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Fish Bulletin No. 121. The California Marine Fish Catch For 1961 and Catch Localities for Dover Sole, *Microstomus pacificus* (Lockington), Landed in California, 1950 through 1959

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**THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF FISH AND GAME
FISH BULLETIN No. 121
The California Marine Fish Catch For 1961
Catch Localities for Dover Sole, *Microstomus pacificus* (Lockington), Landed
in California, 1950 through 1959**



BY
*THE BIOSTATISTICAL SECTION
MARINE RESOURCES OPERATIONS*
and By
E. A. BEST
1963



FIGURE 1

(2)

FIGURE 1

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FOREWORD

Catch Bulletins provide records of California's commercial fisheries and their value to fishermen. They also summarize the marine party boat anglers' sport catch.

This report for 1961 is the 21st in the series. Prior records have been published regularly beginning with those for 1926 and 1927. In recent years, a need for faster publication of catch statistics has made it desirable to publish annually instead of biennially.

There has been a change in the title of the bulletin series from *The Marine Fish Catch of California* to *The California Marine Fish Catch*.

Each wholesale fish dealer or processor completes a record in quadruplicate of all fish received. The triplicate copy of these receipts is sent to the Department of Fish and Game. Party-boat operators record each trip's catch and these records are also sent to the Department. These data are edited and subsequently processed by electric accounting machines.

Published figures are of national and international concern, but they are used primarily by fisheries scientists and legislators to manage and regulate California's important fisheries. Chambers of commerce, members of the fishing industry, educators, and others also find the catch statistics of value in meeting their respective needs.

1. EXPLANATION OF TABLES

The tables of this bulletin summarize the final 1961 records of fish mollusks, and crustaceans landed by the commercial fishing fleet in California. Records of fish caught by party-boat anglers or used for live bait are also summarized.

The tables also record imports from other states or foreign countries that are destined for processing; however, fish shipped into California to be sold in a fresh state are not recorded.

Annual landings and shipments into California are shown in Table 2 and Figure 2. Weights given are totals of all species landed or imported including deliveries to sardine reduction ships from 1930 to 1938.

The 20 leading species landed and shipped into California are ranked according to pounds and value for 1960 and 1961 in Table 3. Poundages of landings and shipments of each species for 1961 are recorded in Tables 6 to 14.

The value for each variety has been computed from prices paid to the fishermen. These are minimal values, less than wholesale, and do not reflect costs of trucking, unloading, ice, or other items. When the price paid for an individual landing is unspecified, we use the average price for that variety in that area. Tables 15 to 21 show values of each variety landed in the state by each port area.

Species caught and landed in California during 1961 are listed in Table 1, both common and scientific names are given. Some varieties are reported collectively when, for economic or other reasons, dealers are unable to provide a specific separation. For example silver and king salmon are combined as salmon because the price is based on size; for this reason, the dealers do not distinguish species.

Animal food is reported as a separate category for the first time. This grouping consists of trawl-caught fish. In prior years, dealers attempted to separate animal food landings by species. Sampling conducted by the Department's Bottomfish Investigation during 1961 showed the species composition of animal food was:

<i>Species</i>	<i>Percent</i>
Sablefish	28
Arrowtooth flounder	27
Rockfish	13
Pacific hake	12
Dover sole	7
Rex sole	5
English sole	2
30 other species	6
	100

In California, almost all fish and shellfish are landed in a round condition, an exception is salmon which is nearly always eviscerated before landing. However, the condition of fish landed by fishermen cannot always be determined, thus, landing figures are tabulated as reported to the Department's Biostatistical Unit, irrespective of condition.

When landings are reported by units of measure other than pounds, appropriate conversion factors are used to equate them to pounds. Conversion factors are determined periodically by sampling the landings at delivery points. Current conversion factors applied to eight important mollusks and crustaceans when not reported by pounds are:

Abalone, red	50 lbs. per doz.
Abalone, pink	25 lbs. per doz.
Abalone, green	35 lbs. per doz.
Clams, Mexican Pismo	8 lbs. round wt. per 1 lb. cleaned wt.
Clams, Washington	7 lbs. per doz.
Crab, market	2 lbs. each
Oyster, eastern	30 lbs. per 100 oysters
Oyster, giant Pacific	50 lbs. per 100 oysters

Table 22 summarizes the party-boat angler catch from 1936 to 1961, excluding World War II years. The annual catch of the more important sport species together with the total effort expended by party-boat sport fishermen are presented. Total effort for 1960 and 1961 is reported as number of anglers; prior to 1960, angler days were used to measure total effort.

The estimated catch of live bait for ocean sport fishing is given in Table 23. These data are based on the reported catches of 14 boats.

The numbers of fishermen licensed for commercial fishing in California are given by area of residence in Table 4. The sizes of the registered fishing boats of the commercial fleet are listed in Table 5.

TABLE 1
Common and Scientific Names of Fishes, Crustaceans, and Mollusks in the 1961 Catch

Common name	Scientific name	Common name	Scientific name
<i>FISHES</i>			
Anchovy	<i>Engraulis mordax</i>	Shark	
Barracuda, California	<i>Sphyraena argentea</i>	Basking	<i>Cetorhinus maximus</i>
Bass, rock		Bonito	<i>Iseurus glaucus</i>
Kelp bass	<i>Paralabrax clathratus</i>	Dogfish	<i>Squalus acanthias</i>
Sand bass	<i>Paralabrax nebulifer</i>	Leopard	<i>Triakis semifasciata</i>
Bonito, Pacific	<i>Sarda chiliensis</i>	Soupin	<i>Galeorhinus gyoferus</i>
Cabezon	<i>Scorpaenichthys marmoratus</i>	Thresher	<i>Alopius vulpinus</i>
Cabrilla, spotted	<i>Epinephelus analogus</i>	Varying amounts of others	
Carp	<i>Cyprinus carpio</i>	Sheephead, California	<i>Pimelotopon pulchrum</i>
Croaker, white	<i>Genyonemus lineatus</i>	Sierra	<i>Scomberomorus sierra</i>
Small amounts of queenfish	<i>Seriophus politus</i>	Skate	
Flounder		Big	<i>Raja binoculata</i>
Starry flounder	<i>Platichthys stellatus</i>	California	<i>Raja inornata</i>
Small amounts of other flatfishes		Longnose	<i>Raja rhina</i>
Flounder, arrowtooth	<i>Atheresthes stomias</i>	Smelt	
Flyingfish	<i>Cypselurus</i> sp.	Grunion	<i>Leuresthes tenuis</i>
Greenling, kelp	<i>Hexagrammos decagrammus</i>	Jacksmelt	<i>Atherinopsis californiensis</i>
Grouper	<i>Mycteroperca</i> sp.	Surf	<i>Hypomesus pretiosus</i>
Hake, Pacific	<i>Merluccius productus</i>	Topsmelt	<i>Atherinops affinis</i>
Halfmoon	<i>Medialuna californiensis</i>	Smelt, whitebait	<i>Alomerus elongatus</i>
Halibut, California	<i>Paralichthys californicus</i>		<i>Spirinchus starksi</i>
Halibut, Pacific	<i>Hippoglossus stenolepis</i>		Young of several others
Hardhead		Sole	
Sacramento blackfish	<i>Orthodon microlepidotus</i>	Dover	<i>Microstomus pacificus</i>
Hardhead	<i>Mylopharodon conocephalus</i>	English	<i>Parophrys vetulus</i>
Herring, Pacific	<i>Clupea pallasii</i>	Petrale	<i>Eopsetta jordani</i>
Lingcod	<i>Ophiodon elongatus</i>	Rex	<i>Glyptocephalus zachirus</i>
Mackerel, jack	<i>Trachurus symmetricus</i>	Sand	<i>Psettichthys melanostictus</i>
Mackerel, Pacific	<i>Scomber diego</i>	Varying amounts of others	
Opaleye	<i>Girella nigricans</i>	Splittail	<i>Pagognichthys macrolepidotus</i>
Perch	Members of family Embiotocidae	Steelhead	<i>Salmo gairdneri</i>
Pompano, Pacific	<i>Palometa simillima</i>	Sturgeon	<i>Acipenser</i> sp.
Rockfish	All species of <i>Sebastes</i> and <i>Sebastes</i>	Swordfish	<i>Xiphias gladius</i>
Sablefish	<i>Anoplopoma fimbria</i>	Tuna	
Salmon		Albacore	<i>Thunnus alalunga</i>
King	<i>Oncorhynchus tshawytscha</i>	Bigeye	<i>Thunnus obesus</i>
Silver	<i>Oncorhynchus kisutch</i>	Bluefin	<i>Thunnus thynnus</i>
Sanddab	<i>Citharichthys sordidus</i>	Oriental	<i>Thunnus orientalis</i>
Sardine	<i>Sardinops curruca</i>	Skipjack	<i>Katsuwonus pelamis</i>
Sculpin	<i>Scorpaena guttata</i>	Yellowfin	<i>Thunnus albacares</i>
Sea bass, giant	<i>Stereolepis gigas</i>	Turbot	
Seabass, white	<i>Cynoscion nobilis</i>	Curlfin	<i>Pleuronichthys decurrens</i>
Shad	<i>Alosa sapidissima</i>	Diamond	<i>Hypsopsetta guttulata</i>
		Hornyhead	<i>Pleuronichthys verticalis</i>
		Small amounts of others	
		Wahoo	<i>Acanthocybium solandri</i>
		Whitefish, ocean	<i>Caulolatilus princeps</i>
		Yellowtail, California	<i>Seriola dorsalis</i>
<i>CRUSTACEANS</i>			
Crab, market	<i>Cancer magister</i>	Shrimp, bay	<i>Crango franciscorum</i>
Crab, rock	<i>Cancer productus</i>		<i>Crango nigricauda</i>
	<i>Cancer antennarius</i>	Shrimp, ocean	<i>Pandalus jordani</i>
	<i>Cancer anthonyi</i>	Small amounts of others	
Lobster, spiny	<i>Panulirus interruptus</i>		
<i>MOLLUSKS</i>			
Abalone		Clam—continued	
Pink	<i>Haliotis corrugata</i>	Pismo	<i>Tresus stultorum</i>
Red	<i>Haliotis rufescens</i>	Washington	<i>Saxidomus nuttalli</i>
Green	<i>Haliotis fulgens</i>	Octopus	<i>Paroteopus appollygon</i>
White	<i>Haliotis sorenseni</i>	Mussel	<i>Mytilus</i> sp.
Clam		Oyster	
Gaper	<i>Tresus nuttalli</i>	Eastern	<i>Crassostrea virginica</i>
Jackknife	<i>Tagelus californianus</i>	Giant Pacific	<i>Crassostrea gigas</i>
		Squid	<i>Loligo opalescens</i>

TABLE 1
Common and Scientific Names of Fishes, Crustaceans, and Mollusks in the 1961 Catch

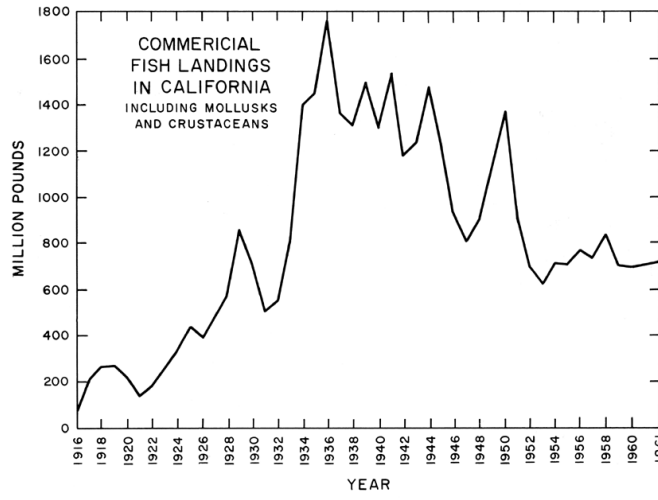


FIGURE 2. Total annual landings and shipments into California. Includes sardine deliveries to reduction ships 1930-38. See Table 2.

FIGURE 2. Total annual landings and shipments into California. Includes sardine deliveries to reduction ships 1930-38. See Table 2

TABLE 2
Total Annual Landings and Shipments Into California of Commercial Fish, Mollusks, and Crustaceans, Includes Sardine Deliveries to Reduction Ships During 1930 Through 1938

Year	Thousands of pounds	Year	Thousands of pounds
1916.....	95,003	1941.....	1,529,148
1917.....	209,877	1942.....	1,173,414
1918.....	261,134	1943.....	1,234,049
1919.....	266,270	1944.....	1,459,446
1920.....	222,004	1945.....	1,216,467
1921.....	135,348	1946.....	919,850
1922.....	182,343	1947.....	795,499
1923.....	253,875	1948.....	900,540
1924.....	340,446	1949.....	1,135,325
1925.....	437,502	1950.....	1,366,596
1926.....	394,964	1951.....	904,088
1927.....	487,166	1952.....	694,977
1928.....	583,527	1953.....	618,899
1929.....	856,854	1954.....	713,406
1930.....	702,189	1955.....	710,714
1931.....	502,390	1956.....	772,549
1932.....	556,139	1957.....	738,550
1933.....	821,805	1958.....	832,919
1934.....	1,390,799	1959.....	713,491
1935.....	1,448,017	1960.....	694,663
1936.....	1,764,900	1961.....	725,253
1937.....	1,362,984		
1938.....	1,310,596		
1939.....	1,486,535		
1940.....	1,297,517		

TABLE 2
Total Annual Landings and Shipments Into California of Commercial Fish, Mollusks, and Crustaceans, Includes Sardine Deliveries to Reduction Ships During 1930 Through 1938

TABLE 3
Landings and Shipments of Leading Species Ranked by Pounds and Value

1960				1961					
Species	Thousands of pounds	Rank	Thousands of dollars	Rank	Species	Thousands of pounds	Rank	Thousands of dollars	Rank
Yellowfin tuna.....	272,648	1	\$35,143	1	Yellowfin tuna.....	269,210	1	\$35,038	1
Jack mackerel.....	74,943	2	1,592	7	Jack mackerel.....	67,906	2	2,629	6
Skipjack.....	74,799	3	7,596	3	Skipjack.....	86,748	3	9,535	3
Albacore.....	71,482	4	11,356	2	Albacore.....	59,414	4	10,210	2
Sardine.....	97,333	5	1,186	8	Pacific mackerel.....	44,110	5	954	9
Pacific mackerel.....	36,809	6	757	9	Sardine.....	43,109	6	1,146	8
Market crab.....	14,876	7	2,517	5	Bluefin tuna.....	22,094	7	2,355	5
Rockfish.....	13,715	8	672	10	Market crab.....	11,711	8	1,981	7
Bluefin tuna.....	13,189	9	1,633	6	Rockfish.....	10,831	9	387	11
Giant Pacific oyster.....	10,957	10	238	13	Squid.....	10,286	10	531	16
Dover sole.....	9,185	11	821	11	Giant Pacific oyster.....	10,047	11	291	14
Salmon.....	6,598	12	3,510	4	Salmon.....	8,922	12	4,927	4
Anchovy.....	5,959	13	74	18	Pacific herring.....	8,515	13	218	17
Albacore.....	4,295	14	496	12	Dover sole.....	7,827	14	457	12
Sablefish.....	2,910	15	227	15	Anchovy.....	7,712	15	110	19
Squid.....	2,561	16	72	19	Albacore.....	4,864	16	607	10
Petrale sole.....	2,470	17	296	14	Miscellaneous (animal food).....	4,777	17	75	20
English sole.....	2,275	18	164	17	English sole.....	3,646	18	291	13
Ocean shrimp.....	2,027	19	203	16	Petrale sole.....	3,291	19	359	15
Pacific herring.....	1,801	20	44	20	Sablefish.....	2,039	20	176	18
All others.....	14,554		1,712		All others.....	16,975		2,038	
Totals.....	694,663		470,338		Totals.....	728,283		574,214	

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TABLE 3
Landings and Shipments of Leading Species Ranked by Pounds and Value

TABLE 4
Licensed Commercial Fishermen

Area of residence	Number of fishermen by season ¹	
	1960-1961	1961-1962
Eureka	1,126	1,321
Sacramento	91	128
San Francisco	1,185	1,229
Monterey	677	696
Santa Barbara	566	627
Los Angeles	2,190	2,287
San Diego	1,506	1,589
Alaska, Washington and Oregon fishermen licensed in California	565	500
Mexican nationals licensed in California	22	43
Other registry	23	14
Totals.....	7,951	8,434

¹ The season is from April 1 to March 31.

TABLE 4
Licensed Commercial Fishermen

TABLE 5
Number of Fishing Boats by Length

Season ¹	Up to 24 feet	25 to 39 feet	40 to 64 feet	65 to 84 feet	85 to 99 feet	100 feet and over	Total
1960-1961	694	1,620	1,052	135	48	100	3,649 ²
1961-1962	830	1,725	1,048	123	44	102	3,872 ³

¹ The season is from April 1 to March 31.

² The owners of 530 boats were issued fishing party licenses in 1960-61.

³ The owners of 544 boats were issued fishing party licenses in 1961-62.

