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Fish Bulletin No. 89. The Commercial Fish Catch of California For the Year 1951 with An Evaluation of the Existing Anchovy Case Pack Requirements

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**STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME
BUREAU OF MARINE FISHERIES
FISH BULLETIN NO. 89**

The Commercial Fish Catch of California For the Year 1951 with An Evaluation of the Existing Anchovy Case Pack Requirements



By
the Staff of the
1953

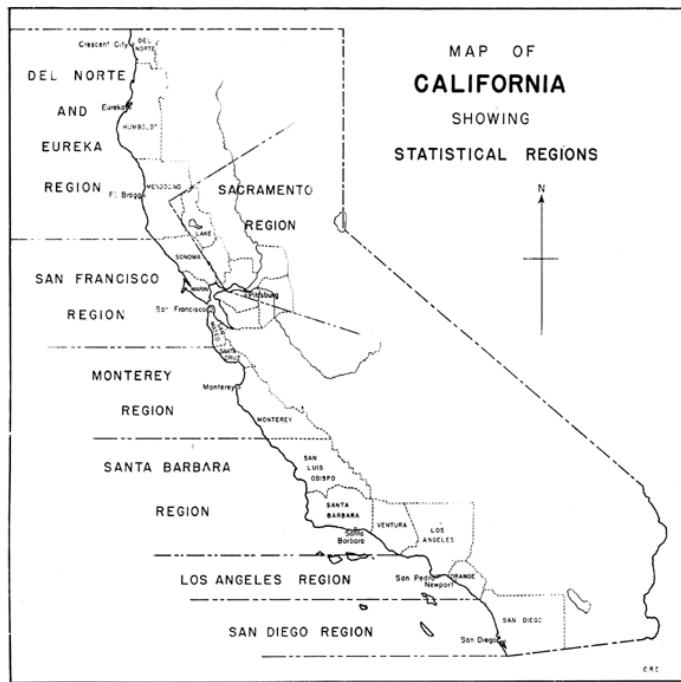


FIGURE 1

FIGURE 1

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FOREWORD

In 1929 a series of fish bulletins was originated, the purpose of which was to present current statistics of the commercial fish landings in California and to record historic notes and changes in conditions which affected these landings. The record of the marine sport catch and the live bait fishery for sport fishing was added in 1949 and has been included in subsequent bulletins. This bulletin is the fourteenth in the series.

Credit for this publication is due the staff of the statistical unit of the Bureau of Marine Fisheries. We acknowledge with sincere appreciation the ever increasing assistance of the marine staff of the Bureau of Patrol who collect the records and enforce the system. Without their interest the record would fail to reach its present degree of completeness.

November, 1952

INTRODUCTION

This publication presents the total landings of commercial fish and shipments into California in the year 1951. It follows in organization the plan used in Bulletin No. 86, which presents comparable figures for 1950. The attempt has been made, however, in this publication to differentiate more clearly the shipments into the State from the landings of our own fleet, and the arrangement within some of the tables has been slightly revised to facilitate the use of landing figures, as defined on page 24. Thus in Table 15, the landings of the California fleet have been totaled and shown in a separate column, with the shipments segregated in the next column. Experience has shown that this arrangement enhances the reference value of the tables. This policy has been pursued wherever possible throughout the tables.

A second minor departure from previous policy pertains to Figure 2 and Table 7. It has been customary in the past to omit the mollusks and crustaceans from these totals. In the present case they have been included. The difference in totals is small and will not impair comparison of the successive graphs. Anyone using these tables for more than superficial reference should first read the "Explanation of Tables" on page 24.

All catch statistics are influenced by economic demand as well as by the abundance of the supply. In using and interpreting the statistics of 1951, at least two economic factors must be considered.

The year 1951 was one of crises in the tuna industry. The phenomenal growth in the post-war years of the tuna fleet with its augmented catch, in conjunction with increased imports of canned and frozen tuna from abroad, gradually piled up a surplus of unsold goods. Early in 1951 the industry was forced to call a halt, and throughout the year the local fleet was either idle or fishing on a rotation basis. Whereas 193 regular tuna boats made 887 deliveries in 1950, 227 tuna boats in 1951 made only 818 deliveries. The average number of deliveries in 1951, 3.6 per boat, compares with 4.6 per boat in 1950. The decrease in catch was not proportionate. The explanation is that when in 1951 a vessel was released to fish, it stayed out until it filled its holds, knowing that it would be tied up again when it returned; whereas in 1950 it was often more productive to return to port with a partial load. These factors must be considered when interpreting the catch of 1951.

While the tuna fleet was idle, the industry was active in attempting legislative curbs on foreign imports. The common threat to the domestic plants and fleet forced concerted action on the part of all concerned. Such effort may have a profound effect upon the future of the tuna fishery.

Meanwhile in the sardine industry the year witnessed the culmination of a trend, associated with the decline in the fishery, from reduction to canning. Although 84 permits were issued to reduce a total of 150,000 tons of sardines, only 1,022 tons of this amount were used. The reasons were largely economic. The season's catch was roughly only 35 percent of that of the preceding year and the price per ton went up accordingly.

This high price coupled with a strong demand for canned sardines took the incentive and the profit out of reduction, and everything that could be packed went into the cans.

The failure of the sardine fishery was absolute in northern California, and almost so at Monterey. This stimulated wholesale trucking of fish both north and south. Of the 25,000 tons processed in Monterey plants, only 878 tons were landed there by fishing boats. The balance was received by truck and originated almost entirely in southern California. At the same time, so great was competition for sardines, that many of the canners in the Los Angeles region trucked loads to their plants from Santa Barbara and Port Hueneme.

These are but two of the economic factors which influenced the catch of 1951. Numerous others were operative, and must be evaluated in any analyses of the detailed catch statistics.

The report on the anchovy case pack requirements has been included in this bulletin because the latter offered the first chance of publication. The information in this article was needed, and in order to make it generally available, it was decided to publish it at the earliest opportunity.

1. ACKNOWLEDGMENTS

The topic of this report was a problem assigned to the statistical unit of the Bureau of Marine Fisheries. The problem was delegated to the author who in turn elicited the assistance of a number of people in the actual collection of the data. Acknowledgment of this help from Messrs. C. E. Blunt, E. C. Greenhood and especially D. J. Miller who obtained the bulk of the information, is gratefully made. The writer must necessarily assume the responsibility for the conclusions and recommendations.

For the calculations, tabulations and preparation of tables and manuscript the writer is indebted to Mrs. C. J. Loring and Mr. S. Imamura. The help and cooperation of employees and the management of the several canneries in which the work was done is likewise acknowledged. Without this assistance from all concerned the work could not have been accomplished.

2. THE PROBLEM

The California Fish and Game Code prohibits the reduction of whole fish of any species, except under special permit. Such permits have been issued only in the case of sardines and shark carcasses,¹ and in these cases reduction is rigorously controlled.

Reduction, however, is a necessary adjunct of canning operations, because all nonedible portions of fish used for canning and all fish scrap must be disposed of. Reduction is the most sanitary and most economic means of utilization. The resulting meal, with its high protein content, is a valuable constituent of stock and poultry food, and the extracted oils find many industrial uses. Hence reduction, besides providing a means of disposal, helps materially to reduce the over-all cost of canning operations.

As a portion of each fish canned goes into reduction, and as it is illegal to reduce whole fish, the Department of Fish and Game is confronted with the problem of determining what percentage of the catch of any species should be canned. In all but a few cases economic factors eliminate this problem. The overwhelming majority of species taken have too great a food value to warrant any reduction of whole fish. At the present time only the sardine and the northern anchovy, *Engraulis mordax*, are available both in sufficient quantity and at a sufficiently low cost to make reduction potentially profitable, and the price and scarcity of sardines is rapidly taking it out of this class. Sardines have been reduced under permit for a number of years, and the case pack

¹ Special reduction permits are occasionally issued to meet some local or transient emergency, such as the elimination of carp from infested inland waters.

requirements have been set low enough to permit the reduction of approximately one-third of each ton taken for canning. In the case of the anchovy, on the contrary, no reduction has ever been permitted, and the required case pack is high enough to preclude any appreciable reduction of whole fish. For the pack in one-pound oval cans the cannery are required to put up 864 cans, or 18 cases containing 48 cans each, per ton of whole fish received. For each size of container used an equivalent case pack is specified.

A summary of the regulations governing the pack of anchovies and the required case pack follows:

1-lb. tall or oval (864 cans are equal to 18 cases, 48 cans to case)	864 cans
No. 10 (120 cans are equal to 20 cases, 6 cans to case)	120 cans
$\frac{1}{2}$ -lb. oval or 9-oz. oblong (1,344 cans are equal to 28 cases, 48 cans to case)	1,344 cans
$\frac{1}{2}$ -lb. buffet (1,584 cans are equal to 33 cases, 48 cans to case)	1,584 cans
$\frac{1}{4}$ -lb. oblong (2,600 cans are equal to 26 cases, 100 cans to case)	2,600 cans
5-oz. or 6-oz. round (2,133 cans are equal to 21# cases, 100 cans to case)	2,133 cans

Any cannery of anchovies desiring to pack in cans of a size or style not listed above must submit samples of the pack to the commission, and secure the acceptable equivalent before engaging in packing such size or style of pack.

Recently these requirements have been criticized by some segments of the industry on the grounds that cannery cannot always obtain this yield per ton. The reasons for such failure and the merits of the arguments advanced against a high case pack will be discussed after the presentation of evidence collected in six sample runs made at six separate plants located in three ports. One sample was run through a plant at Port Hueneme, three at Monterey and two at San Francisco. In addition, the raw-fish fill of container was investigated in three other plants to obtain as complete information as circumstances permitted.

Basically, the number of cans that can be packed from a ton of fish depends upon the amount of edible fish per ton of whole fish received, and upon the amount of fish in each can. Both these factors are variables. The amount of edible fish should be determined on the basis of generally current cannery practices, while the fill of container should be based upon the maximum customary fill of each sized container. The former factor, i.e., the amount of edible meat per ton of whole fish received, is for all practical purposes independent of the size and type of container used to pack it in. And as this is the controlling factor in setting case packs, it will be considered first.

3. AMOUNT OF EDIBLE MEAT PER TON OF FISH

The procedure followed in all these tests was to take a random sample of about 200 pounds of fish from the load. In most cases the sample was taken directly or indirectly from the receiving tanks into which the fish were conveyed from the unloading dock and scale. A cutting table was cleared and cleaned, and the entire weighed sample dumped on to this

table. Here the heads and tails were cut and separated mechanically from the utilizable portion of the fish. In four of the six plants the viscera were at the same time removed by means of suction cups. In the two remaining plants, not equipped with the latter, the viscera were in part withdrawn with the head.

As the cut (edible) sections emerged from the machines, they were collected on trays. When the entire sample had been cut the total amount of cut sections (destined for the packing tables) was weighed. Everything remaining on the cutting table, consisting of broken fish and fish of other species, was then collected and weighed. The latter weight was deducted from the sample weight to give the actual weight of whole, sound anchovies in the sample. It also gave the percentage admixture in the load. The weight of heads, tails and removed viscera was obtained by subtraction, as it was impractical to collect these portions because they dropped, as they were cut, into flumes or on to conveyors which carried them to the reduction plant.

The containers of cut (edible) sections were then taken to the packing tables. In all but one case the sample was packed into cans by one or two women detailed to that job by the packing-room foreman. In one case the sample was packed by the entire packing crew. The latter method averaged the packing skill and practices of all individuals, whereas the former method could be biased by the particular practice of the individual. To detect and allow for this, a large number of filled cans were taken from the production line and weighed, for comparison with the above results. As could be expected, such sample averages varied considerably. Average differences between production line weights and the sample weights differed by as much as 0.3 ounces per can. However, the difference was not consistent, and the production line weights were in some cases greater and in others less than the sample cans. In the presentation of the results from the six samples only the sample weights will be given, while the production line weights will be included in the over-all averages used in determining the accepted fill of container.

However the packing was done, the filled cans (without lids or sauce) were collected, counted and weighed, either collectively or in batches of 1 to 4, upon a laboratory scale. This gave the total weight of packed fish derived from the original sample, plus the weight of the specific number of cans used. In the first four trials the average weight of individual cans was determined by weighing (before or after the run) from 50 to 200 clean, empty cans, without lids. However, in the course of this work it was discovered that, while the variation in weight of individual cans within a given batch was small, nevertheless there was an appreciable and consistent difference in the weight of cans from different lots. Hence in the last two samples, the fish was packed in cans that had been previously weighed and segregated.

Table 1 shows the actual weights of fish, at various stages in processing, in the six separate samples. All percentages are based upon the corresponding stage. Thus the percent of broken and mixed fish is based upon the weight of the initial load. The cleaning loss is based upon the weight of whole, sound anchovies; while the packing loss is based upon line 5, the weight of cut sections.

TABLE 1
*Results of Six Determinations of the Proportionate Amount of Fish Going Into Cans, and the Processing Losses.
 The Percentages Are Based Upon the Preceding Item. Thus the Cleaning Loss Is
 Figured From Item 3, and the Packing Loss From Item 5.*

	Sample 1			Sample 2			Sample 3		
	Pounds	Loss		Pounds	Loss		Pounds	Loss	
		Pounds	Percent		Pounds	Percent		Pounds	Percent
1. Weight of sample.....	199.8	12.2	6.11	223.1	3.7	1.66	259.0	5.0	1.93
2. Broken and mixed fish.....	187.6	80.6	42.96	219.4	91.1	41.52	254.0	115.0	45.3
3. Whole, sound anchovies.....					128.3				
4. Cleaning loss.....	107.0	9.243	8.64		9.02	7.73	139.0	7.0	5.04
5. Weighing loss.....					118.38				
6. Packing loss.....							132.0		
7. Weight of fish in cans.....	97.737								
8. Weight of fish in cans per ton of whole sound anchovies.....		1.042	52.1%		1,079	53.96%		1,039	51.96%
		(line 7 x 2000)							
		line 3							

TABLE 1
*Results of Six Determinations of the Proportionate Amount of Fish Going Into Cans, and the Processing Losses.
 The Percentages Are Based Upon the Preceding Item. Thus the Cleaning Loss Is Figured From Item 3, and the
 Packing Loss From Item 5.*

	Sample 4			Sample 5			Sample 6		
	Pounds	Loss		Pounds	Loss		Pounds	Loss	
		Pounds	Percent		Pounds	Percent		Pounds	Percent
1. Weight of sample.....	215.17	3.75	1.74	214.95	8.30	3.86	135.25	5.50	4.07
2. Broken and mixed fish.....	211.42	98.00	46.40	206.65	88.60	42.90	129.75	66.75	51.45
3. Whole, sound anchovies.....				118.05			63.00		
4. Cleaning loss.....									
5. Weight of cut sections.....	113.42	6.32	5.57	113.83	4.22	3.57	61.99	1.01	1.60
6. Peeling loss.....									
7. Weight of fish in cans.....	107.1								
8. Weight of fish in cans per ton of whole sound anchovies.....	1,013	50.65%		1,102	55.08%		956	47.78%	
(line 7 x 2000)									
line 3									

TABLE I—Cont'd.

TABLE 2
**Condensation of Table 1 Showing Total Losses and Utilizable Fish in Pounds
 and Percent, Based on Six Samples**

	Available		Losses		
	Pounds	Percent	Pounds	Percent	Recommended percentage allowance
1. Weight of samples	1,247.27	100.00	38.45	3.08	3.0
2. Broken and mixed fish			540.05	44.68	45.00
3. Whole, sound anchovies	1,208.82	96.92			
4. Cleaning loss			37.713	5.6	5.6
5. Weight of cut sections	668.77	55.32			
6. Packing loss	631.057	52.2			
7. Weight of fish in cans					
8. Weight of fish in cans per ton whole sound anchovies	1,044.00	52.2			

*TABLE 2
 Condensation of Table 1 Showing Total Losses and Utilizable Fish in Pounds and Percent, Based on Six Samples*

In Table 2 the results are condensed. The six sample values have been combined and the resulting percentages determined to give the average condition in the six plants.

Table 3 shows the pack resulting from these samples. Table 4 combines the sample values in order to give representative average figures for use with each size of container. Additional data on fill of container is presented later.

It appears from the above experiments that 48 to 55 percent of a load of whole, sound anchovies is utilizable in the can. The remaining percentage consisting of heads, tails, viscera and broken fish is necessarily discarded and is processed into fish meal and oil. On the basis of these tests one must conclude that there is a minimum of 956 pounds and an average of 1,044 pounds of edible meat in each ton of whole, sound anchovies received for processing.

This, however, is indicative of the potential rather than the actual yield. It indicates what percentage of the fish can be recovered in the can under prevailing cannery practice from a ton of whole, sound anchovies. While the procedure followed in these tests was based on plant rather than laboratory conditions, there are two sources of loss that have not been adequately considered which will lower the above yields.

