

MARINE LIFE MANAGEMENT ACT PROGRESS REPORT

MONTEREY SPORT SKIFF CREEL SURVEY

1981-82, 1983-84, 1999

Prepared by

David A. VenTresca, Associate Marine Biologist

Central California Marine Sport Fish Project

(Voice: 831/649-2881 Fax: 831/649-2894 Email: dventres@dfg.ca.gov)

Prepared with participation from:

Briana Caia Brady

Mike Donnellan

Jennifer Fisher

Don Flescher

Bear Hornady

Rob Iverson

Howatt King

Scot Lucas

Dr. Nelson Maurer

Paul Reilly

Dedicated to Dr. Nelson Maurer

"A brave soul who chose to steer his own course"

14 January 2000

Abstract

Creel survey data from sport fishers landing their catch in Monterey are summarized and data regarding numbers and mean length of species measured and the sampling effort summary for three survey periods from 1981 to 1999 are presented. During the three surveys 13,345 fishes taken by sport anglers using hook-and-line, representing 65 species, were measured during 130 days of sampling. Six of the species analyzed showed little or not change in mean total length among the survey periods. Nine species demonstrated increases in mean total lengths from 1983-84 to 1999 and five exhibited increases from 1981-82 to 1999. Twenty-six species declined in mean total length from 1981-82 to 1983-84 and sixteen species declined from 1981-82 to 1999.

Introduction

Since 1981 the Central California Marine Sport Fish Project has been collecting information intermittently on fishes landed by sport skiff fishers in the vicinity of Monterey. These were used to assess changes in the quality of fishing in this area. In addition to commercial fisheries and the recreational Commercial Passenger Fishing Vessel fishery, sport skiff fishers constitute a significant component of nearshore fisheries. Monterey sport and commercial anglers have expressed concern regarding the decline in the quality of fishing. Sport anglers believe the sizes of fish have decreased, catch rates have declined, and they must travel farther from Monterey to achieve reasonable catches of quality (i.e. large) fish (Wilson et al. 1996).

The nearshore reefs of central California provide a wide variety of habitats for fishes, ranging from pinnacles and vertical rock walls to nearly horizontal base rock, boulder fields, and sand channels. In the spring and summer, annual upwelling of cool, nutrient-rich water along the central California coast produces rich plankton blooms and supports a rich algal community. This lush plant growth provides an abundant food supply for animals living in and on these reefs. Despite similarities in bottom topography, oceanographic conditions, flora, and invertebrate fauna, significant differences exist in the number, size, and species of sport fishes that inhabit these reef systems. Many of the species are residential, underscoring the need for site specific catch data (Lea et al. 1999).

This report summarizes creel survey data from sport fishers landing their catch in Monterey. Data presented are the numbers and mean length of species measured and the sampling effort summary for three survey periods from 1981 to 1999.

Methods

Three creel surveys of the catch of sport skiff fishers were conducted from 1981 to 1999. All three surveys were conducted at the Monterey Coast Guard Ramp located in Monterey Harbor, Monterey County. Interviews were conducted predominantly on Saturdays, Sundays and occasionally on holidays. One to three Department of Fish and Game personnel would arrive at the ramp at 1000 and leave between 1500 and 1600. A station was set up close to the boat landing ramp and samplers would approach skiffs as they landed, conduct interviews with fishers and examine their catch using the procedure below. Due to the voluntary nature of this survey, every effort was made to respect the angler's property and state of mind while the interview was conducted.

Interview Procedure:

- 1) Briefly explain your connection with Fish & Game and the purpose of the survey BEFORE you ask questions.
- 2) Approach a boat only when it is apparent that you will not be interfering at a crucial moment (immediately after tying up is usually best).
- 3) Ask the boat owner for permission to come aboard before boarding a boat - be aware of fishing poles etc. on deck that could be damaged.
- 4) Handle the angler's catch with care.
 - a) Do not place fish on asphalt or a hot/dirty surface.
 - b) Do not allow fish to dirty the interior of a clean boat.
 - c) If a fish is presented to you in a bucket with water, return it to the bucket with water. Same care is taken with fish packed in ice or on a stringer.
 - d) Do not mix fish from different bags (usually from different anglers on the same boat) unless cleared by anglers to do so.
- 5) Make an effort, whenever time permits, to answer questions as completely as possible (Remember: "I don't know" is always an acceptable answer - it is vital that your answer to a questions regarding angler regulations is UNAMBIGUOUS and ACCURATE. Refer all regulation questions to the California Fishing Regulations for further information)
- 6) Try to keep your enthusiasm level the same no matter what the catch (e.g. a giant bag of sand dabs or 40-lb salmon); don't let your personal biases show.
- 7) Remember that women and kids fish too; be sure to include them in your interview process. But, be aware that some parents are suspicious if you ask questions of a child without their presence. It is best to wait for the arrival of an adult before proceeding with an interview.
- 8) If you wear a jacket such that your shirt patch is covered, take extra steps to identify yourself as a member of the Department and the purpose of the survey.
- 9) Although many of the items covered here are simply a matter of common sense, often times in a busy interview period such common courtesies can be easily overlooked. However the angler being interviewed only sees the image that you project during the time that you are interviewing him/her. For many anglers, their encounter with you will be the first time that they have seen a representative of the Department of Fish and Game. Therefore, it is important that the impression you make be a good one. In our experience, remembering the courtesies listed above will result in a more positive experience for the angler and a more cooperative angler in a second interview.

In addition to date of sample and weather and sea conditions, interview questions include: target species, fishing location, gear used, depth fished, number of anglers in boat, boat type, and hours from launch to landing. All of the fish of anglers that were interview were counted and as many as possible were measured.

Results

From 8 November 1981 to 12 September 1999 three creel survey were conducted, 13,345 fishes taken by sport anglers using hook-and-line, representing 65 species, were measured during 130 days of sampling (Table 1). The geographic fishing range of skiffs that launched from Monterey was from the north side of the Monterey Bay Submarine Canyon to south of Pt. Sur (Figure 1). This report

