STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME
BUREAU OF MARINE FISHERIES
The Commercial Fish Catch of California For the Year 1950 with A Description of Methods Used in Collecting and Compiling the Statistics

FISH BULLETIN No. 86

By
the Staff of the
BUREAU OF MARINE FISHERIES
1952

FOREWORD

This publication represents the work of the entire statistical unit. Every individual has contributed something to its compilation. While it is not possible to extend specific credit to all concerned, the statistical unit acknowledges gratefully the loyal and consistent help of all the marine wardens. Without their unfailing cooperation in the enforcement of the system, it could not function.

The text was written jointly by several staff members. Some contributed an entire section, while others contributed portions which are distributed throughout the whole. For this reason it is not possible to assign authorship to any single section. Equal credit goes to the following:

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INTRODUCTION

The purpose of this bulletin is to present with the current statistics a record of the changes that have been made in the forms and in the routine of collecting and processing the statistics of California's fish catch. While these changes in themselves are often trivial, they are nonetheless of vital importance in using and interpreting the past statistical record, and it is imperative to have a historical record of such changes and the dates they took effect.

The statistical unit of the California Bureau of Marine Fisheries has grown with the fishing industry. Since the publication in 1935 of Fish Bulletin No. 44, describing the statistical forms and procedures, the California fishing industry has maintained its total landings while the value of the catch has increased sixfold. The number of processing plants has increased from 90 to 154, and there are now 528 licensed wholesale fish dealers in the State. The number of registered fishing boats is now 6,103, as compared with 2,453 in 1935. A comparable increase is apparent in every phase of the industry.

The basic system of record gathering has not changed from that initiated over 30 years ago. Today, as then, the foundation of our statistical system is the individual fish receipt made out by the dealer as a legal record of the purchase of each load of fish from the fisherman. The triplicate copy of this receipt, known as the "pink ticket," is the State's record of this original landing. The face of this receipt has changed slightly. Space for information that has proved of little importance has been reassigned to yield data that experience has shown to be of greater value. Other secondary changes have been made and are described herein. The various forms in current use are reproduced in these pages.

The trawling industry for bottom fish has in many ways been revolutionized, and this has resulted in a change in the trawler logs to meet these changed conditions. The fleet of trawlers has grown many fold, and extended its range of operations. State boundaries no longer define its field of activity. Catches of fish are frequently made in the waters of one state and delivered to dealers in another.

This has necessitated an extension of the block areas of origin, and in making this extension the conservation agencies of the northwest states have been considered and consulted. The mutual interests of the coastal states and their common fishery resources were recognized in 1947 with the formation of the Pacific Marine Fisheries Commission, which now coordinates the research and regulatory efforts of the three states.

Elsewhere the horizon has expanded. Imports of frozen fish for domestic processing have come or are coming from the entire Pacific and from the Atlantic Coast. Frozen tuna to be canned in California, has come in recent years from the central Pacific, from Australia, from the Atlantic Coast and extensively from Japan and Peru. Vessels of the California fishing fleet may now be seen off the coasts of South America. To record these origins in the statistical record the block areas of origin have been extended to cover the Pacific.

To handle the vastly increased volume of data, the mechanical units have grown in complexity and number. The tabulating machine of 1931 has been replaced by two modern and improved units, each one of which has far greater capacity and flexibility than the original model. The punching of the entire state-wide record is now done at the Terminal Island headquarters, instead of in the regional offices. While this procedure sacrifices the advantages discussed in the earlier bulletin, the volume of the record and the limited staff in the field offices makes this change a necessity.

In the interval since 1935, there has been a phenomenal increase in marine sport fishing. Catering to this recreation, a large industry has arisen. In 1950, 972 licensed fishing vessels operated, carrying pleasure fishermen on daily cruises to local fishing grounds along the entire California coast. The aggregate of this sport catch is large, and in the case of certain species exceeds the commercial catch. To approximate the magnitude of this catch, by species, daily trip reports are collected from each boat and the records compiled by the statistical unit. The volume and kind of live bait used by this fleet is likewise reported and compiled.

With the growth and dispersion of the fishing industry the statistical unit progressively lost touch with activities in the field. It became increasingly difficult to supply missing information on the tickets and to interpret the written record in the light of changing conditions in the field. While the wardens of the Bureau of Patrol were always ready to assist in this work, much of it was educational rather than enforcement, requiring a knowledge of the underlying need of specific data. For this reason a biologist was assigned to the statistical unit in 1949. His duties were to educate all dealers, and particularly the noncooperative and negligent ones, as to the biological information requested on the tickets; to investigate the biological aspects of ambiguous information on the tickets, and to keep the statistical unit informed of changing practices and conditions in the industry. As a result of such work there was a great improvement in the record. Most of the work was done in Southern California, where the man was stationed, but fairly regular trips were made to Northern California where problems were more numerous and more pressing. Eventually a second man was assigned to the north in the summer of 1950. An immediate improvement in the northern record was apparent. However, it was difficult to retain personnel in these positions, and in January, 1951, with the transfer of one man, we were again reduced to one field man for the entire State. Such is the present status. Close contact between the statistical unit and the industry is essential, but an adequate solution to the problem of maintaining this contact has not yet been found.

The functions of the statistical unit were materially increased in 1949. Up to that date our work was primarily concerned with the fish receipts and subsidiary problems related to them. All legally required reports concerning the production of the industry and all tax matters were handled separately at the department's administrative office in San Francisco.

This separation of catch figures from production figures, though basically illogical, worked satisfactorily for a period of years, until the

growth of the industry introduced mounting complexities that necessitated change. Meanwhile the industry itself began to appreciate the need of complete and detailed production figures which were properly related to the corresponding catch figures. Therefore in 1949 the responsibility of collecting and compiling the records of production was transferred to the statistical unit, and has since then become an integral part of our work. Both the catch and production records have profited by this merger. The two records are, in reality, complementary, and the comparison of the two frequently supplies information and explanations not apparent in the one alone. The fusion of the two completes the statistical picture by showng the volume of the catch and the detailed production from this catch.

The function of the statistical unit is to collect, process and interpret the statistics of the several fisheries. The measure of our success is the degree of accuracy and completeness of the record, and the productive use to which this is put. In the following pages specific problems and procedures for gathering and processing the data are discussed, and the attempt made to explain how the statistical unit has kept pace with a changing and expanding industry.

The scope and complexity of the task of gathering and compiling fisheries statistics has until recently absorbed our full attention. It was long ago realized that we were not utilizing our statistics fully in fisheries management. In 1949 the problem was extensively discussed and a decision reached to assign personnel to the analysis of the figures. In January, 1950, an experienced biologist was delegated to the task of catch analysis. However it was not until 1951 that he was sufficiently freed of other duties to devote much time to this. The work since then has been directed toward a study of the basic relationship between catch and effort. In this relationship lie many of the answers to the problem of intelligent management.

1. COMMERCIAL FISH RECEIPTS

Records of the commercial fish catch go back to 1872. The annual catches, partly estimated, were published in 1879 in the Report of the Commissioners of Fisheries of the State of California. Surveys of the San Francisco markets were made again in 1885 and 1886, and the monthly catch by species thus obtained, and estimates were made of the landings at San Diego and Los Angeles.

In 1909 a law was enacted requiring a license to fish commercially in California. In 1911 another law required wholesale dealers to obtain a license and to keep records of their purchases. This law specified that the record should contain the weight and kind of fish purchased, the date of the transaction and the name of the person from whom the fish was bought. This record was to be kept in books which were to be open to inspection by state fish and game deputies who periodically visited the dealers. These records of the commercial fish catch constitute the beginnings of our statistical system.

Four years later a change was made. In 1915 the wholesale dealers were required to submit upon forms furnished by the State Fish and Game Commission a monthly statement showing the amount of each species taken during the preceding month. However, it was not until 1917 that the basis of the present system of record gathering was inaugurated. In that year legislation was enacted requiring every wholesale dealer or processor of fish to make out, at the time of purchase, a receipt in duplicate for the fish purchased, showing the date, name of fisherman, weight in pounds of each variety, and the price per pound. A signature was required on each receipt. The original was given to the fisherman and the duplicate copy was the dealer's record. The latter was to be held for six months, and from these duplicates the State's statistics were obtained.

This legislation changed the required record-keeping from a set of books to individual receipts of transactions. With one modification, this is the present system. However, the one modification is of fundamental importance. The legislation of 1917 provided no original record for the State. This deficiency was corrected in 1919, when the required receipt system was expanded to include a triplicate copy, which, as the State's property, was to be picked up by a fish and game warden. The required fish receipt books were supplied, gratis, by the State, and from the beginning, the original has been white, the duplicate yellow and the State's triplicate copy pink. Thus originated the term "pink ticket."

According to Scofield (1948) the 1919 law was anticipated, and the triplicate receipt system was put into effect in Southern California about July, 1918. At Monterey it was inaugurated about January, 1919, while at San Francisco and northward the triplicates were not required until about July 1, 1919, when the law went into effect.

The system begun in 1917 and perfected in 1919 has withstood the test of time and remains basically unchanged today. It has provided the State in this interval with the most detailed and accurate record of fish

catches to be found anywhere. Minor changes have been made. Prior to 1933, the pink tickets were collected periodically by the local wardens. In that year, however, additional legislation required the dealers to send in the triplicate copies on the first and sixteenth of each month. The purpose of this provision was to strengthen law enforcement, for it thus became a violation of the code to withhold from the State any fish receipts.

In the same year (1933) the individual dealers were protected by an important piece of legislation. This provided that the record obtained from individual dealers was not a public record. It provided that statistics should be published in summary form, in such manner as would not divulge the business of an individual dealer or concern. This provision has been scrupulously observed, with the consequence that the industry now submits with confidence detailed and accurate records to the Department of Fish and Game.

Another minor change was made in 1950. To meet a variety of problems, and to accommodate the industry, a fourth copy was added to all books. This fourth copy is orange in color. Many dealers employ agents, or operate regional branch offices. In such cases the accounts are kept at the headquarters or main office of the company. Heretofore the agent or regional office making a purchase from a fisherman has eventually sent the pink ticket to his main office to be entered in the company's books. This delayed the receipt of the pink ticket by the Department of Fish and Game, and created innumerable minor difficulties. The fourth copy has solved these problems, and has been appreciated and extensively used, especially by the northern dealers. Now branch offices and agents can retain the fourth (orange) copy for their own records and transmit the yellow dealer's copy to headquarters for accounting. Likewise in the transport of fish by truck, the fourth copy is frequently used as a bill of lading.

While there is basically only one fish receipt, this is issued in three different forms. Figures 1, 2 and 3 illustrate the three. Note that the information requested on each is essentially the same. In fact the upper portion of the three is identical. The differences in the forms are in size, and relative space and arrangement for recording the poundages, etc., of the purchase.

Figure 1 shows the short market form of fish receipt. Generally a boat delivering to a wholesale market has from one to a half dozen species of fish in relatively small quantities. Hence a single entry for each species generally suffices, and a 4" x 4#" ticket has proved adequate in size.

THIS COPY FOR FISHERMAN

CALIFORNIA DIVISION OF FISH AND GAME

HOLLYWOOD MARKET 2462-201 CRESCENT CITY

NAME OF DEALER

PLACE WHERE FISH FIRST LANDED Trinidad

DATE 9-9 1951 GEAR Traps

BOAT NAME Mary Anne F & G NO. 5321

FISHERMAN Martin Marks

(OR DEALER FROM WHOM FISH PURCHASED)

WHERE WERE FISH CAUGHT? GIVE BLOCK NO. 133

VARIETY	WEIGHT	PRICE	AMOUNT	
Crabs	220	20	44	00

No. M 63450 Rec'd By L. A. S. ®

FIGURE 1. The short market ticket. This form is used by the majority of wholesale fish dealers buying market fish from fishermen.

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Figure 2 shows the long market, or trawler receipt, which is identical with the short form, but provides in a ticket of 4" x 7#" more space for the record of purchase. This is needed because the trawlers in general catch a large variety of fish.

THIS COPY FOR FISHERMAN

CALIFORNIA DIVISION OF FISH AND GAME

STAR FISHERIES 2345-223 FORT BRAGG

NAME OF DEALER

PLACE WHERE FISH FIRST LANDED Fort Bragg

DATE 10-10 19 51 GEAR Drag

BOAT NAME Anna F. & G. No. 2047

FISHERMAN Carl Caruso
(OR DEALER FROM WHOM FISH PURCHASED)

WHERE WERE FISH CAUGHT? GIVE BLOCK NO. 257

VARIETY	WEIGHT	PRICE	AMOUNT
Petrale Sole	750	7	
English Sole	565	6½	
Dover Sole	9026	4	
Sand dab	150	5	
Lingcod	280	10	
Rockfish	495	5	

T 124011 Rec'd by J. S.

® RS-16122

FIGURE 2. The long market, or trawler ticket. This form is used mainly by dealers buying from drag boats. The larger variety of species delivered requires a longer ticket.

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THIS COPY FOR FISHERMAN

CALIFORNIA DIVISION OF FISH AND GAME

KING CANNING CO. 7174-745 TERMINAL IS

Name of Packer or Dealer

Place Where Fish First Landed: Terminal Island

Date: December 21, 1951

Boat Name: Starlight F & G No.: 5324

FISHERMAN: Joe Valente

(or Dealer from whom fish purchased)

Where Were Fish Caught? Give Block No.: 944

Gear: Live Bait Price: 310.00

Variety: Yellow fin Tuna

760	840	942	849
777	880	871	792
863	810	798	898
910	924	841	910
822	875	986	756
856	905	795	892
871	782	894	956
820	956	916	824
790	885	898	786
795	925	926	514

® RS-10172

Total Weight (Including Reject): 34090 lbs.

Raw Reject: 240 lbs. Cook Reject: lbs.

To Be Used for: Canning

G 246771 Weighed by: J. Gomez.

FIGURE 3. Cannery ticket. This form is universally used by processors buying loads of canning fish. The weights recorded are those of individual bucket or basket loads.

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Figure 3 shows the cannery form of fish receipt. This measures 4" x 7#" also, but the arrangement is such as to provide space for a tally of large quantities of a single species. Where a second species is delivered in the same load a separate fish receipt is made for each species.

The current forms differ slightly from those used in 1934. More information is now requested in the upper half of each. The origin or place of capture of the fish has in many fisheries assumed more importance. The type of gear employed is of greater interest. Because loads are now frequently trucked from one port to a plant elsewhere, it is necessary to know the first point of landing. Hence space for this information has been provided in the form.

The lower portion of the cannery ticket has likewise changed to conform with changing practices. At the canneries the weighing is now automatic or semiautomatic, and the net weight of fish is obtained directly. Hence it is no longer necessary to provide columns for gross, net and tare. The entire space is now available for the recording of individual bucket-loads of fish. In the long market, or trawler ticket, the "Number of boxes" has been eliminated, because the net weight of each species is now accurately determined.

Such changes are minor, and are made from time to time as new supplies of receipt books are ordered, and as conditions change in the industry. Basically the ticket is the same, and will remain so as long as it continues to supply the needed data as efficiently as it has done to date. Deficiencies in the record are due, not to the form of the ticket, but to the laxity of some dealers using them. This defect is gradually being corrected. In 1949 a biologist was assigned to call regularly on all the dealers of the State. His duties are to explain to the dealers the requirements and the reasons for them, and thus secure through their cooperation a more complete and satisfactory record. Based at our statistical headquarters, this biologist has an opportunity to survey the dealer records as they are received. From this survey he notes those dealers who are not complying with the requirements. On subsequent field trips the biologist visits such dealers and explains the deficiencies in their records in an effort to obtain their future cooperation. This has resulted in a great improvement, but the periodical contacts must be continued in order to avoid a gradual deterioration in the fish receipt entries.

2. CHECKER'S TICKETS

One other form needs mention. Early in the development of the sardine industry there arose the need of a direct check of the poundage of sardines purchased by each plant from the fishermen. Due primarily to the litigation and legislation over the reduction of sardines, the Department of Fish and Game employed seasonal help to estimate the sardine loads of the fleet and check the poundage unloaded at each plant. This procedure had a gradual beginning and no specific date can be set for its inception. However, by 1931 the routine appears to have been codified and since that date the record of the checker's weight has been filed with the corresponding sardine receipt.

During the sardine season sufficient seasonal help is employed at each port to make a routine check of fish received at each sardine processing plant. The extent of this check varies with the locality and to a greater extent with the economic conditions in a particular sardine season. When these conditions are such as to favor wholesale reduction, greater care is necessary in checking cannery receipts. Checkers are assigned to all ports and all points along the coast where sardines are landed.

The checking procedure varies in different regions and in different seasons. At one time a man was stationed at every cannery scale to record the weights of all fish landed. At present the need for such a rigid check has passed, and the procedure is to estimate (from experience, or from an interview with the captain) the approximate load of each boat. The checker then makes the rounds of the unloading hoists to see that scales are operating properly. Also, he watches the unloading of a portion of each load and estimates the percentage composition of any loads of mixed species of fish. His estimates and his observations are recorded on a special checker's ticket which is illustrated in Figure 4. This is a modification of the original ticket, which was changed slightly in 1935, and again revised in 1948. This ticket is green, to differentiate it clearly from the official fish receipt. A separate checker's ticket is made for each individual boat load. The checker's tickets are turned in daily to the local fish and game office and there matched and stapled to the corresponding fish receipt. Any discrepancies in the dual record are immediately investigated and corrected.

The checker's record thus becomes a supplementary part of the permanent landing record. At the present time there is no inducement to falsify the landing figures, and the check serves principally to estimate the percentage composition by species in mixed loads of fish. The statistical record is based entirely upon the pink ticket record, and not upon the checker's figures. However, the checker's ticket is used to prorate, in the statistical record, the poundage of sardines, mackerel and other species in mixed loads of fish.

At the outlying districts where fish are landed for transportation to distant plants the checker's tickets serve another useful purpose. Because such loads are often purchased from the fishermen by an independent buyer acting as agent for several companies and because such loads are frequently split or combined and trucked to different plants, the balancing of fish receipts against production records is complicated. As a local employee of the department, the checker is often able to explain on his ticket the disposition and fate of individual boat loads. This is of considerable help to the personnel of both patrol and statistical units.

THIS COPY FOR FISHERMAN

CALIFORNIA DIVISION OF FISH AND GAME

KING CANNING CO. 7174-745 TERMINAL IS.

Name of Packer or Dealer

Place Where Fish First Landed Terminal Island

Date October 11, 19 51

Boat Name Prince F & G No. 4025

FISHERMAN Al Leone
(or Dealer from whom fish purchased)

Where Were Fish Caught? Give Block No. 760

Gear Purse Seine Price 45.00 per ton

Variety Sardines

152 Buckets 500 per bucket

76000 #

RS-10172

Total Weight (Including Reject) 76000 lbs.

Raw Reject _____ lbs. Cook Reject _____ lbs.

To Be Used for Canning

G 246770 Weighed by S. Burns

FIGURE 4. Cannery ticket on left. Where automatic or semi-automatic scales are used, the scale trips when a given weight is in the bucket. Hence the tripping weight multiplied by the number of bucket loads yields the total weight. On right: The corresponding checker's ticket made out independently by the fish and game checker.

FIGURE 4. Cannery ticket on left. Where automatic or semi-automatic scales are used, the scale trips when a given weight is in the bucket. Hence the tripping weight multiplied by the number of bucket loads yields the total weight. On right: The corresponding checker's ticket made out independently by the fish and game checker

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME

RECEIVED BY KING CANNING CO. 7174-745

PLACE UNLOADED Terminal Island DATE Dec. 11, 1951

DESTINATION ——
STATE TYPE OF CARRIER

BOAT NAME Prince F. & G. No. 4025

DELIVERED BY: FISHING BOAT ☑ TENDER ☐ TRUCK ☐

VARIETY Sardines
IF MIXED LOAD ESTIMATE PERCENTAGE OF EACH VARIETY

LOCALITY OF CATCH (BLOCK NUMBER) 760

40-T WEIGHT ESTIMATE 38-T Actual

LIMIT 50 Tons TOTAL WEIGHT (POUNDS) 76000

CONDITION Good GEAR Purse Seiner

REMARKS: Large Sardines
MAKE NOTES OF ANYTHING UNUSUAL ABOUT LOAD

5% Jack Mackeral - mixed

UNLOADING TIME - START 6:30 a.m. STOP 7:45 a.m.

CHECKED BY J. Jones PLACE Terminal Is.

94898 7-48 45M SPO

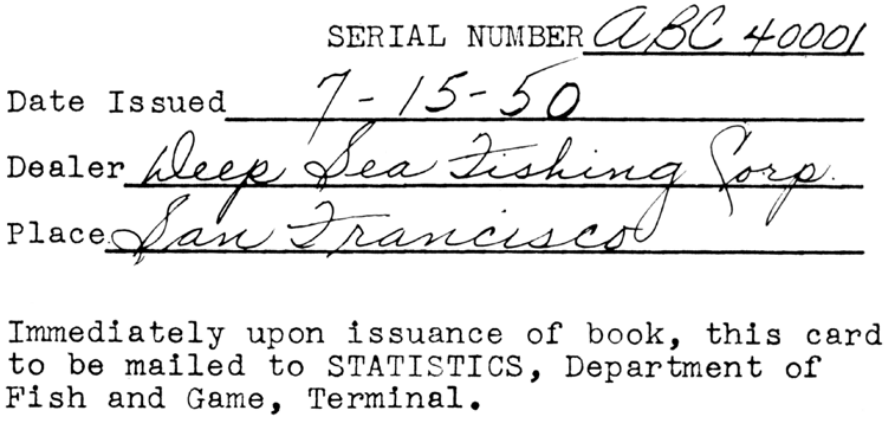
FIGURE 4.—Cont'd. Checker's ticket.

3. INVENTORY SYSTEM

In 1950 there were 528 licensed dealers and 154 processors in the State. Depending upon the volume of his business each individual or concern is currently issued from 1 to 20 books of fish receipts, and it is to our interest, if not our responsibility, to see that no dealer ever runs out of books. For this and other reasons it is necessary that the statistical unit know at all times what unused stock each dealer has on hand, to whom each book was issued, what books have been completed, and what incompleted books are still at large. This in itself is a formidable problem.

Not only must the statistical unit account for every book, but it is our goal to account for every individual receipt in each book. The reason for this is that at times a dealer will for one reason or another withhold a group of tickets and later fail to send them in. Without an adequate and efficient inventory system this would never be detected and the record would suffer proportionately.

The inventory system in use includes: a permanent, duplicate, loose leaf historical record of each book, consecutively arranged by serial numbers; a 3" x 5" card used exclusively to transmit information about each specific book from the office of final issue to the statistical headquarters; and a 4" x 6" card used both as an inventory of books on hand and outstanding, and as a check on the contained receipts in each book.


SERIAL NUMBER ABC 40001

Date Issued 7-15-50

Dealer Deep Sea Fishing Corp.

Place San Francisco

Immediately upon issuance of book, this card to be mailed to STATISTICS, Department of Fish and Game, Terminal.

FIGURE 5. A 3 x 5 inch fish receipt book inventory card.

FIGURE 5. A 3 x 5 inch fish receipt book inventory card

MARKET BOOKS SUPPLIED

OFFICE Terminal Island

DATE June 30, 1951

	Book Series NPQ	Dealer	Place	Date of Issue	Date completed or Remarks
	150001	State Fish Company	Newport	7-6-51	9-11-51
	150051	" " "	"	"	10-10-51
	150101	" " "	"	"	11-11-51
	150151	" " "	"	"	
	150201	" " "	"	"	
	150251	Catalina Fish Company	San Pedro	8-2-51	10-12-51
	150301	" " "	"	"	11-17-51
*	150351	" " "	"	"	
	150401	Ocean Fish Company	San Pedro	8-5-51	
	150451	" " "	"	"	
	150501	" " "	"	"	9-21-51
*	150551	" " "	"	"	
	150601	" " "	"	"	
	150651	Pioneer Fisheries	Morro Bay	9-1-51	10-19-51
	150701	" "	"	"	11-25-51
	150751	" "	"	"	12-23-51
*	150801	" "	"	"	
*	150851	" "	"	"	
	150901	Long Beach Fish Market	Long Beach	9-7-51	11-15-51
	150951	" " "	"	"	12-26-51

* 150351 Dealer out of business. No record of what became of this book.
* 150551 Book destroyed by water. 10/10/51 (Per Warden)
* 150801 Balance of book turned in. Used thru NPQ 150830. Held in Statistics.
* 150851 Reissued to Pacific Mutual Fish Co., Long Beach 10/1/51

FIGURE 6. A page from the loose leaf permanent record of fish receipt books issued to dealers.

FIGURE 6. A page from the loose leaf permanent record of fish receipt books issued to dealers

The entire reserve supply of receipt books is stored at Terminal Island. To each book on hand is stapled a 3" x 5" card illustrated in Figure 5. As supplies go to the regional offices a record of each book is made in duplicate on the loose leaf permanent record (Figure 6). The original is maintained as a comprehensive state-wide record at the statistical unit, while the duplicate goes to the branch office. When a book is issued the 3" x 5" card is removed, filled in completely with the date of issue and the name of the dealer to whom issued, and after this information has been recorded on the duplicate loose leaf record the card is transmitted to Terminal Island where the information is transferred to the original of the loose leaf permanent file. Later, as each book is completed the fact is recorded, with any necessary explanatory notes, on the permanent file.

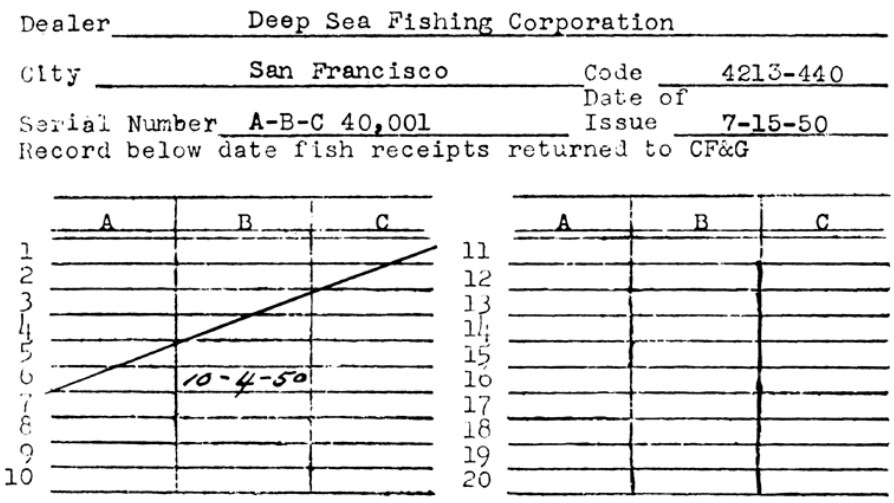


FIGURE 7. A 4 x 6 inch fish receipt inventory card. The record of individual tickets is continued on the reverse face of the card.

FIGURE 7. A 4 x 6 inch fish receipt inventory card. The record of individual tickets is continued on the reverse face of the card

Meanwhile the 4" x 6" card serves the branch office as an inventory of each book. The cards corresponding to books issued to each dealer are filed separately by dealer, while the cards for unissued books serve as a check of the supply on hand. Individual completed fish receipts are checked as received on appropriate spaces on the 4" x 6" card in order to account for all receipts and detect any irregularities. A glance at this file shows immediately if any dealer has failed to turn in fish receipts for the month. As each book is completed the 4" x 6" card is withdrawn from the local files and sent to the statistical unit where the permanent record is completed and closed.

The foregoing inventory system has been in operation since November, 1950. Before that date each regional office had gradually modified an earlier routine to suit its own particular needs. The result was that the unity and completeness of the over-all state-wide record was sacrificed, and the expansion and fluidity of the industry caused endless confusion. The present system is adequate and satisfactory. However, it depends on careful attention to detail and close adherence to the established routine. Given this, it has already shown that it works efficiently. We now have a better record and history of fish receipt books than at any time in the past.

4. MARKET FISHERMAN'S LICENSE

For the privilege of making a livelihood from the fish and shellfish which are the property of all of the people of the State, the commercial fisherman pays a license fee of $10 each year. The money thus collected is spent for the benefit of the commercial fisheries and it therefore reverts to the benefit of the fisherman. In 1909 the first license fee of $2.50 per year was collected from individual fishermen. Prior to that time the license had been for the boat and crew. In 1913 the fee was raised to $10,

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME—BUREAU OF MARINE FISHERIES

APPLICATION FOR MARKET FISHERMAN'S LICENSE AND COMMERCIAL FISHING BOAT REGISTRATION

Every person engaged or employed in the vocation of fishing for fish, mollusks or crustaceans for profit in this State, must first obtain a license from the Division of Fish and Game, for which a fee of $10.00 is required. This license expires March 31st of each year.

