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Fish Bulletin 138. The California Marine Fish Catch For 1966 California-Based Fisheries off the West Coast of Mexico for Temperate Tunas, Market Fish, and Sport Fish

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Publication Date

1968

**STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF FISH AND GAME
FISH BULLETIN 138
The California Marine Fish Catch For 1966
California-Based Fisheries off the West Coast of Mexico for Temperate
Tunas, Market Fish, and Sport Fish**



By
RICHARD F. G. HEIMANN
and
HERBERT W. FREY
and
By
PHILIP M. ROEDEL
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HERBERT W. FREY
1968

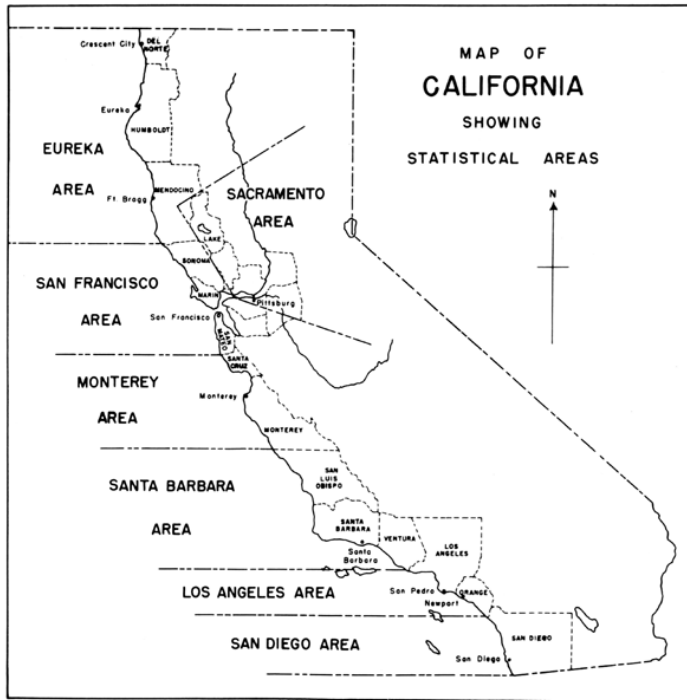


FIGURE 1

(2)

FIGURE 1

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by *Richard F. G. Heimann and Herbert W. Frey*

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IN MEMORIAM

H. Annine Stevens

Annine Stevens passed away on September 24, 1967 at her home in Long Beach. She had retired in June from the Biostatistical Section of the California State Fisheries Laboratory where she had served as Supervising Clerk of the Data Collection Unit since 1959.

Annine joined the Department of Fish and Game in 1953 as an Account Clerk, and later served as a Tabulating Machine Operator and as a Senior Clerk before taking on the duties of Supervising Clerk. In this latter capacity, she bore the major responsibility for preparing the annual catch bulletins as well as for insuring the orderly flow of the basic catch data through the unit. Her special knowledge and background was an asset to the Department that was recognized by all who worked with her.

Her cheerful manner and desire to be helpful to others won her many friends throughout the Department. All of us extend our sincere sympathies to her family.—*Richard F. G. Heimann*

FOREWORD

Catch bulletins provide records of the amounts and values of various living marine resources taken by California's commercial fisheries, and summarize the catches made by the partyboat sportfishing industry. They also detail the small quantities of freshwater fish taken commercially in inland areas. These data provide the basic background for managing California's commercial fishery resources. The published figures are of national and international significance, and are used by fisheries scientists, legislators, educators, members of the fishing industry, and others interested in the State's fisheries.

This report for 1966 is the 26th in the series of catch bulletins. The first, published in 1929, contained the records of the 1926 and 1927 commercial fish catches.

California's fishery statistics are based on a system whereby fish dealers, processors, and partyboat operators send duplicate copies of their landing records to the Department. The statistical system and methods used to collect the records were fully described in Fish Bulletin 86, which reported the catch for 1950. In the intervening years, methods and equipment have been modified as conditions warranted, but the basic principles have remained unchanged.

Credit for this publication belongs to the personnel of the Biostatistics Unit who process the many documents necessary for its publication. Special acknowledgment is given to the wardens along the coast and the clerks in the field offices whose efforts insure the completeness of the records. We appreciate as well the cooperation of the many wholesale fish dealers and canners.

1. EXPLANATION OF TABLES

The tables in this bulletin summarize the statistics of the various fishery operations in California during 1966. Four types of activity are being reported this year: landings of commercial fishermen in California; imports of tuna from other states or foreign countries destined for processing in California; sport catches of the partyboat fleet; and catches of boats supplying live bait for sportfishing. In addition, an appendix showing the species composition of the salmon catch has been included. The tabulation of inshore bait landings shown in 1963, 1964 and 1965 is not included this year; however, we plan to present these data for 1966 and 1967 in the 1967 catch bulletin.

The statistics presented in this publication do not encompass all of the fishing activities in the State since not all of these activities are reported. For example: sportfishing from private boats or from shore is not reported, nor is the importation of fish for use in a fresh state. Department biologists do sample some facets of the sportfishery, but since this is part of specific studies, most of the results are not reported here.

The Department annually publishes a circular which enumerates some of the fishery products produced from the catch. The 1966 figures are contained in circular No. 41, "Statistical Report of Fresh, Canned, Cured, and Manufactured Fishery Products for 1966" (Heimann and Frey, 1967).

1.1. SOURCE OF DATA

Data on each commercial landing and import are recorded on receipts by fish dealers or processors at the time of delivery. Copies of these documents are transmitted to the Department twice each month. For each transaction, the dealer is required to provide the weight of each species and the price paid to the fishermen. The date of the transaction, the fisherman's name, the fishing boat registration number, and intended use of the fish (canning, fresh, etc.) are also required. In addition, the specific area where the fish were caught and the type of gear used are usually reported.

Partyboat catch data are obtained from logs completed by the boat operator. The log for each trip includes the number of each species taken, the number of anglers, the number of hours fished, and the specific area fished. The date, boat name, and boat registration number are also furnished. Copies of these records are sent to the Department monthly.

Operators of boats supplying live bait keep a voluntary daily log showing the number of sets, the species caught, the area fished, and the number of scoops of bait sold. Copies of these logs are furnished the Department monthly. These records represent almost all the live bait landings; nevertheless, the reported catch should be regarded as minimal.

Clerical personnel at field offices at Eureka, San Francisco, Monterey, Terminal Island, and San Diego maintain contact with fish dealers

and local Fish and Game Wardens to insure that the records are accurate and transmitted promptly. All data received by the Department are carefully edited to insure correctness and coded to facilitate processing. The data are then punched into cards and summarized with electric tabulating machines.

1.2. STATISTICAL AREAS

The State is divided into seven areas for the purpose of reporting fisheries statistics (Figure 1). Each statistical area is named for a major port within its boundaries. Sacramento area landing statistics are incorporated with San Francisco totals in the tables.

1.3. SPECIES

The common and scientific names of the species reported in 1966 are listed in Table 1. Some varieties are reported only collectively when, for economic or other reasons, a specific separation is not practical. A further combination of species is made in preparing the tables.

The "Miscellaneous (Animal Food)" category consists of a variety of low value species caught by trawling. Since it is impractical for the dealers to report the many species separately, Department biologists periodically sample this catch to determine its species composition. Based on this sampling, the percentage and weight compositions of the 1966 animal-food category are as follows:

<i>Species</i>	<i>Percent</i>	<i>Pounds</i>
Sablefish	42.7	1,014,927
Rockfish	15.0	356,319
Arrowtooth flounder	10.8	256,350
Pacific hake	10.3	246,115
English sole	5.9	139,243
Dover sole	5.3	126,628
White croaker	2.2	53,079
Rex sole	1.7	41,178
Bigmouth sole	1.7	40,940
Hornyhead turbot	1.1	26,183
Twenty-nine other species	3.3	79,261
	100.0	2,380,223

Salmon catches reported in the tables are for all species combined. However, biologists from the Department's Marine Resources Branch sample the commercial and sport salmon fisheries to determine the species composition of the catches and to obtain estimates of the unreported catch from skiffs. The sampling methods and results for 1952 through 1965 previously have been detailed (Jensen and Swartzell, 1967). The results for 1966 are presented in Appendix A, Tables I and II of this catch report, and we plan to provide these data in a similar manner in the future.

1.4. CONDITION

Most fish and shellfish are landed in a round condition; however, some species, such as salmon and swordfish, are usually eviscerated or cleaned before being brought ashore. The condition of fish landed or shipped into the State cannot always be determined, so the tables summarize the weights as reported to the Department without regard to condition.

Since 1963, oyster landings have been reported as packed weight rather than weight in the shell. The packed weight is estimated to be 15.5 percent of the live weight for Pacific oysters; 10.9 percent for eastern oysters.

Landings reported in measurements other than weight are equated to pounds using conversion factors determined by periodic sampling. The factors used in 1966 were:

Abalone, red	50 pounds per dozen
Abalone, pink	25 pounds per dozen
Abalone, white	25 pounds per dozen
Abalone, green	35 pounds per dozen
Clam, Washington	7 pounds per dozen
Crab, market	2 pounds each
Live bait	12.5 pounds per scoop

1.5. VALUE

Value is computed from prices paid to the fishermen. The area value figures are ascertained by summing the value of all the individual landings in that area. The value for an individual port within an area is calculated from the weights of each species landed at that port and the average price paid for the species in that area. When the price paid for an individual landing is not specified, the average price paid for the species in the area is used.

1.6. REFERENCES

Heimann, Richard F. G., and Herbert W. Frey, 1967. Statistical report of fresh, canned, cured and manufactured fishery products for 1966. Calif. Dept. Fish and Game, Circular, (41): 1-14.

Jensen, Paul T., and Phillip G. Swartzell, 1967. California salmon landings 1952 through 1965. Calif. Dept. Fish and Game, Fish Bull., (135): 43-57.

TABLE 1
Common and Scientific Names of Fishes, Crustaceans, and Mollusks in the 1966 Catch

Common name	Scientific name	Common name	Scientific name
FISHES			
Anchovy.....	<i>Engraulis mordax</i>	Shad.....	<i>Alosa sapidissima</i>
Barracuda, California.....	<i>Sphyræna argentea</i>	Shark	
Bass, rock.....		Brown smooth-	
Kelp bass.....	<i>Paralabrax clathratus</i>	hound.....	<i>Triakis henlei</i>
Sand bass.....	<i>Paralabrax nebulifer</i>	Leopard.....	<i>Triakis semifasciata</i>
Blacksmith.....	<i>Chromis punctipinnis</i>	Pacific angel.....	<i>Squatina californica</i>
Bonito, Pacific.....	<i>Sarda chilensis</i>	Soupfin.....	<i>Galeorhinus zyopterus</i>
Cabezon.....	<i>Scorpaenichthys marmoratus</i>	Spiny dogfish.....	<i>Squalus acanthias</i>
Cabrilla, spotted.....	<i>Epinephelus analogus</i>	Thresher.....	<i>Alopias vulpinus</i>
Carp.....	<i>Cyprinus carpio</i>	Small amounts of	
Corvina, shortfin.....	<i>Cynoscion parvipinnis</i>	others	
Croaker.....		Sheephead, California.....	<i>Pimelotomopon pulchrum</i>
White.....	<i>Genyonemus lineatus</i>	Skate	
Queenfish.....	<i>Seriophilus pelitus</i>	Big.....	<i>Raja binoculata</i>
Eel.....		California.....	<i>Raja inornata</i>
California moray....	<i>Gymnothorax mordax</i>	Longnose.....	<i>Raja rhina</i>
Flounder		Small amounts of	
Arrowtooth.....	<i>Atheresthes stomias</i>	others	
Starry.....	<i>Platichthys stellatus</i>	Smelt	
Small amounts of		Eulachon.....	<i>Thaleichthys pacificus</i>
other flatfishes		Grunion.....	<i>Leuresthes tenuis</i>
Flyingfish.....	<i>Cypselurus</i> spp.	Jacksmelt.....	<i>Atherinopsis californiensis</i>
Greenling, kelp.....	<i>Hexagrammos decagrammus</i>	Nightsmelt.....	<i>Spirinchus starki</i>
Grouper.....	<i>Mycteroperca</i> spp.	Surf.....	<i>Hypomesus pretiosus</i>
Hake, Pacific.....	<i>Merluccius productus</i>	Topsmelt.....	<i>Atherinops affinis</i>
Halibut.....		Smelt, whitebait.....	<i>Allosmerus elongatus</i>
California.....	<i>Paralichthys californicus</i>	Spirinchus starki	
Pacific.....	<i>Hippoglossus stenolepis</i>	Young of several others	
Hardhead		Sole	
Sacramento black-		Dover.....	<i>Microstomus pacificus</i>
fish.....	<i>Orthodon microlepidotus</i>	English.....	<i>Parophrys retulus</i>
Hardhead.....	<i>Mylopharodon conocephalus</i>	Petrale.....	<i>Eopsetta jordani</i>
Herring, Pacific.....	<i>Clupea pallasii</i>	Rex.....	<i>Glyptocephalus zachirus</i>
Lingcod.....	<i>Ophiodon elongatus</i>	Sand.....	<i>Psetichthys melanostictus</i>
Mackerel		Small amounts of	
Bullet.....	<i>Auzis rochei</i>	others	
Jack.....	<i>Trachurus symmetricus</i>	Splittail.....	<i>Pogonichthys macrolepidotus</i>
Pacific.....	<i>Scomber diego</i>	Swordfish.....	<i>Xiphias gladius</i>
Opaleye.....	<i>Girella nigricans</i>	Tuna	
Perch.....	Members of family Embiotocidae	Albacore.....	<i>Thunnus alalunga</i>
Pompano, Pacific.....	<i>Palometa similima</i>	Bigeye.....	<i>Thunnus obesus</i>
Rockfish.....	All species of <i>Sebastes</i> and	Bluefin.....	<i>Thunnus thynnus</i>
<i>Sebastes</i>		Longtail.....	<i>Thunnus tonggol</i>
Sablefish.....	<i>Anoplopoma fimbria</i>	Skipjack.....	<i>Katsuwonus pelamis</i>
Salmon		Yellowfin.....	<i>Thunnus albacares</i>
King.....	<i>Oncorhynchus tshawytscha</i>	Turbot	
Pink.....	<i>Oncorhynchus gorbuscha</i>	Carlin.....	<i>Pleuronichthys decurrens</i>
Silver.....	<i>Oncorhynchus kisutch</i>	Diamond.....	<i>Hypsopsetta guttulata</i>
Sanddab.....	<i>Citharichthys sordidus</i>	Hornyhead.....	<i>Pleuronichthys verticalis</i>
Sardine.....	<i>Sardinops caeruleus</i>	Small amounts of	
Sargo.....	<i>Anisotremus davidsoni</i>	others	
Sculpin.....	<i>Scorpaena guttata</i>	Wahoo.....	<i>Acanthocybium solanderi</i>
Sea bass, giant.....	<i>Stereolepis gigas</i>	Whitefish, ocean.....	<i>Caulolatilus princeps</i>
Seabass, white.....	<i>Cynoscion nobilis</i>	Yellowtail, California.....	<i>Seriola dorsalis</i>
CRUSTACEANS			
Crab		Prawn	
Market.....	<i>Cancer magister</i>	Spot.....	<i>Pandalus platyceros</i>
Rock.....	<i>Cancer productus</i>	Ridgeback.....	<i>Eusicyonia ingentis</i>
	<i>Cancer antennarius</i>	Shrimp	
	<i>Cancer anthonyi</i>	Bay.....	<i>Crango franciscorum</i>
Lobster, spiny.....	<i>Panulirus interruptus</i>	Ocean.....	<i>Crango nigricauda</i>
			<i>Pandalus jordani</i>
MOLLUSKS			
Abalone		Octopus.....	<i>Octopus</i> spp.
Pink.....	<i>Haliotis corrugata</i>	Oyster	
Red.....	<i>Haliotis rufescens</i>	Eastern.....	<i>Crassostrea virginica</i>
Green.....	<i>Haliotis fulgens</i>	Giant Pacific.....	<i>Crassostrea gigas</i>
White.....	<i>Haliotis sorenseni</i>	Squid.....	<i>Loligo opalescens</i>
Clam			
Gaper.....	<i>Tresus nuttalli</i>		
Washington.....	<i>Saxidomus nuttalli</i>		

TABLE 1
Common and Scientific Names of Fishes, Crustaceans, and Mollusks in the 1966 Catch

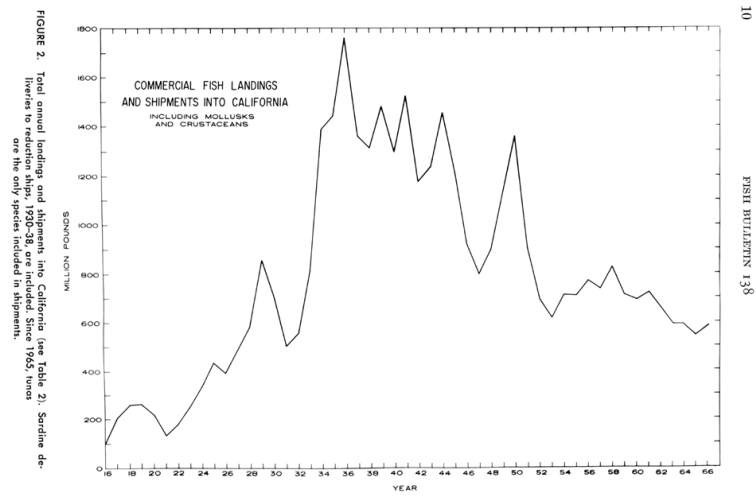


FIGURE 2. Total annual landings and shipments into California (see Table 2). Sardine deliveries to reduction ships, 1930–38, are included. Since 1965, tunas are the only species included in shipments

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	1962	663,107
1938	1,310,596	1963	592,899
1939	1,486,535	1964	591,131
1940	1,297,517	1965*	544,480
		1966	591,533

* Beginning in 1965 only tuna shipments are recorded.

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 *

1965				1966			
Species	Rank	Thousands of pounds	Thousands of dollars	Species	Rank	Thousands of pounds	Thousands of dollars
Yellowfin tuna	1	196,435	\$28,808	Yellowfin tuna	1	189,845	\$38,115
Skipjack tuna	2	89,919	9,487	Albacore tuna	2	73,909	17,306
Albacore	3	68,025	11,628	Skipjack tuna	3	65,226	9,285
Jack mackerel	4	66,666	1,829	Anchovy	4	62,280	644
Squid	5	18,620	308	Jack mackerel	5	40,862	1,424
Bluefin tuna	6	16,735	2,210	Bluefin tuna	6	37,939	5,804
Dover sole	7	10,760	654	Pacific bonito	7	19,148	761
Salmon	8	9,738	4,989	Squid	8	19,026	451
Rockfish	9	9,392	573	Market crab	9	12,376	1,880
Pacific mackerel	10	7,050	224	Dover sole	10	10,312	687
Anchovy	11	5,733	99	Rockfish	11	10,064	660
Pacific bonito	12	5,638	149	Salmon	12	9,447	4,845
English sole	13	4,892	382	Abalone	13	4,964	915
Market crab	14	4,804	1,066	English sole	14	4,845	421
Abalone	15	4,576	698	Pacific mackerel	15	4,630	189
Miscellaneous (animal food)	16	2,874	57	Sablefish	16	3,216	231
Sablefish	17	2,864	201	Petrale sole	17	2,927	391
Petrale sole	18	2,662	325	Bigeye tuna	18	2,878	557
Sardine	19	1,924	125	Miscellaneous (animal food)	19	2,380	44
Rex sole	20	1,491	102	Rex sole	20	1,635	132
All others	--	13,682	2,294	All others	--	13,624	2,557
Totals	--	544,480	\$66,208	Totals	--	591,533	\$87,299

*Only the tunas are included in the shipments.

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

TABLE 4
Number of Licensed Commercial Fishermen

Area of residence	License year*	
	1965-66	1966-67
Eureka.....	1,520	1,695
Sacramento.....	348	437
San Francisco.....	1,546	1,417
Monterey.....	755	686
Santa Barbara.....	856	944
Los Angeles.....	2,022	2,020
San Diego.....	1,676	1,611
Alaska, Washington and Oregon fishermen licensed in California.....	429	478
Mexican nationals licensed in California.....	29	43
Other.....	41	26
Totals.....	9,222	9,357

* April 1 to March 31.

TABLE 4
Number of Licensed Commercial Fishermen

TABLE 5
Number of Registered Fishing Boats by Length

License year*	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
1965-66.....	1,267	1,718	1,090	120	34	100	4,329†
1966-67.....	1,357	1,681	1,077	125	29	99	4,368‡

* April 1 to March 31.

† The owners of 492 boats were issued fishing party licenses in 1965-66.

‡ The owners of 470 boats were issued fishing party licenses in 1966-67.

TABLE 5
Number of Registered Fishing Boats by Length

TABLE 6
Origin of Shipments Received for Processing in California During 1966 *

Shipped from: Species	Pounds shipped to each area			Total pounds
	San Francisco	Los Angeles	San Diego	
Oregon, Washington, Canada and Alaska:				
Tuna, albacore.....	---	5,312,235	76,667	5,388,902
Tuna, skipjack.....	---	4,482	---	4,482
Mexico and Central America:				
Tuna, skipjack.....	---	479,948	---	479,948
Tuna, yellowfin.....	---	91,005	---	91,005
South America:				
Tuna, skipjack.....	---	68,073	---	68,073
Tuna, yellowfin.....	---	720,744	---	720,744
Japan:				
Tuna, albacore.....	---	31,071,237	1,311,244	32,382,481
Tuna, bigeye.....	---	2,640,304	---	2,640,304
Tuna, skipjack.....	---	10,542,105	---	10,542,105
Tuna, yellowfin.....	342,690	42,724,697	476,057	43,543,444
Australia:				
Tuna, albacore.....	---	1,212	---	1,212
Tuna, bluefin.....	---	3,118,804	---	3,118,804
Tuna, longtail.....	---	6,755	---	6,755
Tuna, yellowfin.....	---	6,005	---	6,005
China (Formosa):				
Tuna, albacore.....	---	18,910	---	18,910
Tuna, bigeye.....	---	74,640	---	74,640
Tuna, yellowfin.....	---	430,227	---	430,227
Malaya:				
Tuna, albacore.....	---	9,609,294	261,510	9,870,804
Tuna, bigeye.....	---	146,688	---	146,688
Tuna, yellowfin.....	---	8,954,662	---	8,954,662
Philippines:				
Tuna, yellowfin.....	---	1,381,460	---	1,381,460
South Pacific Islands:				
Tuna, albacore.....	---	5,431,310	2,626,007	8,057,317
Tuna, skipjack.....	---	3,041,663	---	3,041,663
Tuna, yellowfin.....	---	1,322,163	800,539	2,122,702
Total pounds.....	342,690	127,198,623	5,552,024	133,093,337

* Beginning in 1965 only tuna shipments are recorded.

TABLE 6
*Origin of Shipments Received for Processing in California During 1966**

TABLE 7
Origin of Commercial Fish Landings and Volume of Shipments Into California During 1966

Species	Landings of catches from				Tuna shipments*	Grand total
	California waters	Waters north of State	Waters south of State	Total pounds		
Fish:						
Anchovy.....	62,280,236	----	----	62,280,236	----	62,280,236
Barracuda, California.....	233,319	----	85,797	319,116	----	319,116
Blacksmith.....	6,920	----	----	6,920	----	6,920
Bonito, Pacific.....	18,308,175	----	840,319	19,148,494	----	19,148,494
Cabezon.....	12,599	----	----	12,599	----	12,599
Cabrilla, spotted.....	----	----	11,917	11,917	----	11,917
Carp.....	252,409	----	----	252,409	----	252,409
Croaker, white.....	790,997	----	85	791,082	----	791,082
Flounder.....	379,703	925	----	380,628	----	380,628
Flounder, arrowtooth.....	3,503	----	----	3,503	----	3,503
Flyingfish.....	56,362	----	----	56,362	----	56,362
Grouper.....	----	----	250,909	250,909	----	250,909
Hake, Pacific.....	69,002	----	----	69,002	----	69,002
Haliboot.....	9,530	----	----	9,530	----	9,530
Halibut, California.....	749,555	----	261,887	1,011,412	----	1,011,412
Halibut, Pacific.....	671	----	----	671	----	671
Hardhead.....	257,021	----	----	257,021	----	257,021
Herring, Pacific.....	241,973	----	----	241,973	----	241,973
Lingcod.....	790,960	8,919	424	800,303	----	800,303
Mackerel, bullet.....	36,195	----	----	36,195	----	36,195
Mackerel, jack.....	40,862,409	----	----	40,862,409	----	40,862,409
Mackerel, Pacific.....	4,629,504	----	----	4,629,504	----	4,629,504
Oraneye.....	19,432	----	----	19,432	----	19,432
Perch.....	158,176	----	2,205	160,381	----	160,381
Pompano, Pacific.....	59,652	----	----	59,652	----	59,652
Rockfish.....	9,874,348	100,548	88,696	10,063,592	----	10,063,592
Sablefish.....	3,145,883	70,056	----	3,215,939	----	3,215,939
Salmon.....	9,446,995	----	----	9,446,995	----	9,446,995
Sanddab.....	719,419	682	----	720,101	----	720,101
Sardine.....	878,359	----	----	878,359	----	878,359
Sargo.....	960	----	160	1,120	----	1,120
Sculpin.....	84,465	----	24,034	108,499	----	108,499
Sea bass, giant.....	7,486	----	333,481	340,967	----	340,967
Seabass, white.....	674,545	----	663,305	1,337,850	----	1,337,850
Shark.....	630,527	----	23,263	653,790	----	653,790
Sheephead, California.....	13,276	----	2,708	15,984	----	15,984
Skate.....	152,475	----	1,539	154,014	----	154,014
Smelt.....	522,457	----	----	522,457	----	522,457
Smelt, whitebait.....	162,259	----	----	162,259	----	162,259
Sole, Dover.....	9,662,983	648,650	----	10,311,633	----	10,311,633
Sole, English.....	4,779,512	65,356	----	4,844,868	----	4,844,868
Sole, petrale.....	2,885,632	41,558	----	2,927,190	----	2,927,190
Sole, rex.....	1,608,714	26,685	----	1,635,399	----	1,635,399
Sole, sand.....	235,691	----	----	235,691	----	235,691
Sole, miscellaneous.....	25,957	----	----	25,957	----	25,957
Splittail.....	1,890	----	----	1,890	----	1,890
Swordfish.....	463,785	----	4,987	468,772	----	468,772
Tuna, albacore.....	16,141,399	672,854	1,374,959	18,189,212	55,719,626	73,908,838
Tuna, bigeye.....	----	----	16,666	16,666	2,861,632	2,878,298
Tuna, bluefin.....	2,202,585	----	32,617,821	34,820,406	3,118,804	37,939,210
Tuna, longtail.....	----	----	----	----	6,755	6,755
Tuna, skipjack.....	173,781	----	50,915,480	51,089,261	14,136,271	65,225,532
Tuna, yellowfin.....	2,385	----	132,592,138	132,594,523	57,250,249	189,844,772
Turbot.....	83,327	----	----	83,327	----	83,327
Whitefish, ocean.....	985	----	1,724	2,709	----	2,709
Yellowtail, California.....	35,880	----	209,327	245,207	----	245,207
Miscellaneous.....	38,919	----	519	39,438	----	39,438
Miscellaneous (animal food).....	2,202,339	177,884	----	2,380,223	----	2,380,223

TABLE 7
Origin of Commercial Fish Landings and Volume of Shipments Into California During 1966

TABLE 7—Continued
Origin of Commercial Fish Landings and Volume of Shipments Into California During 1966

Species	Landings of catches from			Total pounds	Tuna shipments*	Grand total
	California waters	Waters north of State	Waters south of State			
Crustacean:						
Crab, market.....	12,376,340	50	----	12,376,390	----	12,376,390
Crab, rock.....	330,683	----	160	330,843	----	330,843
Lobster, spiny.....	489,088	----	----	489,088	----	489,088
Prawn, spot.....	3,575	----	----	3,575	----	3,575
Prawn, ridgeback.....	30,238	----	----	30,238	----	30,238
Shrimp, bay.....	4,165	----	----	4,165	----	4,165
Shrimp, ocean.....	1,187,197	3,000	----	1,190,197	----	1,190,197
Mollusk:						
Abalone.....	4,963,556	----	----	4,963,556	----	4,963,556
Octopus.....	17,544	66	----	17,610	----	17,610
Oyster, eastern.....	12,925	----	----	12,925	----	12,925
Oyster, giant Pacific.....	787,502	----	----	787,502	----	787,502
Squid.....	19,025,879	----	----	19,025,879	----	19,025,879
Miscellaneous mollusk.....	2,154	----	----	2,154	----	2,154
Total pounds.....	236,298,367	1,817,233	220,324,480	458,440,080	133,093,337	591,533,417

* For origin of shipments refer to Table 6. Beginning in 1965 only tuna shipments are recorded.

