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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

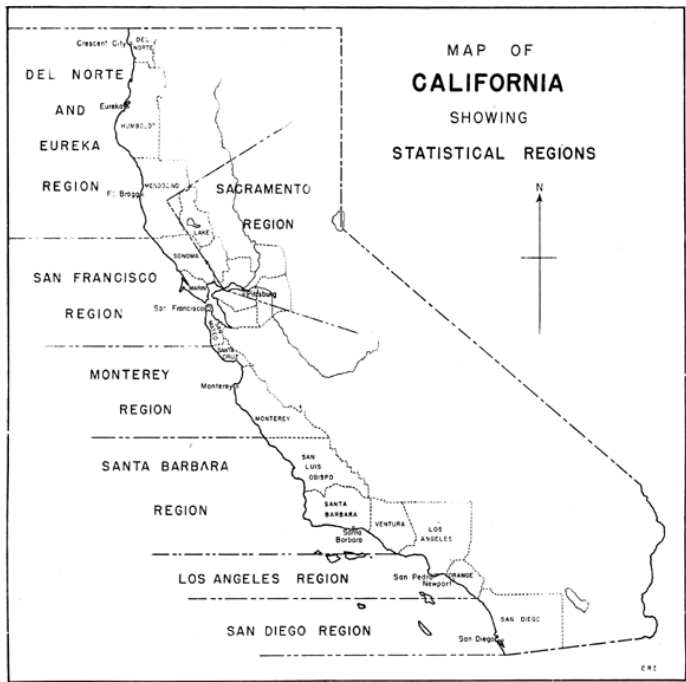


FIGURE 1

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 canners 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
½-lb. oval or 9-oz. oblong (1,344 cans are equal to 28 cases, 48 cans to case)	1,344 cans
½-lb. buffet (1,584 cans are equal to 33 cases, 48 cans to case)	1,584 cans
¼-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 canner 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 canners 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 conveyers 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			223.1			259.0		
2. Broken and mixed fish.....		12.2	6.11		3.7	1.66		5.0	1.93
3. Whole, sound anchovies.....	187.6			219.4			254.0		
4. Cleaning loss.....		80.6	42.96		91.1	41.52		115.0	45.3
5. Weight of cut sections.....	107.0			128.3			139.0		
6. Packing loss.....		9.243	8.64		9.02	7.73		7.0	5.04
7. Weight of fish in cans.....	97.757			118.38			132.0		
8. Weight of fish in cans per ton of whole sound anchovies.....	1,042			1,079			1,039		
		52.15%			53.96%			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			214.95			135.25		
2. Broken and mixed fish.....		3.75	1.74		8.30	3.86		5.50	4.07
3. Whole, sound anchovies.....	211.42	98.00	46.40	206.65	88.60	42.90	129.75	66.75	51.45
4. Cleaning loss.....									
5. Weight of cut sections.....	113.42			118.05			63.00		
6. Packing loss.....		6.32	5.57		4.22	3.57		1.01	1.60
7. Weight of fish in cans.....	107.1			113.83			61.99		
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									

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TABLE 1—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			
2. Broken and mixed fish.....			38.45	3.08	3.0
3. Whole, sound anchovies.....	1,208.82	96.92			
4. Cleaning loss.....			540.05	44.68	45.00
5. Weight of cut sections.....	668.77	55.32			
6. Packing loss.....			37.713	5.6	5.6
7. Weight of fish in cans.....	631.057	52.2			
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	3/4 lb. oblong	6 oz. round	6 oz. round
4. Average raw fish fill.....	6.04 oz.	6.23 oz.	5.9 oz.	9.16 oz.	5.84 oz.	5.14 oz.
5. Pounds of raw fish per case.....	37.75	38.94	36.875	27.48	36.5	32.13
6. Case pack per ton of whole, sound anchovies.....	27.60	27.71	28.18	36.86	30.19	29.74
7. Case pack per ton of fish received.....	35.93	37.23	37.56	36.21	39.03	38.54
8. Required case pack.....	21 1/4	21 1/4	21 1/4	28	21 1/4	21 1/4
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 $5 \frac{9}{16}$ inches in length by $3 \frac{5}{16}$ inches in width and $1 \frac{3}{16}$ 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 utiliz- able 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	
Deep-bodied	Anchoa compressa
Northern	Engraulis mordax
Slough	Anchoa delicatissima
Barracuda	Sphyræna argentea
Bonito, California	Sarda lineolata
Cabezone	Scorpaenichthys marmoratus
Cabrilla	Epinephelus analogus
Carp	Cyprinus carpio
Catfish	
White catfish	Ictalurus catus
Brown bullhead	Ameiurus nebulosus
Corbina, Mexican	Cynoscion orthonopterus
Crevally	Caranx sp.
Flounder, starry	Platichthys stellatus
Flying fish, California	Cypselurus californicus
Grouper	Species of Mycteroperca
Hake	Merluccius productus
Halibut, California	Paralichthys californicus
Halibut, Pacific	Hippoglossus stenolepis
Hardhead	
Greaser blackfish	Orthodon microlepidotus
Hardhead	Mylopharodon conocephalus
Herring, Pacific	Clupea pallasii
Kingfish	
Kingfish	Genyonemus lineatus
Queenfish	Seriplus politus
Lingcod	Ophiodon elongatus
Mackerel, jack	Trachurus symmetricus
Mackerel, Pacific	Pneumatophorus diego
Mullet	Mugil cephalus
Perch	
Blacksmith	Chromis punctipinnis
Halfmoon	Medialuna californiensis
Opaleye	Girella nigricans
Salt-water perch	Members of family Embiotocidae
Pike (Sacramento squawfish)	Ptychocheilus grandis
Pompano, California	Palometa simillima

Rock bass	
Kelp bass	<i>Paralabrax clathratus</i>
Sand bass	<i>Paralabrax nebulifer</i>
Rockfish	All species of <i>Sebastes</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>
Souppin	<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	
Splittail	<i>Pogonichthys macrolepidotus</i>
Swordfish, broadbill	<i>Xiphias gladius</i>
Tomcod	<i>Microgadus proximus</i>

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

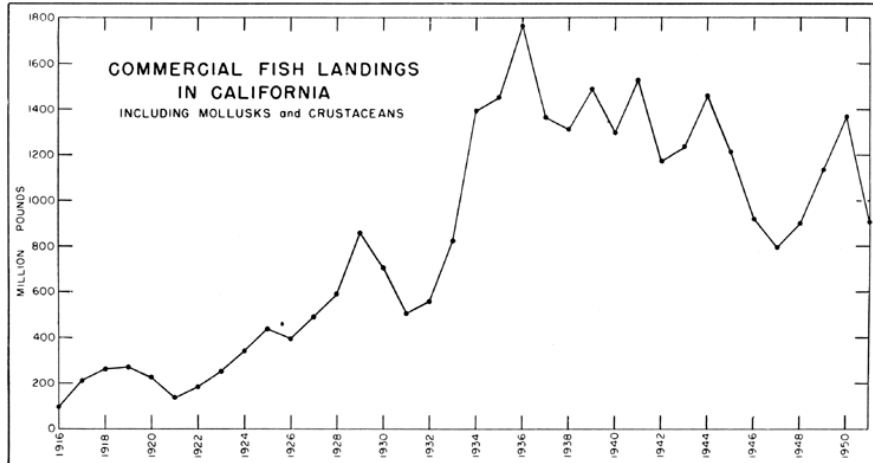


FIGURE 2. Total annual landings and shipments into California of commercial fish, mollusks and crustaceans. Includes sardine deliveries to reduction ships during 1930 through 1938. See Table 7.

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

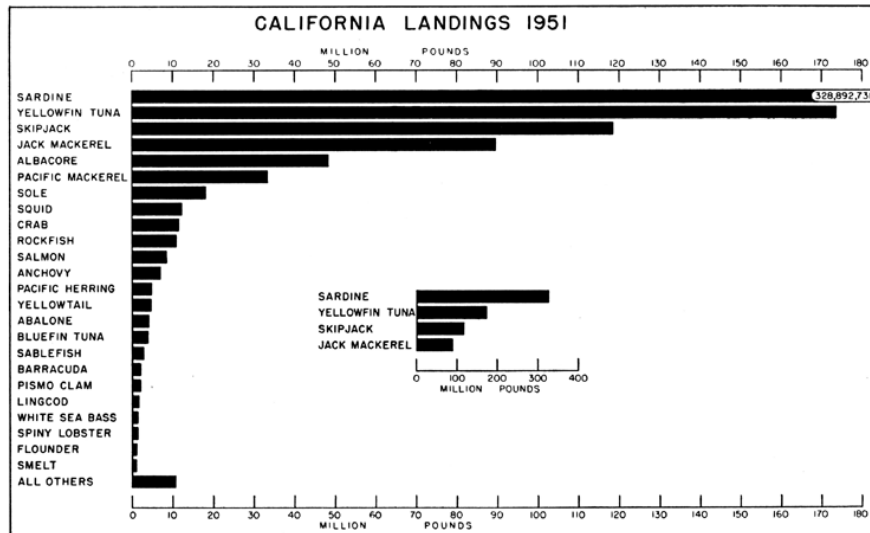


FIGURE 3. The relative landings in 1951 of the more important commercial species. Includes shipments with the catch of the California fleet. See Table 8.

