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Twenty-Seventh Biennial Report

of the

FISH AND GAME

DEPARTMENT

of the

State of Idaho



July 1, 1956 to June 30, 1958

State of Idaho
Department of Fish and Game
Idaho Fish and Game Commission

Honorable Robert E. Smylie
Governor of Idaho
State House
Boise, Idaho
Sir:

Transmitted herewith for your consideration is the twenty-seventh biennial report of the activities of the Idaho Fish and Game Department.

This report covers the period July 1, 1956 through June 30, 1958, with certain data for the last six months of 1958.

Respectfully submitted,

Arlie Johnson, *Chairman*
Frank Cullen
Tom Felton
R. J. Holmes
Glen Stanger

Attest:

Ross Leonard, *Director*

Wildlife Policy

The wildlife policy of the State of Idaho has been established under the Fish and Game Commission Initiative Act of 1938, as follows:

“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 only be 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.

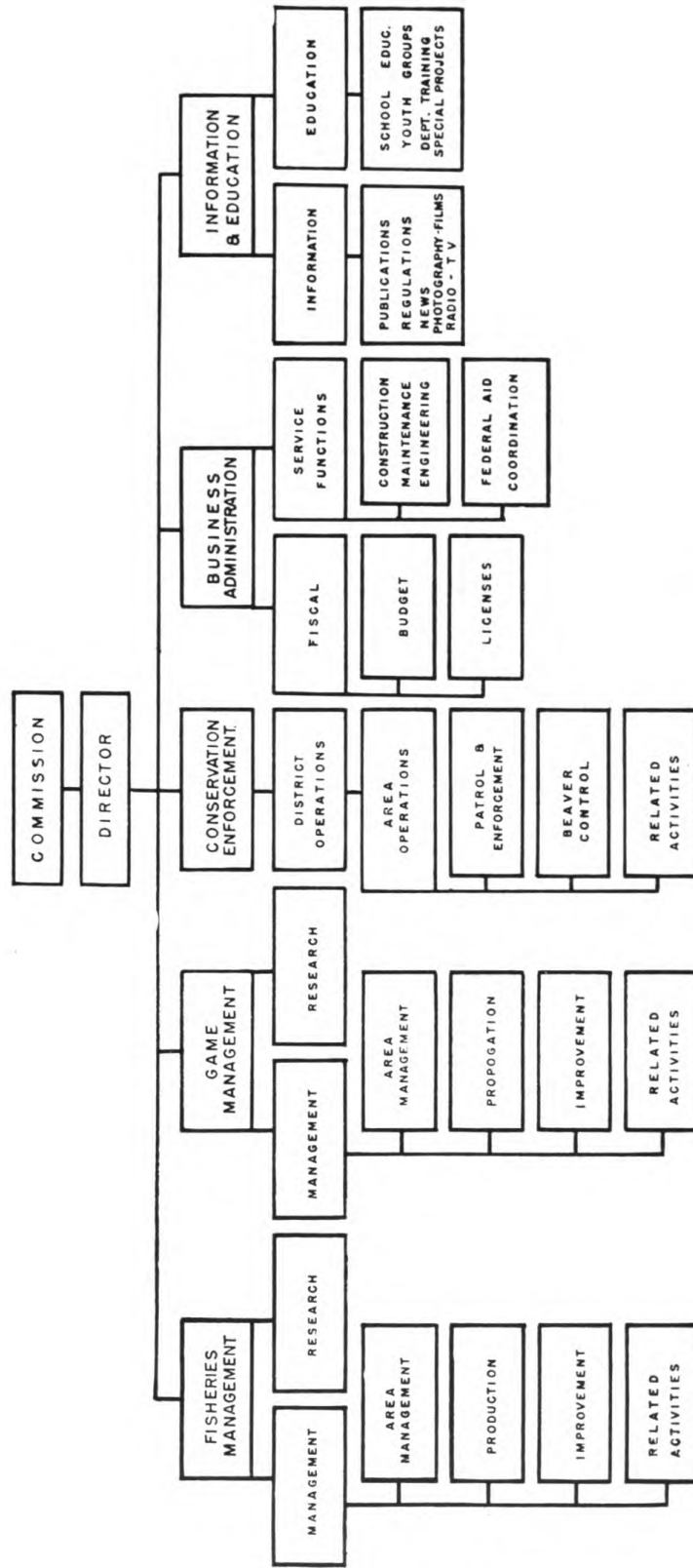
It shall be the authority, power and duty of said Commission to carry out the policy of the State in accordance with this Act.”

“Management of Idaho’s Fish and Wildlife resources presents an ever increasing challenge to the professional worker in this field. Improved methods of harvesting fish and game, together with improved transportation, and an ever increasing number of hunters and fishermen create new problems, never found before in attempting to meet the heavy pressures being placed upon Nature’s resources. The Idaho Fish and Game Department is dedicated to meeting the challenge in a consistent effort to preserve the finest of American traditions, abundant wildlife and freedom in hunting and fishing. With the cooperation of the conservation conscious people of Idaho, this can be done.”

ROSS LEONARD, *Director*

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Fish and Game Department Organization Chart

Administration

Establishment of policy for the preservation, perpetuation, protection and management of all wildlife resources in the state of Idaho continued under the authority of the Idaho Fish and Game Commission. Operations of the Commission were conducted according to the initiative act of 1938, convening in eight regular quarterly and four special sessions during the biennium.

Members of the Commission are appointed for staggered terms of six years from each of five districts in the state. The districts include the following counties:

District No. 1—Boundary, Bonner, Kootenai, Benewah, Shoshone.

District No. 2—Latah, Lewis, Clearwater, Nez Perce, Idaho.

District No. 3—Adams, Valley, Washington, Payette, Gem, Boise, Canyon, Ada, Elmore, Owyhee.

District No. 4—Lemhi, Custer, Camas, Gooding, Lincoln, Blaine, Jerome, Minidoka, Twin Falls, Cassia, Butte.

District No. 5—Clark, Fremont, Jefferson, Madison, Power, Oneida, Bannock, Franklin, Bear Lake, Caribou, Bingham, Bonneville, Teton.

Members of the Idaho Fish and Game Commission with Director Ross Leonard. Left to right, Glen Stanger, Arlie Johnson, R. J. Holmes, Frank Cullen and Tom Felton.



Members of the Commission

Members of the Commission during the first part of the biennium were:

Ray Sims, Bonners Ferry, District No. 1

Tom Felton, Moscow, District No. 2

Arlie Johnson, Boise, District No. 3

R. J. Holmes, Twin Falls, District No. 4

Glen Stanger, Idaho Falls, District No. 5

Frank Cullen, Coeur d'Alene, was appointed by Governor Robert E. Smylie on July 29, 1958 following the resignation of Ray Sims on April 12, 1958.

Arlie Johnson served as chairman of the Commission in 1958. He was preceded by Ray Sims in 1957, and Glen Stanger in 1956.

WESTERN STATES MEETING

One outstanding feature during the biennium was the meeting of the Western Association of Game and Fish Commissioners held at Sun Valley June 22-25, 1958. Approximately 500 people attended taking part in general and technical sessions.

Theme of the convention was "*Western Waters—Their Use and Development.*" The eleven western states were represented as well as British Columbia. Other agencies and organizations were: U.S. Fish and Wildlife Service, Bureau of Reclamation, National Wildlife Federation, Outdoor Writers, U.S. Army Corps of Engineers and the Idaho Wildlife Federation.

Conservation Enforcement

The goal of any conservation enforcement program is to give maximum protection to the fish and wildlife resources. However, the duties of enforcement personnel are many and varied. It is generally agreed that the primary responsibility is impartial enforcement of the fish and game regulations; yet in Idaho, conservation officers spend only approximately half of their time on enforcement. They are required to know and evaluate the wildlife resources in their assigned area and work closely with other department personnel in all department activities conducted in their areas.

Conservation officers cooperate with biologists in formulating recommendations and suggestions for future seasons, regulations and management programs. They participate in many conservation information and education programs for public schools, youth groups, civic and service clubs, sportsmen's organizations, and all other interested groups. They are also expected to assist the radio, television and newspaper outlets of their areas in covering local conservation activities. They cooperate and work closely with city, county, State and Federal agencies.

Increased sales of hunting and fishing licenses definitely indicate that public interest in hunting and fishing is increasing even faster than population numbers. This steadily increasing pressure on our fish and wildlife resources urgently demands better coordinated enforcement as well as progressive wildlife management practices at all levels.

We are continuing to develop and improve a program to give the necessary protection to our natural resources and at the same time to develop public cooperation to the point where a minimum number of arrests is necessary. We feel that a sound program to discourage game law violations before they occur is being better accepted, as the public realizes increasingly that wildlife is public property to which no one person has a special right.

Through all available means a concerted effort is made to keep the public properly and fully informed of all rules and regulations explaining why such rules and regulations are necessary in wildlife management.

Organization of Division

The division consists of a chief of the division, five district conservation officers and 64 regularly appointed conservation officers. With the constantly increasing pressure on our natural resources it appears it will be necessary to increase the field staff sometime in the future.

Improvements

During the biennium, the department's two-way short wave radio system was increased in efficiency. The original forty-two mobile units were supplemented with a purchase of thirty-six radios making a total of seventy-six mobiles installed in department vehicles.

In order to increase radio coverage in some parts of the state, two additional repeater stations were installed. The location of two repeater stations was changed. Now installed and in operation are



A modern two-way radio communications system is an important part of conservation enforcement in Idaho. It aids supervision and direction of field personnel and provides more efficient patrol.

eleven repeater stations at the following sites: Mica Peak near Coeur d'Alene; Little Blacktail Mountain near Sandpoint; Elk Butte near Elk River; Cottonwood Butte northeast of Grangeville; Brundage Mountain north of McCall; Shafer Butte north of Boise; Bald Mountain near Ketchum; Baldy Mountain west of Salmon; East Butte west of Idaho Falls; Chinks Peak southeast of Pocatello; and Ryan Peak west of Rigby. Two additional portable units were purchased, making a total of 14 portable units in operation.

This modern equipment increases efficiency of patrol in many ways. It provides immediate supervision and direction of field personnel at all times and plays a vital part in the enforcement program. Many violators have been apprehended through the use of the radio system, but its most important function is the prevention of violations because of the psychological effect. The use of radio in aircraft-to-car operations has been of special value.

A conservation officer headquarters was constructed at North Fork below Salmon City. This is in an area where suitable housing was unavailable for a permanent station.

A conservation officer headquarters was acquired at Weippe where rental housing was unavailable.

Patrol cabins were also constructed at Bear Valley on the headwaters of the Middle Fork of the Salmon River, Colson Creek near the mouth of the Middle Fork of the Salmon River, Fisher Creek on the North Fork of the Clearwater River near Bungalow Ranger Station, and Red River on the South Fork of the Clearwater River near Red River Ranger Station.

The United States Forest Service granted a free-use permit for patrol cabins near Indian Creek on the Middle Fork of the Salmon River and at Nowhere Creek on the Coeur d'Alene River.

Routine maintenance and improvement work was carried on at all headquarter sites and patrol cabins.

Patrol cabins are built or acquired in back country areas which are difficult to patrol without shelter and facilities for a short stay. The selected areas receive heavy hunting and fishing pressure, and in increased patrol is necessary to protect the resource.

Conservation officer's check on numbers and condition of game animals in the back country areas during winter months.





One of the responsibilities of Conservation Enforcement personnel is to check on browse plant use and make regular reports of conditions in their area.

Report of Arrests and Convictions

In 1955, the legislature amended the law pertaining to remittance of fish and game fine monies. The amendment now requires that the Judge remit one-half of all fine money to the Fish and Game Department and the other one-half to the County Treasurer, who apportions one-half to the county school fund and one-half to the county general fund.

The 1957 session of the legislature also amended the law regarding license application. The amended version requires that any bona fide resident of the State of Idaho desiring a resident license shall, if he is fourteen years of age, or over, produce his Idaho drivers license as proof of residence, or in the case of non-drivers and those under 14 years of age, other suitable proof of residency, and make and sign in person the appropriate license application.

This amendment has been very effective in discouraging non-residents from purchasing resident licenses. Consequently, sales of non-resident licenses have increased.

During the fiscal year of July 1, 1956 to June 30, 1957, a total of 1,269 arrests was made and 1,251 convictions obtained. A total of \$36,113.00 was collected by the judges, of which one-half or \$18,056.50 was remitted to the Department and the other half to the county where the violation occurred. Fifty-five juvenile cases were processed and two jail sentences imposed.

In the fiscal year of July 1, 1957 to June 30, 1958 a total of 1,489 arrests was made with 1,471 convictions obtained. A total of \$40,702.30 was collected by the judges who in turn remitted one-half or \$20,351.15 to the Department. Thirty-six juvenile cases were processed and three jail sentences imposed.

During the biennium, 2,758 arrests were made for game law violations with 2,722 convictions obtained. Fines assessed amounted to \$76,815.30 of which one-half or \$38,407.65 was remitted to the Department and one-half or \$38,407.65 remained in the county in which the conviction was obtained.

The following table shows a breakdown of violations for each month during the biennium:

Type of Violation

1956	Fishing	Big Game	Upland Birds	Water-fowl	Li-censes	Misc.	Trapping Violations	Checking Station Violations
July	60	3	3		43	8		
August	30	4		1	48	5	2	
September	33	14	21		36	15		3
October	15	117	42	11	51	18	5	6
November	5	64	24	23	38	14		16
December	3	30	2	35	14	8	1	3
1957								
January	1	1	3	29	10	12		1
February	15			1	11	6		
March	13	3	1		8	6		
April	40		2	5	8	9		
May	61	1	2	1	30	1		
June	69	1		1	36	5	1	
July	91	6			36	2	1	
August	82	2	1		33	1		
September	56	11	9		27	7		
October	25	61	56	18	47	25		2
November	13	34	37	31	27	29	2	26
December	3	37	7	31	28	7	2	11
1958								
January	7	5	3	41	47	17		
February	13	11	4	3	33	16	1	
March	24	6	2		9	6	2	
April	48			4	20	7	4	
May	71	1	2		15	6	3	1
June	91	2		3	22	9	6	
TOTAL	869	414	221	238	677	239	30	69



Spring is the time of new life. This calf elk blends into the surroundings of plants and grass with dappled spots of sunlight and shadow.

Game Management

All of the big game animals and furbearers, and more than 99 per cent of the game birds, taken annually in Idaho are the result of natural, wild production. Hence conducting game surveys and range investigations and gathering information on the annual harvest make up a large part of each year's work in game management.

Management work has moved ahead during the biennium with trained wildlife technicians applying proven methods in handling the job which results in good hunting and trapping.

Systematic investigations of practically all game and fur species have been in progress during the 1956-1958 period. Individuals are invited to ask the Department for additional information on any item of special interest since this biennial report merely outlines the main activities and findings.

These eight items were of special significance in the 1956-1958 period:

1. Game surveys and big game range studies have been intensified and improved to the point where harvest plans can now approach their goals in some areas. Seasons based upon factual information resulted in a record take of both deer and elk in the biennium.
2. High populations of deer and elk lead to the establishment of general open seasons to replace most of the former special hunts. In 1956 only five controlled hunts were held for deer and five for elk. In 1957 only four controlled elk hunts were held and all deer hunting was done via general seasons.
3. Two deer could be taken per hunter in 1956 and 1957. The Middle Fork of the Salmon was designated a two-deer area in 1956 and it was enlarged in 1957 to include part of the Big Creek drainage. Two additional two-deer units in 1957 were the Juniper Mountain area of Owyhee County and a large southeastern block of land including Bear Lake County, most of Caribou County, and a portion of Franklin County.
4. General seasons on bighorn sheep and mountain goats were established for limited areas in 1956. Careful analysis of hunter participation in 1956 revealed that general seasons could be expanded on these two species since hunting access is difficult in their habitat. Larger areas were opened to general hunting in 1957.
5. Big game report cards in 1957 made statewide hunting data available for analysis much earlier than in previous years. Nearly 65,000 of these cards were returned voluntarily by big game hunters in 1957. The use of report cards is being continued as a valuable aid to game management planning.
6. The Clearwater Game and Range Study was completed. This involved extensive work in the Clearwater drainage and indicated approximately 26,000 elk as the wintering population in the Clearwater, Lochsa, and Selway management units combined. The study showed definite relationships between elk populations and vegetation changes which followed extensive burns of several decades ago.
7. Upland game bird hunting was excellent in both 1956 and 1957. In fact, Idaho had some of the finest game bird hunting in the entire nation, with large areas open for the taking of eleven different species of upland birds. The high population of chukar partridge and the upswing in sage grouse were particularly notable in 1957.

8. **Beaver damage complaints continued heavy in the past despite eleven seasons of trapping under the caretaker program and an average annual take of about 8,000 pelts. In 1957-58 an open season, first in recent history, resulted in a catch of about 24,000 pelts by licensed trappers.**

BIG GAME

Big game field work is coordinated by game biologists, and it involves participation by many other department employees, particularly conservation officers.

In big game management it is important to get current information on these three major items:

1. **The range.** The condition of the range plants which support the animals is particularly important. The welfare and productivity of big game is directly related to range.

2. **The animals.** The sportsman is especially interested in the animals since they provide his hunting. Population trends, reproductive success, age composition, weight, condition, and other data are important in management planning. The cooperation of hunters in getting additional data, particularly on bagged animals, is invaluable.

3. **The harvest.** The effect which the harvest has upon any herd is important to that herd, the range which supports it, and future hunting in the area used by the herd.

Range Work

The usefulness of organized range investigations is greater if the work can be continued over a period of years. The objective in Idaho range work is to carefully establish range inspection points which reflect animal use and range condition, and then to follow up these areas with inspections made annually, or at necessary times. In 1957, Parker three-step range transects were established in seven new areas and forty transects for determining browse utilization and conditions were measured and maintained.

In Boundary, Bonner, Kootenai, Shoshone, and Latah counties, a total of 190 browse study plots were established and examined in the spring of 1958 in nine important deer and elk wintering areas. More than half of these ranges showed heavy or excessive winter use from previous years and generally moderate use in recent mild winters. This suggests the importance of proper annual harvest of deer and elk if ranges are to be maintained in satisfactory condition.

Big Game Populations

Getting information on population trends, or ups and downs in animal numbers, involves many kinds of work. Winter ground counts of game in concentration areas, aerial counts in selected areas, counts of droppings on study plots, and herd composition and hunter success as revealed by checking station records, all were used in 1956 and 1957 in following population trends of big game.

Generally the big game trend counts in the biennium showed that big game numbers were about equal to or above previous populations. There were, of course, some local exceptions.

Extensive aerial surveys of deer and elk were continued during the biennium, mostly in areas which have been covered several consecutive years.



Moose stand out against the white snow as a game census crew fly overhead. Extensive aerial surveys are made on big game animals each year.

Helicopters were used in limited periods in game survey work in the winters of 1957 and 1958 following their satisfactory performance earlier in the Clearwater drainage. Permanent use of helicopters on a limited basis is desirable since these machines enable game technicians to get information which could not be obtained otherwise. Bighorn sheep surveys, for example, were made via helicopter for the first time in 1958 and the information derived immediately bore fruit to the hunter in terms of revised bighorn hunting regulations.

It has been evident for some time that continuous investigations should be made of selected deer and elk herds so that basic information may be accumulated. This will be valuable in interpreting other more general investigations. The deer herd of the Cassia division of the Sawtooth National Forest was selected for these deer study purposes and a biologist was assigned to that area in the fall of 1957 primarily to:

1. work toward improving herd census or inventory methods,
2. obtain information on the movements of the Cassia deer herd,
3. obtain information on herd composition, or the ratio of bucks, does, and fawns in the herd, and
4. determine range conditions and degree of browse utilization on key wintering areas in the Cassia management unit.

After one year of concentrated work with the Cassia deer herd, the following findings seem particularly pertinent:

1. Ground counts as used on the Cassia in past years are likely to be misleading if used alone as deer population trend indicators. Helicopter counts indicated that many deer were outside the counting limits of the selected ground count areas in 1957 and 1958. This undoubtedly contributed to the lower ground counts in 1958.
2. Winter ratios of bucks:does:fawns were similar to those found on many other western deer ranges.
3. A review of past records shows that range conditions have shown little change in recent years. However, the range deteriorated for a long period up to as recently as 1954 and restoring the range to good condition will require careful management of the deer herd.

Other special studies in 1957 and 1958 included antelope survival investigations in the Pahsimeroi Valley and deer range and deer herd studies in southeastern Idaho directed toward planning proper harvest of deer in areas of high deer population and poor wintering conditions. A full-time game biologist was assigned to southeastern Idaho for this latter study.

Big game report cards sent to the department by hunters furnish a rapid and successful method of getting current hunting information for the entire state.



Big Game Report Cards

Big game report cards, supplied to hunters in 1957 with their big game tags, provided a successful method of getting current hunting information for the entire state. These cards were tabulated daily, giving much needed data on the date of kill, location of kill, sex of animal taken, etc. Hunters returned about 65,000 of these cards in the trial year and the data derived were used directly in making needed revisions in hunting seasons and regulations. The cards supplied extensive information from all parts of the state. Sex ratios in the 1957 take as reported by these cards showed 51 per cent male elk and 57 per cent male deer.

Deer

Deer hunting continues to surpass all other kinds of big game hunting from the standpoint of number of hunters participating and animals killed.

More deer were harvested during 1956 than in any other season. Climatic conditions were favorable for high hunting success.

A very successful deer season was experienced again in 1957. Although it was somewhat below the record 1956 harvest, it was the third highest season kill recorded.

While increased harvests have been the rule, there are a number of areas where the harvest could be further increased. Goals in deer management are to harvest the annual increase in herds using properly managed range and to adjust deer numbers in abused ranges so that future herds can be maintained in good condition.

The total kill is computed from the hunter questionnaire, which has been used annually for the past five years.

