

State of California  
The Resources Agency  
DEPARTMENT OF FISH AND GAME

MARINE RECREATIONAL FISHERIES STATISTICS SURVEY  
FOR NORTHERN AND CENTRAL CALIFORNIA,  
QUARTERLY REPORT NO. 2,  
OCTOBER TO DECEMBER, 1979

by

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

MARINE RESOURCES

Administrative Report No. 87-16

1987

MARINE RECREATIONAL FISHERIES STATISTICS SURVEY  
FOR NORTHERN AND CENTRAL CALIFORNIA,  
QUARTERLY REPORT NO. 2,  
OCTOBER TO DECEMBER, 1979 1/

by

Konstantin A. Karpov, 2/  
Gerald S. Kwiecien, 2/  
and  
John J. Mello 2/

ABSTRACT

Field intercept Marine Recreational Fisheries Statistics Survey (MRFSS) data for central and northern California, collected in October to December 1979, 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.

---

1/ Marine Resources Administrative Report No 87-16.

2/ Marine Resources Division, 19160 So. Harbor Drive, Fort Bragg, CA 95437.

## ACKNOWLEDGMENTS

We would like to thank all past and current participants in the California MRFSS survey who have worked together as a team to generate the data contained in this report. Thanks are due to Arthur W. Haseltine for his enthusiastic assistance in editing and to Cheryl A. Avants and Patricia V. Velez for assisting in preparing the final manuscript.

Gordon H. Kubota and Larry Pongeggi of C.I.C. Research in San Diego provided generous access to data tapes and their mainframe for downloading to diskettes for our microcomputer use. Stephen J. Crooke provided assistance in obtaining the data disks for the report.

Russell Porter and the Pacific Marine Fisheries Commission deserve special thanks, as their support in developing the program series and continued assistance throughout the project have made this report possible.

This project was partially funded under the Dingell-Johnson Federal Aid Sportfish Restoration Act, project number F-41-R-2.

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
Beach or Bank Anglers Using Shore Net Gear.....	16
Area 2.....	19
Effort, Ranked Catch, and CPUE Tables.....	19
Jetty or Breakwater Anglers Using Hook-and-Line.....	19
Beach or Bank Anglers Using Hook-and-Line.....	22
Beach or Bank Anglers Using Spear Gear.....	25
Area 2, Sub-Area 045.....	28
Effort, Ranked Catch, and CPUE Tables.....	28

<u>Table of Contents (cont'd.)</u>	<u>Page</u>
Private or Rental Boat Anglers Using Hook-and-Line..	28
Private or Rental Boat Anglers Using Spear.....	31
Area 2, Sub-Area 097.....	34
Effort, Ranked Catch, and CPUE Tables.....	34
CPFV Anglers Using Hook-and-Line.....	34
Length-frequency Histogram.....	37
CPFV Anglers Using Hook-and-Line for Blue Rockfish.....	37
CPFV Anglers Using Hook-and-Line for Greenspotted Rockfish.....	38
CPFV Anglers Using Hook-and-Line for Yellowtail Rockfish.....	39
Area 3 (Ocean).....	40
Effort, Ranked Catch, and CPUE Tables.....	40
Pier or Dock Anglers Using Hook-and-Line.....	40
Jetty or Breakwater Anglers Using Hook-and-Line.....	43
Beach or Bank Anglers Using Hook-and-Line.....	46
Private or Rental Boat Anglers Using Hook-and-Line..	49
CPFV Anglers Using Hook-and-Line.....	52
Length-frequency Histogram.....	55
CPFV Anglers Using Hook-and-Line for Blue Rockfish.....	55
CPFV Anglers Using Hook-and-Line for Yellowtail Rockfish.....	56
Area 3 (Bay).....	57
Effort, Ranked Catch, and CPUE Tables.....	57
Pier or Dock Anglers Using Hook-and-Line.....	57
Beach or Bank Anglers Using Hook-and-Line.....	61

<u>Table of Contents (cont'd.)</u>	<u>Page</u>
Private or Rental Boat Anglers Using Hook-and-Line..	64
CPFV Anglers Using Hook-and-Line.....	70
Length-frequency Histograms.....	73
Private or Rental Boat Anglers Using Hook-and-Line for Striped Bass.....	73
Area 4.....	74
Effort, Ranked Catch, and CPUE Tables.....	74
Pier or Dock Anglers Using Hook-and-Line.....	74
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.....	91
CPFV Anglers Using Hook-and-Line.....	94
Length-frequency Histogram.....	99
Private or Rental Boat Anglers Using Hook-and-Line for White Croaker.....	99
Private or Rental Boat Anglers Using Hook-and-Line for Pacific Sanddab.....	100
CPFV Anglers Using Hook-and-Line for Blue Rockfish.....	101
Area 5.....	102
Effort, Ranked Catch, and CPUE Tables.....	102
Pier or Dock Anglers Using Hook-and-Line.....	102
Beach and Bank Anglers Using Hook-and-Line.....	105
Private or Rental Boat Anglers Using Hook-and-Line..	108
CPFV Anglers Using Hook-and-Line.....	114
Length-frequency Histogram.....	117

<u>Table of Contents (cont'd.)</u>	<u>Page</u>
Pier and Dock Anglers Using Hook-and-Line for Pacific (Chub) Mackerel.....	117
Beach and Bank Anglers Using Hook-and-Line for Barred Surfperch.....	118
Private or Rental Boat Anglers Using Hook-and-Line for Black-and-yellow Rockfish.....	119
Private or Rental Boat Anglers Using Hook-and-Line for Blue Rockfish.....	120
Private or Rental Boat Anglers Using Hook-and-Line for Canary Rockfish.....	121
Private or Rental Boat Anglers Using Hook-and-Line for Gopher Rockfish.....	122
CPFV Anglers Using Hook-and-Line for Bocaccio.....	123
CPFV Anglers Using Hook-and-Line for Pacific (Chub) Mackerel.....	124
LITERATURE CITED.....	125
APPENDIX A - Length Frequency Tables.....	126
Area 1.....	126
Pier or Dock Anglers Using Hook-and-Line.....	126
Jetty or Breakwater Anglers Using Hook-and-Line.....	128
Beach or Bank Anglers Using Hook-and-Line.....	133
Beach or Bank Anglers Using Shore Net Gear.....	136
Area 2.....	137
Jetty or Breakwater Anglers Using Hook-and-Line.....	137
Beach or Bank Anglers Using Hook-and-Line.....	138
Beach or Bank Anglers Using Spear Gear.....	143
Area 2, Sub-Area 045.....	149
Private or Rental Boat Anglers Using Hook-and-Line..	149
Private or Rental Boat Anglers Using Spear.....	154

<u>Table of Contents (cont'd.)</u>	<u>Page</u>
Area 2, Sub-Area 097.....	156
CPFV Anglers Using Hook-and-Line.....	156
Area 3 (Ocean).....	167
Pier or Dock Anglers Using Hook-and-Line.....	167
Jetty or Breakwater Anglers Using Hook-and-Line.....	169
Beach or Bank Anglers Using Hook-and-Line.....	170
Private or Rental Boat Anglers Using Hook-and-Line..	171
CPFV Anglers Using Hook-and-Line.....	179
Area 3 (Bay).....	192
Pier or Dock Anglers Using Hook-and-Line.....	192
Private or Rental Boat Anglers Using Hook-and-Line..	202
CPFV Anglers Using Hook-and-Line.....	215
Area 4.....	217
Pier or Dock Anglers Using Hook-and-Line.....	217
Jetty or Breakwater Anglers Using Hook-and-Line.....	226
Beach or Bank Anglers Using Hook-and-Line.....	228
Private or Rental Boat Anglers Using Hook-and-Line..	230
Private or Rental Boat Anglers Using Spear.....	242
CPFV Anglers Using Hook-and-Line.....	247
Area 5.....	258
Pier or Dock Anglers Using Hook-and-Line.....	258
Beach or Bank Anglers Using Hook-and-Line.....	266
Private or Rental Boat Anglers Using Hook-and-Line..	271
CPFV Anglers Using Hook-and-Line.....	291



Table of Contents (cont'd.)

Page

APPENDIX B - List of Caught Species by Scientific and  
Common Name..... 299

APPENDIX C - List of Species with Corrected Lengths..... 302

## 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. 2 covers the period of October to December 1979. 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 Humbolt counties, extends from the Oregon border to Shelter Cove. Both counties are combined in all mode comparisons. Area 2 contains Mendocino County and that part of Sonoma County which is north of Bodega Bay. Both counties are combined for all modes except the boat modes (private/rental boat and CPFV). The San Francisco Area 3 is segregated into ocean and bay. This area includes anglers from six counties; Marin, Contra Costa, Alameda, San Francisco, Santa Clara, and San Mateo. These counties encircle the bay and extend down to Ano Nuevo. Two sets of tables and figures were generated based on whether anglers specified having fished in the ocean or the bay. Bay anglers were predominantly from San Francisco Bay, but also included a small percentage of Halfmoon Bay anglers. Area 4 includes Santa Cruz County and that part of Monterey County which is north of Ragged Point. Area 5, San Luis Obispo County, extends down to Point Sal.

#### Fishing Modes

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

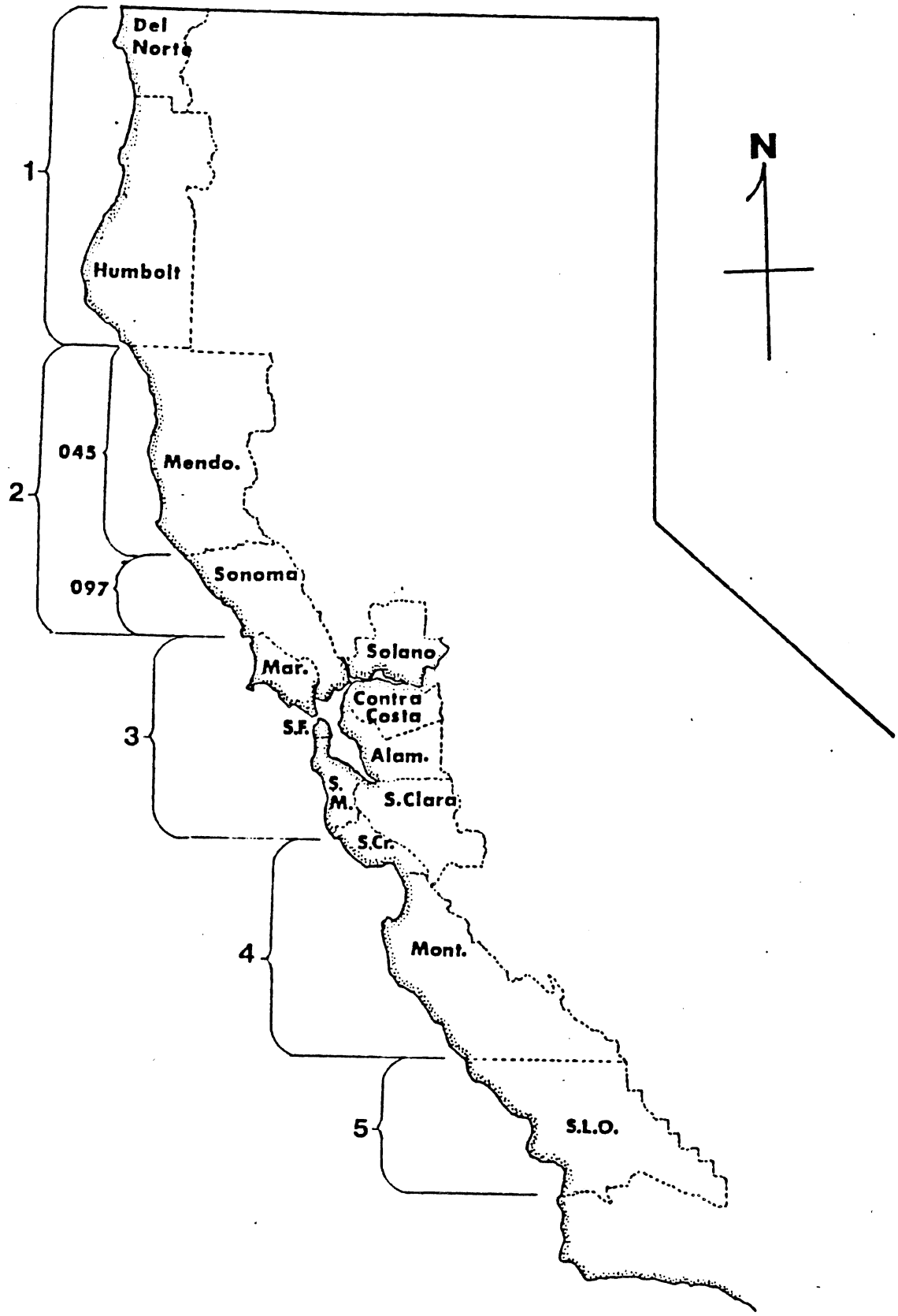


FIGURE 1. Study area counties and sub-areas in northern and central California.

## Gear Types

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

## Catch Definition

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

## Computer-Generated Tables and Figures

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

### Sampled Effort

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

### Ranked Catch

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

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

#### CPUE

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

#### Length-Frequency Data

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

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

#### Species Names and Length-Weight Parameters

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

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

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

Table 1. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1979 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	=	43
Total Hours Effort for Anglers Intercepted	=	81.0
Total Hours Still to Fish (Incomplete Trips)	=	3.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Seaperch, White	1	26	37.7
Sculpins	2	14	20.3
Perch, Shiner	3	10	14.5
Unidentified Fishes	4	4	5.8
Seaperch, Striped	5	4	5.8
Surfperch, Calico	6	4	5.8
Surfperch, Silver	7	3	4.3
Rockfish, Black	8	1	1.4
Cabazon	9	1	1.4
Surfperches	10	1	1.4
Surfperch, Walleye	11	1	1.4
Total		69	100

## C. CPUE

Catch per Angler Day = 1.60      Catch per Angler Hour = 0.85



Table 2. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1979 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 = 43  
 Total Hours Effort for Anglers Intercepted = 81.0  
 Total Hours Still to Fish (Incomplete Trips) = 3.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Seaperch, White	1	26	55.3	0.25	6.44
Perch, Shiner	2	6	12.8	0.04	0.22
Seaperch, Striped	3	4	8.5	0.18	0.73
Surfperch, Calico	4	4	8.5	0.21	0.83
Surfperch, Silver	5	3	6.4	0.40	1.21
Rockfish, Black	6	1	2.1	0.25	0.25
Cabazon	7	1	2.1	0.40	0.40
Surfperches	8	1	2.1	0.22**	0.22
Surfperch, Walleye	9	1	2.1	0.16	0.16
Total		47	100		10.47

## C. CPUE

Catch per Angler Day = 1.09      Catch per Angler Hour = 0.58  
 Kg per Angler Day = 0.24      Kg per Angler Hour = 0.13

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

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

Table 3. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1979 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	=	43
Total Hours Effort for Anglers Intercepted	=	81.0
Total Hours Still to Fish (Incomplete Trips)	=	3.0

## 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	3.72	15	42.9	15	0.25	273	15
Surfperch, Silver	2	1.21	3	8.6	2	0.40	288	4
Surfperch, Calico	3	0.83	4	11.4	4	0.21	229	39
Seaperch, Striped	4	0.73	4	11.4	4	0.18	224	9
Cabezon	5	0.40	1	2.9	1	0.40	281	0
Rockfish, Black	6	0.25	1	2.9	1	0.25	252	0
Perch, Shiner	7	0.22	6	17.1	6	0.04	138	18
Surfperch, Walleye	8	0.16	1	2.9	1	0.16	213	0
Total		7.52	35	100	34			

## C. CPUE\*\*\*

Catch per Angler Day	=	0.81	Catch per Angler Hour	=	0.43
Kg per Angler Day	=	0.17	Kg per Angler Hour	=	0.09

\* 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 1979 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	=	130
Total Hours Effort for Anglers Intercepted	=	334.2
Total Hours Still to Fish (Incomplete Trips)	=	7.2

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Black	1	64	25.2
Greenling, Kelp	2	49	19.3
Surfperch, Redtail	3	40	15.7
Sculpins	4	26	10.2
Seaperch, Striped	5	24	9.4
Rockfish, Blue	6	11	4.3
Salmon, Coho (Silver)	7	6	2.4
Cabazon	8	5	2.0
Surfperches	9	4	1.6
Surfperch, Walleye	10	4	1.6
Flounders, Lefteye	11	4	1.6
Unidentified Fishes	12	3	1.2
Greenling, Rock	13	3	1.2
Lingcod	14	3	1.2
Rockfish, Grass	15	2	0.8
Sole, Sand	16	2	0.8
Rockfishes (unidentified)	17	1	0.4
Rockfish, Copper	18	1	0.4
Irish Lord, Red	19	1	0.4
Flounders, Righteye	20	1	0.4
Total		254	100

## C. CPUE

Catch per Angler Day = 1.95      Catch per Angler Hour = 0.76

Table 5. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1979 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	=	130
Total Hours Effort for Anglers Intercepted	=	334.2
Total Hours Still to Fish (Incomplete Trips)	=	7.2

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Black	1	43	24.6	0.28	12.21
Surfperch, Redtail	2	40	22.9	0.28	11.36
Greenling, Kelp	3	36	20.6	0.46	16.41
Seaperch, Striped	4	21	12.0	0.33	7.02
Rockfish, Blue	5	11	6.3	0.09	0.95
Cabezon	6	5	2.9	1.10	5.49
Sculpins	7	4	2.3	0.95**	3.80
Surfperch, Walleye	8	4	2.3	0.22	0.88
Greenling, Rock	9	3	1.7	0.29	0.88
Lingcod	10	3	1.7	8.23	24.70
Rockfish, Grass	11	2	1.1	0.86	1.73
Rockfish, Copper	12	1	0.6	1.29	1.29
Irish Lord, Red	13	1	0.6	0.21	0.21
Sole, Sand	14	1	0.6	0.62	0.62
Total		175	100		87.54

## C. CPUE

Catch per Angler Day	=	1.35	Catch per Angler Hour	=	0.52
Kg per Angler Day	=	0.67	Kg per Angler Hour	=	0.26

\* 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 1979 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 = 130  
 Total Hours Effort for Anglers Intercepted = 334.2  
 Total Hours Still to Fish (Incomplete Trips) = 7.2

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	24.70	3	1.9	3	8.23	902	128
Greenling, Kelp	2	15.04	33	21.0	30	0.46	309	61
Rockfish, Black	3	10.51	37	23.6	36	0.28	256	50
Surfperch, Redtail	4	10.22	36	22.9	28	0.28	254	29
Seaperch, Striped	5	7.02	21	13.4	21	0.33	267	42
Cabezon	6	4.40	4	2.5	4	1.10	391	95
Rockfish, Grass	7	1.73	2	1.3	2	0.86	337	12
Rockfish, Copper	8	1.29	1	0.6	1	1.29	412	0
Rockfish, Blue	9	0.95	11	7.0	10	0.09	175	24
Surfperch, Walleye	10	0.88	4	2.5	4	0.22	228	31
Greenling, Rock	11	0.88	3	1.9	3	0.29	273	15
Sole, Sand	12	0.62	1	0.6	1	0.62	361	0
Irish Lord, Red	13	0.21	1	0.6	1	0.21	217	0
Total		78.44	157	100	144			

C. CPUE\*\*\*

Catch per Angler Day = 1.21      Catch per Angler Hour = 0.47  
 Kg per Angler Day = 0.60      Kg per Angler Hour = 0.23

\* 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 1979 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	=	42
Total Hours Effort for Anglers Intercepted	=	97.0
Total Hours Still to Fish (Incomplete Trips)	=	8.5

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Redtail	1	32	50.0
Seaperch, White	2	12	18.8
Greenling, Kelp	3	6	9.4
Greenlings (unidentified)	4	2	3.1
Sculpins	5	2	3.1
Cabazon	6	2	3.1
Seaperch, Striped	7	2	3.1
Smelt, Surf	8	1	1.6
Rockfish, Black	9	1	1.6
Greenling, Rock	10	1	1.6
Surfperches	11	1	1.6
Surfperch, Walleye	12	1	1.6
Sole, Sand	13	1	1.6
Total		64	100

## C. CPUE

Catch per Angler Day = 1.52      Catch per Angler Hour = 0.66

Table 8. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1979 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	=	42
Total Hours Effort for Anglers Intercepted	=	97.0
Total Hours Still to Fish (Incomplete Trips)	=	8.5

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Redtail	1	30	53.6	0.44	13.10
Seaperch, White	2	12	21.4	0.23	2.75
Greenling, Kelp	3	5	8.9	0.42	2.11
Cabazon	4	2	3.6	0.38	0.76
Seaperch, Striped	5	2	3.6	0.52	1.04
Smelt, Surf	6	1	1.8	0.00**	0.00
Rockfish, Black	7	1	1.8	0.69	0.69
Greenling, Rock	8	1	1.8	0.14	0.14
Surfperch, Walleye	9	1	1.8	0.19	0.19
Sole, Sand	10	1	1.8	0.13	0.13
Total		56	100		20.91

## C. CPUE

Catch per Angler Day	=	1.33	Catch per Angler Hour	=	0.58
Kg per Angler Day	=	0.50	Kg per Angler Hour	=	0.22

\* 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 1979 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	=	42
Total Hours Effort for Anglers Intercepted	=	97.0
Total Hours Still to Fish (Incomplete Trips)	=	8.5

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Redtail	1	12.67	29	53.7	29	0.44	287	46
Seaperch, White	2	2.75	12	22.2	12	0.23	265	23
Greenling, Kelp	3	2.11	5	9.3	5	0.42	301	65
Seaperch, Striped	4	1.04	2	3.7	2	0.52	315	31
Cabezon	5	0.76	2	3.7	2	0.38	271	48
Rockfish, Black	6	0.69	1	1.9	1	0.69	358	0
Surfperch, Walleye	7	0.19	1	1.9	1	0.19	224	0
Greenling, Rock	8	0.14	1	1.9	1	0.14	212	0
Sole, Sand	9	0.13	1	1.9	1	0.13	226	0
Total		20.48	54	100	54			

## C. CPUE\*\*\*

Catch per Angler Day	=	1.29	Catch per Angler Hour	=	0.56
Kg per Angler Day	=	0.49	Kg per Angler Hour	=	0.21

\* 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 1979 for Quarter 4, by Beach or Bank Anglers Using Shore Net Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted = 9  
 Total Hours Effort for Anglers Intercepted = 18.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Smelt, Surf	1	301	%100.0
Total		301	100

C. CPUE

Catch per Angler Day = 33.44      Catch per Angler Hour = 16.72

Table 11. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1979 for Quarter 4, by Beach or Bank Anglers Using Shore Net Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

## A. Sampled Effort

Number Anglers Intercepted = 9  
 Total Hours Effort for Anglers Intercepted = 18.0  
 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
Smelt, Surf	1	301	%100.0	0.03	9.74
Total		301	100		9.74

## C. CPUE

Catch per Angler Day = 33.44      Catch per Angler Hour = 16.72  
 Kg per Angler Day = 1.08      Kg per Angler Hour = 0.54

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

Table 12. Sampled Effort, Ranked Catch and CPUE for Area 1 in 1979 for Quarter 4, by Beach or Bank Anglers Using Shore Net Gear. Catch Represents Only the Fish Examined by the Sampler.