TABLE 7
Origin of Commercial Fish Landings and Volume of Shipments Into California During 1966

TABLE 8
Monthly Landings and Shipments Into California During 1966

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds	
LANDINGS:														
Fish:														
Anchovy.....	4,888,200	4,615,125	12,736,305	12,782,106	352,188	565,027	366,978	1,588,675	450,348	6,321,444	5,331,020	12,392,670	62,280,236	
Barramundi, California.....	2,309	71	67,317	21,018	131,400	47,182	19,250	3,292	2,630	15,454	5,536	457	319,116	
Blackmouth.....							2,000		700				6,920	
Bonito, Pacific.....	297,665	301,140	7,265	5,125	6,564	181,724	899,696	10,684,499	1,940,230	2,862,613	2,121,529	932,014	19,148,994	
Caloron.....	2,246	1,200	784	1,208	81	411	179	220	583	617	2,173	2,907	12,699	
Calrilla, spotted.....			8,895				312				2,710		11,917	
Carp.....	50,885	24,703	5,699	5,862					9,390	49,150	80,474	23,405	282,469	
Craker, white.....	18,955	65,228	88,354	45,600	36,917	21,280	35,835	99,231	25,154	125,975	38,907	68,446	791,082	
Flounder.....	27,906	74,489	43,315	11,567	22,907	14,209	13,103	43,279	31,999		37,911	32,951	380,628	
Flounder, arrowtooth.....	276		62	175			1,690	1,920	379				3,663	
Fryingfish.....				85	3,139	28,207	16,179	7,488	1,240				56,362	
Grouper.....	61,266	18,253	21,357	20,920		1,999	54	11,469	1,993			22,632	92,114	
Hake, Pacific.....	3,691	1,065	43	1,272	4,588	15,466	16,430	14,270			12,149		69,902	
Hallibut.....	1,672	617		96	329	212	7,910	472	346	1,947	671	1,726	9,630	
Hallibut, California.....	106,565	96,856	95,356	74,172	85,280		109,180	102,678	41,404	42,645	54,748	83,410	1,011,412	
Hallibut, Pacific.....													287,021	
Hardhead.....	76,246	79,720	3,630	2,767		195	452	24		11,750	12,405	40,130	31,900	
Herring, Pacific.....	25,388	2,223	11,620	90,832	77,750	7,990	25,300					1,560	341,973	
Langed.....	13,861	17,672	20,651	43,861	52,398	74,425	107,698						800,303	
Mackerel, bullet.....													36,195	
Mackerel, jack.....	1,088,329	1,822,256	2,119,241	3,695,185	9,797,219	7,801,204	1,412,038	4,577,767	1,980,656	2,838,078	1,694,918	2,338,328	40,862,409	
Mackerel, Pacific.....	187,467	387,147	76,137	123,665	416,497	135,963	430,234	292,652	310,949	1,828,824	363,791	369,757	4,629,644	
Opah.....	150	820	1,916	889	4,944	3,119	6,102	1,414					19,432	
Pompano, Pacific.....	10,628	14,435	22,103	33,616	2,292	2,785	12,402	15,933	11,999	14,188	11,919	8,893	160,381	
Rockfish.....	695,893	599,184	890,027	895,876	828,691	891,692	887,469	1,018,414	1,023,176	1,169,994	748,272	414,114	10,063,592	
Sablefish.....	102,245	84,869	248,608	166,783	242,568	239,690	241,292	315,036	255,388	543,012	322,277	254,579	3,215,939	
Salmon.....				284,800	789,093	2,998,823	3,686,227	1,184,646	437,340					9,446,968
Sanddab.....	35,201	47,675	61,869	83,167	70,576	64,407	78,279	66,974	82,474	74,491	38,724	26,213	720,401	
Sardine.....	4,110	61,671	47,692	45,254	141,141	167,622	58,914	191,751	134,339	69,623	38,255	8,798	878,459	
Sargo.....		169								860			1,120	
Scupin.....	7,923	6,594	7,421	4,774	9,919	10,255	15,849	12,197	8,494	8,519	4,659	6,015	108,499	
Sea bass, giant.....	28,976	31,310	37,132	33,721	15,248	10,282	22,682	40,473	23,011	23,528	52,038	22,166	340,967	
Seahorse, white.....	69,566	110,217	135,749	49,791	134,610	88,551	61,276	291,927	62,125	149,912	115,904	138,200	1,237,586	
Shark.....	36,133	20,903	19,854	28,571	80,905	119,014	40,881	56,017	56,229	62,801	76,405	55,987	653,790	
Sheephead, California.....	3,631	1,777	1,247	429	1,294	358	564	1,884	359	2,178	1,355	1,917	15,984	
Stale.....	12,692	11,746	21,549	13,688	12,791	8,999	11,654	9,605	12,981	15,357	16,774	5,648	154,014	
Stunel.....	10,030	11,284	12,145	42,437	67,638	72,656	51,544	74,730	79,126	42,642	36,626	20,999	822,427	
Stunel, whitehead.....	1,631	16,519	17,821	12,297	21,337	43,466	42,998	6,869					162,269	
Sole, Dover.....	208,741	171,557	798,367	812,468	1,983,453	1,534,728	1,269,998	1,307,383	1,416,815	973,861	497,296	237,559	10,211,633	

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U.S. DEPARTMENT OF COMMERCE

TABLE 8
Monthly Landings and Shipments Into California During 1966

Sole, English	328,510	367,826	501,286	452,144	290,203	247,279	244,788	375,117	560,954	775,700	491,021	209,071	4,844,868
Sole, petrale	178,217	146,845	193,428	311,851	238,041	125,649	212,900	277,586	343,054	335,037	229,824	342,826	2,927,160
Sole, rex	70,889	169,789	112,351	180,645	87,398	92,869	119,450	111,691	221,222	239,524	116,130	159,028	1,625,399
Sole, sand	38,297	46,529	20,955	11,355	23,774	2,595	1,495	19,697	7,136	12,037	24,566	21,885	235,691
Sole, miscellaneous	1,552	2,867	2,184	1,155	2,964	2,747	2,842	4,927	813	1,383	745	3,878	25,057
Splittail	1,800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,800
Swordfish	.....	.....	494	.....	703	12,016	62,611	179,769	159,399	53,116	.....	.....	468,772
Tuna, albacore	.....	.....	.....	.....	.....	.....	1,361,873	4,303,381	6,138,062	6,496,323	741,159	178,411	18,186,212
Tuna, bigeye	.....	.....	16,666	.....	.....	.....	.....	.....	.....	.....	.....	.....	16,666
Tuna, bluefin	129,604	.....	.....	2,735	.....	5,282,226	10,793,889	17,795,582	499,453	312,736	239	3,943	31,820,406
Tuna, skipjack	3,062,795	883,748	7,193,527	3,472,112	3,640,849	4,629,871	9,296,845	7,335,421	1,849,265	3,637,826	3,674,268	5,362,740	51,089,261
Tuna, yellowfin	6,088,067	4,338,117	19,696,955	10,150,435	10,343,977	15,749,925	12,569,278	7,890,320	7,072,015	6,675,772	9,569,174	11,639,945	122,261,623
Turbot	9,787	13,663	10,457	4,150	10,735	2,550	3,465	8,229	6,270	6,070	5,865	3,965	81,327
Witchfish, ocean	798	282	377	33	.....	192	68	244	119	286	234	145	2,799
Yellowtail, California	24,352	45,885	22,959	10,859	8,207	7,614	2,799	6,279	13,469	34,242	31,754	36,887	245,207
Miscellaneous	278	.....	41	15	2,265	17,523	13,551	3,609	19	34	19	.....	39,438
Miscellaneous (animal food)	87,049	82,999	187,170	193,762	209,121	406,437	428,187	278,100	143,529	166,069	139,898	75,929	2,389,223
Crustacean:													
Crab, market	1,896,009	2,064,100	2,382,313	1,535,430	617,127	89,345	4,605	.....	.....	.....	227,048	2,749,822	12,376,390
Crab, rock	24,506	26,226	11,226	23,501	23,239	31,139	32,816	41,667	17,631	39,629	33,091	28,716	329,843
Loaher, spiny	68,790	49,730	26,010	17	.....	.....	.....	.....	.....	142,764	119,508	82,239	489,988
Prawn, spot	835	786	131	.....	112	92	.....	.....	.....	.....	.....	978	936
Prawn, ridgeback	.....	.....	.....	.....	.....	14,793	12,649	2,895	.....	.....	.....	.....	39,238
Shrimp, bay	.....	.....	.....	.....	.....	2,499	975	.....	946	266	.....	.....	3,165
Shrimp, ocean	.....	.....	.....	135,151	485,271	472,709	97,073	.....	.....	.....	.....	.....	1,199,197
Mollusk:													
Khalone	294,683	.....	324,118	645,881	595,160	423,874	509,070	504,869	417,754	491,514	499,550	324,192	1,963,556
Octopus	2,232	3,822	1,051	1,380	2,378	722	1,041	624	439	63	738	386	17,010
Oyster, eastern	68	1,044	1,293	658	1,112	369	795	1,031	1,729	1,961	602	12,925	.....
Oyster, east Pacific	42,358	66,059	109,391	78,958	89,323	79,284	131,112	19,355	29,425	73,351	104,168	97,336	787,862
Squid	2,132,756	1,940,178	481,545	123,430	1,467,843	4,545,213	1,015,310	1,296,995	1,443,570	740,995	1,473,673	2,396,114	19,029,879
Miscellaneous mollusk	359	372	793	129	145	74	.....	.....	.....	.....	6	326	2,151
Total ponds	22,359,776	19,481,255	47,865,960	36,610,153	41,263,747	47,540,340	47,446,459	59,528,772	26,284,289	36,341,249	29,435,293	41,292,851	458,149,680
SHIPMENTS*													
Fish:													
Tuna, albacore	2,725,375	2,498,291	5,384,765	5,998,855	3,342,567	2,934,797	1,052,391	6,166,148	5,314,097	7,238,243	6,429,118	6,727,099	55,719,639
Tuna, bigeye	38,132	125,111	339,827	409,236	389,440	622,094	.....	219,350	149,575	202,400	228,564	131,993	2,861,652
Tuna, bluefin	.....	.....	843,381	.....	1,196,445	1,978,978	.....	.....	.....	.....	.....	.....	3,118,804
Tuna, longtail	.....	.....	.....	575	.....	.....	.....	.....	4,010	.....	2,170	.....	6,755
Tuna, skipjack	512,680	190,897	2,765,483	5,678,715	1,827,154	29,632	.....	4,482	19,429	679,961	962,398	1,514,929	14,136,271
Tuna, yellowfin	2,988,831	4,489,474	6,599,322	7,311,185	8,743,269	8,861,388	1,023,858	997,845	1,703,166	1,871,070	3,293,651	5,329,485	52,299,249
Total ponds	5,392,718	7,171,577	15,918,779	19,401,566	15,489,866	14,558,879	2,076,249	7,231,835	7,177,297	12,968,393	11,915,901	13,799,317	133,693,337
Grand total	27,772,494	26,652,832	63,784,679	56,011,719	56,743,613	62,099,219	49,522,708	66,850,597	33,461,558	49,339,633	41,351,196	57,993,171	591,533,417

* For origins of shipments refer to Table 6. Beginning in 1965 only tuna shipments are recorded.

TABLE 8—Cont'd.

TABLE 9
Monthly Landings of Commercial Fishing Boats in the Eureka Area During 1966

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish													
Flounder.....	339	3,256	2,078	3,231	.....	306	260	11,908	8,867	14,133	8,180	852	53,422
Flounder, arrowtooth.....	276	.....	62	175	.....	.....	.....	115	.....	.....	.....	.....	513
Hallibut, California.....	.....	.....	.....	.....	.....	.....	.....	115	.....	.....	.....	.....	115
Hallibut, Pacific.....	1,459	4,569	10,722	21,880	7,071	18,961	59,388	76,748	80,001	52,722	33,794	6,107	671
Langcod.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	382,383
Mackerel, jack.....	.....	.....	.....	.....	.....	.....	.....	.....	835	.....	.....	.....	835
Perch.....	3,202	7,548	6,474	9,696	.....	.....	2,077	4,751	5,655	3,023	2,238	775	46,139
Rockfish.....	55,224	70,946	109,180	112,106	67,819	206,111	208,483	229,854	278,768	193,343	118,748	39,429	1,811,713
Sablefish.....	40,034	27,480	97,332	42,977	69,943	142,928	142,481	103,941	111,967	382,138	206,197	143,778	1,518,839
Salmon.....	.....	.....	.....	.....	.....	303,113	2,675,236	2,918,437	718,990	.....	.....	.....	6,036,426
Sanddab.....	3,651	13,942	13,455	12,095	3,499	12,819	16,646	15,099	36,025	21,406	6,085	278	154,820
Shark.....	48	45	35	.....	.....	.....	1,300	1,140	139	1,616	1,370	278	2,316
Skate.....	152	1,667	947	4,212	19,674	28,743	36,546	65,970	26,130	4,979	.....	.....	188,520
Snelt, whitebait.....	1,631	15,688	17,096	11,419	16,635	38,118	42,093	6,899	.....	.....	.....	.....	149,570
Sole, Dover.....	90,318	76,182	253,922	253,989	472,802	1,159,677	1,106,242	1,093,316	1,122,150	843,791	335,479	150,138	6,930,099
Sole, English.....	42,000	117,066	192,956	203,966	72,004	115,312	69,834	106,356	258,217	459,362	103,212	41,991	1,869,134
Sole, petrale.....	85,357	54,406	61,568	63,842	29,012	23,813	23,729	83,463	152,966	166,904	125,436	250,561	1,153,427
Sole, rex.....	26,469	48,112	37,470	62,501	2,1047	61,476	72,683	88,370	140,560	147,140	72,576	105,047	886,741
Sole, sand.....	621	188	.....	.....	.....	.....	.....	1,038	807	.....	.....	.....	2,684
Sole, miscellaneous.....	.....	.....	.....	.....	.....	.....	.....	11	8	.....	.....	51	70
Tuna, albacore.....	.....	.....	.....	.....	.....	.....	5,617	306,196	1,182,297	128,639	.....	.....	1,619,734
Turbot.....	.....	.....	.....	.....	.....	.....	.....	210	1,400	588	.....	.....	2,198
Miscellaneous.....	.....	.....	.....	.....	2,324	17,369	15,372	3,459	.....	.....	.....	.....	38,224
Miscellaneous (animal food).....	9,755	7,386	26,612	41,759	73,968	295,324	323,467	100,755	78,669	52,533	18,611	9,694	1,099,421
Crustacean:													
Crab, market.....	1,804,493	2,806,930	2,378,366	1,532,702	643,746	87,968	4,965	.....	.....	.....	4,882	2,662,996	12,046,652
Shrimp, ocean.....	.....	.....	.....	.....	131,031	481,465	472,700	97,075	.....	.....	.....	.....	1,146,171

TABLE 9
Monthly Landings of Commercial Fishing Boats in the Eureka Area During 1966

Mollusk:												
Octopus.....	70	216	178	.....	.....	.....	.....	.....	80	.....	140	643
Oyster, giant Pacific.....	12,405	38,487	86,889	59,038	72,226	62,554	.....	.....	.....	53,226	72,219	535,998
Miscellaneous mollusk.....	.....	.....	500	.....	.....	.....	.....	.....	.....	.....	73,364	826
Total pounds.....	2,187,664	3,383,934	3,297,102	2,564,785	2,002,911	5,432,338	5,577,283	3,215,381	3,718,940	2,526,005	1,203,575	38,623,751
Fish:												
Waters north of State:												
Pompidor.....	.....	.....	568	202	.....	.....	.....	.....	.....	115	40	925
Lingcod.....	.....	.....	867	323	1,102	1,281	.....	.....	4,077	818	438	8,919
Rockfish.....	.....	.....	13,115	20,319	14,903	5,399	.....	.....	23,367	4,797	7,753	8,665
Sablefish.....	.....	.....	5,461	10,757	3,697	1,525	.....	.....	3,376	2,840	9,378	104,458
Sandlakh.....	.....	.....	479	40	.....	.....	.....	.....	.....	88	195	70,056
Sole, Dover.....	.....	.....	66,052	135,419	50,023	67,494	.....	.....	106,363	52,550	92,965	68,804
Sole, English.....	.....	.....	21,921	22,316	1,402	108	.....	.....	1,971	560	14,078	65,356
Sole, petrale.....	.....	.....	5,499	3,844	3,703	194	.....	.....	2,772	1,823	3,656	21,028
Sole, rex.....	.....	.....	5,411	3,404	1,073	1,910	.....	.....	695	1,280	3,611	9,301
Miscellaneous (animal food).....	.....	.....	17,922	35,035	8,591	15,674	.....	.....	16,110	14,716	28,722	177,884
Crustacean:	.....	.....	.....	50	.....	.....	.....	.....	.....	.....	.....	50
Crab, market.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,000
Shrimp, ocean.....	.....	.....	.....	.....	3,000	.....	.....	.....	.....	.....	.....	.....
Mollusk:												
Octopus.....	.....	.....	66	.....	.....	.....	.....	.....	.....	.....	.....	66
Total pounds.....	.....	.....	150,361	251,697	96,494	92,985	.....	.....	160,561	78,632	160,743	162,966
Grand total.....	2,187,664	3,383,934	3,447,463	2,816,482	2,099,405	5,525,323	5,577,283	3,215,381	3,879,501	2,604,637	1,364,318	39,786,120

MARINE FISH CATCH FOR 1956

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TABLE 9—Cont'd.

TABLE 10
Monthly Landings and Shipments of Commercial Fish Into the San Francisco Area During 1966 *

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy.....	.....	.....	15,780	350	800	.....	5,918	9,165	24,190	3,520	7,840	600	68,163
Bonito, Pacific.....	.....	.....	.....	.....	.....	.....	.....	.....	827	1,541	.....	.....	2,368
Cabazon.....	675	697	658	.....	.....	.....	42	136	.....	.....	.....	.....	1,511
Carp.....	50,585	21,703	5,090	9,802	.....	.....	.....	.....	9,360	40,150	80,274	23,465	252,409
Crab, white.....	586	895	815	1,230	.....	.....	.....	.....	125	2,165	2,481	2,235	430
Flounder.....	20,865	46,665	28,480	3,200	10,153	6,452	4,482	22,180	17,425	20,821	21,612	18,504	218,828
Flounder, arrowtooth.....	.....	.....	.....	.....	.....	1,690	1,020	370	.....	.....	.....	.....	2,990
Hake, Pacific.....	.....	.....	.....	.....	.....	1,555	14,500	12,200	2,900	.....	.....	.....	31,740
Haddock, California.....	46,155	31,244	20,548	187	930	6,363	14,347	23,243	11,668	16,604	24,558	32,079	234,026
Hardhead.....	76,246	79,720	3,020	2,700	.....	.....	.....	.....	11,730	12,405	40,120	31,000	257,021
Herring, Pacific.....	25,388	2,223	720	130	.....	.....	.....	.....	.....	.....	.....	1,860	30,021
Lingcod.....	57,40	3,984	3,885	8,222	30,663	37,630	34,337	45,004	40,927	32,060	16,330	8,887	296,207
Mackerel, jack.....	1,527	1,286	2,846	3,785	.....	.....	.....	8	149	135	.....	.....	1,893
Perch.....	.....	.....	.....	.....	.....	.....	.....	701	818	1,867	568	1,520	814
Pompano, Pacific.....	.....	.....	.....	.....	.....	.....	.....	.....	16	6	.....	.....	22
Rockfish.....	171,205	96,123	127,301	67,986	125,448	139,468	143,010	134,775	213,382	249,200	99,489	45,251	1,612,824
Salmon.....	42,105	34,520	137,215	75,515	102,283	105,123	80,018	176,060	80,209	81,094	83,400	20,120	1,021,522
Salmon.....	.....	.....	.....	136,380	358,788	165,508	944,855	426,236	206,739	.....	.....	.....	2,238,476
Sandlabb.....	10,180	14,040	14,075	42,085	34,565	23,137	42,620	39,652	27,091	27,280	18,458	.....	296,266
Seahorse, white.....	.....	.....	.....	.....	.....	.....	.....	.....	122	.....	254	.....	95
Shark.....	14,216	5,093	5,614	115	6,218	10,728	2,285	4,983	8,971	21,508	18,021	12,135	109,977
Skate.....	5,400	6,250	8,200	5,000	6,200	2,100	2,750	4,250	11,900	8,400	3,800	.....	72,500
Smelt.....	7,724	8,246	9,114	4,884	11,987	13,010	12,278	8,181	10,506	5,083	500	.....	67,782
Smelt, whitebait.....	.....	822	825	878	4,502	5,348	305	.....	.....	.....	.....	.....	12,980
Sole, Dover.....	110,760	95,375	382,248	410,209	527,078	271,562	210,613	218,850	178,617	63,567	60,417	12,602	2,542,183
Sole, English.....	201,379	123,340	104,720	97,867	126,162	79,270	125,601	225,730	248,545	255,790	221,492	94,365	1,604,279
Sole, petrale.....	67,205	56,955	52,315	84,727	120,801	49,930	138,495	134,293	159,294	144,613	71,715	67,310	1,143,653
Sole, rex.....	28,870	28,875	20,280	22,755	26,960	12,973	27,652	43,144	61,542	63,447	21,883	10,223	385,724
Sole, sand.....	32,066	24,850	13,515	1,120	2,010	1,430	1,000	19,607	5,263	10,280	20,199	18,165	149,105
Sole, miscellaneous.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117	.....	.....	117

FISH BULLETIN 136

TABLE 10
Monthly Landings and Shipments of Commercial Fish Into the San Francisco Area During 1966*

Splitail.....	1,800															1,800
Tuna, albacore.....							2,855	74,071	944,378	395,063	4,807					1,421,264
Turbot.....	8,180	11,105	8,555	2,185	4,995	2,275	3,465	7,830	4,695	4,475	5,665	3,015				66,600
Miscellaneous.....			41													41
Crustaceans:																
Crab, market.....	31,404	6,182	1,606	1,186	3,003	1,377						230,614	55,468			320,840
Shrimp, bay.....							2,400	575		940	250					4,165
Shrimp, ocean.....						220	300									520
Mollusk:																
Abalone.....				750					4,471	6,000	2,250	125				13,596
Octopus.....	1,214	1,870	3,235	1,015	1,818	417	486	489	430	40	277	135				11,470
Oyster, eastern.....	680	1,044	1,283	658	1,112	300	755	1,031	1,720	1,729	1,061	602				12,955
Oyster, giant Pacific.....	22,092	20,990	20,300	18,192	15,930	14,846	11,514	16,186	17,280	17,945	25,525	20,471				221,577
Miscellaneous mollusk.....			30													30
Total pounds.....	985,379	745,006	1,016,064	1,013,728	1,524,921	969,398	1,838,499	1,643,687	2,314,598	1,496,549	1,045,216	486,904	15,079,949			
Waters south of State:																
Fish:																
Tuna, albacore.....								25,720								25,720
Tuna, bluefin.....										111,260						111,260
Tuna, skipjack.....								2,900		24,900						27,800
Tuna, yellowfin.....							475,362			224,086						699,448
Total pounds.....							478,262			360,306						864,288
SHIPMENTS:																
Fish:																
Tuna, yellowfin.....								102,740	239,550							342,690
Total pounds.....								102,740	239,550							342,690
Grand total.....	985,379	745,006	1,016,064	1,013,728	1,524,921	1,447,660	1,966,959	1,883,637	2,314,598	1,856,855	1,045,216	486,904	16,286,927			

MARINE FISH CATCH FOR 1966

* Includes Sacramento area landings.
For origin of shipments refer to Table 6. Beginning in 1965 only tuna shipments are recorded.

