Twenty-Eighth Biennial Report

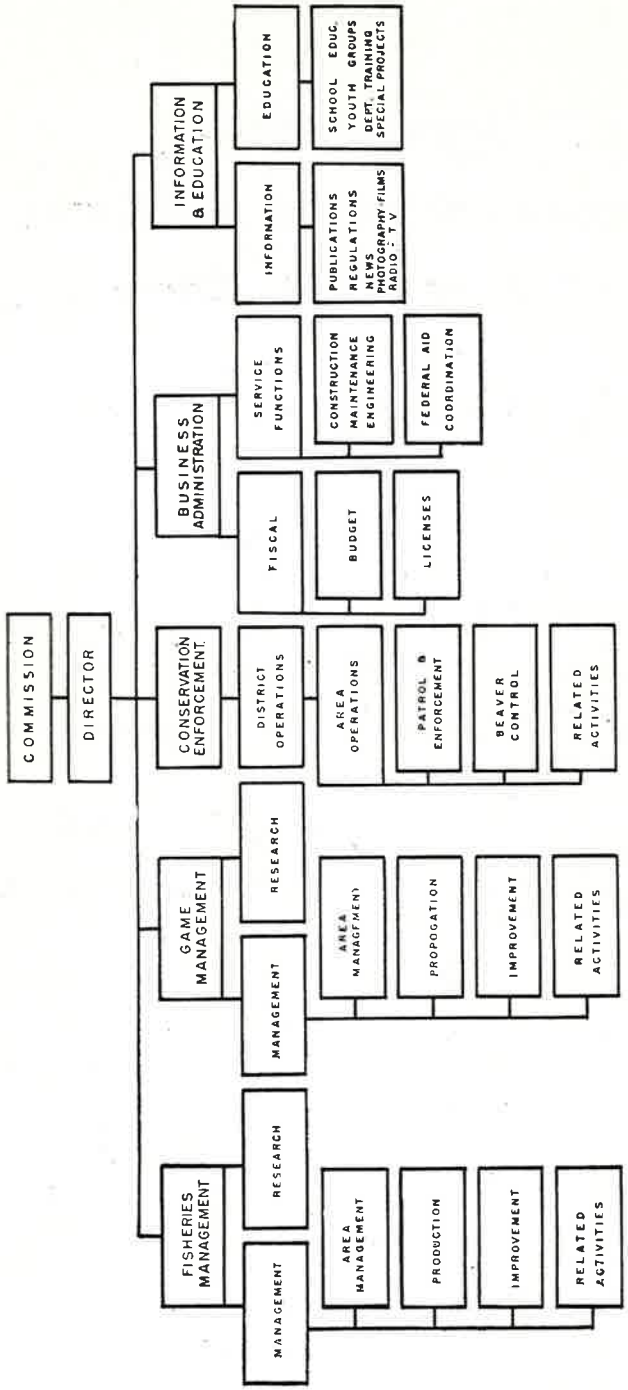
of the

FISH AND GAME DEPARTMENT

of the

State of Idaho

July 1, 1958 to June 30, 1960



Fish and Game Department Organization Chart

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Administration

Establishment of policy for the preservation, perpetutation, pr tection and management of all wildlife resources in the State of Ida continued under the authority of the Idaho Fish and Game Commissi Operations of the Commission were conducted according to the init tive act of 1938, convening in eight regular quarterly and six spec sessions during the biennium.

Members of the Commission are appointed for staggered terms six years from each of five districts in the state. The districts include t 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, Boi Canyon, Ada, Elmore, Owyhee.

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

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

Members of the Commission

Members of the Commission during the biennium were:

Frank Cullen, Coeur d'Alene, District No. 1
Tom Felton, Moscow, District No. 2
Arlie Johnson, Boise, District No. 3
R. J. Holmes, Twin Falls, District No. 4
Glenn Stanger, Idaho Falls, District No. 5

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

Arlie Johnson served as chairman of the Commission in 1958. He w preceded by Ray Sims in 1957, and Ray T. Holmes in 1956.

Tom Felton served as chairman of the Commission in 1959.

Glenn Stanger was elected chairman of the Commission in Januar 1960.

Conservation Enforcement

The duties of a conservation officer are many and varied. Time and effort by conservation officers contributed to many of the work programs described in other sections of this report. Although they are the only members of the Department charged directly with enforcement of laws and regulations governing the fish and game resource, an analysis of work schedules has shown that only slightly more than one-half of an officer's time is actually spent on law enforcement. The remainder is divided among the categories of game management, public relations, improvements, cooperation and office work.

Typical duties under game management include the taking of game bird brood counts; pheasant sex ratio counts; waterfowl counts; stream survey; big game trend counts; beaver population trend counts; participating in bird and big game trapping programs; servicing of bird, big game and beaver depredation complaints; and recording of harvest information on species of game and fish.

Assigned duties under the heading of public relations include speaking engagements at sportsmen's groups and service and social clubs. Many officers participate in local schools with conservation and hunter safety training programs. Contacts are maintained with various news outlets for distribution of facts on local hunting and fishing seasons and programs.

The portion of an officer's time charged to improvements is generally devoted to maintaining equipment such as boats, motors, trailers and snow equipment, and effecting repairs or improvements on permanent installations such as patrol cabins. Cooperation includes time spent with other agencies with city, county, state or federal responsibility. Time necessary for the writing of reports, correspondence, filing, etc., is listed as office work. The effort spent in reading reports, articles and books in order to keep abreast of the rapid changing technology of modern law enforcement and fish and game management is also listed under this heading.

Organization

In July of 1959 a change was made in the administrative organization of the division. For some time the state, for administrative purposes, had been divided into five areas which coincided with the Commission districts. Due to additional personnel and increased responsibilities brought about by an accelerated program, the work load of the district conservation officers was becoming unbalanced between the districts. In order to correct this, the state was divided into six regions with these being subdivided into a total of sixty-four patrol districts. The new regions, whose localities are quite well defined by their names, are called the Panhandle, Clearwater, Western, Magic Valley, Eastern and Salmon Regions. In effect, the new alignment meant little or no change in the former districts in the Panhandle and Clearwater Regions. Creation of the Salmon Region resulted in a transfer of men and/or area from portions of each of the districts formerly comprising the Western, Magic Valley and

Eastern Regions. It is felt that by allowing a greater degree of supe vision the regional set-up will increase the efficiency in the division.

Personnel of the division now include a chief, six regional conserv tion officers and sixty-four regularly appointed district conservati officers. In addition there are nine semi-retired conservation office who work part time on such details as checking license application operating checking stations, and conducting investigative work.

Equipment

The two-way short-wave radio network was enlarged during t biennium with the addition of 12 mobile units making a total of 89 mobi units, 14 portables and 11 repeater stations now in operation. Mobi radio units are being placed in vehicles of other divisions at an accel rated rate and in addition to the 71 in Conservation Enforcement, the are now 11 in Game Management, 3 in Fisheries Management and each in the Information and Education and Administration Divisio Efficiency of several of the repeater stations was increased to give bett coverage in fringe areas. Kits were installed in several boats, pieces snow equipment and four-wheel drive vehicles which permit the rap transfer of radio equipment into these units from a standard vehic This allows greater coverage for enforcement purposes and also adds degree of safety for personnel operating this equipment. Increase standardization in radio procedure has improved efficiency.

Several surplus mechanized "weasels" were obtained and will be us for winter back country patrol. They will also be valuable for increase coverage on big game counts in the winter and spring months.

Larger and safer boats were acquired for use on some of the bigg lakes and rivers in the state. These boats will allow officers to maint routine patrols into areas that previously were visited only infrequent

A special use permit was obtained from the U. S. Forest Service f the Twin Creeks Patrol Cabin on the upper Little North Fork of t Clearwater River. All other patrol cabins and headquarters residenc were maintained and improved as necessary.

Report of Arrests and Convictions

Every effort is made to acquaint the hunting and fishing public wi the reason behind the various laws and regulations and to provide map pamphlets, newspaper stories, radio and T.V. coverage on all seasons a bag limits. Violations still occur. Some are willful and some are brou about by negligence in learning the current regulations. Division pe sonnel are charged with the responsibility for fair, impartial enforceme of all fish and game laws and regulations. When confronted with t physical evidence of a crime, it is the duty of the conservation offic to cite the offender into Court. Determination of a verdict on the charg the seriousness of the offense and the amount and degree of judgme lie wholly within the province of the Court.

During the fiscal year, July 1, 1958 to June 30, 1959, a total of 1,3 arrests was made of which 40 were juvenile cases, 14 was dismissed, were found not guilty and 19 had the entire fine suspended. A total $38,411.00 was collected by the Judges, of which one-half or $19,205.5 was remitted to the county treasurers in those counties where the fin were assessed and the other half to the Department.

In the fiscal year of July 1, 1959 to June 30, 1960, a total of 1,346 arrests was made of which 61 were juvenile, 21 were dismissed, 2 were found not guilty and 33 had the entire fine suspended. A total of $38,-489.25 was collected by the Judges, who remitted one-half or $19,244.63 to the county treasurers and the balance to the Department.

During the biennium there were 2,065 arrests for game law violations of which 101 were juvenile, 35 were dismissed, 17 were found not guilty and 52 had the total fine suspended. Of the $76,900.25 collected by the Judges, one-half or $38,450.13 was remitted to the county treasurers in those counties where the fines were assessed and the balance was remitted to the Department. Fines for the 2,447 cases in which fines were assessed averaged $31.43 each.

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

TYPE OF VIOLATION

1958	Fishing	Big Game	Upland Birds	Water-fowl	Li-censes	Misc.	Trapping Viola-tions	Checking Station Viola-tions
July	74	3	1	....	23	5	....	....
August	76	4	4	....	24	....	....	....
September	42	2	12	....	24	5	....	....
October	35	96	71	32	33	14	....	6
November	9	68	43	11	13	37	....	6
December	5	49	12	37	6	6	....	1
1959								
January	11	8	4	34	28	8	2	....
February	14	6	4	2	9	5	....	....
March	24	5	1	2	25	4	....	....
April	24	5	....	2	9	3	....	....
May	49	....	1	....	10	4	....	....
June	74	7	3	2	29	2	....	....
July	70	3	3	1	13	....	....	....
August	100	8	1	4	28	4	....	....
September	35	11	7	....	12	3	....	....
October	9	158	16	13	38	13	1	12
November	10	126	52	24	28	26	....	6
December	3	51	14	20	9	6	....	3
1960								
January	7	6	3	38	15	10	1	....
February	6	5	2	....	26	13	....	....
March	18	6	....	1	9	11	1	....
April	33	5	1	1	13	1	1	....
May	42	2	2	....	12	7	1	....
June	63	6	....	....	30	4	3	....
TOTAL	833	640	257	224	466	191	10	34

Game Management

Big Game

Major jobs in each big game year are range examination, aerial an ground surveys to determine trends of local populations, and collectio of harvest information during and following the hunting seasons.

Much of the range examination work involves detailed measuremen of forage plants. The technical details of this work are not included this biennial report. However, in the 1958-1960 period many deer rang showed a static or slightly improved condition in contrast to deteriora ing or worsening conditions which had characterized many importa ranges in the previous decade or so. Range improvement is a slo process, and many ranges still are in poor condition; but there are indic tions that more-or-less stable range conditions can eventually be reache if proper game harvests can be arranged for all areas along with son adjustments in other land uses which may affect game welfare. The c operative approach by various agencies and individuals to the overa problems of game and land management has been both productive an heartening in the 1958-60 biennium.

Coordinating the big game field work are the area big game biologist each of whom plans the seasonal work necessary to the continuing b game program in several big game management units.

Other game biologists in the biennium were assigned to specific i vestigations to obtain needed information. These special assignmen included big game jobs involving southeastern Idaho deer in the Caribo Bear Lake area, the Cassia deer herd, antelope in the Pahsimeroi a adjacent areas, and renewed investigations of bighorn sheep, mounta goats, deer, and elk in the upper Salmon River area.

Southeastern Idaho Deer Study

A very limited wintering area for the deer herds in portions of Be Lake and Caribou counties has presented difficult management pro lems. The objective of this study is to determine what adjustment in t harvest was needed to manage the herd on a sustained-yield basis a to reduce the over utilization and deterioration of the winter range.

The two deer bag limit established in 1957 resulted in a peak harve Checking stations were operated for selected periods during the bie nium (5 in 1958 and 10 in 1959) to sample the harvest. Ages of 591 de were obtained in 1958 and 520 in 1959. The age data indicates a you and productive herd. Yearling does made up a larger part of the Carib unit herd in 1959 than in 1958. Fourteen range transects in this ar indicated a slight reduction in deer days use per acre and total brow utilization.

No winter losses due to malnutrition were found during the 1959- winter checks. In the winters of 1957-58 and 1958-59, respectively, m of the 60 and 186 deer found dead and field-checked by bone marr examination had died from malnutrition.

Eighty-three deer were live trapped, tagged and marked with plastic ear markers during the 1958-59 winter. Fifty-two deer older than fawns were belled to aid in determining the summering areas and drifts.

During the 1959-60 winter 193 were tagged and marked, of which 135 were belled. Twenty-eight reports of belled deer during the summer of 1959 were received and locations plotted.

Three two-acre range exclosures were constructed to provide a comparison of range conditions and trend on totally-protected and utilized range sites.

Fall weights were quite satisfactory in the Caribou-Bear Lake area in 1958 and 1959, and yearling bucks averaged above 110 pounds. However as shown above, deer in that area face critical winter range conditions and losses are large in severe winters.

Cassia Deer Herd Study

The Cassia deer herd study continued during 1958 and 1959. The objective of the study is to obtain data which will facilitate the management of the Cassia deer herd and which may also be useful in managing other deer herds within the state.

Pre-hunt and post-hunt composition data were accumulated via extensive observations of deer. Pre-hunt composition was obtained from 138 deer observed in 1958 and 280 in 1959. Post-hunt composition observations included 342 deer in the winter of 1958-59 and 284 a year later. Excellent productivity in the herd is reflected by the favorable ratios of fawns to does in these observations. Aerial counts have proven more efficient and no more costly than ground counts for gathering population trend data. Wintering areas have been mapped and range maps prepared to show the extent and location of the major bitterbrush fields. Browse utilization transects are measured to obtain annual production and browse used. The browse utilization transects indicate a reduction in utilization on the key winter range. The eruption of the meadow mouse population in 1958 on the north Cassia range killed 2.4% of the bitterbrush and damaged 87%. Other browse plants on the transects were damaged to a lesser degree.

The distribution of the harvest was plotted so that a more equitable hunter distribution can be studied. Approximately three-fourths of the harvest was taken from the Goose Creek and Shoshone Creek drainages in 1958. There were 634 deer checked out during the 1958 season at four stations and 1442 from three stations in 1959. Total harvest was about 1000 in 1958 and 2100 in 1959, and bucks exceeded does in the checked harvest in each year.

Pahsimeroi Valley Antelope Study

Field studies were continued during the biennium. The cumulative ground counts during July and August of 1958 shows the highest natality ratio followed by the highest mortality ratio among fawns. The object of the study is to determine the factors affecting antelope production and means to maintain the herds at most productive populations.

Comparative counts by helicopter and from the ground cost essenti ly the same. The helicopter is superior since the herds can be coun in about one day by one or two observers permitting a more accur appraisal of the results.

The September, 1959 count gave fawn to doe ratios of 98:100 for Upper Pahsimeroi and 105:100 for Upper Little Lost River valleys ba on the December aerial trapping adult-yearling doe ratios.

Examination of 52 uteri to date indicate that virtually all does p one year old conceive and give birth to two fawns. Doe:fawn rat suggest that nearly half of the fawns born in the spring of 1959 w dead by September. Attention was focused on minimum temperatu of the weather data during early weeks of fawn existence as a factor fawn survival, but expected differences did not occur. The condition the range appears to be an increasingly important factor. A study of t pronghorn range is needed to determine the status of the present telope range in relation to its capacity for antelope production.

Antelope fawns were tagged during the latter part of May and ea June to study survival, movements and improve aging techniques later recovery of known-aged jaws. Seven fawns were tagged in 19 14 in 1958, 33 in 1959, and 61 in 1960.

One hundred eighty-eight (188) were live trapped, tagged, and ma ed with ½" plastic ear streamers in 1958 and 371 with3" by 6" pieces colored plastic in 1959, principally for study of their migrations or mo ments.

The response for lower jaws brought in by hunters was very couraging and appreciated as 291 were obtained for aging studies 1959.

Salmon Area Big Game Studies

Investigations were renewed in 1959 to obtain additional needed formation on the Bighorn Sheep and Mountain Goats to permit prop hunting of the various herds in several big game management units of t upper Salmon River drainage. Deer, elk and antelope are also includ in the investigations program for this area.

Two goat herds are being intensively studied, one in the low Pahsimeroi and adjacent Salmon River watershed and one in the low Lemhi-to-North Fork range. The only late season goat hunts have be held in the first study area. One hundred and twenty-seven (127) go were counted here in December of which 37 (29%) were kids of the ye

Bighorn sheep trend areas include portions of the following wat sheds:

1. East Fork of the Salmon River
2. Bayhorse Creek to Morgan Creek of the Salmon River
3. Panther Creek

Deer, elk and antelope trend counts were made. The number animals observed that were not duplicated in subsequent counts are follows:

Summary of Aerial and Ground Trend Counts 1959*

ype of Count	Antelope	Deer	Elk	Mtn. Goat	Bighorn Sheep	Total
erial	1388	1797	313	158	214	3870
round	.....	2370	109	.....	.....	2479

*The figures given should not be considered as census or population figures. They are included here mainly to show something of the scope of the work in this one area of special investigations.

Stationary and roving checking stations were operated to obtain harvest data, including ages and weights of bagged game.

Six range transects were remeasured and results of the range transects covered cooperatively with other agencies were summarized.

Big Game Harvests

Big Game Management Units

The state has been divided into 78 big game management units, each of which is a natural unit of range for deer, elk or both. A smaller number of similar units has been used for several years for various record purposes in game management, but 1959 was the first year in which these units became a part of the basic seasons regulations for deer and elk hunting. This has simplified the establishment of seasons and provides a sound and useable basis for the recording of big game harvest, population, and range data.

The job of gathering big game harvest information uses a three-pronged approach including checking stations, big game report cards, and the harvest questionnaire. Each of these three methods has an important part in getting the statewide picture.

Checking Stations

Checking stations are used mostly to gather information on hunter success, age, weight, condition, and other biological data related to productivity and animal welfare, but operations at these stations include checking of licenses and tags as standard practice in law enforcement.

Checking stations are of special value at locations where large numbers of game animals can be handled in a short period of time, and major checking efforts are accomplished only at points where heavy hunter traffic can be intercepted.

Major checking stations handled mostly deer, elk, and bear. Secondary stations were set up to meet local management needs with other species. More than half of the total big game checked came through ten of the larger stations in both 1958 and 1959. The volume of big game handled at checking stations is indicated by the summary figures below.

Year	No. of Stations	Deer	Elk	Bear
1958	52	13,863	3,783	95
1959	40	13,951	3,847	147

Big Game Report Cards

Report cards yield extensive information from all areas. They are of great value in keeping the Fish and Game Department informed of results while the hunting seasons are in progress, and they supply details concerning the distribution of the statewide kill which could not be available without the cards.

A comparison of 1957-58-59 deer and elk report card returns follows:

A comparison of DEER and ELK report card returns for the seasons of 1957-58-59

Item	Deer			Elk		
	1957	1958	1959	1957	1958	1959
Total tags sold	118,002	132,258	133,797	50,732	54,920	56,011
Total cards returned	43,169	44,565	59,980 to Feb. 29	16,966	20,597	25,261
Total kills reported	27,667	26,818	36,442 to Feb. 20	6,276	6,914	7,752 to Feb. 29
Cards returned as percent of tags sold	36.5	33.6	44.82	33.4	37.5	45.1
Kills reported as percent of tags sold	23.4	20.2	27.24	12.3	12.5	13.8
Hunter success as percent of cards returned..	64.08	60.1	60.75	36.9	33.5	30.6

The scope of information derived from analysis of these cards is tremendous. To cite one outstanding item which was a great aid in appraising the results of the 1959 season: Kill locations **within the individual units** were available for most of the 36,442 deer kills and 7,752 elk kills which were individually reported by the persons who did the hunting. This information shed light on the 1959 harvest which was not so completely available in previous season. Hunters have done a very helpful job in reporting their success and this has led to a better understanding of the game potential in the various units.

Date and Location of Kill

The most-used data from the big game report cards is the date and location of the kill. Recorded by individual days this information shows the pattern of the kill through the season in each unit. Some details are shown below for several important units with different kinds of hunting conditions. (Similar information is available for all units for the 1959 season, but only representative units are shown in this report.)

Representative Deer Units—1959

Unit No. 1—In unit No. 1, in white-tailed deer country in the northern end of the state, the harvest moved slowly in the first month of a seven-week season; but it picked up in late season with 55 per cent of the season's reported kills occurring during the final week.

Unit No. 39—More deer were taken in this unit—the Boise drainage—than in any other unit in the state. The entire unit was open to hunting from October 3 through November 29 and a part of the unit was open through December 15. The last week in November yielded 17 per cent of the reported season kill in this unit, but the kill on opening day, October 3, was higher than on any other single day of the entire season. The first two weeks of the season, and the sixth, seventh, and ninth weeks each yielded from ten to seventeen per cent of the season's kill. Bucks outnumbered does in the unit No. 39 kill about 4 to 3. Bucks were preponderant in early and middle season while more than half of the doe harvest came in the latter half of the season.

Unit No. 73—Unit No. 73 had a season covering three week ends in country where deer are readily available to hunters. Forty-seven percent (47%) of the reported kill occurred on opening week end with excellent hunting available the entire season. Indications are that future harvests can be increased in this unit in view of the fact that bucks outnumbered does nearly two to one in the reported kill.

Unit No. 76—This unit, a two-deer area, reopened in late November after a two-week closure; but lack of snow kept the harvest lower than expected in late season. The three week ends of late hunting each yielded from 10 to 13 percent of the season's reported harvest. The first week end, October 17-18, yielded 27 percent of the season's reported harvest. Bucks predominated in the harvest in both the early and the late parts of the season.

Representative Elk Units

In all major elk units the heaviest kill occurred in the opening few days of the 1959 season, but after this initial peak the harvest pattern varied in different units depending upon weather, terrain, access, elk movements, and other factors.

In unit No. 7 (upper St. Joe) and unit No. 17 (upper Selway) the late season elk harvest exceeded the mid-season kill because elk became more available when they moved down to huntable areas in late season.

In unit No. 12 (Lochsa), with a road running the length of the unit, the harvest maintained a rather steady pace through the season after the peak of the first two week-ends. In unit No. 20 (Chamberlain-Bargamin) late-season kill was less important than in the upper St. Joe or upper Selway because much of unit No. 20 is not accessible to hunters in late season.

DISTRIBUTION OF THE 1959 DEER HARVEST*
(by weeks)

Week Ending	UNIT #1 Male	UNIT #1 Female	UNIT #1 Total	Percent of Season Kill	UNIT #39 Male	UNIT #39 Female	UNIT #39 Total	Percent of Season Kill
October 4					250	222	472	14%+
October 11		Closed			203	199	402	12%
October 18	12	9	21	2%	118	84	202	6%
October 25	21	28	49	5%	95	72	167	5%
November 1	23	16	39	4%	170	83	253	7%
November 8	39	34	73	7%	261	93	354	10%
November 15	54	45	99	10%	282	180	462	13%
November 22	92	74	166	17%	117	124	241	7%
November 29	250	281	531	55%	269	329	598	17%
December 6		Closed			46	65	111	3%
December 13					33	65	98	3%
December 20					3	16	19	1%—
	491	487	978		1957	1565	3522	

	UNIT #73 Male	UNIT #73 Female	UNIT #73 Total	Percent of Season Kill	UNIT #76 Male	UNIT #76 Female	UNIT #76 Total	Percent of Season Kill
October 18	364	217	581	47%	203	137	340	27%
October 25	203	109	312	25%	117	80	197	16%
Nov. 1	229	125	354	28%	83	64	147	12%
November 8					73	46	119	10%
November 15						Closed		
November 22						Closed		
November 29					107	61	168	13%
December 6					74	51	125	10%
December 13					85	63	148	12%
	796	451	1247		742	502	1244	

*Data from report cards; figures represent total reported kills but not total harvest.

DISTRIBUTION OF THE 1959 ELK HARVEST BY WEEKS
(Data from report cards; figures are reported kills but not total harvest.)