A. Sampled Effort

Number Anglers Intercepted = 9  
 Total Hours Effort for Anglers Intercepted = 18.0  
 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)	
Smelt, Surf	1	9.74	301	%100.0	20	0.03	172	9
Total		9.74	301	100	20			

C. CPUE\*\*\*

Catch per Angler Day = 33.44      Catch per Angler Hour = 16.72  
 Kg per Angler Day = 1.08      Kg per Angler Hour = 0.54

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

Table 13. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1979 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	=	23
Total Hours Effort for Anglers Intercepted	=	65.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Silver	1	13	65.0
Cabazon	2	2	10.0
Surfperches	3	2	10.0
Greenling, Kelp	4	1	5.0
Surfperch, Calico	5	1	5.0
Flounder, Starry	6	1	5.0
Total		20	100

C. CPUE

Catch per Angler Day = 0.87      Catch per Angler Hour = 0.31

Table 14. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1979 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 = 23  
 Total Hours Effort for Anglers Intercepted = 65.5  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Silver	1	13	81.3	0.16	2.02
Greenling, Kelp	2	1	6.3	0.07	0.07
Surfperch, Calico	3	1	6.3	0.27	0.27
Flounder, Starry	4	1	6.3	0.00**	0.00
Total		16	100		2.35

C. CPUE

Catch per Angler Day = 0.70      Catch per Angler Hour = 0.24  
 Kg per Angler Day = 0.10      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 15. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1979 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 = 23  
 Total Hours Effort for Anglers Intercepted = 65.5  
 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)	
Surfperch, Silver	1	2.02	13	86.7	13	0.16	212	18
Surfperch, Calico	2	0.27	1	6.7	1	0.27	254	0
Greenling, Kelp	3	0.07	1	6.7	1	0.07	164	0
Total		2.35	15	100	15			

## C. CPUE\*\*\*

Catch per Angler Day = 0.65      Catch per Angler Hour = 0.23  
 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 16. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1979 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 = 215.6  
 Total Hours Still to Fish (Incomplete Trips) = 52.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Greenling, Rock	1	22	19.8
Surfperch, Silver	2	22	19.8
Greenling, Kelp	3	20	18.0
Lingcod	4	12	10.8
Surfperch, Redtail	5	7	6.3
Seaperch, Striped	6	6	5.4
Sculpin, Pacific Staghorn	7	4	3.6
Surfperches	8	4	3.6
Unidentified Fishes	9	2	1.8
Rockfish, Blue	10	2	1.8
Sculpin, Buffalo	11	2	1.8
Cabazon	12	2	1.8
Rockfish, Black	13	1	0.9
Rockfish, Vermilion	14	1	0.9
Sculpins	15	1	0.9
Perch, Pile	16	1	0.9
Surfperch, Calico	17	1	0.9
Flounders, Lefteye	18	1	0.9
Total		111	100

C. CPUE

Catch per Angler Day = 1.31      Catch per Angler Hour = 0.51

Table 17. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1979 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	=	215.6
Total Hours Still to Fish (Incomplete Trips)	=	52.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Silver	1	22	23.4	0.18	4.04
Greenling, Rock	2	20	21.3	0.32	6.50
Greenling, Kelp	3	17	18.1	0.35	5.94
Lingcod	4	12	12.8	3.43	41.16
Surfperch, Redtail	5	7	7.4	0.38	2.63
Seaperch, Striped	6	6	6.4	0.45	2.72
Rockfish, Blue	7	2	2.1	0.21	0.43
Cabazon	8	2	2.1	0.00**	0.00
Rockfish, Black	9	1	1.1	0.50	0.50
Rockfish, Vermilion	10	1	1.1	2.59	2.59
Sculpin, Buffalo	11	1	1.1	0.04	0.04
Surfperches	12	1	1.1	0.28**	0.28
Perch, Pile	13	1	1.1	0.87	0.87
Surfperch, Calico	14	1	1.1	0.16	0.16
Total		94	100		67.84

## C. CPUE

Catch per Angler Day	=	1.11	Catch per Angler Hour	=	0.44
Kg per Angler Day	=	0.80	Kg per Angler Hour	=	0.31

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

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



Table 18. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1979 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	=	215.6
Total Hours Still to Fish (Incomplete Trips)	=	52.0

## 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	20.58	6	7.8	6	3.43	677	58
Greenling, Rock	2	5.85	18	23.4	18	0.32	276	50
Greenling, Kelp	3	5.24	15	19.5	15	0.35	280	60
Surfperch, Silver	4	4.04	22	28.6	20	0.18	224	17
Surfperch, Redtail	5	2.63	7	9.1	7	0.38	268	59
Rockfish, Vermilion	6	2.59	1	1.3	1	2.59	547	0
Seaperch, Striped	7	0.91	2	2.6	2	0.45	300	45
Perch, Pile	8	0.87	1	1.3	1	0.87	374	0
Rockfish, Black	9	0.50	1	1.3	1	0.50	320	0
Rockfish, Blue	10	0.43	2	2.6	2	0.21	209	127
Surfperch, Calico	11	0.16	1	1.3	1	0.16	216	0
Sculpin, Buffalo	12	0.04	1	1.3	1	0.04	148	0
Total		43.82	77	100	75			

## C. CPUE\*\*\*

Catch per Angler Day	=	0.91	Catch per Angler Hour	=	0.36
Kg per Angler Day	=	0.52	Kg per Angler Hour	=	0.20

\* 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 1979 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	=	33
Total Hours Effort for Anglers Intercepted	=	44.7
Total Hours Still to Fish (Incomplete Trips)	=	4.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Lingcod	1	26	22.8
Greenling, Kelp	2	21	18.4
Greenling, Rock	3	15	13.2
Rockfish, Blue	4	10	8.8
Cabezon	5	9	7.9
Rockfishes (unidentified)	6	8	7.0
Rockfish, Black	7	7	6.1
Seaperch, Striped	8	7	6.1
Rockfish, Grass	9	2	1.8
Perch, Pile	10	2	1.8
Seaperch, Rubberlip	11	2	1.8
Unidentified Fishes	12	1	0.9
Rockfish, Brown	13	1	0.9
Rockfish, China	14	1	0.9
Rockfish, Black-and-yellow	15	1	0.9
Rockfish, Olive	16	1	0.9
Total		114	100

C. CPUE

Catch per Angler Day =	3.45	Catch per Angler Hour =	2.55
------------------------	------	-------------------------	------

Table 20. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1979 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	=	33
Total Hours Effort for Anglers Intercepted	=	44.7
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
Lingcod	1	26	23.0	3.91	101.78
Greenling, Kelp	2	21	18.6	0.59	12.40
Greenling, Rock	3	15	13.3	0.55	8.19
Rockfish, Blue	4	10	8.8	0.63	6.26
Cabazon	5	9	8.0	1.70	15.32
Rockfishes (unidentified)	6	8	7.1	0.73**	5.84
Rockfish, Black	7	7	6.2	0.49	3.42
Seaperch, Striped	8	7	6.2	0.52	3.65
Rockfish, Grass	9	2	1.8	1.99	3.98
Perch, Pile	10	2	1.8	0.95	1.89
Seaperch, Rubberlip	11	2	1.8	1.27	2.55
Rockfish, Brown	12	1	0.9	1.07	1.07
Rockfish, China	13	1	0.9	0.42	0.42
Rockfish, Black-and-yellow	14	1	0.9	0.79	0.79
Rockfish, Olive	15	1	0.9	0.86	0.86
Total		113	100		168.41

## C. CPUE

Catch per Angler Day	=	3.42	Catch per Angler Hour	=	2.53
Kg per Angler Day	=	5.10	Kg per Angler Hour	=	3.77

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

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

Table 21. Sampled Effort, Ranked Catch and CPUE for Area 2 in 1979 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	=	33
Total Hours Effort for Anglers Intercepted	=	44.7
Total Hours Still to Fish (Incomplete Trips)	=	4.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	90.03	23	28.0	21	3.91	687	137
Cabazon	2	11.91	7	8.5	7	1.70	470	64
Greenling, Kelp	3	9.45	16	19.5	16	0.59	345	39
Rockfish, Blue	4	6.26	10	12.2	10	0.63	341	40
Rockfish, Grass	5	3.98	2	2.4	2	1.99	436	18
Greenling, Rock	6	3.82	7	8.5	7	0.55	335	44
Rockfish, Black	7	3.42	7	8.5	7	0.49	315	34
Seaperch, Rubberlip	8	2.55	2	2.4	2	1.27	389	134
Seaperch, Striped	9	1.56	3	3.7	3	0.52	311	57
Rockfish, Brown	10	1.07	1	1.2	1	1.07	394	0
Perch, Pile	11	0.95	1	1.2	1	0.95	384	0
Rockfish, Olive	12	0.86	1	1.2	1	0.86	403	0
Rockfish, Black-and-yellow	13	0.79	1	1.2	1	0.79	341	0
Rockfish, China	14	0.42	1	1.2	1	0.42	286	0
Total		137.07	82	100	80			

## C. CPUE\*\*\*

Catch per Angler Day	=	2.48	Catch per Angler Hour	=	1.83
Kg per Angler Day	=	4.15	Kg per Angler Hour	=	3.07

\* 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 045 in 1979 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	=	55
Total Hours Effort for Anglers Intercepted	=	169.6
Total Hours Still to Fish (Incomplete Trips)	=	1.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Lingcod	1	48	44.4
Rockfish, Black	2	18	16.7
Rockfish, Canary	3	11	10.2
Rockfish, Blue	4	6	5.6
Rockfishes (unidentified)	5	5	4.6
Rockfish, China	6	5	4.6
Greenling, Kelp	7	5	4.6
Unidentified Fishes	8	3	2.8
Rockfish, Grass	9	2	1.9
Bottomfishes (Groundfishes)	10	1	0.9
Rockfish, Brown	11	1	0.9
Rockfish, Copper	12	1	0.9
Cabazon	13	1	0.9
Sanddab, Pacific	14	1	0.9
Total		108	100

C. CPUE

Catch per Angler Day = 1.96      Catch per Angler Hour = 0.64

Table 23. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1979 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	=	55
Total Hours Effort for Anglers Intercepted	=	169.6
Total Hours Still to Fish (Incomplete Trips)	=	1.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Lingcod	1	48	48.0	3.11	149.38
Rockfish, Black	2	16	16.0	0.71	11.39
Rockfish, Canary	3	11	11.0	0.80	8.82
Rockfish, Blue	4	6	6.0	0.90	5.40
Rockfish, China	5	5	5.0	0.83	4.16
Greenling, Kelp	6	5	5.0	0.67	3.35
Rockfishes (unidentified)	7	3	3.0	0.85**	2.55
Rockfish, Grass	8	2	2.0	1.71	3.42
Rockfish, Brown	9	1	1.0	1.11	1.11
Rockfish, Copper	10	1	1.0	1.57	1.57
Cabezon	11	1	1.0	1.32	1.32
Sanddab, Pacific	12	1	1.0	0.20	0.20
Total		100	100		192.66

## C. CPUE

Catch per Angler Day	=	1.82	Catch per Angler Hour	=	0.59
Kg per Angler Day	=	3.50	Kg per Angler Hour	=	1.14

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

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

Table 24. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1979 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 = 55  
 Total Hours Effort for Anglers Intercepted = 169.6  
 Total Hours Still to Fish (Incomplete Trips) = 1.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Lingcod	1	149.38	48	50.5	47	3.11	642	110
Rockfish, Black	2	9.97	14	14.7	14	0.71	355	53
Rockfish, Canary	3	8.82	11	11.6	11	0.80	366	73
Rockfish, Blue	4	5.40	6	6.3	6	0.90	366	103
Rockfish, China	5	4.16	5	5.3	5	0.83	353	20
Rockfish, Grass	6	3.42	2	2.1	2	1.71	414	38
Greenling, Kelp	7	3.35	5	5.3	4	0.67	363	28
Rockfish, Copper	8	1.57	1	1.1	1	1.57	440	0
Cabezón	9	1.32	1	1.1	1	1.32	434	0
Rockfish, Brown	10	1.11	1	1.1	1	1.11	399	0
Sanddab, Pacific	11	0.20	1	1.1	1	0.20	261	0
Total		188.69	95	100	93			

## C. CPUE\*\*\*

Catch per Angler Day = 1.73      Catch per Angler Hour = 0.56  
 Kg per Angler Day = 3.43      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).

Table 25. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1979 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	=	6
Total Hours Effort for Anglers Intercepted	=	18.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Lingcod	1	15	45.5
Rockfish, Black	2	6	18.2
Rockfish, Blue	3	4	12.1
Greenling, Rock	4	4	12.1
Greenling, Kelp	5	3	9.1
Cabazon	6	1	3.0
Total		33	100

## C. CPUE

Catch per Angler Day = 5.50      Catch per Angler Hour = 1.83



Table 26. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1979 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 = 6  
 Total Hours Effort for Anglers Intercepted = 18.0  
 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
Lingcod	1	15	45.5	2.81	42.11
Rockfish, Black	2	6	18.2	1.08	6.46
Rockfish, Blue	3	4	12.1	0.51	2.02
Greenling, Rock	4	4	12.1	0.43	1.70
Greenling, Kelp	5	3	9.1	0.58	1.75
Cabazon	6	1	3.0	1.68	1.68
Total		33	100		55.72

## C. CPUE

Catch per Angler Day = 5.50      Catch per Angler Hour = 1.83  
 Kg per Angler Day = 9.29      Kg per Angler Hour = 3.10

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

Table 27. Sampled Effort, Ranked Catch and CPUE for Area 045 in 1979 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 = 6  
 Total Hours Effort for Anglers Intercepted = 18.0  
 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	42.11	15	45.5	15	2.81	621	105
Rockfish, Black	2	6.46	6	18.2	6	1.08	400	93
Rockfish, Blue	3	2.02	4	12.1	4	0.51	320	22
Greenling, Kelp	4	1.75	3	9.1	3	0.58	347	6
Greenling, Rock	5	1.70	4	12.1	4	0.43	311	12
Cabezón	6	1.68	1	3.0	1	1.68	474	0
Total		55.72	33	100	33			

C. CPUE\*\*\*

Catch per Angler Day = 5.50      Catch per Angler Hour = 1.83  
 Kg per Angler Day = 9.29      Kg per Angler Hour = 3.10

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

Table 28. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1979 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	=	60
Total Hours Effort for Anglers Intercepted	=	188.4
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Yellowtail	1	200	33.8
Rockfish, Blue	2	83	14.0
Rockfish, Widow	3	73	12.3
Rockfish, Greenspotted	4	59	10.0
Rockfish, Rosy	5	40	6.8
Rockfish, Canary	6	26	4.4
Bocaccio	7	25	4.2
Rockfish, Black	8	21	3.5
Rockfish, Greenstriped	9	10	1.7
Chilipepper	10	10	1.7
Rockfishes (unidentified)	11	9	1.5
Lingcod	12	6	1.0
Rockfish, Starry	13	5	0.8
Rockfish, Olive	14	5	0.8
Rockfish, Yelloweye	15	4	0.7
Sharks	16	3	0.5
Rockfish, Redbanded	17	3	0.5
Rockfish, Vermilion	18	2	0.3
Sole, Petrale	19	2	0.3
Rockfish, Brown	20	1	0.2
Rockfish, Copper	21	1	0.2
Rockfish, Speckled	22	1	0.2
Rockfish, Flag	23	1	0.2
Cabezon	24	1	0.2
Croaker, White	25	1	0.2
Total		592	100

## C. CPUE

Catch per Angler Day = 9.87      Catch per Angler Hour = 3.14

Table 29. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1979 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	=	60
Total Hours Effort for Anglers Intercepted	=	188.4
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Rockfish, Yellowtail	1	200	34.9	1.39	277.88
Rockfish, Blue	2	83	14.5	0.68	56.51
Rockfish, Widow	3	73	12.7	1.22	88.72
Rockfish, Greenspotted	4	59	10.3	0.97	56.95
Rockfish, Rosy	5	31	5.4	0.41	12.80
Rockfish, Canary	6	26	4.5	2.13	55.40
Bocaccio	7	25	4.4	2.72	67.88
Rockfish, Black	8	21	3.7	1.78	37.44
Rockfish, Greenstriped	9	10	1.7	0.47	4.65
Chilipepper	10	10	1.7	1.61	16.12
Rockfishes (unidentified)	11	5	0.9	1.25**	6.25
Rockfish, Starry	12	5	0.9	0.95	4.75
Rockfish, Olive	13	5	0.9	0.70	3.49
Rockfish, Yelloweye	14	4	0.7	3.27	13.10
Lingcod	15	4	0.7	4.79	19.17
Rockfish, Redbanded	16	3	0.5	0.00**	0.00
Rockfish, Vermilion	17	2	0.3	3.56	7.12
Sole, Petrale	18	2	0.3	0.00**	0.00
Rockfish, Brown	19	1	0.2	0.55	0.55
Rockfish, Copper	20	1	0.2	2.06	2.06
Rockfish, Speckled	21	1	0.2	0.77	0.77
Rockfish, Flag	22	1	0.2	1.79	1.79
Croaker, White	23	1	0.2	0.50	0.50
Total		573	100		733.91

## C. CPUE

Catch per Angler Day	=	9.55	Catch per Angler Hour	=	3.04
Kg per Angler Day	=	12.23	Kg per Angler Hour	=	3.90

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

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

Table 30. Sampled Effort, Ranked Catch and CPUE for Area 097 in 1979 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 = 60  
 Total Hours Effort for Anglers Intercepted = 188.4  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Yellowtail	1	277.88	200	37.7	166	1.39	455	39
Rockfish, Widow	2	88.72	73	13.7	71	1.22	422	98
Bocaccio	3	67.88	25	4.7	24	2.72	615	110
Rockfish, Blue	4	56.51	83	15.6	66	0.68	353	30
Rockfish, Canary	5	55.40	26	4.9	26	2.13	499	116
Rockfish, Greenspotted	6	55.02	57	10.7	57	0.97	391	31
Rockfish, Black	7	37.44	21	4.0	21	1.78	488	56
Lingcod	8	19.17	4	0.8	4	4.79	734	169
Chilipepper	9	16.12	10	1.9	10	1.61	489	74
Rockfish, Yelloweye	10	13.10	4	0.8	4	3.27	550	83
Rockfish, Vermilion	11	7.12	2	0.4	2	3.56	610	32
Rockfish, Starry	12	4.75	5	0.9	5	0.95	382	18
Rockfish, Olive	13	3.49	5	0.9	5	0.70	354	99
Rockfish, Greenstriped	14	3.26	7	1.3	7	0.47	341	22
Rockfish, Copper	15	2.06	1	0.2	1	2.06	482	0
Rockfish, Flag	16	1.79	1	0.2	1	1.79	477	0
Rockfish, Speckled	17	0.77	1	0.2	1	0.77	378	0
Rockfish, Brown	18	0.55	1	0.2	1	0.55	313	0
Croaker, White	19	0.50	1	0.2	1	0.50	350	0
Rockfish, Rosy	20	0.41	1	0.2	1	0.41	294	0
Rockfish, Redbanded	21	0.00	3	0.6	0	0.00	0	0
Total		711.94	531	100	474			

C. CPUE\*\*\*

Catch per Angler Day = 8.85      Catch per Angler Hour = 2.82  
 Kg per Angler Day = 11.87      Kg per Angler Hour = 3.78

\* 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 All CPFV Anglers Using Hook-and-Line Gear.  
 Area 097, Quarter 4, 1979.

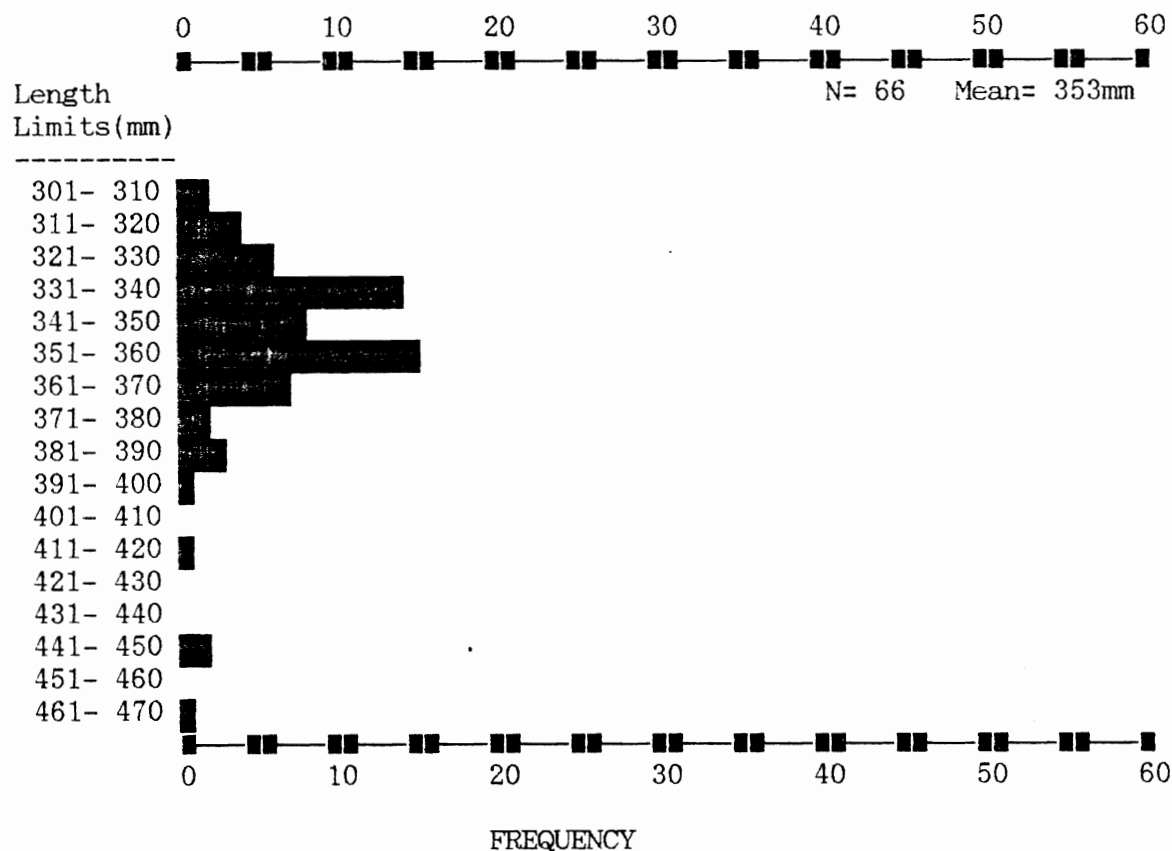


Figure 3. Length-Frequency Histogram for Greenspotted Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 097, Quarter 4, 1979.

