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MARINE RECREATIONAL FISHERIES STATISTICS SURVEY
FOR NORTHERN AND CENTRAL CALIFORNIA,
QUARTERLY REPORT NO. 10,
OCTOBER TO DECEMBER, 1981

by

Konstantin A. Karpov
and
Gerald S. Kwiecien

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Konstantin A. Karpov 2/
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ABSTRACT

Field intercept Marine Recreational Fisheries Statistics Survey (MRFSS) data for central and northern California, collected in October to December, 1981, 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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2/ Marine Resources Division, 19160 So. Harbor Drive, Fort Bragg, CA 95437.

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TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT.....	i
ACKNOWLEDGMENTS.....	ii
TABLE OF CONTENTS.....	iii
INTRODUCTION.....	1
METHODS.....	1
Study Areas.....	2
Fishing Modes.....	2
Gear Types.....	4
Catch Definitions.....	4
Computer-Generated Tables and Figures.....	4
RESULTS.....	7
Area 1.....	7
Effort, Ranked Catch, and CPUE Tables.....	7
Pier or Dock Anglers Using Hook-and-Line.....	7
Jetty or Breakwater Anglers Using Hook-and-Line.....	10
Beach and Bank Anglers Using Hook-and-Line.....	13
Private or Rental Boat Anglers Using Hook-and-Line..	16
Area 2.....	19
Effort, Ranked Catch, and CPUE Tables.....	19
Pier or Dock Anglers Using Hook-and-Line.....	19
Jetty or Breakwater Anglers Using Hook-and-Line.....	22
Beach or Bank Anglers Using Hook-and-Line.....	25
Beach or Bank Anglers Using Spear.....	28
Area 2, Sub-Area 045.....	31
Effort, Ranked Catch, and CPUE Tables.....	31

<u>Table of Contents (cont'd.)</u>	<u>Page</u>
Private or Rental Boat Anglers Using Hook-and-Line..	31
CPFV Anglers Using Hook-and-Line.....	34
Length-frequency Histogram.....	37
Private or Rental Boat Anglers Using Hook-and-Line for Blue Rockfish.....	37
CPFV Anglers Using Hook-and-Line for Blue Rockfish.....	38
Area 2, Sub-Area 097.....	39
Effort, Ranked Catch, and CPUE Tables.....	39
Private or Rental Boat Anglers Using Hook-and-Line..	39
CPFV Anglers Using Hook-and-Line.....	42
Length-frequency Histogram.....	45
CPFV Anglers Using Hook-and-Line for Yellowtail Rockfish.....	45
Area 3 (Ocean).....	46
Effort, Ranked Catch, and CPUE Tables.....	46
Pier or Dock Anglers Using Hook-and-Line.....	46
Jetty or Breakwater Anglers Using Hook-and-Line.....	49
Beach or Bank Anglers Using Hook-and-Line.....	52
Private or Rental Boat Anglers Using Hook-and-Line..	55
CPFV Anglers Using Hook-and-Line.....	58
Area 3 (Bay).....	61
Effort, Ranked Catch, and CPUE Tables.....	61
Pier or Dock Anglers Using Hook-and-Line.....	61
Jetty or Breakwater Anglers Using Hook-and-Line.....	64
Beach or Bank Anglers Using Hook-and-Line.....	67
Private or Rental Boat Anglers Using Hook-and-Line..	70

<u>Table of Contents (cont'd.)</u>	<u>Page</u>
CPFV Anglers Using Hook-and-Line.....	73
Area 4.....	76
Effort, Ranked Catch, and CPUE Tables.....	76
Pier or Dock Anglers Using Hook-and-Line.....	76
Jetty or Breakwater Anglers Using Hook-and-Line.....	79
Beach or Bank Anglers Using Hook-and-Line.....	82
Private or Rental Boat Anglers Using Hook-and-Line..	85
Private or Rental Boat Anglers Using Spear Gear.....	88
CPFV Anglers Using Hook-and-Line.....	91
Length-frequency Histograms.....	94
Beach or Bank Anglers Using Hook-and-Line for Barred Surfperch.....	94
CPFV Anglers Using Hook-and-Line for Chilipepper.....	95
CPFV Anglers Using Hook-and-Line for Lingcod.....	96
Area 5.....	97
Effort, Ranked Catch, and CPUE Tables.....	97
Pier or Dock Anglers Using Hook-and-Line.....	97
Beach and Bank Anglers Using Hook-and-Line.....	100
Private or Rental Boat Anglers Using Hook-and-Line..	103
CPFV Anglers Using Hook-and-Line.....	108
Length-frequency Histogram.....	111
Beach or Bank Anglers Using Hook-and-Line for Barred Surfperch.....	111
Private or Rental Boat Anglers Using Hook-and-Line for Blue Rockfish.....	112
Private or Rental Boat Anglers Using Hook-and-Line for Gopher Rockfish.....	113

<u>Table of Contents (cont'd.)</u>	<u>Page</u>
Private or Rental Boat Anglers Using Hook-and-Line for Yellowtail Rockfish.....	114
CPFV Anglers Using Hook-and-Line for Blue Rockfish.....	115
LITERATURE CITED.....	116
APPENDIX A - Length Frequency Tables.....	117
Area 1.....	117
Jetty or Breakwater Anglers Using Hook-and-Line.....	117
Beach or Bank Anglers Using Hook-and-Line.....	122
Private or Rental Boat Anglers Using Hook-and-Line..	125
Area 2.....	129
Beach or Bank Anglers Using Hook-and-Line.....	129
Beach or Bank Anglers Using Spear Gear.....	131
Area 2, Sub-Area 045.....	132
Private or Rental Boat Anglers Using Hook-and-Line..	132
CPFV Anglers Using Hook-and-Line.....	139
Area 2, Sub-Area 097.....	142
CPFV Anglers Using Hook-and-Line.....	142
Area 3 (Ocean).....	150
Jetty or Breakwater Anglers Using Hook-and-Line.....	150
Beach or Bank Anglers Using Hook-and-Line.....	151
Private or Rental Boat Anglers Using Hook-and-Line..	153
CPFV Anglers Using Hook-and-Line.....	155
Area 3 (Bay).....	163
Pier or Dock Anglers Using Hook-and-Line.....	163
Jetty or Breakwater Anglers Using Hook-and-Line.....	168
Beach or Bank Anglers Using Hook-and-Line.....	169

<u>Table of Contents (cont'd.)</u>	<u>Page</u>
Private or Rental Boat Anglers Using Hook-and-Line..	172
CPFV Anglers Using Hook-and-Line.....	173
Area 4.....	174
Beach or Bank Anglers Using Hook-and-Line.....	174
Private or Rental Boat Anglers Using Hook-and-Line..	178
CPFV Anglers Using Hook-and-Line.....	186
Area 5.....	194
Pier or Dock Anglers Using Hook-and-Line.....	194
Beach or Bank Anglers Using Hook-and-Line.....	199
Private or Rental Boat Anglers Using Hook-and-Line..	201
CPFV Anglers Using Hook-and-Line.....	218
APPENDIX B - List of Caught Species by Scientific and Common Name.....	221
APPENDIX C - List of Species with Corrected Lengths.....	223

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. 10 covers the period of October to December 1981. 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, and 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 Humboldt 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).

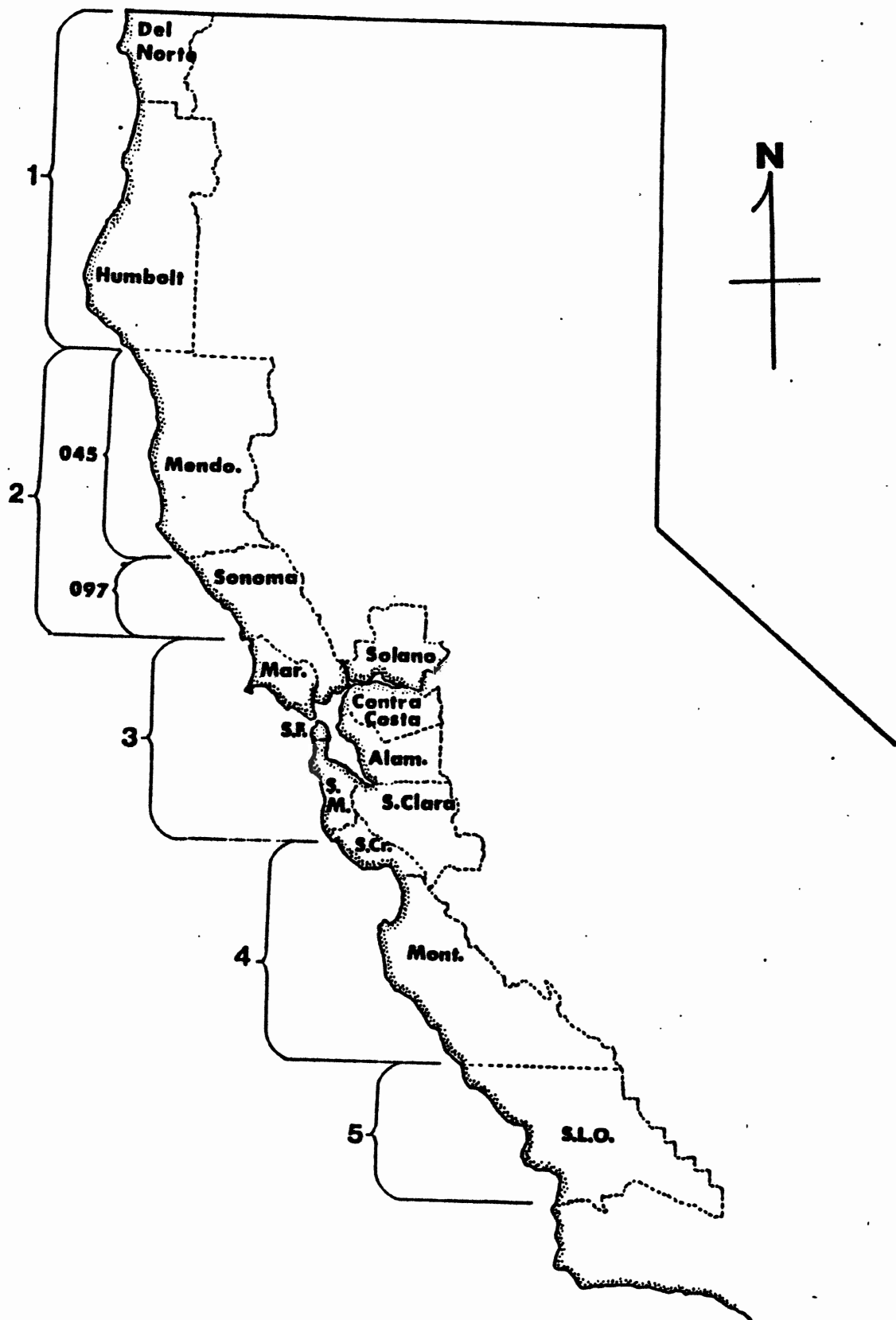


FIGURE 1. Study area counties and sub-areas in northern and central California.

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 Hying 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 1981 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 = 13
 Total Hours Effort for Anglers Intercepted = 36.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperches	1	15	93.8
Flounders, Righteye	2	1	6.3
Total		16	100

C. CPUE

Catch per Angler Day = 1.23 Catch per Angler Hour = 0.44

Table 2. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1981 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	=	13
Total Hours Effort for Anglers Intercepted	=	36.5
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
Surfperches	1	15	%100.0	0.00**	0.00
Total		15	100		0.00

C. CPUE

Catch per Angler Day	=	1.15	Catch per Angler Hour	=	0.41
Kg per Angler Day	=	0.00	Kg per Angler Hour	=	0.00

* 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 1981 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 = 13
 Total Hours Effort for Anglers Intercepted = 36.5
 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)	
Total		0.00	0	0	0			

C. CPUE***

Catch per Angler Day = 0.00 Catch per Angler Hour = 0.00
 Kg per Angler Day = 0.00 Kg per Angler Hour = 0.00

* 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 1981 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 = 102
 Total Hours Effort for Anglers Intercepted = 281.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Black	1	57	31.8
Rockfish, Blue	2	33	18.4
Greenling, Kelp	3	28	15.6
Seaperch, Striped	4	22	12.3
Greenling, Rock	5	11	6.1
Cabezon	6	6	3.4
Rockfish, Copper	7	5	2.8
Rockfish, Brown	8	4	2.2
Sculpin, Pacific Staghorn	9	3	1.7
Surfperch, Redtail	10	3	1.7
Sculpins	11	2	1.1
Lingcod	12	1	0.6
Surfperches	13	1	0.6
Surfperch, Silver	14	1	0.6
Seaperch, White	15	1	0.6
Sole, Sand	16	1	0.6
Total		179	100

C. CPUE

Catch per Angler Day = 1.75 Catch per Angler Hour = 0.64

Table 5. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1981 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	=	102
Total Hours Effort for Anglers Intercepted	=	281.5
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
Seaperch, Striped	1	22	21.2	0.36	7.81
Rockfish, Blue	2	20	19.2	0.18	3.50
Rockfish, Black	3	18	17.3	0.32	5.77
Greenling, Kelp	4	17	16.3	0.34	5.76
Greenling, Rock	5	7	6.7	0.37	2.56
Rockfish, Brown	6	4	3.8	0.46	1.85
Rockfish, Copper	7	4	3.8	0.35	1.40
Cabezon	8	4	3.8	0.65	2.59
Surfperch, Redtail	9	3	2.9	0.19	0.56
Lingcod	10	1	1.0	1.73	1.73
Sculpins	11	1	1.0	0.65**	0.65
Sculpin, Pacific Staghorn	12	1	1.0	0.00**	0.00
Surfperch, Silver	13	1	1.0	0.12	0.12
Seaperch, White	14	1	1.0	0.15	0.15
Total		104	100		34.46

C. CPUE

Catch per Angler Day	=	1.02	Catch per Angler Hour	=	0.37
Kg per Angler Day	=	0.34	Kg per Angler Hour	=	0.12

* 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 1981 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	=	102
Total Hours Effort for Anglers Intercepted	=	281.5
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)	
Seaperch, Striped	1	7.81	22	21.8	22	0.36	274	40
Greenling, Kelp	2	5.76	17	16.8	17	0.34	278	56
Rockfish, Black	3	5.13	16	15.8	16	0.32	263	61
Rockfish, Blue	4	3.50	20	19.8	20	0.18	216	47
Cabazon	5	2.59	4	4.0	4	0.65	326	67
Greenling, Rock	6	2.56	7	6.9	7	0.37	276	85
Rockfish, Brown	7	1.85	4	4.0	4	0.46	284	69
Lingcod	8	1.73	1	1.0	1	1.73	542	0
Rockfish, Copper	9	1.40	4	4.0	4	0.35	268	5
Surfperch, Redtail	10	0.57	3	3.0	3	0.19	227	3
Seaperch, White	11	0.15	1	1.0	1	0.15	231	0
Surfperch, Silver	12	0.12	1	1.0	1	0.12	197	0
Sculpins	13	0.00	1	1.0	0	0.00	0	0
Total		33.17	101	100	100			

C. CPUE***

Catch per Angler Day	=	0.99	Catch per Angler Hour	=	0.36
Kg per Angler Day	=	0.33	Kg per Angler Hour	=	0.12

* 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).

