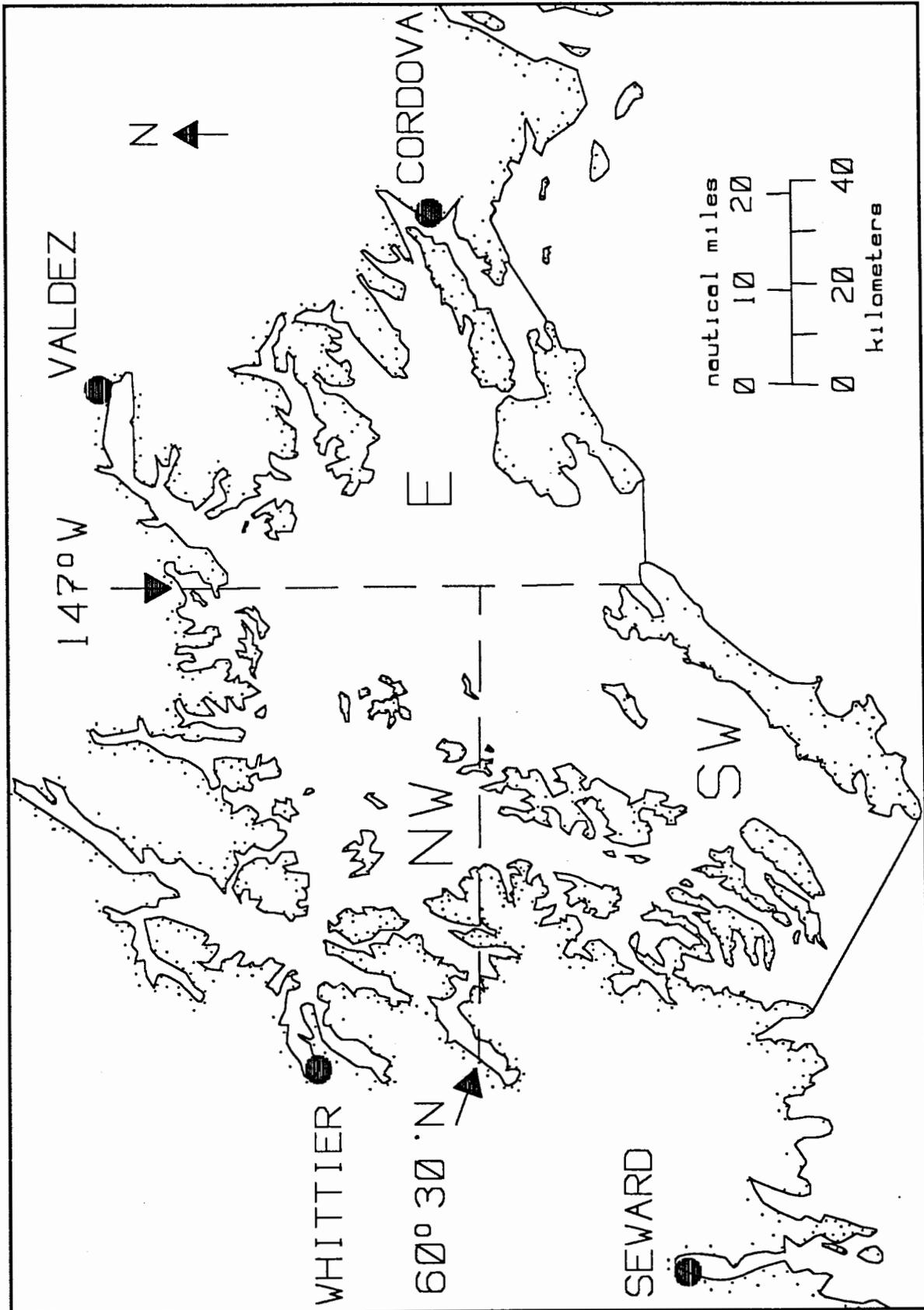


Figure 1. Sample area designation for a longline survey of the Inside District of the Prince William Sound, Alaska, 1996.

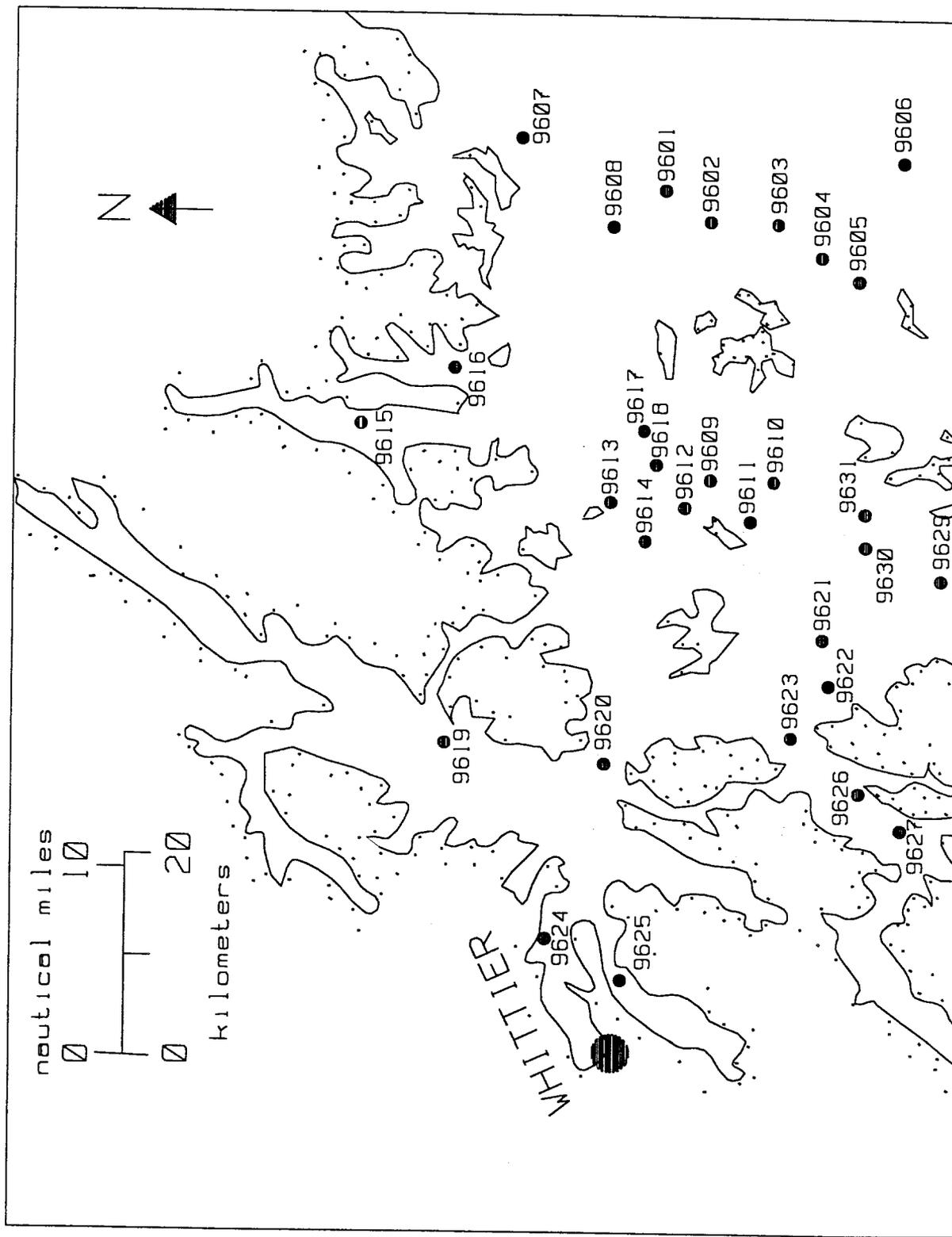


Figure 2. Locations of sets in a longline survey of Prince William Sound, Alaska, 1996.

