Twenty-First Biennial Report

FISH & GAME DEPARTMENT

OF THE STATE OF IDAHO

JANUARY 1, 1945
to JUNE 30, 1946

JAMES O. BECK . . . . . Director

State of Idaho

Department of Fish and Game

Boise

To His Excellency, Dr. C. A. Robins, Governor

and Members of the
Senate and House of Representatives
of the State of Idaho

The twenty-first biennial report of the Fish and Game Department is submitted. The report covers the period January 1, 1945 to June 30, 1946.

Respectfully submitted,

A. L. TRADA,
Commission Chairman.

JAMES O. BECK,
Department Director.

FOREWORD

This biennial report covers 18 months rather than two complete calendar years which have been reported in previous volumes. The change has been made in order to conform to the fiscal year on which all budgets and financial transactions of state departments are based. The period of this report, therefore, begins January 1, 1945, and as far as complete figures of most divisions are concerned, ends June 30, 1946. Subsequent biennial reports will be for two fiscal years, beginning July 1, 1946.

Because some information regarding activities of the department during the summer and autumn of 1946 is necessary in presenting a more complete account of conservation work, summaries and comments dealing with the latter period have been added.

In presenting this report, the department acknowledges its gratitude to the people of Idaho, who as individuals and members of wildlife clubs have made possible through their loyal co-operation the gains that have been registered in perpetuation of a priceless heritage.

The Commission

A. L. Trada, Chairman ..... Coeur d'Alene
C. J. Westcott, Secretary ..... Boise
Walter Fiscus ..... Potlatch
Paul Thoman ..... Twin Falls
Alton R. Howell ..... Idaho Falls

The Department

James O. Beck, Director
Boise

James C. Simpson
Fish Culturist

John J. Boyle,
Federal Aid Supervisor

John W. Smith,
Fur Supervisor

T. D. Biladeau,
Big Game Supervisor

Frank Oster,
Improvement Supervisor

George E. Tucker,
Engineer

Herman Anderson,
Carpenter Foreman

C. G. d'Easum,
Public Relations Officer

R. E. Hoffman, Chief Clerk

Fay Bussard, Principal Clerk
Anna Mastro, Principal Clerk
Gale L. Burgener, Clerk-Typist
Lois Lundy, Secretary
Bernice E. Reed, Secretary
Janice Rose, Clerk-Typist

*Sally Eisenhart, Secretary
*Dorothy Oellien Jones,
Voucher Clerk
*Leo Schweizer, Clerk
*Allen N. Miller, Chief Clerk
*Ross Dimmick, Clerk
*Shirley Clark, Secretary

---

* Resigned during biennium.

Chief Conservation Officers

Marshall Edson, Naples
Harry Palmer, Culdesac
Ivol Sies, Boise
P. J. McDermott, Jr., Jerome
O. R. Christenson, Idaho Falls

Upland Birds

Maurice H. Lundy, Leader
Wildlife Restoration Research

Homer Woody, Superintendent
Lapwai Game Farm

Homer Stever, Game Farm Asst.
Lapwai

Michael Throckmorton, Leader
Wildlife Restoration Research

William Gnemi, Superintendent
Jerome Game Farm

Delbert Jacklin, Game Farm Asst.
Jerome

Conservation Officers

Melvin Barrus, Blackfoot
Wm. Lee Black, Mountain Home
V. R. Borden, St. Maries
Alonzo F. Brown, Hagerman
Fred M. Clark, New Meadows
John S. Costello, Coeur d'Alene
Murvle Crook, Oreana
Grover C. Davis, Filer
Albert Dickson, Gooding
J. B. F. Dillon, Weiser
Karl E. Dresser, Emmett
Hale Ebling, Troy
Charles W. Gallaher, Grangeville
Lester Gissell, Sandpoint
Hawley Hill, Burley
W. R. Horning, Montpelier
Frank R. Keough, American Falls
E. L. Keppner, Soda Springs
Herman M. Koppes, Idaho City
Ray J. Kernan, Lewiston
Stanley Larson, Malad
G. R. Lounsbury, Ketchum
Albert F. Lyle, Mackay
Claude I. Matthews, Spirit Lake
Dana L. Messenger, Carey
T. J. Mizer, Hailey
Joel C. Reynolds, Lowman
Vernon B. Rich, Ashton
Glen H. Richardson, Salmon
E. B. Scholes, Preston
Wesley M. Shaw, Driggs
George F. Staudt, Kellogg

Not Certified By Civil Service

Henry Blanchard, Kooskia
Alfred Clark, McCall
Chris Johnson, Orofino
Fred E. Kreller, Caldwell
J. C. Newman, Dubois
Keith S. Rudd, Challis
Floyd E. Springston, Lewiston

Fisheries Personnel

James C. Simpson, Fish Culturist
Boise

B. D. Ainsworth, Supervisor, Ashton

E. O. Bailey, Supervisor, Eagle

Harvey Albrethsen, Hatchery Superintendent, Whisky Creek
Clarence F. Bess, Hatchery Superintendent, Hay Spur
John Bilow, Hatchery Superintendent, Henry's Lake
Alan J. Clark, Hatchery Superintendent, Clark Fork
J. E. Clark, Hatchery Superintendent, Coeur d'Alene
John M. Coleman, Hatchery Superintendent, Mackay
O. H. Dahlquist, Hatchery Superintendent, Twin Falls
Frank E. Gaver, Hatchery Superintendent, Mullan
L. W. Gaver, Hatchery Superintendent, Grangeville
Elwood D. Grimes, Biologist, Hagerman
Forrest R. Hauck, Biologist, Sandpoint
L. T. Hunt, Hatchery Assistant, Hay Spur
LaVarr Jacklin, Fish Distributor, American Falls
Charles Neider, Hatchery Superintendent, McCall
Charles Sherwood, Hatchery Superintendent, American Falls
Tim M. Vaughan, Hatchery Superintendent, Boise

Not Certified By Civil Service

Walter H. Bethke, Hatchery Assistant, Ashton
Burt Bowlden, Hatchery Assistant, Fernwood
Martin Burgemeister, Hatchery Assistant, American Falls
Norman C. Floyd, Hatchery Assistant, Coeur d'Alene
Wm. R. Harkness, Hatchery Assistant, Clark Fork
Burton W. Kenery, Acting Hatchery Superintendent, Boyd Creek
Fred J. Keppner, Hatchery Assistant, Mackay
D. G. Marsh, Hatchery Assistant, Eagle
Rollo J. Morris, Hatchery Assistant, American Falls
Lawrence J. Shaffer, Hatchery Assistant, Sandpoint

ADMINISTRATION

Fish and game management in Idaho is in charge of a commission of five men appointed by the Governor for terms of six years each. This board of directors is non-political. By provisions of the commission plan, adopted by popular vote in 1938, the five commissioners establish general policies, set seasons and bag limits, and consider wildlife problems of the state. The commission meets quarterly. It selects a chairman and secretary. Commissioners are not salaried employes of the state, except that they receive $10 a day for a maximum of 30 days a year for their services.

Executive officer is the director of the fish and game department, who is appointed by the commission. A fish culturist, the chief of fisheries development, is also appointed by the commission. All other employes of the department are selected by civil service. Examinations determine qualifications. Appointments to various jobs are made by the director who chooses men from the top of the roster prepared by the civil service board.

No examinations were given during the war. Civil service lists were exhausted. Temporary appointments without examination were found necessary in order to keep department work going as efficiently as possible when manpower was scarce in all public and private activity. Late in 1946 the commission joined with the Idaho Merit Council for the giving of examinations and selection of new employes. The merit council becomes the civil service advisory board of the commission. It is anticipated that examinations for all classifications of game department applicants will be scheduled early in 1947. Several vacancies are to be filled and it is probable that additional men will be hired as the department expands in keeping with the greatly increased public interest in hunting and fishing.

Idaho consists of five districts for the purposes of wildlife work. One commissioner is appointed from each district. The areas are:

District One: Boundary, Bonner, Kootenai, Shoshone, and Benewah counties.

District Two: Latah, Clearwater, NezPerce, Lewis, and Idaho counties.

District Three: Ada, Adams, Boise, Canyon, Elmore, Gem, Owyhee, Payette, Valley, and Washington counties.

District Four: Camas, Gooding, Twin Falls, Cassia, Jerome, Blaine, Lincoln, Butte, Minidoka, Lemhi, and Custer counties.

District Five: Clark, Fremont, Madison, Teton, Jefferson, Bonneville, Bingham, Bannock, Power, Oneida, Caribou, Franklin, and Bear Lake counties.

In 1945 the commission elected Alton R. Howell of Idaho Falls as chairman. It was his third year in that office. A. L. Trada of Coeur d'Alene became chairman in 1946. His term on the commission ended in December. Governor Williams appointed W. George Moody of Calder to succeed him.

C. J. Westcott of Boise, a commissioner since December 1942, resigned December 10, 1946. R. G. Cole of Boise was appointed to serve the remaining two years of Westcott's term.

According to custom, the commission sets fishing seasons and regulations at the January meeting. Dates and regulations for hunting game birds and big game are established in July, by which time necessary facts on annually changing conditions are available. The commission receives recommendations from conservation officers, fish and bird men, and from sportsmen. Before the January and July meetings, public hearings are held in the several districts at which suggestions are offered by all interested persons. All advice is welcomed and given proper consideration. The commission acts on the facts in its best judgment, keeping in mind the principles of conservation and public pleasure derived from fishing and hunting encumbered with as little red tape as possible.

The job of keeping these outdoor sports at Idaho's enviable high level has greatly increased during recent years. That is particularly true of the last two years. While the war was being fought there was no reduction in number of fishermen and hunters. In fact there was an increase. After the war the increase developed into a pronounced boom. Figures on license sales emphasize the point. In 1945 the license vendors of Idaho sold 163,000 licenses. In 1946 the figure rocketed again to more than 200,000. That represents an increase of more than 100 per cent in 10 years, and a numerical increase of great proportions from the 130,000 licenses issued in 1941, the last pre-war year. Usually reliable authorities throughout the country predict that this surge of enthusiasm will develop further.

Idaho, by fact of its geography and comparatively little exploitation in the past, will quite probably be among the states most eagerly sought by sportsmen. The west is more and more being recognized as the playground of America. Idaho has variety of game and fish such as to make it unusually attractive.

While the number of rods and guns taking fish and game has multiplied, the fish and game department has remained, in manpower, about the same as it was before the war. More employes have been needed in producing fish, in law enforcement, in scientific study, and in handling a vast amount of office work that naturally develops in any business with 200,000 customers. Trained men were not available. The condition was eased a little on the return to the

department of nine men who served in the armed forces. This was not all expansion, however, as some posts had been vacant during the war. Several temporary men had been hired in other instances, and they will be working on a temporary basis until civil service examinations are given.

New construction has been hampered by the all too familiar but nevertheless real shortage of materials. Wherever the commission felt it could proceed soundly with a new facility it has gone ahead, but several important projects in the expansion program have been delayed until there is greater value for the sportsman's dollar. This phase of the department's work, and other matters of the interlocking program, all pointing toward the goal of a continued supply of wildlife for today and tomorrow, will be explained in greater detail in reports of various branches of the department.

DIVISION OF FISHERIES

At the end of the war, military personnel and war workers returned to the state. Ardent fishermen and novice alike took to the streams and lakes. The increase in resident fishermen was accompanied by an increase in non-resident fishermen. It was the popular belief at the beginning of the war that the streams and lakes of the state would be fished only lightly and thus become populated with fish for the day when the war ended. On the contrary, however, fishermen were somehow able to find ways and means to go fishing. As a result, our waters were not teeming with game fish when the onslaught of anglers descended. Nevertheless, early fishing throughout most of the state was comparatively good, with mid-summer fishing fair, and late fishing good. The take of fish throughout the state was heavy, particularly with respect to trout. What the take will be during the 1947-49 biennium cannot be accurately forecast. However, it is expected to be about the same or greater than the take during 1946.

It should be pointed out here that the production of fish depends largely on the inherent biological laws and not on fish and game administrators. It is the consensus of fisheries workers throughout the United States that the value of fish hatcheries has been oversold to the sporting public. Fish hatcheries do have a place in a fisheries program, but they cannot and should not be considered as the only asset toward producing better fishing or maintaining good fishing. It can be anticipated that future public opinion will be away from artificial propagation. Particularly is this true with reference to the cool and warm-water species.

Stocking Policies

If we are to realize the fullest value of fish planted from our state fish hatcheries, it is necessary that species be planted in the proper environments. As an aid toward this end, a catalogue of the lakes and streams of the state is being prepared. This catalogue, when completed, will list one species of fish for each body of water. As yet, sufficient information is not available to state with accuracy that the species to be allotted in all cases is the proper one; however, as information is gathered from surveys and creel census reports, the catalogue will be kept current. A card index of the plantings of fish in the various lakes and streams has been instituted. Such a system will aid materially in keeping an office record of location, size, and quantity of fish planted.

