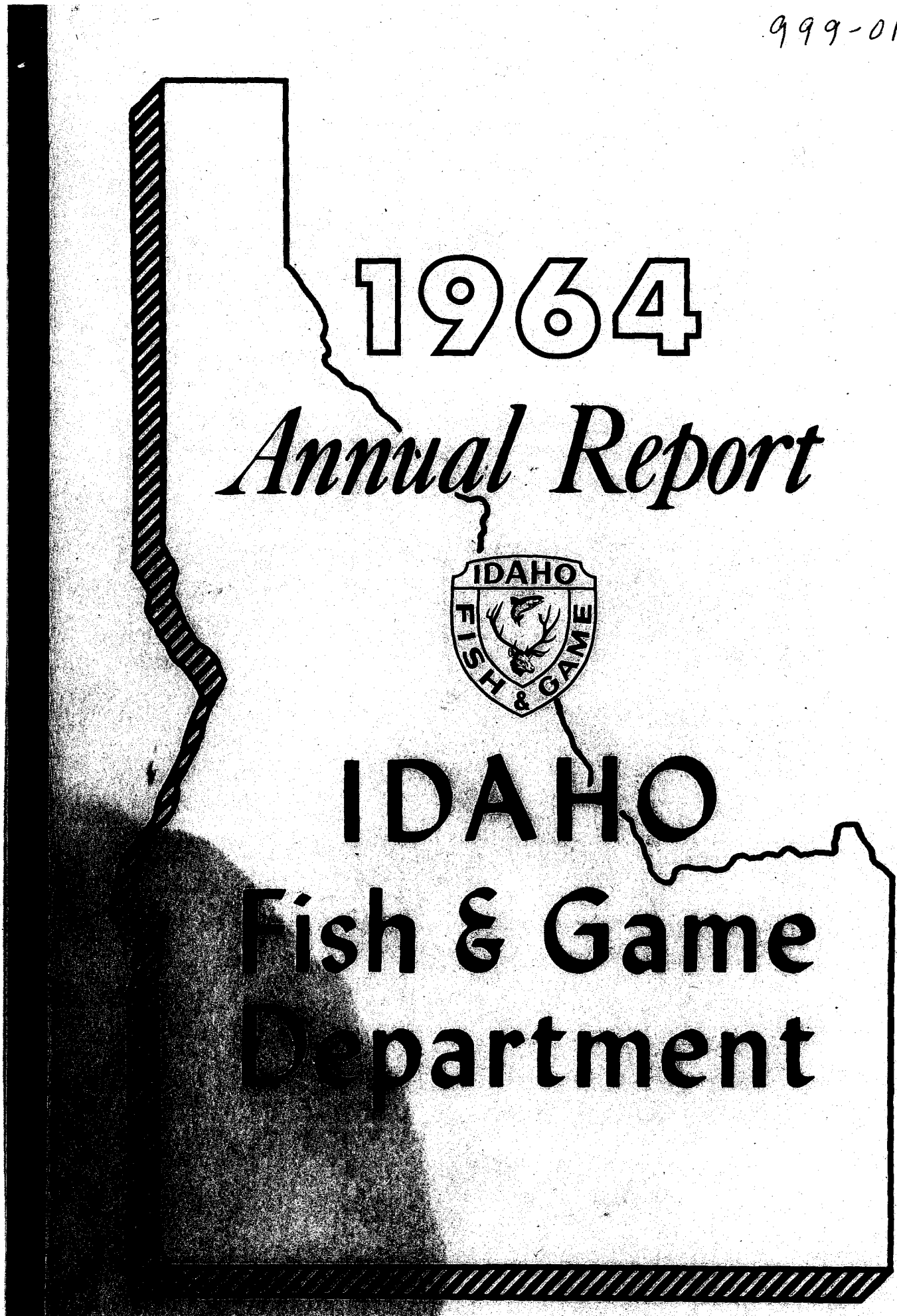
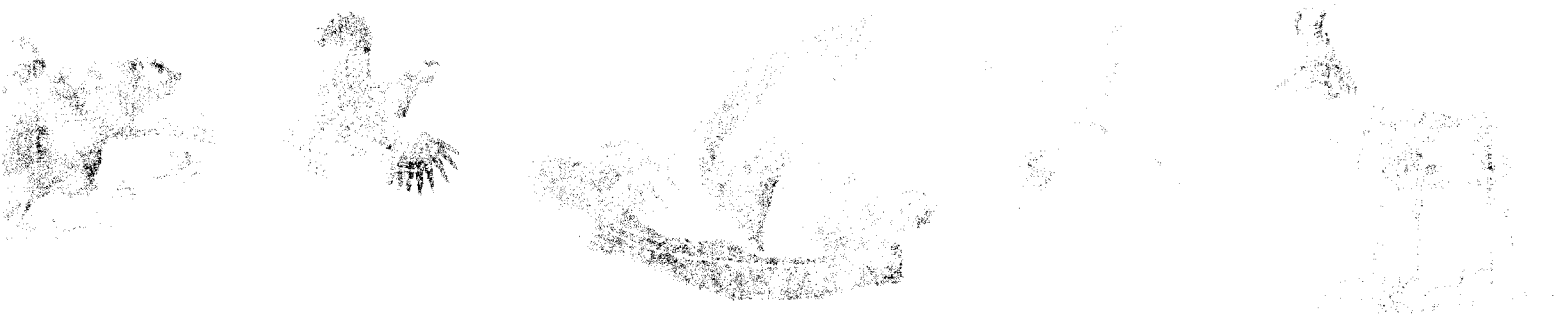


1964

Annual Report

IDAHO Fish & Game Department



IDAHO FISH AND GAME DEPARTMENT

JOHN R. WOODWORTH, Director

POST OFFICE BOX 25
600 SOUTH WALNUT STREET
BOISE, IDAHO, 83701

June 1, 1965

The Honorable Robert E. Smylie
Governor, State of Idaho
Statehouse
Boise, Idaho

Dear Governor Smylie:

We are pleased to submit to you, in compliance with Section 36-1116, Idaho Code, this Annual Report of activities and operations of the Idaho Fish and Game Department for 1964.

Operating for the first complete year with revenues available from increased license fees as a part of our Five Point Program, we moved to expand our operations in every phase. Regular projects were continued and new ones added. Our construction and public access programs were greatly enlarged. In addition to our daily operations, we have prepared long-range plans which will keep pace with the population increase and growth of our State.

Idaho had an exceptionally good fishing year during 1964. Kokanee harvest from Lake Pend Oreille exceeded one million fish. Larger mackinaw (lake trout) were again taken at Priest Lake and Kamloops trout from Pend Oreille. Sturgeon fishing was very good on the Lower Snake River.

Magic Reservoir in central Idaho was an outstanding trout producer. Idaho rivers and streams were heavily stocked as hatcheries produced close to one million pounds of fish during the year. An important change was made in our fish feed to improve the nutritional value. This, in turn, has reduced the cost per pound to produce trout. Cost of producing and planting one pound of trout was down to 52 cents in 1964.

Fisheries research and management operations were expanded throughout the State with extensive studies on 22 lakes and reservoirs. Salmon and steelhead studies were intensified and fish passage facilities evaluated.

Additional fish screens were placed in the Salmon River system. Water quality investigations were conducted on the Snake and Boise Rivers. New facilities were installed at eleven of the State fish hatcheries to improve production.

Game management operations featured significant advances in habitat studies and range improvement. Proper harvest of big game, birds and furbearing animals depends on accurate information at all times.

The deer harvest was about six per cent above 1963--slightly above the 10-year average. Elk harvest decreased 5 per cent under last year. Pheasant hunting results were excellent--about 20 per cent above the long-term average. Harvest of other upland game birds varied with species but was about average. Waterfowl harvest was highest on record, partially due to a longer season than normal. Over 100 hunting and fishing public access sites were operated, maintained or developed during the year.

The conservation enforcement division has expanded operations with additional duties and responsibilities. In addition to law enforcement, field men take part in game and fisheries management, information and education, and administration. Officers are devoting time to preventive enforcement through group contacts and all news media. The Department's first Basic Training School was organized in 1964 to provide training in all phases of fish and game operations. Radio communications were improved by relocating two mobile repeater stations. Forty-three search and rescue missions were accomplished during the year.

Increased use of outdoor resources for hunting, fishing and other forms of recreation has, in turn, placed additional demands on the Fish and Game Department for information services. A constant flow of information to the public is vital and necessary to obtain support for modern wildlife management. One major division effort during the year was preparation of an extensive Ten Year Program Report. Major emphasis was placed on teaching Hunter Safety to Idaho children. Cooperative work with the Idaho Landholder-Sportsman Council led to a new statewide billboard-type information program. Additional news and special feature material was issued. A new publication "Idaho Lowland Lakes and Reservoirs" was issued to the public. The "Big Game Winter Range" film was revised to furnish up-to-date information about this wildlife problem.

The general increase in all Department operations was reflected in the Business Administration Division during 1964 by the heaviest work load in its history. All Department property has been placed on a new inventory list and data processing equipment use expanded. One of the largest construction programs in Department history was undertaken with the start of a new headquarters office in Boise. Accelerated Public Works Projects aided public access and fisheries programs in northern and eastern Idaho. Approximately 1,400 acres were purchased and 1,900 acres leased for management areas or access sites during the year.

Idaho's resources of wildlife, scenery and space for people to visit provide the base for a tremendous future in the recreational field. Public support of wildlife management programs and financial support from hunting and fishing license sales give us the basic needs for realistic operations. We look with real confidence to the future of hunting and fishing in Idaho.

Sincerely,

IDAHO FISH AND GAME DEPARTMENT

John R. Woodworth

John R. Woodworth
Director

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Game Management

A most significant development in recent years has been the increased public appreciation of the specialized requirements which game birds and big game animals have for certain kinds of habitat. Of particular importance to wildlife in much of southern Idaho is sagebrush, which is the key to sage grouse management and a vital factor in carrying mule deer herds through the winter on many foothill ranges.

Wildlife needs are now given consideration through joint field inspection by Fish and Game Department and Bureau of Land Management personnel of all brush removal programs proposed by the Bureau of Land Management. On-the-ground inspection of these brush spraying proposals results in recommendations which should spare key wildlife habitat which would be lost otherwise. This cooperative effort to consider wildlife needs on public lands is probably the biggest single advancement made in game management for 1964. Local residents can cooperate in this program by conferring with local employees of the Fish and Game Department to call to their attention additional ways in which wildlife habitat can be benefited via better range management.

Since wildlife occurs on both public and private lands, the interest and assistance of all land operators, both public and private, is needed if the various game and fur animals are to be maintained at optimum numbers.

The year 1964 saw many advancements in game management efforts in the areas of habitat restoration, research and continuing field surveys which resulted in another successful year for hunters and trappers. Details of the year's work are reviewed on the following pages.

BIG GAME

The goal of Idaho's big game management program is to produce the maximum amount of sustained annual recreational hunting of the highest possible quality, compatible with other land uses.

Selecting the hunting regulations which will allow Idaho license buyers the opportunity to obtain "...the maximum amount of hunting..." from each species of big game animals from each area of the state requires a continuous flow of information on (1) big game populations, (2) hunter harvests, and (3) range conditions.

Supplying this information is the responsibility of the big game management biologist who conducts and coordinates the annual trend counts, range studies and check station operations in which all Department personnel participate.

Tabulation and analysis of the information, preparation of essential reports, and attendance at meetings with other agencies and groups concerned with big game and public lands, is a major and vital part of the area biologist's job. The annual work cycle culminates each spring when final recommendations for the current year's big game hunting regulations are prepared.

Management

Management operations are organized by grouping the 78 big game management units and sub-units into eight geographical regions with a biologist in each area. One of the major accomplishments in 1964 was a complete reorganization of the reporting and record keeping system whereby essential big game data is now assembled by individual management units. Formerly one annual statewide report on each operation such as harvest, census, range work, etc., was prepared. Also, steps were taken in a program to improve and standardize check station procedures.

1964 Big Game Seasons and Regulations:

Opening dates for general big game hunting seasons were established by the Fish and Game Commission at its January meeting, enabling hunters and outfitters to make plans for their fall activities far in advance. Final regulations other than opening dates were established in April. Highlights of the 1964 big game hunting regulations are outlined as follows:

1) All hunting seasons open on a Saturday (bighorn sheep and mountain goat formerly opened September 1, and "back country" deer and elk on September 15).

2) Special "archery-only" hunting season dates and areas were consolidated.

3) General seasons continued in most units for both elk and deer.

4) Controlled elk hunts were continued in the Soldier Mountain, Wood River, Owyhee, Cassia and southeastern Idaho areas. New controlled elk hunts were added in the Upper Big Lost River, Bennett Mountain and Craig Mountain areas.

5) Controlled deer hunts were continued in the Soldier Mountain, Three Creek and Cassia units.

6) Under the regulations permitting a hunter to take a total of not more than three deer, 13 units were open for the taking of an additional deer; using the Extra deer tag in 11 units, and the Middle Fork tag in two units.

7) The special nonresident restricted deer or bear license was again offered to nonresident hunters for $25. This permitted the taking of one deer only from 26 designated management units during the general season, or the taking of one bear in any general bear hunting area during the regular season.

8) Bighorn sheep hunting for 3/4 curl rams continued as a general season in the same areas as 1963, and a controlled hunt was established in the Henrys Lake portion of Fremont County.

9) Moose and antelope hunting continued on a controlled hunt basis.

10) Both general and controlled hunts were continued for mountain goats in the same areas as 1963.

Harvest Data:

Information on the annual big game harvest is obtained principally from hunter report cards, the post-season hunter questionnaire and check stations.

Hunter Report Cards: Business reply cards attached to the big game tag are detached, filled out and mailed by the hunter after an animal has been killed. Tabulation of data from this source reveals:

1) Relative importance of the harvest on each day of the hunting season.

2) Relative importance of local hunting areas within a unit at different times of the season.

3) Ratio of males to females in the harvest and shifts in this ratio throughout the season.

4) Residence of hunters taking animals from each unit.

Weekly compilation of this report card information on data processing machines makes current figures available at any time during or following the season.

Hunter Questionnaire: Each year since 1953, a post-hunting season questionnaire has been mailed to approximately five per cent of the hunting license holders. This sample from a valid cross section of all classes of license buyers provides a reliable gauge of the statewide deer, elk and bear harvest.

Information from both the hunter report cards and the questionnaire is combined to calculate the total deer and elk kill from individual units.

Check stations: At points where large numbers of hunters can be contacted or where special localized information is needed, check stations are operated to obtain data on date and location of kill, hunting success and sex, age and condition of animals taken.

1964 Big Game Harvest (Deer and Elk):

The estimated statewide harvest for 1964 includes 67,379 deer and 13,835 elk. Compared to 1963, these totals show an increase of about six per cent for deer and a decrease of five per cent for elk.

Annual Big Game Harvest*

Species	1964	1963	1962	Ten-Year Average 1954-1963
Deer	67,379	63,546	66,645	67,317
Elk	13,835	14,542	13,653	14,933
Bear	3,499	2,444	3,951	2,928
Antelope	839	774	549	782
Mountain Goat	161	171	144	87
Bighorn Sheep	35	49	58	41
Moose	59	52	45	76

* Deer, elk and bear data from post-season hunter questionnaire. Antelope, goat, sheep and moose data for 1964 based on total reported kills from hunter report cards, follow-up letter, and personal contact by Conservation Officers. Harvest of these species in preceding years based on report cards and follow-up letter only.

Indicated Deer and Elk Harvest, by Unit, 1962 through 1964

(Based on Hunter Questionnaire and Report Cards)

Unit Number	Area (sq. miles)	Deer Harvest 1964	Deer Harvest 1963	Deer Harvest 1962	Elk Harvest 1964	Elk Harvest 1963	Elk Harvest 1962
1	2306	1461	1728	1426	33	45	78
2	666	622	803	687	19	20	26
3	517	691	572	597	93	50	96
4	1440	543	925	677	437	558	392
5	582	790	646	393	76	63	36
6	884	717	833	643	672	838	642
7	539	115	104	176	216	345	335
8	1679	1349	1378	1423	568	441	556
9	475	132	95	158	352	431	418
10	1863	503	551	461	1692	1537	1575
10A	652	921	886	925	246	293	260
11	739	895	1006	962	CH	CLOSED	CLOSED
11A	648	313	347	291	14	35	10
11B	273	69	80	62	0	1	0
12	1216	118	136	167	603	721	917
13	351	1227	1085	1277	22	13	10
14	353	201	178	241	30	40	52
15	929	336	290	306	475	596	652
16	518	165	101	192	385	343	478
16A	228	30	50	71	213	328	265
17	1440	211	443	350	835	1199	1128
18	295	1069	865	1234	52	33	57
19	323	487	735	718	284	393	431
19A	593	266	*	*	98	*	*
20	447	171	335	278	344	738	702
20A	801	132	*	*	287	*	*
21	477	230	430	464	268	313	265
21A	184	171	*	*	137	*	*
22	811	1967	2765	2722	112	90	78
23	556	484	610	563	44	85	65
24	956	276	338	343	123	120	78
25	885	484	631	681	259	280	325
26	566	418	166	544	169	223	304
27	903	836	1239	2001	205	240	281
27A	823	266	290	294	134	90	94
28	1085	457	456	374	161	185	130
29	729	329	376	368	CLOSED	CLOSED	CLOSED
30	453	536	542	554	131	95	21
30A	243	217	243	247	CLOSED	CLOSED	CLOSED
31	597	553	791	653	19	18	10
32	1911	750	1076	1315	44	90	62
33	794	1888	1491	1652	287	200	257
34	488	306	225	220	210	160	164
35	366	622	744	609	161	153	109
36	2479	1510	1523	1398	177	270	234

Indicated Deer and Elk Harvest, by Unit, 1962 through 1964 (continued)

Unit Number	Area (sq. miles)	Deer Harvest 1964	Deer Harvest 1963	Deer Harvest 1962	Elk Harvest 1964	Elk Harvest 1963	Elk Harvest 1962
37	536	273	199	486	CLOSED	CLOSED	CLOSED
37A	370	776	148	*	CLOSED	CLOSED	*
38	2142	63	56	59	CLOSED	CLOSED	CLOSED
39	2615	7528	5159	5803	707	661	546
40	1402	1372	1920	2629	CH	CH	CH
41	3029	1204	1538	1608	CH	CH	CH
42	419	747	978	1432	CLOSED	CLOSED	CLOSED
43	804	681	788	755	CH	CH	CH
44	283	CH	CH	CH	CH	CH	CH
45	1348	322	240	390	CH	CLOSED	CLOSED
46	3665	444	382	356	CLOSED	CLOSED	CLOSED
47	321	CH	CH	CH	CLOSED	CLOSED	CLOSED
48	878	1072	1052	1141	CH	CH	CH
49	539	434	323	402	CH	CH	CH
50	1352	1461	966	826	CH	CLOSED	CLOSED
50A	191	*	*	269	*	*	CLOSED
51	994	381	367	257	CLOSED	CLOSED	CLOSED
52	2428	145	110	99	CLOSED	CLOSED	CLOSED
53	1567	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
54	1357	CH	CH	CH	CH	CH	CLOSED
55	1004	1079	1514	1803	CLOSED	CLOSED	CLOSED
56	878	862	797	1056	CLOSED	CLOSED	CLOSED
57	565	135	142	226	CLOSED	CLOSED	CLOSED
58	692	145	190	139	CLOSED	CLOSED	CLOSED
59	1201	1142	993	1593	120	10	44
60	1431	290	169	186	CH	CH	CH
61	987	546	534	393	325	308	237
62	563	79	68	136	60	23	31
63	1031	26	21	19	CLOSED.	CLOSED	CLOSED
64	512	1043	252	851	CH	CH	CLOSED
65	246	53	68	71	CH	CH	CLOSED
66	1082	3609	1224	1042	CH	CH	CH
67	278	1188	1532	501	52	95	49
68	2033	CLOSED	12	12	CLOSED	CLOSED	CLOSED
69	685	546	267	334	CH	CH	CH
70	261	530	738	CH	CH	CH	CH
71	337	592	513	430	CLOSED	CLOSED	CLOSED
72	392	266	276	282	CLOSED	CLOSED	CLOSED
73	600	1688	1689	1247	CH	CLOSED	CLOSED
73A	650	817	812	1407	CH	CLOSED	CLOSED
74	1693	1277	1233	1080	CLOSED	CLOSED	CLOSED
75	650	710	785	1098	CLOSED	CLOSED	CLOSED
76	210	2569	2922	1435	CH	CH	CH
76A	285	*	*	1664	*	*	CH
77	275	319	344	384	3	28	18
78	227	609	655	851	11	10	31
Unknown	-	1947	1674	3165	571	573	939

* - Unit did not exist during this season
CH - Controlled Hunt

Hunting pressure, as indicated by tag sales records, was nearly identical with last year for deer and slightly lower for elk. Statewide hunter success was similar to 1963; about 50 per cent for deer and 25 per cent for elk.

Compared to the ten-year averages (1954 through 1963) of 67,317 deer and 14,933 elk, the 1964 deer kill was about par, but the elk kill was off about 7 per cent.

Deer: Deer harvests in local areas included big increases in the kill for some units such as the Boise River (unit 39), the Patterson Unit (37A) on the Pahsimeroi, and units 64 and 66 along the South Fork of the Snake River in eastern Idaho where ideal hunting conditions, longer seasons and/or extra deer provisions stimulated hunting.

The reverse was true in other cases like unit 22 (Cuddy Mountain) where hunters missed the best hunting conditions because the main migration of animals to the winter ranges in the Snake River Canyon occurred after the season closed. In other important deer areas (Owyhee Units 40, 41 and 42) the harvest was smaller in 1964 because of a decline in the number of hunters.

A significant point of the deer harvest is that two areas (units 39 and 66) which had a greater-than-normal winter loss during 1963-64 produced exceptionally good deer hunting in 1964. This points out that (1) past harvests were probably more conservative than necessary and (2) deer have a strong reproductive capacity with the full potential yet to be realized in many big game management units.

Elk: The elk kill in most units followed the decline shown by the statewide harvest, but a few scattered units in various parts of the State produced more elk in 1964 than in 1963.

In some important elk areas, unusual weather conditions during late summer apparently affected the distribution of the animals and even experienced hunters had difficulty locating elk during the early part of the season.

Deer and Elk Harvest by Month-1964
(Based on hunter report cards)

Month	DEER		ELK	
	Number of Units open each month*	Per Cent of reported harvest	Number of Units open each month*	Per Cent of reported harvest
September	17	4	20	14
October	45	51	65	63
November	48	37	67	23
December	3	8	10	**

* Season length varied from unit to unit, but a unit is counted here even though it may have been open during only part of the month; units which were hunted in two or more months are counted for each month in which hunting was permitted.

** Less than one per cent.

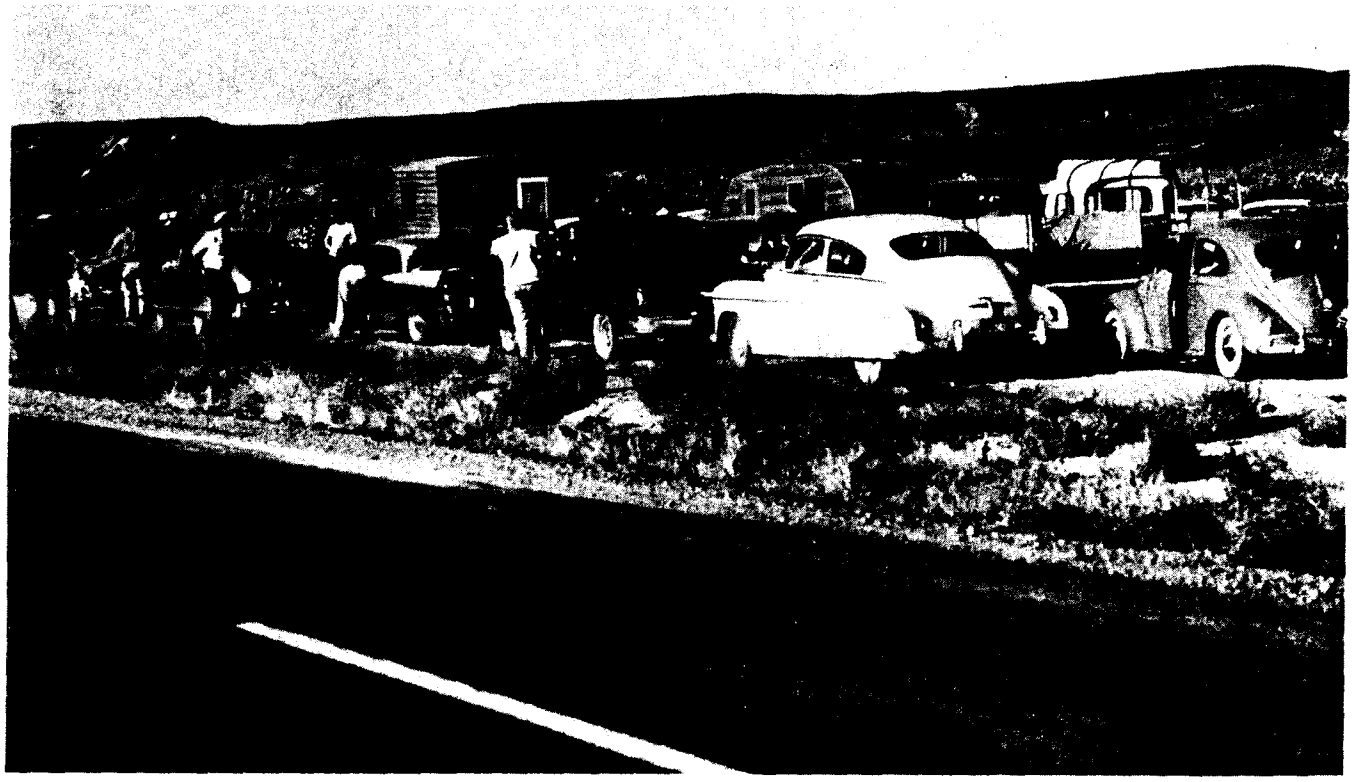
Special Deer Tags:

In addition to the "regular" deer tag valid in any part of Idaho during the open season, a resident hunter could take additional deer by purchasing "Extra" or "Middle Fork" tags for certain units. Also, a nonresident could kill one deer only by the use of a special "Nonresident Restricted" tag in certain designated units.

The importance of these tags in the statewide deer harvest and in individual units is shown in the following tables. The bulk of Idaho's deer kill still depends on the "regular" tag, but use of the other tags is a valuable management tool for adjusting the desired hunting pressure and harvest in certain units.

Deer Harvest by Type of Tag Used 1964
(Data from hunter report cards)

Tag	Total Reported Kill	Per Cent of Total
Regular	17,400	85
Extra	2,519	12
Middle Fork	248	1
Nonresident Restricted Deer	320	2
TOTALS	20,487	100



Valuable game management information is gathered from thousands of hunters at Department checking stations each fall. These hunters are checking out from the deer hunt in Owyhee County.

Deer Harvest by Type of Tag by Units-1961 through 1964
(Data from hunter report cards)

	Tag Used	Units Included	Reported Kill			% Harvest Using Spec. Tag
			Regular Tags	Special Tags	Total	
1961	Extra Deer	42,75,76,78	999	1309	2308	57
	Middle Fork	27*	243	259	502	52
	Middle Fork	26	118	204	322	63
	Hells Canyon	13,18*,22	990	1588	2578	62
1962	Extra Deer	42,59,64,75, 76,76A,78	2132	1677	2909	58
	Middle Fork and Antlerless	27	170	477	647	74
	Middle Fork	26	68	108	176	62
	Hells Canyon	13,18,22	506	1212	1718	71
1963	Extra Deer	13,18,22,42,67, 75,76,78	1680	2259	3939	57
	Middle Fork	27	143	261	404	65
	Nonresident Restricted	25,27,27A,28,29, 30,30A,36,37,37A, 41,46,50,58,59, 64,74	3114	261	3375	8
1964	Extra Deer	13,18,22,37A,42, 64,66,67,75,76,78	2201	2478	4679	53
	Middle Fork	26,27	123	242	365	66
	Nonresident Restricted	19,19A,25,26,27, 27A,28,29,30,36, 37,37A,41,42,43, 46,50,59,67,73,74	4050	320	4370	7

* Multiple tag used in only parts of units 18 and 27 in 1961.

Deer and Elk Check Station Operations-1964

Station	Closing Date	Kill Checked		Hunters Checked
		Deer	Elk	
Placer Creek	Nov. 29	49	115	2090
St. Maries	Dec. 20	115	220	2871
Clarkia	Nov. 29	46	147	1642
Enaville	Nov. 8	20	48	2422
Dobson Pass	Nov. 8	11	27	950
Fernan	Oct. 4	4	4	321
Bunko	Nov. 8	9	11	467
Bovill	Nov. 29	22	55	1427
Priest River	Nov. 29	65	0	760
Spirit Lake	Nov. 29	1	0	18
St. Maries River	Dec. 20	17	0	84
South Fork	Oct. 22	101	420	2441
Kooskia	Oct. 22	49	299	1400
Greer	Oct. 22	62	373	1734
Nez Perce Pass	Oct. 11	15	78	410
Lolo Pass	Oct. 22	24	109	541
Cedars	Oct. 22	28	193	684
Winchester	Dec. 20	54	9	635
Waha	Dec. 20	204	19	1588
Yellow Pine	Sept. 13	27	3	426
Crawford	Sept. 27	10	41	740
Whitebird	Oct. 18	356	9	938
Graves	Oct. 18	514	7	1077
Hornet	Nov. 15	249	12	1549
Mores	Dec. 13	3268	364	23988
Banks	Dec. 13	1185	127	8616
Walters Ferry	Oct. 23	716	0	2314
Marsing	Oct. 23	776	0	2089
Grandview	Oct. 18	81	0	312
Soldier	Oct. 12	89	70	578
Hailey	Oct. 12	327	83	922
Salmon Falls	Oct. 18	102	0	232
Shoshone Basin	Oct. 21	228	0	475
Rock Creek	Oct. 21	256	0	516
Oakley	Oct. 21	417	0	1099
Albion	Oct. 21	246	0	979
Sublett	Oct. 18	203	0	595
Carmen (N. Fork)	Nov. 20	234	278	2363
Salmon (Lemhi)	Dec. 2	41	20	721
Tendoy (Agency)	Dec. 2	0	13	263
Sage Junction	Dec. 13	355	32	1897
Ririe	Oct. 25	1437	7	5760
Ozone (Bone Rd.)	Nov. 22	25	0	474
Howe	Nov. 8	16	0	47
Trail Creek	Nov. 29	113	0	559
Malad	Oct. 20	85	0	302
Montpelier	Oct. 18	78	0	316
Soda Springs	Nov. 29	46	0	161
Rockland	Oct. 18	384	0	875
GRAND TOTAL		12760	3193	83668

Results of Controlled Hunts for Deer and Elk - 1964
(Date from hunter report cards)

Hunt	Unit (or part)	Number of Permits Authorized	Number of Permits Issued	Reported Kill Male	Reported Kill Female	Reported Kill Total	Did not Kill	Did not Hunt	Total No. Reports
DEER (Report cards received as of January 8 "cutoff" date)									
101	44	500	500	59	45	104	30	-	134
102	47	500	500	67	69	136	27	-	163
103	54	2000	2000	289	251	540	125	-	665
TOTAL		3000	3000	415	365	780	182	-	962
ELK (Report cards received as of January 8 "cutoff" date, except as indicated*)									
201	40 & 41	25	25	1	-	1(1)*	6(16)*	-(1)*	7(18)*
202	43	1000	1000	76	50	126	117	-	243
203	44	250	250	30	17	47	24	-	71
204	48	275	275	31	38	69(96)	34(108)	-(12)	103(216)
205	64 & 65	25	25	2	-	2(3)	5(15)	-(0)	7(18)
206	60	300	300	32	35	67(90)	64(116)	-(15)	131(221)
207	66 & 69	200	200	13	13	26(44)	30(105)	-(5)	56(154)
208(A & B)	76	300	300	38	23	61(85)	40(127)	-(11)	101(223)
209	70,73, & 73A	75	75	12	9	21(24)	10(31)	-(0)	31(55)
210	54	15	15	-	-	-(0)	4(10)	-(2)	4(12)
211	49	25	25	2	3	5(6)	4(9)	-(1)	9(16)
212	50	20	20	8	2	10(7)	6(9)	-(0)	16(16)
213	45	25	25	-	-	-(0)	11(10)	-(6)	11(16)
214	11	50	50	13	20	33(34)	16(7)	-(0)	49(41)
TOTAL		2585	2585	258	210	468	371	-	839

* Figures in parentheses indicate returns as of February 1, 1965, for certain hunts where permit holders were sent a special follow-up letter.

1964 Big Game Harvest (Other Species)

The antelope and moose kill under controlled hunts, and the harvest of bighorn sheep and mountain goat under controlled and general hunting are summarized in the following tables.

Hunt		Number of Permits Authorized	Number of Permits Issued	Reported Kill Male	Reported Kill Female	Reported Kill Total	Did not Kill	Did not Hunt	Total No. Reports
MOOSE (Reports received as of April 1 from follow-up letter and personal contact by CO's)									
301		5	5	4	0	4	1	-	5
302-A		4	4	3	0	3	-	1	4
302-B		8	8	6	0	6	2	-	8
303	CLOSED								
304-A		7	7	5	0	5	2	-	7
305		3	3	2	0	2	1	-	3
306		5	5	3	0	3	2	-	5
307-A		5	5	2	0	2	3	-	5
307-B		5	5	-	0	-	5	-	5
308	CLOSED								
309	CLOSED								
310	CLOSED								
311		2	2	1	0	1	1	-	2
312		3	3	3	0	3	-	-	3
313		2	2	1	0	1	1	-	2
314		2	2	2	0	2	-	-	2
315		2	2	1	0	1	1	-	2
316		2	2	2	0	2	-	-	2
317		2	2	2	0	2	-	-	2
318		3	3	2	0	2	-	1	3
319		2	2	2	0	2	-	-	2
320		2	2	2	0	2	-	-	2
321		4	4	4	0	4	-	-	4

Results of Controlled Hunts-1964 (continued)

Hunt	Number of Permits Authorized	Number of Permits Issued	Reported Kill Male	Reported Kill Female	Reported Kill Total	Did not Kill	Did not Hunt	Total No. Reports
MOOSE (continued)								
322	2	2	1	0	1	1	-	2
323	2	2	1	0	1	1	-	2
324	5	5	3	0	3	2	-	5
325	2	2	2	0	2	-	-	2
326	3	3	1	0	1	2	-	3
327	3	3	-	0	-	3	-	3
328	2	2	2	0	2	-	-	2
329	3	3	1	0	1	2	-	3
330	3	3	1	0	1	2	-	3
TOTAL	93	93	59	0	59	32	2	93
ANTELOPE (Reports received as of April 1 from follow-up letter and personal contact by CO's)								
401-A	50	50	24	16	40	8	1	49
401-B	25	25	12	8	20	1	1	22
401-C	75	75	26	32	58	11	5	74
401-D	60	60	41	12	53	4	1	58
402-A	75	75	53	13	66	7	1	74
402-B	15	15	5	4	9	5	1	15
403	100	100	51	25	76	13	7	96
404	CLOSED							
405	50	50	25	14	39	10	1	50
406	100	100	38	38	76	8	13	97
407-A	100	100	25	27	52	29	15	96
407-B	50	50	30	15	45	1	1	47
408	100	100	72	19	91	4	5	100

Results of Controlled Hunts-1964 (continued)

Hunt	Number of Permits Authorized	Issued	Reported Kill Male	Female	Total	Did not Kill	Did not Hunt	Total No. Reports
ANTELOPE (continued)								
409	50	50	27	9	36	12	1	49
410-A	25	25	15	8	23	2	-	25
410-B	25	25	7	5	12	12	1	25
411	50	50	20	13	33	15	2	50
412	10	10	3	4	7	3	-	10
413-A	20	20	11	3	14	5	1	20
413-B	15	15	1	3	4	6	5	15
414 CLOSED								
415	50	50	18	11	29	20	-	49
416	20	20	8	4	12	6	2	20
417	20	20	7	6	13	7	-	20
418	35	35	22	6	28	4	3	35
TOTAL	1120	1120	541	295	836	193	67	1096
SHEEP (Reports received as of April 1 from follow-up letter and personal contact by CO's)								
501	5	5	0	0	0	5	-	5
General Hunting								
No. Tags	431	431	35	0	35	339	38	412
GRAND TOTAL	436	436	35	0	35	344	38	417
MOUNTAIN GOAT (Reports received as of April from follow-up letter and personal contacts by CO's)								
601	8	8	3	3	6	1	1	8
602	5	5	2	1	3	2	-	5
603	8	8	1	-	1	6	-	7
604-A	10	10	3	2	5	3	2	10
604-B	10	10	-	1	1	6	3	10
604-C	5	5	1	-	1	4	-	5

Results of Controlled Hunts-1964 (continued)

Hunt	Number of Permits Authorized	Issued	Reported Kill Male	Female	Total	Did not Kill	Did Not Hunt	Total No. Reports
MOUNTAIN GOAT (continued)								
605-A	8	8	-	-	-	8	-	8
605-B	8	8	2	1	3	5	-	8
606-A	5	5	1	3	4	1	-	5
606-B	5	5	-	1	1	4	-	5
607	10	10	3	1	4	6	-	10
608	5	5	2	2	4	1	-	5
609	10	10	4	1	5	4	-	9
610	5	5	1	3	4	1	-	5
611	5	5	1	2	3	2	-	5
612	5	5	1	3	4	1	-	5
613	12	12	5	5	10	-	2	12
614	14	14	4	8	12	2	-	14
615	9	9	4	2	6	3	-	9
616	8	8	3	4	7	-	-	7
617	5	5	1	1	2	2	1	5
618	5	5	1	-	1	1	2	4
619	6	6	1	-	1	5	-	6
620	8	8	3	2	5	2	1	8
621	4	4	1	1	2	1	1	4
622	8	8	3	5	8	-	-	8
623	4	4	1	-	1	2	1	4

Result of Controlled Hunts-1964 (continued)

Hunt	Number of Permits Authorized	Issued	Reported Kill Male	Female	Total	Did not Kill	Did not Hunt	Total No. Reports
MOUNTAIN GOAT (continued)								
624	4	2	-	-	-	2	-	2
TOTAL	199	197	52	52	104	75	14	193
General Hunting								
No. Tags	207	207	33	24	57	131	14	202
GRAND TOTAL	406	404	85	76	161	206	28	395

Pronghorn antelope are hunted only by permit on a limited basis. Other game animals included in controlled hunts are moose, mountain goats and deer and elk in specified areas.

