

1960
Annual Report



OREGON STATE GAME COMMISSION
GAME DIVISION



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ANNUAL REPORT

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Director

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INTRODUCTION

The objective of Oregon's game management program is to produce and maintain the maximum compatible number of game birds and animals on all suitable habitat and assure maximum recreational benefits to the people of the state. Attainment of this objective requires an intimate knowledge of the status of the wildlife resources and the factors that influence wildlife production.

This report summarizes the activities and findings of department personnel assigned to game work during the period from May 1, 1959, through April 30, 1960, and compares data of that period with that of previous years. The report is statistical in nature and is intended as a convenient reference for members of the Game Commission and its staff.

Oregon's game management program is designed and coordinated by four staff specialists assigned by classes of game or activity. These divisions of program are big game, upland game, waterfowl and fur, and habitat improvement. The programs are executed by 19 district game agents and 12 project leaders acting under the guidance of five regional supervisors. There have been few changes in either design of program or personnel during the year.

Game law enforcement and predator control programs are efficiently executed by the Oregon State Police Department and U. S. Fish and Wildlife Service respectively.

A Division of Research executes basic fish and game research programs.

The successful execution of authorized game programs can be attributed to the conscientious endeavors of department personnel, cooperating organizations, and individuals.

Collective discussion of mutual problems with resource management agencies, Oregon State Police Department, organizations of sportsmen and landowners, and many others has provided an opportunity for exchange of information and established a mutual understanding of objectives.

Annual inventories of wildlife populations and associated factors have been conducted with continuity since 1945. These accumulative measures form a basis for evaluation of applied management and development programs. They have resulted in new concepts of management that have provided substantial benefits for the resources and the public.

The available data are presented in statistical form with a minimum of narrative explanation. It is assumed that readers of this report have a knowledge of the distribution and habits of major game species and the techniques used in securing information pertinent to management of game.



BIG GAME

Inventories indicate that Oregon's big game resources are in a healthy and productive condition and that the exceptional harvest of 146,000 deer and 9,000 elk in 1959 did not have an adverse effect upon the resources.

Production of mule deer and antelope was below normal in 1959, and a cold spring combined with poor moisture supplies resulted in a substantial decline of forage production during the 1959 growing season.

Moderate temperatures and light snowfall during the 1959-60 winter permitted a high survival of big game in spite of the limited forage available.

Bitterbrush utilization measurements on mule deer winter ranges indicated exceptionally heavy use of the limited supply of that preferred species and emphasized the need for a greater harvest of mule deer on some ranges.

The regulation of big game resources by geographical units has been well accepted by the public. It has substantially improved the distribution of hunting pressure and kill and created additional recreational opportunities for the people of Oregon.

BLACK-TAILED DEER

For the first time, the main census effort on black-tailed deer has been on winter concentrations. Previously, sampling has been conducted on summer ranges and consequently was not as up to date or comparable to adjoining eastern Oregon ranges. Unfortunately, this change in inventory periods temporarily makes comparison with past years difficult, except for central Oregon blacktail herds which have been sampled on winter concentrations for some time.

Table 1 shows the averages for the past 10 years as compared to the new winter figures for early 1960.

Summer spotlight checks indicate a general population increase for northwestern Oregon blacktails as shown below.

SUMMER BLACK-TAILED DEER SPOTLIGHTING TRENDS

County	Number of Samples	Sample Miles	Deer Seen	Deer Seen Per Mile	
				1959	1958
Lane	13	293	1,104	3.8	3.4
Columbia	3	37	34	0.1	-
Benton	5	145	294	2.0	1.5
Lincoln	17	77	135	1.8	1.1
Linn	4	135	144	1.1	0.3
Polk	3	105	279	2.7	1.5
Clackamas	1	20	27	1.3	0.8
Marion	1	20	44	2.2	0.6
Washington	1	11	55	5.0	0.8
Yamhill	1	40	32	0.8	0.6
NORTHWEST TOTALS	49	883	2,148	2.4	1.1

The winter sampling disclosed an average of 6.0 deer per mile for 957 miles of census routes. Central region herd data, which can be compared, shows a relatively static population over a 6-year period.

Herd composition is shown in Table 2. Of the 3,333 animals classified last winter, 17 per cent were bucks, 48 per cent were does, and 35 per cent were fawns. The average of 34 bucks per 100 does is down slightly from the previous year's total of 39 per 100 does, but fawn survival is up from 66 per 100 does in 1959 to 73 fawns per 100 does in 1960.

Winter mortality was light in most of western Oregon with the exception of lowland losses in Douglas county. On lowland sheep pastures, a total of 121 deer, or 1.8 carcasses per mile, was found for 74 miles of search. The causative agent of mortality appeared to be a small internal parasite which affects both sheep and deer. As usual, most of the dead deer found were young animals. Losses by county are shown in Table 3.

Blacktail damage complaints totaled 681, as compared to 716 for the previous year. Again this past year, Douglas and Lane counties led in the number of complaints. The use of blood and bone meal as a deer repellent in orchards has been effective, and the high demand for this product from land-owners continues as more orchardists become aware of its effectiveness.

During the 1959 season, 56,562 black-tailed deer were harvested. Of this number, 64 per cent, or 36,562, were bucks. The antlerless harvest of 20,000 deer was nearly 5,000 more than taken in 1958. The use of unit permits for the second year, has greatly aided in hunter distribution, placing greater pressure on units with agricultural or tree farm damage problems. Hunter success in western Oregon was again 46 per cent--the same as for 1958. Hunter success for three blacktail controlled hunts was 51 per cent, with 1,600 hunters bagging 817 deer. Archers reported the harvest of 28 blacktails on four archery areas. The total black-tailed deer kill for 1959 was 57,407.

Table 1

BLACK-TAILED DEER POPULATION TRENDS

Counties by Regions	Miles Traveled	Deer Observed	Deer Density Per Mile									
			*1960	1957	1956	1955	1954	1953	1952	1951	1950	1949
Benton	45	124	2.8	3.7	2.0	2.0	3.9	2.5	3.5	2.0	1.0	1.6
Clackamas	5	0	0.0	0.8	0.6	1.6	1.7	-	-	-	-	-
Clatsop	54	140	2.6	4.0	4.0	3.5	3.0	2.3	2.8	2.7	3.4	2.4
Columbia	14	22	1.6	1.5	-	-	-	-	-	-	-	-
Lane	123	792	6.4	1.9	2.3	3.2	1.6	3.5	2.2	0.3	1.0	1.9
Lincoln	23	43	1.9	1.5	0.7	3.3	1.6	2.4	1.9	2.0	2.7	2.3
Linn	10	26	2.6	2.9	1.5	3.1	2.7	1.8	0.9	0.8	0.2	0.1
Marion	29	66	2.3	2.4	0.7	1.7	1.0	0.0	0.3	0.5	0.7	0.5
Polk	29	280	9.7	5.7	4.0	5.5	4.4	5.6	3.6	3.0	3.4	1.4
Tillamook	80	174	2.2	3.4	3.1	5.0	3.5	2.9	3.0	2.3	3.3	3.4
Washington	37	172	4.7	4.8	3.2	4.3	5.6	7.3	5.9	2.9	1.6	3.0
Yamhill	10	21	2.1	4.5	3.1	5.0	6.0	6.6	5.7	3.1	2.5	2.5
NORTHWEST	459	1,860	4.1	3.1	2.8	3.8	3.0	3.1	2.9	1.8	2.9	2.7
Coos	97	270	2.8	2.7	3.2	2.3	2.0	1.3	1.1	2.8	3.0	2.4
Curry	41	135	3.3	3.1	3.3	2.6	3.4	1.8	1.9	0.8	3.7	1.1
Douglas	102	282	2.9	3.4	2.8	0.8	-	0.5	0.3	0.5	0.4	2.3
Jackson	108	670	6.2	0.5	0.5	0.5	0.5	0.3	0.6	0.4	1.1	1.7
Josephine	20	24	1.3	0.3	0.4	0.3	0.3	0.2	0.1	0.2	0.6	0.2
SOUTHWEST	368	1,381	3.7	1.6	1.5	0.9	0.9	0.6	0.7	1.1	1.6	1.4
Hood River	6	148	24.7	-	31.5	26.8	28.8	20.2	-	15.5	12.3	-
Wasco	62	1,159	18.7	19.2	20.5	25.7	22.7	12.8	10.0	9.2	5.2	-
Badger Creek	15	251	16.7	14.5	10.4	15.4	13.9	9.5	4.2	3.1	4.6	-
Six Fingers	28	249	8.9	15.1	16.2	18.7	42.9	11.0	6.8	4.8	4.1	-
White River	19	659	34.3	28.9	32.3	50.3	17.1	22.5	23.0	28.8	7.5	-
CENTRAL	130	2,466	18.9	19.2	21.4	25.8	23.3	13.2	10.0	10.2	6.0	-
TOTALS AND AVERAGES	957	5,707	6.0	4.0	3.4	3.6	3.1	2.9	2.5	2.2	2.6	2.0

*Summer samples for 1959 not shown; 1960 samples on winter concentrations.

Table 2

BLACK-TAILED DEER HERD COMPOSITION

Counties by Regions	Average Number Per 100 Does											
	Deer Classified				1960		1959		1958		1952	
	Bucks	Does	Fawns	Total	Bucks	Fawns	Bucks	Fawns	Bucks	Fawns	Bucks	Fawns
Benton	21	56	36	113	37	64	36	48	20	54	52	48
Clackamas	12	38	32	82	32	84	20	80	16	63	-	90
Clatsop	32	82	52	166	39	63	40	58	34	70	31	72
Lane	81	161	102	344	50	63	39	51	67	51	45	74
Lincoln	-	-	-	-	-	-	47	60	27	65	-	-
Linn	-	-	-	-	-	-	53	70	17	54	24	80
Marion	10	34	28	72	29	82	20	95	79	77	31	138
Polk	10	28	19	57	36	68	65	92	25	75	26	46
Tillamook	26	59	49	134	44	83	48	78	28	58	37	80
Washington	10	46	38	94	22	83	19	90	22	102	7	93
Yamhill	7	30	25	62	23	83	18	82	26	96	21	113
NORTHWEST	209	534	381	1,124	38	72	37	66	38	67	30	79
Coos	26	102	79	207	25	77	40	79	41	85	23	73
Curry	26	111	60	197	23	54	34	56	48	76	-	-
Douglas	100	322	314	736	31	97	33	90	27	61	27	64
Jackson	75	160	102	337	47	64	41	55	28	67	27	69
Josephine	4	22	25	51	18	114	31	66	19	69	37	81
SOUTHWEST	231	717	580	1,528	32	81	37	69	31	71	28	71
Hood River	9	34	22	65	26	65	58	58	39	54	19	71
Klamath	22	121	81	224	18	67	27	58	40	63	-	-
Masco	87	197	108	392	44	55	61	67	63	62	33	85
CENTRAL	118	352	211	681	33	60	47	63	39	62	25	77
TOTALS AND AVERAGES	558	1,603	1,172	3,333	34	73	39	66	38	67	28	77

Table 3

BLACK-TAILED DEER WINTER LOSSES

Counties by Region	Winter Losses				Total Carcasses	Miles Traveled	Carcasses Per Mile*								
	Sex		Age				1960	1959	1958	1957	1956	1955	1953	1952	1950
	Male	Female	Young	Adult											
Clatsop	2	3	3	2	5	54	-	-	-	-	0.3	0.1	-	-	0.5
Lane						8	0.6	0.9	0.4	0.2	-	1.1	0.3	-	-
Linn						61	-	1.5	-	-	0.6	1.0	0.3	0.9	-
Marion						11	-	-	-	-	0.3	0.8	-	-	1.0
Tillamook						80	-	-	-	-	1.1	0.3	-	-	1.7
Washington						20	-	0.2	0.1	0.1	-	0.6	-	-	0.5
Yamhill						4	-	-	-	-	-	-	-	-	-
NORTHWEST	2	3	3	2	5	234	-	0.2	-	-	0.4	0.4	-	-	0.8
Coos						14	0.3	-	-	-	-	-	-	-	-
Douglas					4	66	1.8	0.4	1.2	0.5	0.6	-	-	-	-
Jackson	74	47	93	28	121	-	-	-	-	-	0.4	-	-	-	0.4
Klamath						28	-	-	-	-	-	-	-	-	-
SOUTHWEST	74	47	93	28	125	108	-	0.4	0.6	-	0.4	-	-	-	-
Hood River						6	-	-	-	-	-	-	-	-	0.3
Wasco						62	-	-	-	-	-	-	-	-	-
CENTRAL					0	68	-	-	-	-	-	0.1	-	-	-
TOTALS AND AVERAGES					130	410	0.3	0.2	0.1	-	0.3	0.4	-	-	0.8

*Mortality averaging less than 0.1 carcass per mile is recorded as (-).

MULE DEER:

Mule deer winter sampling shows a total of 34,295 deer seen on 2,723 miles of census route. The average of 12.6 deer per census mile indicates little change in populations over the past seven years. Population trends by region are shown in Table 4.

All regions showed a slight increase over the 1958 index. The greatest difference by herd range is shown on the Alvord range, where the census showed 70 deer per mile this past winter as compared to 48 per census mile in 1958.

Herd composition is shown in Table 5. A total of 14,083 deer was classified on 54 herd ranges. Of the total classified, 13 per cent were bucks, 51 per cent were does, and 36 per cent were fawns. A drop in bucks per 100 does is apparent, 25 per 100 does for 1960 as compared to 28 in 1959. This is the same buck ratio as in 1958.

Fawn survival dropped from 78 per 100 does in 1959 to 71 fawns per 100 does in 1960. This drop was general on most herd ranges and may be attributed to low forage production and/or a high predation loss.

Antler classes by per cent are shown in Table 6. Little change has occurred over the previous year's percentages. Spikes and forked horns make up 48 per cent of the total, indicating good production in 1958.

Winter losses reflect the mild winter with only 52 deer tallied for 1,967 miles of search, as compared to 72 seen for 1,545 miles in 1959. Losses have been generally low since 1952. The greatest mortality occurred on the Swan Lake range in Klamath county, where approximately one dead deer per mile of search was noted. As shown in Table 7, young males accounted for the larger portion of all mortalities.

Deer wintered well generally, but forage conditions varied from fair to poor by range. Bitterbrush production was down and use was exceptionally heavy in all regions. Warm weather in March started grass production on many ranges, thus relieving some browse use. The 1960 water supplies and soil moisture are below normal but better than in 1959 on most ranges.

Mule deer damage complaints were approximately the same as for 1959, with 89 complaints received in 7 eastern Oregon counties, as compared to 83 for the previous year. Of this total, only 37 involved haystacks, as compared to 52 in 1959.

The 1959 general deer season resulted in the harvest of 87,369 mule deer, which represented 61 per cent of the total deer harvest. This is a 24 per cent increase in the mule deer kill over the 1958 season. The issuance of antlerless permits by unit protected more vulnerable central Oregon ranges and put heavier pressure on less accessible ranges. Five controlled hunts resulted in the kill of 1,075 deer by 2,391 hunters for a success of 45 per cent. Archers reported a kill of 152 mule deer.

The total mule deer harvest for the 1959 season amounted to 88,596 animals.

Interstate Deer Herd:

The Interstate Deer Herd summers in Oregon and winters in northern California. In 1945, the Interstate Deer Herd Committee was formed to coordinate a study and management program. This committee consists of California and Oregon game department representatives and Regions 5 and 6 of the Forest Service.

As the animals leave the Devils Garden area of the Modoc National Forest in northern California to return to the Fremont National Forest summer range in Oregon, they cross the state line in a relatively narrow area. This movement takes place over a short period of time. Tracks are tallied as the deer move across the state line road, and the counted tracks are erased by means of a drag to prevent duplication. Southbound tracks are subtracted from the northbound tally to obtain an accurate total. These counts represent a minimum, as storms and other disturbances affect the track tally. The count does not include many resident deer that use the winter range in California or the many Oregon deer that use the Fremont National Forest summer range and also winter in Oregon. Consequently, the track count provides only a minimum measure of the deer that migrate from California into Oregon in the spring. The summary for a 14-year period is shown below.

Track Count

<u>Year</u>	<u>Number of Tracks Migrating North</u>
1947	10,826
1948	9,665
1949	14,011
1950	13,256
1951	17,570
1952	10,547
1953	11,601
1954	17,615
1955	17,170
1956	12,244
1957	11,695
1958	12,819
1959	14,642
1960	<u>14,235</u>
AVERAGE	13,421

The past counting period began April 5 and extended through May 9, 1960. Deer movements were fairly steady and weather conditions not too severe. Some eleven days, however, were lost to bad weather during the counting period. On some peak days, as high as 1,802 animals were counted. The total of 14,235 animals is very close to the 14,642 tallied in 1959 and is well above the 14-year average of 13,421.

Herd composition percentages for the past 16 years are presented below.

Herd Composition

Year	Percentages of		
	Bucks	Does	Fawns
1944	9	63	28
1945	8	55	37
1946	6	61	33
1947	9	57	34
1948	8	59	33
1949	5	51	44
1950	8	47	45
1951	10	51	39
1952	7	52	41
1953	7	60	33
1954	9	46	45
1955	9	48	43
1956	8	53	39
1957	10	49	41
1958	7	51	42
1959	8	52	40
1960	6	57	37

The ratio of bucks to does remains low, and the fawn survival is the lowest since 1953 and is comparable to 1957's low of 39 per cent. It is felt that fawns went into the winter in poorer condition than for previous years. A comparison of fawns per 100 does taken in the fall and again in the spring showed an average loss of 23 per cent. A comparison taken in 1958-59 showed no loss. This seems to reflect general range conditions experienced last summer when drouthy conditions seriously affected forage and browse production.

Bitterbrush production in northern California was very poor this past year, with the average leader length of 2.4 the lowest recorded for the Devils Garden area. The average leader length for a 10-year period was 3.8. Conversely, the 39 per cent of total use was 36 per cent average and was the same as for 1957. Livestock summer use was 8 per cent and deer winter use was 31 per cent of the total. An 11-year average is shown below.

Production and Utilization of Bitterbrush

Year	Average Twig Length	Summer Use	Winter Use	Total Use
1949-50	-	19	29	48
1950-51	3.2	10	30	40
1951-52	3.7	16	18	34
1952-53	5.4	7	16	23
1953-54	3.8	14	19	33
1954-55	3.2	8	45	53
1955-56	3.0	8	30	38
1956-57	4.5	12	15	27
1957-58	4.3	11	28	39
1958-59	4.8	9	18	27
1959-60	2.4	8	31	39
AVERAGES	3.8	11	25	36

Hunting season data since 1949 is shown below.

Hunting Season Harvest

Year	Oregon		California		Total		Grand Total
	Bucks	Antlerless	Bucks	Antlerless	Bucks	Antlerless	
1949	3,500		491		3,991		3,991
1950	2,440	688	310	1,319	2,750	2,007	4,757
1951	3,149	2,343	*967	1,504	4,116	3,847	7,963
1952	1,898	1,399	*98		1,996	1,399	3,395
1953	2,798	1,893	128		2,926	1,893	4,819
1954	3,821	1,850	361		4,182	1,850	6,032
1955	3,494	2,574	441	2,008	3,935	4,582	8,517
1956	4,659	3,931	*899	1,885	5,558	5,816	11,374
1957	4,912	2,173	*925	0	4,026	2,036	6,062
1958	3,168	981	*662	285	3,830	1,266	5,096
1959	4,738	1,730	*1,345	0	6,083	1,730	7,813

*Forked horns or better.



Table 4
MULE DEER POPULATION TRENDS

Herd Ranges By Regions	Miles Traveled	Deer Observed	Deer Density Per Mile											
			1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	
Devils Garden	80	712	8.9	6.8	7.9	7.3	9.7	10.8	9.6	9.2	7.9	7.5	7.4	
Gearhart Mountain	36	927	25.8	20.2	16.7	19.3	28.3	38.3	32.2	13.9	18.0	7.3	-	
Goodlow Mountain	56	1,070	19.1	21.4	20.0	15.3	19.1	20.7	14.7	15.9	9.3	3.1	-	
Hole-In-Ground	55	204	3.7	5.5	4.0	1.9	3.1	4.1	3.4	3.5	3.0	6.0	6.6	
Maury Mountain	35	137	3.9	3.7	3.5	3.1	3.7	3.9	3.3	3.5	3.1	2.8	2.1	
McKay-Ochoco	35	284	8.1	7.9	7.9	6.2	8.7	9.8	7.6	7.0	7.7	6.0	9.4	
Metolius	65	280	4.3	4.1	4.6	3.3	4.5	5.3	4.2	3.7	3.0	3.0	2.7	
N. Fk. Crooked River	25	241	9.6	8.6	9.7	7.6	11.2	13.0	11.3	8.2	10.1	10.2	11.2	
North Paulina	120	435	3.6	3.9	4.0	3.8	4.0	4.5	4.0	3.5	4.9	4.8	3.5	
Swan Lake	59	1,367	23.2	27.9	27.3	40.3	34.7	27.6	25.2	15.7	11.2	8.0	-	
Tumalo	50	111	2.2	2.1	2.3	2.7	3.2	3.0	2.6	2.0	1.6	1.8	1.5	
CENTRAL	616	5,768	9.4	9.1	8.9	7.3	8.2	9.4	7.9	6.4	6.0	5.5	5.9	
Birch Creek	22	513	23.3	11.2	23.0	13.9	18.2	34.8	16.2	25.1	29.2	29.4	15.6	
Burnt River	55	894	16.2	21.2	14.7	19.0	13.5	14.6	12.8	14.0	27.0	29.0	18.9	
Catherine Creek	22	509	23.1	8.8	-	-	-	-	-	-	-	-	-	
Chesnimnus	109	238	2.2	1.6	2.9	3.2	2.8	2.8	2.3	-	-	-	-	
Day Basin	10	213	21.3	14.0	20.5	21.4	22.5	7.2	13.1	-	-	-	-	
Grande Ronde	40	128	3.2	3.4	-	5.0	1.4	-	-	-	-	-	-	
Heppler	34	600	17.8	15.2	19.6	18.3	24.1	23.5	18.2	24.5	31.3	16.9	8.8	
Imnaha	19	579	30.5	31.6	26.2	25.8	28.5	28.2	29.0	11.9	29.2	27.9	-	
Izee	21	255	12.1	24.5	23.6	22.4	25.6	23.0	20.2	23.9	20.3	28.6	32.1	
Kahler Basin	40	475	11.9	8.3	11.1	12.3	15.2	16.2	11.4	13.7	12.1	11.9	12.2	
Keating	57	1,518	26.6	23.8	19.0	24.6	29.5	22.9	27.3	25.6	18.9	24.5	13.8	
Lookout Mountain	12	479	40.0	37.3	26.6	44.1	46.3	46.5	21.8	36.4	9.0	33.4	-	
McKay Creek	21	313	14.9	13.4	17.3	25.7	28.4	16.4	13.1	21.9	14.4	10.0	-	
Meacham Creek	33	277	8.4	10.3	11.0	10.0	9.7	10.6	11.2	11.6	15.3	12.8	7.2	
Middle Fork John Day	120	498	4.1	4.8	4.3	4.2	4.7	3.9	3.7	2.1	4.3	4.8	5.5	
Minam	53	778	14.7	14.2	14.9	15.0	12.1	25.8	19.7	13.6	7.1	6.7	-	
Monument	24	383	16.0	16.7	24.1	14.0	22.9	24.0	17.6	14.7	25.8	22.9	-	
Murderer's Creek	73	1,499	20.5	24.5	25.2	21.1	21.0	24.8	12.7	14.9	18.8	13.5	17.7	
North Fork John Day	37	591	16.0	11.9	15.8	20.5	16.3	18.8	17.5	17.3	13.8	10.0	11.2	

Table 4 (Continued)
MULE DEER POPULATION TRENDS

Herd Ranges By Regions	Traveled	Observed	Deer Density Per Mile										
			1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950
North Ochoco	38	487	12.8	14.6	15.9	13.8	17.5	16.9	12.4	17.0	11.3	7.3	-
Northside John Day	56	1,250	22.3	19.6	16.6	17.7	27.6	23.7	18.9	20.5	20.0	12.1	32.7
Shaw Mountain	25	70	2.8	6.7	-	-	-	-	-	-	-	-	-
Sled Springs	39	493	12.6	9.0	12.6	16.9	11.9	8.7	10.6	12.8	14.0	-	-
South Fork John Day	25	438	17.3	13.7	17.3	15.4	13.7	23.6	13.1	-	-	-	-
Southside John Day	70	405	5.8	-	-	-	-	-	-	-	-	-	-
Sumpter	15	376	25.0	25.9	24.3	15.1	17.0	18.3	14.5	8.0	10.1	12.4	-
Umatilla	20	328	16.4	4.9	21.4	19.5	24.2	21.0	21.6	17.2	14.5	12.1	5.3
Walla Walla	41	335	8.2	5.3	8.0	13.8	11.7	17.3	8.7	6.4	13.2	13.4	7.3
Wallowa Mountains	23	541	25.3	30.8	27.8	25.4	26.4	19.9	18.6	20.2	19.4	20.5	-
Waterman	31	342	11.0	11.5	9.7	8.1	15.0	13.2	10.5	16.0	12.2	9.6	-
Wenaha	22	151	6.9	3.7	8.8	5.8	8.3	8.4	5.8	5.5	3.0	3.1	-
NORTHEAST	1,137	15,965	14.0	13.6	14.6	14.9	16.0	17.8	14.0	12.3	13.2	13.0	15.0
Alvord	18	1,268	70.4	48.0	49.3	52.3	49.3	34.5	40.9	43.4	52.5	52.1	41.2
Crane Mountain	27	288	10.7	19.6	12.7	7.0	10.7	8.6	8.1	9.4	13.4	12.3	9.0
Crooked Creek	80	763	9.5	10.2	7.2	10.0	10.4	10.7	9.4	8.4	15.6	18.1	13.4
Deep Creek	96	1,055	11.0	8.1	7.2	10.1	9.7	12.8	11.2	8.2	13.6	15.0	12.4
Drewsey	21	297	14.1	13.9	15.3	12.4	13.1	26.6	10.0	16.1	22.3	16.1	-
Dry Mountain	30	417	13.9	14.7	18.3	16.0	13.8	10.8	17.1	15.4	20.5	19.1	19.7
East Goose Lake	16	182	11.4	14.0	7.5	8.4	7.6	7.3	4.4	6.8	4.5	9.7	14.5
Fort Rock	160	2,140	13.3	13.9	16.8	14.2	12.3	11.1	18.2	12.0	8.8	13.1	13.1
Frenchglen	44	704	16.0	19.9	22.9	25.8	21.4	20.8	21.3	16.5	22.4	27.9	23.6
Ironside	18	125	6.9	13.3	5.7	7.5	4.6	5.1	4.4	3.4	20.3	-	-
Mahogany Mountain	50	278	5.5	7.8	9.7	9.3	8.7	-	-	-	-	-	-
Malheur	45	620	13.8	23.6	21.7	17.4	18.5	18.7	17.9	10.7	9.0	6.0	5.0
Riverside	33	50	1.5	4.8	-	-	-	-	-	-	-	-	-
Silver Lake	142	3,279	24.8	19.2	17.1	14.2	12.5	15.8	12.8	16.6	12.2	15.5	9.0
Silvies River	47	408	8.7	8.4	9.6	8.8	15.0	11.2	6.1	16.1	17.0	16.9	16.1
Southside Malheur	75	594	8.0	4.0	4.1	4.0	4.8	3.8	-	-	-	-	-
West Goose Lake	8	30	3.8	8.5	7.9	10.5	7.5	11.0	5.0	8.6	-	5.5	-
Whitehorse	60	64	1.0	1.3	1.4	0.9	1.2	-	-	-	-	-	-
SOUTHEAST	970	12,562	12.9	12.8	12.9	13.2	12.4	13.8	14.0	13.0	13.9	15.8	12.5
TOTALS AND AVERAGES	2,723	34,295	12.6	12.4	12.7	12.7	13.2	14.5	12.5	11.1	11.7	12.0	12.2

Table 5
MULE DEER HERD COMPOSITION

Herd Ranges by Regions	Deer Classified						Average Number Per 100 Does					
	1960		1959		1958		1959		1958		1952	
	Bucks	Does	Fawns	Total	Bucks	Fawns	Bucks	Fawns	Bucks	Fawns	Bucks	Fawns
Devils Garden	33	151	108	292	22	71	65	21	31	90	16	81
Gearhart Mountain	40	168	140	348	24	83	61	38	44	74	27	127
Goodlow Mountain	71	271	230	572	26	85	65	33	28	75	19	89
Hole-In-Ground	30	133	108	271	23	81	64	33	27	88	21	93
Maury Mountain	13	72	46	131	18	64	66	16	25	75	19	76
McKay-Ochoco	11	54	32	97	20	59	57	17	17	73	19	68
Metolius	31	126	77	234	25	61	71	34	30	84	39	72
No. Fk. Crooked River	24	134	84	242	18	63	67	18	24	76	14	68
North Paulina	40	173	114	327	23	66	68	24	36	87	32	89
Swan Lake	34	160	127	321	21	79	78	25	25	75	27	94
Tumalo	32	109	65	206	29	60	75	31	31	76	34	87
CENTRAL	359	1,551	1,131	3,041	23	73	67	27	30	80	24	82
Birch Creek	14	45	33	92	31	73	-	-	20	97	18	74
Burnt River	8	21	22	51	38	95	67	33	58	92	18	88
Chesnimus	20	86	66	172	23	77	101	33	25	96	-	-
Day Basin	8	63	31	102	13	50	56	21	17	51	-	-
Heppner	41	169	164	374	24	97	84	22	25	95	19	79
Imhaha	13	29	36	78	45	124	117	45	26	109	54	59
Izee	15	200	90	305	8	50	58	11	12	52	12	97
Kahler Basin	18	176	136	330	10	77	86	10	17	108	21	69
Keating	39	134	122	295	30	91	75	31	30	86	15	99
Lookout Mountain	20	75	69	164	27	92	61	12	33	78	27	65
McKay Creek	-	-	-	-	-	-	95	10	18	83	-	-
Meacham Creek	43	137	81	261	31	59	61	33	23	87	26	99
Mid. Fk. John Day	23	121	72	216	20	60	77	23	10	65	-	-
Minam	53	75	63	191	70	84	98	85	30	105	-	-
Monument	16	89	74	179	18	83	88	11	18	92	-	-
Murderer's Creek	41	260	165	466	16	63	65	24	18	53	18	78
No. Fk. John Day	31	119	77	227	26	65	65	36	15	61	27	108
North Ochoco	13	110	85	208	12	77	80	21	20	93	15	99
Northside John Day	88	419	262	769	21	62	62	25	18	48	31	85
Pine Creek	101	164	147	412	62	89	142	51	24	121	-	-

Table 5 (Continued)
MULE DEER HERD COMPOSITION

Herd Ranges by Regions	Average Number Per 100 Does															
	Deer Classified			1960			1959			1958			1952			
	Bucks	Does	Fawns	Total	Bucks	Fawns	Total	Bucks	Fawns	Total	Bucks	Fawns	Total	Bucks	Fawns	Total
Southside John Day	24	64	39	127	36	58	94	24	95	119	17	112	129	-	-	-
Sled Springs	32	75	66	173	43	88	131	80	78	158	59	115	174	-	-	-
Snake River	17	52	32	101	33	62	95	14	70	84	16	65	81	-	-	-
So. Fk. John Day	15	98	51	164	15	51	66	40	57	97	19	66	85	30	75	105
Umatilla	19	57	40	116	33	70	103	38	43	81	54	74	128	24	78	102
Walla Walla	20	47	17	84	43	36	79	54	43	97	38	87	125	-	-	-
Wallowa Mountains	21	66	61	148	31	92	123	19	73	92	21	94	115	21	66	87
Waterman	24	167	108	299	14	61	75	58	76	134	30	89	119	-	-	-
Wenaha	17	31	26	74	55	84	139	27	77	104	21	89	110	-	-	-
NORTHEAST	794	3,149	2,235	6,178	25	71	96	27	77	104	21	74	95	26	85	111
Alvord	47	181	110	338	26	61	87	24	100	124	21	85	106	45	89	130
Crane Mountain	36	141	64	241	26	45	71	25	73	99	25	89	114	21	92	115
Crooked Creek	19	114	102	235	17	90	107	27	85	112	23	93	116	5	88	121
Drewsey	24	83	48	155	21	65	86	28	91	119	25	90	114	21	97	122
Dry Mountain	17	77	32	126	22	42	64	28	85	113	25	87	112	23	90	116
East Goose Lake	4	40	31	75	10	77	87	16	88	104	18	141	159	-	-	-
Fort Rock	102	230	198	530	44	86	130	51	84	135	45	102	147	35	109	154
Frenchglen	34	158	75	267	22	47	69	27	82	109	22	85	107	25	74	99
Interstate	33	330	211	574	11	64	75	15	80	95	14	83	97	13	77	110
Ironside	13	43	27	83	30	62	92	38	68	106	32	74	106	-	-	-
Mahogany Mountain	36	62	33	131	58	53	111	66	104	170	55	87	142	-	-	-
Malheur	64	310	198	572	20	66	86	39	94	133	30	85	115	28	107	143
Silver Lake	182	435	435	1,052	42	100	142	34	78	112	40	110	150	40	112	152
Silvies River	28	132	86	246	21	65	86	25	82	107	26	89	115	20	97	117
Warner (Deep Creek)	20	115	104	239	17	90	107	14	88	102	29	93	112	27	117	144
West Goose Lake	-	-	-	-	-	-	-	17	81	98	-	-	-	-	-	-
SOUTHEAST	659	2,451	1,754	4,864	27	71	98	29	84	108	32	94	106	30	94	104
TOTALS AND AVERAGES	1,812	7,151	5,120	14,083	25	71	96	28	78	104	25	80	95	27	88	101

Table 6

MULE DEER ANTLER CLASS PERCENTAGES

Counties by Regions	Per Cent Spikes			Per Cent Two Points			Per Cent Three Points			Per Cent Four Points and Over		
	1960	1959	1956	1960	1959	1956	1960	1959	1956	1960	1959	1956
Crook	10	10	13	37	42	49	22	17	16	31	31	22
Deschutes	10	9	15	28	39	38	24	13	16	38	39	31
Jefferson	3	15	11	22	33	23	26	11	19	48	41	47
Klamath	19	9	10	21	37	43	18	18	17	42	36	30
CENTRAL	11	11	12	27	38	39	22	15	17	40	36	32
Baker	2	6	4	40	45	43	7	8	14	51	41	39
Grant	8	10	13	39	32	35	24	26	29	29	32	23
Morrow	12	15	5	52	38	43	19	26	31	17	21	21
Umatilla	2	10	3	41	40	42	25	19	14	32	31	41
Union	6	-	0	42	-	20	16	-	20	36	-	60
Wallowa	4	11	7	40	34	46	16	10	12	40	45	35
Wheeler	0	7	4	38	44	36	46	11	27	16	38	33
NORTHEAST	5	10	7	41	39	39	21	17	22	33	34	32
Harney	10	6	4	43	44	50	19	25	21	28	25	25
Lake	8	29	22	37	37	35	20	14	15	35	20	28
Malheur	12	6	0	44	42	33	8	14	19	36	38	43
SOUTHEAST	10	14	13	41	41	41	16	18	18	33	27	28
AVERAGES	12	10	11	36	39	40	18	17	19	34	34	30



Table 7
MULE DEER WINTER LOSSES

Herd Ranges by Regions	Winter Losses		Total Carcasses	Total Miles	Carcasses Per Mile*										
	Sex	Age			1956	1957	1958	1959	1960	1954	1953	1952	1950		
					Male	Fem.	Yng.	Ad.	1955	1954	1953	1952	1950		
Devils Garden			20	-	-	-	-	-	0.1	0.1	-	-	-	0.2	0.1
Gearhart Mtn.			36	-	-	0.7	-	-	0.7	-	-	-	-	-	-
Goodlow Mtn.			56	-	-	0.4	0.1	0.5	-	-	-	-	-	0.1	0.1
Maury Mtn.			10	-	-	-	-	-	-	-	-	-	-	-	-
Metolius			10	-	-	-	-	0.1	0.1	0.1	0.1	-	-	0.2	0.1
N. Fk. Crooked R.			15	-	0.1	-	-	-	-	-	-	-	-	-	-
North Paulina			15	-	-	-	-	0.2	-	-	-	-	-	-	-
Swan Lake	2	1	4	1	5	0.4	0.3	0.1	-	-	-	-	-	-	-
CENTRAL	2	1	4	1	5	0.2	-	0.3	-	-	-	-	-	0.3	-
Birch Creek			22	-	-	-	-	-	0.4	0.6	-	-	-	-	-
Burnt River			79	-	-	0.4	-	-	0.2	0.3	-	-	-	-	-
Chesnimus			109	-	-	-	-	-	0.1	-	-	-	-	-	-
Day Basin			10	0.1	1	0.1	-	0.2	0.1	0.2	-	-	-	-	-
Grande Ronde			40	-	-	-	-	-	-	-	-	-	-	-	-
Heppner	1	1	2	-	2	0.1	0.2	0.8	0.6	0.4	-	-	-	0.1	0.1
Innaha			19	-	-	-	0.3	-	0.3	3.0	-	-	-	3.0	-
Izee			21	-	1	0.3	-	0.1	0.6	0.4	-	-	-	2.6	3.3
Kahler Basin			40	-	-	-	-	-	0.3	0.4	-	-	-	-	-
Keating			71	-	-	-	-	-	0.1	0.8	-	-	-	-	-
Lookout Mtn.			32	-	-	-	-	-	-	0.2	-	-	-	-	-
McKay Creek			21	-	-	-	-	-	0.3	0.2	-	-	-	-	-
Meacham Creek			33	-	-	-	-	-	0.3	1.0	-	-	-	0.7	0.2
Minam			53	-	-	-	-	-	0.2	0.4	-	-	-	1.6	-
Monument	1	2	2	1	3	0.3	0.2	0.3	0.3	0.5	-	-	0.1	0.1	0.5
Murgerer's Creek	1	1	1	1	1	0.4	-	-	1.3	0.2	-	-	-	-	-
N. Fork John Day	2	3	4	1	5	0.1	0.1	0.1	0.1	0.5	0.1	-	0.1	0.1	1.0
North Ochoco	2	1	3	-	3	-	-	-	-	0.2	0.1	-	-	-	-
Northside John Day	2	1	3	-	3	0.6	0.3	0.5	0.2	3.8	-	-	-	-	-
Sled Springs			39	-	-	-	-	-	-	-	-	-	-	-	-
Snake River			22	-	5	-	-	-	-	-	-	-	-	-	-

Table 7 (Continued)
MULE DEER WINTER LOSSES

Herd Ranges by Regions	Winter Losses				Total Carcasses	Total Miles	Carcasses Per Mile*														
	Sex		Age				1956	1957	1958	1959	1960	1954	1953	1952	1950						
	Male	Fem.	Yng.	Ad.			1956	1957	1958	1959	1960	1954	1953	1952	1950						
S. Fork John Day	1	1	2		2	25		0.2													
Southside John Day						17															
Sumpter						15		0.2							0.1						
Umatilla						20									0.1	0.9			0.8		
Walla Walla						47									0.2	0.4	0.2		0.4		
Wallowa Mtn.	4	2	6		6	22	0.3	1.1							0.2	0.2			0.1		
Waterman						31									0.1	0.1	0.2		0.1		
Wenaha						22									0.3	0.2			0.9		
NORTHEAST	12	7	25	4	29	1,001					0.2				0.2	0.5			0.7	0.3	
Alvord						18			0.2							0.2				0.4	
Crane Mtn.						27										0.2				1.1	0.3
Crooked Creek	2	0	1	1	2	71											0.1		0.1	0.8	
Deep Creek	1	1	2		2	82														0.8	
Drewsey	1	1	2		2	21	0.1	0.1								0.4				1.4	
Dry Mtn.	1	1	1	1	2	30	0.1									0.8	0.5			2.6	1.3
E. Goose Lake	1		1		1	17										0.1					
Fort Rock						132										0.1			0.2	2.7	0.2
Frenchglen						44														0.1	
Ironside	1	1	2		2	18	0.1									0.1					0.2
Malheur	2	3	1	3	5	45	0.1	0.2								0.1	0.3			1.2	0.5
Riverside		1		1	1	33															
Silver Lake	1		1		1	160														1.3	
Silvies River						47										0.1				0.8	
SOUTHEAST	10	8	11	6	18	745										0.2	0.1			1.4	0.4
TOTALS AND AVERAGES	24	16	40	11	52	1,967					0.1				0.2	0.3			0.8	0.3	

*Mortality averaging less than 0.1 carcass per mile is indicated as (-).