TABLE 5
Number of Fishing Boats by Length

TABLE 6
Origin of Shipments of Fresh Fish Into California During 1961

Shipped from: Species	Pounds shipped to each area				Total pounds
	Eureka	San Francisco	Los Angeles	San Diego	
Continental United States:					
Salmon.....	---	---	24,145	---	24,145
Shad.....	---	7,780	2,700	---	10,480
Sturgeon.....	---	---	18,280	---	18,280
Sucker.....	---	---	166,440	---	166,440
Oregon, Washington, Canada and Alaska:					
Halibut, Pacific.....	---	---	6,840	---	6,840
Sablefish.....	---	---	246,054	---	246,054
Salmon.....	1,111	---	328,422	---	329,533
Shad.....	---	5,989	129,299	---	135,288
Smelt.....	---	---	4,080	---	4,080
Steelhead.....	---	---	1,563	---	1,563
Sturgeon.....	---	---	16,229	---	16,229
Miscellaneous.....	---	---	48,590	---	48,590
Mexico and Central America:					
White, seabass.....	---	---	2,776	---	2,776
Shark.....	---	---	42,679	---	42,679
Tuna, albacore.....	---	378,220	3,216,092	---	3,594,312
Tuna, bluefin.....	---	---	428,562	75,650	504,212
Tuna, skipjack.....	---	---	850,442	3,074,404	3,924,846
Tuna, yellowfin.....	---	142,310	4,899,395	3,874,238	8,915,943
Mollusk:					
Clam, jackknife.....	---	---	---	242	242
Clam, Pismo.....	---	---	940,400	---	940,400
Mussel.....	---	---	---	2,442	2,442
South America:					
Tuna, albacore.....	---	23,330	---	---	23,330
Tuna, skipjack.....	---	---	6,395,517	10,185,523	16,581,040
Tuna, yellowfin.....	---	---	890,002	7,114,113	8,004,115
Japan:					
Sablefish.....	---	---	168,000	---	168,000
Tuna, albacore.....	---	2,427,510	22,427,515	1,626,945	26,491,970
Tuna, bigeye.....	---	132,480	278,016	---	410,496
Tuna, oriental.....	---	90,190	60,725	---	150,915
Tuna, skipjack.....	---	174,370	664,516	---	838,886
Tuna, yellowfin.....	---	16,758,125	32,581,371	2,244,749	51,584,245
Australia:					
Tuna, bluefin.....	---	514,970	102,413	---	617,383
China (Formosa):					
Tuna, albacore.....	---	62,730	---	---	62,730
Tuna, yellowfin.....	---	499,344	489,546	---	988,890
Africa:					
Tuna, albacore.....	---	118,665	---	---	118,665
Tuna, yellowfin.....	---	963,013	---	---	963,013
Total pounds.....	1,111	22,359,026	75,431,519	28,186,306	125,989,962

TABLE 6
Origin of Shipments of Fresh Fish Into California During 1961

TABLE 7
Origin of Commercial Fish Landings and Shipments Into California During 1961

Species	Landings from				Shipments ¹	Grand total
	California waters	Waters north of State	Waters south of State	Total pounds		
Fish:						
Anchovy.....	7,711,573	----	----	7,711,573	----	7,711,573
Barracuda, California.....	478,362	----	231,017	709,379	----	709,379
Bonito, Pacific.....	8,439,400	----	73,572	8,512,972	----	8,512,972
Cabezon.....	4,952	----	----	4,952	----	4,952
Cabrilla, spotted.....	----	----	11,071	11,071	----	11,071
Carp.....	338,550	----	----	338,550	----	338,550
Croaker, white.....	889,164	----	----	889,164	----	889,164
Flounder.....	295,598	19,739	----	315,337	----	315,337
Flounder, arrowtooth.....	60,659	----	----	60,659	----	60,659
Flyingfish.....	32,802	----	----	32,802	----	32,802
Greenling, kelp.....	881	----	----	881	----	881
Grouper.....	3,275	----	202,271	202,271	----	202,271
Hake, Pacific.....	3,275	----	----	3,275	----	3,275
Halfmoon.....	5,907	----	----	5,907	----	5,907
Halibut, California.....	545,472	----	109,082	654,554	----	654,554
Halibut, Pacific.....	3,947	14	----	3,961	6,840	10,801
Hardhead.....	99,266	----	----	99,266	----	99,266
Herring, Pacific.....	1,401,248	----	----	1,401,248	----	1,401,248
Lingcod.....	1,361,726	78,217	----	1,439,943	----	1,439,943
Mackerel, jack.....	97,606,304	----	----	97,606,304	----	97,606,304
Mackerel, Pacific.....	44,110,194	----	----	44,110,194	----	44,110,194
Opaleye.....	2,337	----	----	2,337	----	2,337
Perch.....	118,245	----	----	118,245	----	118,245
Pompano, Pacific.....	11,265	----	160	11,425	----	11,425
Rock bass.....	----	----	2,584	2,584	----	2,584
Rockfish.....	10,324,292	166,728	339,742	10,830,762	----	10,830,762
Sablefish.....	1,562,897	53,531	100	1,616,528	414,054	2,030,582
Salmon.....	8,637,907	----	----	8,637,907	353,678	8,991,585
Sanddab.....	558,057	4,907	----	562,964	----	562,964
Sardine.....	43,169,064	----	----	43,169,064	----	43,169,064
Sculpin.....	26,718	----	----	26,718	----	26,718
Sea bass, giant.....	12,509	----	327,854	340,363	----	340,363
Seabass, white.....	458,491	----	235,733	694,224	2,776	697,000
Shad.....	----	----	----	----	145,768	145,768
Shark.....	610,122	----	13,850	623,972	42,679	666,651
Sheephead, California.....	9,651	----	2,951	12,602	----	12,602
Sierra.....	----	----	782	782	----	782
Skate.....	299,317	----	----	299,317	----	299,317
Smelt.....	491,265	----	----	491,265	4,080	495,345
Smelt, whitebait.....	335,852	----	----	335,852	----	335,852
Sole, Dover.....	6,716,070	1,110,547	----	7,826,617	----	7,826,617
Sole, English.....	3,415,573	230,345	----	3,645,918	----	3,645,918
Sole, petrale.....	3,158,923	231,816	----	3,390,739	----	3,390,739
Sole, rex.....	1,161,485	47,344	----	1,208,829	----	1,208,829
Sole, sand.....	76,028	1,102	----	77,130	----	77,130
Sole, miscellaneous.....	34,484	----	----	34,484	----	34,484
Splittail.....	738	----	----	738	----	738
Steelhead.....	----	----	----	----	1,563	1,563
Sturgeon.....	----	----	----	----	34,489	34,489
Swordfish.....	360,643	----	8,212	368,855	----	368,855
Tuna, albacore.....	20,594,360	143,709	8,385,175	29,123,244	30,291,007	59,414,251
Tuna, bigeye.....	----	----	----	----	461,396	461,396
Tuna, bluefin.....	13,762,432	----	7,120,218	20,882,650	1,121,625	22,004,275
Tuna, oriental.....	----	----	----	----	150,915	150,915
Tuna, skipjack.....	578	----	65,402,282	65,402,860	21,344,772	86,747,632
Tuna, yellowfin.....	----	----	191,854,056	191,854,056	70,456,206	262,310,262
Turbot.....	71,367	----	----	71,367	----	71,367
Wahoo.....	----	----	9,294	9,294	----	9,294
Whitefish, ocean.....	8,447	----	16,744	25,191	----	25,191
Yellowtail, California.....	80,689	----	300,080	380,769	----	380,769
Miscellaneous.....	1,496	----	418	1,914	215,030	216,944
Miscellaneous (animal food).....	3,465,392	321,741	----	3,777,133	----	3,777,133

TABLE 7
Origin of Commercial Fish Landings and Shipments Into California During 1961

TABLE 7—Continued
Origin of Commercial Fish Landings and Shipments Into California During 1961

Species	Landings from				Shipments ¹	Grand total
	California waters	Waters north of State	Waters south of State	Total pounds		
Crustacean:						
Crab, market.....	11,711,225	102	----	11,711,327	----	11,711,327
Crab, rock.....	151,782	----	----	151,782	----	151,782
Lobster, spiny.....	412,453	----	6,269	418,722	----	418,722
Shrimp, bay.....	2,050	----	----	2,050	----	2,050
Shrimp, ocean.....	2,002,709	----	----	2,002,709	----	2,002,709
Mollusk:						
Abalone.....	4,553,766	----	----	4,553,766	----	4,553,766
Clam, gaper.....	220	----	----	220	----	220
Clam, jackknife.....	5,823	----	----	5,823	242	6,065
Clam, Pismo.....	----	----	----	----	940,400	940,400
Clam, Washington.....	1,976	----	----	1,976	----	1,976
Mussel.....	----	----	----	----	2,442	2,442
Octopus.....	3,065	40	----	3,105	----	3,105
Oyster, eastern.....	105,726	----	----	105,726	----	105,726
Oyster, giant Pacific.....	10,047,550	----	----	10,047,550	----	10,047,550
Squid.....	10,285,791	----	----	10,285,791	----	10,285,791
Total pounds.....	322,200,110	2,409,882	274,653,517	599,263,509	125,969,962	725,253,471

¹ For origin of shipments refer to Table 6.

TABLE 7
Origin of Commercial Fish Landings and Shipments Into California During 1961

TABLE 8
Monthly Landings and Shipments Into California During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS:													
Fish:													
Albacore.....	438,420	504,980	690,135	56,350	497,800	300,779	560,030	1,561,102	1,183,011	624,726	720,000	285,260	7,711,573
Barramundi, California.....	66,694	88,272	36,202	83,299	99,901	33,119	63,777	54,710	15,456	91,134	32,598	45,844	702,373
Bonito, Pacific.....	689,669	1,205,874	190,794	305,038	18,668	97,138	278,462	834,974	646,637	711,892	849,349	2,624,427	8,512,672
Caloron.....	397	399	601	415	397	347	17	155	104	250	249	761	4,082
Cabrilla, spotted.....	5,308	1,720	2,505	48	-----	1,300	-----	-----	-----	-----	-----	-----	11,071
Carp.....	69,880	32,945	39,633	26,898	24,093	21,182	23,246	19,909	18,139	27,665	27,390	12,027	338,550
Croaker, white.....	28,236	121,789	112,844	60,320	131,239	149,394	93,866	56,933	42,832	37,299	16,126	9,261	889,164
Flounder.....	22,617	26,302	12,823	10,629	2,398	15,903	7,331	47,499	61,025	62,539	19,186	27,522	313,327
Flounder, arrowtooth.....	2,130	2,574	1,969	10,403	5,317	3,822	19,589	9,891	13,577	3,528	494	201	69,699
Fryingfish.....	-----	-----	-----	-----	55	13,131	13,331	7,115	170	-----	-----	-----	32,892
Greenling, kelp.....	-----	-----	-----	-----	-----	300	-----	497	110	-----	-----	-----	881
Groupers.....	32,926	33,237	36,783	86	17,726	9,635	645	-----	-----	-----	11,219	60,004	202,271
Hake, Pacific.....	2,595	20	170	-----	-----	-----	35	16	30	171	-----	-----	700
Hallibut.....	1,454	20	-----	-----	-----	-----	-----	-----	-----	171	-----	-----	4,191
Hallibut, California.....	58,614	53,872	83,556	85,539	27,555	39,452	68,694	74,539	60,030	44,326	40,535	77,051	654,554
Hallibut, Pacific.....	-----	-----	-----	827	445	1,218	1,549	85	-----	-----	14	-----	3,961
Hardhead.....	20,490	2,870	19,785	6,500	9,759	2,475	175	-----	1,781	7,417	16,103	6,010	99,266
Herring, Pacific.....	741,229	74,090	895	129,735	113,814	73,162	24,569	3,000	2,479	1,000	1,958	231,830	1,401,248
Langost.....	34,969	36,517	58,698	71,968	189,827	172,122	319,868	317,737	132,174	89,799	49,237	37,157	1,439,843
Mackerel, jack.....	2,189,369	3,732,918	1,920,623	3,154,612	5,810,469	8,996,824	3,962,227	3,705,384	9,682,147	20,837,069	20,234,025	13,379,770	97,696,394
Mackerel, Pacific.....	777,289	937,708	807,017	8,833,287	5,969,606	1,042,098	3,414,198	2,581,163	2,868,607	6,380,870	7,134,672	3,763,679	44,110,194
Opaleye.....	814	-----	-----	-----	-----	-----	85	-----	-----	12	-----	-----	1,446
Perch.....	6,342	8,662	17,785	36,756	72	-----	9,243	15,972	4,879	6,363	6,147	6,894	118,245
Pompano, Pacific.....	3,914	1,089	274	175	203	1,389	745	431	378	1,265	683	229	11,425
Rock bass.....	-----	425	833	1,026	-----	-----	185	-----	-----	85	-----	-----	2,984
Rockfish.....	1,112,573	839,790	971,102	1,069,121	1,075,812	1,079,367	954,984	881,332	683,680	806,583	735,719	680,999	10,830,762
Sablefish.....	174,283	129,972	196,913	96,516	77,412	72,215	83,699	186,080	336,108	189,848	189,848	106,962	1,018,228
Salmon.....	-----	-----	534,983	1,792,493	1,867,449	2,108,546	1,229,511	394,294	-----	-----	-----	-----	8,637,997
Sandbars.....	36,015	22,259	39,759	22,671	53,670	47,220	69,974	57,943	61,281	54,804	54,322	43,505	562,664
Sardines.....	184,685	358,612	478,670	869,070	803,020	891,222	692,172	1,356,480	16,638,742	8,399,959	8,088,831	5,560,000	43,192,064
Sculpin.....	1,438	1,584	1,495	2,578	631	1,738	1,446	4,289	3,504	2,046	2,692	3,287	26,718
Sea bass, giant.....	15,354	25,238	20,697	19,901	18,945	11,319	15,066	22,226	24,482	46,690	36,148	75,818	340,383
Sea bass, white.....	62,392	38,922	50,522	22,290	30,781	96,446	51,383	95,569	54,670	98,239	63,869	47,346	694,224
Shark.....	42,223	29,303	30,992	35,833	62,726	78,024	64,346	45,094	51,633	55,039	68,559	79,889	823,972
Shepherd, California.....	1,093	993	329	400	823	618	657	1,617	1,288	2,213	1,253	1,174	12,902

MARINE FISH CATCH FOR 1961
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TABLE 8
Monthly Landings and Shipments Into California During 1961

TABLE 8—Continued
Monthly Landings and Shipments Into California During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS—Continued:													
Fish—Continued:													
Stra.		782											782
Skate	14,060	13,087	22,819	35,486	52,230	38,061	38,917	11,899	13,737	25,150	14,000	18,424	299,317
Soft, whitebait	7,543	79,676	26,070	29,170	27,000	32,838	38,113	60,805	60,627	41,321	6,571	2,968	491,255
Soft, whitebait	17,024	47,241	62,203	98,082	26,274	34,779	36,368	5,631	1,033			435	5,882
Soft, Dove	19,614	242,333	491,929	794,137	1,120,950	871,922	878,562	1,094,258	698,175	670,838	698,613	139,564	7,826,617
Sea, English	210,716	188,969	350,349	302,102	283,023	306,096	307,831	300,090	321,782	435,148	240,455	290,843	3,645,918
Sea, petrale	405,000	102,784	188,791	244,062	288,293	266,205	344,856	494,437	233,645	248,887	266,137	318,264	3,300,739
Sea, mt.	140,111	87,427	87,430	119,417	102,669	82,431	77,803	122,870	116,306	115,830	101,690	55,055	1,298,829
Sea, sand	6,321	7,098	821	1,021	638	631	2,378	2,870	3,165	9,488	6,971	27,086	77,139
Sea, miscellaneous	4,736	3,552	4,684	3,277	3,183	2,741	3,529	2,979	1,462	1,524	1,015	1,015	34,484
Spittail	329	131	195										109
Swordfish						42,563	101,983	165,465	63,543	7,722			398,853
Tuna, albacore	2,661	316			7,173	35,603	8,298,969	10,033,637	7,209,237	3,302,651	183,137		20,123,244
Tuna, bluefin	718,606	667,136	332,042	998,160	7,665,104	3,473,265	11,039,793	6,691,798	7,679,880	9,661,557	10,674,914	5,500,565	65,602,860
Tuna, yellowfin	20,429,491	20,178,537	36,229,025	18,691,263	26,909,006	14,898,400	7,673,274	8,895,342	7,819,650	8,376,975	9,802,412	11,677,851	101,854,656
Turbot	8,650	4,037	1,835	3,688	2,019	4,650	5,646	6,001	5,332	9,180	7,165	13,134	71,367
Walleye	3,004	1,822	6,688	2,462	1,233	6,362							2,941
Whitefish, ocean	4,692	11,822	9,002	23,997	3,000	10,211	168,599	10,927	29,277	32,293	29,165	10,230	380,769
Yellowtail, California	7	30	183	208	473	435	51	18		2,033	3,385	3,751	25,191
Miscellaneous	113,467	54,677	88,790	337,673	532,997	491,746	460,851	579,544	297,776	358,669	344,948	120,292	3,777,133
Crustaceans:													
Crab, market	3,915,307	2,801,668	758,337	1,026,200	714,273	160,907	9,120						254,664
Crab, rock	7,488	4,435	8,821	11,642	11,892	14,968	20,912	16,127	17,136	11,631	14,097	13,336	151,782
Lobster, spiny	52,244	39,991	21,235							162,907	88,353	87,292	418,722
Shrimp, bay		105								830	470	775	2,050
Shrimp, ocean						295,162	389,235	762,637	315,983	239,930			2,002,709
Mollusk:													
Abalone	263,343		99,997	517,128	381,449	530,200	540,551	458,362	478,110	449,048	332,428	473,150	4,553,766
Clam, paper	40	30				40	30						239
Clam, jackknife	77	269	343	536	641	772	930	999	669	386	107	124	5,823
Clam, Washington	344	591	541	602			140	140	48				1,676
Octopus	164	119	167		110	232	866	154	145	271	415	472	3,105