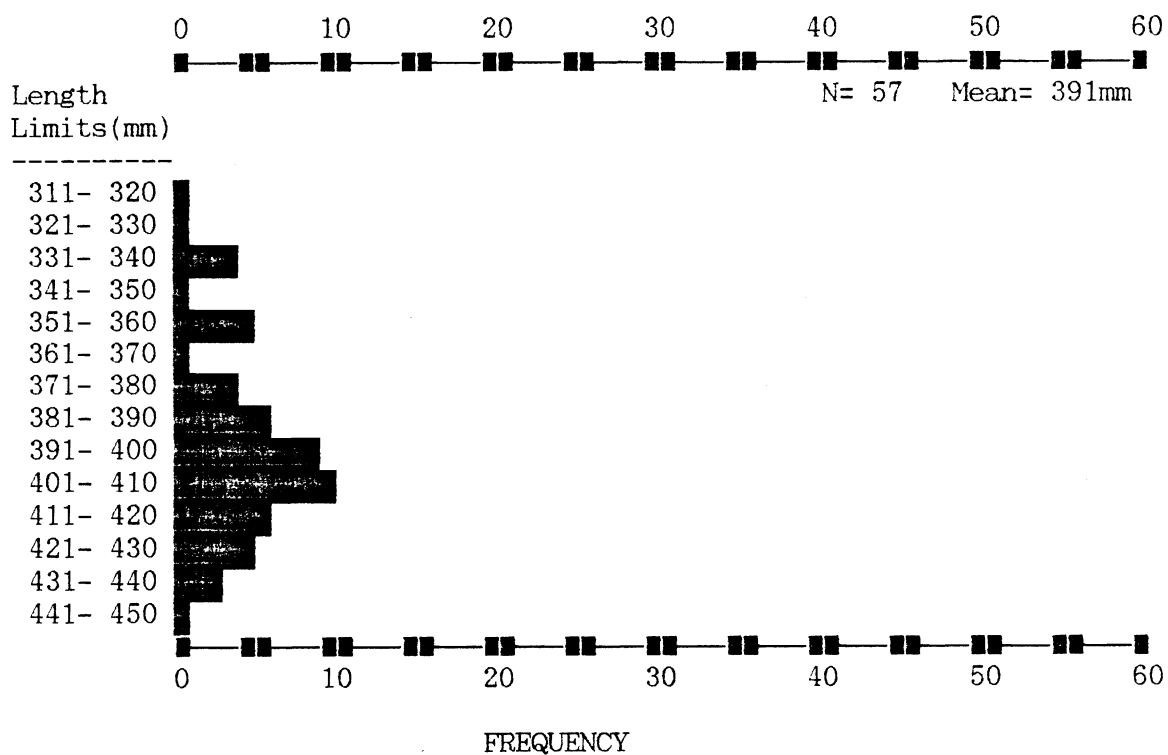


Figure 3. Length-Frequency Histogram for Yellowtail Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 097, Quarter 4, 1979.

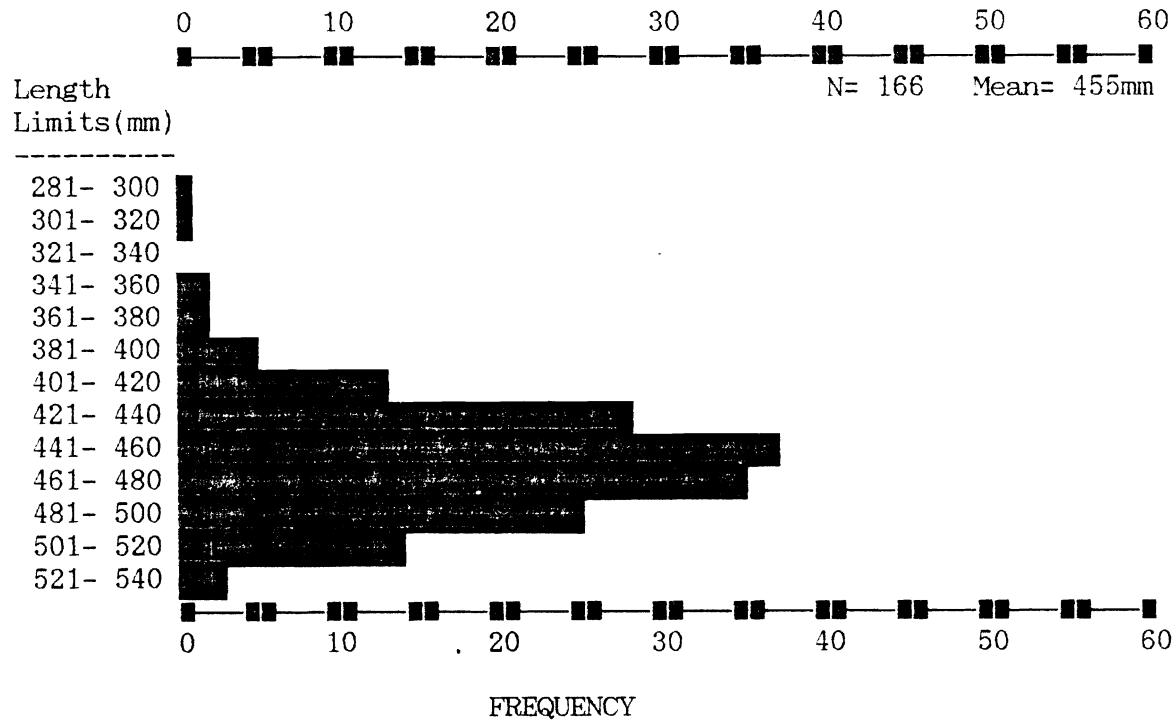




Table 31. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

A. Sampled Effort

Number Anglers Intercepted	=	7
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
Sculpin, Pacific Staghorn	1	112	61.2
Surfperch, Walleye	2	39	21.3
Surfperches	3	15	8.2
Surfperch, Silver	4	9	4.9
Jacksmelt	5	3	1.6
Perch, Shiner	6	3	1.6
Tomcod, Pacific	7	1	0.5
Surfperch, Barred	8	1	0.5
Total		183	100

C. CPUE

Catch per Angler Day = 26.14      Catch per Angler Hour = 6.10

Table 32. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	7
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
Sculpin, Pacific Staghorn	1	46	45.1	0.00**	0.00
Surfperch, Walleye	2	39	38.2	0.15	5.74
Surfperch, Silver	3	9	8.8	0.12	1.04
Jacksmelt	4	3	2.9	0.59	1.77
Perch, Shiner	5	3	2.9	0.02	0.05
Tomcod, Pacific	6	1	1.0	0.05	0.05
Surfperch, Barred	7	1	1.0	0.12	0.12
Total		102	100		8.77

## C. CPUE

Catch per Angler Day	=	14.57	Catch per Angler Hour	=	3.40
Kg per Angler Day	=	1.25	Kg per Angler Hour	=	0.29

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

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

Table 33. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	7
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)	
Surfperch, Walleye	1	5.74	39	69.6	27	0.15	202	30
Jacksmelt	2	1.77	3	5.4	3	0.59	414	7
Surfperch, Silver	3	1.04	9	16.1	9	0.12	188	36
Surfperch, Barred	4	0.12	1	1.8	1	0.12	189	0
Perch, Shiner	5	0.06	3	5.4	3	0.02	110	17
Tomcod, Pacific	6	0.05	1	1.8	1	0.05	182	0
Total		8.77	56	100	44			

## C. CPUE\*\*\*

Catch per Angler Day	=	8.00	Catch per Angler Hour	=	1.87
Kg per Angler Day	=	1.25	Kg per Angler Hour	=	0.29

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

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

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

Table 34. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	34
Total Hours Effort for Anglers Intercepted	=	86.5
Total Hours Still to Fish (Incomplete Trips)	=	11.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Brown	1	47	55.3
Rockfishes (unidentified)	2	11	12.9
Sculpin, Pacific Staghorn	3	6	7.1
Lingcod	4	3	3.5
Croaker, White	5	3	3.5
Rockfish, Black-and-yellow	6	2	2.4
Greenling, Kelp	7	2	2.4
Flounders, Lefteye	8	2	2.4
Unidentified Fishes	9	1	1.2
Smoothhounds	10	1	1.2
Tomcod, Pacific	11	1	1.2
Rockfish, Blue	12	1	1.2
Cabezon	13	1	1.2
Perch, Black	14	1	1.2
Surfperch, Silver	15	1	1.2
Seaperch, White	16	1	1.2
Prickleback, Monkeyface	17	1	1.2
Total		85	100

## C. CPUE

Catch per Angler Day = 2.50      Catch per Angler Hour = 0.98

Table 35. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	34
Total Hours Effort for Anglers Intercepted	=	86.5
Total Hours Still to Fish (Incomplete Trips)	=	11.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Brown	1	17	53.1	0.10	1.73
Croaker, White	2	3	9.4	0.28	0.83
Rockfish, Black-and-yellow	3	2	6.3	0.23	0.47
Greenling, Kelp	4	2	6.3	0.27	0.54
Sculpin, Pacific Staghorn	5	2	6.3	0.07	0.13
Rockfishes (unidentified)	6	1	3.1	0.19**	0.19
Rockfish, Blue	7	1	3.1	0.09	0.09
Perch, Black	8	1	3.1	0.33	0.33
Surfperch, Silver	9	1	3.1	0.26	0.26
Seaperch, White	10	1	3.1	0.20	0.20
Prickleback, Monkeyface	11	1	3.1	0.00**	0.00
Total		32	100		4.76

## C. CPUE

Catch per Angler Day	=	0.94	Catch per Angler Hour	=	0.37
Kg per Angler Day	=	0.14	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 36. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	34
Total Hours Effort for Anglers Intercepted	=	86.5
Total Hours Still to Fish (Incomplete Trips)	=	11.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	!---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Brown	1	1.73	17	56.7	12	0.10	173	27
Croaker, White	2	0.83	3	10.0	3	0.28	290	10
Greenling, Kelp	3	0.54	2	6.7	2	0.27	267	9
Rockfish, Black-and-yellow	4	0.47	2	6.7	2	0.23	235	4
Perch, Black	5	0.33	1	3.3	1	0.33	265	0
Surfperch, Silver	6	0.26	1	3.3	1	0.26	250	0
Seaperch, White	7	0.20	1	3.3	1	0.20	253	0
Rockfish, Blue	8	0.09	1	3.3	1	0.09	178	0
Sculpin, Pacific Staghorn	9	0.07	1	3.3	1	0.07	186	0
Prickleback, Monkeyface	10	0.00	1	3.3	1	0.00	454	0
Total		4.50	30	100	25			

## C. CPUE\*\*\*

Catch per Angler Day	=	0.88	Catch per Angler Hour	=	0.35
Kg per Angler Day	=	0.13	Kg per Angler Hour	=	0.05

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

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

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

Table 37. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	7
Total Hours Effort for Anglers Intercepted	=	28.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Redtail	1	32	80.0
Surfperches	2	4	10.0
Surfperch, Silver	3	4	10.0
Total		40	100

C. CPUE

Catch per Angler Day = 5.71      Catch per Angler Hour = 1.40

Table 38. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	7
Total Hours Effort for Anglers Intercepted	=	28.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Redtail	1	32	88.9	0.46	14.59
Surfperch, Silver	2	4	11.1	0.22	0.87
Total		36	100		15.46

C. CPUE

Catch per Angler Day	=	5.14	Catch per Angler Hour	=	1.26
Kg per Angler Day	=	2.21	Kg per Angler Hour	=	0.54

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



Table 39. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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 = 7  
 Total Hours Effort for Anglers Intercepted = 28.5  
 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)	
Surfperch, Redtail	1	14.59	32	88.9	22	0.46	295	33
Surfperch, Silver	2	0.87	4	11.1	4	0.22	235	26
Total		15.46	36	100	26			

C. CPUE\*\*\*

Catch per Angler Day = 5.14      Catch per Angler Hour = 1.26  
 Kg per Angler Day = 2.21      Kg per Angler Hour = 0.54

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

Table 40. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	76
Total Hours Effort for Anglers Intercepted	=	438.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Salmon, Chinook (King)	1	44	24.2
Rockfish, Blue	2	38	20.9
Salmon	3	27	14.8
Rockfish, Widow'	4	16	8.8
Croaker, White	5	15	8.2
Salmon, Pink	6	12	6.6
Rockfish, Yellowtail	7	7	3.8
Lingcod	8	6	3.3
Rockfish, Brown	9	5	2.7
Rockfish, Black	10	5	2.7
Rockfish, Canary	11	2	1.1
Shark, Blue	12	1	0.5
Rockfish, Copper	13	1	0.5
Greenling, Kelp	14	1	0.5
Surfperch, Silver	15	1	0.5
Flounder, Starry	16	1	0.5
Total		182	100

## C. CPUE

Catch per Angler Day = 2.39      Catch per Angler Hour = 0.42

Table 41. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	76
Total Hours Effort for Anglers Intercepted	=	438.0
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	38	31.4	0.81	30.76
Salmon, Chinook (King)	2	32	26.4	2.64	84.61
Rockfish, Widow	3	16	13.2	0.67	10.74
Rockfish, Yellowtail	4	7	5.8	0.89	6.20
Lingcod	5	6	5.0	2.37	14.24
Croaker, White	6	6	5.0	0.31	1.84
Rockfish, Brown	7	5	4.1	0.31	1.57
Rockfish, Black	8	5	4.1	0.67	3.36
Rockfish, Canary	9	2	1.7	0.70	1.39
Rockfish, Copper	10	1	0.8	1.95	1.95
Greenling, Kelp	11	1	0.8	0.68	0.68
Surfperch, Silver	12	1	0.8	0.00**	0.00
Flounder, Starry	13	1	0.8	0.91	0.91
Total		121	100		158.22

## C. CPUE

Catch per Angler Day	=	1.59	Catch per Angler Hour	=	0.28
Kg per Angler Day	=	2.08	Kg per Angler Hour	=	0.36

\* 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 42. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	76
Total Hours Effort for Anglers Intercepted	=	438.0
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)	
Salmon, Chinook (King)	1	84.61	32	26.4	31	2.64	642	88
Rockfish, Blue	2	30.76	38	31.4	29	0.81	371	48
Lingcod	3	14.24	6	5.0	6	2.37	563	167
Rockfish, Widow	4	10.74	16	13.2	16	0.67	369	26
Rockfish, Yellowtail	5	6.20	7	5.8	7	0.89	375	91
Rockfish, Black	6	3.36	5	4.1	5	0.67	354	17
Rockfish, Copper	7	1.95	1	0.8	1	1.95	473	0
Croaker, White	8	1.84	6	5.0	6	0.31	299	14
Rockfish, Brown	9	1.57	5	4.1	5	0.31	233	89
Rockfish, Canary	10	1.39	2	1.7	2	0.70	362	23
Flounder, Starry	11	0.91	1	0.8	1	0.91	415	0
Greenling, Kelp	12	0.68	1	0.8	1	0.68	366	0
Surfperch, Silver	13	0.00	1	0.8	0	0.00	0	0
Total		158.22	121	100	110			

## C. CPUE\*\*\*

Catch per Angler Day	=	1.59	Catch per Angler Hour	=	0.28
Kg per Angler Day	=	2.08	Kg per Angler Hour	=	0.36

\* 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 1979 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	=	67
Total Hours Effort for Anglers Intercepted	=	234.5
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Yellowtail	1	162	26.6
Rockfish, Blue	2	102	16.8
Rockfish, Greenspotted	3	90	14.8
Rockfish, Canary	4	45	7.4
Rockfish, Widow	5	43	7.1
Bocaccio	6	40	6.6
Rockfish, Rosy	7	29	4.8
Lingcod	8	24	3.9
Rockfish, Yelloweye	9	17	2.8
Rockfish, Copper	10	13	2.1
Rockfish, Greenstriped	11	8	1.3
Rockfish, Starry	12	7	1.2
Rockfish, China	13	5	0.8
Rockfishes (unidentified)	14	4	0.7
Cabazon	15	4	0.7
Rockfish, Vermilion	16	3	0.5
Rockfish, Brown	17	2	0.3
Rockfish, Black	18	2	0.3
Rockfish, Gopher	19	2	0.3
Croaker, White	20	2	0.3
Rockfish, Speckled	21	1	0.2
Greenling, Kelp	22	1	0.2
Sanddab, Pacific	23	1	0.2
Flounders, Righteye	24	1	0.2
Total		608	100

## C. CPUE

Catch per Angler Day = 9.07      Catch per Angler Hour = 2.59

Table 44. Sampled Effort, Ranked Catch and CPUE for Area 3 (Ocean) in 1979 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	=	67
Total Hours Effort for Anglers Intercepted	=	234.5
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	162	27.8	1.21	196.76
Rockfish, Blue	2	92	15.8	0.79	72.31
Rockfish, Greenspotted	3	90	15.5	0.88	79.00
Rockfish, Canary	4	45	7.7	1.57	70.87
Rockfish, Widow	5	43	7.4	1.77	76.03
Bocaccio	6	40	6.9	3.62	144.61
Rockfish, Rosy	7	22	3.8	0.26	5.70
Lingcod	8	19	3.3	6.03	114.60
Rockfish, Yelloweye	9	17	2.9	3.80	64.52
Rockfish, Copper	10	13	2.2	1.52	19.77
Rockfish, Greenstriped	11	8	1.4	0.36	2.90
Rockfish, Starry	12	7	1.2	0.85	5.92
Rockfish, China	13	5	0.9	0.84	4.21
Cabazon	14	4	0.7	2.44	9.76
Rockfish, Vermilion	15	3	0.5	1.70	5.11
Rockfish, Brown	16	2	0.3	0.79	1.58
Rockfish, Black	17	2	0.3	0.99	1.97
Rockfish, Gopher	18	2	0.3	0.42	0.83
Croaker, White	19	2	0.3	0.35	0.69
Rockfishes (unidentified)	20	1	0.2	1.39**	1.39
Rockfish, Speckled	21	1	0.2	0.97	0.97
Greenling, Kelp	22	1	0.2	0.46	0.46
Sanddab, Pacific	23	1	0.2	0.00**	0.00
Total		582	100		879.96

## C. CPUE

Catch per Angler Day	=	8.69	Catch per Angler Hour	=	2.48
Kg per Angler Day	=	13.13	Kg per Angler Hour	=	3.75

\* 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 1979 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	=	67
Total Hours Effort for Anglers Intercepted	=	234.5
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	195.55	161	28.0	156	1.21	428	66
Bocaccio	2	144.61	40	7.0	40	3.62	679	106
Lingcod	3	114.60	19	3.3	19	6.03	799	147
Rockfish, Greenspotted	4	79.00	90	15.7	89	0.88	374	55
Rockfish, Widow	5	76.03	43	7.5	43	1.77	492	65
Rockfish, Blue	6	72.31	92	16.0	88	0.79	366	52
Rockfish, Canary	7	70.87	45	7.8	45	1.57	441	121
Rockfish, Yelloweye	8	64.52	17	3.0	17	3.80	573	97
Rockfish, Copper	9	19.77	13	2.3	13	1.52	424	77
Cabazon	10	9.76	4	0.7	4	2.44	539	66
Rockfish, Starry	11	5.92	7	1.2	7	0.85	368	20
Rockfish, Vermilion	12	5.11	3	0.5	3	1.70	461	96
Rockfish, Rosy	13	4.66	18	3.1	18	0.26	250	21
Rockfish, China	14	4.21	5	0.9	5	0.84	355	15
Rockfish, Greenstriped	15	2.90	8	1.4	8	0.36	314	27
Rockfish, Black	16	1.97	2	0.3	2	0.99	370	167
Rockfish, Brown	17	1.58	2	0.3	2	0.79	355	0
Rockfish, Speckled	18	0.97	1	0.2	1	0.97	405	0
Rockfish, Gopher	19	0.83	2	0.3	2	0.42	285	83
Croaker, White	20	0.69	2	0.3	2	0.35	312	6
Greenling, Kelp	21	0.46	1	0.2	1	0.46	321	0
Total		876.32	575	100	565			

## C. CPUE\*\*\*

Catch per Angler Day	=	8.58	Catch per Angler Hour	=	2.45
Kg per Angler Day	=	13.08	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 4. Length-Frequency Histogram for Blue Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 3 (Ocean), Quarter 4, 1979.