Week Ending	UNIT #7 (Upper St. Joe) Male	UNIT #7 (Upper St. Joe) Female	UNIT #7 (Upper St. Joe) Total	Percent of Season Total	UNIT #12 (Lochsa) Male	UNIT #12 (Lochsa) Female	UNIT #12 (Lochsa) Total	Percent of Season Total
October 4	20	37	57	22%	80	86	166	22%
October 11	19	12	31	12%	69	71	140	19%
October 18	3	12	15	6%	31	35	66	9%
October 25	8	5	13	5%	41	51	92	12%
November 1	3	6	9	3%	41	57	98	13%
November 8	7	7	14	5%	44	55	99	13%
November 15	10	7	17	6%	30	64	94	12%
November 22	3	10	13	5%		Closed		
November 29	12	21	33	12%				
December 6	18	15	33	12%				
December 13	12	17	29	11%				
			265				755	

Week Ending	UNIT #17 (Upper Selway) Male	UNIT #17 (Upper Selway) Female	UNIT #17 (Upper Selway) Total	Percent of Season Total	UNIT #20 (Chamberlain) Male	UNIT #20 (Chamberlain) Female	UNIT #20 (Chamberlain) Total	Percent of Season Total
September 20	59	55	114	20%	55	49	104	26%
September 27	25	9	34	6%	26	21	47	12%
Octeber 4	27	21	48	9%	19	19	38	9%
October 11	18	18	36	6%	21	14	35	9%
October 18	18	19	37	6%	10	18	28	7%
October 25	16	21	37	6%	11	15	26	7%
November 1	14	21	35	6%	12	12	24	6%
November 8	28	24	52	9%	14	13	27	7%
November 15	21	40	61	11%	12	10	22	5%
November 22	20	45	65	11%	4	17	21	5%
November 30	20	24	44	8%	7	22	29	7%
			563				401	

Game Harvest Questionnaire

Beginning in 1953 a game harvest questionnaire has been mailed to approximately five percent (5%) of the purchasers of hunting licenses each year to obtain information concerning the harvest of deer, elk, bear, game birds and waterfowl. The main use of the questionnaire is in determining the statewide harvest of game by sampling a valid cross-section of all classes of license buyers. Local detailed information is supplied more readily and more extensively by the report cards and checking stations.

All deer, elk, and bear harvest information included below is based upon the annual harvest questionnaire unless otherwise stated.

Deer

Mule deer are found in practically all forested and foothill regions of the state. Their numbers greatly exceed those of white-tailed deer which are found principally north of the Salmon River.

More Idaho hunters hunt deer than any other kind of big game, and both 1958 and 1959 were excellent seasons.

During the biennium multiple deer regulations permitted the taking of more than one deer per hunter. Special tags for specified areas permitted the taking of additional deer in certain areas where larger harvests were desired.

In a number of the management units the permissible annual crop of deer is not being taken, particularly in much of the central part of the state. The multiple deer regulations were provided to encourage hunters to visit herds which had previously been underharvested. This provided excellent hunting, and focused the local hunting upon areas where ranges could be improved by additional deer harvest.

Statewide Deer Kill, Hunter Participation, and Success

Year	Big Game License Sales	Deer Tags Sold Regular Tags	Second Tags	Total	License Buyers Killing Deer*	Hunter Success**
1958	175,493***	120,448	11,810	132,258	71,013	57%
1959	176,875***	123,335	11,773	135,108	70,237	56%

*Based on statewide post-season game kill questionnaire.
**Based on license buyers hunting.
***Figures include 5112 non-resident big game licenses in 1958 and 6369 in 1959.

For the 1958 season 62,390 hunters killed one deer; 4,169 killed two deer; and 95 killed three deer. Approximately 71% of all big game license buyers participated in deer hunting. About 8% of the statewide deer kill in 1958 was made on the extra and Middle Fork tags. This 8% is a modest portion of the statewide harvest, but on a management unit basis the Middle Fork tags in the Middle Fork and Chamberlain units contributed 58% and 44% respectively of the season kill. Indications are that permitting individual hunters to take extra deer in scattered management units will have but a slight effect upon the statewide kill. The sex ratio in the 1958 harvest was 161 males to 100 females. Non-resident deer hunters harvested about 3.6% of the statewide total.

During the 1959 season 5,269 deer were taken on the Middle Fork and extra deer tags, or approximately 7½% of the statewide harvest. Although this deer kill is only a small portion of the 70,237 harvest for 1959, it represents 58% of the total deer killed for the units where multiple deer hunting was permitted.

Elk

The increased hunter demand for elk presents numerous problems in obtaining an equitable distribution of the hunters and kill for the various herds. Management of the herds on a unit basis attempts to maintain each herd and the harvest in line with production of food and cover. In planning hunting seasons, the source of hunters, desired harvest, range conditions, cultural developments, access, and other factors affecting the game are considered for each unit.

Elk tag sales showed an upward trend with an increase of approximately 7.6% over the previous biennium. A comparison with past harvests indicates a leveling off of the elk kill, but the combined 1958 and 1959 season kill was about 2.8% over the 1956 and 1957 take which was, up to that time, the highest biennium kill on record. The 1958 harvest of 16,450 elk is a record season elk kill for Idaho.

The ratio of males to females for the statewide harvest was 108 males to 100 females in 1958 and 105 males to 100 females in 1959. A higher proportion of males to females is taken during the first part of the season than in late season.

The Clearwater management unit, which includes the north fork of the Clearwater River, was first in elk harvest both years. This unit, No. 10 in the 1959 big game seasons, yielded 13 per cent of the statewide elk kill in 1959.

Statewide Elk Kill, Hunter Participation, and Success

Year	Big Game License Sales	Elk Tag Sales	License Buyers Killing Elk*	Hunter Success
1958	175,493**	54,920	16,450	27.0%
1959	176,975**	56,381	13,865	24.2%

*Based on statewide post-season game kill questionnaire.
**Figures include 5112 non-resident big game licenses in 1958 and 6369 in 1959.

Bear

The closed season on grizzly bear was continued. With the exception of the four northern counties and management unit No. 60 a year-long season during the biennium was provided for taking of black or cinnamon bear. In Boundary, Bonner, Kootenai and Shoshone counties the season was September 6 to November 30 in 1958 and September 1 to November 30 in 1959. The bag limit was one bear per person.

A statewide harvest of about 3,709 bear was indicated by the hunter questionnaire for 1958, of which 22% were from the four northern counties.

Two thousand three hundred and sixty-six (2,366) bear were killed in 1959 of which 67% were males and 33% were females. Approximately 48% of the statewide 1959 bear kill occurred north of the main Salmon River and 22% occurred in the four northern counties. The largest harvest (11%) was reported from management unit No. 10. Non-resident hunters took about 6% of the statewide bear harvest in 1959.

Moose

Moose are expanding their range and reports of them in new areas are becoming more common. Hunting of moose was continued during the biennium on a controlled hunt basis.

Summary of Controlled Moose Hunts

Year	Hunting Units	No. of Permits	No. of Applicants	Kills				Participating Hunter Success
				Bulls	Cows	Calves	Total	
1958	14	102	686	77	0	0	77	75%
1959	22	90	707	58	1	0	59	71%

Only antlered moose were legal during the 1958 and 1959 seasons except for the late hunt in 1959 in unit 305 during the November 7-15 season which was for either sex. The either sex hunt was for an area where moose drift across the state boundary. Weather conditions largely determine where they are at the time the hunt is held. Rigid restrictions provided in the moose hunts are directed toward providing adequate protection to the species while permitting the public to harvest the crop that is available under good management. Specifying the hunt areas where a limited number of moose are to be taken provides better hunting for the public and distributes the harvest more equally.

With the exception of one permittee in 1959 all persons holding moose hunting permits in the biennium participated in the hunt.

Antelope

The antelope hunt continued to be a very popular part of the big game season. Controlled hunts for the rifle hunters were continued during the biennium. Hunter success in past seasons and annual population surveys are evaluated in determining the number of hunters needed in each area to remove the harvestable surplus. Antelope inhabit the open valleys and adjacent slopes. Hence, they are usually quite accessible to hunters and for this reason harvests must be carefully planned and controlled.

All but one of the hunts were of three days duration during late September. The post-season Medicine Lodge-Crooked Creek unit was held in October to permit a harvest from those drifting back into Idaho to winter.

The following kill data was obtained from the antelope report cards. Checking stations were used to obtain age, weight, and productivity data.

Year	No. Hunt Units	No. of Permits	No. of Applications	Kill			Participating Hunter Success
				Buck	Does	Total	
1958	15	1,355*	3,630	505	314	822**	77%
1959	16	1,295	4,046	411	268	679	69%

*Forty-six successful applicants did not hunt in 1958 and twenty-four successful applicants did not hunt in 1959.
**Total includes 3 reported killed but not classified as to sex.

Bighorn Sheep

Bighorn sheep hunting is trophy hunting. Only rams with horns of ¾ curl or larger are legal. As additional management information was gained liberalization of the hunts seemed desirable. In 1958 four hunting units adjacent to the main Salmon River canyon were continued on a controlled hunt basis for 40 permits. One permit was not sold although two drawings were held, and the remaining permits available on a "first-come, first-serve" basis. The season was from September 6-28 in the controlled hunt units and the general hunt units south of the main Salmon River, and September 6-14 for the general hunt unit north of this river.

Summary of Rocky Mountain Bighorn Sheep Hunts

Year	No. Hunt Units	Type of Hunt	No. Permits	Tags Sold	Kill	Participating Hunter Success
1958	4	Controlled	40	39)	37	26%
1958	3	General Season	Unlimited	255)		
1959	7	General Season	Unlimited	379	59	26%

The kill data in the above table is taken from the bighorn report cards. During the 1958 and 1959 season, respectively, 16 and 15 hunters reported they did not hunt. A total of 168 bighorn report cards were returned in 1958 and 241 in 1959.

General hunts for rams with horns of ¾ curl or more were held in 7 hunt units in 1959 and controlled hunts for bighorn sheep were discontinued. The season north of the Salmon River in Idaho county was September 1-7 while in the remaining units it was September 1-14. There was no limit to the number of tags available. Tag sales increased 29% over the previous year. Maps were provided to assist the hunter in locating the hunting units and to aid the hunter in reporting the area hunted and the location of his kill.

General seasons are providing trophies to hunters and are apparently benefitting the herds. The lamb crop appeared excellent in 1959 and again in 1960.

Mountain Goat

General and controlled hunts were conducted during the 1958 and 1959 mountain goat seasons. Except for a few closures where mountain goats are too accessible to maintain their numbers under general hunting, practically all of the state north of the main Salmon River except Lemhi county was open for general hunting. The general season was September 6-14 in 1958 and September 1-7 in 1959.

Summary of General and Controlled Rocky Mountain Goat Hunts

Year	Hunting Units	Type of Hunt	No. of Permits	Tags Sold	Kills			Participating Hunter Success
					Billies	Nannies	Total	
1958	10	Controlled	60	57)	35	23	57	63%
1958	1	General	Unlimited	96)				
1959	11	Controlled	64	63	17	10	27)	53%
1959	1	General	Unlimited	108	13	19	32)	

The kill data in the above table was obtained from the goat report cards. Four hunters of 94 reporting in 1958 did not hunt. In 1959 at least 18 of 130 reporting did not hunt.

Mountain goats are more widely distributed than bighorn sheep. However, they present more difficult management problems. Goats inhabit portions of the mountainous range from the Snake River Plains north to Canada. They are generally found in small groups. Because of the rough terrain they inhabit, most of the groups are in isolated and little-known or largely-inaccessible areas for most hunters. This results in a concentration of hunters into the accessible sites and known-herd locations. Both sexes have jet black horns of approximately the same length.

Additional checks were made on the known herds and census flights for additional herds were flown so that adequate management measures could be taken to protect the herds and still provide benefits to the public by properly hunting this unique big game animal.

Archery Hunting of Big Game

Archery hunting is gaining in popularity, and various areas were open to archery hunting in pre- or post-seasons for deer, elk and antelope in 1958 and 1959. Archers use the regular big game tags, and archery hunting is legal during the regular general seasons as well as in the special archery hunts. Harvest cards from archers are incomplete and the following report card kills are considered as minimum harvest figures:

Kills by Archers

	1958	1959
Deer	unknown	77
Elk	unknown	9
Antelope	unknown	4

Deer Weights

Weights from selected areas indicate the importance of good range and proper game harvest in producing quality deer.

Weights of hog-dressed deer of various ages and both sexes have been taken in several areas in recent years, but yearling bucks are the simplest age class to use in making comparisons. Weights of deer from various ranges and in different years show that some areas produce heavier deer, apparently because of better range and forage conditions. The heavier deer have generally come from ranges which have been heavily hunted for many years.

Some of the more interesting weight information is briefly summarized here.

Yearling bucks from the Lost River country, weighed at Arco in 1959, averaged only about 90 pounds while yearling bucks in the Boise drainage have averaged nearly 106 pounds for the three-year period 1957 through 1959.

Owyhee yearling bucks, from an area of extremely heavy general range use, averaged just under 94 pounds in 1959.

In the Cassia division, now big game management unit No. 54, in the 1959 season yearling bucks weighed at Shoshone Basin averaged 108 pounds. (See page nine for weights of Caribou-Bear Lake deer.)

Big Game Tagging

Big game animals have been trapped, tagged and released to obtain additional information including movements, survival and development. Plastics and other visible markers have been used to permit identification of marked animals in the field. Permanent records are kept of each individual animal tagged, and these records are an important reference point in analyzing tagging results.

Summary of Big Game Tagging in 1958-59

Year	Antelope	Deer	Elk
1958	144	239	11
1959	491	159	25

Information on movements of tagged animals has been useful in refining hunting areas. For example, when fires in 1959 destroyed important winter range in a portion of unit #39, the deer hunting regulations were promptly revised by using deer movement information gained from the tagging program in this important deer winter range during the previous three winters. The net effect of the season revision was to focus hunting upon the segment of this population most likely to be affected by the adverse conditions caused by the fire.

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 co-operative agreement and the Fish and Game Department supplies three-fourths of the required panels with installation and maintenance handled by the landowner. The Fish and Game Department spent $2829.45 for panels during the fiscal year 1958-59. In 1959-60 all requests for panels were filled from materials on hand and no additional purchases were necessary. This program is working satisfactorily and using the panels where haystacks are adjacent to big game wintering areas has kept big game depredations to a minimum.

Caribou

A small herd of possibly 100 caribou winter in the vicinity of the upper watershed of Priest River and Smith Creek. Part of them are believed to travel during certain portions of the year between Idaho and Canada. This herd is not being hunted, but it is an interesting part of the wildlife resource and in Idaho represents the southernmost point of present-day caribou distribution in the entire west.

Game Birds

In terms of hunter harvest, which is the final judgment of game bird abundance, things were never better than during 1958. The 1958 bird hunter put more game birds in the bag than in any other year on record. In 1959, hunter take of upland game birds skidded to near the long-term average. In the migratory game birds, the 1959 duck kill was considerably below average. The table below which is based on the results of hunter questionnaires sent annually to a five percent sample of Idaho's hunters tells the story more clearly than words. The sharp contrast in harvest between the two years illustrates the ups-and-downs typical of game bird populations and emphasizes the fact that feathered wildlife are largely birds-of-the-year. A year with good production success will mean good hunting prospects; a year of poor production will result in low hunter harvest.

GAME BIRD HARVEST IN IDAHO
Based on Annual Hunter Questionnaire

	1958	1959	Average Annual Harvest 1954-59
Pheasant	700,500	567,600	549,000
Ducks, all species	552,500	455,000	528,000
Mourning Dove	144,200	163,100	131,000
Forest Grouse (3 species)	156,600	113,700	102,000
Hungarian Partridge	87,200	47,400	54,000
Quail (4 species)	74,600	48,800	48,000
Sage Grouse	42,500	23,300	30,000
Chukar Partridge	69,100	28,900	22,000
Canada Goose	17,500	22,500	19,000

Pheasant

Collection of pheasant management data falls into four phases each year: (1) winter sex ratio counts; (2) spring crowing count census of cocks; (3) evaluation of production success; (4) hunting season check station operations. Each of the four phases plays a necessary role in following the status and trend of the pheasant population.

Sex Ratio Counts

Pheasant winter sex ratio counts are made during January when snow cover and cold temperatures cause the birds to congregate in open situations. At this time, roadside counts are made to find the ratio of hens to cocks. The resulting ratio is used to estimate the percentage harvest of roosters during the previous hunting season. It also establishes a breeding index base. The accompanying table lists the results of such counts taken during the past three winters. From 1951 through 1960,

the winter sex ratio has ranged from 41 to 57 cocks per 100 hens. The 1960 winter sex ratio was one of the widest on record at 43 cocks per 100 hens and indicated a better-than-normal harvest of roosters during the 1959 hunting season. Research studies have shown that a ratio of 7 or 8 hens per cock would be adequate for breeding purposes. Our winter sex ratios of two to three hens per cock indicate that we could be harvesting more roosters without in any way endangering the reproductive potential of the pheasant population. Based on this information, the daily bag limit was raised from 3 to 4 roosters in most of southern Idaho for the 1959 hunting season.

Comparison of Pheasant Sex Ratio Counts, 1958-1960

Area	1958 Cocks	1958 Hens	1958 Sex Ratio M:100F	1959 Cocks	1959 Hens	1959 Sex Ratio M:100F	1960 Cocks	1960 Hens	1960 Sex Ratio M:100F
North Idaho	360	580	62:100	496	976	51:100	362	611	59:100
Southwest Idaho	2,826	6,277	45:100	4,209	8,434	50:100	3,791	8,767	43:100
Southcentral Idaho	2,353	3,695	64:100	3,096	4,385	71:100	1,742	3,477	50:100
Southeast Idaho	712	1,676	42:100	3,134	6,166	51:100	3,431	8,829	39:100
TOTALS	6,251	12,228	51:100	10,935	19,961	55:100	9,326	21,684	43:100

Breeding Population Trend

Each spring standardized pheasant crowing count routes are operated through Idaho's major pheasant areas. These counts establish the trend of male pheasant numbers. This information is combined with the basic winter sex ratio for each area to obtain a breeding population index. The table below shows the trend of the pheasant breeding population for the past two years. Despite the poor production year of 1959, brood stock numbers were down only slightly in the spring of 1960.

Trend of Pheasant Breeding Population

Area	Breeding Population Index 1959	Breeding Population Index 1960	Percent Change 1959 to 1960
North Idaho	18	16	—11
Southwest Idaho	96	94	— 2
Southcentral Idaho	91	76	—16
Southeast Idaho	62	68	+10

Pheasant Production

The year 1958 proved to be the peak pheasant year of at least the past decade; pheasant production was exceptional. Conversely, 1959 was a low production year, particularly in the best-quality pheasant range of southwest and southcentral Idaho. Prior to 1960, the method used for evaluating pheasant production success consisted of random brood counts combined with general observations by field men. In 1960, the Department began organizing a system of standardized brood count routes in the major pheasant areas. The purpose of this procedure is to refine and improve the reliability of pheasant production estimates. Several years of such counting will be necessary in order to establish reliable trend data.

Check Station Operations

Pheasant check stations have come to play an important role in management. They furnish essential information on average hunter success and hunting pressure. The results of the opening week end pheasant bag checks for the past two seasons are given in the accompanying table. Average hunting success for 1958, an excellent production year, was the highest of any season on record. In sharp contrast, 1959 hunting success, in terms of average number of pheasants bagged per hunter, was very nearly the lowest.

Comparison of Pheasant Checks on Opening Week End

Area	Year	No. of Hunters	Total Birds	Hours Hunted	Birds Per Hunter	Hours Per Bird
North Idaho	1958	2,029	1,470	6,166	0.72	4.2
	1959	1,201	628	3,647	0.53	5.8
Southwest Idaho	1958	3,381	4,531	11,722	1.34	2.6
	1959	3,087	2,222	11,070	0.72	5.0
Southcentral Idaho	1958	1,804	2,539	5,377	1.41	2.1
	1959	2,002	1,778	6,045	0.89	3.4
Southeast Idaho	1958	3,557	4,804	14,863	1.35	3.1
	1959	3,702	4,291	16,982	1.16	4.0
TOTALS	1958	10,771	13,344	38,128	1.24	2.9
	1959	9,992	8,919	37,744	0.89	4.2
Long-term Totals	(1950-1959)	80,326	79,948	291,948	1.00	3.7

Sage Grouse

Sage grouse, a species which has been plagued by continuing habitat deterioration for many years, maintained good population status in some areas of the state and poor in others during the biennium. Results of check station operations during the limited sage grouse hunts of 1958 and 1959 are shown in the accompanying table. With good production in most areas, the 1958 hunt yielded above-average hunting success; in 1959, poor production combined with the occurrence of a statewide storm front during the 1½-day hunting season resulted in very poor hunting success.

A long-term research study designed to determine ways and means of increasing sage grouse numbers was initiated in 1960 on a limited basis, with one full-time biologist assigned. Preliminary phases of this project include ecological studies of various types of sage grouse habitat and a sage grouse rearing experiment at the Jerome Game Farm to study the effect of controlled environmental changes on individual birds.

Comparison of Sage Grouse Check Station Results, 1958-59

Area	Year	No. of Hunters	Total Birds	Hours Hunted	Birds Per Hunter	Hours Per Bird
Southwest Idaho	1958	1,205	1,410	3,854	1.17	2.7
	1959	1,017	408	4,162	0.40	10.2
Southcentral Idaho	1958	3,593	4,034	11,037	1.12	2.7
	1959	3,286	1,365	14,074	0.42	10.3
Southeast Idaho	1958	4,603	4,076	15,144	0.88	3.7
	1959	4,186	2,822	15,571	0.67	5.5
TOTALS	1958	9,401	9,520	30,035	1.01	3.2
	1959	8,489	4,595	33,807	0.54	7.4

Forest Grouse

Reasonably good populations of forest grouse were present in all suitable habitat types of Idaho during the biennium. With over 20,000,000 acres of forest grouse range occurring in the state, the three forest grouse species undoubtedly have the greatest potential of any of Idaho's game birds for supplying more hunting recreation. 1958 was a good grouse year with opening week end check stations averaging 1.0 birds per hunter; 1959 was a normal production year in most areas but opening week end hunters were handicapped by the same storm conditions which adversely affected sage grouse hunting. The 1959 opening week end check station average of 0.7 birds per hunter did not reflect the true availability of birds in the field.

Sharp-Tailed Grouse

The few scattered flocks of sharp-tailed grouse which still exist in various remaining habitat niches around the state have had fairly stable population status in recent years. A short experimental hunt was held on the largest sharptail flock of the state in Fremont County during 1957 and 1958 with good results. The sharptail hunt in this area was held in conjunction with sage grouse hunting. A total of 241 sharptails were checked in 1958 and 173 in 1959. It is probable that a limited hunt of this nature can be continued in Fremont County annually without adversely affecting this sharptail population.

Hungarian Partridge

The 'Hun' continues to be largely a 'target of opportunity' along with pheasant and chukar hunting. No great toll is taken of them by hunters despite the fact that in some areas they are reasonably abundant particularly in the grassy foothill country adjacent to dryland grain farming. Since Hungarian range often overlaps chukar habitat, more Huns are being harvested as interest in chukar hunting increases.

Chukar Partridge

As with all other game birds, 1958 was a bumper year for chukars, with hunter interest rising and robust populations of this sporty partridge present in most chukar areas of the state. In 1958, 28 counties, and in 1959, 32 counties were open to chukar hunting with seasons ranging from 23 to 44 days in length. The harvest of chukars in Idaho hit a new high in 1958 with 69,100 chukars reported on the hunter questionnaire kill survey for that year. In 1959, along with other game birds, chukar production slumped.

Quail

The distribution of the four species of quail found in Idaho is confined to those sectors where winter weather conditions are normally not severe. A few hunters avidly pursue these fine table birds but generally hunter interest is lacking and the quail are lightly harvested. Nevertheless, the estimated annual harvest of quail compares favorably with the Hungarian partridge each year.

Waterfowl

The two waterfowl hunting seasons of 1958 and 1959 were adjudged to be rather mediocre even though above-normal numbers of birds occurred in the state during both years. Hunting seasons and bag limits were liberal yet both fall periods were exceedingly mild and good waterfowl hunting weather was lacking. The continuing drought in Canada which cut duck production drastically did not appear to result in much reduction of waterfowl numbers moving through the state of Idaho. The Canada goose kill in 1959 was the highest of any year to date. Nesting surveys indicated that in-state goose production in 1960 was the highest since the excellent goose years of 1953 and 1954.