One is the percentage admixture in occasional loads, in excess of the normal and nominal values obtained above. Discussion of this subject will be deferred until later. The second may be termed a conveyor loss. In the path of the fish through the plant from unloading to the filled and sealed cans, they travel from each operation in the process to the next in flumes or conveyors. In this journey there is an inevitable loss caused by mechanical damage to occasional fish or parts thereof, or by actual loss of whole fish or sections from the conveyors or tables. In the described tests the cut sections were taken from the cutting machines and carried directly to and placed upon the packing tables, thus eliminating any conveyor travel in this interval with its resulting loss. Allowance should therefore be made for this in fixing the amount of utilizable fish per ton.

TABLE 3
Data on the Number of Cans Packed From Each Sample, and Derived Information

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
1. Weight of fish in cans (pounds)	97.757	118.38	132.0	107.1	113.83	61.99
2. Number of cans packed.....	259	304	357	187	312	193
3. Size of can.....	6 oz., round	6 oz., round	6 oz., round	½ lb., oblong	6 oz., round	6 oz., round
4. Average raw fish fill.....	4.04 oz.	3.29 oz.	3.9 oz.	3.16 oz.	3.84 oz.	3.14 oz.
5. Pounds of raw fish per case.....	37.75	38.94	36.87 ⁵	27.48	36.15	32.13
6. Case pack per ton of whole, sound anchovies.....	27.60	27.71	28.18 ⁵	36.86	30.19	29.74
7. Case pack per % of fish received.....	25.93	27.25	27.56	36.21	29.03	28.54
8. Required case pack.....	21½	21½	28	21½	21½	21½
9. Required case pack as percent of actual case pack per ton of fish received (Item 8 x 100 ÷ Item 7).....	82.27%	78.29%	77.41%	77.33%	73.49%	74.75%

TABLE 3
Data on the Number of Cans Packed From Each Sample, and Derived Information

TABLE 4

Recapitulation of Table 3 Showing for the 202 x 308 Can the Average Values Resulting From the Sample Runs

	Samples No. 1, 2, 3, 5 and 6	Samples No. 1, 2, 3 and 5
1. Weight of fish in cans (pounds) -----	523.957	461.967
2. Number of cans packed -----	1,425	1,232
3. Average raw fish fill -----	5.88 oz.	6.00 oz.
4. Pounds of raw fish per case -----	36.75	37.5
5. Cases per ton of whole sound anchovies -----	28.57	28.40
6. Cases per ton of fish received -----	27.61	27.47
7. Required case pack as percent of actual case pack per ton of fish received ----- (Required case pack x 100)	77.3%	77.7%
Item 6		

TABLE 4

Recapitulation of Table 3 Showing for the 202 x 308 Can the Average Values Resulting From the Sample Runs

As all other operational losses were duplicated in the test runs, this conveyor loss can be approximated by comparing the sample yield with the actual plant yield for that day's operation. The difference in yields per ton reflects the losses suffered in the mechanical transportation of fish and parts of fish through the plant.

Comparison of the above yields in three plants suggests an average value of 5 percent. The figure is admittedly an estimate, and the loss from this source undoubtedly varies from plant to plant, and probably from day to day. However, the three plants tested were average installations, and the values obtained were not too discordant. They were 3.55, 4.98 and 5.80 percent respectively, and the figures were obtained by converting the difference in case pack per ton between plant and sample yields into a percentage of the potential or sample yield. The average of these three values is 4.78, so that a 5 percent allowance for conveyor losses is a fair, if arbitrary, value to use. Hence the amount of utilizable fish finally put into cans in the six trial runs (Table 1, line 8) would be reduced by 5 percent in average plant operation, to:

Sample 1	990 lbs.
Sample 2	1,025 lbs.
Sample 3	987 lbs.
Sample 4	962 lbs.
Sample 5	1,047 lbs.
Sample 6	907 lbs.

This reduces the corresponding average, 1,044 of Table 2, to 992 pounds. This figure can be accepted, on the basis of the above actual tests, as a fair average value of the amount of edible meat that actually goes into the can, irrespective of the particular container used, from a ton (2,000 lbs.) of whole, sound anchovies.

The average figures presented thus far are based upon a ton of whole, sound anchovies. Such loads are perhaps never received at a plant. Inevitably there is a nominal admixture with other species, and a nominal percentage of broken, nonutilizable anchovies. The extent of this loss is shown in each sample. A deduction of 3 percent from the initial average load will convert this into one of whole, sound anchovies. As all apparent losses have now been determined, the foregoing results may be summarized in terms of a ton of anchovies as received at a plant.

	<i>Percent</i>	<i>Loss</i>	<i>Pounds</i>	<i>Remaining</i>
a. Original load				2,000
b. Broken and mixed fish	3.0		60	1,940
c. Cutting and cleaning loss	45.0		873	1,067
d. Conveyor loss	5.0		53	1,014
e. Packing loss	5.6		57	957
f. Raw fish in cans				957

Hence one may conclude that under average existing cannery conditions 957 pounds of edible meat goes into the can from every ton of fish received at a plant as anchovies. This figure may be rounded off to 960 pounds, and used henceforth for determining case packs.

That these allowances for losses are liberal is shown by a seventh sample taken from an efficient, small cannery without a reduction plant, where every effort is made to salvage all utilizable fish. The corresponding actual losses, and residual fish in this sample, prorated to 2,000 pounds of fish, are as follows:

	<i>Percent</i>	<i>Loss</i>	<i>Pounds</i>	<i>Remaining</i>
a. Original load				2,000
b. Broken and mixed fish	1.0		19	1,981
c. Cutting and cleaning loss	31.3		620	1,361
d. Packing loss	3.8		52	1,309
e. Raw fish in cans				1,309

If to these sample values (c. above) the 5 percent conveyor loss is applied, the actual amount of utilizable fish in cans becomes 1,244 pounds. The actual yield from a ton of fish is, in this case, 287 pounds greater than the average of the six reported samples. Assuming for the present a six-ounce raw fish fill per 6-ounce round can this is equivalent to an increased production of 7.65 cases per ton.

4. FILL OF CONTAINER

Given the amount of utilizable raw fish (960 pounds) per ton of fish received, the question as to how many cans of a given size and type should be packed per ton now becomes one of determining the average amount of raw fish that goes into each can. In the six experimental packs only two sizes of container were used. One was the half-pound, or nine-ounce oblong (509 x 305 x 103)¹ can, and the other the six-ounce round (202 x 308) can. To supplement this information all plants along the coast that were packing anchovies in this interval (September-October, 1952) were visited, and the fill of container in other-sized cans was obtained wherever possible. The data thus obtained have been combined in Table 5 with the sampling information presented above.

In the case of the six-ounce round can, there is considerable variation in fill of container, both in a given plant and between plants. In general, two practices prevail. In one, the can is over-filled with raw fish so that the shrinkage (roughly 13 percent in weight) in the subsequent exhausting leaves the can with the minimum head space. In this practice a lesser amount of sauce is required to fill the packed can. In the second method the can is barely filled with raw fish and the shrinkage caused by exhausting leaves the can with an appreciable head space. This practice requires

¹ A can is completely defined by its shape and dimensions in inches and sixteenths of an inch. Thus the symbols above adequately define a nine-ounce oblong can measuring 5 9/16 inches in length by 3 5/16 inches in width and 1 3/16 inches in height.

TABLE 5
Average Fill of Containers and Case Packs, Based on All Available Data

	6 oz. Round	8 oz. Buffet	9 oz. Oblong	1 lb. Oval
1. Weight of raw fish in cans-----	7,391.47 oz.	861.18 oz.	3,768.07 oz.	5,028.35 oz.
2. Number of cans-----	1,232	100	406	300
3. Average weight of raw fish in cans-----	6.00 oz.	8.61 oz.	9.28 oz.	16.76 oz.
4. Can pack per 960 pounds utilizable fish per ton-----	2,560 cans	1,784 cans	1,655 cans	916 cans
5. Equivalent case pack-----	25.60	37.2	34.5	19.1
6. Required case pack-----	21.33	33.0	28.0	18.0
7. Percent required of potential----- (Item 6 x 100 ÷ Item 5)	83.3%	88.7%	81.1%	94.2%

TABLE 5
Average Fill of Containers and Case Packs, Based on All Available Data

a larger volume of sauce to fill the can. In both cases the net weight of contents, fish and sauce, is the same, but the amount of fish in each can is appreciably different. Average values for the two practices approximate 5.24 and 6.00 ounces of raw fish per can. As the required case pack must be attainable by all packers, under average conditions and according to prevailing practices, the higher value, corresponding to a greater weight of fish per can, should be used as the normal fill of container.

If one accepts the results given in Table 5 as the normal fill of containers, the case packs that can be expected from the average ton of anchovies as received at the plant can be calculated by dividing the amount of utilizable fish per ton (960 pounds) by the corresponding average amount of raw fish in each sized can. The results are tabulated in the fourth and fifth lines of Table 5. In the last line of this table the percentage that the required case pack forms of the actual is shown for each size of container.

5. THE EVALUATION OF EXISTING REQUIREMENTS

It is apparent that in all cases the requirements are lower than the actual average yield in the average plant. Moreover, monthly production reports submitted by the industry show that the required yields are regularly and consistently met and exceeded by an appreciable margin. Thus in the first nine months of this year processors submitted 45 separate monthly production reports covering a pack of 212,727 cases of anchovies in four sizes of container. In only one instance was there a violation of the case pack requirements. In roughly 60 separate packs reported in this interval the required case pack was exceeded in 59 cases and the excess was appreciable. This fact in itself proves that the existing requirements are not too stringent. Thus, with the various allowances made in arriving at the figure 960 pounds, the processor still has a leeway ranging from 6 percent in the case of ovals to 19 percent in the case of the nine-ounce oblong can.

The only argument for lowered requirements that merits consideration is that loads of anchovies received at a plant are at times excessively mixed with other fish, or with anchovies of a size unsuited for canning. If this were the rule, then the requirements should be lowered accordingly. However, it remains the exception, and as such there are adequate provisions in the Fish and Game Code to take care of it. In the first place, case packs are computed and reported to this department on a

monthly basis. Hence, any processor has the advantage of averaging occasional mixed loads with the good or average loads taken in the same 30-day interval. As the required case pack allows appreciable leeway, there is seldom any difficulty in meeting the requirements over a monthly period.

In the second place the processor has the privilege, when a load of anchovies is received containing excessive quantities of other species, of separating the latter in the presence of a representative of the Department of Fish and Game, and either weighing the two portions separately or estimating the extent of admixture. When this is done, separate fish receipts are made for each portion and the case pack is computed on the weight of anchovies only. There is, therefore, in this contingency, no legitimate excuse for failure to make the required case pack.

When, however, a load of anchovies is mixed, with respect to size of fish, the above provision does not apply. If a processor chooses to accept such loads of fish, he must make the required case pack upon the entire load. Hence it is of interest to know what minimum poundage of utilizable anchovies a load must contain in order to meet the required case pack.

Using the fill of containers listed in Table 5, it would require for each container size the following poundage of raw fish in the can to make the required pack. These amounts correspond to the listed poundage of whole sound anchovies. These figures, in turn, will show the percentage of each ton of anchovies that must be suitable for canning. Table 6 summarizes the results.

TABLE 6
The Amount of Edible Meat Needed per Ton to Meet the Required Case Packs, and the Corresponding Poundage and Percent of Whole Sound Anchovies

Container	Required pounds in can, per ton	Equivalent in whole sound anchovies	Percent of fish received
6 oz. round.....	800	1,613	80.7
8 oz. buffet.....	853	1,720	86.0
9 oz. oblong.....	780	1,573	78.7
1 lb. oval.....	905	1,825	91.3

TABLE 6
The Amount of Edible Meat Needed per Ton to Meet the Required Case Packs, and the Corresponding Poundage and Percent of Whole Sound Anchovies

This table shows that the requirements allow from 8.7 to 21.3 percent nonutilizable fish per ton of whole fish received. It shows also that the allowances are not uniform.

What tolerance should be permitted is entirely arbitrary. It should, however, be equitable, and it should be governed by the intent of the regulations. As the sole intent of this regulation is to prevent primary reduction of whole anchovies, the requirements should be high enough to accomplish that purpose, but low enough to permit the development of a legitimate canning industry without excessive legal deterrents. High, attainable requirements will stimulate greater utilization and plant efficiency, whereas low requirements tend to foster reduction. Inasmuch as the present regulations have accomplished their purpose the writer would recommend no change at this time.

In particular, the fills of containers are most conflicting and a potential source of nullifying any regulatory measures. If there is no standard or uniform fill of container, then it becomes impractical to set a logical

and equitable case pack. If the fill of container is progressively decreasing, a periodical upward revision in requirements should be made. As this department has no jurisdiction over the fill, periodical sampling is necessary and the requirements should be adjusted accordingly.

There appears to be a discrimination in the equivalents against the one-pound oval pack. This can be logically explained by fill of containers. By putting less raw fish in each can, correspondingly higher yields can be obtained, and the effect of this upon the case pack is inversely proportionate to the size of the can and proportionate to the number of cans per ton. Thus an ounce less raw fish per can makes a relative difference of 5.1 cases of six-ounce round cans per ton, whereas this difference amounts to only 1.2 cases of the one-pound oval pack. Any change, therefore, in the prevailing fill of containers necessitates a reconsideration of the case pack equivalents. Because insufficient samples of all but the six-ounce can have been taken, and because no standard fill appears to be general, it is recommended that no such revision be made at this time. A possible future downward revision of the one-pound oval requirement, and an upward revision of the six-ounce round case pack is suggested by this preliminary survey.

This survey has also revealed the difficulties in establishing requirements. There are innumerable sources of error, an excessive range in the results; and the lack of consistency and valid averages leaves tremendous latitude in the choice of values to be used. Under these conditions it is impossible to establish regulations that will be equitable to all packs and all processors. The present results are merely indicative. More comprehensive and conclusive results would necessitate an amount of work not justified by the fluid condition existing in the industry. In particular, the lack of any standard fills is disconcerting. Inasmuch as the existing requirements are both accomplishing their purpose and are generally accepted by the majority, it seems advisable to recommend no present change.

<i>Common name</i>	<i>Scientific name</i>
Anchovy	<i>Anchoa compressa</i>
Deep-bodied	<i>Engraulis mordax</i>
Northern	<i>Anchoa delicatissima</i>
Slough	<i>Sphyraena argentea</i>
Barracuda	<i>Sarda lineolata</i>
Bonito, California	<i>Scorpis marmoratus</i>
Cabzone	<i>Epinephelus analogus</i>
Cabrilla	<i>Cyprinus carpio</i>
Carp	
Catfish	
White catfish	<i>Ictalurus catus</i>
Brown bullhead	<i>Ameiurus nebulosus</i>
Corbina, Mexican	<i>Cynoscion orthopopterus</i>
Crevalle	<i>Caranx sp.</i>
Flounder, starry	<i>Platichthys stellatus</i>
Flying fish, California	<i>Cypselurus californicus</i>
Grouper	Species of <i>Mycteroperca</i>
Hake	<i>Merluccius productus</i>
Halibut, California	<i>Paralichthys californicus</i>
Halibut, Pacific	<i>Hippoglossus stenolepis</i>
Hardhead	
Greaser blackfish	<i>Orthodon microlepidotus</i>
Hardhead	<i>Mylopharodon conocephalus</i>
Herring, Pacific	<i>Clupea pallasi</i>
Kingfish	
Kingfish	<i>Genyonemus lineatus</i>
Queenfish	<i>Seriophorus politus</i>
Lingcod	<i>Ophiodon elongatus</i>
Mackerel, jack	<i>Trachurus symmetricus</i>
Mackerel, Pacific	<i>Pneumatophorus diego</i>
Mullet	<i>Mugil cephalus</i>
Perch	
Blacksmith	<i>Chromis punctipinnis</i>
Halfmoon	<i>Medialuna californiensis</i>
Opaleye	<i>Girella nigricans</i>
Salt-water perch	Members of family Embiotocidae
Pike (Sacramento squawfish)	<i>Ptychocheilus grandis</i>
Pompano, California	<i>Palometa simillima</i>