Table 7. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1981 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	=	108
Total Hours Effort for Anglers Intercepted	=	262.9
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Redtail	1	28	39.4
Greenling, Kelp	2	11	15.5
Seaperch, Striped	3	9	12.7
Trout, Rainbow	4	7	9.9
Cabezon	5	6	8.5
Surfperches	6	3	4.2
Surfperch, Walleye	7	2	2.8
Flounder, Starry	8	2	2.8
Trout, Cutthroat	9	1	1.4
Rockfish, Grass	10	1	1.4
Sculpins	11	1	1.4
Total		71	100

C. CPUE

Catch per Angler Day = 0.66 Catch per Angler Hour = 0.27

Table 8. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1981 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 = 108
 Total Hours Effort for Anglers Intercepted = 262.9
 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
Surfperch, Redtail	1	25	43.1	0.44	11.04
Greenling, Kelp	2	10	17.2	0.29	2.88
Seaperch, Striped	3	7	12.1	0.38	2.69
Trout, Rainbow	4	4	6.9	0.20	0.81
Cabezon	5	4	6.9	1.02	4.07
Surfperches	6	3	5.2	0.42**	1.26
Surfperch, Walleye	7	2	3.4	0.25	0.50
Flounder, Starry	8	2	3.4	0.22	0.44
Rockfish, Grass	9	1	1.7	0.85	0.85
Total		58	100		24.54

C. CPUE

Catch per Angler Day = 0.54 Catch per Angler Hour = 0.22
 Kg per Angler Day = 0.23 Kg per Angler Hour = 0.09

* 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 9. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1981 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 = 108
 Total Hours Effort for Anglers Intercepted = 262.9
 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)	
Surfperch, Redtail	1	11.04	25	44.6	25	0.44	290	38
Cabazon	2	3.05	3	5.4	3	1.02	389	60
Greenling, Kelp	3	2.88	10	17.9	10	0.29	271	23
Seaperch, Striped	4	2.69	7	12.5	7	0.38	277	57
Rockfish, Grass	5	0.85	1	1.8	1	0.85	335	0
Trout, Rainbow	6	0.81	4	7.1	4	0.20	275	50
Surfperch, Walleye	7	0.50	2	3.6	2	0.25	235	44
Flounder, Starry	8	0.22	1	1.8	1	0.22	272	0
Surfperches	9	0.00	3	5.4	0	0.00	0	0
Total		22.04	56	100	53			

C. CPUE***

Catch per Angler Day = 0.52 Catch per Angler Hour = 0.21
 Kg per Angler Day = 0.20 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 10. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1981 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	=	139.6
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Black	1	42	43.3
Trout, Rainbow	2	16	16.5
Rockfish, Blue	3	15	15.5
Lingcod	4	15	15.5
Rockfish, Canary	5	6	6.2
Rockfish, Yellowtail	6	1	1.0
Greenling, Kelp	7	1	1.0
Cabezon	8	1	1.0
Total		97	100

C. CPUE

Catch per Angler Day	=	2.85	Catch per Angler Hour	=	0.69
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Table 11. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1981 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	=	139.6
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	37	48.1	1.28	47.48
Rockfish, Blue	2	15	19.5	0.98	14.70
Lingcod	3	14	18.2	4.76	66.70
Rockfish, Canary	4	6	7.8	0.87	5.23
Trout, Rainbow	5	2	2.6	0.40	0.80
Rockfish, Yellowtail	6	1	1.3	0.49	0.49
Greenling, Kelp	7	1	1.3	1.54	1.54
Cabazon	8	1	1.3	0.93	0.93
Total		77	100		137.87

C. CPUE

Catch per Angler Day	=	2.26	Catch per Angler Hour	=	0.55
Kg per Angler Day	=	4.06	Kg per Angler Hour	=	0.99

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

Table 12. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1981 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 = 139.6
 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	66.70	14	18.2	14	4.76	741	132
Rockfish, Black	2	47.48	37	48.1	32	1.28	436	51
Rockfish, Blue	3	14.70	15	19.5	15	0.98	400	19
Rockfish, Canary	4	5.23	6	7.8	6	0.87	389	30
Greenling, Kelp	5	1.54	1	1.3	1	1.54	486	0
Cabezon	6	0.93	1	1.3	1	0.93	381	0
Trout, Rainbow	7	0.80	2	2.6	2	0.40	352	8
Rockfish, Yellowtail	8	0.49	1	1.3	1	0.49	326	0
Total		137.87	77	100	72			

C. CPUE***

Catch per Angler Day = 2.26 Catch per Angler Hour = 0.55
 Kg per Angler Day = 4.06 Kg per Angler Hour = 0.99

* 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 13. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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 = 9
 Total Hours Effort for Anglers Intercepted = 22.0
 Total Hours Still to Fish (Incomplete Trips) = 2.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Perch, Shiner	1	3	%100.0
Total		3	100

C. CPUE

Catch per Angler Day = 0.33 Catch per Angler Hour = 0.14

Table 14. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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 = 9
 Total Hours Effort for Anglers Intercepted = 22.0
 Total Hours Still to Fish (Incomplete Trips) = 2.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
<hr/>					
Total		0	0		0.00

C. CPUE

Catch per Angler Day = 0.00 Catch per Angler Hour = 0.00
 Kg per Angler Day = 0.00 Kg per Angler Hour = 0.00

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

Table 15. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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 = 9
 Total Hours Effort for Anglers Intercepted = 22.0
 Total Hours Still to Fish (Incomplete Trips) = 2.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
<hr/>								
Total		0.00	0	0	0			

C. CPUE***

Catch per Angler Day = 0.00 Catch per Angler Hour = 0.00
 Kg per Angler Day = 0.00 Kg per Angler Hour = 0.00

* 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 1981 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 = 82
 Total Hours Effort for Anglers Intercepted = 227.5
 Total Hours Still to Fish (Incomplete Trips) = 27.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Salmon, Coho (Silver)	1	2	66.7
Seaperch, White	2	1	33.3
Total		3	100

C. CPUE

Catch per Angler Day = 0.04 Catch per Angler Hour = 0.01

Table 17. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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	=	82
Total Hours Effort for Anglers Intercepted	=	227.5
Total Hours Still to Fish (Incomplete Trips)	=	27.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Salmon, Coho (Silver)	1	2	66.7	3.34	6.67
Seaperch, White	2	1	33.3	0.34	0.34
Total		3	100		7.02

C. CPUE

Catch per Angler Day	=	0.04	Catch per Angler Hour	=	0.01
Kg per Angler Day	=	0.09	Kg per Angler Hour	=	0.03

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

Table 18. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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 = 82
 Total Hours Effort for Anglers Intercepted = 227.5
 Total Hours Still to Fish (Incomplete Trips) = 27.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Salmon, Coho (Silver)	1	6.67	2	66.7	2	3.34	707	7
Seaperch, White	2	0.34	1	33.3	1	0.34	305	0
Total		7.02	3	100	3			

C. CPUE***

Catch per Angler Day = 0.04 Catch per Angler Hour = 0.01
 Kg per Angler Day = 0.09 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 19. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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 = 61
 Total Hours Effort for Anglers Intercepted = 139.5
 Total Hours Still to Fish (Incomplete Trips) = 34.1

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Greenling, Rock	1	10	33.3
Greenling, Kelp	2	9	30.0
Rockfish, Blue	3	3	10.0
Greenlings (unidentified)	4	3	10.0
Seaperch, Striped	5	3	10.0
Rockfish, China	6	1	3.3
Cabazon	7	1	3.3
Total		30	100

C. CPUE

Catch per Angler Day = 0.49 Catch per Angler Hour = 0.22

Table 20. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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	=	61
Total Hours Effort for Anglers Intercepted	=	139.5
Total Hours Still to Fish (Incomplete Trips)	=	34.1

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Greenling, Rock	1	10	37.0	0.33	3.28
Greenling, Kelp	2	9	33.3	0.49	4.42
Rockfish, Blue	3	3	11.1	0.17	0.50
Seaperch, Striped	4	3	11.1	0.44	1.32
Rockfish, China	5	1	3.7	0.21	0.21
Cabazon	6	1	3.7	0.29	0.29
Total		27	100		10.04

C. CPUE

Catch per Angler Day	=	0.44	Catch per Angler Hour	=	0.19
Kg per Angler Day	=	0.16	Kg per Angler Hour	=	0.07

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

Table 21. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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 = 61
 Total Hours Effort for Anglers Intercepted = 139.5
 Total Hours Still to Fish (Incomplete Trips) = 34.1

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	!---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Greenling, Kelp	1	4.42	9	33.3	9	0.49	311	79
Greenling, Rock	2	3.28	10	37.0	10	0.33	283	24
Seaperch, Striped	3	1.32	3	11.1	3	0.44	298	29
Rockfish, Blue	4	0.51	3	11.1	3	0.17	217	44
Cabazon	5	0.29	1	3.7	1	0.29	250	0
Rockfish, China	6	0.21	1	3.7	1	0.21	230	0
Total		10.04	27	100	27			

C. CPUE***

Catch per Angler Day = 0.44 Catch per Angler Hour = 0.19
 Kg per Angler Day = 0.16 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 22. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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	=	8
Total Hours Effort for Anglers Intercepted	=	9.0
Total Hours Still to Fish (Incomplete Trips)	=	1.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Greenling, Kelp	1	8	57.1
Seaperch, Striped	2	4	28.6
Greenling, Rock	3	1	7.1
Cabezon	4	1	7.1
Total		14	100

C. CPUE

Catch per Angler Day = 1.75 Catch per Angler Hour = 1.56

Table 23. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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	=	8
Total Hours Effort for Anglers Intercepted	=	9.0
Total Hours Still to Fish (Incomplete Trips)	=	1.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Greenling, Kelp	1	8	57.1	0.61	4.90
Seaperch, Striped	2	4	28.6	0.38	1.52
Greenling, Rock	3	1	7.1	0.38	0.38
Cabazon	4	1	7.1	0.84	0.84
Total		14	100		7.65

C. CPUE

Catch per Angler Day	=	1.75	Catch per Angler Hour	=	1.56
Kg per Angler Day	=	0.96	Kg per Angler Hour	=	0.85

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

Table 24. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1981 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	=	8
Total Hours Effort for Anglers Intercepted	=	9.0
Total Hours Still to Fish (Incomplete Trips)	=	1.5

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Greenling, Kelp	1	4.90	8	57.1	8	0.61	352	27
Seaperch, Striped	2	1.52	4	28.6	4	0.38	284	25
Cabezón	3	0.84	1	7.1	1	0.84	368	0
Greenling, Rock	4	0.38	1	7.1	1	0.38	300	0
Total		7.65	14	100	14			

C. CPUE***

Catch per Angler Day =	1.75	Catch per Angler Hour =	1.56
Kg per Angler Day =	0.96	Kg per Angler Hour =	0.85

* 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 045 in 1981 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 = 36
 Total Hours Effort for Anglers Intercepted = 160.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	283	73.7
Rockfish, Black	2	22	5.7
Rockfish, Canary	3	22	5.7
Lingcod	4	19	4.9
Rockfish, Yellowtail	5	9	2.3
Rockfish, Yelloweye	6	6	1.6
Rockfish, Copper	7	5	1.3
Rockfish, Widow	8	3	0.8
Rockfish, Olive	9	3	0.8
Cabazon	10	2	0.5
Sanddab, Pacific	11	2	0.5
Sole, Rock	12	2	0.5
Salmon, Coho (Silver)	13	1	0.3
Rockfish, Quillback	14	1	0.3
Rockfish, Vermilion	15	1	0.3
Rockfish, China	16	1	0.3
Rockfish, Rosy	17	1	0.3
Greenling, Kelp	18	1	0.3
Total		384	100

C. CPUE

Catch per Angler Day = 10.67 Catch per Angler Hour = 2.39

Table 26. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1981 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	=	36
Total Hours Effort for Anglers Intercepted	=	160.5
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	283	73.7	0.76	215.53
Rockfish, Black	2	22	5.7	1.00	22.03
Rockfish, Canary	3	22	5.7	0.59	13.00
Lingcod	4	19	4.9	3.52	66.95
Rockfish, Yellowtail	5	9	2.3	1.38	12.38
Rockfish, Yelloweye	6	6	1.6	2.25	13.52
Rockfish, Copper	7	5	1.3	1.59	7.93
Rockfish, Widow	8	3	0.8	0.27	0.81
Rockfish, Olive	9	3	0.8	1.12	3.36
Cabezon	10	2	0.5	1.75	3.51
Sanddab, Pacific	11	2	0.5	0.11	0.22
Sole, Rock	12	2	0.5	1.01	2.03
Salmon, Coho (Silver)	13	1	0.3	1.37	1.37
Rockfish, Quillback	14	1	0.3	1.83	1.83
Rockfish, Vermilion	15	1	0.3	0.79	0.79
Rockfish, China	16	1	0.3	0.89	0.89
Rockfish, Rosy	17	1	0.3	0.41	0.41
Greenling, Kelp	18	1	0.3	0.67	0.67
Total		384	100		367.21

C. CPUE

Catch per Angler Day	=	10.67	Catch per Angler Hour	=	2.39
Kg per Angler Day	=	10.20	Kg per Angler Hour	=	2.29

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

Table 27. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1981 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 = 36
 Total Hours Effort for Anglers Intercepted = 160.5
 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	215.53	283	73.7	116	0.76	361	53
Lingcod	2	66.95	19	4.9	19	3.52	673	103
Rockfish, Black	3	22.03	22	5.7	22	1.00	398	59
Rockfish, Yelloweye	4	13.52	6	1.6	6	2.25	486	72
Rockfish, Canary	5	13.00	22	5.7	22	0.59	340	39
Rockfish, Yellowtail	6	12.38	9	2.3	9	1.38	444	80
Rockfish, Copper	7	7.93	5	1.3	5	1.59	431	79
Cabezon	8	3.51	2	0.5	2	1.75	466	133
Rockfish, Olive	9	3.36	3	0.8	3	1.12	417	111
Sole, Rock	10	2.03	2	0.5	2	1.01	416	65
Rockfish, Quillback	11	1.83	1	0.3	1	1.83	454	0
Salmon, Coho (Silver)	12	1.37	1	0.3	1	1.37	525	0
Rockfish, China	13	0.89	1	0.3	1	0.89	362	0
Rockfish, Widow	14	0.81	3	0.8	3	0.27	278	34
Rockfish, Vermilion	15	0.79	1	0.3	1	0.79	364	0
Greenling, Kelp	16	0.67	1	0.3	1	0.67	364	0
Rockfish, Rosy	17	0.41	1	0.3	1	0.41	292	0
Sanddab, Pacific	18	0.22	2	0.5	2	0.11	217	23
Total		367.21	384	100	217			

C. CPUE***

Catch per Angler Day = 10.67 Catch per Angler Hour = 2.39
 Kg per Angler Day = 10.20 Kg per Angler Hour = 2.29

* 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 28. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1981 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 = 8
 Total Hours Effort for Anglers Intercepted = 32.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	90	75.0
Rockfish, Yellowtail	2	25	20.8
Rockfish, Canary	3	5	4.2
Total		120	100

C. CPUE

Catch per Angler Day = 15.00 Catch per Angler Hour = 3.75

Table 29. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1981 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	=	8
Total Hours Effort for Anglers Intercepted	=	32.0
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	90	75.0	0.99	88.69
Rockfish, Yellowtail	2	25	20.8	1.07	26.70
Rockfish, Canary	3	5	4.2	0.84	4.22
Total		120	100		119.61

C. CPUE

Catch per Angler Day	=	15.00	Catch per Angler Hour	=	3.75
Kg per Angler Day	=	14.95	Kg per Angler Hour	=	3.74

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

Table 30. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1981 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 = 8
 Total Hours Effort for Anglers Intercepted = 32.0
 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	88.69	90	75.0	77	0.99	398	40
Rockfish, Yellowtail	2	26.70	25	20.8	25	1.07	405	80
Rockfish, Canary	3	4.22	5	4.2	5	0.84	384	31
Total		119.61	120	100	107			

C. CPUE***

Catch per Angler Day = 15.00 Catch per Angler Hour = 3.75
 Kg per Angler Day = 14.95 Kg per Angler Hour = 3.74

* 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 Blue Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 045, Quarter 4, 1981.