ROOSEVELT ELK

Except for summer distribution measures, the Roosevelt elk census is now taken in the winter period at approximately the same time as the black-tailed deer census. This change makes data obtained this past winter difficult to correlate with the previously taken summer census.

Population trend data are presented in Table 8. A total of 1,803 elk was seen on 378 miles of census routes. This index of 4.8 elk per census mile can hardly be compared to summer samples. However, summer samples taken in 1959 show 7.6 elk per mile, as compared to 6.6 elk per mile for 1958. Clatsop county populations, in particular, still remain at a high level. Cascade Mountain herds are difficult to census, but 166 elk were seen for a trend of 5.5 animals per census mile on new winter samples.

Herd composition, as shown in Table 9, indicates a slight decline in bulls from the 1959 and 1958 composition data. However, the ratio of 16 bulls per 100 cows is the same as for 1957. This is 49 per cent below the 1949 figure. Of the 1,792 elk classified, 10 per cent were bulls, 66 per cent cows, and 24 per cent calves. In Coos county, spikes amounted to 76 per cent of the bulls classified as compared to 65 per cent for the past two years. This is in an area where spike bulls are legal. Clatsop county spikes totaled 72 per cent of the total bulls classified. On a limited number of bulls classified in Tillamook county, 58 per cent were spikes. Spikes were protected in both Clatsop and Tillamook counties.

The calf-cow ratio also shows a slight drop from the 1958 and 1959 ratios. Roosevelt elk calf survival is 23 per cent below that shown for Rocky Mountain elk.

Elk damage in Clatsop county dropped to 30 complaints, as compared to 45 in 1958. Tillamook county complaints increased from two last year to eleven for 1959. Damage in Coos county dropped slightly.

In Coos county, elk have been trapped on damage complaint areas for some time. A summary is shown below of trapping from 1953 to date.

<u>Date Trapped</u>	<u>Number Captured</u>	<u>Release Site</u>
8/1/53	6	Vincent Cr. Burn - Douglas Co.
3/25/54	2	" " " " "
4/2/54	3	" " " " "
4/14/54	4	" " " " "
5/13/55	3	" " " " "
5/27/56	6	Rock Creek - North Umpqua
5/27/57	2	Beaver Hill - Coos Co.
3/18/58	14	Little River - North Umpqua
2/3/59	2	Lobster Hill - Curry Co.
9/19/59	3	" " " " "
9/30/59	3	" " " " "
Total	48	

The 1959 general season harvest of Roosevelt elk totaled 1,904 animals by 14,814 hunters. Tillamook county was hunted for the first time during the general season and contributed 264 bulls as compared to 532 bulls for Clatsop and 685 in Coos counties.

Spikes were legal in the south coast area and made up 48 per cent of the Coos and 34 per cent of the Douglas county kill. The following chart shows the influence of the spike regulation on the illegal elk kill. Results taken from intensive checks on Weyerhaeuser's Millicoma Tree Farm are as follows.

MILICOMA ELK KILL

Year	No. Cars First Day	Legal Kill			Illegal Kill			Total
		*Bulls	Spikes	Total	Spikes	Cows	Calves	
1955	159	59		59	11	3		14
1956	330	64		64	19	3	1	23
1957	593	83	56	139	1	16		17
1958	486	53	77	130	1	13		14
1959	670	77	83	160		5		5

*Three antler points or more.

The illegal kill was transferred from spikes to cows, but this has declined decidedly during the past season.

In the Clatsop Unit, the 1958 known illegal kill was over 70 elk. The noon opening, tried for the first time last year in that area, plus intensive patrol and publicity, cut the illegal kill to 33 known elk for both the Wilson and the Clatsop Units.

Two controlled elk seasons were open in western Oregon, and a kill of 230 elk was made by 650 hunters.



Table 8
ROOSEVELT ELK POPULATION TRENDS

Countries by Regions	Miles Traveled	Elk Observed	Roosevelt Elk Population Trends									
			*1960	1958	1957	1956	1955	1954	1953	1952	1951	1946
Clatsop	54	584	10.8	9.8	9.1	7.9	6.0	6.1	5.9	6.7	6.3	3.7
Lincoln	18	12	0.7	-	1.1	-	0.4	1.0	0.8	1.0	0.8	0.8
Tillamook	80	511	6.4	4.2	4.2	3.8	3.2	2.8	3.6	2.9	2.7	0.5
Lane	28	166	5.5	-	-	-	-	-	-	-	-	-
NORTHWEST	180	1,273	7.1	6.6	5.7	5.6	4.0	3.6	4.1	4.1	2.5	1.7
Coos	97	319	3.3	3.5	2.4	4.9	3.7	1.7	1.7	4.0	3.0	0.6
Curry	41	6	0.1	0.1	0.0	0.0	0.5	0.2	0.2	0.0	0.8	0.1
Douglas	60	205	3.4	3.0	2.5	-	-	-	-	-	-	-
SOUTHWEST	198	530	2.7	2.6	1.9	3.0	2.7	1.4	1.1	2.0	2.0	0.3
TOTALS AND AVERAGES	378	1,803	4.8	4.8	3.9	4.4	3.5	2.7	3.0	3.4	2.4	1.3

* Census changed from summer to winter samples; 1959 summer samples not shown.

Table 9

ROOSEVELT ELK HERD COMPOSITION

Counties by Regions	Average Number Per 100 Cows												
	Elk Classified			1960		1959		1958		1949		Bulls	Calves
	Bulls	Cows	Calves	Total	Bulls	Calves	Bulls	Calves	Bulls	Calves	Bulls		
Clatsop	104	491	171	766	21	34	27	34	23	35	28	40	
Tillamook	34	182	57	273	18	31	26	37	26	37	38	45	
Columbia	4	11	6	21	36	54	-	-	-	-	-	-	
NORTHWEST	142	684	234	1,060	21	34	26	36	24	36	29	42	
Coos	25	354	148	527	7	42	7	46	8	45	24	33	
Douglas	21	139	45	205	15	32	16	19	15	34	-	-	
SOUTHWEST	46	493	193	732	9	39	9	42	9	43	29	33	
TOTALS AND AVERAGES	188	1,177	427	1,792	16	36	18	39	19	38	29	40	

ROCKY MOUNTAIN ELK

A total of 4,761 Rocky Mountain elk was observed on the 979 miles of census routes. The average of 4.9 elk per mile is slightly above the average of 4.6 for the previous year. Table 10 shows a comparison for the past 11 years. Little change is indicated in the past 7-year period.

Aerial census is employed on some ranges where horse travel cannot cover higher levels. In Wallowa county, aerial census data substantiated that made by horse travel on all but the Wenaha, where elk in high wintering areas were more readily seen by air travel and showed an increase rather than the decrease noted from the ground.

Herd composition is presented in Table 11. Of the 2,301 elk classified, 7 per cent were bulls, 63 per cent cows, and 30 per cent calves. The average of 12 bulls per 100 cows is below the average of 1959 but is slightly above the 1958 average of 11 bulls per 100 cows. The calf crop of 47 per 100 cows is the lowest since the 1952 ratio of 44 calves per 100 cows.

Damage complaints totaled only 9 as compared to the 27 received in 1958.

A total of 5,790 Rocky Mountain elk was taken during the 1959 general season by 29,403 hunters for a hunter success of 20 per cent. Archers reported taking 5 elk, and another 1,033 elk were taken on 10 unit and 5 controlled hunts for a total kill of 6,828 Rocky Mountain elk.



Table 10

ROCKY MOUNTAIN ELK POPULATION TRENDS

Herd Ranges	Miles Traveled	Elk Observed	Elk Density Per Mile											
			1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	
Beech Creek	8	11	1.4	0.1	0.9	1.6	0.5	0.4	0.4	0.0	2.6	2.6	2.6	1.7
Birch Creek	22	111	5.0	0.2	6.2	8.0	26.7	11.1	1.8	5.2	19.6	7.1	4.2	
Camp Creek	20	21	1.0	1.6	2.2	2.7	0.3	1.9	1.8	0.7	0.2	-	3.6	
Canyon Creek	40	27	0.7	0.6	0.3	1.0	0.8	0.5	0.4	0.4	0.5	-	1.3	
Chesnimus	109	815	7.5	8.0	7.9	9.2	11.1	10.9	8.2	3.7	2.3	4.5	3.6	
Grande Ronde	106	812	7.7	12.7	8.1	6.8	5.7	4.5	8.0	4.8	3.8	4.3	3.3	
Grub Creek	40	0	0.0	0.0	0.0	0.3	0.0	0.1	0.0	0.2	0.6	0.2	2.5	
Hepner	27	34	1.3	1.1	1.6	2.7	2.4	0.0	2.5	0.4	0.0	0.0	0.5	
McKay Creek	21	77	3.5	0.5	1.6	1.5	20.5	10.1	0.9	3.0	6.3	2.6	-	
Meacham	33	277	8.4	5.9	8.4	3.8	10.5	6.1	6.7	3.7	4.8	6.6	2.8	
Middle Fork	120	587	4.9	3.8	4.0	3.9	4.4	5.2	4.2	2.4	2.6	2.1	3.4	
Minam	58	317	5.5	4.4	4.8	3.9	3.7	1.4	2.3	0.8	2.6	1.6	-	
Monument	40	45	1.1	0.9	2.2	1.1	2.1	2.4	2.0	0.3	0.5	1.3	-	
Mount Emly	80	431	5.4	2.8	1.7	3.4	2.0	2.5	2.6	1.6	1.5	1.4	0.7	
North Fork	37	113	3.1	1.4	3.8	2.5	4.0	2.7	2.7	2.0	3.8	0.9	0.3	
Sled Springs	14	137	9.8	8.9	10.1	3.9	9.5	11.5	-	-	-	-	-	
Sumpter	115	118	1.0	1.1	0.4	0.6	0.5	0.5	0.5	-	-	-	-	
Umatilla	20	131	6.5	2.4	9.8	7.4	7.1	7.2	3.4	3.5	1.0	1.4	2.0	
Walla Walla	47	597	12.7	10.1	12.9	11.8	12.6	17.0	10.2	10.7	13.9	9.2	10.2	
Wenaha	22	100	4.5	11.5	6.7	7.7	15.4	8.7	6.8	7.3	6.7	5.1	-	
TOTALS AND AVERAGES	979	4,761	4.9	4.6	4.6	4.3	5.8	5.2	4.2	3.1	3.7	3.4	2.4	

Table 11

ROCKY MOUNTAIN ELK HERD COMPOSITION

Herd Ranges	Elk Classified			Average Number Per 100 Cows								
	Total			1960		1959		1958		1952		
	Bulls	Cows	Calves	Bulls	Calves	Bulls	Calves	Bulls	Calves	Bulls	Calves	
Birch Creek	3	31	15	49	11	48	17	46	6	70	13	55
Chesnimus	10	188	94	292	5	50	3	51	10	69	32	79
Grande Ronde	23	205	96	324	11	47	12	52	11	46	-	68
Hepner	6	56	19	81	11	34	20	51	7	76	-	-
Lookingglass	-	-	-	-	-	-	18	23	-	-	-	-
McKay Creek	2	21	13	36	10	62	15	61	6	48	15	40
Meacham Creek	7	153	69	229	5	45	14	45	13	34	20	30
M. Fork John Day	6	44	16	66	14	36	14	36	7	35	-	-
Minam	43	106	47	196	41	44	40	60	36	60	-	-
Monument	6	38	20	64	16	53	19	44	16	68	-	-
Mount Emily	-	-	-	-	-	-	13	42	-	-	7	44
N. Fork John Day	12	107	37	156	11	34	-	-	8	63	16	36
Shaw Mountain	9	38	21	68	24	55	-	-	-	-	-	-
Sled Springs	7	88	48	143	8	55	14	63	12	54	-	-
Snake River	8	15	7	30	53	47	-	-	-	-	-	-
Umattilla	1	42	24	67	2	57	10	46	7	51	-	-
Walla Walla	19	175	88	282	11	50	17	57	11	58	19	36
Wenaha	12	142	64	218	8	46	23	63	16	54	38	81
TOTALS AND AVERAGES	174	1,449	678	2,301	12	47	14	51	11	55	18	44
	7%	63%	30%									

ANTELOPE

February aerial antelope population trends are presented in Table 12. A total of 5,712 antelope was counted for 3,725 miles of travel, giving an index of 1.5 per mile, which is identical to the 1959 density per mile.

The high ratio of bucks (50 per 100 does) as shown in Table 13 is considerably above the ratio of 39 per 100 does taken in 1958. Fawn survival is poor, however, with but 45 fawns per 100 does classified, as compared to 77 the previous year. Harney county had the poorest fawn crop with but 18 fawns per 100 does seen. Last year's drouth conditions, together with a high coyote population in Harney county, probably are the chief factors affecting the fawn losses. Of the total antelope classified, 25 per cent were bucks, 52 per cent were females, and 23 per cent were fawns.

Hunting is restricted on antelope. However, both hunting area and permits were increased last season to give a kill of 451 bucks by 812 reporting hunters for a success of 55 per cent.

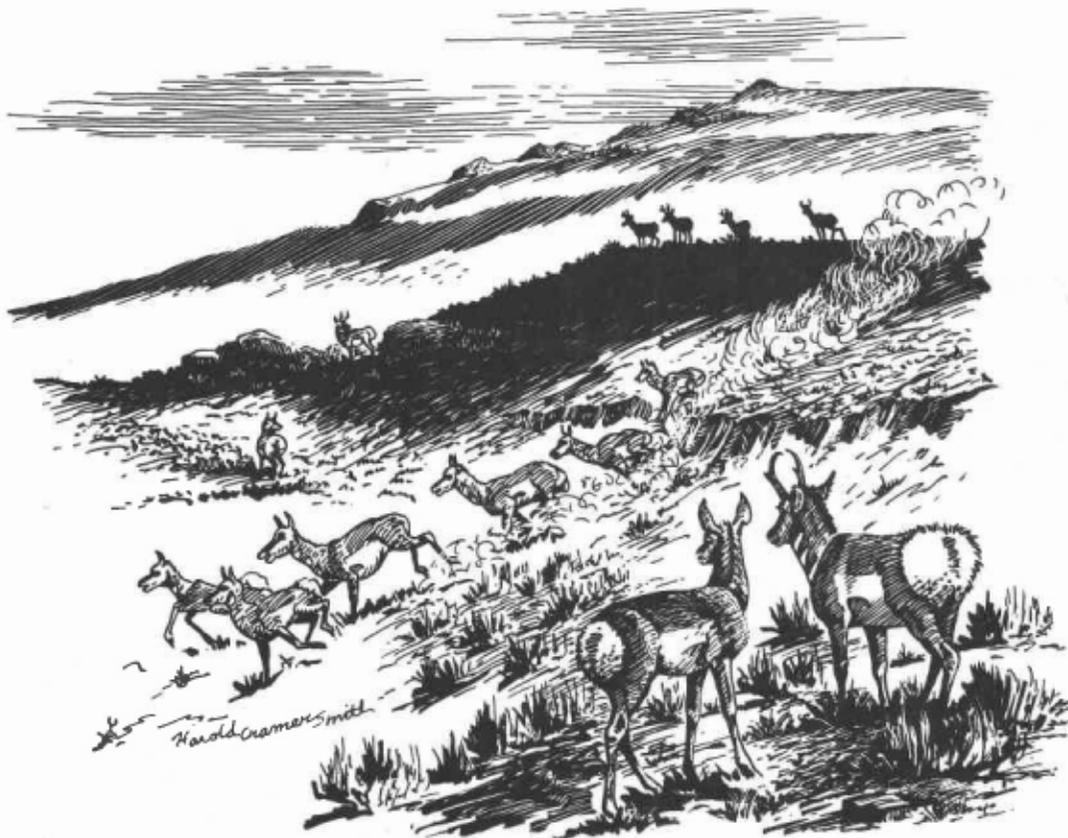


Table 12

ANTELOPE POPULATION TRENDS

Herd Ranges by Counties	Miles Traveled	Antelope Observed	Antelope Density Per Mile											
			1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	
Bear Creek	182	556	3.0	3.3	2.3	2.7	2.6	1.4	2.8	1.4	1.4	1.1	1.9	0.6
Glass Butte	186	0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	-	-	-	0.2
Pine Mountain	182	114	0.6	1.2	1.4	0.5	0.5	1.9	0.5	1.0	0.8	1.0	1.0	1.7
CROOK-DESCHUTES	550	670	1.2	1.5	1.3	1.0	1.0	1.1	1.1	0.8	0.6	1.0	0.8	0.8
Fort Rock	80	201	2.5	-	-	-	-	-	-	-	-	-	-	-
Abert Rim	100	197	2.0	3.5	3.2	-	-	-	-	-	-	-	-	-
Clover Flat	45	52	1.2	0.7	0.0	0.9	0.7	0.6	0.5	0.5	0.7	0.7	0.7	1.2
Drakes Flat	55	537	9.8	10.3	5.5	5.1	5.0	7.2	8.2	4.4	6.6	5.1	5.1	3.5
Silver Lake	225	206	0.9	1.1	1.4	1.2	1.5	1.6	1.6	1.8	2.0	2.0	0.6	2.9
LAKE	425	1,193	2.8	2.8	2.2	2.6	2.7	3.3	3.6	2.5	3.3	2.3	2.3	3.0
Alvord Desert	30	92	3.1	1.4	2.0	1.4	-	-	-	-	-	-	-	-
Big Spring Table	240	1,359	5.7	1.4	4.1	3.5	-	-	-	6.1	10.4	10.5	10.5	9.5
Blitzen Valley	90	18	0.2	0.3	0.2	0.4	-	-	0.2	0.0	0.2	0.3	0.3	0.1
Bridge Creek	40	85	2.1	3.5	3.3	2.3	-	-	2.3	0.8	1.2	1.3	1.3	1.2
Catlow Valley	270	399	1.5	1.7	1.5	1.6	-	-	1.4	1.4	1.4	1.5	1.5	1.7
Chain Lakes	160	59	0.4	0.6	0.3	0.2	-	-	0.6	0.5	0.8	1.3	1.3	1.7
Coleman Mountain	90	39	0.4	1.3	1.7	2.1	-	-	2.4	2.6	1.8	2.0	2.0	4.5
Fields Basin	50	87	1.7	0.8	0.8	1.0	-	-	-	-	-	-	-	-
Foster Flat	80	0	0.0	1.7	0.6	0.8	-	-	1.5	0.7	1.4	4.3	4.3	4.1
Harney Valley	50	0	0.0	1.3	1.2	0.3	-	-	0.8	0.4	2.1	0.7	0.7	0.5
Hart Mountain	100	320	3.2	2.9	1.3	1.7	-	-	0.0	0.0	-	1.3	1.3	1.2
Red "S" Field	60	0	0.0	1.0	0.6	0.4	-	-	0.0	0.6	1.9	1.8	1.8	1.8
Sagehen Flat	240	0	0.0	2.5	0.0	0.0	-	-	0.8	0.5	-	3.5	3.5	4.5
Squaw Butte	120	0	0.0	0.3	0.2	0.3	-	-	0.2	0.4	0.5	0.5	0.3	0.2
HARNEY	1,620	2,458	1.5	1.5	1.3	1.2	-	-	1.1	2.2	1.8	3.0	3.1	3.0

Table 12
ANTELOPE POPULATION TRENDS (Continued)

Herd Ranges by Counties	Miles Traveled	Antelope Observed	Antelope Density Per Mile											
			1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	
Bowden Hills	250	538	2.1	1.3	1.3	1.7	1.0	2.7	3.4	1.2	6.7	9.7	2.9	
Brogan	50	63	1.3	1.2	0.6	0.6	-	0.9	-	-	0.2	0.2	-	
Freezeout	75	29	0.4	0.5	0.3	0.4	0.3	0.2	0.3	0.2	0.3	0.6	0.9	
Harper	25	89	3.6	1.6	1.9	1.3	0.7	0.5	0.6	0.5	0.2	0.5	-	
Juntura	150	119	0.8	1.0	0.9	0.7	1.3	1.0	0.9	1.7	2.5	3.6	1.6	
Mahogany	150	249	1.7	0.7	1.3	1.2	0.8	0.9	0.6	0.5	0.8	1.8	3.2	
Saddle Mountain	150	273	1.8	1.8	2.1	1.7	1.6	2.0	2.4	1.6	1.6	1.5	2.7	
Sheepshead	100	0	0.0	0.2	0.4	0.3	0.0	0.1	0.2	1.5	3.0	2.2	1.5	
Whitehorse	100	31	0.3	0.4	0.5	0.5	0.6	0.5	0.4	0.2	0.3	0.3	0.1	
MALHEUR	1,050	1,391	1.3	1.0	1.1	1.1	0.8	1.1	1.3	0.9	1.7	1.6	1.5	
TOTALS AND AVERAGES	3,725	5,712	1.5	1.5	1.3	1.3	1.3	1.4	2.0	1.5	2.3	2.2	2.3	

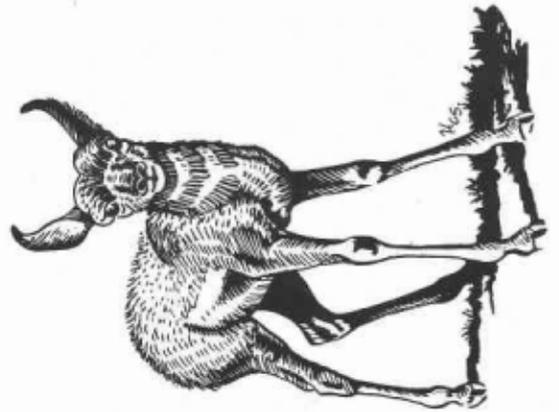


Table 13

ANTELOPE HERD COMPOSITION

County	Antelope Classified			Average Number Per 100 Does								
	1959		Total	1958		1957		1949				
	Bucks	Does		Bucks	Fawns	Bucks	Fawns	Bucks	Fawns			
Crook-Deschutes	28	63	22	114	44	36	52	70	40	70	83	100
Harney	105	181	32	318	58	18	39	74	22	74	100	83
Lake	105	226	200	531	46	88	51	93	52	120	37	59
Malheur	155	336	106	597	45	31	27	70	30	67	71	100
TOTALS AND AVERAGES	393	806	361	1,560	50	45	39	77	33	81	77	83



BIGHORN SHEEP

In 1954, 20 California bighorns from British Columbia were released in a fenced enclosure on the west face of Hart Mountain in Lake county.

Some of the original stock escaped from the pen but continued to stay in the immediate area to the north. Observations indicate good reproduction of sheep both inside and out of the pen. In April of 1959, 23 sheep were counted in the pen and, later, approximately 40 animals were counted to the north of the pen.

Last year in May, a count showed 23 adults but only 3 lambs inside the pen. Six of the adults were rams. This would indicate a poor lamb crop inside the enclosure.

Outside the pen, 30 sheep were found to the north toward the Hart Mountain road, including 11 lambs. This would indicate good reproduction outside of the pen.

It is anticipated that some of the stock inside of the enclosure could be trapped and transplanted to a suitable location on the Steens Mountains in 1960.

MOUNTAIN GOATS

In the spring of 1950, six mountain goats were released in Wallowa county on the east slope of Chief Joseph Mountain. Of these six animals obtained from the Chopaka Mountain area of northern Washington, one animal died shortly after release, leaving 3 adult males, one adult female, and one female yearling.

Periodic reports have been received of the goats since the release. Their preferred year-around range centers around the Matterhorn, Sacajawea Peak, and Hurwal Ridge areas. This spring, six mountain goats were seen from the air. This included 4 adults and 2 kids. The operator of the Joseph Airport reported sighting 8 goats last winter.



RANGE CONDITIONS

Severe drouth conditions over much of central and eastern Oregon ranges greatly retarded browse production on big game winter ranges. Mild wintering conditions and good March grass growth pulled herds away from winter ranges early, but winter use on many browse ranges has been excessive.

Rodent populations were not excessive generally in most of eastern Oregon and were scarce in many areas.

Bitterbrush production and use is summarized in Table 14. Records which cover 154 transects in 29 herd ranges indicate low production and heavy use. The average use of 59 per cent is 34 per cent higher than the total use of 44 per cent for 1959. Twig growth averaged but 3.3 inches, as compared to 5.9 in 1959. Utilization on some ranges went well past the safe margin of 60 per cent, up to 83 per cent, with many transects averaging over 70 per cent use.

Table 15 summarizes condition and trend clusters established to measure long-range changes in plant density and composition. Reading schedules are shown for the next four years.

Last summer, transects totaling 25 clusters or individual plots were measured on six herd ranges. Percentages are shown in Table 16, showing changes in vegetative composition, density, and ground cover. Desirable species are the best forage producers and soil retainers, followed by intermediate and least desirable.

In the Wallowa Mountain area, the Waterman transects showed a 17 per cent decline in desirable species in composition and a 4 per cent decline in vegetative density, pointing to a general decline in range conditions.

The North Fork of the John Day transects showed a slight improvement in desirable species but a density loss of 14 per cent in desirables and intermediates. Plots varied as to location. Those on protected Game Commission winter range lands showed a decided improvement. On unprotected sites, a decline in range conditions was apparent.

The Whitehorse range in Malheur county showed a decrease in desirable plants, offset somewhat by an increase in plant density of least desirable plants. A stable condition is indicated, with excessive cattle use generally. Both deer and cattle use on browse species was heavy.

In Baker county, the Keating range shows little change in condition since 1953, with a slight plant density decrease and a minor increase in composition.

The important and controversial Northside range in Grant county shows an improvement over the last 5-year period. All density types increased, and the composition classes of desirables and undesirables increased with a decrease in intermediates. The average litter increase of 22 per cent also indicates some range recovery.

The heavily used South Silver Lake range in Lake county shows a 6 per cent gain in plant density and an 8 per cent average increase in ground litter. All factors considered, the data indicates general range improvement.

Table 14

BITTERBRUSH UTILIZATION

Herd Ranges by Regions	Number of Study Transects	Average Twig Length	1960		1959	1958	1957	1956	1955	1954	1953
			Summer	Winter							
Badger Creek	4	2.5	11	40	51	36	53	61	69	49	57
Devils Garden	12	2.4	15	46	61	57	52	73	70	58	51
Gearhart Mountain	5	2.4	63	14	77	61	70	54	65	53	88
Goodlow Mountain	5	2.8	41	33	74	63	55	40	67	38	49
Hole-In-Ground	6	2.6	6	32	38	32	28	15	37	30	9
Maury Mountain	2	4.1	67	7	74	61	58	75	75	69	59
Metolius	4	4.1	15	29	44	38	41	61	63	33	37
N. Fk. Crooked River	5	2.3	38	26	64	68	43	66	75	60	66
North Paulina	11	2.3	10	25	35	22	31	29	26	24	13
Six Fingers	5	2.4	5	45	50	29	28	64	71	47	48
Swan Lake	5	4.1	29	37	66	53	48	32	55	35	40
Tumalo	3	2.3	12	15	27	17	13	32	14	10	11
White River	6	3.1	9	49	59	49	49	62	61	35	45
CENTRAL	73	2.8	25	31	56	45	44	51	57	43	45
Burnt River	3	4.7	12	21	33	30	33	32	46	40	38
Izee	3	2.6	10	73	83	66	55	73	85	59	46
Kahler Basin	4	5.8	18	34	52	69	64	78	67	53	56
Keating	1	5.9	1	36	37	25	25	-	-	-	-
Monument	7	5.3	24	40	64	83	77	89	62	56	54
Murderer's Creek	3	3.6	4	77	81	59	52	81	94	63	74
N. Fk. John Day	8	2.1	43	23	67	71	61	68	74	52	54
North Ochoco	4	5.3	15	36	51	57	65	74	54	37	45
Northside John Day	6	3.3	1	64	65	45	43	84	82	64	75
Waterman	3	6.0	10	25	35	47	51	57	38	26	31
NORTHEAST	42	4.4	14	43	57	55	53	70	67	51	49
Crane Mountain	3	2.6	14	37	51	55	44	45	56	4	26
Deep Creek	9	2.7	2	48	50	35	46	45	41	31	21
Dry Mountain	7	2.1	21	38	59	59	43	51	63	36	53
Fort Rock	10	2.4	2	69	71	69	55	60	72	58	50
Silver Lake	7	3.3	4	73	77	70	61	63	69	51	53
Silvies River	3	2.2	39	22	61	40	53	52	62	38	50
SOUTHEAST	39	2.6	14	48	62	57	55	56	63	41	40
TOTALS AND AVERAGES	154	3.3	18	41	59	51	51	59	62	45	45

Table 15

CONDITION AND TREND CLUSTERS

Region	Reading Schedule														
	1960			1961			1962			1963			1964		
	Herd Range	No.	Herd Range	Herd Range	No.	Herd Range	Herd Range	No.	Herd Range	Herd Range	No.	Herd Range	No.	Herd Range	No.
	North Paulina	8*	N. Fk. Crooked Riv.	3	Cearhart Mtn.	3	Maury Mtn.	3	Hole-In-Ground	4*					
	White River	3	Swan Lake	3	McKay-Ochoco	2	Devils Garden	2	Metolius	3					
					Goodlow Mtn.	3			Tumalo	2					
CENTRAL		11		6		8		5		9					
	Birch Creek	3	Lookout Mtn.	3	Mid. Fk. John Day	1	Burnt River	4	Keating	3					
	Grande Ronde	3	McKay Creek	3	Minam	2	Chesnimanus	3	Innaba	2					
	Kahler Basin	3	Meacham Creek	3	North Ochoco	3	Heppner	2	No. Fk. John Day	4					
	Murderer's Creek	4	Monument	3	Southside	2	Izee	4	Northside	8					
	Wallowa Mtn.	2	Sled Springs	2	Walla Walla	6	No. Fk. John Day	7	Waterman	3					
	Wenaha	4	So. Fk. John Day	3			Umatilla	1							
NORTHEAST		19		17		14		21		20					
	Alvord	2	Deep Creek	4	Crane Mtn.	3	Drewsey	3	Frenchglen	3					
	Crooked Creek	3	Hart Mtn.	1	Silvies River	3	Dry Mtn.	4	So. Silver Lake	3					
	Mahogany Mtn.	3	Malheur River	4			No. Silver Lake	3	Whitehorse	3					
SOUTHEAST		8		9		6		10		9					
TOTALS		38		32		28		36		38					

*Clusters established by agencies other than Game Commission.

Table 16
RANGE CONDITION TRENDS

Herd Range	Average Vegetative Composition			Average Vegetative Density			Average								
	Desirable	Intermediate	Least Desirable	Desirable	Intermediate	Least Desirable	Litter	Bare Soil							
Waterman	1955	1959	1955	1959	1955	1959	1955	1959							
	44.8	27.2	37.3	48.3	17.8	24.5	9.1	4.7	6.3	6.6	7.5	37.4	46.7	111.3	97.0
(3 Clusters)	-17.6	+11.0	+6.7	-4.4	+0.3	+0.7	-9.3	-14.3							
N. Fk. John Day	1956	1959	1956	1959	1956	1959	1956	1959							
	29.6	31.2	63.2	50.1	7.1	18.7	13.2	9.8	25.1	14.8	1.0	2.6	61.7	137.4	125.6
(4 Clusters)	+1.6	-13.1	+11.6	-3.4	-10.3	+1.6	+75.7	-55.0							
Whitehorse	1954	1959	1954	1959	1954	1959	1954	1959							
	26.1	24.2	31.2	34.2	42.7	41.6	12.7	11.4	5.0	4.2	16.7	18.1	78.7	94.4	70.0
(3 Clusters)	-1.9	+3.0	-1.1	-1.3	-0.8	+1.4	+15.7	-27.0							
Keating	1953	1959	1953	1959	1953	1959	1953	1959							
	43.9	42.2	42.6	44.0	13.4	14.5	7.3	7.3	4.1	4.0	2.7	2.2	175.7	170.7	155.3
(4 Clusters)	-1.7	+1.4	+1.1	0.0	-0.1	-0.5	-5.0	+1.7							
Northside	1953	1959	1953	1959	1953	1959	1953	1959							
	7.9	8.5	76.5	73.0	15.6	18.4	1.8	2.9	10.6	16.1	4.2	5.0	133.0	274.0	425.4
(8 Clusters)	+0.6	-3.5	+2.8	+1.1	+5.5	+0.8	+155.0	-207.1							
South Silver Lake	1953	1959	1953	1959	1953	1959	1953	1959							
	23.9	23.8	41.8	49.5	34.3	30.1	6.2	8.0	5.6	8.1	10.5	12.6	90.4	114.0	106.3
(3 Clusters)	-0.1	+7.7	-4.2	+1.8	+2.5	+2.1	+23.6	-3.7							

BIG GAME DAMAGE

A total of 770 deer and 62 elk damage complaints was received during the past year. This is slightly under the total number received for the previous year. Table 17 shows complaints by county and region.

As before, the Northwest region had the highest number of both deer and elk complaints, representing 53 per cent of the total. Black-tailed deer contributed to 88 per cent of the total complaints, which involved mainly orchards and gardens. In eastern Oregon, damage was principally to summer alfalfa and haystacks.

Elk damage was considerably below that of the previous year with 53 Roosevelt elk and 9 Rocky Mountain elk damage complaints. Western Oregon depredations centered around pasture damage in Clatsop and Tillamook counties and to grain and forage crops in Wallowa county.

Repellents were issued to 328 complaints. Leckenby's Diamond L product was the main prepared repellent used. Orchard damage has responded well to blood and bone meal mixed in a 50/50 proportion and hung in small cloth bags in young trees. Deer are repelled by the odor.

Kill permits were issued on 211 complaints and hazing permits on 46. Commission personnel hazed on 39 other complaints. Deer killed were taken to designated cold storage plants, which, in turn, distributed the carcasses to school lunch programs or welfare organizations.

A total of 73 fences was completed, as shown in Table 18. Since the beginning of the fencing program in 1949, 461 fences have been completed, totaling 57,633 rods at a cost of \$135,589.

Materials for tree cages were loaned to 44 landowners. Use of blood and bone meal has slightly cut the use of this type of fencing. To date, tree cages have been provided to 331 landowners to protect 34,959 young trees.

Only 1,026 haystack panels were issued to 39 landowners, as compared to 1,937 panels for 54 complaints in 1958. A total of 65 stacks was protected. Both the roll type (snow fence type) and "Z" brace panels were distributed. To date, 33,154 panels have been issued to protect approximately 2,106 haystacks. Table 20 shows the paneling by county and region.

No emergency seasons were held this last year. Table 21 shows past emergency seasons through early 1959. Emergency seasons were granted by the Legislature in 1957. These seasons are for conflicts on agricultural lands only, and the area is restricted to one township in size. A kill of not more than 75 animals is authorized. Eligible participants are chosen by drawing, and the hunts are very closely supervised. Successful hunters are charged \$10.00 for an elk and \$5.00 for a deer or an antelope.

An increasingly high number of damage complaints involving federal, state and private tree farms has been received this past year. It now appears that there are few areas in western Oregon where black-tailed deer do not conflict in some manner with other forms of land use. Elk are also involved in tree damage in coastal areas.



Table 17

BIG GAME DAMAGE COMPLAINTS

Counties by Regions	Number of Complaints		Kill Permits	Haze Permits	Fence Contracts	Tree Cages	Haystack Panels	Repellents	Hazing by	
	Deer	Elk							Employees	Other
Benton	33		7	2	2	1		16		5
Clackamas	21		18		2	2		8		1
Clatsop	37	30	23	2	6			15	21	38
Columbia	9		3		2			4		
Lane	90		22	10	6	6		47		6
Lincoln	12		3					2		2
Linn	27		7	1	4	3		11		2
Marion	34		10	3	9	2		11		2
Multnomah	2							2		2
Polk	74		19		5	7		45		6
Tillamook	10	11	5					7	6	13
Washington	18		8	2	4			3		1
Yamhill	38		10		2			32		1
NORTHWEST	405	41	135	20	42	21		203	27	77
Coos	22	9	11		5			12		3
Curry	2		2							
Douglas	128	3	17	1	6	3		84		20
Jackson	29		10	3	1	3		6		6
Josephine	23		4	1		1		9		8
SOUTHWEST	204	12	44	5	12	7		111		37
Crook	7			3						4
*Deschutes	14			3			2			5
Hood River	22		10	3		10		2		
Jefferson	4			1			4			1
Klamath	10		2	4			4			
Wasco	15		6	2	2	4		4		2
CENTRAL	72		18	16	2	14	10	6		12

* Includes 1 Antelope Complaint

Table 17 (Continued)
BIG GAME DAMAGE COMPLAINTS

Counties by Regions	Number of Complaints		Kill Permits	Haze Permits	Fence Contracts	Tree Cages	Haystack Panels	Repellents	Hazing by	
	Deer	Elk							Employees	Other
Baker	13						5			4
Gilliam	2		1					1		
Grant	11	1	1	2	1		5		2	2
Morrow										
Umatilla	15		2	6					3	8
Union	10	8	1				6	4	3	4
Wallowa	21		5	3			7	1	2	1
Wheeler										
NORTHEAST	72	9	10	11	1	23	6	10	19	
Harney	2									
*Lake	10				1	3	2	2	1	
Malheur	5		4			1				
SOUTHEAST	17		4	3	1	4	2	2	1	
TOTALS	770	62	211	67	44	37	328	39	146	

* Includes 1 Antelope Complaint

Table 18

FENCES COMPLETED

Counties by Regions	Number of Fences	Rods Fenced	Money Expended
Benton	2	50	\$ 125.00
Clackamas	3	425	887.00
Clatsop	5	445	506.00
Columbia	2	73	145.00
Lane	7	180	262.50
Linn	4	218	423.50
Marion	7	1,435	2,519.00
Polk	6	1,224	2,102.00
Tillamook	1	20	50.00
Washington	3	477	667.75
Yamhill	2	229	356.50
NORTHWEST	48	5,469	8,042.75
Coos	6	693	1,731.50
Douglas	5	373	943.00
Jackson	2	153	382.50
Josephine	3	150	375.00
SOUTHWEST	16	1,369	3,432.00
Deschutes	1	400	-
Hood River	4	578	740.00
Wasco	1	285	285.00
CENTRAL	6	1,263	1,025.00
Union	3	735	735.00
NORTHEAST	3	735	735.00
TOTALS	73	8,836	\$13,234.75

Table 19
TREE CAGES

Counties by Regions	Number of Landowners	Number of Tree Cages
Benton	1	16
Clackamas	2	82
Linn	3	42
Lane	6	-
Marion	2	130
Polk	7	952
Yamhill	-	-
NORTHWEST	21	1,222
Douglas	3	364
Jackson	3	38
Josephine	1	5
SOUTHWEST	7	407
Hood River	10	540
Wasco	4	390
CENTRAL	14	930
Grant	1	125
NORTHEAST	1	125
Lake	1	250
SOUTHEAST	1	250
TOTALS	44	2,934

Table 20

HAYSTACK PANELING

Counties by Regions	Number of Landowners	Number of Panels	Number of Haystacks Protected
Crook	2	30	2
Jefferson	4	200	2
Klamath	4	125	7
CENTRAL	10	355	11
Baker	7	113	11
Grant	5	167	13
Wallowa	6	87	7
Wheeler	7	210	10
NORTHEAST	25	577	41
Lake	3	58	11
Malheur	1	36	2
SOUTHEAST	4	84	13
TOTALS	39	1,026	65

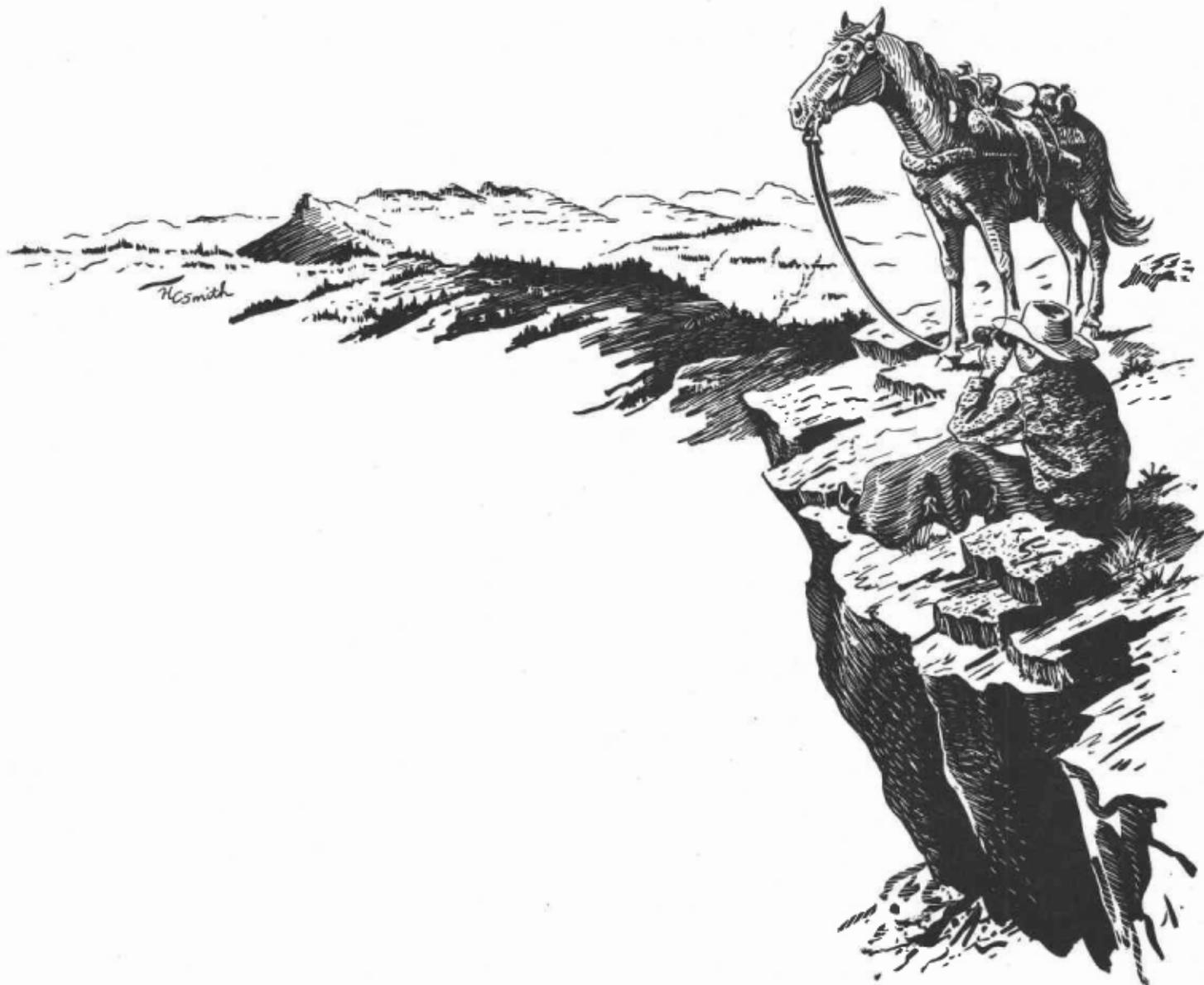


Table 21

SUMMARY OF EMERGENCY BIG GAME SEASONS

County	Area	Dates	Hunters	Kill			
				Bulls	Elk	Deer	Total
				Antlerless	Bucks	Antlerless	Total
Wren		1/24/59	46	-	-	-	16
		2/7/59	46	-	-	-	16
		2/14/59	13	-	-	-	6
		2/21/59	17	-	-	-	8
Benton		122	9	37		46	
Jewell Swenson Knappa Jewell		3/1/58	6	-	-	0	6
		3/1/58	6	-	-	2	6
		1/24/59	13	4	-	6	13
		2/7/59	11	-	-	0	11
		2/8/59	20	4	11	15	20
		2/14/59	18	3	11	14	18
		2/21/59	10	2	-	2	10
	Clatsop		84	-	-	39	84
Sitkum Sitkum		2/1/58	6	3	-	3	6
		2/21/59	6	-	-	0	6
Coos		12	3	3		12	
Douglas	Tye	9/6-7-13-14/58	20	-	-	23	20

Table 21

SUMMARY OF EMERGENCY BIG GAME SEASONS (Continued)

County	Area	Dates	Hunters	Kill				
				Bulls	Elk	Bucks	Deer	Total
	Nashville	1/31/59	19	-	-	-	-	8
		2/8/59	20	-	-	-	-	6
Lincoln			39	1	13			14
	Shaw Mtn. Elgin	2/1/58	15	2	4			6
		8/9-17/58	25	-	-		9	
Union			40	-	-		15	
Wallowa	Day Ridge	8/16-17/58	23	1	7		8	
TOTALS	12		340	-	-	88	-	60

HUNTING SEASONS

The 1959 season marked the second year of hunting antlerless deer on a unit basis. The unit system of hunting, which has been in effect for several years on elk in northeastern Oregon, distributes hunter pressure properly and provides more and better recreation.