Rock bass	
Kelp bass	<i>Paralabrax clathratus</i>
Sand bass	<i>Paralabrax nebulifer</i>
Rockfish	All species of <i>Sebastodes</i> and <i>Sebastolobus</i>
Sablefish	<i>Anoplopoma fimbria</i>
Salmon	
King	<i>Oncorhynchus tshawytscha</i>
Silver	<i>Oncorhynchus kisutch</i>
Sand dab	Species of <i>Citharichthys</i>
Sardine, Pacific	<i>Sardinops caerulea</i>
Sculpin	<i>Scorpaena guttata</i>
Sea bass, black	<i>Stereolepis gigas</i>
Sea bass, white	<i>Cynoscion nobilis</i>
Seatrout, greenling	<i>Hexagrammos decagrammus</i>
Shad	<i>Alosa sapidissima</i>
Shark	
Basking shark	<i>Cetorhinus maximus</i>
Dogfish	<i>Squalus acanthias</i>
Gray smoothhound	<i>Mustelus californicus</i>
Leopard shark	<i>Triakis semifasciata</i>
Soupfin	<i>Galeorhinus zyopterus</i>
Varying amounts of other species	
Sheepshead, California	<i>Pimelometopon pulchrum</i>
Sierra	<i>Scomberomorus sierra</i>
Skate	
Big	<i>Raja binoculata</i>
California	<i>Raja inornata</i>
Longnose	<i>Raja rhina</i>
Varying amounts of other species	
Skipjack, black	<i>Euthynnus lineatus</i>
Smelt	
Grunion	<i>Leuresthes tenuis</i>
Jack smelt	<i>Atherinopsis californiensis</i>
Surf smelt	<i>Hypomesus pretiosus</i>
Top smelt	<i>Atherinops affinis</i>
Small amounts of other Osmerids	
Sole	
English	<i>Parophrys vetulus</i>
Dover	<i>Microstomus pacificus</i>
Petrale	<i>Eopsetta jordani</i>
Rex	<i>Glyptocephalus zachirus</i>
Varying amounts of other species	
Splitail	<i>Pogonichthys macrolepidotus</i>
Swordfish, broadbill	<i>Xiphias gladius</i>
Tomcod	<i>Microgadus proximus</i>

Tuna	
Albacore	<i>Thunnus germo</i>
Bigeye	<i>Parathunnus sibi</i>
Bluefin tuna	<i>Thunnus thynnus</i>
Skipjack	<i>Katsuwonus pelamis</i>
Yellowfin tuna	<i>Neothunnus macropterus</i>
Turbot	
Curlfin	<i>Pleuronichthys decurrens</i>
Diamond	<i>Hypsopsetta gattulata</i>
Sharpnidge	<i>Pleuronichthys verticalis</i>
Small amounts of other species	
Wahoo	<i>Acanthocybium solandri</i>
Whitebait	<i>Allosmerus attenuatus</i>
	<i>Spirinchus starksii</i>
	Young of several other species
Whitefish, ocean	<i>Caulolatilus princeps</i>
Yellowtail	<i>Seriola dorsalis</i>
Crab, market	<i>Cancer magister</i>
Crab, rock	<i>Cancer antennarius</i> <i>Cancer anthonyi</i> <i>Cancer productus</i>
Lobster, spiny	<i>Panulirus interruptus</i>
Shrimp	<i>Crago franciscorum</i> <i>Crago nigricauda</i>
	<i>Squilla</i> sp.
Abalone	
Pink	<i>Haliotis corrugata</i>
Red	<i>Haliotis rufescens</i>
Southern green	<i>Haliotis fulgens</i>
Clam	
Cockle	<i>Paphia staminea</i> Species of <i>Chione</i>
Gaper	<i>Schizothaerus nuttalli</i>
Jackknife	<i>Tagelus californianus</i>
Japanese	<i>Tapes semidecussata</i>
Pismo	<i>Tivela stultorum</i>
Softshell	<i>Mya arenaria</i>
Washington	<i>Saxidomus nuttalli</i>
Mussel	<i>Mytilus californianus</i> <i>Mytilus edulis</i>
Octopus	<i>Paroctopus apollyon</i>
Oyster	
Eastern	<i>Ostrea virginica</i>
Native	<i>Ostrea lurida</i>
Pacific	<i>Ostrea gigas</i>
Prawn	<i>Pandalus</i> sp.
Squid	<i>Loligo opalescens</i>

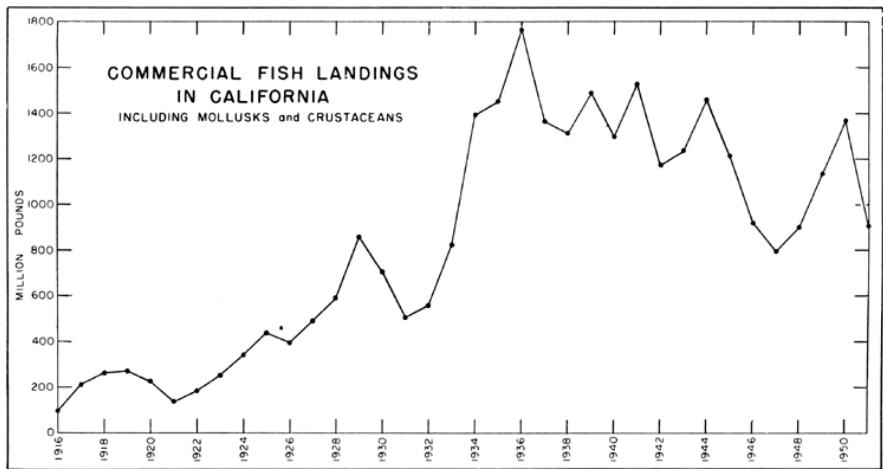


FIGURE 2. Total annual landings and shipments into California of commercial fish, mollusks and crustaceans. Includes sardine deliveries to reduction ships during 1930 through 1938. See Table 7.

FIGURE 2. Total annual landings and shipments into California of commercial fish, mollusks and crustaceans. Includes sardine deliveries to reduction ships during 1930 through 1938. See Table 7

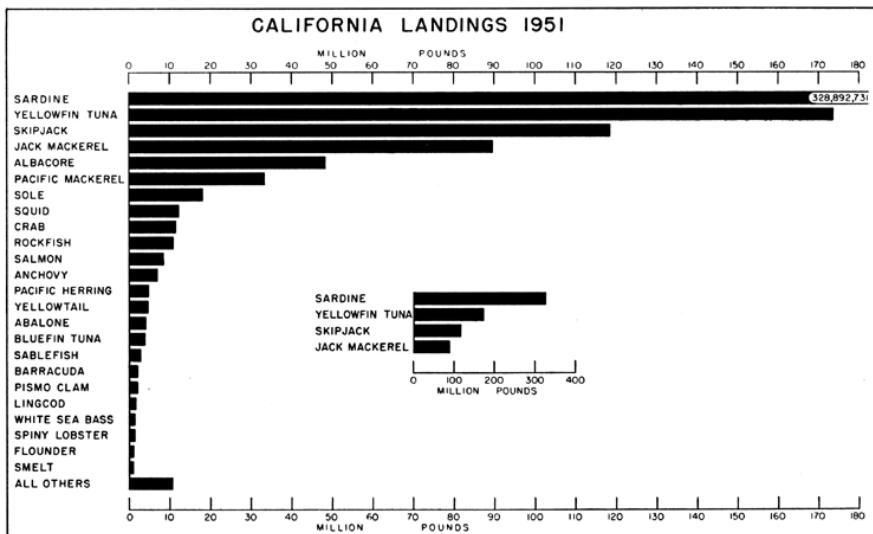


FIGURE 3. The relative landings in 1951 of the more important commercial species. Includes shipments with the catch of the California fleet. See Table 8.

FIGURE 3. The relative landings in 1951 of the more important commercial species. Includes shipments with the catch of the California fleet. See Table 8

7. 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."

TABLE 7

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

Year	Pounds	Year	Pounds
1916	95,002,695	1934	1,390,798,650
1917	209,876,670	1935	1,448,016,584
1918	261,134,265	1936	1,764,900,136
1919	266,270,240	1937	1,362,983,717
1920	222,004,376	1938	1,310,595,651
1921	135,347,826	1939	1,486,534,906
1922	182,343,333	1940	1,297,517,441
1923	253,874,581	1941	1,529,147,645
1924	340,445,919	1942	1,173,414,078
1925	437,502,232	1943	1,234,049,119
1926	394,964,393	1944	1,459,445,859
1927	487,166,143	1945	1,216,467,433
1928	583,526,751	1946	919,850,476
1929	856,854,055	1947	795,498,998
1930	702,188,795	1948	900,540,206
1931	502,389,875	1949	1,135,325,345
1932	556,139,053	1950	1,366,596,282
1933	821,805,007	1951	904,088,178

TABLE 7

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

TABLE 8

Total Commercial Fish Landings and Shipments Into California During 1951

Species	Pounds	Species	Pounds
Sardine	328,892,731	Abalone	4,084,115
Yellowfin tuna	173,668,590	Bluefin tuna	3,864,506
Skipjack	118,637,672	Sablefish	2,887,488
Jack mackerel	89,838,095	Barracuda	2,134,943
Albacore	48,436,233	Pismo clam	2,064,924
Pacific mackerel	33,518,435	Lingcod	1,747,343
Sole	18,226,523	White sea bass	1,546,555
Squid	12,382,869	Spiny lobster	1,470,167
Crab	11,568,353	Flounder	1,128,827
Rockfish	10,993,557	Smelt	1,095,504
Salmon	8,601,165	All others	10,736,488
Anchovy	6,954,852	Total pounds	904,088,178
Pacific herring	4,917,643		
Yellowtail	4,690,600		

TABLE 8

Total Commercial fish Landings and Shipments Into California During 1951

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 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

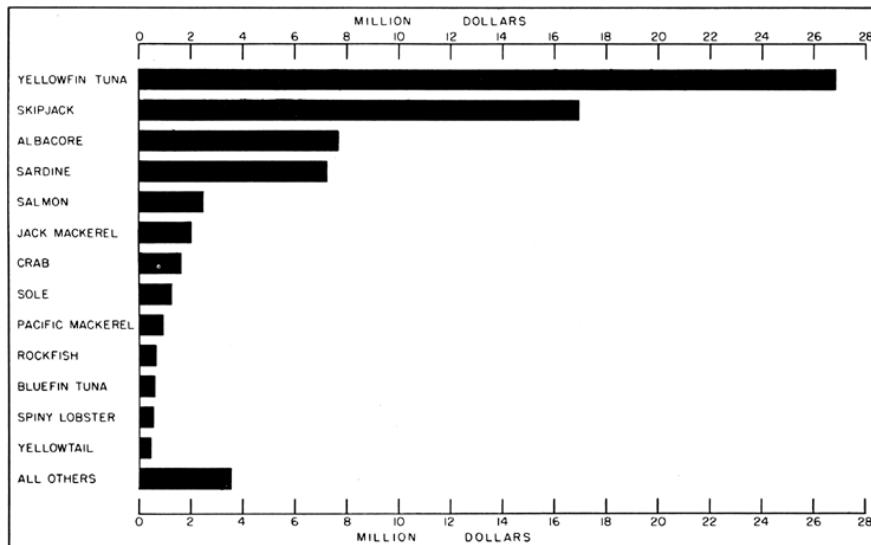


FIGURE 4. Shows the relative value in 1951 of the more important commercial species. This chart is based on the figures in Table 9, which are derived from the comparable figures in Table 8.

FIGURE 4. Shows the relative value in 1951 of the more important commercial species. This chart is based on the figures in Table 9, which are derived from the comparable figures in Table 8

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 10 to 13 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 9, and 24 to 31, 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 weights 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

TABLE 9
Value of Commercial Fish Landings and Shipments Into California During 1951

Species	Value	Species	Value
Yellowfin tuna.....	\$26,834,039	Pacific mackerel.....	932,148
Skipjack.....	16,941,631	Rockfish.....	654,851
Albacore.....	7,679,890	Bluefin tuna.....	604,352
Sardine.....	7,247,470	Spiny lobster.....	561,703
Salmon.....	2,475,628	Yellowtail.....	445,269
Jack mackerel.....	2,016,402	All others.....	3,551,453
Crab.....	1,621,546	Total value.....	\$72,820,815
Sole.....	1,254,433		

TABLE 9
Value of Commercial Fish Landings and Shipments Into California During 1951

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

One item covering a shipment of Japanese clams is given in cleaned weight because no conversion factor was available.

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 7 to 31 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 shown in Table 32, and the amount of live bait used to obtain this catch is shown in Table 33. The addition of these two tables gives a closer approximation to the total yield of the 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.

TABLE 10
Yearly Number of Licensed Commercial Fishermen in California

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
1946-1947-----	12,312	1951-1952-----	13,193

TABLE 10
Yearly Number of Licensed Commercial Fishermen in California

TABLE 11

Number of Commercial Fishermen Licensed by Region, in the 1951-1952 License Year

Region of residence	Number of fishermen, 1951-1952
Eureka-----	836
Sacramento-----	497
San Francisco-----	1,401
Monterey-----	1,182
Santa Barbara-----	485
Los Angeles-----	4,809
San Diego-----	2,977
Alaska, Washington and Oregon fishermen licensed in California-----	929
Mexican nationals licensed in California-----	77
Total-----	13,193

TABLE 11
Number of Commercial Fishermen Licensed by Region, in the 1951-1952 License Year

TABLE 12

Yearly Number of Registered Fishing Boats, Grouped According to Length

Season	Under 40 feet	40 to 84 feet	85 feet and over	Total
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
1951-1952-----	3,927	1,631	279	5,837

TABLE 12
Yearly Number of Registered Fishing Boats, Grouped According to Length

TABLE 13
*Number of Registered Fishing Boats, Grouped by Length and Region of Home Port,
 During the 1951-1952 Season*

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-----	54	289	98	7	-----	2	450
Sacramento-----	85	203	12	1	-----	-----	301
San Francisco-----	56	621	146	21	-----	2	846
Monterey-----	107	256	60	43	4	1	471
Santa Barbara-----	34	130	67	1	-----	-----	232
Los Angeles-----	425	1,154	482	140	47	31	2,279
San Diego-----	109	359	184	35	52	118	857
Alaska, Washington and Oregon-----	45	272	61	10	10	398	398
Other registry-----	-----	-----	1	-----	-----	2	3
Total number of boats-----	870	3,057	1,321	310	113	166	15,837

¹ The owners of 952 of these vessels were issued fishing party permits.

TABLE 13
Number of Registered Fishing Boats, Grouped by Length and Region of Home Port, During the 1951-1952 Season

TABLE 14
Origin of Shipments of Fresh Fish Into California During 1951

Shipped from	Shipped to					Total pounds
	Sacra- mento region	San Fran- cisco region	Monterey region	Los Angeles region	San Diego region	
Continental United States: Miscellaneous fish-----		19,760		76,036		95,796
Oregon, Washington, British Columbia and Alaska: Catfish-----	9,242	760				10,002
Halibut, Pacific-----		35,388	473,504			508,892
Lingcod-----		26,036	49,193			75,229
Sablefish-----		206,366	96,049			302,415
Salmon-----		22,904	1,385,560			1,408,464
Sole-----			1,627			1,627
Miscellaneous fish-----			66,627			66,627
Mollusk: Clam-----			200			200
South of the international boundary: Barracuda-----				28,207		28,207
Corbina, Mexican-----				3,965		3,965
Halibut, California-----				1,017		1,017
Rockfish-----				1,505		1,505
Sea bass, black-----				4,035		4,035
Sea bass, white-----				13,526		13,526
Shark-----				135		135
Tuna, albacore-----			550	603		1,153
Tuna, bluefin-----				2,112		2,112
Tuna, skipjack-----		49,880				49,880
Tuna, yellowfin-----		683,127				683,127
Yellowtail-----		4,445	16,429			20,874
Miscellaneous fish-----				204		204
Mollusk: Clam, Pismo-----			1,287,724	777,200		2,064,924
Mussel-----			2,167			2,167
South America: Bonito-----	2,194	4,664				6,858
Tuna, skipjack-----	44,322	327,238	73,079			444,639
Tuna, yellowfin-----	909,311	1,208,184	8,815,072	1,749,520		12,682,087
Japan: Tuna, albacore-----	5,522,576		11,936,320	60,842		17,519,738
Tuna, mebachi-----	30,000					30,000
Tuna, skipjack-----	216,036		1,944,641	95,628		2,256,305
Tuna, yellowfin-----	20,000		37,201			57,201
Mollusk: Clam, Japanese ¹ -----	22,250					22,250
Total pounds-----	9,242	7,077,903	1,540,086	26,983,002	2,754,928	38,365,161

¹ Cleaned weight, no conversion factor available.

TABLE 14
Origin of Shipments of Fresh Fish Into California During 1951

TABLE 14—Continued
Origin of Shipments of Fresh Fish Into California During 1951

	Pounds		Pounds
Recapitulation:			
Barracuda.....	28,207	Sole.....	1,627
Bonito.....	6,858	Tuna, albacore.....	17,520,891
Catfish.....	10,002	Tuna, bluefin.....	2,112
Corbina, Mexican.....	3,965	Tuna, mackerel.....	30,000
Halibut, California.....	1,017	Tuna, skipjack.....	2,750,824
Halibut, Pacific.....	508,892	Tuna, yellowfin.....	13,422,415
Lingcod.....	75,229	Yellowtail.....	20,874
Rockfish.....	1,505	Miscellaneous fish.....	162,627
Sablefish.....	302,415	Mollusk:	
Salmon.....	1,408,464	Clam ¹	200
Sea bass, black.....	4,035	Clam, Japanese ¹	22,250
Sea bass, white.....	13,526	Clam, Pismo.....	2,064,924
Shark.....	135	Mussel.....	2,167
		Total pounds.....	38,365,161

¹ Cleaned weight, no conversion factor available.

