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Biennial Report 1944-1946.

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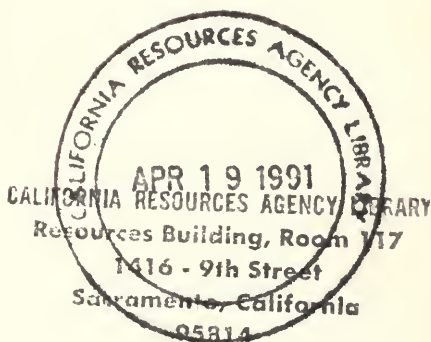
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1944-46



STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
WARREN T. HANNUM, DIRECTOR



THIRTY-NINTH BIENNIAL REPORT
OF THE DIVISION OF
FISH AND GAME
FOR THE YEARS 1944-1946



printed in CALIFORNIA STATE PRINTING OFFICE



72069

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DEDICATION

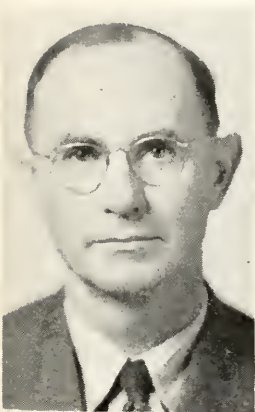
To state officials and legislators who have labored diligently to achieve a wise conservation policy for the protection of our natural resources, to the hunters, anglers and commercial fishermen who have harvested a portion of our crop of game and fish, and to other citizens who have enjoyed the great outdoors and association with the wildlife of the Golden State, this biennial report of accomplishments and progress is dedicated. May its perusal result in a firmer alliance of those who are striving for the protection and development of the wildlife resources of California.



WARREN T. HANNUM
DIRECTOR OF NATURAL RESOURCES



LEE F. PAYNE
PRESIDENT, FISH AND GAME COMMISSION



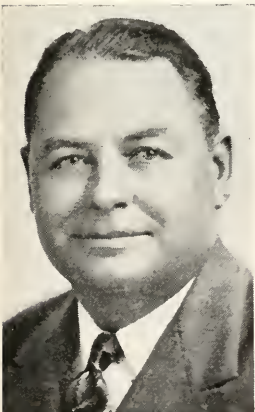
WILLIAM B. WILLIAMS
COMMISSIONER



DOM A. CIVITELLO
COMMISSIONER



NATE F. MILNOR
COMMISSIONER



HARVEY E. HASTAIN
COMMISSIONER



WILLIAM J. SILVA
COMMISSIONER



EMIL J. N. OTT, JR.
EXECUTIVE SECRETARY

In Memoriam



H. L. "TOPPY" RICKS
PRESIDENT
1946

IN MEMORIAM

Listed here are those faithful, self-sacrificing workers for wildlife conservation who, although they have departed during the past biennium, have left their spirit and their works with those who follow them.

| | |
|------------------|-------------------|
| H. L. Ricks | January 31, 1946 |
| John O'Connell | December 5, 1946 |
| Brice L. Hammaek | May 5, 1946 |
| E. J. Johnson | January 10, 1946 |
| Eleanor Larios | Unknown |
| Arthur Boeke | Unknown |
| Newt Deck | November 30, 1945 |
| Joe K. Waite | November 13, 1945 |
| Victor Von Arx | August 20, 1945 |
| W. L. Hare | July 13, 1945 |

“And, departing, leave behind us
Footprints on the sands of time;

“Footprints, that perhaps another,
Sailing o'er life's solemn main,
A forlorn and shipwrecked brother,
Seeing, shall take heart again.”

—*Longfellow*

LETTER OF TRANSMITTAL

July 1, 1946

To HIS EXCELLENCY, EARL WARREN
Governor of the State of California
Sacramento, California

SIR: We, the members of the Fish and Game Commission, respectfully submit the Thirty-ninth Biennial Report, covering the period July 1, 1944, through June 30, 1946.

The report is a brief resume of the activities of the Fish and Game Commission; a report by the Executive Secretary; and detailed reports of the functions of the various bureaus by their respective chiefs. There also are included complete fiscal reports and tabulations on fish and game management.

Respectfully submitted,

CALIFORNIA FISH AND GAME COMMISSION

LEE F. PAYNE, President

WM. B. WILLIAMS

HARVEY E. HASTAIN

WM. J. SILVA

REPORT OF FISH AND GAME COMMISSION

During the past biennium the Fish and Game Commission was composed of the following :

Nate F. Milnor, President
Dom A. Civitello
Lee F. Payne
H. L. Ricks
W. B. Williams

Personnel changes in the commission were effected during the past two years as follows :

Harvey E. Hastain appointed May 23, 1945, vice Nate F. Milnor, term expired.

William J. Silva appointed March 20, 1946, vice H. L. Ricks, deceased.

Dom A. Civitello, resigned March 19, 1946. General H. H. Arnold, retired, was appointed March 20, 1946, vice Dom A. Civitello. However, because of War Department Regulations, General Arnold was unable to officially accept the appointment until July 1, 1947.

Thus at the close of the biennium the commission was composed of the following :

| | |
|-----------------------------------|-------------|
| Lee F. Payne, President | Los Angeles |
| W. B. Williams | Alturas |
| Harvey E. Hastain | Brawley |
| William J. Silva | Modesto |
| General H. H. Arnold, (Tentative) | Sonoma |

It will be noted that the commission is now geographically representative of the sportsmen of the State.

The Division of Fish and Game felt the same effects of "war time" and "reconversion" as commercial agencies experienced. The shortage of personnel, material, supplies and equipment greatly hampered the operation of the division. However, with few exceptions all propagation facilities were operated at normal capacity and when the activities of the biennium are summarized it is found that the established trend of continued advancement was maintained and that progress was made in all fields. In spite of the numerous difficulties encountered during the period, more fish were planted and more game birds released than during any previous similar period.

The enactment of Chapter 648—Statutes of 1945, (Assembly Bill No. 395) by the State Legislature delegated to the commission certain regulatory powers. These regulatory powers, in effect, allow the commission to establish the seasons, bag limits and other regulations affecting the taking of the sporting species of fish and game. This is considered to be the most outstanding step of the biennium in the advancement of the management of these resources. Season, bag limits and regulations can now be established annually on a sound biological basis, so that the fish and game resources of the State can best cope with the demand placed upon it.

During the biennium it was found advisable to abolish the former Bureau of Engineering. This was effected on October 15, 1945. The construction work formerly under the jurisdiction of this bureau has been transferred to the Department of Public Works, Division of Architecture. The fish screen and ladder maintenance was transferred to the Bureau of Fish Conservation.

The Bureau of Patrol and Law Enforcement was faced with a most disheartening task. The fish and game resources under supervision of the bureau are widely scattered over the 155,652 square miles comprising the State. California's population approximated 9,000,000 during the war, and bureau functions were impeded by shortages of personnel, gas and oil, tires and other items essential to the effective patrol operations. However, an exceptional showing was made by the meager force of some 125 employees, as evidenced by the tabulation of arrests, fines and seizures to be found in the appendix of this report. (See Appendix, page 95.)

Wartime restrictions regulating the operation of boats placed the Bureau of Marine Fisheries in a very undesirable position. The Bureau of Marine Fisheries is charged with the management of the marine life in that portion of the Pacific Ocean adjacent to the State of California. With the operation of boats in these waters minimized, it was extremely difficult to carry on the research activities necessary to manage this fishery. However, the bureau was able to maintain sufficient research activities to carry on the continuity of the majority of their studies.

A review of the happenings of the past five years which affect the fish and game resources, include the following:

The population of California has increased by approximately 2,000,000.

The population of California has become more outdoor minded, with a greater percentage buying hunting and fishing licenses each year.

Present day trends toward a shorter work week not only allow greater numbers to go hunting and fishing but those who in the past participated in these sports, now have more time to spend afield.

Higher prices and available markets have increased the demand on the commercial fishery.

Virtually no additional fish and game propagation facilities were acquired during this period.

Maintenance of existing fish and game propagation facilities has been almost nil.

Scientific and field studies have in many cases been suspended or greatly curtailed.

As an aftermath of the war there is an upward trend in fish and game violations.

The State Division of Fish and Game faces a tremendous task in bringing its services to a point of prewar effectiveness, but the future is bright.

The war and most of the reconversion is behind us.

Trained personnel has returned to the department.

Investigations and studies interrupted by the conflict can now be resumed.

Equipment and supplies again are available.

Programs already outlined indicate that the division will, during the next year, enjoy one of the most productive and worthwhile periods in its history.

REPORT OF THE EXECUTIVE SECRETARY

The Executive Secretary was charged with effecting, within the Division of Fish and Game the policies and operational procedures as laid down by the Fish and Game Commission, and in the absence of the commission, acted as chief of the division. For purposes of administration, operation and planning the activities of the division were subdivided as follows:

- Office of Administration
- Bureau of Patrol and Law Enforcement
- Bureau of Marine Fisheries
- Bureau of Fish Conservation
- Bureau of Engineering*
- Bureau of Game Conservation
- Bureau of Game Farms
- Bureau of Licenses

A suitable plan of organization has been worked out and the necessary reorganization of the division to bring it into conformity with this plan is gradually being effected. This reorganization must of necessity be slow; and complete reorganization is not contemplated before July of 1947. (See chart between pages 14 and 15.) The basic purpose behind this reorganization was to relieve bureau personnel of administrative duties. Bureau chiefs and their assistants are technical employees and should not be burdened with fiscal and personnel transactions.

PERSONNEL

The division was consistently faced with a shortage of personnel during the entire biennium. During the latter months, this shortage became less acute. During this period the salary ranges of most of our employees were revised and other adjustments are still being considered by the Personnel Board. These upward adjustments brought the pay scales of the division employees closer to conformity with pay scales of other agencies doing comparable work.

The following personnel changes in the biennium were deemed worthy of note:

Bureau of Patrol: During the fore part of the biennium, Mr. L. F. Chappell served as acting Chief of the Bureau of Patrol and Law Enforcement. On October 8, 1945, Mr. E. L. Macaulay returned from active military service and resumed his position as chief of this bureau, at which time Mr. Chappell returned to his former position as assistant chief in charge of the Marine Patrol. The following personnel of this bureau retired on the dates indicated:

| | | |
|----------------|-------|----------------|
| Clarence Groat | ----- | April 30, 1946 |
| C. J. Walters | ----- | June 30, 1946 |
| L. T. Ward | ----- | June 30, 1946 |

* The Bureau of Engineering was abolished September 1, 1945.

Bureau of Marine Fisheries: Dr. Richard Van Cleve served as Chief of the Bureau of Marine Fisheries from July 1, 1944, through February 26, 1946, at which time he resigned to accept a position with the Federal Government. Dr. Frances N. Clark served as acting chief of this bureau for the balance of the biennium.

Bureau of Fish Conservation: Mr. Allan Taft served as Chief of the Bureau of Fish Conservation for the entire period. The following personnel retired from active duty on the dates indicated:

William Berrian ----- February 13, 1945

Harvey A. Johnson ----- March 31, 1946

Clarence Ganter ----- April 30, 1946

Bureau of Engineering: John E. Spencer served as Chief of Bureau of Engineering through September 1, 1945, at which time the bureau was abolished. Mr. Spencer retired on April 8, 1946.

Bureau of Game Conservation: The senior employee of the Division of Fish and Game, Mr. J. S. Hunter, served as the Chief of the Bureau of Game Conservation during this biennium.

Bureau of Game Farms: The Bureau of Game Farms was headed by Mr. August Bade, who served as chief of this bureau from the period of July 1, 1944, through March 31, 1946, at which time Mr. Bade retired. Mr. Bade can truly be considered the father of our present game farm system, and his retirement, even though justly deserved, is regretted by those who served with him. The duties of the Chief of the Bureau of Game Farms were taken over on April 1, 1945, by Mr. Carlisle Van Ornum, who served in this category until the end of the biennium.

Bureau of Licenses: Mr. H. Russell Dunbar served as Chief of the Bureau of Licenses for the entire biennium.

CONSERVATION EDUCATION

During the war the use of motion pictures was determined to be the most efficient method of educating the greatest number of individuals in the shortest time. Realizing the tremendous need for education among the youth and adults of this State in matters concerning conservation of our wildlife, the commission approved a program of visual education.

During the past two years, even with shortages of men and materials, the program has progressed considerably. We now have approximately 28,600 feet of natural-color motion pictures showing: Trout hatcheries, methods of production, methods of planting; game bird farms and rearing pens, showing hatching, rearing and releasing; trapping coyotes and bobcats; quail watering devices; live-trapping and transplanting of beaver; the sardine industry; catching and canning of tuna; salmon investigations; and others of deer, elk, pheasants, sage hens, pigeons, doves, wild turkeys and antelope.

These films are as yet incomplete, all need to be titled and most of them are in need of further editing and additional subject matter.

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Completion of present films as well as plans for additional ones has a high priority among the activities for the coming year. Showing of these films during the biennium approximated the following:

| | |
|-----------------------------|-------|
| Schools ----- | 120 |
| Sportsmen clubs ----- | 60 |
| Service organizations ----- | 100 |
| Other groups ----- | 50 |
| | <hr/> |
| Total showings ----- | 330 |

These showings have been curtailed by the limited personnel and equipment available for this work. The number of people reached by these showings is estimated at 35,000. And with an estimated 900,000 hunters and fishermen; and approximately 1,500,000 school children in the State, it can be seen that the surface has barely been scratched.

Publication of printed matter along educational lines has been nil during the war and reconstruction period. This was due to a request by the State Printer to curtail all printing, "not absolutely essential to the operation of the agency." Plans for the furtherance of this means of conservation education were being formulated at the close of the biennium and as soon as conditions permit, will be put into effect.

PUBLIC INFORMATION

The division's public information program which is closely associated with the conservation education program also suffered the ill effects of "wartime" conditions. However, the news sheet, *Outdoor California*, was maintained and issued weekly in mimeograph form. This release was sent to personnel of the Division of Fish and Game, newspapers, members of legislative and other groups. This program of public information needs to be expanded in order that all people interested in wildlife may know what is being done in wildlife protection, propagation and management and how they, the public, may help in this work. The inability of the division to keep the public informed of its activities and the reasons for them has resulted in numerous misunderstandings and unjust adverse criticism. This condition is in the process of being remedied through added appropriations and the reclassification of the position to which this work is assigned. By reason of this reclassification the division is now in a position to employ the type of artisan necessary to properly present our program to the public.

LIBRARY

During the biennium, the Division Library, located in the San Francisco office, continued to expand. It has now reached the point where it is recognized as one of the outstanding libraries of its type in the Country.

Arrangements for completion of the binding of bulletins and periodicals which have been delayed during the past five years have been completed. It is expected that all binding will be brought up-to-date within the next year.

The use of the library by outside agencies and students was about the same as the preceding biennium. However, with the increased number of students returning to their books in the last few months of the biennium it is expected that the demand placed on the library in the immediate future will set a new record.

PUBLICATIONS

The issuance of the quarterly *California Fish and Game* was continued during the biennium in spite of the shortage of personnel, paper, and kindred items. Included in these publications were 46 articles, fiscal statements, and recapitulations of arrests and fines. The 46 articles comprised 450 pages, and the average distribution of the quarterly was 4,000. It is expected that in the immediate future this publication will increase considerably, both in size and in distribution. A greater number of field employees and biologists will increase the number of articles worthy of publication, and the influx of students at schools, plus the increased interest of hunters and fishermen in field activities, will no doubt greatly increase the demand placed on the division for this quarterly.

LIAISON ACTIVITIES

Liaison activities were established and maintained with international, national, state and interstate organizations.

Personnel of the division have served on a number of committees and conferences, and delivered some very fine papers at these meetings.

The executive secretary attended, during the biennium, the annual convention of the Western Association of Fish and Game Commissioners; the National Wildlife Conference as advisor to the Director of Natural Resources and helped in the formation of a Tri-State Compact between California, Oregon and Washington. He was California's delegate at a meeting of representatives of the Gulf and Atlantic States to study the off-shore fisheries of the United States, and was made a member of a nine-man committee; three from Sacramento, three from Gulf States and three from Atlantic States, to further study the needs of further protection on conservation of our state and national off-shore fisheries. In addition, he has been a member of the California State Department Fishery Committee and worked closely with the industry and the State Department in the formation of a treaty with Mexico to help conserve and protect the tuna industry from further exploitation.

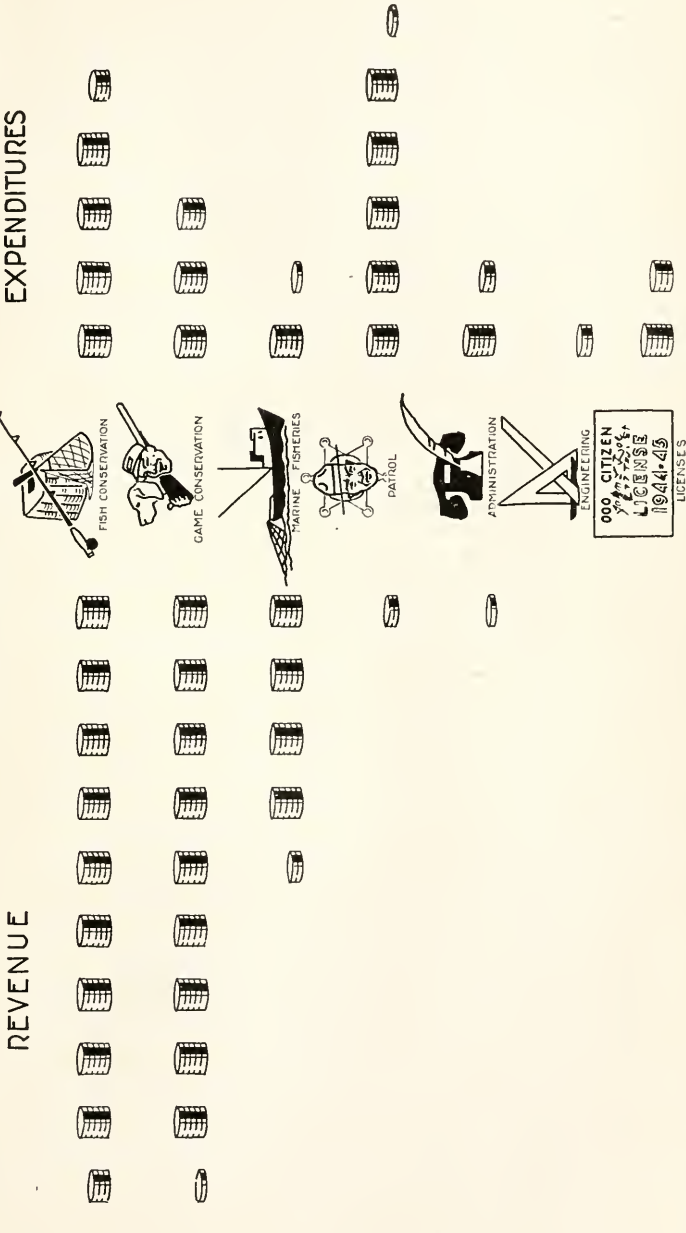
FISCAL


Complete financial statements for the biennium will be found in the appendix of this report. However, the following graphic charts will show in summary the receipts and disbursements for the two year period.

Attention is called to the fact that these charts are made up in accordance with the internal structure of the Division and Fish and Game and that in regard to purpose of expenditure, there is considerable overlapping of functions. That is, expenditures under Bureau of Patrol are directly related to the Bureau of Marine Fisheries as well as all other bureaus. Likewise there are other interrelated activities such as fish screens, between the Bureau of Marine Fisheries and the Bureau of Fish Conservation.

FISH AND GAME PRESERVATION FUND RECEIPTS AND DISBURSEMENTS

96TH FISCAL YEAR



 = \$100,000

FISH AND GAME PRESERVATION FUND RECEIPTS AND DISBURSEMENTS

97TH FISCAL YEAR

REVENUE



EXPENDITURES



FISH CONSERVATION



GAME CONSERVATION



MARINE FISHERIES



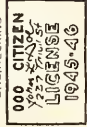
PATROL



ADMINISTRATION




ENGINEERING



1000 CITIZEN
LICENSES
1945-46



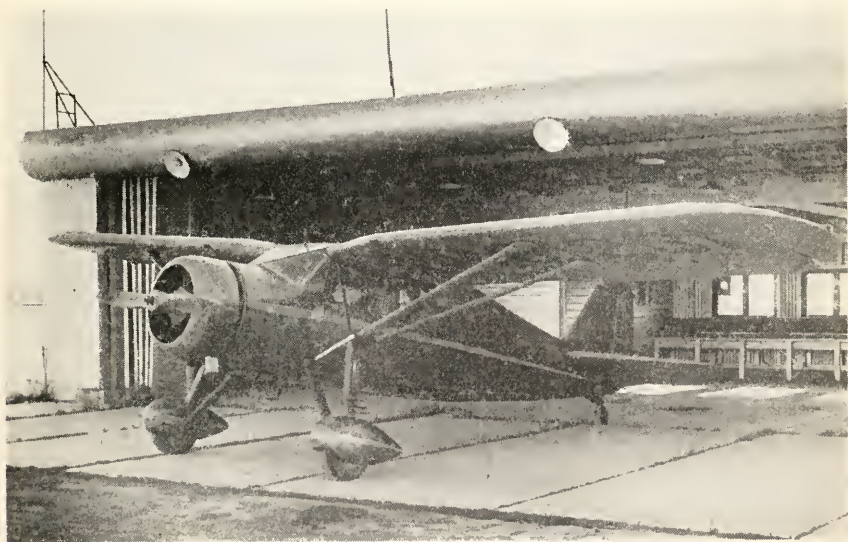
 = \$100,000

BUREAU OF PATROL AND LAW ENFORCEMENT

The Bureau of Patrol and Law Enforcement is the police force of the Division of Fish and Game. This bureau is charged with patrolling fish and game resources of the State, the apprehension of violators of the provisions of the Fish and Game Code and/or regulations of the Fish and Game Commission.

During the first year of the biennium, operations of the Bureau of Patrol and Law Enforcement were affected by gasoline rationing and shortage of manpower. With the lifting of gasoline restrictions on the cessation of hostilities in the Pacific area in August of 1945, an increase in hunting and fishing activities took place. Our automobile transportation was old, new cars were not available and new tires were in very short supply (some old prewar casings had been recapped as many as six and seven times). In spite of these handicaps an increase in arrests and fines was made over previous years.

The purchase of a four-passenger single engine plane during the biennium has proved very valuable in patrol, as well as assisting other bureaus in their field work. Fines resulting from arrests made in conjunction with this air patrol have more than paid the initial cost of the plane. In order to cover ocean water areas of the State, it is recommended that an amphibian plane be obtained during the next biennium, preferably a twin-engine job. This equipment will materially assist our high seas patrol.



Patrol plane of the Division of Fish and Game

All patrol boats taken over by the Federal Government were returned during the biennium except the "*Bluefin*" and "*Quinnat III.*" The former vessel was lost off the Channel Islands and a satisfactory monetary settlement was made. The latter vessel still is operating for the government. Negotiations began in January, 1946, preparatory to returning the M. V. "*N. B. Scofield*" and were still under way at the close of the biennium.

Shortages of personnel continued during the biennium but men on military leave commenced returning in October, 1945. Eleven returned in October, six in November, eight in December, eight in January, three in February, two in March, two in April and one in May. At present only three members of the bureau are still absent on military leaves.

During the war, emergency temporary duration wardens appointments were made and examinations are scheduled early in the next biennium to fill these vacancies as well as the increase permitted in next year's budget. When eligible lists are available, it is proposed to hold a short school of instruction for newly appointed wardens. A warden's manual is in the hands of the printer and will be distributed at the same time as the school course.

A recapitulation of the arrests, fines and seizures will be found in the appendix, on page 95.

REPORT OF THE BUREAU OF MARINE FISHERIES

The Bureau of Marine Fisheries is responsible for the conservation and administration of the marine fisheries of California, both commercial and sport. In order to provide a basis for its recommendations to the Fish and Game Commission and ultimately to the Legislature, the bureau conducts biological and statistical research on the fisheries. Trends in fishing conditions, abundance, and availability of fish, economic factors influencing the industry, fishing methods, and related matters are followed closely. These studies are based on a comprehensive system of catch records which was instituted more than 30 years ago. Correlation of the statistical information with the biological data provides a background for the enactment of wise conservation measures which should result in a continued yield of fisheries products.

THE COMMERCIAL FISH CATCH

The commercial fisheries of California maintained their high level of production in 1944 and 1945. Heavy buying of fillets and canned fish by governmental agencies provided a stable outlet for marine products. With foreign sources of fish oil, meal, and vitamin oil cut off by the war, the demand for these products continued.

Total fish landings, and production of canned fish, oil, and meal for 1944 and 1945 are presented in Table I. (See appendix, page 102.)

The total landings of fish showed an increase of 275,000,000 pounds over the previous biennium. The pack of canned fish increased by 18 percent over the previous two years. The production of fish meal and oil was also greater. The value of the processed products was the highest on record.

On the whole the prices received by the fishermen remained at about the same level as in the previous biennium, although some upward revisions in price ceilings were made. Increased catches of some of the higher-priced species resulted in record total value figures. Table II (see appendix, page 102) presents the catches and value of the most important species of fish handled by California canneries, reduction plants, and fresh fish markets in 1944 and 1945. The values represent the prices paid to the fishermen at the time of delivery.

For the past several years the total value of the California fisheries has shown a steady rise (see Figure 1, page 22). The increase reflects a rise in prices, and a concentration on the more valuable species, both due in large measure to wartime expansion of markets.

Of the most important species, such fish as the sardine, albacore, skipjack, and mackerel maintained positions very nearly the same as in the previous biennium, both in quantity and value. The yellowfin tuna, which is second in total value only to the sardine, has shown a consistent increase in catch and value during the last four years, with landings nearly back to prewar levels. Catches of bluefin tuna, which often show

great variations, were nearly double those of the previous biennium. The foregoing species are utilized principally in canneries. The most important fish handled by the fresh fish markets is the salmon, catches of which were 80 percent greater than in 1942 and 1943.

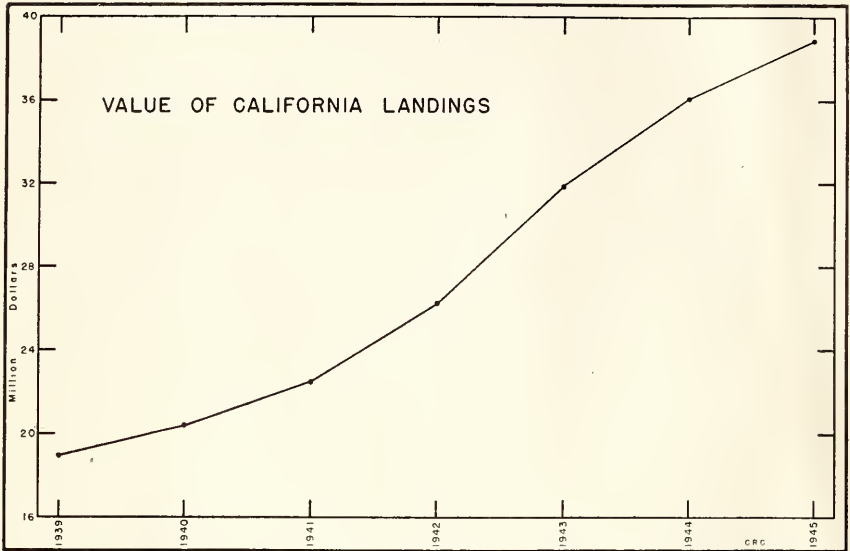


FIGURE 1. Value of California commercial fish catch, 1939-1945. Value represents amount paid to the fishermen at time of delivery

Spectacular increases were made in several hitherto minor fisheries. Development of a canning process for Pismo clams resulted in heavy shipments of these shellfish from Lower California. Within the short space of two years the Pismo clam rose from a position of insignificance to seventh place in the fisheries. This species of clam has been so seriously depleted on California beaches that severe restrictions have been placed on the diggers, and canning of local clams has been prohibited for many years.

Heavy wartime purchases of fresh and frozen fillets by the government, coupled with the great demand for liver oil, stimulated the Northern California trawl fishery. Development of a modified type of otter trawl permitted great increases in the catches of rockfish and sablefish. Rockfish showed a fivefold increase in landings, and the value was more than three times as great as in the previous biennium. The sablefish catch doubled, with a more than twofold increase in value. Sole, formerly the mainstay of the trawl fishery, experienced only moderate increases, and was far behind the rockfish and sablefish.

Another fishery to make great gains was the squid. In both 1944 and 1945 large quantities were canned at Monterey. Most of the squid was packed for government or United Nations Relief and Rehabilitation Administration order for export.

In contrast to the above fisheries, the shark catch showed a decline.

COMMERCIAL FISHERMEN

The numbers of commercial fishermen licensed in California during the years 1944-45 and 1945-46 are given in Table III. (See appendix, page 103).

The number of fishermen licensed in 1944-45 was approximately one thousand less than the previous year. Part of this drop probably reflects the elimination of persons who had obtained commercial fishing licenses in 1943-44 merely to help qualify for Coast Guard passes or extra rations of gasoline. During the following season the license sales returned to approximately the 1943-44 figure of nearly 12,000. In 1945-46 fishermen returning to the fishery from military service swelled the figures.

The region of residence of commercial fishermen operating in California is shown in Table IV. (See appendix, page 103.)

SARDINES

The sardine catch during the 1945-46 season was the smallest on record since the poor season of 1937-38. Landings showed a considerable drop from those of the 1944-45 season, which was above average.

Because of the great demand for canned fish, particularly for the armed forces and for United Nations Relief and Rehabilitation Administration, a large proportion of the sardine catch was canned. The 1945-46 case pack has been exceeded only by that of the 1941-42 season. (See Table V, appendix, page 104.)

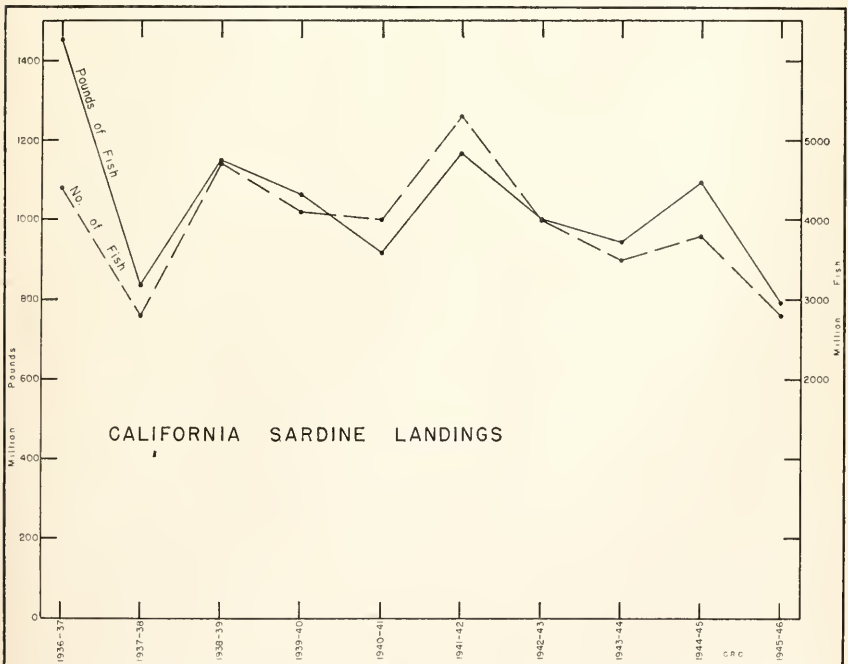


FIGURE 2. Tons and numbers of sardines landed at all California ports during the past 10 seasons. The figures include deliveries to floating plants from 1936-37 through 1938-39, when the floaters ceased operations. Although the greatest tonnage was landed in 1936-37, the greatest number of fish was taken in 1941-42.

The light catch of 1945-46, coupled with the use of greater than usual proportion of the fish for canning, resulted in the lightest production of sardine meal and oil since 1937-38. With all imports of meal and oil at a standstill, the demand for these products is far greater than the supply. The number of reduction plants operating under permit increased from 75 at the close of the last biennium to 85 during the 1945-46 season. The tonnage received under permit for straight reduction amounted to an average of 1,622 tons per plant during the 1945-46 season. This was only 35 percent of the allowable tonnage. During the 1944-45 season 71 percent of the allotted tonnage was used in reduction plants.

The wholesale value of processed sardines during the calendar year 1945 was \$29,326,000. Of this amount, canned sardines accounted for \$15,256,000. Sardine oil was valued at \$7,992,000 and meal was worth \$6,078,000.

Sardine canneries and reduction plants are located on San Francisco Bay, at Monterey and Moss Landing, and at Los Angeles-Long Beach Harbor. Small amounts of meal and oil are also produced at San Diego. (See Table VI, appendix, page 104.)

Sardine Investigations: Due to lack of personnel and equipment, no new investigations were inaugurated in the biennium. The routine sampling of the catch was carried on so that there need be no break in our measures of the size of fish in the catch. The cooperative study of age composition of the sardine was continued with the U. S. Fish and Wildlife Service. Another cooperative investigation carried on with this organization, and brought to completion in the biennium, comprised a detailed analysis of the catches of individual sardine boats over a ten-year period. The results have been published in Fish Bulletin No. 62.

No sardines were tagged, but tag recoveries from former releases continued. In the 1944-45 season two tags were returned in the San Francisco fishery which had been released in British Columbia waters by Canadian workers, and fourteen tags from tagging lots put out off the mouth of the Columbia River by the Oregon Fish Commission were recovered at San Francisco and Monterey. In addition, 228 California tags were re-taken; 20 in the British Columbia fishery, and 208 in the California fisheries. These represented releases made in California and Mexican waters. During the 1945-46 season three Oregon tags were recovered in the Monterey fishery. Of the California releases, eight were retaken in British Columbia, and 34 in the California fisheries.

Detailed studies were made of the tags returned over eight seasons, and the results were published in Fish Bulletin No. 61. These indicate a general intermingling of the sardine population between British Columbia and central Lower California. Because of this constant movement from area to area, use of tag returns to measure the size of the population did not prove successful. The rate of decline in the population from year to year was measured, however, both by tag returns and by age determinations. These were in satisfactory agreement, and for the next biennium age determinations only will be used for these studies since they require much less time and equipment. It is hoped that it will thus be possible to place more effort on studies of oceanographic conditions and their relation to spawning success and availability of sardines on the fishing grounds.

TUNA

Security restrictions and a shortage of boats hampered the tuna fishery during the early part of American participation in the war. However, by 1944 the rigid security regulations had been relaxed somewhat, and new boats had entered the fishery, so that the high seas fleet was able to make greater catches of yellowfin tuna. The improved yellowfin fishery coupled with exceptionally good catches of albacore and bluefin resulted in total tuna landings almost as great as those of the years immediately preceding the war. The 1945 catch of the four most important species of tuna (yellowfin, albacore, bluefin, and skipjack) amounted to 163,000,000 pounds. This figure has been exceeded only in 1939 and 1940 when landings of approximately 165,000,000 and 196,000,000 pounds, respectively, were recorded.

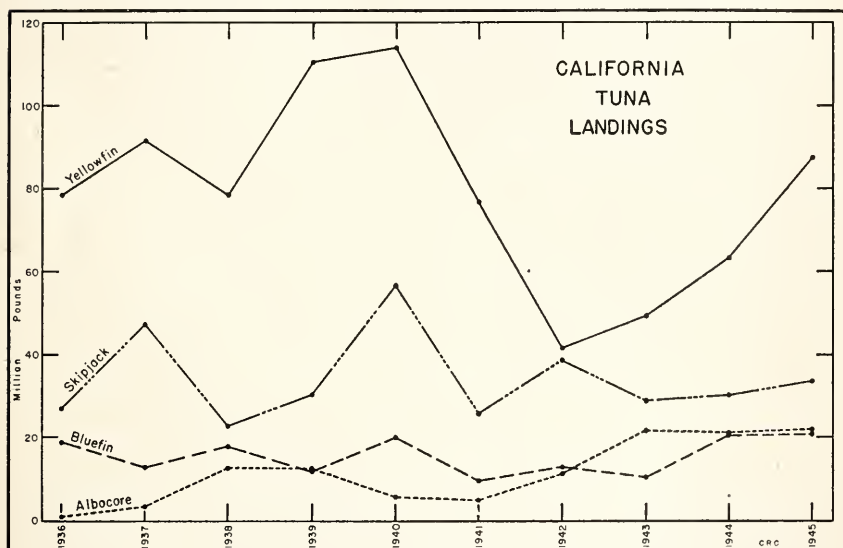


FIGURE 4. California landings of Yellowfin tuna, Skipjack, Albacore and Bluefin tuna, 1936-1945. Graph includes catches made by California boats and shipments from Oregon, Washington and Latin America; shipments from Japan, 1936-1941, are not included.

Catches of the five species of tuna in 1944 and 1945 are shown in Table VII. The case pack of tuna for the same years is presented in Table VIII. Production of canned tuna was supplemented by yellowtail which was packed tuna-style in the following amounts: 19,848 cases in 1944, and 17,336 cases in 1945. Tuna canneries are located at San Diego and Los Angeles-Long Beach Harbor. (See Tables VII and VIII, appendix, pages 104, 105.)

Tuna Investigations: During the war years the entire staff assigned to the tuna investigation left state service, with the result that research came to a standstill. Shortly before the close of the biennium the man who had been in charge of the investigations returned from war service, and work was resumed on the analysis of boat catches and on the racial composition of the tuna populations.

MACKEREL

The mackerel fishery has shown wide variations in seasonal catches ever since its inception in 1928. Landings reflect not only economic conditions and availability of fish, but the competition of other fisheries. During the sardine season the moderately-priced and moderately-abundant mackerel is fished as a side issue to the lower-priced but more abundant sardine. When sardines can be taken in great quantities, mackerel catches drop; when sardines are relatively scarce, mackerel landings often rise as the fishermen turn to that species. Similarly, when the high-priced albacore and bluefin are running, fishermen spurn the mackerel; when the tuna are scarce, they fish for mackerel.

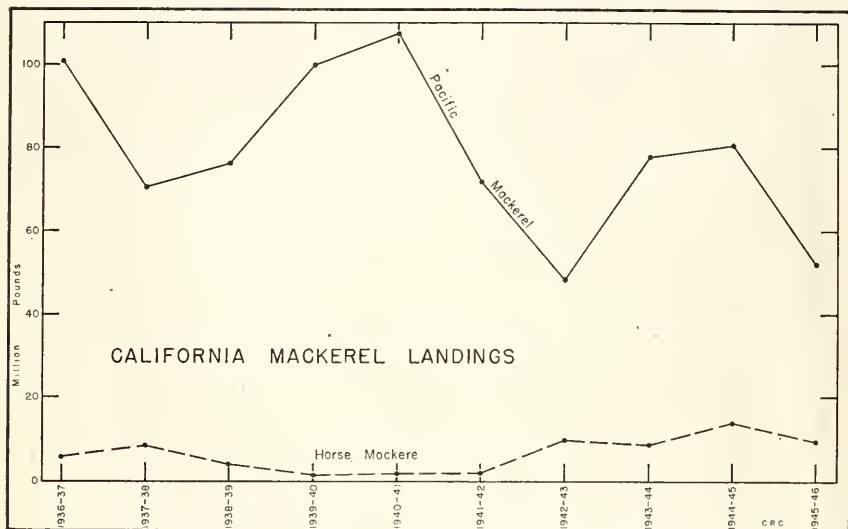


FIGURE 5. California landings of Pacific Mackerel and Horse Mackerel, by seasons, 1936-1937 to 1945-1946. Some mackerel is sold to fresh fish markets, from Monterey to San Diego, but the bulk of the landings are delivered to canneries at Los Angeles-Long Beach Harbor and Newport Harbor.

Catches of Pacific mackerel and horse mackerel for the seasons 1936-37 to 1945-46 are shown in Figure 5 (the mackerel season begins in May and runs through the following April; the canning season usually commences in August or September, and closes in February). The seasonal catches for 1944-45 and 1945-46 are shown in Table IX. The production of canned mackerel for 1944 and 1945 is presented in Table X. The canning industry is centered at Los Angeles-Long Beach Harbor, and nearby Newport Beach. Mackerel and horse mackerel are handled by the fresh fish markets at Monterey, Santa Barbara, Santa Monica, Los Angeles Harbor, Newport Beach, and San Diego. (See Tables IX and X, appendix, page 105.)

Mackerel Investigations: Mackerel investigations remained virtually suspended until the last few months of the biennium. It did prove practicable to take routine samples of the commercial catch at Los Angeles Harbor and Newport Beach throughout the period, thus assuring continuity in both length frequency records and otolith collections for age determination studies.

By the close of the biennium, the staff had expanded sufficiently to allow resumption of a more elaborate mackerel program. An analysis of results of the tagging experiments was in progress, as was work on a racial study which had been underway before the war interrupted the program.

A total of 101 tags from fish released in Monterey Bay, at various points off the Southern California coast and in Mexican waters off Lower California was recovered at Central and Southern California canneries during the 1944-45 fishing season. Of these, 91 were found in Southern California, the remaining ten at San Francisco and Monterey. There were 38 returns in Southern California during 1945-46, representing releases in the same three areas. One tag from a fish released off Southern California was recovered in Central California.

SALMON

The salmon fishery, the oldest commercial fishery in California, underwent a marked expansion during the last two years. In spite of unparalleled persecution for nearly a hundred years in the form of destruction of spawning beds by the construction of dams and by mining operations, in losses of young fish into irrigation diversions, and intensive commercial and sport fishing, the salmon is still the most important fishery in Northern California. Further dangers to the salmon lie ahead as a reckless program of dam construction has been formulated in the name of power development, flood control, and irrigation. Only continued and

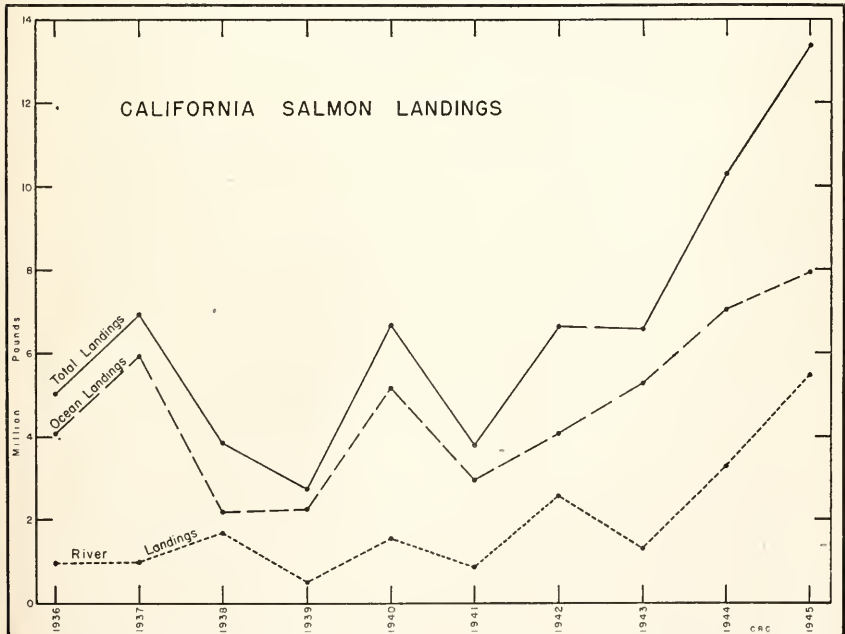


FIGURE 7. Commercial landings of salmon in California, 1936-1945. River catches, made in the lower reaches of the Sacramento-San Joaquin River, consist of king salmon exclusively. The ocean fishery, conducted from the Oregon line south to Monterey Bay, takes king salmon principally but an appreciable proportion of silver salmon is included in the catch.

coordinated activity on the part of the agencies responsible for the conservation of fisheries resources can maintain the salmon fishery at its present high level of production.

The 1944 salmon catch of 10,285,000 pounds was the greatest recorded since 1920. This production reflected a gratifying increase over the all-time low of 2,730,000 pounds landed in 1939.

The following year witnessed an even greater catch. The deliveries of 13,380,000 pounds in 1945 have not been surpassed since the Division of Fish and Game instituted its system for obtaining comprehensive catch records over thirty years ago. Record breaking catches were made in both years by ocean trollers as well as by gill net fishermen in the Sacramento-San Joaquin River area. In addition to the commercial landings, substantial catches of salmon are made by sport fishermen.

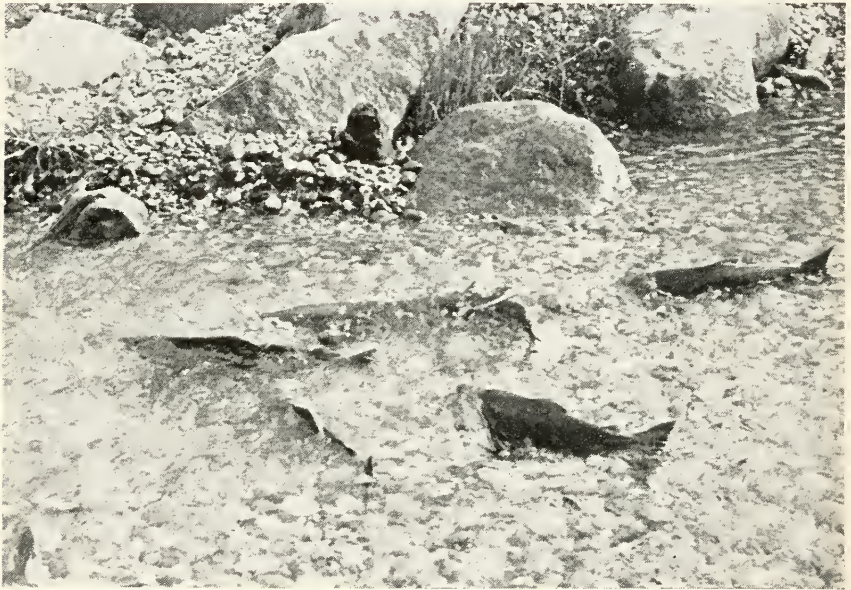


Figure 8. Salmon on a nest in the American River near Folsom.
Photograph by Donald H. Fry, Jr.