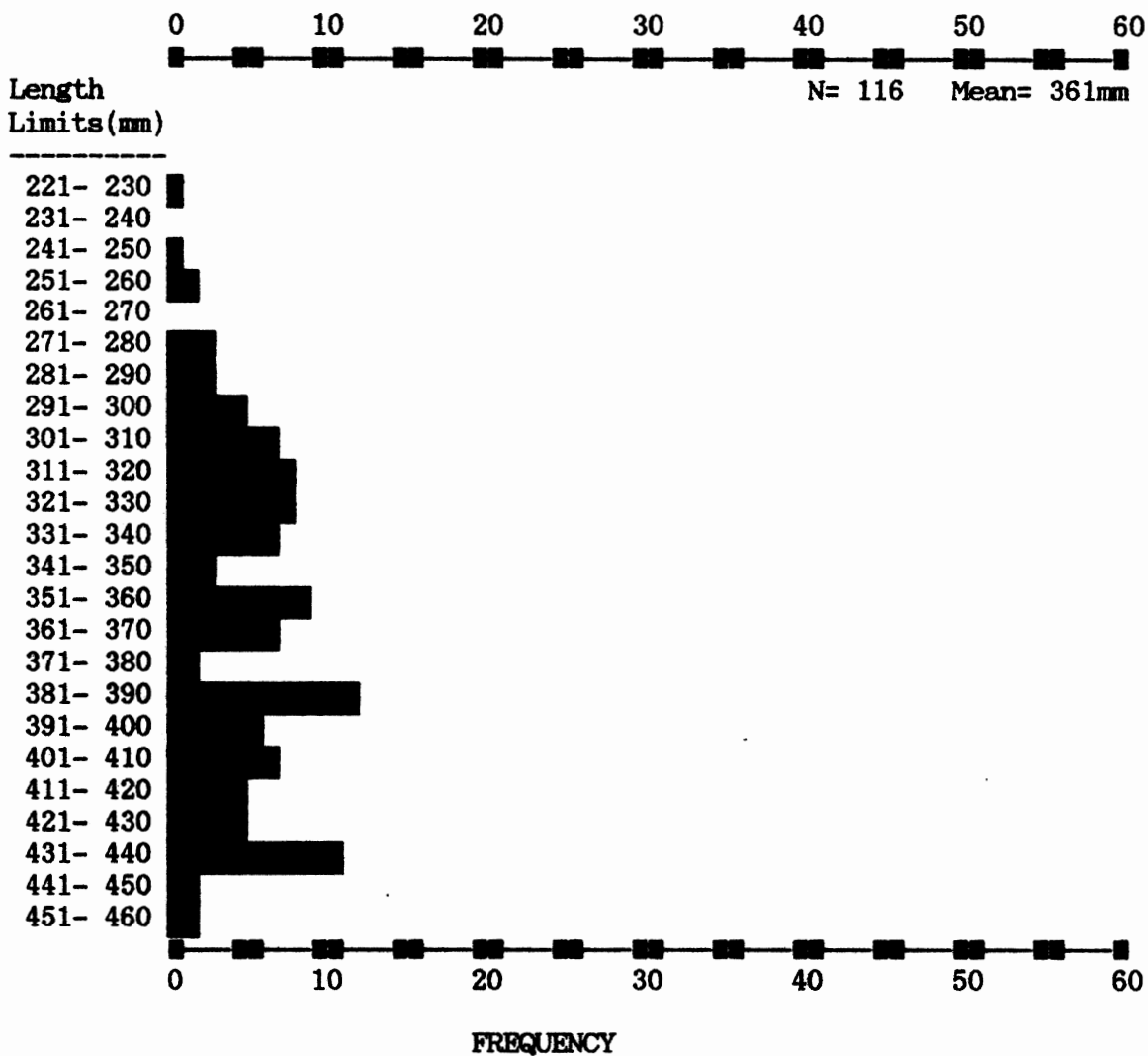


Figure 3. Length-Frequency Histogram for Blue Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 045, Quarter 4, 1981.

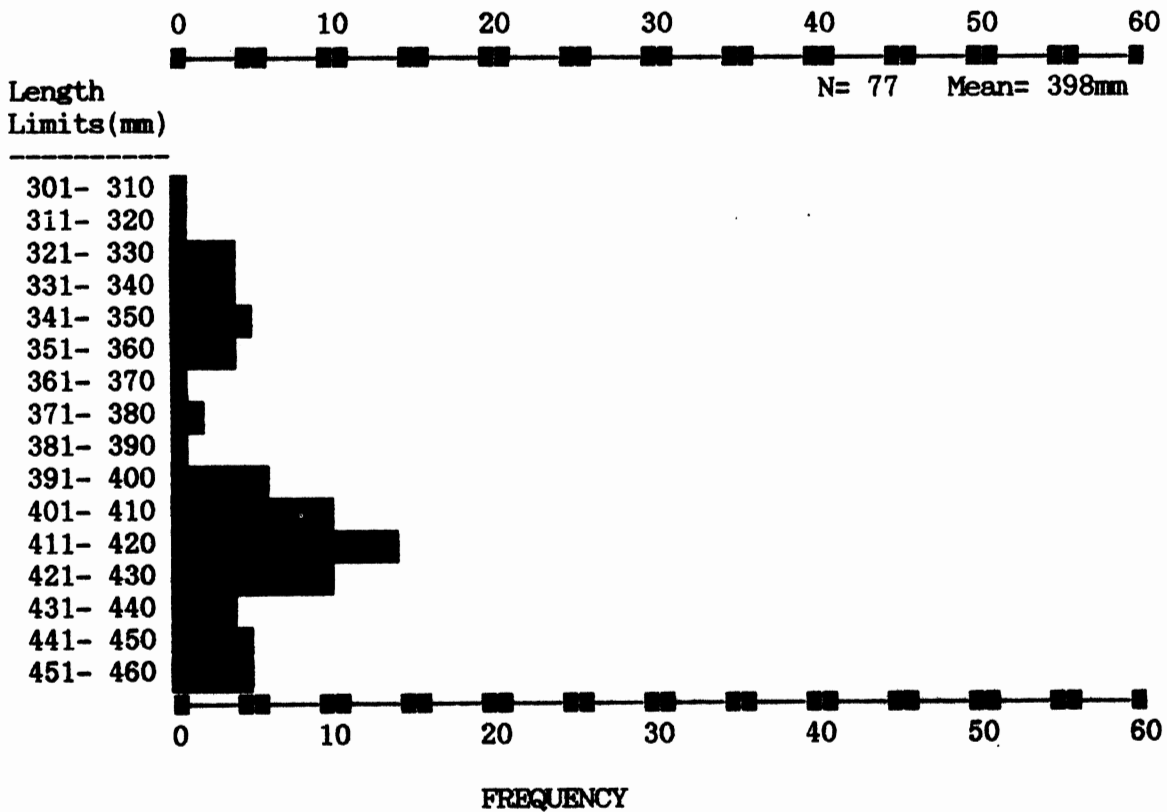


Table 31. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1981 for Quarter 4, by Private or Rental Boat Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	29
Total Hours Effort for Anglers Intercepted	=	105.0
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	5	29.4
Rockfish, Blue	2	4	23.5
Lingcod	3	2	11.8
Cabezon	4	2	11.8
Rockfish, Brown	5	1	5.9
Rockfish, Black	6	1	5.9
Rockfish, Olive	7	1	5.9
Sole, Sand	8	1	5.9
Total		17	100

C. CPUE

Catch per Angler Day = 0.59 Catch per Angler Hour = 0.16

Table 32. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1981 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	=	29
Total Hours Effort for Anglers Intercepted	=	105.0
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	4	40.0	0.63	2.50
Lingcod	2	2	20.0	2.60	5.20
Rockfish, Brown	3	1	10.0	0.70	0.70
Rockfish, Black	4	1	10.0	0.94	0.94
Rockfish, Olive	5	1	10.0	1.31	1.31
Sole, Sand	6	1	10.0	0.61	0.61
Total		10	100		11.27

C. CPUE

Catch per Angler Day	=	0.34	Catch per Angler Hour	=	0.10
Kg per Angler Day	=	0.39	Kg per Angler Hour	=	0.11

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

Table 33. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1981 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 = 29
 Total Hours Effort for Anglers Intercepted = 105.0
 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)	
Lingcod	1	5.20	2	20.0	2	2.60	621	16
Rockfish, Blue	2	2.50	4	40.0	4	0.63	308	125
Rockfish, Olive	3	1.31	1	10.0	1	1.31	461	0
Rockfish, Black	4	0.94	1	10.0	1	0.94	397	0
Rockfish, Brown	5	0.70	1	10.0	1	0.70	341	0
Sole, Sand	6	0.61	1	10.0	1	0.61	360	0
Total		11.27	10	100	10			

C. CPUE***

Catch per Angler Day = 0.34 Catch per Angler Hour = 0.10
 Kg per Angler Day = 0.39 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 34. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1981 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	=	39
Total Hours Effort for Anglers Intercepted	=	267.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfishes (unidentified)	1	156	43.6
Rockfish, Yellowtail	2	50	14.0
Rockfish, Copper	3	32	8.9
Rockfish, Brown	4	22	6.1
Rockfish, Canary	5	20	5.6
Bocaccio	6	19	5.3
Rockfish, Widow	7	15	4.2
Rockfish, Greenspotted	8	15	4.2
Rockfish, Yelloweye	9	13	3.6
Rockfish, Black	10	4	1.1
Rockfish, Rosy	11	4	1.1
Rockfish, Blue	12	3	0.8
Rockfish, China	13	2	0.6
Lingcod	14	2	0.6
Flounder, Starry	15	1	0.3
Total		358	100

C. CPUE

Catch per Angler Day = 9.18 Catch per Angler Hour = 1.34

Table 35. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1981 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	=	39
Total Hours Effort for Anglers Intercepted	=	267.5
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
Rockfishes (unidentified)	1	154	43.5	1.43**	0.00
Rockfish, Yellowtail	2	50	14.1	1.58	79.14
Rockfish, Copper	3	32	9.0	1.51	48.17
Rockfish, Brown	4	22	6.2	0.78	17.16
Rockfish, Canary	5	20	5.6	0.68	13.56
Bocaccio	6	19	5.4	3.02	57.30
Rockfish, Widow	7	15	4.2	0.92	13.81
Rockfish, Greenspotted	8	15	4.2	1.03	15.51
Rockfish, Yelloweye	9	11	3.1	2.71	29.77
Rockfish, Black	10	4	1.1	1.04	4.14
Rockfish, Rosy	11	4	1.1	0.40	1.60
Rockfish, Blue	12	3	0.8	0.43	1.29
Rockfish, China	13	2	0.6	0.53	1.05
Lingcod	14	2	0.6	6.82	13.63
Flounder, Starry	15	1	0.3	1.58	1.58
Total		354	100		297.72

C. CPUE

Catch per Angler Day	=	9.08	Catch per Angler Hour	=	1.32
Kg per Angler Day	=	7.63	Kg per Angler Hour	=	1.11

* 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 097 in 1981 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	=	39
Total Hours Effort for Anglers Intercepted	=	267.5
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	79.14	50	14.2	44	1.58	474	48
Bocaccio	2	57.30	19	5.4	19	3.02	638	115
Rockfish, Copper	3	48.17	32	9.1	29	1.51	426	61
Rockfish, Yelloweye	4	29.77	11	3.1	11	2.71	521	50
Rockfish, Brown	5	17.16	22	6.3	22	0.78	347	52
Rockfish, Greenspotted	6	15.51	15	4.3	14	1.03	400	31
Rockfish, Widow	7	13.81	15	4.3	14	0.92	385	99
Lingcod	8	13.63	2	0.6	2	6.82	848	131
Rockfish, Canary	9	13.56	20	5.7	20	0.68	353	49
Rockfish, Black	10	4.14	4	1.1	4	1.04	404	61
Rockfish, Rosy	11	1.60	4	1.1	4	0.40	290	17
Flounder, Starry	12	1.58	1	0.3	1	1.58	490	0
Rockfish, Blue	13	1.29	3	0.9	3	0.43	303	30
Rockfish, China	14	1.05	2	0.6	2	0.53	301	58
Rockfishes (unidentified)	15	0.00	151	43.0	2	0.00	479	112
Total		297.72	351	100	191			

C. CPUE***

Catch per Angler Day	=	9.00	Catch per Angler Hour	=	1.31
Kg per Angler Day	=	7.63	Kg per Angler Hour	=	1.11

* 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).

Figure 4. Length-Frequency Histogram for Yellowtail Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 097, Quarter 4, 1981.

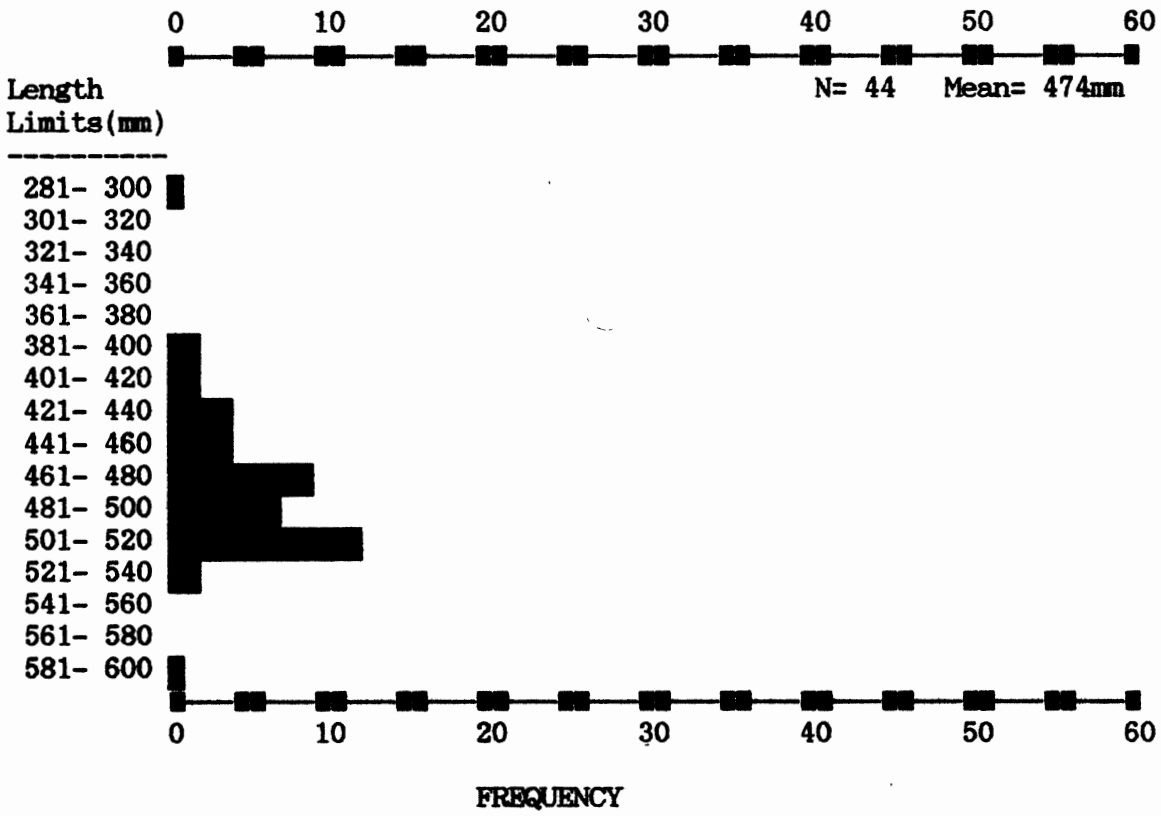


Table 37. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	9
Total Hours Effort for Anglers Intercepted	=	26.0
Total Hours Still to Fish (Incomplete Trips)	=	4.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	3	27.3
Surfperches	2	3	27.3
Skate, California	3	2	18.2
Greenlings (unidentified)	4	2	18.2
Surfperch, Silver	5	1	9.1
Total		11	100

C. CPUE

Catch per Angler Day = 1.22 Catch per Angler Hour = 0.42

Table 38. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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	=	9
Total Hours Effort for Anglers Intercepted	=	26.0
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
Surfperches	1	3	50.0	0.14**	0.42
Greenlings (unidentified)	2	2	33.3	0.00**	0.00
Surfperch, Silver	3	1	16.7	0.14	0.14
Total		6	100		0.56

C. CPUE

Catch per Angler Day	=	0.67	Catch per Angler Hour	=	0.23
Kg per Angler Day	=	0.06	Kg per Angler Hour	=	0.02

* 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 3 (Ocean) in 1981 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 = 9
 Total Hours Effort for Anglers Intercepted = 26.0
 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)	
Surfperch, Silver	1	0.14	1	%100.0	1	0.14	207	0
Total		0.14	1	100	1			

C. CPUE***

Catch per Angler Day = 0.11 Catch per Angler Hour = 0.04
 Kg per Angler Day = 0.02 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 40. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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	=	69.0
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	10	38.5
Croaker, White	2	8	30.8
Rockfishes (unidentified)	3	2	7.7
Seaperch, Rubberlip	4	2	7.7
Flounders, Righteye	5	2	7.7
Sharks	6	1	3.8
Lingcod	7	1	3.8
Total		26	100