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		
Pacific herring	4,917,643		
Yellowtail	4,690,600		
		Total pounds	904,088,178

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

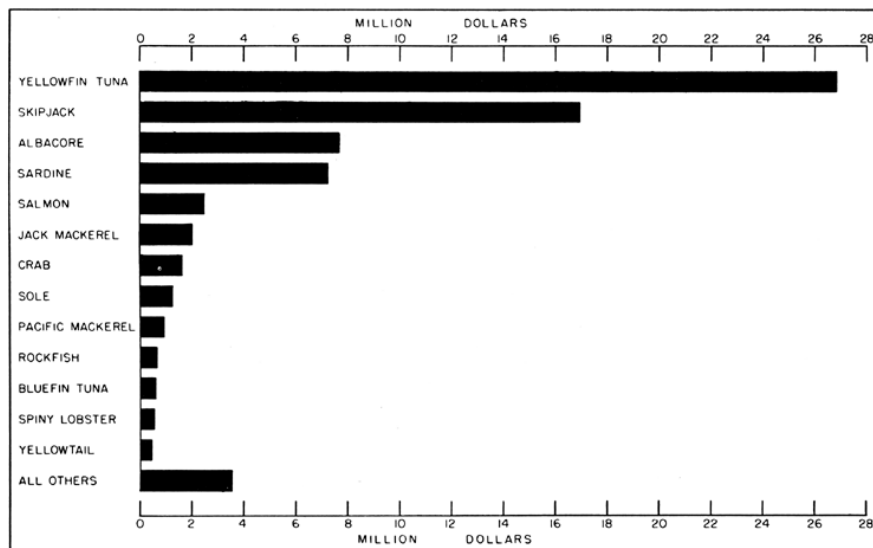


FIGURE 4. Shows the relative value in 1951 of the more important commercial species. This chart is based on the figures in Table 9, which are derived from the comparable figures in Table 8.

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		
Sole.....	1,254,433	Total value.....	\$72,820,815

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
Other registry.....	-----	-----	-----	1	-----	2	3
Total number of boats.....	870	3,057	1,321	310	113	166	5,837

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
	Sacramento region	San Francisco 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 ¹				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, mebaichi.....	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		6,954,852
Barracuda.....	669,825		1,436,913	2,106,736	28,207	2,134,943
Bonito.....	54,047		722,756	776,803	6,858	783,661
Cabernon.....	23,857			23,857		23,857
Cabrilla.....			391,770	391,770		391,770
Carp.....	932,319			932,319		932,319
Catfish.....	238,126			238,126	10,002	248,128
Corbina, Menhaden.....					3,965	3,965
Flounder.....	1,118,279	10,548		1,128,827		1,128,827
Flying fish.....	53,451			53,451		53,451
Grouper.....			583,740	583,740		583,740
Hake.....	24,972			24,972		24,972
Halibut, California.....	643,279		222,654	865,933	1,017	866,950
Halibut, Pacific.....	86,749			86,749	508,892	595,641
Herring, Pacific.....	4,917,643			4,917,643		4,917,643
Kingfish.....	681,959		246	682,196		682,196
Lingcod.....	1,637,546	14,568		1,652,114	75,229	1,727,343
Mackerel, jack.....	89,838,095			89,838,095		89,838,095
Mackerel, Pacific.....	33,518,435			33,518,435		33,518,435
Mullet.....	107,833			107,833		107,833
Perch.....	233,748		6,423	240,171		240,171
Pike.....	876			876		876
Pompano, California.....	64,224			64,224		64,224
Rock bass.....	81,098		207,474	288,572		288,572
Rockfish.....	10,928,309	51,148	12,955	10,992,412	1,505	10,993,917
Sablefish.....	2,535,813	49,123	137	2,585,073	302,415	2,887,488
Salmon.....	7,086,603	107,098		7,193,701	1,408,464	8,602,165
Sand dab.....	542,921	900		543,821		543,821
Sardine.....	328,892,130		601	328,892,731		328,892,731
Sculpin.....	101,087		359	101,447		101,447
Sea bass, black.....	8,990		268,894	277,884	4,035	281,919
Sea bass, white.....	955,145		577,884	1,533,029	13,526	1,546,555
Sitout, greenling.....	383			383		383
Shad.....	606,191			606,191		606,191
Shark.....	796,823		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

Sheepshead.....	57,209	4,201	61,410	61,410
Sierra.....	84,634	19,608	19,608	19,608
Slate.....	1,095,504	84,634	84,634	84,634
Sinelt.....	17,403,137	1,095,504	1,095,504	1,095,504
Sole.....	669	821,759	18,224,896	1,627
Splittail.....	197,397	669	669	669
Swordfish, broadbill.....	2,018	30,637	228,034	228,034
Tomcod.....	13,284,606	17,621,586	2,018	2,018
Tuna, albacore.....	827,185	7,240	30,915,342	17,520,891
Tuna, black skipjack.....	560	3,025,209	7,240	7,240
Tuna, bluefin.....	107,314	115,886,258	3,862,394	2,112
Tuna, melachini.....	560	160,246,175	30,000	30,000
Tuna, skipjack.....	107,314	115,886,258	115,886,848	118,657,672
Tuna, yellowfin.....	107,314	2,769	160,246,175	13,422,415
Walrus.....	162,054	1,505	110,083	110,083
Whitefish.....	12,903	5,295	162,054	162,054
Whitefish, ocean.....	14,444	4,655,282	18,198	18,198
Yellowtail.....	166,972	4,186	4,669,726	20,874
Miscellaneous fish.....			162,923	162,923
Crustacean:				
Crab.....	11,566,901	1,452	11,568,333	11,568,333
Crab, rock.....	22,592		22,592	22,592
Labster, spiny.....	824,611	645,356	1,470,167	1,470,167
Prawn.....	2,694		2,694	2,694
Shrimp.....	931,323		931,323	931,323
Mollusk:				
Abalone.....	4,084,115		4,084,115	4,084,115
Clam.....	38,153		38,153	38,333
Clam, geep.....	3,412		3,412	3,412
Clam, jackknife.....	29,648		29,648	29,648
Clam, Japanese ¹				22,250
Clam, Pismo.....				2,054,924
Clam, Washington.....	3,295		5,295	5,295
Mussel.....	196		196	2,167
Octopus.....	29,200		29,200	29,200
Oyster, eastern.....	178,716		178,716	178,716
Oyster, native.....	17,603		17,603	17,603
Oyster, Pacific.....	133,700		133,700	133,700
Squid.....	12,382,158	711	12,382,869	12,382,869
Total pounds.....	558,021,850	1,070,280	306,631,387	865,723,017
				38,365,161
				901,088,178

¹ For origin of shipments refer to Table 14.
² Cleaned 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
Fishing boat landings:													
Anchovy.....	34,915	518,655	195,904	335,957	266,943	271,833	699,470	394,223	2,624,450	681,483	1,095,164	195,845	6,954,552
Barracuda.....	94,251	231,700	516,476	136,953	164,958	318,427	197,615	91,832	32,206	219,789	196,408	139,491	2,106,736
Bonito.....	1,125	2,241	7,252	132	243	19,055	14,390	104,260	207,904	368,781	14,928	36,512	776,503
Cabezone.....	1,351	1,602	2,620	1,731	359	1,614	496	3,382	3,196	669	2,127	4,169	25,857
Calappa.....	32,918	72,907	55,187	36,231	9,275	62,492	7,646	4,633	18,718	39,611	21,983	31,729	391,770
Carp.....	52,065	89,476	146,141	85,459	70,255	67,678	105,726	61,787	88,140	55,146	61,879	48,567	932,319
Clupea.....	20,674	6,766	11,690	29,588	482	.....	.....	.....	40,998	41,200	45,439	49,298	238,126
Flounder.....	78,599	162,192	119,537	66,942	27,652	11,216	4,372	184,492	177,433	167,572	118,561	38,286	1,128,827
Flying fish.....	.....	.....	.....	.....	629	4,724	11,717	7,480	26,432	2,499	.....	.....	53,451
Groupers.....	39,283	71,376	96,921	54,700	15,773	41,492	18,189	101,584	32,159	44,145	57,111	135,192	583,740
Hake.....	.....	.....	.....	.....	735	6,665	300	9,975	5,012	2,285	.....	.....	24,572
Hallibut, California.....	56,684	83,466	110,588	100,302	51,962	66,785	124,800	79,670	69,832	50,882	44,708	27,734	865,933
Hallibut, Pacific.....	9,563	2,740	1,551	1,896	21,432	18,499	6,659	4,543	3,037	5,157	6,074	5,035	86,749
Herring, Pacific.....	1,655,010	2,007,116	18,963	75,155	90,775	850,830	155,950	20,510	107	.....	7,735	34,592	4,917,643
Kingfish.....	49,685	62,708	82,820	53,573	69,094	54,874	34,619	48,225	33,490	42,607	138,269	20,632	682,196
Langost.....	29,159	36,864	74,533	134,987	145,166	225,572	278,737	227,869	348,339	131,960	83,565	65,292	1,672,114
Mackerel, jack.....	9,623,717	4,522,040	6,218,655	10,594,092	8,672,704	8,396,719	6,844,808	9,155,402	9,365,399	8,691,894	5,842,991	1,907,674	89,838,965
Mackerel, Pacific.....	648,294	202,478	189,896	1,144,226	210,648	349,045	2,127,912	6,696,136	2,793,980	15,210,767	3,638,792	336,354	33,618,433
Mullet.....	31,863	29,137	.....	.....	.....	.....	.....	.....	.....	2,426	27,497	16,900	107,833
Perch.....	14,241	21,360	46,488	67,881	1,625	984	17,339	19,691	16,617	7,708	11,321	14,913	240,171
Pike.....	22	10	96	17	.....	.....	.....	.....	.....	.....	.....	.....	11
Pompano, California.....	6,872	798	14,419	11,648	769	24,490	714	2,856	6,381	10,121	6,848	1,871	64,224
Rock bass.....	30,675	24,419	21,699	7,784	23,993	42,220	26,122	12,707	12,206	11,076	60,889	13,902	288,572
Rockfish.....	782,663	765,292	654,747	897,319	954,041	968,911	1,117,748	1,650,882	1,271,703	604,162	722,982	574,451	10,992,662
Sablefish.....	90,445	154,716	195,354	392,111	263,770	330,547	284,223	230,905	337,319	215,762	121,392	58,559	2,585,073
Salmon.....	10,949	25,704	17,641	25,973	1,140,170	1,459,081	1,884,782	1,126,253	1,501,834	.....	44	279	7,192,701
Sand dab.....	28,623	30,966	66,538	57,103	41,761	39,923	65,761	67,666	64,481	49,992	25,963	16,514	543,821
Sardine.....	71,624,638	2,639,640	177,453	265,885	455,571	570,666	539,486	15,839,433	5,571,344	174,081,217	38,974,974	18,141,421	328,992,731
Sculpin.....	5,199	7,153	10,261	16,273	11,103	17,997	12,909	9,958	2,349	4,962	4,588	1,213	101,437
Sea bass, black.....	29,163	13,579	19,482	10,939	7,447	15,457	8,812	23,636	14,798	75,790	51,992	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	1,333,029
Sea trout, greenling.....	13	115	65	24	12	324	30	583
Shad.....	115	108,369	494,266	3,181	696,991