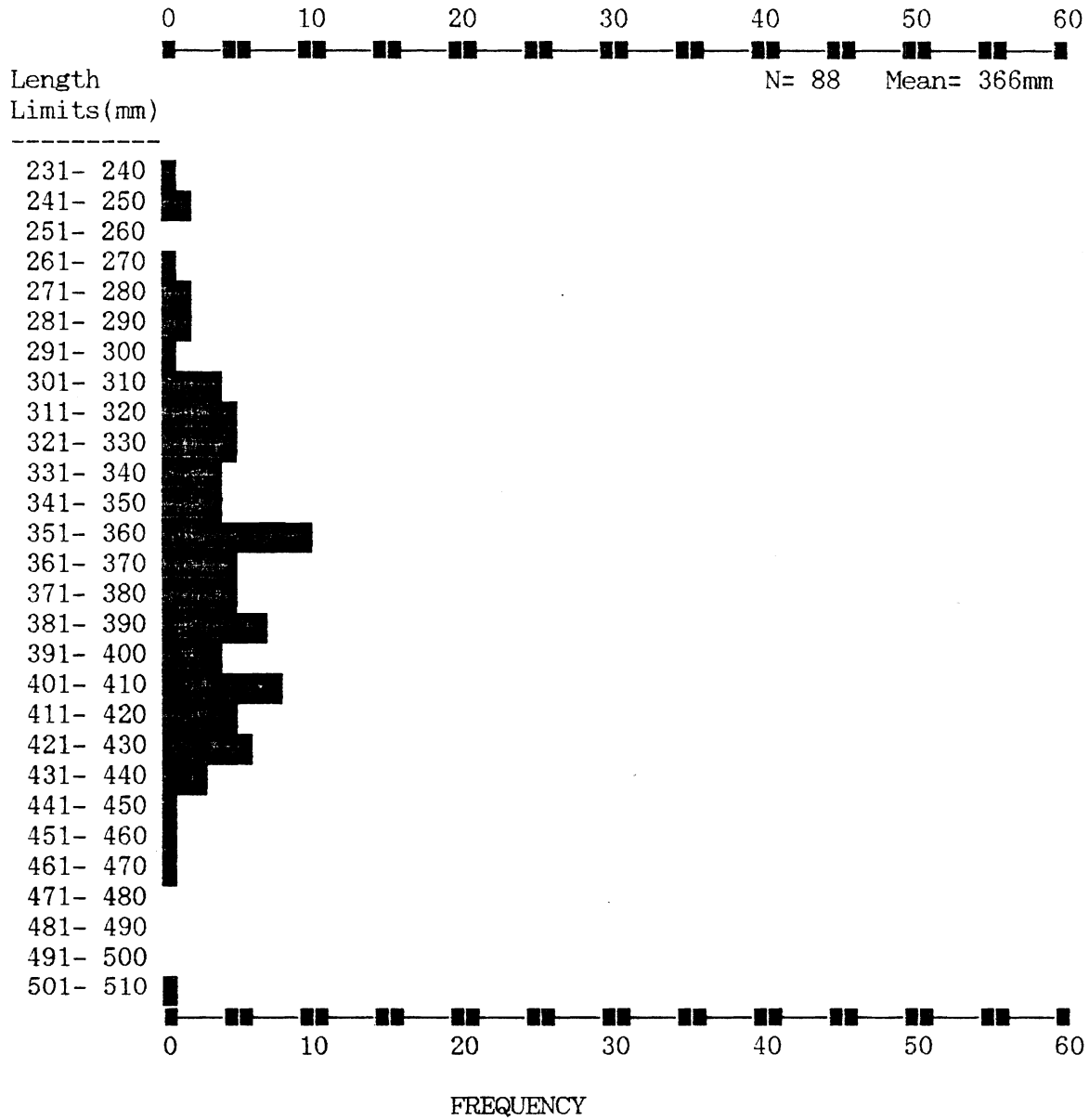




Figure 5. Length-Frequency Histogram for Yellowtail Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 3 (Ocean), Quarter 4, 1979.

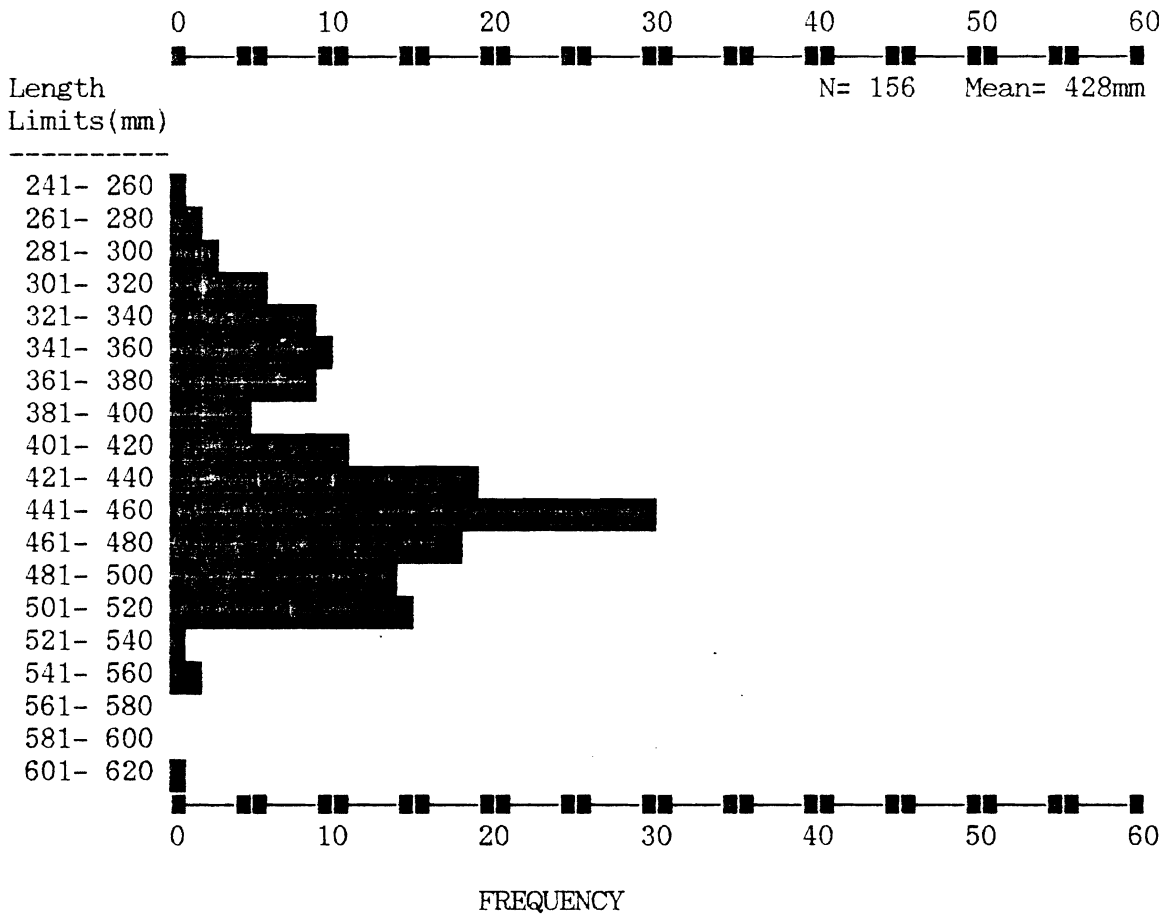


Table 46. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

## A. Sampled Effort

Number Anglers Intercepted	=	267
Total Hours Effort for Anglers Intercepted	=	926.5
Total Hours Still to Fish (Incomplete Trips)	=	30.6

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	172	33.9
Jacksmelt	2	43	8.5
Goby, Yellowfin	3	41	8.1
Surfperches	4	33	6.5
Surfperch, Walleye	5	26	5.1
Perch, Pile	6	24	4.7
Bass, Striped	7	22	4.3
Sharks	8	21	4.1
Rockfish, Brown	9	21	4.1
Seaperch, Rubberlip	10	20	3.9
Seaperch, White	11	18	3.6
Shark, Leopard	12	9	1.8
Croaker, White	13	9	1.8
Perch, Shiner	14	9	1.8
Flounders, Lefteye	15	7	1.4
Perch, Black	16	5	1.0
Smoothhounds	17	4	0.8
Rockfishes (unidentified)	18	4	0.8
Seaperch, Striped	19	4	0.8
Lingcod	20	3	0.6
Cabazon	21	3	0.6
Flounder, Starry	22	3	0.6
Smoothhound, Gray	23	1	0.2
Smoothhound, Brown	24	1	0.2
Skates	25	1	0.2
Irish Lord, Brown	26	1	0.2

(Table 46. - continued)

Common name	Rank by Number	Number Caught	% by Number
Prickleback, Monkeyface	27	1	0.2
Sanddab, Speckled	28	1	0.2
Total		507	100

## C. CPUE

Catch per Angler Day = 1.90      Catch per Angler Hour = 0.55

Table 47. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 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 = 267  
 Total Hours Effort for Anglers Intercepted = 926.5  
 Total Hours Still to Fish (Incomplete Trips) = 30.6

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	40	16.7	0.26	10.51
Goby, Yellowfin	2	30	12.6	0.04	1.29
Surfperch, Walleye	3	26	10.9	0.25	6.56
Perch, Pile	4	24	10.0	0.69	16.65
Sculpin, Pacific Staghorn	5	20	8.4	0.06	1.20
Seaperch, Rubberlip	6	20	8.4	0.40	7.91
Seaperch, White	7	18	7.5	0.34	6.21
Surfperches	8	13	5.4	0.39**	5.07
Rockfish, Brown	9	12	5.0	0.06	0.67
Shark, Leopard	10	5	2.1	1.95	9.74
Bass, Striped	11	5	2.1	1.89	9.44
Croaker, White	12	5	2.1	0.40	2.00
Perch, Black	13	5	2.1	0.12	0.58
Seaperch, Striped	14	4	1.7	0.28	1.14
Cabezon	15	3	1.3	0.17	0.51
Perch, Shiner	16	3	1.3	0.04	0.13
Flounder, Starry	17	3	1.3	0.99	2.97
Smoothhound, Brown	18	1	0.4	2.84	2.84
Skates	19	1	0.4	0.00**	0.00
Sanddab, Speckled	20	1	0.4	0.00**	0.00
Total		239	100		85.41

## C. CPUE

Catch per Angler Day = 0.90      Catch per Angler Hour = 0.26  
 Kg per Angler Day = 0.32      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 48. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 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 = 267  
 Total Hours Effort for Anglers Intercepted = 926.5  
 Total Hours Still to Fish (Incomplete Trips) = 30.6

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Perch, Pile	1	15.95	23	13.1	22	0.69	335	69
Bass, Striped	2	9.44	5	2.9	5	1.89	661	154
Seaperch, Rubberlip	3	7.91	20	11.4	20	0.40	260	60
Shark, Leopard	4	7.79	4	2.3	4	1.95	573	101
Surfperch, Walleye	5	6.30	25	14.3	24	0.25	230	47
Seaperch, White	6	6.21	18	10.3	18	0.34	303	30
Jacksmelt	7	5.26	20	11.4	20	0.26	325	10
Smoothhound, Brown	8	2.84	1	0.6	1	2.84	667	0
Flounder, Starry	9	1.98	2	1.1	2	0.99	426	22
Croaker, White	10	1.60	4	2.3	4	0.40	325	28
Seaperch, Striped	11	1.14	4	2.3	4	0.28	259	7
Goby, Yellowfin	12	0.99	23	13.1	23	0.04	171	36
Sculpin, Pacific Staghorn	13	0.66	11	6.3	11	0.06	173	36
Perch, Black	14	0.58	5	2.9	5	0.12	173	21
Rockfish, Brown	15	0.28	5	2.9	5	0.06	143	18
Cabezon	16	0.17	1	0.6	1	0.17	204	0
Perch, Shiner	17	0.13	3	1.7	3	0.04	144	30
Sanddab, Speckled	18	0.00	1	0.6	0	0.00	0	0
Total		69.23	175	100	172			

C. CPUE\*\*\*

Catch per Angler Day = 0.66      Catch per Angler Hour = 0.19  
 Kg per Angler Day = 0.26      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 49. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 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 = 46  
 Total Hours Effort for Anglers Intercepted = 127.0  
 Total Hours Still to Fish (Incomplete Trips) = 35.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	21	52.5
Shark, Leopard	2	4	10.0
Bass, Striped	3	4	10.0
Perch, Black'	4	4	10.0
Perch, Pile	5	4	10.0
Flounder, Starry	6	2	5.0
Goby, Yellowfin	7	1	2.5
Total		40	100

C. CPUE

Catch per Angler Day = 0.87      Catch per Angler Hour = 0.31

Table 50. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 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	=	46
Total Hours Effort for Anglers Intercepted	=	127.0
Total Hours Still to Fish (Incomplete Trips)	=	35.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Perch, Black	1	4	30.8	0.28	1.11
Perch, Pile	2	4	30.8	0.79	3.14
Bass, Striped	3	2	15.4	0.86	1.71
Flounder, Starry	4	2	15.4	1.22	2.43
Goby, Yellowfin	5	1	7.7	0.00**	0.00
Total		13	100		8.40

## C. CPUE

Catch per Angler Day	=	0.28	Catch per Angler Hour	=	0.10
Kg per Angler Day	=	0.18	Kg per Angler Hour	=	0.07

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

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

Table 51. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 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 = 46  
 Total Hours Effort for Anglers Intercepted = 127.0  
 Total Hours Still to Fish (Incomplete Trips) = 35.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Perch, Pile	1	3.14	4	33.3	4	0.79	361	17
Flounder, Starry	2	2.43	2	16.7	2	1.22	448	67
Bass, Striped	3	1.71	2	16.7	2	0.86	524	25
Perch, Black	4	1.11	4	33.3	4	0.28	248	6
Total		8.40	12	100	12			

C. CPUE\*\*\*

Catch per Angler Day = 0.26      Catch per Angler Hour = 0.09  
 Kg per Angler Day = 0.18      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 52. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 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	=	399
Total Hours Effort for Anglers Intercepted	=	2283.2
Total Hours Still to Fish (Incomplete Trips)	=	33.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	273	21.9
Bass, Striped	2	183	14.7
Shark, Leopard	3	137	11.0
Rockfish, Brown	4	87	7.0
Perch, Shiner	5	84	6.7
Smoothhound, Brown	6	52	4.2
Smoothhounds	7	51	4.1
Skates	8	45	3.6
Perch, Pile	9	40	3.2
Seaperch, Rubberlip	10	40	3.2
Sharks	11	32	2.6
Surfperch, Walleye	12	28	2.2
Goby, Yellowfin	13	21	1.7
Flounder, Starry	14	20	1.6
Rockfishes (unidentified)	15	18	1.4
Seaperch, Rainbow	16	18	1.4
Sturgeons (unidentified)	17	13	1.0
Sturgeon, White	18	11	0.9
Croaker, White	19	11	0.9
Shark, Sevengill	20	9	0.7
Seaperch, White	21	8	0.6
Ray, Bat	22	7	0.6
Rockfish, Kelp	23	6	0.5
Surfperches	24	5	0.4
Unidentified Fishes	25	4	0.3
Spiny Dogfish	26	4	0.3

(Table 52. - continued)

Common name	Rank by Number	Number Caught	% by Number
Stingrays	27	4	0.3
Jacksmelt	28	4	0.3
Rockfish, Black	29	3	0.2
Rockfish, Grass	30	3	0.2
Lingcod	31	3	0.2
Shark, Soupfin	32	2	0.2
Irish Lord, Red	33	2	0.2
Drums	34	2	0.2
Perch, Black	35	2	0.2
Surfperch, Silver	36	2	0.2
Shark, Sixgill	37	1	0.1
Sharks, Dogfish	38	1	0.1
Skate, Big	39	1	0.1
Bocaccio	40	1	0.1
Rockfish, Gopher	41	1	0.1
Greenling, Kelp	42	1	0.1
Sculpin, Bull	43	1	0.1
Fringehead, Onespot	44	1	0.1
Prickleback, Monkeyface	45	1	0.1
Sanddab, Speckled	46	1	0.1
Halibut, California	47	1	0.1
Total		1245	100

## C. CPUE

Catch per Angler Day = 3.12      Catch per Angler Hour = 0.55

Table 53. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 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	=	399
Total Hours Effort for Anglers Intercepted	=	2283.2
Total Hours Still to Fish (Incomplete Trips)	=	33.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Bass, Striped	1	120	21.2	2.07	247.91
Perch, Shiner	2	80	14.2	0.03	2.56
Rockfish, Brown	3	75	13.3	0.14	10.52
Perch, Pile	4	40	7.1	0.70	27.80
Seaperch, Rubberlip	5	40	7.1	0.31	12.45
Shark, Leopard	6	30	5.3	5.98	179.33
Sculpin, Pacific Staghorn	7	27	4.8	0.03	0.73
Surfperch, Walleye	8	22	3.9	0.41	8.99
Seaperch, Rainbow	9	17	3.0	0.24	4.16
Flounder, Starry	10	17	3.0	0.59	9.99
Goby, Yellowfin	11	16	2.8	0.00**	0.00
Croaker, White	12	11	1.9	0.39	4.34
Sturgeon, White	13	10	1.8	17.97	179.72
Shark, Sevengill	14	9	1.6	186.22	1676.00
Seaperch, White	15	8	1.4	0.20	1.58
Rockfish, Kelp	16	6	1.1	0.56	3.34
Smoothhound, Brown	17	4	0.7	0.87	3.50
Spiny Dogfish	18	4	0.7	1.42	5.69
Jacksmelt	19	4	0.7	0.39	1.57
Rockfish, Black	20	3	0.5	0.82	2.47
Rockfish, Grass	21	3	0.5	0.40	1.20
Lingcod	22	3	0.5	0.50	1.51
Irish Lord, Red	23	2	0.4	0.00**	0.00
Perch, Black	24	2	0.4	0.24	0.48
Surfperch, Silver	25	2	0.4	0.31	0.63
Shark, Sixgill	26	1	0.2	0.00**	0.00
Smoothhounds	27	1	0.2	0.87**	5.35

(Table 53. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Skate, Big	28	1	0.2	4.97	4.97
Sturgeons (unidentified)	29	1	0.2	17.97**	17.97
Bocaccio	30	1	0.2	0.06	0.06
Greenling, Kelp	31	1	0.2	0.75	0.75
Sculpin, Bull	32	1	0.2	0.00**	0.00
Prickleback, Monkeyface	33	1	0.2	0.00**	0.00
Sanddab, Speckled	34	1	0.2	0.05	0.05
Halibut, California	35	1	0.2	0.70	0.70
Total		565	100		2416.29

## C. CPUE

Catch per Angler Day = 1.42      Catch per Angler Hour = 0.25  
 Kg per Angler Day = 6.06      Kg per Angler Hour = 1.06

\* 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 54. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 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	=	399
Total Hours Effort for Anglers Intercepted	=	2283.2
Total Hours Still to Fish (Incomplete Trips)	=	33.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Shark, Sevengill	1	744.89	4	0.9	4	186.22	1681	630
Bass, Striped	2	239.64	116	26.8	116	2.07	680	145
Shark, Leopard	3	167.38	28	6.5	28	5.98	771	302
Sturgeon, White	4	161.74	9	2.1	8	17.97	1365	200
Perch, Pile	5	27.80	40	9.2	37	0.70	339	55
Seaperch, Rubberlip	6	12.45	40	9.2	40	0.31	246	40
Rockfish, Brown	7	10.24	73	16.9	72	0.14	188	43
Flounder, Starry	8	9.40	16	3.7	16	0.59	348	72
Surfperch, Walleye	9	8.99	22	5.1	22	0.41	269	33
Spiny Dogfish	10	5.69	4	0.9	4	1.42	700	215
Skate, Big	11	4.97	1	0.2	1	4.97	815	0
Croaker, White	12	4.34	11	2.5	11	0.39	324	23
Seaperch, Rainbow	13	4.16	17	3.9	17	0.24	246	26
Smoothhound, Brown	14	3.50	4	0.9	4	0.87	443	18
Rockfish, Kelp	15	3.34	6	1.4	6	0.56	328	59
Rockfish, Black	16	2.47	3	0.7	3	0.82	369	82
Seaperch, White	17	1.58	8	1.8	7	0.20	248	43
Jacksmelt	18	1.57	4	0.9	4	0.39	349	85
Lingcod	19	1.51	3	0.7	3	0.50	310	155
Rockfish, Grass	20	1.20	3	0.7	3	0.40	262	36
Greenling, Kelp	21	0.75	1	0.2	1	0.75	379	0
Halibut, California	22	0.70	1	0.2	1	0.70	407	0
Surfperch, Silver	23	0.63	2	0.5	1	0.31	266	0
Perch, Black	24	0.48	2	0.5	2	0.24	234	4
Sculpin, Pacific Staghorn	25	0.14	5	1.2	5	0.03	136	6
Bocaccio	26	0.06	1	0.2	1	0.06	180	0

(Table 54. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sanddab, Speckled	27	0.05	1	0.2	1	0.05	158	0
Perch, Shiner	28	0.03	1	0.2	1	0.03	134	0
Shark, Sixgill	29	0.00	1	0.2	1	0.00	2280	0
Smoothhounds	30	0.00	1	0.2	0	0.00	0	0
Sturgeons (unidentified)	31	0.00	1	0.2	0	0.00	0	0
Sculpin, Bull	32	0.00	1	0.2	0	0.00	0	0
Irish Lord, Red	33	0.00	2	0.5	0	0.00	0	0
Prickleback, Monkeyface	34	0.00	1	0.2	1	0.00	406	0
Total		1419.67	433	100	421			

## C. CPUE\*\*\*

Catch per Angler Day = 1.09      Catch per Angler Hour = 0.19  
 Kg per Angler Day = 3.56      Kg per Angler Hour = 0.62

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

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

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

Table 55. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

## A. Sampled Effort

Number Anglers Intercepted	=	21
Total Hours Effort for Anglers Intercepted	=	149.0
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Flounder, Starry	1	25	49.0
Bass, Striped	2	11	21.6
Sturgeons (unidentified)	3	8	15.7
Sturgeon, White	4	6	11.8
Salmon, Chinook (King)	5	1	2.0
Total		51	100

## C. CPUE

Catch per Angler Day = 2.43      Catch per Angler Hour = 0.34

Table 56. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Number Landed and Does Not Include Fish Returned Dead or Alive.

A. Sampled Effort

Number Anglers Intercepted	=	21
Total Hours Effort for Anglers Intercepted	=	149.0
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
Flounder, Starry	1	20	66.7	0.52	10.45
Sturgeon, White	2	6	20.0	14.38	36.29
Bass, Striped	3	3	10.0	1.17	3.52
Salmon, Chinook (King)	4	1	3.3	3.06	3.06
Total		30	100		103.31

C. CPUE

Catch per Angler Day	=	1.43	Catch per Angler Hour	=	0.20
Kg per Angler Day	=	4.92	Kg per Angler Hour	=	0.69

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



Table 57. Sampled Effort, Ranked Catch and CPUE for Area 3 (Bay) in 1979 for Quarter 4, by All CPFV Anglers Using Hook-and-Line Gear. Catch Represents Only the Fish Examined by the Sampler.

## A. Sampled Effort

Number Anglers Intercepted = 21  
 Total Hours Effort for Anglers Intercepted = 149.0  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	!---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Sturgeon, White	1	86.29	6	37.5	6	14.38	1297	112
Flounder, Starry	2	4.18	8	50.0	8	0.52	346	47
Salmon, Chinook (King)	3	3.06	1	6.3	1	3.06	687	0
Bass, Striped	4	1.17	1	6.3	1	1.17	584	0
Total		94.70	16	100	16			

## C. CPUE\*\*\*

Catch per Angler Day = 0.76      Catch per Angler Hour = 0.11  
 Kg per Angler Day = 4.51      Kg per Angler Hour = 0.64

\* 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 6. Length-Frequency Histogram for Striped Bass  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 3 (Bay), Quarter 4, 1979.