TABLE 10—Cont'd.

TABLE 11
Monthly Landings of Commercial Fishing Boats in the Monterey Area During 1966

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM-													
California waters:													
Fish:													
Anchovy.....	297,300	31,500	438,750	366,370	234,950	298,900	156,070	1,161,850	265,156	6,180,540	3,179,110	4,029,540	16,640,036
Bonito, Pacific.....	85	.....	.....	.....	.....	.....	83	3,438	4,508	3,498	2,551	2,327	16,490
Cabezon.....	.....	.....	10	1,060	352	125	.....	.....	.....	.....	31	35	1,645
Croaker, white.....	7,660	8,288	10,476	3,090	3,880	9,386	17,161	2,265	7,100	6,284	6,883	15,501	98,045
Flounder.....	4,288	7,209	2,963	1,232	5,487	6,828	6,560	5,290	4,048	1,801	1,854	6,907	60,067
Hake, Pacific.....	3,667	1,905	.....	987	3,030	845	4,070	11,230	.....	.....	.....	.....	24,931
Halibut, California.....	1,257	1,966	1,894	1,026	14,226	23,618	16,786	23,049	5,097	448	1,039	2,250	92,456
Herring, Pacific.....	.....	.....	11,200	96,402	77,750	7,200	25,200	.....	.....	.....	.....	.....	211,952
Langoust.....	.....	4,788	5,582	9,856	10,345	11,443	10,975	11,211	3,109	7,511	8,873	6,376	92,825
Mackerel, jack.....	.....	2,900	3,600	3,100	195	246,020	17,145	160,266	524,720	187,200	87,885	.....	1,234,731
Perch.....	208	1,417	3,412	11,279	10	.....	156	765	825	235	107	.....	18,114
Pompano, Pacific.....	29	8	190	551	2,178	3,558	542	145	3,120	351	.....	.....	10,669
Rockfish.....	190,186	210,666	334,747	368,865	368,759	305,878	327,041	321,093	270,988	340,273	216,847	114,847	3,383,933
Sablefish.....	13,075	2,270	3,055	22,531	69,815	90,154	103,555	34,980	40,946	77,086	53,212	52,350	495,831
Salmon.....	.....	.....	.....	50,080	63,170	40,754	18,362	12,369	3,813	.....	.....	.....	188,518
Sardine.....	20,705	19,456	28,548	25,623	30,832	18,033	16,064	9,391	18,323	25,375	17,049	20,065	249,464
Sea bass, giant.....	.....	128	.....	.....	.....	2,941	9,674	.....	949	.....	.....	.....	12,964
Sea bass, white.....	182	71	33	48	32	162	36	4,885	286	348	16,106	1,080	23,596
Shark.....	4,740	1,311	434	297	3,403	6,217	7,270	5,764	2,144	6,839	10,059	7,787	56,011
State.....	7,292	5,329	12,987	8,523	7,255	5,120	6,971	4,683	4,545	3,440	2,654	1,848	70,550
Stout.....	2,210	1,061	381	5,131	602	1,818	2,175	365	1,172	30	1,053	280	16,287
Sole, Dover.....	7,720	.....	1,870	12,245	14,450	16,706	31,665	14,065	8,465	13,920	8,320	6,015	135,380
Sole, English.....	21,385	27,669	49,716	70,835	54,369	32,985	39,385	29,970	40,393	35,205	35,395	25,315	452,922
Sole, petrale.....	17,590	24,399	42,178	63,977	49,270	21,380	18,880	15,457	15,357	14,940	17,618	3,197	299,463
Sole, rex.....	16,403	20,180	38,800	28,690	19,285	6,570	6,550	2,983	14,093	14,210	11,230	26,670	203,990
Sole, sand.....	243	1,950	210	.....	1,700	550	405	.....	835	470	110	.....	6,475
Sole, miscellaneous.....	487	1,378	1,820	150	696	646	569	555	428	85	477	2,290	9,743
Swordfish.....	.....	.....	.....	.....	.....	.....	.....	650	.....	121	.....	.....	771
Tuna, albacore.....	.....	.....	.....	.....	.....	.....	7,345	4,999	1,898,508	954,134	129,654	.....	2,994,640
Tuna, skipjack.....	.....	.....	.....	.....	.....	.....	.....	.....	1,500	.....	.....	.....	1,600
Turbot.....	.....	.....	40	.....	180	.....	.....	.....	175	.....	.....	.....	365
Miscellaneous.....	.....	.....	.....	.....	.....	130	65	.....	.....	.....	.....	.....	195

FISH BULLETIN 134

TABLE 11
Monthly Landings of Commercial Fishing Boats in the Monterey Area During 1966

Crustacean:																					
Crab, market.....	630	684	232	110	40	.....	.....	.....	.....	.....	.....	.....	.....	883	330	2,911					
Crab, rock.....	.....	30	259	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	256	.....	531					
Prawn, spot.....	535	786	131	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	978	936	3,366					
Mollusk:																					
Octopus.....	948	1,404	575	365	510	105	480	.....	.....	.....	.....	.....	.....	319	251	4,957					
Oyster, giant Pacific.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,978					
Squid.....	2,225	9,748	565	12,740	1,337,523	4,440,713	982,610	1,295,595	1,442,570	740,695	919,525	.....	.....	.....	.....	11,297,349					
Miscellaneous mollusk.....	250	342	293	129	145	74	.....	.....	.....	.....	.....	.....	.....	6	.....	1,298					
Total pounds.....	630,299	388,006	999,702	1,170,295	2,394,448	5,597,777	1,833,174	3,133,205	4,603,334	8,614,700	4,729,977	4,332,775	38,427,792								
Waters south of State:																					
Fish:																					
Tuna, albacore.....	.....	.....	.....	.....	.....	.....	.....	749	.....	.....	.....	.....	.....	.....	.....	749					
Total pounds.....	.....	.....	.....	.....	.....	.....	.....	749	.....	.....	.....	.....	.....	.....	.....	749					
Grand total.....	630,299	388,006	999,702	1,170,295	2,394,448	5,597,777	1,833,174	3,134,054	4,603,334	8,614,700	4,729,977	4,332,775	38,428,541								

MARINE FISH CATCH FOR 1966

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TABLE 11—Cont'd.

TABLE 12
Monthly Landings of Commercial Fishing Boats in the Santa Barbara Area During 1966

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy.....	2,268,600	69,230	466,215	550,030	5,883	5,542	10,980	8,610	6,300	3,950	2,223,820	3,420,230	9,039,290
Barracuda, California.....	24	.....	2,841	.....	.....	.....	.....	1,278	1,459	40	.....	.....	5,988
Bonito, Pacific.....	602	.....	116	118	.....	288	38,440	45,632	101,794	246,314	51,668	.....	494,250
Cabezon.....	1,671	693	.....	.....	.....	274	43	220	617	2,140	2,961	.....	8,735
Croaker, white.....	.....	.....	.....	.....	.....	.....	258	.....	.....	.....	.....	.....	258
Flounder.....	2,114	17,359	11,626	3,642	3,367	680	1,881	1,192	1,350	951	1,256	1,938	47,356
Hake, Pacific.....	25,586	96,545	30,945	20,943	23,554	20,996	30,021	22,489	12,981	12,629	18,298	30,499	283,396
Hallibut, California.....	2,588	3,728	4,615	3,176	2,907	5,099	2,368	4,031	1,446	2,560	7,125	4,770	44,980
Lincod.....	.....	511,870	551,820	1,368,097	955,090	.....	129,196	1,055,870	870,145	1,221,032	126,076	.....	6,790,386
Mackerel, Pacific.....	.....	.....	.....	5,369	8,969	.....	39,300	28,440	199,435	205,980	.....	.....	545,475
Perch.....	3,070	2,503	1,594	2,063	102	.....	1,535	3,207	1,932	2,733	3,055	1,832	25,146
Pompano, Pacific.....	.....	.....	70	208,140	126,655	133,664	120,794	216,400	205,329	341,825	244,730	132,352	2,202,674
Rockfish.....	205,560	144,358	184,590	.....	120	150	248	465	.....	165	.....	.....	1,058
Sablefish.....	05	190	225	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salmon.....	.....	.....	734	22,712	27,315	25,031	7,106	306	.....	.....	.....	.....	83,204
Sardines.....	.....	201	4,655	1,201	.....	155	.....	.....	.....	165	.....	.....	6,477
Sardine.....	.....	.....	3,733	40,880	.....	173	.....	.....	9,440	33,000	19,844	.....	107,407
Sea loach, giant.....	28	18	42	20	347	173	142	8	.....	27	104	.....	389
Seaman, white.....	15,973	5,492	1,582	1,688	9,697	14,221	15,630	23,369	14,208	34,455	38,559	44,901	219,177
Shark.....	5,119	3,782	3,655	3,370	23,343	29,790	8,194	5,020	5,650	8,927	17,648	10,559	125,016
Sherthead, California.....	.....	.....	30	10	.....	.....	.....	.....	.....	.....	60	53	153
Skate.....	.....	167	390	38	246	88	.....	.....	.....	.....	.....	.....	809
Smelt.....	.....	.....	21,220	8,850	.....	.....	.....	39,820	.....	.....	28	.....	69,618
Sole, Dover.....	.....	.....	1,575	555	9,852	19,250	10,975	11,170	1,220	50	25	.....	55,072
Sole, English.....	63,355	99,494	126,287	52,223	36,088	29,504	9,948	21,651	14,628	24,829	27,641	48,207	544,676
Sole, petrale.....	5,525	11,050	31,696	65,999	41,186	34,732	31,796	42,373	12,445	7,057	2,400	730	285,999
Sole, rex.....	8,245	14,422	28,290	13,325	18,654	9,680	3,965	6,545	4,360	4,347	6,570	6,787	122,000
Sole, sand.....	5,253	20,451	12,370	10,235	20,064	615	.....	.....	.....	380	4,627	.....	77,427
Sole, miscellaneous.....	851	1,132	291	192	269	24	634	412	348	589	187	1,375	6,304

U.S. NAUTIC MILE

TABLE 12
Monthly Landings of Commercial Fishing Boats in the Santa Barbara Area During 1966

Swordfish.....	....	....	....	....	....	....	11,741	45,243	63,671	24,324	....	....	153,238
Tuna, albacore.....	....	....	....	....	....	....	5,475	418,467	971,780	148,746	....	....	1,831,212
Tuna, skipjack.....	....	....	....	....	....	....	....	....	531	459	....	....	990
Turbot.....	1,465	2,468	1,852	1,065	5,540	275	....	180	....	7	170	....	13,942
Yellowtail, California.....	....	....	....	....	20	....	....	....	....	70	....	....	50
Miscellaneous.....	....	....	....	....	....	....	....	....	....	....	....	....	54
Miscellaneous (animal food).....	77,285	75,613	142,636	96,970	117,865	96,059	102,720	117,345	48,950	98,820	83,565	45,110	1,102,918
Crustacean:													
Crab, market.....	73	304	2,109	1,382	338	....	....	....	....	....	697	1,034	5,937
Crab, rock.....	8,823	7,909	1,256	10,283	5,541	8,584	15,168	10,732	5,530	9,812	10,846	9,138	106,539
Lobster, spiny.....	23,064	15,747	10,650	....	112	57	....	....	....	22,985	31,150	....	19,923
Prawn, spp.....	....	....	....	....	....	....	....	....	....	....	....	....	200
Prawn, ridgeback.....	....	....	....	....	....	14,703	12,540	2,865	....	....	....	....	30,238
Shrimp, ocean.....	....	....	....	....	....	809	....	....	....	....	....	....	506
Mollusk:													
Abalone.....	180,958	....	228,917	409,428	281,274	238,299	323,137	316,365	275,586	338,207	300,151	219,913	3,121,205
Ostracod.....	....	33	....	....	50	210	75	65	....	....	....	....	463
Oyster, giant Pacific.....	7,861	1,462	2,392	1,728	1,169	1,484	1,298	2,769	3,139	2,080	1,324	1,523	23,019
Squid.....	177,720	443,040	57,530	....	10,000	8,000	....	200	....	....	221,068	385,780	1,305,038
Grand total.....	3,100,785	1,489,611	1,915,452	2,835,858	1,780,434	702,439	952,183	2,003,117	2,319,918	3,687,642	3,602,238	4,404,477	28,804,154

MARINE FISH CATCH FOR 1966

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TABLE 12—Cont'd.

TABLE 13
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1966

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Anchovy.....	2,022,460	4,514,395	11,815,560	11,865,446	110,555	260,585	19,010	409,050	154,702	133,434	110,250	4,942,300	36,532,747
Barracuda, California.....	.....	.....	13,365	18,366	123,470	38,280	12,661	2,108	348	40	20	277	213,935
Blacksmelt.....	.....	.....	.....	.....	120	2,000	700	4,100	.....	.....	.....	.....	6,920
Bonito, Pacific.....	260,148	58,571	6,940	5,425	5,342	177,559	296,781	9,699,917	90,1245	2,623,429	2,047,496	919,270	17,002,573
Cabotian.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11
Chadler, white.....	132,091	55,475	76,280	40,700	32,053	10,994	17,607	96,397	15,697	117,210	28,880	52,610	676,003
Flyingsh.....	.....	.....	.....	85	3,139	28,207	16,179	7,438	1,249	65	.....	.....	56,362
Hallsmo.....	1,072	562	.....	96	359	212	2,910	472	346	1,047	873	1,726	9,435
Hallard, California.....	23,778	10,569	6,655	13,119	4,796	2,477	800	2,847	1,636	1,722	5,589	11,267	87,515
Lingcod.....	38	62	261	174	199	35	.....	.....	.....	205	96	545	1,576
Mackerel, bullet.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36,165	.....	.....	36,165
Mackerel, jack.....	1,085,529	1,307,486	1,562,121	2,323,688	8,826,334	7,555,574	1,265,699	3,361,491	28,1821	1,428,946	1,481,247	2,338,228	32,831,714
Mackerel, Pacific.....	187,897	389,997	76,017	118,305	391,152	135,153	390,421	265,872	115,749	1,233,576	362,496	369,557	4,033,022
Opaleye.....	155	.....	820	1,516	599	4,014	2,074	1,286	1,414	867	728	478	13,671
Perch.....	2,621	1,484	6,624	6,342	23	2,096	3,317	4,917	2,011	6,057	3,554	4,347	43,793
Pompano, Pacific.....	511	2,675	8,029	914	1,071	2,702	1,629	4,492	2,666	11,086	707	223	36,885
Rockfish.....	34,921	45,227	81,351	69,941	91,719	59,961	9,048	5,398	6,433	28,170	28,067	38,862	499,062
Subfish.....	16	.....	.....	.....	.....	.....	.....	8	.....	.....	.....	.....	16
Salmon.....	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61
Sardine.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	129
Sardine.....	4,110	61,671	46,512	41,621	96,611	165,151	38,820	101,751	123,941	36,021	17,611	8,798	742,618
Sargo.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	960	.....	.....	960
Scupin.....	1,244	679	2,160	1,525	1,590	4,176	6,889	6,203	1,145	607	116	451	30,229
Sea bass, giant.....	128	138	220	305	340	1,219	658	178	30	108	233	117	3,674
Sea bass, white.....	3,737	5,321	669	844	5,151	15,499	25,278	202,189	31,167	11,971	18,165	20,185	345,572
Shark.....	2,139	6,686	4,841	11,666	29,822	45,978	12,118	30,897	31,066	17,220	18,384	16,825	220,225
Sheepshead, California.....	773	337	602	292	1,154	217	779	198	199	629	219	129	4,948
Skate.....	317	210	2,373	28,210	14,235	15,535	245	208	1,488	31,650	35,065	20,419	149,865
Squid.....	.....	.....	.....	.....	288	.....	.....	.....	.....	.....	.....	.....	288

FISH UTILIZATION BOARD

TABLE 13
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1966

Sole, English	218	2,698	4,927	298	210	.....	.....	.....	.....	.....	.....	8,299
Sole, petrale	45	322	624	60	.....	.....	.....	.....	.....	.....	.....	1,590
Sole, rex	.....	.....	.....	229	.....	.....	.....	.....	.....	.....	.....	259
Sole, misoletharus	14	73	108	117	62	133	30	298	.....	.....	24	579
Swordfish	.....	.....	.....	.....	.....	12,016	59,881	117,180	87,535	26,343	725	303,683
Tuna, albacore	.....	.....	.....	.....	.....	326,673	1,427,408	1,051,285	2,526,221	209,721	152,583	5,663,891
Tuna, bluefin	.....	.....	.....	.....	.....	23,855	778,504	1,264,354	135,327	.....	.....	2,302,240
Tuna, skipjack	.....	.....	.....	.....	.....	.....	.....	9,245	142,835	1,841	788	149,169
Tuna, yellowfin	.....	.....	.....	.....	.....	.....	.....	775	.....	.....	.....	778
Turbot	10	.....	.....	20	.....	.....	.....	.....	.....	.....	.....	30
Whitefish, ocean	.....	25	.....	.....	.....	.....	13	.....	.....	.....	14	62
Yellowtail, California	.....	56	195	117	2,816	289	1,878	3,668	8,743	2,013	221	19,726
Miscellaneous	.....	.....	10	25	22	7	10	.....	.....	.....	.....	74
Crustaceans:												
Crab, rock	14,130	15,981	11,298	12,074	17,398	22,408	17,648	30,591	11,675	18,255	19,363	207,536
Loyster, spiny	31,871	19,970	7,981	.....	.....	.....	.....	.....	.....	53,158	36,796	300,169
Mollusk:												
Abalone	64,650	.....	40,982	182,643	241,127	146,255	114,216	105,570	61,105	68,532	93,573	72,381
Squid	1,952,740	1,487,090	423,110	109,690	100,020	96,500	31,000	.....	.....	332,680	1,980,362	6,513,192
Total pounds	5,826,200	7,981,749	14,197,627	14,862,651	10,099,113	8,829,809	3,632,419	17,151,141	3,178,002	8,423,825	4,875,602	11,014,851
Waters north of State:												
Fish:												
Tuna, albacore	.....	.....	.....	.....	.....	.....	.....	.....	232,348	283,495	70,274	586,117
Total pounds	.....	.....	.....	.....	.....	.....	.....	.....	232,348	283,495	70,274	586,117
Waters south of State:												
Fish:												
Barracuda, California	2,285	.....	47,035	2,317	107	1,003	1,130	990	404	13,955	4,293	73,528
Bonito, Pacific	.....	210	.....	.....	.....	.....	561,835	.....	.....	.....	9,355	571,400
Cabrilla, spotted	.....	.....	8,935	.....	.....	.....	.....	.....	.....	.....	.....	8,935
Groupers	44,630	18,253	13,651	20,520	.....	1,990	.....	11,460	.....	705	75,715	185,794
Haddock, California	2,568	8,043	19,127	25,386	33,361	33,728	18,768	9,569	3,892	5,484	18	160,144
Linseed	.....	.....	110	.....	.....	.....	.....	.....	.....	.....	220	390
Perch	.....	.....	530	22	1,123	250	.....	.....	.....	.....	.....	1,035
Rockfish	855	4,315	5,490	13,425	100	3,055	6,202	1,257	2,171	1,580	51,518
Sargo	190	190
Sculpin	5	8	47	23	47	48	72	260

MARINE FISH CATCH FOR 1956

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TABLE 13—Cont'd.

TABLE 13—Continued
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1966

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
Waters south of State:													
Fish—Continued													
Sea bass, giant.....	22,928	31,011	25,357	31,500	13,766	8,039	20,547	39,297	29,738	22,635	35,690	15,333	286,961
Sea bass, white.....	38,159	87,779	130,799	34,832	84,933	46,946	290	513	11,894	76,650	29,607	49,211	562,133
Shark.....	315	370	1,155	224	965	1,355	—	—	—	2,615	4,955	1,294	17,338
Sheepshead, California.....	—	—	18	—	—	—	37	235	321	102	40	—	858
Skate.....	—	—	162	340	—	—	382	190	186	17	—	—	1,539
Swordfish.....	—	—	—	—	—	—	—	336	—	—	—	—	336
Tuna, albacore.....	—	—	—	—	—	—	237,774	210,879	25,554	—	—	—	474,207
Tuna, bigeye.....	—	—	16,666	—	—	—	—	—	—	—	—	—	16,666
Tuna, bluefin.....	—	—	2,735	—	—	5,240,481	8,000,862	11,935,335	343,697	1,509	—	—	20,185,009
Tuna, skipjack.....	2,290,260	881,319	5,312,983	2,631,189	3,013,549	2,951,915	6,595,866	3,101,439	1,287,576	1,800,113	3,196,632	4,148,754	35,712,995
Tuna, yellowfin.....	4,075,705	3,615,254	15,021,582	8,205,277	14,573,187	10,830,279	9,681,840	5,052,714	4,187,586	2,991,678	5,701,575	9,522,115	63,458,792
Whitefish, ocean.....	200	—	315	—	—	23	—	180	—	275	—	—	1,138
Yellowtail, California.....	20,963	44,124	21,822	8,235	6,934	2,634	35	2,763	8,650	18,128	21,268	36,299	191,835
Miscellaneous.....	—	—	—	—	—	—	—	154	—	—	—	—	154
Total pounds.....	6,498,268	4,691,088	20,624,802	10,376,620	17,730,025	18,221,214	25,119,841	20,372,274	8,891,364	4,637,207	8,996,273	13,876,171	157,333,317
SHIPMENTS:*													
Fish:													
Tuna, albacore.....	2,725,375	2,406,291	5,390,203	5,968,855	3,342,567	2,934,767	1,052,391	5,989,159	4,633,007	5,691,825	4,639,687	6,727,009	51,444,138
Tuna, bigeye.....	38,132	125,111	339,827	499,256	389,440	622,094	—	243,350	193,975	262,490	228,564	131,993	2,861,632
Tuna, bluefin.....	—	—	843,381	—	1,196,445	1,078,978	—	—	—	—	—	—	3,118,804
Tuna, skipjack.....	—	—	—	575	—	—	—	—	—	4,010	2,150	—	6,735
Tuna, yellowfin.....	512,480	150,697	2,765,483	5,678,715	1,827,154	29,662	—	4,482	10,429	679,961	962,398	1,514,620	14,136,271
Tuna, miscellaneous.....	1,067,569	4,294,819	6,594,223	7,314,185	8,745,269	9,863,388	921,118	667,495	1,703,166	4,273,980	3,869,847	5,326,485	55,639,963
Total pounds.....	5,183,667	7,076,915	15,834,279	19,891,566	15,480,866	14,535,879	1,973,509	8,561,886	6,496,177	10,854,876	9,723,666	13,700,317	127,138,623
Grand total.....	17,686,256	19,749,722	50,656,708	44,640,837	43,319,004	41,699,902	30,726,769	44,428,301	16,780,091	24,499,403	23,665,815	38,591,339	386,193,146

* For origin of shipments refer to Table 6. Beginning in 1965 only tuna shipments are recorded.