The general deer season extended from October 3 through October 25. Spikes were legal east of the Cascades, while forked-horn bucks were required in western Oregon. Unit permits became valid on October 17 in all units except the Silver Lake Unit, where antlerless hunting was allowed by permit throughout the general season.

In determining the 1959 big game harvest, 125,000 hunter report cards were analyzed to determine kill percentages by sex for each geographic unit. Total kill was determined by a questionnaire survey of 20,000 hunters (an increase of 15,000 questionnaires over the 1958 sample). A return of 17,536 questionnaires, or 87.6 per cent, indicated average hunter success. This was coordinated with county data from the hunter return card to determine distribution of hunting pressure and kill.

Results of the general deer season are presented in Table 22 by region. Antlerless kill is shown by county in Table 22 and by unit in Table 23. The 1959 general season kill far surpassed all other years' records--143,931 deer being taken by 248,701 hunters for a general success of 58 per cent.

Mule deer made up 62 per cent of the harvest as compared to 61 per cent in 1958 and 71 per cent in 1957. This illustrates the increase of pressure on black-tailed deer. Bucks made up 70 per cent of the total for the general season, which is the same as for 1958, even though the 1959 harvest exceeded that of 1958 by 28,567 deer.

Of the 115,447 hunters issued antlerless permits, 42,190 or 36 per cent took antlerless deer as compared to 39 per cent for the 1958 season. The 1959 antlerless kill in western Oregon increased by 26 per cent, or 5,000 animals, over the previous season's kill. The general increase in the blacktail kill of 28 per cent and the still apparently high numbers of deer in western Oregon indicates no apparent reduction in blacktail populations.

A graphic picture of kill by date is shown in Figure I. The opening week end kill amounted to 26 per cent of the total, while the opening week end of the permit season made up 20 per cent of the total.

Table 24 shows a summary of general deer seasons since 1948, when return cards first made kill data available. Hunter success averaged about 29 per cent during the period when bucks only were available through 1951. Antlerless deer have been harvested since 1952. From 1953 through 1959, the total kill has averaged 120,000 deer with a hunter success of 52 per cent.

Deer weights are shown in Table 25. Some variances are shown in averages by antler class. All deer weights are much below the 1947 averages. This difference probably reflects deterioration in general range conditions and an increase in deer numbers.

During 1958, eight controlled deer seasons were held with a total harvest of 1,892 deer, as shown in Table 26. The 3,991 participating hunters experienced a hunter success of 47.4 per cent.

Archers reported a kill of 180 deer, based on hunter return cards only, as shown in Table 28.

The grand total deer kill for all seasons was 146,003.

Silver Lake and Wendling Seasons:

Antlerless permits were valid through the entire season on the Silver Lake Unit only with 4,000 permits issued. Only persons holding a valid Silver Lake permit could hunt in that unit. Intensive field checks and hunter questionnaires gave the following data.

- (1) The straight either-sex season showed that 37 per cent of the total hunter pressure occurred during the opening week end and that 41 per cent of the total deer were taken on the first two days of the season.
- (2) The antlerless kill with a straight either-sex season increased from 31 per cent of the total kill for the 1958 staggered season to 57 per cent for the 1959 season.
- (3) In 1959, 3,899 reporting hunters killed 2,290 deer for 58 per cent success--57 per cent were antlerless. In 1958, with a staggered season, 6,793 reporting hunters killed 1,349 deer for a 20 per cent success and only 31 per cent were antlerless.
- (4) In 1958, with a staggered season, 6,793 hunters reported seeing 808 wasted deer, or .119 per hunter. In 1959, with a straight either-sex season, this waste factor increased. A total of 3,899 hunters saw 533 wasted deer for an index of .136 per hunter.

A similar general either-sex hunt at Wendling in the McKenzie Unit was held where an allowed 800 hunters per day could hunt either sex from the first of the season. A total of 3,530 hunters bagged 260 deer, 82 per cent of which were antlerless. In 1958, with a staggered season, 2,881 hunters shot 183 deer and 75 per cent were antlerless. The wanton waste factor at Wendling was .023 deer per hunter in 1959.

Analysis of these two experimental straight either-sex seasons shows that the procedure did increase the number of deer harvested and resulted in a greater harvest of antlerless deer.

Elk:

Elk seasons for 1959 were generally similar to those held during the previous year. A major change on the north coast was the use of a noon opening to help decrease the usual high illegal kill. Again for the second year, the regulation requiring possession of the scalp and eyes attached to the antlers while in the field was in effect. Also, the definition of the minimum length of an antler point as being two inches was in effect.

The general season extended from October 31 through November 11 on the coast and ended November 22 elsewhere. Bulls with three antler points or more were legal on the north coast and spikes or better were legal in other areas. Either sex could be taken in southeastern Oregon.

Results of the general elk season are presented in Table 29. A record total of 44,217 elk hunters harvested 7,694 elk. Hunter success increased from 14 per cent in 1958 to 17 per cent for the past season. Bull elk made up 93 per cent of the general season kill.

The western Oregon kill of 1,904 exceeded the 1957 record of 1,655. Coos, Clatsop, Douglas, and Tillamook were the west-side counties of highest kill.

The noon opening on the north coast included the Clatsop, Wilson, and Alsea Units. The Wilson Unit had much open Tillamook burn area in it. Elk in that unit were unwary and vulnerable to promiscuous shooting. In 1958, in the Clatsop Unit alone, the known illegal kill was over 70 elk. This past season, with heavy patrol and the noon opening, the illegal known kill for both the Wilson and Clatsop Units amounted to 33 elk.

In eastern Oregon, Wallowa, Umatilla, and Union counties in that order had the highest elk harvest. Almost 2,000 elk were taken in Wallowa county. Elk kill by date is shown in Figure II. Hunter success, as usual, was highest on the opening week end with 32 per cent of the total being taken on those two days.

A summary of general elk seasons since 1933 is shown in Table 30. The 7,694 elk taken last fall is the highest total since the kill of 9,134 in 1949.

Antlerless permits were issued on ten management units. Table 31 shows that a total of 815 antlerless elk was taken by 2,350 permit holders for a hunter success of 35 per cent. Controlled hunts to solve damage problems resulted in a harvest of 458 elk by 1,600 hunters for a success ratio of 28 per cent. A summary of all controlled elk seasons since 1940 is shown in Table 32.

The total kill made by general, unit, and controlled seasons amounted to 8,975 elk for an over-all average of 20 per cent hunter success. This average of one out of each five hunters bagging an elk is very good considering the heavy pressure. Hunter pressure is increasing yearly, and it may be only a short time before all elk hunting will have to be on a permit basis.

Antelope:

A sizable increase in area and in the number of antelope permits was made for the 1959 season. The season extended from August 15 through August 19 with a total of 900 permits available in six areas. In 1958, only 600 permits were available for three areas. The harvest of 451 antelope by 812 reporting hunters gave a success ratio of 55 per cent, as shown in Table 33.



Table 22

1959 GENERAL DEER SEASON

Counties by Regions	Number of Hunters	Harvest		Per Cent of Hunters Successful	County Area in Square Miles	Deer Harvested per Square Mile
		Bucks	Antlerless			
Benton	6,453	1,496	1,426	45.3	647	4.5
Clackamas	5,915	1,374	675	34.6	1,890	1.1
Clatsop	4,088	1,007	734	42.6	820	2.1
Columbia	2,698	682	591	47.2	646	2.0
Lane	16,222	5,148	1,675	42.1	4,594	1.5
Lincoln	4,855	1,435	1,021	50.6	1,006	2.4
Linn	8,933	2,686	2,025	52.7	2,294	2.1
Marion	5,079	967	937	37.5	1,173	1.6
Multnomah	502	41	21	12.4	424	0.1
Polk	9,010	1,638	1,861	38.8	739	4.7
Tillamook	9,950	2,625	2,160	48.1	1,115	4.3
Washington	3,186	631	481	34.9	716	1.6
Yamhill	3,652	814	743	42.6	709	2.2
NORTHWEST	80,543	20,544	14,350	43.3	16,773	2.1
Coos	4,394	1,964	806	63.0	1,611	1.7
Curry	1,622	936	110	64.5	1,622	0.6
Douglas	10,607	4,771	2,253	66.2	5,062	1.4
Jackson	8,156	2,879	814	45.3	2,817	1.3
Josephine	2,198	814	211	46.6	1,625	0.6
SOUTHWEST	26,977	11,364	4,194	57.6	12,737	1.2
Crook	8,393	4,171	848	59.8	2,980	1.7
Deschutes	13,578	4,772	1,430	45.7	3,041	2.0
Hood River	1,961	346	169	26.3	529	1.0
Jefferson	3,691	1,628	481	57.1	1,794	1.2
Klamath	15,787	8,984	2,392	72.1	5,973	1.9
Sherman	713	387	127	72.1	830	0.6
Wasco	6,734	1,791	899	39.9	2,387	1.1
CENTRAL	50,857	22,079	6,346	55.9	17,534	1.6

Table 22 (Continued)

1959 GENERAL DEER SEASON

Counties by Regions	Number of Hunters	Harvest		Per Cent of Hunters Successful	County Area in Square Miles	Deer Harvested per Square Mile
		Bucks	Antlerless			
Baker	10,000	6,246	2,088	83.3	3,084	2.7
Gilliam	669	397	42	65.6	1,211	0.4
Grant	17,301	8,016	3,261	65.2	4,532	2.5
Morrow	3,730	1,485	852	62.7	2,059	1.1
Umatilla	5,306	2,655	1,038	69.6	3,231	1.1
Union	5,079	3,022	789	75.0	3,032	1.9
Wallowa	7,005	4,894	1,126	85.9	3,178	1.9
Wheeler	6,673	3,225	1,080	64.5	1,707	2.5
NORTHEAST	55,763	29,940	10,276	72.1	21,034	1.9
Harney	10,606	5,484	1,759	68.3	10,132	0.7
Lake	14,990	7,813	3,510	75.5	8,270	1.4
Malheur	8,965	4,517	1,755	70.0	9,870	0.6
SOUTHEAST	34,561	17,814	7,024	72.0	28,272	0.9
TOTALS AND AVERAGES	248,701	101,741	42,190	57.9	96,350	1.5

Table 23

ANTLERLESS DEER KILL BY UNIT
DURING GENERAL SEASON

Unit	Permits Issued	Antler-less Harvest	Per Cent Success	Unit	Permits Issued	Antler-less Harvest	Per Cent Success
Alsea	10,000	3,029	30.3*	Nestucca	1,000	435	43.5
Applegate	400	359	89.8*	Northside	3,500	1,346	38.5
Baker	2,000	945	47.3	Ochoco	700	367	52.4
Beulah	4,000	1,413	35.3	Owyhee	506	127	25.1
Butte Falls	500	165	33.0*	Paulina	1,500	1,008	67.2
Catherine Cr.	900	346	38.4	Polk	4,000	1,645	41.1*
Chesnimnus	600	295	49.2	Powers	500	186	37.2
Clatsop	1,000	620	62.0	Santiam	10,000	2,768	27.7*
Columbia Basin	200	63	31.5	Sherman	400	190	47.5
Coquille	700	262	37.4	Silver Lake	4,000	1,148	28.7
Deschutes	800	422	52.8	Silvies	3,000	911	30.4
Desolation	500	186	37.2	Sixes	700	287	41.0
Douglas	1,500	633	42.2	Siuslaw	4,000	1,582	39.6*
Evans Cr.	600	148	24.7*	Sled Springs	800	426	53.3
Fort Rock	2,500	1,253	50.1	Starkey	700	232	33.1
Green Springs	500	321	64.2	Steens Mtn.	932	236	25.3
Grizzly	300	173	57.7	Tenmile	400	114	28.5
Heppner	2,500	1,215	48.6	Trask	2,500	1,806	72.2*
Hood River	400	105	26.3*	Ukiah	800	375	46.9
Imnaha	800	350	43.8	Umatilla	800	350	43.8
Interstate	4,000	1,730	43.3	Umpqua	2,500	321	12.8
Keating	1,500	688	45.9	Walla Walla	500	139	27.8
Klamath	1,000	510	51.0	Warner	1,500	675	45.0
Lookout Mtn.	1,000	350	35.0	Wasco	1,500	519	34.6*
Malheur Riv.	3,961	1,148	29.0	Wenaha	800	240	30.0
Maupin	200	122	61.0	Wheeler	2,500	916	36.6
Maury	600	375	62.5	Whitehorse	148	46	31.1
McKenzie	12,000	3,257	27.1*	Willamette	5,000	768	15.4*
Metolius	800	510	63.8	Wilson	1,500	937	62.5
Murderers Cr.	3,000	1,097	36.6				
				TOTALS	115,447	42,190	36.5

*Portions of these units open for unused tags during extended season. Success percentages include hunters other than permit holders.

Table 24

SUMMARY OF GENERAL DEER SEASONS

Year	Tags Issued	Kill				Total	Per Cent of Hunters Successful
		Mule Deer		Black-tailed Deer			
		Bucks	Antlerless	Bucks	Antlerless		
1948	166,618	23,141	-	16,644	-	39,785	23.9
1949	163,628	36,865	-	20,395	-	57,260	35.0
1950	173,429	26,471	-	17,580	-	44,051	25.4
1951	171,252	37,850	-	19,312	-	57,162	33.4
1952	188,250	32,366	20,426	19,657	5,210	77,659	41.3
1953	204,808	39,916	24,652	27,623	13,045	105,236	51.4
1954	215,047	54,357	22,384	27,702	8,043	112,486	52.3
1955	230,585	51,933	35,570	30,203	13,385	131,091	56.9
1956	233,842	47,155	32,309	26,937	13,340	119,741	51.2
1957	221,960	54,829	26,044	25,282	8,360	114,515	51.6
1958	233,885	51,715	18,863	29,566	15,220	115,364	49.3
1959	248,701	65,179	22,190	36,562	20,000	143,931	57.9

Table 27

SUMMARY OF CONTROLLED DEER SEASONS

Year	Number Of Seasons	Deer Harvested
1938	1	270
1939	2	7,673
1941	2	2,634
1942	1	1,620
1943	4	5,413
1944	2	661
1945	1	584
1946	5	1,062
1948	2	606
1949	1	750
1950	4	1,274
1951	3	6,299
1952	1	202
1953	1	39
1954	1	136
1955	9	2,743
1956	15	5,930
1957	8	1,894
1958	7	887
1959	8	1,892

Table 25

AVERAGE WEIGHTS OF BUCK DEER

Region	Two Points			Three Points			Four Points and Over					
	1959	1958	1957	1947	1959	1958	1957	1947	1959	1958	1957	1947
Northwest	104	99	110	116	136	129	138	141	166	144	148	176
Southwest	83	92	97	89	96	109	114	111	116	133	135	130
Central	108	99	101	113	115	134	139	111	160	164	161	181
BLACK-TAILED DEER AVERAGES	97	97	103	102	115	124	130	126	148	147	148	153
Central	90	94	96	101	127	123	117	138	165	172	159	163
Northeast	93	94	-	103	116	123	-	140	157	152	-	172
Southeast	92	98	95	105	127	130	129	147	155	165	159	174
MULE DEER AVERAGES	92	95	96	103	125	125	123	142	159	163	159	170

Table 26

1959 CONTROLLED DEER SEASONS

Season	Dates	Number of Tags Issued	Av. No. of Days Hunted per Reporting Hunter	Bucks	Kill*		Per Cent of Tag Holders Successful
					Antlerless	Total	
Wallowa Pack	Sept. 5 - 8; Oct. 3 - 25	979 (2 deer)	3.1	299	299	299	30.5
Pine Creek	Oct. 3 - 25	500 (2 deer)	3.4	319	319	319	63.8
Snake R. Pack	Oct. 3 - 25	312 (2 deer)	2.5	101	101	101	32.4
Corvallis Watershed	Oct. 27 - 28; Nov. 7 - 8	300 (1 deer)	1.7	43	54	97	32.3
Hart Mountain	Sept. 12, 20, 26, 27	300 (1 doe)	1.6	2	205	207	69.0
Alfalfa	Dec. 5 - 31	300 (1 deer)	2.2	53	96	149	49.6
Cherry Grove	Dec. 19 - 20	100 (1 deer)	1.3	2	9	11	11.0
Cedar Creek	Nov. 14 - 15	1,200 (1 deer)	1.3	233	476	709	59.1
TOTALS		3,991	2.1	333	1,559	1,892	47.4

*Based on hunter return cards.

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Table 28

1959 ARCHERY SEASONS

Area	Dates	Deer Kill*		Total	Elk Kill*		Total
		Bucks	Antlerless		Bulls	Antlerless	
Baker	9/5 - 9/27	8	10	18	1	0	1
Canyon Creek	9/5 - 10/25	12	10	22			
Deschutes	9/5 - 9/27	18	16	34			
Hart Mtn.	9/12 - 9/20	4	11	15			
Keating	9/5 - 9/27	1	12	13			
Keno	9/5 - 9/27	6	9	15			
Lost Creek	10/3 - 10/16	3	7	10	3	0	3
Malheur	9/19 - 9/20	12	15	27			
McDonald Forest	10/3 - 10/4	2	1	3			
Mt. Emily	9/5 - 9/27	5	3	8	1	0	1
Rogue River	12/5 - 12/20	0	0	0			
Starkey	9/5 - 9/27	4	4	8	2	1	3
Wasco	9/5 - 9/27	5	2	7			
TOTALS		80	100	180	7	1	8

*Based on hunter return cards.

Table 29
1959 ELK SEASONS

County	Number of Hunters	Kill			Per Cent of Hunters Successful	Per Cent Spike Bulls
		Bulls	Antlerless	Total		
Benton	12	1		1	8.3	
Clatsop	5,586	532		532	9.5	
Columbia	209	26		26	12.4	
Coos	3,577	685		685	19.2	48.5
Deschutes	4	2		2	50.0	
Douglas	1,776	253		253	14.2	34.3
Jackson	4	1		1	25.0	
Klamath	43	3		3	7.0	
Lane	666	89		89	13.4	20.0
Lincoln	255	43		43	16.9	
Marion	37	1		1	2.7	
Tillamook	2,550	264		264	10.4	
Wasco	95	4		4	4.2	
WESTERN OREGON						
SUBTOTALS	14,814	1,904		1,904	12.9	22.7
Baker	2,821	298	116	414	14.7	25.2
Crook	333	5	21	26	7.8	
Grant	3,993	584	301	885	22.2	33.5
Harney	366	23	33	56	15.3	11.1
Malheur	212	23	36	59	27.8	22.2
Morrow	1,589	123	5	128	8.1	56.3
Umatilla	6,964	1,209		1,209	17.4	59.4
Union	5,578	1,071		1,071	19.2	54.9
Wallowa	7,232	1,901		1,901	26.3	54.2
Wheeler	315	21	20	41	13.0	62.5
EASTERN OREGON						
SUBTOTALS	29,403	5,258	532	5,790	19.7	51.4
GENERAL SEASON						
TOTALS	44,217	7,162	532	7,694	17.4	43.7
MANAGEMENT UNIT						
TOTALS	(2,350 Permits)	-	815	815	34.7	
CONTROLLED HUNT						
TOTALS	(1,600 Permits)	58	400	458	28.1	
ARCHERY						
TOTALS		7	1	8	-	
GRAND TOTALS						
TOTALS	44,217	7,227	1,748	8,975	20.3	

Table 30

SUMMARY OF GENERAL ELK SEASONS

Year	Tags Issued	Kill				Total	Per Cent of Hunters Successful
		Rocky Mtn. Elk		Roosevelt Elk			
		Bulls	Antlerless	Bulls	Antlerless		
1933	2,523	579				579	23
1934	3,140	752				752	24
1935	2,743	692				692	25
1936	2,947	547				547	19
1937	3,064	634				634	21
1938	3,867	734		294		1,028	27
1939	3,878	842	379	227		1,448	37
1940	4,153	1,152		198		1,350	33
1941	9,203	1,169	2,388	184		3,741	41
1942	7,153	1,296				1,296	18
1943	11,365	1,375	882	696		2,953	26
1944	10,007	1,204	351	439		1,994	20
1945	12,625	2,243		222		2,465	20
1946	16,712	1,933	1,309	256		3,498	21
1947	16,689	1,501	192	356		2,049	12
1948	22,536	2,607	2,414	409		5,430	24
1949	28,110	2,614	6,071	449		9,134	32
1950	24,741	2,210	1,234	947	1,000	5,391	22
1951	28,772	2,502	1,361	528		4,391	15
1952	25,974	2,017	742	574		3,333	13
1953	27,085	2,818	489	685	52	4,044	15
1954	27,858	2,944	453	800	841	5,038	18
1955	29,309	3,237	570	771		4,578	16
1956	34,885	3,522	509	983		5,014	14
1957	37,995	4,619	276	1,655		6,580	17
1958	42,448	3,623	495	1,643		5,761	14
1959	44,217	5,258	532	1,904		7,694	17

TABLE 31

ELK UNIT AND CONTROLLED SEASON KILLS

Season	Dates	No. Permits	Kill			Per Cent Permit Holders Successful
			Bulls	Antlerless	Total	
UNIT SEASONS:						
Chesnimmus	Nov. 14 - 22	250 (1 elk)		122	122	48.8
Desolation	Nov. 14 - 22	200 (1 elk)		59	59	29.5
Heppner	Nov. 14 - 22	250 (1 elk)		75	75	30.0
Imnaha	Nov. 14 - 22	100 (1 elk)		26	26	26.0
Minam	Nov. 14 - 22	200 (1 elk)		33	33	16.5
Sled Spr.	Nov. 14 - 22	300 (1 elk)		133	133	44.3
Starkey	Nov. 14 - 22	400 (1 elk)		151	151	37.8
Ukiah	Nov. 14 - 22	250 (1 elk)		84	84	33.6
Umatilla	Nov. 14 - 22	150 (1 elk)		48	48	32.0
Walla Walla	Nov. 14 - 22	250 (1 elk)		84	84	33.6
GENERAL SEASON UNIT HUNT						
SUBTOTALS		2,350		815	815	34.7
CONTROLLED SEASONS:						
Baker	Dec. 5 - 31	300 (1 elk)	5	39	44	14.7
Bridge Cr.	Dec. 12 - 31	150 (1 elk)	3	37	40	26.7
Clatsop	Nov. 28 - 29	500 (1 elk)	16	90	106	21.2
Elgin	Oct. 3 - 9	300 (1 elk)	8	50	58	19.3
*Mill Cr.	Nov. 7 - 11	100 (1 elk)	22	40	62	68.0
*Matson Cr.	Dec. 12 - 13	150 (1 elk)	0	134	134	94.0
Wenaha	Dec. 19 - 23	100 (1 elk)	4	10	14	14.0
SPECIAL AREA						
SUBTOTALS		1,600	58	400	458	28.1
TOTALS AND AVERAGES		3,950	58	1,215	1,273	32.2

*Checking station data. Rest of data based on return cards only.

Table 32

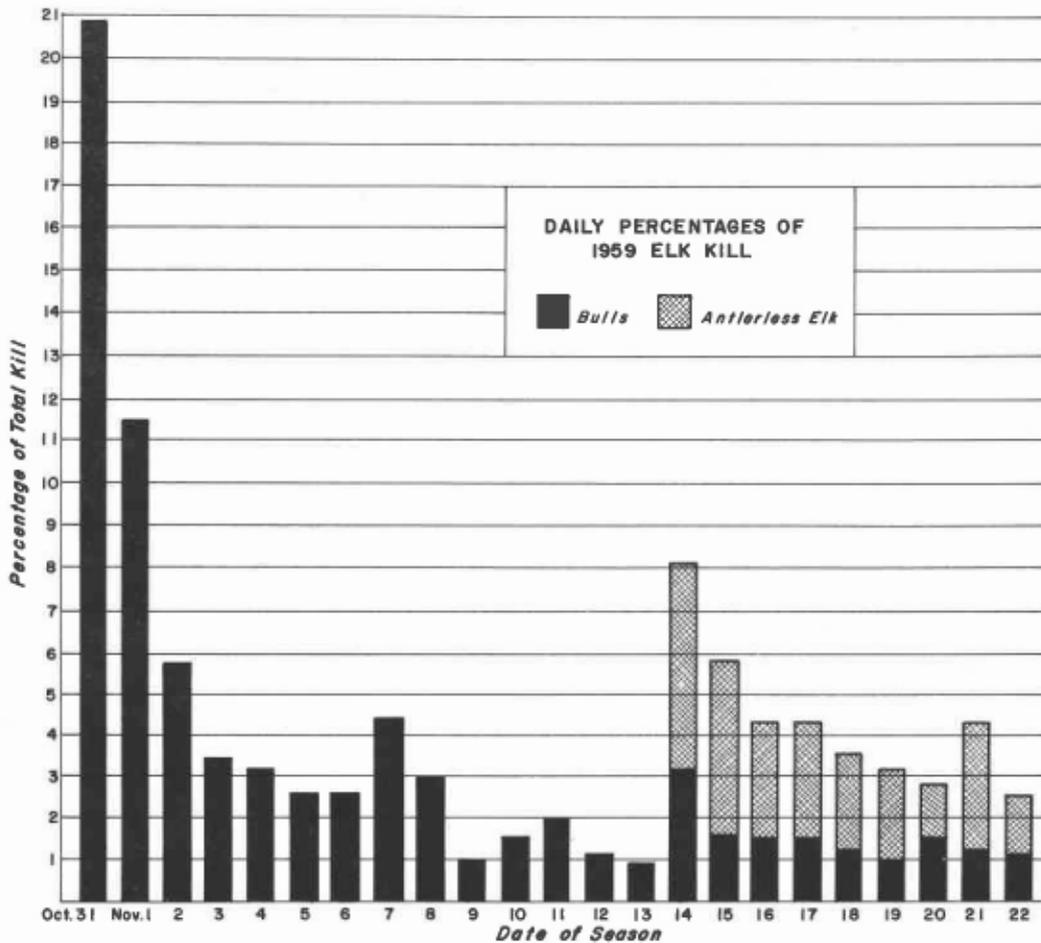
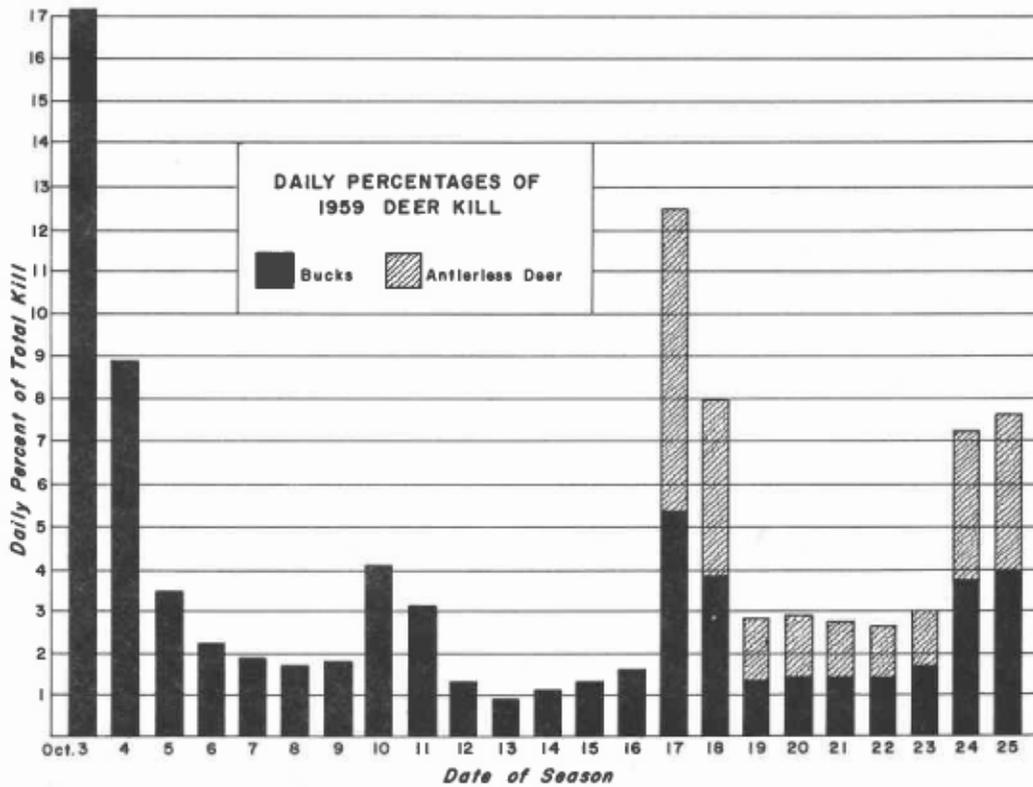
SUMMARY OF CONTROLLED ELK SEASONS

Year	Number Of Seasons	Elk Harvested
1940	1	1,179
1942	1	1,067
1943	1	1,199
1944	1	362
1946	2	68
1947	1	69
1948	5	746
1950	1	103
1951	1	92
1952	2	100
1953	2	101
1954	5	376
1955	15	1,505
1956	21	2,074
1957	13	922
1958	18	1,192
1959	17	1,273

Table 33

ANTELOPE SEASON - 1959

Area	Tags Issued	Reporting Hunters	Harvest	% Successful Hunters
I Ochoco, Maury, Silvies	100	85	41	48.2
II Paulina, Wagonfire, Fort Rock, Silver Lake	150	135	63	46.7
III Klamath, Interstate, Warner	150	134	96	71.6
IV Juniper, Hart Mountain, Steens	250	235	128	54.5
V Beulah, Malheur, Owyhee	150	134	65	48.5
VI Whitehorse	100	89	58	65.2
TOTALS	900	812	451	55.5%





The following report presents information on the status of Oregon's upland game species.

Poor brood production during 1959 resulted in a reduced carry-over of breeding populations for most species. While the 1960 spring inventory of pheasants in western Oregon exceeded that of the previous year, a substantial decline east of the Cascades resulted in a net reduction of approximately 25 per cent over the state as a whole. Valley quail populations followed the same general pattern. Chukar and Hungarian partridge numbers also declined. Dry conditions throughout southeastern Oregon during the spring of 1960 apparently resulted in poor nesting success for chukars as well as sage grouse. Little change was evident in blue and ruffed grouse and mountain quail densities. Mourning doves and band-tailed pigeons indicated modest increases on the areas sampled.

Despite reduced spring populations from 1959 levels, adequate breeding stock remains available to provide good hunting dependent on success of the nesting season.

Game farm liberations for 1959 totaled approximately 24,000 pheasants, 4,000 chukars, and 1,000 gray partridge. Production of 37,000 pheasants is scheduled for 1960 to supplement wild populations where necessary. Gray and chukar partridge production will remain at the 1959 level.

Based on the random sampling of 20,000 licensed hunters by questionnaire, a total of 110,348 individuals hunted upland game in 1959. This represents 37.3 per cent of all those who purchased hunting licenses. Pheasants continue to be most popular with 88 per cent of the upland game hunters participating to bag 375,641 of these birds. Although the total 1959 harvest of 983,190 upland game birds was 23 per cent below the 1,269,662 bagged in 1958, it represents the next highest kill since records became available in 1950.

Weather and habitat conditions are most important to the welfare of upland game and the success of the hunting season. Wise management and sound regulations based on information also are important and the following pages summarize available data for guidance.

RING-NECKED PHEASANTS:

The 1960 carry-over of pheasants averaged 22.8 birds per 100 acres on 24,416 acres sampled, a decline of 26 per cent from 1959. Although the spring density in western Oregon increased 37 per cent from the previous year, this was offset by a 47 per cent decline east of the Cascades. The eastern Oregon decline was evident in all habitat areas, particularly the most productive sections in Umatilla and Malheur counties. Tables 1 and 2 summarize quadrat census results.

A drive count has been conducted each year since 1953 on the E. E. Wilson Game Management Area to determine upland game population trends. An average of 98.9 pheasants per 100 acres was recorded in 1960 compared to 148.5 in 1959, as revealed in Table 3. Valley and bobwhite quail numbers remain at a low level.

A decline in pheasant density on the Madras Project is apparent as revealed in Table 4. The 1960 average of 10.7 birds per 100 acres is 46 per cent below 1959 and 7 per cent below the 12-year average. Valley quail and Hungarian partridge breeding populations also declined from previous years.

Crowing count routes have been established in the better pheasant habitat to determine population changes. Results on the 48 routes sampled during the spring of 1960 revealed an average of 8.3 rooster calls per stop. This information is presented in Table 4-A. It is anticipated that future repetition of these routes will indicate changes in breeding densities of pheasants.

A delay in setting 1959 upland game seasons permitted later brood sampling. Intensive checks from August 3 through 11 resulted in the observation of 1,043 pheasant broods as recorded in Table 5. Western Oregon production was excellent with an average of 7.1 chicks per brood and 6.4 chicks per hen. This compares closely to the 6.6 chicks per hen recorded in 1958 and is 12 per cent above the average for the past five years. A substantial decline in production was evident in eastern Oregon with 4.6 chicks per brood and 3.2 chicks per hen being recorded. The chicks per hen figure is 16 per cent below the five-year average.

A total of 97,474 hunters bagged 375,641 pheasants during the 1959 season, an average of 3.9 birds per hunter. This kill exceeded that of any previous year except 1958, when a record of 477,075 birds was bagged.

Mowing losses in Malheur county followed a similar pattern to past years as shown in Table 6. The average of 46 nests destroyed per 100 acres is identical to 1958, but the 1959 loss of hens was less, averaging 22 per 100 acres compared to 31 the year before.

Crop damage in Malheur county was heavy with 66 complaints in 1959 compared to 44 in 1958. Of the 1959 complaints, 68 per cent involved corn. The high spring density of breeding birds was largely responsible for the increased damage. Scattered complaints also were received from the Multnomah-Clackamas refuge, Umatilla county irrigated lands, and other truck gardening sections throughout the state.

A total of 23,943 pheasants was liberated in 1959. This number included 13,546 in western Oregon and 10,397 in eastern Oregon.

VALLEY QUAIL:

The 1960 spring inventory of valley quail averaged 16.5 birds per 100 acres, a figure 31 per cent less than 1959 and 17 per cent below the average for the past three years. Although 38 per cent more quail were present in western Oregon, the carry-over east of the Cascades declined 50 per cent from the previous year, resulting in a net loss. Population trend results are presented in Tables 1 and 2.

August brood counts as displayed in Table 7 revealed an average of 8.2 chicks per hen in western Oregon, a substantial increase over the 2.1 recorded the previous year. Some of this increase may be due to later observations which resulted in more broods being seen. Production in eastern Oregon averaged less with 5.8 chicks per hen. Average brood size also was less with 8.7 chicks per brood compared to 10.8 west of the Cascades.

During the 1959 season, 32,588 hunters bagged 224,123 quail for an average of 6.9 birds per hunter. Valley quail comprised most of the bag.

Moderate winter weather conditions resulted in little mortality. The absence of prolonged cold spells was particularly favorable.

A total of 2,110 valley quail was trapped and transplanted during the winter of 1959. Most of these birds were trapped on the Malheur Refuge and were released as shown in Table 14.

MOUNTAIN QUAIL:

Table 14 summarizes mountain quail population trends on western Oregon big game samples. The average of 0.45 quail per mile on the 839 miles sampled during the summer months indicates a slight decline from the 1958 figure of 0.47. An inadequate number of quail were observed on eastern Oregon big game routes to determine trends as revealed in Table 13.

Brood counts are presented in Table 8. Production in western Oregon averaged 8.2 chicks per hen compared to 7.7 east of the Cascades. The state average of 8.0 chicks per hen was 7 per cent above 1958 and identical to the average for the past four years.

The western Oregon mountain quail season was concurrent with deer hunting, resulting in a very limited kill. Little hunting pressure on this species was evident in eastern Oregon during the regular upland game season.

BOBWHITE QUAIL:

A substantial decline in bobwhite quail numbers was apparent on 1960 quadrat samples as revealed in Table 1. The western Oregon average of 0.5 quail per 100 acres is 64 per cent below the 1959 figure. Only 35 bobwhites were seen on 7,599 acres sampled, all of these birds being observed in the North Willamette district. In eastern Oregon, the 1960 average also was down from the previous year. Although more birds were seen in Umatilla county, the Malheur county index dropped 76 per cent.