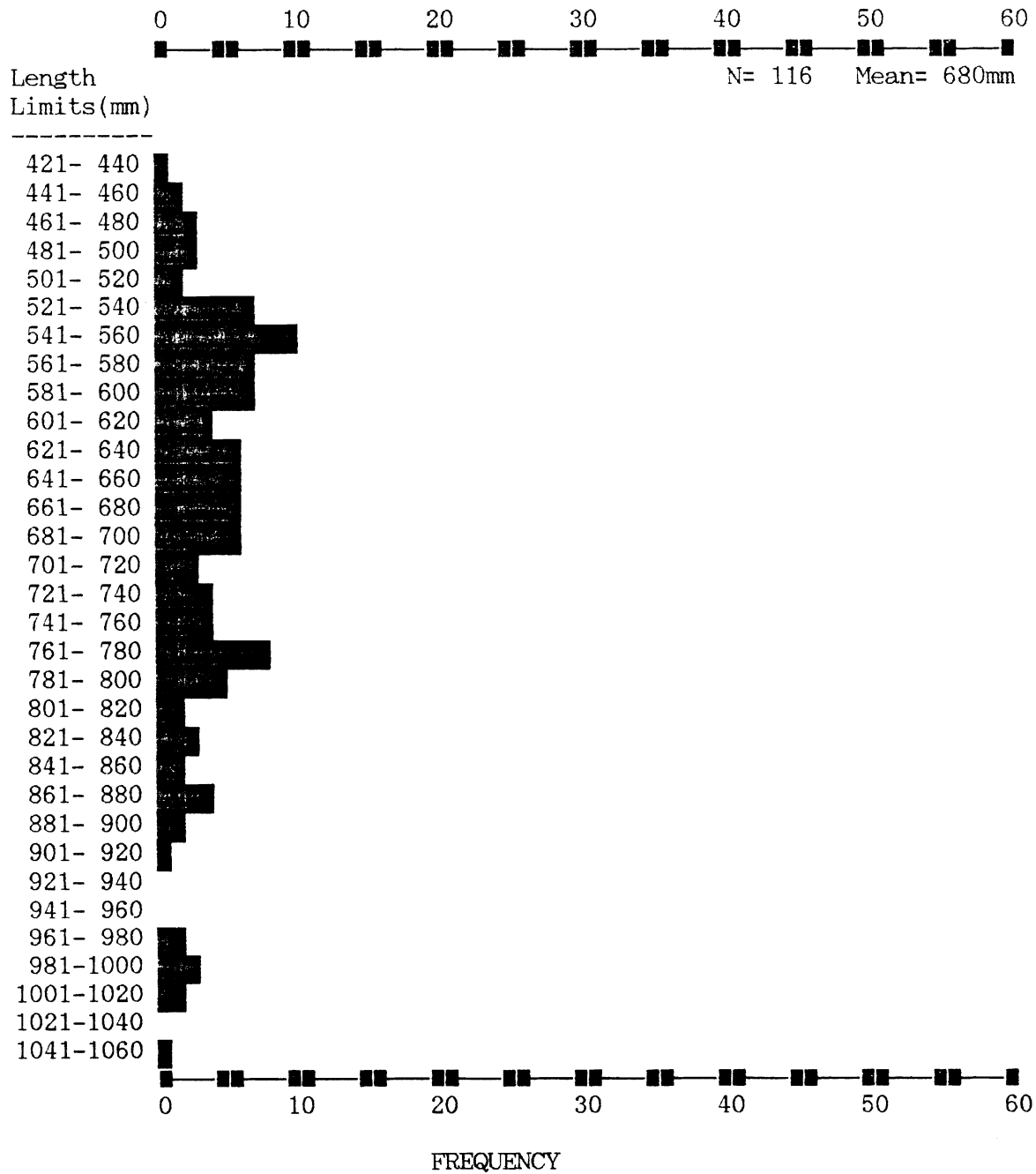


Table 58. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

## A. Sampled Effort

Number Anglers Intercepted	=	325
Total Hours Effort for Anglers Intercepted	=	1058.5
Total Hours Still to Fish (Incomplete Trips)	=	150.6

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	349	42.7
Croaker, White	2	153	18.7
Surfperches	3	47	5.8
Sole, Sand	4	39	4.8
Rockfishes (unidentified)	5	32	3.9
Surfperch, Walleye	6	30	3.7
Surfperch, Barred	7	24	2.9
Sandabs	8	21	2.6
Rockfish, Brown	9	15	1.8
Jacksmelt	10	13	1.6
Sculpins	11	13	1.6
Surfperch, Calico	12	9	1.1
Unidentified Fishes	13	8	1.0
Bottomfishes (Groundfishes)	14	7	0.9
Bocaccio	15	7	0.9
Perch, Black	16	6	0.7
Flounders, Righteye	17	6	0.7
Seaperch, White	18	4	0.5
Sanddab, Pacific	19	4	0.5
Sanddab, Speckled	20	4	0.5
Anchovy, Northern	21	3	0.4
Greenling, Kelp	22	3	0.4
Cabazon	23	3	0.4
Flounders, Lefteye	24	3	0.4
Flounder, Starry	25	3	0.4
Tomcod, Pacific	26	2	0.2

(Table 58. - continued)

Common name	Rank by Number	Number Caught	% by Number
Jack Mackerel	27	2	0.2
Perch, Shiner	28	2	0.2
Sharks	29	1	0.1
Skates	30	1	0.1
Rockfish, Blue	31	1	0.1
Surfperch, Silver	32	1	0.1
Fringehead, Onespots	33	1	0.1
Total		817	100

## C. CPUE

Catch per Angler Day = 2.51      Catch per Angler Hour = 0.77

Table 59. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	325
Total Hours Effort for Anglers Intercepted	=	1058.5
Total Hours Still to Fish (Incomplete Trips)	=	150.6

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Croaker, White	1	126	39.0	0.20	25.05
Sole, Sand	2	36	11.1	0.16	5.77
Surfperches	3	24	7.4	0.15**	3.60
Surfperch, Barred	4	24	7.4	0.17	4.08
Sandabs	5	19	5.9	0.13	2.50
Surfperch, Walleye	6	17	5.3	0.13	2.17
Jacksmelt	7	12	3.7	0.40	4.82
Rockfish, Brown	8	9	2.8	0.18	1.64
Surfperch, Calico	9	9	2.8	0.08	0.73
Perch, Black	10	6	1.9	0.26	1.58
Flounders, Righteye	11	5	1.5	0.71**	3.55
Seaperch, White	12	4	1.2	0.19	0.75
Unidentified Fishes	13	3	0.9	0.00**	0.33
Sculpin, Pacific Staghorn	14	3	0.9	0.05	0.15
Sanddab, Speckled	15	3	0.9	0.03	0.08
Flounder, Starry	16	3	0.9	0.71	2.13
Bottomfishes (Groundfishes)	17	2	0.6	0.00**	0.00
Tomcod, Pacific	18	2	0.6	0.08	0.15
Greenling, Kelp	19	2	0.6	0.17	0.34
Jack Mackerel	20	2	0.6	0.00**	0.00
Perch, Shiner	21	2	0.6	0.10	0.20
Flounders, Lefteye	22	2	0.6	0.11**	10.00
Sanddab, Pacific	23	2	0.6	0.01	0.01
Skates	24	1	0.3	0.00**	1.00
Anchovy, Northern	25	1	0.3	0.00**	4.00
Rockfish, Blue	26	1	0.3	0.74	0.74
Bocaccio	27	1	0.3	0.00**	0.00

(Table 59. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt.(kg)*	Weight Caught
Cabezon	28	1	0.3	0.05	0.05
Surfperch, Silver	29	1	0.3	0.08	0.08
Total		323	100		191.52

## C. CPUE

Catch per Angler Day = 0.99      Catch per Angler Hour = 0.31  
 Kg per Angler Day = 0.59      Kg per Angler Hour = 0.18

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

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

Table 60. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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 = 325  
 Total Hours Effort for Anglers Intercepted = 1058.5  
 Total Hours Still to Fish (Incomplete Trips) = 150.6

## 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	11.53	58	34.3	57	0.20	254	42
Sole, Sand	2	4.17	26	15.4	21	0.16	229	46
Jacksmelt	3	3.21	8	4.7	6	0.40	355	76
Flounder, Starry	4	2.13	3	1.8	3	0.71	347	147
Surfperch, Barred	5	1.87	11	6.5	10	0.17	199	46
Surfperch, Walleye	6	1.66	13	7.7	12	0.13	196	28
Perch, Black	7	1.58	6	3.6	6	0.26	236	53
Rockfish, Brown	8	1.28	7	4.1	7	0.18	207	48
Sandabs	9	1.05	8	4.7	7	0.13	214	25
Rockfish, Blue	10	0.74	1	0.6	1	0.74	366	0
Surfperch, Calico	11	0.73	9	5.3	9	0.08	173	17
Seaperch, White	12	0.56	3	1.8	3	0.19	245	39
Greenling, Kelp	13	0.34	2	1.2	2	0.17	219	62
Perch, Shiner	14	0.20	2	1.2	1	0.10	191	0
Tomcod, Pacific	15	0.15	2	1.2	2	0.08	215	2
Surfperch, Silver	16	0.08	1	0.6	1	0.08	177	0
Sanddab, Speckled	17	0.08	3	1.8	3	0.03	134	8
Sculpin, Pacific Staghorn	18	0.05	1	0.6	1	0.05	169	0
Cabezón	19	0.05	1	0.6	1	0.05	127	0
Sanddab, Pacific	20	0.01	1	0.6	1	0.01	92	0
Bocaccio	21	0.00	1	0.6	0	0.00	0	0
Jack Mackerel	22	0.00	2	1.2	0	0.00	0	0
Total		31.48	169	100	154			

## C. CPUE\*\*\*

Catch per Angler Day = 0.52      Catch per Angler Hour = 0.16  
 Kg per Angler Day = 0.10      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 61. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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 = 46  
 Total Hours Effort for Anglers Intercepted = 164.1  
 Total Hours Still to Fish (Incomplete Trips) = 34.2

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Jacksmelt	1	51	76.1
Sculpin, Pacific Staghorn	2	5	7.5
Perch, Black	3	5	7.5
Sole, Sand	4	2	3.0
Rockfishes (unidentified)	5	1	1.5
Surfperches	6	1	1.5
Seaperch, White	7	1	1.5
Seaperch, Rainbow	8	1	1.5
Total		67	100

C. CPUE

Catch per Angler Day = 1.46      Catch per Angler Hour = 0.41



Table 62. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	46
Total Hours Effort for Anglers Intercepted	=	164.1
Total Hours Still to Fish (Incomplete Trips)	=	34.2

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Jacksmelt	1	50	84.7	0.36	17.80
Perch, Black	2	5	8.5	0.28	1.42
Sole, Sand	3	2	3.4	0.20	0.40
Seaperch, White	4	1	1.7	0.23	0.23
Seaperch, Rainbow	5	1	1.7	0.20	0.20
Total		59	100		20.05

C. CPUE

Catch per Angler Day	=	1.28	Catch per Angler Hour	=	0.36
Kg per Angler Day	=	0.44	Kg per Angler Hour	=	0.12

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

Table 63. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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 = 46  
 Total Hours Effort for Anglers Intercepted = 164.1  
 Total Hours Still to Fish (Incomplete Trips) = 34.2

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Jacksmelt	1	17.80	50	86.2	10	0.36	355	17
Perch, Black	2	1.42	5	8.6	5	0.28	249	28
Seaperch, White	3	0.23	1	1.7	1	0.23	265	0
Seaperch, Rainbow	4	0.20	1	1.7	1	0.20	234	0
Sole, Sand	5	0.20	1	1.7	1	0.20	255	0
Total		19.85	58	100	18			

## C. CPUE\*\*\*

Catch per Angler Day = 1.26      Catch per Angler Hour = 0.35  
 Kg per Angler Day = 0.43      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 4 in 1979 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	=	32
Total Hours Effort for Anglers Intercepted	=	73.7
Total Hours Still to Fish (Incomplete Trips)	=	19.5

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	42	50.0
Surfperches	2	13	15.5
Rockfish, Grass	3	8	9.5
Rockfish, Brown	4	4	4.8
Rockfish, Blue	5	4	4.8
Cabazon	6	3	3.6
Sculpin, Pacific Staghorn	7	2	2.4
Surfperch, Walleye	8	2	2.4
Seaperch, Rubberlip	9	2	2.4
Jacksmelt	10	1	1.2
Greenling, Kelp	11	1	1.2
Seaperch, Striped	12	1	1.2
Perch, Black	13	1	1.2
Total		84	100

C. CPUE

Catch per Angler Day = 2.63      Catch per Angler Hour = 1.14

Table 65. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	32
Total Hours Effort for Anglers Intercepted	=	73.7
Total Hours Still to Fish (Incomplete Trips)	=	19.5

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Barred	1	38	60.3	0.31	11.80
Rockfish, Grass	2	8	12.7	0.19	1.49
Rockfish, Brown	3	4	6.3	0.12	0.48
Rockfish, Blue	4	3	4.8	0.10	0.30
Surfperch, Walleye	5	2	3.2	0.12	0.24
Seaperch, Rubberlip	6	2	3.2	1.21	2.42
Jacksmelt	7	1	1.6	0.39	0.39
Greenling, Kelp	8	1	1.6	0.20	0.20
Cabezon	9	1	1.6	0.38	0.38
Surfperches	10	1	1.6	0.34**	0.34
Seaperch, Striped	11	1	1.6	0.46	0.46
Perch, Black	12	1	1.6	0.20	0.20
Total		63	100		18.70

## C. CPUE

Catch per Angler Day	=	1.97	Catch per Angler Hour	=	0.85
Kg per Angler Day	=	0.58	Kg per Angler Hour	=	0.25

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

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

Table 66. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	32
Total Hours Effort for Anglers Intercepted	=	73.7
Total Hours Still to Fish (Incomplete Trips)	=	19.5

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Surfperch, Barred	1	11.80	38	61.3	35	0.31	246	44
Seaperch, Rubberlip	2	2.42	2	3.2	2	1.21	402	10
Rockfish, Grass	3	1.49	8	12.9	8	0.19	205	30
Rockfish, Brown	4	0.48	4	6.5	4	0.12	180	43
Seaperch, Striped	5	0.46	1	1.6	1	0.46	305	0
Jacksmelt	6	0.39	1	1.6	1	0.39	366	0
Cabazon	7	0.38	1	1.6	1	0.38	274	0
Rockfish, Blue	8	0.30	3	4.8	3	0.10	185	20
Surfperch, Walleye	9	0.24	2	3.2	2	0.12	193	37
Greenling, Kelp	10	0.20	1	1.6	1	0.20	241	0
Perch, Black	11	0.20	1	1.6	1	0.20	218	0
Total		18.36	62	100	59			

## C. CPUE\*\*\*

Catch per Angler Day	=	1.94	Catch per Angler Hour	=	0.84
Kg per Angler Day	=	0.57	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 67. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	115
Total Hours Effort for Anglers Intercepted	=	498.3
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Croaker, White	1	506	41.8
Sandabs	2	147	12.1
Rockfish, Blue	3	136	11.2
Sanddab, Pacific	4	94	7.8
Rockfishes (unidentified)	5	75	6.2
Lingcod	6	50	4.1
Rockfish, Gopher	7	36	3.0
Rockfish, Rosy	8	35	2.9
Rockfish, Yellowtail	9	22	1.8
Rockfish, Canary	10	20	1.7
Rockfish, Copper	11	14	1.2
Rockfish, Starry	12	12	1.0
Rockfish, Olive	13	12	1.0
Chilipepper	14	5	0.4
Rockfish, Greenspotted	15	5	0.4
Bocaccio	16	4	0.3
Rockfish, Kelp	17	4	0.3
Cabazon	18	4	0.3
Unidentified Fishes	19	3	0.2
Tomcod, Pacific	20	3	0.2
Rockfish, Vermilion	21	3	0.2
Rockfish, Black-and-yellow	22	3	0.2
Sharks	23	2	0.2
Rockfish, China	24	2	0.2
Greenling, Kelp	25	2	0.2
Sablefish	26	2	0.2

(Table 67. - continued)

Common name	Rank by Number	Number Caught	% by Number
Sole, Rock	27	2	0.2
Bottomfishes (Groundfishes)	28	1	0.1
Spiny Dogfish	29	1	0.1
Rockfish, Brown	30	1	0.1
Rockfish, Greenstriped	31	1	0.1
Rockfish, Quillback	32	1	0.1
Perch, Pile	33	1	0.1
Sole, Sand	34	1	0.1
Total		1210	100

## C. CPUE

Catch per Angler Day = 10.52      Catch per Angler Hour = 2.43

Table 68. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	115
Total Hours Effort for Anglers Intercepted	=	498.3
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	465	44.7	0.25	114.26
Rockfish, Blue	2	112	10.8	0.34	38.38
Sandabs	3	88	8.5	0.17	15.19
Sanddab, Pacific	4	86	8.3	0.13	11.19
Lingcod	5	50	4.8	2.71	135.61
Rockfishes (unidentified)	6	49	4.7	0.41**	20.09
Rockfish, Gopher	7	36	3.5	0.45	16.21
Rockfish, Rosy	8	29	2.8	0.21	6.13
Rockfish, Yellowtail	9	22	2.1	0.63	13.92
Rockfish, Canary	10	20	1.9	0.66	13.12
Rockfish, Copper	11	14	1.3	0.67	9.39
Rockfish, Starry	12	12	1.2	0.54	6.47
Rockfish, Olive	13	12	1.2	0.93	11.20
Chilipepper	14	5	0.5	0.42	2.11
Rockfish, Greenspotted	15	5	0.5	0.92	4.59
Rockfish, Kelp	16	4	0.4	0.26	1.05
Cabezon	17	4	0.4	1.13	4.50
Tomcod, Pacific	18	3	0.3	0.00**	0.00
Rockfish, Vermilion	19	3	0.3	1.58	4.75
Bocaccio	20	3	0.3	1.38	4.15
Rockfish, Black-and-yellow	21	3	0.3	0.49	1.48
Unidentified Fishes	22	2	0.2	0.00**	0.00
Rockfish, China	23	2	0.2	0.59	1.17
Greenling, Kelp	24	2	0.2	0.48	0.95
Sablefish	25	2	0.2	0.27	0.54
Sole, Rock	26	2	0.2	0.97	1.94
Spiny Dogfish	27	1	0.1	2.58	2.58



(Table 68. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Brown	28	1	0.1	1.23	1.23
Rockfish, Greenstriped	29	1	0.1	0.00**	0.00
Rockfish, Quillback	30	1	0.1	0.00**	0.00
Perch, Pile	31	1	0.1	0.77	0.77
Sole, Sand	32	1	0.1	0.00**	0.00
Total		1041	100		442.97

## C. CPUE

Catch per Angler Day = 9.05      Catch per Angler Hour = 2.09  
 Kg per Angler Day = 3.85      Kg per Angler Hour = 0.89

\* 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 1979 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	=	115
Total Hours Effort for Anglers Intercepted	=	498.3
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	119.33	44	5.4	41	2.71	606	124
Croaker, White	2	103.94	423	52.0	69	0.25	277	21
Rockfish, Blue	3	32.90	96	11.8	67	0.34	273	52
Rockfish, Gopher	4	16.21	36	4.4	21	0.45	302	26
Rockfish, Yellowtail	5	13.29	21	2.6	14	0.63	346	54
Rockfish, Canary	6	13.12	20	2.5	20	0.66	349	50
Rockfish, Olive	7	11.20	12	1.5	12	0.93	410	40
Sanddab, Pacific	8	8.97	69	8.5	56	0.13	225	32
Rockfish, Copper	9	8.05	12	1.5	12	0.67	322	61
Rockfish, Starry	10	6.47	12	1.5	8	0.54	317	33
Rockfish, Rosy	11	6.13	29	3.6	24	0.21	233	21
Rockfish, Vermilion	12	4.75	3	0.4	3	1.58	456	65
Rockfish, Greenspotted	13	4.59	5	0.6	3	0.92	386	20
Bocaccio	14	4.15	3	0.4	2	1.38	497	107
Cabezon	15	3.38	3	0.4	3	1.13	395	103
Spiny Dogfish	16	2.58	1	0.1	1	2.58	904	0
Chilipepper	17	2.11	5	0.6	5	0.42	327	36
Sole, Rock	18	1.94	2	0.2	2	0.97	411	62
Rockfish, Brown	19	1.23	1	0.1	1	1.23	413	0
Rockfish, China	20	1.17	2	0.2	2	0.59	317	14
Rockfish, Black-and-yellow	21	0.99	2	0.2	2	0.49	293	35
Greenling, Kelp	22	0.95	2	0.2	2	0.48	321	45
Perch, Pile	23	0.77	1	0.1	1	0.77	359	0
Sablefish	24	0.54	2	0.2	2	0.27	310	5
Rockfish, Kelp	25	0.52	2	0.2	2	0.26	255	45
Sandabs	26	0.52	3	0.4	3	0.17	229	41

(Table 69. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfishes (unidentified)	27	0.00	1	0.1	0	0.00	0	0
Rockfish, Quillback	28	0.00	1	0.1	0	0.00	0	0
Sole, Sand	29	0.00	1	0.1	1	0.00	421	0
Total		369.79	814	100	379			

## C. CPUE\*\*\*

Catch per Angler Day = 7.08      Catch per Angler Hour = 1.63  
 Kg per Angler Day = 3.22      Kg per Angler Hour = 0.74

\* 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).