Summary of Controlled Hunts-1960 through 1964
(Data from hunter report cards)

Year	No. of Hunt Units	Permits	Applications	Harvest 1/ Male	Female	Total
ANTELOPE						
1960	17	1205	3807	437	267	701
1961	19	900	3243	276	177	453
1962	20	881*	3361	339	210	549
1963	22	1095	3944	390	223	613
1964	23	1120	3666	541	295	836

*One additional permit sold due to error in Hunt 409

MOOSE						
1960	24	73	464	39	0	39
1961	27	81	464	38	0	38
1962	24	89	516	45	0	45
1963	28	84	732	43	0	43
1964	29	93	645	59	0	59
MOUNTAIN GOAT						
1960	20	105	141	36	29	65
1961	26*	160*	241	32	25	57
1962	27	177**	332	48	51	99
1963	28	192	394	45	39	84
1963 (Archery)	1	10***	1	1	0	1
1964	28	199****	356	52	52	104

*Includes 10 archery permits for which there were no applicants.
**No applicants for 9 permits.
***One applicant and two sold on open sale.
****No applicants for 2 permits.

BIGHORN SHEEP						
1962	1	5	13	1	0	1
1963	0	0	0	0	0	0
1964	1	5	22	0	0	0
DEER						
1960	2	300	434	73	43	116
1961	7	1725	5784	127	148	275
1962	5*	3900	2963 and 994 open sales	603	406	1009
1963	3	2900	2308 and 31 open sales	333	259	592
1964	3	3000	2752 and 248 open sales**	415	365	780

*Two units with insufficient applications were open to general hunting and are not included.
**Twenty-eight of the 248 on open sales were not sold.

ELK						
1960	7	1975	5685	149	191	340
1961	7	1725	5784	127	148	275
1962	12	2350	7769	208	200	408
1963	14	2210	8337	245	209	454
1963 (Archery)	2	50*	41	0	0	0
1964	14	2585	7704	258	210	468

*Nine permits were not sold after second drawing.

1/ 1964 data not directly comparable to preceding years; see detailed tables on "Results of Controlled Hunts."

General Bighorn Sheep Hunt 1964
(Data from hunter report cards)

Hunt Unit	Kills	Unsuccessful Hunters	% of hunter success
A	2	23	8
B	3	7	30
C	4	11	27
D	1	6	14
E	1	6	14
F	16	103	13
Unknown	8	188	4
TOTAL	35	344	10

General Bighorn Sheep Hunts-1960 through 1964
(Data from hunter report cards)

Year	Hunting Units	Tags Sold	Harvest
1960	7	417	56
1961	7	555	51
1962	6	522	58
1963	6	552	48
1964	6	431	35

General Mountain Goat Hunts-1960 through 1964
(Data from hunter report cards)

Year	Hunting Units	Tags Sold	Harvest		
			Billies	Nannies	Total
1960	7	188	22	18	40
1961	7	186	18	22	40
1962	7	178	19	26	45
1963	7	217	31	36	67
1964*	7	207	33	24	57

*Figures as of April 1, 1965

Residence of Licensees Purchasing General Bighorn Sheep and General Mountain Goat Season Tags-1964

	Total Tags Sold	Resident	% of Tags	Nonresident	% of Tags
Sheep	431	288	67	143	33
Goat	207	156	75	51	25

Research and Special Surveys

Big Game Food Habits and Nutrition Study:

In southwestern Owyhee County deer are collected each month of the year in order to relate the food habits and deer nutrition to the availability and abundance of forage species. Blood and urine samples are analyzed to determine general condition of the animals and the viscera are examined at Idaho State University in a study of endoparasites. It is believed that the results of this study will be applicable to most of the mule deer ranges in southern Idaho.

Effects of Herbicides on Big Game Ranges:

This study is designed to determine the changes in plant species composition and density resulting from the use of herbicides, principally 2-4D. It has been found that many of the desirable forb species, such as balsam root, are eliminated when an area is sprayed. Though the older bitterbrush plants usually survive, the very young plants are sometimes killed.

Techniques Investigations:

In an effort to improve the quantity and quality of management data, new techniques are being developed. Presently under investigation is a method by which the production and utilization of important browse plants on big game winter ranges can be measured more quickly and effectively. This will increase the amount of data that can be collected each year, making it possible to obtain adequate information from winter ranges where present coverage is insufficient.

The hunter questionnaire-hunter report card method of determining annual deer and elk harvests is also being evaluated.

Lochsa Elk Study:

In large areas of northern Idaho shrub growth and the invasion of browse fields by conifers are reducing big game carrying capacity. The main purpose of this study is to evaluate various methods of land management which might be used to maintain, improve and create elk winter range.

Cougar Study:

In cooperation with the University of Idaho and the University of British Columbia, the Department is financing a long-term study of the life history and ecology of the cougar in the Big Creek drainage of the Middle Fork of the Salmon River. This will include an evaluation of the effects of cougar upon populations of other big game animals.

Bitterbrush Studies:

The U.S. Forest Service, Intermountain Forest and Range Experiment Station, is continuing a study for the Department to determine conditions necessary for the successful planting of bitterbrush. This is a prerequisite for developing a successful program for rehabilitating big game winter ranges in southern Idaho.

Elk Migration Studies in the Dworshak Reservoir Area:

During the second segment of the cooperative study by the U.S. Army Corps of Engineers and the Idaho Fish and Game Department, 71 elk ere trapped, tagged, and/or marked and released in 1964.

Thirty-five reports have been received giving the data and location of ear-tagged and marked elk. Fourteen per cent of these elk had crossed to the other side of the North Fork of the Clearwater River.

The study is to obtain information on the distribution of elk and their migration routes in the area adjacent to the future Dworshak Dam Reservoir. The data obtained will aid in providing management techniques to minimize the adverse affects of the impoundment upon the big game herds.

Trapping

Big Game Tagging:

Weather conditions for trapping and tagging big game animals in 1964 improved over the previous year. Three hundred and sixty-three deer, 87 elk and 29 moose were ear-tagged and released in 1964 to obtain information on their seasonal distribution and movements. Seventy-eight deer and 46 elk were ear-tagged in 1963.

Transplanting:

Nine mountain goats, two males and seven females, were trapped in the upper North Fork of the Clearwater River watershed. These were released in the Seven Devils Recreational Area in Adams County, supplementing the release of eight mountain goats in 1962.

Arrangements and preparations were completed to obtain additional bighorn sheep from British Columbia to supplement the 19 animals released in 1963 in the East Fork of the Owyhee River Canyon in Owyhee County. Adverse weather conditions at the trap site did not permit trapping in 1964, and this effort will be carried over to 1965.

Cougar are being caught, marked and released as part of a study to determine the effects they have on other animals.

Deer are trapped and tagged to determine seasonal movements and distribution (left photo). Fieldmen measure use on range plants. A new method of measurement is part of one research study.

GAME BIRDS AND WATERFOWL

The winter of 1963-64 was long and tough for game birds, particularly in the upper Snake River Valley. In that area, snow cover and below freezing temperatures were the norm from late November until early April. The outstanding production year of 1963 for upland game birds resulted in above-normal populations going into the winter of 1963-64--road kill was high, blizzards took their toll and starvation losses undoubtedly occurred in localized areas.

The spring of 1964 was late in arriving. The first game bird nesters in the state (Canada geese) were two to three weeks behind schedule--a most unusual occurrence. The 1964 growing season for plants was relatively short and slow. Moisture was adequate throughout the state and even over-abundant during the June hatching period in some areas. Despite these factors which appeared not to favor small game, 1964 turned out to be another very good production year for all upland game except forest grouse and cottontail rabbits. Waterfowl hunting success was the best in recent years, with adequate numbers of ducks and above-normal numbers of geese available throughout the long hunting season. The extended season and liberalized bag provision on mallards for half of the counties in Idaho added appreciably to the duck harvest.

Each year, beginning in January with the waterfowl winter inventory and the pheasant winter sex ratio counts and ending in December with the final hunter bag checks, field personnel of the Department collect a continuous stream of management information on Idaho game birds. The main purpose of their field work is to make unbiased management data available to the Idaho Fish and Game Commission so that seasons and bag limits can be established which will offer the most hunting opportunity consistent with maintaining adequate brood stocks.

Whenever possible, the systematic approach and standardized techniques are used in gathering data. In the following pages a sampling of game bird management information collected during 1964 is presented and compared on a trend basis with previous years.

1964 Game Bird Harvest:

The proofs of a successful bird year are the number of birds which go into the hunter's bag and the success per hunting effort.

Checking station and field bag checks serve to determine hunting success locally but the only available method for obtaining statewide estimates is by mail questionnaire to the hunters. The accompanying table lists small game harvests for 1964 and compares them with other years.

Idaho hunters took home more game birds during the 1964 season than in any year in the past decade. This was due to a favorable combination of generally good bird production, liberalized hunting regulations and high hunter participation.

Pheasants

Very soon after its introduction into Idaho around the turn of the century, the ring-necked pheasant became the favorite target for upland game hunters. It is by far the most important bird in the state from the standpoint of hunter interest and provides annually about 40 per cent of the total upland game bird kill for Idaho.

Field work on pheasants divides into (1) January winter sex ratio counts, (2) crowing count census of male birds in May, (3) brood production trend counts in August and (4) evaluation of hunting success in the fall.

Idaho Small Game Harvest, 1956-1964
Based on annual hunter questionnaire survey **

	1956	1957	1958	1959	1960*	1961*	1962*	1963*	Long-Term Average 1954-63	1964*	Percent Change From Long-Term Average	Percent Change From 1963
Pheasant	454,900	610,800	700,500	567,600	525,600	535,000	554,100	715,600	562,600	757,200	+35	+ 6
Mourning dove	129,800	141,500	144,200	163,100	111,800	140,000	159,700	203,300	140,300	191,900	+37	- 6
Forest grouse	98,100	100,200	156,600	113,700	106,300	169,000	138,300	136,800	116,100	98,300	-15	-28
Hungarian	37,400	55,100	87,200	47,400	38,000	37,900	47,500	89,900	53,500	95,800	+79	+ 7
Chukar	--	21,000	69,100	28,900	32,900	38,500	99,300	148,400	62,600	166,600	+166	+12
Quail	33,800	47,900	74,600	48,800	38,200	58,300	61,100	89,600	53,300	88,400	+ 66	- 1
Sage grouse	31,400	21,100	42,500	23,300	15,200	16,100	23,000	28,300	25,100	26,700	+ 7	- 6
Duck	414,000	584,100	552,500	454,900	401,500	428,400	321,500	421,500	471,900	506,800	+ 7	+20
Canada goose	13,600	20,600	17,500	22,500	17,300	24,400	15,800	20,800	19,000	22,800	+20	+10
Snow goose	600	1,200	1,600	500	400	900	300	800	800	1,000	+25	+25
Coot	16,000	12,100	16,400	12,100	12,000	7,200	5,900	14,100	13,400	11,800	-12	-16
Cottontail	92,700	100,000	126,300	197,800	66,600	51,200	37,600	74,500	92,600	47,600	-49	-36

* By sex:
1960 - 500,500 Cocks; 25,100 Hens
1961 - 495,400 Cocks; 39,600 Hens
1962 - 494,900 Cocks; 59,300 Hens
1963 - 602,700 Cocks; 112,900 Hens
1964 - 603,700 Cocks; 153,500 Hens

** All figures rounded to nearest hundred

Sage grouse hunters found better than average shooting in 1964, with a total harvest close to 27,000 birds.

A new bird to Idaho is the turkey which was first introduced into the Salmon River region in 1961 (left photo). Canada geese are banded to obtain management information. Nearly 700 honkers were banded in 1964.

Winter Sex Ratio:

Winter sex ratios, always a valuable indicator of what is happening to a pheasant population, have been particularly useful since limited hen hunting was adopted in Idaho beginning in 1960. The table below shows statewide sex ratios going back to 1950.

Idaho Pheasant Winter Sex Ratios

Year	Sample Size (pheasant)	Sex Ratio M:100F	Hens Per Cock
1950	15,834	53:100	1.9
1951	18,168	57:100	1.8
1952	47,444	50:100	2.0
1953	16,564	55:100	1.8
1954	18,283	45:100	2.2
1955	46,639	41:100	2.4
1956	25,828	41:100	2.4
1957	22,414	52:100	1.9
1958	18,479	51:100	2.0
1959	30,896	55:100	1.8
1960	31,010	43:100	2.3
1961	16,047	46:100	2.2
1962	29,183	41:100	2.4
1963	18,067	47:100	2.1
1964	35,064	47:100	2.1
Average	25,995	48:100	2.1
Range		57:100 to 41:100	1.8 to 2.4

Statewide post-season (winter) sex ratios for pheasants during the period 1950 through 1964 ranged from 1.8 to 2.4 hens per cock, with the average at 2.1 hens per cock. The 1964 ratio was right on the long-term average and was exactly the same as January 1963.

Breeding Population Index:

Each spring, standardized crowing count census routes are operated in the major pheasant areas of Idaho to determine trend of male pheasant numbers from one breeding season to the next. In view of the rugged winter of 1963-64 and the possibility of greater than normal winter losses for pheasants, it was expected that the spring breeding population would be down appreciably. This did not occur. The following table lists the results of breeding population census work.

Trend of Pheasant Breeding Population

Area	Breeding Population Index		Per Cent Change	
	1963	1964	1963	1964
Southwest Idaho	84	76	-10	
South Central Idaho	68	117	+72	
Southeast Idaho	74	73	No change	

Pheasant Production:

Brood trend routes conducted during August indicated that pheasant production would be above average but down somewhat from the outstanding pheasant year of 1963. Best production was forecast for south central Idaho.

The Pheasant Hunt:

A total of 8,844 pheasant hunters passed through pheasant checking stations on opening weekend of the 1964 hunt. On a statewide basis, individual hunter success at 1.30 birds per hunter on opening weekend was exactly the same as the topnotch pheasant year of 1963 and 20 per cent above the long-term average. (See table on following page)

Last year's hunting success was not nearly as uniform over the state as in 1963. Some sectors exhibited poor hunting success while others had the best in many years. North Idaho was down in fall pheasant numbers, as were portions of Washington, Adams, Franklin, Lemhi counties and part of the Magic Valley area. The hottest pheasant hunting spot in the state was the North Side Project in Minidoka County.

Pheasant hunting pressure over the state was about average but down slightly from the previous year.

For the entire season, hunter questionnaire data (see Small Game Harvest table) indicated the highest statewide pheasant harvest on record.

Hen Hunting:

Idaho has had limited hen hunting on a gradually liberalized basis since 1960. The number of hunting days in which one hen was permitted in the daily bag has increased from one weekend in 1960 to all of the season after opening weekend in 1964 (except southeast Idaho counties where limited hen hunting began on the 10th day of the season).

Hen harvest for the five seasons has increased in proportion to liberalization of the hen regulation. An estimated legal hen take of 153,500 was reported for 1964 to constitute 20 per cent of the total pheasant harvest.

If we assume a 50 per cent statewide harvest of roosters, as indicated by the long-term winter sex ratio, and a normal fall ratio of 1.2 hens per cock, then the legal harvest of the fall hen population during the 1964 hunt was about 11 per cent.

During the past five years of limited hen hunting, a total harvest of 390,000 hens has been reported on the hunter questionnaire as compared to 2,697,000 roosters.

Comparison of Pheasant Check Station Results for Opening Weekend, 1960-64

	No. Hunters	No. Birds	Gun Hours	Birds Per Hunter	Hours Per Bird
CLEARWATER					
1964	430	394	1,391	0.92	3.5
1963	453	566	1,609	1.25	2.8
1962	364	352	1,083	0.97	3.1
1961	465	525	1,578	1.13	3.0
1960	598	502	1,955	0.84	3.9
5-year totals & averages (1959-63)	2,392	2,288	7,898	0.96	3.5
SOUTHWEST IDAHO					
1964	2,691	3,403	9,771	1.26	2.9
1963	2,878	3,572	10,272	1.24	2.9
1962	2,412	2,832	9,025	1.17	3.2
1961	2,825	3,533	9,734	1.25	2.8
1960	2,685	3,038	9,647	1.13	3.2
12-year totals & averages (1952-63)	37,670	41,490	132,662	1.10	3.2
SOUTH CENTRAL IDAHO					
1964	2,151	2,842	7,264	1.32	2.6
1963	1,895	2,471	5,406	1.30	2.2
1962	1,935	2,283	6,328	1.18	2.8
1961	1,988	1,927	6,215	0.97	3.2
1960	1,782	1,977	5,167	1.11	2.6
14-year totals & averages (1950-63)	24,124	25,289	71,393	1.05	2.8
SOUTHEAST IDAHO					
1964	3,572	4,835	14,822	1.35	3.1
1963	2,878	3,905	12,012	1.36	3.1
1962	2,993	3,730	12,664	1.25	3.4
1961	2,351	3,018	9,587	1.28	3.2
1960	3,805	4,441	16,552	1.17	3.7
13-year totals & averages (1951-63)	39,394	43,188	172,083	1.10	4.0
STATEWIDE					
1964	8,844	11,474	33,248	1.30	2.9
1963	8,104	10,514	29,299	1.30	2.8
1962	7,704	9,197	29,100	1.19	3.2
1961	7,629	9,003	27,114	1.18	3.0
1960	8,870	9,958	33,321	1.18	3.3
Long-term totals and averages	103,580	112,255	383,936	1.08	3.4

Sage Grouse

Research:

The native sage grouse, although holding its own admirably in the pockets of good habitat remaining in the state, is now a beleagured species in Idaho. Increased demand for additional agricultural acreages and a strong trend toward the development of pure grass ranges for livestock on public and private lands are resulting in accelerated removal of remaining sage grouse habitat.

For the past several years a research project on sage grouse, under project leader Duane Pyrah, has been aimed at documenting the status and trend of sage grouse populations and habitats in the state. The ultimate objective of this project is to design management procedures which can best maintain this fine game bird on the hunting list despite serious habitat losses. Current activity on this project involves (1) plotting annual distribution and movement patterns of the species throughout southern Idaho, (2) correlating this information with present and proposed sagebrush eradication projects, and (3) conducting intensive field work with radio-tracking equipment and individually instrumented birds to follow the nesting distribution of sage grouse hens on a breeding ground study area in Clark County.

Trend in Breeding Numbers:

Since 1951, standard counting procedures have been used to census male sage grouse on their strutting grounds. The accompanying table summarizes counts made at 105 strutting grounds last spring. Counts of male grouse showed no overall change from the previous year in southwest and south central Idaho, but a decline of 18 per cent in the southeast sector.

Sage Grouse Strutting Ground Counts, 1963-64

Area	No. Strutting Grounds	Average Males per Ground		Per cent Change
		1963	1964	
Southwest Idaho	10	22.0	21.6	-2
South central Idaho	51	16.5	16.7	+1
Southeast Idaho	44	39.6	32.5	-18

Production:

To evaluate annual production in sage grouse, a sample of sage grouse wings from hunters' bags is examined each year. Utilizing a technique developed by Duane Pyrah, the wing sample is classified into sex and age classes and broken down by area of the state. The following table lists results for the 1964 season and compares with previous years.

Sage Grouse Production Success, 1961-64
Based on Analysis of Wings from the Hunter's Bag

Area	No. Harvest Areas Sampled	No. Birds in Sample				Young Per Adult Female			
		1961	1962	1963	1964	1961	1962	1963	1964
Southwest Idaho	4	606	620	805	705	2.2	1.7	3.4	2.9
South central Idaho	8	839	1318	1477	1087	1.3	1.8	2.2	1.9
Southeast Idaho	5	1038	1803	2132	1863	2.4	2.1	2.2	2.2
Aggregate, All Areas	20	2483	2731	4414	3655	1.9	2.3	2.3	2.2

Production success during 1964 was virtually the same as the two previous years for all areas combined. The direct relationship between production of young and fall hunting success is clearly illustrated by comparing the young per adult female ratios in the above table with hunting results for the three general areas of the state (see Sage Grouse Check Station Results).

The Sage Grouse Hunt:

Sage grouse hunting success for the 1964 hunt was above average and about on a par with the previous two hunting seasons (see Small Game Harvest table). Check station operations and hunter questionnaire data indicated a slight drop in hunter participation from 1963 to 1964.

Forest Grouse

The forest grouse group generally had poor production and hunting success during 1964. This was most apparent in southwest Idaho where intensive bag check operations on the Mink Creek drainage in Bannock County yielded opening weekend hunting success of only 0.3 birds per hunter, far below normal. Hunter questionnaire results (see Small Game Harvest table) indicated the poorest statewide forest grouse harvest since 1956.

Wild Turkey

The outlook for the Merriam's wild turkey in Idaho continues to be promising, with a fall population of 500 birds estimated for the lower Salmon River drainage in Idaho County. This flock developed from 39 turkeys wild-trapped and transplanted from Colorado during the period 1961 to 1963. The turkeys are slowly extending their range but remain centered around the original release sites. A permit type of hunt will be proposed for consideration by the Idaho Fish and Game Commission for 1965 with the objectives of encouraging dispersal and "breaking the ice" on turkey hunting in Idaho.

Transplants of turkeys from the lower Salmon River flock to other potential turkey areas in the state are programmed for 1965 and subsequent years.

Observations of Merriam's wild turkeys extending their range into the Priest River area of Bonner County from a flock recently established in adjacent Washington were reported by Idaho Fish and Game Department personnel in late 1964.

Comparison of Sage Grouse Check Station Results, 1957-64

Area	Year	Season Length in Days	No. of Hunters	No. of Birds	Average Birds per Hunter
SOUTHWEST IDAHO	1964	2 to 16	660	1,019	1.54
	1963	2 to 9	726	1,097	1.51
	1962	2 to 5	663	734	1.11
	1961	1 to 5	1,022	761	0.74
	1960	1 to 5	1,046	981	0.94
	1959	1½ to 4½	1,012	408	0.40
	1958	1½ to 4½	1,205	1,410	1.17
	1957	1½ to 4½	803	767	0.96
SOUTH CENTRAL	1964	2 to 3	1,471	1,185	0.81
	1963	2 to 3	1,928	1,614	0.84
	1962	2	1,751	1,549	0.88
	1961	1	1,400	993	0.71
	1960	1	285	288	1.01
	1959	1½	3,320	1,372	0.41
	1958	1½	3,593	4,034	1.12
	1957	1½	513	694	1.35
SOUTHEAST IDAHO	1964	2 to 3	2,767	2,549	0.92
	1963	2 to 3	3,278	2,887	0.88
	1962	2	2,694	2,949	1.09
	1961	1	2,199	1,769	0.80
	1960	1	2,463	1,947	0.79
	1959	1½	4,186	2,822	0.67
	1958	1½	4,603	4,076	0.89
	1957	1½	4,883	3,803	0.78
TOTALS AND AVERAGES	1964		4,898	4,753	0.97
	1963		5,932	5,598	0.94
	1962		5,108	5,232	1.02
	1961		4,621	3,523	0.76
	1960		3,794	3,216	0.85
	1959		8,518	4,602	0.54
	1958		9,401	9,520	1.01
	1957		6,199	5,264	0.85

Chukars, Hungarian Partridge and Quail

Chukar production was erratic with success varying widely from area to area. Analysis of wing samples taken at check stations in southern Idaho indicated hatch peaks ranging from mid-June to late July, depending on area. In the Magic Valley sector, 73 per cent of the young were 11 weeks or older at the time of the mid-September hunt, while in Owyhee County, about half of the young had attained that age by the time the shooting started.

Despite the variability in hatch patterns, the overall result was a generally good production year for chukars. A notable exception was the upper Salmon River drainage where chukar production was adjudged to be very poor.

Huns and quail also had generally good production but were down from their top year of 1963 and production quantity varied widely throughout their range.

The third year of the mid-September opening on chukars, Huns and quail brought an eager army of hunters out on opening weekend (see table below).

Opening Weekend Chukar Hunting Success in Southwest Idaho
1963-1964

Year	No. Check Stations	Hunters	Chukars	Birds per Hunter
1964	5	1151	1336	1.2
1963	5	955	1296	1.4

While chukars are the primary objective on the mid-September bird opening in areas where chukars are available, mixed bags of birds are now common. An individual hunter may have various combinations of chukars, sage grouse, forest grouse, Huns, quail and mourning doves in his game bag, depending on his stamina and the range of his hunting expedition.

Hunter Questionnaire results (see Small Game Harvest table) indicated a leveling of the spectacular increase in chukar hunting popularity which has occurred during the past three seasons. While total kill increased 12 per cent over 1963, hunting pressure dropped ten per cent. Total hunters who reported hunting chukars in 1964 were 20,456 compared to 22,673 in 1963.

While 1964 harvest of Huns and quail stayed near the 1963 high, hunter participation on these species dropped roughly in proportion to chukars.

Mourning Dove

Absence of the usual late August cold wave kept large numbers of doves in the state for a longer period than normal and early September hunting was good. The dove maintained its status as the third most important game bird in Idaho (following the pheasant and mallard). Total 1964 harvest of doves, based on hunter questionnaire reports, was 191,900--down six per cent from the record high of 203,300 in 1963. Dove hunter numbers dropped 14 per cent from 1963 to 1964.

In cooperation with the other states in the Western Dove Management Unit, Idaho launched a three-year intensive pre-season banding program on mourning doves during the summer of 1963. A total of 2,645 doves was banded in the state. This constituted about a fifth of the total doves banded pre-season in the western states during 1964 and was second only to California in total bands attached. Objective of the cooperative dove banding program is to acquire better management data on mortality and movements of this popular migratory game bird.

Dove hunters found excellent conditions for their favorite sport in 1964 with the statewide harvest over one-third above the long-term average.

Each fall waterfowl hunters build blinds or repair old ones along the rivers, marshes and lowland lakes. 1964 was a good season with the duck take slightly over one-half million.

Waterfowl

The nature and complexity of waterfowl management makes it necessary that data be pooled on a Flyway basis to be useful. Much of the field work on these migratory species is done in cooperation with the Bureau of Sport Fisheries and Wildlife. Management work on waterfowl in Idaho during 1964 had the following variety:

1) Banding operations on ducks and geese to follow movement and mortality.

2) Aerial breeding pair census and ground nesting surveys on Canada geese to determine production trend.

3) Standardized duck brood count routes to determine production trend.

4) Weekly fall flight census at selected concentration areas to determine volume and peak of migration.

5) Bag checks during the hunting season to evaluate hunting success and the effect of regulation changes.

6) Analysis of hunter questionnaire results to estimate total harvest and hunter participation.

7) A winter waterfowl inventory throughout the state to assess distribution and population status following the hunting season.

Banding:

Banding of waterfowl continues to be the most useful tool available to evaluate the effect of hunting regulations, determine movements and estimate population status of the various species. Annual banding quotas are established by the Bureau of Sport Fisheries and Wildlife. Idaho banded 681 geese and 2307 ducks at state-operated banding stations during 1964. Additional duck banding was carried on at the three Federal refuges in Idaho.

Production in Idaho:

Nesting surveys on Canada geese were continued for the 13th consecutive year to secure the best management information possible on this favorite target of Idaho hunters. The accompanying table lists production trend on six goose nesting units in the state.

Gosling production for 1964 was 14 per cent below the top goose year of 1963 but still above the long-term average. The resident goose flock of southwest Idaho (Homedale and Payette units) was down slightly from 1963 but still far above average.

For the migratory goose flocks of southeast Idaho, goose production was down appreciably from last year and down 28 per cent from the long-term average. The primary factor which triggered local goose production losses in southeast Idaho was the delayed nesting caused by winter extending well into the normal spring period.

Fall Flight:

Fall census data from 10 concentration areas counted weekly throughout the fall months showed that the volume of duck use was nine per cent below 1963 and was the lowest recorded during the past six years of fall counts. The peak of the duck migration arrived on normal schedule during the third week of November with an estimated 807,000 ducks present on the 10 Idaho counting areas at that time. The peak duck count total was about the same as the previous year.

Production trend on Canada goose nesting units, Idaho, 1959-64.

	Southwest Idaho		Southeast Idaho				
	Homedale	Payette River	Blackfoot Reservoir*	Island Park Reservoir	North Fork Snake R.	North Lake	Totals
No. Nests found							
1959	172	91	86	51	42	33	475
1960	213	116	75	52	34	33	523
1961	216	120	71	36	30	28	501
1962	220	127	102	36	40	13	538
1963	260	161	117	44	36	9	627
1964	304	142	129	26	31	20	652
Long-term Av.**	219	123	99	40	36	27	541
No. Nests hatched							
1959	104	59	57	38	41	25	324
1960	166	95	64	43	33	29	430
1961	152	73	57	31	27	28	368
1962	165	104	73	33	37	4	416
1963	206	133	101	33	31	7	511
1964	236	109	75	17	14	18	469
Long-term Av.**	154	93	69	30	32	22	396
Av. hatch/successful nest							
1959	5.2	5.5	4.8	4.7	5.2	4.6	5.1
1960	5.2	5.5	4.9	4.8	4.5	4.7	5.1
1961	5.1	5.2	4.4	4.2	4.6	4.7	4.9
1962	5.3	5.6	4.6	3.5	4.9	5.5	5.1
1963	5.4	5.4	4.8	3.9	4.8	4.7	5.1
1964	4.9	5.3	4.2	4.1	3.6	4.5	4.8
Long-term Av.**	5.2	5.4	4.8	4.3	4.7	4.7	5.0
Goslings Produced							
1959	541	325	274	179	213	115	1,647
1960	863	522	313	206	148	136	2,188
1961	769	383	250	130	124	132	1,788
1962	882	583	336	117	180	22	2,120
1963	1,116	711	483	128	149	33	2,620
1964	1,162	577	317	69	51	81	2,257
Long-term Av.**	795	525	335	131	150	106	1,983

* Blackfoot Reservoir nest survey sample enlarged in 1962 to adjust to changed habitat conditions.

** Long-term averages include the following years of data for the respective units: Homedale, Blackfoot Reservoir and Island Park Reservoir--1952-63; North Fork and North Lake--1954-63; Payette River--1959-63

Waterfowl Hunt:

While the general Federal waterfowl regulations for the Pacific Flyway states were virtually unchanged from the previous year, major liberalizations were allowed in the Pacific Northwest Wintering Mallard Area which includes 22 counties of Idaho.

A special season extension on ducks in the wintering mallard area was permitted from January 8 through January 24, 1965, after the regular waterfowl season had closed in the remainder of the state on January 7. In addition, shooting hours in the wintering mallard counties were extended to one-half hour after sunset and the daily bag limit was increased from seven to eight, with the provision that each daily bag limit must include not less than four mallards. A duck possession limit of twice the daily bag was also allowed in the wintering mallard counties only.

To evaluate the effect of the liberalized duck regulations in the mallard area, intensive field bag checks were taken and a special effort was made through the hunter questionnaire to determine duck harvest during the additional 17 days of hunting season. Field bag checks showed that 14 per cent of 6,984 ducks taken by 3,045 hunters in the wintering mallard counties was added to the bag as a result of the 'bonus' mallard regulations.

Hunter questionnaire data indicated that 27 per cent of the 1964 duck harvest was taken during the extra 17 days of season in the wintering mallard counties.

Due primarily to the extra harvest achieved during the extended season when good hunting weather prevailed and ducks were highly available, individual hunter success during the 1964 season was the highest on record at an average season bag of 15.2 ducks per hunter, as compared to 12.2 in 1963. Total duck harvest reported via hunter questionnaire was 506,800, a substantial 20 per cent above 1963. Goose hunting was also very productive, with 22,800 geese reported taken by Idaho hunters, 10 per cent above 1963.

Winter Waterfowl Inventory:

Total waterfowl counted in Idaho during the mid-winter waterfowl inventory of 1964-65 was 498,900. Duck numbers were down about 10 per cent from the long-term average and wintering geese were six per cent above average. Wintering mallards were up five per cent from 1963 and down a little from the long-term average.

Game Farm

Game farm operations in Idaho are now on a standby basis with only the one game farm facility at Jerome in operation. A total of 13,319 pheasants and 504 chukars were released in the state during 1964.

A new venture at the Jerome farm consists of nurturing a brood stock of Japanese green pheasants for release in north Idaho. The green pheasants are game farm stock obtained from the Virginia Fame Commission under the Foreign Game Bird Introduction program. At the end of 1964, 75 of this species were thriving at the farm. If no calamities occur during rearing operations, enough Japanese green pheasants will be available to make substantial trial releases in north Idaho by the spring of 1967. The Japanese green pheasant is a bird which inhabits agricultural lands but makes considerable use of forest and brush cover. It is hoped that this species can survive and reproduce on farmlands in the forested areas of north Idaho which have proved to be incapable of supporting huntable populations of the ring-necked pheasant.

Habitat Restoration

The wildlife habitat restoration program has been used in Idaho for the past 17 years to provide or improve wildlife food, cover or water. During the last 13 years, most of the project time has been devoted to planting trees and shrubs as windbreaks on private farmlands to benefit the landowner as well as pheasants.

The tree-shrub planting job is being deemphasized in favor of range rehabilitation work that will favor larger numbers of wildlife of several species. However, 94 individual windbreak plantings were made on private land in 1964. Eighty-four per cent of these were made on farms in Soil Conservation Districts as part of a cooperative windbreak program. Over 87,000 trees and shrubs were used in 1964 in new plantings and almost 8,000 plants were used to replace losses in older plantings. Over one and one-half million trees and shrubs have been planted by this project in the last 13 years and it is presumed that upwards of 330,000 acres of private land were opened to public hunting at one time or another during the program. There has not been enough evaluation to determine total planting survival or the amount of private land that was promised by the agreements for these plantings, that is still open to the hunting public.

Summary of Tree and Shrub Planting
1952-1964

Year	Number Plantings	Number of Trees and Shrubs Planted		Acres Planted	Acres Open To Hunting By Permission
		In New Plantings	As Replants		
1952	46	76,129	--	99	--
1953	64	93,348	14,256	96	9,249
1954	108	113,197	14,455	130	19,983
1955	156	121,464	13,013	164	21,962
1956	124	90,912	9,343	106	20,150
1957	97	91,413	4,401	97	16,821
1958	109	83,288	8,334	110	19,303
1959	131	119,503	9,657	146	21,445
1960	161	120,376	7,095	154	28,292
1961	176	225,530	13,668	285	57,890
1962	168	237,859	62,364	289	68,298
1963	129	170,562	17,891	200	34,389
1964	94	87,436	7,912	114	14,954
TOTALS	1,563	1,631,017	182,389	1,990	332,736

In the future, more importance will be given to worthy range rehabilitation projects. In addition to the windbreak plantings, many other wildlife habitat improvements were accomplished in 1964. Project personnel inventoried big game ranges of south Idaho to determine extent and quality of the critical wintering area, potential winter range areas and habitat needs. They also managed those plots of land licensed by the Bureau of Reclamation within the Minidoka irrigation project as public pheasant hunting units. This job included planting, irrigating and fencing some of the parcels.

Another major job was the shrub and legume plantings made at two different sites in eastern Idaho as the project's share in cooperative range restoration programs.

Weeds were sprayed at Carey Lake and on Silver Creek access area. A portion of this same access area was seeded to grass. A fiberglass "guzzler" was installed in eastern Idah to provide free water to doves and sage grouse during the dry period.

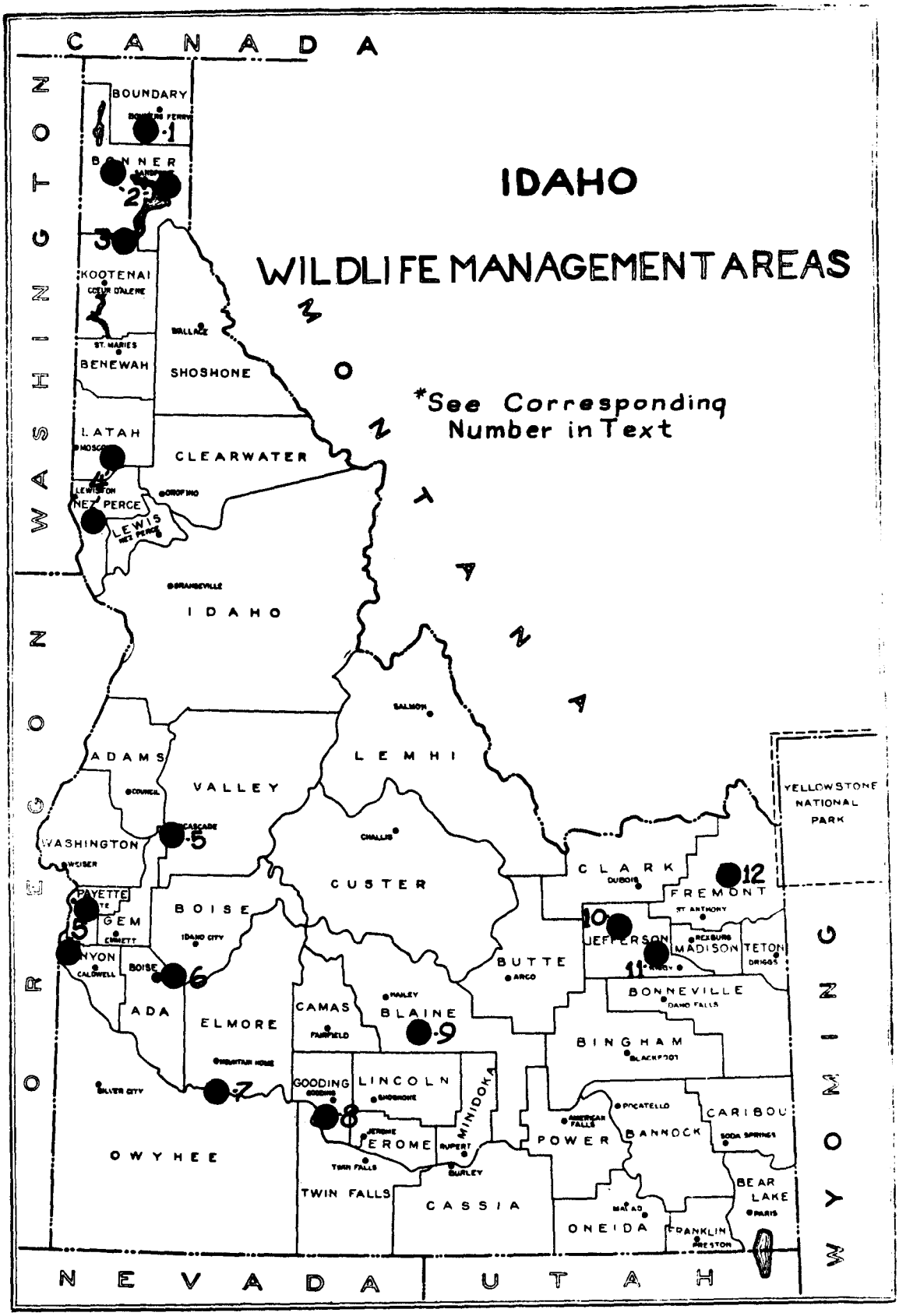
Sixteen more goose nesting platforms were provided in 1964. Ten of these were placed in Blackfoot Reservoir and six in Island Park Reservoir to facilitate production. Others, erected in previous years, were repaired.

Ground preparation was made for plantings within the Coffee Point Cooperative experimental exclosure-inclosure near Aberdeen. Personnel attended many meetings with other agencies and groups to discuss wildlife habitat and needs.

Wildlife Management Areas

There are 12 major land units in Idaho that are managed by the Fish and Game Department for the benefit of the hunting and fishing public. Two of these units have a primary purpos of providing habitat for an endangered population of big game animals, others provide access to hunting and fishing lands and waters and all but one provide "on site" public hunting and fishing opportunities.