Idaho Waterfowl Mid-Winter Inventory
January 1956-January 1960

	1956	1957	1958	1959	1960
Mallard	379,436	302,569	341,435	567,350	464,296
Baldpate	19,539	16,740	17,686	12,241	19,416
Pintail	5,231	9,045	19,256	12,064	14,632
Green-winged Teal	1,318	818	2,489	2,641	1,609
Blue-winged Teal	----	----	2	----	----
Shoveler	157	2,568	1,783	1,094	281
Gadwall	1,131	651	1,382	----	812
Wood Duck	2	3	----	----	110
Redhead	5,724	2,102	3,072	9,580	5,675
Canvasback	1,629	1,744	1,717	2,228	3,358
Scaup	1,927	4,062	3,249	4,222	3,170
Ringneck	1,002	6	423	215	405
Goldeneye	11,188	17,612	11,115	24,586	25,140
Bufflehead	1,007	564	519	1,069	579
Ruddy Duck	127	53	236	111	147
Unidentified Ducks	8,058	5,330	5,729	11,619	6,135
Canada Goose	11,281	8,859	6,826	9,550	9,133
Lesser Canada	----	----	----	4	----
Snow Goose	6	3	----	2	----
Cackling Goose	----	----	----	----	----
Whistling Swan	1	226	110	230	156
Trumpeter Swan	323	326	234	258	382
Mergansers	5,514	7,694	4,592	7,523	3,132
Coot	24,646	11,165	12,419	29,302	19,783
TOTALS	**479,247**	**392,140**	**434,274**	**705,764**	**578,351**

Mourning Dove

The hunting popularity of this migratory game bird continues to grow in Idaho. While the hunter take of all other game birds declined from the good bird year of 1958 to the poor year of 1959, the reported harvest of mourning doves climbed from 144,200 to 163,100 birds. Nationwide breeding population surveys on this species, in which Idaho participates fully, indicate that the population status of mourning doves, particularly in the West, is stabilized at a high level and that the hunting pressure on doves is light. Approximately 19,000,000 doves are harvested in the United States annually; Idaho's share of this total is a fraction of 1%.

Game Farm Operations

Artificial propagation was continued at the Lapwai and Jerome game farms. Holding pens at Hagerman Wildlife Management Area were also utilized. Both game farms reared pheasants. The Jerome facility reared all chukars liberated during the biennium. A hard look at the game farm operation by the Commission resulted in a reorganization of game farm operations to lower costs and bring production more in line with needs. In 1960 all pheasant chick production was performed at Jerome with day-old chicks air-shipped to Lapwai for rearing. Production and planting records are given in the accompanying table. In addition to production listed, the Jerome farm furnished 2,000 day-old pheasant chicks to the Bonneville Sportsman's Association in 1959 and again in 1960. The St. Anthony Industrial School was supplied 120 day-old chicks to be reared as a school activity project in 1960.

Game Farm Chukar Partridge Release Record

	1959			1960		
County	Spring Release	Brood Stock	Total	Spring Release	Brood Stock	Total
Bonneville		150	150		200	200
Clark		75	75		200	200
Gooding	90		90			
Madison		75	75			
Twin Falls					100	100
TOTALS	**90**	**300**	**390**		**500**	**500**

Pheasant Incubation Record

	1959				1960	
	Jerome Farm		Lapwai Farm		Jerome Farm	
Eggs set	23,403	%	16,208	%	19,942	%
Infertile	1,528	6.5	1,391	8.5	1,625	8.1
Dead shell	2,972	12.8	2,579	15.9	2,963	14.9
Broken	76	0.3	77	0.5	138	0.7
Culls	377	1.6	157	1.0	223	1.1
Hatch	18,450	78.8	12,004	74.1	14,993	75.2

GAME FARM PHEASANT RELEASE RECORD

County	1959 Spring Release	1959 Brood Stock	1959 Summer Release	1959 Fall Release	1959 Total	1960 Spring Release	1960 Brood Stock	1960 Summer Release	1960 Fall Release	1960 Total
Ada			530		530	525				525
Adams			265		265					
Bannock	200	165	400		765				105	105
Benewah		630	832		1,462		675	180	350	1,205
Bingham	165	192	600		765					
Bonneville	192	1,054	1,200		984		1,116	270	900	2,286
Boundary		560	510		2,254	448				448
Butte	200		420		1,070		340	275		340
Caribou	595		585		620	100				375
Cassia	91	155	488		1,180	250				250
Clearwater		160	210		734					
Custer			272		370					
Elmore		165	510		272		500			500
Franklin	176	208	420		675					
Fremont			530		804	315				315
Gem	180	314	979		530		500	52	700	1,252
Idaho	192		480	470	1,473	100			600	700
Jefferson	125				1,142	105				105
Jerome		420	467		125		480	180	350	830
Kootenai	181	268	977		887		500		700	1,380
Latah		160	315		1,426					
Lemhi	91	154	448		475		250	128		378
Lewis	176	208	600		693		250			250
Madison	225		510		984					
Minidoka	181	309	865		735			90	1,065	1,635
Nez Perce		165	510		1,355	480	500			500
Oneida			537		675	630			200	830
Owyhee					537	210				210
Payette	165		400		565					
Power	225		510	450	1,185	420		260	315	575
Twin Falls			530		530					420
Washington										
TOTALS	3,360	5,287	16,500	920	26,067	3,583	5,111	1,435	5,285	15,414

Furbearers and Predators

Furbearers

Trapping activity in general and the numbers of most furbearers harvested remained at a depressed level throughout the biennium due to low fur prices. Open seasons on beaver were featured in both years, continuing the pattern established in 1957-58 by the first open season since the turn of the century.

The beaver is the most important single furbearer in Idaho, not only in terms of cash income to the trappers but in its relationship to other phases of the resource. Proper management of this species under general open-season trapping demands additional and more complete information than was formerly available or necessary under the allotment-trapper system, and increased emphasis has been placed on this activity.

Annual Fur Catch

The poor prices received by trappers for most raw furs reduced the number of active trappers to an all-time low. Total trappers' license sales were 758 in 1958-59, and only 667 in 1959-60, less than half the normal level.

Species	1958-59 No. Caught	1958-59 Av. Price	1959-60 No. Caught	1959-60 Av. Price
Beaver	8,497	$ 8.25	8,069	$10.94
Muskrat	79,569	.52	67,726	.57
Mink	3,223	10.53	2,379	12.44
Marten	628	6.00	501	5.90
Otter	123	15.94	66	18.70
Raccoon	509	1.21	533	1.63
Fox	10	2.83	134	2.14
Weasel	929	.66	1,096	.55
Bobcat	802	6.18	1,478	8.24
Coyote	46	1.05	118	1.97
Skunk	226	.97	228	.97
Civet	44	.51	70	.62
Badger	81	1.02	225	2.88
Lynx	1	6.00	8	23.75
Nutria	4	.50	31	.96

Beaver

The major objectives of beaver management are:

1. **To keep beaver populations as low as possible in agricultural areas where they cause damage.**

2. **To maintain suitable populations, under sustained annual harvests, in upper watersheds where their presence is beneficial.**

Open-season beaver trapping was authorized chiefly because the former state-controlled caretaker trapper program had failed to harvest adequate numbers. After a catch of 24,000 pelts in the first year, 1957-58, the harvest dropped back to the former level of approximately 8,000 pelts in each of the 1958-59 and 1959-60 trapping seasons.

The beaver depredation problem, resulting from beaver in agricultural areas, was somewhat alleviated following the large catch during the first open season, even though 448 specific damage complaints were received. This figure increased to 530 the next year following an "average" catch in 1958-59.

Number of Damage Complaints Received

	Summer	Fall	Winter	Spring	Total
1958-59	168	110	40	130	448
1959-60	187	171	58	114	530

To follow the trend of beaver populations and evaluate the effect of open season trapping, aerial colony counts have been conducted for the past three years on 1200 to 1600 miles of trend routes on major drainages throughout the state. Details of these counts, listed below, indicate an overall reduction of about 50 percent during this period.

Most of these routes are large streams located in damage complaint areas, and colony numbers on comparable routes of this type show a desired reduction in colony numbers of 58 percent from the pre-open-season level in 1957, to 1959. On the few routes on non-complaint drainages where beaver are desirable, this decline has been only 24 percent.

Beaver Colony Aerial Counts, 1957-1959

	1957			1958			1959		
	Stream Miles	No. Colonies	Miles Per Colony	Stream Miles	No. Colonies	Miles Per Colony	Stream Miles	No. Colonies	Miles Per Colo
Dist. 1	108	46	2.3	135	24	5.6	0	....	
Dist. II	230	35	6.5	183	12	15.2	214	10	21.
Dist. III	387	99	3.9	352	39	9.0	352	28	12.
Dist. IV	325	61	5.3	319	48	6.6	285	43	6.
Dist. V	604	273	2.2	604	186	3.2	431	159	2.
State	1654	514	3.2	1593	309	5.2	1282	240	5.

To obtain additional population data in upper watersheds where beaver are beneficial conservation officers inaugurated on-the-ground colony counts on small headwater streams in 1959.

Beaver Colony Ground Counts, 1959

	Stream Miles	Number of Colonies	Miles Per Colony
District I	50	28	1.8
District II	32	12	2.7
District III	17	3	5.7
District IV	56	51	1.1
District V	36	39	.9
State	191	133	1.4

Although trend data will not be available until counts are made in future years, the colony density found on these routes (1.4 stream miles per colony) is much higher than that shown for lower drainages in complaint areas by the aerial count (5.3 stream miles per colony).

Predators

Predator control activities consisted of contributions to the cooperative program administered by the Branch of Predator and Rodent Control, U. S. Fish and Wildlife Service, a state trapper in northern Idaho, and the bounty on cougar.

	Total Expenditures	Cooperative Program	State Trapper	Cougar Bounty
1958-59	$22,541.28	$17,397.30	$4,918.98	$225.00
1959-60	24,223.06	19,879.62	4,293.44*	50.00**

* through March 31, 1960
** through December 31, 1959

Cooperative Control Program

The cooperative program is financed by various district and county predatory animal boards, livestock associations, county commissions, state and federal agencies. Support of this program, which was extended to cover the entire state during the biennium, constituted the major predator control expenditure. Operations under Department funds are detailed as follows.

	Salaries and Wages	Other Expenses	Aerial Hunting	Total Cost	Predators Taken			
					Coyote	Bobcat	Bear	Cougar
1958-59	$11,780.47	$2,798.54	$2,818.29	$17,397.30	957	186	16	8
1959-60	12,025.76	4,853.94	2,999.92	19,879.62	1,068	137	31	..

State Trapper

With the expansion of the cooperative program to northern Idaho, operations of the state trapper in that area were discontinued effective March 31, 1960. Total predator removals during the biennium were 129 coyotes and 2 bobcats.

Cougar

The cougar bounty remained at $25.00 for animals taken in the five northern counties through 1959, but was discontinued on January 1, 1960. The increased interest in cougar hunting as a sport and the trophy value of this species have stimulated sufficient harvest without a bounty.

Nine animals were bountied in 1958-59 at a cost of $225.00. Only two cougars were qualified for bounty during 1959-60, yet conservation officers reported a total kill of 119 for the period.

This harvest, unrelated to the bounty payment, exceeds the kill in either of the two most recent years the bounty was in effect statewide; 1955-56 when 100 were taken and 1956-57 when 57 were killed.

Land Management

The three endeavors discussed below are financed through the Pittman-Robertson program which makes wildlife restoration funds available to individual states. These funds are accumulated as a result of an 11 percent federal excise tax on arms and ammunition which is collected at the manufacturers' level. The fund is apportioned to the 50 states on the basis of land area of the state and the number of hunting licenses sold during the preceding year. Project costs are initially borne by the Department which is reimbursed for 75 percent of the expenditures.

In short, wildlife restoration work is financed by hunters who pay an excise tax on firearms and ammunition plus the State's 25 percent contribution which is derived from hunting license sales. In addition to the activities discussed below, several investigative projects are financed by Pittman-Robertson federal aid funds as a part of the program of the game management division.

Big Game Winter Range Revegetation

With the cooperation of the Intermountain Forest and Range Experiment Station of the U. S. Forest Service sufficient knowledge of desirable species and proper planting techniques has been gained to enable the Department to launch a modest program of revegetation of important deer and elk winter range areas.

Bitterbrush (Purshia tridentata), a shrub that is palatable and nutritious to both deer and elk, was planted on approximately 3,220 acres in southcentral and southwestern Idaho during October and November 1959. Approximately 400 acres of this amount was private ranch land and the balance was either U. S. Forest Service, Bureau of Land Management, or Department lands. During October and November, 1960, revegetation work will be accomplished in five different areas of southern Idaho.

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 improving forage production on critical game winter ranges.

The recently published Wildlife Bulletin No. 3: "Improving southern Idaho deer winter ranges by artificial revegetation," by Ralph C. Holmgren and Joseph V. Basile, sets forth principles and techniques of game range revegetation of interest to game managers throughout the West.

Exploratory studies are now underway to determine a practical method of rejuvenating decadent browse stands on critical game ranges.

Early results of a recently-begun study lend promise to hopes of developing a new method of determining browse production and utilization. If successful, the new method may reduce the time required for such determinations by approximately 50 percent.

Habitat Improvement

Three field biologists are assigned to a federal aid project designed to determine and correct those habitat deficiencies which limit the abundance of certain wildlife species. Their activities are directed primarily to improving living conditions for pheasants, sage grouse, quail, and Hungarian and chukar partridges. Attention is also directed toward waterfowl, forest grouse and big game habitat.

One general habitat deficiency for game birds is the lack of food and cover during critical winter periods. The planting of selected trees and shrubs to overcome this problem is a major part of the habitat improvement project. The three field biologists supervise crews who do the planting and maintenance work in various areas of the state. A summary of plantings accomplished during 1959-60 is presented below.

SUMMARY OF PLANTINGS, 1959-60

Year	No. of Planting Sites				Trees and Shrubs Planted		Acres Planted	Acres Opened to "Hunting by Permission"
	SCD*	Pvt.	Dept. Lands	Other	In New Plantings	For Replants		
1959	117	5	8	1	119,503	9,657	146	21,445
1960	144	8	8	1	120,376	7,095	154	28,292
TOTAL	**261**	**13**	**16**	**2**	**239,879**	**16,742**	**300**	**49,737**

*SCD—Plantings made in cooperating Soil Conservation Districts.

Before plantings are made on farms and ranches, 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 resulted in 49,737 acres being assured to hunting by the public during the last two years. Since 1952, the program has resulted in a total of 157,205 acres being assured to hunting availability.

Many improvements deemed necessary and beneficial to wildlife can be incorporated into land management practices. Where such opportunities exist, effort is directed toward advising individuals and land management agencies of the needs of wildlife species and of the benefits that proper land use provides to wildlife. The Fish and Game Department has entered into cooperative work agreements with 34 of the 52 Soil Conservation Districts in the state. The work unit conservationist, working with the individual farmer, often recommends farming practices that not only fit in well with the needs of the farmer and his land but are also beneficial to wildlife. As seen in the chart above many of the tree and shrub shelterbelt plantings are made in cooperating Soil Conservation Districts.

Considerable effort has been directed by project personnel in explaining and promoting the wildlife benefits available under the Conservation Reserve portion of the Soil Bank Act of 1956. However, the results have been rather insignificant to date because of the low financial return to the landowner and the uncertainty of the permanence of the program.

Since the Agricultural Conservation Program (ACP), which is administered by the Agricultural Stabilization and Conservation Committee, can have important effects on all wildlife and fish species, Department personnel participate in their deliberations on county and state levels. Department representatives also attend meetings with the U. S. Bureau of Land Management, the U. S. Forest Service and the Soil Conservation Service where wildlife habitat is being considered.

During the biennium, watering devices which had been developed in arid areas were maintained and four new developments were made. Fencing, development and maintenance of land plots obtained from the U. S. Bureau of Reclamation was continued. Twenty-one goose nesting platforms were constructed in areas where favorable goose nesting sites were not available. Four sage grouse booming grounds were cleared of invading sagebrush which was causing the birds to abandon long-used booming grounds. Wood duck nesting boxes were constructed and installed in areas frequented during spring migration by wood ducks but where no nesting has occurred. Project personnel worked closely with land acquisition and subsequent development programs. Considerable assistance was extended to other activities of the Department, particularly in law enforcement and the collection of wildlife management information.

Wildlife Management Areas

One of the major features of the Federal Aid program is the acquisition, development and maintenance of lands to assure wildlife of a suitable place to live. With the draining of so many lands, this is particularly important for waterfowl, and in many areas big game winter range has become a critical limiting factor. The Idaho Department expends considerable Federal Aid funds on lands acquired and managed to benefit waterfowl and big game.

The areas acquired under this program are known as Wildlife Management Areas and are developed and maintained specifically for wildlife use. Since orderly harvest is an essential and enjoyable phase of proper game management, every effort is made to permit hunting, fishing and other recreation where such use does not interfere with the primary objective of wildlife production.

On approximately half of the management areas listed above, development has progressed to the stage where much of the present work is of a maintenance nature so that the desirable conditions that have been achieved will be retained. On the more recently acquired areas and others where the desired goal has not been reached, steady progress was made during the biennium. On all of the areas more efficient operation is constantly being sought by means of improved irrigation systems and water-handling devices, leveling of cropland, relocation of fences, construction of new and improvement of existing access roads and trails, and the purchase of needed equipment. Boat launching sites, picnic and sanitary facilities have been provided on many of the areas to help the public enjoy use of the areas.

Location and Major Use of Wildlife Management Areas

Albeni Falls—Bonner	Waterfowl, deer, access.
Boise River—Ada, Boise	Deer, elk, access.
Boundary County—Boundary	Waterfowl, furbearers, deer, fishing.
Carey Lake—Blaine	Waterfowl, sage grouse, furbearers, fishing .
C. J. Strike—Owyhee, Elmore	Waterfowl, pheasant, quail, fishing, access.
Farragut—Kootenai	Deer, access.
Fort Boise—Canyon, Payette	Waterfowl, access.
Hagerman—Gooding	Waterfowl, pheasant, quail, fishing, access.
Market Lake—Jefferson	Waterfowl, pheasant, furbearers, fishing.
Middle Fork Salmon—Custer, Lemhi, Valley	Deer, elk, chukars, access.
North Lake—Jefferson	Waterfowl, pheasant, antelope, sage grouse, fishing.
Sand Creek—Fremont	Elk, moose, deer, waterfowl, sage and sharp-tailed grouse, fishing.
Star Lake—Lincoln	Waterfowl, pheasant, sage grouse.
Valley Caunty—Valley	Waterfowl, deer, kokanee spawning.

Food crop production for the use of wildlife is important on many of the management areas. Cereal grains, corn and legumes are commonly used. In addition, trees, shrubs and grasses are used to improve food and protective cover conditions for wildlife. Creating additional water areas has been beneficial on many of the areas.

That the public enjoys the wildlife management areas is evidenced by the annual increase of visitors to the areas each year. Visitors' activities include hunting, fishing, boating, picnicking, watching wildlife and 'just looking around.'

In addition to their routine duties on the areas, the area managers participate in law enforcement, assist in gathering wildlife management information on and adjacent to their areas, and participate in other Departmental activities as needed.

Information and Education

Special projects in information and education work highlighted the work of this division of the department during the biennium. Considerable attention was directed towards the improvement of landholder-sportsman relations through education and publicity. Hunter safety educational efforts continued in practically every community in the state. An increasing amount of time was devoted to the preparation of wildlife exhibits for fairs and sportsmen's jamborees. A new activity, entitled the "Idaho Conservation Information Forum," was initiated during the first part of 1960.

The conservation information forums are conducted in a series of five illustrated lectures by department personnel in cooperation with local sportsmen's clubs. Information covered at the sessions includes the history of conservation in Idaho, basic principles of biology and wildlife management, and detailed discussions of local problems. The forums are supervised by the conservation education field staff located in northern, southwestern and southeastern Idaho, with personnel of all divisions cooperating in presenting the information material.

Hunter safety education continued on a voluntary basis. The emphasis was placed on cooperating with local sportsmen's clubs and other interested persons in promoting community hunter safety training projects. Since the statewide voluntary program started in 1956, over 50,000 Idaho youth have received some part of the hunter safety training course.

Landholder-sportsmen activities were enlivened considerably during the winter of 1959-60 following an attempt by an organization known as the "Associated Sportsmen of America" to lease large blocks of farm land for hunting purposes. Farmers and sportsmen generally reacted unfavorably to this proposition and by the end of this biennium no activity was reported.

Formal in-service-training was resumed in March, 1960. A three and one-half day school was staged at the Idaho National Guard facilities on Gowen Field near Boise. Various subjects in fish and game management, law enforcement, and related fields were presented to all department personnel. Board and lodging facilities were furnished at the school.

Three regular district meetings were held each year for the purpose of gathering information on fish and game management. These sessions also covered the special programs and new projects being conducted by the various divisions of the department.

Following is a listing of the information and education services conducted during the biennium:

Information Services:

1. Maintenance of a central office news service:
   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.

Education activities were:

1. Public school assistance: (a) special lectures on hunter safety and conservation, (b) classroom conservation projects, (c) liason 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.
7. Conducting the "Idaho Conservation Information Forum" series of lectures for adult groups.

Information

The increasing interest in outdoor recreation and hunting and fishing has been reflected in requests for information and materials during this biennium. One phase of this activity includes the answering of written requests for information about places to hunt or fish, or printed materials dealing with the work being done in Idaho to improve wildlife conditions.

These written requests increased almost 20 per cent during the biennium, with over 12 thousand answered and over 20 thousand bulletins and leaflets mailed from the Boise office.

Newspaper coverage of fish and game activities has been stabilized with regular weekly stories being issued for the first four days of each week. Picture mat service is also supplied to the 90 newspapers on the department mailing list and this popular feature is presented every week.

In addition to these standard operations, a weekly feature goes to each daily paper who desires it. A suitable photograph accompanys this article. The feature also goes to all weekly papers for their main story of the week if they wish to use it. Wire service releases generally include news items of more timely nature.

Other services classed under the general heading of information include answering thousands of telephone calls; appearances at schools

and public meetings to present talks and films; radio and television appearances in addition to regular programs and special programs such as exhibits, fairs, Wildlife Week and preparation of special information maps and articles.

Publications

The **Idaho Wildlife Review,** official magazine for the fish and game department, was published 12 times during the biennium. The entire mailing list was revised to bring addresses up-to-date and to eliminate subscribers who had moved. More than 10 thousand readers responded to our request for aid in this effort and the mailing list is in proper order after nearly 12 years publication.

Sixteen thousand copies of this 16 page magazine are printed each issue. This was increased by 1,000 copies during part of the biennial period until the mailing list was revised. The magazine is sent free to Idaho residents. A fee of $1.00 per year is charged to non-residents. Publication costs have remained at the same level during this biennium with a slight increase in mailing fees.

Twelve articles which appeared in the **Wildlife Review** were reprinted in pamphlet form. These deal with wildlife management problems and department projects around the state. A total of almost 100 different subjects are covered through this system. Most of these materials go into Idaho schools. One new series dealing with browse plants of Idaho has proved especially popular with Idaho teachers.

Other materials prepared during the biennium include: 280 thousand big game hunting maps; 300 thousand fishing regulations; 175 thousand bird hunting regulations; 120 thousand waterfowl hunting regulations; 20 thousand trapping regulations; 50 thousand Care of Game Meat pamphlets; 40 thousand Mr. Hunter pamphlets on orientation in the forest; 5 thousand each of film lists and Fish Facts and numerous items of smaller nature.

Fifty thousand copies of a detailed pamphlet titled "Hunting and Fishing in Idaho" were printed. This provides information regarding good hunting and fishing places . . . best times of the year . . . license fees . . . hunting seasons . . . information on packing and outfitting and roads, campgrounds and air facilities.

The department illustrated booklet on Mountain Lakes of Idaho has proved extremely popular with fishermen and the entire supply of 50 thousand copies has been used. Plans call for revision and corrections of maps with another printing of this book in 1961.

One new bulletin dealing with improvement of southern Idaho deer winter ranges by artificial revegetation was published during the biennium. This is a 62 page booklet based on a cooperative study carried on by the U. S. Forest Service and the Idaho Fish and Game Department. Two "Annual Summary of Operation" were printed. These contain a detailed report of operations for each calendar year.