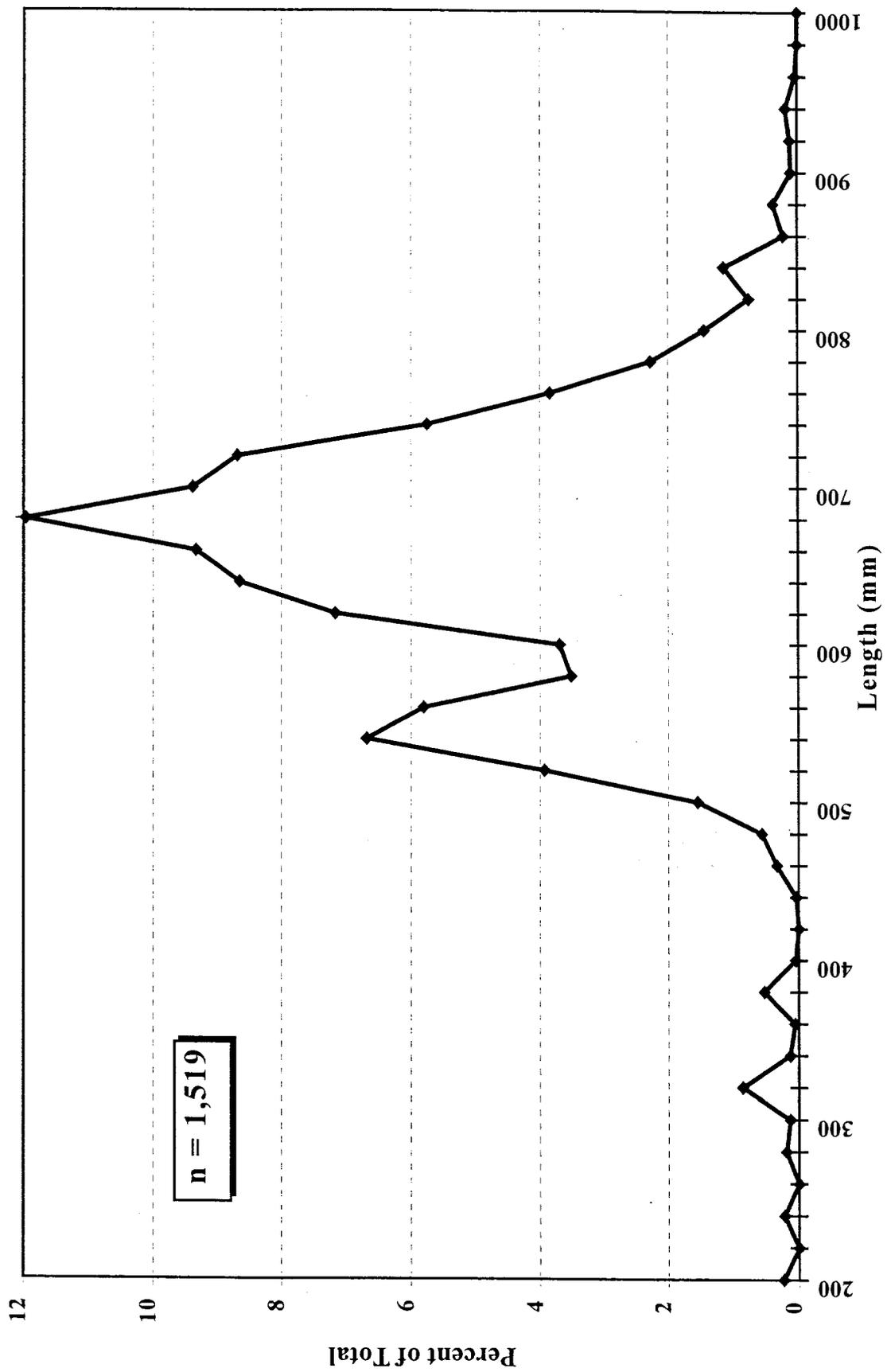


Figure 3. Sablefish length distribution weighted by available and fished area, Prince William Sound, 1996.

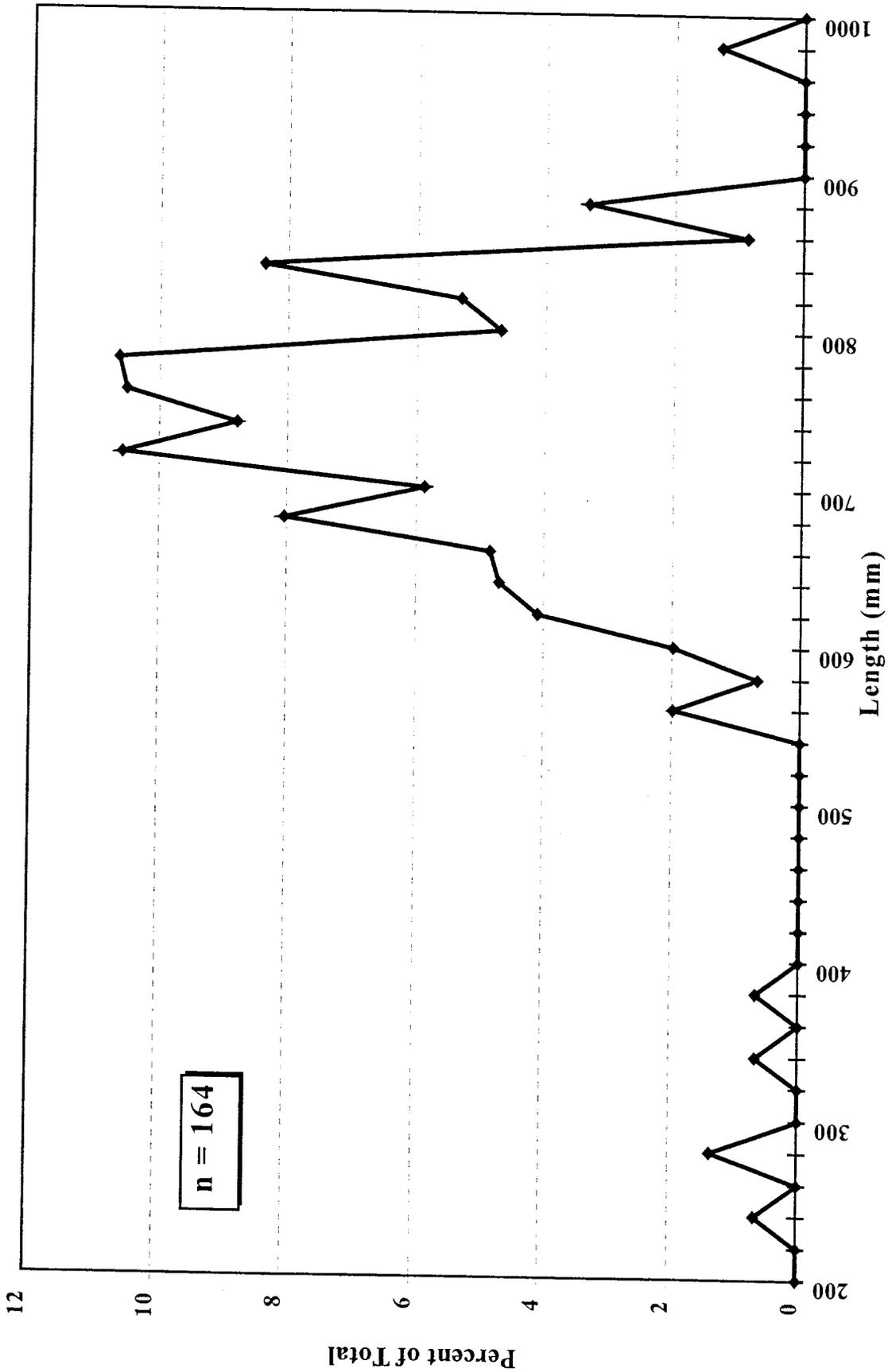


Figure 4. Pacific cod length distribution weighted by available and fished area, Prince William Sound, 1996.