Boat Name CALIFORNIA Fish and Game Number 1952

Home Port Los Angeles U. S. Custom House Number 264010

Name in Full JOHN DOE (License Applicant)

Address 1234 56th St. (Street) San Pedro (City)

Check one: Owner ☒ Captain or Operator ☐ Crew Member ☐

Age 36 Height 6'2" Eyes Brn. (Color) Hair Brn. (Color) Weight 185 Complexion Ruddy

Country or State of birth California Are you fully naturalized?

I Hereby Certify, That I have been a resident of the United States continuously for one year prior to this date.

[Applicant Sign Here] John Doe

If License Applicant Operates a Commercial Fishing Boat, Barge or Vessel, the Following Questions Shall Be Answered Before License Is Issued:

Every person owning or operating any fishing boat or other vessel engaged in commercial fisheries shall on or before the first day of April of each calendar year file with the Division of Fish and Game on a form to be provided by the Division a statement giving the general dimensions and description of such boat or other vessel so used or operated. The owner or operator shall also give a complete description of fishing gear and equipment used or carried on such boat or vessel and in what waters so used.

Name in Full JOHN DOE (Boat Owner) Address 1234 56th St., (Street) San Pedro (City)

Name in Full JACK SMITH (Captain or Operator) Address 1155 Ocean Ave., (Street) Long Beach (City)

Type of Boat (This means type of hull, not the kind of fishing engaged in)

Some boat types include:				
	Tuna clipper	Drag boat	Water taxi	Dory
	Purse seiner X	Salmon troller (jig boat)	Transom stern troller	Skiff
	Round haul boat	River gill netter	Power dory	Etc.

Length 83' Beam 22' Horsepower 240 Gas or Diesel diesel

Does the vessel have refrigeration machinery? yes

Gear Purse Seine

In addition to the above information, I hereby certify that the above vessel has been registered by the assessor of L.A. County for the current calendar year.

[Signed] John Doe (Captain-Owner or License Applicant)

*Space below to be used only in case of change of ownership or change of boat name or Custom House number during current license year.

License issued by ml Date 3-6-52

License Number 1000 Season 19 52-19 53

Former owner Address (Street) (City)

Former Custom House Number Date of Sale or Transfer 19

Former Boat Name

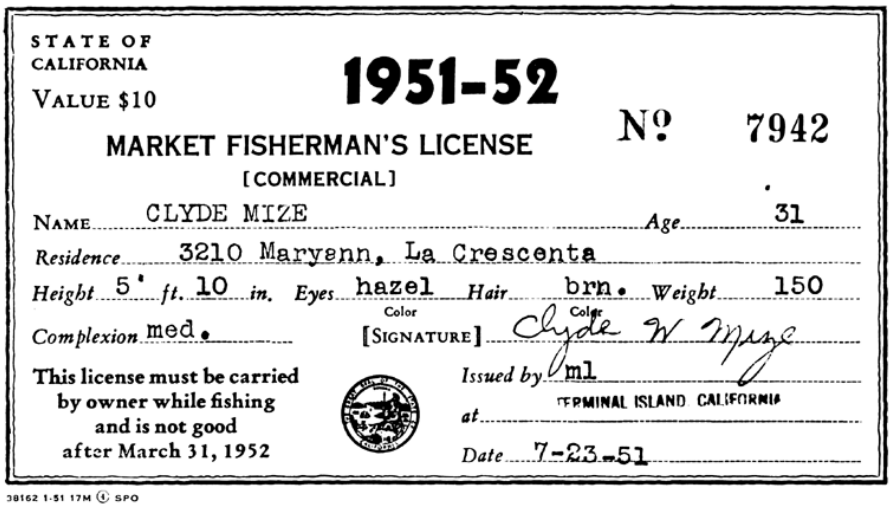
FIGURE 8. Market fisherman's license application and boat registration form. The upper half of this form is the application for market fisherman's license. The lower half applies to the boat owner or operator, and constitutes the boat registration.

FIGURE 8. Market fisherman's license application and boat registration form. The upper half of this form is the application for market fisherman's license. The lower half applies to the boat owner or operator, and constitutes the boat registration

and despite steadily rising cost of everything else, the license fee has remained the same for 38 years.

The license year runs from April 1st through March 31st of the following year. The law requires that every person who brings fish ashore, who operates or assists in operating equipment designed for taking fish or shellfish which is to be sold for profit, must have a commercial fishing license (Section 990). The license is subject to forfeiture (Section 993) in the event of failure to abide by the State Fish and Game Code regulating the fisheries. It must be produced for examination upon the request of duly authorized officers.

The license issued to one person is not transferable to another, and each license carries a description of the licensee. To procure a license, a formal application must be made (Section 990.1) and pertinent information concerning the fisherman, his boat or his method of fishing is required on the application form (Figure 8). After the license is issued (Figure 9), the application form becomes an important basic record in the statistics of the fisheries. The original application is held in the office of issue and a copy of each application is sent to the statistical unit at Terminal Island, where it is filed as a permanent record. The data from the applications are transferred to punch cards to facilitate the compilation of summary statistics. The record given on individual applications is confidential, but summaries are compiled and published each year for the manifold needs of administration and research.


STATE OF CALIFORNIA
VALUE $10

1951-52

MARKET FISHERMAN'S LICENSE
[COMMERCIAL]

No. 7942

NAME CLYDE MIZE Age 31
Residence 3210 Maryenn, La Crescenta
Height 5 ft. 10 in. Eyes hazel Color Hair brn. Color Weight 150
Complexion med.
[SIGNATURE] Clyde W Mize

This license must be carried by owner while fishing and is not good after March 31, 1952

Issued by ml
at TERMINAL ISLAND CALIFORNIA
Date 7-23-51

38162 1-51 17M ⓒ SPO

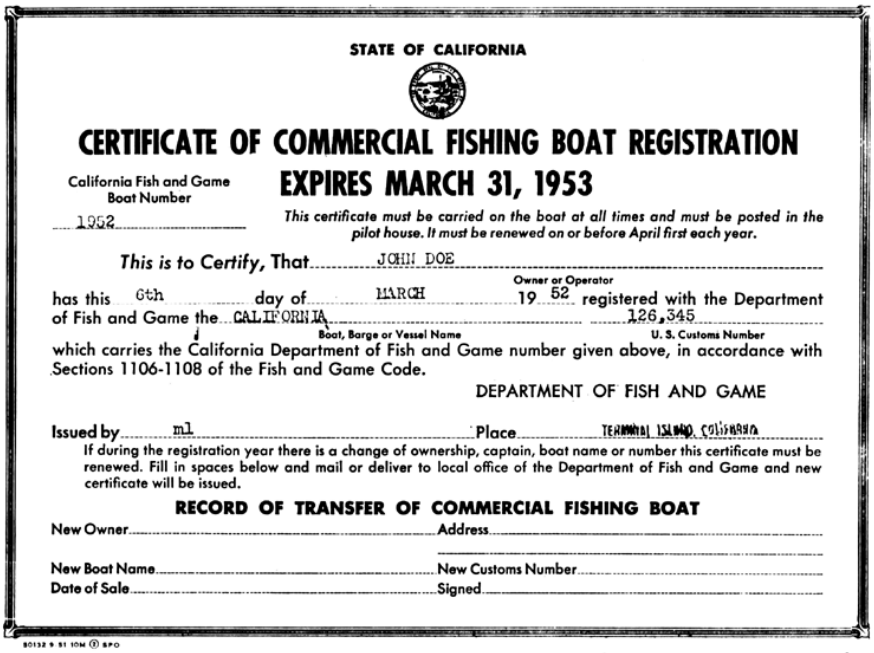
FIGURE 9. Market fisherman's license.

FIGURE 9. Market fisherman's license

The requirement that the fisherman identify the vessel on which he is fishing at the time he makes his application for a license has proven of great value in the work with the fish receipts. often the fish dealers will identify the fisherman on the receipt, but will fail to identify the boat which made the landing. An alphabetical (chaindex) record of fishermen licensed for the current year, made from the applications, enables us to tie the fisherman in with his boat and thus complete such records, which in turn makes the final tabulations of greater value to the biologist studying the fishery.

5. BOAT REGISTRATION

Once a year every person owning or operating a vessel engaged in commercial fishing must register this vessel with the Department of Fish and Game. The vessel must be identified by fish and game number, boat name, and the Federal Bureau of Customs number or the equivalent documented number. To complete the identification, the name of the owner and operator is required, and a complete description of the vessel and its gear must be given. The actual registration form is combined, for convenience, with the fisherman's license application form (Figure 8), and both sections may be completed or only one portion, according to whether a fisherman is applying for a license and/or registering his boat. This annual registration is necessary to provide a continuous record of changes in the fleet and an adequate description of the vessels making the individual catches. This is necessary in scientific studies of the effort expended in making a given catch.



STATE OF CALIFORNIA

CERTIFICATE OF COMMERCIAL FISHING BOAT REGISTRATION

California Fish and Game Boat Number

1952

EXPIRES MARCH 31, 1953

This certificate must be carried on the boat at all times and must be posted in the pilot house. It must be renewed on or before April first each year.

This is to Certify, That JOHN DOE
(Owner or Operator)

has this 6th day of MARCH 19 52 registered with the Department of Fish and Game the CALIFORNIA (Boat, Barge or Vessel Name) 126,345 (U. S. Customs Number)

which carries the California Department of Fish and Game number given above, in accordance with Sections 1106-1108 of the Fish and Game Code.

DEPARTMENT OF FISH AND GAME

Issued by ml Place TERMINAL ISLAND CALIFORNIA

If during the registration year there is a change of ownership, captain, boat name or number this certificate must be renewed. Fill in spaces below and mail or deliver to local office of the Department of Fish and Game and new certificate will be issued.

RECORD OF TRANSFER OF COMMERCIAL FISHING BOAT

New Owner ..... Address .....

New Boat Name ..... New Customs Number .....

Date of Sale ..... Signed .....

FIGURE 10. Certificate of registry. This form is issued to the owner or operator when he registers his vessel for the current year.

FIGURE 10. Certificate of registry. This form is issued to the owner or operator when he registers his vessel for the current year

When a vessel is registered a certificate of registration is issued to the owner, and this certificate must be kept on board the vessel during the registration year (Figure 10). This extends from April 1st through March 31st of the following year, which is identical with the commercial fishing license year. There is no fee for registering a vessel, but there is a penalty (seldom imposed) for nonregistration. Failure to register carries a minimum fine of $100 or 25 days. There is no inclination on the part of the boat owners to avoid registration, but registration is often inadvertently overlooked. It requires constant vigilance to get a complete registration of all active fishing vessels.

Boat registration was initiated in 1919, and the individual registration forms have been kept in the statistical files ever since. This historical record has proved invaluable, for it has made possible the projection of current studies into the past. Without this detailed boat registration record it would not be possible to evaluate the earlier catch in terms of the effort expended in making it. At present, summaries are compiled each year which are designed to facilitate future studies.

6. BOAT PLATES AND BOAT PLATE APPLICATIONS

Prior to 1931, fishing vessels were identified in our statistical system by boat name or by U. S. Bureau of Customs number. Boat names frequently changed, and the customs number was changed whenever a vessel transferred registry from any of the three customs districts in California. Although the documented number issued by the Federal Government to vessels over five net tons remained always with that vessel, the majority of vessels at that time were under this tonnage. Under these circumstances a certain degree of confusion was inevitable.

When in 1931 the state fisheries statistical system was mechanized, it became necessary to assign a specific number to each individual boat, and to use that number for that boat alone. The desirability of such a numbering system now became a necessity. A four-digit numbering system was devised and a stock of numbered plates ordered. These plates

FIGURE 11. Shows the latest type of fish and game boat plate attached to the deckhouse of a fishing vessel.

FIGURE 11. Shows the latest type of fish and game boat plate attached to the deckhouse of a fishing vessel

resembled automobile license plates but were slightly smaller, with black numerals on a white background. Each carried the symbol

FIGURE

to the left of the number. The plates were constructed of noncorrosive metal in order to withstand the effects of salt air and spray. Two identical plates comprised a set, and these were to be fastened on either side of the superstructure of the vessel (Figure 11).

In initiating the system and distributing the plates, a state-wide survey of all fishing boats within the State was conducted by the fish and game wardens. As the plates were distributed and attached to the boats, the wardens obtained a complete description of each vessel, and from this and other sources a historical sketch of each boat was compiled. The owners and operators of each vessel were told the purpose of the plates and given an explanation of the system contemplated. The records thus obtained were compiled and cross-indexed and carefully checked against the customs registrations. From that time on, the boat names were subordinated to the fish and game number, and the latter became the identifying code for each boat.

The plates themselves, issued free, remain the property of the State. If they are lost, destroyed or mutilated, the boat owner is required to make formal application for duplicate plates for which he is charged a nominal fee. When such plates are replaced, the replacements carry the original number. During World War II it was difficult to get suitable noncorrosive metal for the plates, and for a period of years plates of inferior quality were necessarily issued. As a consequence of rapid deterioration the numbers soon became illegible, and the numbering system began to lose its effectiveness. When, therefore, in 1949 the State was again able to obtain suitable noncorrosive metal the entire series of defective plates was recalled and new replicas issued.

The first series of plates had now been in use for 17 years, and it was decided to replace at this time (1949) the first 7,000 sets issued. This was done at state expense in order to maintain legible numbers on all boats. All future replacements will be at the boat owner's expense, and the cost of such is set by law at $2 per plate or $4 for the pair.

To provide for the numbering of new boats and those entering California fisheries for the first time, an application for boat plates was devised. This application (Figure 12) calls for a complete description of the vessel and such history as is needed to check its identity. Upon receipt of such an application a careful search is made through the boat files by boat name, owner's name, the name of previous owners, by documented or customs number, and every precaution is taken to prevent the issue of a new number to a previously numbered boat. Not infrequently we find that such an application applies to a boat that is re-entering the fishing business after perhaps years of use in other fields. In such cases new plates bearing the original number are issued at the legal cost. Not until the record is thoroughly checked and cleared are new numbers ever issued.

Negligent or ignorant owners frequently enter the fisheries without securing an identifying number for their vessel. This fact is brought to light by their first delivery. When fish receipts come in credited to a boat bearing no fish and game number, the case is immediately turned

State of California

DEPARTMENT OF FISH AND GAME

Bureau of Marine Fisheries

APPLICATION FOR BOAT REGISTRATION NUMBER PLATES
Forward application to
California State Fisheries Laboratory, Terminal Island

California Fish and Game boat number registration plates may be issued only upon there being furnished to the Fish and Game Commission the information specified in Fish and Game Code Section 1103, including the County Assessor's certificate of registration for the current calendar year for the vessel upon which the plates are to be placed, and evidence that all county and city taxes due on the vessel have either been paid in full or entered on the assessment roll as a lein on real property.

New Fish and Game Boat Number assigned 1952

Duplicate Plates

Present Custom House No. 264010 Former Custom House No. None

Present Boat Name CALIFORNIA Former Name of Boat None

Home Port Los Angeles (City) California (State)

Length 83' Beam 22' Horsepower 240

Type of Boat Purse Seiner Year Built 1950

Type of Fishing Commercial

OWNER: Name JOHN DOE

Address 1234 56th St. (Street) San Pedro, (City) California (State)

OPERATOR: Name JACK SMITH

Address 1155 Ocean Ave., (Street) Long Beach, (City) California (State)

Former Owner None- New Boat

Former Operator

Plates to be mailed to John Doe, 1234 56th St., San Pedro, California

Date March 6, 1952

500/1-4-52

FIGURE 12. Boat plate application. This is the form used by owners applying for fish and game boat plates.

FIGURE 12. Boat plate application. This is the form used by owners applying for fish and game boat plates

over to the Bureau of Patrol. The owner or operator is then contacted, his license and boat registration checked, and he is requested to file an immediate application for boat plates. The greatest problem that we have in this field concerns transient boats from the neighboring states. In the albacore season, especially, innumerable boats from the Pacific Northwest engage in our California fisheries, and it is extremely difficult to secure

registration and correct identification of this fleet. The solution will involve cooperative effort of the several state agencies, coordinated by the Pacific Marine Fisheries Commission.

In our statistical system the boat is identified by its fish and game number. All other information is subordinate but corroboratory. Hence our master boat file is arranged by number. Each boat is represented by a 3' x 5' card which contains in summary the complete history of the vessel and all its distinguishing symbols. Name, owner, previous names and owners, documented or custom number, type and year built are given. Moreover, the file is kept constantly up to date, and the full time of a clerk is needed to record the changes that continually occur. Such information flows in a constant stream from the field offices of our own department, from the wardens and field men, from current boat registrations and from checks which are made continuously against the Bureau of Customs and U. S. Coast Guard records. The cooperation of these agencies has been of vital importance in maintaining the accuracy of the record of vessels in the fleet. A secondary file is also maintained by boat name, and one by Bureau of Customs numbers, so that any boat can be traced by any identifying symbol over a 20-year period. A cross-index for the current year is maintained through a reference chaindex file.

"Dead" boats are those lost, dismantled or otherwise permanently removed from the active fleet. The file record of such boats is maintained separately, though intact, for the use of biologists engaged in long range studies. The identifying numbers of all such boats are not immediately reissued. Originally it was our intent to eliminate permanently all such numbers. The subsequent phenomenal growth of the fleet revised this decision. To avoid a gradual transition to larger and larger identifying numbers, which by their magnitude would defeat the intent of the system, it is now customary to reissue the numbers of dead boats after a lapse of at least five years. This delay will obviate any danger of confusion.

The system of boat numbering described above has worked efficiently without serious modification for a period of 21 years. It will work indefinitely if it receives the same meticulous care it has received thus far. Detailed routine must be rigorously followed, and the record kept constantly up to date. With the catch statistics, the boat file is the backbone of our statistical system.

7. TRAWLER LOGS

Trawler logs were introduced on California trawler vessels in December, 1933, as part of the official statistical system of this State for the collection of basic records regarding the operation of this fishery. Originally, the trawler log was an integral part of the fish receipt. This system, with the logs and fish receipts combined in one form, worked satisfactorily in the earlier years. At that time the entire trawler catch was made with the "paranzella" net, which was a large seine dragged over the bottom by two boats running parallel. The cost of net, warps and boats represented an investment that was too much for individual fishermen. As a consequence the wholesale houses supplied the boats and gear and operated the fleet with paid crews. This is the only case on the California coast where fishermen have in recent years worked for wages.

For these reasons the combination of fish receipt and log in one form was logical at the time.

In the early years the paranzella nets made lucrative catches. In fact this gear caught more (some claim twice as much) per drag than did the otterboard trawl. The latter gear was tried in 1919 but met with no favor. Between 1936 and 1940 the otterboard gear was reintroduced experimentally by the Department of Fish and Game. By this time the earlier fishing grounds were showing signs of depletion, and the return to the boat owners had diminished. Because the cost of operating an otterboard trawl (requiring only one boat) was proportionately less than in the case of the paranzella, the industry showed a greater interest in the otter trawl at its second introduction. Individual commercial trials of the otterboard gear were made, and while no detailed history of these trials is conveniently at hand, the otterboard trawl had entirely replaced the paranzella net by 1944, and since then has continued in exclusive use.

This change had a profound effect upon our statistical record. In place of the five to nine pairs of company owned and operated paranzella boats, there is now an average of 48 individual otterboard trawl nets operated each month by as many boats which are owned and operated by individual fishermen. No longer do the dealers exercise a dominant control of the fishery. The combined fish receipt-trawler log form was no longer a suitable one for use. Moreover it was large and cumbersome, measuring

DAILY TRAWLER LOG — **California Division of Fish and Game**

Name of Vessel: ST. PATRICK — F. & G. Boat No.: 8400 — Fishing Date: AUG. 23, 1951

Locality Fished: 10 MI. N.W. REDDING ROCK (Miles off what point on shore) — Port of Landing: EUREKA

Type of Net: OTTER TRAWL (Otter, Parenzella or Beam) — Buyer: A. BROWN FISH CO.

Drag No.	F. & G. Block No.	Time Net Set	Time Net Lifted	Depth Fathoms	Direction of Drag	Estimated Pounds Caught Each Drag	Remarks
1	122	6:30A	8:30A	200	N.E.	2000	
2	122	9:00A	11:30A	185	E.S.E.	1500	
3	128	1:00P	3:00P	190	N.N.E.	2500	
4	122	4:00P	6:30P	200	N.E.	500	SNAGGED & TORE NET
5							
6							
7							
8							
9							
10							
11							
12							

T- 37555

Signed: A. Johnson (Captain or Fishing Boss)

FIGURE 13. The daily trawler log now in use.

FIGURE 13. The daily trawler log now in use

18' x 8½', and called for more bookkeeping than the individual, busy fisherman had time for.

In 1945 a new form was designed to meet the needs of the changed fishery. The log record was separated entirely from the fish receipt. Both portions were modified. Fish receipts were made up in books of 50, each measuring 4' x 7#'. The form, now known as the trawler or long market ticket, is identical in format with the regular market ticket. It is, however, longer (Figure 2). Because the trawlers deliver a large variety of species in relatively large quantities, more space for these entries is needed and provided on this ticket. This ticket is stocked by the dealers, who make out one each time a load is purchased from a fisherman.

The log portion of the original form was both simplified and abbreviated. It is reproduced in Figure 13. This form is supplied by the State and made up by the fisherman. It is a record of his actual daily fishing operations. As such it supplies the name and Fish and Game number of the vessel, the date of the drag, the block area in which it was made, the type of net used and the dealer to whom the catch was sold. Specific information concerning each drag is also requested. For research purposes, it is necessary to know the duration of the drag (the time at which the net was both set and lifted), the direction of the drag and an estimate of the catch by species per drag. This information is recorded on the log, and a column is provided for pertinent remarks. The record is made in duplicate. The original is retained by the fisherman for his own use, while the duplicate goes to the Department of Fish and Game. In practice, the completed daily logs are picked up by a warden with the fish receipts from the wholesale houses, or more often, they are mailed by the boat captain direct to the regional Fish and Game office. Here, each log is matched and stapled to the corresponding fish receipt. Thus, the effort in terms of drags, recorded in the log, is associated with the resultant catch reported in the fish receipt.

Authority for obtaining this information has been given to the department by the Legislature and is set forth in Section 1097 of the Fish and Game Code. This section states that the master of any drag vessel must keep a daily record in a book which will be furnished by the commission. The record must show the locality, time of haul, and approximate catch made during that haul. It also states in this section that on or before the fifteenth day of each month, the records shall be sent to the commission.

Section 1096.5 of the Fish and Game Code states that the specific information contained in each log is confidential, and shall, so far as possible, be compiled and published only in summary form, so as not to disclose the individual records or business of any person, firm or corporation.

The effective operation of a system of this type requires continuous personal contact with the fishermen. A detailed inspection of each log and delivery ticket must be made. This is done upon receipt of the record at the regional office by the clerical help, and again at monthly intervals by the biologist engaged upon that investigation. Defects in the record are noted, and the responsible dealer or boat captain is interviewed by a warden or biologist. Persistent explanation of the problem to the fishermen and dealers is necessary to obtain the data in a complete and satisfactory form.

Data from the trawler logs has enabled the department to observe fluctuating conditions in the industry, and interpret the trends of the total catch. Summarization gives a very complete picture of the composition of the catch and the season and locations where this was made. Such a summary for 1949 shows that during this year a catch of 23,750,600 pounds was reported by trawlers and covered by accompanying logs. This represented approximately 90 percent of the over-all total catch by trawler boats in the State for this year. Some 18,094 drags were made in 1949, for which log records were obtained. Six thousand one hundred and sixty-five boat days were spent in making the catch of 23,750,600 pounds. The average catch per day's fishing amounted to 3,852 pounds, and the average catch per drag was 1,313 pounds of salable fish to the fisherman.

The system described, though imperfect, works satisfactorily. There is at least one inherent difficulty. When a vessel stays out and fishes for two or more days, a log record is made for each day's fishing. Upon return to port the entire load, comprising the catch of the two or more days, is sold and recorded on a single fish receipt. In this case two or more days of fishing effort must be matched against the single fish receipt. The difficulty concerns the prorating of the catch to the different points—or areas—of origin shown in the log of fishing operations. After some thought and trials the problem was solved by crediting the entire catch made on a two or three day trip, to the area which yielded the greatest estimated catch. To evaluate the effect of such a solution, a test was run using the records for 1949. Results showed that 88.4 percent of the total catch was correctly credited to the 10 mile square from which the catch actually came. Accordingly this system has been adopted and all such catches are coded in this manner. The log records thus obtained and processed enable the department to determine the amount of effort, both over-all and regional, associated with the resultant catch, and thus reveal the condition of the stock.

8. ORIGIN CODES AND MAPS

The water areas in which individual catches are made are recorded in our statistics by a system of numbers. These numbers are systematically grouped and the resulting groups are defined as statistical regions. Such regions are based in part on the natural distribution of fish of various species and in part on the size, number and location of fishing ports. Local field offices are maintained in the principal statistical regions, and throughout the text these offices are referred to as regional offices. Such references should not be confused with the current reorganizational plans for departmental regional administrative offices. The regional statistical offices are not necessarily located in the operational regional headquarters. Hence, regional in this text refers consistently and exclusively to the fisheries statistical regions.

The numerical system used to define water areas has many advantages. It avoids the ambiguity and uncertainty of loose geographical description; it restricts the origin to an area delimited and defined on a chart, and it is directly adaptable to the mechanical system in use for processing the records, namely the International Business Machines.

The system of block areas adopted in 1933 and described in Fish Bulletin No. 44, has continued in use, with only slight modification, to the present day. Originally the coastal waters of the State were divided into eight statistical zones, numbered from north to south, by parallels of latitude. The boundaries of these zones were:

Region I	From the California-Oregon border	lat. 42° 00' N.
	To Trinidad Head	lat. 41° 00' N.
Region II	From Trinidad Head	lat. 41° 00' N.
	To Point Arena	lat. 39° 00' N.
Region III	The Sacramento-San Joaquin River System	
Region IV	From Point Arena	lat. 39° 00' N.
	To Pigeon Point	lat. 37° 10' N.
Region V	From Pigeon Point	lat. 37° 10' N.
	To Piedras Blancas	lat. 35° 40' N.
Region VI	From Piedras Blancas	lat. 35° 40' N.
	To Point Dume	lat. 34° 00' N.
Region VII	From Point Dume	lat. 34° 00' N.
	To San Onofre	lat. 33° 20' N.
Region VIII	From San Onofre	lat. 33° 20' N.
	To U. S.-Mexican Boundary	lat. 32° 30' N.

In the original tabulating machine, and the cards adapted to it (1931), only three columns were available for points of origin. This meant that for the entire State and the waters beyond state boundaries fished by our vessels, there were 999 separate numbers available. of these, 100 were assigned to each statistical region, or zone, in a manner described in the earlier catch bulletin. This left 100 numbers (900–999) free for assignment to waters beyond the state boundaries, which were exploited by the California fishing fleet. As negligible landings were made in the extreme north, and no fishing by California boats was carried on north of the boundary, whereas heavy catches were made below the U. S.-Mexican boundary, the entire 900 series of numbers was assigned to southern waters. Originally these numbers were assigned at random as need arose, but as the tuna fishery developed, a telescopic system of numbering origins was devised, adopted in May 1938 and has been used consistently since.

This system, which has not hitherto been described in print, was expressly adapted to the tuna fishery. At the time (1938) the fishery covered the coastal and insular waters from California to approximately 2° S. latitude. By insular is meant those islands and island groups along this coast line which were within the fishing range of the tuna fleet. The farthest outlying islands, Clipperton and the Galapagos group, are roughly within 600 miles of the mainland. All catches of yellowfin tuna and skipjack came from this area. However, relatively few boat loads came from a single small segment of this area. On most trips a vessel would fish, and catch a portion of its load, in numerous localities within this extent. Hence it was generally impossible to assign a load to a single origin. Furthermore, it was not easy to obtain from the fishermen the exact locality of their catches.

In order to use all information available, provision in the origin code was therefore made to record all specific origins, when such were known,

and at the same time designate a general area where catches were dispersed. The entire area between the U. S.-Mexican boundary (32° 30' N.) and 2° S., was divided into five zones of latitude. These were not contiguous; they were overlapping. All started from the California boundary, but each extended a different distance southward. From north to south these zones were numbered as follows:

910 From lat. 32° 30' N. to lat. 27° 23' N.
920 From lat. 32° 30' N. to lat. 22° 00' N.
930 From lat. 32° 30' N. to lat. 16° 12' N.
940 From lat. 32° 30' N. to lat. 7° 30' N.
950 From lat. 32° 30' N. to lat. 2° 00' S.