Statewide Deer Kill, Hunter Participation, and Success

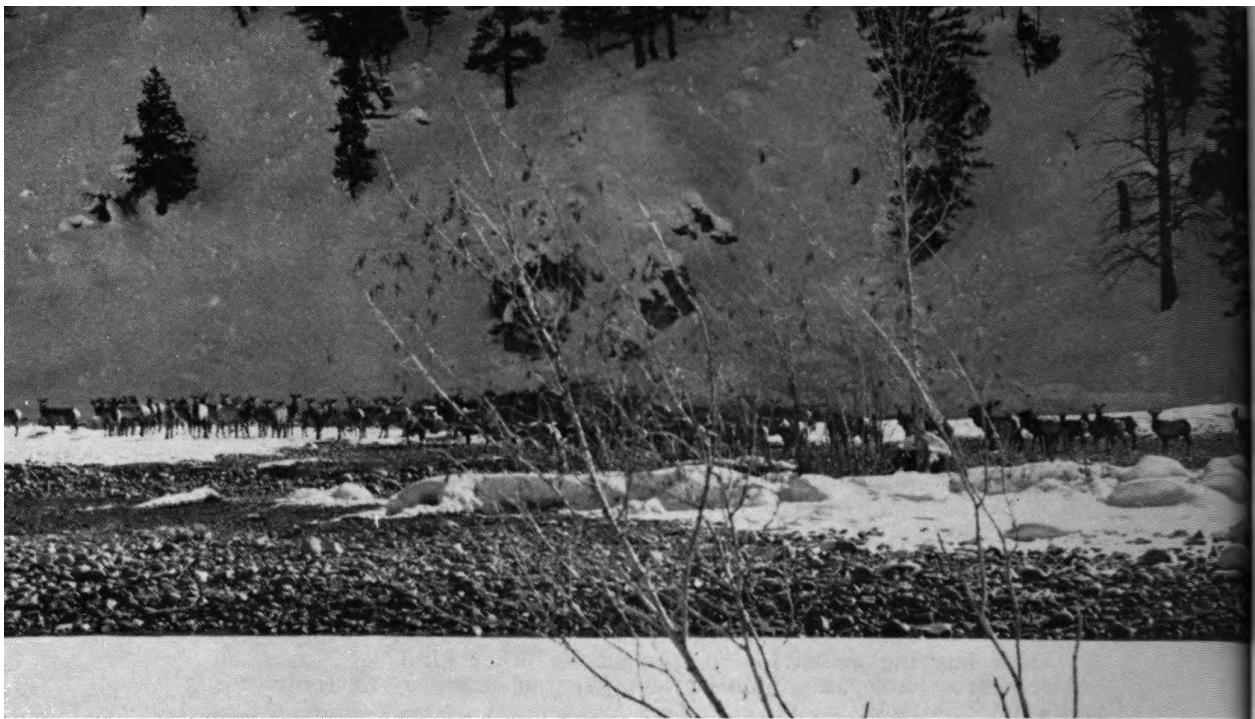
Hunting Season	Big Game License Sales	Deer Tags Sold			License Buyers Killing Deer	Hunter Success
		Regular Tags	Second Tags	Total		
1956	165,952	114,019	327	114,019	71,885	60%
1957	166,003	110,836	7,166	118,002	62,154	51%

Non-resident deer hunters took about 2 per cent and 4 per cent of the deer harvested in the 1956 and 1957 seasons, respectively. Their success was 47 per cent and 46 per cent for the two seasons.

Owyhee County led the state with 9,960 and 8,756 deer taken and with the largest number of deer hunters in 1956 and 1957.

Mule deer are found in practically all portions of the state, while white-tailed deer are found principally north of the Salmon River. Approximately one deer out of seven killed in 1957 was a whitetail.

For the 1957 season, 57,924 deer were taken on the regular tag with a hunter success of 51 per cent. Hunters using the second deer tag took 4,230 deer for a hunter success of 53 per cent.



Elk on the Lightfoot Bar wintering area.

Elk

Elk continue to be the greatest attraction for the non-resident big game hunter. Elk are still expanding their range in portions of the state. However, a number of herds are believed to have reached or passed their population peak. The major factor responsible for high elk populations in the past two decades was the abundance and availability of palatable plants which became established in extensive areas where large fires had removed dense stands of coniferous timber.

During the past biennium elk harvest reached a peak. The 1956 hunting season was exceptionally good, producing the highest kill on record. The 1957 harvest was the third highest.

Remoteness and inaccessibility present difficult management problems in hunter distribution and harvest from many of the larger herds. Recent management has included liberal hunting seasons in remote areas and more restrictive regulations for the more accessible herds.

Statewide Elk Kill, Hunter Participation, and Success

Hunting Season	Big Game License Sales	Elk Tag Sales	License Buyers Killing Elk	Hunter Success
1956	165,952	52,627	15,910	30%
1957	166,003	50,732	13,568	26%

Idaho, Clearwater, and Shoshone counties produced about 60 per cent of the reported statewide kill in 1957. Idaho County contributed 35 per cent of the statewide harvest.

For the 1956 and 1957 seasons, non-residents took about 12 and 15 per cent of the statewide harvest. Their success was 53 per cent and 47 per cent compared to the average resident hunter success of 28 per cent and 24 per cent. Non-residents show a higher hunter success because a majority of them hunt the more remote areas where

the elk are more plentiful. In the remote areas adequate hunter distribution is difficult to obtain.

Bear

The season remained closed statewide on grizzly bear because this animal is now scarce in Idaho.

The season for black (or cinnamon) bear was open to year-round hunting in all but the five northernmost counties. Here a season of September 1 to November 30 was provided.

This big game animal provides a great deal of sport, particularly in the northern portions of the state. Of the calculated 3,124 bear kill by hunters in 1956, 65 per cent was taken north of the Salmon River and 75 per cent of the statewide calculated kill of 3,045 in 1957 was taken north of the Salmon River.

The Clearwater management unit was first in bear harvest, providing approximately 16 per cent of the total take in 1956. The Coeur d'Alene management unit was first in 1957 with 14 per cent.

Non-resident hunters took 7 per cent and 5 per cent of the total bear harvest for the above seasons.

Moose

All moose hunting has been on a permit basis since 1946. Since there is a high hunter demand for moose hunting, controlling the take by issuing a specified number of permits presently appears to be the most equitable and practical method of distributing the harvest among the hunters. The largest number of moose is found in and adjacent to the Targhee National Forest in southeastern Idaho.

Summary of Controlled Moose Hunts

Season	Hunting Units	No. Permits	No. Applicants	KILL				Partic. Hunter Success
				Bulls	Cows	Calves	Total	
1956.....	13	152	925	80	46	8	134	89%
1957.....	15	153		63	27	1	91	61%

Moose of either sex were legal in southeastern Idaho for the 120 permits issued in 1956. Only mature bulls were legal for the 32 permits issued in Idaho County. The hunter success was 89 per cent and 78 per cent, respectively, for those participating in the 1956 hunts.

In 1957 moose of either sex were legal in southeastern Idaho, with only antlered moose being legal in Idaho and Shoshone counties. Reports were received from all but four of the successful applicants. In southeastern Idaho 119 participating hunters took 74 moose for a hunter success of 62 per cent. For Idaho and Shoshone counties, 17 bulls were taken by 30 hunters for a success of 57 per cent.

In 1956 the late winter aerial moose surveys in southeastern Idaho observed 610 moose, or more than the 1949 to 1955 average of 561. Inclement weather conditions delayed the count in 1957 until the snow cover was breaking up; this resulted in the lower count of 429. Storms during the first part of the five-day season in the 1957 southeastern Idaho hunt adversely affected the hunt and contributed to the lower hunter success.

Mountain Goat

Rocky Mountain goats are native to only three states—Idaho, Montana, and Washington. In Idaho they are found north of the Snake River plains to the Canadian border, but are confined principally to the more rugged mountain ranges.

A larger area was opened to general hunting in 1957 as the general hunt in 1956 indicated that portions of the range could be hunted without depletion of goats. Controlled hunts were continued on areas where more protection was desirable.

Summary of Controlled Mountain Goat Hunts

Season	Hunting Units	No. Permits	No. Applicants	KILL			Partic. Hunter Success
				Billies	Nannies	Total	
1956.....	15	65	123 (53 partic.)	14	8	22	42%
1957.....	9	50	90 (39 partic.)	12	16	28	78%

In 1956 during the general mountain goat hunt in portions of Shoshone and Clearwater counties, 63 tags were sold. Of 44 hunters reporting, 33 were successful, 6 did not hunt, and 5 were unsuccessful.

In 1957 the general goat season included most of the state north of the Main Salmon River north of Lemhi County except for two closed areas.

Summary of General Goat Hunts

Season	Tags Sold	Hunting Units	KILL				Partic. Hunter Success	
			Billies	Nannies	Young			Total
					Male	Female		
1956.....	63	1	12	25	1	1	39	89%
1957.....	76	1	26	18	1	1	46	75%
1957 (follow-up returns).....			2	2			4	27%

For the goat hunters returning general hunt cards for the 1956 and 1957 seasons, 85 per cent were successful. For the 16 follow-up returns for 1957, 4 were successful, one did not hunt, and 11 were unsuccessful.

The taking of both sexes has been permitted, since both sexes of the same age have horns of approximately the same length so that it is difficult to apply a practical hunting restriction to the taking of males only. Mountain goats are generally found in small groups of 50 or less. Accordingly, it requires well planned seasons and hunting methods to obtain an adequate harvest without excessive shooting of some herds.

Rocky Mountain Bighorn Sheep

Additional areas were open to general hunting of bighorns during the biennium. By restricting the harvest to rams of three-quarter curl or more and by holding the season in September while they are dispersed, the chances of over-shooting the more accessible herds are meager. Past hunts of this nature have resulted in low hunter take, and this fact has led to liberalization of the hunting area.

Except for two or three small groups, the bighorns are all within the Salmon River watershed. The wintering sites of many of the herds are supporting maximum numbers of bighorns for current range conditions. It is best that the hunting public harvest the animal surplus of this highly prized big game species.

Summary of Rocky Mountain Bighorn Sheep Hunts

Season	Hunting Units	Type of Hunt	No. Permits	No. Applicants	Kill	Partic. Hunter Success
1956.....	6	Controlled	60	128	19	38%
1956.....	1	General	No restriction	75	1	2%
1957.....	2	Controlled	20	40	6	54%
1957.....	2	General	No restriction	193	23	14%

In 1956 for the controlled hunt from September 1-25 only 51 of the available 55 permits were issued. The 5 permits for the December 1-7 hunt on the East Fork of the Salmon River were issued with each of the 5 successful applicants taking a trophy ram. For the other bighorn hunts during the biennium a considerable number of the successful applicants or those purchasing tags on the general hunt did not go into the field during the hunt.

Antelope

Controlled hunts, in which only a specified number of hunters are permitted to hunt, were continued for antelope during the 1956 and 1957 seasons. Antelope live principally in the open arid plains or adjacent mountain valleys and slopes, permitting relatively easy detection by hunters. To prevent excessive removals and to obtain an annual harvest, controlled hunts have been very successful.

Summary of Antelope Hunts

Season	No. Hunt Units	No. Permits Authorized	No. Applicants	KILL				Hunters Partic.	Partic. Hunter Success
				Bucks	Does	Fawns	Total		
1956.....	12	1,425	3,926	476	281	162	919	1,306	70%
1957.....	15	1,670	3,382	635	366	*	1,001	1,392	72%

*not recorded separately

The season was closed in Owyhee County in 1956 to permit the herd to increase. Sixty permits were issued in 1957 for trophy bucks only in the Pole Creek-Battle Creek vicinity. Fifty-five hunters participated, killing 22 buck antelope for a hunter success of 40 per cent.

The total kill figures given above for 1957 are from the hunter report cards. To obtain additional management information, a checking station was operated at Sage Junction in Jefferson County during which 82 per cent of the hunters contacted were successful as follows:

Hunters Checked	Unsuccessful Hunters	KILL				Per cent Success
		Bucks	Does	Fawns	Total	
359	65	152	97	45	294	82%

A study was instigated in 1957 to obtain information on the productivity and herd composition of selected herds including the

Pahsimeroi, Mud Lake, and Warm Springs Creek herds. This will be helpful in obtaining proper removals and in maintaining adequate herd numbers so the hunting public can obtain maximum returns from their resource.

Clearwater Game and Range Study

This investigation was completed in 1957 and the final report was available early in 1958. It involved extensive winter game census work using helicopters and other aircraft, mapping of winter game range and burned areas, surveys to determine the extent of various browse fields, studies of seasonal game movements, and careful analysis of big game harvest data.

Elk numbers may have passed their peak in areas where vegetation has grown far beyond the brushy stage, but they are increasing where logging has removed much of the mature timber. Elk numbers approximated 26,000 wintering animals within the project area.

The report pointed out the extent to which big game populations would be affected by the construction of the proposed Bruces Eddy and Penny Cliffs dams and made the following recommendations based upon findings of the study:

A. Recommendations related to the proposed dams:

- 1. That, because of the serious and adverse effects the proposed Bruces Eddy and Penny Cliffs dams would have on big game populations in the drainage areas directly affected by these dams and their relationship to big game populations in the surrounding areas, it is recommended that these dams not be built.**
- 2. That, in the event either, or both, of these dams is authorized for construction, the enabling act or license authorizing construction include provisions for mitigating the loss to the big game resource, as follows:**
 - a. That the construction agencies acquire all private lands for the projects in fee simple title by the least legal subdivision.**
 - b. That all lands in the dam construction areas, consistent with the primary cause for purchase, be licensed to the State of Idaho, Department of Fish and Game, for administration as being of primary economic importance to wildlife.**
 - c. The purchase of adjacent key big game winter range lands, by the construction agency or agencies, comparable in amount to those inundated by construction of the dams at maximum pool elevation; the winter range lands to be selected and managed by the State of Idaho, Department of Fish and Game, as being of primary economic importance to wildlife.**
 - d. That funds to finance studies of big game management problems arising as the result of one or both of the reservoirs created by the construction of the proposed Bruces Eddy and Penny Cliffs dams be provided by the construction agency or agencies.**

B. Recommendations other than those related to the proposed dams:

- 1. That investigations be initiated in other coniferous forested areas comparable to the study area to determine adequate methods for determining the proper utilization by big game of the browse species in the various stages of plant succession on the winter range areas.**
- 2. That the trend areas established during this investigation be**

censused at intervals, which may include censusing with conventional airplanes each year and with helicopters every five years; and that a complete census by helicopter be conducted at such intervals as deemed advisable by apparent population changes.

3. That following the completion of the Lewis and Clark Highway an increased number of elk be removed by harvest or other means from the Lochsa River drainage.
4. That long-range management planning include the censusing of big game on wintering areas adjacent to the study area.

Big Game Tagging

Information on the seasonal movements of the various big game herds is important in a management program. In Idaho a lack of ample productive winter range is frequently the limiting factor to larger big game herds. By knowing how far and from what areas the various big game animals drift or migrate into the winter concentration sites, management can be applied with assurance that both the range and the big game herds will be maintained and perpetuated in a productive condition.

Trapping, tagging, marking, and releasing big game animals has been one of the most accurate and successful methods of determining big game movements. To date deer and elk have received particular attention in this program, and tagging operations in the biennium were concentrated upon deer.

The Highland Valley site, approximately eight miles east of Boise, has been one of the most successful deer tagging sites during the biennium. In addition to a numbered tag placed in each deer's ear, a small bell held by a strap was placed on a number of the does. Bells have proven helpful in obtaining reports of the distribution of the belled deer throughout the year. The traps are constructed of a pipe frame covered with netting to minimize injury to the deer.

Generally the deer are taken within 15 to 20 miles of the winter tagging site. However, tags have been returned from the Soldier Mountain Game Preserve, the Payette River Game Preserve, and near Atlanta up to 50 miles airline from the winter tagging site near Boise.

The following table summarizes the deer trapping and tagging:

Summary of Deer Trapping and Tagging, 1956-1957

Year	Tagging Site, County	No. Tagged	No. Tagged Deer Killed Next Hunting % Season	Return	Big Game Species
1956	Highland Valley, Ada	69	18	26	Mule Deer
1957	Highland Valley, Ada	55	2 of 1956 3 of 1957	4 5	Mule Deer Mule Deer
1956	Farragut, Kootenai	24	1 of 1954 3 of 1956	4 13	W.T. Deer W.T. Deer
1957	Farragut, Kootenai	33	2 of 1956 9 of 1957	6 27	W.T. Deer W.T. Deer
1957*	Wildhorse Canyon, Elko Nevada	35*	..	..	Mule Deer

*tagging in cooperation with Nevada Department of Fish and Game to study interstate deer movements

In addition, 42 deer were trapped, tagged, and released in Kootenai and Bonner Counties in northern Idaho.

Big Game Salting Studies

To obtain additional factual information as to the practicability and benefits obtained from big game salting, the salting studies, which were started in May of 1955 in the lower Selway River, were continued through the biennium.

This study is a cooperative project of the Idaho Cooperative Wildlife Research Unit, the U.S. Fish and Wildlife Service, and the State of Idaho, Department of Fish and Game. Except for short introductory periods, only one investigator was on the project at a time. Most of the field work was conducted from May to September, supplemented by periodic trips during the fall and winter.

Evidence to date indicates that salt here is not appreciably effective in inducing an earlier drift from the winter range. Elk apparently concentrate adjacent to the artificial and natural licks. Elk continued to use the artificial licks the second year after placement and part of the artificial licks were observed to be used beyond two years after salt placement. Studies of big game movements and concentrations in the area were included in this investigation.

There were 78 tons of salt placed in 1956 of which 3,900 pounds were placed in the study area. Six tons were placed in 1957 with 4,000 pounds placed in the study area. In the spring of 1958, 29 tons were distributed on big game range north of the Main Salmon River.

Artificial Revegetation Studies

The Idaho Fish and Game Department and the Intermountain Forest and Range Experiment Station of the U.S. Forest Service have continued their cooperative studies to develop techniques of browse revegetation as a means of improving forage production on critical game winter ranges.

Sufficient knowledge has been gained to permit an action program of range improvement. In 1957 bitterbrush was seeded on approximately 150 acres of game range on the South Fork of the Payette River, and on 100 acres on the South Fork of the Boise River. An additional 200 acres were seeded on the Boise River in 1958.

A bulletin has been prepared setting forth principles and techniques of game range revegetation which should be of interest to game managers throughout the West.

Protection of Stacked Crops From Big Game Depredations

To protect stacked crops of land operators against depredations by deer and elk, the Fish and Game Department supplies panels to be placed around stacks. Each land operator using these panels signs a cooperative agreement and the Fish and Game Department supplies three-fourths of the required panels with installation and maintenance handled by the landowner. This program is working satisfactorily and has kept depredation complaints to a minimum.

GAME BIRDS

Pheasant

One of the important segments of management data which the Department gathers is the winter pheasant sex ratio count. This count

is taken during January of each year when weather conditions are generally most suitable for this type survey. A snow cover and clear, cold weather create excellent counting conditions. No attempt is made to count all the birds in any given area since the actual number counted is not too significant. When counts are taken in a random manner the results should be very close to the actual sex ratio in the field. The results of counts taken for the last three years are shown in the accompanying table. It can be seen that the indicated pheasant sex ratio for the past two years of two hens for each cock has been much higher in cocks than is needed since a ratio of seven or eight hens per cock would be adequate for reproductive purposes.

Comparison of Pheasant Sex Ratio Counts, 1956-1958

Dist.	1956			1957			1958		
	Cocks	Hens	Sex Ratio M/100 F	Cocks	Hens	Sex Ratio M/100 F	Cocks	Hens	Sex Ratio M/100 F
One	111	255	44:100	217	355	61:100	105	183	57:100
Two	491	969	51:100	374	824	45:100	255	397	64:100
Three	2623	8290	32:100	1906	3931	48:100	2826	6277	45:100
Four	2115	4006	53:100	2718	4035	67:100	2353	3695	64:100
Five	2122	4846	44:100	2488	5566	45:100	712	1676	42:100
Totals	7462	18366	41:100	7703	14711	52:100	6251	12228	51:100

For several years, checking stations on the opening week end of the season have been used to measure the average hunter success. It has been demonstrated that at least 50 per cent of the total kill during any pheasant season will take place during the opening week end. The results of these checks for the last two years are shown in the accompanying tables. There was plenty of evidence during the summer of 1957 that it had been an excellent production year for pheasants. This was borne out in the harvest information which showed the highest average hunter bag for any of the six years that this information has been gathered.

Comparison of Pheasant Checks on Opening Week End, 1956-57

District	Year	No. of Hunters	Hours Hunted	Total Birds	Birds Per Hunter	Hours Per Bird
One	1956	308	803	142	.46	5.6
	1957	432	992	243	.56	4.1
Two	1956	646	1,992	445	.69	4.5
	1957	908	2,789	818	.89	3.4
Three	1956	3,484	11,987	3,672	1.1	3.3
	1957	3,532	12,170	4,518	1.3	2.7
Four	1956	1,710	4,986	1,558	.91	3.2
	1957	2,066	5,138	2,234	1.1	2.3
Five	1956	1,727*	8,310	1,481	.86	5.6
	1957	3,900	16,453	4,042	1.0	4.1
Totals	1956	7,875	28,078	7,298	.93	3.8
	1957	10,838	37,542	11,855	1.1	3.2

*Check taken on Sunday only.



Checking stations are used to determine average hunter success on opening weekends of the pheasant season each year. About fifty per cent of the total kill occurs on opening weekend.

Sage Grouse

Sage grouse populations showed an increase in most areas of their range and hunting seasons were allowed during 1956 and 1957. The results of checking stations operated during the seasons are shown in the accompanying table. Counts taken during the spring of 1958 did not indicate any harm had been done to populations by the two previous open seasons.

Comparison of Sage Grouse Checking Station Results, 1956-57

District	Year	No. of Hunters	Hours Hunted	Total Birds	Birds Per Hunter	Hours Per Bird
Three	1956	1,162	5,143	1,034	0.89	5.0
	1957	806	2,122	770	0.96	2.8
Four	1956	4,179	13,069	4,084	0.98	3.2
	1957	513*	1,611	694	1.40	2.3
Five	1956	5,149	17,825	4,890	0.95	3.7
	1957	4,931	16,976	3,868	0.78	4.4
Totals	1956	10,490	36,037	10,008	0.96	3.6
	1957	6,250	20,709	5,332	0.85	3.9

*Area open reduced in size from 1956.

Forest Grouse

Open seasons were continued on forest grouse in most areas of the state which have populations of these birds. In 1956, opening week end checks showed that 1,032 hunters had taken 1,189 birds. The same stations in 1957 checked 1,163 hunters with 895 birds. The largest reduction in hunter success showed up at the Mink Creek station near Pocatello. The data from this station were complicated by the fact that the general deer archery hunt in this area opened on the same day as the grouse season and a large number of hunters were checked through who had not actually spent much time hunting grouse.

Sharp-tailed Grouse

Very little change was noted in the status of sharp-tailed grouse during the biennium. Populations have been fairly static for a number of years. Fremont County has the largest number of these birds with scattered flocks being observed occasionally in other counties of the state.

Hungarian Partridge

The system of having the Hungarian partridge season coincide with the pheasant season was continued during the biennium. To most hunters, Huns are incidental species that they will take only if the opportunity presents itself while they are pheasant hunting. The population increase noted in 1955 continued during the biennium and has been quite substantial in some areas.

Chukar Partridge

Each year since 1953 when three counties were open for one and one-half days, it has been possible to open additional counties to the hunting of this species and in some instances to lengthen the season. In 1956, there were 14 counties open for periods varying from 18½ to 29½ days. In 1957, there were 20 counties open with seasons from 22½ to 29½ days in length. Chukar hunting is definitely hard work and it has been difficult to arouse interest in enough hunters to adequately harvest this species.