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TABLE 16
Monthly Landings and Shipments Into California During 1951

Shark.....	14,773	17,693	281,299	28,150	76,534	119,421	39,674	37,508	37,656	92,983	47,823	48,810	842,324
Sheepshead.....	7,247	6,993	1,712	820	926	1,174	2,631	919	2,226	7,200	14,927	14,335	61,410
Sierra.....	441			755					410	7	17,443	552	19,608
State.....	10,253	10,890	11,071	10,737	7,830	1,962	1,121	4,243	6,786	5,472	8,764	8,554	84,634
Snelt.....	41,749	57,436	70,005	87,867	54,966	127,888	103,824	174,112	146,383	88,894	82,143	60,237	1,065,504
Sole.....	718,621	597,216	940,972	1,287,888	1,263,177	2,321,632	2,190,114	2,322,417	2,128,072	2,223,354	1,434,330	797,106	18,224,666
Splittail.....	217	182	239									60	669
Swordfish, broadbill.....	900					4,790	55,198	104,280	47,478	13,243	2,145		228,034
Tomcod.....	600								232	224	132	54	2,018
Tuna, albacore.....	3,666		169	318	200	157,917	7,488,951	14,317,692	4,450,982	3,813,082	648,259	35,503	30,915,342
Tuna, black skipjack.....								7,240					7,240
Tuna, bluefin.....	251,398	60,125	700			789,231	1,256,928	1,374,574	80,700	25,832	13,039	3,862,394	
Tuna, skipjack.....	16,618,854	11,890,208	6,814,714	4,088,142	12,303,791	20,253,065	13,013,414	11,992,756	7,815,155	5,121,905	4,116,941	2,158,203	115,860,848
Tuna, yellowfin.....	12,511,007	9,594,669	9,063,242	3,518,271	12,973,297	23,071,788	19,723,282	19,560,546	21,205,577	10,444,917	13,389,578	5,130,001	160,246,175
Turbot.....	7,521	9,477	21,291	19,759	13,645	5,162	3,645	11,141	8,163	6,528	4,106	1,645	110,983
Wahoo.....	1,505												1,505
Whitebait.....	4,688	25,247	12,536	28,631	28,857	32,514	17,000	10,616	1,668	100	67		162,054
Whitefish, coon.....	2,546	4,570	2,546	473	448	303	190	470	678	1,734	3,992	278	18,108
Yellowtail.....	63,570	40,661	196,048	312,666	354,944	1,144,477	1,187,561	667,878	208,869	241,641	99,238	162,173	4,666,726
Miscellaneous fish.....	4,183	6,838	18,094	16,259	21,755	12,645	18,818	15,411	12,141	21,616	10,126	7,037	162,923
Crustacean:													
Crab.....	2,124,745	1,717,696	1,175,639	1,004,706	778,481	282,548	302,482			297	1,615,075	1,696,454	11,868,383
Crab, rock.....	698	907	571	2,392	590	830	2,130	3,110	1,610	3,507	4,269	2,070	22,592
Lobster, spiny.....	392,224	83,822	51,765							278,281	516,838	147,337	1,470,167
Prawn.....	438	613	245	833	7	30				121	210	197	2,694
Shrimp.....	27,556	26,914	26,828	56,953	48,098	68,535	127,172	174,468	173,446	114,826	57,633	28,894	591,223
Mollusk:													
Abalone.....	175,741		263,503	525,830	329,321	445,889	293,533	353,662	433,364	379,075	401,332	482,865	4,084,115
Clam.....	1,487	1,440	2,464	3,135	4,555	5,979	6,502	5,122	3,416	1,987	1,494	633	38,183
Clam, gaper.....	620	490	520	780	920	100	100	80				12	3,412
Clam, jackknife.....	1,266	809	1,401	2,462	3,512	4,482	3,694	3,992	4,217	2,367	929	577	29,648
Clam, Washington.....	312	1,118	1,228	2,377	40							196	5,505
Mussel.....	60	119	26										196
Octopus.....	3,007	2,910	4,400	5,471	2,821	1,082	2,863	1,110	313	1,542	2,279	1,702	26,300
Oyster, eastern.....	17,243	18,826	17,089	15,328	13,311	11,401	10,856	13,827	5,900	18,051	16,591	20,593	178,716
Oyster, native.....				418	2,222	3,070	4,916	2,425	240	152			17,003
Oyster, Pacific.....	12,923	16,173	15,337	15,780	9,403	10,228	8,028	9,118	3,500	12,275	10,578	10,357	133,700
Squid.....	40		3,120	82,239	7,814,316	2,455,385	857,566	574,765	137,410	820	106,434	330,764	12,382,869
Total pounds.....	118,084,705	35,986,639	28,253,014	26,690,352	49,416,572	64,926,262	61,512,618	86,243,338	63,049,991	224,400,015	74,042,646	33,016,965	865,723,017

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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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
Calfish				1,900					1,938	2,802	2,592		10,932
Carlinus, Mexican		2,005											3,905
Hallibut, California		268			133	309	239						1,017
Hallibut, Pacific	45,399	55,559	8,142	6,553	56,494	105,510	87,919	28,159	18,934	54,188			508,992
Langcod		20,000				10,672	3,401	27,466	2,400	11,290			75,229
Rockfish								1,335		179			1,515
Sablefish	97,200	12,375	9,200	2,948	3,218	9,410	31,280	15,310	50,938	116,648	14,400		392,415
Salmon	92,899	138,587	97,055	67,441	186,362	241,810	68,739	157,754	99,987	96,229	55,823	106,669	1,908,464
Sea bass, black	50	210		1,896	1,007	872							4,035
Sea bass, white	2,944	670		1,922	16	784	6,692	619					13,836
Shark								135					135
Sole						27	1,880						1,907
Tuna, albacore	96,756	780,660	665,748	1,033,247	810,939	737,467	4,624,238	5,436,790	1,424,539	158,215	1,149,992		17,820,991
Tuna, bluefin							2,112						2,112
Tuna, mevalchi			30,000										30,000
Tuna, skipjack		2,050	31,620	10,687	12,942	388,096	171,079	990,082	1,455,799	162,653		315,551	2,590,824
Tuna, yellowfin	1,475,433	1,351,217	986,142	3,896,387	3,400,145	89,159	749,128	166,427	1,80,119	169,892	519,079		13,422,415
Yellowtail						20,874							20,874
Miscellaneous fish	30,040	55,008				35		5,375	48,302	160		23,707	162,627
Mollusk:													
Clam ²						200							200
Clam, Japanese ²							22,250						22,250
Clam, Pismo								171,424	390,988	84,066	395,572	271,782	2,094,624
Mussel						2,167							2,167
Total pounds	1,743,625	2,444,114	1,831,082	5,901,923	4,896,002	1,998,627	5,724,548	6,394,158	3,595,077	890,397	2,238,585	1,346,023	38,965,161
Grand total fishing boat landings and shipments	119,828,320	38,430,753	30,084,096	32,562,175	54,312,574	66,534,889	67,237,166	92,997,496	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.