Chemical treatment of lakes and reservoirs to provide better fishing was discussed in a pamphlet which outlined reasons for this type management and how the work is carried on.

Photography Films and Television

A 14 minute sound and color motion picture, The Trumpeter Swan, was completed. This basic information film presents most of a year's cycle of the swan and reviews the management work being done to preserve these rare and beautiful birds.

Color and black and white film footage was obtained during the biennium. Black and white films have been used to prepare short television subjects. Written narration is prepared and sent with each film to Idaho stations. One short film dealing with proper big game tagging procedure was made with sound track and copies were sent to each station for their permanent library. Approximately 60 subjects dealing with management work and department projects have been covered with these short TV films.

Additional appearances have been made at television stations during the period. Subjects presented included condensed versions of the Hunter-Safety program, Landholder-Sportsman Council operations and special shows on projects of local interest. The department participates in one weekly program with regular time throughout the year.

Nearly 4,000 film showings were made during the biennium. These include appearances by department personnel as well as films issued for presentation to schools and service groups. At the end of the biennium the department film library contained a total of 146 films covering 75 different subjects.

Radio

Radio listeners are kept informed on Idaho wildlife activities through the department's weekly radio program. The program usually consists of a tape-recorded interview with a member of the department on some phase of fish and game management or discussion of a certain problem or project. It is available free of charge to any Idaho station desiring to use it.

Originally the length of the program was 15 minutes. However during the biennium it was decided to also make a 5 minute length available to the stations preferring a shorter version. At the end of the biennium 25 Idaho radio stations were making use of the program.

Firearm Safety Education

Firearms safety education in the schools was an important phase of the department's educational program during the 1958-1960 biennium.

Presented at the junior high school level, the training was taken to approximately 12,000 youth in the regular 3-day course by department educators in cooperation with interested faculty and sportsmen. Fifty schools supported the effort by providing school time. The course included aspects of good sportsmanship, respect for property rights of landholders and concern for the future of wildlife and other recources. Color charts, film, wildlife exhibits, and other visual aids were used to enliven the program.

In addition to those courses conducted by the department, interested sportsmen in the state trained approximately 3,000 additional youth during the period. Objective of the course is to reach the youngsters at a time when they are beginning to use firearms at the 7th and 8th

grade level. Three television broadcasts in 1959 carried a streamlined version of the course to acquaint the general public with details of the presentation.

Conservation Essay Contest

The I and E Division continued cooperation with the Idaho Wildlife Federation in supervising details of the annual essay contest sponsored by the sportsmen's organization.

The department supplied reference materials and assumed responsibility for necessary publicity relating to the project which was open to Idaho school students, grades 7 to 12.

Essay subjects for the two contests held in the biennium were: "My Wildlife Heritage—What Shall I Do With It," and "Clean Waters and Idaho's Future." Students responded well to these stimulating subjects and essays were received from all parts of the state. Sportsmen of the federation handled details of judging and awarded prizes at both community and state levels.

School and Summer Camp Programs

Fish and Game department educators made contact with Idaho youth in a variety of situations in the 2-year period. As in past years regular requests were received for camp and school programs on general conservation.

Film showings and discussions on wildlife were presented to 4,625 youth in Scout, 4-H, church and other camps, and to 7,200 students in school programs exclusive of the firearm safety programs. Color charts and wildlife exhibits were a regular part of these presentations.

A new feature was offered in the fall and winter of 1959-60 with a traveling display of large wall panels of wildlife pictures and scenics and the conservation charts. This offering, in two series of ten panels each, circulated in elementary schools in the Boise area for four months and was used in connection with the study of Idaho history.

School conservation programs have been given special impetus through the supply of charts, leaflets, bulletins, and other printed and pictorial matter made available by conservation agencies. These materials reached the teachers at the fall teachers conventions statewide on supply tables set up by department personnel.

State and County Fair Exhibits

Wildlife displays of the Fish and Game department at fairs are a major interest of the public. Attendance records at the wildlife display booths indicate that more than 75,000 people visited each of the two state fair exhibits, with some county fairs drawing 20,000 to 30,000 visitors.

Department exhibits at the state fairs were expanded in the biennium with addition of larger tanks for live fish displays and a variety of live animal exhibits. Beaver, mink and other furbearers, deer and antelope fawns, and specimens of live and mounted predators and game birds supported the central exhibit of game fish.

Exhibit materials also went to a dozen county fairs where department personnel assisted in setting up wildlife displays. A variety of department publications was made available to the public at these events.

Cooperative Wildlife Research Unit

The permanent staff of the Cooperative Wildlife Research Unit remained at three, Dalke full time, Hungerford and MacPhee each one-half time research and one-half time teaching. A full time secretary is employed. Five Research Fellows were employed, all working on problems concerned with native Idaho species of fish and wildlife. There were fourteen projects under investigation during all or a portion of the biennium, and eight are continuing by staff and students.

Two short term fishery projects were completed—one on the post-larval development and diet of the largescale sucker, and the other on a bioassay of Bear Lake water, a special contract investigation with the Fish and Game Department.

The sage grouse investigation begun in 1952 was completed in 1960. A succession of four graduate students was assigned to the project. The four phases of the investigation were as follows: 1. Sexing and aging techniques with seasonal movements, 2. Breeding and reproduction and continuing seasonal movements, 3. Influence of strutting grounds on movements, and 4. Evaluation census methods, interstrutting behavior and ovarian analysis technique as a means of determining production. The final report is now being prepared for publication.

In 1955 an investigation was started evaluating the use of salt by elk in the lower Selway River drainage. A series of four graduate students was assigned to this investigation. The work was roughly divided as follows, but with a continuing thread of measuring upward movements of elk in spring under two generally different sets of conditions.

1. **Evaluating use of artificial licks.**
2. **Effect of artificial licks upon spring movements.**
3. **Measuring rate of migration on salted and unsalted areas and effect of hunting upon elk movements.**
4. **Influence of natural licks upon elk movements.**

The final phase was being organized into a master's thesis at the close of the biennium, and a final report for publication will be written on the entire project.

The first phase of an investigation concerned with evaluating the use of an area by three species of big game and livestock in Fremont County has resulted in a master's thesis entitled "Plant succession and big game winter movements and feeding habits in a sand dune area in Fremont County, Idaho." The study is continuing.

In northern Idaho during the five month grazing season, cattle range in areas occupied by white-tailed deer. A study entitled "Forage utilization by cattle and white-tailed deer on a northern Idaho forest range" evaluated the forage use. The Hatter Creek deer enclosure, with ten years of deer use only, and adjacent cutover forested livestock range, was used for the study.

Studies were also continued on other parts of the University Experimental Forest, particularly in the long-range ruffed grouse project. Some of the census work has been continued both to determine the fall populations and to determine the number of broods. Studies of grouse movement have been underway during the past year with the banding of both ruffed grouse broods and drumming males.

A new phase of the work on the Experimental Forest is the detailed study of microclimate and how it effects the use of cover by various forms of forest wildlife. Working on this study is the first Ph. D. fellow.

A graduate student who had been employed by the Bureau of Commercial Fisheries in Alaska prepared a thesis entitled "Characteristics and structure of early and late spawning runs of chum salmon, **Oncorhynchus keta** (Walbaum), in streams of Prince William Sounds, Alaska."

A limnological survey of the backwater of the lower St. Joe River, Idaho, was started during the biennium. Studies of such backwater areas will produce information concerning successional sequence of fish species and food organisms from a lake to a river environment. The results of this study should be valuable for establishing fish management programs on this and similar areas.

A study of the life history of the cutthroat trout inhabiting the Middle Fork of the Salmon River, Idaho, was begun by a graduate student and Fishery Biologist of the Idaho Fish and Game Department. The project forms part of the Fish and Game Department's research program, the data from which will be analysed and presented as a master's thesis. This study will provide information fundamental to the sound management of the cutthroat trout in this area.

A study of the influence of logging on trout streams in northern Idaho continued through the biennium. This is a long term project which necessitates data being collected from the study streams during and after logging operations. At present logging is taking place in one of two areas. Road building in the second area is scheduled for next year.

Basin Investigations

The accelerated rate at which multiple-use water projects are being proposed and built which affect the fish and game resources of Idaho, has brought about the creation of the office of Coordinator of Basin Investigations during the past biennium. Under the supervision of the Director, the Coordinator reviews all projects utilizing water resources to determine the need for fish and game studies in the event the project will have some deleterious effects upon the fish and wildlife of Idaho and coordinates the fish and game programs with water resource development projects.

The Coordinator is also the Idaho representative on several Columbia Basin technical committees. Direction or review of fisheries-engineering research programs relating to the effects of dams on fish, review of fish passage and fish protective facilities at water-use projects, and coordination of Columbia River Basin study and development programs are among the duties of these technical groups.

From these various activities recommendations are made for administrative approval for planning, studies, design criteria, mitigation, or replacement, for losses to, and development work for enhancement of, the fish and wildlife resources affected by water-use projects. Statements and testimony are prepared for public hearings dealing with the use of water.

Considerable attention has been given to a number of major projects during the last biennium. Among those completed is Brownlee Dam on the Snake River. Those which are under construction include John Day Dam on the Columbia and Oxbow and Ice Harbor on the Snake River. Those projects being planned, under application for license, or which are proposed or recommended, include Enaville on the Coeur d'Alene River, Bruces Eddy and Penny Cliffs on the Clearwater, Nez Perce, Lower Monumental, Asotin, and High Mountain Sheep on the Snake and Garden Valley on the Payette.

Other projects completed earlier but undergoing review include Cabinet Gorge on the Clark Fork River for development of supplemental spawning for Dolly Varden trout, Black Canyon on the Payette to determine feasibility of fish passage, and Lucky Peak on the Boise for supplemental winter flows.

In addition to the consideration given to these major water-development projects, review is made of small reclamation, hydropower, and watershed development projects proposed for Idaho.

When it is determined that field work or studies are desirable to ascertain the effects of a project upon fish and wildlife, these studies are made by personnel in the Fisheries and Game Management Divisions. Occasionally, special studies over a period of several years are required to gather all the facts needed to analyze a project fully. Such studies are currently being completed on Lake Pend Oreille (Albeni Falls and Cabinet Gorge Dams) and in the Middle Snake River (Brownlee, Oxbow and Hells Canyon Dams) on fisheries problems. Initiated recently was a game study on the Clearwater River's North Fork in connection with the big-game use of the reservoir area of the proposed Bruces Eddy project.

Fisheries Management

Improvement in fishing comes about through well organized programs. One program which has paid dividends is the chemical treatment of lakes and streams for the removal of undesirable species of fish. During the biennium, a substantial number of waters have been treated and several lakes and reservoirs which were treated in the previous biennium have come into production. Three bodies of water are of particular significance:

Cocolalla Lake in Bonner County was opened to fishing in 1959 and a limit of three trout was set by the Commission. At first it was felt by many that such a low bag limit would be a deterrent to anglers fishing the lake. Such, however, was not the case, for a fairly large number of fishermen were quite happy to catch three cutthroat, each weighing a pound or more.

Island Park Reservoir lived up to expectations when it reopened to fishing on June 4, 1960. Nearly 6,000 fishermen fished the reservoir on opening day. At the start of the season, the rainbow were 11 inches in length and by the end of the season they were weighing more than a pound. Island Park Reservoir was as good fishing in 1960 at it had been prior to the introduction of the Utah chubs.

Little Wood River from Silver Falls to Shoshone had not produced any trout fishing for many years because rough fish species had taken all the available space in the stream. In the fall of 1959, it was treated with rotenone and was restocked before opening of fishing season in 1960. It can be safely stated that the treated portion of Little Wood River provided more angling and produced more fish for the creel on opening day than it had for all of the previous 20 years.

The number of anglers fishing for steelhead is rapidly increasing each year. Waters which were not fished 10 to 12 years ago now carry a rather heavy fishing intensity. An increase in the number of steelhead entering Idaho rivers, improvement in fishing tackle and a general interest of anglers to catch a quality fish have contributed to the increase in angling intensity. During the winter of 1959-60, it was common to see 200 to 300 steelhead anglers on the Clearwater River between Lewiston and Kooskia.

Jet-propelled power boats now transport fishermen beyond the end of the road on Salmon River, thus opening up new areas to steelheaders. Fishing starts in the fall as soon as the steelhead arrive and continues throughout the winter.

The number of fishermen, willing to strap overnight packs on their backs for fishing trips into mountain lakes, is growing each year. To keep abreast of this pressure, the Department has intensified its management of these waters.

Drouth conditions which have prevailed over the southern and eastern portions of Idaho during 1959 and 1960 have drastically reduced the

normal carry-over storage of water in many irrigation reservoirs. As a result, such good fish producers as Mackay, Magic, Fish Creek, Chesterfield and others will not produce the quality fishing they normally do until such time as storage conditions improve. Because of low flows in many streams, water temperatures often reached the critical tolerance limits for trout and salmon and, in some areas, rather heavy losses of fish have been observed. Also, the extreme drawdown of water in the reservoirs siphoned large numbers of fish into the outlet streams. This made it necessary to do an exceptionally great amount of fish salvage in the irrigation canals.

The harvest of kokanee from Pend Oreille Lake continues on an even plane with the take ranging from one million to one and one-quarter million annually. The Department can point with pride to the management program for Pend Oreille Lake which is providing such an excellent fishery on a sustained-yield basis. The U. S. Army Corps of Engineers deserve much credit for the success of the program because they have not permitted excessive drawdown of the water level of the lake during the spawning and incubation periods of the kokanee.

To further improve upon the stocks of salmon and steelhead in Idaho, the Department plans to attempt a reintroduction of steelhead trout into the South Fork of the Clearwater River and spring chinook salmon into the Clearwater River drainage. An attempt will also be made to introduce fall chinook into the main Clearwater River. The program will get underway in 1961 and will continue for a period of eight years.

Public access to important fishing waters has continued as an important departmental activity during the biennium.

Lake Pend Oreille

A continuing creel census indicates that the quality of kokanee fishing has not declined during the past 10-year period. Increased natural and artificial propagation of kamloops rainbow trout has resulted, roughly, in the doubling of the number harvested during each two-year period from an estimated 600 kamloops annually in 1951-52 to about 9,000 in 1960. Some 2,000 trophy-sized, 20 to 40-inch Dolly Varden and kamloops trout were caught by sport fishermen during the past year—the largest during 1959 was a 40-inch, 36½-pound kamloops.

The native trout (cutthroat and Dolly Varden) have declined in numbers as indicated by the following table. To reverse this downward trend, nursery streams have been improved, additional fishing restrictions imposed, and improved of spawning habitat in the Clark Fork and artificial propagation facilities are being considered.

Year	Men	Hours	Kokanee	Rainbow	Dolly Varden	Cut-throat	Other Game Fish
1959	75,023	345,379	1,262,000	4,906	1,667	3,659	20,685
1960*	71,093	343,664	1,018,000	8,712	2,360	3,363	9,178
Average 1951-58	75,086	385,998	1,143,000**	2,622	2,928	5,748	48,046

*Through October 15, 1960; other years are through November 30.
**Final estimate.

Priest Lake

During the past decade, a serious decline has occurred in the harvest of native trout, both cutthroat and Dolly Varden, apparently as a result of the deterioration of spawning streams, illegal fishing and the introduction of kokanee and mackinaw. Kokanee is now the major sport fish and mackinaw provides the most outstanding sport fishery for this species in the United States. Measures adopted to reverse the downward trend in the native trout fishery are: (1) additional restrictions on the harvest of spawning and immature trout in nursery streams, and (2) treatment of tributary streams to remove competing species, mainly brook trout, and restocking with cutthroat trout.

Williams Lake

Williams Lake, located 15 miles south of Salmon, provides an ideal environment for the production of trout. In 1958, nearly 24,000 trout, weighing approximately 18,000 pounds, were harvested from the 185-acre lake. The catch in 1958 was estimated to be five times larger than the catch in 1952.

The reason for this large increase in catch are increased fishing pressure (twice as many fishermen in 1958 as in 1952) and a change to the planting of fingerling trout in the spring instead of fry in the fall. Fingerlings planted in the spring attain catchable size after spending one year in the lake while fry planted in the fall and naturally-produced trout do not reach sufficient size to enter the catch in large numbers until after their second year of life.

It is believed that a substantial but undetermined portion of the 1958 catch from Williams Lake was fish that had been planted as fingerlings the previous year. In order to determine more accurately the role of hatchery trout in the harvest from the lake, 25,000 fin-clipped fingerling rainbow trout were planted in the lake during the spring of 1959. Some of these marked fish, recovered October 1, 1959, averaged between 8 and 9 inches total length.

A census conducted during the 1960 season revealed that more than two-thirds of the trout caught were fish that had been planted as fingerlings during the spring of 1959.

Island Park Reservoir

In October 1958, Island Park Reservoir was treated with rotenone to remove undesirable fish species, mainly Utah chubs. The following spring it was restocked with rainbow trout and was closed to fishing the entire year. During 1960, a creel census was undertaken to evaluate the success of the program. Preliminary analysis of the data reveals: (1) nearly 6,000 fishermen fished the reservoir on opening day, (2) trout catch per hour of fishing time was higher during the 1960 season than for any other year having creel census information recorded, (3) rainbow trout planted as 2 to 3-inch fingerlings during 1959 and taken in the creel at the start of the 1960 season averaged slightly over 11 inches in length, and (4) trout planted during the spring of 1960 as 2 to 3-inch fingerlings started entering the creel as catchable-sized trout over 6 inches in length during August 1960.

Mann's Lake

Mann's Lake, in Nez Perce County, is owned and operated by the Lewiston Orchards Irrigation Company and supplies water for both irrigation and domestic use. It has been closed to public fishing for many years. By agreement between the Fish and Game Department and the irrigation district, the lake was opened to fishermen access in 1959 and has provided some good fishing for local residents. The Department has installed toilets and trash barrels and makes periodic trash removal to help maintain high sanitary standards for the area.

Stream and Lake Rehabilitation

Oakley Reservoir

Oakley Reservoir and the Goose Creek drainage have produced poor sport fishing for many years. Since the watershed is badly eroded and the waters are warm and turbid, it is felt that re-establishment of a sport fishery may not be too successful even with the rough fish removed. Therefore, only the portion of the drainage above the reservoir to the Utah line was treated and the reservoir was treated with toxaphene to hold costs to a minimum.

Mormon Reservoir

The fish population in Mormon Reservoir was primarily perch and suckers and posed the greatest threat to re-introduction of these species into Magic Reservoir. The reservoir will be restocked with rainbow and opened to year-round fishing.

Magic Reservoir

Although Magic Reservoir still produced fair trout fishing, increasing populations of perch, suckers, chubs and shiners were seriously curtailing growth of fingerling trout in the reservoir. Early in the summer of 1960, it became apparent that the reservoir would be drawn down to its lowest point since 1934 and plans were initiated to treat the reservoir and drainage.

Treatment of the drainage involved approximately 85 stream miles. Nearly 60 stream miles were of such a nature that it was necessary to walk the stream bed and spray it with portable hand pumps.

The reservoir was treated with 500 gallons of emulsifiable rotenone, discharged through a hose into the propwash of the outboard motors. Surface sampling revealed at least 3,554,000 fish were killed during the treatment. Of these, it was estimated that 1,777,000 were perch, 796,096 shiners, 533,100 suckers, 426,480 chubs and 21,324 trout. Other species noted, which were incidental in numbers, were carp and whitefish. The reservoir will be restocked with 2½ to 3 million rainbow trout fingerlings and will be opened to fishing in 1962.

Stream Rehabilitation

Year	Name	County	Volume c.f.s.	Miles treated	Undesirable species	Species restocked
1959	Little Camas Cr.	Elmore	5	4	Perch, sucker	Rainbow
1959	Little Wood River	Blaine, Lincoln	75	48	Sucker, minnow	Rainbow
1959	Fry Cr.	Bonner	1/2		Peamouth, sucker	
1959	Reeder Cr.	Bonner	8		Brook trout, sucker, sculpin	
1959	Bear Cr.	Bonner	3		Brook trout, peamouth, shiner	
1960	Fry Cr.	Bonner	1/2		Peamouth, sucker	
1960	Kalispell Cr.	Bonner	20		Brook trout, sculpin, sucker	
1960	Willow Cr.	Bonneville, Bingham	4-8	95	Sucker	
1960	Salmon Falls Cr.	Twin Falls	20	28	Sucker, minnow	
1960	Camas Cr.	Elmore, Camas, Blaine	5	55	Sucker, minnow, perch	
1960	Big Wood River	Blaine	5	4	Perch; sucker	
1960	Goose Cr.	Cassia	10	24	Sucker, shiner	

Lake Rehabilitation

Year	Name	County	Max. surface area-acres	Storage-acre feet at time of treatment	Undesirable species	Species restocked	Toxicant
1959	Moose Creek Res.	Latah	52	15	Minnow, sucker	Rainbow	Rotenone
1959	St. Johns Res.	Oneida			Utah chub	Rainbow	Rotenone
1959	Lost Valley Res.	Adams	1,140	255	Spiny-ray	Rainbow	Rotenone
1959	Little Camas Res.	Elmore	220	2,500	Perch, sucker	Rainbow	Rotenone
1960	Pettit Lake	Blaine	395	33,000	Squawfish, sucker		Toxaphene
1960	Magic Res.	Blaine		1,000	Perch, sucker, minnow	Rainbow	Rotenone
1960	Mormon Res.	Camas		750	Perch, sucker, minnow	Rainbow	Toxaphene
1960	Oakley Res.	Cassia		1,000	Perch, sucker, minnow	Rainbow	Toxaphene
1960	Sagehen Res.	Gem	230	650	Largemouth bass	Rainbow	Rotenone
1960	C. Ben Ross Res.	Adams	380	150	Spiny-ray, sucker, squawfish	Rainbow	Rotenone
1960	Black Lake	Kootenai	400	6,000	Spiny-ray	Rainbow	Toxaphene
1960	Bond Lake	Boundary	6.2	47	Pumpkinseed	Rainbow	Rotenone
1960	Lee's Bay	Kootenai	16	64	Spiny-ray		Rotenone

Little Camas Reservoir

The reservoir was treated with 550 gallons of emulsifiable rotenone, applied with a high pressure pump on the water surface. Shoreline counts revealed an estimated 200,000 perch, 700 suckers and 200 trout killed. Total kill was considerably higher since a large portion of the fish had sunk. In 1960, fingerling rainbow were planted and had reached 7 to 9 inches in length by September.

Willow Creek

Willow Creek drainage, located in Bonneville and Bingham Counties, was treated during August 1960. By treatment, interspecific competition between rough fish and trout was reduced and an increased survival success for planted fingerling trout assured.

Due to low water flows, a higher than normal toxicant application rate was used and "drip station" intervals were reduced to 1½-mile distances. Local sportsmen assisted in the operation by helping to disperse toxicant at the various stations. Altogether, 95 stream miles were treated with 110 gallons of emulsifiable rotenone.

Little Wood River

Experimental treatment of 48 stream miles was made in August 1959, between Silver Falls and Shoshone. Fish salvaged from Richfield Canal and catchable-sized rainbow trout were replanted prior to the 1960 season. Trout fishing in the section between Silver Falls and Richfield in 1960 was excellent. Prior to the treatment, only a few trout inhabited the stream because of large populations of suckers, shiners and dace.

Salmon Falls Creek

The entire Salmon Falls Creek drainage in Nevada above Salmon Falls Reservoir was treated by the Nevada Fish and Game Department. The portion of the drainage in Idaho was treated by the Idaho Department of Fish and Game in cooperation with the Nevada project. Although the Idaho portion will produce only limited trout fishing, the drainage treatment will be a step forward in a rough-fish control program on Salmon Falls Reservoir.

Lost Valley Reservoir

Lost Valley Reservoir in Adams County has a surface area of 1,140 acres. It was treated with emulsifiable rotenone on September 29, 1959, to eradicate large populations of stunted perch and brown bullheads as well as non-game species, particularly suckers. Storage at time of treatment was 179 acres or a volume of 235 acre feet. The reservoir has been stocked with rainbow trout and will open to fishing in the spring of 1961.

Fish Tagging Studies

Tagging studies have been initiated to check on survival and migration of rainbow trout reared to catchable size in hatcheries. A portion of these studies was financed under the Dingell-Johnson program.