Quail

Most quail populations have followed the upward trend of the Hungarian partridge during the biennium. Except by the confirmed quail hunter, these birds are considered minor species. Many areas could stand more hunting without endangering the quail population.

Mourning Dove

Idaho continued to participate in the nation-wide study of breeding populations of mourning doves being coordinated by the Bureau of Sport Fisheries and Wildlife. Nesting populations remained high during the biennium. Returns from the hunter questionnaire show that, in respect to numbers taken, the mourning dove is second only to the pheasant in popularity among upland game bird hunters.

Waterfowl

The 1956 and 1957 waterfowl hunting seasons were not considered to be too successful by most hunters. Although the length of season and bag limit for both years were the most liberal for some time, the weather over a large part of the season was not conducive to good waterfowl hunting. There were plenty of birds in the state, but the lack of stormy weather prevented high hunter success except for short isolated periods.

In January of each year, all states participate in a winter waterfowl inventory coordinated by the Bureau of Sport Fisheries and Wildlife. The results of the counts in Idaho for the past five years are shown in the accompanying table.

Idaho Waterfowl Mid-Winter Inventory January 1954-January 1958

	1954	1955	1956	1957	1958
Mallard	394,034	344,054	379,436	302,569	341,435
Baldpate	20,780	27,658	19,539	16,740	17,686
Pintail	24,237	17,891	5,231	9,045	19,256
Green-winged Teal	2,274	1,707	1,318	818	2,489
Blue-winged Teal	9	..	..	..	2
Shoveller	83	554	157	2,568	1,783
Gadwall	263	1,246	1,131	651	1,382
Wood Duck	102	..	2	3	..
Redhead	1,147	2,559	5,724	2,102	3,072
Canvasback	2,887	3,477	1,629	1,744	1,717
Scaup	2,191	2,602	1,927	4,062	3,249
Ringneck	800	2,313	1,002	6	423
Goldeneye	8,414	10,713	11,188	17,612	11,115
Bufflehead	992	834	1,007	564	519
Ruddy Duck	152	76	127	53	236
Unidentified Ducks	7,246	3,657	8,058	5,330	5,729
Canada Goose	12,375	6,709	11,281	8,859	6,826
Snow Goose	2	1	6	3	..
Cackling Goose	..	2	..	..	..
Whistling Swan	102	134	1	226	110
Trumpeter Swan	419	290	323	326	234
Mergansers	5,574	1,605	5,514	7,694	4,592
Coot	49,750	36,832	24,646	11,165	12,419
TOTALS	533,833	464,914	479,247	392,140	434,274

Game Farms

Artificial propagation was continued at the game farms at Lapwai and Jerome. The holding pens at the Eagle Fish Hatchery and the Hagerman Wildlife Management Area were also utilized. Both game farms raised pheasants and the Jerome farm also raised all chukars liberated during the biennium. The production and planting records for the game farms are given in the accompanying tables. In addition, Jerome furnished the Bonneville County Sportsman Association with 2,040 day old pheasant chicks in 1957 and 2,010 day old pheasant chicks in 1958.

Pheasant Production Record Jerome Game Farm Planting Record

County	1957				1958			
	Spring Release	Brood Stock	Summer Release	Total	Spring Release	Brood Stock	Summer Release	Total
District No. Three								
Ada	46		905	951			720	720
Adams	100		400	500			560	560
Elmore			432	432			360	360
Gem	100		630	730			560	560
Owyhee	100		810	910			720	720
Payette					50			50
Washington	200		919	1,119	50		755	805
	546		4,096	4,642	100		3,675	3,775
District No. Four								
Butte	300		408	708		300	700	1,000
Cassia		352	554	906	240		1,000	1,240
Custer			220	220			225	225
Jerome			504	504				
Lemhi	204		300	504			300	300
Lincoln			414	414				
Minidoka		352	1,124	1,476	260		1,110	1,370
Twin Falls	135	320	920	1,375			550	550
	639	1,024	4,444	6,107	500	300	3,885	4,685
District No. Five								
Bannock	130	192		322		300		300
Bingham	60		1,344	1,404			1,140	1,140
Bonneville			608	608			560	560
Caribou		450	330	780		660		660
Franklin			680	680			560	560
Jefferson	216		280	496	300		360	660
Madison	216		684	900	270		765	1,035
Oneida		460	300	760		600	360	960
Power		135	504	639		200		200
	622	1,237	4,730	6,589	570	1,760	3,745	6,075

**Pheasant Production Record
Lapwai Game Farm Planting Record**

County	1957				1958			
	Spring Release	Brood Stock	Summer Release	Total	Spring Release	Brood Stock	Summer Release	Total
District No. One								
Benewah	720		1,583	2,303			1,197	1,197
Boundary	1,182		2,808	3,990			1,850	1,850
Kootenai	480		1,224	1,704			636	636
	2,382		5,615	7,997			3,683	3,683
District No. Two								
Clearwater	220	153	1,043	1,416		143	563	706
Idaho	438	324	2,106	2,868		283	1,130	1,413
Latah	437	324	2,107	2,868		283	1,125	1,408
Lewis	220	161	1,053	1,434		143	561	709
Nez Perce	437	325	2,119	2,881	71	287	1,125	1,483
	1,752	1,287	8,428	11,467	71	1,144	4,504	5,719

Lapwai Incubation Report

Pheasant	1957		1958	
Eggs Set	22,817	%	19,778	%
Infertile	1,564	6.9	1,336	6.8
Dead Shell	1,644	7.2	1,920	9.7
Broken	137	.6	83	.4
Culls	313	1.4	278	1.4
Hatch	19,159	83.9	16,161	81.7

Jerome Incubation Report

Pheasant	1957		1958	
Eggs Set	29,328	%	28,243	%
Infertile	2,354	8.0	2,369	8.4
Dead Shell	4,692	16.0	5,684	20.2
Broken	237	.8	61	.2
Culls	625	2.2	341	1.2
Hatch	21,419	73.0	19,788	70.0

Chukar Partridge Planting Record

County	1957				1958			
	Spring Release	Brood Stock	Summer Release	Total	Spring Release	Brood Stock	Summer Release	Total
Ada	200			200				
Bannock	150			150				
Butte						60		60
Caribou	150			150				
Elmore	200			200				
Idaho	250			250				
Jefferson	100			100				
Nez Perce	275			275				
Oneida	150			150				
Power	150			150				
Twin Falls	155	50		205	150	60		210
Washington	150			150				
	1,930	50		1,980	150	120		270

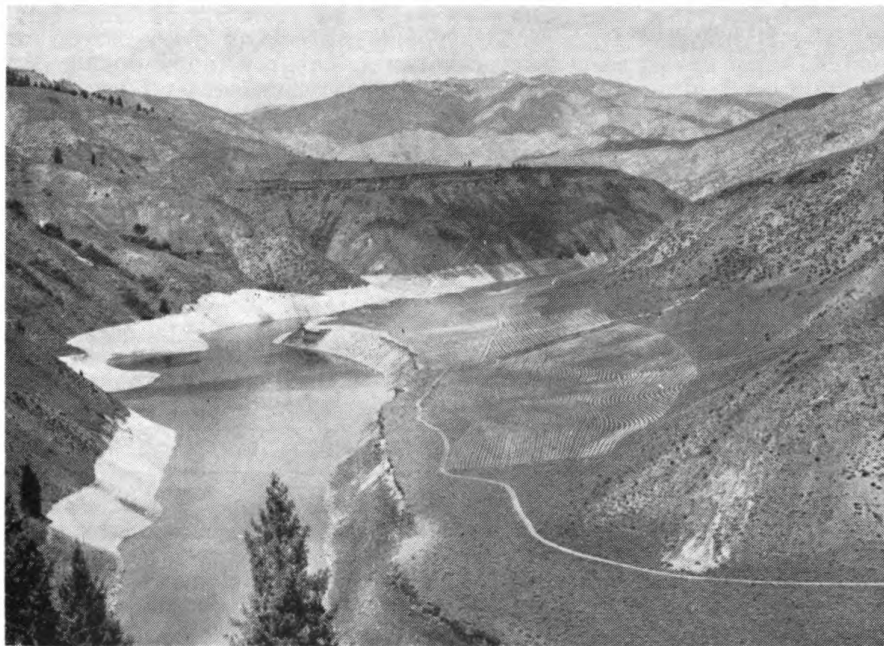
Habitat Improvement

The major objective of the habitat improvement program is to correct, where possible, those characteristics of the environment which limit the abundance of desirable species. If one general habitat deficiency for game birds were to be selected, it would be the lack of food and cover during critical winter months. Other deficiencies encountered which affect upland game birds are lack of protected nesting and brood cover and lack of water during the dry summer months.

Four biologists are assigned to the project to determine the needs for improvement in various portions of the state, to supervise crews who do the improvement work, and to evaluate the success of past improvement work in the light of increased wildlife populations and benefit to the public. Many improvements deemed necessary and beneficial to wildlife can be incorporated into land management practices of other agencies and individuals. Where these opportunities exist, every effort is made to advise other agencies and individuals of the needs of wildlife and of the benefits that proper land use provides to wildlife.

The Fish and Game Department has entered into cooperative work agreements with 28 of the 51 Soil Conservation Districts in the state. As the work unit conservationists work with the individual farmers, farming practices which are also beneficial to wildlife can be incorporated into the overall farm plan. Oftentimes grassed waterways that would also furnish nesting and brood cover or tree and shrub shelterbelts that would provide food and cover for wildlife

One habitat improvement project shows big game winter range on the South Fork of the Boise River. Light colored curve on right center has been planted to bitterbrush, a favorite with deer and elk.



result from this cooperative work. Active departmental participation in the planning of farm programs such as the Agricultural Conservation Program and the Soil Bank Act has resulted in a degree of benefit to wildlife conservation. To date, the Conservation Reserve phase of the Soil Bank Act has resulted in few benefits to wildlife because of the low financial returns to the farmer. Recently increased remuneration rates for land placed in the Conservation Reserve and termination of the Acreage Reserve phase of the Soil Bank Act is expected to create increased participation in the Conservation Reserve which will result in increased benefits for wildlife.

During the biennium two more plastic water tanks were installed for game bird use in arid areas of the state. These plastic tanks, commonly called guzzlers, are designed to catch and store rain and snow water. They are installed underground and have an inclined ramp which allows birds easy access to any water level in the tank. During the same time nine seeps were fenced to prevent livestock trampling and to allow vegetative cover to develop. Seep development work has been accomplished primarily on federal lands administered by the Bureau of Land Management. So that range livestock is not denied access to needed water, pipes are installed to carry water out of the fenced areas into watering troughs which are provided by the Bureau of Land Management. These areas are being planted to trees and shrubs after they are fenced. Many more seep areas are available for development and it is planned to continue this program of providing additional water that will be beneficial to wildlife.

During the biennium long-term leases were obtained from the Bureau of Reclamation on 21 plots of land in Minidoka County. These areas are located in a new irrigation project and vary in size from 9 to 48 acres. As desirable management plans are formulated and money is available, the areas are being developed for wildlife. Fencing against livestock trespass and planting of trees and shrubs has been accomplished on some of the areas and more of it will be done in the future. The present high population of black-tailed jackrabbits is a serious hindrance to successful establishment of desirable trees and shrubs at this time. The areas will be maintained as public hunting areas.

The planting of trees and shrubs to provide food and cover for upland game birds, especially pheasants, has continued during the biennium as a major phase of the habitat improvement program. The following summary shows the plantings accomplished during 1957 and 1958.

Summary of Tree Plantings, 1957-58

Year	No. of Planting Sites				Trees and Shrubs Planted		Acres Opened to "Hunting"	Acres Planted by Permission
	SCD	Pvt.	Dept. Lands	Other	In New Plantings	For Replants		
1957	87	6	2	2	91,413	4,401	97	16,821
1958	106	4	4	4	80,619	7,993	104	23,743
TOTAL	193	10	6	6	172,032	12,394	201	40,564

Before plantings are made on private lands, the landowner agrees that he will allow a reasonable amount of hunting to those who ask permission. As indicated by the chart above, this stipulation has resulted in an additional 40,500 acres being assured access to hunting by the public making a total of nearly 112,000 acres of such open hunting area since 1952.



Wildlife Management Areas are developed and improved to aid wildlife and provide public use. This deep-water channel was dug at the Carey Lake Area to provide fishing access to the lake and also made dirt islands for nesting waterfowl.

The three observational test areas where different species of trees and shrubs are planted to determine their potential usefulness in tree and shrub plantings have resulted in the use of better tree and shrub species. Promising species are added to the testing areas as the Department becomes aware of them.

Wildlife Management Areas

To help augment game abundance and increase recreational opportunity for an ever increasing number of outdoor enthusiasts, the Idaho Fish and Game Department has acquired a number of important land and water areas in various sections of the state. These areas, known as Wildlife Management Areas, are being developed and managed specifically for wildlife. Public use of the areas is allowed and encouraged where such use does not interfere with the primary objective of wildlife production. Every effort is made to permit hunting and fishing since a proper harvest is an important part of our wildlife management program. Not only are fishermen and hunters beginning to realize increased benefits from the management areas, but bird watchers, picnickers, boaters, various youth groups, etc., have become aware of the educational and recreational opportunities available. It is very encouraging that so many people have become enthusiastic users of these areas. Public use of the management areas has shown a notable increase during the biennium and the areas will become increasingly important each year.

Location and Major Use of Wildlife Management Areas

Name—County	Primary Benefits
Boise River—Boise	Deer, elk, public access
Boundary County—Boundary	Waterfowl, furbearers, deer, public fishing
Carey Lake—Blaine	Waterfowl, sage grouse, furbearers
C. J. Strike—Owyhee, Elmore	Waterfowl, pheasant, quail, public access
Farragut—Kootenai	Deer, public access
Hagerman—Gooding	Waterfowl, pheasant, public fishing
Market Lake—Jefferson	Waterfowl, pheasant, furbearers
Middle Fork, Salmon—Valley, Custer, Lemhi	Deer, elk, public access
North Lake—Jefferson	Waterfowl, pheasant, antelope, sage grouse, public fishing
Sand Creek—Fremont	Elk, deer, moose, waterfowl, sage grouse, sharp-tailed grouse, public fishing
Star Lake—Lincoln	Waterfowl, pheasant, sage grouse
Valley County—Valley	Waterfowl, deer

Development and Maintenance

Development of many of the management areas has progressed to the stage where much of the work load is now one of maintaining the desirable conditions that have been attained. However, on these areas where this level has not yet been achieved, steady progress toward that goal was made during the biennium. On all of the areas more efficient operation is constantly being sought by means of improved irrigation and water-handling devices, leveling of crop land, relocation of fences, construction of new and the improvement of existing access roads and trails, and the purchase of needed machinery and equipment. Boat launching sites, picnic and sanitary facilities have been provided for the public on many of the areas.

Crop production for the use of wildlife is an important work phase on each of the areas. In addition—trees, grasses and shrubs have been planted to improve living conditions for wildlife. Creating additional water areas has been beneficial on many of the areas.

There were few major development activities during the biennium. The artificial ponds at Sand Creek were enlarged to provide additional waterfowl area and improve conditions for fish and fishing. At Carey Lake several improvements of the irrigation system were made which resulted in a more efficient use of irrigation water. Leveling of 65 acres of crop land at C. J. Strike improved conditions for the production of wildlife foods. Also, additional water control structures were installed to allow creation of shallow ponds for the benefit of waterfowl. The dwelling at Star Lake was renovated and new electrical wiring was installed. A new culinary water supply system was installed at Hagerman.

Various Federal Aid projects and some regular Departmental funds were utilized in carrying on the work involved in the Wildlife Management Area program.

Furbearers and Predators

Furbearers

The fur resources survey, Federal Aid Project W 108-R, was concluded at the end of the biennium. Many of the Department's fur management activities were carried out through this project, and

important jobs will be continued in the future as a part of the management program.

Beaver

The statewide survey of the beaver caretaker trapper program revealed that Idaho contains approximately 44,000 miles of streams, over 7,000 miles (17 per cent) of which are subject to continual beaver damage complaints.

During the eleven seasons the caretaker program of beaver management was in operation, beaver harvests by these trappers averaged nearly 8,000 pelts per year. In 1957-58, Idaho had its first open beaver season in recent history and a record catch of approximately 24,000 pelts was posted by the licensed trappers of the State. A tag costing \$1.00 was required for each beaver pelted.

Prior to this first open season, population densities were sampled on major streams of the State by means of an aerial count of beaver food storage piles or "caches," each of which represents one colony. The figures obtained are presented in the following table and will be compared with future counts to evaluate the effect of open seasons on the beaver population.

Aerial Beaver Colony Count by Districts, 1957

Area	Stream Miles Counted	No. of Colonies	Stream Miles Per Colony	
			Average	Extremes
District 1	108	46	2.3	2.1- 2.6
District 2	230	35	6.5	5.0-13.0
District 3	387	99	3.9	1.9- 7.3
District 4	325	61	5.3	2.7 *
District 5	604	273	2.2	.6- 6.0
Statewide	1,654	514	3.2	.6 *

*no colonies in 50 stream miles

Annual Fur Catch

The 1955 legislature changed the term of the trapper's license from a calendar year to a July 1 to June 30 period, which covers an entire trapping season. For the 1955-1956 season, both types of licenses, 1955 calendar year and 1955-56 season, were sold, numbering 440 and 669 licenses respectively. In 1956-57, 776 trappers' licenses were sold.

During the biennium trapping activity and fur values continued the general decline which has been in effect since 1950, and the catch of most furbearers has been far below normal.

1955-56 Season

Species	Number Caught	Value	Average Price Per Pelt
Muskrat	145,598	\$123,493.26	\$.85
Mink	559	8,266.71	14.88
Marten	340	2,301.04	6.91
Otter	72	1,224.38	17.85
Raccoon	188	205.10	1.13
Fox	0		
Totals	146,757	\$135,490.49	

Number of Beaver Pelted and Value of Skins Sold

Season	Class A Trappers	Class B Trappers	Salaried Trappers	Conservation Officers	Total Pelts	Receipts*
1956-57	202	6,233	588	116	7,139	\$69,285.20
1957-58	17	1,120	379	75	1,591	\$10,731.50

*State received 25 per cent of receipts from furs taken by caretaker trappers, and full value of skins taken by salaried trappers and conservation officers.

The number of beaver taken by caretaker trappers in 1956-57 was similar to that in 1955-56 but decidedly lower in 1957-58 when most of the beaver trapping was done by private trappers during the first general open season.

1956-57 Season

Species	Number Caught	Value	Average Price Per Pelt
Muskrat	91,043	\$ 55,797.34	\$.61
Mink	3,407	42,160.65	12.37
Marten	366	2,110.30	5.75
Otter	77	1,528.13	19.85
Raccoon	335	234.36	.70
Fox	7	15.61	2.23
Totals	95,235	\$101,846.39	

Predators

Support of the cooperative predator control program, state trappers, and a bounty on cougar composed the predator control operations during the biennium. Expenditures under each activity were as follows:

Total Predator Control Expenditures

	Cooperative Program	State Trappers	Cougar Bounty	Total
1956-57	\$21,300.00	\$7,707.39	\$1,425.00	\$30,432.39
1957-58	18,000.00	4,987.65	225.00	23,212.65

Cooperative Control Program

The major predator control activity consisted of contributing to the cooperative program administered by the Branch of Predator and Rodent Control, Bureau of Sport Fisheries and Wildlife. Operations involving the use of poisons are not supported by Department funds. That portion of the program financed by the Fish and Game Department is summarized in the following table:

	Salaries & Wages	Other Expenses	Aircraft Hire	Total Cost	Predators Taken	
					Coyotes	Bobcats
1956-57	\$15,816.51	\$3,260.49	\$2,223.00	\$21,300.00	657	248
1957-58	14,108.85	1,269.90	2,621.25	18,000.00	469	285

State Trappers

In 1956-57 two Department trappers were assigned to predator control in northern Idaho. Their activities accounted for 376 coyotes and 79 bobcats.

In 1957-58 part of the program was aimed at showing landowners who have losses from predators how to trap coyotes and bobcats. This directs control operations at the individual animals which are responsible for depredations on domestic stock at the place where losses are occurring, and has proven more effective in reducing losses than widespread indiscriminate trapping over a large area by hired trappers.

Actual control activities were directed at known depredation areas, and one trapper destroyed 79 coyotes and 4 bobcats during this period.

Cougar Bounty

A statewide bounty of \$25 per cougar was in effect during the 1956-57 fiscal year. In 1957-58 bounty was paid only on animals taken in the five northern counties of the State.

	Bounty Per Cougar	Area	Number Bountied	Total Cost
1956-57	\$25	Statewide	57	\$1,425.00
1957-53	\$25	Five Northern Counties	9	225.00

Cooperative Wildlife Research Unit

The Idaho Cooperative Wildlife Research Unit has been in operation for ten and a half years as of June 30, 1958. The unit leader, Paul D. Dalke, devotes full time to the training and research activities of the Unit. Kenneth E. Hungerford teaches both undergraduate and graduate courses in wildlife management and devotes approximately half time to research. Craig MacPhee in fisheries management also divides his time approximately one half teaching and one half research.

During the biennium eleven investigations were worked on by graduate students. Three studies are being continued as a part of longer time investigations.

A long-time study on the evaluation of salt in the management of elk, begun in the last biennium, has continued through the current biennium and will be completed in 1960. The first investigator, R. C. Beeman, presented a master's thesis entitled: "Salt in the management of elk and other wildlife in the lower Selway River area." Beeman was followed by Fred J. Kindel, who continued the work of the project and prepared a master's thesis, "Salt in the management of elk in the lower Selway River drainage, Idaho." All of the field work for the third phase of the study which emphasized migration was completed by the close of the biennium by Robert J. Robel.

The second phase of a long-term study on the sage grouse was completed by Don C. Stanton on "A study of breeding and reproduction in a sage grouse population in southeastern Idaho."

In November, 1956, the investigation on "A preliminary study of an antelope herd in Owyhee County, Idaho" was completed by Robert V. Folker.

In September, 1958, Algirdas Greichus presented a master's thesis on "The species and incidence of helminth parasites found in the wild and domestic ruminants of Idaho and their possible transmission from the wild to the domestic ruminants." This was a cooperative study with the Department of Veterinary Science.

The last phase of a study on magpies was completed by Robert E. Jones with a master's thesis entitled "The influence of magpie predation on nesting pheasant and waterfowl populations in southern Idaho."

E. Reade Brown on leave from the Washington Game Department, completed a master's thesis on "The use of sodium TCA and Dalapon to control the competition of perennial grasses with bitter brush seedlings." Field work of this investigation was done in north-central Washington as a State Game Department P-R investigation.