Wildlife management areas have been developed to provide food and living spaces for birds and game animals. Grain is often produced and left for waterfowl as they move south on their annual migrations.


IDAHO
WILDLIFE MANAGEMENT AREAS
*See Corresponding Number in Text
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WASHINGTON
OREGON
NEVADA
UTAH
WYOMING
BOUNDARY
BONNER
KOOTENAI
BENEWAH
SHOSHONE
LATAH
CLEARWATER
NEZ PERCE
LEWIS
IDAHO
ADAMS
VALLEY
WASHINGTON
PAYETTE
GEM
BOISE
CUSTER
LEMHI
CLARK
FREMONT
JEFFERSON
MADISON
TETON
YELLOWSTONE NATIONAL PARK
BUTTE
BONNEVILLE
BINGHAM
CAMAS
BLAINE
ADA
ELMORE
OWYHEE
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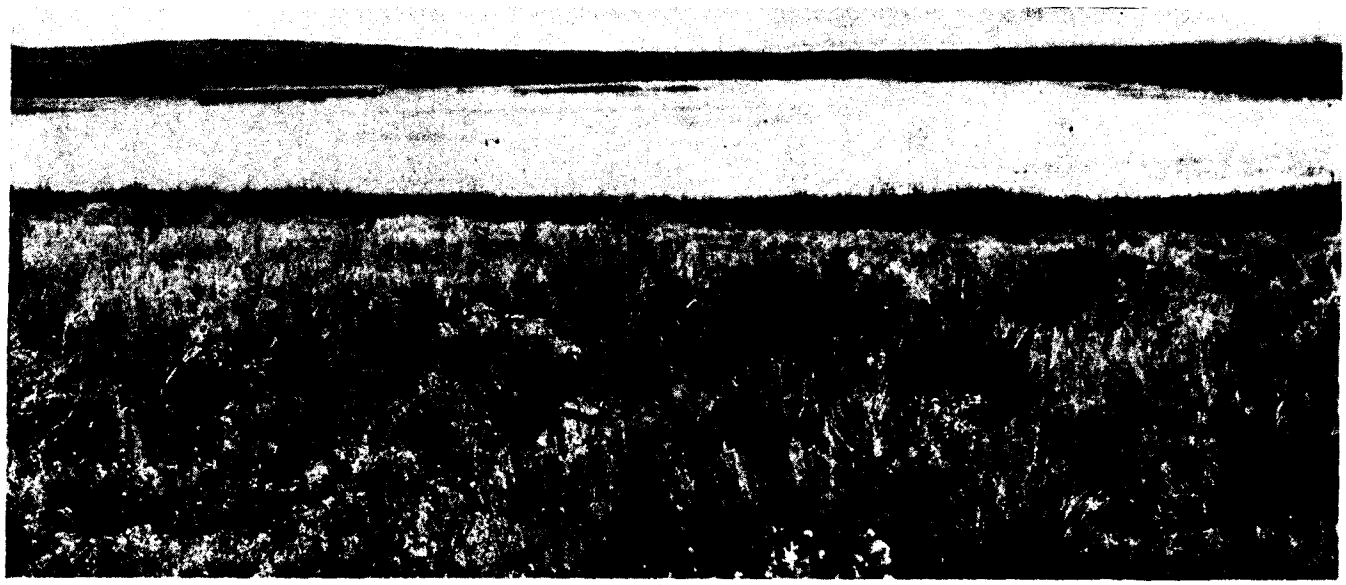
1. Boundary County Wildlife Management Area: In anticipation of development that will triple the size of the shallow lake on this unit, more land was purchased in 1964. There are now over 1,090 acres within the project boundaries and by next fall 630 acres of this should be inundated. The larger shallow lake should provide even better trout fishing and should host several thousand more ducks during the migration periods. Also, with the larger lake, the refuge effect can be maintained and some public hunting allowed. Grains and legumes were grown for waterfowl, and the legume and the grass pastures were grazed by privately owned livestock to make these fields more attractive to waterfowl.

2. Albeni Falls Wildlife Management Areas: This unit, though called an "area," is actually many small parcels of land located along the north shore of Pend Oreille Lake. These parcels, licensed by the Army Corps of Engineers for wildlife, are almost entirely inundated or inaccessible by land. A few of those that are accessible and above water have been developed as public access units, and two small units are being farmed for the production of waterfowl foods.

3. Farragut Wildlife Management Area: Final arrangements were made during 1964 for the transfer of this unit to the State Park Department. Hay was sold on the stump from the main area and barley was left standing on the Shepard Lake satellite unit. At least 29,000 people visited the main area in 1964, mainly for sightseeing, but many used the dock and launching facilities to fish or play in Pend Oreille Lake.

4. Clearwater Wildlife Management Areas: This project was initiated midway in 1964 to provide maintenance for the many public access units and fishing sites in the Clearwater River drainage that are the responsibility of the Idaho Fish and Game Department. The project leader also assisted with various construction and game management projects within the region.



Portions of the North Lake Management Area in eastern Idaho have been flooded to furnish resting areas for ducks and geese. Grain was raised on 130 acres in 1964.

5. Fort Boise Wildlife Management Area: This unit includes the public hunting and fishing areas and public access sites that have been purchased along the lower Payette and Boise rivers. For management purposes, the 1,400 acres owned in Valley County, adjacent to Cascade Reservoir, is included in this project. The headquarters area, the principal portion, is located at the mouth of the Boise River. Here, and also on nearby Gold Island, grain, legumes and cover crops are grown by project personnel and a sharecropper for wildlife and hunting coverts. This area has almost maximum use now by hunters and fishermen seeking pheasants, waterfowl, channel catfish and smallmouth bass. Even in the "off" season the public makes good use of the unit for gun dog field trials and scout encampments. New lands were purchased along the Payette River in 1964 to provide additional public waterfowl hunting and to help alleviate some of the waterfowl depredations on adjacent private lands.

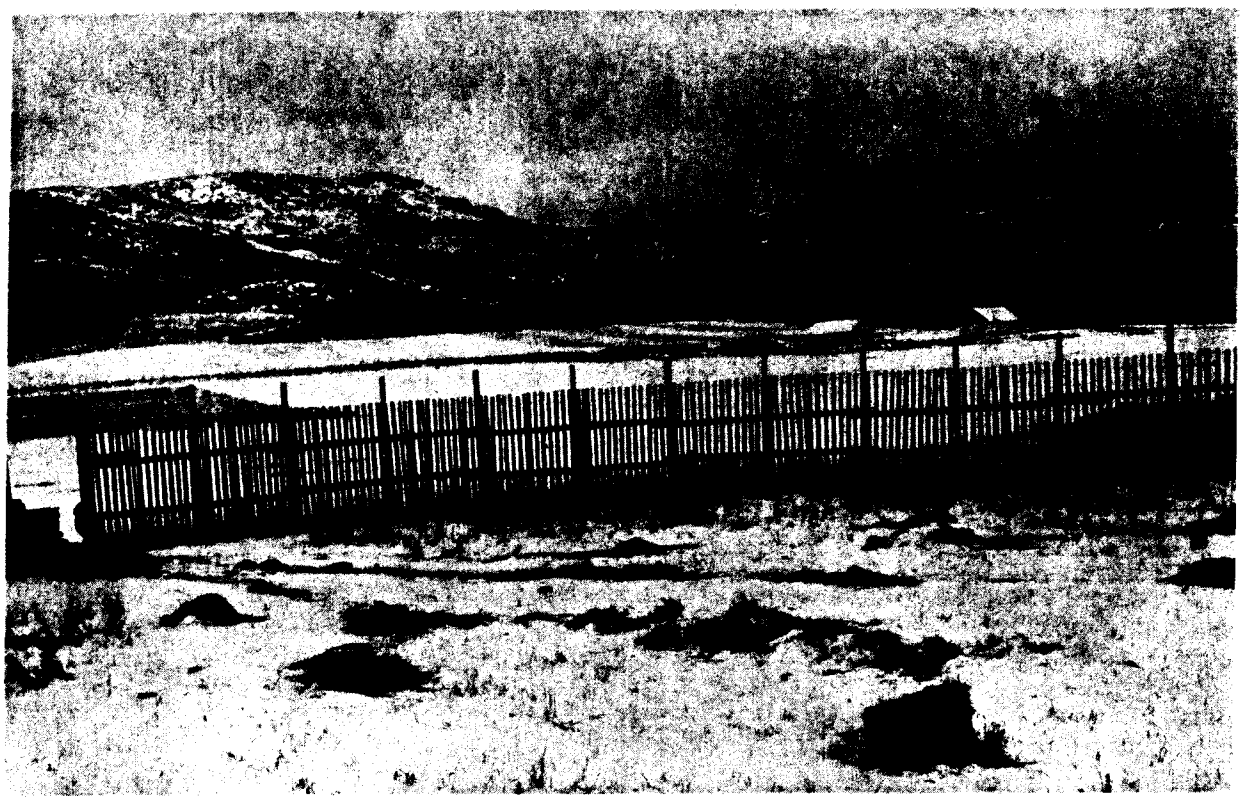
6. Boise River Deer and Elk Winter Range: This large land unit is adjacent to Lucky Peak Reservoir and includes a sizeable portion of the very critical winter range of the Boise River deer herd. Livestock grazing is not permitted now, although considerable trespass cattle and sheep grazing does occur in some areas of the unit. Initial plans were made in 1964 to permit the type of livestock grazing that would encourage the growth of those shrubs needed by big game in the winter. The heavy silting of the December floods and the fluctuations of Lucky Peak Reservoir hampered operations of the "bubbler" that is used to keep a channel open in the ice across Mores Creek.

7. C.J. Strike Wildlife Management Area: This unit includes the owned and licensed lands around C.J. Strike Reservoir in Elmore and Owyhee Counties. The headquarters area, located near the mouth of Jack's Creek on the Bruneau arm of the reservoir, has intense human use. Here grain and legumes are raised for wildlife and hunting coverts. Over 2,000 hunter visits were noted in 1964 and at least 10,000 fishermen visits were evident on this one portion of the unit. Peak waterfowl numbers on the reservoir rose to 30,000 during the late fall of 1964 and duck hunting most days in December was excellent.

8. Hagerman Wildlife Management Area: The owned and leased lands surrounding the Hagerman Fish Hatchery have been developed, during the past several years, as ponds and cropland to produce and hold wildlife and fish. Over 85,000 ducks visited and used the area at one time during the late fall of 1964, and while they were using the area hunters enjoyed exceptional hunting in nearby grain fields. A small portion of the unit is open to public hunting and 600 hunter visits were recorded for the year. The many ponds and the streams provided good trout and spiny-ray fishing. Over 9,000 fisherman visits were noted for 1964. In addition to the hunting and fishing provided by this unit, licensed trappers took over 1,400 muskrats in 1964.

9. Carey Lake Wildlife Management Area: This small unit has the remnants of Carey Lake and about 120 acres of cropland with approximately 50 acres of pasture land, located immediately adjacent to the town of Carey in Blaine County. This unit provides good to excellent waterfowl hunting for a short time each year to a few people. Dove hunting was also excellent the first few days of the season but, again, hunting pressure is only slight. Grain and alfalfa is raised and the weeds are controlled by a sharecropper that leaves portions of the crops in the fields for wildlife. More hunting and some fishing could be provided if upstream neighbors would allow more water to reach the lake to maintain a much higher water level.

10. North Lake Wildlife Management Area: This large unit surrounds the Mud Lake Reservoir in Jefferson County and provides outstanding waterfowl and pheasant hunting each year to a large number of people. Last year over 130 acres of cereal grains were grown adjacent to the reservoir to provide upland game bird hunting coverts and food and to provide food attraction for the thousands of ducks to discourage some of them from feeding in adjacent privately owned cropland. A partial count revealed over 4,500 visits to the area by hunters, fishermen or trappers. The reservoir provides a unique winter ice fishery where, in 1964, over 2,000 visits were made by persons seeking the extra large perch. This unit probably provides more hunting and fishing recreation than any of the other wildlife management areas, and there is still room for more use.



The Sand Creek Wildlife Management Area contains over 18,000 acres and is located north of St. Anthony in eastern Idaho. Along with development for game range, elk are trapped, tagged and released at the headquarters as part of the game management operations.

11. Market Lake Wildlife Management Area: This large unit, also in Jefferson County, includes the major portion of a historic shallow lake that was mostly drained for agriculture. The objectives of the development on this area have been to reclaim as much of the old lake as possible for waterfowl, by diking, blasting and level ditching. Some grain is also raised as further encouragement to waterfowl. The primary value of the area now is to provide a large resting area for waterfowl during their spring migration. Some changes in management of the area, already started, should greatly improve the area as a public hunting unit. The area also provides considerable public fishing opportunity.

12. Sand Creek Wildlife Management Area: This unit contains over 18,000 acres of the high desert range that is the intermediate and winter range for approximately 1,000 elk, many deer and a few moose. Most development on these lands have been directed toward management of big game range, but other developments, such as pond construction, cereal and legume production and grass management, has favored fish and prairie grouse. Livestock grazing has been permitted in one small area during the past several years, and new experiments were initiated to determine how livestock grazing can be used to improve this unit for big game animals.

The land management section is also responsible for the management of over 100 public access areas not associated with wildlife management areas and 13 Primitive Area ranches. Most of the Primitive Area ranches, located in Chamberlain Basin, along the South Fork of the Salmon River and adjacent to the Middle Fork of the Salmon River, are leased to commercial outfitters catering to hunters and fishermen.

Elk herds winter on the semi-desert area, partly on the Sand Creek Management Area lands. This country is historic wintering grounds for big game. Lower photo shows portion of Boise River Area where bitterbrush has been planted as part of experimental range restoration program.

FURBEARERS

Annual Fur Catch:

The 1963-64 trapping season in general was not as profitable as the previous season. A decline in the total catch of about three per cent is indicated from the trappers' reports. Inclement weather restricted trapping in many areas of the state.

Fur prices in general were sub-par. Trappers and the harvest of all furbearers except otter, were far below the "base decade" average (1945-46 through 1955-56). Muskrat was the only furbearing animal averaging a higher pelt value when compared with the previous season. Also, this price exceeded that of the previous 11 seasons.

Comparison of the 1963-64 and 1962-63 Trapping Seasons

Species	Number Caught		Average Prices	
	1963-64	1962-63	1963-64	1962-63
Beaver	5,376	11,672	$ 9.72	$ 9.74
Muskrat	97,960	94,683	.98	.85
Mink	2,665	2,932	10.52	10.74
Marten	221	534	5.39	5.40
Otter	80	97	16.83	17.68
Raccoon	531	477	1.39	2.37
Fox	150	113	2.94	3.41
Bobcat	972	861	5.56	5.48
Weasel	266	230	.41	.63
Coyote	232	240	3.50	2.58
Skunk	172	135	.58	.50
Civet	32	34	2.25*	.78
Badger	77	128	1.54	2.11
Nutria	19	0	1.00**	-
Lynx	28	12	9.96	12.50

* Only one pelt reported sold. ** Only three pelts reported sold.

Beaver

Harvest:

The seventh consecutive open season on beaver resulted in a catch of 5,376. Although this is less than half the harvest of the 1962-63 season, it is larger than that of the 1961-62 season.

Beaver tag sales were less than half the number for the previous season (6,017 to 12,241). The average pelt price was two cents below that of last season ($9.72 to $9.74). The status of the current beaver pelt value is more fully realized when compared with the ten-year "base average" price of $18.31.

Populations:

In 1964, a total of about 455 stream miles was covered on the annual beaver colony trend count. Included were 78 separate sample routes having a total of 261 beaver colonies or 1.7 stream miles per colony. This is approximately the same as the 1963 density of 1.6 miles per colony. A long-term comparison is available for 31 of the routes which have been covered every year since 1959.

Beaver Colony Counts on Comparable Trend Routes
1959 Through 1964

Location	Number of Routes	Stream Miles	Colonies Counted					
			1964	1963	1962	1961	1960	1959
District I	8	54.0	24	26	35	42	35	28
II	3	17.5	9	11	13	16	12	4
III	3	18.5	3	3	5	8	6	3
IV	9	46.0	34	36	44	46	31	41
V	8	40.5	23	31	35	37	43	39
TOTAL	31	176.5	93	107	132	149	127	115

Damage Control:

Conservation officers continued off-season control measures to minimize damage by beaver to roads, irrigation ditches, orchards, croplands, etc. Adjustment of trapping seasons to intensify harvest in complaint areas and the off-season control measures reduced the damage complaints by 36 per cent from last year (190 compared to 298). Expenditures for beaver control declined 41 per cent ($4,433 to $7,497).

Beaver Damage Complaints

District	1963-64	1962-63	1961-62	1960-61	1959-60	1958-59
I	35	37	47	84	61	66
II	6	5	11	9	19	13
III	34	45	60	58	63	44
IV	44	71	59	130	92	111
V	71	140	221	265	295	214
TOTAL	190	298	398	546	530	448

Fisher

The statewide closure on fisher trapping was continued to provide protection for the 39 transplanted from British Columbia during 1962 and 1963. The closure for trapping of marten in the vicinity of the three release sites was also continued. Fisher were reported from two locations in 1964. One was observed on the Lake Creek road near Warren, and the second at Wendover Creek near Powell.

PREDATORS

Cooperative Predator Control Program

Predator control work of the Department is now confined primarily to financial support of the cooperative program to which various federal, state and county agencies and livestock associations contribute. The Branch of Predator and Rodent Control, U.S. Fish and Wildlife Service, administers this fund and carries out actual control operations. Department expenditures for this fund in 1963-64 were $25,004.98.

Cougar

Cougar hunting as a sport continues to produce an annual kill greater than formerly attained under the bounty system. Conservation Officers reported a harvest of 162 cougar in 1963-64, up considerably from the 98 taken a year ago. Hunters actively seeking cats accounted for 78 per cent of the total kill, with most of the remainder taken incidental to other outdoor activities.

Annual Cougar Kill

District	1963-64	=1962-63	1961-62	1960-61	1959-60
I	18	23	14	9	15
II	87	39	79	34	36
III	14	19*	39	25	26
IV	40	16	27	14	41
V	3	1	5	1	1
TOTAL	162	98*	164	83	119

*Two Conservation Officer stations, Boise River and Homedale, in District III were vacant and not reported.

WILDLIFE DEPREDATION CONTROL

A total of 480 depredation complaints were serviced by Conservation Officers in fiscal year 1963-64. Furbearers (principally beaver) accounted for 41 per cent of all wildlife depredation complaints followed by birds (37 per cent), big game (19 per cent), and three per cent for all others.

Servicing costs amounted to $11,992.22, including 26,709 vehicle miles and 2,730 man hours by Conservation Officers. Beaver continued to lead all species in the number of complaints produced (40% of total), followed by pheasants (23%), deer (10%), geese (6%), bear and ducks (each 5%), elk (3%), and each of the remaining species less than two per cent.

Fisheries Management

Fisheries Management

Fishing was exceptionally good throughout Idaho during 1964. Some waters were outstanding and are worthy of special mention.

There were 66,342 anglers who fished 344,000 hours in Pend Oreille Lake and caught an estimated 1,149,000 kokanee; 1,757 cutthroat; 929 Dolly Varden; 4,942 rainbow trout; and 2,789 other fish. Resident anglers took 325,000 kokanee; nonresident anglers took 453,000 kokanee; and commercial anglers, 370,000 kokanee.

Mackinaw fishing at Priest Lake was relatively slow in November. Creel checks indicated that 141 fishermen spent 395 hours of fishing effort and caught 25 fish. Nineteen were mackinaw, ranging in size from six to 31 pounds, with a mean weight of 20 pounds. Six fish were Dolly Varden, ranging in size from 2½ to 13 pounds, with a mean weight of seven pounds.

Summary of the Palisades Reservoir catch for 1964 shows 19,035 fishermen fished 80,242 hours and caught 43,357 trout of which 42,793 were cutthroat. Liberalized regulations in effect during 1964 (the season was increased from 5 to 7 months and the creel limit increased from 5 to 10 trout) were accompanied by a 42 per cent increase in the number of fishermen days, a 53 per cent increase in hours of fishing, and an 83 per cent increase in the number of trout caught. Part of the increased utilization and catch can be attributed to better fishing conditions from heavier stocking of yearling cutthroat trout. The average hourly rate of catch increased from 0.45 in 1963 to 0.54 this year.

Total number of trout harvested from Magic Reservoir during the opening weekend alone was estimated at 30,000 fish. Fishermen success held up until late July when hot weather set in. The combined catch rate (boat and bank) for 1964 was 1.2 fish per hour, which is somewhat higher than for 1963 or 1962. During June and July, yearling fish were comprising 92 per cent of the creel and two-year old fish, 8 per cent. By October, the 1964 fingerling plant was averaging 9 inches in length and was making up 40 per cent of the creel.

Reservoir and Lake Management

Pend Oreille Lake: A continuing creel census is conducted on Pend Oreille Lake each year to determine size and quality of the annual fish harvest. The 1964 creel census demonstrated that angling for kokanee was above average while Dolly Varden continued to decline.

During 1964, approximately 78 per cent of the fishing effort was for kokanee, which made up approximately 99 per cent of the number of fish caught. Twenty per cent of the fishermen sought trout, which made up 7 per cent of the catch. Other species inspired very little fishing effort.

Creel census estimates show that some 66,342 anglers spend 344,302 hours to catch 1,148,197 kokanee; 4,942 rainbow; 1,757 cutthroat; 929 Dolly Varden; 137 mountain whitefish; 271 lake whitefish; 1060 perch; 702 crappie; 134 largemouth bass; and 485 nongame fish.

About 47 per cent of the kokanee harvest occurred during the handlining period, January through May. During this period, commercial fishermen caught an estimated 370,012 kokanee. Approximately 51,747 fishermen sought kokanee in 1964 as compared to 56,000 in 1963.

Rainbow averaged 14.5 inches in the creel; Dolly Varden, 19 inches; and cutthroat, 11.5 inches. An estimated 870 Kamloops and 491 Dolly Varden were "trophy" fish, 17 inches or larger. Kokanee averaged 8.6 inches in length during the first census period of 1964 (January 13-February 27). This compared to 9.0 inches and 8.8 inches, respectively, during the same periods in 1963 and 1962. Average length at spawning was 9.9 inches in 1964 as compared to 10.7 inches in 1963 and 11.0 inches in 1962. This decrease in size is probably due in part to two factors: (1) The relatively weak age class IV and strong age class III; and (2) the cool summer and fall temperatures in 1964 and correspondingly lower magnitude of the plankton population. The size will be watched carefully in 1965 and 1966 to determine if this is the case or if this is initial indication of a decrease in size of fish caused by population density or some other factor.

Kokanee began spawning in the south end of Pend Oreille Lake (major lakeshore spawning area) on approximately November 15 at lake elevation 2060. Spawning in the north end of the lake started approximately November 20. The lake elevation was drawn to 2056.8 by December 1 and remained at this level throughout most of December with late December floods raising the level to 2058.8 by January 2. Although this drop in elevation was intended to take place prior to the major kokanee spawning, it did in fact occur after a large portion of the fish had spawned and left numerous redds stranded.

The largest Kamloops taken from Pend Oreille during the year was 32 lbs. 2 oz.

During the fall of 1964, the artificial Dolly Varden channel in the Clark Fork River was evaluated by John Heimer (graduate student at the University of Idaho). This study indicated that approximately 60 Dolly Varden utilized the channel for spawning. Additional Dolly Varden were observed in the channel but appeared to use it only as a resting area. The study also indicated that egg survival was good in the spring area but poor in other areas. Complete results of this study will be available sometime in June 1965.

Priest Lake: The fishery of Priest Lake continues to provide a wide variety of excellent fishing. However, the cutthroat population has been reduced in past years by such items as improper logging practice and increased nursery area competition by other species and overharvest of mature fish en route to the spawning grounds.

During 1964, several definite steps were taken in an effort to rehabilitate the cutthroat population and provide improved cutthroat fishing in the future.

The spring stocking of Upper Priest Lake continued in conjunction with the Priest Lake Sportsmen during 1964. A total of 117,700 one-to-three-inch fish were planted of which 5,000 were marked with a right ventral fin-clip for future identification.

Two incubation channels, which had recently been constructed, were utilized for the first time. The channel, located on Hunt Creek, received 1,116,604 eyed cutthroat eggs, and the channel at Kalispell Creek received 543,348 eyed cutthroat eggs. Hatching results were quite gratifying at both channels with large numbers of fingerling escaping to the lake. Trapping at the Kalispell Creek channel disclosed an 81 per cent emergence and a 72 per cent escapement to the lake. No trapping was performed on Hunt Creek but the hatch was estimated to be slightly less than that on Kalispell Creek.

A total of 297,307 cutthroat eggs arrived too late to be placed in the Kalispell Creek channel and were planted in Kalispell Creek as one-inch fish in the fall of the year.

Upstream weirs were constructed on Hunt and Kalispell creeks to trap upstream migrants to give a means of evaluation of these channels. These weirs will start operation in the spring of 1965 with the trapping of the cutthroat spawning run.

Anglers always like to try for the big ones...and the fish grow to trophy size in Idaho waters. This mackinaw trout caught at Priest Lake was still growing when caught as it weighed less than 20 pounds. The famous Kamloops trout (bottom photo) are also high on the prize list as hundreds are taken at Pend Oreille Lake each year.

The stream clearance program was not operational during 1964 due to the moving of the Youth Camp from Priest Lake. It is hoped that this program can be terminated during 1965.

Considerable creel census data was gathered on the fall mackinaw fishery in an effort to gain information that will aid in the management of this species. The most notable information was that the mackinaw catch for the two-week December period surpassed that of the entire remaining fall season. Summary of the census collection is listed below. It should be noted that this is a sample taken from the fall fishery and the figures do not approach total usage or total catch.

Month	Men	Hours	Catch	Man hours/fish
October	37	74	5	14.8
November	140	422	19	22.2
December	95	271	30	9.0
TOTALS	272	767	54	14.1

Mean length and weight and per cent of fish caught in 1964 from each age class.

Year of life	Mean length (inches)	Mean Weight (lbs.)	Per cent of catch
6	26	7.5	5.0
7	30.1	13.7	12.5
8	33.8	17.6	35.0
9	39.4	22.4	32.5
10	43.5	35.3	15.0

Coeur d'Alene Lake: Kokanee fishing in Coeur d'Alene Lake continued good in 1964. Due to prohibitive natural factors the kokanee fishery must be maintained with annual plantings. Each fall, an effort is made to obtain 1,000,000 kokanee eggs for stocking in Coeur d'Alene Lake.

Cocolalla Lake: Fishing in Cocolalla Lake was greatly improved during 1964. Fishing had been outstanding for cutthroat in the years following the treatment of this body of water; however, when undesirable species were reintroduced by private individuals, the quality of the fishery began to steadily decline and the cutthroat population could not keep pace with competition from the other species. To revive good fishing, a program of rainbow planting was initiated which resulted in good fishing in 1964.

The rainbow program for Cocolalla Lake calls for an annual plant of 100,000 four-inch rainbow.

Hidden Lake: Hidden Lake in Boundary County, which had been chemically treated in 1961, became non-toxic in 1964 and will be stocked with North Idaho cutthroat in the summer of 1965. This 50-acre lake will be used as a source of brood stock for the supplying of other waters in northern Idaho.

Glidden Lake: Lower Glidden Lake in Shoshone County was surveyed in 1964 as a preliminary step in the possible construction of a dam at the outlet of this lake. A relatively small structure would increase depth of this lake and enhance fish habitat and survival.

Spring Valley Reservoir: Spring Valley Reservoir, in Latah County, continued to be a popular area with anglers during the year. A random creel census conducted during May provided interesting data on fishermen use and harvest. The peak day count of fishermen was 733. Also, 5,795 anglers caught 17,550 rainbow trout in 17,190 hours of fishing. No estimate was made of the total season harvest.

Manns Lake: A random creel census during May 1964 indicated that an estimated 5,681 anglers fished 15,084 hours to catch 6,141 rainbow trout at Manns Lake in Nez Perce County. The low catch-per-hour has been noted annually during the first few months of the fishing season while the lake is still filling.

Lost Valley Reservoir: Treatment of Lost Valley Reservoir was undertaken on October 8 and 9, 1964. Initial treatment of the tributary streams was started on October 8 and completed October 25, 1964. Potholes located in the mud flats were treated with the use of back sprayers. The series of potholes were treated two separate times.

Because of the shallow water depth in the reservoir (majority water surface area was less than 10 inches in depth) an airboat was used to distribute the toxicant.

Average capacity water volume of the reservoir is 42,100 acre feet and maximum area, 1,140 acres. Water volume of the reservoir at time of treatment was 300 acre feet. Surface area was 200 acres. Accretion to the reservoir water volume was about 30 acre feet per day.

A total of 685 gallons of emulsifiable rotenone was used, 520 gallons in the reservoir proper and 165 gallons for the tributary and pothole treatment. An increase in the use of toxicant was required because it has lost some of its potency due to aging.

The bulk of the fish kill consisted of stunted populations of perch and bullhead catfish. Other fish killed in the treatment project, listed in decreasing order of abundance, were: suckers, rainbow trout and brook trout. Total cost of the eradication project was $2,522.62.

C. Ben Ross Reservoir: Harvest of game fish from C. Ben Ross Reservoir for the past several years has been so low that chemical retreatment was deemed advisable to reduce the nongame fish and their competition with trout. Treatment of the reservoir was accomplished on October 19 and 20.

The bulk of the fish kill was comprised of a stunted bullhead population. The remainder of the fish kill consisted of shiners, suckers, squawfish, trout, and lamprey, listed in decreasing order of abundance. Total cost of the eradication treatment was $1,211.75.

Deadwood Reservoir: During the period from 1962 through 1964, a creel census and life history study has been conducted on Deadwood Reservoir and River to determine the physical, biological and ecological factors affecting the rate of return of an annual stocking of approximately 144,000 cutthroat trout fry.

Fishermen success fluctuates considerably from year to year, depending upon weather conditions and the status of the fish populations available.

Game Fish Per Hour

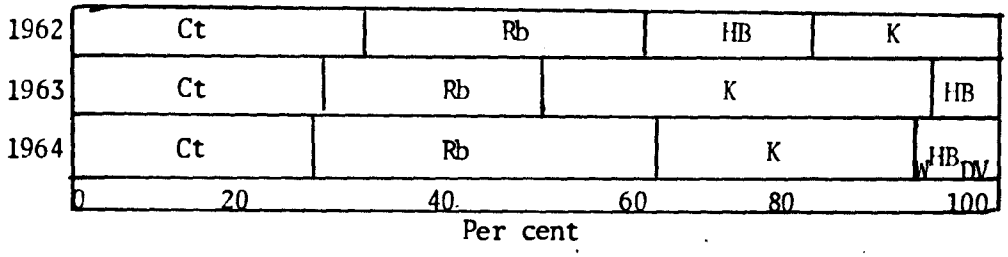
	1961	1962	1963	1964
Reservoir	3.9	1.0	1.6	0.7
River	1.6	0.7	2.6	1.0

During 1960, the reservoir was not stocked with its annual planting of 144,000 cutthroat fry. Following through the 1960 year class of cutthroat trout, it was not indicated in any way that failure to make the plant in 1960 caused any decline in the cutthroat trout fishery.

Estimated Game Fish Harvest

	1962	1963	1964
Reservoir	3,641	5,664	3,324
River	--	4,090	4,782

Percentage composition of the total game fish harvest for 1962, 1963, and 1964 for Deadwood Reservoir and River.



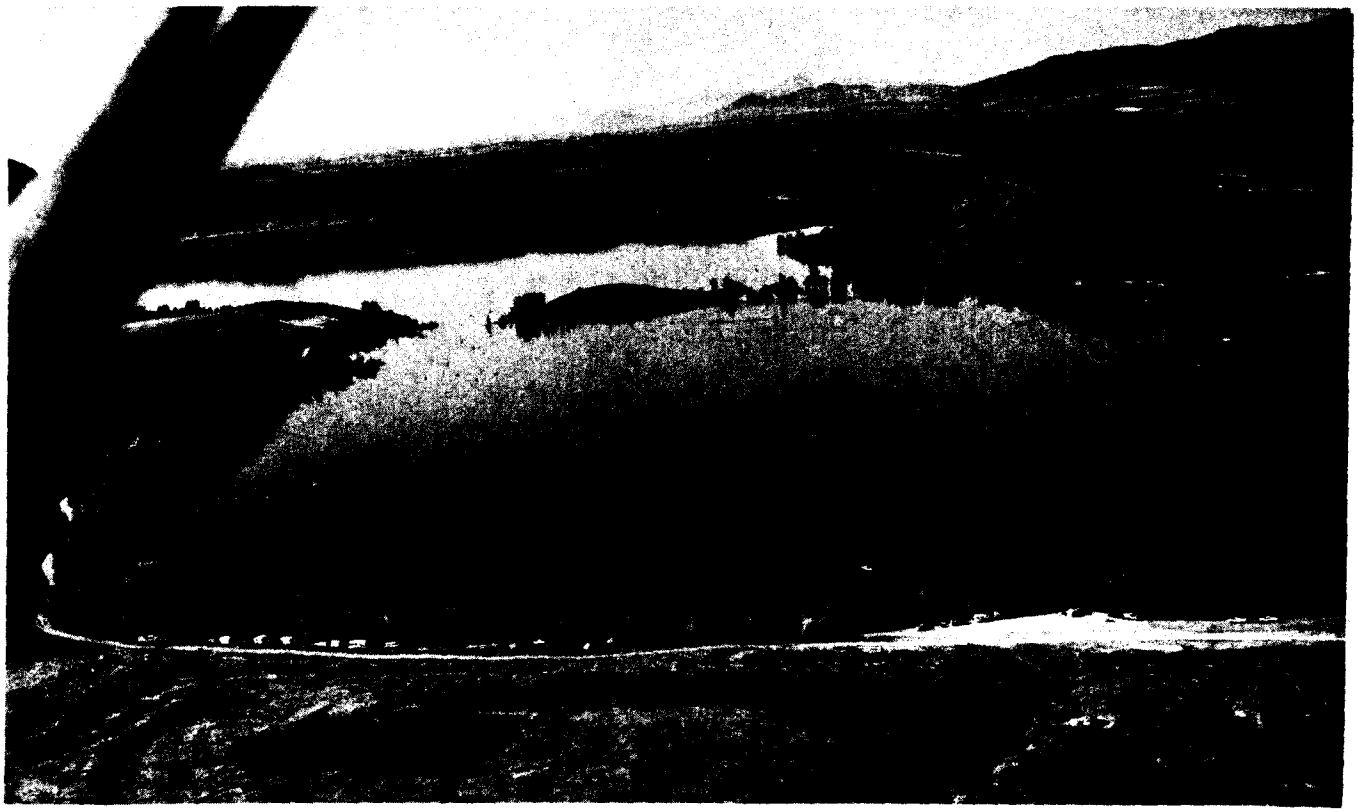
Legend Ct - Cutthroat trout Rb - Rainbow trout
HB - Hybrid cutthroat-rainbow K - kokanee salmon
W - Whitefish

The cyclic number of kokanee available to each year's fishery has a direct influence on overall fishing success. The cutthroat trout fishery seems to remain about the same each year. No rainbow trout have been stocked in Deadwood Reservoir or River since 1949; however, they have been holding their own very well in both the reservoir and the river. Another indicator that natural reproduction will take care of cutthroat trout fishery without the annual stocking of the 144,000 cutthroat trout fry.

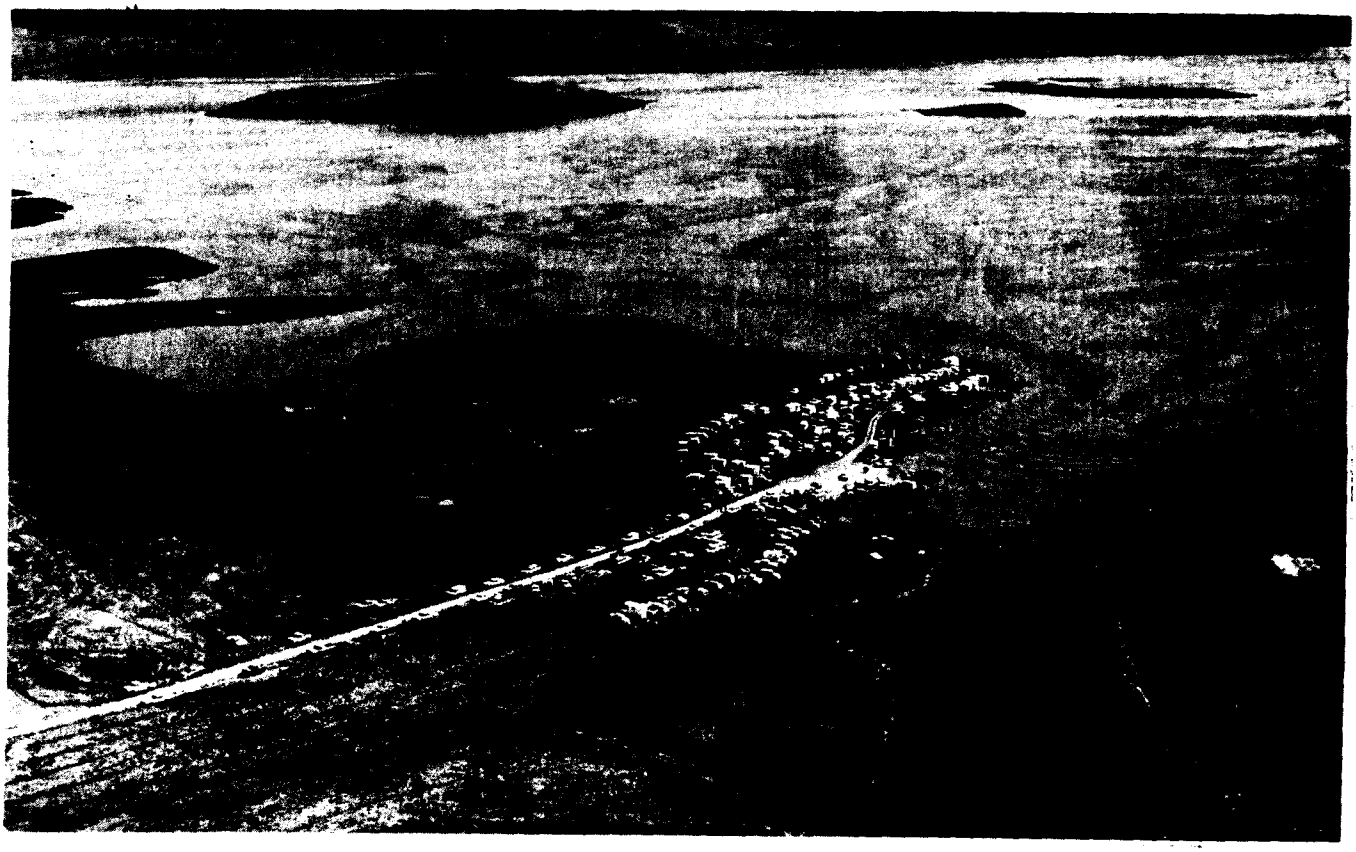
Mackay Reservoir: In view of the high quality of fishing in Mackay Reservoir during 1963 and 1964, the Mackay sportsmen and the Chamber of Commerce requested that the fishing season for the reservoir be the same as the general fishing season. For many years, the season ended on August 31. The season was extended in 1964.

