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CALIFORNIA DEPARTMENT OF FISH AND GAME
STATE FISHERIES COMMISSION
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State of California
The Resources Agency
DEPARTMENT OF FISH AND GAME

MARINE RECREATIONAL FISHERIES STATISTICS SURVEY
FOR NORTHERN AND CENTRAL CALIFORNIA,
QUARTERLY REPORT NO. 6,
OCTOBER TO DECEMBER, 1980

by

Konstantin A. Karpov,
Gerald S. Kwiecien,
and
John J. Mello

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ABSTRACT

Field intercept Marine Recreational Fisheries Statistics Survey (MRFSS) data for central and northern California, collected in October to December, 1980, is presented in a data report format. Data in this quarterly report are subdivided into three categories: primarily by five geographical areas; secondarily by fishing modes and gear types within each area; and finally by catch definition for each area, mode, and gear type. Tables are presented for these categories, each with three sections: sampled effort, ranked catch, and catch-per-unit-effort (CPUE). Also, within each area, length-frequency histograms and tables are presented for select species.

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INTRODUCTION

The California Department of Fish and Game under contract to the National Marine Fisheries Service (NMFS) has participated in the Marine Recreational Fisheries Statistics Survey (MRFSS) from mid 1979 to the present. The survey was initiated to gather catch and effort statistics for marine recreational fisheries along the Pacific west coast.

Annual summaries of these statistics are being published elsewhere on a regional basis (Current Fisheries Statistics Numbers 8321, 8323, 8325, 8328 and 8393). In these summaries, California's data is divided into two regions, Del Norte to Monterey counties (northern region) and San Luis Obispo to San Diego counties (southern region).

Quarterly Report No. 6 covers the period of October to December 1980. It supplements the federal annual summary for only the north-central region of California (Del Norte to San Luis Obispo counties). This region is divided into five areas (subregions) corresponding to historical ports.

METHODS

Catch and length data were collected by Department biologists intercepting anglers actively fishing or in the process of leaving a fishing site. Sampling methodology is described in part in Current Fisheries Statistics (8321, 8323, 8325, 8328, 8393).

Data in this quarterly report are subdivided into three categories: primarily by five geographical areas; secondarily by fishing modes and gear types within each area; and finally by catch definition for each area, mode, and gear type. Tables are presented for these categories, each with three

sections: sampled effort, ranked catch, and catch-per-unit-effort (CPUE).

Also, within each area, length-frequency histograms and tables are presented for select species.

Study Areas

Study areas range in size from one county in Area 5 to six counties in Area 3 (Figure 1). Adjacent counties are combined whenever similarity of habitat and species composition warrants. Boat modes are segregated by county only if separate grounds were fished (i.e. Sonoma County Bodega Bay fishery, sub-area 097, from Mendocino County, sub-area 045).

Area 1, including Del Norte and Humbolt counties, extends from the Oregon border to Shelter Cove. Both counties are combined in all mode comparisons. Area 2 contains Mendocino County and that part of Sonoma County which is north of Bodega Bay. Both counties are combined for all modes except the boat modes (private/rental boat and CPFV). The San Francisco Area 3 is segregated into ocean and bay. This area includes anglers from six counties; Marin, Solano, Contra Costa, Alameda, San Francisco, and San Mateo. These counties encircle the bay and extend down to Ano Nuevo. Two sets of tables and figures were generated based on whether anglers specified having fished in the ocean or the bay. Bay anglers were predominantly from San Francisco Bay, but also included a small percentage of Halfmoon Bay anglers. Area 4 includes Santa Cruz County and that part of Monterey County which is north of Ragged Point. Area 5, San Luis Obispo County, extends down to Point Sal.

Fishing Modes

Modes of fishing were organized into six categories: (i) pier or dock, (ii) jetty or breakwater, (iii) bridge or causeway, (iv) beach or bank, (v) private or rental boat, and (vi) commercial passenger fishing vessel (CPFV).

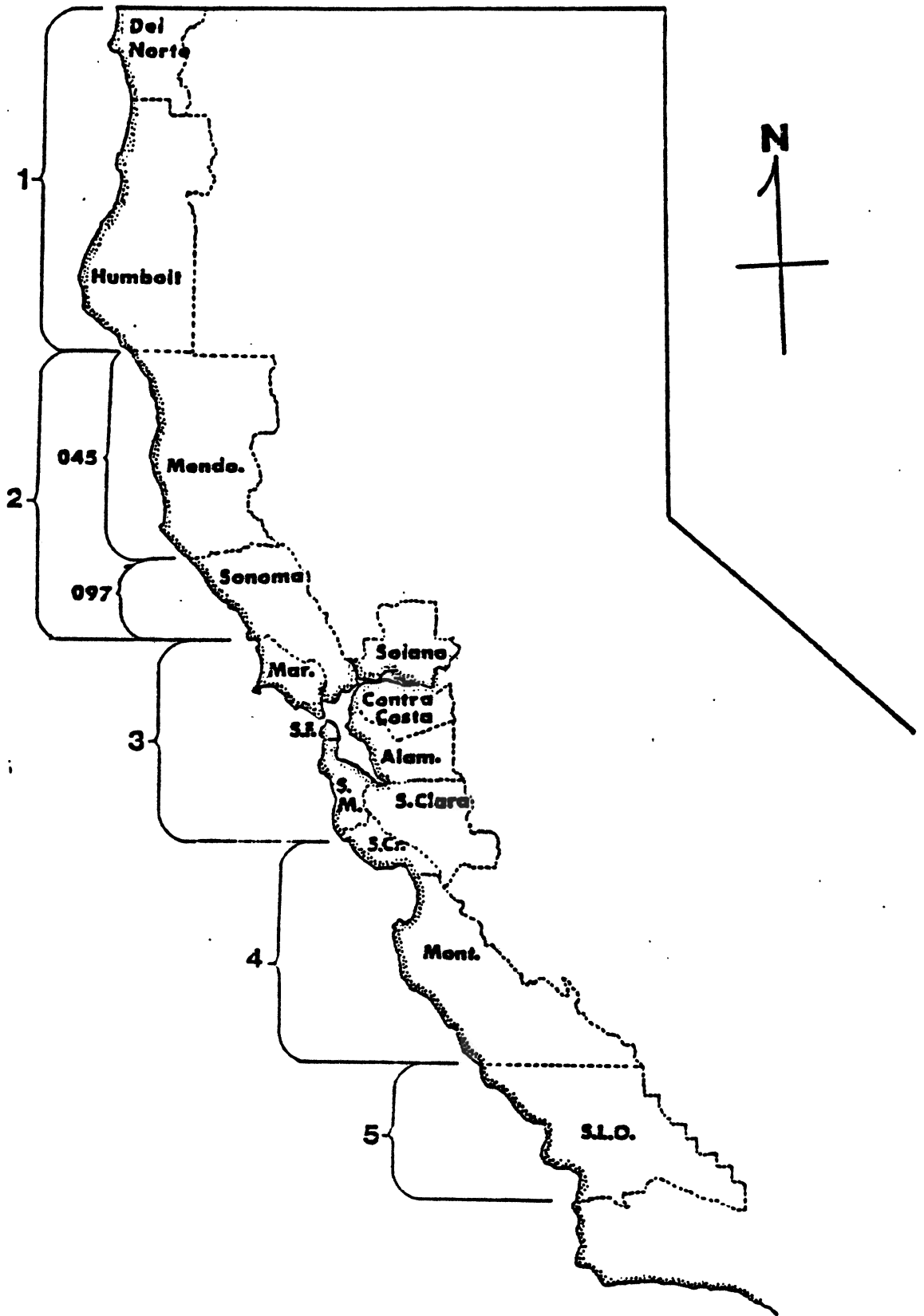


FIGURE 1. Study area counties and sub-areas in northern and central California.

Gear Types

Three types of gear were used; (i) hook-and-line, (ii) spear, or (iii) net. Spears were used only by divers. Dipnet and castnet were the only net gears in active use in northern and central California.

Catch Definition

Catch is defined three different ways: (i) all fish captured, including fish returned dead or alive, those not available at the sampling site (i.e. filleted or given away, etc.), and those available to measure; (ii) landed catch, not including fish returned dead or alive; and (iii) the measured catch only. Fish caught but unavailable to measure were identified to the nearest taxa using the angler's description.

Computer-Generated Tables and Figures

The Microcomputer Program Series (MPS) was developed to generate the tables and figures used in this report. The programs were designed for flexibility and ease of use on area microcomputers. The programs allow the user to generate tables and figures for any combination of area, mode, gear, or definition of catch. Data generated by these programs include: sampled effort, ranked catch, CPUE, and length-frequency data. Documentation of logic and program listings are available (Karpov, 1984).

Sampled Effort

Sampled effort is the same for all three catch definitions for a particular area, mode, or gear. It includes the number of anglers intercepted, the total hours fishing effort, and total hours still to be fished for incomplete trips.

Ranked Catch

Ranked catch includes rank of species caught by number or weight, and other statistics depending on the catch definition. Fish are ranked by

number caught in two of the catch definitions: all fish caught, and landed catch. The measured catch has fish ranked by weight caught. The measured catch tables include average lengths and standard deviation, and derived average weight.

CPUE

CPUE is calculated using two definitions of both "catch" and "effort". Catch is either number or weight (kilograms) caught. Effort is either angler days or total hours fished. CPUE, computed using weight caught as opposed to number landed, is included only for two of the catch definitions: landed catch and measured catch. Average weights incorporated in the landed catch tables are derived either from the respective measured catch table for the same species or, for the more general species groups, by calculating a group average weight. Group average weights of constituent species were calculated from this quarter's data for the same mode, gear, and area. Angler days represent completed fishing days for most areas and modes. Occasional incomplete trips were included for all modes except boat modes.

Length-Frequency Data

Length-frequency histograms and tables were generated for select species. Histograms are included for highly abundant species where at least 10 measured fish occurred in the most frequent size interval. Histograms were summarized in either 5-, 10-, or 20-mm intervals. The criteria for assigning summary intervals was based on the largest recorded size for the species as reported in Miller and Lea (1972). Fish reported from 0 to 12 inches used 5-mm, greater than 12 to 24 inches used 10-mm and greater than 24 inches were assigned 20-mm intervals.

Length-frequency tables (see Appendix A) were generated for all species with at least five measured fish for any given area, mode, and gear. Tables were summarized in 5-mm intervals and include length statistics for possible use in ANOVA computations (Sokal and Rohlf, 1969).

Species Names and Length-Weight Parameters

Total length was recorded for all species except tuna-like fishes with rigid concave caudal fins; for these fork lengths were used. Weights were not actually measured; rather, they were determined, for all major species taken, from precalculated length-weight relationships. The exponential relationship used was $W=aL^b$; where a and b are constants unique to each species (Appendix B).

Throughout this quarter, samplers working from San Mateo through Sonoma counties (area 3 and sub-area 097) inadvertently recorded fork lengths for all species measured. All species with moderately convex to concave caudal fins were converted back to total length using fork-total length relationships from several sources (Echeverria and Lenarz 1986, Karpov In press, and Van Hyning 1951). The linear relationship used was $TL=a+b(FL)$; where a and b are constants unique to each species (Appendix C).

Scientific and common names used were standardized using the American Fisheries Society list (1980).

Table 1. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	67
Total Hours Effort for Anglers Intercepted	=	131.0
Total Hours Still to Fish (Incomplete Trips)	=	22.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Perch, Shiner	1	91	66.4
Surfperch, Walleye	2	16	11.7
Seaperch, Striped	3	8	5.8
Surfperch, Silver	4	6	4.4
Sculpins	5	3	2.2
Surfperches	6	3	2.2
Seaperch, White	7	3	2.2
Greenling, Kelp	8	2	1.5
Sculpin, Pacific Staghorn	9	2	1.5
Rockfish, Black	10	1	0.7
Unidentified Fishes	11	1	0.7
Cabezon	12	1	0.7
Total		137	100

C. CPUE

Catch per Angler Day = 2.04 Catch per Angler Hour = 1.05

Table 2. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	67
Total Hours Effort for Anglers Intercepted	=	131.0
Total Hours Still to Fish (Incomplete Trips)	=	22.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Perch, Shiner	1	40	49.4	0.04	1.48
Surfperch, Walleye	2	16	19.8	0.22	3.60
Seaperch, Striped	3	8	9.9	0.26	2.07
Surfperch, Silver	4	6	7.4	0.25	1.49
Seaperch, White	5	3	3.7	0.25	0.74
Greenling, Kelp	6	2	2.5	0.17	0.34
Sculpin, Pacific Staghorn	7	2	2.5	0.04	0.09
Unidentified Fishes	8	1	1.2	0.00**	0.00
Sculpins	9	1	1.2	0.26**	0.26
Cabezon	10	1	1.2	0.68	0.68
Surfperches	11	1	1.2	0.13**	0.13
Total		81	100		10.88

C. CPUE

Catch per Angler Day	=	1.21	Catch per Angler Hour	=	0.62
Kg per Angler Day	=	0.16	Kg per Angler Hour	=	0.08

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 3. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 67
 Total Hours Effort for Anglers Intercepted = 131.0
 Total Hours Still to Fish (Incomplete Trips) = 22.5

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Walleye	1	3.60	16	20.5	16	0.22	223	43
Seaperch, Striped	2	2.07	8	10.3	8	0.26	248	31
Surfperch, Silver	3	1.49	6	7.7	5	0.25	239	51
Perch, Shiner	4	1.48	40	51.3	20	0.04	138	18
Seaperch, White	5	0.74	3	3.8	2	0.25	274	8
Cabezon	6	0.68	1	1.3	1	0.68	340	0
Greenling, Kelp	7	0.34	2	2.6	2	0.17	227	4
Sculpin, Pacific Staghorn	8	0.09	2	2.6	2	0.04	155	35
Total		10.49	78	100	56			

C. CPUE***

Catch per Angler Day = 1.16 Catch per Angler Hour = 0.60
 Kg per Angler Day = 0.16 Kg per Angler Hour = 0.08

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 4. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	148
Total Hours Effort for Anglers Intercepted	=	391.0
Total Hours Still to Fish (Incomplete Trips)	=	22.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Greenling, Kelp	1	87	37.7
Seaperch, Striped	2	26	11.3
Rockfishes (unidentified)	3	21	9.1
Cabezon	4	17	7.4
Greenling, Rock	5	16	6.9
Surfperches	6	16	6.9
Rockfish, Black	7	13	5.6
Surfperch, Redtail	8	12	5.2
Rockfish, Blue	9	6	2.6
Greenlings (unidentified)	10	6	2.6
Sculpins	11	3	1.3
Unidentified Fishes	12	2	0.9
Perch, Shiner	13	2	0.9
Rockfish, Copper	14	1	0.4
Surfperch, Walleye	15	1	0.4
Flounders, Lefteye	16	1	0.4
Flounder, Starry	17	1	0.4
Total		231	100

C. CPUE

Catch per Angler Day = 1.56 Catch per Angler Hour = 0.59

Table 5. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	148
Total Hours Effort for Anglers Intercepted	=	391.0
Total Hours Still to Fish (Incomplete Trips)	=	22.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Greenling, Kelp	1	75	46.9	0.25	18.62
Seaperch, Striped	2	26	16.3	0.37	9.74
Greenling, Rock	3	16	10.0	0.29	4.62
Cabazon	4	16	10.0	1.43	22.87
Surfperch, Redtail	5	12	7.5	0.16	1.97
Rockfish, Black	6	8	5.0	0.29	2.31
Rockfish, Blue	7	2	1.3	0.13	0.25
Rockfishes (unidentified)	8	1	0.6	0.27**	0.27
Rockfish, Copper	9	1	0.6	0.37	0.37
Perch, Shiner	10	1	0.6	0.00**	0.00
Surfperch, Walleye	11	1	0.6	0.51	0.51
Flounder, Starry	12	1	0.6	1.37	1.37
Total		160	100		62.90

C. CPUE

Catch per Angler Day	=	1.08	Catch per Angler Hour	=	0.41
Kg per Angler Day	=	0.42	Kg per Angler Hour	=	0.16

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 6. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	148
Total Hours Effort for Anglers Intercepted	=	391.0
Total Hours Still to Fish (Incomplete Trips)	=	22.5

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Cabezon	1	22.87	16	10.1	16	1.43	395	160
Greenling, Kelp	2	18.62	75	47.2	72	0.25	256	27
Seaperch, Striped	3	9.74	26	16.4	26	0.37	276	50
Greenling, Rock	4	4.62	16	10.1	16	0.29	266	43
Rockfish, Black	5	2.31	8	5.0	8	0.29	247	77
Surfperch, Redtail	6	1.97	12	7.5	12	0.16	213	31
Flounder, Starry	7	1.37	1	0.6	1	1.37	470	0
Surfperch, Walleye	8	0.51	1	0.6	1	0.51	290	0
Rockfish, Copper	9	0.37	1	0.6	1	0.37	272	0
Rockfish, Blue	10	0.25	2	1.3	2	0.13	199	31
Perch, Shiner	11	0.00	1	0.6	0	0.00	0	0
Total		62.63	159	100	155			

C. CPUE***

Catch per Angler Day	=	1.07	Catch per Angler Hour	=	0.41
Kg per Angler Day	=	0.42	Kg per Angler Hour	=	0.16

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 7. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 84
 Total Hours Effort for Anglers Intercepted = 180.0
 Total Hours Still to Fish (Incomplete Trips) = 25.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Redtail	1	25	39.1
Jacksmelt	2	15	23.4
Greenling, Kelp	3	8	12.5
Trout, Rainbow	4	4	6.3
Cabezon	5	3	4.7
Surfperches	6	2	3.1
Perch, Shiner	7	2	3.1
Seaperch, Striped	8	2	3.1
Surfperch, Silver	9	2	3.1
Salmon, Coho (Silver)	10	1	1.6
Total		64	100

C. CPUE

Catch per Angler Day = 0.76 Catch per Angler Hour = 0.36

Table 8. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	84
Total Hours Effort for Anglers Intercepted	=	180.0
Total Hours Still to Fish (Incomplete Trips)	=	25.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Redtail	1	25	42.4	0.39	9.79
Jacksmelt	2	15	25.4	0.11	1.63
Greenling, Kelp	3	6	10.2	0.51	3.05
Trout, Rainbow	4	3	5.1	0.40	1.21
Cabazon	5	3	5.1	0.65	1.95
Perch, Shiner	6	2	3.4	0.06	0.12
Seaperch, Striped	7	2	3.4	0.41	0.83
Surfperch, Silver	8	2	3.4	0.13	0.25
Salmon, Coho (Silver)	9	1	1.7	0.25	0.25
Total		59	100		19.07

C. CPUE

Catch per Angler Day =	0.70	Catch per Angler Hour =	0.33
Kg per Angler Day =	0.23	Kg per Angler Hour =	0.11

* Weight estimated from length-to-weight regression if available.

Table 9. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 84
 Total Hours Effort for Anglers Intercepted = 180.0
 Total Hours Still to Fish (Incomplete Trips) = 25.5

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	;---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Redtail	1	9.79	25	43.9	25	0.39	282	25
Greenling, Kelp	2	3.05	6	10.5	6	0.51	320	67
Cabezon	3	1.95	3	5.3	3	0.65	303	137
Jacksmelt	4	1.63	15	26.3	14	0.11	247	24
Seaperch, Striped	5	0.83	2	3.5	2	0.41	280	91
Trout, Rainbow	6	0.40	1	1.8	1	0.40	352	0
Surfperch, Silver	7	0.25	2	3.5	2	0.13	201	3
Salmon, Coho (Silver)	8	0.25	1	1.8	1	0.25	297	0
Perch, Shiner	9	0.12	2	3.5	2	0.06	164	12
Total		18.27	57	100	56			

C. CPUE***

Catch per Angler Day = 0.68 Catch per Angler Hour = 0.32
 Kg per Angler Day = 0.22 Kg per Angler Hour = 0.10

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 10. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	51
Total Hours Effort for Anglers Intercepted	=	175.4
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Black	1	78	52.7
Salmon, Coho (Silver)	2	19	12.8
Rockfish, Blue	3	11	7.4
Greenling, Kelp	4	11	7.4
Seaperch, Striped	5	10	6.8
Rockfish, Copper	6	7	4.7
Rockfish, Olive	7	4	2.7
Trout, Rainbow	8	3	2.0
Rockfish, Quillback	9	1	0.7
Rockfish, Rosy	10	1	0.7
Rockfish, Yelloweye	11	1	0.7
Sculpins	12	1	0.7
Seaperch, White	13	1	0.7
Total		148	100

C. CPUE

Catch per Angler Day	=	2.90	Catch per Angler Hour	=	0.84
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Table 11. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 51
 Total Hours Effort for Anglers Intercepted = 175.4
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Black	1	75	53.6	1.03	76.95
Salmon, Coho (Silver)	2	17	12.1	0.13	2.28
Rockfish, Blue	3	11	7.9	0.64	6.99
Seaperch, Striped	4	10	7.1	0.38	3.78
Greenling, Kelp	5	9	6.4	0.43	3.83
Rockfish, Copper	6	7	5.0	0.46	3.25
Rockfish, Olive	7	4	2.9	0.52	2.07
Trout, Rainbow	8	3	2.1	0.82	2.47
Rockfish, Quillback	9	1	0.7	1.53	1.53
Rockfish, Rosy	10	1	0.7	0.58	0.58
Rockfish, Yelloweye	11	1	0.7	0.78	0.78
Seaperch, White	12	1	0.7	0.33	0.33
Total		140	100		104.83

C. CPUE

Catch per Angler Day = 2.75 Catch per Angler Hour = 0.80
 Kg per Angler Day = 2.06 Kg per Angler Hour = 0.60

* Weight estimated from length-to-weight regression if available.

Table 12. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 51
 Total Hours Effort for Anglers Intercepted = 175.4
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Black	1	74.90	73	53.3	38	1.03	398	68
Rockfish, Blue	2	6.99	11	8.0	11	0.64	308	126
Seaperch, Striped	3	3.78	10	7.3	10	0.38	278	48
Greenling, Kelp	4	3.41	8	5.8	8	0.43	301	62
Rockfish, Copper	5	3.25	7	5.1	7	0.46	291	30
Trout, Rainbow	6	2.47	3	2.2	3	0.82	427	109
Salmon, Coho (Silver)	7	2.28	17	12.4	10	0.13	241	17
Rockfish, Olive	8	2.07	4	2.9	4	0.52	338	47
Rockfish, Quillback	9	1.53	1	0.7	1	1.53	427	0
Rockfish, Yelloweye	10	0.78	1	0.7	1	0.78	350	0
Rockfish, Rosy	11	0.58	1	0.7	1	0.58	329	0
Seaperch, White	12	0.33	1	0.7	1	0.33	301	0
Total		102.35	137	100	95			

C. CPUE***

Catch per Angler Day = 2.69 Catch per Angler Hour = 0.78
 Kg per Angler Day = 2.01 Kg per Angler Hour = 0.58

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 2. Length-Frequency Histogram for Kelp Greenling
 Taken by Jetty or Breakwater Anglers Using Hook-and-Line Gear.
 Area 1, Quarter 4, 1980.