Production data are presented in Table 9. Of the 14 females observed,

57 per cent had broods. The average of 5.0 chicks per hen is quite low.

Few birds were taken during the hunting season. No bobwhites were reported in bag checks made throughout the state on opening week end.

HUNGARIAN PARTRIDGE:

Hungarian partridge observed in 1960 on eastern Oregon upland game quadrats dropped 60 per cent from the previous year. This decline was apparent in all districts where partridge and pheasant habitat overlap. Tables 1 and 2 summarize quadrat trend information.

A similar decline is apparent in numbers observed on big game sample routes. Table 10 reveals that the 1960 average of 0.27 birds per mile traveled is 58 per cent below the 1959 figure and 39 per cent below that of 1958. All counties showed a decline with the highest density still to be found in Morrow county.

Production data is presented in Table 11. An average of 79 per cent of the females had broods in 1959 compared to 84 per cent the year before. Average brood size declined from 8.5 to 5.7 and chicks per female declined from 7.1 to 4.5 between the two years.

A total of 6,016 hunters bagged 16,818 Hungarian partridge during the 1959 season, an average of 2.8 birds per hunter. This kill was substantially below the 45,190 bagged in 1958.

EUROPEAN GRAY PARTRIDGE:

Game farm production and liberation of gray partridge continued in the Willamette Valley. Egg production and fertility have improved with 60.1 per cent of the eggs hatching and 74.8 per cent of the birds being raised.

A total of 997 gray partridge was released in 1959 in Benton and Polk counties.

Few wild birds have been seen as the result of plantings in the Willamette Valley. Future releases are planned in southwestern Oregon before production is discontinued.

CHUKAR PARTRIDGE:

Little information is available on chukar numbers due to the inaccessible habitat occupied. Some birds are seen on big game samples as shown in Table 10. The 1960 average of .09 bird per mile indicates a 69 per cent decline in population from the 0.29 per mile observed in 1959. A call count census on 42 miles in northern Lake county for the past four years reveals a more modest change. The 1960 average of 0.76 calls heard per stop compares to 0.80 in 1959, 0.71 in 1958, and 0.52 in 1957.

Chukar brood production fell off from 1958 as revealed in Table 12. This was most apparent in the popular hunting areas of southeastern Oregon where large groups of unpaired adults were observed during the normal nesting season. The averages of 6.0 chicks per brood and 5.6 chicks per female were well below the 1958 figures of 10.3 and 9.6, respectively. Over eastern Oregon as a

whole, average brood size declined from 10.3 in 1958 to 7.3 in 1959 and chicks per female declined from 9.2 to 7.0 between the two years.

During the 1959 hunting season, 11,373 hunters bagged 36,326 chukars for an average of 3.2 birds per hunter. The 1958 kill was 91,558 birds.

Damage to haystacks and growing crops was minor compared to 1958. Fewer birds and the fact that early fall rains permitted dispersal from water sources account for the decline.

Game farm liberations for 1959 totaled 4,181 chukars, of which 1,370 were adults and the remainder were young. Although trial releases were made in Polk, Douglas, and Jackson counties, the majority of the birds were liberated in eastern Oregon.

BAMBOO PARTRIDGE:

The small group of bamboo partridge received through the Foreign Game Importation Program of the Fish and Wildlife Service continues to be held at the E. E. Wilson Game Farm. No eggs were laid in 1959 but modest reproduction is being experienced during 1960. If rearing is successful, it may be possible to supplement the 17 adult breeders on hand and produce some birds for release in 1961.

Bamboo partridge are native to the cultivated areas and marginal brushlands of the China coast and have become established in Japan, where the Oregon stock was obtained. Since the birds tolerate high annual rainfall, trial liberations in coastal and other western Oregon areas are planned.

FOREST GROUSE:

Forest grouse species include blue, ruffed, and Franklin's grouse. Of these, Franklin's grouse are confined to portions of Wallowa county and are so limited in numbers that hunting was not permitted in 1959. No information is available on this species.

Blue and ruffed grouse population trends are measured on big game samples and by hooting and drumming counts during the spring months. Table 13 indicates little change in blue and ruffed grouse observed on winter big game samples. The 1960 average of 0.20 blue grouse per mile is comparable to the 0.22 observed in 1959. Both figures exceed the 0.13 per mile observed in 1958. Only 27 ruffed grouse were observed on the 912 miles traveled and the average density of 0.03 per mile is so low that it cannot be considered indicative of any trend.

Western Oregon trends are summarized in Table 14. Blue grouse averaged 0.26 per mile on 839 miles sampled during the summer of 1959. This represents a 26 per cent decline from 1958 and 1957. A decline of 38 per cent in ruffed grouse density from 1958 to 1959 is indicated, although the small number observed does not provide a reliable sample.

Hooting and drumming counts show an increase in males heard during the spring of 1960. Comparisons are presented in Table 15. The 1960 average of blue grouse calls per mile is nearly three times that of 1959 and 16 per cent above 1958. More ruffed grouse also were heard drumming in 1960 than the previous two years.

Average brood size and chicks per female declined for both blue and ruffed grouse during 1959. Production figures are presented in Tables 16 and 17. The average number of chicks per female was 39 per cent below 1958 for blue grouse and 53 per cent below for ruffed grouse.

A total of 15,332 hunters bagged 32,770 blue and ruffed grouse during the 1959 season, an average of 2.1 birds per hunter. Most of these birds were taken east of the Cascades as few grouse hunters participated in western Oregon where the season was concurrent with deer hunting. The 1958 kill totaled 73,510 birds for comparison.

SAGE GROUSE:

Fewer male sage grouse were counted on strutting grounds during the spring of 1960 compared to 1959. The decline averaged 19 per cent on the 23 areas sampled as indicated in Table 18. Lake county sampling commenced in 1959 so a comparison with past years cannot be made.

Summer trend counts are summarized in Table 19. The average of 3.2 grouse per mile is 22 per cent below that of 1958. Fewer birds were seen on all routes except those in Harney county. Brood production was down as indicated by the average of 0.4 chicks per mile compared to 2.2 in 1958.

Table 20 presents fall concentration counts around waterholes. August rains permitted the sage grouse in northern Lake county to disperse so no concentrations were available for counting. Early fall rains may have had some effect on Malheur county concentrations, which showed a decline of 58 per cent below 1958.

Brood production declined from previous years as indicated in Table 21. Large groups of adult birds without broods were observed during the early summer months. Only 50 per cent of the females had broods compared to 95 per cent in 1958 and the 1959 average of 2.3 chicks per female was 51 per cent below the previous year.

Based on the questionnaire survey, 7,127 hunters bagged 17,304 sage grouse during the 1959 season. This compares closely to the 21,284 birds taken by 7,374 hunters in 1958.

WILD TURKEYS:

Semi-domestic flocks of wild turkeys remain on several ranches east of Roseburg.

Elk hunters reported 16 turkeys observed in the Heppner area during the 1959 season. These birds were released by private individuals in 1957.

A release of 20 turkeys was made in 1959 on Floras Creek in Curry county. These birds originated from Pennsylvania stock and were liberated on the Herb Morrill ranch by a private individual.

MOURNING DOVES:

The 1959 mourning dove call count was conducted between May 20 and June 10 as a part of the nation-wide breeding population inventory. Results for the past seven years are presented in Table 22. The average number of doves heard per mile on the 18 routes samples increased 35 per cent above 1958, while doves seen per mile increased 55 per cent.

Late summer roadside counts on 863 miles in 16 counties indicated a 43 per cent increase in doves seen per mile over 1958 and 58 per cent above 1957. Highest numbers were recorded in Jackson and Jefferson counties. Table 23 summarizes roadside counts for the past three years.

Doves observed on western Oregon upland game quadrats are tallied in Table 24. A substantial decline from 18.8 to 3.5 doves per 100 acres between 1959 and 1960 was recorded in the Northwest region, while the density remained at a high level in Jackson and Josephine counties.

No doves were banded in 1959. Band recoveries are summarized in Tables 25 and 26. Of 3,948 doves banded in Oregon since 1950, 133 or 3.4 per cent have been recovered. Approximately 51 per cent of the recovered bands have come from Oregon, followed by 19 per cent from California and 11 per cent from Mexico.

The 1959 harvest of 194,189 doves by 17,557 hunters exceeded that of all other species except pheasants and quail. Although the kill of all other upland game declined, more mourning doves were taken in 1959 than the previous year.

BAND-TAILED PIGEONS:

Preseason pigeon counts on western Oregon concentration areas are summarized in Table 27. Approximately 7 per cent more pigeons were counted in 1959 than 1958 on the 10 areas sampled. Nearly three times as many birds were counted on the Nehalem flyway, which has been hunted heavily in past years.

A total of 42 pigeons was banded at the Nehalem station in 1959. Of the 1,845 banded since 1950, 163 or 8.8 per cent, have been recovered. Banding information is summarized in Table 28.

The 1959 season resulted in 86,019 pigeons being bagged by 13,143 hunters, an average of 6.5 birds per hunter. This kill was lower than the 122,226 harvested in 1958.

SILVER GRAY SQUIRRELS:

No large concentrations of gray squirrels are present in the state. Jackson, Douglas, Polk, Yamhill, and Wasco counties appear to be the most productive.

A tally of squirrels observed during the past year in Jackson and Josephine counties totaled 68 compared to 69 in 1958 and 67 in 1957. Fewer animals were observed in Douglas county due in part to a mild winter. Gray squirrels are fairly abundant along the Rogue and Sixes rivers in Coos and Curry counties. No concentrations exist in the Willamette Valley except for nut-producing sections. A gradual increase is evident in Wasco county.

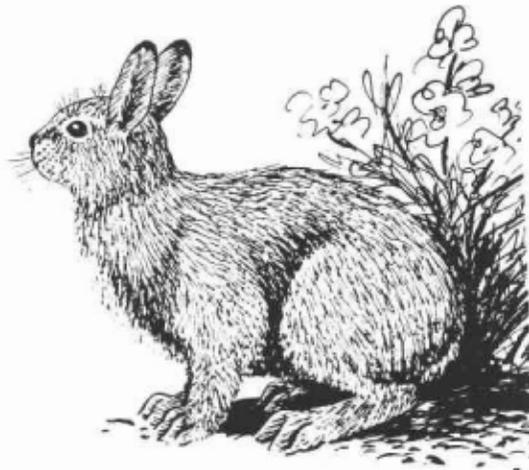
Orchard damage remains a problem. Walnuts and filberts in Polk and Yamhill counties are troubled the most and a complaint involving peaches was received in Douglas county. Damage to young ponderosa pine in the Butte Falls area was not serious this past winter.

RABBITS:

Cottontail rabbits observed on eastern Oregon upland game quadrats are recorded in Table 2. A continued decline is evident as 20 cottontails were observed on 16,817 acres sampled during the spring of 1960 compared to 154 in 1959 and 119 in 1958. None were counted in western Oregon.

The jackrabbit population throughout southeastern Oregon is at a low point, although local concentrations exist in widely separated areas of Lake, Harney, and Malheur counties. A record of rabbits observed on Malheur county sage grouse samples indicates a decline with 153 jackrabbits and 6 cottontails recorded in 1959 as compared to 989 and 336, respectively, in 1958. The 1957 tally was 476 jackrabbits and 29 cottontails.

Snowshoe rabbits seem to be fairly numerous along the Coast and Cascade ranges adjacent to the Willamette Valley. Numerous reports of damage to tree farm reproduction have been received. A total of 13 snowshoes was observed on 156 miles of big game samples in Lane county.



HUNTING SEASONS:

The following chart outlines the 1959 upland game seasons.

SPECIES	Open Season	*Open Area	Daily Bag Limit	Possession Limit
Upland Game				
Mourning Dove	Sept. 1-30	Entire State	10	20
Band-tailed Pigeon	Sept. 1-30	Entire State	6 (a)	6
Silver Gray Squirrel	Sept. 1-30	*Southwest Area	7	7
	Entire Year	*Northwest Area	No Limit	
Blue and Ruffed Grouse	Sept. 5-13	*Eastern Oregon	3 (b)	6
	Oct. 3-11	*Western Oregon	2	4
Sage Grouse	Sept. 5-13	*Southeast Area	2	4
Cock Pheasant	8 a.m. Oct. 10-Nov. 15	Entire State	3 (c)	12
Valley Quail	8 a.m. Oct. 10-Nov. 15	*Eastern Oregon	15	30
		*Western Oregon	10	20
Bobwhite Quail	8 a.m. Oct. 10-Nov. 15	Entire State	5	10
Mountain Quail	Oct. 3-11	*Western Oregon	5	10
	8 a.m. Oct. 10-Nov. 15	*Eastern Oregon	10	20
Hungarian Partridge	8 a.m. Oct. 10-Nov. 15	*Eastern Oregon	10	20
Chukar Partridge	8 a.m. Oct. 10-Nov. 15	*Eastern Oregon	10	20

(a) Season limit on pigeons—30.

(b) Singly or in the aggregate.

(c) One hen allowed in lieu of 1 cock in daily bag or in possession in Malheur County, November 7-15.

*OPEN AREA DESCRIPTIONS:

Western Oregon: All counties west of the summit of the Cascade range, including all of Jackson County and that part of Klamath County south of State Highway 230 and west of U. S. Highway 97.

Eastern Oregon: All counties east of the summit of the Cascade range except those portions included in Western Oregon description.

Southeast Area: All of Crook, Deschutes, Grant, Lake, Malheur and that part of Baker County south and west of U. S. Highway 30.

Southwest Area: All of Benton, Linn, Lane, Douglas, Coos, Curry, Jackson and Josephine counties.

Northwest Area: All of Multnomah, Clackamas, Marion, Washington, Polk, Columbia and Yamhill counties.

Hunting season statistics are presented in Tables 29 through 39.

State-wide kill figures in Table 29 are based on questionnaire sampling of 20,000 licensed hunters selected at random. Replies were received from 17,536, of whom 6,549 indicated they hunted upland game. On the basis of this sample, 37.3 per cent of the 295,474 hunters, or 110,348, hunted upland game in 1959.

Table 30 summarizes the results of seasons since 1950 when questionnaires first provided for sampling upland game hunting success.

The pheasant season extended from October 10 through November 15 with a bag limit of 3 cocks daily and 12 in possession. One hen was allowed in the bag during the last 9 days of the season in Malheur county. Although the crop proved to be poor, the hen regulation had little effect since few outside hunters returned at the last of the season and hunting pressure remained low.

Pheasant hunters experienced good success in western Oregon on the opening week end as revealed in Table 31. Juvenile birds made up 89 per cent of the kill in the Northwest region and 80 per cent in the Southwest region, indicating good brood production. In eastern Oregon, production was off with juveniles making up only 65, 76, and 57 per cent of the bag in the Central, Northeast, and Southeast regions, respectively. On the basis of birds per hunter and birds per hour of effort, state-wide hunter success on the opening week end was equal to the 1956 season and approximately one-third below 1957 and 1958. Rainy weather on the opening day had some effect but the major reason for the decline was poorer production in eastern Oregon.

In an effort to measure the return from game farm birds, 479 wing-banded cocks were released on Government Island August 17, 1959. A voluntary return of 95 bands was received, representing 20 per cent of the birds released. This represents the minimum kill as no attempt was made to obtain return of all the bands.

The E. E. Wilson juvenile pheasant season accommodated 178 hunters, who bagged 199 pheasants for an average of 1.1 birds each. This average exceeded that of any year except 1952. Results of seasons to date are summarized in Table 32.

All quail species were hunted concurrent with pheasants except mountain quail in western Oregon which were included with grouse. Opening week end data for the quail and partridge seasons in eastern Oregon are presented in Table 33. The average of 0.6 valley quail per hunter represents poor success. Lower production is indicated by the 61 per cent juveniles found in the bag compared to 82 per cent in 1958. No bobwhite quail were checked and only 1 mountain quail.

Hungarian and chukar partridge also were hunted concurrent with pheasants. The generous bag limit of 10 daily and 20 in possession did not result in a heavy kill. Huns are taken incidentally while hunting pheasants, and only 41 birds were checked in 730 bags. The average of 0.1 per hunter declined from 0.2 in 1958 and 68 per cent of the birds were juveniles compared to 75 per cent the year before.

Poor brood production and early rains permitting dispersal of the birds resulted in a reduced harvest of chukars. The average of 0.1 birds per hunter in 730 bags checked is much lower than the 0.4 recorded in 1958.

The eastern Oregon blue and ruffed grouse season extended from September 5 through 13. Rainy weather on the opening week end reduced hunter success as revealed in Table 34. Average birds per hunter declined 29 per cent from 1958 in the Central region, 43 per cent in the Northeast region, and 40 per cent in the Southeast region. Grouse hunting in western Oregon was concurrent with the first nine days of the deer season and few hunters participated. Only 32 grouse hunters were checked in the Northwest region and none in southwestern Oregon.

Hunting pressure on sage grouse increased over previous years. Early fall rains permitted many of the concentrations to disperse, thus making hunting more difficult. Despite this, a heavy kill was made in the Colvin Timbers area of Lake county and other popular areas. Hunter success per hour of effort

during the 1959 season declined 75 per cent from the previous year and the average kill per hunter dropped 19 per cent. This information is presented in Table 35.

Mourning dove hunting was permitted through the month of September. Stormy weather forced most doves southward out of the popular central Oregon area after the first week of the season. The kill, however, was high with 194,189 being taken according to results of the questionnaire survey. Field checks as shown in Table 36 revealed an average of 5.3 birds per hunter in the bag.

Results of band-tailed pigeon bag checks are summarized in Tables 37 and 38. The adult-young ratio of 3.5 to 1 is high compared to past years, indicating poor production and a heavy drain on the adult population. Average success of 2.8 birds per man day in 1959 was higher than in the past.

Each year a survey is made of posted land along established routes. This information is summarized in Table 39. Approximately 75 per cent of the farms were not posted during the 1959 upland game season along the 279 miles of roads sampled. This is identical to the percentage unposted in 1958.

SHOOTING PRESERVES:

One shooting preserve license was issued in 1959 in accordance with provisions enacted by the 1959 Legislature. This license was issued to William B. Walch to operate a shooting preserve in the Butte Falls area between September 1 and December 31.

A total of 860 pheasants was released. Four individuals hunted a total of 5 man days, bagging 9 pheasants.

PROPAGATION AND LIBERATION:

Table 40 summarizes 1959 production on the E. E. Wilson and Hermiston game farms. The E. E. Wilson farm produced and liberated 13,558 pheasants and 999 gray partridge. Liberations from Hermiston totaled 10,404 pheasants and 4,192 chukar partridge. Releases by age class for each county are tabulated in Tables 41, 42, and 43.

A total of 3,750 pheasant eggs was distributed to 4-H Club members for approved projects. Thirty-five youngsters succeeded in raising and releasing 1,527 pheasants from these eggs, which represents 41 per cent success. Club members were reimbursed at the rate of \$1.00 per bird released at an age of 10 weeks.

An additional 13,343 pheasant eggs were distributed to individuals on a share basis whereby the cooperator agreed to release half the birds at 8 to 10 weeks of age.

Although not raised on the game farm, some valley quail were trapped in February, 1959, and held at Hermiston pending release. The distribution of these birds is recorded in Table 44.

Table 1
1949 - 1960

UPLAND GAME POPULATION TRENDS

Region	Habitat Area	Pheasants										Bobwhite Quail		Hungarian Partridges					
		Per 100 Acres		Sex Ratio		Valley Quail		Bobwhite Quail		Per 100 Acres		Per 100 Acres		Per 100 Acres					
		1960	1959	1958	1957	1949	1960	1959	1958	1949	1960	1959	1958	1949	1960	1959	1958	1949	
Northwest	No. Willamette	18.5	13.3	10.1	5.2	11.3	45:100	13.2	9.2	9.0	3.0	1.6	3.2	0.9	1.0	-	-	-	-
		40.6	29.7	22.6	9.6	36.1	47:100	4.8	9.3	3.9	4.1	-	0.8	0.7	3.1	-	-	-	-
		25.4	18.8	10.9	12.4	14.0	39:100	55.0	34.0	29.0	24.2	-	-	-	0.5	-	-	-	-
WESTERN OREGON																			
Central	Columbia	30.6	22.4	16.5	8.5	16.0	45:100	19.1	13.8	10.7	7.5	0.5	1.4	0.8	2.3	-	-	-	-
		16.5	30.2	24.2	11.0	20.5	25:100	8.6	35.8	0	34.9	-	-	-	-	0.5	1.2	1.9	2.8
		2.0	3.9	4.1	2.8	4.5	36:100	4.6	18.6	11.6	13.7	-	-	-	-	-	0.02	0	0.1
Northwest	Klamath	11.8	33.9	49.0	34.5	12.7	52:100	1.3	7.4	6.8	-	-	-	-	-	0	0	-	-
		11.7	19.4	17.7	9.2	12.6	47:100	3.7	5.8	51.2	1.4	-	-	-	-	1.1	0	0.3	-
		32.3	56.8	48.7	32.5	59.3	26:100	49.3	74.2	50.1	54.5	0.5	0	1.2	1.3	0.1	2.8	0	4.5
Southeast	Great Basin	6.5	24.3	15.0	6.0	24.6	43:100	11.1	58.4	37.0	6.6	-	-	-	-	0	0.5	0.1	-
		40.9	78.7	84.7	35.5	40.5	24:100	10.1	18.6	37.0	0.6	0.9	3.8	0.1	1.8	1.2	3.1	0.1	6.2
		19.3	36.3	34.0	17.6	25.3	30:100	15.3	30.4	25.0	16.3	0.2	0.6	0.3	0.4	0.6	1.5	0.8	2.1
EASTERN OREGON																			
STATE TOTALS		22.8	30.9	26.9	14.1	21.6	35:100	16.5	24.0	19.1	12.8	0.3	0.9	0.5	1.2	0.4	1.2	0.5	1.3

Table 2
SUMMARY 1960 UPLAND GAME SPRING POPULATION TRENDS

Region	District	Samples		Pheasants			Valley Quail		Bobwhite Quail		Hungarian Partridge		Chukar Partridge		Cottontail Rabbit			
		No.	Acres	Cocks	Hens	Uncl.	Total	Per 100 Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres
Northwest	No. Willamette	38	2,211	112	251	46	409	18.5	291	13.2	35	1.6						
	So. Willamette	40	2,628	287	629	279	1,195	45.5	172	6.5								
	Lane	17	960	79	154	27	260	27.1										
Southwest	Douglas	12	720	63	158	0	221	30.7	552	76.7								
	Southwest	18	1,080	36	94	107	237	21.9	438	40.6								
WESTERN OREGON		125	7,599	577	1,286	459	2,322	30.6	1,453	19.1	35	0.5						
Central	Columbia	28	2,661	81	324	33	438	16.5	229	8.6			14	0.5	11	0.4		
	Central	32	1,920	10	28	0	38	2.0	88	4.6							2	0.1
	Klamath	19	1,069	43	83	0	126	11.8	14	1.3								
Northeast	Hepphner	23	1,600	86	348	20	454	28.4	1,638	102.4			49	3.1	12	0.8	11	0.7
	Umatilla	33	1,980	106	403	193	702	35.5	128	6.5	18	0.9	4	0.2				
	Wallowa	25	1,875	45	56	0	101	5.4	39	2.1								
Southeast	Northeast	38	2,580	102	247	78	427	16.6										
	Grant	5	339	8	25	0	33	9.7	140	41.3								
	Lake	7	612	12	28	0	40	6.5	68	11.1							7	1.1
	Malheur	36	2,181	14	626	117	892	40.9	221	10.1	20	0.9	27	1.2				
EASTERN OREGON		246	16,817	642	2,168	441	3,251	19.3	2,565	15.3	38	0.2	94	0.6	23	0.1	20	0.1
STATE TOTALS		371	24,416	1,219	3,454	900	5,573	22.8	4,018	16.5	73	0.3	94	0.4	23	0.1	20	0.1

Table 3

E. E. WILSON UPLAND GAME POPULATION TRENDS

Year	Pheasants		Valley Quail Per 100 Acres	Bobwhite Quail Per 100 Acres
	Per 100 Acres	Cock-Hen Ratio		
1953	173.7	133:100	19.5	48.5
1954	142.0	70:100	7.7	34.0
1955	169.0	80:100	21.2	22.0
1956	70.3	40:100	-	-
1957	70.0	71:100	5.0	3.7
1958	129.0	90:100	3.2	3.5
1959	148.5	99:100	8.2	4.7
1960	98.9	91:100	5.3	0.0

Table 4

MADRAS PROJECT UPLAND GAME POPULATION TRENDS

Year	Pheasants		Valley Quail Per 100 Acres	Hungarian Partridge Per 100 Acres
	Birds Per 100 Acres	Cock-Hen Ratio		
*1949	1.1	118:100	16.4	1.0
1950	5.1	53:100	48.2**	19.6
1951	7.4	63:100	1.5	3.2
1952	12.5	36:100	4.0	2.2
1953	12.8	36:100	7.0	3.4
1954	12.8	45:100	13.0	2.6
1955	11.8	26:100	30.0	6.1
1956	8.1	71:100	15.6	3.5
1957	9.7	83:100	6.2	3.4
1958	26.4	28:100	8.7	3.8
1959	19.9	15:100	5.4	2.3
1960	10.7	26:100	3.9	1.7

*Based on drive census

**Taken in December during winter concentrations

Table 4-A
PHEASANT CROWING COUNTS

Habitat Area	County	Number of Samples	Average Calls Heard per Stop
No. Willamette	Clackamas	1	23.0
	Marion	1	19.0
	Washington	-	-
	Yamhill	1	19.0
So. Willamette	Benton	1	18.3
	Lane	2	11.9
	Linn	2	15.5
	Polk	1	23.0
Rogue-Umpqua	Douglas	8	4.9
	Jackson	2	14.7
	Josephine	-	-
South Coast	Coos	2	0.6
WESTERN OREGON		21	10.8
Columbia	Hood River	1	2.0
	Jefferson	1	3.0
	Sherman	1	2.7
	Wasco	2	5.6
Upper Deschutes	Crook	1	5.6
	Deschutes	1	1.6
Klamath	Klamath	2	7.2
Blue Mtn. Valley	Baker	2	10.0
	Grant	1	3.3
	Union	3	12.7
	Wallowa	3	6.1
Umatilla-Morrow	Morrow	1	2.6
	Umatilla	1	11.9
Great Basin	Harney	1	1.0
	Lake	3	4.7
Malheur	Malheur	3	5.1
EASTERN OREGON		27	6.1
STATE TOTALS AND AVERAGES		48	8.1

Table 5
1959 PHEASANT BROOD COUNTS
August 3-11, 1959

Region Area	Females Observed	Females with Broods No.	Per Cent	Average Chicks Per Brood	Average Chicks Per Female				
					1959	1958	1957	1956	1955
No. Willamette	123	121	98	6.5	6.4	6.8	6.3	6.7	6.2
So. Willamette	234	227	97	7.4(7.2)*	7.2(6.6)	7.1	8.5	3.3	5.5
<u>NORTHWEST</u>	357	348	97	7.2	7.0	7.0	7.4	5.0	5.9
Rogue-Umpqua	125	86	69	7.0	4.8	5.2	4.7	5.2	3.6
<u>SOUTHWEST</u>	125	86	69	7.0	4.8	5.2	4.7	5.2	3.6
<u>WESTERN OREGON</u>	482	434	90	7.1	6.4	6.6	5.9	4.5	5.1
Columbia	48	38	79	4.4	3.5	6.6	9.4	6.1	2.5
Deschutes	19	17	89	4.5	4.1	4.1	6.7	6.0	2.9
Klamath	83	74	89	5.4	4.8	1.4	4.7	2.6	1.0
<u>CENTRAL</u>	150	129	86	4.8	4.1	4.0	6.9	4.9	2.1
Umatilla-Morrow	191	103	54	3.7(3.0)	2.0(1.4)	4.8	4.2	3.1	2.5
Blue Mountain	343	263	77	4.9	3.8	4.6	5.4	4.8	2.2
<u>NORTHEAST</u>	534	366	69	4.5	3.1	4.7	4.8	3.9	2.4
Great Basin	29	14	48	4.1	2.0	6.0	2.3	2.5	1.8
Malheur	158	100	63	4.7(4.6)	2.9(2.5)	3.6	5.7	4.6	1.4
<u>SOUTHEAST</u>	187	114	61	4.6	2.8	4.8	4.0	3.6	1.6
<u>EASTERN OREGON</u>	871	609	70	4.6	3.2	4.4	5.2	4.0	2.1
<u>STATE TOTALS</u>	1,353	1,043	77	5.6	4.3	5.5	5.4	4.1	3.5

*(7.2) July observations.

Table 6

PHEASANT MOWING LOSS, MALHEUR COUNTY

Year	No. of Contacts	Acres Mowed	Hens Killed		Nests Destroyed		Broods Observed
			No.	Per 100 Acres	No.	Per 100 Acres	
1949	16	480	160	33	900	187	-
1950	26	643	172	27	381	59	-
1951	34	1,308	155	12	164	13	114
1952	27	880	96	11	210	23	39
1953	35	898	183	19	358	40	98
1954	33	1,035	163	13	413	40	46
1955	31	1,477	159	11	284	19	30
1956	39	1,359	240	18	387	28	43
1957	31	1,270	273	21	462	36	36
1958	40	1,344	422	31	626	46	62
1959	33	1,135	251	22	527	46	41
TOTALS AND AVERAGES	345	11,929	2,274	218	4,712	541	509
	31	1,084	207	20	428	49	46

Table 7

VALLEY QUAIL BROOD COUNTS

Region	Females Observed	Females with Broods		Average Chicks per Brood	Average Chicks per Female			
		No.	Per cent		1959	1958	1957	1956
Northwest	81	63	78	11.1	8.6	3.4	8.9	4.6
Southwest	65	48	74	10.4	7.7	1.6	5.1	0.3
WESTERN OREGON	146	111	76	10.8	8.2	2.1	9.1	2.1
Central	249	184	74	10.1	7.5	4.5	9.4	7.3
Northeast	302	180	60	7.4	4.4	6.1	5.7	3.6
Southeast	159	107	67	8.7	5.9	6.6	9.3	5.4
EASTERN OREGON	710	471	66	8.7	5.8	5.2	7.4	6.2
STATE TOTALS	856	582	68	9.1	6.2	4.4	7.7	4.2

Table 8

MOUNTAIN QUAIL BROOD COUNTS

Region	Females Observed	Females With Broods		Average Chicks per Brood	Average Chicks per Female			
		No. Per cent	Chicks per Brood		1959	1958	1957 1956	
Western Oregon	36	28	78	10.5	8.2	9.0	8.9	8.1
Eastern Oregon	40	37	93	8.3	7.7	6.5	-	-
STATE TOTALS	76	65	86	9.3	8.0	7.5	8.9	8.1

Table 9

BOEWHITE QUAIL BROOD COUNTS

Region	Females Observed	Females With Broods		Average Chicks per Brood	Average Chicks per Female
		No. Per Cent	Chicks per Brood		
Western Oregon	12	7	58	8.8	5.2
Eastern Oregon	2	1	50	9.0	4.5
STATE TOTALS	14	8	57	8.8	5.0

Table 10

HUNGARIAN AND CHUKAR PARTRIDGE OBSERVED ON BIG GAME SAMPLES

County	Miles Traveled	Hungarian Partridge			Chukar Partridge						
		No.	Birds per Mile		No.	Birds per Mile					
			1960	1959		1958	1957	1960	1959	1958	1957
Baker	139	80	.58	.98	.37	.29	67	.48	.56	.27	-
Grant	56	4	.07	.13	.04	.09	0	.00	.32	.25	-
Morrow	34	48	1.41	2.70	5.56	.68	0	.00	-	-	-
Umatilla	180	15	.08	.10	.20	.10	4	.02	.05	-	-
Union	87	34	.39	-	-	-	0	.00	-	-	-
Wallowa	279	50	.18	.89	.22	.25	-	-	-	-	-
Wheeler	109	12	.11	.20	.19	.29	10	.09	.23	-	-
TOTALS	884	243	.27	.64	.44	.23	81	.09	.29	.26	-

Table 11

HUNGARIAN PARTRIDGE BROOD COUNTS

Region	Females Observed	Females with Broods		Average Chicks per Brood		Average Chicks per Female		
		No.	Per cent	Brood	Chicks per Brood	1957-1956		
						1959	1958	1957
Central	6	6	100	1.8	1.8	6.5	11.0	7.5
Northeast	66	52	79	6.2	4.9	7.2	9.7	6.6
Southeast	4	2	50	3.5	1.8	6.4	8.5	9.0
STATE TOTALS	76	60	79	5.7	4.5	7.1	9.7	6.7

Table 12
CHUKAR PARTRIDGE BROOD COUNTS

Region	Females Observed	Females with Broods		Average Chicks per Brood	Average Chicks per Female		
		No.	Per cent		1959	1958	1957
Central	10	10	100	7.8	8.4	10.7	11.0
Northeast	49	48	98	8.5	11.3	10.3	11.6
Southeast	65	61	94	6.0	9.6	15.5	10.5
STATE TOTALS	124	119	96	7.3	9.2	11.3	11.1

Table 13
GROUSE AND MOUNTAIN QUAIL TRENDS IN EASTERN OREGON

County	Miles Traveled	Blue Grouse		Ruffed Grouse		Mountain Quail	
		No.	Birds per Mile	No.	Birds per Mile	No.	Birds per Mile
Wasco	46	6	.13	-	1	.02	-
CENTRAL	46	6	.13	-	1	.02	-
Baker	139	18	.13	.10	0	.00	4
Grant	21	0	.00	.09	0	.00	-
Morrow-Wheeler	167	6	.04	.09	3	.02	-
Umatilla	180	10	.06	.03	2	.01	-
Union	87	10	.11	-	0	.00	-
Wallowa	272	136	.50	.54	21	.08	0
NORTHEAST	866	180	.21	.22	.13	.26	.03
TOTALS AND AVERAGES	912	186	.20	.22	.13	.27	.03

Table 14

GROUSE AND MOUNTAIN QUAIL TRENDS IN WESTERN OREGON

County	Miles Traveled	Blue Grouse			Ruffed Grouse			Mountain Quail		
		No.	Birds per Mile		No.	Birds per Mile		No.	Birds per Mile	
			1959	1958		1957	1959		1958	1957
Benton	42	18	.43	-	0	.00	-	5	.12	-
Clackamas	26	11	.42	-	0	.00	-	0	.00	-
Clatsop	73	29	.40	.63	9	.12	.44	2	.03	.07
Columbia	11	5	.45	-	1	.09	-	23	2.09	-
Lane	123	35	.28	.20	10	.08	-	46	.37	.75
Lincoln	23	0	.00	.23	0	.00	.00	3	.13	.00
Linn	10	4	.40	-	0	.00	-	25	2.50	-
Polk	29	27	.93	-	0	.00	-	35	1.21	-
Tillamook	99	38	.38	.34	1	.01	.08	102	1.03	.92
Washington	35	3	.09	-	1	.03	-	35	3.18	-
NORTHWEST	471	170	.36	.55	22	.05	.12	276	.59	.69
Coos	97	5	.05	.03	3	.03	.04	21	.22	.30
Curry	41	21	.51	.33	0	.00	.02	8	.20	.25
Douglas	30	10	.33	-	11	.37	-	35	1.17	-
Jackson	168	10	.06	.02	6	.04	.00	10	.06	.09
Joseph	32	3	.09	.01	0	.00	.00	31	.97	.00
SO	368	49	.13	.06	20	.05	.01	105	.29	.15
TOTAL AND AVERAGE	839	219	.26	.35	42	.05	.08	381	.45	.47

Table 15

GROUSE HOOTING AND DRUMMING COUNTS

County	Miles Traveled	Blue Grouse			Ruffed Grouse		
		Heard	Average Heard per Mile		Heard	Average Heard per Mile	
			1960	1959		1958	1959
Clackamas	20	17	.85	.05	7	-.32	-.72
Clatsop	22	39	1.77	.50	7	.32	.72
Marion	20	15	.75	.41	-	-	-
Tillamook	18	21	1.17	.77	1	.06	.00
Washington	20	17	.85	.20	-	-	-
TOTALS	100	109	1.09	.38	8	.08	.04

Table 16

BLUE GROUSE BROOD COUNTS

Region	Females Observed	Females With Broods		Average Chicks per Brood	Average Chicks per Female		
		No.	Per cent		1959	1958	1957
Western Oregon	41	29	71	3.2	2.3	3.5	4.0
Eastern Oregon	30	14	47	4.9	2.3	4.1	4.4
STATE TOTALS	71	43	61	3.8	2.3	3.8	4.2

Table 17
RUFFED GROUSE BROOD COUNTS

Region	Females Observed	Females With Broods		Average Chicks per Brood	Average Chicks per Female			
		No.	Per cent		1959	1958	1957	1956
Western Oregon	6	6	100	2.4	2.4	5.4	3.4	5.5
Eastern Oregon	9	6	67	4.8	3.2	7.0	4.7	-
STATE TOTALS	15	12	80	3.6	2.9	6.2	4.1	2.8

Table 18
SAGE GROUSE STRUTTING GROUND COUNTS

County	No. of Areas	Male Grouse Counted							
		1960	1959	1958	1957	1956	1955	1954	1953
Crook	1	15	28	10	12	33	45	46	34
Deschutes	7	120	120	119	70	148	192	202	166
Harney	8	241	282	281	185	67	261	235	324
Lake	7	172	244	-	-	-	-	-	-
TOTALS	23	548	674	347	267	248	498	483	524

Table 19
SUMMER SAGE GROUSE TRENDS

County	No. Samples	Miles	Hens	Chicks	Other	Total	Sage Grouse Per Mile			Chicks Per Mile	
							1959	1958	1958		
Crook	-	-	-	-	-	-	-	11.4	-	-	5.8
Deschutes	-	-	-	-	-	-	-	1.0	-	-	0.3
Harney	8	178	12	47	367	426	2.4	1.9	0.3	0.5	1.8
Malheur	13	203	47	99	583	729	3.6	4.0	0.6	0.6	3.2
North Lake	5	80	16	46	62	124	1.6	3.0	-	-	2.0
South Lake	11	128	-	-	582	582	4.5	7.3	-	-	2.3
TOTALS	37	589	75	192	1,594	1,861	3.2	4.1	0.4	0.4	2.2

Table 20

FALL SAGE GROUSE TRENDS

Area	Sage Grouse Counted								
	1959	1958	1957	1956	1955	1954	1953	1952	1951
Century Ranch	-	318	266						
Chewaucan Marsh	-	777	870						
Duncan Reservoir	-	14	0						
Paulina Marsh	-	61	119						
Sheep Lake	-	17	18						
Summer Lake	-	74	46						
Sycan Marsh	-	48	38						
LAKE COUNTY TOTALS	-	1,309	1,357						
Antelope Flat	319	690	506	283	367	570	267	430	1,100
Beulah	-	-	29	-	26	22	42	19	27
Cow Lakes	76	184	223	104	55	50	96	165	400
Crooked Creek	-	21	87	-	-	66	53	65	94
Eiratola Ranch	-	43	162	63	144	175	220	-	-
Ironside	37	116	91	-	-	95	64	70	140
Jordan Valley	104	245	281	73	30	130	85	220	650
Mahogany Mountain	21	58	76	76	-	-	-	-	-
Oregon Canyon	41	59	146	87	-	-	-	-	-
Whitehorse Mountain	83	187	117	42	58	18	60	100	-
MALHEUR COUNTY TOTALS	681	1,603	1,718	800	688	1,126	887	1,069	2,411

Table 21

SAGE GROUSE BROOD COUNTS

County	Females Observed	Females With Broods		Average Chicks per Brood	Average Chicks per Female			
		No.	Per cent		1959	1958	1957	1956
Crook-Deschutes	24	16	67	4.2	2.8	3.8	3.0	2.8
Harney	23	9	39	2.4	1.0	6.6	4.2	1.5
Lake	65	35	54	5.0	2.7	4.2	4.3	2.6
Malheur	47	20	43	4.7	2.0	4.1	5.1	4.3
STATE TOTALS	159	80	50	4.5	2.3	4.7	4.2	2.8

Table 22

MOURNING DOVE CALL COUNT TRENDS

Year	No. Routes	Miles Covered	Doves Heard Per Mile	Doves Seen Per Mile
1953	7	140	1.65	0.93
1954	14	280	1.40	1.06
1955	15	300	1.57	1.55
1956	17	340	1.46	1.69
1957	17	340	1.67	0.87
1958	17	340	1.47	1.39
1959	18	360	1.98	2.16

Table 23

MOURNING DOVE ROADSIDE COUNT TRENDS

County	Miles	Doves Seen	Doves Per Mile		
			1959	1958	1957
Benton	72	86	1.2	7.3	-
Crook	50	232	4.6	2.0	3.2
Deschutes	50	54	1.1	1.5	3.1
Gilliam	40	303	7.6	6.2	7.7
Grant	38	97	2.6	1.6	2.7
Jackson	100	1,006	10.1	8.0	3.1
Jefferson	38	1,867	49.1	16.4	10.4
Klamath	86	665	7.7	1.8	-
Lake	90	174	1.9	10.5	7.3
Lane	60	405	6.8	5.5	1.8
Marion	20	43	2.2	.9	4.1
Morrow	20	229	11.5	5.6	13.5
Umatilla	73	513	7.0	6.0	1.7
Wasco	73	688	9.4	6.8	5.3
Wheeler	33	166	5.0	3.9	5.6
Yamhill	20	38	1.9	2.9	5.0
TOTALS	863	6,566	7.6	5.3	4.8

Table 24

MOURNING DOVE SPRING QUADRAT COUNT TRENDS

Region	Doves Per 100 Acres							
	1960	1959	1958	1957	1956	1955	1954	1953
Northwest	3.5	18.8	6.0	17.4	3.9	5.3	8.8	5.2
*Southwest	28.1	28.0	10.0	10.0	7.7	6.3	6.3	5.7

*Southwest District only.