Part of the decline in the fishery from 1938 to 1941 can be attributed to a succession of dry years which adversely affected spawning and survival of young fish. The subsequent improvement is due in some measure to natural factors which resulted in successful spawning but can also be credited to the cumulative results of wise protective legislation and to improved enforcement of the conservation laws. (See Table XI, Appendix, page 106.)

CENTRAL VALLEYS SALMON STUDIES

San Joaquin River: Only the spring run was counted in the San Joaquin River. A small fall run manages to get through in years when there is water in the river in the area between Dos Palos and Gustine.

The poor run in 1944 was due to a heavy kill of fish which took place in Merced County. At this time the river was reduced to a string of nearly isolated pools for many miles below Dos Palos, resulting from a combination of factors: a light snow pack and impoundment of water to fill Friant Dam plus normal irrigation demand. Water was finally gotten down the stream, but the flow was low enough that in many places the fish had to swim through water less than two feet deep, making them easy prey for spears. Spearing was legal and as many as 200 spearers were counted at a single sand bar. Many of these people were decent sportsmen who would take their limit of two fish and go home. Others were of the type who would spear 20 or 30 fish and take home the two largest. Many people used pitch forks or other inadequate spears, and thousands of fish escaped only to die later. Even the people who were spearing were disgusted with the slaughter, but would say, "It ought to be stopped, but as long as it is legal I might as well get mine." Spearing is now prohibited throughout the entire State.

The 1945 count of 56,000 fish is a minimum figure. The river was high enough so that most of the fish jumped the Mendota Dam instead of using the fish ladder. These fish could be seen in the daytime, and their numbers estimated, but not at night. However, evidence indicates that at that point the run at night is very light.

Tuolumne River: The Tuolumne River count was made on the "big year" of the four-year cycle. The figure of 130,000 consists principally of fish counted through the fish ladder on the Modesto Dam, and includes an estimate of those that jumped the dam. The Tuolumne River salmon run almost exclusively in the fall. There is only a bare remnant of a spring run.

Mokelumne River: The Mokelumne River count was a combination of a fish ladder count and an "over the dam" count. The figure may be too low, but gives an idea of the magnitude of the run. The Mokelumne is potentially an excellent salmon stream, but the Woodbridge Dam is such a serious fish hazard that there would seem to be little hope of rebuilding the run until a satisfactory fish ladder is installed. The present fish ladder works poorly at some water conditions, and is entirely non-functional at others.

Detailed plans have been drawn for a new ladder. We hope to have it installed during the coming biennium.

American River: American River "counts" are actually calculations based on tag returns. The American has both a spring and a fall run; both of which are included in the above figures.

Tagging: During 1943, 1944, and 1945 the only salmon tagged were those released in the American River at Sacramento for population estimate purposes. The tags used were half-inch discs of celluloid held one on each side of the dorsal fin by a pin through the back of the fish.

| <i>Year</i> | <i>No. tagged</i> | <i>No. recovered dead</i> | <i>No. seen at Folsom Dam</i> |
|-------------|-------------------|-------------------------------|-----------------------------------|
| 1943----- | 529 | 39 | 62 |
| 1944----- | 1,659 | 86 | 139 |
| 1945----- | 653 | 38 | 28 |



Figure 9. Tagging salmon at the Division's temporary fish trap on the American River near Sacramento. Photograph by Richard S. Croker.

During the period from May 11 to June 15, 1946, a total of 116 spring run fish were tagged in the vicinity of Martinez, and of these 33 were recovered. More tagging will be done in this area during the fall run. This tagging is part of a program to determine the time at which runs bound for the various rivers pass through the Delta fishing area.

Pollution—Tuolumne River: For years the industrial pollution of the Tuolumne River at the City of Modesto has been getting worse. The city does not have an industrial waste disposal system and has permitted industries to dump into the river via the storm sewers. Plans for stopping this illegal action came to nothing when the war made it impossible to obtain waste disposal machinery, and when it was essential to keep all food processing factories operating at full capacity.

The industries doing the damage are fruit and vegetable canneries, freezers, dehydraters, milk plants, and slaughter houses. The waste from these plants decomposes and removes the dissolved oxygen from the river water. Studies by the Fish and Game Pollution Detail showed that in 1943 the oxygen dropped almost to the point where the river was lethal to salmon; in 1944 the river was actually lethal. The Pollution Detail made studies in collaboration with the State Board of Health, and arranged to have extra water released into the river to dilute the polluted water to the point where salmon could survive. When the Pollution Detail was disbanded, the job was turned over to the Bureau of Marine Fisheries. This bureau then tested the river several times daily, and watched for the arrival of the salmon at the mouth of the Tuolumne. When the fish appeared in numbers, the necessary additional water was released from the Don Pedro Dam by the Turlock Irrigation District. The extra water raised the oxygen content to the point where salmon could survive, and the run went through without incident. Approximately the same thing happened in 1945 except that the pollution was worse and more water was required. A temporary reduction in the flow of extra water resulted in the death of some salmon.

Pollution—Stanislaus River: On October 7, 1944, the sewer pond of the City of Escalon broke its banks and emptied into the Stanislaus River, killing all or nearly all fish between that point and the mouth of the river. Escalon has since built an adequate disposal system which will go into operation as soon as delivery is made on a long-overdue sewer pump.

Studies of Young Salmon: Fyke-netting studies of downstream migrants have included studies of the time of migration in the Feather, American, Cosumnes, Mokelumne, and San Joaquin Rivers, and studies of the damage done by various large unscreened and inadequately screened irrigation diversions. The diversions are all taking salmon, but the ones in the Mendota area are the worst.

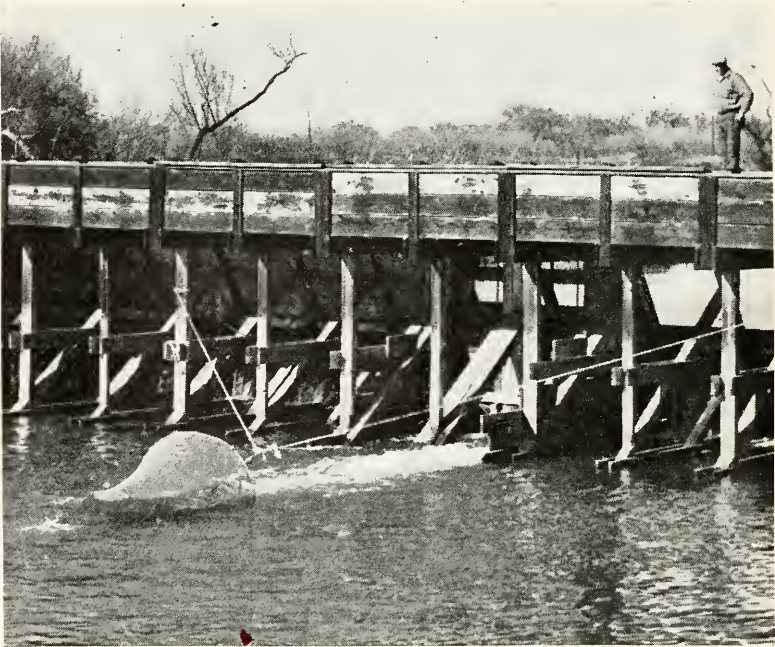


Figure 10. Fyke net being used to estimate the loss of baby salmon into a canal. The canal was taking very little water when this photograph was made and practically the entire flow was going into the fyke net. *Photograph by Donald H. Fry, Jr.*

Electric Screen Testing: Since the cost of screening irrigation canals, particularly the largest ones, by fine mesh screens (rotary drum or similar) would be almost prohibitive, the Fish and Game Commission decided to investigate the possibilities of electrical screening. Two screens were installed at Mendota and one at Dos Palos. Intensive tests carried out when small salmon were migrating in the early part of 1946 showed that the screens as purchased would not keep small salmon out of the canals, but frequent changes made by the manufacturer and the division have resulted in improved performance, and give hope that eventually such methods may prove adequate. It should be kept in mind that small fish are much harder to deflect electrically than large ones, and that fish which are actively migrating are much harder to turn than ones which are merely wandering. Thus it will be seen that screening of small salmon electrically is a very difficult problem which must be approached with caution.



Figure 11. Experimental electric fish screen now being tested near Mendota. *Photograph courtesy of Henry T. Burkly*

SHARK

The shark industry which rose to such spectacular heights in 1938 and the following few years has fallen upon evil days in California. The demand for Vitamin A, principal product of the fishery, is greater than ever, but the supply of sharks is insufficient to provide the raw material. When the shark liver fishery first boomed, many fishermen turned to the new bonanza in response to the incredibly high prices offered. Serious depletion of the soupfin shark, the most important species, resulted from the heavy fishing effort. In 1945 the catch per unit of effort was but a pitiful fraction of what it had been just a few years previously; as shown by studies made by the Bureau of Marine Fisheries, and published in Fish Bulletin No. 64. However, the generous prices paid for high potency soupfin livers, and hopes of sharing in some of the exceptionally rich strikes still being made have induced many fishermen to remain in the fishery. As a result, the soupfin population is being cropped too heavily, and little hope for any future growth can be expressed.

Some shark livers taken off the California coast are processed in plants outside the State, particularly in Seattle. However, these shipments are more than compensated for by importations of outside livers to the many plants which have become established in California. Imports reached considerable proportions in 1944 and 1945 following the decline of the local soupfin fishery (see Table XII, Appendix, page 106).

The shark investigation which was instituted several years ago was continued during the biennium and culminated in the publication of Fish Bulletin No. 64. Soupfin sharks are now so scarce as to make the continuation of biological research difficult. Work has been suspended temporarily until the return of our research vessel from military service will permit a resumption of field studies.

TRAWL FISHERY

The trawl fishery of Northern and Central California experienced a tremendous expansion in 1944 and 1945. Trawling has been carried on in the San Francisco region for many years and rather recently expanded to include the waters near Eureka. Formerly paranzella nets, dragged by pairs of boats, were used exclusively but gradually the more efficient one-boat otter trawl came into use.

Various species of sole and other flatfish have always been the mainstay of the trawl fishery, as they were the fishes most readily taken by the paranzellas and earlier otter trawls. In answer to the great demand for fresh fish occasioned by military purchases during the war, a new type of trawl net was developed at Eureka in November, 1943. By early 1944 this net, the "balloon trawl" which was a modification of the otter trawl, had come into general use. The balloon trawl made possible the large scale capture of various species of bottom fishes which had previously been taken only on set lines because they were active enough to escape the ordinary trawl nets. Landings of rockfish, sablefish, and cultus soared, making possible the fulfillment of government orders as well as contributing to a greatly expanded civilian market for fresh fish. (See Table XIII, Appendix, page 106.)

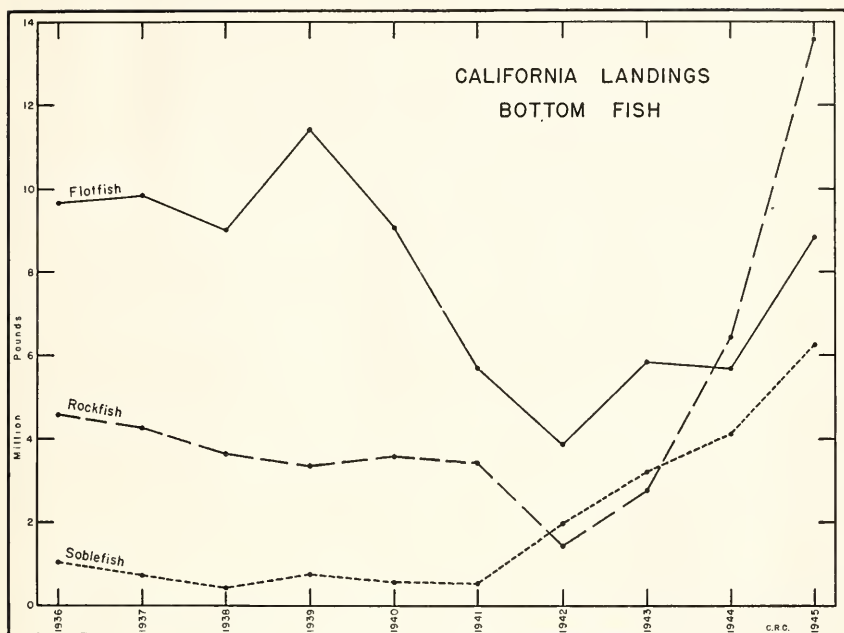


FIGURE 12. California landings of Flatfish, Rockfish and Sablefish, 1936-1945. The flatfish graph includes all species of flatfish except halibut, i.e., the various species of sole, sand dabs, starry flounder and turbot. Flatfish are taken almost entirely in trawl (drag) nets. The many species of rockfish (rock cod) were the basis of a line fishery until 1944. At the beginning of that year large scale trawling commenced. Sablefish (black cod) were taken principally on lines until 1944. During 1944 and 1945 both lines and drag nets were used.

Figure 12 illustrates the development of the trawl fishery in graphic form. It must be pointed out that the figures presented include the catches of set line boats as well as trawlers. Only small quantities of sole, sand dabs, flounders and turbot are taken commercially by line fishermen; the fishery is essentially a trawl fishery. Quantities of California halibut are taken by trawling in Southern California but the greatest catches are made by trammel netters and line fishermen. The only other flatfish of commercial importance, the northern halibut, is taken almost exclusively by set lines and trolling. These two species, exploitation of which long ago reached its limit, are excluded from this discussion.

The sole is a prime favorite of the San Francisco fresh fish trade and shares with the crab the distinction of being a San Francisco specialty.

The fishery for rockfish was almost entirely conducted by set line until 1944. Set liners still operate south of San Francisco and contributed to the 1944 and 1945 catches (approximately 1,680,000 pounds in 1945), but there was no spectacular increase in their operations.

The numerous varieties of rock cod have long been popular in California restaurants and fish markets. Much of the recent expansion in production has taken the form of frozen fillets which have proved to be of excellent quality.

The fishery for sablefish has been essentially a line fishery and a considerable proportion of the catch it still made by set liners. The line fishery at Santa Cruz and Monterey accounted for over 2,400,000 pounds of the 1945 landings, and substantial catches were made by long-line fishermen operating in the Eureka region. An undesirable effect of the expansion of the trawl fishery in Northern California is that the drag nets take large quantities of immature sablefish which will result in damage to the breeding stock. The Eureka line fishery concentrates on the large mature fish inhabiting the deeper waters. Sablefish are valuable as fresh and frozen fillets, and as a smoked product. The livers are high in vitamin potency and command a good price.

The cultus, formerly of minor importance in the line fishery, has also shared in the expansion of the trawling industry, but not to the extent of the rockfish and sablefish.

Investigation of the Trawl Fishery: The trawl investigations, which were commenced when the sole and sand dab fisheries first showed signs of overfishing, suffered a temporary setback when personnel losses following the outbreak of the war curtailed our activities. However, information was collected on fishing methods and intensity and some biological data was collected. At the close of the biennium it was possible to assign adequate personnel to the problem. Our bottom fish resources are far from inexhaustible and it is necessary to formulate a sound conservation policy in order to perpetuate them.

OTHER INVESTIGATIONS

Abalones: The abalone fishery has continued at the maximum level of production. Increased numbers of divers, many of them returning veterans with naval diving experience, have entered the industry. The fishery remains centered along the San Luis Obispo County coast.

Changes in diving methods and areas and in the abundance of abalones have been followed by the Bureau. Recommendations for improved regulatory measures have been formulated.

Oysters: The oyster industry has been at low ebb since the importation of Japanese seed oysters came to an abrupt end in 1941. Only limited production has been possible. Resumption of shipments, which is expected in early 1947, will find both the growers and the Bureau of Marine Fisheries ready for the rebirth of the industry.

Pismo Clam: The Pismo clam, choicest delicacy of Central and Southern California beaches, has become so scarce throughout the State that commercial and amateur diggers alike now have difficulty in obtaining worthwhile quantities. The local commercial take in 1945 was only 26,000 pounds. Nothing short of the most severe regulation can bring the Pismo clam back to even a semblance of its former great abundance.

During the war, when canned foods were in heavy demand, Southern California canners imported Pismo clams from Mexico. The clam is abundant along the beaches of Lower California and a heavy production was possible. Shipments of shucked Pismo clams amounted to approximately 1,470,000 pounds in 1944 and increased to 6,680,000 pounds in 1945. The latter figure represents a harvest of over 53,000,000 pounds in live weight.

Pismo clam investigations were suspended during the war. However, one of our staff members was able to make a few observations on Mexican beaches while on vacation.

Sea Lions: In response to an intensification of the usual complaints of sea lion depredations on fishing gear and fishery resources, the Bureau of Marine Fisheries in cooperation with the Bureau of Patrol made a survey of the numbers of sea lions present along the entire California coast in June, 1946. The assistance of the United States Navy in placing dirigibles and crews at our disposal is gratefully acknowledged.

The survey revealed that sea lions have indeed increased substantially in numbers since the last previous complete count, which was made in 1938. The 1946 survey listed 12,506 sea lions, an increase of 4,645. Of these, 7,338 were observed south of Point Conception. It is in Southern California that the greatest increase has taken place.

Realizing that the increase in numbers of sea lions constituted a menace to the fishing industry, the Bureau recommended that a reduction in the herds was desirable.

Undersea Oil Exploration: The ever-increasing demand for petroleum products has led the oil industry to seek new deposits far from shore beneath the ocean bottom. Exploration methods involve the detonation of explosive charges under the surface of the water, with echoes of oil-bearing strata being picked up on sonic detection devices. Inasmuch as the use of explosives can cause damage to marine life, any undersea exploration is subject to regulation by the Fish and Game Commission.

Supervision of the exploratory work insofar as it may affect the fisheries resources is the responsibility of the Bureau of Marine Fisheries. Not only have the operations been closely observed and supervised, but independent studies have been conducted to determine the effect of explosives on fish, mollusks, and crustaceans. These studies, which are the subject of a forthcoming publication, indicate that the use of explosives as conducted in oil surveys is only moderately harmful to marine life, and only within a restricted range. If the "shots" are buried under the sand, harmful effects are minimized, it was noted. As a result of these observations, the oil companies are required to operate only where fish are not abundant at the time, and furthermore they must bury their charges in the sand when operating in shallow water.

Ocean Sportfishing: Deep sea sport fishing was greatly curtailed during the war, largely because of stringent security measures and to some extent because party boat operators and crews entered the armed forces or were engaged in commercial fishing. Activity increased in 1945 as security restrictions were lifted. By the spring of 1946 the sport fishery from San Francisco to San Diego was operating on a prewar scale. In fact, many new boats were built and newcomers to the business were eagerly reaping the golden harvest of postwar easy money.

The bureau's survey of sport fishing boat catches was suspended until early 1946 when an increase in research personnel had made resumption possible.

The interests of commercial fishermen and anglers overlap, as both groups fish in the same waters and for the same species of fish. Both commercial and sport fisheries have expanded at a sensational rate, the

former since about 1915, the latter since about 1925. During the past 15 years there has been an unfortunate but increasing feeling of bitterness between the two groups with many in either faction refusing to see the merit or necessity of the other.

The Bureau of Marine Fisheries believes that this schism is neither desirable nor necessary, but that in fact the entire fishery is one and the same and there is room for all. In the commercial fisheries thousands of persons make their living in providing necessary food and other marine products for all the people. In the sport fishery hundreds of persons make their living as boat operators, and hundreds of thousands of people obtain the recreation which is so vital in these days when the pace of living literally kills.

Hence it is with a sense of gratification that we can report that in 1946 members of the so-called conflicting interests were brought together and were able to compromise many of their differences. Under the guidance of their present capable leaders, the organized sportsmen and the commercial fishing industry should enjoy more harmonious relations, to the benefit of the entire fishery.

Fisheries Statistics: Good catch records are the basis of all fisheries research and are a necessary part of any management program. California was a pioneer in establishing a comprehensive system for the collection and analysis of fisheries statistics. During the past few years every effort has been made to keep the system functioning in spite of the loss of clerical and field personnel. Although it was necessary to drop certain special reports, the basic material was collected and future analyses will be possible as we are able to obtain personnel. The commercial catch records suffered somewhat from a curtailment of field supervision but the loss of basic material is negligible; the ocean sport catch survey suffered somewhat more.

Experience has shown that fisheries statistics do not compile themselves automatically. Constant pressure must be brought to bear on the dealers who are required to make the original reports and who often prefer to neglect them. Only experienced clerical personnel can build the raw records into finished reports, and such help has been heart-breakingly scarce. In spite of difficulties, the biennium ended with our catch reports in good shape; the research and administrative staffs can refer to them with confidence.

REPORT OF THE BUREAU OF FISH CONSERVATION

The Bureau of Fish Conservation is charged with the problem of making investigations and performing activities which will further the conservation and propagation of fresh water fish of the State. Toward this end the Fish Conservation Bureau has compiled data which has been used as a guide in formulating regulations on bag limits and seasons for taking fish. Fish hatcheries have been operated and various species were planted in many of our inland waters.

A research staff was employed to obtain information used for the development of policies of operation, and to serve as a basis for conservation and propagation procedures. The results of this research make it possible to base all activities of the bureau on sound biological investigations and reports. The research staff has conducted surveys of streams and lakes, supervised the planting and rescuing of fish, compiled creel counts from catch records of fish taken by sportsmen and various other special investigations. Studies were continued on the effects of dams in waterways. Fish screens were maintained. Other studies included investigations regarding the "farm pond" program and also the results of fishing in tributaries of the Sacramento River as a consequence of the impounding of water at the Shasta Reservoir.

CHANGES IN TROUT SEASON

The end of the war in 1945, and the lifting of gasoline restrictions contributed to a tremendous increase in the purchase of fishing licenses. The demands for travel and recreation boosted the sale of licenses to approximately 500,000 for the year. This total exceeded the average license sales of 442,000 for the preceding four years by approximately 100,000. The greater proportion of the license sales in 1945 occurred in the few months following the termination of hostilities.

Wartime increase in population was a major factor in the increase of license sales but it is noteworthy that the percentage of total population buying angling licenses has also grown in recent years as shown by the following tabulation:

POPULATION AND ANGLING LICENSE SALES

| Year | Population | Angling licenses | Percentage of population buying licenses |
|-----------|------------|---------------------|---|
| 1930----- | 5,677,251 | 248,319 | 4.3 |
| 1940----- | 6,907,387 | 388,472 | 5.6 |
| 1945----- | 9,250,000* | 554,025 | 5.9 |

* Estimated.

The year 1943 was the last in which it was possible to carry on an annual creel census by sending postal card questionnaires to a random sample of licensed anglers.

The number of licensed anglers remained relatively constant during the war years and the reported average catch of trout by successful anglers was 66 in 1941, 70 in 1942 and 75 in 1943. The estimated total

catch of trout by all anglers was between 15 and 16 million as compared to an estimated catch of between 12 and 13 million prior to the war. Although the total production of hatchery reared trout was increased from 133,948 pounds in 1940 to 351,461 pounds in 1945 the increase was not equal to the increased drain upon the trout supply.

It was evident from the rapid increase in angling license sales during the fall months of 1945 that the number of anglers in the field during 1946 might be as great as 700,000 and this has been verified by the preliminary figures as to license sales in 1946.

With these facts in mind the bureau recommended to the commission at the first regulatory meeting in January, 1946, that the bag limit on trout be reduced to 15 fish or 10 pounds and one fish. This recommendation was supported by most of the sportsmen's organizations throughout the State except for its application to the bag limits for north coast steelhead streams.

The commission authorized the regulation, making it state-wide, and it became effective with the opening of the trout season May 1, 1946.

FISH HATCHERIES AND FISH PLANTING

The following hatcheries were operated during the period covered by this report :

| <i>Hatchery</i> | <i>County</i> |
|-------------------------------------|---------------|
| Basin Creek | Tuolumne |
| Brookdale | Santa Cruz |
| Burney | Shasta |
| Coy Flat (seasonal) | Tulare |
| Fall Creek | Siskiyou |
| Feather River | Plumas |
| Fillmore | Ventura |
| Hot Creek | Mono |
| Huntington Lake (seasonal) | Fresno |
| Kaweah | Tulare |
| Kern River | Kern |
| Kings River | Fresno |
| Lake Almanor | Plumas |
| Mt. Shasta | Siskiyou |
| Mt. Whitney and Black Rock ponds | Inyo |
| Mt. Tallac | El Dorado |
| Prairie Creek | Humboldt |
| Sequoia | Tulare |
| Tahoe | Placer |
| Yosemite | Mariposa |
| Yuba River | Sierra |
| Central Valleys (warm water fishes) | Sacramento |

Operation of the Alpine and Madera seasonal hatcheries located in the counties of the same name was discontinued early in the war and they continued inoperative during the biennium in order to conserve manpower and because they were the least essential.

A few temporary ponds using well water were put into operation at the San Gabriel site near Whittier, Los Angeles County, in 1944. They were operated on an experimental basis to determine if the site was suitable for a permanent installation. It was found that with aeration the water was satisfactory and, the temperature being approximately 60 degrees, the growth of the fish was rapid.

Two experimental ponds set up at Owens Park, Stanislaus County, were abandoned after two months of operation as the supply of water was inadequate and too high in temperature.

The following ponds were operated in cooperation with sportsmen groups:

Murphys pond, Murphys, Calaveras County, operated on an experimental basis in 1945, June to November, with fair success and again in 1946.

Feather River ponds, Belden, Plumas County.

Truckee River ponds, Truckee, Placer County, operated in 1945 and 1946.

South Fork American River, Kyburz, El Dorado County.

Hatchery and residential buildings suffered continued depreciation during the war years when materials and labor were unavailable for normal upkeep and this condition continued through the biennium. Plans have been made for extensive repair and remodeling as soon as possible.

Increased production and the rearing of larger fish has created problems in the distribution of the fish. The only new automotive equipment available since 1941 were three Navy tank trucks designed for hauling petroleum products. One of these has been remodeled and it can transport in excess of 1200 pounds of trout in the 1300-gallon tank. Aeration is dual, utilizing both the spray and air injection methods.

Preliminary experiments in the planting of fish in high mountain lakes by plane indicates that fish of small size can be poured safely in the water containing them so long as the height from which they are released is more than 300 feet. Larger fish are injured unless dropped by parachuted containers.

RESEARCH

The biological staff, reduced to four by the war at the beginning of the biennium, began to increase in size with the return of men from military service, and by June 30, 1946, numbered 15. Of the 11 additions, six were former full-time or part-time employees, two were new men, and three were seasonal employees. Operations, severely limited during 1944 and 1945, expanded during the first half of 1946. A list of publications and reports is given at the end of this section; their titles are sufficiently self-explanatory to give an idea of some of the activities. Further description follows.

Stream and lake surveys still remain the axis around which the fish conservation work revolves. Certain long-range programs are under way, including cooperative surveys with the Fresno County Sportsmen's Club, the third and fourth of which took place during the biennium; the Mt. Eddy Lake unit survey in Siskiyou County; and an intensive study of waters in Mono and Inyo Counties. In addition, surveys are carried on by all members in connection with other duties whenever opportunity offers. They provide important information used by the biologists in making recommendations for stocking, for stream and lake closures, for stream and lake improvements, and for regulatory or legislative proposals.

RECORDS OF FISH PLANTING AND RESCUE

Along with the surveys, the biological staff is charged with seeing that the stocking and fish rescue records are kept up to date, both in detail and in summary, and from this has evolved, in cooperation with the hatchery staffs, a new instrument called the "Hatchery Management Binder." This is a loose-leaf but permanent record, a collection of information on past stocking, stocking policy, and basic survey data, to be kept at each hatchery, with duplicates in the district biologist's office and in San Francisco. An outstanding advantage is that it makes available to a new man coming into a hatchery, all existing knowledge with regard to the waters under his jurisdiction. Preparation of such a binder requires a great amount of detailed field and office work on the part of both hatcherymen and biologists, and so far only six hatcheries have been so equipped, but the others will be similarly equipped as time permits.

CREEL COUNTS AND CATCH RECORDS

Creel counts and catch records continue to be one of the most important phases of our fisheries investigations. The general angling catch records, based on a return postcard questionnaire sent to a one-in-ten sample of the angling licensees, was limited in 1944 and 1945 by shortage of help. The counties of heavy striped bass catch, however, were sampled in order to maintain an unbroken record for this important fishery. In addition, creel counts were carried out by members of the staff, some as annual spot checks on important waters, some as intensive long-range projects. Outstanding among the latter is the Castle Lake program, the first phase of which, just ended, yielded valuable information on survival of various species of trout stocked at various sizes in a typical mountain lake. The results, including figures bearing on the cost to the commission of each trout caught by the angler for various species stocked at various sizes, were published on July 1, 1946 in *California Fish and Game*, Volume 32, No. 3.

EFFECT OF DAMS

Much attention has been given to the effects of new dams upon fish life. Studies have been made, including in most cases recommendations for maintenance of fish and fishing; of plans of the U. S. Bureau of Reclamation, the U. S. Engineers, and several power companies for construction of dams or flood control devices and for alteration of dams or operating methods on the following streams: Santa Maria, Santa Ynez, Salinas, San Lorenzo, Russian, Eel, Klamath, Pit, Truckee, South Fork American, South Fork San Joaquin Rivers, and Putah and Cache Creeks in the Yolo-Solano project. All applications to the State Division of Water Resources for permits to appropriate water have been examined since the beginning of 1945, and protests entered where the amount to be diverted threatened to reduce the stream flow below the safety limit for fish.

Many of these appropriations are of a comparatively minor nature, but in the aggregate they bring about a serious reduction in the total amount of water which can support game fish. However, it is realized

that there is nothing to be gained by demanding unreasonable releases of water for fish protection, and of the 515 applications reviewed up to June 30, 1946, only 27 have been protested. Of these protests, 14 have been taken care of by including in the permit, provisions regarding maintenance of stream flow; by agreement between the applicant and the commission; by withdrawal of the application; and by withdrawal of our protest. Eight protests still were pending at the end of the period. In all cases where the U. S. Fish and Wildlife Service and the U. S. Forest Service were interested, cooperative contacts have been maintained with these agencies.

FISH SCREENS

The maintenance of fish screens came under the jurisdiction of this bureau on October 15, 1945, and operations of the fish screen crew in the northern part of the State have since been under supervision of our district biologist in that area. The installation of $\frac{1}{8}$ -inch by 3-inch mesh, smaller than the mesh of most of our present screens, is being pushed, since it is more efficient in preventing the loss of small fish and at the same time clogs less easily than the larger mesh.

FARM PONDS

The number of small reservoirs constructed by ranch owners for stock watering and irrigation purposes has greatly increased, and a "farm pond" program is under way. This project includes not only the furnishing of bass, sunfish and other warm-water species as initial seed stock, but experiments at our Central Valleys Hatchery at Elk Grove as to proper numbers and combinations of species for such waters, and on weed control and fertilization.

SHASTA RESERVOIR

The proper fish management of the newly constructed Shasta Reservoir has been under study. A further problem in this connection has arisen from the fact that "hardheads" (*Mylophorodon conocephalus*, sometimes miscalled "pike") and other rough fish have migrated out of this large body of water up its tributaries, especially the Sacramento River, in such numbers as to endanger the heretofore excellent trout fishing in these streams. Investigation indicates that the hardhead goes upstream in the spring and descends again in the fall, and plans are underway for the construction of a low dam on the Sacramento River which will block future upstream incursions of these fish once the fall migration has taken them downstream below it. It will include a trap where trout on their upstream spawning migration can be segregated from the rough fish and allowed to ascend, while the latter will be destroyed.

MISCELLANEOUS PROJECTS

Other long-range projects which have been continued or revived during the biennium are: The Lake Almanor study; the Clear Lake investigation, to which one biologist is now devoting a large part of his time; diseases in the trout hatcheries; pollution control, under one of our former pollution specialists returned from naval service; the Waddell Creek

steelhead life history study, now in final stages of preparation for publication; and the striped bass investigation. To the latter, two men have devoted almost their entire time since early in 1946, and marked progress has been made in assessing the catch, in delimiting spawning seasons and localities, and in evaluating the incidental effect on striped bass of the river net fishery for salmon.

Finally, a much needed check list and bibliography of California fresh-water fishes is in preparation, and a manual for the use of the biological staff. Sections relating to plankton collections and analysis, and the study of food contents of fish stomachs, already have been completed.

The publications by the members of the research staff and a list of the special administrative reports prepared by the personnel of the Bureau of Fish Conservation during the biennium will be found in the appendix, page 63.

It is planned that both the hatchery and research programs will be expanded in the future to a point well above prewar level. This objective will enable us to accomplish a more complete program of operation and to expand the research activities to include investigations on many problems which must be solved for the most efficient conservation of fish of our inland waters.

REPORT OF THE BUREAU OF ENGINEERING

During the biennium, activities of the bureau were greatly restricted due to the war and the restrictions immediately following the end of hostilities. The bureau was particularly under-staffed in the field which only permitted a minimum of maintenance work on the many fish screens installed previous to the war. Lack of materials and the difficulties of obtaining such material as was available further slowed this important work. New installations were entirely out of the question and were not attempted.

Because private individuals and companies as well as public agencies were experiencing the same difficulties, maintenance and repairs to fishways on privately owned and operated dams were only demanded in essential instances. Fortunately, it may be stated that the important runs of fish were not handicapped by lack of properly conditioned fishways as only in a few instances was the bureau unable to take necessary remedial steps. The general condition of field structures was continually observed, however, and records were kept of needed improvements and new installations for the time when construction work would be feasible.

The staff of the bureau was able to complete a considerable number of field surveys for other bureaus of the division and to complete the desired plans for these projects.

For the Bureau of Fish Conservation, the Crystal Lake Fish Hatchery on Crystal Lake and Hot Creek in Shasta County were important projects. Complete topographic surveys and other studies were made from which a preliminary plan of the proposed development was prepared in accordance with the desires of that bureau. Topographic surveys were made of other fish hatchery sites as requested and studies and water measurements were made at existing fish hatcheries.

Two topographic and property surveys were made for the Bureau of Game Farms, one upon property acquired by that bureau at Chico, and the other at the Game Farm at Redding. Plans also were prepared for a residence at the latter place.

Early in the biennium the bureau was able to start a two-man survey party at the Fleming Ranch on Honey Lake in Lassen County. This property was acquired by the Bureau of Game Conservation pursuant to the provisions of the federal aid Pittman-Robertson Act and which that bureau proposed to develop under federal aid for a portion of their Honey Lake Waterfowl Management Area. At a considerable disadvantage through lack of personnel, sufficient field data was obtained so that a preliminary layout was prepared of the full development of this 2,100-acre site in accordance with the desires of the Bureau of Game Conservation. So that construction could start under contract at an early date, designs of all structures were made in order that full advantage could be taken of nonpriority construction.

Surveys were also started on other units of the Honey Lake Waterfowl Development but had to be discontinued due to shortage of personnel. As previously stated, construction work was difficult and usually subject to government priorities. Earth moving and grading, however,

were exempt from such restrictions and the bureau was therefore able to relocate, under contract, the access road into the Cedar Creek Fish Hatchery site in Mendocino County.

There is an important need for adequate fish screens and fishways throughout the State and now that war conditions are slowly being eliminated it is hoped that definite progress will be made on these important installations as well as the other engineering needs of the division throughout the next biennium.

By action of the Fish and Game Commission on August 24-25, 1945, the Bureau of Engineering was discontinued and the activities normally carried on by that bureau were transferred to the Department of Public Works, Division of Architecture, and to the various bureaus within the Division of Fish and Game.

REPORT OF THE BUREAU OF GAME CONSERVATION

During the past two years the Bureau of Game Conservation has been concerned with the many problems that continually arise in conservation work. With some we have gained in knowledge and experience; with others, we have not yet arrived at the answer.

Data has been compiled which was used as a guide in formulating regulations and bag limits for taking game. A staff of trappers was maintained to take predatory animals.

A research staff was employed to obtain information for use in the development of policies of operation, as well as to serve as a basis for conservation procedures. The results of this research make it possible to predicate all activities of this bureau on sound biological investigations and reports.

Many of these findings are put into immediate application by a staff of game management personnel, while other projects require several seasons for conclusion.

Studies have been made of crop damage by wildlife and the alleviation of some of the depredations was attempted. Increasing difficulties of the sportsman to find a place to hunt has been a major consideration during the biennium.

Pittman-Robertson projects, financed three-fourths by the Federal Government and one-fourth by California, included various surveys and investigations, development projects and land acquisition. Several programs of upland game bird conservation have yielded promising results. The transportation of beaver into new or depleted areas is giving these animals a chance to recover some of the habitats in which they once abounded.

Investigations on the health of the wildlife of the State were continued by the disease laboratory staff.

ANTELOPE SEASON

Antelope hunts were continued during the month of September in 1944 and 1945, along the same lines as previous hunts, with 500 permits, selected by lottery, being issued to hunters. In 1944, a total of 322 antelope was taken, and in 1945, a total of 307. An air survey of the antelope area in the winter of 1945 revealed a lesser number in the herd and a much reduced number of bucks, and, as a result of these findings, no open season was recommended for 1946.

PREDATOR CONTROL

During the biennium a grand total of 13,224 coyotes and 5,082 bobcats were taken by our predatory animal hunters and trappers. Trappers were greatly curtailed in their work by wartime restrictions on the use of automobiles. A summary of the predators taken during the biennium will be found in the appendix, page 136.

CROP DAMAGE

Game damage to crops and land has been a constant problem. In the rice fields, losses have been greatly reduced by herding ducks and geese with airplanes and by using bombs, flood lights, scare crows and strings of firecrackers on a slow-burning fuse that ignites the crackers at definite intervals throughout the time the birds may have been working in the field.

The acquisition of lands and better control of grazing seem to be the best answer to the deer problem in areas where deer are damaging orchards, gardens, crops and grain fields, some ground has been gained by herding, and by the use of repellent sprays. The ultimate answer in certain areas seems to be a thinning of the herds by trapping or other means. Trapping is feasible where deer congregate in considerable numbers in a limited area, but trapping will be slower and much more costly where they are scattered over a large area.

AVAILABLE HUNTING AREAS

By far the most serious problem confronting the sportsmen of California is one that can be resolved only by the sportsmen themselves. It is a problem worthy of full-time attention of all the sportsmen's organizations in the State. The problem, briefly defined, is the promotion of better relations with landowners in order that the responsible hunter may have access to additional land on which to hunt.

More and more acreage is being closed, chiefly because of the actions of psuedo-sportsmen. There is a considerable percentage of meat hunters who have no regard for the rights of property owners and who have conducted themselves in a manner which has prejudiced landowners toward all hunters, including true sportsmen.

California has an area (in round numbers) of 100,000,000 acres. Only a small percentage of this area is highly developed agricultural land. There is no valid reason why the greater portion of the balance should not be open to sportsmen, if the owners could be assured hunters would observe the code advocated by all sportsman's organizations, to an end that deliberate acts of vandalism would be eliminated.

Through the action of psuedo-sportsmen, stock has been wantonly killed and crippled, gates left open, domestic fowl slaughtered, fences broken down, crops destroyed and property burned. There also has been much illegal hunting which landowners, generally, do not approve.

The closing of national forests became necessary because those in charge felt that hunters, generally, cannot be trusted. The restrictive action was a direct outgrowth of destructive acts by a very small percentage of the hunters who previously enjoyed the forests.

Better control of meat hunters, and hooligans with guns, by sportsmen's organizations can bring about better hunting on lands now closed to the public.

PUBLIC SHOOTING GROUNDS

The matter of public shooting grounds was vigorously advocated early in 1944, and the Bureau of Game Conservation was instructed to investigate and appraise suitable lands.

The United States Fish and Wildlife Service agreed to cooperate with the State in land examination and appraisal. This agreement has been fulfilled in every respect.

There was general concord by all parties that 3,500 acres was the smallest unit which could be economically administered and that 5,000 was a desirable minimum.

Lands of marginal or submarginal agricultural quality only, can be considered for public shooting grounds, first because of purchase cost, and second, to avoid a reduction in agricultural production. The latter was an especially potent reason in wartime.

The necessity for an adequate and cheap water supply limits still further a choice of sites. Agricultural markets expanded by war prices have put into cultivation considerable acreage which normally would have been available for acquisition and has inflated values on practically all land far beyond its actual productive capacity.

Because all purchase money was to be furnished by the State, the Department of Finance ruled that appraisal by the United States Fish and Wildlife Service could not be accepted unless supported by a comparable appraisal from an acceptable independent source. This decision was a concession on the part of the Department of Finance, since that organization commonly required three appraisals.

The following is a list of tracts which have been examined and of findings and action taken in each case. The projects are listed in the order of their inception:

1. Yolo By-Pass, Yolo County, 74,000 acres. This area was reported favorably but the key land holders refused to consider selling. This area is one of the most adaptable sites examined but because of the attitude of the owners is unavailable.

2. Merced County Tract, 5,500 acres. This tract embraces the southern portion of the Crane Ranch and miscellaneous adjoining properties. The report on this land was generally favorable, although its water supply is inadequate pending allocation of Central Valley waters. The Crane Ranch was appraised by the United States Fish and Wildlife Service, and the additional lands by Merced Realty Board. Negotiations were terminated when the Crane interests executed a long time lease at a figure which implied a value for in excess of the appraisal.

3. Hay Ranch, Madera County, originally 3,200 acres; finally 7,000 acres. This tract was offered by the owner at \$40 per acre with the provision that he retain grazing rights for a period of 20 years from date of sale. The offer was declined by the Fish and Game Commission because of the grazing stipulation.

4. Chico Sportsmen's tract, Glenn County, 5,700 acres. Located in the southeast corner of Glenn County along the west side of Butte Creek. This tract was appraised by members of the Chico Realty Board and was favorably reported upon by the Bureau of Game Conservation. It is not of record that a definite rejection of this tract has been made.

5. Moffat tract, Madera County, 5,000 acres. This tract abuts on Lone Willow Slough just north of Number 3 above. It is without water right and would be dependent on floodwater runoff, supplemented by pumping. Development and maintenance cost would be high. It was rejected for these reasons.

6. Imperial Valley Tract, Imperial County, 3,720 acres. Following a joint examination of the entire "Salton Sea Reserve" by representatives of the Fish and Wildlife Service and the Division of Fish and Game, areas were selected by each which were deemed suitable for their respective purposes and mutually satisfactory as to location. (Salton Sea Reserve is all the land of the Imperial Irrigation District located below the minus 230 foot contour and is reserved by the District for the disposal of waste and drainage waters and the silt carried in these waters. This land cannot be purchased and is available by lease only. The State is leasing two separate tracts, one of 2,640 acres, the other, 1,080 acres. Both are being developed as experimental areas on which management practices in the handling of both waterfowl and hunters are being tested. The restrictions imposed by State regulations on contract work and the prevailing labor shortage has severely impeded progress.

7. Sutter By-Pass, Sutter County, 9,988 acres. The tract was appraised by the United States Fish and Wildlife Service. The values affixed were generally so high that the tract was rejected in spite of its good location and its adequate water supply.

8. Colusa County, 8,500 acres. In cooperation with United States Fish and Wildlife, an attempt was made to locate suitable land adjoining the federal feeding area at Colusa. Failing in this effort, the investigators arranged for an appraisal of the Welch Tract, located in Colusa Trough east of Maxwell. More than a year was required to obtain the second appraisal required by the Department of Finance. The commission then decided to postpone acquisition pending a reduction of land prices and an evaluation of experience obtained on experimental areas.

9. Jameson Tract, Fresno County, 4,100 acres. This tract is located on Fresno Slough 24 miles west of the City of Fresno. It has been partly developed as a commercial shooting area. Water must be purchased from the Central Valleys Project and pumped from Fresno Slough. The commission rejected the tract because of its high price.

Summary: Nine tracts totaling nearly 57,000 acres have been examined. A considerable portion of the land was found suitable for the proposed use. Prices of these lands, however, were found to be uniformly high, in nearly all cases being at least double the value of the land, based upon its productive capacity under normal economic conditions. Only one of the nine locations in Imperial County, has actually been obtained. This area is under annual lease and being developed experimentally.

Other Public Shooting Areas: 1. Sherman Island, Sacramento County, 3,100 acres. Control of this area was obtained by transfer from the State Reclamation Board. The primary purpose in obtaining this area was to prevent its being leased to private parties.

2. Imperial Waterfowl Refuge, Imperial County, 2,500 acres. In order to disperse concentrations of waterfowl occupying this refuge, which are alleged to damage agricultural crops, this refuge has been opened to the public for the last two shooting seasons. Dispersal has been eminently satisfactory but hunter success was low on the refuge area.

3. Honey Lake, Lassen County. There are three units in this project, all acquired under the Federal Aid in Wildlife Restoration (Pittman-Robertson) Act, for development as waterfowl management areas. Under

terms of this act, 50 percent of all lands so acquired must remain inviolate sanctuaries. Only one unit has been opened to shooting. Of the 2,092 acres of Unit No. 1 (Fleming Ranch) 1,000 acres are open for public shooting. Due to the small size of this area it will probably be necessary in the future to limit the number of shooters. When the other units of this project are developed an area equal to half the total acreage will be available for public shooting.