C. CPUE

Catch per Angler Day = 1.63 Catch per Angler Hour = 0.38

Table 41. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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	=	69.0
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
Croaker, White	1	8	72.7	0.26	2.10
Seaperch, Rubberlip	2	2	18.2	0.00**	0.00
Rockfishes (unidentified)	3	1	9.1	0.00**	0.00
Total		11	100		2.10

C. CPUE

Catch per Angler Day	=	0.69	Catch per Angler Hour	=	0.16
Kg per Angler Day	=	0.13	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 42. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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 = 69.0
 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)	
Croaker, White	1	2.10	8	%100.0	8	0.26	284	15
Total		2.10	8	100	8			

C. CPUE***

Catch per Angler Day = 0.50 Catch per Angler Hour = 0.12
 Kg per Angler Day = 0.13 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 43. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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	=	24
Total Hours Effort for Anglers Intercepted	=	86.5
Total Hours Still to Fish (Incomplete Trips)	=	8.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Smelt, Surf	1	12	52.2
Surfperch, Barred	2	6	26.1
Surfperch, Silver	3	3	13.0
Surfperches	4	1	4.3
Sanddab, Pacific	5	1	4.3
Total		23	100

C. CPUE

Catch per Angler Day = 0.96 Catch per Angler Hour = 0.27

Table 44. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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	=	24
Total Hours Effort for Anglers Intercepted	=	86.5
Total Hours Still to Fish (Incomplete Trips)	=	8.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Smelt, Surf	1	12	52.2	0.06	0.75
Surfperch, Barred	2	6	26.1	0.38	2.26
Surfperch, Silver	3	3	13.0	0.26	0.77
Surfperches	4	1	4.3	0.34**	0.34
Sanddab, Pacific	5	1	4.3	0.09	0.09
Total		23	100		4.21

C. CPUE

Catch per Angler Day	=	0.96	Catch per Angler Hour	=	0.27
Kg per Angler Day	=	0.18	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 45. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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 = 24
 Total Hours Effort for Anglers Intercepted = 86.5
 Total Hours Still to Fish (Incomplete Trips) = 8.0

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	2.26	6	26.1	6	0.38	262	52
Surfperch, Silver	2	0.78	3	13.0	3	0.26	249	18
Smelt, Surf	3	0.75	12	52.2	10	0.06	207	23
Sanddab, Pacific	4	0.09	1	4.3	1	0.09	203	0
Surfperches	5	0.00	1	4.3	0	0.00	0	0
Total		3.87	23	100	20			

C. CPUE***

Catch per Angler Day = 0.96 Catch per Angler Hour = 0.27
 Kg per Angler Day = 0.16 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 46. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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 = 23
 Total Hours Effort for Anglers Intercepted = 156.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfishes (unidentified)	1	33	42.3
Salmon	2	18	23.1
Rockfish, Blue	3	6	7.7
Croaker, White	4	6	7.7
Salmon, Chinook (King)	5	4	5.1
Cabezon	6	3	3.8
Sanddab, Pacific	7	3	3.8
Flounder, Starry	8	2	2.6
Sharks	9	1	1.3
Sturgeons (unidentified)	10	1	1.3
Lingcod	11	1	1.3
Total		78	100

C. CPUE

Catch per Angler Day = 3.39 Catch per Angler Hour = 0.50

Table 47. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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	=	23
Total Hours Effort for Anglers Intercepted	=	156.5
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
Rockfishes (unidentified)	1	33	55.9	0.56**	18.48
Rockfish, Blue	2	6	10.2	0.56	3.36
Croaker, White	3	6	10.2	0.38	2.29
Salmon, Chinook (King)	4	4	6.8	4.83	19.31
Cabazon	5	3	5.1	0.00**	0.00
Sanddab, Pacific	6	3	5.1	0.05	0.14
Flounder, Starry	7	2	3.4	0.00**	0.00
Salmon	8	1	1.7	4.83**	4.83
Lingcod	9	1	1.7	4.11	4.11
Total		59	100		52.52

C. CPUE

Catch per Angler Day	=	2.57	Catch per Angler Hour	=	0.38
Kg per Angler Day	=	2.28	Kg per Angler Hour	=	0.34

* 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 48. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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 = 23
 Total Hours Effort for Anglers Intercepted = 156.5
 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)	
Salmon, Chinook (King)	1	19.31	4	20.0	4	4.83	762	193
Lingcod	2	4.11	1	5.0	1	4.11	724	0
Rockfish, Blue	3	3.36	6	30.0	6	0.56	330	36
Croaker, White	4	2.29	6	30.0	6	0.38	320	23
Sanddab, Pacific	5	0.05	1	5.0	1	0.05	170	0
Salmon	6	0.00	1	5.0	0	0.00	0	0
Rockfishes (unidentified)	7	0.00	1	5.0	0	0.00	0	0
Total		29.12	20	100	18			

C. CPUE***

Catch per Angler Day = 0.87 Catch per Angler Hour = 0.13
 Kg per Angler Day = 1.27 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 49. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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 = 61
 Total Hours Effort for Anglers Intercepted = 463.5
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Yellowtail	1	33	22.8
Salmon, Chinook (King)	2	31	21.4
Rockfish, Greenspotted	3	28	19.3
Bocaccio	4	16	11.0
Chilipepper	5	9	6.2
Rockfish, Blue	6	9	6.2
Rockfish, Greenstriped	7	5	3.4
Rockfish, Canary	8	5	3.4
Croaker, White	9	4	2.8
Salmon	10	2	1.4
Sharks	11	1	0.7
Rockfish, Rosy	12	1	0.7
Cowcod	13	1	0.7
Total		145	100

C. CPUE

Catch per Angler Day = 2.38 Catch per Angler Hour = 0.31

Table 50. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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 = 61
 Total Hours Effort for Anglers Intercepted = 463.5
 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	33	25.8	0.95	31.38
Rockfish, Greenspotted	2	28	21.9	0.91	25.35
Salmon, Chinook (King)	3	23	18.0	3.49	80.24
Bocaccio	4	16	12.5	1.86	29.74
Chilipepper	5	9	7.0	1.00	9.04
Rockfish, Blue	6	7	5.5	0.53	3.73
Rockfish, Greenstriped	7	5	3.9	0.41	2.05
Rockfish, Canary	8	5	3.9	1.30	6.48
Rockfish, Rosy	9	1	0.8	0.23	0.23
Cowcod	10	1	0.8	4.74	4.74
Total		128	100		192.97

C. CPUE

Catch per Angler Day = 2.10 Catch per Angler Hour = 0.28
 Kg per Angler Day = 3.16 Kg per Angler Hour = 0.42

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

Table 51. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1981 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	=	61
Total Hours Effort for Anglers Intercepted	=	463.5
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)	
Salmon, Chinook (King)	1	80.24	23	18.0	23	3.49	701	107
Rockfish, Yellowtail	2	31.38	33	25.8	28	0.95	395	64
Bocaccio	3	29.74	16	12.5	16	1.86	549	78
Rockfish, Greenspotted	4	25.35	28	21.9	27	0.91	378	52
Chilipepper	5	9.04	9	7.0	9	1.00	424	59
Rockfish, Canary	6	6.48	5	3.9	5	1.30	427	94
Cowcod	7	4.74	1	0.8	1	4.74	662	0
Rockfish, Blue	8	3.73	7	5.5	7	0.53	327	14
Rockfish, Greenstriped	9	2.05	5	3.9	5	0.41	326	32
Rockfish, Rosy	10	0.23	1	0.8	1	0.23	240	0
Total		192.97	128	100	122			

C. CPUE***

Catch per Angler Day	=	2.10	Catch per Angler Hour	=	0.28
Kg per Angler Day	=	3.16	Kg per Angler Hour	=	0.42

* 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 52. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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	=	125
Total Hours Effort for Anglers Intercepted	=	370.5
Total Hours Still to Fish (Incomplete Trips)	=	5.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	77	34.4
Anchovy, Northern	2	24	10.7
Seaperch, White	3	18	8.0
Shark, Leopard	4	13	5.8
Surfperch, Walleye	5	13	5.8
Rockfishes (unidentified)	6	12	5.4
Rockfish, Brown	7	12	5.4
Croaker, White	8	11	4.9
Flounder, Starry	9	8	3.6
Seaperch, Rubberlip	10	7	3.1
Perch, Shiner	11	6	2.7
Tomcod, Pacific	12	3	1.3
Seaperch, Rainbow	13	3	1.3
Unidentified Fishes	14	2	0.9
Bass, Striped	15	2	0.9
Surfperches	16	2	0.9
Surfperch, Silver	17	2	0.9
Flounders, Lefteye	18	2	0.9
Sharks	19	1	0.4
Skate, Big	20	1	0.4
Stingrays	21	1	0.4
Perch, Black	22	1	0.4
Perch, Pile	23	1	0.4
Flounders, Righteye	24	1	0.4
Sole, Butter	25	1	0.4
Total		224	100

C. CPUE

Catch per Angler Day = 1.79 Catch per Angler Hour = 0.60

Table 53. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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	=	125
Total Hours Effort for Anglers Intercepted	=	370.5
Total Hours Still to Fish (Incomplete Trips)	=	5.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Anchovy, Northern	1	24	20.7	0.00**	0.00
Seaperch, White	2	18	15.5	0.20	3.54
Sculpin, Pacific Staghorn	3	13	11.2	0.07	0.91
Surfperch, Walleye	4	13	11.2	0.19	2.53
Croaker, White	5	11	9.5	0.18	2.00
Flounder, Starry	6	8	6.9	0.24	1.93
Rockfish, Brown	7	7	6.0	0.14	0.98
Seaperch, Rubberlip	8	5	4.3	0.29	1.46
Tomcod, Pacific	9	3	2.6	0.07	0.21
Seaperch, Rainbow	10	3	2.6	0.11	0.32
Surfperches	11	2	1.7	0.20**	0.40
Surfperch, Silver	12	2	1.7	0.13	0.26
Flounders, Lefteye	13	2	1.7	0.00**	0.48
Skate, Big	14	1	0.9	0.92	0.92
Bass, Striped	15	1	0.9	0.00**	0.00
Perch, Black	16	1	0.9	0.00**	0.00
Perch, Pile	17	1	0.9	0.00**	0.00
Sole, Butter	18	1	0.9	0.09	0.09
Total		116	100		16.01

C. CPUE

Catch per Angler Day	=	0.93	Catch per Angler Hour	=	0.31
Kg per Angler Day	=	0.13	Kg per Angler Hour	=	0.04

* 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 (Bay) in 1981 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 = 125
 Total Hours Effort for Anglers Intercepted = 370.5
 Total Hours Still to Fish (Incomplete Trips) = 5.0

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	2.00	11	19.0	11	0.18	237	66
Flounder, Starry	2	1.93	8	13.8	6	0.24	277	24
Seaperch, White	3	1.77	9	15.5	9	0.20	243	55
Seaperch, Rubberlip	4	1.46	5	8.6	5	0.29	245	19
Rockfish, Brown	5	0.98	7	12.1	7	0.14	196	16
Skate, Big	6	0.92	1	1.7	1	0.92	451	0
Surfperch, Walleye	7	0.58	3	5.2	3	0.19	221	30
Seaperch, Rainbow	8	0.32	3	5.2	3	0.11	188	14
Surfperch, Silver	9	0.26	2	3.4	2	0.13	201	10
Tomcod, Pacific	10	0.21	3	5.2	3	0.07	209	4
Sculpin, Pacific Staghorn	11	0.21	3	5.2	3	0.07	186	27
Sole, Butter	12	0.09	1	1.7	1	0.09	201	0
Flounders, Lefteye	13	0.00	2	3.4	2	0.00	216	4
Total		10.72	58	100	56			

C. CPUE***

Catch per Angler Day = 0.46 Catch per Angler Hour = 0.16
 Kg per Angler Day = 0.09 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 55. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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 = 10
 Total Hours Effort for Anglers Intercepted = 40.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	7	63.6
Jacksmelt	2	2	18.2
Rockfish, Brown	3	2	18.2
Total		11	100

C. CPUE

Catch per Angler Day = 1.10 Catch per Angler Hour = 0.28

Table 56. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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 = 10
 Total Hours Effort for Anglers Intercepted = 40.0
 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
Croaker, White	1	7	77.8	0.09	0.61
Jacksmelt	2	2	22.2	0.05	0.10
Total		9	100		0.71

C. CPUE

Catch per Angler Day = 0.90 Catch per Angler Hour = 0.23
 Kg per Angler Day = 0.07 Kg per Angler Hour = 0.02

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

Table 57. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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	=	10
Total Hours Effort for Anglers Intercepted	=	40.0
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)	
Croaker, White	1	0.61	7	77.8	7	0.09	197	25
Jacksmelt	2	0.10	2	22.2	2	0.05	194	40
Total		0.71	9	100	9			

C. CPUE***

Catch per Angler Day	=	0.90	Catch per Angler Hour	=	0.23
Kg per Angler Day	=	0.07	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 58. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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	=	71
Total Hours Effort for Anglers Intercepted	=	242.5
Total Hours Still to Fish (Incomplete Trips)	=	4.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	19	18.4
Seaperch, Rubberlip	2	19	18.4
Shark, Leopard	3	12	11.7
Seaperch, Rainbow	4	10	9.7
Perch, Shiner	5	8	7.8
Perch, Pile	6	6	5.8
Rockfish, Brown	7	5	4.9
Lingcod	8	4	3.9
Surfperches	9	4	3.9
Seaperch, White	10	3	2.9
Flounder, Starry	11	3	2.9
Unidentified Fishes	12	2	1.9
Skates	13	2	1.9
Greenling, Kelp	14	1	1.0
Sculpin, Buffalo	15	1	1.0
Cabezon	16	1	1.0
Surfperch, Redtail	17	1	1.0
Surfperch, Barred	18	1	1.0
Goby, Yellowfin	19	1	1.0
Total		103	100

C. CPUE

Catch per Angler Day = 1.45 Catch per Angler Hour = 0.42

Table 59. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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	=	71
Total Hours Effort for Anglers Intercepted	=	242.5
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
Seaperch, Rubberlip	1	17	24.3	0.43	7.38
Sculpin, Pacific Staghorn	2	11	15.7	0.00**	0.00
Seaperch, Rainbow	3	10	14.3	0.30	3.01
Perch, Shiner	4	6	8.6	0.00**	0.00
Rockfish, Brown	5	5	7.1	0.07	0.37
Perch, Pile	6	5	7.1	0.18	0.92
Seaperch, White	7	3	4.3	0.20	0.61
Flounder, Starry	8	3	4.3	0.13	0.39
Shark, Leopard	9	2	2.9	0.00**	0.00
Lingcod	10	2	2.9	0.84	1.68
Surfperches	11	2	2.9	0.34**	0.68
Greenling, Kelp	12	1	1.4	0.57	0.57
Sculpin, Buffalo	13	1	1.4	0.13	0.13
Surfperch, Redtail	14	1	1.4	0.00**	0.00
Surfperch, Barred	15	1	1.4	0.00**	0.00
Total		70	100		15.74

C. CPUE

Catch per Angler Day	=	0.99	Catch per Angler Hour	=	0.29
Kg per Angler Day	=	0.22	Kg per Angler Hour	=	0.06

* 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 1981 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	=	71
Total Hours Effort for Anglers Intercepted	=	242.5
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)	
Seaperch, Rubberlip	1	3.48	8	23.5	8	0.43	264	76
Lingcod	2	1.68	2	5.9	2	0.84	425	23
Seaperch, Rainbow	3	1.21	4	11.8	4	0.30	258	55
Perch, Pile	4	0.92	5	14.7	5	0.18	218	45
Seaperch, White	5	0.61	3	8.8	2	0.20	248	66
Greenling, Kelp	6	0.57	1	2.9	1	0.57	344	0
Flounder, Starry	7	0.39	3	8.8	3	0.13	232	16
Rockfish, Brown	8	0.37	5	14.7	5	0.07	153	31
Sculpin, Buffalo	9	0.13	1	2.9	1	0.13	231	0
Surfperches	10	0.00	2	5.9	0	0.00	0	0
Total		9.34	34	100	31			