A study of the influence of logging on trout streams in northern Idaho continued through the biennium and two master's theses were completed. Wayne E. Oien presented a thesis, "A pre-logging inventory of four trout streams in northern Idaho."

The continuity of this study was broken during the second phase of the investigation by the death of Dr. Virgil S. Pratt in January, 1957. Supervision and direction of the study was taken over by Dr. Craig MacPhee in August, 1957. In June, 1958, Roger Bachmann com-

pleted a master's thesis on "The ecology of four north Idaho trout streams with special reference to the influence of forest road construction."

"A survey of the fishery resources of Priest and Upper Priest Lakes and their tributaries, Idaho" was completed by Theodore C. Bjornn in June, 1957, as a master's thesis. This study was undertaken as a D. J. project for the Fish and Game Department.

Age and growth studies of rainbow and steelhead trout in the Clearwater River were completed by Dr. MacPhee for the Fish and Game Department's D. J. studies on Clearwater River Fisheries investigations. Another phase of the over-all investigation involved attempts to distinguish resident rainbow trout from sea-run steelhead. The work was coordinated by the Unit with the actual research being done by Departments of Bacteriology and Physics at the University of Idaho.

Research in Progress

The salt evaluation study on elk together with the influence of natural licks on migration patterns is the last phase of this long-term study by Williams and Dalke. Completion is expected in 1960.

The sage grouse investigation concerning productivity and year-round movements under Schlatterer and Dalke is now in the final phase with completion in 1960.

Another phase of the white-tailed deer research has been started on the Hatter Creek 800-acre deer enclosure by Thilenius and Hungerford. This work involves a study of the degree of competition for browse between white-tailed deer and cattle.

A new investigation was started at the close of the biennium on plant succession and utilization by livestock and big game in a sand dune area in Fremont County, Idaho by Chadwick and Dalke. The problem is important because moose, elk, and deer use the sand dune area for winter range, while livestock are present on the same areas during the summer.

The nutritional quality of big game browse was tested in experiments using hamsters and rabbits and simulated browsing was continued on red stem ceanothus on the Hatter Creek enclosure. This research is being done by Hungerford and student help. Microclimate studies concerning ruffed grouse and white-tailed deer by Hungerford continues on the Hatter Creek area of the University Experimental Forest.

The study on the influence of logging on trout streams will be continued into the post-logging phase as soon as the areas are logged. In the meantime, some prelogging data will be collected by summer field assistants.

During 1957 a short-term project on the post-larval development and diet of the large scale sucker was started by MacPhee and Casey.

A bioassay of Bear Lake waters was undertaken by MacPhee on a contract basis for the Fish and Game Department. The purpose was to determine factors which might be inhibiting the production of phytoplankton and, if possible, to determine an economical method of increasing it.

During the biennium eleven men completed requirements for the master's degree, five in big game, two in upland game birds, three in fisheries, and one on big game browse.



Idaho youth summer camps are visited each year and wildlife educational programs are conducted by Fish and Game Department personnel. Firearms safety training is a part of this project, as well as nature trail work, displays of mounted birds and animal skins, and resource conservation.



Information and Education

Creating a general understanding of Idaho wildlife conservation policies and programs, assisting the state's educators in bringing the basic conservation story to Idaho youth, and maintaining a constant flow of information directly to the hunter and fisherman are the basic objectives of this departmental activity.

Conservation information and education is an integral part of the department's organization. A state office staff of four conservation educators and the division chief, plan and operate the various special service functions of the division. Two Conservation Educators, assigned directly to educational work, devote a large portion of their time in working with the public schools, youth groups, sportsmen's clubs and civic organizations.

All office and field personnel of the department spend a considerable portion of their time performing informational and educational duties. To assist in keeping this function at a high level, the division is dedicated to the task of maintaining a constant flow of information to them at all times.

In-service-training sessions for all personnel are also held each year at which time the operating policies and programs of the department are explained in detail. The fourth annual school was held at the Farragut Wildlife Management Area in August, 1957. No regular school was held last year since all personnel were invited to attend the Western Association Conference of Game and Fish Commissioners at Sun Valley in June, 1958.

Three regular district meetings were held each year with the main objective of gathering information for the management of fish and game. These sessions were also used to explain various projects and programs being conducted by the various divisions of the department.

All of the regular conservation information and education services were continued during the biennium. Actually, very few major changes were made even in the special projects such as hunter safety and landholder-sportsman relations. Some activities were expanded in scope, however. Newspaper reporting was improved with the addition of a feature writing service, more miscellaneous information circulars were prepared and distributed, the conservation and hunter safety presentations in the public schools were stepped up considerably, and the demand for county and regional fair exhibits increased statewide.

Information services included:

1. Maintenance of a central office news service with a weekly distribution of:
 - a. Dated news releases on department activities, usually Monday through Thursday.
 - b. A weekly condensation of the news for Thursday release.
 - c. Distribution of pictures and mats on department activities for Thursday release.
 - d. Distribution of a feature article on Idaho wildlife for Sunday release.
 - e. Special news releases to the wire services.
2. Publication of the IDAHO WILDLIFE REVIEW, a bi-monthly magazine.

3. Publication of various conservation information and education pamphlets and circulars.
4. Publication of regulations and legal notices.
5. Production of a statewide wildlife information radio program.
6. Maintenance of a film-loan library on various wildlife subjects.
7. Photographic services, including both still and moving picture production.

Educational activities were:

1. Public school assistance: (a) special lectures on hunter safety and conservation, (b) classroom conservation projects, (c) liaison work with school administrators and teachers in conservation education.
2. Summer youth camp education with lectures and exhibits.
3. Wildlife exhibits for fairs and sportsman's jamborees.
4. Assisting the Idaho Wildlife Federation in conservation education including the statewide essay contests, and the summer conservation workshops for Idaho teachers.
5. Landholder-Sportsman Council program activities.
6. Talks, lectures, and demonstrations on wildlife conservation to clubs and organizations.

Information

Many thousand requests for information concerning fish and game management, hunting and fishing possibilities, and related items are processed through the Division during each biennium.

In addition to regular information operations, the Division prepares and disseminates regular news services to newspapers, radio stations, wire services and other news outlets.

Nearly 10 thousand written inquiries were answered and over 15,000 information bulletins and leaflets were mailed upon request during the period.

During the two year period, nearly 1,500 news stories were prepared and mailed to over ninety Idaho newspapers and several outside the state. These stories covered items such as department projects and programs, fish and game management activities, various seasons and regulations and any special items connected with the wildlife resource of Idaho. Mats were prepared and mailed to papers on an average of three times a month. Feature articles with photographs were prepared for one year.

Other specialized activities of the information section included participation in National Wildlife Week, materials for fairs and exhibits, special maps and bulletins and radio and TV spot announcements.

Publications

Publication of the *Idaho Wildlife Review*, official magazine of the Fish and Game Department, was continued during the biennium. This is issued six times a year and is free to Idaho residents. A fee of \$1.00 per year is presently charged to non-residents.

A slight but steady increase has been noted in the number of subscriptions for the publication. Mailing has increased nearly 1,000 copies per issue during the past two years with the present number totaling 15,650 copies each issue. A few extra copies are printed each time and are distributed at fairs, exhibits and meetings.

Despite some increase in paper and labor costs, the over-all cost to the department has remained nearly level with previous years. Based on random surveys it is believed that approximately 60 thousand people read the **Idaho Wildlife Review**.

Reprints have been made of articles dealing with game and fish management and one page sheets containing information about Idaho birds, furbearing and game animals. A new series dealing with major Idaho browse plants is now being run. Most of these reprints go to school children, youth groups, libraries and for exhibit purposes.

Twenty-five thousand copies of a detailed booklet titled "Hunting and Fishing in Idaho" were prepared and issued. These provide information about good hunting and fishing areas . . . time of the year that is best . . . license fees . . . hunting seasons . . . information about outfitting and packing and roads, campgrounds and air facilities. Copies were sent to Chambers of Commerce, the Department of Commerce and Development and to Idaho Ports of Entry.

A forty page booklet titled "Your Fish and Game Department" was printed during the biennium. Illustrated with photographs, it provides information on the functions and activities of the Department. It explains the organization and fiscal operation and the duties, responsibilities and activities of the five primary divisions. Game animals, birds, fish and furbearers of Idaho are listed.

Other publications included: "Idaho Fish Facts" dealing with hatchery production, transportation of trout and release methods; "Proper Field Care of Game Meat"; "Mr. Hunter" what to do when lost in the mountains; and books and leaflets dealing with the fire-arms safety program.

Other publications included game and fish seasons and regulations and maps, upland game bird and waterfowl regulations and trapping seasons. Lists of Idaho outfitters and packers were also prepared.

A new edition of the Idaho Fish and Game Law Code book was revised and printed during the biennium. This is the first re-printing in four years and brings the Fish and Game legislative laws up-to-date with all changes and new laws in the proper places. Two thousand copies were published and made available to judges, prosecuting attorneys and department personnel.

Two "Annual Summary of Operations" were printed during the past two years. These contained a detailed report of operations and activities for each calendar year.

Photography and Films

Wildlife conservation and management films continue in top priority with increased requests coming from Idaho schools every year. As a result, the department has purchased 47 new motion picture films during the biennium. The present film library now contains 130 reels.

In addition to films mailed and shown at schools, youth groups and clubs, many department personnel attended meetings and showed motion pictures or slides. In all nearly 3,500 showings were made during the biennium.



A stile erected to provide public access to Silver Creek emphasizes one phase of the Landholder-Sportsmen's program in Idaho.

One fourteen minute, sound and color, film was produced. It shows the various methods used to treat lakes and reservoirs and explains the purpose of the program. Editing has been completed on a film of similar length dealing with the rare and beautiful Trumpeter swan. This should be completed early in 1959. Film was obtained on helicopter census use in counting elk and on large scale lake treatment at Cocolalla Lake.

Still photographs were obtained during the past two years on department projects and management operations. A large file of photographs is on hand with all catalogued according to subject. A large number of prints have been furnished to writers, magazines, newspapers and individuals. Several thousand prints have been distributed in this manner.

Landholder-Sportsman Relations

The Idaho Landholder Sportsman Council, formed in 1954, continued its program during the biennium meeting in Boise for two regular sessions each year.

A late summer meeting was held each year to formulate plans and programs for the fall hunting seasons. January meetings were conducted to survey the results of the fall program and to consider ideas for the summer recreational season.

Walter Little, New Plymouth farmer and sportsman, continued as chairman until January, 1958, when Don Fredericksen of Good-

ing was elected chairman. Ernie Day of Boise was elected vice-chairman at this meeting and the Department's I & E Division Chief continued as secretary.

The program continued to emphasize the use of the "Hunting by Permission" signs. Council representatives and sportsmen throughout the state report improvement in sportsman relations as a result of the Council's continued efforts. In addition to the standard publicity regarding the program and the distribution of signs by sportsman's clubs, several localities adopted the procedure of distributing the "Hunting by Permission" signs at county fairs.

Council representatives made plans to continue the program with increased emphasis on cooperation with local sportsman's clubs and civic organizations.

Firearm Safety Education

The Department emphasized gun safety training in the biennium, providing schools a 3-day course at the junior high level. Approximately 27,300 school students received safety instruction in the 2-year period.

The course combined firearm safety with general aspects of conservation, and featured the Game Department's collection of display specimens. It was taken to 125 schools during the biennium. Approximately 15 per cent of the students later were certified by sportsmen's and other organizations providing followup training on the rifle range.

These 3-day courses were scheduled and conducted by officers of the I. & E. Division, assisted by conservation officers and sportsmen in local communities.

Objective is to reach boys and girls at the age when most of them are beginning to use firearms in the field, at the 7th and 8th grade level. The Department plans to make the gun safety program a basic part of its educational service to the public with the assistance of local community sportsmen.

Youth Summer Camps Education

Department field men in the I. & E. Division were on call for visits to youth summer camps. Scout and 4-H camps and church groups received the same type of educational programs taken to schools, including firearm safety training where this was desired. Special feature of these visits is the selection of films on wildlife, and the department display of mounted birds and mammal skins.

Field men conducted nature trail work for the camp, assisting in plant identification and bird study, and discussed basic resource use and appreciation. Camps throughout the state were visited. Local conservation officers assisted in these camp programs.

Essay Contests

In 1956-1958, the Idaho Wildlife Federation sponsored statewide conservation essay contests for students in Idaho junior and senior high schools.

The Department's I. & E. Division has taken a leading part in publicizing and expediting the activity by supplying contest information and reference material to schools and students. Assistance also has been given Federation officials in the conduct of judging phases and making awards.

Students throughout the state have participated. Essay subjects for the two years are listed: 1956, "Wildlife, Conservation Through Harvest." 1957, "My Wildlife Heritage; What Shall I do with it?" The department considers this activity of high educational value for conservation.

State Fair Exhibits

Exhibits at the state and county fairs have proved a major attraction for the public. Counts of visitors to these display booths indicate more than 100,000 people stop to view the wildlife displays during fair week. In 1958 the aquarium space was expanded to accommodate a larger display of sport and other fish found in Idaho waters.

The exhibits also include posters, live mammals, birds and prepared specimens of wildlife found in Idaho. At many county fairs sponsored primarily by local sportsmen's clubs, the department also contributes display specimens and material. I. & E. division men and conservation officers man these exhibits.

Teacher Training and Scholarship Program

Scholarship funds for teacher awards have been solicited by the I. & E. Division annually since 1950 in cooperation with the Idaho Wildlife Federation with the objective of promoting better public understanding of resource-use problems.

In the winter of 1956-57 the seventh scholarship fund drive was activated, resulting in a total of \$1,777.50 collected for teacher scholarships. Of this, the National Wildlife Federation and Idaho sportsmen provided \$1,037.50. Private industry and other sources accounted for the remainder. Donors to the conservation workshop program for 1957 are listed herewith.

Donors, 1957 Teacher Scholarship Fund

National Wildlife Federation.....	\$900.00
Potlatch Forests Foundation.....	300.00
Idaho Power Company.....	150.00
Utah Power & Light Company.....	150.00
Washington Water Power Company.....	100.00
Coeur d'Alene Wildlife Federation.....	75.00
Jefferson Co. Sportsmen's Assn.....	37.50
Spirit Lakes Sportsmen's Assn.....	25.00
Squaw Creek Soil Conservation District.....	25.00
Canyon Soil Conservation District.....	10.00
Wood River Soil Conservation District.....	5.00

A major portion of this fund was held for deferred awards until the spring of 1958, after classroom projects of the workshop enrollees were evaluated. Twelve \$75 awards were conferred under this plan in 1957 and 1958 at the close of the spring school terms. In addition, twenty-five awards of \$20 each and one \$50 grant were conferred. Total scholarship disbursement in the period amounted to \$1,450.00

Further educational assistance was given school people through reference materials and teaching aids mailed to schools and made available to delegates at the annual fall teachers conventions.

Another school project in which the division participated was initiated by the State Association of Soil Conservation Districts, ladies' auxiliary, in 1957.



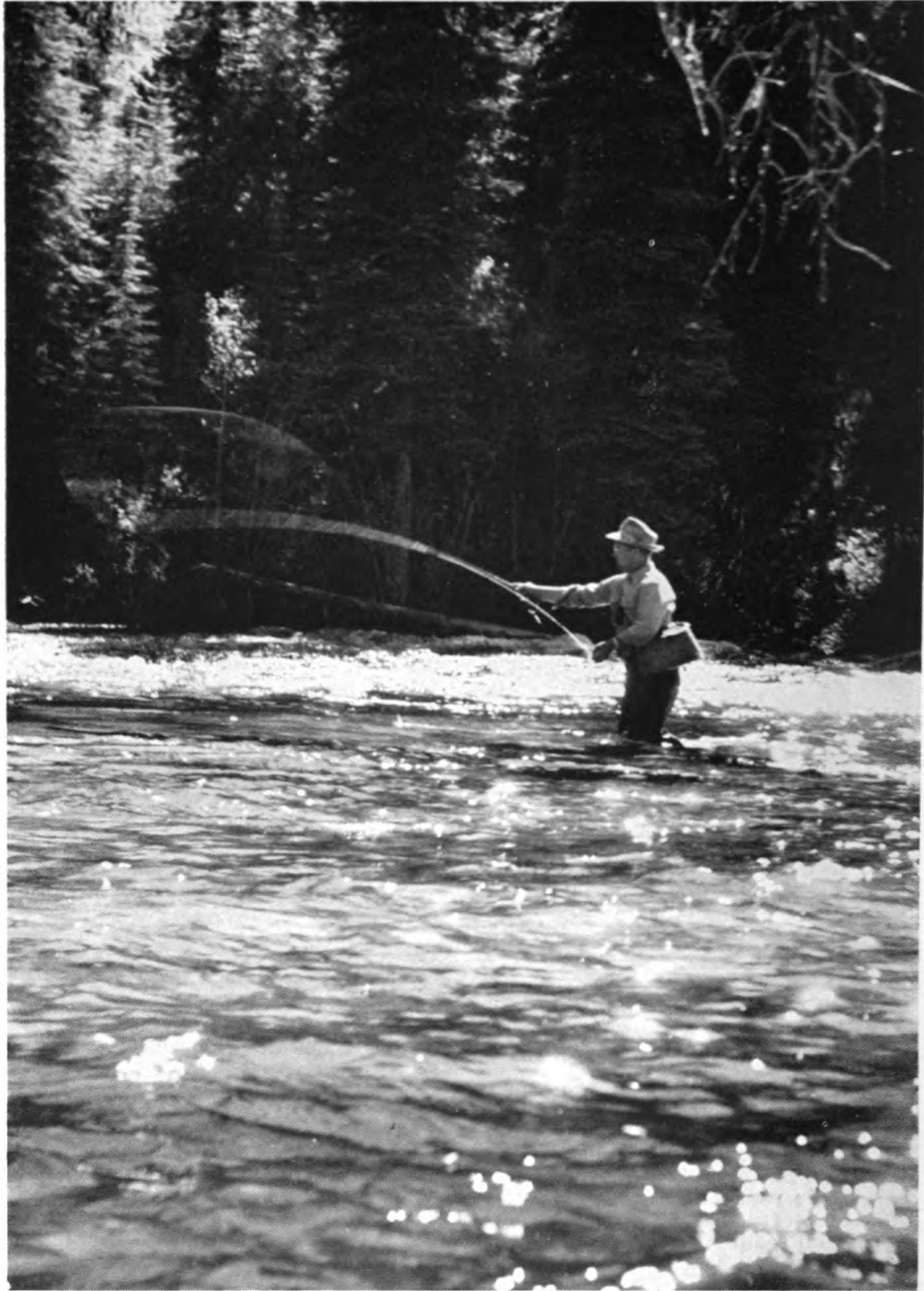
A portable recorder is used to record field projects and activities as a part of the statewide radio service.

Here again the Department provided publicity and information to school teachers desiring help in setting up conservation teaching projects in their own classrooms, and assisted the auxiliary in the publishing and distribution of information about the project in local districts.

Radio

The Department continued to produce a weekly fifteen minute radio program during the biennium. The program is made up mainly of recorded interviews with department personnel and sportsmen on wildlife and the management activities of the Department. During the summer months a weekly report on fishing conditions, based on reports from field workers, is included.

Seventeen Idaho radio stations are presently using the program. It is available free of charge to any station wishing to participate. Tape recorded copies are mailed out each week to cooperating stations.



The long cast! Survey trends show increased fishing intensity and harvest, particularly on steelhead and salmon. The average number of fishing trips also increased by 15 per cent during 1957.

Fisheries Management

Increased use of Idaho fisheries resources has been evidenced during the biennium. This has been shown not only through additional license sales but is also reflected by the Statewide Fishing Harvest Survey which has been carried on each year since 1954.

As the number of anglers and fishing intensity increased, the harvest of fish has kept pace. For example, in 1957 the trout catch increased 11 per cent over 1956. The warm-water fish and perch take rose by 24 per cent and chinook salmon nearly doubled, coming up 83 per cent over the 1956 take.

It is apparent that not only are more people going fishing in Idaho, but they are making more trips each season. The average number of trips per angler increased from 10.4 in 1956 to 10.8 in 1957. It appears the greatest increase in fishing trips occurred with people trying for salmon and steelhead.

Kokanee fishing has remained a popular sport with the total number of this species taken exceeding two million fish a year. Trout head the list with over ten million taken by anglers each season.

Although not taken in such large numbers each year, the mackinaw of Priest Lake and kamloops trout of Pend Oreille Lake are popular with thousands of fishermen. The largest mackinaw reported in 1957 and 1958 were 48 and 49 pounds, respectively. Sturgeon fishing along the lower Snake River continues as a popular sport.

A major problem in the management of Idaho's fishery resource has been the introduction of non-game, or trash, fish species into fishing waters when the non-game fish were used for bait. Nearly fifty lakes and reservoirs have been treated with chemicals to remove all fish as a part of fisheries management in Idaho in the past ten years. These have been stocked with game fish and have furnished outstanding fishing. But, unless stringent action is taken to prevent the use of live fish for bait—and unless the attitude of a number of fishermen changes about this use—much of the work and money will have been wasted.

Other portions of fisheries management and operations during the biennium represent very real progress. Present participation in the Columbia River Fishery Development Program will provide substantial benefits to anadromous fish species. Studies such as the Middle Snake River investigation; the Lake Pend Oreille survey; the Clearwater River investigation; Experimental Rough Fish Control and Stream Improvement Projects will all furnish long-term benefits to the State.

Fish hatchery improvement and expansion of rearing facilities, coupled with a vastly improved fish transportation system, will not only aid by increased production of game fish, but will provide more rapid delivery with fish in better condition at the end of the trip.

Whitefish Control Project

During the fall of 1957, a whitefish harvest program was initiated to reduce the number of whitefish in Teton and North Fork of Snake Rivers. An electric seine and 5,000 watt electric generator were purchased and used in the harvest work.

Twenty-two thousand pounds of whitefish were taken from the North Fork of the Snake River and 4,000 pounds from Teton River.

These fish were distributed to State institutions and to other charitable organizations.

Subsequently, the North Fork of the Snake River was treated in October, 1958, both above and below Island Park Reservoir where the major portion of electric seining took place. The large numbers of whitefish observed during river treatment indicated that the electric seining had little effect on the population of whitefish in the river.