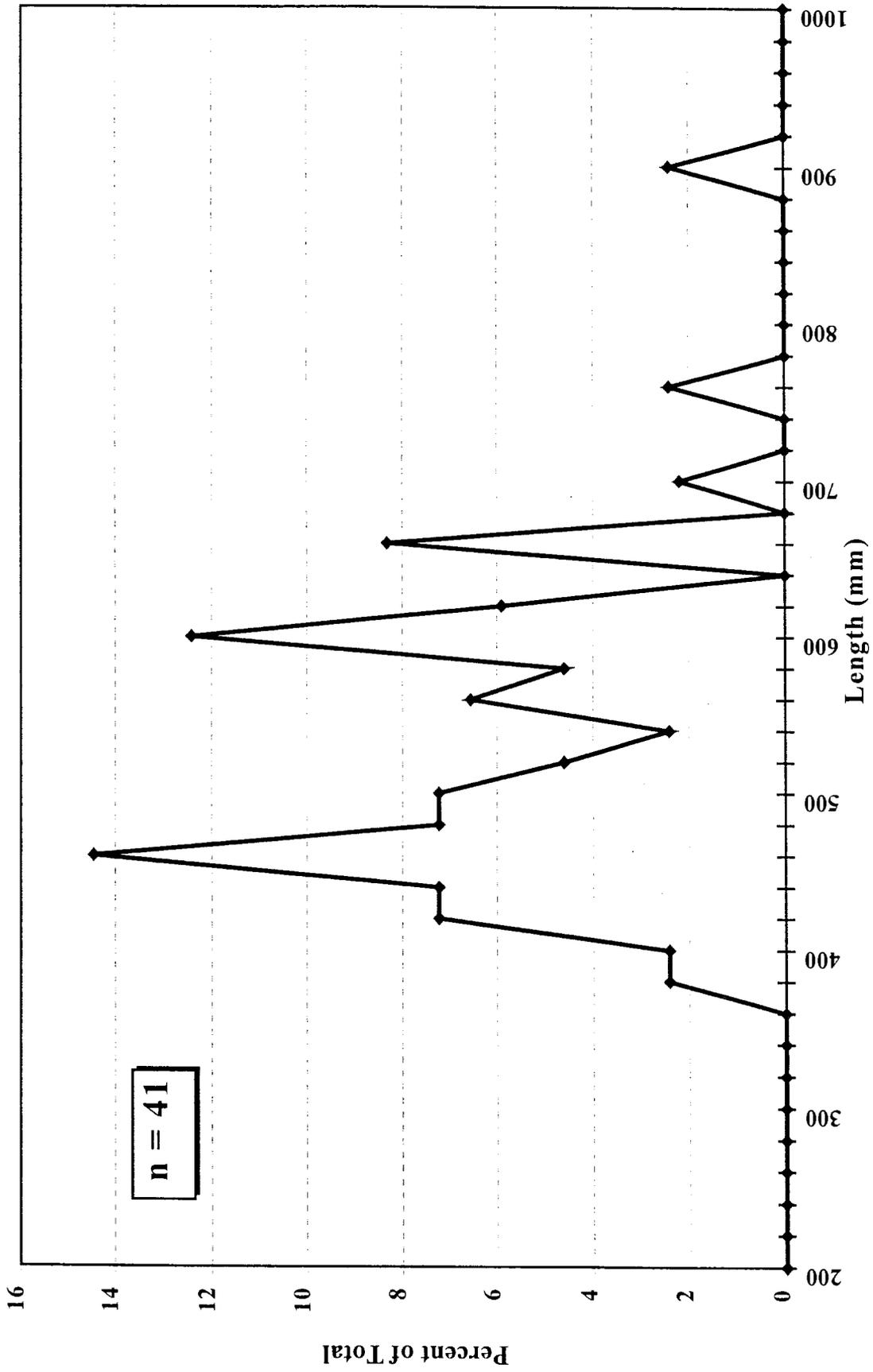


Figure 5. Rougheye rockfish length distribution weighted by available and fished area, Prince William Sound, Alaska, 1996.

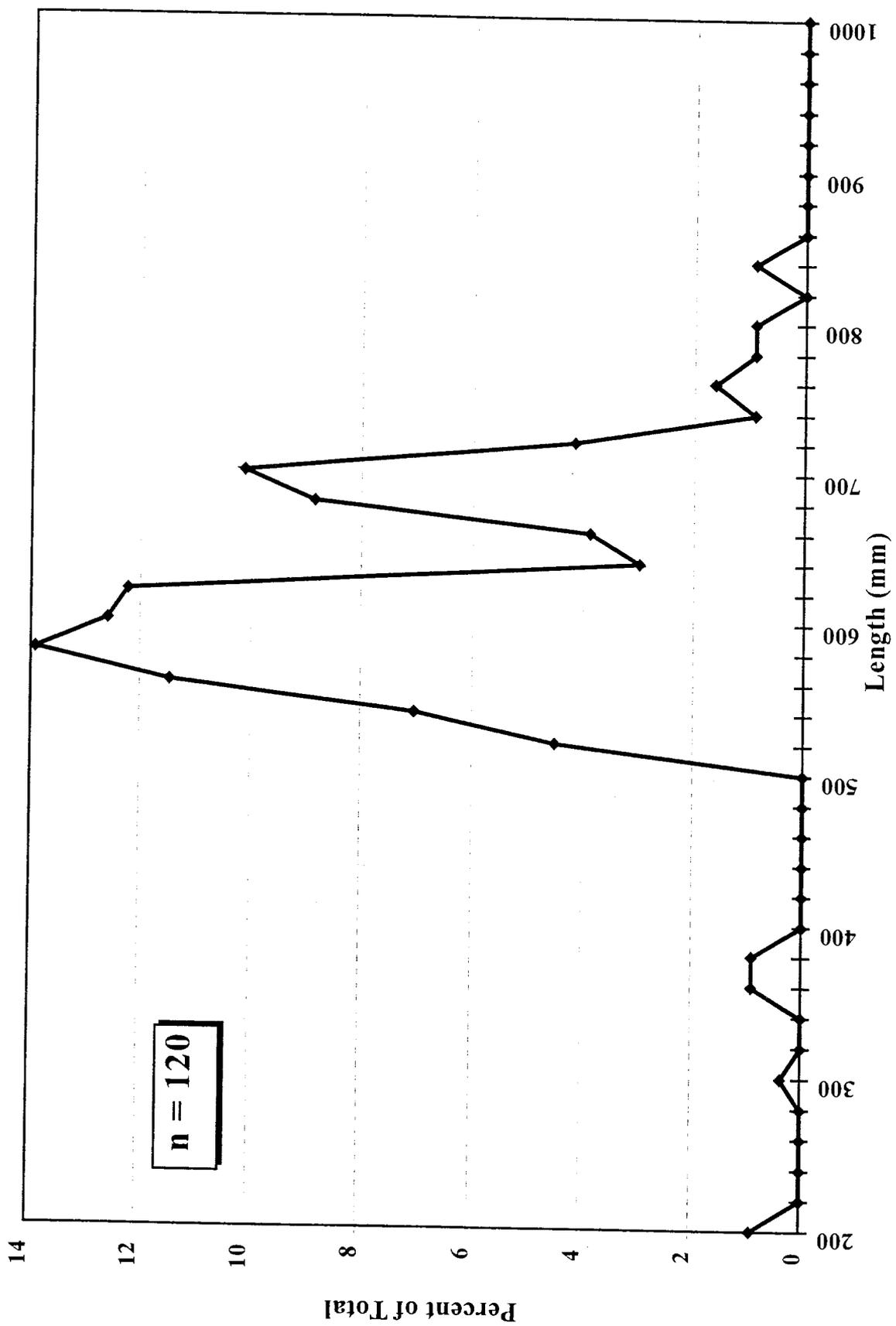


Figure 6. Walleye pollock length distribution weighted by available and fished area, Prince William Sound, Alaska, 1996.

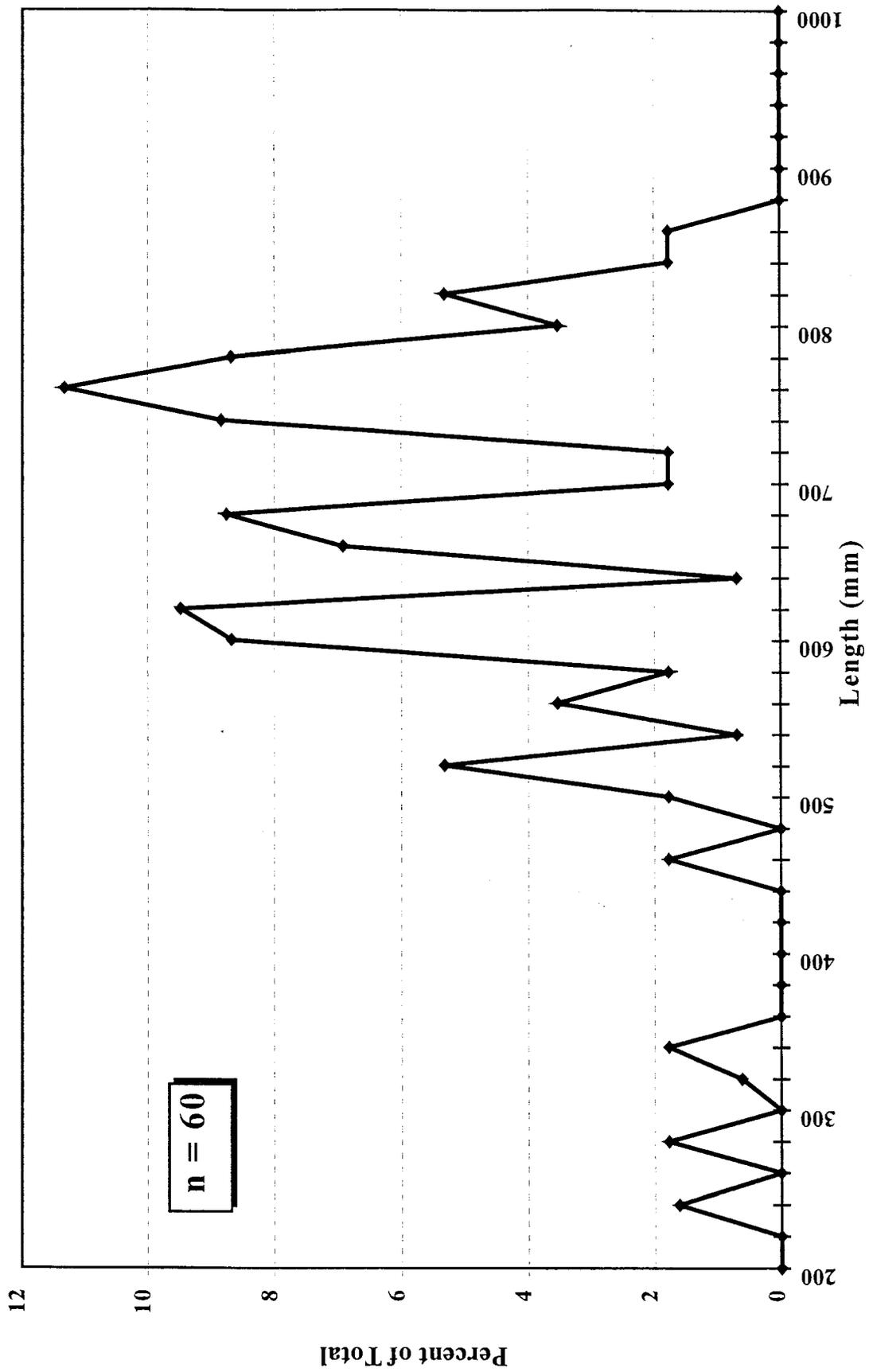


Figure 7. Arrowtooth flounder length distribution weighted by available and fished area, Prince William Sound, 1996.

