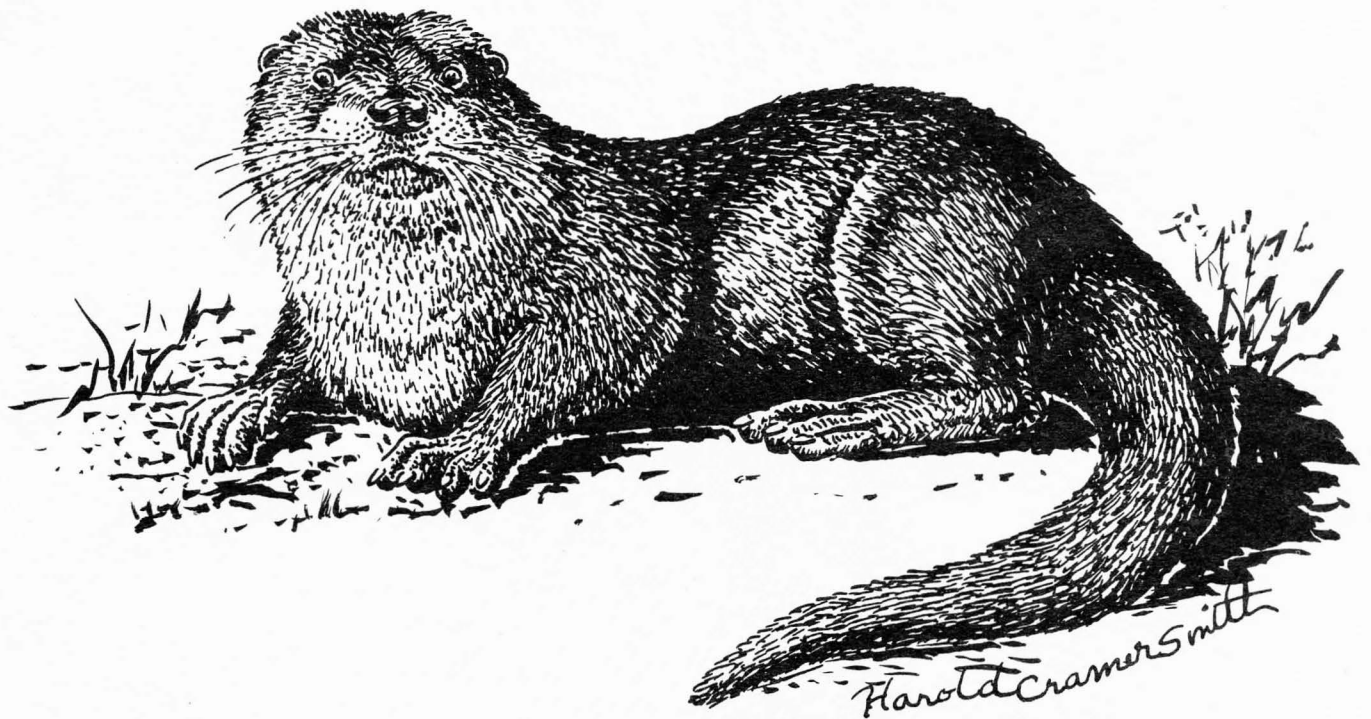


1978 ANNUAL REPORT

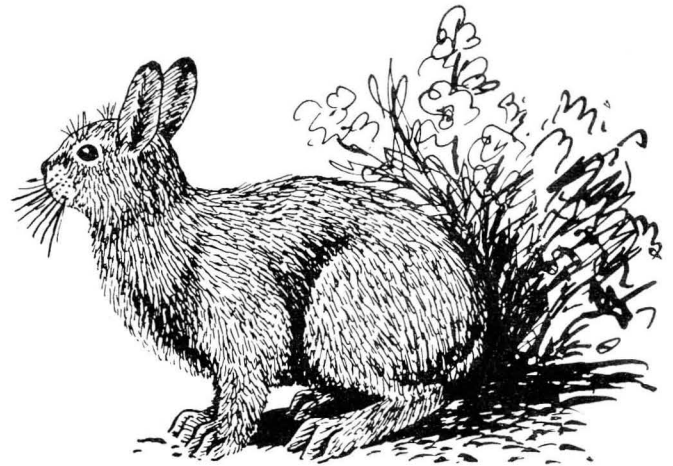


WILDLIFE DIVISION



506 S.W. MILL STREET
P.O. BOX 3503
PORTLAND, OREGON 97208

1978 Annual Report



WILDLIFE DIVISION



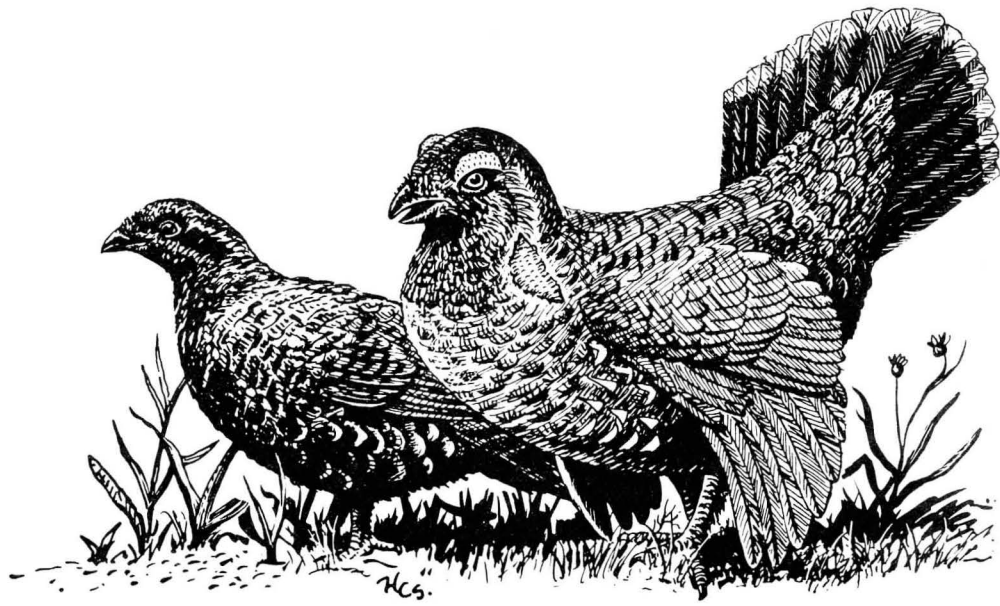
JOHN R. DONALDSON, Director

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INTRODUCTION

Wildlife Division activities for the period from July 1, 1977 through June 30, 1978 are summarized on the following pages. Data are presented in tabular form with minimal interpretation and discussion provided.

The number of hunting licenses sold during 1977 totaled 412,620, a 9 percent increase over 1976. Deer tag sales increased to 301,107, a 22 percent rise, while the elk hunters numbered 114,684 for an increase of 15 percent.

Mule deer hunting success continued to increase because of improved fawn survival and population trends. The harvest of mule deer was 79,650 in 1977 compared to 44,030 in 1976. Black-tailed deer hunters had a 37-day general season, the same as in 1976, but enjoyed a 35 percent higher harvest. The take of elk totaled 13,014, an increase of 27 percent over 1976. Overall, the estimated big game harvest totaled 148,826 animals, a 55 percent increase over 1976. Big game hunting provided 2,620,504 man-days of recreation, while small game hunting furnished 1,482,222 days afield.

Mule deer numbers were down somewhat compared to 1977. The spring ratio of 37 fawns per 100 adults was 34 percent lower than the previous year's level and indicated a 69 percent survival rate. Black-tailed deer trend counts indicated a 5 percent increase over the 1977 counts. Roosevelt elk trends were down about 10 percent compared to the previous year's while Rocky Mountain elk showed a definite increase. Pheasant and quail breeding densities throughout the state were up from densities reported in 1976, while chukar and grouse numbers were down. The January waterfowl inventory showed a 4 percent decrease from the 1976 count.

Increased prices for long-haired furs continue to encourage trapping activities. A total of 3,215 trapping licenses was sold, compared with 2,227 in 1976. The State Legislature classified the bobcat as a furbearing mammal effective October 4, 1977, which will cause the number of trapping licenses sold to remain at a high level until bobcat pelt prices decline. The reported take of 89,240 pelts worth \$1,000,768 represents only the harvest by licensed trappers. An unknown number of coyotes and other unprotected animals were taken by persons not required to purchase a trapping license.

A nongame wildlife program was initiated in 1976 with a modest budget of hunting license money authorized by the 1975 legislature. The nongame program staff includes two full-time and two half-time biologists assigned to four different regions. Responsibilities will be to develop and coordinate nongame programs within the regions, using the public sector wherever possible. Beginning

January 1, 1978, Oregon taxpayers will be able to contribute to the nongame program through donations from their tax refunds. This can be accomplished by marking an appropriate square on the income tax forms. Funds from this source will be earmarked for the protection and preservation of Oregon's nongame species.

Birds released from the game farm totaled 22,542 pheasants; 2,663 chukar partridges; and 36 Hungarian partridges. Pheasants and chukars were released as ten-week-old birds or as adults to provide additional hunting, while the Hungarian partridges were liberated as breeding stock.

Wildlife habitat improvements in cooperation with individual landowners and public agencies continued to be emphasized during the year. In addition, the Commission administered approximately 134,800 acres of wildlife lands during 1978 within 18 projects. Of the total, 104,513 acres are owned and the remaining acreage is controlled through lease or long term agreements.

Expenditures for wildlife during the year were prorated by activity as follows: habitat improvement, 33 percent; management, 32 percent; support services, 26 percent; research, 6 percent; and game bird propagation, 3 percent.

The Wildlife Division program for the year was administered by a central office staff consisting of an operations chief, assistant chief, six specialists and two secretaries. Field personnel responsible for management programs included 21 district biologists, 16 assistant district biologists, four nongame biologists, five habitat biologists and ten management area superintendents, all under the direction of 6 regional supervisors.

Valuable support was provided by Research, I and E, Lands, Engineering, Environmental, Analyses and Fiscal Sections. Enforcement was administered by the Department of State Police.

Cooperation from individuals, groups and public agencies contributed toward success of the Division's program during the year. Federal agencies making major contributions included the Fish and Wildlife Service, Forest Service, Bureau of Land Management, Soil Conservation Service, Corps of Engineers and Bureau of Reclamation. The State Department of Forestry, Department of Agriculture, Oregon State University, and various branches of county governments were but a few state and local agencies providing valuable assistance.





The 410,620 licensed hunters reported taking 129,120 deer, 17,773 elk, 920 bear, 976 antelope, 27 cougar and 13 bighorn sheep during the 1977 season. Hunters spent 2,620,504 days in the field in taking the 148,829 big game animals. Hunters spent 9 percent more time in the field and took 36 percent more big game animals in 1977 than in 1976.

Deer tag sales increased 22 percent in 1977 over the number sold in 1976 with a total of 301,107 deer tags sold. These hunters harvested 129,120 deer, a 60 percent increase in harvest over the 1976 take of 80,700 deer.

Elk tag sales increased 15 percent in 1977 over the 1976 sales with a record number of 114,684 elk tags sold. These hunters reported taking 17,773 elk compared to 13,190 taken in 1976.

Harvest of bear decreased by 4 percent and bighorn sheep by 13 percent while the take of antelope increased by 11 percent over numbers reported in 1976.

Spring black-tailed deer trend counts indicated a 5 percent increase over counts in 1977 while mule deer trend data indicated little change in the trends. Unusual conditions during elk trend counts magnified level changes, indicating a 21 percent increase in Rocky Mt. elk trends and a 10 percent decrease in Roosevelt elk trends.

Transplanting efforts continued to expand the range of Roosevelt elk while helping to reduce damage problems. During the 1977-78 winter, 54 elk were

captured and transplanted to 4 sites of which 2 were new sites in western Oregon. In eastern Oregon, 41 elk were transplanted to alleviate damage problems.

The cooperative road closure program was expanded to include 56 areas involving 2,251,190 acres to protect wildlife and wildlife habitat during the hunting seasons and winter months while improving the quality of hunting in most areas.

Black-tailed Deer

Northwestern Oregon deer hunters were allowed a 37-day buck season while southwestern Oregon hunters were restricted to 30 days to reduce the buck harvest and increase postseason buck/doe ratios. The 127,460 general season deer hunters reported taking 30,850 bucks, averaging 24 percent success. This amounted to a 5 percent increase in general season hunters and a 7 percent increase in their buck harvest compared to the 1976 season results. Early season buck hunting opportunities were allowed by a 3,000 permit, 9-day season which produced a harvest of approximately 100 bucks. (Table 19)

Antlerless black-tailed deer harvest was allowed by a nine-day extended season in the vicinity of agricultural lands in northwestern Oregon and by 26,850 permits authorized in 20 units or subunits in western Oregon valid during the latter part of the general buck season. These permits generated a take of 10,640 deer. Bowhunters also harvested an additional 1,802 deer. (Table 19)

Herd composition of 5,239 black-tailed deer classified averaged 30 bucks and 64 fawns per 100 does. This is compared to the 26 bucks and 67 fawns recorded in 1977. Both current ratios are above the 10-year average of 28 bucks and 62 fawns. Buck ratios improved 47 percent over the previous year, partially because of the shorter season allowed in southwestern Oregon. (Table 1)

A mild winter with above average precipitation produced average survival in the wintering black-tailed deer. Population trend counts completed during March and April on 2,650 miles of routes averaged 4.4 deer per mile, a 5 percent increase over the previous year. The population remained stable in northwestern Oregon while a 25 percent increase was observed in the southwest region. (Table 2)

Black-tailed deer were involved in 2,382 of the damage complaints received during a 12-month period ending April 20, 1978. This represents an 11 percent increase in damage complaints over the previous 12-month period. Repellents, kill permits, fence contracts and scheduled hunting seasons were the primary methods used to alleviate further damage. (Table 15)

Mule Deer

Mule deer hunters were again allowed a 12-day season except in 6 units where postseason buck ratios were below desirable levels and where only 7 days of hunting was allowed. The bag was a forked horn buck or larger except in 3 southeastern Oregon units where the bag was a 4-point or larger. A total of 141,740 general season hunters reported 69,510 bucks harvested and average 49 percent success. This was a 21 percent increase in hunters and a 75 percent increase in harvest compared to results of the 1976 season. (Table 19)

Antlerless harvest was allowed by a \$5 bonus deer tag valid during a 9-day season which followed the general buck season. A total of 11,600 tags was

issued in 21 units or subunits and 9 damage control areas. These tags produced a harvest of 8,882 deer. Bowhunters took an additional 1,258 deer during their seasons. (Tables 19 and 24)

Herd composition of 20,298 mule deer averaged 15 bucks and 62 fawns per 100 does. This represents declines from the 17 bucks and 78 fawns recorded in 1979. The current buck ratio is above the 10-year average of 13 bucks and only slightly below the 10-year average of 63 fawns. (Table 3)

Although August and September rains started a good greenup on eastern Oregon ranges, little moisture fell after September and most green forage dried. Poor winter forage conditions and cold January temperatures produced a fawn survival of 69 percent and a spring fawn ratio of 37 fawns per 100 adults. This was considerably below the excellent 84 percent survival and 56 fawn ratio of the previous winter. (Table 5)

While spring composition counts indicated that a population drop should occur, the 1978 spring population trend counts indicated levels comparable to the previous year when a much higher population existed. The problem occurred in the count of the previous year when herds were widely scattered during the survey period. A total of 38,030 mule deer was counted on 3,528 miles of routes, averaging 10.8 deer per mile. (Table 6)

Poor winter forage conditions, a product of the fall drought, caused the mule deer damage problem to increase from 185 complaints the previous year to 322 complaints during the last 12 months. Haystack panels, hazing supplies, physical assistance in hazing and emergency hunts were used to reduce the more serious problems. Repellents and kill permits were commonly used on the smaller complaints involving gardens and small orchards. (Table 15)

Roosevelt Elk

Elk hunting in western Oregon was reduced to a 9-day season, 3 days shorter than allowed in 1976. The bag limit in two units, the Chetco and Dixon, was restricted to a 3-point bull or larger to provide westside hunting opportunities for larger bulls. Also, an area in the Tioga Unit on the Millicoma Tree Farm remained closed for the second year to test the effect of older bulls in reproduction and study the movement of bulls from a protected area.

Thirty-four percent of Oregon's elk rifle hunters chose to buy Roosevelt elk tags. A total of 38,760 hunters reported a harvest of 3,952 bulls and 807 antlerless elk and averaged 12 percent success. The 1,162 individuals who exchanged their bull tags for antlerless controlled hunt tags reported taking 751 antlerless elk. Bowhunters also took an additional 56 antlerless elk. (Tables 20, 22 and 25)

Herd composition of 5,256 Roosevelt elk averaged 5 bulls and 41 calves per 100 cows. This is compared to the 5 bulls and 38 calves observed the previous year and the 10-year average of 5 bulls and 37 calves. (Table 7)

Population trend surveys on 699 miles of routes averaged 1.9 elk per mile, a 10 percent decline from the 2.1 elk per mile observed on the same routes the previous 2 years. Trends based on reproduction and survival would indicate at least a stable population. (Table 8)

Winter elk trapping continued at damage sites and on the Jewell Wildlife Management Area in Clatsop County. A total of 22 elk was transplanted from damage sites and 32 from the Jewell area to two new sites in western Oregon. (Table 9)

Roosevelt elk were involved in 98 damage complaints, an 8 percent increase over the number received the previous year. Seventy percent of these occurred in northwest Oregon. Controlled seasons, trapping, kill permits and hazing equipment were measures used to reduce damage. (Table 15)

Rocky Mt. Elk

Rocky Mt. elk hunters were again allowed a 16-day season except in five units where only a 9-day season was allowed to reduce the bull harvest and increase postseason bull ratios. The bag limit was a spike or better except in the Snake River Unit where the bag was restricted to 3-point or larger. Bull hunter numbers were controlled in two units by permit quotas issued on a first come, first serve basis.

A total of 73,580 hunters reported hunting Rocky Mt. elk and took 9,318 bulls and 3,696 antlerless elk and averaged 18 percent success. The antlerless harvest was generated by the 6,491 controlled antlerless permits issued and by bowhunters. (Tables 20, 22, 26 and 27)

Herd composition of the 7,463 Rocky Mt. elk classified averaged 5 bulls and 45 calves per 100 cows. This is compared to the 7 bulls and 47 calves observed the previous year and the ten-year average of 5 bulls and 47 calves. (Table 10)

Most Rocky Mt. elk herds continued to increase as indicated by the average of 12.6 elk per mile observed on the 2,233 miles of routes. Although a decline was indicated by the previous year's trend count, this year's count confirms that the 1977 trend was conservative because of wide herd distribution when the count was made. (Table 11)

Rocky Mt. elk were involved in 66 damage complaints, an increase over the 59 received during the previous year. Forty-one elk were trapped at two damage sites. Haystack paneling, hazing, controlled hunts and trapping were used to alleviate the problems. (Tables 12 and 15)

Antelope

A five-day season with 1,400 controlled buck antelope tags was authorized in 20 areas and 120 controlled doe antelope tags allowed in two areas. Also, 200 bow antelope tags were authorized in the Gerber Reservoir area. Buck antelope hunters averaged 75 percent success and doe hunters 77 percent success. Bowhunters reported taking only one buck antelope. An estimated 976 antelope were taken during the 1977 seasons. (Table 23)

Preseason aerial composition of 3,292 antelope averaged 26 bucks and 30 fawns per 100 does. This is compared to 25 bucks and 40 fawns the previous year and a 10-year average of 28 bucks and 36 fawns. (Table 13)

Although fawn ratios remain low, antelope populations continue to gradually increase. Aerial counts in late February and March averaged 2.5 antelope per

mile on 3,995 miles of census routes. This is compared to 2.2 antelope per mile observed the previous year and a 10-year average of 1.9 antelope per mile. (Table 14)

Antelope were involved in 12 damage complaints during the last year while only one was received during the previous 12-month period. (Table 15)

Bear

Bear hunters were allowed a five-month season except in the Cascade Range and 9 units in a central portion of eastern Oregon where only 4 months were allowed. Cubs less than one year of age and sows with cubs were protected.

Although hunters purchased 15,847 bear tags, 12,833 reported that they hunted and reported taking 920 bear. While this was a 16 percent increase in hunters compared to the previous year, it was a 14 percent reduction in harvest.

Bear were involved in 26 damage complaints during the 12 months reported compared to 24 received during the previous period. Twelve bear causing damage were taken by federal trappers. (Table 15)

Cougar

One hundred fifteen cougar tags were allowed in 5 areas of northeastern Oregon and 25 tags in 2 areas of western Oregon. Only 70 tag holders reported hunting and taking 25 cougar in eastern Oregon and 2 cougar in western Oregon. This was a considerable increase in harvest over the 16 cougar taken statewide the previous year. (Table 29)

Three cougar that were causing damage to livestock were killed in northeastern Oregon, 1 cougar was killed illegally by an elk hunter and 1 was hit and killed by a vehicle on a highway. Cougar were involved in 22 damage complaints compared to 23 during the previous 12-month period. (Table 15)

Bighorn Sheep

Twenty-four bighorn sheep tags were issued in three hunt areas. Two hunts were allowed on both Hart Mt. and the Steens Mt. while only one hunt was allowed in the Owyhee Unit. Twenty-three of 24 tag holders hunted and took 13 rams. Four sheep were taken on Hart Mt., 5 on the Steens Mt. and 4 in the Owyhee Unit. (Table 32)

Nineteen California bighorn sheep were captured on Hart Mt. and 14 transplanted to Aldrich Mt. on the Murderer's Creek Wildlife Management Area and 5 to Abert Rim in the Warner Unit. Thirteen Rocky Mt. bighorn sheep were trapped near Translater Ridge in the Lostine River drainage, 8 transplanted to Bear Creek in the Minam Unit and 5 to Battle Creek in the Snake River Unit. An estimated population of 490 California bighorn sheep and 90 Rocky Mt. bighorn sheep exists in Oregon.

Mountain Goats

Aerial census of mountain goats in the Eagle Cap Wilderness area on March 2, 1978 produced the highest count since 1971. A total of 22 goats was seen which

included 4 yearlings. No hunting has been allowed on these goats since 1968.

The status of the population along the Columbia Gorge remains uncertain. Only rarely are one or two adults seen and never has a kid been observed.

Range and Climatic Conditions

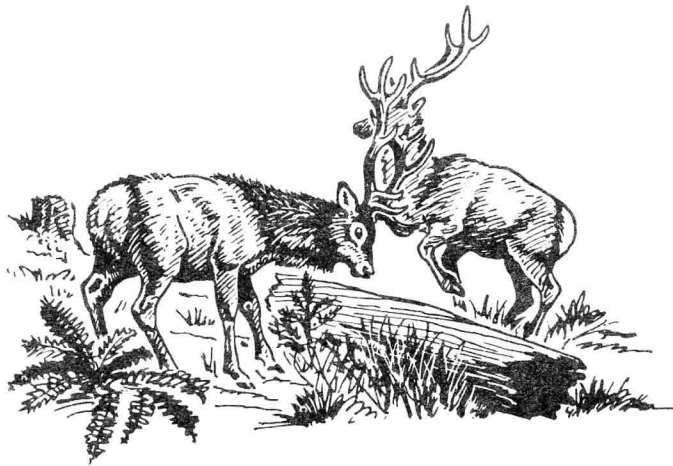
The mild spring of 1977 with moderate rainfall was followed by a hot, dry summer. Late September rains which tapered off in October started a greenup on most ranges. A brief period of snow between November 18 and 24 dropped 7 inches of snow in the Medford area and 18 inches on the White River winter range.

The winter was mild and wet except in Baker, Wallowa and Wasco Counties where snow and cold temperatures created stress on big game herds. Wallowa County had over a month of crusted snow while some winter ranges in Wasco County were covered with snow for three and one-half months. Winter losses were heavier than normal in Wasco County. Variable weather occurred during the following spring. Adequate spring moisture occurred to stimulate good forage growth on most ranges.

Cooperative Road Closure Program

The 1977-1978 road closure program was expanded to include 56 areas involving 2,251,190 acres. This was an increase of 8 areas and 206,488 acres over the number under the program during the 1976-1977 period. (Table 33)

Road closures continue to be very popular with both deer and elk hunters and public opinion continues to urge expansion of the program. Most hunters using these areas experienced better success and were pleased with the improved hunting quality.



STATE SUMMARY
COOPERATIVE ROAD CLOSURE PROGRAM

Year	Western Oregon		Eastern Oregon		Total	
	No. Areas	Acres	No. Areas	Acres	No. Areas	Acres
1971	0	0	1	200,000	1	200,000
1972	0	0	2	259,000	2	259,000
1973	2	16,900	8	471,100	10	488,000
1974	3	16,960	22	667,650	25	684,610
1975	6	75,520	27	1,307,410	33	1,382,930
1976	9	207,872	39	1,836,830	48	2,044,702
1977	9	180,240	48	2,070,950	57	2,251,190

TYPE OF ROAD CLOSURES
BY YEAR

Year	Hunting Season		All Year		Winter Range		Total	
	No. Areas	Acres	No. Areas	Acres	No. Areas	Acres	No. Areas	Acres
1971	1	200,000	0	0	0	0	1	200,000
1972	1	200,000	0	0	1	59,000	2	259,000
1973	7	412,100	1	7,300	2	68,600	10	488,000
1974	15	522,604	5	75,456	5	86,550	25	684,610
1975	21	781,314	7	297,456	5	304,160	33	1,382,930
1976	32	1,260,456	10	470,016	6	314,230	48	2,044,702
1977	44	1,472,540	7	467,300	6	311,350	57	2,251,190

COMPARATIVE DEER HUNTERS SUCCESS - OPENING WEEKEND
RAGER AREA - COMPARABLE AREAS

Year	Percent Hunter Success	
	Rager Area	Comparable Areas
1970	5	2
1971	2	2
1972	3	1
*1973	6	4
1974	3	3
1975	5	2
1976	11	4
1977	12	6

* Year Rager Closure in effect.

COMPARATIVE DEER HUNTER SUCCESS - OPENING WEEKEND
COX CREEK AREA - INTERSTATE UNIT

Year	Percent Hunter Success	
	Cox Creek	*Interstate Unit
1973	34	-
1974	24	-
1975	23	5
1976	34	21
1977	37	27

* Excludes Cox Creek hunter harvest and success

Game Damage

Deer damage complaints increased 16 percent over the number received during the 1976-1977 period with a total of 2,704 deer complaints received. Elk damage complaints totaled 164, an increase of 9 percent from the previous period. Also, 26 bear, 22 cougar and 12 antelope complaints were received. (Table 15)

The following tables summarize the origin of the complaints by species and the action taken.

Damage Complaints Received by Region

Region	Deer Complaints		Elk Complaints	
	Number	Percent	Number	Percent
Northwest	1,185	44	69	52
Southwest	1,089	39	29	18
Central	177	7	4	2
Northeast	208	8	62	38
Southeast	45	2	0	0
TOTAL	2,704	100	164	100

Actions Taken on Damage Complaints

Type of Action	Percent of Complaints Receiving Type of Action
Repellents	66
Kill Permits	9
Fence Contracts	6
Haze Permits	5
Noise Makers	5
Haystack Panels	2
Hazing by Employees	2
Tree Cages	1
Miscellaneous Assistance	7

A total of 90 damage complainants constructed 3,700 rods of fence at a cost of \$17,394.50 to the Department. During the previous year, 67 complainants constructed 3,417 rods of fence. Orchardists constructed 322 cages to protect individual trees. In eastern Oregon, 95 haystacks were protected with 2,043 prefabricated panels. Haystack yards containing machine stacked hay loaves have increased the demand for both panels and stack yard fences. (Tables 16, 17 and 18)



Table 1
BLACK-TAILED DEER HERD COMPOSITION

Units by Region	Wildlife Management District	Deer Classified, 1978*				Bucks per 100 Does			Fawns per 100 Does		
		Bucks	Does	Fawns	Total	1978	1977	10-Year Average	1978	1977	10-Year Average
Alsea	Mid-Will.	57	134	97	288	43	59	42	72	79	71
Clatsop	N. Coast	23	150	63	236	15	17	32	42	68	70
McKenzie	Lane	96	203	124	423	47	49	32	61	60	52
Nestucca	N. Coast	-	-	-	-	-	12	28	-	48	67
Polk	N. Will.	30	105	66	201	29	46	31	63	57	51
Santiam	N. Will.	35	107	75							
	Mid-Will.	9	55	34							
		44	162	109	315	27	44	36	67	77	65
Scappoose	N.W. Will.	11	54	52	117	20	36	33	96	81	60
Siuslaw	Lane	33	54	29	116	61	43	34	54	46	54
Trask	N. Coast	17	35	15							
	N.W. Will.	8	27	20							
	N. Will.	19	51	34							
		44	113	69	226	39	26	26	61	42	56
Wilson	N. Coast	7	51	26	84	14	31	39	51	31	67
NORTHWEST REGION		345	1,026	635	2,006	34	39	34	62	61	59
Applegate	Rogue	66	118	76	260	56	28	30	64	45	60
Chetco	Rogue	12	50	26							
	S. Coast	2	48	25							
		14	98	51	163	14	16	16	52	62	69
Dixon	Douglas	73	313	249	635	28	16	25	79	83	82
Elkton	Douglas	16	68	55	139	23	21	23	81	90	77

*1978 information gathered November 1977 through January 1978

Table 1

BLACK-TAILED DEER HERD COMPOSITION
(Continued)

Units by Region	Wildlife Management District	Deer Classified, 1978*				Bucks per 100 Does			Fawns per 100 Does		
		Bucks	Does	Fawns	Total	1978	1977	10-Year Average	1978	1977	10-Year Average
Evans Creek	Rogue	36	99	60	195	36	11	28	61	59	59
Melrose	Douglas	27	189	134	350	14	14	19	71	92	80
Powers	S. Coast	10	53	37	100	19	23	24	70	77	73
Rogue	Rogue	76	301	195	572	25	19	23	65	39	50
Sixes	S. Coast	23	98	62	183	23	18	26	63	78	74
Tioga	S. Coast	17	86	37	140	20	5	29	43	35	57
SOUTHWEST REGION		358	1,423	965	2,746	25	17	24	68	71	68
Keno	Klamath	15	79	32	126	19	25	14	41	51	34
Wasco	Columbia	82	180	108	370	46	37	34	60	69	59
CENTRAL REGION		97	259	140	496	37	35	26	54	65	50
STATE TOTALS AND AVERAGES		800	2,708	1,731	5,239	30	26	28	64	67	62

*1978 information gathered November 1977 through January 1978

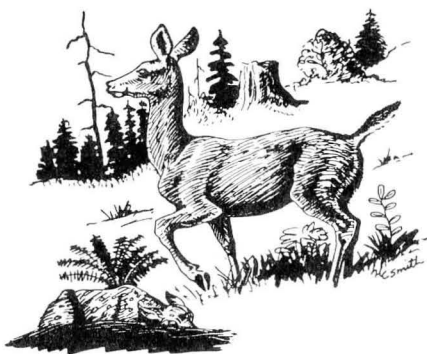


Table 2
BLACK-TAILED DEER POPULATION TRENDS

Units by Region	Wildlife Management District	Miles Traveled	Deer Observed	Deer per Mile			Management Objective
				1978	1977	1976	
Alsea	Mid-Will.	356	1,017	2.9	3.1	3.4	2.2
McKenzie	Lane	94	596	6.4	5.5	4.0	3.8
Saddle Mt.	N. Coast	112	196	1.8	1.8	1.8	1.5
	NW Will.	40	75	1.9	1.9	0.7	
	N. Will.	255	647	2.5	2.1	2.4	
	Mid-Will.	113	282	2.5	2.4	2.4	
Santiam		408	1,004	2.5	2.0	2.1	1.5
Scappoose	NW Will.	168	264	1.6	1.3	1.2	1.0
	Lane	106	223	2.1	3.2	2.1	2.0
	Douglas	60	215	3.6	3.7	2.0	3.0
Siuslaw		166	438	2.6	3.4	2.1	2.5
Stott Mt.	N. Will.	186	419	2.3	1.8	1.7	1.0
	N. Coast	83	199	2.4	2.4	2.0	
	NW Will.	45	112	2.5	2.3	2.7	
	N. Will.	89	240	2.7	2.5	2.8	
Trask		217	551	2.5	2.4	2.6	2.5
Wilson	N. Coast	42	95	2.3	1.6	1.7	1.5
NORTHWEST REGION		1,749	4,580	2.6	2.6	2.5	
Applegate	Rogue	53	515	9.7	5.8	7.2	4.0
	Rogue	43	176	5.1	2.4	1.9	
	S. Coast	67	134	2.0	1.5	1.7	
Chetco		110	310	2.8	1.9	1.7	1.5
Dixon	Douglas	80	352	4.4	4.3	2.9	3.0
Evans Creek	Rogue	45	266	5.9	3.0	2.8	2.5
	Douglas	60	489	8.1	3.9	2.0	3.0
	Lane	100	556	5.6	5.5	4.7	3.8
Indigo		160	1,045	6.5	4.8	3.4	3.5
Melrose	Douglas	130	775	6.0	6.8	4.2	2.0
Powers	S. Coast	40	108	2.7	2.7	2.4	1.6
Rogue	Rogue	96	1,249	13.0	11.9	8.7	10.0
Sixes	S. Coast	66	131	2.0	3.3	3.7	2.6
Tioga	S. Coast	20	53	2.7	3.1	1.8	2.5
SOUTHWEST REGION		800	4,804	6.0	4.8	3.7	
WESTERN OREGON TOTALS		2,549	9,384	3.7	3.4	2.9	
Keno	Klamath	28	157	5.7	13.3	12.9	19.0
White River	Columbia	73	2,132	29.2	27.6	27.5	26.0
CENTRAL REGION		101	2,289	22.7	23.9	23.7	
TOTALS AND AVERAGES		2,650	11,673	4.4	4.2	3.8	