Table 25

MOURNING DOVE BAND RECOVERIES BY LOCATION

Where Recovered	Year Recovered										Totals	Per cent of Recoveries
	1959	1958	1957	1956	1955	1954	1953	1952				
Arizona	1	1	0	1	0	3	2	1	9		6.5	
California	1	6	5	4	2	8	1	0	27		19.4	
Mexico	0	1	1	6	1	3	2	1	15		10.8	
Nevada	0	0	0	0	0	3	1	0	4		2.9	
New Mexico	0	0	0	0	1	0	0	0	1		0.7	
Oregon	1	7	5	15	18	19	5	1	71		51.1	
Utah	0	0	0	0	0	0	0	1	1		0.7	
Washington	0	2	3	2	1	2	1	0	11		7.9	
TOTALS	3	17	14	28	23	38	12	4	139		100.0	

Table 26

MOURNING DOVE BAND RECOVERIES BY YEAR

Year Banded	Number Banded	Year Recovered										Total Recoveries	Per cent Recovery	
		1959	1958	1957	1956	1955	1954	1953	1952	1951	1950			
1950	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1951	35	0	0	0	0	0	0	0	0	0	0	0	0	0
1952	383	0	0	0	1	0	3	4	4	0	0	0	12	3.1
1953	882	1	0	2	2	0	9	8	0	0	0	0	22	2.5
1954	1,223	0	3	1	8	6	26	0	0	0	0	0	44	3.5
1955	676	0	3	1	8	17	0	0	0	0	0	0	29	4.3
1956	388	0	2	5	9	0	0	0	0	0	0	0	16	4.1
1957	216	0	2	5	0	0	0	0	0	0	0	0	7	3.2
1958	144	2	1	0	0	0	0	0	0	0	0	0	3	2.1
TOTALS	3,948	3	11	14	28	23	38	12	4	0	0	0	133	3.4

Table 27

BANDTAILED PIGEON TRENDS

County	Area	Pigeons Counted		Per cent of Change
		1959	1958	
Benton	Pigeon Butte	732	405	+81%
Clackamas	Austin Hot Springs	-	407	-
Columbia	Dutch Canyon	324	347	- 7%
Coos	Isthmus Slough	338	414	-24%
Douglas	Hudson Slough	1,191	1,171	+ 2%
Lane	Camas Swale	96	-	-
	Cushman	508	337	+51%
Linn	Crawfordsville	422	474	-11%
Marion	Aurora	284	220	+29%
Tillamook	Nehalem	314	109	+188%
Yamhill	Silver Springs	160	164	- 2%
TOTALS		4,369	4,078	+ 7%



Table 28

BAND-TAILED PIGEON BAND RECOVERIES
NEHALEM BANDING STATION TILLAMOOK COUNTY

Banding Year	Number Banded	Number of Band Recoveries by Year											Total Recovered	Per cent Recovery
		1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1950		
1950	77	0	0	0	0	1	0	0	0	1	1	4	7	9.1
1952	69	1	0	1	0	0	4	0	0	0	0	0	6	8.7
1953	245	0	1	0	1	3	8	16	0	0	0	0	29	11.8
1954	294	1	1	3	6	6	11	0	0	0	0	0	28	9.5
1955	196	1	1	3	1	9	0	0	0	0	0	0	15	7.7
1956	483	1	10	8	25	0	0	0	0	0	0	0	44	9.1
1957	226	5	8	6	0	0	0	0	0	0	0	0	19	8.4
1958	213	4	9	0	0	0	0	0	0	0	0	0	13	6.1
1959	42	2	0	0	0	0	0	0	0	0	0	0	2	4.8
TOTALS	1,845	15	30	21	33	19	23	16	1	1	1	4	163	8.8

Table 29

1959 UPLAND GAME SEASONS

Species	Hunters		Per Cent of Total Hunters	Kill	Birds per Hunter	Birds per Time Afield	Average Times Afield
	Number	Kill					
Pheasants	97,474	375,641	32.9		3.9	0.9	4.4
Quail	32,588	224,123	11.0		6.9	1.8	3.8
Chukar partridge	11,373	36,326	3.8		3.2	1.1	3.0
Hungarian partridge	6,016	16,818	2.0		2.8	0.8	3.7
Blue and ruffed grouse	15,332	32,770	5.2		2.1	1.0	2.2
Sage grouse	7,127	17,304	2.4		2.4	1.2	2.1
Doves	17,557	194,189	5.9		11.1	3.2	3.4
Pigeons	13,143	86,019	4.4		6.5	2.0	3.2

Table 30

SUMMARY OF UPLAND GAME SEASONS

Year	Pheasants		Quail		Chukar Partridge		Hungarian Partridge		Forest Grouse		Sage Grouse		Mourning Doves		Band-tailed Pigeons		
	Hunters	Kill	Hunters	Kill	Hunters	Kill	Hunters	Kill	Hunters	Kill	Hunters	Kill	Hunters	Kill	Hunters	Kill	
1950	74,968	192,118	12,777	64,163													
1951	83,920	237,037	12,777	75,373													
1952	82,145	244,791	21,903	107,105					24,400	40,504		18,788					
1953	90,441	274,940	28,340	147,651					22,812	36,043		11,406					
1954	94,699	292,527	29,950	149,352					19,120	32,886							
1955	92,741	278,223	25,545	149,740					19,536	31,923							
1956	83,206	226,320	25,472	115,643	3,820				21,636	36,780							
1957	88,691	310,096	21,930	124,431	5,321	10,319	5,321	11,609	18,813	38,916				13,169	117,875	14,621	93,853
1958	102,789	477,075	38,470	280,345	15,809	91,558	11,172	45,190	27,315	73,510	7,374	21,284	16,870	158,471	20,278	122,226	
1959	97,474	375,641	32,588	224,123	11,373	36,326	6,016	16,818	15,332	32,770	7,127	17,304	17,557	194,189	13,143	86,019	

Table 31
 1959 PHEASANT SEASON
 (Opening Weekend Data)

District	Hunters Checked	Hours Hunted	Birds Killed	Birds per Hunter	Birds per Hour	Age Ratios			
						Young		Old	
						No.	Per cent	No.	Per cent
North Coast	148	287	62	0.4	0.2	60	97	2	3
North Willamette	53	127	47	0.9	0.4	38	81	9	19
South Willamette	29	55	6	0.2	0.1	4	80	1	20
Lane	86	280	64	0.7	0.2	57	89	7	11
NORTHWEST	316	749	179	0.6	0.2	159	89	19	11
Jackson	51	116	62	1.2	0.5	48	77	14	23
Douglas	32	98	19	0.6	0.2	42	84	8	16
SOUTHWEST	83	214	81	1.0	0.4	90	80	22	20
Columbia	111	234	65	0.6	0.3	47	76	15	24
Deschutes	47	194	44	0.9	0.2	34	77	10	23
Klamath	81	376	34	0.4	0.1	10	29	24	71
CENTRAL	239	804	143	0.6	0.2	91	65	49	35
Umatilla	155	643	109	0.7	0.2	54	71	22	29
Hepner	105	299	42	0.4	0.1	33	79	9	21
Union	47	91	39	0.8	0.4	33	85	6	15
Baker	33	84	41	1.2	0.5	33	80	8	20
Grant	32	126	6	0.2	0.0	3	50	3	50
NORTHEAST	372	1,243	237	0.6	0.2	156	76	48	24
Lake	31	-	23	0.7	-	-	-	-	-
Harney	17	31	3	0.2	0.1	0	0	3	100
Malheur	228	1,297	222	1.0	0.2	102	58	73	42
SOUTHEAST	276	1,328	248	0.9	0.2	102	57	76	43
TOTALS AND AVERAGES, 1959	1,286	4,338	888	0.7	0.2	598	74	214	26
TOTALS AND AVERAGES, 1958	1,813	6,180	2,086	1.2	0.3	1,312	78	356	22
TOTALS AND AVERAGES, 1957	956	3,154	1,064	1.1	0.3	649	81	148	19
TOTALS AND AVERAGES, 1956	938	2,868	694	0.7	0.2	435	76	138	24

Table 34
1959 BLUE AND RUFFED GROUSE SEASON

District	Hunters Checked	Hours Hunted	Grouse Killed				Total	Birds per Hour	Birds per Hunter
			Blue		Ruffed				
			Number	Per cent Young	Number	Per cent Young			
North Coast	0	0	0	-	0	0	0.0	0.0	
North Willamette	11	24	2	100	0	2	0.1	0.2	
Lane	21	-	10	-	5	15	-	0.7	
NORTHWEST	32	24	12	-	5	17	0.1	0.5	
South Coast	-	-	-	-	-	-	-	-	
SOUTHWEST	-	-	-	-	-	-	-	-	
Columbia	39	-	7	-	14	21	-	0.5	
Klamath	-	-	-	-	-	-	-	-	
CENTRAL	39	-	7	-	14	21	-	0.5	
Grant	32	59	4	-	6	10	0.2	0.3	
Heppner	15	41	4	-	0	4	0.1	0.3	
Umatilla	22	44	9	89	7	16	0.4	0.7	
Wallowa	113	321	85	-	39	124	0.4	1.1	
NORTHEAST	182	465	102	-	52	154	0.3	0.8	
Malheur	10	40	9	33	0	9	0.2	0.9	
SOUTHEAST	10	40	9	-	0	9	0.2	0.9	
TOTALS AND AVERAGES	263	529	130	-	71	201	0.3	0.8	

Table 35

1959 SAGE GROUSE SEASON

County	Hunters Hunted	Hours Hunted	Grouse Killed	Grouse per Hour		Grouse per Hunter		Sex-Age Ratios			
				1959	1958	1959	1958	Per cent Males	Per cent Females	Per cent Young	Per cent Adults
				1959	1958	1959	1958				
Harney	47	188	81	0.4	-	1.7	0.7	31	69	-	-
Lake	196	1,321	248	0.2	1.2	1.3	1.5	-	-	62	38
Malheur	121	246	154	0.6	1.5	1.3	1.8	45	55	24	76
TOTALS AND AVERAGES	364	1,755	483	0.3	1.2	1.3	1.6	38	62	43	57

Table 36

1959 DOVE SEASON

County	Hunters Checked	Hours Hunted	Doves Killed	Birds per Hour	Birds per Hunter		
					1959	1958	1957
					1959	1958	1957
Crook	30	132	142	1.1	4.7	9.1	7.2
Deschutes	64	208	433	2.1	6.8	5.3	7.0
Jackson	35	62	90	1.5	2.6	3.6	1.4
Jefferson	73	269	408	1.5	5.6	5.8	3.3
Klamath	27	108	189	1.8	7.0	5.5	3.4
Lake	70	266	388	1.5	5.5	5.6	4.4
Lane	8	32	12	0.4	1.5	2.1	3.7
Malheur	7	12	40	3.3	5.7	6.0	7.0
Marion	8	16	37	2.3	4.6	2.8	5.5
Wasco	27	101	120	1.2	4.4	4.8	5.2
TOTALS AND AVERAGES	349	1,206	1,859	1.5	5.3	5.1	5.4

Table 37
1959 BAND-TAILED PIGEON SEASON

District	Hunters Checked	Hours Hunted	Pigeons Killed	Birds	Birds	Crip- pling Loss	Adult-Juvenile Ratios	
				per Hour	per Hunter		Field Check	Corrected*
No. Coast	83	241	126	0.5	1.5	32%	3.7-1	3.2-1
No. Willamette	130	420	373	0.9	2.9	-	2.1-1	2.0-1
So. Willamette	62	244	234	1.0	3.8	-	7.3-1	5.3-1
Lane	30	230	100	0.4	3.3	31%	4.8-1	4.0-1
So. Coast	100	361	308	0.9	3.1	-	7.8-1	5.7-1
TOTALS AND AVERAGES	405	1,496	1,141	0.8	2.8	-	4.2-1	3.5-1

*5.3 per cent of birds with neck crescent are juveniles.

7.4 per cent of birds without neck crescent are adults.

Table 38
SUMMARY OF PIGEON SEASONS

Year	Hunters Checked	Pigeons Killed	Birds per Man Day	Age Ratio Adults to Young
1947	304	1,053	3.4	-
1948	466	1,405	3.0	-
1949	1,200	2,678	2.2	3.0-1
1950	947	2,253	2.4	3.2-1
1951	1,074	1,997	1.9	3.1-1
1952	1,175	1,947	1.7	3.4-1
1953	759	1,603	2.1	3.8-1
1954	743	1,518	2.0	3.3-1
1955	770	1,546	2.0	3.2-1
1956	714	1,862	2.6	2.6-1
1957	730	1,453	2.0	3.6-1
1958	608	1,187	2.0	2.7-1
1959	405	1,141	2.8	3.5-1

Table 39
LAND ACCESS SURVEY

County	Miles Samples	Not Posted %	No Hunting %	Hunting by Permission %	Private Clubs %
Clackamas	20	90	10	0	0
Douglas	30	65	35	0	0
Hood River	21	93	7	0	0
Jackson	25	48	49	3	0
Jefferson	46	66	29	5	0
Josephine	12	73	27	0	0
Linn	30	60	23	9	8
Marion	20	91	9	0	0
Sherman	30	90	7	3	0
Wasco	25	57	28	15	0
Yamhill	20	90	10	0	0
TOTALS	279	75	21	3	1

Table 40

1959 GAME BIRD PRODUCTION

Species	Corvallis	Hermiston	Total
<u>PHEASANTS:</u>			
January 1, inventory	5,092	1,500	6,592
Losses	220	32	252
Spring liberations	4,872	1,468	6,340
Eggs gathered	66,609	24,000	90,609
Eggs to 4-H	3,750	0	3,750
Eggs to individuals	9,837	3,506	13,343
Eggs set	19,846	16,000	35,846
Pheasants hatched	14,988	12,400	27,388
Per cent hatched	75.5	77.5	76.4
Pheasants raised	13,803	10,521	24,324
Per cent raised	92.1	84.8	88.8
Pheasants liberated	13,558*	10,404	23,962
Spring	4,872	1,468	6,340
Summer	2,703	7,742	10,445
Fall	5,983	1,194	7,177
December 31, inventory	5,117	1,585	6,702
			(Total
<u>PARTRIDGE:</u>	(European Gray)	(Chukar)	Partridges)
January 1, inventory	486	1,405	1,891
Losses	147	25	172
Spring liberations	339	1,380	1,719
Eggs gathered	2,827	7,900	10,727
Eggs set	2,599	5,000	7,599
Birds hatched	1,561	4,450	6,011
Per cent hatched	60.1	89.0	79.1
Birds raised	1,168	4,292	5,460
Per cent raised	74.8	96.4	90.8
Summer liberations	660	2,812	3,472
Total liberations	999	4,192	5,191
December 31, inventory	508	1,480	1,988

*Includes 168 birds sold for dog trials and 20 birds used for experimental purposes by students and college personnel.

Table 41

1959 PHEASANT LIBERATIONS

Counties by Regions	1959 Liberations			Total Released
	Adult Spring	Young Summer	Adult Fall	
Benton	217	59	389	665
Clackamas	192	360	416	968
Clatsop			383	383
Lane	767		960	1,727
Linn	766	63	696	1,525
Marion	576	445	384	1,405
Multnomah		479		479
Polk	432		336	768
Washington	766		352	1,118
Yamhill	768		767	1,535
NORTHWEST	4,484	1,406	4,683	10,573
Douglas		720	382	1,102
Jackson	384	405	767	1,556
Josephine		315		315
SOUTHWEST	384	1,410	1,149	2,973
WESTERN OREGON TOTALS	4,868	2,846	5,832	13,546
Crook	196	396		592
Deschutes	204	396		600
Jefferson	300	499		799
Klamath		896		896
Wasco		500		500
CENTRAL	700	2,687		3,387
Baker	216	211		427
Gilliam		500		500
Grant		600		600
Morrow		396		396
Umatilla		316	792	1,098
Union	336	489	392	1,217
Wallowa	216	848		1,064
Wheeler		304		304
NORTHEAST	768	3,664	1,184	5,606
Harney		504		504
Lake		890		890
SOUTHEAST		1,394		1,394
EASTERN OREGON TOTALS	1,468	7,745	1,184	10,397
STATE TOTALS	6,336	10,591	7,016	23,943

Table 42

CHUKAR PARTRIDGE LIBERATIONS

Counties by Regions	Adult	Young	Total	Total Released 1951-1959
Polk		200	200	200
NORTHWEST		200	200	200
Douglas	448		448	448
Jackson		448	448	1,748
SOUTHWEST	448	448	896	2,196
Baker		400	400	4,331
Gilliam			-	3,399
Grant			-	3,951
Morrow	14		14	3,401
Umatilla		306	306	5,888
Union			-	680
Wallowa	400		400	4,725
Wheeler	60		60	2,617
NORTHEAST	474	706	1,180	28,992
Crook		107	107	3,678
Deschutes		108	108	1,307
Jefferson			-	3,969
Klamath	448		448	2,739
Sherman			-	2,758
Wasco			-	4,050
CENTRAL	448	215	663	18,501
Harney		220	220	6,943
Lake		1,022	1,022	7,864
Malheur			-	5,781
SOUTHEAST		1,242	1,242	20,588
STATE TOTALS	1,370	2,811	4,181	70,477

Table 43

EUROPEAN GRAY PARTRIDGE LIBERATIONS

County	1959 Liberations			Total Releases 1950 - 1959
	Adult	Young	Total	
Benton		660	660	1,011
Lane				36
Linn				1,304
Marion				350
Polk	337		337	1,571
TOTALS	337	660	997	4,272

Table 44

VALLEY QUAIL LIBERATIONS*

Counties by Regions	Total Liberated
Clatsop	550
Tillamook	50
NORTHWEST	600
Klamath	550
CENTRAL	550
Baker	380
Umatilla	480
Union	100
NORTHEAST	960
STATE TOTALS	2,110

*Wild birds trapped in February and held at
Hermiston Game Farm.



Administration:

Administration of the waterfowl resource while the birds are within the nation's borders is the direct responsibility of the U. S. Fish and Wildlife Service. The states, however, have a direct responsibility of management while the birds are within their boundaries. Such management includes obtaining factual data on reproduction, migration, mortality, and on breeding, feeding, and wintering ground conditions. Methods of obtaining detailed information are coordinated in the seven Pacific Flyway states by a flyway committee to assure results which can be combined and interpreted on a flyway basis.

Winter Inventory:

Even though waterfowl populations were down substantially throughout the nation, the wintering population in Oregon was the highest ever recorded. The mallard population, however, was down about 100,000 birds from 1959. This recorded decrease was more than made up for by an increase in the number of wintering pintails and widgeons. The 1,019,356 birds counted is a 2.1 per cent increase over 1959 and a 30.2 per cent increase over the 3-year average for 1957-1959. Inventory figures for the last five winters are presented in Table 1.

Table 1
WINTER INVENTORY TRENDS IN OREGON

Species	1960	1959	1958	1957	1956
Mallard	413,194	514,393	316,414	375,605	150,089
Gadwall	345	1,186	1,849	979	409
Baldpate	216,951	189,378	84,971	107,147	79,841
Green-winged teal	10,373	9,141	7,656	11,051	3,066
Shoveller	2,371	2,477	226	361	283
Pintail	207,417	123,129	74,652	86,980	62,421
Wood duck	54	25	29	10	11
Redhead	255	103	28	27	50
Canvasback	2,856	4,722	4,473	2,841	5,837
Scaup	9,750	9,893	5,255	9,755	8,570
Ring-necked duck	442	545	1,129	116	2,022
Harlequin	6	-	-	-	-
Goldeneye	1,158	2,070	2,578	2,358	1,583
Bufflehead	10,953	2,109	1,516	1,606	732
Ruddy	19,560	7,889	10,788	3,868	7,788
Merganser	915	996	2,650	3,382	633
Scoter	368	589	634	2	1,101
Old Squaw	-	-	2	2	-
Unidentified ducks	9,848	15,103	52,378	9,037	44,516
TOTAL DUCKS	906,816	883,748	567,228	616,029	368,952
Coot	32,863	20,208	17,181	23,559	42,157
Snow goose	179	575	131	182	150
Cackling goose	8,400	6,605	1,554	1,653	723
White-fronted goose	-	182	54	687	-
Canada goose	66,710	81,393	43,751	64,211	63,968
Black brant	652	1,121	2,778	1,493	2,073
Blue goose	-	-	-	1	-
TOTAL GEESE	75,941	89,876	48,268	58,469	66,914
Swan	3,736	4,435	5,786	3,996	7,477
TOTAL WATERFOWL	1,019,356	998,267	638,463	711,811	485,500
Per cent change from previous year	+2.1%	+56.4	-10.3%	+46.6%	+27.3%

Due to prolonged inclement weather, the lower Columbia River was not censused by plane as in previous years. A large concentration of swan which stayed on the river, therefore, was not tallied. On a flight some three weeks after the inventory was complete, 4,300 swans were counted in the sector not previously covered.

Harvest:

The 94-day duck, goose, and coot season extended from noon, October 7, 1959 through January 8, 1960; brant season from November 10, 1959 through January 8, 1960; and snipe season from October 31, 1959 through November 29, 1959.

The major changes from 1959 regulations were: (1) changing shooting hours of one-half hour before sunrise to sunset, to sunrise to sunset; (2) removal of bonus ducks from the bag; and (3) prohibiting the brant season from extending later than the framework of the general waterfowl season.

Bag limits were as follows:

Duck - Five a day, 10 in possession. Only one wood duck and one hooded merganser and an aggregate of not more than 2 redheads, canvasbacks or ruddies were allowed a day or in possession.

Goose - Three a day or in possession plus three snow geese a day or in possession. No open season on Ross's goose.

Brant - Three a day or in possession.

Coot - Twenty-five a day or in possession.

Snipe - Eight a day or in possession.

Merganser (American and red-breasted) - Five a day, 10 in possession.

Hunting was quite poor during most of the season and little effort was made toward determining hunting success through bag checks. Results of these bag checks are shown in the following table.

Table 2

HUNTER SUCCESS

Area	Hunters	Ducks	Geese	Success	Hours Hunted
Malheur Co.	17	66	2	3.9	79
Camas Swale	30	35	0	1.2	320
N. Coast	58	147	15	2.8	-
TOTAL	105	248	17	2.5	-

Results of a random mail survey are presented in Table 3 and show the harvest of waterfowl in Oregon to be 22 per cent lower than in 1958. The take of ducks was down 27 per cent, while the goose kill was up 44 per cent.

Table 3
WATERFOWL KILL

	1959	1958	1957
Size of sample	17,536	5,047	4,961
Per cent of license holders hunting waterfowl	20.1%	24.1%	25.4%
Number of waterfowl hunters	59,496	67,819	67,674
Average times afield	6.50	6.15	6.71
Ducks killed per day	1.53	1.97	1.74
Geese killed per day	0.25	0.16	0.18
Total ducks killed	598,313	823,822	789,942
Total geese killed	<u>96,211</u>	<u>66,757</u>	<u>81,591</u>
TOTAL WATERFOWL KILLED	694,524	890,579	871,591
CHANGE FROM PRECEDING YEAR	-22.0%	+2.2%	+15.6%

Most duck hunters reported very poor hunting throughout the season. This contention was substantiated by the mail survey which showed that hunters averaged only 1.53 ducks per day, the lowest success ratio since 1953. Goose hunters, however, fared better, averaging 0.25 geese per day and enjoyed the best hunting since 1954.

A number of factors contributed to the light harvest of ducks. Low production in the drouth area of the prairie provinces reduced the size of the crop, providing fewer birds-of-the-year for the hunter. Absence of young pin-tails was especially noticeable during pre-season banding operations and in hunters' bags. Mild weather, ample winter food, absence of fall rains to fill ponds and marshes, curtailed hunting hours and bag limits, and the increase in price of duck stamps were all factors serving to reduce the duck kill.

Hunters using the public shooting grounds also experienced comparatively poor hunting. The average daily success dropped from 2.37 birds per man in 1958 to 1.77 last season. A summary of shooting ground successes is to be found in Table 4, with species composition of the kill for the past two seasons presented in Table 5.

Table 4

SUMMARY OF SHOOTING GROUNDS SUCCESS

Area	Days of Season	Hunter Days	Harvest				Total	Success Ratio
			Ducks	Geese	Coots	Snipe		
Summer Lake	94	6,260	6,239	6,621	102	10	12,972	2.07
Sauvie Island	47	9,560	14,668	244	43	6	14,961	1.56
Warner Valley	40	699	229	1,055	-	-	1,284	1.84
Malheur Refuge			Closed due to low water					
TOTALS		16,519	21,136	7,920	145	16	29,217	1.77

Juvenile Season:

Lack of rainfall which caused a shortage of water in the ponds on the E. E. Wilson Area, along with a small population of ducks, reduced juvenile hunter success to 2 birds per hunter as compared with 2.37 for the 1958 season. Forty-six juvenile hunters took 92 ducks on the five permitted hunting days. The youngsters were accompanied by licensed adult hunters and were assigned to blinds around the ponds.

Other Mortality:

Waterfowl which wintered in Oregon returned north in excellent condition due to another mild winter and an abundance of natural and cultivated food crops. No losses due to starvation were recorded. Some artificial feeding was resorted to on Sauvie Island, but the purpose was to dispose of an old supply of weevil-infested grain rather than to supply a need of the birds.

Damage:

Most waterfowl damage complaints were forwarded to the U. S. Fish and Wildlife Service for action. The usual number of complaints was received from the Klamath basin and Umatilla county where damage to unharvested grain in the fall and sprouted grain in the spring is common.

Production:

Results obtained from breeding ground surveys are presented in Table 6, with trends in duck and goose production in Tables 7, 8, and 9. Duck production, according to the limited sampling, was only half that recorded in 1958 but slightly above the peak production season in 1957.

In addition to the production shown in Table 6, a census of 60 square miles in Malheur county showed 59 broods of ducks with 284 young and one-half square mile in Jefferson county revealed 7 broods with 56 young (mallard, 4 broods with 36 young; 2 blue-winged or cinnamon teal with 15 young; and 1 pintail with 5 young).

Table 5
SPECIES TAKEN ON PUBLIC SHOOTING GROUNDS, 1959 AND 1958 SEASONS

Species	Summer Lake		Sauvie Island		Malheur		Warner Valley		Total	
	1959	1958	1959	1958	1959	1958	1959	1958		
Mallard	1,408	2,270	6,062	11,223	C	750	112	557	7,582	14,800
Baldpate	1,623	2,153	3,770	7,340	l	431	15	76	5,408	10,000
Green-winged teal	699	754	1,765	1,900	o	54	6	9	2,470	2,717
Pintail	1,705	2,037	2,417	2,990	s	333	84	288	4,206	5,648
Shoveller	409	466	238	209	e	194	-	31	647	900
Gadwall	186	151	58	75	d	393	-	37	244	656
Scaup	31	16	123	130	d	16	3	-	157	162
Canvasback	17	44	42	56	d	275	1	-	60	375
Redhead	57	131	9	14	u	23	2	15	68	183
Ruddy	7	25	19	12	e	6	2	3	28	46
Goldeneye	13	15	11	35	t	16	2	-	26	66
Bufflehead	38	29	32	59	o	8	-	3	70	99
Ring-necked duck	5	1	67	30	l	17	-	-	72	48
Hooded merganser	2	1	7	11	l	8	-	-	9	20
American merganser	7	3	17	33	l	-	-	-	24	36
Cinnamon teal	22	61	-	-	o	-	-	-	22	61
Wood duck	7	-	22	27	w	1	-	3	29	31
Blue-winged teal	1	-	5	-	w	-	2	4	8	4
White-winged scoter	-	-	-	10	w	6	-	-	-	16
Surf scoter	1	-	3	4	a	-	-	-	4	4
Mallard-Pintail X	1	-	1	-	t	-	-	-	2	-
Blue-winged/Cinn. teal	-	-	-	-	e	1	-	-	-	1
Old squaw	-	-	-	-	r	1	-	-	-	1
TOTAL DUCKS	6,239	8,157	14,668	24,158		2,533	229	1,026	21,136	35,874
Snow goose	6,226	3,076	6	2	C	78	258	405	6,490	3,561
Canada goose	198	169	104	36	l	119	80	133	382	457
Cackler	47	50	37	21	o	5	688	582	772	658
White front	147	68	13	-	s	11	26	76	186	155
Lesser Canada	3	1	84	54	e	4	3	14	90	73
Ross's goose	-	1	-	-	d	-	-	-	-	1
TOTAL GEESE	6,621	3,365	244	113		217	1,055	1,210	7,920	4,905
Coot	102	136	43	161		1	-	8	145	306
Snipe	10	10	6	-		-	-	-	16	10

Table 6

WATERFOWL PRODUCTION

Species	Klamath Basin (37.0 Sq. Miles)			Summer Lake (1.0 Sq. Mile)			Silver Lake (1.0 Sq. Mile)											
	No. Broods		No. Young	No. Broods		No. Young	No. Broods		No. Young									
	1959	1958	1957	1959	1958	1957	1959	1958	1957									
Mallard	192	85	101	1,009	421	540	19	13	11	137	104	76	4	7	21	21	51	148
Pintail	11	-	2	70	-	9	2	6	5	15	51	36	3	2	4	18	18	20
Gadwall	44	17	10	305	103	53	17	17	10	143	136	84	4	4	13	24	34	97
BW/Cinn. Teal	135	25	35	891	150	189	20	6	2	151	53	18	3	2	7	16	30	57
Shoveller	-	-	-	-	-	-	1	-	1	7	-	6	-	1	-	-	7	-
Redhead	605	253	687	3,354	1,414	4,437	12	26	14	77	184	107	-	3	5	-	22	40
Canvasback	46	-	3	276	-	13	-	-	-	-	-	-	-	-	-	-	-	-
Scaup	27	4	11	191	24	66	-	-	-	-	-	-	-	-	-	-	-	-
Ruddy	114	97	99	712	600	580	1	4	-	7	25	-	1	2	-	4	13	-
Wood Duck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unidentified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
and Other	-	6	-	-	36	-	1	-	-	8	-	-	-	-	-	-	-	-
Total Ducks	1,174	487	948	6,808	2,748	5,887	73	72	43	545	553	327	15	21	50	83	175	362
Canada Goose	236	244	233	1,016	1,182	1,065	75	74	79	283	343	337	47	58	71	241	248	306
Species	Paulina Marsh (0.75 Sq. Mile)			Abert Lake (3.4 Sq. Miles)			Umatilla County (4.0 Sq. Miles)											
	No. Broods		No. Young	No. Broods		No. Young	No. Broods		No. Young									
	1959	1958	1957	1959	1958	1957	1959	1958	1957									
Mallard	3	2	10	20	16	86	12	11	13	78	83	101	4	2	19	20	13	96
Pintail	1	4	2	6	33	13	4	3	2	28	23	15	-	3	5	-	12	26
Gadwall	2	2	2	16	17	16	4	5	7	28	44	50	1	1	2	2	7	3
BW/Cinn. Teal	6	1	3	40	12	17	2	1	1	18	10	6	-	3	4	-	14	24
Shoveller	1	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Redhead	-	1	2	-	7	17	1	4	6	6	26	27	-	-	1	-	-	4
Scaup	-	1	-	-	5	-	1	-	-	-	-	-	-	-	-	-	-	-
Ruddy	-	-	-	-	-	-	1	3	1	4	19	5	-	-	-	-	-	-
Wood Duck	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	9	-	1
Unident. & Other	1	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Ducks	14	11	19	98	90	149	24	27	30	162	205	204	7	9	32	31	46	154
Canada Goose	-	6	-	-	27	-	26	26	18	119	114	74	-	-	8	-	-	28

Table 7
WATERFOWL PRODUCTION IN OREGON
(Comparative trends on 45.7 sq. miles)

Species	No. Broods			No. Young		
	1959	1958	1957	1959	1958	1957
Mallard	234	120	175	1,285	688	1,047
Pintail	21	18	20	137	137	119
Gadwall	72	46	44	518	341	303
BW/Cinn. Teal	166	38	52	1,116	269	311
Shoveller	2	1	1	14	7	6
Redhead	618	287	715	3,437	1,653	4,632
Canvasback	46	0	3	276	0	13
Scaup	27	5	11	191	29	66
Ruddy	117	106	100	727	657	585
Wood duck	2	0	1	9	0	1
Unident. & Misc.	2	6	0	19	36	0
TOTAL DUCKS	1,307	627	1,122	7,727	3,817	7,083
Canada Goose	376	408	409	1,630	1,914	1,816

Table 8
DUCK PRODUCTION TRENDS

Sample	No. Broods			No. Young			Av. Size Broods		
	1959	1958	1957	1959	1958	1957	1959	1958	1957
Klamath Basin	1,174	487	948	6,808	2,748	5,887	5.8	5.6	6.2
Summer Lake	73	72	43	545	553	327	7.5	7.7	7.6
Silver Lake	15	21	50	83	175	362	5.5	8.3	7.2
Paulina Marsh	14	11	19	98	90	149	7.0	8.2	7.8
Abert Lake	24	27	30	162	205	204	6.8	7.6	6.8
Umatilla County	7	9	32	31	46	154	4.4	5.1	4.8
TOTALS	1,307	627	1,122	7,727	3,817	7,083	5.9	6.1	6.3

Table 9
CANADA GOOSE PRODUCTION TRENDS

Sample	No. Broods			No. Young			Av. Size Broods		
	1959	1958	1957	1959	1958	1957	1959	1958	1957
Klamath Basin	236	244	233	1,016	1,182	1,065	4.3	4.8	4.6
Summer Lake	67	74	79	283	343	337	4.2	4.6	4.3
Silver Lake	47	58	71	212	248	306	4.5	4.3	4.3
Abert Lake	26	27	18	119	118	74	4.6	4.4	4.1
TOTALS	376	409	401	1,630	1,918	1,782	4.3	4.7	4.4

The snow pack in the mountains was the lightest recorded in a number of years. The light spring runoff, along with very little precipitation, resulted in the drying up of many potholes in southeastern Oregon and lowering the water levels in the major marshes. Only one half the normal habitat in Malheur Refuge was suitable for production. Water levels there were the lowest in 25 years.

Except in Malheur and Harney counties, the drouth did not noticeably affect production. Although water levels dropped in Warner Valley, the Klamath basin, and at Summer Lake, they did not reach the critical stage.

Duck broods were late in showing, with a high percentage of Class I broods being observed in late July. Production was high on areas not affected by drouth.

Estimates of the biologist on the Malheur Refuge were only 8 per cent of last year's production on ducks, 4 per cent on coots, and 30 per cent on geese.

In 1958 an intensive search at Summer Lake revealed 268 goose nests. A portion of this area at that time contained 59 nests with 311 eggs. This same sample has been run in succeeding years with the following results:

TABLE 10
SUMMER LAKE GOOSE NEST CENSUS

No. of Nests			No. of Eggs			Av. No. Eggs per Nest		
1960	1959	1958	1960	1959	1958	1960	1959	1958
54	64	59	265	326	311	4.9	5.0	5.2

Table 11 presents results of goose nest censuses on the Columbia River. These checks were made by the U. S. Fish and Wildlife Service and Washington Game Department, with some assistance in 1959 and 1960 by the Oregon Game Commission.

Fall Migrations:

Southeastern Oregon:

The first of the early flight of pintails was recorded in the Klamath basin during the first week of August and at Summer Lake on August 5. The size of the flights during peak migration periods was less than that recorded in 1958. A peak of 34,000 pintails was recorded on the Malheur Refuge on July 16, as compared with a peak of 64,000 on August 6, 1958.

Widgeon moved through the southeastern section of the state in increased numbers from 1958. A high of 55,000 was counted on Malheur Refuge on October 13, as compared with 33,000 last year, and a peak of 128,000 in Warner Valley to last year's 70,000.

A few snow geese arrived at Summer Lake as early as September 10, but the main migration did not get under way until the first of October. By November 9,

an estimated 408,000 snow geese occupied the marsh. A sharp freeze on November 17 and 18 caused most of them to continue on south. The last large flights left on December 3. On Malheur Refuge, a peak population of 9,000 snow geese was tallied on October 13. The first arrivals came about September 30 and most had departed by November 13.

White-fronted geese arrived at Summer Lake about September 1 and left with the opening of hunting season on October 7.

Northeastern Oregon:

Mallard populations throughout the fall migration period compared favorably with flights recorded in 1958, both as to arrival dates and numbers. A sizeable increase has been recorded in this area within the last five years due to the Columbia River Development Project and comparatively mild winters. During severe winters, many ducks are forced to winter on the lower river and in the Willamette Valley where weather conditions are usually less severe.

Lesser Canada geese started arriving along the Columbia River to winter about October 1, the normal date. By the end of the month the migration was complete.

Western Oregon:

The peak population of waterfowl in western Oregon occurred during the first week of December. Flights of mallards arrived on normal dates but the numbers were approximately half of the populations recorded in 1958. A high of 125,000 mallards was recorded on Sauvie Island on December 3 as compared with a total of 200,000 on December 13, 1958.

The pintail and widgeon migrations compared favorably, both in dates and numbers with those of 1958.

Of unusual occurrence was a large flight of blue-winged teal through western Oregon in September. This species normally does not use this part of the state in numbers during their fall movements.

Tables 12 through 20 contain the periodic inventory figures for key waterfowl areas during the fall and winter months.

