

Twenty-Second Biennial Report

FISH and GAME DEPARTMENT

OF THE STATE OF IDAHO



JULY 1, 1946 TO JUNE 30, 1948

T. B. MURRAY

Director

State of Idaho

Department of Fish and Game

The twenty-second biennial report of Fish and Game Department of the State of Idaho is herewith respectfully submitted to his excellency, Governor C. A. Robins, and members of the Senate and House of Representatives of the Idaho legislature.

The report covers the biennium that began July 1, 1946 and ended June 30, 1948, with certain data for the last six months of 1948.

GEORGE MOODY,
Commission Chairman.

T. B. MURRAY,
Department Director.

Wildlife Policy

The policy of the state of Idaho with respect to fish and game is stated as follows in the Idaho Fish and Game Commission Act, passed by the people at general election November 8, 1938:

“All wildlife, including all wild animals, wild birds, and fish, within the state of Idaho, is hereby declared to be the property of the State of Idaho. It shall be preserved, protected, perpetuated and managed. It shall be only captured or taken at such times or places, under such conditions, or by such means, or in such manner, as will preserve, protect, and perpetuate such wildlife, and provide for the citizens of this state, and as by law permitted to others, continued supplies of such wildlife for hunting, fishing, and trapping.

“It shall be the authority, power and duty of said Commission to administer and carry out the policy of the state in accordance with this act.”

Administration

Idaho has the commission form of fish and game management. The commission plan, which is used by a majority of states, places administration of the broad policies involved in preserving and perpetuating wildlife on five men, who are in a sense the board of directors for a function with 200,000 customers and stockholders—the license purchasers of the state—and with an annual budget of more than one million dollars.

Each member of the commission is appointed by the Governor for a term of six years. Not more than three members may be affiliated with the same political party. For the purposes of commission appointments and certain phases of wildlife administration involving geographical boundaries, the state consists of five fish and game districts.

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

District Two comprises Latah, Clearwater, Nez Perce, Lewis, and Idaho counties.

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

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

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

Members of the commission during the biennium under consideration in this report were: A. L. Trada of Coeur d' Alene, chairman in 1946, who was succeeded in 1947 by George Moody of Calder; Walter A. Fiscus of Potlatch who has been a member since the commission was organized in 1938; C. J. Wescott of Boise who was succeeded as secretary in 1947 by R. G. Cole of Boise; Paul Thoman of Twin Falls, appointed in 1944; and Alton R. Howell of Idaho Falls, reappointed for a six year term in 1944 after serving one term beginning in 1938.

During 1946 the commission was organized as follows; A. L. Trada, chairman; C. J. Wescott, secretary; Walter Fiscus, Paul Thoman and Alton R. Howell.

In 1947 Walter Fiscus was chairman. R. G. Cole was secretary. Other members were George Moody, Paul Thoman, and Alton Howell.

Moody was chairman in 1948 and Cole was secretary. Other members were Fiscus, Thoman and Howell.

As the commission operates on a calendar year basis and not a fiscal year as the financial reports of the state must be made, the commission period covered does not correspond to the fiscal report. The commission organizes by electing a chairman and secretary each January.

According to custom of several years, the commission sets fishing seasons and regulations at the January meeting. Big game seasons are determined in April. When conditions make it advisable, as was the case in 1948, upland bird seasons are determined at the July meeting. There is another quarterly meeting in October of each year.

In order to obtain all possible data on wildlife so that state policies for protection and use might be followed, the commission held public hearings prior to the setting of the seasons. At these hearings recommendations were received from groups and individuals interested in some phase of management. When all available facts had been presented the regulations were determined.

The commission sets the course for fish and game activities. Actual administration is in charge of the department, of which the director is the executive officer. The director is appointed by the commission. The fish culturist, who has charge of the fisheries division under supervision of the director, is also appointed by the commission. All other regular employees of the department are selected by the merit system. They must meet certain qualifications and pass competitive examinations.

Late in 1946 the commission took action to affiliate the department with the merit system council of the state of Idaho which includes employees of the department of public health, department of public assistance, unemployment compensation and employment service divisions of the industrial accident board, all of which departments and services have merit plans for employment and compensation.

The fish and game department has 100 employees on the merit system roster.

Two directors served during the biennium. James O. Beck of Mayfield, who was appointed in 1942, resigned in January, 1947. C. G. d'Easum, public relations officer, was appointed acting director until May when T. B. Murray, formerly of the U. S. fish and wildlife service with more than 20 years experience in game activities in Idaho, was selected as director.

The commission conducted all meetings in Boise, with the exception of a meeting at Salmon in August, 1947, and a meeting in July, 1948 that began at Boise and was continued at several points in southern Idaho during a field inspection of department facilities and wildlife habitat.

Three appointments to the commission were made in January, 1949. Terms of Walter A. Fiscus and R. G. Cole had expired. Fiscus was completing his second term and Cole had served two years of the unexpired term of C. J. Wescott who resigned late in 1946. Alton Howell resigned in November, 1948 after being a commission member since 1938. To fill the three places Governor C. A. Robins appointed Clare Wellman of Lewiston, R. G. Cole of Boise, and John Dahlstrom of Pocatello.

PERSONNEL

The Commission

George Moody	Calder
Walter Fiscus	Potlatch
** R. G. Cole, Secretary	Boise
Paul Thoman	Twin Falls
Alton R. Howell	Idaho Falls
* Clare Wellman	Lewiston
* John Dahlstrom	Pocatello
* Appointed in January, 1949.	
** Reappointed in January, 1949.	

The Department

T. B. Murray, Director

* James O. Beck, Director

James C. Simpson	Frank Oster
Fish Culturist	Improvement Supervisor
Vernon B. Rich	George E. Tucker
Federal Aid Coordinator	Engineer (Resigned September 22, 1948)
John W. Smith	C. G. d'Easum
Fur Supervisor	Public Relations Officer
T. D. Biladeau	** Jack Andersor
Big Game Supervisor	Assistant Public Relations Officer
Virgil Borden	
Land Acquisition Officer	
R. E. Hoffman, Chief Clerk	
Fay Bussard, Principal Clerk	Kenneth Hobbs, Accounting Clerk
Anna Mastro, Principal Clerk	** Jo Ann Eckery, Stenographer
Betty Tucker, Secretary	Gordon Lee, Warehouseman
Bernice Howell, Secretary	Lora Wampler, Clerk-Typist
Louise Snodgrass, Senior Stenographer	** Edward J. Monaghan, Jr., Pilot
Elizabeth Knowles, Senior Stenographer	
* Lois Lundy, Secretary	
* Janice Rose, Stenographer	
* Rosemary Emery, Clerk-Typist	
* Gale Burgener, Clerk-Typist	
* Resigned during biennium	** Joined Dept. after July 1, 1948

District Conservation Supervisors

Marshall Edson Coeur d'Alene
 Harry Palmer Lewiston
 Ivol Sies Boise
 P. J. McDermott, Jr. Jerome
 O. R. Christenson Idaho Falls

Conservation Officers

Melvin Barrus, Blackfoot	* Herman M. Koppes, Idaho City
William Lee Black, Mt. Home	Fred E. Kreller, Caldwell
* John J. Boyle, Cascade	Stanley Larson, Sugar City
Alonzo Brown, Wendell	* G. R. Lounsbury, Ketchum
Fred M. Clark, Priest River	Warren Lowery, Burley
John S. Costello, Coeur d'Alene	Albert F. Lyle, New Plymouth
Murvle Crook, Oreana	Claude I. Matthews, Shoshone
John Cerny, St. Maries	Dana L. Messenger, Homedale
Grover C. Davis, Filer	Alvin I. Misseldine, Driggs
Albert I. Dickson, Gooding	T. . Mizer, Hailey
J. B. F. Dillon, Weiser	* J. C. Newman, Dubois
Marshall C. Dillon, Mackay	Lawrence Perkins, Boise
Karl E. Dresser, Emmett	Joel C. Reynolds, New Meadows
Hale Ebling, Deary	Glen Richardson, Kooskia
Paul Flinn, Bonners Ferry	Cecil Sanford, Avery
Stanley S. Fredericksen, Ashton	E. B. Scholes, Preston
Charles W. Gallaher, Grangeville	Dave W. Sharpe, Ririe
Lester Gissel, Sandpoint	Wesley M. Shaw, St. Anthony
Elmo Heter, McCall	George F. Staudt, Kellogg
Hawley Hill, Salmon	Phillip Swanstrum, More's Creek
W. R. Horning, Montpelier	Wendell Twitchell, Soda Springs
LaVarr Jacklin, North Fork	Boyd D. Thietten, Stanley
Norman Jockumsen, Dubois	Wallace Wakefield, Riggins
Frank Keough, Pocatello	J. M. Wilkins, Orofino
E. L. Keppner, Malad City	Derrel G. Wright, Challis
Ray J. Kernan, Lewiston	

* Resigned during biennium.

Upland Bird Personnel

Maurice Lundy, Biologist	Boise
Michael Throckmorton, Biologist	Coeur d'Alene
William Gnemi, game farm superintendent	Jerome
Delbert Jacklin, game farm assistant	Jerome
Homer Woody, game farm superintendent	Lapwai
Hugh Harper, Jr., game farm assistant	Lapwai
Homer Stever, caretaker, N. Idaho bird farm, Coeur d'Alene	

Construction Foremen

Herman Anderson, Hagerman

C. H. Young, Clark Fork

Refuge Manager

Orrin F. Blattner

Rupert

Fisheries Personnel

- James C. Simpson, Fish Culturist Boise
- Forrest Hauck, Biologist Boise
- Tim M. Vaughan, Biologist Sagle
- B. D. Ainsworth, Hatchery Superintendent, American Falls
- Harvey Albrethsen, Hatchery Superintendent, Ashton
- E. O. Bailey, Hatchery Superintendent, Twin Falls
- Clarence Bess, Hatchery Assistant, Eagle
- Walter Bethke, Hatchery Superintendent, Mullan
- Burt Bowlen, Hatchery Assistant, Hagerman
- * John Bilow, Hatchery Superintendent, Henry's Lake
- Alan J. Clark, Hatchery Superintendent, Clark Fork
- J. E. Clark, Hatchery Superintendent, Sandpoint
- John M. Coleman, Hatchery Superintendent, Mackay
- ** Henry Dahlquist, Hatchery Superintendent, Twin Falls
- Norman C. Floyd, Hatchery Assistant, Coeur d'Alene
- Frank Gaver, Hatchery Superintendent, Eagle
- L. W. Gaver, Hatchery Superintendent, Hay Spur
- Elwood Grimes, Hatchery Superintendent, Hagerman
- * Don Haevers, Hatchery Assistant, Boyd Creek
- Maurice Harding, Hatchery Assistant, American Falls
- L. T. Hunt, Hatchery Superintendent, Henry's Lake
- Fred Keppner, Hatchery Assistant, Ashton
- Edward Langworthy, Hatchery Assistant, Clark Fork
- Charles Neider, Hatchery Superintendent, McCall
- Charles Sherwood, Hatchery Superintendent, Whiskey Creek
- * Resigned during biennium.
- ** On leave.

BIG GAME ANIMALS

DEER

Deer removal in 1946 was the largest that the state has experienced. Eighty-two thousand hunters harvested approximately 27,000 deer. One hunter of every three was successful. This harvest was believed to be excessive for the maintenance of deer numbers.

In order to reduce the take, a season 10 days shorter was prescribed for areas under the greatest hunting pressure in 1947. The season that had previously extended to November 10 was ended October 31. The change permitted animals to move to winter range at a normal time and curtailed the kill of game concentrating on winter areas. Special hunts and closed areas also helped to bring the harvest down to a more conservative figure. Although there were approximately as many hunters in 1947 as in 1946 the kill was reduced in 1947 by 8,000 head. Removal of 20,000 deer is believed to be proper and safe from the standpoint of herd maintenance.