Table 3
MULE DEER HERD COMPOSITION

Units by Region	Wildlife Management District	Deer Classified, 1978*				Bucks per 100 Does			Fawns per 100 Does		
		Bucks	Does	Fawns	Total	1978	1977	10-Year Average	1978	1977	10-Year Average
Deschutes	Deschutes	21	110	68	199	19	23	23	62	61	56
Grizzly	Ochoco	31	295	173	499	11	15	11	60	83	68
Klamath	Klamath	28	210	129	367	13	21	8	61	59	52
Maupin	Columbia	-	-	-	-	-	13	-	-	58	-
Maury	Ochoco	25	297	173	495	8	13	5	58	87	44
Metolius	Deschutes	59	200	141	400	30	33	24	71	65	55
Ochoco	Ochoco	40	291	174	505	14	18	8	60	94	64
Paulina	Deschutes	138	550	325	1,013	25	20	19	59	70	61
Sherman	Columbia	18	112	44	174	16	10	6	39	62	57
CENTRAL REGION		360	2,065	1,227	3,652	17	19	14	59	73	61
13	Baker	25	173	94	292	14	16	15	54	74	61
	Catherine Cr.	55	343	290	688	13	19	15	84	84	66
	Chesnimnus	27	181	120	328	15	10	7	66	83	55
	Desolation	8	111	80	199	8	3	8	72	87	75
	Heppner	8	122	78							
	Heppner	60	587	526							
	Umatilla	26	112	82							
		94	821	686	1,601	11	16	14	84	81	72
	Imnaha	37	222	189	448	17	14	14	85	78	60
	Keating	24	236	168	428	10	13	11	71	81	69
	Lookout Mt.	33	502	374	909	7	13	7	75	79	69
	Minam	38	137	92	267	28	22	22	67	82	63
	Murderer's Cr.	158	1,115	588	1,861	14	19	11	53	78	62
	Northside	28	285	186	499	10	23	18	65	82	66
	Pine Creek	10	107	81	198	9	11	11	76	80	74
	Sled Springs	23	199	168	390	12	11	10	84	93	78
	Snake River	31	198	106	335	16	10	12	54	49	45
	Starkey	17	123	107	247	13	18	12	87	92	74
	Ukiah	31	185	148	364	17	33	14	80	71	60
	Umatilla	19	194	115	328	10	17	14	59	81	67

*1978 information gathered November 1977 through January 1978

Table 3
MULE DEER HERD COMPOSITION
(continued)

Units by Region	Wildlife Management District	Deer Classified, 1978*				Bucks per 100 Does			Fawns per 100 Does		
		Bucks	Does	Fawns	Total	1978	1977	10-Year Average	1978	1977	10-Year Average
Walla Walla	Umatilla	16	140	69	225	11	22	15	49	72	56
Wenaha	Wallowa	18	149	91	258	12	8	8	61	74	81
Wheeler	Heppner	27	386	329	742	7	15	10	85	78	66
NORTHEAST REGION		719	5,807	4,081	10,607	12	16	13	70	80	66
Beaty's Butte	Lake Harney	5	17	8							
		17	67	41							
		22	84	49	155	26	-	-	58	-	-
Beulah	Malheur	41	398	130	569	10	14	11	33	76	63
Fort Rock	Lake	62	370	216	648	17	21	19	57	94	62
Interstate	Klamath Lake	48	311	151		15	12		49	50	
		91	565	329		16	11		58	95	
		139	876	480	1,495	16	11	16	55	68	56
Malheur River	Harney Malheur	12	166	56							
		5	53	17							
		17	219	73	309	8	38	12	33	70	54
Owyhee	Malheur	32	171	106	309	18	20	13	62	73	71
Silver Lake	Lake	56	276	175	507	20	16	12	63	93	64
Silvies	Harney Grant	52	312	153							
		30	252	132							
		82	564	285	931	15	10	10	51	79	62
Steens Mt. Warner	Harney Lake	114	372	172	658	31	16	14	46	92	54
		30	137	65	232	22	15	9	48	55	59
Whitehorse	Malheur Harney	26	100	44							
		5	34	17							
		31	134	61	226	23	24	17	46	73	62
SOUTHEAST REGION		626	3,601	1,812	6,039	17	15	12	50	78	59
STATE TOTALS AND AVERAGES		1,705	11,473	7,110	20,298	15	17	13	62	78	63

*1978 information gathered November 1977 through January 1978

Table 4

MULE DEER BUCKS BY ANTLER CLASS
(From Winter Deer Herd Composition)

Region	Number Classified	Percent Spikes			Percent Two Points			Percent Three Points			Percent Four Points & Over		
		10-Yr.			10-Yr.			10-Yr.			10-Yr.		
		1978	1977	Ave.	1978	1977	Ave.	1978	1977	Ave.	1978	1977	Ave.
CENTRAL	498	15	18	16	41	44	33	16	15	18	28	23	33
NORTHEAST	749	13	11	13	49	46	42	17	16	18	21	27	27
SOUTHEAST	550	18	15	13	49	40	39	15	30	19	18	15	29
TOTALS & AVERAGES	1,717	15	14	14	47	44	39	16	19	18	22	23	29



Table 5

MULE DEER SPRING FAWN SURVIVAL

Units by Region	Wildlife Management District	Deer Classified			Spring Fawns per 100 Adults			Percent Spring Survival		
		Adults	Fawns	Total	1978	1977	Average*	1978	1977	Average*
Deschutes	Deschutes	99	38		38	40	39	73	80	84
Grizzly	Ochoco	179	68		42	51	35	70	71	59
Klamath	Klamath	251	82		32	68	29	59	100	72
Maury	Ochoco	299	77		25	46	34	46	60	60
Metolius	Deschutes	193	71		37	43	35	69	88	76
Ochoco	Ochoco	330	109		32	58	32	60	73	56
Paulina	Deschutes	541	179		33	52	40	70	90	75
CENTRAL REGION		1,898	624	2,522	33	51	35	68	84	67
Catherine Cr.	Union	169	105		62	69	46	84	97	82
Chesnimnus	Wallowa	186	84		45	57	30	78	75	58
Desolation	Grant	49	22		45	75	-	67	83	-
Fossil	Heppner	349	226		70	57	55	89	81	81
Heppner	Heppner	370	211		57	66	61	76	94	88
Imnaha	Wallowa	93	20		22	38	26	30	56	65
Keating	Baker	307	113		37	72	38	57	100	72
Lookout Mt.	Baker	110	33		30	45	34	43	64	52
Minam	Wallowa	313	96		31	51	34	58	75	68
Mt. Emily	Umatilla	107	57		53	67	59	99	96	91
Murderer's Cr.	Grant	492	132		27	65	45	59	98	73
Northside	Grant	237	93		39	59	48	66	88	82
Pine Creek	Baker	95	28		28	58	36	40	81	58
Sled Springs	Wallowa	202	101		54	61	41	71	73	61
Snake River	Wallowa	188	83		40	40	-	91	91	-
Starkey	Union	149	108		72	76	50	94	97	78
Sumpter	Baker	243	65		27	51	36	57	80	73
Ukiah	Umatilla	289	150		52	64	56	76	100	90
Walla Walla	Umatilla	94	42		45	62	52	100	100	99
Wenaha	Wallowa	70	36		51	-	-	94	-	-
NORTHEAST REGION		4,112	1,814	5,926	44	60	41	70	87	71

* 8-year average

Table 5
MULE DEER SPRING FAWN SURVIVAL
(Continued)

Units by Region	Wildlife Management District	Deer Classified			Spring Fawns per 100 Adults			Percent Spring Survival		
		Adults	Fawns	Total	1978	1977	Average*	1978	1977	Average*
Beulah Fort Rock	Malheur	692	136		20	56	33	67	85	70
	Lake	274	117		43	65	43	75	83	79
Interstate	Klamath Lake	245	68		28	46	30	66	100	67
		244	78		32	55	38	64	58	64
		489	146		30		34	64		69
Malheur	Malheur	241)	62)		26)	54	38	90	93	77
	Harney	204) ⁴⁴⁵	37) ⁹⁹		18) ²²	51	28	58	84	55
Owyhee Silver Lake	Malheur	-	-		-	53	44	-	87	79
	Lake	325	141		43	66	39	81	83	67
Silvies	Harney	190)	21)		11	50	29	26	70	56
	Grant	100) ²⁹⁰	22) ⁴³		22			43		
Steens Mt. Warner	Harney	962	258		27	53	23	75	66	48
	Lake	287	91		32	48	32	82	100	72
SOUTHEAST REGION		2,309	632		27	54	34	63	79	64
TOTALS AND AVERAGES		8,319	3,070		37	56	37	69	84	67

* 8-year average



Table 6
MULE DEER POPULATION TRENDS

Units by Region	Wildlife Management District	Miles Traveled	Deer Observed	Deer per Mile			Management Objective
				1978	1977	1976	
Biggs	Columbia	127	614	4.8	4.9	-	5.4
Upper Deschutes	Deschutes	55	149	2.7	2.9	2.7	
Grizzly	Ochoco	88	817	9.3	8.3	10.0	11.7
Klamath Falls	Klamath	77	614	8.0	7.0	12.4	15.0
Maupin	Columbia	89	286	3.2	3.9	-	5.1
Maury	Ochoco	104	781	7.5	8.4	7.6	11.6
Metolius	Deschutes	90	692	7.7	4.5	4.1	4.5
Ochoco	Ochoco	147	1,924	10.4	10.6	10.5	11.2
Paulina	Deschutes	280	1,414	5.0	6.1	4.5	5.0
CENTRAL REGION		1,057	7,291	6.9	7.1	7.7	
Catherine Cr.	Union	22	766	34.8	34.7	29.3	33.0
Chesnimnus	Wallowa	88	314	3.6	3.0	3.4	3.0
Desolation	Grant	94	354	3.8	3.8	3.8	4.5
Fossil	Heppner	99	805	8.1	7.6	6.2	6.0
	Grant	26	78	3.0	6.1	8.0	5.5
	Heppner	77	1,331	17.3	17.5	17.1	12.0
	Umatilla	29	305	10.5	10.8	13.8	10.0
Heppner		132	1,714	13.0	17.5	14.5	12.0
Imnaha	Wallowa	56	239	4.3	5.2	10.7	12.0
Keating	Baker	71	1,464	20.6	24.5	29.7	20.0
Lookout Mt.	Baker	32	694	21.7	23.8	14.1	25.0
Minam	Wallowa	67	1,484	22.1	30.8	27.3	21.0
Mt. Emily	Umatilla	51	1,155	22.6	19.8	22.1	18.0
Murderer's Cr.	Grant	168	3,680	21.9	20.7	22.4	16.0
Northside	Grant	56	1,632	29.1	30.5	23.5	20.0
Pine Creek	Baker	31	303	9.8	16.5	13.6	18.0
Sled Springs	Wallowa	57	733	12.9	14.1	11.8	9.5
Snake River	Wallowa	75	578	7.7	6.8	8.8	10.0
Starkey	Union	56	441	7.9	8.9	9.6	10.0
Sumpter	Baker	79	1,144	14.5	8.1	12.2	14.0
Ukiah	Umatilla	68	1,563	22.9	21.6	23.5	22.0
Walla Walla	Umatilla	47	467	9.9	10.0	9.6	10.0
Wenaha	Wallowa	38	123	3.2	7.1	5.6	7.0
NORTHEAST REGION		1,387	19,653	14.2	14.8	15.6	
Beulah	Malheur	119	1,838	15.4	8.5	7.5	9.5
Fort Rock	North Lake	61	1,181	19.5	16.4	19.1	15.0
	Klamath	113	1,131	10.0	9.2	11.2	15.2
	Lake	80	800		9.7	8.4	
Interstate		193	1,931	10.0	9.4	10.0	

Table 6
MULE DEER POPULATION TRENDS
(Continued)

Units by Region	Wildlife Management District	Miles Traveled	Deer Observed	Deer per Mile			
				1978	1977	1976	Management Objective
Malheur River	Harney Malheur	48	255	5.3	8.2	8.4	7.9
		175	676	3.9	3.8	3.0	
		223	931	4.6	4.7	4.2	7.9
Owyhee Silver Lake	Malheur Lake	50	135	2.7	3.3	2.3	4.5
		65	1,341	20.8	15.8	16.1	17.0
Silvies	Grant Harney	24	306	12.7	9.6	7.5	7.5
		55	326	5.9	7.4	12.9	9.5
		79	632	20.8	7.9	11.2	17.0
Steens Mt.	Harney	82	1,998	24.4	12.1	12.7	20.1
Warner	South Lake	87	731	8.4	5.8	6.9	9.5
Whitehorse	Malheur	125	368	2.9	1.4	1.3	2.5
SOUTHEAST REGION		1,084	11,086	10.2	8.2	8.5	
TOTALS AND AVERAGES		3,528	38,030	10.8	10.7	11.4	



Table 7
1978 ROOSEVELT ELK HERD COMPOSITION

Units by Region	Wildlife Management District	Elk Classified				Bulls per 100 Cows			Calves per 100 Cows		
		Bulls	Cows	Calves	Total	1978	1977	10-Year Average	1978	1977	10-Year Average
Alsea	Mid-Will.	9	176	56	241	5	-	-	32	-	-
Clatsop	N. Coast	46	1,214	443	1,703	4	4	5	36	45	38
McKenzie	Lane	20	206	104	330	10	12	10	50	39	38
Scappoose	NW Will.	7	115	50	172	6	9	10	43	40	42
	N. Coast	9	109	48	166	8			44		
	NW Will.	8	170	70	248	5			41		
Trask		17	279	118	414		7	6		37	41
Wilson	S. Coast	11	236	91	338	5	5	4	39	50	38
NORTHWEST		110	2,226	862	3,198	5	6	6	39	43	38
Chetco	S. Coast	5	51	12		10	-	-	24	-	-
Dixon	Douglas	14	238	122	374	6	3	7	50	40	42
	S. Coast	4	162	68							
	Douglas	21	335	167							
Elkton		25	497	235	757	5	4	5	47	35	40
Melrose	Douglas	4	70	33	107	6	0	4	50	36	33
Powers	S. Coast	0	67	16	83	0	0	3	24	30	41
Tioga	S. Coast	28	458	183	669	6	7	2	40	26	32
SOUTHWEST		76	1,381	601	2,058	6	5	3	44	30	34
TOTALS AND AVERAGES		186	3,607	1,463	5,256	5	6	5	41	38	37

Table 8
ROOSEVELT ELK POPULATION TRENDS

Units by Region	Wildlife Management District	Miles Traveled	Elk Observed	Elk per Mile			Management Objective
				1978	1977	1976	
Clatsop	N. Coast	124	329	2.7	3.3	3.8	3.8
Siuslaw	Douglas	120	42	0.4	1.0	0.8	4.3
Trask	N. Coast	45	72	1.6	1.8	1.3	1.5
Wilson	N. Coast	57	209	3.7	3.5	3.5	3.0
NORTHWEST REGION		346	652	1.9	2.2	2.3	
Chetco	S. Coast	47	32	0.7	1.2	-	1.5
Dixon	Douglas	36	162	4.5	1.1	4.2	5.3
Indigo	Douglas	24	82	3.4	1.0	2.9	5.3
Powers	S. Coast	58	0	0	0.5	0.9	1.2
	Douglas	60	107	1.9	1.7	2.3	2.0
	S. Coast	128	273	2.1	1.2	1.1	1.8
Tioga		188	380	2.0	1.3	1.3	1.7
SOUTHWEST REGION		353	656	1.9	1.8	1.9	
TOTALS AND AVERAGES		699	1,308	1.9	2.1	2.1	

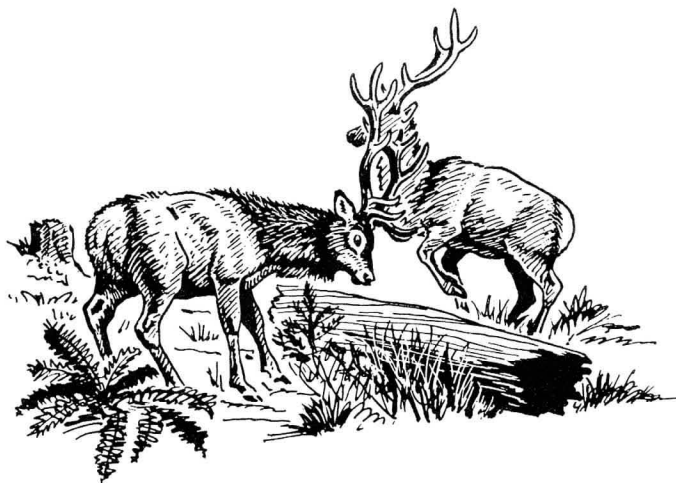


Table 9
ROOSEVELT ELK TRAPPING AND TRANSPLANTING

Release Site			No. Elk	Capture Site	
Site No.	Location	County		Location	County
35	Gunners Lake	Columbia	17	Damage Sites	Clatsop
65	Fish Creek	Clackamas	21	Damage Sites	Clatsop
64	Euchre Creek	Lincoln	5	Damage Sites	Clatsop
68	Jewell WMA	Clatsop	7	Damage Sites	Clatsop
66	Fall Creek	Lane	23	Jewell WMA	Clatsop
67	Siuslaw River	Lane	9	Jewell WMA	Clatsop
65	Fish Creek	Clackamas	3	Jewell WMA	Clatsop
1976-1977 Period Total			85		
70	Little Grass Mt.	Polk	32	Jewell WMA	Clatsop
	Little Grass Mt.	Polk	11	Damage Sites	Clatsop
35	Gunners Lake	Columbia	7	Damage Sites	Clatsop
68	Jewell WMA	Clatsop	4	Damage Sites	Clatsop
1977-1978 Period Total			54		
Total 1947-1976			1,185		
Grand Total			1,324		



Table 10
1978 ROCKY MOUNTAIN ELK HERD COMPOSITION

Units by Region	Elk Classified				Bulls per 100 Cows			Calves per 100 Cows		
	Bulls	Cows	Calves	Total	1978	1977	10-Year Average	1978	1977	10-Year Average
Baker	17	230	103	350	7	18	10	48	58	54
Catherine Cr.	13	182	83	278	7	8	7	46	45	48
Chesnimnus	10	350	161	521	3	1	2	46	44	45
Desolation	15	89	44	148	17	0	6	49	53	42
Heppner	13	210	95	318	6	8	7	45	50	49
Imnaha	3	101	39	143	3	5	6	39	43	44
Keating	8	80	36	124	10	-	-	45	-	-
Lookout Mt.	7	101	37	145	7	-	-	37	-	-
Minam	30	206	77	313	15	30	16	37	49	42
Pine Creek	13	213	91	317	6	-	3	43	-	44
Sled Springs	6	230	124	360	3	2	2	54	45	47
Snake River	31	323	113	467	11	3	5	35	30	40
Starkey	36	800	345	1,181	5	3	5	43	50	50
Ukiah	37	691	300	1,028	5	6	6	43	53	46
Umatilla	11	527	227	765	2	7	3	43	51	48
Walla Walla	14	362	163	539	4	7	3	45	51	48
Wenaha	9	313	144	466	3	4	5	46	41	46
TOTALS AND AVERAGES	273	5,008	2,182	7,463	5	7	5	45	47	47

Table 11
ROCKY MOUNTAIN ELK POPULATION TRENDS
(Aerial Census)

Units by Region	Wildlife Management District	Miles Traveled	Elk Observed	Elk per Mile			
				1978	1977	1976	Management Objective
Catherine Cr.	Union	125	609	4.9	5.3	3.1	4.0
Chesnimnus	Wallowa	302	4,014	13.3	9.6	11.3	10.5
Desolation	Grant	94	716	7.6	7.1	6.4	6.0
Heppner	Heppner	67	806	12.3	19.5	12.7	10.0
Imnaha	Wallowa	200	670	3.4	3.2	2.7	
Keating	Baker	75	241	3.2	2.0	1.1	1.5
Minam	Wallowa	200	2,096	10.5	8.4	8.6	
Mt. Emily	Umatilla	93	2,660	28.6	25.2	33.6	25.0
Murderer's Cr.	Grant	55	124	2.3	0.8	0.4	2.5
Northside	Grant	68	113	1.7	1.2	1.5	2.5
Pine Creek	Baker	90	226	2.5	2.2	2.3	2.2
Sled Springs	Wallowa	130	2,206	17.0	11.7	15.0	
Snake River	Wallowa	200	2,779	13.9	8.2	8.9	
Starkey	Union	106	3,122	29.5	26.7	19.5	16.0
Sumpter	Baker	115	444	3.9	2.3	3.2	3.0
Ukiah	Umatilla	69	2,534	36.7	46.2	48.5	40.0
Walla Walla	Umatilla	55	1,154	21.0	22.2	19.9	20.0
Wenaha	Wallowa	189	3,728	19.7	-	17.0	
NORTHEAST REGION		2,233	38,242	12.6	10.4	11.3	

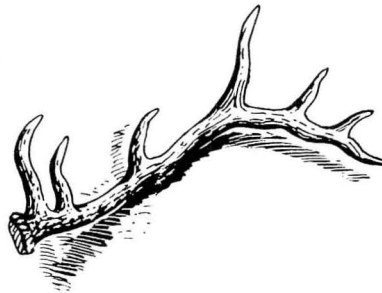


Table 12

ROCKY MOUNTAIN ELK TRANSPLANT RECORDS
Northeastern Oregon

Year	Number Elk Caught	Trapping Site		Release Site		Trapping and Hauling Losses
		Landowner	Location	Number Elk	Location	
1973 - 1974	64	L. Westenskow	Harris Mt. (Union Co.)	23	Bridge Cr. WMA	
	28	Rainbow Ranch Inc.	Hunt Mt. (Baker Co.)	41	Upper Grande Ronde	
				28	Elkhorn WMA (Auburn)	
Total	92					
1974 - 1975	48	Armond Arnoldus	Pumpkin Ridge (Union Co.)	48	Upper Grande Ronde	
	69	L. Cregor	Hunt Mt. (Baker Co.)	67	Elkhorn WMA (Auburn)	2
	53	Carl Loening	Muddy Creek (Baker Co.)	42	Hells Canyon	
				11	Elkhorn WMA (N. Powder)	
Total	170					
1975 - 1976	50	Cross J. Ranch	Elk Creek (Baker Co.)	46	State of Idaho	
	23	Gerald Brown	Alder Slope (Wallowa Co.)	4	Elkhorn WMA (N. Powder)	
				23	Pete King Creek (State of Idaho)	
Total	73					
1976 - 1977	5	Armond Arnoldus	Pumpkin Ridge (Union Co.)	5	Upper Grande Ronde	
1977 - 1978	27	L. Cregor	Muddy Creek (Baker Co.)	39	Hells Canyon	
	14	W. Loening	Muddy Creek (Baker Co.)	2	Elkhorn WMA (Auburn)	
Total	41					
Grand Total	381					

Table 13

1977 ANTELOPE HERD COMPOSITION

Area	Wildlife Management District	Antelope Classified				Bucks Per 100 Does			Fawns Per 100 Does		
		Bucks	Does	Fawns	Total	1977	1976	Ave.	1977	1976	Ave.
Beaty's Butte	Harney Lake	76	277	77							
		29	84	9							
		105	361	86	552	29	15	26	24	41	34
Beulah Juniper Malheur	Malheur	17	48	14	79	35	38	29	29	51	39
	Harney	57	222	55	334	26	13	27	25	16	27
	Harney	20	92	34							
	Malheur	1	8	1							
		21	100	35	156	21	58	33	35	51	37
Maury Murderer's Cr. Ochoco Owyhee Paulina- Wagontire	Ochoco	4	49	15	68	8	22	31	31	24	26
	Harney	142	210	146	498	71	45	52	73	53	73
	Ochoco	72	202	84	358	36	32	33	42	79	49
	Malheur	4	30	4	38	13	15	19	13	37	26
	Deschutes	32	148	17							
Silvies	Harney	8	33	3							
	Lake	2	23	9							
		42	204	29	275	21	15	22	14	19	24
	Ochoco	3	64	15							
	Harney	1	31	11							
Steens Mt. Warner Whitehorse		4	95	26	125	4	13	22	27	29	29
	Harney	34	197	43	274	17	24	29	22	27	36
	Lake	10	143	31	184	7	-	22	22	-	30
	Malheur	31	224	65							
	Harney	5	22	4							
		36	246	69	351	15	21	22	28	46	36
TOTALS AND AVERAGES		548	2,107	637	3,292	26	25	28	30	40	36

Table 14
1978 AERIAL ANTELOPE INVENTORY

Unit	District	Miles	Antelope	Antelope per Mile		
				1978	1977	10-Year Average
Beatys Butte	Harney	900	2,569	2.9	2.3	2.4
Beulah	Malheur	175	230	1.3	1.3	2.7
Ft. Rock-Silver Lk.	Lake	225	279	1.2	1.3	0.8
Grizzly	Ochoco	20	51	2.6	2.6	-
Interstate	Lake	50	82	1.6	2.2	1.3
Juniper	Harney	240	901	3.8	5.6	2.1
	Lake	50	197	3.9	3.7	3.4
Malheur River	Harney	140	1,226	8.8	5.7	4.4
	Malheur	100	45	0.5	-	-
Maury	Deschutes	200	181	0.9	1.1	0.8
	Ochoco	125	549	4.4	0.9	2.5
Murderer's Creek	Harney	40	29	0.7	13.0	3.8
Ochoco	Ochoco	125	424	3.4	4.3	1.9
Owyhee	Malheur	285	452	1.6	1.5	2.8
Paulina-Wagontire	Deschutes	450	740	1.6	1.1	1.7
	Harney	60	20	0.3	2.0	1.0
Silvies	Ochoco	125	136	1.1	2.2	1.6
	Harney	60	94	1.6	2.9	1.4
Steens Mt.	Harney	220	845	3.8	2.1	1.8
Warner	Lake	105	523	5.0	1.5	3.5
Whitehorse	Malheur	300	272	0.9	0.6	1.3
TOTALS AND AVERAGES		3,995	9,845	2.5	2.2	1.9

Table 15
BIG GAME DAMAGE COMPLAINTS

Units by Region	Wildlife Management District	No. of Complaints Deer Elk		Action Taken on Deer and Elk Complaints										Misc. Complaints Received		
				Kill Permits	Haze Permits	Fence Contracts	Tree Cages	Hay- stack Panels	Repel- lents	Noise Makers	Hazing by Employees	Other	No Action	Bear	Cougar	Ante- lope
Alsea	Mid-Will.	231	7	15	4	14	5		191	4	1	11		2	1	
Saddle Mt.	N. Coast	55	37	3	27	1			51	18		25		1		
	Lane	140	2	8	8	10			100			16		3	2	
	Mid-Will.	20	1	2		1			17	2						
McKenzie		160	3	10	8	11			117	2		16		3	2	
Stott Mt.	N. Will.	41		2		4			35	1						
	NW Will.	20	1	4	5				10			2				
	N. Will.	37	1													
	Mid-Will.	23		4	1	3			15	4		4				
Santiam		80	2	8	6	3			25	4		6				
Scappoose	NW Will.	28	7	4	9				18			3		2		
Siuslaw	Lane	177		4	1	21			122			29			1	
	North Coast	17		3	1				12	1					1	
	NW Will.	4	3	1	2				3							
	N. Will.	38	1	3		3			29			5				
Trask		59	4	7	3	3			44	1		5			1	
	NW Will.	48		11	3				34							
	N. Will.	189	5	71	7	2	3		116	5		10		1		
	Lane	38		3		4			26			5				
	Mid-Will.	74		5	3	3	1		60	5		4				
Willamette		349	5	90	13	9	4		236	10		19		1		
Wilson	N. Coast	5	4		3				5	2		1			1	
NORTHWEST REGION		1,185	69	143	74	66	9		884	42	1	115		9	6	
Applegate	Rogue	176		16	4	1			147			13		4	1	
	Rogue	9							8					1		
	S. Coast	35		5	1	2			27			2				
Chetco		44		5	1	2			35			2		1		
Dixon	Douglas	54	2	1	4	14			38	2					1	
	Douglas	11	3	1	1	3			8	1				1		
	S. Coast	28	3	2	6				22	2				3		
Elkton		39	6	3	7	3			30	3				4	1	

Table 15
BIG GAME DAMAGE COMPLAINTS
(Continued)

Units by Region	Wildlife Management District	No. of Complaints Deer Elk		Action Taken on Deer and Elk Complaints										Misc. Complaints Received		
				Kill Permits	Haze Permits	Fence Contracts	Tree Cages	Hay- stack Panels	Repel- lents	Noise Makers	Hazing by Employees	Other	No Action	Bear	Cougar	Ante- lope
	Douglas Rogue	4 182		2 7		1 2			1 155					1 3		
Evans Creek		186		9	4	3	1		156			18		4	2	
Melrose	Douglas	386	1	31	3	40	3		280	2					6	
	Douglas S. Coast	13 26	2		1				13 26		1					
Powers		39	2		1	1			39		1					
Rogue	Rogue	18	1	4					7	1		6				
Sixes	S. Coast	41		7	3	1			38					1		
	Douglas S. Coast	13 93	17	1	8	1			12 79	8		21				
Tioga		106	17	1	8	2			91	8		21				
SOUTHWEST REGION		1,089	29	77	35	67	4		861	16	1	60		14	11	
	Columbia Heppner	8 7			1				7 2							
Biggs		15		3	1	1			9		2					
Grizzly	Ochoco	9			3			1	1	2		2				
Hood	Columbia	46	2	12	1	2			31			2		1		
Keno	Klamath		1		1					1						
Klamath	Klamath	13						3	5	2	2		2			
Maupin	Columbia	19							16			3				
Maury	Ochoco	1							1							
Metolius	Deschutes	3			2				1	2						
Ochoco	Ochoco	5			1				3			1				
Paulina	Deschutes	3			2					2						2
Up. Deschutes	Deschutes	1			1	1			1	1						
White River	Columbia	62	1	10	4	1	1		28	8	6	5		1		
CENTRAL REGION		177	4	25	16	5	1	4	96	18	10	13	2	2		2

Table 15
BIG GAME DAMAGE COMPLAINTS
(Continued)

Units by Region	Wildlife Management District	No. of Complaints		Action Taken on Deer and Elk Complaints										Misc. Complaints Received		
		Deer	Elk	Kill Permits	Haze Permits	Fence Contracts	Tree Cages	Hay- stack Panels	Repel- lents	Noise Makers	Hazing by Employees	Other	No Action	Bear	Cougar	Ante- lope
Baker	Baker	13	14	3	4			3	6	11	2	2				
Catherine Cr.	Union	12	7	2		1		1	5		4	2	3			
Chesnimnus	Wallowa	1	3					1								
Columbia Basin	Heppner	19					1	3	3	5	11	1				
Desolation	Baker	1							1							
Fossil	Heppner	33		2				13	5	3	7	2				
	Grant	7		1				4	2	1						
	Heppner	19	2				2	4	1	2	11	2				
	Umatilla	4						3		1						
Heppner		30	2	1			2	11	3	4	11	2				
Imnaha	Wallowa	4	1			3			2	1						
Keating	Baker	1	1					1			1					
Lookout Mt.	Baker	4						1		2	3					
Minam	Wallowa	23	9			4		5		17	5		1		2	
	Umatilla	1	4		1				1		2		1			
	Union	9	2				1		7				1			
Mt. Emily		10	6		1		1		8		2		2			
	Grant	13				4		2	8			1				
	Harney												7			7
Murderer's Cr.		13				4		2	8			1	7			7
Northside	Grant	11			1	2		5	2			1	1			
Pine Creek	Baker	1						1								
Sled Springs	Wallowa	13	11		1	3	1	4	3	3	5		3	1		
Snake River	Wallowa	3		1		2		1							2	
	Baker	1							1							
	Union	3	2		2				3		1		1		1	
Starkey		4	2		2				4		1		1		1	
Ukiah	Umatilla	3	1						1		2		1			

Table 15
BIG GAME DAMAGE COMPLAINTS
(Continued)

Units by Region	Wildlife Management District	No. of Complaints		Action Taken on Deer and Elk Complaints										Misc. Complaints Received		
		Deer	Elk	Kill Permits	Haze Permits	Fence Contracts	Tree Cages	Hay- stack Panels	Repel- lents	Noise Makers	Hazing by Employees	Other	No Action	Bear	Cougar	Ante- lope
Walla Walla	Umatilla	1							1							
	Union	2	4						2		3		2			
	Wallowa	6	1						3				4			
Wenaha		8	5						5		3		6			
NORTHEAST REGION		208	62	9	9	19	5	52	57	46	57	11	25	1	5	7
Beulah	Malheur	17		2				3	4	12						
	Deschutes Lake	3			2	1			1	2						1
		3						1	1							
Fort Rock		6			2	1		1	2	2						1
Interstate	Lake	4			2			2			1					1
Juniper	Harney	1				1										
Malheur R.	Harney	10						4					6			
Owyhee	Malheur	1											1			
Silver Lake	Lake	1								1						
	Harney	1				1										
	Grant	1						1								
Silvies		2				1		1								
Steens Mt.	Harney									1						1
Warner	Lake	3			1	1										
SOUTHEAST REGION		45		2	5	4		10	6	16	1		7			3
STATE TOTALS		2,704	164	256	139	161	19	66	1,904	138	70	199	34	26	22	12

Table 16
FENCES COMPLETED
May 1977 through April 1978

Unit	Wildlife District	No. of of Fences	Rods Fenced	Money Expended
Saddle Mtn.	N. Coast	1	21	\$ 115.50
Scappoose	NW Will.	1	16	80.00
Trask	N. Will.	4	242	925.00
Stott Mtn.	N. Will.	1	23	80.50
Alsea	Mid-Will.	21	552	2,620.50
Siuslaw	Lane	9	254	1,113.50
Santiam	Mid-Will.	6	294	1,279.00
McKenzie	Lane	6	154	632.00
Willamette	N. Will.	1	17	85.00
	Lane	3	67	294.50
NORTHWEST REGION		53	1,640	\$ 7,225.50
Melrose	Douglas	9	664	\$ 3,320.00
Dixon	Douglas	1	20	70.00
Elkton	S. Coast	1	20	101.50
Tioga	S. Coast	2	34	170.00
Sixes	S. Coast	1	24	120.00
Powers	S. Coast	1	18	90.00
Rogue	Rogue	1	121	605.00
SOUTHWEST REGION		16	901	\$ 4,476.50
Hood	Columbia	1	240	\$ 1,200.00
Deschutes	Deschutes	1	330	1,650.00
Fort Rock	Deschutes	1	80	400.00
CENTRAL REGION		3	650	\$ 3,250.00
Fossil	Heppner	1	20	\$ 100.00
Murderer's Cr.	Grant	4	71	352.50
Imnaha	Wallowa	3	140	700.00
Minam	Wallowa	4	78	390.00
Sled Springs	Wallowa	2	70	350.00
Snake River	Wallowa	2	110	550.00
NORTHEAST REGION		16	489	\$ 2,442.50
Interstate	Lake	1	10	Salvaged Wire
Malheur River	Harney	1	10	Salvaged Wire
SOUTHEAST REGION		2	20	\$ 0.00
STATE TOTAL		90	3,700	\$17,394.50