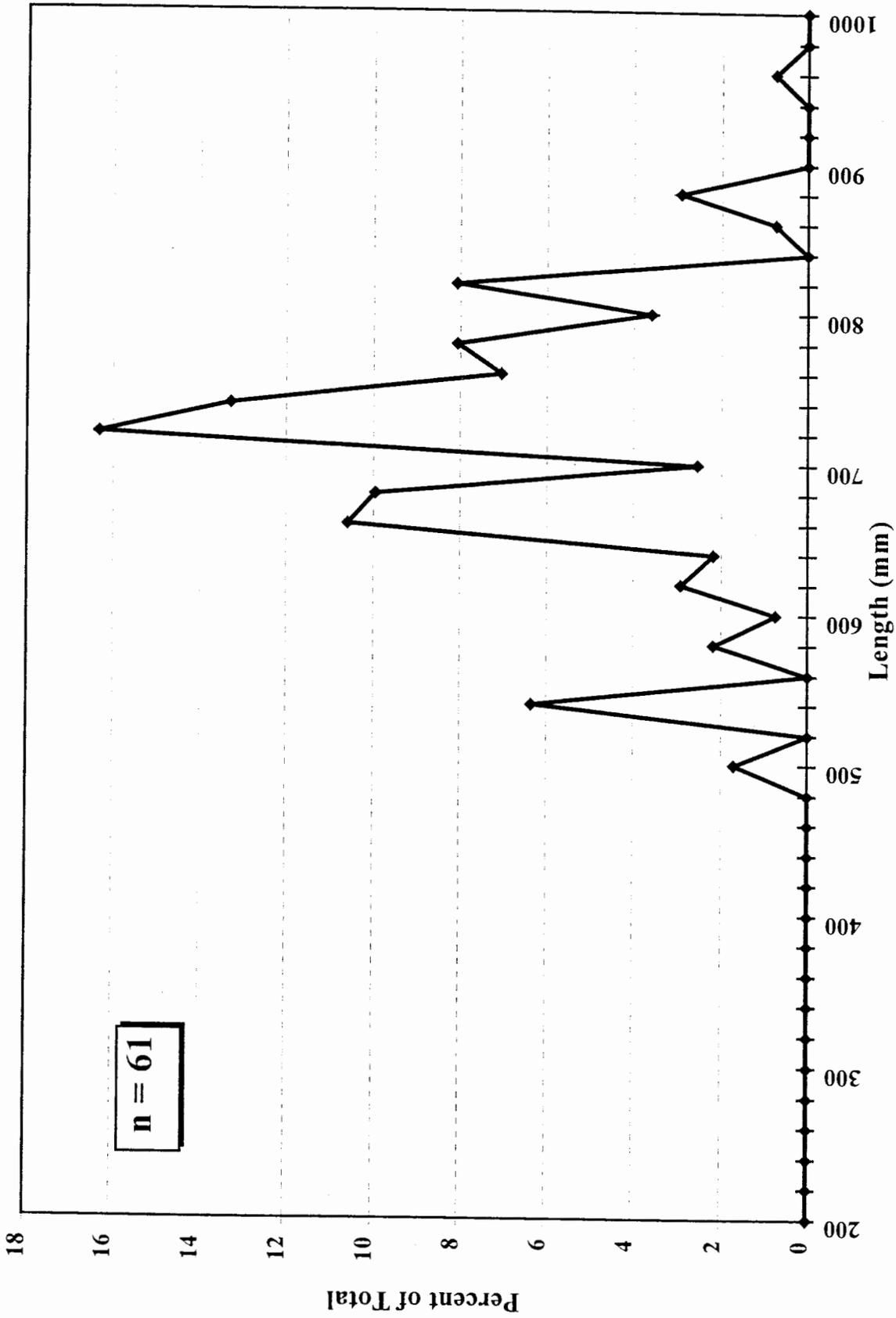


Figure 8. Shortraker rockfish length distribution weighted by available and fished area, Prince William Sound, Alaska, 1996.

Appendix A. Summary of fish catch and the status of hooks without fish for individual longline skates during a sablefish longline survey in Prince William Sound, 1996.

Set Number	Longline Skate	Sablefish	Pacific			Arrowtooth			Skate Species	Shark Species	Other Species	Hooks without fish			Remarks
			Cod	Pollock		Halibut	Flounder	Rockfish				Baited	Unbaited	Ineffective	
9601	1	1	0	0		5	1	0	0	0	0	34	1	3	
9601	2	2	0	0		2	0	0	1	0	0	37	0	3	
9601	3	4	0	1		2	0	0	2	0	0	36	0	0	
9601	4	0	0	1		1	0	0	0	0	0	41	2	0	
9601	5	1	0	1		2	0	0	2	0	1	36	2	0	
9601	6	4	0	0		1	0	0	0	0	0	37	0	3	
9601	7	2	0	0		1	0	0	0	1	0	39	0	2	
9601	8	3	0	1		2	0	1	1	0	0	35	0	2	
9601	9	3	0	1		1	0	0	1	1	0	35	0	3	
9601	10	4	0	2		4	0	0	1	0	1	27	3	3	
9601	11	3	0	3		0	0	0	0	0	0	36	0	3	
9601	12	0	0	0		5	0	1	0	0	0	36	0	3	
9601	13	1	0	1		1	0	0	0	0	0	37	1	4	Lead ball lost at end of skate.
9601	14	4	0	0		2	0	0	0	0	0	38	1	0	
9601	15	0	0	0		1	0	0	0	0	0	39	1	4	
9602	1	8	0	0		3	0	1	1	2	0	26	0	4	
9602	2	0	0	0		3	0	0	2	1	0	38	0	1	
9602	3	1	0	0		2	1	0	1	0	0	40	0	0	
9602	4	3	0	1		10	1	0	2	0	0	28	0	0	
9602	5	0	0	0		1	1	0	0	0	0	43	0	0	
9602	6	1	1	0		5	0	1	0	0	0	37	0	0	
9602	7	0	3	0		3	0	19	0	0	0	20	0	0	
9602	8	1	1	0		0	0	0	1	0	0	42	0	0	
9602	9	1	0	0		0	0	0	0	0	0	18	3	23	
9602	10	1	0	0		0	0	0	0	0	0	33	3	8	
9602	11	0	0	0		0	0	0	1	0	0	44	0	0	
9602	12	6	1	1		4	0	0	2	0	0	27	0	4	
9602	13	4	0	0		4	0	0	4	1	0	31	1	0	
9602	14	4	0	3		3	0	0	3	0	0	27	1	4	
9602	15	5	1	4		2	1	0	5	0	0	26	1	0	
9602	16	4	2	0		5	0	0	1	0	0	24	2	7	
9603	1	2	3	0		8	0	0	2	0	0	17	0	13	
9603	2	2	3	1		2	0	0	1	1	0	29	2	4	
9603	3	3	2	0		5	0	0	3	0	0	30	2	0	

-Continued-

Appendix A. (p. 2 of 13)