4. Tule Lake Reservoir and Madeline Plains, Lassen County. This is another Pittman-Robertson project and subject to the same restrictions as Honey Lake. When completed this project will provide 2,500 acres for public shooting.

PITTMAN-ROBERTSON

During the biennium the Pittman-Robertson program has continued to operate on a reduced scale. Although a tremendous unappropriated reserve—approximately \$12,000,000—has accumulated since the act became law, the war-time shortage of manpower, equipment, and materials has made any increase in annual appropriations impractical. Although California, in common with most of the other states, specifically requested that there be no increase in available Pittman-Robertson funds during the war period, we have been making plans for the expenditure of the greatly increased appropriations that undoubtedly will be made by Congress during the next few years.

On July 1, 1944, California received an apportionment of \$34,493.03 and on July 1, 1945, \$39,413.47. Adding California's contribution of one-third brings the total available for expenditure during the biennium to \$98,542.00.

A total of 13 projects was in operation during all or part of the biennium. Of these, eight were in the category of surveys and investigations, two were development projects, and three involved the acquisition of lands. Following is an account of the various projects which have been undertaken :

Surveys and Investigations: Two five-year research projects were completed on June 30, 1945, and final reports are at present being prepared. One of these, Project 5-R, was a study of California's fur resources, and the other, Project 6-R, was a study of problems involved in the management of valley quail, particularly in the south coast counties.

Project 15-R, a study of the effect of seasonal and other factors on the palatability of deer and antelope meat was begun early in 1944 and field work was completed in the fall of 1945. A final report now is being prepared by the University of California, the cooperating agency. The results of this study may well have an important effect on future decisions relative to deer seasons.

Project 16-R, begun in 1944 and completed June 30, 1946, involved the investigation of water development possibilities for wild life use in the southeastern deserts and sufficient data has been obtained to justify an extensive program just as soon as funds, labor, and material are again available.

Four other investigational projects were begun during the latter part of the biennium. These are Project 19-R, a study of the life history and habits of mountain quail; Project 20-R, a survey of waterfowl food

plants being conducted in cooperation with the University of California; Project 22-R, an investigation of pheasant management problems; and Project 24-R, a survey of the critical summer and winter ranges for deer within the State.

Development Projects: Project 14-D, providing for the construction of approximately five miles of drift fence on the western boundary of the Tehama winter range was completed early in 1944 and has since provided that critical deer range with much-needed protection from livestock trespass.

Project 18-D, the live-trapping and transplanting of beaver, commenced in May, 1945, was still in operation at the close of this biennium. To date, approximately 170 beaver have been transplanted at 44 locations.

Land Acquisition: In spite of soaring land prices that have doomed extensive acquisition projects to almost certain failure, it was possible to complete certain phases of two existing projects and to obtain preliminary approval of projects that will be carried through to completion just as soon as conditions return to something approximating normal.

Under Project 10-L, the Tehama Winter Deer Range, three additional parcels totaling 3,500 acres were added to 25,000 acres already under State control.

In Madeline Plains, Lassen County, under Project 17-L, approximately 4,500 acres, including the Tule Lake Reservoir, were acquired for waterfowl management purposes. Half of this area will be available for public shooting.

As this biennium came to a close, preliminary approval had been obtained for the acquisition of 131,000 acres in the critical Doyle Winter Range area in southeastern Lassen County, and 640 acres of deer range in the vicinity of Bald Mountain, Shasta County.

THE UPLAND GAME BIRD PROGRAM

As a result of studies conducted under auspices of Federal Aid in Wildlife Restoration, Project California 6R, many management problems concerning valley quail have been solved and the results published in a University of California Bulletin entitled "Increasing Valley Quail in California" by John T. Emlen, Jr. and Ben Glading. This bulletin points out that valley quail management is strictly a problem of local land management; that quail only can be increased to the advantage of quail by improving local habitat conditions; such as water, cover, feed and predation. It is emphasized that merely raising birds in pens and dumping them into unsuitable habitat is worthless.

One method for improving quail habitat has amply proven its value on an experimental basis. This device, known as the "Gallinaceous Guzzler" provides water in dry areas without the benefit of springs, seeps, pipelines, etc., by collecting rainwater and storing it underground for quail use. In all, 13 of these outfits have been installed to date: Five in San Benito County, three in Fresno County, three in Riverside County, and two in San Bernardino County. All have proven their value by establishing centers of quail population in areas formerly devoid of these birds. Other states, including Arizona, New Mexico and Oregon have become interested in similar devices and are highly enthused as to their

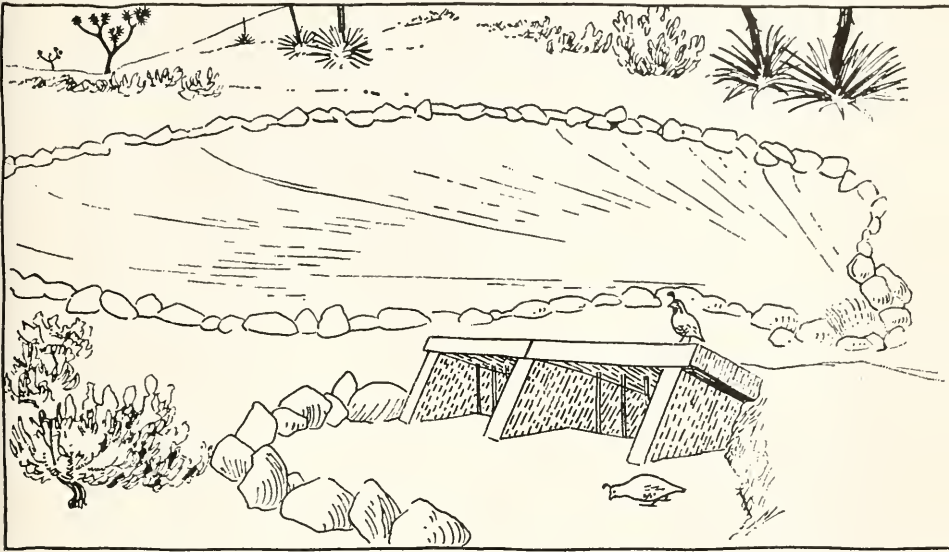


FIGURE 13. The "Gallinaceous Guzzler." This is a device to supply water to quail and other small game in arid areas in California. This self filling watering unit is inexpensive to install and requires little or no maintenance. The "Guzzler" is filled by winter rainfall and stores water underground for summer use by quail. The birds get the water by descending a ramp.

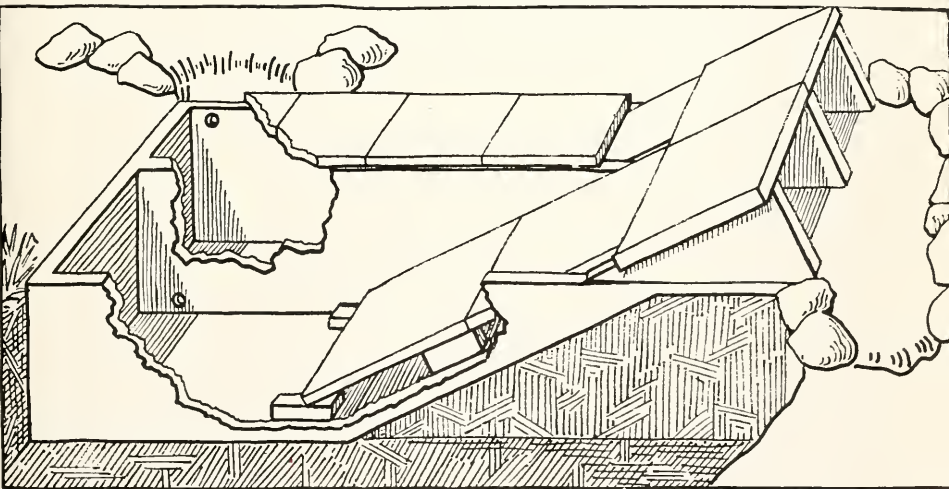


FIGURE 14. Cutaway of "Gallinaceous Guzzler." This shows the details of construction of the "Gallinaceous Guzzler." All construction is of concrete. The underground tank holds about 750 gallons of water. Concrete roof and baffle slabs retard summer evaporation. The rain collecting apron is made of concrete covered with asphalt emulsion; the size of the apron is calculated on the basis of the minimum recorded rainfall for the area in which the "Guzzler" is installed.

value for arid land game. The U. S. Soil Conservation Service is negotiating a program for installing them in Southern California and the other southwest states.

Other methods of improving quail habitat include control of cover by planting native and introduced shrubs; by thinning extensive brush areas; by proper management of food patches, and where the occasion demands, proper predator control, including the control of ground squirrels. One new method of ground squirrel control developed recently by the U. S. Fish and Wildlife Service gives promise of controlling ground squirrels without killing quail. It involves the use of the new poison "1080" together with yellow dyed bait. This poison has been tested by the Division of Fish and Game and is considered safe for use in quail areas when handled according to regulations of the California State Department of Agriculture.

Sportsmen throughout the State have become conscious of the findings of the quail study and are asking for aid in quail habitat management. As a result, the division is instigating a program to aid ranchers and sportsmen who are interested in developing quail populations on local areas. A new Federal Aid in Wildlife Restoration Project, 26D, is being written up to accomplish this purpose in the south coastal ranges from San Francisco to Santa Barbara. If this program proves successful, it will be followed by similar projects in other areas of the State.

In order to determine similar management procedures for mountain quail and ringnecked pheasants, two new Federal Aid research projects, (19R and 22R) have been started. The pheasant study was preceded by work done by the Bureau of Game Conservation in the Gridley area. Some preliminary results of the pheasant study include the relation of blackbird control methods to pheasant population. It is tentatively concluded that if this control is done under methods presented by the California Department of Agriculture, only negligible damage to pheasants will result.

It is too early to say at this time what definite conclusions will ensue from the new pheasant and mountain quail studies, but it is hoped that practical recommendations for management of these species will be forthcoming.

BEAVER RESTORATION PROGRAM

In the course of this biennium the Federal Aid in Wildlife Restoration Project California 18-D, "Beaver Live Trapping and Transplanting" was approved and in operation seasonally for a period of eight months.

During this period 44 beaver transplantings were made to new locations not previously occupied by beaver in 17 counties of the State. The animals consisted of 77 males, 80 females, and 13 sex unknown, a total of 170 animals. The personnel of this project has been one experienced beaver trapper and assistant.

Some of the early experimental beaver plantings made by the Division of Fish and Game and U. S. Forest Service are showing results worthy of mention for the benefits gained in reference to future operations in game management work.

The beaver planted late in 1934 at Rowland Creek, Plumas County, have more than proved their worth in the following factors: Control of

soil erosion, maintenance of a continuous flow of the stream during the low water period of the year, and restoration of the large stream irrigated meadow for livestock. Stream improvement has developed additional fishing waters where there was practically none prior to the introduction of the beaver. By 1941, numerous fishermen from various parts of the State were enjoying excellent fishing from waters impounded behind a series of 30 beaver dams over a distance of $1\frac{1}{4}$ miles. The distribution of surplus animals from this location to other streams where their accomplished results have been equally as favorable and of much interest to landowners and agencies faced with the problem of land utilization.

Another outstanding demonstration is the colony of beaver introduced into Ackerson Creek, Tuolumne County, early in 1940. Only three animals were used to start this experiment. The stream bed was eroded to the degree where the water table had dropped very low and was of practically no value for subirrigation to an adjacent 400 acre meadow along both banks of the stream. The meadow no longer was suitable for livestock and the stream was drying up for a short period in the summer months. By 1944, the beaver had constructed a series of 18 dams down the length of the meadow. The stream was flowing continuously throughout the year, the water table was again normal, and the meadow was restored, furnishing grazing for livestock. The stored water back of the beaver dams was creating habitat for fishlife and many limits of fish were reported taken by fishermen.

Another example of stream improvement by transplanted beaver is Smithneck Creek in Sierra County. Five animals were transferred there in July of 1943 from Rowland Creek, Plumas County. In June of 1946 the animals had constructed eight large dams. The impounded waters were raising the water table in the lands adjacent to the beaver ponds, creating a better growth of grass for stock grazing. Fishermen report an increase in the size and numbers of fish caught since the addition of the beaver dams in the stream. Ducks have been observed nesting in the vicinity of the ponds for the past two seasons.

The restoration and introduction of these valuable animals is being administered with caution as regards other interests and any definite conclusions regarding the economic value of the animals are stated with reservations. However, if certain facts and opinions obtained so far are indicative of benefits to be derived with proper management, it will justify activities on a much larger scale in the future.

PARASITES AND DISEASES

In August, 1945, the disease laboratory staff moved into new quarters located in Strawberry Canyon on the campus of the University of California in Berkeley. This has greatly facilitated our work but with the end of the war and the return of service men to the staff, as well as the expansion of our program, the facilities are again proving inadequate and crowded.

Studies on deer in the coastal counties presented further evidence that the parasites of the digestive tract are the chief cause of losses, particularly among fawns and yearlings, while the mule deer of the northeastern portion of the State, including the winter deer herd which migrates into our State from Oregon, apparently are not greatly infected

with these parasites. Liver flukes have been found to be common in deer in areas where these parasites are a serious problem with cattle and sheep, but in areas where domestic livestock are not infected, deer also are free of this parasite. A type of papilloma, or skin tumor, occasionally seen in cattle, has been observed on several deer from Marin County. An extensive survey was conducted to determine the incidence and possible importance of a round worm parasite that occurs in the feet of deer. Although large percentages of deer were found to be infected in many areas of the State, it did not seem that these parasites were causing much suffering or debilitating results in the infected animals. Studies were conducted on the nasal bots of deer and the fly responsible for this infection was determined.

Examination of a number of antelope during the special hunting seasons revealed that although several types of parasites occurred in these animals, they were in such small numbers as to be causing no harm.

Further investigations were made in an effort to determine the source of a so-called "iodine" condition of ducks in the lower San Francisco Bay area. J. B. Swim, toxicologist for the city and county of San Francisco collaborated in this study. No iodine is involved in the condition although the ducks develop a medicinal odor somewhat resembling iodine. This odor is readily distinguishable from the sewer smell which develops in some ducks on the bay which feed extensively at the outflows of several sewer disposal areas.

This condition in the ducks was first observed by hunters and game wardens in the years following cessation of extensive feeding of grain by the various duck clubs in the area. Apparently the shortage of food forces the ducks remaining in the area to consume much algae which grows particularly abundant in some of the marshes and salt ponds bordering the bay. When dried, this material gives off the characteristic odor. When fed to healthy ducks, these birds develop the odor which rapidly permeates their muscle tissue. Ducks which feed on this material sometimes can be recognized immediately by the odor when shot, but in many cases the sickening aroma is not evidenced until the flesh is heated or while cooking in the oven. The condition causes no noticeable harmful effects on the birds; they remain in good flesh and apparently recover when they leave the area or cease feeding on the algae. The chief problem presented by this condition is the fact that many hunters discard such birds when they come to bag, thus creating a considerable waste.

The program of studies on the blood and other parasites of quail has been continued, and now is expanding to include similar investigations on the diseases of mountain quail and pheasants. Field samples obtained chiefly through the cooperation of the Associated Sportsmen of California and other hunters have added much to our knowledge of the distribution of some of the parasites of quail. Laboratory studies on fly-borne *Haemoproteus*-malaria showed that infected birds can harbor the parasites in their blood continuously over a period of several years without being subjected to possible reinfection and that the large parasitic fly which occurs on the birds is capable of transmitting the infection just as the smaller species of fly was known to be a vector.

Collateral with our studies on the diseases of game birds, comparable information is being obtained on other species of birds. It was found that

magpies and crows in Lassen County frequently become infected with malaria before they are able to fly. This may be a significant finding in view of the fact that the greatest losses that occur in wild game birds is during their first few weeks of life. An extensive program is being undertaken to study the epidemiology of bird malaria in the Bakersfield area in collaboration with the University of California and the United States Public Health Service to determine possible relationships to the encephalitis of horses and man since both diseases are mosquito-borne.

Observations at the state game farms have revealed frequent losses from diseases such as pullorum, tuberculosis and gapeworm. Programs are being developed with the aim toward eradication of these diseases. A pullorum disease control program already has been instituted modeled somewhat along the lines of the pullorum disease control program which the State Department of Agriculture has in force for the domestic poultry industry.

Through the cooperation of game wardens and other field personnel of the Division of Fish and Game and several hunters we have had opportunity to examine a variety of animals for evidence of disease. Further studies are in progress in an effort to learn more of the significance of disease evident in such animals and their possible relationships to the animals in nature.

PUBLICATIONS AND PROGRAM

A list of the publications prepared by members of the staff during the biennium will be found in the appendix, page 65.

It is planned that the program of the Bureau of Game Conservation will be greatly expanded in the next biennium thus permitting investigations on many problems in need of solution for the most efficient conservation of our mammals and birds. With the start of the next biennium, investigations on the food habits of animals will be reestablished. The Bureau of Game Farms will be incorporated into the Bureau of Game Conservation and it is felt that this consolidation will greatly increase the efficiency of the two programs of propagation and planting, and conservation and management.

REPORT OF BUREAU OF GAME FARMS

The Bureau of Game Farms in the past biennium has maintained production of upland game birds in captivity for purposes of restocking new areas or replenishing depleted stock in other areas.

The main production units were the Yountville Game Farm at Yountville, Napa County and the Los Serranos Game Farm at Chino, San Bernardino County.

Besides the above mentioned units, a number of smaller units were operated by the State, together with many maintained in cooperation with sportsmen's groups. These usually consist of holding pens where young birds can be reared to an age favorable for release. Some, however, maintain birds for egg production as well. The eggs from the latter were shipped either to the game farm at Yountville or the one at Chino.

An abode brooder house has been constructed at the unit in the Kern County Park near Bakersfield. A new unit near Fresno will handle eggs from the Central California district. The number of small units is being increased.

Sportmen's groups in the vicinity of Chico, Marysville, Porterville and Brawley have asked for game farm units and these have been approved. At Porterville the local sportsmen already have made available 48 pens and the Chico club had deeded a piece of property to the State to be used as a site for the unit there. Construction on the other units will be undertaken as soon as possible. Other units in operation, not mentioned above, are located at Redding, Willows, Sacramento, Bakersfield, Castaic and Valley Center and there are many other smaller units containing only holding pens.

Maintaining production during the war years was a difficult task for many reasons. Chief among these was the shortage of personnel. With so many of the younger employees in the armed services, operation was maintained by the older men, supplemented by boys and girls of high school age, and war veterans in the process of rehabilitation who put in long hours of hard and confining work. Evening classes, once a week for a year and a half, consisting of lectures and motion pictures on Game Farming and Conservation did much toward training the veterans and helping them with their problems. Several have continued on with the work.

As the war came to an end many men returned to their old positions and although the staff still is short of sufficient experienced personnel the outlook is promising.

Another problem confronting the efficient operation of the game farm program was the procurement of sufficient and adequate feed. By substituting where possible, and by frequently obtaining discarded grains, this shortage was somewhat overcome. However, the resulting lack of proteins, minerals and vitamins in these feeds had its effects and the birds produced were not quite up to those of former years. The birds took longer to put on weight and their feathering was none too good. It is expected that the feed situation will improve and that conditions arising through lack of a proper feed supply will be alleviated.

An extensive amount of new battery brooder equipment was in operation. This material is proving very satisfactory at the larger units and it is felt that the equipment will prove even more efficient when new housing facilities can be provided. However, it was found that these batteries are most efficient only with large numbers of birds. The small units, receiving as few as 500 day-old chicks per week, find the battery brooder method is not as efficient as the old method of brooding by pens.

Requests for bulletins and other information were received from many sources, including several from soldiers still in the armed forces who apparently were interested in the possibility of entering into upland game bird farming when they returned to civilian life.

During the biennium, pheasants of the Chinese and Mongolian varieties produced well at the various game farms. The hens averaged about 55 eggs per season. Losses due to cracked, culled and infertile eggs totaled approximately 15 percent. Not all of the chicks were up to standard and some were disposed of. Of the total eggs set, approximately 65 percent hatched into A-1 chicks.

The egg production of the Chukar partridge was about 40 eggs per hen. Normal losses were incurred from infertile, cracked and culled eggs, and substandard chicks. About 65 percent of the eggs set hatched into A-1 chicks.

The bureau found that valley quail are the most difficult to raise, probably because of their susceptibility to various diseases when concentrated in pens. Egg production of the valley quail was comparable with that of Chukar partridge. Infertility was approximately 20 percent, and the hatchability of all quail eggs set was approximately 70 percent.

A total of 114,075 birds were distributed from the Yountville and Los Serranos Game Farms during the biennium. This figure includes many transfers of day old chicks, and these birds suffered the normal casualties incident to work of this nature. A proportion of the total distribution was utilized as breeding stock at smaller units. During the two years, despite all handicaps, a total of 65,638 birds were liberated.

A tabulation by counties, showing the number of game birds, including quail, pheasant, turkeys and Chukars, which were liberated will be found on page 138 of the appendix.

REPORT OF THE BUREAU OF LICENSES

In the distribution and sale of licenses this bureau has three objectives:

First, to establish as many agencies throughout the State as possible so as to enable the sportsmen to obtain licenses whenever and wherever they may apply. Second, to maintain a harmonious and friendly relationship with these agencies in order to secure their cooperation, since they are the means by which we are able to sell the licenses to the sportsmen. Third, to give the agencies the best possible service in supplying them with licenses for the purpose of overcoming the possibility of a shortage when such licenses are most needed by the sportsmen.

During the biennium which covered the war years we were somewhat handicapped in maintaining proper distribution of licenses throughout the State because many of our former agents had gone out of business or, due to lack of help and inability to obtain sporting goods merchandise, had discontinued handling licenses. During these years the sale of licenses showed a slight decrease which, in a measure, was caused by wartime restrictions on travel and so forth. However, in the latter part of 1944 it was noticeable that there was a greater demand on the part of sportsmen for licenses.

The bureau anticipated that the end of World War II would stimulate our license sales. It, therefore, was considered advisable that we change the method of distributing licenses to our agents.

There were two methods of distribution:

One, where the agent paid cash in advance for the value of licenses needed, and any licenses that remained unsold were returned, and the value refunded to them. These agents were paid 5 percent of the amount of sales accounted for and a majority of the agencies throughout the State operated under this plan.

Two, a method where the agent was placed under a bond and licenses were sent to him on a credit or consignment basis. The agent then remitted regularly on licenses that were sold, and as compensation he was paid three and a half percent ($3\frac{1}{2}\%$) of the amount accounted for.

With the expectation of an increase in our license sales it was believed that the first, or cash plan of distribution, would not be satisfactory because many of our agents had small business establishments and probably did not have sufficient capital available to purchase the number of licenses needed to serve the sportsmen.

In the 1945 session of the State Legislature a bill previously approved by the Fish and Game Commission, was introduced. This bill placed all license distribution entirely on a credit, or consignment basis and allowed the agent 5 percent of the amount of sales accounted for. This bill was given approval and became effective on January 1, 1946 with the issuance of the 1946 angling licenses.

There was considerable work involved in contacting all of the former cash agents, getting them signed up under the new method, and determining the value of licenses of various kinds and denominations that should be sent to them. We were handicapped also in not being able to

obtain the necessary office equipment to keep the records controlling the distribution and license sales of each agent.

It is our purpose to carry on this work along the same lines that a large commercial concern would use to control their credit accounts—however, with this difference—we considered it our responsibility to keep the agent supplied with licenses at all times, whether he requisitioned the licenses or not. During the six month period—January 1 to June 30, 1946—that this system has been in operation, it has proved very satisfactory and we believe we are in a position to give the sportsmen better service than we have in the past. To carry out the credit distribution, the State is divided into five districts with a branch office in each district to serve all of the agents of that particular district. The principal office of the bureau is maintained at Sacramento with branches in Redding, Sacramento, San Francisco, Los Angeles and Fresno.

Several years ago the premium rate on our license bond was \$5 per thousand. Due to close supervision of the agents, and by holding the claims filed with the surety company to a minimum, the premium rate was reduced, first to \$3, then to \$2.50, and with the renewal of our schedule bond in February of 1946, a further reduction to \$2 per thousand was made.

The pheasant tag law, which became effective in 1943, was repealed by the 1945 Legislature—consequently there were no pheasant tag sales for that year. The sale of pheasant tags for 1943 amounted to \$121,186. In 1944 the sale was \$105,923.

The commission, acting under the provisions of Section 1346, Fish and Game Code, provided for antelope hunts in both 1944 and 1945. In 1944, 3,910 persons made applications. In 1945 the number of applicants had increased to 4,675. At the time of the drawing in 1945, of the first 500 names drawn, 119 were from women.

The commission did not set a season for elk hunting in either 1944 or 1945. Consequently no drawings were held.

The trend of increased license sales has been caused by the increased population and returned service men, but the new all credit method of license distribution has practically eliminated area shortages that formerly occurred, and has also contributed to the increased sale.

LIST OF PUBLICATIONS

PUBLICATIONS BY STAFF MEMBERS OF THE BUREAU
OF MARINE FISHERIES

- Fish Bulletin No. 61. Results of Tagging Experiments in California Waters on the Sardine, *Sardinops caerulea*. 90 pp.
- Fish Bulletin No. 62. Catch per-Unit-of-Effort in California Waters of the Sardine, *Sardinops caerulea*, Ralph P. Silliman and Frances N. Clark. 76 pp.
- Fish Bulletin No. 63. The Commercial Fish Catch of California for the Years 1943 and 1944. By the Staff of the Bureau of Marine Fisheries. 81 pp.
- Fish Bulletin No. 64. The Biology of the Soupfin, *Galeorhinus zyopterus*, and Biochemical Studies of the Liver. 96 pp. (In press at close of biennium)
- The "Balloon" Type Otter Trawl for Rockfishes. W. L. Scofield. California Fish and Game, Vol. 31, No. 1, pp. 12-15.
- A Preliminary Report on the Fishery Resources of California in Relation to the Central Valley Project. Richard Van Cleve. California Fish and Game, Vol. 31, No. 2, pp. 35-52.
- Occurrence of the Bramble Shark, *Echinorhinus brucus*, in California. Carl L. Hubbs and Frances N. Clark. California Fish and Game, Vol. 31, No. 2, pp. 64-67.
- Program of the Bureau of Marine Fisheries. Richard Van Cleve. California Fish and Game, Vol. 31, No. 3, pp. 80-138.
- The Pacific Tunas. H. C. Godsil. California Fish and Game, Vol. 31, No. 4, pp. 185-194.
- The Shark, *Carcharhinus azureus*, in Southern California Waters. D. H. Fry, Jr. and P. M. Roedel. California Fish and Game, Vol. 31, No. 4, p. 209.
- Two Unusual Flatfishes from Monterey Bay. J. B. Phillips. California Fish and Game, Vol. 31, No. 4, pp. 210-211.
- An Albino California Sardine. J. B. Phillips. California Fish and Game, Vol. 32, No. 1, pp. 31-32.
- Effect of Red Water on Marine Life in Santa Monica Bay, California. Hermann Sommer and Frances N. Clark. California Fish and Game, Vol. 32, No. 2, pp. 100-101.
- Recovery of Tagged Soupfin Shark. William Ellis Ripley. California Fish and Game, Vol. 32, No. 2, pp. 101-102.
- Comments on Bureau of Reclamation's Comprehensive Plan for Water Resources Development, Central Valley Basin, California. By Bureau of Marine Fisheries. (Mimeographed)
- Vertebral variation with Size in *Clevelandia ios*. Charles R. Clothier. Copeia, No. 3, pp. 113-116. (In press at close of biennium)

PUBLICATIONS BY STAFF MEMBERS OF THE BUREAU
OF FISH CONSERVATION

- Twenty-five years ago in CALIFORNIA FISH AND GAME, Brian Curtis. California Fish and Game, Vol. 30, No. 3; Vol. 30, No. 4; Vol. 31, No. 1; Vol. 31, No. 2; Vol. 31, No. 4; Vol. 32, No. 1.
- Fisheries and the Central Valley Project, Brian Curtis. California Fish and Game, Vol. 31, No. 2, p. 73.
- The Fishery of the Lower Colorado River, William A. Dill. California Fish and Game, Vol. 30, No. 3, pp. 109-211.
- A Preliminary Report on the Fishery of Millerton Lake, California. William A. Dill. California Fish and Game, Vol. 32, No. 2, pp. 49-70.
- Review of "The Fishes of the Bering Sea and Neighbouring Waters, Its Origin and Zoogeography," Anatoly P. Andriashev, Leo Shapovalov, Copeia, 1944, No. 4.
- A New Fish Screen for Hatchery Use, J. H. Wales. California Fish and Game, Vol. 31, No. 3, pp. 157-159.
- Notes on an Epizoic Alga. J. H. Wales. California Fish and Game, Vol. 32, No. 1, pp. 30-31.

- Fungus in Air Bladder of Striped Bass. J. H. Wales. California Fish and Game, Vol. 32, No. 1, p. 31.
- Sturgeon from Shasta Lake, J. H. Wales. California Fish and Game, Vol. 32, No. 1, p. 31.

ADMINISTRATIVE REPORTS (UNPUBLISHED)

Reports prepared by Brian Curtis.

- Angling Catch Records, 1943. Submitted December 12, 1945.
- The Frog Lake (Nevada County) Fishery in 1944. Submitted February 13, 1945.
- The Frog Lake (Nevada County) Fishery in 1945. Submitted May 6, 1946.
- Reconnaissance of Cedar Creek, San Diego County, with reference to Stream Improvement Possibilities. Submitted June 27, 1945.
- Fishery Program for Conn Valley Reservoir, Napa County. Submitted August 27, 1945.
- Fishery Problems of the Reservoirs of the San Diego City Water Supply. Submitted November 16, 1945.

Reports prepared by William A. Dill

- Sites for Small Artificial Trout Lakes. Submitted July 25, 1944.
- Sites for Small Artificial Trout Lakes. Report No. 2. Submitted September 18, 1944.
- A Preliminary Survey of Big Creek below Huntington Lake, Fresno County, California. Submitted December 8, 1944.
- The Mechanics of Stocking and Management Procedure. Submitted January 23, 1945.
- How to File and Index Stream and Lake Records. Submitted March 17, 1945.
- The Fishery of Millerton Lake, Fresno-Madera Counties. Progress Report No. 1. The Creel Counts of May 29 and 30, 1945. Submitted June 13, 1945.
- A Report on the Proposed Diversion of Water From Tributaries of the South Fork of the San Joaquin River near Florence Lake, Fresno County. Submitted September 18, 1945.
- The Little Kern River Drainage, Tulare County. Progress Report No. 2. Submitted November 19, 1945.

Reports prepared by William A. Dill, Scott M. Soule, and Charles K. Fisher, Jr.

- A Preliminary Report on the May 29, 1946, Creel Count at Millerton Lake, California. Submitted June 8, 1946.

Reports prepared by William A. Dill and J. H. Wales

- The Fishery of Shasta Lake, Shasta County. Report No. 1. A Preliminary Account. Submitted April 6, 1945.

Reports prepared by Leo Shapovalov

- Preliminary Report on the Fisheries of the Russian River System, California. Submitted August 25, 1944.
- Preliminary Report on the Fisheries of the Santa Ynez River System, Santa Barbara County, California. Submitted September 15, 1944.
- Preliminary Report on the Fisheries of the Santa Maria River System, Santa Barbara, San Luis Obispo, and Ventura Counties. Submitted September 15, 1944.
- Creel Census at Stevens Creek and Stevens Creek Reservoir, Santa Clara County, May 1 and 2, 1943. Submitted November 8, 1944.
- Creel Census at Stevens Creek and Stevens Creek Reservoir, Santa Clara County, May 1, 1944. Submitted November 10, 1944.
- Fish Rescue and Stream Improvement Work in the North Coast Area in 1942. Submitted December 29, 1944.
- Fish Rescue and Stream Improvement Work in the North Coast Area in 1943. Submitted February 15, 1945.
- Fish Rescue and Stream Improvement Work in the North Coast Area in 1944. Submitted March 20, 1945.

- Creel Census at Stevens Creek and Stevens Creek Reservoir, Santa Clara County, May 1, 1945. Submitted May 17, 1945.
- Observations on Controlled Flows in the Eel River, Lake, and Mendocino Counties, September 25 and 26, 1945. Submitted October 31, 1945.
- Pollution and Fish Mortality in Lower Salinas River, Monterey County, October, 1945. Submitted November 9, 1945.
- The Management of a Relatively Small Coastal Steelhead Stream System, with Special Reference to Big Creek, Monterey County. Submitted March 5, 1946.
- Recommendations for the Management of Arroyo Corte Madera del Presidio and Old Mill Creek, Marin County, California. Submitted April 10, 1946.
- Creel Census at Stevens Creek and Stevens Creek Reservoir, Santa Clara County, May 1, 1946. Submitted May 21, 1946.

Reports prepared by J. H. Wales

- Fin Regeneration and Comparative Growth Rate in Trout. Submitted September 21, 1944.
- Observations on Fish Screens in the Shasta River Drainage. Submitted September 28, 1944.
- Studies on Trout Anemia. Submitted October 6, 1944.
- The Klamath River at Different Stages of Flow. Submitted November 13, 1944.
- Castle Lake Report for 1944. Submitted May 28, 1945.
- Summary of 1944 Hatchery Disease Reports. Submitted May 24, 1945.
- The Hardhead Problem in the Sacramento River Above Shasta Lake. Submitted February 19, 1946.

Reports prepared by Chester Woodhull

- A Brief Report on the Preston School of Industry Reservoir. Submitted March 29, 1946.
- The Drainage System of Bass Lake, El Dorado County. Submitted March 29, 1946.

PUBLICATIONS BY STAFF MEMBERS OF THE BUREAU OF GAME CONSERVATION

Pittman-Robertson Projects

PROJECT 5-R: A SURVEY OF THE FUR RESOURCES OF THE STATE OF CALIFORNIA.

The Fur Catch in California, 1940-1941, Howard Twining. California Fish and Game, Vol. 30, No. 4, pp. 242-246.

A Progress Report on Beaver Management in California, Arthur L. Hensley. California Fish and Game, Vol. 32, No. 2, pp. 87-99.

PROJECT 6-R: THE MANAGEMENT OF VALLEY QUAIL IN THE SOUTH COAST COUNTIES OF CALIFORNIA.

The Kettlemen Hills Quail Project, Ben Glading, R. W. Enderlin, and Henry A. Hjermsman. California Fish and Game, Vol. 31, No. 3, pp. 139-156.

Valley Quail Under Private Management at the Dune Lakes Club, Ben Glading, David M. Selleck, and Fred T. Ross. California Fish and Game, Vol. 31, No. 4, pp. 167-183.

Increasing Valley Quail in California, John T. Emlen, Jr., and Ben Glading. University of California Agriculture Experiment Station Bulletin. 695, 56 pp.

Disease Studies

The blood protozoa of North American birds. Bird-Banding 15: 89-112.

Notes on a water ouzel. Carlton M. Herman and Pedro Galindo. Condor, Vol. 46, p. 297.

Studies on the condition of California Mule deer at Sequoia National Park. Joseph S. Dixon and Carlton M. Herman, California Fish and Game, Vol. 31, No. 1, pp. 3-11.

Hippoboscid flies as parasites of game animals in California. Carlton M. Herman. California Fish and Game, Vol. 31, No. 1, pp. 16-25.

- Gapeworm in California quail and chukar partridge. Carlton M. Herman. California Fish and Game, Vol. 31, No. 2, pp. 68-72.
- Cephenemyia jellisoni* Townsend (Diptera Cuterebridae) reared from nasal bot of black-tailed deer. Carlton M. Herman. Pan-Pacific Entomologist, Vol. 21, p. 120.
- Deer management problems as related to diseases and parasites of domestic range livestock. Carlton M. Herman. Transactions of the 10th North American Wildlife Conference, American Wildlife Institute, pp. 242-246.
- Some worm parasites of deer in California. Carlton M. Herman. California Fish and Game, Vol. 31, No. 4, pp. 201-208.
- Preliminary report on the distribution of *Onchocerca cervipedis*. Carlton M. Herman and Arthur I. Bischoff. Journal of Parasitology, Vol. 31, p. 16, (Supplement).
- Quail disease studies. Carlton M. Herman. West Coast Sportsman, Vol. 2, pp. 13-14.
- The nose bot fly of deer. Carlton M. Herman, California Fish and Game, Vol. 32, No. 1, pp. 17-18.
- Duck Diseases at Tulare Lake. Donald D. McLean, California Fish and Game, Vol. 32, No. 2, pp. 71-88.

Miscellaneous

- The Prong-horned Antelope in California. Donald D. McLean, California Fish and Game, Vol. 30, No. 4, pp. 221-241.
- Late Spring Spawning of Chinook Salmon. (*Oncorhynchus tshawytscha*) Donald D. McLean, California Fish and Game, Vol. 31, No. 4, pp. 111-112.
- Pheasants Flown to Guam. Janet Quinn, California Fish and Game, Vol. 32, No. 1, pp. 32-33.
- Twenty-five years of the California Fish and Game Commission, J. S. Hunter, California Fish and Game, Vol. 32, No. 2, pp. 39-47.

APPENDIX

STATEMENT OF EXPENDITURES (COMPLETE) BY OBJECT

For the Period July 1, 1943, to June 30, 1944

(Ninety-fifth Fiscal Year)

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------|--------------------|------------|--------------|
| Administration—101 | | | | |
| Seasonal..... | \$2,394 39 | | | \$2,394 39 |
| Departmental librarian..... | 2,460 00 | | | |
| Educational directors..... | 3,435 00 | | | |
| Executive secretary..... | 5,239 92 | | | |
| Fish and game commission..... | 180 00 | | | |
| Janitor..... | 1,980 00 | | | |
| Junior stenographer-clerk..... | 334 61 | | | |
| Senior stenographer-clerk..... | 2,580 00 | | | |
| Supervisory clerk grade I..... | 2,940 00 | | | |
| Telephone operator..... | 1,980 00 | | | 21,129 53 |
| Accident and death claims..... | | \$5,876 35 | | |
| Automobile..... | | 4,849 34 | | |
| Freight, cartage, express..... | | 590 82 | | |
| Legal advertising..... | | 930 90 | | 12,247 41 |
| Library..... | | 48 90 | \$397 76 | 446 66 |
| Light, heat and power..... | | 1,479 23 | | 1,479 23 |
| Office..... | | 4,002 80 | 340 29 | 4,343 09 |
| Postage..... | | 4,508 08 | | |
| Premium on bonds..... | | 48 00 | | |
| Printing fish and game magazine..... | | 3,510 76 | | |
| Printing, general..... | | 1,939 21 | | |
| Pro rata attorney general service..... | | 6,000 00 | | |
| Pro rata departmental administration..... | | 27,878 47 | | |
| Pro rata general fiscal administration..... | | 14,092 65 | | |
| Pro rata Personnel Board service..... | | 4,260 40 | | |
| Rent..... | | 12,362 44 | | |
| Telephone and telegraph..... | | 5,644 77 | | |
| Travel..... | | 3,659 37 | | 83,904 15 |
| Total administration..... | \$23,523 92 | \$101,682 49 | \$738 05 | \$125,944 46 |
| Patrol and Law Enforcement—104 | | | | |
| Assistant fish and game warden seas patrol..... | \$38,807 21 | | | |
| Assistant chief fish and game patrol..... | 12,090 00 | | | |
| Captain fish patrol boat..... | 3,719 25 | | | |
| Chief fish and game patrol..... | 4,680 00 | | | |
| Deckhand fish patrol boat..... | 486 75 | | | |
| Fish and game patrol captain..... | 44,760 00 | | | |
| Fish and game warden..... | 245,565 60 | | | |
| Intermediate account clerk..... | 5,051 50 | | | |
| Intermediate stenographer clerk..... | 4,980 00 | | | |
| Marine Diesel Engineman..... | 2,250 00 | | | |
| Senior Account clerk..... | 1,295 00 | | | |
| Senior stenographer clerk..... | 2,580 00 | | | \$366,265 31 |
| Airplane..... | | \$106 00 | | 106 00 |
| Automobile..... | | 52,207 54 | \$83 17 | 52,290 71 |
| Boats..... | | 6,943 00 | 5,211 37 | 12,154 37 |
| Field..... | | 2,777 95 | 399 79 | 3,177 74 |
| Freight..... | | 167 76 | | |
| Light, heat and power..... | | 66 63 | | 234 39 |
| Office..... | | 456 72 | 14 60 | 471 32 |
| Postage..... | | 859 84 | | |
| Premium on bonds..... | | 861 75 | | |
| Printing..... | | 627 52 | | |
| Rent..... | | 9,478 20 | | |
| Telephone and telegraph..... | | 8,482 51 | | |
| Travel..... | | 58,155 45 | | 78,465 27 |
| Total Patrol and Law Enforcement..... | \$366,265 31 | \$141,190 87 | \$5,708 93 | \$513,165 11 |
| Marine Fisheries—105 | | | | |
| Seasonal..... | \$3,083 97 | | | \$3,083 97 |
| Assistant chief..... | 4,080 00 | | | |
| Chief..... | 4,640 00 | | | |
| Deckhand fish patrol boat..... | 1,605 00 | | | |
| Fisheries statistician..... | 3,420 00 | | | |
| Intermediate account clerk..... | 12,459 85 | | | |
| Intermediate typist clerk..... | 251 46 | | | |
| Intermediate stenographer clerk..... | 1,183 40 | | | |
| Janitor and janitress..... | 1,980 00 | | | |
| Junior aquatic biologist..... | 6,020 49 | | | |

STATEMENT OF EXPENDITURES (COMPLETE) BY OBJECT

For the Period July 1, 1943, to June 30, 1944

(Ninety-fifth Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---------------------------------------|---------------------|---------------------|-------------------|---------------------|
| Marine Fisheries—105—Continued | | | | |
| Key punch operator | \$4,029 93 | | | |
| Net man and boatswain | 2,340 00 | | | |
| Senior account clerk | 385 18 | | | |
| Senior fisheries researcher | 10,676 49 | | | |
| Senior stenographer clerk | 2,580 00 | | | |
| Supervising fisheries resources | 11,205 00 | | | |
| Supervising key punch operator | 1,024 59 | | | \$67,881 39 |
| Automobile | | \$1,866 25 | \$16 06 | 1,882 31 |
| Cooperative research | | 5,096 71 | | 5,096 71 |
| Field | | 4,254 58 | 4 00 | 4,258 58 |
| Fish specimens and tagged fish | | 734 50 | | |
| Fish tags | | 235 28 | | |
| Freight, cartage, express | | 129 76 | | 1,099 54 |
| Laboratory | | 3,049 48 | 221 22 | 3,270 70 |
| Light, heat and power | | 573 87 | | 573 87 |
| Office | | 506 12 | 62 43 | 568 55 |
| Postage | | 35 00 | | |
| Printing | | 3,713 56 | | |
| Rent | | 5,512 51 | | |
| Telephone and telegraph | | 135 46 | | |
| Travel | | 8,496 21 | | 17,892 74 |
| Total Marine Fisheries | \$70,965 36 | \$34,339 29 | \$303 71 | \$105,608 36 |
| Fish Conservation—106 | | | | |
| Seasonal | \$49,905 82 | | | \$49,905 82 |
| Assistant fish and game warden | 1,980 00 | | | |
| Assistant fish hatchery supervisor | 16,860 00 | | | |
| Bass hatchery foreman | 2,005 00 | | | |
| Chief | 5,040 00 | | | |
| Economic biologist | 3,600 00 | | | |
| Fish and game toxicologist | 4,080 00 | | | |
| Fish hatchery assistant | 64,220 24 | | | |
| Fish hatchery foreman | 36,985 28 | | | |
| Fish hatchery man | 30,224 79 | | | |
| Groundsman and flower gardener | 555 75 | | | |
| Intermediate clerk | 2,027 53 | | | |
| Intermediate stenographer clerk | 1,175 56 | | | |
| Laborer | 165 00 | | | |
| Senior account clerk | 2,580 00 | | | |
| Senior fisheries biologist | 6,120 00 | | | |
| Senior stenographer clerk | 2,713 76 | | | |
| Student biologist | 261 00 | | | |
| Supervising fish biologist | 3,840 00 | | | |
| Supervisor, fish hatcheries | 4,350 00 | | | |
| Telephone operator | 57 82 | | | \$188,841 73 |
| Automobile | | \$17,738 06 | | |
| Chemicals | | 677 22 | | |
| Eyed eggs | | 1,124 20 | | |
| Fish foods | | 93,383 10 | | |
| Freight, cartage, express | | 5,843 97 | | |
| Fuel | | 3,505 42 | | |
| Ice | | 1,673 70 | | |
| Light, heat and power | | 5,969 84 | | |
| Office | | \$190 84 | | 130,106 35 |
| Operating equipment | | 8 52 | \$1,096 37 | 1,104 89 |
| Operating service | | 2,162 11 | | |
| Operating supplies | | 3,362 39 | | |
| Postage | | 515 33 | | |
| Printing | | 250 53 | | |
| Rent | | 16,000 37 | | 22,290 73 |
| Structural maintenance | | 2,097 48 | 169 56 | 2,267 04 |
| Telephone and telegraph | | 1,446 64 | | |
| Travel | | 13,852 14 | | 15,298 78 |
| Total Fish Conservation | \$238,747 55 | \$169,801 86 | \$1,265 93 | \$409,815 34 |