Table 17
TREE CAGES CONTRACTED
May 1977 through April 1978

Units by Regions	Wildlife District	No. of Cages	Rods of Wire	Money Expended
McKenzie	Lane	7	7	\$ 12.25
Willamette	N. Will.	50	30	75.00
NORTHWEST REGION		57	37	\$ 87.25
Melrose	Douglas	135	82	\$143.50
SOUTHWEST REGION		135	82	\$143.50
Hood	Columbia	30	20	\$ 70.00
CENTRAL REGION		30	20	\$ 70.00
Heppner	Heppner	6	4	Salvaged
Mt. Emily	Union	80	48	\$196.80
Sled Springs	Union	8	5	20.50
Baker	Baker	6	20	50.00
NORTHEAST REGION		100	77	\$267.30
STATE TOTALS		322	216	\$568.05



Table 18

HAYSTACK PANELS ISSUED
May 1977 through April 1978

Units by Region	Wildlife District	Number of Haystacks	Number of Panels Issued
Grizzly	Ochoco	3	75
Klamath Falls	Klamath	3	134
<u>CENTRAL REGION</u>		6	209
Columbia Basin	Heppner	5	125
Heppner	Heppner	6	120
	Grant	6	110
	Umatilla	3	225
Fossil	Heppner	20	306
Murderer's Cr.	Grant	4	115
Northside	Grant	6	139
Silvies	Grant	1	18
Catherine Cr.	Union	1	20
Baker	Baker	7	246
Lookout Mtn.	Baker	1	30
Keating	Baker	1	12
Chesnimnus	Wallowa	1	16
Minam	Wallowa	5	71
Sled Springs	Wallowa	4	93
Snake River	Wallowa	1	12
<u>NORTHEAST REGION</u>		72	1,658
Fort Rock	Lake	2	25
Interstate	Lake	2	21
Malheur River	Harney	7	54
Beulah	Malheur	6	76
<u>SOUTHEAST REGION</u>		17	176
<u>STATE TOTALS</u>		95	2,043



Table 19
1977 DEER SEASON

Units by Region	GENERAL DEER SEASON					ADDITIONAL DEER HARVEST		ALL SEASONS	
	Number of Hunters	Bucks	Unit Permit Harvest	General Season Total	Percent Hunter Success	Early Seasons	Late Seasons	Total Harvest	Total Hunter Days
Alsea	16,960	3,470	2,430	5,900	35	190	1,070	7,160	134,010
Clatsop	6,310	1,600	0	1,600	25	0	0	1,600	47,540
McKenzie	17,990	3,330	1,280	4,610	26	40	1,820	6,470	135,100
Nestucca	2,530	500	80	580	23	0	0	580	16,310
Polk	5,500	950	310	1,260	23	0	230	1,490	32,410
Santiam	15,630	2,210	1,170	3,380	22	60	760	4,200	106,880
Scappoose	3,410	650	230	880	26	0	450	1,330	25,260
Siuslaw	6,820	670	530	1,200	18	0	420	1,620	40,010
Trask	9,360	1,390	780	2,170	23	0	640	2,810	60,010
Willamette	11,350	1,060	810	1,870	16	30	1,050	2,950	69,250
Wilson	4,430	660	0	660	15	140	0	800	32,380
NW REGION TOTALS	80,820*	16,490	7,620	24,110	30	460	6,440	31,010	699,160
Applegate	6,050	960	530	1,490	25	0	0	1,490	33,630
Chetco	3,250	730	0	730	23	0	0	730	18,050
Dixon	13,030	3,060	460	3,520	27	560	0	4,080	81,600
Elkton	4,410	820	270	1,090	25	0	0	1,090	24,480
Evans Creek	4,150	520	240	760	18	0	0	760	22,090
Melrose	10,070	1,920	680	2,600	26	40	140	2,780	63,950
Powers	4,210	1,270	70	1,340	32	0	0	1,340	26,210
Rogue	13,040	2,750	660	3,410	26	40	80	3,530	106,110
Sixes	4,810	1,260	0	1,260	26	40	80	1,380	41,640
Tioga	4,510	1,070	210	1,280	28	0	0	1,280	21,840
SW REGION TOTALS	51,260*	14,360	3,120	17,480	34	680	300	18,460	439,600
BLACK-TAILED DEER TOTALS	127,460*	30,850	10,740	41,590	33	1,140	6,740	49,470	1,138,760
Deschutes	7,650	1,840	0	1,840	24	230	60	2,130	46,430
Grizzly	4,330	1,490	0	1,490	34	0	130	1,620	15,030
Hood River	1,160	280	0	280	24	0	70	350	4,960
Keno	1,790	450	0	450	25	0	100	550	9,790
Klamath	5,990	2,350	0	2,350	39	0	0	2,350	22,920
Maupin	870	270	0	270	31	0	0	270	2,300
Maury	1,690	1,110	0	1,110	65	70	0	1,180	9,710
Metolius	2,670	680	0	680	25	0	300	980	10,160
Ochoco	12,260	5,180	0	5,180	42	0	260	5,440	43,230
Paulina	7,660	2,480	0	2,480	32	0	390	2,870	29,180
Sherman	2,180	630	0	630	29	0	160	790	8,210
Sprague	2,140	370	0	370	17	0	0	370	8,720
Wasco	6,790	1,900	0	1,900	28	150	450	2,500	40,980
CENTRAL REGION TOTALS	51,080*	19,030	0	19,030	37	450	1,920	21,400	251,620
Baker	6,340	3,040	0	3,040	48	190	0	3,230	28,540
Catherine Cr.	3,040	940	0	940	31	0	350	1,290	11,740
Chesnimnus	1,250	610	0	610	49	0	0	610	3,970
Columbia Basin	860	290	0	290	33	0	120	410	2,590
Desolation	3,700	1,620	0	1,620	44	250	50	1,920	18,660
Heppner	10,160	4,110	0	4,110	40	340	1,540	5,990	40,750
Imnaha	1,770	950	0	950	54	0	0	950	5,490
Keating	3,620	1,490	0	1,490	41	60	370	1,920	15,630
Lookout Mt.	1,500	590	0	590	39	50	200	840	3,800
Minam	2,240	1,040	0	1,040	46	140	330	1,510	13,500
Murderer's Cr.	6,600	3,040	0	3,040	46	0	940	3,980	32,870
Northside	5,270	2,780	0	2,780	53	0	1,030	3,810	25,290
Pine Creek	1,280	690	0	690	54	0	0	690	5,790
Sled Springs	3,320	1,620	0	1,620	49	0	360	1,980	13,140
Snake River	470	230	0	230	49	0	0	230	1,950
Starkey	3,080	970	0	970	32	120	0	1,090	14,120
Ukiah	4,070	1,310	0	1,310	32	0	270	1,580	15,460
Umatilla	5,180	1,690	0	1,690	33	0	190	1,880	23,580
Walla Walla	940	330	0	330	35	0	0	330	3,360
Wenaha	1,190	440	0	440	37	0	110	550	4,380
Wheeler	7,490	4,010	0	4,010	54	0	720	4,730	25,460
NE REGION TOTALS	63,710*	31,790	0	31,790	50	1,150	6,580	39,520	310,070
Beaty's Butte	610	210	0	210	35	40	0	250	4,030
Beulah	4,040	2,700	0	2,700	67	0	0	2,700	13,300
Fort Rock	4,620	1,930	0	1,930	42	0	0	1,930	22,670
Interstate	5,300	2,550	0	2,550	48	0	0	2,550	18,220
Juniper	170	60	0	60	38	0	0	60	640
Malheur River	4,930	2,590	0	2,590	52	0	0	2,590	18,260
Owyhee	2,020	1,070	0	1,070	53	0	0	1,070	6,920
Silver Lake	5,120	2,460	0	2,460	48	0	0	2,460	22,290
Silvies	5,200	2,780	0	2,780	54	0	0	2,780	17,720
Steens Mt.	1,600	670	0	670	42	0	0	670	5,710
Wagontire	940	350	0	350	38	0	0	350	2,520
Warner	2,550	1,030	0	1,030	40	0	0	1,030	9,630
Whitehorse	700	290	0	290	41	0	0	290	2,800
SE REGION TOTALS	35,150*	18,690	0	18,690	53	40	0	18,730	144,710
MULE DEER TOTALS	141,740*	69,510	0	69,510	49	1,640	8,500	79,650	706,400
GENERAL SEASON TOTALS	269,200*	100,360	10,740	111,100	41				
EARLY SEASON TOTALS	22,230*					2,780			
LATE SEASON TOTALS	26,400*						15,240		
GRAND TOTALS	292,470*							129,120	1,845,160

*Total omits duplication of hunters participating in more than one unit or region or species or season.

Table 20
1977 ELK SEASON

Units by Region	Number of Hunters	Hunter Days	Bulls	Elk Harvest Anterless	Total	Percent Hunter Success	Percent Yearling Bulls
Alsea	2,120	9,420	233	0	233	11	70
Clatsop	8,580	39,040	974	378	1,352	16	73
McKenzie	2,780	13,150	259	0	259	9	62
Nestucca	860	2,080	47	0	47	5	62
Polk	870	2,840	55	0	55	6	80
Santiam	2,200	8,680	128	0	128	6	60
Scappoose	1,070	6,840	62	38	100	9	59
Siuslaw	710	1,880	36	0	36	5	60
Trask	2,670	9,920	233	18	251	9	64
Willamette	550	2,270	4	0	4	1	100
Wilson	5,940	27,120	500	194	694	12	79
NW REGION TOTALS	25,210*	123,240	2,531	628	3,159	13	71
Applegate	30	130	0	0	0	0	0
Chetco	500	1,450	22	0	22	4	0
Dixon	1,860	7,210	88	6	94	5	0
Elkton	2,500	10,740	241	45	286	11	68
Evans Creek	0	0	4	0	4		100
Melrose	2,600	9,560	157	0	157	6	79
Powers	1,310	5,730	106	0	106	8	59
Rogue	1,920	8,850	150	0	150	8	54
Sixes	460	1,400	51	0	51	11	29
Tioga	4,920	21,230	587	128	715	15	69
SW REGION TOTALS	13,540*	66,300	1,406	179	1,585	12	62
Deschutes	360	1,960	11	0	11	3	67
Keno	300	1,200	4	0	4	1	0
W. CENTRAL REGION TOTALS	660*	3,160	15	0	15	2	50
ROOSEVELT ELK TOTALS	38,760*	192,700	3,952	807	4,759	12	68
Baker	5,820	30,820	546	164	710	12	56
Catherine Cr.	2,780	12,210	159	102	261	9	33
Chesnimnus	2,520	14,380	658	160	818	32	89
Columbia Basin	160	620	0	0	0	0	0
Desolation	6,040	30,930	794	321	1,115	18	64
Heppner	7,600	36,420	705	423	1,128	15	82
Imnaha	3,260	15,850	306	95	401	12	72
Keating	1,370	6,760	137	61	198	14	59
Lookout Mt.	280	780	11	10	21	8	0
Minam	3,960	23,890	443	191	634	16	59
Murderer's Cr.	1,310	6,780	63	14	77	6	29
Northside	1,310	5,320	137	41	178	14	41
Pine Creek	1,140	5,210	133	17	150	13	72
Sled Springs	3,480	24,750	655	375	1,030	30	91
Snake River	1,050	5,440	77	0	77	7	5
Starkey	9,970	47,290	1,235	452	1,687	17	77
Ukiah	9,500	51,460	903	565	1,468	15	74
Umatilla	9,800	48,490	872	259	1,131	12	83
Walla Walla	2,640	13,180	214	157	371	14	78
Wenaha	6,050	28,210	930	170	1,100	18	86
Wheeler	1,120	4,720	37	14	51	5	20
NE REGION TOTALS	71,580*	413,510	9,015	3,591	12,606	18	73
Grizzly	110	510	0	0	0	0	0
Hood River	670	3,900	15	7	22	3	75
Maury	260	2,900	0	0	0	0	0
Metolius	30	30	0	0	0	0	0
Ochoco	800	3,290	44	7	51	6	17
Wasco	2,230	11,250	100	91	191	9	63
E. CENTRAL REGION TOTALS	3,910*	21,880	159	105	264	7	51
Beulah	600	2,780	59	0	59	10	31
Malheur River	800	4,430	55	0	55	7	33
Silvies	460	2,060	30	0	30	6	62
SE REGION TOTALS	1,690*	9,270	144	0	144	9	38
ROCKY MT. ELK TOTALS	73,580*	444,660	9,318	3,696	13,014	18	72
STATE TOTALS	112,340	637,360	13,270	4,503	17,773	16	70

*Total omits duplication of hunters participating in more than one unit or region or species.

DEER HUNTING TRENDS 1952-1977

Table 21

STATE TOTALS				MULE DEER						BLACK TAILED DEER					
Year	Hunters	Deer Harvested	Percent Hunter Success	General Season Hunters	Number Harvested	Percent Hunter Success	Percent of Total	Antler-less Harvest	Percent Antler-less	General Season Hunters	Number Harvested	Percent Hunter Success	Percent of Total	Antler-less Harvest	Percent Antler-less
1952	188,250	77,897	41	126,719	53,030	61	68	20,570	39	61,531	24,867	40	32	5,210	21
1953	204,808	105,275	51	121,356	64,607	53	61	24,652	38	83,552	40,668	49	39	13,045	32
1954	215,047	112,622	52	134,617	76,877	57	68	22,410	29	80,430	35,745	44	32	8,043	22
1955	230,585	133,834	58	148,566	90,126	61	67	37,752	42	81,919	43,708	53	33	13,446	31
1956	233,842	146,568	54	146,568	85,394	58	68	37,978	44	87,274	40,277	46	32	13,340	33
1957	221,960	116,409	52	140,627	81,873	58	70	26,853	33	81,333	34,626	43	30	8,877	26
1958	233,885	116,251	50	139,183	71,250	51	61	19,308	27	94,702	45,001	47	39	15,251	34
1959	248,701	146,003	59	138,856	88,261	64	61	23,685	27	104,750	56,670	54	39	20,108	35
1960	259,739	157,504	61	141,102	96,122	68	61	28,254	29	110,725	61,382	55	39	20,133	33
1961	265,326	163,939	62	147,597	97,951	66	60	30,538	31	101,971	65,988	65	40	24,529	37
1962	263,838	139,712	53	143,580	76,776	53	55	24,977	32	108,343	62,936	58	45	21,932	35
1963	258,375	117,619	45	136,676	64,678	47	55	15,403	24	105,603	52,941	50	45	16,754	32
1964	249,080	143,023	57	148,215	84,665	57	59	19,931	23	110,555	58,358	53	41	18,807	32
1965	267,840	119,369	45	143,618	71,637	50	60	19,242	27	108,281	47,732	44	40	13,348	27
1966	270,770	147,975	55	147,975	88,516	56	60	22,821	26	110,384	59,459	52	40	14,687	25
1967	272,150	142,000	52	153,950	87,180	57	61	29,518	34	109,250	54,820	50	39	15,089	27
1968	284,600	151,380	53	163,260	89,020	55	59	23,374	26	111,940	62,360	56	41	16,586	27
1969	264,900	101,500	38	166,350	68,860	41	68	14,265	21	88,850	32,640	37	32	5,757	18
1970	282,000	101,600	36	180,150	72,200	40	71	14,453	20	92,050	29,400	32	29	4,347	15
1971	279,220	87,800	31	162,180	47,240	29	54	7,840	17	109,120	40,560	37	46	7,990	20
1972	245,770	73,400	30	110,700	29,380	27	40	95	0	127,200	44,020	35	60	7,970	18
1973	296,290	103,470	35	124,040	41,340	33	40	62	1	153,360	62,130	41	60	19,099	31
1974	286,560	76,400	27	118,980	30,960	26	41	1,018	3	155,420	45,440	29	59	10,511	23
1975	251,930	54,980	22	112,430	23,620	21	43	390	2	151,430	31,360	21	57	2,230	7
1976	246,850	80,700	33	116,980	44,030	38	55	3,630	8	122,000	36,670	30	45	4,530	12
1977	292,470	129,120	44	141,740	79,650	56	62	9,400	12	127,460	49,470	39	38	10,844	22



Black-tailed deer

ELK HUNTING TRENDS 1933-1977

Table 22

STATE TOTAL						ROCKY MOUNTAIN ELK					ROOSEVELT ELK				
Year	Hunters	Bulls	Antlerless	Total Harvest	Percent Hunter Success	Hunters	Bulls	Antlerless	Number Harvested	Percent Hunter Success	Hunters	Bulls	Antlerless	Number Harvested	Percent Hunter Success
1933	2,440	579	0	579	24	2,440	579	0	579	24	No Open Season				
1940	6,152	1,350	1,179	2,529	41	4,809	1,152	1,179	2,331	48	1,343	198	0	198	15
1945	8,597	2,398	67	2,465	29	7,270	2,176	67	2,243	31	1,327	222	0	222	17
1950	22,802	3,157	2,234	5,391	24	16,726	2,210	1,234	3,444	21	6,076	947	1,000	1,947	32
1955	27,709	4,228	1,855	6,083	22	21,504	3,361	1,749	5,110	24	6,205	867	106	973	16
1961	51,349	9,707	2,384	12,091	24	36,514	7,098	1,863	8,961	25	14,835	2,609	521	3,130	21
1962	52,991	7,998	2,178	10,176	19	39,432	6,460	1,925	8,385	21	13,559	1,538	253	1,791	13
1963	54,724	10,082	3,606	13,688	25	41,216	6,959	3,606	10,565	26	13,508	3,125	0	3,123	23
1964	62,898	11,846	5,311	17,157	27	41,010	7,576	4,879	12,455	30	21,888	4,270	432	4,702	21
1965	67,387	8,066	4,200	12,266	18	47,651	5,768	3,594	9,362	20	19,736	2,298	606	2,904	15
1966	68,178	8,030	3,372	11,402	17	49,504	5,529	3,189	8,718	18	18,674	2,501	183	2,684	14
1967	64,200	7,660	2,870	10,530	16	46,100	5,220	2,690	7,910	17	18,100	2,440	180	2,620	14
1968	65,900	7,160	2,250	9,410	14	45,600	4,170	1,980	6,150	13	20,300	2,990	270	3,260	16
1969	66,000	7,800	2,118	9,918	15	46,300	5,800	2,080	7,880	17	19,700	2,000	38	2,038	10
1970	73,560	10,150	2,530	12,680	17	52,190	6,920	2,420	9,340	18	21,370	3,230	110	3,340	16
1971	74,550	7,830	2,440	10,270	14	51,640	5,330	2,260	7,590	15	22,910	2,500	180	2,680	12
1972	79,100	8,075	2,235	10,310	13	53,700	5,742	2,188	7,930	15	25,400	2,333	47	2,380	9
1973	98,300	11,087	2,913	14,001	14	65,100	7,626	2,735	10,361	16	33,200	3,461	178	3,640	11
1974	106,200	9,527	4,543	14,070	13	69,100	6,628	4,036	10,664	15	37,600	2,899	507	3,406	9
1975	110,830	11,481	3,870	15,351	14	73,280	7,393	3,476	10,869	15	37,550	4,087	395	4,482	12
1976	98,510	9,767	3,423	13,190	13	64,970	7,389	2,838	10,227	16	33,800	2,378	585	2,963	9
1977	112,340	13,270	4,503	17,773	16	73,580	9,318	3,696	13,014	18	38,760	3,952	807	4,759	12

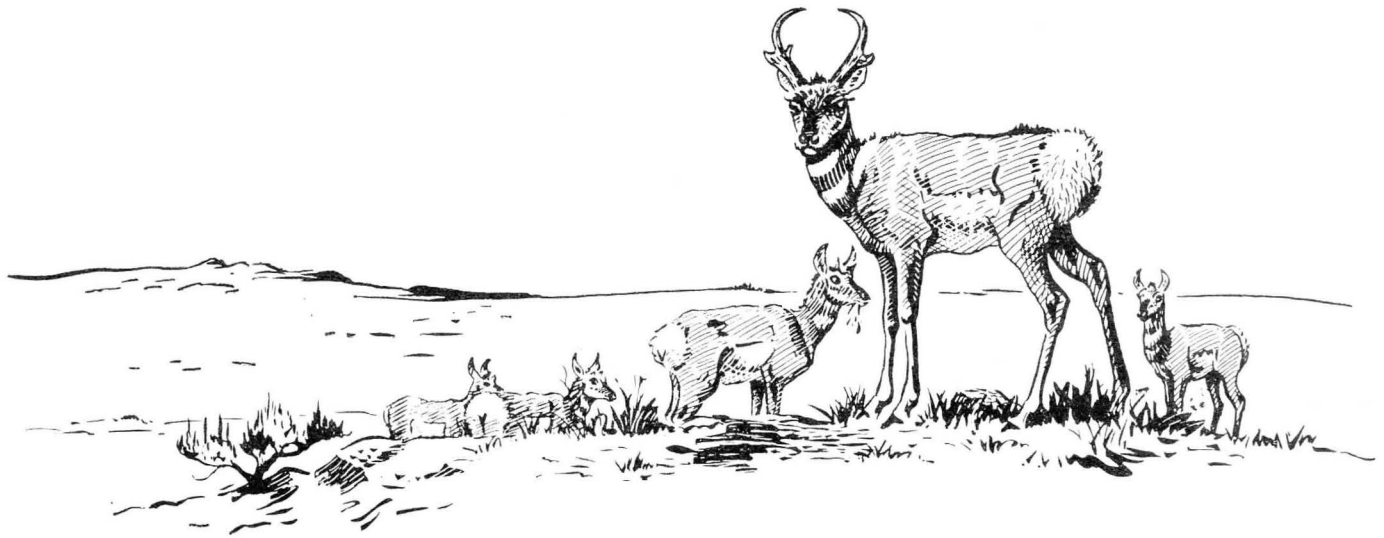


Table 23

1977 BUCK ANTELOPE SEASON (79% Report Card Return)

Hunt Number	Name of Area	Tags Issued	Report Cards Received	Number Did Not Hunt	Number Hunted	Reported Harvest	Percent Success	Hunter Days
435A	Part Paulina & Wagonire Units	50	43	1	42	28	67	101
436	Maury Unit	50	47	1	46	32	70	120
437	Ochoco Unit	70	58	2	56	52	93	112
438	Grizzly Unit	10	9	0	9	6	67	19
446	Murderer's Creek Unit	25	22	0	22	22	100	24
451A	N. Part Baker Unit	10	8	1	7	6	86	8
451B	S. Part Baker Unit	10	9	0	9	8	89	17
464	Lookout Mountain Unit	10	8	0	8	7	88	14
465	Beulah Unit	75	58	4	54	47	87	104
466	Malheur River Unit	150	109	5	104	85	82	212
467	Owyhee Unit	125	91	1	90	70	78	225
468	Whitehorse Unit	200	156	8	148	97	66	398
469	Steens Mountain Unit	160	130	5	125	85	68	305
470	Beatys Butte	160	129	0	129	110	85	265
470A	National Antelope Refuge	15	15	0	15	14	93	28
471	Juniper Unit	125	88	1	87	60	69	189
472	Silvies Unit	50	44	0	44	37	84	98
473A	S. Part Wagonire Unit	35	27	0	27	13	48	77
475A	E. Part Interstate Unit	50	39	2	37	19	51	105
476A	Fort Rock-Silver Lake Units	20	18	0	18	11	61	46
TOTALS		1,400	1,108	31	1,077	809	75	2,467

1977 DOE ANTELOPE SEASON

437A	Portion Ochoco Unit	20	14	2	12	5	42	17
446A	Murderer's Creek Unit	50	39	1	38	34	89	58
446B	Murderer's Creek Unit	50	41	1	40	38	95	65
TOTALS		120	94	4	90	77	86	140

1977 ANTELOPE BOW SEASON

475B	Gerber Reservoir Area	200	94	4	90	1	01	443
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ESTIMATED TOTAL HARVEST: 976 -

Table 24
1977 MULE DEER \$5.00 CONTROLLED HUNT RESULTS

The following was expanded from controlled hunt report cards

Unit Name	No.	Permits Author- ized	Permits Issued	Partici- pating Hunters	Total Kill	Hunter Success	Average Days Hunted	% Success of All Permits Issued	HARVEST		
									Bucks	Does	Fawns or 2-pt.
Deschutes	634	100	90	88	63	71	2.2	70	1	59	3
Paulina	635	450	427	408	384	94	1.7	90	3	363	18
Ochoco	637	350	327	294	260	88	1.9	79	1	248	10
Grizzly	638	150	148	142	133	93	1.9	90	0	126	7
Metolius	639	350	342	328	300	91	1.6	87	4	288	7
N. Wasco	641A	150	138	135	100	74	2.5	72	33	64	3
S. Wasco	641B	300	285	280	240	85	2.3	84	58	177	4
Pine Grove-1	641C-1	50	50	43	38	90	1.9	77	0	38	0
Pine Grove-2	641C-2	50	50	48	40	83	1.9	80	1	38	0
Pine Grove-3	641C-3	50	49	45	33	73	1.7	67	5	26	1
Hood River	242A	150	140	128	71	55	4.0	50	34	34	2
E. Sherman	243A	100	98	98	86	88	1.9	88	0	84	2
W. Sherman	643B	100	95	90	72	80	2.0	76	0	69	3
Columbia Basin	644	150	147	144	119	83	1.8	81	0	114	5
Wheeler	645	900	871	839	715	85	2.0	82	14	677	23
Murderer's Cr.	646	1,400	1,308	1,224	935	76	2.5	71	30	850	55
Northside	647	1,400	1,316	1,248	1,030	82	2.4	78	36	924	69
Heppner	648	1,400	1,325	1,261	1,131	89	1.9	85	19	1,056	54
Rhea Cr.	648A	500	363	355	344	97	1.3	94	4	319	20
Ritter-1	648B-1	250	240	215	207	96	1.9	86	1	200	5
Ritter-2	648B-2	250	240	212	203	96	1.4	84	3	191	8
Ukiah	649	350	339	326	270	82	2.6	79	6	245	18
Desolation	650	100	89	73	53	72	2.4	60	2	47	4
Bridgeport	651A	200	192	192	183	95	1.2	95	0	178	5
Catherine Cr.	653	450	429	410	354	86	2.3	82	7	328	18
Umatilla	654	250	241	231	192	83	2.6	79	3	173	15
Sled Springs	657	400	378	367	359	97	2.0	95	0	338	20
Minam	660	450	412	394	333	84	2.2	80	5	305	22
Keating	663	450	422	400	369	92	1.9	87	3	343	23
Lookout Mt.	664	250	236	225	201	89	1.7	85	5	182	12
Sisley Cr.	664A	100	62	60	50	83	1.5	81	1	45	3
TOTALS		11,600	10,849	10,313	8,882	86	2.1	81	288	8,143	449

Table 25

1977 ROOSEVELT ELK CONTROLLED HUNT RESULTS

The following is a maximum estimate. Data expanded from hunter report card returns.

Unit Name	No.	Permits Author- ized	Permits Issued	Partici- pating Hunters	Total Kill	Hunter Success	Average Days Hunted	% Success of All Permits Issued	ELK HARVEST			
									Cows	Calves	Spike or 2-pt.	3-pt. or Better
Elsie	210A	100	99	96	42	44	4.4	42	40	1	0	0
Big Noise	210B	75	74	73	63	87	2.9	85	58	5	0	0
N. Birkenfeld	210C	100	98	95	63	66	3.1	64	53	10	0	0
W. Nehalem	210D	100	98	98	65	66	4.8	66	61	4	0	0
S. Birkenfeld	210E	100	100	94	25	26	4.9	25	20	4	0	0
Clear Cr.	210F	100	96	94	48	51	4.3	50	42	6	0	0
Olney	210G	50	46	46	42	92	2.3	92	38	3	0	0
Seaside-1	210H-1	6	6	6	6	100	3.0	100	6	0	0	0
Seaside-2	210H-2	6	6	6	6	100	2.5	100	6	0	0	0
Seaside-3	210H-3	6	6	6	6	100	2.0	100	5	1	0	0
Seaside-4	210H-4	6	4	4	4	100	2.0	100	4	0	0	0
Seaside-5	210H-5	6	6	6	4	75	3.0	75	3	1	0	0
Seaside-6	120H-6	6	6	6	6	100	2.5	100	5	0	0	1?
Seaside-7	120H-7	6	6	6	-	-	2.0	-	-	-	-	-
Seaside-8	210H-8	6	6	-	-	-	-	-	-	-	-	-
Banks	211A	150	146	141	71	50	5.9	50	53	18	0	0
Lousignont	212A	100	91	91	11	12	4.6	12	7	4	0	0
E. Nehalem	212B	100	96	94	70	75	3.5	73	60	9	0	0
Pike	214A	25	24	19	4	25	16.2	20	4	0	0	0
S. Elkhorn Bow	221A	200	200	No report cards issued								
Matson	224A	75	74	74	63	85	1.9	85	51	12	0	0
Fall Creek	224B	75	74	73	72	100	1.1	98	65	7	0	0
TOTALS		1,198*	1,162*	1,132	751	65	3.6	63	650	100	0	1

* Excludes S. Elkton Bow Hunt

Table 26
1977 ROCKY MT. ELK CONTROLLED HUNT RESULTS

The following data were expanded from the controlled hunt report cards.

Unit Name	No.	Permits Author- ized	Permits Issued	Partici- pating Hunters	Total Kill	Hunter Success	Average Days Hunted	% Success of All Permits Issued	ELK HARVEST			
									Cows	Calves	Spike or 2-pt.	3-pt. or Better
Ochoco	237	50	48	48	4	8	4.9	8	4	0	0	0
No. Wasco	241A	75	74	70	48	69	3.1	65	38	10	0	0
Larch Creek	241B	50	49	47	19	41	7.0	39	12	7	0	0
Neal Creek	241C	50										
Pleasant Ridge-1	241D-1	50	49	49	9	19	7.4	19	6	3	0	0
Pleasant Ridge-2	241D-2	50	45	45	2	5	9.1	5	2	0	0	0
Hood River	242A	50	50	44	6	14	13.1	12	3	0	0	0
Wheeler	245	50	42	36	15	42	4.2	36	9	6	0	0
Murderer's Cr.	246	50	44	44	9	21	5.5	21	7	2	0	0
Northside	247	100	94	89	42	47	3.6	45	40	2	0	0
Heppner	248	700	675	652	425	65	3.7	63	370	55	0	0
No. Ukiah-1	249A-1	175	164	162	101	63	3.7	62	83	18	0	0
No. Ukiah-2	249A-2	175	168	162	103	64	4.0	62	85	18	0	0
Cable Cr.-1	249B-1	300	294	283	203	72	3.6	69	174	29	0	0
Cable Cr.-2	249B-2	300	259	252	77	30	2.3	30	49	28	0	0
Bridge Cr.	249C	150	148	141	122	87	2.8	83	108	15	0	0
Desolation	250	400	382	360	272	76	3.5	71	216	56	0	0
Baker	251	250	136	132	79	60	4.3	58	57	22	0	0
S. Elkhorn	251A	100	86	86	29	33	4.8	33	25	4	0	0
S. Baker	251B	150	67	65	36	55	3.3	53	27	9	0	0
Starkey	252A	500	482	461	344	75	3.6	71	291	53	0	0
Shaw Mt.	252B	100	82	82	42	51	4.5	51	30	12	0	0
Catherine Cr.	253	250	207	200	103	52	4.1	50	83	19	0	0
Umatilla	254	450	434	422	232	55	3.8	53	197	35	0	0
Walla Walla	255	250	242	225	137	60	3.5	56	108	28	0	0
Mill Creek	255A	75	72	70	42	59	4.1	58	10	6	13	12
Wenaha	256	150	150	148	127	86	3.1	85	104	23	0	0
Troy	256A	150	145	128	85	66	3.2	58	64	20	0	0
E. Sled Springs	257A	100	144	136	93	68	3.6	64	79	13	0	0
W. Sled Springs	257B	250	238	230	186	80	3.4	78	160	25	0	0
Flora	257C	245	245	242	169	69	4.2	69	132	36	0	0
Chesnimnus	258	300	277	277	164	59	3.7	59	143	21	0	0
Minam	260	400	328	312	188	60	4.0	57	150	37	0	0
Imnaha	261	200	190	181	109	60	4.0	57	83	26	0	0
Pine Cr.	262	100	66	64	27	42	4.6	41	18	9	0	0
Keating	263	250	174	145	66	45	3.4	38	52	14	0	0
Lookout Mt.	264	50	30	30	10	36	3.4	36	8	2	0	0
Beulah	265	100	55	47	12	26	4.4	22	12	0	0	0

Table 27

1977 CHESNIMNUS AND SLED SPRINGS CONTROLLED BULL HUNT RESULTS

The following is a maximum estimate. Data expanded from hunter report card returns.