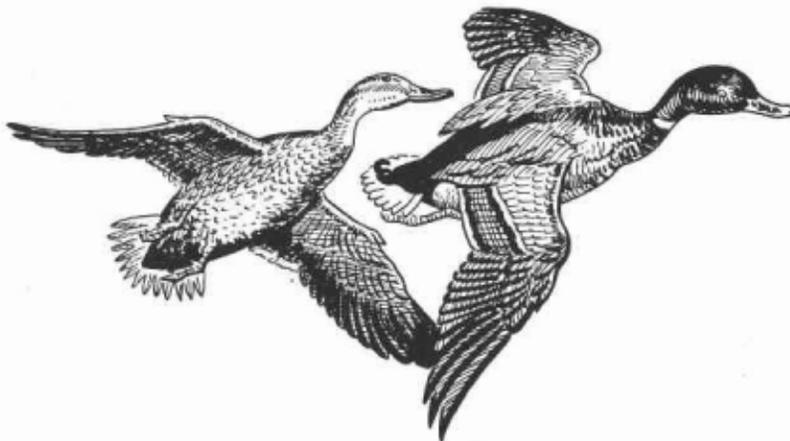


Table 11

*COLUMBIA RIVER CANADA GOOSE NESTING SURVEY
NUMBER OF LOCATED NESTS, 1950-1960
JOHN DAY PROJECT AREA (UMATILLA TO DAM SITE)

Island	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
1. Near Umatilla	0	-	-	-	-	-	-	-	0	-	-
2. No. 17	2	-	-	-	-	-	-	4	3	2	4
3. No. 18	1	-	-	-	-	-	-	2	2	1	1
4. Paterson (19120)	25	22	19	18	14	-	17	17	11	9	10
5. Blalock	1	0	0	0	0	-	-	1	2	1	6
6. No. 22 (0)	25	25	30	19	28	19	13	31	32	33	26
7. Whitcomb-Toms Camp (0)	6	3	4	-	5	3	3	3	5	4	3
8. Carley	10	13	14	-	19	5	10	13	9	9	9
9. Alderdale (25)	10	8	11	-	8	21	8	11	10	9	13
10. Near Alderdale (0)	-	-	-	-	-	-	0	0	0	0	0
11. Thanksgiving (0)	21	21	15	-	20	8	12	19	-	18	14
12. No. 27 (0)	17	25	17	-	19	-	11	12	-	18	18
13. Willow Creek (0)	-	-	0	-	0	0	-	0	-	1	0
14. No. 10	4	6	1	-	0	-	-	-	-	0	0
15. Pine Creek (28) (0)	-	10	11	-	14	18	-	21	-	20	15
16. McCarthy	-	14	9	-	10	5	-	11	-	14	8
17. No. 30 (0)	-	8	5	-	-	1	-	3	5	4	2
18. Near Arlington	0	0	0	-	1	-	3	2	3	0	0
19. Goose	-	-	0	-	-	-	-	0	1	2	3
20. Fountain	-	-	2	-	-	-	2	1	1	1	1
21. 4 O'clock (0)	-	-	1	-	-	-	2	1	0	-	-
22. Rock	-	-	0	-	-	-	-	0	0	1	2
23. Goodnoe (0)	-	-	3	-	-	-	-	6	8	11	9
24. Towal	-	-	9	-	-	-	-	3	4	5	3
25. Hook	-	-	1	-	-	-	-	0	0	0	0
26. John Day Group	-	-	20	-	-	-	-	16	19	15	16
TOTAL	122	155	172	37	138	80	81	177	115	178	163

HAT ROCK ISLANDS

No. 1 (0)	2	3	3	3	3
No. 2 (0)	6	7	5	5	3
No. 3 (0)	-	-	2	2	5
No. 4 (0)	4	5	4	4	3
No. 5 (0)	-	5	2	2	2
TOTAL	12	18	16	16	16

THE DALLES RESERVOIR AREA

Oregon Shore Is. (0)	-	2	2	2	2
Lower Miller (0)	-	2	2	2	2
Upper Miller Group	-	2	2	2	3
Miller	-	1	1	1	2
Rabbit	-	2	2	2	2
TOTAL	7	7	7	7	11

*Census by U. S. Fish and Wildlife Survey, Washington and Oregon Game Departments.
(0) Oregon Islands. Balance in Washington.
- Not censused.

Table 12

WATERFOWL POPULATION COUNTS

Sauvie Island

September 24, 1959 through January 2, 1960

Date	Whistling		Canada		Lesser		Cackling		Mallard		Pintail		Widgeon		Teal		Shoveller		Diving		Unidentified		*Other		Total
	Swan	Goose	Goose	Canada	Goose	Goose	Goose	Goose	Goose	Goose	Goose	Goose	Goose	Goose	Goose	Goose	Goose	Ducks	Ducks	Waterfowl	Waterfowl	Waterfowl	Waterfowl	Waterfowl	
Sept. 24	-	25	450	450	-	450	225	150	250	45	-	-	-	80	-	1,675									
Oct. 15	-	24	550	1,500	-	1,500	5,000	20,000	1,500	-	50	2,500	25	31,224											
Oct. 21	-	20	425	2,000	20	2,000	30,000	20,000	2,000	25	770	2,520	-	57,830											
Oct. 29	-	50	450	5,000	50	5,000	45,000	20,000	2,000	20	775	3,525	-	76,940											
Nov. 4	22	560	725	6,000	75	6,000	75,000	20,000	2,000	25	540	5,040	25	110,137											
Nov. 12	100	1,650	1,000	40,000	150	40,000	85,000	22,000	2,500	50	460	4,510	-	157,420											
Nov. 19	150	1,850	1,400	50,000	150	50,000	100,000	25,000	4,500	25	75	4,550	25	187,725											
Dec. 3	150	4,250	3,500	100,000	750	100,000	150,000	125,000	1,500	25	95	2,500	275	388,270											
Dec. 10	125	4,175	3,600	125,000	500	125,000	200,000	75,000	2,500	25	100	2,500	116	413,916											
Dec. 18	225	2,900	3,750	75,000	250	75,000	175,000	25,000	1,500	20	25	2,500	95	286,515											
Dec. 26	150	4,725	4,500	100,000	225	100,000	175,000	125,000	2,500	-	50	3,500	-	415,675											
Jan. 2	250	4,725	5,225	125,000	225	125,000	125,000	120,000	2,500	-	45	2,250	-	385,005											

* 125 white-fronted geese counted on December 3.

25 wood ducks observed October 15.

175 snow geese counted on January 2.

Table 13
 WATERFOWL POPULATION COUNTS
 Government Island
 October 15, 1959 through January 2, 1960

Date	Canada Goose	Lesser Canada	Cackling Goose	Mallard	Pintail	Widgeon	G.W. Teal	Diving Ducks	Other and Unidentified	Coot	Total
Oct. 15	5	15	-	75	50	450	50	-	25	-	670
Oct. 20	10	50	10	125	200	700	100	-	25	75	1,295
Oct. 29	20	40	20	250	850	500	75	-	50	85	1,890
Nov. 4	40	-	-	275	1,000	525	70	15	30	110	2,065
Nov. 12	80	50	-	350	2,500	850	75	20	40	150	4,115
Nov. 19	25	150	25	750	3,500	950	85	-	65	150	5,700
Dec. 3	250	25	25	125	125	850	20	-	25	-	1,445
Dec. 10	200	25	25	725	1,250	750	200	-	20	125	3,320
Dec. 18	200	25	25	525	1,250	350	20	-	20	80	2,495
Dec. 26	225	150	125	150	250	750	-	-	15	25	1,690
Jan. 2	100	75	25	125	525	775	-	-	52	35	1,712

32 whistling swan observed Jan. 2

Table 14
 WATERFOWL POPULATION COUNTS
 Columbia River from Celilo to John Day River
 October 8, 1959 through February 17, 1960

Date	Canada Goose	Mallard	Pintail	Widgeon	Goldeneye	Scaup	Other Ducks	Coot	Total
Oct. 8	1,100	3,500	2,000	400	-	10	2	300	7,312
Oct. 13	1,875	6,800	5,000	850	-	25	10	200	14,760
Oct. 19	4,050	10,300	4,500	3,500	-	25	15	200	22,590
Oct. 28	4,200	12,000	4,000	3,000	-	25	15	200	23,440
Nov. 5	5,600	18,500	6,100	2,200	-	15	6	150	32,571
Nov. 11	5,575	7,000	3,300	1,250	-	10	6	75	17,216
Nov. 19	7,094	6,872	3,600	4,413	-	8	21	134	22,142
Nov. 28	6,500	10,747	5,050	5,740	8	6	10	122	28,183
Dec. 5	3,850	13,100	2,750	4,200	-	40	26	100	24,066
Dec. 8	1,432	12,204	10,020	2,841	-	2	26	80	26,605
Dec. 17	5,055	11,325	1,800	1,825	6	12	8	50	20,081
Dec. 24	5,000	10,500	2,000	1,300	15	10	21	50	18,896
Dec. 31	5,000	20,310	6,115	4,300	10	3	17	120	35,875
Jan. 5	965	9,150	2,100	1,900	29	12	30	160	14,346
Jan. 15	90	2,850	1,000	1,100	-	-	-	-	5,040
Jan. 23	25	4,318	-	251	2	-	33	514	5,143
Jan. 29	400	9,180	221	300	10	5	39	364	10,519
Feb. 5	6,097	9,983	750	2,052	-	20	50	79	19,031
Feb. 11	90	3,897	6	660	9	27	50	60	4,799
Feb. 17	87	1,787	30	62	2	-	21	23	2,012

Table 15
 WATERFOWL POPULATION COUNTS*
 Cold Springs National Refuge
 August 21, 1959 through February 19, 1960

Date	Whistling Swan	Canada Goose	Mallard	Pintail	Widgeon	G.W. Teal	Other and Unidentified	Coot	Total
Aug. 21	-	368	-	-	-	-	120	-	488
Aug. 28	-	341	400	600	-	-	-	15	1,341
Sept. 4	-	276	480	900	150	20	-	-	1,826
Sept. 11	-	225	700	2,840	800	30	7	80	4,682
Sept. 18	-	338	721	500	361	23	88	71	2,102
Sept. 25	-	417	355	80	90	27	41	10	1,020
Oct. 2	1	1,020	2,900	1,750	1,600	50	135	150	7,606
Oct. 9	-	19,000	9,130	5,100	3,100	60	526	200	37,116
Oct. 16	36	20,000	32,000	20,000	28,000	300	496	150	100,982
Oct. 23	18	24,370	48,000	24,000	8,000	30	113	100	104,631
Oct. 30	12	13,000	42,000	7,000	21,000	200	222	-	83,434
Nov. 6	12	9,500	135,000	7,500	7,500	200	18	-	159,730
Nov. 13	8	14,800	135,000	15,000	27,000	200	49	100	192,157
Nov. 17	21	100	190,000	20,000	6,000	1,500	-	-	217,621
Nov. 27	1	8,000	180,000	20,000	10,000	100	32	-	218,133
Dec. 4	21	5,030	145,000	20,000	15,000	200	22	-	185,273
Dec. 11	1	2,300	150,000	25,000	10,000	-	-	-	187,301
Dec. 18	1	18,000	180,000	10,000	5,000	400	-	-	213,401
Dec. 23	1	85	140,000	5,000	3,000	-	-	-	148,086
Jan. 2	-	350	60,000	10,000	2,500	-	60	-	72,910
Jan. 5	-	3,133	157,000	8,000	16,000	-	-	-	184,133
Jan. 14	-	30	14,050	300	150	500	-	-	15,030
Jan. 22	-	250	4,500	200	600	-	-	-	5,550
Jan. 29	-	195	15,000	550	800	700	4	3	17,252
Feb. 5	-	535	5,000	280	135	-	34	5	5,989
Feb. 12	-	4,270	31,800	1,280	2,980	600	-	-	40,930
Feb. 19	-	6,328	6,050	955	3,730	324	45	7	17,439

Peak of 172 white-fronted geese counted on Oct. 16.

Peak of 43 snow geese observed on Oct. 23.

*Census by U. S. Fish and Wildlife Service.

Table 16
 WATERFOWL POPULATION COUNTS*
 McKay Creek National Refuge
 August 21, 1959 through February 19, 1960

Date	Canada		Mallard	Pintail	Widgeon	G.W.		Other and Unidentified	Coot	Total
	Goose	Teal								
Aug. 21	26		458	822	-	60	18		3	1,387
Aug. 28	8		1,250	1,000	100	125	275		12	2,770
Sept. 4	2		223	220	8	18	2,712		-	3,183
Sept. 11	16		1,225	1,925	500	20	249		100	4,035
Sept. 18	16		1,400	1,575	525	50	49		150	3,765
Sept. 25	7		1,850	3,687	713	-	120		100	6,477
Oct. 3	16		3,900	7,800	1,300	-	-		400	13,416
Oct. 9	4,050		6,840	5,400	5,400	-	495		400	22,585
Oct. 16	12,000		14,500	27,500	20,000	300	1,506		200	76,006
Oct. 23	26,000		39,000	5,000	26,000	-	90		150	96,240
Oct. 31	40,000		59,000	9,000	18,000	-	818		-	126,818
Nov. 6	10,500		91,000	37,500	40,500	-	1		-	179,501
Nov. 13	11,800		104,000	43,000	44,500	-	12		75	203,387
Nov. 17	5,000		110,000	30,000	18,000	-	-		-	163,000
Nov. 27	13,600		150,000	20,000	20,000	200	12		-	203,812
Dec. 4	9,449		120,000	25,000	16,000	-	-		-	170,449
Dec. 11	7,500		110,000	20,000	15,000	-	-		-	287,500
Dec. 18	10,000		120,000	20,000	10,000	-	-		-	160,000
Dec. 23	8,500		100,000	10,000	20,000	-	-		-	138,500
Jan. 2	27,000		130,000	10,000	15,000	-	-		-	182,000
Jan. 5	2,180		60,000	21,000	30,000	200	35		-	113,415
Jan. 14	5,000		67,500	7,750	7,750	-	-		-	88,000
Jan. 22	40		1,800	100	100	-	-		-	2,040
Jan. 29	945		36,500	3,500	2,600	-	-		-	43,545
Feb. 5	3,500		8,650	150	2,000	-	-		-	14,300
Feb. 12	2,400		9,640	800	3,880	340	7		-	17,067
Feb. 19	3,750		6,050	250	2,870	-	5		-	12,925

19 whistling swan observed on October 23.
 *Census by U. S. Fish and Wildlife Service.

Tabl. 17

WATERFOWL POPULATION COUNTS*

Malheur National Refuge

July 16, 1959 through March 11, 1960

Date	Swan	Canada Goose	Snow Goose	Mallard	Cadwall	Widgeon	Pintail	G.W. Teal	Shoveller	Redhead	Canvasback	Ruddy Duck	Other Species	Coot	Total
July 16	18	3,000	-	5,700	7,200	1,500	34,000	1,400	500	3,200	200	3,100	1,100	13,000	73,918
Aug. 13	8	2,300	-	8,200	19,000	32,000	12,000	3,300	10,000	1,100	10	1,500	1,400	24,000	114,818
Aug. 26	13	3,400	-	4,300	23,000	5,700	7,300	8,000	20,000	500	10	5,000	1,300	21,000	99,523
Sept. 12	16	2,100	-	9,000	35,000	4,000	25,000	10,000	3,000	100	200	3,100	1,514	70,000	163,030
Sept. 19	22	2,600	-	6,000	70,000	5,000	4,000	5,000	7,000	500	-	2,000	2,920	40,000	145,042
Sept. 30	23	3,500	2,800	4,000	45,000	13,000	2,000	10,000	7,500	400	100	500	2,287	160,000	251,110
Oct. 13	23	4,300	9,000	6,000	50,000	55,000	10,000	6,000	13,000	500	600	40,000	274	200,000	394,677
Oct. 26	617	7,000	1,500	8,000	20,000	36,000	35,000	12,000	6,000	200	600	12,000	6,452	160,000	305,369
Nov. 13	745	6,550	40	8,000	35,000	12,000	3,000	1,000	7,000	100	50	50,000	4,937	35,000	163,422
Nov. 24	510	8,000	-	3,800	15,000	2,100	1,800	1,400	4,300	10	-	5,000	1,820	22,000	65,740
Dec. 11	144	3,500	-	3,200	200	200	700	100	-	7	2	70	164	500	8,787
Dec. 17	45	1,500	-	3,800	400	900	400	300	-	-	2	75	280	160	7,862
Dec. 23	41	1,100	-	3,400	350	700	350	200	-	-	-	50	265	125	6,581
Jan. 2	43	200	-	3,000	100	150	60	10	-	10	-	30	496	210	4,309
Jan. 4	46	300	-	3,000	100	150	50	10	-	10	-	30	496	200	4,392
Jan. 15	37	300	-	2,600	100	110	60	25	-	5	1	100	332	160	3,830
Jan. 26	38	260	-	1,600	100	250	80	20	-	20	-	90	326	170	2,954
Feb. 23	106	1,400	60	3,000	100	200	300	60	-	40	1	100	435	350	6,152
Mar. 1	171	5,000	200	4,800	100	300	4,300	200	-	50	10	100	631	400	14,262
Mar. 11	3,621	3,400	28,000	9,200	200	1,700	108,000	4,000	100	100	50	5	630	13,000	172,006

White-fronted goose observations: Sept. 12 - 500; Sept. 19 - 2,200; Sept. 30 - 1,500; Mar. 1 - 100; Mar. 11 - 350.

Scaup observations: Oct. 26 - 6,000; Nov. 13 - 3,000; Mar. 1 - 300.

Common merganser observations: Nov. 13 - 1,200; Nov. 28 - 1,600.

*Census by U. S. Fish & Wildlife Service.

Table 18
WATERFOWL POPULATION COUNTS
Summer Lake
August 16, 1959 through April 11, 1960

Date	Whistling Swan	Canada Goose	Whitefront	Snow Goose	Mallard	Pintail	Widgeon	Gadwall	G.W. Teal	Diving Ducks	Other Ducks	Unidentified Ducks	Coots	Total
Aug. 16	-	924	-	3	844	1,312	446	376	658	217	2,848	3,993	1,240	12,861
Sept. 10	-	867	1,142	13	4,266	4,937	1,580	219	2,321	187	1,352	7,782	1,812	26,478
Sept. 19	-	1,287	2,749	46	3,224	3,381	6,070	216	2,914	62	1,314	8,250	2,445	31,958
Sept. 25	-	1,056	4,256	70	3,655	4,478	8,931	362	3,560	160	1,723	14,250	2,769	45,270
Oct. 1	-	1,016	3,657	13,840	2,964	4,135	8,479	304	4,767	178	1,477	6,340	1,880	49,037
Oct. 12	2	334	48	34,250	168	242	293	36	198	137	45	42,250	835	78,838
Oct. 19	6	677	5	220,623	235	316	289	28	251	342	138	38,320	866	262,096
Nov. 2	166	607	-	351,250	278	2,308	1,813	110	432	263	143	19,500	668	377,538
Nov. 9	193	547	-	408,365	219	1,947	810	68	471	260	483	14,890	425	428,678
Nov. 16	338	527	-	383,450	363	2,065	1,210	41	394	254	324	18,360	194	407,520
Nov. 23	352	629	-	86,350	291	1,731	981	26	462	227	287	14,380	221	105,937
Dec. 3	271	584	-	38,215	311	970	422	16	312	171	193	14,280	174	55,919
Dec. 14	610	597	-	33	453	1,940	256	23	-	206	68	5,200	147	9,533
Dec. 21	852	664	-	19	424	1,157	168	38	263	164	61	2,100	120	6,030
Dec. 28	617	584	-	-	464	1,312	628	22	134	177	45	1,450	124	5,587
Mar. 4	408	536	6	3,845	386	845	211	23	192	191	89	1,810	67	8,609
Mar. 11	318	428	-	20,470	324	1,340	186	42	241	146	160	2,680	83	26,418
Mar. 18	386	494	-	32,400	428	1,970	332	35	308	278	329	3,875	117	40,952
Apr. 1	86	406	-	7,400	321	845	82	63	934	414	343	3,860	294	15,048
Apr. 11	13	318	-	3,150	238	414	61	42	1,470	306	290	2,342	212	8,856

One blue goose recorded Nov. 16.
Six Ross's geese observed March 18; three on April 11.

Table 19
WATERFOWL POPULATION COUNTS
Silver Lake
November 29, 1959

Date	Whistling Swan	Canada Goose	Snow Goose	Mallard	Widgeon	Pintail	G.W. Teal	Shoveller	Canvasback	Diving Ducks	Unidentified Ducks	Coot	Total
Nov. 29	3,017	966	18	114	37	76	12	28	371	180	2,275	187	7,281

Table 20

WATERFOWL POPULATION COUNTS

Warner Valley

August 11, 1959 through March 29, 1960

Species	Aug. 11	Aug. 26	Sept. 24	Oct. 12	Nov. 12	Dec. 18	Feb. 4	Mar. 29
Whistling Swan	-	-	-	16	8,135	865	2	440
Canada Goose	4,700	4,800	2,575	2,800	4,000	4,020	5,814	1,115
Cackling Goose	-	-	-	-	26,500	31,000	1,530	13,000
W. F. Goose	-	-	-	-	-	-	-	-
Snow Goose	-	-	-	-	6,000	350	6	56,000
Mallard	8,900	5,000	3,100	2,900	5,350	8,000	1,550	325
Pintail	12,550	5,400	4,100	10,700	2,300	2,400	100	1,400
Widgeon	11,600	8,400	69,300	128,200	45,000	650	100	-
Gadwall	1,900	1,500	6,600	8,900	950	-	-	-
G. W. Teal	2,000	1,500	1,500	100	-	-	-	400
Cinn. Teal	3,100	1,150	1,125	1,100	-	-	-	-
Shoveller	1,600	1,100	2,500	8,700	3,000	-	-	350
Canvasback	1,500	1,400	2,800	9,000	2,200	-	-	220
Bufflehead	-	-	-	-	-	-	25	-
Scaup	-	-	225	425	110	-	-	-
Redhead	8,800	6,200	4,200	2,700	50	-	-	125
Ruddy	200	50	375	530	50	-	-	-
Merganser	-	-	-	-	-	-	27	90
Coot	8,100	7,800	38,800	88,800	2,400	-	-	-
TOTAL	64,950	44,300	137,200	264,871	106,045	47,285	9,154	73,465

Table 21

WATERFOWL BANDING
May 1, 1959 through April 30, 1960

Species	Banding Station					Total
	Summer Lake	Hermiston	Sauvie Island	North Coast	Ontario	
Mallard	727	912	1,114	1		2,754
Pintail	442	124	1,503		112	2,181
Widgeon	143	33	848			1,024
G. W. Teal	26		72			98
B. W. Teal			112			112
Cinn. Teal	2					2
Gadwall	8					8
Wood Duck	1		83			84
Redhead	1					1
Shoveller			1			1
Canvasback			1			1
Black Duck					1	1
TOTAL DUCKS	1,350	1,069	3,734	1	113	6,267
Coot						1
Snow Goose	1					1
Canada Goose			4			4
TOTAL WATERFOWL	1,351	1,070	3,738	1	113	6,273

Table 22

RECOVERY OF WATERFOWL BANDED IN OREGON

Species	State of Recovery										Total		
	Ore.	Calif.	Wash.	Ida.	Mont.	Nevada	Alaska	States*	B. C.	Alta.		Sask.	Mexico
Trumpeter Swan	1												1
G. B. Can. Goose	8	1				1				2			12
W. Can. Goose	1							1					2
Mallard	408	30	133	15	7	1	1	7	16	98	5		721
Pintail	77	36	18	5		2	1	5	1	2	1	3	151
Widgeon	65	1	21	2			2						91
Gadwall	5	2											7
G. W. Teal	16		3				1						20
B. W. Teal	2	2	1										5
Cinn. Teal		1											1
Wood Duck	1	3											4
Canvasback		1											1
Bufflehead	1												1
Coot	2												2
TOTAL	587	77	176	22	7	4	5	12	18	102	6	3	1,019

*Other States: Kansas - 1 mallard Northwest Territories - 1 mallard
 North Dakota - 2 mallards Nebraska - 1 pintail
 Oklahoma - 1 mallard Utah - 2 pintails
 Arkansas - 2 mallards Texas - 2 pintails

Banding:

During the year a total of 6,267 ducks, 5 geese, and 1 coot was banded in Oregon. Numbers by species banded at five stations are shown in Table 21. Recoveries during the year from these bandings as well as from bandings in previous years were made in 14 states, 4 Canadian provinces, and Mexico. These recoveries by species are given in Table 22. Total number of banded waterfowl recovered in Oregon from bandings at foreign as well as local banding stations was 1,379 ducks, 227 geese, and 8 coots. The state or province where these birds were captured is to be found in Table 23.

Table 23

WATERFOWL BAND RECOVERIES

State or Province Where Banded	Recovered in Oregon		
	Geese	Ducks	Coots
Oregon	14	990	2
Washington	4	82	-
California	91	200	-
Idaho	6	8	-
Nevada	24	6	-
Utah	1	1	-
Montana	2	7	-
Oklahoma	-	2	-
New Mexico	1	1	-
South Dakota	-	1	-
North Dakota	-	2	-
Hawaii	-	1	-
Alaska	81	8	-
British Columbia	-	17	-
Alberta	-	35	2
Saskatchewan	-	13	-
Northwest Territories	3	5	-
TOTAL	227	1,379	4

Table 24 presents a summary of band recoveries from birds banded by the Game Commission since 1947. In general, samples of less than 50 birds were omitted from this summary although in some cases, especially with geese, smaller samples were summarized.



Table 24
SUMMARY OF WATERFOWL BAND RECOVERIES BY BANDING PERIODS

Species	Area	Year	Banding Period	Total Banded	Total Returns	Direct Returns		4th Yr & Over		2d Yr		3d Yr		4th Yr & Over		% Total Returns
						Returns	%	Returns	%	Returns	%	Returns	%			
Mallard	Ont.	1948	Preseason	63	12	9	14.3	3.2	0	0.0	1.6	1.6	0.0	19.0		
	W.V.	1949	Preseason	191	37	20	10.5	6.8	1	0.5	1.6	1.6	0.5	19.4		
	S.L.	1949	Preseason	168	63	53	31.5	2.4	2	1.2	2.4	2.4	1.2	37.5		
	S.L.	1950	Preseason	214	46	22	10.3	5.6	7	3.3	2.3	2.3	3.3	21.5		
	S.L.	1951	Preseason	87	15	10	11.5	1.1	2	2.3	2.3	2.3	2.3	17.2		
	S.L.	1953	Preseason	532	126	78	14.7	5.3	15	2.8	0.9	0.9	2.8	23.7		
	S.L.	1954	Preseason	1,225	391	333	27.2	2.7	16	1.3	1.1	1.1	1.3	31.9		
	S.L.	1955	Preseason	884	260	193	21.8	2.7	28	2.0	1.7	1.7	2.0	29.4		
	S.L.	1956	Preseason	732	252	207	28.3	4.2	4	0.5	1.4	1.4	0.5	34.4		
	S.L.	1957	Preseason	286	130	114	39.9	4.2	4	-	1.4	1.4	-	-		
	S.L.	1958	Preseason	219	24	22	10.0	0.9	-	-	-	-	-	-		
	S.L.	1959	Preseason	283	78	78	27.6	-	-	-	-	-	-	-		
	S.I.	1955	Preseason	1,444	504	375	26.0	5.8	27	1.9	1.2	1.2	1.9	34.9		
	S.I.	1956	Preseason	260	101	85	32.7	2.7	4	1.5	1.9	1.9	1.5	38.8		
	S.I.	1957	Preseason	615	187	156	25.4	3.1	-	-	2.0	2.0	-	-		
	S.I.	1958	Preseason	28	13	12	42.9	3.6	-	-	-	-	-	-		
	S.I.	1959	Preseason	592	138	138	23.3	-	-	-	-	-	-	-		
	E.E.W.	1954	Preseason	59	20	7	11.9	15.3	1	1.7	5.1	5.1	1.7	33.9		
	Ont.	1948	In-Season	477	71	24	5.0	4.8	14	2.9	2.1	2.1	2.9	14.9		
	Ont.	1949	In-Season	461	92	30	6.5	5.4	19	4.1	3.9	3.9	4.1	20.0		
	E.E.W.	1953	In-Season	271	53	8	3.0	7.7	12	4.4	4.4	4.4	4.4	19.6		
	E.E.W.	1954	In-Season	1,806	444	213	11.8	6.3	60	3.3	3.2	3.2	3.3	24.6		
	E.E.W.	1955	In-Season	326	64	19	5.8	6.4	9	2.8	4.6	4.6	2.8	19.6		
	E.E.W.	1956	In-Season	853	174	61	7.2	6.8	41	1.6	4.8	4.8	1.6	20.4		
	E.E.W.	1957	In-Season	200	41	24	12.0	7.5	2	0.0	1.0	1.0	-	-		
	L.G.	1948	In-Season	61	19	15	24.6	1.6	0	0.0	4.9	4.9	0.0	31.1		
	C.B.	1953	In-Season	47	18	7	14.9	4.3	4	8.5	10.6	10.6	8.5	38.3		
	C.B.	1954	In-Season	82	19	3	3.7	13.4	3	3.7	2.4	2.4	3.7	23.2		
	G.I.	1951	In-Season	152	37	21	13.8	4.6	6	3.9	2.0	2.0	3.9	24.3		
	S.I.	1957	In-Season	153	27	9	5.9	9.2	-	-	2.6	2.6	-	-		

Table 24 (Continued)

Species	Area	Year	Banding Period	Total Banded	Total Returns	Direct Returns	2d Yr Returns	3d Yr Returns	4th Yr & Over Returns	% Direct Returns	% 2d Yr Returns	% 3d Yr Returns	% 4th Yr & Over Returns	% Total Returns
Mallard	Ont.	1949	Postseason	79	21	2	7	4	8	2.5	8.9	5.1	10.1	26.6
	Ont.	1950	Postseason	905	150	1	56	30	63	0.1	6.2	3.3	7.0	16.6
	Ont.	1953	Postseason	254	36	1	12	12	11	0.4	4.7	4.7	4.3	14.2
	Ont.	1956	Postseason	526	70	1	37	14	18	0.2	7.0	2.7	3.4	13.3
	Ont.	1959	Postseason	112	0	0	-	-	-	0.0	-	-	-	-
	L.G.	1948	Postseason	58	14	2	5	2	5	3.5	8.6	3.5	8.6	24.1
	Her.	1948	Postseason	566	100	1	38	22	39	0.2	6.7	3.9	6.9	17.7
	Her.	1949	Postseason	2,509	407	16	163	98	130	0.6	6.5	3.9	5.2	16.2
	Her.	1950	Postseason	1,280	275	2	130	43	100	0.2	10.2	3.4	7.8	21.5
	Her.	1951	Postseason	1,993	349	1	81	133	134	0.1	4.1	6.7	6.7	17.5
	Her.	1952	Postseason	324	54	0	16	9	29	0.0	4.9	2.8	9.0	16.7
	Her.	1953	Postseason	504	80	1	24	28	27	0.2	4.8	5.6	5.4	15.9
	Her.	1954	Postseason	695	97	0	53	14	30	0.0	7.6	2.0	4.3	14.0
	Her.	1955	Postseason	1,178	133	4	43	28	58	0.3	3.7	2.4	4.9	11.3
	Her.	1956	Postseason	1,239	138	0	63	51	24	0.0	5.1	4.1	1.9	11.1
	Her.	1957	Postseason	169	7	0	4	3	-	0.0	2.4	1.8	-	-
	Her.	1958	Postseason	830	32	2	30	-	-	0.2	3.6	-	-	-
	Her.	1959	Postseason	912	0	0	-	-	-	0.0	-	-	-	-
	S.I.	1948	Postseason	115	22	0	15	1	6	0.0	13.0	0.9	5.2	19.1
	S.I.	1949	Postseason	161	32	0	11	8	13	0.0	6.8	5.0	8.1	20.0
	S.I.	1950	Postseason	231	38	0	18	10	10	0.0	7.8	4.3	4.3	16.5
	S.I.	1951	Postseason	59	13	0	6	5	2	0.0	10.2	8.5	3.4	22.0
	S.I.	1952	Postseason	42	11	0	7	2	2	0.0	16.7	4.8	4.8	26.2
	S.I.	1953	Postseason	913	185	0	94	39	52	0.0	10.3	4.3	5.7	20.3
	S.I.	1954	Postseason	464	66	0	34	15	17	0.0	7.3	3.2	3.7	14.2
	S.I.	1955	Postseason	94	16	0	6	4	6	0.0	6.4	4.3	6.4	17.0
	S.I.	1956	Postseason	645	110	0	62	28	20	0.0	9.6	4.3	3.1	17.1
	S.I.	1957	Postseason	353	46	0	30	16	-	0.0	8.5	4.5	-	-
	S.I.	1958	Postseason	534	55	3	52	-	-	0.6	9.7	-	-	-
	S.I.	1959	Postseason	444	1	1	-	-	-	0.2	-	-	-	-
	S.I.	1950	Postseason	421	117	2	59	-	33	0.5	14.0	5.5	7.8	27.8
	S.I.	1951	Postseason	76	20	0	10	4	6	0.0	13.2	5.3	7.9	26.3
	S.I.	1952	Postseason	616	158	0	68	43	47	0.0	11.0	7.0	7.6	25.6
	S.I.	1953	Postseason	606	134	1	78	20	35	0.2	12.9	3.3	5.8	22.1
	S.I.	1954	Postseason	1,352	285	0	135	77	73	0.0	10.0	5.7	5.4	21.1
	S.I.	1955	Postseason	524	128	1	80	27	20	0.2	15.3	5.2	3.8	24.4
	S.I.	1956	Postseason	880	162	2	89	53	20	0.2	10.1	6.0	2.3	18.4
	S.I.	1957	Postseason	827	91	0	60	31	-	0.0	7.3	3.7	-	-

Table 24 (Continued)

Species	Area	Year	Banding Period	Total Banded	Total Returns	Direct Returns		4th Yr & Over		3d Yr Returns		2d Yr Returns		1st Yr Returns		% Total Returns
						0	27	2d Yr	3d Yr	4th Yr	% Direct Returns	% 2d Yr Returns	% 3d Yr Returns	% 4th Yr & Over	% 1st Yr Returns	
Mallard	S.I.	1958	Postseason	502	27	0	27	-	-	0.0	5.4	-	-	-	-	-
	S.I.	1959	Postseason	522	0	0	-	1	7	0.0	-	1.6	10.9	-	-	-
	G.I.	1950	Postseason	64	18	2	8	31	32	3.1	12.5	4.4	4.6	28.1	22.0	21.6
	E.E.W.	1953	Postseason	701	154	5	86	12	31	0.7	12.1	2.6	6.8	12.0	17.7	-
	E.E.W.	1954	Postseason	453	98	0	55	0	1	0.0	8.0	0.0	4.0	-	-	-
	E.E.W.	1955	Postseason	25	3	0	2	12	8	0.0	11.2	3.7	2.5	-	-	-
	E.E.W.	1956	Postseason	322	57	1	36	15	-	0.3	7.1	4.9	-	-	-	-
	E.E.W.	1957	Postseason	309	37	0	22	-	-	0.0	7.3	-	-	-	-	-
	E.E.W.	1958	Postseason	648	48	1	47	-	-	0.2	7.3	-	-	-	-	-
	G.P.	1953	Postseason	235	61	2	36	12	11	0.9	15.3	5.1	4.7	26.0	21.1	-
	G.P.	1954	Postseason	654	138	0	68	34	36	0.0	10.4	1.1	-	-	-	-
	G.P.	1957	Postseason	95	11	0	10	1	-	0.0	10.5	1.1	-	-	-	-
	C.B.	1952	Postseason	101	29	0	17	7	5	0.0	16.8	6.9	5.9	28.7	-	-
Pintail	S.I.	1950	Preseason	69	7	2	1	1	3	2.9	1.4	1.4	4.3	10.1	19.8	15.1
	S.I.	1953	Preseason	96	19	13	2	2	20	13.5	2.1	2.1	2.9	15.1	10.5	12.3
	S.L.	1954	Preseason	690	104	55	13	16	7	8.0	1.9	2.3	1.1	-	-	-
	S.L.	1955	Preseason	448	47	24	11	7	2	5.4	2.5	1.6	1.7	-	-	-
	S.L.	1956	Preseason	179	22	12	5	2	-	6.7	2.8	1.1	-	-	-	-
	S.L.	1958	Preseason	351	29	25	4	-	-	7.1	1.1	-	-	-	-	-
	S.L.	1959	Preseason	143	11	11	-	-	-	7.7	-	-	-	-	-	-
	W.V.	1949	Preseason	132	17	7	3	1	6	5.3	2.3	0.8	4.5	12.9	14.9	15.4
	S.I.	1949	Preseason	114	17	12	3	1	1	10.5	2.6	0.9	0.9	-	-	-
	S.I.	1955	Preseason	894	138	85	26	15	12	9.5	2.9	1.7	1.3	-	-	-
	S.I.	1956	Preseason	1,169	252	205	25	20	2	17.5	2.1	0.8	0.2	-	-	-
	S.I.	1957	Preseason	456	72	55	11	6	-	12.1	2.4	1.3	-	-	-	-
	S.I.	1958	Preseason	63	9	9	0	-	-	14.3	0.0	-	-	-	-	-
	S.I.	1959	Preseason	755	42	42	0	-	-	5.6	-	-	-	-	-	-
	N.T.C.	1953	Preseason	90	7	5	1	0	1	5.6	1.1	0.0	1.1	7.8	3.4	12.3
	N.T.C.	1954	Preseason	88	3	3	0	0	0	3.4	0.0	0.5	2.1	7.4	20.9	14.0
	N.T.C.	1955	Preseason	187	23	12	6	1	4	6.4	3.2	1.1	0.0	-	-	-
	N.T.C.	1956	Preseason	94	7	4	2	1	0	4.3	2.1	1.1	-	-	-	-
	N.T.C.	1957	Preseason	202	24	20	2	2	-	9.9	1.0	1.0	3.5	-	-	-
	S.L.	1948	In-season	86	18	9	4	2	3	10.5	4.7	2.3	1.8	4.0	-	-
	S.I.	1957	In-season	271	25	10	10	5	-	3.7	3.7	1.8	-	-	-	-
	Her.	1949	Postseason	50	7	1	3	2	1	2.0	6.0	4.0	2.0	-	-	-
	Her.	1959	Postseason	124	0	0	-	-	-	0.0	-	-	-	-	-	-

Table 24 (Continued)

Species	Area	Year	Banding Period	Total Banded	Total Returns	Direct Returns	2d Yr Returns	3d Yr Returns	4th Yr Returns & Over	% Direct Returns	% 2d Yr Returns	% 3d Yr Returns	% 4th Yr Returns & Over	% Total Returns
Pintail	Ont.	1949	Postseason	61	3	0	0	2	1	0.0	0.0	3.3	1.6	4.9
	Ont.	1950	Postseason	455	43	1	14	12	16	0.2	3.1	2.6	3.5	9.5
	Ont.	1953	Postseason	95	10	0	3	1	6	0.0	3.2	1.1	6.3	10.5
	S.I.	1947	Postseason	84	10	0	4	1	5	0.0	4.8	1.2	6.0	11.9
	S.I.	1951	Postseason	69	8	0	4	2	2	0.0	5.8	2.9	2.8	11.6
	S.I.	1954	Postseason	972	72	1	25	19	27	0.1	2.6	2.0	2.8	7.4
	S.I.	1956	Postseason	200	23	0	8	9	6	0.0	4.0	4.5	3.0	11.5
	S.I.	1957	Postseason	101	11	0	7	4	-	0.0	6.9	4.0	-	-
	S.I.	1958	Postseason	143	4	1	3	-	-	0.7	2.1	-	-	-
	S.I.	1959	Postseason	299	0	0	-	-	-	0.0	-	-	-	-
	S.I.	1952	Postseason	355	43	0	19	13	11	0.0	5.4	3.7	3.1	12.1
	S.I.	1954	Postseason	567	39	0	13	13	13	0.0	2.3	2.3	2.3	6.9
	S.I.	1955	Postseason	204	17	1	8	7	1	0.5	3.9	3.4	0.5	8.3
	S.I.	1956	Postseason	413	35	0	27	5	3	0.0	6.5	1.2	0.7	8.5
	S.I.	1957	Postseason	157	6	0	4	2	-	0.0	2.5	1.3	-	-
	S.I.	1958	Postseason	390	15	0	15	-	-	0.0	3.8	-	-	-
	S.I.	1959	Postseason	748	0	0	-	-	-	0.0	-	-	-	-
Widgeon	S.I.	1955	Preseason	55	17	17	0	0	0	30.9	0.0	0.0	0.0	30.9
	S.I.	1959	Preseason	62	8	8	-	-	-	12.9	-	-	-	-
	S.I.	1948	Interseason	58	11	5	3	0	3	8.6	5.2	0.0	5.2	19.0
	S.I.	1949	Interseason	69	14	10	0	0	2	14.5	2.9	0.0	2.9	20.3
	S.I.	1957	In-season	55	8	3	4	1	-	5.5	7.3	1.8	-	-
	E.E.W.	1954	In-season	41	10	8	2	0	0	19.5	4.9	0.0	0.0	24.4
	S.I.	1950	Postseason	232	30	0	6	5	19	0.0	2.6	2.2	8.2	12.9
	S.I.	1952	Postseason	177	35	0	9	9	17	0.0	5.1	5.1	9.6	19.8
	S.I.	1953	Postseason	59	13	0	5	3	5	0.0	8.5	5.1	8.5	22.0
	S.I.	1954	Postseason	1,188	205	3	99	37	66	0.3	8.3	3.1	5.6	17.3
	S.I.	1955	Postseason	1,944	266	0	97	74	95	0.0	5.0	3.8	4.9	13.7
	S.I.	1956	Postseason	556	89	0	47	29	13	0.0	8.5	5.2	2.3	16.0
	S.I.	1957	Postseason	181	23	0	16	7	-	0.0	8.8	3.9	-	-
	S.I.	1958	Postseason	436	17	0	17	-	-	0.0	3.9	-	-	-
	S.I.	1959	Postseason	845	0	0	-	-	-	0.0	-	-	-	-
	S.I.	1950	Postseason	156	17	0	6	3	8	0.0	3.8	1.9	5.1	10.9
Her.	Her.	1959	Postseason	33	0	0	-	-	-	0.0	-	-	-	-
G.P.	G.P.	1953	Postseason	58	4	0	2	2	0	0.0	3.4	3.4	0.0	6.9
G.P.	G.P.	1955	Postseason	84	9	0	3	2	4	0.0	3.6	2.4	4.8	10.7