Rearing Ponds

A program of natural trout retaining ponds will be undertaken. This program, it is felt, will not be extensive because of the scarcity

of suitable sites. For a natural trout retaining pond to be successful, several basic factors must be taken into consideration, namely:

1. The pond should be located close to the stream or lake where fish are to be liberated.
2. The pond should be located on new ground that is not swampy or boggy.
3. Whenever possible, the pond should be fed by springs.
4. The pond must be deep enough to prevent winter kill.

Fish Food

There is a definite need for revision in the types of feeds and improvement in feeding practices. For northern Idaho, a feed must be used that is high in calcium, inasmuch as the waters used in the hatcheries are relatively free of this mineral. It has been impossible during the past year to secure the necessary meals, particularly fish meals, needed to improve the diets fed to hatchery fish. As soon as this shortage is overcome, a change in present feeding practices will be undertaken. For the past several years, the department has relied heavily on horse meat for feed, but with the inevitable reduction of horses on the farms and ranches of the state, we will be forced to look for other sources of meat. It is anticipated that there will be sufficient horse meat to supply our needs during 1947. In an effort to meet the increasing needs for additional fish feed, the department has embarked upon a project of salvaging landlocked sockeye or blueback salmon from Pend d'Oreille lake. The salmon salvaged are those that run upstream to spawn and would die normally at the end of the spawning cycle. The fish are taken while the flesh is still in good condition and taken to state hatcheries where it is frozen. It is then distributed to other hatcheries where it is stored for future use. As soon as the run of sockeye out of Island Park reservoir in Fremont county develops in numbers to a point where salvage operations can be carried on economically, the department will institute a salvage program at this station, probably in 1947.

During the 1945-1946 biennium the following amounts of fish food were fed:

		Pounds	Cost
Liver	1945	111,356	$ 9,090.26
	1946	117,120	9,550.00
Spleen	1945	41,069	1,834.35
	1946	35,118	1,611.06
Horsemeat	1945	89,742	3,251.79
	1946	159,511	5,902.75
Salmon Viscera	1945	29,656	1,489.30
	1946	33,515	1,649.50
Trash Fish	1945	16,933	338.66
	1946	19,006	380.12
Meal*	1945	12,947	335.40
	1946	6,523	94.95
Total	1945	301,703	$16,339.76
	1946	370,893	19,188.92

* Includes Bread.

Reservoirs

Contrary to popular public opinion, irrigation and power reservoirs are not and cannot be made as productive of fish life as non-fluctuating or natural bodies of water. With the construction of reservoirs contemplated by the U. S. Bureau of Reclamation and the Corps of Army Engineers, it is felt that very definite inroads will be made on our present fish producing waters. The past history of most reservoirs in western United States is that the newly created body of water is exceptionally productive for the first five or six years after construction. After that time, the productivity is reduced to a point where the reservoir is even less productive than the original river.

Salmon runs have been almost completely destroyed in the Snake river above the mouth of the Salmon river simply because fish ladders were not installed in the dams that were constructed on the tributary rivers. If the number of dams now contemplated for the Snake river and the Salmon river and tributaries are constructed, the time may not be far distant when salmon fishing will be lost completely to fishermen of Idaho even though fish ladders are installed. Each fish ladder that a salmon is forced to ascend and each reservoir that it must pass through takes its toll of the strength of a salmon. There-

fore, present, day fisheries workers feel that salmon runs in the Snake river may soon be destroyed.

Because of the relatively non-migratory habits of the trout, fish ladders over dams placed across streams which are not frequented by salmon and steelhead are not recommended.

Black Bullheads

Black bullheads have been rather widely distributed throughout Idaho. They not only have been planted in waters which were not suitable for trout, but have been stocked in several good trout waters. In many cases, they have been planted in waters far too cold to permit growth to catchable size. Regardless of where bullheads have been stocked, they have been so successful at spawning that they have overstocked practically every body of water where they have been planted. Unfortunately, this species does not meet with a great deal of favor among fishermen, which may account for, in part at least, its present overstocked condition. It is recommended that the black bullhead be removed from the category of game fish. In so doing the present few bullhead fishermen in the state would be encouraged to take a greater supply of bullheads and new fishermen may be converted to angling for this tasty food fish.

Warm-Water Species

The waters suitable for cool-water (perch) and warm-water (bass, crappie, sunfish) fishes are very limited in Idaho. However, some very good largemouth black bass, crappie, and perch fishing has been realized from those bodies of water where biological conditions are suitable. Notable among these are Chatcolet, Benewah, Round, Hidden, Cave, and Medicine Lakes in Benewah and Kootenai counties, in the bayous of Pend d'Oreille Lake in Bonner County, and also several smaller bodies of water throughout the state. Research in other states has proved that it is impossible to "fish out" a lake stocked with warm-water fish. When the food supply and the number of fish present are in balance, the fish discontinue biting. Because warm-water species of fish are so successful in rearing young fish (much more so than trout) and because there are so few warm-water fish anglers in the state, many of our bodies of water are, at the present time, overstocked and others will, in all probability, become over-stocked. Anglers must realize in the not too distant future that they are passing by a very desirable bit of sport in failing to fish for warm-water fish.

In an effort to make additional fishing for sportsmen, the department has undertaken a program of stocking farm ponds. Most of these ponds are stock-watering ponds, but many are suitable for

maintaining and producing a crop of fish. During 1946, 34 such ponds located in Latah, Lewis, and Nez Perce counties were stocked with large-mouth black bass, bluegill, sunfish, and yellow perch. The ponds ranged in size from one-tenth of an acre to 2.5 acres with the majority under one acre.

Kamloops Rainbow Trout

The Kamloops rainbow trout, **Salmo gairdneri kamloops,** in Pend d'Oreille lake has established a rate of growth seldom experienced in fresh water. Kamloops were first planted in Lake Pend d'Oreille in 1942. In 1945, four years later, they had reached a size of 32½ pounds. The largest specimen taken in 1946 was 31½ pounds.

Examination of scales taken from two fish, one in its third year of growth and the other in its fourth year of growth, showed that hatchery fish of this species experienced a period of slow growth and then made very rapid growth. This would indicate that the species has some difficulty adjusting itself from a hatchery diet to the diet of natural food. (The principal reason for such rapid growth may be attributed in part to the fact that the kamloops have been able to find an abundance of food, chiefly blueback or sockeye salmon, which range in size from seven to nine inches and average about three per pound.) No definite information is available pertaining to the number of kamloops taken during the biennium; however, 225 were registered in the "big fish" contest sponsored at Sandpoint and Bayview during 1946, and undoubtedly some were taken which were not recorded.

There has been considerable agitation to have this species planted in other bodies of water throughout the state; however, further distribution is not contemplated until such time as sufficient eggs can be taken beyond our present demands. Lakes are being tested, meanwhile, to determine their capabilities.

Pollution

Each year brings with it an increase in the demand for more fish for anglers. Each year also finds an increase in the number of streams in the state which are being polluted, and as a result, are lost to the fishermen. The pollutents range from industrial wastes, city sewage, to mining operations. Present statutes have insufficient teeth in them to permit the fish and game department to prevent further pollution or to correct present conditions. Therefore, legislation should be considered which would permit the department to rectify conditions if future demands for an increased number of fish are to be met. The department has co-operated with the Water Utilization Committee, a committee which was organized by the State Chamber of Commerce for the purpose of studying the waters

of the state and determining the most beneficial uses. Mr. Joe D. Wood, who has been employed as research engineer for the committee, has been most helpful and co-operative. The department, in turn, has made available engineering and biological services. The committee is still functioning and the Department will continue to make services and information available as they are desired.

Bullfrogs

During the biennium a number of bullfrogs have been distributed throughout the state. Too little information is available at the present time to venture a guess as to how well they will do or how much additional sport will be realized from angling for them. It is felt, however, that the areas within the state, where the species will reach sufficient growth to make them desirable and propagate in sufficient number, is extremely limited.

Bait Fish

The present law permits the use of the young of carp, whitefish, and perch as bait. The present law should be changed to prevent the use of fingerling whitefish and perch because they are game fish, and the use of carp as bait should be completely discouraged because of its destructive habits. Many very good trout waters do not at the present time contain this species, and a very definite decline in the productivity of those waters would be experienced should they become populated with carp.

Education

There is a definite need of further education of department employees in present-day fish culture and fisheries work in general. During the biennium, a collection of fish of the state will be made and a checklist prepared. It is also planned that a pamphlet on Idaho fishes will be compiled and published for use by department personnel and sportsmen alike.

Non-Game Fish

It is generally accepted that certain rough or trash fish such as carp, squawfish, suckers, chubs, and tench survive at the expense of game fish. Squawfish have been accused of living on the young of trout and trout spawn; tench and carp often thought of as being responsible for the destruction of spawning beds. The extent of actual damage done by some of these fish is still not too well known. It may be concluded that in waters where certain rough fish are found to be on the increase, they are doing so at the expense of the more desirable species, thus making control measures necessary.

In order to control the less desirable species, the department has been conducting a non-game fish removal program. This program is

primarily carried on through licensed commercial fishermen who pay a royalty to the state, augmented by state operated traps and seines. Due to changing fishing conditions, the number of men fishing commercially has varied during the biennium. At the present time, there are eleven licensed commercial fishermen operating in Idaho. Of this number, eight are operating in the vicinity of St. Maries, and three in the southwestern part of the state.

The removal of these fish has served a two-fold purpose:

(1) Reduction of undesirable species, and (2) Utilization of these fish for human consumption, feed at hatcheries, and game and fur farms.

Rough fish removal has for many years been a part of the program of the department. However, it was not developed to its present standing until 1943 when the permit system for commercial fishermen was adopted. Since that time, there has been little change in the system. It is hoped, however, that this program will be further developed to include additional fishing territory for commercial fishermen and the development of a state operated rough fish removal crew and rescue unit.

Summary of Non-Game Fish Removed
1945-1946

Carp	1945	215,325
	1946	27,537
Suckers	1945	404,599
	1946	123,409
Tench	1945	20,460
	1946	9,200
Bullheads	1945	242,319
	1946	26,679
Totals	1945*	882,703
	1946**	186,825
Biennium		1,069,528

* Includes figures for December, 1944 which were omitted in the 1944 report.

** Includes figures for January 1, 1946 to July 1, 1946 (subject to outstanding reports).

Table I

Fish Planted From State Hatcheries

Station	Year	Rainbow	Cutthroat	Eastern Brook	Sockeye Salmon	German Brown	Whitefish	Kamloops	Total	Total Pounds
American Falls	1945	1,204,412	355,200	109,600	459,000	15,690	.....	2,128	2,143,902	13,131
	1946	316,880	743,005	1,675	306,500	.....	.....	3,600	1,371,660[1]	12,072
Ashton	1945	1,077,261	461,003	211,459	82,742	.....	.....	.....	1,832,465	5,425
	1946	517,545	482,345	192,622	187,912	.....	.....	.....	1,380,433	4,687
Boyd Creek	1945	218,100	345,750	34,220	.....	208,420	.....	.....	1,114,470	1,569
	1946	50,630	437,380	249,028	86,180	199,160	.....	.....	1,022,378	2,109
Clark Fork	1945	313,620	470,604	.....	.....	.....	.....	.....	784,224	2,779
	1946	327,876	370,500	.....	.....	.....	.....	6,384	711,032[2]	7,842
Coeur d'Alene	1945	356,000	1,302,330	.....	.....	.....	.....	.....	1,658,330	2,562
	1946	.....	762,664	13,000	97,500	.....	.....	.....	873,164[3]	1,510
Eagle	1945	1,233,173	76,800	.....	.....	55,650	.....	.....	1,365,623[4]	11,363
	1946	790,972	.....	95,118	102,000	190,800	.....	.....	1,178,890[5]	8,690
Evergreen	1945	476,267	99,000	.....	.....	.....	.....	.....	575,267	2,833
	1946	172,150	232,000	.....	.....	.....	.....	.....	404,150	1,222
Fernwood	1945	166,210	511,450	.....	.....	.....	.....	.....	677,660	3,901
	1946	133,540	.....	153,708	.....	106,000	.....	.....	393,248	1,834
Grangeville	1945	342,223	624,644	.....	.....	.....	.....	.....	966,867	1,063
	1946	190,352	814,440	.....	.....	.....	.....	.....	1,004,792	687
Hagerman	1945	127,854	55,100	.....	.....	.....	.....	.....	182,954	2,224
	1946	69,745	20,400	.....	.....	.....	.....	4,950	95,095	2,602
Hayspur	1945	704,130	390,700	141,600	388,890	.....	.....	.....	1,625,320	5,889
	1946	382,250	424,000	90,240	483,000	.....	.....	.....	1,379,490	6,522
Henry's Lake	1945	.....	1,700,000	.....	.....	.....	.....	.....	1,700,000	.....
	1946	.....	1,697,000	.....	.....	.....	.....	.....	1,697,000	.....
Mackay	1945	973,300	238,650	176,542	.....	.....	.....	.....	1,388,492	4,172
	1946	712,980	276,942	.....	379,200	.....	.....	.....	1,369,122	2,356
McCall	1945	799,020	41,800	90,700	757,900	.....	.....	.....	1,689,420	3,782
	1946	71,840	313,750	36,391	890,750	.....	.....	.....	1,312,551	3,259
Mullan	1945	598,800	585,190	.....	.....	.....	.....	.....	1,183,990	1,175
	1946	505,241	403,580	.....	79,850	.....	.....	.....	988,401	1,682
Sandpoint	1945	385,245	360,965	.....	.....	.....	10,000,000	.....	10,746,210	5,129
	1946	122,255	375,435	130,800	234,875	.....	1,984,362	.....	2,820,997[6]	1,919
Twin Falls	1945	717,910	79,360	1,500	445,000	.....	.....	.....	1,243,770[7]	6,657
	1946	323,850	105,300	15,300	427,900	.....	.....	.....	872,350	5,375
Whisky Creek	1946	.....	491,622	.....	.....	.....	.....	.....	491,622	545
Total	1945	9,693,525	7,698,546	1,073,601	2,133,532	279,760	10,000,000	2,128	30,880,992	73,654
	1946	4,688,106	7,995,372	991,218	3,275,217	495,960	1,984,362	14,934	19,445,169	64,913
Total For Biennium		15,381,631	15,693,918	2,064,819	5,408,749	775,720	11,984,362	17,062	50,326,161[8]	138,567