White-tail deer of northern Idaho have been holding their own in the face of reduced habitat brought about by the clearing of more land for agricultural use. The increase of open areas has made possible more observation of deer. On the basis of these observations there is reason to believe the population has grown. There are areas in the north that have sufficient forage to support more game animals than are now present. This is particularly true of the northern portion of Shoshone county. Other methods of harvest than those being employed may be advisable here to allow these herds to increase.

Probably the greatest obstacle to white-tail expansion is the illegal practice of spotlighting. Legislation to curb this poaching is desirable.

In some hunting areas where terrain is open and cover is scattered, where roads are good, and where the nearby human population likely to go hunting is great, special hunts have been scheduled as a means of controlling the game kill. Since this initial success on the Pocatello elk herd and the Minidoka deer herds, the policy has been expanded in keeping with demands of conservation.

The first principle of the controlled or so-called "special" hunt is the good of the herd. After careful study has determined the number that should be removed a season is set and permits are issued. Any license holder may apply for a permit. A public drawing determines the winners. According to law, game preserves for which the number of hunt applications will exceed the number of permits can be opened to hunting only on the controlled, draw-hunt basis.

Special hunts are used in many other states. Some states have

resorted to removal of male animals only in certain districts as a means of reducing the annual harvest. This method has some public favor in that it does not restrict the number of hunters and eliminates a drawing.

In certain areas where hunter population is likely to be great because of relative abundance of game and its easy access, definite limitation of the number of hunters is probably desirable as a safety factor.

The basic policy of Idaho's special hunts is sound. The practical administration involving many details and the complications of the laws of chance, is difficult to work out to the satisfaction of all of the thousands of sportsmen who desire to take part. Improvement of the system is constantly being sought by the department.

Further consideration is being given to the hunting of male animals only in certain areas as a means of controlling the take.

ELK

Number of elk hunters increased by 7,500 in 1947 over the previous year. Most of the increase came in the southwestern district where there was a short open season in much of the back country. The elk hunt was the first of its kind in the area. Prior to that year all elk hunting in the district had been by special permit. Nearly 2,000 elk were killed.

In north-central Idaho, the principal elk territory of the state containing the Lochsa-Selway-Clearwater areas, the take was 4,386 head in 1946. Game management officers believed that the harvest was too large and was endangering the future supply. Season for the following year was shortened by six days, a controlled hunt was conducted in the Selway game preserve, and closed areas to which elk could retreat and escape gunfire were set up on an annual basis. These changes helped to bring about a reduction in the kill in 1947. The reduction amounted to about 600 head. In addition to the regulations, it was recognized that the fact of fewer elk in the district had an influence on the lighter kill.

As the number of hunters continues to increase, the methods of control practiced in the Selway can be expected to hold the harvest at the 1947 level for perhaps only two seasons.

The problem of opening a closed area to hunting when it has been properly rebuilt is difficult. In order to prevent overshooting, certain regulations that do not apply in a general season are needed. Control may be accomplished by special hunts, regulating the number of hunters, or by the hunting of bulls only.

to hunt -

BLACK BEAR

Black bear in northern Idaho are holding up well under increased hunting. Bear are numerous enough in that district for hunters to devote their time to that species only, just as others hunt deer and elk.

MOUNTAIN GOAT

3007-30900

Rocky mountain goat have, in several Idaho areas they have inhabited for a long period of time, been considerably reduced in number, according to recent estimates and surveys. As the goat was never numerous, in comparison with other popular game species, it became advisable to close the season in 1948. Goat were hunted in certain limited districts in 1946 and 1947. The kill in 1946 was 125. In 1947 the kill was 67.

The area where most of the decline in goat occurred was in District Two—north-central Idaho. A large number of elk hunters packed to the goat range and shot goats as a by-product of the elk hunt. There was more hunting than there probably would have been if hunters had been packing to the primitive district for goat only.

Under the law, hunters may leave goat meat in the field. A change in this law is desirable as goat are too valuable to be shot for only the head and horns.

BIGHORN SHEEP

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Bighorn sheep have been and still remain a difficult problem of game management. Under complete protection for a number of years and partial protection for several more, the herds appear only to have held their own. There has been little, if any, increase. The few remaining bands that are on common-use range and are available to motor transportation have gradually declined. Poaching, predatory animals, and unfavorable forage conditions may be contributory causes. Primitive area herds have apparently held their own but have failed to show an appreciable growth.

A controlled hunt was conducted for mature rams in 1946. It was the first bighorn hunt in Idaho since 1939. Thirty-five permits were issued. Thirteen rams were killed. The same number of permits were issued in 1947. The kill was 15 rams. As the increase has been slight, according to best data on lamb crops, doubt was expressed that the older rams were being replaced. Therefore, there was no bighorn hunt in 1948.

PRONGHORN ANTELOPE

Because the survey of the previous spring showed a decrease of antelope in the central Idaho herd—commonly known as the Lost River herd—no hunt was scheduled in 1946. Careful study of previous hunts demonstrated that hunters had been concentrating on certain drainages and killing more antelope in these zones than the bands could stand. At the same time other herds in places more difficult to reach were increasing and causing some damage to agriculture. With these facts in mind, the department started a new system of unit hunting in 1947. Quotas were established for what was considered a suitable harvest in each of seven geographical zones. Permits in total of 555 were issued. Hunters took 461 pronghorn. Both sexes were shot.

The new method resulted in a better distribution of hunters and removal of proper numbers of animals from various portions of the range. Similar hunts were conducted in 1948 with equally satisfactory results.

A survey of antelope in Owyhee county was conducted in 1947. The resident herd was found to be less than 600 head. The area has sufficient forage to carry a larger herd. Therefore it is believed advisable to allow the herd to develop before hunting is permitted. In winter antelope drift into the southwest corner of Owyhee county from Nevada. It is unlikely that any of these animals would be available to Idaho hunters because they arrive too late in the season for a suitable hunting period.

During the winter of 1948 and 1949 an extensive inventory of antelope over that entire zone is to be made by Idaho, Oregon, Nevada and California.

~~FEDERAL AID PROJECTS~~

With the co-operation of the division of federal aid in wildlife restoration, the department has undertaken various means of maintaining and increasing the big game supply.

In March, 1948, the department trapped 130 pronghorn on Big Lost river and transplanted them in Owyhee and Oneida counties. Twenty-nine were released in Oneida county and the rest in Owyhee county on ranges not being used by the resident herds.

Fourteen whitetail deer were trapped at the Farragut refuge, Kootenai county. Nine were released on the North Fork of Payette river. The other were released in the north. Further trapping and transplanting of whitetail is contemplated to spread the species to more parts of the state. The principal whitetail areas are the Panhandle counties and the Lochsa-Selway.

Certain tracts of private land on critical winter game range have been acquired and negotiations are underway for others. The land is being obtained to provide better range for game animals, particularly in the winter, and to facilitate migration of game herds. The tracts are largely in isolated terrain in wilderness and primitive areas. On some portions of such range the rehabilitation of browse plants that make up most of the feed of deer will be attempted. The procedure is slow, but over the long pull should prove beneficial to big game and future welfare of the hunting public.

SALTING

The department purchased and distributed 191 tons of salt for big game in 1946 and the same amount in 1947. Sixty tons were placed each year by plane. Salting from the air has been done for many years. Season after season more and more is distributed by that method which has been proved both efficient and economical.

Northern Idaho game districts received 104 tons of salt annually during the biennium. Here the need of salt supplement is greater than in nearly all other game ranges and exerts a greater control over the animals. Use of salt has been found to be valuable in moving game from winter range at the earliest possible time and in reducing crop depredations.

Pack strings and trucks are still used in placing of salt in areas that can be most easily reached by such transportation. The U. S. forest service aids in salt distribution.

WINTER FEEDING

When severe winter weather creates critical conditions in certain localized areas of big game range it is necessary for the department to provide supplemental feed for short periods. Although it has been established in Idaho as well as other states that winter feeding as a general practice is of meagre benefit to game and may, in fact, be detrimental, feed can be distributed for periods of three or four weeks with some benefit. To meet such emergencies the Idaho department has constructed quonset huts and other storage barns in areas where big game is most likely to be short of natural forage when snow is deep.

These barns are stocked with hay and stock cubes during the fall. When it is necessary to feed, conservation officers go to the stations and distribute the emergency rations. Game in these districts is supplied with bulk and nourishment to carry it through the most difficult weeks.

**Removal By Game Department Districts
Season of 1947**

District	Deer	Elk	Antelope	Mtn. Goat	Black Bear	Bighorn	Moose
1	2,277	339	0	17	247	0	0
2	2,684	3,719	0	19	77	0	0
3	5,365	1,951	0	15	62	12	0
4	3,978	257	366	16	12	3	0
5	4,591	283	95	0	8	0	24

**Hunter Take on Special Hunts in 1946
Deer**

Number of Permits		Kill
3,250	Cassia division, Minidoka forest	2,533
400	Albion division, Minidoka forest	268
400	Sublett and Black Pine divisions	262
150	Warm Springs Creek Game Preserve	74
150	Big Lost River Game Preserve	101

Elk

200	Pocatello Game Preserve (bulls only)	68
200	Soldier Mountain Game Preserve	76
350	Elmore-Boise and Valley counties	198

Bull Moose

30	Mature Bull Moose Hunt, Fremont county	26
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Bighorn Sheep Rams

35	Rocky Mtn. Bighorn Sheep Rams, (Salmon River area)	13
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**Hunter Take on Special Hunts in 1947
Deer**

Number of Permits		Kill
1,500	Cassia division of Minidoka forest	1,259
500	Sublett and Black Pine divisions	344
400	Albion division	305
100	Warm Springs Creek Game Preserve	40
200	Big Lost River Game Preserve	120
1,000	Soldier Mountain Game Preserve	372
1,500	(785 issued) South Fork Payette Game Preserve	265

RECOMMENDATIONS

It is desirable that the commission have authority to regulate hunting in game preserves, at its discretion, by means other than special hunts.

Black bear and mountain goat should be given the same consideration as other game animals with respect to the law requiring carcasses to be taken out by the hunter.

A stronger law against spotlighting is necessary.

A bill regulating the professions of packing and guiding is advisable, and commercial plane services taking hunters to game country should be regarded as packers. Care must be taken, however that any such law is of benefit to the hunting public as well as to packers and guides.

Consideration should be given to a law prohibiting the carrying of firearms on special hunt areas during a special hunt by persons who do not have permits. In the absence of such a statute, special hunt regulations have been abused.

TABULATION OF GAME KILL

Known State Hunter Removal

Year	Deer	Elk	Antelope	Mtn. Goat	Black Bear	Bighorn	Moose
1946	26,936	5,435	0	125	233	13	26
1947	18,895	6,544	461	67	406	15	24

Removal By Game Department Districts

Season of 1946

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

Elk

50	Soldier Mountain Game Preserve	14
150	Pocatello Game Preserve	127
300	South Fork Payette Game Preserve	83
1,000	Selway Game Preserve	550

Bull Moose

30	Mature Bull Moose Hunt, Fremont county	24
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Bighorn Sheep Rams

35	Rocky Mtn. Bighorn Sheep Rams (Salmon river area)	15
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Pronghorn Antelope

555	Antelope hunt in eastern Idaho counties	461
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Fisheries Division

At the beginning of the biennium it was felt that the fishing load had pretty well reached its peak. However, such was not the case, for each year the number of fishermen has increased, and from present indications there is a good possibility that the number will increase even more. In 1947 more than 200,000 licenses, most of them for fishing, were purchased. The fisheries division is ever mindful of the greater demands for fish and as rapidly as possible plans are being made and steps taken to meet them.

The increase in fishing pressure has forced the tightening of regulations concerning seasons and bag limits, and it now appears that a further reduction in the creel limit on trout and whitefish is in order. This is in spite of an increase in the number of legal size fish raised at the hatcheries and an increase in personnel at some stations in order to take care of greater production.