Table 24 (Continued)

Species	Area	Year	Banding Period	Total Banded	Total Returns	Direct Returns	2d Yr Returns	3d Yr Returns	4th Yr & Over	% Direct Returns	% 2d Yr Returns	% 3d Yr Returns	% 4th Yr & Over	% Total Returns
Widgeon	S.L.	1954	Postseason	65	11	0	5	2	4	0.0	7.7	3.1	6.2	16.9
	S.L.	1955	Postseason	48	6	0	3	3	0	0.0	6.3	6.3	0.0	12.5
	S.L.	1956	Postseason	48	3	0	1	1	1	0.0	2.1	2.1	2.1	6.3
	S.L.	1959	Postseason	81	0	0	-	-	-	-	0.0	-	-	-
G.W. Teal	S.L.	1957	Preseason	50	8	7	1	-	-	14.0	2.0	-	-	-
	S.I.	1959	Preseason	42	8	8	-	-	-	19.0	-	-	-	-
	S.L.	1948	Interseason	115	12	6	4	1	1	5.2	3.5	0.9	0.9	10.4
	S.L.	1949	Interseason	68	6	5	0	1	0	7.4	0.0	1.5	0.0	8.8
	G.I.	1951	In-season	83	12	5	5	2	0	6.0	6.0	2.4	0.0	14.5
	C.B.	1954	In-season	74	5	1	0	2	2	1.4	0.0	2.7	2.7	6.8
	S.L.	1947	Postseason	310	15	0	8	4	3	0.0	2.6	1.3	1.0	4.9
	S.L.	1953	Postseason	66	3	0	2	0	0	0.0	3.0	1.5	0.0	4.5
	S.L.	1954	Postseason	107	9	0	2	4	3	0.0	1.9	3.7	2.8	4.1
	S.L.	1956	Postseason	489	15	0	10	2	3	0.0	2.0	0.4	0.6	3.1
	G.P.	1953	Postseason	48	7	0	4	1	2	0.0	8.3	2.1	4.2	14.6
	Her.	1956	Postseason	48	2	0	0	1	1	0.0	0.0	2.1	2.1	4.2
	S.I.	1950	Postseason	51	4	0	2	2	0	0.0	3.9	3.9	0.0	7.8
	S.I.	1956	Postseason	480	31	0	16	11	4	0.0	3.3	2.3	0.8	6.5
	S.I.	1959	Postseason	30	0	0	-	-	-	-	0.0	-	-	-
Cinn. Teal	S.L.	1949	Preseason	79	2	1	1	0	0	1.3	1.3	0.0	0.0	2.4
	S.L.	1953	Preseason	62	2	1	1	0	0	1.6	1.6	0.0	0.0	3.2
	S.L.	1954	Preseason	168	6	2	2	1	1	1.2	1.2	0.6	0.6	3.6
	S.L.	1955	Preseason	72	8	5	3	0	0	6.9	4.2	0.0	0.0	1.1
	S.L.	1956	Preseason	190	12	9	0	3	0	4.7	0.0	1.6	0.0	6.3
	S.I.	1959	Preseason	112	5	5	-	-	-	4.5	-	-	-	-
Gadwall	S.L.	1949	Preseason	57	29	25	2	0	2	43.9	3.5	0.0	3.5	50.9
	S.L.	1950	Preseason	58	22	16	2	1	3	27.6	3.4	1.7	5.2	37.9
	S.L.	1955	Preseason	52	13	11	0	2	0	21.2	0.0	3.8	0.0	25.0
	S.L.	1956	Preseason	40	12	11	0	1	0	27.5	0.0	2.5	0.0	30.0
	S.L.	1948	Interseason	49	14	9	3	0	2	18.4	6.1	0.0	4.1	28.6
	S.L.	1947	Postseason	45	16	1	12	0	3	2.2	26.7	0.0	6.7	35.6
	S.L.	1955	Postseason	41	9	0	5	3	1	0.0	12.2	7.3	2.4	22.0
	S.L.	1956	Postseason	35	1	0	1	0	0	0.0	2.9	0.0	0.0	2.9
	S.L.	1958	Postseason	58	8	1	7	-	-	1.7	12.1	-	-	-
	S.L.	1949	Preseason	57	29	25	2	0	2	43.9	3.5	0.0	3.5	50.9
	S.L.	1950	Preseason	58	22	16	2	1	3	27.6	3.4	1.7	5.2	37.9

Table 24 (Continued)

Species	Area	Year	Banding Period	Total Banded	Total Returns	Direct Returns	2d Yr Returns	3d Yr Returns	4th Yr & Over Returns	% Direct Returns	% 2d Yr Returns	% 3d Yr Returns	% 4th Yr & Over Returns	% Total Returns
Redhead	S.I.	1949	Preseason	40	8	7	0	1	0	17.5	0.0	2.5	0.0	20.0
	S.I.	1956	Preseason	95	23	22	1	0	0	23.2	1.1	0.0	0.0	24.2
Wood Duck	S.I.	1953	Preseason	84	6	4	1	0	1	4.8	1.2	0.0	1.2	7.1
	S.I.	1954	Preseason	135	16	4	5	3	4	3.0	3.7	2.2	3.0	11.9
	S.I.	1955	Preseason	299	32	23	5	2	2	7.7	1.7	0.7	6.7	10.7
	S.I.	1956	Preseason	119	7	5	2	0	0	4.2	1.7	0.0	0.0	5.9
	S.I.	1957	Preseason	110	6	4	2	0	-	3.6	1.8	0.0	-	-
	S.I.	1959	Preseason	83	3	3	-	-	-	3.6	-	-	-	-
	N.T.C.	1958	Preseason	107	4	3	1	-	-	2.8	0.9	-	-	-
Gr. Scaup	N.T.C.	1949	Interseason	89	1	0	0	0	1	0.0	0.0	0.0	1.1	1.1
	N.T.C.	1950	Postseason	84	7	0	4	1	2	0.0	4.8	1.2	2.4	8.3
	N.T.C.	1951	Postseason	57	1	0	0	1	0	0.0	0.0	1.8	0.0	1.8
	N.T.C.	1953	Postseason	63	6	0	4	1	1	0.0	6.3	1.6	1.6	9.5
	N.T.C.	1954	Postseason	42	1	0	1	0	0	0.0	2.4	0.0	0.0	2.4
		S.I.	1953	Preseason	83	2	1	1	0	0	1.2	1.2	0.0	0.0
Coot	S.I.	1954	Preseason	41	2	2	0	0	0	4.9	0.0	0.0	0.0	4.9
	S.I.	1955	Preseason	59	1	1	0	0	0	1.7	0.0	0.0	0.0	1.7
	S.I.	1956	Preseason	43	1	1	0	0	0	2.3	0.0	0.0	0.0	2.3
	L.L.	1954	In-season	47	1	1	0	0	0	2.1	0.0	0.0	0.0	2.1
	E.E.W.	1954	In-season	42	5	3	1	1	0	7.1	2.4	2.4	0.0	11.9
	L.L.	1954	Postseason	59	2	0	1	1	0	0.0	1.7	1.7	0.0	3.4
	S.I.	1953	Postseason	196	7	1	6	0	0	0.5	3.1	0.0	0.0	3.6
	S.I.	1954	Postseason	81	1	0	1	0	0	0.0	1.2	0.0	0.0	1.2
	S.L.	1955	Postseason	44	1	0	1	0	0	0.0	0.0	2.3	0.0	-
	C.B.	1952	Postseason	44	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	G.P.	1954	Postseason	87	9	0	0	8	1	0.0	0.0	9.2	1.1	10.3

Table 24 (Continued)

Species	Area	Year	Banding Period	Total Banded	Total Returns	Direct Returns	2d Yr Returns	3d Yr Returns	4th Yr Returns & Over	% Direct Returns	% 2d Yr Returns	% 3d Yr Returns	% 4th Yr Returns & Over	% Total Returns
Can. Goose	W.V.	1950	Preseason	39	16	3	7	4	2	7.7	17.9	10.3	5.1	41.0
	W.V.	1951	Preseason	30	5	2	1	1	1	6.7	3.3	3.3	3.3	16.7
	W.V.	1952	Preseason	78	35	11	6	7	11	14.1	7.7	9.0	14.1	44.9
	W.V.	1953	Preseason	85	25	8	6	0	11	9.4	7.1	0.0	12.9	29.4
	W.V.	1954	Preseason	136	33	16	4	4	9	11.8	2.9	2.9	6.6	24.3
	W.V.	1955	Preseason	15	3	2	1	0	0	13.3	6.7	0.0	0.0	20.0
	W.V.	1956	Preseason	15	4	2	1	0	1	13.3	6.7	0.0	6.7	26.7
	W.S.R.	1954	Preseason	55	13	6	2	4	1	10.9	3.6	7.3	1.8	23.6
	W.S.R.	1955	Preseason	34	10	3	3	0	4	8.8	8.8	0.0	11.8	29.4
	S.L.	1949	Preseason	36	16	7	3	2	4	19.4	8.3	5.6	11.1	44.4
	S.L.	1957	Preseason	40	9	6	2	1	-	15.0	5.0	2.5	-	-
	Ont.	1952	Preseason	19	6	5	0	1	0	26.3	0.0	5.3	0.0	31.6
	Ont.	1953	Preseason	20	5	1	3	0	1	5.0	15.0	0.0	5.0	25.0
	Ont.	1954	Preseason	19	4	3	0	1	0	15.8	0.0	5.3	0.0	21.1
	S.I.	1950	Preseason	39	7	4	2	1	0	10.3	5.1	2.6	0.0	17.9
	S.I.	1953	Preseason	32	3	1	1	0	1	3.1	3.1	0.0	3.1	9.4
	S.L.	1948	Postseason	22	8	0	5	0	3	0.0	22.7	0.0	13.6	36.4
	G.P.	1953	Postseason	20	4	0	2	0	2	0.0	10.0	0.0	10.0	20.0
	G.P.	1955	Postseason	26	7	0	3	3	1	0.0	11.5	11.5	3.8	26.9
	G.P.	1956	Postseason	20	2	0	2	0	0	0.0	10.0	0.0	0.0	10.0

Brant:

The number of brant wintering in the coastal bays was the lowest on record. The small population and unfavorable hunting weather served to reduce hunting pressure to practically nothing. Success is shown in the following table.

Table 25

BRANT HUNTING SUCCESS

No. Hunters			No. Successful			Brant Taken			Age Ratio		
Checked									Adults to Immature		
1959	1958	1957	1959	1958	1957	1959	1958	1957	1959	1958	1957
26	44	75	8	21	48	11	37	79	8-3	24-13	48-31

Snipe:

All snipe observed on spring upland game census samples are recorded and expressed in snipe per 100 acres. Table 26 presents results of these counts for the last five years.

Table 26

SPRING SNIPE CENSUS

Region	Birds per 100 Acres					No. Birds Observed 1960	Acres Censused 1960
	1960	1959	1958	1957	1956		
Northwest	1.16	2.70	1.96	2.83	3.15	67	5,799
Southwest	3.24	2.42	1.08	2.25	0.92	35	1,080

Several snipe winnowing census routes have been established in an attempt to improve sampling techniques on this species. Results obtained are given in the following table.

SNIPE WINNOWING CENSUS

Sample	Mileage In Route	Snipe Heard			Additional Snipe Seen			Total		
		1959	1958	1957	1959	1958	1957	1959	1958	1957
		Summer Lake	20	36	27	18	21	11	4	57
Hot Lake	20	5	9	-	0	1	-	5	10	-
Hines*	20	0	13	-	0	1	-	0	14	-

*Area dry in 1959.



BEAVER

Harvest:

The beaver and otter season opened on November 1, 1959, in Malheur, Lake, and Harney counties and on November 15, 1959 in the balance of the state. All areas closed February 15. Many area closures were in effect throughout the state during the season.

Trappers reported catching 10,906 beavers during the 1959-60 season. In the nine open seasons that commercial beaver trapping has been legalized, 107,468 pelts have been taken. Trappers reported receiving \$1,128,686.77 from the sale of these furs. During these nine seasons, the catches varied only slightly from year to year, from a high of 15,257 in the 1951-52 season to a low of 9,786 during 1958-59.

An ear-tagged 50-pound beaver was trapped on the Chetco River on January 17, 1960. The records show this beaver to have been an adult male when transplanted from Pistol River on August 9, 1948.

The catch of beaver and other fur species by county is presented in Table 1.

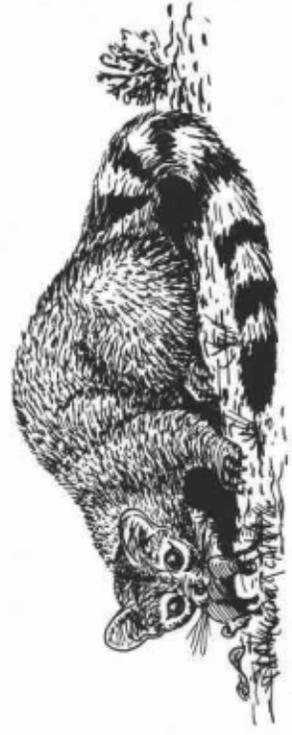
Table 1
1959-1960 FUR CATCH*

County	No. Trappers' Reports	Otter	Mink	Muskrat	Raccoon	Skunk	Civet Cat	Weasel	Opossum	Badger	Gray Fox	Red Fox	Wildcat	Coyote	Marten	Nutria	Beaver
Baker	14	1	76	253	14	17				3	18	11	48	11	1		74
Benton	20	2	37	119	96						11	11					510
Clackamas	33	15	67	306	63		2		3		15	1	2			3	501
Clatsop	79	17	345	1,996	206	1		4	9				55	116		5	680
Columbia	37	16	105	580	54	16		2	1			2	9	11		1	441
Coos	36	26	65	805	44		1				18		12	1	9	1	480
Crook	5		2	4	2					1			11	1			105
Curry	9	1	24	31	10		3								16		146
Deschutes	20	4	85	421	8		1	8		4		1	41	8	52		86
Douglas	70	45	259	450	244	8	13	2			5		17	8	20	1	1,252
Gilliam	1																64
Grant	14		52	255	8			3		3			6				177
Harney	13		7	2	21	1				36			73	45			70
Hood River	8	1	32	121	24			1					2	1			59
Jackson	33	12	35	639	71	30	5	1			9		76	94			113
Jefferson	3		12	1	5			2		1			4				21
Josephine	16	9	9	441	57	4				1	2		5				111
Klamath	40	20	179	16,239	59		1	3		5			44	1	3		296
Lake	8		12	1,645	6					6			49	11			92
Lane	122	52	445	760	249	3	134	8			12	2	93	12	6	39	1,795
Linn	49	31	140	1,224	148		20				1		79	16		7	579
Linn	57	13	135	327	181	4	3				30	1	1			4	638
Malheur	29	6	1	3,563	26					20			251	75			118
Marion	43	3	47	621	81	14	1				21	2		4		31	513
Morrow	4		15	15	1												40
Multnomah	26	3	98	620	84	1	5	5	4			1	6	1	2		239
Polk	11	3	19	25	60		2				10	14	6	1			263
Sherman	1																28
Tillamook	34	25	133	551	73			2					11			1	212

Table 1 (Continued)
1959-1960 FUR CATCH

County	No. Trappers' Reports	Other	Mink	Muskrat	Raccoon	Skunk	Civet Cat	Weasel	Opossum	Badger	Gray Fox	Red Fox	Wildcat	Coyote	Marten	Nutria	Beaver
Umatilla	21		53	2,867	27	12								1			197
Union	18		43	656	20		1	9			2		17	3	1	10	54
Wallowa	15		82	911	30			18	2				12	3	1		30
Wasco	8	2	86	63	53				1				10	1			94
Washington	22	3	33	410	64				1		3	4	1				368
Wheeler	2		1	10													30
Yamhill	18	3	38	177	175			2			7	5	4			3	430
TOTALS	939	313	2,772	37,108	2,264	111	192	67	18	83	153	444	945	425	109	108	10,906

*Plus 8 ringtail cats (Curry - 6, Douglas - 2)



Seals Issued:

During the winter, trappers purchased 13,823 beaver seals at \$1.00 each. They reported using 10,906 on beavers and submitted 2,759 for refund. One hundred fifty-eight seals remain outstanding.

Damage Complaints:

Since opening of beaver seasons in 1951, the number of damage complaints has decreased in accordance with the decrease in the beaver population. Annual trapping in areas of damage serves to reduce the number and severity of the complaints. A total of 179 complaints was received and acted upon during the year, as compared with 289 in 1956. Many of these complaints were referred to private trappers for trapping during the open season. Advice and assistance on procedures and techniques for preventing damage were offered to a number of complainants. In addition, Commission personnel dead-trapped 110 beavers, live-trapped and transplanted 9, and issued 19 kill permits. Frequency of complaints and action taken for the past three years are shown in the following table.

Table 2

BEAVER COMPLAINT DISPOSITION

Region	No. Beaver Complaints			Beaver Dead-trapped			Beaver Live-trapped and Transplanted			Kill Permits Issued		
	1959	1958	1957	1959	1958	1957	1959	1958	1957	1959	1958	1957
Northwest	49	65	88	8	0	15	0	0	1	10	30	11
Southwest	28	34	51	0	0	1	0	0	0	8	16	18
Central	26	21	26	24	37	25	1	1	6	1	1	1
Northeast	58	47	79	52	31	69	8	13	7	0	2	0
Southeast	18	14	26	26	12	43	0	0	4	0	1	0
TOTAL	179	181	270	110	80	153	9	14	18	19	50	30

OTHER FURBEARERS

Trapping Pressure:

During the 1959-60 season only 1,029 trapping licenses were issued. Available records dating back to 1923 show this to be the smallest number of trappers for any previous year. License sales dropped steadily from a recent high of 2,270 for the 1951-52 season.

Fur Values:

Trappers again found fur prices very low on most species but slightly higher than prices paid last year. The value of otter pelts advanced \$3.87, beaver \$3.33, mink 88 cents, and muskrat 11 cents. Table 3 contains the average prices on the various species for comparison over the last five years.

With the return in fashion of a limited amount of fur trim to women's garments, long-haired furs are becoming more in demand. Wildcat, coyote, and raccoon are the furs most often used. This demand is reflected in the increased prices paid to fur trappers. Wildcats, which averaged \$1.32 during the 1954-55 season, brought an average of \$6.49 last winter, with the best pelts selling for a high of \$18.00.

Fashions have not demanded the return of marten skins. Trappers averaged only \$3.17 as compared with \$33.45 each during the winter of 1945.

Table 3

AVERAGE PELT PRICES

Species	1959-60	1958-59	1957-58	1956-57	1955-56
Mink	\$ 9.45	\$ 8.57	\$ 8.08	\$10.42	\$13.71
Muskrat	.66	.55	.66	.71	.97
Marten	3.17	4.34	4.59	5.31	5.00
Otter	21.93	18.05	23.80	21.95	20.65
Beaver	12.41	9.08	10.29	9.24	11.90
Wildcat	6.49	3.43	2.76	2.43	2.56
Coyote	1.99	1.15	1.00	1.12	1.42
Badger	2.10	1.43	.83	-	-
Raccoon	1.66	1.35	1.10	.76	.96
Gray Fox	.52	.41	.39	.32	1.16
Red Fox	2.81	3.08	3.00	1.35	-
Skunk	.74	.86	.65	.34	.53
Civet Cat	.86	.52	.47	.55	.67
Weasel	.46	.29	.53	.44	.60
Opossum	.68	.23	.20	.22	.70
Ring-tailed Cat	.43	.76	.71	.50	-
Nutria	.56	.78	1.29	-	-

Annual Fur Catch:

Trappers reported catching 56,424 animals during the 1959-60 trapping season and receiving \$204,872.25 from the sale of their pelts. This represents approximately 91 per cent of the fur harvest since only 90 of the 1,029 licensed trappers failed to file a report.

Table 1 contains the compiled reports by species for each county.

Drouth throughout southeastern Oregon eliminated or seriously reduced the muskrat population on many of the marsh areas. Only 2 muskrats were reported trapped in Harney county where the normal take runs between 10,000 and 15,000 animals.

Nutrias which escaped or were illegally liberated from fur farms have apparently become established in western Oregon. Trappers reported catching nutrias in 12 western Oregon counties and in Union county.

Opossums are also established and spreading from two illegal introductions. The colony in Clatsop county has spread into Columbia, Washington, and Tillamook counties, and the introduction near Troutdale has spread through the territory bounded by the Columbia River, Cascade foothills, Molalla River, and Willamette River.

Muskrat Census and Harvest (Lake County):

The January census of muskrat houses on Silver Lake showed 21 being used, a slight increase from 1959.

Table 4

SILVER LAKE MUSKRAT HOUSE COUNT

Year	No. Houses	Year	No. Houses
1960	21	1957	33
1959	13	1956	5
1958	41	1955	2

The census of occupied muskrat houses on the Summer Lake Game Management area resulted in a count of 1,228, a tally slightly lower than last year but well above the counts of the previous 6 years. Table 5 presents the results of these January counts and the subsequent harvests which took place. The 1,602 pelts taken from the area were sold through The Seattle Fur Exchange for a net of \$1,026. The share-trapper received 75 per cent of the revenue and the Game Commission retained 25 per cent.

Table 5

SUMMER LAKE MUSKRAT CENSUS AND HARVEST

Year	Number Houses	Musk rats Harvested	No. Trap Nights	Av. No. Trap Sets per Catch
1953	455	0	-	-
1954	782	0	-	-
1955	771	827	3,141	3.7
1956	726	835	2,160	2.5
1957	527	0	-	-
1958	1,033	1,652	3,994	2.4
1959	1,342	1,543	3,344	2.1
1960	1,228	1,602	3,920	2.4



In July, 1959, the department created a Division of Fish and Game Research. This Research Division inherited responsibility for the execution of game research projects.

Findings of the two deer studies that were initiated in 1958 are summarized in the following paragraphs.

I. An Ecological Study of Mule Deer on the South Silver Lake Range.

This Federal Aid project (W-53-R) is being carried out in cooperation with the Northwest Forest and Range Experiment Station of the United States Forest Service. The Experiment Station is conducting a forage study.

The Game Commission is engaged in determining the annual population level of deer, the extent of seasonal range used by deer, and the reaction of hunters to and the effect upon the deer herd of several types of hunting regulations.

A. Population Studies

1. Trend census.

Data from winter counts for 1959 and 1960 of 137 miles of sight record strip counts have been obtained. Each winter three consecutive counts of the 137 miles of sample strips were made at the peak of late winter deer concentration. The results of counts of identical samples are presented in Table 1.

Table 1
SIGHT RECORD STRIP COUNTS

1959		1960	
Count	No. Deer	Count	No. Deer
1	2,680	1	3,405
2	3,212	2	3,528
3	3,173	3	3,287
Mean = 3,022		Mean = 3,407	

Confidence limits of the 1959 counts are:

$$95\% \text{ level} = 3,022 \pm 601$$

Confidence limits of the 1960 counts are:

$$95\% \text{ level} = 3,407 \pm 244$$

An analysis of variance for the 1959 and 1960 total counts indicates no significant difference at the 95 per cent level between the three total counts for either year.

Using pooled totals of the three counts for each year in a ratio analysis, no significant difference in the deer populations between the two years, 1959 and 1960, was shown by the data obtained.

Further analysis of these data suggests that the sampling intensity is only capable of detecting a total population change from year to year of 20 to 25 per cent, or greater.

2. Summer track count samples

Data from two summer counts of 20 one-mile track count samples on the assumed summer range of the South Silver Lake deer herd have been obtained. Three consecutive counts were made in late August of 1958 and 1959 of the 20 sample strips. The results of the counts are presented in Table 2.

Table 2

TRACK SAMPLE COUNTS			
1958		1959	
Count	No. Tracks	Count	No. Tracks
1	390	1	791
2	530	2	823
3	548	3	886
Mean = 489		Mean = 833	

Confidence limits of the 1958 counts are:

$$95\% \text{ level} = 489 \pm 175$$

Confidence limits of the 1959 counts are:

$$95\% \text{ level} = 833 \pm 98$$

An analysis of variance of the 1958 and 1959 total counts indicates no significant difference at the 95 per cent level between the three total counts for either year.

Using pooled totals of the three counts for each year in a ratio analysis, a significant difference is indicated at the 95 per cent level between the populations of deer tracks counted in 1958 and 1959. A 25 per

cent increase in deer tracks with a standard error of .12 was indicated for 1959 over 1958.

Track count sampling appears to be an excellent technique for obtaining pre-season fawn-adult ratios. The ratio of fawns to adults in August 1958 was found to be .31 with a standard error of .06. In August 1959, it was .50 with a standard error of .05, an increase in the fawn to adult ratio of 61.29 per cent for 1959 over 1958.

Animal tracks are, of course, a measure of animal activity as well as abundance and are directly affected by the many factors which influence animal activity. It is not known that an increase in deer numbers would result in a proportionate or disproportionate increase in deer tracks.

B. Seasonal Deer Range Determination

A deer trapping, marking, and marked deer recovery program was started in the past year on the Silver Lake range. Six large corral traps and eight smaller portable traps baited with alfalfa hay, mahogany boughs, and stock salt were used to capture deer on the Silver Lake winter range.

C. Hunting Season

Four thousand permits were issued for a 23-day either-sex season on the Silver Lake unit in 1959. Three thousand, eight hundred and ninety nine hunters spent 10,762 hunter days in killing 2,290 deer for a success ratio of 58.7 per cent on the area in 1959. The doe kill increased 19 per cent, the fawn kill increased 7 per cent, and the buck kill decreased 26 per cent of the total kill in an either-sex season as compared to a buck season followed by an either-sex season. Hunters reported seeing far more live deer in 1959 than in 1958, but about the same number of wasted carcasses. Hunters are apparently unable to accurately classify the age and sex of the deer they see while hunting. A correlation coefficient ($r = .987$, $r^2 = 97\%$) was found between the deer kill and the number of hunter days spent on the area for each day of the open season. A count of cars was found to be the most reliable method of field checking hunter density. No significant difference could be found in deer condition between deer killed in 1958 and 1959.

II. An Ecological Study of Black-tailed Deer

This Federal Aid project (W-51-R) is a cooperative endeavor of the Oregon State Game Commission and the Oregon State Board of Forestry. The primary objective is to determine the effect of known number of deer upon the growth and survival of young Douglas fir in plantations.

A. Deer Population Control

In May 1959, a 330-acre deer enclosure was located in the Tillamook Burn. Utilizing traps, snares, and drugs, a known deer population of 15 tagged and belled animals was established in the enclosure by January 1960. The composition of the original deer population trapped within the enclosure in June 1958, the deer population within the enclosure in June

1959, and the known deer population of June 1960 is given in the following table.

Table 3

DEER POPULATIONS, CEDAR CREEK ENCLOSURE			
Deer	June 1958	June 1959	June 1960
Adult male		9**	3
Yearling male		8	1
Total adult and yearling males	12	17	4
Adult female		18***	7
Yearling female		8	
Total adult and yearling females	19	26	7
Tagged fawns		22	
Untagged fawns		4	
Total fawns	16*	26	4
TOTAL DEER	47	69	15

* Plus unknown natural mortality.

** Does not include three killed during 1958 hunting season.

*** Does not include on fence kill October 1958.

B. Douglas Fir Study

Two randomly located 55-acre plantings of 2-0 Douglas fir seedlings were made within the enclosure, one in February 1959 and one in December 1959. In order to measure animal damage to the planted seedlings, 18 randomly located 50-tree sample plots were established in 1959 and 21 like plots were made in 1960.

Deer damage to conifers in the Tillamook Burn area is seasonal in nature, occurring mainly from December to April. The damage sample plots were measured twice each year: in April to assess animal damage, and in late summer at the end of the growing season to determine annual growth and mortality. The result of the measurements made to date on the damage sample plots is given in Tables 4 and 5.

Table 4

CEDAR CREEK DOUGLAS FIR DAMAGE MEASUREMENTS

Date Planted	Date Checked	Un-damaged Trees	Alive		Total Trees Alive	Dead Trees			Missing Trees	Total Trees Dead	Total Trees	
			Damage by Deer	Damage by Rabbit		Un-damaged	Damage by Deer	Damage by Rabbit				
<u>February 1959 Planting:</u>												
Trees 2/59	4/59	470	311	4	785	3	96	1	15	115	900	
Percentage		52.2	34	.4	87.2	.3	10.7	.1	1.7	12.8	100	
Trees 2/59	8/59	543	4	0	547	87	130	9	12	238	785	
Percentage		69.2	.4	0	69.7	11.1	16.5	1.1	2	30.3	100	
Trees 2/59	4/60	416	40	9	465	46	15	1	21	83	548	
Percentage		76	7	1.7	85	8.4	2.7	.2	3.8	15.1	100	
Total Survival and Mortality					51.7	15.1	26.8	1	5	48.4	100	

Table 5

<u>December 1959 Planting:</u>												
Trees 12/59	4/60	989	24	30	1,043	3	1	2	1	7	1,050	
Percentage		94.2	2.3	2.8	99.3	.3	.09	.19	.09	.7	100	

Table 6 indicates the percentage of change in deer numbers and deer damage occurring within the Cedar Creek enclosure in 1959 and 1960.

Table 6

PERCENTAGE OF CHANGE IN DEER NUMBERS AND DEER DAMAGE,
CEDAR CREEK ENCLOSURE

Year	Deer Population	Percentage of Change	Deer-days of Use	Percentage of Change	Available Trees Damaged Per Deer- day Use	Percentage of Change	Percentage of Trees Damaged by Deer	Percentage of Change
1959	43		3,053		.133		45	
1960	15	-64	2,010	-34	.012	-91	2.3	-95

The reduction in deer damage to available fir seedlings (45 per cent to 2.3 per cent) was in greater ratio than either the reduction in deer numbers (43 to 15) or the reduction in potential deer-days use (3,053 to 2,010).

C. Other Work

Other studies currently under way at Cedar Creek include a testing of mechanical protectors for reducing deer damage to conifer seedlings, inception of deer forage availability and utilization studies, testing of pellet group counting as a population and deer use index, and assistance in testing the effects of tetramine-treated conifer seedlings on deer.



Habitat Improvement



Habitat development on game management areas is reported under the appropriate heading.

A state-wide habitat improvement project (P.R., W-38-D) includes most of the other developments. A habitat improvement agent, with crew and equipment, is assigned to each of three regions to carry out the program. Several other employees work part time on the project. Most of the project effort goes to developing upland game habitat on private farm lands.

The following is a summary of the separate progress report for Project W-38-D-7, Habitat Improvement for Game, covering the period October 1, 1958 to December 31, 1959.

During this period, 36 ten-year agreements were signed with cooperating landowners. The total number now in effect is 335. Ninety-five per cent of these farms, totaling 317,667 acres, are open to hunting. In addition, seven annual agreements concerning annual crops called for 1,605 acres to be open to hunting.

Northwest Region: Some type of habitat development was performed on 86 farms. Multiflora rose planted during the two seasons of this period totaled 29,790 plants. Survival of previous plantings has been good. Annual food crops raised for upland game and waterfowl totaled approximately 800 acres. Twenty concrete, cistern-type water developments were completed. An estimated 110 acres of burned or logged-over hill land in Clatsop County were broadcast seeded to lotus for big game range improvement. One hundred wood duck nest boxes were built and erected and 106 boxes were inspected for utilization.

Columbia Basin: Two crews planted approximately 120,000 tree and shrub seedlings of 16 species on private farms for upland game cover. Thirty-five new plantings were set out on 185 acres. These, as well as most plantings made during the previous two years, were maintained by cultivation, weed

spraying, and often by fencing. Some 200 pounds of clean seed, locally collected is available for propagating part of next year's stock. Four quail roosts were constructed. Fifty-five grass seedings, on 105 acres, were made for improving cover. Twenty-three thousand Volga wildrye grass plants were set out. Fifty-nine plastic cisterns were installed to provide watering facilities for upland game birds. Approximately 4,900 rods of new fence were constructed to protect various improvements or patches of existing good cover.

Southeast Region: Ten plastic cisterns were placed in chukar habitat of Lake County. These and previously installed units have been well utilized. Several small woody plantings were established (total, 3,130 plants).

State-wide: A total of 9,680 tree and shrub seedlings was planted on various game management areas and elsewhere for trial or demonstration purposes. Several types of water developments for big game were installed for trial on the Deschutes National Forest.

Forest Cooperative Projects (In part, included in W-38-D)

Ochoco: A cooperative upland game habitat development project was initiated in the spring of 1959 upon the Land Utilization (recently renamed National Grassland) project near Madras. To date, the following work has been completed:

- 1) Seven plots, averaging about one acre in size, were prepared, fertilized and seeded to grain, perennial grass and legume mixtures. A total of 514 rods of stock-tight fence was constructed.
- 2) Approximately one-half mile of creek bottom was fenced stock-tight to protect existing cover.
- 3) Three old orchards or homestead sites were fenced to exclude livestock (160 rods of fence). Developed springs provide available water.
- 4) A total of 3,750 shrub and tree seedlings was planted.
- 5) Six self-filling plastic cisterns were installed for drinking water.

On the Big Summit district of the Ochoco National Forest, a trial planting of 1,200 woody plants of ten species was made in cooperation with the forest.

Deschutes: The Fort Rock district on the Deschutes forest has given high priority for wildlife and recreation. Over most of the district, water is unavailable. The Game Department has cooperated since 1948 in the development of excavated waterholes for deer. During the past year, eight of these were deepened. Currently, interest centers around the development of a satisfactory self-filling cistern. Two types were installed last year for trial. A 700-gallon metal stock tank was placed in a dry waterhole; a sheet-metal collecting apron will be constructed. Also, a 1,200-gallon capacity concrete tank with metal collecting apron and drinking trough regulated by float valve was designed and built for trial. The tank was full this spring. Some seeding and planting is in progress on the district. Five hundred woody plants and a grass-legume seed mixture were planted in fenced areas around the Pumice Spring and Sand Spring waterholes. A cooperative bitterbrush reseeding trial is under way in the Aspen Flat burn. Last fall, 220 pounds of bitterbrush seeds

were drilled on several sites. Germination and early survival this spring has been very satisfactory.

Shrub Nursery

This nursery, located at the Hermiston game farm, produces species not commercially available or those used in small quantities. This stock is available in the fall for replacement planting. Most of the planting stock used in the habitat improvement program is produced in the State Board of Forestry nursery. A smaller quantity is purchased from commercial nurseries.

Production for the 1959 growing season at the Game Commission nursery was as follows:

<u>Species</u>	<u>Amount</u>	<u>Source</u>
Volga wildrye grass	27,700	Culms produced at nursery
Black locust	4,500	Seed collected locally
Sand cherry	3,500	Seed purchased
Chokecherry	3,300	Seed collected locally
Bitterbrush	2,425	Seed collected locally
Klamath plum	2,275	Seed collected
Multiflora rose	2,100	Seed collected locally
Matrimony vine	1,600	Cuttings from nursery production
Southernwood	455	Cuttings from nursery production
Purpurea willow	350	Cuttings from nursery production
American plum	225	Seed purchased
Hybrid poplar	180	Cuttings from nursery production
Golden willow	175	Cuttings from nursery production
Wood rose	30	Seed collected locally
Native willow	25	Cuttings from nursery production
	<u>47,140</u>	

Soil Bank

Cooperation with the Soil Bank program was continued. Meetings were attended and, in the Willamette Valley, field assistance was rendered with farm plan recommendations. A total of 200 man days per year is a reasonable estimate of the time this department has devoted to the program.

Some 5,700 acres in Oregon have been signed up specifically as wildlife practices; however, all of the 241,000 acres now under the Conservation Reserve in the state provide undisturbed vegetative cover, food or water attractive to many useful forms of wildlife.





The predatory animal control program in Oregon is administered by the Branch of Predator and Rodent Control, U. S. Fish and Wildlife Service, and operates on funds supplied by several federal, state, and private agencies. The budget for the 1960 fiscal year is presented in Table 1. With federal allotments, it totals \$333,000. Contributing agencies are: Counties, Bureau of Land Management, and Livestock Associations, \$135,800; State Game Commission, \$40,000; State Department of Agriculture, \$50,000; and the Federal Government, \$108,000.

Forty-seven federal hunters were employed under this program in 32 counties. Clatsop, Hood River, Multnomah, and Polk counties did not appropriate funds and, therefore, did not have the service of a government hunter. Timber interests in Clatsop county did, however, employ a trapper to destroy bears which were causing damage to second-growth fir trees.

During the fiscal year, these hunters took 9,186 predatory animals and an additional 4,056 nuisance animals of five species. A detailed list of take by species and by county is given in Table 2. A slight decrease in catch of most species was recorded. Many additional predators were taken with getters and lethal baits but were not located and, therefore, not counted.

Bounties:

During the year between April 30, 1959 and May 1, 1960, the Game Commission paid out \$1,800 for the destruction of 36 cougars and \$5,657.50 for the killing of 2,263 bobcats. The number of these animals bountied by county, with a comparison with the two previous years, is shown in Table 3.

Since the termination of World War II, a definite increase in hunting pressure has been exerted on the cougar. It is now sought by a large number of hunters as a trophy animal and should be rated higher than a predator with a price on its head. It is in danger of extermination, as revealed in the recent decline in the number of pelts presented for bounty. In 1949, 201 cougars were taken. Numbers have dropped steadily to 56 in 1957, 48 in 1958, and 36 in 1959.

Trends:

Field observations indicate bobcat and coyote populations are both down from 1959. Increased fur values, especially on bobcats, have stimulated trapping which has helped to hold the animals in check. The U. S. Fish and Wildlife Service stepped up their activities in southeastern Oregon, primarily through placement of lethal baits on antelope kidding grounds and on deer concentration areas, to reduce an increased population of coyotes.

Records of coyotes seen on big game census samples are available only from three districts in the Northeast Region and from one in the Southwest Region. Sixteen coyotes were observed on 459 miles of samples in Grant, Umatilla, and Morrow counties, and 2 coyotes on 200 miles of winter samples and 1 coyote on 200 miles of summer samples in Jackson and Josephine counties.

Avian Predators:

Crows, magpies, and ravens were quite plentiful throughout their ranges. No unusual instances of extensive predation were recorded.

An attempt was made by the U. S. Fish and Wildlife Service and State Department of Agriculture to control starlings. Light traps were used with good success in holly groves in the Willamette Valley. Excellent success was obtained in killing several hundred thousand starlings in eastern Oregon feed lots with poisoned French-fried potatoes.