Footnotes for Fish Table

[1] In addition to this total, 1000 rainbow and 115 Kamloops were transferred to Hayspur and Sandpoint respectively.

[2] In addition to this total 4,300 rainbow, 10,752 rainbow, and 3,168 Kamloop were transferred to Blanchard Ponds and 20,000 eastern brook to Grangeville.

[3] In addition to this total, 300,000 eastern brook, 220,500 German brown and 351,200 cutthroat were transferred to Fernwood and 40,000 eastern brook to Eagle and 60,000 rainbow to Fernwood.

[4] In addition to this total 408,536 rainbow and 5,000 eastern brook were transferred to Evergreen and Grangeville respectively.

[5] In addition to this total 16,616 Kamloops, 4,440 cutthroat, 40,150 rainbow, and 150,000 rainbow were transferred to Clark Fork, Mullan, Grangeville, and Evergreen respectively.

[6] Includes fish planted from Blanchard Ponds.

[7] In addition to this total 5,400 rainbow were transferred to Hagerman.

[8] In addition to this total 7,120 Chinook salmon were planted from Twin Falls.

Table II

Fish Planted from Federal Hatcheries

Station	Year	Rainbow	Cutthroat	Eastern Brook	Total
Hagerman	1945	298,805	.....	131,901	430,706
	1946	230,860	341,000	38,475	610,335
Warm River	1945	256,750	301,590	.....	558,340
	1946	63,016	413,000	.....	476,016
Total	1945	555,555	301,590	131,901	989,046
	1946	293,876	754,000	38,475	1,086,351
Total for Biennium		849,431	1,055,590	170,376	2,075,397

Table III

Fish Planted By State of Wyoming In Idaho Waters

Station	Year	Rainbow	Cutthroat	Eastern Brook	Total
Western Wyoming	1946	.....	45,000	7,062	52,062

Table IV

Summary of Fish Planted In Idaho By All Agencies*

State Hatcheries	1945	30,878,864
	1946	19,445,169
Federal Hatcheries	1945	989,046
	1946	1,086,351
State of Wyoming	1946	52,062
Total for biennium		52,451,492

* Does not include warm-water fish.

Table V

Warm-Water Fish Salvaged and Planted

Station	Year	Large Mouth Bass	Small Mouth Bass	Bullheads	Crappie	Bluegills	Perch	Bullfrogs	Total
American Falls	1945	.....	.....	.....	.....	.....	114,380	.....	114,380
	1946	.....	.....	.....	.....	.....	30,000	.....	30,000
Eagle	1945	(All fish were mixed: Bullheads, crappie, bass, and perch)							106,832
	1946	200	.....	.....	3,500	.....	16,000	.....	104,900*
Hagerman	1945	8,208	11,880	10,800	.....	430	5,000	.....	36,318
	1946	80	.....	1,048	80	4,700	.....	1,000	6,908
Twin Falls	1946	.....	.....	.....	.....	.....	12,000	.....	12,000
Sandpoint	1945	310,296	.....	.....	44,800	.....	.....	.....	355,096
	1946	25,813	.....	.....	.....	35,366	15,000	.....	362,379**
Total	1945	.....							612,626
	1946	.....							516,187
Total for biennium		.....							1,128,813

* Includes 85,200 mixed bullheads, bass, crappie, and perch.
** Includes 286,200 mixed bullheads, bass, crappie, perch and bluegills.

Table VI

Eggs Handled by State

Eggs Taken by State*

Station	Species	1945	1946
American Falls	Rainbow	872,000	993,000
American Falls	Kamloop	83,000	.....
Clark Fork	Kamloop	.....	27,000
Coffee Pot	Rainbow	5,836,000	2,452,542
Deep Creek	Rainbow	.....	5,256
Gold Creek	Sockeye Salmon	754,000	.....
Granite Creek	Cutthroat	.....	312,708
Granite Creek	Sockeye Salmon	26,656	.....
Granite Creek	Whitefish	10,000,000	2,172,555
Mullan Hatchery	Rainbow	587,000	763,628
Hayden Creek	Cutthroat	3,268,765	235,000
Hayden Creek	Rainbow	767,412	109,440
Hayspur	Rainbow	402,050	319,275
Henry's Lake	Cutthroat	6,473,000	7,254,212
Mackay	Rainbow	1,897,060	922,960
St. Charles	Rainbow	.....	161,225
Williams Lake**	Rainbow	3,066,000	4,103,893
Wolf Lodge	Cutthroat	3,355,356	1,074,320
Total		28,388,299	20,907,014

Eggs Purchased By State

Year	Rainbow	German Brown	Eastern Brook	Kamloop	Sockeye Salmon
1945	1,000,000	600,000	1,872,842	55,000	4,000,000
1946	1,933,669	1,000,000	1,660,556		3,500,000

Eggs from Fish and Wildlife Service at Yellowstone Park

Year	Species	Amount
1945	Cutthroat	1,250,000
1946	Cutthroat	2,168,000

TOTAL EGGS HANDLED:	1945	37,166,141
	1946	31,169,239
	Biennium	68,335,380

* Subject to outstanding reports.

** Operated cooperatively by the state and U.S. Fish and Wildlife Service.

UPLAND GAME BIRDS

After four years of restricted hunting due to army service, rationing, and other factors, thousands of hunters again took to the field for the 1946 pheasant season. This increase is evident in the greater number of hunters checked in the field by the conservation officers and by the increase in resident and non-resident licenses in the past two years. According to the number of licenses sold, resident hunting has increased twenty-five percent over 1944 and non-resident bird hunting has increased seventy-five per cent since 1944. To keep upland bird hunting in Idaho is going to require the cooperation of the farmers, sportsmen, and the constant work of research, propagation and protection by the game department.

During three disastrous springs in 1943, 1944, and 1945, when the weather factors were unfavorable for upland game bird natural reproduction, the number of birds dropped to one of their lowest points in 1945. During the spring of 1946, weather conditions in general were favorable throughout the state for natural reproduction and the birds staged a nice comeback.

Pheasants

The game department obtained the services of a trained bird biologist during the first part of 1946. Another was employed in the fall. Many problems which affect the upland game birds both in the wild state and on the game farms have been given much-needed study. Many of the problems being studied are still in the field, where not much information is available from other sources and these will have to be worked out through a number of years.

During the past the question, "What good are our game farms doing?" has arisen numerous times. To add to the existing data on game farm birds, a banding program was included in the Wildlife Restoration Research project. Each cock bird released from the game farm in the spring and summer of 1946 was carefully banded and a record was kept of the location and date he was released. When hunters send in bands, we hope to arrive at new figures for the percentage that survive in the field, movement after release, and the approximate number of pheasants in Idaho. A number of bands were turned in during the 1946 hunting season. With the aid of federal funds made available through "The Federal Aid to Wildlife Act," a research program has been set up for the study of pheasants. Two trained men have been employed by the department to work on this research program. One will work in southern Idaho and the other in northern Idaho.

Another phase of upland game work being given careful consideration is the establishment of small refuges throughout the state to provide protection, food, and cover for the birds.

The season of 1946 was the second year for the "no-hen" law in Idaho. Reports from field men indicate that this protection to hens, coupled with a favorable spring, has brought about a substantial increase in the number of pheasants. The sex ratio that was observed in the field before the opening of the season was 120 hens to 100 roosters. The "no-hen" rule is one of the most essential factors in keeping our pheasant population.

The second regulation which has helped our pheasant population is the rule that prohibits the use of rifles on game birds. This has saved many birds and has decreased the danger of shooting in settled communities with high-powered rifles.

The kill of pheasants in 1946 according to the records received to date was much higher than the kill in 1944 or 1945. It is reported from several areas that the kill was excessive and that brood stock for the coming year was depleted. These reports have not been checked yet by actual field survey since the season was just over at time this report was written. In the southwestern part of the state post-season census has indicated the largest potential breeding population in recent years.

Hungarian Partridge

The Hungarian partridge population was very low during 1945, but the past year being favorable for natural propagation, this species has started upward again. Partridge have continued their spread over many sections of the state and are now showing up in sites miles from where they were introduced. Large coveys have been seen in the Craters of the Moon area and also in the Malad district. By trapping this winter, the game department hopes to extend their range into some other sections of the state where pheasants have not been successful and to provide hunting for sportsmen in those areas.

Chukar Partridge

The recent successful plantings of Chukar partridge have been very encouraging and it is planned by the department to continue the stocking of these fine natives of India in carefully selected sites. An effort is also being made to secure Chukar partridge from different strains for stocking than we have at present in additional habitats throughout the state. The three areas that have been most successful to date in the plantings of Chukars are:

1. Near the Black Canyon Dam in Gem County; 2. Near Albion in Cassia County; 3. Near Grandview in Owyhee County.

This last planting has attracted much interest since numerous ranchers in the area reported broods of the tiny Chukars the past spring.

Blue Grouse

This fine native of Idaho is increasing in scattered areas. The most notable increases have been reported from the Priest Lake, Seven Devils and the Salmon River regions. Every effort is being made to protect this bird so that they will increase and in the future we may again enjoy the fine sport of shooting grouse. The fact that the blue grouse is a cyclic species makes it necessary to set hunting seasons only while the grouse is on the upswing or peak of the cycle. If hunting were allowed on the downward part of the cycle, it would deplete badly needed stock required for reproduction when the cycle starts upward again.

Sagegrouse

The sagegrouse population has shown a slight increase in the past two years, but it is unlikely any season for this species will be opened for some time. In some sections, the number of birds might warrant the opening of a season, but a small shooting area would concentrate the hunting load and the number killed would be excessive. The department started a sagegrouse census on the booming grounds during the spring of 1946 and this census will be added to each year. By this method, we hope to keep an accurate check on the trend in number of sagegrouse.

Quail

The three quail species—California, Valley, and Bobwhite—have remained in nearly constant numbers in Idaho. In some areas there have been decreases and in other areas increases. It is planned to import a limited number of Gambel quail for stocking in the desert areas of the southern part of the state.

Hunting Seasons

Idaho had hunting for pheasants, Hungarian partridge, and valley quail in both 1945 and 1946. Seasons varied in 1945, but in 1946 were the most uniform in many years. Pheasants were the most important upland game bird.

Sagegrouse were not numerous enough to justify a general hunt either year. Mourning doves were protected in 1945. A ten-day season was opened in 1946.

Duck and goose shooting were good in most part of the state in 1945. The season lasted from October 16 to December 31. In 1946, the season was reduced to 45 days, October 26 to December 9, and the bag limit was reduced to seven a day from ten the previous year. Ducks were generally scarce. Federal regulations govern the hunting of migratory waterfowl.