Unit Name	No.	Permits Author- ized	Permits Issued	Partici- pating Hunters	Total Kill	Hunter Success	Average Days Hunted	% Success of All Permits Issued	Total 1&2 pt.	Total 3+ pt.	Total Cows
Sled Springs	957	3,000	2,978	2,851	653	22	5.8	21	571	79	2
Chesnimnus	958	2,500	2,318	2,239	648	28	4.9	27	586	58	2



Table 28
ROCKY MOUNTAIN GOAT HARVEST

Year	Number of Hunters	Harvest			Percent Hunter Success
		Males	Females	Total	
1965	5	3	2	5	100
1966	5	3	2	5	100
1967	5	3	2	5	100
1968	8	4	1	5	63
1969-77	No open season				
TOTALS	23	13	7	20	87

Table 29
COUGAR HARVEST

Year	Tags Issued	No. Hunted	Harvest		Total	Percent Hunter Success
			Males	Females		
1970	25	16	4	6	10	56
1971	101	68	8	10	18	26
1972	75	46	10	12	22	48
1973	83	55	9	7	16	29
1974	75	34	11	5	16	47
1975	95	52	4	11	15	29
1976	125	60	10	6	16	27
1977	140	73	16	11	27	37
TOTALS	709	404	72	68	140	35

Table 30
1977 COUGAR SEASON

December 1 through 31

Hunt Number	301	302	303	304	305	306	307	TOTAL
Tags	20	30	40	15	10	10	15	140
Report Cards Received	14	29	33	13	7	7	14	117
Did Not Hunt	5	10	15	9	3	1	1	44
Did Hunt	9	19	18	4	4	6	13	73
Total Days of Hunting	39	88	122	12	28	35	64	388
Average Days/Hunter	4.3	4.6	6.8	3.0	7.0	5.8	4.9	5.32
Days/Cougar Taken	19.5	8.0	11.1	-	28.0	-	32.0	14.37
Percent Hunt w/Dogs	89	100	89	50	100	100	85	90
Average Number Dogs/Hunter	3.6	3.7	3.1	1.3	3.0	2.7	3.2	3.12
Percent Use Guide	33	11	11	-	25	17	8	14
Cougars Taken:								
Male Juvenile	-	-	-	-	-	-	-	-
Male Adult	1	7	7	0	0	0	1	16
Female Juvenile	-	-	-	-	-	-	-	-
Female Adult	1	4	4	0	1	0	1	11
TOTAL COUGARS TAKEN:	2	11	11	0	1	0	2	27
Percent Hunter Success	22	58	61	-	25	-	15	37

Cougar Taken by Management Unit:

Sled Springs	1
Wenaha	1
Snake River	3
Imnaha	7
Minam	7
Catherine Creek	4
Keating	1
Hells Canyon Wilderness	1
Dixon	1
McKenzie	1
	<u>27</u>



Hunt 301 - All of Units 56, 57 and 58

Hunt 302 - All of Units 59 and 61

Hunt 303 - All of Units 53, 60, 62 and 63

Hunt 304 - All of Units 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, and 64

Hunt 305 - That part of Unit 59 (Snake River) described as follows: Hells Canyon Wilderness

Hunt 306 - That part of Unit 19 (McKenzie) described as follows: That part of Unit 19 west of the following line: Beginning at Highway 20; south on Forest Roads 1312 and 149 to Highway 126 at Blue River; southwest on Highway 126 to Forest Road 1743; south on Forest Roads 1743, 18011, 181, 196, and Westfir Road to Highway 58; south on Forest Roads 2132, 2165 and 232 to Lane-Douglas County line.

Hunt 307 - All of Unit 23 and that part of Unit 22 lying outside the exterior boundary of the Umpqua National Forest.

Table 31

Table B8: Estimated 1977 Bear Effort and Harvest by Management Units

Unit	Hunters	Hunter Days	Harvest (1) ¹	Harvest (2) ²
Alsea	818	6,060	76	44
Applegate	758	4,916	32	73
Baker	543	5,249	0	24
Beaty's Butte	0	0	0	0
Beulah	64	159	0	12
Catherine Creek	44	264	0	8
Chesnimnus	140	1,295	44	0
Chetco	571	3,273	76	61
Clatsop	671	3,388	44	20
Columbia Basin	0	0	0	0
Deschutes	152	632	32	8
Desolation	451	5,273	0	28
Dixon	1,240	9,670	76	81
Elkton	424	3,291	32	32
Evans Creek	247	443	76	53
Fort Rock	44	1,322	0	0
Grizzly	32	95	0	0
Heppner	171	757	0	0
Hood River	402	2,432	0	12
Imnaha	171	1,379	32	16
Interstate	0	0	0	0
Juniper	0	0	0	0
Keating	215	1,383	0	4
Keno	32	32	0	4
Klamath	0	0	0	4
Lookout Mountain	64	223	0	0
Malheur River	32	96	0	8
Maupin	0	0	0	0
Maury	0	0	0	0
McKenzie	1,070	9,508	76	48
Melrose	371	2,073	0	40
Metolius	0	0	0	0
Minam	367	2,613	0	8
Murderer's Creek	196	1,200	0	0
Nestucca	240	1,070	0	4
Northside	0	0	0	8
Ochoco	152	1,641	0	0
Owyhee	0	0	0	0
Paulina	0	0	0	0
Pine Creek	96	1,178	0	0
Folk	304	2,546	0	16
Powers	627	3,090	108	32
Rogue	771	8,805	32	32
Santiam	1,038	9,710	44	52
Scappoose	120	1,860	0	0
Sherman	0	0	0	0
Silver Lake	44	88	0	0
Silvies	32	32	0	0
Suislaw	495	5,567	0	28
Sixes	367	4,135	0	24
Sled Springs	171	2,431	32	16
Snake River	120	556	32	12
Sprague	0	0	0	8
Starkey	451	2,316	0	8
Steens Mountain	0	0	0	0
Tioga	531	3,077	32	28
Trask	436	2,543	44	8
Ukiah	331	1,935	0	8
Umatilla	399	3,447	0	16
Wagontire	0	0	0	0
Walla Walla	96	446	0	8
Warner	0	0	0	0
Wasco	171	1,227	0	8
Wenaha	247	1,954	0	4
Wheeler	32	191	0	0
Whitchorse	0	0	0	0
Willamette	120	580	0	4
Wilson	424	6,119	0	8
Total	12,835	133,570	920	920

¹ Hunter survey estimates.

² Hunter survey statewide estimates allocated to units according to returned bear report cards.

Table 32
BIGHORN SHEEP HARVEST

Year	Hart Mountain		Steens Mountain		Owyhee		Total Kill	Percent Success
	Hunters	No. Killed	Hunters	No. Killed	Hunters	No. Killed		
1965	6	5					5	83
1966	3	3					3	100
1967	No open season							
1968	3	1	3	2			3	50
1969	3	2	3	2			4	67
1970	6	5	6	2			7	58
1971	3	1	8	1			2	18
1972	5	4	8	2			6	46
1973	0	0	8	1	2	2	3	30
1974	5	1	10	5	2	2	8	47
1975	5	3	10	7	4	3	13	68
1976	8	5	12	8	2	2	15	68
1977	8	4	11	5	4	4	13	57
TOTAL	55	34	80	35	14	13	82	55

Table 33

1977-1978 COOPERATIVE ROAD CLOSURES

A R E A D E S C R I P T I O N				T Y P E C L O S U R E / S P E C I E S I N V O L V E D			Effective Dates
Name	Wildlife Unit	Landownership	Acres	Hunt. Season	Winter Range	Perma- nent	
Eagle Creek	McKenzie	USFS	42,240	Elk			11/ 9/77 - 11/23/77
Mosby Creek	McKenzie	Georgia-Pacific	7,680	Deer			9/29/77 - 11/ 6/77
Millicoma Tree Farm	Tioga	Weyerhaeuser Co.	24,320	Elk			11/11/77 - 11/20/77
N. Fk. Siuslaw	Alsea	USFS	32,000			Elk	
Onion Peak	Clatsop	Crown Zellerbach	3,800	Elk			11/ 9/27 - 11/20/77
Red Blanket Cr.	Rogue	USFS, Boise Cascade	15,800		Elk		12/ 1/77 - 4/15/78
Slick Rock- Warnic Cr.	Polk	BLM, Crown Zellerbach, Willamette Industries, Publishers Paper Co.	12,800	Deer, elk			9/ 1/77 - 11/20/77
S.F. Lewis & Clark River	Clatsop	Crown Zellerbach	3,200	Elk			11/ 9/77 - 11/20/77
Upper Tualatin- Trask	Trask	Stimson Lumber Co.	38,400	Deer, elk			Weekends, 9/28/77 - 11/20/77
WESTERN OREGON TOTAL			180,240				
Applegate Butte- Fuego Mt.	Sprague	USFS	300,800			Deer	
Big Rock	Northside	USFS	6,400	Deer, elk			9/28/77 - 11/27/77
BLM Coop. Projects	Klamath Interstate	BLM	8,320			Birds, deer	
Burnt Cabin- Whiskey Mt.	Silvies	USFS	32,100	Deer, elk			9/28/77 - 10/ 7/77 10/26/77 - 11/13/77

Table 33
1977-1978 COOPERATIVE ROAD CLOSURES
(Continued)

A R E A D E S C R I P T I O N				T Y P E C L O S U R E / S P E C I E S I N V O L V E D			Effective Dates
Name	Wildlife Unit	Landownership	Acres	Hunt. Season	Winter Range	Perma- nent	
Cabin Lake- Silver Lake	Fort Rock Paulina Silver Lake	USFS, Private, Weyerhaeuser	220,000		Deer		12/ 1/77 - 3/31/78
Camp Creek	Northside	USFS	14,720			Deer, elk	
Chesnimnus	Chesnimnus	USFS	200,000	Elk			10/26/77 - 11/13/77 11/16/77 - 11/27/77
Coleman Rim	Beatys Butte	BLM	11,520	Deer			9/29/77 - 10/12/77
Conroy Cliff	Malheur R.	USFS	32,600	Deer, elk			9/28/77 - 10/12/77 10/26/77 - 11/13/77
Cox Creek	Interstate	USFS, BLM, Private	33,920	Deer			9/28/77 - 10/ 7/77
Crooked Creek	Malheur R.	USFS	5,400	Deer, elk			9/28/77 - 10/12/77 10/26/77 - 11/13/77
Dairy Creek	Silvies	USFS	62,500	Deer, elk			9/28/77 - 10/ 7/77 10/26/77 - 11/13/77
Devine Ridge- Rattlesnake	Malheur R.	USFS	23,000	Deer, elk			9/28/77 - 10/12/77 10/26/77 - 11/13/77
Flagtail	Murderer's Creek	USFS	6,400	Deer, elk			9/28/77 - 11/27/77
Fox Butte	Paulina	USFS	147,200	Deer			9/28/77 - 10/23/77
Gordon	Wenaha	USFS	5,760	Elk			10/26/77 - 11/27/77
Hall Ranch	Catherine Creek	Private	1,100	Elk			10/26/77 - 11/27/77

Table 33

1977-1978 COOPERATIVE ROAD CLOSURES
(Continued)

A R E A D E S C R I P T I O N				T Y P E C L O S U R E / S P E C I E S I N V O L V E D			Effective Dates
Name	Wildlife Unit	Landownership	Acres	Hunt. Season	Winter Range	Perma- nent	
Heppner Region Hunt Area	Heppner	Private	90,000	Deer, elk			9/28/77 - 10/23/77
Howard Cr.	Sled Sprgs.	Boise Cascade	6,400		Elk		12/ 1/ 77 - 4/30/78
Lower Klamath Hills	Klamath	BLM, Private	1,920			Birds, deer	
Marks Cr. Burn	Ochoco	USFS	4,800				9/28/77 - 5/31/78
Middle Ridge	Umatilla	USFS	9,600	Elk			10/26/77 - 11/27/77
Murderer's Cr.	Murderer's Creek	USFS, ODFW	102,500			Deer, elk	
Myrtle Park	Silvies Murderer's Creek	USFS	38,400	Deer, elk			9/28/77 - 11/27/77
Noregaard	Sled Sprgs.	Boise Cascade, USFS, Private	124,760	Deer, elk			9/21/77 - 11/27/77
Rager	Ochoco	USFS	225,280	Deer, elk			9/28/77 - 11/27/77
Shingle Gulch	Starkey	Private, Boise Cascade	2,080		Elk		10/ 1/77 - 3/15/78
Sunflower Flat	Wasco	Warm Springs Indians, USFS	10,070		Deer		12/ 1/77 - 3/15/78
Texas Butte	Heppner	USFS, Kinzua Corp.	29,440	Elk			10/29/77 - 12/18/77
Tumalo	Deschutes	USFS, BLM, State, Brooks-Scanlon, Private	57,000		Deer		12/ 1/77 - 3/31/78

Table 33
1977-1978 COOPERATIVE ROAD CLOSURES
(Continued)

A R E A D E S C R I P T I O N				T Y P E C L O S U R E / S P E C I E S I N V O L V E D			Effective Dates
Name	Wildlife Unit	Landownership	Acres	Hunt. Season	Winter Range	Perma- nent	
Vinegar Hill- Indian Rock	Desolation	USFS	7,040			Deer, elk	
Wolf Mtn.	Malheur	USFS	49,920	Deer, elk			9/28/77 - 10/12/77 10/26/77 - 11/13/77
Wallowa-Whitman Nat'l Forest (15 areas)		USFS	200,000	Deer, elk			Varying Periods
EASTERN OREGON TOTAL			2,070,950				
STATE TOTAL			2,251,190				





Pheasants

The 1978 breeding population revealed an average of 32.8 pheasants per 100 acres on the 1,760 acres of habitat sampled. The average was 22 percent above 1977 when 26.8 birds per 100 acres were recorded on 3,600 acres of habitat. In Umatilla County the population index increased from an average of 44.5 to 54.4 but declined in western Oregon from 16.1 to 10.5 birds per 100 acres of habitat. A ratio of 33 cocks per 100 hens was identical with the numbers recorded last year. A summary of breeding populations is presented in Tables 1 and 2.

Results of the annual drive count on a 188-acre strip extending the full length of the E. E. Wilson Wildlife Area is presented in Table 3. Only 2.6 birds per 100 acres was recorded, the lowest population since the census was started in 1953. The ratio of 10 cocks per 100 hens is also the lowest on record.

Crow counts, another method of determining breeding population densities, were conducted on 22 established routes in eastern Oregon. All crow count routes west of the Cascades have been discontinued. The technique involves recording the number of cocks heard crowing during a two-minute interval at each of 20 stops made a mile apart on the sample route. The average of 2.9 recordings at each stop was 7 percent higher than in 1977. A four-year comparison of results is shown in Table 4.

The best indicator of the size of the pheasant crop that will be available for the hunting season is a measure of success of the nesting season. The statewide

density on 2,385 miles of habitat sampled was 29 percent greater than in 1977. The increase was most pronounced in Malheur and Umatilla Counties but was generally higher than last year in all pheasant areas. Results are shown in Table 5. Three hundred seven hens were counted with 83 percent having broods. Individual broods averaged 19 percent more chicks than in 1977 while the number of chicks per hen increased 68 percent.

The increase in the summer population of pheasants in Malheur County was reflected in an increase in the number of pheasant damage complaints. Sixteen complaints were received compared with 13 last year and is the greatest number since 1972. Pheasant damage complaints are summarized in Table 6.

During the statewide hunting season, which extended from October 14 through November 19, 56,871 hunters bagged 180,086 pheasants, an average of 3.2 birds per hunter. Hunting pressure and hunter success, as shown in Table 25 were comparable with 1976. Success on opening weekend was also identical with last year. See Table 24.

A summary of upland game bird seasons is presented in Table 22 and a tabulation of season results since 1958 is shown in Table 23. Distribution of hunting pressure and harvest of pheasants by geographic unit is presented in Table 25.

Valley Quail

The carryover of valley quail for the spring breeding season is measured by the quadrat method of sampling and is in conjunction with the pheasant inventory. On the 60 samples, totaling 3,600 acres of habitat, 1,323 quail were counted which represents a statewide population of 56.1 breeding birds per 100 acres of habitat. In 1977, 36.8 birds per 100 acres were recorded. See Tables 1 and 2.

Production surveys on 3,652 miles sampled in late July and early August revealed a 27 percent decline from 1977. Production was down uniformly throughout the state. Results are presented in Table 7.

While a decrease was noted in the total number of birds on the sampled areas, the size of broods and number of chicks per adult also declined. Many single adults or pairs without broods were recorded which indicates poor nesting success or an extremely late nesting season.

Mountain Quail

No accurate measurement of opening breeding populations of mountain quail can be made due to the scattered distribution of the species and the brushy terrain the birds inhabit. The number of quail observed on big game sample routes, however, indicates a sharp decrease in the number of breeding birds. Table 8 presents breeding population summaries for the last three years.

The mid-summer production inventory provides a more reliable indicator of quail abundance since sampling is extensive and spans most ranges. As shown in Table 9, 389 birds were observed on 1,897 miles sampled compared with 957 on 1,976 miles last year. The number of chicks per brood declined from an average of 8.1 to 6.6 while the ratio of chicks per adult dropped from 4.1 to 2.3.

Chukar Partridge

The number of chukar partridges observed on 1,449 miles of big game routes last winter declined 59 percent from the previous year. Table 10 presents the status of breeding populations on eastern Oregon ranges. Decreases were recorded on most routes but some improvement was recorded on a small population in Harney County.

Mid-summer production surveys on 1,515 miles sampled revealed 2,047 chukars compared with 2,741 in 1977, a decline of 25 percent. Individual broods averaged 4 percent more chicks than last year and the ratio of chicks per adult increased from 1.2 to 3.3. Table 11 shows the production and population trends on the better chukar ranges.

Hungarian Partridge

Only 143 Hungarian partridges were seen on 1,449 miles of big game routes covering ranges inhabited by the species. The limited data indicated a spring breeding population slightly higher than in 1977. A summary is contained in Table 10.

Hungarian partridges are wide ranging and difficult to detect on sample routes. Only 287 birds were counted on 1,959 miles of samples, an increase of 62 percent from 1977. Populations were significantly higher in the upper Columbia Basin and comparable with last year over the rest of eastern Oregon. The average number of chicks per brood was up from 6.9 in 1977 to 10.0 and the ratio of chicks per adult increased from 3.3 to 4.0. Production inventories are presented in Table 12.

Forest Grouse

Blue and ruffed grouse continue to fluctuate irrespective of hunting seasons which have little effect on populations of these widely scattered birds. The carryover of grouse for the spring breeding season, as determined by the number seen on 1,938 miles of big game routes that bisect grouse ranges, was down sharply from 1977. A summary of breeding populations by area is shown in Table 8.

Call counts of males heard on sample routes during the spring breeding season are presented in Table 13. The number of blue grouse heard hooting was down sharply from last year while the number of ruffed grouse drumming was above last year's average and comparable with 1976 and 1975.

Approximately 37 percent fewer blue grouse were counted on 1,887 miles of production samples than were observed last year. Populations were down uniformly on most grouse ranges. Individual broods averaged 3.4 chicks compared with 3.5 last year and the ratio of chicks to adults declined from 1.2 to 1.0. A summary is contained in Table 14.

Only 16 ruffed grouse were observed on 1,654 miles of production routes compared with 43 in 1977. Populations in northeastern Oregon were comparable to last year but were down throughout western Oregon. The average number of

chicks per brood declined 20 percent while the number of chicks per adult dropped 15 percent from 1977. Production survey results are presented in Table 15.

Sage Grouse

The annual inventory of sage grouse strutting grounds has been sharply curtailed but limited observations indicate a static population at a relatively low level. Only 18 of the 30 strutting areas formerly censused were checked in 1978. On these few areas the number of strutting cocks dropped to 212 from 220 in 1977 and 448 in 1973. A comparison of counts for the last nine years is presented in Table 16.

Production data based on 882 miles of trend routes is summarized in Table 17. The surveys indicate that sage grouse populations remain at a low level throughout their range, but are at an 18 percent higher level than last year. A total of 827 sage grouse were counted compared with 713 birds on 681 miles of trend routes last year. Production from a low carryover of breeding stock was quite low due in part to a late, cold spring. The average number of chicks per brood declined from 4.0 to 3.0 while the ratio of chicks per adult was only 0.9.

Turkeys

No reliable census techniques have been developed to inventory turkey populations or determine trends in numbers. General observations, however, indicate continued low populations throughout most of the turkey range. A few more sightings of turkeys in the Wasco Unit last fall, however, indicate the population there may be on the rise.

Mourning Doves

The annual call count survey was conducted between May 20 and May 31 in conjunction with a nationwide effort to determine trends in breeding populations. The average number of doves heard per mile (.22) was down 51 percent and was the lowest since the survey was initiated in 1953. See Table 18.

August roadside counts on 2,351 miles sampled revealed an average of 1.3 doves per mile compared with 2.0 last year and 2.5 in 1976. Table 19 summarizes the data for the past five years.

A tally of doves observed on western Oregon upland game quadrats during late winter is provided in Table 20. A small number of doves continues to winter in western Oregon but the population remains well below the populations recorded in the late 1960s.

No doves were banded in 1978.

Band-tailed Pigeons

The preseason inventory of band-tailed pigeons at mineral springs and tideflat concentration areas is presented in Table 21. A total of 3,045 was counted at

17 watering sites, a decrease of 4 percent from 1977. More pigeons were observed at 7 sites while fewer birds were using the 10 remaining areas.

No pigeons were banded during the year.

Hunting Seasons

The following table contains a synopsis of the 1977 hunting seasons for the various upland game species.

1977 GAME BIRD SEASONS

UPLAND GAME BIRDS:	OPEN SEASON (all dates inclusive)	OPEN AREA	DAILY BAG LIMIT	POSSESSION LIMIT
Blue & Ruffed Grouse	Sept. 1 - Sept. 30	*Eastern Oregon	3	6
	Sept. 17 - Nov. 6	*Western Oregon	3	6
Chukar & Hungarian Partridge	Oct. 1 - Dec. 31	*Eastern Oregon	6	12
	Oct. 15 - Nov. 20	*Western Oregon and Klamath County	4	8
Cock Pheasant	9 a.m. Oct. 15 - Nov. 20	*Western Oregon	2	4
		*Eastern Oregon	2	8
Valley and Mountain Quail	Sept. 17 - Nov. 20	*Western Oregon	10	20
	9 a.m. Oct. 15 - Dec. 31	*Eastern Oregon	10	20
Turkey	No fall season. See Controlled Gobbler Season.			
MIGRATORY BIRDS:				
Mourning Dove	Sept. 1 - Sept. 30	Entire State	10	20
Band-Tailed Pigeon	Sept. 1 - Sept. 30	Entire State	5	5

Random survey sampling was conducted following the 1977 hunting seasons. From a total of 18,248 questionnaires (4.43% sample), 10,696 usable forms (65.3%) were returned. Projection of the results indicated that 90,272 of the 412,097 licensed hunters hunted upland game. An estimated 933,162 birds were killed and 639,762 days of recreation were provided. Table 22 summarizes the 1977 seasons while Table 23 compares harvest data from 1958 to date. Tables 25 through 32 summarize the harvest of most upland game by species and geographical area as determined from the mail questionnaire. Estimates of available habitat are included to provide a basis for comparing harvest by area.

Upland game bird hunting for a limited number of juveniles was permitted on the E. E. Wilson Wildlife Area during four days in September and October and for juveniles and adults on four days in October. Three hundred hunters participated and bagged 139 pheasants, 34 quail and 38 chukar partridges. Hunting success for each of the 22 years that juvenile seasons have been conducted is shown in Table 33.

From general observations the turkey population had increased slightly from 1976 but not enough to justify a general fall hunt. A nine-day spring gobbler season extending from April 15 through April 23 was authorized, however. One thousand three hundred fifty applications were received for 350 permits.

Two hundred thirty of the permit holders (65%) reported taking 27 gobblers; 12 from the South Wasco area; 11 from the North Wasco area and 4 from the northeast area. Of the 201 hunters who hunted, 125 (62%) reported hearing or seeing turkeys.

Game Farm Operations

Game bird production on the E. E. Wilson Wildlife Area during 1977 is summarized in Table 34. Totals of 22,738 pheasants, 3,064 chukar partridges and Hungarian partridges were raised by artificial methods.

All of the pheasant chicks were sexed when removed from the incubators. Except for those in the first hatch, which were kept as breeding stock for the 1978 season, the female chicks were disposed of on a share basis or were sold at 25¢ each to persons interested in rearing pheasants. Totals of 14,070 female chicks and 31,200 surplus eggs were distributed. Approximately 84 percent of the 47,880 eggs placed in incubators hatched.

Pheasant liberations are recorded in Table 35. The 1977 releases totaled 22,542 birds, of which 11,345 were liberated in western Oregon and the remainder east of the Cascades. Of the total, 3,108 were released as adults in the spring, 6,464 as eight-to-ten week old cocks in the summer and 12,970 as adult cocks just prior to or during the hunting season. Twenty-nine hundred of the young cocks had been transferred during the summer to holding pens on the Denman, Klamath, Summer Lake and Ladd Marsh Wildlife Areas. They were released on the areas periodically during the hunting season.

A total of 2,663 chukar partridges were raised and released on depleted habitats in eastern Oregon and for stocking wildlife areas during the hunting season. One hundred forty-four adult chukars were stocked in Lake County and 147 in Harney County prior to the nesting season. Four hundred birds were transferred to the Ladd Marsh holding pen for rearing and release during the hunting season. An additional 1,972 chukars were stocked for the gun in the Klamath Hills and on the E. E. Wilson, Denman and Fern Ridge Wildlife Areas.

A small breeding flock of Hungarian partridges is maintained and the limited production used to stock eastern Oregon ranges. A total of 36 Huns was released in Lake County prior to the nesting season.

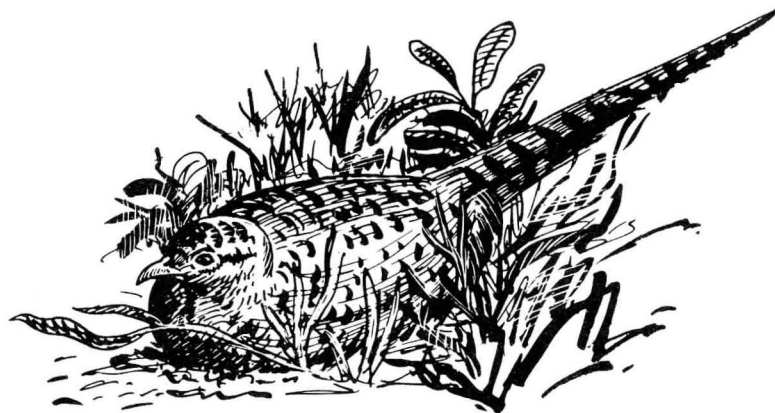


Table 1
UPLAND GAME POPULATION TRENDS

		PHEASANTS						VALLEY QUAIL				
Region	Habitat Area	Per 100 Acres					1978 Cocks per 100 Hens	Per 100 Acres				
		1978	1977	1976	1975	1974		1978	1977	1976	1975	1974
Northwest	No. Will.	3.0	5.4	-	3.0	3.7	120	3.0	6.5	9.1	0.2	0.8
	Mid. Will. Lane	- 4.0	- 1.0	- 3.4	6.8 1.1	- 6.0	- 60	- 1.0	- 0.0	- -	- -	- -
Southwest	Rogue Douglas	16.0	26.0	28.5	15.5	18.2	72	11.7	15.7	15.8	13.3	12.7
		14.0	21.0	17.8	-	-	64	39.2	39.0	41.4	-	-
WESTERN OREGON		10.5	16.1	15.9	8.1	13.5	71	11.5	17.1	16.9	6.1	5.1
Central	Ochoco	-	-	-	-	2.4	-	-	-	-	-	4.4
Northeast	Umatilla Morrow	54.4	44.5	71.4	46.2	75.8	20	103.5	115.6	43.2	16.0	18.2
		2.5	0.8	5.5	1.0	5.0	29	14.4	12.5	10.0	-	2.0
Southeast	Malheur	-	43.8	34.8	24.5	33.0	-	-	11.3	13.4	8.0	8.3
EASTERN OREGON		37.1	36.0	49.1	30.8	32.4	20	73.6	53.9	27.6	10.6	9.1
STATE TOTALS		32.8	26.8	32.1	21.0	25.8	33	56.1	36.8	22.1	8.8	7.7



Table 2
SUMMARY 1978 UPLAND GAME SPRING POPULATION INVENTORY

Region	Wildlife District	Samples		PHEASANTS				VALLEY QUAIL		
		No.	Acres	Cocks	Hens	Uncl.	Total	Per 100 Acres	No.	Per 100 Acres
Northwest	No. Will. Lane	8	462	6	5	3	14	3.0	14	3.0
		3	198	3	5	0	8	4.0	2	1.0
Southwest	Rogue Douglas	10	600	39	54	3	96	16.0	70	11.7
		7	420	23	36	0	59	14.0	107	39.2
WESTERN OREGON		28	1,680	71	100	6	177	10.5	193	11.5
Northeast	Heppner Umatilla	6	360	2	7	0	9	2.5	52	14.4
		12	720	56	285	51	392	54.4	743	103.5
EASTERN OREGON		18	1,080	58	292	51	401	37.1	795	73.6
1978 STATE TOTALS		46	1,760	129	392	57	578	32.8	988	56.1
1977 STATE TOTALS		60	3,600	208	629	126	963	26.8	1,323	36.8

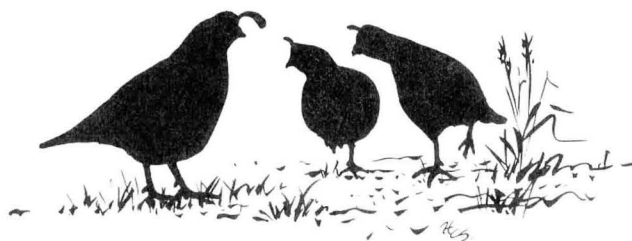


Table 3
E. E. WILSON UPLAND GAME POPULATION TRENDS

Year	Pheasants		Valley Quail	Bobwhite Quail
	Per 100 Acres	Cock-Hen Ratio	Per 100 Acres	Per 100 Acres
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
1961	148.9	57:100	22.8	2.1
1962	103.0	74:100	4.3	0.0
1963	136.7	43:100	6.9	0.0
1964	69.7	44:100	0.0	0.0
1965	73.4	34:100	13.8	0.0
1966	47.8	59:100	0.0	0.0
1967	43.1	29:100	0.0	0.0
1968	47.8	64:100	12.7	0.0
1969	41.5	79:100	0.0	0.0
1970	14.9	100:100	3.7	0.0
1971	13.3	71:100	0.0	0.0
1972	13.8	117:100	0.0	0.0
1973	14.9	75:100	0.0	0.0
1974	5.8	38:100	0.0	0.0
1975	12.2	53:100	0.0	0.0
1976	6.3	71:100	6.4	0.0
1977	7.4	86:100	3.7	0.0
1978	2.6	10:100	0.0	0.0

Table 4
PHEASANT CROWING COUNTS

Area	County	No. of 20-Mile Samples	Ave. Calls Heard per Stop				
			1978	1977	1976	1975	1974
Columbia	Hood River	1	3.4	2.9	2.4	3.7	4.0
	Sherman	1	2.7	3.0	4.7	2.3	1.5
	Wasco	2	3.0	2.7	3.3	2.5	2.4
Upper Deschutes	Deschutes	1	0.1	0.1	0.2	0.3	0.2
Blue Mt. Valley	Baker	5	3.3	3.5	3.1	2.9	2.9
	Union	4	6.1	4.6	4.9	3.9	3.2
	Wallowa	3	3.4	1.8	1.9	1.4	1.5
Great Basin	Harney	1	0.2	0.2	0.3	0.8	0.6
	Lake	2	1.0	-	-	-	-
	Malheur	2	11.2	1.3	1.2	-	-
EASTERN OREGON AVERAGES		22	2.9	2.7	2.9	2.7	2.3



Table 5

1978

PHEASANT PRODUCTION INVENTORY

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Hens		Chicks per Brood	Chicks per Hen		
			1978	1977	1976	Number Observed	% with Broods		1978	1977	1976
NW Willamette	90	67	7	4	8	6	100	6.0	6.0	3.3	5.3
N. Willamette	250	116	5	4	5	13	100	5.8	5.8	3.8	5.3
Mid-Willamette	206	41	2	3	2	4	75	7.8	6.2	5.0	6.6
Lane	222	56	3	1	1	7	86	7.2	6.1	1.5	2.7
NORTHWEST	768	280	4	3	3	30	93	6.4	6.0	3.7	4.7
Umpqua	140	14	1	7	6	3	67	4.5	3.0	3.8	4.4
Rouge	149	338	23	27	33	57	70	5.8	3.9	4.2	2.9
SOUTHWEST	289	352	12	15	18	60	70	5.7	3.2	4.1	3.1
WESTERN OREGON	1,057	632	6	7	8	90	78	6.0	4.0	3.6	3.5
Columbia	235	68	3	6	5	6	83	8.0	6.7	2.1	3.1
Ochoco	146	11	1	2	-	1	100	8.0	8.0	3.7	-
CENTRAL	381	79	2	4	3	7	86	8.0	6.9	2.3	3.1
Umatilla	256	547	21	9	17	80	84	7.0	5.5	4.9	6.1
Heppner	115	77	7	3	10	12	67	6.3	4.8	5.0	5.5
Union	87	63	7	9	7	11	82	4.8	3.9	3.6	4.3
Baker	132	75	6	4	4	13	59	6.4	3.9	2.5	5.5
Grant	70	0	-	1	2	-	-	-	-	7.0	5.0
Wallowa	10	0	-	1	1	-	-	-	-	-	-
NORTHEAST	670	762	11	6	10	116	81	6.7	4.8	4.0	5.8

Table 5
PHEASANT PRODUCTION INVENTORY
(Continued)

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Hens		Chicks per Brood	Chicks per Hen		
			1978	1977	1976	Number Observed	% with Broods		1978	1977	1976
Lake Malheur	77 200	0 568	0 28	1 16	- 23	- 94	- 89	- 5.6	- 4.1	3.0 1.7	- 4.6
SOUTHEAST	277	568	21	13	19	94	89	5.6	4.1	1.7	4.6
EASTERN OREGON	1,328	1,409	11	7	10	217	85	6.3	4.6	2.8	4.7
STATE TOTALS	2,385	2,041	9	7	9	307	83	6.2	4.4	3.0	4.2



Table 6
MALHEUR COUNTY PHEASANT DAMAGE

Year	Damage Complaints				Total
	Corn	Grain	Beets	Other	
1958	31		13		44
1959	45	8	14		67
1960	18	3	6		27
1961	10	3	2		15
1962	14	1	2		17
1963	24	11	9		44
1964	28	2	7	2	39
1965	23	8	2		33
1966	34	6	5	2	47
1967	20	6	5	2	33
1968	10	1	6		17
1969	20	3	5		28
1970	18	3	7		28
1971	22	2	3	3	30
1972	12	-	1	1	14
1973	9	-	1	-	10
1974	12	-	-	-	12
1975	8	1	1	-	10
1976	6	0	-	-	6
1977	10	1	2	-	13
1978	16	-	-	-	16