Fish Eradication Projects—Lakes

Year	Name	County	Max. Surface Area-Acres	Storage Acre feet-at time of treatment	Undesirable species	Restocked
1957	Cocolalla Lake	Bonner	800	25,000	Minnows, suckers spiny-ray species	Cutthroat
1957	Little Cocolalla Lake	Bonner	58	1,290	Same-above	Cutthroat
1957	Algoma Lake	Bonner	27	57	Same-above	Cutthroat
1957	Westmond Creek Lake	Bonner	12	110	Same-above	Cutthroat
1958	Spruce Lake	Boundary	5	60	Shiners, suckers	Trout
1958	Sinclair Lake	Boundary	3	49	Pumpkinseed sunfish	Trout
1958	Little Wood River Reservoir (includes tributaries)	Blaine		200	Suckers	Rainbow
1958	Island Park Reservoir	Fremont	7,794	17,500	Utah chub	Rainbow

Rough Fish Control Projects

Some side channels of the St. Joe River in Benewah and Shoshone Counties were treated with rotenone in 1957. Several hundred thousand rough fish, mostly one to five inches, were killed. Sampling showed 80 per cent squawfish, 15 per cent suckers, and 5 per cent sculpins. Additional and more extensive treatment will be necessary to make a definite improvement in the trout fishery of the river.

Fry Creek, a tributary of Pend Oreille Lake was treated in 1957 and 1958 to eradicate spawning runs of peanose and suckers. Some 6,200 peanose and 150 suckers were killed.

Jewel Creek, a tributary of Pend Oreille Lake, was treated in 1957 and 1958 to control spawning runs of rough fish. Approximately 14,000 peanose and 250 suckers were killed.

Soldier Creek and Reeder Creek, tributaries of Priest Lake, were treated in 1957 and 1958, respectively, for the purpose of eradicating brook trout and suckers in these formerly important cutthroat trout spawning streams. An effort will be made to re-establish a spawning run of cutthroat trout.

Rock Creek, from the mouth of Rock Creek upstream to the mouth of Third Fork, in Twin Falls County, was treated on November 14 and 15, 1957, to eradicate the fish population which was composed primarily of suckers, shiners and chiselmouth. Creel-size trout were planted just prior to opening of the 1958 fishing season and additional



A portion of the 19,600,000 Utah chubs estimated to have been killed during treatment of Island Park Reservoir.

releases were made, as needed, throughout the season. Reports from field personnel indicate fishing was excellent over the entire treated area throughout the season. Prior to treatment, only the upper portion of the treated section supported trout.

Island Park Reservoir and portions of all of its tributaries including the North Fork of the Snake River above Island Park Reservoir and downstream to Big Falls were treated to remove a heavy infestation of Utah chub.

Treatment of the reservoir and streams required 47,000 pounds of 6.5 per cent powdered rotenone and 1,430 gallons of ProNox Fish.

Shoreline and surface sampling on the day after the reservoir was treated revealed that nearly 24,000,000 fish were killed during the reservoir treatment. Of this number, 19,602,780 were Utah chub; 4,051,148 shiners; 24,106 suckers; 2,000 dace; 1,000 sculpin; 42,452 rainbow trout; 200 cutthroat trout; 600 brook trout; 60,920 kokanee; and 4,084 whitefish, for a total of 23,789,290 fish. Non-game fish constituted 99.46 per cent, while game fish comprised only 0.54 per cent of the total fish population.

The North Fork of Snake River above and below the reservoir contained large numbers of whitefish, Utah chub, dace, sculpin, brook trout and a relatively small population of rainbow trout.

The reservoir will be restocked with several million rainbow trout fry and fingerlings. Tributaries above the reservoir and the river downstream from the dam will be restocked with rainbow trout fingerling and creel-size rainbow trout in preparation for the 1959 fishing season.

Fish Tagging Study

A small-scale trout tagging study was begun in American Falls Reservoir to determine migration within and out of American Falls Reservoir of planted hatchery trout.

Four hundred sixty-eight trout, ranging in length from 8 to 12 inches, were tagged with a circular jaw tag and released in the

reservoir. Tags recovered to date have all been caught in the forebay or river below the American Falls dam.

Mountain Lakes Management

During the biennium, 51 mountain lakes in the Clearwater and lower Salmon River drainages were checked for fish production, growth and success of previous fish plants. As a result of the checks, a total of 41 lakes was subsequently planted with cutthroat trout and one lake planted with California golden trout. The trout were planted at the rate of 500 fish per surface acre.

During 1958, 17 mountain lakes in Boundary, Bonner and Shoshone Counties were investigated; nine were in need of planting, four were adequately stocked and four were too shallow for stocking.

Lands Acquired by the Department for Fisheries

Area	County	Type of Agreement	Purpose for which acquired
Spirit Lake 2.1 acres	Kootenai	Purchase	Public Access
Tolo Lake 40 acres	Idaho	Purchase	Public Access
Dog Creek 186 acres	Gooding	Easement and purchase	Reservoir development and public access
Salmon 5.16 acres	Lemhi	Purchase	Fish redistribution site, fish screen warehouse
Snake River (Bordewick) 5.6 acres	Twin Falls	Gift	Public access
Springfield Lake (Danielson) 8 acres	Bingham	Purchase	Public access

Access Properties

Sand Dune Lakes

Graded and graveled two miles of road from County road to the lakes.

Spirit Lake

Cleared and graded the public access area.

Silver Creek

Installed trash barrels at convenient locations to be used by fishermen for the deposition of refuse. Installed stiles at desirable locations to prevent damage to fences surrounding private property.

Developed a parking area on Department land at the Hayspur Fish Hatchery.

Richfield Canal

Some five miles of road were constructed along the Richfield Canal to provide better fisherman access to this very productive water. The work was done in co-operation with the Bureau of Land Management.



Granite Creek, tributary to Lake Pend Oreille, showing improvement work which enhanced the stream for kokanee and trout spawning. Two K-dams are shown.

Thorn Creek Reservoir

A Memorandum of Agreement was entered into with the Thorn Creek Cattle Association whereby that organization would permit public fishing in Thorn Creek Reservoir during the months of June, July and October. The Department gave financial assistance in the construction of two and one-half miles of access road and with the fencing of the dam and two one-acre plots of ground for parking and camping. The Department further agreed to place the desired informational signs and to plant such trees and grass as are deemed necessary.

Lake Pend Oreille Rehabilitation

During the course of the Lake Pend Oreille fisheries study, a technical committee was formed to analyze the findings and make recommendations to their administrators for remedial measures where desirable. Membership on the committee was composed of representatives of the U.S. Army, Corps of Engineers; Washington Water Power Company (constructors and operators of Albeni Falls and Cabinet Gorge Dams, respectively) and of the U.S. Fish and Wildlife Service and the Idaho Department of Fish and Game, for the fishery interests.

Preliminary analysis of creel census data collected over an 8-year period (two life cycles of kokanee) indicates there has not been a significant change in the quality of kokanee angling. A downward trend was noted for trout fishing, however. In order to prevent cumulative effects from impairing the fishery, and especially so since Albeni Falls had operated during this period largely for the benefit of fish, the committee recommended some development work in the spawning tributaries of Lake Pend Oreille to enhance those streams for both trout and kokanee spawning. In addition an artificial spawn-



Fish screen on a Lemhi River irrigation canal.

ing channel was constructed adjacent to the Clark Fork Fish Hatchery and a hatching battery purchased for the use of this hatchery.

South Gold, Granite and Sullivan Spring Creeks have been improved by clearing, placement of rock and K-dams and addition of graded gravels for spawning. Altogether, the additional spawning areas and hatchery facilities will handle some 8- to 10-million kokanee eggs and 2- to 3-million trout eggs annually.

Funds for the development work were provided by the Corps of Engineers and Washington Water Power Company. They include funds for operation and maintenance of the facilities for several years. Construction work was done by the improvement division and included fish-counting and trapping weirs on Sullivan Spring and Granite Creeks.

Columbia River Fisheries Program

The 1957 Legislature amended the Fish and Game Code to permit the Department to construct and maintain fish screens in water courses which carry 125 cubic feet of water per second or less. Following the enactment of this legislation, the Department has been actively engaged in the design of suitable fish screens and in obtaining leases from property owners where screens will be installed.

To date, six screens have been installed. When the program has been completed, there will have been installed approximately 250 screens in the Salmon River drainage. Early in 1959, a contract will be let for a warehouse building in which screens can be manufactured and maintained.

Investigations of fish passage problems at known obstructions include Dagger Falls on the Middle Fork of the Salmon River, Sunbeam Dam on the main Salmon, the Little Salmon River falls and Selway Falls on the Selway River. Studies on the Little Salmon River indicate that irrigation demands above the three falls have reduced the

river flow to the extent that introduction of anadromous fish above the falls is not economically feasible. The construction of a fish ladder at Dagger Falls is scheduled to begin during fiscal year 1959. No definite plans have been formulated for improvements at Selway Falls and Sunbeam Dam.

Through co-operative agreements with the U.S. Geological Survey flow and temperature records are being collected on a number of streams which show promise as sources of water for fish hatchery operations.

Multiple-Use Water Projects

Projects utilizing water for irrigation, flood control and hydro-power are being proposed at an accelerated rate in Idaho. Some of the proposals conflict with each other and with the protection and maintenance of fish and wildlife resources. When these conflicting uses arise, the project features are reviewed, conferences held, committees appointed for further joint analyses, and studies are sometimes initiated. From these, recommendations are made to administrators to prevent losses to fish and wildlife or to keep these at a minimum. Measures for mitigation of or replacement for losses or for enhancement of the present fishery or wildlife uses are also proposed.

In the last biennium, approximately 40 multiple-use projects have been reviewed. The Division has also been active with membership on seven working technical committees and one task force. These technical committees have assignments such as direction of fisheries-engineering research programs relating to effects of dams on fish, setting up broad fisheries research and action programs for the Columbia River drainage, reviewing plans for projects under construction and proposed for the Middle and Lower Snake River Basins, and analyzing findings from studies relating to the effects of dams on a local fishery.

Middle Snake River Studies

In conjunction with the construction of Brownlee and Oxbow Dams in the Middle Snake River by Idaho Power Company, studies have been made to determine the time of seaward migration of chinook salmon and steelhead trout and to evaluate the effects of the dams on the resident sport fishery.

Seaward migration of both salmon and trout occurs for the most part during spring floods and is correlated with the rise in water temperature of Snake River in April and May, each year. The peak of the chinook salmon migration precedes the peak of the run-off during these months while the peak of the steelhead trout migration approximately coincides with the peak of the spring flood. Movements of both species from tributaries of the Snake River to the Snake River was noted during the fall and winter months. These movements were generally associated with periods of fall rains and winter freezing. Seaward migrations of these fall and winter movements of fish were not detected. Information regarding the time and size of seaward migration will be valuable in determining operation of downstream fish passage facilities.

In connection with the resident sport fishery study, and using temperature data from an associated study, it was anticipated that the sturgeon sport fishery would be lost through most of the section of river inundated by the dams, that Brownlee Reservoir would support excellent warm-water fish populations, and that water temperatures below Brownlee Dam would be suitable for a trout habitat.

From these studies, recommendations have been made to the construction agency for replacement of and mitigation for losses which will occur to resident fish populations in the sections of the river affected by their projects. Among these recommendations are:

- (1) That the Company construct some small manageable trout reservoirs near the project area to replace the lost sturgeon fishery.
- (2) That the Company make preparations for the stocking of trout below Brownlee Dam.
- (3) That a large initial stocking of bass be made in the Brownlee Reservoir at the time of initial filling.

Wildhorse River Transplanting Project

Because Wildhorse River enters the Snake between Brownlee and Oxbow Dams and no provisions are being made to handle the runs of spring chinook salmon and steelhead rainbow trout utilizing the Wildhorse, a project is underway to transplant these runs to the Weiser River drainage. A trapping weir was constructed across Wildhorse River and placed in operation in January, 1958. All salmon and steelhead downstream migrants trapped at the weir have been marked and transplanted to Pine Creek of the Weiser River. An evaluation of their return as adults will be made to determine the success of such a transplanting program.

Costs of the project are being borne by the construction agency. In addition, it is anticipated that the juvenile steelhead trout lost to the sport fishery of the Wildhorse drainage will be replaced by plantings of hatchery trout.

The transplanting program will continue through the Spring of 1960.

Wildhorse River Weir



For trapping downstream migrant salmon and steelhead for transplantation to Weiser River drainage. Constructed and operated with Idaho Power Company funds as partial mitigation for losses of these species to Wildhorse River, mouth of which is located between Oxbow and Brownlee Dams.



Barge-trap used for catching downstream migrating chinook salmon and steelhead trout to determine time and size of migrations. Trap is 6'x6'x18' and is submerged in central bay of barge.

Hatchery Operations

Maintenance and Improvement

American Falls

Placed concrete walls on the dirt raceways. Increased the width of each raceway from 7 feet to 12 feet.

Clark Fork

Installed an egg incubator of one million-egg capacity.

Grace

Placed concrete walls on dirt raceways. Increased the width of each raceway from 7 feet to 14 feet.

Hagerman

Constructed:

1. Four raceways, each 15 feet by 587 feet, together with a water diversion and supply line from Riley Creek.
2. Concrete walls on five of the dirt raceways.
3. Eight fry raceways, each 3 feet by 107 feet.
4. New hatchery water supply line, 20 inches by 1,970 feet.
5. New domestic water supply line, 6 inches by 2,600 feet.
6. One five-room residence.
7. Painted all buildings.

Hayspur

Dredged slough to provide a pond for public fishing.
Constructed roads to provide for a public campground.

Kamiah

Painted residence.
Installed a cattle guard.

Mackay

Constructed:

1. Eight fry raceways, each 3 feet by 110 feet.
2. One five-room residence, including landscaping of grounds.

McCall

Painted all buildings.

Built a turn-around road to accommodate new tankers.

Sandpoint

Painted all buildings.

Installed two cattle guards.

Landscaped around ponds.

Warm River

Painted all buildings.

Fish Tanks

An expansion of the rearing facilities of the State's fish hatcheries has made it necessary to improve and enlarge its fish transportation equipment. In 1957, the Department purchased two tanks which were of fiberglass construction. One is a pickup tank and has a capacity of 200 gallons and the second is carried on a two-ton truck and has a capacity of 900 gallons. Each tank is enclosed and insulated. The large tank is equipped with a refrigeration plant capable of maintaining water temperature of 45° F. Bottled oxygen, dispensed through carbon stones, comprises the water aeration system. To date, these tanks have operated quite satisfactorily; however, future purchases of tanks of fiberglass construction is not recommended because of the difficulties encountered in attaching outlet pipes or remodeling the unit. The tanks lack structural integrity because of the amount of wood which must be used in their construction.

During 1958, the Department purchased two 900-gallon fish distribution tanks and four fish transportation tanks. All tanks are of aluminum construction and insulated with two inches of spun glass. Aeration of the water is accomplished in the same manner as in the fiberglass tanks.

The transportation tanks will be operated as truck and trailer units. Each truck tank has a capacity of 2,000 gallons and each trailer tank has a capacity of 3,000 gallons. Each tank is also subdivided into compartments of approximately 700 gallons each.

The purchase of these units will greatly facilitate the transportation of fish from Hagerman to redistribution areas around the State.

Fish Food

The substitution of pelleted trout food for the traditional red meats and fresh fish and fish offal has marked the most drastic change in the operation of fish hatcheries in recent years. During the biennium, the consumption of pellets and meal (the same formula is used for both) has increased from 250,153 pounds in 1956 to 1,149,400 pounds in 1958. During the same period, the decline in the consumption of red meat was 1,058,850 pounds.

The production of trout for the period was increased 191,684 pounds.

Federal Aid in Fisheries Program

F 3-R Biological and Economic Survey of Fishery Resources in Lake Pend Oreille

This investigation was initiated in 1951, to determine if the construction of Albeni Falls and Cabinet Gorge Dams would have adverse effects on the fishery of Lake Pend Oreille. The problems created by these dams involved the blocking of spawning migrations and the exposure of spawn by drawdowns and peaking operations. All major phases of field work for this investigation were completed in 1958.

Annual creel census and spawning-ground surveys have been conducted each year since 1951. These studies provide the basis for an evaluation of changes in the fishery. Since kokanee have in most cases a four-year life cycle, fish which were spawned in 1947 through 1950 and harvested in 1951 through 1954 were not affected by either dam; however, kokanee which were spawned in 1951 through 1954 were subject to blockage and drawdowns. The effects of these two factors have been reflected by the harvests and spawning escapements in 1955 through 1958. A critical analysis of the eight years' data will be completed in 1959.

Other phases of field work accomplished in 1957-'58, which have not been continuous, included: intensive life history studies of the kokanee, experimental tagging and tow-netting of kokanee, limnological studies, and production evaluations of kokanee spawning in Granite Creek and Sullivan Springs.

Creel Census Figures Showing Estimated Total Catch
of Game Fish for Years 1951 to 1958

Year	Men	Hours	Kokanee	Trout	Other Game Species
1951	60,172	330,923	820,486	10,750	18,838
1952	57,814	308,850	514,913	8,778	*
1953	99,855	522,692	1,335,881	16,398	73,523
1954	90,566	459,271	1,232,916	11,515	53,182
1955	70,829	330,612	642,045	11,366	19,215
1956	87,813	406,538	1,092,651	11,882	27,199
1957	72,355	331,476	751,113	10,193	44,300
1958**	79,293	354,455	1,126,053	11,070	91,927

*not tabulated

**through September

F 15-R Clearwater River Fisheries Investigations

This study was initiated in 1954 to measure the contribution of steelhead trout in the sport fishery of the Clearwater drainage. Several high dams are proposed for the drainage and preliminary survey funds for one of these, Bruces Eddy on the North Fork, appropriated. None have been authorized for construction. The studies have shown that:

- (1) The steelhead trout, even in years when runs are small, contributes importantly to the economic structure of the area. Approximately a half-million dollars were expended each of the two years studied, 1955 and 1956, by anglers seeking adult or juvenile steelhead trout in Idaho.
- (2) Practically all of the small "wild" rainbow trout in the sport catch in the North and Middle Forks and a significant proportion of these in the South Fork (closed to steelhead migration for a number of years) are of steelhead trout origin. Serological studies have furnished the proof for this statement.
- (3) During the years studied for each 1,000 steelhead counted over the Lewiston dam, approximately 700 more entered the sport catch in the lower Columbia, 225 more entered the sport catch from The Dalles to Lewiston dam and 1,325 entered the Columbia River commercial catch. Approximately one-half of these latter appeared in the commercial catch at Celilo, now non-existent.
- (4) A significant proportion of the steelhead trout production of the Clearwater drainage is contributed by the North Fork. Field studies and analyses indicate that this proportion approaches or exceeds 50 per cent of the total Clearwater production.
- (5) Returns of marked hatchery trout planted in the study areas during 1955-6 averaged 21.6 per cent. These returns ranged from 8.7 to 40.5 per cent in the several areas.

Recommendations based upon the study are that in the interest of preservation of the present fisheries, the dams not be built, or that, in the event the dams are authorized, certain provisions for protection of, mitigation for losses to, or development for enhancement of the present fisheries be included in the authorization bill.

A few of the 300,000 adult spawning squawfish estimated to have been killed in the North Fork of Payette River above Cascade Reservoir during experimental rough fish control work.



F 18-R Statewide Creel Census

Each year since 1954 licensed anglers in Idaho, both resident and non-resident have been sampled for fishing and fish-harvest data. A representative sample of licensees are mailed questionnaires which they fill out and return. Tabulations from these returns give fishing intensity and harvest trends which may be used for formulation of management plans for the future.

Several trends are beginning to be indicated after four years of this census. Most notable of these are the increased fishing intensity and harvest particularly on chinook salmon and steelhead trout.

The average number of fishing trips made each year increased by 15 per cent in 1957. This year also showed a sharp increase in the numbers of licensed anglers.

Idaho Angling and Catch Data, 1954-7

	Year			
	1954	1955	1956	1957
Licensed anglers	238,250	223,450	217,850	225,320
Angling trips	2,048,000	2,153,000	2,128,000	2,436,500
Per cent of anglers seeking:				
Trout	93.1	93.1	93.4	90.7
Chinook				
Salmon	7.7	9.5	10.4	14.4
Steelhead				
Trout	7.8	7.9	6.1	7.8
Total catch of:				
Trout	()	9,597,300	9,127,100	10,177,400
	)11,308,400*(
Kokanee	()	1,963,500	2,174,800	2,194,700
Warm-water	2,777,000	3,239,800	2,671,200	3,321,300
Salmon	29,550	38,880	42,690	78,200
Steelhead	25,200	26,250	15,775	39,550
Sturgeon	2,230	2,340	4,390	2,910
Whitefish		718,400	512,800	565,600
Average seasonal catch/angler:				
Trout	()	49.8	48.1	49.8
	)54.5*(
Kokanee	()	67.6	84.6	77.0
Warm-water	57.7	68.3	58.4	66.1
Salmon	1.7	2.0	2.0	2.41
Steelhead	1.5	1.6	1.3	2.25
Sturgeon	1.0	0.9	1.4	0.8
Whitefish		40.7	25.3	25.1

*Trout and kokanee data combined in 1954.



Experimental aerial application of fish toxicant on spawning carp populations in Lake Lowell killed an estimated 100,000 carp in a 43-acre plot.

F 22-R Experimental Rough Fish Control

During the last two years, the emphasis of this project has been directed toward the development of control measures against rough fish populations based on the findings of life history studies.

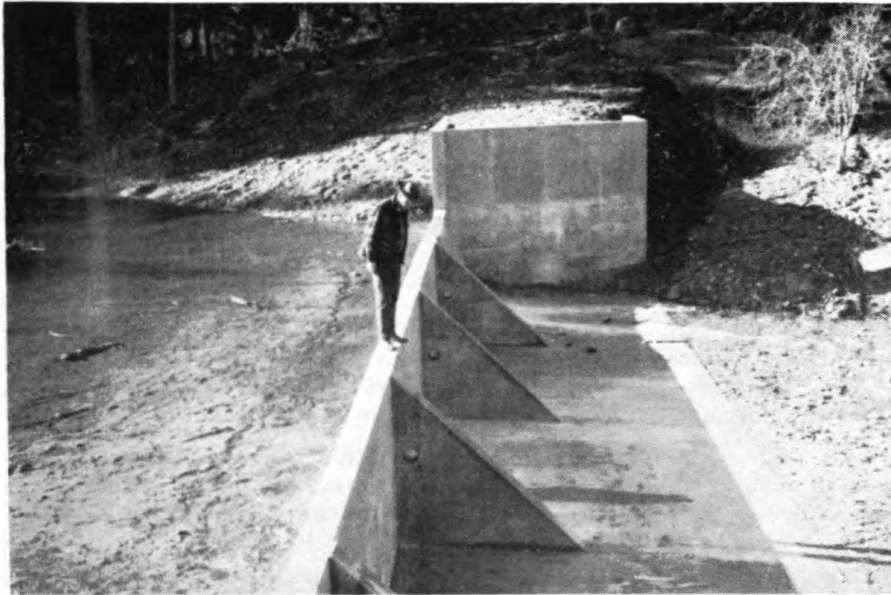
Life history studies have been made of carp, at Lake Lowell, and squawfish, at Cascade Reservoir and the Payette Lakes. These studies indicate that both species are vulnerable to control measures during their spawning periods and that applicable methods of control can be developed.