There remained nine numbers available for assignment within each zone. Four of these were used to designate the predominant coastal areas, according to the scheme suggested in Figure 14. The coastal waters of each interzonal area were divided into three portions, numbered from north to south, two, three and four. The combination of these three portions was collectively designated by the figure 1. Thus, if an entire catch was made off Cape Blanco, Costa Rica, it was coded in our record 944. If, however, the catch was made at several points between the Gulf of Tehuantepec and Coiba Island it was coded 941. The numbers five to nine were used either to designate offshore banks or islands, or left unassigned. The number eight was used to indicate offshore catches where precise origin was not known. This was possibly a mistake, because there has been some confusion of these numbers on the chart with the zone numbers. Within certain zones arbitrary codes were necessarily used, but the scheme described was followed wherever possible. The numbers from 960 upwards were left in reserve for future need.

The extent, or southern boundary of a zone, was suggested by the practice of the fleet and the size of the vessels in it. Thus, in 1938, and even today, a large number of the smaller boats seldom go beyond Cape San Lucas; hence the 920 zone. Each zone was similarly defined. Although the limits were quite arbitrary, the system has worked fairly well. It has provided adequately for the data available. While the origins in our statistical record are far from precise or perfect, the reason is not that the system is at fault, but rather that precise origins could not, with the staff available, be obtained.

In the intervening years our fisheries have greatly expanded. Today extensive catches are made north of the state boundary; large tonnages of fish come from Mexican and Central American waters, and imports of frozen tuna for processing in California, come from the entire Pacific Ocean.

If these new origins are to be incorporated into our statistical system, each must necessarily be assigned a different number. With only the unassigned 900 series of numbers available this would be impossible, without a complete revision of our system were it not for the fact that larger machines, carrying a greater number of columns were installed in 1947. With a larger card upon which the individual record was punched, it became possible to assign four columns to the origin field. This meant that 9999 numbers were available for specific water areas, instead of the 999. But to utilize this additional set of numbers it would be necessary to reorganize entirely the existing system of numbering. Eventually this will be done, but it is as yet premature. There is no present need for such

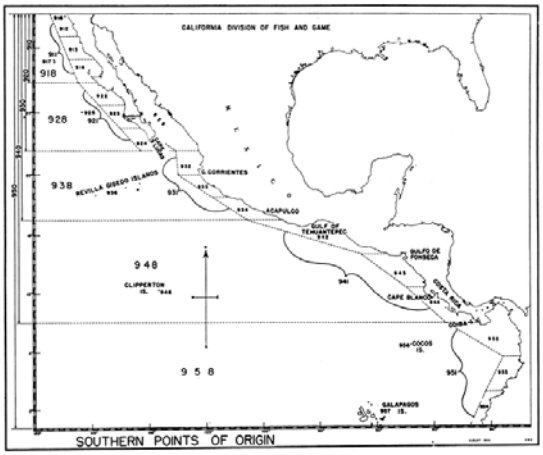


FIGURE 14. The origin codes applied to catches coming from south of the United States-Mexican boundary. Adopted May, 1938.

FIGURE 14. The origin codes applied to catches coming from south of the United States-Mexican boundary. Adopted May, 1938

a drastic change. The immediate needs can be temporarily met by expediency. This has been done.

The waters to the north of California have arbitrarily been assigned four-digit numbers. These numbers are those used by the States of Oregon and Washington, to designate their water areas. As they are all four-digit numbers, we can use them without any modification or confusion. Thus, any time a four-digit origin code appears in our records, it is immediately apparent that the catch was made in the waters of Oregon or Washington. To provide for shipments from, and occasional loads caught in the Pacific Northwest, where the precise origin is not known, we arbitrarily use codes as follows:

002=Alaska
003=British Columbia
004=Washington
005=Oregon
006=Oregon and/or Washington

These general origin codes suffice for our mechanical needs.

The distant Pacific origins have been assigned the remaining numbers of the 900 series according to a scheme illustrated in Figure 15. The Pacific was arbitrarily divided into a central, southern, and western zone, suggested by the potential tuna fisheries. The South American waters were assigned the 960 series, and that number designated the entire South American zone. The central Pacific was assigned the number 970, to indicate the whole delimited area. Similarly 980 defined the region lying in the southwest Pacific shown in the figure. Each of these three regions had nine numbers available for subdivision. Numbers were assigned specifically only as needed to meet the statistical need of describing the origin of specific imports. Thus shipments from Japan are coded 982 while those originating in Australia are coded 989. Shipments from the Fiji Islands are coded 978. Admittedly this is an expedient, but it was adopted because such was preferable to a break in continuity of the past record until this break is justified by a carefully conceived and comprehensive system which will stand the test of time.

In the foregoing listing of statistical regions, it will be noted that the 300 series of numbers was assigned to the Sacramento-San Joaquin River system. Within this system the assignment of numbers was partial and arbitrary. There are inherent drawbacks to the random assignment of numbers. One such drawback is the fact that it frequently happens that the general origin of a particular catch is known, but not the specific block area. In such cases there are two alternative methods of processing the data. Either the catch must be arbitrarily assigned to a specific area, with the possibility of an error in judgment, or the catch must be recorded as origin unknown. In the former case the reliability of the record becomes questionable. In the latter case definite, general knowledge of the origin is lost, because it does not show in the tabulated record.

This limitation became apparent in the river records. Here, the general region in which the catch was made was usually known, but since specific areas were randomly numbered, this information could not be incorporated into the permanent tabulated reports.

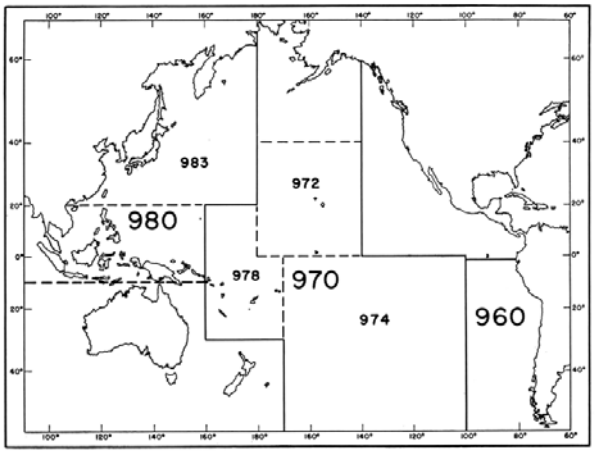


FIGURE 15. The origin codes adopted January 1, 1950, for use with imports of fish from the entire Pacific region.

FIGURE 15. The origin codes adopted January 1, 1950, for use with imports of fish from the entire Pacific region

To correct this defect, the numbers in Region 3 were reassigned in 1951, and the new origin codes became effective as of January 1, 1952. The new system was telescopic, as in the case of the 900 series. The entire river system was divided into a few large natural areas, based upon prior experience with the river fisheries. Each such larger area was assigned 10 consecutive numbers, e.g. 320 to 329, and was itself designated by the first number of this series. Thus, for example, the number 320 designated a general area which itself was (or could be) subdivided into nine parts. Where a specific origin is now given, it can be coded by the corresponding number, e.g. 326; but in cases where only a general origin is given, this information can now be incorporated into the record by using the number of the larger area, e.g. 320, from which the catch is known to have come. Thus all available information will now go into the record, without in any way depreciating the accuracy of the record. This system of numbers, adopted January 1, 1952, is shown in Figure 16.

The same problem arose in the ocean fisheries. Frequently a general origin was given—or known—but the exact block area from which the catch came was not known. In order to salvage the information available on such origins, specific block areas were grouped into natural fishing areas, and an unassigned number (within the corresponding regional series) was used to indicate this grouping. For example, numerous records show that the catch was made at Santa Catalina Island. As catches from this location could be assigned to at least six separate block areas, it would be obviously arbitrary and incorrect to assign a catch to any one in particular. Therefore the six blocks involved were collectively designated by the number 797, so that the general information given could be included in the record. The need for this was not originally foreseen, but a modification to meet this need has been extensively made without any radical change in the block area system.

The system of defining and recording the origin of catches, described in this and earlier bulletins, has proved generally satisfactory. All origin information given on the fish receipt goes into the tabulated record, and nothing goes into this record that is in any way questionable. The statistics are therefore as complete and as reliable as the original record. Unfortunately, all fish receipts are not complete, and data on origin is frequently omitted. To a limited extent this deficit is corrected in the following manner. At weekly or monthly intervals the current fish receipts for a given fishery are reviewed by a biologist assigned to that fishery. The origin given on individual receipts is compared with his sampling notes, and any missing origin is inserted where such is actually known. Nothing is added to the ticket arbitrarily. In this way the origin records are both checked and supplemented. Unfortunately, this cannot be done for all species. The practice is confined to the major fisheries under biological investigation. At this time the biologist also notes those processors who are negligent in completing the receipts, and this information is turned over to the statistical field biologist who attempts on subsequent trips to secure better cooperation from such concerns. While a perfect record is obviously unobtainable, we attempt by these means to maintain and improve the quality of our catch statistics.

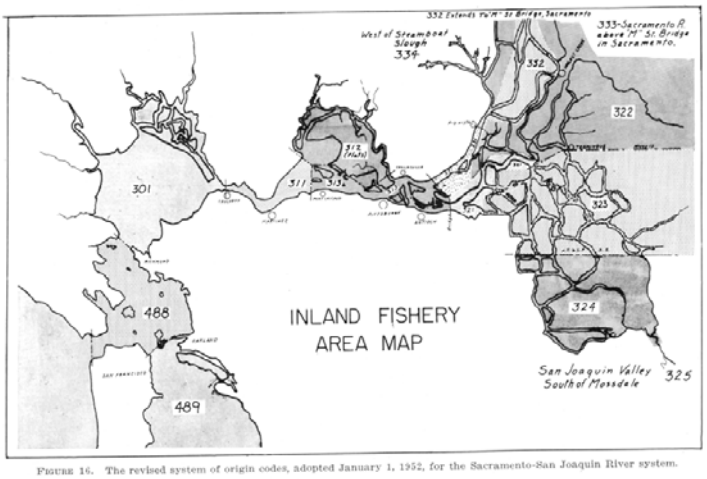


FIGURE 16. The revised system of origin codes, adopted January 1, 1952, for the Sacramento-San Joaquin River system.

FIGURE 16. The revised system of origin codes, adopted January 1, 1952, for the Sacramento-San Joaquin River system

9. MECHANICAL DEVICES

The development of our fisheries statistical system has paralleled that of every growing industrial process. Small at inception, the entire earlier record was manually tabulated. The problems of thus compiling the data increased with the volume of the ticket record, until by 1930 there was time and help sufficient only to keep abreast with the current receipts. The record of preceding years had not been analyzed, and the chances of going back into this record to extract its full value to research became increasingly remote. Furthermore the ever increasing volume of current work left no time for careful consideration and interpretation of the extensive record. We never failed to compile the actual catch by species, but circumstances were forcing us to abandon our primary objective of analyzing the statistics in the endeavor to evaluate the condition of each major fishery.

In 1930 the crisis was met by the foresight of the administrative head of the Division of Fish and Game. Upon his instructions, arrangements were made to mechanize the department, and the following year International Business Machine equipment was installed to process the record.

The change from manual to mechanical processing, based on punch cards, involved the establishment of a complete numerical code system. Each item of information on the original fish receipt had to be exactly and specifically defined by an arbitrary code number. This was one of the major problems incident to mechanizing the process.

No special codes are required for date, pounds or price. All weights are converted into pounds, and the price is shown in cents and fractions of a cent per pound. Cities and dealers were assigned code numbers conforming to the statistical region in which they were located. The condition of the fish, whether dressed or round, the gear with which it was caught and the type of tax assessable were also coded with little difficulty. The species of fish, the origin of the catch and the boat identification presented the principal difficulties. How the two latter problems were solved is described on pages 26 and 32.

The species code was made to conform to biological relationship. The mackerel-like fishes were assigned the series 001 to 099, and within this series specific relationships dictated the numbers used. Thus, the tunas were coded consecutively 001 to 009. River species were assigned the 300 series, conforming to the numbering of Region 3, which embraced the Sacramento-San Joaquin River systems. Mollusks and crustaceans were assigned respectively the 700 and 800 series. This system makes the coding of the species easier to use and remember and therefore less subject to error. Moreover, it facilitates the sorting of cards for special studies on related species, as in the case of flatfish.

The principal difficulty in the coding of species was not inherent in the system but resulted from the use of incorrect or colloquial names. To obviate this it was necessary to develop a list, arranged numerically by code number, of all commercial species, with both the commonly accepted name and all the known misnomers after each. It was also necessary to develop an alphabetical cross index so that the correct code could be readily obtained for any given name.

The basic data in our statistical record is taken directly from the fish receipts. These are collected at least twice a month. The receipts are processed by statistical regions. Each item of information is checked and coded. Missing information, which cannot be obtained, is coded 999, 00, or in the case of origins, assigned a general regional origin code in certain fisheries. Where the boat identification number is missing, the boat registration files are consulted and every effort is made to trace the catch to the correct boat. Two clerks work with the tickets of each region. One makes the original check and assigns the codes, and the other rechecks this work to eliminate all possible error before the work is punched.

There are three basic steps in the I. B. M. procedure.

1. The written information on the fish receipts is coded and the codes transferred to individual punch cards.
2. The punched cards are then sorted by machine into a desired sequence.
3. The sorted cards are then run through the tabulating machines which produce a printed summary as desired, or a listing report.

The statistical unit at Terminal Island uses two types of key-punch machines. The first type punches numerical codes only. The second type punches both numerical and alphabetical data. Up to 1947 we used only the numerical codes, but in that year the tabulating machines were modified

FIGURE 17. Four key-punch machines in operation. *Photograph by Herb Phillips, San Pedro.*

FIGURE 17. Four key-punch machines in operation. Photograph by Herb Phillips, San Pedro.

to meet our needs, and the alphabetical type-bars were added. Further historical notes on these machines will be presented later.

In key-punching (Figure 17) the cards are fed automatically into the machine. As each hole is punched the card is automatically advanced to the next column. As the operator completes the punching of a card, it is ejected and stacked, and a new card inserted. An efficient operator can punch on this machine several hundred cards per hour. Speed in punching depends largely on the number of holes to be punched and on the legibility of the source data.

There are 80 columns in the card we use (Figure 18), with 12 positions in each column. One hole is punched per column to indicate a number, while a combination of two holes in a single column records a given letter of the alphabet. The eleventh and twelfth positions in each column are primarily for the alphabetical code.

To expedite the work the key-punch machine is equipped with a duplicating device so that information common to a series of cards can be punched in a single operation. This device enables the machine to "read" information from a master card and transfer all this information to the card being punched. Data in the master card must obviously be common to all cards for the particular job being punched. Thus, in a given job the region, year and month may be identical throughout. The duplicating device saves the appreciable amount of work required to punch separately this data in every single card.

The punched cards are checked for accuracy by another operator using an I. B. M. verifier. This is similar in principle to the key-punch machine. Instead of punching a hole, however, the verifier "feels" the card in order to detect if the desired hole has been punched. The card will not move to the next column if a discrepancy occurs. The theory of the I. B. M. verifier is that different operators will not, in general, make the same punching error. Verifying is generally assigned to experienced operators. It is their responsibility to catch all punching errors, and detect errors in coding also. Our verifying machines are used only for the numerical data. Alphabetic information is limited in use, and can be readily verified by running a listing on the tabulating machine.

FIGURE 18. The punch card in present use.

FIGURE 18. The punch card in present use

FIGURE 19. The sorting machine. *Photograph by Herb Phillips, San Pedro.*

FIGURE 19. The sorting machine. Photograph by Herb Phillips, San Pedro.

After punching and verifying, the cards are arranged in the sequence demanded by the particular report. This is accomplished by the I. B. M. sorting machine (Figure 19). The sorter scans a single column of each of the cards to be sorted. Electric controls direct each card to one of 13 pockets. Four hundred cards are sorted into required sequences each minute. Cards in each pocket are verified by sight to eliminate any possible machine error. A separate sort is required for each column. On the average a set of cards goes through the sorting machine seven times for each individual report. Two sorting machines, working constantly, are needed to handle the cards for the routine and special reports which we normally use.

FIGURE 20. One of two model 405 I.B.M. tabulating machines in operation.
Photograph by Herb Phillips, San Pedro.

FIGURE 20. One of two model 405 I.B.M. tabulating machines in operation. Photograph by Herb Phillips, San Pedro.

The final step in the process is the tabulating or listing of the data in the desired form. This is accomplished by the tabulating—or accounting—machine (Figure 20). Two of these are needed to handle the volume of our work. The tabulating machine is designed to perform a simple listing of the data in any desired order, or to group and summarize in any desired manner. (They are not electronic calculators.) The machine handles both numerical and alphabetical material, and prints the latter in clear, easily readable type. The machine is fully automatic and requires a minimum of attention by the operator.

FIGURE 21. A control panel for the tabulating machine being wired for a report.
Photograph by Herb Phillips, San Pedro.

FIGURE 21. A control panel for the tabulating machine being wired for a report. Photograph by Herb Phillips, San Pedro.

The "brain" of the machine is the control panel, which is housed in a rack on the left side of the machine. The panel is an extremely complex unit, similar in principle to a telephone switchboard. It is illustrated in Figures 21 and 22. The proper wiring of this panel demands a thorough understanding of the principles of the machine, its limitations and its potentialities. The value of a machine to the job is proportional to the understanding of it by the operator. Once a knowledge of the control panel is acquired, the operator can produce innumerable reports. In effect, the operator directs the machine and tells it which operation to perform and in what order, by merely making the corresponding connections on the control panel.

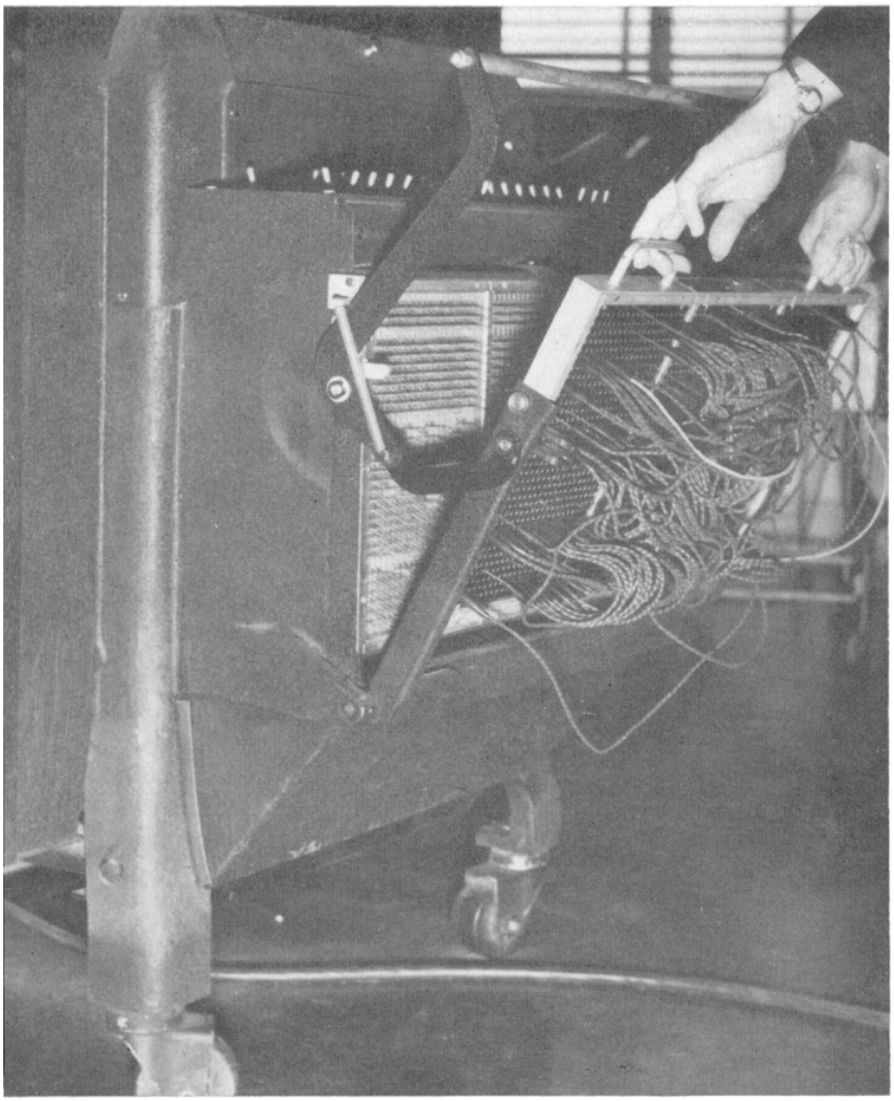


FIGURE 22. A control panel being inserted into the tabulating machine.
Photograph by Herb Phillips, San Pedro.

FIGURE 22. A control panel being inserted into the tabulating machine. Photograph by Herb Phillips, San Pedro.

The original tabulating machine installed in 1931 was designed to handle a card with 45 columns. By July of 1936, the existing equipment had become inadequate for our needs and we installed additional key-punch machines and verifiers, a second sorter and a second tabulating machine of the same capacity. In these two tabulating machines the control panel wiring was made directly on the machine. In 1938 the control panel on both machines was changed, so that it became removable, enabling the operator to set up a board for the next report while another report was being run on the machine.

By 1947, we again faced inadequate facilities. A survey was made of our needs and the existing bottlenecks, and the problem was solved by enlarging the capacity of the tabulating machines. The two machines in use were removed entirely and replaced with two model 405 I. B. M. accounting machines which handled a card with 80 columns in place of the 45 on the earlier card. With the newer type of machine and card, additional information could be punched into the record and greater flexibility obtained in the resulting reports.

FIGURE 23. The machine room of the statistical unit. The tabulating machine is in the foreground, with the sorter, key-punch and verifying machines against the walls. *Photograph by Herb Phillips, San Pedro.*

FIGURE 23. The machine room of the statistical unit. The tabulating machine is in the foreground, with the sorter, key-punch and verifying machines against the walls. Photograph by Herb Phillips, San Pedro.

However, the 80 column card was larger than the earlier one, and the new machines were designed to operate through rectangular punched holes, whereas the earlier machines used round holes. As a consequence the previously punched cards could not be run through the new tabulators, which nullified the value of the earlier cards. The problem was solved by transferring the complete punch card record for the past three years to the new 80 column cards. This was effected by a reproducing machine, loaned to us for the purpose by the I. B. M. company.

The new accounting machines installed in 1947 were equipped with alphabetical type bars. There were 25 of these, in addition to 30 numeric type bars. As the alpha bars also carried numeric codes, this gave a capacity of 55 numeric type bars. For the first time we were able to print on the report at the time it was run, alphabetic data that formerly was

typed in after the report left the machine. Although alphabetical codes and data have limited application in our work, the time saved when they are used is considerable.

As this bulletin goes to press (May, 1952) the tabulating machines have again been enlarged in capacity. Fifteen additional numeric type bars have been added, so that the present capacity is 25 alpha and 45 numeric bars, making a total of 70 potential numeric type bars. This enables the machine to print more information on the reports. Twenty-four additional counters were also installed in each machine. Added to the existing 32 counters, the machine can now accumulate 56 individual sets of figures. This enables us to utilize the additional type bar capacity. In addition to this, a subtraction unit and class selectors were added. These changes will not only give increased capacity but will add materially to the flexibility of the machines. The present equipment will produce reports giving more information in a greater variety of groupings, in a shorter time.

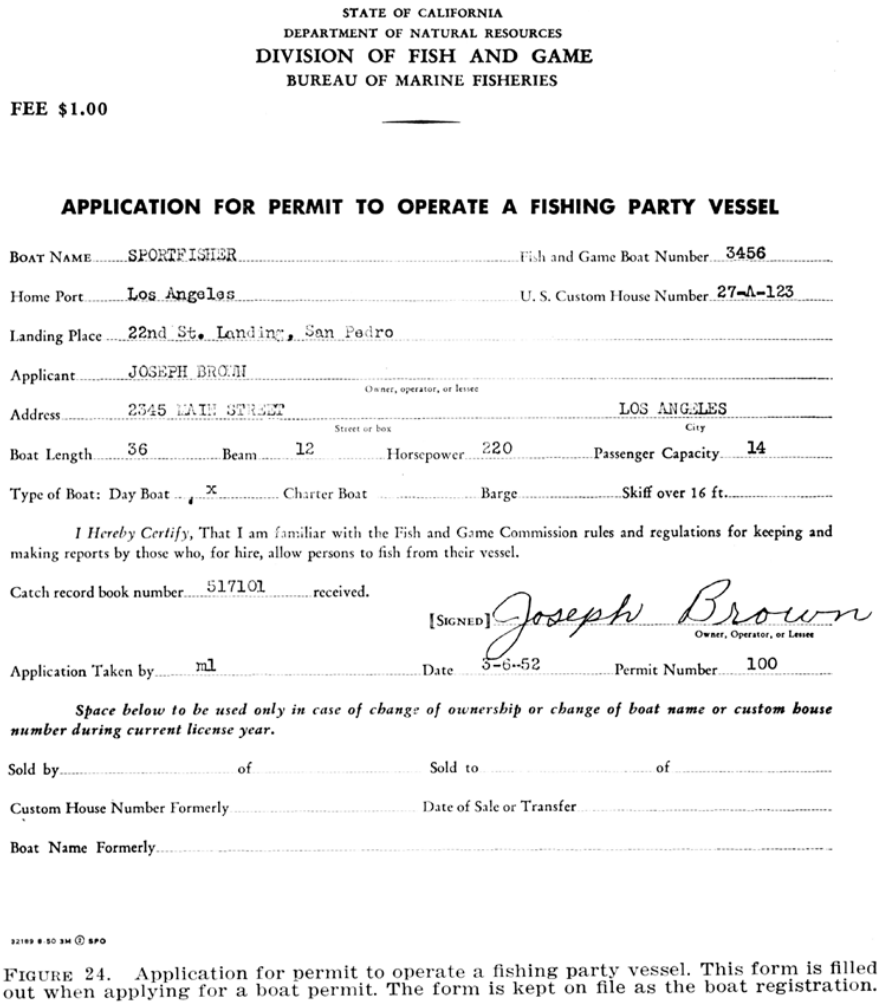
The end product of the mechanical process is the printed report. This is produced on continuous fan-fold paper. The machine of 1931 and those of 1947 used a sheet 10 inches in width. With the increased capacity installed in 1952 a sheet 14½ inches in width is required to show the results of some tabulations. However, for much of the work the 10-inch sheet suffices.

Over the years the various reports required for routine statistical and administrative purposes have been gradually modified. Occasional revision is essential to meet changing needs and the capacities of improved and enlarged machines. At this date, May, 1952, there are six basic routine reports. For the sake of the historical record the scope of these reports is shown in Figures 35 to 40, pages 70 to 72, inclusive.

In addition, numerous special reports are run, too numerous to discuss or illustrate individually. There is, however, one special report which has proved basic in all our catch analysis. This is a listing for a given species, of every individual catch by every boat, made throughout a year. In the analysis of every fishery it is this report that supplies all the information, and is the source of all special compilations. Eventually it will be run, in all probability, as a routine, for every major species. This report is essentially similar to routine report III, except that it includes only a single species.

10. MARINE SPORT CATCH RECORDS

One of our most popular outdoor recreations in California is deep sea fishing. Ocean angling has been of considerable importance for some time, and its magnitude is growing every year. It was realized long ago that adequate catch records are an essential part of the information necessary for proper fisheries management. In the early 1930's the need for a measure of the ocean recreational fisherman's catch became apparent. The first preliminary work was done in 1932 when a few picked sportfishing boat operators were asked to keep catch records voluntarily. Enough success was obtained so that the ground work for a full-fledged program was achieved.



STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME
BUREAU OF MARINE FISHERIES

FEE $1.00

APPLICATION FOR PERMIT TO OPERATE A FISHING PARTY VESSEL

Boat Name SPORTFISHER Fish and Game Boat Number 3456

Home Port Los Angeles U. S. Custom House Number 27-A-123

Landing Place 22nd St. Landing, San Pedro

Applicant JOSEPH BROWN
Owner, operator, or lessee

Address 2345 MAIN STREET LOS ANGELES
Street or box City

Boat Length 36 Beam 12 Horsepower 220 Passenger Capacity 14

Type of Boat: Day Boat x Charter Boat Barge Skiff over 16 ft.

I Hereby Certify, That I am familiar with the Fish and Game Commission rules and regulations for keeping and making reports by those who, for hire, allow persons to fish from their vessel.

Catch record book number 517101 received.

[Signed] Joseph Brown
Owner, Operator, or Lessee

Application Taken by ml Date 3-6-52 Permit Number 100

Space below to be used only in case of change of ownership or change of boat name or custom house number during current license year.