Spawning

During the fall of 1946 the division experienced considerable difficulty in obtaining sufficient rainbow trout eggs to supply the state hatcheries. The American Falls fish hatchery had sufficient pond space and sufficient water to carry enough fall-spawning rainbow trout brood stock to supply the needed eggs of this species. There were rainbow trout brood stock at this station previously, but they were poor egg producers so it was thought expedient to replace them with a better strain. The department, therefore, purchased from the state of California 25,000 eggs from select fish which have been held to form the nucleus of the present brood stock. These fish were spawned in the fall of 1948 for the first time. It is anticipated that within the next year or two these fish will supply sufficient eggs for this fall strain throughout the state.

An attempt is being made to establish a brood stock of brook trout at the Ashton hatchery where there is sufficient pond space to carry this species. The eggs for this brood stock were obtained from a select strain of brook trout from Oregon

In addition to the rainbow brood stock at American Falls, a limited number of this species is held at Hayspur as an auxiliary supply of eggs in the event of a catastrophe at the American Falls station. The hatchery at Mullan also retains a sufficient number of rainbow brood stock to produce approximately 800,000 eggs but these fish are a spring spawning variety. The Clark Fork hatchery has sufficient kamloops trout on hand to provide eggs for the department's needs of this species.

Three spawning stations are operated for the taking of eggs from wild fish. They are Wolf Lodge creeg, tributary of Coeur d'Alene lake—cutthroat eggs; Henry's Lake in Fremont county—cutthroat eggs; and Coffee Pot rapids on the North Fork of Snake River above Island Park Reservoir—spring rainbow eggs. A limited number of Kokanee eggs from wild fish is taken from Pend d'Oreille lake and a limited number of whitefish eggs from Priest Lake. With the present spawning stations and the present brood stock it is believed that a sufficient number of eggs for the department's requirements can be supplied.

Distribution

The problem of proper and equitable distribution of hatchery fish has been the major difficulty during the biennium. A big step forward has been made, yet a great deal remains to be accomplished. Many of the pickup distribution tanks are too small or are worn out and must be replaced. It is planned that all necessary replacements of such equipment will be made during the winter of 1949.

There are several reasons why distribution has been so great a problem. There had never been an over-all plan for the allocation of any particular species of fish to the various waters of the state. Nor had it been determined which waters should be stocked with legal-size fish, nor which waters should be stocked with three-inch or one-inch fish. Before a proper stocking program could be evolved, the waters of the state had to be cataloged. This was accomplished during the fall of 1947 and the following winter. When the cataloging was completed the fisheries biologists took to the field to interview hatchery men, conservation officers, forestry officials and interested sportsmen to obtain all available pertinent information regarding fish planting. When all information had been assembled, a catalog was sent to each hatchery as a guide for the distribution of fish in the area served by the hatchery.

Certain hatcheries are poorly located according to the areas they must serve and, therefore, it is difficult to get proper distribution of fish from those hatcheries. Other hatcheries, because of a poor water supply, are unable to raise sufficient fish or fish of the size required to properly handle their areas. It therefore became necessary to construct a single station sufficiently large enough to supply the necessary fish to augment and, in some cases, replace the fish at those hatcheries which were unable to produce sufficient fish to care for their areas. The commission was requested to approve a site of Tucker Springs creek in Hagerman valley, and to allocate sufficient money to construct the necessary facilities. Such approval was granted and construction was begun in 1947. Ponds were completed to produce a limited number and poundage of fish for redistribution in 1948. With the Hagerman hatchery in operation it be-

came necessary to construct a large transport tank in order that a sufficient poundage of fish could be transported to make each trip an economical operation. To accomplish this a 2,000-gallon tank was constructed and mounted on a semi-trailer. This tank is capable of hauling 1,200 pounds of fish for a distance of 500 miles.

It is now felt that with the stream catalog, the Hagerman hatchery soon operating at capacity, and the proper distribution equipment, waters of the state can be planted with the proper species, size and number of fish.

Parasites and Diseases

No serious outbreak of parasitism or disease was experienced at any of the hatcheries during the biennium. A slight epidemic of a blood disease, thought to be furunculosis and certainly bacterial, occurred at the Hagerman and Twin Falls hatcheries causing some loss among the cutthroat and brook trout. The disease was quickly brought under control by sulfadiazine treatment.

Fish Food

The general demand for meat products which are used for fish food has increased considerably during the past two years and, as a result, the amount available to the department is limited. Prices on some meat items have increased to the point that some orders have been canceled.

In order to cope with the shortage of red meat products and increased prices, and to further improve the quality of food fed to fish, the department has undertaken the practice of using a prepared meal as part of the diet fed hatchery fish. This meal is composed of several ingredients. The principal item is salmon carcass meal.

Salmon and Steelhead

During 1947 the salmon fishermen of the state enjoyed one of the largest salmon runs in recent years. The run in 1948 was normal in size although it arrived two or three weeks later than usual.

The regulations passed by the commission which allowed the taking of salmon by hook and line only, and closed certain headwater streams to protect salmon on the spawning grounds, have been the greatest conservation measures for this species applied in recent years. With these measures in effect, and other things being equal, sportsmen will have a plentiful supply of spring chinook salmon to fish for in the years to come.

The run of fall chinook apparently occurs only in the Snake

River, with most of the spawning taking place between Swan Falls dam and Walter's Ferry bridge. The fall run of chinook salmon is utilized only to a very small extent by sportsmen. It is expected that with the construction of the Hell's Canyon dam, the migration of this strain of salmon will be completely blocked and thus will be destroyed.

Increased interest is being shown by sportsmen in the angling for steelhead, particularly on the Salmon River in the vicinity of Salmon City. It is not known how detrimental the construction of the proposed dams on the Columbia and Snake rivers will be to the runs of salmon and steelhead, but it can be expected that the runs will be seriously reduced.

During the biennium the department has undertaken the task of trying to rehabilitate the run of spring chinook salmon in the Clearwater river. This run was destroyed when the Lewiston power dam was constructed. The 1947 egg take resulted in the planting of 53,200 fry and fingerling salmon. The take for 1948 resulted in 65,000 eyed eggs but the resulting fish have not yet been planted. All of the eggs were hatched at the Mullan hatchery and the fish stocked were placed in tributaries of the North Fork of the Clearwater River.

Floods

The 1948 flood in northern Idaho had a very detrimental effect on the streams. The flood waters were responsible for a greatly reduced take this year compared with former years, and no doubt these waters will produce even less fish for several years to come. The pool structure of many of the streams was almost completely ruined. It is not known how many eggs of steelhead trout which had spawned prior to the flood, nor how many fry and fingerling steelhead and other trout were destroyed, but it was probably a considerable number.

Mackinaw Trout in Bear Lake

Results of the fisheries management program set up for Bear Lake are beginning to be evident. This program which was initiated from the results of an extensive fisheries survey of Bear Lake in the late thirties, participated in by the U. S. Fish and Wildlife Service and the Idaho and Utah Departments of Fish and Game, recommended the planting of mackinaw trout.

Although the results are not phenomenal, the percentage of mackinaws in the creel is increasing annually. Scale studies made from mackinaws taken this past spring show that natural reproduction is occurring successfully. Difficulty in obtaining mackinaw trout eggs is slowing the program of artificial propagation for this species. Incidentally, Bear Lake is the only Idaho water in which the introduction of mackniaw has been successful.

Eggs Taken By State

Station	Species	1947	1948	Total
American Falls	Rainbow	1,946,000	1,694,000	3,640,000
Ashton	Rainbow	75,800		75,800
Clark Fork	Kamloops	62,380	62,264	124,644
Coffee Pot	Rainbow	3,951,000	7,507,000	11,458,000
Hayspur	Rainbow	262,580	581,000	843,580
Henry's Lake	Cutthroat	10,870,000	11,475,000	22,345,000
Henry's Lake	East. Brook	723,400	163,000	886,400
Mackay	Rainbow	693,700	1,799,400	2,493,100
Marsh Creek	Chinook Salmon	83,500	65,700	149,200
Mullan	Rainbow	918,500	822,700	1,741,200
Pend d'Oreille	Kokanee	1,523,500	1,573,500	3,097,000
Priest Lake	Cutthroat	536,600		536,600
St. Charles Creek	Cutthroat		294,000	294,000
St. Charles Creek	Rainbow		150,600	150,600
Williams Lake *	Rainbow	486,200	1,483,500	1,969,700
Wolf Lodge	Cutthroat	1,977,700	885,300	2,863,000
	TOTAL	24,110,860	28,556,364	52,667,224

* Williams Lake is operated in co-operation with U. S. Fish and Wildlife Service, each agency taking one-half the eggs. The number listed here is state's share.

State Eggs Exchanged with Other Agencies

Species	1947	1948
Rainbow		1,466,000
Cutthroat	2,552,000	800,000
Kokanee	550,000	

Eggs Received by Purchase or Exchange from Other Agencies

Species	1947	1948
Rainbow	1,646,300	
Brown Trout	282,900	
Eastern Brook	1,479,175	
Yellowstone Blackspot	500,000	402,000
Mackinaw	4,000	
Kokanee	550,000	

Summary of Rough Fish Removed

Species	Year	Pounds
Carp	1947	119,435
	1948	211,656
Tench	1947	120,000
	1948	39,685
Suckers	1947	124,099
	1948	266,039
Chubs	1947	7,400
	1948	22,890
Squawfish	1947	
	1948	4,608
Bullhead Catfish	1947	35,930
	1948 *	

* The taking of Bullhead Catfish commercially was discontinued in 1948. The above summary for species does not include Dec. 1948.

HATCHERY PRODUCTION 1947 - 1948 1

Station	Yr.	Rainbow		Cutthroat		Eastern Brook		German Brown		Mackinaw		Kamloops		Sockeye Salmon		Chinook		S. M. Bass		Total				
		No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.	
American Falls	'47	370,161	12,107	179,368	608								3,060	108	6,795	15					559,384	12,838		
	'48	746,090	11,945	421,717	2,251	860	10	26,999	277						78,002	66					1,273,668	14,549		
Ashton	'47	575,681	3,366	1,172,600	714	155,748	478														1,904,209	4,558		
	'48	1,092,996	8,925	754,500	862	167,240	1,174														2,014,736	10,961		
Boyd Creek	'47	95,072	194	297,218	340	255,684	936														647,974	1,470		
	'48			84,470	74																84,470	74		
Clark Fork	'47	393,330	14,080 ²	475,122	250	88,890	149					17,620	1,376								974,962	15,855		
	'48	315,755	4,613	669,720	1,536	66,885	4,267					21,884	1,771								1,074,244	12,187		
Coeur d'Alene	'47	75,432	87	724,290	712																799,722	799		
	'48	524,840	586	848,340	1,299																1,373,180	1,885		
Eagle	'47	1,459,174	32,973	507,000	Fry	13,000	200	46,000	230			12,810 ³	1,078								1,978,984	34,051		
	'48	801,438	9,645									25,031	2,439								888,469	12,589		
Fernwood ⁴	'47	12,240	160	43,524	305	36,192	1,751														91,956	2,214		
	'48																							
Grangeville	'47	169,175	72	179,700	127	46,550	25														395,425	224		
	'48	120,822	52	367,589	205																488,411	257		
Hagerman	'47	215,000	9,780	41,900	2,904																3,150	34		
	'48	196,920	7,104	45,006	2,254	78,710	2,491	21,816	75												9,000	120		
Hayspur	'47	281,377	1,987	598,800	538										104,320	163					984,497	2,688		
	'48	541,160	7,232	291,085	502	159	79,648	131							47,040	98					958,933	8,122		
Henry's Lake	'47			1,423,000	Fry																1,423,000	Fry		
	'48			594,000	Fry																594,000	Fry		
Mackay	'47	614,360	1,427	322,524	314	50,500	100														987,384	1,841		
	'48	908,464	2,789	538,800	286	160,310	950														1,607,574	4,022		
McCall	'47	377,920	4,150	287,500	313	118,140	2,614								126,900	133					860,460	7,210		
	'48	224,500	164	503,500	373	191,900	1,265								71,000	38					990,900	1,840		
Mullan	'47	503,232	1,659	346,088	263	37,000	12								37,000	11	16,800	16			923,320	1,945		
	'48	336,314	1,774	544,000	390										29,560	18	36,400	65			995,954 ⁶	2,293		
Sandpoint	'47	99,425	3,238	801,000	354	288,291	1,670					1,629	181		121,580	40					1,311,925	5,453		
	'48	361,230	470	713,730	416	112,915	880								535,000	138					1,722,375	1,924		
Twin Falls	'47	696,694	5,007	2,000	100	41,944	341														93,600	360		
	'48	728,704	2,787	345,150	550	87,956	1,672								59,976	60					1,221,795	5,069		
Whiskey Creek	'47	162,692	404	376,889	779	36,680	786														543,081	1,253		
	'48	152,845	1,359	667,760	628										69,120	128					981,175	3,378		
TOTAL	'47	6,100,965	90,691	7,728,523	8,619	1,118,939	8,076					70	35,119	2,743	490,195	722	16,800	16			34	15,480,391	110,955	
	'48	7,052,078	59,445	7,389,367	11,626	966,465	13,854	174,463	713	4,770	477	477	46,915	4,210	889,698	546	36,400	65			12,000	195	16,621,836	91,197
Total, Biennium		13,153,043	150,136	15,117,890	20,245	2,085,404	21,930	174,463	713	8,270	547	82,034	6,953	1,379,898	1,268	53,200	81	15,150	229			32,102,227	202,152	