Table 7
VALLEY QUAIL PRODUCTION INVENTORY

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Birds Classified			Chicks per Brood	Chicks per Adult		
			1978	1977	1976	Adults	Chicks	Total		1978	1977	1976
NW Willamette	90	5	1	4	3	5	-	5	-	-	1.9	1.7
N. Willamette	250	67	3	8	3	56	11	67	-	0.2	2.5	1.3
Mid-Willamette	206	144	7	18	8	62	82	144	7.5	1.3	2.8	3.0
Lane	222	85	4	6	3	46	39	85	13.5	0.8	1.7	3.0
NORTHWEST	768	301	4	9	4	169	132	301	8.5	0.8	2.4	2.3
Umpqua	140	40	3	9	8	25	15	40	5.0	0.6	5.8	5.5
Rogue	158	166	11	29	30	-	38	38	6.3	-	1.6	2.0
SOUTHWEST	298	206	7	17	17	25	53	78	5.8	2.1	2.1	2.4
WESTERN OREGON	1,066	507	5	12	9	194	185	379	5.5	1.0	2.3	2.4
Columbia	235	260	11	16	20	131	129	260	7.6	0.5	2.9	3.0
Ochoco	203	270	13	6	21	76	194	270	13.9	2.6	3.1	3.1
Deschutes	85	139	16	13	15	29	109	138	13.6	3.8	3.5	2.4
CENTRAL	523	669	13	12	19	236	432	668	11.1	1.8	3.1	2.9
Umatilla	256	295	12	8	10	79	216	295	9.3	2.7	2.5	8.8
Heppner	115	94	8	4	11	22	72	94	9.0	3.3	3.7	5.6
Wallowa	363	169	5	9	5	39	93	132	11.9	2.4	5.3	3.5
Union	87	42	5	13	0	13	29	42	9.7	2.2	7.1	-
Baker	232	30	1	5	2	20	10	30	5.0	0.5	1.4	2.2
Grant	209	283	1	18	14	93	190	283	8.1	2.0	4.3	5.2
NORTHEAST	1,262	913	7	9	7	266	610	876	9.0	2.3	3.3	5.2

Table 7
VALLEY QUAIL PRODUCTION INVENTORY
(Continued)

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Birds Classified			Chicks per Brood	Chicks per Adult		
			1978	1977	1976	Adults	Chicks	Total		1978	1977	1976
Lake	97	125	13	29	7	34	91	125	11.4	2.7	1.8	3.3
Harney	363	44	1	1	1	5	39	44	12.8	7.8	5.0	7.3
Malheur	341	420	12	10	13	145	275	420	13.3	1.9	7.7	3.4
SOUTHEAST	801	589	7	7	8	184	405	589	12.7	2.2	4.1	3.5
EASTERN OREGON	2,586	2,171	8	11	10	686	1,447	2,133	10.5	2.1	3.4	3.6
STATE TOTALS	3,652	2,678	7	10	10	880	1,632	2,512	11.6	1.9	2.9	3.2



Table 8
GROUSE AND MOUNTAIN QUAIL TRENDS

District and Region	Miles Traveled	BLUE GROUSE				RUFFED GROUSE				MOUNTAIN QUAIL			
		No.	Birds per Mile			No.	Birds per Mile			No.	Birds per Mile		
			1978	1977	1976		1978	1977	1976		1978	1977	1976
Heppner	176	2	.01	.01	.01	-	-	-	-	2	.01	.00	.00
Umatilla	178	23	.13	.03	.06	10	.06	.02	.01	0	.00	.00	.00
Union	78	6	.08	.04	.03	2	.40	-	-	0	.00	-	-
Wallowa	381	35	.09	.22	.19	4	.01	.04	.07	0	.00	.02	.01
Baker	213	2	.01	.02	.07	0	.00	.00	.00	0	.00	.00	.00
Grant	21	0	.00	.90	.05	0	.00	-	-	0	.00	.00	-
NORTHEAST	1,047	68	.06	.10	.12	16	.02	.02	.03	2	-	.01	.01
N. Willamette	221	12	.06	.05	.03	0	-	.05	-	55	.25	.08	.24
NW Willamette	159	4	.03	.02	.04	1	.01	.08	.07	35	.22	.29	.37
Lane	276	22	.08	.12	-	1	-	.02	-	25	.09	.95	-
NORTHWEST	656	38	.06	.07	.03	1	-	.05	.03	115	.18	.44	.29
Douglas	140	10	.07	.21	-	1	.01	-	-	47	.34	.95	-
Rogue	95	1	.01	.08	.00	0	.00	-	.02	134	1.41	2.59	2.45
SOUTHWEST	235	11	.05	.16	.00	1	-	-	.02	181	.77	1.58	2.45
STATE TOTALS AND AVERAGES	1,938	117	.06	1.00	.08	18	.01	.02	.03	298	.15	.38	.29

Table 9
MOUNTAIN QUAIL PRODUCTION INVENTORY

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Birds Classified			Chicks per Brood	Chicks per Adult		
			1978	1977	1976	Adults	Chicks	Total		1978	1977	1976
North Coast	308	33	1	2	1	8	23	31	1.3	2.9	2.9	1.9
NW Willamette	159	35	2	3	4	11	24	35	-	2.2	1.6	4.1
N. Willamette	221	55	2	1	2	15	40	55	11.0	2.7	1.4	2.8
Mid-Willamette	297	37	1	4	3	10	27	37	8.3	2.7	4.9	4.1
Lane	276	25	1	9	7	11	14	25	3.0	1.3	5.1	4.6
NORTHWEST	1,261	185	1	3	3	55	128	183	8.7	2.3	3.7	3.8
South Coast	120	23	2	11	19	13	10	23	2.5	0.7	5.2	5.2
Umpqua	140	47	3	9	9	18	29	47	4.8	1.6	4.7	4.4
Rogue	95	134	14	26	25	32	102	134	8.5	3.2	4.0	3.8
SOUTHWEST	255	204	8	14	17	63	141	204	5.9	2.2	4.5	4.4
WESTERN OREGON	1,516	389	3	6	6	118	269	387	6.6	2.3	4.1	4.1
Grant	18	0	-	0	0	-	-	-	-	-	-	-
Wallowa	363	0	-	1	0	-	-	-	-	-	12.0	-
NORTHEAST	381	0	-	1	0	-	-	-	-	-	12.0	-
STATE TOTALS	1,897	389	2	5	5	118	269	387	6.6	2.3	4.1	4.1

Table 10
CHUKAR AND HUNGARIAN PARTRIDGE OBSERVED ON BIG GAME SAMPLES

District	Miles Traveled	CHUKAR PARTRIDGE					HUNGARIAN PARTRIDGE				
		No.	Birds per Mile				No.	Birds per Mile			
			1978	1977	1976	1975		1978	1977	1976	1975
Heppner	176	33	.19	.30	.14	.05	32	.18	.15	.15	.07
Umatilla	178	13	.07	.09	.27	.08	36	.20	.08	.03	.08
Wallowa	381	64	.17	.79	.31	.06	14	.04	.06	.05	.03
Baker	213	103	.48	1.25	.32	.15	41	.19	.12	.12	.04
Union	37	7	.19	.05	.11	.00	18	.49	.49	.49	.05
Grant	112	5	.05	.21	.11	.04	0	.00	.00	.00	.02
Columbia	73	4	.05	-	-	-	0	.00	-	-	-
Harney	185	25	.14	.10	.31	.21	0	-	.00	.00	.00
Malheur	94	12	.13	.18	.06	.09	2	.02	.00	.00	.00
TOTALS	1,449	266	.18	.45	.23	.10	143	.10	.07	.07	.04



Table 11

CHUKAR PARTRIDGE PRODUCTION INVENTORY

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Birds Classified			Chicks per Brood	Chicks per Adult		
			1978	1977	1976	Adults	Chicks	Total		1978	1977	1976
Columbia	130	147	11	20	19	35	112	147	9.3	3.2	2.7	3.6
Ochoco	57	19	3	9	7	3	16	19	8.0	5.3	4.4	2.4
CENTRAL	187	166	9	17	15	38	128	166	9.1	3.4	3.4	3.4
Umatilla	182	18	1	10	3	4	14	18	7.0	3.5	8.6	10.5
Heppner	115	102	9	20	13	37	68	105	11.3	1.8	4.0	3.6
Wallowa	193	320	17	27	15	48	169	217	8.9	3.5	1.5	6.2
Baker	100	375	38	58	46	128	311	439	7.2	2.4	0.5	6.0
Grant	195	138	7	11	15	26	112	138	10.2	4.3	5.5	5.0
NORTHEAST	785	953	12	22	16	243	674	917	9.2	2.8	1.5	5.4
Lake	25	0	0	0	1	-	-	-	-	-	-	1.5
Harney	363	99	3	4	5	15	84	99	14.0	5.6	2.3	7.9
Malheur	155	829	53	31	50	145	586	731	9.2	4.0	0.5	2.9
SOUTHEAST	543	928	17	13	18	160	670	830	9.7	4.2	0.7	3.3
STATE TOTAL	1,515	2,047	14	18	16	441	1,472	1,913	9.5	3.3	1.2	4.1

Table 12
HUNGARIAN PARTRIDGE PRODUCTION INVENTORY

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Birds Classified			Chicks per Brood	Chicks per Adult		
			1978	1977	1976	Adults	Chicks	Total		1978	1977	1976
Columbia	365	11	-	-	1	5	6	11	6.0	1.2	2.0	3.6
Ochoco	161	45	3	0	-	9	36	45	12.0	4.0	-	-
Umatilla	256	142	6	1	3	21	121	142	12.1	5.8	1.9	5.6
Heppner	115	26	2	3	2	3	23	26	11.5	7.7	3.8	3.7
Wallowa	193	5	-	1	1	5	-	5	-	-	7.3	5.5
Union	87	31	4	6	1	11	20	31	4.0	1.8	3.3	1.6
Baker	232	14	1	-	1	2	12	14	12.0	6.0	3.0	-
Grant	209	0	-	1	0	-	-	-	-	-	5.3	-
Malheur	341	13	-	-	1	1	12	13	12.0	12.0	-	6.0
STATE TOTALS	1,959	287	1	1	1	57	230	287	10.0	4.0	3.3	4.2

Table 13
GROUSE HOOTING AND DRUMMING COUNTS

District	Miles Traveled	Total Heard	BLUE GROUSE				Total Heard	RUFFED GROUSE			
			Average Heard per Mile					Average Heard per Mile			
			1978	1977	1976	1975		1978	1977	1976	1975
NW Willamette	67	35	.52	.48	.19	.28	2	.03	.05	.04	.11
Lane	60	7	.12	.07	.00	.12	2	.03	.02	.00	-
Umpqua	-	-	-	1.80	2.30	-	-	-	.02	.05	-
Metolius	64	8	.13	.30			-	-	-		
Wallowa	20	0		-	-	-	17	.90	-	1.15	.55
TOTALS AND AVERAGES	211	50	.24	.93	1.10	.16	21	.10	.02	.14	.09



Table 14
BLUE GROUSE PRODUCTION INVENTORY

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Birds Classified			Chicks per Brood	Chicks per Adult		
			1978	1977	1976	Adults	Chicks	Total		1978	1977	1976
North Coast	308	2	-	-	-	2	-	2	-	-	-	-
NW Willamette	159	4	-	-	-	3	1	4	-	0.3	-	-
N. Willamette	221	13	1	1	-	5	8	13	4.0	1.6	0.7	1.6
Mid-Willamette	297	30	1	2	1	17	13	30	2.8	0.8	1.4	0.7
Lane	276	22	1	1	1	15	7	22	2.0	0.5	0.4	0.7
NORTHWEST	1,261	71	1	1	1	42	29	71	3.0	0.7	0.8	0.6
South Coast	120	35	3	3	2	11	24	35	4.0	2.2	2.9	2.1
Umpqua	140	10	1	2	1	7	3	10	3.0	0.4	1.9	1.5
Rogue	95	1	-	1	-	1	-	1	-	-	1.7	-
SOUTHWEST	355	36	1	2	1	19	27	46	3.9	1.4	2.3	2.0
WESTERN OREGON	1,616	107	1	1	1	61	56	117	3.4	0.9	1.3	0.8
Wallowa	253	93	4	7	6	43	49	92	3.5	1.1	1.1	1.7
Grant	18	15	8	9	0	7	5	12	2.5	0.7	3.5	-
EASTERN OREGON	271	108	4	7	6	50	54	104	3.4	1.1	1.2	1.7
STATE TOTALS	1,887	215	1	2	1	111	110	121	3.4	1.0	1.2	1.2

Table 15
RUFFED GROUSE PRODUCTION INVENTORY

District	Miles Traveled	Total Birds Observed	Birds 10-Mile Sample			Birds Classified			Chicks per Brood	Chicks per Adults		
			1978	1977	1976	Adults	Chicks	Total		1978	1977	1976
North Coast	308	0	-	-	-	-	-	-	-	-	-	2.5
NW Willamette	159	1	-	1	1	1	-	1	-	-	3.0	2.0
N. Willamette	221	0	-	1	-	-	-	-	-	-	2.3	-
Mid-Willamette	297	0	-	-	-	-	-	-	-	-	0.0	-
Lane	276	1	-	-	-	1	-	1	-	-	3.0	1.3
NORTHWEST	1,261	2	-	-	-	2	-	2	-	-	1.6	1.2
Umpqua	140	1	-	-	-	1	-	1	-	-	-	-
SOUTHWEST	140	1	-	-	-	1	-	-	-	-	-	-
WESTERN OREGON	1,401	3	-	-	-	3	-	3	-	-	1.6	1.2
Wallowa	253	13	1	1	-	3	10	13	5.0	3.3	4.5	-
EASTERN OREGON	253	13	1	1	-	3	10	13	5.0	3.3	4.5	-
STATE TOTALS	1,654	16	-	-	-	6	10	16	5.0	1.7	2.0	1.2



Table 16
SAGE GROUSE STRUTTING GROUND COUNTS

County	Number of Areas	MALE GROUSE COUNTED								
		1978	1977	1976	1975	1974	1973	1972	1971	1970
Deschutes	6	56	60	40	35	33	51	45	56	79
Crook	-	-	-	-	30	-	-	19	-	221
Harney	12	156	160	117	105	48	397	487	242	235
N. Lake	-	-	-	-	-	-	-	-	-	88
Wheeler	-	-	-	-	-	3	-	-	-	-
TOTALS	18	212	220	157	170	84	448	551	298	623

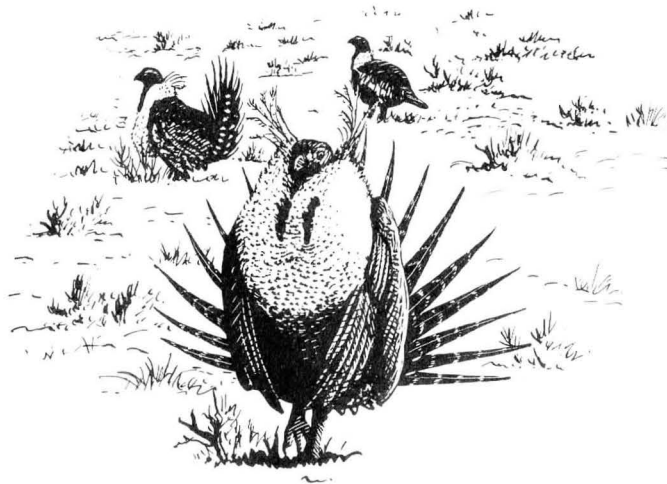


Table 17
SAGE GROUSE PRODUCTION INVENTORY

District	Miles Traveled	Total Birds Observed	Birds per 10-Mile Sample			Birds Classified			Chicks per Brood	Chicks per Adult		
			1978	1977	1976	Adults	Chicks	Total		1978	1977	1976
Crook	23	31	14	0	17	7	24	31	3.4	3.4	-	4.4
Deschutes	100	4	-	2	1	2	-	2	-	-	1.0	-
Lake	148	61	4	0	14	36	23	59	3.3	0.6	-	1.5
Harney	363	36	1	1	1	27	9	36	1.7	0.3	0.1	0.9
Malheur	248	695	28	27	11	28	33	61	3.0	1.2	-	3.3
STATE TOTAL	882	827	9	11	8	100	89	189	3.0	0.9	-	2.0



Table 18
MOURNING DOVE CALL COUNT TRENDS

Year	Routes	Miles Traveled	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
1960	18	360	1.87	1.47
1961	18	360	2.07	1.37
1962	18	360	1.76	1.16
1963	16	320	1.68	1.44
1964*	18	360	0.89	1.45
1965	20	400	0.61	0.46
1966	18	360	0.84	0.71
1967	18	360	0.84	0.69
1968	18	360	0.69	0.67
1969	18	360	0.81	0.44
1970	18	360	0.43	0.45
1971	18	360	0.96	0.41
1972	18	360	0.44	0.45
1973	18	360	0.66	0.72
1974	17	340	0.43	0.43
1975	16	320	0.40	0.33
1976	17	340	0.42	0.52
1977	18	360	0.45	0.53
1978	18	360	0.22	0.17

*Routes Randomized

Table 19
AUGUST MOURNING DOVE ROADSIDE COUNT TRENDS

Wildlife District	Miles Traveled	Doves Seen	Doves per Mile				
			1978	1977	1976	1975	1974
NW Willamette	90	60	0.7	0.7	1.5	1.3	0.7
N. Willamette	250	204	0.8	1.0	1.5	1.5	0.7
Mid-Willamette	206	166	0.8	1.6	1.8	1.3	1.6
Lane	222	96	0.4	0.5	0.8	0.3	0.7
Rogue	158	1,040	6.6	6.6	5.7	4.4	4.6
Columbia	84	239	2.8	5.4	1.8	4.8	5.4
Umatilla	256	387	1.5	1.5	2.9	2.2	0.9
Ochoco	203	125	0.6	0.7	4.8	1.2	1.8
Deschutes	50	51	1.0	1.7	1.4	2.6	0.6
Heppner	115	187	1.6	4.3	3.2	3.7	10.0
Harney	60	8	0.1	0.2	0.9	0.8	0.6
N. Lake	90	52	0.6	1.4	1.3	1.1	0.5
Malheur	248	352	1.4	-	-	-	-
Union	87	57	0.7	3.6	1.2	1.5	1.0
Baker	232	148	0.6	2.6	1.3	0.9	1.8
TOTALS AND AVERAGES	2,351	3,172	1.3	2.0	2.5	1.8	1.9

Table 20
MOURNING DOVE SPRING QUADRAT COUNT TRENDS

Region	Doves per 100 Acres							
	1978	1977	1976	1975	1974	1973	1972	1971
Will. Val. (462 acres)	-	7.1	0.5	0.1	0.1	2.1	1.2	3.4
Rogue Val. (600 acres)	1.2	3.0	11.6	20.6	1.5	3.5	7.2	6.9
Douglas County (420 acres)	-	4.3	2.1	-	-	2.0	5.3	13.3

Table 21
BAND-TAILED PIGEON TRENDS

County	Area	1978	1977	1976	1975	1974	1973
Benton	Pigeon Butte	31		140	35	79	55
	Long Tom	11	249	25	24	43	88
Columbia	Dutch Canyon	100	55	155	62	83	93
	Conyer Creek	58	119	157	135	71	58
	St. Helens	125	185	270	352	210	164
	Clatskanie	-	88	-	77	80	90
Coos	Blueslide	230	287	333	648	274	399
	Parkerburg	265	203	151	502	143	397
Curry	N. Fork Sixes	265	199	161	178	176	395
Douglas	Hudson Slough	1	82	29	117	161	-
	Canton Creek	-	17	42	56	48	41
Lane	Cushman	387	192	215	-	135	408
	Cheshire	213	165	204	95	140	200
	Fall Creek	-	31	350	-	84	184
	Teeters Creek	40	131	166	284	178	199
Linn	Crawfordsville	196	345	213	102	37	151
Marion	Aurora	-	-	-	-	30	52
Polk	Foothill	296	39	135	127	79	51
Tillamook	Nehalem	-	187	203	88	338	227
	Tillamook Bay	396	235	148	-	-	-
Yamhill	Silver Springs	214	357	260	282	142	81
	Fairdale	217	211	198	-	171	165
TOTALS		3,045	3,377	3,555	3,164	2,702	3,498



Table 22
1977 GAME BIRD SEASONS

Species	Hunters	Harvest	Days Hunted	Birds per Hunter	Birds per Day	Days per Hunter
Pheasants	56,871	180,086	291,942	3.2	0.6	5.1
Quail	34,642	243,272	200,523	7.0	1.2	5.8
Chukar Partridge	19,015	99,880	75,581	5.2	1.3	4.0
Hungarian Partridge	5,768	18,819	25,225	3.3	0.8	4.4
Blue & Ruffed Grouse	31,203	118,362	162,364	3.8	0.7	5.2
Doves	18,064	206,141	85,959	11.4	2.4	4.8
Pigeons	10,287	66,273	52,828	6.4	1.3	5.1
Turkeys	350	28	700	0.1	-	2.0
Subtotals	*90,272	932,861	895,122	9.9	1.0	9.9
Ducks	44,554	529,013				
Geese	15,792	51,485				
Snipe	3,488	13,253				
Coots	4,839	25,346				
Subtotals	*57,262	619,097	587,100	10.8	1.1	10.3
TOTALS	147,534	1,551,958	1,482,222	10.5	1.0	10.0

* Total upland game and waterfowl hunters and total days hunted.

Table 23

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
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	158,474	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
1960	94,599	351,656	30,670	190,873	9,442	37,683	5,543	16,765	17,208	36,586			14,893	173,108	13,096	86,956
1961	91,117	375,755	35,088	242,040	15,033	75,268	5,205	15,581	17,819	45,180	2,725	6,659	18,340	202,082	15,003	121,032
1962	82,430	329,481	29,037	129,894	19,029	124,727	5,604	16,552	14,380	29,194	3,541	10,571	16,566	164,116	14,133	121,446
1963	84,024	374,243	31,460	265,491	28,299	295,243	8,885	36,535	13,944	34,553	1,913	4,117	16,542	184,030	11,997	90,505
1964	81,722	336,846	31,213	230,875	25,572	194,530	7,744	26,334	12,351	27,313	3,718	8,669	17,320	208,513	12,460	103,885
1965	75,373	254,575	26,383	168,274	19,653	130,132	6,021	17,288					16,205	163,064	12,597	105,173
1966	72,133	243,436	26,171	158,585	16,554	115,151	5,122	15,907	7,725	16,836	2,234	3,731	16,370	196,797	12,415	121,069
1967	72,135	263,316	34,512	250,988	16,483	81,766	4,339	10,365	12,746	37,412			16,617	172,429	9,862	82,212
1968	67,592	217,051	30,648	216,638	16,872	99,527	4,080	10,818	12,684	34,718	1,231	2,010	18,699	186,422	12,294	94,511
1969	71,835	223,845	28,610	173,775	22,338	160,035	5,163	14,167	14,785	41,454	2,774	4,758	18,882	198,502	11,286	84,572
1970	72,880	231,920	31,120	236,350	28,660	222,960	5,620	19,700	17,080	49,450	5,430	10,250	20,120	208,620	12,910	99,410
1971	54,400	167,915	27,296	179,050	23,088	148,146	6,614	24,074	15,825	43,193	2,068	3,102	17,508	180,757	10,798	84,318
1972	58,164	179,490	30,490	191,891	21,238	121,547	6,463	20,631	17,841	58,274	4,226	6,794	17,869	192,333	11,517	87,135
1973	58,058	169,655	27,786	156,032	18,657	95,616	5,737	19,605	19,910	60,380	4,046	7,483	15,873	156,850	9,604	66,328
1974	59,344	168,378	26,729	140,559	20,688	106,654	5,795	18,224	22,095	60,525	1,774	1,947	17,539	161,113	10,366	59,645
1975	58,033	174,905	26,661	148,300	21,019	119,514	4,381	12,568	26,649	91,352	1,310	2,121	17,887	201,929	10,657	63,749
1976	56,848	189,184	33,047	208,863	23,246	139,654	6,312	23,774	26,740	80,874	-	-	16,565	179,817	10,440	50,050
1977	56,871	180,086	34,642	243,272	19,015	99,880	5,768	18,819	31,203	118,362	-	-	18,064	206,141	10,287	66,273

Table 24
1977 PHEASANT SEASON
OPENING WEEKEND SUCCESS

Area	Hunters Checked	Pheasants Bagged	Bird/Hunter				
			1977	1976	1975	1974	1973
NW Willamette	-	-	-	0.5	0.4	0.1	0.5
N. Willamette	50	10	0.2	0.2	0.5	0.1	0.1
NORTHWEST	50	10	0.2	0.4	0.4	0.1	0.2
Umpqua	53	25	0.5	0.5	0.5	-	-
Rogue	117	45	0.4	0.4	0.3	0.3	0.5
SOUTHWEST	170	70	0.4	0.4	0.3	0.3	0.5
Lower Columbia	88	42	0.5	0.3	0.4	0.2	0.3
Klamath	28	10	0.4	0.2	0.3	0.4	0.5
CENTRAL	116	52	0.4	0.4	0.3	0.3	0.4
Morrow	31	14	0.5	0.3	0.2	0.7	0.6
Umatilla	180	111	0.6	0.9	0.8	0.5	1.1
Baker	58	16	0.3	0.2	0.4	0.2	0.4
Grant	11	5	0.5	0.6	0.7	-	0.5
Union	16	5	0.3	0.4	0.3	0.1	0.5
NORTHEAST	296	151	0.5	0.7	0.6	0.4	0.8
Lake	-	-	-	-	-	0.4	0.5
Harney	-	-	-	0.6	0.8	1.8	0.2
Malheur	309	270	0.9	1.1	0.9	0.9	1.0
SOUTHEAST	309	270	0.9	1.1	0.9	0.8	0.9
TOTALS & AVERAGES	941	553	0.6	0.6	0.5	0.5	0.6



Table 25
1977 PHEASANT HARVEST

Habitat Area	Hunters	Harvest	Days Hunted	Square Miles of Habitat	Birds Killed per Square Mile		
					1977	1976	1975
North Willamette	13,156	24,560	62,127	1,525	16.1	17.4	14.6
South Willamette	6,736	11,547	29,728	909	12.7	11.3	10.8
NORTHWEST	19,892	36,107	91,855	2,434	14.8	15.1	13.2
Umpqua	1,038	1,907	3,171	331	5.8	3.1	4.0
Rogue	4,398	9,748	24,536	236	41.3	32.9	48.4
SOUTHWEST	5,436	11,655	27,707	567	20.6	15.5	22.5
Lower Deschutes	1,686	10,570	13,826	859	12.3	10.3	12.8
Upper Deschutes	2,034	3,713	7,796	344	10.8	22.3	16.8
Klamath	3,574	6,990	15,969	289	24.2	36.0	25.7
CENTRAL	7,294	21,273	37,591	1,492	14.3	18.1	16.2
Columbia Basin	10,463	37,887	52,715	1,999	19.0	21.5	17.7
Blue Mountain	5,173	14,569	24,347	739	19.7	19.9	19.3
NORTHEAST	15,636	52,456	77,062	2,738	19.2	21.1	18.1
Malheur	9,449	53,726	50,889	330	162.9	167.5	151.0
Great Basin	1,488	4,869	6,838	737	6.6	6.7	4.2
SOUTHEAST	10,937	58,595	57,727	867	67.6	67.9	60.1
STATE TOTALS	*56,871	180,086	291,942	8,098	22.2	23.4	20.8

*State total omits duplication of hunters hunting in more than one area or county.

Table 26
1977 QUAIL HARVEST

Habitat Area	Hunters	Harvest	Days Hunted	Square Miles of Habitat	Birds Killed per Square Mile		
					1977	1976	1975
North Coast	684	3,990	5,406	1,623	2.5	0.5	0.8
North Willamette	6,183	32,883	32,271	4,296	7.7	5.3	4.2
South Willamette	5,830	30,316	32,340	4,562	6.6	5.3	3.7
NORTHWEST	12,697	67,189	70,017	10,481	6.4	4.5	3.5
South Coast	1,129	6,211	5,258	1,814	3.4	3.9	2.7
Umpqua	2,972	22,450	16,460	2,862	7.8	5.0	3.0
Rogue	3,349	23,679	21,244	2,543	9.3	6.7	5.9
SOUTHWEST	7,450	52,340	42,962	7,219	7.3	5.3	3.9
Lower Deschutes	2,029	10,914	7,739	3,140	3.5	3.4	3.5
Upper Deschutes	1,861	15,845	8,995	5,665	2.8	3.3	2.1
Klamath	1,000	6,283	4,528	3,990	1.6	1.7	1.0
CENTRAL	4,890	33,042	21,262	12,705	2.6	2.8	2.1
Columbia Basin	4,069	21,042	20,795	5,915	3.6	4.0	1.7
Blue Mountain	3,419	24,882	16,329	10,769	2.3	1.4	1.3
NORTHEAST	7,488	45,924	37,124	16,684	2.8	2.3	1.4
Malheur	3,917	32,121	24,053	9,918	3.2	3.5	2.4
Great Basin	1,078	12,656	5,105	16,994	0.7	0.9	0.5
SOUTHEAST	4,995	44,777	29,158	26,912	1.7	1.8	1.2
STATE TOTALS	*34,642	243,242	200,523	74,001	3.3	2.8	2.0

*State total omits duplication of hunters hunting in more than one area or county.

Table 27
1977 CHUKAR PARTRIDGE HARVEST

Habitat Area	Hunters	Harvest	Days Hunted	Square Miles of Habitat	Birds Killed per Square Mile		
					1977	1976	1975
Upper Willamette	122	154	876	-	-	-	-
NORTHWEST	122	154	876	-	-	-	-
Rogue	202	463	855	-	-	-	-
SOUTHWEST	202	463	855	-	-	-	-
Lower Deschutes	2,912	13,522	10,807	1,609	8.4	6.1	9.7
Upper Deschutes	992	1,658	2,280	3,150	0.5	1.4	0.7
Klamath	374	1,786	1,013	-	-	-	-
CENTRAL	4,278	16,966	14,100	4,759	3.6	3.5	3.7
Columbia Basin	3,514	16,626	12,912	2,472	6.7	6.4	4.6
Lower Snake	4,048	23,607	16,579	3,619	6.5	9.4	9.2
Upper John Day	607	1,935	2,399	1,600	1.2	1.6	2.4
Lower John Day	1,358	7,826	4,658	1,877	4.2	10.3	4.8
NORTHEAST	9,527	49,994	36,548	9,568	5.2	7.5	6.0
Malheur	4,402	24,567	16,696	3,194	7.7	12.0	10.0
Great Basin	1,532	7,736	6,506	3,745	2.1	3.3	2.5
SOUTHEAST	5,934	32,303	23,202	6,939	4.7	7.3	6.0
STATE TOTALS	*19,015	99,880	75,581	21,266	4.7	6.6	5.6

*State total omits duplication of hunters hunting in more than one area or county.

Table 28
1977 HUNGARIAN PARTRIDGE HARVEST

Habitat Area	Hunters	Harvest	Days Hunted	Square Miles of Habitat	Birds Killed per Square Mile		
					1977	1976	1975
Lower Deschutes	662	1,127	3,007	2,517	0.4	0.8	0.4
Upper Deschutes	234	234	529	3,494	0.1	0.2	0.1
CENTRAL	896	1,361	3,536	6,011	0.2	0.5	0.2
Columbia Basin	2,309	9,083	8,174	5,305	1.7	1.5	0.5
Blue Mountain	1,915	6,979	9,491	7,001	1.0	1.1	0.8
NORTHEAST	4,224	16,062	17,665	12,306	1.3	1.3	0.7
Malheur	835	1,072	3,554	5,156	0.2	1.1	0.4
Great Basin	82	324	470	1,552	0.2	-	0.6
SOUTHEAST	917	1,396	4,024	6,708	0.2	0.8	0.4
STATE TOTALS	*5,768	18,819	25,225	25,025	0.8	1.0	0.5

*State total omits duplication of hunters hunting in more than one county or area.



Table 29
1977 BLUE AND RUFFED GROUSE HARVEST

Habitat Area	Hunters	Harvest	Days Hunted	Square Miles of Habitat	Birds Killed per Square Mile		
					1977	1976	1975
North Coast	2,293	9,939	13,758	1,333	7.5	6.4	8.3
North Willamette	6,611	20,050	30,802	2,043	9.8	7.1	7.3
South Willamette	6,664	24,383	39,073	3,013	8.1	6.7	8.6
NORTHWEST	15,568	54,372	83,633	6,389	8.5	6.8	8.2
South Coast	1,008	3,334	4,508	1,442	2.3	1.6	2.5
Umpqua	3,365	10,187	18,282	2,228	4.6	2.7	3.5
Rogue	2,269	4,928	8,287	1,894	2.6	2.0	1.9
SOUTHWEST	6,642	18,449	31,077	5,564	3.3	2.2	2.7
Lower Deschutes	561	1,690	2,652	623	2.7	4.3	2.2
Upper Deschutes	517	1,310	1,212	2,172	0.6	0.5	0.1
Klamath	592	777	1,347	2,251	0.3	0.5	0.5
CENTRAL	1,670	3,777	5,211	5,046	0.7	1.0	0.5
Columbia Basin	2,743	14,100	16,530	610	23.1	0.8	6.6
Blue Mountain	5,727	25,744	24,216	3,769	6.8	4.0	4.3
NORTHEAST	8,470	39,844	40,746	4,379	9.0	4.3	4.6
Great Basin	485	1,920	1,697	1,486	1.3	1.0	0.9
SOUTHEAST	485	1,920	1,697	1,486	1.3	1.0	0.9
STATE TOTALS	*31,203	118,362	162,364	22,864	5.2	3.5	4.0

*State total omits duplication of hunters hunting in more than one county or area.