TABLE 14
Origin of Shipments of Fresh Fish Into California During 1951

TABLE 15

Origin of the Commercial Fish Landings and Shipments Into California During 1951

Species	Fishing boat landings				Shipments ¹	Total pounds of fishing boat landings and shipments combined
	California	North of the state boundary	South of the international boundary	Total fishing boat landings		
Anchovy.....	6,954,852			6,954,852	28,207	6,983,059
Barracuda.....	669,823		1,436,913	2,106,736	6,858	2,134,943
Bass.....	540,417		722,756	1,263,173		782,140
Cabron.....	23,880			23,880		23,837
Cabrilla.....			391,770	391,770		391,770
Carp.....	932,319			932,319		932,319
Carlin.....	238,126			238,126		240,126
Cortina, Mexican.....					3,965	3,965
Flounder.....	1,118,279	10,548		1,128,827		1,128,827
Flying fish.....	53,451		383,740	53,451		53,451
Grouper.....				583,740		583,740
Hake.....	24,972			24,972		24,972
Halibut, California.....			222,654	863,953	1,017	866,950
Halibut, Pacific.....	645,279			867,149	508,892	503,641
Herring, Pacific.....	80,7			80,7		80,7
Kingfish.....	4,017,643			4,017,643		4,017,643
Lingcod.....	681,950		246	682,196		682,196
Mackerel, blue.....	1,657,546	14,568		1,672,114	75,229	1,747,343
Mackerel, Pacific.....	80,518,435			80,518,435		80,518,435
Mullet.....	107,833			107,833		107,833
Perch.....	233,748		6,423	240,171		240,171
Pike.....	80			80		80
Pompano, California.....	61,224			64,224		64,224
Rock bass.....	81,068		207,474	288,572		288,572
Rockfish.....		51,148	12,595	10,990,632	1,505	10,990,537
Salmon.....	10,936,520	49,123	157	10,936,520	302,15	2,887,988
Salmon.....	2,533,813			2,533,813		2,533,813
Salmon.....	7,085,603	107,098		7,192,701	1,408,464	8,601,165
Sand dab.....	542,921	900		543,821		543,821
Sardine.....	328,869,010			328,869,010		328,869,010
Solefish.....	101,087		350	101,437		101,437
Sea bass, black.....	8,590		268,894	277,484	4,035	281,519
Sea bass, white.....	955,145		577,884	1,532,029	13,526	1,546,555
Seastrout, greenling.....	50			50		50
Shad.....	606,191			606,191		606,191
Shark.....	706,823		45,501	842,324	135	842,459

CALIFORNIA DEPARTMENT OF FISH AND GAME

TABLE 15

Origin of the Commercial Fish Landings and Shipments Into California During 1951

							COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951
Sheepshead	57,209		4,201	61,410		61,410	
Silverside			19,608	19,608		19,608	
Skate			84,634	84,634		84,634	
Smelt			1,095,504	1,095,504		1,095,504	
Sole	17,403,137	821,759		18,224,896	1,627	18,226,323	
Splitfin	669			669		669	
Swordfish, broadbill	197,500		30,637	228,634		228,634	
Tomcod	2,018			2,018		2,018	
Tuna, albacore	13,284,606	9,150	17,621,886	30,915,342	17,520,891	48,430,233	
Tuna, black skipjack			7,240	7,240		7,240	
Tuna, longtail	837,185		3,025,209	3,862,394		3,862,394	
Tuna, melsachi					2,112	3,862,394	
Tuna, skipjack	569					30,000	
Tuna, yellowfin			115,886,238	115,886,848	2,750,824	118,637,672	
Turbot			160,246,175	160,246,175	13,422,415	173,668,599	
Wahoo	107,214	2,769		1,105		1,105	
Whitebait				1,105		1,105	
Whiting, ocean	162,054			162,054		162,054	
Yellowtail	12,903		5,253	18,198		18,198	
Miscellaneous fish	14,474		4,634,282	4,634,282	20,874	4,634,282	
	156,972	1,765	4,186	162,928	102,627	325,350	
Crustacean:							
Crab	11,566,901	1,452		11,568,233		11,568,233	
Crab, rock	22,592			22,592		22,592	
Lobster, spiny	824,611		645,556	1,470,167		1,470,167	
Prawn	2,694			2,694		2,694	
Shrimp	931,225			931,225		931,225	
Mollusk:							
Ahalone	4,084,115			4,084,115		4,084,115	
Clam ¹	38,153			38,153	200	38,353	
Clam, gammarus	3,412			3,412		3,412	
Clam, jackknife	29,648			29,648		29,648	
Clam, Japanese ²						22,250	
Clam, Pismo						2,034,924	
Clam, Washington	5,295			5,295		5,295	
Octopus	19			19	2,167	2,167	
Oyster, eastern	29,200			29,200		29,200	
Oyster, northern	178,716			178,716		178,716	
Oyster, Pacific	17,603			17,603		17,603	
Squid	123,240			123,240		123,240	
	12,382,158		711	12,382,869		12,382,869	
Total pounds	558,021,320	1,070,280	306,631,387	865,723,017	38,365,161	904,088,178	

¹ For origin of shipments refer to Table 14.

² Climated weight, no conversion factor available.

TABLE 15—Cont'd.

TABLE 16
Monthly Landings and Shipments Into California During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds	CALIFORNIA DEPARTMENT OF FISH AND GAME	
Fishing boat landings:															
Anchoa.....	34,915	518,055	105,904	335,987	266,943	27,183	609,470	304,223	2,624,450	681,463	1,005,164	105,815	6,954,852		
Barnacles.....	9,262	29,270	31,779	136,250	164,264	318,427	197,013	192,332	53,993	210,720	190,039	193,020	2,194,738		
Bonito.....	1,130	2,341	7,322	132	1,835	18,053	14,390	194,229	297,994	307,781	14,928	36,512	776,293		
Cabezone.....	1,331	1,692	2,620	1,731	959	1,614	496	3,382	3,196	660	2,127	4,169	23,857		
Californilla.....	32,018	72,007	55,887	36,231	9,275	62,404	7,646	4,653	18,718	39,611	21,983	31,739	391,770		
Carp.....	52,785	88,476	18,541	88,345	70,259	67,678	105,726	61,177	88,173	61,299	45,150	49,558	48,201	320,219	
Catfish.....	20,474	4,956	11,906	26,988	482	1,100	1,100	1,100	1,100	1,100	1,100	1,100	238,126		
Flounder.....	73,839	102,192	119,337	66,942	27,652	11,216	41,372	184,423	177,433	167,572	115,561	38,286	1,128,827		
Flying fish.....	629	4,724	1,717	7,480	2,499	2,499	2,499	2,499	2,499	2,499	2,499	2,499	53,451		
Grouper.....	33,523	71,376	66,021	54,707	15,071	41,179	18,382	15,587	15,587	44,145	37,111	135,192	582,749		
Hake.....	735	6,665	300	9,975	5,012	2,235	2,235	2,235	2,235	2,235	2,235	2,235	24,572		
Hallibut, California.....	56,084	83,466	110,588	100,303	51,062	60,759	124,800	79,670	69,832	50,882	44,709	27,754	865,933		
Hallibut, Pacific.....	9,563	2,740	1,651	1,984	21,433	18,490	6,630	4,943	3,037	5,157	8,074	5,035	86,749		
Herring, Pacific.....	1,832,900	2,040,110	18,400	75,345	60,694	83,000	150,000	25,107	17,757	31,490	4,893	1,043	4,893,103		
Kingfish.....	49,685	62,708	82,529	53,573	60,694	51,874	34,019	48,225	33,490	42,007	138,269	20,632	682,196		
Lingcod.....	26,150	39,564	74,533	134,687	145,156	225,572	278,727	227,869	248,339	131,660	85,565	56,292	1,672,114		
Mackerel.....	6,820,117	4,822,040	6,718,655	10,630,000	8,600,000	8,399,716	6,284,386	8,055,400	8,055,400	8,055,400	8,055,400	8,055,400	1,017,674	89,865,062	
Market, Pacific.....	6,339,600	1,000,178	1,000,178	1,000,178	1,000,178	1,000,178	1,000,178	1,000,178	1,000,178	1,000,178	1,000,178	1,000,178	33,518,635		
Mullet.....	31,863	29,137	1,144,226	210,645	549,045	2,127,912	8,069,016	2,793,980	15,200,000	15,200,000	15,200,000	15,200,000	15,200,000	238,000	
Perch.....	14,241	21,360	46,488	1,681	984	17,339	19,694	16,617	7,708	11,321	14,913	240,171			
Pike.....	22	17	17	17	17	17	17	17	17	17	17	17	11,576		
Porgy, California.....	6,872	798	14,419	11,648	790	2,140	714	2,655	5,381	10,121	6,845	1,871	64,224		
Rook fish.....	30,675	24,419	21,699	7,784	25,063	42,220	26,122	12,707	12,306	11,076	60,889	13,602	288,572		
Sablefish.....	782,965	765,202	954,747	997,240	954,914	968,011	1,117,748	1,050,882	1,271,703	934,162	722,082	573,451	10,992,052		
Salmon.....	6,911	15,171	19,671	30,911	33,071	22,282	22,282	22,282	22,282	22,282	22,282	22,282	58,400	2,290,072	
Salmon.....	10,940	25,704	17,641	25,973	1,140,170	1,490,981	1,884,782	1,129,233	1,361,834	1,361,834	1,361,834	1,361,834	279	7,192,701	
Sand dab.....	28,952	30,096	66,338	57,105	41,761	39,923	55,761	67,666	64,481	49,962	25,666	16,514	543,821		
Sardine.....	71,624,935	2,639,640	177,433	268,882	48,452	570,666	530,486	18,589,433	5,571,344	174,881,217	35,974,674	18,141,421	328,892,731		
Solefish.....	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100		
Sea bass, black.....	20,163	13,579	10,482	10,659	7,447	15,557	6,812	23,426	14,768	75,780	51,902	23,959	277,484		
Sea bass, white.....	10,755	55,879	90,824	46,354	84,135	154,927	136,891	195,025	277,398	287,234	146,278	47,329	1,533,029		
Seastrat, greenling.....	13	115	65	24	12	324	324	324	324	324	324	324	383		
Shad.....	115	108,599	494,296	3,181									606,191		

TABLE 16
Monthly Landings and Shipments Into California During 1951

COMMERCIAL FISH CATCH ON CALIFORNIA FOR 1951

TABLE 16—*Cont'd.*

TABLE 16—Continued
Monthly Landings and Shipments Into California During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Shipments: ¹													
Barracuda.....				1,440	375	343		15,162		9,464	1,178	245	28,207
Bonito.....	2,194			4,186	478								6,858
Catfish.....				1,969									10,002
Codfish, Mexican.....		2,008				133	309	230					3,265
Hakelet, California.....		268										77	1,017
Hakelet, Pacific.....	43,309	55,939	8,142	6,553	50,494	105,510	87,919	28,139	18,034	54,188		50,965	508,892
Lingcod.....						10,672	3,401	27,466	2,400	11,290			75,229
Rockfish.....								27,455	15				1,565
Sablefish.....		37,200	12,375	6,290	2,945	3,218	9,410	31,200	15,810	50,338	116,649	14,400	302,415
Salmon.....	92,869	138,387	97,055	67,441	186,362	241,819	68,739	157,754	99,087	96,229	55,823	106,999	1,408,464
Sea bass, black.....	50	210		1,896	1,007	872							4,035
Sea bass, white.....	2,944	670			1,822	15	764	6,092	151				15,320
Shark.....									135				135
Sole.....							27	1,600					1,627
Tuna, albacore.....	95,756	780,960	665,748	1,035,212	810,939	737,467	4,624,238	5,195,790	1,124,339	158,215	1,149,992		17,840,390
Tuna, bluefin.....								2,12					2,112
Tuna, mackerel.....		30,000											30,000
Tuna, skipjack.....		2,050	31,620	10,087	12,943	385,099	171,079	200,082	1,455,760	162,933			2,750,824
Tuna, yellowfin.....	4,745,433	1,351,217	986,142	3,806,387	3,406,118	80,740	79,128	166,127	140,119	169,892	519,079	360,257	13,740,741
Yellowtail.....						20,874	35						20,574
Miscellaneous fish.....	30,040	55,008						5,375	48,302	160		23,707	162,627
Total pounds.....	1,743,625	2,444,114	1,831,082	5,901,923	4,896,002	1,098,627	5,721,548	6,264,158	3,566,077	800,397	2,238,583	1,346,023	35,865,161
Grand total fishing boat landings and shipments.....	119,828,330	38,430,753	30,084,096	32,592,175	54,312,574	66,534,889	67,237,166	92,097,496	66,616,068	225,200,412	76,281,231	34,362,988	904,088,178

¹ For origin of shipments refer to Table 14.
² Cleaned weight.

CALIFORNIA DEPARTMENT OF FISH AND GAME

TABLE 17
Monthly Landings of the Commercial Fishing Boats in the Eureka Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds	COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951
Fishing boat landings from California waters:														
Carpenter.....					6,600	25,400	15,600	14,560					63,160	
Hallibut, Pacific.....	14,702	33,289	30,908	36,302	2,401	3,997	18,158	121,643	88,879	69,037	65,777	27,699	515,752	23,110
Herring, Pacific.....	49,824	1,328		132	17,488	9,444	614		216	38			52,960	
Lingcod.....	7,771	16,917	30,114	51,640	38,875	132,459	192,718	109,035	173,756	70,410	39,535	19,785	923,015	100
Mackerel, jack.....													46,114	
Perch.....	44	2,246	11,213	18,950	20		4,192	6,163	4,528	701	80		4,522,450	
Rockfish.....	175,635	276,119	255,152	185,767	283,398	810,723	791,309	569,205	714,009	370,450	205,232	156,453	4,171,195	
Sablefish.....	25,502	37,605	45,890	95,788	54,370	113,939	171,605	131,416	240,027	144,616	85,489	21,457	1,893,307	
Salmon.....					29,600	30,000	629,575	318,725	194,370				121,723	
Sand dab.....	6,204	12,925	12,266	7,776	6,342	13,480	17,578	19,443	16,291	8,904	1,474	1,845	1,773	
Shark.....							70			500	391	725		
Skate.....		84		121	42								165	
Smelt.....					706	2,837	25,091	62,485	109,333	52,699	7,692		297,743	
Soles.....	130,634	259,239	363,612	430,440	531,335	1,772,603	1,537,003	1,570,010	1,531,210	1,670,668	1,085,808	513,317	11,429,739	
Tomcod.....	600												600	
Worm, allscore.....													2,051,494	
Turbot.....	148	631	2,697	998	231		983	1,731	1,207,626	838,154			111,307	
Whitebait.....	2,358	18,417	11,312	21,697	17,088	24,865	11,459	4,091	2,700	50		86	150	
Miscellaneous fish.....	726	505	1,367	3,890	1,777	2,432	8,953	8,661	5,387	2,398	694	1,037	37,817	
Crustacean:														
Crab.....	1,551,039	1,476,375	1,080,932	1,768,789	695,775	214,484	71,568						923,901	7,789,333
Mollusk:														
Clam, Washington.....	312	1,138	1,228	2,377	45								195	5,295
Octopus.....	695	920	805	103		45		52	35	70			116	2,511
Total pounds.....	1,957,376	2,137,615	1,847,517	2,638,693	1,925,345	3,818,389	3,530,683	3,011,033	4,220,583	3,184,478	1,488,571	1,712,613	31,033,196	

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TABLE 17
Monthly Landings of the Commercial Fishing Boats in the Eureka Region During 1951

TABLE 17—Continued
Monthly Landings of the Commercial Fishing Boats in the Eureka Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from waters north of the state boundary:													
Flounder.....	2,748	920	6,631	123	126	10,345
Lingcod.....	65	1,724	2,169	1,180	1,303	5,933	655	1,045	1,264	41	14,568	14,568
Rockfish.....	15,558	2,740	948	1,047	10,963	929	8,582	8,456	1,354	538	51,148	51,148
Sablefish.....	12	6,744	5,442	1,437	2,218	2,530	5,749	22,129	2,100	762	49,123	49,123
Salmon.....	86,929	10,636	9,400	107,098	107,098
Sand dab.....	411	185	6	60	900	900
Seal.....	10,179	31,538	134,273	122,359	65,728	117,118	21,765	94,178	143,216	57,046	12,269	521,759	521,759
Turbot.....	1,289	1,480	2,769	2,769
Miscellaneous fish.....	778	989	1,785	1,785
Cephalopoda:	1,452	1,452
Crab.....	102	727	623
Total pounds.....	36,554	38,485	148,165	131,664	69,515	221,221	39,515	125,958	175,178	61,265	13,610	1,061,130	1,061,130
Grand totals, Eureka region.....	1,057,376	2,174,169	1,888,002	2,787,158	2,057,009	3,417,901	3,751,904	3,080,548	4,346,541	3,359,656	1,549,839	1,726,223	32,094,326