- In addition to fish planted, this tabulation includes the transfer of 45,000 EBT; 625,000 CT; and 428,000 RB to Hagerman to be held over during the winter of 1948-1949.
- This figure includes some two-year holdover fish.
- These fish transferred to North Idaho and included in the total for Clark Fork.
- The Fernwood station planted a total of 103,114 trout transferred from Hagerman during 1948.
- Included in these figures are 17,356 CT transferred to Mullan; 10,917 RB to McCall; 35,650 EBT to Grangeville; the transferral in footnote No. 4; for distribution from these stations.
- Included in this total are 49,680 RB-CT hybrids

FISH AND GAME DEPARTMENT

FISH FOOD -- 1947-1948

	1947		1948 *		Total	
	Pounds	Cost	Pounds	Cost	Pounds	Cost
Liver	145,582	\$13,498.98	119,192	\$14,075.51	264,774	\$27,574.49
Spleen	27,419	1,336.61	19,262	1,298.41	46,681	2,635.02
Horse Meat	245,454	13,031.61	161,958	10,940.10	407,412	23,971.71
Viscera	37,421	2,207.78	30,143	2,588.54	67,564	4,796.32
Trash Fish	33,744	495.11	24,467	673.50	58,211	1,168.61
Meal and Bread	56,545	4,416.75	60,576	5,071.16	117,121	9,487.91
Miscellaneous	3,983	93.14	51,049	2,578.96	55,032	2,672.10
(Bone meal, cheeks, lungs, brains, offal, etc.)						
TOTAL	550,147	\$35,079.98	466,647	\$37,226.18	1,016,795	\$72,306.16

* January 1 to October 31 inclusive.

FISH SALVAGED AND PLANTED

Station	Year	Trout	L.M. Bass	S.M. Bass	Bullheads	Crappie	Bluegills	Perch	Bullfrogs	Total
American Falls	'47	2,000	3,000							5,000
American Falls	'48							600		600
Ashton	'47	8,500								8,500
Ashton	'48									
Eagle	'47		1,000	6,000				18,000		31,000
Eagle	'48	1,516						10,200		*78,016
Hagerman	'47						500		2,700	3,200
Hagerman	'48	3,500	16				20			3,536
Hayspur	'47	503								503
Hayspur	'48	642								642
Total	'47	1,003	4,000	6,000		6,000	500	18,000	2,700	48,203
Total	'48	5,658	16				20	10,800		82,794
Total Biennium		16,661	4,061	6,000		6,000	520	28,800	2,700	130,997

* Includes 66,300 mixed bass, perch, bullheads, crappie.

FISH PLANTED FROM FEDERAL HATCHERIES

Station	Year	Rainbow		Cutthroat		East, Brook		Grayling		Total	
		Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Hagerman	1947	153,466	9,083			75,676	2,624	10,000	455	239,142	12,162
	1948	754,818	16,038			*41,250	1,031	2,000	32	798,068	17,101
Warm River	1947			292,500						292,500	
	1948	110,260		266,800						377,060	
TOTAL	1947	153,466	9,083	292,500		75,676	2,624	10,000	455	531,642	Total
	1948	865,078	16,038	266,800		41,250	1,031	2,000	32	1,175,128	Pounds
Total for biennium		1,018,544	25,121	559,300		116,926	3,655	12,000	487	1,706,770	Not Available

* Transferred to Hagerman State Hatchery.

Upland Game Birds

Pheasants

A favorable spring for hatching in 1947 and a fairly large carry-over of birds afforded Idaho hunters in counties of suitable habitat one of the best shooting seasons in 1947 that they had in more than 10 years. The number of pheasants in the field showed a definite increase.

Checking station records indicate that the hatch was above average. Four young birds were killed to each old bird bagged. Because weather during the shooting season was unfavorable to hunters the number of birds left in the field for the spring of 1948 was substantially above that of the previous year.

The spring of 1948 was below average for the hatching of young pheasants. Weather was unusually cold although amount of rain was not excessive in most parts of the state that had considerable population of birds. Shortly before the hunting season officers noted four distinct age classes of birds in the field. They represented aged birds, mature birds of the 1947 hatch and two broods of young from the 1948 hatch. Percentage of young birds killed to old birds killed was about two to one. That was a sharp decline from 1947. Hunting would in all probability have been less successful had it not been for the large carryover of brood stock from 1947. Exceptions were noted in Jerome, Gooding and Lincoln counties where the hunter success was greater than in the previous year.

At the April meeting in 1948 the commission authorized the fencing and development of 100 refuge-release sites. Many of these have been obtained. Others are to be established. These release sites consist of plots from one to five acres each fenced with chicken wire and steel posts. Refugees adjoining release sites vary from 80 to 640 acres. Pheasants four to eight weeks old are released at the sites as the birds are available from state game farms at Jerome, Lapwai and the North Idaho bird refuge near Coeur d'Alene. Each pen has water, cover, natural feed and artificial feed. The plan is to give the young birds an opportunity to adapt themselves to the new conditions before they fly over the fence and liberate themselves in the wild. Refuge areas surrounding the release pens were selected on the basis of complete year around food and cover. Their function is to provide a sanctuary to which pheasants may retire from guns and dogs of the hunter.

One of the most interesting release areas was established in the Hollister district in Twin Falls county. The Southern Idaho Fish and Game association purchased a tract on which there is an abandoned

well. The department installed a pump, fenced the area, and is planning to set out food and cover plants. Water is to be provided at a time when it has not previously been used. An effort will be made to hold brood birds on the area for hatching the following spring.

Other areas have also been made possible by co-operation of landowner, sportsmen's clubs, and the department.

Hungarian Partridge

The number of Hungarian partridge in southern Idaho has declined in the past two years. The decrease is marked in the Crane creek country of Washington county and has also been noticed in other parts of the southwestern district. A similar decline, although perhaps not so pronounced, was indicated in other areas. Reason for the fluctuation is not known. Hunter kill is meagre and cannot be considered as the major factor. The department is planning a survey of foods utilized by Hungarian partridge throughout the year in the hope of arriving at evidence that may have a bearing on the cycle that moves in a few years from relative abundance to scarcity.

Chukar Partridge

Chukar partridge are increasing in the Black Canyon area above Emmett in Gem county. They have dispersed to hills above Sweet and Ola and have been observed in the Dry Creek and Pearl vicinities. Bird population in this section is estimated at 6,000 to 8,000.

An increase has been noted in the chukar population near Albion where a plant was made several years ago. Another release was made in 1946 near Grandview in Owyhee county. The birds spread from ShooFly through the Grandview farming country. However, poaching and mistaken shooting during the 1947 upland bird season reduced the number to such an extent that there is some doubt that the plant will be a success.

There has been no open season on chukars.

Quail

The population of all three species of quail common to many Idaho counties—bob white, valley, and mountain—has shown a steady increase. Field reports in the fall of 1948 from hunters and officers indicated a substantial crop.

Sagehens

Sage grouse were hunted in Idaho in 1948 for the first time in five years. The September shoot in many southern Idaho counties lasted one and one-half days. The bag limit was two birds. Many

thousands of hunters took part. The success ratio was high. The hunt was carefully managed by means of checking stations and roving officers. Checking stations records accounted for more than 18,000 sagehens taken by hunters.

Surveys after the hunt showed that the number of birds taken had not been excessive and that there was a large brood stock remaining. Reports of sage hen disease that came to the department were investigated. None proved to be wide-spread or of a nature likely to destroy great numbers of birds.

Other Grouse Species

After a number of years of closed season, hunting was permitted in October, 1948, for blue, ruffed and Franklin's grouse. Northern Idaho counties only had the hunt. The season lasted two and one-half days. Studies were undertaken by the research unit at the University of Idaho to determine proportion of young to old birds killed, and other information that will be valuable in determining the advisability of a season in 1949.

Number of grouse in southern Idaho has been increasing according to reports from field personnel, but the birds are not yet present in sufficient number to justify even a brief season.

Migratory Waterfowl

Idaho can lay claim to a "resident" flock of Canadian geese, numbering presently between 5,500 and 6,000. This flock of geese nests along the Snake river and tributaries from Shoshone falls to Weiser and stays within this range the entire year. It was necessary to close the greater part of Canyon county to the shooting of geese during hunting season, 1948, in order to protect the heavy concentration of geese on the Deer Flat migratory waterfowl refuge. It is hoped that this resident flock can be maintained and the annual increase be taken by hunters.

All species of ducks have held their own on the breeding grounds within the state. Some of the species not nesting in Idaho have shown some decrease. Generally the number of waterfowl has been sufficient to furnish fair to good hunting throughout the state during the biennium.

Pheasant Holding Pens, North Idaho Refuge

It has been demonstrated that spring releases of year-old birds may be a step in the direction of materially augmenting the supply of ring-necked pheasants for hunters. This appears to be particularly

true of District One—the Panhandle counties—and Latah county in District Two.

To facilitate this program, the holding pens at the North Idaho bird refuge near Coeur d'Alene are being covered so that upwards of 2,500 mature birds can be carried through the fall, winter and spring.

A refuge manager has been assigned to this area to care for birds and to plant and improve the premises for wildlife habitat. A near-capacity number of birds is being raised at the pens during the winter of 1948-1949. It is planned that they will be released next spring after danger of storm and flood has abated.

Pheasant Farms

The fish and game department operated two upland bird farms, one at Lapwai and the other at Jerome. Holding pens for the feeding, growth and subsequent release of mature birds were maintained at the North Idaho bird refuge near Coeur d'Alene. Holding pens were also operated at Eagle.

The two production centers and the refuge pens were used in conjunction with a number of release areas throughout the state. The release sites of about one acre each adjoining larger areas in which hunting is prohibited, serve the purpose of raising young birds in natural surroundings so they are more adaptable to wild conditions and have a better possibility of survival and reproduction.

During the two years the total number of pheasants released by the two bird farms was 69,821. In 1947 the figure was 38,058. In 1948 the total was 31,763. During the latter year fewer day-old chicks were taken from the farms. More birds were transferred to holding pens.