C. CPUE***

Catch per Angler Day	=	0.48	Catch per Angler Hour	=	0.14
Kg per Angler Day	=	0.13	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 61. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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	=	355.0
Total Hours Still to Fish (Incomplete Trips)	=	6.4

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	49	32.2
Seaperch, Rubberlip	2	42	27.6
Bass, Striped	3	24	15.8
Sharks	4	9	5.9
Shark, Leopard	5	7	4.6
Surfperches	6	5	3.3
Stingrays	7	3	2.0
Flounders, Righteye	8	3	2.0
Sturgeon, White	9	2	1.3
Croaker, White	10	2	1.3
Surfperch, Walleye	11	2	1.3
Skates	12	1	0.7
Perch, Black	13	1	0.7
Flounders, Lefteye	14	1	0.7
Flounder, Starry	15	1	0.7
Total		152	100

C. CPUE

Catch per Angler Day = 2.05 Catch per Angler Hour = 0.43

Table 62. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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	=	355.0
Total Hours Still to Fish (Incomplete Trips)	=	6.4

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, Rubberlip	1	42	70.0	0.25	10.50
Bass, Striped	2	6	10.0	1.34	8.04
Sculpin, Pacific Staghorn	3	3	5.0	0.00**	0.00
Sturgeon, White	4	2	3.3	15.73	31.46
Surfperch, Walleye	5	2	3.3	0.03	0.07
Shark, Leopard	6	1	1.7	3.56	3.56
Stingrays	7	1	1.7	0.00**	0.00
Croaker, White	8	1	1.7	0.14	0.14
Perch, Black	9	1	1.7	0.18	0.18
Flounders, Righteye	10	1	1.7	0.00**	0.00
Total		60	100		53.94

C. CPUE

Catch per Angler Day	=	0.81	Catch per Angler Hour	=	0.17
Kg per Angler Day	=	0.73	Kg per Angler Hour	=	0.15

* 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 1981 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 = 355.0
 Total Hours Still to Fish (Incomplete Trips) = 6.4

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	31.46	2	13.3	2	15.73	1339	90
Bass, Striped	2	8.04	6	40.0	6	1.34	597	105
Shark, Leopard	3	3.56	1	6.7	1	3.56	721	0
Seaperch, Rubberlip	4	0.50	2	13.3	2	0.25	234	1
Perch, Black	5	0.18	1	6.7	1	0.18	207	0
Croaker, White	6	0.14	1	6.7	1	0.14	231	0
Surfperch, Walleye	7	0.07	2	13.3	2	0.03	140	11
Total		43.94	15	100	15			

C. CPUE***

Catch per Angler Day = 0.20 Catch per Angler Hour = 0.04
 Kg per Angler Day = 0.59 Kg per Angler Hour = 0.12

* 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).

Table 64. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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 = 9
 Total Hours Effort for Anglers Intercepted = 64.0
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Bass, Striped	1	22	%100.0
Total		22	100

C. CPUE

Catch per Angler Day = 2.44 Catch per Angler Hour = 0.34

Table 65. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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 = 9
 Total Hours Effort for Anglers Intercepted = 64.0
 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
Bass, Striped	1	15	%100.0	1.30	19.44
Total		15	100		19.44

C. CPUE

Catch per Angler Day = 1.67 Catch per Angler Hour = 0.23
 Kg per Angler Day = 2.16 Kg per Angler Hour = 0.30

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

Table 66. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1981 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 = 9
 Total Hours Effort for Anglers Intercepted = 64.0
 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)	
Bass, Striped	1	18.14	14	%100.0	14	1.30	560	158
Total		18.14	14	100	14			

C. CPUE***

Catch per Angler Day = 1.56 Catch per Angler Hour = 0.22
 Kg per Angler Day = 2.02 Kg per Angler Hour = 0.28

* 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 67. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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	=	48
Total Hours Effort for Anglers Intercepted	=	172.5
Total Hours Still to Fish (Incomplete Trips)	=	14.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperches	1	11	29.7
Sculpin, Pacific Staghorn	2	9	24.3
Surfperch, Walleye	3	4	10.8
Sole, Sand	4	4	10.8
Croaker, White	5	3	8.1
Seaperch, White	6	3	8.1
Surfperch, Barred	7	2	5.4
Seaperch, Rainbow	8	1	2.7
Total		37	100

C. CPUE

Catch per Angler Day = 0.77 Catch per Angler Hour = 0.21

Table 68. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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	=	48
Total Hours Effort for Anglers Intercepted	=	172.5
Total Hours Still to Fish (Incomplete Trips)	=	14.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperches	1	5	21.7	0.10**	0.50
Surfperch, Walleye	2	4	17.4	0.11	0.42
Sole, Sand	3	4	17.4	0.07	0.26
Croaker, White	4	3	13.0	0.13	0.38
Seaperch, White	5	3	13.0	0.09	0.26
Surfperch, Barred	6	2	8.7	0.09	0.18
Sculpin, Pacific Staghorn	7	1	4.3	0.00**	0.00
Seaperch, Rainbow	8	1	4.3	0.11	0.11
Total		23	100		2.12

C. CPUE

Catch per Angler Day	=	0.48	Catch per Angler Hour	=	0.13
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 69. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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 = 48
 Total Hours Effort for Anglers Intercepted = 172.5
 Total Hours Still to Fish (Incomplete Trips) = 14.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Seaperch, White	1	0.26	3	30.0	3	0.09	193	3
Surfperch, Walleye	2	0.21	2	20.0	2	0.11	189	22
Surfperch, Barred	3	0.18	2	20.0	2	0.09	171	5
Croaker, White	4	0.13	1	10.0	1	0.13	225	0
Seaperch, Rainbow	5	0.11	1	10.0	1	0.11	189	0
Sole, Sand	6	0.07	1	10.0	1	0.07	182	0
Total		0.95	10	100	10			

C. CPUE***

Catch per Angler Day = 0.21 Catch per Angler Hour = 0.06
 Kg per Angler Day = 0.02 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 70. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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	=	61
Total Hours Effort for Anglers Intercepted	=	163.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sole, Sand	1	5	26.3
Seaperch, White	2	3	15.8
Flounder, Starry	3	3	15.8
Sculpin, Pacific Staghorn	4	2	10.5
Ray, Bat	5	1	5.3
Jacksmelt	6	1	5.3
Cabezon	7	1	5.3
Surfperches	8	1	5.3
Mackerels and Tunas	9	1	5.3
Mackerel, Pacific (Chub)	10	1	5.3
Total		19	100

C. CPUE

Catch per Angler Day = 0.31 Catch per Angler Hour = 0.12

Table 71. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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	=	61
Total Hours Effort for Anglers Intercepted	=	163.0
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
Sole, Sand	1	5	31.3	0.00**	0.00
Seaperch, White	2	3	18.8	0.00**	0.00
Flounder, Starry	3	3	18.8	2.55	7.64
Jacksmelt	4	1	6.3	0.00**	0.00
Sculpin, Pacific Staghorn	5	1	6.3	0.00**	0.00
Cabezon	6	1	6.3	0.52	0.52
Surfperches	7	1	6.3	0.00**	0.00
Mackerel, Pacific (Chub)	8	1	6.3	0.26	0.26
Total		16	100		8.42

C. CPUE

Catch per Angler Day	=	0.26	Catch per Angler Hour	=	0.10
Kg per Angler Day	=	0.14	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 72. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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 = 61
 Total Hours Effort for Anglers Intercepted = 163.0
 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)	
Flounder, Starry	1	5.09	2	50.0	2	2.55	563	56
Cabazon	2	0.52	1	25.0	1	0.52	309	0
Mackerel, Pacific (Chub)	3	0.26	1	25.0	1	0.26	275	0
Total		5.88	4	100	4			

C. CPUE***

Catch per Angler Day = 0.07 Catch per Angler Hour = 0.02
 Kg per Angler Day = 0.10 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 73. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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 = 85
 Total Hours Effort for Anglers Intercepted = 286.5
 Total Hours Still to Fish (Incomplete Trips) = 4.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	229	87.7
Sole, Sand	2	9	3.4
Croaker, White	3	8	3.1
Lingcod	4	5	1.9
Surfperches	5	3	1.1
Surfperch, Walleye	6	2	0.8
Jacksmelt	7	1	0.4
Rockfish, Copper	8	1	0.4
Perch, Black	9	1	0.4
Seaperch, White	10	1	0.4
Surfperch, Calico	11	1	0.4
Total		261	100

C. CPUE

Catch per Angler Day = 3.07 Catch per Angler Hour = 0.91

Table 74. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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	=	85
Total Hours Effort for Anglers Intercepted	=	286.5
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
Surfperch, Barred	1	214	88.1	0.28	59.30
Sole, Sand	2	9	3.7	0.09	0.85
Croaker, White	3	8	3.3	0.11	0.85
Lingcod	4	5	2.1	2.77	13.86
Surfperch, Walleye	5	2	0.8	0.18	0.36
Jacksmelt	6	1	0.4	0.42	0.42
Rockfish, Copper	7	1	0.4	0.57	0.57
Perch, Black	8	1	0.4	0.31	0.31
Seaperch, White	9	1	0.4	0.15	0.15
Surfperch, Calico	10	1	0.4	0.41	0.41
Total		243	100		77.07

C. CPUE

Catch per Angler Day	=	2.86	Catch per Angler Hour	=	0.85
Kg per Angler Day	=	0.91	Kg per Angler Hour	=	0.27

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

Table 75. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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	=	85
Total Hours Effort for Anglers Intercepted	=	286.5
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)	
Surfperch, Barred	1	54.59	197	87.6	187	0.28	233	53
Lingcod	2	13.86	5	2.2	5	2.77	634	27
Croaker, White	3	0.85	8	3.6	8	0.11	206	38
Sole, Sand	4	0.76	8	3.6	8	0.09	200	26
Rockfish, Copper	5	0.57	1	0.4	1	0.57	315	0
Jacksmelt	6	0.42	1	0.4	1	0.42	373	0
Surfperch, Calico	7	0.41	1	0.4	1	0.41	288	0
Surfperch, Walleye	8	0.36	2	0.9	2	0.18	220	15
Perch, Black	9	0.31	1	0.4	1	0.31	258	0
Seaperch, White	10	0.15	1	0.4	1	0.15	229	0
Total		72.26	225	100	215			

C. CPUE***

Catch per Angler Day	=	2.65	Catch per Angler Hour	=	0.79
Kg per Angler Day	=	0.85	Kg per Angler Hour	=	0.25

* 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 1981 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	=	54
Total Hours Effort for Anglers Intercepted	=	169.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	44	21.3
Mackerel, Pacific (Chub)	2	42	20.3
Croaker, White	3	38	18.4
Sanddab, Pacific	4	32	15.5
Rockfishes (unidentified)	5	7	3.4
Rockfish, Brown	6	6	2.9
Rockfish, Yellowtail	7	6	2.9
Rockfish, Rosethorn	8	6	2.9
Rockfish, Olive	9	6	2.9
Rockfish, Canary	10	5	2.4
Rockfish, Gopher	11	4	1.9
Rockfish, Starry	12	3	1.4
Rockfish, Copper	13	2	1.0
Lingcod	14	2	1.0
Skates	15	1	0.5
Rockfish, Vermilion	16	1	0.5
Rockfish, Black-and-yellow	17	1	0.5
Cabezon	18	1	0.5
Total		207	100

C. CPUE

Catch per Angler Day = 3.83 Catch per Angler Hour = 1.22

Table 77. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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	=	54
Total Hours Effort for Anglers Intercepted	=	169.5
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	40	28.6	0.37	14.87
Sanddab, Pacific	2	32	22.9	0.17	5.38
Croaker, White	3	13	9.3	0.24	3.08
Mackerel, Pacific (Chub)	4	12	8.6	0.60	7.24
Rockfish, Brown	5	6	4.3	0.61	3.67
Rockfish, Rosethorn	6	6	4.3	0.24	1.45
Rockfish, Olive	7	6	4.3	0.86	5.14
Rockfish, Yellowtail	8	5	3.6	0.22	1.09
Rockfish, Canary	9	5	3.6	0.27	1.35
Rockfish, Gopher	10	4	2.9	0.36	1.42
Rockfish, Starry	11	3	2.1	0.43	1.29
Rockfish, Copper	12	2	1.4	0.27	0.55
Lingcod	13	2	1.4	0.00**	0.00
Skates	14	1	0.7	0.00**	0.00
Rockfishes (unidentified)	15	1	0.7	0.43**	0.43
Rockfish, Vermilion	16	1	0.7	0.38	0.38
Rockfish, Black-and-yellow	17	1	0.7	0.49	0.49
Total		140	100		47.82

C. CPUE

Catch per Angler Day	=	2.59	Catch per Angler Hour	=	0.83
Kg per Angler Day	=	0.89	Kg per Angler Hour	=	0.28

* 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 1981 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 = 54
 Total Hours Effort for Anglers Intercepted = 169.5
 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)	
Mackerel, Pacific (Chub)	1	4.23	7	10.8	7	0.60	348	41
Rockfish, Blue	2	3.72	10	15.4	10	0.37	282	50
Rockfish, Brown	3	3.67	6	9.2	6	0.61	320	49
Croaker, White	4	3.08	13	20.0	13	0.24	274	23
Rockfish, Olive	5	2.57	3	4.6	3	0.86	400	41
Rockfish, Rosethorn	6	1.45	6	9.2	6	0.24	245	15
Rockfish, Canary	7	1.35	5	7.7	5	0.27	264	22
Rockfish, Starry	8	1.29	3	4.6	3	0.43	297	25
Rockfish, Yellowtail	9	1.09	5	7.7	5	0.22	247	23
Rockfish, Gopher	10	0.71	2	3.1	2	0.36	264	37
Rockfish, Copper	11	0.55	2	3.1	2	0.27	247	11
Rockfish, Black-and-yellow	12	0.49	1	1.5	1	0.49	294	0
Rockfish, Vermilion	13	0.38	1	1.5	1	0.38	283	0
Sanddab, Pacific	14	0.17	1	1.5	1	0.17	248	0
Total		24.73	65	100	65			

C. CPUE***

Catch per Angler Day = 1.20 Catch per Angler Hour = 0.38
 Kg per Angler Day = 0.46 Kg per Angler Hour = 0.15

* 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 1981 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 = 10
 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
Lingcod	1	17	70.8
Rockfish, Vermilion	2	3	12.5
Rockfish, Olive	3	2	8.3
Cabezon	4	2	8.3
Total		24	100

C. CPUE

Catch per Angler Day = 2.40 Catch per Angler Hour = 3.69

Table 80. Sampled Effort, Ranked Catch and CPUE for Area 4
in 1981 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 = 10
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
Lingcod	1	17	70.8	3.29	55.90
Rockfish, Vermilion	2	3	12.5	3.11	9.34
Rockfish, Olive	3	2	8.3	1.11	2.21
Cabezon	4	2	8.3	3.04	6.08
Total		24	100		73.54

C. CPUE

Catch per Angler Day = 2.40 Catch per Angler Hour = 3.69
Kg per Angler Day = 7.35 Kg per Angler Hour = 11.31

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

Table 81. Sampled Effort, Ranked Catch and CPUE for Area 4
in 1981 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	=	10
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	55.90	17	70.8	17	3.29	665	67
Rockfish, Vermilion	2	9.34	3	12.5	3	3.11	582	28
Cabezón	3	6.08	2	8.3	2	3.04	589	45
Rockfish, Olive	4	2.21	2	8.3	2	1.11	437	2
Total		73.54	24	100	24			

C. CPUE***

Catch per Angler Day	=	2.40	Catch per Angler Hour	=	3.69
Kg per Angler Day	=	7.35	Kg per Angler Hour	=	11.31