An aerial application of emulsifiable rotenone was made on 43 acres of shallow water at Lake Lowell when carp were crowded into this area during their spawning activities. Approximately 100,000 carp, weighing 300,000 pounds, were killed. Loss of game fish was very small.

The North Fork of the Payette River above Cascade Reservoir was treated with rotenone when squawfish were concentrated in this stream during their spawning migration. An estimated 300,000 adult squawfish were killed. The trout kill was less than 1,000 fish.

Attempts will be made to evaluate the effects of these rough fish removals on game fish populations by age-growth studies and creel census work.

Future plans include continued study of control methods and the results of partial removal of rough fish populations and life history studies of detrimental rough fish populations.



Fish-migration barrier on Cocolalla Creek which prevents the re-entry of non-game fish to Cocolalla Lake, treated in 1957.

F 32-R Tests for Increasing Returns of Hatchery Trout

The true measure of the success of a fish-planting program is in the numbers of stocked fish returned to the creel. This is particularly true in stocking catchable-size trout since a fairly good investment is represented by each trout stocked. This study is designed to measure the returns of trout under different conditions of rearing and stocking and of specific or racial conditions or other biological factors.

Tests conducted in a lake and stream in central Idaho indicate (1) greater returns to the creel of trout reared on a dry than on a production diet containing meat, and (2) better returns from one large stocking at the beginning of the season than from several smaller plantings spaced throughout the season in both the stream and lake sampled.

Tests conducted in lowland lakes of North Idaho show highest returns to the creel from trout planted before or early in the season than from those planted later in the season. Periodic planting throughout the season, however, was necessary to maintain fishing quality on the smaller, heavily-fished lakes. Returns in per cent from two lakes from each of six monthly plantings made early in each month were:

	April	May	June	July	August	September
Lake A (small) ..	58	68	34	37	16	28
Lake B (large) ..	33	35	14	7	5	6

Additionally, it was learned that better survival of summer-planted fish is obtained if plantings are made at the time of day when water temperatures are optimum for trout.

Analysis of tests conducted in north-central Idaho has not been made. These tests will determine the returns of trout to the creel when planted at fingerling or at catchable size. The economics involved (value of each trout returned to the creel) will be considered.

In southwestern and southeastern Idaho, tests are being conducted on types of equipment used to transport trout. In southeastern Idaho, additional tests on returns of trout to the creel are being made on several lots of fish being reared on different diets.

F 34-R Water Quality Investigations

This study was initiated in June of 1958 to determine the existing sources of pollution in the State and to determine the effects of the pollutants. Methods of improving water quality, where game fish habitat is affected by pollution, were also investigated.

A state-wide survey to determine the location and types of pollution is completed. From the survey, the most serious pollution problems appear to be located in the Pocatello area, along the Portneuf River, and in the Boise Valley.

The effects of placer mining (dredging) on a trout stream are being studied on Seigel Creek, a tributary to Red River in Idaho County. Biological, chemical, and physical measurements were made on the stream to determine the changes resulting from dredging. Analysis of collected data has not been completed.

A series of tests to determine if the heavy metal ions in Bear Lake water are factors limiting plankton growth were made. Con-



Water quality studies measuring the effect of the silt-laden waters (further trough) on trout and salmon eggs and fry. These tests showed a significantly greater loss to eggs hatched in turbid water compared to those hatched in clear water (closer trough).

trolled laboratory experiments, with the chemical content of Bear Lake water the only variable were carried on with *Chlorella* as a test organism. Growth rates for each culture were then calculated. From this, it does not appear that the heavy metal ions of lead, copper and zinc are factors which limit phytoplankton production.

F 19-D Rehabilitation of Stanley Lake

Following construction of a fish-migration block in the outlet and chemical treatment of Stanley Lake for eradication of all fish (reported during last biennium), experimental fertilization of its water was attempted. Enough ammonium nitrate was added to the lake to raise the nitrogen content of its water so that a normal fertility balance existed among the four basic elements, nitrogen, phosphorus, calcium and potassium.

Within a month plankton organisms associated with nitrogen deficient waters had disappeared. A year later, tests indicated a greater winter survival of planted fish and an approximate doubling of the organic residue of the lake water.

The quality of fishing in Stanley Lake has increased tremendously since the lake was treated for removal of squawfish, suckers and shiners.

F 28-D Mountain Lakes

Although the Sawtooth Primitive Area lies within several hours drive of the heavily populated Boise Valley, very little recreational use was made of the area. This was due primarily to the long distance involved in getting into the area on existing trails. The project was initiated primarily to make some 30 mountain lakes accessible to



A section of new fisherman access trail that was constructed to mountain lakes in the Sawtooth Wilderness Area during the biennium.



Pat's Lake situated on the headwaters of Johnson Creek in the Sawtooth Area is one of the excellent fishing spots made accessible by the trail system project.

horse- and back-packers, riders or hikers. These lakes are located in the southwest corner of the primitive area, near Atlanta, and principally on the Little Queens River and Johnson Creek, tributaries of the Boise River drainage.

Approximately 20 miles of horse trail and 10 miles of foot trail were laid out and constructed, making the area accessible from Atlanta, Graham and Grandjean as well as from the eastern or Stanley side.

The lakes have all been stocked with trout and it is anticipated that recreational use of the area will develop rapidly. Excellent fishing was reported in 1958.

The project also provided funds for construction of trail signs for this and four other mountain lake areas in the State, signs which will direct users of the areas to the lakes they seek. An additional two miles of horse trail was constructed into the Flytrip Basin lakes off the Middle Fork of the Boise.

Co-operative arrangements were made with the Boise and the Nez Perce National Forests for this work. The completed trails have been inspected and accepted into the trail system of the Boise National Forest which agency will maintain them in the future.

F 29-D Cocolalla Lake Fisheries Restoration

The largest eradication project undertaken in Idaho, to date, was completed during the biennium. The Cocolalla Lake project consisted of four steps essential to successful completion.

- (1) Survey of the entire Cocolalla drainage to help in scheduling treatment of the five lakes and the numerous streams involved.

- (2) Construction of a migration block across Cocolalla Creek below Round Lake. This will prevent the re-entry of non-game fish species to these waters.
- (3) Chemical treatment of the entire drainage above the migration block. This was accomplished by treating several small shallow lakes through the ice, treatment of streams with drip stations as well as application of fish toxicants through beaver ponds during spring run-off, application of 70,000 pounds of ground derris root with cube-eaters (large barges especially adapted for rapid dispersal of this powder) and treatment of shallow areas by boat in Cocolalla Lake itself, and treatment of Round Lake below Cocolalla Lake.
- (4) Restocking with the North Idaho strain of cutthroat trout. This required installation of special egg-taking facilities in a remote mountain lake where a pure strain of this particular race of cutthroat is found, hatching and planting the fry from these eggs.

Cocolalla Lake will reopen to public fishing in 1959 and it is anticipated that within several years it will produce an excellent sport fishery.

IDAHO FISH PLANTINGS
By Species, Size—All Agencies
(November 1, 1956—October 31, 1958)

Species	Numbers of Each Species Planted, by Size						Total	Pounds
	Year	1 to 3-inch	3 to 6-inch	6 to 22-inch	Total	Pounds		
Rainbow	'57	4,380,641	2,226,893	2,040,977	8,648,511	574,295		
	'58	2,996,079	3,054,726	2,078,095	8,128,900	679,309		
Cutthroat	'57	6,490,408		22,202	6,512,610	6,449		
	'58	2,984,532	15,708	25,829	3,026,069	6,065		
Brook	'57	505,157	265,247	53,850	824,254	14,277		
	'58	386,155	295,096	20,406	701,657	8,312		
Kamloops	'57	350,500	14,200	71,884	436,584	12,660		
	'58	579,472	70,950	84,871	735,293	14,343		
Golden	'58	9,300			9,300	3		
Mackinaw	'58			36,996	36,996	4,254		
Kokanee	'57	1,956,696			1,956,696	942		
	'58	2,160,000	34,000		2,194,000	1,014		
L. M. Bass	'57	66,000	3,650		69,650	527		
	'58	206,555		18	206,573	506		
S. M. Bass	'58		3,588		3,588	69		
Totals	'57	13,749,402	2,509,990	2,188,913	18,448,305	609,150		
	'58	9,322,093	3,474,068	2,246,215	15,042,376	713,875		
Biennium Totals		23,071,495	5,984,058	4,435,128	33,490,681	1,323,025		

**FISH PLANTINGS IN IDAHO BY OTHER AGENCIES
 (November 1, 1956-October 31, 1958)**

Station	Year	Rainbow		Cutthroat		L. M. Bass		Total	
		No.	Lbs.	No.	Lbs.	No.	Lbs.	No.	Lbs.
U.S. Hagerman	'57	646,906	100,525					646,906	100,525
	'58	534,155	94,992					534,155	94,992
Snake River Trout Co.	'57	65,150	14,721					65,150	14,721
New Mexico	'58					101,555	271	101,555	271
Oklahoma	'58					105,000	210	105,000	210
Washington	'57			100,000	100			100,000	100
	'58			165,000	387			165,000	387
Wyoming	'57			17,976	27			17,976	27
	'58			11,794	11			11,794	11
Totals		712,056	115,246	117,976	127			830,032	115,373
		534,155	94,992	176,794	398	206,555	481	917,504	95,871
Biennium Totals		1,246,211	210,238	294,770	525	206,555	481	1,747,536	211,244

HATCHERY PRODUCTION (November 1, 1956—October 31, 1958)

Station	Year	Rainbow		Cutthroat		Brook		Kamloops		Steelhead	
		Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.
American Falls ¹	'57	840,974	94,842	117,376	238	57,525	330				
	'58	945,335	105,877	37,107	1,307	60,557	696				
Ashton ²	'57	903,789	17,043	437,388	392	17,760	590				
	'58	817,068	44,458	109,656	103	37,280	300				
Clark Fork	'57	151,886	24,261	586,098	318	20,700	1,725	342,584	12,608		
	'58	160,150	26,450	220,300	354			698,293	14,306		
Eagle ³	'57	790,082	31,374	126,000	118	109,258	209			450	102
	'58	677,856	26,806	134,400	64	33,855	183				
Grace	'57	1,100,011	54,869	1,233,139	2,914	84,344	1,162				
	'58	692,525	68,539	381,438	105	100,486	3,121				
Grangeville	'57			181,041	105						
	'58	116,900	42			22,500	4,500				
Hagerman	'57	697,130	129,636								
	'58	960,126	196,008								
Hayspur	'57	1,120,758	34,491								
	'58	798,900	41,135								
Henry's Lake	'57			640,200	291						
	'58			534,000	267						
Mackay ⁴	'57	942,140	53,195	90,825	102						
	'58	631,835	58,636			44,530	526				
McCall	'57	146,500	62	330,500	154	93,024	677				
	'58	343,450	138	233,800	105	56,760	742				
Mullan ⁵	'57	488,724	635	694,284	443	156,340	87	94,000	52		
	'58	512,500	470	217,600	125	307,817	212	37,000	37		
Sandpoint ⁶	'57	649,233	2,367	649,308	254	137,426	457				
	'58	607,500	1,002	422,277	166	52,645	2,060				
Twin Falls	'57	701,750	25,820			95,900	4,400				
	'58	662,200	25,770			33,000	330				
Warm River ⁷	'57		320	1,059,278	972						
	'58		429	550,288	632						
Totals	'57	8,532,927	468,415	6,345,834	6,301	838,777	14,267	436,584	12,660	450	102
	'58	7,926,345	595,760	3,041,475	6,093	726,930	8,367	735,293	14,343		
Biennium Totals		16,459,272	1,064,175	9,387,309	12,394	1,565,707	22,634	1,171,877	27,003	450	102

¹Includes 40,049 Rainbow-Cutthroat crosses in 1958.

²Includes 30,000 (40 lbs.) Cutthroat transfers 1958 to American Falls.

³Includes 66,000 (467 lbs.) L. M. Bass reared and released from C. J. Strike Bass ponds.

⁴Includes 50,400 (400 lbs.) Rainbow transfers to Clark Fork and 100,500 (1,200 lbs.) Rainbow transfers to Hagerman for holding.

⁵Includes 40,800 (34 lbs.) Rainbow transfers 1957 to Clark Fork and 22,042 (47 lbs.) Brook transfers 1958 to Sandpoint for holding.

⁶Includes 324,166 (2,044 lbs.) Rainbow transfers 1957 to Clark Fork for holding.

⁷Increase in weight of Rainbow and Brook transfers from American Falls and Ashton prior to planting (1957 and 1958).

HATCHERY PRODUCTION (November 1, 1956—October 31, 1958)

Station	Golden		Mackinaw		Kokanee		L. M. Bass		S. M. Bass		Totals	
	Year	Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.	Lbs.
American Falls'	'57										1,015,875	95,410
	'57										1,042,999	107,880
Ashton'	'57				290,400	160					1,693,337	18,186
	'58										964,004	44,861
Clark Fork	'57				176,000	44					1,277,218	38,956
	'58				1,560,000	390					2,638,743	41,500
Eagle'	'57				397,800	117	69,650	527			1,498,240	32,447
	'58				380,000	76					1,226,111	27,129
Grace	'57										2,417,494	58,445
	'58			36,996	4,254						1,231,013	78,779
Grangeville	'57										381,438	105
	'58										297,941	147
Hagerman	'57										719,630	134,136
	'58						18	25	3,588	69	963,732	196,102
Hayspur	'57										1,120,758	34,491
	'58										798,900	41,136
Henrys Lake	'57										640,200	291
	'58										534,000	267
Mackay'	'57										1,032,965	53,297
	'58										676,365	59,162
McCall	'57										643,624	916
	'58	9,300	3		73,600	23					708,310	1,014
Mullan'	'57				65,000	26					2,266,244	1,505
	'58				832,896	288					1,074,917	844
Sandpoint'	'57										1,435,967	3,078
	'58										1,082,422	3,228
Twin Falls	'57										983,650	30,530
	'58				186,000	310					884,200	26,622
Warm River'	'57				189,000	522					1,059,278	1,422
	'58										550,288	1,258
Totals	'57	9,300	3	36,996	4,254	942	69,650	527			18,180,918	503,214
	'58				2,194,000	1,014	18	25	3,588	69	14,673,945	629,928
Biennium Totals		9,300	3	36,996	4,254	1,956	69,668	552	3,588	69	32,854,863	1,133,142

FISH SALVAGED AND PLANTED
(November 1, 1956—October 31, 1958)

Station Area	Year	Trout	Whitefish	Bullheads	L. M. Bass	Perch	Crappie	Totals	
								Numbers	Pounds
Ashton	'58		375					375	750
Eagle	'57			5,850	630	51,000	7,200	64,680	6,455
	'58			3,116	925	12,750	7,794	24,585	4,000
Hagerman	'57				13			13	7
Hayspur	'57	732						732	1,150
	'58	1,128						1,128	1,510
Mackay	'57	4,717	15,060					19,777	878
	'58	20,889	2,321					23,210	3,450
Sandpoint	'57						35	35	2
Total	'57	5,449	15,060	5,850	643	51,000	7,235	85,237	8,492
	'58	22,017	2,696	3,116	925	12,750	7,794	49,298	9,710
Biennium Totals		27,466	17,756	8,966	1,568	63,750	15,029	134,535	18,202

EGGS TAKEN BY STATE
(November 1, 1956—October 31, 1958)

Station	Year	Species	Number Green Eggs	Eye-up, %	Number Eyed Eggs
American Falls	'57	Rainbow	9,190,142	84.03	7,722,013
	'58	Rainbow	5,674,623	77.15	4,377,704
Clark Fork	'57	Kamloops	527,800	94.55	499,050
	'58	Kamloops	948,480	80.60	764,480
Coffee Pot	'57	Rainbow	1,221,756	97.84	1,195,362
Eagle	'57	Rainbow	571,892	89.51	511,892
	'58	Rainbow	504,916	89.12	449,994
Fish Lake	'57	Cutthroat	169,198	95.00	160,738
	'58	Cutthroat	354,040	73.06	258,664
Hayspur	'57	Rainbow	1,211,718	95.57	1,158,098
	'58	Rainbow	1,303,960	94.77	1,235,750
Henry's Lake	'57	Cutthroat	8,439,904	88.23	7,446,605
	'58	Cutthroat	3,961,000	77.71	3,077,975
Priest Lake	'57	Kokanee	2,185,920	94.81	2,072,552
	'58	Kokanee	1,577,580	96.04	1,515,180
St. Charles Creek	'57	Rainbow	69,600	89.31	62,160
	'58	Rainbow	70,560	86.39	60,960
	'57	Cutthroat	567,840	79.64	452,240
	'58	Cutthroat	454,080	80.00	363,280
Williams Lake	'57	Rainbow	842,086	96.87	815,724
	'58	Rainbow	1,334,988	95.84	1,279,476
Totals	'57		24,997,856	88.39 (Av.)	22,096,434
	'58		16,184,227	82.69 (Av.)	13,383,463
Biennium Totals			41,182,083		35,479,897

**EGGS RECEIVED BY PURCHASE OR EXCHANGE
FROM, AND EXCHANGED TO, OTHER AGENCIES**

(November 1, 1956—October 31, 1958)

Species	Year	Number	
		Received	Exchanged
Rainbow	'57	2,580,954	31,164
	'58	4,210,390	
Kamloops	'57	581,140	
	'58	952,016	
Brook	'57	1,176,118	
	'58	1,088,285	
Mackinaw	'57	63,296	
	'58	125,172	
Golden	'58	10,000	
	'57	671,860	
Kokanee	'57	671,860	
	'58	607,660	
Totals	'57	5,073,368	31,164
	'58	6,993,523	
Biennium Totals		12,066,891	31,164

**ROUGH FISH REMOVAL—SEINING PERMITS
(in Pounds)**

(November 1, 1956—October 31, 1958)

Species	Year	Pounds
Carp	'57	498,374
	'58	339,775
Chub	'58	141,095
	'57	593,587
Suckers	'58	601,525
	'57	900
Squawfish	'57	900
	'57	103,365
Unidentified	'57	103,365
	'58	33,140
Totals	'57	1,196,226
	'58	1,115,535
Biennium Totals		2,311,761

FISH COUNTS
LEWISTON DAM FISH LADDERS
(November 1, 1956—October 31, 1958)

Month	Year	Steelhead	Chinook Salmon
November	'56	14	
	'57	96	
December	'56	17	
	'57	10	
January	'57		
	'58	7	
February	'57		
	'58	1,183	
March	'57	933	
	'58	8,809	
April	'57	2,425	
	'58	3,439	
May	'57	141	11
	'58	905	
June	'57	31	42
	'58	19	11
July	'57	36	98
	'58	2	11
August	'57	27	
	'58	2	1
September	'57	2,090	1
	'58	4,803	2
October	'57	4,322	
	'58	13,266	1
Totals	'57	10,036	152
	'58	32,541	26
Biennium Totals		42,577	178

FISH FOOD
(November 1, 1956—October 31, 1958)

Item	Year	Pounds	Cost
Liver	'57	399,680	\$ 39,584.13
	'58	220,029	19,875.99
Slaughterhouse by-products	'57	866,021	42,251.04
	'58	450,449	21,109.77
Horsemeat	'57	60,203	4,192.09
	'58	43,468	3,042.76
Fish and fish viscera	'57	322,791	15,956.26
	'58	140,634	7,459.79
Meal and meal products	'57	579,277	60,362.89
	'58	1,149,400	122,427.45
Totals	'57	2,227,972	\$162,346.41
	'58	2,003,980	173,915.76
Biennium Totals		4,231,952	\$336,262.17

Business Administration

Financing Wildlife

Hunters and fishermen who purchase licenses entitling them to take part in their favorite sport, pay for the propagation, management and conservation of the wildlife resource of Idaho by contributing the largest single source of revenue for department operations.

Their proportion of this revenue amounts to 71.2 per cent of all monies received by the department. The sportsmen also make a secondary contribution in the form of the federal excise tax when they purchase sporting arms and ammunition and sport fishing tackle.

Another source of revenue to the department (starting during this biennium) has been funds made available through the Columbia River Fishery Development Program with Congressional appropriation. The total of both types of federal aid and the Columbia River program amounts to 21.5 per cent of total revenues.

Federal funds are designated for certain projects and specific types of programs and all such must meet federal requirements before the Idaho Fish and Game Department is eligible for reimbursement. One of the conditions of this cooperation is the State Assent to Federal Acts which prohibits the diversion of license receipts for any other purpose than operation of the Fish and Game Department. (Idaho Code 36-2601 and 36-5301.)

The Fish and Game Department deposits all revenue received with the Idaho State Treasurer who places the money in the "Fish and Game Fund." This fund, is by law, reserved, set aside, appropriated and made available until expended as may be directed by the Idaho Fish and Game Commission.

Financial policies are formulated and approved by the Commission when they establish a budget for the operation and maintenance of the Department each fiscal year. Accordingly, the Fish and Game Department, as in any well-managed business, must carry a substantial amount of operating funds, or working capital.

This money must be available to carry on operations during low income periods and in addition, must be sufficient to finance Federal Aid, Columbia River and other projects until such time as they are completed or approved for federal reimbursement.

The Idaho Fish and Game Department has kept pace with modern management methods and expanded to meet the increasing pressure on the wildlife resource. Dealing with all phases of wildlife and operating a business as large as this has become, is exacting, important and has the interest of every part of the state.

Probably the most important thing to note in considering this operation is the fact that all costs for management, protection and perpetuation of this vital resource are paid for by those who take part in the sport of hunting and fishing, and that no state tax monies are appropriated for this purpose.

Graphs, charts and financial statements are presented on the following pages. These record and show the financial condition and operations for the biennium ending June 30, 1958.

Land Acquisition Summary

The following is a report of lands and property acquired during the period July 1, 1956 to June 30, 1958.

Spirit Lake Public Access, Kootenai County—2.1 acres—cost \$3,000.00.

Cocolalla Lake Public Access, Bonner County—2.56 acres—cost \$2,500.00.

Conservation officer quarters at Weippe, Clearwater County—0.23 acres and improvements—cost \$5,500.00.

Tolo Lake Public Access, Idaho County—40 acres—cost \$3,500.00.

Boise River Elk and Deer Winter Range, Elmore County—Land exchange, acquired 1,479 acres exchanged 777 acres—cost \$6,550.00 cash plus assignment of lease on 520 acres.

Dog Creek Reservoir, Gooding County, easements for reservoir and road rights of way and public use area—186 acres—cost \$1,412.50.

Salmon River Fish Distribution Site and warehouse site for Columbia River project, Lemhi County—5.16 acres—cost \$2,750.00.