TABLE 16
Monthly Landings and Shipments Into California During 1951

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
Fishing boat landings from California waters:													
Carp.....				6,600	25,490	16,000	11,560						65,160
Flounder.....	14,702	33,289	30,968		30,302	2,401	3,997	18,153	121,645	88,979	60,037	68,777	27,669
Hallbut, Pacific.....				132	17,568	9,444	614	107	216	38			25,119
Herring, Pacific.....	40,524	1,328						1,025					10,113
Langcod.....	7,771	16,917	30,114	51,640	38,875	152,489	192,718	139,055	173,756	70,410	39,535		923,015
Mackerel, jack.....										190			190
Perch.....	44	2,246	11,213	15,852	30		4,915	6,195	4,528	751	82		45,944
Rockfish.....	175,635	276,119	255,152	186,767	283,398	510,723	791,300	596,203	714,000	370,450	209,232		4,822,450
Salmon.....	25,562	37,005	45,800	95,785	54,870	113,935	171,693	134,410	240,027	144,616	85,489		1,171,195
Sand dab.....	6,204	12,925	12,566	7,776	217,394	598,003	626,675	315,725	194,570				1,885,267
Shark.....		84			6,342	13,480	17,952	16,443	16,232	9,304	1,477	1,645	121,172
Skate.....			121	62			70			500	394		1,773
Smelt.....				706	2,837	25,091	62,468	109,353	52,666	7,692			183
Sole.....	130,654	259,339	365,612	439,440	531,535	1,772,903	1,537,603	1,570,010	1,521,310	1,670,668	1,085,808	543,217	11,425,379
Tomcod.....	600												600
Tuna, albacore.....							983	4,731	1,207,626	838,151			2,051,494
Turbot.....	140	498	2,607	895			60	365	1,342	270	86		6,647
Whitebait.....	2,358	18,417	11,312	21,607	17,088	24,865	11,459	4,061	90				111,307
Miscellaneous fish.....	726	505	1,367	3,800	1,777	2,432	8,553	8,661	5,387	2,368	691		37,817
Crustacean:													
Crab.....	1,551,029	1,476,375	1,080,932	1,768,789	608,775	214,484	71,568						923,901
Mollusk:													
Clam, Washington.....	312	1,138	1,228	2,377	45								195
Ostrop.....	668	920	595	103					62	35	70		116
Total pounds.....	1,967,376	2,137,615	1,847,517	2,638,993	1,925,345	3,348,386	3,630,683	3,041,035	4,220,883	3,184,478	1,488,574	1,712,613	31,032,195

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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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		10,548
Langcod.....	667	1,724	2,106	1,189	1,803	3,993	655	1,225	1,254	411	41		14,668
Rockfish.....	13,858	2,794	945	1,979	1,937	10,983	929	8,582	8,456	1,354	538		51,148
Sablefish.....		12	6,744	5,442	1,437	2,218	2,339	5,749	22,129	2,100	762		49,123
Salmon.....							86,929	10,636					107,565
Sand lab.....		411	195	6							228		900
Sole.....	19,179	31,528	134,373	122,350	65,728	117,118	24,765	94,178	143,216	57,046	12,269		821,759
Turbot.....		1,289	1,459										2,748
Miscellaneous fish.....			775	985									1,760
Crustacean:													
Crab.....		102	727	623									1,452
Total pounds.....	36,554	38,485	148,165	131,664	69,515	221,221	39,515	125,958	175,178	61,265	13,910		1,061,130
Grand total, Eureka region.....	1,067,376	2,174,169	1,886,002	2,787,158	2,057,006	3,417,901	3,751,904	3,080,548	4,346,541	3,359,656	1,549,859	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:													
Carp.....	52,065	89,179	145,911	78,859	42,124	51,078	86,464	48,665	64,650	52,248	51,079	41,117	821,794
Catfish.....	20,674	6,796	11,990	29,988	482				40,968	41,290	45,430	40,568	238,126
Flounder.....		795											795
Flk.....	22	10	96		17								155
Salmon.....	10,949	35,701	17,641	25,973	39,895	2,055		91,125	1,129,615		64	279	1,343,171
Shad.....				108,599	494,296	3,181							606,076
Smelt.....						915	635						1,550
Splittail.....	217	153	239										609
Tuna, albacore.....									3,257	21,625	3,165		28,027
Total pounds.....	83,918	122,904	175,877	243,419	576,814	57,229	87,399	139,790	1,258,400	115,831	99,718	82,335	3,043,634
Shipments ¹ :													
Catfish.....									1,938	2,802	2,562	1,910	9,242
Total pounds.....									1,938	2,802	2,562	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.

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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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
Fishing boat landings from California waters:													
Anchovy			1,855	30,139	16,412	24,343	15,699	19,125	58,432	79,384	38,520		291,100
Cabonnet		249	241	199				298	100	90	158		1,293
Carp							702	2,782	400				3,884
Flounder	59,137	63,842	85,423	26,353	24,443	6,198	23,051	61,538	89,063	98,099	48,838	16,513	590,399
Hake				735	6,665	309	9,975	5,012	2,285				24,972
Halibut, California	1,962	394	183	209	439	1,005	670	537	314	569	675	599	6,515
Halibut, Pacific	9,563	2,749	1,651	1,354	3,365	9,946	6,025	4,856	2,921	5,119	6,074	5,095	58,630
Herring, Pacific	1,615,386	2,004,238	18,963	80	15	1,399	107			7,735	24,479		3,672,383
Kingfish	185	37	567	1,072	1,321	596	725	1,396	1,216	558	249	39	7,893
Lingcod	11,289	15,054	28,989	61,969	82,030	71,790	72,633	66,287	66,266	52,393	27,383	23,757	553,612
Mackerel, jack							67	135					202
Perch	6,563	9,981	12,977	31,899		964	4,902	6,550	4,174	594	1,191	418	78,833
Pompano, California			27	215	82				1,982				1,376
Rockfish	188,084	81,285	196,563	185,870	240,025	109,189	105,645	182,153	265,024	242,016	221,883	206,417	2,294,245
Sablefish	9,296	645	18,156	12,232	38,471	75,194	24,893	37,814	31,108	1,249	2,384		146,225
Salmon				665,566	828,332	948,073	528,163	167,772					3,168,899
Sand dab	18,639	7,019	34,477	33,872	21,058	14,732	23,500	41,676	33,449	26,492	16,694	8,052	279,651
Sardine	411			32				161,699	381	399			163,144
Sea haw, white								417	1,563	26	49		2,467
Sea trout, greenling								324					324
Shark	5,545	6,366	2,846	199	56	482	1,810	2,245	16,444	34,642	6,484	3,483	80,397
Skate	7,755	5,899	7,899	8,300	5,650	699	1,059	4,059	5,119	7,699	5,059	4,695	62,995
Smelt	7,019	32,519	32,328	77,296	36,838	46,827	24,755	32,299	61,626	43,931	7,415	14,298	429,393
Sole	536,393	299,621	382,538	474,492	397,279	334,712	413,254	616,417	425,519	345,657	286,056	216,033	4,994,163
Swordfish, broadbill			169	315	299					539			539
Tomcod								899	1,099,716	1,201,556	221,398		2,653,772
Tuna, albacore									6,821	6,178	4,029	1,465	18,593
Turbot	6,649	8,912	16,219	17,235	13,415	2,399	3,585	10,776	6,821	6,178	4,029	1,465	97,935
Whitebait	1,349	6,331	719	3,643	9,178	7,949	4,787	3,946	494	39	67		38,134
Miscellaneous fish	417	1,293	12,293	6,341	15,199	4,566	4,668	1,369	1,368	3,442	2,511	2,777	56,691