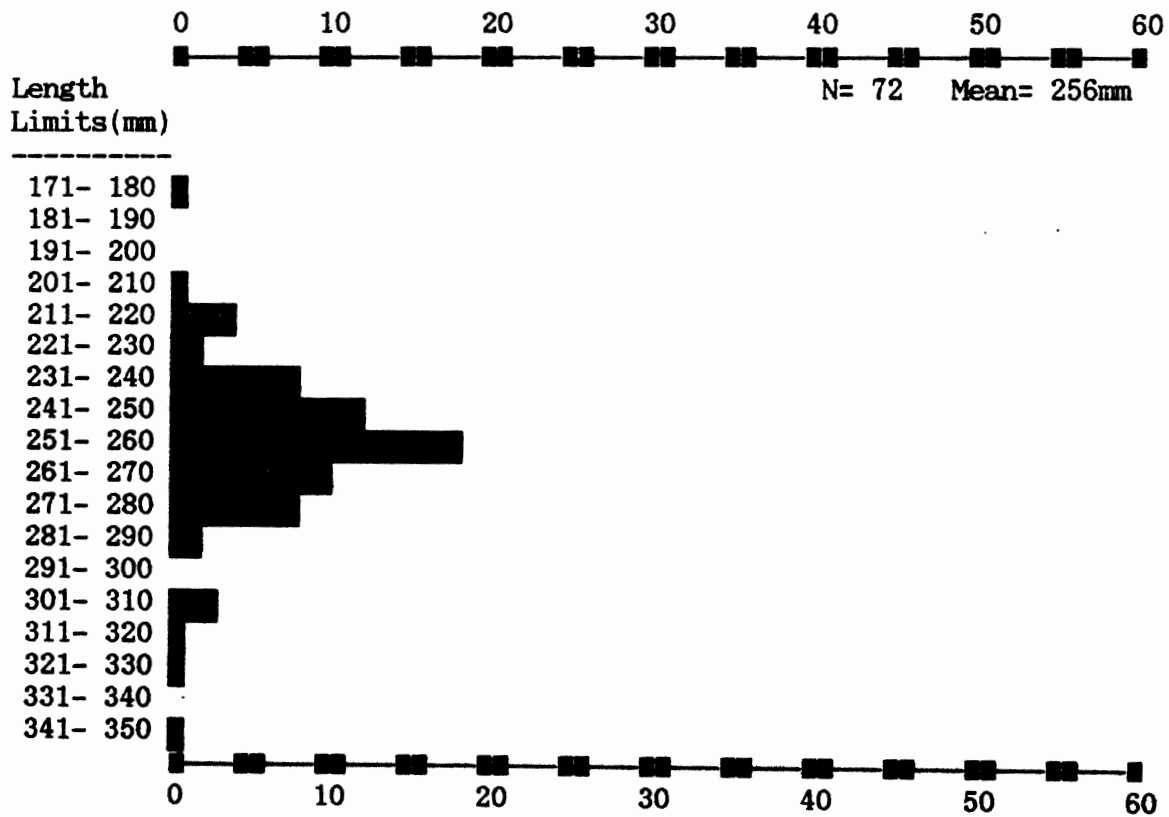


Table 13. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	50
Total Hours Effort for Anglers Intercepted	=	105.0
Total Hours Still to Fish (Incomplete Trips)	=	8.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	1	8	20.5
Greenling, Kelp	2	8	20.5
Greenling, Rock	3	6	15.4
Surfperches	4	4	10.3
Seaperch, Striped	5	4	10.3
Greenlings (unidentified)	6	3	7.7
Seaperch, White	7	3	7.7
Cabazon	8	2	5.1
Pricklebacks	9	1	2.6
Total		39	100

C. CPUE

Catch per Angler Day = 0.78 Catch per Angler Hour = 0.37

Table 14. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 50
 Total Hours Effort for Anglers Intercepted = 105.0
 Total Hours Still to Fish (Incomplete Trips) = 8.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	8	24.2	0.55	4.36
Greenling, Kelp	2	8	24.2	0.25	1.96
Greenling, Rock	3	6	18.2	0.47	2.80
Seaperch, Striped	4	4	12.1	0.53	2.11
Seaperch, White	5	3	9.1	0.26	0.77
Cabezón	6	2	6.1	0.71	1.42
Greenlings (unidentified)	7	1	3.0	0.34**	0.34
Pricklebacks	8	1	3.0	0.00**	0.00
Total		33	100		13.76

C. CPUE

Catch per Angler Day = 0.66 Catch per Angler Hour = 0.31
 Kg per Angler Day = 0.28 Kg per Angler Hour = 0.13

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 15. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 50
 Total Hours Effort for Anglers Intercepted = 105.0
 Total Hours Still to Fish (Incomplete Trips) = 8.5

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Jacksmelt	1	3.82	7	24.1	7	0.55	400	39
Seaperch, Striped	2	2.11	4	13.8	4	0.53	317	30
Greenling, Kelp	3	1.96	8	27.6	8	0.25	253	38
Greenling, Rock	4	1.87	4	13.8	4	0.47	312	67
Cabezón	5	1.42	2	6.9	2	0.71	346	13
Seaperch, White	6	0.77	3	10.3	2	0.26	276	27
Greenlings (unidentified)	7	0.00	1	3.4	0	0.00	0	0
Total		11.95	29	100	27			

C. CPUE***

Catch per Angler Day = 0.58 Catch per Angler Hour = 0.28
 Kg per Angler Day = 0.24 Kg per Angler Hour = 0.11

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 16. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	103
Total Hours Effort for Anglers Intercepted	=	234.0
Total Hours Still to Fish (Incomplete Trips)	=	46.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Seaperch, Striped	1	12	24.0
Rockfishes (unidentified)	2	8	16.0
Pricklebacks	3	8	16.0
Greenlings (unidentified)	4	4	8.0
Greenling, Kelp	5	3	6.0
Surfperches	6	2	4.0
Surfperch, Redtail	7	2	4.0
Prickleback, Monkeyface	8	2	4.0
Unidentified Fishes	9	1	2.0
Skate, Big	10	1	2.0
Rockfish, Gopher	11	1	2.0
Greenling, Rock	12	1	2.0
Sculpins	13	1	2.0
Sculpin, Buffalo	14	1	2.0
Cabazon	15	1	2.0
Flounder, Starry	16	1	2.0
Sole, Sand	17	1	2.0
Total		50	100

C. CPUE

Catch per Angler Day = 0.49 Catch per Angler Hour = 0.21

Table 17. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	103
Total Hours Effort for Anglers Intercepted	=	234.0
Total Hours Still to Fish (Incomplete Trips)	=	46.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, Striped	1	12	41.4	0.31	3.68
Greenling, Kelp	2	3	10.3	0.50	1.49
Surfperches	3	2	6.9	0.27**	0.54
Surfperch, Redtail	4	2	6.9	0.18	0.35
Prickleback, Monkeyface	5	2	6.9	0.00**	0.00
Skate, Big	6	1	3.4	32.91	32.91
Rockfish, Gopher	7	1	3.4	0.62	0.62
Greenlings (unidentified)	8	1	3.4	0.29**	0.29
Greenling, Rock	9	1	3.4	0.28	0.28
Sculpins	10	1	3.4	0.54**	0.00
Cabazon	11	1	3.4	0.54	0.54
Flounder, Starry	12	1	3.4	0.65	0.65
Sole, Sand	13	1	3.4	0.39	0.39
Total		29	100		41.74

C. CPUE

Catch per Angler Day	=	0.28	Catch per Angler Hour	=	0.12
Kg per Angler Day	=	0.41	Kg per Angler Hour	=	0.18

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 18. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 103
 Total Hours Effort for Anglers Intercepted = 234.0
 Total Hours Still to Fish (Incomplete Trips) = 46.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Skate, Big	1	32.91	1	5.6	1	32.91	1580	0
Seaperch, Striped	2	1.54	5	27.8	5	0.31	262	36
Greenling, Kelp	3	1.49	3	16.7	3	0.50	319	72
Flounder, Starry	4	0.65	1	5.6	1	0.65	376	0
Rockfish, Gopher	5	0.62	1	5.6	1	0.62	338	0
Cabezon	6	0.54	1	5.6	1	0.54	313	0
Sole, Sand	7	0.39	1	5.6	1	0.39	314	0
Surfperch, Redtail	8	0.35	2	11.1	2	0.18	222	3
Greenling, Rock	9	0.28	1	5.6	1	0.28	269	0
Prickleback, Monkeyface	10	0.00	2	11.1	2	0.00	251	5
Total		38.76	18	100	18			

C. CPUE***

Catch per Angler Day = 0.17 Catch per Angler Hour = 0.08
 Kg per Angler Day = 0.38 Kg per Angler Hour = 0.17

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 19. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 155
 Total Hours Effort for Anglers Intercepted = 379.0
 Total Hours Still to Fish (Incomplete Trips) = 34.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Redtail	1	106	66.3
Greenling, Rock	2	16	10.0
Greenling, Kelp	3	8	5.0
Surfperch, Calico	4	7	4.4
Surfperch, Silver	5	4	2.5
Seaperch, Rainbow	6	4	2.5
Cabazon	7	3	1.9
Surfperches	8	3	1.9
Sharks	9	1	0.6
Rockfish, Black	10	1	0.6
Rockfish, Blue	11	1	0.6
Greenlings (unidentified)	12	1	0.6
Sculpin, Buffalo	13	1	0.6
Seaperch, Striped	14	1	0.6
Perch, Black	15	1	0.6
Surfperch, Walleye	16	1	0.6
Flounder, Starry	17	1	0.6
Total		160	100

C. CPUE

Catch per Angler Day = 1.03 Catch per Angler Hour = 0.42

Table 20. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	155
Total Hours Effort for Anglers Intercepted	=	379.0
Total Hours Still to Fish (Incomplete Trips)	=	34.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Redtail	1	106	67.9	0.52	54.67
Greenling, Rock	2	15	9.6	0.36	5.34
Greenling, Kelp	3	8	5.1	0.29	2.28
Surfperch, Calico	4	7	4.5	0.37	2.56
Surfperch, Silver	5	4	2.6	0.20	0.80
Seaperch, Rainbow	6	4	2.6	0.33	1.32
Cabazon	7	3	1.9	0.62	1.86
Rockfish, Black	8	1	0.6	0.94	0.94
Rockfish, Blue	9	1	0.6	0.24	0.24
Greenlings (unidentified)	10	1	0.6	0.49**	0.49
Sculpin, Buffalo	11	1	0.6	0.22	0.22
Surfperches	12	1	0.6	0.33**	0.33
Seaperch, Striped	13	1	0.6	0.39	0.39
Perch, Black	14	1	0.6	0.87	0.87
Surfperch, Walleye	15	1	0.6	0.40	0.40
Flounder, Starry	16	1	0.6	0.47	0.47
Total		156	100		73.18

C. CPUE

Catch per Angler Day	=	1.01	Catch per Angler Hour	=	0.41
Kg per Angler Day	=	0.47	Kg per Angler Hour	=	0.19

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 21. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	155
Total Hours Effort for Anglers Intercepted	=	379.0
Total Hours Still to Fish (Incomplete Trips)	=	34.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Redtail	1	52.61	102	67.5	73	0.52	299	55
Greenling, Rock	2	5.34	15	9.9	15	0.36	286	47
Surfperch, Calico	3	2.56	7	4.6	5	0.37	277	23
Greenling, Kelp	4	2.28	8	5.3	8	0.29	268	32
Cabezon	5	1.86	3	2.0	3	0.62	323	57
Seaperch, Rainbow	6	1.32	4	2.6	4	0.33	268	45
Rockfish, Black	7	0.94	1	0.7	1	0.94	397	0
Perch, Black	8	0.87	1	0.7	1	0.87	393	0
Surfperch, Silver	9	0.80	4	2.6	2	0.20	231	16
Flounder, Starry	10	0.47	1	0.7	1	0.47	341	0
Surfperch, Walleye	11	0.40	1	0.7	1	0.40	273	0
Seaperch, Striped	12	0.39	1	0.7	1	0.39	288	0
Rockfish, Blue	13	0.24	1	0.7	1	0.24	251	0
Sculpin, Buffalo	14	0.22	1	0.7	1	0.22	279	0
Greenlings (unidentified)	15	0.00	1	0.7	0	0.00	0	0
Total		70.30	151	100	117			

C. CPUE***

Catch per Angler Day	=	0.97	Catch per Angler Hour	=	0.40
Kg per Angler Day	=	0.45	Kg per Angler Hour	=	0.19

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 22. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Shore Net Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	65
Total Hours Effort for Anglers Intercepted	=	135.5
Total Hours Still to Fish (Incomplete Trips)	=	2.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Smelt, Surf	1	10120	%100.0
Surfperches	2	2	0.0
Sculpin, Pacific Staghorn	3	1	0.0
Total		10123	100

C. CPUE

Catch per Angler Day = 155.74 Catch per Angler Hour = 74.71

Table 23. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Shore Net Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 65
 Total Hours Effort for Anglers Intercepted = 135.5
 Total Hours Still to Fish (Incomplete Trips) = 2.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Smelt, Surf	1	10120	%100.0	0.04	443.25
Surfperches	2	2	0.0	0.00**	0.00
Total		10122	100		443.25

C. CPUE

Catch per Angler Day = 155.72 Catch per Angler Hour = 74.70
 Kg per Angler Day = 6.82 Kg per Angler Hour = 3.27

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 24. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Shore Net Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 65
 Total Hours Effort for Anglers Intercepted = 135.5
 Total Hours Still to Fish (Incomplete Trips) = 2.5

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Smelt, Surf	1	443.25	10120	%100.0	478	0.04	188	9
Surfperches	2	0.00	2	0.0	0	0.00	0	0
Total		443.25	10122	100	478			

C. CPUE***

Catch per Angler Day = 155.72 Catch per Angler Hour = 74.70
 Kg per Angler Day = 6.82 Kg per Angler Hour = 3.27

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 25. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Spear Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	7
Total Hours Effort for Anglers Intercepted	=	11.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Greenling, Kelp	1	6	25.0
Lingcod	2	6	25.0
Greenling, Rock	3	3	12.5
Cabezon	4	2	8.3
Seaperch, Striped	5	2	8.3
Seaperch, Rubberlip	6	2	8.3
Seaperch, Rainbow	7	2	8.3
Seaperch, White	8	1	4.2
Total		24	100

C. CPUE

Catch per Angler Day = 3.43 Catch per Angler Hour = 2.17

Table 26. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Spear Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	7
Total Hours Effort for Anglers Intercepted	=	11.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Greenling, Kelp	1	6	25.0	0.21	1.28
Lingcod	2	6	25.0	2.18	13.10
Greenling, Rock	3	3	12.5	0.40	1.20
Cabezon	4	2	8.3	2.21	4.42
Seaperch, Striped	5	2	8.3	0.46	0.93
Seaperch, Rubberlip	6	2	8.3	0.71	1.42
Seaperch, Rainbow	7	2	8.3	0.33	0.66
Seaperch, White	8	1	4.2	0.30	0.30
Total		24	100		23.30

C. CPUE

Catch per Angler Day	=	3.43	Catch per Angler Hour	=	2.17
Kg per Angler Day	=	3.33	Kg per Angler Hour	=	2.10

* Weight estimated from length-to-weight regression if available.

Table 27. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1980 for Quarter 4, by Beach or Bank Anglers Using Spear Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 7
 Total Hours Effort for Anglers Intercepted = 11.1
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Cabezon	1	4.42	2	10.5	2	2.21	521	69
Lingcod	2	2.18	1	5.3	1	2.18	586	0
Seaperch, Rubberlip	3	1.42	2	10.5	2	0.71	335	5
Greenling, Kelp	4	1.28	6	31.6	6	0.21	241	39
Greenling, Rock	5	1.20	3	15.8	3	0.40	286	92
Seaperch, Striped	6	0.93	2	10.5	2	0.46	304	33
Seaperch, Rainbow	7	0.66	2	10.5	2	0.33	274	19
Seaperch, White	8	0.30	1	5.3	1	0.30	293	0
Total		12.38	19	100	19			

C. CPUE***

Catch per Angler Day = 2.71 Catch per Angler Hour = 1.71
 Kg per Angler Day = 1.77 Kg per Angler Hour = 1.12

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 3. Length-Frequency Histogram for Redtail Surfperch
 Taken by Beach and Bank Anglers Using Hook-and-Line Gear.
 Area 2, Quarter 4, 1980.

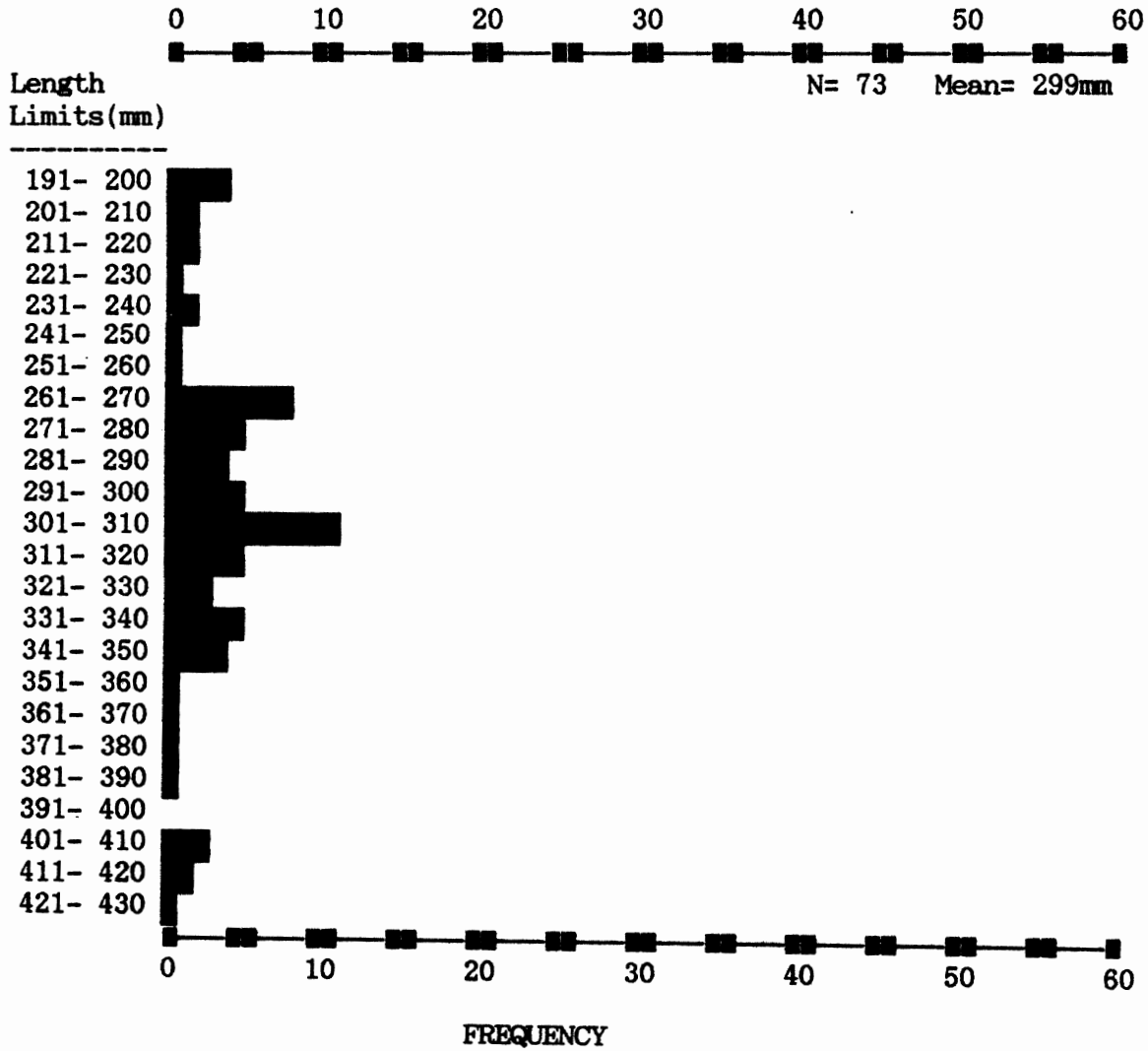


Figure 4. Length-Frequency Histogram for Surf Smelt
 Taken by Beach and Bank Anglers Using Shore Net Gear.
 Area 2, Quarter 4, 1980.