Table 30
1977 SILVER GRAY SQUIRREL HARVEST

Habitat Area	Hunters	Harvest	Days Hunted	Square Miles of Habitat	Squirrels Killed per Square Mile		
					1977	1976	1975
North Willamette	748	5,001	4,104	2,043	2.4	1.4	1.0
South Willamette	1,479	8,784	11,577	3,013	2.9	1.4	0.7
NORTHWEST	2,227	13,785	15,681	5,056	2.7	1.4	0.8
South Coast	489	1,442	3,042	1,442	1.0	1.8	1.2
Umpqua	1,428	6,597	9,027	2,228	3.0	1.1	1.0
Rogue	2,062	11,412	10,232	1,894	6.0	4.9	2.0
SOUTHWEST	3,979	19,451	22,301	5,564	3.5	2.6	1.4
Lower Deschutes	1,059	3,795	3,632	623	6.1	6.5	3.2
Upper Deschutes	88	263	176	1,400	0.2	0.1	0.6
Klamath	346	1,176	1,491	2,251	0.5	0.9	0.6
CENTRAL	1,493	5,234	5,299	4,274	1.2	1.5	1.0
STATE TOTALS	*7,364	38,470	43,281	14,894	2.6	1.9	1.1

*State total omits duplication of hunters hunting in more than one county or area.



Table 31
1977 MOURNING DOVE HARVEST

Habitat Area	Hunters	Harvest	Days Hunted	Square Miles of Habitat	Birds Killed per Square Mile		
					1977	1976	1975
North Willamette	4,659	30,654	21,908	2,254	13.6	17.2	21.5
South Willamette	2,702	27,401	13,406	1,548	17.7	16.6	19.5
NORTHWEST	7,361	58,055	35,314	3,802	15.3	16.9	20.7
Umpqua	683	6,415	3,112	634	10.1	8.0	7.0
Rogue	2,210	35,323	13,675	649	54.4	31.2	45.3
SOUTHWEST	2,893	41,738	16,787	1,283	32.5	19.7	26.4
Lower Deschutes	1,446	23,075	5,453	2,517	9.2	5.9	3.7
Upper Deschutes	2,031	20,252	5,543	3,494	5.8	5.5	7.9
Klamath	976	15,773	6,841	1,649	9.6	5.4	7.5
CENTRAL	4,453	59,100	17,837	7,660	7.7	5.6	6.5
Columbia Basin	1,647	18,812	8,092	5,305	3.5	4.5	2.1
Blue Mountain	971	11,335	2,814	7,001	1.6	0.9	1.4
NORTHEAST	2,618	30,147	10,906	12,306	2.4	2.5	1.7
Malheur	890	7,578	3,106	9,911	0.8	0.9	1.1
Great Basin	574	9,523	2,009	15,515	0.6	0.5	0.5
SOUTHEAST	1,464	17,101	5,115	25,426	0.7	0.7	0.7
STATE TOTALS	*31,203	206,141	85,959	50,477	4.1	3.6	4.0

*State total omits duplication of hunters hunting in more than one county or area.

Table 32
1977 BAND-TAILED PIGEON HARVEST

Habitat Area	Hunters	Harvest	Days Hunted	Square Miles of Habitat	Birds Killed per Square Mile		
					1977	1976	1975
North Coast	2,021	17,953	9,559	1,333	13.5	8.1	11.1
North Willamette	2,766	12,278	16,137	2,043	6.0	3.5	6.6
South Willamette	1,791	10,361	7,313	3,013	3.4	3.4	2.5
NORTHWEST	-	40,592	33,009	6,389	6.4	4.4	5.6
South Coast	1,346	11,232	7,398	1,442	7.8	9.6	10.8
Umpqua	1,267	6,570	4,672	2,228	2.9	1.6	3.0
Rogue	1,173	7,145	6,573	1,894	3.8	2.1	2.6
SOUTHWEST	-	24,947	18,643	5,564	4.5	3.8	4.9
Lower Deschutes	194	734	1,176	221	3.3	2.4	3.3
CENTRAL	-	734	1,176	221	3.3	2.4	3.3
STATE TOTALS	*10,287	66,273	52,828	12,174	5.4	4.1	5.2

*State total omits duplication of hunters hunting in more than one county or area.

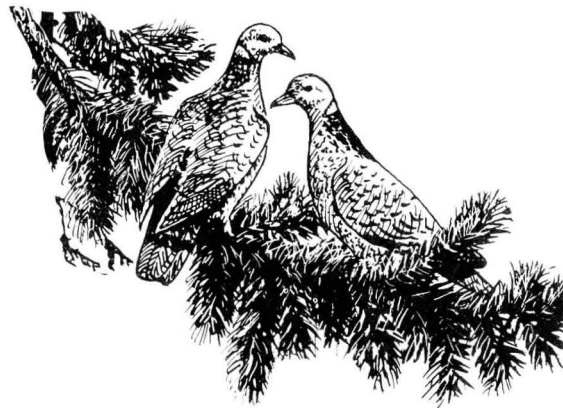


Table 33
E. E. WILSON JUVENILE PHEASANT SEASON

Year	Total Hunters	PHEASANTS				Quail Killed	Chukars Killed
		Pheasants Killed	Birds per Hunter	Highest Daily Kill	Lowest Daily Kill		
1956	252	172	0.7	41	6	-	-
1957	261	226	0.8	73	5	-	-
1958	184	185	1.0	40	26	12	-
1959	178	199	1.1	49	15	5	-
1960	269	289	1.1	73	28	35	-
1961	573	468	0.8	106	15	67	-
1962	584	546	0.9	114	4	53	-
1963	593	307	0.5	57	8	42	-
1964	559	319	0.6	65	9	27	-
1965	440	115	0.3	29	3	7	-
1966	384	104	0.3	30	2	9	-
1967	290	107	0.4	31	3	23	-
1968	244	75	0.3	51	1	4	-
1969	345	134	0.4	37	2	21	-
1970	364	134	0.4	48	2	26	137
1971	343	124	0.4	31	4	23	54
1972	351	184	0.5	56	2	21	51
1973	311	134	0.4	39	2	14	55
1974	322	115	0.4	33	0	16	61
1975	293	120	0.4	44	3	20	60
1976	346	137	0.4	31	4	13	61
1977	300	139	0.5	34	4	9	38



Table 34
1977 GAME BIRD PRODUCTION

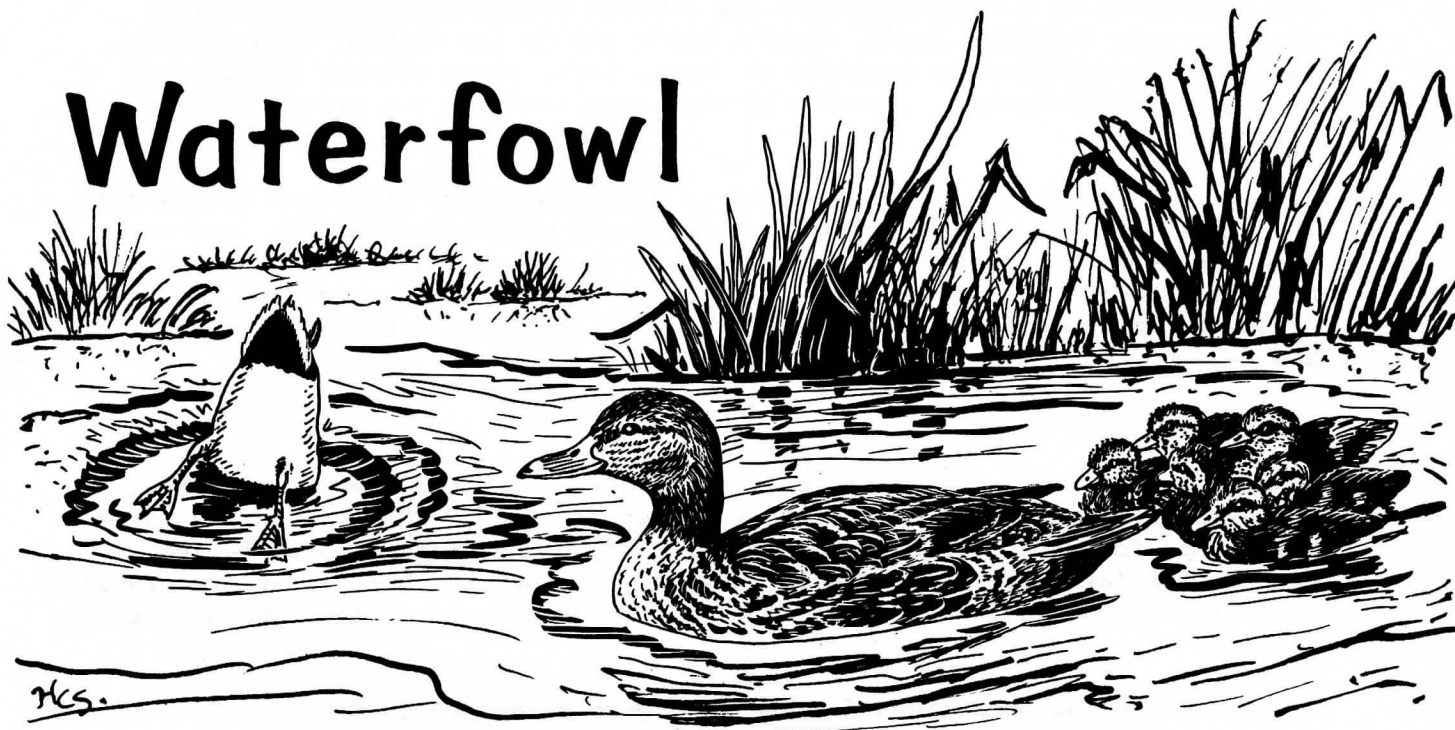
	Pheasant	Hungarian Partridge	Chukar Partridge
January 1 inventory	3,280	106	336
Losses	170	34	45
Spring liberation	3,000	36	0
Eggs gathered	105,882	492	5,824
Eggs to individuals	31,200	0	2,000
Eggs set	47,880	339	3,569
Birds hatched	40,327	71	3,064
Percent hatched	84.2	21.0	85.9
Female chicks to public	14,070	-	-
Birds reared	22,738	0	3,064
Liberated			
Spring	3,000	36	144
Summer	9,364	0	547
Fall	19,374	0	1,973
December 31 inventory	3,256	29	388



Table 35
1977 PHEASANT LIBERATIONS

Counties by Regions	Spring Adults	Summer Young	Fall Adult	Total Released
Benton	447		1,494	1,941
Clackamas	127		343	470
Columbia			392	392
Lane	200		1,700	1,900
Linn	104		246	350
Marion	173		1,201	1,374
Polk	200		969	1,169
Washington	392		768	1,160
Yamhill	100		605	705
NORTHWEST	1,743		7,718	9,461
Douglas			288	288
Jackson	286		1,133	1,419
Josephine	98		79	177
SOUTHWEST	384		1,500	1,884
WESTERN OREGON TOTAL	2,127		9,218	11,345
Crook	77	510		587
Deschutes	104	210		314
Jefferson		500	784	1,284
Sherman	105	240	192	537
Klamath			500	500
Wasco	95	480	200	775
CENTRAL	381	1,940	1,676	3,997
Baker		720		720
Gilliam		403		403
Grant		728		728
Morrow	200	728	392	1,320
Umatilla		720	392	1,112
Union			792	792
Wallowa	200			200
Wheeler		325		325
NORTHEAST	400	3,624	1,576	5,600
Harney		500		500
Lake	200	400	500	1,100
SOUTHEAST	200	900	500	1,600
EASTERN OREGON TOTAL	981	6,464	3,752	11,197
STATE TOTALS	3,108	6,464	12,970	22,542

Waterfowl



Administration

Administration of the waterfowl resource, while the birds are within the nation's borders, is the primary responsibility of the U. S. Fish and Wildlife Service. Each state, however, has a direct responsibility of management while the birds are within its boundaries. Management practices include obtaining factual data on reproduction, migrations, 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.

The Department of Fish and Wildlife has acquired 27,664 acres of land specifically for waterfowl use and controls an additional 22,105 acres through lease or agreement. These acreages are located in 9 management units and are being developed to supply the needs of waterfowl and to provide opportunities for public hunting.

Production

Water conditions throughout eastern Oregon were ideal for waterfowl production in 1978. Most of the lakes, marshes and reservoirs were filled to near capacity and provided better than normal habitat. A cool, wet spring preserved water levels at these optimum levels and permitted nesting to occur on normal dates.

Canada goose breeding ground surveys were conducted on 18 established ground transects, sampling most of the major breeding grounds in Oregon. The results indicate a decline of 7.6 percent from 1977 in the number of young produced,

and a decrease of 5.3 percent from the average of the previous five years. Declines were recorded in the Klamath Basin and on the Malheur Refuge while increased production was recorded at Summer Lake, along rivers, and on many small lakes and marshes. Results of the annual surveys are presented in Table 1.

With good habitat and weather conditions duck production increased throughout the state. As determined from ground transects which traversed 15 important breeding areas, production increased 8.4 percent from 1977 but was down 3.2 percent from the average of the previous five years. Survey results are presented in Table 2 and production trends by species are shown in Tables 3 and 4.

Fall Migrations

The size and pattern of fall flights of waterfowl through Oregon is determined by means of periodic counts at 15 concentration areas. These sites are normal rest stops for ducks and geese migrating through the state, and wintering grounds for late arrivals. Tabulations of waterfowl on these areas are presented in Tables 5 through 14 and a record of peak migrations for prior years is shown in Table 15.

Waterfowl banding operations for the year were conducted on Sauvie Island by the Department of Fish and Wildlife and on the Umatilla National Refuge by the U. S. Fish and Wildlife Service. Banding is conducted in these areas to fulfill continental banding quotas on mallards and pintails. Returns from banded birds provide basic data for determining hunting mortality, natural mortality, distribution and migration patterns.

During the 1977 postseason period (January and February 1978) only 89 ducks of three species were trapped on Sauvie Island. In the 1978 preseason period (June, 1978) 11 Canada geese were banded in Jackson County and 44 geese on Ladd Marsh.

A total of 177 waterfowl banded in Oregon in prior years was reported taken during the 1977-78 hunting season. The birds were recovered in 12 states, 3 Canadian provinces, Mexico and U.S.S.R. The species taken and the location where recovered are shown in Table 16.

Oregon hunters reported taking 522 banded waterfowl during the season. The birds had been banded at sites in 15 states, 6 Canadian provinces or territories and on Wrangell Island in the U.S.S.R. The total includes 255 ducks, 278 geese, and 1 brant. Returns by area of banding are provided in Table 17.

Hunting Seasons

The 93-day general waterfowl season opened on October 15 and continued through January 15 except in the Columbia Basin counties of Gilliam, Morrow, Sherman, Umatilla and Wasco where the season extended through January 22. The duck season also continued through January 22 in Baker, Malheur, Union and Wasco Counties but the goose season terminated on December 15 in Baker and Malheur Counties and on January 15 in Union and Wallowa Counties.

The bag limits of 7 ducks a day and 14 in possession remained unchanged from 1976. The limit could contain no more than 2 redheads or 2 canvasbacks or 1 of each daily; and no more than 4 singly or in the aggregate in possession.

The goose daily bag limit remained at 6 but not more than 3 could be white geese nor more than 3 could be of the dark species. The possession limit was also 6 of any species or any combination of species except Ross' goose. Only 1 Ross' goose was allowed as part of the daily bag or possession limit.

A 93-day season on black brant extended from November 19 through February 19, and a season on snipe ran concurrent with the general waterfowl season. Four brant and 8 snipe were permitted daily with a possession limit equal to double the daily bag of both species.

Harvest

A random mail survey was conducted immediately after the close of the hunting seasons to determine hunter participation and success on the various game species. Results of the survey, as shown in Table 18, indicate that hunters experienced a much poorer season than in 1976-77. The harvest of waterfowl was down 17.7 percent, with 529,013 ducks, 51,485 geese, 25,346 coots and 13,253 snipe taken. The number of hunters also showed a decrease from 60,262 in 1976 to 57,262. Distribution of hunting pressure and harvest by area is presented in Table 19.

The decline in the fall duck and goose populations and a decrease in hunting pressure was also reflected in a lower harvest of waterfowl on public shooting grounds. Success compared with the two previous years is shown in Table 20 and an analysis of the harvest by species and management area is presented in Table 21.

Age classification of 570 snow geese bagged by hunters at Summer Lake showed a ratio of 268 adults or subadults to 302 birds-of-the-year. The low percentage of young birds in the bag (53 percent) indicates a relatively poor production year.

Winter Inventory

The annual mid-winter inventory was conducted during the first week of January and revealed a total of 406,864 ducks, 97,219 geese, 1,110 brant, 8,954 swans and 18,776 coots wintering in Oregon. See Table 22. Compared with 1977 the duck population was down 6 percent, geese no change, swans up 39 percent and coots down 2 percent.

The total waterfowl count of 532,923 represents a 4 percent decline from the 556,298 birds tallied the previous winter. A slight increase was recorded in the number of wintering widgeon, teal, pintails and diving ducks but a sharp decline in the number of mallards. Foggy weather along the upper Columbia and ice storms in the Willamette Valley restricted visibility and undoubtedly resulted in minimum counts.

Snipe

Trends in snipe densities in western Oregon are measured each spring in conjunction with the upland game bird census. Results obtained are presented

in Table 23 with the average densities for the previous four years included for comparison.

In eastern Oregon, where 20-mile pheasant crow counts traverse snipe habitat, the number of snipe-on-breeding-territory seen or heard is recorded. On the 260 miles of transects, 190 snipe were seen or heard compared with 297 in 1977. A four-year comparison is provided in Table 24.

A measure of hunting pressure on snipe and the size and distribution of the harvest is obtained from the hunter questionnaire. Over 13,200 snipe were reported taken by 3,488 hunters who stated they hunted snipe. Results are presented by county and geographical unit in Table 19.

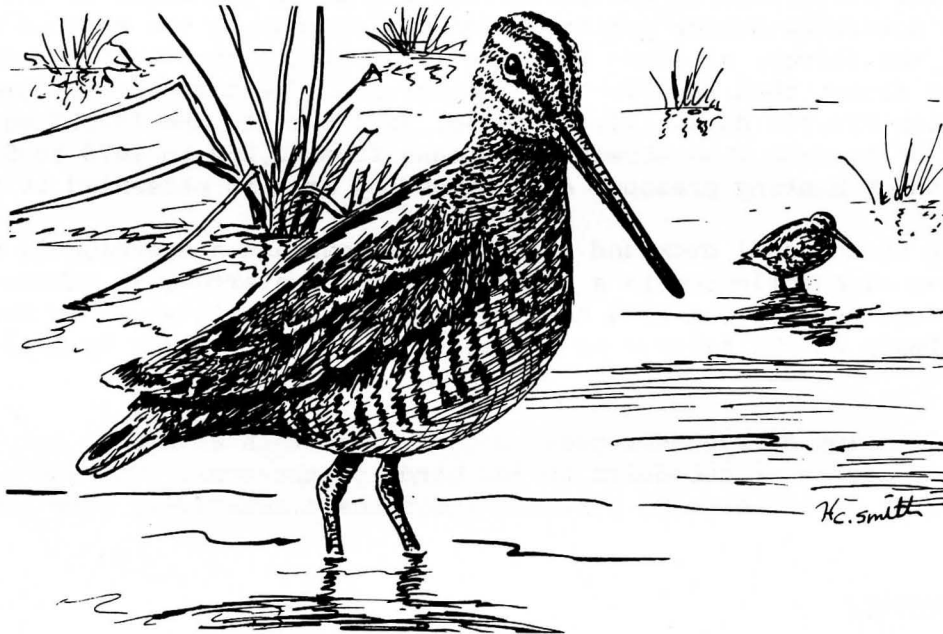


Table 1
GOOSE PRODUCTION TRENDS 1973-78

Transect	Total Broods						Total Young					
	1978	1977	1976	1975	1974	1973	1978	1977	1976	1975	1974	1973
Klamath River	284	303	272	268	283	332	1,277	1,362	1,224	1,205	1,272	1,496
Sprague River	11	3	9	16	0	2	51	13	42	70	0	8
Nuss Lake	30	6	10	7	5	7	136	159	46	31	23	33
Agency Lake	0	6	22	14	54	34	0	27	98	62	241	154
Wocus Bay	35	88	10	46	13	36	158	397	45	208	60	163
Howard Bay	0	6	0	21	5	11	0	29	0	95	21	48
Summer Lake	33	17	33	30	30	34	170	84	158	125	136	152
N. Lake County	6	2	0	24	11	14	29	6	0	105	37	63
Columbia River	14	7	9	13	6	4	75	47	52	66	33	12
Crook County	37	15	26	29	28	32	196	63	121	146	126	144
Jefferson County	2	4	5	1	3	7	12	18	21	3	12	34
S. Lake County	25	17	15	13	34	17	116	73	74	54	172	52
Ladd Marsh	30	35	39	47	33	25	135	192	220	263	201	138
Howard Prairie	8	3	13	11	14	11	34	15	66	68	74	65
Hyatt Lake	3	1	2	4	1	2	18	3	7	17	4	11
Hanks Marsh	16	13	13	14	34	17	70	60	60	60	100	76
Malheur Refuge	206	259	399	232	256	151	929	1,166	1,596	812	1,000	680
Klamath For. Ref.	26	22	22	44	69	52	118	100	100	200	200	231
TOTALS	766	807	899	834	879	788	3,524	3,814	3,930	3,590	3,712	3,560

Production in 1978 down 7.6 percent from 1977.

Table 2
DUCK PRODUCTION TRENDS 1973-78

Transect	Square Miles	Total Broods						Total Young					
		1978	1977	1976	1975	1974	1973	1978	1977	1976	1975	1974	1973
Klamath Basin	-	129	66	171	25	141	255	728	371	1,062	170	901	2,261
Klamath Mgt. Area	-	63	81	20	52	65	61	310	443	150	344	439	436
Klamath For. Ref.	-	59	48	22	34	-	34	348	257	111	152	-	198
Summer Lake	1	34	61	48	19	46	56	233	438	300	127	319	295
Upper Klamath Ref.	-	47	36	49	22	-	37	279	184	307	116	-	216
N. Lake County	4	4	2	8	3	4	7	17	15	55	37	34	53
Hanks Marsh	-	21	34	15	26	-	19	125	180	118	113	-	111
Umatilla County	4	24	21	17	6	22	21	136	148	83	39	119	115
Wallowa County	4	6	8	7	7	10	4	40	35	33	62	63	30
Jefferson County	1	12	9	9	3	4	12	71	52	55	11	23	87
Malheur County	5	17	20	64	20	23	45	130	100	437	105	133	238
Columbia County	3	13	8	8	15	10	15	40	33	43	77	53	63
Crook County	1	63	55	70	20	76	49	387	288	452	126	489	367
Jackson County	12	34	50	64	34	53	37	166	232	333	168	274	201
Douglas County	-	-	1	26	3	1	2	-	7	184	14	11	6
TOTALS	35	526	500	598	289	455	654	3,010	2,783	3,723	1,661	2,858	4,677

Production in 1978 up 8.4 percent from 1977.

Table 3

DUCK PRODUCTION BY TRANSECT, 1978

TRANSECT B - Broods Y - Young		Klamath River and Lake	Klamath Basin Fed. Refuges	Klamath Manage- ment Area	North Lake County	Summer Lake	Umatilla County	Jefferson Co.	Malheur County	Wallowa County	Crook County	Jackson County	Columbia County	TOTAL
<u>SPECIES</u>														
Mallard	B	35	11	19	1	4	18	11	8	2	41	26	5	181
	Y	188	68	84	9	37	100	66	71	19	249	139	24	1,054
Gadwall	B	1	15		1	13								30
	Y	11	98		1	96								206
B.W./Cinn. Teal	B	5	16	9		3	3	1	8	3	19	3	1	71
	Y	45	104	44		18	16	5	52	18	117	9	5	433
G.W. Teal	B						1							1
	Y						6							6
Shoveler	B		4	1			1							6
	Y		21	11			8							40
Pintail	B		13	10	1	2			1	1	2			30
	Y		45	48	5	10			7	3	15			133
Widgeon	B			2										2
	Y			5										5
Wood Duck	B		6				1					5	4	16
	Y		36				6					18	29	89
Redhead	B	59	22	14	1	11								107
	Y	376	130	87	2	65								660
Canvasback	B	2	8	1										11
	Y	8	56	6										70
Ruddy Duck	B	12	11	5		1								29
	Y	57	70	20		7								154
Scaup	B	5	11								1			17
	Y	37	75								6			118
Unidentified	B	2	10	2										14
	Y	6	51	5										62
TOTAL	B	121	127	63	4	34	24	12	17	6	63	34	10	515
	Y	728	754	310	17	233	136	71	130	40	387	166	58	3,030

Table 4

DUCK PRODUCTION BY SPECIES 1973-78
(12 Transects)

Species	Number of Broods						Number of Young					
	1978	1977	1976	1975	1974	1973	1978	1977	1976	1975	1974	1973
Dabblers:												
Mallard	181	123	168	84	138	168	1,054	692	1,015	467	848	1,008
Pintail	30	31	25	14	20	37	133	153	162	103	137	223
Gadwall	30	49	49	23	26	57	206	319	311	147	187	362
B.W./Cinn. Teal	71	103	73	52	84	81	433	554	473	324	542	552
G. W. Teal	1	0	2	1	4	1	6	0	15	5	23	6
Widgeon	2	3	5	0	2	4	5	20	32	0	14	19
Shoveler	6	14	1	5	5	6	40	85	7	34	27	37
Wood Duck	16	13	15	20	14	21	89	61	87	104	88	96
Subtotals	337	336	338	199	293	375	1,966	1,884	2,102	1,184	1,866	2,303
Divers:												
Redhead	107	66	142	29	131	254	660	404	965	211	785	1,728
Canvasback	11	37	43	5	12	33	70	182	251	35	73	231
Scaup	17	5	9	1	0	5	118	22	64	7	0	36
Ringneck	0	0	0	0	1	0	0	0	0	0	3	0
Bufflehead	0	0	0	0	0	0	0	0	0	0	0	0
Ruddy	29	26	25	7	13	46	154	123	112	33	70	290
Subtotals	164	134	219	42	156	338	1,002	731	1,392	286	931	2,285
Miscellaneous:												
C. Merganser	0	2	6	0	1	0	0	6	39	0	8	0
H. Merganser	0	0	0	2	0	1	0	0	0	9	0	6
Unid. Ducks	14	18	15	3	7	16	62	92	99	12	43	83
Subtotals	14	20	21	5	8	17	62	98	138	21	51	89
TOTALS	515	490	578	246	458	730	3,030	2,713	3,632	1,491	2,848	4,677

Table 5
WATERFOWL POPULATIONS
Sauvie Island
October 10, 1977 through February 24, 1978

Date	Whist- ling Swan	Canada Goose	Mallard	Pintail	Widgeon	G.W. Teal	*Diving Ducks	**Other Waterfowl	Coot	Total
Oct. 10		1,100	13,000	20,000	8,000	400	25	101	10	42,636
Oct. 21	1	2,750	16,000	32,000	9,000	800		57	50	46,258
Nov. 4	200	11,500	23,000	42,000	26,000	1,000	10	1	75	103,786
Nov. 18	269	16,000	26,000	40,000	35,000	200		9	65	117,543
Nov. 29	500	12,050	26,000	45,000	35,000	300	10	500	20	119,380
Dec. 20	1,610	14,100	24,000	41,000	26,000	700			300	107,710
Jan. 6	1,022	7,891	22,371	4,200	15,290	1,630	625	989	390	54,408
Feb. 2		1,250	2,000	2,500	4,000	200	35	200	200	10,385
Feb. 24	4	2,050	850	200	25	110	7	125	120	3,491

* Peak of: 25 scaup on Oct. 10; 10 buffleheads on Oct. 21; 25 Am. mergansers on Feb. 2; and 7 ruddy ducks on Feb. 24.

** Peak of: 450 shovelers on Nov. 29; and 200 shovelers on Feb. 2.



Table 6
WATERFOWL POPULATIONS
Summer Lake
October 10, 1977 through January 4, 1978

Date	Whist- ling Swan	Canada Goose	Snow Goose	Mallard	Pintail	Widgeon	Gadwall	G.W. Teal	Shoveler	*Diving Ducks	**Other Waterfowl	Unid. Ducks	Coot	Total
Oct. 10		703	3,500	344	1,755	965	68	850	172	107		16,430	1,563	26,457
Oct. 17		627	9,000	65	99	20	8	55		86	250	24,350	1,910	36,470
Oct. 24	242	842	18,000	81	153	95	50	55	6	135		27,000	805	47,464
Oct. 31	276	800	30,000	125	230	450	55	140	8	236		25,410	610	58,340
Nov. 7	719	755	40,000	38	141	42	43	40	15	260		40,000	625	82,678
Nov. 14	1,461	797	70,000	198	480	105	60	195		161		35,000	175	108,632
Nov. 21	1,645	1,091	100	485	560	345	50	190	33	237		8,550	45	13,310
Nov. 28	1,293	822	117	4	35		23	7		120		7,500	167	10,088
Dec. 5	1,632	1,692	119	555	1,023	625	130	32	2	85		5,320	57	11,272
Dec. 12	1,110	1,050	137	863	531	18	2		2	35		4,075	18	7,841
Dec. 19	1,470	2,218		181	19	15	155			151		5,200	3	9,412
Jan. 4	1,448	2,743		789	465	48	88		1	145		2,310	65	8,102

* Peak of: 40 redheads and 57 ruddy ducks on Oct. 10; 126 canvasbacks on Oct. 31; 5 scoters on Nov. 14; 145 buffle heads and 26 scaup on Nov. 21; and 33 goldeneyes and 16 common mergansers on Jan. 4.

** Peak of: 250 white-fronted geese on Oct. 17.

Table 7

WATERFOWL POPULATIONS
Columbia River from The Dalles Dam to Mouth of John Day River
October 18, 1977 through January 6, 1978

Date	Canada Goose	Mallard	Pintail	Widgeon	Canvasback	Scaup	* Other Waterfowl	Coot	Total
Oct. 18	2,391	34	24	4		23	6	199	2,681
Nov. 3	4,011	71				152	34	145	4,413
Nov. 29	4,175	206			48	1,001	130	142	5,702
Dec. 16	1,146	137		11		1,095	305	123	2,817
Jan. 6	446	289	11			48	34	6	834

*Peak of: 1 ruddy duck on Oct. 18; 1 bufflehead and 16 unidentified ducks on Nov. 3; 1 swan, 1 white-fronted goose, 1 redhead, 81 unidentified divers and 40 Am. mergansers on Nov. 29; and 297 goldeneyes on Dec. 16; 5 G. W. teal on Jan. 6.

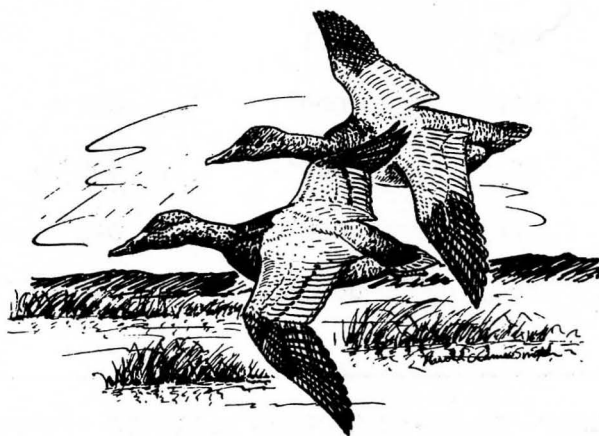


Table 8

WATERFOWL POPULATIONS
William L. Finley National Refuge
November 28, 1977 through March 22, 1978

Date	Canada Goose	Mallard	Pintail	Widgeon	G.W. Teal	Wood Duck	*Other & Unidenti- fied	Total
Nov. 28	6,285	8,200	1,850	1,250	725		25	18,335
Dec. 19	4,280	60	2,000	3,300	50	50	51	9,791
Jan. 6	6,553	3,790	3,100	1,600	400		325	15,768
Jan. 30	3,620	850		175	150			4,795
Mar. 22	6,265	535	100	100	475		65	7,540

*Peak of: 50 bufflehead and 1 snow goose on Dec. 19; 325 shovelers on Jan. 6; and 65 ring-necked ducks on Mar. 22.

Table 9

WATERFOWL POPULATIONS
Baskett Slough National Refuge
November 28, 1977 through March 22, 1978

Date	Canada Goose	Mallard	Pintail	Widgeon	G.W. Teal	*Other & Unidenti- fied	Total
Nov. 28	12,800	22,650	10,800		1,400		47,650
Dec. 19	4,000	3,000	1,500	2,000	2,000	1	12,501
Jan. 6	4,635	11,230	16,720	6,600	2,030		41,215
Jan. 30	5,028	650	110	125	180	20	6,113
Mar. 22	2,570	180					2,750

*Peak of: 1 snow goose on Dec. 19; and 20 whistling swans on Jan. 30.

Table 10
 WATERFOWL POPULATIONS
 Ankeny National Refuge
 November 28, 1977 through March 22, 1978

Date	Canada Goose	Mallard	Pintail	Widgeon	G.W. Teal	*Other & Unidenti- fied	Coot	Total
Nov. 28	10,300	16,600	15,200	4,800	200			47,100
Dec. 19	16,080	27,000	1,000	14,000	700	1		58,781
Jan. 6	3,600	12,540	11,540	400	10,850	72	80	38,882
Jan. 30	6,250	2,400	900	2,600	400			12,550
Mar. 22	2,550	1,700						4,250

*Peak of: 70 shovelers and 2 snow geese on Jan. 6.