TABLE 8
Monthly Landings and Shipments Into California During 1961

Oyster, eastern.....	9,100	8,775	5,850	7,475	8,060	7,150	6,500	6,630	7,073	19,913	7,500	10,800	105,726
Oyster, giant Pacific.....	1,293,656	1,065,470	1,055,141	495,725	429,806	283,909	301,708	411,267	635,398	1,384,881	1,184,230	1,253,186	10,017,460
Squid.....	491,769	1,114,039	165,115	309,375	43,187	365,989	1,122,584	313,440	1,016,865	525,650	1,360,365	3,427,140	10,285,791
Total pounds.....	35,074,079	35,446,057	45,803,755	39,256,723	54,810,063	37,675,361	48,197,563	51,317,849	68,397,997	65,697,733	64,360,827	53,225,472	569,263,509
SHIPMENTS:													
Fish:													
Haiibut, Pacific.....	.....	.....	.....	.....	.....	1,440	.....	.....	5,400	.....	.....	.....	6,840
Sablefish.....	.....	.....	41,000	19,000	.....	52,468	36,919	.....	76,625	20,042	.....	168,000	414,054
Salmon.....	40,000	24,160	33,174	17,157	.....	1,169	5,067	611	20,662	143,196	61,442	.....	385,973
Sea bass, white.....	.....	2,760	.....	.....	1,601	53,433	20,254	.....	.....	.....	40,000	20,000	7,778
Shad.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	145,768
Shark.....	.....	12,208	5,588	.....	10,560	.....	834	2,880	10,600	.....	.....	.....	42,670
Smelt.....	.....	.....	.....	.....	.....	4,080	.....	.....	.....	.....	.....	.....	4,080
Steelhead.....	.....	.....	.....	.....	.....	1,363	.....	.....	.....	.....	.....	.....	1,563
Sturgeon.....	.....	10,313	1,223	.....	10,727	3,058	3,668	.....	.....	3,500	.....	.....	34,480
Tuna, albacore.....	5,964,581	3,378,867	3,563,915	2,837,502	1,493,401	604,647	483,522	535,203	2,327,708	3,346,657	2,861,595	2,893,400	30,291,007
Tuna, bigeye.....	.....	.....	.....	61,850	.....	.....	100,383	160,147	20,630	.....	9,584	108,802	461,396
Tuna, bluefin.....	.....	.....	.....	.....	.....	.....	30,443	557,970	237,771	21,441	.....	.....	1,121,023
Tuna, chilean.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,890
Tuna, oriental.....	80,140	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50,835
Tuna, skipjack.....	313,804	103,870	1,370,140	4,776	643,431	3,884,234	2,764,650	5,514,333	561,157	1,421,154	1,230,552	3,322,458	21,344,772
Tuna, yellowfin.....	7,235,923	3,630,521	6,308,227	5,666,744	5,719,913	6,476,421	5,376,413	8,042,851	4,600,904	5,813,546	6,195,728	6,490,015	70,456,206
Miscellaneous.....	10,535	630	26,300	32,455	11,000	60,810	34,800	.....	.....	.....	.....	.....	215,030
Mollusk:													
Clam, jackknife.....	.....	.....	.....	.....	.....	56	.....	186	.....	.....	.....	.....	242
Clam, Pismo.....	33,640	25,300	.....	.....	.....	282,888	144,392	311,449	.....	.....	163,840	.....	940,400
Mussel.....	.....	.....	.....	.....	.....	313	.....	490	785	650	100	.....	2,442
Total pounds.....	13,677,553	7,188,469	11,251,576	8,630,464	7,891,013	10,407,215	9,275,911	15,139,078	7,862,177	10,814,670	10,562,843	13,279,993	135,689,962
Grand total.....	48,781,632	42,634,526	57,055,331	47,896,187	62,701,076	48,082,576	57,473,474	66,456,927	76,260,174	76,512,403	74,923,670	66,505,466	723,553,471

¹ For origin of shipments refer to Table 6.

MARINE FISH CATCH FOR 1961

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TABLE 8—Cont'd.

TABLE 9
Monthly Landings and Shipments of Commercial Fish Into the Eureka Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Cabazon	---	---	---	---	15	---	---	---	---	---	---	---	15
Flounder	18,338	8,233	1,927	5,731	503	7,409	1,615	18,032	46,063	53,784	15,594	5,639	182,881
Flounder, arrowtooth	---	529	1,200	10,123	4,817	2,047	8,530	5,271	13,677	3,625	404	---	60,214
Hallibut, California	---	---	---	---	---	---	---	---	---	---	---	---	---
Hallibut, Pacific	---	---	---	---	607	448	1,218	316	1,549	98	---	---	3,917
Herring, Pacific	---	---	---	---	---	---	70	---	---	---	---	---	70
Lingcod	9,315	5,540	18,767	35,303	84,979	73,760	97,939	232,945	40,519	36,281	24,816	6,231	684,443
Perc	3,911	2,610	5,496	30,496	---	---	7,145	10,792	2,329	3,025	2,306	---	60,951
Roadfish	132,345	100,349	134,278	228,273	204,844	177,018	140,227	322,511	131,388	109,315	101,979	67,585	1,500,952
Sablefish	34,137	11,185	21,777	23,349	43,981	33,817	34,470	60,312	33,877	88,717	84,003	37,149	526,988
Salmon	---	---	---	292,797	526,546	655,546	1,308,822	1,216,489	134,901	---	---	---	4,134,901
Sanddab	6,350	9,455	6,522	7,041	4,574	15,058	10,339	17,777	5,289	5,824	7,538	1,900	98,607
Shark	---	---	---	---	---	---	183	40	---	146	753	---	1,126
Skate	1,100	614	1,685	4,134	18,400	35,630	23,020	21,119	1,612	230	78	---	101,270
Stout	---	---	---	---	22,530	47,591	75,211	57,106	64,519	25,639	3,477	---	308,882
Smooth whitefish	9,106	46,053	61,808	65,894	22,824	32,075	33,244	5,565	740	---	---	---	307,247
Sole, Dover	47,264	28,238	79,982	341,242	817,984	648,680	693,301	830,408	821,401	857,264	600,670	162,382	5,168,706
Sole, English	106,212	88,862	96,274	143,262	97,433	132,063	72,745	99,352	137,613	202,794	99,265	32,125	1,208,903
Sole, petrale	260,362	37,988	38,546	77,426	95,093	96,096	121,856	230,148	81,486	101,430	63,605	171,783	1,374,601
Sole, rex	32,851	19,629	16,565	67,115	58,025	53,014	53,848	72,832	54,408	56,173	45,913	26,247	566,920
Sole, sand	1,716	1,643	128	665	---	2,271	---	---	---	493	535	191	7,642
Sole, miscellaneous	335	100	---	---	---	---	---	---	---	---	---	---	532
Tuna, albacore	---	---	---	---	---	---	11,311	562,045	867,670	268,076	---	---	1,440,092
Turbot	1,355	65	---	345	---	---	66	696	3,022	2,071	622	119	7,594
Miscellaneous (animal food)	39,575	20,232	52,412	173,501	423,155	340,097	334,251	418,871	162,605	201,050	224,620	47,891	2,436,150
Crustacean:													
Crab, market	3,649,197	2,614,009	701,463	984,997	673,285	150,909	9,320	---	---	---	---	1,781,429	10,573,639
Crab, rock	---	---	---	---	20	75	---	15	---	---	---	---	110
Shrimp, ocean	---	---	---	---	---	298,162	389,233	762,657	315,985	239,680	---	---	2,002,709

FISH BULLETIN NO. 121

TABLE 9
Monthly Landings and Shipments of Commercial Fish Into the Eureka Area During 1961

MARINE FISH CATCH FOR 1961													
Mollusk:													
Clam, Washington.....	344	501	541	802	-----	-----	-----	-----	140	48	-----	1,075	
Octopus.....	37	-----	-----	-----	126	-----	-----	86	535,500	1,203,300	1,213,800	378	
Oyster, giant Pacific.....	1,115,100	931,700	878,850	432,600	345,500	191,100	228,000	327,600	-----	-----	1,001,700	8,406,650	
Total pounds.....	5,468,830	3,927,631	2,067,650	2,662,955	3,461,945	2,960,191	3,707,759	5,278,370	2,881,730	3,162,949	2,450,096	3,288,439	41,648,515
Waters north of State:													
Fish:													
Flounder.....	-----	-----	-----	42	10	1,762	-----	11,342	4,558	1,915	110	-----	19,739
Hallibut, Pacific.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	14	-----	14
Langcod.....	-----	774	3,684	7,048	10,778	15,753	18,775	18,775	16,873	4,236	278	-----	78,217
Rockfish.....	-----	21,103	13,132	20,498	19,995	18,547	35,888	14,443	8,618	14,838	-----	-----	166,728
Sablefish.....	-----	2,754	13,132	5,173	5,504	3,766	3,763	3,135	8,301	11,103	-----	-----	53,531
Sauddab.....	-----	-----	170	172	599	1,565	829	466	477	561	97	-----	4,907
Sole, Dover.....	-----	-----	17,179	270,361	160,111	166,877	111,617	115,134	56,096	81,912	128,397	-----	1,110,447
Sole, English.....	-----	-----	2,853	10,408	8,333	38,264	6,228	67,496	73,576	19,774	3,623	-----	230,345
Sole, petrale.....	-----	-----	4,239	10,851	18,638	31,940	25,510	92,341	29,442	11,028	8,927	-----	331,816
Sole, rex.....	-----	-----	2,982	7,784	3,307	7,847	3,020	9,688	5,908	3,624	3,684	-----	47,344
Sole, sand.....	-----	-----	-----	-----	-----	513	18	239	-----	341	-----	-----	1,102
Tuna, albacore.....	-----	-----	-----	-----	-----	-----	246	-----	-----	-----	-----	-----	248
Miscellaneous (animal food).....	-----	-----	3,656	61,110	37,702	44,847	54,550	34,098	22,641	25,119	38,018	-----	321,741
Crustacean:													
Crab, market.....	-----	-----	-----	74	-----	28	-----	-----	-----	-----	-----	-----	102
Mollusk:													
Octopus.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	40	-----	-----	40
Total pounds.....	-----	-----	55,440	390,810	261,268	328,819	236,778	386,456	230,151	162,368	208,329	-----	2,266,419
SHIPMENTS:¹													
Fish:													
Salmon.....	-----	-----	-----	-----	-----	500	-----	611	-----	-----	-----	-----	1,111
Total pounds.....	-----	-----	-----	-----	-----	500	-----	611	-----	-----	-----	-----	1,111
Grand total.....	5,468,830	3,927,631	2,123,090	3,363,766	3,722,213	3,319,510	3,947,637	5,664,827	3,111,881	3,325,317	2,658,396	3,288,439	43,916,045

¹ For origin of shipments refer to Table 6.

TABLE 9—Cont'd.

TABLE 10
Monthly Landings and Shipments of Commercial Fish Into the San Francisco Area During 1961¹

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchorovy.....	----	----	----	----	----	----	3,450	4,000	173,620	48,500	----	----	229,570
Calicos.....	----	----	----	----	60	----	----	----	----	----	----	100	160
Crab.....	60,880	32,945	39,035	26,898	24,093	21,182	23,246	16,050	18,139	27,695	27,085	11,152	337,400
Croaker, white.....	84	15	29	10	315	110	365	140	700	325	280	1,465	4,055
Flounder.....	1,810	6,265	6,935	4,500	1,775	6,823	3,770	18,018	10,305	5,880	2,722	20,235	88,538
Flounder, arrowtooth.....	2,130	2,045	565	280	500	985	2,310	1,535	----	----	----	----	10,350
Hake, Pacific.....	2,405	----	140	----	----	----	----	----	----	----	----	----	700
Halibut, California.....	9,911	3,194	363	285	259	1,263	2,683	3,111	884	784	4,590	22,583	50,050
Halibut, Pacific.....	20,400	2,870	19,785	9,500	9,750	2,475	175	----	1,781	7,417	16,103	9,910	99,298
Hardhead.....	741,229	73,735	115	----	----	----	----	----	----	----	1,985	223,130	1,039,894
Herring, Pacific.....	13,455	14,548	16,540	22,184	76,459	63,630	84,107	58,800	46,916	25,346	7,272	16,355	445,212
Lingcod.....	----	----	----	----	----	----	555	19,038	816	----	----	900	20,800
Masked, jack.....	1,762	4,422	10,162	4,661	35	----	32	160	100	460	824	651	23,422
Perch.....	282,993	126,053	226,724	240,695	294,004	216,543	152,598	129,202	165,014	178,473	141,566	98,104	2,221,752
Rockfish.....	75,316	60,998	147,809	55,253	10,615	23,445	12,451	70,015	67,830	75,728	36,618	36,636	672,440
Salmon.....	21,715	10,895	30,790	167,335	607,098	1,029,816	722,862	650,707	223,675	----	----	31,322	3,701,733
Sardine.....	2,002	99	31	----	19	----	60	6,461	12,368	979	9,159	39,866	62,466
Seabass, white.....	8,745	3,452	1,250	----	170	1,462	2,210	7,350	20,202	27,980	13,862	43,661	130,246
Shark.....	12,100	8,255	10,675	10,600	12,540	10,120	8,259	6,550	10,850	14,630	9,775	15,840	130,195
Skate.....	1,190	2,935	18,560	17,921	2,561	2,724	2,795	2,443	3,960	2,464	773	----	58,168
Snail.....	183	1,014	183	2,278	3,750	2,704	3,124	36	----	435	2,287	15,994	18,994
Sole, Dover.....	138,548	208,999	374,424	161,436	132,594	42,547	82,164	82,886	102,736	32,072	36,205	36,042	1,404,951
Sole, English.....	81,669	58,623	42,205	46,069	102,085	82,783	90,625	74,988	158,260	145,010	114,550	307,728	1,303,973

FISH BULLETIN NO. 121

TABLE 10
Monthly Landings and Shipments of Commercial Fish Into the San Francisco Area During 1961

Sole, petrale.....	93,672	32,411	38,490	37,761	91,705	48,642	127,655	64,278	69,137	74,579	101,007	36,722	816,169
Sole, rex.....	89,810	43,313	41,960	24,964	34,100	19,345	18,299	25,372	48,838	38,138	32,547	19,915	414,533
Sole, mid.....	4,665	3,320	690	345	835	2,747	2,399	2,400	3,165	8,655	9,436	27,465	65,733
Sole, miscellaneous.....	---	---	225	---	1,135	70	36	525	382	943	---	179	2,993
Splittail.....	329	134	166	---	---	---	---	---	---	---	---	109	738
Tuna, albacore.....	7,265	2,855	1,835	1,780	1,930	4,550	391	1,101,501	1,737,208	638,657	54,962	---	3,432,289
Turbot.....	---	---	---	---	---	---	---	---	---	---	---	---	---
Miscellaneous.....	---	39	---	---	---	---	---	---	---	---	---	---	60,904
Miscellaneous (animal food).....	24,375	5,900	900	33,615	21,420	11,905	19,150	15,520	33,645	14,895	4,440	---	91
Crustacean:													
Crab, market.....	253,636	172,510	51,011	29,702	21,907	350	---	---	---	---	250,912	285,491	1,065,519
Shrimp, bay.....	---	105	---	---	---	---	---	---	830	470	275	370	2,050
Mollusk:													
Abalone.....	1,875	---	1,200	2,100	1,075	3,125	950	975	1,833	4,650	4,350	2,275	21,108
Octopus.....	25	112	150	---	110	62	866	65	145	100	340	472	2,447
Oyster, eastern.....	9,190	8,773	5,530	2,173	8,999	1,159	6,509	6,839	7,973	19,913	2,200	19,800	105,248
Oyster, giant Pacific.....	28,456	27,230	28,191	28,080	32,958	48,969	40,233	48,142	53,489	60,731	57,270	76,636	331,273
Total pounds.....	1,990,396	917,345	1,116,574	948,276	1,898,853	1,677,466	1,438,381	2,442,739	3,004,899	1,399,955	976,338	1,361,977	19,081,199
SHIPMENTS: ²													
Fish:													
Shad.....	---	---	---	---	1,601	4,388	---	---	---	---	---	7,780	13,769
Tuna, albacore.....	687,610	899,610	348,940	149,430	456,370	118,955	---	57,380	6,030	311,880	34,340	100,000	3,029,455
Tuna, skipjack.....	---	---	---	61,500	---	---	---	---	20,630	---	---	---	182,490
Tuna, bluefin.....	---	---	---	---	---	---	---	---	---	---	---	---	614,970
Tuna, oriental.....	80,160	---	---	---	---	---	---	---	---	---	---	---	90,190
Tuna, skipjack.....	---	---	---	---	---	---	---	---	65,680	60,370	---	---	174,370
Tuna, yellowfin.....	1,768,879	724,820	1,743,700	1,605,070	1,403,345	996,809	917,880	1,405,550	916,570	2,053,211	2,629,235	2,315,620	18,362,792
Total pounds.....	2,476,079	1,624,439	2,092,640	1,819,350	1,951,819	1,119,862	1,120,010	1,778,870	1,007,180	2,425,061	2,622,725	2,321,400	22,350,026
Grand total.....	4,467,075	2,541,775	3,209,214	2,767,626	3,769,672	2,797,328	2,558,391	4,218,609	4,012,079	3,825,016	3,999,063	3,683,377	41,440,225

MARINE FISH CATCH FOR 1961

¹ Includes Sacramento area landings.
² For origin of shipments refer to Table 6.