Magic Reservoir: A fishermen count on opening day showed 519 boats and 781 bank fishermen on the reservoir by 10:00 a.m. The total number of fishermen present was estimated to be 2,500. Fishing success for boat fishermen on opening weekend was 1.8 trout per hour and 0.9 trout per hour for bank fishermen. The number of trout harvested from Magic Reservoir on the opening weekend alone probably exceeded 30,000 fish. This is believed to be more than the entire trout population that existed in the reservoir when it was treated in 1960.

In spite of heavy initial harvest, fishing success in October was almost as good as it was the first part of the season. During September and October, the 1964 fingerling plant were averaging 9 inches in length and comprising 35 and 40 per cent of the creel. Sampling in May indicated that plankton abundance in the reservoir was three to four weeks behind normal, due to the cold spring weather. This condition was reflected in fish growths, as fish lengths on opening day averaged 1.5 inches less than in 1963.



Fishing is a favorite form of recreation as attested by the cars, trucks and boats at two of Idaho's reservoirs. Top photo shows use at Twin Lakes in Franklin County, with public access area in foreground. Lower photo illustrates heavy use of another area (Hopkin's Landing) at Blackfoot Reservoir, also in eastern Idaho.



A total of 77 perch were checked during 3,332 creel inspections in 1963, and 103 perch were checked in 1964 during 1,721 creel inspections. Many small perch were seen discarded on the beaches in 1964. No Utah chub have been collected since the eradication project in October 1960.

Williams Lake: During the 1964 fishing season, a study was conducted at Williams Lake to determine fishing pressure, quality of the fishery resource, and to establish an angler trend count that could be used for comparison with successive seasons.

A pneumatic car counter was installed on the one access road to the lake on May 29 and operated continuously throughout the season until September 30. Anglers leaving the lake were interviewed on the opening weekend of fishing season, Independence Day weekend, and Labor Day weekend. Creel census data were also collected at periodic intervals during the summer.

There were 4,146 cars that transported 8,445 anglers to the lake during the census period. Fourteen per cent of these anglers were nonresidents and 18 per cent of them were non-license-buying anglers (juveniles under 14 years of age in this case). Twenty-four per cent of the people visiting the lake were non-anglers.

The average angler visiting the lake caught 7.3 fish at a rate of 1.1 fish per hour and stayed for 6.6 hours on each trip. Assuming that the data collected on the census days are representative of the remainder of the season, a total harvest of approximately 62,000 rainbow trout was taken from Williams Lake during the 1964 fishing season.

Average size of the fish was somewhat smaller this year than in the past, averaging 10.75 inches on opening day, compared to 11.5 inches in 1960 and 10.9 inches in 1963. This decrease in growth rate was apparently caused by the large plants of fingerlings (125,000) in 1962 and 1963. In order to attain maximum growth for the number of fish planted and in an effort to retain a quality rainbow trout fishery in this area, the annual number of fish to be planted in the future will be reduced to 100,000 fish.

The spawning run into Lake Creek was sampled again this year to determine age class composition, sex ratio, and comparative length of the spawners. Only 605 spawners were captured in the trap this year, compared to some 2,000 per year in previous years. It has been suggested that, because we are planting fingerlings in the eastern end of the lake, these fish are unable to find the inlet spawning stream on the western end of the lake, as they become mature. To investigate this possibility, one-half of the 1965 fingerling plant will be planted in the creek and the remaining one half will be planted near the eastern shoreline. A percentage of each plant will be given identifying marks.

Jimmy Smith Lake: Creel census data collected from Jimmy Smith Lake during the winter of 1963-64 showed the average angler to be catching 1.3 fish per hour that averaged 10.5 inches in length. In comparison, fish were caught at the rate of 3.9 fish per hour in the winter of 1954-55 but they averaged only 6 per pound (about 7-9 inches in length). In 1960, the catch rate was 4.0 fish per hour.

The decreased catch rate is believed to be caused by increased fishing pressure. A pneumatic car counter was installed on the one access road to the lake at the beginning of the fall season of 1964 to measure the fishing pressure and determine the utilization extent of this fishery resource.

American Falls Reservoir: Returns from tagged fish released in American Falls Reservoir in 1963 continued to come in during 1964. There was approximately a 10 per cent return of tags from the April, June and September plants, the principle difference being the April and June released fish were caught the year they were released, while most of the fish planted in September were caught the following year.

Two plants of tagged fish were made in the Snake River below Shelley during 1963 also. There was less than one per cent of these fish in 1964. Growth of the tagged fish planted during 1963 was excellent and they averaged four pounds each in September 1964. The return of the tags had practically ceased by December 1964.

Fishing pressure on the forebay at American Falls Dam continued to grow. Random counts revealed an estimated 17,000 fishermen trips to the forebay during 1964. All fish caught in the forebay came from the reservoir. The installation of an all-season boat ramp on the west side of the reservoir, near the dam, increased fishermen use on the reservoir considerably. Planting of catchable-size trout in the reservoir backwaters during April and May produces good fishing near the dam and in the forebay during June, July and August.

Springfield Lake: Excellent fishing was enjoyed at Springfield Lake following chemical treatment of the lake in the fall of 1963 to eradicate nongame fish. Opening weekend, fishermen harvested 4,400 fish from the 66 surface-acre lake. Fishing success remained high during the remainder of the season and should be excellent next year. No rough fish were found during the 1964 fishing season.

Blackfoot Reservoir: High quality fishing was available on the reservoir again in 1964. The catch was predominantly rainbow with an increase in rainbow-cutthroat hybrids from the 1963 hatchery plants. The entire Blackfoot River above the reservoir did not open to fishing until July 1, and fishing was excellent.

The reservoir was filled to capacity through the summer. This created vast areas of shallow water for rough fish reproduction. The carp and Utah chubs increased accordingly and will probably affect the trout population in 1965.

Average size of fish decreased slightly from the 1963 catch. Fish averaged 1 1/4 pounds on the opening day and were averaging 2 3/4 pounds by October. September and October saw a number of fish in the 4-to-6-pound class being taken by both bank and boat fishermen. Fishing pressure during the 1964 season was about double the fishing pressure of 1963. On opening day, there were over 200 boats on the reservoir compared to 90 in 1963.

Bear Lake: Lake trout fishing on Bear Lake was comparable with the previous years. Several fish in the 15-pound class were taken. Trout fishing was also slightly improved over 1963.

Stone Reservoir Eradication: This reservoir was drained completely during September with loss of all game fish. A large population of carp was then eliminated from the reservoir with rotenone. The reservoir was restocked in November with crappie and bass and will reopen with the general fishing season in 1965.

Chesterfield Reservoir: This reservoir returned to the list of waters producing quality fishing in 1964. The water level remained high throughout the season and a number of large fish were taken by anglers. The reservoir was well stocked and should be one of the brighter fishing spots in 1965.

Palisades Reservoir: Fisheries investigations were continued for the second year at Palisades Reservoir, an eight-year-old multipurpose impoundment which occupies a 25-square mile area of the South Fork of the Snake River basin in eastern Idaho.

During 1964, fishing regulations were changed to a seven-month season and ten-trout limit from the former five months and five trout. Liberalized regulations and a stepped up planting program involving six-inch cutthroat trout were accompanied by a 42 per cent increase in numbers of fishermen, a 53 per cent increase in hours of fishing, and an 83 per cent increase in number of trout caught.

Catch data of 2,319 anglers interviewed in the stratified-sample creel census were projected to provide estimates of 19,015 fishermen who fished 80,242 hours for 43,357 trout during 1964. As in 1963, cutthroat trout made up 98 per cent of the trout catch, with more than two-thirds originating from plants of yearling cutthroat. The average hourly rate of catch increase from 0.45 in 1963 to 0.54 in 1964. As in 1963, catch rates were highest in October (0.75 and 0.90) and lowest in August (nearly 5 hours per fish). Catch rates were higher in all months of 1964 than in the corresponding period of 1963, largely due to the planting of 220,000 yearling cutthroat in 1963, of which 5.1 per cent were caught in 1963 and 7.3 per cent were caught in 1964. Of the 230,000 six-inch cutthroat planted in June 1964, 5.9 per cent were caught with a larger percentage due to be caught in 1965. Another 250,000 of these fish are being held at the Jackson Federal Hatchery for stocking in 1965.

Growth rates of planted cutthroat is relatively good in the reservoir for two years, during which time the major food is Daphnia, a microcrustacean that is found in abundance only during the summer and fall months. Growth of age four and older planted cutthroat (16" plus) is relatively slow due to the absence of a suitable forage species. Though abundant, Utah chubs, suckers and redside shiners do not provide adequate forage because they occupy a different ecological niche than do large trout.

During the past two years, approximately 1,600,000 kokanee fry have been planted in Palisades Reservoir. Two million eyed kokanee eggs have been planted in Big Elk and McCoy creeks in an effort to initiate natural spawning in the most suitable tributary streams. Objectives of kokanee introductions are to evaluate this species as a forage and game species in Palisades Reservoir.

Of 2,435 fishermen contacted at Palisades Reservoir during 1964, 91 per cent were Idaho residents. The other nine per cent originated largely from nearby areas of Wyoming and Utah. Fifteen per cent of the fishermen fished free of charge (11% resident children, 3% old-age permittees, and 1% nonresident children and military personnel on furlough).

Trolling spoons was the popular method of fishing at Palisades Reservoir. Other methods of fishing from boats (still fishing with baits or trolling pop gear, flatfish, or spinners) produced poorer than average success of all types of fishing from a boat.

Fishing from shore was not as popular as fishing from a boat. Approximately 44 per cent of the fishermen did not use boats. The most successful methods of fishing from shore were still fishing with earthworms, minnows or cut bait (parts of fish). Spin and fly casting and still fishing with eggs, grasshoppers, cheese or marshmallows were less popular and less effective. About seven per cent of all fishermen used dead minnows for bait.

Island Park Reservoir: Utah chubs continued to increase in numbers at this reservoir. They made up 77 per cent of the fish in experimental gill net catches in 1964, compared to 55 per cent in 1963. As in 1963, kokanee were the most abundant game fish in the reservoir (11%), followed by rainbow trout (7%) and brook trout (5%). Kokanee made up over half of the sport catch during 1964 but are expected to be virtually absent from the 1965 fishery, owing to maturing and subsequent loss of the dominant 1961 year class. Several hundred thousand foot-long kokanee spawned in tributary streams during September. Some 16,000 were trapped in Moose Creek, from which over four million eggs were taken for artificial propagation.

In order to evaluate artificial stocking of Island Park Reservoir, some 75,000 fingerling rainbow trout were marked and planted in the reservoir during 1964. The relative merits of stocking these small fish and fish of catchable size will be evaluated by studies in 1965 and subsequent years.

Mountain Lake Fish Planting

A new method of releasing fish from an airplane was developed in 1964 and used successfully in stocking 65 mountain lakes in Big Lost and Big Wood River drainages. Fish are carried in a plastic bag inflated with oxygen. Depending upon the type of plane used, 25 or 30 bags can be loaded and that many lakes planted on a single flight. The contents of a single bag (which will hold up to 4,000 fish) are poured into a special release container. As the plane passes over the lake, the fish and water are released and freefall into the lake. Lakes as small as one acre in size were stocked with good results. The costs of stocking by plane averaged $7.50 per lake. Lakes were planted in a few minutes that normally would have taken two or more days on the ground, and three to four times the cost.

In addition to lakes planted in the Lost and Wood River drainages, a total of 127 mountain lakes were planted in the Boise, Clearwater, Payette and Salmon river drainages.

Trail Construction--Mountain Lakes

Approximately 4.5 miles of trail was constructed on the Boise National Forest during 1964. The trail started at the mouth of Rock Creek and ended about 1,000 yards from Timpa Lake. This will open up fishing access to eight mountain lakes. These lakes were barren of fish prior to 1963.

The APW sponsored high mountain lake trail construction program in Bonner and Boundary counties was terminated in 1964. This project resulted in trails to 15 high lakes and the improvement of the road to another. Trails were completed to Trout Creek Lake #1 and #2, Hunt Peak Lakes #1 and #2, Fisher Peak Lake, Caribou Lake, Gem Lake, Estelle Lake, Blacktail Lake, Ball Creek Lake, Roman Nose Lakes #1 and #2, Beehive Lake, Copper Lake and Queen Lake. The road was improved into Roman Nose Lake #3. No trail was constructed to Little Harrison Lake due to extremely difficult terrain.

Streams and Rivers

Bass Fishing in Coeur d'Alene River Drainage: During 1964, bass fishing proved good in the waters adjacent to the lower Coeur d'Alene River. A bass in excess of nine pounds taken from Swan Lake was the largest reported bass taken in the area. Catch per hour figures for a few of the waters are as follows: Bull Run Lake, 2.9 bass per hour; Medicine Lake, 1.2 bass per hour; Benewah Lake, .8 bass per hour; Thompson Lake, .8 bass per hour; and Cave Lake, .5 bass per hour.

Selway Falls Steelhead Fishery: A formal census of anglers at Selway Falls showed a low harvest of adult steelhead by both licensed anglers and Nez Perce Indians during the spring of 1964. Licensed anglers caught only four steelhead in 44 man days of fishing between March 8 and March 31, the end of the fishing season. No Indians were observed fishing during this time.

During April, an estimated 13 steelhead were taken during 23 man days by Indians. No Indians were observed fishing during May. By contrast, the 1963 census showed that licensed anglers took 232 steelhead and Indians harvested 24 fish. In 1962, licensed anglers took 496 steelhead while Indians caught 405 fish.

Fishing effort during late winter and spring of 1964 was reduced by poor road conditions and a late winter which slowed fish movements until the end of the fishing season. It also appears that Indians have reduced their efforts at Selway Falls in favor of snagging steelhead spawners on spawning beds along roaded sections of streams.

Indian Steelhead Fishery--Lochsa River: During 1963 there was an indication that Indians of the Nez Perce tribe had increased their activity of snagging steelhead spawners in the tributaries of the Lochsa River. An effort was made to measure this harvest by conducting a random creel census from March 8 to May 30, 1964. From data collected, it is estimated that Indian harvest of steelhead from the Lochsa River was 112 fish.

Payette River, South Fork--Whitefish Creel Census: Creel data was collected on the South Fork Payette River during January and February, 1964, to determine the status of the whitefish fishery. Fishermen were checked on 21 (35 per cent) of the days during the January and February whitefish season.

During the census period, 167 fishermen were checked that fished 491 hours and caught 1,453 whitefish ranging from 6 to 19 inches in total length and averaging about 10 inches.

Harvest information comparisons of 1962 and other related data are shown in the following table.

Year	Anglers	Hours	Fish	Fish/Hour
1964	167	491	1,453	3.0
1962	64	190	903	4.8

Stream Survey--Deadwood Reservoir Tributaries: A stream survey was made on all tributaries entering Deadwood Reservoir. Findings showed that almost all fish spawn in Deadwood River proper. Very little use was noted in the tributaries.

Survey for Proposed Ponds--Snake River: During July 1964, two side channels, formed by islands in the Snake River in the C. J. Strike backwater area, were surveyed to determine the feasibility of diking across the islands to form ponds. Development is not feasible at this time because of the long haul necessary to obtain suitable fill material.

Owyhee Stream Survey--1964: Each year there are requests to stock fingerling and catchable-size rainbow trout in streams throughout Owyhee County. In order to properly evaluate the capability of these streams to support a rainbow trout fishery, surveys were made on 13 streams.

The stream survey was divided into four sections: (1) Water temperature collections, (2) Determining existing fish populations, (3) Survival of stocked trout, (4) Growth and survival of resident trout.

Water temperatures were recorded from June to December, 1964. During May, June, October and December, water temperatures were favorable for trout survival. July, August and September water temperatures, in the lower sections of all streams sampled, increased beyond the tolerance limit for trout.

A total of 28 sections located in 13 streams were sampled to determine existing fish populations. Sample sections were randomly picked throughout each drainage. Dace and redside shiner made up 92 per cent and trout, 8 per cent of the fish populations.

Per cent of each fish species collected in 28 stream sample areas, 1964

Species	Per cent
Rainbow trout	8
Redside shiner	20
Dace	52
Sucker	15
Squawfish	3
Sculpin	2
Chiselmouth chub	trace

Trout were confined to the extreme upper portion of the streams. Resident trout, found only in the upper sections of streams surveyed were small in size but very abundant. Sampling on Jordon Creek showed that the summer stocking of catchable rainbow trout were not surviving the winter.

At the end of the survey, it was concluded that none of the streams studied, except Jordon Creek, would benefit from a stocking program of either fingerling or catchable rainbow trout.

Richfield Canal: On May 20, 1964, 5,000 rainbow trout, averaging 3.2 ounces and 7 inches in length, were released in the Richfield Canal. In less than five months, these fish attained lengths up to 17 inches and weighed from 1.5 to 2 pounds, providing excellent fishing in the canal during 1964. In addition to the numbers harvested by fishermen, the weight of the 837 hatchery fish salvaged in October exceeded the weight of the total plant of hatchery fish released in May by 255 pounds. In June 1963, marked fingerling trout averaging less than five inches and 0.6 of an ounce were released in the canal. Prior to the time the canal was shut off in 1963, a number of these marked fish moved upstream out of the canal into the river section below Magic Dam. Here they wintered over and re-entered the canal in 1964. During the salvage operation in October 1964, marked fish were recovered, weighing four to five pounds and measuring 20 inches in length.

Road Construction: The June flood of 1964 created a dramatic example of the damage that can result when road building agencies constrict stream channels of rivers by construction of wide roadbeds in narrow canyons.

The streambed of the South Fork of the Clearwater has been crowded repeatedly during the past 10 years by road construction designed to widen and straighten the Elk City Highway. The Department has repeatedly objected to the constriction of the stream channel where the dumping of excess fill material created white-water sections that are possible fish migration blocks.

During the flood, the South Fork of the Clearwater turned into a raging torrent in its constricted, straightened channel. Many sections of the roadway were washed away by the erosive force of the water. Constricted areas forced the water to pile up and go over the road causing even more erosion. After the flood receded, the road building agencies determined the cause of the damage and obtained funds to widen constricted areas.

Fish Salvage: In September 1964, 1,000 pounds of rainbow trout were salvaged from the Little Camas Reservoir canal. The fish were planted back in the reservoir. Over 2,000 rainbow, weighing 3,064 pounds, were salvaged from the Richfield Canal in October 1964 and transplanted in Magic Reservoir. Forty-one per cent of the salvaged fish were hatchery rainbow, compared to 86 per cent in 1963.

Grasshopper Control

On July 16, 1964, some five miles of desert rangeland adjacent to the Little Wood River above Richfield were sprayed by a DC-3, using technical malathion. Four monitoring stations were set up prior to and during the spraying. Although the plane was to stay 200 feet from the stream bank, there was drift and direct spraying over the water in some portions of the river. Fortunately, the contamination of the river with malathion was light. Some aquatic insect mortality occurred along with a limited kill of juvenile suckers. Observations on the river and in the desert area sprayed showed no effect on adult fish or wildlife.

Between July 31 and August 8, 1964, one hundred thousand acres of land in the South Fork of the Boise River drainage were sprayed with malathion at the rate of eight ounces per acre.

In the area sprayed, only two streams, lower Smith Creek and the lower South Fork proper, were important fish supporting waters. There were no adverse effects to aquatic life observed on either of these two waters.

Unlicensed Fishermen Participation

During the 1964 fishing season in the Magic Valley region (area 5), data were collected on the number of unlicensed fishermen checked by conservation officers. A total of 6,059 fishermen were contacted on 25 separate waters. Of the number of fishermen checked, 17.6 per cent were found to be unlicensed. Juveniles under 14 years of age comprised 11.9 per cent; 5.6 per cent were persons 70 years of age and older; and 0.1 per cent were military furlough permittees. Percentages of unlicensed fishermen by the various waters ranged from 8.3 to 41.0 per cent. A similar survey in 1963 showed 13.2 per cent unlicensed fishermen, of which 8.9 per cent were juveniles, 4.2 per cent old age, and 0.1 per cent military. Fishing success of unlicensed fishermen in 1963 was found to be nearly the same as the licensed fishermen. This would indicate that over 17 per cent of the total fish harvest in Area 5 in 1964 was taken by non-paying fishermen.

Information gathered at three other areas in the state also indicated that between 15 and 18 per cent of the fishermen were exempted from purchase of a license. Slightly less than half were persons older than 70 years of age.

Fisheries Research and Surveys

Statewide Fishing Harvest Survey: The annual postal card questionnaire survey was conducted in 1964 to determine the trends of the salmon and steelhead harvest from Idaho waters during 1963. A postal card questionnaire was sent to 15,456 anglers who purchased Idaho fishing licenses. There was a substantial increase in the number of anglers (36,900) who fished for steelhead trout in Idaho during 1963. This increase is no doubt related to the large escapement of steelhead which entered Idaho during the fall of 1962 and the spring of 1963. The number of chinook salmon anglers remained at the same level (21,400) in 1963 as was estimated for the two previous years.

Estimated harvest of chinook salmon in 1963 was 24,400 fish, a harvest similar in magnitude to that of 1962 and 1961. The smaller harvest during the recent years reflects the lesser abundance of the combined spring and summer chinook runs which have entered Idaho. Estimated harvest of steelhead trout in 1963 was 54,800 fish, a significant increase from the previous year when 39,200 fish were estimated to have been caught. Increased harvest of steelhead appeared to have been taken primarily from the Salmon River drainage during the 1963 spring season. Fish taken during this period would have been part of a large escapement of the 1962-63 fish year.

Steelhead anglers returned 7,030 1963 steelhead permits with a reported catch of 9,098 fish. As in 1962, it appears that successful anglers returned their steelhead permits more readily than the unsuccessful anglers.

Studies to Increase the Return of Hatchery Fish to the Creel

Alturas Lake: Studies were conducted in 1963 at Alturas Lake to evaluate mid-season plants of catchable-size hatchery trout. A creel census was conducted to determine the return to the creel of individual plants made throughout the season and the effect of the plants on the rate of fishing success.

The return to the creel of hatchery-reared rainbow trout was directly related to the time of planting (see table). Anglers harvested the largest number of fish from the plant made just before the opening of the fishing season. The return from the plant made in late June was smaller but still a relatively good return. The number of fish harvested from the third plant was smaller and reflects the lesser amount of fishing pressure these fish were subjected to.

The catch per hour for rainbow trout was highest during June as shoreline anglers caught fish at a rate of more than 1.5 fish per hour. The catch rate for both shoreline and boat anglers during July and August was under one fish per hour. The plants made during late June and early August helped maintain a relatively good catch rate.

Kamloops rainbow trout reared to a large size in a hatchery (10 to 16 inches) were planted in Alturas Lake during the fall of 1962 and July 1963. Plantings were made to determine if rearing these fish to a larger size before planting would increase the number of fish which would attain a large size as in certain other lakes. Many jaw-tagged Kamloops planted during the fall of 1962 were caught by anglers that fall. Analysis of stomach contents of many of these fish revealed that few were feeding on forage fish in the lake. A few of the tagged fish planted in 1962 were observed in the creels of fishermen during the early part of the 1963 season. A high percentage of Kamloops trout observed in the creel were sexually mature and appeared to have spawned during the spring of 1963. An estimated 42.6 per cent of the 5,500 untagged Kamloops planted in July of 1963 were harvested by anglers.

Hatchery-reared rainbow and Kamloops trout were estimated to have made up 54.9 per cent of the anglers' catch in 1963. Remainder of the catch was made up by kokanee, naturally produced rainbow trout, and Dolly Varden.

Alturas Lake Harvest Data—1963

	Kokanee	Hatchery-reared rainbow trout			
		First plant	Second plant	Third plant	Kamloops
Number caught	11,928	7,613	6,622	3,848	2,608
Number planted	--	10,500	10,500	10,500	1/
Date planted	--	May 27	June 27	August 2	1/
Percent return	--	72.5	63.1	36.6	42.6 2/

1/ In September, 1962, 4,200 jaw-tagged fish were planted; 5,500 untagged fish were planted July 24, 1963.

2/ The percent return applies only to the estimated return of the fish planted in 1963.

Salmon and Steelhead Investigations

South Fork, Salmon River Studies: Steelhead fishermen in the drainage enjoyed a better-than-average fishing season. Checking station records show a catch of 737 steelhead for 1,695 anglers. This was 9.43 steelhead per fisherman, compared to an average of 9.30 per fisherman over the last five years. Water conditions remained ideal for fishing longer than usual and danger of an over-harvest became apparent. Therefore, fishing was suspended by an emergency closure on May 10.

Late arrival of chinook salmon in the South Fork drainage prompted the decision for a 10-day delay in the opening date of the fishing season. This affected the total harvest of chinook from the drainage, as recorded through checking stations. Total catch recorded was 1,709 chinook for 4,253 fishermen, lowest on record for the past five years. The individual catch, however, of 0.40 chinook per fisherman, compares favorably with the five-year average catch of 0.42 fish per fisherman.

A weir was installed in the South Fork, two miles upstream from the mouth of the East Fork of the South Fork, for the purpose of counting the summer-run chinook into the river. Harvest above the weir (1,056) was subtracted from the count through the weir (2,895), giving a spawning escapement of 1,839 fish. Redd counts and sex and age composition data collected on spawning grounds were compared to data obtained at the weir in an effort to evaluate and improve methods of determining escapements.

Redd counts indicated an average spawning escapement in the South Fork drainage. Surveys of dead fish on the spawning grounds showed four-year-old fish predominating, which appears to be normal for this race of fish.

Steelhead Production Studies--Lemhi Big Springs Creek: Studies to evaluate success of a program to rehabilitate the steelhead runs on the Lemhi River were continued during 1964. Approximately 440,000 eyed steelhead trout eggs from Clearwater River fish were planted in the hatching channel adjacent to Lemhi Big Springs Creek during 1964. Survival from eyed egg to emergent fry was 68 per cent with nearly 300,000 fry counted from the hatching channel.

Juvenile rainbow-steelhead trout were enumerated as they left Lemhi Big Springs Creek. Nearly 13,000 juvenile rainbow-steelhead trout were estimated to have left the stream during the fall of 1964. Most of these 13,000 fish were young-of-the-year fish just completing their first growing season.

A number of fry released into Lemhi Big Springs Creek during the last two years has been increased approximately 100,000 since the first plant in 1962. There has been a corresponding increase in the number of migrants leaving the stream during the fall of the last three years, indicating capacity of the stream to rear fish through their first year was not exceeded in 1962 and 1963. A still larger number of fry will be released into the stream during 1965 in an effort to determine what the capacity of the stream is for rearing young-of-the-year trout.

The number of yearling rainbow-steelhead trout leaving Lemhi Big Springs Creek during the spring months of April and May has been almost identical (2,200 fish) for each of the three years, 1962 through 1964. It appears the stream can rear a much larger number of young-of-the-year fish than it can carry over winter.

Chinook Salmon Production Studies--Lemhi River: During the spring and early summer of 1964, a fish weir was constructed in the Lemhi River to facilitate enumeration of salmon and steelhead entering and leaving the upper portion of the Lemhi River. The upstream migrant weir was put into operation on June 23 and 1,075 adult chinook salmon were enumerated through September 13. An unknown number of adult salmon had migrated upstream past the weir site prior to June 23.

The portion of the weir used to trap upstream migrants was operated through December 15 to determine if adult steelhead entered the upper portion of the Lemhi River during the fall months. No adult steelhead were captured or observed.

As a part of the weir facility, a system of louvers, to divert a sample of downstream migrant salmon and steelhead into a trap, was installed on the west bank of the river. The louver collection facility was operated from late June through December during 156 days. During the days that the downstream migrant trap was operated, 3,423 juvenile chinook salmon and 530 juvenile rainbow-steelhead trout were captured. The smallest number of fish were captured during July and the largest number of fish were caught during the month of October.

Facilities to allow trapping downstream migrant salmon and steelhead were constructed at two irrigation ditch screens. One screen (L-43) is located in the upper portion of the Lemhi River approximately one mile upstream from the Lemhi weir, and the other (L-5) is located five miles upstream from the mouth of the Lemhi River. Trapping facilities at screen L-43 were operated from the latter part of May through December. The trap was operated 164 days during this period and 8,811 chinook salmon juveniles and 102 rainbow-steelhead trout juveniles were captured. The smallest number of fish were captured during the month of August, and the largest number during the month of October. The trap at screen L-5 was operated from the latter part of September through the early part of December. The trap was operated 30 days and 3,315 juvenile chinook salmon and 19 juvenile rainbow-steelhead trout were captured at this facility. The largest number of fish were caught during the month of October. These studies will be continued in future years to determine the production of juvenile salmon and steelhead in the Lemhi River as affected by various levels of spawning ground and nursery area seeding.

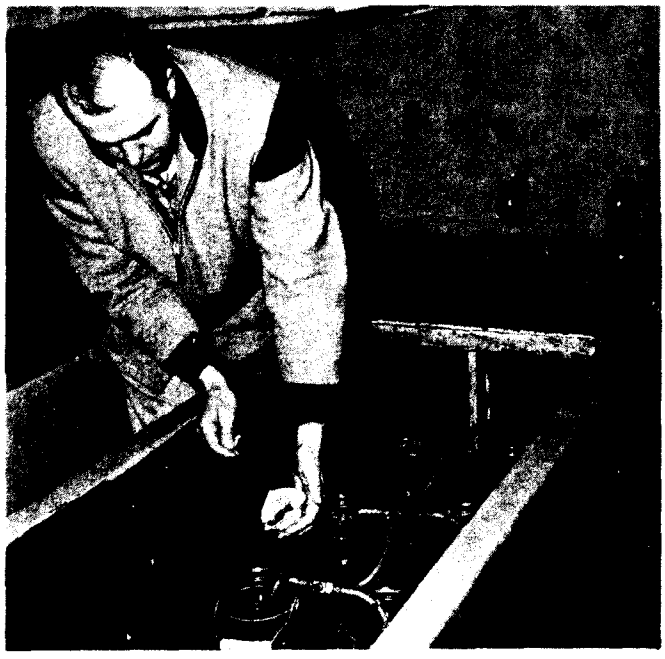
Fish weir used to count salmon and steelhead entering and leaving the upper portion of the Lemhi River.

Sockeye Salmon Studies--Redfish and Alturas Lakes: Studies to measure the production of sockeye salmon were continued at Redfish during 1964. Juvenile sockeye salmon, migrating from the lake to the ocean were enumerated at the Redfish Lake Creek weir, located a short distance downstream from Redfish Lake. Only 6,500 juvenile (smolt) sockeye were counted at the weir in 1964 compared to more than 20,000 for each of the three previous years. An estimate of the survival from egg to smolt can be determined by relating the number of smolts produced to the estimated egg deposition for each brood year (see following table). The estimated survival to the smolt stage for the last four brood years has been relatively high compared to the previous four brood years. The apparent high survival could be accounted for by (1) a small number of fish present in the lake and, therefore, lessened competition; or, (2) a significant contribution by kokanee or residual sockeye to the smolt runs. The latter explanation seems particularly applicable to the 1961 brood year when more smolts were counted leaving the lake than the number of eggs estimated to be available for deposition.

Brood year	Adult sockeye counted at weir	Estimated egg deposition	Smolts counted from Redfish Lake	Percent survival (egg to smolt)	Percent age class I smolts
1955	4,361	5,994,000	79,300	1.3	41.5
1956	1,381	1,788,000	11,300	0.6	8.0
1957	571	825,000	4,100	0.5	87.8
1958	55	87,000	1,500	1.7	46.7
1959	290	465,000	27,200	5.8	92.6
1960	75	105,000	21,500	20.5	97.7
1961	11	24,000	25,000	2/	91.2
1962	39	54,000	(4,300) 1/	(8.0)	
1963	395				
1964	335				

1/ Partial total.
2/ Kokanee or residual sockeye must have contributed to smolt run.

Underwater diving gear proves useful to fisheries biologist for surveying high mountain lakes.



Water quality investigations were conducted on portions of the Boise and Snake Rivers during 1964 (left photo). Steelhead were spawned at the Lewiston holding pond to obtain eggs for hatching channels in the South Fork Clearwater River drainage.

During the summer of 1964, 335 adult sockeye salmon were captured at the Redfish Lake Creek weir. Estimates of survival from smolt to returning adult sockeye are available for the smolts which left Redfish Lake during the years 1956-62 (see the following table). From limited scale and length frequency studies, it appears that a large majority of the sockeye salmon returning to Redfish Lake do so after spending two years in the ocean. Survival of smolts which left Redfish Lake during the years 1960, 1961 and 1962 was much higher than for the smolts which migrated to the ocean during the four preceding years. Increased survival was due in part to smaller harvest of returning adults by the commercial fishery in the lower Columbia River during the years 1962, 1963 and 1964.

Year	Smolts leaving Redfish Lake			Number of 1/ returning adults	Percent survival (smolt to adult)	Percent of run harvested by fishery
	I	II	Total			
1956	------	------	42,500	55	0.13	62.9
1957	33,100	25,400	58,500	290	0.50	68.3
1958	900	46,600	47,500	75	0.16	66.4
1959	3,600	10,400	14,000	11	0.08	70.6
1960	700	1,500	2,200	39	1.77	37.0
1961	25,200	800	26,000	395	1.52	21.3
1962	21,000	2,000	23,000	338	1.46	20.0
1963	22,800	500	23,300			
1964	4,300	2,200	6,500			

1/ Number returning two years later.

In addition to adult sockeye salmon enumerated at the Redfish Lake Creek weir, 40 to 50 sea-run sockeye were observed in the inlet and outlet of Alturas Lake during the summer of 1964. These sockeye were bright red in color and were observed spawning during mid-August--the same time the kokanee from Alturas Lake spawn. The sockeye salmon which migrate into Redfish Lake spawn during late September and early October on the shoal areas of the lake. It is possible that the sea-run sockeye which returned to Alturas Lake in 1964 were actually kokanee which had gone to sea and returned.

Salmon and Steelhead Downstream Migrant Studies: During the fall of 1964, the Department contracted with the U.S. Bureau of Commercial Fisheries to undertake some trapping and marking studies on downstream migrant juvenile salmon and steelhead. Trapping was conducted on the upper Salmon River at screen S-14 and on the lower Salmon River with a floating bargetrap.

The trap at screen 14 was operated 32 days during the months of October and November. One juvenile rainbow-steelhead trout and 304 juvenile chinook salmon were captured during this period. Water control facilities will be constructed at S-14 screen during the spring of 1965 to increase the number of juvenile salmon and steelhead which can be captured at this facility.

The floating barge-type, scoop trap was located on the main Salmon River near Whitebird, Idaho, to sample the Salmon River for downstream migrant chinook salmon. The trap was operated twice a week from September 23 to December 14, when ice conditions forced the closure of the trapping operation. During this period, the trap collected 646 chinook salmon smolts ranging in size from 68 to 130 millimeters, fork length. Of these smolts, 200 were marked with a thermal brand.

Rapid River Anadromous Fish Hatchery Evaluation Program: An evaluation program of the new Rapid River salmon hatchery was initiated in 1964. Construction of a velocity barrier with upstream and downstream trapping facilities was initiated during the fall of 1964 near the mouth of Rapid River. Juvenile downstream migrants and adult upstream migrant salmon and steelhead will be enumerated at this facility beginning in the spring of 1965.

Growth records are being kept on the salmon and steelhead fingerlings being reared at the hatchery. Juvenile salmon and steelhead reared at the hatchery will be marked as they are released and the number of returning adults will be determined.

Attempts to hold and spawn adult fall-run chinook salmon from Snake River at the hatchery were not encouraging. It appears that low Rapid River water temperatures prevent normal egg maturation. Losses of adult salmon were high and egg quality at the time of spawntaking was low.

Holding and spawning of spring-run chinook salmon and steelhead trout from the Snake River was successful and egg and fry survival was high during the first year of rearing.

Bruces Eddy Fisheries Studies: In the spring of 1964, the Idaho Fish and Game Department, under contract to the Army Corps of Engineers, conducted a study of spawning steelhead on Little Moose Creek in the upper North Fork of the Clearwater drainage.

A weir and traps were placed in the stream and adult steelhead entering Little Moose Creek were captured, tagged, released and closely observed while in the study area. Observations were made on timing, movement, spawning, redd discernibility, competition and general activity.

Steelhead were later than usual in entering the study area due to the winter conditions that prevailed until late spring. Fish were in the study stream from April 20 through the first week in June and averaged 15.8 days in the stream. Length of time in the stream before spawning ranged from one to 22 days and after spawning, from zero to six days. Length of time spent on the redd averaged 1.6 days and no fish stayed on any redd more than three days. Water conditions mainly determined how long a redd was discernible. High flows of turbid water caused redds to disappear in a few days.

Of six successfully spawning, marked female steelhead in Little Moose Creek, one built two redds, and five built one redd each. Of four successfully spawning, marked male steelhead, two spawned three times each, one spawned twice, and one spawned once. Competition between males occurred throughout spawning.

Evaluation of Fish Facilities

Brownlee and Oxbow Dams: On August 4, 1955, the Idaho Power Company was licensed, through Federal Power Commission Project 1971, to construct a three-dam complex, consisting of Brownlee, Oxbow and Hells Canyon hydroelectric dams on the middle Snake River. This study is concerned with Brownlee and Oxbow projects only.

On November 17, 1960, the F.P.C. issued an order to Idaho Power Company to consult and cooperate with the Department of Interior and the fisheries agencies of Idaho, Oregon and Washington in determining a mutually satisfactory program for the purpose of testing and evaluating the fish facilities at Brownlee and Oxbow projects.

In February 1961, the Idaho Fish and Game Department signed an agreement with Idaho Power Company to evaluate the upstream and downstream fish facilities for passing migratory game fish past the two dams to determine if the fish passage facilities functioned as designed and to recommend changes in fish passage conditions or request other passage facilities.

Brownlee Dam, the larger of the two completed hydroelectric projects, was the first to be constructed. Brownlee is a high head, rock-fill dam with a reservoir 58 miles long with a usable storage capacity of 1,000,000 acre feet. The primary function of the project is power production. All water discharge passes through Francis-type turbines. Additional regulation of the forebay is provided by flood ports. The U.S. Army Corps of Engineers requires Brownlee Reservoir to be drawn down at least 43 feet by March 1 of each year for flood control.

A barrier net facility for collecting downstream migrant fish is located in the Brownlee impoundment approximately one mile upstream from the dam.

Oxbow Dam is a rock-fill, clay-core dike that creates a reservoir with a usable storage capacity of 5,500 acre feet and extends 12 miles upstream to the base of Brownlee Dam. With the exception of flows released to attract fish to the upstream fish facility at the base of the dam, or spillway releases, all discharge from the reservoir is through Francis-type turbines. Because of the unique location of the powerhouse in relation to the upstream fish facility, it is necessary for upstream migrating salmon and steelhead to pass through the influence of the powerhouse tailrace and continue upstream in the much smaller volume of flow around the "oxbow" to the spillway fish trap at the base of the dam.

Upstream fish facilities at Oxbow consist of a short fishway section where fish are captured in a modified Buckley Trap. Fish are transferred from the trap to a tank truck, hauled above the two dams, and released in Brownlee Reservoir to continue their migration upstream.