Table 11
WATERFOWL POPULATIONS
Umatilla National Wildlife Refuge
October 18, 1977 through February 14, 1978

Date	Whist- ling Swan	Canada Goose	Mallard	Gadwall	Widgeon	Pintail	Redhead	Canvas- back	*Other Waterfowl	Coot	Total
Oct. 18	-	6,600	13,915	25	300	175	560	27	95	1,405	23,102
Nov. 16	-	6,401	44,254	305	15		200	170	462		51,807
Dec. 21	18	21,448	87,645			1,400		150		501	111,162
Jan. 9		40,000	73,752			1,206	237	385	263	94	115,937
Feb. 14		18,893	22,654	17	420	540			1,077		43,601



Table 12

WATERFOWL POPULATIONS
 Malheur National Refuge
 September 20, 1977 through January 5, 1978

Date	Swan	Canada Goose	Snow Goose	Mallard	Gadwall	Widgeon	Pintail	G.W. Teal	Shoveler	Redhead	Canvas- back	Ruddy Duck	*Other Species	Coot	Total
Sep. 20	37	1,890	6	4,390	775	2,060	9,105	2,580	115	485	5	100	461	4,710	26,739
Oct. 30	51	2,580	900	3,470	6,115	2,660	4,810	7,410	290	170	4,170	175	1,223	8,225	42,279
Nov. 30	271	3,600	1,005	4,050	3,610	885	2,500	1,370	440	10	135	70	840	1,405	20,221
Dec. 6	289	3,960	975	2,200	2,100	675	2,905	1,470	200	5	40	85	1,037	650	16,597
Jan. 5	7	1,455		250		35		60					55	5	1,867

* Peak of: 280 B.W./Cinn. Teal and 2 wood ducks on Sept. 20; 75 white-fronted geese and 485 scaup on Oct. 30; 10 Ross' geese on Nov. 30; 580 common mergansers, 30 hooded mergansers, 35 ring-necked ducks, 220 buffleheads, 85 common goldeneyes and 2 Burrow's goldeneyes on Dec. 6.

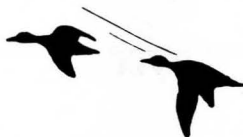


Table 13
WATERFOWL POPULATIONS
McKay Creek National Refuge
October 18, 1977 through February 14, 1978

Date	Canada Goose	Mallard	Pintail	Widgeon	G.W. Teal	*Other & Unidenti- fied	Total
Oct. 18	150	300	25	20	75	10	580
Nov. 16	120	850	50	100			1,120
Dec. 21	850	4,050				15	4,915
Jan. 9	500	3,000	25	100			3,625
Feb. 14	215	1,021	440	256			1,932

* Peak of: 10 common mergansers on Oct. 18; 15 common goldeneyes on Dec. 21.

Table 14
WATERFOWL POPULATIONS
Cold Springs National Refuge
October 18, 1977 through February 14, 1978

Date	Canada Goose	Mallard	Pintail	Widgeon	G.W. Teal	*Other & Unidenti- fied	Total
Oct. 18	500	300	50	100	200	-	1,150
Nov. 16	975	2,825				25	3,825
Dec. 21	200	7,100				20	7,320
Jan. 9	5,000	12,000	50	15			17,065
Feb. 14	1	126					127

* Peak of: 25 whistling swans on Nov. 16.

Table 15
WATERFOWL MIGRATIONS
(10 Areas)
Oregon 1973-77

	1973	1974	1975	1976	1977
October					
Mallard	47,283	26,565	52,863	31,218	31,144
Pintail	46,955	30,962	67,159	37,085	37,237
Others	76,873	53,490	70,276	57,579	45,224
White Geese	25,814	9,155	43,485	4,977	18,900
Dark Geese	22,395	20,717	27,294	24,517	15,813
TOTAL	219,320	140,889	261,077	155,376	148,318
November					
Mallard	68,452	57,213	114,945	47,200	100,945
Pintail	76,270	64,370	88,272	52,136	75,960
Others	100,456	31,759	75,692	65,016	63,671
White Geese	113,533	79,072	97,737	81,005	71,005
Dark Geese	64,054	86,060	85,353	75,929	57,797
TOTAL	422,765	318,474	461,999	321,286	369,378
December					
Mallard	80,663	59,657	184,686	103,344	153,247
Pintail	43,957	75,383	52,979	41,268	77,488
Others	90,942	81,065	120,341	62,348	54,774
White Geese	1	4,554	388	333	1,112
Dark Geese	89,824	92,226	111,970	74,567	54,075
TOTAL	305,387	312,885	470,364	281,860	340,696
January					
Mallard	112,366	136,893	190,205	232,310	177,945
Pintail	67,362	124,784	83,101	77,755	85,429
Others	83,161	142,325	169,579	117,897	138,979
White Geese	45	1,223	441	849	468
Dark Geese	45,246	93,277	144,580	94,871	99,226
TOTAL	308,180	498,502	587,906	523,682	502,047

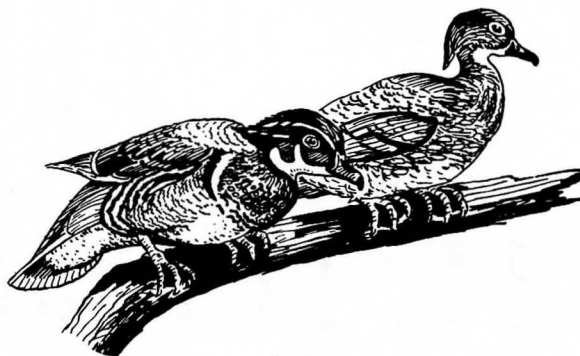


Table 16
RECOVERY OF OREGON-BANDED WATERFOWL
1977 - 78 Hunting Season

Species	STATE OF RECOVERY												Total
	Oregon	Calif.	Wash.	Idaho	Nevada	Alaska	*Other States	B. C.	Alta.	Sask.	Mexico	U.S.S.R.	
Canada Goose	13	5	1	2	1	1	4	1	8				36
Mallard	50	9	26	4	1	1	3	5	10	1			110
Pintail	14	8	10				2	2	4		1	1	42
Am. Widgeon	2	1	1						1				5
G. W. Teal	2	1	4				1						8
Redhead		1					1						2
Canvasback	2		2										4
TOTAL	83	25	44	6	2	2	11	8	23	1	1	1	177

*Other States

Montana - 1 mallard, 3 Canada geese
Utah - 1 redhead
Colorado - 1 green-winged teal
Texas - 1 mallard, 2 pintails
Mississippi - 1 mallard
Wyoming - 1 Canada goose

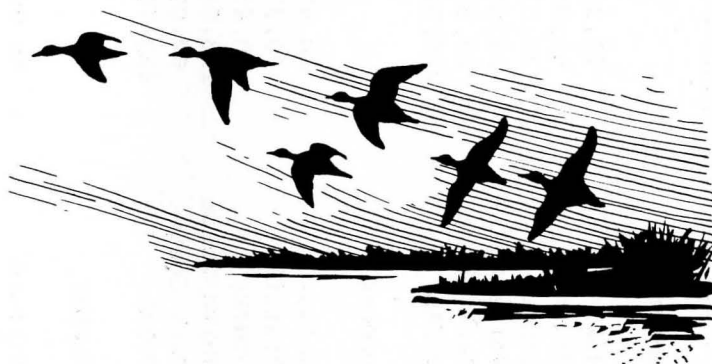


Table 17

BANDED WATERFOWL RECOVERIES IN OREGON
1977-78 Hunting Season

State or Province Where Banded	Canada Goose	Lesser Canada	Cackler	W. F. Goose	Snow Goose	Ross' Goose	Mallard	Gadwall	Pintail	Widgeon	G.W. Teal	B.W. Teal	Wood Duck	Canvas- back	Greater Scaup	W.W. Scoter	Brant	Total
Oregon	13						50		14	2	2			2				83
Washington	21						32		1	1			1					56
California	10		4	1	4		34		6	5	1			3	1			69
Idaho	6						8		1				1					16
Nevada	1																	1
Utah							1		1									2
Montana	1						1											2
Wyoming											1							1
Colorado							2		3									5
New Mexico						1												1
Nebraska									1									1
Oklahoma									1									1
Vermont												1						1
New York														1				1
Alaska	190	5							1								1	197
British Columbia	4						9	1		2			1					17
Alberta	3						25		10									38
Saskatchewan					1	1	4		3							1		10
Manitoba									1									1
McKenzie Dist.					1	1	4		4									10
Yukon Terr.										1								1
U.S.S.R.					8													8
TOTALS	249	5	4	1	14	3	170	1	47	11	4	1	3	6	1	1	1	522

Table 18
WATERFOWL HARVEST

	1977	1976	1975
Number of Waterfowl Hunters*	57,262	60,262	60,836
Percent of Licensed Hunters Hunting Waterfowl	13.9%	15.9%	15.6%
Total Ducks Killed	529,013	634,192	966,557
Total Geese Killed	51,485	70,869	86,534
TOTAL WATERFOWL KILLED	580,498	705,061	853,091
Change from Preceding Year	-17.7%	-17.4%	+50.5%

* Duck Hunters - 44,554; Goose Hunters - 15,792



Table 19
1977 WATERFOWL HARVEST BY AREA

County and Area	Hunters				Harvest			
	Duck	Goose	Coot	Snipe	Duck	Goose	Coot	Snipe
Benton	1,750	864	84	122	16,263	1,336	0	89
Clackamas	1,369	40	49	134	9,905	0	195	268
Lane	3,093	585	824	275	22,300	1,068	2,820	657
Linn	1,876	306	119	154	15,106	243	168	628
Marion	2,446	724	221	68	21,305	1,590	892	484
Polk	2,366	1,735	375	235	14,524	6,657	309	32
Washington	1,604	315	119	154	18,186	193	0	32
Yamhill	858	193	0	32	4,769	108	0	32
WILLAMETTE VALLEY					122,358	11,195	4,384	2,222
Clatsop	1,072	221	168	154	14,401	199	536	134
Columbia	2,734	986	49	166	56,918	3,975	293	595
Multnomah	2,417	1,052	168	109	25,580	2,984	572	367
COLUMBIA RIVER					96,899	7,158	1,401	1,096
Lincoln	787	121	84	32	6,649	86	98	0
Tillamook	1,561	0	35	141	19,689	0	211	1,787
NORTH COAST					26,338	86	309	1,787
Coos	1,983	86	327	141	22,464	0	3,209	1,097
Curry	438	36	0	32	6,810	108	0	161
SOUTH COAST					29,274	108	3,209	1,258
Douglas	2,046	329	350	154	23,544	72	8,011	766
Jackson	1,750	235	195	300	9,270	135	1,317	3,530
Josephine	391	50	0	0	1,790	0	0	0
UMPQUA-ROGUE					34,604	207	9,328	4,296
Hood River	170	36	0	0	780	72	0	0
Wasco	451	428	35	0	1,753	693	141	0
HOOD RIVER-WASCO					2,533	765	141	0
Crook	903	221	98	89	8,360	221	244	89
Deschutes	1,363	405	252	109	4,072	405	545	223
Jefferson	378	229	0	32	2,066	580	0	32
UPPER DESCHUTES					14,498	1,206	789	344

Table 19
1977 WATERFOWL HARVEST BY AREA
(Continued)

County and Area	Hunters				Harvest			
	Duck	Goose	Coot	Snipe	Duck	Goose	Coot	Snipe
KLAMATH	10,674	5,225	1,148	629	102,800	14,459	3,132	1,278
Gilliam	115	36	0	0	456	72	0	0
Morrow	728	306	84	0	2,400	428	49	0
Sherman	642	1,115	0	0	5,259	6,781	0	0
Umatilla	2,108	657	328	45	17,732	1,038	970	268
COLUMBIA BASIN					25,847	8,319	1,019	268
Grant	438	121	0	0	1,135	207	0	0
Wheeler	183	121	49	32	605	207	0	32
UPPER JOHN DAY					1,740	414	0	32
Baker	936	235	84	65	5,173	179	293	226
Union	953	284	35	89	8,902	271	70	223
Wallowa	498	207	49	45	2,157	144	0	0
SNAKE RIVER					16,232	594	363	449
MALHEUR	3,201	792	203	154	28,393	1,626	450	134
HARNEY	762	478	70	32	5,058	2,236	70	0
LAKE	3,047	1,589	434	154	22,441	3,112	751	89
STATE TOTAL	*44,554	*15,792	*4,839	*3,488	529,015	51,485	25,346	13,253

* State total omits duplication of hunters hunting in more than one county.



Table 20

SUMMARY OF PUBLIC SHOOTING GROUNDS SUCCESS

Area	Season Length	Hunter Days	Harvest				Total	Success per Hunter Day		
			Ducks	Geese	Coots	Snipe		1977	1976	1975
Summer Lake	70	6,940	7,283	882	109	38	8,312	1.20	1.27	1.83
Sauvie Island	47	9,470	18,102	1,299	92	6	19,499	2.06	2.89	2.96
TOTALS		16,410	25,385	2,181	201	44	27,811	1.70	2.11	2.46



Table 21

SPECIES COMPOSITION OF WATERFOWL TAKEN ON PUBLIC SHOOTING GROUNDS
1975 - 77 Seasons

Species	Summer Lake			Sauvie Island			Total		
	1975	1976	1977	1975	1976	1977	1975	1976	1977
Mallard	1,805	2,286	1,752	6,662	9,408	5,718	8,467	11,694	7,470
Am. Widgeon	1,346	1,220	1,412	7,314	7,440	5,857	8,660	8,660	7,269
Europ. Widgeon	-	-	1	1	-	9	1	-	10
G. W. Teal	1,306	1,473	984	3,659	3,639	2,186	4,965	5,112	3,170
Pintail	2,169	1,586	1,622	4,867	5,200	3,178	7,036	6,786	4,800
Shoveler	648	295	289	788	756	645	1,436	1,051	934
Gadwall	572	360	705	136	118	119	708	478	824
Cinn./B.W. Teal	187	65	61	13	17	9	200	82	70
Wood Duck	8	2	3	26	71	27	34	73	30
Hybrid	1	-	1	2	-	1	3	-	2
Ruddy Duck	100	20	36	26	26	20	126	46	56
Goldeneye	23	31	47	21	4	9	44	35	56
Bufflehead	100	56	94	44	12	19	144	68	113
R. N. Duck	19	7	13	153	104	79	172	111	92
Scaup	52	22	45	162	53	142	214	75	187
Canvasback	93	60	66	44	31	24	137	91	90
Redhead	189	117	124	4	10	6	193	127	130
H. Merganser	2	4	1	21	40	16	23	44	17
Com. Merganser	10	22	25	14	39	32	24	61	57
Old Squaw	-	1	-	-	-	1	-	1	1
Am. Scoter	-	-	1	-	-	-	-	-	1
W. W. Scoter	-	1	-	-	-	-	-	1	-
Surf Scoter	1	-	1	-	-	-	1	-	1
Scoter (Unid.)	-	-	-	2	2	5	2	2	5
Unident. Duck	17	-	-	-	-	-	17	-	-
TOTAL DUCKS	8,648	7,628	7,283	23,959	26,970	18,102	32,607	34,598	25,385
Snow Goose	3,504	3,723	598	8	48	17	3,512	3,771	615
Blue Goose	-	-	1	-	-	-	-	-	1
Canada Goose	159	201	199	971	933	902	1,130	1,134	1,101
Lesser Canada	4	15	8	176	494	348	180	509	356
Cackler	30	19	25	13	42	29	43	61	54
White-Front	145	53	23	10	2	3	155	55	26
Ross' Goose	56	39	28	-	-	-	56	39	28
Black Brant	-	-	-	1	-	-	1	-	-
TOTAL GEESE	3,898	4,050	882	1,179	1,519	1,299	5,077	5,569	2,181

Table 22
WINTER INVENTORY TRENDS IN OREGON

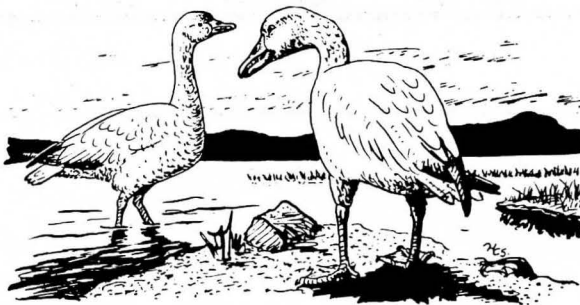
Species	1978	1977	1976	1975	1974
Mallard	178,324	232,321	190,205	136,893	112,366
Gadwall	1,779	562	3,948	1,351	1,398
Am. Widgeon	62,114	58,449	52,580	76,942	36,511
G. W. Teal	21,150	15,641	32,746	30,837	13,957
B.W./Cinn. Teal	-	-	-	-	116
Shoveler	6,139	10,389	7,941	1,767	1,439
Pintail	85,755	78,327	83,101	124,784	67,362
Wood Duck	110	18	17	62	68
Redhead	1,085	281	392	539	207
Canvasback	8,158	3,609	11,112	4,889	7,166
Scaup	12,364	9,690	9,398	2,817	6,243
Ring-Necked Duck	2,667	1,071	1,204	885	650
Harlequin	2	9	13	3	6
Old Squaw	1	-	-	1	-
Goldeneye	712	1,272	1,410	615	913
Bufflehead	4,556	3,044	2,629	4,978	2,347
Ruddy Duck	6,034	9,962	24,640	8,281	3,725
Merganser	4,462	3,046	10,384	2,203	2,064
Scoter	1,684	869	1,290	656	797
Unid. Ducks	9,469	4,067	9,875	5,499	5,554
TOTAL DUCKS	406,864	432,627	442,885	404,002	262,889
Coot	18,776	19,214	24,710	30,680	19,767
Snow Goose	466	849	441	1,223	45
Cackling Goose	316	2	-	2,244	1,647
White-fronted Goose	982	1	92	4,901	-
Canada Goose	95,455	94,868	142,719	84,625	43,599
Black Brant	1,110	2,300	1,769	1,507	1,904
TOTAL GEESE	98,329	98,020	145,021	94,500	47,195
Swan	8,954	6,437	6,067	6,466	4,987
TOTAL WATERFOWL	532,923	556,298	618,683	535,648	334,838
Percent change from previous year	-4.2%	-10.1%	+15.5%	+60.0%	-36.1%

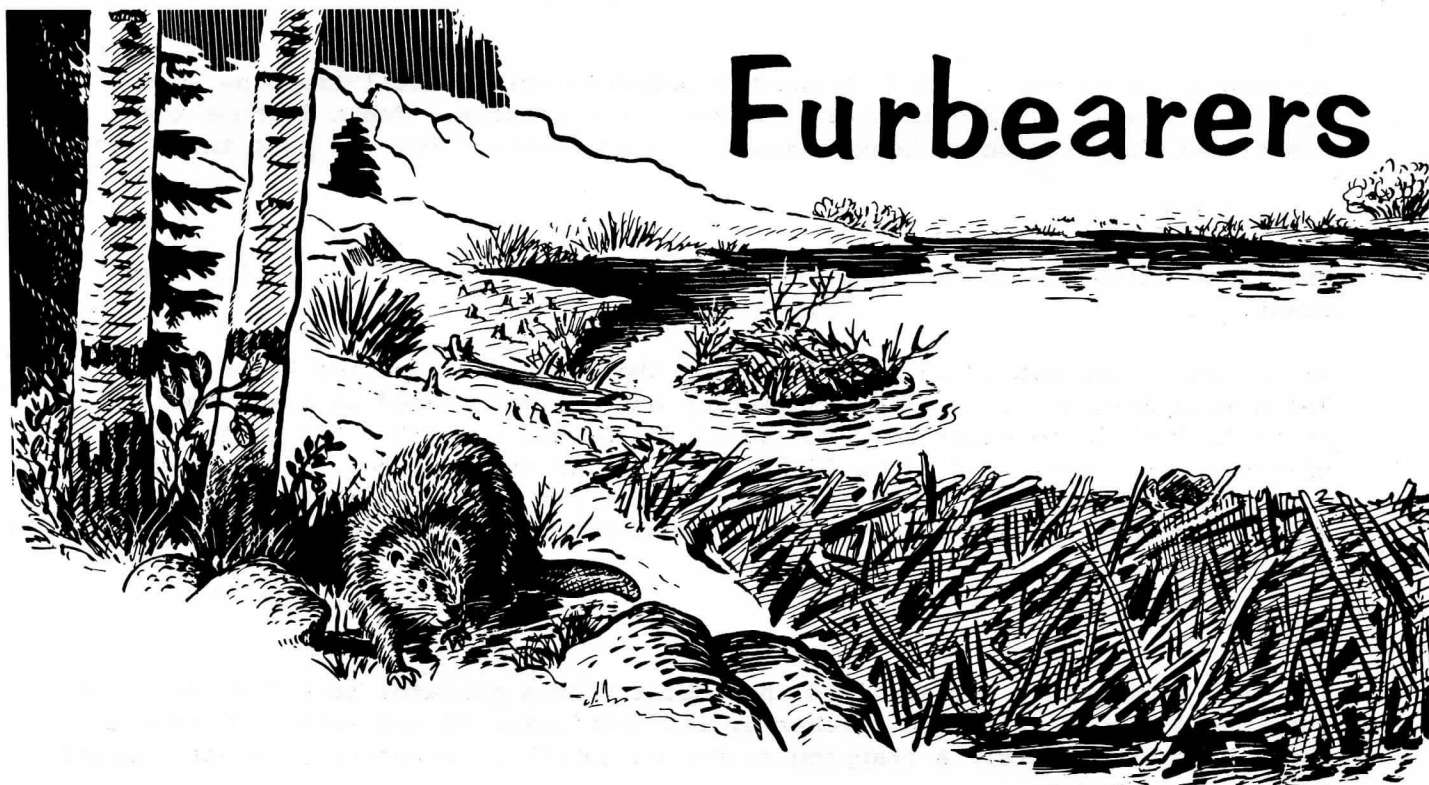
Table 23
SNIPE CENSUS
(Western Oregon)

Region	Birds per 100 Acres					No. Birds Observed	Acres Censused
	1978	1977	1976	1975	1974		
Northwest	3.0	0.8	14.4	3.7	8.4	14	462
Southwest	8.8	6.5	16.7	0.7	0.8	53	600

Table 24
SNIPE CENSUS
(Eastern Oregon)

County	No. Samples	Mileage	1978	1977	1976	1975	1974
Baker	5	100	140	240	206	246	165
Union	4	80	6	19	10	8	15
Wallowa	3	60	22	8	16	6	23
Lake	1	20	22	30	-	15	14
TOTALS	13	260	190	297	232	275	217





Continued improvement in the fur market over the last six years has stimulated interest in trapping and resulted in increased trapping efforts. Last winter, 3,215 trapping licenses were issued compared with 2,227 in the 1976-77 season and 791 for the 1971-72 season. In addition to the licensed trappers, a number of children under 14 years of age and an undetermined number of predator trappers who are not required to obtain a license engaged in trapping.

Only eight species of animals are classified as furbearers by statute and open seasons were authorized on seven. No season was provided on fisher. Other animals with valuable fur coats, such as the wolverine, kit fox, sea otter and ringtail cat, are classed as protected wildlife. In addition, nine species of unprotected animals produce fur of commercial value and were trapped at every opportunity. Bobcat, coyote, muskrat and beaver were the most valuable or most abundant fur animals and attracted much of the trapping effort.

Beaver

The season on beaver extended from November 15, 1977 through February 15, 1978 in all areas except in Grant and Harney Counties. A November 1 opening was authorized in these counties to permit early trapping of the high country.

Trappers purchased 17,689 beaver seals at \$1 each during the 1977-78 season. They reported using 7,252 on beaver and submitting 5,658 for refund. The remainder, many of which were undoubtedly used on beaver, were unaccounted for.

The number of beaver damage complaints registered in the last five years is attributed directly to an increased beaver population. Three hundred eighty-two complaints were received last year compared with 481 in 1976. Some live-trapping and transplanting was conducted on these complaints by Department personnel but most complainants handled their own problems through the use of kill permits,

fencing or repellents. Many landowners deferred action until trapping season and then engaged private trappers to remove the animals. Table 1 shows the number and disposition of beaver complaints by district for the past three years.

River Otter

The river otter season ran concurrent with the beaver season and in the same areas.

River otter were placed in Appendix II of the Endangered Species Act by the Endangered Species Scientific Association and a limit placed on the number of pelts that could be exported. The quota for Oregon was 350. All pelts, to be eligible for export, had to be identified with an approved seal. Two hundred seventy-six pelts were submitted to Department personnel and marked with a \$2 seal. Trappers in reporting their fur catch for the season reported they took 291 otters.

Bobcat

The 1977 legislature reclassified the bobcat from a predator to a furbearer and when the Act took effect on October 4, the Commission closed eastern Oregon to the taking of bobcats. A trapping season of November 15-February 15 was adopted for western Oregon.

The Endangered Species Act also listed the bobcat in Appendix II and thus took over control of the export of pelts from the United States. A quota of 3,000 bobcats was authorized to be taken in Oregon for foreign export. Western Oregon trappers submitted 2,921 pelts to Department offices for tagging with a \$2 seal. In reporting on their fur catch for the season they listed only 2,276 bobcats taken.

Other Furbearers

Two thousand seven hundred forty-six licensed trappers (71 percent) submitted reports of fur animals taken. The reports indicated that 89,240 animals of 16 species were trapped and sold for a total of \$1,000,768.14. Additional revenue was received from the sale of fur by unlicensed predator trappers, children and the 29 percent of the licensed trappers who failed to file a report. The take of furbearers and unprotected species is presented by county in Table 2.

The prices offered for raw furs early in the season is a major factor influencing the interest in trapping and affecting the harvest of various fur animals. At the opening of the 1977-78 season prices were quite high on most species and remained high through the winter. Good returns stimulated trapping interest and trapping pressure and resulted in heavy trapping of most species. The trend in fur values as determined from trapper reports is shown in Table 3.

The annual muskrat census was conducted on the Summer Lake Wildlife Area in early January. A total of 581 active houses was counted compared with 423 in 1977 and 229 in 1976. The population has recovered to a level where trapping of surpluses and removal of nuisance animals can be resumed. Four hundred muskrats were trapped by state personnel following the waterfowl season. Results of inventories and subsequent harvests since 1959 are presented in Table 4.

Through negotiations with the British Columbia Fish and Game Branch eight fisher were obtained for transplanting. They were released in the Jackson Creek drainage in eastern Douglas County on January 9 (3), February 21 (3), and April 5 (2). Additional animals are expected from British Columbia trappers next winter.



Table 1

BEAVER COMPLAINT DISPOSITION
April, 1977 through March 1978

Region	District	Complaints			Beaver Dead-Trapped			Beaver Live-Trapped and Transplanted			1977 Dispositions		
		1977	1976	1975	1977	1976	1975	1977	1976	1975	Kill Permits	Referred to Trappers	Other
	N. Coast	4	6	10	0	0	0	0	0	0	1	1	2
	N. Will.	36	37	39	0	0	0	1	0	2	16	9	10
	NW Will.	48	69	61	0	0	0	0	0	3	9	29	10
	Mid. Will.	35	25	10	0	0	0	0	0	0	24	4	7
	Lane	20	51	22	0	0	0	0	0	0	15	5	0
NORTHWEST		143	188	142	0	0	0	1	0	5	65	48	29
	Umpqua	47	59	61	4	0	0	2	0	0	23	8	10
	Rogue	31	56	36	0	0	0	0	0	0	16	7	8
	S. Coast	18	27	12	0	0	0	0	0	0	14	3	1
SOUTHWEST		96	142	109	4	0	0	2	0	0	53	18	19
	Columbia	25	21	28	1	5	2	18	8	6	0	0	0
	Ochoco	4	9	6	0	0	0	1	1	0	1	1	1
	Deschutes	2	3	3	0	1	0	0	0	0	1	0	1
	Klamath	6	5	0	0	0	0	0	0	0	2	3	1
CENTRAL		37	38	37	1	6	2	19	9	6	4	4	3
	Baker	17	15	10	2	10	1	6	5	3	0	3	0
	Grant	6	16	15	2	12	8	0	0	0	2	1	1
	Union	6	5	6	2	5	5	0	0	0	1	2	1
	Umatilla	28	31	16	12	16	16	0	0	1	4	9	3
	Wallowa	5	0	0	0	0	0	0	0	0	1	0	4
	Heppner	15	11	20	7	6	6	6	4	5	0	4	2
NORTHEAST		77	78	67	25	49	36	12	9	9	8	19	11
	Harney	14	11	9	5	8	5	2	2	0	5	14	0
	N. Lake	4	2	0	2	0	0	1	0	0	0	2	0
	S. Lake	2	7	9	0	1	11	0	7	0	0	1	1
	Malheur	9	15	15	11	14	20	0	3	7	1	0	0
SOUTHEAST		29	35	33	18	23	36	3	12	7	6	17	1
STATE TOTALS		382	481	388	48	78	74	37	30	27	136	106	63

Table 2
FUR CATCH
1977-78

County	Number Trappers' Reports	Average Price		\$8.24	\$4.07	\$20.72	\$14.29	\$2.52	\$7.25	\$0.63	\$2.06	\$12.98	\$27.27	\$53.14	\$71.74	\$29.88	\$6.80	Total
		Beaver	Otter															
				Mink	Muskrat	Raccoon	Marten	Striped Skunk	Spotted Skunk	Weasel	Opossum	Badger	Gray Fox	Red Fox	Bobcat	Coyote	Nutria	
Baker	74	138	7	35	1,310	115		59	2	17		65		1		604		2,353
Benton	72	348	2	9	223	293		41	4		304		11	24	42	23	1,676	3,000
Clackamas	109	215	4	12	378	438		62	4	2	456	9	27	25	40	66	438	2,176
Clatsop	89	496	7	111	1,519	528		6	35	9	50				64	19	3,549	6,393
Columbia	91	383	7	49	661	382		14	8	3	298			21	57	75	1,347	3,305
Coos	102	321	16	18	399	357	1	18	60	1	16		3		169	50	3	1,432
Crook	41	109		51	441	16		1				72				539		1,229
Curry	40	64	6	3	121	210		19	39				7		161	58		688
Deschutes	45	84	14	34	22	24	7		1	1		21			1	389		598
Douglas	203	734	41	49	289	1,470		279	264	2	30		86	71	376	275	335	4,301
Gilliam	3	2			1	3						3				14		23
Grant	53	198		68	240	43		5	1			71				523		1,149
Harney	28	100		16	84	16			1	7		44				1,057		1,325
Hood River	21	27		19	792	22		18		4	27			5		13		927
Jackson	106	75	3	30	1,258	421	1	122	8				48		130	132		2,228
Jefferson	11	8	8	17	26	7			1			1				55		123
Josephine	69	47	5	2	857	211		93	15	2		2	46		71	133		1,484
Klamath	161	130	24	198	16,115	117	41	19	3	3		27	2		14	288		16,981
Lake	46	31		6	283	31		26				23				467		867
Lane	302	974	38	99	1,644	1,073	7	53	502	7	637		28	83	386	274	1,949	7,754
Lincoln	90	363	18	20	412	299	3	1	49	2	223				190	79	671	2,330
Linn	169	468	5	59	502	494	2	79	28	1	750		22	50	161	87	2,856	5,564
Malheur	114	434	5	27	4,827	46		10		7		154	1	28		711		6,250
Marion	129	205	12	45	628	656		52		4	511	1	6	75	93	26	1,330	3,644
Morrow	19	45		47	288	28		3		1		86			1	191		690
Multnomah	49	96	3	10	475	108			1	3	106			5	15	7	329	1,158
Polk	60	207	28	18	221	343		42	21		192		4	29	37	31	674	1,847
Sherman	2											4				10		14
Tillamook	84	271	25	37	627	372		3	51	6	178			4	226	135	50	1,985
Umatilla	67	183		24	663	75		3				30				263		1,241
Union	50	56		25	676	26		9		3		10						805
Wallowa	43	18	1	72	675	63	4	7		4		22			11	142		1,019
Wasco	32	77	5	36	165	82					2	1			2	106		476
Washington	82	117		7	782	268		20	1	2	252		11	9	13	28	437	1,947
Wheeler	11	31				9						7				52		99
Yamhill	79	197	7	4	234	366		30	5		324		2	6	16	16	628	1,835
TOTAL	2,746	7,252	291	1,257	37,838	9,012	66	1,094	1,104	91	4,356	653	304	436	2,276	6,938	16,272	89,240

Table 3
AVERAGE PELT PRICES

Species	1977-78	1976-77	1975-76	1974-75	1973-74
Mink	\$ 8.24	\$10.20	\$ 7.29	\$ 7.11	\$ 9.37
Muskrat	4.07	4.38	2.93	2.27	2.22
Marten	14.29	15.85	14.85	8.36	5.10
Otter	44.89	56.90	41.97	34.44	35.77
Beaver	13.06	18.04	13.61	13.28	16.22
Wildcat	71.74	103.21	102.94	36.97	53.55
Coyote	29.88	41.22	22.88	14.62	19.45
Badger	12.98	20.20	15.93	6.69	8.80
Raccoon	20.72	20.69	15.80	10.13	10.15
Gray Fox	27.27	28.09	20.50	10.61	16.98
Red Fox	53.14	50.35	38.39	24.23	27.12
Striped Skunk	2.52	3.26	2.63	2.07	2.33
Spotted Skunk	7.25	4.80	2.28	2.21	2.01
Weasel	.63	.87	.75	.46	.37
Opossum	2.06	2.14	1.65	1.53	1.59
Nutria	6.80	5.68	4.64	4.49	3.96

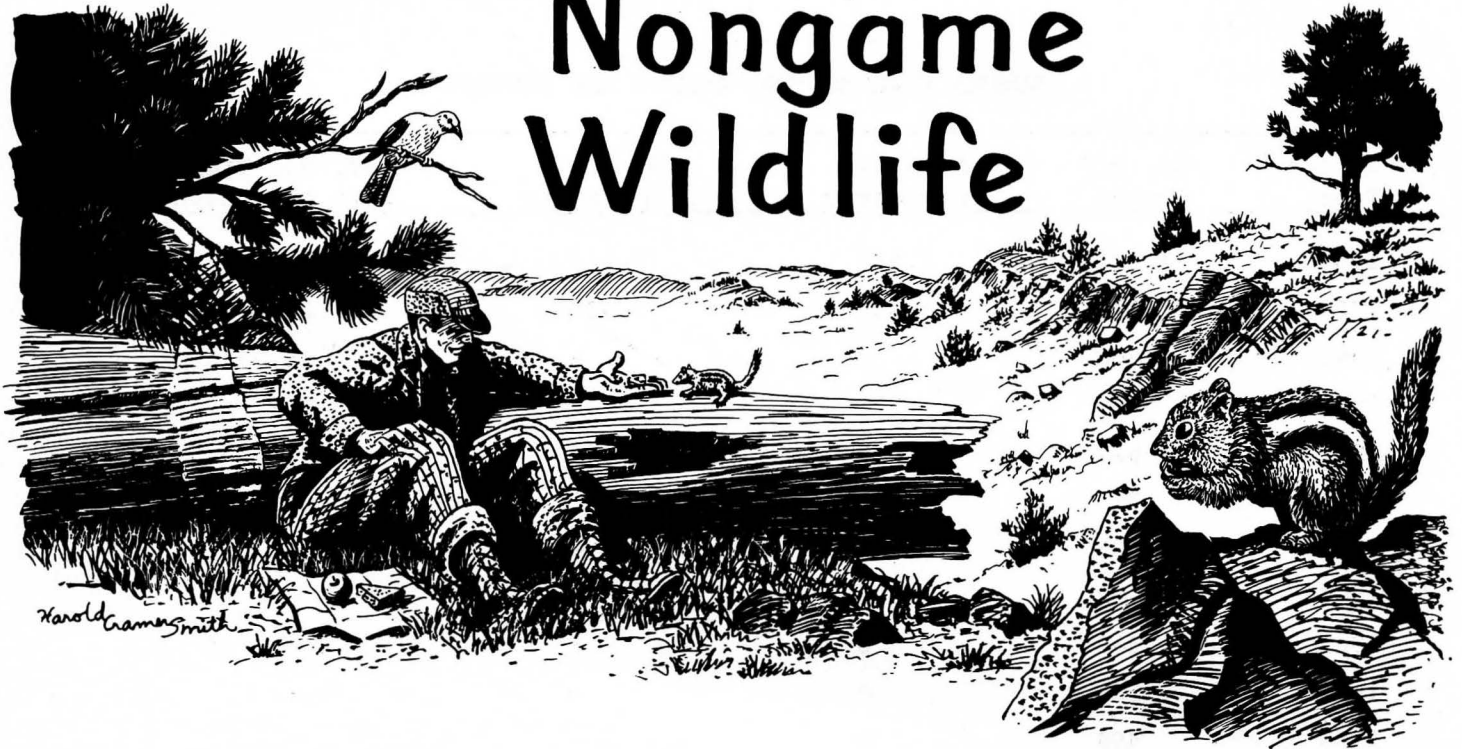


Table 4
SUMMER LAKE MUSKRAT CENSUS AND HARVEST

Year	No. of Houses	Muskrats Harvested	No. of Trap Nights	Av. No. Trap Sets per Catch
1959	1,342	1,543	3,344	2.1
1960	1,228	1,602	3,920	2.4
1961	568	0	-	-
1962	588	550	1,238	2.2
1963	627	438	972	2.2
1964	712	417	1,271	3.0
1965	325	0	-	-
1966	68	0	-	-
1967	368	0	-	-
1968	288	0	-	-
1969	488	0	-	-
1970	466	0	-	-
1971	598	235	490	2.1
1972	211	0	-	-
1973	761	0	-	-
1974	334	0	-	-
1975	165	0	-	-
1976	229	0	-	-
1977	423	0	-	-
1978	581	401	-	-



Nongame Wildlife



The watchable wildlife program covers the management of all nongame birds, mammals, amphibians and reptiles. The two objectives of the program are to provide viewing opportunities and determine species distribution, status and population trends.