TABLE 10—Cont'd.

TABLE 11
Monthly Landings of Commercial Fishing Boats in the Monterey Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy.....	187,170	412,725	39,600	6,550	16,050	10,870	315,520	1,262,220	770,841	246,676	352,890	36,900	3,787,512
Bonito, Pacific.....	---	---	---	---	---	---	0	---	---	---	---	---	6
Cabezon.....	669	358	390	9	752	847	17	---	101	236	212	561	3,788
Croaker, white.....	180	48,667	59,130	20,111	20,265	48,470	10,633	5,265	8,475	11,255	5,482	144	238,138
Flounder.....	2,681	8,702	1,922	---	---	---	1,946	78	99	960	733	---	18,760
Flounder, arrowtooth.....	---	---	95	---	---	---	---	---	---	---	---	---	95
Groening, kelp.....	---	---	---	---	---	---	---	---	---	---	---	---	45
Hallbut, California.....	1,020	580	47	---	---	116	4,900	362	711	670	387	---	9,387
Herring, Pacific.....	---	355	850	196,235	111,314	73,162	24,889	300	2,479	100	---	---	332,784
Langdon.....	---	5,832	7,044	10,868	5,515	18,058	18,320	13,912	7,006	8,911	13,796	14,331	23,907
Mackerel, jack.....	1,835	2,380	263,983	2,150	15,875	10,518	10,507	7,410	105,685	3,210,447	20,390	---	3,650,940
Mackerel, Pacific.....	---	390	---	100	---	130	---	6,900	3,285	---	---	---	10,995
Perch.....	81	60	639	10,257	---	---	39	85	---	1,310	431	---	12,967
Pompano, Pacific.....	---	759	49	42	40	29	---	153	---	12	1	99	1,236
Rockfish.....	235,068	271,554	387,163	315,849	350,076	283,808	264,342	217,851	235,627	228,318	228,609	261,390	3,273,924
Sablefish.....	62,517	55,459	22,791	3,428	16,188	8,436	43,148	21,623	11,633	16,371	57,744	31,867	350,409
Salmon.....	---	---	---	73,548	387,442	128,520	54,773	33,773	6,821	---	---	---	664,577
Sandlady.....	7,050	1,870	2,317	2,865	7,128	8,296	12,863	11,309	21,633	19,100	15,107	1,777	111,664
Sardine.....	28,000	---	---	---	---	---	190	22,622	568,375	254,400	20,390	---	1,102,942
Seabass, white.....	505	327	40	107	---	---	70	62	4,463	6,388	1,162	---	13,406

FISH BULLETIN NO. 131

TABLE 11
Monthly Landings of Commercial Fishing Boats in the Monterey Area During 1961

Shark.....	5,179	2,869	670	---	190	2,229	7,585	1,148	5,431	4,824	4,376	4,583	38,077
Shark.....	1,855	4,469	10,462	6,525	3,729	3,915	8,587	3,712	2,812	10,178	5,947	2,413	84,005
Smelt, whitefish.....	1,535	692	1,870	3,550	211	1,803	3,844	10,078	1,986	6,554	542	890	33,495
Smelt, whitefish.....	5,355	174	214	---	---	---	---	---	293	---	---	---	12,811
Sole, Dover.....	---	110	4,070	4,792	7,630	11,185	13,085	9,535	7,480	1,175	520	60	56,642
Sole, English.....	4,280	9,636	22,119	14,990	15,685	16,200	12,630	20,673	26,700	33,002	15,658	12,262	208,715
Sole, petrale.....	1,265	2,367	7,483	12,783	11,167	8,165	7,780	9,262	18,845	18,625	10,258	3,290	111,439
Sole, rex.....	11,223	8,455	6,942	5,438	2,015	1,978	2,525	4,098	5,210	5,133	8,582	7,186	70,455
Sole, sand.....	---	---	---	---	---	---	---	240	---	---	---	---	240
Sole, miscellaneous.....	1,340	3,406	2,311	634	---	266	190	177	189	412	603	1,475	11,612
Swordfish.....	---	---	---	---	---	---	---	---	451	---	---	---	451
Tuna, albacore.....	---	---	747	---	---	---	50,674	822,270	1,069,070	198,120	1,716	---	1,871,250
Miscellaneous (animal food).....	---	---	---	---	---	---	---	69	8,188	---	---	290	8,217
Crustacean:													
Crab, market.....	4,079	3,542	1,400	185	---	---	---	---	---	---	3,835	2,998	16,039
Mollusk:													
Abalone.....	---	---	---	---	---	---	250	---	---	---	---	433	683
Clam, gear.....	40	20	---	---	---	40	80	20	---	---	20	---	220
Octopus.....	---	---	---	---	---	44	---	---	---	31	---	---	75
Squid.....	---	---	40	246,700	41,335	338,330	1,117,564	315,440	1,002,250	247,860	292,635	68,730	3,686,284
Grand total.....	572,967	827,188	849,941	878,743	998,128	976,507	2,005,304	2,534,165	3,667,250	4,535,991	1,066,635	485,130	19,897,950

MARINE FISH CATCH FOR 1964

TABLE 11—Cont'd.

TABLE 12
Monthly Landings of Commercial Fishing Boats in the Santa Barbara Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy.....		3,395			1,800	3,000	4,100	10,650	1,650			29,235	54,130
Barracuda, California.....	23,126	41,320	3,630	48,615			912		12,853	21,879	1,475	1,131	154,371
Bonito, Pacific.....	1,265	1,839	47	177	300			271	391	2,976	2,639	12,828	21,586
Cabezon.....	118	141	261	105	70			155		14	37	97	969
Croaker, white.....					5	85	100	156		10		36	617
Flounder.....	98	3,102	1,739	353	80	11						7	5,419
Greenling, halibut.....							200		497			31	728
Hake, Pacific.....			30										30
Halibut, California.....	17,077	23,265	16,954	21,056	15,401	19,228	15,295	17,455	5,625	5,845	5,154	25,254	191,674
Lingcod.....	5,894	9,024	11,659	5,073	3,256	5,538	8,207	6,300	2,056	7,108	12,540	7,254	83,469
Mackerel, jack.....	745,320	141,900	365,900	396,492	457,000	126,100	862,814	11	1,139,549	2,821,569	4,090,370	3,749,953	14,794,841
Mackerel, Pacific.....	9,900			38,100	12,000		25,500	41,300	69,000	31,900	1,665,740	586,890	2,471,690
Perch.....	300	908	1,404	944			2,026	3,652	2,175	1,694	2,355	2,122	17,190
Pumpkin, Pacific.....							25						25
Rockfish.....	342,498	278,802	102,677	107,990	165,728	277,223	303,784	151,065	92,641	213,083	122,547	162,969	2,330,948
Sablefish.....	2,613	2,390	1,665	1,355	1,855	100	95	965	225	325	180	993	12,643
Salmon.....				1,183	1,077	60,477	22,149	19,822	28,838				133,537
Sardines.....		40		178	115	109	323						968
Sardine.....	20,750	23,390	82,400					562,070	3,065,460	1,300,800	2,660,355	856,155	8,582,290
Sculpin.....				143									143
Sea bass, giant.....	145	137		496	390	320	415	79	18	27	158		2,172
Sea bass, white.....	18,682	10,424	14,254	5,311	4,859	11,389	8,771	9,903	9,389	1,673	3,724	3,237	101,479
Shark.....	4,173	1,951	2,421	15,299	11,663	16,844	15,261	9,688	7,994	3,385	5,418	7,968	98,615
Sheepshead, California.....	327	188	72			35	206						64
Skate.....	125	338	1,648		391		96			75			41
Stink.....					18	170		299	153	26	203	93	962
Sole, Dover.....	3,343	5,025	6,255	14,305	4,731	1,833	7,465	28,302	2,465	7,415	2,791	1,089	82,741
Sole, English.....	18,585	31,775	227,158	87,403	56,487	36,694	25,283	37,937	25,623	34,568	16,329	38,739	636,482
Sole, petrale.....	40,591	29,798	100,034	105,541	73,730	86,972	62,945	65,428	25,742	39,815	115,799	103,467	855,714
Sole, rex.....	15,327	16,030	17,301	14,616	4,822	647	350	10,789	1,945	15,765	10,664	11,110	119,557

FISH BULLETIN, NO. 121

TABLE 12
Monthly Landings of Commercial Fishing Boats In the Santa Barbara Area During 1961

TABLE 13
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy.....	249,250	358,899	650,835	49,800	480,040	288,899	238,950	184,132	217,500	329,550	367,110	229,725	3,640,361
Barnacle, California.....	10,200	27,255	10,170	30,119	80,884	30,232	62,254	20,274	1,928	18,197	9,809	.....	311,284
Bonito, Pacific.....	688,490	1,301,824	100,607	394,802	16,244	91,201	243,333	778,429	638,327	705,006	844,900	2,606,251	8,376,294
Carp.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	276
Croaker, white.....	38,043	75,958	62,592	40,360	111,215	91,519	84,762	50,442	32,974	45,185	12,596	7,015	643,491
Flyingfish.....	.....	.....	.....	.....	55	13,131	12,331	7,115	170	.....	.....	.....	32,802
Halfmoon.....	1,454	30	.....	.....	.....	.....	15	16	20	171	.....	.....	4,191
Hake, California.....	12,679	7,192	10,780	29,411	4,506	4,561	1,819	9,504	10,283	0,940	2,224	.....	127,095
Herring, Pacific.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,500
Lingcod.....	38	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	143
Mackerel, jack.....	1,442,611	3,588,698	1,263,740	2,846,090	5,327,594	8,860,206	3,088,361	3,678,625	8,445,097	14,805,572	16,122,295	9,629,885	79,120,714
Mackerel, Pacific.....	768,289	933,549	801,698	8,781,641	5,554,616	1,037,367	3,384,035	2,532,704	2,802,223	6,309,544	5,462,614	3,176,444	41,544,224
Opah.....	814	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
Perch.....	238	653	40	25	47	.....	.....	130	275	474	531	1,225	3,658
Pompano, Pacific.....	3,914	330	225	833	163	1,335	765	276	366	1,265	482	.....	9,984
Rockfish.....	54,007	40,925	29,128	52,446	24,496	32,439	18,044	17,700	39,411	24,115	23,689	20,651	385,681
Subfish.....	.....	.....	50	.....	.....	212	.....	.....	16	.....	200	.....	338
Salmon.....	.....	.....	.....	.....	.....	13,081	9	40	.....	.....	.....	.....	13,169
Sardine.....	91,665	333,312	396,270	599,070	503,920	517,133	469,889	529,645	13,084,907	6,834,799	5,394,136	4,704,745	33,429,312
Sculpin.....	1,011	221	632	820	631	575	1,121	2,388	283	72	55	28	7,837
Sea bass, giant.....	162	556	759	227	1,024	1,319	612	141	2,893	311	167	.....	313
Sea bass, white.....	18,312	10,367	15,939	8,666	24,727	62,298	37,368	60,673	15,486	8,659	4,410	1,067	266,702
Shark.....	12,280	13,954	24,447	14,022	27,007	47,619	29,248	23,665	14,696	13,433	26,297	15,119	261,796
Sheepshead, California.....	93	107	184	71	136	65	29	906	759	829	533	290	2,862
Skate.....	.....	25	104	.....	.....	.....	.....	22	20	122	.....	.....	30
Snell.....	3,418	75,790	6,895	3,908	1,560	240	350	10	.....	6,347	1,376	1,880	101,744
Sole, moon/snook.....	.....	27	31	31	.....	214	.....	619	392	78	331	.....	1,715
Swordfish.....	.....	.....	.....	.....	.....	.....	38,541	88,231	108,708	25,362	408	.....	239,340
Tuna, albacore.....	.....	.....	.....	.....	.....	.....	4,697,165	3,611,988	1,917,995	1,288,639	68,563	.....	10,933,281
Tuna, bluefin.....	.....	.....	.....	.....	947	51,174	1,831,390	3,489,585	7,734,227	390,294	12,820	.....	13,720,967
Tuna, skipjack.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	578
Whitefish, ocean.....	979	1,517	2,462	475	48	888	.....	.....	.....	.....	1,170	.....	8,515
Yellowtail, California.....	1,671	2,565	5,333	3,257	2,433	7,637	2,649	2,792	8,665	5,068	4,472	3,791	48,618
Miscellaneous.....	.....	.....	163	208	.....	.....	201	51	18	.....	88	.....	301

FISH BULLETIN NO. 131

TABLE 13
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1961

Crustacean:																						
Crab, rock.....	7,252	4,213	4,545	5,922	5,388	8,379	12,751	9,900	7,284	5,632	5,046	1,703	73,118									
Lobster, spiny.....	25,628	19,064	9,688							78,805	42,250	21,718	197,243									
Mollusk:																						
Abalone.....	44,450		11,725	50,549	65,511	99,836	135,823	132,474	99,198	131,440	116,091	115,025	1,002,531									
Celops.....	92	7										49	148									
Squid.....	366,600	438,230	195,075	62,675		27,650	5,330			14,615	298,390	720,405	1,927,570									
Total pounds.....	3,840,789	7,235,181	3,692,617	12,855,348	12,243,850	11,325,151	13,835,121	15,358,762	35,116,174	31,478,500	20,246,574	22,502,283	198,630,350									
Waters south of State:																						
Fish:																						
Barracuda, California.....	30,620	14,605	19,775		9,705			23,995		49,718	18,770	40,460	207,645									
Bonito, Pacific.....		694				5,515	34,218	31,799					72,136									
California spotted.....	5,388	1,730	2,555			1,200							11,023									
Groupers.....	26,967	31,733	36,783		17,736	9,635	645					11,210	55,265									
Hallibut, California.....													89									
Pompano, Pacific.....													160									
Rock bass.....		435	833								85		1,275									
Rockfish.....	20,760	24,862	24,403	12,020	10,647	45,884	69		230	17,373	15,832	23,369	198,599									
Sablefish.....		100	100										100									
Sea bass, giant.....	15,053	19,667	23,109	18,310	12,845	8,455	16,842	20,815	21,149	42,767	32,630	69,158	300,551									
Sebass, white.....		15,247						9,005	14,261	30,030	6,897	4,991	80,531									
Shark.....		2,555				835			1,855	2,852			725									
Sierra.....		643											643									
Tuna, bluefin.....	2,061	216			73,211	838,303	1,905,568	3,452,017	472,968	116,288			128,643									
Tuna, skipjack.....	466,631	186,408	249,026	485,590	4,301,899	2,632,874	9,117,465	5,184,911	6,448,374	7,293,943	8,423,337	4,402,582	49,163,849									
Tuna, yellowfin.....	19,941,795	16,698,712	33,205,332	15,830,932	24,082,994	12,198,013	5,237,529	7,115,501	6,702,984	5,591,399	7,883,341	9,672,767	164,034,539									
Wahoo.....			2,462			6,892							5,294									
Whiting, ocean.....	1,760	285	2,178	969	495	239					305	339	1,533									
Yellowtail, California.....	2,295	6,474	1,150	19,748		25,800	163,439	3,910	3,878	8,350	12,402	5,530	252,673									
Miscellaneous.....					418								418									
Crustacean:																						
Lobster, spiny.....		3,887	2,382										6,269									
Total pounds.....	20,413,479	16,907,963	33,598,337	16,423,912	28,509,920	15,483,249	17,005,736	16,296,592	13,466,070	13,156,963	16,408,878	14,408,076	222,274,875									

MARINE FISH CATCH FOR 1961

TABLE 13—Cont'd.