TABLE 13
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Area During 1966

TABLE 14
 Monthly Landings and Shipments of Commercial Fish Into the San Diego Area During 1966

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
LANDINGS FROM:													
California waters:													
Fish:													
Barracuda, California		71	174	2,435	3,443	5,727	759	73			680	34	13,396
Bonito, Pacific	36,282	359	28		337	3,427	2,497	677,119	28,657	17,731	20,142	5,817	762,366
Croaker, white	588	670	753	380	465	340	347	379	192				4,549
Hake, Pacific	24	15	43				121						188
Hallibut													95
Hallibut, California	6,821	7,774	3,837	3,025	603	1,419	2,852	3,014	4,853	5,148	5,346	5,055	49,647
Langcod			5		120				10	189			165
Mackerel, jack					13,600								13,600
Mackerel, Pacific		150	120		16,385		710	613	640	1,756	29,268	1,295	50,937
Opaleye								1,045					5,761
Perch		297	283	419	864	439	4,614	1,215		619	645	1,125	11,620
Rockfish	28,413	27,529	31,203	32,606	33,414	35,645	28,175	31,740	13,140	7,857	16,210	12,640	300,802
Sablefish							20						20
Salmon							310						310
Sanddab	665	24	648	2,023	1,766	293	2,639	3,481	424				12,263
Sardine			1,150		3,650	130	9,550				800		15,280
Sealpin	6,679	5,833	3,254	2,801	4,099	5,407	3,389	480	6,378	7,540	4,523	5,561	58,236
Sea bass, giant	309	15	48	264	83	288	638	14	310	202	68	47	2,386
Sebastes, white	4,368	7,062	1,219	7,524	24,642	6,374	4,195	10,233	941	710	2,114	14,125	84,907
Shark	9,247	3,466	3,524	9,282	18,550	24,302	10,864	8,107	6,532	4,688	4,755		165,929
Sheephead, California	2,406	1,338	597	308	5	101	50	212	80	1,434	906	835	8,175
Smelt	918							36					554
Sole, miscellaneous		284	265	666	1,037	1,924	1,608	1,754	37	120	6	113	8,714
Swordfish							1,751	15,641	7,543	1,158			20,093
Tuna, albacore							221,954	1,938,392	374,132	210,069			2,865,558
Tuna, bluefin									106				345
Tuna, skipjack									20,193				22,182
Tuna, yellowfin									1,828				1,610
Turbot	112												112
Whitefish, ocean	508	29	32	33		139	45	136		11			833
Yellowtail, California	402		563	1,348	969	1,344	1,741	1,429	684	6,300	1,050	117	16,694
Miscellaneous				5	16	4		6				10	51
Crustacean:													
Crab, rock	1,406	2,960	1,432	1,144		48		284	420	2,532	3,136	2,755	16,057
Lober, spiny	13,855	14,013	7,709	17						66,621	37,572	25,613	165,400

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TABLE 14
 Monthly Landings and Shipments of Commercial Fish Into the San Diego Area During 1966

Mollusk:	40,675	.....	53,219	53,660	73,759	39,320	63,617	78,454	75,093	82,525	46,701	31,898	638,921
Abalone.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Octopus.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Squid.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total pounds.....	153,778	72,801	112,236	118,570	197,877	127,325	363,213	2,798,002	543,248	444,254	247,311	110,037	5,289,632
Waters north of State:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fish:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tuna, albacore.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total pounds.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waters south of State:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fish:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barracuda, California.....	.....	.....	4,102	900	4,380	2,172	.....	212	.....	.....	503	.....	12,269
Bonito, Pacific.....	645	.....	397	.....	885	450	.....	261,973	329	.....	272	3,968	268,919
Calappa, spotted.....	.....	.....	.....	.....	.....	.....	.....	312	.....	.....	2,710	.....	3,022
Croaker, white.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	85
Groupers.....	17,356	.....	7,596	.....	.....	.....	.....	51	.....	1,693	.....	21,927	16,399
Halibut, California.....	.....	45	6,090	10,286	7,460	32,927	25,846	17,782	1,277	.....	.....	.....	101,713
Langcod.....	.....	.....	4	.....	.....	.....	.....	30	.....	.....	.....	.....	34
Perch.....	.....	.....	3,310	2,185	.....	3,081	915	882	202	102	12,339	10,103	270
Rockfish.....	3,439	.....	2	29	4,230	6,625	5,548	6,467	873	.....	.....	.....	36,781
Sculpin.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23,781
Sea bass, giant.....	5,583	.....	11,465	1,632	612	963	97	876	1,933	356	16,843	6,290	46,320
Sealass, white.....	7,345	3,692	1,435	4,455	755	5,151	5,780	9,919	3,639	16,824	10,361	2,535	71,172
Shark.....	.....	.....	373	287	1,694	664	150	1,449	507	444	2,405	1,785	9,955
Sherthead, California.....	352	102	.....	.....	.....	.....	.....	1,382	68	.....	.....	.....	1,840
Swordfish.....	.....	.....	404	.....	702	.....	.....	660	1,705	.....	.....	.....	3,471
Tuna, albacore.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tuna, bluefin.....	120,661	.....	.....	.....	17,560	522,194	315,215	11,043	.....	.....	.....	25,831	87,428
Tuna, skipjack.....	802,535	.....	.....	.....	.....	2,614,425	4,565,833	20,123	199,567	.....	.....	.....	6,977,437
Tuna, yellowfin.....	2,007,202	2,429	1,881,444	1,440,923	625,291	2,375,959	2,700,279	1,259,317	396,630	1,846,453	474,559	1,213,886	15,745,625
Whitefish, ocean.....	.....	.....	3,645,083	1,954,161	4,770,790	4,443,291	2,826,388	2,746,791	2,882,901	3,460,008	3,867,317	5,108,833	38,433,808
Yellowtail, California.....	2,987	198	30	.....	.....	.....	.....	28	110	.....	.....	.....	220
Miscellaneous.....	278	1,761	509	1,081	137	820	614	512	467	911	7,393	280	17,502
Crustacean:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crab, rock.....	.....	.....	.....	.....	100	.....	.....	60	.....	.....	.....	.....	100
Total pounds.....	2,977,303	729,090	5,562,554	3,415,949	5,417,524	7,088,703	8,104,127	9,211,056	3,321,776	5,488,625	4,417,319	6,380,980	62,124,126
SHIPMENTS*:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fish:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tuna, albacore.....	.....	.....	81,500	.....	.....	.....	.....	176,989	681,090	1,543,418	1,789,431	.....	4,275,428
Tuna, yellowfin.....	170,031	94,662	.....	.....	.....	.....	.....	.....	.....	600,069	402,804	.....	1,276,806
Total pounds.....	170,031	94,662	81,500	.....	.....	.....	.....	176,989	681,090	2,143,517	2,192,235	.....	5,552,234
Grand total.....	3,310,112	896,553	5,759,290	3,534,519	5,615,401	7,216,118	8,467,340	12,186,107	4,546,114	6,076,306	6,943,632	6,900,937	73,052,519

MARINE FISH CATCH FOR 1965

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*For origin of shipments refer to Table 6. Beginning in 1965 only tuna shipments are recorded.

TABLE 14—Cont'd.

TABLE 15
Value of Landings and Shipments of Commercial Fish Into California by Area, 1966

Species	Eureka	San Francisco*	Monterey	Santa Barbara	Los Angeles	San Diego	Total
LANDINGS:							
Fish:							
Anchovy.....	---	68,163	16,640,036	9,039,290	36,532,747	---	62,280,236
	---	\$5,045	\$176,025	\$88,881	\$375,974	---	\$643,925
Barracuda, California ..	---	---	---	5,988	287,463	25,665	319,116
	---	---	---	\$1,152	\$51,214	\$4,169	\$56,535
Blacksmith.....	---	---	---	---	6,920	---	6,920
	---	---	---	---	\$166	---	\$166
Bonito, Pacific.....	---	2,396	16,490	494,350	17,573,973	1,061,285	19,148,494
	---	\$210	\$726	\$19,311	\$697,887	\$43,147	\$761,281
Cabazon.....	---	2,208	1,645	8,735	11	---	12,599
	---	\$60	\$98	\$345	\$2	---	\$505
Cabrilla, spotted.....	---	---	---	---	8,895	3,022	11,917
	---	---	---	---	\$1,334	\$519	\$1,853
Carp.....	---	252,409	---	---	---	---	252,409
	---	\$10,097	---	---	---	---	\$10,097
Croaker, white.....	---	12,342	98,045	258	676,003	4,434	791,082
	---	\$1,234	\$6,792	\$16	\$35,661	\$470	\$44,173
Flounder.....	54,347	218,628	60,097	47,356	---	---	380,628
	\$5,304	\$15,144	\$5,116	\$3,812	---	---	\$27,376
Flounder, arrowtooth...	513	2,990	---	---	---	---	3,503
	\$26	\$60	---	---	---	---	\$86
Flyingfish.....	---	---	---	---	56,362	---	56,362
	---	---	---	---	\$6,745	---	\$6,745
Grouper.....	---	---	---	---	165,794	65,115	230,909
	---	---	---	---	\$41,801	\$15,256	\$57,057
Hake, Pacific.....	31,740	24,934	12,140	---	---	188	69,002
	\$635	\$504	\$243	---	---	\$18	\$1,400
Halfmoon.....	---	---	---	---	9,435	95	9,530
	---	---	---	---	\$2,195	\$13	\$2,208
Halibut, California.....	115	234,026	92,666	285,596	247,659	151,360	1,011,412
	\$30	\$59,168	\$20,413	\$76,952	\$67,146	\$40,327	\$264,036
Halibut, Pacific.....	671	---	---	---	---	---	671
	\$239	---	---	---	---	---	\$239
Hardhead.....	---	257,021	---	---	---	---	257,021
	---	\$51,404	---	---	---	---	\$51,404
Herring, Pacific.....	---	30,021	211,952	---	---	---	241,973
	---	\$2,179	\$21,079	---	---	---	\$23,258
Lingcod.....	391,302	269,307	92,825	44,380	1,966	523	800,303
	\$33,434	\$24,065	\$9,324	\$4,071	\$303	\$58	\$71,255
Mackerel, bullet.....	---	---	---	---	36,195	---	36,195
	---	---	---	---	\$905	---	\$905
Mackerel, jack.....	835	283	1,234,731	6,790,386	32,821,174	15,000	40,862,409
	\$38	\$13	\$45,837	\$221,589	\$1,156,250	\$600	\$1,424,327
Mackerel, Pacific.....	---	---	---	545,475	4,033,092	50,937	4,629,504
	---	---	---	\$19,443	\$166,426	\$2,641	\$188,510
Opaleye.....	---	---	---	---	13,671	5,761	19,432
	---	---	---	---	\$2,796	\$1,287	\$4,083
Perch.....	46,139	15,664	18,114	23,446	45,728	11,290	160,381
	\$6,905	\$3,828	\$2,558	\$5,589	\$8,592	\$2,151	\$29,923
Pompano, Pacific.....	---	22	10,669	12,076	36,885	---	59,652
	---	\$11	\$5,573	\$2,415	\$11,769	---	\$20,068
Rockfish.....	1,912,261	1,612,834	3,385,933	2,263,974	851,007	337,583	10,063,592
	\$100,948	\$105,334	\$196,906	\$133,667	\$78,242	\$44,552	\$659,649
Sablefish.....	1,588,892	1,031,522	593,831	1,658	16	20	3,215,939
	\$162,158	\$42,044	\$26,304	\$115	\$2	\$2	\$230,625
Salmon.....	6,938,426	2,238,476	188,518	83,204	61	310	9,446,996
	\$3,407,684	\$1,278,079	\$110,074	\$48,738	\$30	\$220	\$4,845,485
Sanddab.....	155,502	296,266	249,484	6,477	129	12,263	720,101
	\$14,552	\$23,355	\$16,443	\$575	\$29	\$3,069	\$58,023
Sardine.....	---	---	12,964	107,497	742,618	15,280	878,359
	---	---	\$2,463	\$17,428	\$129,618	\$2,542	\$152,051
Sargo.....	---	---	---	---	1,120	---	1,120
	---	---	---	---	\$192	---	\$192
Sculpin.....	---	---	---	---	26,479	82,020	108,499
	---	---	---	---	\$9,239	\$22,453	\$31,692
Sea bass, giant.....	---	---	128	1,298	290,635	48,906	340,967
	---	---	\$26	\$204	\$51,346	\$8,450	\$60,226
Seabass, white.....	---	503	23,596	219,177	938,505	156,079	1,337,650
	---	\$138	\$6,172	\$65,706	\$256,211	\$46,934	\$375,161
Shark.....	3,316	109,977	56,014	125,016	243,583	115,884	653,790
	\$168	\$4,709	\$2,242	\$13,131	\$32,502	\$13,983	\$66,735
Sheephead, California ..	---	---	---	153	5,816	10,015	15,984
	---	---	---	\$10	\$467	\$902	\$1,379
Skate.....	2,440	72,500	70,959	809	7,306	---	154,014
	---	\$949	\$1,221	\$65	\$187	---	\$2,422

TABLE 15
Value of Landings and Shipments of Commercial Fish Into California by Area, 1966

TABLE 15—Continued
Value of Landings and Shipments of Commercial Fish Into California by Area, 1966

Species	Eureka	San Francisco*	Monterey	Santa Barbara	Los Angeles	San Diego	Total
LANDINGS—Continued							
Fish—Continued							
Smelt.....	188,320	97,783	16,287	69,618	149,895	554	522,457
Smelt, whitebait.....	\$12,203	\$12,491	\$1,506	\$644	\$5,137	\$65	\$32,046
Sole, Dover.....	149,579	12,680	-----	-----	-----	-----	162,259
Sole, English.....	\$14,852	\$1,702	-----	-----	-----	-----	\$16,554
Sole, petrale.....	7,578,740	2,942,183	135,380	56,072	258	-----	10,311,633
Sole, rex.....	\$532,174	\$143,785	\$7,299	\$3,321	\$16	-----	\$686,595
Sole, sand.....	1,934,490	1,904,279	452,922	544,878	8,299	-----	4,844,868
Sole, miscellaneous.....	\$171,968	\$170,730	\$36,600	\$40,610	\$1,000	-----	\$420,908
Swordfish.....	1,196,985	1,143,653	299,493	285,999	1,060	-----	2,927,190
Tuna, albacore.....	\$154,766	\$156,615	\$42,208	\$37,059	\$187	-----	\$390,835
Tuna, bigeye.....	913,426	395,724	203,990	122,000	259	-----	1,635,399
Tuna, bluefin.....	\$77,643	\$31,127	\$13,232	\$10,548	\$22	-----	\$132,572
Tuna, skipjack.....	2,684	149,105	6,475	77,427	-----	-----	235,691
Tuna, yellowfin.....	\$290	\$18,022	\$772	\$9,456	-----	-----	\$28,540
Tuna, miscellaneous.....	70	117	9,743	6,304	979	8,744	25,957
Crustacean.....	\$6	\$9	\$977	\$681	\$127	\$2,136	\$3,336
Shrimp, bay.....	-----	1,880	-----	-----	-----	-----	1,880
Shrimp, ocean.....	-----	\$378	-----	-----	-----	-----	\$378
Mollusk.....	-----	-----	771	133,238	305,199	29,564	468,772
Abalone.....	-----	-----	\$323	\$56,259	\$148,653	\$14,961	\$220,196
Octopus.....	1,619,734	1,446,984	2,995,389	1,651,212	6,754,215	3,821,678	18,189,212
Squid.....	\$279,296	\$255,684	\$527,471	\$281,257	\$1,296,396	\$721,310	\$3,361,414
Miscellaneous mollusk.....	-----	-----	-----	-----	16,666	-----	16,666
Crustacean.....	-----	111,260	-----	-----	\$3,442	-----	\$3,442
Crab, market.....	-----	\$18,135	-----	-----	27,731,364	6,977,782	34,820,406
Crab, rock.....	-----	\$27,860	1,500	990	\$4,096,329	\$1,020,309	\$5,104,773
Lobster, spiny.....	-----	\$4,110	\$158	\$199	\$3,961,804	\$1,197,107	\$5,089,281
Prawn, spot.....	-----	699,448	-----	-----	\$4,724,881	\$2,061,309	\$6,760,597
Prawn, ridgeback.....	-----	\$118,458	-----	-----	\$3,459,567	\$3,435,508	\$32,594,823
Shrimp, bay.....	2,198	66,600	395	13,942	\$16,809,014	\$6,761,385	\$23,688,857
Shrimp, ocean.....	\$112	\$3,303	\$16	\$862	30	162	83,327
Miscellaneous crustacean.....	-----	-----	-----	-----	\$4	\$24	\$4,321
Whitefish, ocean.....	-----	-----	-----	-----	1,190	1,519	2,709
Yellowtail, California.....	-----	-----	-----	-----	\$89	\$121	\$210
Miscellaneous fish.....	38,524	41	195	34	208	436	39,438
Miscellaneous (animal food).....	\$1,926	\$2	\$10	\$2	\$47	\$69	\$2,056
Total pounds.....	1,277,305	-----	-----	1,102,918	-----	-----	2,380,223
Total value.....	\$22,000	-----	-----	\$21,972	-----	-----	\$43,972
Crustacean:							
Crab, market.....	12,046,702	320,840	2,911	5,937	-----	-----	12,376,390
Crab, rock.....	\$1,757,343	\$118,472	\$1,276	\$2,618	-----	-----	\$1,879,709
Lobster, spiny.....	-----	-----	551	106,539	207,536	16,217	330,843
Prawn, spot.....	-----	-----	\$20	\$6,676	\$25,399	\$629	\$32,724
Prawn, ridgeback.....	-----	-----	-----	123,519	200,169	165,400	489,088
Shrimp, bay.....	-----	-----	3,366	\$100,161	\$171,545	\$137,624	\$409,330
Shrimp, ocean.....	-----	-----	\$2,356	209	-----	-----	3,575
Miscellaneous crustacean.....	-----	-----	-----	\$86	-----	-----	\$2,442
Mollusk.....	-----	-----	-----	30,238	-----	-----	30,238
Abalone.....	-----	4,165	-----	\$7,591	-----	-----	\$7,591
Octopus.....	-----	\$356	-----	-----	-----	-----	\$356
Squid.....	1,189,171	\$20	-----	506	-----	-----	1,190,187
Miscellaneous mollusk.....	\$124,251	\$62	-----	\$60	-----	-----	\$124,373
Mollusk:							
Abalone.....	-----	13,586	-----	3,121,205	1,189,834	638,921	4,963,566
Octopus.....	-----	\$1,917	-----	\$598,284	\$213,087	\$101,915	\$915,203
Oyster, eastern.....	709	11,479	4,957	463	-----	2	17,610
Oyster, giant Pacific.....	\$34	\$473	\$431	\$46	-----	-----	\$984
Squid.....	-----	12,925	-----	-----	-----	-----	12,925
Miscellaneous mollusk.....	535,908	\$40,584	-----	-----	-----	-----	\$40,584
Total pounds.....	\$123,259	\$21,577	1,978	28,039	-----	-----	\$77,502
Total value.....	-----	\$50,963	\$455	\$6,449	-----	-----	\$181,126
Miscellaneous mollusk.....	-----	-----	11,207,349	1,305,038	6,513,192	300	19,025,879
Miscellaneous mollusk.....	828	30	\$341,687	\$17,160	\$91,736	\$24	\$450,607
Miscellaneous mollusk.....	\$147	\$1	\$324	-----	-----	-----	\$2,184
Total pounds.....	39,768,130	15,944,237	38,428,541	28,804,154	267,994,523	67,500,495	458,440,080
Total value.....	\$7,001,756	\$2,774,240	\$1,633,617	\$1,925,274	\$30,785,979	\$11,048,842	\$55,149,708

TABLE 15
Value of Landings and Shipments of Commercial Fish Into California by Area, 1966

TABLE 15—Continued
Value of Landings and Shipments of Commercial Fish Into California by Area, 1966

Species	Eureka	San Francisco*	Monterey	Santa Barbara	Los Angeles	San Diego	Total
SHIPMENTS:							
Fish:							
Tuna, albacore.....	----	----	----	----	51,444,198	4,275,428	55,719,626
Tuna, bigeye.....	----	----	----	----	\$12,940,099	\$1,004,693	\$13,944,792
Tuna, bluefin.....	----	----	----	----	2,861,632	-----	2,861,632
Tuna, longtail.....	----	----	----	----	\$553,384	-----	\$553,384
Tuna, skipjack.....	----	----	----	----	3,118,804	-----	3,118,804
Tuna, yellowfin.....	----	----	----	----	\$699,512	-----	\$699,512
	----	----	----	----	6,755	-----	6,755
	----	----	----	----	\$1,121	-----	\$1,121
	----	----	----	----	14,136,271	-----	14,136,271
	----	----	----	----	\$2,524,135	-----	\$2,524,135
	----	342,690	----	----	55,630,963	1,276,596	57,250,249
	----	\$83,073	----	----	\$14,082,495	\$261,129	\$14,426,697
Total pounds.....	----	342,690	----	----	127,198,623	5,552,024	133,093,337
Total value.....	----	\$83,073	----	----	\$30,800,746	\$1,265,822	\$32,149,641
GRAND TOTAL POUNDS.	39,768,130	16,286,927	38,428,541	28,804,154	395,193,146	73,052,519	591,533,417
GRAND TOTAL VALUE.	\$7,001,756	\$2,857,313	\$1,633,617	\$1,925,274	\$61,566,725	\$12,314,664	\$87,299,349

* Includes Sacramento area landings.
 For origin of shipments refer to Table 6. Beginning in 1965 only tuna shipments are recorded.

TABLE 15
Value of Landings and Shipments of Commercial Fish Into California by Area, 1966

TABLE 16
Value of Landings by Port, Eureka Area, 1966

	Value	Pounds
Eureka		
Salmon.....	\$1,445,212	2,925,324
Market crab.....	814,047	5,580,346
Albacore.....	186,418	1,081,106
Dover sole.....	156,433	2,227,772
Giant Pacific oyster.....	123,259	535,908
Ocean shrimp.....	25,144	240,645
Petrale sole.....	22,809	177,102
English sole.....	22,715	255,521
Sablefish.....	22,505	220,513
Rockfish.....	20,887	417,423
Rex sole.....	17,973	211,440
All other species.....	13,250	141,736
Port totals.....	\$2,870,742	14,014,836
Fort Bragg		
Salmon.....	\$1,095,932	2,262,365
Market Crab.....	106,816	732,232
Dover sole.....	89,994	1,281,617
Albacore.....	85,934	498,360
Sablefish.....	73,578	720,951
Petrale sole.....	53,302	412,247
English sole.....	29,889	336,230
Rockfish.....	25,407	466,219
Lingcod.....	12,724	148,922
Rex sole.....	12,551	147,658
Whitebait smelt.....	5,259	52,965
Miscellaneous (animal food).....	5,257	305,231
All other species.....	6,170	91,772
Port totals.....	\$1,602,813	7,456,769
Crescent City		
Market crab.....	\$687,189	4,710,724
Salmon.....	551,752	1,101,693
Ocean shrimp.....	98,715	944,776
English sole.....	26,192	294,638
Rockfish.....	8,724	156,144
Albacore.....	6,944	40,268
Petrale sole.....	6,405	49,540
Sablefish.....	5,922	58,025
Lingcod.....	5,646	66,079
Dover sole.....	4,873	69,402
All other species.....	11,734	155,241
Port totals.....	\$1,414,096	7,646,530
Fields Landing		
Dover sole.....	\$280,874	3,999,949
English sole.....	93,172	1,048,101
Petrale sole.....	72,160	538,096
Sablefish.....	60,153	580,403
Market crab.....	57,501	394,171
Rockfish.....	45,930	872,475
Rex sole.....	42,393	498,727
Miscellaneous (animal food).....	16,683	998,599
Lingcod.....	11,910	139,392
Salmon.....	11,802	23,692
Sanddab.....	9,803	104,759
Smelt.....	6,549	97,697
Whitebait smelt.....	6,215	62,597
All other species.....	3,200	30,117
Port totals.....	\$718,345	9,387,775

TABLE 16
Value of Landings by Port, Eureka Area, 1966

TABLE 16—Continued
Value of Landings by Port, Eureka Area, 1966

	Value	Pounds
Albion		
Salmon.....	\$144,286	284,532
All other species.....	452	3,098
Port totals.....	\$144,738	287,630
Trinidad		
Market crab.....	\$91,338	626,131
Salmon.....	52,869	130,399
Port totals.....	\$144,207	756,530
Point Arena		
Salmon.....	\$105,750	208,245
Port totals.....	\$105,750	208,245
All other ports		
All species.....	\$1,065	9,815
Totals.....	\$1,065	9,815
EUREKA AREA TOTALS.....	\$7,001,756	39,768,130

TABLE 16
Value of Landings by Port, Eureka Area, 1966

TABLE 17
Value of Landings and Shipments by Port, San Francisco Area, 1966 *

	Value	Pounds
San Francisco		
Landings:		
Dover sole.....	\$118,812	2,100,640
Petrale sole.....	118,738	867,052
Yellowfin tuna.....	118,458	699,448
Salmon.....	111,803	190,738
English sole.....	105,255	1,173,991
Rockfish.....	89,691	1,401,513
Market crab.....	60,845	164,778
California halibut.....	38,430	152,004
Sablefish.....	35,754	877,200
Albacore.....	34,096	192,956
Bluefin tuna.....	18,135	111,260
Sanddab.....	17,732	224,937
Rex sole.....	17,245	219,241
Sand sole.....	17,002	140,670
Lingcod.....	16,005	179,106
Flounder.....	10,077	145,613
All other species.....	16,973	301,695
Total Landings.....	\$945,051	9,142,852
Shipments:		
Yellowfin tuna.....	\$83,073	342,690
Total shipments.....	\$83,073	342,690
Port totals.....	\$1,028,124	9,485,542
Bodega Bay		
Landings:		
Salmon.....	\$539,080	959,302
English sole.....	54,958	612,983
Market crab.....	29,921	81,032
Petrale sole.....	27,297	199,331
Dover sole.....	24,362	430,731
Rex sole.....	11,849	150,638
Albacore.....	10,224	57,863
Smelt.....	9,901	70,023
Rockfish.....	9,694	123,677
All other species.....	18,775	300,223
Port totals.....	\$736,061	2,985,803
Point Reyes		
Landings:		
Salmon.....	\$339,737	579,886
Giant Pacific oyster.....	42,743	185,840
Market crab.....	18,895	51,170
Petrale sole.....	10,559	77,105
English sole.....	10,413	116,145
Rockfish.....	4,872	75,151
All other species.....	13,787	187,979
Port totals.....	\$441,006	1,273,276
Sausalito		
Landings:		
Salmon.....	\$183,229	321,562
Albacore.....	113,309	652,565
All other species.....	6,330	70,226
Port totals.....	\$304,868	1,044,353
Oakland		
Landings:		
Albacore.....	\$95,966	543,096
Salmon.....	47,708	89,382
All other species.....	1,344	10,072
Port totals.....	\$145,018	642,550

TABLE 17
Value of Landings and Shipments by Port, San Francisco Area, 1966

TABLE 17—Continued
Value of Landings and Shipments by Port, San Francisco Area, 1966 *

	Value	Pounds
Princeton		
Landings:		
Salmon.....	\$47,791	81,689
California halibut.....	18,287	72,332
Market crab.....	5,348	14,482
All other species.....	3,647	47,926
Port totals.....	\$75,073	216,429
Clear Lake		
Landings:		
Hardhead.....	\$49,856	249,281
Carp.....	7,485	187,116
Port totals.....	\$57,341	436,397
Tomales Bay		
Landings:		
Eastern oyster.....	\$40,584	12,925
Giant Pacific oyster.....	8,220	35,737
All other species.....	4,444	49,646
Port totals.....	\$53,248	98,308
Berkeley		
Landings:		
Salmon.....	\$7,755	13,229
All other species.....	620	2,459
Port totals.....	\$8,375	15,688
All other ports		
Landings:		
All species.....	\$8,199	88,581
Totals.....	\$8,199	88,581
SAN FRANCISCO AREA TOTALS.....	\$2,857,313	16,286,927

* Includes Sacramento area landings.