Sold by of Sold to of

Custom House Number Formerly Date of Sale or Transfer

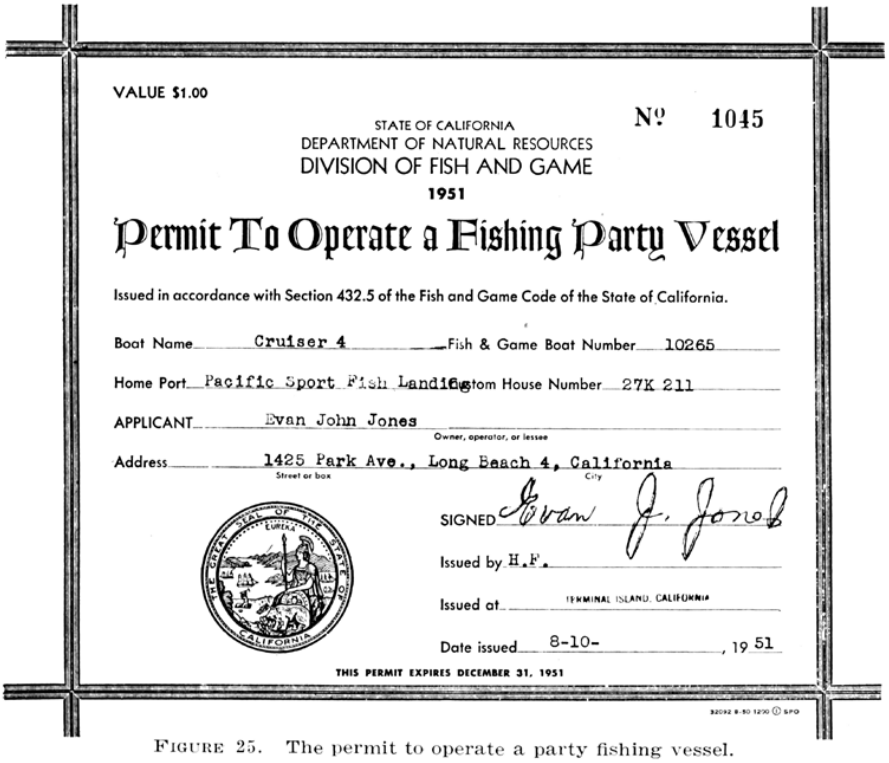
Boat Name Formerly

32189 8 50 3M ⓒ SPO

FIGURE 24. Application for permit to operate a fishing party vessel. This form is filled out when applying for a boat permit. The form is kept on file as the boat registration.

FIGURE 24. Application for permit to operate a fishing party vessel. This form is filled out when applying for a boat permit. The form is kept on file as the boat registration

In 1935 the State Legislature passed a law (Section 432.5 of the Fish and Game Code) making it mandatory that the owner of any vessel more than 16 feet in over-all length, who for hire allows persons to fish therefrom, must procure a permit from the commission at a cost of $1 (Figures 24 and 25). The permit is valid for the calendar year. The application is essentially a boat registration and it was designed to fulfill this purpose.



VALUE $1.00

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME

No. 1045

1951

Permit To Operate a Fishing Party Vessel

Issued in accordance with Section 432.5 of the Fish and Game Code of the State of California.

Boat Name Cruiser 4 Fish & Game Boat Number 10265

Home Port Pacific Sport Fish Landing Custom House Number 27K 211

APPLICANT Evan John Jones
Owner, operator, or lessee

Address 1425 Park Ave., Long Beach 4, California
Street or box City

SIGNED Evan J. Jones

Issued by H.F.

Issued at TERMINAL ISLAND, CALIFORNIA

Date issued 8-10-, 1951

THIS PERMIT EXPIRES DECEMBER 31, 1951

FIGURE 25. The permit to operate a party fishing vessel.

FIGURE 25. The permit to operate a party fishing vessel

The holder of the permit must keep accurate records of the fish taken and comply with such other regulations as the commission is authorized to prescribe (General Order 750). All forms necessary for keeping the required reports, and postage paid envelopes for mailing them are supplied by the Department of Fish and Game. Figure 26 illustrates the form used in northern and central California. Figure 27 shows that used in the San Francisco area and by the boats operating in the Sacramento-San Joaquin River Delta, while Figure 28 shows the form used in Southern California. The separate forms are adapted to local conditions. Although minor changes in the several forms have been made periodically, they have remained basically the same since the system was inaugurated. The individual records are confidential, but summary statistics on the sport catch are compiled and issued each month.

General Order 750 is written much like a set of instructions on how the records are to be kept, and it is used as such.

(a) The records must be delivered to the nearest office of the Department of Fish and Game on or before the fifth day of each month following the month to which they pertain.

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME

Date 12/19/51 Town of landing AVILA
Boat name DORIE Fish and Game No. 1234
Block areas fished 615 No. in party fishing 22

Indicate below number of fish of each species taken and your estimate of weight. Even if no fish are caught, state that no fish were taken and fill in other blanks. Blank lines are for species which are not shown in the list.

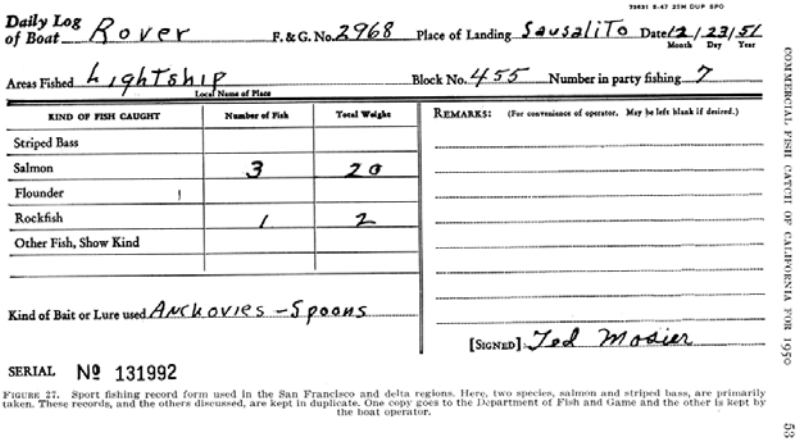
SPECIES		NO. OF FISH	TOTAL WT., LBS.
CABEZONE (BULLHEAD)	261	4	29
LING COD	195	5	20
FLOUNDERS, SOLE, SAND DABS	230		
HALIBUT	222		
KINGFISH	435		
MACKEREL	051		
PERCH	550		
ROCKFISH (ROCK COD)	250	36	56
BLACK ROCKFISH (BLUEFISH)	252		
YELLOWTAIL ROCKFISH	259		
SALMON	300		
SHARK	150		
SMELT	180		
SEA TROUT		1	1

95215 8-48 200 BKS. OF 150 ①
STATE PRINTING OFFICE

No. 43523

FIGURE 26. Sport fishing record form used in Northern California. The species of fish listed are those most commonly taken by ocean fishermen from Crescent City to Port San Luis.

FIGURE 26. Sport fishing record form used in Northern California. The species of fish listed are those most commonly taken by ocean fishermen from Crescent City to Port San Luis



Daily Log of Boat Rover F. & G. No. 2968 Place of Landing Sausalito Date 2 / 23 / 51 (Month Day Year)

Areas Fished Lightship (Local Name of Place) Block No. 455 Number in party fishing 7

KIND OF FISH CAUGHT	Number of Fish	Total Weight
Striped Bass		
Salmon	3	20
Flounder		
Rockfish	1	2
Other Fish, Show Kind		

Kind of Bait or Lure used Anchovies - Spoons

REMARKS: (For convenience of operator. May be left blank if desired.)

[SIGNED] Ted Mosier

SERIAL № 131992

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1950

53

FIGURE 27. Sport fishing record form used in the San Francisco and delta regions. Here, two species, salmon and striped bass, are primarily taken. These records, and the others discussed, are kept in duplicate. One copy goes to the Department of Fish and Game and the other is kept by the boat operator.

FIGURE 27. Sport fishing record form used in the San Francisco and delta regions. Here, two species, salmon and striped bass, are primarily taken. These records, and the others discussed, are kept in duplicate. One copy goes to the Department of Fish and Game and the other is kept by the boat operator

CALIFORNIA DIVISION OF FISH AND GAME

Date JUNE 28, 1951 Town of landing SANTA MONICA
Boat name KINGFISH Fish and Game No. 3066
Block areas fished 702 No. in party fishing 22

Indicate below number of fish of each species taken and your estimate of weight. Even if no fish are caught, state that no fish were taken and fill in other blanks. Blank lines are for species which are not shown in the list.

SPECIES		NO. OF FISH	TOTAL WT., LBS.
ALBACORE	005		
BARRACUDA	130	8	35
BONITO	003	2	8
CABEZONE	261		
LING COD	195		
FLOUNDERS, SOLE, SAND DABS	230		
HALIBUT	222	4	15
KINGFISH (TOM COD)	435	60	35
MACKEREL, PACIFIC	051	45	50
ROCKFISH (ROCK COD)	250		
SAND BASS AND KELP BASS	275	30	40
SCULPIN	260	2	2
SHARK	150	1	6
SHEEPSHEAD	145		
SKIPJACK	002		
SMELT	180		
TUNA, BLUEFIN	004		
WHITEFISH	490		
WHITE SEA BASS	400		
YELLOWTAIL	040		

94886 8-48 75M ⓑ SPO

Nº 455711

FIGURE 28. Sport fishing record form used in Southern California.

FIGURE 28. Sport fishing record form used in Southern California

(b) The records must show all information asked for on the printed forms.

(c) All records of sport catch must be completed between the time fishing is stopped at the end of each trip and before the passengers are disembarked at the pier, dock, or harbor. Operators of anchored fishing barges must note the catches of all passengers before they leave the barges and complete the record at the end of each day's operation.

(d) The record must be kept on the vessel or barge at all times.

(e) If the sport fishing vessel has not operated during any one month, the owner or operator shall notify the department not later than the fifth day of the following month.

(f) A notice giving information on license requirements, bag limits and other pertinent data is furnished by the department and shall be posted in a prominent place on the boat.

(g) Both owner and operator shall be responsible for keeping accurate records and complying with these regulations.

In processing the voluminous sport catch record, the routine has been radically changed. From the inauguration of the system to the end of 1948 the individual tickets were checked and edited by the biologist assigned to the investigation, then every ticket record was transferred to a punch card and processed in a manner similar to the commercial record. Moreover each ticket normally includes a large number of species, and the existing routine required that a card be punched for each separate species on each and every ticket. By the end of 1948 the sport fishing record became too voluminous to handle with existing help and facilities. Accordingly, in the two succeeding years only a portion of the record was handled. The following summary records the fraction of the total number of tickets that was used in each month of the two years, 1949 and 1950.

	1949	*1950*
January	All tickets used	All tickets used
February	All tickets used	All tickets used
March	All tickets used	Every other ticket
April	All tickets used	Every fourth ticket
May	Every fourth ticket	Every fourth ticket
June	Every fourth ticket	Every fourth ticket
July	Every fourth ticket	Every fourth ticket
August	Every fourth ticket	Every fourth ticket
September	Every other ticket	Every fourth ticket
October	All tickets used	Every other ticket
November	All tickets used	All tickets used
December	All tickets used	All tickets used

The fraction handled depended upon the volume of the monthly record. In the winter months when fishing was light the entire record was used. As the season progressed, one half of the tickets were selected, while at the height of the summer season only every fourth ticket was used. The method of selecting the tickets was random. As the tickets came in, those for each boat were arranged chronologically, but the boat order was random. From this collection every second or every fourth ticket was withdrawn depending upon the total volume. The tickets thus selected were then checked and edited as formerly; cards were punched for each item and the reports run from these cards. The remaining tickets were not used. The resulting reports recorded, therefore,

MARINE SPORT FISHING BOAT RECORD

MONTH YEAR May 1951

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ANGLER DAYS			14		15	30	46	17	21	22	19	13		28	28	44	30	15	12	16	
BLOCK AREA			850		850		850								850			850			
						829		829	829	829						829				829	
											849	849		807			849		849		
	005																				
	130								9						3	2		2		14	
	280																				
	003																				
	261																				
	423																				
	195																				
	230																				
	222																				
	435																				
	051																				
	055																				
	092																				
	550																				
	275		152		175	176	133	90	190	181	157	129		68	308	294	338	216	132	130	
	250						15	4			4				6	7				3	
	260						5		2		3				1					3	
	150																				
	145						5	2	4	2	3				2	6		1	1	2	
	002																				
	180																				
	004																				
	001																				
	490									1						2		1	1		
	400																				
	040																				
TOTAL			152		175	176	158	96	203	184	167	129		68	320	311	338	220	134	138	

FIGURE

BOAT NAME Len-Alf I BOAT NO. 1349
CITY Wilmington 746

21	22	23	24	25	26	27	28	29	30	31			SPECIES				TOTALS				
	15	25	19	13	42	34	20	20	36	22				131	280	177	28				616
											BOAT	DAYS		6	11	8	1				26
				850										850							
	829	829				829		829	829						829						
			849		849		849			849						849	807				
													005								
	14	11	17	5	11		16	10	51	10			130	10	95	54					159
													280								
													003								
													261								
													423								
													195								
													230								
													222								
													435								
													051								
													055								
													092								
													550								
	110	300	83	129	468	196	205	319	538	305			275	1113	2524	1817	68				5523
			4		5				3				250	21	17	13					51
			2		2								260	6	5	7					18
	1		2		2			2	10				145	8	29	8					45
													002								
													180								
													004								
													001								
													490	1	3	1					5
													400								
				2						2			040	2		2					4
	125	311	108	136	488	196	221	331	602	317			1161	2673	1902	68					5704

FIGURE 29. Monthly marine sport fishing boat record. This is the form now used in the manual tabulation of the daily catch records. Cards are punched from the totals on this sheet and the reports run from such cards.

FIGURE 29. Monthly marine sport fishing boat record. This is the form now used in the manual tabulation of the daily catch records. Cards are punched from the totals on this sheet and the reports run from such cards

only one-half or one-fourth of the actual catch and corresponding effort. The total catch and effort were obtained by multiplying these figures by two or four.

The system was not satisfactory, and the resulting reports, because of the nature of the original data, did not give the several combinations of catch and effort desired. A study of the problem was made and a new system of processing the record was put into effect on January 1, 1951. This system, after a year's trial, has proved entirely satisfactory and will continue in use.

A card file is maintained by Fish and Game number of every currently registered sport fishing boat. As tickets come in, the date of receipt and the serial numbers of those tickets are entered on the file card for the corresponding boat. By inspection of a card, one can thus tell how many days each month a boat fished, and on what dates the tickets were received. (This portion of the routine dates back to 1946.) In place of being individually checked and edited by the biologist, as was formerly done, the records on the tickets are now tabulated by clerical help on individual monthly boat sheets, illustrated in Figure 29. The completed tabulations are then returned to the biologist. It is his responsibility to check each monthly boat sheet for gross or obvious errors, interpret any questionable data, supply any missing information, and total the columns on the right of the form. With the entire months fishing activity of each boat on one sheet, irregularities become more apparent, which makes the editing both easier and more exact. Moreover the system permits the handling of the entire catch record.

Upon completion of the editing, the forms are returned to the statistical unit. Here, the totals in the right hand columns are punched. Thus, the volume of cards is greatly reduced and considerable clerical and machine time saved. The resulting reports give the desired combinations of catch and effort, and yield a greater amount of valuable data, with less error and less work, than those run under the earlier system.

We now have 10 years of reports for analysis and comparison, and from them we have learned a great deal about the status of many of our most important ocean fishes. Many facts have come to light which are of considerable help in maintaining and improving ocean fishing. Among the benefits resulting are the formulation of protective legislation and the defeat of harmful laws. The deplorable plight of our yellowtail has been emphasized, and as a result, a major research project has been started to find out what can be done to improve the fishery. The rather consistent decline in the kelp bass catch per angler day has been demonstrated. The catch records have emphasized the tremendous importance of salmon to northern California recreational fishermen and the need for giving special consideration to this fish when dams and irrigation diversions are planned or when pollution and industrial waste occur in the streams. In general, these records give us a clearer understanding of the problems besetting marine anglers, the species which need the most attention and a start toward proper management, with the ultimate goal of future good fishing.

11. LIVE BAIT RECORD

Concurrent with the tremendous development of ocean sport fishing, there has developed a need in southern California for large quantities of live bait. The boats fishing for live bait range from Port Hueneme to San Diego. The species occurring north of Ventura County can be taken on other bait, and live bait is not an essential item for catching them.

The fish used as live bait are not brought ashore, hence, they do not appear on the regular commercial fish reports. A system was inaugurated in 1939 whereby records of the bait catch could be collected. The boat operators are required to make a daily record of the amount and kinds of fish sold as bait for sport fishing purposes (Fish and Game Code Sections 1091, 1095). These records must be delivered each month to the Department of Fish and Game (Fish and Game Code Section 1094). The reports are confidential (Fish and Game Code Section 1096.5) and are compiled and published periodically as summaries so as not to disclose the business of any individual.

The catches are recorded in number of scoops of fish by species. To convert scoops to pounds a conversion factor is necessary. Periodic checks are made on individual bait boats to get figures for the average weight of a scoop of bait. Different conversion factors are used for different areas.

The data compiled from the bait records are used to follow fluctuations in the availability of bait fishes, to show the amounts and kinds of fish

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME

Daily Bait Record

Date MAY 5, 1951 Town NEWPORT BEACH
No. of hauls 3 Fish and Game No. 2814
Block areas fished 738 Boat name SKIPPER

Indicate below the number of scoops of each species taken. If you fished and even though no fish were caught fill in the blanks above.

SPECIES		NO. OF SCOOPS
SARDINES	100	
ANCHOVIES	110	173
QUEENFISH (Herring)	440	6
SMELT	180	1
KINGFISH (Tomcod)	435	
FIRECRACKERS		

32102 8-50 20M ⑧ SPO

№ 2903

FIGURE 30. Daily bait record. This is the form used by bait fishermen in reporting daily catches of live bait.

FIGURE 30. Daily bait record. This is the form used by bait fishermen in reporting daily catches of live bait

used as live bait and to show the effort expended to make the catch. With the introduction of such devices as fathometers for detecting underwater schools, lights to attract schools at night and net pulling gurdies, greater efficiency has been achieved and the catch per unit of effort has been rising steadily during the postwar years. The unit of effort, in this case, is the number of hauls made or the number of times the fisherman lays out his net. Catch records are the nucleus of management plans which will enable the fisherman to realize a continued and profitable yield from the fishery.

Another important use of these reports is to evaluate the success of sardine spawning. A silhouette of a sardine about six months old is printed on the cover of the log book with instructions to the fisherman to record all sardines smaller than the figure as "firecrackers" which is the traditional common name of these small sardines. If consistently large catches of "firecrackers" are made it indicates good spawning survival and a large year class to supply the sardine industry in coming seasons. However, the failure of "firecrackers" to appear in the bait catch might indicate only that the young fish did not appear on the Southern California bait grounds and not that there was necessarily a poor spawning survival in all areas.

The anchovy is by far the most important species in the live bait fishery, making up 70 percent of the total poundage over the three-year period, 1948 through 1950. In the same period sardines constitute 24 percent, with queenfish, kingfish, smelt and other minor species making up the remainder.

The boats fishing for live bait must be registered each year and all fishermen working on the boats must have commercial fishing licenses.

12. FISH DEALER'S AND PROCESSOR'S LICENSE

In the early nineteen hundreds, and as late as 1910, the Fish and Game Commission of the State of California had little or no authority to investigate or prosecute fish dealers and packers who were allegedly violating the laws protecting the fish of the State. In the 21st Biennial Report of the commission they were pleased to note that the Attorney General and the District Attorney of the City of San Francisco were attempting to investigate the supposed existence of an "illegal" combination or trust among fish dealers. The commission felt that the existence of such "illegal" combinations might affect species of fish propagated and distributed by the State, and make it possible for such trusts to sustain market prices by selling surplus fish to fertilizer plants. Since the Fish and Game Commission had no authority to deal with these situations it made the recommendation to the Governor, "that it might be advisable to call the attention of the Legislature to the fact that an act regulating and licensing fish dealers by this body, and giving it the necessary power to cancel such license upon conviction of violation of the laws protecting fish, would be a most effective way of curbing such evils."

As a result of these recommendations the "Wholesale Dealer's License Act" was incorporated into the California Fish and Game Laws of 1911. The act provided that "every person engaged in the vocation of dealing in, buying and selling fish or shellfish by wholesale in this State, must first obtain a license before engaging in such a vocation." It authorized

the Fish and Game Commissioners or their deputies to issue licenses prepared by the controller of the State to any citizen of the United States, or any person who has made his declaration of intention to become a citizen, upon payment of $5; and to any noncitizen upon payment of $20. Licenses would cover a one-year period from July 1st of one year to June 30th of the year following. Licenses were nontransferable. Each licensed dealer was required to keep a register to be posted at the time of each transaction, in the English language, of the date, kind and weight of fish received or bought, and the name and residence of the person or persons from whom the same was received or purchased. This register was to be open to inspection at all times by the members of the commission or their authorized agents. Violations of the act were declared a misdemeanor and punishable by fines ranging from $20 to $500, or by imprisonment of 10 to 100 days, or both. All fines and moneys collected from the sale of licenses were paid into the State Treasury to the credit of the Fish and Game Preservation Fund.

The work of the commission was hampered by lack of funds, and it was felt that a revision of the system of taxing the fisheries would be helpful. The 1914–1916 Biennial Report of the Fish and Game Commissioners to the Governor reported that the only revenue then available to the commission was received from market fishermen's licenses, wholesale dealers' licenses and from fines imposed. It was thought to be unfair that the poorest fisherman must pay $10 for his license when the largest cannery paid only $5 for its license. It was felt that California was far behind other states and countries in the matter of taxing its commercial fisheries. As a result our fisheries were not as advanced as others, for the State did not have sufficient money for its commercial fisheries work. The system employed in Oregon, Washington and Alaska as well as in most of the Atlantic states was to tax the fishermen according to the apparatus they used, and the canners, packers and wholesale dealers according to the amount of fish they handled (Biennial Report, 1914–1916).

A law enacted by the Legislature, effective in August, 1915, required dealers and handlers of fish to make an accurate monthly statement of the quantity and varieties of fish handled, and where the fish were caught. It was considered of the greatest importance that this law be enforced and that the reports be complete and accurate. To that end a list of all dealers in the State who were required to make this report was compiled, and printed blanks were issued to each. As a result of this law, complete and accurate records of fish handled since October, 1915, are available. These dealer records have in a measure helped to show the decline or rise of any fishery, and the seasons of each variety of fish. When supplemented by other records, they were also used as a basis for many conservation measures (Biennial Report, 1914–1916).

The "Wholesale Dealer's License Act" was improved and the Fisheries Tax Regulations were added to the 1917–1919 Fish and Game Code. The code stated that "Any person in the State who engages in the business of canning, curing, preserving or packing fish, which are taken in waters of this State or are brought into this State in a fresh condition; or of manufacturing fish scrap, fish meal, fish oil, chicken feed or fertilizer from fish or fish offal; or of dealing in mollusks or crustaceans by wholesale, must first procure a license for each plant or place of business." The section of the code dealing with the privilege tax required a 2½-cent

tax for each 100 pounds or fraction thereof of fish purchased or received by the dealer excepting herring and buck shad, and mollusks or crustaceans utilized for human consumption in a fresh state. This tax was to be reported and paid on a quarterly basis. All money so collected was paid into the State Treasury, to the credit of the Fish and Game Preservation Fund, and was to be expended on conservation work for the benefit of the commercial fishing industries within the districts from which the revenues were derived. Penalties for violation of any laws enacted for the protection of fish and game were made heavier, with forfeiture of the dealer's license as one of the penalties for a third violation. Surrender of the dealer's license for a period of one year was also the penalty for failure to pay the privilege tax, and no new license would be issued to such a dealer for the remainder of the year for which the original license had been issued.

These basic laws continue to be in force at the present time, with slight additions and clarifications made during the intervening years. The 1933–1935 code provided that the privilege tax was to be collected on a monthly basis and that unpaid privilege taxes constituted a lien on the plant and real property where the packing operation was being conducted. The commission also received authorization to enter and examine any canning, packing, preserving or reduction plant, or any place of business where fishery products were being manufactured, to ascertain the amount of fish received, kind and amount of fishery products produced or manufactured, and the number and size of cans or containers for fishery products purchased, received, used or on hand. It stipulated that it was unlawful to receive or agree to receive more fish than could be used without deterioration, waste or spoilage, and except as allowed in the code (Section 1065—Sardine reduction) it was unlawful to use any fish, or part thereof except fish offal in a reduction plant or by reduction process. Clarification of some of the terms (reduction plant, packer, fish offal) used in the code were listed. Specific regulations relating to the canning and reduction of sardines were amended as reported in the 1933–1935 code.

The "act" was amended and the 1937–1939 code provided that an additional privilege tax on salmon of one-half cent per pound be imposed. The revenue from this source was to be used only for the purpose of propagating salmon.

The Fish Packers and Shellfish Dealers License Act, as it is now known, was further amended in 1947 (becoming effective September 19, 1947) requiring all dealers in fresh fish to be licensed (Biennial Report, 1946–1948). This increased the amount of revenue from dealers' licenses considerably. However, it was felt that this amendment created a hardship for many fresh fish dealers and butcher shops which handled fresh fish only one or two days a week, so the act was again amended in 1948 (Biennial Report, 1948–1950), and now provides that only persons or firms dealing in fish on a wholesale basis must have a dealer's license.

Dealers' licenses are issued by any of the regional offices. An application for a license must be filled out in duplicate by the dealer or processor requesting the license, giving the date, full name of firm, corporation, or society (Figure 31); complete name of owner, owners or officers; complete mailing address as well as location of plant or place of business, and the type or kind of business to be engaged in. This application must

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME

APPLICATION FOR FISH DEALER'S AND FISH PACKER'S LICENSE

License required by persons engaged in the business of canning, curing, preserving, packing or dealing by wholesale in fish, mollusks or crustaceans, taken from the waters of this State or brought into this State in the fresh condition; and by persons engaged in the business of manufacturing fish scraps, fish meal, fish oil, chicken feed or fertilizer from fish or fish offal.

Citizens of the United States and persons with declaration of intention papers ..... X $5.00

Noncitizens (aliens) of the United States 20.00

Date July 1, 19 52

Full name of firm, corporation, or society SMITH'S SEAFOODS, CO.

Full name of owner, owners or officers J. L. SMITH

R. D. BROWN

Complete mailing address:
Street address MUNICIPAL FISH WHARF Route -- Box 511

City or Post Office SAN PEDRO State CALIFORNIA

Location of business or plant:
Street address MUNICIPAL FISH WHARF Route -- Box 511

City SAN PEDRO County of LOS ANGELES

Kind of business WHOLESALE FISH

[SIGNED] R. D. Brown
J. L. Smith
(If a corporation, signature and title of one officer necessary)

Issued by ml

Date of issue July 2, 19 51 License No. 1101

Citizen . . $ 5.00 ☒
Alien . . $20.00 ☐

Licenses are issued on a fiscal year basis expiring on June 30 of each year.

Present or mail completed application form with remittance to the Division of Fish and Game. Offices are located at:

Room 201 Broadway Pier Building
Foot of Broadway
San Diego 1, California

Ferry Building
San Francisco 11, California

300 State Office Building No. 1
Sacramento 14, California

Terminal Island Station
San Pedro, California

271 Tyler Street
Monterey, California

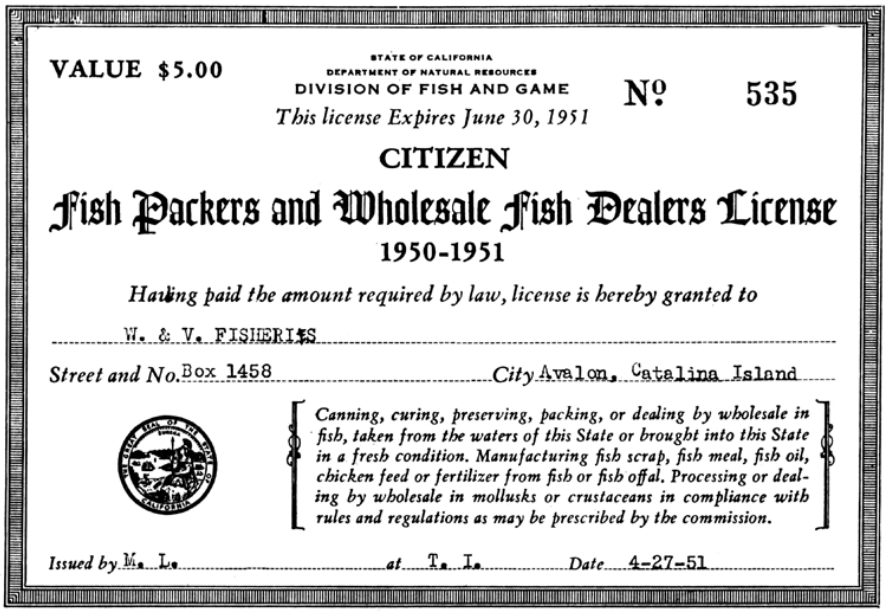
Room 310 California State Building
First and Broadway
Los Angeles 12, California

21568 1-50 5M DUP ⓓ &PD

FIGURE 31. Application form for fish dealer's and fish packer's license.