Bird Farms

During 1946, a thorough survey was made of the two game farms at Lapwai and Jerome, and it was decided to reduce the number of birds raised at the farm to their rated capacity. This decrease lowered the number of birds liberated in the field, but it is thought that by producing stronger and better birds, the final survival in the field would be higher than by releasing crowded, smaller birds.

Labor conditions still continue to hamper the farms, but it is hoped that by working out a proposed system, it will be possible to have trained men at the farms year after year.

The mashes used at the farms have not, in some cases, been as high in protein content and concentrates as we would like to feed. Governmental restrictions forced the department to lower the quality of the mashes.

The incubation and hatching house at Lapwai was remodelled and has proven quite satisfactory. It is also planned to purchase new incubating and hatching equipment for both of the farms.

A program has been submitted for the increasing of game farm facilities and if the program is approved, it will substantially increase the number of birds to be liberated in the different counties. The program would increase brooder and pen capacities at both farms, and provides for the building of a new game farm.

Sportsmen's clubs who desired to raise their own birds, were furnished day-old pheasants by the farms. This method increased the interest of the club members in pheasants and also increased the number of birds liberated in the field.

The Jerome game farm is under the supervision of William Gnemi, who has done a very commendable job in efficient operation of the farm and in producing fine birds. The Lapwai game farm was under the supervision of Homer Stever until Homer Woody, the regular superintendent, returned from the service in September, 1946. Both Mr. Stever and Mr. Woody have spent many hours of hard work producing fine birds to be released into the fields of Idaho and have kept accurate records.

Pheasant Plantings by Counties and Districts

From Jerome Game Farm

County	1945			1946		
	Broodstock	Young Birds	Day-Old	Broodstock	Young Birds	Day-Old
Ada	90	995		125	661	
Adams		355		50	280	
Boise	80	250		35	130	
Canyon	85	900		100	740	
Elmore	100	600		150	350	1,000
Gem	82	750		70	460	
Owyhee	85	525		40	300	
Payette	83	625		55	430	
Valley					45	
Washington		790		175	520	
Camas						
Gooding		700		100	500	
Twin Falls	220	900		150	700	
Cassia	105	750		150	700	
Jerome	395	855		100	700	
Blaine		200				
Lincoln		800		127	700	
Butte	150	500		105	400	
Minidoka	105	750		210	700	
Lemhi		500			400	
Custer		500			400	
Clark						
Fremont	60	500		65	400	
Madison	60	500		65	400	
Teton						
Jefferson	90	500		60	400	
Bonneville	90	500	1,845	60	500	2,350
Bingham	75	600		70	600	
Bannock	65	600		70	600	
Power	90	500		60	400	
Oneida	75	500	2,000	70	500	1,500
Caribou	60	500		70	300	
Franklin	75	800	500	70	600	1,500
Bear Lake	65	500		45		1,000
Loss Eagle Pens		500			663	
TOTALS	2,385	18,745	4,345	2,447	14,479	7,350

Pheasants

Total Young Birds Released	1945—18,245	1946—13,811
Total Brood Stock Released	1945— 2,385	1946— 2,447
Brood Stock Held at Farm	1945— 2,560	1946— 2,250
Birds to be Planted		1946— 300
Total Day-Old Birds Released to Clubs	1945— 4,345	1946— 7,350

Chukars:

Total Young Birds Released	1945— 127	1946— 543
Brood Stock Held at Farm	1945— 75	1946— 50
Birds to be Planted		1946— 150
Plantings:		
Blaine	1945— 127	1946—
Bannock	1945—	1946— 100
Owyhee	1945—	1946— 125
Cassia	1945—	1946— 29

Hatching Operations

	1945	1946
Eggs Set	45,964	47,048
Infertile	7,583	5,833
Broken	129	240
Dead in Shell	1,705	6,650
Cull Chicks	666	447
Normal Hatch	35,877	33,878

Pheasant Plantings By Counties and Districts

From Lapwai Game Farm

County	1945 Broodstock	1945 Young Birds	1945 Day-Old	1946 Broodstock	1946 Young Birds	1946 Day-Old
Kootenai	84	1,074	500	208	1,357	
Benewah	82	1,070		189	1,270	
Bonner	101	1,190		199	580	
Boundary	85	1,190			2,380	
Shoshone	80	985			250	
Dist. No. 1, general distribution				168		
Nez Perce	0	2,670		142	1,748	2,400
Latah	218	1,550		180	1,324	
Idaho	200	1,110		262	1,400	
Clearwater	0	630		100	500	
Lewis	144	630		65	880	950
Loss, Coeur d'Alene Pens		116			382	
Wilder Boy Scouts						300
TOTALS	944	12,215	500	1,513	12,071	3,650

Pheasants:

Total Young Birds Released	1945—12,099	1946—11,689
Total Brood Stock Released	1945— 944	1946— 1,513
Brood Stock Held at Farm	1945— 1,400	1946— 1,350
Total Day-Old Birds Released to Clubs	1945— 500	1946— 3,650

Chukars:

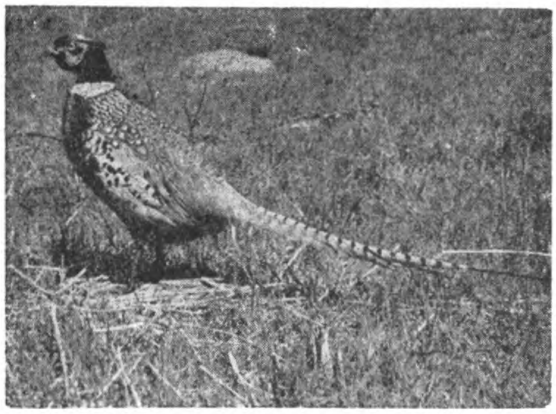
Total Young Birds Released	1945— 100	1946— 165
Brood Stock Held at Farm	1945— 0	1946— 0
Plantings:		
Latah	1945— 100	1946—
Idaho	1945— 32	1946—
Owyhee	1945—	1946— 135

Hatching Operations

Eggs Set	32,760	30,240
Infertile	4,391	3,740
Dead in Shell	3,946	3,866
Normal Hatch	24,423	22,634

Summary of Pheasant Releases

Game Farm	1945			1946		
	Broodstock	Young Birds	Day-Old	Broodstock	Young Birds	Day-Old
Lapwai	994	12,099	500	1,513	11,689	3,650
Jerome	2,385	18,245	4,350	2,447	13,811	7,350
TOTALS	3,379	30,344	4,850	3,960	25,500	11,000



BIG GAME

During the biennium, Idaho's hunters had a liberal variety of big game. They could take deer, elk, goat, bear, and limited numbers of antelope, bighorn sheep, and moose. Percentages of successful hunters have run high, due primarily to early fall rains that softened the ground and made hunting conditions ideal, and to a large extent, caused deer to drift into upper winter range areas earlier in the season than is true of dry years.

Many of Idaho's deer herds were at or near their present maximum capacity which is limited by winter range. Some of these areas were the South and Middle Forks of the Payette, the North, Middle, and South Forks of the Boise, the Middle Fork of the Salmon river, the main Salmon below the community of North Fork, the Minidoka forest, and areas in Clearwater drainage and Boundary county. It was generally recognized that hunting pressure would increase and that little fear need be expressed concerning an under-harvest of game in these areas except possibly the Middle fork of the Salmon river. Consequently hunting seasons remained very much as in past years. However, discussions were held among department personnel and land administrators in regard to better distribution of hunters, and more intensive salting in north Idaho to induce game to leave winter ranges at the earliest possible date. Range studies were continued.

The fall of 1945 saw the largest game kill that Idaho had experienced up to that time. The kill in 1946 was approximately 20 percent larger than that of 1945. Hunters were more numerous than ever. Non-resident hunters increased 100 percent. In 1945 there were 422. In 1946 there were 824. Since the creation of the department, Idaho's big game had increased until, in some areas, the game numbers were in excess of winter range capacity. As with all good things, our big game is limited and expendable. The nation has had the greatest sales publicity program for hunting that so far has been experienced. Resorts, dude ranches, airlines, railroads, sporting arms manufacturers, sporting magazines, and many other concerns have used game popularity as an aid in their advertising. Game and fish are definite attractions meriting public enthusiasm, but it is time to give some thought to how long we can meet this increasing demand.

Airplane Use

Discriminating use of airplanes for removal of game from mountains near state and forest landing fields in remote areas has been desirable. However in 1946, we suddenly experienced a large increase in plane use. Especially was this true of private planes. Planes fly to remote areas from out of state, obtain game and fly out without ever stopping in Idaho except to land and hunt in those areas. Local planes fly in and out with little likelihood of being checked by game

department personnel. It is desired that we have regulations protecting game from this uncontrolled hunting.

That the game department become air-minded and secure planes for patrol is necessary in the near future, but this measure will accomplish little without progressive regulations. Airplane use by the department has increased for salt distribution, game studies, management of herds, and enforcement patrol.

Law Recommendations

Pressure has slowly been built up by packers and guides, hunters, and the game department, to obtain a satisfactory means of accommodating the various parties concerned. Means of obtaining regulations that will protect the packer or guide are being sought.

Many of the state game preserves have served the purpose of their creation by increasing deer and elk so well that in many cases the game is in danger of eating itself out of a provident home. It is now desired to open many of these preserves to general hunting and remove the closure regulations as required in the statutes. New preserves are being created by the commission in overhunted areas, but are left flexible for proper game management.

The individual cost of the various game licenses should be increased to meet the ever-increasing demand and cost of expanding projects.

Hunter Kill

	Deer	Elk	Antelope	Goat	Bear	Bighorns	Moose
1945	21,268	4,392	605	59	150	....	....
1946	26,936	5,435	0	125	233	13	26
Totals	48,204	9,827	605	184	383	13	26

Removal By Game Department Districts
Season of 1945

District	Deer	Elk	Antelope	Goat	Bear	Bighorns	Moose
1	3,045	35					
2	1,749	3,385		23	45		
3	6,964	466		6	41		
4	6,417	275	562	30	16		
5	3,093	231	43		3		

Bear taken by the Fish and Wildlife Service, calendar year 1945, 62.

Season of 1946

District	Deer	Elk	Antelope	Goat	Bear	Bighorns	Moose
1	3,219	207		0	62	0	0
2	2,800	4,386		73	99	0	0
3	9,277	379		19	57	9	0
4	7,520	280		33	14	4	0
5	4,120	193		0	1	0	26

Increased kills were general throughout the state, but principal increases noted were the elk taken from the Selway-Locksa and the deer kill on the Boise River drainages. In past years hunting pressure had advanced to the point where in many areas, the department had to restort to special hunts as a means of control to maintain the game herds. In these areas the herds fared well. Proper removals were made and percentages of successful hunters usually ran higher than in other parts of the state. The main reasons for higher percentage are that these areas are generally open with small escape refuges for the game and are easily accessible to automotive travel. In areas of the state open during the regular season, it is believed that little or no damage was done to the herds as many areas were at maximum numbers for available winter forage. However, a continued large harvest would probably tend to decrease the herds.

Studies of range and game animals have been and are being conducted over all areas of the state. Extensive studies have been conducted on the Fremont moose herd, Pocatello elk herd, Payette river deer herd, and the Minidoka deer herd. Other similar projects are proposed for 1947.

Payette Deer Herd

The year 1945 brought the first special deer hunt on the Payette Game Preserve since its creation. In 1946, it was opened to general hunting for deer. Control measures were taken to assure only proper removal by designating a definite number to be removed and closing the area when this number was obtained. This procedure has resulted in more efficient management and a sustained yield that was unlikely under past practices.

The Payette range is still in a unfavorable condition as it experienced two severe winters in close succession resulting in full utilization of forage plants. It is believed progress has been made in the management of this herd and we hope to see gradual improvement of the range within the next few years.

Pocatello Elk Range

The Pocatello unit has shown a general improvement over conditions observed a few years ago. The improvement has been obtained mostly by proper placement of salt and removal of excess game. In the summer of 1946, a mature bull elk hunt was held here. Due to heavy plant foliage and good escape areas for the game, a more limited removal was obtained than had been expected. Sixty-eight head were killed. This type of hunt was conducted to remove the old bulls to correct malformations which were developing in this highly inbred herd. Some of these malformations were club feet, deformed heads, and bulls without antlers. Forty bull elk calves were introduced from the Jackson, Wyoming herd in the early part of 1946. These calves were to replace the old bulls. It is anticipated that a larger removal of elk will be allowed in 1947 than has been permitted in past years.

Fremont Herds

Using data obtained from the herd studies of this area, it was determined that a limited number of bull moose could be annually removed and still obtain a slight increase of overall numbers. During 1946, a harvest of moose was permitted in Idaho, the first for many years. Thirty permits were issued at public drawing. Twenty-six bulls were shot. Eighty-six and six tenths percent of the hunters were successful. This high percentage of successful hunters was anticipated by the department as the kill percentage of moose in adjacent areas of Wyoming has always been high.