A tagging study was conducted in the fall of 1961 to determine whether the upstream migrant salmon should be released in the Snake River above Brownlee Reservoir or into the reservoir immediately upstream from the dam. Spawning ground recovery of reservoir-released fish was not significantly different from the recovery of fish released in the river upstream from the reservoir.

In conjunction with the 1961 fall chinook tagging program, Dr. E. J. Ordal, pathologist from the University of Washington, conducted a study on the incidence of C. columnaris in adult fall chinook salmon. He reported that over one-fourth of the adult chinook salmon and steelhead examined at the Weiser and Brownlee release sites were infected with columnaris disease. It was discovered during the spawning ground surveys that it was very difficult to determine whether or not gill deterioration on dead fish resulted from disease or natural decomposition.

Studies at the downstream migrant fish facilities were conducted to determine if significant numbers of fish were bypassing the net. Results of tests designed to measure the effectiveness of the barrier net indicate that fish were able to move through or beneath the net. It is believed that, from the beginning, the barrier net never constituted a complete barrier. Even after the wing nets were installed on both the Idaho and Oregon sides, the net was never completely fish-tight. Despite a constant effort by the company divers, it was an almost insurmountable task to maintain the nearly seven acres of submerged netting in a fish tight condition.

It is likely that fish passed through holes in the net and, also, with favorable temperature and oxygen conditions, passed beneath it.

Juvenile chinook salmon and steelhead trout have been collected at the Brownlee barrier net since 1959. Number of migrant salmon collected at the net has declined from 130,551 in 1959 to 13,482 in 1963. Number of steelhead captured has declined from 18,250 in 1959 to 1,212 in 1963. (See following table.)

Reduction in number of downstream chinook salmon migrants is possibly due in part to decreased numbers of spawners. However, data compiled indicates that major reductions in number of downstream migrants collected at the barrier net took place before any major reduction in the number of spawners occurred. A major reduction in the number of downstream migrant steelhead collected at the barrier net also occurred before a reduction in the number of spawners.

Since Brownlee Reservoir was created, a steady decline in the number of downstream migrants has occurred. Decreases in the number of downstream migrants captured at the barrier net since 1959 could be the result of factors other than the obvious one of reduced spawning populations. Among these possibilities, one must consider (1) migrants fail to migrate through the long expanse of reservoir; (2) succumb to adverse environmental conditions within the reservoir; or (3) migrants have passed through or under the net and past the dam.

During the study, six large scoop traps were fished in the tailrace and the river downstream from Brownlee Dam to sample the number of fish which pass under or through holes in the barrier net and leave the reservoir via spillway or turbines. On some days scoop trap catches exceeded the barrier net facility catches. Generally, catches at scoop traps increased as the barrier net catches increased and decreased when scoop trap catches decreased.

A large percentage of the fish collected in the scoop traps below the dam were dead. Many of the dead fish examined externally in the tailrace traps showed some evidence of damage resulting from pressure changes. Evidence of pressure change and mechanical injury were observed mostly in chinook and steelhead which were 150 millimeters or more in length.

During 1962, downstream migrating fall chinook salmon and steelhead trout were captured from Snake River near Weiser, Idaho, marked and released. Spring chinook were captured and marked in Eagle Creek near Richland, Oregon. These fish were captured and marked before they entered Brownlee Reservoir in order to (1) determine with assurance the origin and age of fish collected at the barrier net; and (2) to obtain an estimate of the number of fall chinook entering the reservoir.

Marked fall chinook of the 1961 year class were recaptured at the barrier net in 1962 and 1963. Estimated recruitment to the reservoir ranged from 791,644 fish based on mark and recovery data of fish recovered at the barrier net in 1962, to a recruitment of 546,420 fish based on recoveries of marked fish from 1962 and 1963.

The number of fall chinook females, spring chinook, and steelhead released upstream to spawn naturally, and the number of downstream migrants collected at the barrier net.

Year	Fall Chinook Salmon			Spring Chinook	Steelhead Trout	Downstream Migrants Collected at Barrier Net	
	Number released upstream	Per Cent females 1/	Number of females	Number released upstream	Number released upstream 2/	Chinook salmon	Steelhead trout
1957	14,952	27.8	4,157	--	3,911	--	--
1958	14,305	36.7	5,250	761	4,528	--	--
1959	11,825	26.6	3,145	1,250	4,557	130,551	18,250
1960	5,100	29.8	1,520	2,631	1,974	49,485	2,574
1961	4,658	65.0	3,028	2,057	1,798	19,767	2,143
1962	1,600	45.6	730	1,048	1,139	13,669	1,462
1963	51	--	--	343	466 3/	13,482	1,212

1/ The percentage of females in the spawning escapement was determined by examination of dead fish found on the spawning ground surveys.

2/ Fish year count. The 1957 count includes fish counted in the fall of 1957 and the spring of 1958

3/ The count of fish during the fall of 1963 only.

Samples of marked and unmarked fish were measured in 1962 and 1963 in order to facilitate identification of the various races and age classes of fish collected at the barrier net. The Age Class I spring chinook and Age Class 0 fall chinook had rather distinctive length frequency distributions during the spring months. Age Class I fall chinook and Age Class II spring chinook (residuals) had overlapping length frequency distributions.

From the mark and recovery program, it was determined that spring chinook appear to migrate through the reservoir more readily than either fall chinook or steelhead trout. More than 90 per cent of the 1960 year class fish were Age Class I fish, their normal migration age.

It was not possible during the course of this study to identify, specifically, all factors contributing to the ineffectiveness of the barrier net to operate as planned. It must be concluded, however, that the barrier net is a failure as a method of collecting downstream migrating salmon and steelhead in Brownlee Reservoir. The barrier net was removed during the summer of 1964. Results of this study were presented at a Federal Power Commission hearing held in Washington, D.C., in June 1964.

Lake and Reservoir Investigations

Anderson Ranch Reservoir: A fishery research project, initiated in 1963, was continued during 1964 at Anderson Ranch Reservoir on the South Fork of the Boise River. Objectives of the project are to develop control programs on nongame fish species and to search for environmental conditions that might limit abundance of game fish species. Segments of the project include fish life histories and distribution, limnology, and creel census.

Anderson Ranch Reservoir is a large Bureau of Reclamation irrigation and power development containing 493,000 acre feet of water, and is approximately 12 miles in length. The reservoir is dominated by nongame fish species and sport fishing is generally poor.

Gill netting, creel census, and SCUBA observations show the following species present in the reservoir: rainbow trout, Dolly Varden, kokanee, yellow perch, whitefish, coarse-scaled sucker, fine-scaled sucker, squawfish, chiselmouth chub, redside shiner. The catch of experimental gill net sets made throughout the summer was composed of 51 per cent squawfish, 27 per cent sucker spp., 5 per cent chiselmouth chub, 13 per cent yellow perch, and 4 per cent rainbow trout.

Dissolved oxygen data collected indicate an ample abundance of well-oxygenated water throughout the reservoir during the summer months. Dissolved oxygen levels in Anderson Ranch Reservoir ranged from a mid-summer low of 8.5 p.p.m. to a spring and fall high of 12.6 p.p.m. and 10.5 p.p.m., respectively. Dissolved oxygen concentrations at depths of 200 feet ranged from 8-10 p.p.m. and remained fairly constant at these levels throughout the months of June, July and August.

Temperature data collected indicated relatively homothermous conditions in May and October. Stratification began in mid-June and complete stratification was accomplished in mid-July.

Surface water temperatures varied from 53° to 75° F. The temperature of the bottom waters varied from 39° to 48° F. The 70° isotherm, when present, remained within 25 feet of the water surface at both stations during the summer. The isotherms of 65, 60, 50 and 45° F. were found at greater depths as the summer progressed. Since isotherms were formed at greater depths as the summer progressed, fish which occupy waters of a limited temperature range, such as trout and kokanee, would also have to move deeper later in the summer.

Plankton were measured volumetrically to determine the standing crop, fluctuations in the standing crop, and depth distribution patterns. Cladocera comprise the bulk of the zooplankters sampled in the reservoir. Daphnia species are present in both quantity and quality throughout most of the growing season. A high of 55 organisms per liter was collected in May at a depth of 20 feet. In general, numbers of Cladocera decreased as the water depth increased. Cladoceraus were found to be abundant in the diets of squawfish, rainbow trout and yellow perch.

SCUBA observations were initiated in early June to determine the extent and frequency of squawfish spawning along the shoreline areas of Anderson Ranch Reservoir. Spawning activity commenced on June 21. Surface water temperature was 64° F. With the aid of scuba, squawfish spawning in shoreline areas was confirmed. Eggs were observed scattered in granitic type rubble within three to four feet of the water surface. Suckers were most active in the squawfish spawning areas during the peak spawning period and were observed feeding on freshly deposited squawfish spawn.

Hoop-net traps set in Lime Creek, a tributary stream, showed little movement of squawfish out of the reservoir. It appears that most of the squawfish population in the reservoir spawns in the impoundment.

Temperature, dissolved oxygen, and zooplankton abundance data indicated the reservoir environment was suitable for the production of kokanee salmon. An attempt to start a cycle of kokanee was made in late November. Early fall-run kokanee eggs (696,000) were transferred from Moose Creek in eastern Idaho to Eagle Hatchery. These eggs were hatched and held to the swim-up fry stage and released in the South Fork Boise River about six miles upstream from the reservoir.

Yellow perch is the predominant species sought after by anglers during the summer months and many quality fish entered the creel. Hatchery-reared rainbow trout comprised 85 per cent of the trout catch. Most trout are taken by trolling in early spring or late fall. Few are harvested during the mid-summer months.

Cascade Reservoir: In the summer of 1964, a water quality and preliminary limnological study was conducted on Cascade Reservoir. This body of water is located in Valley County near the town of Cascade at an elevation of 4,828 feet above sea level.

Dense phyto-plankton blooms, mainly the blue-green algae, Aphanizomemon, occurred during summer and early fall. The decomposition of this mass of plant material contributes to the oxygen deficiency in the lower layers of the reservoir.

Daphnia, a cladoceran zooplankter, and an aquatic insect, the midge, are the main items of diet of the fish species present in the reservoir. Daphnia is present in both quality and quantity throughout most of the growing season. A high of 85 organisms per liter was recorded in June at a depth of 10 feet.

Water chemistry analysis indicates water relatively low in mineral content but high in both phosphate and nitrate nutrients. Fluctuation of the shallow, sloping lake shoreline, inundation of rich farmland, many cattle feeding close to the water's edge, irrigation return flow water, and raw sewage from the town of McCall are all factors contributing to the nutrient supply in the reservoir.

Dissolved oxygen in the reservoir below the 25-foot depth decreases steadily during the summer and fall. Oxygen readings of zero were recorded in the area near the dam at the 50-foot depth and only one part per million was recorded at 30 feet.

Water temperatures ranged from 55° to 72° F. in the reservoir during the study period. However, air temperature during the summer of 1964 was below normal and higher summer air temperatures have been recorded in other years. A partial thermal stratification existed in the reservoir for two months during the summer.

Squawfish and large-scale sucker are the most abundant species in the reservoir. Yellow perch and bullhead provide most of the angling harvest from the reservoir. Trout caught are of fine quality but the catch is small.

Kokanee numbers appear to be diminished from previous years. There was no run into Poison Creek in 1964. Such factors as high temperature, the disease columnaris, and low oxygen levels during summer months probably contributed to the decimation of this species.

Due to the large rough fish population, it seems probable the quality of the trout fishery will continue to decline. Perch may compete successfully. Eradication of spawning squawfish and their fry in the North Fork of the Payette River above the reservoir during the years 1958 through 1962 seemed to decrease squawfish numbers to the extent that in 1963, trout and perch fishing were improved from previous years. However, 1964 was again a poor year for trout and was not one of the better perch years.

Lucky Peak Reservoir: A limnological investigation was conducted on Lucky Peak Reservoir during the summer and fall of 1964. This body of water lies approximately nine miles southeast of Boise and is used primarily for irrigation water storage and flood control.

A widely fluctuating body of water with steep, sloping banks, Lucky Peak contains approximately 305,000 acre-feet at full pool, with a maximum depth at the dam of about 225 feet, and an average depth of about 130 feet. Water analysis indicates water low in mineral and nutrient content. High levels of dissolved oxygen are present at all depths throughout the year.

The temperature range during the year was 40° F. to 70° F. Thermal stratification existed during the period between early June and the middle of August in 1964. Pulses of cladoceran zooplankton were observed in late June, middle of August and in the middle of September. Greatest density was in the middle of September when 45 organisms per liter were recorded at a depth of 10 feet. Zooplankton is the main source of food for the fish species in the lake, although the cladoceran species present, mainly Daphnia, are small.

Diatoms make up the greatest portion of phytoplankton present. No blooms of green or blue-green algae were noted during the study period. Suckers and squawfish and redside shiners are very numerous in the reservoir. Other fish species present include yellow perch, chiselmouth, Tui chub, and rainbow trout. A spawning run of squawfish was noted in Mores Creek during June, and it is believed spawning occurs in the reservoir also. Trout fishing is supported to a large extent by hatchery plants, although some native fish are present. Growth of trout is slow in this reservoir.

Pollution

Snake River: During the past year, Snake River flows in the Milner area were sufficient to provide adequate dilution water for many of the industrial wastes added to the water. With increased flows and some reduction in wastes by the various food processing industries located in the Burley area, no fish kills occurred in Milner Reservoir during 1964.

Although progress in pollution abatement has been made, there are still too many organic wastes entering Snake River. A survey in the Burley-Milner area in February revealed much grease, silt and both solid and dissolved organic matter entering the Snake River from potato plants west of Burley. The main drain, a large irrigation canal, which enters the Snake River on the north side between Burley and Milner Dam, still resembles a flow of sewage for most of its length. This canal transports wastes from nearby small towns, a large sugar processing plant, a slaughterhouse, and a cheese factory to mention a few.

Boise River: Pollution abatement on the Boise River has made some progress but some industries are still causing problems. Slaughterhouse wastes and potato and sugar plant wastes are still added to the river in substantial amounts.

In the lower Boise, when irrigation diversions are first filled in the spring, much accumulated organic matter on the river bottom is transported by the water into irrigation laterals and on to croplands. Usually rough fish present in the river are also diverted with the water.

In the spring of 1964, a large kill of suckers occurred in the Eureka Canal diversion below the Simplot Potato Processing Plant near Caldwell. The kill was due to a complete lack of dissolved oxygen in the water caused by the decomposition of large amounts of organic matter, mainly Sphaerotilus, flushed from the river bottom and into the diversion water. Dead and dying suckers were carried into irrigation laterals and onto croplands. This problem has occurred in past years.

Another fish kill occurred in Cruzen Ditch near Boise. In this case, waste oil from a farm implement manufacturing company was the cause.

Spruce Budworm Control--National Forests

Hughes Creek Research Study--1964 Segment: A study, financed by the U.S. Forest Service and conducted by Idaho Fish and Game personnel, was conducted at Hughes Creek to determine what effect carefully controlled program of DDT application to the forest for control of spruce budworm would have upon aquatic organisms. The 1964 control program called for helicopters to spray one pound of DDT per acre in a 400-foot-wide strip beginning 400 feet from streamside and for TBM-type aircraft to spray the remainder of the area beyond 800 feet also with one pound of DDT per acre. The area encompassed in the Hughes Creek experimental project was 16,000 acres.

Spray distribution, as detected with eight oil sensitive card lines, was fairly close to the proposed limits. The helicopter spray application averaged 486 feet, rather than 400 feet, from the stream. The fixed wing aircraft appeared to be overly conservative in its spray application and averaged 1,040 feet rather than 800 feet from the stream. Spray cards with 0.1 gallons or more per acre concentrations were considered to have been within a spray swath.

Some fish held in live boxes in test and control streams died during the study, but the cause of death has not yet been determined. Aquatic insect losses, determined by drift net sampling, occurred on each day of spraying. Spray, when applied by fixed-wing aircraft in the pattern followed in Hughes Creek, could not be kept out of the streams.

Salmon National Forest Spruce Budworm Control Project--500,000 acres: Five hundred thousand acres of the Salmon National Forest, near the city of Salmon, was sprayed this year in an effort to control an epidemic population of spruce budworm. The area was located in the drainages of Panther Creek, Horse Creek, Yellowjacket Creek, Silver Creek, North Fork Salmon River, and the Salmon River between Horse Creek and Tower Creek.

At the beginning of the project, helicopters were spraying a 400-foot-wide strip with one-half pound of DDT per acre, beginning 300 feet from the streams. Fixed-wing aircraft were spraying one pound of DDT per acre on the remainder of the forest beyond the 300-700 foot helicopter zone.

Upon monitoring the streams for DDT contamination, it was found that controls placed upon the spray aircraft were not stringent enough to keep the spray out of the streams. Several adjustments were made in the application pattern during the project until, on the final spray day, helicopters were applying one-half pound DDT per acre beginning 600 feet from the streams out to 1,400 feet, and the fixed-wing aircraft were spraying one pound DDT per acre on the remainder of the area beyond 1,400 feet from the stream.

Using aquatic insects on indicators of DDT in the streams, the following information was obtained:

Type of Aircraft Spraying	Number of Streams Monitored	Distance from Stream	Percentage of streams hit
Helicopters	11	300 ft.	27.3
Helicopters	6	400 ft.	16.6
TBM	8	800 ft.	62.5
TBM	21	1,400 ft.	19.0
Multiple engine	13	1,400 ft.	61.5

From the data collected in the monitoring of this project, it is evident that:

1. Spray can be applied most accurately to designated area with helicopters.

2. TBM-type aircraft are quite difficult to maneuver in rugged terrain, such as the Salmon Forest area, and should be used only in areas without streams or where the distance is greater than 1,400 feet from the streams.

3. Multiple engine aircraft are even more difficult to maneuver than the TBM and, therefore, are not recommended for use in spraying rugged terrain such as the Salmon Forest when valuable aquatic life is involved.

DDT Long-Range Study: During the Salmon Forest spray projects, a research study was initiated in an effort to determine some of the long-term effects of sublethal amounts of DDT upon aquatic insect abundance, residue accumulation in fish, reproductive success in fish, and delayed mortality in fish. Rainbow fingerlings and adult rainbow were held in live boxes during the spraying activity and throughout the summer, with the following resultant mortalities:

Location of Live Box	Size of Fish	Number Per Box	Mortality at end of Summer
Geertson Creek-Control	Fingerlings	300	13%
Indian Creek	"	300	44%
Panther Creek	"	300	97%
Geertson Creek-Control	Adults	30	17%
North Fork 1/	Adults	30	10%
North Fork 2/	Adults	25	12%
Indian Creek	Adults	30	37%
Panther Creek	Adults	30	47%

1/ These fish were held in the upper end of the North Fork hatching channel and received no supplemental feeding.

2/ These fish were held in the lower end of the North Fork hatching channel and were fed DDT-killed aquatic insects.

On July 17, a multiple-engined spray aircraft dumped some 500 gallons of insecticide across a small tributary of Panther Creek, approximately 35 miles above the Panther Creek live box station. Four days later (July 21), significant mortalities began to occur in the fingerling live box and did not subside until August 21. By October 21, 97 per cent of the fingerling died in this live box, compared to 44 per cent in the Indian Creek live box and only 13 per cent at the control station. Although it would appear that the high losses in Panther Creek resulted from the DDT dumped in the headwaters, conclusive proof is not available and it is possible the losses were caused by some other factor.

All fingerling and adult rainbow which survived in this study were transferred to the Mackay hatchery. The fingerlings were observed for DDT content, differential mortality, rate of maturation, and general physical fitness. The adults will be spawned and the eggs and sperm tested for DDT content, fertility, hatching success, swim-up success, and general well-being of the resultant fry.

Insect bottom samples were taken at Hughes Creek and will be taken again in 1965 and 1966 to measure population abundance and species composition after being exposed to a forest spray project. Five thousand eyed cutthroat eggs were held in a hatchery basket and trough at the North Fork channel test station and another 5,000 were held in a similar manner in a control stream. There was no significant difference in the hatching success of these eggs.

Chinook eggs were taken from live, partially spawned adult fish in the North Fork and also from completed redds in the stream bed. These, along with eggs taken in a similar manner from a control stream, have been sent to the laboratory for DDT analysis. The results have not yet been received from the lab. Wild rainbow-steelhead fingerlings were collected from Hughes Creek before spraying commenced, and again after it terminated. These fish have been sent to the lab for tissue analysis, but the results have not as yet been received.

BASIN INVESTIGATIONS

Middle Snake River: During the spring of 1963, the Federal Power Commission ordered Idaho Power Company to make several changes in its Fish Conservation Program for the middle Snake River. These changes were:

1. Remove from Brownlee Reservoir the Brownlee net installation including the barge traps and pumping and loading system prior to the beginning of the 1964 downstream migrant season.

2. Construct a hatchery and holding facility to handle approximately 300 adult spring chinook salmon, or steelhead, and rear approximately 600,000 fingerling of either species to seaward migration size. The facility was to be located on Rapid River, a tributary of the Little Salmon River, and operated on an experimental basis with transfer of adult spring chinook, or steelhead trout, to Rapid River installations from Oxbow Dam.

3. Continue to artificially propagate fall chinook salmon in facilities near Oxbow Dam until an alternate plan is ordered by FPC.

4. Construct, operate and maintain a temporary fish facility for Hells Canyon Dam.

5. Provide funds to evaluate the success of artificial propagation facilities to be constructed at Rapid River.

During the spring and summer of 1964, Idaho Power Company constructed holding and propagation facilities at Rapid River and the Fish and Game Department assumed operation of the facility under contract with IPC.

In February 1964, the Federal Power Commission granted Pacific Northwest Power Company a license for the construction of High Mountain Sheep Dam. This decision has since been challenged by the Washington Public Power Supply System and others. The case (presently) is being heard in the United States Court of Appeals.

Boise River: Construction of a flood control project on the Boise River from Boise downstream was reactivated by the Corps of Engineers in the fall of 1963. However, the project was delayed following recommendations of the Fish and Game Department that the project be reauthorized with recreation, fish and wildlife included as purposes of the project. The project remained status quo during 1964.

The long legal battle to provide storage space in Lucky Peak Reservoir for water to be released in Boise River during periods of low flow, was resolved when the State Reclamation Engineer issued a permit for storage to the U.S. Bureau of Reclamation on condition "That the yield of water from 50,000 acre feet of space be available for maintaining minimum wintertime flows in the Boise River below Boise Diversion Dam under a release pattern established from time to time by the Director of the Idaho Fish and Game Department." This established a significant precedent in the continuing efforts to get recreation, fish and wildlife uses recognized as beneficial uses of water in the State of Idaho.

Dworshak Dam: Negotiations continued with the U.S. Army Corps of Engineers to provide measures which will be necessary to propagate and perpetuate in the best possible manner the fish and wildlife at the Dworshak project. Fisheries agencies, including the Idaho Fish and Game Department, have since requested a fish hatchery large enough to handle eggs from 12,000 steelhead. It is the opinion of these agencies that fish passage over the dam will fail because of the difficulty in guiding small fish through the reservoir where they would have to be passed over the dam, or through turbines, on their downstream migration. The Corps of Engineers has not indicated what type of facilities it will recommend to Congress for construction at Dworshak Dam.

Montpelier Creek Dam: The Montpelier Creek Dam and Reservoir project, sponsored by the Bear Lake Soil Conservation District, Montpelier Irrigation Company, and the city of Montpelier, was authorized as a Watershed Protection and Flood Prevention Act (Public Law 566) project in September 1964, and qualified for federal assistance specified in the approved watershed work plan. Approximately 1.4 miles of excellent stream fishing habitat will be replaced with a multiple-use reservoir subjected to fluctuating water levels. No fish passage facilities will be provided.

COLUMBIA RIVER FISHERY DEVELOPMENT PROGRAM

Fish Passage

Plans and specifications for modification of the Powerhouse Fishway at the Washington Water Power Company Dam near Lewiston were prepared. It is anticipated that construction will start in the late winter or early spring of 1965. Preparation of plans for revision of the north fishway is in progress. The south fishway was revised in 1963 and operation through 1964 has shown a significant improvement over the original ladder. Fishway revision at the dam to improve upstream passage for salmon and steelhead is being financed by Bureau of Commercial Fishery and Washington Water Power Company funds through agreement between the Idaho Fish and Game Department and the Company.

Construction of the fishway around Selway Falls, located about 21 miles upstream from the mouth of the Selway River, continued through 1964. Unstable rock formations and flood damage in June and December of 1964 have increased the cost of this project and delayed the scheduled completion date. Depending upon available funds and river conditions, completion is now scheduled for the fall of 1965.

Because of lack of funds, no work was done on removal of barriers to upstream migrating anadromous fish during 1964. It is hoped that this project can be reactivated in the near future.

Fish Screens

A total of 16 fish screens was installed in irrigation canals in the Salmon River drainage during 1964. These screens are a portion of about 250 which eventually will be installed in diversions from the Salmon River and its tributary streams. Since 1959, 204 screens have been placed in operation.

Chinook Salmon

During July and August 1964, adult spring and summer-run chinook salmon were captured in the Salmon River drainage, held in ponds until sexually mature, and spawned. Eggs were transported by aircraft to the Sweetwater eyeing station near Lewiston. When the eggs were eyed, 925,864 were planted in the streambed of the upper Selway River near Magruder Ranger Station. An additional 285,162 eyed eggs were planted in a newly constructed experimental hatching channel at the mouth of Running Creek, a tributary of the Selway River. Adult chinook salmon from the 1964 spring run also were captured at Bonneville Dam, transported by truck to the Carson National Fish Hatchery and held to maturity in ponds. Some 1,000,000 eyed eggs from this source were planted in Bear Creek, a tributary to the Selway River. This is the fourth consecutive year spring and summer chinook eyed egg plantings of similar magnitude have been made in the Selway River drainage. This project is expected to continue for a minimum of one more year.

Chinook salmon smolts collected in a bypass trap at one of the fish screens on the Main Salmon River to check on downstream migration. Large floating collection barge is towed up the Clearwater River where it was placed in service on the North Fork (lower photo).

In November 1964, about 1,000,000 eyed fall chinook eggs were planted in a controlled flow, hatching channel on the lower Selway River. These eggs were made available from the Bureau of Sport Fisheries and Wildlife, Spring Creek Fish Cultural Station on the Columbia River. A total of 289,630 fry from a 1963 plant of fall chinook eggs from the same source was counted out of the Selway River hatching channel during the spring months of 1964. The count of fry amounted to a survival of approximately 29 per cent of the eggs planted.

Coho Salmon

A total of 1,000,000 eyed coho "silver" salmon eggs was planted in November and December 1964 in two hatching channels on Red River, a tributary of the South Fork Clearwater River. These eggs were received from the Eagle Creek National Fish Hatchery in Oregon. The initial plant of coho eggs in the Clearwater River drainage was made in the Red River hatching channel during January 1963 and totaled 100,000 eggs. In December of 1963, 500,000 eyed eggs were planted. During the spring of 1964, a total of 155,897 fry or approximately 31 per cent of the December 1963 egg plant was counted out of the channel.

Steelhead

A program to reintroduce steelhead into the South Fork of the Clearwater and Lemhi river drainages, initiated in 1962, was continued during the year. In the spring of 1964, 503 adult steelhead were transported from Lewiston Dam and released into the South Fork Clearwater River and its tributaries. On May 27, an aerial check was made of the various streams stocked and seven steelhead redds were observed. Visibility was very poor. Totals of 521,195 and 443,576 eyed steelhead eggs were planted in the Red River and Lemhi River hatching channels, respectively. These eggs were from fish held and spawned at the Lewiston Dam holding pond. A survival of 57 per cent (297,962 fry) was realized from the Red River channel. A total of 298,877 fry (67 per cent survival) was counted out of the Lemhi River channel. Steelhead adult transfers into the South Fork Clearwater drainage and eyed egg plants in the Lemhi and South Fork Clearwater River drainages will continue until runs have been established.

HATCHERY PRODUCTION

Idaho State fish hatcheries produced 945,000 pounds of fish during 1964. A big step forward in the operation and management of State fish hatcheries has been a change in the practice of specifying the amount and kind of ingredients in fish feed. Beginning January 1, 1963, the Department called for bids on an open formula which specified feed ingredients and the vitamin concentrate in detail. Low bidders mix and deliver the feed to hatchery stations.

Cost of fish feed per pound of fish produced has diminished steadily since the advent of dry fish feed. In 1955, it required 5.6 pounds of wet feed at a cost of 38 cents per pound of fish produced. In 1964, the poundage of dry feed had been reduced to 2.2 pounds and the cost to produce a pound of fish was reduced to 17 cents.

The cost of producing and planting one pound of trout averaged 52 cents per pound in 1964.

Fish Feed

Experiments in fish nutrition are continuing at several of the State's production hatcheries in an effort to develop the most desirable fish feed. In addition to the development of dry feed for use at the warmer water trout hatcheries, the Department is now purchasing a pellet, known as the Oregon Moist Pellet, for use in colder water stations in northern Idaho. Although it has not been used long enough to give concrete results, indications are that the fish feed will be superior to the former meat and salmon viscera diet which had been standard for many years.

Salmon Stations

The fish hatchery at Rapid River near Riggins was constructed by Idaho Power Company during 1964. It is an experimental station built to determine if it would be possible to rear spring chinook salmon in a fish hatchery and transfer the run of spring chinook from the Snake River drainage to the Rapid River drainage. Eight-hundred-fifty thousand spring chinook eggs were taken during the year. These are presently in the incubators at the Rapid River Station. The Oxbow Salmon Station, also constructed by Idaho Power, was expanded to rear fall chinook salmon to fingerling size for release. Both the Rapid River Hatchery and the Oxbow Salmon Station are operated by the Fish and Game Department under contract with Idaho Power Company.

Steelhead are being reared experimentally at Hagerman Hatchery to determine the response of this species to 58° F. water.

Fish Health

Fish reared in hatcheries generally displayed good growth and survival. No significant disease problems were encountered during the year. The use of medicated feed dropped to a low level.

Disease problems resulting from interstate and international shipment of fish and fish eggs from one fisheries station to another has been cause of considerable concern among fish culturists. Idaho has not been confronted with such a problem since 1963 when a virus disease known as "infectious pancreatic necrosis," caused high mortalities at one station. This disease was transported to the station through trout eggs from a commercial source. This circumstance emphasizes the need for expanded brood stock facilities from which a larger quantity of the required number of trout eggs can be produced.

Fish Hatchery Improvements

American Falls: Installed ten vertical incubators; installed two-way radio in fish planting truck; and painted exterior of all buildings.

Ashton: Installed ten vertical incubators; purchased fish loader.

Clark Fork: Installed ten vertical incubators; purchased 20 plastic rearing troughs; purchased fish loader; installed two-way radio in fish planting truck; and erected garage for truck storage.

Eagle: Installed one vertical incubator; installed storm windows and doors on two dwellings; ceilings of two dwellings were insulated; removed one small dwelling from station; converted meat-grinding room into personnel room; roads and parking on hatchery grounds were surfaced with asphalt.

Grace: Installed two-way radio in fish distribution truck; completed new dwelling; access road surfaced with asphalt.

Hagerman: Replaced bridge over Riley Creek; increased head wall height of Tucker Springs Diversion Dam; completed sidewalk on fish display pond and curb in public display area; replaced two furnaces in duplex; and painted exterior of buildings.

Hayspur: Painted interior superintendent's residence because of smoke damage which resulted from faulty furnace operation; Loving Creek Diversion channel completed; purchased fish loader; and purchased ten vertical incubators.

Mackay: Erected steel hatchery building; installed ten vertical incubators and 31 plastic rearing troughs; installed perforated water intake screen on hatchery supply line; purchased fish loader; installed oil furnace to replace obsolete coal furnace in one dwelling; insulated domestic water line to prevent freezing; installed shower cabinet in storage building; replaced kitchen cabinet in dwelling No. 3.

McCall: Razed two old raceways and filled in space for parking; painted exterior of all buildings.

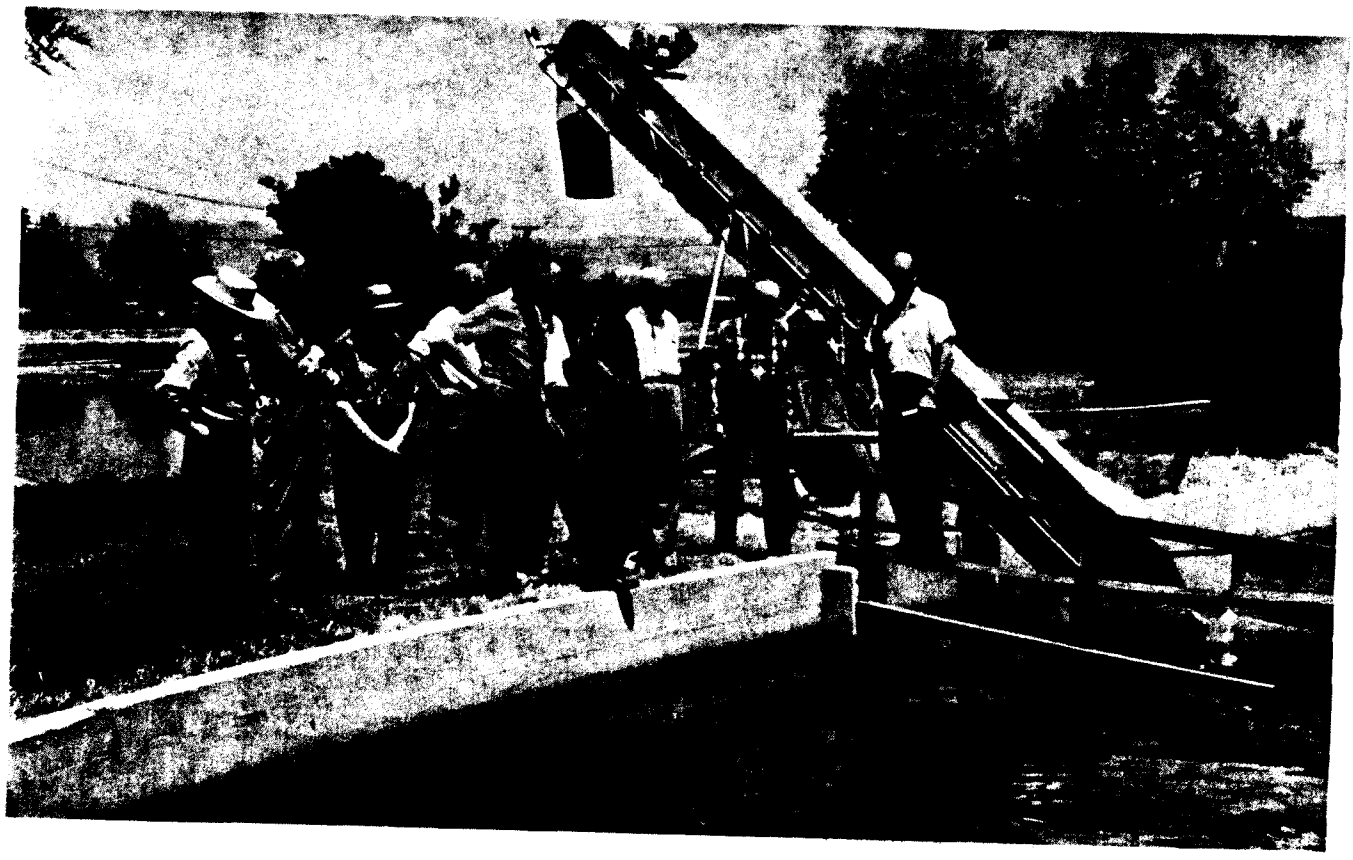
Mullan: Installed two-way radio in fish distribution truck.

Sandpoint: Painted exterior of all buildings; installed ten vertical incubators; repaired water supply pipeline.

Twin Falls: Painted exterior of all buildings; purchased five vertical incubators; an eight-inch pump and water recirculation system was installed by Southern Idaho Fish and Game Association.

Kokanee Spawntaking Operations--North Idaho: During 1964, a total of 1,787,899 kokanee eggs were taken from various natural sources in north Idaho. This total was broken down as follows: Beauty Creek (Coeur d'Alene Lake) - 1,181,027; Blackwell Slough (Coeur d'Alene Lake) - 234,896; Granite Creek (Pend Oreille Lake) - 191,400; and Priest Lake - 180,576. These eggs will be used in stocking north Idaho waters such as Coeur d'Alene Lake, Spirit Lake and Brush Lake.

Many Idaho mountain lakes were stocked with trout using plastic containers and concentrated oxygen in the water. The method was developed by a Department fisheries biologist. Visitors view trout and fish loading facilities at the Eagle Hatchery in the lower photo. Over one million pounds of fish were placed in Idaho waters in 1964.



EGGS TAKEN BY STATE
(October 1, 1963 --- September 30, 1964)

Station	Species	Numbers Green Eggs	% Eye up	Numbers Eyed Eggs
American Falls	Rainbow	2,970,414	82.00	2,435,739
	Rainbow	97,944	76.80	75,221
	Cutthroat	30,528	50.00	15,264
Coeur d'Alene Lake	Kokanee	100,340	94.50	948,213
Clark Fork	Kamloops	777,127	79.90	620,924
Clearwater	Steelhead	1,077,271	89.50	964,152
Eagle	Rainbow	1,421,343	85.00	1,208,142
	Brown	44,880	50.00	22,440
Hayspur	Rainbow	623,832	87.00	542,734
Henrys Lake	Cutthroat	9,244,000	88.00	8,135,530
	Cutthroat and Rainbow	359,022	83.00	297,988
Moose Creek	Kokanee	4,093,060	88.00	3,601,893
Oxbow[1]	Chinook	774,450	72.06	558,100
Pend Oreille Lake	Kokanee	111,940	94.50	105,783
Priest Lake	Kokanee	8,990	94.51	8,496
Rapid River[1]	Chinook Salmon	705,986[2]		
	Steelhead	21,165	79.00	16,720
Salmon River	Chinook	1,354,971	89.38	1,211,026
Williams Lake	Rainbow	366,770	95.21	349,212
Total		24,184,953	(Av.)82.75	21,117,577

[1] Idaho Power Company Station operated by Fish and Game Department.
[2] Eye up not complete at end of report period.