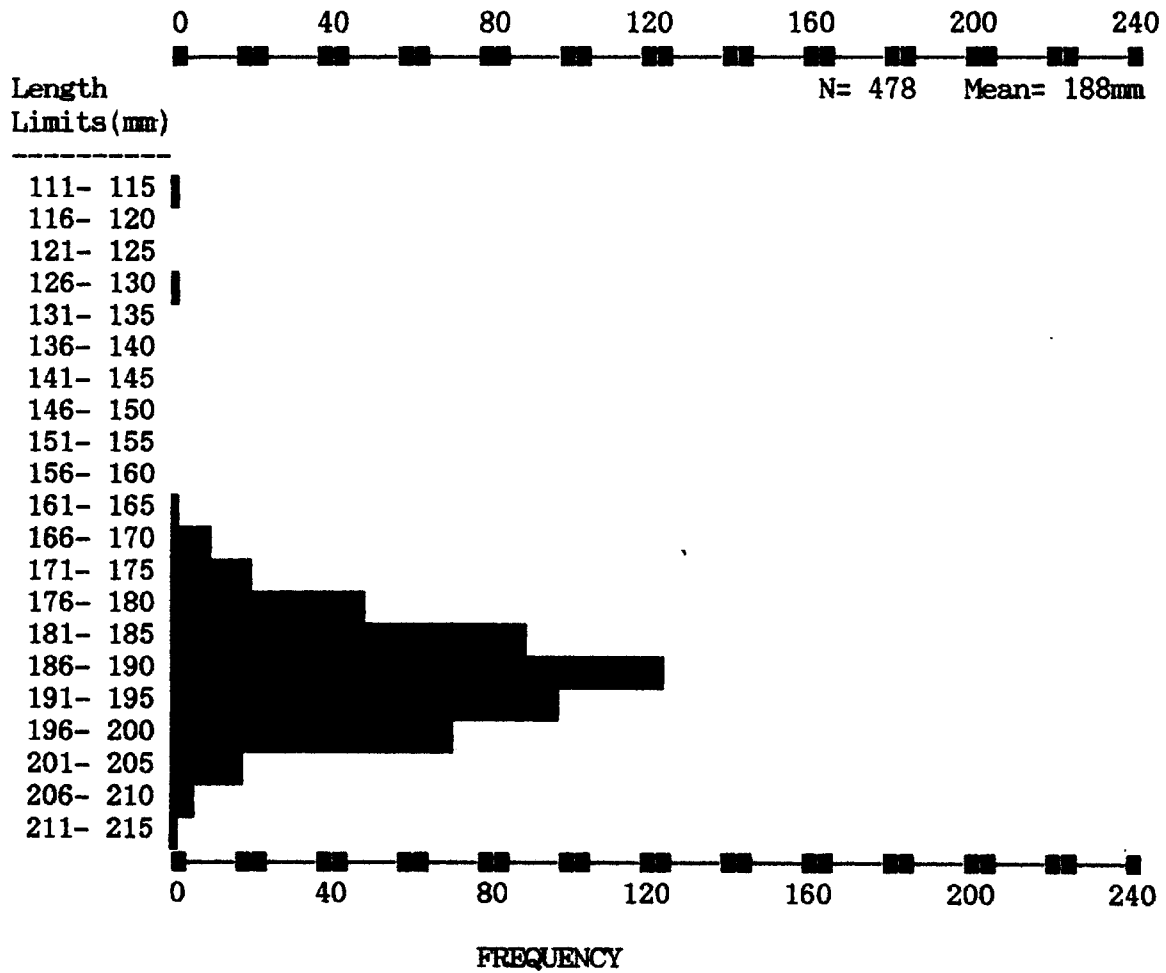


Table 28. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 80
 Total Hours Effort for Anglers Intercepted = 316.4
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	120	33.0
Lingcod	2	69	19.0
Rockfish, Black	3	43	11.8
Rockfish, Canary	4	35	9.6
Rockfish, Yellowtail	5	23	6.3
Rockfishes (unidentified)	6	20	5.5
Sanddab, Pacific	7	13	3.6
Rockfish, Rosy	8	10	2.7
Rockfish, Copper	9	8	2.2
Rockfish, China	10	5	1.4
Rockfish, Yelloweye	11	4	1.1
Cabezon	12	4	1.1
Rockfish, Quillback	13	3	0.8
Greenling, Kelp	14	2	0.5
Sharks	15	1	0.3
Salmon, Coho (Silver)	16	1	0.3
Rockfish, Widow	17	1	0.3
Rockfish, Vermilion	18	1	0.3
Greenling, Rock	19	1	0.3
Total		364	100

C. CPUE

Catch per Angler Day = 4.55 Catch per Angler Hour = 1.15

Table 29. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 80
 Total Hours Effort for Anglers Intercepted = 316.4
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	90	27.0	0.58	51.90
Lingcod	2	69	20.7	3.77	259.82
Rockfish, Black	3	43	12.9	0.96	41.33
Rockfish, Canary	4	35	10.5	0.70	24.53
Rockfish, Yellowtail	5	23	6.9	0.86	19.85
Rockfishes (unidentified)	6	19	5.7	0.78**	14.82
Sanddab, Pacific	7	13	3.9	0.17	2.20
Rockfish, Rosy	8	10	3.0	0.42	4.23
Rockfish, Copper	9	8	2.4	1.45	11.57
Rockfish, China	10	5	1.5	0.92	4.62
Rockfish, Yelloweye	11	4	1.2	2.76	11.04
Cabazon	12	4	1.2	2.43	9.74
Rockfish, Quillback	13	3	0.9	0.98	2.94
Greenling, Kelp	14	2	0.6	0.62	1.24
Sharks	15	1	0.3	0.00**	0.00
Salmon, Coho (Silver)	16	1	0.3	1.34	1.34
Rockfish, Widow	17	1	0.3	0.31	0.31
Rockfish, Vermilion	18	1	0.3	3.26	3.26
Greenling, Rock	19	1	0.3	0.63	0.63
Total		333	100		465.37

C. CPUE

Catch per Angler Day = 4.16 Catch per Angler Hour = 1.05
 Kg per Angler Day = 5.82 Kg per Angler Hour = 1.47

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 30. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	80
Total Hours Effort for Anglers Intercepted	=	316.4
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	259.82	69	22.7	59	3.77	674	143
Rockfish, Blue	2	51.90	90	29.6	42	0.58	330	46
Rockfish, Black	3	41.33	43	14.1	29	0.96	391	62
Rockfish, Canary	4	24.53	35	11.5	35	0.70	345	75
Rockfish, Yellowtail	5	19.85	23	7.6	23	0.86	369	92
Rockfish, Copper	6	11.57	8	2.6	7	1.45	419	68
Rockfish, Yelloweye	7	11.04	4	1.3	4	2.76	509	118
Cabezon	8	9.74	4	1.3	4	2.43	529	111
Rockfish, China	9	4.62	5	1.6	5	0.92	363	37
Rockfish, Rosy	10	4.23	10	3.3	9	0.42	295	22
Rockfish, Vermilion	11	3.26	1	0.3	1	3.26	592	0
Rockfish, Quillback	12	2.94	3	1.0	3	0.98	349	100
Salmon, Coho (Silver)	13	1.34	1	0.3	1	1.34	521	0
Greenling, Kelp	14	1.24	2	0.7	2	0.62	354	23
Greenling, Rock	15	0.63	1	0.3	1	0.63	357	0
Sanddab, Pacific	16	0.51	3	1.0	3	0.17	247	18
Rockfish, Widow	17	0.31	1	0.3	1	0.31	292	0
Rockfishes (unidentified)	18	0.00	1	0.3	0	0.00	0	0
Total		448.86	304	100	229			

C. CPUE***

Catch per Angler Day	=	3.80	Catch per Angler Hour	=	0.96
Kg per Angler Day	=	5.61	Kg per Angler Hour	=	1.42

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 31. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Spear Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 8
 Total Hours Effort for Anglers Intercepted = 6.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Greenling, Kelp	1	9	47.4
Lingcod	2	5	26.3
Rockfish, Black	3	2	10.5
Rockfish, Blue	4	2	10.5
Cabezon	5	1	5.3
Total		19	100

C. CPUE

Catch per Angler Day = 2.38 Catch per Angler Hour = 2.92

Table 32. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Spear Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 8
 Total Hours Effort for Anglers Intercepted = 6.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Greenling, Kelp	1	9	47.4	0.84	7.58
Lingcod	2	5	26.3	2.72	13.60
Rockfish, Black	3	2	10.5	1.35	2.71
Rockfish, Blue	4	2	10.5	0.90	1.79
Cabezon	5	1	5.3	1.54	1.54
Total		19	100		27.23

C. CPUE

Catch per Angler Day = 2.38 Catch per Angler Hour = 2.92
 Kg per Angler Day = 3.40 Kg per Angler Hour = 4.19

* Weight estimated from length-to-weight regression if available.

Table 33. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Spear Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	8
Total Hours Effort for Anglers Intercepted	=	6.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	13.60	5	26.3	5	2.72	600	161
Greenling, Kelp	2	7.59	9	47.4	9	0.84	387	57
Rockfish, Black	3	2.71	2	10.5	2	1.35	450	1
Rockfish, Blue	4	1.79	2	10.5	2	0.90	390	8
Cabezon	5	1.54	1	5.3	1	1.54	459	0
Total		27.23	19	100	19			

C. CPUE***

Catch per Angler Day	=	2.38	Catch per Angler Hour	=	2.92
Kg per Angler Day	=	3.40	Kg per Angler Hour	=	4.19

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 34. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 14
 Total Hours Effort for Anglers Intercepted = 56.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	96	69.1
Rockfish, Yellowtail	2	18	12.9
Rockfish, Canary	3	8	5.8
Rockfish, Rosy	4	5	3.6
Rockfish, Yelloweye	5	4	2.9
Lingcod	6	3	2.2
Rockfish, Copper	7	2	1.4
Rockfish, Widow	8	1	0.7
Greenlings (unidentified)	9	1	0.7
Greenling, Kelp	10	1	0.7
Total		139	100

C. CPUE

Catch per Angler Day = 9.93 Catch per Angler Hour = 2.48

Table 35. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	14
Total Hours Effort for Anglers Intercepted	=	56.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	96	69.1	0.68	64.86
Rockfish, Yellowtail	2	18	12.9	0.56	10.10
Rockfish, Canary	3	8	5.8	0.48	3.87
Rockfish, Rosy	4	5	3.6	0.47	2.35
Rockfish, Yelloweye	5	4	2.9	1.22	4.87
Lingcod	6	3	2.2	2.17	6.51
Rockfish, Copper	7	2	1.4	1.10	2.19
Rockfish, Widow	8	1	0.7	0.27	0.27
Greenlings (unidentified)	9	1	0.7	1.75**	1.75
Greenling, Kelp	10	1	0.7	0.51	0.51
Total		139	100		97.27

C. CPUE

Catch per Angler Day	=	9.93	Catch per Angler Hour	=	2.48
Kg per Angler Day	=	6.95	Kg per Angler Hour	=	1.74

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 36. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 14
 Total Hours Effort for Anglers Intercepted = 56.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Blue	1	64.86	96	69.1	87	0.68	347	51
Rockfish, Yellowtail	2	10.10	18	12.9	18	0.56	332	52
Lingcod	3	6.51	3	2.2	3	2.17	567	129
Rockfish, Yelloweye	4	4.87	4	2.9	4	1.22	398	58
Rockfish, Canary	5	3.87	8	5.8	8	0.48	320	28
Rockfish, Rosy	6	2.35	5	3.6	5	0.47	307	10
Rockfish, Copper	7	2.19	2	1.4	2	1.10	386	62
Greenling, Kelp	8	0.51	1	0.7	1	0.51	332	0
Rockfish, Widow	9	0.27	1	0.7	1	0.27	282	0
Greenlings (unidentified)	10	0.00	1	0.7	0	0.00	0	0
Total		95.52	139	100	129			

C. CPUE***

Catch per Angler Day = 9.93 Catch per Angler Hour = 2.48
 Kg per Angler Day = 6.82 Kg per Angler Hour = 1.71

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 5. Length-Frequency Histogram for Canary Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 045, Quarter 4, 1980.

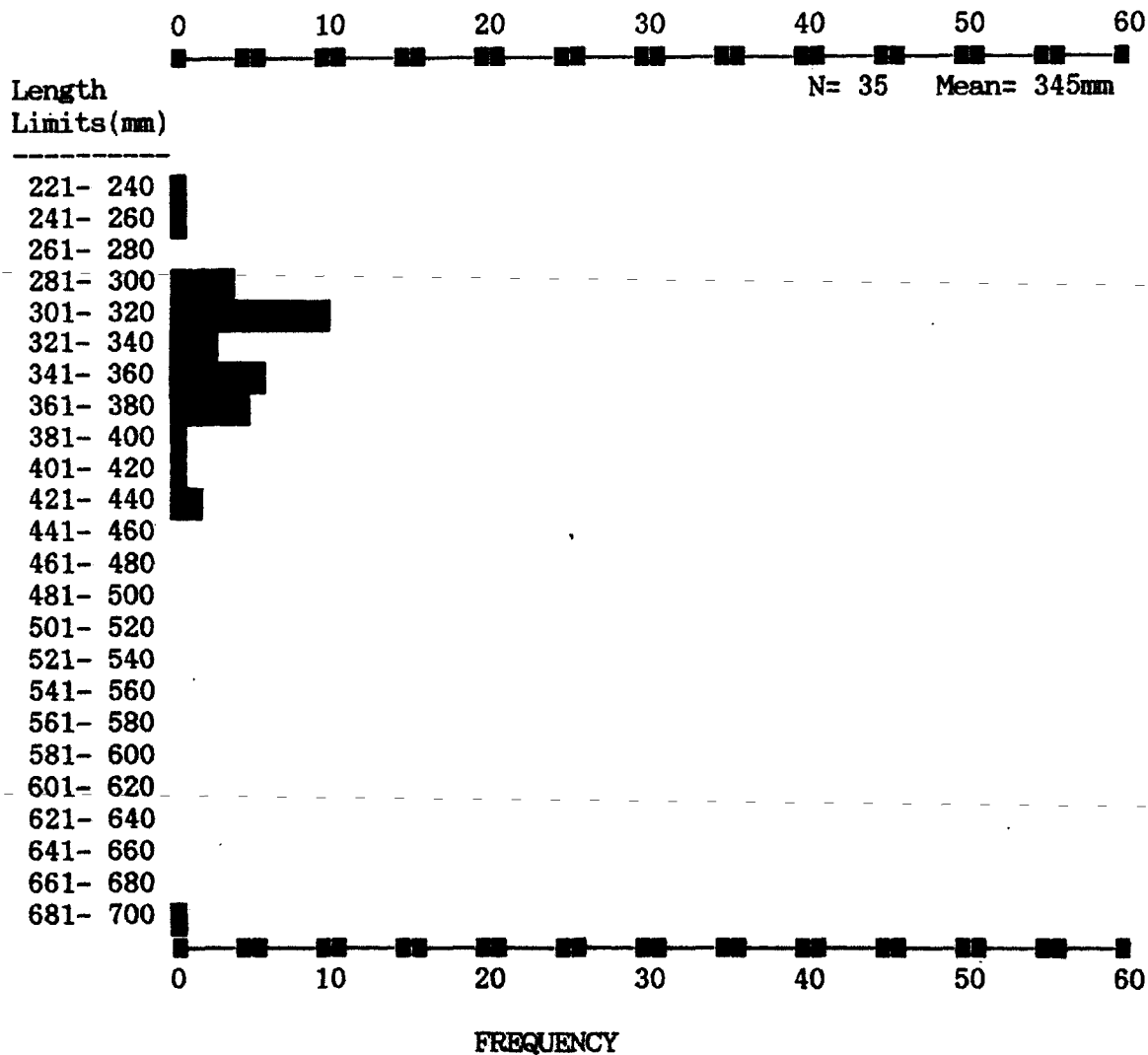


Figure 6. Length-Frequency Histogram for Blue Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 045, Quarter 4, 1980.

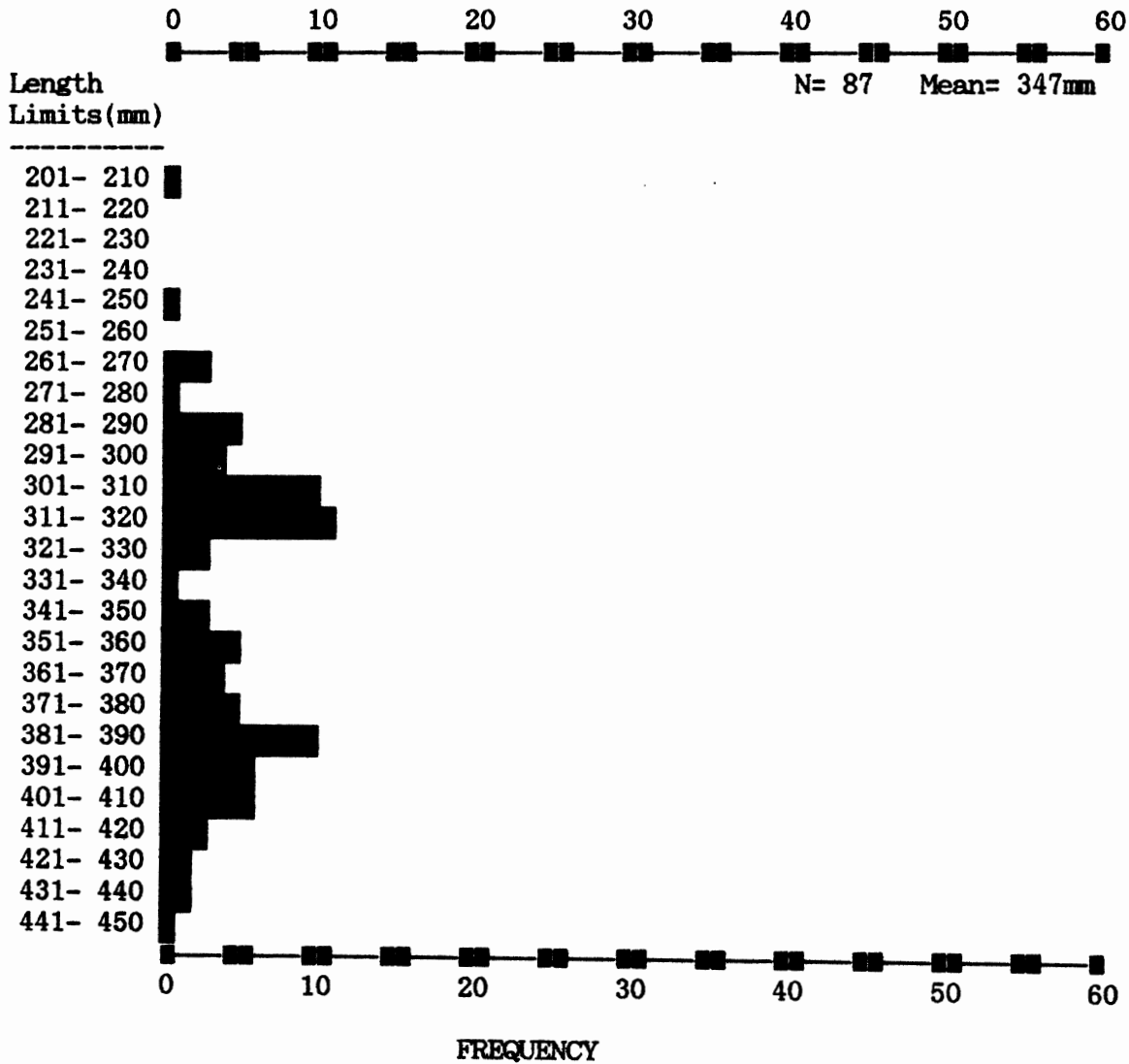


Table 37. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 74
 Total Hours Effort for Anglers Intercepted = 297.0
 Total Hours Still to Fish (Incomplete Trips) = 4.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfishes (unidentified)	1	147	51.0
Rockfish, Yellowtail	2	31	10.8
Rockfish, Black	3	31	10.8
Lingcod	4	22	7.6
Rockfish, Canary	5	12	4.2
Flounders, Righteye	6	10	3.5
Sculpin, Pacific Staghorn	7	8	2.8
Rockfish, Brown	8	7	2.4
Rockfish, Blue	9	7	2.4
Sharks	10	3	1.0
Cabazon	11	3	1.0
Rockfish, Copper	12	2	0.7
Jacksmelt	13	1	0.3
Rockfish, Gopher	14	1	0.3
Greenling, Kelp	15	1	0.3
Flounders, Lefteye	16	1	0.3
Flounder, Starry	17	1	0.3
Total		288	100

C. CPUE

Catch per Angler Day = 3.89 Catch per Angler Hour = 0.97

Table 38. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 74
 Total Hours Effort for Anglers Intercepted = 297.0
 Total Hours Still to Fish (Incomplete Trips) = 4.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfishes (unidentified)	1	117	47.8	0.70**	81.90
Rockfish, Yellowtail	2	31	12.7	0.77	23.85
Rockfish, Black	3	31	12.7	0.81	25.15
Lingcod	4	20	8.2	2.69	53.88
Rockfish, Canary	5	12	4.9	0.49	5.84
Flounders, Righteye	6	10	4.1	0.99**	9.90
Rockfish, Brown	7	7	2.9	0.56	3.95
Rockfish, Blue	8	7	2.9	0.43	2.99
Cabezon	9	3	1.2	1.03	3.08
Rockfish, Copper	10	2	0.8	1.04	2.09
Jacksmelt	11	1	0.4	0.74	0.74
Rockfish, Gopher	12	1	0.4	0.21	0.21
Greenling, Kelp	13	1	0.4	0.81	0.81
Flounders, Lefteye	14	1	0.4	0.00**	0.00
Flounder, Starry	15	1	0.4	0.99	0.99
Total		245	100		215.37

C. CPUE

Catch per Angler Day = 3.31 Catch per Angler Hour = 0.82
 Kg per Angler Day = 2.91 Kg per Angler Hour = 0.73

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 39. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 74
 Total Hours Effort for Anglers Intercepted = 297.0
 Total Hours Still to Fish (Incomplete Trips) = 4.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	35.02	13	9.7	13	2.69	615	98
Rockfish, Black	2	25.15	31	23.1	25	0.81	368	62
Rockfish, Yellowtail	3	23.85	31	23.1	13	0.77	356	94
Rockfish, Canary	4	5.84	12	9.0	12	0.49	314	55
Rockfish, Brown	5	3.95	7	5.2	5	0.56	298	85
Cabazon	6	3.08	3	2.2	3	1.03	388	71
Rockfish, Blue	7	2.99	7	5.2	4	0.43	304	9
Rockfish, Copper	8	2.09	2	1.5	2	1.04	385	4
Flounder, Starry	9	0.99	1	0.7	1	0.99	426	0
Greenling, Kelp	10	0.81	1	0.7	1	0.81	389	0
Jacksmelt	11	0.74	1	0.7	1	0.74	443	0
Rockfish, Gopher	12	0.21	1	0.7	1	0.21	236	0
Rockfishes (unidentified)	13	0.00	24	17.9	0	0.00	0	0
Total		104.71	134	100	81			

C. CPUE***

Catch per Angler Day = 1.81 Catch per Angler Hour = 0.45
 Kg per Angler Day = 1.42 Kg per Angler Hour = 0.35

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 40. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 22
 Total Hours Effort for Anglers Intercepted = 94.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Yellowtail	1	126	47.2
Rockfishes (unidentified)	2	51	19.1
Rockfish, Blue	3	48	18.0
Rockfish, Canary	4	16	6.0
Rockfish, Greenspotted	5	7	2.6
Rockfish, Olive	6	5	1.9
Rockfish, Rosy	7	4	1.5
Rockfish, Widow	8	3	1.1
Lingcod	9	3	1.1
Rockfish, Copper	10	2	0.7
Rockfish, China	11	1	0.4
Bocaccio	12	1	0.4
Total		267	100

C. CPUE

Catch per Angler Day = 12.14 Catch per Angler Hour = 2.84

Table 41. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 22
 Total Hours Effort for Anglers Intercepted = 94.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Yellowtail	1	126	47.2	1.50	189.02
Rockfishes (unidentified)	2	51	19.1	1.28**	65.28
Rockfish, Blue	3	48	18.0	0.82	39.20
Rockfish, Canary	4	16	6.0	1.35	21.66
Rockfish, Greenspotted	5	7	2.6	0.92	6.43
Rockfish, Olive	6	5	1.9	1.05	5.27
Rockfish, Rosy	7	4	1.5	0.14	0.58
Rockfish, Widow	8	3	1.1	1.26	3.79
Lingcod	9	3	1.1	5.75	17.25
Rockfish, Copper	10	2	0.7	1.44	2.88
Rockfish, China	11	1	0.4	1.19	1.19
Bocaccio	12	1	0.4	4.04	4.04
Total		267	100		356.59

C. CPUE

Catch per Angler Day = 12.14 Catch per Angler Hour = 2.84
 Kg per Angler Day = 16.21 Kg per Angler Hour = 3.79

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 42. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 22
 Total Hours Effort for Anglers Intercepted = 94.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Yellowtail	1	189.02	126	58.9	101	1.50	467	36
Rockfish, Blue	2	39.20	48	22.4	40	0.82	373	43
Rockfish, Canary	3	21.66	16	7.5	16	1.35	439	72
Rockfish, Greenspotted	4	6.43	7	3.3	7	0.92	382	45
Lingcod	5	5.75	1	0.5	1	5.75	810	0
Rockfish, Olive	6	5.27	5	2.3	5	1.05	421	67
Bocaccio	7	4.04	1	0.5	1	4.04	720	0
Rockfish, Widow	8	3.79	3	1.4	3	1.26	441	78
Rockfish, Copper	9	2.88	2	0.9	2	1.44	413	112
Rockfish, China	10	1.19	1	0.5	1	1.19	396	0
Rockfish, Rosy	11	0.58	4	1.9	4	0.14	206	13
Total		279.81	214	100	181			

C. CPUE***

Catch per Angler Day = 9.73 Catch per Angler Hour = 2.28
 Kg per Angler Day = 12.72 Kg per Angler Hour = 2.98

* Weight estimated from length-to-weight regression if available.
 ** Total length except for species with tuna-like caudal fins (see text).
 *** CPUE is underestimated if all fish taken were not examined (see text).

Figure 7. Length-Frequency Histogram for Yellowtail Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 097, Quarter 4, 1980.