Table 70. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	25
Total Hours Effort for Anglers Intercepted	=	24.9
Total Hours Still to Fish (Incomplete Trips)	=	0.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Lingcod	1	55	42.0
Rockfish, Blue	2	17	13.0
Sanddab, Pacific	3	15	11.5
Rockfish, Kelp	4	11	8.4
Greenling, Kelp	5	11	8.4
Cabezon	6	8	6.1
Rockfish, Black-and-yellow	7	4	3.1
Rockfish, Gopher	8	3	2.3
Rockfish, Olive	9	2	1.5
Rockfishes (unidentified)	10	1	0.8
Rockfish, Black	11	1	0.8
Rockfish, Vermilion	12	1	0.8
Rockfish, China	13	1	0.8
Bocaccio	14	1	0.8
----- Total		131	100

C. CPUE

Catch per Angler Day =	5.24	Catch per Angler Hour =	5.26
------------------------	------	-------------------------	------

Table 71. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	25
Total Hours Effort for Anglers Intercepted	=	24.9
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
Lingcod	1	55	42.0	2.21	121.55
Rockfish, Blue	2	17	13.0	0.58	9.79
Sanddab, Pacific	3	15	11.5	0.00**	0.00
Rockfish, Kelp	4	11	8.4	0.53	5.82
Greenling, Kelp	5	11	8.4	0.68	7.52
Cabezon	6	8	6.1	1.79	14.34
Rockfish, Black-and-yellow	7	4	3.1	0.67	2.69
Rockfish, Gopher	8	3	2.3	0.44	1.31
Rockfish, Olive	9	2	1.5	0.58	1.15
Rockfishes (unidentified)	10	1	0.8	0.63**	0.63
Rockfish, Black	11	1	0.8	0.78	0.78
Rockfish, Vermilion	12	1	0.8	2.36	2.36
Rockfish, China	13	1	0.8	0.60	0.60
Bocaccio	14	1	0.8	1.33	1.33
Total		131	100		169.87

## C. CPUE

Catch per Angler Day	=	5.24	Catch per Angler Hour	=	5.26
Kg per Angler Day	=	6.79	Kg per Angler Hour	=	6.82

\* 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 1979 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	=	25
Total Hours Effort for Anglers Intercepted	=	24.9
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)	
Lingcod	1	121.55	55	47.8	49	2.21	577	80
Cabezon	2	14.34	8	7.0	8	1.79	480	59
Rockfish, Blue	3	9.79	17	14.8	14	0.58	333	30
Greenling, Kelp	4	7.52	11	9.6	11	0.68	366	20
Rockfish, Kelp	5	5.82	11	9.6	11	0.53	327	32
Rockfish, Black-and-yellow	6	2.69	4	3.5	4	0.67	325	9
Rockfish, Vermilion	7	2.36	1	0.9	1	2.36	530	0
Bocaccio	8	1.33	1	0.9	1	1.33	503	0
Rockfish, Gopher	9	1.31	3	2.6	3	0.44	297	37
Rockfish, Olive	10	1.15	2	1.7	2	0.58	352	47
Rockfish, Black	11	0.78	1	0.9	1	0.78	373	0
Rockfish, China	12	0.60	1	0.9	1	0.60	319	0
Total		169.24	115	100	106			

## C. CPUE\*\*\*

Catch per Angler Day	=	4.60	Catch per Angler Hour	=	4.62
Kg per Angler Day	=	6.77	Kg per Angler Hour	=	6.80

\* 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 1979 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	=	86
Total Hours Effort for Anglers Intercepted	=	416.2
Total Hours Still to Fish (Incomplete Trips)	=	6.4

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sandabs	1	405	39.9
Rockfish, Blue	2	170	16.7
Lingcod	3	120	11.8
Rockfishes (unidentified)	4	69	6.8
Sanddab, Pacific	5	59	5.8
Bocaccio	6	57	5.6
Rockfish, Yellowtail	7	40	3.9
Rockfish, Rosy	8	16	1.6
Bottomfishes (Groundfishes)	9	12	1.2
Rockfish, Starry	10	9	0.9
Rockfish, Canary	11	8	0.8
Rockfish, Olive	12	7	0.7
Shark, Blue	13	6	0.6
Chilipepper	14	6	0.6
Jack Mackerel	15	6	0.6
Rockfish, Copper	16	5	0.5
Rockfish, Gopher	17	5	0.5
Rockfish, Greenspotted	18	3	0.3
Rockfish, Brown	19	2	0.2
Rockfish, China	20	2	0.2
Cabezon	21	2	0.2
Rockfish, Greenstriped	22	1	0.1
Rockfish, Widow	23	1	0.1
Rockfish, Yelloweye	24	1	0.1
Rockfish, Speckled	25	1	0.1
Rockfish, Flag	26	1	0.1

(Table 73. - continued)

Common name	Rank by Number	Number Caught	% by Number
Mackerel, Pacific (Chub)	27	1	0.1
Sole, Rock	28	1	0.1
Total		1016	100

## C. CPUE

Catch per Angler Day = 11.81      Catch per Angler Hour = 2.44



Table 74. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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	=	86
Total Hours Effort for Anglers Intercepted	=	416.2
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
Sandabs	1	398	41.0	0.00**	0.00
Rockfish, Blue	2	169	17.4	0.61	102.68
Lingcod	3	119	12.3	3.29	391.62
Sanddab, Pacific	4	59	6.1	0.00**	0.00
Rockfishes (unidentified)	5	55	5.7	0.71**	39.05
Rockfish, Yellowtail	6	40	4.1	0.62	24.88
Bocaccio	7	40	4.1	1.33	53.11
Rockfish, Rosy	8	16	1.6	0.26	4.18
Bottomfishes (Groundfishes)	9	12	1.2	0.00**	0.00
Rockfish, Starry	10	9	0.9	0.51	4.55
Rockfish, Canary	11	8	0.8	0.82	6.54
Rockfish, Olive	12	7	0.7	1.21	8.49
Chilipepper	13	6	0.6	0.53	3.20
Jack Mackerel	14	6	0.6	0.37	2.22
Rockfish, Copper	15	5	0.5	0.87	4.33
Rockfish, Gopher	16	5	0.5	0.37	1.83
Rockfish, Greenspotted	17	3	0.3	0.70	2.09
Rockfish, Brown	18	2	0.2	0.66	1.32
Rockfish, China	19	2	0.2	0.94	1.88
Cabezon	20	2	0.2	2.63	5.25
Rockfish, Greenstriped	21	1	0.1	0.21	0.21
Rockfish, Widow	22	1	0.1	0.35	0.35
Rockfish, Yelloweye	23	1	0.1	0.93	0.93
Rockfish, Speckled	24	1	0.1	0.62	0.62
Rockfish, Flag	25	1	0.1	0.67	0.67
Mackerel, Pacific (Chub)	26	1	0.1	0.58	0.58
Sole, Rock	27	1	0.1	0.51	0.51

(Table 74. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Total		970	100		661.09

## C. CPUE

Catch per Angler Day = 11.28      Catch per Angler Hour = 2.33  
 Kg per Angler Day = 7.69      Kg per Angler Hour = 1.59

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

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

Table 75. Sampled Effort, Ranked Catch and CPUE for Area 4 in 1979 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 = 86  
 Total Hours Effort for Anglers Intercepted = 416.2  
 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)	
Lingcod	1	210.62	64	17.1	57	3.29	646	132
Rockfish, Blue	2	102.07	168	44.9	134	0.61	338	39
Bocaccio	3	49.13	37	9.9	34	1.33	480	101
Rockfish, Yellowtail	4	23.01	37	9.9	36	0.62	346	44
Rockfish, Olive	5	7.28	6	1.6	6	1.21	447	38
Rockfish, Canary	6	4.90	6	1.6	6	0.82	369	74
Rockfish, Starry	7	4.55	9	2.4	9	0.51	309	42
Rockfish, Copper	8	4.33	5	1.3	5	0.87	359	36
Rockfish, Rosy	9	3.92	15	4.0	14	0.26	248	34
Chilipepper	10	3.20	6	1.6	6	0.53	352	34
Cabezon	11	2.63	1	0.3	1	2.63	559	0
Rockfish, Greenspotted	12	2.09	3	0.8	3	0.70	349	44
Rockfish, China	13	1.88	2	0.5	2	0.94	365	47
Rockfish, Gopher	14	1.83	5	1.3	5	0.37	282	26
Rockfish, Brown	15	1.32	2	0.5	2	0.66	330	52
Rockfish, Yelloweye	16	0.93	1	0.3	1	0.93	370	0
Rockfish, Flag	17	0.67	1	0.3	1	0.67	341	0
Rockfish, Speckled	18	0.62	1	0.3	1	0.62	353	0
Mackerel, Pacific (Chub)	19	0.58	1	0.3	1	0.58	349	0
Sole, Rock	20	0.51	1	0.3	1	0.51	338	0
Jack Mackerel	21	0.37	1	0.3	1	0.37	314	0
Rockfish, Widow	22	0.35	1	0.3	1	0.35	303	0
Rockfish, Greenstriped	23	0.21	1	0.3	1	0.21	264	0
Total		427.00	374	100	328			

## C. CPUE\*\*\*

Catch per Angler Day = 4.35      Catch per Angler Hour = 0.90  
 Kg per Angler Day = 4.97      Kg per Angler Hour = 1.03

\* 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).

Figure 7. Length-Frequency Histogram for White Croaker  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 4, 1979.

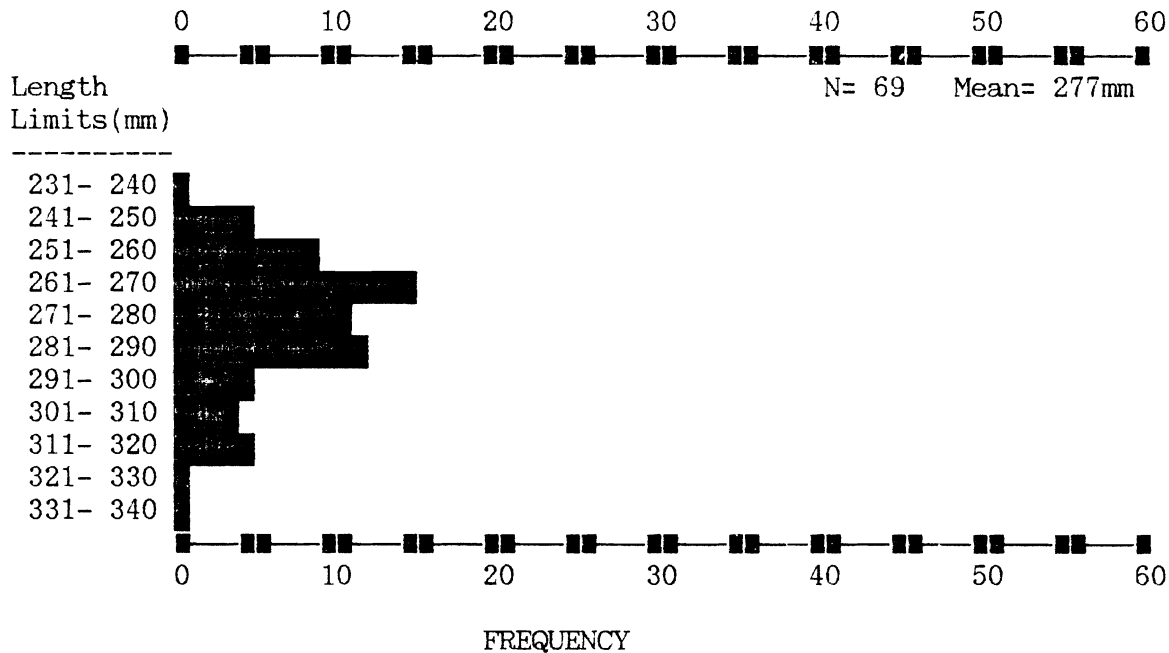


Figure 8. Length-Frequency Histogram for Pacific Sanddab  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 4, 1979.

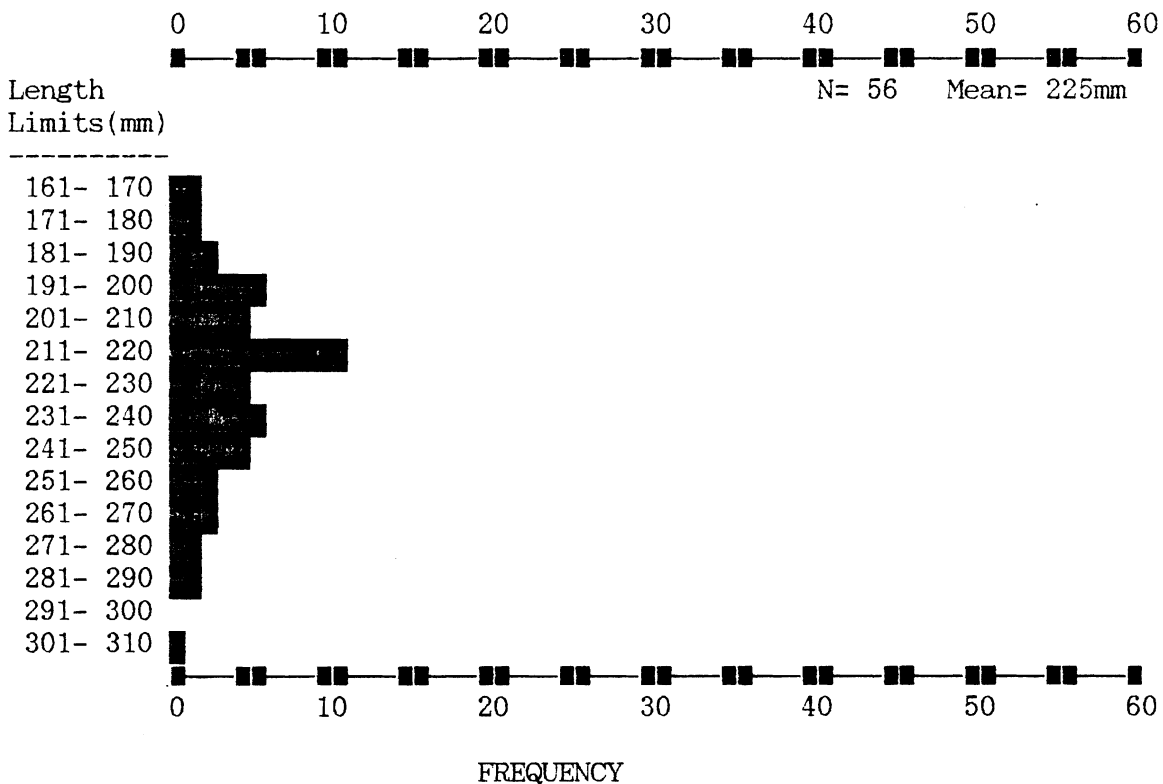


Figure 9. Length-Frequency Histogram for Blue Rockfish  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 4, Quarter 4, 1979.

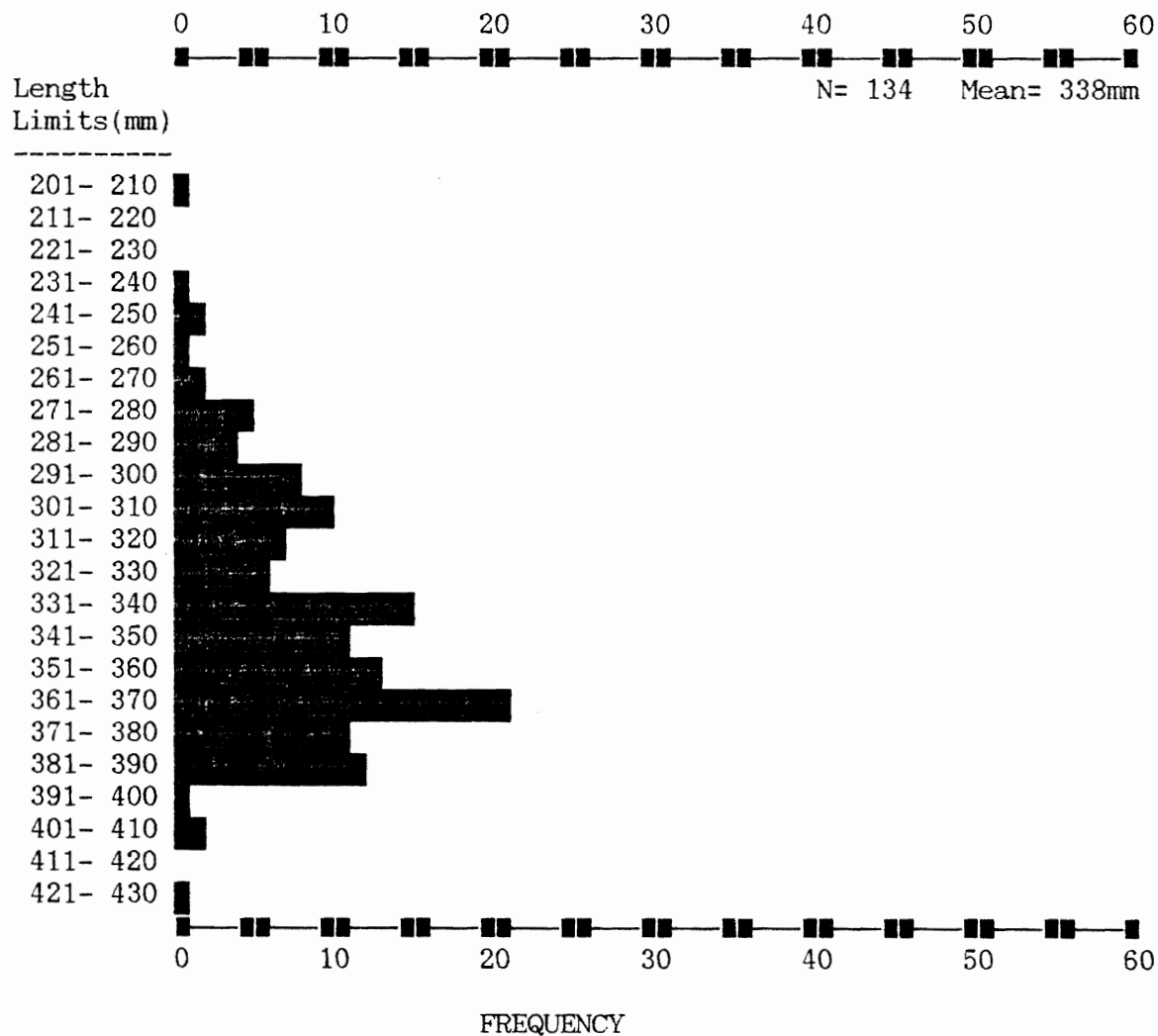


Table 76. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 for Quarter 4, by Pier or Dock Anglers Using Hook-and-Line Gear. Catch Represents All Fish Captured, Both Kept and Returned.

## A. Sampled Effort

Number Anglers Intercepted	=	170
Total Hours Effort for Anglers Intercepted	=	390.7
Total Hours Still to Fish (Incomplete Trips)	=	128.9

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Sculpin, Pacific Staghorn	1	168	28.5
Mackerel, Pacific (Chub)	2	90	15.3
Croaker, White	3	71	12.1
Surfperch, Barred	4	54	9.2
Perch, Shiner	5	51	8.7
Jacksmelt	6	46	7.8
Surfperch, Walleye	7	31	5.3
Sole, Sand	8	18	3.1
Surfperches	9	15	2.5
Bocaccio	10	14	2.4
Surfperch, Silver	11	7	1.2
Bottomfishes (Groundfishes)	12	5	0.8
Perch, Black	13	3	0.5
Unidentified Fishes	14	2	0.3
Skates	15	2	0.3
Cabazon	16	2	0.3
Perch, Pile	17	2	0.3
Surfperch, Calico	18	2	0.3
Skate, Big	19	1	0.2
Anchovy, Northern	20	1	0.2
Rockfishes (unidentified)	21	1	0.2
Lingcod	22	1	0.2
Fringehead, Onespots	23	1	0.2
Flounder, Starry	24	1	0.2
Total		589	100

## C. CPUE

Catch per Angler Day = 3.46      Catch per Angler Hour = 1.51

Table 77. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 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	=	170
Total Hours Effort for Anglers Intercepted	=	390.7
Total Hours Still to Fish (Incomplete Trips)	=	128.9

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Mackerel, Pacific (Chub)	1	81	27.0	0.56	45.65
Surfperch, Barred	2	43	14.3	0.19	8.15
Surfperch, Walleye	3	31	10.3	0.12	3.80
Jacksmelt	4	29	9.7	0.38	10.98
Croaker, White	5	29	9.7	0.16	4.54
Perch, Shiner	6	27	9.0	0.04	0.95
Sculpin, Pacific Staghorn	7	21	7.0	0.04	0.76
Sole, Sand	8	14	4.7	0.15	2.15
Surfperch, Silver	9	7	2.3	0.07	0.48
Bocaccio	10	4	1.3	0.05	0.19
Perch, Black	11	3	1.0	0.32	0.96
Cabazon	12	2	0.7	0.41	0.83
Surfperches	13	2	0.7	0.13**	0.26
Surfperch, Calico	14	2	0.7	0.17	0.35
Skate, Big	15	1	0.3	12.96	12.96
Anchovy, Northern	16	1	0.3	0.00**	0.00
Perch, Pile	17	1	0.3	0.59	0.59
Fringehead, Onespot	18	1	0.3	0.00**	0.00
Flounder, Starry	19	1	0.3	0.14	0.14
Total		300	100		93.73

## C. CPUE

Catch per Angler Day	=	1.76	Catch per Angler Hour	=	0.77
Kg per Angler Day	=	0.55	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 78. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 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 = 170  
 Total Hours Effort for Anglers Intercepted = 390.7  
 Total Hours Still to Fish (Incomplete Trips) = 128.9

## 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	41.15	73	30.5	69	0.56	343	32
Skate, Big	2	12.96	1	0.4	1	12.96	1140	0
Jacksmelt	3	10.60	28	11.7	28	0.38	353	57
Surfperch, Barred	4	5.31	28	11.7	28	0.19	207	45
Croaker, White	5	4.07	26	10.9	26	0.16	228	56
Surfperch, Walleye	6	3.19	26	10.9	26	0.12	194	24
Sole, Sand	7	1.38	9	3.8	9	0.15	229	39
Perch, Black	8	0.96	3	1.3	3	0.32	262	26
Perch, Shiner	9	0.91	26	10.9	21	0.04	137	9
Cabezon	10	0.83	2	0.8	2	0.41	248	152
Perch, Pile	11	0.59	1	0.4	1	0.59	330	0
Surfperch, Silver	12	0.41	6	2.5	6	0.07	166	9
Surfperch, Calico	13	0.35	2	0.8	2	0.17	218	39
Sculpin, Pacific Staghorn	14	0.14	4	1.7	4	0.04	150	11
Bocaccio	15	0.14	3	1.3	3	0.05	170	10
Flounder, Starry	16	0.14	1	0.4	1	0.14	235	0
Total		83.12	239	100	230			

## C. CPUE\*\*\*

Catch per Angler Day = 1.41      Catch per Angler Hour = 0.61  
 Kg per Angler Day = 0.49      Kg per Angler Hour = 0.21

\* 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 5 in 1979 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	=	81
Total Hours Effort for Anglers Intercepted	=	161.5
Total Hours Still to Fish (Incomplete Trips)	=	52.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Surfperch, Barred	1	107	46.1
Sculpin, Pacific Staghorn	2	34	14.7
Cabezon	3	20	8.6
Rockfishes (unidentified)	4	19	8.2
Rockfish, Grass	5	15	6.5
Prickleback, Monkeyface	6	10	4.3
Surfperch, Calico	7	6	2.6
Surfperch, Silver	8	5	2.2
Seaperch, White	9	3	1.3
Sanddab, Pacific	10	3	1.3
Sole, Sand	11	3	1.3
Unidentified Fishes	12	1	0.4
Ray, Bat	13	1	0.4
Jacksmelt	14	1	0.4
Rockfish, Copper	15	1	0.4
Rockfish, Blue	16	1	0.4
Bass, Striped	17	1	0.4
Perch, Shiner	18	1	0.4
Total		232	100

## C. CPUE

Catch per Angler Day = 2.86      Catch per Angler Hour = 1.44

Table 80. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 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 = 81  
 Total Hours Effort for Anglers Intercepted = 161.5  
 Total Hours Still to Fish (Incomplete Trips) = 52.0