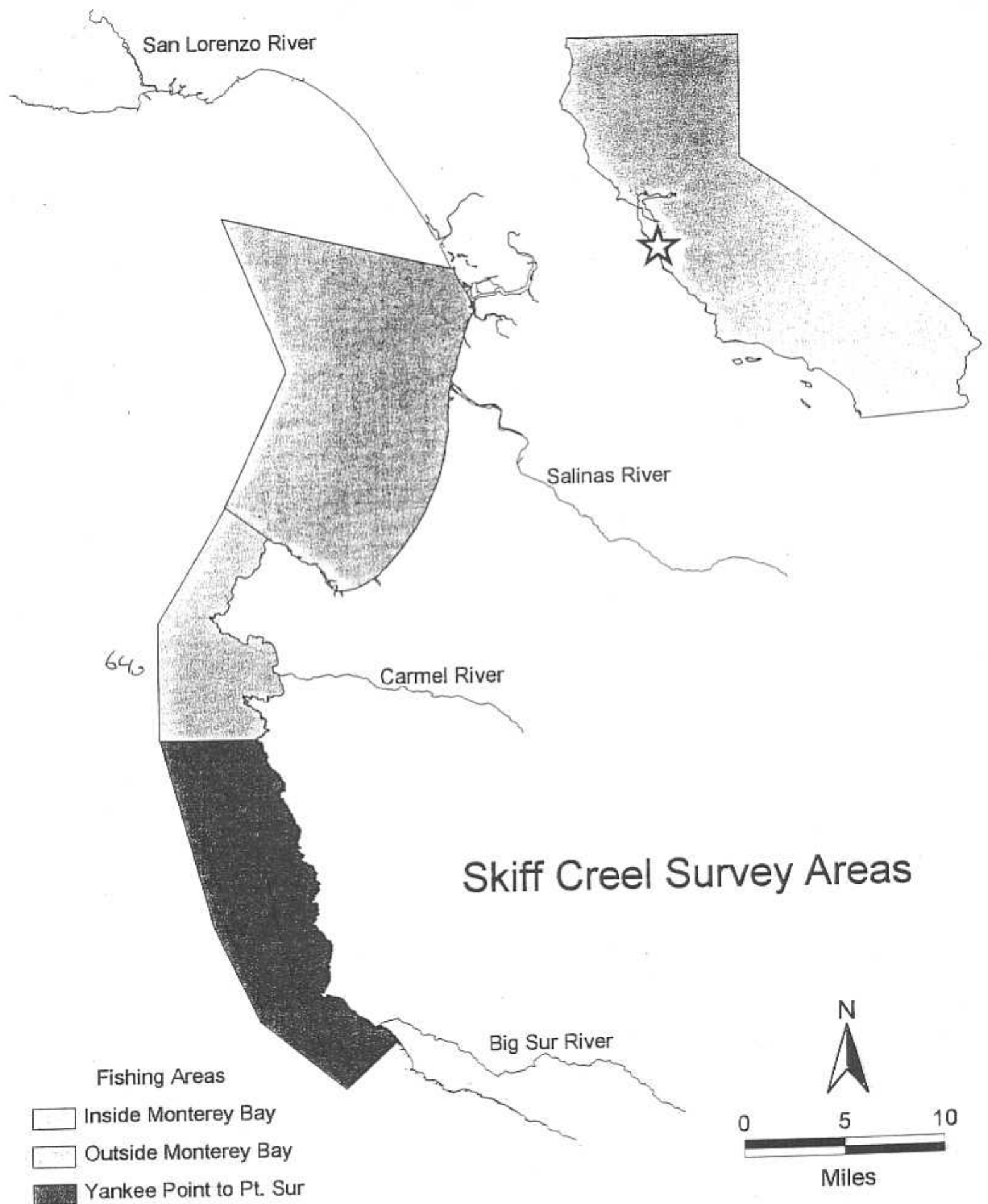


Figure 1. Skiff creel survey areas from Monterey Bay to Point Sur

summarizes the numbers and mean length of fish measured for each of three fishing areas (Inside Monterey Peninsula, Outside Monterey Peninsula, and from Yankee Pt. to Pt. Sur) for the three survey periods (1981-82, 1983-84, and 1999). Generally the area and survey period that has received the greatest cumulative fishing pressure to date is Inside Monterey Peninsula in 1999 and the areas that have received the least are from Yankee Pt. to Pt. Sur in 1981-82 and Outside the Monterey Peninsula in 1981-82. In addition to within fishing area comparisons, spatial/temporal comparisons were also made between areas and survey periods (i.e. between Outside the Monterey Peninsula in 1981-82 and Inside Monterey Peninsula in 1999. This comparison is an attempt to compare the most virgin or least fished areas to area which have whose fish populations have received the great cumulative fishing pressure.

Table 1. Sampling effort during three creel surveys, 1981-99

Survey	Dates	Months	# Days	# Fish	# Species
1	8 Nov 81 - 19 Dec 82	13	56	7199	58
2	2 Jan 83 - 10 Nov 84	23	45	4547	54
3	12 Jun 99 - 12 Sept 99	3	29	1599	32

Species that were observed rarely or only in one year are not discussed in detail in this report although all data are presented in Table 2. Species that demonstrated little change in mean total length from 1981-82 to 1983-84 or to 1999 included brown, China, rosy, and starry rockfish, Pacific Hake and Pacific Sanddab.

Black Rockfish

Black rockfish occur from southern California to Alaska; although they are much more abundant north of San Francisco. Mean total length of black rockfish taken inside the Monterey Peninsula declined 9% from 1981-82 to 1983-84 but increased 12% from 1983-84 to 1999. A similar trend was observed outside the Monterey Peninsula with a 13% decline from 1981-82 to 1983-84 but a 11% increase from 1983-84 to 1999. There is a 3% difference in mean total length between the area whose fish populations have received the least cumulative fishing pressure (Outside the Monterey Peninsula 1981-82) and the area whose fish populations have received the greatest cumulative fishing pressure (Inside the Monterey Peninsula 1999).