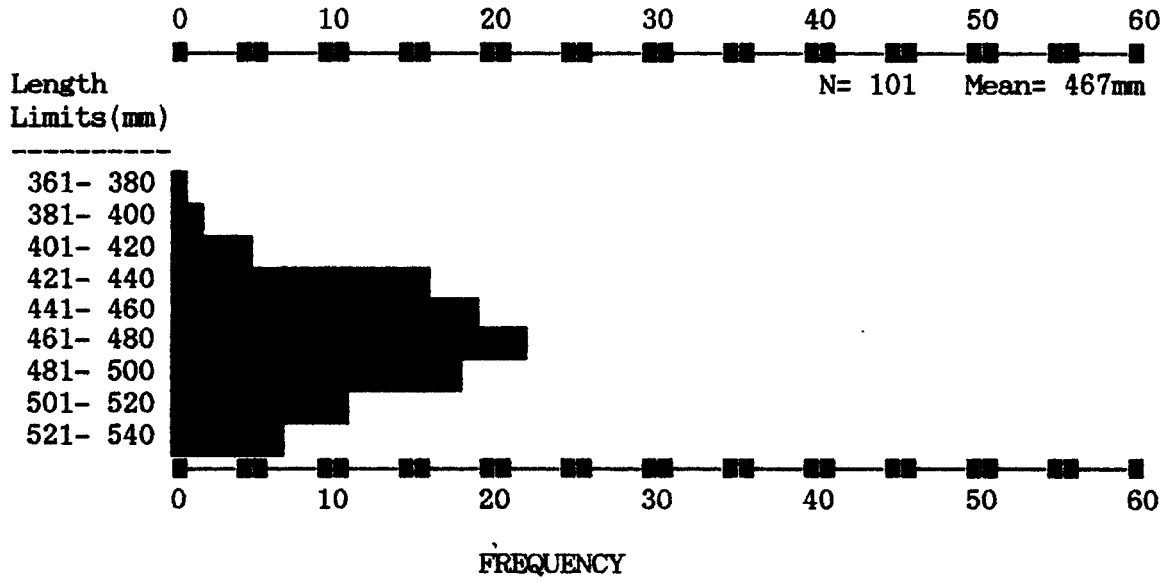


Table 43. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	25
Total Hours Effort for Anglers Intercepted	=	100.5
Total Hours Still to Fish (Incomplete Trips)	=	1.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	12	31.6
Surfperch, Walleye	2	8	21.1
Sculpin, Pacific Staghorn	3	5	13.2
Seaperch, White	4	4	10.5
Tomcod, Pacific	5	3	7.9
Jacksmelt	6	3	7.9
Surfperch, Redtail	7	1	2.6
Surfperch, Barred	8	1	2.6
Flounder, Starry	9	1	2.6
Total		38	100

C. CPUE

Catch per Angler Day = 1.52 Catch per Angler Hour = 0.38

Table 44. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	25
Total Hours Effort for Anglers Intercepted	=	100.5
Total Hours Still to Fish (Incomplete Trips)	=	1.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	12	32.4	0.10	1.25
Surfperch, Walleye	2	8	21.6	0.30	2.39
Sculpin, Pacific Staghorn	3	4	10.8	0.00**	0.00
Seaperch, White	4	4	10.8	0.24	0.96
Tomcod, Pacific	5	3	8.1	0.10	0.30
Jacksmelt	6	3	8.1	0.61	1.83
Surfperch, Redtail	7	1	2.7	0.13	0.13
Surfperch, Barred	8	1	2.7	1.04	1.04
Flounder, Starry	9	1	2.7	0.28	0.28
Total		37	100		8.18

C. CPUE

Catch per Angler Day	=	1.48	Catch per Angler Hour	=	0.37
Kg per Angler Day	=	0.33	Kg per Angler Hour	=	0.08

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 45. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 25
 Total Hours Effort for Anglers Intercepted = 100.5
 Total Hours Still to Fish (Incomplete Trips) = 1.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Walleye	1	2.39	8	24.2	4	0.30	234	69
Jacksmelt	2	1.83	3	9.1	3	0.61	418	18
Croaker, White	3	1.25	12	36.4	11	0.10	206	33
Surfperch, Barred	4	1.04	1	3.0	1	1.04	375	0
Seaperch, White	5	0.96	4	12.1	4	0.24	260	65
Tomcod, Pacific	6	0.30	3	9.1	3	0.10	234	10
Flounder, Starry	7	0.28	1	3.0	1	0.28	291	0
Surfperch, Redtail	8	0.13	1	3.0	1	0.13	201	0
Total		8.18	33	100	28			

C. CPUE***

Catch per Angler Day = 1.32 Catch per Angler Hour = 0.33
 Kg per Angler Day = 0.33 Kg per Angler Hour = 0.08

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 46. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	16
Total Hours Effort for Anglers Intercepted	=	73.5
Total Hours Still to Fish (Incomplete Trips)	=	1.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	1	4	44.4
Sculpin, Pacific Staghorn	2	1	11.1
Croaker, White	3	1	11.1
Surfperches	4	1	11.1
Seaperch, White	5	1	11.1
Flounders, Righteye	6	1	11.1
Total		9	100

C. CPUE

Catch per Angler Day = 0.56 Catch per Angler Hour = 0.12

Table 47. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	16
Total Hours Effort for Anglers Intercepted	=	73.5
Total Hours Still to Fish (Incomplete Trips)	=	1.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	4	66.7	0.61	2.44
Croaker, White	2	1	16.7	0.28	0.28
Seaperch, White	3	1	16.7	0.34	0.34
Total		6	100		3.06

C. CPUE

Catch per Angler Day	=	0.38	Catch per Angler Hour	=	0.08
Kg per Angler Day	=	0.19	Kg per Angler Hour	=	0.04

* Weight estimated from length-to-weight regression if available.

Table 48. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 16
 Total Hours Effort for Anglers Intercepted = 73.5
 Total Hours Still to Fish (Incomplete Trips) = 1.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Jacksmelt	1	2.44	4	66.7	4	0.61	418	12
Seaperch, White	2	0.34	1	16.7	1	0.34	304	0
Croaker, White	3	0.28	1	16.7	1	0.28	292	0
Total		3.06	6	100	6			

C. CPUE***

Catch per Angler Day = 0.38 Catch per Angler Hour = 0.08
 Kg per Angler Day = 0.19 Kg per Angler Hour = 0.04

* Weight estimated from length-to-weight regression if available.
 ** Total length except for species with tuna-like caudal fins (see text).
 *** CPUE is underestimated if all fish taken were not examined (see text).

Table 49. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 15
 Total Hours Effort for Anglers Intercepted = 42.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	1	34	59.6
Surfperch, Walleye	2	20	35.1
Surfperches	3	2	3.5
Seaperch, Rainbow	4	1	1.8
Total		57	100

C. CPUE

Catch per Angler Day = 3.80 Catch per Angler Hour = 1.36

Table 50. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	15
Total Hours Effort for Anglers Intercepted	=	42.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	34	59.6	0.57	19.24
Surfperch, Walleye	2	20	35.1	0.17	3.43
Surfperches	3	2	3.5	0.16**	0.32
Seaperch, Rainbow	4	1	1.8	0.11	0.11
Total		57	100		23.09

C. CPUE

Catch per Angler Day	=	3.80	Catch per Angler Hour	=	1.36
Kg per Angler Day	=	1.54	Kg per Angler Hour	=	0.55

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 51. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 15
 Total Hours Effort for Anglers Intercepted = 42.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Jacksmelt	1	19.24	34	59.6	10	0.57	408	17
Surfperch, Walleye	2	3.43	20	35.1	12	0.17	212	28
Seaperch, Rainbow	3	0.11	1	1.8	1	0.11	188	0
Surfperches	4	0.00	2	3.5	0	0.00	0	0
Total		22.77	57	100	23			

C. CPUE***

Catch per Angler Day = 3.80 Catch per Angler Hour = 1.36
 Kg per Angler Day = 1.52 Kg per Angler Hour = 0.54

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 52. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	34
Total Hours Effort for Anglers Intercepted	=	164.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfishes (unidentified)	1	84	53.8
Rockfish, Black	2	17	10.9
Greenling, Kelp	3	9	5.8
Unidentified Fishes	4	8	5.1
Sharks	5	6	3.8
Sculpin, Pacific Staghorn	6	6	3.8
Lingcod	7	4	2.6
Sandabs	8	4	2.6
Rockfish, Brown	9	3	1.9
Rockfish, Canary	10	3	1.9
Croaker, White	11	3	1.9
Flounders, Righteye	12	3	1.9
Rockfish, Blue	13	2	1.3
Shark, Leopard	14	1	0.6
Rockfish, Kelp	15	1	0.6
Greenling, Rock	16	1	0.6
Cabezon	17	1	0.6
Total		156	100

C. CPUE

Catch per Angler Day = 4.59 Catch per Angler Hour = 0.95

Table 53. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	34
Total Hours Effort for Anglers Intercepted	=	164.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfishes (unidentified)	1	78	55.3	0.78**	60.84
Rockfish, Black	2	17	12.1	0.98	16.62
Greenling, Kelp	3	9	6.4	0.69	6.19
Unidentified Fishes	4	8	5.7	0.00**	0.00
Sharks	5	4	2.8	0.00**	0.00
Lingcod	6	4	2.8	1.59	6.37
Sandabs	7	4	2.8	0.11	0.45
Rockfish, Canary	8	3	2.1	0.32	0.95
Croaker, White	9	3	2.1	0.44	1.33
Flounders, Righteye	10	3	2.1	0.00**	0.00
Rockfish, Brown	11	2	1.4	0.36	0.72
Rockfish, Blue	12	2	1.4	0.41	0.81
Shark, Leopard	13	1	0.7	0.00**	0.00
Rockfish, Kelp	14	1	0.7	0.53	0.53
Greenling, Rock	15	1	0.7	0.28	0.28
Cabazon	16	1	0.7	0.64	0.64
Total		141	100		95.73

C. CPUE

Catch per Angler Day	=	4.15	Catch per Angler Hour	=	0.86
Kg per Angler Day	=	2.82	Kg per Angler Hour	=	0.58

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 54. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 34
 Total Hours Effort for Anglers Intercepted = 164.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Black	1	16.62	17	37.8	15	0.98	391	68
Greenling, Kelp	2	6.19	9	20.0	9	0.69	359	60
Lingcod	3	3.18	2	4.4	2	1.59	523	70
Croaker, White	4	1.33	3	6.7	3	0.44	337	18
Rockfish, Canary	5	0.95	3	6.7	3	0.32	268	68
Rockfish, Blue	6	0.81	2	4.4	2	0.41	299	9
Rockfish, Brown	7	0.72	2	4.4	2	0.36	271	21
Cabezón	8	0.64	1	2.2	1	0.64	333	0
Rockfish, Kelp	9	0.53	1	2.2	1	0.53	331	0
Sandabs	10	0.45	4	8.9	4	0.11	203	29
Greenling, Rock	11	0.28	1	2.2	1	0.28	269	0
Total		31.70	45	100	43			

C. CPUE***

Catch per Angler Day = 1.32 Catch per Angler Hour = 0.27
 Kg per Angler Day = 0.93 Kg per Angler Hour = 0.19

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 55. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	21
Total Hours Effort for Anglers Intercepted	=	129.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Yellowtail	1	53	38.7
Rockfish, Blue	2	23	16.8
Rockfish, Widow	3	11	8.0
Bocaccio	4	9	6.6
Rockfishes (unidentified)	5	8	5.8
Rockfish, Canary	6	8	5.8
Lingcod	7	8	5.8
Rockfish, Vermilion	8	6	4.4
Rockfish, Black	9	5	3.6
Rockfish, China	10	1	0.7
Rockfish, Rosy	11	1	0.7
Rockfish, Yelloweye	12	1	0.7
Rockfish, Greenspotted	13	1	0.7
Rockfish, Olive	14	1	0.7
Greenling, Kelp	15	1	0.7
Total		137	100

C. CPUE

Catch per Angler Day =	6.52	Catch per Angler Hour =	1.06
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Table 56. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	21
Total Hours Effort for Anglers Intercepted	=	129.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Yellowtail	1	53	41.1	1.08	57.14
Rockfish, Blue	2	23	17.8	0.69	15.84
Rockfish, Widow	3	11	8.5	1.39	15.28
Bocaccio	4	9	7.0	3.81	34.33
Rockfish, Canary	5	8	6.2	1.81	14.45
Lingcod	6	8	6.2	6.00	48.03
Rockfish, Black	7	5	3.9	0.72	3.59
Rockfish, Vermilion	8	5	3.9	2.63	13.13
Rockfishes (unidentified)	9	1	0.8	1.36**	1.36
Rockfish, China	10	1	0.8	0.44	0.44
Rockfish, Rosy	11	1	0.8	0.38	0.38
Rockfish, Yelloweye	12	1	0.8	5.48	5.48
Rockfish, Greenspotted	13	1	0.8	0.43	0.43
Rockfish, Olive	14	1	0.8	1.35	1.35
Greenling, Kelp	15	1	0.8	0.37	0.37
Total		129	100		211.60

C. CPUE

Catch per Angler Day	=	6.14	Catch per Angler Hour	=	1.00
Kg per Angler Day	=	10.08	Kg per Angler Hour	=	1.63

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 57. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	21
Total Hours Effort for Anglers Intercepted	=	129.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Yellowtail	1	57.14	53	41.4	52	1.08	411	65
Lingcod	2	48.03	8	6.3	8	6.00	742	298
Bocaccio	3	34.33	9	7.0	9	3.81	647	217
Rockfish, Blue	4	15.84	23	18.0	23	0.69	352	39
Rockfish, Widow	5	15.28	11	8.6	11	1.39	450	81
Rockfish, Canary	6	14.45	8	6.3	8	1.81	479	91
Rockfish, Vermilion	7	13.13	5	3.9	3	2.63	544	72
Rockfish, Yelloweye	8	5.48	1	0.8	1	5.48	662	0
Rockfish, Black	9	3.59	5	3.9	5	0.72	361	32
Rockfish, Olive	10	1.35	1	0.8	1	1.35	465	0
Rockfish, China	11	0.44	1	0.8	1	0.44	291	0
Rockfish, Greenspotted	12	0.43	1	0.8	1	0.43	298	0
Rockfish, Rosy	13	0.38	1	0.8	1	0.38	287	0
Greenling, Kelp	14	0.37	1	0.8	1	0.37	296	0
Total		210.24	128	100	125			

C. CPUE***

Catch per Angler Day	=	6.10	Catch per Angler Hour	=	0.99
Kg per Angler Day	=	10.01	Kg per Angler Hour	=	1.62

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 8. Length-Frequency Histogram for Yellowtail Rockfish Taken by All CPFV Anglers Using Hook-and-Line Gear. Area 3 (Ocean), Quarter 4, 1980.

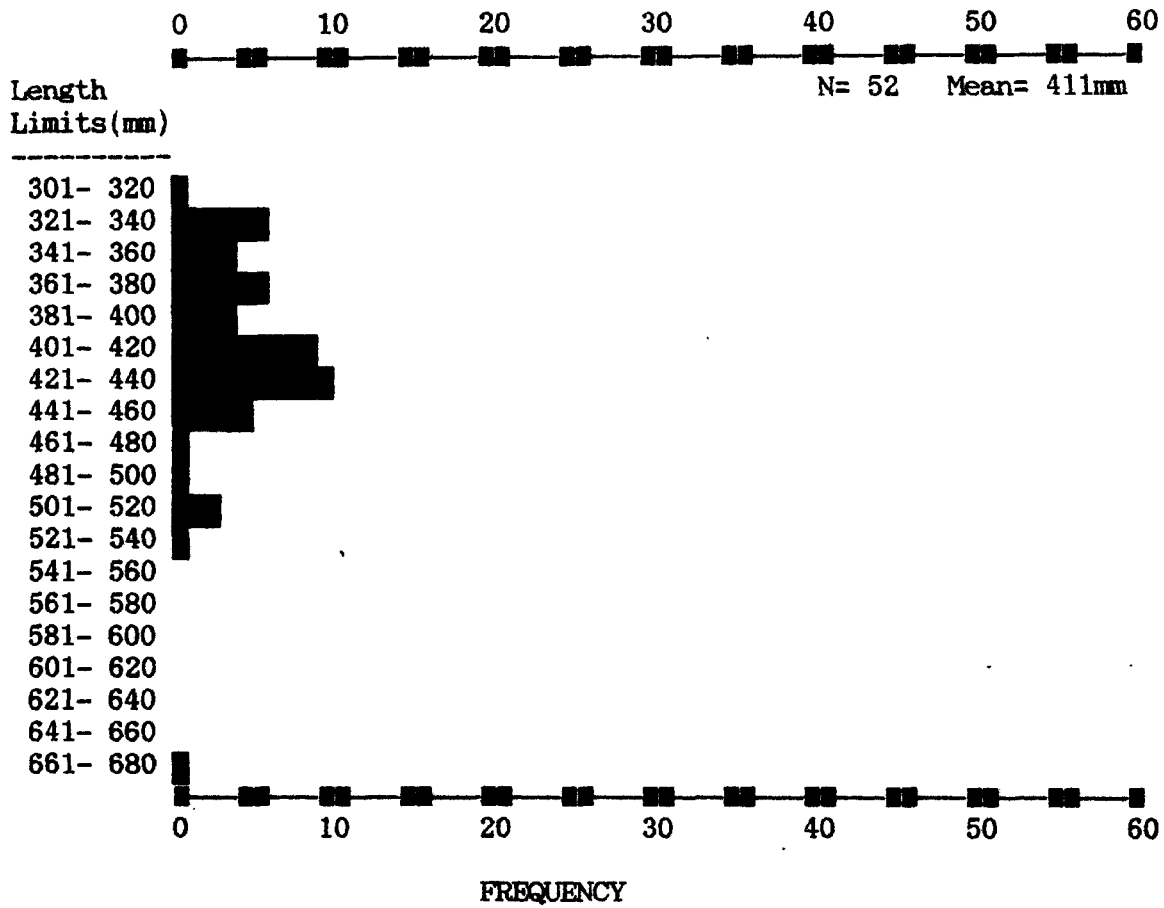


Table 58. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	203
Total Hours Effort for Anglers Intercepted	=	675.0
Total Hours Still to Fish (Incomplete Trips)	=	9.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	48	21.5
Surfperch, Walleye	2	34	15.2
Surfperches	3	23	10.3
Seaperch, Rubberlip	4	22	9.9
Gobies	5	17	7.6
Rockfishes (unidentified)	6	11	4.9
Goby, Yellowfin	7	10	4.5
Perch, Pile	8	9	4.0
Rockfish, Brown	9	8	3.6
Perch, Shiner	10	8	3.6
Jacksmelt	11	6	2.7
Perch, Black	12	6	2.7
Seaperch, White	13	6	2.7
Shark, Leopard	14	3	1.3
Sharks	15	2	0.9
Smoothhound, Brown	16	2	0.9
Ray, Bat	17	2	0.9
Seaperch, Rainbow	18	2	0.9
Skates	19	1	0.4
Skate, Big	20	1	0.4
Cabezon	21	1	0.4
Bass, Striped	22	1	0.4
Total		223	100

C. CPUE

Catch per Angler Day = 1.10 Catch per Angler Hour = 0.33

Table 59. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 203
 Total Hours Effort for Anglers Intercepted = 675.0
 Total Hours Still to Fish (Incomplete Trips) = 9.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Walleye	1	34	27.6	0.09	2.92
Seaperch, Rubberlip	2	22	17.9	0.25	5.60
Gobies	3	11	8.9	0.01**	0.11
Goby, Yellowfin	4	10	8.1	0.01	0.10
Perch, Pile	5	9	7.3	0.76	6.85
Perch, Shiner	6	8	6.5	0.03	0.24
Perch, Black	7	6	4.9	0.24	1.44
Seaperch, White	8	6	4.9	0.22	1.33
Rockfish, Brown	9	3	2.4	0.16	0.47
Sculpin, Pacific Staghorn	10	3	2.4	0.00**	0.00
Shark, Leopard	11	2	1.6	0.94	1.88
Ray, Bat	12	2	1.6	3.08	6.16
Seaperch, Rainbow	13	2	1.6	0.08	0.16
Smoothhound, Brown	14	1	0.8	1.55	1.55
Skate, Big	15	1	0.8	3.10	3.10
Jacksmelt	16	1	0.8	0.07	0.07
Cabezon	17	1	0.8	0.32	0.32
Bass, Striped	18	1	0.8	0.87	0.87
Total		123	100		33.19

C. CPUE

Catch per Angler Day = 0.61 Catch per Angler Hour = 0.18
 Kg per Angler Day = 0.16 Kg per Angler Hour = 0.05

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 60. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	203
Total Hours Effort for Anglers Intercepted	=	675.0
Total Hours Still to Fish (Incomplete Trips)	=	9.5

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Perch, Pile	1	6.85	9	8.3	9	0.76	342	80
Ray, Bat	2	6.16	2	1.9	2	3.08	491	240
Seaperch, Rubberlip	3	5.60	22	20.4	20	0.25	234	20
Skate, Big	4	3.10	1	0.9	1	3.10	691	0
Surfperch, Walleye	5	2.92	34	31.5	4	0.09	169	44
Shark, Leopard	6	1.88	2	1.9	2	0.94	451	54
Smoothhound, Brown	7	1.55	1	0.9	1	1.55	541	0
Perch, Black	8	1.44	6	5.6	6	0.24	230	40
Seaperch, White	9	1.33	6	5.6	5	0.22	260	34
Bass, Striped	10	0.87	1	0.9	1	0.87	527	0
Rockfish, Brown	11	0.47	3	2.8	3	0.16	205	13
Cabezon	12	0.32	1	0.9	1	0.32	258	0
Perch, Shiner	13	0.21	7	6.5	7	0.03	131	14
Seaperch, Rainbow	14	0.16	2	1.9	2	0.08	159	68
Goby, Yellowfin	15	0.10	10	9.3	8	0.01	106	8
Jacksmelt	16	0.07	1	0.9	1	0.07	221	0
Total		33.05	108	100	73			

C. CPUE***

Catch per Angler Day	=	0.53	Catch per Angler Hour	=	0.16
Kg per Angler Day	=	0.16	Kg per Angler Hour	=	0.05

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 61. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	49
Total Hours Effort for Anglers Intercepted	=	156.5
Total Hours Still to Fish (Incomplete Trips)	=	7.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	12	54.5
Perch, Shiner	2	4	18.2
Surfperch, Silver	3	2	9.1
Shark, Leopard	4	1	4.5
Bass, Striped	5	1	4.5
Seaperch, Rubberlip	6	1	4.5
Flounder, Starry	7	1	4.5
Total		22	100

C. CPUE

Catch per Angler Day = 0.45 Catch per Angler Hour = 0.14

Table 62. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	49
Total Hours Effort for Anglers Intercepted	=	156.5
Total Hours Still to Fish (Incomplete Trips)	=	7.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Sculpin, Pacific Staghorn	1	8	50.0	0.00**	0.00
Perch, Shiner	2	4	25.0	0.00**	0.00
Surfperch, Silver	3	2	12.5	0.35	0.70
Seaperch, Rubberlip	4	1	6.3	0.11	0.11
Flounder, Starry	5	1	6.3	0.96	0.96
Total		16	100		1.77

C. CPUE

Catch per Angler Day	=	0.33	Catch per Angler Hour	=	0.10
Kg per Angler Day	=	0.04	Kg per Angler Hour	=	0.01

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 63. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 49
 Total Hours Effort for Anglers Intercepted = 156.5
 Total Hours Still to Fish (Incomplete Trips) = 7.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Flounder, Starry	1	0.96	1	25.0	1	0.96	422	0
Surfperch, Silver	2	0.70	2	50.0	1	0.35	275	0
Seaperch, Rubberlip	3	0.11	1	25.0	1	0.11	177	0
Total		1.77	4	100	3			