TABLE 17
Monthly Landings of the Commercial Fishing Boats in the Eureka Region During 1951

TABLE 18

Monthly Landings and Shipments of Commercial Fish Into the Sacramento Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Cod.....	52,065	89,475	145,941	78,859	42,124	51,078	86,464	48,665	84,650	52,946	51,079	41,417	824,741
Cuttlefish.....	20,674	6,760	11,960	29,988	482	40,998	41,260	45,430	40,568	238,129	795
Flounder.....	795	17	11	155
Pike.....	22	10	59	279
Sabine.....	10,840	25,704	17,641	25,973	38,895	2,055	91,125	1,129,615	44	279	1,343,171
Shad.....	108,599	494,295	3,181	915	935	600,078
Smelt.....	1,850
Splittail.....	217	153	259	99	850
Tuna, albacore.....	3,237	21,025	3,165	28,027
Total pounds.....	83,918	122,904	175,877	243,419	576,814	57,229	87,399	139,790	1,255,400	115,831	99,718	82,335	3,043,634
Shipments ¹ :													
Cuttlefish.....	1,938	2,802	2,592	1,910	9,242
Total pounds.....	1,938	2,802	2,592	1,910	9,242
Grand totals, Sacramento region.....	83,918	122,904	175,877	243,419	576,814	57,229	87,399	139,790	1,260,338	118,633	102,310	84,245	3,052,876

¹ See Table 14 for origin of shipments.TABLE 18
Monthly Landings and Shipments of Commercial Fish Into the Sacramento Region During 1951

TABLE 19
Monthly Landings and Shipments of Commercial Fish Into the San Francisco Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds	CALIFORNIA DEPARTMENT OF FISH AND GAME
Fishing boat landings from California waters:														
Anchovy			1,895	30,139	16,612	24,343	15,690	19,125	38,452	79,354	38,520		284,100	
Calanzeone		249	241	190				702	2,752	400	100	30	185	1,285
Carp														3,584
Flounder	59,137	63,843	85,423	26,533	24,843	6,198	23,033	61,938	80,063	98,040	48,835	10,543	589,369	
Hake						735	6,665	300	9,975	5,012	2,285			24,972
Haddock, California						296	430	1,064	678	342	314	569	1,227	
Haddock, Pacific	9,563	2,740	1,651	1,851		3,968	9,046	2,025	4,836	2,291	5,119	6,074	5,039	58,439
Herring, Pacific	1,615,386	2,004,238	18,963	80			80	15	1,300	107				3,672,383
Kingfish	195	37	597	1,072		1,321	509	725	1,399	1,216	558	240	30	7,893
Lahila	11,289	18,054	28,989	61,969	83,030	71,700	72,000	68,257	66,266	52,303	27,383	23,737	584,112	
Mackerel, jack								67	1,735	1,563				302
Perch	6,563	9,981	12,977	31,569		961	4,009	6,550	4,174	504	1,191	418	78,833	
Pompano, California			27	215		52					1,082			1,376
Rockfish	188,084	81,285	106,563	169,363	240,600	100,180	105,545	98,153	99,000	240,016	221,953	206,417	2,980,145	
Sablefish	0,296	645	15,156	12,232		38,471	75,194	21,893	37,614	34,108	1,240	2,384	14,625	265,585
Salmon						605,556	825,832	945,075	528,165	167,772				3,165,400
Sardine	18,650	7,019	34,477	35,572	21,058	14,732	23,500	41,676	33,449	26,492	16,694	8,000	279,651	
Sea bass, white	111					108		140,493	190,291	160	20	160	144	2,407
Sebastout, greenling								417	1,563	26	40	222		321
Shark	5,545	6,996	2,840	1,05	50	485	1,810	2,212	16,441	34,012	6,484	5,182	85,307	
Skate			7,735	5,890	7,800	8,200	5,950	600	1,050	1,050	4,850	3,110	7,660	5,035
Smelt	7,019	32,510	32,828	77,206	36,838	46,827	21,755	32,200	61,626	43,931	7,415	14,308	430,393	
Sole	536,393	260,621	382,538	474,402	397,270	334,712	415,234	616,247	426,310	346,637	250,056	216,033	4,684,163	
Swallowfish, broadbill														430
Tonno			160	315	200				232	324	133	54	1,418	
Tuna, albacore							869	168,326	1,050,716	1,201,556	221,203			2,645,722
Turbot	6,940	8,912	16,200	17,235	13,415	2,300	3,355	10,776	6,821	6,178	4,020	1,405	97,935	
Whiting	1,349	6,284	710	5,683	9,178	7,949	4,784	3,546	404	56	4,07	4,67	28,131	
Miscellaneous fish	947	1,298	12,203	6,941	15,730	4,359	4,998	1,360	1,268	3,412	2,531	2,777	56,891	

TABLE 19
Monthly Landings and Shipments of Commercial Fish Into the San Francisco Region During 1951

	COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951											
Crustacean:												
Crab.....	517,745	182,818	71,797	89,067	58,573	63,154	227,217	1,000		1,612,510	3,551,917	
Crab, rock.....		26,914	26,828	66,653	48,098	68,535	127,172	174,168	173,446	114,826	1,000	
Shrimp.....	27,556									57,633	931,323	
Mollusk:												
Aalone.....			4,125	385		688	1,506		881	330	8,005	
Octopus.....	1,233	788	1,712	3,506	1,820	426	1,459	807	179	217	12,662	
Oyster, eastern.....	17,543	18,526	17,689	15,338	13,311	11,491	10,966	13,527	5,500	18,120	178,716	
Oyster, native.....					7,488	3,070	2,435	2,435	210	188	16,591	
Oyster, Pacific.....	12,689	16,017	15,337	14,922	9,403	10,223	8,028	9,118	3,609	12,273	17,663	
Total pounds.....	3,962,039	2,755,406	955,802	1,168,607	1,745,782	1,692,911	2,099,852	2,196,639	2,475,113	2,295,353	2,570,407	
Fishing boat landings from waters south of the international boundary:												
Cooper.....							6,700				6,700	
Tuna.....								1,582			6,582	
Tuna, skipjack.....	1,420		3,412								4,832	
Tuna, yellowfin.....	26,389		175,618								201,968	
Total pounds.....	27,800		179,030			6,700	6,582				220,112	
Shipments:												
Bonito.....	2,194										2,194	
Catfish.....										760	760	
Hakelet, Pacific.....	16,905		4,400	6,083							8,000	
Lingcod.....						3,401	11,145				35,388	
Sablefish.....							31,200	5,810			26,000	
Salmon.....	1,627	2,119		3,259	408			4,614	5,688		23,566	
Tuna, albacore.....						1,532,980	1,682,200	999,189	158,215	1,149,992	22,904	
Tuna, mitchali.....				90,000							5,522,576	
Tuna, yellowfin.....	65,136	117,804	120,821	105,160	135,340	184,416	44,322				500,000	
Miscellaneous fish.....						83,440	300,610				250,358	
Clam, Japanese ¹								19,600	160		929,311	
Total pounds.....	85,862	119,923	186,541	115,463	137,317	267,856	1,882,313	1,746,935	1,029,213	226,289	1,271,841	
Grand totals, San Francisco region.....	3,175,692	2,875,329	3,231,673	1,284,160	1,886,299	1,967,467	3,957,747	3,943,631	3,501,326	2,521,642	3,842,338	1,355,068
											31,615,362	

¹ See Table 14 for origin of shipments.

² Cleaned weight.

TABLE 19—Cont'd.

TABLE 20
Monthly Landings and Shipments of Commercial Fish Into the Monterey Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds	CALIFORNIA DEPARTMENT OF FISH AND GAME
Fishing boat landings from California waters:														
Anchoovy.....	27,475	480,560	7,490	46,080	2,900	307,240	135,903	2,533,276	554,394	865,889	88,850	5,050,657	
Calamone.....	948	1,106	1,767	1,509	875	1,555	372	3,114	3,966	1,750	2,374	41	18,978	
Pacific salmon.....	140	2,360	15	398	147	302	328	59	51	41	6,840		
Haddock, California.....	6,485	4,230	3,053	2,293	3,063	17,873	15,854	7,657	1,290	360	2,332	417	64,416	
Herring, Pacific.....	1,650	75,075	90,775	850,750	155,935	18,185	1,192,270	
Kingfish.....	23,715	27,037	22,304	26,907	20,825	18,744	17,845	19,278	12,578	1,522	1,225	1,225	22,411	
Liaison.....	2,104	11,257	7,280	20,919	19,787	10,858	5,342	6,945	12,235	8,108	127,106		
Mackerel, jack.....	835	17,504	10,997	130,550	14,300	1,300	20,751	88,413	6,717	115,082	123,395	237,605	777,480	
Mackerel, Pacific.....	3,519	9,289	705	55,955	1,622	138,637	7,919	60,972	55,802	24,559	943	357,818	
Perch.....	1,590	1,566	956	1,010	1,622	1,622	1,622	1,622	1,622	1,622	1,622	1,622	9,354	
Pompano, California.....	6,215	10,240	10,283	105	1,790	506	264	355	928	25	56	31,447		
Rockfish.....	303,447	263,051	405,762	387,377	306,215	279,899	165,723	225,445	224,395	251,966	237,161	125,302	3,176,433	
Salefish.....	51,684	107,604	122,484	177,238	154,639	138,297	85,271	56,051	53,262	43,399	29,771	20,007	1,058,200	
Salmon.....	12,121	12,121	12,121	12,121	12,121	12,121	12,121	12,121	12,121	12,121	
Rock dab.....	2,666	6,549	15,512	12,558	11,729	10,549	14,584	8,777	13,380	12,776	6,535	5,461	121,041	
Sardine.....	99,751	29,420	51,390	27,894	271,635	52,550	12,254	730,606	109,420	228	304,158	65,315	1,757,070	
Sea bass, white.....	7	85	24	12	30	30	20	764	19	308,328	
Seabream, greenling.....	13	115	115	239		
Shad.....	115	115		
Shark.....	258	211	435	95	66	1,745	1,478	1,115	1,179	452	981	856	8,871	
Skate.....	1,688	4,296	2,949	650	360	222	222	1,600	1,600	425	360	360	18,556	
Smelt.....	14,096	16,320	21,090	1,944	4,961	46,034	11,234	23,501	17,614	25,610	8,531	6,464	197,572	
Solefish.....	37,763	44,539	106,790	142,565	107,126	53,293	85,607	62,708	63,729	43,348	31,148	19,291	797,907	
Swordfish, broadbill.....	349	192	192	192	192	192	541	
Tuna, albacore.....	7,113	1,230,220	388,294	1,136,274	204,931	2,969,432		
Tuna, yellowfin.....	350		
Whitebait.....	981	579	514	3,291	2,691	784	2,609	1,264	12,613		
Miscellaneous fish.....	71	458	499	275	189	6,613	600	8,705		
Crustacean:														
Crab.....	1,249	2,403	3,245	1,923	567	83	58	121	1,787	3,583	14,898	
Prawn.....	438	613	245	833	7	39	39	210	197	210	2,694	

TABLE 20
Monthly Landings and Shipments of Commercial Fish Into the Monterey Region During 1951

Mollusk:													
Clam, paper.....	620	480	520	780	620	100	100	\$0	100		12	3,412	
Mussel.....	60	110	26									196	
Octopus.....	901	1,104	1,706	1,804	571	474	1,280	251	99	1,245	1,918	1,234	
Squid.....	80		1,320	1,804	7,468,411	2,082,180	832,100	560,895	137,330	820	96,694	350,764	
Total pounds.....	593,004	1,024,578	805,297	1,185,266	8,688,630	3,697,686	2,139,020	3,366,153	3,671,912	2,789,990	1,970,416	947,644	30,365,896
Fishing boat landings from waters south of the international boundary:													
Bonito.....											7,510		
Tuna, bluefin.....											67,095		
Tuna, skipjack.....											89,685		
Tuna, yellowfin.....											18,848		
Total pounds.....											183,120		
Shrimps:													
Bonito.....				4,186	478							4,664	
Tuna, skipjack.....				10,687								315,551	
Tuna, yellowfin.....				96,941	375,345	5,719						327,238	
Total pounds.....				111,814	378,823	5,719					169,892	560,287	
												1,208,184	
Grand totals Monterey region.....	593,004	1,024,578	805,297	1,297,689	8,694,453	3,705,405	2,139,020	3,366,153	3,855,032	2,449,882	1,970,416	1,823,452	32,091,802

¹ See Table 14 for origin of shipments.

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

TABLE 20—*Cont'd.*

TABLE 21

Monthly Landings of the Commercial Fishing Boats in the Santa Barbara Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Anchovy.....	456	44,987		13,000	42,000	139,254	5,215	2,100		45,429			201,569
Barracuda.....		676											94,574
Baitfish.....													6,354
Calezone.....	383	247	612	32	84	61	124						3,016
Flounder.....	1,509	2,131		189	162	12							4,518
Haddock, California.....	20,267	19,235	19,052	18,708	18,205	7,873	11,948	9,735	15,309	20,317	34,729	22,098	214,458
Kingfish.....	500	579	592	532	532	1,021	1,021	1,021	1,021	949	949	949	4,574
Lingcod.....	1,433	828	2,299	1,711	1,297		1,423	824	1,463	1,618	2,744	1,554	21,124
Mackerel, jack.....	773,209	97,000	248,000	215,000	9	1,030,645	1,154,625	34,480	77,073	841,029	723,022	15,284	5,207,335
Mackerel, Pacific.....	83,689			280		5,720	31,160	1,373		489,287	117,875	47,000	776,677
Percula.....	387	292	671	1,073			20	200	709	2,656	1,987	1,782	9,553
Pompano, California.....													6,656
Rock bass.....	7,228	2,587	648	562	1,289	6,313	3,002	4,642	3,504	1,561	1,714	716	33,769
Rockfish.....	35,008	41,469	48,000	33,251	35,709	13,788	10,986	13,736	9,819	6,469	6,095	14,873	285,146
Sailfish.....			323										778
Salmon.....						500	1,000	22		331			1,839
Seadab.....	76	16	253	205	519	110	22	313	554	456	55	55	2,843
Sardine.....	10,620,091		21,000			137,200	358,600	14,771,725	4,747,260	30,447	11,166,359	2,802,26	74,972,226
Solejumper.....	115	75	62	215						45			111
Sea bass, black.....			204		34	333	84	36	89	364	47		1,191
Sea bass, white.....	8,707	30,432	24,943	10,835	14,975	12,405	28,658	28,743	42,029	69,650	30,204	10,047	311,737
Shark.....	3,603	3,465	267,023	13,687	29,482	39,922	11,059	5,000	5,372	24,185	6,172	4,135	413,745
Sheepshead.....	4,642	5,440	702	6	518	654	1,702	115		1,681	763	2,226	18,686
Skate.....	289	212		454	353	20			167	1,220	738	64	3,508
Swordfish.....	79	35	145	65	79			80					1,214
Sole.....	13,297	13,513	56,059	65,345	103,842	94,308	34,452	18,452	22,210	20,455	1,088	6,116	488,595
Swordfish, broadbill.....								930	18,468	10,538	322		30,058
Tuna, albacore.....							8,910	77,985	35,104	12,749	14,977	6,062	155,787
Tuna, mafin.....								412					412
Turbot.....	432	127	826	49	230	638					80		2,282
Whitefish, ocean.....	673	4,046				200	25			73	690	2,315	8,022
Miscellaneous fish.....	192	14	55	1,596	551	1,166	384	210	435	399	1,239	560	6,831

TABLE 21

Monthly Landings of the Commercial Fishing Boats in the Santa Barbara Region During 1951

Crustacean:													
Crab.....	54,222	55,898	18,988	44,274	23,544	5,127	3,639		267	748	3,996	210,733	
Crab, rock.....	100	40								1,246	1,496	2,882	
Lobster, spiny.....	61,987	49,570	25,820						49,020	76,562	68,413	331,382	
Mollusk:													
Abalone.....	39,031		90,160	107,539	54,238	137,439	121,450	136,878	210,383	153,430	120,007	162,559	1,342,114
Octopus.....	114	39	22			113	132				43	20	482
Oyster, Pacific.....	234	156		55								1,348	
Squid.....				335								335	
Total pounds.....	11,628,135	327,857	832,174	581,776	323,822	1,635,048	1,788,707	15,127,378	5,192,526	32,200,158	12,320,989	3,183,427	85,162,007
Fishing boat landings from waters south of the in- ternal boundary:							402					402	
Tuna, albacore.....							402					402	
Total pounds.....													* ⁹²
Grand total Santa Barbara region.....	11,628,135	327,857	832,174	581,776	323,822	1,635,048	1,788,109	15,127,378	5,192,526	32,200,158	12,320,989	3,183,427	85,162,409

TABLE 21—Cont'd.