Lake Walcott

An experimental plant of 3,000 tagged rainbow was made in May 1960 in the upper end of Lake Walcott. Although these fish showed excellent growth through the summer months, a definite downstream migration out of the lake was evident. During August, 27,970 fingerlings were finclipped and released in the upper end of the lake. Downstream migration of the fingerlings out of the lake has also been apparent.

Little Wood River

The section of Little Wood River between Richfield and Shoshone is marginal habitat for rainbow trout. In order to determine the advisability of continuing trout plantings in this area, 500 trout were tagged and released in May 1960.

Road Inspections

Plans-in-hand inspections of proposed new roads or road relocations in company with the sponsoring agencies have been made for most developments. These inspections have been most helpful in preventing or minimizing adverse effects to fish habitat of streams.

Pollution

The pollution outlook for the biennium has been both encouraging and discouraging. Mining has had a rough period due to strikes and the drop in metal prices. Most placer mining is at a standstill at present due to the lack of a market for many of the previously strategic metals and many of the smaller outfits have terminated operations because of lack of funds. For this reason, some of our streams and rivers were clear for the first time in years.

The building or proposed building of several new sewage treatment plants in some of the larger cities of the state, which have previously been discharging their raw sewage into various streams and rivers, is one of the most encouraging developments which has happened recently from the standpoint of habitat improvement for fish and wildlife.

Encouraging also has been the pollution abatement begun by some of the food processing plants and meat packing plants in the southwestern part of the state. The building of settling ponds has been the first step towards lessening the amount of organic waste released into our various waters.

Not so encouraging is the fact that even more food processing plants, mostly of the potato processing type, are under construction or in operation at the present time along the Snake River. This means an even greater load of slime-producing, oxygen-consuming organic waste in this already loaded river. Although most of these plants will use settling ponds, which reduces the B.O.D. considerably, the total waste from the greater number of plants still releases a large amount of organic matter into the river.

There were the usual fish kills reported to the Department, although the number of these was somewhat lessened this year. The application of insecticides and herbicides continues at a high rate and is of considerable concern to the Department.

Chinook Salmon Spawning Ground Surveys

Each year since 1950, surveys have been conducted in Idaho to determine the amount and success of spawning by chinook salmon. The amount of spawning is determined by counting the number of redds (nests in gravel where eggs are laid) either from the air or on foot. These counts, along with harvest information, are used to evaluate the effectiveness of management practices in providing for the maximum allowable harvest by sport fishermen and the necessary escapement for spawning.

The largest number of spring and summer chinook salmon redds was counted in 1957, when nearly 14,000 were counted in the Salmon River drainage alone. The numbers of redds counted in 1958 and 1959 decreased to 6,805 and 5,818, respectively, due to smaller runs during those years. From surveys conducted in 1960, it appears that the number of redds in the Salmon River drainage will approach the number found in 1957.

The run of spring chinook in the Weiser River system is not in a healthy condition. It is feared that unless a greater number of fish can be passed successfully around the dams in the Middle Snake River this run of fish will become extinct.

Redfish Lake

Since 1954, the Fish and Game Department has operated a fish-counting weir on Redfish Lake Creek between Redfish and Little Redfish Lakes. The primary purpose of this weir has been to trap the adult upstream and juvenile downstream migrant sockeye salmon. The numbers of fish counted through the weir in past years are as follows:

Year	Adults (upstream)	Juveniles (downstream)
1954	998	....
1955	4,361	48,720
1956	1,381	40,000
1957	571	32,857
1958	55	38,000
1959	290	12,324
1960	75	2,000

During the summer of 1959, the weir was also used to determine the upstream and downstream movements of other fishes in addition to the sockeye salmon. The weir was used to determine the number of hatchery trout that moved downstream from Redfish Lake after being planted. The number that left the lake during the summer was found to be an insignificant portion of the total plant. The weir was also used to enumerate the number of trash fish moving to or from Redfish and Little Redfish Lakes. This information will be useful in the future planning of rehabilitation projects for lakes in that area.

Columbia River Fishery Development Program

In July 1956, the State of Idaho became an active participant in the Columbia River Fishery Development Program. This program, federally financed except for land purchase, provides funds to aid the production of anadromous fish species.

Field surveys to determine the location of barriers to fish passage, fish losses in irrigation diversions, sources of water supply for hatching and rearing purposes and the availability of adequate spawning areas have been continued to the present date. As sufficient information became available through these studies, active programs to aid the production of salmon and steelhead have been initiated.

By June 30, 1960, a total of 60 fish screens were installed in irrigation canals located in the upper Salmon River drainage. Another 75 are scheduled for completion by June 30, 1961. A fish screen construction and maintenance warehouse and storage shed have been erected at Salmon, Idaho. Plans are presently being formulated to study screens of more economical design for installation in large canals.

In October 1960, the fishway constructed around Dagger Falls, located on the Middle Fork of the Salmon River, was completed. This fishway, of vertical-slot design, is the first ever to be constructed over a natural barrier to fish migration in the State of Idaho. The fishway, constructed by contract, is self-adjusting to river flows and has a total lift of 15 feet. Ten miles of road were constructed to provide access to the site.

A consulting biologist, outstanding in the field of fishway design, has been studying for two years fish passage conditions in the fishways of the Washington Water Power Company dam near Lewiston, Idaho. Recommendations for improved passage for salmon and steelhead over this man-made obstacle will be considered in the near future.

Observations of fish passage over Selway Falls, located about 21 miles above the mouth of the Selway River, have indicated that, although adult steelhead are able to pass upstream through the area at some stages of river flow, extended delays to fish passage are common. Improved fish passage is recommended and engineering design studies are expected to commence early in 1961.

Through cooperative action with the U. S. Forest Service, the owner of a small hydroelectric power dam located on Moose Creek in the Selway River drainage has been ordered to provide fish passage over this barrier. Timber was felled for this work in the fall of 1960. Construction is expected to be completed by the fall of 1961.

A new phase, "Operational Studies," was initiated in the Columbia River Fishery Development Program. This increases the scope of the Program to include studies pertaining to such problems as artificial pond rearing, methods of predator control, development of fish cultural techniques and improvement of natural habitat.

As part of the study program, plans have been laid to determine if chinook salmon can be successfully introduced into the Clearwater River drainage in sufficient numbers to establish self-sustaining runs. Land has been purchased near Lewiston, Idaho, on which will be constructed an egg-incubation station. This station will be utilized to provide eyed eggs of salmon and steelhead for deposition in various streams in the Clearwater River drainage.

Middle Snake River Studies

Studies of resident game fish populations in Brownlee Reservoir were continued during 1960 to determine how they are being affected by Brownlee Dam.

As during 1959, the bulk of the bass spawning occurred while water was being stored in the reservoir so any destruction of eggs should have been minimal. Populations of large and smallmouth bass and black crappie continued to be very good. Sport fishing for these species was not as good as during the preceding year. It was good in the spring and early summer but relatively poor during the extremely hot weather of July and early August. Fishing improved in late August and early September.

Downstream trapping operations were again undertaken below Brownlee Dam the first half of the year as an indication of the effectiveness of the barrier net in the Brownlee forebay. An estimated 75,650 salmon and steelhead downstream migrants passed by the barrier net and dam from January 1 to June 30, of which an estimated 34,530 passed the project alive. Total catch of salmon and steelhead downstream migrants at the barrier net's artificial outlets during the same period was 50,908.

During September and October of 1960, 629 adult chinook salmon that had been hauled from the Oxbow trap were tagged at Brownlee and Weiser release sites. An attempt is being made to determine the relative success of spawning of the fish released at the respective sites. Bottled oxygen was used in addition to the regular circulating pumps for aeration of the water in the fish tanks. Ice was also added to reduce water temperature in the tanks. Intensive checking will de done on the spawning grounds between Swan Falls and Marsing during October and November.

Wildhorse River Transplating Project

Operation of the Wildhorse River weir was terminated as of June 30, 1960. Totals of 2,882 steelhead downstream migrants and 260 chinook salmon downstream migrants were trapped and marked at the weir and transplanted to the Weiser River drainage from January 1, 1960 to June 30, 1960. From the beginning of the project on January 1, 1958, to its termination on June 30, 1960, totals of 20,621 steelhead and 4,569 chinook salmon downstream migrants were marked and transplanted to the Weiser River drainage. These fish represent only a portion of the total downstream migrants that passed down the Wildhorse River since only 300 c.f.s. of the Wildhorse River could be strained by the weir.

Federal Aid in Fisheries

(DINGELL-JOHNSON PROGRAM)

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

Field work on this project has been concluded. Considerable time has been spent during the biennium writing a final report on creel census, spawning surveys, biological studies and statistical analysis of the project. It is planned to publish the report in 1961.

F 18-R Statewide Fishing Harvest Survey

A postal card survey has been conducted each year since 1954 to determine trends in catch and fishing intensity. In each survey through 1958, information was collected for all groups of game fish in the state. The information collected during the five-year period will serve as a basis for comparison with future surveys to be conducted once every five years.

The number of salmon and steelhead entering Idaho varies each year and, consequently, the harvest and fishing pressure also vary. Estimates of the catch and fishing intensity are needed annually so that a continuing evaluation of management practices can be made. The survey conducted in 1959 differed from those conducted in previous years in that only chinook salmon and steelhead trout catch data were obtained.

In 1959, there were 241,714 licensed anglers in Idaho. Nearly 15 per cent of these anglers fished for steelhead and a slightly smaller percentage fished for chinook salmon. There were 51 and 6 per cent increases in the number of anglers seeking steelhead and salmon, respectively, in 1959 over the preceding year. The increase in steelhead anglers in 1958 over 1957 was 23 per cent. Both increases are the result of larger runs of steelhead into Idaho waters due to the cessation of the Indian dip net fishery at Celilo Falls and the closing of commercial fishing above Bonneville Dam in 1957. The estimated catch for 1959 was 62,000 steelhead and 40,000 chinook salmon.

F 22-R Experimental Rough Fish Control

Life history studies have been made on carp at Lake Lowell and squawfish at Cascade Reservoir. These studies have shown that both species are vulnerable to chemical control measures in these waters during their spawning periods.

Carp removed from Lake Lowell by aerial application of emulsifiable rotenone was approximately 254,000 pounds in 1959 and 23,000 fish, which weighed 90,000 pounds, in 1960. On June 23, 1959, the North Fork of the Payette River above Cascade Reservoir was treated with emulsifiable rotenone. It is estimated that 234,000 adult squawfish and 12,600 suckers were killed on their spawning migration. The North Fork was again treated on July 24 to kill the newly-hatched fry. The activity was repeated in 1960 and approximately 450,000 were killed. A later treatment to kill the fry was also made. It is believed that the population of squawfish in Cascade Reservoir can be held in check if the river is treated annually with rotenone during the spawning migration run and again before the newly-hatched fry return to the reservoir.

The project of Experimental Rough Fish Control has been terminated.

Idaho Angling and Catch Data, 1954-1958

	Year				
	1954	1955	1956	1957	1958
Licensed anglers	238,250	223,450	217,850	225,320	233,16[illegible]
Angling trips	2,048,000	2,153,000	2,128,000	2,436,500	2,482,722
Per cent of anglers seeking:					
Trout	93.1	93.1	93.4	90.7	92.[illegible]
Chinook salmon	7.7	9.5	10.4	14.4	12.[illegible]
Steelhead trout	7.8	7.9	6.1	7.8	9.[illegible]
Total catch of Trout	{11,308,400*}	9,597,300	9,127,100	10,177,400	11,415,300
Kokanee	2,777,000	1,963,500	2,174,800	2,194,700	2,442,600
Warm-water	29,550	3,239,800	2,671,200	3,321,300	3,991,700
Salmon	25,200	38,880	42,690	78,200	49,400
Steelhead	2,230	26,250	15,775	39,550	59,630
Sturgeon	....	2,340	4,390	2,910	3,130
Whitefish		718,400	512,800	565,600	434,615
Average seasonal catch/angler:					
Trout	{54.5*}	49.8	48.1	49.8	52.[illegible]
Kokanee	57.7	67.6	84.6	77.0	90.[illegible]
Warm-water	1.7	68.3	58.4	66.1	73.[illegible]
Salmon	1.5	2.0	2.0	2.41	1.[illegible]
Steelhead	1.0	1.6	1.3	2.25	2.[illegible]
Sturgeon	....	0.9	1.4	0.8	1.[illegible]
Whitefish		40.7	25.3	25.1	23.[illegible]

*Trout and kokanee data combined in 1954.

F 32-R Tests for Increasing the Returns of Hatchery Trout

During 1959, creel census studies were conducted to determine the role of hatchery trout in the sport fisheries of Alturas, Redfish and Stanley Lakes and the Salmon River above Challis. Alturas, Redfish and Stanley Lakes are relatively infertile lakes and, consequently, the natural production of trout is small. It was found that, in each lake, hatchery trout made up the majority of fish creeled and that better than 75 per cent of the planted fish were caught by the fishermen. Without the hatchery trout, fishing in each of the lakes would be considered poor.

Hatchery trout planted in the Salmon River did not play quite as important a role as fish planted in the lakes. Although the upper Salmon River is heavily fished during the summer, it was found that only about 15 per cent of the anglers fished for trout; most were after salmon. Less than 40 per cent of the trout caught were hatchery trout and only about 20 per cent of the fish planted were caught by fishermen during the summer of 1959. Some hatchery trout are undoubtedly caught during the fall and winter. The recovery of planted trout was highest in those areas of highest fishing pressure. The number of fish caught per mile appeared to be related more to the amount of fishing pressure than to the number of fish planted.

In 1959, tests on Pebble and Toponce Creeks showed that winter survival of catchable-sized hatchery rainbow trout was very low. The best returns of catchable-sized hatchery fish were realized from the first planting of fish after spring runoff and as near as possible to the opening of the general fishing season on June 4.

A study of fish migration and return of hatchery fish to the creel in Mackay Reservoir was initiated in 1960. A total of 2,500 rainbow trout were jaw-tagged and released in the reservoir along with 25,000 fingerlings which were fin-clipped. Creel census data have not been analyzed.

Experiments have been carried out during the past two years to determine the comparative return to the creel of catchable-sized rainbow when transported in two fish tanks, each having a different type of aeration. The water in tank No. 1 was aerated by passing oxygen through a carbon stone. The surface of the water was agitated slightly with a small paddle driven by an electric motor. The water in tank No. 2 was aerated by recirculating it with a pump and spraying it back into the tank through garden hose nozzles.

Results of the tests showed that the tank with pump aeration consistently returned more fish to the creel than did the tank with stone aeration when the transported fish were released into a stream environment. Preliminary figures show no significant difference in returns from the two tanks when the transported fish were released back into hatchery ponds or into a lake environment.

Chemistry tests of the water of each tank showed a greater carbon dioxide content in the tank with stone aeration. When a buffer agent was used to control corbon dioxide in the tank with stone aeration, a slightly greater return of fish to the creel was realized than from the tank with pump aeration when the transported fish were released into a stream environment. Further work on the control of carbon dioxide in fish tanks is planned.

Tests were conducted on two north central Idaho lakes and streams to determine the comparative rates of return to the creel of hatchery trout planted as fingerlings and as catchable-size fish. No conclusions have, as yet been made.

F 34-R Water Quality Investigations

A general water quality survey has been made on the more important lakes and reservoirs throughout the state to determine, if possible, if there is a correlation between productivity, arbitrarily measured by the quantity of plankton present, and the chemical composition of the water. From the analysis, total dissolved solids appear to be a fairly good index of plankton productivity. Water quality investigations have also been made on the Boise, Snake and Portneuf Rivers and Georgetown Creek. All were found to be heavily polluted by domestic, industrial and/or agricultural wastes.

The three-year study of the effect of dredging on a trout stream has been completed. Not all of the data collected have been analyzed but some of the early results indicate: (1) a significant rise in water temperature in and below the dredge area, (2) a decrease in both bottom organisms and game fish in and below the dredge, (3) a silting in of the pools below the dredge, and (4) a reduction in the cover available for fish.

Bioassays were run on 11 different pesticides to determine their toxicity to fish. The bioassays, in which the test fish are exposed to known concentrations of a pesticide for a specified length of time, determine the relative toxicity of the material tested. The 11 pesticides tested were: DDT, Dieldrin, Dowpon, Karmex W, Amino Triazole, Aquatic Weed-Killer Phygon X-L, Sinox General, Malathion, Heptachlor

and Toxaphene. All of the pesticides tested are potential hazards to fish life, although Karmex W., Dowpon and Amino Triazole do not appear to represent a major toxicity problem unless carelessly handled or used in overdosage.

F 37-R Middle Fork of Salmon River Trout Fishery Investigation

This project was conducted during 1959 and 1960 to determine what might be done to maintain the high quality trout fishing found in the Middle Fork of the Salmon River. Increased fishing intensity on the Middle Fork has apparently begun to make inroads into the trout populations, particularly the cutthroat trout.

The Middle Fork is isolated and inaccessible by truck and it is, therefore, necessary to rely on naturally-produced trout to provide the fishing. Secondly, the cutthroat trout population in the Middle Fork is one of the few such populations remaining in the state and should be preserved.

This study was conducted to determine the present status of the trout populations, to obtain an estimate of the annual harvest and to determine the migration patterns of the trout. From tagging studies, it has been found that a large portion of the cutthroat trout and Dolly Varden migrate up the Middle Fork in the spring and down-stream in the fall. This migration is not confined to maturing fish which enter tributaries of the Middle Fork to spawn. Some fish have been recovered from the Salmon River after being tagged many miles up the Middle Fork.

F 38-R Blackfoot River Fishery Investigation

Studies were commenced in the spring of 1959 to evaluate the status of the cutthroat trout fishery in Blackfoot River.

A creel census was conducted to obtain fishing pressure and harvest information. Life history of cutthroat trout and stream survey studies were conducted.

Field collections were completed on October 31, 1960, and analysis of data is in progress.

Of interest is the segregation of trout populations in the river-reservoir and tributary system. Those cutthroat inhabiting the main Blackfoot River and the lower sections of Lanes, Sheep, Diamond and Spring Creeks habitually spend one to two years in the stream system before migrating into Blackfoot Reservoir where they attain a large size before returning to spawn in the tributary system. Once they have spawned, the large fish drift downstream and large numbers are taken in the sport fishery. This is an excellent utilization of these large fish as most would be lost due to spawning mortality if not taken in the fishery.

Cutthroat populations inhabiting the upper sections of tributary streams spend their entire life in the stream and attain a very small size in comparison to cutthroat that utilize the main Blackfoot River and Reservoir.

Hatcheries

Maintenance and Improvements

American Falls

1. Rewired residences Nos. 3 and 4 to conform with present-day electrical wiring standards.

2. Replaced kitchen sinks in residences Nos. 2 and 3.

Ashton

1. New pipe lines were installed from water supply pond to rearing ponds and the hatchery.
2. Rebuilt water diversion structures from supply pond and to the raceways.
3. Constructed a new entrance road to the hatchery.
4. Landscaped hatchery grounds.
5. Constructed a diversion ditch to bypass irrigation waste water around water supply pond.
6. Replaced kitchen sinks in both residences.
7. Replaced electrical wiring in the hatchery,
8. Constructed one new raceway 16 feet by 140 feet with a center division wall.

Clark Fork

1. Installed a septic tank and field drains for assistant's residence and trailer house.
2. Installed an overflow control on brood stock pond.

Eagle

Placed a concrete floor in the horseshoe raceway.

Hagerman

1. Completed rebuilding of raceways.
2. Installed an underground electric cable to supply electricity to lights and outlets around raceways.

Hayspur

1. Installed an overflow control culvert on brood stock pond.
2. Partially remodeled kitchens in both dwellings.
3. Added a utility room to the assistant's dwelling.

Sandpoint

Installed cattleguards on entrance roads.

Twin Falls

1. Rebuilt hatchery water intake diversion structure.
2. Replaced electric wiring in hatchery and residence so as to conform with state electrical code.

Cocolalla Lake

Constructed a fish weir on each of the two tributaries.

Operations

Grangeville

Operations at the Grangeville Fish Hatchery were discontinued after the 1959 season. Low water flows, overcrowding of fish, siltation, and disease have made the operation of the hatchery unsatisfactory.

Hepatoma

Tumorous conditions have been reported in trout and other fish for over a century. During 1960, an increased occurrence of hepatoma was noted in hatchery rainbow trout. The cause of this condition has not been determined and is now under joint investigation by the Fish and Game Departments of the eleven Western states, federal agencies and universities.

State and national authorities have concluded that hepatoma in trout may have some medical significance which should be thoroughly investigated but that it poses no known problem to human health.

IDAHO FISH PLANTINGS[1]

By Species and Size—All Agencies

(November 1, 1958 – October 31, 1960)

Species	Year	Number of Each Species Planted by Size 0-3″	3-6″	6″ up	Total	Pounds
Rainbow[2]	1959	5,260,176	2,089,600	2,412,732	9,762,508	685,141
	1960	3,489,716	2,850,058	2,709,195	9,048,969	750,776
Cutthroat[3]	1959	3,647,616	32,720	14,140	3,694,476	7,370
	1960	5,021,416	22,610	19,073	5,063,099	8,072
Brook	1959	232,835	112,685	18,940	364,460	4,133
	1960	171,740	181,490		353,230	2,845
Kamloops	1959	574,080	46,325	51,825	672,230	10,026
	1960	627,968		48,000	675,968	8,228
Mackinaw	1959		5,330	53,415	58,745	6,442
	1960			27,675	27,675	4,480
Golden	1959	13,200			13,200	5
	1960	21,750			21,750	5
Kokanee	1959	1,196,500			1,196,500	306
	1960	1,344,000			1,344,000	342
Smallmouth Bass	1959	3,503	3,504		7,007	77
Largemouth Bass	1959	50,000			50,000	3
	1960	40,000	105,000		145,000	340
Totals	1959	10,977,910	2,290,164	2,551,052	15,819,126	713,503
	1960	10,716,590	3,159,158	2,803,943	16,679,691	775,088
Biennium Totals		21,694,500	5,449,322	5,354,995	32,498,817	1,488,591

[1] Excludes all salvaged fish. These are reported in another table.
[2] Includes 47,220 (695 lbs.) rainbow-brown hybrids 1960.
[3] Includes 138,000 (276 lbs.) cutthroat-rainbow hybrids 1960.