STATEMENT OF EXPENDITURES (COMPLETE) BY OBJECT
For the Period July 1, 1943, to June 30, 1944
(Ninety-fifth Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|--------------------------------------|--------------------------|-----------------------|-------------------|---------------------|
| Engineering—107 | | | | |
| Seasonal..... | \$39 75 | | | \$39 75 |
| Assistant hydraulic engineer..... | 3,532 20 | | | |
| Chief..... | 5,040 00 | | | |
| Intermediate stenographer clerk..... | 1,920 00 | | | |
| Junior civil engineer..... | 2,580 00 | | | |
| Laborer..... | 3,643 91 | | | 16,716 11 |
| Automobile..... | | \$891 28 | | |
| Blueprinting..... | | 120 01 | | |
| Field..... | | 146 43 | | |
| Freight, cartage, express..... | | 1 92 | | |
| Inspection of fish screens..... | | 63 02 | | 1,222 66 |
| Office..... | | 135 30 | 4 61 | 139 91 |
| Rent..... | | 559 79 | | |
| Telephone and telegraph..... | | 1 90 | | |
| Travel..... | | 3,243 69 | | 3,805 38 |
| Total Engineering..... | \$16,755 86 | 5,163 34 | \$4 61 | \$21,923 81 |
| Game Conservation—108 | | | | |
| Seasonal..... | \$9,149 52 | | | \$9,149 52 |
| Chief..... | 5,040 00 | | | |
| Economic biologist..... | 7,200 00 | | | |
| Game bird breeder..... | 1,242 67 | | | |
| Game refuge supervisor..... | 16,131 85 | | | |
| Hunter and trapper..... | 35,232 43 | | | |
| Intermediate stenographer clerk..... | 1,976 92 | | | |
| Junior economic biologist..... | 869 59 | | | |
| Laborer..... | 8,155 75 | | | |
| Lion hunter..... | 6,270 00 | | | |
| Parasitologist..... | 2,775 00 | | | |
| Senior stenographer clerk..... | 2,622 24 | | | |
| Supervising hunter and trapper..... | 10,220 00 | | | \$97,736 45 |
| Temporary help..... | 72 58 | | | 72 58 |
| Automobile..... | | \$15,872 32 | | |
| Field..... | | 5,448 30 | | |
| Freight, cartage, express..... | | 1,196 28 | | |
| Light, heat, power..... | | 1,054 43 | | |
| Lion bounty..... | | 4,400 00 | | 27,971 33 |
| Office..... | | 166 46 | \$61 10 | 227 56 |
| Postage..... | | 82 20 | | |
| Printing..... | | 197 86 | | |
| Rent..... | | 6,607 74 | | |
| Rent..... | | 343 22 | | |
| Travel..... | | 9,459 84 | | 16,690 86 |
| Field..... | | | 3,571 39 | 3,571 39 |
| Total Game Conservation..... | \$106,958 55 | \$44,828 65 | \$3,632 49 | \$155,419 69 |
| Game Farms—109 | | | | |
| Seasonal..... | \$14,045 67 | | | \$14,045 67 |
| Camp cook..... | 500 48 | | | |
| Chief..... | 4,640 00 | | | |
| Game bird breeder..... | 19,330 19 | | | |
| Game farm superintendent..... | 4,995 00 | | | |
| Junior stenographer clerk..... | 1,590 00 | | | 31,055 67 |
| Auto..... | | \$902 07 | | 902 07 |
| Field..... | | 15,312 03 | \$52 00 | 15,364 03 |
| Freight, cartage, express..... | | 175 75 | | |
| Light, heating and power..... | | 4,074 19 | | |
| Office..... | | 51 15 | | |
| Operating expenses..... | | 118 84 | | |
| Postage..... | | 283 56 | | |
| Rent..... | | 309 00 | | |
| Telephone and telegraph..... | | 378 00 | | |
| Travel..... | | 965 39 | | 6,355 88 |
| Total Game Farms..... | \$45,101 34 | \$22,569 98 | \$52 00 | \$67,723 32 |

STATEMENT OF EXPENDITURES (COMPLETE) BY OBJECT

For the Period July 1, 1943, to June 30, 1944

(Ninety-fifth Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------|--------------------|------------|----------------|
| Licenses—111 | | | | |
| Seasonal..... | \$262 08 | | | \$262 08 |
| Chief..... | 4,640 00 | | | |
| Intermediate account clerk..... | 7,132 91 | | | |
| Intermediate clerk..... | 564 65 | | | |
| Intermediate stenographer clerk..... | 4,200 00 | | | |
| Intermediate typist clerk..... | 122 71 | | | |
| Senior account clerk..... | 5,038 66 | | | |
| Supervising account clerk grade 1..... | 5,918 70 | | | 27,617 63 |
| Temporary help..... | 270 00 | | | 270 00 |
| Auto..... | | \$657 02 | | |
| Freight, cartage, express..... | | 1,380 57 | | |
| License Commission—cash agents..... | | 60,819 43 | | |
| License Commission—credit agents..... | | 17,888 66 | | |
| License identification buttons..... | | 14,288 05 | | |
| Office..... | | 1,283 75 | | |
| Postage..... | | 3,642 08 | | |
| Premium on bonds..... | | 1,975 19 | | |
| Printing..... | | 11,625 09 | | |
| Rent..... | | 340 20 | | |
| Telephone and telegraph..... | | 255 13 | | |
| Travel..... | | 1,178 14 | | 115,333 31 |
| Total Licenses..... | \$28,149 71 | \$115,333 31 | | \$143,483 02 |
| Construction of Fish Screens and Stream Improvements | | | | |
| Total Fish Screens..... | \$165 00 | | | \$165 00 |
| Unallocated support abatements..... | | | | —2,005 66 |
| Total Fish and Game support—Ninety-fifth Fiscal Year..... | | | | \$1,541,242 45 |
| Less estimated maintenance deductions..... | | | | 11,523 21 |
| Net total for support—Ninety-fifth Fiscal Year..... | | | | \$1,529,719 24 |
| Additions and Betterments | | | Detail | |
| Purchase of land—Redding (for warehouse, shop, garage, etc.)..... | | | \$3,500 00 | \$3,500 00 |
| Improvements— | | | | |
| Construction of ward cottage—Yosemite hatchery..... | | | \$1,238 22 | |
| Game farms..... | | | 2,629 80 | |
| Remodel house on Honey Lake refuge..... | | | 311 14 | |
| Kern hatchery—well project..... | | | 620 34 | |
| Total Improvements..... | | | | \$4,799 50 |
| Total Additions and Betterments..... | | | | \$8,299 50 |
| Cooperation with Federal Government—Pittman-Robertson Act | | | | |
| 13-D-1..... | | | \$105 00 | |
| 14-D-1..... | | | 137 57 | |
| 11-L-2..... | | | 3,174 59 | |
| 11-L-3..... | | | 22,050 00 | |
| 5-R-1944..... | | | 3,966 76 | |
| 6-4-1944..... | | | 6,714 02 | |
| 15-R-1944..... | | | 2,093 73 | |
| Total Pittman-Robertson Act..... | | | | \$38,241 67 |
| Less individual abatement from Federal Government pro rata share Pittman-Robertson..... | | | | \$28,659 91 |
| Net total Pittman-Robertson Ninety-fifth Fiscal Year..... | | | | \$9,581 76 |
| Contributed to Employees Retirement Fund..... | | | | 34,734 47 |
| Grand total Fish and Game Preservation Fund—Ninety-fifth Fiscal Year..... | | | | \$1,582,334 97 |
| TRUST | | | | |
| Special Deposit Fund— | | | | |
| City of Los Angeles hatchery donation..... | | | | \$60 51 |

STATEMENT OF EXPENDITURES (COMPLETE) BY FUNCTION

For the Period July 1, 1943, to June 30, 1944

(Ninety-fifth Fiscal Year)

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|--|--------------------|--------------------|------------|--------------|
| Administration—101 | | | | |
| Education and public information..... | \$3,435 00 | \$190 57 | | \$3,625 57 |
| Executive..... | 7,559 92 | 4,217 62 | \$2 77 | 11,780 31 |
| Exhibits..... | | 117 01 | | 117 01 |
| Fish and game magazine..... | | 3,510 76 | | 3,510 76 |
| Library..... | 2,255 00 | 420 97 | 394 99 | 3,070 96 |
| Office..... | 10,274 00 | 93,225 56 | 340 29 | 103,839 85 |
| Total administration..... | \$23,523 92 | \$101,682 49 | \$738 05 | \$125,944 46 |
| Patrol and Law Enforcement—104 | | | | |
| Cannery inspection..... | \$21,439 82 | \$946 28 | | \$22,386 10 |
| Executive..... | 16,755 00 | 3,031 93 | \$18 54 | 19,805 47 |
| Land patrol..... | 268,407 96 | 105,434 85 | 454 83 | 374,297 64 |
| Marine patrol..... | 47,501 03 | 29,050 38 | 5,228 18 | 81,779 59 |
| Office..... | 10,031 50 | 1,345 39 | 7 38 | 11,384 27 |
| Pollution patrol..... | 2,130 00 | 1,382 04 | | 3,512 04 |
| Total Patrol and Law Enforcement..... | \$366,265 31 | \$141,190 87 | \$5,708 93 | \$513,165 11 |
| Marine Fisheries—105 | | | | |
| Central Valleys Water Project | | | | |
| Study and salmon..... | \$11,322 66 | \$5,494 52 | \$117 13 | \$16,934 31 |
| Executive..... | 8,720 00 | 1,049 43 | 16 06 | 9,785 49 |
| Fish cannery auditing..... | | 5,283 93 | | 5,283 93 |
| Laboratory..... | 3,877 81 | 1,840 83 | 100 71 | 5,819 35 |
| Mackerel..... | 1,385 00 | 7 70 | | 1,392 70 |
| Office..... | 8,569 94 | 962 43 | 62 43 | 9,594 80 |
| Sardines..... | 10,991 56 | 1,423 82 | | 12,415 38 |
| Shark investigation..... | 3,425 00 | 6,651 04 | | 10,076 04 |
| Shellfish and miscellaneous..... | 3,275 00 | 452 78 | | 3,727 78 |
| Statistics..... | 18,567 66 | 10,993 57 | 7 38 | 29,568 61 |
| Tuna..... | 830 73 | 179 24 | | 1,009 97 |
| Total Marine Fisheries..... | \$70,965 36 | \$34,339 29 | \$303 71 | \$105,608 36 |
| Fish Conservation—106 | | | | |
| Biological survey..... | \$10,491 84 | \$1,205 21 | | \$11,697 05 |
| Executive..... | 11,840 00 | 1,226 58 | | 13,066 58 |
| Field supervision..... | 3,780 00 | 713 39 | | 4,493 39 |
| Fish food unallocated..... | | 71,934 52 | | 71,934 52 |
| Fish planting..... | 1,075 00 | 1,509 41 | \$21 53 | 2,605 94 |
| Fish rescue..... | 11,179 50 | 3,464 42 | | 14,643 92 |
| Office..... | 8,862 95 | 468 45 | | 9,331 40 |
| Operating expenses—unallocated..... | | 235 15 | | 235 15 |
| Pollution inspection..... | 4,080 00 | 1,189 65 | 33 31 | 5,302 96 |
| Statistical..... | | 305 79 | | 305 79 |
| Structural maintenance..... | | 214 68 | | 214 68 |
| Alpine Hatchery..... | 450 00 | 13 25 | | 463 25 |
| Arrowhead Lake Egg Collecting Station..... | | 31 65 | | 31 65 |
| Basin Creek Hatchery..... | 5,813 34 | 1,179 32 | | 6,992 66 |
| Benbow Dam Experimental Station..... | 1,422 50 | 235 16 | | 1,657 66 |
| Black Rock Springs Ponds..... | | 399 99 | | 399 99 |
| Bogus Creek Egg Collecting Station..... | | 85 00 | | 85 00 |
| Brookdale Hatchery..... | 6,631 85 | 2,335 86 | 2 01 | 8,969 72 |
| Burney Creek Hatchery..... | 6,283 23 | 1,074 91 | | 7,358 14 |
| Central Valley Hatchery..... | 4,735 00 | 2,868 67 | 43 24 | 7,646 91 |
| Cedar Creek Hatchery..... | | 260 00 | | 260 00 |
| Copco Egg Collecting Station..... | | 91 18 | | 91 18 |
| Claremont..... | 410 00 | | | 410 00 |
| Copco Egg Collecting Station Addition..... | 104 88 | | | 104 88 |
| Coy Flat..... | 645 00 | 105 19 | | 750 19 |
| Fall Creek Hatchery..... | 6,651 51 | 692 92 | | 7,344 43 |
| Feather River Hatchery..... | 3,949 74 | 369 80 | | 4,319 54 |
| Fillmore Hatchery..... | 16,560 94 | 9,730 35 | 681 95 | 26,973 24 |
| Fishing Creek Hatchery..... | | 150 00 | | 150 00 |
| Fort Seward Hatchery..... | | 1 31 | | 1 31 |
| Hot Creek Hatchery..... | 17,546 08 | 16,087 27 | 130 06 | 33,763 41 |
| Kaweah Hatchery..... | 4,422 30 | 1,910 96 | 11 79 | 6,345 05 |
| Kern Hatchery..... | 3,188 00 | 1,480 05 | | 4,668 05 |
| Kings River Hatchery..... | 5,655 74 | 1,814 76 | | 7,470 50 |
| Klamathon Egg Collecting Station..... | | 4 32 | | 4 32 |
| Lake Almanor Hatchery..... | 6,246 71 | 1,665 73 | 11 79 | 7,924 23 |

STATEMENT OF EXPENDITURES (COMPLETE) BY FUNCTION

For the Period July 1, 1943, to June 30, 1944

(Ninety-fifth Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------|--------------------|------------|--------------|
| Fish Conservation—106—Continued | | | | |
| Mad River Egg Collecting Station..... | 933 72 | | | 933 72 |
| Madera Hatchery..... | 1,251 14 | 547 40 | | 1,798 54 |
| Mount Shasta Hatchery..... | 43,852 93 | 16,282 52 | 71 11 | 60,206 56 |
| Mount Tallac Hatchery..... | 2,220 02 | 2,333 00 | 40 55 | 4,593 57 |
| Mount Whitney Hatchery..... | 20,979 94 | 16,325 99 | 51 63 | 37,357 56 |
| Prairie Creek Hatchery..... | 5,659 29 | 2,283 16 | 5 13 | 7,947 58 |
| Rearing Reservoir Hatchery..... | | 1 00 | | 1 00 |
| Rush Creek Egg Collecting Station..... | 318 49 | 7 70 | | 326 19 |
| Salt Springs Hatchery..... | 58 50 | | | 58 50 |
| San Lorenzo Egg Collecting Station..... | | 195 51 | | 195 51 |
| Sequoia Hatchery..... | 3,231 05 | 2,190 33 | 148 21 | 5,569 59 |
| Shasta River Egg Collecting Station..... | 155 00 | 133 24 | | 288 24 |
| Snow Mountain Egg Collecting Station..... | 2,165 33 | 408 55 | | 2,573 88 |
| Tahoe Hatchery..... | 7,936 04 | 2,959 60 | 11 31 | 10,906 95 |
| Upper Truckee..... | | 10 00 | | 10 00 |
| Yosemite Hatchery..... | 4,769 99 | 786 46 | 2 31 | 5,558 76 |
| Yuba River Hatchery..... | 3,190 00 | 282 50 | | 3,472 50 |
| Total Fish Conservation..... | \$238,747 55 | \$169,801 86 | \$1,265 93 | \$409,815 34 |
| Engineering | | | | |
| Engineering..... | \$6,112 20 | \$2,447 89 | \$4 61 | \$8,564 70 |
| Executive..... | 5,040 00 | 1,121 54 | | 6,161 54 |
| Inspecting fish screens..... | 3,683 66 | 1,516 84 | | 5,200 50 |
| Office..... | 1,920 00 | 77 07 | | 1,997 07 |
| Total Engineering..... | \$16,755 86 | \$5,163 34 | \$4 61 | \$21,923 81 |
| Game Conservation | | | | |
| Duck rescue..... | \$495 97 | \$389 25 | | \$885 22 |
| Elk refuge..... | 1,070 00 | 784 05 | | 1,854 05 |
| Executive..... | 11,220 00 | 2,882 30 | | 14,102 30 |
| Game management..... | 8,279 49 | 5,396 34 | \$1,070 47 | 14,746 30 |
| Grey Lodge Refuge..... | 4,126 27 | 642 35 | 10 87 | 4,779 49 |
| Honey Lake Refuge..... | 1,237 34 | 1,292 01 | 1,860 16 | 4,389 51 |
| Imperial Refuge..... | 2,460 00 | 264 13 | | 2,724 13 |
| Los Banos Refuge..... | 4,253 01 | 1,611 10 | 620 59 | 6,484 70 |
| Office..... | 4,626 68 | 346 38 | | 4,973 06 |
| Predatory animal—lion hunting..... | 5,745 00 | 6,893 21 | | 12,638 21 |
| Predatory animal—trapping..... | 50,135 37 | 18,642 00 | 9 30 | 68,786 67 |
| Research..... | 8,219 83 | 2,442 29 | 61 10 | 10,723 22 |
| Statistics..... | | 8 19 | | 8 19 |
| Suisun Refuge..... | 5,089 59 | 1,273 12 | | 6,362 71 |
| Winter feed and salting of game..... | | 1,961 93 | | 1,961 93 |
| Total Game Conservation..... | \$106,958 55 | \$44,828 65 | \$3,632 49 | \$155,419 69 |
| Game Farms | | | | |
| Castaic Farm..... | 1,860 00 | 278 55 | | 2,138 55 |
| Executive..... | 4,640 00 | 322 71 | | 4,962 71 |
| Fresno Farm..... | 3,334 79 | 1,511 90 | 20 00 | 4,866 69 |
| Game Bird Distribution—Los Serranos..... | | 81 43 | | 81 43 |
| Game Bird Distribution—Yountville..... | | 88 45 | | 88 45 |
| Game management..... | | 38 44 | | 38 44 |
| Los Serranos game farm..... | 10,509 16 | 6,659 31 | | 17,168 47 |
| Office..... | 1,590 00 | 199 60 | | 1,789 60 |
| Redding Farm..... | 2,216 66 | 1,052 33 | | 3,268 99 |
| Sacramento State Farm..... | 2,768 34 | 996 60 | 10 00 | 3,774 94 |
| Visalia State Farm..... | 12 50 | | | 12 50 |
| Willows game farm..... | 2,670 48 | 725 42 | 10 00 | 3,405 90 |
| Yountville boarding house..... | 355 48 | 478 67 | | 834 15 |
| Yountville game farm..... | 15,143 93 | 10,136 57 | 12 00 | 25,292 50 |
| Total Game Farms..... | \$45,101 34 | \$22,569 98 | \$52 00 | \$67,723 32 |
| Licenses | | | | |
| Executive..... | \$4,640 00 | \$219 39 | | \$4,859 39 |
| License distribution..... | 21,409 71 | 113,670 44 | | 135,080 15 |
| Office..... | 2,100 00 | 1,443 48 | | 3,543 48 |
| Total licenses..... | \$28,149 71 | \$115,333 31 | | \$143,483 02 |

STATEMENT OF EXPENDITURES (COMPLETE) BY FUNCTION
For the Period July 1, 1943, to June 30, 1944
(Ninety-fifth Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------|--------------------|-----------|----------------|
| Construction of Fish Screens and Stream Improvements | | | | |
| Seasonal—First half..... | \$165 00 | | | \$165 00 |
| Total Fish Screens..... | \$165 00 | | | \$165 00 |
| Containers—Supplementary..... | | | | |
| Unallocated supplementary abatements..... | | | | —2,005 66 |
| Total Fish and Game Support—95th Fiscal Year..... | | | | \$1,541,242 45 |
| Less estimated maintenance deductions..... | | | | 11,523 21 |
| Net total for support—95th Fiscal Year..... | | | | \$1,529,719 24 |
| Additions and betterments..... | | | Detail | |
| Purchase of Land | | | | |
| Redding (for warehouse, shop, garage, etc.)..... | | | 3,500 00 | \$3,500 00 |
| Improvements | | | | |
| Construction of Ward Cottage— | | | | |
| Yosemite Hatchery..... | | | 1,238 22 | |
| Game farms..... | | | 2,629 80 | |
| Remodel house on Honey Lake Refuge..... | | | 311 14 | |
| Kern Hatchery well project..... | | | 620 34 | |
| Total improvements..... | | | | \$4,799 50 |
| Total Additions and Betterments..... | | | | \$8,299 50 |
| Cooperation with Federal Government— | | | | |
| Pittman-Robertson Act | | | Detail | |
| 13-D-1..... | | | \$105 00 | |
| 14-D-1..... | | | 137 57 | |
| 11-L-2..... | | | 3,174 59 | |
| 11-L-3..... | | | 22,050 00 | |
| 5-R-1944..... | | | 3,966 76 | |
| 6-R-1944..... | | | 6,714 02 | |
| 15-R-1944..... | | | 2,093 73 | |
| Total Pittman-Robertson Act..... | | | | \$38,241 67 |
| Less indicated abatement from Federal Government pro rata share, Pittman-Robertson Act..... | | | | 28,659 91 |
| Net Total Pittman-Robertson Act—95th Fiscal Year..... | | | | \$9,581 76 |
| Contributions to Employees Retirement Fund..... | | | | 34,734 47 |
| Grand total Fish and Game Preservation Fund—95th Fiscal Year..... | | | | \$1,582,334 97 |
| Trust | | | | |
| Special Deposit Fund | | | | |
| City of Los Angeles hatchery donation..... | | | | \$60 51 |

STATEMENT OF REVENUE (COMPLETE)
For the Period July 1, 1943, to June 30, 1944
(Ninety-fifth Fiscal Year)

Revenue for Fish and Game Preservation Fund

1944 series

Angling

| | |
|---|--------------|
| Citizen..... | \$297,585 00 |
| Citizen—Sales refunded to ineligible licensees..... | —2 00 |
| Non-resident..... | 1,201 00 |
| Alien..... | 4,520 00 |
| Duplicate..... | 93 50 |

Total angling..... \$303,397 50

Hunting

| | |
|----------------------|---------|
| Citizen..... | \$74 00 |
| Junior..... | 4 00 |
| Nonresident..... | 10 00 |
| Declarant alien..... | 40 00 |
| Alien..... | 25 00 |

Total hunting..... 153 00

Trapping

| | |
|--------------|--------|
| Citizen..... | \$1 00 |
|--------------|--------|

Total trapping..... 1 00

Fish packers and shellfish dealer

| | |
|--------------|----------|
| Citizen..... | \$255 00 |
|--------------|----------|

Total fish packers and shellfish dealer..... 255 00

Miscellaneous licenses and tags

| | |
|-------------------------------|-----------|
| Deer tags..... | \$17 00 |
| Fish tags..... | 2,540 00 |
| Game tags..... | 52 05 |
| Market fisherman..... | 64,640 00 |
| Fish importers..... | 65 00 |
| Fish party boat permits..... | 175 00 |
| Fish breeder..... | 205 00 |
| Game breeder..... | 2,795 00 |
| Kelp license..... | 50 00 |
| Game management—licenses..... | 90 00 |
| Game management—tags..... | 5 25 |

Total 1944 series..... \$374,440 80

1943 series

Angling

| | |
|---|--------------|
| Citizen..... | \$585,898 00 |
| Citizen—Sales refunded to ineligible licensees..... | —26 00 |
| Nonresident..... | 7,308 00 |
| Alien..... | 4,410 00 |
| Duplicate..... | 864 50 |

Total angling..... \$598,454 50

Hunting

| | |
|---|--------------|
| Citizen..... | \$502,247 00 |
| Citizen—Sales refunded to ineligible licensees..... | —8 00 |
| Junior..... | 26,109 00 |
| Nonresident..... | 17,650 00 |
| Declarant alien..... | 2,680 00 |
| Alien..... | 1,900 00 |
| Duplicate..... | 975 50 |

Total hunting..... 551,553 50

Commercial hunting club

\$750 00

Total commercial hunting club..... 750 00

Commercial hunting club operator citizen

\$205 00

Total commercial hunting club operator citizen..... 205 00

Trapping

| | |
|---|------------|
| Citizen..... | \$1,521 00 |
| Sales refunded to ineligible licensees..... | —1 00 |
| Alien..... | 32 00 |

Total trapping..... 1,552 00

STATEMENT OF REVENUE (COMPLETE)
For the Period July 1, 1943, to June 30, 1944
(Ninety-fifth Fiscal Year)—Continued

Revenue for Fish and Game Preservation Fund—Continued

1943 series—Continued

Fish packer and shellfish dealer

| | | |
|---|----------|--------|
| Citizen..... | \$970 00 | |
| Alien..... | 20 00 | |
| Total fish packer and shellfish dealer..... | | 990 00 |

Miscellaneous licenses and tags

| | | |
|-------------------------------|--------------|----------------|
| Deer tags..... | \$147,746 00 | |
| Fish tags..... | 1,540 00 | |
| Game tags..... | 66 81 | |
| Market fisherman..... | 49,740 00 | |
| Fish importers..... | 5 00 | |
| Fish party boat permits..... | 60 00 | |
| Fish breeder..... | 25 00 | |
| Game breeder..... | 300 00 | |
| Kelp license..... | 10 00 | |
| Game management—licenses..... | 20 00 | |
| Game management—tags..... | 4 29 | |
| Antelope permits..... | 2,500 00 | |
| Pheasant tags..... | 121,186 00 | |
| Elk permits..... | 750 00 | |
| Total 1943 series..... | | \$1,477,458 10 |

1942 series

Angling

| | | |
|--------------------|----------|--------|
| Citizen..... | \$628 00 | |
| Nonresident..... | —3 00 | |
| Total angling..... | | 625 00 |

Hunting

| | | |
|--------------------|-------------|-----------|
| Citizen..... | \$13,212 00 | |
| Junior..... | 795 00 | |
| Duplicate..... | 20 50 | |
| Total hunting..... | | 14,027 50 |

Miscellaneous licenses and tags

| | | |
|------------------------|---------|-----------|
| Deer tags..... | \$73 00 | |
| Fish tags..... | 20 93 | |
| Game tags..... | | |
| Total 1942 series..... | | 14,746 43 |

Grand total revenue all years—licenses Fish and Game Preservation Fund..... \$1,866,645 33

Other revenue

| | | |
|----------------------------|-------------|------------|
| Court fines..... | \$38,189 36 | |
| Deer meat permits..... | 4,263 00 | |
| Lease of Kelp beds..... | 1,334 50 | |
| Publication sales..... | 53 99 | |
| Fish packers tax..... | 291,229 66 | |
| Kelp tax..... | 1,057 30 | |
| Salmon packers tax..... | 33,933 60 | |
| Miscellaneous revenue..... | 18,826 32 | |
| Total other revenue..... | | 388,887 73 |

Total revenue Ninety-fifth Fiscal Year..... \$2,255,533 06

Grand total revenue all years Fish and Game Preservation Fund..... \$2,255,533 06

STATEMENT OF EXPENDITURES (COMPLETE) BY OBJECT

For the Period July 1, 1944, to June 30, 1945

(Ninety-sixth Fiscal Year)

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------|--------------------|------------|--------------|
| Administration | | | | |
| Seasonal help | \$195 08 | | | |
| Regular help | 24,649 52 | | | \$24,844 60 |
| Accident and death claims | | \$4,618 41 | | 4,618 41 |
| Auto | | 4,593 00 | \$19 22 | 4,612 22 |
| Educational | | 1,200 00 | 287 20 | 1,487 20 |
| Freight, cartage and express | | 684 72 | | 684 72 |
| Legal advertising | | 552 27 | | 552 27 |
| Library | | 397 24 | 327 74 | 724 98 |
| Light, heat and power | | 1,805 50 | | 1,805 50 |
| Office | | 3,196 43 | 53 47 | 3,249 90 |
| Photography | | 6,283 15 | | 6,283 15 |
| Postage | | 4,985 14 | | 4,985 14 |
| Premium of bonds | | 54 00 | | 54 00 |
| Printing fish and game magazine | | 1,965 43 | | 1,965 43 |
| Printing, general | | 1,081 40 | | 1,081 40 |
| Pro rata, attorney general services | | 6,000 00 | | 6,000 00 |
| Pro rata, departmental administration | | 31,001 28 | | 31,001 28 |
| Pro rata, general fiscal administration | | 15,247 56 | | 15,247 56 |
| Pro rata, Personnel Board services | | 5,414 31 | | 5,414 31 |
| Rent | | 12,210 73 | | 12,210 73 |
| Telephone and telegraph | | 6,041 57 | | 6,041 57 |
| Travel | | 4,976 09 | | 4,976 09 |
| Total Administration | \$24,844 60 | \$112,308 23 | \$687 63 | \$137,840 46 |
| Patrol and Law Enforcement | | | | |
| Seasonal help | \$31,760 43 | | | |
| Regular help | 319,564 47 | | | \$351,324 90 |
| Airplane | | \$965 00 | | 965 00 |
| Auto | | 60,775 51 | \$79 69 | 60,855 20 |
| Boats | | 9,222 94 | 267 82 | 9,490 76 |
| Field | | 1,508 33 | 295 11 | 1,803 44 |
| Freight, cartage, and express | | 137 08 | | 137 08 |
| Light, heat and power | | 103 32 | | 103 32 |
| Office | | 287 44 | 446 44 | 733 88 |
| Postage | | 236 50 | | 236 50 |
| Premium on bonds | | 1,433 75 | | 1,433 75 |
| Printing | | 1,421 82 | | 1,421 82 |
| Rent | | 14,182 43 | | 14,182 43 |
| Telephone and telegraph | | 8,302 87 | | 8,302 87 |
| Travel | | 59,142 10 | | 59,142 10 |
| Total Patrol and Law Enforcement | \$351,324 90 | \$157,719 09 | \$1,089 06 | \$510,133 05 |
| Marine Fisheries | | | | |
| Seasonal help | \$4,935 94 | | | |
| Regular help | 69,006 89 | | | \$73,942 83 |
| Automobile | | \$3,084 06 | | 3,084 06 |
| Cooperative research | | 3,808 25 | \$1,011 34 | 4,819 59 |
| Field | | 4,243 83 | | 4,243 83 |
| Fish tags | | 417 76 | | 417 76 |
| Freight, cartage and express | | 95 34 | | 95 34 |
| Laboratory | | 1,442 57 | 1,523 53 | 2,966 10 |
| Light, heat and power | | 589 42 | | 589 42 |
| Office | | 179 90 | | 179 90 |
| Office | | | 5 01 | 5 01 |
| Postage | | 20 00 | | 20 00 |
| Printing | | 2,233 52 | | 2,233 52 |
| Rent | | 5,440 82 | | 5,440 82 |
| Telephone and telegraph | | 158 87 | | 158 87 |
| Travel | | 10,373 67 | | 10,373 67 |
| Total Marine Fisheries | \$73,942 83 | \$32,088 01 | \$2,539 88 | \$108,570 72 |

STATEMENT OF EXPENDITURES (COMPLETE) BY OBJECT
For the Period July 1, 1944, to June 30, 1945
(Ninety-sixth Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|-------------------------------------|--------------------------|-----------------------|-------------------|---------------------|
| Fish Conservation | | | | |
| Seasonal help..... | \$50,321 17 | | | \$236,864 13 |
| Regular help..... | 186,542 96 | | | |
| Automobile..... | | \$21,809 16 | | 21,809 16 |
| Chemicals..... | | 887 16 | | 887 16 |
| Eyed eggs..... | | 1,568 70 | | 1,568 70 |
| Field..... | | 4 08 | | 4 08 |
| Fish foods..... | | 98,552 73 | | 98,552 73 |
| Freight, cartage and express..... | | 5,007 74 | | 5,007 74 |
| Fuel..... | | 6,319 03 | | 6,319 03 |
| Ice..... | | 1,574 19 | | 1,574 19 |
| Light, heat and power..... | | 6,629 26 | | 6,629 26 |
| Office..... | | 588 33 | | 588 33 |
| Operating equipment..... | | 25 52 | \$1,440 59 | 1,466 11 |
| Operating service..... | | 2,450 18 | | 2,450 18 |
| Operating supplies..... | | 3,974 87 | | 3,974 87 |
| Postage..... | | 508 15 | | 508 15 |
| Printing..... | | 258 63 | | 258 63 |
| Rent..... | | 19,766 65 | | 19,766 65 |
| Structural maintenance..... | | 3,524 80 | | 3,524 80 |
| Telephone and telegraph..... | | 1,575 64 | | 1,575 64 |
| Travel..... | | 14,744 82 | | 14,744 82 |
| Total Fish Conservation..... | \$236,864 13 | \$189,769 64 | \$1,440 59 | \$428,074 36 |
| Engineering | | | | |
| Seasonal help..... | \$198 50 | | | \$21,824 16 |
| Regular help..... | 21,625 66 | | | |
| Automobile..... | | \$1,872 48 | | 1,872 48 |
| Blueprinting..... | | 186 81 | | 186 81 |
| Field..... | | 161 43 | | 161 43 |
| Freight, cartage and express..... | | 4 59 | | 4 59 |
| Inspection of fish screens..... | | 511 44 | | 511 44 |
| Office..... | | 92 41 | \$59 74 | 152 15 |
| Rent..... | | 597 15 | | 597 15 |
| Telephone and telegraph..... | | 20 76 | | 20 76 |
| Travel..... | | 4,938 05 | | 4,938 05 |
| Total Engineering..... | \$21,824 16 | \$8,385 12 | 959 74 | \$30,269 02 |
| Game Conservation | | | | |
| Seasonal help..... | \$11,961 31 | | | \$109,100 08 |
| Regular..... | 97,138 77 | | | |
| Airplane rental..... | | \$500 00 | | 500 00 |
| Automobile..... | | 20,487 66 | \$117 57 | 20,605 23 |
| Field..... | | 5,421 83 | 4,884 65 | 10,306 48 |
| Freight, cartage and express..... | | 93 32 | | 93 32 |
| Laboratory..... | | 50 77 | 11 82 | 62 59 |
| Light, heat and power..... | | 1,521 10 | | 1,521 10 |
| Lion bounty..... | | 3,530 00 | | 3,530 00 |
| Office..... | | 120 99 | | 120 99 |
| Postage..... | | 4 00 | | 4 00 |
| Printing..... | | 172 25 | | 172 25 |
| Rent..... | | 4,234 17 | | 4,234 17 |
| Telephone and telegraph..... | | 378 09 | | 378 09 |
| Travel..... | | 12,011 09 | | 12,011 09 |
| Total Game Conservation..... | \$109,100 08 | \$48,525 27 | \$5,014 04 | \$162,639 39 |
| Game Farms | | | | |
| Seasonal help..... | \$25,097 01 | | | \$54,862 34 |
| Regular help..... | 29,765 33 | | | |
| Automobile..... | | \$1,307 04 | | 1,307 04 |
| Field..... | | 21,389 25 | | 21,389 25 |
| Field additional help..... | | | \$7,673 83 | 7,673 83 |
| Freight, cartage and express..... | | 121 67 | | |
| Light, heat and power..... | | 4,505 62 | | |
| Office..... | | 382 39 | | |
| Operating expense..... | | 779 00 | | |
| Rent..... | | 1 25 | | |
| Telephone and telegraph..... | | 464 62 | | |
| Travel..... | | 1,577 65 | | 7,832 20 |
| Total Game Farms..... | \$54,862 34 | \$30,528 49 | \$7,673 83 | \$93,064 66 |

STATEMENT OF EXPENDITURES (COMPLETE) BY OBJECT
For the Period July 1, 1944, to June 30, 1945
(Ninety-sixth Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------------|-----------------------|-----------|--------------|
| Licenses | | | | |
| Seasonal help..... | \$458 40 | | | |
| Regular..... | 28,799 72 | | | \$29,258 12 |
| Automobile..... | | \$778 50 | | |
| Freight, cartage, express..... | | 1,135 61 | | |
| License commission—cash accounts..... | | 61,933 70 | | |
| License commission—credit accounts..... | | 20,999 52 | | |
| License identification buttons..... | | 20,914 43 | | |
| Light, heat and power..... | | 6 41 | | |
| Office..... | | 289 27 | | 106,057 44 |
| Office..... | | | \$1 59 | 1 59 |
| Postage..... | | 3,283 96 | | |
| Premium on bonds..... | | 2,251 62 | | |
| Printing..... | | 9,301 94 | | |
| Rent..... | | 549 75 | | |
| Telephone and telegraph..... | | 346 80 | | |
| Travel..... | | 1,295 28 | | 17,029 35 |
| Total Licenses..... | \$29,258 12 | \$123,086 79 | \$1 59 | \$152,346 50 |

For additional expenditures see statement of expenditures by function.

STATEMENT OF EXPENDITURES (COMPLETE) BY FUNCTION

For the Period July 1, 1944, to June 30, 1945

(Ninety-sixth Fiscal Year)

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|--|--------------------|--------------------|------------|--------------|
| Administration | | | | |
| Education and public information..... | \$3,615 00 | \$9,310 21 | \$296 42 | \$13,221 63 |
| Executive..... | 7,935 02 | 4,848 93 | 19 22 | 12,803 17 |
| Exhibits..... | | 112 31 | | 112 31 |
| Fish and game magazine..... | | 1,205 38 | | 1,205 38 |
| Library..... | 2,460 00 | 367 95 | 318 52 | 3,146 47 |
| Office..... | 10,834 58 | 96,463 45 | 53 47 | 107,351 50 |
| Total Administration..... | \$24,844 60 | \$112,308 23 | \$687 63 | \$137,840 46 |
| Patrol and Law Enforcement | | | | |
| Cannery inspection..... | \$10,551 28 | \$535 58 | | \$11,086 86 |
| Executive..... | 20,687 50 | 4,504 94 | \$10 44 | 25,202 88 |
| Land patrol..... | 266,587 00 | 113,776 34 | 451 31 | 380,814 65 |
| Marine patrol..... | 43,300 24 | 36,072 03 | 627 31 | 79,999 58 |
| Office..... | 10,198 88 | 1,602 75 | | 11,801 63 |
| Pollution patrol..... | | 1,227 45 | | 1,227 45 |
| Total Patrol and Law Enforcement..... | \$351,324 90 | \$157,719 09 | \$1,089 06 | \$510,133 05 |
| Marine Fisheries | | | | |
| Central Valley Water Project and salmon study..... | \$14,514 60 | \$9,475 86 | \$2,221 80 | \$26,212 26 |
| Executive..... | 8,960 00 | 1,881 81 | | 10,841 81 |
| Fish cannery auditing..... | | 5,187 07 | | 5,187 07 |
| Laboratory..... | 6,201 00 | 1,637 30 | 73 90 | 7,912 20 |
| Mackerel..... | 1,230 00 | 414 35 | | 1,644 35 |
| Office..... | 10,237 79 | 747 09 | 5 01 | 10,989 89 |
| Sardines..... | 6,883 44 | 1,549 40 | | 8,432 84 |
| Shark investigation..... | 2,670 00 | 2,702 26 | | 5,372 26 |
| Shellfish and miscellaneous..... | 3,060 00 | 415 06 | | 3,475 06 |
| Statistics..... | 20,186 00 | 8,077 81 | 239 17 | 28,502 98 |
| Total Marine Fisheries..... | \$73,942 83 | \$32,088 01 | \$2,539 88 | \$108,570 72 |
| Fish Conservation | | | | |
| Biological survey..... | \$10,880 53 | \$1,588 07 | \$371 70 | \$12,840 30 |
| Executive..... | 13,110 00 | 2,151 36 | | 15,261 36 |
| Field supervision..... | 3,465 00 | 589 34 | | 4,054 34 |
| Fish food unallocated..... | | 70,030 37 | | 70,030 37 |
| Fish planting..... | | 479 26 | | 479 25 |
| Fish rescue..... | 9,069 00 | 2,919 82 | 48 21 | 12,037 03 |
| Office..... | 9,252 96 | 724 38 | | 9,977 34 |
| Operating expense unallocated..... | | 465 21 | | 465 21 |
| Pollution inspection..... | 1,020 00 | 217 91 | | 1,237 91 |
| Statistical..... | | 903 74 | | 903 74 |
| Structural maintenance..... | | 274 45 | | 274 45 |
| Alpine hatchery..... | | 25 44 | | 25 44 |
| Arrowhead Lake Egg Collecting Station..... | | 27 36 | | 27 36 |
| Basin Creek..... | 6,197 29 | 2,893 50 | 36 58 | 9,127 37 |
| Benbow Dam Experimental Station..... | 1,170 00 | 173 49 | 4 76 | 1,348 25 |
| Black Rock Springs..... | | 587 92 | 8 20 | 596 12 |
| Bogus Creek Egg Collecting Station..... | | 85 00 | | 85 00 |
| Brookdale Hatchery..... | 6,580 16 | 1,910 66 | | 8,490 82 |
| Burney Creek Hatchery..... | 7,784 82 | 1,899 20 | 260 28 | 9,944 30 |
| Cedar Creek Hatchery..... | | 260 00 | | 260 00 |
| Central Valley Hatchery..... | 4,040 64 | 3,609 97 | | 7,650 61 |
| Claremont Hatchery..... | | 3 69 | | 3 69 |
| Copco Egg Collecting Station..... | | 85 00 | | 85 00 |
| Coy Flat..... | | 73 39 | | 73 39 |
| Fall Creek Hatchery..... | 5,028 64 | 660 96 | | 5,689 60 |
| Feather River Hatchery..... | 1,570 84 | 1,353 59 | | 2,924 43 |
| Fillmore Hatchery..... | 19,450 80 | 12,773 21 | 267 26 | 32,491 27 |
| Fishing Creek..... | | 150 00 | | 150 00 |
| Hot Creek Hatchery..... | 14,886 24 | 26,582 73 | 132 92 | 41,601 89 |
| Kaweah Hatchery..... | 5,698 51 | 1,737 39 | 10 89 | 7,446 79 |
| Kern Hatchery..... | 3,145 00 | 1,959 51 | | 5,104 51 |
| Kings River Hatchery..... | 6,249 16 | 2,486 55 | | 8,735 71 |
| Klamathon Egg Collecting Station..... | | 258 12 | | 258 12 |
| Lake Almanor Hatchery..... | 8,049 97 | 2,347 42 | 49 15 | 10,446 54 |
| Madera Hatchery..... | | 69 82 | | 69 82 |
| Mt. Shasta Hatchery..... | 46,318 19 | 14,103 54 | 2 50 | 60,424 23 |
| Mt. Tallac Hatchery..... | 2,873 11 | 2,479 25 | 17 30 | 5,369 66 |
| Mt. Whitney Hatchery..... | 22,685 27 | 19,847 27 | 22 49 | 42,555 03 |
| Prairie Creek Hatchery..... | 5,077 98 | 2,266 48 | 8 71 | 7,353 17 |
| Rearing Residence..... | | 1 00 | | 1 00 |
| Rush Creek Egg Collecting Station..... | | 51 90 | | 51 90 |
| San Lorenzo Egg Collecting Station..... | | 215 43 | | 215 43 |
| Sequoia Experimental Station..... | 3,830 00 | 1,925 78 | 12 08 | 5,767 86 |