FIGURE 31. Application form for fish dealer's and fish packer's license

be signed by the owner, officer or agent of the company or corporation. The license is then issued (Figure 32). The original application form is sent to the statistical office at Terminal Island, where permanent files are maintained. The duplicate copies of the applications are filed at the regional offices for current reference.



VALUE $5.00

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME

Nº 535

This license Expires June 30, 1951

CITIZEN

Fish Packers and Wholesale Fish Dealers License

1950-1951

Having paid the amount required by law, license is hereby granted to

W. & V. FISHERIES

Street and No. Box 1458 *City* Avalon, Catalina Island

Canning, curing, preserving, packing, or dealing by wholesale in fish, taken from the waters of this State or brought into this State in a fresh condition. Manufacturing fish scrap, fish meal, fish oil, chicken feed or fertilizer from fish or fish offal. Processing or dealing by wholesale in mollusks or crustaceans in compliance with rules and regulations as may be prescribed by the commission.

Issued by M. L. *at* T. I. *Date* 4-27-51

FIGURE 32. Fish packer's and wholesale fish dealer's license.

FIGURE 32. Fish packer's and wholesale fish dealer's license

Fish dealers and processors are assigned code numbers which act as an identification in our key-punch card system. The code number also sets specific dealers apart from other dealers or firms of similar name which might be confused with them. When one firm operates in several localities the code number will distinguish one operation from another. This procedure has been in effect since 1931. Upon receipt of the original license application of a new dealer at the statistical office, a code number is assigned to the dealer. Three-by-five master file cards are made up using the information given on the license application. These cards are made in sets of two, one an alphabetic card and the other a numeric card. Information received from time to time relative to the dealer's status, is recorded on these master cards providing a valuable source of information for quick study or reference. A rubber stamp, having the dealer's name, city where the business is located, and dealer code number on it, is furnished by the department. The stamp is to be used by the dealer for stamping this information on the triplicate copy of the fish receipts which are delivered to the Department of Fish and Game.

The fee for a dealer's license has not changed since its inception. It remains $5 for citizens or anyone who declares his intention to become a citizen, and $20 for noncitizens. The present dealer's license is issued for a term of one year from July 1st of one year to June 30th of the following year. If it is issued after the beginning of such term it is valid only for the remainder thereof. This provision has remained throughout the years, for dealers' licenses were issued in 1911–1912 on this basis.

13. PROCESSORS' REPORTS

While the "pink ticket" system, discussed in preceding pages, yields a complete record of every pound of fish landed commercially in California, it neither tells what is done with this fish, nor the quantities of processed fish produced from it. Although this information is of secondary importance, there are innumerable valid reasons why it must be known.

Economically, the industry at large and the administration must know the total pack and of what container sizes this pack is composed. From the law-enforcement standpoint the State must know the disposition of the fresh fish received by a processor. Thus, the California law proscribes the reduction of any whole fish into meal and oil, except under permit. Such permits are issued only—excepting special limited cases—in the case of sardines and shark. In the former case a limited seasonal allotment is made, upon application, to each established processor. In the latter case processors may, under permit, reduce shark carcasses. Since, however, reduction of fish scrap (heads, viscera, etc.), is a legitimate operation incidental to all fish canning, the prohibition of reduction of whole fish makes it imperative to know what yields of case goods should be expected from each ton of whole fish received, and the total case pack each processor is making.

To get this information the law requires each processor to submit on or before the fifth of each month a report of the actual amount of fish received at each plant, the amount of fish packed and the number and size of containers packed therefrom, and a record of the kind and quantity of by-products produced during the preceding month (Figures 33 and 34). The law likewise requires that an annual statement be submitted by each processor on or before the fifteenth of January stating the amount and kind of fishery products canned, preserved or manufactured in the preceding year. While this is the substance of the current laws, their evolution is complex. References to particular sections of the code are given in a subsequent page.

The word processor has been freely used in this presentation. A processor is defined in the code as "* * * any person canning fish or preserving fish by the common methods of drying, salting, pickling or smoking." It is apparent that no single form could conveniently cover the diverse products produced. Hence forms have been prepared, and modified from time to time, to secure this information in a concise and convenient form. Our aim has been to minimize the number of forms and reports. Those in current use are listed below and a few are illustrated in the figures.

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME
MONTHLY PROCESSORS REPORT *
* Read Instructions on Reverse Side

Monthly statement of fish received, fish processed and by-products produced

by PACIFIC COAST CANNING CO., INC., located
Name of Firm
at TERMINAL ISLAND, CALIF., for calendar month ending January 31, 1952

Report, separately, receipts and pack of each species. Show separate entries for sardines received for (1) canning, (2) reduction under permit, (3) other purposes. Make separate entries for fish received for re-sale, and show to whom sold. Identify positively, size and type of container used, and style of pack. Indicate clearly when pack is to be used for pet food.

SPECIES	RAW FISH RECEIVED		CASE PACK				
	Pounds Received	Used for	Style of Pack	Kind of Can	Size of Can	No. Cans to Case	Number of Cases Packed
Yellowfin	4,608,532	Canning	Fancy	Round	½-lb.	48	41,482
			Grated	"	½ "	48	3,344
			Grated	"	½ "	48	45,162
Skipjack	4,135,445	Canning	Fancy	Round	½ "	48	1,345
			Fancy	"	½ "	48	11,445
			Grated	"	½ "	48	8,126
			Grated	"	½ "	48	50,264
			Fancy	"	½ "	100	1,324
Yellowtail	13,440	Canning	Flakes	Round	½ "	48	261
Bonito	400	Canning	Flakes	Round	½ "	48	6
Jack Mackerel	421,330	Canning	Natural	Tall	1 "	48	2,432
			Tomato	Oval	1 "	48	1,550
Sardines	1,718,698	Canning	Natural	Tall	5-oz.	100	19,336
	44,800	Pet food		Tall	1-lb.	48	1,768
		" "		Tall	6-oz.	48	517
	286,000	Reduction					

Sardine meal (canning) ..... tons
Sardine meal (permit) ..... tons
Other fish meal 71.60 tons
Sardine oil (canning) ..... gallons
Sardine oil (permit) ..... gallons
Other fish oil 675 gallons

I HEREBY CERTIFY that the statements made and the figures shown herein are to the best of my knowledge and belief true and complete.

February 2, 1952 (Date) — John Doe (Signature) — Vice President (Title)

FIGURE 33. Monthly processors' report. This form is used to secure the record of fish received, fish processed by canning and by-products produced by the canning and reduction plants.

FIGURE 33. Monthly processors' report. This form is used to secure the record of fish received, fish processed by canning and by-products produced by the canning and reduction plants

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

Processors Report—Cured and Manufactured Fishery Products *

* Read Instructions on Reverse Side

Monthly statement of fish received, fish processed and by-products

Produced by Allen's Smoke House,

located at Newport Beach, Calif., for calendar month ending January 31, 19 52

Report receipts of fish separately by species. Show whether fish is dried, kippered, mildcured, pickled, salted, smoked, etc. Indicate clearly raw fish weight and finished weight after processing. Be sure to show the size and type of container packed.

SPECIES	RAW FISH RECEIVED: Pounds Received	RAW FISH RECEIVED: Method of Processing	PROCESSED PACK: Total Processed Weight	PROCESSED PACK: Kind of Containers	PROCESSED PACK: Size	PROCESSED PACK: Number of Containers Packed
Pacific Mackerel	140	Smoking	70			
Yellowtail	320	"	160			
Salmon	35	"	17			
Rock Bass	150	"	75			
Ling Cod	200	"	100			
Barracuda	1630	"	815			

Shrimp meal ..... pounds.

I HEREBY CERTIFY, that the statements made and the figures shown herein, are to the best of my knowledge and belief true and complete.

February 1, 1952 (Date) — John Allen (Signature) — Owner (Title)

FIGURE 34. Monthly processors' report. This form is used to secure the record of fish received and fish cured or otherwise manufactured into fishery products, except by canning and reduction. The form serves essentially to get the record from smokehouses, and those concerns drying, salting and mildcuring salmon and other species.

FIGURE 34. Monthly processors' report. This form is used to secure the record of fish received and fish cured or otherwise manufactured into fishery products, except by canning and reduction. The form serves essentially to get the record from smokehouses, and those concerns drying, salting and mildcuring salmon and other species

13.1. Monthly Processors' Reports

1. Canned fishery products.
2. Cured and manufactured fishery products.
3. Shark livers received, and processed.
4. Shark carcasses reduced.
5. Tons of kelp harvested.

13.2. Annual Processors' Reports

6. Canned fishery products.
7. Cured and manufactured fishery products.
8. Shark liver oil production.

By far the most important of these is the monthly report of canned fishery products produced. This report is the basis of the monthly statistics issued by the department giving the tonnage of cannery fish received, the case pack of the principal species, the amounts of meal and oil produced, the amount of sardines used for reduction under permit and other routine information needed. From this report the individual case pack is calculated to ascertain if the legally required yields have been met. From this report the amounts of sardines used for canning are determined and the amounts credited to reduction allotments are calculated.

The amount of detailed work in checking, computing, compiling, coding, tabulating and summarizing this data is immense, and the

manuals of procedure to guide the staff in this work are voluminous. No adequate description of the routine can be given here. However, the basic steps are indicated by the procedure governing monthly reports.

1. The various monthly blank forms are mailed on the twentieth of each month by the regional offices to the respective processors in that district.

2. The completed forms are received at the regional offices by the fifth of the following month.

3. Here they are checked against a regional inventory of licensed processors to see that each individual concern has filed a return.

4. In the regional offices each report is checked for completeness and accuracy. Any deficiencies, errors or ambiguities are called to the attention of the local captain of patrol, and through him corrections obtained.

5. In the case of sardines processed, the tonnage of fish reported as received is checked against the record of individual fish receipts of that processor.

6. In the case of sardines, the case pack, the amounts used for reduction under permit and other detail is calculated on a standardized work sheet. Also the several different can sizes are converted by accepted factors into equivalents of one-pound oval cans.

7. The initialed reports are then sent to the statistical unit at Terminal Island. Here the entire work sheet is checked.

8. A person of supervisory rank then codes the entire report, preparatory to transferring the record to the punch card system. The cards are then punched and verified.

9. Three tabulated reports are then run to yield the combinations needed for various purposes.

10. From the tabulated reports summaries for general release are made, and mimeographed copies prepared. These are distributed to all interested parties on the twentieth of each month, presenting the statistics of the preceding month.

The uses for the summarized information derived from the several reports are many. Two mimeographed summaries are issued each month. One shows (in season) the total monthly and seasonal receipts of sardines, the amount used for canning and reduction, and the tons of oil and meal produced. It also shows the monthly and seasonal case pack by standard packs, and the total pack in one-pound oval equivalents. The second mimeographed release shows the monthly receipts of tuna by species and those of other important canning species. It shows the monthly case pack grouped into standard packs of light meat and white meat tuna. The packs of other species are also shown. These two mimeographed reports are issued primarily for the benefit of the industry, and they are extensively used. They furnish the most reliable current statistics on the pack.

The several monthly reports furnish the answers to the innumerable inquiries constantly received concerning the current season's receipts of fish and the current pack. While the final statistical record of fish landings is based entirely upon the individual fish receipts, the volume of this record is such that there is always a lag, and final landing figures are not available until some months later. In the meantime the receipts of fish reported on processors' reports furnish close estimates of current landings at the processing plants.

All the reports contribute to an annual statistical circular which is compiled at the close of each year and distributed in printed form about April of each year. This circular is of immense value to the department, to the industry and to the State Legislature, because it gives, up to date, the final figures on manufactured fishery products, and preliminary figures on the annual catch. It also presents the total sardine catch and total case pack by season. Before the current year is over inquiries pour in, and the figures are extensively used as soon as they are available. The work involved in the preparation of the monthly and annual summaries is amply justified by the extensive use of the prepared figures.

The legislation governing the present processors' reports is contained in Sections 1073 and 1098 of the present Fish and Game Code. These two sections supersede or clarify a large volume of earlier legislation. While not complete, the following summary will trace the evolution of the present reports.

In August, 1915, an amendment was passed by the State Legislature requiring a monthly report to the Fish and Game Commission from all fish dealers. This report was to show the poundage of each species of fish purchased. In July, 1917, a new report was required, to be submitted quarterly. This report was to show the total amount of fresh fish used for purposes other than human consumption in the fresh state, and the poundage of all mollusks and crustaceans handled, whether used fresh or otherwise. Note that the law of 1915 concerned fish receipts, whereas that of 1917 was concerned with the production of fishery products. These laws remained in effect until 1933. In that year the fish and game laws were revised, and consolidated into the Fish and Game Code. The monthly report of fish received was then discarded, and the quarterly report of fish processed was changed (Section 1017) to a monthly report. Meanwhile, a parallel change was made in 1929, when an amendment to the fish and game laws stated that by the fifth of the following month each packer of fish must show the actual amount of fish received at each plant and also the amount of fish packed, number and size of cans or other containers of fish, fishery products and by-products packed, produced or reduced at such plant during the preceding calendar month. In 1933, this likewise became a part (Section 1073) of the Fish and Game Code.

The annual reports date back to legislation passed in 1919. This required all persons canning, curing or manufacturing fishery products from fish or offal, to file an annual report with the commission on or before the fifteenth day of January. This report was to show the amount and kind of fishery products canned, preserved or manufactured, but did not call for figures on the fish received. This portion of the law was also incorporated into the Fish and Game Code in 1933.

The laws governing the reduction of fish are complex. They are adequately discussed in an article by B. D. Marx Green, which appeared in the quarterly magazine *California Fish and Game*, vol. 13, no. 1, January, 1927.

REPORT I A
SPECIES BY ORIGIN
REGIONAL

Species	Origin	Pounds by Origin	Pounds by Species	Total Region
YELLOWTAIL	040			
	040 719	582		
	040 867	396		
	040 920	9405		
			10383	
BARRACUDA	130			
	130 720	509		
	130 860	617		
	130 920	1186		
			2312	
WHITE SEA BASS	400			
	400 718	514		
	400 849	1684		
	400 920	2166		
			4364	
				17059

FIGURE 35. The form of routine report I-A.

FIGURE 35. The form of routine report I-A

REPORT I B
SPECIES BY PRICE
REGIONAL

Origin Group	Species	Price	Pounds by Price	Pounds by Species	Pounds by Origin Group	Pounds by Month
CALIFORNIA						
YELLOWTAIL	040					
	040	1000	582			
	040	1400	396			
				978		
BARRACUDA	130					
	130	1000	509			
	130	1200	617			
				1126		
WHITE SEA BASS	400					
	400	1700	514			
	400	1800	1684			
				2198	4302	
SOUTH OF BOUNDARY FISHING BOAT LANDING						
YELLOWTAIL	040					
	040	1300	9405			
				9405		
BARRACUDA	130					
	130	1500	1186			
				1186		
WHITE SEA BASS	400					
	400	2000	2166			
				2166	12757	
						17059

FIGURE 36. The form of routine report I-B.

FIGURE 36. The form of routine report I-B

REPORT II
DEALER
STATEWIDE

	Dealer	City	Species	Pounds by Species and City	Pounds by Dealer
SEASIDE FISHERIES	7125	743			
LONG BEACH	7125	743			
	7125	743	040	582	
				582*	582
J MC CARTHY NEWPORT BEACH	7209	748			
	7209	748	040	396	
	7209	748	130	617	
	7209	748	400	1684	
				2697*	2697
DEARDEN FISH LONG BEACH	7296	743			
	7296	743	130	509	
	7296	743	400	514	
				1023*	1023
PIONEER FISHERIES INC	7820	770			
SAN PEDRO	7820	770			
	7820	770	130	1186	
				1186*	1186
ZANKICH BROS SAN PEDRO	7822	770			
	7822	770	400	2166	
				2166*	2166
TERMINAL FISHERIES	7825	770			
SAN PEDRO	7825	770			
	7825	770	040	9405	
				9405*	9405
Total Pounds 17059					

FIGURE 37. The form of routine report II.

FIGURE 37. The form of routine report II

REPORT III
DAILY BOAT LISTING
STATEWIDE

Boat	Origin	City	Dealer	Month	Day	Price	Species	Pounds	Pounds by Boat
1859	719	743	7125	07	02	1000	040	220	
1859	719	743	7125	07	03	1000	040	362	
1859	720	743	7296	07	05	1000	130	148	
1859	720	743	7296	07	06	1000	130	361	
1859	718	743	7296	07	12	1700	400	364	
1859	718	743	7296	07	13	1700	400	150	
									1605
6946	920	770	7825	07	11	1300	040	8421	
6946	920	770	7820	07	11	1500	130	625	
6946	920	770	7822	07	11	2000	400	1208	
6946	920	770	7825	07	13	1300	040	984	
6946	920	770	7822	07	14	2000	400	958	
6946	920	770	7820	07	16	1500	130	561	
									12757
7594	867	748	7209	07	04	1400	040	291	
7594	867	748	7209	07	08	1400	040	105	
7594	860	748	7209	07	10	1200	130	291	
7594	860	748	7209	07	11	1200	130	326	
7594	849	748	7209	07	16	1800	400	702	
7594	849	748	7209	07	17	1800	400	982	
									2697
								17059*	

FIGURE 38. The form of routine report III.

FIGURE 38. The form of routine report III

REPORT IV
BOAT CATCH SUMMARY
REGIONAL

Boat	Species	Pounds by Species	Pounds by Boat	Total Region
1859	040	582		
1859	130	509		
1859	400	514		
			1605	
6946	040	9405		
6946	130	1186		
6946	400	2166		
			12757	
7594	040	396		
7594	130	617		
7594	400	1684		
			2697	
				17059

FIGURE 39. The form of routine report IV.

FIGURE 39. The form of routine report IV

REPORT V
CITY
REGIONAL

	City Species	Pounds by Species	Pounds by City	Total Pounds
LONG BEACH	743			
	743 040	582		
	743 130	509		
	743 400	514		
			1605	
NEWPORT BEACH	748			
	748 040	396		
	748 130	617		
	748 400	1684		
			2697	
SAN PEDRO	770			
	770 040	9405		
	770 130	1186		
	770 400	2166		
			12757	
				17059

FIGURE 40. The form of routine report V.

FIGURE 40. The form of routine report V

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15. LIST OF COMMON AND SCIENTIFIC NAMES OF FISHES, CRUSTACEANS AND MOLLUSKS

Common name	*Scientific name*
Anchovy	
Deep-bodied	Anchoa compressa
Northern	Engraulis mordax
Slough	Anchoa delicatissima
Barracuda	Sphyraena argentea
Bonito, California	Sarda lineolata
Cabezone	Scorpaenichthys marmoratus
Cabrilla	Epinephalus analogus
Carp	Cyprinus carpio
Catfish	
Forktail	Ictalurus catus
Squaretail	Ameiurus nebulosus
Corbina, Mexican	Cynoscion orthonopterus
Crevally	Caranx sp.
Flounder, starry	Platichthys stellatus
Flying fish, California	Cypselurus californicus
Grouper	Species of Mycteroperca
Hake	Merluccius productus
Halibut, California	Paralichthys californicus
Halibut, Pacific	Hippoglossus stenolepis
Hardhead	
Greaser blackfish	Orthodon microlepidotus
Hardhead	Mylopharodon conocephalus
Herring, Pacific	Clupea pallasi
Kingfish	
Kingfish	Gcnyonemus lineatus
Queenfish	Seriphus politus
Lingcod	Ophiodon elongatus
Mackerel, jack	Trachurus symmetricus
Mackerel, Pacific	Pneumatophorus diego
Mullet	Mugil cephalus
Perch	
Blacksmith	Chromis punctipinnis
Halfmoon	Medialuna californiensis
Opaleye	Girella nigricans
Salt-water perch	Members of family Embiotocidae
Pike (Sacramento squawfish)	Ptychocheilus grandis
Pompano, California	Palometa simillima
Rock bass	
Kelp bass	Paralabrax clathratus
Sand bass	Paralabrax nebulifer
Rockfish	All species of Sebastodes and Sebastolobus
Sablefish	Anoplopoma fimbria
Salmon	
King	Oncorhynchus tshawytscha
Silver	Oncorhynchus kisutch
Sand dab	Citharichthys sordidus
	Citharichthys stigmaeus
Sardine, Pacific	Sardinops caerulea
Sculpin	Scorpaena guttata
Sea bass, black	Stereolepis gigas
Sea bass, white	Cynoscion nobilis
Seatrout, greenling	Hexagrammos decagrammus
Shad	Alosa sapidissima
Shark	
Basking shark	Cetorhinus maximus
Dogfish	Squalus acanthias
Gray smoothhound	Mustelus californicus
Leopard shark	Triakis semifasciata
Soupfin	Galeorhinus zyopterus
Varying amounts of other species	
Sheepshead, California	Pimelometopon pulchrum
Sierra	Scomberomorus sierra
Skate	
Big	Raja binoculata
California	Raja inornata
Longnose	Raja rhina
Varying amounts of other species	
Smelt	
Grunion	Leuresthes tenuis
Jack smelt	Atherinopsis californiensis
Surf smelt	Hypomesus pretiosus
Top smelt	Atherinops affinis
Small amounts of other Osmerids	
Sole	
English	Parophrys vetulus
Dover	Microstomus pacificus

Petrale	Eopsetta jordani
Rex	Glyptocephalus zachirus
Varying amounts of other species	
Splittail	Pogonichthys macrolepidotus
Sucker, western	Catostomus occidentalis
Swordfish, broadbill	Xiphias gladius
Tomcod	Microgadus proximus
Tuna	
Albacore	Thunnus germo
Bluefin tuna	Thunnus thynnus
Skipjack	Katsuwonus pelamis
Yellowfin tuna	Neothunnus macropterus
Turbot	
Curlfin	Pleuronichthys decurrens
Diamond	Hypsopsetta guttulata
Sharpridge	Pleuronichthys verticalis
Small amounts of other species	
Wahoo	Acanthocybium solandri
Whitebait	Allosmerus attenuatus
	Spirinchus starksi
	Young of several other species
Whitefish, ocean	Caulolatilus princeps
Yellowtail	Seriola dorsalis

Common name	*Scientific name*
Crab, market	Cancer magister
Crab, rock	Cancer antennarius
	Cancer anthonyi
	Cancer productus
Lobster, spiny	Panulirus interruptus
Shrimp	Crago franciscorum
	Crago nigricauda
	Squilla sp.
Abalone	
Pink	Haliotis corrugata
Red	Haliotis rufescens
Southern green	Haliotis fulgens
Clam	
Cockle	Paphia staminea
	Species of Chione
Gaper	Schizothaerus nuttalli
Jackknife	Tagelus californianus
Pismo	Tivela stultorum
Softshell	Mya arenaria
Washington	Saxidomus nuttalli
Mussel	Mytilus californianus
	Mytilus edulis
Octopus	Paroctopus apollyon
Oyster	
Eastern	Ostrea virginica
Pacific	Ostrea gigas
Squid	Loligo opalescens

16. EXPLANATION OF TABLES

The tables published in this bulletin supply the complete available record of the commercial catch of fish, mollusks and crustaceans landed in California. In these tables the catch is divided into two components, and in using the tables it is important to appreciate the distinction. The major component is the catch of the California fleet of fishing vessels. The other includes the shipments by common carrier into California of fresh fish originating in other states or countries. Throughout the tables the first component is designated as the catch—or landings—of the California fleet. The second is indicated by the one word "shipments."

The catch of the California fleet is actually the aggregate of deliveries at California ports of all fresh fish, crustaceans and mollusks caught by American fishing vessels in the Pacific Ocean and the rivers and streams of California. It is not strictly the total and exclusive catch of the California fishing fleet. The catch actually includes deliveries made by fishing vessels based and registered in Oregon, Washington and Alaska. Conversely, many vessels of the California fleet deliver occasional loads to Oregon and Washington. However, these exceptions are nominal, and to all intents and purposes the designation is correct.

The term shipment is used in the tables to separate all landings in California of fresh fish taken in other states or countries by alien vessels, or vessels of other fleets, and delivered by rail, truck or ocean carrier. The largest portion of the shipments consists of tuna imported frozen from abroad for processing in California. The records of such fish destined to domestic canneries are complete and accurate. The records of shipments of fish destined for fresh consumption are incomplete, because California fish receipts are not always made for loads trucked across a state or national boundary. Thus, customs declarations show that there was a large poundage of lobster trucked across the United States-Mexican boundary into Southern California, but of this amount only a fraction is reported on our fish receipts.

In Tables 4 to 7 inclusive, the term "yearly" has been intentionally employed in place of "annual," because the year in question is the license year, extending from April 1 to March 31 of the succeeding year.

Whenever in these tables the value of the catch is given (Tables 3, and 18 19 20 21 22 23 24 25 inclusive) the value shown represents the amount paid to the fishermen. In the case of shipments the price paid by the buyer, as shown on the fish receipt, is used. Where no price is shown a calculated value is applied, based on the average price per pound paid for that species for the month in the area where the fish is delivered.

In the case of halibut delivered in the San Francisco region, two species are involved. In many instances the species are not separated in the fish receipts. To avoid a grouping of the two in the records, the percentage composition of the catch was determined by periodic sampling. Biologists of this bureau investigated market loads and determined the actual composition of the halibut catch. This is, over a period of time, consistently about 90 percent Pacific halibut and 10 percent California halibut. Hence the total catch of halibut in the San Francisco region is shown in this proportion.

The poundages shown in the tables are obtained from the weight shown on the individual fish receipts. The receipt does not always indicate whether the fish is cleaned or round. Nor does the receipt indicate, in the case of those species normally cleaned by the fisherman, the extent of the cleaning and the resulting weight loss. In such cases no adjustment is made in the tables for cleaning losses. The poundage shown is the aggregate of all weights given on the individual fish receipts.

An exception to this rule is made for catfish. This species is invariably delivered cleaned, and as the cleaning loss is 50 percent, the total poundage on the fish receipts is multiplied by two in the tables.

In the case of mollusks these are often purchased by number rather than by weight. Hence, appropriate average conversion factors have been developed by sampling to convert to round weight, or weight in the shell. The factors now in use are as follows:

Crab, market	2 pounds each
Abalone, red	50 pounds per dozen
Abalone, pink	35 pounds per dozen
Abalone, green	35 pounds per dozen
Clams, Mexican Pismo	8 pounds round weight per 1 pound cleaned weight
Clams, Washington	7 pounds per dozen
Oyster, Eastern	30 pounds per hundred
Oyster, Pacific	50 pounds per hundred, or 8 pounds per cleaned gallon

Many of the tables include fresh water species and species taken in inland waters. The poundages so taken are credited to the adjacent coastal region. Thus, mullet from the Salton Sea is in all tables credited to the San Diego region, while carp from Clear Lake is included in the totals for the Sacramento region. In these two instances the fish receipt record is supplemented by statistics supplied by the inland fisheries branch of the department, under whose jurisdiction much of the fishing is conducted.

Tables 1 to 25 inclusive pertain to the commercial fisheries. Inasmuch as there is a large poundage of fish taken by recreational fishermen, an estimate of this sport catch is given in Table 26, and the amount of live bait used to obtain this catch is shown in Table 27. The addition of these two tables gives a closer approximation to the total yield of the indigenous species. Unfortunately, the estimated sport catch is recorded in numbers of fish rather than in weight of fish. Experience has shown that in the sport fishery only the number of fish taken can be obtained with sufficient accuracy. The amount of bait used is compiled from the daily bait records made out by those boats supplying the party fishing boats. These figures do not include the quantities of bait used by the regular commercial fleet.

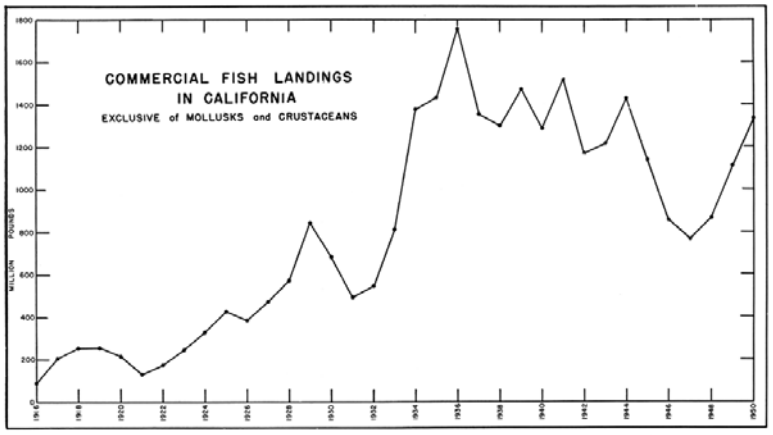

FIGURE 41. The total annual landings and shipments into California of commercial fish, exclusive of mollusks and crustaceans. This chart portrays the figures in Table 1.