TABLE 22
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Fishing boat landings from California waters:													
Anchova.....	7,440	38,095	104,009	285,358	162,251	97,141	280,228	147,095	29,320	47,715	100,755	16,995	1,406,402
Bararuda.....	25	105	7,004	2,832	29,851	131,904	21,320	18,986	68,962	16,218	184	308,138	308,138
Bottito.....	4	1	9,801	128	11	2,887	2,200	24,833	40,350	40,350
Carp.....	200	4	4,009	10,240	3,090	2,200	10,800	7,150	40,311	40,311
Flounder.....	8	45	187	4	54	104	62	507	975	975
Flying fish.....	628	4,724	11,717	7,480	26,194	2,469	53,213	53,213
Hake, California.....	23,301	48,092	70,000	51,672	37,093	32,297	37,572	5,272	5,626	721	617	27,399	27,399
Kingfish.....	20,788	32,234	52,223	28,509	37,387	36,794	13,309	28,832	12,985	17,325	122,341	9,709	412,426
Lingcod.....	157	60	161	59	53	36,794	78	160	132	1,267	68	2,190	2,190
Mackerel, jack.....	8,851,673	4,407,136	5,559,658	10,339,541	8,658,205	7,364,774	5,699,323	9,632,374	9,281,505	7,707,794	4,981,576	33,816,664	33,816,664
Mackerel, Pacific.....	560,392	101,429	196,400	1,089,700	201,430	316,041	1,050,014	6,656,928	2,719,250	14,320,480	5,46,673	220,328	220,328
Mullet.....	3,426	3,426	3,426
Perch.....	5,717	7,308	12,341	5,377	1,605	20	186	2,960	6,844	3,225	5,519	10,648	61,749
Pike.....	79	20	20
Pompano, California.....	659	416	4,152	1,159	603	380	208	2,391	2,611	2,537	6,820	1,818	23,712
Rock bass.....	558	236	2,440	5,356	7,258	9,663	5,921	2,641	1,765	1,900	78	827	39,217
Haddock.....	71,324	81,138	74,144	91,864	86,056	51,174	32,657	32,247	45,517	50,935	40,038	67,916	725,155
Sablefish.....	3,959	8,962	11,487	10,094	8,445	233	300	3,873	4,378	1,619	793	26,410	26,410
Salmon.....	161	161
Sand dab.....	1,347	3,587	3,019	2,497	2,116	1,061	370	441	638	564	679	1,298	18,026
Sardine.....	58,678,350	2,314,448	126,063	216,955	179,805	380,015	157,290	189,535	704,185	142,713,231	26,644,055	14,366,274	246,572,019
Seabass, black.....	4,296	4,000	5,536	10,147	10,232	14,777	11,165	8,708	2,186	3,482	1,045	5,076	5,076
Sea bass, white.....	20	50	40	323	885	1,017	505	1,218	355	576	5,079	5,079
Sea bass, white.....	1,504	19,889	14,888	22,895	55,490	116,272	60,106	31,676	45,840	35,081	61,207	18,488	483,326
Shark.....	2,076	5,726	7,557	6,231	23,141	37,658	12,325	7,506	4,485	12,224	4,459	8,489	137,209
Shad.....	1,389	1,385	1,738	2,357	270	209	24	770	1,186	2,643	2,628	1,148	12,263
Skate.....	1,112	492	548	574	1,236	1,068	51	193	719	717	70	240	7,012
Sole.....	18,282	6,051	13,830	7,213	9,560	8,926	4,342	7,813	11,340	11,741	66,147	38,120	203,365
Solefish.....	37	21	445	1,170	1,048	1,256	8	105	16	15	4	15	351
Swallowfish, breadbill.....	4,790	42,715	56,470	30,690	10,088	725	145,448	145,448
Tuna, albacore.....	151	13,871	1,196,526	1,829,967	385,070	126,280	135,556	29,531	3,719,052
Tuna, bluefin.....	360,000	375,616	8,963	24,583	25,750	794,912	794,912	794,912

CALIFORNIA DEPARTMENT OF FISH AND GAME

TABLE 22
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Region During 1951

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

Tuna, skipjack.....	1,873	324		168	248	41	60	109	186	70	1,180	156	365
Whitefish, ocean.....	12				99	810	446	633	1,920	49	76		4,881
Yellowtail.....				3,395	2,809	4,528	4,618	2,854	3,734	8,381	3,057	2,408	4,045
Miscellaneous fish.....	2,303	4,475	3,684										45,537
 Crustacean:													
Crabs, rock.....	443	533	415	2,392	560	830	2,130	2,110	1,610	912	1,049	40	13,944
Lobster, spiny.....	31,971	26,579	19,982							99,485	119,610	61,275	361,003
 Mollusk:													
Abalone.....	106,983		153,820	394,542	254,147	264,112	155,430	194,035	200,499	212,464	253,820	265,500	2,427,361
Octopus.....	61	59	69	46	130	24					33	82	591
Squid.....			1,890		345,905	373,205	4,755	13,570	80		9,740		740,355
Total pounds.....	68,300,385	7,108,138	6,829,101	12,150,989	10,116,799	9,260,765	10,031,078	18,655,043	13,535,110	165,710,596	36,092,645	16,823,140	375,055,819
 Fishing boat landings from waters north of the State boundary:													
Tuna, albacore.....								9,150					9,150
Total pounds.....								9,150					9,150
 Fishing boat landings from waters south of the international boundary:													
Baracuda.....	55,829	157,331	171,762	95,725	28,470	31,788	124,822	75,241	24,232	71,930	136,399	114,404	1,087,892
Bonito.....		1,984	1,284	128		14,680	4,123	101,911	151,478		7,348	6,539	594,585
Calico.....	30,558	66,793	51,749	33,613	5,234	41,859	6,470	4,653	15,718	35,261	17,377	26,626	338,707
Grouper.....	33,323	61,613	61,146	32,455	13,387	19,742	17,622	10,121	30,107	34,186	36,389	30,326	582,584
Halibut, California.....						146	592	1,653	19,474	1,812	27		32,704
Perch.....	240						511	655		1,021	2,024	1,972	6,423
Rock bass.....	22,452	21,213	15,205	94	14,468	24,114	14,331	4,691	6,292	6,865	58,292	8,972	197,751
Rockfish.....									832				832
Sardine.....						601							601
Sea bass, black.....	19,701	12,785	8,816	9,642	1,272	4,071	3,192	3,154	11,754	25,640	28,626	17,914	146,573
Sea bass, white.....			8	733	535	2,174	12,461	27,862	48,059	125,094	109,265	23,040	8,853
Shark.....		210		9		82	40	80	381	7,412	23	1,681	1,681
Sheepshead.....	233			17					830	175	200	550	2,995
Sole.....	241			755						7	17,443	552	18,998
Swordfish, broadbill.....		900									100		8,807
Tuna, albacore.....								3,375	821,503	2,118,764	942,369	59,328	3,875,239
Tuna, black skipjack.....						7,240							7,240

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TABLE 22—Cont'd.

TABLE 22—Continued
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Tuna, bluefin.....	251,308	69,125	709	400,807	827,531	1,058,399	1,134	2,669,004
Tuna, skipjack.....	6,131,167	4,155,727	3,308,647	3,421,696	6,874,070	9,429,509	5,382,921	5,473,184	4,435,015	1,732,276	1,412,992	1,829,529	53,395,512
Tuna, yellowfin.....	3,691,457	3,178,311	4,454,421	3,245,127	6,815,716	9,331,868	9,652,440	10,372,081	9,925,843	1,898,309	6,247,134	4,968,947	73,891,567
Whitefish, ocean.....	13,272	10,100	49	277,730	281,673	988,233	1,081,732	661,988	174,274	63,526	71,281	112,193	909
Yellowtail.....	7,924	101,100	69	150	600	413	1,685	145	3,034	3,832,292
Miscellaneous fish.....	1
Total pounds.....	10,194,681	8,032,492	8,174,911	7,139,179	13,736,473	19,907,919	17,541,572	19,728,623	16,331,087	4,362,259	8,082,383	7,230,886	140,444,595
<hr/>													
Shipments ¹ :													CALIFORNIA DEPARTMENT OF FISH AND GAME
Herring, Pacific.....	26,499	55,939	3,742	470	50,494	105,510	87,919	25,159	18,031	54,188	42,665	473,504
Lingcod.....	20,000	10,972	16,121	2,400	49,193
Sablefish.....	37,200	12,375	9,200	246	3,218	9,410	10,000	14,400	98,049
Salmon.....	91,272	136,468	97,055	61,191	185,954	241,819	68,739	157,754	91,473	90,543	50,623	106,669	1,385,569
Sole.....	1,97	1,090	1,27
Tuna, albacore.....	99,759	780,990	665,718	1,658,341	750,097	737,491	3,090,655	3,751,590	425,330	11,938,870
Tuna, skipjack.....	2,050	12,943	203,853	129,757	200,090	1,360,132	161,983	519,079	2,067,600
Tuna, yellowfin.....	1,410,297	1,233,413	865,321	3,603,286	1,148,940	448,518	166,427	140,119	9,535,400
Yellowtail.....	1,115	8,285	28,792	23,618	142,633
Miscellaneous fish.....	38,005	55,908	35	1
Total pounds.....	1,684,734	2,321,038	1,644,241	5,312,394	2,148,674	1,316,335	3,833,598	4,499,832	2,439,298	390,780	982,974	459,104	26,983,002
Grand totals, Los Angeles region.....	80,121,890	17,461,668	16,748,283	24,902,592	26,001,946	30,494,049	31,406,248	42,932,648	32,308,490	170,463,735	45,188,002	21,513,139	542,492,566

¹ See Table 14 for origin of shipments.

TABLE 22
Monthly Landings and Shipments of Commercial Fish Into the Los Angeles Region During 1951

TABLE 23
Monthly Landings and Shipments of Commercial Fish Into the San Diego Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds	COMMERCIAL CATCH OF CALIFORNIA FOR 1951
Fishing boat landings from California waters:														
Anchovy.....	510	25,101	104,908	92,275	32,091	162	3,405	8,692	880	48	12,724	267,111
Barracuda.....	182	864	406	35	5	1,183	2,843	238
Boato.....	238	238
Flying fish.....	86,911
Hallibut, California.....	4,879	8,436	16,017	27,580	5,305	3,015	3,580	4,857	5,511	5,144	6,612	8,234	86,996	86,996
King mackerel.....	2,422	2,032	7,569	3,007	1,031	697	2,808	6,462	3,958	3,022	1,430	234	35,096	499
Lionfish.....	116	13	13	20	50	287	104	27,200	15,000	46,495	46,495
Mackerel, jack.....	93	91,700	291	7,543	27,284	8,101	818	14,775	136,533	34,688	61,583	383,731	383,731
Mahi-mahi, Pacific.....	31,883	29,137	27,407	16,000	104,407	104,407	104,407
Pompano, California.....	72	635	1,733	1,360	1,967	221	906	635	75	317	1,033
Rock bass.....	52	2,307	1,232	2,071	2,040	408	60	2,785	2,742	3,242	1,599	32,070	1,132
Sahrung.....	337	327
Sand dab.....	188	188
Sardine.....	2,425,895	285,772	2,311	4,120	10,320	919,279	896,222	907,180	5,426,214	5,426,214
Sole.....	669	2,271	4,945	6,697	639	38	567	130	317	928	50	50	16,774	16,774
Sea bass, black.....	174	204	125	503	965	209	140	2,320	2,320
Sea bass, white.....	454	4,099	21,968	11,981	10,148	12,022	6,772	9,860	17,273	10,035	10,575	3,800	115,987	115,987
Shark.....	6,201	1,445	2,956	7,682	23,822	35,896	9,949	18,404	6,097	14,775	21,076	21,076	21,076	21,076
Sheepshead.....	992	690	272	11	118	4,078	11,012	9,287	28,460	28,460	28,460
Skate.....	33	467	500	500	500
Snelt.....	2,330	2,490	2,112	703	65	1,165	107	10	1,445	10,397	10,397
Sole.....	107	104	50	213	37	37	511	511	511
Sebastodes, longbill.....	6,259	6,158	5,882	1,201	1,320	20,820	20,820	20,820
Tuna, albacore.....	3,380	48,856	800,071	538,534	98,518	164,025	63,448	82	1,716,832	1,716,832
Tuna, bluefin.....	22,739	12,805	41,807	41,807	41,807	41,807
Tuna, skipjack.....	2,914	162	1,735	4,402	4,402	168	777	93	60	10,399	10,399	10,399
Yellowtail.....	15	205	129	17	5	5	20	391	391	391	391	391
Miscellaneous fish.....

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TABLE 23
Monthly Landings and Shipments of Commercial Fish Into the San Diego Region During 1951

TABLE 23—Continued
Monthly Landings and Shipments of Commercial Fish Into the San Diego Region During 1951

Species	January	February	March	April	May	June	July	August	September	October	November	December	Total pounds
Crustacean:													
Crab, rock.....	193	254	116							2,505	1,974	334	5,666
Lobster, spiny.....	10,944	7,973	6,853							56,274	36,734	14,648	132,226
Mollusk:													
Abalone.....	27,227		10,822	49,624	20,551	44,238	15,965	21,153	13,482	12,300	27,175	54,767	306,635
Clam.....	1,487	1,440	2,464	3,135	4,555	5,979	6,502	5,122	3,415	1,987	1,404	633	38,153
Clam, jackknife.....	1,266	809	1,401	2,402	3,512	4,482	3,694	3,992	4,217	2,307	929	577	29,648
Total pounds.....	2,829,101	454,711	88,485	140,291	188,114	291,536	929,972	619,078	196,604	1,398,125	1,121,097	1,112,637	9,040,751
Fishing boat landings from waters south of the international boundary:													
Baracuda.....	37,957	73,910	62,726	12,169	1,729	61,460	19,382	5,710	8,573	12,737	6,929	15,739	349,021
Bonito.....	1,125	297	5,968			3,407		1,886	45,869	65,010	915	525	120,632
Cobia.....	1,950	3,214	3,442	2,613	4,011	20,616	1,175			4,539	4,606	5,152	33,980
Grouper.....		9763	4,575	2,275	6,388	14,590	332			10,092	722	1,966	54,158
Halibut, California.....	8,169	2,211	269			17,474	72,503	50,430	30,010	8,145	605	134	189,950
Kingfish.....			6				240						246
Rock bass.....	354	383	3,334	293	346	331	963	602	257	115			2,869
Rockfish.....	3,796	2,284			295				32		4,563	143	11,763
Sabrefish.....											137		137
Sailfish.....												350	
Sea bass, black.....	442	744	1,462	753	5,614	13,443	2,519	18,838	742	46,206	22,513	6,015	122,321
Sea bass, white.....	1,056	28,272			1,348	1,797	7,974	76,340	13,239	63,265	20,448	5,799	219,538
Shark.....	148		300	20	4,045	2,478	965	1,879	5,397	10,081	3,307		28,620
Sheepshead.....					35	300	335		192	321	293	817	2,196
Sierra.....	290								410				410
Swordfish, broadbill.....							3,576	18,746	598	910			23,830
Tuna, bonito.....	135						91,815	4,645,992	8,201,015	993,238	266,091	4,977	14,239,263
Tuna, bluefin.....								53,610	22,610	38,567			110
Tuna, skipjack.....	10,480,397	7,734,481	3,502,655	668,446	5,420,712	10,823,556	8,230,993	5,619,448	3,290,098	3,385,750	2,703,949	325,874	62,188,226
Tuna, yellowfin.....	8,883,170	6,116,358	4,463,200	273,144	6,457,581	13,739,920	10,070,842	9,218,465	11,290,898	8,546,608	7,142,444	161,054	89,333,672

CALIFORNIA DEPARTMENT OF FISH AND GAME

TABLE 23
Monthly Landings and Shipments of Commercial Fish Into the San Diego Region During 1951

² See Table 14 for origin of shipments.