STATEMENT OF EXPENDITURES (COMPLETE) BY FUNCTION

For the Period July 1, 1944, to June 30, 1945

(Ninety-sixth Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------|--------------------|-------------|----------------|
| Fish Conservation—Continued | | | | |
| Shasta River Egg Collecting Station..... | | \$586 55 | | \$586 55 |
| Snow Mountain Egg Collecting Station..... | \$3,167 78 | 668 29 | | 3,836 07 |
| Tahoe Hatchery..... | 8,548 84 | 3,844 07 | \$105 71 | 12,498 62 |
| Upper Truckee Egg Collecting Station..... | | 10 00 | | 10 00 |
| Yosemite Hatchery..... | 4,320 24 | 1,192 68 | 76 21 | 5,589 13 |
| Yuba River Hatchery..... | 3,393 16 | 219 57 | 5 64 | 3,618 37 |
| Total Fish Conservation..... | \$236,864 13 | \$189,769 64 | \$1,440 59 | \$428,074 36 |
| Engineering | | | | |
| Engineering..... | \$12,806 39 | \$4,374 26 | \$52 05 | \$17,232 70 |
| Executive..... | 5,040 00 | 1,389 16 | | 6,429 16 |
| Inspection fish screen..... | 1,999 03 | 2,605 73 | | 4,604 76 |
| Office..... | 1,978 74 | 15 97 | 7 69 | 2,002 40 |
| Total Engineering..... | \$21,824 16 | \$8,385 12 | \$59 74 | \$30,269 02 |
| Game Conservation | | | | |
| Duck rescue..... | \$147 12 | \$352 93 | | \$500 05 |
| Elk refuge..... | 2,030 00 | 728 54 | | 2,758 54 |
| Executive..... | 11,292 10 | 3,389 53 | | 14,681 63 |
| Game management..... | 9,709 33 | 6,798 08 | \$615 40 | 17,122 81 |
| Grey Lodge Refuge..... | 4,686 67 | 742 22 | 46 59 | 5,475 48 |
| Honey Lake Refuge..... | 4,386 00 | 2,724 62 | 1,565 42 | 8,676 04 |
| Imperial Refuge..... | 2,460 00 | 202 12 | | 2,662 12 |
| Los Banos Refuge..... | 4,750 00 | 1,922 27 | 217 30 | 6,889 57 |
| Office..... | 4,620 56 | 232 20 | | 5,152 76 |
| Predatory animal lion hunting..... | 5,425 00 | 6,716 82 | | 12,141 82 |
| Predatory animal trapping..... | 46,001 44 | 19,203 35 | 601 74 | 65,806 53 |
| Research..... | 9,132 98 | 3,546 52 | 25 76 | 12,705 26 |
| Statistics..... | | 316 93 | | 316 93 |
| Suisun Refuge..... | 4,158 88 | 1,373 64 | 1,941 83 | 7,474 35 |
| Winter feed and salt for game..... | | 215 50 | | 215 50 |
| Total Game Conservation..... | \$109,100 08 | \$48,525 27 | \$5,014 04 | \$162,639 39 |
| Game Farms | | | | |
| Castaic Farm..... | \$1,815 00 | \$300 33 | | \$2,115 33 |
| Chino Farm..... | | 9 87 | | 9 87 |
| Executive..... | 4,645 00 | 313 69 | | 4,958 69 |
| Fresno Farm..... | 4,626 18 | 1,762 58 | | 6,388 76 |
| Game bird district—Los Serranos..... | 1,707 14 | 104 17 | | 1,811 31 |
| Game bird district—Yountville..... | | 111 67 | | 111 67 |
| Game management..... | | 24 58 | | 24 58 |
| Los Serranos Game Farm..... | 10,910 61 | 7,197 59 | \$35 20 | 18,143 40 |
| Office..... | 1,825 33 | | | 1,825 33 |
| Redding Farm..... | 2,490 14 | 2,705 20 | | 5,195 34 |
| Sacramento State Farms..... | 3,607 30 | 1,323 88 | | 4,931 18 |
| Visalia Farm..... | 338 71 | | | 338 71 |
| Willows Farm..... | 1,683 01 | 951 54 | 211 41 | 2,845 96 |
| Yountville boarding house..... | 1,045 00 | 3,160 47 | | 4,205 47 |
| Yountville Game Farm..... | 20,168 92 | 12,562 92 | 7,427 22 | 40,159 06 |
| Total Game Farms..... | \$54,862 34 | \$30,528 49 | \$7,673 83 | \$93,064 66 |
| Licenses | | | | |
| Executive..... | \$4,880 00 | \$903 41 | | \$5,783 41 |
| License distribution..... | 22,422 49 | 120,242 40 | | 142,664 89 |
| Office..... | 1,955 63 | 1,940 98 | \$1 59 | 3,898 20 |
| Total Licenses..... | \$29,258 12 | \$123,086 79 | \$1 59 | \$152,346 50 |
| Construction of Fish Screens and Stream Improvement | | | | |
| Total Fish Screens..... | \$165 00 | \$782 61 | \$15,643 29 | \$16,590 90 |
| Unallocated support abatements..... | | | | 4,214 84 |
| Special item—Repaired Jenner Jetty..... | | | | 2,500 00 |
| Total allotment for support—Ninety-sixth Fiscal Year..... | | | | \$1,637,814 22 |
| Less estimated maintenance deductions..... | | | | 10,787 60 |
| Net total allotment for support—Ninety-sixth Fiscal Year..... | | | | \$1,627,026 62 |

STATEMENT OF EXPENDITURES (COMPLETE) BY FUNCTION
For the Period July 1, 1944, to June 30, 1945
(Ninety-sixth Fiscal Year)—Continued

| | Detail | Total |
|--|------------|----------------|
| Additions and Betterments | | |
| Purchase of land— | | |
| Redding (For warehouse, shop, garage etc.)..... | \$794 00 | \$794 00 |
| Improvements— | | |
| Building room in tank house and repair cottage on Elk Refuge..... | 208 59 | |
| Cedar Creek Hatchery project..... | 2,159 48 | |
| Construction of rearing ponds—all hatcheries..... | 451 11 | |
| Fern Creek house and garage remodel project..... | 338 31 | |
| Ferry building alterations..... | 130 00 | |
| Fillmore Hatchery levee construction..... | 1,935 00 | |
| Game farms..... | 2,764 04 | |
| Kings River Hatchery repair and foundation replacement project..... | 449 50 | |
| Maintenance and repair of Jenner Jetty— payable from Chapter 1091-43..... | 5,000 00 | |
| Overhauling pump on Elk Refuge..... | 436 23 | |
| Portable housing project Fillmore Hatchery..... | 6,908 37 | |
| Remodel cottages on Honey Lake Refuge..... | 2,012 06 | |
| Remodel house on Honey Lake Refuge..... | 128 70 | |
| Replacing of bridge on Imperial Refuge..... | 136 99 | |
| Tahoe Hatchery water supply project..... | 317 98 | \$23,376 36 |
| Total Additions and Betterments..... | | \$24,170 36 |
| Special item—Cooperation with Federal Government— Pittman-Robertson Act | | |
| 14-D-1..... | \$4,833 70 | |
| 18-D..... | 729 89 | |
| 10-L-4..... | 8,496 09 | |
| 10-L-5..... | 7,763 40 | |
| 17-L-1..... | 28,443 74 | |
| 5-R-1945..... | 3,935 60 | |
| 6-R-1945..... | 6,717 79 | |
| 15-R-1945..... | 5,136 12 | |
| 16-R-1945..... | 6,380 82 | |
| | | \$72,437 15 |
| Less indirect abatement from Federal Government pro rata share Pittman-Robertson..... | | 54,284 44 |
| Net total Pittman-Robertson..... | | \$18,152 71 |
| Contributions to Employees Retirement Fund..... | | 35,307 98 |
| Grand total Fish and Game Preservation Fund Ninety-sixth Fiscal Year..... | | \$1,704,657 67 |

STATEMENT OF REVENUES (COMPLETE)
For the Period July 1, 1944, to June 30, 1945
(Ninety-sixth Fiscal Year)

Revenue for Fish and Game Preservation Fund:

| 1945 series | Detail | Total |
|---|--------------|--------------|
| Angling | | |
| Nonresident..... | \$1,280 00 | |
| Citizen..... | 316,546 00 | |
| Alien..... | 4,800 00 | |
| Duplicate..... | 169 50 | |
| Total Angling..... | | \$322,795 50 |
| Hunting | | |
| Citizen..... | 90 00 | |
| Junior..... | 8 00 | |
| Declarant alien..... | 55 00 | |
| Total Hunting..... | | 153 00 |
| Miscellaneous Licenses and Tags | | |
| Deer tags..... | \$20 00 | |
| Fish tags..... | 2,403 00 | |
| Game tags..... | 50 80 | |
| Market fisherman..... | 62,900 00 | |
| Fish importers..... | 60 00 | |
| Fish party boat permits..... | 160 00 | |
| Fish breeder..... | 270 00 | |
| Game management—tags..... | 8 91 | |
| Game breeder..... | 2,620 00 | |
| Kelp license..... | 50 00 | |
| Total 1945 series..... | | 68,542 71 |
| Total 1945 series..... | | \$391,491 21 |
| 1944 series | | |
| Angling | | |
| Citizen..... | \$564,853 00 | |
| Nonresident..... | 8,102 00 | |
| Alien..... | 4,960 00 | |
| Duplicate..... | 1,076 50 | |
| Total Angling..... | | 578,991 50 |
| Hunting | | |
| Citizen..... | \$551,267 00 | |
| Junior..... | 34,242 00 | |
| Nonresident..... | 21,090 00 | |
| Declarant alien..... | 2,910 00 | |
| Alien..... | 3,250 00 | |
| Duplicate..... | 1,426 50 | |
| Total Hunting..... | | 614,185 50 |
| Community Hunting Club | | |
| Citizen..... | \$900 00 | |
| Total Community Hunting Club..... | | 900 00 |
| Community Hunting Club Operator | | |
| Citizen..... | \$250 00 | |
| Total Community Hunting Club Operator..... | | 250 00 |
| Trapping | | |
| Citizen..... | \$1,592 00 | |
| Alien..... | 38 00 | |
| Total Trapping..... | | 1,630 00 |
| Fish Packer and Shellfish Dealer | | |
| Citizen..... | \$90 00 | |
| Alien..... | 20 00 | |
| Total Fish Packer and Shellfish Dealer..... | | 910 00 |

STATEMENT OF REVENUES (COMPLETE)

For the Period July 1, 1944, to June 30, 1945

(Ninety-sixth Fiscal Year)—Continued

| | | |
|---|--------------|----------------|
| Revenue for Fish and Game Preservation Fund: | | |
| 1944 series—continued | | |
| Miscellaneous Licenses and Tags | | |
| Deer tags..... | \$178,163 00 | |
| Fish tags..... | 1,180 00 | |
| Game tags..... | 50 22 | |
| Market fisherman..... | 43,850 00 | |
| Fish party boat permits..... | 59 00 | |
| Fish breeder control..... | 35 00 | |
| Game breeder..... | 265 00 | |
| Kelp license..... | 30 00 | |
| Game management—licenses..... | 160 00 | |
| Game management—tags..... | 41 49 | |
| Antelope permits..... | 2,500 00 | |
| Pheasant tags..... | 105,811 00 | |
| Deer meat lockers..... | 4,962 00 | |
| Deer meat wardens..... | 618 00 | |
| | <hr/> | 337,724 71 |
| Total 1944 series..... | | \$1,534,591 71 |
| 1943 series | | |
| Angling | | |
| Citizen..... | \$2,138 00 | |
| Nonresident (none)..... | | |
| Total Angling..... | | \$2,138 00 |
| Hunting | | |
| Citizen..... | \$5,081 00 | |
| Junior..... | 450 00 | |
| Duplicate..... | 14 50 | |
| Total Hunting..... | | 5,545 50 |
| Miscellaneous Licenses and Tags | | |
| Deer tags..... | \$40 00 | |
| Fish tags..... | 27 | |
| Market fisherman..... | 200 00 | |
| | <hr/> | 240 27 |
| Total 1943 series..... | | \$7,923 77 |
| Subrevenue..... | | \$1,934,006 69 |
| Other Revenue | | |
| Court fines..... | \$38,909 88 | |
| Lease of kelp beds..... | 998 10 | |
| Fish packers tax..... | 339,110 13 | |
| Kelp tax..... | 1,474 74 | |
| Salmon tax..... | 52,799 07 | |
| Miscellaneous revenue..... | 17,297 67 | |
| Sale of boat..... | 10,486 00 | |
| Total Other Revenue..... | | \$461,075 59 |
| Grand total, Fish and Game Preservation Fund..... | | \$2,395,082 28 |

STATEMENT OF EXPENDITURES (INCOMPLETE) BY OBJECT

(AS OF DECEMBER 31, 1946)

For the Period July 1, 1945, to June 30, 1946

(Ninety-seventh Fiscal Year)

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------|--------------------|-------------|--------------|
| Administration—101 | | | | |
| Seasonal help..... | \$693 48 | | | \$693 48 |
| Regular help..... | 34,814 16 | | | 34,814 16 |
| Accident and death claims..... | | \$10,849 47 | | 10,849 47 |
| Automobile..... | | 1,572 04 | | 1,572 04 |
| Educational and public information..... | | 2,843 00 | \$1,503 80 | 4,346 80 |
| Freight, cartage, express..... | | 1,740 20 | | 1,740 20 |
| Legal advertisements..... | | 1,952 64 | | 1,952 64 |
| Library..... | | 101 17 | 187 02 | 288 19 |
| Light, heat and power..... | | 1,671 78 | | 1,671 78 |
| Office..... | | 8,239 32 | 608 68 | 8,848 00 |
| Photo..... | | 5,485 12 | 7 63 | 5,492 75 |
| Postage..... | | 6,712 05 | | 6,712 05 |
| Premium on bonds..... | | 30 00 | | 30 00 |
| Printing fish and game magazine (only)..... | | 4,127 44 | | 4,127 44 |
| Printing—general..... | | 3,519 31 | | 3,519 31 |
| Pro rata attorney general service..... | | 6,000 00 | | 6,000 00 |
| Pro rata departmental administration..... | | 35,744 50 | | 35,744 50 |
| Pro rata general fiscal administration..... | | 21,615 36 | | 21,615 36 |
| Pro rata Personnel Board service..... | | 8,832 20 | | 8,832 20 |
| Rent..... | | 13,130 28 | | 13,130 28 |
| Telephone and telegraph..... | | 7,884 02 | | 7,884 02 |
| Travel..... | | 7,412 49 | | 7,412 49 |
| Total Administration—101..... | \$35,507 64 | \$149,462 39 | \$2,307 13 | \$187,277 16 |
| Patrol and Law Enforcement—104 | | | | |
| Seasonal help..... | \$63,195 75 | | | \$63,195 75 |
| Regular help..... | 443,732 68 | | | 443,732 68 |
| Airplane..... | | \$2,217 45 | \$2,547 13 | 4,764 58 |
| Automobile..... | | 89,341 76 | 9,217 71 | 98,559 47 |
| Boats..... | | 29,757 09 | 23,316 57 | 53,073 66 |
| Field..... | | 3,867 95 | 7,770 24 | 11,638 19 |
| Freight, cartage and express..... | | 212 37 | | 212 37 |
| Light, heat and power..... | | 115 56 | | 115 56 |
| Laboratory..... | | 00 | | 00 |
| Office..... | | 378 15 | 6 30 | 384 45 |
| Postage..... | | 736 89 | | 736 89 |
| Premium on bonds..... | | 2,271 25 | | 2,271 25 |
| Printing..... | | 1,971 28 | | 1,971 28 |
| Rent..... | | 8,306 67 | | 8,306 67 |
| Telephone and telegraph..... | | 10,133 16 | | 10,133 16 |
| Traveling..... | | 81,739 69 | | 81,739 69 |
| Total Patrol and Law Enforcement—104..... | \$506,928 43 | \$231,049 27 | \$42,857 95 | \$780,835 65 |
| Marine Fisheries—105 | | | | |
| Seasonal help..... | \$7,129 50 | | | \$7,129 50 |
| Regular help..... | 93,208 17 | | | 93,208 17 |
| Automobile..... | | \$5,602 69 | \$9 90 | 5,612 59 |
| Boats..... | | | 465 00 | 465 00 |
| Cooperative research..... | | 1 09 | | 1 09 |
| Fish cannery auditing..... | | 5,306 32 | | 5,306 32 |
| Fish inspecting and fish tagging..... | | 51 74 | | 51 74 |
| Fish tags..... | | 1,042 55 | | 1,042 55 |
| Freight, cartage and express..... | | 117 32 | | 117 32 |
| Laboratory..... | | 2,065 36 | 57 94 | 2,123 30 |
| Library..... | | 133 11 | 61 84 | 194 95 |
| Light, heat and power..... | | 617 52 | | 617 52 |
| Office..... | | 329 48 | 343 43 | 672 91 |
| Printing..... | | 5,792 90 | | 5,792 90 |
| Rent..... | | 5,366 54 | | 5,366 54 |
| Scientific investigations..... | | 2,139 47 | 354 40 | 2,493 87 |
| Statistics..... | | 216 65 | | 216 65 |
| Telephone and telegraph..... | | 177 81 | | 177 81 |
| Traveling..... | | 14,064 04 | | 14,064 04 |
| Total Marine Fisheries—105..... | \$100,337 67 | \$43,024 59 | \$1,292 51 | \$144,654 77 |

STATEMENT OF EXPENDITURES (INCOMPLETE) BY OBJECT
(AS OF DECEMBER 31, 1946)

For the Period July 1, 1945, to June 30, 1946

(Ninety-seventh Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|---------------------|---------------------|--------------------|---------------------|
| Fish Conservation—106 | | | | |
| Seasonal help..... | \$89,873 57 | | | \$89,873 57 |
| Regular..... | 227,322 78 | | | 227,322 78 |
| Automobile..... | | \$30,306 14 | \$8,645 64 | 38,951 78 |
| Chemicals..... | 1,131 05 | 3,130 01 | | 4,261 06 |
| Eyed eggs..... | | 7,089 32 | 57 68 | 7,147 00 |
| Field operating supplies..... | | 100,020 77 | | 100,020 77 |
| Fish foods..... | 4,716 73 | | | 4,716 73 |
| Freight, cartage and express..... | 4,483 30 | | | 4,483 30 |
| Fuel..... | 2,655 48 | | | 2,655 48 |
| Light, heat and power..... | 7,777 67 | | | 7,777 67 |
| Office..... | 586 03 | | 23 50 | 609 53 |
| Operating equipment..... | 30 90 | | 11,897 05 | 11,927 95 |
| Operating service..... | 1 24 | | | 1 24 |
| Postage..... | 555 64 | | | 555 64 |
| Printing..... | 288 21 | | | 288 21 |
| Rent..... | 20,540 96 | | | 20,540 96 |
| Structural maintenance..... | 6,144 36 | | 894 44 | 7,038 80 |
| Telephone and telegraph..... | 1,749 88 | | | 1,749 88 |
| Travel..... | 18,684 76 | | | 18,684 76 |
| Total Fish Conservation—106..... | \$317,196 35 | \$209,892 45 | \$21,518 31 | \$548,607 11 |
| Engineering—107 | | | | |
| Seasonal help..... | \$140 80 | | | \$140 80 |
| Regular help..... | 5,495 47 | | | 5,495 47 |
| Automobile..... | | \$519 61 | | 519 61 |
| Blueprinting..... | | 54 28 | | 54 28 |
| Field..... | | 14 64 | | 14 64 |
| Inspecting fish screens..... | | 65 93 | | 65 93 |
| Office..... | | 38 22 | | 38 22 |
| Rent..... | 188 50 | | | 188 50 |
| Telephone and telegraph..... | 8 30 | | | 8 30 |
| Traveling..... | 971 94 | | | 971 94 |
| Total Engineering—107..... | \$5,636 27 | \$1,861 42 | | \$7,497 69 |
| Game Conservation—108 | | | | |
| Seasonal help..... | \$17,828 18 | | | \$17,828 18 |
| Regular help..... | 148,019 15 | | | 148,019 15 |
| Automobile..... | | \$31,423 44 | \$5,242 01 | 36,665 45 |
| Crow bounty..... | 240 15 | | | 240 15 |
| Field..... | 22,129 84 | | 6,971 71 | 29,101 55 |
| Freight, cartage and express..... | 117 90 | | | 117 90 |
| Laboratory..... | 657 31 | | 599 69 | 1,257 00 |
| Light, heat and power..... | 2,456 74 | | | 2,456 74 |
| Lion bounty..... | 9,610 00 | | | 9,610 00 |
| Office..... | 1,119 20 | | 61 46 | 1,180 66 |
| Postage..... | 178 20 | | | 178 20 |
| Printing..... | 274 31 | | | 274 31 |
| Rent..... | 4,256 60 | | | 4,256 60 |
| Telephone and telegraph..... | 601 44 | | | 601 44 |
| Traveling..... | 18,485 58 | | | 18,485 58 |
| Total Game Conservation—108..... | \$165,847 33 | \$91,550 71 | \$12,874 87 | \$270,272 91 |
| Game Farms—109 | | | | |
| Seasonal help..... | \$31,342 75 | | | \$31,342 75 |
| Regular..... | 43,762 91 | | | 43,762 91 |
| Automobile..... | | 2,624 94 | | 2,624 94 |
| Miscellaneous field..... | | 8,169 09 | \$12 20 | 8,181 29 |
| Freight, cartage and express..... | | 107 30 | | 107 30 |
| Game foods..... | 21,554 56 | | | 21,554 56 |
| Light, heat and power..... | 4,977 96 | | | 4,977 96 |
| Office..... | 17 93 | | | 17 93 |
| Postage..... | 33 00 | | | 33 00 |
| Printing..... | 39 90 | | | 39 90 |
| Rent..... | 11 75 | | | 11 75 |
| Telephone and telegraph..... | 939 04 | | | 939 04 |
| Traveling..... | 2,086 25 | | | 2,086 25 |
| Total Game Farms—109..... | \$75,105 66 | \$40,561 72 | \$12 20 | \$115,679 58 |

STATEMENT OF EXPENDITURES (INCOMPLETE) BY OBJECT
(AS OF DECEMBER 31, 1946)

For the Period July 1, 1945, to June 30, 1946
 (Ninety-seventh Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------------|-----------------------|-----------|----------------|
| Licenses—111 | | | | |
| Seasonal help..... | \$583 57 | | | \$583 57 |
| Regular help..... | 30,701 50 | | | 30,701 50 |
| Automobile..... | | \$915 58 | | 915 58 |
| Freight, cartage and express..... | | 1,373 42 | | 1,373 42 |
| License indicating buttons..... | | 15,483 85 | | 15,483 85 |
| License commission—credit agents..... | | 61,573 46 | | 61,573 46 |
| License commission—cash agents..... | | 57,337 08 | | 57,337 08 |
| Office..... | | 757 20 | \$823 63 | 1,580 83 |
| Postage..... | | 2,777 40 | | 2,777 40 |
| Premium on bonds..... | | 6,538 63 | | 6,538 63 |
| Printing..... | | 17,932 37 | | 17,932 37 |
| Rent..... | | 556 50 | | 556 50 |
| Telephone and telegraph..... | | 268 85 | | 268 85 |
| Traveling..... | | 1,179 63 | | 1,179 63 |
| Total Licenses—111..... | \$31,285 07 | \$166,693 97 | \$823 63 | \$198,802 67 |
| Construction of Fish Screens and Stream Improvements | | | | |
| Total Fish Screens..... | 267 38 | 24,587 79 | | 24,855 17 |
| Total Fish and Game Support— 97th Fiscal Year..... | | | | \$2,278,482 71 |
| Less estimated maintenance deductions..... | | | | 12,111 89 |
| Net total Fish and Game Support—97th Fiscal Year..... | | | | \$2,266,370 82 |
| Special item—Claim of Secretary of State Board of Control—Chapter 1527-45..... | | | | 978 27 |
| Total Operating Expenditures—97th Fiscal Year..... | | | | \$2,267,349 09 |

STATEMENT OF EXPENDITURES (INCOMPLETE) BY OBJECT
(AS OF DECEMBER 31, 1946)
For the Period July 1, 1945, to June 30, 1946
(Ninety-seventh Fiscal Year)—Continued

| | Detail | Total |
|---|------------|----------------|
| Additions and Betterments | | |
| Purchase of land | | |
| Buchner Field, City of Yreka..... | \$813 00 | \$813 00 |
| Improvements | | |
| Alteration and modernization of hatchery buildings..... | 1,354 46 | |
| Construction of rearing ponds all hatcheries..... | 948 38 | |
| Engineering projects..... | 10,000 00 | |
| Experiments, electrical and mechanical fish screens..... | 186 88 | |
| Fern Creek house and garden remodeling project..... | 148 95 | |
| Game farms..... | 868 33 | |
| Honey Lake Refuge..... | 2,546 96 | |
| Improvement county public shooting grounds..... | 5,000 00 | |
| Madeline Plains Waterfowl Mgmt. | | |
| Preliminary engineering service | | |
| Tulelake dam..... | 70 00 | |
| Redding Game Farm—construction of house and garden..... | 9,225 00 | |
| Redding warehouse..... | 4,966 17 | |
| Replacement of hatchery pipe lines..... | 666 89 | |
| Tahoe Hatchery improvement..... | 1,224 75 | |
| Waddell Creek Dam repair project..... | 122 54 | |
| Yountville game farms holding pens..... | 6,611 48 | |
| Repairs, restoration and maintenance of Jenner Jetty on Russian River, Chapter 1194-45..... | 20,000 00 | |
| | | 63,940 79 |
| Total Additional and Betterments—97th Fiscal Year..... | | \$64,753 79 |
| Special Item—Cooperation with Federal Government | | |
| Pittman-Robertson Act | | |
| Beaver transplanting, statewide project 18-D..... | \$3,583 79 | |
| Madeline Plains Waterfowl Mgmt. | | |
| Area Project 17 L-2..... | 11,069 46 | |
| Project 17 L-3..... | 2,960 00 | |
| Project 15-R..... | 2,338 06 | |
| Project 16-R..... | 7,702 42 | |
| Project 19-R..... | 6,522 61 | |
| Project 20-R..... | 1,393 24 | |
| Project 22-R..... | 3,654 07 | |
| Project 24-R-1..... | 907 87 | |
| Madeline Plains Tulelake Dam..... | 1,566 41 | |
| | | 41,697 93 |
| Less indirect abatement from federal government, pro rata share Pittman-Robertson Act..... | | 28,381 55 |
| Net total, Pittman-Robertson Act..... | | \$13,316 38 |
| Contributions to Employees Retirement Fund..... | | 111,458 07 |
| Grand total Fish and Game Preservation, 97th Fiscal Year..... | | \$2,456,877 33 |

STATEMENT OF EXPENDITURES (INCOMPLETE) BY FUNCTION

(AS OF DECEMBER 31, 1946)

For the Period July 1, 1945, to June 30, 1946

(Ninety-seventh Fiscal Year)

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|--|--------------------|--------------------|-------------|--------------|
| Administration—101 | | | | |
| Education and public information..... | \$5,834 10 | \$7,727 21 | \$1,511 43 | \$15,072 74 |
| Executive..... | 10,250 00 | 7,419 80 | | 17,669 80 |
| Exhibits..... | | 122 52 | | 122 52 |
| Fish and game magazine..... | | 2,564 01 | | 2,564 01 |
| Library..... | 2,354 29 | 1,390 12 | 139 02 | 3,883 43 |
| Office..... | 17,069 25 | 130,223 73 | 656 68 | 147,949 66 |
| Unallocated..... | | 15 00 | | 15 00 |
| Total Administration—101..... | \$35,507 64 | \$149,462 39 | \$2,307 13 | \$187,277 16 |
| Patrol and Law Enforcement—104 | | | | |
| Airplane..... | | \$2,246 31 | \$9,722 13 | \$11,968 44 |
| Cannery inspection..... | \$20,649 47 | 217 71 | | 20,867 18 |
| Executive..... | 29,453 46 | 4,885 26 | 7,175 00 | 41,513 72 |
| Land patrol..... | 369,024 20 | 157,636 59 | 2,375 02 | 529,035 81 |
| Marine patrol..... | 74,525 15 | 62,271 03 | 23,585 80 | 160,381 98 |
| Office..... | 13,276 15 | 2,696 84 | | 15,972 99 |
| Pollution patrol..... | | 726 77 | | 726 77 |
| Unallocated..... | | 368 76 | | 368 76 |
| Total Patrol and Law Enforcement—104..... | \$506,928 43 | \$231,049 27 | \$42,857 95 | \$780,835 65 |
| Marine Fisheries—105 | | | | |
| Central Valley Water Project and salmon study..... | \$19,944 30 | \$14,283 71 | \$873 81 | \$35,101 82 |
| Executive..... | 11,602 97 | 2,745 76 | | 14,348 73 |
| Fish cannery auditing..... | | 6,063 43 | | 6,063 43 |
| Laboratory..... | 4,891 86 | 3,731 24 | 13 10 | 8,636 20 |
| Library..... | | 28 74 | 33 | 29 07 |
| Mackerel..... | 3,909 83 | 137 41 | | 4,047 24 |
| Office..... | 11,123 79 | 1,511 40 | 347 12 | 12,982 31 |
| Sardines..... | 12,238 01 | 2,202 26 | | 14,440 27 |
| Shark investigation..... | 5,315 97 | 1,982 48 | 18 45 | 7,316 90 |
| Shellfish and miscellaneous..... | 3,790 00 | 930 21 | 2 10 | 4,722 31 |
| Statistics..... | 27,145 13 | 9,362 95 | 37 60 | 36,545 68 |
| Tuna..... | 375 81 | | | 375 81 |
| Unallocated..... | | 45 00 | | 45 00 |
| Total Marine Fisheries—105..... | \$100,337 67 | \$43,024 59 | \$1,292 51 | \$144,654 77 |
| Fish Conservation—106 | | | | |
| Biological survey..... | \$25,027 95 | \$6,087 70 | \$1,554 82 | \$32,670 47 |
| Executive..... | 15,345 00 | 2,203 51 | 12 81 | 17,561 32 |
| Field inspection..... | | —3 53 | | —3 53 |
| Field supervision..... | 9,925 00 | 1,933 22 | 8,666 87 | 20,525 09 |
| Fish foods unallocated..... | | 43,804 41 | | 43,804 41 |
| Fish planting..... | | 1,881 52 | | 1,881 52 |
| Fish rescue..... | 12,809 75 | 3,861 14 | | 16,670 89 |
| Fish screens..... | | 929 26 | | 929 26 |
| Office..... | 8,929 74 | 369 09 | 180 35 | 9,479 18 |
| Operating expenses unallocated..... | | 638 44 | | 638 44 |
| Pollution inspection..... | 1,684 00 | 158 43 | | 1,842 43 |
| Statistical..... | | 255 94 | | 255 94 |
| Stream improvement..... | 830 00 | 446 99 | | 1,276 99 |
| Structural maintenance..... | | 103 29 | 1,545 71 | 1,649 00 |
| Unallocated..... | | 9,111 70 | | 9,111 70 |
| Unallocated (automobile, gas and oil)..... | | 130 86 | | 130 86 |
| Alpine Hatchery..... | | 20 84 | | 20 84 |
| Arrowhead Lake Hatchery..... | | 11 25 | | 11 25 |
| Basin Creek Hatchery..... | 5,863 10 | 1,702 54 | | 7,565 64 |
| Benbow Dam..... | 1,491 00 | 83 38 | | 1,574 38 |
| Black Rock Springs..... | | 306 54 | 19 20 | 325 74 |
| Bogus Creek Egg Collecting Station..... | | 85 00 | | 85 00 |
| Brookdale Hatchery..... | 7,457 03 | 2,406 35 | 202 08 | 10,065 46 |
| Burney Creek Hatchery..... | 8,760 20 | 2,042 09 | 161 25 | 10,963 54 |
| Central Valley..... | 8,971 57 | 3,751 85 | 200 43 | 12,923 85 |
| Copco Egg Collecting Station..... | | 85 00 | | 85 00 |
| Coy Flat..... | 495 02 | 146 06 | 9 49 | 650 57 |

STATEMENT OF EXPENDITURES (INCOMPLETE) BY FUNCTION
(AS OF DECEMBER 31, 1946)
For the Period July 1, 1945, to June 30, 1946
(Ninety-seventh Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|--|---------------------|---------------------|--------------------|---------------------|
| Fish Conservation—106—Continued | | | | |
| Crystal Lake..... | | \$2 00 | | \$2 00 |
| Experimental Hatchery..... | \$450 00 | | | 450 00 |
| Fall Creek Hatchery..... | 6,569 24 | \$1,170 59 | \$26 09 | 7,765 92 |
| Feather River Hatchery..... | 3,800 32 | 939 19 | 384 00 | 5,123 51 |
| Fillmore Hatchery..... | 23,353 08 | 22,869 22 | 1,253 69 | 47,475 99 |
| Fishing Creek..... | | 31 25 | | 31 25 |
| Hot Creek Hatchery..... | 21,986 66 | 30,945 74 | 106 15 | 53,038 55 |
| Huntington Lake..... | 305 64 | 489 48 | | 795 12 |
| Kaweah Hatchery..... | 6,726 32 | 1,914 22 | 880 35 | 9,520 89 |
| Kern Hatchery..... | 4,546 66 | 2,014 11 | 157 43 | 6,718 20 |
| Kings River Hatchery..... | 7,057 22 | 3,376 20 | 975 57 | 11,408 99 |
| Klamathon..... | | 1,333 91 | | 1,333 91 |
| Lake Almanor Hatchery..... | 9,973 00 | 2,732 43 | 231 62 | 12,937 05 |
| Madera Hatchery..... | | 59 28 | | 59 28 |
| Mt. Shasta Hatchery..... | 52,606 48 | 17,944 37 | 327 96 | 70,878 81 |
| Mt. Tallac Hatchery..... | 4,071 45 | 2,618 49 | 262 81 | 6,952 75 |
| Mt. Whitney Hatchery..... | 25,830 78 | 23,349 12 | 957 75 | 50,137 65 |
| Mt. Whittier Hatchery..... | 360 00 | | | 360 00 |
| Owens Park..... | | 43 99 | 505 88 | 549 87 |
| Potter Valley..... | 1,050 00 | | | 1,050 00 |
| Prairie Creek Hatchery..... | 7,110 17 | 2,684 12 | 2,308 95 | 12,103 24 |
| Rush Creek Hatchery..... | 900 00 | 94 80 | | 994 80 |
| San Gabriel Experimental Station..... | 300 00 | 349 97 | 40 51 | 690 48 |
| San Lorenzo Hatchery..... | | 72 89 | | 72 89 |
| Squoia Hatchery..... | 4,235 41 | 2,201 93 | 55 51 | 6,492 85 |
| Shasta River Hatchery..... | 303 50 | 87 00 | | 390 50 |
| Snow Mountain..... | | 534 00 | 9 74 | 543 74 |
| Tahoe Hatchery..... | 11,747 64 | 4,276 36 | 387 91 | 16,411 91 |
| Tuolumne..... | 580 00 | | | 580 00 |
| Upper Truckee Egg Collecting Station..... | | 10 00 | | 10 00 |
| Whittier Hatchery..... | 5,070 00 | 1,433 55 | 44 00 | 6,547 55 |
| Yosemite Hatchery..... | 7,025 03 | 1,215 00 | 33 75 | 8,273 78 |
| Yuba River Hatchery..... | 3,648 39 | 242 31 | 15 63 | 3,906 33 |
| Unallocated..... | | 2,304 06 | | 2,304 06 |
| Total Fish Conservation—105..... | \$317,196 35 | \$209,892 45 | \$21,518 31 | \$548,607 11 |
| Engineering—107 | | | | |
| Engineering..... | \$2,665 15 | \$778 27 | | \$3,443 42 |
| Executive..... | 2,231 12 | 254 06 | | 2,485 18 |
| Inspection of fish screens..... | 360 00 | 821 99 | | 1,181 99 |
| Office..... | 380 00 | 7 10 | | 387 10 |
| Total Engineering—107..... | \$5,636 27 | \$1,861 42 | | \$7,497 69 |
| Game Conservation—108 | | | | |
| Elk Refuge..... | \$2,940 00 | \$808 19 | \$13 15 | \$3,761 34 |
| Executive..... | 14,365 00 | 3,183 54 | | 17,548 54 |
| Game management..... | 28,273 38 | 18,494 58 | 306 12 | 47,074 08 |
| Grey Lodge Refuge..... | 5,697 36 | 1,155 25 | 625 67 | 7,478 28 |
| Honey Lake Refuge..... | 7,994 95 | 4,818 17 | 3,876 89 | 16,690 01 |
| Imperial Refuge..... | 3,807 33 | 6,197 17 | | 10,004 50 |
| Imperial Valley Public Shooting Grounds..... | | 825 00 | | 825 00 |
| Los Banos Refuge..... | 5,225 00 | 2,304 60 | 571 37 | 8,100 97 |
| Office..... | 6,588 95 | 443 50 | 39 07 | 7,071 52 |
| Predatory animal—lion hunting..... | 8,047 10 | 13,057 52 | | 21,104 62 |
| Predatory animal trapping..... | 56,219 23 | 29,791 00 | 3,341 05 | 89,351 28 |
| Predatory birds..... | | 240 15 | | 240 15 |
| Research..... | 20,250 04 | 6,685 80 | 596 00 | 27,531 84 |
| Riverside..... | | 10 65 | | 10 65 |
| Statistics..... | | 852 18 | | 852 18 |
| Suisun Refuge..... | 6,438 99 | 1,368 76 | 1,530 37 | 9,338 12 |
| Unallocated..... | | 736 91 | 1,975 18 | 2,712 09 |
| Unallocated (automobile, gas and oil)..... | | 136 09 | | 136 09 |
| Winter feeding and salt for game..... | | 441 65 | | 441 65 |
| Total Game Conservation—108..... | \$165,847 33 | \$91,550 71 | \$12,874 87 | \$270,272 91 |

**STATEMENT OF EXPENDITURES (INCOMPLETE) BY FUNCTION
(AS OF DECEMBER 31, 1946)**

For the Period July 1, 1945, to June 30, 1946
(Ninety-seventh Fiscal Year)—Continued

| Function | Salaries and wages | Operating expenses | Equipment | Total |
|---|--------------------------|-----------------------|-----------|--------------|
| Game Farms—109 | | | | |
| Castaic Farm | \$2,720 88 | \$132 10 | ----- | \$2,852 98 |
| Chino Game Farm | 104 39 | 160 73 | ----- | 265 12 |
| Executive | 4,451 75 | 151 44 | ----- | 4,603 19 |
| Fresno Game Farm | 5,688 90 | 2,220 99 | ----- | 7,909 89 |
| Game bird district—Los Serranos | 1,725 17 | 60 78 | \$5 25 | 1,791 20 |
| Game bird district—Yountville | 1,910 39 | 226 43 | ----- | 2,136 82 |
| Game management | 690 00 | 12 22 | ----- | 702 22 |
| Los Serranos Game Farm | 15,675 78 | 10,792 85 | ----- | 26,468 63 |
| Office | 2,210 00 | 371 14 | ----- | 2,581 14 |
| Redding Game Farm | 4,040 59 | 1,518 12 | ----- | 5,558 71 |
| Sacramento Game Farm | 4,442 58 | 930 19 | ----- | 5,372 77 |
| Valley Center Farm | 640 00 | 43 86 | 6 95 | 690 81 |
| Willows Game Farm | 3,722 92 | 911 92 | ----- | 4,634 84 |
| Yountville boarding house | 3,485 15 | 4,168 06 | ----- | 7,653 21 |
| Yountville Game Farm | 23,597 16 | 18,860 89 | ----- | 42,458 05 |
| Total Game Farms—109 | \$75,105 66 | \$40,561 72 | \$12 20 | \$115,679 58 |
| Licenses—111 | | | | |
| Executive | \$7,640 00 | \$1,304 74 | ----- | \$8,944 74 |
| License distribution | 21,630 07 | 164,661 21 | \$821 06 | 187,112 34 |
| Office | 2,015 00 | 681 51 | 2 57 | 2,699 08 |
| Unallocated (automobile, gas and oil) | ----- | 46 51 | ----- | 46 51 |
| Total Licenses—111 | \$31,285 07 | \$166,693 97 | \$823 63 | \$198,802 67 |

For additional expenditures see Statement of Expenditures by Object.

STATEMENT OF REVENUE (INCOMPLETE) (AS OF DECEMBER 31, 1946)
For the Period July 1, 1945, to June 30, 1946
(Ninety-seventh Fiscal Year)

Revenue for Fish and Game Preservation Fund:

| | | |
|--|-------|--------------|
| 1946 series— | | |
| Angling | | |
| Citizen | ..... | \$737,079 00 |
| Nonresident | ..... | 8,928 00 |
| Alien | ..... | 5,950 00 |
| Duplicate | ..... | 237 00 |
| Total Angling | ..... | \$752,194 00 |
| Hunting | | |
| Citizen | ..... | \$40 00 |
| Junior | ..... | 2 00 |
| Declarant alien | ..... | 10 00 |
| Total Hunting | ..... | 52 00 |
| Fish Packer and Wholesale Shellfish Dealer | | |
| Citizen | ..... | \$75 00 |
| Alien | ..... | 20 00 |
| Total fish packer and wholesale shellfish dealer | ..... | 95 00 |
| Miscellaneous Licenses and Tags | | |
| Deer tags | ..... | \$7 00 |
| Fish tags | ..... | 2,205 00 |
| Game tags | ..... | 98 85 |
| Market fisherman | ..... | 73,970 00 |
| Fish importers | ..... | 45 00 |
| Fish party boat permits | ..... | 384 00 |
| Fish breeder | ..... | 350 00 |
| Game breeder | ..... | 2,675 00 |
| Kelp license | ..... | 40 00 |
| Game management area licenses | ..... | 100 00 |
| Game management area tags | ..... | 84 |
| Total 1946 series | ..... | \$832,216 69 |
| 1945 series— | | |
| Angling | | |
| Citizen | ..... | \$773,084 00 |
| Nonresident | ..... | 12,571 00 |
| Alien | ..... | 5,600 00 |
| Duplicate | ..... | 1,582 50 |
| Total Angling | ..... | \$792,837 50 |
| Hunting | | |
| Archery-Citizen | ..... | \$132 00 |
| Citizen | ..... | 677,570 00 |
| Junior | ..... | 36,994 00 |
| Nonresident | ..... | 38,780 00 |
| Declarant alien | ..... | 2,775 00 |
| Alien | ..... | 3,300 00 |
| Duplicate | ..... | 1,540 00 |
| Total Hunting | ..... | 761,091 00 |
| Community Hunt Club | | |
| Citizen | ..... | \$800 00 |
| Total Community Hunt Club | ..... | 800 00 |
| Community Hunt Club Operation | | |
| Citizen | ..... | \$240 00 |
| Total Community Hunt Club Operation | ..... | 240 00 |
| Trapping | | |
| Citizen | ..... | \$1,753 00 |
| Alien | ..... | 20 00 |
| Total Trapping | ..... | 1,783 00 |
| Fish Packer and Shellfish Dealer | | |
| Citizen | ..... | \$1,440 00 |
| Alien | ..... | 20 00 |
| Total Fish Packer and Shellfish Dealer | ..... | 1,460 00 |

STATEMENT OF REVENUE (INCOMPLETE) (AS OF DECEMBER 31, 1946)
For the Period July 1, 1945, to June 30, 1946
(Ninety-seventh Fiscal Year)—Continued

Revenue for Fish and Game Preservation Fund:

| | | |
|--|-------------|-----------------------|
| 1945 series—Continued | | |
| Miscellaneous Licenses and Tags | | |
| Archery Deer tags..... | \$31 00 | |
| Deer tags..... | 214,619 00 | |
| Fish tags..... | 2,309 00 | |
| Game tags..... | 82 61 | |
| Market fisherman..... | 54,060 00 | |
| Fish importers..... | 5 00 | |
| Fish party boat permits..... | 152 00 | |
| Fish breeder..... | 50 00 | |
| Game breeder..... | 140 00 | |
| Kelp license..... | 110 00 | |
| Game management area licenses..... | 40 00 | |
| Game management area tags..... | 24 | |
| Antelope permits..... | 2,500 00 | |
| Deer meat wardens..... | 439 00 | |
| Deer meat lockers..... | 7,397 00 | 281,934 85 |
| Total 1945 series..... | | <u>\$1,840,146 35</u> |
| 1944 series— | | |
| Angling | | |
| Alien..... | | |
| Citizen..... | \$1,454 00 | |
| Duplicate..... | 4 00 | |
| Nonresident..... | —6 00 | |
| Total Angling..... | | <u>\$1,452 00</u> |
| Hunting | | |
| Citizen..... | \$11,353 00 | |
| Junior..... | 770 00 | |
| Nonresident..... | 90 00 | |
| Declarant alien..... | 20 00 | |
| Duplicate..... | 62 50 | |
| Total Hunting..... | | <u>12,295 50</u> |
| Miscellaneous Licenses and Tags | | |
| Deer tags..... | \$70 00 | |
| Fish tags..... | 28 | |
| Pheasant tags..... | 112 00 | |
| Deer meat lockers..... | 15 00 | 197 28 |
| Total 1944 series..... | | <u>\$13,944 78</u> |
| Subrevenue..... | | |
| | | <u>\$2,686,307 82</u> |
| Other Revenue | | |
| Court fines..... | \$60,042 95 | |
| Lease of Kelp beds..... | 1,334 50 | |
| Fish packers tax..... | 266,146 51 | |
| Kelp tax revenue..... | 2,560 58 | |
| Salmon packers tax..... | 61,541 65 | |
| Miscellaneous revenue..... | 10,142 10 | |
| Interest on survey money investment fund..... | 1,384 86 | |
| Sale of boat..... | 68,043 86 | |
| Total Other Revenue..... | | <u>471,197 01</u> |
| Grand total—Fish and Game Preservation Fund..... | | <u>\$3,157,504 83</u> |

ARRESTS, FINES AND SEIZURES

| | |
|---|-----|
| 1. Total Arrests Over 43 Years..... | 96 |
| 2. Recapitulation, Arrests and Convictions..... | 96 |
| 3. Seizure of Fish and Game (Fish)..... | 97 |
| 4. Seizure of Fish and Game (Game)..... | 98 |
| 5. Fish Cases..... | 99 |
| 6. Game Cases..... | 100 |

TOTAL ARRESTS FOR PERIOD OF 43 YEARS

| | | | |
|-----------|-------|-----------|-------|
| 1902-1904 | 550 | 1924-1926 | 3,207 |
| 1904-1906 | 774 | 1926-1928 | 4,390 |
| 1906-1908 | 1,192 | 1928-1930 | 5,388 |
| 1908-1910 | 1,771 | 1930-1932 | 5,237 |
| 1910-1912 | 2,063 | 1932-1934 | 3,795 |
| 1912-1914 | 1,993 | 1934-1936 | 4,535 |
| 1914-1916 | 2,087 | 1936-1938 | 6,382 |
| 1916-1918 | 1,797 | 1938-1940 | 7,444 |
| 1918-1920 | 1,891 | 1940-1942 | 7,262 |
| 1920-1922 | 2,258 | 1942-1944 | 4,298 |
| 1922-1924 | 2,715 | 1944-1946 | 5,902 |