FIGURE 41. The total annual landings and shipments into California of commercial fish, exclusive of mollusks and crustaceans. This chart portrays the figures in Table 1

TABLE 1

Total Annual Landings and Shipments Into California of Commercial Fish. Excludes Mollusks and Crustaceans, But Includes Sardine Deliveries to Reduction Ships During 1930 to 1938.

Year	Pounds	Year	Pounds
1916	88,390,465	1934	1,378,154,189
1917	202,987,474	1935	1,433,616,046
1918	254,238,270	1936	1,753,632,108
1919	256,120,774	1937	1,354,050,220
1920	215,431,810	1938	1,298,036,943
1921	129,086,209	1939	1,472,988,721
1922	176,216,485	1940	1,284,881,633
1923	246,383,030	1941	1,517,533,106
1924	325,948,382	1942	1,166,614,194
1925	425,695,707	1943	1,215,161,305
1926	382,602,891	1944	1,430,202,850
1927	471,210,260	1945	1,138,943,309
1928	572,070,120	1946	855,997,768
1929	841,149,549	1947	763,324,829
1930	680,858,788	1948	863,000,994
1931	491,083,110	1949	1,110,074,882
1932	542,060,362	1950	1,336,082,157
1933	811,002,474		

TABLE 1
Total Annual Landings and Shipments Into California of Commercial Fish. Excludes Mollusks and Crustaceans, But Includes Sardine Deliveries to Reduction Ships During 1930 to 1938

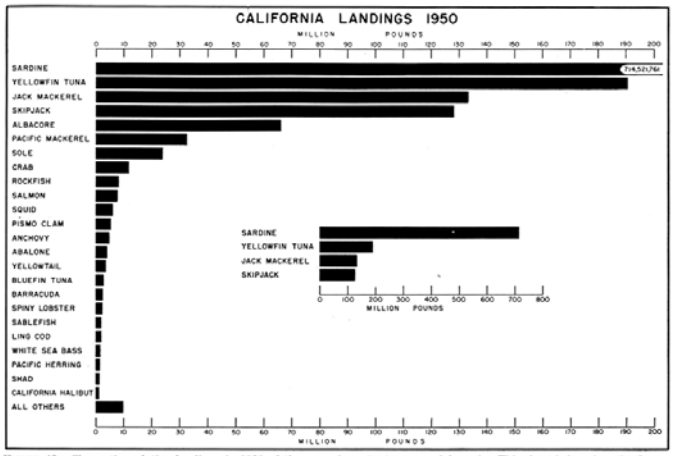

FIGURE 42. Shows the relative landings in 1950 of the more important commercial species. This chart is based on the figures in Table 2, which include the shipments with the catch of our own fleet.

FIGURE 42. Shows the relative landings in 1950 of the more important commercial species. This chart is based on the figures in Table 2, which include the shipments with the catch of our own fleet

TABLE 2

Total Commercial Fish Landings and Shipments Into California During 1950

Species	Pounds	Species	Pounds
Sardine	714,521,761	Yellowtail	3,532,121
Yellowfin tuna	190,446,466	Bluefin tuna	2,846,841
Jack mackerel	133,255,752	Barracuda	2,258,415
Skipjack	128,081,078	Spiny lobster	2,229,550
Albacore	66,124,414	Sablefish	1,919,971
Pacific mackerel	32,649,969	Lingcod	1,914,725
Sole	23,893,198	White sea bass	1,532,730
Crab	11,723,145	Pacific herring	1,425,351
Rockfish	8,115,909	Shad	1,263,365
Salmon	7,758,591	California halibut	1,092,745
Squid	5,995,485	All others	9,904,554
Pismo clam	5,272,696		
Anchovy	4,878,687	Total pounds	1,366,592,310
Abalone	3,954,791		

TABLE 2
Total Commercial Fish Landings and Shipments Into California During 1950

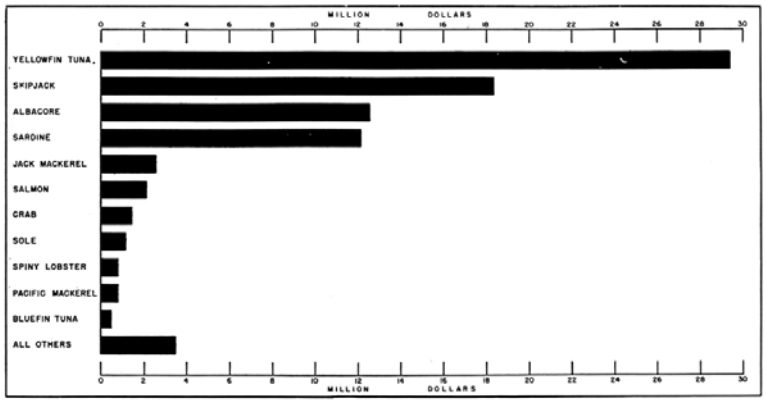

FIGURE 43. Shows the relative value in 1950 of the more important commercial species. The chart is based on the figures in Table 2, which are derived from the comparable figures in Table 2.

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1950

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FIGURE 43. Shows the relative value in 1950 of the more important commercial species. The chart is based on the figures in Table 3, which are derived from the comparable figures in Table 2

TABLE 3

Value of Commercial Fish Landings and Shipments Into California During 1950

Species	Value	Species	Value
Yellowfin tuna	$29,398,827	Sole	1,155,519
Skipjack	18,344,394	Spiny lobster	798,175
Albacore	12,556,927	Pacific mackerel	794,479
Sardine	12,140,322	Bluefin tuna	438,500
Jack mackerel	2,571,869	All others	3,487,904
Salmon	2,115,375		
Crab	1,421,158	Total value	$85,223,449

TABLE 3
Value of Commercial Fish Landing and Shipments Into California During 1950

TABLE 4

Yearly Number of Licensed Commercial Fishermen in California

1941-1942	9,344	1946-1947	12,312
1942-1943	9,043	1947-1948	12,894
1943-1944	11,804	1948-1949	14,261
1944-1945	10,871	1949-1950	14,962
1945-1946	11,747	1950-1951	14,600

TABLE 4
Yearly Number of Licensed Commercial Fishermen in California

TABLE 5

Number of Commercial Fishermen Licensed by Region, in the 1950-1951 License Year

Region of residence	Number of fishermen, 1950-1951
Eureka	826
Sacramento	577
San Francisco	1,448
Monterey	1,383
Santa Barbara	555
Los Angeles	5,388
San Diego	3,174
Alaska, Washington and Oregon fishermen licensed in California	1,206
Mexican nationals licensed in California	43
Total	14,600

TABLE 5
Number of Commercial Fishermen Licensed by Region, in the 1950–1951 License Year

TABLE 6

Yearly Number of Registered Fishing Boats, Grouped According to Length

Season	Under 40 feet	40 to 84 feet	85 feet and over	Total
1941-1942	2,331	765	106	3,202
1942-1943	2,264	650	51	2,965
1943-1944	2,929	750	47	3,726
1944-1945	2,852	870	60	3,782
1945-1946	3,103	943	99	4,145
1946-1947	3,558	1,144	155	4,857
1947-1948	3,639	1,201	202	5,042
1948-1949	4,088	1,378	256	5,722
1949-1950	4,294	1,595	271	6,160
1950-1951	4,127	1,710	266	6,103

TABLE 6

Yearly Number of Registered Fishing Boats, Grouped According to Length

TABLE 7

Number of Fishing Boats Registered in the Season 1950-1951 in Each Region, Grouped by Length

Region of home port	Number of boats, grouped by length						Total number of boats for each region
	Up to 24 feet	25 to 39 feet	40 to 64 feet	65 to 84 feet	85 to 99 feet	100 feet and over	
Eureka	43	283	110	10		1	447
Sacramento	108	248	13	2			371
San Francisco	48	631	131	32	3	1	846
Monterey	91	252	57	42	5	1	448
Santa Barbara	52	143	53	3	2		253
Los Angeles	387	1,225	479	114	50	33	2,288
San Diego	111	414	171	38	42	104	880
Alaska, Washington and Oregon	1	90	370	84	9	15	569
Mexico				1			1
Total number of boats	841	3,286	1,384	326	111	155	[1]6,103

[1] The owners of 972 of these vessels were issued fishing party permits.

TABLE 7

Number of Fishing Boats Registered in the Season 1950–1951 in Each Region, Grouped by Length

TABLE 8

Origin of Shipments of Fresh Fish Into California During 1950

Shipped from	Shipped to			Total pounds
	San Francisco region	Los Angeles region	San Diego region	
Continental United States:				
Salmon		30,789		30,789
Tuna, unclassified	40,000			40,000
Miscellaneous fish	15,000	11,185		26,185
Oregon, Washington and British Columbia:				
Halibut, Pacific		56,213		56,213
Sablefish	170,971	165,019		335,990
Salmon	7,110	651,790		658,900
Tuna, albacore	24,607		21,936	46,543
Miscellaneous fish	1,999			1,999
South of the international boundary:				
Rock bass			2,538	2,538
Rockfish			1,677	1,677
Sea bass, black			7,458	7,458
Sea bass, white			1,390	1,390
Tuna, albacore			28,639	28,639
Yellowtail		2,300		2,300
Mollusk:				
Clam, Pismo		1,214,808	4,057,888	5,272,696
South America:				
Swordfish, broadbill			751	751
Tuna, skipjack		32,534	4,000	36,534
Tuna, yellowfin	760,108	5,048,307	2,301,617	8,110,032
Australia, Fiji and Philippine Islands:				
Tuna, bluefin	107,878			107,878
Tuna, skipjack		117,220		117,220
Tuna, yellowfin	2,100	18,500		20,600
Japan:				
Swordfish, broadbill	347			347
Tuna, albacore	40,743	4,262,495		4,303,238
Tuna, skipjack	288,447	2,819,458		3,107,905
Total pounds	1,459,310	14,430,618	6,427,894	22,317,822

	Pounds		Pounds
Recapitulation:			
Salmon	689,689	Tuna, skipjack	3,261,659
Tuna, albacore	4,378,420	Tuna, yellowfin	8,130,632

TABLE 8
Origin of Shipments of Fresh Fish Into California During 1950

TABLE 9

Origin of the Commercial Fish Landings and Shipments Into California During 1950

Species	California	North of the state boundary[1]	South of the international boundary	South America	Australia, Fiji and Philippine Islands	Japan	Total pounds
Anchovy	4,878,687						4,878,687
Barracuda	890,435		1,367,980				2,258,415
Bonito	33,456		662,158				695,614
Cabezone	21,679						21,679
Cabrilla			283,380				283,380
Carp	1,066,081						1,066,081
Catfish	299,494						299,494
Flounder	911,809	1,301					913,110
Flying fish	60,714						60,714
Grouper			296,368				296,368
Hake	500						500
Halibut, California	806,279		286,466				1,092,745
Halibut, Pacific	201,878	56,213					258,091
Herring, Pacific	1,425,351						1,425,351
Kingfish	747,387						747,387
Lingcod	1,831,965	81,775	985				1,914,725
Mackerel, jack	133,255,752						133,255,752
Mackerel, Pacific	32,649,969						32,649,969
Mullet	239,421						239,421
Perch	235,623		9,817				245,440
Pompano, California	183,697						183,697
Rock bass	102,703		102,664				205,367
Rockfish	7,769,726	314,788	31,395				8,115,909
Sablefish	1,533,183	386,788					1,919,971
Salmon	7,064,951	693,640					7,758,591
Sand dab	677,266	5,595					682,861
Sardine	714,521,761						714,521,761
Sculpin	139,248		275				139,523
Sea bass, black	11,903		146,351				158,254
Sea bass, white	1,123,429		409,301				1,532,730
Seatrout, greenling	411						411
Shad	1,263,365						1,263,365
Shark	710,023		7,222				717,247

TABLE 9
Origin of the Commercial Fish Landings and Shipments Into California During 1950

Sheepshead	59,344		6,865				66,209
Sierra			4,259				4,259
Skate	153,438		320				153,758
Smelt	590,755		213				590,968
Sole	21,701,008	2,192,190					23,893,198
Splittail	1,531						1,531
Swordfish, broadbill	22,860		3,634	751		347	27,592
Tomcod	317						317
Tuna, albacore	38,140,086	76,939	23,604,151			4,303,238	66,124,414
Tuna, bluefin	9,339		2,729,624		107,878		2,846,841
Tuna, skipjack	12,421		124,706,998	36,534	117,220	3,107,905	128,041,078
Tuna, unclassified		40,000					40,000
Tuna, yellowfin	1,461		182,314,373	8,110,032	20,600		190,446,466
Turbot	127,549						127,549
Whitebait	207,607						207,607
Whitefish, ocean	14,453		6,173				20,626
Yellowtail	5,647		3,526,474				3,532,121
Miscellaneous fish	120,350	28,294	6,179				154,813
Crustacean:							
Crab	11,721,352	1,793					11,723,145
Lobster, spiny	933,449		1,296,101				2,229,550
Prawn	3,790						3,790
Shrimp	913,181						913,181
Mollusk:							
Abalone	3,954,791						3,954,791
Clam	25,484						25,484
Clam, gaper	4,290						4,290
Clam, jackknife	20,908						20,908
Clam, Pismo			5,272,696				5,272,696
Clam, Washington	7,022						7,022
Mussel	1,325						1,325
Octopus	59,629						59,629
Oyster, eastern	117,079						117,079
Oyster, native	36,166						36,166
Oyster, Pacific	143,612						143,612
Squid	5,995,485						5,995,485
Total pounds	999,765,877	3,879,306	347,142,022	8,147,317	245,698	7,411,490	1,366,592,310

[1] Includes 96,974 pounds of fish shipped from Continental United States.

TABLE 9—Cont'd.

TABLE 10
Monthly Landings and Shipments Into California During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Anchovy	71,046	63,433	154,402	162,185	303,222	209,372	220,617	332,671	2,111,439	963,986	178,049	108,265	4,878,687
Barracuda	144,019	218,097	235,602	199,087	295,871	327,491	205,098	185,262	228,007	91,919	61,129	27,873	2,258,415
Bonito	70,431	125,042	35,822	3,123	26,547	1,860	166,295	81,089	36,349	46,508	73,949	28,399	695,614
Cabezone	4,136	8,009	2,913	822	1,848	649	475	38	155	82	1,578	974	21,679
Cabrilla	11,855	35,724	49,583		7,643	89,413		1,649	16	17,822	13,445	34,420	262,980
Carp	8,924	38,635	71,382	109,336	144,969	162,560	93,383	151,504	89,395	76,430	81,213	39,030	1,066,081
Catfish	12,978	13,600	13,706	34,630	2,796				47,362	48,754	73,062	52,526	299,494
Flounder	110,917	192,277	107,733	52,440	22,275	41,950	98,441	32,571	92,251	40,683	79,595	41,957	913,110
Flying fish				9,738	17,883	19,233	7,125	4,903	1,742				60,714
Grouper	39,825	29,961	44,810	661	26,979	43,939		1,688	172	33,711	6,553	68,049	296,368
Hake				500									500
Halibut, California	84,538	117,304	132,053	126,788	90,866	74,526	76,751	71,705	136,790	72,790	46,805	33,789	1,062,745
Halibut, Pacific	21,627	21,490	9,684	1,846	14,911	53,230	44,751	6,174	2,714	11,269	20,451	31,234	238,091
Herring, Pacific	397,314	698,930	76,367	135	612	39,581	58,825	73,600	32,199		20,482	27,315	1,425,351
Kingfish	13,092	35,201	129,524	95,923	178,038	59,828	23,974	36,605	39,924	46,155	25,319	41,804	747,387
Lingcod	49,147	105,289	210,010	162,296	140,316	217,058	236,671	280,878	221,087	97,239	126,713	66,374	1,914,725
Mackerel, jack	1,174,719	13,309,757	8,187,579	5,169,444	7,443,877	1,838,818	13,106,563	7,162,921	38,163,567	17,245,965	12,920,918	8,430,724	133,255,782
Mackerel, Pacific	182,581	103,607	374,896	283,770	702,440	721,915	3,971,939	3,353,046	13,771,540	3,523,523	3,505,979	2,064,733	32,649,969
Mullet	64,472	36,948	15,735	13,109	9,148						48,502	51,507	239,421
Perch	18,251	26,247	40,144	62,894	4,316	1,996	16,084	18,605	9,709	14,787	13,886	16,331	245,449
Pompano, California	971	39,819	65,526	26,421	32,618	2,032	760	552	1,463	4,671	4,212	4,650	183,697
Rock bass	22,802	21,760	9,362	10,460	30,827	11,691	7,066	10,244	7,022	4,818	10,013	59,302	205,367
Rockfish	358,512	615,374	693,598	947,854	526,668	666,081	700,866	1,043,536	763,293	671,241	643,076	513,788	8,113,909
Sablefish	27,341	46,626	87,565	124,276	139,611	219,603	164,487	327,957	178,473	209,383	257,777	116,870	1,910,971
Salmon	110,850	75,762	144,009	128,493	872,660	1,491,477	2,096,648	1,222,752	1,365,918	85,975	94,659	63,388	7,758,891
Sand dab	38,319	73,120	62,563	87,262	78,352	46,164	42,409	46,469	41,219	53,105	75,602	41,277	682,861
Sardine	81,121,577	1,120,209	334,290	321,631	412,334	471,842	473,935	44,421,448	6,946,271	209,807,080	172,938,434	135,954,570	714,521,781
Sculpin	8,752	11,120	21,278	20,549	10,588	12,687	19,585	13,940	7,337	2,711	2,855	7,850	139,523
Sea bass, black	15,932	13,819	21,452	6,293	17,963	12,359	2,860	8,778	6,641	13,432	16,823	21,902	158,254
Sea bass, white	5,292	48,806	98,441	165,237	179,491	168,046	147,583	260,636	263,003	118,696	43,288	34,199	1,532,730
Seatrout, greenling	35	148			60	39	30	99					411
Shad			73,610	511,787	672,912	3,056							1,263,365
Shark	196,165	115,923	33,068	43,042	51,071	89,401	26,879	24,648	30,871	22,395	47,288	36,496	717,247

TABLE 10
Monthly Landings and Shipments Into California During 1950

Sheepshead	13,455	9,816	4,228	1,307	1,705	1,424	386	913	1,913	6,761	9,633	14,936	66,209
Sierra	938	1,781			455	160					905		4,239
Skate	14,515	24,648	17,600	18,598	26,484	9,526	5,695	5,924	5,427	8,494	8,892	9,044	153,748
Smelt	35,523	54,119	79,134	42,887	75,749	47,242	55,925	62,765	51,749	69,984	15,603	9,188	500,068
Sole	933,053	1,599,723	1,375,931	1,685,979	2,946,615	3,554,031	2,196,862	2,688,446	2,465,924	1,775,988	1,288,816	1,382,730	23,893,198
Splittail	115	499	68	46				22	781				1,531
Swordfish, broadbill		492	425			1,398	9,412	691	13,247	1,663	354		27,892
Tomcod										110	207		317
Tuna, albacore	11		20,498	14,821	228,672	1,902,727	19,694,613	11,319,111	20,854,154	10,266,019	1,429,006	393,032	66,124,414
Tuna, bluefin	851,583	646,905	37,832	19,370	47,538	2,119	66,370	320,191	453,123		210,310		2,845,841
Tuna, skipjack	2,697,766	5,696,296	7,772,991	4,278,512	10,978,982	13,721,139	9,793,557	23,069,978	12,217,273	11,691,675	17,631,020	8,427,189	128,041,079
Tuna, unclassified			40,000										40,000
Tuna, yellowfin	6,560,731	9,207,923	17,611,881	20,707,963	27,670,214	28,156,195	25,487,399	22,242,874	7,843,644	7,531,151	11,631,137	5,795,254	190,446,466
Turbot	6,270	29,305	32,468	8,717	5,151	4,124	8,247	3,905	1,349	8,025	12,789	7,199	127,549
Whitebait	35,949	28,892	37,291	21,875	26,451	27,871	18,026	8,047	1,089		1,460	4,056	207,607
Whitefish, ocean	6,507	1,939	835	1,669	606	289	43	313	199	317	2,769	3,110	20,626
Yellowtail	19,779	103,526	156,392	148,221	311,366	553,055	766,069	774,276	287,314	103,817	133,543	174,563	3,332,121
Miscellaneous fish	3,766	10,246	10,365	18,498	6,794	13,172	10,280	31,930	11,219	3,717	10,361	24,062	154,813
Crustacean:													
Crab	1,445,084	1,815,305	1,210,963	539,123	795,762	324,337	260,858	2,720	3,752	1,914	1,956,221	3,067,206	11,723,145
Lobster, spiny	317,209	343,538	169,183							224,734	428,530	746,156	2,229,350
Prawn	1,135	786	1,144	536	381	123	13	187	34	242	428	481	5,790
Shrimp	33,465	24,987	40,404	69,465	74,423	73,361	141,651	217,589	126,217	48,453	47,148	14,018	913,181
Mollusk:													
Abalone	199,698		178,506	551,641	413,374	323,915	311,124	317,044	278,883	317,601	476,781	386,322	3,954,791
Clam	998	1,435	2,335	120	2,875	3,675	4,227	2,998	2,320	1,672	1,650	1,260	25,484
Clam, gaper	560	400	480	580	500	600	440	200	240	140	60		4,200
Clam, jackknife	55	115	417	3,860	2,715	3,016	2,720	2,240	1,964	1,032	845	1,890	20,908
Clam, Pismo	477,048	465,584	540,832	303,320	473,824	563,232	830,912	642,640	945,304				5,272,696
Clam, Washington	552	1,758	1,459	2,101	91				178	130	299	454	7,022
Mussel	100	440	694	61								30	1,325
Octopus	4,747	6,295	9,032	6,603	5,468	3,299	3,299	3,304	1,579	3,867	7,358	4,378	59,629
Oyster, eastern	5,750	7,250	7,000	5,850	8,191	4,750	3,500	4,750	17,307	16,232	16,730	19,769	117,079
Oyster, native				1,034	4,935	11,683	10,749	6,739	1,479	345			36,946
Oyster, Pacific	19,186	22,925	14,543	10,175	13,543	4,186	8,118	5,006	11,637	12,834	11,424	8,355	142,832
Squid				189,373	609,870	203,414	1,904,630	788,465	1,110,386	233,528	919,185	86,634	5,995,485
Total pounds	98,308,168	37,455,705	40,917,970	38,020,818	57,216,666	56,613,830	83,605,958	121,871,383	111,308,002	325,758,785	226,847,133	168,667,892	1,366,592,310

TABLE 10—Cont'd.

TABLE 11

Monthly Landings of the Commercial Fishing Boats in the Eureka Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Anchovy							240	700					940
Cabezone					117	12							129
Carp					92,936	77,024	31,748						201,728
Flounder	39,067	116,205	49,241	34,947	2,270	33,678	88,198	15,367	72,071	20,020	31,420	32,230	534,714
Halibut, Pacific		50	154		8,801	48,014	38,300	448	169				95,936
Herring, Pacific		744										19,744	20,488
Lingcod	18,481	52,966	60,707	57,554	24,876	125,811	119,135	137,780	138,420	34,418	61,847	22,677	855,572
Perch	80	3,825	2,800	13,984			4,269	5,859			267	112	30,896
Rockfish	47,765	265,937	208,936	530,298	166,520	334,453	393,426	600,393	504,571	174,085	116,624	77,473	3,429,451
Sablefish	13,677	18,885	37,333	47,110	68,731	103,447	43,645	92,361	63,006	37,632	20,620	28,019	374,466
Salmon					144,740	458,201	828,160	560,593	225,764				2,217,558
Sand dab	8,104	31,564	15,899	19,519	11,667	15,510	15,055	12,054	15,401	1,464	11,306	2,125	159,668
Sardine							1,337						1,337
Shark	1,392	468	21				99	5		1,191	4,724	5,013	12,810
Smelt			152		1,827	2,784	20,541	16,496	11,026	1,043			53,869
Sole	266,450	948,290	580,433	756,233	1,574,358	2,152,501	1,311,738	1,668,720	1,741,714	1,083,810	585,438	790,655	13,363,540
Tuna, albacore							53,837	1,556,275	1,513,014	2,468,349	834	1,855	5,594,164
Turbot		7,721	3,183	1,058		431	1,488	950	255	35		231	15,335
Whitebait	9,640	11,422	21,036	19,818	19,213	23,801	14,882	6,941	1,089		323	1,376	127,542
Miscellaneous fish	634	2,221	2,839	3,681	1,174	3,177	4,807	27,009	5,299	323	3,609	1,376	86,149
Crustacean:													
Crab	534,859	1,073,910	979,051	587,910	580,972	225,740	67,807				501,595	1,703,675	6,247,522
Mollusk:													
Clam, Washington	552	1,758	1,459	2,101	91				178	130	299	454	7,022
Mussel		350	571										921
Octopus	805	1,959	1,726	1,081	101	800	175	100	105	131	405		7,368
Total pounds	932,506	2,539,815	1,965,541	2,084,254	2,698,314	3,605,181	3,038,947	4,602,051	4,295,082	3,822,584	1,338,991	2,685,939	33,009,208

TABLE 11
Monthly Landings of the Commercial Fishing Boats in the Eureka Region During 1950

Fishing boat landings from waters north of the state boundary:													
Flounder					120	108	102			971			1,301
Lingcod		1,762	1,090	8,822	6,366	13,926	12,575	29,679	6,528	1,027			81,775
Rockfish		5,255	1,174	31,729	41,755	93,465	24,662	80,879	28,747	7,122			314,788
Sablefish				170	18,476	14,275	3,202	11,244	2,604	827			50,798
Salmon								570	3,331	50			3,951
Sand dab				5,014	210	371							5,595
Sole		39,796	9,870	123,681	525,286	760,186	176,607	421,695	101,129	33,940			2,192,190
Tuna, albacore								48	6,380				6,428
Miscellaneous fish		100											100
Crustacean:													
Crab						1,793							1,793
Total pounds		46,913	12,134	169,416	592,213	884,124	217,148	544,115	148,719	43,937			2,658,719
Grand totals Eureka region	932,506	2,586,728	1,977,675	2,253,670	3,290,527	4,489,608	3,256,095	5,146,166	4,443,801	3,866,521	1,338,991	2,685,939	36,268,227

TABLE 11—Cont'd.