TABLE 13—Continued
 Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
SHIPMENTS:¹													
California waters:													
Fish													
Halter, Pacific.....	.....	.....	.....	.....	.....	1,440	.....	.....	5,400	.....	.....	.....	6,840
Sablefish.....	.....	.....	41,000	19,000	.....	52,498	36,919	.....	70,628	20,042	.....	.....	414,084
Salmon.....	40,000	24,160	35,174	17,137	.....	669	5,097	.....	20,692	148,196	61,442	.....	352,257
Seafood, white.....	.....	.....	.....	.....	.....	.....	2,776	.....	.....	.....	.....	.....	2,776
Shad.....	.....	2,700	.....	.....	.....	40,045	20,254	.....	.....	40,000	20,000	.....	131,999
Shark.....	.....	12,208	5,588	.....	10,569	.....	834	2,880	10,600	.....	.....	.....	42,679
Sardine.....	.....	.....	.....	.....	.....	4,080	.....	.....	.....	.....	.....	.....	4,080
Steelhead.....	.....	.....	.....	.....	.....	1,563	.....	.....	.....	.....	.....	.....	1,563
Sturgeon.....	.....	15,313	2,223	.....	10,725	3,088	3,468	.....	.....	3,500	.....	.....	34,489
Tuna, albacore.....	5,326,971	2,245,233	2,178,889	2,432,629	1,036,621	488,982	483,322	477,833	2,321,678	3,038,077	2,722,963	2,893,469	25,643,667
Tuna, bigeye.....	.....	.....	.....	.....	.....	.....	100,383	160,147	.....	.....	9,584	8,802	278,916
Tuna, bluefin.....	.....	.....	.....	.....	.....	.....	102,413	169,380	237,771	21,441	.....	.....	531,995
Tuna, oriental.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,850	.....	9,850
Tuna, skipjack.....	.....	103,870	1,283,821	.....	643,431	519,628	1,376,313	2,267,559	422,628	272,508	.....	1,050,327	7,910,475
Tuna, yellowfin.....	3,626,481	2,405,701	2,395,082	3,332,573	3,692,793	3,211,629	3,719,242	3,372,291	3,426,036	2,830,128	3,166,313	2,776,042	38,899,314
Miscellaneous.....	10,335	630	26,300	32,455	11,000	60,810	31,800	.....	.....	.....	.....	.....	158,700
Mollusk:													
Clam, Pismo.....	32,640	25,200	.....	.....	.....	262,888	144,392	311,440	.....	.....	163,840	.....	940,400
Total pounds.....	9,038,397	5,340,015	5,930,977	5,834,696	3,315,051	4,655,290	6,018,937	6,664,776	6,622,330	6,370,892	6,154,032	7,586,126	75,431,519
Grand total.....	33,292,665	29,483,159	43,191,931	35,113,956	46,068,821	31,463,690	38,859,794	38,220,130	55,334,574	51,006,055	51,807,484	44,496,465	496,338,744

¹ For origin of shipments refer to Table 6.

TABLE 13
 Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1961

TABLE 14
Monthly Landings and Shipments of Commercial Fish Into the San Diego Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Barracuda, California.....	48	3,249	1,056	1,268	2,916	2,075	1,141	516	.....	3	.....	135	12,407
Bonito, Pacific.....	2,944	1,807	2,940	56	2,124	442	883	14,475	7,063	4,229	1,730	5,616	41,544
Cabezon.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
Craker, white.....	20	119	163	80	.....	.....	45	501	433	544	233	.....	2,468
Hallbut, California.....	17,287	19,641	11,999	7,774	7,363	15,256	3,539	19,600	23,731	16,233	9,600	14,237	165,880
Lingcod.....	45	.....	.....	.....	.....	.....	.....	.....	.....	17	.....	.....	62
Mackerel, Pacific.....	.....	3,779	5,419	13,546	2,890	4,601	663	659	2,499	39,726	3,318	365	77,495
Pomfry.....	.....	.....	14	73	.....	.....	.....	.....	.....	.....	.....	.....	87
Rockfish.....	31,450	38,059	34,088	29,736	13,309	21,361	5,552	6,810	4,666	11,605	6,861	12,578	217,205
Sandfish.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20	.....	.....	20
Sardine.....	43,620	.....	.....	.....	.....	4,000	.....	.....	.....	.....	.....	.....	47,620
Sculpin.....	427	1,363	863	1,615	.....	1,163	325	1,901	3,221	1,674	2,627	3,259	18,738
Sea loon, giant.....	492	174	.....	101	523	210	16	449	37	29	43	72	2,082
Sea bass, white.....	7,777	2,361	1,564	1,117	945	22,749	3,113	3,475	1,234	1,005	599	189	46,038
Shark.....	11,857	4,842	1,229	8,492	13,496	9,265	9,087	3,313	2,526	1,978	6,514	6,743	79,332
Sheepshead, California.....	373	638	122	29	177	515	602	.....	47	699	371	1,130	4,723
Squid.....	.....	37	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	44
Sole, miscellaneous.....	.....	.....	4	1,693	1,896	1,787	3,043	1,624	199	235	50	.....	10,431
Sturgeon.....	.....	.....	.....	.....	.....	2,234	3,892	16,344	14,594	672	.....	.....	37,500
Tuna, albacore.....	.....	.....	.....	.....	.....	35	140,776	294,844	1,069,416	687,783	88,342	.....	2,221,196
Tuna, bluefin.....	.....	.....	.....	.....	.....	119	417	14,002	17,812	.....	.....	.....	32,330
Whitefish, ocean.....	.....	.....	.....	.....	.....	.....	.....	27	.....	.....	.....	.....	27
Yellowtail, California.....	16	599	32	82	397	17,453	2,078	692	1,334	1,725	1,229	5	24,887
Miscellaneous.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75	.....	.....	80
Crustacean:													
Crab, rock.....	188	.....	.....	.....	.....	.....	.....	.....	.....	264	664	.....	1,116
Lobster, spiny.....	12,862	8,249	5,660	.....	.....	.....	.....	.....	.....	57,642	28,813	23,420	136,646
Mollusk:													
Abalone.....	47,330	.....	29,594	71,138	27,229	45,335	22,220	24,030	29,053	21,474	14,025	19,202	380,950
Clam, jackknife.....	77	269	343	536	541	772	500	969	669	286	107	124	5,823
Squid.....	.....	.....	.....	.....	1,652	.....	.....	.....	.....	.....	.....	.....	1,652
Total pounds.....	176,960	85,296	91,840	136,614	75,758	130,102	298,338	384,661	1,188,754	847,966	135,041	87,420	3,568,600
Waters north of state:													
Fish:													
Tuna, albacore.....	137,270
Total pounds.....	137,270

MARINE FISH CATCH FOR 1961

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TABLE 14
Monthly Landings and Shipments of Commercial Fish Into the San Diego Area During 1961

TABLE 14—Continued
 Monthly Landings and Shipments of Commercial Fish Into the San Diego Area During 1961

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM—Continued:													
Waters south of state:													
Fish:													
Baracuda, California.....	----	1,863	1,571	3,297	6,196	----	----	825	848	1,340	3,544	4,118	23,372
Bonito, Pacific.....	----	----	----	48	----	----	----	796	85	189	215	----	1,436
Cabrillo, spotted.....	----	----	----	86	----	----	----	----	----	----	----	----	48
Grouper, California.....	5,959	1,504	----	86	----	----	----	----	----	----	----	4,739	12,288
Hallibut, California.....	40	----	2,213	----	26	----	38,667	24,282	18,693	13,754	10,500	892	108,557
Rock Bass.....	----	----	1,026	----	----	----	185	----	----	----	----	----	1,211
Rockfish.....	13,543	9,589	21,568	8,119	22,242	5,694	1,330	277	----	15,282	21,758	22,101	141,143
Sea bass, giant.....	65	5,702	2,108	848	2,172	1,955	181	1,642	388	3,446	3,170	6,375	27,303
Skepin, white.....	5,113	----	19,026	7,128	220	----	2,061	15,999	3,376	26,816	46,812	28,661	155,202
Shark.....	----	965	----	----	----	----	787	----	199	432	1,227	1,610	5,220
Silverhead, California.....	----	150	----	160	----	----	150	711	442	687	661	----	2,861
Steri.....	139	----	----	----	----	----	----	----	----	----	----	----	139
Swordfish.....	----	----	----	----	----	26,075	2,802	5,410	567,038	97,794	----	----	8,212
Tuna, albacore.....	----	----	----	----	----	11,333	3,410,397	3,311,391	172,999	223,616	9,055	13,910	7,343,115
Tuna, bluefin.....	----	----	----	----	----	----	----	----	----	----	----	----	430,913
Tuna, skipjack.....	251,975	489,728	83,016	512,600	3,263,203	840,391	1,922,328	1,506,887	1,230,938	2,697,614	2,231,577	1,007,183	16,238,442
Tuna, yellowfin.....	857,696	3,879,835	3,023,693	2,807,241	2,826,642	2,700,987	2,417,635	1,751,411	1,117,396	2,784,586	1,917,071	2,305,994	27,919,917
Whitefish, ocean.....	235	1,448	690	270	----	----	----	235	1,640	1,895	1,455	7,888	7,888
Yellowtail, California.....	819	510	3,087	706	----	----	----	3,533	12,859	15,561	9,383	969	47,407
Total pounds.....	865,445	4,079,660	3,158,785	3,340,463	6,221,660	3,578,722	7,868,456	6,795,412	3,176,659	5,999,382	4,281,378	3,473,712	82,374,764
SHIPMENTS:													
Fish:													
Tuna, albacore.....	----	224,024	1,044,088	254,543	----	----	----	75,550	----	----	104,292	----	1,626,945
Tuna, bluefin.....	----	----	----	----	----	----	----	----	----	----	----	----	75,550
Tuna, skipjack.....	313,284	----	116,328	4,776	----	3,364,610	1,288,287	3,256,496	74,619	1,088,410	1,180,492	2,472,115	13,259,627
Tuna, yellowfin.....	1,848,393	----	2,997,245	720,999	623,772	1,296,953	748,691	3,364,910	287,398	630,207	591,180	898,352	13,233,100
Mollusk:													
Clam, jackknife.....	----	----	----	56	----	186	----	----	650	100	212	----	242
Mussel.....	----	----	----	318	----	400	765	----	----	----	----	----	2,142
Total pounds.....	2,162,477	224,024	3,227,959	985,418	624,143	4,631,563	2,136,964	6,697,821	332,667	2,018,717	1,789,086	3,370,467	28,168,306
Grand total.....	3,294,822	4,388,890	6,478,884	4,462,485	6,921,561	8,355,387	10,153,758	13,877,894	4,686,110	8,603,335	6,202,505	6,931,599	84,278,940

¹ For origin of shipments refer to Table 6.

FISH BULLETIN NO. 141

TABLE 14
 Monthly Landings and Shipments of Commercial Fish Into the San Diego Area During 1961

TABLE 15
Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

Species	Eureka	San Francisco ¹	Monterey	Santa Barbara	Los Angeles	San Diego	Total
LANDINGS:							
Fish:							
Anchovy.....	---	229,570	3,787,512	54,130	3,640,361	---	7,711,573
Barracuda, California.....	---	\$3,741	\$54,162	\$1,943	\$50,237	---	\$110,083
Bonito, Pacific.....	---	---	---	154,371	519,229	35,779	708,379
Cabazon.....	15	160	3,768	999	---	10	4,952
Cabrilla, spotted.....	\$1	\$8	\$216	\$62	---	---	\$288
Carp.....	---	337,400	---	---	1,150	---	338,550
Croaker, white.....	---	\$15,283	238,138	1,039	\$58	2,468	\$15,341
Flounder.....	202,620	88,538	18,760	5,419	---	---	299,337
Flounder, arrowtooth.....	\$9,946	\$4,595	\$1,885	\$452	---	---	\$16,878
Flyingfish.....	50,214	10,350	95	---	---	---	60,659
Greenling, kelp.....	\$2,424	\$386	\$4	---	---	---	\$2,814
Grouper.....	---	---	---	---	32,802	---	32,802
Hake, Pacific.....	---	---	153	728	\$5,939	---	\$5,939
Halfmoon.....	---	---	\$6	\$44	---	---	\$50
Halibut, California.....	---	---	---	---	189,983	12,288	202,271
Halibut, Pacific.....	218	50,050	9,957	191,674	\$41,055	\$1,884	\$42,939
Hardhead.....	\$13	\$10,000	\$2,452	\$42,973	---	---	\$3,275
Herring, Pacific.....	3,331	30	---	---	---	---	3,361
Lingcod.....	\$963	\$8	---	---	---	---	\$971
Mackerel, jack.....	---	99,266	---	---	---	---	99,266
Mackerel, Pacific.....	70	\$19,554	---	---	8,500	---	\$19,554
Opaleye.....	\$7	1,039,894	352,794	---	\$425	---	1,401,248
Perch.....	762,580	\$5,629	\$22,085	---	143	62	\$31,146
Pompano, Pacific.....	\$52,766	445,212	148,497	83,469	---	---	1,439,943
Rock bass.....	---	\$28,849	\$14,048	\$7,871	\$16	\$5	\$103,555
Sablefish.....	---	20,809	3,650,940	14,794,841	79,139,714	---	97,606,304
Salmon.....	---	\$1,092	\$85,107	\$281,102	\$1,661,935	---	\$2,029,236
Sea bass, white.....	---	---	10,395	2,477,680	41,544,624	77,495	44,110,194
Shark.....	---	---	\$269	\$49,802	\$901,518	\$2,906	\$954,495
Sheephead, California.....	---	---	---	---	2,337	---	2,337
Sierra.....	60,951	23,422	12,967	17,160	\$352	---	\$352
Skate.....	\$8,687	\$3,902	\$1,647	\$3,839	\$730	87	\$18,245
Smelt.....	---	---	1,256	25	10,144	---	\$18,815
Sturgeon.....	---	---	\$774	\$6	\$2,159	---	\$3,939
Tilapia.....	---	---	---	---	1,373	1,211	2,584
Trout.....	---	---	---	---	\$260	\$252	\$512
Wahoo.....	2,117,410	2,221,752	3,228,024	2,320,948	584,280	358,348	10,830,762
Yellowtail.....	\$90,286	\$106,876	\$167,663	\$108,625	\$73,749	\$39,486	\$586,685
Other.....	\$79,899	\$72,640	\$50,409	\$12,643	\$37	---	\$1,616,528
Salmon.....	\$45,578	\$20,649	\$18,501	\$779	\$115	---	\$85,622
Salmon.....	4,134,901	3,701,733	654,577	133,537	13,159	---	8,637,907
Sanddab.....	\$2,138,077	\$2,112,593	\$364,405	\$76,250	\$6,597	---	\$4,697,892
Sardine.....	103,514	346,566	111,984	568	312	20	562,964
Sardine.....	\$8,187	\$22,145	\$7,308	\$34	\$64	\$4	\$37,802
Sculpin.....	---	---	1,109,842	8,582,290	33,429,512	47,620	43,169,064
Sea bass, giant.....	---	---	\$33,845	\$242,878	\$865,824	\$3,443	\$1,145,990
Seabass, white.....	---	---	---	143	7,837	18,738	26,718
Shark.....	---	---	---	\$29	\$2,659	\$4,766	\$7,454
Sheephead, California.....	---	---	---	2,173	306,835	29,355	340,363
Sierra.....	---	---	---	\$287	\$51,205	\$4,744	\$56,236
Skate.....	---	30,866	13,406	101,479	347,233	201,240	694,224
Smelt.....	\$9,146	\$3,687	\$31,204	\$115,559	\$56,992	---	\$216,588
Sturgeon.....	1,136	130,246	38,977	98,615	270,426	84,572	623,972
Tilapia.....	\$62	\$4,942	\$2,210	\$8,325	\$34,731	\$9,283	\$59,553
Trout.....	---	---	---	1,076	3,852	7,674	12,602
Wahoo.....	---	---	---	\$54	\$268	\$610	\$932
Yellowtail.....	---	---	---	---	643	139	782
Other.....	101,270	130,195	64,905	2,624	323	---	299,317
Other.....	\$59	\$1,522	\$609	\$130	\$33	---	\$2,653
Other.....	296,882	\$6,168	33,465	982	101,744	44	491,265
Other.....	\$15,145	\$5,701	\$1,987	\$83	\$2,583	\$5	\$25,504