Black-and-yellow Rockfish

Black-and-yellow rockfish is a shallow water species whose depth range is from the intertidal to 120 feet. Black-and-yellow rockfish taken inside the Monterey Peninsula showed a 10% decline in mean total length from 1981-82 to 1983-84 and 13% from 1981-82 to 1999. Outside the Monterey Peninsula mean total length declined 4% from 1981-82 to 1983-84. There is a 16% difference in mean total length between the area whose fish populations have received the least cumulative fishing pressure (Outside the Monterey Peninsula 1981-82) and the area whose fish populations have received the greatest cumulative fishing pressure (Inside the Monterey Peninsula 1999).

Blue Rockfish

Blue rockfish is one of the most frequently taken species by sport fishers in central California. Inside the Monterey Peninsula blue rockfish mean total length declined 14% from 1981-82 to 1983-84 and increased 1% from 1983-84 to 1999; thus there was a net 13% decline from 1981-82 to 1999.

Outside the Monterey Peninsula mean total length declined 10% from 1981-82 to 1983-84 and increased 1% from 1983-84 to 1999; thus there was a net 9% decline from 1981-82 to 1999. From Yankee Pt. to Pt. Sur mean total length declined 12% from 1981-82 to 1983-84. There is a 17% difference in mean total length between the area whose fish populations have received the least cumulative fishing pressure (Outside the Monterey Peninsula 1981-82) and the area whose fish populations have received the greatest cumulative fishing pressure (Inside the Monterey Peninsula 1999).

Bocaccio

During past decades bocaccio was a major species in the sport catch; however, existing stocks are severely depressed. Mean length of bocaccio landed inside the Monterey Peninsula declined 18% from 1981-82 to 1999. Outside the Monterey Peninsula mean length declined 15% from 1981-82 to 1983-84. There is a 26% difference in mean total length between the area whose fish populations have received the least cumulative fishing pressure (Outside the Monterey Peninsula 1981-82) and the area whose fish populations have received the greatest cumulative fishing pressure (Inside the Monterey Peninsula 1999).

Cabazon

Cabazon inhabit a depth range from the shallow intertidal to 250 feet. Inside the Monterey Peninsula cabazon mean total length declined 7% from 1981-82 to 1983-84 and increased 2% from 1983-84 to 1999; thus there was a net 5% decline from 1981-82 to 1999. Outside the Monterey Peninsula mean total length declined 8% from 1981-82 to 1983-84. There is a 12% difference in mean total length between the area whose fish populations have received the least cumulative fishing pressure (Outside the Monterey Peninsula 1981-82) and the area whose fish populations have received the greatest cumulative fishing pressure (Inside the Monterey Peninsula 1999).

Canary Rockfish

Canary rockfish is a deep water species whose stocks have been dramatically reduced along the entire California coast. Inside the Monterey Peninsula canary rockfish mean total length declined 17% from 1981-82 to 1983-84 and 4% during the same time period outside the Monterey Peninsula. There is a 22% difference in mean total length between the area whose fish populations have received the least cumulative fishing pressure (Outside the Monterey Peninsula 1981-82) and the area whose fish populations have received the greatest cumulative fishing pressure (Inside the Monterey Peninsula 1999).

Copper Rockfish

Copper rockfish is of the longest lived species of nearshore rockfish are copper rockfish. Inside the Monterey Peninsula copper rockfish mean total length declined 11% from 1981-82 to 1983-84 and increased 4% from 1983-84 to 1999; thus there was a net 7% decline from 1981-82 to 1999. Outside the Monterey Peninsula mean total length declined 11% from 1981-82 to 1983-84.

Gopher Rockfish

Gopher rockfish are morphologically similar to black-and-yellow rockfish but occur in relatively deeper water. Gopher rockfish taken inside the Monterey Peninsula showed a 4% decline in mean total length from 1981-82 to 1983-84 and 8% from 1981-82 to 1999. Outside the Monterey

pressure (Outside the Monterey Peninsula 1981-82) and the area whose fish populations have received the greatest cumulative fishing pressure (Inside the Monterey Peninsula 1999).