TABLE 12

Monthly Landings of the Commercial Fishing Boats in the Sacramento Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Carp	7,724	35,755	70,132	107,936	43,983	74,070	58,045	141,042	86,785	74,595	77,417	36,830	814,314
Catfish	10,796	10,658	9,192	24,890	2,796				47,362	48,754	73,062	52,526	280,036
Flounder			153	647	57								857
Lingcod						241							241
Salmon	23,262	53,762	50,937	62,921	61,600	23,789		80,391	829,638		6,659	8,554	1,211,513
Sardine	157,000							1,468,000		266,000			1,891,000
Shad			75,610	511,787	672,912	3,056							1,263,365
Splittail	115	499	68	46				22	781				1,531
Miscellaneous	8		74	33	9				400		12		536
Grand totals, Sacramento region	198,905	110,674	206,166	708,260	781,357	101,156	58,045	1,689,455	964,966	389,349	157,150	97,910	5,463,393

TABLE 12
Monthly Landings of the Commercial Fishing Boats in the Sacramento Region During 1950

TABLE 13

Monthly Landings and Shipments of Commercial Fish Into the San Francisco Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Anchovy			5,064	12,200	27,870	19,615	2,740	27,500	118,000	125,570			338,559
Cabezone	20	1,905	210		45	9	36		155	15	78	22	2,492
Carp	1,200				4,530	3,611	3,196	2,142	2,610	1,835	796		19,914
Catfish	2,182	2,942	4,574	9,760									19,458
Flounder	66,515	64,683	51,051	10,572	12,085	7,834	3,765	14,606	18,233	17,220	47,312	9,704	323,580
Halibut, California	2,403	2,372	1,059	172	879	880	717	636	283	143	2,272	555	11,771
Halibut, Pacific	21,627	21,350	9,530	1,846	5,210	3,216	6,631	5,726	2,545	1,292	20,451	4,998	105,942
Herring, Pacific	397,314	696,431	76,092						15		20,382	3,967	1,194,201
Kingfish		6		171	40	50	160	2,346	1,527	261	483	10	5,227
Lingcod	8,519	20,741	103,211	77,012	93,207	69,469	99,783	120,732	69,332	26,401	42,469	17,995	776,871
Mackerel, jack									879,015				879,015
Mackerel, Pacific									19,397				19,397
Perch	2,652	5,668	14,190	23,291	205		8,705	9,131	4,119	6,018	5,429	1,044	80,752
Pompano, California	50					18				175			243
Rockfish	8,358	30,268	33,783	71,961	78,282	58,256	99,122	148,336	60,764	146,114	138,302	116,357	989,603
Sablefish	23		200	333	200	13,100	11,550	9,053	10,373	10,811	8,400	1,201	65,854
Salmon					466,772	579,591	1,099,338	466,495	249,364				2,861,460
Sand dab	20,821	29,312	38,311	34,760	24,567	24,333	19,763	28,330	12,177	42,197	34,911	34,838	364,530
Sardine	832,880		445	113				23,421,826	296,000	421			24,551,685
Sea bass, white	43		94				214	1,215	1,643	399	60	57	3,635
Shark	6,351	5,470	2,802	832	2,125	815	869	5,741	3,071	3,737	16,767	10,302	58,993
Skate	10,570	10,373	11,100	14,400	19,700	5,200	4,950	5,050	3,750	6,200	8,220	5,500	103,013
Smelt	15,749	27,391	60,735	33,982	66,549	28,291	22,013	12,549	14,541	22,368	1,974	245	306,587
Sole	608,088	472,670	604,870	414,910	473,562	393,481	635,694	675,068	495,481	606,973	654,473	555,615	6,590,887
Tomcod										110	207		317
Tuna, albacore							789	129,273	3,484,314	3,133,893	103,678	673	6,852,620
Turbot	6,921	17,965	25,334	5,829	4,741	3,311	3,124	2,935	1,094	7,999	12,724	6,908	100,196
Whitefish	26,299	14,445	16,048	1,720	7,238	3,870	3,144	1,050			1,469	3,766	79,049
Miscellaneous fish	868	1,999	3,144	1,649	1,197	7,498	4,818	3,499	2,302	1,565	1,494	1,794	31,927
Crustacean													
Crab	910,823	721,498	206,415	202,075	171,020	72,795	183,166	210	1,252		1,120,531	1,162,773	5,062,470
Shrimp	33,465	24,987	40,404	60,465	74,423	73,361	141,651	217,589	126,217	48,453	47,148	14,018	913,181

TABLE 13
Monthly Landings and Shipments of Commercial Fish Into the San Francisco Region During 1950

Mollusk													
Abalone			525	2,575	3,369	3,675	3,225	2,650	2,330				18,369
Octopus	1,121	1,929	4,019	2,854	2,099	1,083	2,209	1,067	495	2,154	4,961	2,679	26,660
Oyster, eastern	5,750	7,250	7,000	5,850	8,191	4,750	3,500	4,750	17,207	16,232	16,729	19,769	117,079
Oyster, native				1,034	4,155	11,583	10,740	6,739	1,470	345			36,166
Oyster, Pacific	12,556	14,657	12,671	10,175	13,543	3,250	7,650	5,750	11,637	12,834	11,424	8,355	124,502
Total pounds	3,002,570	2,196,324	1,330,881	1,008,941	1,565,494	1,396,935	2,384,767	25,333,144	5,910,733	4,271,659	2,643,705	1,983,145	53,028,298
Fishing boat landings from waters north of the state boundary:													
Tuna, albacore								4,180	18,030				22,210
Total pounds								4,180	18,030				22,210
Fishing boat landings from waters south of the international boundary:													
Tuna, albacore										20,905			20,905
Tuna, skipjack							89,892			97,349	54,854	8,190	201,285
Tuna, yellowfin							62,114			140,367	91,412	41,950	335,843
Total pounds							103,006			258,621	146,266	50,140	558,033
Shipments[1]													
Saldefish	6							36,695	4,850	30,000	99,420		170,971
Salmon	38							3,487	3,585				7,110
Swordfish, broadbill										347			347
Tuna, albacore	11							65,330					65,330
Tuna, bluefin	60,140				47,538								107,878
Tuna, skipjack						98,769	179,137	10,541					288,447
Tuna, unclassified			40,000										40,000
Tuna, yellowfin	398,326			25,285	94,779	72,834		66,561		102,323		2,100	762,208
Miscellaneous fish												16,999	16,999
Total pounds	458,721		40,000	25,285	142,317	171,603	179,137	182,623	8,435	132,670	99,420	19,099	1,459,310
Grand totals San Francisco region	3,461,291	2,196,324	1,370,881	1,034,226	1,707,811	1,568,538	2,666,910	25,519,947	5,937,198	4,662,950	2,889,391	2,052,384	55,067,851

[1] See Table 8 for origin of shipments.

TABLE 13—Cont'd.

TABLE 14
Monthly Landings of the Commercial Fishing Boats in the Monterey Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Anchovy		9,000				500		2,775	1,776,646	664,169	93,600		2,546,690
Cabezone	2,722	3,759	2,450	641	1,611	583	323	38		67	1,380	888	16,462
Flounder	3,002	4,867	4,148	4,929	7,595	192	6,018	2,439	1,664	2,403	831	18	38,106
Hake				500									500
Halibut, California	22,328	13,422	6,502	1,878	4,404	3,383	4,547	242	715	2,395	7,411	10,076	79,610
Herring, Pacific		1,755	275	135		39,300	58,825	73,600	32,175			50	206,113
Kingfish	2,589	25,662	89,344	23,731	18,365	19,806	15,365	16,433	22,540	14,014	17,652	30,578	296,579
Lingcod	7,690	20,622	23,734	13,511	12,241	5,789	3,551	1,964	5,808	4,969	20,520	24,202	145,606
Mackerel, jack	1,149	1,820	24,831	48,412	4,390	8,768	78	13,756	27,346,094	3,999,189	63,415	149	31,511,952
Mackerel, Pacific			50	849		1,135	647	88,153	274,471	18,611	616	855	385,378
Perch	2,174	2,169	9,451	14,599	19		1,947	322	1,170	1,184	558	700	34,293
Pompano, California	81	35,390	57,583	29,438	29,026	300	315	30	74	3,708		2,757	132,712
Rockfish	207,879	196,912	323,709	174,375	112,356	103,129	150,365	174,081	136,461	311,069	311,711	236,722	2,438,769
Sablefish	9,685	11,233	31,923	45,219	70,324	71,486	86,400	123,375	97,642	116,069	128,696	53,461	845,504
Salmon					186,490	363,470	118,977	77,677	23,091				769,705
Sand dab	5,394	9,588	7,789	26,680	41,088	5,377	7,045	5,548	12,784	8,504	8,659	3,385	141,841
Sardine	2,682,920	121,895	288,190	492,090	382,294	493,290	437,000	19,034,973	5,133,368	6,859,981	3,884,653	1,965,194	41,884,458
Sea bass, white	41	1,271	5,992	96	729	211	18,924	46,446	34,716	21,616			130,042
Seatrout, greenling	35	148			60	39	20	99					411
Shark	181,046	94,064	11,960	100	330	1,473	916				1,213	401	291,532
Skate	2,292	10,813	3,674	2,697	5,143	2,295	627	200	600	863		1,204	30,408
Smelt	9,249	12,145	9,222	4,256	4,639	7,778	4,122	22,194	19,146	29,246	3,187	1,096	126,280
Sole	45,281	99,776	141,617	266,570	278,905	109,103	30,839	16,665	120,242	48,853	26,200	26,670	1,229,773
Tuna, albacore							7,167	757,970	6,679,449	1,103,069	144,120	46,537	8,738,303
Turbot		1,892	3,365	1,103	410	97	985				65		7,917
Whitebait	10	25	302	37				56				290	720
Miscellaneous fish			31	741	1,885		12	295					2,964

TABLE 14
Monthly Landings of the Commercial Fishing Boats in the Monterey Region During 1950

Crustacean:													
Crab	1,967	3,005	2,397	7,843	1,028	241	579				2,252	2,859	22,181
Prawn	1,135	786	1,144	836	381	123	13	187	34	242	428	481	5,790
Mollusk:													
Abalone				9,800	2,000	1,950							13,750
Clam, gaper	560	400	480	580	590	600	440	200	240	140	60		4,290
Mussel	100	90	123	61								30	404
Octopus	2,734	2,333	3,245	2,676	3,017	1,333	853	2,337	979	1,578	1,970	1,786	24,738
Squid				189,373	609,365	203,414	1,904,630	738,465	1,110,386	233,528	919,185	84,225	5,992,571
Total pounds	3,192,033	688,352	1,053,536	1,359,750	1,778,547	1,355,067	2,870,540	21,199,725	42,830,595	13,444,749	5,648,521	2,494,665	97,916,080
Fishing boat landings from waters north of the state boundary:													
Tuna, albacore								508					508
Total pounds								508					508
Grand totals, Monterey region	3,192,033	688,352	1,053,536	1,359,750	1,778,547	1,355,067	2,870,540	21,200,233	42,830,595	13,444,749	5,648,521	2,494,665	97,916,588

TABLE 14—Cont'd.

TABLE 15
Monthly Landings of the Commercial Fishing Boats in the Santa Barbara Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Anchovy			2,283	7,160	50,640	35,011	69,130	62,655	8,358	26,447	6,516	23,500	291,700
Barracuda	158	3,265	1,269	5,819	6		12		38,509	28,306	586	749	78,679
Cabezone	964	345	253	71		45	116				123	64	1,981
Flounder	2,264	6,499	2,429	985	14	4	231	33					12,362
Halibut, California	35,213	42,085	27,944	51,088	46,227	28,706	11,699	12,092	12,391	15,859	11,593	25,148	320,045
Herring, Pacific					612	281					100		993
Kingfish				99					275	20,005			20,979
Lingcod	3,998	7,068	22,764	3,323	3,482	479	1,330	615	841	678	1,152	763	46,603
Mackerel, jack	172,000			13,820	82,380	45,740	687,560	472,365	165,165	258,025	332,211	419,431	2,668,697
Mackerel, Pacific					108		75,390	61,618	160,585	67,905	271,125	256,201	892,932
Perch	2,750	3,805	1,134	3,549	1,144	682	199	492	326	617	255	257	15,210
Pompano, California									130	30			160
Rock bass	171	1,342	1,196	1,430	1,007	763	2,440	521		299	2,682	6,222	18,064
Rockfish	12,183	28,932	20,851	19,686	23,496	23,218	15,650	10,974	9,077	5,184	9,853	10,504	189,508
Sablefish		73				5,735						52	5,860
Salmon					930	190	616	61					1,797
Sand dab	5	478	27	807	375	117	442	257	166		6	153	2,833
Sardine	6,032,500			290			11	16,270	28,750	31,427,846	34,428,049	23,090,168	95,023,884
Sculpin	226	159	114	1,093	88				74		184		1,938
Sea bass, black			290	116	294	160	30	647	149		97	75	1,858
Sea bass, white	3,149	38,650	56,874	68,861	6,342	19,603	22,027	16,393	110,245	58,626	12,661	6,619	420,050
Shark	2,401	2,210	3,512	11,321	8,188	23,286	15,196	4,865	6,029	1,291	5,732	4,884	88,915
Sheepshead	864	1,249	369	12	527	1,144	50	194		6	701	1,558	6,674
Skate	296		184	271	289	127		239		130	146		1,702
Smelt	55			25	1,195	69	294	121			25	81	1,865
Sole	12,750	38,859	37,722	121,334	93,530	138,312	32,744	6,070	4,196	2,965	12,703	9,499	509,694
Swordfish, broadbill									12,291	430			12,721
Tuna, albacore							40,485	662,634	1,901,012	96,963	159,241	27,693	2,891,028
Turbot	249	1,724	586	747		85	650					60	4,101
Whitefish, ocean	16			11	91	99					494	1,625	2,336
Miscellaneous fish	550	1,077	419	13	113	225	255	93		315	212	653	3,925

TABLE 15
Monthly Landings of the Commercial Fishing Boats in the Santa Barbara Region During 1950

Crustacean:														
Crab	6,573	13,507	21,630	40,405	42,022	21,284	7,396	.....	.....	554	30,960	197,129	381,560
Lobster, spiny	57,705	66,318	39,533	.....	.....	.....	.....	.....	.....	59,280	65,474	88,195	374,505
Mollusk:													
Abalone	123,515	.....	68,048	306,278	223,740	149,348	180,081	106,903	97,435	293,574	173,705	84,064	1,806,691
Octopus	.....	34	42	12	261	183	62	.....	.....	.....	22	.....	616
Oyster, Pacific	6,630	8,268	1,872	.....	780	936	468	156	.....	.....	.....	.....	19,110
Squid	.....	.....	.....	.....	505	.....	.....	.....	.....	.....	.....	.....	505
Grand totals, Santa Barbara region	6,477,285	265,948	311,345	658,426	588,386	496,032	1,164,764	1,436,290	2,559,004	32,365,026	35,546,608	24,256,057	106,125,171

TABLE 15—Cont'd.

TABLE 16
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Anchovy	71,046	54,433	146,455	142,825	224,712	154,246	148,507	239,041	208,435	147,800	77,633	84,765	1,700,198
Barracuda	26,473	21,012	3,639	64,333	120,700	159,026	46,818	13,006	7,747	4,500	4,980	110	472,344
Bonito	419	664	42	29	54	186	335	4,026	314	.....	.....	.....	6,069
Cabezone	430	.....	.....	110	75	.....	.....	.....	.....	.....	.....	.....	615
Carp	.....	2,900	1,450	1,400	2,600	7,855	490	8,320	.....	.....	3,000	2,200	30,125
Flounder	69	122	731	360	134	134	37	45	252	61	32	5	1,982
Flying fish	.....	.....	.....	9,728	17,883	19,233	7,125	4,993	1,742	.....	.....	.....	60,714
Halibut, California	8,079	36,486	74,332	57,991	20,275	11,314	12,666	9,056	16,226	6,579	1,768	4,766	259,370
Kingfish	12,503	29,513	38,224	71,771	157,343	39,972	8,449	16,837	12,352	11,272	6,994	10,038	415,268
Lingcod	86	1,557	180	65	81	1,183	71	35	349	359	559	337	4,862
Mackerel, jack	1,001,570	13,307,937	8,162,748	5,107,212	7,357,197	1,784,310	12,418,925	6,677,800	9,772,293	12,988,551	11,605,292	7,965,103	98,150,038
Mackerel, Pacific	184,750	109,219	372,570	264,392	671,224	570,981	3,834,547	3,171,213	13,307,486	3,428,946	3,255,355	1,649,554	30,800,137
Perch	10,295	10,583	11,808	6,343	2,913	1,304	857	2,801	2,633	6,003	8,418	10,514	74,472
Pompano, California	840	4,429	7,945	2,983	3,582	1,714	445	522	1,259	758	4,212	1,893	30,582
Rock bass	3,397	8,862	5,293	4,830	12,687	7,304	3,717	5,976	6,986	4,143	5,752	4,062	75,009
Rockfish	61,525	68,815	91,795	97,412	86,167	46,452	15,740	26,755	23,504	25,263	34,443	70,200	648,161
Sablefish	3,950	11,375	7,989	11,424	1,880	640	11	19	.....	53	387	3,771	41,499
Salmon	.....	.....	.....	.....	.....	2,918	.....	.....	.....	.....	.....	.....	2,918
Sand dab	905	3,178	537	483	445	466	104	60	691	940	720	776	8,304
Sardine	70,557,317	968,899	45,043	29,158	30,060	68,037	35,587	476,050	1,485,353	231,009,613	133,617,277	109,089,939	547,412,341
Sculpin	6,899	4,438	13,091	12,220	8,739	12,557	19,883	13,940	7,263	2,691	2,053	7,402	111,228
Sea bass, black	146	204	6	430	401	11	182	346	1,304	398	245	.....	3,693
Sea bass, white	1,596	5,543	12,526	73,159	141,269	103,718	42,242	28,125	17,269	997	1,993	11,778	440,615
Shark	4,211	11,783	13,099	26,304	30,278	40,994	6,403	11,404	15,900	9,849	5,052	8,849	183,096
Sheepshead	11,898	6,553	2,915	908	674	280	332	336	604	3,129	6,360	8,431	42,420
Skate	1,239	3,225	2,642	1,230	1,352	925	119	415	1,077	1,038	283	1,685	14,826
Smelt	8,877	13,346	7,431	3,578	1,499	8,420	8,855	11,105	7,036	8,307	7,855	7,766	94,075
Sole	497	297	386	3,251	1,074	420	240	228	62	365	.....	70	6,890
Swordfish, broadbill	.....	.....	.....	.....	.....	1,398	6,423	447	.....	.....	.....	.....	8,268
Tuna, albacore	.....	.....	.....	.....	.....	179,726	2,827,404	1,508,170	1,505,836	917,967	350,603	208,098	7,497,804
Tuna, bluefin	.....	.....	.....	.....	.....	2,119	2,472	2,467	.....	.....	32	.....	8,090
Tuna, skipjack	.....	.....	.....	.....	.....	.....	.....	438	110	40	.....	.....	588
Tuna, yellowfin	.....	.....	.....	.....	.....	.....	.....	204	760	75	80	.....	1,122
Whitefish, ocean	4,422	1,236	232	200	184	100	43	313	199	127	1,760	2,711	11,716
Yellowtail	.....	.....	.....	125	447	499	305	110	380	701	232	.....	2,799
Miscellaneous fish	1,261	3,343	1,388	1,363	1,826	1,002	353	1,034	55	1,222	3,830	2,185	19,284

TABLE 16
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Region During 1950

Crustacean:														
Crab	582	1,355	1,370	890	710	2,484	1,910	2,510	2,500	552	618	439	16,220
Lobster, spiny	54,771	75,274	28,878							86,693	79,656	75,115	400,387
Mollusk:														
Abalone	74,823		100,891	218,075	173,177	161,572	120,300	193,174	171,746	208,916	248,168	237,475	1,909,307
Octopus	87	40								7		113	247
Squid												2,409	2,409
Total pounds	72,007,153	14,786,711	9,158,936	6,215,713	9,071,672	3,401,690	19,572,231	12,432,330	26,580,816	248,878,212	140,333,981	119,441,939	690,970,384
Fishing boat landings from waters north of the state boundary:														
Tuna, albacore							1,250						1,250
Total pounds							1,250						1,250
Fishing boat landings from waters south of the international boundary:														
Barracuda	89,998	144,101	177,101	115,712	13,434	1,133	154,022	153,838	122,613	55,581			1,029,853
Bonito	18,056	6,242	7,003	634		1,014	164,612	76,451	35,335	46,396	56,375	2,820	416,458
Cabrilla	11,835	34,054	47,123		7,176	81,890			16	17,522	13,445	37,765	253,145
Grouper	39,693	29,377	40,968		23,764	43,564				33,711	5,814	61,928	278,819
Halibut, California			3,007	3,302		2,867	10,264	102	23,398		526		45,466
Perch		497	761	1,128	35		107		1,461	965	959	3,904	9,817
Rock bass	15,978	6,803	693	1,046	11,129					105		48,545	84,299
Rockfish		3,607	131	5,040	3,735				200				12,713
Sculpin	275												275
Sea bass, black	14,175	12,667	7,803	774	4,211	5,422	1,127	409	3,439	11,789	3,975	19,079	86,870
Sea bass, white	238	482	13,028	80	1,650	95	16,021	86,232	47,366	2,603	14,444	2,468	184,707
Shark			129			607			1,824		180		2,740
Sheepshead		1,113	523		203				391				2,430
Sierra	823	1,781											2,604
Skate						200							200
Tuna, albacore						34,172	2,001,244	823,395	1,068,747	432,346	59,489	8,519	4,458,112
Tuna, bluefin	734,150	592,433	37,832				84,009	813,791	167,145		210,278		2,589,838
Tuna, skipjack	970,364	1,887,228	3,254,159	1,882,185	5,154,382	6,219,826	5,134,338	10,530,392	5,361,150	7,268,139	4,338,897	2,702,783	54,703,843
Tuna, yellowfin	1,388,599	3,379,573	8,582,195	14,403,524	14,360,696	14,960,269	15,087,584	9,020,780	3,299,984	4,905,514	2,346,058	1,196,296	92,931,072
Whitefish, ocean		961	200	400						190			1,451
Yellowtail	11,255	20,441	48,071	47,313	75,866	326,344	729,894	731,285	271,853	46,590	891	55,481	2,374,184
Miscellaneous fish	24		92	20					58				194
Total pounds	3,295,483	6,129,960	12,221,518	16,463,178	19,658,401	21,677,403	23,363,322	21,906,675	10,716,080	12,822,051	7,033,331	4,139,688	159,449,090

TABLE 16—Cont'd.

TABLE 16—Continued
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Shipments[1]													
Halibut, Pacific										9,977		46,236	56,213
Sablefish		5,060	10,120	20,020		10,920	19,579	54,600		14,000	254	30,366	165,019
Salmon	93,550	12,000	93,072	65,572	12,128	63,218	49,557	33,478	31,245	85,925	88,000	54,834	682,579
Tuna, albacore			20,498	14,521	228,672	759,638	1,050,274	986,506	578,914	479,806	163,096	570	4,262,495
Tuna, skipjack	9,025	199		67,952	65,408	548,950	303,415	544,989	501,863	383,244	370,147	142,020	2,969,212
Tuna, yellowfin	464,756	165,372			497,620	198,129		685,722	655,771	704,068	723,910	939,448	5,066,807
Yellowtail								2,300					2,300
Miscellaneous fish		110		10,530		395						150	11,185
Mollusk:													
Clam, Pismo			248,184	67,720	193,304	244,024	184,872	221,096	55,908				1,214,808
Total pounds	567,331	212,741	371,874	276,315	997,142	1,825,274	1,587,797	2,528,692	1,823,401	1,679,020	1,347,407	1,213,624	14,430,618
Grand totals Los Angeles region	75,980,967	21,129,412	21,749,328	22,955,206	29,727,215	26,904,367	44,524,600	36,867,697	39,120,297	263,379,283	157,738,719	124,795,251	864,851,342

[1] See Table 8 for origin of shipments.

TABLE 16
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Region During 1950

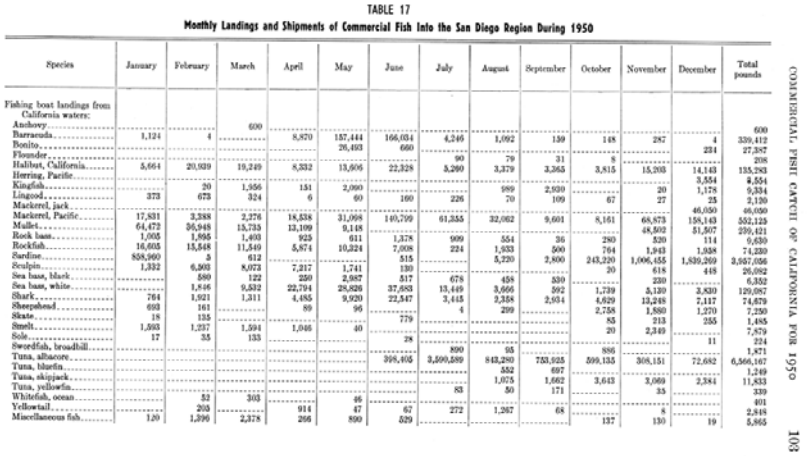

TABLE 17

Monthly Landings and Shipments of Commercial Fish Into the San Diego Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Anchovy			600										600
Barracuda	1,124	4		8,870	157,444	166,034	4,246	1,092	139	148	287	4	339,412
Bonito					26,493	660						234	27,387
Flounder							90	79	31		8		208
Halibut, California	5,664	20,939	19,249	8,332	13,605	22,328	5,260	3,379	3,365	3,815	15,203	14,143	135,283
Herring, Pacific												3,554	3,554
Kingfish		20	1,956	151	2,999			989	2,939		20	1,178	9,334
Lingcod	373	673	324	6	60	160	226	70	109	67	27	25	2,130
Mackerel, jack												46,050	46,050
Mackerel, Pacific	17,831	3,388	2,276	18,838	31,098	140,709	61,355	32,062	9,601	8,161	68,875	158,143	552,125
Mullet	64,472	26,948	13,733	12,109	9,148						48,502	51,507	226,421
Rock bass	1,005	1,895	1,493	925	611	1,378	909	554	36	280	520	114	9,630
Rockfish	16,605	13,548	11,549	5,874	10,324	7,008	224	1,933	500	764	1,943	1,938	74,230
Sardine	858,960	5	612			515		5,220	2,800	243,220	1,006,455	1,839,269	3,957,056
Sculpin	1,332	6,903	8,073	7,217	1,741	130				20	618	448	26,082
Sea bass, black		580	122	250	2,987	517	678	458	530		230		6,352
Sea bass, white		1,816	9,532	22,794	28,826	37,683	13,449	3,666	592	1,739	5,130	3,830	129,087
Shark	764	1,921	1,311	4,485	9,920	22,547	3,445	3,358	2,934	4,629	13,248	7,117	74,679
Sheepshead	693	161		89	96		4	269		2,758	1,880	1,270	7,250
Skate	18	135				779				85	213	255	1,485
Smelt	1,593	1,237	1,594	1,046	40					20	2,349		7,879
Sole	17	35	133			28						11	224
Swordfish, broadbill							890	95		886			1,871
Tuna, albacore						398,405	3,500,589	843,280	753,925	599,135	308,151	72,682	6,566,167
Tuna, bluefin								552	697				1,249
Tuna, skipjack								1,075	1,662	3,643	3,069	2,384	11,833
Tuna, yellowfin							83	50	171		35		339
Whitefish, ocean		53	303		46								401
Yellowtail		203		914	47	67	272	1,267	68		8		2,848
Miscellaneous fish	120	1,396	2,378	266	890	529				137	130	19	5,865

TABLE 17
Monthly Landings and Shipments of Commercial Fish Into the San Diego Region During 1950

TABLE 17—Continued

Monthly Landings and Shipments of Commercial Fish Into the San Diego Region During 1950

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Crustacean:													
Crab	176	120								508	262	331	1,399
Lobster, spiny	13,154	13,370	3,782							64,508	39,808	23,935	158,557
Mollusk:													
Abalone	1,260		9,042	14,013	11,088	7,370	7,428	14,317	7,054	15,111	54,908	64,983	206,674
Clam	998	1,455	2,335	120	2,875	3,675	4,227	2,908	2,320	1,672	1,659	1,260	25,484
Clam, jacknife	55	115	417	3,860	2,715	3,016	2,759	2,240	1,964	1,032	845	1,890	20,908
Total pounds	986,316	108,531	92,726	110,859	312,145	813,628	3,696,134	917,943	791,448	932,346	1,374,373	2,296,594	12,653,043
Fishing boat landings from waters south of the international boundary:													
Barracuda	26,266	79,715	53,593	4,503	2,267	1,208		27,326	58,979	2,184	55,276	27,010	338,127
Bonito	51,956	118,136	25,177	2,449			1,348	612		112	17,574	25,345	245,709
Cabrilla		1,570	2,471		467	7,323		1,549				16,655	30,035
Grouper	132	384	3,842	661	3,215	395		1,688	172		739	6,121	17,549
Halibut, California	10,851			2,023	11,775	5,346	31,566	46,093	80,412	43,799	8,032	1,101	241,000
Lingcod										720		265	985
Rock bass	251	2,858	777	2,229	3,393	2,246		935			1,059	359	15,827
Rockfish	4,197		1,670	3,079	4,033			205	1,381	1,666	200	574	17,005
Sea bass, black	1,611	368	13,231	4,703	2,612	6,249	843	6,918	1,219	1,345	10,276	2,748	52,023
Sea bass, white	325	1,014	95	247	585	6,736	34,608	107,169	51,172	32,896	9,000	9,447	253,294
Shark			234		201	479		275	1,113	1,678	372	130	4,482
Sheepshead		440	421	298	205			114	716	868	694	677	4,435
Sierra	135				455	160					905		1,655
Skate										90	30		120
Smelt											213		213
Swordfish, broadbill		402	425				2,099	149	205		354		3,634
Tuna, albacore						520,836	10,133,820	3,938,548	3,311,533	1,013,595	139,794	6,369	19,096,495
Tuna, bluefin	57,093	54,472		10,370			89	2,381	5,581				129,986
Tuna, skipjack	1,958,377	3,718,869	4,523,732	2,290,375	5,739,192	6,849,594	4,135,775	11,982,543	6,352,488	3,850,060	12,864,053	5,571,812	69,861,870

TABLE 17

Monthly Landings and Shipments of Commercial Fish Into the San Diego Region During 1950

Tuna, yellowfin	4,309,959	5,632,978	7,089,179	6,278,254	12,717,109	12,799,413	10,111,058	12,469,556	3,886,955	1,678,804	8,467,642	3,616,460	89,047,458
Whitefish, ocean	2,069	90		968	285						505	804	4,722
Yellowtail	8,524	73,880	108,321	99,869	234,906	226,145	35,598	39,314	15,213	56,526	132,412	119,082	1,149,790
Miscellaneous fish	301					346	135		3,105	155	657	1,286	5,985
Crustacean:													
Lobster, spiny	191,879	188,676	96,990							14,253	243,592	560,911	1,296,101
Total pounds	6,622,817	9,874,152	11,914,158	8,704,821	18,742,700	20,436,676	24,488,939	28,645,195	13,770,246	6,698,561	21,933,380	9,967,156	181,818,801
Shipments:[1]													
Rock bass								2,538					2,538
Rockfish							1,677						1,677
Sea bass, black					7,458								7,458
Sea bass, white								1,399					1,399
Swordfish, broadbill									751				751
Tuna, albacore							5,654	22,955				21,936	50,575
Tuna, skipjack						4,000							4,000
Tuna, yellowfin			1,949,507			125,550	226,560						2,301,617
Mollusk:													
Clam, Pismo	477,048	495,584	292,648	235,600	280,520	319,208	646,040	421,544	889,696				4,057,888
Total pounds	477,048	495,584	2,242,155	235,600	287,978	448,758	879,931	448,457	890,447			21,936	6,427,894
Grand totals, San Diego region	8,088,181	10,478,267	14,349,039	9,051,280	19,342,823	21,499,062	29,065,004	30,011,595	15,452,141	7,650,907	23,837,733	12,285,686	200,899,738

[1] See Table 8 for origin of shipments.