Set Number	Longline		Pacific		Pollock	Halibut	Arrowtooth		Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish		Remarks
	Skate	Sablefish	Cod	Pollock			Flounder	Baited					Unbaited	Ineffective	
9603	4	1	1	0	3	0	0	0	1	0	0	0	32	2	5
9603	5	2	1	0	2	0	0	0	0	0	0	0	36	3	1
9603	6	8	1	0	0	0	1	1	1	0	0	0	33	1	0
9603	7	5	3	0	7	0	0	0	4	1	0	0	25	0	0
9603	8	3	0	3	6	0	0	0	0	0	0	0	29	3	1
9603	9	1	0	1	2	0	0	0	2	0	0	0	39	0	0
9603	10	5	0	1	2	0	0	0	4	0	0	0	33	0	0
9603	11	2	0	1	3	0	0	0	5	0	0	0	34	0	0
9603	12	2	0	0	3	0	1	1	2	0	0	0	34	0	3
9603	13	4	0	1	3	0	0	0	1	0	0	0	33	1	2
9603	14	4	0	2	0	0	0	0	4	0	0	0	34	1	0
9603	15	3	0	0	1	1	0	0	8	1	0	0	26	1	4
9604	1	0	8	0	2	0	0	0	3	0	0	0	27	0	5
9604	2	1	2	1	2	0	0	0	2	0	0	0	36	0	1
9604	3	1	2	0	2	0	0	0	3	2	0	0	31	0	4
9604	4	0	4	1	1	0	0	0	5	1	0	0	28	0	5
9604	5	0	4	1	1	0	0	0	5	1	0	0	27	1	5
9604	6	0	4	0	7	0	0	0	3	1	0	0	26	1	3
9604	7	0	2	1	2	3	0	3	3	0	0	0	34	0	0
9604	8	1	4	2	0	1	0	0	1	0	0	0	36	0	0
9604	9	0	0	4	5	0	0	0	2	1	0	0	32	1	0
9604	10	1	5	1	3	1	1	0	2	0	0	0	18	0	14
9604	11	0	4	0	4	2	0	0	4	0	0	0	30	1	0
9604	12	3	3	1	3	0	0	0	2	1	0	0	32	0	0
9604	13	2	1	0	2	0	0	0	1	1	0	0	36	0	2
9604	14	1	1	0	1	0	0	0	0	0	0	0	40	1	1
9604	15	2	8	3	6	0	0	0	4	1	0	0	18	3	0
9605	1	0	4	1	3	1	0	0	7	1	0	0	21	1	6
9605	2	0	5	0	4	1	0	0	1	0	0	0	32	0	2
9605	3	0	2	0	1	3	0	0	8	0	0	0	28	1	2
9605	4	0	4	0	3	2	0	0	3	0	0	0	28	0	5
9605	5	0	8	1	2	1	0	0	3	0	0	0	30	0	0
9605	6	4	6	0	3	0	0	0	1	0	0	0	31	0	0
9605	7	0	7	0	5	1	0	0	3	0	0	0	28	1	0
9605	8	0	8	1	1	1	0	0	2	0	0	0	30	0	2
9605	9	0	10	1	3	2	0	0	2	0	0	0	21	0	6

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Appendix A. (p. 3 of 13)

Set Number	Longline Skate	Sablefish	Pacific		Arrowtooth			Skate Species	Shark Species	Other Species	Hooks without fish			Remarks
			Cod	Pollock	Halibut	Flounder	Rockfish				Baited	Unbaited	Ineffective	
9605	10	0	7	2	4	0	0	0	0	0	32	0	0	
9605	11	1	8	3	0	1	0	2	0	0	29	1	0	
9605	12	0	8	1	5	2	3	2	0	0	24	0	0	
9605	13	0	8	1	3	1	1	0	0	0	31	0	0	
9605	14	0	3	0	13	2	0	1	1	0	24	0	1	
9605	15	0	1	0	5	1	0	1	0	0	17	5	15	
9606	1	7	0	0	1	3	0	1	1	0	29	0	3	
9606	2	8	0	0	0	1	0	1	1	0	34	0	0	
9606	3	6	0	1	1	0	0	1	0	0	31	0	5	
9606	4	5	0	0	1	0	0	1	3	0	32	1	2	
9606	5	7	0	1	4	2	0	9	1	0	19	0	2	
9606	6	4	0	0	1	1	0	2	0	0	26	8	3	
9606	7	12	0	1	2	1	0	1	0	0	28	0	0	
9606	8	12	0	1	2	1	0	2	1	0	19	5	2	
9606	9	2	0	0	4	1	0	6	1	0	30	0	1	
9606	10	8	0	1	2	0	1	1	1	0	28	0	3	
9606	11	10	0	0	0	0	0	1	1	0	30	1	2	
9606	12	8	0	1	2	0	0	2	1	0	30	0	1	
9606	13	5	1	0	2	0	1	2	1	0	32	1	0	
9606	14	2	0	0	4	0	0	2	3	0	30	0	4	
9606	15	5	2	0	5	2	0	3	1	0	27	0	0	
9607	1	1	1	0	8	0	0	1	0	0	23	1	10	
9607	2	0	1	0	2	2	0	0	0	0	40	0	0	
9607	3	0	0	0	3	0	1	1	0	0	38	0	2	
9607	4	1	1	1	1	0	0	1	0	0	40	0	0	
9607	5	0	0	0	1	0	0	1	0	0	41	0	2	
9607	6	0	0	0	3	1	0	2	0	0	39	0	0	
9607	7	1	0	2	0	0	0	2	1	0	35	1	3	
9607	8	1	0	0	1	1	0	0	0	0	40	0	2	
9607	9	0	0	0	7	0	0	2	0	0	33	0	3	
9607	10	1	5	0	5	0	2	3	0	0	28	1	0	
9607	11	1	0	1	3	1	1	4	0	0	33	1	0	
9607	12	3	2	0	1	0	0	3	0	0	33	0	3	
9607	13	2	3	1	2	0	0	1	1	0	34	1	0	
9607	14	0	3	1	2	0	0	0	0	0	36	0	3	
9607	15	0	0	0	5	0	0	2	0	0	25	0	13	

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Appendix A. (p. 4 of 13)

Set Number	Longline Skate	Pacific		Halibut	Arrowtooth		Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish		Remarks
		Cod	Pollock		Flounder	Rockfish					Baited	Unbaited	
9608	1	1	0	0	3	0	0	2	1	0	24	2	12
9608	2	3	0	0	6	0	0	0	0	1	34	1	0
9608	3	6	0	0	3	0	0	1	0	0	34	1	0
9608	4	4	1	1	5	0	0	0	0	0	26	3	5
9608	5	4	0	0	3	0	0	1	1	0	26	2	8
9608	6	3	1	0	3	0	0	0	1	1	34	2	0
9608	7	5	0	2	2	0	0	2	1	0	33	0	0
9608	8	4	0	1	2	0	0	1	0	0	35	0	2
9608	9	5	1	1	3	0	0	0	0	0	34	1	0
9608	10	3	0	0	4	0	0	2	0	1	34	1	0
9608	11	3	0	1	3	0	0	5	0	0	30	3	0
9608	12	2	0	0	5	1	0	0	0	0	34	1	2
9608	13	2	0	0	2	0	0	1	0	0	35	3	2
9608	14	3	0	0	1	0	0	4	1	0	26	1	9
9608	15	5	0	0	9	1	0	0	0	0	26	1	3
9609	1	4	0	0	0	0	0	2	0	0	24	3	12
9609	2	0	0	0	1	0	0	0	0	0	24	1	19
9609	3	1	0	0	0	0	0	0	0	0	33	0	11
9609	4	3	0	0	0	0	0	1	0	0	30	3	8
9609	5	0	0	0	1	0	0	1	1	0	24	4	14
9609	6	4	0	0	1	0	0	1	0	0	29	1	9
9609	7	4	0	0	1	1	1	0	0	0	30	1	7
9609	8	6	0	0	0	0	0	0	0	0	38	0	1
9609	9	2	0	0	0	0	0	0	0	0	37	1	5
9609	10	4	0	0	1	0	0	0	0	0	40	0	0
9609	10	5	0	0	0	0	0	1	0	0	36	0	3
9609	12	7	0	0	0	0	0	0	0	0	35	0	3
9609	13	2	0	1	1	0	0	0	1	0	39	0	1
9609	14	4	0	0	0	0	1	0	0	0	40	0	0
9609	15	7	0	0	1	0	0	1	0	0	35	0	1
9610	1	2	0	0	1	0	0	0	0	0	22	0	20
9610	2	1	0	0	0	0	0	0	0	0	26	5	13
9610	3	1	0	0	0	0	0	0	0	0	35	1	8
9610	4	2	0	0	1	0	0	0	0	0	23	0	19
9610	5	5	0	0	1	0	0	0	1	0	35	1	2
9610	6	4	0	0	1	0	0	0	0	0	35	2	3

Lost ball lost at end of skate

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Appendix A. (p. 5 of 13)