TABLE 17
Value of Landings and Shipments by Port, San Francisco Area, 1966

TABLE 18
Value of Landings by Port, Monterey Area, 1966

	Value	Pounds
Monterey		
Squid.....	\$329,026	10,792,049
Albacore.....	230,407	1,308,431
Rockfish.....	144,780	2,502,175
Anchovy.....	41,880	3,958,990
English sole.....	23,958	296,476
Petrale sole.....	23,819	169,013
Sablefish.....	21,744	490,886
Salmon.....	9,846	16,335
Rex sole.....	8,617	132,845
California halibut.....	8,540	38,764
Sanddab.....	6,360	96,496
Lingcod.....	5,172	51,488
All other species.....	21,269	305,886
Port totals.....	\$875,418	20,160,134
Moss Landing		
Albacore.....	\$200,473	1,649,527
Anchovy.....	133,895	12,657,370
Salmon.....	80,757	138,983
Rockfish.....	51,365	872,921
Jack mackerel.....	43,372	1,168,346
Pacific herring.....	18,530	186,320
Petrale sole.....	18,389	130,480
Squid.....	12,652	415,000
English sole.....	12,642	156,446
Sanddab.....	9,534	149,193
Dover sole.....	5,764	106,905
All other species.....	27,024	338,605
Port totals.....	\$704,697	17,970,096
Santa Cruz		
Salmon.....	\$19,471	32,900
California halibut.....	10,145	46,047
Albacore.....	6,591	37,431
All other species.....	17,295	181,933
Port totals.....	\$53,502	298,311
MONTEREY AREA TOTALS.....	\$1,633,617	38,428,541

TABLE 18
Value of Landings by Port, Monterey Area, 1966

TABLE 19
Value of Landings by Port, Santa Barbara Area, 1966

	Value	Pounds
Morro Bay		
Abalone.....	\$275,465	1,452,553
Albacore.....	275,230	1,517,971
Jack mackerel.....	110,511	3,386,502
Rockfish.....	86,627	1,468,770
Salmon.....	19,114	32,812
Petrale sole.....	15,489	119,533
White seabass.....	14,319	47,765
California halibut.....	13,971	51,851
Sardine.....	12,622	77,853
Miscellaneous (animal food).....	7,457	374,314
Giant Pacific oyster.....	6,449	28,039
Perch.....	5,363	22,446
All other species.....	22,856	282,974
Port totals.....	\$865,473	8,863,383
Santa Barbara		
Abalone.....	\$273,980	1,415,786
Spiny lobster.....	77,460	95,524
Swordfish.....	47,680	112,921
Rockfish.....	35,475	603,219
English sole.....	29,316	393,333
California halibut.....	24,109	89,476
White seabass.....	17,044	56,853
Petrale sole.....	15,493	104,133
Miscellaneous (animal food).....	11,629	583,743
Ridgeback prawn.....	7,591	30,238
Shark.....	6,463	61,518
Rock crab.....	6,395	102,048
All other species.....	9,436	102,312
Port totals.....	\$560,101	3,751,104
Port Hueneme		
Jack mackerel.....	\$111,078	3,403,878
Anchovy.....	88,881	9,039,290
Pacific mackerel.....	18,481	518,480
Spiny lobster.....	18,366	22,649
Abalone.....	18,040	91,475
Squid.....	17,160	1,305,038
California halibut.....	17,110	63,503
Pacific bonito.....	16,724	428,144
Swordfish.....	8,480	20,082
Sardine.....	4,806	29,644
All other species.....	6,763	116,535
Port totals.....	\$325,889	15,039,018
Avila		
Salmon.....	\$29,684	50,392
White seabass.....	29,557	98,596
Abalone.....	22,150	116,850
California halibut.....	17,686	65,641
Rockfish.....	10,898	182,313
Petrale sole.....	7,981	61,591
Sand sole.....	7,358	60,249
English sole.....	5,955	79,903
Albacore.....	5,735	31,628
All other species.....	16,478	315,093
Port totals.....	\$153,482	1,062,256
All other ports		
Abalone.....	\$8,649	44,541
All other species.....	11,680	43,852
Totals.....	\$20,329	88,393
SANTA BARBARA AREA TOTALS.....	\$1,925,274	28,804,154

TABLE 19
Value of Landings by Port, Santa Barbara Area, 1966

TABLE 20
Value of Landings and Shipments by Port, Los Angeles Area, 1966

	Value	Pounds
Terminal Island		
Landings:		
Yellowfin tuna.....	\$16,756,454	93,167,327
Skipjack tuna.....	4,724,881	35,861,804
Bluefin tuna.....	3,997,477	27,261,810
Albacore.....	1,276,065	6,651,419
Jack mackerel.....	968,165	27,198,349
Pacific bonito.....	461,299	11,616,291
Anchovy.....	354,557	34,451,670
Pacific mackerel.....	119,001	2,883,808
Squid.....	63,071	4,477,972
All other species.....	4,846	24,712
Total landings.....	\$28,716,416	243,595,162
Shipments:		
Yellowfin tuna.....	\$14,082,495	55,630,963
Albacore.....	12,937,584	51,434,198
Skipjack tuna.....	2,524,135	14,136,271
Bluefin tuna.....	699,512	3,118,604
Bigeye tuna.....	553,384	2,861,632
Longtail tuna.....	1,121	6,755
Total shipments.....	\$30,798,231	127,188,623
Port totals.....	\$59,514,647	370,783,785
San Pedro		
Landings:		
White seabass.....	\$231,840	849,235
Abalone.....	186,303	1,044,096
Pacific bonito.....	162,300	4,086,986
Sardine.....	128,081	733,809
Swordfish.....	99,504	204,290
Spiny lobster.....	92,990	108,506
Jack mackerel.....	79,467	2,255,750
Rockfish.....	73,842	520,916
Bluefin tuna.....	68,843	469,465
California halibut.....	57,210	211,012
Yellowfin tuna.....	52,560	292,240
Giant sea bass.....	51,236	288,888
California barracuda.....	49,554	278,147
Pacific mackerel.....	42,001	1,017,846
Grouper.....	41,801	185,794
White croaker.....	29,036	539,014
Squid.....	28,665	2,035,220
California yellowtail.....	22,919	206,877
Anchovy.....	15,351	1,491,660
Pacific pompano.....	11,183	35,047
Rock crab.....	10,678	87,249
Albacore.....	9,480	49,392
Shark.....	8,233	61,488
Sculpin.....	7,627	21,861
Perch.....	6,518	34,339
All other species.....	17,638	262,908
Port totals.....	\$1,584,860	17,372,065
Wilmington		
Landings:		
Jack mackerel.....	\$118,554	3,365,246
Pacific bonito.....	73,532	1,351,667
White croaker.....	6,033	127,620
Pacific mackerel.....	5,278	127,902
All other species.....	4,791	426,470
Port totals.....	\$208,188	5,898,905

TABLE 20
Value of Landings and Shipments by Port, Los Angeles Area, 1966

TABLE 20—Continued
Value of Landings and Shipments by Port, Los Angeles Area, 1966

	Value	Pounds
Newport Beach		
Landings:		
Swordfish.....	\$43,540	89,392
Abalone.....	26,521	144,051
Shark.....	22,703	170,460
Spiny lobster.....	18,664	21,778
White seabass.....	15,543	56,933
California halibut.....	9,178	33,852
Albacore.....	9,075	47,280
All other species.....	5,063	131,562
Port totals.....	\$150,287	695,338
Long Beach		
Landings:		
Spiny lobster.....	\$28,105	32,795
All other species.....	8,333	125,039
Port totals.....	\$36,438	157,834
Redondo Beach		
Landings:		
Rock crab.....	\$14,539	118,796
Spiny lobster.....	7,527	8,783
All other species.....	2,078	21,468
Port totals.....	\$24,144	149,047
Santa Monica		
Landings:		
Spiny lobster.....	\$9,227	10,767
White seabass.....	7,031	25,757
All other species.....	7,438	33,163
Port totals.....	\$23,696	69,687
San Clemente		
Landings:		
Spiny lobster.....	\$7,890	9,206
All other species.....	1,200	5,356
Port totals.....	\$9,090	14,562
Sunset Beach		
Landings:		
Spiny lobster.....	\$7,105	8,291
All other species.....	1,037	6,661
Port totals.....	\$8,142	14,952
All other ports		
Landings:		
All species.....	\$4,718	26,971
Total landings.....	\$4,718	26,971
Shipments:		
Albacore.....	\$2,515	10,000
Total shipments.....	\$2,515	10,000
Totals.....	\$7,233	36,971
LOS ANGELES AREA TOTALS	\$61,566,725	395,193,146

TABLE 20
Value of Landings and Shipments by Port, Los Angeles Area, 1966

TABLE 21
Value of Landings and Shipments by Port, San Diego Area, 1966

	Value	Pounds
San Diego		
Landings:		
Yellowfin tuna.....	\$6,761,385	38,435,508
Skipjack tuna.....	2,031,309	15,197,107
Bluefin tuna.....	1,020,309	6,977,782
Albacore.....	721,310	3,821,678
Spiny lobster.....	119,381	143,476
Abalone.....	101,891	638,771
White seabass.....	44,907	149,338
Rockfish.....	43,196	327,362
Pacific bonito.....	42,977	1,057,098
California halibut.....	39,332	147,626
Sculpin.....	22,422	81,905
Grouper.....	15,256	65,115
Swordfish.....	14,961	29,564
Shark.....	13,206	109,636
Giant sea bass.....	8,450	48,906
All other species.....	24,469	212,480
Total landings.....	\$11,024,761	67,443,352
Shipments:		
Albacore.....	\$1,004,693	4,275,428
Yellowfin tuna.....	261,129	1,276,596
Total shipments.....	\$1,265,822	5,552,024
Port totals.....	\$12,290,583	72,995,376
Cardiff		
Landings:		
Spiny lobster.....	\$12,139	14,589
Port totals.....	\$12,139	14,589
All other ports		
Landings:		
Spiny lobster.....	\$6,104	7,335
All other species.....	5,838	35,219
Totals.....	\$11,942	42,554
SAN DIEGO AREA TOTALS.....	\$12,314,664	73,052,519

TABLE 21
Value of Landings and Shipments by Port, San Diego Area, 1966

TABLE 22
Statewide Commercial Partyboat Catch by Species
(Not including anchored barges)
1957-1966 *

Species	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Barracuda, California.....	577,181	782,723	1,195,585	755,408	391,384	335,807	485,099	303,070	443,304	892,697
Bank kip and mudd.....	990,071	633,471	429,426	478,656	615,034	730,140	1,219,344	1,103,384	1,209,313	1,279,939
Bonito, Pacific.....	258,355	422,568	776,386	1,199,919	849,426	798,725	775,719	1,298,804	806,322	644,415
Cabrete.....	14,479	9,909	5,329	2,516	2,529	4,538	6,726	6,461	7,575	10,293
Halibut, California.....	10,795	16,192	23,365	48,310	108,011	118,966	125,069	141,465	118,213	88,726
Lingcod.....	38,012	39,801	31,206	28,232	23,466	25,399	27,513	25,203	33,290	44,676
Mackerel, jack.....	8,875	27,897	11,820	8,337	28,981	9,029	9,342	8,577	25,619	19,027
Mackerel, Pacific.....	151,960	139,607	88,952	79,270	113,983	110,738	146,960	101,219	131,896	208,060
Rockfish.....	1,395,151	1,561,132	1,177,979	1,015,673	896,641	956,438	862,659	966,801	1,347,430	1,688,718
Salmon.....	41,791	32,676	35,945	37,841	43,965	37,612	75,457	92,021	91,677	70,181
Scupin.....	13,473	13,743	11,477	15,111	26,672	33,214	55,896	78,844	71,888	69,851
Seabass, white.....	19,039	34,039	10,593	15,697	14,082	14,564	19,800	14,601	9,775	3,972
Sheepshead, California.....	15,105	18,130	17,146	11,541	15,210	15,488	18,443	26,822	41,621	52,987
Tuna, albacore.....	41,460	6,482	39	76,075	184,881	229,314	158,372	112,358	99,771	74,680
Tuna, bluefin.....	6,428	884	1,390	97	2,358	2,453	737	693	92	1,998
Whitefish, ocean.....	4,389	4,143	3,608	3,850	6,617	6,137	6,231	6,849	13,810	15,587
Yellowtail, California.....	242,686	123,284	457,350	251,969	42,397	21,820	45,705	39,104	18,267	30,163
All others.....	50,148	44,939	28,039	56,132	87,981	92,776	142,630	114,400	163,595	166,470
Total number of fish.....	3,499,585	3,950,880	4,328,575	4,090,034	3,453,633	3,656,993	4,278,502	4,434,176	4,634,558	5,406,420
Number of angler days†.....	536,175	515,152	557,154	516,255	495,805	503,916	566,866	643,155	695,445	827,720
Number of anglers.....	.....	.....	.....	657,498	693,916	660,866	643,155	695,445	688,103	827,720

* See Fish Bulletin No. 121 for historical records 1936-1961.
 † Not available after 1961.

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TABLE 22
Statewide Commercial Partyboat Catch by Species (Not including anchored barges) 1957-1966

TABLE 23
Recorded Catch of Live Bait for Saltwater Sportfishing 1961-1966

Species	Thousands of pounds*					
	1961	1962	1963	1964	1965	1966
Anchovy.....	11,825	12,333	8,884	10,382	12,296	13,382
Herring, Pacific.....	----	----	46	18	----	----
Mackerel, jack.....	----	----	15	----	----	25
Sardine, adult.....	136	20	38	283	66	51
Sardine, juvenile.....	3	17	3	1	2	----
Squid.....	----	----	5	----	----	2
Miscellaneous†.....	15	67	82	26	82	82
Total pounds.....	11,979	12,437	9,073	10,710	12,446	13,545
Number of vessels‡.....	16	22	23	22	24	18

* Weights are estimated from voluntary records. They should be regarded as minimal because some fishermen do not supply catch information.

† Consists primarily of queenfish and white croaker.

‡ The number of live bait fishing vessels for which landings were reported. These numbers differ slightly from those in previous catch bulletins, since the earlier landing records, as submitted, sometimes included the catch of more than one boat.

TABLE 23
Recorded Catch of Live Bait for Saltwater Sportfishing 1961-1966

1.7. APPENDIX A

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APPENDIX A

TABLE I
California Commercial Troll Salmon Landings by Port-Area, Month and Species, in Pounds * and Numbers—1966 †

	April		May		June		July		August		September		Season	
	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers
Chesnut City														
King.....	346	44	10,280	1,105	289,676	35,835	49,835	5,990	4,494	235	6,205	906	390,896	46,715
Silver.....	.....	.....	474	74	351,936	35,082	351,075	42,394	24,185	3,112	12,966	1,323	740,636	102,185
Eureka														
King.....	39,590	4,490	239,517	28,888	820,406	90,272	297,097	36,928	85,114	7,852	61,222	6,414	1,542,946	174,814
Silver.....	83	15	25,035	4,833	687,848	106,222	737,945	88,861	65,942	6,724	19,501	1,826	1,536,144	208,481
Fort Bragg														
King.....	54,131	5,807	26,095	2,762	391,142	31,656	962,714	78,418	478,044	38,852	118,600	11,345	2,020,316	168,840
Silver.....	79	14	1,625	313	133,806	19,052	520,016	57,342	61,241	6,906	7,680	832	724,447	83,859
San Francisco														
King.....	135,877	13,862	310,434	33,339	143,484	12,097	555,785	43,163	498,749	26,276	208,034	13,692	1,798,354	143,029
Silver.....	603	113	9,524	1,621	22,024	3,093	389,070	41,011	17,496	1,646	1,705	154	440,122	48,238
Monterey														
King.....	50,723	5,032	85,899	6,695	60,730	4,537	27,387	2,310	17,419	1,270	4,157	333	246,015	20,177
Silver.....	91	20	963	198	7,349	1,037	16,044	1,699	2,901	363	.....	.....	20,978	3,639
Statewide														
King.....	280,617	29,265	710,655	72,789	1,705,438	174,997	1,862,818	169,809	993,781	74,485	305,308	32,200	5,979,027	553,575
Silver.....	756	162	37,091	6,949	1,292,963	181,486	2,013,850	231,907	170,865	17,053	41,942	4,335	3,497,427	445,792

* Dressed land on.
† Not included are 541 pounds (98 fish) of pink salmon.

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TABLE I
California Commercial Troll Salmon Landings by Port-Area, Month and Species, in Pounds and Numbers—1966

1.8. APPENDIX A

APPENDIX A

TABLE II
California Ocean Recreational Salmon Landings and Success* by Fishery, Port, Month and Species, in Numbers of Fish—1966

	February			March			April			May			June			July		
	King	Silver	Fish /Day	King	Silver	Fish /Day	King	Silver	Fish /Day	King	Silver	Fish /Day	King	Silver	Fish /Day	King	Silver	Fish /Day
Crescent City																		
Partyboat.....	0	0	--	0	0	--	0	0	--	0	0	--	0	0	--	0	0	--
Skiff.....	0	0	--	0	0	--	0	0	--	0	0	--	0	0	--	0	0	--
Eureka																		
Partyboat.....	0	0	--	0	0	--	1	3	^b	8	26	^b	156	522	0.7	208	2,328	1.2
Skiff.....	0	0	--	0	0	--	0	0	--	0	0	--	262	880	0.4	1,662	15,560	1.1
Fort Bragg																		
Partyboat.....	0	0	--	0	0	--	2	4	^b	17	13	^b	228	171	0.6	744	635	0.5
Skiff.....	0	0	--	0	0	--	0	0	--	0	0	--	40	45	0.2	1,256	2,379	0.6
San Francisco																		
Partyboat.....	3,113	7	1.0	15,807	37	1.6	14,136	88	1.5	1,520	1,964	0.6	2,051	1,102	0.8	6,626	726	0.8
Skiff.....	179	0	0.6	2,636	6	1.8	1,241	13	1.9	17	28	0.6	30	15	0.6	60	7	0.6
Monterey																		
Partyboat.....	20	0	^c	31	0	^c	41	0	^c	58	41	^c	96	52	^c	306	33	^c
Skiff.....	65	0	^c	100	0	^c	138	0	^c	193	138	^c	319	174	^c	1,021	110	^c
Statewide																		
Partyboat.....	3,133	7	1.0	15,838	37	1.6	14,180	95	1.5	1,603	1,144	0.6	2,531	1,847	0.8	7,584	3,722	0.8
Skiff.....	244	0	0.6	2,736	6	1.8	1,379	13	1.9	210	166	0.6	701	1,202	0.4	4,154	22,466	1.0

* Salmon per angler-day, species combined. ^b Data unavailable. ^c Data not comparable to that of other ports or months.

MAINE FISH CATCH FOR 1966

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TABLE II
California Ocean Recreational Salmon Landings and Success by Fishery, Port, Month and Species, in Numbers of Fish—1966

APPENDIX A
TABLE II—Continued
California Ocean Recreational Salmon Landings and Success* by Fishery, Port, Month and Species, in Numbers of Fish—1966

	August			September			October			November			Season		
	King	Silver	Fish /Day	King	Silver	Fish /Day	King	Silver	Fish /Day	King	Silver	Fish /Day	King	Silver	Fish /Day
 Crescent City															
Partyboat.....	0	0	..	0	0	..	0	0	..	0	0	..	0	0	..
Skiff.....	20	74	0.2	15	20	b	0	0	..	0	0	..	210	1,002	0.6
 Eureka															
Partyboat.....	105	290	0.3	31	88	0.2	0	15	b	0	0	..	509	3,272	0.8
Skiff.....	265	409	0.2	115	266	0.2	0	0	..	0	0	..	2,304	20,115	0.8
 Fort Bragg															
Partyboat.....	480	38	0.2	129	10	0.3	0	54	b	0	3	b	1,600	928	0.4
Skiff.....	306	219	0.1	244	87	0.1	0	0	..	0	0	..	1,876	2,730	0.4
 San Francisco															
Partyboat.....	3,983	91	0.6	5,231	22	1.0	4,147	0	0.8	3,339	0	1.2	59,953	3,137	1.1
Skiff.....	45	0	0.5	34	0	b	112	0	b	55	..	b	4,559	69	1.6
 Monterey															
Partyboat.....	44	0	*	21	0	*	6	0	*	0	0	..	625	125	*
Skiff.....	148	0	*	80	0	*	25	0	*	0	0	..	2,089	422	*
 Statewide															
Partyboat.....	4,612	419	0.5	5,415	120	1.0	4,183	99	0.8	3,339	3	1.2	62,688	7,463	1.0
Skiff.....	784	702	0.1	468	283	0.1	137	0	b	65	0	b	10,888	24,938	0.8

* Salmon per angler-day, species combined. b Data unavailable. * Data not comparable to that of other ports or months.

SCT. NAZAROVIC. HSLA

TABLE II
California Ocean Recreational Salmon Landings and Success by Fishery, Port, Month and Species, in Numbers of Fish—1966

2. CALIFORNIA-BASED FISHERIES OFF THE WEST COAST OF MEXICO FOR TEMPERATE TUNAS, MARKET FISH, AND SPORT FISH¹

PHILIP M. ROEDEL AND HERBERT W. FREY

Marine Resources Operations

2.1. INTRODUCTION

On 1 January 1968, Mexico implements the provisions of its law establishing an exclusive fishery zone 12 nautical miles in breadth. A transitory provision of this law states that: "The Federal Executive shall establish the conditions and terms under which nationals of countries that have traditionally exploited the living resources of the sea within the zone of three nautical miles beyond the territorial sea may be authorized to continue their activities, for a period that shall not exceed five years counted from January 1, 1968. Nationals of such countries may continue the said activities without any special conditions during the year 1967." During May 1967, representatives of the United States and Mexico met in Washington, D. C. to discuss in an informal and exploratory manner the situation brought about by this law. No conclusions were reached at the Washington meeting, but the Mexican delegation indicated their government would look favorably on a continuation of the fishery under permit (via la pesca) in the Pacific Coast territorial waters of Mexico, and would allow fishing at the "traditional" rate in the adjacent exclusive fishery zone, at least for the 5-year period.

Mexico's action in adopting a 12-mile zone is of especial interest to Californians because of its potential impact on three groups (tuna fishermen, market fishermen, and sport fishermen) whose representatives have fished under permit for many years in Mexico's territorial waters, particularly off Baja California.

The Mexican delegation expressed an interest in obtaining detailed information on U. S. fishing activities south of the boundary, with special emphasis on the quantities by species taken less than 9, from 9 to 12, and more than 12 nautical miles from the Mexican coast. This paper, pursuant to the Mexican request, records the information about the California-based albacore and bluefin tuna fisheries, market fisheries, and recreational fisheries off the west coast of Mexico. We are not including data for the tropical tunas because the Inter-American Tropical Tuna Commission has the most detailed records on these species.

The basic documents for this compilation are the fish receipts made out at the time commercial fishermen unload at a California port, and

¹ This paper was originally prepared August 1967 in response to a request from the Delegation of Mexico during conversations on fishery matters with the United States, Washington, D.C., May 1967, and was issued for limited distribution as MRO Reference No. 67-22 in substantially its present form. A section has been added which summarizes the final agreement reached in September 1967.

the catch records completed by the operators of the "partyboats": vessels that carry sportsfishermen for hire. The catch locality reporting system is not ideal for the problem at hand, because the smallest statistical reporting unit is 10 minutes latitude by 10 minutes longitude and a given unit may fall partly within and partly outside either a 9- or a 12-mile band along the coast. Nevertheless, these records coupled with fishermen interviews, detailed log books maintained particularly by tuna fishermen, and the staff's knowledge of fishing grounds made reasonably accurate allocations possible.

We have used the period 1961–1965 as a base except for the commercial albacore fishery for which data were available for 1951–1963.

In summary, (1) the quantity of albacore caught within 12 miles of Mexico each year is relatively negligible (an average of about 110 tons/year), (2) the tonnage of bluefin taken is variable but significant, worth some \$200,000 per year to the fishermen, (3) the amount of market fish approaches 2 million pounds annually worth nearly \$350,000 to the fishermen, and (4) the amount of sportfishing is extremely important but difficult to measure in terms of economic benefit to the State (17,500 partyboat anglers in 1965 paid over \$250,000 in fees to the boat operators alone). Most of these fisheries are prosecuted within a few miles of shore, and relatively little activity took place in the 9- to 12-mile zone during 1961–1965.

The total value of the commercial landings to California's economy is about 3.2 times the price paid the fishermen; therefore, catches of bluefin and various market species made within 12 miles of the Mexican coast annually contribute about \$1.75 million to our economy. These fisheries are thus of considerable importance to the State. They also comprise a sizeable source of revenue to the Mexican government and constitute a resource not harvested to any significant degree by Mexican nationals at the present time.

All these fisheries have been prosecuted for decades by California-based fishermen. California's commercial records go back over 50 years, but U. S. boats were operating in Mexican waters long before the California statistical system was inaugurated in 1916. In fact Collins (1892), in his report on a survey made in 1888, remarks that the San Diego fishing grounds for bonito and barracuda extended "to a long distance southward, off Mexico." Coleman (1923) states ". . . the year 1907 marks the period when this fishing (off Baja California) became a general practice." By 1920, boats carrying ice operated as far south as Cedros Island and at times as far as Magdalena Bay, seeking then as now halibut, barracuda, white seabass, rockfish, and tuna. The sport fishery is not as old, but official state records extend back to 1936, about the time that partyboats began fishing at the Coronado Islands.

The sections which follow give detailed accounts of the fisheries in question, and summarize the fee system currently imposed by Mexico on U. S. fishermen who wish to fish in the territorial waters of Mexico. Unless otherwise noted, the weight unit used is the short ton (2,000 pounds).

The data came from records maintained by the Biostatistical Unit of the California Department of Fish and Game. These were augmented by various staff members with personal knowledge of the fisheries, especially Robert R. Bell (bluefin tuna), William L. Craig (albacore), John E. Fitch (market fishery), and Parke H. Young (sportfish).

2.2. THE COMMERCIAL ALBACORE FISHERY

Californians have fished albacore off Baja California for many years. Clemens and Craig (1965) state that fishing boat captains knew as early as 1912 that albacore were available there in commercial quantities. Statistical records for catches off Mexico date back to 1918, but catches were negligible until 1942 (Table 1). In 1952, the peak year of the fishery, over 26 million pounds were taken. Catches have since declined, with unfavorable oceanic conditions for albacore resulting in few or no California landings from this area in 1958 and 1959. The catch since 1959 has fluctuated between 3 and 8½ million pounds.