* 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 1981 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	=	94
Total Hours Effort for Anglers Intercepted	=	514.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfishes (unidentified)	1	311	35.8
Lingcod	2	221	25.4
Chilipepper	3	95	10.9
Rockfish, Blue	4	63	7.2
Bocaccio	5	58	6.7
Mackerel, Pacific (Chub)	6	42	4.8
Rockfish, Yellowtail	7	30	3.5
Sandabs	8	11	1.3
Rockfish, Brown	9	6	0.7
Rockfish, Greenspotted	10	6	0.7
Rockfish, Copper	11	5	0.6
Rockfish, Rosethorn	12	4	0.5
Rockfish, Canary	13	4	0.5
Rockfish, Vermilion	14	3	0.3
Surfperch, Barred	15	3	0.3
Rockfish, Olive	16	2	0.2
Bottomfishes (Groundfishes)	17	1	0.1
Rockfish, Greenstriped	18	1	0.1
Rockfish, Starry	19	1	0.1
Wolf-eel	20	1	0.1
Sanddab, Pacific	21	1	0.1
Total		869	100

C. CPUE

Catch per Angler Day	=	9.24	Catch per Angler Hour	=	1.69
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Table 83. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1981 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	=	94
Total Hours Effort for Anglers Intercepted	=	514.0
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	282	34.4	0.78**	219.96
Lingcod	2	204	24.9	3.81	777.44
Chilipepper	3	94	11.5	0.59	55.06
Rockfish, Blue	4	63	7.7	0.52	32.91
Bocaccio	5	58	7.1	1.33	76.96
Mackerel, Pacific (Chub)	6	41	5.0	0.61	24.91
Rockfish, Yellowtail	7	30	3.7	0.80	24.02
Sandabs	8	11	1.3	0.16**	1.76
Rockfish, Brown	9	6	0.7	1.13	6.79
Rockfish, Greenspotted	10	6	0.7	0.83	4.98
Rockfish, Copper	11	5	0.6	0.95	4.77
Rockfish, Rosethorn	12	4	0.5	0.28	1.13
Rockfish, Canary	13	4	0.5	0.74	2.95
Rockfish, Vermilion	14	3	0.4	1.28	3.85
Surfperch, Barred	15	3	0.4	0.19	0.56
Rockfish, Olive	16	2	0.2	1.44	2.87
Rockfish, Greenstriped	17	1	0.1	0.02	0.02
Rockfish, Starry	18	1	0.1	0.82	0.82
Wolf-eel	19	1	0.1	8.44	8.44
Sanddab, Pacific	20	1	0.1	0.16	0.16
Total		820	100		1250.35

C. CPUE

Catch per Angler Day	=	8.72	Catch per Angler Hour	=	1.60
Kg per Angler Day	=	13.30	Kg per Angler Hour	=	2.43

* 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 1981 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 = 94
 Total Hours Effort for Anglers Intercepted = 514.0
 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)	
Lingcod	1	625.00	164	36.5	164	3.81	694	88
Bocaccio	2	75.63	57	12.7	40	1.33	486	91
Chilipepper	3	55.06	94	20.9	74	0.59	360	44
Rockfish, Blue	4	32.91	63	14.0	52	0.52	320	42
Rockfish, Yellowtail	5	24.02	30	6.7	30	0.80	376	47
Wolf-eel	6	8.44	1	0.2	1	8.44	965	0
Rockfish, Brown	7	6.79	6	1.3	6	1.13	399	40
Rockfish, Greenspotted	8	4.98	6	1.3	6	0.83	372	27
Rockfish, Copper	9	4.77	5	1.1	5	0.95	369	46
Rockfish, Vermilion	10	3.85	3	0.7	3	1.28	430	11
Rockfish, Canary	11	2.95	4	0.9	4	0.74	359	73
Rockfish, Olive	12	2.87	2	0.4	2	1.44	466	85
Mackerel, Pacific (Chub)	13	2.43	4	0.9	4	0.61	350	36
Rockfish, Rosethorn	14	1.13	4	0.9	4	0.28	256	31
Rockfish, Starry	15	0.82	1	0.2	1	0.82	366	0
Surfperch, Barred	16	0.56	3	0.7	3	0.19	215	17
Sanddab, Pacific	17	0.16	1	0.2	1	0.16	242	0
Rockfish, Greenstriped	18	0.02	1	0.2	1	0.02	129	0
Total		852.39	449	100	401			

C. CPUE***

Catch per Angler Day = 4.78 Catch per Angler Hour = 0.87
 Kg per Angler Day = 9.07 Kg per Angler Hour = 1.66

* 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 Barred Surfperch
 Taken by Beach and Bank Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 4, 1981.

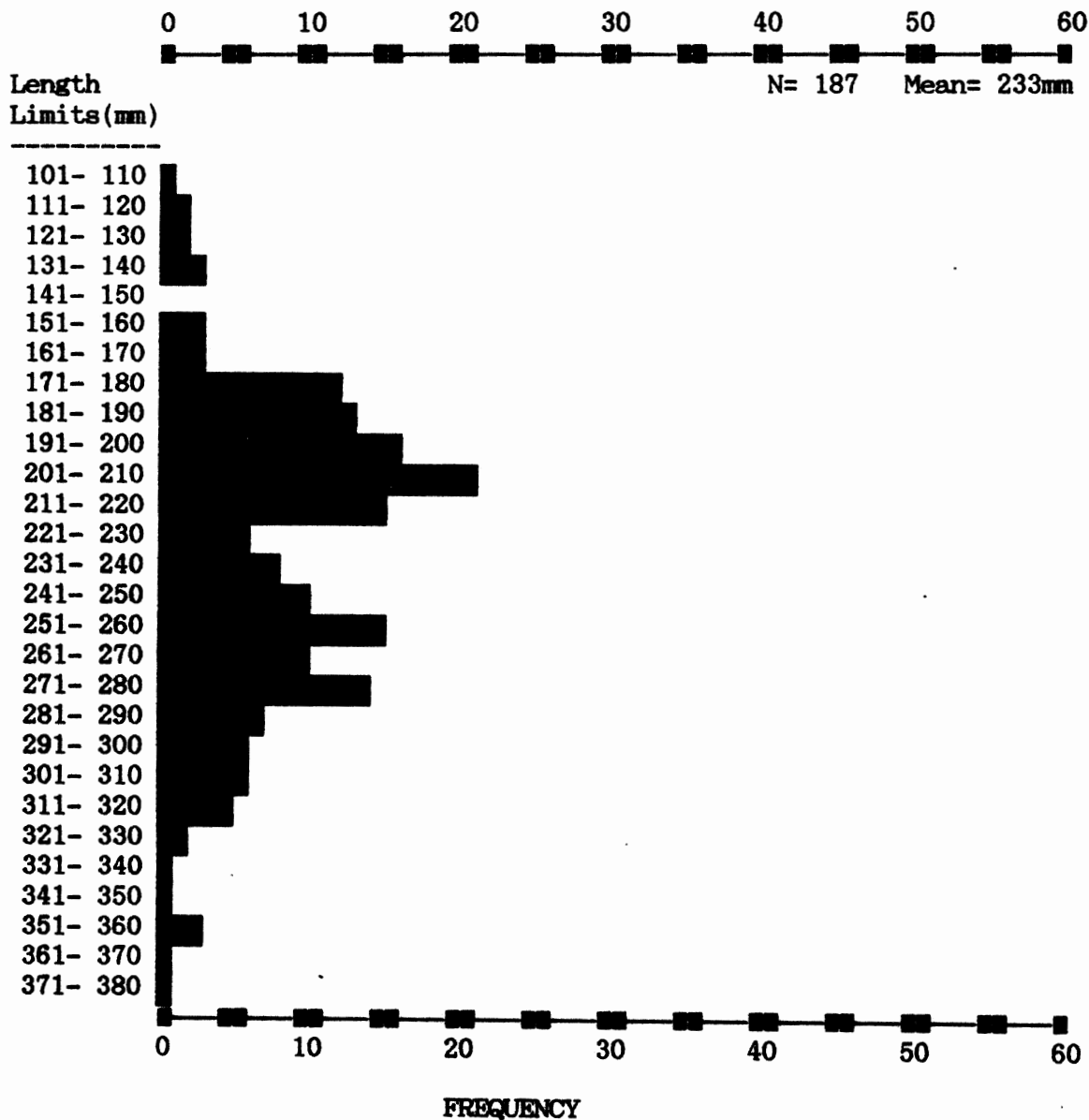


Figure 6. Length-Frequency Histogram for Chilipepper
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 4, 1981.

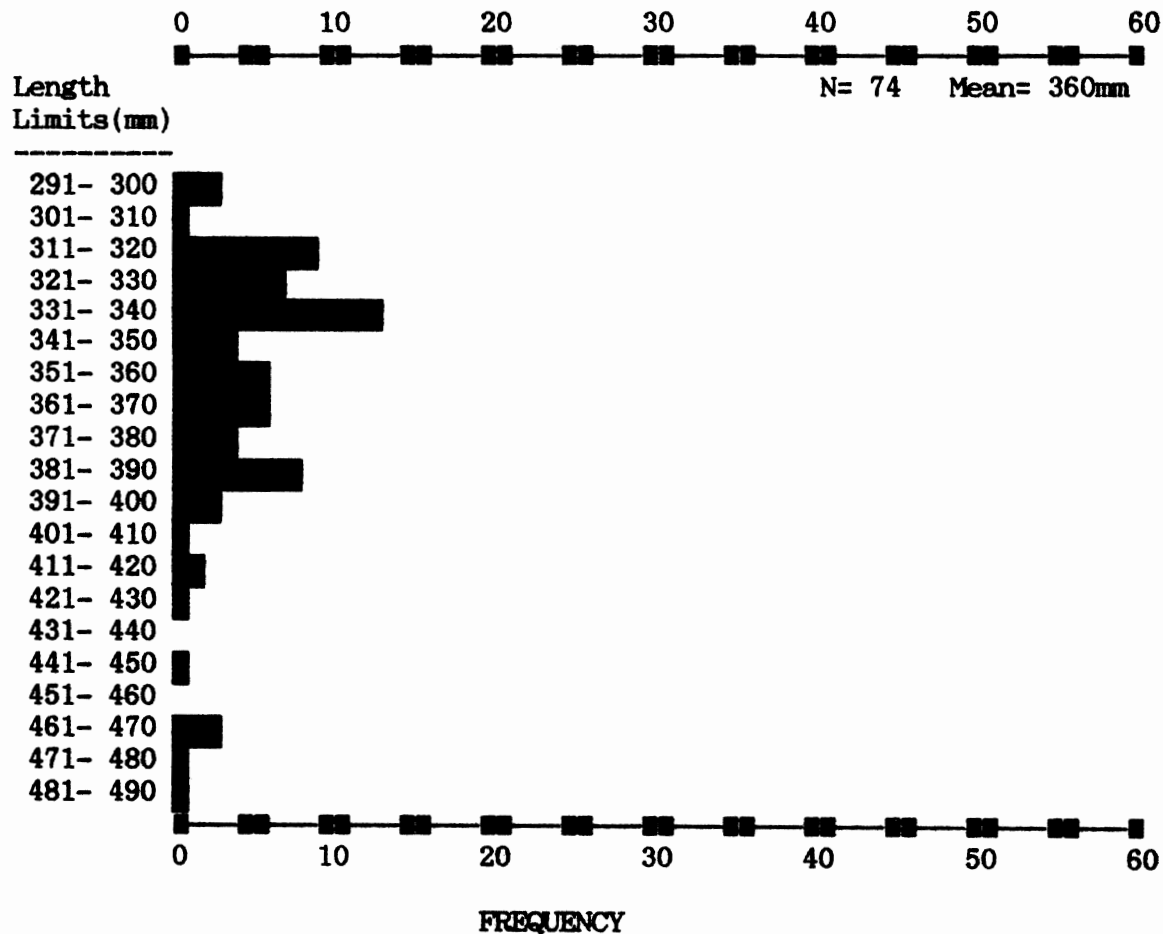


Figure 7. Length-Frequency Histogram for Lingcod
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 4, Quarter 4, 1981.

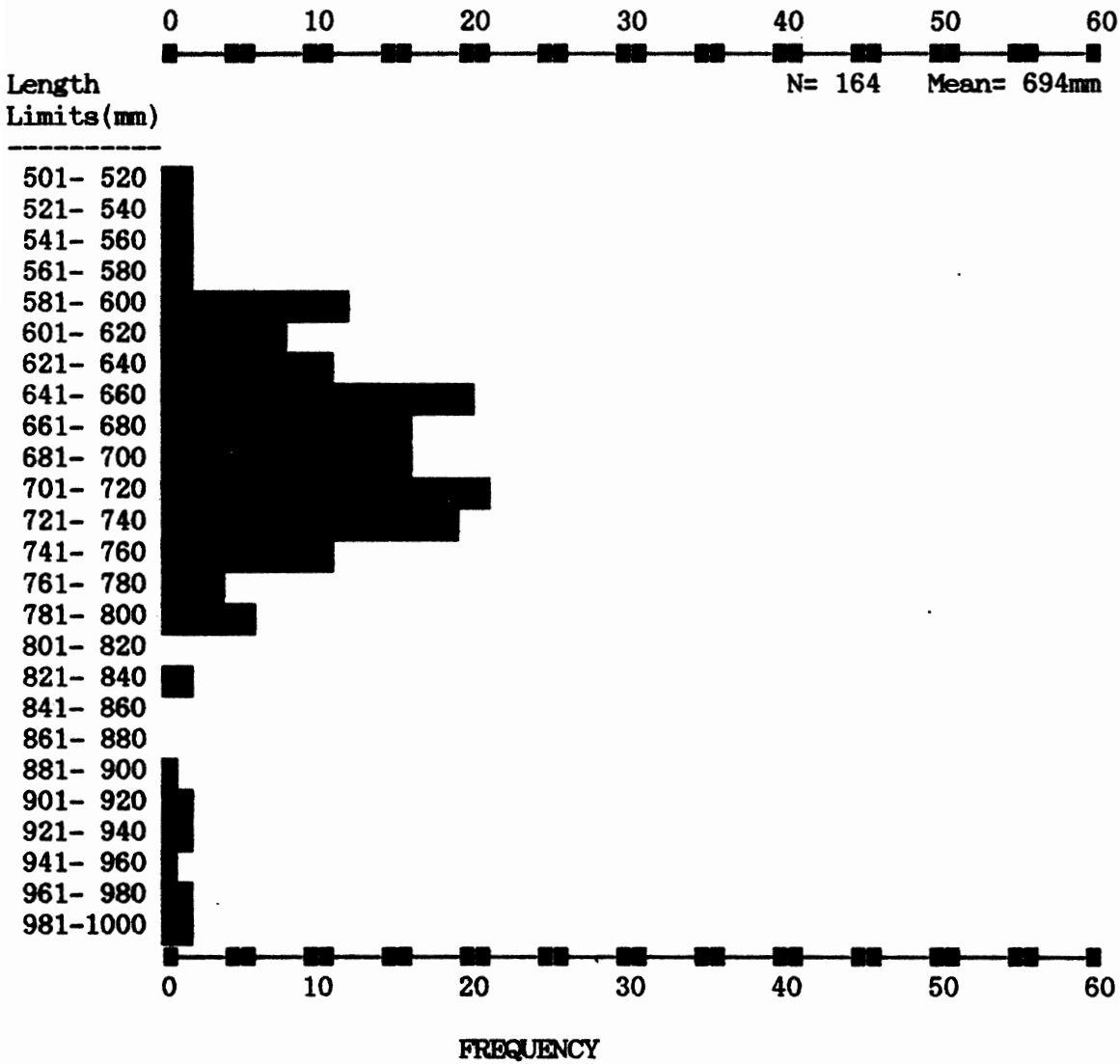


Table 85. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	96
Total Hours Effort for Anglers Intercepted	=	239.0
Total Hours Still to Fish (Incomplete Trips)	=	6.1

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Mackerel, Pacific (Chub)	1	74	34.3
Perch, Shiner	2	37	17.1
Jacksnelt	3	31	14.4
Surfperches	4	15	6.9
Croaker, White	5	14	6.5
Surfperch, Walleye	6	14	6.5
Surfperch, Barred	7	12	5.6
Sculpin, Pacific Staghorn	8	10	4.6
Thornback	9	2	0.9
Surfperch, Calico	10	2	0.9
Sanddab, Pacific	11	2	0.9
Flounder, Starry	12	2	0.9
Skates	13	1	0.5
Total		216	100

C. CPUE

Catch per Angler Day	=	2.25	Catch per Angler Hour	=	0.90
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Table 86. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 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 = 96
 Total Hours Effort for Anglers Intercepted = 239.0
 Total Hours Still to Fish (Incomplete Trips) = 6.1