C. CPUE***

Catch per Angler Day = 0.08 Catch per Angler Hour = 0.03
 Kg per Angler Day = 0.04 Kg per Angler Hour = 0.01

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 64. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	203
Total Hours Effort for Anglers Intercepted	=	977.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	129	22.8
Rockfishes (unidentified)	2	87	15.4
Rockfish, Brown	3	44	7.8
Gobies	4	39	6.9
Shark, Leopard	5	36	6.4
Surfperches	6	35	6.2
Seaperch, Rubberlip	7	30	5.3
Seaperch, White	8	23	4.1
Perch, Black	9	22	3.9
Bass, Striped	10	18	3.2
Flounder, Starry	11	15	2.7
Smoothhound, Brown	12	14	2.5
Smoothhound, Gray	13	9	1.6
Surfperch, Walleye	14	9	1.6
Sturgeon, White	15	8	1.4
Goby, Yellowfin	16	8	1.4
Eagle Rays	17	6	1.1
Perch, Pile	18	6	1.1
Sharks	19	5	0.9
Skates	20	4	0.7
Sturgeons (unidentified)	21	4	0.7
Lingcod	22	3	0.5
Surfperch, Silver	23	3	0.5
Skate, Big	24	2	0.4
Sole, Petrale	25	2	0.4
Ray, Bat	26	1	0.2

(Table 64. - continued)

Common name	Rank by Number	Number Caught	% by Number
Cusk-eels	27	1	0.2
Cabazon	28	1	0.2
Flounders, Righteye	29	1	0.2
Total		565	100

C. CPUE

Catch per Angler Day = 2.78 Catch per Angler Hour = 0.58

Table 65. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	203
Total Hours Effort for Anglers Intercepted	=	977.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Sculpin, Pacific Staghorn	1	41	15.1	0.04	1.78
Shark, Leopard	2	36	13.2	4.11	148.08
Rockfish, Brown	3	36	13.2	0.23	8.41
Seaperch, Rubberlip	4	30	11.0	0.48	14.36
Perch, Black	5	22	8.1	0.34	7.43
Seaperch, White	6	21	7.7	0.41	8.66
Rockfishes (unidentified)	7	17	6.3	0.25**	4.25
Flounder, Starry	8	15	5.5	1.15	17.21
Bass, Striped	9	11	4.0	1.70	18.73
Smoothhound, Brown	10	7	2.6	2.96	20.74
Surfperch, Walleye	11	6	2.2	0.46	2.74
Perch, Pile	12	6	2.2	0.81	4.85
Gobies	13	5	1.8	0.00**	0.00
Sturgeon, White	14	4	1.5	27.21	108.82
Surfperches	15	4	1.5	0.43**	1.72
Lingcod	16	3	1.1	1.16	3.47
Surfperch, Silver	17	3	1.1	0.22	0.65
Skate, Big	18	2	0.7	4.97	9.95
Sole, Petrale	19	2	0.7	1.26	2.51
Cabazon	20	1	0.4	0.43	0.43
Total		272	100		384.80

C. CPUE

Catch per Angler Day	=	1.34	Catch per Angler Hour	=	0.28
Kg per Angler Day	=	1.90	Kg per Angler Hour	=	0.39

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 66. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 203
 Total Hours Effort for Anglers Intercepted = 977.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sturgeon, White	1	108.82	4	1.9	4	27.21	1474	433
Shark, Leopard	2	65.81	16	7.6	15	4.11	743	115
Bass, Striped	3	18.73	11	5.2	11	1.70	618	200
Flounder, Starry	4	17.21	15	7.1	12	1.15	415	108
Seaperch, Rubberlip	5	14.36	30	14.3	17	0.48	272	76
Smoothhound, Brown	6	11.85	4	1.9	4	2.96	675	45
Skate, Big	7	9.95	2	1.0	2	4.97	815	8
Seaperch, White	8	8.66	21	10.0	12	0.41	324	13
Rockfish, Brown	9	8.41	36	17.1	33	0.23	230	35
Perch, Black	10	7.43	22	10.5	19	0.34	259	59
Perch, Pile	11	4.85	6	2.9	6	0.81	358	56
Lingcod	12	3.47	3	1.4	3	1.16	454	115
Surfperch, Walleye	13	2.74	6	2.9	6	0.46	279	31
Sole, Petrale	14	2.51	2	1.0	2	1.26	454	41
Surfperch, Silver	15	0.65	3	1.4	2	0.22	237	8
Cabezon	16	0.43	1	0.5	1	0.43	288	0
Sculpin, Pacific Staghorn	17	0.35	8	3.8	8	0.04	151	44
Rockfishes (unidentified)	18	0.00	16	7.6	0	0.00	0	0
Surfperches	19	0.00	4	1.9	0	0.00	0	0
Total		286.24	210	100	157			

C. CPUE***

Catch per Angler Day = 1.03 Catch per Angler Hour = 0.21
 Kg per Angler Day = 1.41 Kg per Angler Hour = 0.29

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 67. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 28
 Total Hours Effort for Anglers Intercepted = 110.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	8	57.1
Sturgeon, White	2	3	21.4
Bass, Striped	3	2	14.3
Sturgeons (unidentified)	4	1	7.1
Total		14	100

C. CPUE

Catch per Angler Day = 0.50 Catch per Angler Hour = 0.13

Table 68. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted = 28
 Total Hours Effort for Anglers Intercepted = 110.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Sturgeon, White	1	3	60.0	13.32	39.97
Bass, Striped	2	2	40.0	1.72	3.44
Total		5	100		43.41

C. CPUE

Catch per Angler Day = 0.18 Catch per Angler Hour = 0.05
 Kg per Angler Day = 1.55 Kg per Angler Hour = 0.39

* Weight estimated from length-to-weight regression if available.

Table 69. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 28
 Total Hours Effort for Anglers Intercepted = 110.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sturgeon, White	1	39.97	3	60.0	3	13.32	1270	109
Bass, Striped	2	3.44	2	40.0	2	1.72	666	25
Total		43.41	5	100	5			

C. CPUE***

Catch per Angler Day = 0.18 Catch per Angler Hour = 0.05
 Kg per Angler Day = 1.55 Kg per Angler Hour = 0.39

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 70. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 153
 Total Hours Effort for Anglers Intercepted = 370.5
 Total Hours Still to Fish (Incomplete Trips) = 85.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	38	31.9
Rockfishes (unidentified)	2	16	13.4
Sculpin, Pacific Staghorn	3	11	9.2
Sculpins	4	8	6.7
Sanddabs	5	8	6.7
Surfperches	6	7	5.9
Sanddab, Speckled	7	5	4.2
Jacksmelt	8	4	3.4
Surfperch, Walleye	9	3	2.5
Seaperch, Rainbow	10	3	2.5
Flounder, Starry	11	3	2.5
Anchovy, Northern	12	2	1.7
Lingcod	13	2	1.7
Seaperch, White	14	2	1.7
Perch, Pile	15	2	1.7
Sharks	16	1	0.8
Flatfishes	17	1	0.8
Flounders, Lefteye	18	1	0.8
Halibut, California	19	1	0.8
Sole, Sand	20	1	0.8
Total		119	100

C. CPUE

Catch per Angler Day = 0.78 Catch per Angler Hour = 0.32

Table 71. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	153
Total Hours Effort for Anglers Intercepted	=	370.5
Total Hours Still to Fish (Incomplete Trips)	=	85.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	18	26.1	0.18	3.33
Rockfishes (unidentified)	2	16	23.2	0.00**	0.00
Sanddab, Speckled	3	5	7.2	0.03	0.16
Jacksmelt	4	4	5.8	0.33	1.33
Sculpin, Pacific Staghorn	5	3	4.3	0.00**	0.00
Surfperch, Walleye	6	3	4.3	0.12	0.35
Seaperch, Rainbow	7	3	4.3	0.16	0.49
Flounder, Starry	8	3	4.3	0.51	1.52
Anchovy, Northern	9	2	2.9	0.00**	0.00
Lingcod	10	2	2.9	0.00**	0.00
Seaperch, White	11	2	2.9	0.21	0.42
Perch, Pile	12	2	2.9	0.68	1.37
Sharks	13	1	1.4	0.00**	0.00
Sculpins	14	1	1.4	0.00**	0.00
Flatfishes	15	1	1.4	0.35**	0.35
Sandabs	16	1	1.4	0.03**	0.06
Halibut, California	17	1	1.4	1.59	1.59
Sole, Sand	18	1	1.4	0.23	0.23
Total		69	100		11.20

C. CPUE

Catch per Angler Day	=	0.45	Catch per Angler Hour	=	0.19
Kg per Angler Day	=	0.07	Kg per Angler Hour	=	0.03

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 72. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	153
Total Hours Effort for Anglers Intercepted	=	370.5
Total Hours Still to Fish (Incomplete Trips)	=	85.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Croaker, White	1	2.22	12	37.5	12	0.18	241	61
Halibut, California	2	1.59	1	3.1	1	1.59	534	0
Perch, Pile	3	1.37	2	6.3	2	0.68	341	57
Jacksnelt	4	1.33	4	12.5	4	0.33	345	36
Flounder, Starry	5	1.02	2	6.3	2	0.51	349	8
Seaperch, Rainbow	6	0.49	3	9.4	3	0.16	217	11
Seaperch, White	7	0.42	2	6.3	2	0.21	257	30
Surfperch, Walleye	8	0.36	3	9.4	3	0.12	193	29
Sole, Sand	9	0.23	1	3.1	1	0.23	267	0
Sanddab, Speckled	10	0.06	2	6.3	2	0.03	141	1
Total		9.08	32	100	32			

C. CPUE***

Catch per Angler Day	=	0.21	Catch per Angler Hour	=	0.09
Kg per Angler Day	=	0.06	Kg per Angler Hour	=	0.02

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 73. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 101
 Total Hours Effort for Anglers Intercepted = 221.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	1	8	30.8
Surfperch, Walleye	2	3	11.5
Sanddab, Pacific	3	3	11.5
Sanddab, Speckled	4	3	11.5
Rockfishes (unidentified)	5	2	7.7
Sole, Sand	6	2	7.7
Rockfish, Brown	7	1	3.8
Lingcod	8	1	3.8
Cabezon	9	1	3.8
Seaperch, Rubberlip	10	1	3.8
Flounder, Starry	11	1	3.8
Total		26	100

C. CPUE

Catch per Angler Day = 0.26 Catch per Angler Hour = 0.12

Table 74. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	101
Total Hours Effort for Anglers Intercepted	=	221.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Walleye	1	3	17.6	0.15	0.44
Sanddab, Pacific	2	3	17.6	0.22	0.66
Sanddab, Speckled	3	3	17.6	0.00**	0.00
Sole, Sand	4	2	11.8	0.54	1.08
Rockfishes (unidentified)	5	1	5.9	0.00**	0.00
Rockfish, Brown	6	1	5.9	0.00**	0.00
Lingcod	7	1	5.9	2.05	2.05
Cabezon	8	1	5.9	0.40	0.40
Seaperch, Rubberlip	9	1	5.9	1.15	1.15
Flounder, Starry	10	1	5.9	0.48	0.48
Total		17	100		6.26

C. CPUE

Catch per Angler Day	=	0.17	Catch per Angler Hour	=	0.08
Kg per Angler Day	=	0.06	Kg per Angler Hour	=	0.03

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 75. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Jetty or Breakwater Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 101
 Total Hours Effort for Anglers Intercepted = 221.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	2.05	1	8.3	1	2.05	574	0
Seaperch, Rubberlip	2	1.15	1	8.3	1	1.15	395	0
Sole, Sand	3	1.08	2	16.7	2	0.54	320	128
Sanddab, Pacific	4	0.66	3	25.0	3	0.22	268	14
Flounder, Starry	5	0.48	1	8.3	1	0.48	343	0
Surfperch, Walleye	6	0.44	3	25.0	3	0.15	206	24
Cabezon	7	0.40	1	8.3	1	0.40	280	0
Total		6.26	12	100	12			

C. CPUE***

Catch per Angler Day = 0.12 Catch per Angler Hour = 0.05
 Kg per Angler Day = 0.06 Kg per Angler Hour = 0.03

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 76. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	29
Total Hours Effort for Anglers Intercepted	=	75.9
Total Hours Still to Fish (Incomplete Trips)	=	13.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	1	86	65.6
Surfperch, Silver	2	13	9.9
Surfperch, Barred	3	9	6.9
Perch, Black	4	4	3.1
Surfperch, Walleye	5	4	3.1
Surfperch, Calico	6	4	3.1
Surfperches	7	3	2.3
Seaperch, White	8	3	2.3
Greenling, Kelp	9	1	0.8
Lingcod	10	1	0.8
Cabazon	11	1	0.8
Seaperch, Striped	12	1	0.8
Sole, Sand	13	1	0.8
Total		131	100

C. CPUE

Catch per Angler Day = 4.52 Catch per Angler Hour = 1.73

Table 77. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	29
Total Hours Effort for Anglers Intercepted	=	75.9
Total Hours Still to Fish (Incomplete Trips)	=	13.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	86	67.2	0.33	28.38
Surfperch, Silver	2	13	10.2	0.06	0.83
Surfperch, Barred	3	9	7.0	0.19	1.69
Perch, Black	4	4	3.1	0.38	1.52
Surfperch, Walleye	5	4	3.1	0.09	0.38
Surfperch, Calico	6	4	3.1	0.11	0.43
Seaperch, White	7	3	2.3	0.17	0.52
Greenling, Kelp	8	1	0.8	0.38	0.38
Lingcod	9	1	0.8	1.17	1.17
Cabazon	10	1	0.8	0.00**	0.00
Seaperch, Striped	11	1	0.8	0.19	0.19
Sole, Sand	12	1	0.8	0.70	0.70
Total		128	100		36.17

C. CPUE

Catch per Angler Day	=	4.41	Catch per Angler Hour	=	1.69
Kg per Angler Day	=	1.25	Kg per Angler Hour	=	0.48

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 78. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	29
Total Hours Effort for Anglers Intercepted	=	75.9
Total Hours Still to Fish (Incomplete Trips)	=	13.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Jacksmelt	1	20.46	62	60.2	26	0.33	347	18
Surfperch, Barred	2	1.69	9	8.7	9	0.19	216	14
Perch, Black	3	1.52	4	3.9	4	0.38	280	30
Lingcod	4	1.17	1	1.0	1	1.17	475	0
Surfperch, Silver	5	0.83	13	12.6	13	0.06	161	13
Sole, Sand	6	0.70	1	1.0	1	0.70	374	0
Seaperch, White	7	0.52	3	2.9	3	0.17	242	12
Surfperch, Calico	8	0.43	4	3.9	4	0.11	183	40
Greenling, Kelp	9	0.38	1	1.0	1	0.38	300	0
Surfperch, Walleye	10	0.38	4	3.9	4	0.09	176	38
Seaperch, Striped	11	0.19	1	1.0	1	0.19	225	0
Total		28.25	103	100	67			

C. CPUE***

Catch per Angler Day	=	3.55	Catch per Angler Hour	=	1.36
Kg per Angler Day	=	0.97	Kg per Angler Hour	=	0.37

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 79. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	83
Total Hours Effort for Anglers Intercepted	=	283.9
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	95	30.9
Rockfishes (unidentified)	2	87	28.3
Rockfish, Gopher	3	27	8.8
Rockfish, Blue	4	22	7.2
Lingcod	5	16	5.2
Lizardfish, California	6	10	3.3
Rockfish, Canary	7	6	2.0
Sanddab, Pacific	8	6	2.0
Rockfish, Brown	9	5	1.6
Unidentified Fishes	10	3	1.0
Sharks	11	3	1.0
Rockfish, Copper	12	3	1.0
Rockfish, China	13	3	1.0
Rockfish, Olive	14	3	1.0
Greenling, Kelp	15	3	1.0
Mackerel, Pacific (Chub)	16	3	1.0
Rockfish, Yellowtail	17	2	0.7
Rockfish, Vermilion	18	2	0.7
Rockfish, Rosy	19	2	0.7
Flounders, Righteye	20	2	0.7
Rockfish, Black-and-yellow	21	1	0.3
Sculpin, Pacific Staghorn	22	1	0.3
Cabezon	23	1	0.3
Sanddab, Speckled	24	1	0.3
Total		307	100

C. CPUE

Catch per Angler Day = 3.70 Catch per Angler Hour = 1.08

Table 80. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	83
Total Hours Effort for Anglers Intercepted	=	283.9
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	87	30.5	0.24	20.76
Rockfishes (unidentified)	2	81	28.4	0.39**	31.59
Rockfish, Gopher	3	27	9.5	0.37	9.88
Rockfish, Blue	4	22	7.7	0.30	6.70
Lingcod	5	16	5.6	2.75	44.01
Lizardfish, California	6	10	3.5	0.36	3.64
Rockfish, Canary	7	6	2.1	0.13	0.77
Sanddab, Pacific	8	6	2.1	0.15	0.92
Rockfish, Brown	9	5	1.8	0.56	2.78
Rockfish, Copper	10	3	1.1	0.43	1.30
Rockfish, China	11	3	1.1	0.68	2.04
Greenling, Kelp	12	3	1.1	1.18	3.55
Mackerel, Pacific (Chub)	13	3	1.1	0.52	1.55
Rockfish, Vermilion	14	2	0.7	1.62	3.25
Rockfish, Rosy	15	2	0.7	0.21	0.41
Rockfish, Olive	16	2	0.7	1.07	2.15
Flounders, Righteye	17	2	0.7	0.49	0.97
Unidentified Fishes	18	1	0.4	0.00**	0.00
Rockfish, Yellowtail	19	1	0.4	0.09	0.09
Rockfish, Black-and-yellow	20	1	0.4	0.18	0.18
Cabazon	21	1	0.4	0.82	0.82
Sanddab, Speckled	22	1	0.4	0.06	0.06
Total		285	100		137.43

C. CPUE

Catch per Angler Day	=	3.43	Catch per Angler Hour	=	1.00
Kg per Angler Day	=	1.66	Kg per Angler Hour	=	0.48

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 81. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	83
Total Hours Effort for Anglers Intercepted	=	283.9
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Croaker, White	1	16.70	70	42.2	58	0.24	275	20
Lingcod	2	13.75	5	3.0	5	2.75	628	63
Rockfish, Gopher	3	9.88	27	16.3	23	0.37	281	25
Rockfish, Blue	4	5.48	18	10.8	18	0.30	263	48
Greenling, Kelp	5	3.55	3	1.8	3	1.18	430	97
Rockfish, Vermilion	6	3.25	2	1.2	2	1.62	400	255
Rockfish, Brown	7	2.23	4	2.4	4	0.56	292	98
Lizardfish, California	8	2.18	6	3.6	6	0.36	349	24
Rockfish, Olive	9	2.15	2	1.2	2	1.07	429	54
Rockfish, China	10	2.04	3	1.8	3	0.68	331	23
Mackerel, Pacific (Chub)	11	1.55	3	1.8	3	0.52	337	7
Rockfish, Copper	12	1.30	3	1.8	3	0.43	281	51
Sanddab, Pacific	13	0.92	6	3.6	6	0.15	240	19
Cabazon	14	0.82	1	0.6	1	0.82	365	0
Rockfish, Canary	15	0.77	6	3.6	6	0.13	208	15
Flounders, Righteye	16	0.49	1	0.6	1	0.49	340	0
Rockfish, Rosy	17	0.41	2	1.2	2	0.21	233	13
Rockfish, Black-and-yellow	18	0.18	1	0.6	1	0.18	215	0
Rockfish, Yellowtail	19	0.09	1	0.6	1	0.09	186	0
Sanddab, Speckled	20	0.06	1	0.6	1	0.06	166	0
Rockfishes (unidentified)	21	0.00	1	0.6	0	0.00	0	0
Total		67.80	166	100	149			

C. CPUE***

Catch per Angler Day	=	2.00	Catch per Angler Hour	=	0.58
Kg per Angler Day	=	0.82	Kg per Angler Hour	=	0.24

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 82. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Spear Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	11
Total Hours Effort for Anglers Intercepted	=	10.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	22	31.4
Seaperch, Striped	2	10	14.3
Greenling, Kelp	3	7	10.0
Rockfish, Kelp	4	6	8.6
Perch, Black	5	6	8.6
Perch, Pile	6	5	7.1
Lingcod	7	3	4.3
Cabezon	8	3	4.3
Surfperches	9	3	4.3
Rockfishes (unidentified)	10	2	2.9
Rockfish, Olive	11	2	2.9
Rockfish, Gopher	12	1	1.4
Total		70	100

C. CPUE

Catch per Angler Day = 6.36 Catch per Angler Hour = 6.70

Table 83. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Spear Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	11
Total Hours Effort for Anglers Intercepted	=	10.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	22	31.4	0.55	12.03
Seaperch, Striped	2	10	14.3	0.48	4.83
Greenling, Kelp	3	7	10.0	0.65	4.52
Rockfish, Kelp	4	6	8.6	0.44	2.65
Perch, Black	5	6	8.6	0.44	2.65
Perch, Pile	6	5	7.1	0.72	3.61
Lingcod	7	3	4.3	2.02	6.05
Cabezon	8	3	4.3	1.64	4.91
Surfperches	9	3	4.3	0.52**	1.56
Rockfishes (unidentified)	10	2	2.9	0.31**	0.62
Rockfish, Olive	11	2	2.9	0.64	1.28
Rockfish, Gopher	12	1	1.4	0.40	0.40
Total		70	100		45.12

C. CPUE

Catch per Angler Day	=	6.36	Catch per Angler Hour	=	6.70
Kg per Angler Day	=	4.10	Kg per Angler Hour	=	4.32

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 84. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Spear Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	11
Total Hours Effort for Anglers Intercepted	=	10.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Blue	1	12.03	22	33.8	14	0.55	326	38
Lingcod	2	6.05	3	4.6	3	2.02	561	88
Cabezon	3	4.92	3	4.6	3	1.64	450	125
Seaperch, Striped	4	4.83	10	15.4	10	0.48	309	13
Greenling, Kelp	5	4.52	7	10.8	7	0.65	357	33
Perch, Pile	6	3.61	5	7.7	5	0.72	349	34
Perch, Black	7	2.65	6	9.2	6	0.44	298	28
Rockfish, Kelp	8	2.65	6	9.2	6	0.44	307	35
Rockfish, Olive	9	1.28	2	3.1	2	0.64	367	17
Rockfish, Gopher	10	0.40	1	1.5	1	0.40	292	0
Total		42.94	65	100	57			

C. CPUE***

Catch per Angler Day	=	5.91	Catch per Angler Hour	=	6.22
Kg per Angler Day	=	3.90	Kg per Angler Hour	=	4.11

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 85. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	240
Total Hours Effort for Anglers Intercepted	=	991.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfishes (unidentified)	1	496	32.9
Lingcod	2	319	21.1
Rockfish, Blue	3	250	16.6
Rockfish, Olive	4	129	8.5
Sandabs	5	40	2.7
Rockfish, Yellowtail	6	35	2.3
Rockfish, Rosy	7	34	2.3
Unidentified Fishes	8	32	2.1
Sanddab, Pacific	9	27	1.8
Mackerel, Pacific (Chub)	10	26	1.7
Bocaccio	11	25	1.7
Rockfish, Copper	12	22	1.5
Rockfish, Greenspotted	13	10	0.7
Rockfish, Rosethorn	14	9	0.6
Chilipepper	15	8	0.5
Rockfish, Starry	16	6	0.4
Jack Mackerel	17	6	0.4
Bottomfishes (Groundfishes)	18	5	0.3
Rockfish, Vermilion	19	4	0.3
Rockfish, China	20	4	0.3
Rockfish, Canary	21	4	0.3
Thornyhead, Shortspine	22	3	0.2
Greenling, Kelp	23	3	0.2
Sharks	24	1	0.1
Salmon	25	1	0.1
Rockfish, Greenstriped	26	1	0.1