Complete figures are presented in accompanying tables.

PHEASANT PRODUCTION RECORD

Lapwai Game Farm

PLANTING RECORD:

County	1947				1948			
	Brood Stock	Young Birds	Day-Old Chicks	Total	Brood Stock	Young Birds	Day-Old Chicks	Total
District No. 1:								
Benewah	101	1,325	500	1,926	157	2,185	100	2,342
Bonner	.....	1,500	.....	1,500	120	1,975	.....	2,095
Boundary	300	1,500	.....	1,800	192	2,100	.....	2,292
Kootenai	325	2,375	60	2,760	285	800	100	1,185
Total	726	6,700	560	7,986	754	7,060	100	7,914
District No. 2:								
Clearwater	36	750	.....	786	120	500	.....	620
Idaho	109	2,000	.....	2,109	365	1,650	.....	2,015
Latah	162	1,500	.....	1,662	232	2,400	250	2,882
Lewis	120	1,000	.....	1,120	120	500	.....	620
Nez Perce	283	2,150	.....	2,433	237	2,040	.....	2,277
Total	710	7,400	.....	8,110	1,074	7,090	250	8,414
TOTALS	1,436	14,100	560	16,096	1,828	14,150	350	16,328
Grand Total for 1947 and 1948: 32,424.								

	1947	1948
Birds Transferred to Coeur d'Alene Holding		
Pens for Spring release	1,000	2,000
Birds held at Lapwai farm for broodstock and		
Spring release	1,800	1,700

INCUBATION

	1947	1948
Eggs Set	28,725	32,832
Infertiles	3,756	3,737
Dead in Shell	3,829	5,309
Normal Hatch	20,987	23,502

PHEASANT PRODUCTION RECORD
Jerome Game Farm

PLANTING RECORD 1947				1948						
COUNTY—	Brood Stock	12-Week Birds	Day-Old	Total	Spring Plant.	Brood Stock	12-Week Birds	Release Pens	Day-Old	Total
District No. 3:										
Ada	147	380		527						
Adams							300			300
Canyon ..	206	385		591						
Elmore ..	110	508		618			500			500
Gem		104		104						
Owyhee ..	341	908		1,249			400			400
Payette ..	17	418		435						
Washington	102	500		602						
	923	3,203		602			1,200			1,200
District No. 4:										
Butte	51	400		451			200			200
Cassia		700		700	240	260	200			700
Custer		300		300			300			300
Gooding ..	150	600		750	25					25
Jerome	290	640		930	38			650		688
Lemhi		400		400			200			200
Lincoln ..	150	500		650						
Minidoka ..	208	700		902	238	260	250			748
Twin Falls	94	950		1,044	200	260	200	600		1,260
	943	5,190		6,133	741	780	1,350	1,450		4,321
District No. 5:										
Bannock ..		800		800	110	60	350		100	620
Bingham ..	211	900		1,111	110	150	350			610
Bonneville	5	700	2,260	2,965		349	350		1,500	2,199
Franklin ..	225	900		1,125	110	195	350	850		1,505
Fremont ..		200		200						
Jefferson ..		600	200	800		150	350			500
Madison ..		600		600	120	150	350			620
Oneida	252	700	2,500	3,452	100	195	350	615		1,260
Power		650		650	100	150	350			600
	693	6,050	4,960	11,703	650	1,399	2,800	1,465	1,600	7,914
EAGLE PENS—										
Totals	2,559	14,443	4,960	21,962	1,391	2,179	5,350	4,915	1,600	15,435
GRAND TOTAL FOR 1947 - 1948 — 37,397										

CHUKAR PARTRIDGE

	1947	1948
Cassia	200	105
Gem		125
	200	230
GRAND TOTAL FOR 1947 - 1948 — 430		
Approximately 3,000 pheasants retained in 1948 for post-season planting.		

INCUBATION

PHEASANT:	1947	1948
Eggs Set	39,566	37,045
Infertiles	4,952	7,181
Broken	207	110
Culls	523	969
Dead in Shell	6,098	7,725
Hatch	27,786	21,060
CHUKAR:		
Eggs Set	626	678
Infertiles	93	86
Broken	2	6
Culls	12	7
Dead in Shell	42	30
Hatch	477	549

Furbearing Animals

Value of wild fur as a natural resource continued to hold a position of importance in the public mind during the years 1946 and 1947. The department made advances in its fur management program, and in 1948 launched a transplanting project in the expectation of improving the resource in the areas that can support more animals and that have not received sufficient stock by natural development. This is a long-range program. Results will be watched carefully year by year.

A federal aid wildlife restoration program resulted in the live-trapping and transplanting of 279 muskrats. They were trapped from refuges and canals and transplanted in the back country away from irrigation projects.

Also under this project, a marten livetrapping program was undertaken, resulting in the transplanting of 14 martens. Beaver transplanting will be dealt with in another part of this report.

During the 1946-47 trapping season, 2,236 trapper's licenses were sold. Of these, 626 trappers filed their annual fur take reports showing the number and kind of furbearing animal skins taken and the prices received.

On the basis of these reports, the 626 trappers caught 47,901 muskrats which sold for \$53,763.15; 1,568 mink sold for \$17,815.61; 29 fox sold for \$34.50; 195 racoon sold for \$44.00; 16 otter sold for \$170.50; and 895 marten sold for \$12,351.66. Total furbearers reported taken were 50,604; total price received was \$84,179.36.

During the trapping season of 1947-48 there were 1,561 trapper's licenses sold. Of these, 417 trappers filed their annual fur take reports. On the basis of these reports the 417 trappers caught 66,075 muskrats which sold for \$80,946.36; 637 mink which sold for \$14,986.01, and 13 racoon which sold for \$12.90. There was no open season on marten, fox, fisher or otter. Total furbearers reported taken were 66,729; total price received was \$95,973.01.

Beaver

Since 1928 when the department started livetrapping beaver from complaint areas and releasing them in areas where they were desirable, beaver have made rapid strides in establishing themselves. Their dams are valuable to stockmen, farmers and sportsmen. They assist in holding up the water table thus producing more grass by subirrigation and more water for irrigating ranches below through water storage in ponds. Their dams assist in flood control and

help to stop erosion on our streams. The improve habitat for furbearers, ducks, fish and watering places for livestock and wildlife. These benefits are of more value to the people of Idaho than the revenue received from the sale of fur. In view of these factors, beaver have been livetrapped each year from complaint areas near farm lands, canals, and ditches and released on streams where their endeavors would be beneficial.

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 farmers or landowners, their farms are inspected by the local conservation officer who may recommend that a permit be issued to trap a certain number of beaver. This in turn is brought before the Idaho State Fish and Game Commission which authorizes the director to issue the permit.

Prior to October 1, 1945, holders of these permits were paid 66 2/3 per cent of the revenue derived from the sale of the fur after the four percent cost of grading and selling was deducted. They were paid 60 per cent to March 1, 1947. Since then they have been paid 75 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 each year by drawings. The local conservation officers set up the boundaries of the allotments and the number of beaver to be taken. 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 skins. This system had drawbacks. Some places were over-trapped, and the department had considerable expense in livetrapping and planting complaint beaver.

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. Each is large enough that the trapper can pelt sufficient beaver to pay him to devote most of his time throughout the year, to trap all complaint beaver and beaver on streams where they are too numerous, and plant them on streams in his allotment where habitat and food conditions are favorable to increase the population. The caretaker also patrols this allotment and protects the beaver thereon.

Each year the conservation officer, in whose district the allotment is, recommends the number of beaver he is to take and where they are to be trapped. This recommendation is made to the fish

check on traps - 1947

and game commission which authorizes the director to issue the permit. These beaver are taken from complaint areas or where they are too numerous for the feed. The trapper received 60 per cent of the revenue derived from the sale of the fur up to March 1, 1947. Since then they have been paid 75 per cent.

All caretaker allotments to be granted are advertised in a paper in the county in which the vacant allotment exists. Upon request trappers 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 mountain roads, logging roads, or trails are being damaged, or where the beaver are too numerous and it is necessary that they be thinned. There are eight allotments that will not be let until the beaver are increased enough to warrant a caretaker trapper. These areas are being stocked from other allotments with beaver livetrapped by allotment trappers.

Class "B" caretaker trappers livetrapped and transplanted 446 beaver on streams in their allotments the summer of 1946 and 371 beaver on streams in their allotments the summer of 1947.

Plans were made to stock beaver on all streams where the habitat and food conditions were favorable. A federal aid wildlife restoration program was set up to assist in the planting of beaver. The summer of 1948 each caretaker trapper livetrapped a designated number of beaver to be planted out of his trapping district on areas that had not been allotted and needed stocking.

To carry out this program and plant the beaver where planned, pickup trucks, pack horses and airplane were used, some beaver were taken by airplane to landing fields in the back country and planted by man and pack horse at the heads of streams. Some were dropped by parachute on meadows at the headwaters of streams, thus saving a considerable loss of beaver by long packs with horses.

Elmo Heter, conservation officer at McCall, made a box hinged at the bottom with heavy elastic bands around each end that would hold two beaver. This box was attached to a parachute. Upon landing, the elastic bands pulled the box open and the beaver were released. Most parachutes were later recovered and returned to the

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Forest Service which furnished them and assisted in the planting program.

In all, 182 beaver were planted by the use of airplanes. Fifty-seven of these were dropped by parachute. And 353 were planted by pickup trucks and pack horses, making a total of 535 beaver planted in cooperation with federal aid. Also beaver caretaker trappers live-trapped and planted in their own districts 442 beaver, making a total of 977 beaver transplanted the summer of 1948.

All beaver skins are shipped to the Boise office. There they are inspected to see if properly skinned, fleshed and stretched. They are tagged and a receipt is sent the trapper showing the condition of the skin and the tag number. After the skins are sold receipts are sent the trapper showing the price received for each skin.

All skins were sold by the department on the Seattle Fur Exchange at Seattle, Washington, up to February, 1948. Since then some of the skins were sold by the department through the Denver Fur Auction company at Denver, Colorado. The Denver company conducted a sale of 2,412 beaver skins at Boise May 5, 1948. Several eastern fur buyers attended this sale. All skins were sold at a satisfactory price. There were three Idaho fur buyers at the sale. Only one did any bidding and he bought 74 skins.

During the trapping season of 1946-47 there were 58 class "B" caretaker trappers and 311 Class "A" or farmer trappers. They skinned 7,192 beaver. These skins sold for \$144,430.43. Selling and grading cost was \$5,778.03. The state's share was \$45,433.47, and the trappers' share was \$93,239.14.

During the trapping season of 1947-48 there were 61 Class "B" or caretaker trappers and 191 Class "A" or farmer trappers. They skinned 6,444 beaver. These skins sold for \$200,035.89. Selling and grading cost was \$8,001.44. The state's share was \$48,459.86, and the trappers' share was \$143,574.60.

PREDATOR CONTROL

Sportsmen's associations and other interested groups have cooperated with the department in controlling magpies. A total of 310,428 magpie heads were turned in for bounty paid at rates varying from four to 10 cents. The price increased as the biennium advanced. The total sum paid for magpie bounty was \$22,638.

The department paid \$12,450 for bounty on cougar at the rate of \$50.00 per animal. Skins were turned in to the department for verification and branding. During the two years 249 cougar were bountied.

Bounty was paid on coyotes, bob cat, and lynx cat during part of the biennium at the rate of \$3 for pups and \$5 for adults. The amount was \$18,426 for 6,029 predators. Bounty was discontinued in 1947 and none was paid in 1948.

Predator trappers working under supervision of department personnel were hired. They were paid \$36,633 during the biennium. All the predator trappers assisted with all phases of field operations in addition to their trapping duties. Travel cost was \$2,764, and \$10,882 was spent for supplies, equipment, and rental of equipment.