Moose in Idaho are not restricted to the Fremont area, but are also found dispersed over much of the area north of the Salmon river. Here the moose had been reduced to such a low number that their recovery has been very slow. However, reports of moose being seen in new areas of these districts would seem to indicate an increase of moose for north Idaho.

Antelope

From information obtained on an antelope count in the spring of 1946, it was determined to suspend a special hunt until a more detailed survey can be made. Numbers counted were below desired figures for antelope in the state. It is hoped that live-trapping operations will be re-established with antelope so that all areas of the state will have suitable numbers in habitable terrain.

Bighorn Mountain Sheep

In 1940, it was decided to conduct a bighorn sheep survey in Idaho, and to further the causes of the survey, the hunting of this splendid animal was suspended. Much valuable information was obtained on this study. In 1946, it was decided to allow a limited hunting of rams again in Idaho. Hunting was allowed only in the

more concentrated areas of the bighorn terrain. Thirteen rams were killed by 35 hunters who held permits.

Mountain Goat

The hunting season for the mountain goat in 1946 saw the largest take since the introduction of the $10 fee for a goat tag in 1943. Many of the outlying, endangered mountain goat herds were protected in the 1946 season. It is hoped that increased hunting will not further reduce this limited game animal. It is to be regretted that Idaho allows the hunting of mountain goat solely as a trophy animal, for those who maintain the belief that the flesh of mountain goat is not palatable are in error. Each year, good meat that could serve better purposes is left for a royal feast to the eagles and coyotes. This is also true of the black bear. At present, many bear are shot merely for the thrill. In some cases, the killer does not even bother to salvage the hide. If we are to be privileged with the presence of this animal in south Idaho in coming years further regulations will be required.

Soldier Mountain

Under present management practices in the Soldier Mountain area in Camas and Elmore counties, it is believed that an ample annual harvest is being removed to assure maintenance of winter forage. A few years ago the herd had outgrown its winter forage production and difficulties were encountered in opening this game preserve to hunting. Because of these obstructions, the winter forage potential was reduced by over-grazing. This condition is now being corrected. There was general season on deer and a special hunt for elk.

Selway-Lochsa

Spotted areas where browse has been completely used have been showing for some years in this great game area of north central Idaho. Much of this area was burned in 1910 and 1924. Reproduction of plants was primarily browse type and made ideal game forage. However in the area burned during 1910, some of this browse is dying out. Causes are believed to be varied. Some of these reasons are that the life cycle of the browse is completed, over-use, and shading out by reproduction of evergreen trees. Projects have been proposed in co-operation with land administrators to conduct experiments in how to conserve and reproduce more browse on these areas. The hunters' harvest of elk this biennium has been the largest in the history of this area. About 3000 were killed in 1945 and more than 4300 in 1946.

Middle Fork of Salmon River

Deer have for many years concentrated each winter along a portion of the Middle Fork of Salmon river in a remote region.

Feed has become scarce due to over-use. Because deer became too numerous for their winter range a special season was arranged during which two deer could be shot by each hunter. After several years the herd was decreased but still remains a problem. The last two-deer hunt was conducted in 1945. Less than 300 deer were killed. In 1946 there was no two-deer hunt, but an extended season was specified. It continued until the end of November. Kill was less than in 1945. Few hunters took part.

Game Salting

In 1945, 165 tons of salt were purchased by the department, of which 17½ tons were distributed by plane and 10 tons by the department pack string. In 1946, 235 tons were purchased, of which 21½ tons were distributed by plane and 10 tons placed by department pack string. The remaining salt was distributed by the forest service which has been liberal in its assistance and has rendered valuable co-operation. Plane saltings were made over the Kaniksu, Coeur d'Alene, Lolo, Nez Perce, Bitterroot, Challis, Salmon, and Caribou National Forests. Distribution by plane is successful in the proper placement of salt for game use and it is proposed to increase this means of distribution, especially in north Idaho where it is difficult to move pack stock except along well-maintained trails.

Recent studies have shown that salt requirements vary a good deal with the amount of annual rainfall and evaporation of ground moisture. Because of this, the salt allotments are likely to be increased in the southern part of the state.

Game feeding was conducted in late winter and early spring of 1946 because of game concentration caused by unusually heavy snow fall. The areas were mostly on the South Fork of the Payette, the Middle and South Forks of the Boise, and the Soldier Mountain area; also on Warm Springs Creek near Ketchum, and in Bear Lake county. The emergency feeding is believed to have saved some deer and elk. It is certain that continued feeding year after year would be more detrimental to the herds than to hold the game numbers at the capacity of their winter forage.

Storage barns for emergency feed have been constructed and supplied in preparation for the winter of 1946-1947. Several Quonset huts were purchased, moved, and placed on foundations in the heart of game country where feeding may become necessary. Hay and concentrates are stored for that emergency.

Transplanting of Game

In cooperation with federal wildlife restoration men, the department trapped 152 antelope from the Challis area in January of 1946. Approximately 80 antelope were released in the vicinity of Holbrook and 72 in Twin Falls county, 45 miles southwest of Twin Falls.

Reports come to the department frequently concerning their condition. From all indications, the antelope have stayed in the vicinity where released and are doing well.

In 1945, 19 head of elk causing depredations were trapped from the Pocatello herd and moved to Owyhee county. A Pittman-Robertson project was then set up and 56 elk obtained from the Yellowstone elk herd and 49 secured from the State of Wyoming at Jackson, were released in Owyhee county. Some of these elk were released on Poison Creek as heavy snows on the summit prevented truck travel to a more remote area. Part of this herd is causing depredation in the Grandview area. The department is attempting to trap and remove elk from this vicinity.

Forty head of bull elk calves were obtained early in 1946 from the state of Wyoming and released with the Pocatello herd on Mink creek. One hundred seventy-two mule deer were trapped from the Boise river feed yard in 1946 and released in Owyhee county in the Murphy vicinity. At present, Owyhee county can support a much larger deer herd than it now carries. Consequently, the plants are made in that county. The deer season was closed in Owyhee county in 1946. We hope that Owyhee county will be able to carry a good part of the southwest hunting pressure in a few years. Game reports show that the planted animals are doing well, with good reproduction.

It is probable that continued deer trapping operations on the Payette and Boise rivers will be conducted if snow conditions permit. The deer are to be released in adjacent areas which have ample winter forage for more game than they now carry.

FUR-BEARING ANIMALS

Realizing that wild fur is among the important natural resources of the state, the fish and game department is giving more and more attention to that field. A fur supervisor was appointed early in 1946. John W. Smith, a member of the department for many years and chief conservation officer for the southwestern district, was assigned to the work. The new civil service program contemplates the hiring of one fur biologist and one fur biologist assistant. They will make studies of fur bearers in various parts of the state with the purpose of maintaining and improving the stock, and, if possible, developing better fur.

Attention will be given to environment, predators, and trapping seasons so that the fur crop may continue to be a valuable asset and a source of livelihood to thousands of persons.

During the trapping season of 1945-46 there were 1713 licensed trappers in Idaho. All but 18 were residents. Seventy-five per cent of these trappers filed annual reports giving the number of pelts and the prices received.

These figures from 1222 trappers show revenue of more than a quarter-million dollars from muskrat, mink, fox, otter and raccoon. In view of the fact that more trappers are in the field this winter and that marten may be trapped in several areas the value of the 1946-47 fur crop is likely to be much greater.

On the basis of actual reports, Idaho trappers in 1945-46 caught 119,940 muskrat which sold for $227,279; 2157 mink, sold for $44,687; 21 otter, sold for $393.50; 24 fox sold, for $136; and 204 raccoon, sold for $561. Total price for 122,325 skins was $273,058.

Beaver

Since 1928 when the first beaver were livetrapped from complaint areas and released in areas where they are desirable beaver have made rapid strides in establishing themselves as a valuable fur resource.

Beaver livetrapping and transplanting was carried on in 1945 by hired trappers, and in 1946 by Class B or beaver-caretaker trappers. During this biennium beaver were moved from areas of complaint near farm lands, canals, ditches and creek areas and released at the heads of streams where their endeavors would benefit both soil and water conservation and by propagation build the fur resource to greater value. Beaver are increasing under this program.

The 1941 session of the Idaho Legislature passed a bill providing for the protection of beaver. Under this act, two classes of beaver trapper or caretaker permits are granted by the state fish and game

department. Class A permits are granted to farmers and land owners to trap and pelt troublesome beaver or take out beaver from their lands should they become too numerous for the feed available. Upon application by the farmers or landowners their farms are inspected by the local conservation officer who may recommend that a permit be issued stating upon the permit the number of beaver to be pelted. This in turn is brought before the Idaho state fish and game commission which authorizes the director to issue the permit. These permitees were paid 66 2/3 per cent of the revenue derived from the sale of the fur until October 1, 1945. Since that date they have been paid 60 per cent.

Until October 1, 1945, Class B or caretaker permits were granted to local trappers or trappers from the district in which the allotment was granted. Trappers for these allotments were selected by drawings. These drawings for caretaker allotments were held each year. The local conservation officers set up the boundaries of the allotments and the number of beaver to be pelted. These beaver were taken from complaint areas or where they were too numerous for the feed available. The trapper received 50 per cent of the receipts from the pelts.

A new system of caretaker trapper allotments was started October 1, 1945. The state was mapped out in beaver allotments. These allotments were set up on a permanent basis and each is large enough that the trapper can pelt sufficient beaver to pay him to devote most of his time the entire year to trap all complaint beaver and beaver on streams where they are too numerous, stock streams in his allotment where conditions and food are favorable to increase the beaver population, to patrol his allotment and to protect the beaver thereon.

Each year the conservation officer, in whose district his allotment is, recommends the number of beaver he is to pelt and where they are to be trapped. This recommendation is made to the Idaho fish and game commission which authorizes the director to issue the permit. These beaver are pelted from complaint areas or where they are too numerous for the feed. The trapper receives 60 percent of the revenue derived from the sale of the fur. All caretaker allotments to be granted are advertised in the local paper in the county in which the vacant allotment exists. Upon the request of the trappers they are furnished applications to fill out and must furnish three character references. When the applications are received and references returned to the fish and game department they are filed and graded. The trapper receiving the highest grade is given the vacant allotment.

Class A, or landowner allotments, have the first right and if it is necessary that beaver be removed and the landowner wishes to do so, he is granted a permit even though it is in the area granted to the

caretaker trapper. Permits are given only in areas where damage is apparent and no beaver are removed from headwaters of streams except where a drift to lower land is noticeable, or where mountain roads, logging roads, or trails are being damaged, or where the beaver are too numerous and it is necessary that they be thinned.

All pelts are sold by the department on the Seattle Fur Exchange and both classes of trappers are sent receipts showing the prices received for each individual pelt.

Since 1939 when 720 beaver were pelted, the number of skins has increased each year. In 1944 a total of 7,680 beaver were pelted by 366 Class A and 96 Class B trappers. The total sale value of these pelts was $200,881.00.

During the period from January 1, 1945 to September 30, 1946, 12,880 beaver were pelted by 53 Class B trappers and 391 Class A trappers. The total sale value of these pelts was $469,992.50.

Trappers received $261,949.50, the state received $189,215.36 and sales commission was $18,799.70.

In the fall of 1946, 143 Class A and 62 Class B permits were issued.

PREDATORS

The state legislature passed an act in 1945 amending the laws of 1941 relating to the protection of beaver and other fur bearing animals so as to provide that not less than 20 percent of all funds retained each year by the state fish and game commission out of the proceeds from the sale of beaver fur shall be set aside each year by the director of the fish and game department from the fish and game fund and placed in the game director's predatory animal fund.

The Idaho fish and game commission allocated $35,000 to be used in the control of predators during 1945. Of this amount $21,000 was set aside for the bounty program, and the balance of $14,000 was placed in a fund to hire predator trappers in winter on the critical big game ranges. This amount was divided among the five districts as follows: District No. 1, $3,400.00; District No. 2, $3,800.00; District No. 3, $2,800.00; District No. 4, $2,000.00; and District No. 5, $2,000.00.

In District No. 1 paid-trappers took 268 coyotes and three bobcat lynx; in District No. 2, 120 coyotes and 30 bobcat lynx; in District No. 3, 197 coyotes, nine bobcat lynx and three cougar; in District No. 4, 159 coyotes, four bobcat lynx and six cougar; in District No. 5, 58 coyotes. Total taken through the entire state by salaried trappers was 802 coyotes, 46 bobcat lynx and nine cougar.