(Table 85. - continued)

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Widow	27	1	0.1
Rockfish, Yelloweye	28	1	0.1
Rockfish, Speckled	29	1	0.1
Rockfish, Flag	30	1	0.1
Treefish	31	1	0.1
Rockfish, Gopher	32	1	0.1
Cabezón	33	1	0.1
Flounders, Righteye	34	1	0.1
Flounder, Starry	35	1	0.1
Total		1509	100

C. CPUE

Catch per Angler Day = 6.29 Catch per Angler Hour = 1.52

Table 86. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	240
Total Hours Effort for Anglers Intercepted	=	991.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfishes (unidentified)	1	473	32.4	0.70**	331.10
Lingcod	2	318	21.8	3.00	952.65
Rockfish, Blue	3	246	16.9	0.53	129.36
Rockfish, Olive	4	129	8.8	0.95	122.49
Sandabs	5	40	2.7	0.10	3.92
Rockfish, Yellowtail	6	35	2.4	0.58	20.46
Rockfish, Rosy	7	32	2.2	0.23	7.26
Sanddab, Pacific	8	27	1.9	0.06	1.59
Unidentified Fishes	9	25	1.7	0.00**	0.00
Bocaccio	10	23	1.6	1.24	28.57
Rockfish, Copper	11	22	1.5	1.66	36.53
Mackerel, Pacific (Chub)	12	21	1.4	0.41	8.53
Rockfish, Greenspotted	13	10	0.7	0.85	8.53
Rockfish, Rosethorn	14	9	0.6	0.22	1.94
Chilipepper	15	8	0.5	0.53	4.27
Rockfish, Starry	16	6	0.4	0.61	3.65
Jack Mackerel	17	6	0.4	0.48	2.88
Rockfish, Vermilion	18	4	0.3	1.01	4.03
Rockfish, China	19	4	0.3	0.60	2.42
Rockfish, Canary	20	4	0.3	1.31	5.25
Thornyhead, Shortspine	21	3	0.2	6.25	18.75
Greenling, Kelp	22	3	0.2	0.52	1.56
Salmon	23	1	0.1	0.00**	0.00
Rockfish, Greenstriped	24	1	0.1	0.41	0.41
Rockfish, Widow	25	1	0.1	0.28	0.28
Rockfish, Yelloweye	26	1	0.1	0.70	0.70
Rockfish, Speckled	27	1	0.1	0.96	0.96

(Table 86. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Flag	28	1	0.1	0.84	0.84
Treefish	29	1	0.1	1.07	1.07
Rockfish, Gopher	30	1	0.1	0.38	0.38
Cabezon	31	1	0.1	2.78	2.78
Flounder, Starry	32	1	0.1	0.00**	0.00
Total		1458	100		1703.13

C. CPUE

Catch per Angler Day = 6.08 Catch per Angler Hour = 1.47
 Kg per Angler Day = 7.10 Kg per Angler Hour = 1.72

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 87. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	240
Total Hours Effort for Anglers Intercepted	=	991.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	263.63	88	13.7	81	3.00	637	95
Rockfish, Blue	2	126.73	241	37.5	183	0.53	321	41
Rockfish, Olive	3	121.54	128	19.9	113	0.95	411	46
Rockfish, Copper	4	36.53	22	3.4	22	1.66	440	68
Bocaccio	5	23.60	19	3.0	19	1.24	463	118
Rockfish, Yellowtail	6	14.03	24	3.7	24	0.58	331	68
Thornyhead, Shortspine	7	12.50	2	0.3	2	6.25	661	83
Rockfish, Rosy	8	6.80	30	4.7	22	0.23	239	19
Rockfish, Greenspotted	9	5.97	7	1.1	7	0.85	372	50
Rockfish, Canary	10	5.25	4	0.6	4	1.31	442	51
Chilipepper	11	4.27	8	1.2	8	0.53	336	93
Rockfish, Starry	12	3.65	6	0.9	6	0.61	331	26
Rockfish, Vermilion	13	3.02	3	0.5	3	1.01	377	111
Cabazon	14	2.78	1	0.2	1	2.78	571	0
Rockfish, China	15	2.42	4	0.6	4	0.60	318	30
Rockfish, Rosethorn	16	1.94	9	1.4	9	0.22	235	20
Jack Mackerel	17	1.92	4	0.6	4	0.48	338	29
Sanddab, Pacific	18	1.59	27	4.2	11	0.06	179	21
Greenling, Kelp	19	1.56	3	0.5	3	0.52	332	31
Treefish	20	1.07	1	0.2	1	1.07	409	0
Rockfish, Speckled	21	0.96	1	0.2	1	0.96	404	0
Rockfish, Flag	22	0.84	1	0.2	1	0.84	369	0
Rockfish, Yelloweye	23	0.70	1	0.2	1	0.70	337	0
Rockfish, Greenstriped	24	0.41	1	0.2	1	0.41	329	0
Mackerel, Pacific (Chub)	25	0.41	1	0.2	1	0.41	314	0
Rockfish, Gopher	26	0.38	1	0.2	1	0.38	288	0

(Table 87. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sandabs	27	0.29	3	0.5	3	0.10	190	45
Rockfish, Widow	28	0.28	1	0.2	1	0.28	285	0
Rockfishes (unidentified)	29	0.00	1	0.2	0	0.00	0	0
Total		645.06	642	100	537			

C. CPUE***

Catch per Angler Day = 2.68 Catch per Angler Hour = 0.65
 Kg per Angler Day = 2.69 Kg per Angler Hour = 0.65

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 9. Length-Frequency Histogram for White Croaker
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 4, 1980.

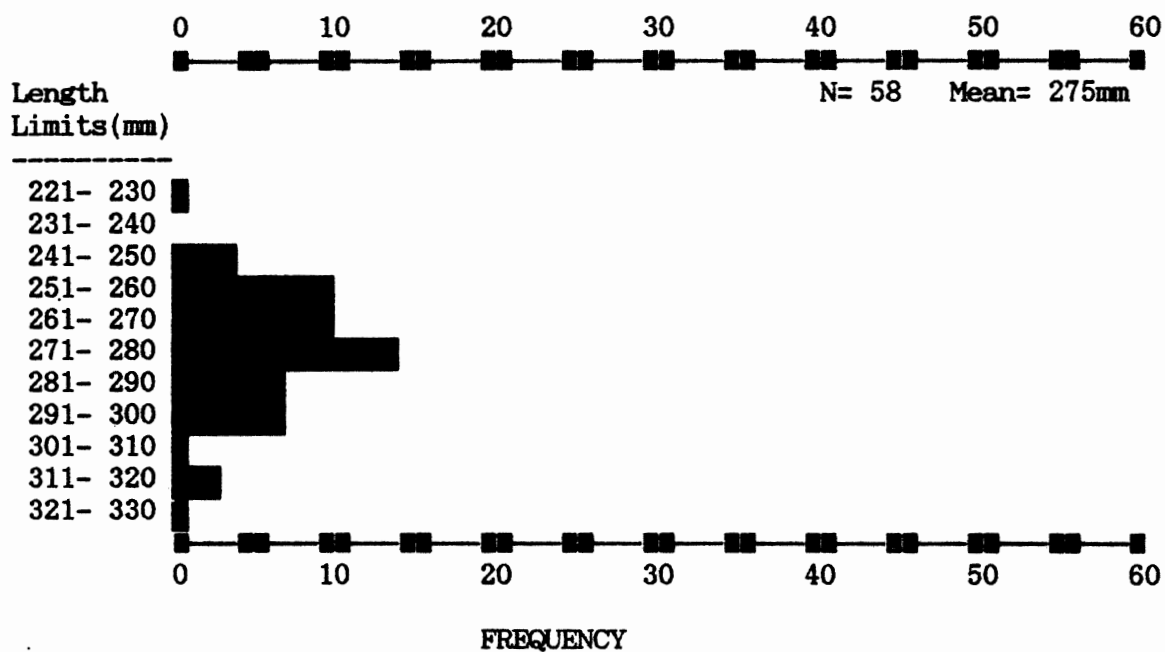


Figure 10. Length-Frequency Histogram for Lingcod
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 4, 1980.

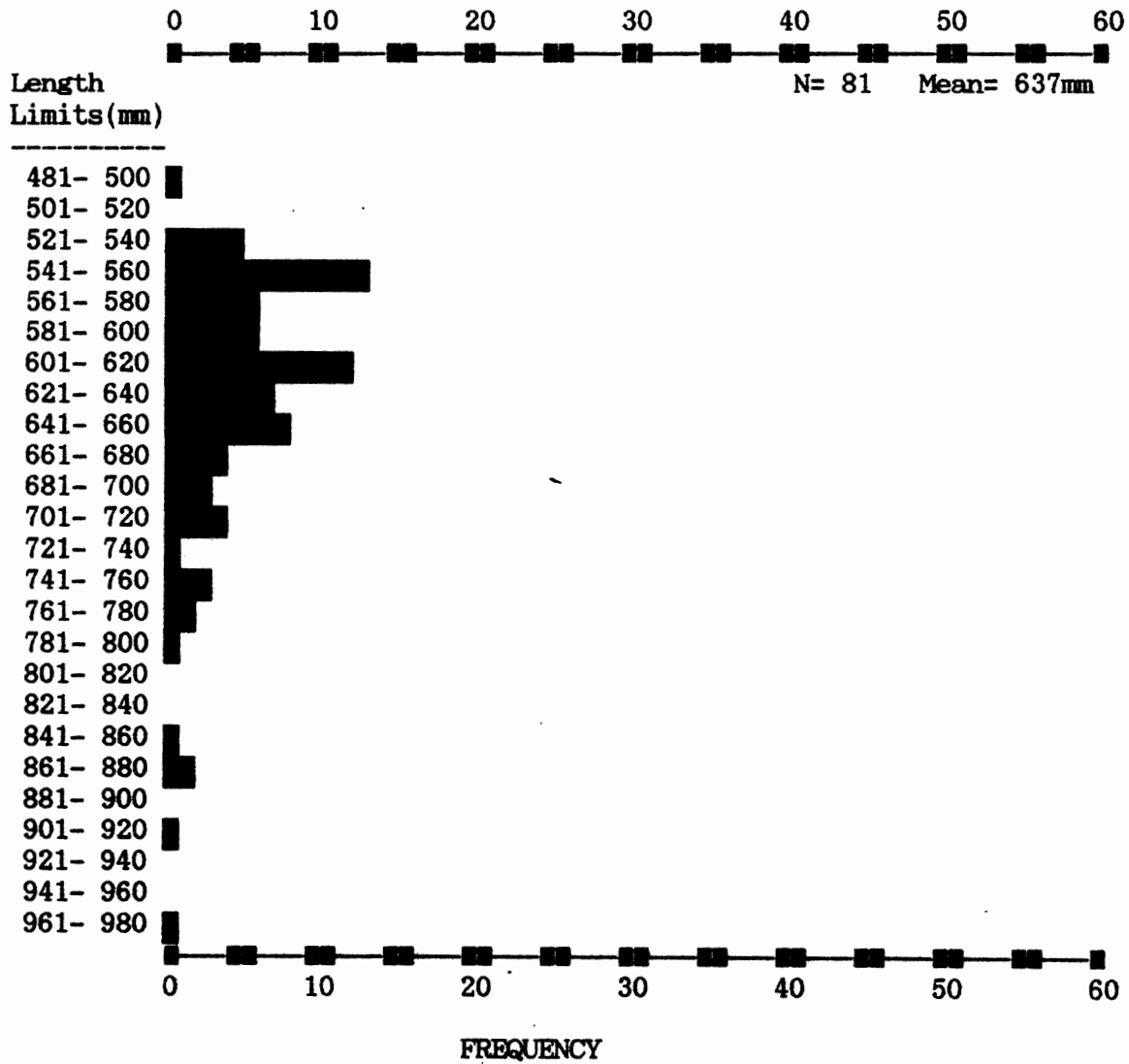


Figure 11. Length-Frequency Histogram for Blue Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 4, 1980.

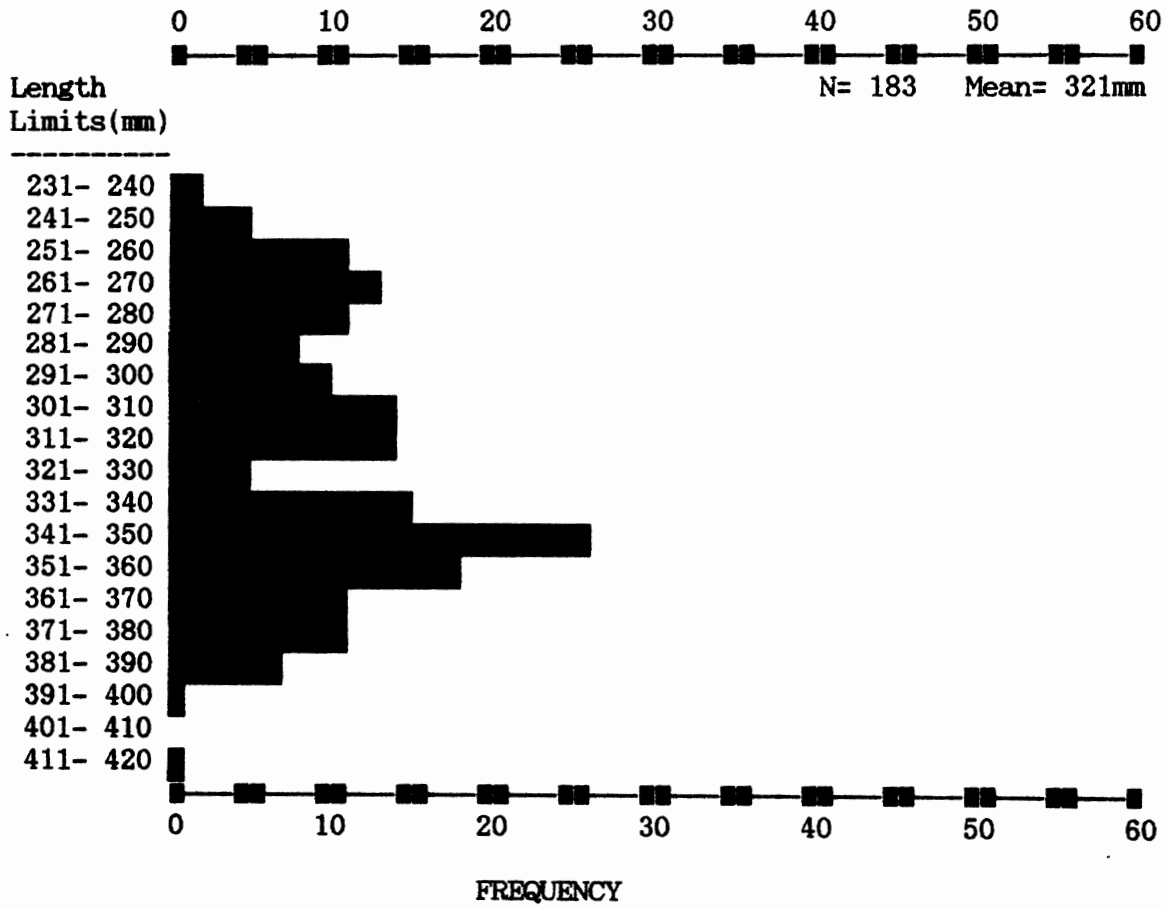


Figure 12. Length-Frequency Histogram for Olive Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 4, 1980.

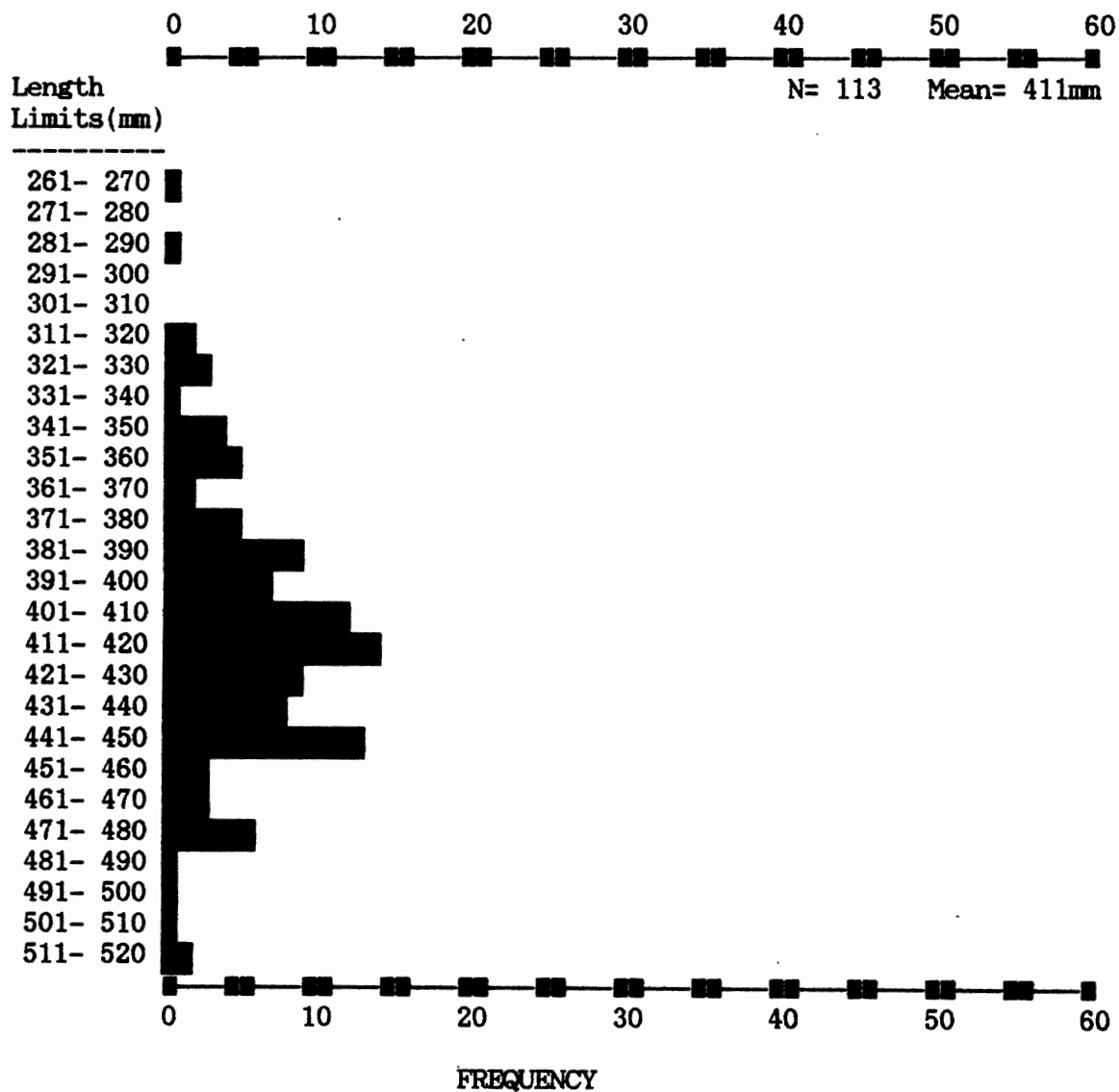


Table 88. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	293
Total Hours Effort for Anglers Intercepted	=	767.8
Total Hours Still to Fish (Incomplete Trips)	=	34.8

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Perch, Shiner	1	100	24.0
Croaker, White	2	56	13.4
Jacksmelt	3	54	12.9
Sculpin, Pacific Staghorn	4	52	12.5
Bocaccio	5	31	7.4
Mackerel, Pacific (Chub)	6	24	5.8
Surfperch, Walleye	7	23	5.5
Surfperch, Barred	8	22	5.3
Surfperches	9	16	3.8
Surfperch, Silver	10	12	2.9
Skates	11	6	1.4
Shark, Horn	12	3	0.7
Greenling, Kelp	13	3	0.7
Sanddab, Pacific	14	3	0.7
Thornback	15	2	0.5
Seaperch, White	16	2	0.5
Flounder, Starry	17	2	0.5
Irish Lord, Brown	18	1	0.2
Jack Mackerel	19	1	0.2
Seaperch, Striped	20	1	0.2
Surfperch, Redtail	21	1	0.2
Surfperch, Calico	22	1	0.2
Perch, Reef	23	1	0.2
Total		417	100

C. CPUE

Catch per Angler Day = 1.42 Catch per Angler Hour = 0.54

Table 89. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	293
Total Hours Effort for Anglers Intercepted	=	767.8
Total Hours Still to Fish (Incomplete Trips)	=	34.8

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	52	19.7	0.28	14.36
Croaker, White	2	37	14.0	0.10	3.70
Perch, Shiner	3	34	12.9	0.03	0.92
Bocaccio	4	31	11.7	0.05	1.58
Mackerel, Pacific (Chub)	5	24	9.1	0.18	4.24
Surfperch, Walleye	6	23	8.7	0.12	2.80
Surfperch, Barred	7	22	8.3	0.19	4.08
Surfperches	8	14	5.3	0.09**	1.26
Surfperch, Silver	9	12	4.5	0.07	0.80
Greenling, Kelp	10	3	1.1	0.52	1.56
Seaperch, White	11	2	0.8	0.24	0.48
Flounder, Starry	12	2	0.8	0.15	0.29
Thornback	13	1	0.4	0.00**	0.00
Skates	14	1	0.4	0.00**	0.00
Irish Lord, Brown	15	1	0.4	0.04	0.04
Jack Mackerel	16	1	0.4	0.00**	0.00
Seaperch, Striped	17	1	0.4	0.45	0.45
Surfperch, Redtail	18	1	0.4	0.19	0.19
Surfperch, Calico	19	1	0.4	0.13	0.13
Perch, Reef	20	1	0.4	0.00**	0.00
Total		264	100		36.87

C. CPUE

Catch per Angler Day	=	0.90	Catch per Angler Hour	=	0.34
Kg per Angler Day	=	0.13	Kg per Angler Hour	=	0.05

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 90. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	293
Total Hours Effort for Anglers Intercepted	=	767.8
Total Hours Still to Fish (Incomplete Trips)	=	34.8

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	!---Mean---!		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Jacksmelt	1	5.80	21	12.1	21	0.28	325	41
Mackerel, Pacific (Chub)	2	3.36	19	11.0	19	0.18	239	38
Surfperch, Walleye	3	2.80	23	13.3	23	0.12	195	21
Surfperch, Barred	4	2.22	12	6.9	12	0.19	211	33
Croaker, White	5	2.10	21	12.1	21	0.10	200	38
Bocaccio	6	1.58	31	17.9	16	0.05	174	15
Greenling, Kelp	7	1.56	3	1.7	3	0.52	321	82
Perch, Shiner	8	0.84	31	17.9	22	0.03	126	12
Seaperch, White	9	0.48	2	1.2	2	0.24	266	53
Seaperch, Striped	10	0.45	1	0.6	1	0.45	303	0
Surfperch, Silver	11	0.27	4	2.3	4	0.07	164	11
Surfperch, Redtail	12	0.19	1	0.6	1	0.19	227	0
Flounder, Starry	13	0.15	1	0.6	1	0.15	240	0
Surfperch, Calico	14	0.13	1	0.6	1	0.13	202	0
Irish Lord, Brown	15	0.04	1	0.6	1	0.04	116	0
Perch, Reef	16	0.00	1	0.6	0	0.00	0	0
Total		21.95	173	100	148			

C. CPUE***

Catch per Angler Day	=	0.59	Catch per Angler Hour	=	0.23
Kg per Angler Day	=	0.07	Kg per Angler Hour	=	0.03

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 91. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	101
Total Hours Effort for Anglers Intercepted	=	206.0
Total Hours Still to Fish (Incomplete Trips)	=	50.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	45	44.6
Surfperch, Silver	2	24	23.8
Perch, Black	3	7	6.9
Perch, Pile	4	5	5.0
Rockfish, Grass	5	4	4.0
Surfperch, Calico	6	3	3.0
Rockfishes (unidentified)	7	2	2.0
Rockfish, Kelp	8	2	2.0
Sculpin, Pacific Staghorn	9	2	2.0
Surfperches	10	2	2.0
Cabezon	11	1	1.0
Perch, Shiner	12	1	1.0
Seaperch, Striped	13	1	1.0
Seaperch, Rubberlip	14	1	1.0
Flounder, Starry	15	1	1.0
Total		101	100

C. CPUE

Catch per Angler Day	=	1.00	Catch per Angler Hour	=	0.49
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Table 92. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	101
Total Hours Effort for Anglers Intercepted	=	206.0
Total Hours Still to Fish (Incomplete Trips)	=	50.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Barred	1	42	46.2	0.20	8.49
Surfperch, Silver	2	24	26.4	0.07	1.65
Perch, Black	3	7	7.7	0.39	2.75
Perch, Pile	4	5	5.5	0.55	2.76
Rockfish, Grass	5	4	4.4	0.18	0.70
Surfperch, Calico	6	3	3.3	0.20	0.60
Rockfish, Kelp	7	2	2.2	0.15	0.29
Sculpin, Pacific Staghorn	8	1	1.1	0.04	0.04
Cabezon	9	1	1.1	1.46	1.46
Seaperch, Striped	10	1	1.1	0.24	0.24
Flounder, Starry	11	1	1.1	0.32	0.32
Total		91	100		19.31

C. CPUE

Catch per Angler Day	=	0.90	Catch per Angler Hour	=	0.44
Kg per Angler Day	=	0.19	Kg per Angler Hour	=	0.09

* Weight estimated from length-to-weight regression if available.