Co-operative predator control operations provided a means of getting full coverage of the principal upland game bird, antelope, and deer ranges. This phase of control work was largely supervised by the U. S. Fish and Wildlife Service. A total of \$103,795 was allocated and spent on this co-operative setup.

Full scale predator control operation has resulted in reduction of the breeding population of coyotes to a very low point, except in some parts of the timbered back country. Control work must be continued to keep coyotes and other predators from taking too large a toll of game animals and birds. This control is a vital part of the over-all game management program.

WILDLIFE RESTORATION WITH FEDERAL AID

Benefits to wildlife by reason of a federal fund increased after the war because accumulating money was released to states, making possible many projects that had been delayed by lack of materials and men. Because Idaho showed an increase in license sales during the war, the amount of federal aid available in the biennium was larger than ever before.

The federal fund, which was established by the Pittman-Robertson act of 1937, appropriates annually for wildlife restoration the revenue from a 11 per cent excise tax on arms and ammunition. The fund is distributed to states on the basis of land area of each state compared to the total area of the United States and in the ratio that the sale of fish and game licenses in each state compares with the total license sale throughout the country. On accepting a federal allocation the state fish and game department matches the fund to the extent of 25 per cent.

Terms of the act permit the use of the money for restoration of native game species. This may include research, studies of game conditions, purchase and development of lands for birds and game.

None of the funds are to be spent on fish. Further legislation to permit federal aid in fisheries is pending.

In Idaho the division of federal aid has conducted its work along several courses, all bearing toward the common goal of improving the status of wildlife. Projects approved by the commission and authorized by the regional offices of the U. S. fish and wildlife service in Portland, have included acquisition of winter range for big game, research on upland birds, distribution of big game salt, development of migratory and upland bird refuges, and improvement of habitat.

During the last biennium appropriations to Idaho were as follows:

Fiscal year, 1947 — Federal share	\$48,673.85
Fiscal year, 1947 — State share	16,224.62
Fiscal year, 1948 — Federal share	\$184,351.38
Fiscal year, 1948 — State share	61,450.46
Total money available for wildlife restoration approved projects	\$310,700.31
Money obligated on approved projects during biennium	\$164,798.16
Unobligated balance as of June 30, 1948	\$117,964.32

A brief resume of work carried on under approved wildlife restoration projects follows:

Land Acquisition

Big game occupying vast summer ranges in Custer, Lemhi, Valley and Idaho counties moves down to lower elevations along the river to winter. It has been the endeavor to purchase private lands in this critical area to retire them from domestic grazing. To-date 1,716.19 acres have been acquired.

A total of 150.88 acres of big game winter range was purchased in the Boise river drainage in Elmore county.

In the vicinity of St. Maries the department gained control of vital big game winter range. Some 3,223 acres of state lands have been leased; 1,467 acres acquired from Benewah county and 180 acres of private land have been purchased making a total of 4,870 acres brought under Idaho fish and game department management plan during this biennium.

A ranch of 4,763 acres was purchased on Big Bend Ridge in Fremont county to supply additional winter range for controlling the moose and elk herd, and to provide unrestricted movement by game to and from adjacent desert winter range.

Research Conducted

A pheasant research project designated to compare production of pheasants on refuge land with non-refuge control areas was initiated to determine whether this department would be justified in acquiring agricultural land for production of this game species.

It was concluded that purchase of agricultural land for pheasant production areas only could not be justified because of limited nesting occurring in ideal habitat.

Salt Provided

Sixty tons of salt has been placed annually as a tool in management to draw big game off limited winter range at an early date and to draw them back from depredation areas. Placing of salt above and adjacent to winter range also retards their winter return.

A statewide maintenance project was initiated during the biennium which provides for the planting, seeding and current repairs necessary on buildings, fences, irrigations systems, etc., on refuge lands.

Game Transplanted

The division has endeavored to move species of game animals and birds from congested areas and introduce them into new areas where suitable habitat does exist. To date under this project 136 antelope, 535 beaver, 14 marten, 279 muskrats and 9 white-tail deer have successfully been located in new environment.

Hagerman Refuge

A plan is underway to distribute available water over Hagerman refuge lands for production of feed and cover for game birds. Feed-producing trees and shrubs are being planted in the reclaimed area.

Deer winter range was fenced on Boise river refuge, More's creek. The headquarters house was remodeled and a fire guard was constructed.

Star Lake Improved

Ditches and dykes have been constructed to carry to and confine early spring runoff and waste water from irrigation into a limited area of Star lake bed in Lincoln county to insure year around supply of water for migratory and upland game birds. A fence has been constructed to exclude stock from nesting area. Recently 7,000 ducks were counted resting on this small area.

Habitat Developed

In northern Idaho feed producing trees and shrubs are being planted on private property adjacent to farm ponds to provide feed and cover for game birds. Farmers enter into an agreement whereby they agree to protect the area.

North lake migratory bird refuge area is being increased to supply additional feed and nesting cover.

Plans have been made and negotiations are being consummated for feed and nesting refuge on backwaters of Cascade reservoir. The project is known as the Valley county migratory bird management area.

Acquisition and development of Carey lake, a small but productive waterfowl area is proposed. These three projects have preliminary approval.

Education

The purpose of education and public relations service is to provide information about activities of the game department and wildlife of the state. In order to give facts as wide distribution as possible, the department:

Prepares news articles for newspapers and radio stations;

Writes fish and game stories of special application for papers and magazines;

Publishes a bi-monthly eight-page magazine with text and illustrations dealing with fish and game subjects;

Publishes pamphlets of fish and game seasons and regulations;

Publishes a map of big game hunting areas;

Publishes a map of upland bird hunting areas;

Publishes a book of fish and game laws;

Makes motion pictures of Idaho wildlife for showing by the department in schools, at sportsmen's club meetings, and meetings of civic and service clubs; and

Works with sportsmen's clubs on projects for the benefit of wildlife.

From the time the commission was organized until late in 1948 there was one man in the public relations office. Last October an assistant was hired after merit system examination.

Duties of the public relations section were greatly increased by the rise in number of license holders. Not only was the pressure on fish, game and birds advanced to an all-time high, but the volume of written and telephoned communications to the department swelled to previously unknown proportions. There was also a greater demand for fish and game pictures and speakers.

The department visited many grade and high schools with motion pictures. Scheduled tours were arranged during winter and spring months. This activity will be expanded. One man will be in the field most of the time, meeting various groups, particularly students.

Additions have been made to the supply of 16 mm. fish and game films. The list now includes:

Trout culture, color, 25 minutes.

Fishing Across Idaho, color, 30 minutes.

Idaho Big Game, color, 20 minutes.

Deer in Winter, color, 10 minutes.

Antelope Trapping, color, 10 minutes.

Bighorn Mountain Sheep, color, 10 minutes.

Bear Valley Salmon, color, 10 minutes.

Beaver Transplanting, color, 25 minutes.

Pheasant Farming, color, 10 minutes.

Big Game Survey, color, 10 minutes.

Motion pictures of bird hunting, including migratory waterfowl, field care of game meat, and aerial salting of big game areas are being prepared. The department expects to shoot and edit films on hunting safety, fishing for bass and other warm-water species, trapping of fur-bearing animals and wildlife research.

Game department films do not have sound tracks. Wherever they are shown it is desirable that a representative of the game department be present to explain the subject matter.

An illustrated book "Wildlife of Idaho", published by the commission several years ago, is used by many schools. Copies were distributed to the schools without charge. A limited number may still be obtained by teachers for classroom use.

Hunting accidents have always been a matter of concern by the fish and game department. Efforts to prevent firearm casualties are carried on regularly. Careful hunting is stressed at every opportunity by all members of the department. Posters urging constant care with guns have been widely distributed during the last several years.

In 1946 there were seven hunting fatalities directly attributed to firearms. In 1947 the toll increased to 14 persons. During the 1948 hunting season there were also 14 deaths.

Effectiveness of safety campaigns is difficult to measure. Although the number of deaths in 1947 and 1948 increased over the comparatively low figure of 1946, one of the primary causes may have been the greater number of hunters in the field. There is no method of measuring the probable toll had not the department and sportsmen's organizations emphasized the hazards of careless hunting.

First issue of "Idaho Wildlife Review", the bi-monthly department publication, was printed in June, 1948. Since then there have been three issues, the most recent in December. The illustrated

pamphlet has a circulation list of 3,500. It is available without charge to interested Idaho residents, and at 50 cents a year to non-residents.

CO-OPERATIVE RESEARCH UNIT

Late in 1947 a co-operative wildlife research unit was established at the University of Idaho. The fish and game department, U. S. fish and wildlife service and the university joined in the program. The three organizations furnish finances and services to make investigation of wildlife problems possible. Similar units are operated in several other states.

Dr. Paul Dalke, a wildlife technician who has had many years experience in research with the fish and wildlife service, was appointed leader. The unit has undertaken the study of several pertinent questions concerning upland game birds and other wildlife. University students taking courses dealing with natural resource conservation are given aid and instruction. Fellowships in wildlife research are provided for graduate students. Because the unit is still young and finances are limited, few such fellowships have yet been granted, but more are planned.

The unit will make factual analysis of specific questions in an effort to supply answers for the guidance of long-range wildlife policies.

LAW ENFORCEMENT

Conservation officers made 2,035 arrests for violation of fish and game laws during the two years beginning July 1, 1946, and ending June 30, 1948.

In the first fiscal year the total was 1,041. In the second year the number was 944.

Listed by categories of violation the arrests for the two-year period were: 482, game; 868, fish; 610, birds; and 75, fur.

In 1,958 instances fines were levied by the courts to which defendants were taken for arraignment. The fines totaled \$65,405.85. There were 303 confiscations. Sale of confiscated equipment amounted to \$3,130.

Construction and Maintenance

July 1, 1946 to June 30, 1948

Only absolutely essential construction was attempted during the past biennium because construction and maintenance have been hampered by shortage of both labor and material.

Listed below are the different projects that have been worked on by the regular construction crews or crews superintended by the regular personnel.

HATCHERIES

American Falls

A 20x50 Quonset navy ammunition hut was erected for a slaughter house and equipped with electric hoist, bone grinder, meat slicer, and a meat grinder. The floors and walls are of concrete. A pole corral was constructed for handling the horses to be butchered for fish food. It is intended that the majority of the horse meat used for fish food at Ashton, Hayspur, Whiskey Creek and Mackay, in addition to American Falls, will be processed here.

The old wooden supply lines for irrigation system, and the round concrete ponds were replaced with spiral welded, asphalt dipped steel pipe. Three cattle guards were installed so that the pasture land could be used to pasture horses held for slaughter. A 400-foot overflow ditch was converted into a raceway and covered with chicken netting to prevent depredation by fish-eating birds.

The space over the utility rooms in the hatchery building was boxed in to provide dry storage for hatchery equipment. A room in the basement of the superintendent's residence was cased in to make an additional bedroom. The old coal furnace was replaced with an oil furnace. All buildings were painted outside and inside. The inside concrete walls are painted gray. The concrete hatching vats were painted gray outside and green inside. These were painted to prevent erosion of the concrete and facilitate cleaning.

A wash room was installed in the hatchery for use by station personnel. Electric hot water tanks were installed in all residences. Electric kitchen stoves were installed in the superintendent's and second assistant's houses, and oil heating units installed in the two assistant's houses. This work cost \$12,855.96.

Idaho Power Company improved the channel of the Snake River adjacent to the hatchery to prevent the loss of fish in the river during the months they are peaking water from American Falls reservoir for power purposes.

Ashton

The hatchery building was lengthened sufficiently to give additional room for egg picking and an insulated meat-holding room.

A ditch was constructed and sides rip-rapped to bypass the surplus irrigation water around the hatchery reservoir pond. The concrete tile pickup line to supply the east raceways was replaced with perforated steel pipe.