ARRESTS AND CONVICTIONS—RECAPITULATION

| | <i>Number of arrests</i> | <i>Fines imposed</i> | <i>Jail sentences (days)</i> |
|----------------------|------------------------------|--------------------------|----------------------------------|
| Fish cases 1944-1945 | 1,073 | \$31,582 50 | 36 |
| Game cases 1944-1945 | 974 | 49,767 00 | 83½ and 6 months |
| Totals 1944-1945 | 2,047 | \$81,349 50 | 119½ days and 6 months |
| Fish cases 1945-1946 | 2,023 | 63,493 50 | 250 |
| Game cases 1945-1946 | 1,327 | 65,184 50 | 64 |
| Totals 1945-1946 | 3,350 | \$128,678 00 | 314 |
| Recapitulation : | | | |
| 1944-1945 | 2,047 | 81,349 50 | 119½ and 6 months |
| 1945-1946 | 3,550 | 128,678 00 | 314 |
| Totals | 5,597 | \$210,027 50 | 433½ and 6 months |

SEIZURES OF FISH AND GAME

| <i>Fish</i> | <i>July 1, 1944</i> | <i>July 1, 1945</i> | <i>Total</i> |
|--------------------------|----------------------|----------------------|--------------|
| | <i>to</i> | <i>to</i> | |
| | <i>June 30, 1945</i> | <i>June 30, 1946</i> | |
| Abalones | 1,896 | 3,681 | 5,577 |
| Abalones, pounds | -- | 20 | 20 |
| Bass, black | 68 | 253 | 321 |
| Bass, pounds | -- | 41 | 41 |
| Bass, striped | 21 | 325 | 346 |
| Bass, striped, pounds | 77 | -- | 77 |
| Bass, pounds | 1,506 | 61 | 1,567 |
| Carp, pounds | -- | 40 | 40 |
| Clams | 3,374 | 2,028 | 5,402 |
| Clams, pismo | 19 | -- | 19 |
| Clams, cockles | 462 | -- | 462 |
| Catfish | -- | 15 | 15 |
| Catfish, pounds | 699 | 590 | 1,289 |
| Crabs | -- | 557 | 557 |
| Crappie | 43 | 23 | 66 |
| Devilfish, pounds | -- | 25 | 25 |
| Elops Affinis | -- | 1 | 1 |
| Fish trap | 18 | -- | 18 |
| Frogs | -- | 54 | 54 |
| Gaff hooks | -- | 2 | 2 |
| Halibut, pounds | 70 | 60 | 130 |
| Kelp and rock bass | -- | 22 | 22 |
| Lobster, pounds | 1,000 | 200 | 1,200 |
| Lobster traps | 174 | 57 | 231 |
| Lobster receiver | 1 | -- | 1 |
| Lobster spiny | -- | 519 | 519 |
| Lobster spiny sacks | -- | 14 | 14 |
| Lobsters | 64 | 234 | 298 |
| Mussels, pounds | -- | 75 | 75 |
| Perch | -- | 10 | 10 |
| Perch, saltwater, pounds | 50 | -- | 50 |
| Salmon | 63 | 90 | 153 |
| Salmon, chinook | 21 | -- | 21 |
| Salmon, pounds | -- | 1,940 | 1,940 |
| Salmon, king | 26 | -- | 26 |
| Salmon, silver, pounds | 45 | -- | 45 |
| Shad, pounds | 102 | -- | 102 |
| Spear | -- | 2 | 2 |
| Spotfin, croaker, pounds | -- | 360 | 360 |
| Sturgeon | -- | 4 | 4 |
| Sunfish | 260 | 471 | 731 |
| Sunfish, bluegill | 35 | -- | 35 |
| Sunfish, pounds | -- | 9 | 9 |
| Trammel nets | -- | -- | 2 |
| Trout, pounds | 25 | 148 | 173 |
| Trout, steelhead | 21 | -- | 21 |
| Trout, steelhead, pounds | 1 | -- | 1 |
| Trout, rainbow | 1,669 | -- | 1,669 |
| Trout, rainbow, pounds | 10 | -- | 10 |
| Trout | 949 | 1,068 | 2,017 |
| White sea bass, pounds | 5,537 | -- | 5,537 |

SEIZURES OF FISH AND GAME—Continued

| Game | July 1, 1944 | July 1, 1945 | Total |
|------------------------|---------------------|---------------------|-------|
| | to June 30, 1945 | to June 30, 1946 | |
| Deer | 95 | 79 | 174 |
| Deer meat, pounds | 809 | 1,635 | 2,444 |
| Deer meat canned, jars | 10 | 8 | 18 |
| Doves | 561 | 837 | 1,398 |
| Ducks | 897 | 298 | 1,195 |
| Ducks, teal | 2 | — | 2 |
| Florida Gallinule | — | 1 | 1 |
| Geese | 73 | 43 | 116 |
| Grebe | — | 1 | 1 |
| Killdeer | 2 | — | 2 |
| Meadowlark | — | 2 | 2 |
| Pheasants | 65 | 33 | 98 |
| Pheasants hen | 75 | 76 | 151 |
| Pheasants male | 229 | 94 | 323 |
| Pigeons | 3 | 25 | 28 |
| Quail | 3 | 120 | 123 |
| Quail, valley | 20 | — | 20 |
| Rabbits | 3 | 90 | 93 |
| Rabbits, cottontail | 26 | — | 26 |
| Robins | — | 13 | 13 |
| Squirrel, gray | 2 | — | 2 |
| Sagehens | 6 | — | 6 |
| Shorebirds | 3 | — | 3 |
| Swans | 9 | 3 | 12 |
| Wood ducks | 3 | — | 3 |
| Wilson snipe | — | 1 | 1 |

FISH CASES

| Offense | July 1, 1944, to June 30, 1945 | | | July 1, 1945, to June 30, 1946 | | |
|--|--------------------------------|-------------|------|--------------------------------|-------------|------|
| | Arrests | Fines | Jail | Arrests | Fines | Jail |
| Abalones: Undersize, over limit, out of shell, no license, closed season, remove from shell below high tide, fail to show license on demand, no commercial license | 211 | \$5,280 00 | | 442 | \$14,114 50 | |
| Angling: No license, closed season, closed area, within 150 feet of dam, not holding rod, false statement in securing license, set lines, after sundown, two poles, fish gaff 300 feet of stream, fishing in fish ladder, closed waters, lending license to another, illegally taken fish, using trout roe for bait, back dating angling license, operating set line | 250 | 5,472 50 | 1 | 538 | 9,710 00 | |
| Barracuda: Overlimit, undersize, no license | 1 | 50 00 | | 1 | 30 00 | |
| Bass: Underize, using two rods, after sundown, night fishing, closed season, no license, two lines, overlimit, possession for sale, failure to return bass to water taken in shad net, buying striped bass | 116 | 3,121 00 | | 293 | 7,707 50 | 35 |
| Bass, black: No license | 30 | 335 00 | 10 | 3 | 75 00 | |
| Catfish: Selling, undersize, closed season, use of net to take catfish, closed waters | 8 | 702 50 | | 24 | 787 00 | |
| Clams: Undersize, clam forks in preserve, take clams in preserve, out of shell, overlimit, no license, closed season | 85 | 2,289 00 | 25 | 116 | 3,281 50 | |
| Commercial: Operating net and taking tuna in closed season, gill net in closed waters, no license, failure to give fishermen copy at delivery, operating round haul net, failure to keep record of fresh fish purchased and from whom | 97 | 4,870 00 | | 151 | 11,410 00 | 90 |
| Crabs: Undersize, closed season, overlimit | 7 | 200 00 | | 31 | 1,720 00 | |
| Crappie: Selling | 1 | 25 00 | | | | |
| Frogs: Overlimit, closed season | 1 | 25 00 | | 6 | 90 00 | |
| Lobsters: Closed season, undersize, overlimit | 14 | 600 00 | | 31 | 1,488 00 | |
| Pollution | 6 | 750 00 | | 18 | 1,275 00 | |
| Salmon: Undersize, taken illegally, other than angling, at night, at fish screen, no license, spearing, night spearing | 87 | 2,592 50 | | 124 | 4,480 00 | 105 |
| Spearing: Spearing in prohibited area, 300 feet of stream, using gaff hook | 25 | 830 00 | | | | |
| Sturgeon: Possession | 1 | 10 00 | | 2 | 50 00 | |
| Sunfish: No license, closed season, overlimit | 35 | 750 00 | | 9 | 192 50 | |
| Trout: Overlimit, closed area, not using hook and line, sale, more than one pole, closed season | 99 | 2,995 00 | | 233 | 7,102 50 | 20 |
| Taking marine life within marine refuge | | | | 1 | 5 00 | |
| Totals | 1,074 | \$30,927 50 | 36 | 2,023 | \$63,518 50 | 250 |

GAME CASES

| Offense | July 1, 1944, to June 30, 1945 | | | July 1, 1945, to June 30, 1946 | | |
|---|--------------------------------|-------------|-------|--------------------------------|-------------|------|
| | Arrests | Fines | Jail | Arrests | Fines | Jail |
| Antelope: Closed season..... | | | | 5 | \$475 00 | |
| Deer: Night hunting, refuge, transfer deer tags, forked horn, overlimit, closed season, doe, no tags, failure to have deer tag validated, spike buck, fawn, altering deer tag, spotlight, early and late shooting..... | 266 | \$19,512 50 | 6 mo. | 266 | 19,362 00 | 64 |
| Deer Meat, Closed season, unstamped, no permit, illegally taken..... | 44 | 2,822 50 | 71 | 89 | 6,070 00 | |
| Doves: Closed season, shooting from auto, no license, overlimit, unplugged gun..... | 89 | 3,275 00 | | 106 | 3,925 00 | |
| Ducks: Closed season, early and late shooting, overlimit, no license, unplugged gun, failure to show game on demand..... | 161 | 5,452 50 | | 254 | 9,018 00 | |
| Failure to show license on demand..... | 1 | 10 00 | | | | |
| Failure to declare out of state game..... | 3 | 125 00 | | | | |
| Failure to make report fur sales..... | 1 | 10 00 | | | | |
| Firearms in refuge, shooting from highway..... | 44 | 1,390 00 | | 21 | 490 00 | |
| Florida Gallinule..... | | | | 1 | 50 00 | |
| Geese: Overlimit, unplugged gun, refuge, no license..... | 8 | 595 00 | | 25 | 1,345 00 | |
| Grebe: Possession..... | | | | 4 | 115 00 | |
| Grouse..... | 1 | 35 00 | | 1 | 50 00 | |
| Hunting: No license, failure to show license on demand, transfer of license, hunting in refuge, falsifying in order to secure citizen's license, night, use license of another, spotlighting, refuse to show license on demand..... | 50 | 1,072 50 | | 146 | 3,358 50 | |
| Jacksnipe..... | | | | 3 | 75 00 | |
| Killdeer..... | | | | 1 | 25 00 | |
| Meadowlark..... | 3 | 75 00 | | 1 | 35 00 | |
| Nongame birds..... | 3 | 75 00 | | 5 | 80 00 | |
| Pheasants: Closed season, hen, no license, set lines, overlimit..... | 185 | 11,360 00 | | 198 | 13,475 00 | |
| Pigeons: Closed season, overlimit..... | 13 | 440 00 | | 7 | 113 00 | |
| Quail: Closed season, no license..... | 20 | 872 00 | | 57 | 1,504 50 | |
| Rabbits: Closed season, no license..... | 20 | 440 00 | 12½ | 103 | 2,707 00 | |
| Robins and Flickers..... | | | | 8 | 175 00 | |
| Sagehens: Closed season..... | 3 | 125 00 | | 1 | 50 00 | |
| Seagull: Possession..... | 1 | 25 00 | | | | |
| Shooting from automobile..... | 9 | 135 00 | | | | |
| Shooting from power boat..... | 26 | 740 00 | | | | |
| Shorebirds..... | 1 | 35 00 | | 5 | 160 00 | |
| Squirrels..... | 4 | 125 00 | | 3 | 110 00 | |
| Swans..... | 13 | 680 00 | | 8 | 425 00 | |
| Taking birds with traps..... | 1 | 25 00 | | | | |
| Trapping: For profit, no license..... | 1 | 50 00 | | 5 | 65 00 | |
| Trespassing..... | | | | 2 | 25 00 | |
| Totals..... | 971 | \$49,502 50 | | 1,325 | \$63,283 00 | |

MARINE FISHERIES STATISTICS

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TABLE I
California Fisheries Production

| | 1944 | 1945 | Total |
|---|---------------|---------------|---------------|
| Total landings, pounds..... | 1,458,942,000 | 1,216,851,000 | 2,675,793,000 |
| Cases of fish canned..... | 7,738,949 | 8,346,210 | 16,085,159 |
| Tons of fish meal produced..... | 107,132 | 78,653 | 185,785 |
| Gallons of fish oil produced..... | 18,269,785 | 12,062,111 | 30,331,896 |
| Gallons of liver oil produced..... | 414,874 | 203,815 | 618,689 |
| Value of canned and processed fishery products | \$79,074,776 | \$79,755,151 | \$158,829,927 |

TABLE II
Pounds and Value of Commercial Fish Landings in California

| Species | 1944 | | 1945 | |
|---------------------------|---------------|--------------|---------------|--------------|
| | Pounds | Value | Pounds | Value |
| Sardine | 1,147,208,000 | \$12,716,000 | 845,063,000 | \$9,407,000 |
| Yellowfin Tuna | 63,144,000 | 6,269,000 | 87,448,000 | 8,717,000 |
| Albacore | 20,969,000 | 3,484,000 | 21,836,000 | 4,256,000 |
| Skipjack | 30,037,000 | 2,694,000 | 33,348,000 | 2,982,000 |
| Salmon | 10,286,000 | 1,665,000 | 13,381,000 | 2,228,000 |
| Bluefin Tuna..... | 20,344,000 | 1,939,000 | 20,594,000 | 2,030,000 |
| Pismo Clam..... | 11,754,000 | 317,000 | 53,440,000 | 1,433,000 |
| Pacific Mackerel | 83,657,000 | 1,707,000 | 53,717,000 | 1,119,000 |
| Shark | 2,613,000 | 757,000 | 2,438,000 | 1,103,000 |
| Rockfish | 6,421,000 | 287,000 | 13,586,000 | 637,000 |
| Crab | 2,935,000 | 428,000 | 4,346,000 | 521,000 |
| Sablefish | 4,116,000 | 374,000 | 6,259,000 | 519,000 |
| Barracuda | 3,648,000 | 470,000 | 3,873,000 | 485,000 |
| Squid | 10,937,000 | 299,000 | 15,226,000 | 426,000 |
| Sole | 4,700,000 | 303,000 | 7,755,000 | 350,000 |
| Spiny Lobster | 920,000 | 252,000 | 1,272,000 | 302,000 |
| Yellowtail | 2,957,000 | 234,000 | 3,534,000 | 292,000 |
| Abalone | 1,630,000 | 145,000 | 2,447,000 | 280,000 |
| California Halibut | 1,492,000 | 286,000 | 1,742,000 | 256,000 |
| Bonito | 819,000 | 69,000 | 2,714,000 | 197,000 |
| Smelt | 1,541,000 | 108,000 | 2,370,000 | 156,000 |
| Horse Mackerel | 12,777,000 | 229,000 | 9,033,000 | 145,000 |
| Broadbill Swordfish | 749,000 | 226,000 | 363,000 | 110,000 |
| Catfish | 340,000 | 80,000 | 425,000 | 103,000 |
| Cabrilla | 209,000 | 34,000 | 579,000 | 83,000 |
| Shad | 2,689,000 | 121,000 | 1,484,000 | 72,000 |
| White Sea-bass | 394,000 | 56,000 | 527,000 | 69,000 |
| Pacific Cultus | 746,000 | 65,000 | 759,000 | 67,000 |
| Northern Halibut | 244,000 | 44,000 | 296,000 | 50,000 |
| All other | 8,675,000 | 471,000 | 6,996,000 | 435,000 |
| Totals | 1,458,942,000 | \$36,129,000 | 1,216,851,000 | \$38,830,000 |

TABLE III
Nationality of Commercial Fishermen

| <i>Nativity</i> | 1944-45 | 1945-46 |
|---------------------|---------|---------|
| United States ----- | 6,836 | 7,742 |
| Italy ----- | 1,400 | 1,412 |
| Jugoslavia ----- | 896 | 810 |
| Norway ----- | 460 | 454 |
| Portugal ----- | 348 | 371 |
| Great Britain ----- | 211 | 231 |
| Sweden ----- | 107 | 101 |
| Mexico ----- | 74 | 78 |
| Spain ----- | 63 | 67 |
| Denmark ----- | 62 | 62 |
| Germany ----- | 55 | 57 |
| Finland ----- | 52 | 60 |
| Russia ----- | 52 | 53 |
| Greece ----- | 48 | 49 |
| Austria ----- | 44 | 40 |
| France ----- | 27 | 22 |
| Netherlands ----- | 22 | 22 |
| All others ----- | 114 | 116 |
| Totals ----- | 10,871 | 11,747 |

TABLE IV
Residence of Licensed Commercial Fishermen

| <i>Region of Residence</i> | 1944-45 | 1945-46 |
|----------------------------------|---------|---------|
| Eureka ----- | 365 | 628 |
| Sacramento ----- | 501 | 559 |
| San Francisco ----- | 1,469 | 1,484 |
| Monterey ----- | 1,007 | 1,074 |
| Santa Barbara ----- | 347 | 441 |
| Los Angeles ----- | 4,978 | 4,863 |
| San Diego ----- | 1,648 | 2,023 |
| Alaska, Washington, Oregon ----- | 522 | 646 |
| Mexico ----- | 34 | 29 |
| Totals ----- | 10,871 | 11,747 |

TABLE V

Sardines (Seasonal Record)

| | 1944-45 | 1945-46 |
|---|------------|------------|
| Total tons landed..... | 548,415 | 396,090 |
| Tons received for canning..... | 265,367 | 257,997 |
| Total cases all sized cans packed..... | 3,668,471 | 3,761,306 |
| Number of reduction permits issued..... | 78 | 85 |
| Permit tonnage granted..... | 390,000 | 394,995 |
| Number of tons used under permit..... | 277,098 | 137,867 |
| Tons of sardine meal produced..... | 83,973 | 56,543 |
| Gallons of sardine oil produced..... | 17,702,612 | 11,231,584 |

TABLE VI

Sardine Case Pack by Size of Can

| Size of Can | 1944 | 1945 |
|----------------------|-----------|-----------|
| No. 10, 6's..... | 71,002 | 70,310 |
| 1-lb. oval..... | 1,485,811 | 1,211,203 |
| 1-lb. tall..... | 2,052,469 | 2,431,521 |
| 10½-oz. E.O. | 9,003 | 28,992 |
| ½-lb. sq. | 25,578 | 78,600 |
| ½-lb. 96's..... | 59,547 | 50,634 |
| ½-lb. fillet..... | 20,584 | 10,075 |
| 5-oz. 100's..... | 374 | -- |
| ¼-lb. sq. 100's..... | 10,292 | 3,089 |
| Totals..... | 3,734,660 | 3,884,424 |

TABLE VII

Tuna Catch in Pounds

| Species | 1944 | 1945 |
|----------------|-------------|-------------|
| Yellowfin..... | 63,144,000 | 87,448,000 |
| Skipjack..... | 30,037,000 | 33,348,000 |
| Albacore..... | 20,969,000 | 21,836,000 |
| Bluefin..... | 20,344,000 | 20,594,000 |
| Bonito..... | 819,000 | 2,714,000 |
| Totals..... | 135,313,000 | 165,940,000 |

TABLE VIII

Number of Cases of Tuna Packed

| | 1944 | | | 1945 | | |
|-------------------------|---------|--------------------|-----------|--------|--------------------|-----------|
| | 1-lb. | $\frac{1}{2}$ -lb. | Total | 1-lb. | $\frac{1}{2}$ -lb. | Total |
| Albacore | 14,973 | 420,140 | 435,123 | --- | 480,615 | 480,615 |
| Ponito | --- | 8,490 | 8,490 | 321 | 49,495 | 49,816 |
| Bluefin | 6,070 | 367,934 | 374,004 | 7,269 | 290,589 | 297,858 |
| Skipjack | 3,409 | 360,448 | 363,857 | 1,512 | 545,525 | 548,174 |
| Yellowfin | 74,993 | 744,976 | 827,483 | 81,202 | 1,415,091 | 1,497,991 |
| Tuna, grated and flakes | 11,876 | 729,915 | 765,007 | 8,821 | 539,633 | 548,454 |
| Tuna, tonno style | --- | 15,365 | 15,365 | --- | 16,198 | 16,198 |
| Totals | 111,321 | 2,647,268 | 2,789,329 | 99,125 | 3,337,146 | 3,439,106 |

* One hundred cans to the case. All others forty-eight.

TABLE IX

Mackerel Catch in Pounds

| Species | 1944-45 | 1945-46 |
|------------------|------------|------------|
| Pacific Mackerel | 80,785,000 | 52,003,000 |
| Horse Mackerel | 13,743,000 | 9,270,000 |
| Totals | 94,528,000 | 61,273,000 |

TABLE X

Number of Cases of Mackerel Packed

| Size of can | 1944 | 1945 |
|---------------------|---------|---------|
| 1-lb. | 973,098 | 587,959 |
| $\frac{1}{2}$ -lb. | 13,324 | 34 |
| Miscellaneous sizes | --- | 1,624 |
| Total | 986,422 | 589,617 |

CENTRAL VALLEY SALMON STUDIES

TABLE XI

Counts of Adult Salmon

| | 1943 | 1944 | 1945 |
|---|---------|---------|--------|
| San Joaquin River (at Mendota), Spring run----- | * | 5,000 | 56,000 |
| Tuolumne River (at Modesto), fall run----- | * | 130,000 | * |
| Mokelumne River (at Woodbridge), fall run----- | * | * | 6,500 |
| American River ----- | 7,000** | 30,000 | 38,000 |

* No count made.

** Incomplete but probably represents over two-thirds of total.

TABLE XII

Shark Livers Processed by California Plants

Quantities in Pounds

| | July, 1944 | July, 1945 | Changes | |
|---------------------------------------|------------|------------|---------|---------|
| | June, 1945 | June, 1946 | | |
| Taken in California waters | | | | |
| Soupfin ----- | 307,216 | 192,247 | minus | 114,969 |
| Dogfish ----- | 58,472 | 51,247 | minus | 7,225 |
| Mixed Species ----- | 118,838 | 190,560 | plus | 71,722 |
| Total ----- | 484,526 | 434,054 | minus | 50,472 |
| Taken in Washington and Oregon waters | | | | |
| Soupfin ----- | 94,362 | 15,623 | minus | 78,739 |
| Dogfish ----- | 1,117,668 | 814,359 | minus | 303,309 |
| Mixed Species ----- | 7,796 | 6,656 | minus | 1,140 |
| Total ----- | 1,219,826 | 836,638 | minus | 383,188 |
| Taken in Latin American waters | | | | |
| Mixed Species ----- | 1,104,934 | 1,003,806 | minus | 101,128 |
| Taken on Atlantic Coast | | | | |
| Mixed Species ----- | 11,502 | 17,026 | plus | 5,524 |
| GRAND TOTAL ----- | 2,820,788 | 2,291,524 | minus | 529,264 |

TABLE XIII

Catches of Bottom Fish, in Pounds

| | 1944 | 1945 |
|-----------------------------|-----------|------------|
| Flatfish | | |
| Sole ----- | 4,700,000 | 7,755,000 |
| Sand Dab ----- | 550,000 | 590,000 |
| Starry Flounder ----- | 365,000 | 340,000 |
| Turbot ----- | 75,000 | 160,000 |
| Rockfish (Rock Cod) ----- | 6,421,000 | 13,586,000 |
| Sablefish (Black Cod) ----- | 4,116,000 | 6,259,000 |
| Cultus (Ling Cod) ----- | 746,000 | 759,000 |

FISH DISTRIBUTION AND RESCUE

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I—RECORD OF FISH DISTRIBUTION

RECAPITULATION—1944

HATCHERY PRODUCTION

| Trout | |
|---------------------|------------|
| Rainbow | 12,794,688 |
| Steelhead | 1,857,133 |
| Loch Leven | 877,110 |
| Eastern Brook | 1,251,553 |
| Total | 16,780,484 |

| Salmon | |
|---------------|-----------|
| King | 3,096,620 |
| Silver | 69,252 |
| Kokanee | 257,810 |
| Total | 3,423,682 |

GENERAL FISH RESCUE

| Trout | |
|-----------------|-----------|
| Rainbow | 21,862 |
| Steelhead | 1,743,104 |
| Cutthroat | 152 |
| Total | 1,765,118 |

| Salmon | |
|--------------|---------|
| King | 98,458 |
| Silver | 94,896 |
| Total | 193,354 |

| Spiny Rayed | |
|-----------------------------|-----------|
| Smallmouth Black Bass | 315,215 |
| Largemouth Black Bass | 563,962 |
| Spotted Bass | 3,009 |
| Striped Bass | 8,670 |
| Calico Bass | 10 |
| Sacramento Perch | 42,965 |
| Crappie | 10,344 |
| Squartetail Catfish | 238,909 |
| Forkedtail Catfish | 215,086 |
| Bluegill Sunfish | 89,566 |
| Green Sunfish | 8,020 |
| Warmouth Bass | 41,250 |
| Sturgeon | 5 |
| Mosquito Fish | 1,000 |
| Total | 1,538,011 |

| | | | | | | | | | |
|----------------------|------------|------------|-----------|---------|-----------|-----------|-----------|---------|------------|
| SAN BERNARDINO..... | 244,925 | 244,925 | 244,925 | | | | | | 244,925 |
| SAN DIEGO..... | 38,700 | 38,700 | 38,700 | | | | | | 38,700 |
| SAN FRANCISCO..... | 43,670 | 43,670 | 43,670 | | | | | | 43,670 |
| SAN LUIS OBISPO..... | 19,000 | 19,000 | 19,000 | | | | | | 19,000 |
| SAN MATEO..... | 79,054 | 9,000 | 70,054 | | | | | | 79,054 |
| SANTA BARBARA..... | 22,880 | 22,880 | | | | | | | 22,880 |
| SANTA CLARA..... | 50,997 | 50,997 | | | | | | | 50,997 |
| SANTA CRUZ..... | 294,122 | 30,020 | 264,102 | | | | | | 294,122 |
| SEQUOIA..... | 90,916 | 90,916 | | | | | | | 90,916 |
| SHASTA..... | 666,770 | 519,000 | 107,210 | | | | 40,560 | | |
| | 19,300 | 4,500 | | | | | 14,800 | | |
| | 433,400 | 386,000 | 25,000 | | | | 22,400 | | 1,119,470 |
| SIERRA..... | 155,000 | 130,000 | | | | | 25,000 | | |
| | 27,000 | 20,000 | | | | | 7,000 | | |
| | 3,840 | | | | | | 3,840 | | |
| | 228,120 | 183,100 | | | | | 45,020 | | 413,960 |
| SISKIYOU..... | 2,988,860 | 87,365 | 302,775 | | | | 2,598,720 | | |
| | 691,868 | 554,648 | | | | | 74,220 | | 3,680,728 |
| TEHAMA..... | 62,000 | 62,000 | | | | | | | 297,000 |
| | 235,000 | 230,000 | 5,000 | | | | | | |
| TRINITY..... | 410,600 | 363,000 | | | | | 47,600 | | 410,600 |
| TULARE..... | 62,963 | 62,963 | | | | | | | |
| | 892,777 | 300,832 | | | | | 91,945 | | |
| | 157,326 | 157,326 | | | | | | | 824,697 |
| | 57,800 | 57,800 | | | | | | | |
| | 90,916 | 90,916 | | | | | | | |
| | 52,915 | 52,915 | | | | | | | |
| TUOLUMNE..... | 748,430 | 642,540 | | | | | 105,890 | | |
| | 143,330 | 38,220 | 105,110 | | | | | | 891,760 |
| VENTURA..... | 146,300 | 146,300 | | | | | | | 146,300 |
| YUBA..... | 10,000 | 10,000 | | | | | | | 10,000 |
| Total..... | 20,204,166 | 12,794,688 | 1,857,133 | 877,110 | 1,251,553 | 3,096,620 | 69,252 | 257,810 | 20,204,166 |

| | | | | | | | | | |
|---------------|--------------|-----------|---------|---------|--|--|--|-----------|--|
| HOT CREEK | Alpine | 5,290 | | | | | | | |
| | Fresno | 76,170 | | | | | | | |
| | Inyo | 21,417 | | | | | | | |
| | Madera | 43,760 | 10,000 | | | | | | |
| | Mono | 1,088,302 | 178,078 | | | | | 1,244,939 | |
| KAWEAH | Fresno | 5,800 | | | | | | | |
| | Tulare | 392,777 | 91,945 | | | | | 398,577 | |
| KERN | Kern | 107,054 | | | | | | | |
| | Tulare | 157,326 | | | | | | 294,380 | |
| KINGS RIVER | Fresno | 687,605 | | | | | | | |
| | Madera | 95,280 | | | | | | 782,885 | |
| LAKE ALMANOR | Butte | 13,550 | | 2,000 | | | | | |
| | Lassen | 229,770 | | 32,200 | | | | | |
| | Plumas | 638,750 | | | | | | | |
| | Shasta | 19,300 | | 14,800 | | | | | |
| | Tehama | 62,000 | | | | | | 963,370 | |
| | Alpine | 75,500 | | 5,000 | | | | | |
| | Yuba | 134,500 | | 41,000 | | | | | |
| MOUNT SHASTA | Butte | 372,000 | | 10,000 | | | | | |
| | Colusa | 10,000 | | | | | | | |
| | El Dorado | 399,000 | | 10,000 | | | | | |
| | Humboldt | 3,200 | | 3,200 | | | | | |
| | Lassen | 43,000 | | | | | | | |
| | Modoc | 34,000 | | | | | | | |
| | Nevada | 641,500 | | 93,000 | | | | | |
| | Placer | 263,000 | | 10,000 | | | | | |
| | Plumas | 44,000 | | | | | | | |
| | Shasta | 433,400 | | 22,400 | | | | | |
| | Sierra | 27,000 | | 7,000 | | | | | |
| | Siskiyou | 601,868 | | 63,000 | | | | | |
| | Tehama | 235,000 | | 74,220 | | | | | |
| | Trinity | 410,000 | | 5,000 | | | | | |
| | Yuba | 10,000 | | 47,600 | | | | 3,873,568 | |
| | MOUNT TALLAC | Alpine | 5,600 | | | | | | |
| | | El Dorado | 730,590 | | | | | | |
| Nevada | | 19,640 | | | | | | | |
| Placer | | 155,731 | | | | | | 911,561 | |
| MOUNT WHITNEY | Fresno | 23,600 | | 9,600 | | | | | |
| | Inyo | 315,035 | | 58,080 | | | | | |
| | Mono | 129,500 | | 120,000 | | | | | |
| | Tulare | 57,800 | | | | | | 525,935 | |

III—RECORD OF FISH DISTRIBUTION—Continued
From Hatchery by County—1944

| Hatchery | County | Total from hatchery by county | Rainbow | Steelhead | Loch Leven | Eastern Brook | King Salmon | Silver Salmon | Kokanee | Total |
|----------------|-----------|-------------------------------|------------|-----------|------------|---------------|-------------|---------------|---------|------------|
| PLASKETT PONDS | Colusa | 4,000 | 4,000 | | | | | | | 17,000 |
| | Glenn | 13,000 | 13,000 | | | | | | | |
| PRAIRIE CREEK | Del Norte | 1,043,804 | | 545,904 | | | 497,900 | 69,252 | | 1,767,818 |
| | Humboldt | 724,014 | 25,644 | 629,118 | | | | | | |
| SEQUOIA | Fresno | 112,896 | 112,896 | | | | | | | 203,812 |
| | Tulare | 90,916 | 90,916 | | | | | | | |
| TAHOE | Alpine | 1,300 | | | | 1,300 | | | | |
| | El Dorado | 413,110 | | | | 288,380 | | | 69,270 | |
| | Nevada | 96,350 | 55,460 | | | 13,700 | | | 82,650 | |
| | Pacifi | 119,460 | 68,330 | | | 51,130 | | | | |
| | Sierra | 3,840 | | | | 3,840 | | | | 634,060 |
| YOSEMITE | Madera | 6,600 | 6,600 | | | | | | | |
| | Mariposa | 935,370 | 630,060 | | 285,310 | | | | | 1,085,300 |
| | Tuolumne | 143,330 | 38,220 | | 105,110 | | | | | |
| YUBA RIVER | Sierra | 228,120 | 183,100 | | | 45,020 | | | | 228,120 |
| | Totals | 20,204,166 | 12,794,688 | 1,857,133 | 877,110 | 1,251,583 | 3,096,620 | 69,252 | 287,810 | 20,204,166 |

IV—SPINY RAYED FISH RESCUE RECAPITULATION—1944

| Source | County | Mosquito | Spotted Bass | Small-mouth Black Bass | Large-mouth Black Bass | Stripped Bass | Calico Bass | Sacramento Perch | Crappie | Square-tail Catfish | Forked-tail Catfish | Blac-gill Sunfish | Green Sunfish | War-mouth Bass | Sturgeon | Total | |
|---------------------------------|---------------------------------|----------|--------------|------------------------|------------------------|---------------|-------------|------------------|---------|---------------------|---------------------|-------------------|---------------|----------------|----------|--------|-----------|
| CENTRAL VALLEYS FISH RESCUE | Alameda | | | | 1,950 | | | | | | | 300 | | | | 2,250 | |
| | Amador | | 9 | | 25 | | | | | | | 30 | | | | 64 | |
| | Contra Costa | | | | 2,360 | | | | | | | 500 | | | | 2,860 | |
| | Mariposa | | | | | | | 11,900 | | | | | | | | 11,900 | |
| | Merced | | | | | | | 30,600 | | | | | | | | 30,600 | |
| | Napa | | | 10,652 | | | | | | | 1,210 | | 6 | 1,273 | | | 1,025 |
| | Placer | | 1,000 | | 15 | | | | | | | 10 | | | | | 1,025 |
| | Sacramento | | | 3,000 | 13,040 | 501,914 | 4,537 | | 465 | 6,499 | 200,870 | 113,983 | 71,679 | 149 | 40,654 | 3 | 956,793 |
| | San Francisco | | | 45 | | 26,770 | | 10 | | 1 | | | 19 | | | | 26,851 |
| | San Joaquin | | | | 8 | 3,297 | 220 | | | 5 | 1,055 | 26,025 | 1,271 | 1,737 | 90 | | 33,708 |
| | Solano | | | 82,840 | | | | | | | | 2,820 | | | | | 85,660 |
| | Sutter | | | | | 6,753 | 937 | | | | | 17,100 | | 3,100 | | 2 | 27,892 |
| | Yolo | | | 206,130 | | 20,377 | 2,976 | | | 15,950 | 50,836 | | 6,005 | 1,261 | 500 | | 304,035 |
| | COAST FISH RESCUE | Monterey | | | | | | | | | 3,875 | 3,112 | | | | | 6,987 |
| Santa Clara | | | | | 496 | | | | | | | | | | | 496 | |
| Fresno | | | | 2,500 | | | | | | 500 | | | | | | 3,000 | |
| Kern | | | | | | | | | 940 | 4,925 | | | | | | 5,865 | |
| SOUTHERN CALIFORNIA FISH RESCUE | Kings | | | | | | | | | 250 | | | | | | 250 | |
| | Tulare | | | | | | | | | 575 | | | | | | 575 | |
| | Los Angeles | | | | | | | | | | | | | | | | |
| | Riverside | | | | 5 | | | | | 2,708 | | 411 | 500 | | | 3,624 | |
| | San Bernardino | | | | | | | | | 3,000 | | 1,500 | | | | 4,500 | |
| | San Diego | | | | | | | | | 3,200 | | 3,600 | | | | 6,800 | |
| | Santa Barbara | | | | | | | | 2,900 | | | 775 | | | | 3,675 | |
| | Ventura | | | | | | | | | | | 660 | | | | 660 | |
| | | | | | | | | | | 2,000 | | | 2,800 | | | | 4,800 |
| | Total Fish Rescue (Spiny Rayed) | | 1,000 | 3,009 | 315,215 | 563,962 | 8,670 | 10 | 42,965 | 10,344 | 238,903 | 215,086 | 89,566 | 8,020 | 41,250 | 5 | 1,538,011 |

V—TROUT AND SALMON RESCUE RECAPITULATION—1944

| Source | County | Rainbow | Steelhead | Cutthroat | King Salmon | Silver Salmon | Total |
|---------------------------------|---|---------|------------------------------|-----------|----------------------------|---------------------------|--|
| CENTRAL VALLEYS FISH RESCUE | Sacramento..... Sutter..... Yolo..... | | | | 25,198 21,850 23,550 | | 25,198 21,850 23,550 |
| CENTRAL CALIFORNIA FISH RESCUE | Tuolumne..... | 3,830 | | | | | 3,830 |
| COAST FISH RESCUE | Monterey..... San Benito..... Santa Clara..... | | 2,086 5,000 79 | | | | 2,086 5,000 79 |
| MISCELLANEOUS FISH RESCUE | Glenn..... | | 7,200 | | | | 7,200 |
| NORTH COAST FISH RESCUE | Del Norte..... Humboldt..... Lake..... Mendocino..... Sonoma..... | | 13,602 | 152 | 27,800 | 32,043 2,343 60,510 | 73,657 2,343 249,788 479,173 6,721 |
| NORTHERN CALIFORNIA FISH RESCUE | Shasta..... | 32 | | | | | 32 |
| SOUTHERN CALIFORNIA FISH RESCUE | San Bernardino..... San Luis Obispo..... Santa Barbara..... Ventura..... | 18,000 | 93,160 813,180 133,625 | | | | 18,000 93,160 813,180 133,625 |
| Total Trout and Salmon Rescue | | 21,862 | 1,743,104 | 152 | 98,458 | 94,896 | 1,958,472 |

VI—RECAPITULATION—1945

HATCHERY PRODUCTION

| | Trout | |
|--------------------|------------|--|
| Rainbow..... | 14,918,913 | |
| Steelhead..... | 1,208,757 | |
| Loch Leven..... | 529,680 | |
| Eastern Brook..... | 1,554,565 | |
| Total..... | 18,211,915 | |

| | Salmon | |
|--------------|-----------|--|
| King..... | 3,018,080 | |
| Kokanee..... | 252,160 | |
| Total..... | 3,270,240 | |

GENERAL FISH RESCUE

| | Trout | |
|-----------------|-----------|--|
| Rainbow..... | 2,000 | |
| Steelhead..... | 1,702,353 | |
| Loch Leven..... | 1,600 | |
| Total..... | 1,705,953 | |

| | Salmon | |
|-------------|---------|--|
| King..... | 126,014 | |
| Silver..... | 67,175 | |
| Total..... | 193,189 | |

Spiny-Rayed

| | |
|----------------------------|-----------|
| Smallmouth Black Bass..... | 178,315 |
| Largemouth Black Bass..... | 290,035 |
| Spotted Bass..... | 12,903 |
| Viviparous Perch..... | 2,330 |
| Striped Bass..... | 40,209 |
| Calico Bass..... | 75,000 |
| Sacramento Perch..... | 18,571 |
| Crappie..... | 88,882 |
| Squardtail Catfish..... | 207,707 |
| Forkedtail Catfish..... | 610,288 |
| Bluegill Sunfish..... | 602,026 |
| Green Sunfish..... | 355,586 |
| Warmouth Bass..... | 101,784 |
| Sturgeon..... | 5 |
| Total..... | 2,583,641 |

VII—RECORD OF FISH DISTRIBUTION
FROM COUNTY BY HATCHERY—1945

| | Basin Creek Hatchery | Hot Creek Hatchery | Mt. Shasta Hatchery | Tahoe Hatchery | Mt. Tallac Hatchery | Total from county by hatchery |
|-------------------------|------------------------|-----------------------------|--------------------------|-----------------------|---------------------|-------------------------------|
| ALPINE COUNTY | | | | | | |
| Rainbow..... | 35,700 | 6,600 | 76,000 | 10,140 | 4,770 | 123,070 |
| Eastern Brook..... | 18,000 | | | | | 28,140 |
| | 53,700 | 6,600 | 76,000 | 10,140 | 4,770 | 151,210 |
| AMADOR COUNTY | | | | | | |
| Rainbow..... | | | 122,000 | | | 122,000 |
| Eastern Brook..... | | | 39,000 | | | 39,000 |
| | | | 161,000 | | | 161,000 |
| BUTTE COUNTY | | | | | | |
| Rainbow..... | Lake Almanor 23,400 | | 387,000 | | | 410,400 |
| Eastern Brook..... | 5,400 | | | | | 5,400 |
| | 28,800 | | 387,000 | | | 415,800 |
| CALAVERAS COUNTY | | Table Mountain Rearing Pond | | | | |
| Rainbow..... | Basin Creek 127,000 | | 11,400 | | | 138,400 |
| | | | Prairie Creek 492,280 | | | 492,280 |
| | | | 487,360 | | | 487,360 |
| | | | 979,640 | | | 979,640 |
| DEL NORTE COUNTY | | | | | | |
| Steelhead..... | Mt. Shasta | Tahoe | Mt. Tallac | 206,980 | 552,430 | 1,122,910 |
| King Salmon..... | | | 303,000 | 271,390 | | 279,390 |
| | | | 8,000 | 79,380 | | 79,380 |
| | | | 371,000 | 537,750 | 552,430 | 1,481,680 |
| EL DORADO COUNTY | | | | | | |
| Rainbow..... | | Huntington Lake 31,230 | Kings River 651,975 | Mt. Whitney 30,750 | Sequoia 115,696 | 898,891 |
| Eastern Brook..... | 49,240 | 39,090 | | 12,096 | | 51,186 |
| Kokanee..... | | | | | | |
| | 49,240 | 90,320 | 651,975 | 42,846 | 115,696 | 950,077 |
| FRESNO COUNTY | | | | | | |
| Rainbow..... | | | | | | |
| Eastern Brook..... | | | | | | |

| | | | | | |
|--|---|----------------------------------|---------|--|---|
| GLENN COUNTY Rainbow..... | Mt. Shasta 20,000 | Mt. Shasta | | | 20,000 |
| HUMBOLDT COUNTY Steelhead..... Eastern Brook..... | 377,588 377,588 | | 2,000 | | 377,588 2,000 |
| INYO COUNTY Rainbow..... Loch Leven..... Eastern Brook..... | 377,588 Hot Creek 19,532 | Mt. Whitney 177,933 16,790 | 92,612 | | 377,588 177,933 16,790 110,612 |
| KERN COUNTY Rainbow..... | 259,184 Black Rock Springs | 287,335 | | | 259,184 287,335 |
| LASSEN COUNTY Rainbow..... Eastern..... | 6,206 Burney Creek 180,410 3,600 | Kern 122,717 Lake Almanor | | | 6,206 180,410 48,300 |
| LOS ANGELES COUNTY Rainbow..... | 184,010 Fillmore 241,970 | 336,700 | | | 184,010 241,970 |
| MADERA COUNTY Rainbow..... | 142,400 Kings River | Yosemite 16,800 | | | 142,400 16,800 |
| MARIN COUNTY Rainbow..... | 5,760 Brookdale | | | | 5,760 |
| MARIPOSA COUNTY Rainbow..... Loch Leven..... Eastern Brook..... | 731,100 Rainbow 146,880 | Yosemite 731,100 146,880 | 84,880 | | 731,100 146,880 84,880 |
| MODOC COUNTY Rainbow..... | 446,670 Burney Creek | 962,890 | | | 446,670 962,890 |
| MONO COUNTY Rainbow..... Loch Leven..... Eastern Brook..... | 38,971 Black Rock Springs | Mt. Whitney 979,902 | 245,320 | | 38,971 979,902 168,959 |
| | 38,971 | 1,148,861 | 245,320 | | 38,971 1,148,861 245,320 |

VII—RECORD OF FISH DISTRIBUTION—Continued
From County by Hatchery—1945

| | Basin Creek Hatchery | Hot Creek Hatchery | Mt. Shasta Hatchery | Tahoe Hatchery | Mt. Tallac Hatchery | Total from county by hatchery |
|-----------------------|----------------------|--------------------|---------------------|----------------|---------------------|-------------------------------|
| MONTEREY COUNTY | | | | | | |
| Rainbow..... | 31,202 | | | | | 31,202 |
| Steelhead..... | 31,250 | | | | | 31,250 |
| | 62,452 | | | | | 62,452 |
| NEVADA COUNTY | | | | | | |
| Rainbow..... | Mt. Shasta | Tahoe | | | | |
| Eastern Brook..... | 606,922 | 51,080 | | | | 658,002 |
| Kokanee..... | 83,406 | 5,000 | | | | 88,406 |
| | | 74,280 | | | | 74,280 |
| | 690,328 | 130,960 | | | | 821,288 |
| ORANGE COUNTY | | | | | | |
| Rainbow..... | Fillmore | | | | | |
| | 6,150 | | | | | 6,150 |
| PLACER COUNTY | | | | | | |
| Rainbow..... | Mt. Shasta | Mt. Tallac | Tahoe | | | |
| Eastern Brook..... | 259,136 | 181,330 | 943,960 | | | 1,384,426 |
| | 19,100 | | 63,740 | | | 82,840 |
| | 278,236 | 181,330 | 1,007,700 | | | 1,467,266 |
| PLUMAS COUNTY | | | | | | |
| Rainbow..... | Feather River | Lake Almanor | Mt. Shasta | | | |
| Eastern Brook..... | 407,372 | 1,220,900 | 80,000 | | | 1,708,372 |
| | 69,980 | 9,500 | | | | 79,480 |
| | 477,352 | 1,230,400 | 80,000 | | | 1,788,352 |
| RIVERSIDE COUNTY | | | | | | |
| Rainbow..... | Fillmore | Whittier | | | | |
| | 49,400 | 2,500 | | | | 51,900 |
| SAN BENITO COUNTY | | | | | | |
| Rainbow..... | Brookdale | | | | | |
| | 5,810 | | | | | 5,810 |
| SAN BERNARDINO COUNTY | | | | | | |
| Rainbow..... | Fillmore | Whittier | | | | |
| | 233,000 | 3,000 | | | | 236,000 |
| SAN DIEGO COUNTY | | | | | | |
| Rainbow..... | Fillmore | | | | | |
| | 47,180 | | | | | 47,180 |