Star Lake Wildlife Management Area, Lincoln County, acquired from the United States under the provisions of the Recreation Act—80 acres—cost \$240.00.

Carey Lake Wildlife Management Area, Blaine County

Segment No. 1—55 acres & assignment of grazing reservation on 40 acres—cost \$15,000.00.

Segment No. 2—45 acres & assignment of grazing reservation on 50 acres—cost \$14,500.00.

Bordewick Public Access to Snake River, Twin Falls County—5.6 acres—cost: Gift.

Market Lake Wildlife Management Area, Jefferson County, acquired for waterfowl restoration

Segment No. 1—941 acres—cost \$56,460.00.

Segment No. 2—43.15 acres—cost \$5,000.00.

Segment No. 3—exchanged 37.48 acres with Highway Department for 55.32 acres.

Sand Creek Wildlife Management Area, Fremont County, acquired for big game winter range—640 acres—cost \$5,760.00.

STATEMENT OF NON-EXPENDABLE ASSETS (as of June 30, 1957)

Biennium Ending June 30, 1958

Equipment Description	Cost at Time of Purchase
Office & Field Equipment.....	\$ 467,576.22*
Automotive Equipment.....	369,660.01
Real Estate (Land).....	906,031.30
Real Estate Improvements.....	1,759,716.25
Total	\$3,502,983.78

*Estimated market value

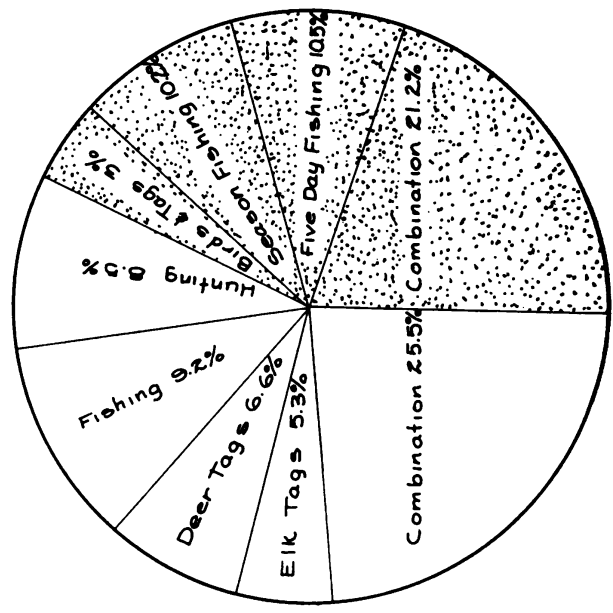
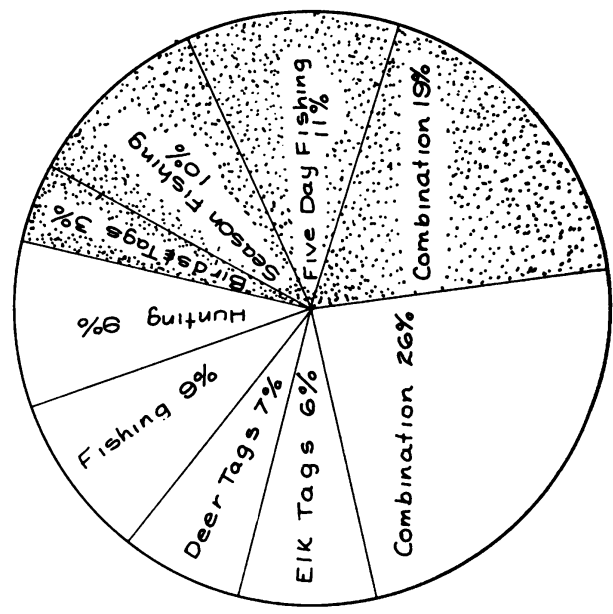
FISH AND GAME FUND No. 6

July 1, 1956-June 30, 1958

	Number	Dollars
1	Resident Hunting & Fishing	212,916 \$ 809,080.80
1-A	Resident Hunting	115,846 275,137.92
2-A	Non-Resident Hunting & Fishing	8,926 635,977.50
1-B	Resident Fishing	118,451 281,326.68
2-B	Non-Resident Bird	3,168 60,192.00
2-C	Non-Resident Season Fish	27,660 315,324.00
2-E	Non-Resident 5-Day Fish	86,311 327,981.80
	Shipping Permits	2,428 971.20
	Deer Tags	232,483 220,875.20
	Elk Tags	103,249 196,173.10
1-D	Resident Trapper	1,808 9,040.00
	Commercial Fish	394 3,940.00
	Resident Outfitter	284 1,420.00
	Non-Resident Outfitter	23 575.00
	Guide License	163 815.00
	Resident Fur Buyer	90 450.00
	Taxidermist	18 180.00
	Private Pond Permit	103 1,030.00
	Game Bird Farm Permit	72 720.00
4-C	Non-Resident Gun	6 11.40
	Commission Saved	3,565.33
	Beaver Tags	24,987 23,737.65
2-D	Non-Resident Trapper	16 1,200.00
	Non-Resident Fur Buyer	8 160.00
	Deer Permits	1,822 5,466.00
	Elk Permits	2,775 13,875.00
	Moose Permits	305 7,625.00
	Moose Tags	305 3,050.00
	Sheep Permits	76 1,900.00
	Sheep Tags	344 3,440.00
	Goat Permits	113 565.00
	Goat Tags	252 2,520.00
	Antelope Permits	3,095 9,285.00
	Antelope Tags	3,276 3,276.00
	Erroneous License Sales	128.10
	R. A. M. (Insuff. Checks)	cr. 261.25
	Total Licenses and Permits	\$3,220,753.43
	Fines and Confiscations	\$ 37,084.76
	Beaver Hides (State Share)	20,335.17
	Miscellaneous Sales	33,864.09
	Sale of Capital Assets	10,365.01
	Department Rentals	19,416.62
	Refunds	120,230.72
	Insurance Adjustments	11,558.42
	Interest	262.12
	Total Receipts Fund No. 6	\$3,473,870.34

RESIDENT & NON-RESIDENT SPORTING LICENSE SALES ANNUAL COMPARISON BY DOLLARS

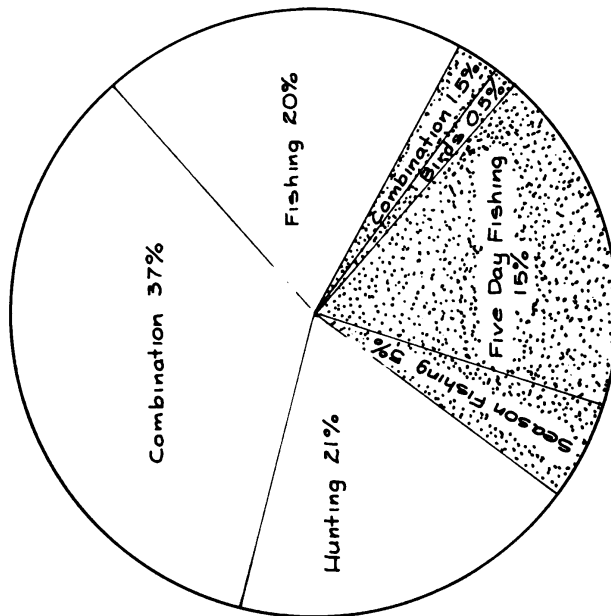
<p>JULY 1, 1956 - JUNE 30, 1957</p> <p> RESIDENT SPORTING LICENSE SALES - \$856,309 - 58% NON-RESIDENT SPORTING LICENSE SALES - \$629,945 - 42% </p>	<p>JULY 1, 1957 - JUNE 30, 1958</p> <p> RESIDENT SPORTING LICENSE SALES - \$900,834 - 55% NON-RESIDENT SPORTING LICENSE SALES - \$734,969 - 45% </p>
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RESIDENT & NON-RESIDENT SPORTING LICENSE SALES ANNUAL COMPARISON BY NUMBERS

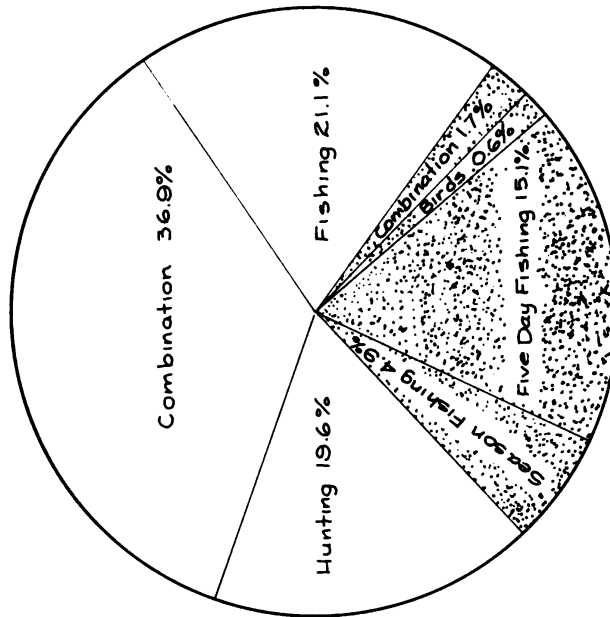
JULY 1, 1956 - JUNE 30, 1957

RESIDENT SPORTING - 215,828 - 78%
 LICENSE SALES
 NON-RESIDENT SPORTING - 59,520 - 22%
 LICENSE SALES



JULY 1, 1957 - JUNE 30, 1958

RESIDENT SPORTING - 231,385 - 78%
 LICENSE SALES
 NON-RESIDENT SPORTING - 66,495 - 22%
 LICENSE SALES



TABLATION OF LICENSE SALES—BY SERIES

Years	Resident Fish & Game	Resident Game	Resident Fish	Non-Res. Big Game	Non-Res. Bird	Non-Res. Fish	Tourist Fish	Shipping Trophy Lic.	Deer Tags	Elk Tags	Goat	Sheep	Antelope	Archery
1947	123,552	32,571	28,970	1,471	876	8,411	27,683	2,890	413	82,034	27,361	140		
1948	123,122	39,043	35,720	1,610	1,260	8,697	28,739	3,552	390	88,229	24,731			
1949	118,443	42,389	39,249	1,352	986	9,023	29,715	2,128	357	83,432	31,262			
1950	117,051	44,452	42,046	1,182	704	9,682	31,340	774	332	89,173	33,855			
1951	118,761	45,701	41,778	2,229	709	11,471	36,528	1,403	564	99,553	43,198			
1952	124,793	48,714	44,106	3,187	820	13,407	42,533	1,542	908	105,562	47,469			
1953	126,772	46,030	44,456	3,309	1,035	14,641	46,632	1,492	899	101,582	44,097			
1954	125,316	46,465	45,333	3,638	1,162	14,823	49,107	1,315	830	103,702	48,201			
1955	118,189	46,315	47,095	3,729	1,133	13,042	41,379	1,062	16	106,840	50,757			
1956	104,944	56,962	54,305	4,046	1,334	12,874	41,686	1,191		114,019	52,627	63	75	89
1957	104,035	57,086	57,504	4,882	1,818	13,837	45,063	1,253		118,329*	50,732	76	193	92

*Of this total 327 tags were for the Middle Fork and 7,166 were 2-deer tags.

REVENUE AND EXPENDITURE COMPARISON

Years	Expenditures										Revenue	
	Fish & Game Fund	Predatory Animal Control	Pittman-Robertson	Dingell-Johnson	Reimbursable Projects	Beaver Pelts	Total Expenditures	License				
1957-58	\$1,665,433.58	\$23,212.65	\$261,618.53	\$117,072.38	\$126,985.10	\$ 21,679.81	\$2,216,002.05	\$1,697,252.47				
1957-56	1,592,846.12	30,432.39	620,966.90	113,833.60	37,507.22	37,950.00	2,433,536.23	1,528,500.96				
1956-55	1,316,078.29	32,860.26	446,618.77	92,749.24		52,321.26	1,940,627.82	1,395,822.37				
1955-54	1,190,160.95	30,744.11	377,521.87	115,529.63		92,477.50	1,806,434.06	1,364,474.96				
1954-53	1,156,832.56	33,985.14	409,535.23	48,794.78		55,354.98	1,704,502.69	1,283,120.00				
1953-52	1,021,142.99	29,005.64	321,217.31	28,013.64		82,846.87	1,482,226.45	1,258,275.20				
1952-51	986,360.09	27,018.42	243,217.95	7,829.64		56,987.35	1,321,413.45	1,139,871.25				
1951-50	1,124,914.38	40,284.39	162,294.42			134,172.50	1,461,665.24	987,709.73				
1950-49	1,051,633.39	32,726.88	366,494.77			92,697.08	1,543,602.12	906,618.15				
1949-48	976,279.61	51,607.17	138,104.75			88,854.91	1,254,846.44	958,876.60				
1948-47	772,029.21	51,537.71	121,255.65			151,241.01	1,096,063.58	877,528.55				
1947-46	644,682.04	52,257.54	36,455.81			117,139.66	850,535.05	718,945.20				

STATEMENT OF TOTAL FUND OPERATION BIENNIIUM PERIOD ENDING JUNE 30, 1958

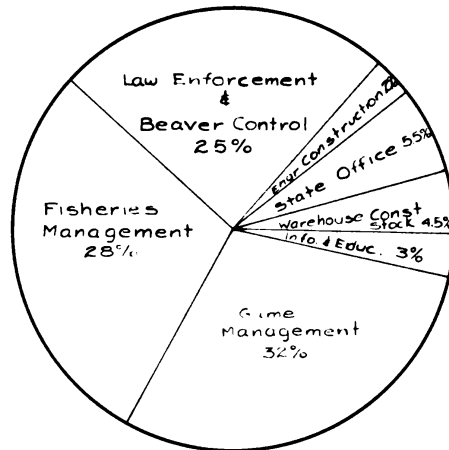
Funds	Fish & Game	Predatory	P. R.	D. J.	Reimbursable	Beaver	Total
Beginning Fund Balance							
July 1, 1956	\$ 807,067.77	\$ 11,994.72	\$ 31,062.31	\$ 39,878.02		\$ 262.81	\$ 890,265.63
Revenue							
Licenses	3,220,753.43						3,220,753.43
Matching Funds			666,308.28	176,928.92	\$215,270.78		1,058,507.98
Other	253,116.91		28,120.90	126.91	85.23	59,367.00	340,816.95
Total Revenue	3,473,870.34		694,429.18	177,055.83	215,356.01	59,367.00	4,620,078.36
Department Transfer of Funds	515,000.00 cr.	44,000.00		61,000.00	100,000.00		
Total Funds Available	3,765,938.11	55,994.72	1,035,491.49	277,933.85	315,356.01	59,629.81	5,510,343.99
Disbursements							
Salaries & Wages	1,491,163.17	38,431.26	342,917.69	118,380.94	95,665.33		2,086,558.39
Travel	106,847.29	1,910.93	39,367.94	9,874.68	10,901.81		168,902.65
Other Expense	941,207.97	11,854.07	216,380.88	77,747.59	34,000.09	59,629.81	1,340,820.41
Capital Outlay	716,729.17	1,448.78	283,911.42	24,902.77	23,925.09		1,050,917.23
Refunds	2,332.10		7.50				2,339.60
Total	3,258,279.70	53,645.04	882,585.43	230,905.98	164,492.32	59,629.81	4,649,538.28
Transfers	54,854.11	268.54	7,551.01	2,337.82	1,572.29		66,083.77
Total Disbursements	3,312,633.81	53,913.58	890,136.44	233,243.80	166,064.61	59,629.81	4,715,622.05
Fund Balance	453,304.30	2,081.14	145,355.05	44,690.05	149,291.40		794,721.94
Less Encumbrances	175,688.99		1,397.82	238.60			177,295.41
Operating Capital Balance							
June 30, 1958	\$ 277,615.31	\$ 2,081.14	\$ 143,957.23	\$ 44,481.45	\$149,291.40		\$ 617,426.53

ANALYSIS of REVENUES & EXPENDITURES

FISCAL YEAR ENDING JUNE 30, 1957

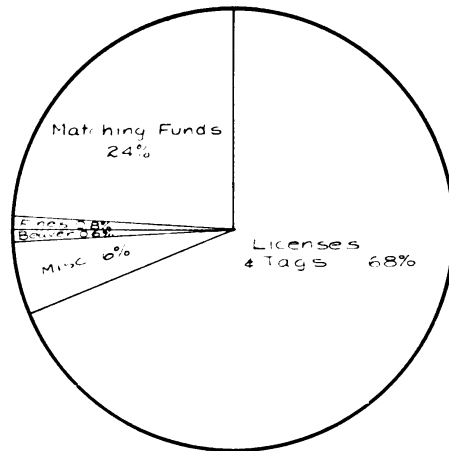
TOTAL FUND OPERATION

HOW YOUR FISH & GAME DOLLAR WAS USED



\$2,433,536.23

SOURCES of REVENUE



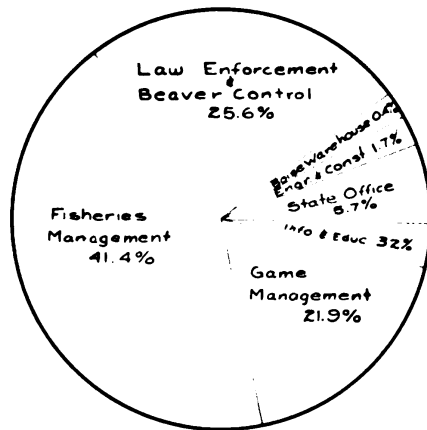
\$2,239,382.95

ANALYSIS of REVENUES & EXPENDITURES

FISCAL YEAR ENDING JUNE 30, 1958

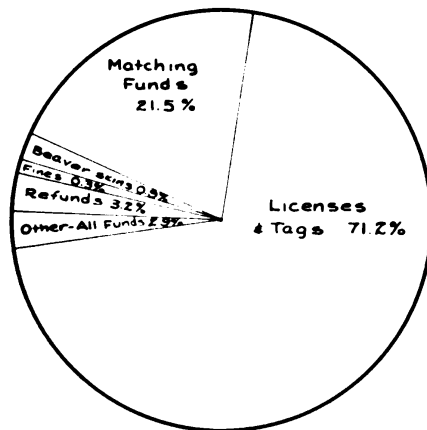
TOTAL FUND OPERATIONS

HOW YOUR FISH & GAME DOLLAR WAS USED



\$2,216,002.05

SOURCES of REVENUE



\$2,380,695.41

DETAIL STATEMENT OF EXPENDITURES
FISCAL YEAR ENDING JUNE 30, 1958, FUND No. 6

	Total	Sal. & Wages	Travel	Other Expense	Capital Outlay	Refunds
Fish & Game Fund No. 6	\$1,665,433.58	\$807,061.43	\$54,761.24	\$496,853.77	\$306,288.50	\$468.64
Administration Division	176,496.60	101,252.79	8,401.35	48,077.32	18,296.50	468.64
Headquarters	111,361.84	63,031.73	3,678.64	34,540.90	9,641.93	468.64
Commission	4,164.25	1,000.00	3,036.33	102.92	25.00	
Construction	38,383.23	25,777.79	1,451.51	7,711.32	3,442.61	
Service	13,429.42	7,321.27	234.87	2,244.79	3,628.49	
Warehouse	9,157.86	4,122.00		3,477.39	1,558.47	
Conservation Enforcement Div.	546,279.92	339,333.29	28,504.47	118,392.56	60,049.60	
Headquarters	20,106.01	11,698.67	1,959.25	6,144.73	303.36	
District 1	80,757.02	46,363.13	2,803.07	17,893.55	13,697.27	
District 2	72,846.96	47,970.60	3,424.48	13,441.85	8,010.03	
District 3	108,004.46	68,822.30	5,538.46	22,689.21	10,954.49	
District 4	121,317.78	78,758.68	5,708.01	27,366.04	9,485.05	
District 5	131,736.30	79,401.91	6,330.21	28,411.74	17,592.44	
Beaver Control	11,511.39	6,318.00	2,740.99	2,445.44	6.96	
Fisheries Mgmt. Division	672,775.13	217,489.43	10,213.89	252,180.04	192,891.77	
Headquarters	49,394.27	20,030.03	2,395.88	8,829.50	18,138.86	
Management	75,481.97	34,387.85	2,816.81	10,671.88	27,605.43	
Transportation	15,314.36	3,336.00	714.04	10,140.92	1,123.40	
American Falls	59,521.48	21,071.89	357.41	32,750.18	5,342.00	

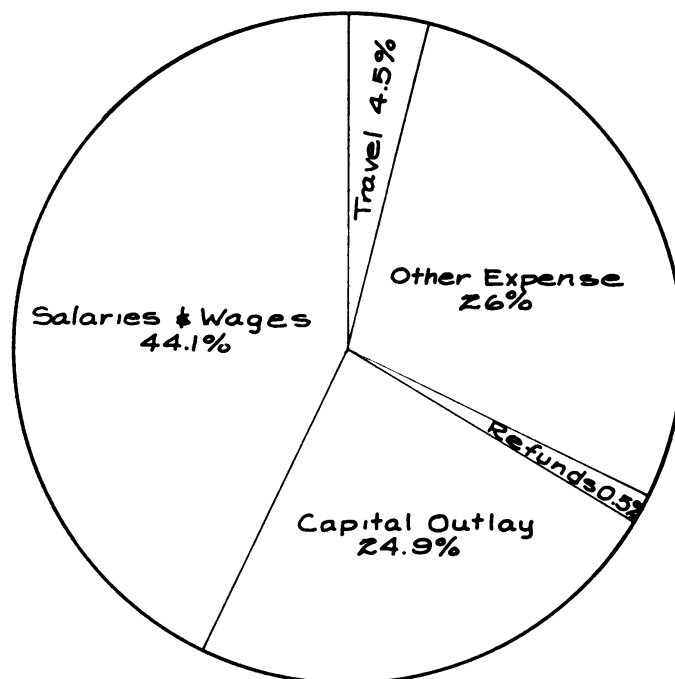
Ashton	24,511.73	8,712.55	315.15	15,387.45	96.58
Clark Fork	32,089.34	11,842.61	290.25	16,778.03	3,178.45
Eagle	35,854.05	19,823.26	359.01	9,145.68	6,526.10
Grace	41,897.05	11,088.26	190.45	22,864.34	7,754.00
Grangeville	3,748.35	962.83	16.60	828.73	1,940.19
Hagerman	183,369.42	28,710.96	395.44	73,846.65	80,416.37
Hayspur	21,649.97	8,929.82	135.65	11,768.04	816.46
Henry's Lake	5,161.17	4,241.47	170.32	749.38	
Mackay	62,986.19	13,074.53	957.10	18,996.94	29,957.62
McCall	12,818.33	6,225.38	257.95	2,925.69	3,409.31
Mullan (Hale)	9,528.59	5,997.50	229.35	3,219.95	81.79
Sandpoint	7,865.47	5,538.50	1.50	1,683.38	642.09
Twin Falls	16,022.22	6,673.14	152.65	7,954.04	1,242.39
Warm River	4,318.88	2,827.77	110.34	1,380.77	
Fernwood-Wolf Lodge	3,731.19	1,346.00	50.80	164.45	2,169.94
Kamiah	7,511.10	2,669.98	297.19	2,094.04	2,450.79
Game Management Division	199,889.09	112,205.80	5,503.93	48,948.77	33,230.59
Headquarters	32,178.15	9,094.15	916.03	6,183.14	15,984.83
Big Game	73,038.14	44,902.52	2,544.06	13,639.59	11,951.97
Farragut Mgmt. Area	16,422.23	10,196.74	219.19	5,383.85	622.45
Bird Section	31,625.91	24,014.18	1,378.36	5,126.94	1,106.43
Eagle Holding Pens	357.00			357.00	
Jerome Game Farm	25,898.00	12,632.85	219.77	10,491.52	2,553.86
Lapwai Game Farm	20,369.66	11,365.36	226.52	7,766.73	1,011.05
Information & Education Div.	69,992.84	36,780.12	2,137.60	29,255.08	1,820.04