The department paid a bounty of $5 for coyote and bobcat lynx

adults, $3 on coyote pups and bobcat lynx kittens. This bounty was in effect from May 1, 1945 until September 30, 1945. A total of $20,661 was expended in the bounty program. The following is a tabulation by counties of coyotes taken throughout the state:

County		County	
Ada	72	Lemhi	43
Adams	44	Lewis	2
Bannock	68	Lincoln	92
Bear Lake	14	Madison	1
Benewah	115	Minidoka	14
Bingham	40	Nez Perce	20
Blaine	117	Oneida	121
Boise	4	Owyhee	1,036
Bonner	186	Payette	29
Bonneville	2	Power	113
Boundary	40	Shoshone	10
Butte	28	Teton	3
Camas	35	Twin Falls	359
Canyon	24	Valley	7
Caribou	129	Washington	176
Cassia	151		
Clark	12	Total coyotes	4,243
Clearwater	78		
Custer	29		
Elmore	350	Coyote adults, 3,492 at $5.00	$17,460
Franklin	10	Coyote pups, 751 at $3.00	2,253
Fremont	23	Bobcat lynx adults, 102 at $5.00	510
Gem	61	Bobcat lynx kittens, 6 at $3.00	18
Gooding	191	Cougar, 14 at $30.00	420
Idaho	191		
Jefferson	7		$20,661
Jerome	51		
Kootenai	89		
Latah	56		

In 1946 the fish and game department paid a bounty of $3 for coyote adults and pups, and bobcat lynx adults and kittens. Effective January 23, 1946, the Idaho state fish and game commission raised the bounty on cougar from $30 to $50. For the 1946-47 season $40,000 was allocated to be expended in the predatory animal control program. Of this amount $22,000 was for payment of bounty from April 15, 1946 until November 15, 1946, or until such time as the $22,000 was expended. The balance of $18,000 was to hire predator trappers for the big game ranges. This amount was divided among the five districts as follows: District No. 1, $4,500; District No. 2, $4,500; District No. 3, $3,000; District No. 4, $3,000; and District No. 5, $3,000.

From April 15, 1946 until November 4, 1946, a total of $23,583 was expended on bounties. These predators were taken by counties as follows:

County		County	
Ada	152	Lemhi	157
Adams	124	Lincoln	98
Bannock	11	Minidoka	101
Bear Lake	24	Nez Perce	14
Benewah	40	Oneida	53
Bingham	43	Owyhee	1,929
Blaine	429	Payette	97
Boise	160	Power	254
Bonner	102	Shoshone	7
Bonneville	6	Teton	4
Boundary	43	Twin Falls	473
Butte	99	Valley	26
Camas	262	Washington	195
Canyon	139		
Caribou	240	Total coyotes	7,293
Cassia	398		
Clearwater	45		
Custer	118	Coyote adults, 5,432 at $3.00	$16,296
Elmore	431	Coyote pups, 1,861 at $3.00	5,583
Franklin	9	Bobcat lynx adults, 165 at $3.00	495
Fremont	50	Bobcat lynx kittens, 3 at $3.00	9
Gem	78	Cougar, 24 at $50	1,200
Gooding	501		
Idaho	191		$23,583
Jefferson	14		
Jerome	104		
Kootenai	44		
Latah	28		

Bounty on cougar, which had been $15 for a number of years, was twice increased during the biennium. First it was boosted to $30 and later to $50, which is still the prevailing figure. With this stimulation and the addition of some special cash prizes by individuals, the destruction of cougar was greatly increased. From January 1, 1945 until June 30, 1946, the report shows 117 skulls were presented for bounty. Nine more were taken by predator trappers. No bounty was paid on these animals. Many of the cougar are not accounted for on the bounty tabulation above because they were killed in months during which no bounty was paid on coyotes or wildcats.

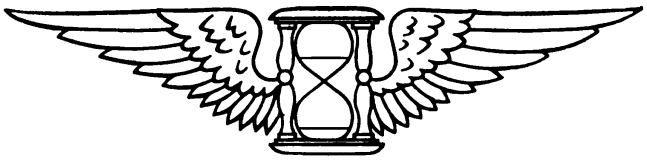
Predator Birds

Bounty of five cents a head was paid on magpies during part of 1945. In 1946 the bounty was 10 cents during January and February

and five cents each from that time until October 15. Higher price was paid in the late winter months in order to remove as many of the destructive birds as possible before their nesting season.

Figures on payment of magpie bounty during the period January 1, 1945 to June 30, 1946 are as follows: A total of 110,701 heads were bountied at a cost of $5,778.05. During 1945 the department paid bounty on 68,340 heads, and during six months of 1946 paid bounty on 42,631 heards.

Sportsmen's clubs in many parts of the state conducted magpie campaigns. Traps were used extensively. Following the regular practice, sportsmen paid the bounty to individuals presenting heads. The clubs then were reimbursed by the department on presentation of vouchers.



CONSTRUCTION AND IMPROVEMENTS

Because of extreme shortage of both building material and labor, activities of the department in the construction field were necessarily greatly curtailed. Only work that was considered essential was undertaken.

A major project was the building of a new fish hatchery on Whisky creek in Bannock county. Several other installations and improvements were made in the fisheries division. In the short supply of available materials there was more at hand for fish structures than other types of game department construction.

The various developments during the biennium are listed below under individual locations:

SOUTHEASTERN DIVISION

Ashton Hatchery

In the latter part of 1946 800 feet of ditch was dug in which it is the intention to install perforated pipe to pick up additional water for the east raceways, and 600 feet of drainage ditch dug to by-pass the hatchery reservoir with the waste irrigation water from the farms above.

It is also the intention to extend the hatchery building 12 feet in length to enlarge the cold storage capacity and give room for fuel storage and egg-picking operations.

Coffee Pot Spawning Station

In September 1945 the commission decided to replace the temporary wooden trap at this Fremont county station with a permanent structure and entered into a contract with Jack C. Olson of Lorenzo to erect a reinforced concrete trap across the North Fork of Snake River about two and one-half miles below Mack's Inn, also to finish and erect a house over the holding pens. This work was completed in July 1946, after considerable delay due to inability to get lumber, at a cost of $8,142.98.

Henry's Lake Hatchery

In October and November 1945 a state force account crew erected a reinforced concrete fish lader on Hatchery Creek 160 feet long, 4 feet wide and two and one-half feet high, also concrete holding pens 27 feet by 20 feet by 4 feet deep and a concrete trough to return the spawned fish to the lake to keep them from mixing with the unspawned fish. The work cost $3,083.12.

During September, October and part of November 1946, Department force account crew of three men replaced the wooden discharge

box on the dirt rearing pond with a reinforced concrete structure, repaired and housed the spring structure, extended the spawned-fish trough 36 feet, replaced the pipe line from spring to hatchery, installed an independent pipe line from spring to residence, and erected a house over the 20x27 foot holding pens to give badly needed protection to men when spawning the fish and also to prevent poaching of fish in the trap.

American Falls Hatchery

The work at this station consisted of replacing the wooden hatching troughs with 10 reinforced concrete vats 15 feet by 3 feet by two feet 4 inches high, replacing the wooden supply troughs with concrete troughs, installed a concrete box so that muskrats could be screened out of the supply line to outside raceways, and replacing the badly broken floor of cold storage grinding room with a new concrete floor. This work cost $2,524.34.

The contemplated work for this station in the near future is as follows:

Erection of a 20 foot by 50 foot Quonset type steel Navy ammunition hut to be used as a slaughter house and storage for fish food.

Replace the wooden irrigation pipe with 4-inch spiral welded steel pipe.

Replace the 8-inch wooden pipe that supplies the round rearing ponds with 8-inch spiral welded steel pipe.

These wooden pipes were originally installed in the old town of American Falls and later installed at the hatchery and are in bad shape.

Erect a reinforced concrete tank in the hatchery supply line 10 feet by 30 feet by 8 feet to act as a combined settling and surge tank to help eliminate the gas and fine silt that bother the egg hatching.

Thousand Springs or Hagerman Refuge

The earth dikes and concrete outlet structures on the 12 bass ponds were raised two feet and two new trout ponds were constructed complete with concrete outlet structures, 24-inch wood supply line and concrete head gate. These ponds are 126 feet by 400 feet by 4 feet deep with outlet structures high enough to permit another 4-foot raise on the dikes.

In addition to the above the following developments have been made:

Installation of a hydraulic ram, pipe line and concrete cistern for domestic water supply system for both hatchery and farm

residences. Installation of building and equipment for a cold storage unit. This work cost $25,889.38.

All buildings at both hatchery and refuge were painted in 1946. Tentative plans have been drawn to erect a hatchery building and raceways to utilize the ample water supply at this location as soon as the necessary materials are available.

Hayspur Hatchery

Only a small amount of maintenance work has been attempted at this station but a small force account crew is now replacing the wooden hatching troughs and supply system with 10 concrete vats and concrete supply troughs. It is also planned to raise the spring house, clean out the ditch from Loving Creek, work the brood stock ponds so that more brood stock can be handled at this station, and if easements can be secured, to construct a roadway to the oiled highway.

Mackay Hatchery

To make sure of its water rights for proposed developments to increase hatchery production, the department purchased, for $7000, a ranch adjoining hatchery property. The ranch has 155 miners' inches of decreed water.

As the concrete on the east wall of the hatchery was failing, 40 feet of the wall was replaced. The wooden hatching troughs and wooden supply troughs were replaced with two concrete supply troughs and eight concrete vats. This work cost $2914. The contemplated development at this station is building of additional raceways, enlarging the residence and construction of a larger superintendent's residence, and landscaping the grounds.

Twin Falls Hatchery

Development at this station was graveling the road, improving the grounds, and painting the buildings.

Whisky Creek Hatchery

This fish hatchery, about eight miles south of Grace in Bannock county, is the newest addition to the state's trout-raising facilities. In October, 1945, the Commission entered into a contract with A. D. Stanley of Boise to furnish materials and construct a hatchery building 54 by 38 feet; a residence 24 by 33 feet; garage with extra room; two concrete raceways, seven by 126 feet, spring diversion structure, surge tank, and cattle guard. Work was completed in July and the hatchery was used during the latter part of the 1946 season.

It is the intention, when labor and materials are more plentiful, to landscape the grounds, construct additional rearing ponds or race-

ways, fence the property, and possibly build an assistant's residence.

Hagerman Refuge

General maintenance and painting of the buildings was done and it is planned in the near future to erect a 20 foot by 50 foot Quonset type hut for a district warehouse and tentative plans have been submitted for a centralized hatching and incubation unit for game birds at this location.

Jerome Game Farm

Three additional covered-top pens in an area of 470 by 160 feet, were built. Wooden box in irrigation system was replaced with 100 feet of concrete pipe. All buildings were painted.

Winter Feed Storage For Deer and Elk

During the fall of 1946 the department erected steel Quonset type huts at the several locations for the storage of hay and cubes for supplemental feed for deer and elk. These buildings are all erected on low concrete walls with concrete floors, are moisture and rat proof and are at the following locations: Little Smoky, Lick Creek, Paradise Creek, Jumbo Creek, Featherville, More's Creek, Lambing Creek, Pine Flats and Gallagher.

It is the intention to erect a district warehouse of the steel Quonset type in District 5 when a suitable location is obtained and also to paint all department buildings when good paint is again available and weather permits.

NORTHWESTERN DIVISION

Clarksfork Hatchery

New rearing ponds have been added to this hatchery and this construction has made possible an increase of 100% in the output of fingerlings.

The log-crib dam, above the hatchery, has been safe-guarded by installation of a spillway adequate to handle excessive flood waters.

Sandpoint Hatchery

A previous contract to furnish domestic water to the Art Murphy cabin has been completed by installation of a pipe line from the hatchery supply line.

Granite Creek Trap

The flood water damage to this structure has been efficiently repaired.

Fernwood Rearing Ponds

Repairs have been made on road leading to this station. The cold storage unit has been moved to the ponds for convenient operation.

Boyd Creek Hatchery

Repair has been done on the siphon across Selway river.

Lapwai Bird Farm

Repair work has been done on pens and brooder house, and several new pens added. A new well has been drilled to insure a constant water supply and a sprinkler system installed in bird pens. Some repair work is being done on assistant superintendent's residence.

Lapwai Ponds

Excavation of rearing ponds has been completed and diversion dam and pipe line installed.

Grangeville Hatchery

The pipe line to bring additional water from springs has been completed.

McCall Hatchery

Work has been completed on contract let for construction of additional rearing ponds and garage.

Evergreen Hatchery

Bids on the construction of new hatchery, rearing ponds, residence and garage were rejected by the commission. Bids were considered too high.