Set Number	Longline Skate	Sablefish	Pacific		Arrowtooth Halibut	Flounder	Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish		Remarks
			Cod	Pollock							Baited	Unbaited Ineffective	
9610	7	6	0	0	2	0	0	0	0	0	30	0	7
9610	8	6	0	0	0	0	1	0	0	0	36	0	2
9610	9	6	0	0	0	0	1	0	0	0	34	1	3
9610	10	4	0	0	0	0	0	0	0	0	38	1	2
9610	11	3	0	0	0	0	1	0	0	0	38	0	3
9610	12	6	0	0	2	0	0	0	0	0	35	0	2
9610	13	5	0	0	0	0	0	0	0	0	29	0	11
9610	14	9	0	0	0	0	2	0	0	0	33	1	0
9610	15	12	0	0	1	0	0	0	0	0	24	2	6
9611	1	8	0	0	1	0	0	0	0	0	13	0	23
9611	2	6	0	0	0	0	0	0	0	0	33	0	6
9611	3	9	0	0	0	0	0	0	0	0	26	4	6
9611	4	11	0	0	0	0	0	0	0	0	27	3	4
9611	5	11	0	0	0	0	1	0	1	0	30	2	0
9611	6	9	0	0	0	0	0	0	1	0	34	0	0
9611	7	5	0	0	0	0	0	0	0	0	39	0	1
9611	8	4	0	0	0	0	0	0	0	0	35	0	6
9611	9	15	0	0	0	0	0	0	0	0	28	2	0
9611	10	12	0	0	0	0	1	0	0	0	31	1	0
9611	11	7	0	0	0	0	0	0	0	0	35	1	2
9611	12	11	0	0	0	0	0	0	0	0	30	0	3
9611	13	10	0	0	1	1	0	0	0	0	30	0	3
9611	14	7	0	0	3	0	0	0	0	0	29	0	6
9611	15	13	0	0	0	0	2	0	0	0	30	0	0
9612	1	4	0	0	1	1	1	1	1	0	30	1	5
9612	2	8	0	0	2	0	3	0	0	0	32	0	0
9612	3	3	0	0	0	0	1	0	0	0	39	0	2
9612	4	3	0	1	1	0	0	0	0	0	38	1	1
9612	5	5	0	0	2	0	0	0	0	0	38	0	0
9612	6	7	0	0	1	0	1	0	0	0	35	1	0
9612	7	3	0	0	1	0	2	0	0	0	37	0	2
9612	8	4	0	0	0	0	0	0	0	0	38	0	3
9612	9	6	0	0	1	0	1	0	0	0	35	2	0
9612	10	6	0	0	0	0	0	0	0	0	38	0	0
9612	11	7	0	0	4	0	0	0	0	0	22	0	12
9612	12	5	0	0	2	0	0	0	0	0	36	0	2
9612	13	2	0	0	1	0	0	0	0	0	32	0	10

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Appendix A. (p. 6 of 13)

Set Number	Longline Skate	Pacific		Arrowtooth Halibut	Flounder	Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish		Remarks
		Sablefish	Cod							Baited	Unbaited Ineffective	
9612	14	6	0	2	0	0	0	0	0	27	0	10
9612	15	4	0	0	0	0	0	0	0	30	0	11
9613	1	3	0	6	0	0	1	0	0	26	1	8
9613	2	5	0	2	0	0	1	0	0	27	3	7
9613	3	3	0	3	0	1	1	0	0	37	0	0
9613	4	4	0	2	0	1	2	0	0	36	0	0
9613	5	10	0	1	0	0	1	0	0	33	0	0
9613	6	6	0	2	0	0	2	0	0	35	0	0
9613	7	5	0	2	0	0	1	0	0	36	0	0
9613	8	5	0	2	0	0	1	0	0	36	0	0
9613	9	4	0	3	0	1	1	0	0	36	0	0
9613	10	1	0	6	0	1	0	1	0	35	1	0
9613	11	6	0	2	0	0	4	0	0	31	0	2
9613	12	5	0	3	0	0	1	0	0	34	0	2
9613	13	5	0	0	0	1	0	0	0	39	0	0
9613	14	7	0	1	0	0	1	0	0	35	0	1
9613	15	0	0	6	0	0	0	0	0	21	0	18
9614	1	8	0	5	0	0	1	0	0	31	0	0
9614	2	7	0	0	0	0	2	0	0	33	1	2
9614	3	8	0	1	0	0	1	0	0	33	2	0
9614	4	3	0	0	0	0	1	0	0	41	0	0
9614	5	5	0	1	1	0	0	0	0	37	1	0
9614	6	8	0	1	0	0	3	1	0	32	0	0
9614	7	4	0	4	1	0	0	1	0	35	0	0
9614	8	5	0	2	0	0	1	0	0	35	2	0
9614	9	1	0	1	0	0	1	0	0	36	2	4
9614	10	3	0	4	0	0	0	0	0	34	0	4
9614	11	6	0	3	1	0	0	0	0	34	0	0
9614	12	3	0	8	0	0	1	0	0	33	0	0
9614	13	5	0	4	0	1	0	0	0	35	0	0
9614	14	6	0	6	0	0	0	0	0	29	0	4
9614	15	6	0	4	0	0	0	0	0	33	0	2
9615	1	0	2	4	1	0	1	0	0	33	0	4
9615	2	0	3	1	0	0	0	0	0	36	0	3
9615	3	1	2	0	0	0	1	0	0	39	0	0
9615	4	1	4	1	0	0	0	0	0	38	0	0
9615	5	0	2	2	0	0	1	0	0	36	0	2

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Set Number	Longline Skate	Pacific Sablefish	Pacific Cod	Pollock	Halibut	Arrowtooth Flounder	Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish			Remarks	
											Baited	Unbaited	Ineffective		
9615	6	2	1	2	1	0	1	2	0	0	0	35	0	1	
9615	7	0	3	0	1	0	2	1	0	0	0	38	0	0	
9615	8	0	2	1	0	0	0	0	0	0	0	36	0	6	
9615	9	0	3	1	1	0	0	0	0	0	0	40	0	0	
9615	10	4	1	0	0	0	0	0	0	0	0	40	0	0	
9615	11	0	3	1	3	0	0	0	0	0	0	38	0	0	
9615	12	0	1	0	0	0	0	0	0	0	0	44	0	0	
9615	13	0	0	3	0	0	0	0	0	0	0	42	0	0	
9615	14	0	1	2	2	0	0	0	0	0	0	34	1	5	
9615	15	1	2	0	3	1	0	0	0	0	0	32	0	6	
9616	1	0	0	0	9	1	0	2	0	0	0	28	0	5	
9616	2	1	0	0	11	0	0	2	0	0	0	30	0	1	
9616	3	1	0	0	11	0	0	4	0	0	0	26	0	3	
9616	4	1	0	1	14	0	0	4	0	0	0	25	0	0	
9616	5	2	2	0	7	0	0	3	0	0	0	23	1	7	
9616	6	2	0	0	8	0	0	0	0	0	0	35	0	0	
9616	7	1	0	0	8	1	0	0	0	0	0	28	0	7	
9616	8	1	1	0	10	1	0	1	0	0	0	30	1	0	
9616	9	0	0	0	3	0	0	2	0	0	0	40	0	0	
9616	10	2	0	0	13	0	1	0	0	0	0	28	1	0	
9616	11	2	0	0	10	0	0	2	0	0	0	28	0	3	
9616	12	0	0	0	8	0	1	1	0	0	0	31	0	4	
9616	13	4	0	0	4	0	0	0	0	0	0	32	0	5	
9616	14	0	0	0	7	1	0	0	0	0	0	24	3	10	
9616	15	0	0	0	5	0	0	0	0	0	0	25	1	14	
9617	1	9	0	0	3	0	0	1	0	0	0	24	2	6	
9617	2	8	0	0	0	0	0	0	0	0	0	32	0	5	
9617	3	5	0	0	3	0	0	0	0	0	0	28	2	7	
9617	4	9	0	0	3	0	0	0	0	0	0	31	1	1	
9617	5	3	0	0	0	0	0	1	0	0	0	41	0	0	
9617	6	6	0	0	0	0	1	0	0	0	0	36	1	1	
9617	7	1	0	1	1	0	0	1	0	0	0	37	4	0	
9617	8	5	0	1	1	0	0	1	0	0	0	37	0	0	
9617	9	6	0	0	1	0	2	4	0	0	0	32	0	0	
9617	10	13	0	0	0	0	0	1	0	0	0	25	1	5	
9617	11	8	0	0	0	0	1	3	0	0	0	29	0	4	