STATEMENT OF DISBURSEMENTS

ADMINISTRATION DIVISION

Biennium Period Ending June 30, 1958

	State Office	Engineering, Construction Maintenance	Warehouse Operations	Total
Salaries & Wages . . .	\$136,156.80	\$ 39,656.31	\$ 30,919.45	\$206,732.56
Travel	15,148.12	2,898.66	3,146.15	21,192.93
Operating Expense . .	87,381.72	16,637.82	17,824.25	121,843.79
Capital Outlay	19,635.32	27,257.04	69,762.23	116,654.59
Refund	2,315.35			2,315.35
Total	\$260,637.31	\$ 86,449.83	\$121,652.08	\$468,739.22

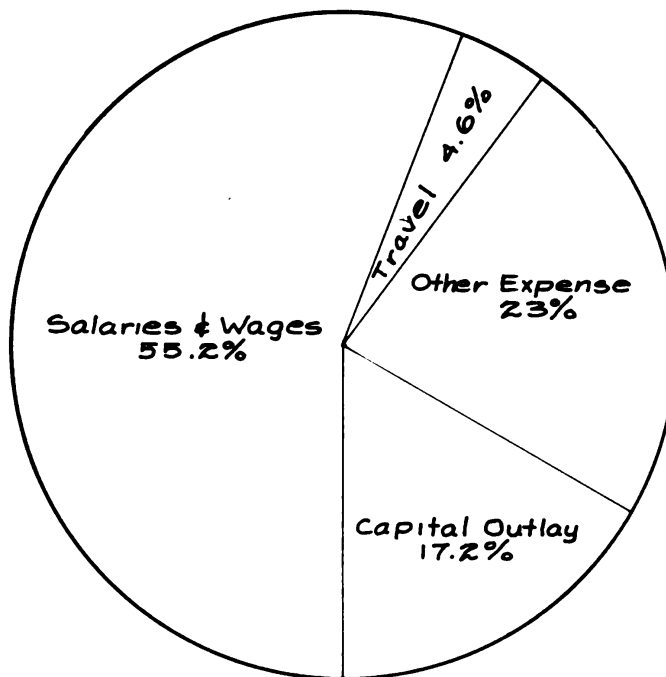


STATEMENT OF DISBURSEMENTS

CONSERVATION ENFORCEMENT DIVISION

Biennium Period Ending June 30, 1958

	Enforcement	Beaver	Pelts	Total
Salaries & Wages .. \$	637,225.59	\$13,864.00		\$ 651,089.59
Travel	48,769.48	6,297.45		55,066.93
Operating Expense ..	206,122.38	5,311.67	59,629.81	271,063.86
Capital Outlay	202,266.38	6.96		202,273.34
Total	\$1,094,383.83	\$25,480.08	\$59,629.81	\$1,179,493.72

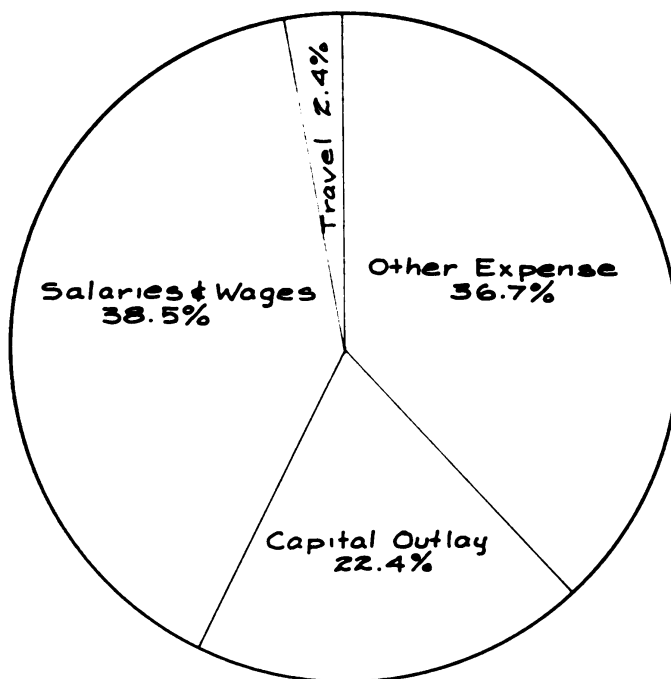


STATEMENT OF DISBURSEMENTS

FISHERIES DIVISION

Biennium Period Ending June 30, 1958

	Fish & Game	Dingell-Johnson	Reimbursable	Total
Salaries & Wages \$	402,879.45	\$118,380.94	\$ 95,665.33	\$ 616,925.72
Travel	17,587.10	9,874.68	10,901.81	38,363.59
Operating Expense	474,173.42	77,747.59	34,000.09	585,921.10
Capital Outlay.....	309,445.10	24,902.77	23,925.09	358,272.96
Total	\$1,204,085.07	\$230,905.98	\$164,492.32	\$1,599,483.37

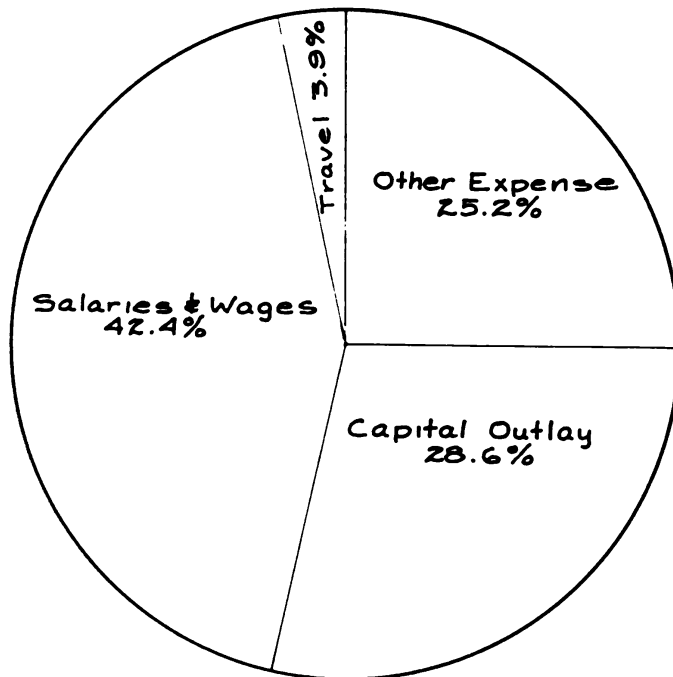


STATEMENT OF DISBURSEMENTS

GAME MANAGEMENT DIVISION

Biennium Period Ending June 30, 1958

	Fish & Game	Predator	Pittman-Robertson	Total
Salaries & Wages . . .	\$152,304.42	\$38,431.26	\$342,917.69	\$ 533,653.37
Travel	6,842.94	1,910.93	39,367.94	48,121.81
Operating Expense . . .	90,660.32	11,854.07	216,380.88	318,895.27
Capital Outlay	75,608.45	1,448.78	283,911.42	360,968.65
Refunds			7.50	7.50
Total	\$325,416.13	\$53,645.04	\$882,585.43	\$1,261,646.60

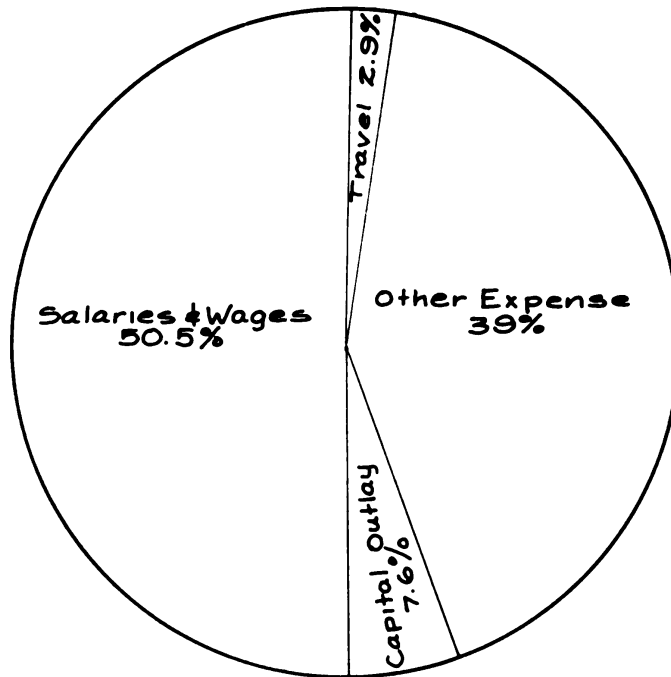


STATEMENT OF DISBURSEMENTS

INFORMATION & EDUCATION DIVISION

Biennium Period Ending June 30, 1958

	Fish & Game
Salaries & Wages	\$ 70,875.88
Travel	4,083.95
Operating Expense	54,649.88
Capital Outlay	10,565.66
Total	\$140,175.37



FEDERAL AID IN FISH AND WILDLIFE RESTORATION

Wildlife Restoration

The Federal Aid in Wildlife Restoration Act provides that the Federal Government will finance 75 per cent of approved wildlife projects. Under this act Congress appropriates annually funds received from revenue derived from an 11 per cent excise tax on sporting arms and ammunition. The Idaho Legislature passed an enabling act authorizing the Fish and Game Department to participate in this program on March 4, 1939.

Types of Suitable Projects

The basic requirements are that all projects shall be substantial in character and design. Depending upon objectives, they embrace activities in four groups as follows:

1. **LAND PURCHASE**—Purchase of lands for the rehabilitation of wildlife.
2. **LAND DEVELOPMENT**—To make land and water areas more suitable for and productive of wildlife, through planting food and cover planting, creating new water impoundments, stabilization of water levels, introduction of game species into suitable habitat and other activities necessary to accomplish this purpose.
Provisions are made under development projects to maintain all Federal Aid projects, buildings or land improvements.
3. **INVESTIGATIONS AND SURVEYS**—Research to solve pressing wildlife management problems. These studies must be confined to procurement of factual information designed to improve the administration of the wildlife resources of the state.
4. **COORDINATION**—The preparation and submission of proposed projects for consideration of Director, Fish and Game Commission, the U.S. Fish and Wildlife Service and Department of Interior, and the coordination of active projects in compliance with Federal and State law.

The act providing for Federal Aid in Wildlife Restoration was amended August 12, 1955, to provide that up to 30% of the funds so appropriated may be used for game management. (Measures concerned with harvest and control of wild birds and mammals being managed by the state fish and game department; law enforcement and public relations are not approvable activities.)

Wildlife Restoration Funds Received

One-half the federal funds available to the states for wildlife restoration projects is allocated in the ratio that the area of each state bears to the total area of all the states; the remainder is allocated in the ratio of the states' paid hunting license holders to the total number of paid hunting license holders in all the states. No state shall receive less than one-half of one per cent, nor more than five per cent of the total amount apportioned to all the states. Since March 11, 1939, when the Idaho Legislature passed the Act enabling participation, \$2,945,670.05 in federal apportionments has been allocated to the State of Idaho.

The following financial report is for the period July 1, 1956 to June 30, 1958:

Unobligated balance of Federal funds, July 1, 1956	\$ 5,150.07
Apportionment Fiscal Year 1957	330,805.48
Apportionment Fiscal Year 1958	354,522.21
Total Federal money available to finance approved projects for period July 1, 1956 to June 30, 1958	\$690,477.76
Unobligated balance of Federal funds as of June 30, 1958	\$ 49,087.59

**Federal Aid in Wildlife Restoration Projects Initiated
During Biennium July 1, 1956 to June 30, 1958**

Coordination	Federal	State	Estimated Total
FW 40-C-16 Coordination	\$ 19,710.00	\$ 6,570.00	\$ 26,280.00
FW 40-C-17 Coordination	16,789.51	5,596.51	22,386.02
Total Coordination	\$ 36,499.51	\$ 12,166.51	\$ 48,666.02
Development			
FW 2-D- 4 C. J. Strike Wildlife Mgmt. Area	\$ 5,391.00	\$ 1,737.00	\$ 7,188.00
FW 2-D- 5 C. J. Strike Wildlife Mgmt. Area	9,478.95	3,150.00	12,628.95
FW 2-D- 6 C. J. Strike Wildlife Mgmt. Area	9,000.00	3,000.00	12,000.00
FW 4-D- 3 Carey Lake Development	600.00	200.00	800.00
FW 4-D- 4 Carey Lake Development	5,449.50	1,816.50	7,266.00
FW 4-D- 5 Carey Lake Development	3,975.00	1,325.00	5,300.00
W 36-D- 7 Hagerman Refuge	5,700.00	1,900.00	7,600.00
W 36-D- 8 Hagerman Refuge	8,788.50	2,929.50	11,718.00
W 36-D- 9 Hagerman Refuge	9,750.00	3,250.00	13,000.00
W 55-D- 9 North Lake Wildlife Mgmt. Area	12,225.00	4,075.00	16,300.00
W 55-D-10 North Lake Wildlife Mgmt. Area	16,828.00	5,609.43	22,437.43
W 55-D-11 North Lake Wildlife Mgmt. Area	24,000.00	8,000.00	32,000.00
W 60-D- 5 Boundary County Refuge	675.00	225.00	900.00
W 60-D- 6 Boundary County Refuge	1,978.50	659.50	2,638.00
W 60-D- 7 Boundary County Refuge	1,155.00	385.00	1,540.00
W 64-D- 5 Boise River Deer & Elk Range	4,350.00	1,450.00	5,800.00
W 64-D- 6 Boise River Deer & Elk Range	8,414.44	2,804.81	11,219.25
W 64-D- 7 Boise River Deer & Elk Range	11,175.00	3,725.00	14,900.00
W 73-D- 5 Star Lake Management Area	4,875.00	1,625.00	6,500.00
W 73-D- 6 Star Lake Management Area	7,834.05	2,611.35	10,445.40
W 73-D- 7 Star Lake Management Area	8,475.00	2,825.00	11,300.00
W 80-D- 9 Game Habitat Improvement	21,900.00	7,300.00	29,200.00
W 80-D-10 Game Habitat Improvement	42,997.50	14,332.50	57,330.00
W 80-D-11 Game Habitat Improvement	43,500.00	14,500.00	58,000.00
W 89-D- 6 Sand Creek Wildlife Mgmt. Area	8,925.00	2,975.00	11,900.00
W 89-D- 7 Sand Creek Wildlife Mgmt. Area	11,702.25	3,901.75	15,604.00
W 89-D- 8 Sand Creek Wildlife Mgmt. Area	12,900.00	4,300.00	17,200.00
W 103-D-4 Farragut Wildlife Mgmt. Area	8,400.00	2,800.00	11,200.00
W 113-D-2 Primitive Area Winter Range	4,650.00	1,550.00	6,200.00
W 113-D-3 Primitive Area Winter Range	6,158.25	2,352.75	8,211.00
W 113-D-4 Primitive Area Winter Range	6,675.00	2,225.00	8,900.00
W 116-D-1 Market Lake Wildlife Mgmt. Area	7,890.75	2,630.25	10,521.00
W 116-D-2 Market Lake Wildlife Mgmt. Area	8,925.00	2,975.00	11,900.00
Total Development	\$344,741.69	\$114,905.34	\$459,647.03

Lands				
W 71-L- 2	Sand Creek Wildlife Mgmt.....	\$ 4,365.00	\$ 1,455.00	\$ 5,820.00
W 82-L- 6	Carey Lake Migratory Bird Unit.....	22,350.00	7,450.00	29,800.00
W 115-L-1	Market Lake Wildlife Mgmt.....	90,195.00	30,965.00	120,260.00
W 115-L-2	Market Lake Wildlife Mgmt.....	42,450.00	14,150.00	56,600.00
W 115-L-3	Market Lake Wildlife Mgmt.....	3,825.00	1,275.00	5,100.00
W 118-L-1	Reclamation Projects Wildlife Mgmt. Areas.....	2,318.34	772.78	3,091.12
Total Lands.....		\$165,503.34	\$ 55,167.78	\$220,671.12
Research				
W 85-R- 8	Game Population Census & Range.....	\$ 84,750.00	\$ 28,250.00	\$113,000.00
W 96-R- 7	Statewide Game Bird Survey & Inv.....	22,725.00	7,575.00	30,300.00
W 96-R- 8	Statewide Game Bird Survey & Inv.....	5,775.00	1,925.00	7,700.00
W 108-R-4	Fur Resources Survey.....	7,950.00	2,650.00	10,600.00
W 108-R-5	Fur Resources Survey.....	4,125.00	1,375.00	5,500.00
W 111-R-5	Artificial Reveg. Studies.....	6,375.00	2,125.00	8,500.00
W 112-R-3	Clearwater Game & Range Study.....	30,000.00	10,000.00	40,000.00
Total Research.....		\$161,700.00	\$ 53,900.00	\$215,600.00

Summary of Estimated Costs

Type of Project	Federal	State	Estimated Total	% of Total Money Obligated
Coordination Projects....	\$ 36,499.51	\$ 12,166.51	\$ 48,666.02	5.1%
Development Projects....	344,741.69	114,905.34	459,647.03	51.6%
Land Projects.....	165,503.34	55,167.78	220,671.12	21.9%
Research Projects.....	161,700.00	53,900.00	215,600.00	21.4%
Total	\$748,569.54*	\$249,514.63	\$998,084.17	100.0%

*This figure represents the total federal funds obligated for projects during the biennium. Many of the projects are continuing and are carried beyond the biennium period, therefore, this figure does not represent actual expenditures.

Fish Restoration

A federal Act passed on August 9, 1950, provides that federal funds obtained from a 10% excise tax on fishing rods, creels, reels and artificial lures, baits and flies, be made available to participating states on the following basis: 40% in the ratio that the area of each state, including coastal and Great Lakes waters, bears to the total area of all states; and 60% in ratio that the number of persons holding paid licenses to fish for sport or recreation in each state bears to the number of licensed fishermen in all the United States.

These funds available to the Idaho Fish and Game Department are used to finance approved fish restoration and management projects in exactly the same manner as for the Wildlife Restoration projects.

The following financial report is for the period July 1, 1956 to June 30, 1958:

Unobligated balance of Federal funds, July 1, 1956....	\$ 3,708.01
Apportionment Fiscal Year, 1957.....	84,885.44
Apportionment Fiscal Year, 1958.....	94,303.37
Total Federal money available to finance approved projects for period July 1, 1956 to June 30, 1958.....	182,896.82
Unobligated balance of Federal funds as of June 30, 1958.....	3,218.67

Federal Aid in Fish Restoration and Management Projects Initiated During Biennium

JULY 1, 1956 to JUNE 30, 1958

Coordination	Federal	State	Estimated Total
FW 40-C-16 Coordination	\$ 7,290.00	\$ 2,430.00	\$ 9,720.00
FW 40-C-17 Coordination	4,197.38	1,399.12	5,596.50
	\$ 11,487.38	\$ 3,829.12	\$ 15,316.50
Development			
FW 2-D- 4 C. J. Strike Wildlife Mgmt.....	\$ 609.00	\$ 203.00	\$ 812.00
F 28-D- 2 Mountain Lakes	15,000.00	5,000.00	20,000.00
F 29-D- 1 Cocolalla Lake Restoration	72,969.75	24,323.25	97,293.00
	\$ 88,578.75	\$ 29,526.25	\$118,105.00
Research			
F 3-R- 7 Biological & Economic Survey of Pend Oreille Lake	\$ 12,866.25	\$ 4,288.75	\$ 17,155.00
F 3-R- 8 Biological & Economic Survey of Pend Oreille Lake	16,275.00	5,425.00	21,700.00
F 13-R- 2 Fisheries Investigations of Henry Lake	273.75	91.25	365.00
F 15-R- 3 Clearwater Fisheries Investigation	8,532.00	2,844.00	11,376.00
F 15-R- 4 Clearwater Fisheries Investigation	8,625.00	2,875.00	11,500.00
F 15-R- 5 Clearwater Fisheries Investigation	1,650.00	550.00	2,200.00
F 18-R- 3 Statewide Fishing Harvest	2,625.00	875.00	3,500.00
F 18-R- 4 Statewide Fishing Harvest	2,700.00	900.00	3,600.00
F 22-R- 3 Experimental Rough-Fish Control	11,700.00	3,900.00	15,600.00
F 22-R- 4 Experimental Rough-Fish Control	15,517.86	5,172.62	20,690.48
F 32-R- 1 Tests for Increasing Returns of Hatchery Trout	8,250.00	2,750.00	11,000.00
F 34-R- 1 Water Quality Investigations	5,250.00	1,750.00	7,000.00
	\$ 94,264.86	\$ 31,421.62	\$125,686.48
Lands			
F 31-L- 1 Cocolalla Lake	\$ 1,950.00	\$ 650.00	\$ 2,600.00
F 33-L- 1 Danielson Lake Public Access	881.25	293.75	1,175.00
	\$ 2,831.25	\$ 943.75	\$ 3,775.00

Summary of Estimated Costs

Type of Project	Federal	State	Estimated Total	% of Total Money Obligated
Coordination	\$ 11,487.38	\$ 3,829.12	\$ 15,316.50	5.9%
Development	88,578.75	29,526.25	118,105.00	45.3%
Research	94,264.86	31,421.62	125,686.48	46.9%
Land	2,831.25	943.75	3,775.00	1.9%
	\$197,162.24*	\$ 65,720.74	\$262,882.98	100.0%

*This figure represents the total federal funds obligated for projects during the biennium. Many of the projects are continuing and are carried beyond the biennium period, therefore, this figure does not represent total expenditures.