Yellowtail Rockfish

Yellowtail rockfish is one of the most commonly schooling rockfishes in depths exceeding 100 feet and is important in both sport and commercial fisheries. Inside the Monterey Peninsula yellowtail rockfish mean total length declined 12% from 1981-82 to 1983-84 and increased 14% from 1983-84 to 1999; thus there was a net 1% increase from 1981-82 to 1999. Outside the Monterey Peninsula mean total length declined 17% from 1981-82 to 1983-84 and increased 9% from 1983-84 to 1999; thus there was a net 10% decline from 1981-82 to 1999. There is a 13% difference in mean total length between the area whose fish populations have received the least cumulative fishing pressure (Outside the Monterey Peninsula 1981-82) and the area whose fish populations have received the greatest cumulative fishing pressure (Inside the Monterey Peninsula 1999).

Summary

This report summarizes creel survey data from sport fishers landing their catch in Monterey. Data presented are the numbers and mean length of species measured and the sampling effort summary for three survey periods from 1981 to 1999. During the three surveys 13,345 fishes taken by sport anglers using hook-and-line, representing 65 species, were measured during 130 days of sampling. Six of the species analyzed showed little or not change in mean total length among the survey periods. Nine species demonstrated increases in mean total lengths from 1983-84 to 1999 and five exhibited increases from 1981-82 to 1999. Twenty-six species declined in mean total length from 1981-82 to 1983-84 and sixteen species declined from 1981-82 to 1999.

References

Lea, R.N., R.D. McAllister, D.A. VenTresca. 1999. Biological Aspects of Nearshore Rockfishes of the Genus *Sebastes* with Notes on Ecologically Related Species. Calif. Dept Fish and Game Fish Bulletin 177. p109.

Wilson, C.E., L.A. Lalko, D. Wilson-Vandenberg, P.N. Reilly. 1996. Onboard Sampling of the Rockfish and Lingcod Commercial Passenger Fishing Vessel Industry in Northern and Central California, Marine Region Division Admin. Rpt 96-2. p103.

Table 2. Number of each species measured and mean total length during 1981-82, 1983-84, and 1999.

Species	Area Fished		1981-82	1983-84	1999
Albacore	Outside Monterey Peninsula	n			23
		Mean TL			822
Black RF	Inside Monterey Peninsula	n	63	40	61
		Mean TL	315	287	322
	Outside Monterey Peninsula	n	37	12	30
		Mean TL	332	288	320
Black Surfperch	Inside Monterey Peninsula	n	12		3
		Mean TL	281		269
Black-and-yellow RF	Inside Monterey Peninsula	n	168	98	76
		Mean TL	283	256	247
	Outside Monterey Peninsula	n	126	68	5
		Mean TL	295	283	251
Blacksmith	Inside Monterey Peninsula	n	1	1	5
		Mean TL	270	266	218
Blue RF	Inside Monterey Peninsula	n	1191	849	336
		Mean TL	306	264	266
	Outside Monterey Peninsula	n	904	515	137
		Mean TL	321	290	293
	Yankee Pt. to Pt. Sur	n	39	17	4
		Mean TL	311	272	283
Bocaccio RF	Inside Monterey Peninsula	n	14	5	10
		Mean TL	468	457	383
	Outside Monterey Peninsula	n	28	19	
		Mean TL	521	445	
Brown RF	Inside Monterey Peninsula	n	37	32	33
		Mean TL	323	316	323
	Outside Monterey Peninsula	n		2	
		Mean TL		301	
Cabezon	Inside Monterey Peninsula	n	49	12	15
		Mean TL	413	385	392
	Outside Monterey Peninsula	n	71	16	2
		Mean TL	445	409	409
California Halibut	Inside Monterey Peninsula	n		1	10
		Mean TL		992	910
	Outside Monterey Peninsula	n			2
		Mean TL			788
California Lizard Fish	Inside Monterey Peninsula	n		1	
		Mean TL		244	
Canary RF	Inside Monterey Peninsula	n	159	68	8
		Mean TL	304	253	357
	Outside Monterey Peninsula	n	109	30	3
		Mean TL	326	314	339
	Yankee Pt. to Pt. Sur	n	1		
		Mean TL	264		
Chilipepper RF	Inside Monterey Peninsula	n		16	
		Mean TL		347	
	Outside Monterey Peninsula	n	27	4	
		Mean TL	346	355	

Table 2. Number of each species measured and mean total length during 1981-82, 1983-84, and 1999.