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Mackerel, Pacific (Chub)	1	72	49.7	0.50	36.26
Jacksmelt	2	29	20.0	0.16	4.58
Perch, Shiner	3	12	8.3	0.03	0.39
Surfperch, Walleye	4	11	7.6	0.18	1.99
Surfperch, Barred	5	8	5.5	0.15	1.17
Croaker, White	6	7	4.8	0.27	1.88
Thornback	7	2	1.4	0.59	1.17
Surfperch, Calico	8	2	1.4	0.23	0.46
Flounder, Starry	9	2	1.4	0.36	0.73
Total		145	100		48.63

C. CPUE

Catch per Angler Day = 1.51 Catch per Angler Hour = 0.61
 Kg per Angler Day = 0.51 Kg per Angler Hour = 0.20

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

Table 87. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 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	=	96
Total Hours Effort for Anglers Intercepted	=	239.0
Total Hours Still to Fish (Incomplete Trips)	=	6.1

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Mackerel, Pacific (Chub)	1	26.19	52	48.6	39	0.50	329	39
Jacksmelt	2	3.63	23	21.5	19	0.16	259	68
Croaker, White	3	1.35	5	4.7	5	0.27	282	44
Thornback	4	1.17	2	1.9	2	0.59	520	0
Surfperch, Barred	5	1.17	8	7.5	8	0.15	195	33
Flounder, Starry	6	0.73	2	1.9	2	0.36	315	21
Surfperch, Calico	7	0.46	2	1.9	2	0.23	230	71
Perch, Shiner	8	0.39	12	11.2	12	0.03	134	8
Surfperch, Walleye	9	0.18	1	0.9	1	0.18	220	0
Total		35.26	107	100	90			

C. CPUE***

Catch per Angler Day	=	1.11	Catch per Angler Hour	=	0.45
Kg per Angler Day	=	0.37	Kg per Angler Hour	=	0.15

* 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 88. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 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 = 65
 Total Hours Effort for Anglers Intercepted = 191.5
 Total Hours Still to Fish (Incomplete Trips) = 22.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	147	67.7
Surfperch, Silver	2	47	21.7
Surfperches	3	8	3.7
Rockfishes (unidentified)	4	4	1.8
Surfperch, Walleye	5	3	1.4
Surfperch, Calico	6	3	1.4
Rockfish, Gopher	7	1	0.5
Cabezon	8	1	0.5
Bass, Kelp	9	1	0.5
Sanddab, Pacific	10	1	0.5
Flounder, Starry	11	1	0.5
Total		217	100

C. CPUE

Catch per Angler Day = 3.34 Catch per Angler Hour = 1.13

Table 89. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 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	=	65
Total Hours Effort for Anglers Intercepted	=	191.5
Total Hours Still to Fish (Incomplete Trips)	=	22.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Barred	1	141	85.5	0.31	43.01
Surfperch, Silver	2	14	8.5	0.09	1.27
Surfperch, Walleye	3	3	1.8	0.00**	0.00
Surfperch, Calico	4	3	1.8	0.21	0.63
Cabazon	5	1	0.6	0.29	0.29
Bass, Kelp	6	1	0.6	0.14	0.14
Sanddab, Pacific	7	1	0.6	0.04	0.04
Flounder, Starry	8	1	0.6	0.62	0.62
Total		165	100		46.01

C. CPUE

Catch per Angler Day	=	2.54	Catch per Angler Hour	=	0.86
Kg per Angler Day	=	0.71	Kg per Angler Hour	=	0.24

* 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 1981 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	=	65
Total Hours Effort for Anglers Intercepted	=	191.5
Total Hours Still to Fish (Incomplete Trips)	=	22.0

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	32.64	107	89.9	101	0.31	243	48
Flounder, Starry	2	0.62	1	0.8	1	0.62	370	0
Surfperch, Silver	3	0.55	6	5.0	6	0.09	180	15
Surfperch, Calico	4	0.42	2	1.7	2	0.21	235	7
Cabezon	5	0.29	1	0.8	1	0.29	248	0
Bass, Kelp	6	0.14	1	0.8	1	0.14	230	0
Sanddab, Pacific	7	0.04	1	0.8	1	0.04	165	0
Total		34.70	119	100	113			

C. CPUE***

Catch per Angler Day	=	1.83	Catch per Angler Hour	=	0.62
Kg per Angler Day	=	0.53	Kg per Angler Hour	=	0.18

* 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 1981 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	=	95
Total Hours Effort for Anglers Intercepted	=	367.9
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	360	46.1
Rockfish, Gopher	2	90	11.5
Rockfishes (unidentified)	3	50	6.4
Rockfish, Yellowtail	4	36	4.6
Lingcod	5	30	3.8
Rockfish, Olive	6	24	3.1
Mackerel, Pacific (Chub)	7	23	2.9
Rockfish, Copper	8	22	2.8
Rockfish, Starry	9	22	2.8
Rockfish, Brown	10	20	2.6
Rockfish, Canary	11	16	2.0
Cabezon	12	13	1.7
Rockfish, Rosy	13	12	1.5
Rockfish, Vermilion	14	8	1.0
Rockfish, Black	15	7	0.9
Jacksmelt	16	6	0.8
Rockfish, Flag	17	6	0.8
Croaker, White	18	6	0.8
Rockfish, China	19	5	0.6
Sanddab, Pacific	20	5	0.6
Spiny Dogfish	21	4	0.5
Rockfish, Kelp	22	4	0.5
Rockfish, Black-and-yellow	23	2	0.3
Greenling, Kelp	24	2	0.3
Sculpin, Pacific Staghorn	25	2	0.3
Halibut, California	26	2	0.3

(Table 91. - continued)

Common name	Rank by Number	Number Caught	% by Number
Skate, Big	27	1	0.1
Rockfish, Grass	28	1	0.1
Treefish	29	1	0.1
Flounder, Starry	30	1	0.1
Total		781	100

C. CPUE

Catch per Angler Day = 8.22 Catch per Angler Hour = 2.12

Table 92. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 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	=	95
Total Hours Effort for Anglers Intercepted	=	367.9
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
Rockfish, Blue	1	356	46.7	0.50	179.60
Rockfish, Gopher	2	90	11.8	0.49	44.48
Rockfishes (unidentified)	3	49	6.4	0.54**	26.46
Rockfish, Yellowtail	4	36	4.7	0.36	12.85
Rockfish, Olive	5	24	3.1	0.94	22.64
Lingcod	6	23	3.0	2.50	57.49
Rockfish, Copper	7	22	2.9	0.81	17.90
Rockfish, Starry	8	22	2.9	0.64	14.11
Mackerel, Pacific (Chub)	9	22	2.9	0.44	9.65
Rockfish, Brown	10	20	2.6	0.61	12.28
Rockfish, Canary	11	16	2.1	0.42	6.69
Cabezon	12	13	1.7	1.42	18.49
Rockfish, Rosy	13	12	1.6	0.20	2.43
Rockfish, Vermilion	14	8	1.0	1.73	13.81
Rockfish, Black	15	7	0.9	0.55	3.87
Jacksmelt	16	6	0.8	0.00**	0.00
Rockfish, Flag	17	6	0.8	0.62	3.73
Croaker, White	18	6	0.8	0.24	1.45
Rockfish, China	19	5	0.7	0.54	2.70
Spiny Dogfish	20	4	0.5	2.50	9.99
Rockfish, Kelp	21	4	0.5	0.85	3.38
Sanddab, Pacific	22	4	0.5	0.18	0.71
Rockfish, Black-and-yellow	23	2	0.3	0.48	0.96
Greenling, Kelp	24	2	0.3	0.57	1.14
Skate, Big	25	1	0.1	28.37	28.37
Rockfish, Grass	26	1	0.1	1.81	1.81
Treefish	27	1	0.1	0.97	0.97

(Table 92. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Flounder, Starry	28	1	0.1	1.03	1.03
Total		763	100		499.00

C. CPUE

Catch per Angler Day = 8.03 Catch per Angler Hour = 2.07
 Kg per Angler Day = 5.25 Kg per Angler Hour = 1.36

* 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 93. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 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	=	95
Total Hours Effort for Anglers Intercepted	=	367.9
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)	
Rockfish, Blue	1	179.60	356	50.8	181	0.50	317	39
Lingcod	2	52.49	21	3.0	21	2.50	603	83
Rockfish, Gopher	3	44.48	90	12.8	78	0.49	294	20
Skate, Big	4	28.37	1	0.1	1	28.37	1500	0
Rockfish, Olive	5	22.64	24	3.4	24	0.94	407	56
Cabezon	6	18.49	13	1.9	13	1.42	434	82
Rockfish, Copper	7	17.90	22	3.1	22	0.81	345	57
Rockfish, Starry	8	14.11	22	3.1	22	0.64	336	30
Rockfish, Vermilion	9	13.81	8	1.1	8	1.73	465	82
Rockfish, Yellowtail	10	12.85	36	5.1	36	0.36	287	41
Rockfish, Brown	11	12.28	20	2.9	20	0.61	321	44
Mackerel, Pacific (Chub)	12	9.21	21	3.0	19	0.44	318	30
Rockfish, Canary	13	6.69	16	2.3	16	0.42	305	23
Rockfish, Black	14	3.87	7	1.0	7	0.55	331	20
Rockfish, Flag	15	3.73	6	0.9	6	0.62	333	10
Rockfish, Kelp	16	3.38	4	0.6	4	0.85	387	35
Rockfish, China	17	2.70	5	0.7	5	0.54	307	26
Spiny Dogfish	18	2.50	1	0.1	1	2.50	895	0
Rockfish, Rosy	19	2.43	12	1.7	12	0.20	231	17
Rockfish, Grass	20	1.81	1	0.1	1	1.81	423	0
Croaker, White	21	1.45	6	0.9	6	0.24	273	36
Greenling, Kelp	22	1.14	2	0.3	2	0.57	344	23
Flounder, Starry	23	1.03	1	0.1	1	1.03	432	0
Treefish	24	0.97	1	0.1	1	0.97	388	0
Rockfish, Black-and-yellow	25	0.96	2	0.3	2	0.48	293	4
Sanddab, Pacific	26	0.54	3	0.4	3	0.18	249	34
Total		459.43	701	100	512			

C. CPUE***

Catch per Angler Day	=	7.38	Catch per Angler Hour	=	1.91
Kg per Angler Day	=	4.84	Kg per Angler Hour	=	1.25

* 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 1981 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	=	10
Total Hours Effort for Anglers Intercepted	=	30.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	135	75.0
Rockfish, Yellowtail	2	21	11.7
Rockfish, Canary	3	6	3.3
Rockfish, Greenspotted	4	4	2.2
Rockfish, Copper	5	3	1.7
Rockfish, Vermilion	6	3	1.7
Rockfish, Flag	7	3	1.7
Rockfish, Rosy	8	2	1.1
Rockfish, Starry	9	1	0.6
Lingcod	10	1	0.6
Mackerel, Pacific (Chub)	11	1	0.6
Total		180	100

C. CPUE

Catch per Angler Day = 18.00 Catch per Angler Hour = 6.00

Table 95. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 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	=	10
Total Hours Effort for Anglers Intercepted	=	30.0
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	135	75.0	0.63	84.52
Rockfish, Yellowtail	2	21	11.7	0.42	8.87
Rockfish, Canary	3	6	3.3	0.65	3.90
Rockfish, Greenspotted	4	4	2.2	0.47	1.87
Rockfish, Copper	5	3	1.7	1.28	3.83
Rockfish, Vermilion	6	3	1.7	1.80	5.39
Rockfish, Flag	7	3	1.7	0.57	1.72
Rockfish, Rosy	8	2	1.1	0.24	0.48
Rockfish, Starry	9	1	0.6	0.62	0.62
Lingcod	10	1	0.6	2.98	2.98
Mackerel, Pacific (Chub)	11	1	0.6	0.43	0.43
Total		180	100		114.60

C. CPUE

Catch per Angler Day	=	18.00	Catch per Angler Hour	=	6.00
Kg per Angler Day	=	11.46	Kg per Angler Hour	=	3.82

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

Table 96. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1981 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 = 10
 Total Hours Effort for Anglers Intercepted = 30.0
 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	84.52	135	75.0	100	0.63	342	37
Rockfish, Yellowtail	2	8.87	21	11.7	21	0.42	307	31
Rockfish, Vermilion	3	5.39	3	1.7	3	1.80	482	15
Rockfish, Canary	4	3.90	6	3.3	6	0.65	354	21
Rockfish, Copper	5	3.83	3	1.7	3	1.28	404	66
Lingcod	6	2.98	1	0.6	1	2.98	650	0
Rockfish, Greenspotted	7	1.87	4	2.2	4	0.47	305	37
Rockfish, Flag	8	1.72	3	1.7	3	0.57	321	40
Rockfish, Starry	9	0.62	1	0.6	1	0.62	335	0
Rockfish, Rosy	10	0.48	2	1.1	2	0.24	245	0
Mackerel, Pacific (Chub)	11	0.43	1	0.6	1	0.43	320	0
Total		114.60	180	100	145			

C. CPUE***

Catch per Angler Day = 18.00 Catch per Angler Hour = 6.00
 Kg per Angler Day = 11.46 Kg per Angler Hour = 3.82

* 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 Barred Surfperch
 Taken by Beach and Bank Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1981.

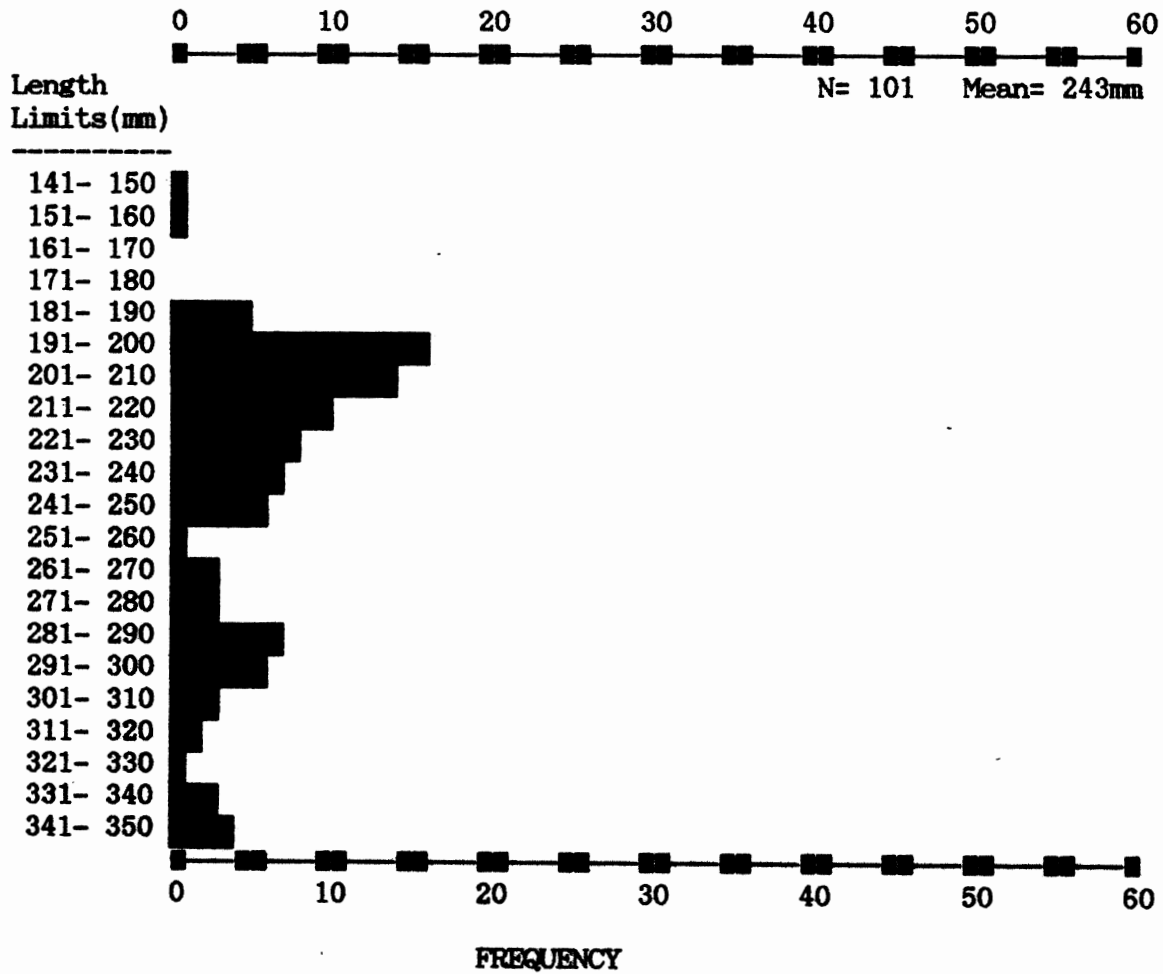


Figure 9. Length-Frequency Histogram for Blue Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1981.