Table 93. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Beach or Bank Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 101
 Total Hours Effort for Anglers Intercepted = 206.0
 Total Hours Still to Fish (Incomplete Trips) = 50.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Barred	1	4.45	22	31.0	21	0.20	213	42
Perch, Pile	2	2.76	5	7.0	5	0.55	322	15
Perch, Black	3	2.75	7	9.9	7	0.39	285	20
Surfperch, Silver	4	1.65	24	33.8	13	0.07	164	17
Cabezon	5	1.46	1	1.4	1	1.46	450	0
Rockfish, Grass	6	0.70	4	5.6	4	0.18	206	3
Surfperch, Calico	7	0.60	3	4.2	3	0.20	231	9
Flounder, Starry	8	0.32	1	1.4	1	0.32	305	0
Rockfish, Kelp	9	0.29	2	2.8	2	0.15	209	27
Seaperch, Striped	10	0.24	1	1.4	1	0.24	245	0
Sculpin, Pacific Staghorn	11	0.04	1	1.4	1	0.04	158	0
Total		15.27	71	100	59			

C. CPUE***

Catch per Angler Day = 0.70 Catch per Angler Hour = 0.34
 Kg per Angler Day = 0.15 Kg per Angler Hour = 0.07

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 94. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	106
Total Hours Effort for Anglers Intercepted	=	412.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	349	33.4
Mackerel, Pacific (Chub)	2	132	12.6
Rockfish, Gopher	3	114	10.9
Rockfishes (unidentified)	4	58	5.5
Sanddab, Pacific	5	47	4.5
Lingcod	6	43	4.1
Croaker, White	7	38	3.6
Rockfish, Rosy	8	30	2.9
Rockfish, Copper	9	29	2.8
Cabezon	10	29	2.8
Rockfish, Canary	11	20	1.9
Rockfish, Black-and-yellow	12	20	1.9
Rockfish, Starry	13	19	1.8
Rockfish, Brown	14	15	1.4
Rockfish, Olive	15	14	1.3
Rockfish, Yellowtail	16	12	1.1
Jacksmelt	17	11	1.1
Rockfish, Vermilion	18	10	1.0
Rockfish, China	19	10	1.0
Spiny Dogfish	20	7	0.7
Bocaccio	21	7	0.7
Rockfish, Kelp	22	7	0.7
Rockfish, Black	23	6	0.6
Sole, Rock	24	6	0.6
Rockfish, Widow	25	2	0.2
Rockfish, Grass	26	2	0.2

(Table 94. - continued)

Common name	Rank by Number	Number Caught	% by Number
Greenling, Kelp	27	2	0.2
Sole, Sand	28	2	0.2
Smelt, Surf	29	1	0.1
Rockfish, Greenspotted	30	1	0.1
Rockfish, Flag	31	1	0.1
Jack Mackerel	32	1	0.1
Sanddab, Speckled	33	1	0.1
Total		1046	100

C. CPUE

Catch per Angler Day = 9.87 Catch per Angler Hour = 2.53

Table 95. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	106
Total Hours Effort for Anglers Intercepted	=	412.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	349	34.5	0.48	166.04
Mackerel, Pacific (Chub)	2	132	13.0	0.39	52.03
Rockfish, Gopher	3	114	11.3	0.40	45.56
Rockfishes (unidentified)	4	58	5.7	0.51**	29.58
Sanddab, Pacific	5	47	4.6	0.15	7.13
Lingcod	6	43	4.2	2.05	88.29
Rockfish, Rosy	7	30	3.0	0.24	7.24
Rockfish, Copper	8	29	2.9	1.03	29.96
Cabezon	9	29	2.9	1.45	41.91
Rockfish, Canary	10	20	2.0	0.47	9.42
Rockfish, Black-and-yellow	11	20	2.0	0.49	9.88
Rockfish, Starry	12	19	1.9	0.64	12.14
Rockfish, Brown	13	15	1.5	1.11	16.63
Rockfish, Olive	14	14	1.4	0.61	8.55
Rockfish, Yellowtail	15	12	1.2	0.33	3.96
Rockfish, Vermilion	16	10	1.0	1.77	17.71
Rockfish, China	17	10	1.0	0.55	5.47
Jacksmelt	18	9	0.9	0.21	1.88
Spiny Dogfish	19	7	0.7	2.63	18.43
Bocaccio	20	7	0.7	0.59	4.16
Rockfish, Kelp	21	7	0.7	0.44	3.10
Rockfish, Black	22	6	0.6	0.59	3.57
Croaker, White	23	6	0.6	0.29	1.77
Sole, Rock	24	6	0.6	0.97	5.82
Rockfish, Widow	25	2	0.2	0.36	0.72
Rockfish, Grass	26	2	0.2	1.17	2.34
Greenling, Kelp	27	2	0.2	0.60	1.20

(Table 95. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Sole, Sand	28	2	0.2	0.35	0.70
Smelt, Surf	29	1	0.1	0.00**	0.00
Rockfish, Greenspotted	30	1	0.1	0.52	0.52
Rockfish, Flag	31	1	0.1	0.34	0.34
Jack Mackerel	32	1	0.1	0.17	0.17
Sanddab, Speckled	33	1	0.1	0.00**	0.00
Total		1012	100		596.20

C. CPUE

Catch per Angler Day = 9.55 Catch per Angler Hour = 2.45
 Kg per Angler Day = 5.62 Kg per Angler Hour = 1.44

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 96. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted	=	106
Total Hours Effort for Anglers Intercepted	=	412.8
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Blue	1	162.23	341	38.6	178	0.48	311	37
Lingcod	2	88.29	43	4.9	38	2.05	565	72
Rockfish, Gopher	3	45.56	114	12.9	96	0.40	290	24
Cabezon	4	41.91	29	3.3	27	1.45	442	62
Mackerel, Pacific (Chub)	5	30.74	78	8.8	28	0.39	307	33
Rockfish, Copper	6	29.96	29	3.3	29	1.03	368	77
Rockfish, Vermilion	7	17.71	10	1.1	10	1.77	470	75
Rockfish, Brown	8	16.63	15	1.7	15	1.11	380	92
Rockfish, Starry	9	12.14	19	2.2	19	0.64	334	38
Rockfish, Black-and-yellow	10	9.88	20	2.3	17	0.49	293	24
Rockfish, Canary	11	8.95	19	2.2	19	0.47	315	37
Rockfish, Olive	12	8.55	14	1.6	14	0.61	356	44
Rockfish, Rosy	13	7.24	30	3.4	30	0.24	245	13
Sanddab, Pacific	14	6.98	46	5.2	34	0.15	238	23
Sole, Rock	15	5.82	6	0.7	6	0.97	412	39
Rockfish, China	16	5.47	10	1.1	10	0.55	309	20
Spiny Dogfish	17	5.27	2	0.2	2	2.63	910	28
Bocaccio	18	4.16	7	0.8	7	0.59	364	93
Rockfish, Yellowtail	19	3.96	12	1.4	12	0.33	284	19
Rockfish, Black	20	3.57	6	0.7	6	0.59	337	37
Rockfish, Kelp	21	3.10	7	0.8	7	0.44	308	32
Rockfish, Grass	22	2.34	2	0.2	2	1.17	370	0
Jacksmelt	23	1.88	9	1.0	9	0.21	296	47
Croaker, White	24	1.47	5	0.6	5	0.29	294	26
Greenling, Kelp	25	1.20	2	0.2	2	0.60	348	53
Rockfish, Widow	26	0.72	2	0.2	2	0.36	303	46

(Table 96. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	;---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sole, Sand	27	0.70	2	0.2	2	0.35	304	2
Rockfish, Greenspotted	28	0.52	1	0.1	1	0.52	320	0
Rockfish, Flag	29	0.34	1	0.1	1	0.34	272	0
Jack Mackerel	30	0.17	1	0.1	1	0.17	245	0
Sanddab, Speckled	31	0.00	1	0.1	0	0.00	0	0
Total		527.44	883	100	629			

C. CPUE***

Catch per Angler Day = 8.33 Catch per Angler Hour = 2.14
 Kg per Angler Day = 4.98 Kg per Angler Hour = 1.28

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Table 97. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	41
Total Hours Effort for Anglers Intercepted	=	153.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	223	39.1
Rockfish, Yellowtail	2	62	10.9
Rockfish, Canary	3	46	8.1
Rockfish, Greenspotted	4	41	7.2
Rockfishes (unidentified)	5	27	4.7
Rockfish, Vermilion	6	23	4.0
Mackerel, Pacific (Chub)	7	20	3.5
Rockfish, Rosy	8	17	3.0
Rockfish, Starry	9	15	2.6
Rockfish, Greenstriped	10	14	2.5
Rockfish, Olive	11	14	2.5
Lingcod	12	13	2.3
Sanddab, Pacific	13	13	2.3
Rockfish, Copper	14	8	1.4
Rockfish, Yelloweye	15	7	1.2
Bocaccio	16	6	1.1
Rockfish, Speckled	17	6	1.1
Chilipepper	18	4	0.7
Rockfish, Widow	19	3	0.5
Rockfish, China	20	2	0.4
Rockfish, Squarespot	21	2	0.4
Rockfish, Flag	22	2	0.4
Rockfish, Gopher	23	2	0.4
Rockfish, Black	24	1	0.2
Total		571	100

C. CPUE

Catch per Angler Day = 13.93 Catch per Angler Hour = 3.72

Table 98. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	41
Total Hours Effort for Anglers Intercepted	=	153.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	219	39.5	0.46	101.46
Rockfish, Yellowtail	2	62	11.2	0.60	37.25
Rockfish, Canary	3	46	8.3	0.81	37.49
Rockfish, Greenspotted	4	41	7.4	0.56	23.11
Rockfishes (unidentified)	5	27	4.9	0.62**	16.74
Rockfish, Vermilion	6	23	4.1	1.55	35.70
Rockfish, Rosy	7	15	2.7	0.23	3.51
Rockfish, Starry	8	15	2.7	0.68	10.23
Rockfish, Greenstriped	9	14	2.5	0.23	3.24
Rockfish, Olive	10	14	2.5	0.76	10.62
Lingcod	11	13	2.3	1.73	22.52
Sanddab, Pacific	12	12	2.2	0.13	1.51
Mackerel, Pacific (Chub)	13	11	2.0	0.49	5.39
Rockfish, Copper	14	8	1.4	1.77	14.16
Rockfish, Yelloweye	15	7	1.3	1.27	8.88
Bocaccio	16	6	1.1	1.03	6.19
Rockfish, Speckled	17	6	1.1	0.73	4.40
Chilipepper	18	4	0.7	0.67	2.68
Rockfish, Widow	19	3	0.5	0.61	1.84
Rockfish, China	20	2	0.4	0.50	1.00
Rockfish, Squarespot	21	2	0.4	0.20	0.40
Rockfish, Flag	22	2	0.4	0.96	1.91
Rockfish, Gopher	23	2	0.4	0.36	0.72
Rockfish, Black	24	1	0.2	0.43	0.43
Total		555	100		351.39

C. CPUE

Catch per Angler Day	=	13.54	Catch per Angler Hour	=	3.62
Kg per Angler Day	=	8.57	Kg per Angler Hour	=	2.29

* Weight estimated from length-to-weight regression if available.

** Mean weight for this group was not calculated or was estimated from other sources (see text).

Table 99. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1980 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 41
 Total Hours Effort for Anglers Intercepted = 153.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Blue	1	101.46	219	42.2	162	0.46	308	38
Rockfish, Canary	2	37.49	46	8.9	46	0.81	378	39
Rockfish, Yellowtail	3	37.25	62	11.9	59	0.60	339	54
Rockfish, Vermilion	4	35.70	23	4.4	23	1.55	454	50
Rockfish, Greenspotted	5	23.11	41	7.9	35	0.56	323	43
Lingcod	6	22.52	13	2.5	13	1.73	539	41
Rockfish, Copper	7	14.16	8	1.5	8	1.77	449	72
Rockfish, Olive	8	10.62	14	2.7	14	0.76	376	67
Rockfish, Starry	9	10.23	15	2.9	15	0.68	343	26
Rockfish, Yelloweye	10	8.88	7	1.3	7	1.27	404	52
Bocaccio	11	6.19	6	1.2	6	1.03	453	70
Rockfish, Speckled	12	4.40	6	1.2	6	0.73	365	51
Rockfish, Rosy	13	3.51	15	2.9	15	0.23	242	17
Rockfish, Greenstriped	14	2.78	12	2.3	12	0.23	270	34
Chilipepper	15	2.68	4	0.8	4	0.67	375	56
Mackerel, Pacific (Chub)	16	2.45	5	1.0	5	0.49	330	26
Rockfish, Flag	17	1.91	2	0.4	2	0.96	385	14
Rockfish, Widow	18	1.84	3	0.6	3	0.61	361	9
Sanddab, Pacific	19	1.39	11	2.1	11	0.13	224	27
Rockfish, China	20	1.00	2	0.4	2	0.50	302	11
Rockfish, Gopher	21	0.72	2	0.4	2	0.36	281	13
Rockfish, Black	22	0.43	1	0.2	1	0.43	305	0
Rockfish, Squarespot	23	0.40	2	0.4	2	0.20	248	32
Total		331.12	519	100	453			

C. CPUE***

Catch per Angler Day = 12.66 Catch per Angler Hour = 3.38
 Kg per Angler Day = 8.08 Kg per Angler Hour = 2.16

* Weight estimated from length-to-weight regression if available.

** Total length except for species with tuna-like caudal fins (see text).

*** CPUE is underestimated if all fish taken were not examined (see text).

Figure 13. Length-Frequency Histogram for Blue Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1980.

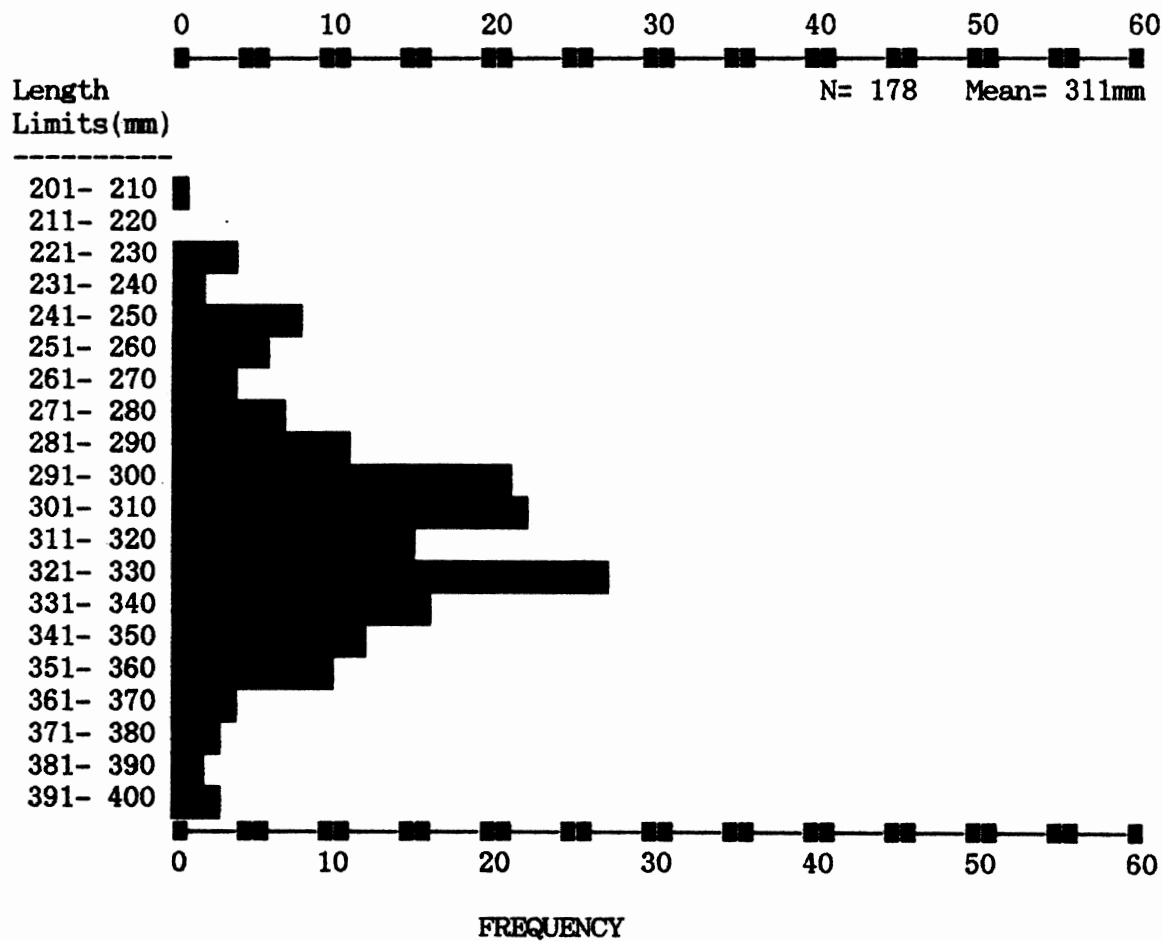


Figure 14. Length-Frequency Histogram for Rosy Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1980.

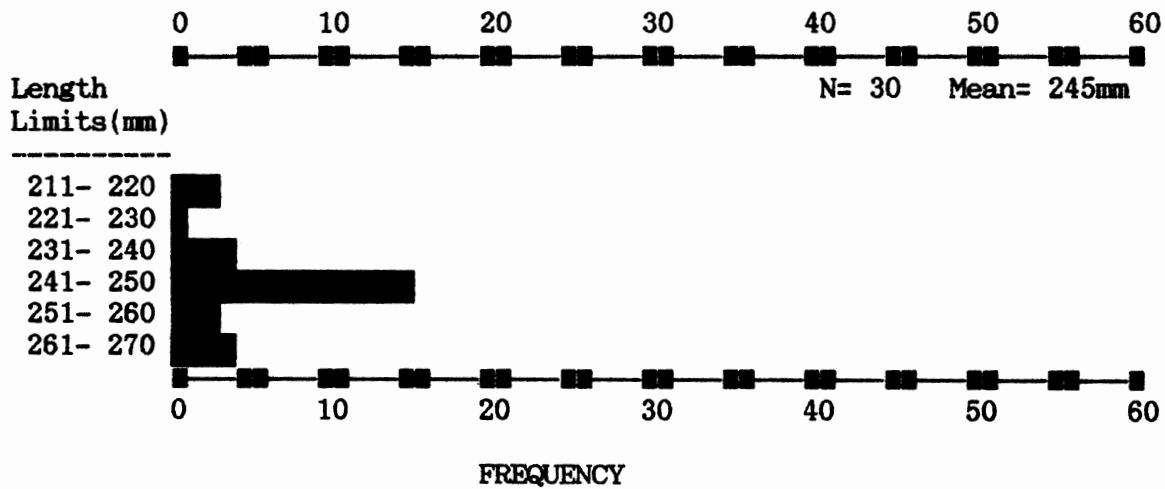


Figure 15. Length-Frequency Histogram for Gopher Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1980.

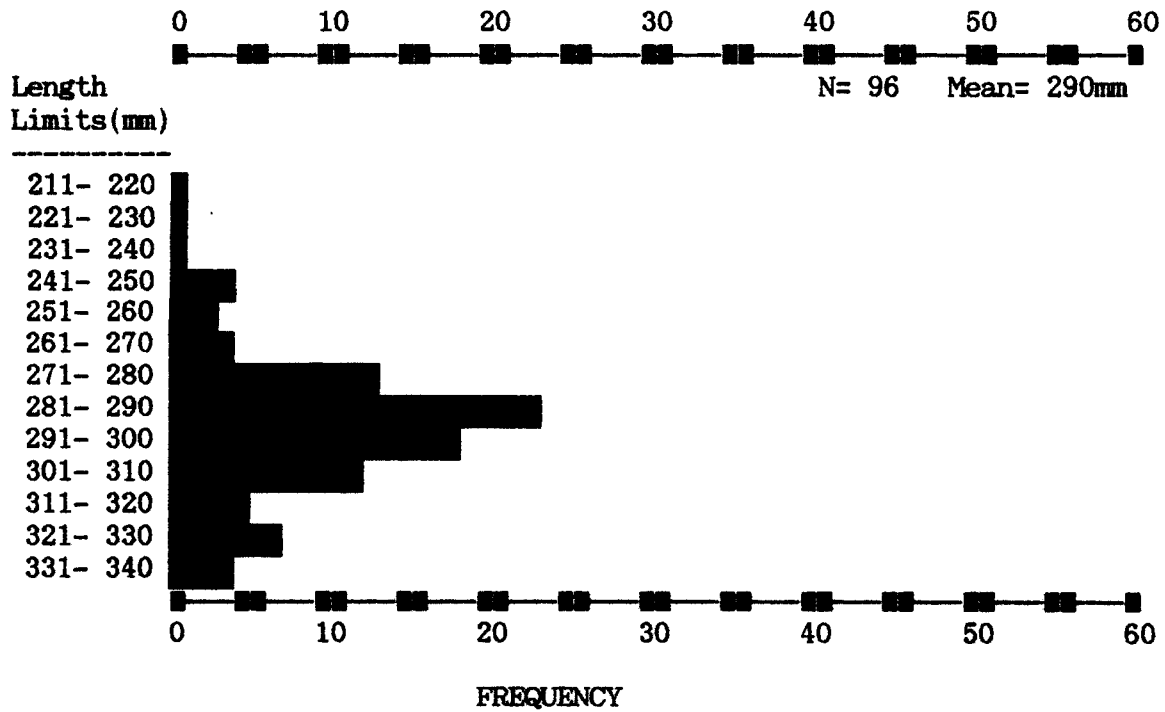


Figure 16. Length-Frequency Histogram for Blue Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1980.