FISH PLANTINGS IN IDAHO BY OTHER AGENCIES

(November 1, 1958—October 31, 1960)

Station	Year	Rainbow Numbers	Rainbow Pounds	Cutthroat Numbers	Cutthroat Pounds	Totals Numbers	Totals Pounds
Hagerman Federal (Idaho)	1959	766,757	97,777			766,757	97,777
	1960	873,926	88,806			873,926	88,806
Jackson Federal (Wyo.)	1959			247,080	637	247,080	637
Springfield Federal (Utah)	1960	1,560	610			1,560	610
Wyoming State	1959			36,682	83	36,682	83
	1960			412,470	1,497.4	412,470	1,497.4
Totals	1959	766,757	97,777	283,762	720	1,050,519	98,497
	1960	875,486	89,416	412,470	1,497.4	1,287,956	90,913.4
Biennium Totals		1,642,243	187,193	696,232	2,217.4	2,338,475	189,410.4

HATCHERY PRODUCTION
(November 1, 1958—October 31, 1960)

Hatchery	Year	Rainbow Nos.	Rainbow Lbs.	Cutthroat Nos.	Cutthroat Lbs.	Brook Nos.	Brook Lbs.	Brown Nos.	Brown Lbs.	Kamloops Nos.	Kamloops Lbs.
American Falls[1]	1959	997,033	129,985	1,280	400						
	1960	1,096,972	151,112	9,280	32	58,870	535	7,230	152		
Ashton	1959	1,216,202	46,966	99,100	59	23,350	260				
	1960	880,517	39,770	226,380	231	94,070	830				
Clark Fork[2]	1959	161,050	24,350	186,160	266					672,230	10,026
	1960	148,100	28,425	378,600	327					675,968	8,228
Eagle[3]	1959	1,341,420	33,824	120,000	50						
	1960	1,107,411	22,304	189,000	90						
Grace[4]	1959	934,574	73,766	288,950	2,547	87,400	1,222				
	1960	999,881	86,394	321,458	3,103		565				
Grangeville	1959			227,161	113						
	1960	(Station closed)									
Hagerman	1959	1,079,449	159,733								
	1960	1,033,100	226,762								
Hayspur[5]	1959	924,375	46,438								
	1960	809,480	43,865								
Henrys Lake[6]	1959			453,830	1,513						
	1960			1,024,000	1,467						
Mackay[7]	1959	946,819	56,004	12,374	11						
	1960	808,254	57,751	46,665	46						
McCall	1959	487,900	190	244,100	116	42,850	937				
	1960	442,500	202	401,890	164						
Mullan	1959	388,825	385	304,250	124	90,000	30				
	1960	289,800	414	739,500	501	285,000	57				
Sandpoint[8]	1959	330,496	597	762,680	439	121,040	1,679				
	1960	602,910	1,512	558,070	244	32,812	636				
Twin Falls[9]	1959	529,050	25,620								
	1960	503,400	23,060								
Warm River[10]	1959		8,323	715,834	979						
	1960		2,973	760,586	374		223			672,230	10,026
Totals	1959	9,337,193	606,181	3,415,719	6,617	364,640	4,128			675,968	8,228
	1960	8,722,325	684,544	4,655,429	6,579	470,752	2,846	7,230	152		
Biennium Totals		18,059 518	1,290,725	8,071,148	13,196	835,392	6,974	7,230	152	1,348,198	18,254

HATCHERY PRODUCTION—Nov. 1, 1958-Oct. 31, 1960 (Continued)

Hatchery	Year	Kokanee Nos.	Kokanee Lbs.	Mackinaw Nos.	Mackinaw Lbs.	Golden Nos.	Golden Lbs.	S. M. Bass Nos.	S. M. Bass Lbs.	L. M. Bass Nos.	L. M. Bass Lbs.	Totals Nos.	Totals Lbs.
American Falls[1]	1959											998,313	130,385
	1960											1,172,352	151,831
Ashton	1959											1,338,652	47,285
	1960											1,200,967	40,831
Clark Fork[2]	1959	1,124,000	281									2,143,440	34,923
	1960	1,248,000	312									2,450,668	37,292
Eagle[3]	1959									50,000	3	1,511,420	33,877
	1960									140,000	240	1,436,411	22,634
Grace[4]	1959			61,985	6,542							1,372,909	84,077
	1960			27,675	4,480							1,349,014	94,542
Grangeville	1959											277,161	113
	1960												
Hagerman	1959							7,007	77			1,086,456	159,810
	1960											1,033,100	226,762
Hayspur[5]	1959											924,375	46,438
	1960											809,480	43,865
Henrys Lake[6]	1959											453,830	1,513
	1960											1,024,000	1,467
Mackay[7]	1959											959,193	56,015
	1960					21,750	5					876,669	57,802
McCall	1959	72,500	25			13,200	5					860,550	1,273
	1960	96,000	30									940,390	396
Mullan	1959											783,075	539
	1960											1,314,300	972
Sandpoint[8]	1959											1,214,216	2,715
	1960											1,193,792	2,392
Twin Falls[9]	1959											529,050	25,620
	1960											503,400	23,060
Warm River[10]	1959											715,834	9,302
	1960											760,586	3,570
Totals	1959	1,196,500	306	61,985	6,542	13,200	5	7,007	77	50,000	3	15,118,474	633,885
	1960	1,344,000	342	27,675	4,480	21,750	5			140,000	240	16,065,129	707,416
Biennium Totals		2,540,500	648	89,660	11,022	34,950	10	7,007	77	190,000	243	31,183,603	1,341,301

[1] Includes 92,733 (3,405 lbs.) Rb. trans. 1959 to Hagerman for holding, 1,400 (200 lbs.) Rb. trans. 1960 to Hayspur for brood stock and 7,230 (152 lbs.) brown trout trans. 1960 to Eagle for holding.
[2] Includes 206,180 (1959) and 187,920 (1960) planted eyed kamloops eggs.
[3] LMB trans. 1959 C. J. Strike rearing ponds. Rb. prod. 1960 includes 47,220 (695 lbs.) brown-rainbow hybrids.
[4] Increase in wt. brook trans. from Am. Falls prior to planting 1960.
[5] Includes 58,700 (5,729 lbs.) trans. 1960 to Clark Fork for holding.
[6] Includes 138,000 Ct.-Rb. hybrids 1960.
[7] Includes 86,898 (3,145 lbs.) Rb. 1959 and 107,163 (2,187 lbs.) Rb. 1960 trans. to Hagerman for holding.
[8] Includes 120,496 (407 lbs.) Rb. 1959 and 284,500 (1,138 lbs.) Rb. 1960 trans. to Clark Fork for holding. Includes 110,565 eyed Ct. eggs planted 1960.
[9] Includes 15,000 (1,000 lbs.) Rb. trans. 1959 to Hagerman for holding.
[10] Increase in wt. of Rb. trans. from Am. Falls (1,269 lbs.) and Ashton (7,054 lbs.) prior to planting or return to Ashton for holding 1959. Increase in wt. of Rb. trans. from Am. Falls (2,943 lbs.) and Ashton (30 lbs.) and of brk. from Grace prior to planting 1960.

FISH SALVAGED AND PLANTED
(November 1, 1958–October 31, 1960)

Station Area	Year	Trout	Whitefish	Largemouth Bass	Bullhead Catfish	Crappie	Perch	Totals Numbers	Totals Pounds
American Falls	1959	1,224						1,224	1,224
	1960	340						340	255
Ashton	1960	14,920						14,920	7,110
Eagle	1959			4,768	1,700	2,570	4,200	13,238	1,972
	1960			85	5,400*	56,029		61,514	2,834
Hayspur	1959	2,411	450					2,861	4,031
	1960	3,865						3,865	3,738
Mackay	1959	34,440	13,273					47,713	7,656
	1960	11,690	6,180					17,870	2,390
Totals	1959	38,075	13,723	4,768	1,700	2,570	4,200	65,036	14,883
	1960	30,815	6,180	85	5,400	56,029		98,509	16,327
Biennium Totals		68,890	19,903	4,853	7,100	58,599	4,200	163,545	31,210

*Bullhead catfish, perch and crappie combined.

EGGS TAKEN BY STATE
(November 1, 1958–October 31, 1960)

Station	Year	Species	Numbers Green Eggs	% Eye-Up	Numbers Eyed Eggs
American Falls	1959	Rainbow	6,875,942	64.16	4,411,948
	1959	Rainbow	285,786	72.55	207,350
	1960	Rainbow	3,090,931	87.78	3,090,931
	1960	Rainbow	698,277	92.00	642,970
	1960	Brown	19,008	78.49	14,920
Clark Fork	1959	Kamloops	1,255,840	93.76	1,177,480
	1960	Kamloops	939,600	85.85	806,600
Cocolalla Lake	1960	Cutthroat	78,546	92.35	72,546
Eagle	1959	Rainbow	834,034	84.66	706,102
	1960	Rainbow	854,040	88.13	753,173
	1960	Brown x Rainbow	156,600	52.11	81,600
Hayspur	1959	Rainbow	1,364,088	92.82	1 266,150
	1960	Rainbow	1,264,032	93.53	1,182,192
Henrys Lake	1959	Cutthroat	4,057,998	85.03	3,450,554
	1960	Cutthroat	6,753,684	82.76	5,589,483
	1960	Cutthroat x Rainbow	168,222	82.80	139,284
Pend Oreille Lake	1959	Kokanee	635,712	93.44	594,000
	1960	Kokanee	1,393,920	93.31	1,370,420
St. Charles Creek	1959	Rainbow	66,640	89.20	59,440
	1959	Cutthroat	170,170	75.14	127,853
	1960	Cutthroat	152,160	82.18	125,160
Williams Lake	1959	Rainbow	1,965,076	95.27	1,872,107
	1960	Rainbow	1,308,245	96.54	1,262,951
Totals	1959		17,511,286	(Av.) 79.22	13,872,389
	1960		16,877,265	(Av.) 89.66	15,132,230
Biennium Totals			34,388,551		29,005,219

EGGS RECEIVED BY PURCHASE OR EXCHANGE FROM OTHER AGENCIES

(November 1, 1958–October 31, 1960)

Species	Year	Numbers
Rainbow	1959	7,257,144
	1960	6,396,754
Cutthroat	1959	663,082
Brook	1959	967,930
	1960	480,816
Mackinaw	1959	81,180
	1960	99,399
Golden	1959	15,500
	1960	50,125
Kokanee	1959	607,660
Totals	1959	9,592,496
	1960	7,027,094
Biennium Totals		16,619,590

ROUGH FISH REMOVAL–SEINING PERMITS

(in pounds)

(November 1, 1958–October 31, 1960)

Species	Year	Pounds
Carp	1959	301,180
	1960	573,213
Chubs	1959	4,205
Suckers	1959	740,725
	1960	883,787
Unidentified	1959	178,342
	1960	42,030
Totals	1959	1,224,452
	1960	1,499,030
Biennium Totals		2,723,482

FISH COUNTS
LEWISTON DAM FISH LADDER

(November 1, 1958–October 31, 1960)

Month	Year	Steelhead	Chinook Salmon
November	1958	1,018	
	1959	24	
December	1958	284	
	1959	31	
January	1959	62	
	1960		
February	1959	418	
	1960	72	
March	1959	6,008	
	1960	1,172	
April	1959	6,460	
	1960	8,868	
May	1959	808	
	1960	484	14
June	1959	85	5
	1960	25	15
July	1959	4	3
	1960		14
August	1959	109	2
	1960	15	
September	1959	3,707	3
	1960	3,817	
October	1959	8,017	
	1960	6,533	
Totals	1959	26,980	13
	1960	21,041	43
Biennium Totals		48,021	56

FISH FOOD

(November 1, 1958—October 31, 1960)

Item	Year	Pounds	Cost
Liver	1959	94,174	$ 8,475.66
	1960	45,545	4,483.62
Slaughterhouse by-products	1959	166,036	8,204.51
	1960	107,797	5,464.86
Horsemeat	1959	2,151	150.57
Fish and fish viscera	1959	84,635	4,514.59
	1960	89,401	5,013.30
Meal and meal products	1959	1,269,196	136,067.12
	1960	1,615,903	163,718.44
Totals	1959	1,616,192	$157,412.45
	1960	1,858,646	178,680.22
Biennium Totals		3,474,838	$336,092.67

Business Administration

Financing Wildlife

Keeping Idaho's ever growing numbers of fishermen, hunters and outdoor enthusiasts happy while perpetuating the wildlife resources is a big job. However, from the financial side it is gratifying that this is accomplished basically by the sale of the hunting and fishing licenses and does not increase the tax structure.

Again the records show that our residents purchased by far the majority of hunting and fishing licenses. However, the non-resident through his purchases still contributes almost half of the hunting and fishing license revenue. This hunting and fishing revenue, according to charts, is still our main source of funds, with federal participation through Pittman-Robertson, Dingell-Johnson and Columbia River reimbursements coming in second. The deposits from sale of equipment, rentals and Conservation Enforcement fines account for the remaining portion of our self-sustaining income.

The Idaho State Legislature convening in 1959 authorized a small fee increase in the Department's resident hunting, fishing and combination licenses. This increase was necessary to finance the increasing costs in administering and perpetuating the wildlife resources. While the receipts, due to the fee increase, continued to increase, the records show the usual resistance to a license increase and less resident sporting licenses were sold than in the previous biennium. In addition to the fee increase the Legislature created a new tourist fishing license enabling non-residents to fish the first day for $2.00 and an additional day for $1.00. The result of the new tourist license was to increase the number of sales and their apportionate costs, however the deposits for tourist licenses remained the same as the year before.

Fiscal policies as established by the Fish and Game Commission, in accordance with the enabling Idaho Code legislation, did not change during this biennium. The Department operated in accordance with sound fiscal policies as necessary in any well-organized, self-sustaining business. The Business Division kept pace with modern management methods and continued to expand and meet the increasing pressures as a result of increased activity on the field level. In January of 1960 the Department installed a "Series 50" IBM installation. Fiscal data was programmed as well as statistical studies, some of which had been in the past performed by outside agencies. At the end of the biennium this equipment was operating successfully in providing management with accurate up-to-date information needed to more efficiently carry out their responsibilities. The most popular phase of electronic data processing during the biennium was the processing of the 1960 controlled hunts. All time and accuracy records were broken in drawing, publishing and mailing the permits to the successful applicants.

For the record, accounting statements, graphs and charts are printed on the following pages to establish the Department's fiscal standing for the biennium.

Land Acquisition

Ashton Hatchery, Fremont County, addition of 1.37 acres of land to hatchery site—$1,000.

Gold Island Wildlife Management Area, Canyon County, wildlife habitat received from Idaho Power Co. in connection with its Brownlee Hydro-electric project—330.91 acres.

Hagerman Refuge, Gooding County, land exchange to promote more efficient department operations—1.45 acres.

Danielson Lake Public Access, Bingham County, 10.0 acres—$1,000.

Garfield Bay Public Access, Bonner County—69.1 acres—$40,000.

Rose Lake Public Access, Kootenai County—0.67 acres—$4,400.

Boise River, Ada County, road right of way for access to Lucky Peak Reservoir—1.71 acres—gift from Jess K. Hatcher.

Lewiston Orchards Game Farm Site, Nez Perce County—10.0 acres—$15,000.

Sullivan Springs Spawn-Taking Station, Bonner County—12.17 acres—$10,200.

Columbia River Fishery Development Program—In cooperation with this program the Department of Fish and Game has secured easements for the installation of 173 fish screens in Lemhi and Custer Counties.

North Lake Wildlife Management Area, Jefferson County—renewal of lease for 9 years—259.3 acres—$116.64.

North Lake Wildlife Management Area, Jefferson County—easement for road right of way—2.0 acres—gift from Frank S. Jackett.

Pocatello Elk Refuge, Bannock County—renewal of lease for 8 years—595.45 acres—$403.00.

St. Maries Winter Deer Range, Benewah County—renewal of lease for 10 years—1757.0 acres—$1,230.

Cocolalla Lake Public Access, Bonner County—5.0 acres—cost $1,200.

Glendale Reservoir Public Access, Franklin County—2.1 acres—$400.

Virgil Borden Snake River Access, Elmore County—15.0 acres—gift from R. H. Bennett Estate.

St. Joe River Public Access, Shoshone County—land lease for 7 years—38.6 acres—$27.02.

Waha Lake Public Access, Nez Perce County—32.1 acres—gift from Bessie V. Clarke.

Lower Boise River Public Access, Canyon County—38.0 acres—$1,000.

Lower Boise River Public Access, Canyon County—10-year land lease—29.1 acres—$43.54.

Lower Boise River Public Access, Canyon County—easements for 7 rights of way, parking areas and public hunting privileges—16.95 acres—$2,807.

Lower Payette River Public Access, and Management area, Payette County—303.0 acres—$18,250.

Lower Payette River Public Access, Payette County—easements for 2 rights of way and parking areas—4.81 acres—$1,500.

Lower Payette River Public Access, Gem County—easement for right of way and parking area—1.55 acres—$400.

Land Disposal

Wolf Lodge Holding Ponds, Kootenai County, sale of surplus lands—4.12 acres—received $3,000.

Hagerman Refuge, Gooding County, Sale of Department lands for highway right of way—9.82 acres—received $800.

Construction and Maintenance

The following Construction and Maintenance was accomplished during the biennium period, details for which may be found in the Management Division reports.

Construction

Completed Dagger Falls Fishway
Salmon River Fish Screens
Sanitary Facilities Salmon River
Niagara Springs Public Access Area
Atwater Lake Access
Payette River Public Access
Lewiston Orchard Game Farm
Hagerman Hatchery
Eagle Hatchery
Cocolalla Lake
Salmon Warehouse
Salmon River Public Use Area
Mores Creek
Boise River
Sand Dune Lakes Public Use Area
Reservoir (A), Public Access
Lucky Peak Public Access
Farragut Public Access
Cocolalla Lake Public Area
Ashton Hatchery
Hayspur Hatchery
Chatcolet Lake

Painting

Sand Creek Management Area
Hagerman Refuge
C. J. Strike Refuge
Jerome Game Farm

Improvement

C. J. Strike Access Road
Sand Dune Lakes Access
Dog Creek Public Access
Mackay Public Access
Glendale Reservoir and Public Access Area
Salmon Warehouse Yard
Salmon River Screens
Gold Island Management Unit
Moore Lake Management Area
Carey Lake Management Area
Hagerman Management Area
Administration Building, Boise
Jerome District Office
Hagerman Management Area Shop
Garden Valley Administration Site
Powell Administration Site
Ashton Hatchery
Twin Falls Hatchery
American Falls Hatchery
Hayspur Hatchery
Clark Fork Hatchery
Market Lake Refuge
Lucky Peak Reservoir—Survey
Waha Lake Public Access
Sandpoint Hatchery

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, stalilization 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 percent, 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, $3,596,624.77 in federal apportionments has been allocated to the State of Idaho.

The following financial report is for the period July 1, 1958 to June 30, 1960:

Unobligated balance of Federal funds, July 1, 1958	$ 49,087.59
Federal Appropriation for Fiscal Year 1959	314,351.29
Federal Appropriation for Fiscal Year 1960	296,603.43
Total Federal money available to finance approved projects for period July 1, 1958 to June 30, 1960	$660,042.31
Unobligated balance of Federal funds as of June 30, 1960	$ 83,269.54

Federal Aid in Wildlife Restoration Projects Initiated During Biennium July 1, 1958 to June 30, 1960

Project			Federal	State	Est. Total
Coordination					
FW	40-C-18	Coordination	$ 16,497.61	$ 5,499.21	$ 21,996.82
FW	40-C-19	Coordination	20,655.00	6,885.00	27,540.00
		Total Coordination	$ 37,152.61	$ 12,384.21	$ 49,536.82
Development					
FW	2-D- 7	C. J. Strike Wildlife Mgmt. Area	$ 11,775.00	$ 3,925.00	$ 15,700.00
FW	2-D- 8	C. J. Strike Wildlife Mgmt. Area	12,375.00	4,125.00	16,500.00
FW	4-D- 6	Carey Lake Development	3,750.00	1,250.00	5,000.00
FW	4-D- 7	Carey Lake Development	4,725.00	1,575.00	6,300.00
W	36-D-10	Hagerman Refuge	11,175.00	3,725.00	14,900.00
W	36-D-11	Hagerman Refuge	14,175.00	4,725.00	18,900.00
W	55-D-12	North Lake Wildlife Mgmt. Area	18,150.00	6,050.00	24,200.00
W	55-D-12	North Lake Wildlife Mgmt. Area.	450.00	150.00	600.00
W	55-D-13	North Lake Wildlife Mgmt. Area	19,350.00	6,450.00	25,800.00
W	60-D- 8	Boundary County Refuge	2,025.00	675.00	2,700.00
W	60-D- 9	Boundary County Refuge	1,050.00	350.00	1,400.00
W	64-D- 8	Boise River Deer and Elk Range	16,900.00	4,500.00	21,400.00
W	64-D- 8	Boise River Deer and Elk Range	3,150.00	1,050.00	4,200.00
W	64-D- 9	Boise River Deer and Elk Range	6,300.00	2,100.00	8,400.00
W	73-D- 8	Star Lake Management Area	8,100.00	2,700.00	10,800.00
W	73-D- 9	Star Lake Management Area	9,675.00	3,225.00	12,900.00
W	80-D-12	Game Habitat Improvement	42,675.00	14,225.00	56,900.00
W	80-D-13	Game Habitat Improvement	38,550.00	12,850.00	51,400.00
W	89-D- 9	Sand Creek Wildlife Mgmt. Area	13,275.00	4,425.00	17,700.00
W	89-D-10	Sand Creek Wildlife Mgmt. Area	18,225.00	6,075.00	24,300.00
W	103-D- 5	Farragut Wildlife Mgmt. Area	825.00	275.00	1,100.00
W	113-D- 5	Primitive Area Winter Range	5,475.00	1,825.00	7,300.00
W	113-D- 6	Primitive Area Winter Range	7,125.00	2,375.00	9,500.00
W	116-D- 3	Market Lake Wildlife Mgmt. Area	12,375.00	4,125.00	16,500.00
W	116-D- 3	Market Lake Wildlife Mgmt. Area	3,370.50	1,123.50	4,494.00
W	116-D- 4	Market Lake Wildlife Mgmt. Area	16,500.00	5,500.00	22,000.00
W	119-D- 1	Gold Island Wildlife Mgmt. Area	4,200.00	1,400.00	5,600.00
W	120-D- 1	Boise and Payette Rivers Access	3,150.00	1,050.00	4,200.00
W	120-D- 2	Boise and Payette Rivers Access	5,850.00	1,950.00	7,800.00
W	121-D- 1	Hunter Access Roads	4,500.00	1,500.00	6,000.00
W	123-D- 1	Snow Removal	3,000.00	1,000.00	4,000.00
W	126-D- 1	Albeni Falls Wildlife Mgmt. Area	4,275.00	1,425.00	5,700.00
		Total Development	$326,495.50	$107,698.50	$434,194.00

Lands				
W 9-L-5	Hagerman Refuge	$ 66.00	$ 22.00	$ 88.00
W 115-L-4	Market Lake Wildlife Mgmt. Area	37,593.75	12,531.25	50,125.00
W 117-L-1	Statewide Land Leases	4,137.23	1,379.07	5,516.30
W 117-L-2	Statewide Land Leases	386.25	128.75	515.00
W 117-L-3	Statewide Land Leases	922.50	307.50	1,230.00
W 117-L-4	Statewide Land Leases	332.25	110.75	443.00
W 122-L-1	Boise and Payette Rivers Access	1,200.00	400.00	1,600.00
W 122-L-2	Boise and Payette Rivers Access	975.00	325.00	1,300.00
W 122-L-3	Boise and Payette Rivers Access	15,187.50	5,062.50	20,250.00
W 127-L-1	Fort Boise Wildlife Mgmt. Area	24,525.00	8,175.00	32,700.00
	Total Lands	$ 85,325.48	$ 28,441.82	$113,757.30
Research				
W 85-R-11	Game Population Cens. and Rge.	$ 87,750.00	$ 29,250.00	$117,000.00
W 85-R-12	Game Population Cens. and Rge.	105,000.00	35,000.00	140,000.00
W 111-R- 6	Artificial Revegetation Studies	537.36	179.12	716.48
W 111-R- 7	Artificial Revegetation Studies	6,375.00	2,125.00	8,500.00
W 111-R- 8	Artificial Revegetation Studies	6,375.00	2,125.00	8,500.00
W 125-R- 1	Sage Grouse Investigations	9,225.00	3,075.00	12,300.00
	Total Research	$215,262.36	$ 71,754.12	$287,016.48

Summary of Initiated Projects

Type of Project	Federal	State	Estimated Total	% of Total Money Obligated
Coordination Projects	$ 37,152.61	$ 12,384.21	$ 49,536.82	5.6
Development Projects	326,495.50	107,698.50	434,194.00	49.1
Land Projects	85,325.48	28,441.82	113,767.30	12.9
Research Projects	215,262.36	71,754.12	287,016.48	32.4
TOTAL	$664,235.95*	$220,278.65	$884,514.60	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.