VII—RECORD OF FISH DISTRIBUTION—Continued
From County by Hatchery—1945

| | Basin Creek Hatchery | Hot Creek Hatchery | Mt. Shasta Hatchery | Tahoe Hatchery | Mt. Tallac Hatchery | Total from county by hatchery |
|------------------------|-----------------------|-----------------------------|------------------------|-----------------------|---------------------|-------------------------------|
| TRINITY COUNTY | | | | | | |
| Rainbow..... | Mt. Shasta 134,000 | | | | | 134,000 |
| Eastern Brook..... | 84,240 | | | | | 84,240 |
| TULARE COUNTY | | | | | | |
| Rainbow..... | 168,240 | | | | | 168,240 |
| Eastern Brook..... | Coy Flat 62,532 | Kaweah 310,252 56,649 | Kern 152,678 | Mt. Whitney 59,985 | Sequoia 82,375 | 700,148 56,649 |
| TUOLUMNE COUNTY | | | | | | |
| Rainbow..... | 32,326 | 32,326 | 62,532 | 59,985 | 82,375 | 756,797 |
| Eastern Brook..... | | | Basin Creek 387,570 | | | 511,780 |
| Kokanee..... | | | 124,210 | | | 162,720 |
| Loch Leven..... | | | 29,120 | | | 98,500 |
| | | | 98,500 | | | 39,360 |
| VENTURA COUNTY | | | | | | |
| Rainbow..... | 515,190 | 297,170 | | | | 812,360 |
| | Fillmore 76,050 | | | | | |
| YUBA COUNTY | | | | | | |
| Rainbow..... | Mt. Shasta 25,000 | Yuba River 8,140 | | | | 76,050 |

GRAND TOTAL FROM COUNTY BY HATCHERY

| | |
|--------------------|------------|
| Rainbow..... | 14,918,913 |
| Steelhead..... | 1,208,757 |
| Loch Leven..... | 529,680 |
| Eastern Brook..... | 1,554,565 |
| King Salmon..... | 3,018,080 |
| Kokanee..... | 252,160 |
| Grand total..... | 21,482,155 |

VIII—RECORD OF FISH DISTRIBUTION

From Hatchery by County—1945

BASIN CREEK HATCHERY

| | Alpine | Calaveras | Tuolumne | Total |
|--------------------|--------|-----------|----------|---------|
| Rainbow..... | 35,700 | 127,000 | 387,570 | 550,270 |
| Eastern Brook..... | 18,000 | ----- | 29,120 | 47,120 |
| Kokanee..... | ----- | ----- | 98,500 | 98,500 |
| | 53,700 | 127,000 | 515,190 | 695,890 |

BLACK ROCK SPRINGS HATCHERY

| | Inyo | Kern | Mono | Total |
|--------------|---------|-------|--------|---------|
| Rainbow..... | 259,184 | 6,206 | 38,971 | 304,361 |

BROOKDALE HATCHERY

| | Marin | Monterey | San Benito | San Francisco |
|----------------|-------|----------|------------|---------------|
| Rainbow..... | 5,760 | 31,202 | 5,810 | 108,320 |
| Steelhead..... | ----- | 31,250 | ----- | ----- |
| | 5,760 | 62,452 | 5,810 | 108,320 |

BROOKDALE HATCHERY—Continued

| | San Mateo | Santa Clara | Santa Cruz | Total |
|----------------|-----------|-------------|------------|---------|
| Rainbow..... | 15,960 | 181,957 | 56,689 | 405,698 |
| Steelhead..... | 58,540 | ----- | 180,438 | 270,228 |
| | 74,500 | 181,957 | 237,127 | 675,926 |

BUCKEYE PONDS

| | Tulare | Total |
|--------------|--------|--------|
| Rainbow..... | 32,326 | 32,326 |

BURNEY HATCHERY

| | Lassen | Modoc | Shasta | Siskiyou | Total |
|--------------------|---------|---------|---------|----------|-----------|
| Rainbow..... | 180,410 | 446,670 | 670,351 | ----- | 1,297,431 |
| Loch Leven..... | ----- | ----- | 67,230 | 7,000 | 74,230 |
| Eastern Brook..... | 3,600 | ----- | 18,002 | 17,259 | 38,861 |
| | 184,010 | 446,670 | 755,583 | 24,259 | 1,410,522 |

VIII—RECORD OF FISH DISTRIBUTION—Continued
 From Hatchery by County—1945
 COY FLAT STATION

| | Tulare | Total |
|--------------|--------|--------|
| Rainbow..... | 62,532 | 62,532 |

FALL CREEK HATCHERY

| | Siskiyou | Total |
|------------------|-----------|-----------|
| Rainbow..... | 32,443 | 32,443 |
| Steelhead..... | 68,661 | 68,661 |
| King Salmon..... | 2,526,220 | 2,526,220 |
| Total..... | 2,627,324 | 2,627,324 |

FEATHER RIVER HATCHERY

| | Plumas | Sierra | Total |
|--------------------|---------|---------|---------|
| Rainbow..... | 407,972 | 106,000 | 513,972 |
| Eastern Brook..... | 69,980 | 21,120 | 91,100 |
| | 477,952 | 127,120 | 605,072 |

FILLMORE HATCHERY

| | Los Angeles | Orange | Riverside | San Bernardino | San Diego |
|--------------|-------------|--------|-----------|----------------|-----------|
| Rainbow..... | 241,970 | 6,150 | 49,400 | 233,000 | 47,180 |

FILLMORE HATCHERY—Continued

| | San Luis Obispo | Santa Barbara | Ventura | Total |
|--------------|-----------------|---------------|---------|---------|
| Rainbow..... | 14,100 | 20,650 | 76,050 | 688,500 |

HOT CREEK HATCHERY

| | Alpine | Fresno | Inyo | Madera | Mono | Total |
|--------------------|--------|--------|--------|--------|-----------|-----------|
| Rainbow..... | 6,600 | 49,240 | 19,532 | 46,635 | 979,902 | 1,101,909 |
| Eastern Brook..... | | | 18,000 | | 168,959 | 186,959 |
| | 6,600 | 49,240 | 37,532 | 46,635 | 1,148,861 | 1,288,868 |

VIII—RECORD OF FISH DISTRIBUTION—Continued
 From Hatchery by County—1945
 HUNTINGTON LAKE HATCHERY

| | | Fresno |
|--------------------|--|--------|
| Rainbow..... | | 51,230 |
| Eastern Brook..... | | 39,090 |
| Total..... | | 90,320 |

KAWEAH HATCHERY

| | | Tulare |
|--------------------|--|---------|
| Rainbow..... | | 310,252 |
| Eastern Brook..... | | 56,649 |
| Total..... | | 366,901 |

KERN HATCHERY

| | Kern | Tulare | Total |
|--------------|---------|---------|---------|
| Rainbow..... | 122,717 | 152,678 | 275,395 |

KINGS RIVER HATCHERY

| | Fresno | Madera | Total |
|--------------|---------|---------|---------|
| Rainbow..... | 651,975 | 142,400 | 794,375 |

LAKE ALMANOR HATCHERY

| | Butte | Lassen | Plumas | Shasta | Tehama | Total |
|--------------------|--------|---------|-----------|--------|--------|-----------|
| Rainbow..... | 23,400 | 292,000 | 1,220,900 | 57,300 | 73,900 | 1,667,500 |
| Eastern Brook..... | 5,400 | 44,700 | 9,500 | 9,800 | 6,600 | 76,000 |
| | 28,800 | 336,700 | 1,230,400 | 67,100 | 80,500 | 1,743,500 |

MT. SHASTA HATCHERY

| | Alpine | Amador | Butte | El Dorado |
|--------------------|--------|---------|---------|-----------|
| Rainbow..... | 76,000 | 122,000 | 387,000 | 363,000 |
| Eastern Brook..... | | 39,000 | | 8,000 |
| King Salmon..... | 76,000 | 161,000 | 387,000 | 371,000 |

VIII—RECORD OF FISH DISTRIBUTION—Continued

From Hatchery by County—1945

MT. SHASTA HATCHERY—Continued

| | Glenn | Humboldt | Nevada | Placer |
|---------------------|--------|----------|---------|---------|
| Rainbow | 20,000 | ----- | 606,922 | 259,136 |
| Eastern Brook | ----- | 2,000 | 83,406 | 19,100 |
| King Salmon | ----- | ----- | ----- | ----- |
| | 20,000 | 2,000 | 690,328 | 278,236 |

MT. SHASTA HATCHERY—Continued

| | Plumas | Shasta | Sierra | Siskiyou |
|---------------------|--------|---------|--------|----------|
| Rainbow | 80,000 | 390,240 | 53,402 | 556,200 |
| Eastern Brook | ----- | 6,400 | 80,832 | 3,000 |
| King Salmon | ----- | ----- | ----- | 4,500 |
| Loch Leven | ----- | ----- | ----- | 7,100 |
| | 80,000 | 396,640 | 53,402 | 648,632 |

MT. SHASTA HATCHERY—Continued

| | Tehama | Trinity | Yuba | Total |
|---------------------|---------|---------|--------|-----------|
| Rainbow | 205,000 | 134,000 | 25,000 | 3,277,900 |
| Eastern Brook | 3,000 | 34,240 | ----- | 275,978 |
| King Salmon | ----- | ----- | ----- | 4,500 |
| Loch Leven | ----- | ----- | ----- | 7,100 |
| | 208,000 | 168,240 | 25,000 | 3,565,478 |

MT. TALLAC HATCHERY

| | Alpine | El Dorado | Placer | Total |
|---------------|--------|-----------|---------|---------|
| Rainbow | 4,770 | 552,930 | 181,330 | 739,030 |

MT. WHITNEY HATCHERY

| | Fresno | Inyo | Mono | Tulare | Total |
|---------------------|--------|---------|---------|--------|---------|
| Rainbow | 30,750 | 177,933 | ----- | 59,985 | 268,668 |
| Eastern Brook | 12,096 | 92,612 | ----- | ----- | 104,708 |
| Loch Leven | ----- | 16,790 | 245,320 | ----- | 262,110 |
| | 42,846 | 287,335 | 245,320 | 59,985 | 635,486 |

VIII—RECORD OF FISH DISTRIBUTION—Continued

From Hatchery by County—1945

PRAIRIE CREEK HATCHERY

| | Del Norte | Humboldt | Total |
|------------------|-----------|----------|-----------|
| Steelhead..... | 492,280 | 377,588 | 869,868 |
| King Salmon..... | 487,360 | | 487,360 |
| | 979,640 | 377,588 | 1,357,228 |

SEQUOIA HATCHERY

| | Fresno | Tulare | Total |
|--------------|---------|--------|---------|
| Rainbow..... | 115,696 | 82,375 | 198,071 |

TABLE MOUNTAIN REARING POND

| | Calaveras | Total |
|--------------|-----------|--------|
| Rainbow..... | 11,400 | 11,400 |

TAHOE HATCHERY

| | Alpine | El Dorado | Nevada | Placer | Sierra | Total |
|--------------------|--------|-----------|---------|-----------|--------|-----------|
| Rainbow..... | | 206,980 | 51,680 | 943,960 | 3,600 | 1,206,220 |
| Eastern Brook..... | 10,140 | 271,390 | 5,000 | 63,740 | | 350,270 |
| Kokanee..... | | 79,380 | 74,280 | | | 153,660 |
| | 10,140 | 557,750 | 130,960 | 1,007,700 | 3,600 | 1,710,150 |

WHITTIER HATCHERY

| | Los Angeles | Riverside | San Bernardino | Total |
|--------------|-------------|-----------|----------------|-------|
| Rainbow..... | 2,280 | 2,500 | 3,000 | 7,780 |

YOSEMITE HATCHERY

| | Madera | Mariposa | Tuolumne | Total |
|--------------------|--------|----------|----------|-----------|
| Rainbow..... | 16,800 | 731,100 | 124,210 | 872,110 |
| Eastern Brook..... | | 84,880 | 133,600 | 218,480 |
| Loch Leven..... | | 146,880 | 39,360 | 186,240 |
| | 16,800 | 962,860 | 297,170 | 1,276,830 |

GRAND TOTAL

| | |
|--|------------|
| Rainbow..... | 14,918,913 |
| Steelhead..... | 1,208,757 |
| Eastern Brook..... | 1,554,565 |
| Loch Leven..... | 529,680 |
| King Salmon..... | 3,018,080 |
| Kokanee..... | 252,160 |
| Grand total from hatcheries by county..... | 21,482,155 |

IX—SPINY-RAYED FISH RESCUE RECAPITULATION—1945

| Central Valley Fish Rescue | Alameda | Amador | Contra Costa | Fresno | Merced | Napa | Nevada | Sacramento |
|----------------------------|---------|--------|--------------|--------|--------|--------|--------|------------|
| Central Valley Fish Rescue | | | | | | | | |
| Spotted Bass | | | | | | | | 12,643 |
| Small Mouth Black Bass | | | | | | | | 8,034 |
| Large Mouth Black Bass | 50 | 90 | 265 | 50 | 50 | 39,897 | 50 | 200,063 |
| Viviparous Perch | | | | | | | | 2,330 |
| Striped Bass | | | | | | | | 1,654 |
| Sacramento Perch | | | | | | | | 17,555 |
| Crappie | | | | | | | | 31,380 |
| Squaretail Catfish | | | | | | | | 65,093 |
| Forkedtail Catfish | | | | | | 3,000 | | 230,415 |
| Bluegill Sunfish | 322 | | 2,005 | | | 300 | | 46,132 |
| Green Sunfish | | | | | | | | 77,800 |
| Warmouth Bass | | | | | | 46,110 | | 91,043 |
| Sturgeon | | | | | | | | 2 |
| Totals | 372 | 90 | 2,270 | 50 | 50 | 89,307 | 50 | 784,164 |

| Central Valley Fish Rescue—Continued | San Francisco | San Joaquin | Santa Clara | Sutter | Yolo | Total |
|--------------------------------------|---------------|-------------|-------------|---------|---------|-----------|
| Spotted Bass | | | | | | 12,643 |
| Small Mouth Black Bass | | | | | | 178,009 |
| Large Mouth Black Bass | 29,271 | 14,800 | | 7,794 | 130,078 | 261,027 |
| Viviparous Perch | | | | | 8,544 | 2,330 |
| Striped Bass | | 900 | | 9,671 | 27,967 | 40,192 |
| Sacramento Perch | | | | | | 17,555 |
| Crappie | | | | 1,845 | 9,770 | 42,965 |
| Squaretail Catfish | | | | | 49,000 | 13,093 |
| Forkedtail Catfish | | 46,200 | | 76,000 | 254,731 | 607,646 |
| Bluegill Sunfish | | 2,250 | | 9,008 | | 39,987 |
| Green Sunfish | | 8,000 | 250 | 31,200 | 191,850 | 354,960 |
| Warmouth Bass | | | | 10,000 | | 101,043 |
| Sturgeon | | | | | 3 | 5 |
| Totals | 29,271 | 72,150 | 250 | 145,518 | 667,943 | 1,791,485 |

IX—SPINY-RAYED FISH RESCUE RECAPITULATION—1945—Continued

| | Contra Costa | Total |
|-----------------------------|--------------|-------|
| Coast Fish Rescue | | |
| Small Mouth Black Bass..... | 306 | 306 |
| Bluegill Sunfish..... | 639 | 639 |
| Totals..... | 945 | 945 |

| | Merced | San Joaquin | Stanislaus | Total |
|-----------------------------|--------|-------------|------------|--------|
| Fresno Modesto Fish Rescue | | | | |
| Large Mouth Black Bass..... | 77 | 99 | 931 | 1,107 |
| Striped Bass..... | 8 | 9 | 10,397 | 13,138 |
| Crappie..... | 181 | 2,560 | 4,182 | 4,187 |
| Squaretail Catfish..... | 142 | 138 | 807 | 1,087 |
| Forkedtail Catfish..... | 1,434 | 68 | 2,512 | 4,104 |
| Bluegill Sunfish..... | 246 | 21 | 380 | 626 |
| Green Sunfish..... | | | 720 | 741 |
| Warmouth Bass..... | | | | |
| Sturgeon..... | | | | |
| Totals..... | 2,088 | 2,910 | 19,929 | 24,927 |

| | Alpine | Lake | Total |
|---------------------------------|--------|--------|--------|
| Northern California Fish Rescue | | | |
| Spotted Bass..... | 260 | 459 | 719 |
| Large Mouth Black Bass..... | | 75,000 | 75,000 |
| Calico Bass..... | | 1,016 | 1,016 |
| Sacramento Perch..... | | 3,445 | 3,445 |
| Crappie..... | | 2,004 | 2,004 |
| Squaretail Catfish..... | | 1,555 | 1,555 |
| Forkedtail Catfish..... | | 5,065 | 5,065 |
| Bluegill Sunfish..... | | | |
| Totals..... | 260 | 88,544 | 88,804 |

IX—SPINY-RAYED FISH RESCUE RECAPITULATION—1945—Continued

| | Kern | Los Angeles | Madera | Merced | Orange | Riverside | San Bernardino |
|---------------------------------|------|-------------|--------|--------|--------|-----------|----------------|
| Southern California Fish Rescue | | | | | | | |
| Large Mouth Black Bass..... | 25 | 5,806 | 917 | 5,133 | 631 | 12,332 | 85 |
| Crappie..... | | | | | | 29,000 | 2 |
| Squaretail Catfish..... | | | | | | 40,960 | 7,993 |
| Bluegill Sunfish..... | | | | | | 109,950 | 49,435 |
| Totals..... | 25 | 5,806 | 917 | 5,133 | 631 | 192,242 | 57,515 |

| | San Diego | San Luis Obispo | Santa Barbara | Ventura | Total |
|---|-----------|-----------------|---------------|---------|---------|
| Southern California Fish Rescue—Continued | | | | | |
| Large Mouth Black Bass..... | 570 | | 45 | 1,898 | 27,442 |
| Crappie..... | 300 | | | 2 | 29,304 |
| Squaretail Catfish..... | | | | | 48,953 |
| Bluegill Sunfish..... | 4,841 | 15,520 | 17,240 | 46,102 | 243,148 |
| Totals..... | 5,711 | 15,520 | 17,285 | 48,002 | 348,847 |

Grand Total Spiny-Rayed Fish Rescue

| | |
|-----------------------------|-----------|
| Spotted Bass..... | 12,903 |
| Small Mouth Black Bass..... | 178,315 |
| Large Mouth Black Bass..... | 290,035 |
| Viviparous Perch..... | 2,330 |
| Striped Bass..... | 40,209 |
| Calico Bass..... | 75,000 |
| Sacramento Perch..... | 18,571 |
| Crappie..... | 88,882 |
| Squaretail Catfish..... | 207,707 |
| Forcedtail Catfish..... | 610,288 |
| Bluegill Sunfish..... | 602,026 |
| Green Sunfish..... | 355,586 |
| Warmouth Bass..... | 101,784 |
| Sturgeon..... | 5 |
| Grand total..... | 2,583,641 |

X—TROUT AND SALMON RESCUE RECAPITULATION

BY COUNTY—1945

| | Butte | Sacramento | San Joaquin | Sutter | Yolo | Total |
|---------------------------------|-----------|------------|-------------|-----------|-------------|---------|
| Central Valley Fish Rescue | 5,700 | 51,867 | 999 | 33,821 | 33,627 | 126,014 |
| King Salmon..... | | | | | | |
| | | | | | | |
| | | | | San Mateo | Santa Clara | Total |
| Central Valley Fish Rescue | | | | 1,500 | 59,450 | 60,950 |
| Steelhead..... | | | | | | |
| | | | | | | |
| | Del Norte | Lake | Mendocino | Shasta | Sonoma | Total |
| Northern California Fish Rescue | | | | | | |
| Silver Salmon..... | 2,834 | | 64,241 | | | 67,175 |
| Steelhead..... | | 125,977 | 638,016 | | 10,230 | 774,223 |
| Rainbow..... | | | | 400 | | 400 |
| Loch Leven..... | | | | 1,600 | | 1,600 |
| | 2,834 | 125,977 | 702,257 | 2,000 | 10,230 | 843,398 |

X—TROUT AND SALMON RESCUE RECAPITULATION—Continued

| | San Diego | San Luis Obispo | Santa Barbara | Total |
|---------------------------------|-----------|-----------------|---------------|---------|
| Southern California Fish Rescue | | | | |
| Steelhead..... | 2,000 | 113,440 | 751,740 | 867,180 |
| Rainbow..... | | | 1,600 | 1,600 |
| | 2,000 | 113,440 | 753,340 | 868,780 |

TOTAL TROUT AND SALMON RESCUE

| | |
|--------------------|-----------|
| Rainbow..... | 2,000 |
| Steelhead..... | 1,702,353 |
| Loch Leven..... | 1,600 |
| King Salmon..... | 126,014 |
| Silver Salmon..... | 67,175 |
| Grand total..... | 1,899,142 |

GAME STATISTICS

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| 3. Predatory Animal Catch by Counties..... | 136 |

FISH AND GAME

| | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | Totals | County |
|---|------|------|------|------|------|------|------|------|------|------|------|------|--------|-----------------|
| 2 | | 1 | | | | | 1 | | | 1 | | | 8 | Alameda |
| 1 | | 1 | | | | | | | | | | | 3 | Alpine |
| 1 | 3 | 4 | 2 | 1 | | 4 | 1 | | 3 | 3 | | | 26 | Amador |
| 1 | 4 | | 2 | 2 | 1 | 1 | 3 | 1 | | | | | 66 | Butte |
| | | | | | | | | | | | | | 62 | Calaveras |
| | 4 | 4 | | 1 | | 1 | 2 | | | | | | 75 | Colusa |
| | | | | | | | | | | | | | | Contra Costa |
| 3 | 1 | 4 | 4 | 6 | 11 | 7 | 8 | 5 | 1 | | 1 | 1 | 213 | Del Norte |
| 5 | 13 | 3 | 3 | 8 | | 2 | 6 | 3 | 6 | 1 | 2 | 1 | 213 | El Dorado |
| 2 | 4 | | 4 | 3 | 6 | 16 | 2 | 7 | 19 | 3 | 2 | 2 | 163 | Fresno |
| 9 | 5 | 7 | 8 | 9 | 11 | 7 | 5 | 7 | 6 | 12 | 14 | 7 | 231 | Glenn |
| 9 | 22 | 28 | 19 | 24 | 25 | 28 | 16 | 22 | 7 | 5 | 19 | 11 | 1,015 | Humboldt |
| | | | | | | | | | | | | | 2 | Imperial |
| | | | | | | 1 | 3 | | | | | | 22 | Inyo |
| 6 | 6 | 4 | 5 | 5 | 12 | 5 | 2 | 10 | 5 | 13 | 5 | 9 | 403 | Kern |
| | | | | | | | | | | | | | 1 | Kings |
| 1 | 11 | 13 | 13 | 12 | 15 | 10 | 8 | 12 | 9 | 7 | 7 | 3 | 473 | Lake |
| 1 | 2 | | | | | | | | | | | | 13 | Lassen |
| 1 | 3 | 2 | 3 | 8 | 5 | 6 | 5 | 3 | 2 | | | | 178 | Los Angeles |
| | 8 | 3 | 1 | 2 | 4 | 3 | 4 | 12 | 1 | 9 | | | 101 | Madera |
| | | | | | | | 1 | | | | | | 3 | Marin |
| 1 | 3 | | | | 1 | 4 | | | | | | | 138 | Mariposa |
| 1 | 5 | 13 | 4 | 12 | 16 | 21 | 11 | 31 | 20 | 8 | 20 | 6 | 639 | Mendocino |
| | | | | | | | | | | | | | 5 | Merced |
| | | | | | | | | | | | | 1 | 6 | Modoc |
| | | | | | | | | | | | | | 18 | Mono |
| 3 | 2 | 19 | 8 | 17 | 11 | 19 | 14 | 16 | 10 | 6 | 17 | 14 | 552 | Monterey |
| | | | | | 1 | | | | | | | | 4 | Napa |
| 4 | 6 | 1 | | 1 | 1 | 5 | | 1 | | | 1 | | 33 | Nevada |
| | | | 2 | | | | 5 | | | | | | 18 | Orange |
| 9 | 1 | 5 | 3 | | 7 | 4 | 2 | | | | | | 116 | Placer |
| | 3 | 1 | | | | | 1 | | | | | | 19 | Plumas |
| 7 | 6 | 8 | 1 | 2 | 3 | | 3 | 2 | | 5 | 5 | 1 | 107 | Riverside |
| | | | | | | | | | | | | | 1 | Sacramento |
| 3 | 2 | | | | 1 | | | | | | 1 | 3 | 64 | San Benito |
| | | | | | | | | | | | | | 8 | San Bernardino |
| 5 | 12 | 12 | 12 | 14 | 4 | 15 | 8 | 6 | 2 | 2 | 1 | 7 | 240 | San Diego |
| | | | | | 4 | 11 | 10 | 6 | 6 | 2 | | 2 | 2 | San Francisco |
| | | | | | | | | | | | | | 2 | San Joaquin |
| | | 1 | 1 | 2 | 4 | 5 | 4 | 5 | 2 | 7 | 3 | 4 | 225 | San Luis Obispo |
| | | | | | | | | | | | | | 1 | San Mateo |
| 7 | 14 | 20 | 7 | 5 | 11 | 11 | 18 | 5 | 6 | | 4 | 6 | 424 | Santa Barbara |
| | 6 | 13 | 3 | 2 | 5 | 1 | 4 | 1 | | 9 | 4 | 3 | 120 | Santa Clara |
| | | | | | | | | | | | | | 4 | Santa Cruz |
| 9 | 20 | 22 | 3 | 18 | 8 | 11 | 8 | 7 | 5 | 18 | 9 | 4 | 640 | Shasta |
| | | | | | | | | | | | | | 2 | Sierra |
| 8 | 2 | 12 | 1 | 18 | 18 | 22 | 12 | 31 | 3 | 1 | | 2 | 41 | Siskiyou |
| | 7 | 12 | 20 | | | | | | 13 | 4 | 4 | 3 | 502 | Solano |
| | | | | | | | | | | | 1 | | 31 | Sonoma |
| | 1 | | | | 3 | | | | | | | | 25 | Stanislaus |
| | | | | | | | | | | | | | 2 | Sutter |
| | 7 | 9 | 8 | 6 | 10 | 9 | 3 | 4 | 6 | 2 | 17 | 11 | 404 | Tehama |
| | 12 | 18 | 18 | 29 | 28 | 50 | 38 | 24 | 19 | 23 | 13 | 15 | 851 | Trinity |
| | 4 | 7 | 9 | 8 | 15 | 13 | 17 | 12 | 8 | 6 | 17 | 21 | 450 | Tulare |
| | 3 | 5 | 4 | 3 | 1 | | 1 | 6 | | | 3 | 2 | 185 | Tuolumne |
| | | | | | | | | | | | | | 164 | Ventura |
| | 1 | 1 | 2 | 1 | 9 | | 2 | 2 | | 1 | | | 3 | Yolo |
| | | | | 1 | 2 | | | | | | 2 | | 3 | Yuba |
| | 3 | | | | | | | | 3 | 2 | 5 | | 45 | |
| | 215 | 255 | 177 | 224 | 253 | 292 | 228 | 243 | 162 | 150 | 177 | 143 | 9,509 | Totals |

III—PREDATORY ANIMAL CATCH BY COUNTIES

| | July 1, 1944, to June 30, 1945 | | | | July 1, 1945, to June 30, 1946 | | | | Total biennium |
|----------------------|--------------------------------|--------|--------------------|-------|--------------------------------|--------|--------------------|-------|-------------------|
| | Coyote | Bobcat | Other predators | Total | Coyote | Bobcat | Other predators | Total | |
| Alpine..... | 41 | 5 | | 46 | 57 | 9 | 1 | 67 | 46 |
| Amador..... | 25 | 2 | | 27 | 51 | | 94 | 146 | 94 |
| Butte..... | 37 | 3 | 52 | 92 | 15 | 16 | | 31 | 238 |
| Colusa..... | | | | | 15 | | | 117 | 31 |
| El Dorado..... | 84 | 9 | 17 | 110 | 95 | 17 | 5 | 227 | 227 |
| Fresno..... | 80 | 14 | 11 | 105 | 165 | 20 | 60 | 245 | 350 |
| Glenn..... | 1 | 1 | | 2 | | | | | 2 |
| Humboldt..... | | | | | 10 | 126 | 41 | 177 | 177 |
| Inyo..... | 150 | 12 | 5 | 167 | 109 | 5 | 23 | 137 | 304 |
| Kern..... | 168 | 16 | 35 | 219 | 214 | 17 | 37 | 268 | 487 |
| Lake..... | | | | | 31 | 12 | 9 | 43 | 43 |
| Lassen..... | 841 | 10 | 78 | 929 | 304 | 7 | 49 | 360 | 789 |
| Los Angeles..... | 254 | 39 | 94 | 387 | 146 | 14 | 37 | 197 | 584 |
| Mariposa..... | 48 | 6 | 77 | 131 | | | | | 131 |
| Merced..... | | | | | 1 | | | 1 | 1 |
| Modoc..... | 222 | 8 | 50 | 280 | 49 | 2 | | 51 | 331 |
| Mono..... | | | | | 63 | 4 | 1 | 68 | 68 |
| Monterey..... | 98 | 44 | 55 | 200 | 145 | 36 | 40 | 221 | 421 |
| Nevada..... | 17 | 1 | 33 | 51 | 6 | 3 | | 9 | 60 |
| Nimrod..... | 9 | | | 9 | 6 | 1 | | 7 | 16 |
| Plumas..... | | | | | 252 | 57 | 54 | 363 | 509 |
| Riverside..... | 118 | 11 | 17 | 146 | | | | 6 | 6 |
| Sacramento..... | | | | | 208 | 91 | 145 | 444 | 842 |
| San Benito..... | 196 | 89 | 113 | 398 | 248 | 36 | 33 | 317 | 394 |
| San Bernardino..... | 69 | 5 | 3 | 77 | 208 | 26 | 92 | 342 | 636 |
| San Diego..... | 113 | 48 | 133 | 294 | 259 | 52 | 75 | 386 | 425 |
| San Luis Obispo..... | 20 | 4 | 15 | 39 | 569 | 84 | 35 | 688 | 1,358 |
| Santa Barbara..... | 574 | 81 | 15 | 670 | | | | | 125 |
| Santa Cruz..... | 29 | 5 | 91 | 125 | 161 | 6 | 2 | 169 | 250 |
| Shasta..... | 69 | 9 | 3 | 81 | 2 | | | 2 | 2 |
| Sierra..... | | | | | 9 | | | 9 | 9 |
| Siskiyou..... | 85 | 14 | 2 | 101 | | | 58 | 67 | 168 |
| Stanslaus..... | 27 | 4 | 28 | 59 | | | | | 59 |
| Tehama..... | 20 | 5 | | 25 | 19 | 3 | | 32 | 57 |
| Trinity..... | 85 | 35 | 12 | 132 | 43 | 16 | 5 | 64 | 196 |
| Tulare..... | 69 | 3 | 42 | 114 | 85 | 10 | 6 | 101 | 215 |
| Tuolumne..... | 97 | 13 | 35 | 145 | 38 | 8 | 1 | 47 | 192 |
| Ventura..... | 327 | 46 | 119 | 492 | 237 | 64 | 74 | 375 | 867 |
| Yuba..... | | | | | 15 | | 7 | 22 | 22 |
| Totals..... | 3,473 | 542 | 1,138 | 5,153 | 3,851 | 757 | 1,006 | 5,614 | 10,757 |

| | 1944-45 | 1945-46 |
|---------------------------------|---------|---------|
| Average number of trappers..... | 20 | 20 |
| Miles of trapline..... | 276,063 | 305,141 |
| Number of sets..... | 266,997 | 283,042 |
| Number of days..... | 5,983 | 5,902 |

GAME BIRD RELEASES

LIBERATION OF GAME FARM BIRDS, JANUARY 1, 1944, THROUGH DECEMBER 31, 1945

| County | Ringneck | Reeves | Turkey | Chukar | Valley Quail | Total |
|---------------------|----------|--------|--------|--------|--------------|--------|
| 1. Alameda | 614 | | | | 24 | 638 |
| 2. Alpine | | | | | | |
| 3. Amador | 681 | 157 | | 121 | | 959 |
| 4. Butte | 748 | | | | | 748 |
| 5. Calaveras | 120 | | | | | 120 |
| 6. Colusa | 420 | | | 58 | | 478 |
| 7. Contra Costa | 1,122 | | | | | 1,122 |
| 8. Del Norte | | | | | | |
| 9. El Dorado | 251 | 60 | | | 35 | 346 |
| 10. Fresno | 4,053 | 4 | | 574 | | 4,631 |
| 11. Glenn | 2,560 | | | 21 | | 2,581 |
| 12. Humboldt | 969 | | | | | 969 |
| 13. Imperial | 2,652 | | | | | 2,652 |
| 14. Inyo | 3,364 | | | | | 3,364 |
| 15. Kern | 3,274 | | 108 | 977 | | 4,359 |
| 16. Kings | 1,476 | | | | | 1,476 |
| 17. Lake | 149 | | | | | 149 |
| 18. Lassen | 880 | | | | | 880 |
| 19. Los Angeles | 674 | 54 | | | | 728 |
| 20. Madera | 165 | | | 86 | | 251 |
| 21. Marin | 1,457 | | | | 80 | 1,537 |
| 22. Mariposa | | 180 | | 70 | | 250 |
| 23. Mendocino | 17 | | | | | 17 |
| 24. Merced | 2,914 | | | 34 | | 2,948 |
| 25. Modoc | 1,761 | | | 198 | | 1,959 |
| 26. Mono | 403 | | | 49 | | 452 |
| 27. Monterey | 652 | | 246 | 40 | | 938 |
| 28. Napa | 1,019 | | | 162 | 152 | 1,333 |
| 29. Nevada | | | | | | |
| 30. Orange | 776 | | | 72 | | 848 |
| 31. Placer | 594 | 146 | | 258 | | 998 |
| 32. Plumas | 344 | | | 30 | | 374 |
| 33. Riverside | 1,304 | 177 | 17 | 744 | 50 | 2,292 |
| 34. Sacramento | 1,508 | 16 | | | 37 | 1,561 |
| 35. San Benito | 208 | | 48 | | | 256 |
| 36. San Bernardino | 1,871 | 38 | | 694 | | 2,603 |
| 37. San Diego | 90 | | | 251 | | 341 |
| 38. San Francisco | | | | | | |
| 39. San Joaquin | 1,713 | | | | | 1,713 |
| 40. San Luis Obispo | 260 | | | 359 | 60 | 679 |
| 41. San Mateo | 557 | | | | | 557 |
| 42. Santa Barbara | 312 | | | | | 312 |
| 43. Santa Clara | 786 | | | | | 786 |
| 44. Santa Cruz | 337 | | | | | 337 |
| 45. Shasta | 1,280 | 69 | | 456 | | 1,805 |
| 46. Sierra | 1,047 | | | 114 | | 1,161 |
| 47. Siskiyou | 1,303 | 100 | | 52 | | 1,455 |
| 48. Solano | 1,959 | | | | | 1,959 |
| 49. Sonoma | 1,355 | | 20 | | 90 | 1,465 |
| 50. Stanislaus | 340 | | | | | 340 |
| 51. Sutter | 135 | | | | | 135 |
| 52. Tehama | 1,618 | | | | | 1,618 |
| 53. Trinity | | | | | | |
| 54. Tulare | 3,695 | | | | | 3,695 |
| 55. Tuolumne | 924 | 45 | | 337 | | 1,306 |
| 56. Ventura | 392 | | | | | 392 |
| 57. Yolo | 424 | | | 193 | | 617 |
| 58. Yuba | 118 | | | | | 118 |
| Totals | 57,675 | 1,046 | 439 | 5,950 | 528 | 65,638 |

LICENSE SALES

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FINAL STATEMENT OF LICENSE SALES, 1944 SERIES

| County | Angling licenses | | | | | Market fisherman \$10 each | Pheasant tags \$1 each |
|-----------------------------|------------------|----------------------|----------|-------------------------|---------------|----------------------------|------------------------|
| | Citizen \$2 each | Nonresident \$3 each | Alien | Duplicate 50 cents each | Total angling | | |
| Alameda..... | \$60,672 00 | \$51 00 | \$755 00 | \$60 00 | \$61,538 00 | | \$9,489 00 |
| Alpine..... | 296 00 | 195 00 | 10 00 | 2 00 | 491 00 | | 335 00 |
| Amador..... | 1,788 00 | | 25 00 | 27 50 | 1,800 00 | | 5,319 00 |
| Butte..... | 10,186 00 | 27 00 | 5 00 | 4 00 | 10,265 50 | | 197 00 |
| Calaveras..... | 2,230 00 | | 5 00 | 2 50 | 2,239 00 | | 1,984 00 |
| Colusa..... | 1,332 00 | | 310 00 | 24 00 | 1,339 50 | | 3,943 00 |
| Contra Costa..... | 21,400 00 | 45 00 | 5 00 | 8 50 | 21,779 00 | \$2,130 00 | 26 00 |
| Del Norte..... | 2,260 00 | 327 00 | 10 00 | 7 00 | 2,600 50 | 460 00 | 427 00 |
| El Dorado..... | 4,528 00 | 123 00 | | | 4,608 00 | | |
| Fresno: | | | | | | | |
| Agents..... | 22,562 00 | 3 00 | | 8 50 | 22,573 50 | | 3,630 00 |
| Fresno Branch..... | 912 00 | 45 00 | 300 00 | 27 50 | 1,284 50 | | 419 00 |
| Totals, Fresno..... | \$23,474 00 | \$48 00 | \$300 00 | \$36 00 | \$23,858 00 | | \$4,049 00 |
| Glenn..... | 1,456 00 | 3 00 | 5 00 | 7 50 | 1,471 50 | | 1,921 00 |
| Humboldt..... | 13,176 00 | 108 00 | 70 00 | 25 00 | 13,379 00 | 2,690 00 | 355 00 |
| Imperial..... | 2,808 00 | | | | 2,808 00 | | 554 00 |
| Inyo..... | 10,640 00 | | | | 11,056 00 | | 954 00 |
| Kern..... | 15,062 00 | 321 00 | 55 00 | 40 00 | 15,103 50 | | 1,620 00 |
| Kings..... | 4,750 00 | 24 00 | | 17 50 | 4,808 50 | | 669 00 |
| Lake..... | 4,318 00 | 12 00 | 5 00 | 3 50 | 4,360 50 | | 776 00 |
| Lassen..... | 4,222 00 | 45 00 | 15 00 | 5 50 | 4,360 50 | | 942 00 |
| Los Angeles: | | | | | | | |
| Agents..... | 204,528 00 | 291 00 | 60 00 | 140 00 | 205,019 00 | 2,000 00 | 5,500 00 |
| Los Angeles Branch..... | 584 00 | 132 00 | 445 00 | 37 00 | 1,198 00 | | 62 00 |
| Terminal Island Branch..... | 116 00 | 6 00 | 5 00 | 5 50 | 132 50 | 43,050 00 | 10 00 |
| Totals, Los Angeles..... | \$205,228 00 | \$429 00 | \$510 00 | \$182 50 | \$206,349 50 | | \$5,572 00 |

| | | | | | | | |
|----------------------------|-------------|----------|------------|---------|-------------|-------------|-------------|
| Madera..... | 4,214 00 | 6 00 | 150 00 | 9 00 | 4,223 00 | | 728 00 |
| Marin..... | 9,780 00 | 27 00 | 15 00 | 17 00 | 9,953 00 | | 1,064 00 |
| Mariposa..... | 2,100 00 | 9 00 | 15 00 | 4 00 | 2,146 50 | | 56 00 |
| Mendocino..... | 7,266 00 | 3 00 | 90 00 | 16 50 | 7,294 00 | 1,090 00 | 633 00 |
| Mered..... | 6,806 00 | 9 00 | 90 00 | 16 50 | 6,915 50 | | 2,915 00 |
| Motoc..... | 2,772 00 | 3 00 | 10 00 | 6 50 | 2,787 50 | | 472 00 |
| Mono..... | 6,252 00 | 1,038 00 | 10 00 | 27 50 | 7,327 50 | | 42 00 |
| Monterey: | | | | | | | |
| Agents..... | 10,292 00 | 15 00 | 430 00 | 12 00 | 10,749 00 | | 861 00 |
| Monterey Branch..... | 46 00 | 3 00 | 135 00 | 2 50 | 186 50 | 9,890 00 | 4 00 |
| Totals, Monterey..... | \$10,338 00 | \$18 00 | \$565 00 | \$14 50 | \$10,935 50 | \$8,890 00 | \$865 00 |
| Napa..... | 8,002 00 | 6 00 | 30 00 | 18 00 | 8,056 00 | | 1,627 00 |
| Nevada..... | 4,564 00 | 348 00 | 65 00 | 17 00 | 4,994 00 | | 1,528 00 |
| Orange..... | 19,152 00 | 6 00 | 3 00 | 10 50 | 19,173 50 | 8,200 00 | 839 00 |
| Placer..... | 6,136 00 | 48 00 | 30 00 | 5 50 | 6,219 50 | | 2,003 00 |
| Plumas..... | 6,046 00 | 123 00 | 60 00 | 17 00 | 6,846 00 | | 497 00 |
| Riverside..... | 12,948 00 | 33 00 | 15 00 | 17 00 | 13,013 00 | | 511 00 |
| Sacramento: | | | | | | | |
| Agents..... | 29,376 00 | 15 00 | 1,065 00 | 15 00 | 30,471 00 | | 9,854 00 |
| Sacramento Branch..... | 518 00 | 63 00 | 535 00 | 53 00 | 1,169 00 | 1,340 00 | 365 00 |
| Totals, Sacramento..... | \$29,894 00 | \$78 00 | \$1,600 00 | \$68 00 | \$31,540 00 | \$1,340 00 | \$10,219 00 |
| San Benito..... | 1,274 00 | 6 00 | 35 00 | 7 00 | 1,322 00 | | 324 00 |
| San Bernardino..... | 43,202 00 | 66 00 | 25 00 | 46 00 | 43,339 00 | | 977 00 |
| San Diego: | | | | | | | |
| Agents..... | 48,226 00 | 111 00 | 65 00 | 10 00 | 48,347 00 | | 564 00 |
| San Diego Branch..... | 100 00 | 39 00 | 65 00 | 7 00 | 211 00 | 16,450 00 | ----- |
| Totals, San Diego..... | \$48,326 00 | \$150 00 | \$65 00 | \$17 00 | \$48,558 00 | \$16,450 00 | \$564 00 |
| San Francisco: | | | | | | | |
| Agents..... | 50,798 00 | 18 00 | 665 00 | 27 00 | 51,508 00 | | 7,041 00 |
| San Francisco Branch..... | 640 00 | 87 00 | 1,135 00 | 45 00 | 1,907 00 | 19,870 00 | 199 00 |
| Totals, San Francisco..... | \$51,438 00 | \$105 00 | \$1,800 00 | \$72 00 | \$53,415 00 | \$19,870 00 | \$7,240 00 |
| San Joaquin..... | 25,806 00 | ----- | 620 00 | 25 00 | 26,451 00 | | 4,289 00 |
| San Luis Obispo..... | 8,692 00 | 21 00 | 90 00 | 19 50 | 8,822 50 | | 1,66 00 |
| San Mateo..... | 7,760 00 | 9 00 | 80 00 | 3 50 | 7,852 50 | | 1,556 00 |
| Santa Barbara..... | 9,028 00 | 9 00 | 80 00 | 19 00 | 9,136 00 | | 256 00 |
| Santa Clara..... | 17,510 00 | 9 00 | 185 00 | 16 50 | 17,720 50 | | 3,139 00 |
| Santa Cruz..... | 8,958 00 | 36 00 | 425 00 | 24 00 | 9,443 00 | 970 00 | 748 00 |
| Shasta: | | | | | | | |
| Agents..... | 8,868 00 | 15 00 | 20 00 | 9 50 | 8,912 50 | | 1,374 00 |
| Redding Branch..... | 156 00 | 33 00 | 90 00 | 11 50 | 280 50 | | 62 00 |
| Totals, Shasta..... | \$9,024 00 | \$48 00 | \$110 00 | \$21 00 | \$9,203 00 | | \$1,436 00 |