Species	Area Fished		1981-82	1983-84	1999
China RF	Inside Monterey Peninsula	n	17	12	3
		Mean TL	297	288	269
	Outside Monterey Peninsula	n	16	13	
		Mean TL	302	309	
Copper RF	Inside Monterey Peninsula	n	239	211	51
		Mean TL	302	269	281
	Outside Monterey Peninsula	n	94	33	8
		Mean TL	340	304	317
	Yankee Pt. to Pt. Sur	n	12	2	
		Mean TL	399	316	
Cowcod	Inside Monterey Peninsula	n		1	
		Mean TL		680	
	Outside Monterey Peninsula	n	2		
		Mean TL	501		
	Yankee Pt. to Pt. Sur	n	1		
		Mean TL	684		
Curlfin Turbot	Inside Monterey Peninsula	n	1		
		Mean TL	274		
Flag RF	Outside Monterey Peninsula	n	1		
		Mean TL	373		
Gopher RF	Inside Monterey Peninsula	n	288	236	169
		Mean TL	277	266	255
	Outside Monterey Peninsula	n	277	178	62
		Mean TL	290	286	251
	Yankee Pt. to Pt. Sur	n	7	1	
		Mean TL	306	272	
Grass RF	Inside Monterey Peninsula	n	24	1	1
		Mean TL	358	294	368
	Outside Monterey Peninsula	n	8	2	
		Mean TL	430	374	
Greenspotted RF	Inside Monterey Peninsula	n	26	2	
		Mean TL	308	368	
	Outside Monterey Peninsula	n	54	21	
		Mean TL	346	331	
Greenstriped RF	Inside Monterey Peninsula	n	6	1	
		Mean TL	280	307	
	Outside Monterey Peninsula	n	15	8	
		Mean TL	278	263	
Halfmoon	Inside Monterey Peninsula	n	6	2	
		Mean TL	322	302	
	Outside Monterey Peninsula	n		1	
		Mean TL		317	
Jack Mackerel	Inside Monterey Peninsula	n	2	23	
		Mean TL	341	338	
	Outside Monterey Peninsula	n		1	
		Mean TL		289	
Jacksmelt	Inside Monterey Peninsula	n	4		16
		Mean TL	384		271
Kelp Bass	Inside Monterey Peninsula	n	32	9	3
		Mean TL	453	413	512

Table 2. Number of each species measured and mean total length during 1981-82, 1983-84, and 1999.

Species	Area Fished		1981-82	1983-84	1999
Kelp Greenling	Inside Monterey Peninsula	n	33	9	7
		Mean TL	365	328	338
	Outside Monterey Peninsula	n	37	4	1
		Mean TL	366	385	332
	Yankee Pt. to Pt. Sur	n	1		
Kelp RF	Inside Monterey Peninsula	n	264	227	90
		Mean TL	300	284	283
	Outside Monterey Peninsula	n	91	81	27
		Mean TL	325	307	301
	Yankee Pt. to Pt. Sur	n	1		
King Salmon	Inside Monterey Peninsula	n	339	133	6
		Mean TL	726	658	858
	Outside Monterey Peninsula	n	1	1	8
		Mean TL	815	643	825
	Yankee Pt. to Pt. Sur	n	18		
Lingcod	Inside Monterey Peninsula	n	76	25	28
		Mean TL	607	605	534
	Outside Monterey Peninsula	n	104	80	8
		Mean TL	595	619	605
	Yankee Pt. to Pt. Sur	n	18		
Monkeyface-eel	Inside Monterey Peninsula	n	3		
		Mean TL	573		
	Outside Monterey Peninsula	n		1	
		Mean TL		674	
	Yankee Pt. to Pt. Sur	n			
Ocean Whitefish	Inside Monterey Peninsula	n	1	2	12
		Mean TL	443	391	740
	Outside Monterey Peninsula	n	247	117	21
		Mean TL	371	358	335
	Yankee Pt. to Pt. Sur	n	363	192	22
Olive RF	Inside Monterey Peninsula	n	396	382	350
		Mean TL	387	347	
	Outside Monterey Peninsula	n	25	14	
		Mean TL	387	347	
	Yankee Pt. to Pt. Sur	n	25	14	
Pacific Bonito	Inside Monterey Peninsula	n	5	2	
		Mean TL	599	644	
	Outside Monterey Peninsula	n	4	1	
		Mean TL	602	495	
	Yankee Pt. to Pt. Sur	n	4	1	
Pacific Hake	Inside Monterey Peninsula	n	18	19	
		Mean TL	548	538	
	Outside Monterey Peninsula	n	52	91	13
		Mean TL	338	364	309
	Yankee Pt. to Pt. Sur	n	15	28	
Pacific Mackerel	Inside Monterey Peninsula	n	348	355	
		Mean TL	348	355	
	Outside Monterey Peninsula	n	100	142	90
		Mean TL	231	225	235
	Yankee Pt. to Pt. Sur	n	12	10	2
Pacific Sanddab	Inside Monterey Peninsula	n	214	222	241
		Mean TL	214	222	241
	Outside Monterey Peninsula	n	9	1	
		Mean TL	316	385	
	Yankee Pt. to Pt. Sur	n	5		
Petrale Sole	Inside Monterey Peninsula	n	412		
		Mean TL	412		
	Outside Monterey Peninsula	n			
		Mean TL			
	Yankee Pt. to Pt. Sur	n			