The commercial albacore fishery off Baja California has extended as far south as Rosa Bank and westward over 600 miles offshore (Figure 1). Most albacore are caught over 12 miles from shore; however, during years when ocean conditions are favorable, some fish are taken in the 9–12 mile zone and a few may be taken within 9 miles of shore. For example, catches have been made on Ranger Bank, a portion of which is located in the 9–12 mile zone, and within 8 to 10 miles of Guadalupe Island.

In 1951, the California Department of Fish and Game initiated a system whereby albacore fishermen were asked to keep a special log of their fishing activities. Concerning the catch off Baja California, these records show an annual average of 223,000 pounds of albacore was taken within 12 miles of shore during the period 1951–1963 (Figure 2, Table 2). We feel the bulk of this catch was made in the 9–12 mile zone, although the data are not sufficiently sophisticated to substantiate this conclusion.

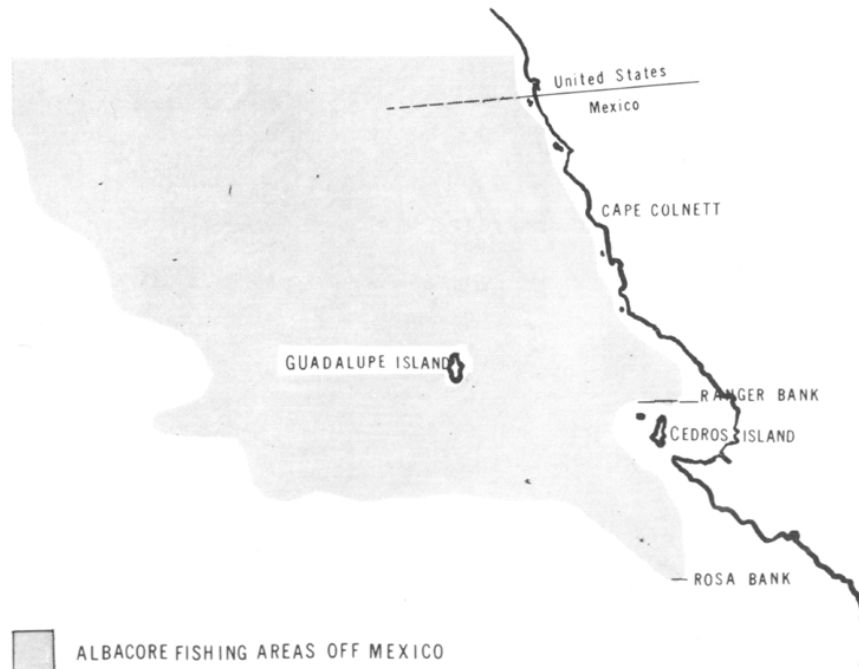
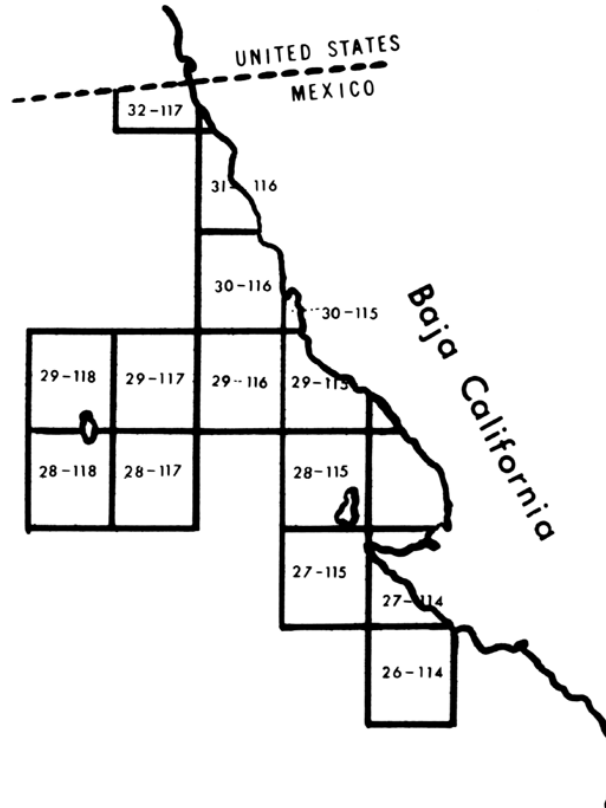


FIGURE 1. Albacore fishing areas off Baja California.
FIGURE 1. Albacore fishing areas off Baja California

TABLE 1
ALBACORE CATCHES OFF BAJA CALIFORNIA LANDED IN CALIFORNIA PORTS
1918-1965

Year	Pounds	Year	Pounds	Year	Pounds
1918	1,527	1934	---	1950	23,575,512
1919	77,874	1935	61,279	1951	17,621,586
1920	---	1936	---	1952	26,697,061
1921	2,199	1937	---	1953	20,490,810
1922	---	1938	29,919	1954	11,818,195
1923	26,634	1939	4,187	1955	19,690,269
1924	415,016	1940	880	1956	21,064,574
1925	521,981	1941	---	1957	20,911,816
1926	60	1942	2,623,216	1958	724,753
1927	123,995	1943	9,498,716	1959	---
1928	---	1944	9,774,659	1960	2,986,543
1929	45	1945	12,214,180	1961	8,319,514
1930	---	1946	8,958,818	1962	4,576,009
1931	---	1947	5,762,119	1963	6,930,638
1932	---	1948	25,901,589	1964	8,682,744
1933	---	1949	23,541,172	1965	3,136,516

TABLE 1
ALBACORE CATCHES OFF BAJA CALIFORNIA LANDED IN CALIFORNIA PORTS 1918-1965



Each statistical area represents one degree of latitude and longitude.

FIGURE 2. Statistical areas at least partly within 12 miles of Baja California shores in which albacore were caught during 1951-1963.

FIGURE 2. Statistical areas at least partly within 12 miles of Baja California shores in which albacore were caught during 1951-1963

TABLE 2
AVERAGE ALBACORE CATCH IN POUNDS TAKEN OFF BAJA CALIFORNIA, 1951-1963
FROM ONE-DEGREE SQUARES
LYING AT LEAST PARTLY WITHIN TWELVE MILES OF SHORE

One-degree square	1951-1963 average albacore catch*	Estimated percent caught within 12 miles of coast	1951-1963 estimated average catch within 12 miles of Mexican coast
26-114.....	105,131 (2)	5	5,256
27-114.....	12,253 (2)	5	613
-115.....	133,297 (3)	5	6,665
28-115.....	568,739 (5)	10	56,874
-117.....	134,415 (5)	0	---
-118.....	532,813 (9)	5	26,641
29-115.....	244,509 (5)	5	12,225
-116.....	703,834 (10)	0	---
-117.....	515,762 (11)	0	---
-118.....	503,762 (10)	5	25,188
30-115.....	2,451 (1)	100	2,451
-116.....	1,003,966 (10)	5	50,198
31-116.....	339,780 (10)	5	16,989
32-117.....	797,116 (12)	2.5	19,928
Total.....	----	---	223,028

* Numbers in parentheses represent the number of years of the 13 during which albacore were caught in that particular one-degree square.

TABLE 2
AVERAGE ALBACORE CATCH IN POUNDS TAKEN OFF BAJA CALIFORNIA, 1951-1963 FROM ONE-DEGREE SQUARES LYING AT LEAST PARTLY WITHIN TWELVE MILES OF SHORE

Logbook data also show that during the period 1959-1963, the fleet spent an average of 36 boat-days fishing within 12 miles of Baja California, and that probably most of this effort was expended in the 9-12 mile zone (Table 3)

The California fleet landings from off Baja California (Table 1) for 1951-1963 averaged 13,357,771 pounds annually. The average catch inside 12 miles (Table 2) was 223,028 pounds during this period and was negligible (1.67 percent) when compared with the total California landings.

TABLE 3
DAYS FISHED FOR ALBACORE IN ONE-DEGREE SQUARES WITHIN
TWELVE MILES OF BAJA CALIFORNIA SHORES
1959-1963

One-degree square	Year					Average days fished	Estimated average days fished within 12 miles
	1959	1960	1961	1962	1963		
28-118.....	--	7	7	12	--	5	1
29-116.....	--	--	--	92	2	19	--
29-117.....	2	--	17	223	--	49	--
29-118.....	--	9	154	194	155	102	5
30-116.....	2	--	34	555	123	143	7
31-116.....	--	--	12	51	413	95	5
32-117.....	5	58	1,463	1,567	444	707	18
Total.....	9	74	1,687	2,694	1,137	1,120	36

TABLE 3
DAYS FISHED FOR ALBACORE IN ONE-DEGREE SQUARES WITHIN TWELVE MILES OF BAJA CALIFORNIA SHORES 1959-1963

2.3. THE COMMERCIAL BLUEFIN FISHERY

United States vessels began fishing for bluefin tuna in 1914, but it was not until 1918 that significant commercial catches were made. In 1930, United States vessels began fishing off the west coast of Baja California and they have continued to do so since then.

Bluefin enter the North American fishing grounds between Cape San Lucas and Point Conception where they are fished during the summer months. The major concentrations are found 30 to 40 miles from shore near banks and shallows. Important fishing areas are Morgan, Lusitania, and Uncle Sam Banks off Baja California (Figure 3) and about the Channel Islands off southern California.

We have detailed catch and effort data for the period 1961–1965, which were obtained in cooperation with the Inter-American Tropical Tuna Commission. During this time, California-based vessels took 93 percent of the United States catch off southern California (both within and more than 12 miles offshore) or more than 12 miles from the Mexican coast, 5 percent within 9 miles of the Mexican coast, and 2 percent within the Mexican 9–12 mile zone. The average annual catch by United States vessels was over 600 tons within 9 miles of the Mexican coast and over 200 tons from 9 to 12 miles offshore (Table 4). The value of the catch to the fishermen was about \$200,000 per year based on an average price of \$250 per ton from 1961 through 1965. The annual value to the state's economy was on the order of \$640,000 using the 3.2:1 factor suggested in the "California Fish and Wildlife Plan" (California Department of Fish and Game, 1965).

A portion of Ranger Bank lies within 12 miles of San Benito Island, and this area produces a large portion of the catch taken within the forthcoming Mexican exclusive fishing zone. Some bluefin are caught close to the Coronado Islands, San Martin Island, Guadalupe Island, and Cedros Island, well within both 9 miles and 12 miles of Mexico (Figure 4).

TABLE 4
U.S. EASTERN PACIFIC BLUEFIN TUNA CATCH
1961–1965

Year	Tons						Total catch
	0 to 9 miles of Mexican coast	9 to 12 miles of Mexican coast	Within 12 miles of Mexican coast	South of boundary less 12 mile catch	South of boundary total	North of boundary (California)	
1961.....	407	57	464	3,096	3,560	6,881	10,441
1962.....	819	13	832	6,248	7,080	8,520	15,600
1963.....	1,060	24	1,084	10,527	11,611	3,565	15,176
1964.....	173	681	854	8,404	9,258	2,328	11,586
1965.....	626	304	930	5,897	6,827	1,137	7,964
5 Year Average							
Tons.....	617	216	833	6,834	7,667	4,486	12,153
Percent.....	5.1	1.8	6.9	56.2	63.1	36.9	100.0

TABLE 4
U.S. EASTERN PACIFIC BLUEFIN TUNA CATCH 1961–1965

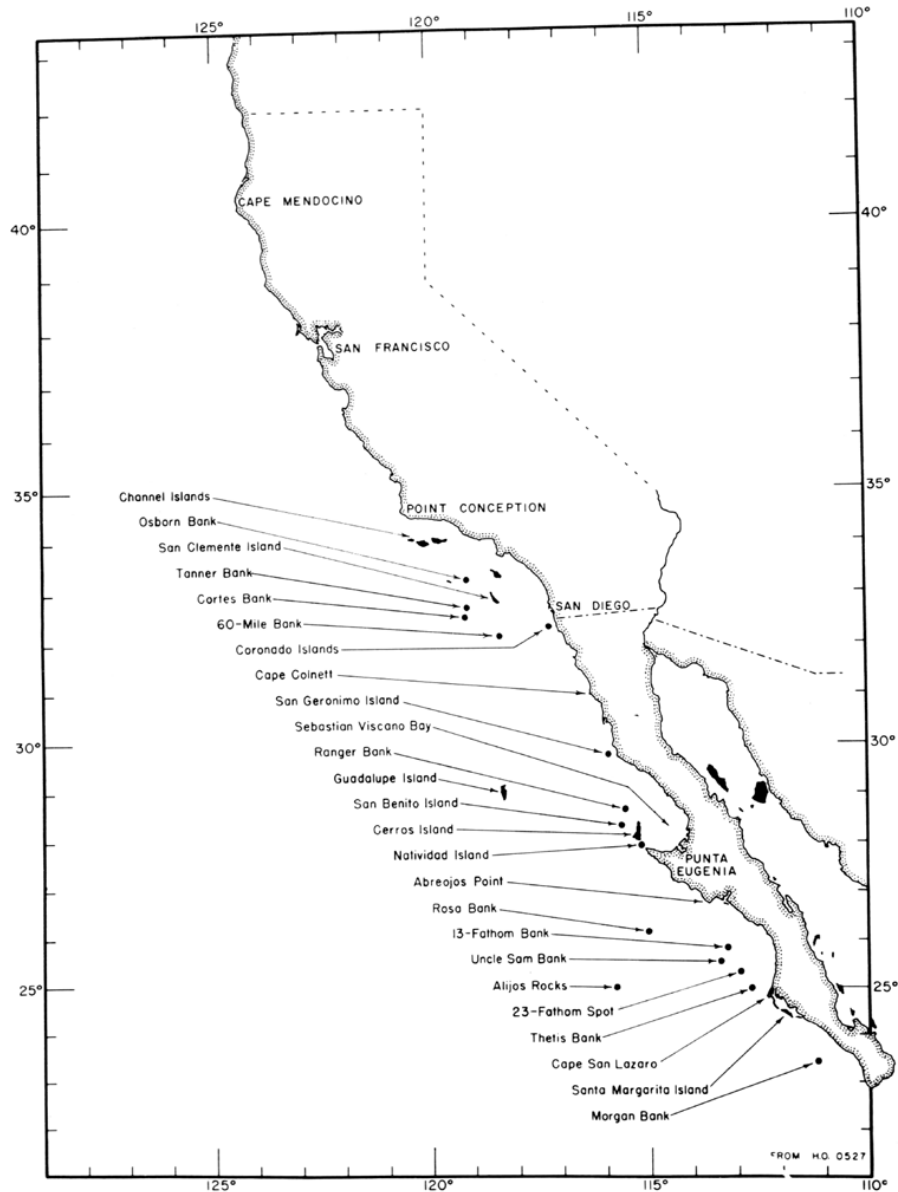


FIGURE 3. Major bluefin tuna fishing grounds in the eastern Pacific Ocean.

FIGURE 3. Major bluefin tuna fishing grounds in the eastern Pacific Ocean

The number of U. S. vessels operating within 12 miles of Mexico each year increased from 9 in 1961 to 28 in 1965, averaging 15 per year (Tables ⁵ & ⁶). These vessels spent 183 boat-days per year fishing bluefin close to shore. Most of this effort was within 9 miles of the coast; nevertheless, 47 days were expended within the 9–12 mile zone (Table 7).

In some years previous to 1961, large segments of the bluefin tuna population entered Mexican waters very close to shore. When this took place, United States vessels realized over \$1 million annually from fish caught within 12 miles of the Baja California coast. This can happen again. For this reason, the figures based on only the 1961-65 catch are conservative.

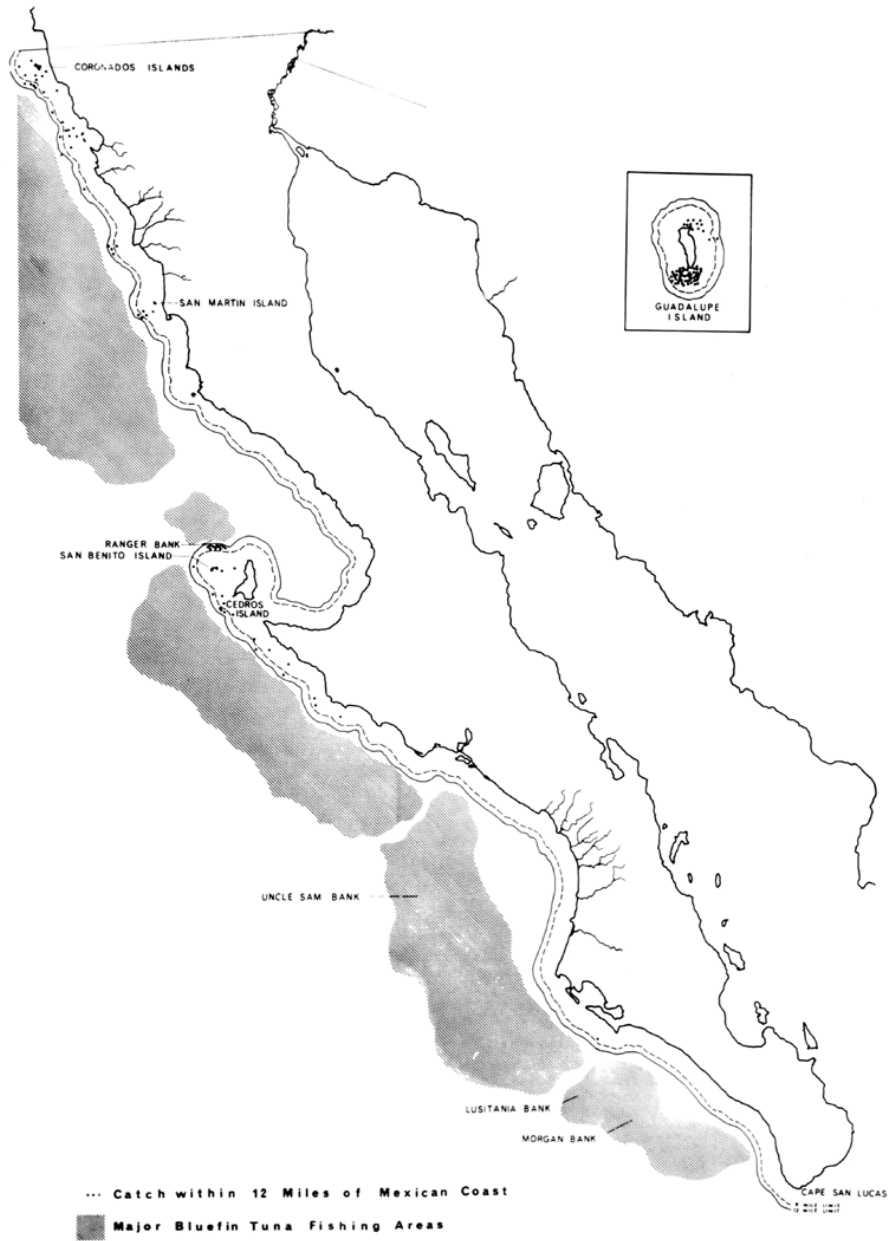


FIGURE 4. Bluefin tuna fishery off Baja California.
FIGURE 4. Bluefin tuna fishery off Baja California

TABLE 5
LENGTHS OF U.S. FLAG VESSELS FISHING BLUEFIN TUNA WITHIN
12 MILES OF THE MEXICAN COAST
1961-1965

Year	Feet							Total
	60-69	70-79	80-89	90-99	100-109	110-119	120-129	
1961.....	--	5	1	2	1	--	--	9
1962.....	--	3	1	1	--	1	--	6
1963.....	1	6	4	1	--	2	--	14
1964.....	--	2	2	2	2	6	2	16
1965.....	--	5	4	4	2	10	3	28
Five year average.....	1	4	2	2	1	4	1	15

TABLE 5
LENGTHS OF U.S. FLAG VESSELS FISHING BLUEFIN TUNA WITHIN 12 MILES OF THE MEXICAN COAST
1961-1965

TABLE 6
NET TONNAGE OF U.S. FLAG VESSELS FISHING BLUEFIN TUNA
WITHIN 12 MILES OF THE MEXICAN COAST
1961-1965

Year	16-70 Tons	71-100 Tons	Over 100 Tons	Total
1961.....	--	6	3	9
1962.....	--	4	2	6
1963.....	3	8	3	14
1964.....	--	4	12	16
1965.....	2	9	17	28

TABLE 6
NET TONNAGE OF U.S. FLAG VESSELS FISHING BLUEFIN TUNA WITHIN 12 MILES OF THE MEXICAN
COAST 1961-1965

TABLE 7
U.S. FLEET BLUEFIN TUNA EFFORT
FIVE-YEAR AVERAGE, 1961-1965
[Standard Days] *

0 to 9 miles of Mexican coast	9 to 12 miles of Mexican coast	Within 12 miles of Mexican coast	South of boundary less 12 miles	South of boundary total	North of boundary (California)	Total effort
136	47	183	1,504	1,687	988	2,675

* Twelve hours.

TABLE 7
U.S. FLEET BLUEFIN TUNA EFFORT FIVE-YEAR AVERAGE, 1961-1965 [Standard Days]

2.4. THE MARKET FISHERY

United States vessels participate in a fishery for market fish (peces para mercado-fresco) along the west coast of Baja California from the Mexico-California border to Cape San Lucas (Figure 5) and, to some extent, into the Gulf of California. During the period 1961 to 1965, these vessels annually landed in California ports an average of over 1.8 million pounds of market fish (Table 8) caught off the coast of Mexico. These landings brought over \$350,000 to the fishermen and, at the 3.2:1 ratio, added about \$1,120,000 to the state's economy. In 1965, 49 California-based vessels engaged in the fishery.

The market fishery off Baja California is based upon 7 species which make up over 90 percent of the catch: California barracuda, grouper, California halibut, rockfishes, giant sea bass, white seabass, and California yellowtail; about 25 other species are taken incidentally. Waters off Mexico provide from 2.3 percent (rockfishes) to 100.0 percent (grouper) of the total California landings of these species (Table 9). About 95 percent of the catch is made within 9 miles of the Mexican shore (Tables 10, 11); in fact, most of it comes from inside the 25 fathom curve, which characteristically is within 3 miles of shore. About 1 percent of the catch is made between 9 and 12 miles from shore and the remaining 4 percent on banks more than 12 miles offshore.

Our catch records, based upon fish receipts, are not sophisticated enough to pinpoint catches by distance from shore. This information was ascertained from interviews with fishermen and from the personal knowledge of staff members familiar with the fishery. Because a large portion of the market fishery is tied to depth contours and to specific banks, we believe the allocations to be quite accurate.

The vessels engaged in this fishery employ a variety of fishing gear; hook and line, gill nets, trammel nets, and purse seines are the more common types of equipment used.

2.4.1. Principal Species in the Baja California Market Fish Fishery

2.4.1.1. California Barracuda

The fishing grounds for barracuda extend along the west coast of Baja California from Point Santo Tomas to Magdalena Bay in waters 3 to 25 fathoms deep and inside the 9-mile zone. Barracuda are fished in conjunction with white seabass, giant sea bass, and yellowtail. During 1961–65, the Baja California barracuda fishery contributed approximately 26 percent of the total California landings. The catch off Mexico averaged about 132,000 pounds worth \$20,500 to the fishermen. Barracuda catches were less during these 5 years than in any other comparable period since 1928. This reflects both a decreased market demand and an increased availability of these fish off California associated with comparatively warm ocean water.

2.4.1.2. Grouper

The waters off Baja California produce 100 percent of the groupers landed in California. Landing in California during the period 1961 to 1965 averaged nearly 225,000 pounds and annually contributed \$57,000 to the income of the California fishermen. This fishery extends from 20 to 30 miles north of San Juanico Bay southward to Cape San Lucas and

into the Gulf of California. Groupers are primarily taken in waters 5 to 25 fathoms deep; therefore about 93 percent of the catch comes from waters within 9 miles of shore, 5 percent from waters 9 to 12 miles from shore, and about 2 percent from banks over 12 miles from shore.

2.4.1.3. California Halibut

California halibut are sometimes taken by trammel net inside the Coronado Islands and north of Ensenada. A gill-net fishery south of Cape Colnett also provides a halibut catch. Catches are made primarily inside the 10-fathom curve, and all are made within 9 miles of shore. During the period 1961–1965, the Baja California fishery annually contributed 15 percent of the total California halibut landings and provided \$35,000 to the income of California fishermen.