TABLE 17—Cont'd.

TABLE 18

The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1950

Species	Eureka region		Sacramento region		San Francisco region		Monterey region	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
Anchovy	940	$706			338,559	$7,143	2,546,990	$38,455
Barracuda								
Bonito								
Cabezone	129	7			2,492	73	16,462	339
Cabrilla								
Carp	201,728	2,017	814,314	$20,943	19,914	1,782		
Catfish			280,036	53,193	19,458	3,887		
Flounder	336,015	19,135	857	65	323,580	13,072	38,106	1,954
Flying fish								
Grouper								
Hake							500	5
Halibut, California					11,771	2,320	79,610	16,957
Halibut, Pacific	93,936	25,739			103,942	20,854		
Herring, Pacific	20,488	459			1,194,201	10,747	296,115	5,153
Kingfish					5,257	295	296,579	15,896
Lingcod	937,347	63,552	241	29	776,871	52,439	145,606	13,133
Mackerel, jack					879,013	10,725	31,311,932	917,634
Mackerel, Pacific					19,397	679	385,378	11,061
Mullet								
Perch	30,895	3,241			80,752	10,320	34,293	2,493
Pompano, California					243	60	182,712	63,310
Rock bass								
Rockfish	3,744,222	115,666			989,603	39,290	2,438,790	169,749
Sablefish	625,264	46,520			236,825	23,755	845,504	32,045
Salmon	2,221,509	522,721	1,211,513	292,763	2,868,570	798,623	769,705	250,616
Sand dab	165,253	8,264			354,530	18,008	141,841	8,979
Sardine	1,337	134	1,891,000	32,903	24,551,685	428,427	41,684,458	783,668
Sculpin								
Sea bass, black								
Sea bass, white					3,635	763	130,042	20,065
Seatrout, greenling							411	14
Shad			1,265,363	83,781				
Shark	12,810	1,612			88,993	13,280	291,532	2,537
Sheepshead								

TABLE 18

The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1950

Sierra								
Skate					166,015	1,449	30,498	623
Smelt	53,969	3,005			306,687	23,308	126,280	6,225
Sole	13,555,730	665,785			6,590,887	383,920	1,229,773	76,615
Splittail			1,531	225				
Swordfish, broadbill					347	146		
Tomcod					317	14		
Tuna, albacore	5,600,592	1,060,752			6,961,085	1,293,370	8,738,811	1,643,770
Tuna, bluefin					107,878	16,182		
Tuna, skipjack					499,732	70,164		
Tuna, unclassified					40,000	5,800		
Tuna, yellowfin					1,098,051	178,214		
Turbot	15,335	678			190,196	3,938	7,917	365
Whitebait	127,842	11,378			79,040	7,999	725	79
Whitefish, ocean								
Yellowtail								
Miscellaneous fish	56,249	2,439	536	239	48,926	2,871	2,664	87
Crustaceans:								
Crab[1]	6,249,315	702,423			5,052,470	666,914	22,181	3,303
Lobster, spiny								
Prawn							5,790	2,316
Shrimp					913,181	58,718		
Mollusk:								
Abalone					18,369	2,559	13,750	1,513
Clam								
Clam, gaper							4,290	432
Clam, jackknife								
Clam, Pismo								
Clam, Washington								
Mussel	7,022	734						
Octopus	921	76					404	33
Oyster, eastern	7,368	327			26,663	1,192	24,738	2,642
Oyster, native					117,979	16,134		
Oyster, Pacific					36,166	4,770		
Squid					124,502	14,031		
							5,992,571	157,005
Total pounds and value	26,268,227	$3,257,236	5,463,393	$483,051	55,067,851	$4,208,235	97,916,588	$3,920,082

[1] All crab landings north of Santa Barbara are market crab, with the exception of 1,462 pounds of rock crab landed in the San Francisco region. South of Santa Barbara the catch is exclusively rock crab, whereas in the Santa Barbara region both species are included.

TABLE 18—Cont'd.

TABLE 18—Continued

The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1950

Species	Santa Barbara region		Los Angeles region		San Diego region		Total	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
Anchovy	291,709	$4,521	1,700,198	$33,493	600	$54	4,878,687	$94,372
Barracuda	78,679	10,457	1,502,197	222,389	677,539	86,319	2,258,415	329,165
Bonito			422,527	40,858	273,087	26,845	695,614	67,703
Cabezone	1,981	97	615	40			21,679	556
Cabrilla			253,145	30,605	30,435	3,850	283,580	34,455
Carp			30,133	708			1,066,081	25,450
Catfish							299,494	57,080
Flounder	12,362	570	1,982	245	208	15	913,110	35,056
Flying fish			60,714	4,815			60,714	4,815
Grouper			278,819	53,227	17,849	2,659	296,368	55,886
Hake							500	5
Halibut, California	320,045	62,793	395,036	64,210	376,283	76,342	1,092,745	224,623
Halibut, Pacific			86,213	17,988			258,061	64,581
Herring, Pacific	993	45			3,554	107	1,425,351	16,507
Kingfish	20,979	266	415,268	18,396	9,334	768	747,387	35,621
Lingcod	46,662	8,090	4,862	469	3,105	290	1,914,725	135,002
Mackerel, jack	2,668,697	38,963	98,150,038	1,904,110	46,050	437	133,355,732	2,571,869
Mackerel, Pacific	892,932	15,359	30,800,137	748,442	552,125	18,938	32,640,969	794,479
Mullet					239,421	17,382	239,421	17,382
Perch	15,216	2,186	84,290	16,984			245,440	33,224
Pompano, California	160	40	30,582	4,288			183,697	47,698
Rock bass	18,004	1,886	159,308	24,137	27,995	2,699	205,367	28,722
Rockfish	189,508	18,913	660,874	56,967	92,912	8,529	8,115,909	409,135
Sablefish	5,860	206	206,518	24,885			1,919,971	127,411
Salmon	1,797	575	683,497	250,137			7,758,591	2,115,375
Sand dab	2,833	201	8,204	1,390			682,861	36,842
Sardine	95,023,884	1,415,957	547,412,241	9,457,388	3,957,066	41,945	714,521,761	12,140,322
Sculpin	1,938	152	111,593	20,294	26,082	3,348	139,523	23,794
Sea bass, black	1,858	224	90,563	15,150	63,833	9,296	158,254	24,670
Sea bass, white	420,050	81,406	595,322	145,555	383,681	74,051	1,532,730	321,840
Seatrout, greenling							411	14
Shad							1,263,363	82,781
Shark	88,915	9,799	185,836	21,539	79,161	7,283	717,247	56,020

TABLE 18

The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1950

TABLE 18—Continued

The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1950

Species	Santa Barbara region		Los Angeles region		San Diego region		Total	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
Anchovy	291,709	$4,521	1,700,198	$33,493	600	$54	4,878,687	$94,372
Barracuda	78,679	10,457	1,502,197	222,389	677,539	86,319	2,258,415	329,165
Bonito			422,527	40,858	273,087	26,845	695,614	67,703
Cabezone	1,981	97	615	40			21,679	556
Cabrilla			253,145	30,605	30,435	3,850	283,580	34,455
Carp			30,133	708			1,066,081	25,450
Catfish							299,494	57,080
Flounder	12,362	570	1,982	245	208	15	913,110	35,056
Flying fish			60,714	4,815			60,714	4,815
Grouper			278,819	53,227	17,849	2,659	296,368	55,886
Hake							500	5
Halibut, California	320,045	62,793	395,036	64,210	376,283	76,342	1,092,745	224,623
Halibut, Pacific			86,213	17,988			258,061	64,581
Herring, Pacific	993	45			3,554	107	1,425,351	16,507
Kingfish	20,979	266	415,268	18,396	9,334	768	747,387	35,621
Lingcod	46,662	8,090	4,862	469	3,105	290	1,914,725	135,002
Mackerel, jack	2,668,697	38,963	98,150,038	1,904,110	46,050	437	133,355,732	2,571,869
Mackerel, Pacific	892,932	15,359	30,800,137	748,442	552,125	18,938	32,640,969	794,479
Mullet					239,421	17,382	239,421	17,382
Perch	15,216	2,186	84,290	16,984			245,440	35,224
Pompano, California	160	40	30,582	4,288			183,697	47,698
Rock bass	18,004	1,886	159,308	24,137	27,995	2,699	205,367	28,722
Rockfish	189,508	18,913	660,874	56,967	92,912	8,529	8,115,909	409,135
Sablefish	5,860	206	206,518	24,885			1,919,971	127,411
Salmon	1,797	575	683,497	250,137			7,758,591	2,115,375
Sand dab	2,833	201	8,204	1,390			682,861	36,842
Sardine	95,023,884	1,415,957	547,412,241	9,457,388	3,957,066	41,945	714,521,761	12,140,322
Sculpin	1,938	152	111,593	20,294	26,082	3,348	139,523	23,794
Sea bass, black	1,858	224	90,563	15,150	63,833	9,296	138,254	24,670
Sea bass, white	420,050	81,406	566,322	145,555	383,681	74,051	1,532,730	321,840
Seatrout, greenling							411	14
Shad							1,263,363	82,781
Shark	88,915	9,799	185,836	21,539	79,161	7,283	717,247	86,030

TABLE 18—Cont'd.

TABLE 19

Landings of the Commercial Fishing Boats in the Eureka Region During 1950, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Eureka region totals		$3,257,236	36,268,227
Eureka	Sole	$544,023	12,710,822
	Albacore	410,567	2,167,725
	Crab	220,596	1,962,597
	Salmon	102,467	435,473
	Rockfish	68,950	2,231,387
	Sablefish	31,940	429,295
	Lingcod	31,886	470,294
	Pacific Halibut	24,774	92,336
	Flounder	15,783	442,104
	Sand dab	6,289	125,772
	All other	9,307	126,827
	Totals	$1,466,582	21,194,632
Fort Bragg (Noyo)	Albacore	$608,412	3,212,313
	Salmon	190,657	810,274
	Sole	57,089	1,333,859
	Rockfish	35,927	1,162,670
	Lingcod	20,053	295,769
	Sablefish	13,389	179,960
	All other	8,981	133,731
	Totals	$934,508	7,128,576
Crescent City	Crab	$282,016	2,509,042
	Salmon	192,817	819,450
	Albacore	34,882	184,169
	Sole	9,154	213,875
	Lingcod	6,453	95,178
	All other	7,622	156,768
	Totals	$532,944	3,978,482
Fields Landing	Crab	$96,947	862,514
	Sole	55,519	1,297,164
	Rockfish	8,005	259,060
	Lingcod	4,917	72,525
	All other	8,886	137,396
	Totals	$174,274	2,628,659
Trinidad	Crab	$101,061	899,121
	Salmon	13,331	56,654
	Albacore	5,124	27,054
	All other	168	2,850
	Totals	$119,684	985,679
Point Arena	Salmon	$11,979	50,910
	All other	1,475	11,211
	Totals	$13,454	62,121
Shelter Cove	Salmon	$10,092	42,891
	All other	163	2,187
	Totals	$10,255	45,078
All other ports	All other	$5,535	245,000
	Totals	$5,535	245,000

TABLE 19
Landings of the Commercial Fishing Boats in the Eureka Region During 1950, Shown by Port of Landing With the Corresponding Values

TABLE 20

Landings of the Commercial Fishing Boats in the Sacramento Region During 1950, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Sacramento region totals		$483,051	5,463,393
Pittsburg	Salmon	$147,349	609,887
	Shad	61,753	942,796
	Catfish	30,719	161,720
	Carp	5,153	146,391
	All other	134	936
	Totals	$245,108	1,861,730
Benicia	Sardine	$32,903	1,891,000
	Salmon	27,622	114,328
	Totals	$60,525	2,005,328
Sacramento	Salmon	$47,229	195,483
	Shad	5,950	90,836
	Catfish	4,765	25,088
	All other	400	8,333
	Totals	$58,344	319,740
Martinez	Salmon	$39,786	164,676
	Shad	14,925	227,856
	All other	89	1,071
	Totals	$54,800	393,603
Rio Vista	Salmon	$26,755	110,742
	All other	573	3,634
	Totals	$27,328	114,376
Clear Lake	Carp	$15,507	659,861
	Totals	$15,507	659,861
Bethel Island	Catfish	$9,160	48,224
	Totals	$9,160	48,224
Stockton	Catfish	$7,154	37,664
	All other	13	74
	Totals	$7,167	37,738
All other ports	All other	$5,112	22,793
	Totals	$5,112	22,793

TABLE 20
Landings of the Commercial Fishing Boats in the Sacramento Region During 1950, Shown by Port of Landing With the Corresponding Values

TABLE 21

Landings of the Commercial Fishing Boats and Shipments Into the San Francisco Region During 1950 Shown by Port of Landing With the Corresponding Values

		Value	Pounds
San Francisco region totals		$4,208,235	55,067,851
San Francisco	Albacore	$1,191,294	6,411,699
	Crab	469,662	3,557,788
	Sardine	186,682	10,698,086
	Sole	179,865	3,087,800
	Yellowfin tuna	178,214	1,098,051
	Salmon	154,719	555,745
	Skipjack tuna	70,164	489,732
	Shrimp	35,688	555,020
	Sablefish	19,676	196,167
	Bluefin tuna	16,182	107,878
	Lingcod	15,177	224,848
	Pacific halibut	12,694	64,512
	Sand dab	10,941	221,475
	All other	84,660	2,894,270
	Totals	$2,625,618	30,163,071
Point Reyes	Salmon	$433,744	1,557,989
	Sole	85,184	1,462,391
	Crab	70,715	535,718
	Rockfish	16,278	410,030
	Lingcod	13,191	195,417
	Albacore	7,263	39,089
	All other	21,093	296,982
	Totals	$647,468	4,497,616
Bodega Bay	Sole	$90,566	1,554,785
	Crab	87,772	664,938
	Salmon	82,871	297,619
	Albacore	71,140	382,883
	Lingcod	18,023	267,010
	Smelt	13,771	181,196
	Rockfish	8,844	222,770
	All other	9,684	181,501
	Totals	$382,671	3,752,702
Richmond	Sardine	$211,442	12,117,000
	Shrimp	18,193	282,938
	Salmon	9,481	34,054
	All other	4,348	198,300
	Totals	$243,464	12,632,292
Princeton	Salmon	$114,042	409,634
	Albacore	22,231	119,652
	Crab	25,506	193,221
	All other	6,297	158,133
	Totals	$168,076	880,640
y	Sole	$26,197	449,726
	Eastern oyster	10,473	76,000
	Rockfish	6,708	168,960
	Lingcod	4,867	72,103
	Pacific oyster	4,626	41,050
	All other	5,832	80,156
	Totals	$58,703	887,995

TABLE 21
Landings of the Commercial Fishing Boats and Shipments Into the San Francisco Region During 1950 Shown by Port of Landing With the Corresponding Values

TABLE 21—Continued

Landings of the Commercial Fishing Boats and Shipments Into the San Francisco Region During 1950 Shown by Port of Landing With the Corresponding Values

		Value	Pounds
McNear's Point	Sardine	$28,618	1,640,000
	Shrimp	4,826	75,050
	Totals	$33,444	1,715,050
Tomales Bay	Pacific oyster	$9,405	83,452
	Eastern oyster	5,661	41,079
	Native oyster	4,706	35,680
	All other	4,994	151,478
	Totals	$24,766	311,689
Oakland	Crab	$9,072	68,727
	Catfish	3,887	19,458
	All other	4,524	64,878
	Totals	$17,483	153,063
All other ports	All other	$6,542	73,733
	Totals	$6,542	73,733

TABLE 21
Landings of the Commercial Fishing Boats and Shipments Into the San Francisco Region During 1950 Shown by Port of Landing With the Corresponding Values

TABLE 22

Landings of the Commercial Fishing Boats in the Monterey Region During 1950, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Monterey region totals		$3,929,082	97,916,588
Monterey	Albacore	$610,062	3,243,287
	Sardine	569,997	30,318,991
	Jack mackerel	559,839	28,563,232
	Squid	151,804	5,794,057
	Rockfish	125,453	1,802,489
	Salmon	62,949	193,331
	Anchovy	37,196	2,463,290
	Sablefish	15,214	401,425
	Sole	13,855	222,386
	Lingcod	9,663	107,128
	Pacific mackerel	7,840	273,163
	Kingfish	6,299	117,514
	All other	26,473	376,937
	Totals	$2,196,644	73,877,230
Moss Landing	Albacore	$977,967	5,199,189
	Sardine	190,565	10,136,410
	Salmon	122,994	377,746
	Jack mackerel	54,409	2,775,950
	Sole	3,784	60,744
	All other	15,470	597,697
	Totals	$1,365,189	19,147,736
Santa Cruz	Salmon	$64,673	198,628
	Sole	58,976	946,643
	Albacore	55,741	296,335
	Rockfish	44,146	634,275
	California pompano	42,400	149,505
	Sardine	23,106	1,229,057
	White sea bass	16,915	109,626
	Sablefish	16,798	443,206
	California halibut	9,807	46,042
	Kingfish	9,449	176,296
	All other	25,238	662,009
	Totals	$367,249	4,891,622

TABLE 22
Landings of the Commercial Fishing Boats in the Monterey Region During 1950, Shown by Port of Landing With the Corresponding Values

TABLE 23

Landings of the Commercial Fishing Boats in the Santa Barbara Region During 1950, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Santa Barbara region totals		$2,587,222	106,125,171
Port Hueneme	Sardine	$776,292	52,100,077
	White sea bass	61,860	319,195
	Jack mackerel	36,420	2,494,487
	Pacific mackerel	11,808	686,488
	Albacore	11,685	62,021
	Spiny lobster	9,776	38,142
	Barracuda	8,841	66,523
	California halibut	7,479	38,119
	All other	11,816	356,222
	Totals	$935,977	56,161,274
Avila	Sardine	$257,905	17,309,071
	Albacore	230,281	1,222,296
	Abalone	20,055	187,434
	Crab	10,053	82,402
	Rockfish	6,311	63,239
	Broadbill swordfish	5,895	12,721
	All other	15,339	297,070
	Totals	$545,839	19,174,233
Santa Barbara	Sardine	$249,979	16,777,100
	Spiny lobster	82,878	323,362
	California halibut	48,844	248,950
	Abalone	46,242	432,171
	Sole	24,813	445,474
	White sea bass	17,598	90,803
	Albacore	14,087	74,773
	Crab	13,412	109,931
	Shark	5,371	48,743
	All other	8,841	280,741
	Totals	$512,065	18,832,048
Morro Bay	Albacore	$289,073	1,562,519
	Sardine	131,225	8,807,055
	Abalone	50,559	472,512
	Crab	22,682	185,917
	Rockfish	9,073	90,913
	All other	9,574	95,484
	Totals	$512,186	11,214,400
Channel Islands	Abalone	$31,112	290,762
	Totals	$31,112	290,762
San Simeon	Abalone	$29,912	279,550
	Shark	26	234
	Totals	$29,938	279,784
Cambria	Abalone	$6,003	56,100
	All other	762	7,631
	Totals	$6,765	63,731
All other ports	All other	$13,340	108,939
	Totals	$13,340	108,939

TABLE 23
Landings of the Commercial Fishing Boats in the Santa Barbara Region During 1950, Shown by Port of Landing With the Corresponding Values

TABLE 24

Landings of the Commercial Fishing Boats and Shipments Into the Los Angeles Region During 1950, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Los Angeles region totals		$40,465,894	864,851,342
Terminal Island	Yellowfin tuna	$12,672,555	82,235,917
	Skipjack tuna	6,873,495	48,439,003
	Sardine	6,842,360	396,888,659
	Albacore	2,363,742	12,499,957
	Jack mackerel	1,073,910	55,356,186
	Bluefin tuna	325,705	2,109,489
	Pacific mackerel	273,784	11,266,833
	Yellowtail	147,337	1,699,383
	Bonito	34,976	361,698
	All other	6,705	334,199
	Totals	$30,614,569	611,191,324
Long Beach	Yellowfin tuna	$1,666,237	10,812,698
	Sardine	1,620,344	93,987,497
	Skipjack tuna	909,663	6,410,591
	Jack mackerel	231,021	11,908,294
	Albacore	201,852	1,067,433
	Pacific mackerel	149,209	6,140,290
	Yellowtail	47,036	542,511
	Bluefin tuna	42,658	276,285
	Pismo clam	19,437	1,214,808
	Spiny lobster	9,636	27,825
	All other	15,178	337,604
	Totals	$4,912,271	132,725,836
Wilmington	Yellowfin tuna	$753,670	4,890,782
	Sardine	726,670	42,150,210
	Jack mackerel	527,902	27,211,426
	Skipjack tuna	400,421	2,821,852
	Albacore	129,789	686,350
	Pacific mackerel	100,499	4,135,757
	All other	3,442	55,477
	Totals	$2,642,393	81,951,854
San Pedro	Barracuda	$208,747	1,349,368
	White sea bass	133,625	546,524
	Abalone	71,521	881,889
	Albacore	64,814	342,752
	Spiny lobster	53,777	155,291
	Grouper	52,446	274,731
	California halibut	49,060	233,063
	Bluefin tuna	34,269	221,947
	Rockfish	32,066	372,001
	Pacific mackerel	29,276	1,204,789
	Cabrilla	26,442	218,713
	Rock bass	19,133	126,292
	Sculpin	15,685	86,180
	Black sea bass	14,621	87,395
	Sardine	12,326	714,964
	Perch	11,488	57,012
	Yellowtail	11,282	130,126
	Jack mackerel	10,905	562,137
	Shark	10,153	87,605
	Yellowfin tuna	9,170	59,508
	Kingfish	8,519	192,293
	All other	30,947	454,593
	Totals	$910,272	8,359,173

TABLE 24
Landings of the Commercial Fishing Boats and Shipments Into the Los Angeles Region During 1950, Shown by Port of Landing With the Corresponding Values

TABLE 24—Continued

Landings of the Commercial Fishing Boats and Shipments Into the Los Angeles Region During 1950, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Newport Beach	Albacore	$277,162	1,465,693
	Pacific mackerel	193,122	7,947,418
	Sardine	151,750	8,802,181
	Jack mackerel	58,554	3,018,249
	Abalone	57,612	710,386
	Spiny lobster	22,288	64,359
	California halibut	7,534	35,789
	Barracuda	6,768	43,751
	All other	29,466	300,704
	Totals	$804,256	22,388,520
Los Angeles	Salmon	$249,073	682,579
	Sablefish	19,885	165,019
	Pacific halibut	17,988	56,213
	All other	2,698	46,508
	Totals	$289,644	950,319
Santa Monica	Sardine	$83,904	4,866,830
	Spiny lobster	33,908	97,915
	Anchovy	17,679	897,429
	Albacore	15,738	83,226
	Rockfish	12,302	142,709
	Barracuda	11,042	71,379
	Abalone	7,391	91,133
	California halibut	6,302	29,939
	All other	26,710	398,257
	Totals	$214,976	6,678,817
Redondo Beach	Albacore	$9,397	49,691
	Spiny lobster	7,353	21,234
	Rockfish	7,269	84,325
	Abalone	4,781	58,949
	Perch	4,453	22,098
	All other	7,478	87,706
	Totals	$40,731	324,003
Dana Point	Spiny lobster	$9,866	28,489
	Abalone	2,830	34,895
	All other	2,786	14,207
	Totals	$15,482	77,591
Santa Barbara Island	Abalone	$8,794	108,430
	Octopus	5	31
	Totals	$8,799	108,461
Avalon	Albacore	$2,873	15,192
	Abalone	1,502	18,515
	Flying fish	1,052	13,272
	All other	2,938	18,452
	Totals	$8,365	65,431
All other ports	All other	$4,136	30,003
	Totals	$4,136	30,003

TABLE 24
Landings of the Commercial Fishing Boats and Shipments Into the Los Angeles Region During 1950, Shown by Port of Landing With the Corresponding Values

TABLE 25

Landings of the Commercial Fishing Boats and Shipments Into the San Diego Region During 1950, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
San Diego region totals		$30,292,729	200,899,738
San Diego	Yellowfin tuna	$13,350,167	86,375,303
	Skipjack tuna	9,197,882	63,697,243
	Albacore	3,452,341	17,943,558
	Spiny lobster	556,507	1,436,517
	Yellowtail	102,573	1,092,365
	Barracuda	86,125	676,021
	California halibut	74,740	358,982
	White sea bass	70,396	364,746
	Sardine	41,945	3,957,056
	Pismo clam	28,811	4,057,888
	Bonito	26,034	264,843
	Bluefin tuna	19,681	131,206
	Pacific mackerel	18,896	550,895
	Abalone	14,074	171,014
	Black sea bass	9,058	64,147
	Rockfish	7,891	85,963
	Shark	5,502	59,806
	All other	26,121	232,244
	Totals	$27,088,744	181,519,797
Point Loma	Albacore	$1,493,680	7,763,412
	Skipjack tuna	892,458	6,180,460
	Yellowfin tuna	768,799	4,974,111
	Yellowtail	5,651	60,183
	All other	813	8,254
	Totals	$3,161,401	18,986,420
Salton Sea	Mullet	$17,382	239,421
	Totals	$17,382	239,421
Oceanside	White sea bass	$3,179	16,470
	California halibut	3,140	15,082
	Spiny lobster	1,127	2,910
	All other	2,914	22,837
	Totals	$10,360	57,299
All other ports	All other	$14,842	96,801
	Totals	$14,842	96,801

TABLE 25
Landings of the Commercial Fishing Boats and Shipments Into the San Diego Region During 1950, Shown by Port of Landing With the Corresponding Values

TABLE 26
The Recorded State-wide Catch, in Numbers of Fish, Made by Anglers Fishing From Licensed Party Boats and the Number of Angler Days

Species	1936	1937	1938	1939	1940	1946	1947	1948	1949	1950
Albacore	410	1,368	3,880	8,730	159	11,061	8,044	15,313	23,461	114,502
Barracuda	505,062	742,849	374,106	732,878	761,609	388,333	680,640	413,036	363,990	251,040
Halibut, California	71,366	49,904	35,387	85,708	94,945	134,123	133,187	178,639	106,516	86,998
Rock bass [1]	353,278	233,423	404,642	458,778	451,079	390,761	693,035	661,085	797,328	616,898
Salmon	238	1,370	2,610	4,038	7,075	2,950	5,063	11,188	20,404	52,993
Sea bass, white	12,815	12,756	16,406	32,241	17,591	12,935	21,632	25,051	62,570	58,386
Yellowtail	97,453	62,847	44,974	26,730	96,756	3,051	7,082	12,787	18,023	7,673
All other	826,857	1,009,665	1,011,396	1,271,220	1,061,169	299,944	861,746	1,279,394	959,101	1,046,901
Total number of fish	1,957,479	2,134,182	1,953,604	2,620,323	2,490,983	1,243,358	2,419,429	2,596,493	2,351,393	2,235,593
Number of angler days	204,189	328,216	217,211	241,386	273,861	209,043	447,816	533,309	490,943	602,431

[1] Rock bass includes two species, kelp bass (Paralabrax clathratus) and sand bass (P. nebulifer).

TABLE 26
The Recorded State-wide Catch, in Numbers of Fish, Made by Anglers Fishing From Licensed Party Boats and the Number of Angler Days

TABLE 27

The Recorded Catch of Live Bait in Southern California Made by the Vessels Supplying the Party Boat Fleet

Species	Pounds		
	1948	1949	1950
Anchovy	7,172,581	5,554,194	7,647,640
Kingfish	51,953	101,934	48,545
Mackerel, jack			433
Pompano, California	110		
Queenfish	493,859	395,769	232,618
Sardine	1,027,643	2,908,253	3,093,587
Sardine, firecrackers		1,070	4,251
Smelt	54,503	108,697	30,824
Total pounds	8,800,649	9,069,917	11,057,898
Number of boats	25	23	25

TABLE 27
The Recorded Catch of Live Bait in Southern California Made by the Vessels Supplying the Party Boat Fleet