CALIFORNIA DEPARTMENT OF FISH AND GAME

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

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
Fishing boat landings from California waters:													
Anchovy.....	27,475	480,500	.....	7,400	46,080	2,900	307,240	135,500	2,553,270	554,394	855,899	88,859	5,050,067
Calicoset.....	948	1,106	1,767	1,509	875	1,583	372	3,114	3,056	493	1,737	2,318	18,978
Flounder.....	.....	.....	840	2,980	215	805	145	842	858	50	61	44	6,840
Habitat, California.....	6,485	4,259	3,053	2,229	3,983	17,373	15,564	7,057	1,390	369	2,332	417	64,416
Herring, Pacific.....	.....	1,450	.....	75,075	90,775	850,750	155,935	18,185	.....	.....	.....	.....	1,922,270
Kingfish.....	23,715	27,037	22,385	20,097	20,825	16,744	17,837	10,855	15,278	21,533	14,123	10,692	222,441
Lingcod.....	5,809	2,922	11,332	17,202	20,999	19,969	7,967	10,888	5,542	5,943	12,223	8,108	127,106
Mackerel, jack.....	835	17,904	10,997	139,550	14,300	1,300	20,784	88,413	6,717	115,982	123,393	237,095	777,480
Mackerel, Pacific.....	3,510	9,289	705	33,855	1,022	.....	138,637	7,915	60,972	55,892	24,559	943	357,918
Perch.....	1,299	1,696	9,285	13,570	.....	.....	7,735	2,136	369	180	545	93	37,864
Pompano, California.....	6,213	382	10,240	10,283	105	1,790	596	264	655	928	25	56	31,447
Rockfish.....	303,447	268,651	408,782	387,377	396,215	279,899	165,723	225,445	224,395	351,966	237,191	125,202	3,176,243
Sablefish.....	51,658	107,564	122,694	177,285	184,639	193,297	85,271	56,081	53,562	43,399	29,779	20,007	1,053,290
Salmon.....	.....	.....	.....	156,819	121,413	223,181	177,692	113	.....	.....	.....	.....	679,128
Sand dab.....	2,869	6,549	15,512	12,538	11,729	10,540	14,884	8,777	13,390	12,776	6,533	5,694	121,941
Sardine.....	99,751	29,420	31,390	27,398	274,635	23,459	12,255	230,683	109,420	225	394,158	65,315	1,757,670
Sea bass, white.....	.....	7	.....	.....	.....	.....	5,518	.....	32,390	20	764	19	38,688
Sea trout, greenling.....	13	115	65	.....	24	12	.....	.....	30	.....	.....	.....	239
Shad.....	.....	.....	115	.....	.....	.....	.....	.....	.....	.....	.....	.....	115
Shark.....	258	211	435	95	66	1,745	1,478	1,115	1,179	432	981	856	8,871
Skate.....	1,088	4,206	2,599	920	300	222	.....	.....	1,050	425	366	200	11,256
Spot.....	14,069	16,350	21,090	1,944	4,961	46,064	11,824	23,591	17,914	25,010	8,581	6,464	197,372
Sole.....	37,763	44,539	106,790	142,565	107,126	33,293	.....	85,607	62,798	63,729	43,348	31,148	797,507
Swordfish, broadbill.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	192	.....	.....	441
Tuna, albacore.....	.....	.....	.....	.....	.....	.....	7,113	1,230,220	358,204	1,136,274	204,931	.....	2,966,742
Turbot.....	.....	.....	399	.....	.....	.....	.....	.....	.....	.....	.....	.....	399
Whalefish.....	981	979	914	3,291	2,991	.....	784	2,669	1,294	.....	.....	.....	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	.....	.....	.....	1,787	3,583	14,898
Prawn.....	438	613	245	533	7	39	.....	.....	.....	121	210	.....	2,694

CALIFORNIA DEPARTMENT OF FISH AND GAME

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	80	100								12	3,412	
Mussel.....	60	110	20															196	
Octopus.....	904	1,104	1,792	1,816	571	474	1,292	251	99	1,255	1,918	1,234	12,710						
Squid.....	50		1,220	81,904	7,498,411	2,082,180	882,100	590,895	137,330	820	96,694	330,764	11,632,468						
Total pounds.....	593,004	1,024,578	805,297	1,185,266	8,688,630	3,697,686	2,139,020	3,366,153	2,671,912	2,278,990	1,970,416	947,644	30,368,596						
Fishing boat landings from waters south of the international boundary:																			
Bonito.....									7,519				7,519						
Tuna, bluefin.....									67,995				67,995						
Tuna, skipjack.....									89,658				89,658						
Tuna, yellowfin.....									18,846				18,846						
Total pounds.....									183,120				183,120						
Shipments: ¹																			
Bonito.....				4,186	478								4,664						
Tuna, skipjack.....				10,687						1,000			315,551						327,238
Tuna, yellowfin.....				96,941	375,345	5,719				169,892			560,287						1,208,184
Total pounds.....				111,814	375,823	5,719				170,892			875,838						1,540,086
Grand totals Monterey region.....	593,004	1,024,578	805,297	1,297,080	9,064,453	3,703,405	2,139,020	3,366,153	2,855,032	2,449,882	1,970,416	1,823,482	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.....				13,000	42,000	139,254	5,215	2,100					201,569
Barracuda.....		466	44,987	674						48,439			44,574
Bonito.....									2,942			3,412	6,354
Cabezon.....	383	245	612	32	84	61	124			37	185		1,851
Flounder.....		1,509	2,151	139	139	162	12			200	255		4,518
Hallbut, California.....	20,267	19,235	19,052	18,708	15,505	7,873	11,948	9,735	15,309	20,317	34,729	22,080	214,458
Kingfish.....	565	878	162	852	130	133		1,000	33	149	145	57	4,094
Lingcod.....	1,433	858	2,209	1,711	1,297	1,021	1,423	824	1,463	1,618	2,714	4,533	21,124
Mackereel, jack.....	773,299	97,000	248,000	215,000	9	1,030,645	1,154,625	34,489	77,073	841,628	723,022	13,264	5,207,355
Mackereel, Pacific.....	83,989			250		5,720	31,160	1,375		489,287	117,875	47,000	776,677
Perch.....	387	232	671	1,373			20	200	709	2,027	1,567		9,338
Pompano, California.....										6,656			6,656
Rock bass.....	7,228	2,857	648	662	1,290	6,213	3,002	4,612	3,304	1,561	1,714		33,799
Rockfish.....	35,008	41,499	48,025	33,251	33,702	13,788	10,983	13,736	9,819	6,467	6,995		298,146
Salbfish.....			325				38						778
Salmon.....					566	1,000	22			331			1,829
Sand dab.....	76	16	253	205	519	110	236	313	554	456	50		2,843
Sardine.....	10,820,001			21,000		137,200	358,000	14,771,725	4,477,200	30,447,482	11,166,359	2,802,626	74,972,833
Southern.....	146	75		62	315					35			115
Sea bass, black.....			204		34	333	84	35	89	364	47		1,191
Sea bass, white.....	8,707	39,652	24,943	19,835	14,575	12,405	28,558	28,745	42,029	99,839	39,294	19,917	311,737
Shark.....	695	3,493	267,183	13,648	29,422	39,092	11,026	4,962	3,372	24,154	6,172	8,376	418,175
Sheepshead.....	4,642	5,440	702	6	518	654	1,702	115		1,681	793	2,233	15,486
Slate.....	290	212		454	333		20			167	1,220	738	3,208
Snout.....	79	35	145	65	780				89				1,214
Sole.....	13,567	13,513	56,059	65,345	103,842	94,308		34,422	18,369	22,519	20,433	9,508	488,426
Swordfish, broadbill.....								509	15,468	10,328	322		30,628
Tuna, albacore.....							8,910	77,983	35,104	12,749	14,977	6,062	155,787
Tuna, bluefin.....								412					412
Turbot.....	492	127	826	49	250	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					297	748	3,996	210,733						
Crab, rock.....		100	40											1,246	1,496	2,382					
Lebster, spiny.....	61,987	49,870	25,820										49,020	76,562	68,413	331,282					
Mollusk:																					
Abalone.....	39,031		90,160	107,539	54,238	137,439	121,450	136,878	216,383	153,430	120,007			162,559	1,342,114						
Octopus.....	114	39	22			113	132				43			20	483						
Oyster, Pacific.....	234	156		85											1,518						
Squid.....				335											335						
Total pounds.....	11,628,135	327,857	852,174	581,776	323,832	1,635,048	1,786,707	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 international boundary:																					
Tuna, albacore.....							402								402						
Total pounds.....							402								402						
Grand totals Santa Barbara region.....	11,628,135	327,857	852,174	581,776	323,832	1,635,048	1,786,109	15,127,378	5,192,526	32,200,158	12,320,989			3,183,427	85,162,409						

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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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:													
Anchovy.....	7,440	38,095	194,009	285,358	162,251	97,141	280,228	147,055	29,320	47,715	100,755	16,995	1,496,492
Barramula.....	25	102	7,094	2,822	29,851	121,994	21,220	10,719	18,998	68,992	16,218	184	308,188
Bonito.....				4	61			9,861	428	91	2,887	6,665	24,833
Carp.....			200		2,731		4,000	10,340	3,990	2,900	10,800		40,511
Fleander.....	8	45	187		4	64	4		194	92	497		978
Flying fish.....				629	4,724	11,717	7,480	26,194	2,469				53,213
Hallbut, California.....	23,291	43,062	70,072	51,006	27,089	18,902	19,647	8,875	2,794	5,826	728	417	271,339
Kingfish.....	90,788	32,224	42,223	28,599	37,287	86,794	19,299	28,822	12,085	17,225	122,241		9,709
Langcod.....	157	60	161	59	53		73	160		132	1,267		2,190
Mackerel, jack.....	8,851,873	4,407,126	5,559,558	10,229,542	8,658,395	7,264,774	5,669,222	9,622,274	9,281,505	7,707,794	4,981,576	1,656,803	83,910,564
Mackerel, Pacific.....	660,292	101,429	189,101	1,088,700	201,480	316,041	1,959,014	6,656,028	2,718,233	14,929,125	3,461,678	226,828	32,000,419
Mullet.....										3,426			3,426
Perch.....	5,717	7,265	12,241	5,377	1,695	20	186	2,960	6,866	3,225	5,519	10,648	61,749
Pike.....										720			720
Pompano, California.....	669	416	4,132	1,159	903	350	208	2,291	2,611	2,537	6,820	1,815	23,712
Rock bass.....	859	526	2,440	5,359	7,258	9,463	8,921	2,641	1,765	1,900	788	827	29,217
Rockfish.....	71,224	81,128	74,144	91,885	86,056	51,174	32,627	32,247	45,617	50,935	40,032	67,916	728,155
Sablefish.....	3,989	8,962	11,487	10,092	10,048	3,645	233	300	3,873	4,378	1,619	793	20,419
Salmon.....						451							451
Sand dab.....	1,247	3,287	3,419	2,497	2,116	1,061	379	441		564	679		18,026
Sardine.....	58,678,289	2,314,448	126,983	216,555	176,805	380,315	187,289	189,833	704,188	142,713,631	20,644,035	14,399,274	246,829,919
Seeltin.....	4,266	4,907		10,174	10,245	17,809	11,433	8,708	2,210	3,320	4,029		58,676
Sea bass, black.....	20	40			323	585	1,017	895	1,218	355	576		6,079
Sea bass, white.....	1,564	19,889	14,888	22,992	55,499	116,272	60,196	31,276	45,840	35,081	61,297	18,488	483,226
Sheepshead.....	1,389	863	738	797	370	220	894	793	1,186	945	2,629	1,448	12,263
Skate.....	1,112	492	548	374	1,226	1,060	51	150	719	717	70	240	7,012
Smelt.....	18,282	6,651	13,820	7,213	9,560	8,926	4,342	7,813	11,310	11,741	66,147	38,120	262,365
Sole.....	57	21	445	1,170	1,045	1,288	2,099	105	26	15	4	15	6,251
Swordfish, broadbill.....						4,790	42,715	56,470	30,660	10,988	725		145,448
Tuna, albacore.....	151					13,871	1,166,526	1,829,967	388,070	126,280	135,556	29,531	3,719,952
Tuna, bluefin.....							360,000		375,616	8,963	24,883	25,799	794,912