Eagle Hatchery

A new 16-inch well has been drilled and the water supply materially increased. The killing house has been enlarged and equipped to handle the work in a more satisfactory manner. Repair work has been done to prevent flood water damage from Boise River.

General

All buildings at hatcheries, bird farms, and fish-traps in this division, together with buildings at Hagerman, Twin Falls, and Jerome have been painted.

Two D-4 cats and dozers, two 2½-ton International trucks, four snowmobiles, and six 1½-ton trucks have been purchased from surplus U. S. equipment.

The department purchased a sufficient number of Quonset huts to provide a warehouse in each district and adequate buildings for storage of winter feed to big game in isolated areas.

WILDLIFE RESTORATION

Congress passed the Pittman-Robertson act in 1937, providing for federal aid to the states in wildlife restoration. Under the terms of this act, congress appropriates annually the revenue from the 10 per cent excise tax on arms and ammunition. Each state participating is required to match such federal funds in an amount of 25 per cent. The Idaho state legislature passed in 1939 an enabling act authorizing the fish and game department to participate in this program. Idaho has since been taking part.

Area, License Basis

Federal funds are distributed on the basis of the relative land areas of the state as compared to the total land area of the United States and the total number of fishing and hunting licenses sold by the state as compared to the total number of licenses sold throughout the United States. These funds must be used by the state within two years from the beginning of the federal fiscal year in which allocations were made. Any unobligated balances remaining at the end of the two-year period revert to the United States Fish and Wildlife Service for use in administering the migratory bird conservation program.

Funds may be spent for the restoration of native game species, which may include general surveys of game conditions, research projects, acquisition and development of lands. None of these funds can be expended in the state's fisheries program.

Federal funds allocated to the Idaho department from 1938 to and including the 1946 fiscal year amounted to $273,415.10. With the addition of 25% state matching money, or $91,138.36, there was made available for wildlife restoration purposes, $364,553.46.

The fish and game commission placed this division under civil service in 1940 and appointments were made from the register. At the present time a supervisor and secretary are employed. The supervisor receives a full time salary and the secretary is paid half-time in carrying forward projects accepted under the act. During 1945 half-time pay was received by both supervisor and secretary from this fund and half-time from the fish and game department. The supervisor of Federal Aid; in addition to Wildlife Restoration work, supervised construction, purchase of land and the state's beaver program.

Work has been carried on in many lines. It has consisted of securing information on game birds, big game and fur bearers. Environmental conditions have been improved by the purchase of winter range lands for big game, nesting areas for game birds as well as migratory birds, fencing to exclude stock, and planting of food plants, shrubs, and trees. Buildings on lands purchased were reconstructed and improved to be used as headquarters by men

employed by the fish and game department. Beaver, pheasants, antelope, deer and elk were livetrapped and transplanted. The elk were secured at Yellowstone Park and shipped to Murphy in Owyhee County. Antelope were trapped near Challis, Idaho, and two large plants were made—one near Malad and the second near Three Creek south of Twin Falls. Deer were removed from a congested winter range near the Arrowrock dam and planted south of Snake River.

Game Range Obtained

Idaho has an abundance of summer range, as have most other states, but lacks winter range for all types of big game. We have endeavored during this biennium and previous years to add to the winter range.

In Benewah County near St. Maries a winter deer area was established. We purchased 4,847 acres and 1,280 acres were leased from the state. We still claim ownership of these lands, as well as lease and have added during the present year by purchase of an additional 1,468 acres.

In Boise County between the Boise River and Mores Creek 2,546 acres of land were purchased and in 1944, 520 acres were leased from the state as a deer and elk winter range. This area was given protection during 1945 and 1946 by the construction of a fence consisting of five barb wires on steel posts to exclude livestock. Hay raised on the property is sufficient to care for emergency feeding on both the Boise and Payette drainages.

Migratory Refuge Completed

The Boundary County Refuge in North Idaho was completed during 1946. This refuge consisting of 801 acres was purchased in 1942 and is now being used by ducks, geese, swan and other migrants as well as by pheasants and deer.

The dam impounds a lake of approximately 380 acres. Improvements recently completed consist of a modern dwelling, garage, deep well and pump house, hay shed, etc. Sufficient hay is harvested to more than care for state-owned stock and emergency feeding and sufficient grain is raised and stored for the emergency feeding of pheasants and migratory birds.

Clearwater Bird Refuge

In Idaho County near Stites, 160 acres of land was purchased in 1941 as a refuge, and nesting area for pheasants and upland game birds. Fence materials are again available and at the present time the area is being fenced to eliminate livestock. Grain and food shrubs will be planted for winter use by birds.

Beaver Transplanting and Pelting

This was inaugurated as a Pittman-Robertson wildlife restoration

livetraping and transplanting project in 1939 and carried as such for three years. During this time approximately 6,200 beaver were livetrapped from complaint areas on farms, canals, ditches and from lower creek areas and transplanted to the headwaters of streams where their endeavors would aid in both soil and water conservation and have better chance for propagation.

In 1941 the Idaho state legislature passed a bill providing for the protection of beaver and set up under the act various classes of trappers or caretakers and the percentage or commissions to be paid by the department for services. Under this act trappers were paid various percentages. At the present time they receive 60% of the revenue derived from the sale of pelts. From 1939 until October of 1945 at which time a special supervisor was employed and placed in charge of the state's fur resources, 31,969 beaver were pelted and shipped to the Seattle Fur Exchange for sale at public auction.

New and Approved Projects

In June of this year a project was submitted for a pheasant survey in all counties of the state. Two men were employed as leaders and work was started in July. One man was placed in charge of the 10 northern counties and the other in charge of the balance of the state.

We hope, under this project or study, to secure a factual basis for pheasant management by evaluating the following:

a. Size of inviolate refuges, as to acreage; b. Location in regards to water, farm areas, etc.; c. Food and cover preference; d. Affect of predators—kinds; e. Survival of self-propagated birds and hatchery planted; f. Reproduction from both types; g. Dispersal distances; h. Size of plantings required for rapid increase; i. Affect of climate, elevation, etc.; j. Analysis of food taken; k. Adaptability of breeds; l. Present state population.

A companion project was submitted and received preliminary approval. This project calls for purchase of five 40-acre tracts of land; one in each of the five Commissioner districts. Areas are to be located in farmed districts where water is available, set aside as inviolate sanctuaries, fenced to protect nesting by exclusion of most predators as well as livestock and seeded to cover food shrubs and grain crops. The pheasant survey leaders will then be placed in charge of these areas and their study will determine their feasibility.

This project is to be enlarged and presented from year to year for purchase of additional tracts similar, larger or smaller if research proves them feasible.

Amendment to Law

An amendment to the Federal aid in Wildlife Restoration Act

passed and approved on July 24, 1946, changes the method of appropriating funds and includes maintenance of completed projects as an approvable activity for expenditure of such funds. It makes the following provisions:

No state shall receive less than ½ of one percent, nor more than 5% of the total amount appropriated to all states.

Wildlife restoration shall include maintenance of completed projects but not more than 25% of amount received by a state can be expended for maintenance in any one year. Maintenance may include upkeep and repair of structures acquired or constructed with Federal Aid funds, construction of improvements needed on land purchase projects, replacement of signs and markers, dams, dikes, levees, canals, ditches, fences, replanting of trees, shrubs, vegetation and food plots.

Previous to passage of amendment maintenance funds were furnished by the State.

A state-wide maintenance project is now being prepared, under which 200 acres of grain will be planted next spring on the various state refuges purchased under the wildlife restoration act. From 10 to 40 acres of wheat will be planted on each refuge (fenced for protection where necessary) and left for harvest by birds.

Wildlife Restoration Federal Aid Finances

July 1, 1946—Unallocated balance		$13,945.33
July 1, 1946—Federal Appropriation		48,610.98
September 23, 1946—Federal Appropriation		62.87
TOTAL FEDERAL		$62,619.18
State Matching 25% fund		$20,873.06
Total available for Wildlife Restoration		$83,492.24
Approved projects 10/14/46:		
St. Maries Winter Range	$ 453.00	
St. Maries Winter Range	2,338.82	
TOTAL	$2,791.82	2,791.82
TOTAL UNALLOCATED 11/1/46		$80,700.42
Pending project—preliminary approval:		
Pheasant Refuges		$44,270.00
St. Maries Winter Range		11,730.00
		$56,000.00

NOTE: Above projects, or preliminary projects are not charged against available funds until land purchases have been approved. Purchase of segments may be made within three years from date of acceptance.

LAW ENFORCEMENT

Number of arrests for violation of fish and game laws took a sharp rise in 1945 and 1946. Court cases reflected directly the greater numbers of hunters and fishermen in Idaho.

Although this biennial report is only for 18 months, and figures on fines and confiscations for that period appear in the financial statement on another page, it seems appropriate to present further data on law enforcement so that somewhat of a comparison can be made.

Up to the end of November, 1946 there had been 877 arrests. During the previous comparable period in 1945 there were 549 arrests. In 1944 the total for the entire year was 362 cases. Since that year the annual number of prosecuted violations has more than doubled.

It is the policy of the fish and game department to enforce the law vigorously and impartially. Thorough enforcement, consistent with justice, is one of the foundation stones of good conservation.

EDUCATION DIVISION

"As far as the older generation is concerned it is too late. If conservation is to succeed it will come through education of young people."

That statement, in some form, has frequently been made by old heads of the wildlife field. Its truth is generally recognized but not commonly applied because the program is comparatively new.

While hoping to develop a more effective means of regular emphasis on conservation in schools, the Idaho fish and game department has carried on with its talks and moving pictures.

The information service, consisting of one man, has presented programs to schools, sportsmen's clubs, and various civic organizations. Conservation officers have co-operated to a large extent in this effort.

After several changes were made in fish and game laws by the 1945 legislature, new volumes of the laws were compiled and published. Pamphlets detailing fishing seasons and regulations were published in the spring of each year in the biennium. Similar pamphlets dealing with hunting and trapping were issued in the summer.

News releases giving spot news about commission and department activities were prepared frequently. Newspapers, news services, radio

stations, and sport magazines were of great assistance to the department and to the public in publishing these stories. Many requests from publications out of Idaho were answered. The department also supplied articles and illustrations for sportsmen's periodicals within the state.

The big game map, published every fall, has been widely distributed. Requests for copies have been received from nearly every state and several foreign countries, including The Netherlands, from where a hunter came in 1946 to shoot elk. A notable increase in number of licenses issued was reflected in a steady stream of letters inquiring about seasons and conditions.

Hunting safety was emphasized each fall. The most extensive campaign was conducted in 1946. In addition to news releases and numerous talks by game men and sportsmen, the department distributed a number of large signs with a picture of a deer and the slogan: "Don't Shoot 'Til You're Sure." Thousands of automobile bumper strips were also used.

Shooting fatalities on hunting trips numbered at least 12 in 1945. In 1946, according to incomplete reports the total was seven. Some of the saving may be credited to the safety campaign, which will be continued on a larger scale.

An expedition arranged by the game department for the purpose of obtaining facts about big game in a primitive area rode the Salmon river from Salmon City to Lewiston during the spring of 1946. The trip was the first of its kind for game purposes and added much to the knowledge of an area that has long been popular with many sportsmen and will continue to be visited by hunters and fishermen who regard a trip down the River of No Return among the great thrills of a western vacation. Color movies were taken and a sound film is being prepared.

As 1946 neared an end, several organizations interested in conservation of natural resources joined in an effort to increase conservation education in public schools of Idaho. By co-operation of school officials, the agencies are hopeful that teaching of the basic principles may become part of the approved course of study.

FINANCIAL REPORT

January 1, 1945 to June 30, 1946

The department experienced a record biennium from the standpoint of revenue. Number of licenses sold was greater than ever before. Receipts from other sources also increased. All funds of the fish and game department are derived from sources other than taxes. The department is entirely self-supporting. It receives no money from the general fund.

Increased demand has been placed on department funds by the steadily mounting number of fishermen and hunters. It is necessary to spend more money to keep up with the unprecedented use of wildlife resources. The fact that number of sportsmen has multiplied is shown by the tremendous volume of licenses sold during the 18 months covered by this report. In a period of 10 years the number of licenses has gone up 100 per cent.

Revenue from beaver pelts was larger during 1945 and 1946 than during the previous biennium. Prices have averaged higher because of a rise in the fur market and improvement in handling of Idaho hides. Records show almost $260,000 was paid to beaver trappers during the 18-month period, compared with $180,000 for the previous 24 months.

Royalties on non-game fish show a slight decrease, but will probably be up to the figure of 1943 and 1944 when totals for the last six months of 1946 are added.

More fines were collected than ever before. Revenue from fines and sale of confiscated gear is a relatively small portion of the total income, however, and makes little appreciable difference in the fund.