IDAHO FISH PLANTINGS*
By Species, Size --- All Agencies
(October 1, 1963 -- September 30, 1964)

Species	0 - 3"	3 - 6"	6" - Up	Total	Pounds
Rainbow	4,663,177	1,791,833	3,140,266	9,595,276	1,002,791
Cutthroat	5,319,409[1]	750,030	3,150	6,072,589	47,182
Brook	220,572	7,300	19,490	247,362	1,814
Brown		2,600		2,600	100
Kamloops	308,808	337,910	61,218	707,936	36,696
Golden	18,400			18,400	6
Kokanee	810,000[2]			810,000	310
Chinook Salmon	495,540			495,540	1,940
Largemouth Bass	600		720	1,320	19
Steelhead	964,771[3]			964,771	
Rainbow and Cutthroat	246,120			246,120	110
Silver Salmon	1,100,000[4]			1,100,000	8,667
Totals	14,147,397	2,889,673	3,224,844	20,261,914	1,099,635

* Excludes all salvaged fish -- these are reported in another table.
1 Includes 659,952 eyed eggs
2 Includes 332,000 eyed eggs
3 Eyed Eggs
4 Includes 617,000 eyed eggs

HATCHERY PRODUCTION
(October 1, 1963 - September 30, 1964)

Hatchery	Rainbow		Cutthroat		Brook		Brown		Kamloops	
	Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.	Nos.	Lbs.
American Falls	987,554	136,749	131,796	119						
Ashton	997,492	42,492	256,463	1,165	29,164	46				
Clark Fork	344,043	27,279	2,235,387	555					657,636	34,846
Eagle	1,229,808	40,856					2,600	100		
Grace	1,550,117	98,750	515,000	466						
Hagerman	1,925,970	392,102							286,750	14,022
Hayspur	737,734	40,911								
Henrys Lake			1,197,200	526						
Mackay	861,784	72,241	101,710	37						
McCall	410,102	127	352,150	137						
Mullan	304,000	608	299,284	593	180,000	84[1]				
Sandpoint	372,821	1,995	129,004	239	38,198	1,684				
Twin Falls	439,870	35,694								
Warm River		450[2]	244,192	587						
Totals	10,161,295	890,254	5,462,186	4,424	247,362	1,814	2,600	100	944,386	48,868

Hatchery	Goldens Nos.	Goldens Lbs.	Kokanee Nos.	Kokanee Lbs.	Rainbow and Cutthroat Nos.	Rainbow and Cutthroat Lbs.	Totals Nos.	Totals Lbs.
American Falls							1,119,350	136,868
Ashton			810,000	310			2,093,119	44,013
Clark Fork							3,237,066	62,680
Eagle							1,232,408	40,956
Grace							2,065,117	99,216
Hagerman							2,212,720	406,124
Hayspur							737,734	40,911
Henrys Lake					246,120	110	1,443,320	636
Mackay	18,400	6					981,894	72,284
McCall							762,252	264
Mullan							783,284	1,285
Sandpoint							540,023	3,918
Twin Falls							439,870	35,694
Warm River							244,192	1,037
Totals	18,400	6	810,000	310	246,120	110	17,892,349	945,886

[1]Transferred to Sandpoint for rearing.
[2]Includes weight increase of rainbow transferred to station.

FISH PLANTINGS IN IDAHO BY OTHER AGENCIES

(October 1, 1963 - September 30, 1964)

Station	Rainbow		Cutthroat		Totals	
	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds
U.S. Hagerman (Idaho)	865,924	118,300			865,924	118,300
U.S. Jackson (Wyoming)			230,028	18,163	230,028	18,163
U.S. Creston (Montana)	46,790	8,277			46,790	8,277
Wyoming State			10,916	551	10,916	551
Totals	912,714	126,577	240,944	18,714	1,153,658	145,291

FISH SALVAGED AND PLANTED

(October 1, 1963 --- September 30, 1964)

Station area	Bullhead Catfish	Crappie	Yellow Perch	Total	Pounds
Eagle	3,027	25,500	3,000	31,527	1,077
Totals	3,027	25,500	3,000	31,527	1,077

FISH FEED

(October 1, 1963--September 30, 1964)

ITEM	POUNDS	COST
Liver	46,802	2,639.31
Slaughterhouse By-Products	49,268	2,617.64
Fish and Fish Viscera	63,639	2,778.31
Meal and Meal Products	1,921,316	150,528.40
Totals	2,081,025	$158,563.66

EGGS RECEIVED BY PURCHASE OR EXCHANGE FROM OTHER AGENCIES

(October 1, 1963 - September 30, 1964)

Species	Number
Rainbow	8,394,351
Brook	470,093
Mackinaw	102,080
Golden	20,304
Kokanee	642,150
Chinook Salmon	2,000,000
Silver Salmon	500,000
Total	12,128,978

FISH LOSSES INVESTIGATED DURING 1964

Water	Cause of Kill	Species	Number
Morton Slough (Bonner Co.)	Undetermined	Bass, crappie, sunfish	Numerous
McArthur Reservoir (Boundary Co.)	Oxygen Depletion	Eastern brook	20-30
Cocolalla Lake (Bonner Co.)	Bacterial infection	Bullheads, perch, crappie	Numerous
Riley Creek	Chlorine from HTH used at upstream Federal Hatchery	Rainbow trout 100%	1,400
Sand Hollow Dr. Tributary to Boise River (Ada Co.)	Possibility of CuSo4 used to treat sheep-Negative test for pesticides	Rough fish 99% Rainbow trout 1%	1,000
Eureka Canal Diversion of Boise River (Ada Co.)	Oxygen deficit due to organic decomposition	Rough fish 99% channel cat 1%	1,000
Cruzen ditch diversion of Boise River (Ada Co.)	Oil from farm equipment manufacturer	Rough fish 100% (mainly suckers)	1,500
C. J. Strike Reservoir (Owyhee Co.)	Not known positively but suspect pesticides	Rough fish 98% Game fish 2% (one sturgeon)	2,500
Brownlee Reservoir (upper end)	Unknown	Game fish 98% (channel catfish 2% rough fish)	250-300

Conservation Enforcement

General

Law Enforcement is the oldest branch of the conservation field and has gradually taken on new meanings, duties and responsibilities over the years. Even in the early days, one of the basic and primary purposes of wildlife law enforcement was actually management of the wildlife resource through manipulation of the timing and amount of harvest, thereby assuring protection and perpetuation of basic brood stocks. Enforcement of licensing requirements through the years has always assured an inflow of revenues with which to finance wildlife programs. More meaningful in recent years has been the additional enforcement purpose of providing each hunter or fisherman with a reasonably equal opportunity to take his share of the harvest during open season. When viewed as to its law enforcement function alone, the Fish and Game Department holds the distinction of being Idaho's oldest statewide law enforcement agency, dating back well beyond the turn of the century.

In addition to implementation of basic wildlife management practices through enforcement of conservation laws and regulations, personnel of the Conservation Enforcement Division participate in many other Department activities, as shown by Table I which gives the total effort, expressed in terms of man hours for each category, as to the work output of the Division's 64 District Conservation Officers during the calendar year of 1964.

TABLE I. ANNUAL AVERAGE - DISTRICT CONSERVATION OFFICERS
WORK OUTPUT SUMMARY - 1964

Total Number of Hours and Average Hours Per Officer by Categories.

Total	Law Enf.	Game Mgt.	Fish Mgt.	I & E	Admin.	Imprvmts. Equip. Maint. Etc.
185,091	120,648	17,625	4,801	5,794	26,421	9,712
2,906	1,895	277	75	91	415	153
	(65.2%)	(9.5%)	(2.6%)	(3.1%)	(14.3%)	(5.3%)

Participation by Conservation Officers in game and fisheries management programs includes gathering data as to trends and composition of populations and harvests; salvaging of stranded or injured fish or animals; collecting or trapping, tagging and transplanting wildlife of various species; and assisting with the transportation and releasing of artificially propagated wildlife. Also requiring considerable output of time and effort is the servicing of wildlife depredation complaints which result from conflict between people and wildlife populations, generally brought on by both parties attempting to make common use of the same land areas.

These management contributions are substantiated by the total man hours of 4,801 spent in assisting with fisheries management and the 17,625 hours spent in assisting with game management activities.

The total of 5,794 hours listed for I & E work in part represents the presentation of Hunter Safety and other programs to school and youth groups. The District Conservation officers also presented programs and disseminated information to sportsmen's and service clubs and variqus other adult groups. A number of county and regional fair displays were also installed and manned in part by division personnel.

The category of "Improvements" is represented by an annual division total of 9,712 hours. This activity includes maintenance and repair of Department facilities, installations and equipment assigned to Conservation Enforcement Division. An inspection system has recently been set up to further assure proper and timely handling of this work.

The 26,421 hours listed for administration duties includes such varied activities as search and rescue work, supervision of license vendorships, and what is commonly termed "office work." The past year has seen definite progress made in setting up an improved system of work planning and programming and improvement of factual and written reports and records. Such orderly and continuing records will provide necessary and useful reference information on a conventional day-to-day basis and, in addition, have special value as readily available background information for use as a working base by personnel newly assigned to a district.

Enforcement

Again referring to Table I, it is noted that law enforcement duties of the District Conservation Officers accounted for an annual statewide total of 120,648 hours. This breaks down to an annual average for each of the current force of 64 officers of 1,895 hours. The average Idaho Conservation Officer district is comprised of 1,306 square miles and has a resident, year around population of 11,100 people. Each officer serves as the immediate supervisor of an average of 9.5 license vendorships in his district. Sales by these outlets during 1964 resulted in 5,727 resident and nonresident license purchasers as the average responsibility load for each District Officer in working his assigned area. Relative to resident licenses alone, the average officer district had 1964 sales of 3,583. Each such resident license sale was based on an individual license application. All such applications are screened and checked by District Conservation Officers as a means of determining unqualified and fraudulent purchases. In addition, each Conservation Officer actually field checked an average of 1,478 licenses during 1964. This number represents 26% of all licenses sold.

Additional duties of the District Conservation Officer relate to licensing and other requirements for taxidermists, commercial processing and storage facilities, commercial and private fish ponds, commercial fishing and seining permits, permits for private game bird farms and parks, trappers and fur buyers licenses, and falconry, special and scientific collecting permits.

Each officer (during the calendar year of 1964) averaged two arrests per month, plus assisting with others. He averaged 5.7 days off per month, took an average of seven days of annual leave and used seven-tenths of a day of sick leave during the year. He drove an average vehicle mileage of 1,938 per month at an average operational cost of 4.5 cents per mile. This average officer ate 80 meals in the field from camp groceries and spent 29 nights in his sleeping bag during the 12-month period.

In addition to checking licenses and bag limits, each District Conservation Officer made and received many other contacts relative to sundry matters. These included the receipt of an annual average total of 1,984 phone calls via his "office" phone in his home. Forty (2%) of these calls were for the purpose of reporting violations. One thousand three hundred and forty-three (67.7%) calls received were requests for information. Complaints relative to depredations by wildlife averaged twenty-eight (1.4%) and phone calls dealing with a great variety of miscellaneous subjects made up the balance of 574 (28.9%) calls.

In addition to enforcement of laws and regulations, on and after the fact basis wherein a violation has already been committed, a great deal of each officer's time was devoted to preventive enforcement. This work is aimed at increasing public acceptance and support of the laws and reducing unintentional and inadvertent violations through better knowledge. This also promotes understanding of the Department's programs and objectives. Such prevention campaigns were undertaken through individual and group contacts, by distributing information via such means as newspapers, radios and television and by placards, leaflets and posters distributed through license vendors or placed at applicable field locations. Special emphasis was placed on disseminating information relative to residence requirements by means of news releases, bulletin boards, and advisors at colleges and universities. A similar effort was made at labor camps, construction projects and other locations or situations which involved a high percentage of people whose bona fide residence was other than Idaho.

More effective patrol coverage and pressure was maintained during the year by continuing to utilize division personnel on a more fluid and flexible basis between districts and regions as local and seasonal demands and activities indicated. Productive results were also obtained by using several types of comparatively new equipment and by division personnel utilizing a greater variety of transportation methods in obtaining back country coverage.

Training

The Conservation Enforcement Division co-sponsored an administrative school for supervisory personnel from various law enforcement agencies throughout the state. In addition the Department's first Basic Training School was organized and conducted over a two-week period during the early summer of 1964. Other training schools and conferences, of both law enforcement and general types, were attended by division personnel. For the second time in the last three years, a representative of the Fish and Game Department was adjudged the outstanding student at the Idaho Law Enforcement Academy held at Idaho State University.

All recruiting of Conservation Enforcement Division personnel was done on a Conservation Officer II level. Recruits are now required to have four years of previous high quality experience with our Department, or a college degree in wildlife or fisheries management, police science or closely related subjects, in order to qualify for a position as an officer. These pre-employment requirements as to educational and experience background are substantially higher than those required for regular law enforcement personnel employed by other non-federal agencies and governmental units in Idaho.

Buildings - Equipment

Two additional small trailer houses were purchased during the year by the enforcement division. They are used as back country patrol headquarters similar to patrol cabins but on a more flexible year-around basis, as they can be relocated as seasonal demands and requirements change. Law enforcement in remote areas can be much more varied, flexible and effective, particularly during bad weather, if overnight facilities are available.

A medium-sized residence type trailer house was purchased for use as a conservation officer residence and headquarters at Yellowpine. The Deary conservation officer residence was declared surplus and is in the process of being sold.

The Conservation Officer on back country patrol.

The Conservation Officer has many duties. One includes checking conditions and helping on winter game surveys...in this instance, the upper St. Joe River. The officers also teach gun safety to hundreds of Idaho youngsters each year.

Our original jet boat was modified and improved through the addition of a new motor and heat exchanger. A contract was also let for the construction of an additional jet boat of larger size to augment enforcement patrol coverage and wildlife management work in the remote canyon areas of the Snake, Salmon and Clearwater rivers. Several smaller boats, outboard motors and boat trailers were purchased for additional locations which have not previously had such equipment.

The division purchased a small snow tractor for use primarily in the Magic Valley region. Two additional horse trailers were purchased in order to expand back country horse patrol coverage. Furnishing of standardized check station sign kits to all District Conservation Officers was completed in 1964. In addition, such items as spotting scopes, cameras, pack-boards and other types of small equipment were made more available to field personnel as a matter of advancing the effectiveness and productivity of their enforcement work.

New office equipment such as letter copying machines, dictaphones and desks were supplied to some regional offices. This program will continue as funds and office facilities are developed.

Communications

The Coeur d'Alene base radio was relocated to the new regional office site in that city. All preliminary arrangements were completed toward moving the mobile radio repeater from Brundage Mountain to Snowbank Mountain. Substantial improvement in radio coverage for law enforcement and administrative purposes was obtained in central and eastern Idaho by relocating the mobile repeater from East Butte to the Big Southern Butte.

After a check of figures indicated a savings could be made by having radio repair and maintenance done on a job-by-job, parts and labor basis, a maintenance contract previously used was terminated. Repairs are now being obtained from technicians of other state agencies and at regular commercial shops on a job and materials basis.

Search and Rescue

Search and rescue work was continued at a high level of participation with other cooperating agencies. The following table reflects efforts of Department personnel for 1964 in this area of endeavor. Many missions undertaken were on behalf of people other than hunters or fishermen.

TABLE II. SEARCH AND RESCUE
1962, 1963 and 1964

Year	No. Missions	Man Hours	Automotive Vehicles Mileage	and Cost	Boat-Horse-Snowcat/Costs	Meals
1962	21	226.5 - $679.50 (1.4 man months)	1213	$109.62	Boat & Horse $231.00	$10.24
1963	36	453 - $1359.00 (2.8 man months)	2336	$210.24	Boat & Horse $112.00	$19.10
1964	43	559 - $1677.00 (3.5 man months)	3434	$309.06	Boat & Snowcat $816.00	$32.43
Totals	100	1238.5 - $3715.50 (7.7 man months)	6983	$628.92	Boat, Horse, Snow Cat $1,209.00	$61.77

Grand Total - $5,615.19

Arrests, Convictions and Fines

The following tables are concerned with information of several types relative to arrests, convictions and fines.

TABLE III. NUMBER OF ARRESTS, FINES AND AVERAGE AMOUNT OF FINES BY COUNTY AND REGION

January 1 -- December 31, 1964

Region and County	Total Arrests	Arrests with Fines	Total Money	Average Fine
Panhandle Region				
Benewah	10	7	$325.00	$46.43
Bonner	40	36	945.00	26.25
Boundary	20	19	840.00	44.21
Kootenai	45	39	1,095.00	28.08
Shoshone	35	29	1,520.00	52.41
Total and Average	150	130	4,725.00	36.35
Clearwater Region				
Clearwater	56	35	790.50	22.59
Idaho	81	75	2,900.00	38.67
Latah	14	14	320.00	22.86
Lewis	2	2	50.00	25.00
Nez Perce	47	20	340.00	17.00
Total and Average	200	146	4,400.50	30.14
Western Region				
Ada	47	39	775,00	19.87
Adams	13	13	295.00	22.69
Boise	57	48	1,193.00	24.85
Canyon	114	54	1,291.00	23.91
Elmore	49	46	900.00	19.57
Gem	15	14	290.00	20.71
Owyhee	43	35	790.00	22.57
Payette	29	22	500.00	22.73
Valley	54	52	1,185.00	22.79
Washington	21	16	355.00	22.19
Total and Average	442	339	7,574.00	22.34
Magic Valley Region				
Blaine	26	21	570.00	27.14
Camas	24	23	580.00	25.22
Cassia	41	38	1,005.00	26.45
Gooding	60	49	805.00	16.43
Jerome	18	14	225.00	16.07
Lincoln	3	3	50.50	16.83
Minidoka	14	10	250.00	25.00
Twin Falls	41	37	915.00	24.73
Total and Average	227	195	4,400.50	22.57

Table IV gives a breakdown of those 1964 arrests which did not result in fines.

TABLE IV. BREAKDOWN OF TOTAL CASES WITHOUT FINES - 1964

Region	Total Susp.	Dismissed	Acquitted	Forfeited	Juvenile	Jail in Lieu of Fine	Totals
Panhandle	2	1	1	5	8	3	20
Clearwater	11	12	3	25	2	1	54
Western	15	2	2	6	74	0	99
Magic Valley	3	1	1	3	27	1	36
Eastern	14	5	1	0	43	0	63
Salmon	0	3	0	0	4	1	8
Total	45	24	8	39	158	6	280
Percent of Arrests without fines	16%	9%	3%	14%	56%	2%	100%
Percent of Total Arrests	3%	2%	0.5%	3%	10%	0.4%	18.7%

It is noteworthy that of the total of 1,494 arrests made in 1964 only 0.5% resulted in acquittals, and 2% in dismissals. The combined conviction and forfeiture rate exceeded 97%.

Table V gives a record of arrests by county and region during the period of 1954 to 1964, inclusive. In actual fact, portions of some counties lie in two or more regions. However, for the purposes of this table, such counties have, of necessity, been placed entirely in one region or the other.

TABLE V. TOTAL ARRESTS BY COUNTY AND REGION

1954 - 1964

Region and County	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Panhandle											
Benewah	19	19	15	17	39	35	43	24	13	20	10
Bonner	27	42	24	52	42	21	33	45	17	39	40
Boundary	19	10	9	13	18	9	17	9	6	16	20
Kootenai	79	49	52	128	92	42	41	31	28	52	45
Shoshone	20	12	28	72	22	25	22	35	26	38	35
Totals	164	132	128	282	213	132	156	144	90	165	150
Clearwater											
Clearwater	24	14	10	14	16	29	12	41	31	71	56
Idaho	30	20	22	16	28	42	54	84	92	137	81
Latah	9	9	6	3	14	10	8	10	15	18	14
Lewis	4	2	3	7	2	3	5	12	3	1	2
Nez Perce	13	3	20	18	18	27	60	51	77	73	47
Totals	80	48	61	58	78	116	139	198	223	300	200

TABLE V. (Cont'd)

Region and County	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Western											
Ada	55	44	88	135	82	96	42	42	29	38	47
Adams	12	13	20	10	9	13	12	14	28	20	13
Boise	18	15	20	34	28	25	35	17	33	42	57
Canyon	72	54	62	65	64	53	66	46	44	94	114
Elmore	48	20	38	31	66	25	26	26	55	47	49
Gem	18	9	9	5	19	9	7	23	14	14	15
Owyhee	31	27	31	50	73	82	61	26	34	70	43
Payette	21	15	10	6	7	9	8	5	5	19	39
Valley	55	46	63	37	26	62	44	41	35	57	54
Washington	22	11	25	10	13	8	5	14	26	42	21
Totals	352	254	366	383	387	387	306	254	303	443	442
Magic Valley											
Blaine	9	57	10	20	23	43	28	21	20	28	26
Camas	8	10	7	3	15	4	18	7	18	41	24
Cassia	25	26	16	34	60	49	47	39	21	34	41
Gooding	26	12	13	6	27	29	24	43	59	45	60
Jerome	9	8	7	6	12	15	22	21	11	23	18
Lincoln	1	8	2	7	9	5	5	5	3	8	3
Minidoka	7	3	9	10	14	12	14	15	12	17	14
Twin Falls	44	29	31	47	27	39	61	48	26	23	41
Totals	129	153	95	133	192	196	219	199	170	224	227
Eastern											
Bannock	73	47	27	33	51	12	27	24	31	35	44
Bear Lake	19	25	15	14	8	21	13	7	17	31	44
Bingham	30	25	32	26	55	42	27	36	19	16	24
Bonneville	59	33	35	39	71	35	30	42	43	32	49
Caribou	48	43	54	46	61	28	22	43	49	54	43
Franklin	18	17	16	20	29	31	15	27	21	41	35
Fremont	44	62	50	50	53	49	39	44	23	30	38
Madison	11	3	7	2	6	3	5	6	2	4	3
Oneida	25	7	13	3	7	10	11	53	22	20	23
Power	35	32	55	38	50	61	35	39	18	45	51
Teton	5	7	5	3	4	5	6	5	1	2	3
Totals	367	306	359	279	400	302	236	332	251	310	362
Salmon											
Butte	16	7	11	14	15	20	12	0	6	7	19
Clark	13	10	21	21	34	24	3	19	15	16	14
Custer	28	32	34	51	47	81	66	55	32	54	39
Jefferson	32	38	68	76	42	58	62	51	54	32	13
Lemhi	32	22	22	22	46	44	31	49	31	50	28
Totals	121	109	156	134	184	227	179	174	138	159	113
Yearly Totals	1,213	1,002	1,165	1,319	1,454	1,360	1,235	1,301	1,175	1,601	1,494

Table VI shows a breakdown of violations by type for each month of calendar year 1964 and comparative sub-totals for 1962 and 1963.

TABLE VI. BREAKDOWN OF VIOLATIONS BY TYPE

Month	Fishing	Big Game	Upland Birds	Migratory Birds	Licenses	Misc.	Trap-ping	Check Station	Total
January	8	24	1	25	13	12	0	0	83
February	12	11	3	10	12	13	0	0	61
March	17	4	4	0	13	2	1	0	41
April	35	3	1	0	6	4	2	0	51
May	66	3	0	1	10	11	1	0	92
June	97	1	0	2	16	8	0	0	124
July	104	3	0	0	29	12	0	0	148
August	53	2	0	0	17	9	0	0	86
September	52	10	13	16	12	15	0	0	118
October	30	129	19	12	30	11	1	6	238
November	13	102	44	34	28	30	0	3	254
December	7	78	9	70	23	6	0	5	198
Totals 1964	499	370	94	170	209	133	5	14	1,494
Totals 1963	557	382	89	206	213	123	11	20	1,601
Totals 1962	399	285	120	72	203	76	10	10	1,175

Table VII gives the state of origin of nonresidents arrested, by number and percentage, during the calendar year of 1964. Eighteen and seven-tenths per cent (18.7%) or 279 of the 1964 total of persons arrested (1,494) were nonresidents.

TABLE VII. STATE OF ORIGIN OF NONRESIDENTS ARRESTED

State of Residence	Number of Arrests	Per Cent of Grand Total of 1964 arrests (1,494)	Per Cent of 1964 Arrests of non-Residents (279)
California	58	3.9	20.8
Montana	29	2.0	10.4
Nevada	6	.4	2.1
Oregon	19	1.3	6.8
Texas	5	.3	1.8
Utah	67	4.5	24.0
Washington	53	3.5	19.0
Wyoming	5	.3	1.8
Miscellaneous	37	2.5	13.3
Total	279	18.7%	100.0%

Making up the miscellaneous group of 1964 arrests of nonresidents were one to four people from each of nineteen additional states, and two from Canada.


FISHERMEN
PROTECT YOUR SPORT
SPORTSMEN
IT TAKES ALL
3
LANDHOLDER
RESPECT
PROPERTY RIGHTS
COURTESY PAYS

Information and Education

GENERAL

Demand for information and education services during 1964 reflected a continuing upsurge in outdoor recreation activities. This general trend of interest in the outdoors showed even more striking increases during the year than was reflected by the sale of hunting and fishing licenses. All field offices and the central information service at the state headquarters, received more requests during the year than ever before. Information questions varied from road conditions, snow depth in the back country, how to plan a bighorn sheep hunt, interpretation of regulations, where to go hunting and fishing, and even the weather. There seems to be little question that the golden age of outdoor recreation has arrived, and a major problem for I & E is how to meet the ever-increasing demand with adequate information and advice for the recreation-seeking public.

With increased field coverage and improved use of the mass publicity media, continued emphasis is being placed on the problems of natural resource management. Public support and a favorable climate of public opinion is very important in initiating and conducting good wildlife management programs. Divisional services continue to emphasize the need for maintaining a constant flow of information from the Department to the public concerning the status of their wildlife today and the plans for its future management.

A considerable amount of attention was placed on the development of a Ten Year Program Report during the year. All divisions assisted the Director in compiling and editing this report. It was approved by the Commission and presented to Idaho sportsmen by the end of the year.

Highlights of the year's work will be presented on the following pages. Information services included a weekly news service to all Idaho newspapers and news outlets, publication of special information bulletins and the bi-monthly magazine, IDAHO WILDLIFE REVIEW, printing of legal notices and regulations, production of a weekly radio broadcast, regular guest appearances on television, maintenance of a still photograph and moving picture film library, and the maintenance of a constant flow of information to the public.

Educational projects included conducting school wildlife conservation programs, lectures, talks and visual aids presentations to clubs and organizations, the preparation and operation of exhibits at fairs and sportsmen's jamborees, lecturing and displaying exhibits for summer youth camps, conducting a statewide hunter safety program, and assisting the public schools in wildlife essay contests and other conservation education projects.

Cooperative work with the Idaho Landholder-Sportsman Council was continued during 1964. Emphasis was placed on extending this project into several areas in the state. Special efforts were established in eastern Idaho, highlighted by a region-wide Landholder-Sportsman meeting in Pocatello, and additional field work was required on the deer hunting situation in the Craig Mountain and Joseph Plains areas of north central Idaho.

The annual awards program of the Council was continued, with the Landholder-Sportsman of the Year Award going to William McCracken, whose ranch borders Blackfoot Reservoir. Special Awards of Merit for local leadership in landholder-sportsman relations went to C. C. Davidson, Ashton; Tom Arima, Homedale; John Spencer, Grangeville; Elmer Taylor, Grangeville; and Potlatch Forests Inc. of Lewiston.

INFORMATION SERVICES

Department news and feature release packages containing upwards of 3,000 words each were continued throughout the year and mailed to some 265 daily and weekly newspapers, radio-television broadcasting stations and actively interested individuals. These packages always include mat photos and a news recap column under the Director's by-line for the weeklies, and a Sunday news feature with 8 x 10 inch glossy prints for the dailies, as well as four dated news stories. Spot news stories are filed immediately with the Associated Press and United Press International news bureaus in Boise.

Printed coverage of this material is widespread throughout the state. The mat photo and the Director's Column are especially popular with the weekly press. Publication of 800- to 1,000-word news features by the dailies, and many of the weeklies, gives the Department the opportunity to write in depth about management policies and programs.

Additional service this year was the weekly preparation of news and feature material for publication on the Thursday Outdoor Page of both morning and evening editions of the IDAHO DAILY STATESMAN, a service inaugurated by the Boise newspapers about 12 months ago.

Additional need and use of all information sources has been emphasized during the year. Requests for information concerning where to go and what to look for, led everything else. Thousands of information pamphlets were reprinted from articles appearing in the Department magazine IDAHO WILDLIFE REVIEW. Student requests for leaflets about Idaho birds, big game and other wildlife, were far in excess of any previous year.

Several items of special interest include: Preparation and printing of 25,000 copies of a booklet on Idaho Lowland Lakes and Reservoirs where public use and access sites are located. This will be as popular as the Idaho Mountain Lakes booklet which will go into a combined printing in excess of 70,000 copies when the new revision appears about June 1965. Care of Game Meat and What To Do If Lost information leaflets were combined after being revised. These were printed on pink paper for easy identification. They proved popular, and production will be doubled in 1965. Concise Summaries of Operations and a review of operations under the Five-Point Program, were prepared at the close of the year. A comprehensive 120-page report dealing with Idaho wildlife resources as of today and plans for the coming ten years was prepared and distributed to sportsmen, members of the Idaho Legislature and interested citizens of the state.

Thousands of special signs were issued under supervision of the division. Many appearances were made before civic clubs, sportsmen's groups and other organizations to present Department projects and operations, in addition to specific information programs dealing with hunting and fishing in the state.

The subscription lists continue to grow for the Department's 16-page magazine, IDAHO WILDLIFE REVIEW. Despite many subscribers moving and not notifying us of the address change (which causes cancellation), over 3,000 new names were added to the mailing list. Present printing is at 20,000 copies per issue. The magazine is mailed without charge to Idaho residents six times each year.

The 30th Biennial Report was edited and printed, ready for members of the Legislature and the public. The Annual Report for 1963 was published in the spring in the most complete form yet. Waterfowl regulations were revised to new timetable schedules with a map of shooting areas.

The information leaflet, booklet and pamphlet procedure was revised to establish a numbering system for proper identification when answering requests. An additional 14 articles were reprinted from articles appearing in the WILDLIFE REVIEW during the year. The WILDLIFE REVIEW is being indexed to update the material. A new set will be published in July 1965, with a total compilation for 17 years of publishing.

PHOTOGRAPHY AND FILMS

The photography section has been enlarged with hundreds of additional still photos and hundreds of feet of motion picture film added to the library. The former Big Game Winter Range film was completely revised with management information updated. This was completed except for narrative and will be ready for showing in the spring of 1965. Other films presently under production, or being revised, include: Revise the Trout Transportation film to modernize; revise the Chemical Treatment of Lakes and Reservoirs for the same purpose; and one new film nearly completed for editing on Mountain Lakes of Idaho. Discussion is being held concerning the possibility of Idaho, Oregon and Washington cooperating to produce another sound and color film. One idea deals with the Hells Canyon region lying between the three states.

A great deal of footage was filmed during the year to supply television shorts for news and information. Detailed explanation of the new salmon-steelhead and sturgeon angling card was made with one 55-second TV insert. Television use varies, but in general, excellent use was made of timely department operations on local news programs. Special programs such as airplane use in planting fish in high lakes, were half-hour shows and received excellent reviews. Additional ownership of color television sets will place future demands for color films far above present supplies.

Color slides have been prepared during the year to assist assembling complete sets dealing with specific subjects. One group dealt with Conservation Officer activities, one with fish species, and another with fishery biology work. Other slide series are being developed in cooperation with the other divisions of the department. Color scenics were also obtained to complete the department list. Nearly 1,000 black and white photographs were mailed to newspapers, feature writers and in answer to special requests.

RADIO AND TELEVISION

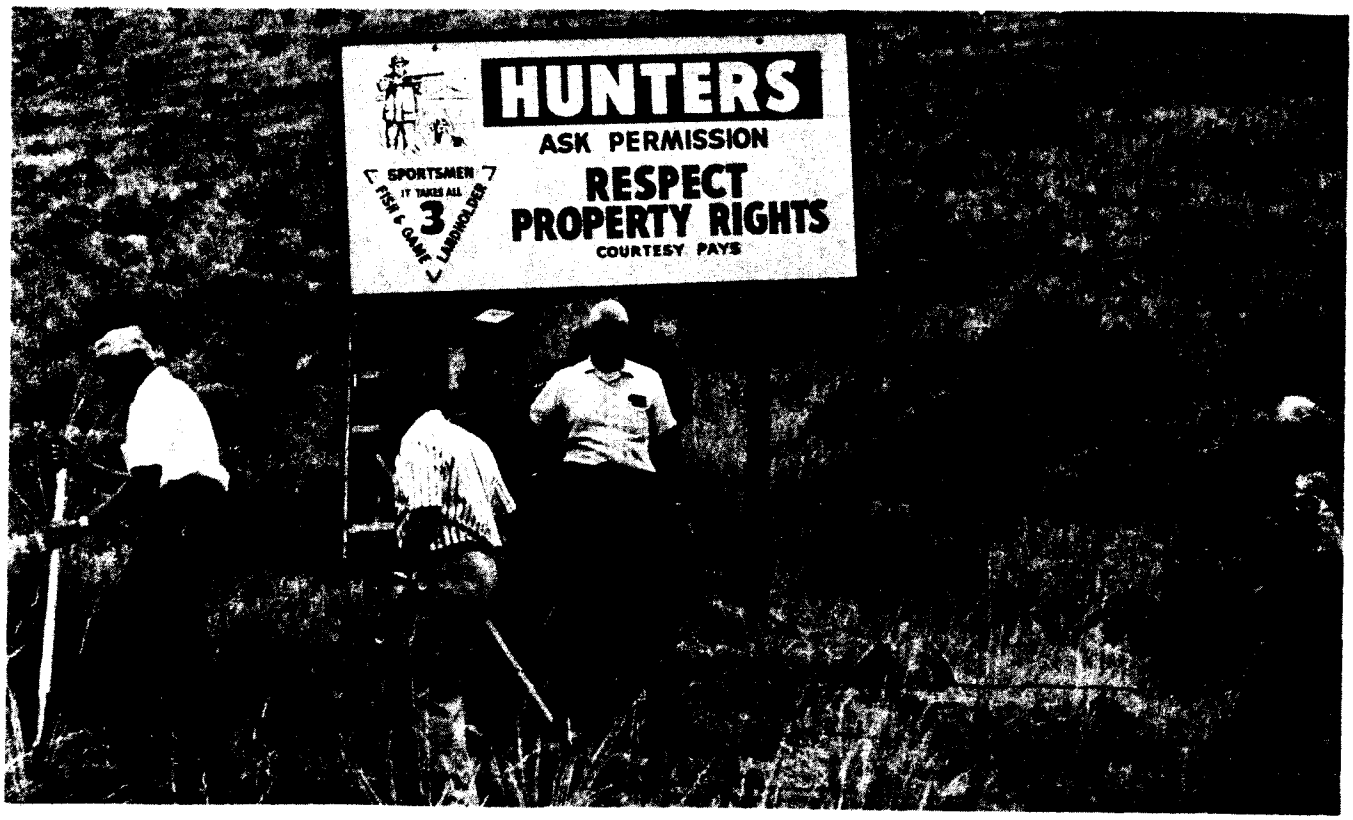
A weekly taped radio information program was produced and furnished to 25 radio stations on a statewide basis. During the 1964 summer and fall hunting seasons, a special fish and game news radio program was furnished weekly to a net of seven Boise Valley stations on a sponsored basis.

A live "Sportsman Alert" program was supplied to station KIDO in Boise on a daily sponsored basis for four months during the hunting season. The regular half-hour weekly television program was carried "live" on KTVB, Channel 7 in Boise, and a sponsored "Field and Stream" news report was also carried by Channel 7 at night throughout the hunting season.

Another live "Outdoor Idaho" show was presented over KTMV in Twin Falls on a once-a-month basis through the summer and fall months. Additional news and film clip materials were furnished for the use of television stations whenever possible.

FILMS

Use of films from the lending library showed a continual increase again in 1964. Approximately 2,000 film lendings were made to sports groups, civic clubs, churches, schools, and commercial institutions. Some films have worn out and cannot be replaced, but new films have been added whenever possible. Additional films were procured for assignment and use from regional offices over the state.



Sportsmen and Department Conservation Educator place Landholder-Sportsman Council sign to aid cooperative project. One phase of Information and Education operations includes teaching gun safety and wildlife conservation in many Idaho schools (bottom photo).

EDUCATION

Regional Reports - Field Activities

Panhandle Region

1964 was the first full year that a Conservation Educator was stationed in the Panhandle region, an area comprising the northern five counties. Much of the first year was spent in getting acquainted with the area.

Hunter Safety training received a great deal of attention during the year. Eighteen periods of instruction were given in seven communities. In several additional communities, help was given in organizing a course and furnishing materials. Emphasis was given to offering a minimum of four hours of instruction in each course. Close cooperation with other Department personnel and with sportsmen's organizations facilitated the presentation of such courses. A total of nearly nine hundred students received training during the year.

An additional 13 programs concerning wildlife conservation were presented to youth groups totaling nearly 1,800 youngsters. Summer camps, boy scouts, farm-forestry tours, and schools received this instruction.

Fifty meetings of sportsmen's organizations, civic groups, church groups and other organizations were attended. In most instances, programs were given or questions answered. Twenty-five programs were presented to adult audiences totaling about 900 persons.

Twenty-two programs were presented in which one or more movies were shown. Film loans from the Panhandle office totaled 36, and many more requests were received for which no appropriate films were available. Colored slide programs proved to be very popular; however, due to a shortage of slides only seven such programs were presented. Much time was spent in obtaining photographs, both color and black and white, with which to start a photo file. With a steadily growing file of slides, an increased number of programs featuring colored slides is anticipated.

Twenty-seven news releases of local interest were written. In most instances, the releases went to the eight newspapers located in northern Idaho plus two papers in nearby Spokane. Black and white photographs were supplied with some of the news releases. An additional eight feature stories were written for special edition newspapers. One WILDLIFE REVIEW article was written and published also.

An exhibit was placed at the Teachers' Institute for distribution of materials for the conservation essay contest. An exhibit was also placed at the Coeur d'Alene Jamboree and viewed by about 1,100 persons. Assistance was given in preparing displays at county fairs in Kootenai and Benewah counties in cooperation with sportsmen's organizations and the Fish and Wildlife Service.

Considerable time was devoted to establishing a wildlife conservation oriented Explorer Scout Post in Coeur d'Alene. The I & E field man acted as the Post Advisor during the initial organization period and will serve as assistant advisor starting in 1965.

Clearwater Region

At Lewiston the I & E field man assigned to the Clearwater Region maintained the usual contacts during 1964 with wildlife groups as well as service clubs, Chambers of Commerce and other organizations. A total of 48 meetings were attended at which approximately 1,400 adults received information regarding the state's wildlife resources and the Department's work.

Slightly over two thousand youngsters received programs in summer camp visits, miscellaneous school projects (including gun safety training for 701 students during school hours), and Boy Scout groups. A display was placed at the annual Teachers' Institute at Lewiston to provide conservation teaching aids and handout literature to teachers.

In all, a total of 97 program presentations were given during the year by the Lewiston field man. These included 63 film showings at 37 presentations, 35 flip-chart talks, 13 slide lectures and 12 talks. Seventy-eight film loans were made from the motion picture film library maintained at Lewiston.

A close working relationship was maintained with much of the press and radio news media in the region. Seventeen news releases, including several feature articles, were distributed for a total of 58 news spots during the year. Black and white photos were provided the press from the Lewiston photo file.

Numerous photography assignments to record Department and conservation activities were completed. Over 100 usable negatives and several hundred feet of 16mm motion picture film footage were sent to the headquarters office files. Close to three hundred colored slides were added to slide files at Lewiston and Boise, adding new subjects and updating or replacing others

Under a new cooperative agreement with the U.S. Forest Service, a descriptive text was written for the first of several planned fishing and hunting maps. The first area to be covered by these maps is the Upper Selway River and adjoining areas which includes a total of over 700 square miles. It lies just north of the Salmon River along the Idaho-Montana line, partly in the Nez Perce National Forest and partly within the Bitterroot National Forest.