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

Tuna, skipjack.....										109	186	70					385
Whitefish, ocean.....	1,873	324		168	248	41	60	130	399	302	1,180	156					4,881
Yellowtail.....	12	4,475		3,595	2,809	810	446	632	1,929	49	75						4,045
Miscellaneous fish.....	2,303		3,684			4,528	4,648	2,854		3,734	8,381	3,057					46,537
Crustacean:																	
Crab, rock.....	443	553	415	2,392	560	830	2,130	2,110	1,610		912	1,049	40				13,044
Lobster, spiny.....	31,971	26,579	19,082								99,485	119,610	61,376				391,003
Mollusk:																	
Albacore.....	108,983		153,820	364,542	254,147	264,112	155,430	194,035	200,499	212,464	232,820	265,599	2,427,261				
Octopus.....	61	59	69	46	130	24					33	82					504
Squid.....			1,800		345,905	373,205	4,755	13,870	80		9,740						749,555
Total pounds.....	68,300,385	7,108,138	6,929,101	12,450,989	10,116,799	9,249,795	10,031,978	18,685,043	13,338,110	165,710,896	36,092,645	16,823,140	375,055,819				
Fishing boat landings from waters north of the state boundary:										9,150							9,150
Tuna, albacore:																	
Total pounds.....										9,150							9,150
Fishing boat landings from waters south of the international boundary:																	
Barramundi.....	55,829	137,231	171,762	95,725	28,470	31,788	124,822	75,211	24,282	71,939	136,399	114,404	1,087,892				
Bonito.....		1,094	1,294	126		14,689	4,123	191,311	151,475	308,119	7,548	6,539	594,585				
Calappa.....	30,258	66,793	51,749	33,613	5,331	41,859	6,470	4,653	18,718	35,261	17,377	26,622	338,707				
Groupers.....	33,223	61,613	61,146	32,425	13,387	19,742	17,857	10,158	32,180	34,138	56,389	130,326	822,854				
Hilfish, California.....						146	592	1,633	19,474	19,812	27		32,704				
Perch.....	240						511	655		1,021	2,024	1,572	6,423				
Rock bass.....	22,452	21,213	15,205	942	14,498	24,114	14,331	4,691	6,295	6,865	58,292	8,973	197,751				
Rockfish.....													832				
Sardines.....						691							691				
Sea bass, black.....	19,791	12,785	8,816	9,642	1,272	4,071	3,192	3,154	11,751	25,646	23,025	17,914	146,573				
Sea bass, white.....		176	753	535	2,174	12,431	27,863	48,069	125,094	109,265	23,040	8,853	358,546				
Shark.....		210		91		92	540	931	3,680	7,475	2,025	1,833	18,881				
Sheepshead.....	233			17					830	172	299	559	2,065				
Sierra.....	241			755						7	17,443	552	18,998				
Sweetfish, broadbill.....	900						1,718	4,989			100		8,807				
Tuna, albacore.....						3,375	821,803	2,148,764	342,369	69,328			3,375,239				
Tuna, black skipjack.....						7,240							7,240				

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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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		700			400,807	827,831	1,958,399			1,134	2,699,004
Tuna, skipjack.....	6,137,167	4,155,727	3,308,647	3,421,696	6,874,079	9,429,509	5,382,921	5,473,184	4,435,015	1,732,776	1,412,992	1,829,529	53,563,542
Tuna, yellowfin.....	3,691,457	3,478,311	4,454,424	3,245,127	6,515,719	9,331,868	9,632,440	10,372,081	9,525,543	1,898,209	6,247,174	4,968,947	73,691,657
Whitetail, ocean.....			49			170			290				509
Yellowtail.....	13,272	7,324	101,106	277,720	281,673	988,233	1,081,732	661,958		174,274	63,526	71,281	3,832,292
Miscellaneous fish.....				60			150			600	413	1,983	3,083
Total pounds.....	10,166,681	8,032,492	8,174,941	7,139,179	13,736,473	19,907,919	17,541,572	19,738,623	16,331,087	4,392,339	8,082,383	7,239,886	140,444,595
Shipments:													
Hallibut, Pacific.....	26,494	55,939	3,742	470	50,494	105,519	87,919	28,139	18,034	54,188			42,665
Lingcod.....		20,000				19,972			16,121	2,400			49,193
Sablefish.....	37,200	12,375	9,200	246	3,218	9,410			10,000			14,400	96,049
Salmón.....	91,272	136,468	97,055	64,191	185,954	241,819	68,739	137,754	94,473	90,543	50,823	106,569	1,385,550
Sole.....					27	1,690							1,627
Tuna, albacore.....	96,756	780,660	695,748	1,633,247	750,097	737,467	3,090,655	3,754,590	425,350				11,938,870
Tuna, skipjack.....		2,650			12,943	205,983	125,737	290,982	1,290,132	161,883			2,087,699
Tuna, yellowfin.....	1,410,297	1,258,412	865,321	3,693,386	1,148,949		448,518	166,427	140,119				9,535,400
Yellowtail.....						4,445							4,445
Miscellaneous fish.....	30,005	55,008				35		5,295	28,702				142,693
Mollusk:													
Clam.....						200							200
Clam, Pismo.....						7,092		171,424	360,988	84,096	393,372	271,732	1,287,724
Mussel.....						2,167							2,167
Total pounds.....	1,654,734	2,321,938	1,644,241	5,312,394	2,148,674	1,316,335	3,833,598	4,499,832	2,439,298	390,780	962,974	459,104	26,983,002
Grand totals, Los Angeles region.....	80,121,800	17,461,668	16,748,283	24,902,562	26,001,946	30,494,049	31,496,248	42,932,648	32,398,495	170,463,735	45,138,002	21,513,130	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
Fishing boat landings from California waters:													
Anchovy.....	510			25,101	104,908	8,165	1,127		3,402	1,465	899	48	12,724
Barracuda.....					182	864			5	168			2,843
Bonito.....													1,183
Flying fish.....													238
Hallibut, California.....	4,879	8,436	16,017	27,820	5,305	3,612	2,586	1,683	541	5,144	5,612	3,946	86,581
Kingfish.....	2,422	2,352	7,303	3,007	1,031	697	2,808	6,462	3,658	3,022	1,420	234	35,096
Lingcod.....		116	13					50	287				499
Mackerel, jack.....	493	91,760		291	7,543	27,284	3,101	318	14,775	136,553	34,980	61,853	381,791
Mackerel, Pacific.....	31,863	29,137									27,407	16,000	104,407
Mullet.....									1,033				1,033
Pompano, California.....										635	75	817	3,112
Rock bass.....	82		72	635	1,733	1,398	1,957	221	806				817
Rockfish.....	5,329	5,478	2,307	1,232	2,671	2,200	468	69	2,763	3,872	3,742	1,999	33,070
Salmon.....									327				327
Sardine.....	2,425,865	295,772			1,131		2,341	4,120	188	10,065	919,279	896,222	907,189
Sardine.....	668	2,271	4,925	6,657	643	38	367	130	130	517	928	50	16,774
Sea bass, black.....				174	204	125		693	965	206	140		3,230
Sea bass, white.....	454	4,099	21,968	11,881	10,148	12,022	6,772	9,860	17,373	10,035	10,575	3,800	118,987
Shark.....	6,201	1,445	2,996	7,682	23,822	35,896	9,949	15,494	6,667	8,148	17,246	21,092	150,578
Sheepshead.....	922	660	212					11	118	4,078	11,012		9,287
Skate.....			33	467									500
Smelt.....	2,300	2,460	2,112	703		65		1,165	107	10			1,445
Sole.....	107	104					60	213		37			511
Swordfish, broadbill.....							6,229	6,188	5,882	1,201	1,320		20,820
Tuna, albacore.....	3,380					48,556	80,071	53,534	38,518	104,025	65,418		174,832
Tuna, bluefin.....							22,739	6,235			82		12,805
Tuna, skipjack.....								15	210				225
Yellowtail.....	2,914					162	1,738	4,692	168	77	93	69	10,399
Miscellaneous fish.....	15	205				129	17		5				391