TABLE 15
Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

TABLE 15—Continued
Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

Species	Eureka	San Francisco ¹	Monterey	Santa Barbara	Los Angeles	San Diego	Total
LANDINGS—Continued:							
Fish—Continued:							
Smelt, whitebait.....	307,247	15,994	12,611	-----	-----	-----	335,852
	\$21,352	\$1,927	\$1,946	-----	-----	-----	\$25,225
Sole, Dover.....	6,279,233	1,404,981	59,642	82,741	-----	-----	7,826,617
	\$375,498	\$73,200	\$2,946	\$4,965	-----	-----	\$456,609
Sole, English.....	1,498,648	1,303,973	206,715	636,582	-----	-----	3,645,918
	\$111,047	\$94,068	\$15,153	\$39,796	-----	-----	\$260,054
Sole, petrale.....	1,606,417	816,169	111,439	856,714	-----	-----	3,380,739
	\$183,291	\$96,880	\$13,306	\$95,609	-----	-----	\$389,086
Sole, rex.....	604,264	414,553	70,455	119,557	-----	-----	1,208,829
	\$42,056	\$26,946	\$3,601	\$7,246	-----	-----	\$79,849
Sole, sand.....	8,744	65,733	240	2,413	-----	-----	77,130
	\$919	\$6,672	\$29	\$255	-----	-----	\$7,585
Sole, miscellaneous.....	435	2,955	11,012	7,898	1,713	10,431	34,484
	\$21	\$185	\$1,036	\$481	\$135	\$2,487	\$4,345
Splittail.....	-----	738	-----	-----	-----	-----	738
	-----	\$258	-----	-----	-----	-----	\$258
Swordfish.....	-----	-----	451	63,352	259,340	45,712	368,855
	-----	-----	\$180	\$26,702	\$115,666	\$19,670	\$162,218
Tuna, albacore.....	1,440,248	3,432,239	1,871,750	683,813	11,993,563	9,701,581	29,123,244
	\$234,328	\$615,751	\$302,662	\$108,863	\$2,172,034	\$1,755,016	\$5,188,654
Tuna, bluefin.....	-----	-----	-----	15	20,419,372	463,263	20,882,650
	-----	-----	-----	\$2	\$2,946,350	\$58,695	\$2,705,047
Tuna, skipjack.....	-----	-----	-----	-----	49,164,418	16,238,442	65,402,860
	-----	-----	-----	-----	\$5,432,668	\$1,787,852	\$7,220,520
Tuna, yellowfin.....	-----	-----	-----	-----	164,034,539	27,819,517	191,854,056
	-----	-----	-----	-----	\$20,815,983	\$3,613,755	\$24,429,738
Turbot.....	7,594	67,974	-----	2,869	-----	-----	71,367
	\$750	\$3,514	-----	\$147	-----	-----	\$4,411
Wahoo.....	-----	-----	-----	-----	9,294	-----	9,294
	-----	-----	-----	-----	\$3,249	-----	\$3,249
Whitefish, ocean.....	-----	-----	-----	45	17,231	7,915	25,191
	-----	-----	-----	\$3	\$861	\$613	\$1,477
Yellowtail, California..	-----	-----	-----	7,789	300,686	72,294	380,769
	-----	-----	-----	\$547	\$21,197	\$6,097	\$27,751
Miscellaneous.....	-----	90	-----	296	1,448	80	1,914
	-----	\$11	-----	\$27	\$335	\$4	\$377
Miscellaneous (animal food)	2,760,891	187,185	9,717	819,340	-----	-----	3,777,133
	\$55,216	\$3,239	\$153	\$16,387	-----	-----	\$74,995
Crustacean:							
Crab, market.....	10,573,741	1,065,519	16,039	56,028	-----	-----	11,711,327
	\$1,699,198	\$262,971	\$4,629	\$14,130	-----	-----	\$1,980,928
Crab, rock.....	110	-----	-----	77,438	73,118	1,116	151,782
	-----	-----	-----	\$4,173	\$7,926	\$32	\$12,131
Lobster, spiny.....	-----	-----	-----	76,564	203,512	136,646	416,722
	-----	-----	-----	\$51,918	\$142,925	\$89,476	\$283,719
Shrimp, bay.....	-----	2,050	-----	-----	-----	-----	2,050
	-----	\$267	-----	-----	-----	-----	\$267
Shrimp, ocean.....	2,002,709	-----	-----	-----	-----	-----	2,002,709
	\$190,055	-----	-----	-----	-----	-----	\$190,055
Mollusk:							
Atalune.....	-----	24,198	683	3,145,494	1,002,531	380,950	4,553,766
	-----	\$4,390	\$128	\$462,373	\$104,060	\$35,992	\$606,943
Clam, gaper.....	-----	-----	220	-----	-----	-----	220
	-----	-----	\$22	-----	-----	-----	\$22
Clam, jackknife.....	-----	-----	-----	-----	-----	5,823	5,823
	-----	-----	-----	-----	-----	\$2,480	\$2,480
Clam, Washington.....	1,976	-----	-----	-----	-----	-----	1,976
	\$279	-----	-----	-----	-----	-----	\$279
Octopus.....	418	2,447	75	17	148	-----	3,105
	\$8	\$93	\$8	\$4	\$32	-----	\$145
Oyster, eastern.....	-----	105,726	-----	-----	-----	-----	105,726
	-----	\$5,107	-----	-----	-----	-----	\$5,107
Oyster, giant Pacific.....	8,406,650	531,575	-----	1,109,325	-----	-----	10,047,550
	\$210,166	\$58,154	-----	\$22,187	-----	-----	\$290,507
Squid.....	-----	-----	3,686,284	2,571,065	4,026,590	1,852	10,285,791
	-----	-----	\$129,020	\$34,195	\$68,049	\$74	\$231,338
Total pounds.....	43,914,934	19,081,199	19,897,950	39,381,567	420,907,225	56,080,634	599,263,509
Total value.....	\$5,496,415	\$3,634,125	\$1,270,361	\$1,770,628	\$35,703,328	\$7,565,871	\$55,440,728

TABLE 15
Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

TABLE 15—Continued
Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

Species	Eureka	San Francisco ¹	Monterey	Santa Barbara	Los Angeles	San Diego	Total
SHIPMENTS:²							
Fish:							
Halibut, Pacific.....	----	----	----	----	6,840	----	6,840
					\$3,038		\$3,038
Sablefish.....	----	----	----	----	414,054	----	414,054
					\$90,719		\$90,719
Salmon.....	1,111	----	----	----	352,567	----	353,678
	\$403				\$228,547		\$228,950
Seabass, white.....	----	----	----	----	2,776	----	2,776
					\$694		\$694
Shad.....	----	13,769	----	----	131,999	----	145,768
		\$27,538			\$15,919		\$43,457
Shark.....	----	----	----	----	42,679	----	42,679
					\$6,486		\$6,486
Smelt.....	----	----	----	----	4,080	----	4,080
					\$734		\$734
Steelhead.....	----	----	----	----	1,563	----	1,563
					\$391		\$391
Sturgeon.....	----	----	----	----	34,489	----	34,489
					\$22,332		\$22,332
Tuna, albacore.....	----	3,020,455	----	----	25,643,607	1,626,945	30,291,007
		\$495,657			\$4,346,591	\$279,184	\$5,121,432
Tuna, bigeye.....	----	182,480	----	----	278,916	----	461,396
		\$39,014			\$35,841		\$74,855
Tuna, bluefin.....	----	514,970	----	----	531,005	75,650	1,121,625
		\$74,671			\$65,792	\$9,456	\$149,919
Tuna, oriental.....	----	90,190	----	----	60,725	----	150,915
		\$14,404			\$9,910		\$24,404
Tuna, skipjack.....	----	174,370	----	----	7,910,475	13,258,927	21,344,772
		\$23,470			\$830,600	\$1,461,244	\$2,315,314
Tuna, yellowfin.....	----	18,362,792	----	----	38,860,314	13,233,100	70,456,206
		\$3,239,197			\$5,615,315	\$1,792,062	\$10,606,574
Miscellaneous.....	----	----	----	----	215,030	----	215,030
					\$62,535		\$62,535
Mollusk:							
Clam, jackknife.....	----	----	----	----	----	242	242
						\$96	\$96
Clam, Pismo.....	----	----	----	----	940,400	----	940,400
					\$21,629		\$21,629
Mussel.....	----	----	----	----	----	2,442	2,442
						\$180	\$180
Total pounds.....	1,111	22,359,026			75,431,519	28,198,308	125,989,962
Total value.....	\$403	\$3,914,041			\$11,357,073	\$3,502,222	\$18,773,739
GRAND TOTAL POUNDS.	43,916,045	41,440,225	19,997,950	39,381,567	496,338,744	84,278,940	725,253,471
GRAND TOTAL VALUE.	\$8,496,818	\$7,548,166	\$1,270,361	\$1,770,628	\$47,060,401	\$11,068,093	\$74,214,467

¹ Includes Sacramento area landings.

² For origin of shipments refer to Table 6.

TABLE 15
Value of Landings and Shipments of Commercial Fish Into California by Area, 1961

TABLE 16
Value of Landings and Shipments by Port, Eureka Area, 1961

	Value	Pounds
EUREKA AREA TOTALS	\$5,496,818	43,916,045
Eureka		
Salmon.....	\$712,041	1,382,438
Market crab.....	453,602	2,822,696
Giant Pacific oyster.....	210,166	8,406,650
Albacore.....	150,943	927,739
Dover sole.....	147,409	2,465,036
Petrale sole.....	56,226	492,779
Ocean shrimp.....	50,042	527,318
English sole.....	32,628	440,337
Rockfish.....	19,186	458,614
Rex sole.....	17,851	256,480
Miscellaneous (animal food).....	10,856	542,843
Sablefish.....	8,510	108,278
Flounder.....	6,365	129,646
Lingcod.....	6,257	90,420
Smelt.....	6,171	119,606
Whitebait.....	5,330	76,825
All other.....	8,561	176,647
Totals.....	\$1,902,153	19,424,322
Crescent City		
Market crab.....	\$1,049,358	6,529,921
Salmon.....	709,560	1,382,776
Ocean shrimp.....	51,260	540,153
Albacore.....	17,524	107,708
Lingcod.....	5,455	78,841
Whitebait.....	5,188	74,660
All other.....	6,957	88,198
Totals.....	\$1,845,302	8,802,257
Fort Bragg		
Salmon.....	\$684,047	1,304,377
Ocean shrimp.....	75,893	799,722
Dover sole.....	69,953	1,169,783
Albacore.....	65,206	400,775
Petrale sole.....	45,057	394,891
Market crab.....	41,060	255,513
Rockfish.....	28,309	643,968
Sablefish.....	23,043	293,176
Lingcod.....	19,240	278,050
English sole.....	17,758	239,654
Miscellaneous (animal food).....	14,176	708,841
Rex sole.....	8,986	129,115
Smelt.....	5,475	109,404
All other.....	6,332	105,385
Totals.....	\$1,104,535	6,832,654
Fields Landing		
Dover sole.....	\$157,142	2,627,802
Market crab.....	83,518	519,714
Petrale sole.....	80,882	708,874
English sole.....	56,178	798,636
Rockfish.....	41,970	995,757
Miscellaneous (animal food).....	30,184	1,509,207
Lingcod.....	21,800	315,039
Rex sole.....	15,020	215,806
Sablefish.....	13,979	177,850
Ocean shrimp.....	12,860	135,516
Whitebait.....	7,898	113,646
Salmon.....	7,398	14,338
All other.....	15,828	225,703
Totals.....	\$547,657	8,357,888

TABLE 16
Value of Landings and Shipments by Port, Eureka Area, 1961

TABLE 16—Continued
Value of Landings and Shipments by Port, Eureka Area, 1961

	Value	Pounds
Trinidad		
Market crab.....	\$71,660	445,927
Salmon.....	25,246	51,584
All other.....	77	914
Totals.....	\$96,983	498,425
All other ports		
All other.....	\$188	499
Totals.....	\$188	499

TABLE 16
Value of Landings and Shipments by Port, Eureka Area, 1961

TABLE 17
Value of Landings and Shipments by Port,¹ San Francisco Area, 1961

	Value	Pounds
SAN FRANCISCO AREA TOTALS	\$7,548,166	41,440,225
San Francisco		
Yellowfin tuna.....	\$3,239,197	18,362,792
Albacore.....	927,221	5,426,052
Salmon.....	404,093	708,066
Market crab.....	161,955	656,219
Rockfish.....	87,647	1,818,510
Bluefin tuna.....	74,671	514,970
English sole.....	69,268	954,103
Petrale sole.....	65,741	553,839
Dover sole.....	48,478	930,480
Bigeye tuna.....	39,014	182,480
Shad.....	27,538	13,769
Skipjack.....	23,470	174,370
Rex sole.....	18,738	288,280
Sanddab.....	18,416	288,206
Sablefish.....	17,248	561,845
Lingcod.....	16,934	261,325
Oriental tuna.....	14,494	90,190
White seabass.....	8,808	29,725
California halibut.....	7,470	37,388
Sand sole.....	5,898	58,108
All other.....	21,095	813,626
Totals.....	\$5,297,394	32,724,343
Bodega Bay		
Salmon.....	\$797,512	1,397,428
Market crab.....	55,370	224,352
English sole.....	13,193	181,727
Petrale sole.....	8,793	74,076
Dover sole.....	48,216	157,663
All other.....	23,206	336,082
Totals.....	\$906,290	2,371,358
Sausalito		
Salmon.....	\$399,957	700,818
Albacore.....	55,043	306,818
Market crab.....	8,543	34,614
All other.....	591	13,656
Totals.....	\$464,134	1,055,906
Point Reyes		
Salmon.....	\$257,433	451,083
Giant Pacific oyster.....	49,714	454,421
Petrale sole.....	22,100	186,185
Market crab.....	18,688	75,722
Rockfish.....	13,753	294,456
English sole.....	12,112	166,835
Lingcod.....	9,770	150,775
Dover sole.....	8,345	160,173
All other.....	14,876	278,559
Totals.....	\$406,791	2,218,209
Oakland		
Salmon.....	\$171,345	300,237
Albacore.....	124,572	694,383
Dover sole.....	8,161	156,635
All other.....	6,317	49,291
Totals.....	\$310,395	1,200,546
Princeton		
Salmon.....	\$72,898	127,735
Market crab.....	13,185	53,343
All other.....	5,305	30,551
Totals.....	\$91,388	211,629

TABLE 17
Value of Landings and Shipments by Port, San Francisco Area, 1961

TABLE 17—Continued
Value of Landings and Shipments by Port,¹ San Francisco Area, 1961

	Value	Pounds
Tomales Bay		
Giant Pacific oyster.....	\$8,440	77,154
Pacific herring.....	8,107	976,810
Eastern oyster.....	5,107	105,726
All other.....	4,505	38,112
Totals.....	\$26,159	1,197,802
Clear Lake		
Hardhead.....	\$17,669	89,695
Carp.....	7,975	176,050
Totals.....	\$25,644	265,745
Berkeley		
Salmon.....	\$9,355	16,366
All other.....	337	1,495
Totals.....	\$9,692	17,861
Turlock		
Carp.....	\$5,369	118,522
All other.....	1,886	9,601
Totals.....	\$7,255	128,123
All other ports		
All other.....	\$3,044	48,703
Totals.....	\$3,044	48,703

¹ Includes Sacramento area landings.

TABLE 17
Value of Landings and Shipments by Port, San Francisco Area, 1961

TABLE 18
Value of Landings by Port, Monterey Area, 1961

	Value	Pounds
MONTEREY AREA TOTALS.....	\$1,270,361	19,897,950
Monterey		
Rockfish.....	\$160,347	3,122,603
Squid.....	129,002	3,685,784
Albacore.....	110,808	685,270
Salmon.....	69,899	125,505
Jack mackerel.....	54,708	2,346,241
Anchovy.....	40,101	2,810,552
English sole.....	14,612	199,342
Sardine.....	13,004	426,337
Petrale sole.....	12,045	100,876
Lingcod.....	8,422	89,027
Sablefish.....	7,918	149,966
Sauddab.....	6,519	99,080
White croaker.....	6,338	122,601
All other.....	15,241	270,774
Totals.....	\$649,024	14,234,258
Moss Landing		
Salmon.....	\$202,507	363,763
Albacore.....	190,691	1,179,289
Jack mackerel.....	30,366	1,303,273
Sardine.....	20,841	683,305
Pacific herring.....	20,330	324,754
Anchovy.....	13,910	972,710
Sablefish.....	5,979	113,242
Rockfish.....	5,174	69,362
All other.....	15,196	184,745
Totals.....	\$504,994	5,194,443
Santa Cruz		
Salmon.....	\$92,020	165,309
All other.....	24,314	303,940
Totals.....	\$116,334	469,249

TABLE 18
Value of Landings by Port, Monterey Area, 1961

TABLE 19
Value of Landings by Port, Santa Barbara Area, 1961

	Value	Pounds
SANTA BARBARA AREA TOTALS.....	\$1,770,628	39,381,567
Morro Bay		
Abalone.....	\$243,343	1,597,786
Albacore.....	91,887	577,181
Rockfish.....	60,189	1,214,882
Sardine.....	56,400	1,992,950
Petrale sole.....	50,101	448,937
Salmon.....	31,619	54,773
Giant Pacific oyster.....	22,187	1,109,325
Jack mackerel.....	19,050	1,002,654
Market crab.....	11,160	44,252
Miscellaneous (animal food).....	8,981	449,073
Lingcod.....	7,393	78,402
White scabass.....	6,137	19,958
Rex sole.....	5,508	90,888
All other.....	18,369	245,064
Totals.....	\$632,324	8,926,125
Port Hueneme		
Jack mackerel.....	\$262,052	13,792,185
Sardine.....	186,152	6,577,810
Pacific mackerel.....	49,379	2,456,660
Squid.....	33,095	2,488,350
Abalone.....	23,032	174,558
Swordfish.....	9,342	22,164
All other.....	10,756	103,303
Totals.....	\$573,808	25,615,030
Santa Barbara		
Abalone.....	\$159,457	1,133,220
Rockfish.....	45,179	1,042,025
Petrale sole.....	42,829	383,771
Spiny lobster.....	39,179	59,980
California halibut.....	36,980	164,944
English sole.....	34,889	558,231
California barracuda.....	20,109	130,578
White scabass.....	19,189	62,402
Swordfish.....	15,797	37,479
Miscellaneous (animal food).....	7,337	366,831
All other.....	15,711	304,224
Totals.....	\$436,656	4,243,685
Avila		
Salmon.....	\$44,277	78,158
Albacore.....	16,209	101,814
Abalone.....	6,147	40,363
All other.....	12,715	118,893
Totals.....	\$79,348	339,228
San Simeon		
Abalone.....	\$27,135	178,167
Totals.....	\$27,135	178,167
Ventura		
Spiny lobster.....	\$12,027	18,412
All other.....	3,379	20,481
Totals.....	\$15,406	38,893
All other ports		
All other.....	\$5,951	40,439
Totals.....	\$5,951	40,439