Two exhibits were placed at the region's major county fairs in Lewiston and Orofino. Seventeen species of live wild animals were displayed in cooperation with the U.S. Fish and Wildlife Service at the Nez Perce County Fair at Lewiston, and a continuous slide show exhibit was presented at the Clearwater County Fair in Orofino. An estimated 16,000 persons viewed the two exhibits.

Southwestern Idaho

Division personnel in southwest Idaho presented programs in person at more than 160 appearances at service clubs, sportsmen's clubs, schools and other gatherings in 1964.

Approximately 6,000 youth were reached in school, scouting and other youth programs which included firearm safety instruction, career and vocational guidance, discussions and talks on basic wildlife and natural resources conservation. All talks to youth groups were illustrated with flip charts, films or slides, and use was made of the Department collection of prepared bird and mammal specimens. Adult audiences totaled about 3,500 to 4,000 people, it is estimated.

The two state fair displays set up by the Division each attracted nearly 100,000 people in 1964, according to fair officials, and have become a leading exhibit at these two largest Idaho fairs. The live fish display continues to be the center of this Department display, with other live wildlife adding interest.

The wildlife conservation essay contest again in 1964 was well received in the schools with the subject, "Wildlife Needs a Place to Live." Participation was over that in 1963. As in the past, the Idaho Wildlife Federation announced winners at the state level during National Wildlife Week in March following the close of the contest. The Division served as coordinating agency, supplying reference materials for teachers and students and assisting sportsmen's clubs with details of judging, etc. Plans are set for continuing the project in the 1965-66 period.

Other Department personnel are assuming a growing responsibility in gun safety programs. In the school years of 1963-64, over 12,000 school students at the 7th and 8th grade level were given basic firearm safety instruction statewide. This year the total will be much higher, with many enforcement men and biologists reporting gun safety programs completed for the year. I & E personnel have contributed with active participation and assistance in getting local programs started.

Eastern Idaho

Conservation education activities in eastern Idaho continued to increase during 1964. Many requests could not be filled because of conflict of time and distance. About 225 presentations were made by the Conservation Educator during the past year. Cooperation with other personnel continued with much help from other divisions in public relations programs.

Firearm safety instruction was given to 4,542 students by I & E personnel this year. An additional 866 were reported certified as having passed the NRA Safe Hunter Course by sportsmen's groups in eastern Idaho. Training was mostly in the 6th and 7th grade levels to Boy and Girl Scout groups and other groups by request.

Wildlife conservation was taught at 10 schools and camps. Slide talks, flip charts, movies and lectures were used. Two displays were set up at Idaho Falls and Pocatello at Teachers' Institutes to disseminate information to students through their teachers. Handouts and other information were given to children at the regional office also.

Displays and exhibits were used at 12 sportsmen and scout jamborees. Wildlife movies and continuous run slide series were used at most displays. About 13,500 persons viewed the displays. Exhibits were furnished at three county fairs. Live animals, birds and fish were used at the Eastern Idaho State Fair at Blackfoot.

Wildlife movies played an important part in activities here this year with 87 films shown and 50 loaned from the regional film library. Ten TV and five radio programs were given over eastern Idaho stations during the year. Several other radio and TV programs were presented by other Department workers.

Color slide talks were increasingly in demand this year. Thirty-seven talks were given using color slides. Continuous run color slide series at displays attracted 13,350 viewers. The slide talks were mainly made up from slides on file on request. Many subjects were included in the slide talk programs.

Slide series were made up on Fish Management, Big Game Tagging and Trapping, Fish and Game Department Activities, and How to Make a Slide Talk. The Conservation Officer slide series has been presented over 10 times by the District Conservation Officers in the eastern region and six times by the I & E officer.

Idaho boys and girls learn about wildlife in the classroom and on Nature walks such as this one of Nez Perce and Clearwater County 4-H members at Camp Heyburn.

Business Administration

Business Administration

Financing Wildlife Fiscal Year Ending June 30, 1964

Fiscal

The first year of recording income, based on license sales after increases were authorized by the Thirty-Seventh Session of the Idaho Legislature, has been completed. The record still does not reflect normal conditions because of the heavy license sales just prior to the time the license fees were increased. The record does indicate, however, that license deposits have increased $437,000 since the license fee changes became effective. The $437,000 is still considerably below that expected under the Five-Point Program.

Licenses

License deposits, as stated above, are up. Anticipated revenue is down, however, because unit sales of all sporting licenses are down with the exception of the First-Day and Additional-Day tourist fishing licenses. Since the fiscal year 1959-60, these licenses have tripled themselves in sales. See the following license charts for detail.

A survey of the 606 vendors presently handling the distribution of hunting and fishing regulations and the sale of sporting licenses indicated an approval of the new style First-Day and Additional-Day tourist fishing licenses. The vendors indicated in the survey, however, that in spite of the new license stamp, the time involved in processing the tourist fishing licenses was increasing and hardly worth the five percent commission. The Department is still working on new procedures to more efficiently handle licensing. Ninety-two vendor applications from businessmen were processed during the fiscal year, 76 of which were approved.

Audits

The Department's fiscal records were audited by the State Bureau of Public Accounts and the Federal Bureau of Sport Fisheries. All accounts were reported to be in order.

New Office Construction

The fiscal year saw a tremendous increase in activity toward the establishment of new administrative facilities for the Boise headquarters office, as well as regional offices. On March 2, 1964, a $49,452 contract was signed for the erection of the Coeur d'Alene regional office. A most impressive dedication of this building was held on August 24, 1964. On March 3, 1964, the Fish and Game Commission approved tentative plans for the headquarters office. It wasn't until September 25, 1964, however, that the Department entered into a contract for $346,702.00 for the Construction of this building. On April 28, 1964, the Commission approved a budgeted figure of $65,000 for the construction of the Lewiston regional office. Sixty-two thousand, four-hundred and two dollars of these funds were obligated by contract on February 15, 1965.

It is felt that these administrative buildings will greatly enhance the Department's status and will increase the efficiency and morale of the Department personnel. Better service and management of the wildlife resources will be the end result of this year's activity.

CONSTRUCTION AND MAINTENANCE

The following projects summarize activities of the Construction Section during the fiscal year, July 1, 1963, to June 30, 1964.

Columbia River Fisheries Program

Built and installed a steel fish trap cage in the new Lewiston Dam south end fish ladder. Painted all buildings at Salmon office and shop and installed office air conditioner. Maintained and operated all screen installations and performed flood damage preventive work at Lemhi screens.

Fisheries Management

Built Lemhi combination upstream-downstream fish counting weir on Lemhi River - a Dingell-Johnson project. Built two cutthroat spawning channels on Hunt and Kalispell creeks, tributaries of Priest Lake (An Accelerated Public Works project). Pre-engineering for Lake Creek Dam near Ketchum. Pre-engineering for possible dam and impoundment on Wildhorse Creek near Fairfield. Demolished and removed the Bruces Eddy fish trap facility. Built small building as a workshop and shelter at Lemhi traps for use of all personnel in the work done there.

Hatchery Improvements

Mackay Hatchery: Replaced cabinets and added a basement room in assistant's dwelling.

Grace Hatchery: Built a new residence at Grace Hatchery and landscaped grounds. Main access road and hatchery grounds roads were covered with asphalt surface.

Hagerman Hatchery: Increased the heighth of Hagerman Hatchery springhead wall for better operation. Replaced a deteriorated bridge across Riley Creek within hatchery grounds. Placed curbs and sidewalks in public grounds at the hatchery and improved the new access road to the hatchery from the highway. Replaced a furnace in the duplex dwelling with two oil-fired furnaces, one for each apartment. Overhauled and replaced where needed, sinks and cabinets in four older dwellings. Installed storm windows on one dwelling. Installed elevated metal feed storage bin.

Clark Fork Hatchery: Moved a two-car storage garage from the abandoned Lapwai Game Farm to Clark Fork Hatchery.

Eagle Hatchery: Installed a concrete divider in the broodstock pond. Remodeled a portion of the old grinding room for a crew room. Overhauled and rebuilt the cabinet work in the older dwelling.

Hayspur Hatchery: Built new diversion ditch to convey water from Loving Creek to the new raceways to be built at the Hayspur Hatchery.

All Hatchery Installations: Built four new fish loaders for various hatcheries and remodeled and rebuilt two older loaders.

Public Access Improvements

Built five access areas on lower Snake River below Walters Ferry with graveled roads, sanitary facilities and boat ramps (D-J project). Built Garfield Bay Jetty, boat ramp and boat dock (APW project). Installed concrete bridge on county access road to Niagra Springs

Entrance and portion of new Regional office at Coeur d'Alene started in 1964 and completed early in 1965. Lower left photo shows Department construction crew building a concrete boat ramp on the Walter's Ferry public access site. Another fish screen is under way on the Salmon River in lower right picture.

public ground across the creek, replacing a fallen wooden bridge (A cooperative project with road district and various other organizations). Constructed access road to Bliss Dam backwaters at Tuana Gulch near Bliss. Road improvements on the Massacre Rocks access road.

Cooperated with Elmore County in construction Deer Creek access to Anderson Ranch Dam impoundments. Cleaned up debris and trash, etc., at Horseshoe Bend public access. Drilled well, installed pump and installed sanitary facilities at Corbin Park near Post Falls (APW project). Drilled well and installed pump on Cocolalla public access area (APW project). Performed maintenance work on C.J. Strike public access area road, boat ramp and dock. Built access road, river crossing and parking area on Teton River access area near Victor. Furnished other agencies for public access areas, two cattleguards to Twin Lakes, two cattleguards to Bingham County access and two cattleguards to Ferry Butte access. Installed boat dock on Rose Lake public access area (APW project).

Management Area Improvements (Pittman-Robertson)

Placed rip rap on Market Lake main impoundment dike. Installed new furnace at Fort Boise headquarters residence. Installed new roof on Fort Boise headquarters dwelling. Constructed one-half mile of pad for concrete irrigation ditch on Fort Boise Gold Island. Replaced electric wiring in Boundary County area headquarters residence.

General Improvements - Statewide

Built new district office building at Coeur d'Alene for the Panhandle Region. Moved a quonset storage building from Lapwai Game Farm and re-assembled at the Kamiah Station. Moved a quonset storage building from Kooskia Station and re-assembled at the Lewiston office site. Moved a dwelling from Lapwai Game Farm to the Lewiston office site to be incorporated in the new office building. Moved from Lapwai Game Farm to the Lewiston office site a brooder house to be re-assembled for district storage and shop. Demolished Braves Field baseball stadium at Boise to make way for new main office building. Completed plans for new main office building at Boise. Drilled well on new office site in Boise to be used for heating and cooling the building. Pre-engineering for McArthur Dam reconstruction.

Painting - Statewide

Boise warehouse - painted inside. Boise office - painted inside. Fort Boise dwelling - painted outside all buildings. Twin Falls Hatchery - painted outside all buildings.

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 rehabilitation of wildlife.

2. Land Development - To make land and water areas more suitable for and productive of wildlife, through food and cover plantings, creation of new water impoundments, stabilization of water levels, introduction of game species into suitable habitat, and other activities necessary to accomplish these purposes.

Provisions are made under development projects to maintain all Federal Aid projects, buildings and 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 laws.

The act providing for Federal Aid in Wildlife Restoration was amended August 12, 1955, to provide that up to 30 per cent 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 of 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 state's paid hunting license holders to the total number of paid hunting license holders in all the states. No state shall receive less than one-half of one per cent nor more than five per cent of the total amount apportioned to all the states. Since March 11, 1939, when the Idaho Legislature passed the act enabling participation, $4,714,447.99 in Federal apportionments has been allocated to the State of Idaho.

The following financial report is for the period July 1, 1963, to June 30, 1964:

Unobligated balance of Federal funds, July 1, 1963		$ 672.91
Federal apportionment for fiscal year 1964	$312,449.38	
Credits from closed projects	79,527.33	
Total Federal money available to finance approved projects for period July 1, 1963, to June 30, 1964		392,649.62
Federal funds obligated for approved projects in fiscal year 1964	380,767.53	
Federal funds available for budgeting, July 1, 1964		$ 11,882.09

Fish Restoration

A Federal Act passed on August 9, 1950, provides that Federal funds obtained from a 10 per cent excise tax on fishing rods, creels, reels and artificial lures, baits and flies, be made available to participating states on the following basis: 40 per cent in the ratio that the area of each state, including coastal and Great Lakes waters, bears to the total area of all states; 60 per cent in the 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.

Since August 9, 1950, when the Idaho Legislature passed the act enabling participation, $1,010,956.99 in Federal apportionments has been allocated to the State of Idaho.

The following financial report is for the period July 1, 1963, to June 30, 1964:

Unobligated balance of Federal funds, July 1, 1963		$ 24,484.08
Federal apportionment for fiscal year 1964	$100,442.20	
Credits from closed projects	34,545.51	
Total Federal money available to finance approved projects for period July 1, 1963, to June 30, 1964		159,471.79
Federal funds obligated for approved projects in fiscal year 1964	96,924.75	
Federal funds available for budgeting, July 1, 1964		$ 62,547.04

Accelerated Public Works

Under authority of P.L. 87-658, 87th Congress (76 Stat. 541-542, Public Works Acceleration Act, approved September 14, 1962), Accelerated Public Works program funds have been made available to the Department of the Interior for apportionment to the several eligible State and Territorial fish and game departments for use on Federal Aid in Fish Restoration Projects (16 U.S.C. 669-669i) and Federal Aid in Wildlife Restoration Projects (16 U.S.C. 777-777k). It is to be remembered that the principal purpose of the Accelerated Public Works program is to provide employment in economically needy areas at the earliest possible time, while simultaneously accomplishing useful public works of lasting benefit.

Types of Suitable Projects

Accelerated Public Works funds may be used for projects only in areas designated by the Department of Commerce as "eligible areas." Funds under this program are available for capital improvements only, such as buildings, stream bank stabilization and improvement, boat ramps, construction of fishing lakes, lake and stream renovation and the like.

Accelerated Public Works Funds Received

Funds allocated to the Department of the Interior for carrying out the objectives of this program were apportioned to the State Fish and Game Departments by the Secretary as follows: (1) $10,000 was apportioned to each State and Territory; (2) 65 per cent of the remainder of the allocation to the Department of the Interior was apportioned on the basis of the ratio of the number of unemployed persons in the eligible areas of all the States and 35 per cent on the basis of the ratio of the number of 5(b)[1] areas in each State to the total number of 5(b) areas in all the states; and (3) not more than 10 per cent of the allocation was apportioned to any one State.

Since the start of the program, the Idaho Fish and Game Department has received a total allocation of Accelerated Public Works Funds of $151,338.00.

The following financial report is for the period July 1, 1963, to June 30, 1964:

Unobligated balance of Federal funds, July 1, 1963		$ 000.00
Federal apportionment during fiscal year 1964	$65,238.00	
Total Federal funds available to finance approved projects for period July 1, 1963, to June 30, 1964		65,238.00
Federal funds obligated during fiscal year 1964	65,238.00	
Unobligated balance of Federal funds, July 1, 1964		$ 000.00

The Idaho Fish and Game Department initiated the following projects under the Accelerated Public Works program during this period:

APW-FW-1-D-5. Fishing and Hunting Access Trail Development - Shoshone County. The project provides for the construction of five big game hunter access trails, totaling 20 miles in length, in key big game concentration areas of Shoshone County. The trails are named (1) Buzzard's Roost, 3 miles; (2) Mulligan Hump, 5 miles; (3) Buck Point to Caribou Ridge, 4 miles; (4) Copper Creek Trail #623, 6 miles; and (5) Revett Lake Trail, 2 miles.

APW-FW-1-D-6. Fishing and Hunting Access Trail Development - Boundary County; Mountain Lakes Segment. Provides for the construction or improvement of nine miles of forest trails into high mountain lakes where fisherman access is desirable. The trails are designated as (1) Trout Creek Lake #2 to Ball Creek Lake, 2 miles; (2) Roman Nose Lake #3 to Roman Nose Lakes #1 & #2, 1.5 miles; (3) reopening of U.S.F.S. Trail #279 and construction of new trail to Beehive and Little Harrison Lakes, 4.5 miles; (4) improvement of Copper Lake Trail and reopening of old U.S.F.S. trail, 0.5 miles; and (5) improvement of trail to Queen Lake from Queen Mountain Road, 0.5 miles.

APW-FW-2-D-4. Public Access Development, Kootenai County - Corbin Park Segment. Provides for the development of the Corbin Park public access area on the Spokane River to promote the harvest of the fishery resource, including the drilling of a six-inch well and installation of hand-operated pump, and the installation of two prefabricated toilets.

APW-FW-3-D-2. Public Access Development, Teton County - Packsaddle Lake Segment. Provides for renovation of Packsaddle Lake Dam to make it impervious to water, removal of debris, and construction of a spillway to ensure impoundment of maximum waters, as a benefit to the existing fishery.

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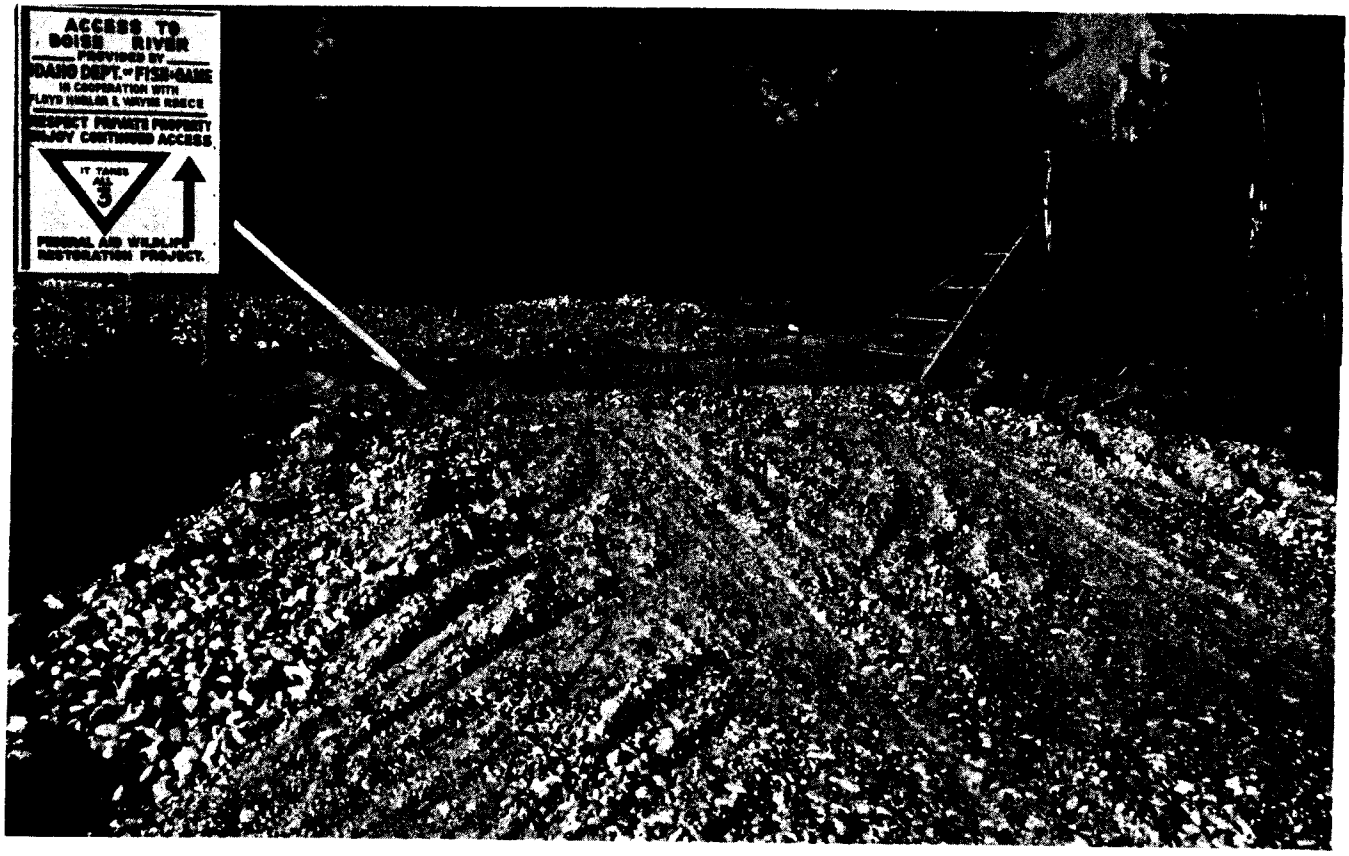
[1] A 5(b) redevelopment area is defined in the Area Redevelopment Act (75 Stat. 48-12, U.S.C. 2504). These areas are those of low income, low farm income, rural development counties, areas of low-production farming, and very small areas of substantial and persistent unemployment, or a combination of these or other similar conditions. These areas are designated by the Department of Commerce from time to time.



Access sites have been acquired and developed in many areas of the state. Development may include roads, fences, parking areas and sanitary facilities. Lower photo shows construction men building bridge across a canal to provide access to Bliss Reservoir.

APW-F-3-D-1. Priest Lake Spawning Channels - Bonner County. Provides for construction of artificial spawning channels, one near the mouth of Hunt Creek on the east shore and one near the mouth of Kalispell Creek on the west shore of Priest Lake, to enhance the cutthroat trout fishery in Priest Lake. Also the drilling of a six-inch well and installation of a hand-operated pump at the Cocolalla Lake public access site to provide a culinary water supply.

APW-F-3-D-2. Priest Lake Spawning Channels - Bonner County, Hatchery Ponds. Provides for construction of a battery of five reinforced concrete ponds for the rearing of kokanee salmon fry to approximately four inches in length for planting in Coeur d'Alene and Priest Lakes in an effort to establish a self-sustaining kokanee fishery in these waters.

APW-F-4-D-1. Public Access Development - Boundary County, Bonner Lake and Moyie River. Provides for the improvement and development of public access sites on Bonner Lake and on the Moyie River to promote the orderly harvest of the fishery resources.

Fishing and hunting access trail development accounted for construction of five trails for hunters in Shoshone County and nine miles of pathway for fishermen in Boundary County during the year.

FEDERAL AID IN WILDLIFE RESTORATION PROJECTS APPROVED[1]
During Fiscal Year July 1, 1963 to June 30, 1964

PROJECT NO.	NAME OF PROJECT	ESTIMATED COSTS FEDERAL	STATE	TOTAL
FW-40-C-24	Fish and Wildlife Management Coordination	$ 17,670.00	$ 5,890.00	$ 23,560.00
DEVELOPMENT PROJECTS:				
FW-2-D-12	C. J. Strike Wildl. Mgmt. Area	12,600.00	4,200.00	16,800.00
W-36-D-15	Hagerman Wildl. Mgmt. Area	7,650.00	2,550.00	10,200.00
W-55-D-17	North Lake Wildl. Mgmt. Area	16,125.00	5,375.00	21,500.00
W-60-D-13	Boundary County Wildl. Mgmt. Area	2,400.00	800.00	3,200.00
W-64-D-13	Boise River Wildl. Mgmt. Area	7,500.00	2,500.00	10,000.00
W-75-D-11	Trapping, Tagging and Transplanting	4,125.00	1,375.00	5,500.00
W-80-D-17	Game Habitat Improvement	39,750.00	13,250.00	53,000.00
W-89-D-14	Sand Creek Wildl. Mgmt. Area	22,500.00	7,500.00	30,000.00
W-103-D-9	Farragut Wildl. Mgmt. Area	1,275.00	425.00	1,700.00
W-116-D-8	Market Lake Wildl. Mgmt. Area	23,250.00	7,750.00	31,000.00
W-123-D-5	Snow Removal	2,475.00	825.00	3,300.00
W-124-D-6	Fort Boise Wildl. Mgmt. Area	23,625.00	7,875.00	31,500.00
W-126-D-5	Albeni Falls Wildl. Mgmt. Area	2,100.00	700.00	2,800.00
W-128-D-4	Carey Lake Wildl. Mgmt. Area	2,400.00	800.00	3,200.00
W-130-D-5	Statewide Public Hunting Access Sites, Snake River - Walters Ferry Segment	5,625.00	1,875.00	7,500.00
	TOTAL DEVELOPMENT PROJECTS	173,400.00	57,800.00	231,200.00

[1] Projects approved by the Idaho Fish and Game Commission and the Bureau of Sport Fisheries and Wildlife during fiscal year 1964; project funds were obligated as available.

RESEARCH PROJECTS:

W-85-R-16	Big Game Surveys and Investigations	88,125.00	29,375.00	117,500.00
W-96-R-12	Statewide Game Bird Survey	4,500.00	1,500.00	6,000.00
W-111-R-12	Artificial Revegetation Studies on Ranges	9,150.00	3,050.00	12,200.00
W-125-R-5	Sage Grouse Investigations	11,025.00	3,675.00	14,700.00
	TOTAL RESEARCH PROJECTS	112,800.00	37,600.00	150,400.00

LAND ACQUISITION PROJECTS:

W-129-L-10	Statewide Public Hunting Access Sites, Teton River - Fox Creek Segment	240.00	80.00	320.00

SUMMARY OF INITIATED PROJECTS

CLASSIFICATION	FEDERAL	STATE	TOTAL	PERCENT OF TOTAL
Coordination	$ 17,670.00	$ 5,890.00	$ 23,560.00	5.81
Development Projects	173,400.00	57,800.00	231,200.00	57.02
Research Projects	112,800.00	37,600.00	150,400.00	37.09
Land Acquisition Projects	240.00	80.00	320.00	.08
Totals	$304,110.00	$101,370.00	$405,480.00	100.00

FEDERAL AID IN FISH RESOTRATION PROJECTS APPROVED[1]
During Fiscal Year July 1, 1963 to June 30, 1964

PROJECT NO.	NAME OF PROJECT	ESTIMATED COSTS FEDERAL	STATE	TOTAL
FW-40-C-24	Fish and Wildlife Management Coordination	$ 5,580.00	$ 1,860.00	$ 7,440.00
DEVELOPMENT PROJECTS:				
F-45-D-13	Statewide Public Fishing Access Sites, Snake River - Pingree Segment	3,075.00	1,025.00	4,100.00
F-45-D-14	Statewide Public Fishing Access Sites, Snake River - Massacre Rocks Segment	2,437.50	812.50	3,250.00
F-46-D-2	Fish Barrier Dam - Yellow Belly Lake	8,775.00	2,925.00	11,700.00
F-48-D-2	Channel Clearance in Priest Lake Tributary Streams	1,275.00	425.00	1,700.00
F-52-D-1	Lemhi River Fish Trapping Facilities	13,575.00	4,525.00	18,100.00
	TOTAL DEVELOPMENT PROJECTS	29,137.50	9,712.50	38,850.00

[1] Projects approved by the Idaho Fish and Game Commission and the Bureau of Sport Fisheries and Wildlife during fiscal year 1964; project funds were obligated as available.

RESEARCH PROJECTS:

F-18-R-10	Statewide Fishing Harvest Survey	3,600.00	1,200.00	4,800.00
F-32-R-7	Tests for Increasing Returns of Hatchery Trout	12,750.00	4,250.00	17,000.00
F-34-R-7	Water Quality Investigations	9,750.00	3,250.00	13,000.00
F-49-R-3	Salmon and Steelhead Investigations	22,500.00	7,500.00	30,000.00
F-51-R-2	Anderson Ranch Reservoir - South Fork Boise River Fishery Research Project	9,375.00	3,125.00	12,500.00
	TOTAL RESEARCH PROJECTS	57,975.00	19,325.00	77,300.00

LAND ACQUISITION PROJECTS

None

SUMMARY OF INITIATED PROJECTS

CLASSIFICATION	FEDERAL	STATE	TOTAL	PERCENT OF TOTAL
Coordination	$ 5,580.00	$ 1,860.00	$ 7,440.00	6.02
Development Projects	29,137.50	9,712.50	38,850.00	31.43
Research Projects	57,975.00	19,325.00	77,300.00	62.55
Land Acquisition Projects	0.00	0.00	0.00	0.00
Totals	$ 92,692.50	$ 30,897.50	$123,590.00	100.00

ACCELERATED PUBLIC WORKS PROJECTS APPROVED
During Fiscal Year July 1, 1963 to June 30, 1964

PROJECT NO.	NAME OF PROJECT	ESTIMATED COSTS FEDERAL	STATE	TOTAL
APW-FW-1-D-5	Fishing and Hunting Access Trail Development - Shoshone County	$ 12,540.00	$ 6,460.00	$ 19,000.00*
APW-FW-1-D-6	Fishing and Hunting Access Trail Development - Boundary County, Mountain Lakes Segment	11,250.00	11,250.00	22,500.00
APW-FW-2-D-4	Public Access Development - Kootenai County, Corbin Park Segment	1,650.00	1,650.00	3,300.00
APW-FW-3-D-2	Public Access Development - Teton County, Packsaddle Lake Segment	2,750.00	2,750.00	5,500.00
APW-F-3-D-1	Priest Lake Spawning Channels - Bonner County	6,270.00	3,230.00	9,500.00*
APW-F-3-D-2	Priest Lake Spawning Channels - Bonner County, Hatchery Ponds	10,560.00	5,440.00	16,000.00*
APW-F-4-D-1	Public Access Development - Boundary County, Bonner Lake and Moyie River	5,500.00	5,500.00	11,000.00
	Subtotals	50,520.00	36,280.00	86,800.00
Increases in funds made available by amendments to projects approved in last fiscal year:				
APW-FW-1-D-1	Fishing and Hunting Access Trail Development - Bonner County	228.00	228.00	456.00
APW-FW-1-D-2	Fishing and Hunting Access Trail Development - Kootenai County	2,150.00	2,150.00	4,300.00
APW-FW-1-D-4	Fishing and Hunting Access Trail Development - Shoshone County	1,700.00	1,700.00	3,400.00
APW-FW-2-D-1	Public Access Development, Kootenai County - Office Building	5,500.00	5,500.00	11,000.00
APW-FW-3-D-1	Public Access Development, Teton County - Teton River	5,140.00	5,140.00	10,280.00
	Subtotals	14,718.00	14,718.00	29,436.00
	TOTALS	$ 65,238.00	$ 50,998.00	$116,236.00

* 66% Federal funds; 34% State funds. Remaining projects were financed 50% Federal and 50% State funds.

IDAHO FISH AND GAME DEPARTMENT

Nonexpendable Assets

June 30, 1964

Highways and Waterways	$ 863,440.00
Office Machines and Equipment	108,245.00
Field Equipment	49,270.00
Engineering and Precision Equipment	154,125.00
Hatchery, Farm and Construction Equipment	226,839.00
Household Furnishings and Equipment	15,463.00
Land	1,769,292.00
Building	967,927.00
Total	$4,154,601.00*

* Listed at Department's Cost

LAND ACQUISITION

Pursuant to the needs for providing administrative, fish and wildlife habitat and management areas, and public access sites, the following report is made of lands added to the land management rolls of the Idaho Fish and Game Department during the period July 1, 1963, to June 30, 1964:

The following lands have been acquired by purchase of fee title, easement, U.S. Patent, etc.

NAME OF SITE	County	No. Acres	Consideration
ADMINISTRATIVE SITES:			
Boise Office Site	Ada	9.7	$ 80,000
Panhandle Region Office Site	Kootenai	1.71	3,100
FISH & WILDLIFE MANAGEMENT AREA SITES			
Priest Lake Spawning Channels	Bonner	4.47	2,500
Boundary County Wildl. Mgmt. Area	Bonner	197.45	20,900
Fort Boise Wildl. Mgmt. Area	Canyon	3.29	Exchange
Market Lake Wildl. Mgmt. Area	Jefferson	179.0	22,500
Market Lake Wildl. Mgmt. Area	Jefferson	24.92	63
North Lake Wildl. Mgmt. Area	Jefferson	13.64	750
Billingsley Creek Mgmt. Area	Gooding	283.62	60,000
FISHING & HUNTING ACCESS SITES:			
Bear Lake Canal Outlet[1/]	Bear Lake	200.0	500
Bonner Lake Access	Boundary	40.0	3,200
Henrys Fork Access, Earl J. Lee Site	Madison	144.6	5,700
Horseshoe Bend Millpond	Boise	35.03	2,400
Payette River, Nesbitt Island	Payette	2.0	200
Snake River, Banbury Springs Site	Gooding	54.8	138
Snake River, Clark's Island Site	Canyon	17.14	8,000
Snake River, Ferry Butte Site	Bingham	3.66	5,000
St. Maries River	Benewah	15.26	4,500
Teton River, Foster Slough Site	Teton	171.5	17,150

1/ Purchase price paid for lands under provisions of Recreation and Public Purposes Act. The sale has been protested and decision has not been made.

The following lands have been leased.

NAME OF SITE	County	No. Acres	Lease Fee Paid
ADMINISTRATIVE SITES:			
Clarkia Check Station	Shoshone	1.0	$ 50.00
FISH & WILDLIFE MANAGEMENT AREA SITES:			
Priest Lake Spawning Channel	Bonner	5.53	82.00 1/
FISHING & HUNTING ACCESS SITES:			
Lava Lake	Blaine	40.0	10.00
Magic Reservoir	Camas & Blaine	503.112	126.00
Salmon River	Custer & Lemhi	83.3	21.00
Silver Creek	Blaine	120.0	30.00
Snake River, Auger Falls Site	Jerome & Twin Falls	144.39	38.00
Snake River, Crystal Springs Site	Gooding	80.56	20.00
Snake River, Michaud Flats Site	Power	161.65	41.00
Snake River, Owsley Bridge Site	Twin Falls	10.0	25.00 1/
Snake River, Strong Site	Twin Falls	18.52	47.00 1/
Snake River, Thousand Springs Site	Twin Falls	39.90	100.00 1/
Snake River, Vinyard Lake Site	Jerome	119.80	30.00
Spokane River, Corbin Park Site	Kootenai	20.0	Free Use
Wilson Lake	Jerome	160.0	40.00
Wood River	Blaine	234.08	59.00
OTHER:			
Bureau of Reclamation License, 6 plots	Minidoka	116.99	
Salmon River Fish Screen Easements 18 sites	Custer		

1/ Lease fee paid for 10 years; other lease fees paid annually.

IDAHO FISH AND GAME DEPARTMENT
STATEMENT OF TOTAL FUND OPERATIONS
FISCAL YEAR ENDING JUNE 30, 1964

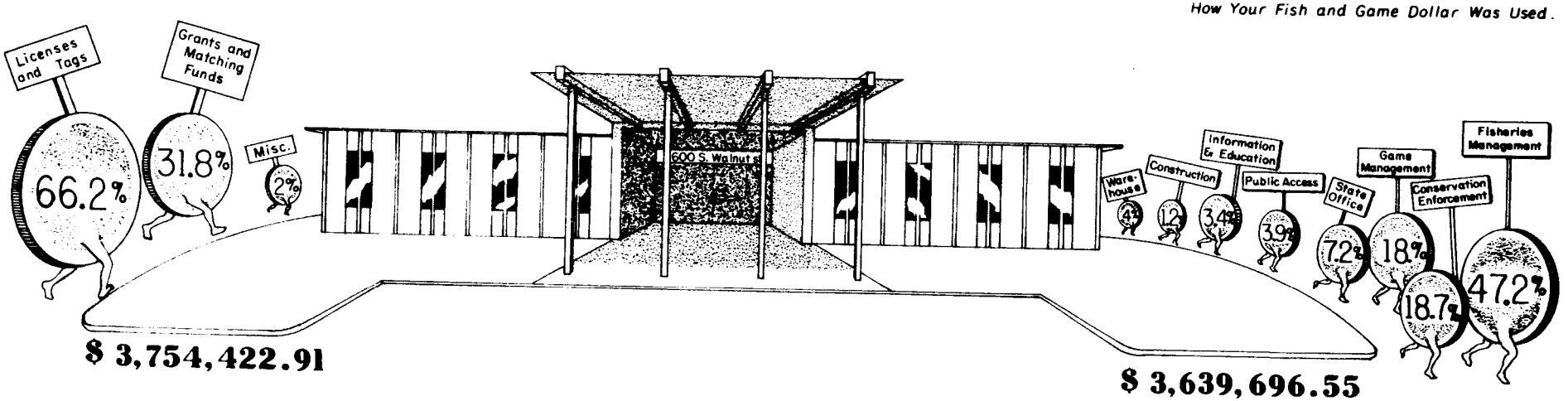
	Fish And Game Sect. 1	Predator Animal Sect. 2	Wildlife Restoration Sect. 3	Fish Restoration Sect. 4	Columbia River Sect. 5	Special Study Sect. 6	Accelerated Pub. Wrks. Sect. 7	Building	Total
Beginning Balance									$1,479,460.10
Revenue									
Licenses	2,482,483.79								2,482,483.79
Matching Funds			374,542.65	89,313.52	525,317.00	150,109.16	57,122.30		1,196,404.63
Others	64,350.26		10,071.49	1,031.12	49.42		32.20		75,534.49
Total Revenue	2,546,834.05		384,614.14	90,344.64	525,366.42	150,109.16	57,154.50		3,754,422.91
Department Transfers									-0-
Total Funds Available									5,233,883.01
Disbursements									
Salaries & Wages	1,131,631.90		180,151.85	53,859.33	105,033.13	28,045.93	6,828.98		1,505,551.12
Travel	65,221.54		6,040.13	3,809.17	9,517.54	1,678.92	990.13		87,257.43
Other Expense	658,070.61	25,004.98	152,436.97	55,760.16	75,009.83	(2,974.52)	84,654.36		1,047,962.39
Capital Outlay	462,631.67		49,782.68	36,773.64	348,547.86	57,135.48	43,318.68		998,190.01
Refunds	760.60			(25.00)					735.60
Total Expense	2,318,316.32	25,004.98	388,411.63	150,177.30	538,108.36	83,885.81	135,792.15		3,639,696.55
State Transfers									
Social Security	31,840.88								31,840.88
Adm. Audit	3,250.00								3,250.00
Adm. Charges	13,036.50								13,036.50
Prior Bien. Canc. War.	(164.90)								(164.90)
Total Disbursements	2,366,278.80	25,004.98	388,411.63	150,177.30	538,108.36	83,885.81	135,792.15		3,687,659.03
Fund Balance									1,546,223.98
Outstanding Orders	173,263.84	-0-	9,249.11	440.33	207.00	194.50	3,245.86	350,000.00	536,300.64
Unencumbered Fund Balance									$1,009,323.34

IDAHO FISH AND GAME DEPARTMENT

Fiscal Year Ending June 30, 1964

Revenue

Where the Money Comes From.