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951
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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							2,595	1,974	534	5,666
Lobster, spiny.....	10,044	7,673	6,883							56,274	38,734	14,648	132,226
Mollusk:													
Abalone.....	27,727		10,823	49,624	20,851	44,338	15,965	21,153	12,482	12,300	27,175	54,797	306,635
Clam.....	1,487	1,440	2,464	3,135	4,555	5,379	6,502	5,122	2,445	1,987	1,404	632	38,153
Clam, jackknife.....	1,266	809	1,401	2,402	3,512	4,482	3,694	3,992	4,217	2,367	929	577	29,648
Total pounds.....	2,529,101	454,711	88,455	140,291	188,114	291,536	929,972	619,078	196,601	1,369,125	1,121,097	1,112,637	9,040,751
Fishing boat landings from waters south of the international boundary:													
Barracuda.....	37,857	73,919	92,736	12,169	1,729	81,460	10,382	5,710	8,373	12,737	6,629	15,739	349,021
Bonito.....	1,125	257	5,968			3,491		1,886	45,869	69,616	915		120,852
Cabrilla.....	1,660	5,214	3,738	2,918	4,041	20,543	1,176			4,350	4,606	5,117	53,063
Groupers.....		9,762	4,875	2,275	6,356	14,990	332			10,097	722		54,186
Hallbut, California.....		8,169	2,311	269		17,474	72,303	59,439	39,010	8,145	605		189,950
Kingfish.....				6			249						246
Rock bass.....	354	383	3,334	286	345	911	901	692	206	115			2,366
Rockfish.....	3,766	2,264			295				732		4,563	143	11,763
Subfish.....												137	137
Sculpin.....								369					369
Sea bass, black.....	442	744	1,462	753	5,614	15,443	2,519	18,838	742	49,209	22,513	6,045	122,321
Sea bass, white.....		1,066	28,272		1,348	1,797	7,974	76,349	13,239	63,265	20,448	5,799	219,538
Shark.....		145		399	20	4,945	2,478	965	1,879	5,397	19,081	3,307	28,629
Sheepshead.....					38	300	335		92	321	293		817
Sierra.....													2,196
Swordfish, broadbill.....	200							3,576	18,746	410			610
Tuna, albacore.....	135					91,815	4,645,992	8,310,015	939,238	250,091	4,977		14,239,263
Tuna, bluefin.....						5,958	33,369	233,882	26,177				349,110
Tuna, skipjack.....	10,480,287	7,734,481	3,502,655	696,449	5,429,712	10,823,656	8,230,493	5,619,448	3,290,088	3,388,759	2,786,849	388,374	62,168,226
Tuna, yellowfin.....	8,883,170	6,116,368	4,463,200	273,141	6,457,981	13,739,920	10,070,842	9,218,465	11,290,886	8,546,698	7,142,444	181,054	86,333,672

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

Wahoo.....	1,905																			1,905
Whalefish, ocean.....			2,397	305		67	100	440	206		452	497	122							4,788
Yellowtail.....	37,372	33,337	94,912	31,916	73,010	155,701	100,861	5,287	32,507		177,289	27,788	49,920							822,990
Miscellaneous fish.....		300	325			34		51	423											1,133
Crustacean:																				
Lobster, spiny.....	288,322										73,802	283,732								645,556
Mollusk:									711											711
Squid.....									711											711
Total pounds.....	19,735,275	13,986,384	8,206,305	993,517	11,980,119	24,910,337	23,166,130	23,380,939	15,856,578		12,707,947	10,235,062	584,365							163,783,158
Shipments ¹ :																				
Barracuda.....				1,440	375	343		15,162		9,464	1,178	245								28,207
Cortina, Mexican.....		2,055		1,560																3,615
Hullbut, California.....		268		133	309	230														77
Rockfish.....								1,335		170										1,505
Sea bass, black.....	80	210		1,896	1,007	872														4,035
Sea bass, white.....	2,944	670		1,822	15	764		6,692	619											13,529
Shark.....									135											135
Tuna, albacore.....					60,842			603												61,445
Tuna, bluefin.....								2,112												2,112
Tuna, skipjack.....										85,628										85,628
Tuna, yellowfin.....					1,749,820															1,749,820
Yellowtail.....						16,429														16,429
Miscellaneous fish.....	35								80											89
Mollusk:																				
Clam, Pismo.....				355,104	422,066															777,200
Total pounds.....	3,029	3,183		362,222	2,233,988	18,717	9,637	17,331	85,628	9,634	1,178	411								2,754,928
Grand totals, San Diego region.....	22,268,405	14,444,248	8,294,790	1,496,030	14,402,221	25,269,790	24,105,739	24,017,348	16,148,810	14,086,706	11,337,337	1,097,413								177,678,837

¹ See Table 14 for origin of shipments.

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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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	\$99,692
Burrofish.....							7,519	702
Bonito.....					1,265	40	18,978	504
Cabonnoe.....								
Calella.....								
Carp.....	63,160	\$474	824,764	\$39,341	3,884	190		
Catfish.....			228,126	\$6,792				
Flounder.....	528,330	27,843	795	89	589,369	26,402	6,840	451
Flying fish.....								
Grouper.....					8,700	402		
Hake.....					24,972	312		
Halibut, California.....					8,315	1,314	64,416	14,120
Halibut, Pacific.....	28,119	6,332			56,659	14,546		
Herring, Pacific.....	52,990	1,336			3,672,383	29,195	1,192,270	22,773
Kingfish.....					2,808	478	222,441	16,661
Lingcod.....	637,583	89,398			585,612	46,398	127,106	11,783
Macarell, jack.....	190	10			202	10	777,480	28,845
Macarell, Pacific.....							357,918	16,888
Mullet.....								
Perch.....	45,944	6,987			78,833	10,824	37,864	3,017
Pike.....			166	13				
Pompano, California.....					1,376	770	31,447	14,774
Rock bass.....								
Rockfish.....	4,573,598	234,626			2,291,248	108,804	3,174,243	219,902
Sablefish.....	1,220,318	118,249			265,888	18,316	1,038,200	52,833
Salmon.....	2,002,385	620,130	1,345,171	301,677	3,165,400	925,862	679,128	224,388
Sard dabb.....	122,072	7,886			273,651	15,996	121,041	6,245
Sardine.....					165,144	3,815	1,757,070	52,887
Sculpin.....								
Sea bass, black.....					2,407	498	38,688	8,078
Sea bass, white.....					324	16	259	9
Seatrout, greenling.....								

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

Shad.....			606,076	38,363			115	6
Shark.....	1,772	385			80,507	4,259	8,871	402
Sheepshead.....								
Sierra.....	165	5			62,095	663	11,355	329
Smelt.....	290,743	16,453	1,850	277	420,363	29,634	197,572	10,787
Sole.....	12,247,538	808,344			4,084,163	344,285	797,907	60,559
Splittail.....			669	172				
Swordfish, broadbill.....					530	239	541	216
Tomsod.....	620	36			1,418	78		
Tuna, albacore.....	2,051,494	250,001	28,027	6,124	2,552,354	424,643	2,956,742	390,127
Tuna, black skipjack.....								
Tuna, bluefin.....					4,832	665	67,095	10,061
Tuna, skipjack.....					201,098	29,606	18,848	12,884
Tuna, yellowfin.....					97,935	3,616	359	14
Turbot.....	9,416	401						
Wahoo.....	111,307	10,624			38,134	3,497	12,613	1,462
Whitefish.....								
Whitefish, ocean.....								
Yellowtail.....	39,582	1,852			56,091	2,542	8,705	613
Miscellaneous fish.....								
Crustacean:								
Crab.....	7,790,805	1,040,072			3,551,917	546,235	14,898	2,863
Crab, rock.....					1,000	50		
Lobster, spiny.....								
Prawn.....					931,325	63,766	2,694	1,078
Shrimp.....								
Mollusk:								
Abalone.....					8,005	1,152		
Clam.....							3,412	104
Clam, paper.....								
Clam, jackknife.....								
Clam, Washington.....		511						
Mussel.....							195	14
Octopus.....	2,841	140			12,662	886	12,710	1,274
Oyster, eastern.....					178,716	28,460		
Oyster, native.....					17,693	2,804		
Oyster, Pacific.....					132,452	14,388		
Squid.....							11,632,468	318,730
Total pounds and value.....	32,094,326	\$3,144,182	3,043,634	\$496,841	24,537,459	\$2,710,882	30,551,716	\$1,693,621

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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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
Shipments: ¹								
Barracuda.....					2,194	\$214	4,064	\$436
Bonito.....					760	141		
Catfish.....			9,242	\$1,971				
Corbina, Mexican.....								
Hallbut, California.....								
Hallbut, Pacific.....					35,388	4,243		
Lingcod.....					26,036	2,070		
Rockfish.....								
Salbfish.....					205,366	14,219		
Salmon.....					22,904	6,997		
Sea bass, black.....								
Sea bass, white.....								
Shark.....								
Sole.....					5,522,576	884,164		
Tuna, albacore.....								
Tuna, bluefin.....								
Tuna, mabuchi.....					30,000	3,697		
Tuna, skipjack.....					260,358	37,492	327,238	47,024
Tuna, yellowfin.....					929,311	137,584	1,208,184	185,940
Yellowtail.....					19,760	814		
Miscellaneous fish.....								
Mollusk:								
Clam.....					22,350	4,003		
Clam, Pismo.....								
Mussel.....								
Total pounds and value.....			9,242	\$1,971	7,077,903	\$1,097,338	1,540,086	\$233,400
Grand totals.....	32,094,326	\$3,144,182	3,052,876	\$438,812	31,615,362	\$3,808,230	32,091,802	\$1,837,021

¹ See Table 14 for origin of shipments.