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Set Number	Longline Skate	Sablefish	Pacific		Pollock	Halibut	Arrowtooth		Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish		Remarks
			Cod	Pollock			Flounder	Rockfish					Baited	Unbaited	
9617	12	3	0	0	0	1	0	0	0	1	0	0	31	4	5
9617	13	3	0	0	0	0	0	0	0	1	0	0	33	0	8
9617	14	1	0	0	0	2	0	0	0	1	0	0	28	0	13
9617	15	1	0	0	0	2	0	0	0	3	0	0	28	0	11
9618	1	6	0	0	0	0	0	1	1	1	0	0	36	1	0
9618	2	4	0	0	0	0	0	0	1	0	0	0	36	0	4
9618	3	7	0	0	0	0	0	0	0	1	0	0	35	0	2
9618	4	4	0	0	0	1	0	0	0	0	0	0	38	0	2
9618	5	8	0	0	0	0	0	0	0	0	0	0	26	0	11
9618	6	5	0	0	0	1	0	0	0	0	0	0	37	2	0
9618	7	4	0	0	0	2	0	0	0	2	0	0	33	0	4
9618	8	6	0	0	0	1	0	0	0	1	0	0	34	2	1
9618	9	6	0	0	0	0	0	0	0	1	0	0	35	0	3
9618	10	8	0	0	0	1	0	0	0	2	0	0	29	0	5
9618	11	6	0	1	0	3	0	0	1	0	0	0	33	1	0
9618	12	8	0	0	0	1	0	0	0	0	0	0	31	3	2
9618	13	3	0	0	0	2	0	0	0	0	0	0	29	1	10
9618	14	2	0	0	0	1	0	0	0	1	0	0	26	4	11
9618	15	4	0	0	0	4	0	0	0	0	0	0	19	1	17
9619	1	2	0	0	0	1	0	0	3	0	0	0	36	0	3
9619	2	1	1	0	0	3	0	1	0	0	0	0	39	0	0
9619	3	0	0	0	0	2	0	0	0	0	1	0	41	0	1
9619	4	1	0	0	0	1	0	1	0	0	0	0	39	2	1
9619	5	1	0	0	0	2	0	0	0	0	0	0	42	0	0
9619	6	0	0	0	0	4	0	0	0	0	0	0	40	0	1
9619	7	0	0	0	0	0	0	0	0	0	0	0	45	0	0
9619	8	0	0	1	1	1	0	0	0	0	0	0	41	0	2
9619	9	1	0	0	0	0	0	0	0	0	0	0	35	6	3
9619	10	1	0	0	0	1	1	1	1	0	0	0	41	0	0
9619	11	1	0	0	2	0	0	0	0	0	1	0	38	2	1
9619	12	0	0	1	1	1	0	0	0	0	0	0	43	0	0
9619	13	0	0	1	1	1	0	0	0	0	0	0	40	3	0
9619	14	0	0	0	0	0	0	0	0	0	0	0	43	0	2
9619	15	0	0	0	0	0	0	0	0	0	0	0	38	5	2
9620	1	9	0	0	0	1	0	0	0	0	0	0	32	3	0
9620	2	5	0	0	0	0	0	0	0	0	0	0	33	2	5

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Appendix A. (p. 9 of 13)

Set Number	Longline Skate	Sablefish	Pacific		Pollock	Halibut	Arrowtooth		Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish		Remarks	
			Cod	Pollack			Halibut	Flounder					Baited	Unbaited		Ineffective
9620	3	7	0	0	0	0	1	0	0	0	0	0	22	1	13	
9620	4	4	0	0	0	0	1	0	0	0	0	0	25	1	14	
9620	5	11	0	0	0	0	2	0	0	0	0	0	32	0	0	
9620	6	3	0	0	0	0	3	0	0	0	0	0	29	4	5	
9620	7	4	0	0	0	0	3	1	0	0	0	0	27	7	3	
9620	8	6	0	0	0	0	2	0	0	0	0	0	33	3	1	3 ft long piece of gillnet caught on hook
9620	9	3	0	0	0	0	7	0	0	0	0	0	31	0	4	
9620	10	5	0	0	0	0	4	0	0	1	0	0	26	0	9	
9620	11	4	3	0	0	0	0	0	0	0	0	0	36	2	0	
9620	12	5	0	0	0	0	2	0	0	0	0	0	30	8	0	
9620	13	6	0	0	0	0	2	0	0	0	0	0	36	1	0	
9620	14	8	1	0	0	0	5	0	0	0	0	0	30	1	0	
9620	15	7	0	0	0	0	1	0	0	1	0	0	30	3	3	
9621	1	7	0	0	0	0	0	0	0	0	0	0	29	0	9	
9621	2	4	0	0	0	0	0	0	0	0	0	0	33	1	7	
9621	3	6	0	0	0	0	0	0	2	0	0	0	34	1	2	
9621	4	5	0	1	0	0	0	0	0	1	0	0	28	3	7	
9621	5	3	0	0	0	0	0	0	1	0	0	0	40	1	0	
9621	6	4	0	0	0	0	0	0	0	0	0	0	38	0	3	
9621	7	5	0	1	0	0	0	0	0	0	0	0	39	0	0	
9621	8	6	0	0	0	0	1	0	2	0	0	0	36	0	0	
9621	9	6	0	0	0	0	0	0	0	0	0	0	35	1	3	
9621	10	1	0	0	0	0	1	0	0	0	0	0	39	1	2	
9621	11	5	0	0	0	0	2	0	0	0	0	0	36	0	2	
9621	12	7	0	1	0	0	0	0	0	0	0	0	37	0	0	
9621	13	11	0	0	0	0	0	0	2	0	0	0	32	0	0	
9621	14	8	0	0	0	0	1	0	2	0	0	0	30	2	0	
9621	15	5	0	0	0	0	1	0	0	0	0	0	32	0	7	
9622	1	5	0	0	0	0	0	0	0	0	0	0	28	1	11	
9622	2	1	0	0	0	0	0	0	0	0	0	0	24	10	10	Lead ball lost from end of skate
9622	3	4	0	0	0	0	0	0	0	0	0	0	35	0	6	
9622	4	8	0	0	0	0	0	0	0	0	0	0	36	1	0	
9622	5	2	0	0	0	0	0	0	0	0	0	0	33	4	6	
9622	6	2	0	0	0	0	1	1	0	0	0	0	27	9	5	
9622	7	5	0	0	0	0	0	0	0	0	0	0	40	0	0	
9622	8	6	0	0	0	0	0	0	0	0	0	0	38	0	0	
9622	9	5	0	0	0	0	0	0	1	0	0	0	38	0	0	

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Appendix A. (p. 10 of 13)

Set Number	Longline Skate	Sablefish	Pacific			Arrowtooth			Skate Species	Shark Species	Other Species	Hooks without fish			Remarks
			Cod	Pollock		Halibut	Flounder	Rockfish				Baited	Unbaited	Ineffective	
9622	10	5	0	0		0	0	0	1	0	0	39	0	0	
9622	11	5	0	0		1	0	0	0	1	0	29	0	9	
9622	12	7	0	0		0	0	1	0	0	0	37	0	0	
9622	13	0	0	0		0	0	0	1	0	0	28	3	13	
9622	14	3	0	0		0	0	0	0	0	0	39	0	3	
9622	15	1	0	0		2	0	0	0	0	0	24	0	18	
9623	1	5	2	3		3	0	3	1	0	0	26	2	0	
9623	2	4	1	0		3	0	0	4	0	0	31	1	1	
9623	3	6	0	0		2	0	2	1	0	0	33	1	0	
9623	4	7	0	1		3	0	1	5	0	0	28	0	0	
9623	5	5	2	0		1	0	0	3	0	0	34	0	0	
9623	6	6	0	2		0	0	0	2	0	0	34	1	0	
9623	7	6	0	0		1	0	1	2	0	0	33	2	0	
9623	8	3	1	0		1	0	0	4	0	1	35	0	0	
9623	9	8	1	2		0	0	0	2	0	0	32	0	0	
9623	10	5	0	1		2	0	0	4	0	0	30	0	3	
9623	11	5	0	1		2	0	0	1	0	0	34	0	2	
9623	12	3	0	0		0	0	2	1	0	0	33	4	2	
9623	13	7	1	1		1	0	1	0	0	0	30	1	3	
9623	14	7	2	0		0	0	1	4	0	0	30	1	0	
9623	15	5	1	0		0	0	0	1	0	0	29	3	6	
9624	1	0	0	0		1	0	0	0	0	0	43	0	1	
9624	2	2	0	0		0	0	0	0	0	0	43	0	0	
9624	3	0	0	0		3	0	0	2	0	0	40	0	0	
9624	4	1	0	1		0	0	0	0	0	0	43	0	0	
9624	5	1	0	0		0	0	0	0	0	0	44	0	0	
9624	6	1	0	0		0	0	0	0	0	0	44	0	0	
9624	7	0	0	0		0	0	0	0	0	0	44	0	1	
9624	8	1	0	0		0	0	0	0	0	0	44	0	0	
9624	9	1	0	0		2	0	0	0	0	0	38	1	3	
9624	10	1	0	1		1	0	0	0	0	0	42	0	0	
9624	11	3	1	0		0	0	0	0	0	0	41	0	0	
9624	12	0	0	1		1	0	0	0	0	0	40	2	1	
9624	13	0	1	1		0	0	0	0	0	0	43	0	0	
9624	14	0	0	0		2	0	0	1	0	0	41	1	0	
9624	15	3	0	0		2	0	0	2	0	0	37	1	0	

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Appendix A. (p. 11 of 13)