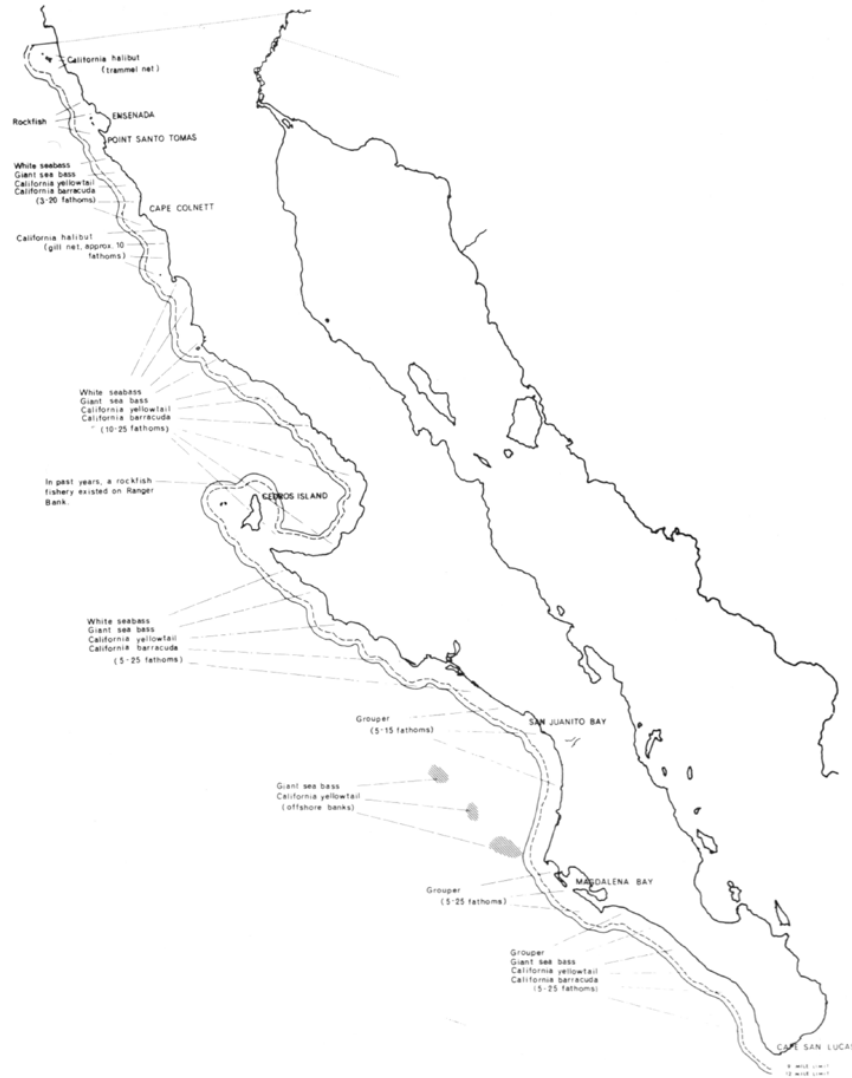


FIGURE 5. Principal market fishing areas off Baja California used by California-based vessels.

FIGURE 5. Principal market fishing areas off Baja California used by California-based vessels

TABLE 8
POUNDAGES OF MARKET FISH CAUGHT OFF MEXICO BY U.S. VESSELS
AND DELIVERED TO CALIFORNIA PORTS, 1961-1965

Species	Year					Total	Average
	1961	1962	1963	1964	1965		
Barracuda, California.....	231,017	224,707	31,360	83,115	89,055	659,254	131,851
Grouper.....	202,271	311,091	233,482	164,030	213,815	1,124,689	224,938
Halibut, California.....	109,082	87,009	265,277	184,037	115,370	760,775	152,155
Rockfishes.....	339,742	441,299	215,144	74,050	99,649	1,169,884	233,977
Sea bass, giant.....	327,854	438,021	289,619	208,697	338,697	1,602,888	320,578
Seabass, white.....	235,733	365,541	518,741	840,264	850,538	2,810,817	562,163
Yellowtail, California*.....	205,586	151,355	44,283	84,221	115,283	600,728	120,146
All others.....	114,208	230,372	139,473	115,498	91,979	691,530	138,305
Total.....	1,765,493	2,249,395	1,737,379	1,753,912	1,914,386	9,420,565	1,884,113

* An additional 94,494 pounds of yellowtail caught off Acapulco by a tuna vessel are not included.

TABLE 8
POUNDAGES OF MARKET FISH CAUGHT OFF MEXICO BY U.S. VESSELS AND DELIVERED TO CALIFORNIA PORTS, 1961-1965

TABLE 9
AVERAGE POUNDAGES OF PRINCIPAL MARKET FISH CAUGHT OFF MEXICO AND CALIFORNIA
IN RELATION TO AVERAGE CALIFORNIA LANDINGS
1961-1965

Species	Catch off Mexico	Percent total California landings	Catch off California	Percent total California landings	Total California landings
Barracuda, California.....	131,851	26.0	374,302	74.0	506,153
Grouper.....	224,938	100.0	-----	-----	224,938
Halibut, California.....	152,155	14.7	879,411	85.3	1,031,566
Rockfishes.....	233,977	2.3	9,521,181	95.3	9,984,990
Sea bass, giant.....	320,578	96.3	12,345	3.7	332,923
Seabass, white.....	562,163	56.5	433,653	43.5	995,816
Yellowtail, California.....	139,044* (120,146)†	79.3 (76.8)†	36,320	20.7 (23.2)†	175,364 (156,466)†

* Total catch off Mexico. In 1961, 94,494 pounds of yellowtail were caught off Acapulco by a tuna vessel.
† These figures based on Baja California catches only.

TABLE 9
AVERAGE POUNDAGES OF PRINCIPAL MARKET FISH CAUGHT OFF MEXICO AND CALIFORNIA IN RELATION TO AVERAGE CALIFORNIA LANDINGS 1961-1965

TABLE 10
PERCENTAGE OF CATCH BY AREA FOR THE PRINCIPAL MARKET FISH SPECIES TAKEN OFF THE WEST COAST OF MEXICO BY CALIFORNIA-BASED VESSELS *

Species	Percent of catch		
	0-9 miles	9-12 miles	Over 12 miles
Barracuda, California.....	100.0	-----	-----
Grouper.....	93.0	5.0	2.0
Halibut, California.....	100.0	-----	-----
Rockfishes†.....	100.0	-----	-----
Sea bass, giant.....	85.0	†	15.0
Seabass, white.....	100.0	-----	-----
Yellowtail, California.....	90.0	5.0	5.0

* Estimate made by Department biologists with personal knowledge of the fishery and from information obtained by interviewing fishermen.
† In years past, a fishery for rockfishes existed on Ranger Bank, northwest of Cedros Island. If this fishery should be re-established, part of the rockfish catch would occur in the 9-12 mile zone, and part would be taken over 12 miles from shore.
‡ Those few banks located within the 9-12 mile zone are rarely, if ever, fished for giant sea bass.

TABLE 10
PERCENTAGE OF CATCH BY AREA FOR THE PRINCIPAL MARKET FISH SPECIES TAKEN OFF THE WEST COAST OF MEXICO BY CALIFORNIA-BASED VESSELS

TABLE 11
AVERAGE (1961-1965) POUNDAGE AND VALUE BY ZONE OF THE PRINCIPAL MARKET FISH SPECIES TAKEN OFF THE WEST COAST OF MEXICO BY CALIFORNIA-BASED VESSELS

Species	0-9 miles		9-12 miles		Over 12 miles	
	Pounds	Value	Pounds	Value	Pounds	Value
Barracuda, California.....	131,851	\$20,569	-----	-----	-----	-----
Grouper.....	209,192	44,763	11,247	\$2,418	4,499	\$967
Halibut, California.....	152,155	34,996	-----	-----	-----	-----
Rockfishes.....	233,977	28,077	-----	-----	-----	-----
Sea bass, giant.....	272,491	43,871	-----	-----	48,087	7,742
Seabass, white.....	562,163	150,098	-----	-----	-----	-----
Yellowtail, California.....	108,132	10,056	6,007	559	6,007	559
Total.....	1,669,961	\$332,430	17,254	\$2,977	58,593	\$9,268

TABLE 11
AVERAGE (1961-1965) POUNDAGE AND VALUE BY ZONE OF THE PRINCIPAL MARKET FISH SPECIES TAKEN OFF THE WEST COAST OF MEXICO BY CALIFORNIA-BASED VESSELS

TABLE 12
NUMBER AND LENGTHS OF VESSELS LANDING MARKET FISH CAUGHT IN WATERS OFF MEXICO IN 1965

Length in feet					Total
10-20	21-30	31-40	41-50	51 and over	
1	1	28	17	2	49

TABLE 12
NUMBER AND LENGTHS OF VESSELS LANDING MARKET FISH CAUGHT IN WATERS OFF MEXICO IN 1965

TABLE 13
NUMBER AND NET TONNAGE OF VESSELS LANDING MARKET FISH CAUGHT IN WATERS OFF MEXICO IN 1965

Net tonnage				Total
1-3	4-15	16-70	Unknown*	
--	33	2	14	49

* It is possible one of these vessels (17 feet in length) might have a net tonnage that would fall in the 1-3 ton class. Twelve of the vessels are 30 to 40 feet in length and probably fall in the 4-15 ton class.

TABLE 13
NUMBER AND NET TONNAGE OF VESSELS LANDING MARKET FISH CAUGHT IN WATERS OFF MEXICO IN 1965

2.4.1.4. Rockfishes

A rockfish fishery exists at the present time in rocky areas from the border to south of Ensenada. Rockfish are also taken by vessels fishing farther south but usually as an incidental catch. In the past, a rockfish fishery existed on Ranger Bank northwest of Cedros Island.

The Baja California rockfish fishery annually contributes about 234,000 pounds, valued at \$28,000, to the California landings. While this is less than 3 percent of the State's total rockfish landings in weight, it represents almost 5 percent of the value. It also represents over 50 percent of the rockfish landings in San Diego.

2.4.1.5. Giant Sea Bass

The giant sea bass fishery off Baja California contributes 96 percent of the total California landings. During the period 1961 to 1965, the catch off Mexico by California-based vessels averaged over 320,000

pounds and had an annual value of about \$51,000 to the fishermen. This fishery extends from Point Santo Tomas to Cape San Lucas and occasionally into the Gulf of California. Eighty-five percent of the fish are caught within 9 miles of shore, and 15 percent are taken from banks that are over 12 miles from shore. The few fishing banks located in the 9–12 mile zone are rarely fished for this species.

2.4.1.6. White Seabass

This is the major species in the Baja California market fishery. The catch off Mexico annually averages over 562,000 pounds, is valued at over \$150,000, and comprises 56.5 percent of the California landings.

White seabass, along with giant sea bass, barracuda, and yellowtail, forms a complex of fishes that is fished in waters 3 to 25 fathoms deep along the west coast of Baja California from Point Santo Tomas to San Juanico Bay. Waters of this depth are characteristically within 9 miles of shore.

2.4.1.7. California Yellowtail

The Baja California fishery for yellowtail extends from Point Santo Tomas southward to Cape San Lucas and into the Gulf of California. Occasionally, yellowtail from further south off the coast of Mexico are landed in California; but these are usually caught by tuna vessels rather than those engaged in the market fishery. Most yellowtail catches off Baja California are made in conjunction with fishing activities for other species. Approximately 90 percent of the catch is made within 9 miles of shore, 5 percent within 9 to 12 miles of shore, and 5 percent in waters over 12 miles from shore (Table 10). The Baja California fishery provided over 76 percent of the California landings during the period 1961 to 1965 and contributed over \$11,000 annually to the State's fishermen.

During the mid-1950's, yellowtail catches were far greater than they are today because at that time, these fish were used for canning. Average landings for the period 1953–1958 were 1.3 million pounds. Cooler ocean temperatures off California during this period tended to keep the fish in the southern portion of their range so they were less available to California fishermen. At present, there is relatively little demand for canned yellowtail in the United States.

2.4.1.8. Pacific Bonito

Although now a minor constituent of the Baja California catch, bonito were once of considerable significance. As was the case with yellowtail, they were used mainly for canning, but demand for this species has been low in recent years. Bonito have been more abundant off California in the recent warm water years, and the local supply has generally been sufficient to meet consumer demands. Though not now significant as a market species, a potential exists for an increased fishery especially if the canned product obtains better reception.

2.5. RECREATIONAL FISHING BY U.S. CITIZENS OFF THE PACIFIC COAST OF MEXICO

Citizens of the United States have enjoyed the privilege of fishing under permit in the territorial waters of Mexico off the coast of Baja California for decades. Sport fishermen may be divided into three groups (which are not mutually exclusive) according to the type of vessel from which they fish. These groups include those who fish from: a) Partyboats which carry sportsmen at a standard fee on a regular schedule. These vessels usually do not enter Mexican ports; though a few which make extended trips may enter ports south of Ensenada; b) Charter boats which may or may not enter Mexican ports; and c) Private vessels of U.S. registry operating out of U.S. ports which may be cleared to operate out of Mexican ports.

This report is not concerned with (nor are data available to us regarding) U.S. citizens sportfishing out of Mexican ports on vessels of Mexican registry.

Most of the United States sport vessels for hire that fish the inshore waters of Mexico's west coast operate out of San Diego. This sportfishing industry has been in existence since the mid-1930's, and its operations have centered around the Coronado Islands. Generally speaking, these partyboats and charter boats make one-day trips and fish close to shore though some make extended cruises. In addition, a substantial number of private boat owners fish off the northern portion of Baja California in particular.

Catch data are excellent for partyboats, are more limited for charter boats, very limited for private vessels operating out of U.S. ports, and are non-existent for private vessels of U.S. registry operating out of Mexican ports.

2.5.1. California-Based Partyboat Fisheries off Baja California

Partyboats based in the San Diego area routinely participate in sportfishing activities off the coast of Baja California (Figure 6). The bulk of their activity is in close proximity to the Coronado Islands, which are represented by California Department of Fish and Game statistical area 916 (Figure 7). Some of these vessels, operating out of both San Diego and San Pedro, take limited numbers of anglers on longer trips which may extend the full length of the Baja California peninsula, into the Gulf of California, or to offshore islands (Guadalupe, Revilla Gigedos). These trips are on a scheduled basis and last approximately two weeks. Partyboats from California ports as far north as Santa Monica conduct albacore cruises in waters over 12 miles off the Baja California coast during the albacore season. These account for over 90 percent of the fish taken in waters represented by Fish and Game statistical area 910 (Figure 7).

2.5.1.1. Fishing Localities

The Department of Fish and Game has been collecting data on the California-based partyboat fishery off Baja California since 1936. Concerning partyboat licenses, Section 7923 of the California Fish and Game Code states, "the holder of a license shall keep a true record in the English language of all fish taken ..." As a result, the Department

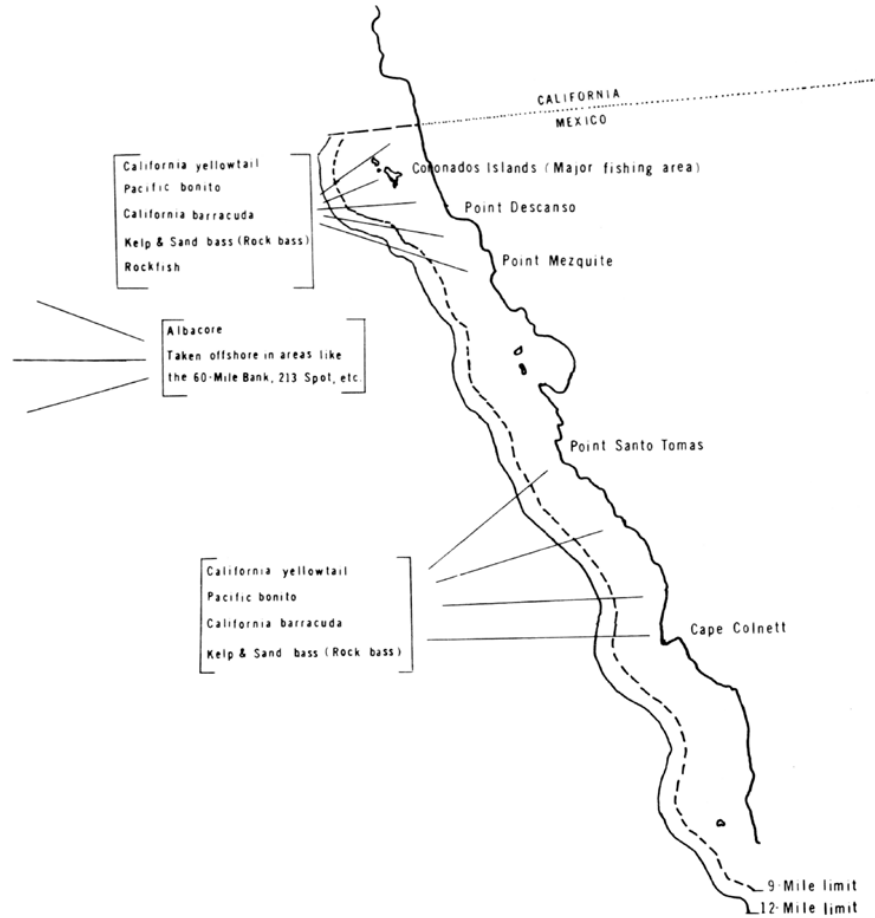


FIGURE 6. Principal partyboat fishing areas off Baja California used by California-based vessels.

FIGURE 6. Principal partyboat fishing areas off Baja California used by California-based vessels has excellent information about the partyboat catch off the coast of northern Baja California.

To gather fishery data, a grid of five statistical areas was established for the inshore area north of Mesquite Point and around the Coronado Islands (Figure 7). These areas are almost entirely within 9 miles of shore, and all but a negligible amount of fishing activity in them occurs within the 9-mile zone.

All other California-based partyboat fishing activity in waters off the west coast of Mexico is assigned to a general statistical area, 910. Most fishing occurs over 12 miles from shore; however, partyboats operating below Ensenada fish in both waters less than 9 miles and over 12 miles from land. They also fish the banks in the 9–12 mile zone, but our records do not reveal the extent of activity there. Nevertheless, we believe that the effort is relatively small in the 9–12 mile zone, and that the catch there is negligible when compared to the total catch in area 910. The catch within 9 miles of shore is undoubtedly greater than that in the 9–12 mile zone, but still is not of appreciable significance.

2.5.1.2. Partyboat Fleet

In 1965, 67 partyboats made at least one trip off Baja California. These vessels ranged in length from 25 to 85 feet and represented 13 different home ports (Table 14).

of the 67 boats, 31 fished only in area 910. These vessels were larger as a general rule and had a greater carrying capacity than the rest. Seven vessels fished only in waters off northern Baja California that are within 9 miles of shore. They provided sportsmen with one-day trips out of San Diego and concentrated their activities in the vicinity of the Coronado Islands. The remaining 29 fished both inshore and in area 910 (Table 15).

Since 1961, there has been a tendency for larger vessels to enter the fleet, and these operate primarily in area 910 (Table 16). This is due primarily to two things: the increased interest in fishing offshore for albacore, and the demand for extended trips down the west coast of Baja California, which the partyboat industry is supplying. This use of larger vessels is reflected in the number of anglers per boat-day that patronize the fishery (Table 17). Some of these larger vessels fish the inshore waters off northern Baja California when catches are good, and this is reflected by an increase in the number of anglers per inshore boat-day from 1961 to 1964. However, when the catch, particularly of yellowtail (Table 18), dropped off in 1965, the larger vessels did not visit these waters as much; and the number of anglers per boat day declined.

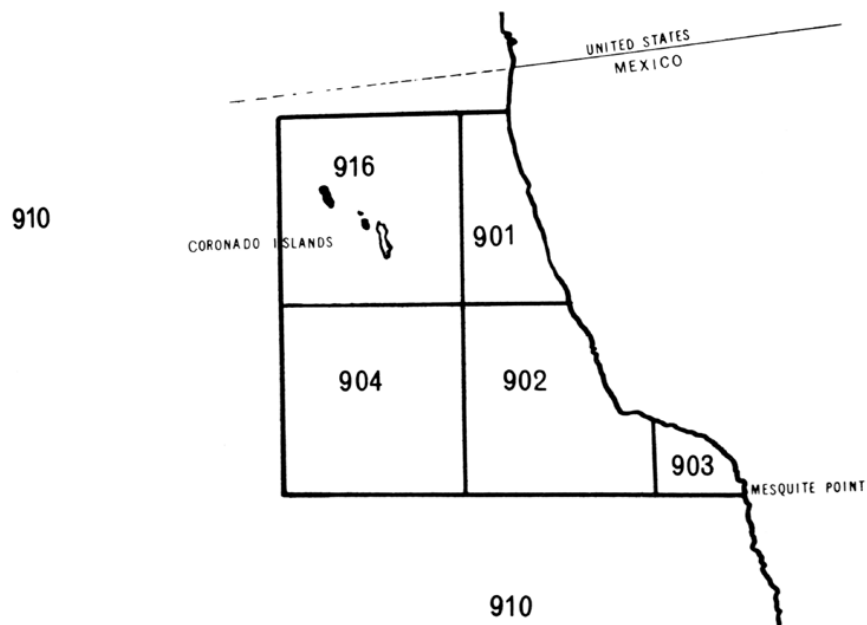


FIGURE 7. California Department of Fish and Game partyboat statistical areas off Baja California.

FIGURE 7. California Department of Fish and Game partyboat statistical areas off Baja California

TABLE 14
LENGTHS AND HOME PORTS OF CALIFORNIA-BASED PARTYBOATS OPERATING
IN WATERS OFF BAJA CALIFORNIA IN 1965

Length in feet							Total
21-30	31-40	41-50	51-60	61-70	71-80	Over 81	
1	11	23	10	12	5	5	67

Home port	Number of boats	Home port	Number of boats
Long Beach.....	6	Redondo Beach.....	1
Los Angeles.....	3	San Diego.....	32
Monterey.....	1	San Pedro.....	7
Newport.....	6	Santa Barbara.....	2
Oceanside.....	3	Terminal Island.....	1
Oxnard.....	1	Ventura.....	1
Port Hueneme.....	3		

TABLE 14
LENGTHS AND HOME PORTS OF CALIFORNIA-BASED PARTYBOATS OPERATING IN WATERS OFF BAJA CALIFORNIA IN 1965

TABLE 15
FISHING LOCATIONS OF CALIFORNIA-BASED PARTYBOATS OPERATING IN
WATERS OFF BAJA CALIFORNIA IN 1965

Partyboats which confined their activities to within 9 miles of the northern Baja California shore (Statistical areas 901, 902, 903, 904, 916)*.....	7
Partyboats fishing only in area 910†.....	31
Partyboats fishing both the inshore waters of northern Baja California and area 910.....	29
	67
Total number of partyboats fishing the inshore waters of northern Baja California within 9 miles of shore.....	36
Total number of vessels fishing in area 910†.....	61

* See Figure 7.

† Some of these vessels may have fished less than 12 miles from shore in waters south of Ensenada, Baja California.

TABLE 15
FISHING LOCATIONS OF CALIFORNIA-BASED PARTYBOATS OPERATING IN WATERS OFF BAJA CALIFORNIA IN 1965

TABLE 16
NUMBER OF CALIFORNIA PARTY BOAT ANGLERS FISHING WATERS OFF THE
COAST OF BAJA CALIFORNIA, 1961-1965

Year	Statistical areas*							Grand total§
	901	902	903	904	916	Total†	910‡	
1961.....	246	284	14	---	21,470	22,014	1,892	23,906
1962.....	104	189	69	120	20,706	21,188	11,582	32,770
1963.....	101	133	164	14	22,845	23,257	32,039	55,296
1964.....	897	102	333	108	27,459	28,899	37,897	66,796
1965.....	71	487	221	962	15,717	17,458	36,330	53,788
5-year average.....	284	239	160	241	21,639	22,563	23,948	46,511

* California Department of Fish and Game statistical areas (Figure 7).

† These anglers fished within 9 miles of the Baja California coast.

‡ The majority of these anglers fished for albacore in areas over 12 miles from shore; however, some of them fished within 12 miles of shore south of Ensenada.

§ A limited but undetermined number of these anglers fished in the 9-12 mile zone.

TABLE 16
NUMBER OF CALIFORNIA PARTY BOAT ANGLERS FISHING WATERS OFF THE COAST OF BAJA CALIFORNIA, 1961-1965

TABLE 17
AVERAGE NUMBER OF ANGLERS PER DAY ON CALIFORNIA-BASED PARTYBOATS
OPERATING OFF BAJA CALIFORNIA, 1961-1965

Year	Statistical areas 901, 902, 903, 904, 916			Statistical area 910		
	Boat days	Anglers	Anglers per boat day	Boat days	Anglers	Anglers per boat day*
1961.....	1,443	22,014	15.3	80	1,892	23.6
1962.....	1,300	21,188	16.3	464	11,582	25.0
1963.....	1,296	23,257	17.9	1,352	32,039	23.7
1964.....	1,487	28,899	19.4	1,507	37,897	25.1
1965.....	1,048	17,458	16.7	1,335	36,330	27.2

* The number of anglers per trip would be slightly greater than this, for some trips in area 910 may last several weeks.

TABLE 17
AVERAGE NUMBER OF ANGLERS PER DAY ON CALIFORNIA-BASED PARTYBOATS OPERATING OFF BAJA
CALIFORNIA, 1961-1965

2.5.1.3. Species Sought

The California-based partyboat fishery took an annual average of 192,000 fish, weighing about 1.5 million pounds, from waters off Baja California during the period 1961-1965 (Tables 18-20). Approximately 50 species were represented in the catch; however, fewer than 10 species or species groups contributed over 90 percent of the landings. The average annual catch within 12 miles was about 128,000 fish, weighing an estimated 466,000 pounds. Catches outside of 12 miles were 64,000 fish, weighing over 1 million pounds.

California yellowtail is the prime target of sport fishermen in the nearshore areas (within 12 miles of land) during the spring, summer, and fall; and the whole fishery is dependent to no small degree on the magnitude of the yellowtail run. Barracuda is also a highly esteemed species, and when the water temperature regime is favorable, these 2 species are sought during the winter months. Pacific bonito, kelp bass, and sand bass are available all year. Rockfish, while available all year, are fished primarily during the winter months when more desirable species are not present.

Rockfish are the major contributors to the inshore catch in terms of numbers (40,000 fish); and they, along with Pacific bonito, kelp and sand bass, California yellowtail, California barracuda, sculpin, Pacific mackerel, California halibut, and California sheephead, make up the bulk of the inshore catch.

The major attraction in the Baja California offshore waters is albacore. While a few albacore are taken within 9 miles of shore, most are taken over 12 miles from shore and comprise the bulk of the offshore catch. This fishery exists for a relatively short time each year, usually reaching its peak in July and August.

The partyboats that offer extended cruises down the Baja California coast and to offshore islands are usually in search of marlin, wahoo, giant sea bass, yellowtail, barracuda, and other large game fish.

2.5.1.4. Number of Anglers

The number of anglers that participated in the California-based partyboat fishery off Baja California increased considerably during 1961-1965. (Table 21)

The number fishing within 9 miles of the northern Baja California shore (statistical areas 901-904 and 916) averaged 22,563 annually.

There was a sharp increase in 1964 when fishing was exceptionally good and a sharp decrease in 1965 when fishing conditions were less favorable. Generally speaking, there is a slight upward trend.