B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Surfperch, Barred	1	76	54.3	0.27	20.59
Rockfish, Grass	2	15	10.7	0.29	4.33
Cabezón	3	11	7.9	0.23	2.54
Prickleback, Monkeyface	4	10	7.1	0.00**	0.00
Sculpin, Pacific Staghorn	5	7	5.0	0.06	0.41
Surfperch, Calico	6	6	4.3	0.31	1.83
Surfperch, Silver	7	3	2.1	0.17	0.50
Sanddab, Pacific	8	3	2.1	0.19	0.56
Sole, Sand	9	3	2.1	0.26	0.77
Ray, Bat	10	1	0.7	0.00**	0.00
Rockfishes (unidentified)	11	1	0.7	0.29**	0.29
Rockfish, Copper	12	1	0.7	0.38	0.38
Bass, Striped	13	1	0.7	6.11	6.11
Perch, Shiner	14	1	0.7	0.04	0.04
Seaperch, White	15	1	0.7	0.02	0.02
Total		140	100		38.37

C. CPUE

Catch per Angler Day = 1.73      Catch per Angler Hour = 0.87  
 Kg per Angler Day = 0.47      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 81. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 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 = 81  
 Total Hours Effort for Anglers Intercepted = 161.5  
 Total Hours Still to Fish (Incomplete Trips) = 52.0

## 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	19.77	73	56.2	73	0.27	234	48
Bass, Striped	2	6.11	1	0.8	1	6.11	1030	0
Rockfish, Grass	3	4.33	15	11.5	15	0.29	234	37
Cabezon	4	2.54	11	8.5	11	0.23	221	45
Surfperch, Calico	5	1.83	6	4.6	6	0.31	263	18
Sole, Sand	6	0.77	3	2.3	3	0.26	263	64
Sanddab, Pacific	7	0.56	3	2.3	3	0.19	255	0
Surfperch, Silver	8	0.51	3	2.3	3	0.17	217	28
Rockfish, Copper	9	0.38	1	0.8	1	0.38	275	0
Sculpin, Pacific Staghorn	10	0.12	2	1.5	2	0.06	178	18
Perch, Shiner	11	0.04	1	0.8	1	0.04	140	0
Seaperch, White	12	0.02	1	0.8	1	0.02	125	0
Prickleback, Monkeyface	13	0.00	10	7.7	10	0.00	426	44
Total		36.97	130	100	130			

## C. CPUE\*\*\*

Catch per Angler Day = 1.60      Catch per Angler Hour = 0.80  
 Kg per Angler Day = 0.46      Kg per Angler Hour = 0.23

\* 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 5 in 1979 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	=	109
Total Hours Effort for Anglers Intercepted	=	467.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Rockfish, Blue	1	325	35.6
Rockfish, Gopher	2	118	12.9
Croaker, White	3	59	6.5
Lingcod	4	57	6.3
Rockfish, Canary	5	49	5.4
Rockfish, Brown	6	47	5.2
Rockfish, Black-and-yellow	7	26	2.9
Rockfish, Whitebelly	8	23	2.5
Rockfish, Black	9	22	2.4
Sanddab, Pacific	10	21	2.3
Rockfish, Rosy	11	19	2.1
Rockfish, Yellowtail	12	16	1.8
Rockfishes (unidentified)	13	15	1.6
Rockfish, Copper	14	15	1.6
Rockfish, Olive	15	12	1.3
Mackerel, Pacific (Chub)	16	11	1.2
Rockfish, Vermilion	17	10	1.1
Bottomfishes (Groundfishes)	18	8	0.9
Rockfish, Starry	19	8	0.9
Cabazon	20	8	0.9
Rockfish, China	21	7	0.8
Jacksmelt	22	6	0.7
Unidentified Fishes	23	6	0.7
Rockfish, Grass	24	5	0.5
Sharks	25	4	0.4
Spiny Dogfish	26	3	0.3

(Table 82. - continued)

Common name	Rank by Number	Number Caught	% by Number
Thornyhead, Shortspine	27	3	0.3
Greenling, Kelp	28	3	0.3
Rockfish, Yelloweye	29	2	0.2
Halibut, California	30	2	0.2
Rockfish, Kelp	32	1	0.1
Surfperch, Barred	33	1	0.1
Total		912	100

## C. CPUE

Catch per Angler Day = 8.37      Catch per Angler Hour = 1.95

Table 83. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 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	=	109
Total Hours Effort for Anglers Intercepted	=	467.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Blue	1	295	34.9	0.44	129.57
Rockfish, Gopher	2	118	14.0	0.45	53.01
Lingcod	3	56	6.6	2.14	119.91
Croaker, White	4	56	6.6	0.23	12.98
Rockfish, Canary	5	49	5.8	0.51	24.78
Rockfish, Brown	6	47	5.6	0.85	40.13
Rockfish, Black-and-yellow	7	26	3.1	0.54	13.93
Rockfish, Black	8	22	2.6	0.58	12.76
Sanddab, Pacific	9	21	2.5	0.21	4.44
Rockfish, Whitebelly	10	20	2.4	0.82	16.42
Rockfish, Rosy	11	19	2.2	0.28	5.27
Rockfish, Yellowtail	12	16	1.9	0.38	6.05
Rockfish, Copper	13	15	1.8	1.41	21.08
Rockfish, Olive	14	12	1.4	0.84	10.04
Mackerel, Pacific (Chub)	15	11	1.3	0.54	5.93
Rockfish, Vermilion	16	10	1.2	1.37	13.72
Rockfish, Starry	17	8	0.9	0.89	7.14
Cabazon	18	8	0.9	1.76	14.04
Rockfish, China	19	7	0.8	0.49	3.41
Jacksmelt	20	5	0.6	0.44	2.19
Rockfish, Grass	21	5	0.6	1.42	7.09
Rockfishes (unidentified)	22	5	0.6	0.49**	1.96
Spiny Dogfish	23	3	0.4	1.54	4.63
Thornyhead, Shortspine	24	3	0.4	6.28	18.84
Greenling, Kelp	25	3	0.4	0.65	1.94
Rockfish, Yelloweye	26	2	0.2	1.64	3.29

(Table 83. - continued)

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Rockfish, Kelp	28	1	0.1	0.63	0.63
Surfperch, Barred	29	1	0.1	0.23	0.23
Halibut, California	30	1	0.1	3.86	3.86
Total		845	100		559.26

C. CPUE

Catch per Angler Day = 7.75      Catch per Angler Hour = 1.81  
 Kg per Angler Day = 5.13      Kg per Angler Hour = 1.20

\* 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 5 in 1979 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	=	109
Total Hours Effort for Anglers Intercepted	=	467.1
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Blue	1	124.74	284	34.5	208	0.44	300	44
Lingcod	2	117.77	55	6.7	55	2.14	568	88
Rockfish, Gopher	3	50.31	112	13.6	109	0.45	301	27
Rockfish, Brown	4	40.13	47	5.7	40	0.85	349	78
Rockfish, Canary	5	24.78	49	6.0	49	0.51	323	36
Rockfish, Copper	6	21.08	15	1.8	15	1.41	412	78
Thornyhead, Shortspine	7	18.84	3	0.4	3	6.28	633	180
Rockfish, Whitebelly	8	16.42	20	2.4	19	0.82	336	79
Cabazon	9	14.04	8	1.0	8	1.76	464	107
Rockfish, Black-and-yellow	10	13.93	26	3.2	24	0.54	302	11
Rockfish, Vermilion	11	13.72	10	1.2	10	1.37	432	67
Croaker, White	12	12.98	56	6.8	38	0.23	272	22
Rockfish, Black	13	12.76	22	2.7	22	0.58	335	27
Rockfish, Olive	14	10.04	12	1.5	12	0.84	391	63
Rockfish, Starry	15	7.14	8	1.0	8	0.89	371	40
Rockfish, Grass	16	7.09	5	0.6	5	1.42	388	44
Rockfish, Yellowtail	17	6.05	16	1.9	15	0.38	292	45
Mackerel, Pacific (Chub)	18	5.93	11	1.3	11	0.54	338	32
Rockfish, Rosy	19	5.27	19	2.3	19	0.28	256	19
Spiny Dogfish	20	4.63	3	0.4	3	1.54	765	31
Sanddab, Pacific	21	4.44	21	2.6	21	0.21	242	69
Halibut, California	22	3.86	1	0.1	1	3.86	715	0
Rockfish, China	23	3.41	7	0.9	7	0.49	299	17
Rockfish, Yelloweye	24	3.29	2	0.2	2	1.64	445	35
Greenling, Kelp	25	1.94	3	0.4	3	0.65	360	10
Jacksmelt	26	1.75	4	0.5	4	0.44	375	39

(Table 84. - continued)

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Rockfish, Kelp	27	0.63	1	0.1	1	0.63	350	0
Surfperch, Barred	28	0.23	1	0.1	1	0.23	230	0
Rockfishes (unidentified)	29	0.00	2	0.2	0	0.00	0	0
Total		547.19	823	100	714			

## C. CPUE\*\*\*

Catch per Angler Day = 7.55      Catch per Angler Hour = 1.76  
 Kg per Angler Day = 5.02      Kg per Angler Hour = 1.17

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

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

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

Table 85. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 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 = 18  
 Total Hours Effort for Anglers Intercepted = 65.4  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number
Bocaccio	1	130	51.0
Rockfish, Blue	2	24	9.4
Chilipepper	3	18	7.1
Mackerel, Pacific (Chub)	4	18	7.1
Rockfish, Canary	5	15	5.9
Rockfish, Greenspotted	6	15	5.9
Rockfish, Greenstriped	7	13	5.1
Lingcod	8	10	3.9
Rockfish, Widow	9	2	0.8
Rockfish, Flag	10	2	0.8
Rockfish, Copper	11	1	0.4
Rockfish, Yellowtail	12	1	0.4
Rockfish, Vermilion	13	1	0.4
Rockfish, Yelloweye	14	1	0.4
Rockfish, Starry	15	1	0.4
Rockfish, Speckled	16	1	0.4
Rockfish, Gopher	17	1	0.4
Sole, Rock	18	1	0.4
Total		255	100

## C. CPUE

Catch per Angler Day = 14.17      Catch per Angler Hour = 3.90

Table 86. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 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	=	18
Total Hours Effort for Anglers Intercepted	=	65.4
Total Hours Still to Fish (Incomplete Trips)	=	0.0

## B. Ranked Catch

Common name	Rank by Number	Number Caught	% by Number	Mean Wt. (kg)*	Weight Caught
Bocaccio	1	130	52.2	0.77	100.60
Rockfish, Blue	2	22	8.8	0.61	13.36
Chilipepper	3	18	7.2	0.80	14.35
Mackerel, Pacific (Chub)	4	18	7.2	0.80	14.41
Rockfish, Canary	5	15	6.0	0.68	10.24
Rockfish, Greenspotted	6	15	6.0	0.56	8.35
Rockfish, Greenstriped	7	13	5.2	0.28	3.59
Lingcod	8	6	2.4	1.77	10.60
Rockfish, Widow	9	2	0.8	0.76	1.52
Rockfish, Flag	10	2	0.8	0.81	1.62
Rockfish, Copper	11	1	0.4	0.52	0.52
Rockfish, Yellowtail	12	1	0.4	0.92	0.92
Rockfish, Vermilion	13	1	0.4	1.16	1.16
Rockfish, Yelloweye	14	1	0.4	0.93	0.93
Rockfish, Starry	15	1	0.4	0.78	0.78
Rockfish, Speckled	16	1	0.4	1.18	1.18
Rockfish, Gopher	17	1	0.4	0.66	0.66
Sole, Rock	18	1	0.4	1.33	1.33
Total		249	100		186.10

## C. CPUE

Catch per Angler Day	=	13.83	Catch per Angler Hour	=	3.81
Kg per Angler Day	=	10.34	Kg per Angler Hour	=	2.85

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

Table 87. Sampled Effort, Ranked Catch and CPUE for Area 5 in 1979 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 = 18  
 Total Hours Effort for Anglers Intercepted = 65.4  
 Total Hours Still to Fish (Incomplete Trips) = 0.0

B. Ranked Catch

Common name	Rank by Wt.	Weight* Caught	Number Caught	% by No.	No. Meas.	---Mean---		SD LN.
						Wt.* (kg)	Ln.** (mm)	
Bocaccio	1	100.60	130	52.2	89	0.77	411	65
Mackerel, Pacific (Chub)	2	14.41	18	7.2	18	0.80	380	31
Chilipepper	3	14.35	18	7.2	18	0.80	394	57
Rockfish, Blue	4	13.36	22	8.8	22	0.61	326	72
Lingcod	5	10.60	6	2.4	6	1.77	524	115
Rockfish, Canary	6	10.24	15	6.0	15	0.68	344	79
Rockfish, Greenspotted	7	8.35	15	6.0	15	0.56	319	54
Rockfish, Greenstriped	8	3.59	13	5.2	13	0.28	286	32
Rockfish, Flag	9	1.62	2	0.8	2	0.81	360	57
Rockfish, Widow	10	1.52	2	0.8	2	0.76	383	46
Sole, Rock	11	1.33	1	0.4	1	1.33	460	0
Rockfish, Speckled	12	1.18	1	0.4	1	1.18	430	0
Rockfish, Vermilion	13	1.16	1	0.4	1	1.16	415	0
Rockfish, Yelloweye	14	0.93	1	0.4	1	0.93	370	0
Rockfish, Yellowtail	15	0.92	1	0.4	1	0.92	400	0
Rockfish, Starry	16	0.78	1	0.4	1	0.78	360	0
Rockfish, Gopher	17	0.66	1	0.4	1	0.66	345	0
Rockfish, Copper	18	0.52	1	0.4	1	0.52	305	0
Total		186.10	249	100	208			

C. CPUE\*\*\*

Catch per Angler Day = 13.83      Catch per Angler Hour = 3.81  
 Kg per Angler Day = 10.34      Kg per Angler Hour = 2.85

\* 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).

Figure 10. Length-Frequency Histogram for Pacific (Chub) Mackerel  
 Taken by Pier or Dock Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 4, 1979.

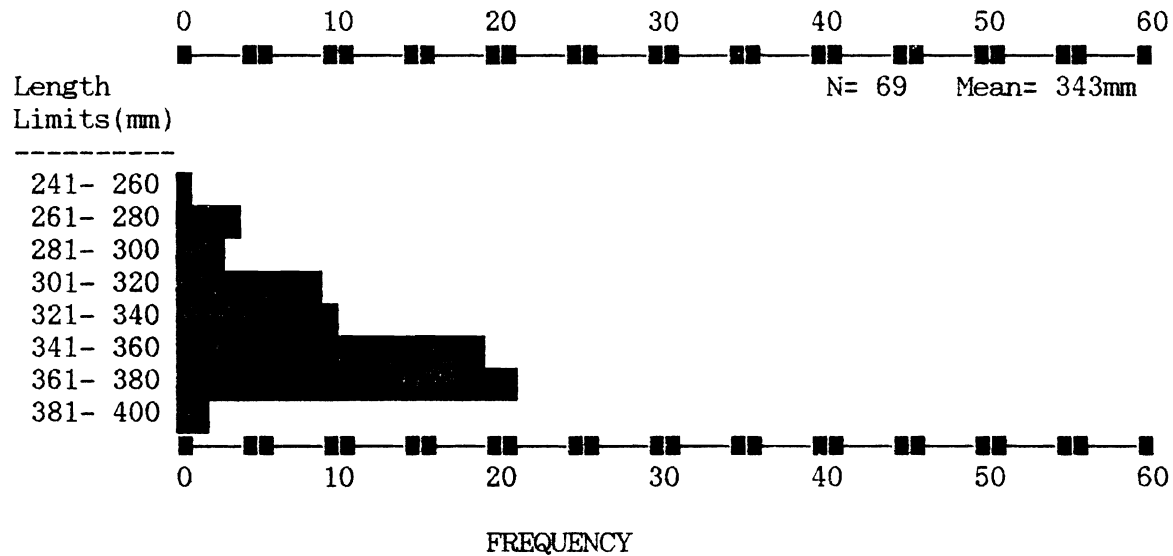


Figure 11. Length-Frequency Histogram for Barred Surfperch  
 Taken by Beach and Bank Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 4, 1979.

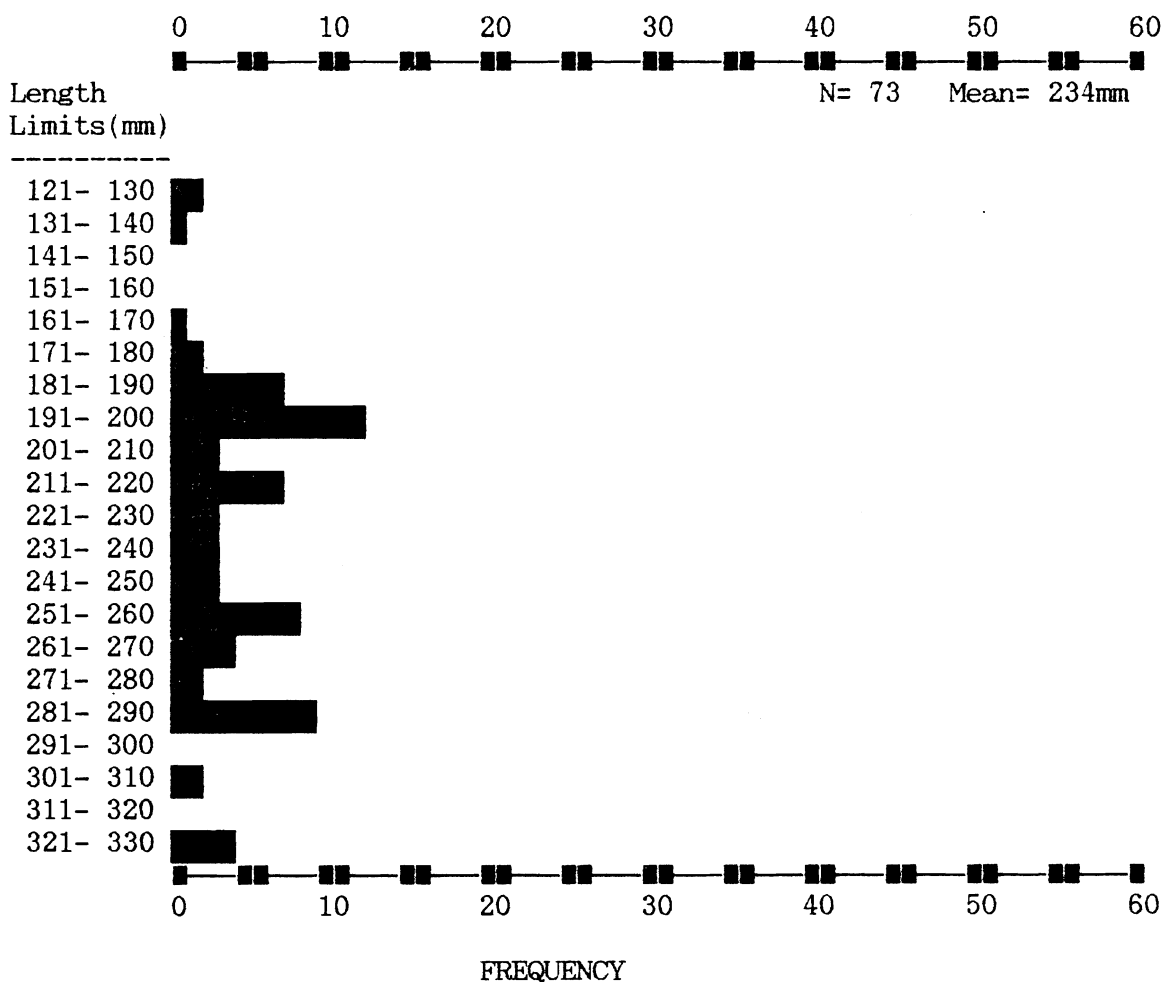


Figure 12. Length-Frequency Histogram for Black-and-yellow Rockfish  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 4, 1979.

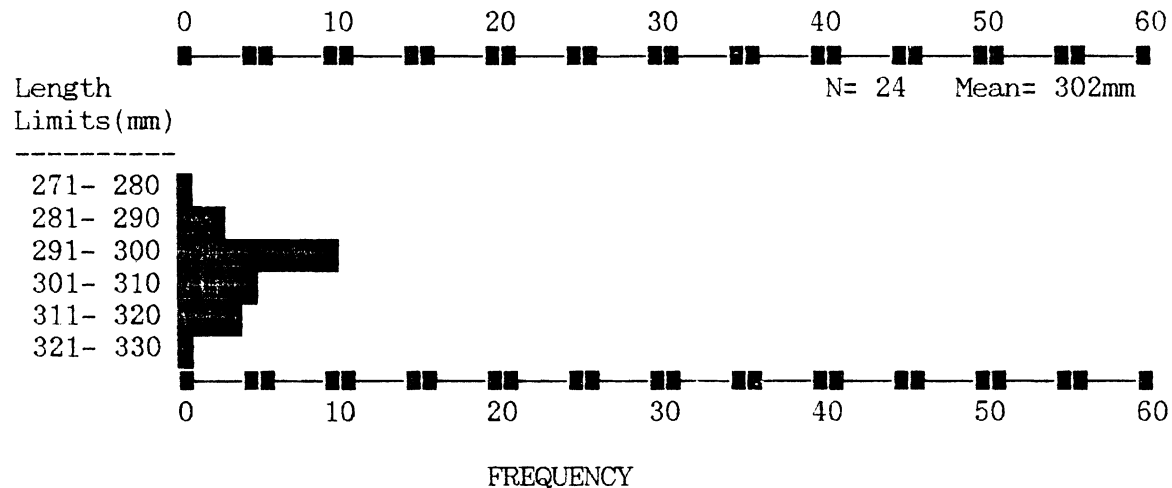




Figure 13. Length-Frequency Histogram for Blue Rockfish  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 4, 1979.