TABLE 19
Value of Landings by Port, Santa Barbara Area, 1961

TABLE 20
Value of Landings and Shipments by Port, Los Angeles Area, 1961

	Value	Pounds
LOS ANGELES AREA TOTALS	\$47,060,401	496,338,744
Terminal Island		
Yellowfin tuna.....	\$26,490,937	202,655,603
Albacore.....	6,469,824	37,367,697
Skipjack.....	6,263,221	57,074,467
Bluefin tuna.....	2,611,710	20,175,436
Jack mackerel.....	1,395,398	66,447,522
Sardine.....	765,224	29,545,346
Pacific mackerel.....	731,682	33,718,042
Pacific bonito.....	159,096	6,239,066
Squid.....	41,754	2,470,625
Bigeye tuna.....	35,841	278,916
Pismo clam.....	17,042	740,960
California yellowtail.....	11,396	161,649
Oriental tuna.....	9,910	60,725
Shark.....	6,516	42,804
All other.....	3,005	163,539
Totals.....	\$44,922,556	457,142,397
San Pedro		
Bluefin tuna.....	\$100,409	774,760
White seabass.....	95,977	288,391
Sardine.....	87,796	3,389,809
California barracuda.....	76,211	505,378
Spiny lobster.....	67,316	95,851
Swordfish.....	60,303	135,209
Pacific mackerel.....	55,711	2,705,598
Jack mackerel.....	57,290	2,728,093
Rockfish.....	57,284	447,581
Giant sea bass.....	50,978	307,469
Grouper.....	40,824	188,912
Anchovy.....	39,138	2,836,119
Yellowfin tuna.....	30,298	238,756
Albacore.....	27,790	153,450
Squid.....	23,616	1,397,415
White croaker.....	21,472	545,852
California halibut.....	18,761	72,408
Pacific bonito.....	13,643	535,031
Shark.....	10,997	90,367
California yellowtail.....	9,219	130,772
Salmon.....	6,547	13,119
All other.....	15,028	129,208
Totals.....	\$969,608	17,709,548
Los Angeles		
Salmon.....	\$228,547	352,567
Sablefish.....	90,719	414,054
Sturgeon.....	22,332	34,489
Shad.....	15,919	131,999
All other.....	71,432	428,481
Totals.....	\$428,949	1,361,590
Wilmington		
Jack mackerel.....	\$156,711	7,462,407
Pacific mackerel.....	79,553	3,666,028
Pacific bonito.....	42,446	1,694,555
Sardine.....	12,252	473,057
Anchovy.....	6,075	440,197
All other.....	5,345	163,606
Totals.....	\$302,382	13,869,850

TABLE 20
Value of Landings and Shipments by Port, Los Angeles Area, 1961

TABLE 20—Continued
Value of Landings and Shipments by Port, Los Angeles Area, 1961

	Value	Pounds
Newport Beach		
Abalone.....	\$102,310	985,912
Jack mackerel.....	52,534	2,501,600
Swordfish.....	51,009	114,369
Pacific mackerel.....	31,501	1,451,652
Shark.....	22,168	166,542
Spiny lobster.....	15,597	22,209
California halibut.....	9,939	38,358
All other.....	12,640	120,899
Totals.....	\$297,698	5,401,541
Santa Monica		
White seabass.....	\$14,295	42,954
Spiny lobster.....	13,016	18,533
All other.....	16,310	292,529
Totals.....	\$43,621	354,016
Long Beach		
Albacore.....	\$17,875	98,703
Rockfish.....	10,589	78,182
Spiny lobster.....	9,579	13,640
All other.....	5,002	133,714
Totals.....	\$43,045	324,239
San Clemente		
Spiny lobster.....	\$31,839	45,336
Totals.....	\$31,839	45,336
Redondo Beach		
Rock crab.....	\$7,623	70,322
All other.....	6,984	31,445
Totals.....	\$14,607	101,767
All other ports		
All other.....	\$6,096	28,460
Totals.....	\$6,096	28,460

TABLE 20
Value of Landings and Shipments by Port, Los Angeles Area, 1961

TABLE 21
Value of Landings and Shipments by Port, San Diego Area, 1961

	Value	Pounds
SAN DIEGO AREA TOTALS	\$11,068,093	84,278,940
San Diego		
Yellowfin tuna.....	\$5,365,817	41,052,617
Skipjack.....	3,249,096	29,498,369
Albacore.....	2,033,774	11,326,171
Bluefin tuna.....	68,151	538,913
California halibut.....	60,840	269,202
Spiny lobster.....	59,337	90,619
White seabass.....	55,603	196,337
Abalone.....	35,992	380,950
Rockfish.....	32,875	298,697
Swordfish.....	19,670	45,712
Shark.....	8,988	81,883
California yellowtail.....	5,891	70,896
All other.....	30,106	280,302
Totals	\$11,026,140	84,130,668
La Jolla		
Spiny lobster.....	\$21,823	33,327
All other.....	2,525	23,136
Totals	\$24,348	56,463
Oceanside		
Spiny lobster.....	\$4,548	6,946
All other.....	4,277	29,792
Totals	\$8,825	36,738
All other ports		
All other.....	\$8,780	55,071
Totals	\$8,780	55,071

TABLE 21
Value of Landings and Shipments by Port, San Diego Area, 1961

TABLE 22
 Statewide Commercial Party Boat Catch by Species
 (Not including anchored barges)
 1936-1940, 1947-1961

Species	Number of fish									
	1936	1937	1938	1939	1940	1947	1948	1949	1950	1951
Barracuda, California.....	492,836	598,454	314,256	663,498	704,320	677,449	384,056	366,423	256,367	260,545
Bass, lady and mud.....	315,942	228,397	435,917	426,772	411,400	663,064	630,617	798,959	419,397	781,909
Bonito, Pacific.....	17,916	40,654	14,373	17,326	9,683	36,466	14,919	5,372	2,359	14,475
Calton.....	2,287	2,143	4,275	2,323	3,248	9,886	14,666	14,125	15,971	18,029
Halibut, California.....	34,961	22,359	17,194	39,739	55,838	101,436	143,462	104,630	88,653	59,295
Linecod.....	2,532	3,885	4,593	6,436	6,785	22,011	24,406	26,131	23,868	24,052
Mackerel, jack.....	1,393	1,925	3,462	1,222	10,109	4,505	2,351	2,932	557	202
Mackerel, Pacific.....	70,836	36,251	87,956	160,925	116,320	148,941	203,012	93,158	66,969	47,188
Rockfish.....	204,627	243,125	236,312	209,453	301,355	193,377	410,271	670,637	679,161	721,895
Salmon.....	157	1,095	1,990	3,501	7,080	6,018	11,269	23,037	56,557	71,970
Scupin.....	14,658	13,164	21,063	17,856	15,098	26,062	52,554	37,030	53,410	33,721
Seabass, white.....	11,046	11,244	14,053	30,218	15,079	20,724	24,078	65,845	54,718	44,367
Sheepshead, California.....	8,676	9,279	13,188	11,317	11,231	13,003	12,263	15,446	14,231	20,416
Tuna, albacore.....	463	1,346	3,833	8,819	1,122	11,445	15,414	22,662	118,087	75,924
Tuna, bluefin.....	2,920	4,020	11,927	9,909	6,878	2,194	104	1,941	27	7,142
Whitefish, ocean.....	3,066	3,547	4,567	7,672	4,223	5,160	14,124	14,576	16,925	8,328
Yellowtail, California.....	93,869	61,054	42,556	25,935	95,204	6,195	15,028	17,719	6,971	23,721
All others.....	39,220	41,254	46,147	81,022	94,355	100,612	134,963	156,427	121,061	126,352
Total number of fish.....	1,313,473	1,344,139	1,281,608	1,724,234	1,672,838	2,070,432	2,110,019	2,338,794	2,193,413	2,350,844
Number of angler days.....	166,784	201,241	201,685	231,328	250,456	356,436	407,757	469,915	544,264	556,949
Number of anglers ¹										

¹ Figures for World War II years, 1941-1946, not available.
² Number of anglers are not recorded for years prior to 1960. Figures published in Fish Bulletin No. 117 were estimates.

MARINE FISH CATCH FROM 1961

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TABLE 22
 Statewide Commercial Party Boat Catch by Species (Not including anchored barges) 1936-1940, 1947-1961

TABLE 22—Continued
 Statewide Commercial Party Boat Catch by Species
 (Not including anchored barges)
 1936-1940,¹ 1947-1961

Species	Number of fish									
	1932	1933	1934	1935	1936	1937	1938	1939	1940	1961
Barracuda, California	336,862	170,550	282,552	154,902	87,603	677,184	782,723	1,105,555	755,498	391,884
Bass, kelp and sand	536,075	711,490	876,667	497,343	470,362	690,071	653,671	428,426	478,856	613,691
Bonito, Pacific	7,646	6,321	70,078	22,409	61,404	284,555	522,563	773,386	1,199,919	843,426
Calveson	10,847	9,650	13,132	12,366	18,165	14,479	9,909	5,329	2,516	2,839
Hailbot, California	34,158	34,290	56,674	35,902	21,661	10,758	16,192	23,353	43,310	105,911
Linecod	17,389	13,011	22,640	29,113	37,649	38,012	39,801	31,206	28,232	23,466
Mackerel, jack	4,985	196,230	16,807	39,473	23,463	6,878	27,867	11,820	8,517	28,891
Mackerel, Pacific	76,968	61,467	318,037	181,018	121,126	131,969	136,607	88,952	76,370	113,988
Rockfish	705,731	698,475	1,146,362	1,137,737	2,036,715	1,928,151	1,561,152	1,177,473	1,015,623	896,941
Salmon	86,472	98,723	119,911	128,978	114,505	44,701	52,676	55,945	37,911	42,955
Southern	39,068	28,852	33,462	28,613	36,558	15,473	15,743	11,477	15,111	26,672
Sea bass, white	41,933	27,935	41,588	30,103	19,755	19,036	24,036	10,563	15,627	14,052
Sheepshead, California	16,481	17,349	21,499	14,102	14,789	15,105	18,120	17,146	11,541	15,210
Tuna, albacore	187,267	23,273	20,058	78,898	65,811	41,549	6,882	39	76,075	184,901
Tuna, bluefin	145	4,276	966	8,179	34,187	6,428	881	1,330	67	2,268
Whitefish, ocean	10,003	4,963	9,652	9,508	7,651	4,389	6,143	5,008	5,850	6,647
Yellowtail, California	86,283	27,702	46,872	36,485	29,198	242,996	123,384	457,500	254,969	42,367
All others	106,087	117,789	177,338	96,034	62,927	60,148	44,959	29,039	66,132	87,281
Total number of fish	2,306,133	2,208,158	3,274,537	3,113,883	3,262,995	3,499,585	3,959,880	4,328,575	4,690,034	3,453,633
Number of angler days	588,087	502,146	532,190	496,286	522,063	536,175	515,152	557,154	516,253	495,805
Number of anglers ²									637,498	503,916

¹ Figures for World War II years, 1941-1946, not available.
² Number of anglers are not recorded for years prior to 1960. Figures published in Fish Bulletin No. 117 were estimates.

FISH BULLETIN NO. 141

TABLE 22
 Statewide Commercial Party Boat Catch by Species (Not including anchored barges) 1936-1940, 1947-1961

TABLE 23
Recorded Catch of Live Bait for Saltwater Sportfishing, 1961

Species	Thousands of pounds ¹
Anehovy.....	11,825
Sardine, adult.....	136
Sardine, juvenile.....	3
Miscellaneous ²	15
Total pounds.....	11,979

¹ Using a conversion factor of 12.5 pounds per live bait scoop, weights are estimated from voluntary records submitted by 14 boats. The weight of a scoop of live bait varies between 10 and 15 pounds. The records represent almost all the live bait landings, however, they should be regarded as minimal.

² Consists primarily of queenfish and white croaker.

TABLE 23
Recorded Catch of Live Bait for Saltwater Sportfishing, 1961

3. CATCH LOCALITIES FOR DOVER SOLE, *MICROSTOMUS PACIFICUS* (LOCKINGTON), LANDED IN CALIFORNIA, 1950 THROUGH 1959

E. A. BEST
Marine Resources Operations
California Department of Fish and Game

3.1. INTRODUCTION

World War II technological advances in freezing fillets transposed Dover sole from a discarded scrap fish to California's most important flatfish. This rapid transposition took place between 1943 and 1948. Credit for developing Dover sole as an acceptable fish for the fillet trade rests with Oregon processors. The Oregon fishery began in 1941 and reached a magnitude of 6.4 million pounds by 1943 (Cleaver, 1951).

With the momentum provided by the Oregon industry, the fishery moved south, and in 1943 Dover sole were recorded for the first time in California landings. Landings increased slowly through 1947 and in 1948 jumped to 7.2 million pounds. Hagerman (1952) reported on the early phase of this fishery. Stimulated by increased purchasing by the armed forces during the Korean conflict, Dover sole catches peaked at 11.7 million pounds in 1952. This represented 52 percent of the total flatfish landings in California. From 1950 to 1959 the annual harvest averaged 8.9 million pounds. The 7.3 million pounds caught in 1959 was the lowest for this period; yet it was 39 percent of all flatfish taken (Figure 1).

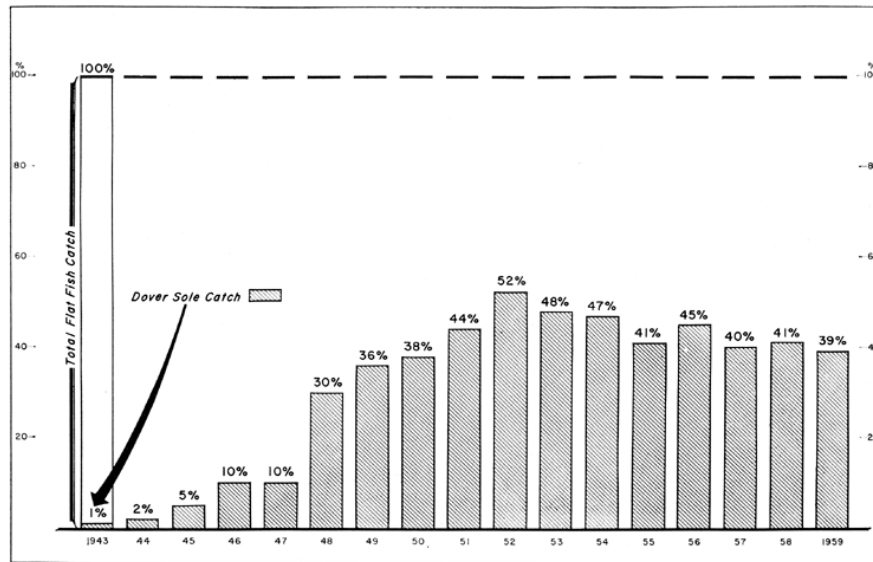


FIGURE 1. Proportion of Dover sole landings to total flatfish landings, 1943 through 1959.

FIGURE 1. Proportion of Dover sole landings to total flatfish landings, 1943 through 1959

3.2. FISHERY

Dover sole inhabit relatively deep areas of the continental slope. Otter trawls are the only practical way to harvest them. Fishing takes place in depths ranging from a little less than 100 fathoms during summer to over 400 fathoms in late winter and early spring.

Vessels average about 60 feet in overall length but vary from about 45 to 90 feet and normally require a three- or four-man crew. Nearly all are typical Pacific coast combination-type construction with deck house forward and the after deck clear for working gear. Several annually switch to albacore or sardine fishing, or become salmon pick-up vessels at the appropriate season and return to the trawl fishery for the remainder of the year. In recent years numerous unemployed sardine purse-seine vessels have become year-round trawlers (Figure 2). An excellent description of gear and electronic aids was given by Alverson (1957).

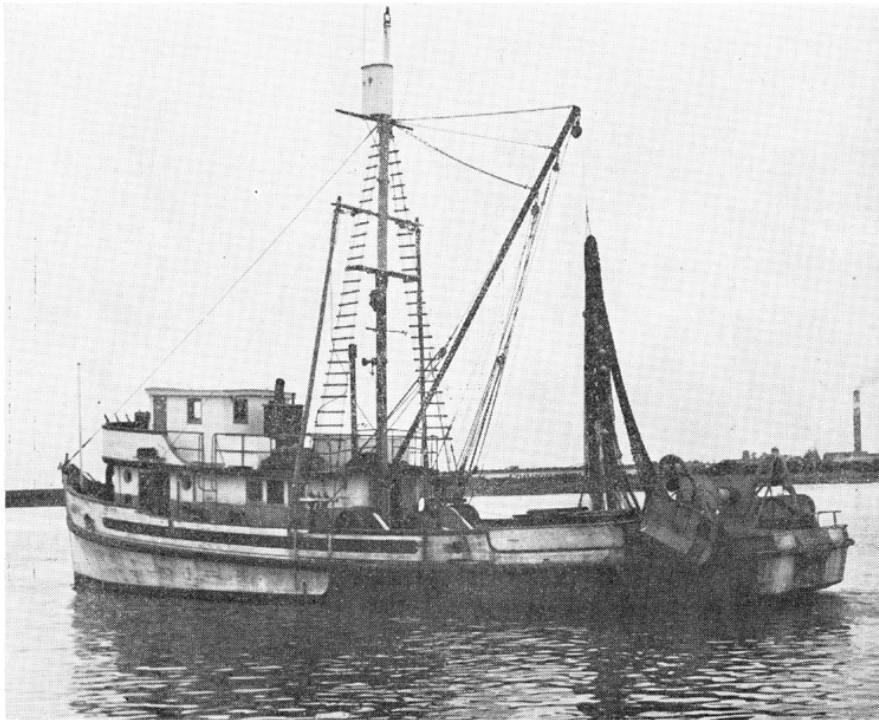


FIGURE 2. Former sardine purse-seine vessel rigged for otter trawling.
Photo by Paul H. Reed, July 1962.