TABLE 23—*Cont'd.*

TABLE 24
The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1951

Species	Eureka region		Sacramento region		San Francisco region		Monterey region	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
Fishing boat landings:								
Anchovy.....					284,100	\$8,722	5,050,057	\$99,992
Barracuda.....							7,419	706
Bass.....							18,978	504
Calicoe.....					1,263	40		
Cabilla.....								
Carp.....	53,160	\$17,1	857,122	\$30,611	3,884	199		
Catfish.....			258,126	50,792				
Flounder.....	526,530	27,843	795	80	589,309	26,402	6,840	451
Flying fish.....								
Grouper.....					6,770	400		
Hake.....					24,972	312		
Halibut, California.....					6,515	1,314	64,416	14,120
Halibut, Pacific.....	28,119	6,332			88,620	14,546		
Herring, Pacific.....	32,990	1,386			3,672,328	29,200	1,102,270	22,775
Hungry jack.....							77,880	16,661
Lingcod.....	937,583	83,305			588,612	46,398	127,106	11,783
Mackerel, jack.....	190	10			202	10	7,780	2,940
Mackerel, Pacific.....							357,018	16,838
Mullet.....								
Perch.....	45,944	5,987			78,833	10,524	37,864	3,017
Pike.....			156	13				
Pompano, California.....					1,876	770	81,447	14,774
Rock bass.....								
Rockfish.....	4,573,598	234,626			2,204,345	145,502	3,176,243	210,552
Sablefish.....	1,258,118	115,285			208,458	18,316	1,000,000	42,533
Salmon.....	2,002,265	520,130	1,343,171	301,677	3,185,400	925,562	679,128	224,383
Sand dab.....	122,072	7,886			279,651	15,996	121,041	9,345
Sardine.....					165,144	3,815	1,757,070	52,887
Seabream.....								
Sea bass, black.....					2,407	498	38,688	8,078
Sea bass, white.....					324	16	259	9
Seatear, greenling.....								

CALIFORNIA DEPARTMENT OF FISH AND GAME

TABLE 24
The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1951

			606,076	38,365		115	6
Sard.	1,773	388		80,507	4,299	8,871	402
Shad.....							*
Sheepshead.....							*
Sierra.....							*
Skate.....	163	3		62,005	963	11,356	326
Sole.....	269,483	16,189	277	6,003	29,911	10,172	10,782
Sole.....	12,247,638	808,244		4,684,163	344,285	797,907	60,939
Splittail.....		669	172				*
Swordfish, broadbill.....				539	239	541	216
Tuna.....	803	30		1,118	78		*
Tuna, albacore.....	2,051,494	259,001	28,927	6,124	2,052,384	424,043	2,968,742
Tuna, black skipjack.....							390,127
Tuna, bluefin.....							*
Tuna, yellowfin.....							*
Turbot.....	9,116	491			4,832	698	67,093
Walleye.....					201,998	29,906	10,444
Whitebait.....	111,307	10,624			18,848	18,848	12,884
Whitefish, ocean.....					97,035	3,515	2,910
Yellowtail.....						350	14
Miscellaneous fish.....	39,582	1,262		56,691	2,342	8,705	613
Crustacean:							
Crab.....	7,790,805	1,040,072		3,551,917	546,285	11,898	2,863
Crab, rock.....				1,000	50		*
Lobster, spiny.....						2,694	1,078
Prawn.....							*
Shrimp.....				931,323	63,796		
Mollusk:							
Ahalone.....				8,005	1,152		*
Clam.....						3,412	191
Clam, gaper.....							*
Clam, jackknife.....							*
Clam, Washington.....	5,295	511					*
Mussel.....							*
Octopus.....	2,841	140		12,602	886	1,57	1
Oyster, eastern.....				178,716	28,460	12,710	1,274
Oyster, native.....				17,903	2,804		*
Oyster, Pacific.....				132,402	14,588		*
Squid.....						11,632,168	318,730
Total pounds and value.....	32,094,326	\$3,144,182	3,043,634	\$436,841	24,537,459	\$2,710,882	30,551,716
							\$1,603,621

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TABLE 24—Cont'd.

TABLE 24—Continued
The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1951

Species	Eureka region		Sacramento region		San Francisco region		Monterey region	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
Skinneosteal								
Barracuda.....								
Bonito.....								
Catfish.....	9,242	\$1,971			2,194	\$214		
Cobia, Mexican.....					760	141		
Hhalibut, California.....								
Hhalibut, Pacific.....					35,388	4,245		
Lingcod.....					26,036	2,070		
Rockfish.....								
Sablefish.....					208,366	14,219		
Salmon.....					22,904	6,697		
Sea bass, black.....								
Sea bass, white.....								
Shark.....								
Sole.....								
Tuna, albacore.....					5,522,576	884,164		
Tuna, opah.....								
Tuna, mola-chi.....					30,000	5,697		
Tuna, skipjack.....					260,558	37,492	327,238	47,024
Tuna, yellowfin.....					929,311	137,584	1,208,184	185,940
Miscellaneous fish.....					19,760	814		
Mollusks:								
Clam.....					22,230	4,003		
Clam, Pismo.....								
Mussel.....								
Total pounds and value.....	9,242	\$1,971	7,077,903	\$1,097,338	1,540,096		\$233,400	
Grand totals.....	32,094,326	\$3,144,182	3,082,876	\$438,812	31,615,362	\$3,808,220	32,091,802	\$1,537,021

CALIFORNIA DEPARTMENT OF FISH AND GAME

¹ See Table 14 for origin of shipments.

TABLE 24
The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1951

TABLE 24—Continued
The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1951

Species	Santa Barbara region		Los Angeles region		San Diego region		Total		COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	
Fishing boat landings:									
Anchoa.....	201,569	\$3,346	1,406,402	\$30,940	12,724	\$603	6,054,552	\$143,660	
Barracuda.....	94,574	10,309	1,396,030	245,678	610,132	66,752	2,106,736	356,739	
Bonito.....	6,354	564	639,435	61,897	123,495	11,102	776,803	74,365	
Cabilla.....	3,616	173	23,857	717	
Cobia.....	300,707	52,280	53,063	7,062	307,770	50,114	
Cory.....	40,511	1,215	532,319	41,230	
Cuttle.....	238,126	50,792	
Diamond.....	4,618	255	55,652	79	1,128,827	55,110	
Flying fish.....	53,213	4,100	238	51,517	4,127	
Grouper.....	522,854	106,820	54,188	10,127	583,740	117,349	
Hake.....	24,972	312	
Hallibut, California.....	214,458	49,689	304,013	76,277	276,531	57,241	565,230	108,841	
Hallibut, Pacific.....	86,710	20,378	
Herring, Pacific.....	4,917,043	53,304	
Kingfish.....	4,094	189	112,426	23,636	35,342	3,267	682,196	44,249	
Lingfish.....	21,124	2,100	7,100	60	99	56	1,672,114	14,277	
Mackerel, jack.....	5,207,355	92,690	83,810,564	1,894,119	42,304	798	89,838,653	2,016,402	
Mackerel, Pacific.....	776,677	19,028	32,000,049	881,601	383,791	14,601	33,518,655	932,148	
Mullet.....	3,426	137	104,407	6,787	107,833	6,924	
Percy.....	9,858	1,468	68,172	18,840	240,111	34,839	
Pike.....	720	22	876	35	
Pompano, California.....	6,656	1,530	23,712	5,017	1,033	207	64,224	22,208	
Rock bass.....	33,709	3,580	25,696	49,213	17,835	2,001	288,572	45,867	
Rockfish.....	265,146	23,597	735,087	10,400	43,733	5,033	10,877,100	641,449	
Sabrefish.....	1,141	57	59,419	10,191	137	14	2,585,073	199,360	
Salmoneidae.....	1,859	724	451	162	327	124	7,192,701	1,972,762	
Sand dab.....	2,948	18	18,020	5,032	188	28	543,821	36,515	
Sardine.....	74,972,553	1,564,934	246,872,620	5,547,883	5,425,044	75,903	328,850,000	7,217,170	
Sculpin.....	637	54	83,676	15,949	17,124	2,409	101,437	18,412	
Sea bass, black.....	1,191	163	151,652	25,099	124,641	20,242	277,484	45,504	
Sea bass, white.....	311,737	73,977	841,672	211,976	338,828	71,091	1,833,029	364,820	
Seawrout, greenling.....	583	25	

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TABLE 24
The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1951

TABLE 24—Continued
The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1951

Species	Santa Barbara region		Los Angeles region		San Diego region		Total	
	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value
Shad							606,161	38,271
Shark	413,175	27,476	110,890	18,055	188,198	10,610	842,324	70,317
Sheepshead	18,486	1,623	14,268	1,225	28,656	2,671	61,410	5,519
Sierra			18,998	2,214	610	59	19,608	2,273
Skate			161	7,012	365	300	846	1,482
Sole	3,486	1,612	20,935	10,135	10,275	848	1,065,504	65,537
Sole	488,426	39,417	6,251	1,060	511	92	18,221,896	1,234,157
Splittail							669	172
Swordfish, broadbill	30,058	12,065	132,255	68,057	44,650	19,891	228,001	104,475
Tomcod							2,018	108
Tuna, albacore	156,189	21,006	7,104,441	11,141,683	15,956,995	2,624,779	30,153,312	4,867,386
Tuna, black skipjack			7,240	1,086			7,240	1,086
Tuna, longtail			3,416	530			3,400	527
Tuna, skipjack			53,403,997	7,556,739	62,198,451	8,981,456	115,886,848	16,551,774
Tuna, yellowfin			73,691,657	11,363,234	86,333,672	13,373,085	160,246,175	24,769,155
Turbot			2,382	160			160,246,175	1,180
Wahoo					1,995		1,905	120
Whitesait							162,051	15,583
Whitefish, ocean	8,022	1,017	5,390	516	4,786	309	18,198	1,869
Yellowtail			3,836,337	363,219	833,289	78,088	4,699,726	443,307
Miscellaneous fish	6,891	495	49,590	11,098	1,924	111	162,923	16,519
Crustaceans								
Crab	210,733	32,236					11,568,351	1,621,546
Crab, rock	2,882	83	13,044	1,312	5,666	358	22,592	1,803
Lobster spiny	331,832	99,083	361,005	149,563	777,782	313,057	1,470,167	561,703
Prawn							2,694	1,078
Shrimp							931,323	65,796
Mollusk								
Anadine	1,342,114	158,672	2,427,361	184,236	306,635	20,636	4,984,115	364,896
Clam					38,153	10,380	38,153	10,380
Clam, gaper							3,112	194

CALIFORNIA DEPARTMENT OF FISH AND GAME

TABLE 24

The Value, by Region, of the Annual Landings and Shipments of Commercial Fish Into California During 1951

					29,648	8,115	26,618	8,115
							526	511
							198	14
							29,200	2,139
							175,000	28,300
Clam, jackknife								
Clam, Washington								
Musel								
Odogone	483	40	501	99				
Oyster, eastern								
Oyster, native								
Oyster, Pacific	1,248	92	40	749,355	17,310	711	57	17,603
Squid	335							
Total pounds and value	\$85,162,409	\$2,243,558	515,509,561	\$30,754,588	171,823,909	\$25,903,411	\$65,723,017	\$66,796,883
Shrimps ¹								
Barracuda								
Bonito								
Cod								
Cormina, Mexican								
Halibut, California								
Halibut, Pacific								
Hammerhead								
Rockfish								
Sablefish								
Saltfish								
Sea bass, black								
Sea bass, white								
Shark								
Sole								
Tuna, albacore								
Tuna, bluefin								
Tuna, mackai								
Tuna, yellowfin								
Yellowtail								
Miscellaneous fish								
Mollusk:								
Clam								
Clam, Pismo								
Musel								
	200		72				22,450	4,075
	1,287,724	22,020		777,200	5,140		2,064,924	27,460
	2,167	223					2,167	223
Total pounds and value	26,983,002	\$4,379,799	2,754,928	\$311,142			38,361,161	\$6,033,932
Grand totals	\$85,162,409	\$2,243,558	542,492,566	\$35,134,387	177,578,837	\$26,211,853	904,088,178	\$72,820,815

¹ See Table 14 for origin of shipments.

TABLE 24—*Cont'd.*

TABLE 25
Landings of the Commercial Fishing Boats in the Eureka Region During 1951, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Eureka region totals.....		\$3,144,182	32,094,326
Eureka.....	Sole.....	\$648,001	9,818,196
	Crab.....	370,437	2,774,807
	Salmon.....	182,752	703,705
	Rockfish.....	93,639	1,825,315
	Sablefish.....	69,117	713,283
	Albacore.....	46,056	364,797
	Lingcod.....	29,061	327,081
	Flounder.....	20,635	390,077
	Sand dab.....	6,567	101,659
	All other.....	19,663	223,138
	Totals.....	\$1,485,928	17,242,058
Fort Bragg.....	Albacore.....	\$211,120	1,672,311
	Salmon.....	183,654	707,179
	Rockfish.....	125,070	2,438,021
	Sole.....	88,462	1,340,328
	Sablefish.....	46,392	478,761
	Lingcod.....	37,014	416,590
	Smelt.....	10,363	164,227
	Crab.....	4,028	30,174
	All other.....	4,387	60,718
	Totals.....	\$710,499	7,308,309
Crescent City.....	Crab.....	\$384,850	2,882,773
	Salmon.....	107,125	412,494
	Sole.....	23,825	360,986
	Lingcod.....	12,804	144,106
	Rockfish.....	8,403	163,799
	All other.....	15,142	216,184
	Totals.....	\$552,149	4,180,342
Fields Landing.....	Crab.....	\$162,489	1,217,144
	Sole.....	48,053	728,082
	Salmon.....	7,579	29,184
	Rockfish.....	7,490	146,011
	All other.....	10,829	127,775
	Totals.....	\$236,440	2,248,196
Trinidad.....	Crab.....	\$117,935	883,412
	Salmon.....	5,918	22,340
	All other.....	180	1,710
	Totals.....	\$124,033	907,462
Shelter Cove.....	Salmon.....	\$26,813	103,247
	All other.....	600	7,668
	Totals.....	\$27,413	110,915
All other ports.....	All other.....	\$7,720	97,044
	Totals.....	\$7,720	97,044

TABLE 25
Landings of the Commercial Fishing Boats in the Eureka Region During 1951, Shown by Port of Landing With the Corresponding Values

TABLE 26
Landings of the Commercial Fishing Boats and Shipments Into the Sacramento Region During 1951, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Sacramento region totals-----		\$438,812	3,052,876
Pittsburg-----	Salmon.....	\$155,056	690,364
	Catfish.....	24,926	116,858
	Shad.....	15,250	240,918
	Carp.....	9,635	201,994
	All other.....	1,750	8,021
	Totals.....	\$206,617	1,258,155
Benicia-----	Salmon.....	\$50,674	225,619
	Shad.....	19,615	309,868
	All other.....	1,223	8,478
	Totals.....	\$71,512	543,965
Rio Vista-----	Salmon.....	\$45,559	202,843
	All other.....	1,829	8,644
	Totals.....	\$47,388	211,487
Martinez-----	Salmon.....	\$41,413	184,386
	All other.....	306	4,369
	Totals.....	\$41,719	188,755
Clear Lake-----	Carp.....	\$28,934	606,578
	Totals.....	\$28,934	606,578
Sacramento-----	Catfish.....	\$7,311	34,276
	Salmon.....	6,367	28,347
	All other.....	200	1,259
	Totals.....	\$13,878	63,882
Bethel Island-----	Catfish.....	\$11,176	52,396
	Carp.....	42	885
	Totals.....	\$11,218	53,281
All other ports-----	Catfish.....	\$7,525	35,280
	All other.....	10,021	91,493
	Totals.....	\$17,546	126,773

TABLE 26
Landings of the Commercial Fishing Boats and Shipments Into the Sacramento Region During 1951, Shown by Port of Landing With the Corresponding Values

TABLE 27

Landings of the Commercial Fishing Boats and Shipments Into the San Francisco Region During 1951, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
San Francisco region totals		\$3,808.20	31,615,362
San Francisco	Albacore	\$1,127,806	7,044,383
	Crab	372,098	2,419,364
	Salmon	253,180	865,869
	Sole	179,241	2,438,662
	Yellowfin tuna	167,490	1,131,309
	Skipjack	38,187	265,190
	Shrimp	38,064	555,678
	Rockfish	26,625	554,687
	Sablefish	22,015	319,526
	Lingcod	21,832	274,614
	Flounder	18,262	407,637
	Pacific halibut	16,012	80,082
	Smelt	11,228	159,262
	Sand dab	10,117	176,864
	All other	40,319	991,011
	Totals	\$2,342,476	17,684,138
Point Reyes	Salmon	\$433,960	1,484,131
	Sole	77,952	1,060,574
	Rockfish	49,805	1,037,601
	Crab	49,035	318,825
	Lingcod	12,128	152,555
	All other	25,171	418,346
	Totals	\$648,051	4,472,032
Bodega Bay	Salmon	\$92,556	316,589
	Crab	87,531	569,124
	Sole	87,047	1,184,314
	Rockfish	29,257	609,723
	Albacore	17,179	107,302
	Smelt	16,651	236,189
	Lingcod	12,706	159,823
	All other	12,608	197,649
	Totals	\$355,535	3,380,463
Sausalito	Albacore	\$160,625	1,003,280
	Salmon	54,279	185,634
	Crab	13,829	89,915
	Totals	\$228,733	1,278,829
Princeton (Halfmoon Bay)	Salmon	\$92,388	315,966
	Crab	8,302	53,973
	All other	4,416	52,036
	Totals	\$105,106	421,975
Tomales Bay (Marshall)	Pacific herring	\$27,737	3,488,933
	Eastern oyster	15,569	97,766
	Pacific oyster	8,865	81,627
	All other	8,184	57,438
	Totals	\$60,355	3,725,764
Oakland	Crab	\$14,164	92,095
	Salmon	3,827	13,088
	All other	3,744	32,196
	Totals	\$21,735	137,379