$ 3,754,422.91

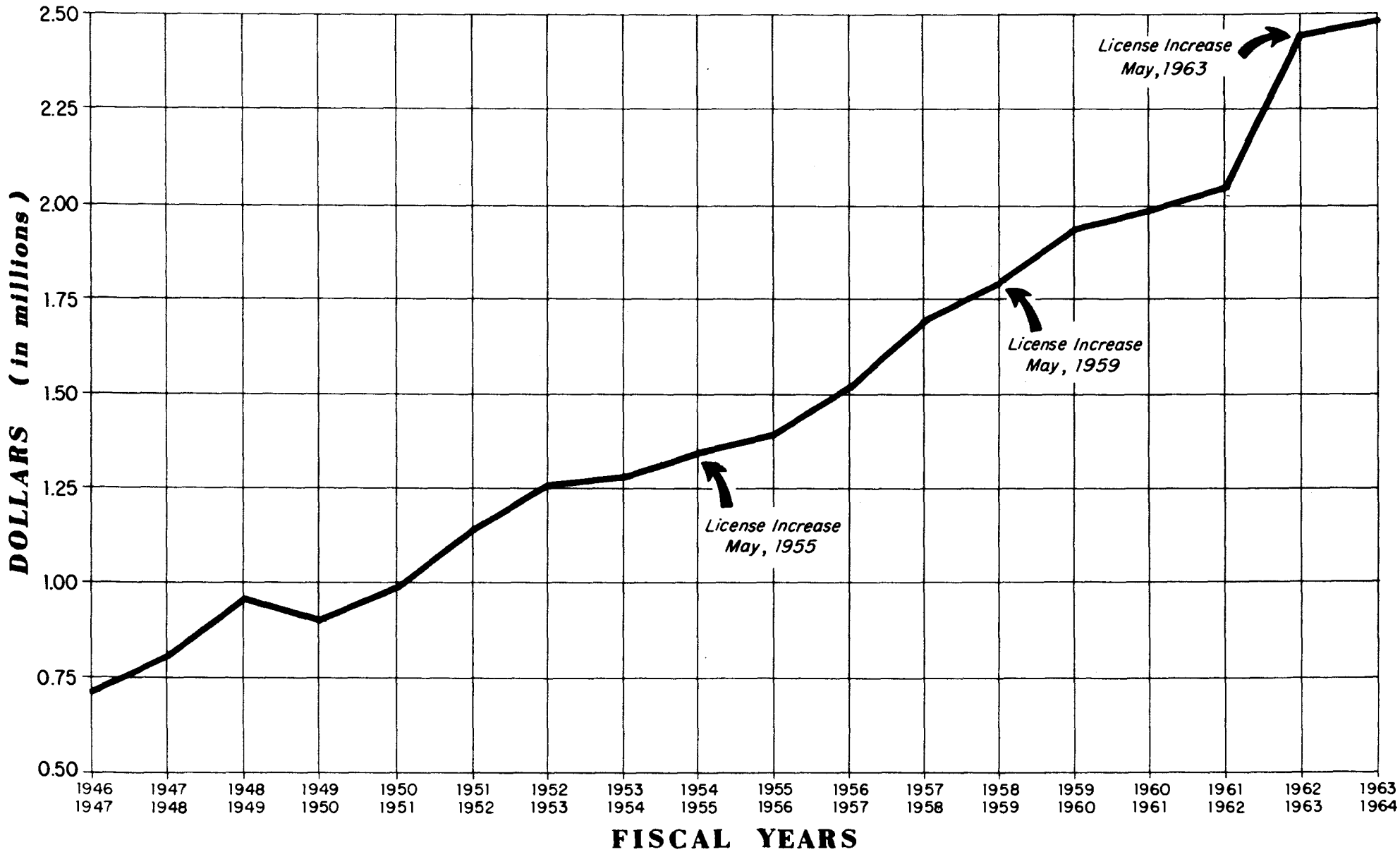
Distributions

How Your Fish and Game Dollar Was Used.

$ 3,639,696.55

IDAHO FISH AND GAME DEPARTMENT

Deposits of License Revenue



IDAHO FISH AND GAME DEPARTMENT
DETAIL OF CASH RECEIPTS
FISH AND GAME FUND #6
JULY 1, 1963 - JUNE 30, 1964

		NUMBER	DOLLARS
01	RESIDENT HUNTING & FISHING	89,411	$ 509,517.30
02	RESIDENT HUNTING	61,449	175,129.65
03	RESIDENT FISHING	59,607	226,476.20
10	NONRESIDENT HUNTING & FISHING	6,580	624,815.00
11	NONRESIDENT BIRD	3,112	73,910.00
12	NONRESIDENT SEASON FISH	9,552	136,070.40
13	NONRESIDENT 7-DAY FISH	26,199	124,282.80
14	TOURIST FIRST-DAY FISH	47,203	89,685.70
15	TOURIST ADDITIONAL 1-DAY FISH	25,095	23,840.25
16	NONRESIDENT GUN	403	1,914.25
17	NONRESIDENT DEER-BEAR	1,176	27,930.00
20	SHIPPING PERMITS	919	367.60
21	DEER TAGS	117,554	223,352.60
22	ELK TAGS	57,529	163,957.65
23	EXTRA DEER TAGS	13,093	24,876.70
24	MIDDLE FORK DEER TAGS	1,837	3,490.30
27	NONRESIDENT RESTRICTED DEER	956	1,816.40
28	BEAVER TAGS	6,518	3,096.19
29	COMMISSION SAVED		2,665.80
30	RESIDENT TRAPPER	733	3,665.00
31	COMMERCIAL FISH	239	2,390.00
32	RESIDENT OUTFITTER	-0-	-0-
34	RESIDENT FUR BUYER	35	175.00
35	TAXIDERMIST	25	250.00
36	PRIVATE POND PERMIT	34	340.00
37	GAME BIRD FARM PERMIT	18	180.00
40	NONRESIDENT TRAPPER	1	75.00
41	NONRESIDENT FUR BUYER	5	100.00
42	DUPLICATE LICENSES	1,809	1,809.00
50	DEER PERMITS	2,339	7,015.00
51	ELK PERMITS	2,255	11,259.00
52	MOOSE PERMITS	84	2,100.00
53	MOOSE TAGS	85	850.00
54	SHEEP PERMITS	-0-	-0-
55	SHEEP TAGS	552	5,520.00
56	GOAT PERMITS	195	975.00
57	GOAT TAGS	412	4,120.00
58	ANTELOPE PERMITS	1,096	3,286.00
59	ANTELOPE TAGS	1,159	1,159.00
98	ERRONEOUS LICENSE SALES		80.00
99	R.A.M. (INSUFF. CHECKS.)		(59.00)
	TOTAL LICENSES AND PERMITS		$2,482,483.79
	RENTALS		14,862.05
	FINES AND CONFISCATIONS		17,402.50
	MISCELLANEOUS SALES		4,068.43
	SALE OF CAPITAL ASSETS		1,132.50
	INSURANCE ADJUSTMENTS		163.15
	REFUNDS C.O.		1,779.84
	REFUNDS O.E.		24,941.79
	TOTAL RECEIPTS FUND #6		$2,546,834.05

TABULATION OF LICENSE SALES BY SERIES

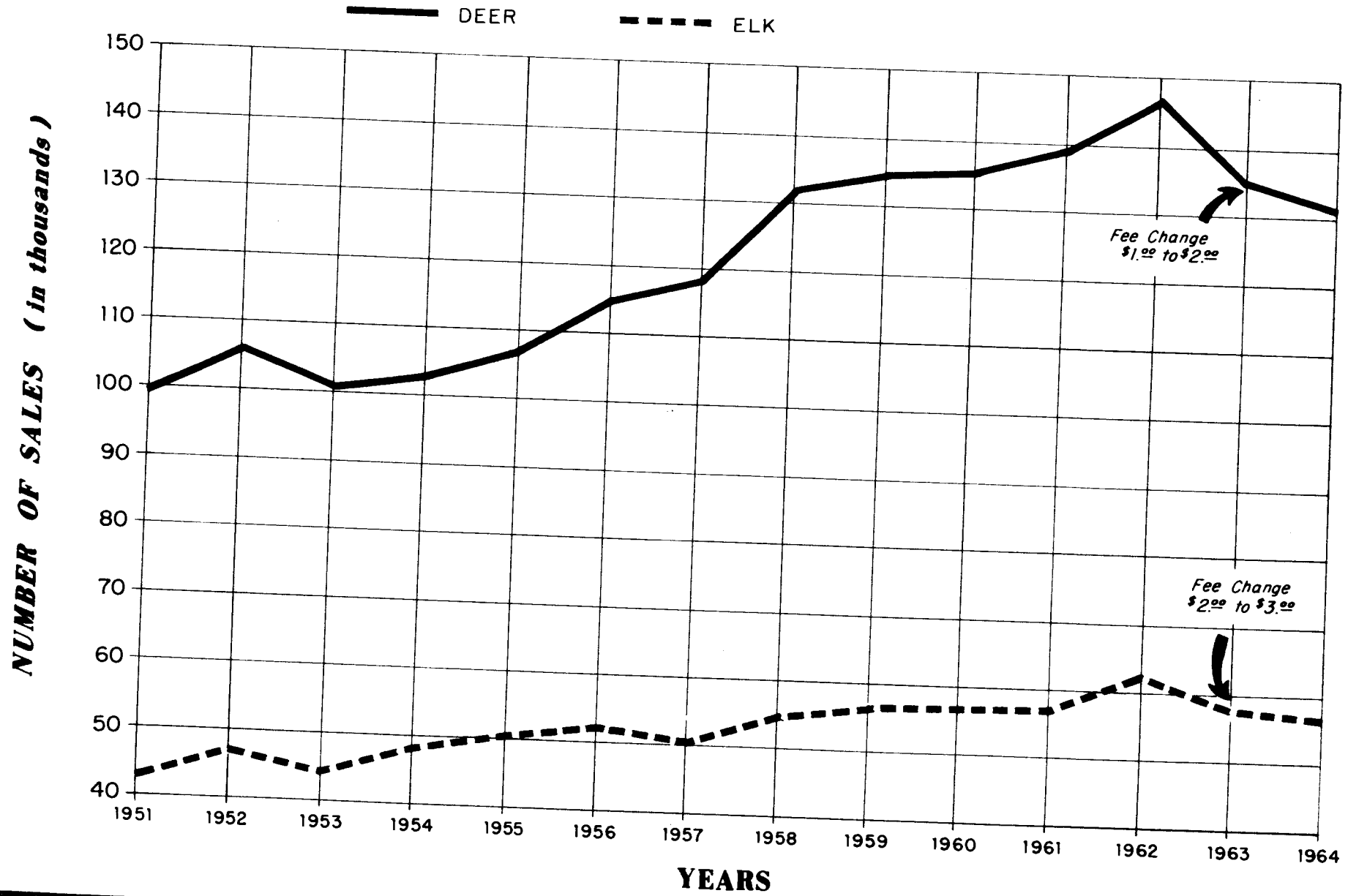
	Resident Fish & Game	Resident Game	Resident Fish	Non-Res. Big Game	Non-Res. Bird	Non-Res. Fish	Tourist Fish	Tourist 1-Day Fish	Additional 1-Day Fish	Shipping Permits	Reg. Deer Tags	Elk Tags	General Season* Goat Tags	General Season* Sheep Tags	General Season* Archery Ante-Lope Tags	Issued Without Charge To Old Age Permit Holders: Reg. Deer Tags	Issued Without Charge To Old Age Permit Holders: Elk Tags
1954	125,316	46,465	45,393	3,638	1,162	14,823	49,107			1,315	103,702	48,201				1,434	1,240
1955	118,189	46,315	47,095	3,729	1,133	13,042	41,379			1,062	106,840	50,757				1,658	1,500
1956	104,944	56,962	54,305	4,046	1,334	12,874	41,686			1,191 M.F.Deer	114,019 327	52,627	63	75	89	1,967	1,794
1957	104,035	57,086	57,504	4,882	1,818	13,837	45,063			1,253 Ext.Deer	110,836 7,166	50,732	76	193	92	2,226	2,065
1958	106,423	63,958	62,613	5,112	2,175	14,601	44,419			1,075 Ext.Deer M.F.Deer	120,448 9,123 2,687	54,920	96	255	58	2,491	2,278
1959	108,325	62,281	59,825	6,369	3,261	14,270	30,492	22,433	7,717	1,005 Ext.Deer M.F.Deer	123,335 8,400 3,373	56,381	108	379	69	2,514	2,244
1960	100,924	65,609	65,561	6,725	2,521	13,839	30,466	28,387	10,138	937 Ext.Deer M.F.Deer H.C.Deer	123,460 5,900 3,841 2,796	56,324	188	417	82	2,682	2,393
1961	97,804	66,215	66,248	7,778	2,811	14,036	30,716	30,194	10,731	896 Ext.Deer M.F.Deer H.C.Deer	123,646 7,152 3,148 5,695	58,727	186	555	81	2,780	2,485
1962	100,374	65,442	68,832	8,769	3,288	13,665	32,306	32,705	11,561	912 Ext.Deer M.F.Deer H.C.Deer Ant.Deer	124,564 11,524 3,442 6,388 1,353	62,040	176	522	69	2,795	2,518
1963	104,024	60,768	64,099	7,795	3,177	12,517	26,774	46,754	24,320	877 M.F.Deer Ext.Deer Res.Deer	117,554 1,837 13,093 956	57,529	217	552	63	3,049	2,734
1964	100,307	63,288	65,906	6,968	3,753	10,972	26,322	54,166	33,082	912 M.F.Deer Ext.Deer Res.Deer	115,737 1,922 14,140 1,224	56,132	206	432	63	3,068	2,792

*This does not include controlled hunt permits.

M.F. Deer - Middle Fork Deer Tags
Ext. Deer - Extra Deer Tags
H.C. Deer - Hells Canyon Deer Tags
Res. Deer - Nonresident Restricted Deer Tags
Ant. Deer - Antlerless Deer Tags

IDAHO FISH AND GAME DEPARTMENT

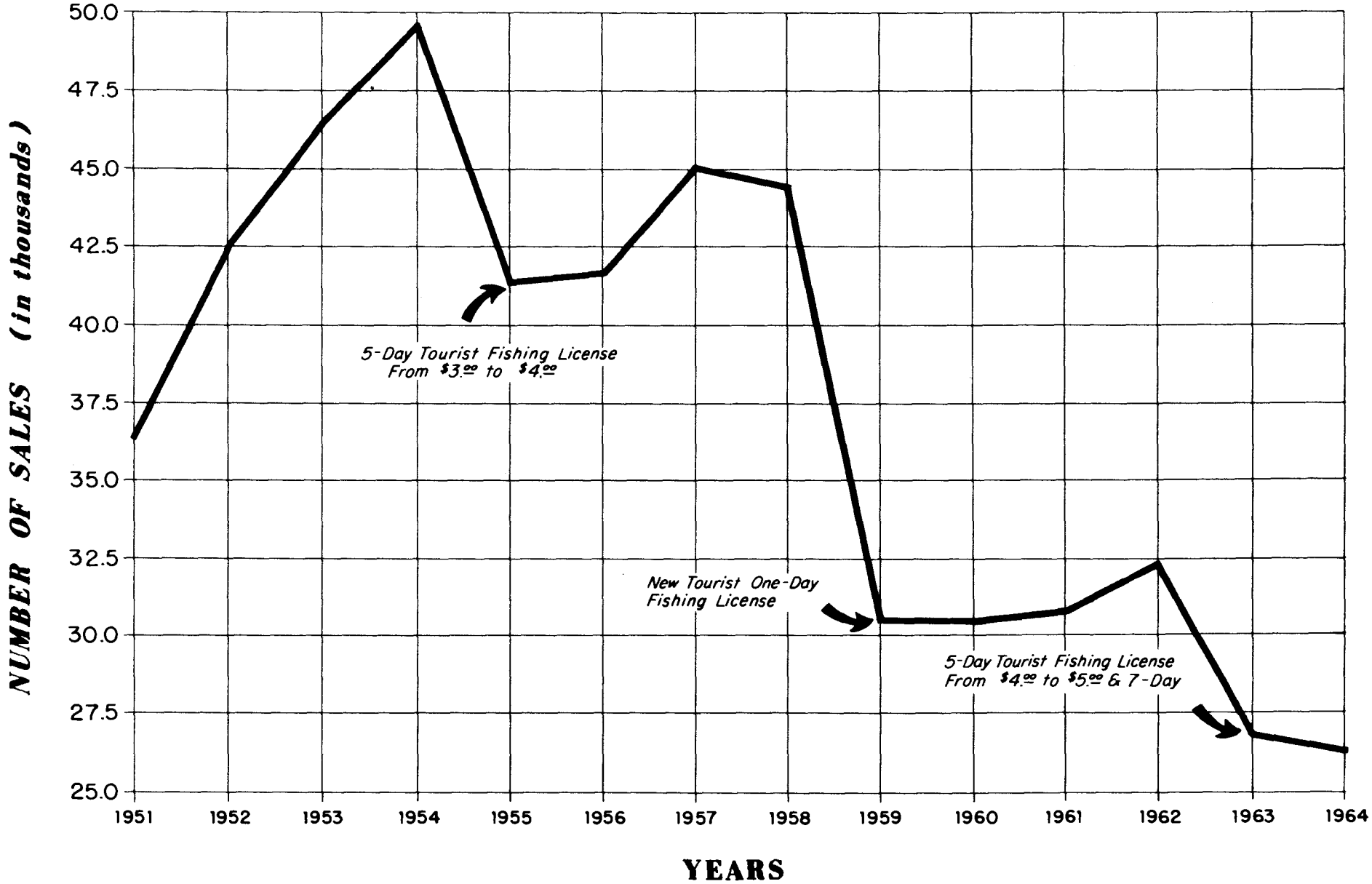
Deer & Elk Tag Sales



IDAHO FISH AND GAME DEPARTMENT

Nonresident Seven-day Fish License Sales

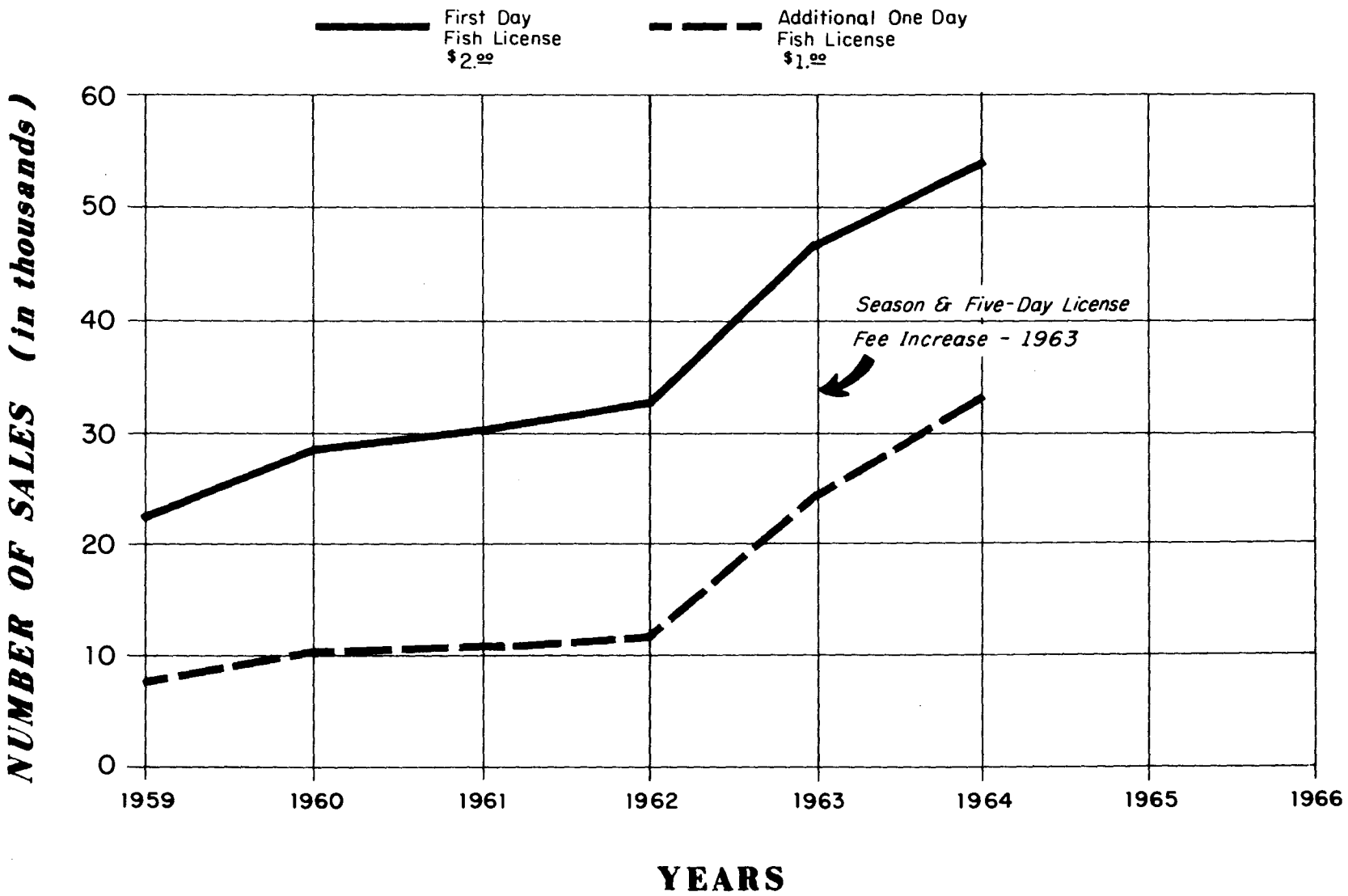
Class 13



IDAHO FISH AND GAME DEPARTMENT

Tourist Fish License Sales

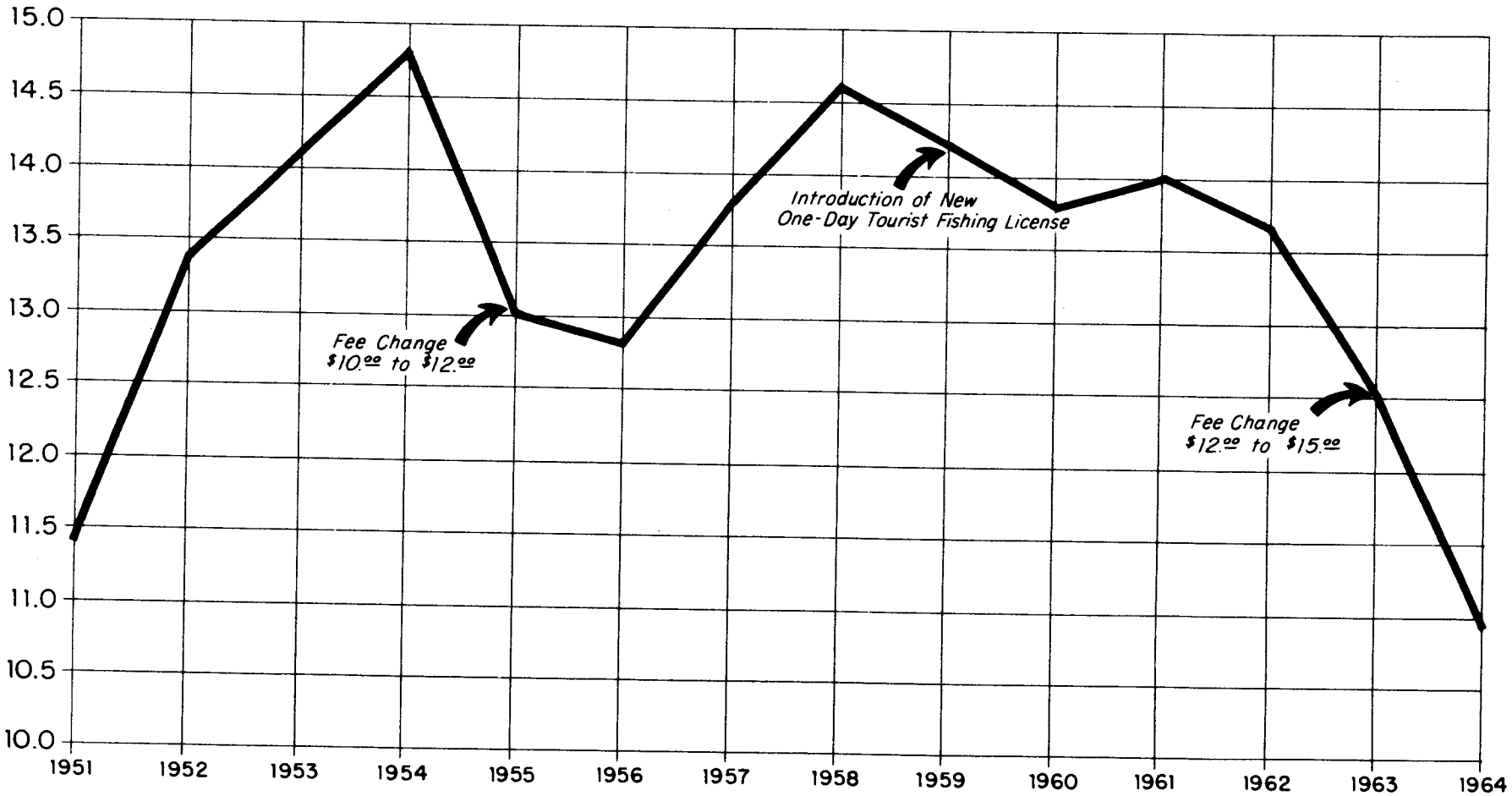
Class 14 & 15



IDAHO FISH AND GAME DEPARTMENT

Nonresident Season Fish License Sales

Class 12



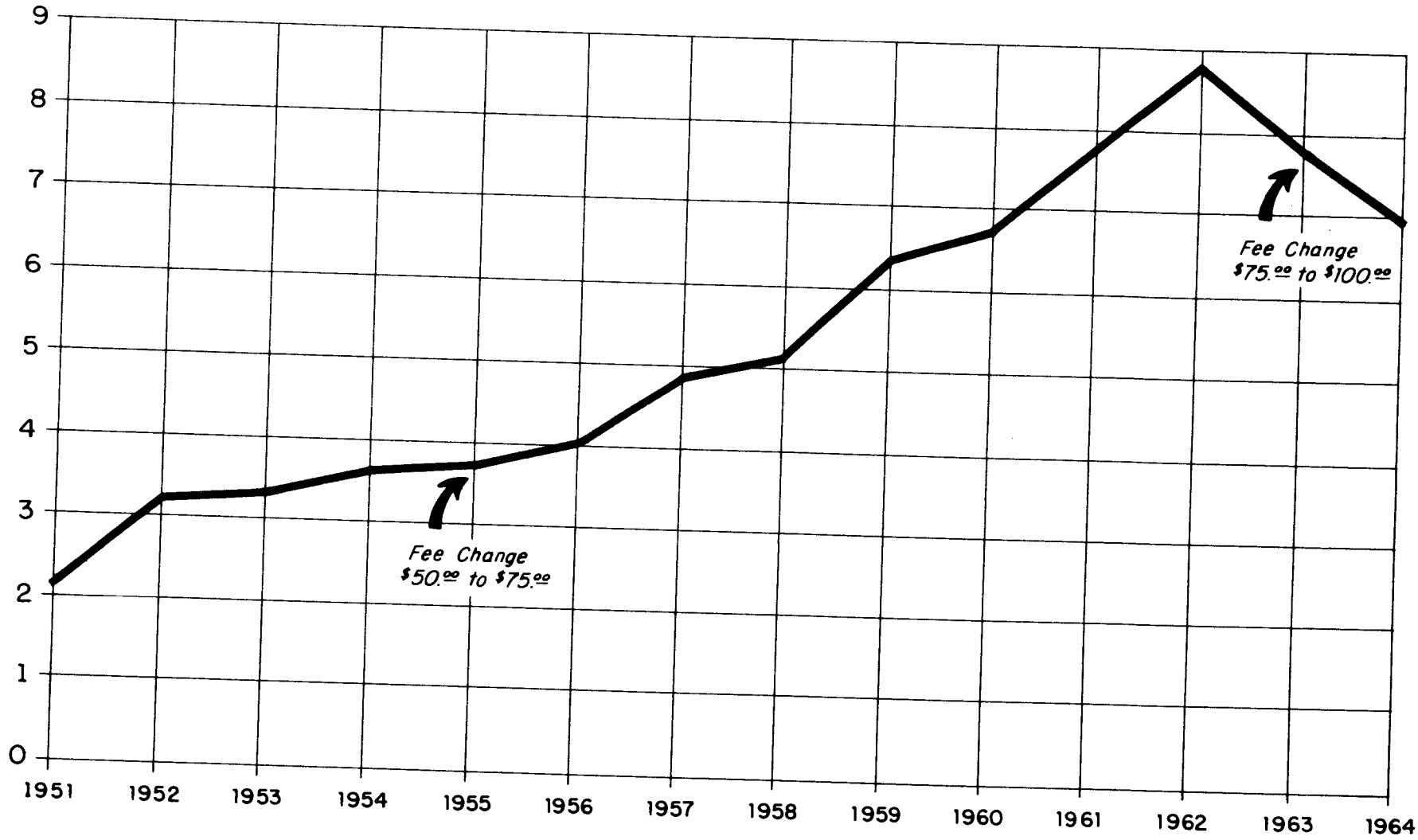
NUMBER OF SALES (in thousands)

YEARS

IDAHO FISH AND GAME DEPARTMENT

Nonresident Big Game License Sales

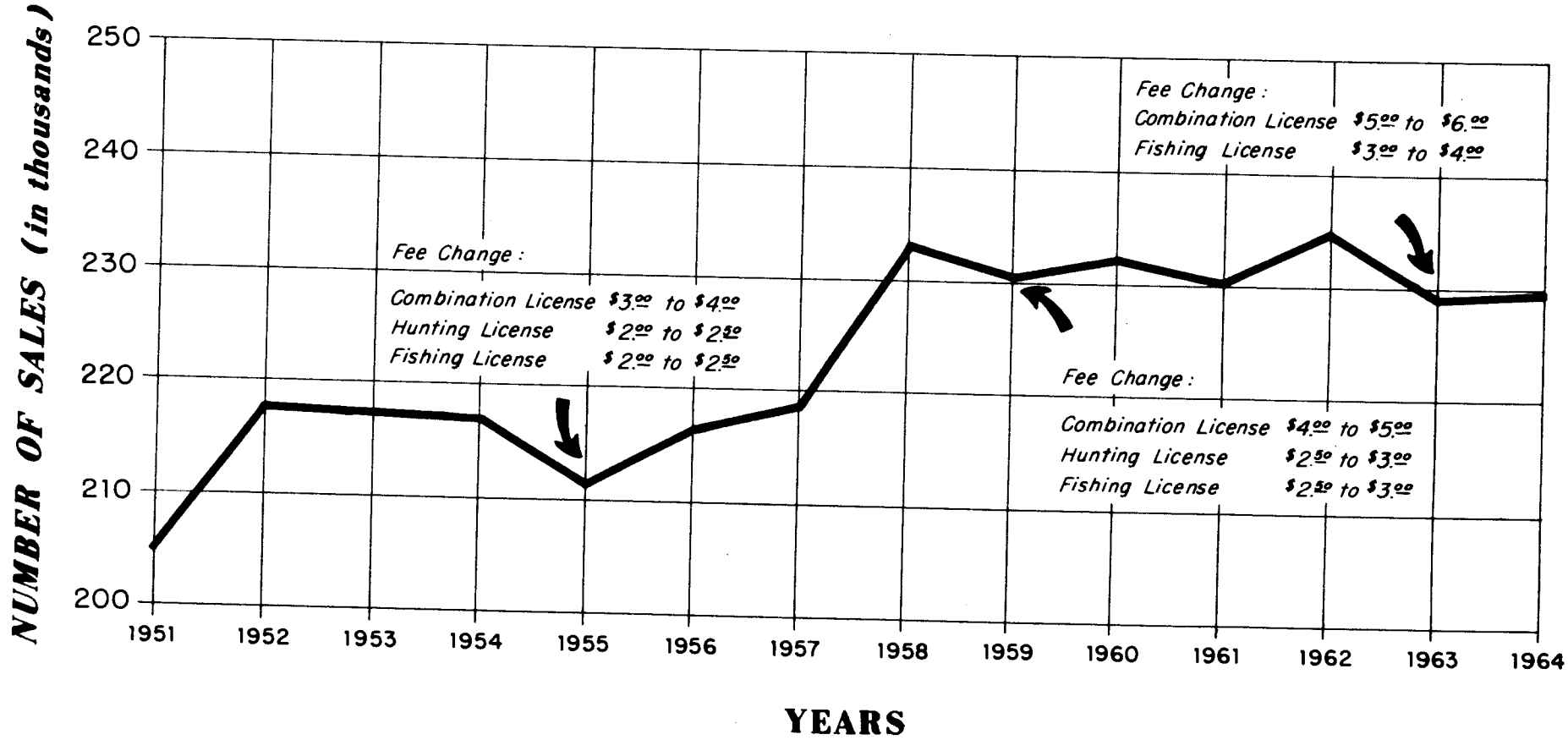
Class 10



IDAHO FISH AND GAME DEPARTMENT

Resident Sporting License Sales

Class 1, 2 & 3



COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM
STATEMENT OF OPERATION

CONSTRUCTION FUNDS AS OF JUNE 30, 1964

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	
FEDERAL APPROPRIATION FISCAL YEAR 1961	295,000.00	
FEDERAL APPROPRIATION FISCAL YEAR 1962	261,627.29	
FEDERAL APPROPRIATION FISCAL YEAR 1963	741,549.54**	
FEDERAL APPROPRIATION FISCAL YEAR 1964	119,450.46	
FEDERAL APPROPRIATION FISCAL YEAR 1965	75,000.00	
TOTAL FEDERAL FUNDS AVAILABLE FOR PROGRAM		$2,142,002.29

DISPOSITION OF FUNDS:

CRP- 1	INVESTIGATION & PLANNING	315,949.36*
CRP- 2	ACCESS & FILL AT SALMON WHSE.	1,344.82*
CRP- 3	SALMON WHSE. PLANS & SPECIFICATIONS	1,975.97*
CRP- 4	WELL AT SALMON WAREHOUSE	539.00*
CRP- 5	DAGGER FALLS PLANS & SPECIFICATIONS	9,207.26*
CRP- 6	FISH SCREENS PLANS & SPECIFICATIONS	8,298.55*
CRP- 8	FISH SCREEN CONSTRUCTION	433,097.80*
CRP-10	DAGGER FALLS FISHWAY CONSTRUCTION	122,612.43*
	DAGGER FALLS ACCESS	50,627.29*
CRP-11	SALMON WAREHOUSE CONSTRUCTION	50,692.22*
CRP-14	SELWAY FALLS FISHWAY, PRE-ENGINEERING	22,723.93*
CRP-15	STREAM CLEARANCE & MINOR FALLS CONS.	10,000.00*
CRP-17	SCREENING IRRIGATION DIVERSIONS	133,483.20*
CRP-18	FISH COUNTING & FISHWAY STUDY LEWISTON DAM	10,741.86*
CRP-19	SELWAY FALLS, PLANS & SPECIFICATIONS	15,000.00*
CRP-21	STREAM CLEARANCE & MINOR FALLS CONSTRUCTION	28,000.00
CRP-22	SCREEN IRRIGATION DIVERSIONS	159,988.94*
CRP-23	REVISION FISHWAYS, LEWISTON DAM	130,000.00
CRP-24	SELWAY FALLS FISHWAY	443,000.00
CRP-26	SCREENING IRRIGATION DIVERSIONS	75,000.00
TOTAL FUNDS EXPENDED OR CONTRACTED		2,022,282.63
BALANCE FEDERAL APPROPRIATION JUNE 30, 1964		$ 119,719.66***

* CLOSED
** $275,549.54 ADVANCED FROM 1964 APPROPRIATION
*** RESERVED FOR CRP-24

OPERATION AND MAINTENANCE FUNDS AS OF

JUNE 30, 1964

FEDERAL APPROPRIATION FISCAL YEAR 1959	$ 10,000.00
FEDERAL APPROPRIATION FISCAL YEAR 1960	16,624.58
FEDERAL APPROPRIATION FISCAL YEAR 1961	25,000.00
FEDERAL APPROPRIATION FISCAL YEAR 1962	40,000.00
FEDERAL APPROPRIATION FISCAL YEAR 1963	40,000.00
FEDERAL APPROPRIATION FISCAL YEAR 1964	35,000.00

DISPOSITION OF FUNDS:

CRP - 7	OPERATION & MAINTENANCE OF SCREENS	1,591.95*
CRP - 9	OPERATION & MAINTENANCE OF SCREENS	3,446.06*
CRP -12	OPERATION & MAINTENANCE OF SCREENS	16,249.58*
CRP -13	OPERATION & MAINTENANCE OF SCREENS	24,759.52*
CRP -16	OPERATION & MAINTENANCE OF SCREENS	32,216.74*
CRP -20	OPERATION & MAINTENANCE OF SCREENS	41,475.80*
CRP -25	OPERATION & MAINTENANCE OF SCREENS	35,000.00

TOTAL FUNDS EXPENDED OR CONTRACTED $154,739.65

*PROJECT CLOSED

COLUMBIA RIVER OPERATIONAL STUDY PROJECTS

JUNE 30, 1964

CRP-OS- 1	INTRODUCTION OF FALL-SPAWNING CHINOOK SALMON INTO THE CLEARWATER RIVER DRAINAGE	$ 4,992.74*
CRP-OS- 2	DEVELOPMENT OF TECHNIQUES AND EQUIPMENT TO FACILITATE PLANTING OF SALMON AND STEELHEAD EGGS	2,435.62*
CRP-OS- 3	REINTRODUCTION OF SPRING AND SUMMER-RUN CHINOOK SALMON INTO THE SELWAY RIVER, CLEARWATER RIVER DRAINAGE, IDAHO	52,286.13*
CRP-OS- 4	TRANSFER OF ADULT STEELHEAD FOR SPAWNING PURPOSES, SOUTH FORK OF CLEARWATER	4,253.68*
CRP-OS- 5	PLANTING OF EYED FALL-SPAWNING CHINOOK SALMON EGGS IN THE CLEARWATER RIVER DRAINAGE	6,740.98*
CRP-OS- 6	REINTRODUCTION OF SPRING & SUMMER-RUN CHINOOK SALMON INTO THE SELWAY RIVER, CLEARWATER RIVER DRAINAGE, IDAHO	24,371.08*
CRP-OS- 7	REINTRODUCTION OF STEELHEAD TROUT INTO THE SOUTH FORK OF THE CLEARWATER RIVER & THE LEMHI RIVER	24,518.53*
CRP-OS- 8	REINTRODUCTION OF SPRING AND SUMMER-RUN CHINOOK SALMON INTO THE SELWAY RIVER	45,948.41*
CRP-OS- 9	PLANTING OF EYED FALL-SPAWNING CHINOOK SALMON EGGS IN THE CLEARWATER RIVER DRAINAGE	13,396.32*
CRP-OS-10	REINTRODUCTION OF STEELHEAD TROUT INTO THE SOUTH FORK OF THE CLEARWATER RIVER & THE LEMHI RIVER, 1963	23,000.00
CRP-OS-11	REINTRODUCTION OF SPRING AND SUMMER-RUN CHINOOK SALMON INTO THE SELWAY RIVER DRAINAGE	40,000.00
CRP-OS-12	PLANTING OF EYED FALL SPAWNING CHINOOK SALMON EGGS IN THE CLEARWATER RIVER DRAINAGE	2,000.00
TOTAL FUNDS EXPENDED OR CONTRACTED		$243,943.49

*PROJECT COMPLETED