The number of anglers fishing from partyboats in area 910 increased from 1,892 in 1962 to 37,897 in 1964. Their major objective is albacore, and interest in this species continues to grow. As long as oceanic conditions in these waters are favorable for albacore, the trend of increased numbers of partyboat anglers fishing this offshore area will continue.

TABLE 18
AVERAGE NUMBERS AND WEIGHTS OF FISH TAKEN OFF BAJA CALIFORNIA BY THE CALIFORNIA-BASED PARTYBOAT FISHERY, 1961-1965

Species	Average weight per fish	Average no. fish caught within 9 miles of shore*	Weight of average catch	Average no. fish caught in area 910†	Weight of average catch
Barracuda, California	4.9	8,438	41,346	767	3,758
Bass, kelp and sand	1.2	17,450	20,940	858	1,030
Bonito, Pacific	3.0	34,554	103,662	854	2,562
Bullet mackerel	1.5‡	---	---	4	6
Cabezon	2.0	99	198	>1	---
Croaker	0.7	10	7	---	---
Croaker, white	0.5	11	6	---	---
Croaker, yellowfin	0.6	14	8	---	---
Dolphinfish	12.0‡	---	---	96	1,152
Flatfish, miscellaneous	0.75	283	212	1	1
Flyingfish	1.5‡	---	---	>1	---
Grouper	18.0‡	---	---	27	486
Halibut, California	4.0	1,439	5,756	16	64
Hake, Pacific	2.0	3	6	---	---
Halfmoon	1.0	67	67	1	1
Jacks (Carangids)	15.0‡	---	---	35	525
Lingcod	8.0	290	2,320	11	88
Mackerel, jack	3.0	187	561	194	582
Mackerel, Pacific	1.2	2,078	2,494	938	1,126
Marlin	140.0	1	140	22	3,080
Opah	30.0‡	---	---	2	60
Opaleye	1.0‡	3	3	---	---
Perch	1.0	1	1	---	---
Rockfish	1.8	39,264	70,675	703	1,265
Sailfish	40.0‡	---	---	>1	---
Salmon	7.5	>1	---	---	---
Salmon, silver	7.0	>1	---	---	---
Sanddab	0.3	42	13	---	---
Sculpin	1.3	3,771	4,902	20	26
Sea bass, giant	60.0	22	1,320	75	4,500
Seabass, white	7.8	449	3,502	28	218
Shark	5.0	2	10	1	5
Sheephead, California	3.1	1,354	4,197	162	502
Sierra	3.0	---	---	3	9
Smelt	0.4	3	1	---	---
Snapper	5.0‡	---	---	9	45
Tuna, albacore	18.4	1,962	36,101	53,874	991,282
Tuna, bluefin	15.0‡	21	315	237	3,555
Tuna, skipjack	6.0‡	74	444	2,061	12,366
Tuna, yellowfin	18.0‡	>1	---	55	990
Wahoo	20.0‡	---	---	12	240
Whitefish, ocean	2.0	962	1,924	108	216
Yellowtail, California	12.0	13,578	162,936	2,420	29,040
Miscellaneous fish	1.74	1,389	2,417	274	601
Total	---	127,821	466,484	63,868	1,059,381

* California Department of Fish and Game statistical areas 901, 902, 903, 904, and 916 (Figure 7).
 † Catches in area 910 are mainly from waters beyond 12 miles from shore; however, there are some catches represented that were made within 12 miles of shore at various points along the Peninsula south of Ensenada.
 ‡ Estimates.

TABLE 18
AVERAGE NUMBERS AND WEIGHTS OF FISH TAKEN OFF BAJA CALIFORNIA BY THE CALIFORNIA-BASED PARTYBOAT FISHERY, 1961-1965

Partyboats making extended trips are becoming more popular and we expect the number of anglers patronizing them to increase in future years.

2.5.1.5. Value of the Baja California Partyboat Fishery to California

The California-based partyboat fishery off Baja California is of considerable economic importance to California and in particular to the San Diego area.

Using \$15 per day per angler as a base, the industry has an estimated annual gross income from fares alone of about \$700,000. This is a reasonable base figure, for the offshore and extended trips cost considerably more than this per day, while the shorter inshore trips off northern Baja California are on the order of \$10 per day.

The inshore segment of the partyboat fishery is a significant constituent of this industry. At \$10 per day, anglers using these areas paid over \$225,000 to the boat operators alone each year.

All these anglers purchase fishing equipment; fishermen from inland areas stay in motels, eat at restaurants, buy gasoline, etc. Considering the boat fares and these other expenditures, we feel it is very safe to say the Baja California partyboat fishery contributes well over \$1 million to the State's economy each year.

2.5.2. Charter Boat Fisheries off Baja California

The charter boat fleet is really a nebulous segment of the partyboat fleet because vessels that are partyboats on one trip may be charter boats on the next. The distinguishing characteristic between the two is how the vessels are "hired." In the partyboat operation, the angler buys space on the vessel for the trip and the captain of the boat usually decides where the boat will fish. When the angler "hires" the vessel for the trip, it is considered a charter boat operation. In this case, the angler has more to say about where the boat will fish.

Because of the obvious complications that would arise from trying to keep separate catch records for these two "fleets" and because there really is not pressing reason to do so, no effort is made to distinguish between their activities as far as catch data are concerned. The data presented in this report for the partyboat fishery therefore include catches made by charter boats.

2.5.3. Sportfishing From Private Vessels

Privately owned California-based sportfishing vessels fish waters off Baja California from the border to Cape San Lucas and into the Gulf of Mexico. Each year, an increasing number of pleasure boats cruise down the west coast of Baja California to the Cape and then up to La Paz or beyond. In varying degrees, these boats engage in sport fishing; however, data are not available as to the magnitude of their fishing activities or to the size of their catch except for northern Baja California in 1964.

In 1964, the California Department of Fish and Game conducted a "creel census" of private boats based in southern California. Data collected at San Diego and Mission Bay show an estimated 3,066 mandays spent during the year fishing within 9 miles of shore in statistical areas 901 and 916 (Table 22, Figure 7). Fish taken in significant numbers

included kelp bass, sand bass, white croaker, California halibut, California barracuda, white seabass, sculpin, and various species of rockfish. In addition, 7,323 man-days were spent fishing in waters over 12 miles from the coast for albacore and marlin (Table 23).

There was little or no fishing in the 9–12 mile zone.

TABLE 19
NUMBER OF FISH TAKEN BY PARTYBOAT FISHERMEN IN WATERS OFF BAJA CALIFORNIA
NORTH OF ENSENADA AND WITHIN NINE MILES OF SHORE

Species	1961	1962	1963	1964	1965	Total	5-year average
Albacore.....	479	1,337	715	1,950	5,328	9,809	1,962
Barracuda, California.....	8,780	1,318	9,822	13,906	8,364	42,190	8,438
Bass, kelp and sand.....	10,673	13,986	21,430	23,763	17,400	87,252	17,450
Bonito, Pacific.....	31,520	19,599	22,808	72,853	25,992	172,772	34,554
Mackerel, Pacific.....	818	4,192	1,121	1,108	3,149	10,388	2,078
Rockfishes.....	57,569	43,750	35,613	28,317	31,071	196,320	39,264
Sculpin.....	2,265	2,473	6,181	3,740	4,197	18,856	3,771
Sheephead, California.....	1,130	788	1,266	977	2,609	6,770	1,354
Yellowtail, California.....	12,084	10,735	19,929	19,672	5,472	67,892	13,578
Incidental-caught fish*	5,007	4,987	4,866	6,609	5,407	26,876	5,372
Total.....	130,325	103,165	123,751	172,895	108,989	639,125	127,821

* Includes California halibut, ocean whitefish, white seabass, jack mackerel, lingcod, and others (Table 18).

TABLE 19
NUMBER OF FISH TAKEN BY PARTYBOAT FISHERMEN IN WATERS OFF BAJA CALIFORNIA NORTH OF
ENSENADA AND WITHIN NINE MILES OF SHORE

TABLE 20
NUMBER OF FISH TAKEN BY PARTYBOAT FISHERMEN IN WATERS OFF BAJA CALIFORNIA
IN STATISTICAL AREA 910 *

Species	1961	1962	1963	1964	1965	Total	5-year average
Albacore.....	3,813	36,846	85,424	79,058	64,231	269,372	53,874
Barracuda, California.....	326	511	315	1,618	1,066	3,836	767
Bass, kelp and sand.....	70	175	1,278	1,435	1,333	4,291	858
Bonito, Pacific.....	---	850	968	755	1,698	4,271	854
Mackerel, Pacific.....	---	---	3,556	780	352	4,688	938
Rockfishes.....	880	107	222	1,174	1,131	3,514	703
Tuna, skipjack.....	---	---	5,181	3,404	1,722	10,307	2,061
Yellowtail, California.....	245	36	4,029	1,100	6,691	12,101	2,420
Incidental-caught fish†	80	449	1,209	1,805	3,442	6,985	1,393
Total.....	5,414	38,974	102,182	91,129	81,666	319,365	63,868

* This is a California Department of Fish and Game statistical area. Catch data for Area 910 (Figure 7) mainly represent catches made in waters over 12 miles from the coast of Mexico; however, they do present data about the few catches made within 12 miles of shore south of Ensenada, Baja California.

† Includes jack mackerel, California sheephead, and marlin.

TABLE 20
NUMBER OF FISH TAKEN BY PARTYBOAT FISHERMEN IN WATERS OFF BAJA CALIFORNIA IN STATISTIC-
AL AREA 910

TABLE 21
PARTYBOAT FISHING EFFORT IN WATERS OFF BAJA CALIFORNIA
EXPRESSED IN BOAT DAYS, 1961-1965

Year	Statistical area*							Grand total§
	901	902	903	904	916	Total†	910‡	
1961.....	17	23	1	---	1,402	1,443	80	1,523
1962.....	7	10	4	5	1,274	1,300	464	1,764
1963.....	4	7	10	1	1,274	1,296	1,352	2,648
1964.....	45	7	23	4	1,408	1,487	1,507	2,994
1965.....	4	21	15	29	979	1,048	1,335	2,383
5-year average.....	15	14	11	8	1,267	1,315	948	2,262

* California Department of Fish and Game statistical areas (Figure 7).
† This fishing effort was expended within 9 miles of the Baja California coast.
‡ This fishing effort was expended mainly on albacore in waters over 12 miles from shore; however, there was a small but undetermined amount expended within 12 miles of shore south of Ensenada.
§ Fishing effort expended in the 9-12 mile zone, while undetermined, is negligible.

TABLE 21
PARTYBOAT FISHING EFFORT IN WATERS OFF BAJA CALIFORNIA EXPRESSED IN BOAT DAYS, 1961-1965

TABLE 22
ESTIMATED SPORTFISHING EFFORT AND CATCH DURING 1964 BY UNITED STATES
PRIVATE VESSELS FISHING WATERS WITHIN NINE MILES OF
NORTHERN BAJA CALIFORNIA SHORES

Time period	Number of days sampled	Boat days	Man days	Man hours	Number of fish caught
January-February					
Mooring sites.....	0	---	---	---	---
Launching sites.....	3	0	0	0	0
Total.....	3	0	0	0	0
March-April					
Mooring sites.....	10	0	0	0	0
Launching sites.....	8	29	73	741	543
Total.....	18	29	73	741	543
May-June					
Mooring sites.....	9	258	1,029	8,341	2,011
Launching sites.....	6	54	108	938	513
Total.....	15	312	1,137	9,279	2,524
July-August					
Mooring sites.....	10	0	0	0	0
Launching sites.....	9	216	502	3,506	144
Total.....	19	216	502	3,506	144
September-October					
Mooring sites.....	10	442	1,083	8,835	122
Launching sites.....	8	82	271	2,159	696
Total.....	18	524	1,354	10,994	818
November-December					
Mooring sites.....	9	0	0	0	0
Launching sites.....	7	0	0	0	0
Total.....	16	0	0	0	0
Grand total.....	89	1,081	3,066	24,520	4,029

TABLE 22
ESTIMATED SPORTFISHING EFFORT AND CATCH DURING 1964 BY UNITED STATES PRIVATE VESSELS
FISHING WATERS WITHIN NINE MILES OF NORTHERN BAJA CALIFORNIA SHORES

TABLE 23
ESTIMATED SPORTFISHING EFFORT AND CATCH DURING 1964 BY UNITED STATES
PRIVATE VESSELS FISHING WATERS OVER 12 MILES FROM THE
SHORES OF NORTHERN BAJA CALIFORNIA *

Time period	Number of days sampled	Boat days	Man days	Man hours	Number of fish caught
July-August					
Mooring sites	10	1,162	5,750	164,512	2,093
Launching sites	9	533	1,573	16,558	853
Total	19	1,695	7,323	181,070	2,946

* Fishing effort expended in the 9 to 12 mile zone is negligible.

TABLE 23
ESTIMATED SPORTFISHING EFFORT AND CATCH DURING 1964 BY UNITED STATES PRIVATE VESSELS
FISHING WATERS OVER 12 MILES FROM THE SHORES OF NORTHERN BAJA CALIFORNIA

2.6. FEES

Commercial vessels fishing in the west-coast territorial waters of Mexico do so under the terms of a Mexican permit issued pursuant to the Industrial Fishery Tax Law of Mexico. Permits are issued on a single-trip basis, and may be obtained at Ensenada, Baja California, or at Mexican offices maintained in San Pedro and San Diego, California. The San Diego office opened in 1916, and the San Pedro office in 1917 (Coleman 1923). Cost and duration of a permit depend upon the size (net tonnage) of the vessel concerned (Table 24). In addition, boats and nets must be registered, and individual fishermen must have credential cards.

Recreational fishermen carried on partyboats pay 12 pesos (96 cents) per day; this license fee is included in the price of the ticket. Each partyboat pays in addition an annual boat license fee of \$1 per net ton, and each landing pays an annual fee based upon the volume of their business. For the larger San Diego landings this fee has been on the order of \$750 in recent years. Boats making trips of more than 24 hours duration also pay a consular fee of \$16. Individual U.S. fishermen can buy a three-day license for 6 pesos (48 cents), a 30-day license for 12 pesos (96 cents), a 90-day license for 25 pesos (\$2.00), or an annual license for 50 pesos (\$4.00) (Com. Nac. Consult. de Pesca, 1967).

A recent Mexican publication, (Secretaria de Industria y Comercio, 1966) gives details on permits issued during the period 1959–1965. The material which follows is abstracted from this document; therefore, it includes data pertaining to the yellowfin-skipjack fishery as well as those we have discussed.

The number of fishing permits issued by the three control offices declined between 1959 and 1964 (Table 25), this reflected particularly in the number issued to larger vessels; however, there was an increase in the number issued to small vessels (Table 26). The total number of authorizations has also declined. These include fishing permits (despachos via la pesca), boat registrations (registro de embarcaciones), net registrations (registro de redes), and credential cards (tarjetas credenciales). These declines reflect the volume and value of the total catch in Mexican waters by U.S. west coast fishermen. Catches have dropped over the years in tonnage, value, and percentage of the total Mexican catch from 45,000 metric tons (26.0%), worth 137 million pesos (21.3%) in 1959 to 11,900 metric tons (5.6%), worth 36 million

pesos (4.7%) in 1965. The peak year for U.S. fishermen was 1960 (64,000 metric tons, 195 million pesos).

National fisheries are steadily growing both in total catch and in relative proportion of the catch. U.S. catches remain substantial even though the quantity is less. How much of the decrease can be attributed to the cost of permits is an open question. Some tuna boat operators say they would purchase licenses if they cost less so that they could enter territorial waters if they wished. Some feel a flat fee annual license would actually generate more income for Mexico.

The permits are expensive (the average tuna boat permit issued during 1960–1966 cost over \$1,200 according to the American Tunaboat Association), and tuna vessels tend not to buy unless they are quite sure they will have to fish in Mexican waters to insure a successful trip. Market boats and inshore sportfishers, on the other hand, have no alternative but to obtain permits if they wish to fish off Mexico.

There is no breakdown available of sportfishing permits by national origin, since the "authorizations" for sport fishing issued to both nationals and foreigners are combined in the Mexican publication. These totaled 135,000 in 1959, dropped to 79,000 in 1961 and since then have risen, reaching 132,000 in 1965.

2.7. RESULT OF THE NEGOTIATIONS

The material presented so far includes all that prepared in August 1967 as MRO Reference Number 67–22, and which was distributed to members of the United States delegation prior to the second-round negotiations held in Mexico City 11–19 September 1967. These negotiations culminated in an agreement which formed the basis for an exchange of notes (as opposed to a formal treaty) between the two governments. The agreement covers these points with respect to west coast fisheries for the five years beginning 1 January 1968 (the section of the Mexican law cited in the Introduction specifically limits foreign fishing in the Mexican exclusive fishing zone to this time period):

1. U.S. fishermen can continue to fish in waters 9 to 12 miles off Mexico for albacore, yellowfin, bluefin, skipjack, thread herring, white sea bass, giant sea bass, rockfishes, California halibut, yellowtail, barracuda, groupers, "and such other species as are commonly taken incidentally in fishing for the above-mentioned species," and for anchoveta, northern anchovy, and Pacific sardine as tuna bait only.

2. The total volume of these species to be taken commercially in the 9–12 mile zone during the 5 years is not to exceed the total catch made by U.S. vessels in the five-year period 1963–1967.

3. U.S. sport fishermen can continue to fish in the zone for the five-year period without reference to previous catch levels.

4. Reciprocally, Mexican vessels can fish in waters 9 to 12 miles off California "where fishing vessels of Mexico have carried on fishing traditionally and in a sustained manner" up to a level not to exceed their total catch in that zone during the 1963–67 period.

5. Vessels and gear employed by one country in the exclusive zone of the other must be of the same type as those used in 1963–1967 and must be legal in that country.

The agreement provides further for the necessary exchange of data to substantiate each nation's operations in the 9–12 mile zone of the

TABLE 24
FEEs PAID TO MEXICO BY U.S. COMMERCIAL FISHERMEN FOR "FISHERY CLEARANCE"
DOCUMENTS (VIA LA PESCA) FOR FISHING PRIVILEGES IN THE
TERRITORIAL WATERS OF MEXICO

Vessel net tonnage	Period (Days)	Charge per net ton		25% Surcharge* (Dollars)	Total per net ton (Dollars)
		Pesos	Dollars		
1- 3 tons.....	10	80.50	\$ 6.708	none	\$ 6.708
4- 15 tons.....	25	193.50	16.125	none	16.125
16- 70 tons.....	50	210.00	17.500	\$4.375	21.875
71-100 tons					
Seiner.....	70	190.00	15.833	3.958	19.791
Bait boat.....	70	170.00	14.167	3.542	17.709
Over 100 tons (Feb. 20-Nov. 15)					
Seiner.....	90	175.00	14.583	3.646	18.229
Bait boat.....	90	150.00	12.500	3.125	15.625
Over 100 tons (Nov. 16-Feb. 19 following year)					
Seiner.....	90	85.00	7.083	1.771	8.854
Bait boat.....	90	80.50	6.708	1.677	8.385

* This surcharge enables boats to buy their licenses at Mexican offices in California (San Pedro and San Diego) rather than to enter a Mexican port.

ADDITIONAL CHARGES

- A. Annual boat registration: 15.00 pesos (\$1.25) per net ton.
- B. Net fee: 0.55 pesos (\$.046) per meter of length.
- C. Identification: 12.00 pesos (\$1.00) per fisherman.
- D. Inspection fee: \$5 to \$15 for inspection on return to a U.S. port.

SOURCE: Based on document prepared May 1967 for U.S.-Mexican Fishery Negotiations, Washington, D.C., May 1967. Data from Mexican Fish and Game office, San Pedro, Fishermen's Cooperative Association, San Pedro, and the Fishery Tax Law of Mexico (Com. Nac. Consult. de Pesca, 1967).

TABLE 24
FEEs PAID TO MEXICO BY U.S. COMMERCIAL FISHERMEN FOR "FISHERY CLEARANCE" DOCUMENTS
(VIA LA PESCA) FOR FISHING PRIVILEGES IN THE TERRITORIAL WATERS OF MEXICO

TABLE 25
COMMERCIAL FISHING PERMITS ISSUED BY MEXICO THROUGH WEST COAST
CONTROL OFFICES TO U.S. VESSELS, 1959-1965 *

Year	Total	Ensenada	San Diego	San Pedro
1959.....	661	254	186	221
1960.....	718	280	190	248
1961.....	605	183	256	166
1962.....	633	151	358	124
1963.....	546	103	331	112
1964.....	441	86	273	82
1965.....	480	134	286	60

* Source: Secretaria de Industria y Comercio, 1966; Table II-11.

TABLE 25
COMMERCIAL FISHING PERMITS ISSUED BY MEXICO THROUGH WEST COAST CONTROL OFFICES TO
U.S. VESSELS, 1959-1965

TABLE 26
NET TONNAGE OF VESSELS ISSUED PERMITS THROUGH WEST COAST
CONTROL OFFICES, 1959-1965 *

Net tonnage	1959	1960	1961	1962	1963	1964	1965
3 or less.....	49	47	111	142	83	114	117
4- 15.....	89	96	140	251	243	173	162
16- 70.....	82	62	57	90	69	45	99
70-100.....	244	249	154	84	68	56	44
Over 100.....	197	264	143	66	83	53	58
Total.....	661	718	605	633	546	441	480

* Source: Secretaria de Industria y Comercio, 1966; Table II-10.

TABLE 26
NET TONNAGE OF VESSELS ISSUED PERMITS THROUGH WEST COAST CONTROL OFFICES, 1959-1965

other during 1963–1967, and for an annual review of operations conducted under the agreement.

In essence, U.S. commercial fishermen can operate off the west coast of Mexico for the period 1968–1972 much as they have in the past: under permit (via la pesca) in territorial waters, and without any special permit up to the total catch level of 1963–1967 in the contiguous exclusive fishery zone. Sport fishing operations are unchanged in-shore and there is no limitation on fishing intensity in the 9–12 mile zone.

The question of a revised permit system in Mexican territorial waters was discussed informally, but, since this is a matter of internal Mexican law, received no official consideration during the negotiations. Existing Mexican regulations thus continue to apply (Table 24).

Both delegations recognized the increasing need for joint cooperative efforts directed toward research on and conservation of the many living marine resources of common concern. A working group, of which the senior author was a member, recommended and the delegations approved an annex to the formal report which calls for, with respect to the Pacific, a meeting at the earliest convenient date of appropriate officials and scientists of the two nations to exchange information and develop coordinated programs of research and management with special respect to anchovies, sardines and hake.

2.8. REFERENCES

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APPENDIX A

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APPENDIX A NAMES OF SPECIES BAJA CALIFORNIA FISHERIES

Common names	Scientific names	Common names	Scientific names
Anechoveta.....	<i>Cetengraulis mysticetus</i>	Perch.....	Members of family Embiotocidae
Anechovy, northern.....	<i>Engraulis mordax</i>	Pompano, Pacific.....	<i>Palometa simillima</i>
Barracuda, California.....	<i>Sphyrna argentea</i>	Sablefish.....	<i>Anoplopoma fimbria</i>
Bass, kelp.....	<i>Paralabrax clathratus</i>	Sailfish.....	<i>Istiophorus greyi</i>
Bass, sand.....	<i>Paralabrax nebulifer</i>	Salmon.....	<i>Oncorhynchus</i> spp.
Bonito, Pacific.....	<i>Sarda chiliensis</i>	Salmon, silver.....	<i>Oncorhynchus kisutch</i>
Cabezon.....	<i>Scorpaenichthys marmoratus</i>	Sanddab.....	<i>Citharichthys sordidus</i>
Croaker.....	Members of family Sciaenidae	Sardine, Pacific.....	<i>Sardinops caerulea</i>
Croaker, white.....	<i>Genyonemus lineatus</i>	Sargo.....	<i>Anisotremus davidsoni</i>
Croaker, yellowfin.....	<i>Umbrina roncador</i>	Sculpin.....	<i>Scorpaena guttata</i>
Dolphinfish.....	<i>Coryphaena hippurus</i>	Seabass, white.....	<i>Cynoscion noblis</i>
Flatfish.....	Members of families Pleuronectidae, Bothidae, and Cynoglossidae	Sea bass, giant.....	<i>Stereolepis gigas</i>
Flyingfish.....	<i>Cypselurus</i> spp.	Shark.....	Various species
Grouper.....	<i>Mycteroperca</i> spp.	Sheephead, California.....	<i>Pimelometopon pulchrum</i>
Halibut, California.....	<i>Paralichthys californicus</i>	Sierra.....	<i>Scomberomorus sierra</i>
Hake, Pacific.....	<i>Merluccius productus</i>	Skate.....	<i>Raja</i> spp.
Hallmoon.....	<i>Merluccius californiensis</i>	Smelt.....	Members of family Atherinidae
Herring, thread.....	<i>Opisthonema</i> spp.	Snapper.....	Members of family Lutjanidae
Jacks.....	Members of family Carangidae	Sole.....	Various flatfish
Lingcod.....	<i>Ophiodon elongatus</i>	Swordfish.....	<i>Xiphias gladius</i>
Mackerel, bullet.....	<i>Auzis</i> sp.	Tuna, albacore.....	<i>Thunnus alalunga</i>
Mackerel, jack.....	<i>Trachurus symmetricus</i>	Tuna, bluefin.....	<i>Thunnus thynnus</i>
Mackerel, Pacific.....	<i>Scorber diego</i>	Tuna, skipjack.....	<i>Euthynnus (Katsuwonus) pelamis</i>
Marlin.....	<i>Makaira audax</i>	Tuna, yellowfin.....	<i>Thunnus albacares</i>
Opah.....	<i>Lampris regius</i>	Wahoo.....	<i>Acanthocybium solandri</i>
Opaleye.....	<i>Girella nigricans</i>	Whitefish, ocean.....	<i>Caulatilius princeps</i>
		Yellowtail, California.....	<i>Seriola dorsalis</i>

printed in CALIFORNIA OFFICE OF STATE PRINTING

Δ76038—800 11-67 3,500

NAMES OF SPECIES BAJA CALIFORNIA FISHERIES