TABLE 27

Landings of the Commercial Fishing Boats and Shipments Into the San Francisco Region During 1951, Shown by Port of Landing With the Corresponding Values

TABLE 27—Continued

Landings of the Commercial Fishing Boats and Shipments Into the San Francisco Region During 1951, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Richmond.....	Shrimp.....	\$19,083	278,580
	All other.....	86	387
	Totals.....	\$19,169	278,967
Drakes Bay.....	Eastern oyster.....	\$12,891	80,950
	Pacific oyster.....	5,520	50,825
	Totals.....	\$18,411	131,775
All other ports.....	All other.....	\$8,649	104,040
	Totals.....	\$8,649	104,040

TABLE 27

Landings of the Commercial Fishing Boats and Shipments Into the San Francisco Region During 1951, Shown by Port of Landing With the Corresponding Values

TABLE 28

Landings of the Commercial Fishing Boats and Shipments Into the Monterey Region During 1951, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
Monterey region totals-----		\$1,837,021	32,091,802
Monterey-----	Squid-----	\$313,626	11,446,190
	Yellowfin tuna-----	188,850	1,227,032
	Rockfish-----	184,683	2,781,373
	Albacore-----	112,919	858,697
	Anchovy-----	98,885	4,994,188
	Salmon-----	89,792	271,768
	Skipjack-----	59,908	416,896
	Sardine-----	39,983	1,328,341
	Jack mackerel-----	23,175	624,667
	Sablefish-----	14,801	292,513
	Sole-----	13,227	173,131
	Bluefin tuna-----	10,061	67,095
	Lingcod-----	8,376	90,358
	Kingfish-----	8,126	108,489
	Pacific mackerel-----	5,269	111,872
	All other-----	22,446	287,932
	Totals-----	\$1,194,127	25,080,542
Moss Landing-----	Albacore-----	\$266,021	2,022,972
	Salmon-----	71,035	214,998
	Pacific herring-----	18,429	964,865
	Sole-----	8,642	113,121
	White sea bass-----	7,900	37,837
	Pacific mackerel-----	4,837	102,693
	Jack mackerel-----	4,777	128,749
	California halibut-----	4,236	19,323
	Squid-----	4,172	152,260
	Sardine-----	3,477	115,525
	All other-----	6,600	75,484
	Totals-----	\$400,126	3,947,827
Santa Cruz-----	Salmon-----	\$63,556	192,362
	Sole-----	39,090	511,655
	Sablefish-----	37,694	744,945
	Rockfish-----	25,542	384,672
	California pompano-----	12,926	27,513
	Albacore-----	11,187	85,073
	Sardine-----	9,427	313,204
	Kingfish-----	6,995	93,395
	Pacific mackerel-----	6,752	143,353
	Smelt-----	6,448	118,098
	California halibut-----	5,910	26,962
	All other-----	16,501	408,836
	Totals-----	\$242,028	3,050,068
All other ports-----	All other-----	\$740	13,365
	Totals-----	\$740	13,365

TABLE 28

Landings of the Commercial Fishing Boats and Shipments Into the Monterey Region During 1951, Shown by Port of Landing With the Corresponding Values

TABLE 29
*Landings of the Commercial Fishing Boats in the Santa Barbara Region During 1951, Shown by
 Port of Landing With the Corresponding Values*

		Value	Pounds
Santa Barbara region totals-----		\$2,243,358	85,162,409
Port Hueneme-----	Sardine.....	\$575,871	27,553,623
	Jack mackerel.....	69,933	3,928,846
	White sea bass.....	16,685	71,272
	Pacific mackerel.....	12,010	490,213
	Barraocuda.....	5,781	53,035
	Rockfish.....	5,099	57,943
	All other.....	18,461	300,569
	Totals-----	\$703,840	32,455,501
Avila-----	Sardine.....	\$571,080	27,324,365
	Abalone.....	10,881	92,093
	Jack mackerel.....	5,767	324,000
	Rockfish.....	5,555	63,130
	Crab.....	5,341	34,818
	All other.....	17,898	149,049
	Totals-----	\$616,522	27,987,455
Santa Barbara-----	Sardine.....	\$289,939	13,872,665
	Spiny lobster.....	94,295	315,369
	White sea bass.....	51,226	218,823
	California halibut.....	40,959	176,777
	Sole.....	34,812	431,376
	Shark.....	24,231	364,381
	Abalone.....	17,107	144,794
	Jack mackerel.....	16,989	954,436
	Broadbill swordfish.....	10,721	26,710
	Crab.....	10,169	66,290
	Pacific mackerel.....	6,649	271,389
	All other.....	16,273	158,818
	Totals-----	\$613,370	17,001,828
Morro Bay-----	Sardine.....	\$130,044	6,222,200
	Abalone.....	32,357	273,864
	Albacore.....	17,035	126,657
	Crab.....	16,752	109,205
	Rockfish.....	7,551	85,807
	All other.....	5,570	52,420
	Totals-----	\$209,309	6,870,153
San Simeon-----	Abalone.....	\$48,495	410,450
	Lingcod.....	15	147
	Totals-----	\$48,510	410,597
Channel Islands ¹ -----	Abalone.....	\$43,840	371,048
	Totals-----	\$43,840	371,048
All other ports-----	Abalone.....	\$5,892	49,865
	All other.....	2,075	15,962
	Totals-----	\$7,967	65,827

¹ San Miguel, Santa Rosa and Santa Cruz Islands.

TABLE 29
*Landings of the Commercial Fishing Boats in the Santa Barbara Region During 1951, Shown by Port of Land-
 ing With the Corresponding Values*

TABLE 30
**Landings of the Commercial Fishing Boats and Shipments Into the Los Angeles Region During 1951, Shown by
 Port of Landing With the Corresponding Values**

		Value	Pounds
Los Angeles region totals.....		\$35,134,387	542,492,566
Terminal Island.....	Yellowfin tuna.....	\$11,478,630	74,439,881
	Skipjack.....	6,704,188	47,547,431
	Sardine.....	4,074,823	181,103,255
	Albacore.....	2,824,456	17,575,957
	Jack mackerel.....	1,220,535	54,005,958
	Pacific mackerel.....	547,820	19,884,585
	Bluefin tuna.....	404,492	2,579,666
	Yellowtail.....	205,947	2,163,310
	Bonito.....	57,386	592,834
	Squid.....	14,518	628,500
	All other.....	1,570	24,741
	Totals.....	\$27,534,365	400,546,118
Long Beach.....	Sardine.....	\$788,153	35,029,026
	Yellowfin tuna.....	772,627	5,010,548
	Skipjack.....	638,951	4,531,570
	Jack mackerel.....	211,674	9,366,124
	Pacific mackerel.....	137,061	4,974,999
	Yellowtail.....	117,175	1,230,828
	Albacore.....	78,752	490,053
	Pismo clam.....	22,020	1,287,724
	Bluefin tuna.....	17,699	112,876
	Spiny lobster.....	16,552	39,952
	Rock bass.....	9,471	55,813
	Abalone.....	6,451	85,000
	Rockfish.....	5,083	59,872
	Grouper.....	5,876	28,761
	Barraeuenda.....	5,617	31,791
	All other.....	18,619	261,544
	Totals.....	\$2,852,781	62,596,481
Wilmington.....	Yellowfin tuna.....	\$568,378	3,685,982
	Skipjack.....	504,841	3,580,436
	Jack mackerel.....	408,736	18,085,666
	Sardine.....	373,721	16,609,814
	Pacific mackerel.....	82,913	3,009,540
	Bluefin tuna.....	45,715	291,551
	Albacore.....	40,710	253,330
	Yellowtail.....	12,679	133,185
	All other.....	745	8,765
	Totals.....	\$2,038,438	45,658,269
San Pedro.....	Barraeuenda.....	\$226,749	1,283,241
	White sea bass.....	200,024	794,220
	Grouper.....	99,235	485,730
	Bluefin tuna.....	65,737	419,239
	California halibut.....	61,975	247,011
	Spiny lobster.....	61,371	148,132
	Abalone.....	53,908	710,251
	Cabriga.....	48,240	312,640
	Rockfish.....	38,833	382,214
	Sardine.....	33,007	1,466,970
	Albacore.....	31,744	197,538
	Rock bass.....	28,608	168,582
	Yellowtail.....	28,500	299,370
	Black sea bass.....	24,320	146,950
	Jack mackerel.....	20,388	902,123
	Pacific mackerel.....	19,456	706,214
	Kingfish.....	19,350	337,617
	Sculpin.....	14,013	73,519
	Yellowfin tuna.....	13,667	88,630
	Perch.....	10,865	53,520

TABLE 30
**Landings of the Commercial Fishing Boats and Shipments Into the Los Angeles Region During 1951, Shown by
 Port of Landing With the Corresponding Values**

TABLE 30—Continued

Landings of the Commercial Fishing Boats and Shipments Into the Los Angeles Region During 1951, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
San Pedro—Continued.....	Shark.....	\$10,151	84,035
	Smelt.....	10,125	197,298
	Broadbill swordfish.....	9,908	22,166
	Sablefish.....	9,311	54,289
	All other.....	29,952	520,941
	Totals.....	\$1,169,437	10,102,440
Los Angeles.....	Salmon.....	\$496,169	1,385,560
	Pacific halibut.....	124,626	473,504
	Sablefish.....	16,472	96,049
	Lingcod.....	7,810	50,449
	All other.....	33,748	190,688
	Totals.....	\$678,825	2,196,250
Newport Beach.....	Sardine.....	\$139,195	6,186,466
	Pacific mackerel.....	94,181	3,418,547
	Abalone.....	93,841	1,236,373
	Albacore.....	81,542	507,420
	Broadbill swordfish.....	49,826	111,467
	Jack mackerel.....	32,780	1,450,426
	Spiny lobster.....	18,017	43,488
	White sea bass.....	8,307	32,983
	California halibut.....	7,430	29,612
	All other.....	25,580	245,387
	Totals.....	\$550,699	13,262,169
Santa Monica.....	Sardine.....	\$138,984	6,177,089
	Spiny lobster.....	30,213	72,926
	Anchovy.....	20,037	910,790
	Rockfish.....	17,594	173,174
	Barracuda.....	8,022	45,401
	California halibut.....	6,098	24,303
	All other.....	15,793	123,200
	Totals.....	\$236,741	7,526,883
San Clemente Island.....	Abalone.....	\$19,116	251,858
	Spiny lobster.....	96	232
	Totals.....	\$19,212	252,090
Dana Point.....	Spiny lobster.....	\$16,189	39,075
	All other.....	1,674	17,624
	Totals.....	\$17,863	56,699
Redondo Beach.....	Rockfish.....	\$6,007	59,128
	Spiny lobster.....	3,867	9,335
	All other.....	6,586	59,216
	Totals.....	\$16,460	127,679
Santa Catalina Island.....	Abalone.....	\$3,069	40,440
	Broadbill swordfish.....	2,825	6,321
	All other.....	5,548	36,514
	Totals.....	\$11,442	83,275
All other ports.....	Abalone.....	\$5,670	74,703
	All other.....	2,454	9,510
	Totals.....	\$8,124	84,213

TABLE 30

Landings of the Commercial Fishing Boats and Shipments Into the Los Angeles Region During 1951, Shown by Port of Landing With the Corresponding Values

TABLE 31

Landings of the Commercial Fishing Boats and Shipments Into the San Diego Region During 1951, Shown by Port of Landing With the Corresponding Values

		Value	Pounds
San Diego region totals-----		\$26,214,835	177,578,837
San Diego-----	Yellowfin tuna.....	\$12,273,456	79,234,708
	Skipjack.....	7,758,307	53,727,886
	Albacore.....	1,751,249	10,645,891
	Spiny lobster.....	304,704	757,029
	Baracuda.....	103,681	640,402
	Sardine.....	75,951	5,425,044
	Yellowtail.....	68,857	734,867
	White sea bass.....	67,937	323,509
	California halibut.....	53,612	255,997
	Bluefin tuna.....	51,064	331,800
	Black sea bass.....	20,869	128,505
	Abalone.....	20,439	303,705
	Broadbill swordfish.....	19,896	44,650
	Shark.....	18,349	176,094
	Pacific mackerel.....	14,649	383,484
	Grouper.....	10,127	54,186
	Bonito.....	9,764	108,615
	Cabrilla.....	7,052	53,063
	Rockfish.....	5,738	42,219
	Pismo clam.....	5,440	777,200
	All other.....	22,235	205,048
	Totals-----	\$22,663,376	154,356,902
Point Loma-----	Yellowfin tuna.....	\$1,370,630	8,848,484
	Skipjack.....	1,236,958	8,566,193
	Albacore.....	883,045	5,368,055
	Yellowtail.....	10,743	114,657
	Bluefin tuna.....	9,431	61,283
	Bonito.....	1,324	14,730
	Totals-----	\$3,512,131	22,973,402
Oceanside-----	White sea bass.....	\$4,792	22,818
	California halibut.....	3,160	15,266
	All other.....	3,462	18,987
	Totals-----	\$11,414	57,071
Mission Beach-----	Clam.....	\$5,280	19,497
	Jackknife clam.....	2,862	10,455
	Totals-----	\$8,151	29,952
Salton Sea-----	Mullet.....	\$6,787	104,407
	Totals-----	\$6,787	104,407
All other ports-----	Lobster.....	\$7,699	19,128
	All other.....	5,277	37,975
	Totals-----	\$12,976	57,103

TABLE 31

Landings of the Commercial Fishing Boats and Shipments Into the San Diego Region During 1951, Shown by Port of Landing With the Corresponding Values

TABLE 32

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	1951
Albacore.....	410	1,368	3,880	8,730	159	11,051	8,044	15,313	23,461	114,502	75,924
Barnacles.....	595,600	7,000	37,109	73,778	76,159	38,000	69,041	41,910	56,000	25,700	26,900
Halibut, California.....	71,266	49,904	35,587	85,708	94,945	134,123	133,187	178,639	106,516	86,998	59,295
Rock bass ¹	533,278	253,423	464,642	458,778	451,679	390,761	693,035	661,085	797,328	616,898	781,600
Salmon.....	238	1,370	2,610	4,038	7,075	2,950	5,063	11,188	20,404	52,995	71,970
Sea bass, white.....	12,121	13,154	16,496	32,171	11,771	12,552	21,952	63,101	55,352	44,441	37,756
Yellowtail.....	97,453	62,847	44,974	26,730	96,756	3,051	7,082	12,787	18,023	7,673	23,721
All other.....	826,857	1,009,665	1,011,396	1,271,220	1,061,168	299,944	861,749	1,279,394	959,101	1,046,901	1,024,213
Total number of fish.....	1,937,479	2,134,182	1,933,694	2,620,323	2,490,983	1,243,358	2,419,429	2,596,483	2,351,303	2,235,593	2,350,644
Number of angler days.....	204,189	328,216	217,211	241,386	273,861	209,043	447,816	533,309	490,943	602,431	556,949

¹ Rock bass includes two species, kelp bass (*Paralabrax clathratus*) and sand bass (*P. nebulosus*).

TABLE 32
The Recorded State-wide Catch, in Numbers of Fish, Made by Anglers Fishing From Licensed Party Boats and the Number of Angler Days

TABLE 33
The Recorded Catch of Live Bait in Southern California Made by the Vessels Supplying the Party Boat Fleet

Species	Pounds			
	1948	1949	1950	1951
Anchovy-----	7,172,581	5,554,194	7,647,640	10,283,730
Kingfish-----	51,953	101,934	48,545	79,458
Queenfish-----	493,859	395,769	232,618	204,097
Sardine-----	1,027,643	2,908,253	3,093,587	2,607,234
Sardine, firecrackers-----		1,070	4,251	3,797
Smelt-----	54,503	108,697	30,824	50,181
Total pounds-----	8,800,539	9,069,917	11,057,465	13,228,497
Number of boats reporting-----	25	23	25	22

TABLE 33
The Recorded Catch of Live Bait in Southern California Made by the Vessels Supplying the Party Boat Fleet