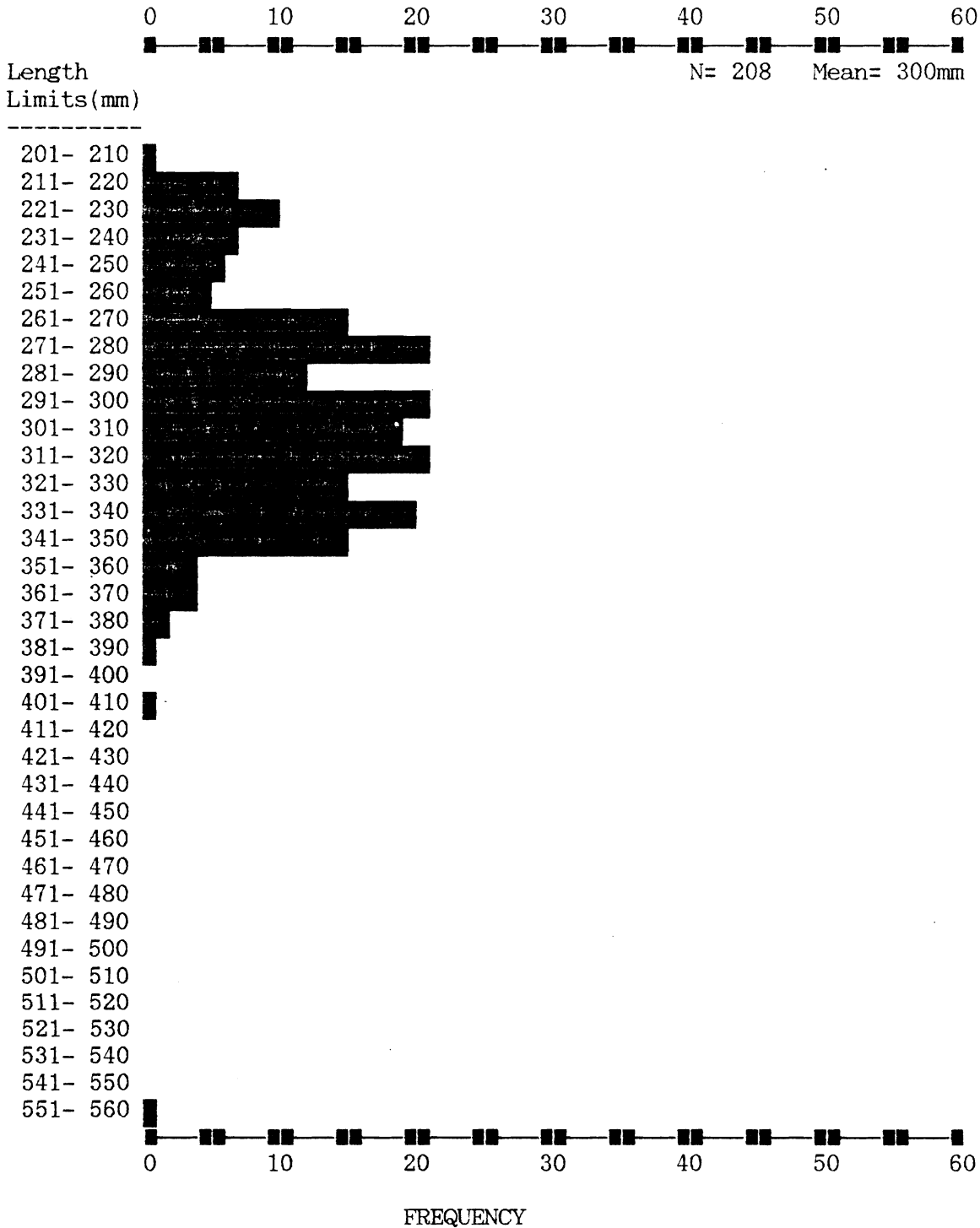


Figure 14. Length-Frequency Histogram for Canary Rockfish  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 4, 1979.

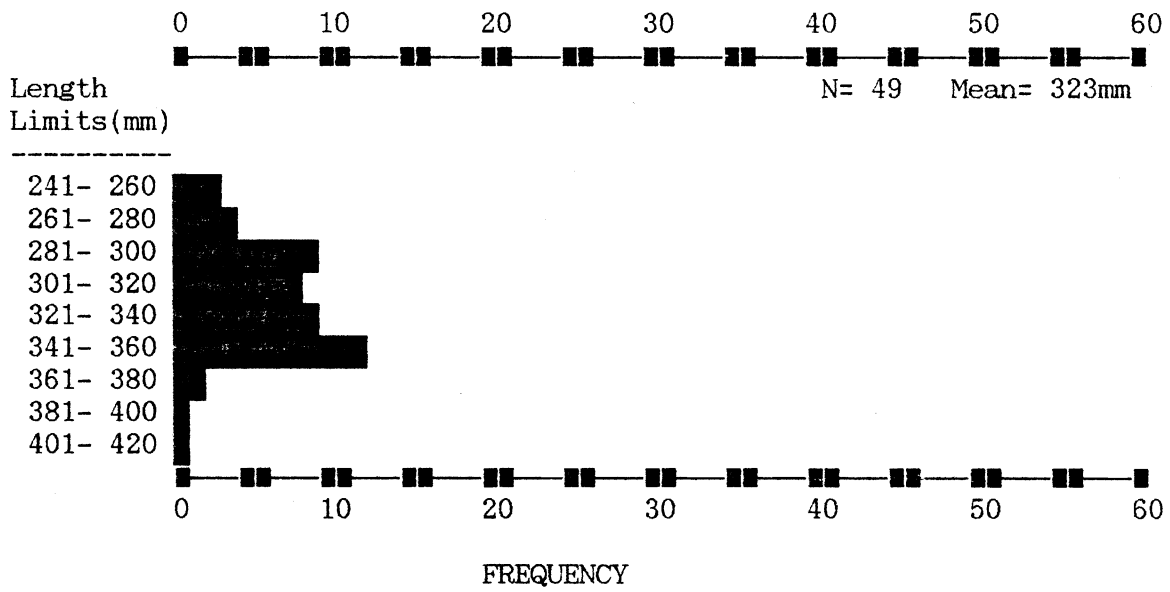


Figure 15. Length-Frequency Histogram for Gopher Rockfish  
 Taken by Private or Rental Boat Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 4, 1979.

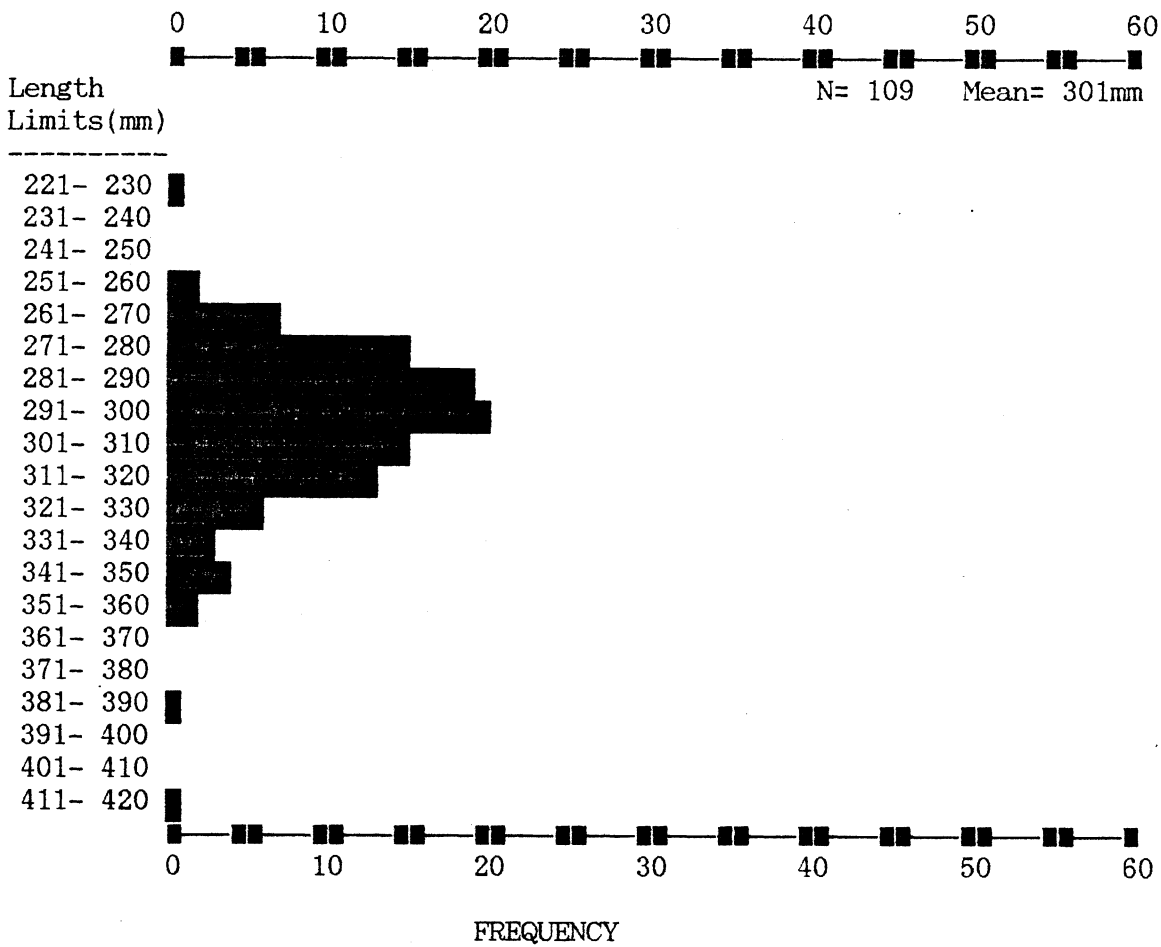


Figure 16. Length-Frequency Histogram for Bocaccio  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 4, 1979.

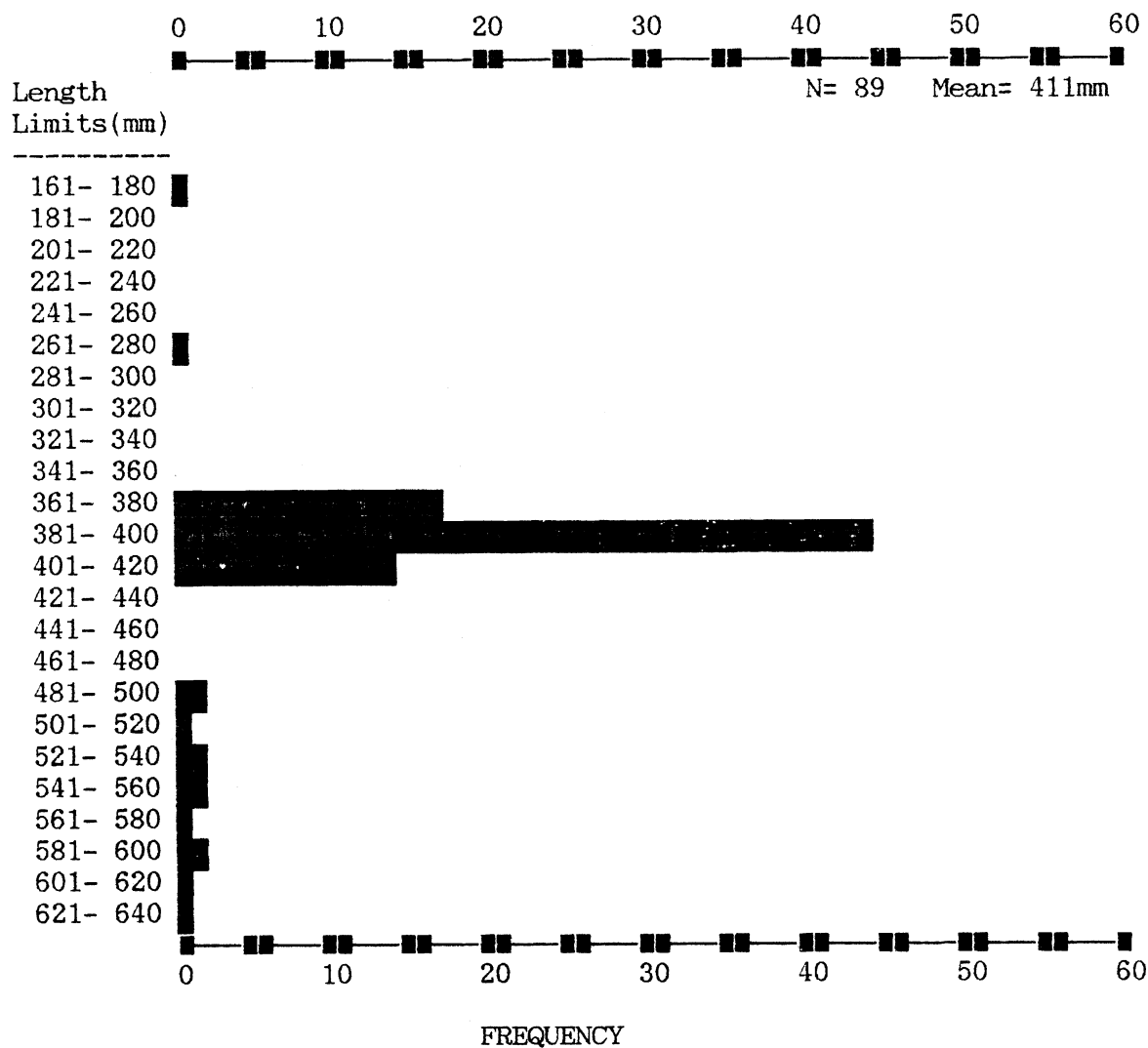
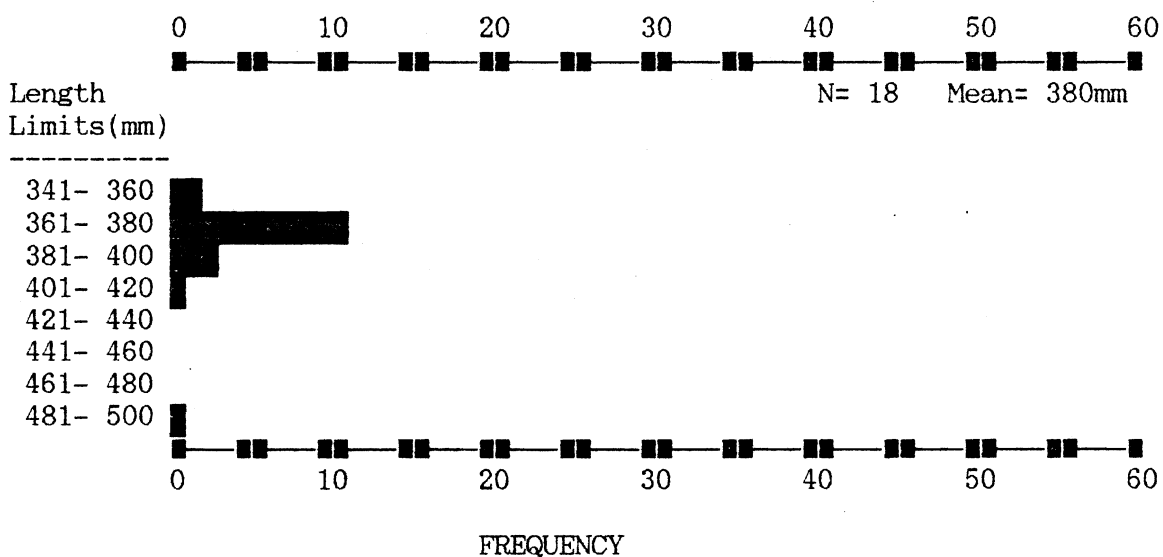


Figure 17. Length-Frequency Histogram for Pacific (Chub) Mackerel  
 Taken by All CPFV Anglers Using Hook-and-Line Gear.  
 Area 5, Quarter 4, 1979.



#### LITERATURE CITED

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

APPENDIX A.

Pages 126 to 298 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 1979 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
Sablefish	<u>Anoplopoma fimbria</u>	0.00002248980	2.84080
Jacksmelt	<u>Atherinopsis californiensis</u>	0.00000098820	3.35360
Flounders, Lefteye	Bothidae		
Bottomfishes (Groundfishes)	Bottom Pisces (Groundfishes)		
Prickleback, Monkeyface	<u>Cebidichthys violaceus</u>	0.00000000000	0.00000
Sharks	Chondrichthyes		
Sanddab, Pacific	<u>Citharichthys sordidus</u>	0.00000142860	3.37080
Sandabs	<u>Citharichthys</u> spp.		
Sanddab, Speckled	<u>Citharichthys stigmaeus</u>	0.00000266000	3.29530
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>Enophris bison</u>	0.00001790000	2.89600
Sculpin, Bull	<u>Enophris taurina</u>		
Sole, Petrale	<u>Eopsetta jordani</u>	0.00000305800	3.23950
Shark, Soupfin	<u>Galeorhinus zyopterus</u>		
Croaker, White	<u>Genyonemus lineatus</u>	0.00000708500	3.08328
Irish Lord, Red	<u>Hemilepidotus hemilepidotus</u>	0.00003580000	2.89600
Irish Lord, Brown	<u>Hemilepidotus spinosus</u>	0.00003580000	2.90000
Perch, Zebra	<u>Hermosilla azurea</u>	0.00001070000	3.10250
Greenlings (unidentified)	Hexagrammidae		
Greenling, Kelp	<u>Hexagrammos decagrammus</u>	0.00002604300	2.89280
Greenling, Rock	<u>Hexagrammos lagocephalus</u>	0.00002604300	2.89280
Shark, Sixgill	<u>Hexanchus griseus</u>		
Surfperch, Walleye	<u>Hyperprosopon argenteum</u>	0.00000035580	3.71700
Surfperch, Silver	<u>Hyperprosopon ellipticum</u>	0.00000469894	3.22700
Smelt, Surf	<u>Hypomesus pretiosus</u>	0.00000086900	3.38600
Seaperch, Rainbow	<u>Hypsurus caryi</u>	0.00001535000	3.00700
Sole, Rock	<u>Lepidopsetta bilineata</u>	0.00000760300	3.09570
Sculpin, Pacific Staghorn	<u>Leptocottus armatus</u>	0.00001790000	2.89600
Tomcod, Pacific	<u>Microgadus proximus</u>	0.00000534900	3.07000
Molas	Molidae		
Bass, Striped	<u>Morone saxatilis</u>	0.00001068210	2.90671
Smoothhound, Gray	<u>Mustelus californicus</u>	0.00002089000	2.88000
Smoothhound, Brown	<u>Mustelus henlei</u>	0.00002089000	2.88000
Smoothhounds	<u>Mustelus</u> spp.		
Ray, Bat	<u>Myliobatis californica</u>	0.00001054400	3.09289



## APPENDIX B (continued)

Common Name	Scientific Name	a	b
Fringehead, Onespot	<u>Neoclinus uninotatus</u>	0.00000000000	0.00000
Shark, Sevengill	<u>Notorynchus maculatus</u>	0.00000070600	3.49000
Salmon, Pink	<u>Oncorhynchus gorboscha</u>		
Salmon, Coho (Silver)	<u>Oncorhynchus kisutch</u>	0.00000944000	3.00000
Salmon	<u>Oncorhynchus spp.</u>		
Salmon, Chinook (King)	<u>Oncorhynchus tshawytscha</u>	0.00000944000	3.00000
Lingcod	<u>Ophiodon elongatus</u>	0.00001157000	2.99000
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		
Flatfishes	Pleuronectiformes		
Shark, Blue	<u>Prionace glauca</u>	0.00000082655	3.20000
Sole, Sand	<u>Psettichthys melanostictus</u>	0.00000277100	3.26480
Skate, Big	<u>Raja binoculata</u>	0.00002428050	2.85496
Skates	Rajidae		
Seaperch, Rubberlip	<u>Rhacochilus toxotes</u>	0.00003220500	2.90840
Perch, Pile	<u>Rhacochilus vacca</u>	0.00000925500	3.09900
Drums	Sciaenidae		
Mackerel, Pacific (Chub)	<u>Scomber japonicus</u>	0.00000136600	3.39360
Cabezon	<u>Scorpaenichthys marmoratus</u>	0.00008823220	2.72030
Rockfishes (unidentified)	Scorpaenidae		
Rockfish, Kelp	<u>Sebastes atrovirens</u>	0.00003277410	2.86200
Rockfish, Brown	<u>Sebastes auriculatus</u>	0.00002601290	2.93360
Rockfish, Redbanded	<u>Sebastes babcocki</u>	0.00002346750	2.94310
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, Quillback	<u>Sebastes maliger</u>	0.00003000000	2.93000
Rockfish, Black	<u>Sebastes melanops</u>	0.00001965710	2.95480
Rockfish, Vermilion	<u>Sebastes miniatus</u>	0.00002677000	2.91650
Rockfish, Blue	<u>Sebastes mystinus</u>	0.00001624670	2.98849
Rockfish, China	<u>Sebastes nebulosus</u>	0.00000564040	3.20470
Rockfish, Speckled	<u>Sebastes ovalis</u>	0.00000324000	3.25050
Bocaccio	<u>Sebastes paucispinis</u>	0.00000583320	3.09410
Rockfish, Canary	<u>Sebastes pinniger</u>	0.00001051000	3.05560
Rockfish, Grass	<u>Sebastes rastrelliger</u>	0.00000575900	3.23500
Rockfish, Rosy	<u>Sebastes rosaceus</u>	0.00001678900	2.99430
Rockfish, Yelloweye	<u>Sebastes ruberrimus</u>	0.00001304370	3.05710
Rockfish, Flag	<u>Sebastes rubrivinctus</u>	0.00002346750	2.94310
Rockfish, Olive	<u>Sebastes serranoides</u>	0.00000521020	3.15410

APPENDIX B (continued)

Common Name	Scientific Name	a	b
Rockfish, Whitebelly	<u>Sebastes vexillaris</u>	0.00001648140	3.01800
Thornyhead, Shortspine	<u>Sebastolobus alascanus</u>	0.00001406040	3.06300
Sharks, Dogfish	<u>Squalidae</u>		
Spiny Dogfish	<u>Squalus acanthias</u>	0.00000189000	3.09000
Electric Rays	<u>Torpedinidae</u>		
Jack Mackerel	<u>Trachurus symmetricus</u>	0.00000331000	3.22320
Shark, Leopard	<u>Triakis semifasciata</u>	0.00002089000	2.88000
Unidentified Fishes	<u>Unidentified Pisces</u>		

Appendix C. List of Common and Scientific Names for Fish from Areas 097 and 3 in 1979 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)	<u>Acipenseridae</u>
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>
Seaperch, Striped	<u>Embiotoca lateralis</u>
Croaker, White	<u>Genyonemus lineatus</u>
Greenling, Rock	<u>Hexagrammos lagocephalus</u>
Surfperch, Walleye	<u>Hyperprosopon argenteum</u>
Surfperch, Silver	<u>Hyperprosopon ellipticum</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, Redbanded	<u>Sebastes babcocki</u>
Rockfish, Gopher	<u>Sebastes carnatus</u>
Rockfish, Copper	<u>Sebastes caurinus</u>
Rockfish, Greenspotted	<u>Sebastes chlorostictus</u>
Rockfish, Starry	<u>Sebastes constellatus</u>
Rockfish, Greenstriped	<u>Sebastes elongatus</u>
Rockfish, Widow	<u>Sebastes entomelas</u>
Rockfish, Yellowtail	<u>Sebastes flavidus</u>
Chilipepper	<u>Sebastes goodei</u>
Rockfish, Black	<u>Sebastes melanops</u>
Rockfish, Vermilion	<u>Sebastes miniatus</u>
Rockfish, Blue	<u>Sebastes mystinus</u>
Rockfish, China	<u>Sebastes nebulosus</u>
Rockfish, Speckled	<u>Sebastes ovalis</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>