Table 1

FEDERAL PREDATORY ANIMAL CONTROL BUDGET
July 1, 1959 through June 30, 1960

County	County Budgeted, B.L.M., and Livestock Association	State Dept. of Agriculture	State Game Commission
Baker	\$ 4,500	\$ 1,386	\$ 1,386
Benton	3,300	925	925
Clackamas	3,500	925	925
Columbia	1,500	465	465
Coos	9,600	2,772	2,772
Crook	3,000	925	925
Curry	6,000	1,850	1,850
Deschutes	3,000	925	925
Douglas	13,000	3,695	3,695
Gilliam	3,000	925	925
Grant	3,000	925	925
Harney	4,300	1,620	1,620
Jackson	3,500	925	925
Jefferson	1,500	465	465
Josephine	3,300	925	925
Klamath	6,000	1,850	1,850
Lake	6,000	1,850	1,850
Lane	9,000	2,772	2,772
Lincoln	3,200	925	925
Linn	3,000	925	925
Malheur	5,000	1,155	1,155
Marion	3,200	925	925
Morrow	6,000	1,850	1,850
Sherman	2,250	695	695
Tillamook	3,000	925	925
Umatilla	4,000	925	925
Union	3,000	925	925
Wallowa	3,000	925	925
Wasco	3,700	925	925
Washington	3,200	925	925
Wheeler	3,000	925	925
Yamhill	3,300	925	925
TOTALS	\$135,850	\$40,000	\$40,000
Bird Control Program		10,000	
GRAND TOTALS	\$135,850	\$50,000	\$40,000

Table 2

PREDATORS TAKEN BY FEDERAL HUNTERS
July 1, 1959 through June 30, 1960

County	Coyote	Bobcat	Bear	Mt. Lion	Fox	Porcupine	Badger	Skunk	Raccoon	Opossum
Baker	241	134	14			73	92	1	11	
Benton	17	33	4		55			40	46	
Clackamas	41	30	4		57			1	30	5
Clatsop			23							
Columbia	52	5	27							
Coos	48	87	38			4		16	9	
Crook	165	72				55	23	1	52	
Curry	14	39	35					1	2	
Deschutes	133	19				24	12	1	7	
Douglas	191	97	33		13	112			1	
Gilliam	67	17				18	50	45	173	
Grant	233	73				15	33	1	3	
Harney	419	136				6	61		2	
Hood River								7	7	
Jackson	239	61	5		8	46		52	31	
Jefferson	85	53				53	11		5	
Josephine	139	130	3		26	126		140	61	
Klamath	181	118	1			155	27	4	5	
Lake	722	211	1			62	123	1	33	
Lane	92	67	28	4	49	10		26	26	
Lincoln	15	23	1	1	1				32	
Linn	58	33	5		132	2		23	15	
Malheur	1,334	400	5			37	508	1	13	
Marion	46	18	5		125	1		21	20	2
Morrow	261	45	3			55	71		22	
Multnomah										
Polk										
Sherman	46	10				31	19	9	1	
Tillamook	129	60	11					3	16	
Umatilla	316	25	1			68	62	3	6	1
Union	101	60	2	2		97	40	11	23	
Wallowa	214	110	7			269	85	4	20	
Wasco	200	35				103	78		16	
Washington	57	9	1		28			8	35	1
Wheeler	118	35				14	38		5	
Yamhill	40	21	21		132			6	123	
TOTAL	6,014	2,266	273	7	626	1,439	1,333	418	651	15

Table 3

PREDATORS BOUNTIED
 May 1, 1959 through April 30, 1960

County	Bobcat			Cougar		
	1959-60	1958-59	1957-58	1959-60	1958-59	1957-58
Baker	276	138	126	2	-	-
Benton	-	-	-	1	-	-
Clackamas	46	37	72	-	2	2
Clatsop	112	133	126	-	-	1
Columbia	56	54	35	-	-	-
Coos	72	40	105	-	-	2
Crook	-	-	-	-	-	-
Curry	41	38	67	7	3	6
Deschutes	138	150	186	1	2	-
Douglas	241	329	280	11	15	18
Gilliam	24	46	41	-	-	-
Grant	-	-	-	-	-	1
Harney	-	-	-	-	-	-
Hood River	-	-	-	-	-	-
Jackson	431	371	356	1	-	1
Jefferson	-	-	11	-	1	-
Josephine	58	91	40	-	2	1
Klamath	-	-	-	-	-	-
Lake	-	-	-	-	-	-
Lane	158	176	189	7	12	20
Lincoln	108	120	157	1	1	1
Linn	30	61	63	1	3	-
Malheur	-	876	335	-	1	1
Marion	15	15	40	-	1	-
Morrow	-	16	82	-	-	-
Multnomah	36	67	92	-	-	2
Polk	75	48	76	-	-	-
Sherman	-	-	-	-	-	-
Tillamook	-	12	-	2	1	-
Umatilla	-	-	-	-	-	-
Union	-	-	-	-	1	-
Wallowa	2	54	70	1	3	-
Wasco	143	127	111	1	-	-
Washington	-	-	6	-	-	-
Wheeler	201	137	153	-	-	-
Yamhill	-	-	-	-	-	-
TOTAL	2,263	3,128	2,819	36	48	56



In its endeavor to meet the increasing public demand for wildlife and outdoor recreation, the Commission has found it necessary to acquire certain key tracts of land and develop them for primary use by wildlife and the public.

Most of Oregon's land acquisition and development programs have been executed with the assistance of federal Pittman-Robertson funds. Further federal assistance is rendered by permitting the withdrawal of public domain lands for wildlife and recreational purposes.

Oregon laws provide that lands purchased for the production of game and recreation are taxable. Taxes accruing on the 41,677 acres of project lands in 1959 totaled \$26,118.29.

Table 1 displays the location and status of land management projects. Acquisition and development are not complete on any of the areas. Substantial progress in development occurred in 1959; however, only 1,988 acres were acquired during the year.

Uses of game management areas by both wildlife and the public have shown a consistent increase and the need for further acquisition and development of land is evident.

Table 1
GAME MANAGEMENT AREAS

Name	Area	Date Initiated	Project Area	Purchased to Date	Land Acquired		Lease or Agreement Acres	Annual Cost	1959 Taxes	1959 Assessment
					Cost	Acres				
Summer Lake	14,250A	1944	14,250A	8,472A	\$100,102.00	5,778A	\$ 900.00	\$ 332.85	\$1,092.77	
Sauvies Island	12,129A	1946	12,129A	7,369A	786,117.00	3,495A	1,000.00	10,228.82	3,458.97	
Government Island	2,565A	1949	2,565A	2,310A	190,622.00	-	-	3,480.43	-	
Ladd Marsh	1,463A	1949	1,463A	1,463A	252,074.00	-	-	705.10	-	
Klamath	8,291A	1949	8,291A	2,874A	239,936.00	2,400A	-	661.97	535.28	
North Fork	23,900A	1950	23,900A	1,440A	7,204.00	9,992A	2,623.00	137.75	119.62	
E. E. Wilson	1,771A	1950	1,771A	-	-	1,686A	-	-	-	
Ft. Stevens	1,466A	1950	1,466A	-	-	1,466A	-	-	-	
Warner Valley	22,000A	1951	22,000A	-	-	22,000A	-	-	-	
Wenaha	17,652A	1953	17,652A	6,831A	149,493.00	40A	6.00	1,394.27	822.84	
White River	17,016A	1953	17,016A	8,208A	184,999.00	-	-	2,515.30	687.34	
Camas Swale	2,700A	1942	2,700A	2,514A	78,945.00	-	-	5,964.58	-	
Willamette Valley Flood Control Dams	3,703A	1949	3,703A	36A	-	3,667A	-	92.42	-	
Rogue Valley	1,920A	1953	1,920A	160A	48,000.00	1,760A	-	604.80	427.50	
TOTALS			130,826A	41,677A	\$2,037,492.00	52,284A	\$4,529.00	\$26,118.29	\$7,114.32	

GAME MANAGEMENT AREAS

SAUVIE ISLAND GAME MANAGEMENT AREA

In 1947 the Game Commission initiated the purchase of land in the northern half of Sauvie Island for a game management area. To date, 10,863 acres have been acquired, of which approximately 5,700 were open to public hunting during the 1959 waterfowl season. The balance of the area remained closed, as did an additional 1,260 acres of adjacent private land which is in legislative refuge.

Development:

During the 1959 farming period, a total of 709 acres was planted to wildlife food crops and left standing for fall and winter waterfowl use. Acreages were as follows: field corn - 81; sweet corn - 45; Sudan grass - 229; summer barley - 29; fall barley - 95; buckwheat and/or duckwheat - 64; barley, duckwheat, buckwheat, and millet in various combinations - 130; and potatoes - 36.

Waterfowl populations were low throughout most of the winter. Mild weather and ample feed in eastern Washington were instrumental in keeping large flights of mallards in the upper Columbia basin during much of the winter. With a comparatively small number of birds using the island, the planted food crops were sufficient to carry the birds through most of the mild winter. A supplemental supply of 3,000 bushels of barley, however, was fed out in February and March. This grain had been held in storage for 3 years for emergency use and was badly infested with weevils.

Six lakes were treated with rotenone to kill scrap fish and thus allow aquatic waterfowl food plants to grow.

Recreation:

Popularity of the management unit as a recreation area continues to grow. The number of people using Game Commission lands was determined to be 120,000, a 20 per cent increase over 1959. Angling, picnicking, water sports, hunting, and other forms of activity attracted the outdoor enthusiasts.

Waterfowl:

The peak in the fall population of waterfowl occurred during the first week in December. Flights of mallards arrived on normal dates, but the numbers were only half the numbers recorded in 1958. A high of 125,000 mallards was counted on December 3 as compared with a high of 200,000 on December 13, 1958.

Hunting was allowed on the area every other day through the 94-day season, a total of 47 hunting days. A total of 9,560 hunter days was used in bagging 14,668 ducks, 244 geese, 43 coots, and 6 snipe for a 1.56 birds-per-man success average.

Ten barrel blinds were placed in fields on Oak Island and afforded extra hunting for 623 nimrods. They killed 376 ducks and 157 geese for a 0.95 success average.

Upland Game:

No pheasants were released on the management area, but hunters were successful in bagging 161 birds from previous liberations or natural reproduction.

During the winter 209 valley quail were liberated. These birds had been previously live-trapped in eastern Oregon.

GOVERNMENT ISLAND MANAGEMENT AREA

The Government Island group is administered as part of the Sauvie Island project. All of the 2,310 acres owned by the Game Commission on Government, Lemon, and McGuire Islands were closed to waterfowl hunting but open to deer and upland game birds.

Development:

Forty-nine acres were seeded to wildlife food crops and left standing for winter use. Acreages were as follows: corn - 6, potatoes - 8, summer barley - 5, fall barley - 15, and buckwheat - 15. Most of the corn did not mature, but a fair amount of food was produced from the other seedings.

Twenty-five acres of brush and berry bushes were cleared.

Waterfowl:

Government Island remained closed to waterfowl hunting, but hunters did kill a number of birds on adjacent sand bars.

Approximately 2,500 ducks and 400 geese wintered on the island. Goose numbers were up from last winter but only half the usual population of ducks migrated into the area.

Upland Game:

Pheasant hunting was allowed during the entire season. An undetermined number of sportsmen was attracted to the island to hunt the 479 pheasants which had previously been liberated. Success was good the first week end but dropped off rapidly as the remaining birds sought protection in dense vegetation.

Two hundred valley quail were transplanted during the winter from eastern Oregon.

Recreation:

Government Island is growing rapidly in popularity as an outdoor playground. Its beaches and sandbars are heavily used by boaters, picnickers, and other recreationists. With increased usage, incidents of vandalism, litterbugging, and other undesirable acts have increased manifold.

SUMMER LAKE GAME MANAGEMENT AREA

In 1944 the Game Commission initiated the purchase of land for the Summer Lake Management Area with primary objectives of producing and maintaining waterfowl and providing an area for public recreation. To date, 13,960 acres have been purchased or leased. Of this total, 6,598 acres were open to hunting in 1959.

Acquisition:

The Foster tract containing 455 acres and the Lewis tract containing 40 acres were purchased and added to the management unit during the year.

Development and Maintenance:

A new residence and checking station with bachelor's quarters were constructed. The rock bunk house, storage and power house, chicken house, and oil house were razed and material salvaged. Routine maintenance was conducted on all other buildings.

Approximately one-half mile of 3' x 12' dike was constructed to enclose a 30-acre marsh management unit. Two thousand three hundred yards of gravel and dirt were hauled to repair dikes damaged by wind and water erosion and burrowing rodents. One-half mile of ditch was cleaned with the dragline.

Eight miles of roads were graded and maintained and one mile of roadway was resurfaced.

One and one-fourth mile of fencing was replaced and 35 miles of fence maintained.

A total of 449 acres was farmed, planted to barley, wheat and rye, and left standing for bird feed. Farming operations also included irrigating, land leveling, and application of large quantities of 2-4-D to control Russian thistle, Russian knapweed, sweet clover, white top and morning glory.

Waterfowl:

The peak population of waterfowl at Summer Lake was 428,678 recorded on November 19. Snow geese made up most of the population. Only 6,000 ducks and geese remained through the winter months.

Production of both ducks and geese was comparable with that of 1958.

Hunters killed more geese than ducks during the 94-day season. A total of 6,260 hunter days was expended in taking 6,239 ducks and 6,621 geese, for a 2.07 birds-per-man-day success ratio.

Upland Game:

A large decrease in the carry-over of pheasant breeding stock which survived the hunting season and mild winter was recorded in the spring census of Summer Lake Valley. Only 6.5 birds per 100 acres were observed as compared with 24.3 in 1959. Quail numbers were also down to 11.1 per 100 acres from 58.4 in 1959.

Four hundred forty-eight pheasants were liberated on the area during the summer. Hunters bagged only 71 of these on the area during the season.

Furbearers:

A January, 1960 census of active muskrat houses revealed 1,228 compared with 1,342 in 1959. A trapping quota was set on the basis of this inventory.

The share trapper fulfilled his quota after the termination of the waterfowl season, catching 1,602 muskrats which sold for \$1,026.00.

KLAMATH GAME MANAGEMENT AREA

The Klamath Game Management Area comprises a total of 5,585 acres in the following units: 1,500 acres in Midland and Furber Marsh, 1,320 acres in Shoalwater Bay, 365 acres at Squaw Point, and 2,400 acres at Rocky Point. All of the Rocky Point unit is owned by the U. S. Forest Service, and 239 acres of the Squaw Point unit is owned by the State Land Board. The remaining lands in the Klamath Game Management Area are owned by the Game Commission.

The Furber Marsh unit is the only site where development and maintenance work were conducted. Unless otherwise stated, the balance of this report refers only to this section.

Acquisition: None.

Development and Maintenance:

Routine maintenance was conducted on all buildings on the area.

Approximately 4,000 feet of irrigation ditch were dug with a back hoe and 680 feet of drainage ditch created with the use of ditching powder. Four culverts were installed in various ditches to provide better access to fields, and 160 feet of 21-inch culvert installed in the Klamath Irrigation District canal to insure a summer water supply. Repair of ditches and dikes was necessary due to muskrat burrows and wave action.

An access road, 1,825 feet in length, was constructed to provide public access to the Klamath River. A 60' x 100' parking area and a boat ramp were also completed.

A total of 240 rods of fence was constructed on the south boundary of the area.

Canada geese grazed heavily during the spring months on fall seeded barley and rye. Of 71 acres planted, 15 acres were completely killed out.

Spring rain benefitted 335 acres of spring planted barley, wheat, and oats, but later drouth has caused early heading which may reduce the yield. Short grain, however, should be taken more readily by migrant waterfowl.

Seventy-two acres of alfalfa, clover, and grass mixtures were fertilized, irrigated, and otherwise managed. Spring use on two of the alfalfa fields by white-fronted geese was quite extensive.

During the period, 120 tons of gypsum and 14 tons of ammonia sulfate and other fertilizers were used to condition the soil and improve fertility.

A 500-gallon fuel storage tank, steam cleaner, hay rake, and miscellaneous shop tools were purchased.

Game Use:

Twenty-five broods of Canada geese resided on the area, using the spring-planted grain adjacent to flooded areas. Between 200 and 300 local honkers moved back to the area after hunting season and remained through the winter.

Duck production was quite high with mallard broods most frequently observed. Broods of canvasbacks, redheads, shovellers, pintails, gadwalls, and cinnamon teal were also frequently noted.

Recreational Use:

Hunters averaged less than one bird per man-day during the 1959 season. A check of 467 hunters showed they had bagged 312 ducks, 12 geese, and 62 pheasants. Hunting on the units in Upper Klamath Lake was almost nonexistent, with the water level $3\frac{1}{2}$ feet lower than normal.

With the construction of an access road, boat ramp, and parking lot near the Klamath River, use of the area by hunters and fishermen has increased considerably.

ROGUE VALLEY MANAGEMENT AREA

The Game Commission acquired 1,760.64 acres of surplus military land at Camp White in 1953 from General Services Administration. In 1956 the Game Commission purchased an additional 160 acres along the south boundary and adjacent to Agate Slough. These lands were acquired primarily to produce upland game birds and waterfowl and to provide opportunities for public hunting and angling.

Development and Maintenance:

A concrete water control was constructed in the North Fork of Whetstone Creek to divert water for irrigation of a grain field and to create waterfowl habitat through impounding water in an existing pond site. Existing impoundments were maintained.

Six hundred seventy-two rods of four-strand barbed wire boundary fence were constructed and the existing eight miles of fence on the area maintained.

Twenty acres of Sudan grass were planted but failed to mature. Twenty-two acres of winter wheat planted in the fall of 1959 will provide good food and cover for wildlife.

Game Use:

Creation of waterfowl habitat through food plantings and impounding water has increased production of mallards and cinnamon teal. Pheasant and quail numbers have also increased because of improved habitat.

Recreational Use:

Hunting pressure on the area on doves, pheasants, quail, and ducks continues to increase. Proximity to Medford and lack of bird hunting sites in

Rogue Valley make the area quite valuable to local nimrods.

Impoundments on the area have been stocked with several species of warm-water game fish and now attract many families of anglers.

The area is also used for dog training and conducting field trials. A portion of the area has been set aside for these uses.

CAMAS SWALE MANAGEMENT AREA

In 1942, the purchase of Camas Swale for a game management area was initiated. Primary objectives were the production and management of waterfowl and upland game birds. To date, 2,514 acres of the 2,700-acre project area have been acquired.

Acquisition: None.

Development and Maintenance:

The Camas Swale area is divided into four farm units of approximately 500 acres of arable land. Through bids, sharecroppers are selected to plant a predetermined number of acres for wildlife in exchange for use of the other acreage. Under this arrangement, approximately 100 acres of corn and 300 acres of Sudan grass were planted and left standing as wildlife food crops.

Other developments included removal of old buildings, installation of cable gates, construction of 15 portable barrel blinds, purchase of five barrel blinds, culvert installation, drilling of a 110-foot domestic well which resulted in not finding water, and the construction of two parking areas.

Game Use:

Waterfowl did not use the food plantings extensively until after the close of the hunting season. Hunters using the area, therefore, had only fair success. Thirty hunters were checked with 35 ducks for a 1.2 birds-per-man success average. They had hunted 320 hours.

A fair harvest of planted pheasants was obtained with most of the birds bagged on the first two days of the season.

Recreational Use:

Hunting pressure was not controlled on the area during the 1959 hunting season. Spot checks were made to determine hunter success.

LADD MARSH MANAGEMENT AREA

Acquisition:

The 800-acre Boothman ranch was purchased and added to the Ladd Marsh Management Area.

Development and Maintenance:

One and one-fourth miles of fence were constructed and over two miles of fence repaired. The corral on the Counsell tract was replaced.

One-fourth mile of ditch was dug with a back hoe to connect an irrigation ditch to the marsh in order to maintain marsh water levels. A small dike was also dug to prevent drainage into a neighbor's drain ditch.

Maintenance was conducted on the houses and barns on the Counsell and Peebler tracts.

Wildlife Use:

Four goose nesting platforms were installed in the marsh. They have not been used to date.

SNAKE RIVER ISLANDS

Acquisition:

In 1959, the Game Commission acquired Patch ($78\frac{1}{2}$ acres), Porter (80 acres), and Huffman (55 acres) Islands in the Snake River from the Idaho Power Company. These islands were in restitution for waterfowl habitat destroyed with the filling of Brownlee Dam.

Thirty acres of Patch Island were seeded to barley and wheat by a share-cropper in exchange for grazing privileges on Porter Island. About 150 geese heavily grazed the planting during May and June. This grazing may reduce the yield as much as 50 per cent. The grain will be left standing for fall and winter use by upland game and waterfowl.

One hundred Russian olive trees, 150 willow cuttings, and 1,000 big rye grass plants were planted on Porter Island to improve wildlife habitat.

Most of Huffman Island was inundated when Brownlee Dam was at full pool during the spring months. This prevented the growth of any wildlife food or cover plants.



E. E. WILSON GAME MANAGEMENT AREA

Game farm operations and habitat plantings continue as the major activities on the E. E. Wilson Game Management Area. No major changes are planned unless necessitated by further Air Force development.

Juvenile hunters, dog trainers, and the general public use the facilities provided. An important aspect of such public use is the demonstration value of the area, particularly for habitat improvement and upland game management practices.

Game Production:

A total of 13,558 pheasants was liberated in western Oregon during 1959, including 168 birds sold to field trial organizations and 20 used for experimental studies. Liberations included 4,872 hens in the spring, 2,703 young birds during the summer, and 5,983 mature cocks for the fall hunting season.

European gray partridge liberations totaled 999 birds, 339 of which were breeders released in the spring and 660 young released in the fall. Early egg production permitted release of the breeders a month prior to any previous year. The hatching and rearing success percentages of 60 and 75, respectively, were comparable to past years.

The bamboo partridge received in April, 1959, did not produce any eggs or indicate interest in nesting.

Development of Habitat:

Habitat practices conducted last year were as follows:

1. Approximately 300 acres were farmed, of which 84 acres of mixed food crops were left standing for game bird use.
2. Approximately 60 tons of grain were harvested for use in the pheasant-rearing program.
3. Filbert trees on land reclaimed by the Air Force were removed and transplanted on filbert plots within the Management Area.
4. Noxious weeds such as Canadian thistle and tansy ragwort were controlled. A cutting and thinning program to eliminate excess brush was initiated to improve juvenile hunting and field trial conditions.
5. Three additional water impoundments were developed.

Juvenile Hunting Area:

A total of 178 juvenile hunters utilized the area during the 1959 season, bagging 199 pheasants and 5 quail.

Waterfowl hunting was permitted for the second year with 46 juveniles participating during the five days allowed. The kill totaled 92 ducks and 1 coot for an average of 2 birds per hunter.

Dog Trials and Training:

Approximately 200 persons used the area for dog training purposes while 400 more participated in field trials. Five different clubs utilized the area 18 days for ten licensed dog trials, including one Pacific Coast championship trial.

Population Trends:

Students of the Fish and Game Department at Oregon State College have discontinued annual inventory work on the area. Each year since 1950 complete counts have been attempted on a 400-acre block during January and April.

Upland game population trends will be measured by personnel working on the area. A complete count was attempted this spring on an 188-acre strip extending the full length of the area. Population densities averaged 68.0 pheasants, 11.7 valley quail, and 1.0 bobwhite quail per 100 acres. While these measurements cannot be compared with past records, continued sampling will provide a basis for determining trends.

HERMISTON GAME FARM

Operations at the Hermiston game farm during 1959 resulted in production of 14,813 game birds. Other activities included construction of haystack panels for big game damage control, raising of forage and grain crops, and growing of shrubs for habitat development projects.

Game Production:

A total of 10,404 pheasants was liberated, including 1,468 adult breeders during the spring, 7,742 young during the summer, and 1,194 adult cocks during the fall. All of these birds were released in eastern Oregon.

Chukar liberations totaled 4,192, of which 1,380 were breeders released in the spring and 2,812 were young birds liberated during the summer. Polk, Douglas, and Jackson counties received 1,096 of these birds while the remainder were liberated in eastern Oregon.

Construction:

Construction during 1959 included:

1. The shop was sealed with 1/4-inch plywood.
2. Two flat beds and one horse rack were completed for trucks in the Northeast Region.
3. The main irrigation headgate was improved and 75 distribution gates were installed.
4. A total of 927 snow fence type panels was constructed for haystack protection. This total included 310 panels 6 feet high by 12 feet long, 307 panels 6 feet by 15 feet, 66 panels 7 feet by 12 feet, and 244 panels 7 feet by 15 feet.

Grain and Forage:

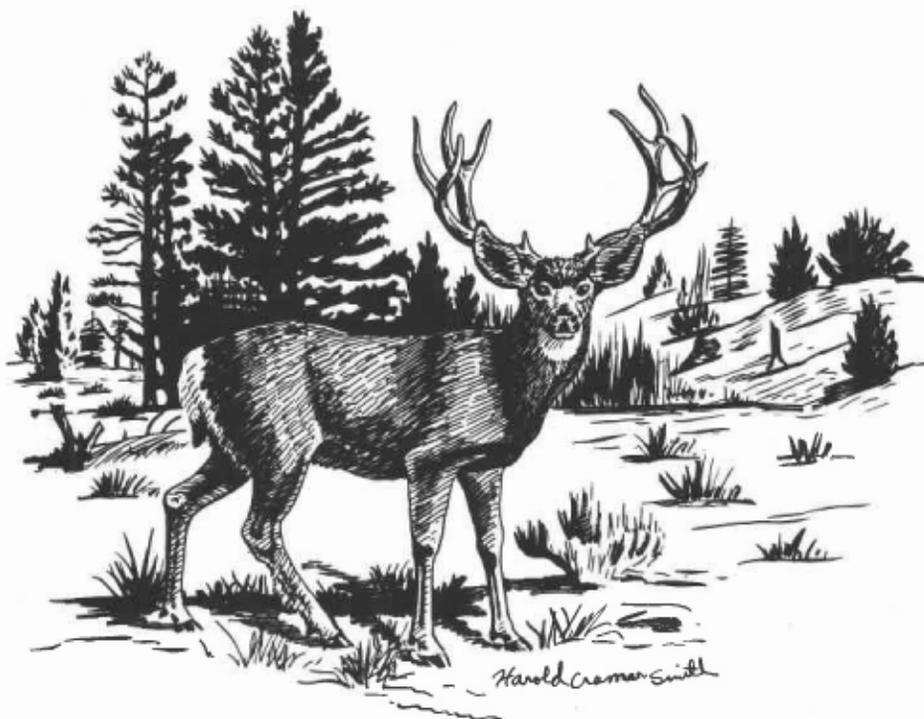
1. Approximately 26 tons of wheat and $3\frac{1}{4}$ tons of barley were produced.
2. Hay production totaled 240 tons, of which 48 tons were used for regional horse feed and 25 tons were carried over the winter.
3. A total of 37 tons of straw was sold.

Land Disposition:

Approximately 40 acres on the north end of the farm is under a five-year lease for mint production. The annual rental fee is \$2,000.

Habitat Development:

Shrub production at the nursery totaled approximately 21,000 plants of various species.



NORTH FORK JOHN DAY BIG GAME WINTER RANGE

The North Fork Winter Range project consists of approximately 12,000 acres of steep south slopes which have a low forage production potential. Most of the lands have been acquired by long-term lease.

Since 1954, the control of livestock trespass by fencing and patrol has caused the perennial grasses to show a good recovery and some shrub rejuvenation is evident.

The following is a summary of the past year's operation.

Acquisition:

A 300-acre tract was leased from Heppner Lumber Company, which has since been purchased by the Kinzua Logging Company.

Development:

A six-acre field near Hoskins Cabin was tilled and summer fallowed and planted to mixed grasses last fall.

Livestock trespass was controlled during the period.

The interior of the headquarters cabin was repainted.

Fencing maintenance took considerable time as a windstorm resulted in many breaks in the boundary fence. An ice jam swept away 300 yards of fence below Buckaroo Creek, which also was repaired.

No new salt was placed on the project, as the natural rock salt placed in the spring of 1959 is still usable.

Game Use:

Game inventories showed a general increase of deer and elk on the management area. Winter counts gave 16 mule deer per mile compared to 12 the previous year.

Elk sampling showed 113 elk observed compared to 77 for 1959.

Herd composition ratios for mule deer gave 26 bucks and 65 fawns per 100 does--a decline in the buck-doe ratio from 1959 but much above the 1958 ratio. This compares with the state average of 25 bucks and 71 fawns per 100 does.

The project is heavily hunted for both deer and elk during the 1959 season. Upland game birds were hunted lightly in the area, with the main emphasis on blue and ruffed grouse.

Bitterbrush plots on the North Fork project showed poor annual twig growth of only 2.1 inches and an over-all use of 67 per cent as compared to the eastern Oregon average of 3.3 inches and 59 per cent use.

Condition and trend transects showed an improvement in density and composition in plots protected against livestock use. Outside the project fences, the transects showed a density loss in desirable species.

WHITE RIVER BIG GAME WINTER RANGE

The White River range consists of lands adjacent to national forest lands on the east slope of Mt. Hood. This area is being acquired and developed as a wintering range for a herd of black-tailed deer. A deer-proof drift fence aids in preventing crop damage, particularly to winter wheat, on adjacent private lands.

The following is a summary of the past year's operation.

Acquisition:

The recent addition of the Barber estate consisting of 520 acres brings the project total to 8,193 acres, which is about half of the desired total area.

Development:

Maintenance was carried out on all buildings on the project.

A concrete floor for the basement of the McCorkle house was poured and a short sidewalk constructed.

Very little work on roads was required except for snow clearance last winter.

A new strip of fence $12\frac{1}{2}$ miles long was built through the sale of timber on the project. Most of the fence was built on Happy Ridge, mainly as a dividing fence between pastures. Maintenance was conducted on all other existing fences. Very little work has been required on the $4\frac{3}{8}$ miles of deer-proof fence.

One thousand bitterbrush plants from Hermiston were planted in the spring of 1959, but survival on these plants was low. This spring the following plantings were made on Happy Ridge: 430 American plum, 200 wild cherry, 700 silver-berry, 400 honeysuckle, 300 rose, and 1,000 bitterbrush. Survival was very good.

Planting and spot seeding were done in the spring of 1959 and 23 acres of new ground was cleared last fall and was leveled and seeded this spring. Some 50 acres of down logs and brush were burned on Happy Ridge and seeded to a grass-legume mixture.

Game Use:

Mild weather prevailed over the project last winter. Few elk used the area, but deer concentrations were high. A total of 659 deer was seen on the White River samples for an average of 34 per mile as compared to 32 per mile last year. For the general area of the project, 1,159 deer were seen for 62 miles of census route--slightly below the average for last year.

Herd composition data showed 44 bucks and 55 fawns per 100 does, as compared to 34 bucks and 73 fawns per 100 does for the state-wide black-tailed deer average.

Shrub use was considerably higher this past year, with bitterbrush showing 59 per cent use as compared to 44 per cent for 1959.

A clipping study conducted this spring on a field of mixed alfalfa and grass indicated that spring and fall game use was close to 1,000 pounds per acre. A 71 per cent difference was noted between the inside and outside of a deer-proof enclosure.

The project was used extensively by deer hunters with fair to good success. Hunting is fairly difficult due to the brushy terrain until late in the season when deer are forced down to lower elevations.

WENAHA BIG GAME WINTER RANGE

The 17,653-acre Wenaha project was initiated in 1953 to provide a winter range for elk and deer using the Wenaha watershed. Steep bunchgrass slopes above the Wenaha and Grande Ronde rivers provide forage during severe weather, while agricultural lands on the Bartlett and Eden benches are being acquired and converted into permanent pastures for use during milder weather. In addition to winter game use, management practices are benefitting the increase of resident elk and deer populations.

The following is a summary of last year's operation.

Acquisition:

No new lands have been purchased during the year, with the total remaining at 6,831 acres acquired to date, or a little more than one-third of the area planned for the project.

Development:

Approximately one mile of fence was constructed from the Eden bench breaks down to the Grande Ronde river, making a total of nearly 10 miles of forest Service boundary fence.

All buildings were maintained, and the gas-operated household equipment at the headquarters has been replaced by an electrically-operated water heater, range, and refrigerator.

A new shut-off valve was replaced at the lower Cummings tract and water system repairs were made on the Mabel Knight place.

Hay sharecropping operations gave the project a total of 2,823 bales on the fifty-fifty operative basis.

A 17-acre field above the Dick Schafer tract that was fallowed in 1959 was planted to a mixture of 75 pounds of alfalfa and 150 pounds of manchar brome seed. The newly seeded ground and other hay and grasslands received an application of 1,800 pounds of land plaster and 2,000 pounds of 16-20 fertilizer.

All alfalfa fields were worked with springtooth and spiketooth harrows to control weeds.

Skidroads and landings on the Hyland DeJean tract, totaling nine acres, were seeded to 45 pounds of timothy and 45 pounds of orchard grass. This seeding was done on snow and resulted in a very good stand. Seven acres on the Upper DeJean tract were seeded to the same mixture with fairly good results.

Game Use:

Game use on the project was heavy last year with a total of 151 deer seen on 22 miles of census sample. This average of 6.9 deer per census mile is well above the average of 3.7 for 1959.

Ground counts of Rocky Mountain elk showed a decline in animals seen from the previous year. An aerial inventory taken in March, however, showed an increase rather than a decrease in elk seen.

Herd composition averaged 55 bucks and 84 fawns per 100 does, which indicates a similar buck ratio to the 1959 production but an increase in fawn production. On Rocky Mountain elk, the ratio of 8 bulls and 46 calves is well below the 1959 ratio of 23 bulls and 63 calves per 100 cows.

The project area and adjacent summer ranges were heavily hunted for both deer and elk during the fall seasons. Heavier hunting on the project is anticipated with the build-up of the resident elk herd.

To better measure big game use on the area, a total of 11 pellet group transects have been established. Seven others will be set out as time allows, making a total of 18 transects, which will sample both the Eden and Bartlett benches. These transects have 10 individual plots set one chain apart and cover 1/100 of an acre each, or 1/10 of an acre per transect.





SUMMARY

A cold spring combined with less-than-normal precipitation in eastern Oregon contributed to a decline in the production of game birds and forage for big game in 1959.

The public demand for hunting increased nearly 5 per cent in 1959. Hunting license sales totaled 295,312. The hunters reported taking approximately 155,000 big game animals and 1,675,000 game birds.

Current game inventories indicate the following general conditions:

There is little evidence of change in mule deer densities in spite of a slight decline of fawn production and an exceptional harvest of 88,500 animals in 1959.

An increase of black-tailed deer is indicated; however, there is some evidence of a reduction in areas that were heavily hunted to alleviate damage to conifer reproduction and agricultural crops.

Roosevelt elk densities averaged the same as in 1959. Application of a noon opening and other protective measures substantially reduced wanton waste during the 1959 season.

Rocky Mountain elk wintered at high elevations and populations appear stable on all major elk ranges. Hunters reported harvest of 6,828 Rocky Mountain elk in 1959.

Antelope fawn production was below normal in 1959; however, survival was high during the mild winter and densities in the spring of 1960 averaged the same as in 1959. An aggressive predator control program was executed on antelope ranges.

Production of upland game birds was substantially below the averages for 1957 and 1958, particularly in eastern Oregon counties. This condition resulted in a decline in the number of birds harvested and a reduction of the number of breeding birds available in the spring of 1960.

A similar condition prevailed with waterfowl. The January inventory indicated a 16 per cent decline in the Pacific Flyway; however, an unprecedented number (1,019,356) of ducks and geese wintered in Oregon.

A recent decline in the fur market resulted in a reduction of trapping pressure and the number of furbearers harvested during the 1959-60 season.

The many development programs designed to enhance game production on the lands and waters of the state were aggressively executed during the year.

SUMMARY OF 1959-60 GAME INVENTORIES

Species	Miles of Samples	Numbers Counted	*Average Densities			Sex Ratio Per 100 Females	Production Per 100 Females	1959 Harvest	
			1960	1959	1958			Hunters	Kill
Mule Deer	2,723	34,295	12.6	12.4	12.7	13.2	71	141,181	88,589
Black-tailed Deer	957	5,707	6.0	4.0	3.3	3.6	73	107,520	57,414
Roosevelt Elk	378	1,803	4.8	4.8	3.9	3.5	36	14,814	2,147
Rocky Mtn. Elk	979	4,761	4.9	4.6	4.6	5.8	54	29,403	6,828
Antelope	3,725	5,712	1.5	1.5	1.3	1.4	45	900	451
TOTAL BIG GAME	8,762	52,278	-	-	-	-	-	293,818	155,429
Pheasants	976	5,573	22.8	30.9	26.9	19.1	430	97,474	375,641
Valley Quail	976	4,018	16.5	24.0	19.1	11.0	620)		
Bobwhite Quail	976	73	0.3	0.9	0.5	0.6	500)	32,588	224,123
Mountain Quail	1,747	385	0.4	0.5	0.4	0.3	800)		
Hun. Partridge	976	94	0.4	1.2	0.5	0.6	450	6,016	16,818
Chukars	976	23	0.1	-	-	-	700	11,373	36,326
Blue & Ruffed Grouse	1,747	474	0.2	0.3	0.2	0.3	250	15,332	32,770
Sage Grouse	589	1,861	3.2	4.1	-	-	230	7,127	17,304
Pigeons	-	4,369	-	-	-	-	-	17,557	194,189
Doves	863	6,566	7.6	5.3	4.8	4.9	-	13,143	86,019
Ducks	-	939,679	940M	904M	585M	412M	590	59,496	598,313
Geese	-	79,677	80M	94M	54M	71M	430	-	96,211
TOTAL GAME BIRDS	4,175	1,042,792						260,106	1,677,714

*Density Indexes - Pheasants, Quail, and Partridge - Birds per 100 acres
 Big Game, Grouse, and Doves - Per mile of sample route
 Waterfowl - January inventory

DIRECTORY OF PERSONNEL
GAME DIVISION

<u>Activity</u>	<u>Personnel</u>	<u>Headquarters</u>	<u>Address</u>	<u>Phone</u>
Chief of Operations	McKean, J. W.	Portland	Office	AT 2-5866
Big Game	Luman, I. D.	Portland	Office	CH 4-1843
Upland Game	Mace, R. U.	Portland	Office	CH 4-9894
Fur & Mig. Birds	Kebbe, C. E.	Portland	Office	AT 2-4066
Habitat Improvement	Stanton, F. W.	Portland	Office	CH 4-3379
NORTHWEST REGION				
Reg. Supervisor	Zumwalt, L. C.	Corvallis	Rte. 1, Box 325	WA 4-5311
Asst. Supervisor	Schneider, L. F.	Corvallis	Rte. 1, Box 325	WA 4-5311
Dist. Game Agent	Batterson, W. M.	Nehalem	Rte. 1, Box 28	EM 8-2265
Dist. Game Agent	Cummings, M. S.	Salem	Rte. 2, Box 59	EM 4-4148
Dist. Game Agent	Ives, F. F.	Corvallis	1544 Highland Way	PL 2-1798
Dist. Game Agent	Jubber, Robert	Eugene	1945 Hayes	DI 3-7236
Mgr., E. E. Wilson	Kirkpatrick, Don	Corvallis	Rte. 1, Box 325	PL 3-4938
Mgr., Sauvie Island	Alexander, J. K.	Portland	Rte. 1, Box 85	MA 1-3488
Habitat Agent	Sanford, Delmar E.	Albany	Rte. 4, Box 593B	
SOUTHWEST REGION				
Regional Supervisor	Vaughn, J. W.	Roseburg	Box 577	OR 3-5373
Dist. Game Agent	McCaleb, W. L.	Roseburg	Rte. 2, Box 1433A	OR 3-8682
Dist. Game Agent	Maben, Robert	Medford	Rte. 4, Box 398	SP 2-6087
Dist. Game Agent	Sturgis, Harold	Coquille	326 E. 12th	3819
CENTRAL REGION				
Reg. Supervisor	Mathisen, L. M.	Bend	Parrell Road	EV 2-5113
Dist. Game Agent	Bonn, Paul	Bend	674 E. Penn	EV 2-1758
Dist. Game Agent	Eastman, D. L.	Klamath Falls	5244 Barry Ave.	TU 4-3571
Dist. Game Agent	Ebert, Paul	The Dalles	313 West 21st St.	CY 6-2959
Habitat Agent	Winegar, H. H.	Wasco	Box 175	GI 2-5553
Mgr., White River	Laughlin, E. T.	Tygh Valley	Wamic Rural Station	2366
Mgr., Klamath	Hoffmeister, A. H.	Klamath Falls	Rte. 3, Box 93B	TU 2-1220
SOUTHEAST REGION				
Reg. Supervisor	Masson, W. V.	Hines	Box 8	6582
Dist. Game Agent	Mason, G. Ellis	Hines	Box 237	6251
Dist. Game Agent	Langdon, C. R.	Ontario	Rte. 1, Box 433	OL6-J-L
Dist. Game Agent	Grogan, Frank	Lakeview	Rte. 6, Box 262	8107
Dist. Game Agent	Maw, Vernon	Summer Lake		WH 3-2717
Range Technician	Langdon, M. O.	Burns	Box 409	6552
Mgr., Summer Lake	Claggett, A. B.	Summer Lake		WH 3-2910
Habitat Agent	Case, Victor	Burns	297 So. Harney	5645
NORTHEAST REGION				
Reg. Supervisor	Brown, W. H.	La Grande	Box 742	WO 3-4350
Dist. Game Agent	Morton, E. K.	Baker	2670 Resort St.	JA 3-4511
Dist. Game Agent	Stein, Robert H.	Enterprise	501 River St.	1661
Dist. Game Agent	Smith, C. E.	Pendleton	1015 S. W. Frazer	CR 6-5260
Dist. Game Agent	Ward, G. F.	Heppner	Box 284	6-9195
Dist. Game Agent	Denney, Ralph	John Day	245 N. W. 1st St.	109
Habitat Agent	Ely, J. F.	Pendleton	Star Rte., Mt. Hebron	CR 6-0744
Game Farm Supt.	Dickinson, R. C.	Hermiston	Rte. 1, Box 100	JO 7-6566
Mgr., Wenaha	Scott, Harlan	Troy		
Habitat Agent	Heintz, James	La Grande	Rte. 2, Box 116	WO 3-4808