Fish Restoration

The following financial report is for the period July 1, 1958 to June 30, 1960:

Unobligated balance of Federal funds, July 1, 1958	$ 3,218.67
Federal Appropriation for Fiscal Year, 1959	75,250.42
Federal Appropriation for Fiscal Year, 1960	83,269.54
Total Federal money available to finance approved projects for period July 1, 1958 to June 30, 1960	$161,738.63
Unobligated balance of Federal funds as of June 30, 1960	6,914.33

Federal Aid in Fish Restoration and Management Projects Initiated During Biennium

July 1, 1958 to June 30, 1960

		Federal	State	Est. Total
Coordination				
FW 40-C-18	Coordination	$ 3,621.43	$ 1,207.14	$ 4,828.57
FW 40-C-19	Coordination	4,845.00	1,615.00	6,460.00
	Total Coordination	$ 8,466.43	$ 2,822.14	$ 11,288.57
Development				
F 40-D- 1	Glendale Res. Public Access	1,492.50	497.50	1,990.00
	Total Development	$ 1,492.50	$ 497.50	$ 1,990.00
Research				
F 3-R- 9	Biological and Economic Survey of Lake Pend Oreille	$ 7,500.00	$ 2,500.00	$ 10,000.00
F 3-R- 9	Biological and Economic Survey of Lake Pend Oreille	750.00	250.00	1,000.00
F 3-R-10	Biological and Economic Survey of Lake Pend Oreille	5,100.00	1,700.00	6,800.00
F 18-R- 5	Statewide Fishing Harvest	2,850.00	950.00	3,800.00
F 18-R- 6	Statewide Fishing Harvest	1,875.00	625.00	2,500.00
F 22-R- 5	Experimental Rough Fish Control	13,500.00	4,500.00	18,000.00
F 22-R- 6	Experimental Rough Fish Control	11,437.50	3,812.50	15,250.00
F 32-R- 2	Tests for Increasing the Returns of Hatchery Trout	7,875.00	2,625.00	10,500.00
F 32-R- 3	Tests for Increasing the Returns of Hatchery Trout	9,450.00	3,150.00	12,600.00
F 34-R- 2	Water Quality Investigations	15,000.00	5,000.00	20,000.00
F 34-R- 3	Water Quality Investigations	13,500.00	4,500.00	18,000.00
F 37-R- 1	Middle Fork Salmon River	5,025.00	1,675.00	6,700.00
F 37-R- 2	Middle Fork Salmon River	7,875.00	2,625.00	10,500.00
F 38-R- 1	Blackfoot River Fishery Investigation	4,275.00	1,425.00	5,700.00
F 38-R- 2	Blackfoot River Fisheries Investigation	4,800.00	1,600.00	6,400.00
	Total Research	$110,812.50	$ 36,937.50	$147,750.00
Lands				
F 39-L-1	Glendale Res. Public Access	$ 375.00	$ 125.00	$ 500.00
F 41-L-1	Silver Creek Public Access	9,037.50	3,012.50	12,050.00
F 42-L-2	Little Bear Creek Reservoir	28,545.00	9,515.00	38,060.00
	Total Lands	$ 37,957.50	$ 12,652.50	$ 50,610.00

Summary of Initiated Projects

Type of Project	Federal	State	Estimated Total	% of Total Money Obligated
Coordination	$ 8,466.43	$ 2,822.14	$ 11,288.57	5.3
Development	1,492.50	497.50	1,990.00	1.0
Research	110,812.50	36,937.50	147,750.00	69.8
Land	37,957.50	12,652.50	50,610.00	23.9
TOTAL	$158,728.93*	$ 52,909.64	$211,638.57	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.

DETAIL OF CASH RECEIPTS
FISH AND GAME FUND NO. 6

July 1, 1958 – June 30, 1960

		Number	
1	Resident Hunting and Fishing	213,796	$ 917,763.65
1A	Resident Hunting	126,678	329,760.91
1B	Resident Fishing	126,715	336,844.55
2A	Non-Resident Hunting and Fishing	11,554	823,222.50
2B	Non-Resident Bird	5,461	103,759.00
2C	Non-Resident Season Fishing	28,387	323,611.80
2E	Non-Resident 5-Day Fishing	73,543	279,539.40
2F	Tourist First-Day Fishing	25,312	48,092.80
2G	Tourist Additional 1-Day Fishing	8,481	8,056.95
	Non-Resident Gun	9	17.10
	Shipping Permits	2,067	826.80
	Deer Tags	255,693	242,908.35
	Elk Tags	111,322	211,511.80
	Extra Deer Tags	8,400	7,980.00
	Middle Fork Deer Tags	3,373	3,204.35
	Beaver Tags	17,872	16,978.40
	Commission Saved		4,912.61
	Resident Trapper	1,421	7,105.00
	Commercial Fishing	366	3,660.00
	Resident Outfitter	272	1,360.00
	Guide License	224	1,120.00
	Resident Fur Buyer	74	370.00
	Taxidermist	33	330.00
	Private Pond Permit	83	830.00
	Game Bird Farm Permit	49	490.00
	Non-Resident Outfitter	29	725.00
	Non-Resident Trapper	7	525.00
	Non-Resident Fur Buyer	7	140.00
	Deer Permits	2,300	6,900.00
	Elk Permits	4,278	21,390.00
	Moose Permits	192	4,800.00
	Moose Tags	192	1,920.00
	Sheep Permits	39	975.00
	Sheep Tags	673	6,730.00
	Goat Permits	120	600.00
	Goat Tags	323	3,230.00
	Antelope Permits	2,650	7,950.00
	Antelope Tags	2,777	2,777.00
	Erroneous License Sales		83.10
	R. A. M. (insufficent checks)		261.25
	Total License and Permits		$3,733,262.32
	Rentals		33,454.72
	Fines and Confiscations		37,477.78
	Miscellaneous Sales		13,326.11
	Sale of Capital Assets		12,433.69
	Insurance Adjustments		675.04
	Refunds		54,063.32
	Interest and Conscience Money		25.00
	Total Receipts Fund No. 6		$3,884,717.98

TABULATION OF LICENSE SALES BY SERIES

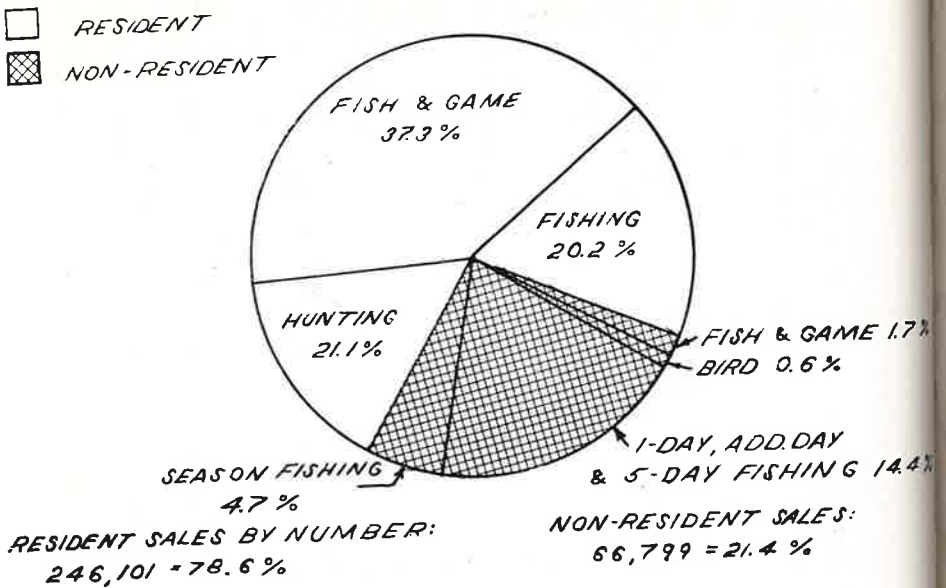
	Resident Fish and Game	Resident Game	Resident Fish	Non-Res. Big Game	Non-Res. Bird	Non-Res. Fish	Tourist 1st Day Fish	Additional One Day Fish	Shipping Permits	Trophy Licenses	Deer Tags	Elk Tags	Goat	Sheep	Archery Antelope
1947	123,552	32,571	28,970	1,471	876	8,411	27,683		2,890	413	82,034	27,361	140		
1948	123,122	39,043	35,720	1,610	1,260	8,697	28,739		3,552	390	88,229	24,731			
1949	118,442	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	45,071	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	45,393	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		75	89
1956	104,944	56,962	54,305	4,046	1,334	12,874	41,686		1,191		114,019	52,627	63	193	92
1957	104,035	57,086	57,504	4,882	1,818	13,837	45,063		1,253		327*	50,732	76		
											110,836‡				
											7,166†				
1958	106,423	63,958	62,613	5,112	2,175	14,601	44,419		1,075		120,448‡	54,920	96	255	58
											9,123†				
											2,687*				
1959	108,325	62,281	59,825	6,369	3,261	14,270	30,492	22,433	7,717	1,005	123,335‡	56,381	108	379	69
											3,373*				
											8,400†				

*Middle Fork Deer Tags
‡Regular Deer Tags
†Extra Deer Tags

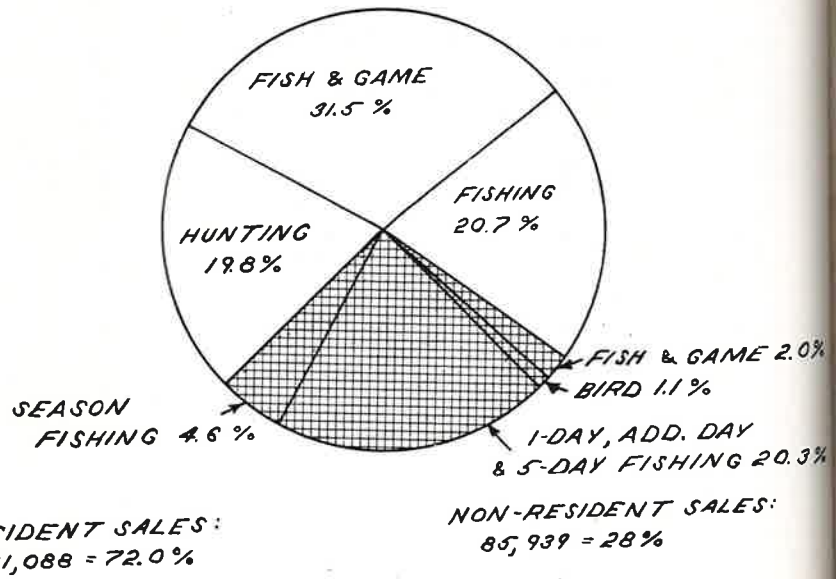
RESIDENT AND NON-RESIDENT

Sporting License Sales

ANNUAL COMPARISON BY NUMBERS



July 1, 1958 — June 30, 1959

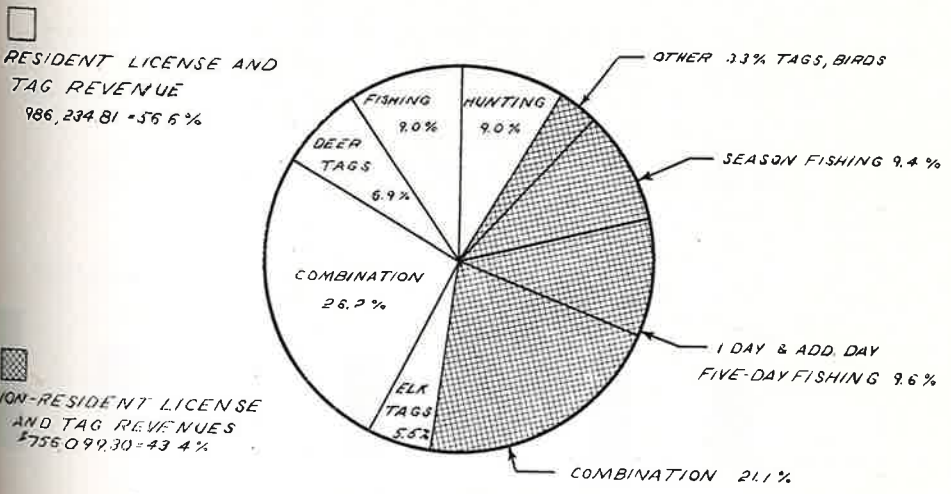


July 1, 1959 — June 30, 1960

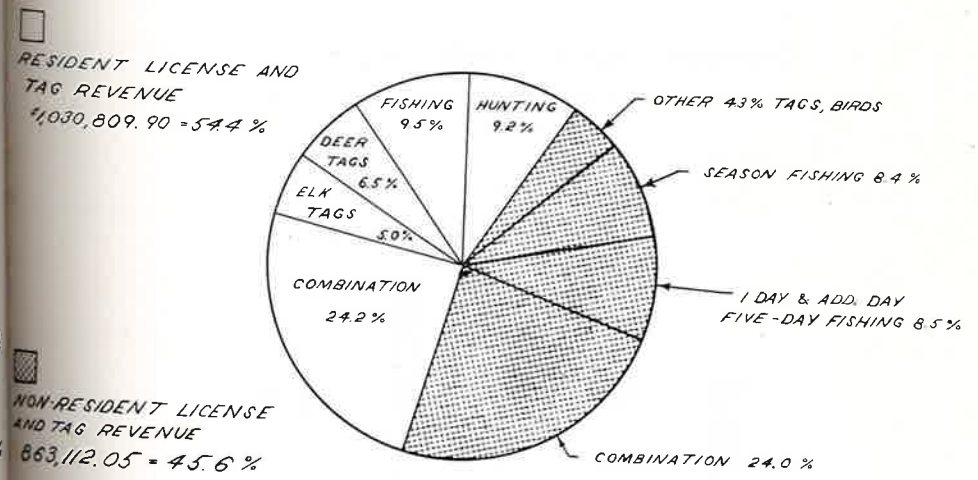
RESIDENT AND NON-RESIDENT

Sporting License Sales

ANNUAL COMPARISON BY DOLLARS



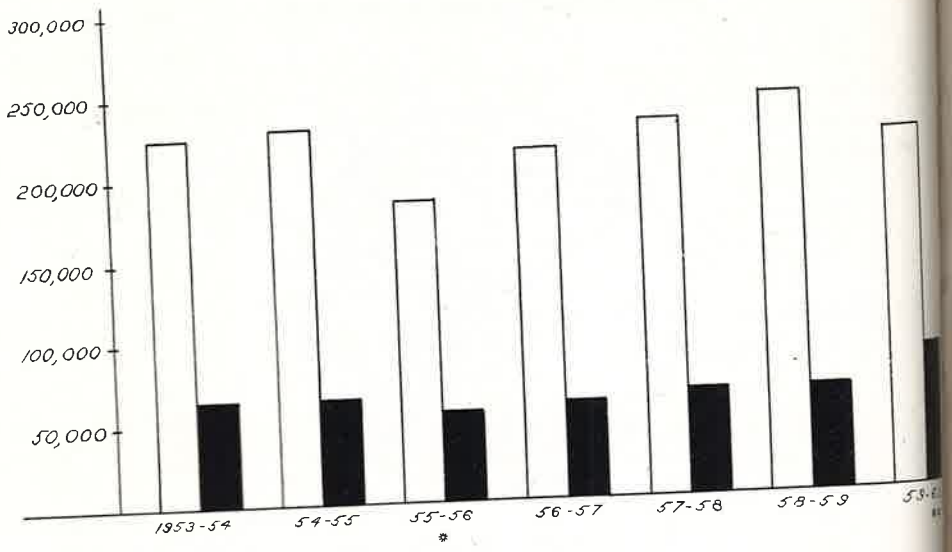
July 1, 1958 — June 30, 1959



July 1, 1959 — June 30, 1960

Comparison of Sporting License Sale

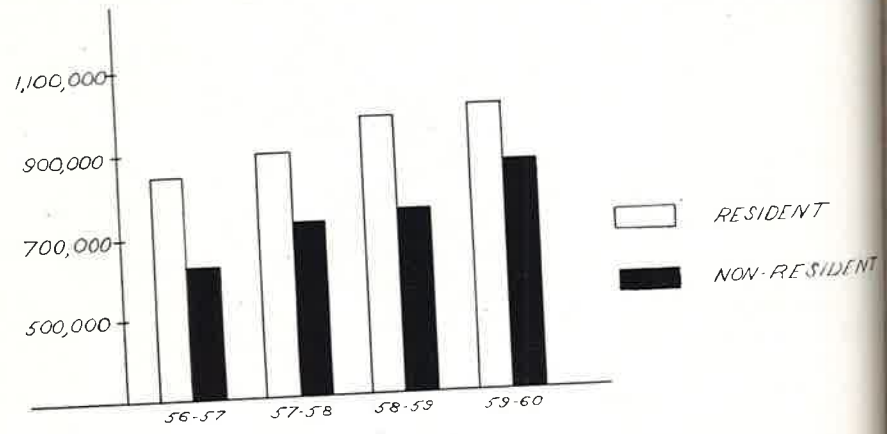
BY NUMBER



*Fiscal year following license increase.
**Fiscal year following license increase and new tourist license.

Comparisons of Sporting License Sales

BY DOLLARS, LICENSES AND TAGS



Comparisons of Sporting License Sales

SALES BY NUMBER

		Resident		Non-Resident	
		Number	Percent	Number	Percent
Fiscal Year					
	1959-60	221,088	72.0	85,939	28.0
	1958-59	246,101	78.6	66,799	21.4
	1957-58	231,385	78.0	66,495	22.0
	1956-57	215,828	78.0	59,570	22.0
New License					
	1955-56	185,782	76.5	56,897	23.5
	1954-55	231,404	77.5	67,092	22.5
	1953-54	224,712	77.2	66,057	22.8

Sporting License and Tag Sales by Dollars

Fiscal Year					
	1959-60	$1,030,809.90	54.4	$863,112.05	45.6
	1958-59	986,234.81	56.6	756,099.30	43.4
	1957-58	900,834.21	55.0	734,969.40	45.0
	1956-57	856,309.00	58.0	629,945.00	42.0

STATEMENT OF TOTAL FUND OPERATIONS

July 1, 1958 – June 30, 1960

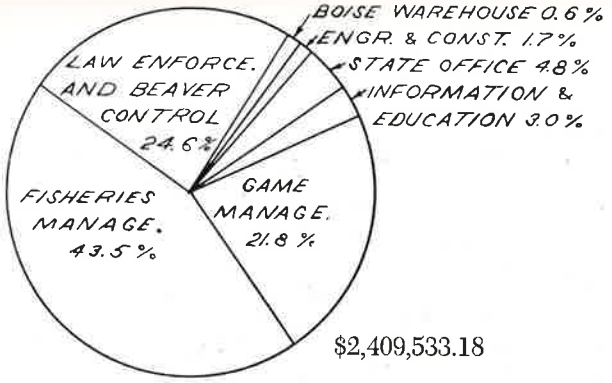
	Fish and Game	Predatory Animal Control	Pittman-Robertson	Dingell-Johnson	Columbia River	Special Studies	Rotary Fund	Total
Beginning Balance	$ 453,304.30	$ 2,081.14	$145,355.05	$ 44,690.05	$149,291.40	$	$1,000.00	$ 795,721.94
Revenue Total Receipts	3,884,717.98		376,198.01	116,868.59	504,310.22	20,731.78		4,902,826.58
Department Transfers	-107,147.68	52,620.00	82,000.00	15,000.00	-55,472.32	12,000.00	1,000.00	
Total Funds Available	4,230,874.60	54,701.14	603,553.06	176,558.64	598,129.30	32,731.78	2,000.00	5,698,548.52
Disbursments								
Salaries and Wages	1,740,592.77	32,149.91	299,658.52	75,156.48	213,492.78	17,304.02		2,378,354.48
Travel	120,646.94	430.45	16,017.50	5,092.05	17,265.16	3,985.21		163,437.31
Other Expenses	1,086,353.07	17,030.26	201,141.13	40,056.97	91,740.73	2,641.38		1,438,963.54
Capital Outlay	589,293.57	17.78	79,782.34	16,805.28	190,708.20	296.70		876,903.87
Refunds	968.27				3,905.11			4,873.38
Total Expense	3,537,854.62	49,628.40	596,599.49	137,110.78	517,111.98	24,227.31		4,862,532.58
State Transfers	73,481.33	177.81	6,235.03	1,882.02	4,323.16	329.04		86,428.39
Total Disbursments	3,611,335.95	49,806.21	602,834.52	138,992.80	521,435.14	24,556.35		4,948,960.97
Fund Balance	619,538.65	4,894.93	718.54	37,565.84	76,694.16	8,175.43	2,000.00	749,587.55
Less Outstanding Orders	47,716.75		4,278.95	1,508.50	4,996.02			58,500.22
Unencumbered Fund Balance	$ 571,821.90	$ 4,894.93	$ -3,560.41	$ 36,057.34	$ 71,698.14	$ 8,175.43	$2,000.00	$ 691,087.33

Analysis of Revenues and Expenditures

How Your Fish and Game Dollar Was Used

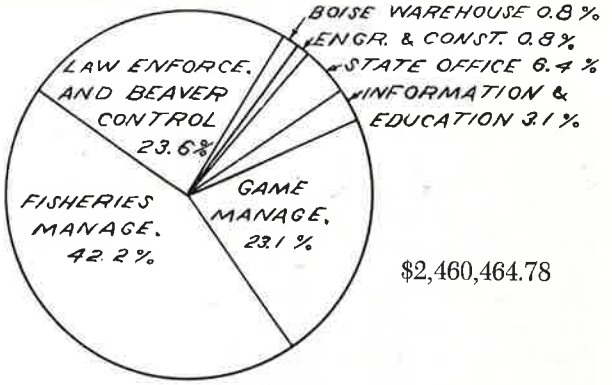
TOTAL FUND OPERATIONS

FISCAL YEAR ENDING JUNE 30, 1959



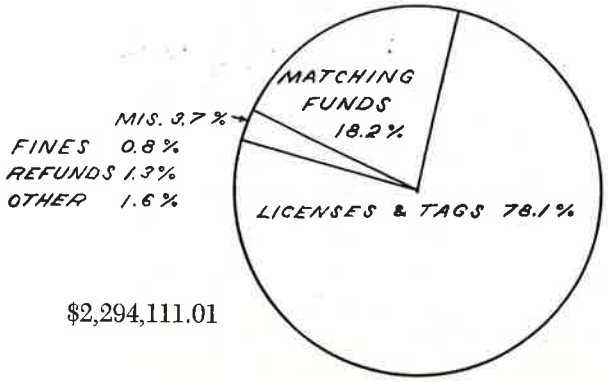
$2,409,533.18

FISCAL YEAR ENDING JUNE 30, 1960

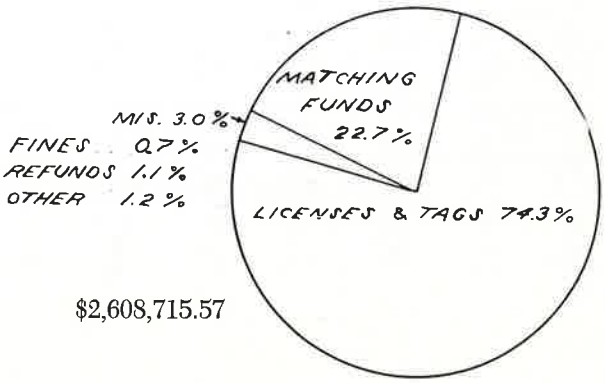


$2,460,464.78

Sources of Revenue



$2,294,111.01

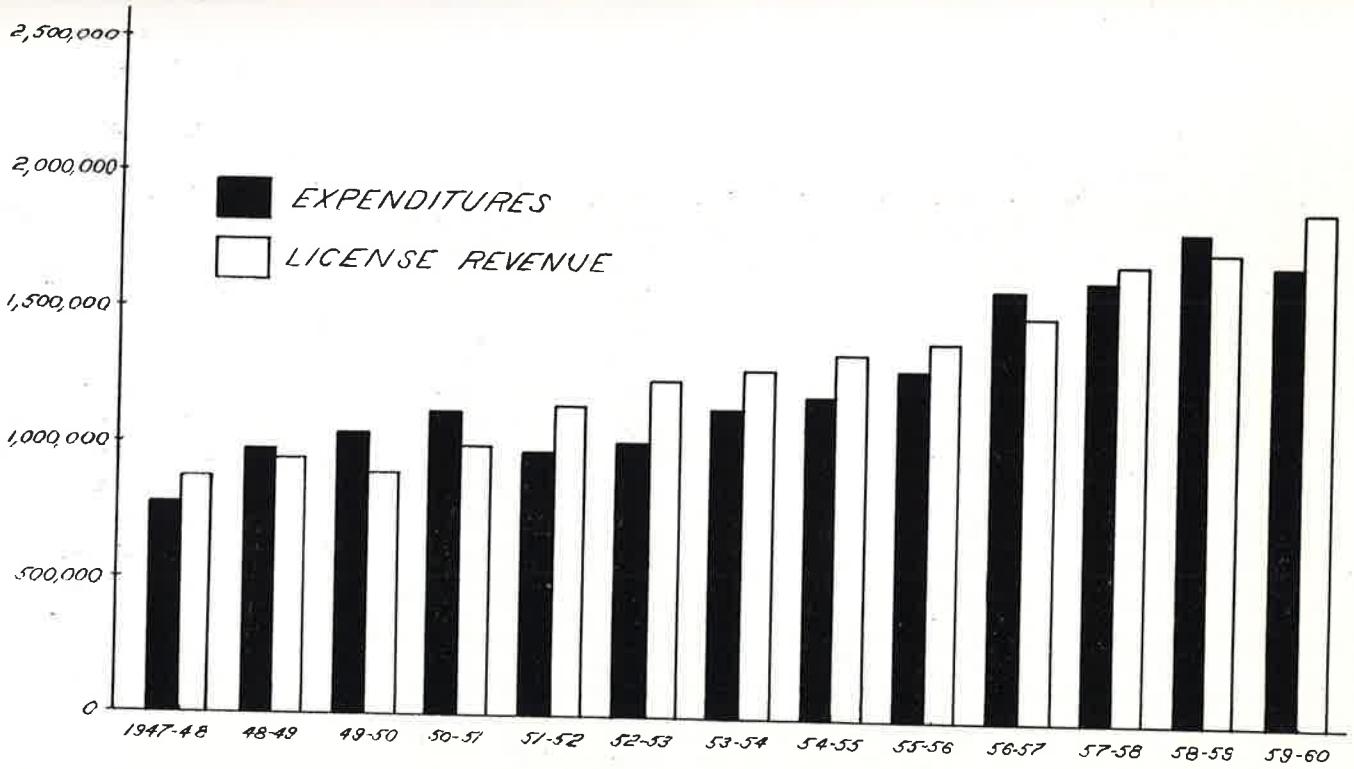


$2,608,715.57

COMPARISONS OF EXPENDITURES AND REVENUE

	Fish and Game	Predatory Animals	Pittman-Robertson	Dingell-Johnson	Columbia River	Special Studies	Beaver Pelts	Total	License Revenue
1946-47	$ 644,682.04	$52,257.54	$ 36,455.81	$	$	$	$117,139.66	$ 850,535.05	$ 718,945.20
1947-48	772,029.21	51,537.71	121,255.65				151,241.01	1,096,063.58	877,528.55
1948-49	976,279.61	51,607.17	138,104.75				88,854.91	1,254,846.44	958,876.60
1949-50	1,051,683.39	32,726.88	366,494.77				92,697.08	1,543,602.12	906,618.15
1950-51	1,124,914.38	40,284.39	162,294.42				134,172.50	1,461,665.24	987,709.73
1951-52	986,360.09	27,018.42	243,217.95	7,829.64			56,987.35	1,321,413.45	1,139,871.25
1952-53	1,021,142.99	29,005.64	321,217.31	28,013.64			82,846.87	1,482,226.45	1,258,275.20
1953-54	1,156,832.56	33,985.14	409,535.23	48,794.78			55,354.98	1,704,502.69	1,283,120.00
1954-55	1,190,160.95	30,744.11	377,521.87	115,529.63			92,477.50	1,806,434.06	1,364,474.96
1955-56	1,316,078.29	32,860.77	446,618.77	92,749.24			52,321.26	1,940,627.82	1,395,822.37
1956-57	1,592,846.12	30,432.39	620,966.90	113,833.60	37,507.22		37,950.00	2,433,536.23	1,523,500.96
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
1958-59	1,833,379.12	23,335.04	274,415.35	77,802.34	200,601.33		-o-	2,409,533.18	1,793,606.67
1959-60	1,704,475.50	26,293.36	322,184.14	59,308.44	319,099.07	21,638.89	-o-	2,452,999.40	1,939,655.65