Set Number	Longline Skate	Sablefish	Pacific Cod	Pollock	Halibut	Arrowtooth		Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish		Remarks
						Flounder	Rockfish					Baited	Unbaited Ineffective	
9625	1	1	0	0	0	1	0	0	0	0	0	36	5	2
9625	2	0	0	0	0	0	0	0	1	0	0	44	0	0
9625	3	0	0	0	0	1	0	1	0	0	0	32	0	11
9625	4	0	0	0	0	1	0	0	0	0	0	43	1	0
9625	5	0	0	0	0	1	1	0	0	0	0	41	1	1
9625	6	0	0	0	0	3	0	0	0	0	0	33	2	7
9625	7	1	0	0	0	2	0	0	0	0	0	40	0	2
9625	8	1	0	0	0	0	1	0	0	0	0	43	0	0
9625	9	1	0	0	0	2	0	0	0	0	0	42	0	0
9625	10	1	0	0	0	4	0	1	0	0	0	38	0	1
9625	11	0	0	0	0	2	0	0	0	0	0	42	0	1
9625	12	0	1	0	0	1	0	0	0	0	0	43	0	0
9625	13	0	0	1	1	1	0	0	0	0	0	41	0	2
9625	14	0	1	0	1	1	0	0	0	0	0	41	1	1
9625	15	0	0	0	2	0	0	0	1	0	0	42	0	0
9626	1	5	0	0	1	1	0	0	1	0	0	30	1	7
9626	2	3	0	0	1	0	0	0	0	0	0	33	0	8
9626	3	2	0	0	0	0	0	0	1	0	0	42	0	0
9626	4	4	0	0	0	0	0	0	0	0	0	41	0	0
9626	5	3	0	0	0	0	0	0	1	0	0	38	2	1
9626	6	4	0	0	1	0	0	0	0	0	0	35	2	2
9626	7	5	0	0	0	0	0	0	0	0	0	40	0	0
9626	8	3	0	0	0	0	0	0	1	0	0	40	0	1
9626	9	8	0	0	1	0	0	0	2	0	0	34	0	0
9626	10	4	0	0	1	0	0	0	1	0	0	38	1	0
9626	11	4	0	0	3	0	0	0	0	0	0	27	2	9
9626	12	5	0	0	1	0	0	0	1	0	0	37	1	0
9626	13	3	0	0	1	0	0	0	0	0	0	39	0	2
9626	14	2	0	0	0	0	0	0	0	0	0	42	0	1
9626	15	9	0	0	0	0	0	0	0	0	0	32	2	2
9627	1	0	0	0	0	0	0	2	0	0	0	21	1	21
9627	2	2	0	0	1	0	0	0	0	0	0	35	1	6
9627	3	3	0	1	3	0	0	0	0	0	0	36	0	2
9627	4	1	0	0	1	1	0	0	0	0	0	39	0	2
9627	5	1	0	0	2	0	1	2	0	0	0	39	0	0
9627	6	7	0	0	0	0	0	0	0	0	0	38	0	0

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Appendix A. (p. 12 of 13)

Set Number	Longline Skate	Sablefish	Pacific		Pollock	Halibut	Arrowtooth		Rockfish	Skate Species	Shark Species	Other Species	Hooks without fish		Remarks	
			Cod	Pollock			Halibut	Flounder					Baited	Unbaited		Ineffective
9627	7	3	0	0	0	0	0	0	2	0	0	0	40	0	0	
9627	8	1	0	0	0	0	0	0	0	0	0	0	43	1	0	
9627	9	5	0	0	0	0	0	0	1	0	0	0	39	0	0	Lead ball lost from end of skate
9627	10	4	0	0	0	0	0	0	1	0	0	0	34	3	3	Lead ball lost from end of skate
9627	11	4	0	0	0	1	0	0	1	0	0	0	39	0	0	
9627	12	1	0	0	0	0	0	0	1	1	0	0	40	0	2	
9627	13	3	0	0	0	0	0	0	1	0	0	0	38	1	2	
9627	14	4	0	0	0	3	0	0	1	0	0	0	33	1	3	
9627	15	8	0	0	0	0	0	0	2	1	0	0	27	0	7	
9628	1	2	0	0	0	6	0	0	0	3	0	0	30	1	3	
9628	2	0	0	0	0	1	0	0	1	2	0	0	41	0	0	
9628	3	1	0	0	0	1	0	0	1	1	0	0	41	0	0	
9628	4	1	0	0	0	0	0	0	0	2	0	0	34	1	7	
9628	5	5	0	0	0	0	0	0	0	2	0	0	38	0	0	
9628	6	2	0	0	0	2	0	0	0	0	0	0	40	0	1	
9628	7	1	0	0	0	2	0	0	1	1	0	0	40	0	0	
9628	8	1	0	0	0	2	0	0	0	2	0	0	40	0	0	
9628	9	2	0	1	3	0	0	0	0	1	0	0	38	0	0	
9628	10	0	0	1	0	0	0	0	0	4	0	0	39	0	1	
9628	11	3	0	1	0	0	0	0	0	2	0	0	39	0	0	
9628	12	1	0	0	1	0	0	0	1	1	0	0	41	0	0	
9628	13	1	0	0	1	0	0	0	0	1	0	0	42	0	0	
9628	14	2	0	0	0	1	1	0	0	3	0	0	38	0	0	
9628	15	4	0	0	0	2	0	0	0	2	1	0	27	0	9	
9629	1	8	0	0	0	1	0	0	0	1	0	0	34	1	0	
9629	2	3	0	0	0	1	0	0	0	1	0	0	39	0	1	
9629	3	3	0	0	0	1	0	0	1	2	1	0	35	0	2	
9629	4	4	0	0	0	2	0	0	0	1	0	0	38	0	0	
9629	5	3	0	0	0	1	0	0	0	3	0	0	37	1	0	
9629	6	0	0	0	0	2	0	0	1	3	0	0	36	0	3	
9629	7	1	0	0	0	2	0	0	0	1	1	0	40	0	0	
9629	8	2	0	0	0	0	0	0	0	0	0	0	43	0	0	
9629	9	4	0	1	1	1	0	0	0	2	0	0	37	0	0	
9629	10	4	0	0	0	2	0	0	0	1	0	0	38	0	0	
9629	11	2	0	0	0	0	0	0	0	1	0	0	42	0	0	
9629	12	3	0	0	0	1	0	0	0	1	0	0	39	0	1	

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Appendix A. (p. 13 of 13)

Set Number	Longline Skate	Pacific Sablefish	Pacific Cod	Pollock	Arrowtooth			Skate Species	Shark Species	Other Species	Hooks without fish			Remarks
					Halibut	Flounder	Rockfish				Baited	Unbaited	Ineffective	
9629	13	1	0	0	1	0	2	4	0	0	36	0	1	Lead ball left off skate when setting
9629	14	3	0	0	0	0	0	1	0	0	36	0	5	Lead ball left off skate when setting
9629	15	1	0	0	2	0	0	1	0	0	38	0	3	
9630	1	8	0	0	0	0	0	1	0	0	34	2	0	
9630	2	7	0	0	0	0	0	0	0	0	37	1	0	
9630	3	6	0	0	2	0	0	1	0	0	32	0	4	
9630	4	4	0	0	0	0	0	0	0	0	36	1	4	
9630	5	8	0	0	1	0	0	1	0	0	35	0	0	
9630	6	7	0	0	0	0	0	0	0	0	35	1	2	
9630	7	5	0	0	2	0	0	2	0	0	36	0	0	
9630	8	7	0	0	0	0	0	0	0	0	38	0	0	
9630	9	10	0	0	0	0	0	1	0	0	34	0	0	
9630	10	7	0	0	1	0	0	0	0	0	37	0	0	
9630	11	11	0	0	0	0	0	0	0	0	33	0	1	
9630	12	6	0	0	1	0	0	1	0	1	30	2	4	
9630	13	7	0	0	0	0	0	0	0	0	35	0	3	
9630	14	4	0	0	0	0	0	1	0	0	26	2	12	
9630	15	6	0	0	2	0	0	0	0	0	22	1	14	
9631	1	5	0	0	1	0	0	0	0	0	33	1	5	
9631	2	3	0	0	0	0	0	0	0	0	35	1	6	
9631	3	8	0	0	0	0	0	0	0	0	37	0	0	
9631	4	6	0	0	0	0	0	0	1	0	32	1	5	
9631	5	1	0	0	0	0	0	0	0	0	44	0	0	
9631	6	4	0	0	1	0	1	0	0	0	35	1	3	
9631	7	4	0	0	0	0	0	0	0	0	29	6	6	
9631	8	2	0	0	1	0	0	0	0	0	37	0	5	
9631	9	4	0	0	0	0	0	0	0	0	37	1	3	
9631	10	6	0	0	0	0	0	0	0	0	38	1	0	
9631	11	4	0	0	0	0	0	1	0	0	40	0	0	
9631	12	3	0	0	2	0	1	0	0	0	27	1	11	
9631	13	1	0	0	1	0	0	0	0	0	33	4	6	
9631	14	5	0	0	0	0	1	0	0	0	39	0	0	
9631	15	5	0	0	0	0	0	0	1	0	36	1	2	

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