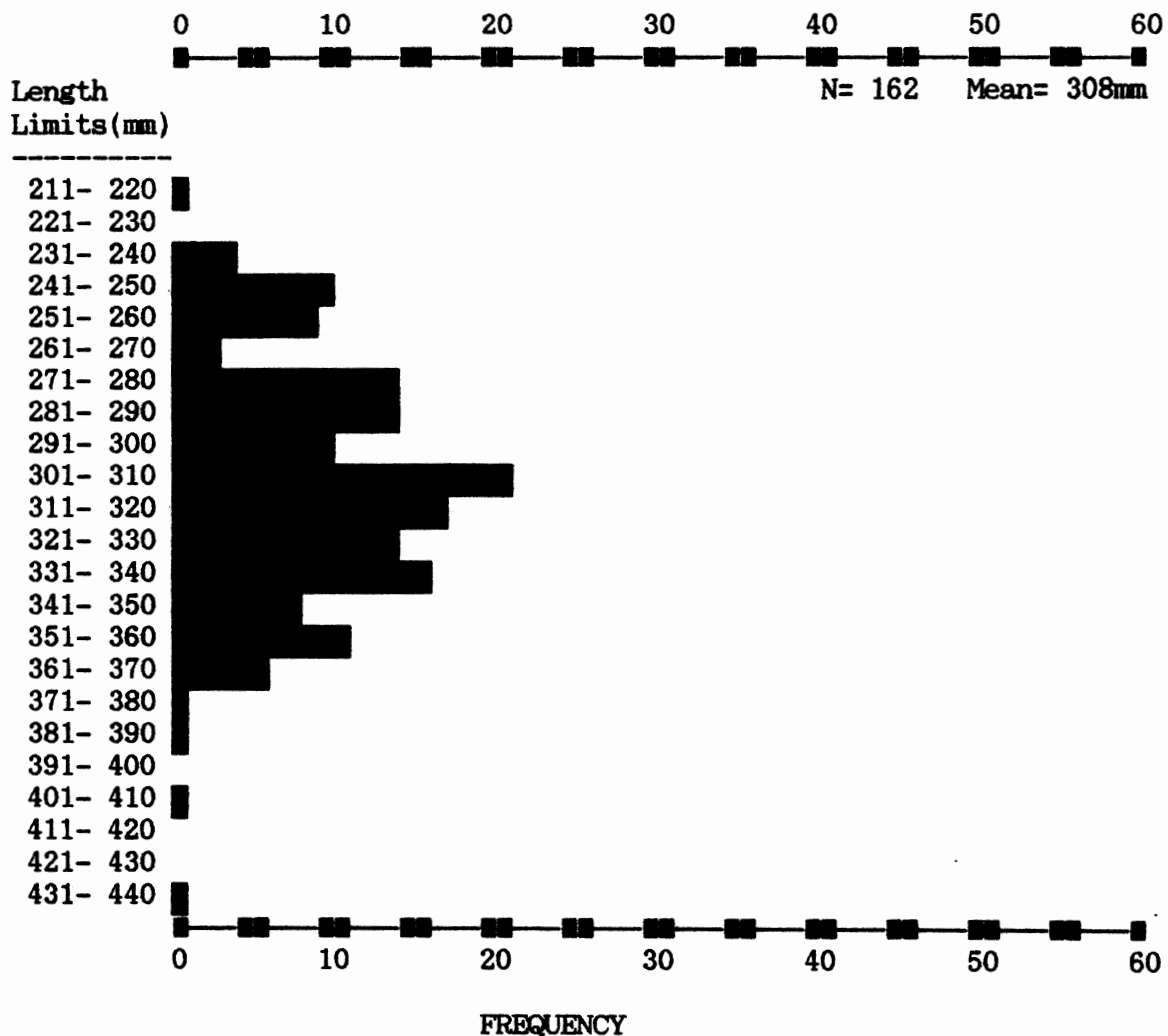


Figure 17. Length-Frequency Histogram for Canary Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1980.

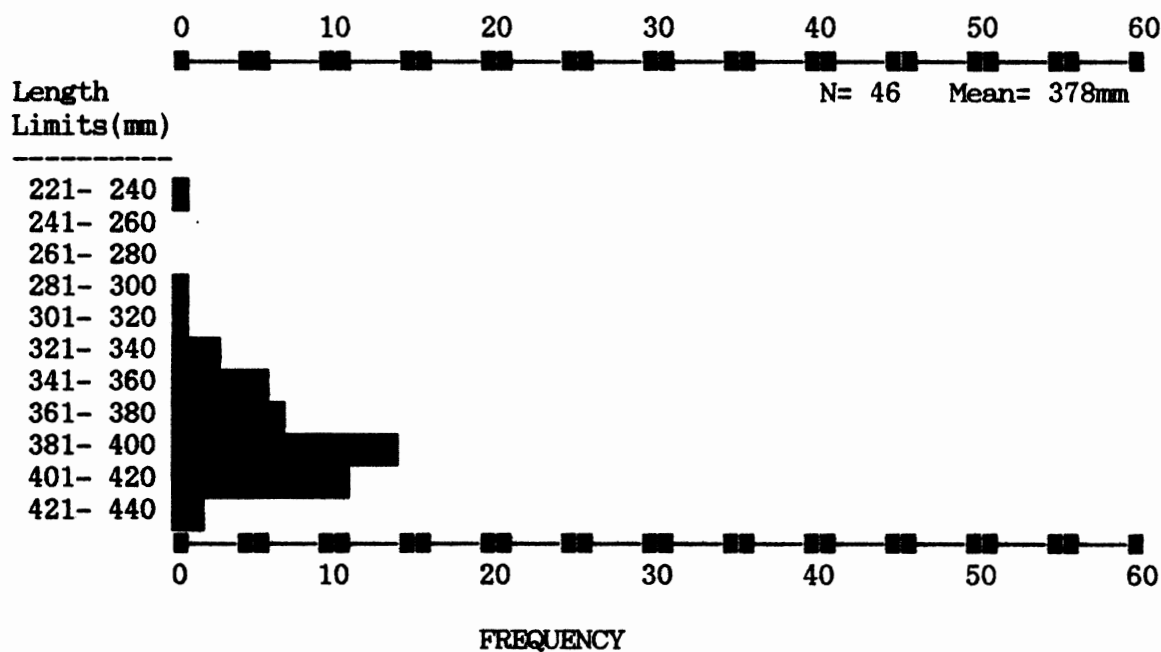
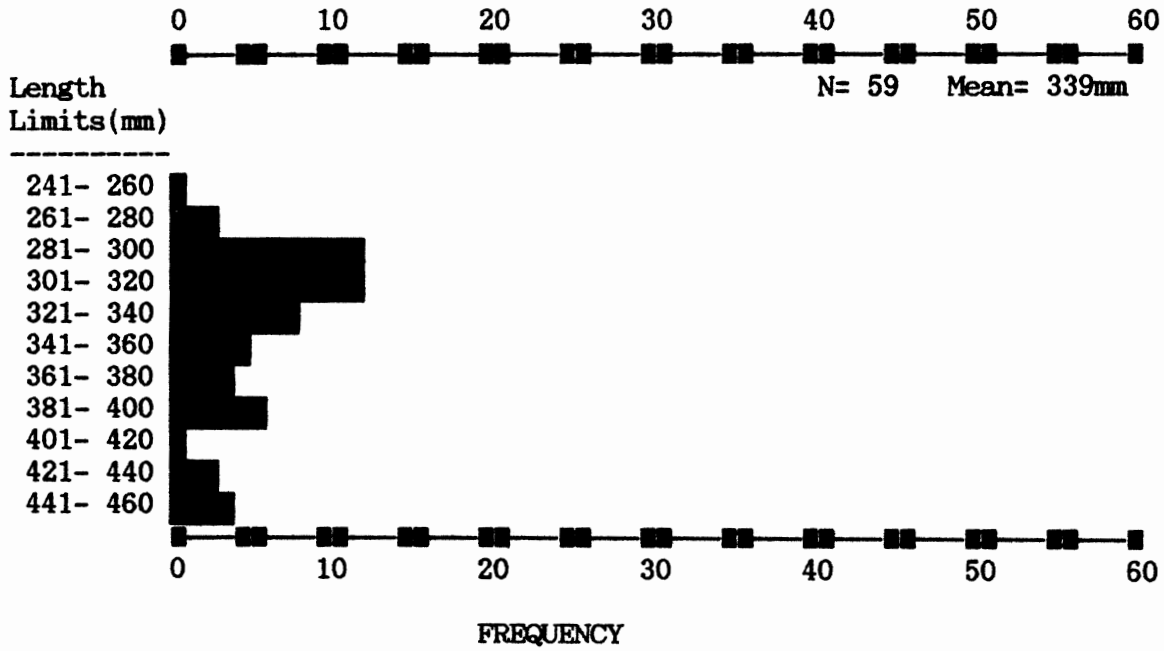


Figure 18. Length-Frequency Histogram for Yellowtail Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1980.



LITERATURE CITED

- Bailey, R.M., C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, C.R. Robins, and W.B. Scott. 1980. A list of common and scientific names of fishes from the United States and Canada. 4th ed. Am. Fish Soc., Spec. Publ., (12):1-174.
- Echeverria, T. and W.H. Lenarz. 1984. Conversions between total, fork and standard lengths in 35 species of Sebastes from California. Fishery Bulletin 82(1):249-251.
- Karpov, K.A. 1984. Microcomputer program series for MRFSS regional data analysis. Reference Manual. Ver 1.1 and 1.11 for 1979-1980 (Available from author). 135 pp.
- Karpov, K.A. In press. Conversions between total, fork and standard lengths for 41 species from 15 families in California using preserved and fresh specimens. Calif. Dept. Fish and Game, Mar. Resources Admin. Rept.
- Miller, D.J. and R.N. Lea. 1972. Guide to coastal marine fishes of California. Calif. Dept. Fish and Game, Fish Bull. 157:235pp.
- Sokal, R.R. and F.J. Rohlf. 1969. Biometry. Freeman and Co., San Francisco and London. 776pp.
- U.S. Department of Commerce. 1984a. Marine recreational fisheries statistics survey, Pacific coast, 1979-1980. Prepared by M.C. Holliday, D.G. Deuel and W.M. Scogin. NOAA Current Fisheries Statistics. May 1984. No. 8321.
- U.S. Department of Commerce. 1984b. Marine recreational fisheries statistics survey, Pacific coast, 1981-1982. Prepared by M.C. Holliday, D.G. Deuel and W.M. Scogin. NOAA Current Fisheries Statistics. November 1984. No. 8323.
- U.S. Department of Commerce. 1985. Marine recreational fisheries statistics survey, Pacific coast, 1983-1984. Prepared by M.C. Holliday, D.G. Deuel and W.M. Scogin. NOAA Current Fisheries Statistics. August 1985. No. 8325.
- U.S. Department of Commerce. 1986. Marine recreational fisheries statistics survey, Pacific coast, 1985. Prepared by M.C. Holliday, D.G. Deuel and W.M. Scogin. NOAA Current Fisheries Statistics. July 1986. No. 8328.
- U.S. Department of Commerce. Marine recreational fisheries statistics survey, Pacific coast, 1986. Prepared by M.C. Holliday, D.G. Deuel and W.M. Scogin. NOAA Current Fisheries Statistics. September 1987. No. 8393.
- Van Hyning, J.M. 1951. The ocean salmon troll fishery of Oregon. Pac. Mar. Fish. Comm. Bull. 2:43-76.

APPENDIX A

Pages 131 to 288 are on the attached microfiche on inside of back cover.

Appendix B. List of Common Names, Scientific Names, and Length-Weight Parameters from All Areas in 1980 for Quarter 4, Taken by All Mode Anglers Using All Types of Gear.

Common Name	Scientific Name	a	b
Goby, Yellowfin	<u>Acanthogobius flavimanus</u>	0.00001360000	2.89000
Sturgeon, White	<u>Acipenser transmontanus</u>	0.00000053086	3.34800
Sturgeons (unidentified)	Acipenseridae		
Surfperch, Barred	<u>Amphistichus argenteus</u>	0.00001070000	3.10250
Surfperch, Calico	<u>Amphistichus koelzi</u>	0.00000469894	3.22700
Surfperch, Redtail	<u>Amphistichus rhodoterus</u>	0.00000469894	3.22700
Jacksmelt	<u>Atherinopsis californiensis</u>	0.00000098820	3.35360
Flounders, Lefteye	Bothidae		
Bottomfishes (Groundfishes)	Bottom Pisces (Groundfishes)		
Prickleback, Monkeyface	<u>Cebidichthys violaceus</u>	0.00000000000	0.00000
Sharks	Chondrichthyes		
Sanddab, Pacific	<u>Citharichthys sordidus</u>	0.00000142860	3.37080
Sandabs	<u>Citharichthys</u> spp.		
Sanddab, Speckled	<u>Citharichthys stigmaeus</u>	0.00000266000	3.29530
Herring, Pacific	<u>Clupea harengus pallasii</u>	0.00002519100	2.84900
Sculpins	Cottidae		
Perch, Shiner	<u>Cymatogaster aggregata</u>	0.00000473500	3.21000
Perch, Black	<u>Embiotoca jacksoni</u>	0.00029100000	2.49640
Seaperch, Striped	<u>Embiotoca lateralis</u>	0.00001540000	3.01000
Surfperches	Embiotocidae		
Anchovy, Northern	<u>Engraulis mordax</u>	0.00000560100	2.98400
Sculpin, Buffalo	<u>Enophrys bison</u>	0.00001790000	2.89600
Sole, Petrale	<u>Eopsetta jordani</u>	0.00000305800	3.23950
Croaker, White	<u>Genyonemus lineatus</u>	0.00000708500	3.08328
Gobies	Gobiidae		
Irish Lord, Brown	<u>Hemilepidotus spinosus</u>	0.00003580000	2.90000
Shark, Horn	<u>Heterodontus francisci</u>	0.00000855000	3.00000
Greenlings (unidentified)	Hexagrammidae		
Greenling, Kelp	<u>Hexagrammos decagrammus</u>	0.00002604300	2.89280
Greenling, Rock	<u>Hexagrammos lagocephalus</u>	0.00002604300	2.89280
Surfperch, Walleye	<u>Hyperprosopon argenteum</u>	0.00000035580	3.71700
Surfperch, Silver	<u>Hyperprosopon ellipticum</u>	0.00000469894	3.22700
Smelt, Surf	<u>Hypomesus pretiosus</u>	0.00000086900	3.38600
Seaperch, Rainbow	<u>Hypsurus caryi</u>	0.00001535000	3.00700
Sole, Rock	<u>Lepidopsetta bilineata</u>	0.00000760300	3.09570
Sculpin, Pacific Staghorn	<u>Leptocottus armatus</u>	0.00001790000	2.89600
Tomcod, Pacific	<u>Microgadus proximus</u>	0.00000534900	3.07000
Perch, Reef	<u>Micrometrus aurora</u>	0.00000000000	0.00000
Bass, Striped	<u>Morone saxatilis</u>	0.00001068210	2.90671
Smoothhound, Gray	<u>Mustelus californicus</u>	0.00002089000	2.88000
Smoothhound, Brown	<u>Mustelus henlei</u>	0.00002089000	2.88000
Eagle Rays	Myliobatidae		
Ray, Bat	<u>Myliobatis californica</u>	0.00001054400	3.09289
Salmon, Coho (Silver)	<u>Oncorhynchus kisutch</u>	0.00000944000	3.00000
Salmon	<u>Oncorhynchus</u> spp.		
Cusk-eels	Ophidiidae		
Lingcod	<u>Ophiodon elongatus</u>	0.00001157000	2.99000
Halibut, California	<u>Paralichthys californicus</u>	0.00000849000	3.03300

APPENDIX B (continued)

Common Name	Scientific Name	a	b
Seaperch, White	<u>Phanerodon furcatus</u>	0.00001366000	2.97800
Flounder, Starry	<u>Platichthys stellatus</u>	0.00000163000	3.34000
Thornback	<u>Platyrrhinoidis triseriata</u>	0.00000510900	2.96780
Flounders, Righteye	Pleuronectidae		
Flatfishes	Pleuronectiformes		
Sole, Sand	<u>Psettichthys melanostictus</u>	0.00000277100	3.26480
Skate, Big	<u>Raja binoculata</u>	0.00002428050	2.85496
Skates	Rajidae		
Seaperch, Rubberlip	<u>Rhacochilus toxotes</u>	0.00003220500	2.90840
Perch, Pile	<u>Rhacochilus vacca</u>	0.00000925500	3.09900
Trout, Rainbow	<u>Salmo gairdnerii</u>	0.00000637000	3.06300
Mackerel, Pacific (Chub)	<u>Scomber japonicus</u>	0.00000136600	3.39360
Cabezon	<u>Scorpaenichthys marmoratus</u>	0.00008823220	2.72030
Rockfishes (unidentified)	Scorpaenidae		
Rockfish, Kelp	<u>Sebastes atrovirens</u>	0.00003277410	2.86200
Rockfish, Brown	<u>Sebastes auriculatus</u>	0.00002601290	2.93360
Rockfish, Gopher	<u>Sebastes carnatus</u>	0.00002047310	2.95730
Rockfish, Copper	<u>Sebastes caurinus</u>	0.00001648140	3.01800
Rockfish, Greenspotted	<u>Sebastes chlorostictus</u>	0.00002047310	2.95730
Rockfish, Black-and-yellow	<u>Sebastes chrysomelas</u>	0.00000446010	3.25650
Rockfish, Starry	<u>Sebastes constellatus</u>	0.00000531230	3.19500
Rockfish, Greenstriped	<u>Sebastes elongatus</u>	0.00000475820	3.15310
Rockfish, Widow	<u>Sebastes entomelas</u>	0.00000291200	3.25430
Rockfish, Yellowtail	<u>Sebastes flavidus</u>	0.00001130400	3.04020
Chilipepper	<u>Sebastes goodei</u>	0.00000283950	3.24380
Rockfish, Rosethorn	<u>Sebastes helvomaculatus</u>	0.00001678550	2.99430
Rockfish, Squarespot	<u>Sebastes hopkinsi</u>	0.00000324000	3.25050
Rockfish, Quillback	<u>Sebastes maliger</u>	0.00003000000	2.93000
Rockfish, Black	<u>Sebastes melanops</u>	0.00001965710	2.95480
Rockfish, Vermilion	<u>Sebastes miniatus</u>	0.00002677000	2.91650
Rockfish, Blue	<u>Sebastes mystinus</u>	0.00001624670	2.98849
Rockfish, China	<u>Sebastes nebulosus</u>	0.00000564040	3.20470
Rockfish, Speckled	<u>Sebastes ovalis</u>	0.00000324000	3.25050
Bocaccio	<u>Sebastes paucispinis</u>	0.00000583320	3.09410
Rockfish, Canary	<u>Sebastes pinniger</u>	0.00001051000	3.05560
Rockfish, Grass	<u>Sebastes rastrelliger</u>	0.00000575900	3.23500
Rockfish, Rosy	<u>Sebastes rosaceus</u>	0.00001678900	2.99430
Rockfish, Yelloweye	<u>Sebastes ruberrimus</u>	0.00001304370	3.05710
Rockfish, Flag	<u>Sebastes rubrivinctus</u>	0.00002346750	2.94310
Rockfish, Olive	<u>Sebastes serranoides</u>	0.00000521020	3.15410
Treefish	<u>Sebastes serripes</u>	0.01240400000	1.89000
Thornyhead, Shortspine	<u>Sebastolobus alascanus</u>	0.00001406040	3.06300
Spiny Dogfish	<u>Squalus acanthias</u>	0.00000189000	3.09000
Pricklebacks	Stichaeidae		
Lizardfish, California	<u>Synodus lucioceps</u>	0.00000331000	3.16000
Jack Mackerel	<u>Trachurus symmetricus</u>	0.00000331000	3.22320
Shark, Leopard	<u>Triakis semifasciata</u>	0.00002089000	2.88000
Unidentified Fishes	Unidentified Pisces		

Appendix C. List of Common and Scientific Names for Fish from Areas 097 and 3 in 1980 for Quarter 4 Corrected from Fork to Total Length Using Linear Regressions from Echeverria and Lenarz (1984), Karpov (In Press), and Van Hyning (1951).

Common Name	Scientific Name
Sturgeon, White	<u>Acipenser transmontanus</u>
Sturgeons (unidentified)	Acipenseridae
Surfperch, Barred	<u>Amphistichus argenteus</u>
Surfperch, Calico	<u>Amphistichus koelzi</u>
Surfperch, Redtail	<u>Amphistichus rhodoterus</u>
Jacksmelt	<u>Atherinopsis californiensis</u>
Perch, Shiner	<u>Cymatogaster aggregata</u>
Perch, Black	<u>Embiotoca jacksoni</u>
Croaker, White	<u>Genyonemus lineatus</u>
Greenling, Kelp	<u>Hexagrammos decagrammus</u>
Greenling, Rock	<u>Hexagrammos lagocephalus</u>
Surfperch, Walleye	<u>Hyperprosopon argenteum</u>
Surfperch, Silver	<u>Hyperprosopon ellipticum</u>
Smelt, Surf	<u>Hypomesus pretiosus</u>
Seaperch, Rainbow	<u>Hypsurus caryi</u>
Sculpin, Pacific Staghorn	<u>Leptocottus armatus</u>
Bass, Striped	<u>Morone saxatilis</u>
Lingcod	<u>Ophiodon elongatus</u>
Seaperch, White	<u>Phanerodon furcatus</u>
Seaperch, Rubberlip	<u>Rhacochilus toxotes</u>
Perch, Pile	<u>Rhacochilus vacca</u>
Rockfish, Brown	<u>Sebastes auriculatus</u>
Rockfish, Gopher	<u>Sebastes carnatus</u>
Rockfish, Copper	<u>Sebastes caurinus</u>
Rockfish, Greenspotted	<u>Sebastes chlorostictus</u>
Rockfish, Widow	<u>Sebastes entomelas</u>
Rockfish, Yellowtail	<u>Sebastes flavidus</u>
Rockfish, Black	<u>Sebastes melanops</u>
Rockfish, Vermilion	<u>Sebastes miniatus</u>
Rockfish, Blue	<u>Sebastes mystinus</u>
Rockfish, China	<u>Sebastes nebulosus</u>
Bocaccio	<u>Sebastes paucispinis</u>
Rockfish, Canary	<u>Sebastes pinniger</u>
Rockfish, Rosy	<u>Sebastes rosaceus</u>
Rockfish, Yelloweye	<u>Sebastes ruberrimus</u>
Rockfish, Olive	<u>Sebastes serranoides</u>