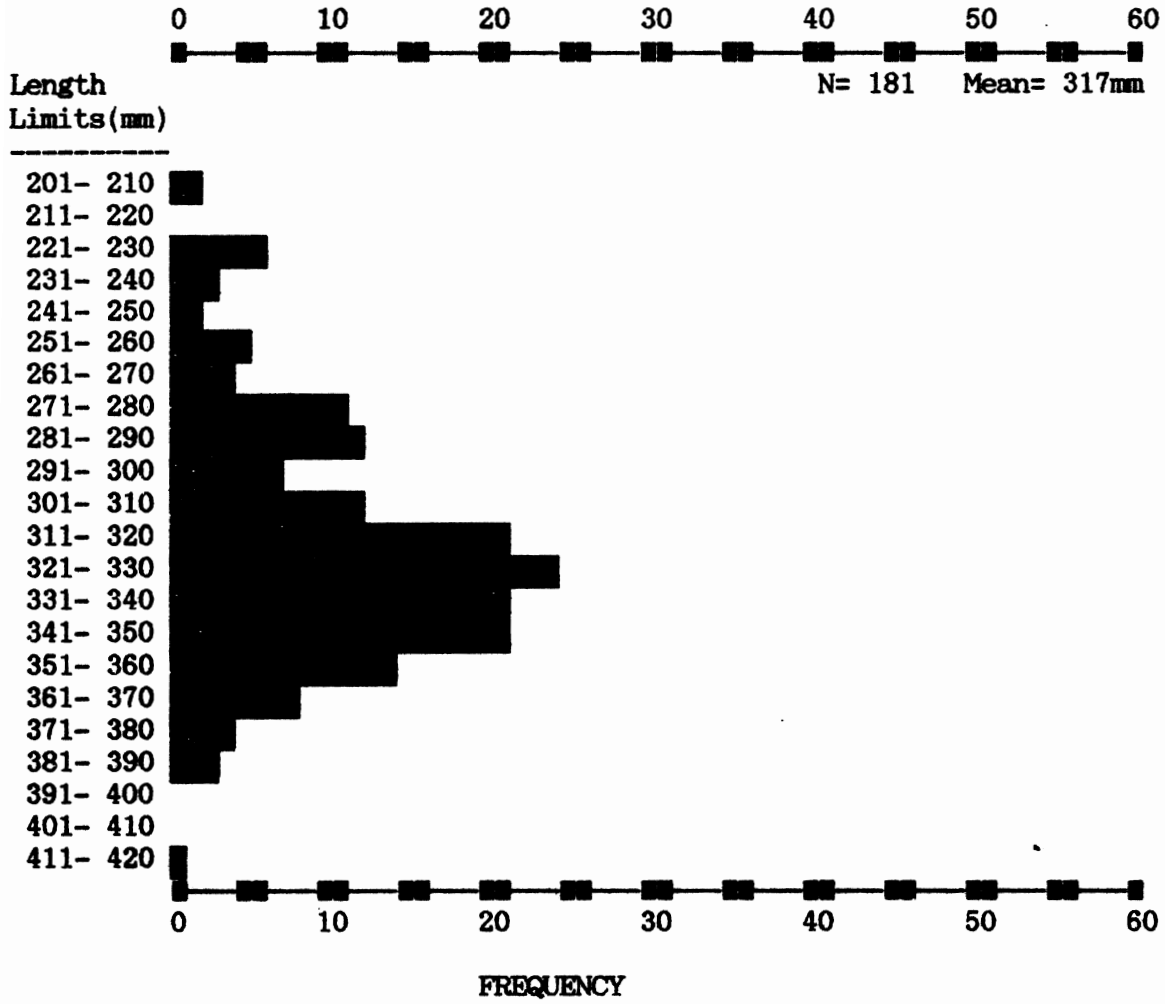


Figure 10. Length-Frequency Histogram for Gopher Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1981.

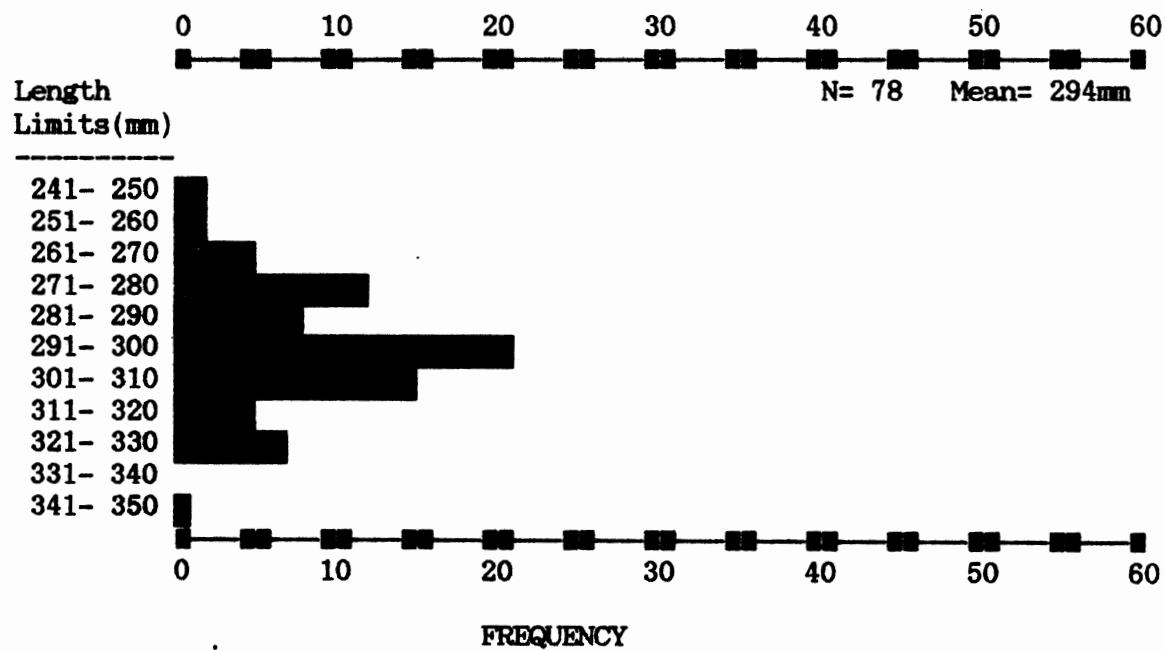


Figure 11. Length-Frequency Histogram for Yellowtail Rockfish
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1981.

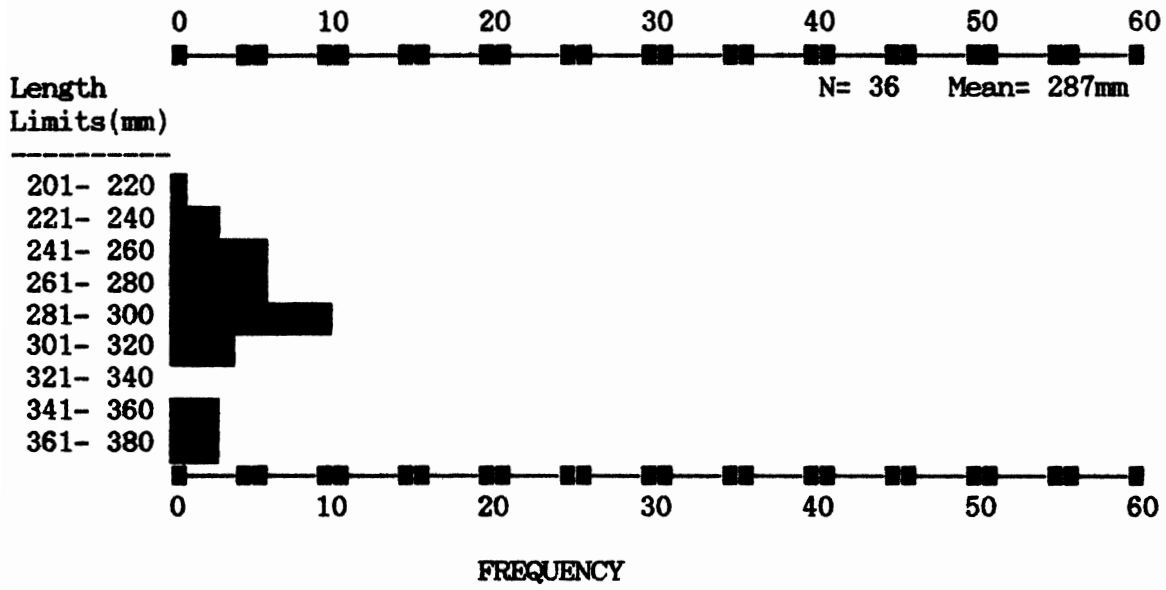
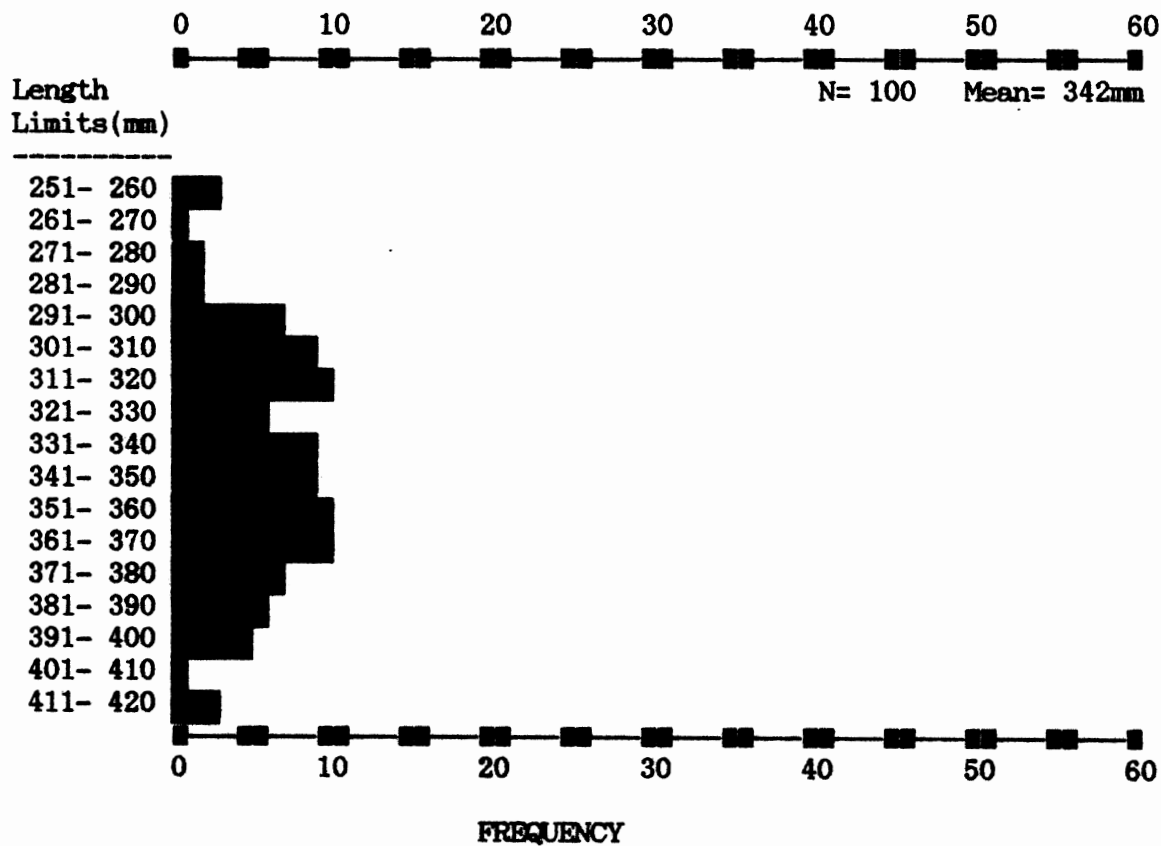


Figure 12. Length-Frequency Histogram for Blue Rockfish
 Taken by All CPFV Anglers Using Hook-and-Line Gear.
 Area 5, Quarter 4, 1981.



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APPENDIX A

Pages 117 to 220 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 1981 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
Wolf-eel	<u>Anarrhichthys ocellatus</u>	0.00000502500	3.09100
Jacksmelt	<u>Atherinopsis californiensis</u>	0.00000098820	3.35360
Flounders, Lefteye	Bothidae		
Bottomfishes (Groundfishes)	Bottom Pisces (Groundfishes)		
Sharks	Chondrichthyes		
Sanddab, Pacific	<u>Citharichthys sordidus</u>	0.00000142860	3.37080
Sandabs	<u>Citharichthys</u> spp.		
Sculpins	Cottidae		
Perch, Shiner	<u>Cymatogaster aggregata</u>	0.00000473500	3.21000
Stingrays	Dasyatidae		
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
Croaker, White	<u>Genyonemus lineatus</u>	0.00000708500	3.08328
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, Butter	<u>Isopsetta isolepis</u>	0.00000277100	3.26480
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
Bass, Striped	<u>Morone saxatilis</u>	0.00001068210	2.90671
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.		
Salmon, Chinook (King)	<u>Oncorhynchus tshawytscha</u>	0.00000944000	3.00000
Lingcod	<u>Ophiodon elongatus</u>	0.00001157000	2.99000
Bass, Kelp	<u>Paralabrax clathratus</u>	0.00000271598	3.27000
Halibut, California	<u>Paralichthys californicus</u>	0.00000849000	3.03300
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		
Sole, Sand	<u>Psettichthys melanostictus</u>	0.00000277100	3.26480
Skate, Big	<u>Raja binoculata</u>	0.00002428050	2.85496
Skate, California	<u>Raja inornata</u>	0.00002430000	2.85000

APPENDIX B (continued)

Common Name	Scientific Name	a	b
Skates	Rajidae		
Seaperch, Rubberlip	<u>Rhacochilus toxotes</u>	0.00003220500	2.90840
Perch, Pile	<u>Rhacochilus vacca</u>	0.00000925500	3.09900
Trout, Cutthroat	<u>Salmo clarkii</u>	0.00000507000	3.14000
Trout, Rainbow	<u>Salmo gairdnerii</u>	0.00000637000	3.06300
Mackerel, Pacific (Chub)	<u>Scomber japonicus</u>	0.00000136600	3.39360
Mackerels and Tunas	Scombridae		
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
Cowcod	<u>Sebastes levis</u>	0.00001851570	2.98070
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
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 serriiceps</u>	0.01240400000	1.89000
Spiny Dogfish	<u>Squalus acanthias</u>	0.00000189000	3.09000
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 1981 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, Redtail	<u>Amphistichus rhodoterus</u>
Jacksmelt	<u>Atherinopsis californiensis</u>
Perch, Shiner	<u>Cymatogaster aggregata</u>
Perch, Black	<u>Embiotoca jacksoni</u>
Anchovy, Northern	<u>Engraulis mordax</u>
Croaker, White	<u>Genyonemus lineatus</u>
Greenling, Kelp	<u>Hexagrammos decagrammus</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>
Salmon, Chinook (King)	<u>Oncorhynchus tshawytscha</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, Copper	<u>Sebastes caurinus</u>
Rockfish, Greenspotted	<u>Sebastes chlorostictus</u>
Rockfish, Greenstriped	<u>Sebastes elongatus</u>
Rockfish, Widow	<u>Sebastes entomelas</u>
Rockfish, Yellowtail	<u>Sebastes flavidus</u>
Chilipepper	<u>Sebastes goodei</u>
Cowcod	<u>Sebastes levis</u>
Rockfish, Black	<u>Sebastes melanops</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>