General maintenance was done on coal house and root cellar of superintendent's residence. All buildings were painted both inside and outside. The fence was rebuilt on north and west boundary. This work cost \$5,211.02.

Boyd Creek

Repair of siphon across Selway River and general maintenance accomplished. This work cost \$415.93.

Clark Fork

The work at this station consisted of the following: Building and painting of a new assistant superintendent's residence. Installation of larger pump and tank for domestic water supply. Repair of cold storage room. Repair and strengthening of bridge across Spring Creek. Cleaning creek channel and building racking for creek. Installation of 4-inch concrete floor at spillway from reservoir pond. All buildings were painted inside and outside. This work cost \$10,172.59.

Coeur d' Alene

The department remodeled the garage building into a residence for superintendent, as the living quarters over the hatchery were too damp. Also general maintenance. This work cost \$7,010.06.

Eagle

A concrete side wall was placed around the horseshoe-shaped rearing pond in order to prevent the growth of tules and cattails, and provide better management of this facility.

A 20'x50' Quonset hut was erected with concrete floors for storage space. The drain from septic tank was changed. The bridge across slough was repaired. The inside of hatchery was painted, also some leveling and landscaping and general maintenance was done. This work cost \$11,523.48.

Fernwood Rearing Ponds

General maintenance cost \$178.35.

Grangeville

Water from another spring was piped to hatchery; buildings were painted and house wired for electricity. This work cost \$754.62.

Hagerman

The two large (125'x400') holding ponds completed in 1945 and 1946 proved too large for proper management, so they were cut into four ponds with dikes through the center with the necessary concrete control structures and pipe lines. A concrete catch trough was erected to properly handle the fish at the bottom of these ponds.

In July 1947 the commission decided to develop this station to use the large amount of water on hand. Since then the department has:

Completed installation of 1,500' of 42" steel pipe line; built 10 batteries of earth-bottomed raceways, each 115' long, 15' wide and five to the set, with the necessary concrete head trough division structures and tail race; remodeled the old refuge house as an assistant's residence; built a bridge across Riley Creek; landscaped the grounds; installed and fenced two parking areas west of Twin Falls-Hagerman highway to open to the public bass fishing areas on the west side of the slough; and carried on general maintenance. This work cost \$49,010.34.

Hayspur

The old wooden lead troughs in the hatchery have been replaced with two concrete lead troughs, ten new concrete vats were added, repairs were made to cattle guard and culvert, the roof was repaired on barn and all buildings were painted. This cost \$3,908.96.

Henry's Lake

Wooden discharge structure on rearing pond was replaced with concrete structure; the six-inch hatchery supply line was replaced with eight-inch wooden pipe. Domestic water line was installed from spring to house, intake dam was replaced and housed, and a new house was built over spawning ponds. This cost \$1,517.70.

Mackay

The superintendent's residence was remodeled to give more room. A wooden flume was replaced by 20-inch wood pipe. The old wood lead trough for concrete ponds was replaced with concrete trough. All buildings were wired for electricity and all buildings were painted. This cost \$3,976.40.

McCall

Contract for completion of work on new rearing ponds and garage started in the twenty-first biennium was completed, and small amount of maintenance. This was done at a cost of \$1,779.28.

Mullan

The Shoshone County Sportsmen's Association completed the following installations: Constructed 12'x18' building for slaughterhouse, installed one earth-bottomed brood stock pond 10x150 feet, and installed a coal stoker furnace with hot water radiators in living quarters.

Sandpoint

Remodeled concrete rearing ponds. All buildings were painted and general maintenance. This cost \$1,176.80.

Twin Falls

General maintenance cost \$264.80.

Whiskey Creek

The contract for building this hatchery, ponds and houses, was completed in July, 1946. Consequently, the final payment shows in the cost for this biennium.

Subsequent to the contract the cold storage unit was added. One cattle guard was built. Gravel was put on driveways and the property was fenced. This cost \$4,701.34.

Wolf Lodge Fish Trap

The wooden apron was replaced with a concrete apron and gravel deposit was cleared from above the trap. Also there was general maintenance. This cost \$3,329.22.

Lapwai Rearing Ponds

Excavation was completed and pipe line installed on two rearing ponds, one 225 feet by 38 feet, the other 175 feet by 43 feet, early in 1946, but some of the bills for the work were paid after June 30. This cost was \$2,559.86.

Jerome Game Farm

At this station a new cinder block incubator house 20 feet by 48 feet was built. No. 2 brooder house was turned around so as to give

better runways. The floor in the last 60 feet of No. 1 brooder house was raised six inches to keep water from coming in on the floor when runways were irrigated. The department cover-topped six pens 70 feet by 160 feet and three pens 90 feet by 170 feet. This work was done under the supervision of Superintendent William Gnemi. This cost \$761.31.

Lapwai Game Farm

At this station Superintendent Homer Woody and his crew completed the following: Remodeled superintendent's residence; repaired and put new posts in six laying pens; cover-topped and placed new post on six cover-topped pens, 75 feet by 156 feet; built three new open-top pens 90 feet by 170 feet; rearranged water pipes to all cover-topped and open pens. Remodeled small brooder house, constructed new 20 feet by 88 feet brooder house and brooder runs; and re-roofed large open shed. This work cost \$15,122.51.

North Idaho Bird Farm

Quonset warehouse and general maintenance cost \$2,298.25.

Boundary County Refuge

An emergency spillway was constructed on the dam at this refuge at a cost of \$1,674.24.

Big Game Feed Storage

During the fall of 1946 the department purchased seventeen Quonset type Navy ammunition huts for winter big game feed and other storage. Twelve of these have been erected at various sites. Feed storage huts were erected and painted at the following: Priess Hot Springs, Lick Creek, Paradise Creek, Jumbo Creek, Featherville, Gallagher, Pine Flat and Lambing Creek. Warehouses were provided at North Idaho Bird Farm, Kooskia, Boise River refuge and Eagle. This cost \$14,704.33.

Financial Report

July 1, 1946 to June 30, 1948

Revenue and expenditures of the fish and game department increased during the biennium to an all-time high. The increase in revenue can be attributed largely to two factors—a greater number of fishermen and hunters, and an increase in the cost of licenses. Fees for many types of licenses were raised by the legislature in 1947.

Expenses were greater because of additions to field and office personnel, an expanded construction program, and higher prices for materials needed in the operation of fish and game activities.

Total receipts amounted to \$2,166,676.18. Expenditures were \$1,947,936.85. Surplus for the biennium was \$218,739.33.

During these two years covered by the report 355,652 resident hunting and fishing licenses were sold. Non-resident hunters and fishermen bought 78,514 licenses. There were 129 alien fishing and hunting licenses. The composite report of both fiscal years shows sale of 164,505 deer tags, 47,167 elk tags, 427 goat tags, 61 sheep tags, 555 antelope tags, and 418 non-resident trophy licenses for big game.

The department received \$65,405.85 in fines as a result of 1,958 convictions. There were 303 confiscations. Equipment seized in connection with violations was sold for \$3,196.45.

The state received \$99,891.12 from a national tax on firearms and ammunition as its allocation for federal aid projects for wildlife. From the sale of beaver, the fish and game fund received \$93,893.33, which was 25 per cent of the sale price of pelts in 1947-1948, and 33 1/3 per cent in 1946 and 1947. The balance was paid to caretaker and land-owner trappers.

All revenue of the fish and game department, as is shown in this summary and in detailed tables, is received from sources other than taxation. The department is sustained by its own income, provided largely by license fees of fishermen and hunters.

Operating expenses, and purchase of land, equipment, and buildings accounted for an outlay of \$1,418,049.47. This sum and others on the expenditure side are presented in detail on subsequent pages. Control of predators cost \$103,795. Bounty was paid on 228 cougar and 310,428 magpies. For a time, bounty was paid on coyotes, lynx cat and bobcat, but was discontinued in the second year of the biennium. The state paid out \$157,711.46 in Pittman-Robertson wildlife restoration funds. Approximately \$100,000 was refunded by the federal agency in charge. Amount paid to beaver trappers as their share of selling price of beaver pelts was \$268,380.67.

Department expenditures are controlled by the state legislature

and the bureau of budget. The budget approved by the legislature every two years permits the department to spend a specified amount during the biennium, and may not spend more even though its revenue may be greater than the budgeted sum. Twenty-five per cent must remain for the final quarter of the biennium, beginning Jan. 1, 1949. The department has expended almost to its maximum for the first three quarters, but will have a slight excess of the required 25 per cent for the fourth quarter.

A surplus of \$815,284.26 is on deposit with the state treasurer in the fish and game fund to be spent for wildlife purposes. There was a surplus of approximately \$600,00 at the beginning of the biennium. Revenue during the biennium exceeded the budget by an additional \$200,000.

**IDAHO DEPARTMENT OF FISH AND GAME
DETAIL OF CASH RECEIPTS**

July 1, 1946 to June 30, 1947

FISH AND GAME FUND NO. 6	NUMBER	AMOUNT
Licenses —		
Resident Hunting and Fishing	163,048	\$ 370,400.25
Resident Hunting	127	241.30
Resident Fishing	11,000	20,900.00
Non-Resident Hunting and Fishing	1,122	53,295.00
Non-Resident Bird	2,060	19,570.00
Non-Resident Fishing	9,551	64,044.25
Non-Resident 5-Day Fishing	28,470	57,054.15
Alien Hunting and Fishing	1	71.25
Alien Fishing	86	959.50
Alien Bird	4	57.00
Non-Resident Gun	36	68.40
Resident Trapper	2,046	9,718.50
Non-Resident Trapper	36	855.00
Shipping Permits	2,767	1,106.80
Deer Tags	82,491	78,366.45
Elk Tags	19,826	18,834.70
Goat Tags	287	2,726.50
Sheep Tags	28	266.00
Resident Fur Buyers	86	430.00
Non-Resident Fur Buyers	11	220.00
Taxidermist Licenses	19	190.00
Private Pond Permits	28	280.00
Whitefish and Blueback Salmon Permits	18	180.00
Moose Tags	30	285.00
Moose Permits	30	600.00
Mt. Sheep Permits	35	175.00
Archery Deer Permits	83	415.00
Deer Permits	4,350	13,050.00
Elk Permits	750	3,750.00
Commission Saved		835.15
Sale of Beaver Skins	7,227	45,433.47
Miscellaneous Sales		2,916.81
Fines	927	28,509.50
Confiscations	140	1,334.95
Royalty Non-Game Fish		7,519.32
Refunds and Adjustments		31,977.04
Rentals (Dept. Houses)		3,130.00
Total of Fish and Game Fund No. 6		\$ 839,766.29
PREDATOR ANIMAL FUND NO. 60		
Sale of Miscellaneous Furs		352.13
WILDLIFE RESTORATION FUND NO. 61		
Federal Refunds		25,022.29
Miscellaneous Sales		525.16
BEAVER SUSPENSE FUND NO. 149		
Beaver Skins (Trapper Share)		93,239.14
TOTAL RECEIPTS ALL FUNDS		\$ 958,905.01