Total income for the period has been above expenditures. The department has spent its funds, however, right up to the limits of the budgeted appropriation. The appropriation rather than revenue governs expenditures. There is an increase in surplus of $90,000. Surplus has been accumulated during war years and the immediate postwar period until it has reached nearly $600,000. This is deposited with the state treasurer who has invested a portion of it in war bonds. The commission plans to use this money in judicious development. Under existing conditions major construction is not considered economically sound. Various improvements and new installations will be undertaken as quickly as equipment, materials, and manpower are available at prices within a range that will give the people of the state fair value for their hunting and fishing dollars.

Proposed fish and game work for the next biennium will require all anticipated revenues and the surplus.

IDAHO DEPARTMENT OF FISH AND GAME

DETAIL OF DISBURSEMENTS

January 1, 1945 — June 30, 1946

GAME FUND	1945	1946 Jan. 1-June 30	Total
Salaries	$190,278.36	$113,456.24	$ 303,734.60
Travel	35,564.02	12,684.14	48,248.16
Operating Expense	139,149.16	88,793.22	227,942.38
Capital Outlay	104,226.08	108,470.86	212,696.94
Refunds		143.45	143.45
Less Warrant Cancelled	—33.72		—33.72
Total Game Fund	$469,183.90	$323,547.91	$ 792,731.81
PREDATOR ANIMAL FUND			
Trapper Salaries	$ 7,741.38	$ 8,737.30	$ 16,478.68
Bounties (Predator Animal)	21,003.00	8,720.00	29,723.00
Bounties (Magpies)	2,696.81	3,081.24	5,778.05
Miscellaneous Expenditures	872.15	1,096.20	1,968.35
Total Predator Animal Fund	$ 32,313.34	$ 21,634.74	$ 53,948.08
WILDLIFE RESTORATION FUND			
Claims Paid	$ 21,418.42	$ 13,844.31	$ 35,262.73
BEAVER SUSPENSE FUND			
Claims Paid (Trappers Share)	106,118.76	124,233.92	230,352.68
Total all Funds	$629,034.42	$483,260.88	$1,112,295.30

OPERATION IN FUNDS

	Balance 1/1/45	Receipts Cash	Disbursements Transfers	Disbursements Cash	Transfers	Balance 6/30/46
Fish and Game	$492,780.96	$ 928,582.92	$ 1,000.00	$ 792,731.81	$87,000.00	$542,632.07
Predator Animal	3.42	805.74	66,000.00	53,948.08		12,861.08
Wildlife Restoration	10,279.00	13,378.20	20,000.00	35,262.73		8,394.47
Beaver Suspense	2,312.29	259,697.70		230,352.68		31,657.31
Revolving	1,000.00		1,000.00		1,000.00	1,000.00
	$106,375.67	$1,202,064.56	$88,000.00	$1,112,295.30	$88,000.00	$596,544.93

RECONCILLIATION

State Auditors' Balance	$596,544.93
Fish and Game Department Balance	596,544.93

IDAHO DEPARTMENT OF FISH AND GAME

DETAIL OF DISBURSEMENTS

January 1, 1946 — June 30, 1946

GAME FUND No. 6

Salaries and Wages	$113,456.24
Travel	12,684.14
Other Expense	88,793.22
Capital Outlay	108,470.86
Refunds	143.45
Total Fund No. 6	$323,547.91

PREDATOR ANIMAL FUND No. 60

Trapper Salaries	$8,737.30	
Bounties (Predator Animals)	8,720.00	
Bounties (Magpies)	3,081.24	
Miscellaneous	1,096.20	
Total Fund No. 60		$ 21,634.74

WILDLIFE RESTORATION No. 61

Claims Paid	$ 13,844.31

BEAVER SUSPENSE FUND No. 149

Claims Paid	124,233.92
Total Claims Paid	$483,260.88

OPERATIONS IN FUNDS

January 1, 1946 — June 30, 1946

	Balance 12/31/45	Receipts Cash	Receipts Transfers	Disbursements Cash	Disbursements Transfers	
Fish and Game	$142,615.48	$349,564.50	$400,000.00	$323,547.91	$ 26,000.00	$542,632.07
Predator Animal	9,254.38	241.44	25,000.00	21,634.74		12,861.08
Wildlife Restoration	17,301.08	4,937.70		13,844.31		8,394.47
Beaver Suspense	2,797.00	153,094.23		124,233.92		31,657.31
Bonds	400,000.00				400,000.00	
Revolving			1,000.00			1,000.00
	$571,967.94	$507,837.87	$426,000.00	$483,260.88	$426,000.00	$596,544.93

Financial tables are printed on the following pages.

IDAHO DEPARTMENT OF FISH AND GAME

DETAIL OF CASH RECEIPTS

January 1, 1945 to December 31, 1945

FISH AND GAME FUND

Licenses and Permits	1944 Issue No.	1944 Issue Amount	1945 Issue No.	1945 Issue Amount	Total No.	Total Amount
Resident Hunting and Fishing	9,385	$17,831.50	129,425	$245,907.50	138,810	$263,739.00
Non-Resident Hunting and Fishing	27	1,282.50	384	18,240.00	411	19,522.50
Non-Resident Bird	374	3,553.00	949	9,015.50	1,023	12,568.50
Non-Resident Fish	322	1,529.50	5,837	27,725.75	6,159	29,255.25
Non-Resident 10-Day Fishing	1,063	2,019.70	14,707	27,943.30	15,770	29,963.00
Resident Whitefish	10	19.00			10	19.00
Whitefish Permit	2	20.00	8	80.00	10	100.00
Alien Fish	11	104.50	124	1,178.00	135	1,282.50
Non-Resident Gun	4	7.60	8	15.20	12	22.80
Resident Trapper	480	2,280.00	966	4,588.50	1,446	6,868.50
Non-Resident Trapper	5	118.75	14	332.50	19	451.25
Shipping Permits	701	280.40	995	398.00	1,696	678.40
Deer Tags	10,618	10,087.10	50,863	48,319.85	61,481	58,406.95
Elk Tags	2,528	2,401.60	10,962	10,413.90	13,490	12,815.50
Goat Tags	14	133.00	137	1,301.50	151	1,434.50
Antelope Tags			1,000	950.00	1,000	950.00
Taxidermist License	2	20.00	7	70.00	9	90.00
Private Pond	10	100.00	8	80.00	18	180.00
Resident Fur Buyers	2	10.00	65	325.00	67	335.00
Non-Resident Fur Buyers	1	20.00	9	180.00	10	200.00
Selway Elk Permits	10	10.00			10	10.00
Antelope Permits			1,000	3,000.00	1,000	3,000.00
Minidoka No. 1 Permits			2,500	7,500.00	2,500	7,500.00

Minidoka No. 2 Permits		2,000	6,000.00	2,000	6,000.00
Albion Permits		400	1,200.00	400	1,200.00
Payette Deer Permits		859	2,577.00	859	2,577.00
Pocatello Elk Permits		150	750.00	150	750.00
Archery Permits		30	300.00	30	300.00
Payette Elk Permits		60	300.00	60	300.00
Soldier Mountain Elk Permits		250	1,250.00	250	1,250.00
Boise and Valley County Elk Permits		250	1,250.00	250	1,250.00
Elmore County Elk Permits		200	1,000.00	200	1,000.00
Commission Saved	53.25		572.95		626.20
Total Licenses and Permits	$41,881.40		$422,764.45		$464,645.85
Excise Tax			44.36		44.36
Refunds			425.96		425.96
Miscellaneous Sales			823.13		823.13
Royalty Non-Game Fish			13,244.98		13,244.98
Beaver Pelts		6,604	83,806.33	6,604	83,806.33
Other Furs			569.06		569.06
Fines		532	14,889.75	532	14,889.75
Confiscations		74	569.00	74	569.00
Game Fund Receipts	$41,881.40		$537,137.02		$579,018.42
BEAVER SUSPENSE FUND No. 149 Trappers Share Pelts Sold			106,603.47		106,603.47
GAME WARDENS P.A. FUND No. 60 Predator Pelts Sold			564.30		564.30
WILDLIFE RESTORATION FUND No. 61, Federal Refunds			8,440.50		8,440.50
TOTAL RECEIPTS— 1945	$41,881.40		$652,745.29		$694,626.69

IDAHO DEPARTMENT OF FISH AND GAME

DETAIL OF CASH RECEIPTS

January 1, 1946 to June 30, 1946

FISH AND GAME FUND

Licenses and Permits	1945 Issue No.	1945 Issue Amount	1946 Issue No.	1946 Issue Amount	Total No.	Total Amount
Resident Hunting and Fishing	10,465	$19,883.50	78,721	$149,569.90	89,186	$169,453.40
Non-Resident Hunting and Fishing	38	1,805.00	9	427.50	47	2,232.50
Non-Resident Bird	351	3,334.50	3	28.50	354	3,363.00
Non-Resident Fish	316	1,501.00	5,601	26,604.75	5,917	28,105.75
Non-Resident 10-Day Fish	990	1,881.00	3,416	6,490.40	4,406	8,371.40
Commercial Whitefish	5	50.00	6	60.00	11	110.00
Alien Fishing	16	152.00	40	380.00	56	532.00
Alien Gun			1	4.75	1	4.75
Non-Resident Gun	11	20.90	8	16.20	19	36.10
Resident Trapper	729	3,462.75	310	1,472.50	1,039	4,935.25
Non-Resident Trapper	8	190.00	19	451.25	27	641.25
Shipping Permits	781	312.40	16	6.40	797	318.80
Deer Tags	10,487	9,962.65			10,487	9,962.65
Elk Tags	1,790	1,700.50			1,790	1,700.50
Goat Tags	15	142.50			15	142.50
Taxidermist Licenses			4	40.00	4	40.00
Private Pond			18	180.00	18	180.00
Non-Resident Fur Buyers	5	100.00	2	40.00	7	140.00
Resident Fur Buyers	8	40.00	23	115.00	31	155.00

Commission Saved	57.40		16.00		73.40
Total Licenses and Permits	$44,596.10		$185,902.15		$230,498.25
Miscellaneous Sales			1,551.11		1,551.11
Non-Game Fish			3,043.23		3,043.23
Beaver Sales		6,185	104,086.89	6,185	104,086.89
Other Furs			29.66		29.66
Fines		307	9,642.52	307	9,642.52
Confiscations		69	331.00	69	331.00
Refunds			181.84		181.84
Real Estate Rentals			200.00		200.00
Game Fund Receipts	$44,596.10		$304,968.40		$349,564.50
BEAVER SUSPENSE FUND No. 149					
Trappers Share Pelts Sold			$153,094.23		$153,094.23
GAME WARDEN'S P.A. FUND No. 60					
Predator Pelts Sold			241.44		241.44
WILDLIFE RESTORATION FUND No. 61					
Federal Refunds			4,937.70		4,937.70
Total Receipts	$44,596.10		$463,241.77		$507,837.87
Total Receipts—Biennium					$1,202,064.56

IDAHO DEPARTMENT OF FISH AND GAME

DETAIL OF DISBURSEMENTS

January 1, 1945 — December 31, 1945

GAME FUND No. 6		
Salaries and Wages		$190,278.36
Travel		35,564.02
Other Expense		139,149.16
Capital Outlay		104,226.08
Less Cancelled Warrant		33.72
Total Game Fund		$469,183.90
PREDATOR ANIMAL FUND No. 60		
Salaries (Trapper)	$ 7,741.38	
Bounties (Predatory Animals)	21,003.00	
Bounties (Magpies)	2,696.81	
Miscellaneous Expenditures	872.15	
Total		$ 32,313.34
WILDLIFE RESTORATION (P.R.) FUND No. 61		
Claims Paid		$ 21,418.42
BEAVER SUSPENSE FUND No. 149		
Claims Paid		$106,118.76
Total Claims Paid		$629,034.42

OPERATION IN FUNDS

January 1, 1945 — December 31, 1945

	Balance 12/31/44	Receipts Cash	Receipts Transfers	Disbursements Cash	Disbursements Transfers	
Fish and Game	$ 92,780.96	$579,018.42	$ 1,000.00	$469,183.90	$61,000.00	$142,615.48
Predatory Animal	3.42	564.30	41,000.00	32,313.34		9,254.38
Wildlife Restoration	10,279.00	8,440.50	20,000.00	21,418.42		17,301.08
Beaver Suspense	2,312.29	106,603.47		106,118.76		2,797.00
Revolving	1,000.00				1,000.00	
Totals	$106,375.67	$694,626.69	$62,000.00	$629,034.42	$62,000.00	$171,967.94

RECONCILLIATION

Cash, State Treasury	$171,967.94
U.S. Treasury Bonds	400,000.00
	$571,967.94