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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
Fishing boat landings:								
Anchovy.....	201,569	\$3,346	1,406,402	\$30,940	12,724	\$600	6,554,882	\$143,660
Barramunda.....	94,874	10,309	1,306,030	246,678	618,132	96,732	2,109,736	356,739
Bonito.....	3,254	364	609,435	41,897	123,465	11,102	778,863	74,263
Calappa.....	3,616	173					28,887	717
Calappa.....			338,707	82,262	33,003	7,052	391,770	59,314
Carp.....			40,511	1,215			932,219	41,220
Catfish.....							238,126	50,792
Flounder.....	4,818	255	975	79			1,128,857	55,110
Flying fish.....			53,213	4,193	228	34	53,451	4,217
Grouper.....			522,854	106,820	54,186	10,127	583,740	117,349
Hake.....							34,972	312
Hallibut, California.....	214,458	40,689	394,013	76,277	275,581	57,241	865,053	168,641
Hallibut, Pacific.....							86,749	20,878
Herring, Pacific.....	4,094	189	412,436	23,656	35,342	3,287	4,917,643	53,304
Kingfish.....	21,124	2,217	2,190	340	499	56	1,672,114	144,007
Lingcod.....	5,307,255	92,609	83,810,564	1,894,119	42,394	728	89,638,065	2,016,402
Mackerel, jack.....	776,677	19,028	32,000,049	881,691	383,791	14,661	23,318,653	92,148
Mackerel, Pacific.....			3,426	137	194,407	6,787	107,833	6,924
Mullet.....	9,288	1,468	68,172	13,940			240,171	34,836
Pike.....			720	22			876	55
Pompano, California.....	6,656	1,530	23,712	5,917	1,033	207	64,224	22,298
Rock bass.....	33,749	3,353	236,968	49,213	17,835	2,091	284,572	45,567
Rockfish.....	268,146	23,597	725,987	73,760	43,833	5,957	10,992,052	65,646
Sablefish.....	1,141	57	20,419	10,191	137	14	2,585,073	199,360
Salmon.....	1,859	724	491	162	327	124	7,192,791	1,972,762
Sand dab.....	2,843	218	18,026	3,042	188	28	543,821	36,515
Sardine.....	74,972,853	1,596,934	246,572,620	5,547,883	5,425,044	75,951	338,892,731	7,347,470
Scupin.....	637	54	53,076	15,649	17,154	2,409	101,637	18,412
Sea bass, black.....	1,191	163	151,632	25,099	124,641	20,242	277,484	45,504
Sea bass, white.....	311,757	73,977	841,672	211,976	338,825	71,091	1,553,029	364,620
Seatrou, greenling.....							883	55

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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							698,161	38,371
Shark	413,175	27,476	149,800	18,095	188,198	19,610	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	19,668	2,273
Skate	3,508	164	7,012	366	500	46	84,634	1,862
Smelt	1,214	102	20,365	10,136	10,397	848	1,095,594	68,537
Sole	488,426	39,417	6,281	1,060	541	62	18,221,866	1,284,157
Spittail							669	172
Swordfish, broadbill	30,068	12,065	152,255	68,057	44,650	19,896	228,034	100,473
Tanook							2,018	108
Tuna, albacore	156,189	21,006	7,194,441	1,441,683	15,956,065	2,624,779	30,915,312	4,867,363
Tuna, black skipjack			7,240	1,086			7,240	1,086
Tuna, bluefin	412	62	3,469,916	533,724	390,971	60,170	3,862,284	604,027
Tuna, skipjack			33,363,907	7,556,739	62,198,451	8,981,456	115,886,848	16,551,774
Tuna, yellowfin			73,691,657	11,263,234	86,333,672	13,373,085	160,246,173	21,769,153
Turbot	2,382	160					110,083	4,180
Wahoo					1,565	120	1,565	120
Whitefish							162,054	15,583
Whitefish, ocean	8,022	1,017	5,390	546	4,786	306	18,198	1,869
Yellowtail			3,836,337	365,219	853,289	78,088	4,669,726	443,397
Miscellaneous fish	6,831	495	49,309	11,096	1,324	111	162,923	15,519
Crustaceans:								
Crab	210,733	32,326					11,568,353	1,621,546
Crab, rock	2,882	83	13,044	1,312	5,666	358	22,592	1,803
Loaster spiny	331,382	99,083	361,063	149,563	777,782	313,057	1,470,167	561,793
Prawn							2,664	1,078
Shrimp							931,323	63,796
Mollusk:								
Abalone	1,342,114	158,572	2,427,361	184,236	396,635	20,636	4,084,115	364,596
Clam					33,183	10,330	33,183	10,330
Clam, paper							3,412	194

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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

Clam, jackknife.....					29,618	8,115	29,618	8,115
Clam, Washington.....							5,295	511
Mussel.....							196	14
Octopus.....	483	40	501	99			29,200	2,139
Oyster, eastern.....							178,716	28,460
Oyster, native.....							17,903	2,804
Oyster, Pacific.....	1,248	92					333,700	14,477
Squid.....	335	40	749,355	17,310	711	57	12,382,869	336,137
Total pounds and value.....	85,162,409	\$2,243,358	515,509,564	\$30,754,588	174,823,909	\$35,093,411	865,723,017	\$66,796,883
Shipments ¹								
Barracuda.....					28,207	\$4,567	28,207	\$4,567
Bonito.....							6,838	630
Calfish.....							10,902	2,112
Corbina, Mexican.....					3,965	695	3,965	695
Halibut, California.....					1,017	211	1,017	211
Halibut, Pacific.....			473,504	\$124,626			308,892	128,869
Langcod.....			49,193	7,615			75,229	9,688
Rockfish.....					1,605	205	1,505	203
Sablefish.....			95,049	15,472			302,115	30,991
Salmon.....			1,385,560	496,169			1,088,164	202,866
Sea bass, black.....					4,635	555	4,635	538
Sea bass, white.....					13,620	2,840	13,620	2,840
Shark.....					135	14	135	14
Sole.....			1,627	276			1,627	276
Tuna, albacore.....			11,936,870	1,918,255	61,445	10,108	17,620,801	2,812,527
Tuna, bluefin.....					2,112	325	2,112	325
Tuna, mehak.....							30,666	5,997
Tuna, skipjack.....			2,067,600	291,532	95,628	13,809	2,750,824	389,857
Tuna, yellowfin.....			9,535,400	1,470,339	17,493,820	271,001	13,122,115	2,064,884
Yellowtail.....			4,445	823	16,429	1,530	20,874	1,962
Miscellaneous fish.....			142,663	31,757	201	15	162,627	32,586
Mollusk:								
Clam.....			200	72			22,450	4,075
Clam, Rancho.....			1,267,724	22,020	777,200	5,440	2,064,624	27,490
Mussel.....			2,167	223			2,167	223
Total pounds and value.....			26,983,002	\$4,379,799	2,754,628	\$311,424	38,365,161	\$6,023,502
Grand totals.....	85,162,409	\$2,243,358	542,492,566	\$35,134,387	177,578,537	\$36,214,835	904,088,178	\$72,820,385

¹ See Table 14 for origin of shipments.

COMMERCIAL FISH CATCH OF CALIFORNIA FOR 1951

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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.....	\$211,129	1,672,311
	Salmon.....	183,654	707,179
	Rockfish.....	125,070	2,438,021
	Sole.....	83,462	1,340,328
	Sablefish.....	48,392	473,761
	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.....		\$3,808,220	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
	Barracuda.....	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	2,579,606
	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
	Barracuda.....	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.....	Barracuda.....	\$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
	Cabrilla.....	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	10,645,801
	Spiny lobster.....	304,704	757,029
	Barracuda.....	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	258,997
	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.....	\$5,289	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	11,061	8,044	15,313	23,461	114,502	75,924
Barracuda.....	595,062	742,849	374,109	722,878	761,009	388,333	689,640	413,036	363,990	251,040	269,545
Halibut, California.....	71,696	49,904	25,587	85,708	94,945	124,123	133,187	178,939	195,516	86,698	59,295
Rock bass ¹	353,278	233,423	464,642	458,778	451,679	390,761	603,035	661,085	797,328	616,898	781,609
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.....	12,815	12,756	16,406	32,241	17,591	12,453	21,632	25,051	62,570	58,586	44,367
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	1,009,663	1,011,396	1,271,220	1,961,169	299,944	861,746	1,279,394	959,101	1,046,901	1,024,213
Total number of fish.....	1,957,479	2,134,182	1,933,694	2,620,323	2,490,983	1,243,358	2,419,429	2,596,493	2,351,393	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. nebulifer*).

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
Ancovy.....	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