IDAHO DEPARTMENT OF FISH AND GAME
DETAIL OF CASH RECEIPTS
July 1, 1947 to June 30, 1948

FISH AND GAME FUND NO. 6	NUMBER	AMOUNT
Licenses —		
Resident Hunting and Fishing	118,451	\$ 337,585.35
Resident Hunting	32,625	61,987.50
Resident Fishing	30,401	57,761.90
Non-Resident Hunting and Fishing	1,479	70,252.50
Non-Resident Bird	865	16,435.00
Non-Resident Fishing	7,990	75,895.50
Non-Resident 5-Day Fishing	26,977	76,865.45
Alien Fishing and Hunting	1	71.25
Alien Fishing	35	831.25
Alien Bird	2	47.50
Non-Resident Gun	62	117.80
Resident Trapper	1,509	7,167.75
Non-Resident Trapper	2	142.50
Shipping Permits	2,742	1,096.80
Deer Tags	82,014	77,913.30
Elk Tags	27,341	51,947.90
Goat Tags	140	1,330.00
Sheep Tags	33	313.50
Trophy Licenses	418	9,927.50
Resident Fur Buyers	76	380.00
Non-Resident Fur Buyers	18	360.00
Taxidermist Licenses	21	210.00
Private Pond Permits	32	320.00
Whitefish and Blueback Salmon Permits	40	400.00
Moose Tags	30	285.00
Antelope Tags	555	555.00
Antelope Permits	555	1,665.00
Moose Permits	30	600.00
Sheep Permits	35	175.00
Archery Deer Permits	95	475.00
Deer Permits	4,485	13,455.00
Elk Permits	2,000	10,000.00
Commission Saved		958.30
Sale of Beaver Skins	5,589	48,459.86
Misc. Sales (Automobiles, Etc.)		20,898.66
Fines	1,031	36,896.35
Confiscations	163	1,861.50
Royalty Non-Game Fish		4,007.83
Refunds		285.06
Cancelled Warrants		33.10
Less Check Returned for Collection		-133.00
Total of Fish and Game Fund No. 6		\$ 989,837.91
PREDATOR ANIMAL FUND NO. 60		
Cancelled Warrant		3.30
Miscellaneous Furs Sold		11.52
WILDLIFE RESTORATION FUND NO. 61		
Federal Refunds		72,670.81
Miscellaneous Sales: Hay, etc.		1,672.86
BEAVER SUSPENSE FUND NO. 149		
Beaver Skins (Trappers Share)		143,574.60
Cancelled Warrant .....		.17
TOTAL RECEIPTS ALL FUNDS		\$1,207,771.17

FISH AND GAME DEPARTMENT

IDAHO DEPARTMENT OF FISH AND GAME
 DETAIL OF CASH RECEIPTS

July 1, 1946 to June 30, 1948, Inclusive

FISH AND GAME FUND NO. 6	7-1-46 to 6-30-47	7-1-47 to 6-30-48	Two Year Total
Licenses	163,048	\$370,400.25	\$ 337,585.35
Resident Hunting and Fishing	127	241.30	61,987.50
Resident Hunting	11,000	20,900.00	57,761.90
Resident Fishing	1,122	53,295.00	70,252.50
Non-Resident Hunting & Fishing	2,060	19,570.00	16,435.00
Non-Resident Bird	9,551	64,044.25	75,895.50
Non-Resident Fishing	28,470	57,054.15	76,865.45
Non-Resident 5-Day Fishing	1	71.25	71.25
Alien Hunting & Fishing	86	959.50	831.25
Alien Fishing	4	57.00	47.50
Alien Bird	36	68.40	117.80
Non-Resident Gun	2,046	9,718.50	7,167.75
Resident Trapper	36	855.00	142.50
Non-Resident Trapper	2,767	1,106.80	1,096.80
Shipping Permits	82,491	78,366.45	77,913.30
Deer Tags	19,826	18,834.70	51,947.90
Elk Tags	287	2,726.50	1,330.00
Goat Tags	28	266.00	313.50
Sheep Tags	86	430.00	9,927.50
Trophy Licenses	11	220.00	380.00
Resident Fur Buyers	19	190.00	360.00
Non-Resident Fur Buyers	28	280.00	210.00
Taxidermist Licenses	18	180.00	320.00
Private Bond Permits	30	285.00	400.00
Whitefish & Blueback Salmon	555	555.00	285.00
Moose Tags	555	555.00	285.00
Antelope Tags	555	555.00	555.00
Antelope Permits	555	555.00	555.00
			1,665.00
			281,499
			\$ 707,985.60
			32,752
			62,228.80
			41,401
			78,661.90
			2,601
			123,547.50
			2,925
			36,005.00
			17,541
			139,939.75
			55,447
			133,919.60
			142.50
			2
			121
			1,790.75
			6
			104.50
			98
			186.20
			3,555
			16,886.25
			38
			997.50
			5,509
			2,203.60
			164,505
			156,279.75
			47,167
			70,782.60
			427
			4,056.50
			61
			468.50
			418
			9,927.50
			92
			810.00
			29
			580.00
			40
			400.00
			60
			600.00
			58
			580.00
			60
			570.00
			555
			555.00
			555
			1,665.00

Continued:	7-1-46 to 6-30-47	7-1-47 to 6-30-48	Two Year Total
Moose Permits	30	30	60
Archery Deer Permits	83	95	178
Deer Permits	4,350	4,485	8,835
Elk Permits	750	2,000	2,750
Commission Saved	835.15	958.30	1,793.45
Sale of Beaver Skins	45,433.47	48,459.86	93,893.33
Misc. Sales (Automobiles, etc.)	2,916.81	20,898.66	23,815.47
Fines	28,509.50	-36,896.35	65,405.85
Confiscations	1,334.95	1,861.50	3,196.45
Royalty Non-Game Fish	7,519.32	4,007.83	11,527.15
Refunds & Adjustments	31,977.04	258.06	32,235.10
Rentals (Dept. Houses)	3,130.00		3,130.00
Cancelled Warrant		33.10	33.10
Less Check Returned for Collection		-133.00	-133.00
Totals of Fish & Game Fund No. 6	\$839,766.29	\$ 989,837.91	\$1,829,604.20
PREDATOR ANIMAL FUND NO: 60			
Sale of Misc. Furs	\$ 352.13	11.52	\$ 363.65
Cancelled Warrant		3.30	3.30
WILDLIFE RESTORATION FUND NO. 61			
Federal Refunds	\$ 25,022.29	\$ 72,670.81	\$ 97,693.10
Miscellaneous Sales	525.16	1,672.86	2,198.02
BEAVER SUSPENSE FUND NO. 149			
Beaver Skins (Trapper Share)	\$ 93,239.14	\$ 143,574.60	\$ 236,813.74
Cancelled Warrant .....		.17	.17
TOTALS	\$958,905.01	\$1,207,771.17	\$ 236,813.91
			\$2,166,676.18

**IDAHO DEPARTMENT OF FISH AND GAME
DETAIL OF DISBURSEMENTS
July 1, 1946 to June 30, 1947**

FISH AND GAME FUND NO. 6		
Salaries and Wages	\$249,793.58	
Travel	23,198.81	
Other Expense	212,284.72	
Capital Outlay	159,372.63	
Refunds	32.30	
Total Fund No. 6		\$ 644,682.04
PREDATOR ANIMAL FUND NO. 60		
Trapper Salaries	\$ 13,081.58	
Bounties (Magpies)	11,323.40	
Bounties (Predator Animals)	24,576.00	
Miscellaneous Expenditures	3,276.56	
Total Fund No. 60		\$ 52,257.54
WILDLIFE RESTORATION FUND NO. 61		
Claims Paid	\$ 36,455.81	
Total Fund No. 61		\$ 36,455.81
BEAVER SUSPENSE FUND NO. 149		
Claims Paid to Trappers	\$117,139.66	
Total Fund No. 149		\$ 117,139.66
TOTAL CLAIMS PAID		\$ 850,535.05

**DETAIL OF DISBURSEMENTS
July 1, 1947 to June 30, 1948**

FISH AND GAME FUND NO. 6		
Salaries and Wages	\$289,370.36	
Travel	27,842.49	
Other Expense	243,161.79	
Capital Outlay	211,566.07	
Refunds	88.50	
Special Audit Fees	1,338.22	
Total Fund No. 6		\$ 773,367.43
PREDATOR ANIMAL FUND NO. 60		
Trappers Salaries	\$ 23,552.06	
Travel	2,764.81	
Bounties (Magpies)	11,314.93	
Bounties (Cougar) (126)	6,300.00	
Misc. (Equip. Rentals, etc.)	7,605.91	
Total Fund No. 60		\$ 51,537.71
WILDLIFE RESTORATION FUND NO. 61		
Claims Paid	\$121,255.65	
Total Fund No. 61		\$ 121,255.65
BEAVER SUSPENSE FUND NO. 149		
Claims Paid to Trappers	\$151,241.01	
Total Fund No. 149		\$ 151,241.01
TOTAL CLAIMS PAID		\$1,097,401.80

**IDAHO DEPARTMENT OF FISH AND GAME
 DETAIL OF DISBURSEMENTS**

	July 1, 1946 to June 30, 1948			Total
	7-1-46 to 6-30-47	7-1-47 to 6-30-48		
FISH AND GAME FUND NO. 6				
Salaries and Wages	\$ 249,793.58	\$ 289,370.36		\$ 539,163.94
Travel	23,198.81	27,842.49		51,041.30
Other Expense	212,284.72	243,161.79		455,446.51
Capital Outlay	159,372.63	211,566.07		370,938.70
Refunds		88.50		120.80
Special Audit Fees	32.30	1,338.22		1,338.22
Total Fund No. 6	\$644,682.04	\$ 773,367.43		\$1,418,049.47
PREDATOR ANIMAL FUND NO. 60				
Trapper Salaries	\$ 13,081.58	\$ 23,552.06		\$ 36,633.64
Travel		2,764.81		2,764.81
Bounties (Magpies)	11,323.40	11,314.93		22,638.33
Bounties (Predator Animals)	24,576.00	6,300.00		30,876.00
Misc. (Equipment Rentals, etc.)	3,276.56	7,605.91		10,882.47
Total Fund No. 60	\$ 52,257.54	\$ 51,537.71		\$ 103,795.25
WILDLIFE RESTORATION FUND NO. 61				
Total Claims Paid	\$ 36,455.81	121,255.65		157,711.46
BEAVER SUSPENSE FUND NO. 149				
Total Claims Paid to Trappers	\$117,139.66	\$ 151,241.01		\$ 268,380.67
TOTALS OF ALL FUNDS	\$850,535.05	\$1,097,401.80		\$1,947,936.85

FISH AND GAME DEPARTMENT

IDAHO DEPARTMENT OF FISH AND GAME OPERATIONS IN FUNDS, July 1, 1946 to June 30, 1948, Inclusive

July 1, 1946 to June 30, 1947			
	Receipts		Balance 6-30-47
	Cash	Transfer	
Fish and Game Fund No. 6	\$ 839,766.29	\$ 1,000.00	\$626,716.32
Predator Animal Fund No. 60	352.13	40,000.00	955.67
Wildlife Restoration Fund No. 61	25,547.25	71,000.00	68,486.11
Beaver Suspense Fund No. 149	93,239.14		7,756.79
Revolving Fund		1,000.00	1,000.00
TOTALS	\$ 958,905.01	\$ 113,000.00	\$ 704,914.89

July 1, 1947 to June 30, 1948			
	Receipts		Balance 6-30-48
	Cash	Transfer	
Fish and Game Fund No. 6	\$ 989,837.91	\$ 100,500.00	\$727,686.80
Predator Animal Fund No. 60	14.82	15,000.00	49,932.78
Wildlife Restoration Fund No. 61	74,343.67		36,574.13
Beaver Suspense Fund No. 149	143,574.77		90.55
Revolving Fund			1,000.00
TOTALS	\$ 1,207,771.17	\$ 115,500.00	\$ 815,284.26

July 1, 1946 to June 30, 1948			
	Receipts		Balance 6-30-48
	Cash	Transfer	
Fish and Game Fund No. 6	\$1,829,604.20	\$ 1,000.00	\$727,686.80
Predator Animal Fund No. 60	366.95	140,000.00	49,932.78
Wildlife Restoration Fund No. 61	99,891.12	86,000.00	36,574.13
Beaver Suspense Fund No. 149	236,813.91		90.55
Revolving Fund		1,000.00	1,000.00
TOTALS	\$ 2,166,676.18	\$ 228,500.00	\$ 815,284.26

RECONCILIATION

State Auditor's Balance	\$815,284.26
Fish & Game Dept. Balance	\$815,284.26