Table 2. Number of each species measured and mean total length during 1981-82, 1983-84, and 1999.

Species	Area Fished		1981-82	1983-84	1999
Starry RF	Inside Monterey Peninsula	n	32	33	11
		Mean TL	320	304	308
	Outside Monterey Peninsula	n	117	68	4
		Mean TL	319	318	300
	Yankee Pt. to Pt. Sur	n	6		
Striped Surfperch	Inside Monterey Peninsula	n	18	3	
		Mean TL	314	326	
	Outside Monterey Peninsula	n	1	1	
		Mean TL	320	332	
Swordspine RF	Inside Monterey Peninsula	n	2		
		Mean TL	252		
Tiger RF	Inside Monterey Peninsula	n	1		
		Mean TL	432		
Treefish	Inside Monterey Peninsula	n	1		1
		Mean TL	363		244
Unid. Flatfish	Outside Monterey Peninsula	n	2		
		Mean TL	383		
Unid. RF	Inside Monterey Peninsula	n		2	
		Mean TL		351	
	Outside Monterey Peninsula	n	1		
		Mean TL	430		
Unid. Sanddab	Inside Monterey Peninsula	n			10
		Mean TL			264
Vermilion RF	Inside Monterey Peninsula	n	53	53	53
		Mean TL	323	312	342
	Outside Monterey Peninsula	n	24	20	5
		Mean TL	387	430	404
	Yankee Pt. to Pt. Sur	n	6		
		Mean TL	474		
White Croaker	Inside Monterey Peninsula	n	2	7	
		Mean TL	255	267	
Widow RF	Inside Monterey Peninsula	n	3	1	
		Mean TL	327	240	
	Outside Monterey Peninsula	n	6	5	
		Mean TL	334	366	
Wolf-eel	Inside Monterey Peninsula	n	1		
		Mean TL	1090		
	Outside Monterey Peninsula	n	1		
		Mean TL	1460		
Yelloweye RF	Inside Monterey Peninsula	n	2	1	2
		Mean TL	336	514	399
	Outside Monterey Peninsula	n	11	5	
		Mean TL	478	431	
	Yankee Pt. to Pt. Sur	n	2		
		Mean TL	457		

Table 2. Number of each species measured and mean total length during 1981-82, 1983-84, and 1999.

Species	Area Fished		1981-82	1983-84	1999
Yellowtail RF	Inside Monterey Peninsula	n	97	115	53
		Mean TL	294	260	298
	Outside Monterey Peninsula	n	177	110	6
		Mean TL	344	284	309
	Yankee Pt. to Pt. Sur	n	4		
		Mean TL	356		