Fish and Game Fund 6. Comparisons



DETAIL STATEMENT OF EXPENDITURES

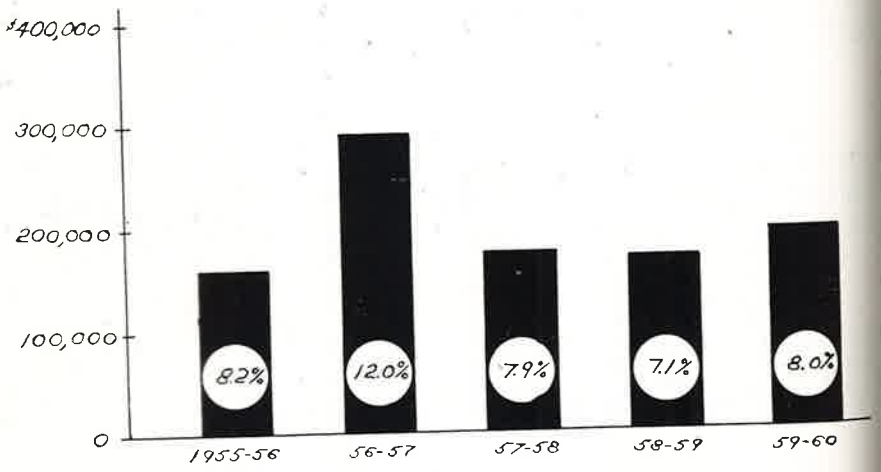
July 1, 1958 – July 30, 1960

FISH AND GAME FUND ONLY

	Total	Salaries and Wages	Travel	Operating Expense	Capital Outlay	Refunds
Fish and Game Fund #6	$3,537,854.62	$1,740,592.77	$120,646.94	$1,086,353.07	$589,293.57	$968.27
Administration	369,561.53	232,464.04	24,543.63	119,489.36	7,903.77 cr.	968.27
Headquarters	248,716.52	145,983.78	10,043.36	88,286.86	3,434.25	968.27
Commission	14,073.62	2,470.00	10,368.60	1,195.27	39.75	
Construction	62,643.47	54,780.97	3,586.76	16,409.14	12,133.40 cr.	
S-Printing	9,450.68	8,868.00	....	113.34 cr.	696.02	
S-Shop	4,847.53	8,951.50	232.64	2,120.51	6,457.12 cr.	
Warehouse	28,368.37	11,170.85	64.60	12,561.32	4,571.60	
Service	1,461.34	238.94	247.67	970.40 cr.	1,945.13	
Conservation Enforcement	1,173,225.42	741,999.45	55,346.64	239,491.85	136,387.48	
Headquarters	38,954.14	21,676.37	2,463.02	13,761.44	1,053.31	
Region 1 Panhandle	174,190.83	104,843.03	5,739.24	36,878.57	26,729.99	
Region 2 Clearwater	172,604.62	107,051.49	8,539.78	32,246.22	24,767.13	
Region 3 Western	215,285.29	143,449.95	10,241.90	42,593.24	19,000.20	
Region 4 Magic Valley	240,686.09	152,021.07	11,988.86	47,814.91	28,861.25	
Region 5 Eastern	272,023.90	176,856.79	12,323.80	52,225.72	30,617.59	
Region 6 Salmon	55,176.91	34,936.00	3,451.30	11,515.57	5,274.04	
Beaver Control	4,303.64	1,164.75	598.74	2,456.18	83.97	
Fisheries Management	1,403,817.90	447,943.37	25,502.68	567,470.17	362,901.68	
Headquarters	68,823.32	38,862.12	8,175.19	9,572.23	12,213.78	
Management	212,146.76	67,609.53	7,598.82	51,352.63	85,585.78	
Transportation	133,289.21	16,346.05	1,977.47	30,720.96	84,244.73	
American Falls	134,409.85	37,526.66	737.71	74,659.50	21,485.98	
Ashton	70,113.20	20,434.00	930.82	31,397.06	23,351.32	
Clark Fork	68,897.07	23,632.90	672.24	40,043.95	4,547.98	
Eagle	61,847.44	33,357.04	708.76	22,797.71	4,983.93	
Grace	96,331.97	21,959.40	700.50	46,851.52	26,820.55	
Grangeville	3,485.42	2,044.73	60.85	1,379.84	....	
Hagerman	288,612.29	64,164.90	528.29	147,069.99	76,849.11	
Hayspur	53,280.77	20,737.35	382.85	22,698.35	9,462.22	
Henry's Lake	8,632.83	6,161.75	147.90	2,081.52	241.66	
Mackay	73,919.01	28,075.55	1,029.79	42,875.75	1,937.92	
McCall	21,553.41	12,789.35	314.00	6,962.62	1,487.44	
Mullan (Hale)	29,702.59	15,014.66	470.08	7,015.98	7,201.87	
Sandpoint	20,506.91	12,542.50	258.60	6,410.92	1,294.89	
Twin Falls	28,982.24	12,981.25	234.50	15,633.46	133.03	
Warm River	12,092.77	7,150.66	141.69	4,346.07	454.35	
Fernwood-Wolf Lodge	3,414.43	2,030.10	10.85	1,150.85	222.63	
Kamiah	7,776.41	4,522.87	421.77	2,449.26	382.51	
Game Management	444,534.00	237,901.86	12,001.31	107,919.84	86,710.99	
Headquarters	42,329.45	23,426.99	1,250.66	3,344.17	14,307.63	
Big Game	151,143.34	85,925.64	4,837.45	31,919.41	27,460.84	
Farragut Mgmt. Area	32,445.48	12,186.34	327.55	13,999.35	5,932.24	
Bird Section	100,097.46	59,409.71	3,905.80	19,517.01	17,264.94	
Eagle Holding Pens	....	....	....	....	....	
Jerome Game Farm	41,877.91	22,334.73	387.25	18,588.49	567.44	
Lapwai Game Farm	44,173.09	22,393.25	548.88	18,592.20	2,638.76	
Fur Management	17,249.40	11,161.20	661.15	1,953.86	3,473.19	
Lewiston	15,217.87	64.00	82.57	5.35	15,065.95	
Information and Education	146,715.77	80,284.05	3,252.68	51,981.85	11,197.19	

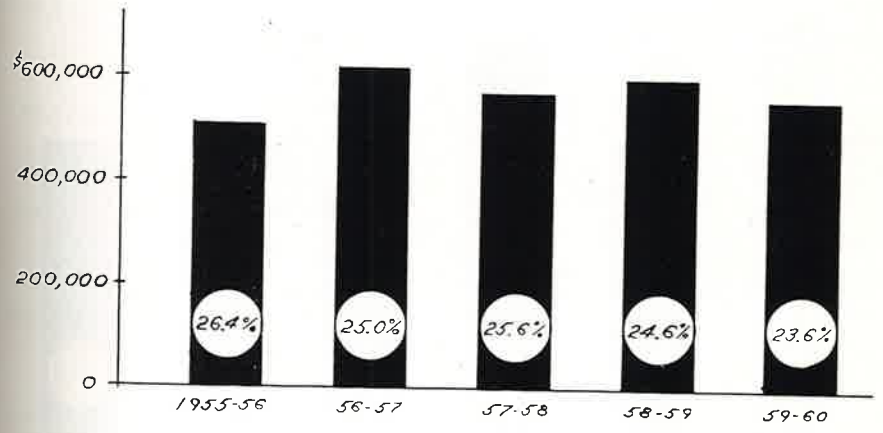
Administration Division
Expenditure Comparisons–All Funds

	Commission and Headquarters		Engineering and Construction		Warehouse		Total	
1955-56	$109,219.00	5.6%	$26,553.00	1.3%	$ 24,485.00	1.3%	$160,257.00	8.2%
1956-57	133,380.17	5.5%	48,066.60	2.0%	110,795.85	4.5%	292,242.62	12.0%
1957-58	127,257.00	5.7%	38,383.00	1.7%	10,856.00	0.5%	176,496.00	7.9%
1958-59	115,697.00	4.8%	42,360.00	1.7%	13,909.00	0.6%	171,966.00	7.1%
1959-60	158,005.25	6.4%	20,283.27	0.8%	19,306.93	0.8%	197,595.45	8.0%



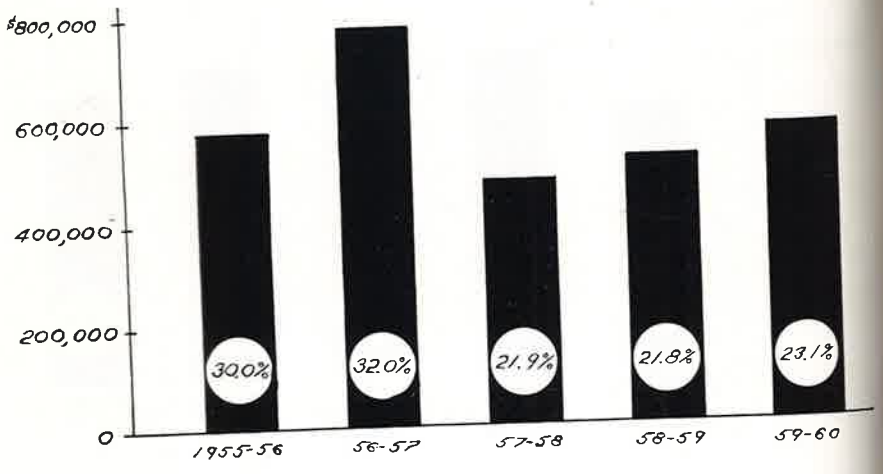
Conservation-Enforcement Division
Expenditure Comparisons–All Funds

	Fish and Game	Beaver Control	Beaver Pelts	Total	
1955-56	$459,407.00	$	$52,321.00	$511,728.00	26.4%
*1956-57	559,615.30	13,968.69	37,950.00	611,533.99	25.0%
1957-58	534,769.00	11,511.00	21,679.81	567,960.00	25.6%
1958-59	592,796.00	1,041.00	.....	593,837.00	24.6%
1959-60	576,125.96	3,262.19	.....	579,388.15	23.6%



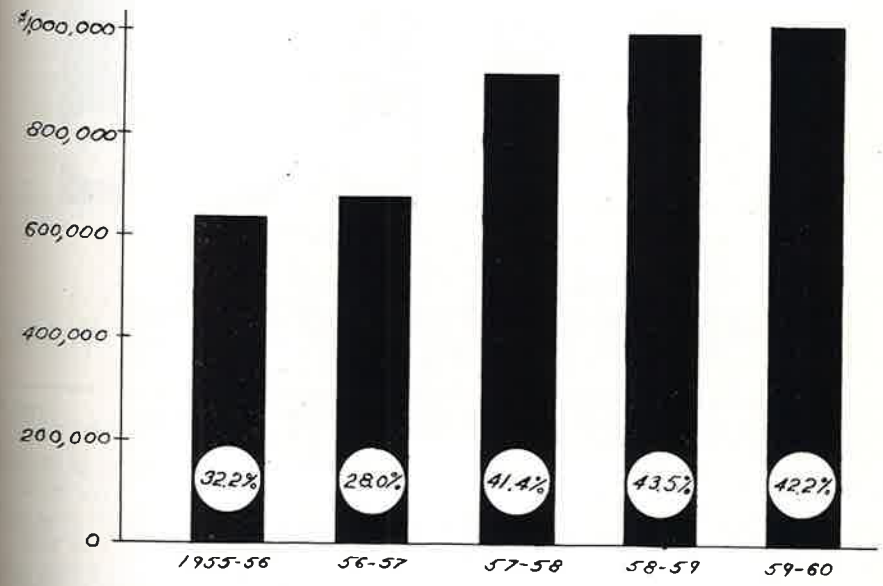
Game Management Division
Expenditure Comparisons–All Funds

	Fish and Game	Predator Animal	Pittman-Robertson	Total	
1955-56	$102,127.00	$32,861.00	$446,619.00	$581,607.00	30.0%
*1956-57	125,527.04	30,432.39	620,966.90	776,926.33	32.0%
1957-58	199,889.00	23,212.65	261,618.53	484,720.00	21.9%
1958-59	225,717.00	23,335.00	274,416.00	523,468.00	21.8%
1959-60	218,816.93	26,293.36	322,184.14	567,294.43	23.1%



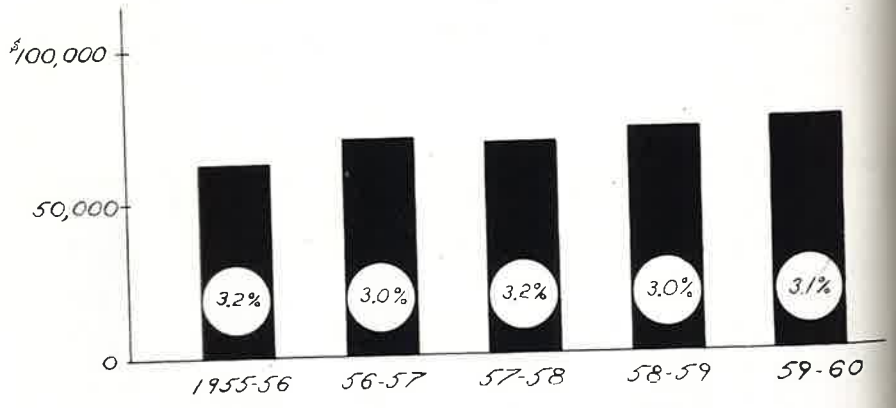
Fisheries Management Division
Expenditure Comparisons–All Funds

	Fish and Game	Dingell-Johnson	Columbia River	Special Studies	Total	
1955-56	$532,298.00	$92,749.00	$	$	$ 625,047.00	32.2%
*1956-57	531,309.94	113,833.60	37,507.22	....	682,650.76	28.0%
1957-58	672,775.00	117,072.38	126,985.10	....	916,833.00	41.4%
1958-59	769,652.00	77,802.00	200,601.00	....	1,048,055.00	43.5%
1959-60	634,166.27	59,308.44	319,099.07	21,638.89	1,034,212.67	42.2%



Information & Education Division
Expenditure Comparisons–All Funds

1955-56	$61,989.00	3.2%
***1956-57	70,182.53	3.0%
1957-58	69,992.84	3.2%
1958-59	72,207.07	3.0%
1959-60	74,508.70	3.1%



OPERATING RATIO COMPARISONS
ALL FUNDS

	1955-56	1956-57	1957-58	1958-59	1959-
Salaries and Wages	$ 904,571.00 46.6%	$1,008,664.00 41.4%	$1,077,895.00 48.6%	$1,148,236.00 47.6%	$1,230,11 50.1%
Travel	70,409.00 3.6%	95,697.00 3.9%	73,206.00 3.3%	78,326.00 3.3%	85,11 3.5%
Operating Expenses	625,072.00 32.2%	632,600.00 26.0%	708,220.00 32.0%	710,576.00 29.4%	728,38 29.7%
Capital Outlay	340,381.00 17.5%	694,712.00 28.6%	356,205.00 16.0%	468,149.00 19.5%	408,75 16.6%
Refunds	195.00 .01%	1,863.00 .01%	476.00 .01%	4,246.00 .02%	627.52 .01%
Total	$1,940,628.00	$2,433,536.00	$2,216,002.00	$2,409,533.00	2,452,99

EXPENDITURE COMPARISONS
FISHERIES MANAGEMENT DIVISION–FISH AND GAME FUND

	1955-56	1956-57	1957-58	1958-59	1959-60
Headquarters	$ 91,769.32	$ 49,910.08	$ 49,394.27	$ 33,238.62	$ 35,584.70
Fisheries Management		23,905.62	75,481.97	105,164.82	106,981.94
Fish Transportation	33,381.84	33,365.81	15,314.36	110,927.85	22,361.36
Hatcheries					
American Falls	47,335.58	45,024.64	59,521.48	73,744.77	60,665.08
Ashton	16,414.38	21,328.62	24,511.73	29,203.20	46,910.00
Clark Fork	24,052.06	53,371.70	32,089.34	33,049.97	35,847.10
Eagle	26,611.02	33,960.25	35,854.05	33,315.17	28,532.27
Grace	52,638.90	28,510.11	41,897.05	57,343.09	38,988.88
Grangeville	2,137.32	2,004.16	3,748.35	2,525.87	959.55
Hagerman	96,009.61	123,609.48	183,369.42	157,738.54	130,873.75
Hayspur	17,612.49	19,711.76	21,649.97	27,974.66	25,306.11
Henry's Lake	3,595.68	7,642.47	5,161.17	3,592.72	5,040.11
Mackay	77,242.99	29,847.83	62,986.19	38,690.98	35,228.03
McCall	7,396.29	8,762.51	12,818.33	12,454.60	9,098.81
Mullan	6,460.26	9,283.72	9,528.59	12,737.49	16,965.10
Sandpoint	6,576.43	13,260.37	7,865.47	10,646.18	9,860.73
Twin Falls	14,931.27	16,807.67	16,022.22	14,071.60	14,910.64
Warm River	3,239.46	7,214.67	4,318.88	4,933.16	7,159.61
Fernwood-Wolf Lodge	2,924.23	1,804.79	3,731.19	2,850.84	563.59
Kamiah	1,968.94	1,983.68	7,511.10	5,447.50	2,328.91
TOTAL	$532,298.07	$531,309.94	$672,775.13	$769,651.63	$634,166.27

EXPENDITURE COMPARISONS
GAME MANAGEMENT DIVISION–FISH AND GAME FUND

	1955-56	1956-57	1957-58	1958-59	1959-60
Headquarters	$ 42,332.72	$ 34,646.23	$ 32,178.15	$ 16,997.20	$ 25,332.25
Big Game Management		23,906.80	73,038.14	85,033.91	66,109.43
Farragut Mgmt. Area	9,499.75	12,319.34	16,422.23	19,206.98	13,238.50
Bird Management		7,059.29	31,625.91	50,892.00	49,205.46
C. J. Strike Refuge	886.17				
Eagle Pens	566.50	911.69	357.00	-o-	-o-
Jerome Game Farm	23,414.25	23,552.49	25,898.00	19,758.44	22,119.47
Lapwai Game Farm	25,427.40	23,131.20	20,369.66	26,644.63	17,528.46
Lewiston Area	-o-	-o-	-o-		15,217.87
Fur Management				7,183.91	10,065.49
TOTAL	$102,126.79	$125,527.04	$199,889.09	$225,717.07	$218,816.93

EXPENDITURE COMPARISONS
ADMINISTRATION DIVISION – FISH AND GAME FUND

	1955-56	1956-57	1957-58	1958-59	1959-60
Headquarters	$109,219.13	$123,235.51	$111,361.84	$104,893.12	$143,823.4
Service		19,311.16	13,429.42	11,236.14	1,079.9
Commission		5,462.40	4,164.25	5,993.86	8,079.7
Construction and Maintenance	26,553.16	128,402.39	38,383.23	42,360.20	20,283.2
Electronic Data Processing					5,022.7
Printing		4,682.26			2,378.7
Shop		3,082.87			
Warehouse	24,484.59	8,066.03	9,157.86	7,482.76	16,928.2
TOTAL	$160,256.88	$292,242.62 ***	$176,496.60	$171,966.08	$197,595.4 *

EXPENDITURE COMPARISONS
CONSERVATION ENFORCEMENT–FISH AND GAME FUND

		1955-56	1956-57	1957-58	1958-59	1959-6
Headquarters		$ 13,232.37	$ 18,625.43	$ 20,106.01	$ 19,117.26	$ 19,836.8
Panhandle	1	69,631.66	76,513.36	80,757.02	86,265.59	87,925.3
Clearwater	2	66,284.28	73,305.51	72,846.96	90,916.37	81,688.3
Western	3	89,337.91	122,865.63	108,004.46	114,257.03	101,026.3
Magic Valley	4	108,564.43	137,192.50	121,317.78	135,659.15	105,026.3
Eastern	5	112,356.18	131,112.87	131,736.30	146,580.42	125,443.4
Salmon		-o-	-o-	-o-	-o-	55,176.3
Beaver Control		-o-	13,968.69	11,511.39	1,041.45	3,261.2
TOTAL		$459,406.83	$573,583.99	$546,279.92	$593,837.27	$579,388.3

Columbia River Fisheries Development Program
Expenditure Comparisons

Construction Funds as of June 30, 1960

Federal appropriation fiscal year 1957	$200,000.00	
Federal appropriation fiscal year 1958	125,000.00	
Federal appropriation fiscal year 1959	300,000.00	
Federal appropriation fiscal year 1960	24,375.00	
Advance on 1961 appropriation	44,972.05	
Total Federal Funds available for program		694,347.05
Disposition of Funds		
CRP- 1 Investigation and Planning	266,000.00	
CRP- 2 Access and fill at Salmon Warehouse	* 1,344.82	
CRP- 3 Salmon Warehouse Plans and Specifications	* 1,975.97	
CRP- 4 Well at Salmon Warehouse	* 539.00	
CRP- 5 Dagger Falls Plans and Specifications	* 9,207.26	
CRP- 6 Fish Screens Plans and Specifications	8,300.00	
CRP- 7 Operation and Maintenance (1959)	*	
CRP- 8 Fish Screen Construction	192,000.00	
CRP- 9 Operation and Maintenance (1959)	*	
CRP-10 Dagger Falls Fishway Construction	114,480.00	
Dagger Falls Access	50,000.00	
CRP-11 Salmon Warehouse Construction	50,500.00	
Total Funds Expended or Contracted		694,347.05
Balance Federal Appropriation June 30, 1960		-o-

Operation and Maintenance Funds as of June 30, 1960

Federal Appropriation Fiscal Year 1960		14,625.00
CRP-12 Operation and Maintenance Screens	14,625.00	
Balance Federal Appropriation June 30, 1960		-o-

*Project Completed

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*

Twenty-Ninth Biennial Report

of the

FISH AND GAME DEPARTMENT

of the

STATE OF IDAHO

July 1, 1960 to June 30, 1962