FINAL STATEMENT OF LICENSE SALES, 1944 SERIES

| County | Angling licenses | | | | | Market fisherman \$10 each | Pheasant tags \$1 each |
|-----------------|------------------|----------------------|------------|-------------------------|---------------|----------------------------|------------------------|
| | Citizen \$2 each | Nonresident \$3 each | Alien | Duplicate 50 cents each | Total angling | | |
| Sierra..... | \$1,270 00 | \$18 00 | | \$3 00 | \$1,291 00 | | \$93 00 |
| Siskiyou..... | 9,984 00 | 540 00 | \$150 00 | 18 00 | 10,692 00 | | 1,795 00 |
| Solano..... | 19,544 00 | | 515 00 | 40 50 | 20,099 50 | \$320 00 | 3,866 00 |
| Sonoma..... | 16,550 00 | 21 00 | 295 00 | 32 00 | 16,898 00 | | 2,319 00 |
| Stanislaus..... | 14,988 00 | 39 00 | 145 00 | 36 50 | 15,208 50 | | 3,589 00 |
| Sutter..... | 2,570 00 | | | 50 | 2,570 50 | | 998 00 |
| Tehama..... | 2,964 00 | 42 00 | 15 00 | 7 00 | 3,028 00 | | 1,379 00 |
| Trinity..... | 1,504 00 | | | 3 50 | 1,507 50 | | 14 00 |
| Tulare..... | 14,802 00 | | | 12 50 | 14,814 50 | | 1,744 00 |
| Tuolumne..... | 3,968 00 | 27 00 | 5 00 | 9 00 | 3,999 00 | | 501 00 |
| Ventura..... | 10,402 00 | 3 00 | | 14 50 | 10,419 50 | | 233 00 |
| Yolo..... | 3,362 00 | 3 00 | 30 00 | 2 50 | 3,397 50 | | 3,021 00 |
| Yuba..... | 3,756 00 | 9 00 | | 8 50 | 3,773 50 | | 2,114 00 |
| Out of State: | | | | | | | |
| Arizona..... | 436 00 | 297 00 | | | 733 00 | | |
| Nevada..... | | 4,095 00 | | | 4,095 00 | | 117 00 |
| Oregon..... | 86 00 | 153 00 | | | 239 00 | | 481 00 |
| Totals..... | \$863,890 00 | \$9,297 00 | \$9,480 00 | \$1,174 00 | \$883,841 00 | \$108,490 00 | \$105,923 00 |
| Number..... | 431,945 | 3,099 | 1,896 | 2,348 | | 10,849 | |

FINAL STATEMENT OF HUNTING, DEER TAGS, AND TRAPPING LICENSE SALES, 1944 SERIES

| County | Hunting licenses | | | | | | Deer tags | | Trapping licenses | | |
|-----------------------------|---------------------|--------------------|-------------------------------|---------------------------------|--------------------|-----------------------|------------------|-------------|---------------------|-------------------|-------------------|
| | Citizen \$2 each | Junior \$1 each | Non- resident \$10 each | Declarant alien \$10 each | Alien \$25 each | Duplicate 50c each | Total Hunting | \$1 each | Citizen \$1 each | Alien \$2 each | Total Trapping |
| Alameda..... | \$34,402 00 | \$1,562 00 | | \$20 00 | \$75 00 | \$77 50 | \$36,136 50 | \$10,002 00 | | | |
| Alpine..... | 114 00 | 8 00 | \$80 00 | | | | 202 00 | 74 00 | | | |
| Amador..... | 2,128 00 | 162 00 | | 20 00 | | 7 00 | 2,317 00 | 996 00 | | | |
| Butte..... | 13,384 00 | 1,113 00 | 60 00 | | | 67 00 | 14,624 00 | 4,759 00 | | | |
| Calaveras..... | 1,792 00 | 145 00 | | | | 3 50 | 1,940 50 | 919 00 | | | |
| Columbia..... | 4,466 00 | 379 00 | 10 00 | 70 00 | 50 00 | 27 50 | 5,002 50 | 1,421 00 | | | |
| Contra Costa..... | 13,620 00 | 589 00 | | 60 00 | | 27 50 | 14,296 50 | 3,950 00 | | | |
| Del Norte..... | 882 00 | 57 00 | 150 00 | | | 2 50 | 1,091 50 | 264 00 | | | |
| El Dorado..... | 3,352 00 | 230 00 | 30 00 | | | 11 00 | 3,623 00 | 1,753 00 | | | |
| Agents..... | | 1,287 00 | | | | 12 00 | 21,509 00 | 6,255 00 | \$56 00 | | \$56 00 |
| Fresno Ag..... | 812 00 | 75 00 | 20 00 | 200 00 | 200 00 | 46 50 | 1,383 50 | 293 00 | | | |
| Totals, Fresno..... | \$21,022 00 | \$1,362 00 | \$20 00 | \$200 00 | \$200 00 | \$58 50 | \$22,862 50 | \$6,548 00 | \$56 00 | | \$56 00 |
| Glenn..... | 4,014 00 | 506 00 | 10 00 | | | 29 50 | 4,559 50 | 1,484 00 | | | |
| Humboldt..... | 11,680 00 | 666 00 | 30 00 | | | 19 50 | 12,420 50 | 5,536 00 | | | |
| Imperial..... | 5,684 00 | 317 00 | | | 25 00 | 6 00 | 5,957 00 | 380 00 | | | |
| Inyo..... | 3,698 00 | 269 00 | 30 00 | | | 25 00 | 4,022 00 | 1,633 00 | | | |
| Kern..... | 16,504 00 | 970 00 | | | | 28 00 | 17,500 00 | 5,041 00 | | | |
| Kings..... | 4,550 00 | 315 00 | | | | 5 00 | 4,870 00 | 1,270 00 | | | |
| Lake..... | 3,822 00 | 399 00 | | 30 00 | | 15 50 | 4,266 50 | 2,076 00 | | | |
| Lassen..... | 5,218 00 | 462 00 | 130 00 | 20 00 | | 23 50 | 5,853 50 | 2,587 00 | | | |
| Los Angeles: | | | | | | | | | | | |
| Agents..... | \$5,082 00 | 2,809 00 | | | | 63 50 | 87,954 50 | 17,535 00 | | | |
| Los Angeles Branch..... | 482 00 | 50 00 | 70 00 | 190 00 | 225 00 | 25 00 | 1,042 00 | 166 00 | 74 00 | 4 00 | 78 00 |
| Terminal Island Branch..... | 88 00 | 11 00 | | | | 50 | 99 50 | 29 00 | 15 00 | | 15 00 |
| Totals, Los Angeles..... | \$85,652 00 | \$2,870 00 | \$70 00 | \$190 00 | \$225 00 | \$89 00 | \$89,096 00 | \$17,730 00 | \$89 00 | \$4 00 | \$93 00 |

FINAL STATEMENT OF HUNTING, DEER TAGS, AND TRAPPING LICENSE SALES, 1944 SERIES—Continued

| County | Hunting licenses | | | | | | Deer tags | | Trapping licenses | | |
|-------------------------|---------------------|--------------------|-------------------------------|---------------------------------|--------------------|-----------------------|------------------|------------|---------------------|-------------------|-------------------|
| | Citizen \$2 each | Junior \$1 each | Non- resident \$10 each | Declarant alien \$10 each | Alien \$25 each | Duplicate 50c each | Total Hunting | \$1 each | Citizen \$1 each | Alien \$2 each | Total Trapping |
| Madera..... | \$3,578 00 | \$221 00 | | | | \$5 00 | \$3,804 00 | \$1,287 00 | | | |
| Marin..... | 5,514 00 | 388 00 | \$30 00 | | | 14 50 | 5,946 50 | 2,172 00 | | | |
| Mariposa..... | 802 00 | 43 00 | | | | 16 50 | 845 50 | 395 00 | | | |
| Mendocino..... | 5,706 00 | 376 00 | | \$10 00 | | 37 50 | 6,108 00 | 2,845 00 | | | |
| Merced..... | 8,702 00 | 696 00 | | | | 21 50 | 9,435 50 | 2,116 00 | | | |
| Modoc..... | 3,756 00 | 261 00 | 1,620 00 | | | 3 00 | 5,658 00 | 1,998 00 | | | |
| Mono..... | 1,132 00 | 23 00 | 280 00 | | | | 1,438 00 | 583 00 | | | |
| Monterey: | | | | | | | | | | | |
| Agents..... | 9,290 00 | 652 00 | | 80 00 | \$25 00 | 24 00 | 10,071 00 | 3,809 00 | | | |
| Monterey Branch..... | 106 00 | 1 00 | | 70 00 | 75 00 | 2 50 | 254 50 | 5 00 | | | |
| Totals, Monterey..... | \$9,396 00 | \$653 00 | | \$150 00 | \$100 00 | \$26 50 | \$10,325 50 | \$3,874 00 | | | |
| Napa..... | 7,024 00 | 556 00 | | 40 00 | | 28 50 | 7,648 50 | 3,204 00 | | | |
| Nevada..... | 4,224 00 | 314 00 | 250 00 | 50 00 | | 16 50 | 4,854 50 | 2,134 00 | | | |
| Orange..... | 7,108 00 | 434 00 | | | | 4 50 | 7,546 50 | 1,327 00 | | | |
| Placer..... | 7,254 00 | 603 00 | 10 00 | 10 00 | | 18 50 | 7,895 50 | 2,984 00 | | | |
| Plumas..... | 4,424 00 | 269 00 | 90 00 | 10 00 | 50 00 | 10 00 | 4,853 00 | 2,294 00 | | | |
| Riverside..... | 8,200 00 | 655 00 | | | | 25 50 | 8,880 50 | 1,819 00 | | | |
| Sacramento: | | | | | | | | | | | |
| Agents..... | 23,518 00 | 1,890 00 | | 80 00 | 25 00 | 53 50 | 25,566 50 | 6,446 00 | | | |
| Sacramento Branch..... | 956 00 | 49 00 | 130 00 | 410 00 | 950 00 | 74 50 | 2,569 50 | 296 00 | \$266 00 | \$14 00 | \$280 00 |
| Totals, Sacramento..... | \$24,474 00 | \$1,939 00 | \$130 00 | \$490 00 | \$975 00 | \$128 00 | \$28,136 00 | \$6,742 00 | \$266 00 | \$14 00 | \$280 00 |
| San Benito..... | 2,580 00 | 265 00 | | | | 10 00 | 2,855 00 | 1,219 00 | | | |
| San Bernardino..... | 10,290 00 | 795 00 | | | | 33 00 | 11,118 00 | 1,694 00 | | | |
| San Diego: | | | | | | | | | | | |
| Agents..... | 19,180 00 | 1,056 00 | | | | 4 50 | 20,240 50 | 5,415 00 | | | 5 00 |
| San Diego Branch..... | 126 00 | 6 00 | 30 00 | | 25 00 | 16 50 | 203 50 | 556 00 | 5 00 | | |
| Totals, San Diego..... | \$19,306 00 | \$1,062 00 | \$30 00 | | \$25 00 | \$21 00 | \$20,444 00 | \$5,971 00 | \$5 00 | | \$5 00 |

| | | | | | | | | | | | |
|------------------------|--------------|-------------|-------------|------------|------------|------------|--------------|--------------|------------|---------|------------|
| San Francisco: | 30,302 00 | 695 00 | 290 00 | 50 00 | 850 00 | 19 00 | 31,066 00 | 7,265 00 | 1,090 00 | 18 00 | 1,108 00 |
| Agents: | 626 00 | 107 00 | | 890 00 | | 75 00 | 2,838 00 | 270 00 | | | |
| San Francisco Branch: | | | | | | | | | | | |
| Totals, San Francisco: | \$30,928 00 | \$802 00 | \$290 00 | \$940 00 | \$850 00 | \$94 00 | \$33,904 00 | \$7,535 00 | \$1,090 00 | \$18 00 | \$1,108 00 |
| San Joaquin: | 17,704 00 | 1,338 00 | | | | 26 00 | 19,068 00 | 4,474 00 | | | |
| San Luis Obispo: | 6,828 00 | 568 00 | | | | 18 00 | 7,414 00 | 2,923 00 | | | |
| San Mateo: | 7,528 00 | 590 00 | 10 00 | 90 00 | 75 00 | 18 00 | 8,308 00 | 1,959 00 | | | |
| Santa Barbara: | 5,962 00 | 776 00 | 20 00 | 20 00 | | 7 50 | 6,785 50 | 2,444 00 | | | |
| Santa Clara: | 14,400 00 | 1,086 00 | | 90 00 | 25 00 | 39 00 | 15,640 00 | 5,243 00 | | | |
| Santa Cruz: | 5,318 00 | 439 00 | | 220 00 | 200 00 | 23 00 | 6,200 00 | 2,126 00 | | | |
| Shasta: | 8,488 00 | 535 00 | 10 00 | | | 25 50 | 9,058 50 | 4,241 00 | | | |
| Agents: | 154 00 | 15 00 | 30 00 | 30 00 | 75 00 | 18 00 | 322 00 | 108 00 | 87 00 | 2 00 | 89 00 |
| Redding Branch: | | | | | | | | | | | |
| Totals, Shasta: | \$8,642 00 | \$550 00 | \$40 00 | \$60 00 | \$75 00 | \$43 50 | \$9,380 50 | \$4,349 00 | \$87 00 | \$2 00 | \$89 00 |
| Sierra: | 770 00 | 68 00 | 40 00 | | | 50 | 878 50 | 436 00 | | | |
| Siskiyou: | 12,334 00 | 866 00 | 6,490 00 | | 50 00 | 27 50 | 19,767 50 | 5,716 00 | | | |
| Solano: | 12,528 00 | 736 00 | | | | 41 50 | 13,305 50 | 3,763 00 | | | |
| Sonoma: | 12,188 00 | 958 00 | | 110 00 | 100 00 | 32 50 | 13,388 50 | 3,927 00 | | | |
| Stanislaus: | 10,686 00 | 984 00 | 20 00 | 50 00 | | 40 50 | 11,780 50 | 2,756 00 | | | |
| Sutter: | 3,386 00 | 240 00 | | | | 15 00 | 3,641 00 | 831 00 | | | |
| Tehama: | 4,698 00 | 310 00 | | | | 25 00 | 5,063 00 | 1,336 00 | | | |
| Trinity: | 1,922 00 | 72 00 | | | | 1 00 | 1,995 00 | 611 00 | | | |
| Tulare: | 12,840 00 | 941 00 | | | | 11 00 | 13,792 00 | 4,349 00 | | | |
| Tuolumne: | 2,818 00 | 219 00 | 100 00 | | | 8 00 | 3,145 00 | 1,411 00 | | | |
| Ventura: | 5,636 00 | 511 00 | | | | 10 00 | 6,157 00 | 2,187 00 | | | |
| Yolo: | 6,724 00 | 641 00 | 10 00 | 50 00 | 175 00 | 41 50 | 7,641 50 | 2,168 00 | | | |
| Yuba: | 4,888 00 | 374 00 | | | | 26 50 | 5,288 50 | 1,538 00 | | | |
| Our of State: | | | | | | | | 8 00 | | | |
| Arizona: | 118 00 | | 20 00 | | | | 5,920 00 | 564 00 | | | |
| Nevada: | | | 5,900 00 | | | 1 50 | 10,428 50 | 715 00 | | | |
| Oregon: | 514 00 | 13 00 | | | | | | | | | |
| Totals: | \$557,904 00 | \$35,016 00 | \$25,920 00 | \$2,970 00 | \$3,275 00 | \$1,480 00 | \$626,634 00 | \$178,250 00 | \$1,503 00 | \$38 00 | \$1,631 00 |
| Number: | 278,982 | 35,016 | 2,592 | 297 | 131 | 2,978 | | 178,250 | 1,583 | 19 | |

FINAL STATEMENT OF LICENSE SALES, 1944 SERIES—Continued

| County | Deer meat permits | | |
|----------------------|---------------------------------|------------------------|------------|
| | Agents (lockers) \$0.50 each | Wardens \$1.00 each | Total |
| Alameda..... | \$81 00 | \$36 00 | \$117 00 |
| Alpine..... | | | |
| Amador..... | | | |
| Butte..... | 137 50 | 46 00 | 183 50 |
| Calaveras..... | | | |
| Colusa..... | 45 00 | | 45 00 |
| Contra Costa..... | 64 50 | | 64 50 |
| Del Norte..... | 9 00 | | 9 00 |
| El Dorado..... | | 19 00 | 19 00 |
| Fresno..... | 210 00 | 10 00 | 220 00 |
| Glenn..... | 87 50 | | 87 50 |
| Humboldt..... | 98 50 | 6 00 | 104 50 |
| Imperial..... | 23 00 | | 23 00 |
| Inyo..... | 2 50 | 19 00 | 21 50 |
| Kern..... | 122 00 | 10 00 | 132 00 |
| Kings..... | 49 50 | | 49 50 |
| Lake..... | 1 50 | 35 00 | 36 50 |
| Lassen..... | 48 50 | | 48 50 |
| Los Angeles..... | 1,544 50 | 112 00 | 1,656 50 |
| Madera..... | 9 50 | 2 00 | 11 50 |
| Marin..... | 36 50 | 1 00 | 37 50 |
| Mariposa..... | | 13 00 | 13 00 |
| Mendocino..... | 50 | 17 00 | 17 50 |
| Merced..... | 121 00 | | 121 00 |
| Modoc..... | 6 00 | 4 00 | 10 00 |
| Mono..... | | | |
| Monterey..... | 106 00 | 12 00 | 118 00 |
| Napa..... | 15 50 | | 15 50 |
| Nevada..... | 25 00 | | 25 00 |
| Orange..... | 150 50 | | 150 50 |
| Placer..... | 39 00 | 92 00 | 131 00 |
| Plumas..... | | | |
| Riverside..... | 89 00 | | 89 00 |
| Sacramento..... | 179 00 | 11 00 | 190 00 |
| San Benito..... | 85 50 | | 85 50 |
| San Bernardino..... | 55 00 | 2 00 | 57 00 |
| San Diego..... | 78 00 | 12 00 | 90 00 |
| San Francisco..... | | 17 00 | 17 00 |
| San Joaquin..... | 241 00 | 13 00 | 254 00 |
| San Luis Obispo..... | 74 50 | | 74 50 |
| San Mateo..... | 20 00 | 2 00 | 22 00 |
| Santa Barbara..... | 45 50 | | 45 50 |
| Santa Clara..... | 199 50 | | 199 50 |
| Santa Cruz..... | 37 50 | | 37 50 |
| Shasta..... | 33 50 | 76 00 | 109 50 |
| Sierra..... | | | |
| Siskiyou..... | 116 50 | 5 00 | 121 50 |
| Solano..... | 64 00 | | 64 00 |
| Sonoma..... | 62 00 | 7 00 | 69 00 |
| Stanislaus..... | 112 50 | | 112 50 |
| Sutter..... | | | |
| Tehama..... | 57 50 | | 57 50 |
| Trinity..... | | 36 00 | 36 00 |
| Tulare..... | 169 50 | | 169 50 |
| Tuolumne..... | 11 50 | 3 00 | 14 50 |
| Ventura..... | 55 50 | | 55 50 |
| Yolo..... | 113 00 | | 113 00 |
| Yuba..... | 43 00 | | 43 00 |
| Totals..... | \$4,977 00 | \$618 00 | \$5,595 00 |
| Number..... | 9,954 | 618 | 10,572 |

FINAL STATEMENT OF MISCELLANEOUS LICENSE SALES BY BRANCH OFFICE AND AGENTS, 1944 SERIES—Continued

| Type | Los Angeles | Monterey | Sacramento | San Diego | San Francisco | Terminal Island | Agents | Total | Number |
|--|-------------|----------|------------|-----------|------------------|-----------------|--------|-------------------|-------------|
| Commercial Hunting Club: Citizen, \$25 each..... Alien, \$100 each (None sold)..... | | | | | \$900 00 | | | \$900 00 | 36 |
| Commercial hunting club operator: Citizen, \$5 each..... Alien, \$25 each (None sold)..... | | | | | 250 00 | | | 250 00 | 50 |
| Fish packer and shellfish dealer: Citizen, \$5 each..... Alien, \$20 each..... | | | | \$95 00 | \$20 00 20 00 | 230 00 | | 1,145 00 20 00 | 229 1 |
| Fish tags, 1 cent each..... | \$360 00 | | | | 3,360 00 | | 28 | 3,720 28 | 372,028 |
| Game tags, 3 cents each..... | 73 98 | | \$14 40 | | 13 89 | | | 102 27 | 3,409 |
| Fish importer, \$5 each..... | | | | | 65 00 | | | 65 00 | 13 |
| Fish party boat permits, \$1 each..... | | 8 00 | | | 118 00 | 108 00 | | 234 00 | 234 |
| Fish breeder, \$5 each..... | | | | | 240 00 | | | 240 00 | 48 |
| Game breeder, \$5 each..... | 2,225 00 | | 275 00 | | 560 00 | | | 3,060 00 | 612 |
| Kelp license, \$10 each..... | | | | | 80 00 | | | 80 00 | 8 |
| Game management: Licenses, \$10 each..... Tags, 3 cents each..... | 42 24 | | 3 75 | | 250 00 75 | | | 250 00 46 74 | 25 1,588 |
| Antelope permits, \$5 each..... | | | 2,500 00 | | | | | 2,500 00 | 500 |

FINAL STATEMENT OF LICENSE SALES, 1945 SERIES

| County | Angling licenses | | | | Market fisherman \$10 each | Trapping licenses | | |
|-----------------------------|------------------|----------------------|----------------|-------------------------|----------------------------|-------------------|------------------|----------------|
| | Citizen \$2 each | Nonresident \$3 each | Alien \$5 each | Duplicate 50 cents each | | Total angling | Citizen \$1 each | Alien \$2 each | Total trapping |
| Alameda..... | \$76,404 00 | \$51 00 | \$755 00 | \$107 50 | | | | |
| Alpine..... | 378 00 | 261 00 | | | \$77,317 50 | | | |
| Amador..... | 2,336 00 | | 5 00 | | 639 00 | | | |
| Butte..... | 14,006 00 | 81 00 | 15 00 | 42 00 | 2,346 00 | | | |
| Calaveras..... | 2,452 00 | | 15 00 | | 14,144 00 | | | |
| Colusa..... | 1,552 00 | | | 4 50 | 2,467 50 | | | |
| Contra Costa..... | 28,804 00 | 48 00 | 235 00 | | 1,556 50 | | | |
| Del Norte..... | 4,054 00 | 903 00 | 5 00 | 14 50 | 29,176 50 | \$2,670 00 | | |
| El Dorado..... | 5,748 00 | 162 00 | 25 00 | 15 00 | 4,986 50 | 920 00 | | |
| Fresno: | | | | | | | | |
| Agents..... | 31,978 00 | 3 00 | 350 00 | 17 00 | 31,998 00 | \$40 00 | | \$40 00 |
| Fresno Branch..... | 1,104 00 | 126 00 | | 49 50 | 1,689 50 | | | |
| Totals, Fresno..... | \$33,142 00 | \$129 00 | \$350 00 | \$66 50 | \$33,687 50 | \$40 00 | | \$40 00 |
| Glenn..... | 1,858 00 | 33 00 | 15 00 | 11 00 | 1,917 00 | | | |
| Humboldt..... | 15,398 00 | 123 00 | 115 00 | 29 50 | 15,665 50 | 4,800 00 | | |
| Imperial..... | 3,856 00 | | | 2 00 | 3,858 00 | | | |
| Inyo..... | 15,652 00 | 291 00 | 45 00 | 59 00 | 16,047 00 | | | |
| Kern..... | 19,844 00 | 12 00 | 5 00 | 26 00 | 19,887 00 | | | |
| Kings..... | 5,186 00 | | 100 00 | 7 00 | 5,293 00 | | | |
| Lake..... | 5,482 00 | 15 00 | 5 00 | 10 50 | 5,512 50 | | | |
| Lassen..... | 4,280 00 | 72 00 | 15 00 | 9 50 | 4,346 50 | | | |
| Los Angeles: | | | | | | | | |
| Agents..... | 279,536 00 | 294 00 | 145 00 | 167 00 | 280,122 00 | 1,280 00 | | |
| Los Angeles Branch..... | 738 00 | 195 00 | 475 00 | 66 00 | 1,474 00 | 62 00 | \$4 00 | 66 00 |
| Terminal Island Branch..... | 122 00 | 15 00 | | 5 50 | 142 50 | | | |
| Totals, Los Angeles..... | \$280,386 00 | \$504 00 | \$620 00 | \$228 50 | \$281,738 50 | \$62 00 | \$4 00 | \$66 00 |

| | | | | | | | | | |
|----------------------------|-------------|----------|--|------------|----------|-------------|-------------|---------|------------|
| Madera..... | 5,270 00 | | | | 8 50 | 5,283 50 | | | |
| Marin..... | 10,992 00 | 18 00 | | 165 00 | 20 00 | 11,105 00 | | | |
| Mariposa..... | 3,376 00 | 78 00 | | 5 00 | 4 50 | 3,463 50 | | | |
| Mendocino..... | 11,258 00 | 33 00 | | 55 00 | 10 50 | 11,356 50 | 480 00 | | |
| Merced..... | 6,654 00 | 12 00 | | 145 00 | 17 50 | 6,828 50 | | | |
| Modoc..... | 2,870 00 | | | 165 00 | 5 00 | 3,050 00 | | | |
| Mono..... | 9,364 00 | 1,101 00 | | 35 00 | 39 50 | 10,539 50 | | | |
| Monterey..... | 11,292 00 | 9 00 | | 515 00 | 23 00 | 11,839 00 | | | |
| Agents..... | 108 00 | 12 00 | | 175 00 | 7 50 | 302 50 | | | |
| Monterey Branch..... | | | | | | 10,590 00 | | | |
| Totals, Monterey..... | \$11,400 00 | \$21 00 | | \$690 00 | \$30 50 | \$12,141 50 | \$10,590 00 | | |
| Napa..... | 9,232 00 | 30 00 | | 40 00 | 25 00 | 9,327 00 | | | |
| Nevada..... | 6,022 00 | 378 00 | | 60 00 | 12 50 | 6,472 50 | | | |
| Orange..... | 33,906 00 | 66 00 | | | 29 50 | 34,001 50 | 7,660 00 | | |
| Placer..... | 8,360 00 | 210 00 | | 25 00 | 11 00 | 8,606 00 | | | |
| Plumas..... | 7,302 00 | 186 00 | | 55 00 | 14 50 | 7,557 50 | | | |
| Riverside..... | 15,438 00 | 75 00 | | 5 00 | 23 50 | 15,541 50 | | | |
| Sacramento..... | 33,288 00 | 6 00 | | 1,900 00 | 45 50 | 35,239 50 | | | |
| Agents..... | 810 00 | 144 00 | | 445 00 | 62 50 | 1,461 50 | 1,590 00 | 8 00 | 340 00 |
| Sacramento Branch..... | | | | | | | | | |
| Totals, Sacramento..... | \$34,098 00 | \$150 00 | | \$2,345 00 | \$108 00 | \$36,701 00 | \$1,590 00 | \$8 00 | \$340 00 |
| San Benito..... | 1,832 00 | 3 00 | | 20 00 | 6 00 | 1,861 00 | | | |
| San Bernardino..... | 49,686 00 | 141 00 | | 60 00 | 62 50 | 49,949 50 | | | |
| San Diego..... | 55,058 00 | 213 00 | | | 10 00 | 55,281 00 | | | |
| Agents..... | 138 00 | 93 00 | | 20 00 | 12 50 | 263 50 | 21,370 00 | | |
| San Diego Branch..... | | | | | | | | | |
| Totals, San Diego..... | \$55,196 00 | \$306 00 | | \$20 00 | \$22 50 | \$55,544 50 | \$21,370 00 | | |
| San Francisco..... | 60,742 00 | 42 00 | | 595 00 | 54 00 | 61,433 00 | | | |
| Agents..... | 840 00 | 102 00 | | 1,080 00 | 94 00 | 2,116 00 | 20,330 00 | 18 00 | 1,233 00 |
| San Francisco Branch..... | | | | | | | | | |
| Totals, San Francisco..... | \$61,582 00 | \$144 00 | | \$1,675 00 | \$148 00 | \$63,549 00 | \$20,330 00 | \$18 00 | \$1,233 00 |
| San Joaquin..... | 29,094 00 | 36 00 | | 740 00 | 42 50 | 29,912 50 | | | |
| San Luis Obispo..... | 11,822 00 | 18 00 | | 100 00 | 35 50 | 11,975 50 | | | |
| San Mateo..... | 10,676 00 | 15 00 | | 85 00 | 14 50 | 10,790 50 | | | |
| Santa Barbara..... | 10,586 00 | 21 00 | | 105 00 | 17 00 | 10,729 00 | | | |
| Santa Clara..... | 22,484 00 | 15 00 | | 250 00 | 36 50 | 22,785 50 | | | |
| Santa Cruz..... | 10,654 00 | 24 00 | | 365 00 | 44 50 | 11,087 50 | 940 00 | | |
| Shasta..... | 9,738 00 | 60 00 | | 30 00 | 20 50 | 9,848 50 | | | |
| Agents..... | 178 00 | 75 00 | | 80 00 | 23 00 | 356 00 | | | 104 00 |
| Redding Branch..... | | | | | | | | | |
| Totals, Shasta..... | \$9,916 00 | \$135 00 | | \$110 00 | \$43 50 | \$10,204 50 | | | \$104 00 |

FINAL STATEMENT OF LICENSE SALES, 1945 SERIES—Continued

| County | Angling licenses | | | | | Market fisherman \$10 each | Trapping licenses | | |
|-----------------|------------------|----------------------|----------------|-------------------------|----------------|----------------------------|-------------------|----------------|----------------|
| | Citizen \$2 each | Nonresident \$3 each | Alien \$5 each | Duplicate 50 cents each | Total angling | | Citizen \$1 each | Alien \$2 each | Total trapping |
| Sierra..... | 1,560 00 | 30 00 | 140 00 | 5 50 | 1,595 50 | | | | |
| Siskiyou..... | 11,422 00 | 774 00 | | 20 50 | 12,556 50 | | | | |
| Solano..... | 21,778 00 | 33 00 | 285 00 | 36 50 | 22,132 50 | 290 00 | | | |
| Sonoma..... | 20,762 00 | 57 00 | 270 00 | 54 00 | 21,143 00 | | | | |
| Stanislaus..... | 16,264 00 | 36 00 | 115 00 | 41 00 | 16,456 00 | | | | |
| Sutter..... | 2,826 00 | 3 00 | 10 00 | 6 50 | 2,845 50 | | | | |
| Tehama..... | 4,312 00 | 30 00 | 5 00 | 21 00 | 4,368 00 | | | | |
| Trinity..... | 1,850 00 | 30 00 | | 7 00 | 1,887 00 | | | | |
| Tulare..... | 17,262 00 | 42 00 | | 15 00 | 17,319 00 | | | | |
| Tuolumne..... | 5,126 00 | 45 00 | 10 00 | 10 50 | 5,191 50 | | | | |
| Ventura..... | 12,856 00 | 3 00 | | 12 00 | 12,691 00 | | | | |
| Yolo..... | 3,862 00 | 21 00 | 70 00 | 17 00 | 3,960 00 | | | | |
| Yuba..... | 4,452 00 | | | | 4,459 00 | | | | |
| Out of State: | | | | | | | | | |
| Arizona..... | 554 00 | 279 00 | | | 833 00 | | | | |
| Nevada..... | 2 00 | 6,090 00 | | | 6,092 00 | | | | |
| Oregon..... | 112 00 | 309 00 | | 1 00 | 422 00 | | | | |
| Totals..... | \$1,094,658 00 | \$13,848 00 | \$10,400 00 | \$1,755 50 | \$1,120,661 50 | \$116,960 00 | \$30 00 | \$1,783 00 | |
| Number..... | 547,329 | 4,616 | 2,080 | 3,511 | | 11,696 | 15 | 1,768 | |

FINAL STATEMENT OF LICENSE SALES, 1945 SERIES—Continued

| County | Hunting licenses | | | | | | | | Archery Deer tags \$1 each | Deer tags \$1 each |
|-----------------------------|--------------------------------|---------------------|--------------------|--------------------------|---------------------------------|--------------------|-----------------------|------------------|----------------------------------|-----------------------|
| | Archery citizen \$3 each | Citizen \$2 each | Junior \$1 each | Nonresident \$10 each | Declarant alien \$10 each | Alien \$25 each | Duplicate 50¢ each | Total hunting | | |
| Alameda..... | | \$38,758 00 | \$1,412 00 | \$30 00 | \$60 00 | | \$66 00 | \$40,326 00 | \$11,604 00 | |
| Alpine..... | | 154 00 | 7 00 | 110 00 | | | | 271 00 | 88 00 | |
| Amador..... | | 2,564 00 | 183 00 | | | | | 2,757 00 | 1,180 00 | |
| Butte..... | | 17,460 00 | 1,197 00 | 130 00 | | | | 18,880 00 | 5,888 00 | |
| Calaveras..... | | 2,290 00 | 145 00 | | | | | 2,435 00 | 1,158 00 | |
| Colusa..... | | 2,224 00 | 442 00 | 20 00 | 10 00 | \$50 00 | 32 50 | 2,407 50 | 1,545 00 | |
| Contra Costa..... | | 15,384 00 | 651 00 | | 30 00 | | 28 50 | 16,293 50 | 4,727 00 | |
| Del Norte..... | | 1,556 00 | 66 00 | 290 00 | | | 2 50 | 1,914 50 | 458 00 | |
| El Dorado..... | | 4,178 00 | 255 00 | 10 00 | | | 11 00 | 4,454 00 | 2,147 00 | |
| Fresno: | | | | | | | | | | |
| Agents..... | | 24,528 00 | 1,364 00 | | 170 00 | 350 00 | 13 00 | 25,905 00 | 7,240 00 | |
| Fresno Branch..... | | 936 00 | 63 00 | 60 00 | | | 35 00 | 1,614 00 | 271 00 | |
| Totals, Fresno..... | | \$25,464 00 | \$1,427 00 | \$60 00 | \$170 00 | \$350 00 | \$48 00 | \$27,519 00 | \$7,511 00 | |
| Glenn..... | | 5,450 00 | 484 00 | 60 00 | | | 40 50 | 6,034 50 | 1,734 00 | |
| Humboldt..... | | 12,494 00 | 745 00 | 60 00 | | | 19 50 | 13,318 50 | 5,614 00 | |
| Imperial..... | | 6,636 00 | 324 00 | | | | 10 00 | 6,970 00 | 437 00 | |
| Inyo..... | | 4,942 00 | 296 00 | 10 00 | | | 28 00 | 5,276 00 | 2,056 00 | |
| Kern..... | | 21,464 00 | 1,132 00 | | | | 34 50 | 22,650 50 | 6,136 00 | |
| Kings..... | | 4,990 00 | 297 00 | | | | 4 50 | 5,291 50 | 1,435 00 | |
| Lake..... | | 5,278 00 | 411 00 | | | | 19 50 | 5,708 50 | 2,652 00 | |
| Lassen..... | | 6,162 00 | 500 00 | 200 00 | 10 00 | | 17 00 | 6,889 00 | 3,025 00 | |
| Los Angeles: | | | | | | | | | | |
| Agents..... | | 121,438 00 | 4,480 00 | 70 00 | 10 00 | | 83 00 | 126,081 00 | 21,701 00 | |
| Los Angeles Branch..... | | 572 00 | 60 00 | 140 00 | 170 00 | 175 00 | 30 00 | 1,249 00 | 199 00 | |
| Terminal Island Branch..... | | 146 00 | 7 00 | | 30 00 | | | 183 50 | 26 00 | |
| Totals, Los Angeles..... | | \$102 00 | \$122,156 00 | \$4,547 00 | \$210 00 | \$175 00 | \$113 50 | \$127,513 50 | \$21,926 00 | |

FINAL STATEMENT OF LICENSE SALES, 1945 SERIES—Continued

| County | Hunting licenses | | | | | | | | | | Archery Deer tags \$1 each |
|----------------------------|--------------------------------|---------------------|--------------------|--------------------------|---------------------------------|--------------------|-----------------------|------------------|----------------------------------|-----------------------|----------------------------------|
| | Archery citizen \$3 each | Citizen \$2 each | Junior \$1 each | Nonresident \$10 each | Declarant alien \$10 each | Alien \$25 each | Duplicate 50¢ each | Total hunting | Archery Deer tags \$1 each | Deer tags \$1 each | |
| Madera..... | | \$4,568 00 | \$246 00 | | | | \$3 00 | \$4,817 00 | | \$1,692 00 | |
| Marin..... | | 6,190 00 | 569 00 | | \$40 00 | | 12 50 | 6,811 50 | | 2,505 00 | |
| Martinez..... | | 1,022 00 | 37 00 | | | | | 1,059 00 | | 492 00 | |
| Mendocino..... | | 8,462 00 | 563 00 | \$10 00 | 10 00 | | 14 00 | 9,059 00 | | 4,256 00 | |
| Merced..... | | 9,616 00 | 722 00 | | | | 38 50 | 10,431 50 | | 2,226 00 | |
| Modoc..... | | 4,178 00 | 262 00 | 1,630 00 | | | 18 50 | 6,088 50 | | 2,033 00 | |
| Mono..... | | 1,450 00 | 42 00 | 200 00 | | | 4 50 | 1,696 50 | | 750 00 | |
| Monterey: | | 11,196 00 | 752 00 | | 110 00 | 125 00 | 26 50 | 12,209 50 | | 4,530 00 | |
| Agents..... | | 12 00 | 6 00 | | 40 00 | 175 00 | 1 00 | 234 00 | | 11 00 | |
| Monterey Branch..... | | | | | | | | | | | |
| Totals, Monterey..... | | \$11,208 00 | \$758 00 | | \$150 00 | \$300 00 | \$27 50 | \$12,443 50 | | \$4,451 00 | |
| Napa..... | | 7,958 00 | 566 00 | 30 00 | 80 00 | | 28 00 | 8,662 00 | | 3,490 00 | |
| Nevada..... | | 5,954 00 | 313 00 | 160 00 | 30 00 | | 24 00 | 6,481 00 | | 2,873 00 | |
| Orange..... | | 8,636 00 | 515 00 | | | | 7 50 | 9,158 50 | | 1,764 00 | |
| Placer..... | | 8,428 00 | 598 00 | 160 00 | 10 00 | | 17 00 | 9,213 00 | | 3,456 00 | |
| Plumas..... | | 4,748 00 | 262 00 | 100 00 | 30 00 | 50 00 | 9 50 | 5,199 50 | | 2,518 00 | |
| Riverside..... | | 10,732 00 | 719 00 | | | | 34 00 | 11,485 00 | | 2,259 00 | |
| Sacramento: | | 29,324 00 | 1,911 00 | | 60 00 | 25 00 | 52 00 | 31,372 00 | | 8,226 00 | |
| Agents..... | | 1,168 00 | 84 00 | 240 00 | 380 00 | 875 00 | 84 00 | 2,840 00 | | 350 00 | |
| Sacramento Branch..... | | | | | | | | | | | |
| Totals, Sacramento..... | | \$30,492 00 | \$1,995 00 | \$240 00 | \$440 00 | \$900 00 | \$136 00 | \$34,212 00 | | \$8,576 00 | |
| San Benito..... | | 2,602 00 | 216 00 | | | | 11 50 | 2,829 50 | | 1,226 00 | |
| San Bernardino..... | | 14,354 00 | 1,013 00 | 20 00 | | | 28 00 | 15,415 00 | | 3,197 00 | |
| San Diego: | | | | | | | | | | | |
| Agents..... | | 25,900 00 | 1,082 00 | | | | 3 00 | 27,000 00 | | 5,997 00 | |
| San Diego Branch..... | | 250 00 | 4 00 | 20 00 | | | 16 50 | 315 50 | | 67 00 | |
| Totals, San Diego..... | | \$26,150 00 | \$1,086 00 | \$20 00 | | \$25 00 | \$19 50 | \$27,315 50 | | \$6,064 00 | |
| San Francisco: | | | | | | | | | | | |
| Agents..... | | 32,528 00 | 705 00 | | 20 00 | | 19 00 | 33,272 00 | | 8,513 00 | |
| San Francisco Branch..... | | 784 00 | 111 00 | 160 00 | 750 00 | 675 00 | 58 00 | 2,544 00 | | 345 00 | |
| Totals, San Francisco..... | | \$33,312 00 | \$816 00 | \$160 00 | \$770 00 | \$675 00 | \$77 00 | \$35,816 00 | | \$8,858 00 | |

FINAL STATEMENT OF LICENSE SALES, 1945 SERIES—Continued

| County | Deer meat permits | | |
|----------------------|-----------------------------|---------------------|------------|
| | Agents (locker) 50c each | Wardens \$1 each | Total |
| Alameda..... | \$145 50 | | \$145 50 |
| Alpine..... | | | |
| Amador..... | | | |
| Butte..... | 165 50 | \$50 00 | 215 50 |
| Calaveras..... | 10 00 | | 10 00 |
| Colusa..... | 41 00 | | 41 00 |
| Contra Costa..... | 90 00 | | 90 00 |
| Del Norte..... | 5 50 | | 5 50 |
| El Dorado..... | 27 00 | | 27 00 |
| Fresno..... | 241 00 | 12 00 | 253 00 |
| Glenn..... | 54 00 | | 54 00 |
| Humboldt..... | 126 50 | 5 00 | 131 50 |
| Imperial..... | 39 00 | | 39 00 |
| Inyo..... | 37 50 | 5 00 | 42 50 |
| Kern..... | 127 00 | 1 00 | 128 00 |
| Kings..... | 54 00 | | 54 00 |
| Lake..... | 2 00 | 22 00 | 24 00 |
| Lassen..... | 133 50 | | 133 50 |
| Los Angeles..... | 2,303 50 | 105 00 | 2,408 50 |
| Madera..... | 30 00 | | 30 00 |
| Marin..... | 67 00 | 8 00 | 75 00 |
| Mariposa..... | 17 00 | 9 00 | 26 00 |
| Mendocino..... | 93 50 | 9 00 | 102 50 |
| Merced..... | 214 50 | | 214 50 |
| Modoc..... | 56 00 | 1 00 | 57 00 |
| Mono..... | 8 00 | | 8 00 |
| Monterey..... | 76 00 | 8 00 | 84 00 |
| Napa..... | 69 50 | | 69 50 |
| Nevada..... | 65 00 | | 65 00 |
| Orange..... | 242 00 | | 242 00 |
| Placer..... | 67 00 | 20 00 | 87 00 |
| Plumas..... | | | |
| Riverside..... | 129 50 | | 129 50 |
| Sacramento..... | 275 50 | 53 00 | 328 50 |
| San Benito..... | 97 00 | | 97 00 |
| San Bernardino..... | 133 00 | | 133 00 |
| San Diego..... | 142 00 | 17 00 | 159 00 |
| San Francisco..... | 5 00 | 33 00 | 38 00 |
| San Joaquin..... | 280 50 | 14 00 | 294 50 |
| San Luis Obispo..... | 49 50 | | 49 50 |
| San Mateo..... | 130 50 | | 130 50 |
| Santa Barbara..... | 86 50 | | 86 50 |
| Santa Clara..... | 223 50 | | 223 50 |
| Santa Cruz..... | 47 00 | | 47 00 |
| Shasta..... | 124 00 | 29 00 | 153 00 |
| Sierra..... | | | |
| Siskiyou..... | 162 00 | 4 00 | 166 00 |
| Solano..... | 78 50 | | 78 50 |
| Sonoma..... | 119 00 | | 119 00 |
| Stanislaus..... | 136 00 | | 136 00 |
| Sutter..... | 25 00 | | 25 00 |
| Tehama..... | 32 00 | | 32 00 |
| Trinity..... | | 32 00 | 32 00 |
| Tulare..... | 210 50 | 2 00 | 212 50 |
| Tuolumne..... | 21 00 | | 21 00 |
| Ventura..... | 109 00 | | 109 00 |
| Yolo..... | 121 00 | | 121 00 |
| Yuba..... | 64 00 | | 64 00 |
| Total..... | \$7,409 50 | \$439 00 | \$7,848 50 |
| Number..... | 14,819 | 439 | 15,258 |

FINAL STATEMENT OF MISCELLANEOUS LICENSE SALES BY BRANCH OFFICE AND AGENTS, 1945 SERIES

| Type | Fresno | Los Angeles | Monterey | Sacramento | San Diego | San Francisco | Terminal Island | Agents | Total | Number |
|---|--------|-------------|----------|------------|-----------|-----------------|-----------------|---------|-------------------|----------|
| Commercial hunting club: Citizen, \$25 each..... Alien, \$100 each..... | | | | | | \$800 00 | | | \$800 00 | 32 |
| Commercial hunting club operator: Citizen, \$5 each..... Alien, \$25 each..... | | | | | | 240 00 | | | 240 00 | 48 |
| Fish packer and shellfish dealer: Citizen, \$5 each..... Alien, \$20 each..... | | | | | \$140 00 | 940 00 20 00 | \$360 00 | | 1,440 00 20 00 | 288 1 |
| Fish tags, 1 cent each..... | \$1 00 | \$660 00 | | | | 4,051 00 | | \$83 01 | 4,795 01 | 479,501 |
| Game tags, 3 cents each..... | | 95 34 | | \$38 07 | | | | | 133 41 | 4,447 |
| Fish importer, \$5 each..... | | | | | | 65 00 | | | 65 00 | 13 |
| Fish party boat permits, \$1 each..... | | | \$2 00 | | 4 00 | 212 00 | 58 00 | 36 00 | 312 00 | 312 |
| Fish breeder, \$5 each..... | | | | | | 320 00 | | | 320 00 | 64 |
| Game breeder, \$5 each..... | | 2,075 00 | | 110 00 | | 665 00 | | | 2,850 00 | 570 |
| Kelp license, \$10 each..... | | | | | | 90 00 | | | 90 00 | 9 |
| Game management: Licenses, \$10 each..... Tags, 3 cents each..... | | 8 16 | | 89 | | 20 00 | | | 20 00 9 15 | 2 305 |
| Antelope permits, \$5 each..... | | | | 2,500 00 | | | | | 2,500 00 | 500 |

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