FIGURE 2. Former sardine purse-seine vessel rigged for otter trawling. Photo by Paul H. Reed, July 1962

Occasionally Dover sole are landed on a daily basis; however, in northern California, trips usually last 4 or 5 days while in central California the standard is 2 or 3 days. Fish are stowed below decks in pens with adequate ice to prevent spoilage. The vessels do not have shelves in the pens to prevent crushing fish. Day fish (those to be sold the day caught) are boxed aboard the vessel and landed without ice. Few trawlers are equipped with refrigeration. That used is merely for chilling the fish-hold to minimize ice melting and is not adequate to freeze catches at sea.

3.3. REPORTING THE CATCH

California otter trawlers are required by law to keep logbooks of their fishing activities. For reporting fishing localities, they are supplied charts with the offshore area divided into numbered blocks measuring 10 minutes of longitude by 10 minutes of latitude (Figures 3, 4). Trawler logs combined with landing receipts are used to determine fishing location and species caught. For a complete description of this technique, see Clark (1935) and California Department of Fish and Game (1952).

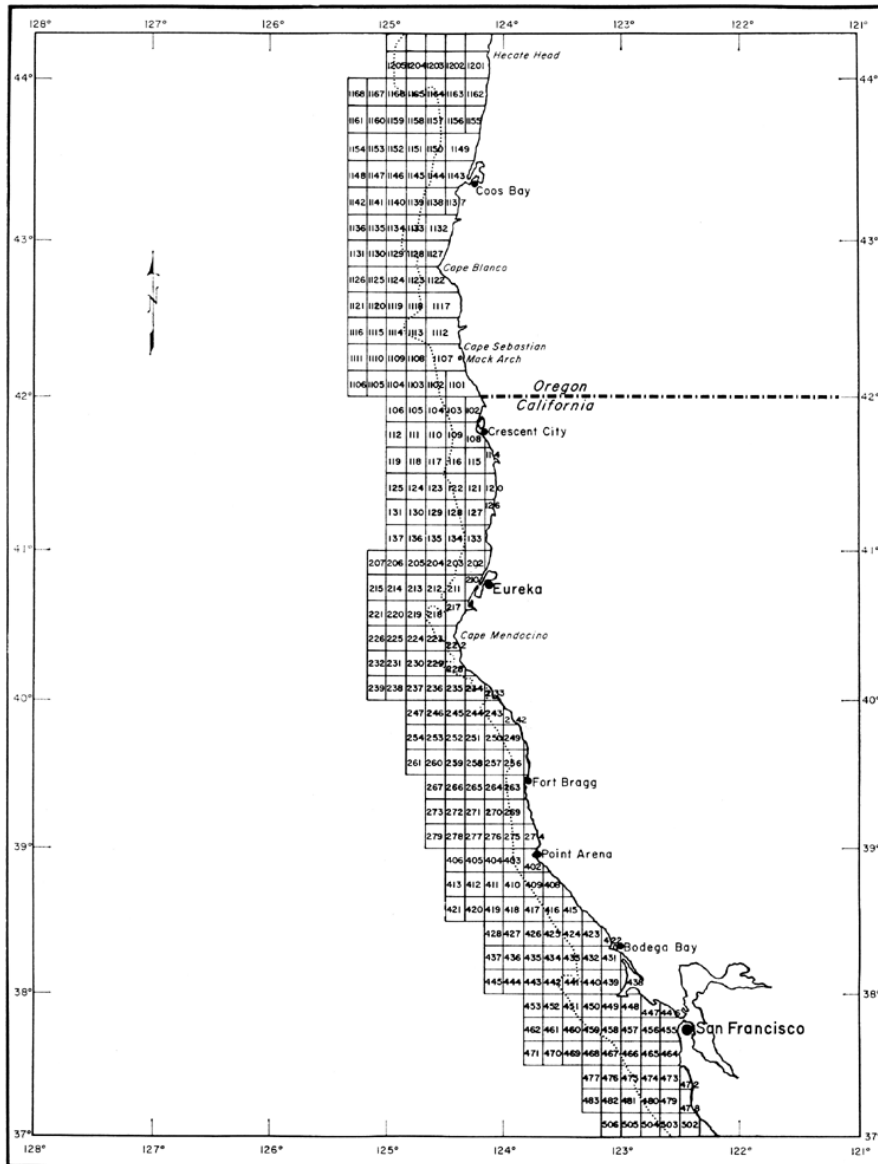


FIGURE 3. California Department of Fish and Game fishing chart for northern California and southern Oregon.

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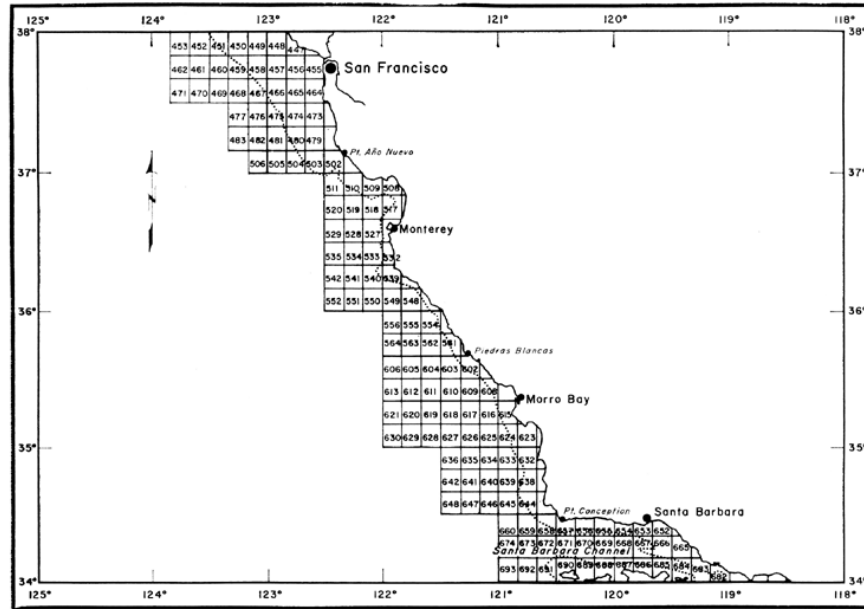


FIGURE 4. California Department of Fish and Game fishing chart for central California.

FIGURE 4. California Department of Fish and Game fishing chart for central California

These data, summarized monthly and yearly, provide information about the fishery and are particularly useful in delineating new fishing areas and determining areas not actively fished.

The Dover sole fleet is far ranging. Its sphere of operations, as indicated by 1950 to 1959 catch locality summaries, may be anywhere from central Oregon to central California (Table 1). When averaged for

TABLE 1

Dover Sole Catch Localities by General Areas, 1950 Through 1959.

(Landings in thousands of pounds)

General area	Block numbers	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Coos Bay, Oregon ..	1127-1205	535	29	126	39	335	283	234	192	302	259
Mack Arch, Oregon..	1101-1126	786	586	1,049	1,049	1,574	699	790	790	836	931
Eureka	102- 226	7,417	7,116	9,066	6,231	4,895	4,993	3,960	4,293	3,951	3,670
Fort Bragg	228- 279	687	756	1,125	1,159	1,704	1,494	2,082	1,953	1,416	1,233
Bodega Bay	402- 445	118	109	223	239	408	260	58	87	1,191	846
San Francisco	446- 483	5	19	103	152	978	448	1,127	606	355	372
Monterey	502- 564	0	6	56	35	36	6	14	10	1	2
Morro Bay	602- 648	0	0	0	0	0	2	3	1	1	14
Santa Barbara	652- 693	0	0	0	0	0	0	*0	0	0	0
Total		9,548	8,621	11,748	8,904	9,930	8,185	8,268	7,932	8,053	7,327

* Landings totaled 200 pounds. An important trawl fishery has developed at Santa Barbara since 1959.

TABLE 1

Dover Sole Catch Localities by General Areas, 1950 Through 1959. (Landings in thousands of pounds)

1950-1954 and 1955-1959, these catch locality data show northern California's continued domination of the fishery but also indicate gradually increasing importance of Dover sole to central California ports (Figures 5, 6, 7, 8).

Monthly summaries of trawl landings reveal very clearly the seasonal character of the Dover sole fishery. Less than 1 percent of the total annual Dover sole landings are made in both January and February. With the coming of spring and improved weather, landings increase until they peak in midsummer. About one-half of the annual catch is landed during June, July, and August. A decline sets in as winter approaches and stormy weather prevails in the off-shore fishing areas.

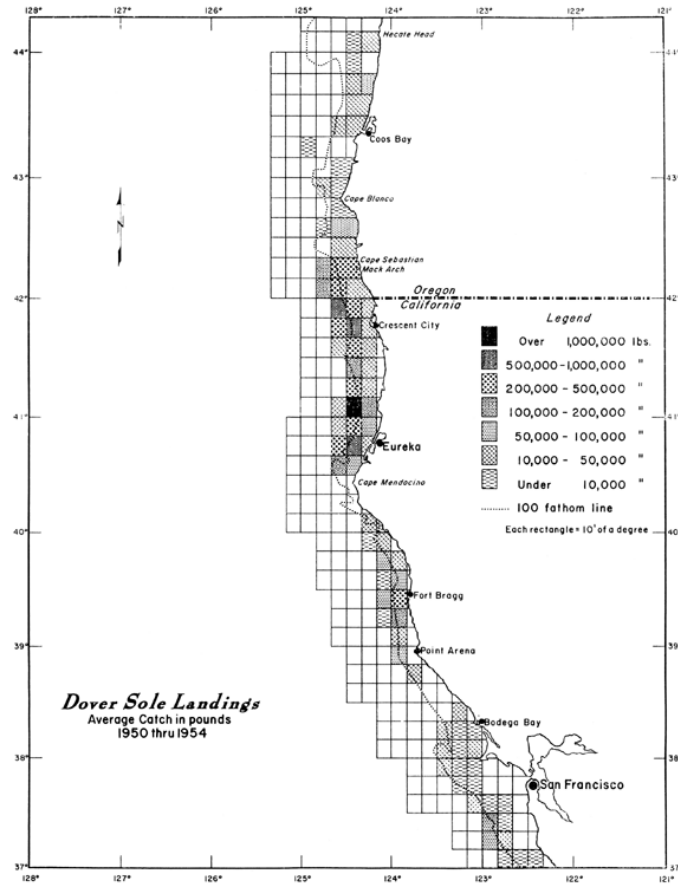


FIGURE 5. Origin of average annual Dover sole catches from northern California and southern Oregon landed by California otter trawlers for 1950 through 1954.

FIGURE 5. Origin of average annual Dover sole catches from northern California and southern Oregon landed by California otter trawlers for 1950 through 1954

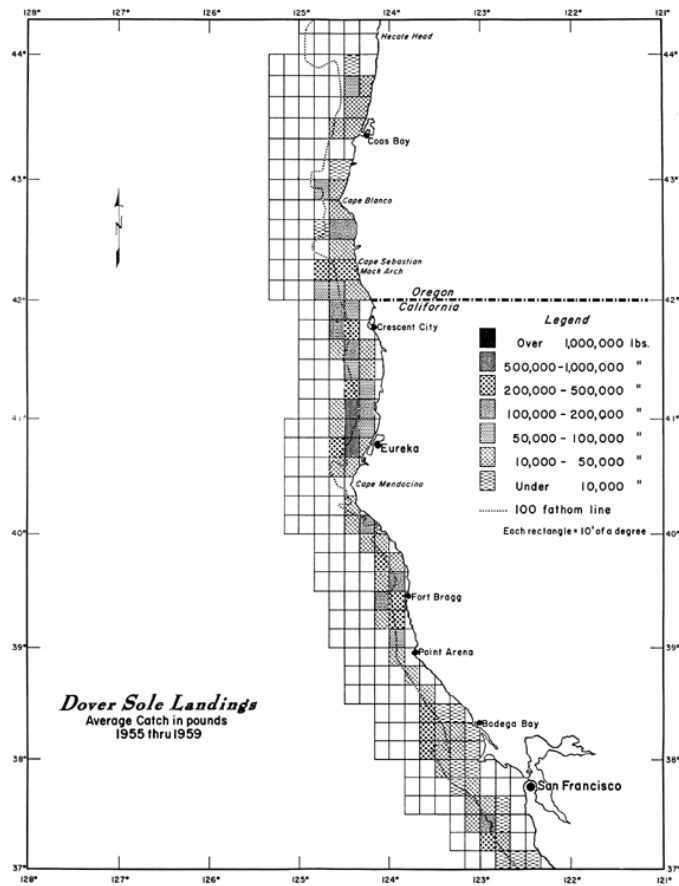


FIGURE 6. Origin of average annual Dover sole catches from northern California and southern Oregon landed by California otter trawlers for 1955 through 1959.

FIGURE 6. Origin of average annual Dover sole catches from northern California and southern Oregon landed by California otter trawlers for 1955 through 1959

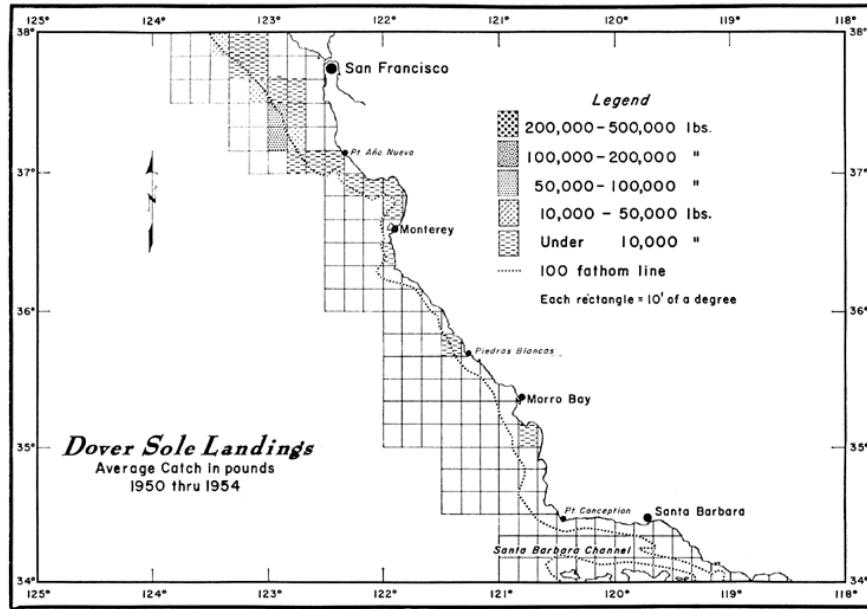


FIGURE 7. Origin of average annual Dover sole catches from central California landed by California otter trawlers for 1950 through 1954.

FIGURE 7. Origin of average annual Dover sole catches from central California landed by California otter trawlers for 1950 through 1954

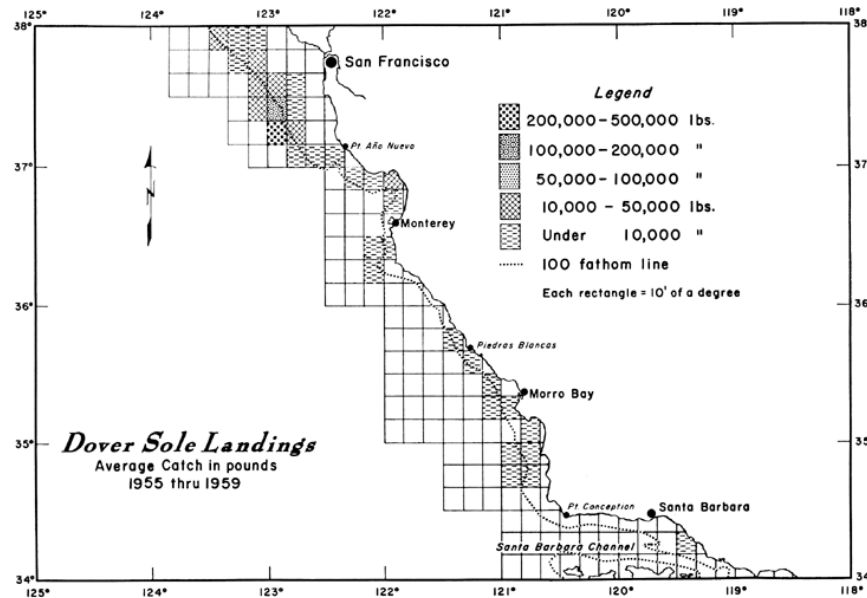


FIGURE 8. Origin of average annual Dover sole catches from central California landed by California otter trawlers for 1955 through 1959.

FIGURE 8. Origin of average annual Dover sole catches from central California landed by California otter trawlers for 1955 through 1959

3.4. SUMMARY

1. Technological advances made during the early 1940's changed Dover sole from a trash fish to California's most important flatfish.
2. Dover sole landings in California averaged nearly 9 million pounds annually from 1950 to 1959.
3. The fishery is primarily in northern California with central California ports landing increased quantities in recent years.
4. Dover sole trawling is primarily a summer fishery with little activity during winter.

3.5. REFERENCES

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