All the watchable wildlife data are summarized in the following text and tables.

Viewing

As the program name implies, watchable wildlife is dedicated to provide increased opportunities and knowledge on wildlife viewing, photography and study. Viewing opportunities such as nature trails, photography blinds, interpretive stations and species checklists are being developed on Department and other public lands. The first area has just been completed on Stewart Park in Roseburg.

The Stewart Park Wildlife Area covers approximately 12 acres and has a varied mixture of aquatic and upland habitat types. The area is traversed by a nature trail with a series of interpretive stations and photography points. This project was a cooperative effort involving the Department, Roseburg City Parks, Audubon Society, Job Corp., scout and youth groups and many local businesses who provided time, equipment and materials.

Similar viewing areas are now being developed at The Dalles, Enterprise, La Grande, Baker, Ontario, Klamath Falls, Medford and Grants Pass.

Bald Eagles

Two populations of bald eagles are present in the state. A resident group nests along the state's larger lakes and rivers and coastal bays. The annual nesting bald eagle survey was conducted by the Oregon Cooperative Wildlife Research Unit in cooperation with other federal agencies, private landowners and Department personnel. Surveyed were 136 nests revealing 28 percent utilization compared to 26 percent in 1977. The past decline in use appears to have now stabilized. See Table 1 for past years' summary.

Concentrations of bald eagles winter in Oregon along the Columbia River, coast and large inland lakes. A major concentration area is the Klamath Basin where as many as 300 eagles are tallied at one time. A major winter roosting area was discovered in southern Klamath County and is now being acquired by the U. S. Fish and Wildlife Service.

Wintering Hawk Populations

Two survey methods are utilized to measure wintering raptor populations statewide. Roadside counts are conducted during late December and early January to measure the annual trend of hawks and owls wintering in the state. The results of that survey by counts are presented in Table 2 and are compared with last year in Table 3. The most common species seen were rough-legged, red-tailed and American kestrel hawks. Decreases were recorded on nearly all species and probably reflect the severe winter weather statewide forcing birds to move south.

Trend data on wintering raptors is also obtained on upland game and big game surveys. Both marsh hawks and short-eared owls continued declines in western Oregon (Table 4). Both species occupy agricultural lands in western Oregon and could reflect changes in land uses.

Summering Hawk Population

Trends in summering hawk populations are obtained while conducting upland game brood and roadside counts during July and August. This information is summarized in Tables 5 and 6 for western and eastern Oregon, respectively. The number of birds seen per mile has declined from the high in 1976. However, slight increases in red-tailed hawks and kestrels were noted.

Hawk Production

For the second year, hawk production data were collected in the form of fledgling rate. The average number of young fledglings from the nest checked was down from 1977 except for the kestrel. A better interpretation of the population trend will be made with several more years of data. See Table 7.

Waterbird Population

Klamath Lake is a major waterbird production area. Table 8 displays three years of inventories made on Klamath Lake compared to estimated population in 1970. California gulls, western grebes and eared grebes are the most abundant species observed.

Small Bird Counts

To better understand small bird distribution, season of use and habitat preference, selected inventories were conducted. In Grant and Union Counties counts were conducted monthly along the John Day River and Catherine Creek, respectively. This data will be useful in commenting on major land use changes that might occur in those drainages.

Other counts were also conducted on forestland, farmland, marshes, beaches and bays to identify important use areas and use periods. Volunteers from local birding clubs assisted in many of these counts. This information cannot be easily summarized in this report, but it is available from district and regional files.

Mammal Inventories

Nongame mammal observations on deer inventory routes are recorded to establish a population trend. Western Oregon counts are by spotlight while in eastern Oregon they are conducted during the daytime.

Mammals observed on the 1,117 miles of western Oregon routes are summarized in Table 9. Increases were noted in coyote, bobcat, raccoon and black-tailed jackrabbits. Porcupine and opossums continue to expand their distribution but their numbers have decreased.

An interesting trend is apparent in Table 10 which summarizes observations in eastern Oregon. Mountain cottontail, jackrabbit and coyote numbers are all increasing. This is an opposite trend from last year when rabbits were down and coyotes increased. This increase in rabbits is also seen on the 90-mile evening rabbit count in northern Lake County (Table 11).

The total number of coyotes and bobcats seen on all big game routes is summarized in Table 12. Coyote numbers continue to remain high. Table 13 presents an interesting 33-year trend of coyotes seen in Harney County while conducting big game winter counts. This trend also reflects the high population.

Habitat Inventory

Many species of nongame birds need specific habitats to survive. Critical sites are being located and recorded to aid landowners and managers in planning for their protection. Present efforts have been directed toward a selected group of species listed in Table 14.

Habitat Development

Nongame habitat developments completed during the year are presented in Table 15. A summary of all nongame developments since 1970 is displayed in Table 16. A total of 2,217 birdhouses was constructed during 1978, raising the eight year total to 12,037. Other developments include nest sites for ospreys, eagles and squirrels.

Marine Mammals

Annually, a coastal flight is made along Oregon's coastline in June to inventory the summering seal and sea lion numbers. Table 17 summarizes this count by species and compares it with past years. Sea lions and harbor seal numbers appear to be still increasing.

Endangered Species

A total of 12 species of Oregon's animals are classed as threatened or endangered and includes four mammals, seven birds and one amphibian. Six are threatened or endangered nationally, while six are classed as threatened only in Oregon. Endangered species are Columbian white-tailed deer, California brown pelican, Aleutian Canada goose and the American and Arctic peregrine falcon. Threatened species are: Sea otter, wolverine, kit fox, northern bald eagle, northern spotted owl, western snowy plover and western spotted frog.

A coordinated agency plan is being developed for the northern spotted owl. This group has established a goal to protect and manage not less than 400 pairs of spotted owls in western Oregon. The spotted owl is a western Oregon species dependent on mature coniferous forests.



Table 1
STATEWIDE BALD EAGLE NESTING SURVEY

Year	Total Nests Checked	Active		Status Inactive		Unknown No.
		No.	%	No.	%	
1971	28	9	32	19	68	0
1972	59	20	49	21	51	18
1973	82	36	53	32	47	14
1974	145	61	51	59	49	25
1975	61	11	19	48	81	2
1976	82	33	40	49	60	19
1977	53	14	26	39	73	4
1978	136	38	28	98	72	125



Table 2
WINTER RAPTOR COUNTS

Area	Miles	Cooper's Hawk	Swain- son's Hawk	Rough- Legged	Red- tailed	Golden Eagle	Bald Eagle	Marsh Hawk	Prairie Falcon	Pere- grine	American Kestrel	Great Horned Owl	Uni- denti- fied	Total
Columbia	33	2		5	75		12	16			33	3		147 (2)
Clatsop	60	1			2			7						12 (2)
														(3)
Tillamook	60				1						2		1	4
Lane-Linn	50			4	2			1			1			8
Washington	52	3		4	21		1	3			33			67 (2) (2)
NW REGION	255	6		13	101		13	27			69	3	1	238
Coos	50	1		3	7		2				12			25
Curry	50			1	4			1			1			7
Douglas	107	1		3	65	4			1		47			122 (1)
Jackson	110	2		3	18				3		36			63 (1)
Josephine	51	2			10						12			26 (1)
														(2)
SW REGION	368	6		10	104	4	2	1	4		108			243
Crook	120		1	2	1	3	1	1			2			11
Deschutes	55			1	5				1					7
Jefferson	112			2	3	1	1				4			11
Lake	43			5					1					6
Sherman	72		1	16	1	1					3			22
Wasco	93		1	3	4						6		1	15
CEN. REGION	495		3	29	14	5	2	1	2		15		1	72
Baker	83			10	1	3		5			3			23 (4)
Grant	130				10		2		2		3			17
Morrow	64			1	1									2
Gilliam	43			1	2	1					1		1	6
Umatilla	148		2	54	6		2	5			6	1	8	85 (1)
Union	208			38	15	11		17	5		10		4	100
Wallowa	48			3	3			2						8
Wheeler	61				2	2								4
NE REGION	785		2	107	40	17	4	29	7		23	1	13	245

(1) = 1 Merlin

(3) = 1 Snowy Owl

(2) = 1 Sharp-shinned Hawk

(4) = 1 Pygmy Owl

Table 2
WINTER RAPTOR COUNTS
(Continued)

Area	Miles	Cooper's Hawk	Swain- son's Hawk	Rough- Legged	Red- Tailed	Golden Eagle	Bald Eagle	Marsh Hawk	Prairie Falcon	Pere- grine	American Kestrel	Great Horned Owl	Uni- denti- fied	Total
Harney	390			20		6					1			27
Malheur	190	1		6	4	10	2	9	1		23			56
SE REGION	580	1		26	4	16	2	9	1		24			83
TOTAL	2,483	13	5	185	263	42	23	67	14		239	4	15	881



Table 3
STATEWIDE
WINTER RAPTOR TREND

Year	Miles	B I R D S P E R 100 M I L E S										Great Horned Owl	Uni- denti- fied	Total
		Cooper's	Swain- sons	Rough- legged	Red- tailed	Golden Eagle	Bald Eagle	Marsh	Prairie Falcon	Pere- grine	American Kestrel			
1976	2,354	.3	.2	5.6	13.8	1.9	2.9	3.4	.6	.1	6.7	.1	.8	36.5
1977	2,960	.8	1.1	18.2	20.2	2.2	2.5	5.9	1.7	.1	10.3	.1	2.8	65.8
1978	2,483	.5	.2	7.5	10.6	1.7	9.3	2.7	.6	-	9.6	.2	.6	35.5

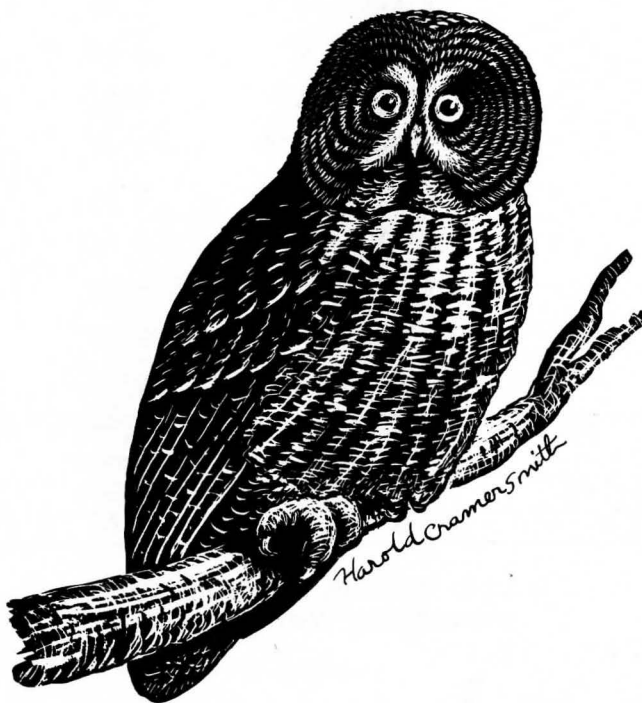


Table 4

HAWK AND OWL POPULATIONS
WINTERING IN WESTERN OREGON

Year	Miles Traveled	NUMBER OBSERVED PER 100 MILES TRAVELED									
		Hawks					Eagles		Falcons		Owl
		Sharp- Shinned	Cooper's	Red- tailed	Rough- legged	Marsh	Golden	Bald	Prairie	Kestral	Short- eared
1965	173	1.2	3.5	24.8	.0	15.0	-	-	-	10.4	12.7
1966	163	.0	1.2	14.1	.0	8.0	-	-	-	3.7	.6
1967	173	.6	5.2	26.6	.0	12.1	-	-	-	10.4	5.2
1968	173	.0	1.7	17.9	12.1	11.5	-	-	-	2.9	2.9
1969	173	3.5	4.0	15.6	3.5	16.7	-	-	-	9.8	16.2
1970	173	.0	2.3	12.1	2.3	20.2	-	-	-	13.9	3.5
1971	161	1.9	1.2	18.0	3.1	10.0	-	-	-	13.7	.0
1972	161	1.5	2.5	14.9	.0	19.3	-	-	-	5.6	3.1
1973	163	.0	2.5	27.0	3.1	21.4	-	-	-	17.2	8.0
1974	80	3.8	1.3	32.6	6.3	21.3	-	-	-	5.0	.0
1975	61	8.3	6.6	31.4	.0	14.9	-	-	-	9.9	.0
1976	633	.2	.9	24.6	1.6	3.0	.5	1.1	.6	20.2	.0
1977	240	.4	2.1	27.5	.0	2.5	1.3	.0	.0	5.4	.0
1978	152	2.0	2.6	24.3	.7	1.9	2.6	.7	2.0	10.5	.0



Table 5
 RAPTOR POPULATIONS
 SUMMERING IN WESTERN OREGON

Year	Miles Traveled	NUMBER OBSERVED PER 100 MILES TRAVELED						
		Hawks					Falcons	
		Sharp-shinned	Cooper's	Red-tailed	Rough-legged	Marsh	Prairie	Kestral
1970	500	0	0	3.4	1.6	1.4	0	17.0
1971	396	0	0	.8	0	.8	0	6.6
1972	477	0	.4	3.4	0	2.1	0	13.2
1973	493	0	.2	3.0	.2	1.2	0	12.0
1974	1,048	0	.3	1.1	0	.3	0	5.8
1975	968	.1	0	2.3	0	.2	0	5.4
1976	605	1.3	.3	2.5	0	1.0	.2	12.6
1977	1,322	0	0	2.7	0	.2	0	4.5
1978	969	.1	-	2.5	0	1.3	-	6.2



Table 6
 RAPTOR POPULATIONS
 SUMMERING IN EASTERN OREGON

		N U M B E R O B S E R V E D P E R 100 M I L E S T R A V E L E D									
		Hawks									
Year	Miles Traveled	Goshawk	Sharp- shinned	Cooper's	Red- tailed	Swain- son's	Ferru- ginous	Marsh	Golden Eagle	Kestral	Prairie Falcon
1972	350	.6	0	.3	4.0	1.4	2.6	2.6	.9	29.1	0
1973	350	1.1	0	0	4.6	0	.9	1.1	1.7	39.1	0
1974	350	0	0	0	2.6	.3	1.1	.6	.6	21.1	0
1975	465	0	0	0	4.5	0	1.7	.6	.2	13.8	0
1976	1,871	.2	.3	.1	6.3	2.5	7.5	2.8	.9	11.9	.6
1977	1,863	.1	.1	.1	3.0	1.5	.2	1.2	.4	6.6	.5
1978	1,657	.1	.2	.2	4.1	1.7	.2	1.4	.4	11.2	.3



Table 7
STATEWIDE RAPTOR PRODUCTION TREND

Species	Average Young Fledged Per Nest					
	1978	1977	1976	1975	1974	1973
Red-tailed Hawk	1.9	2.3	-	-	-	-
Goshawk	1.7	2.4	-	-	-	-
Cooper's Hawk	2.4	2.5	-	-	-	-
Sharp-shinned Hawk	-	-	-	-	-	-
Prairie Falcon	3.1	3.9	-	-	3.0	2.9
Kestrel	3.5	3.4	-	-	-	-



Table 8
WATERBIRD INVENTORY
UPPER KLAMATH LAKE AND KLAMTH RIVER

Species	BIRDS SEEN			
	1970	1976	1977	1978
Eared and Horned Grebe	33	584	1,006	936
Western Grebe	1,144	974	1,616	1,714
Pied-billed Grebe	-	-	3	4
White Pelican	499	145	78	179
Double-crested Cormorant	332	201	708	439
Great Blue Heron	87	33	45	43
Common Egret	12	35	62	122
Black-crowned Night Heron	160	129	103	221
Sandhill Crane	9	1	3	12
California and Ring-billed Gull	7,500	10,821	12,455	9,137
Bonaparte's Gull	-	-	65	5
Forester's Tern	-	50	289	241
Caspian Tern	-	5	7	7
Black Tern	-	86	933	46
Bald Eagle	5	11	4	27
Nighthawk	-	-	-	2

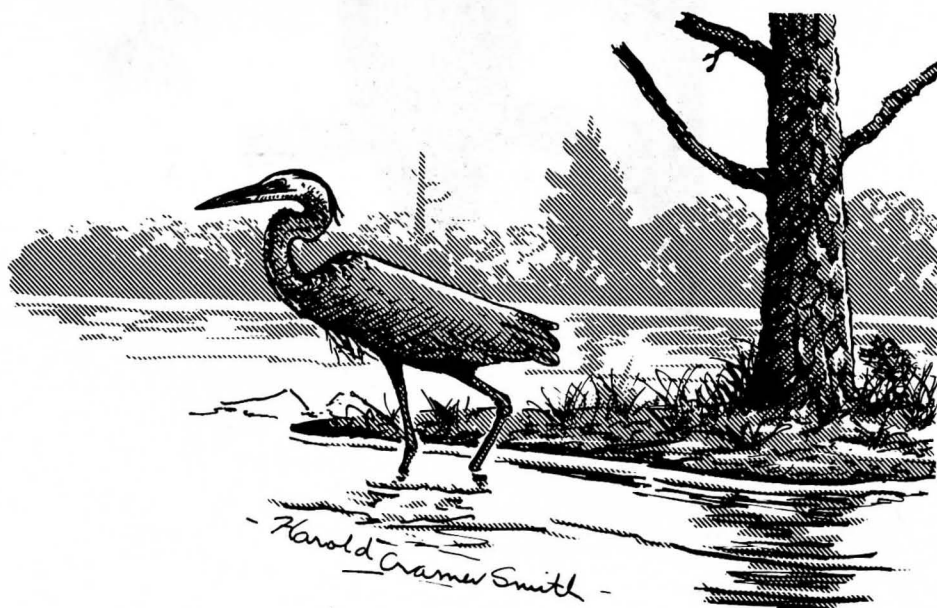


Table 9

NONGAME MAMMALS OBSERVED ON BIG GAME TREND SAMPLES
WESTERN OREGON

Year	Miles Traveled	NUMBER OBSERVED PER 100 MILES TRAVELED									
		Brush Rabbit	Black-tailed Jack Rabbit*	Porcupine	Bobcat	Coyote	Gray Fox	Red Fox	Raccoon	Striped Skunk	Opossum
1966	1,632	.1	.1	0	.2	0	0	.1	1.8	.1	.1
1967	1,690	0	.1	0	.4	.1	.1	.1	3.0	0	.1
1968	1,816	.2	.2	0	.2	.2	.2	.2	3.1	.2	0
1969	1,805	0	.3	.1	.2	0	.1	.2	5.5	.3	.1
1970	1,703	0	.1	.1	.4	.1	.2	.4	4.0	.2	.3
1971	806	.1	0	.1	.1	.1	0	.4	5.8	0	.2
1972	1,396	.1	0	.1	.4	.2	.1	.1	4.4	.1	.1
1973	1,625	.1	0	.4	.2	.1	.1	.1	6.3	.2	.2
1974	1,529	0	0	.1	0	.2	0	.3	5.8	.3	.1
1975	1,122	0	0	.4	.5	.2	.1	.2	3.4	.3	.3
1976	1,847	.9	2.8	.5	.1	.5	0	.1	6.6	2.4	.1
1977	1,921	.7	5.2	.4	.2	.5	.1	0	2.3	3.5	.1
1978	1,117	0	7.4	.1	.4	.9	0	0	3.4	2.3	0

* Southwest Oregon



Table 10
NONGAME MAMMALS OBSERVED ON BIG GAME TREND SAMPLES
EASTERN OREGON

Year	Traveled	Number Observed per 100 Miles Traveled				
		Cottontail	Black-tailed Jack Rabbit	Coyote	Badger	Porcupine
1966	865	1.7	4.4	3.6	0	-
1967	865	3.5	4.5	3.0	0	-
1968	877	5.1	3.9	2.7	0	-
1969	877	3.4	4.8	2.2	.1	-
1970	830	4.1	4.5	4.5	.1	-
1971	460	2.2	6.1	6.3	.2	-
1972	699	1.6	.7	3.4	0	-
1973	794	1.6	1.1	5.3	0	-
1974	702	.9	1.6	6.1	0	-
1975	667	1.3	.9	3.4	0	-
1976	2,116	1.4	1.0	4.0	0	-
1977	2,360	4.1	1.4	3.9	.1	-
1978	492	5.2	5.2	5.9	0	.6



Table 11
JACKRABBIT POPULATION TRENDS
NORTH LAKE COUNTY

Miles	Number of Routes	Total Counted	Rabbits per 10 Miles						
			1978	1977	1976	1975	1974	1973	1972
90	3	64	7.1	5.0	2.8	0.2	0.6	1.7	1.3

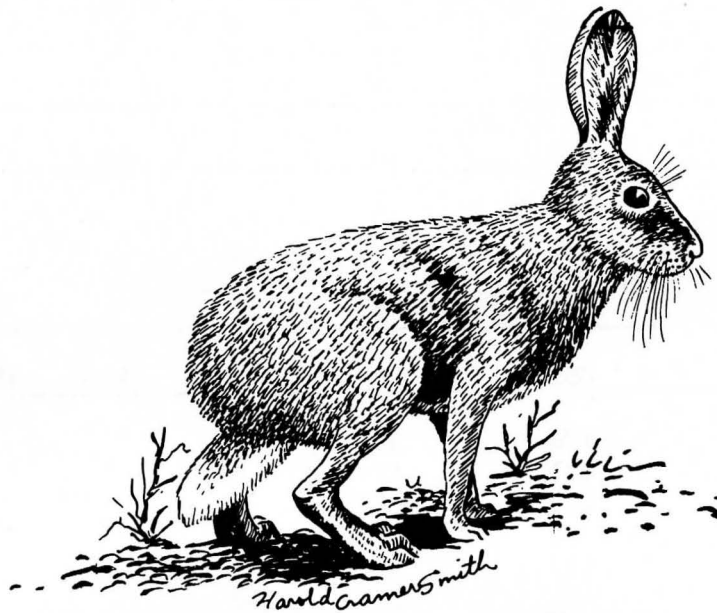


Table 12
COYOTES AND BOBCATS OBSERVED ON BIG GAME TREND SAMPLES

Wildlife District By Region	Miles Traveled	Number Observed		Coyotes per 1,000 Miles Traveled			
		Coyotes	Bobcats	1978	1977	1976	1975
N. Coast	458	3	0				
N. Willamette	-	-	-				
NW Willamette	300	2	0				
Mid-Willamette	-	-	-				
Lane	300	0	1				
NORTHWEST	1,058	5	1	4.7	8.7	3.4	5.8
S. Coast	460	0	0				
Rogue	237	10	1				
Douglas	-	-	-				
SOUTHWEST	697	10	1	14.3	13.1	8.4	24.9
Ochoco	218	19	0				
Columbia	216	7	0				
Klamath	-	-	-				
Deschutes	425	2	0				
CENTRAL	859	28	0	32.6	35.2	20.3	21.3
Umatilla	178	39	0				
Wallowa	381	12	0				
Baker	213	7	0				
Union	76	11	0				
Heppner	243	5	0				
Grant	625	20	0				
NORTHEAST	1,716	94	0	54.8	35.3	53.8	33.1
N. Lake	125	13	0				
S. Lake	-	-	-				
Harney	185	11	0				
Malheur	1,229	17	0				
SOUTHEAST	1,539	41	0	26.6	15.7	21.3	42.5
STATE TOTALS	5,869	178	2	30.3	21.7	20.3	20.7

Table 13
COYOTES OBSERVED ON HARNEY DISTRICT BIG GAME ROUTES
1946 - 1978

Year	Miles Traveled	Number of Coyotes Seen	Coyotes Per 100 Miles
1946	95	6	6.3
1947	151	6	4.0
1948	142	3	2.1
1949	132	3	2.3
1950	151	3	2.0
1951	173	1	0.6
1952	162	1	0.6
1953	167	1	0.6
1954	181	2	1.1
1955	181	1	0.6
1956	157	2	1.3
1957	167	1	0.6
1958	169	5	3.0
1959	187	8	4.3
1960	187	4	2.1
1961	187	6	3.2
1962	187	11	5.8
1963	187	5	2.7
1964	187	18	9.6
1965	187	5	2.6
1966	187	8	4.2
1967	187	2	1.1
1968	187	2	1.1
1969	187	2	1.1
1970	187	2	1.1
1971	140	16	11.4
1972	207	7	3.4
1973	207	2	1.0
1974	207	7	3.4
1975	199	6	3.0
1976	180	12	6.6
1977	203	5	2.5
1978	185	11	5.9
33-Year Ave.	176	5.3	3.0

Harney District includes Harney Co. and small portions of southern Grant Co.

Table 14

SUMMARY NESTING BIRD SITES AND COLONIES

County	Number Colonies			Number Nest Sites			Great Grey Owls	Barred Owls	Sandhill Cranes
	Great Blue Herons	White Pelicans	Egrets	Osprey	Eagles	Prairie Falcons			
Baker	4			1	21	12			2
Benton	1			2					
Clackamas	3			1	1				
Clatsop	2				19				
Columbia					2				
Coos	2			28	6				
Crook					3	8			
Curry	1			15					
Deschutes	6			68	27				
Douglas	2			35	14				
Gilliam					3	2			
Grant	6			2	5	2			
Harney	3		2		15				217
Hood River				2					
Jackson	3			11	3				
Jefferson					9	6			
Josephine	4			10	2				
Klamath	2	1	1 <u>1</u> /	28	99	10	2		25
Lake	2	1	1 <u>1</u> /	3	17	32			338
Lane	7			45	7				
Lincoln	4				11				
Linn	10				1				
Malheur	4				11	1			
Marion	9			2	1				
Morrow	2				3				
Multnomah	1			2					
Polk	3			2					
Sherman	2								
Tillamook	4				11				
Umatilla				1	2				
Union	1			1	3	4	1		2
Wallowa	3				2			1	
Wasco	1			1	1				
Washington					1				
Wheeler	1			1	4				
Yamhill	1								
TOTALS	94	2	4	261	304	77	3	1	584

1/ Also used by double-crested cormorants and gulls

Table 15

NONGAME WILDLIFE HABITAT DEVELOPMENTS
1978

County	Number Nest Boxes				Raptor Perch	Number Nest Sites		Tree & Shrub Plantings	Acres Herbaceous Seedings
	Squirrels	Bluebirds	P. Martin	Other		Eagles	Osprey		
Baker		150							
Benton				72					
Clackamas				10					
Clatsop				10					
Columbia				20					
Coos				50					
Crook				200				1,300	
Curry									
Deschutes									
Douglas				60				200	
Gilliam		150							
Grant		100							
Harney		31		19				1,054	
Hood River									
Jackson				60	12			150	
Jefferson				62					
Josephine				40					
Klamath	6	30		200			2	2,050	
Lake		70		3				100	15
Lane									
Lincoln									
Linn				26					
Malheur								4,530	55
Marion				28					
Morrow		50							
Multnomah									
Polk									
Sherman									
Tillamook				12					
Umatilla		200			6				
Union	20	200		20					
Wallowa		200		20					
Wasco	11							1,300	
Washington				70					
Wheeler		50							
Yamhill				4					
TOTALS	37	1,231		986	18		2	10,684	70

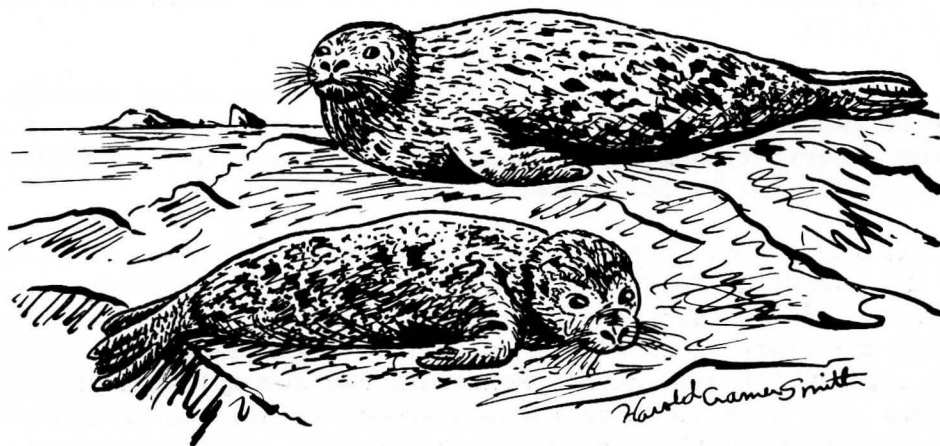
Table 16

SUMMARY NONGAME HABITAT DEVELOPMENTS
1970 - 1977

County	Number Nest Boxes				Number Nest Sites		Tree & Shrub Plantings	Acres Herbaceous Seedings
	Squirrels	Bluebirds	P. Martin	Other	Eagles	Osprey		
Baker				573		3		
Benton				967				
Clackamas								
Clatsop								
Columbia				23				
Coos		30						
Crook								
Curry				59				
Deschutes				111				
Douglas		91		107		20		
Gilliam		10		142				
Grant		127		279				
Harney		104		106			8	210
Hood River		20		106				
Jackson		358		128				
Jefferson								
Josephine		108		53				
Klamath	61	205	1	1,418		21	5,110	
Lake		3		65			250	90
Lane				50				20
Lincoln		18						
Linn								
Malheur		30		72			2,982	40
Marion	26							
Morrow	8	70		176				
Multnomah				185				
Polk			13					
Sherman				19				
Tillamook								
Umatilla				531				
Union	11	180		890				
Wallowa	4	400		1,040				
Wasco	73	257		414			3,600	
Washington				140				
Wheeler		10		27				
Yamhill								
TOTALS	183	2,021	14	7,681		44	11,950	360

Table 17
OREGON COASTAL SEAL AND SEA LION COUNT
June 1973 - June 1978

Species	Count Conducted					
	1973	1974	1975	1976	1977	1978
Steller's Sea Lion	1,208	617	1,161	1,491	1,479	2,559
California Sea Lion	0	175	0	4	2	5
Harbor Seal	843	618	847	1,544	2,301	2,720
Elephant Seal	0	1	0	0	0	0
Sea Otter	0	19	6	0	0	0





A total of \$466,166 was expended during the year to accomplish the proposed work as outlined in the statewide habitat improvement program W-38-D-25. Program expenditures since the habitat program was initiated in 1953 now total \$5,033,513.

Funding of the habitat improvement program is accomplished through the Division of Federal Aid of the U. S. Fish and Wildlife Service at a rate of 75 percent contribution by that agency. Those funds are matched with 25 percent contribution by the state.

The habitat improvement program continues with a diversity of projects to benefit the essential food, cover, water and loafing space requirements of wildlife. Major emphasis continues to be placed on big game winter ranges throughout the state in an effort to improve their carrying capacities for deer and elk. Small game development work was accomplished through a variety of programs such as protective fencing around natural cover and water, shrub and tree plantings, herbaceous seedings for food, artificial nesting sites and placements of watering devices on dry summer range. Public use facilities such as litter collection and outdoor toilets were maintained as needed. Information and directional signs were placed to control public use activities and identify development projects.

Effort in habitat improvement which cannot be quantified is the emphasis placed on preservation of existing habitat. Input into regional and local planning meetings and recommendations to other land management agencies and private landowners regarding practices such as rangeland brush control, forest logging procedures, wetland drainage programs, channel improvement work, or

others can preserve critical habitat that could be expensive to replace. This effort cannot be quantified but is of significant value and should be recognized as a vital function of a habitat improvement program.

Habitat improvement personnel continue to utilize current literature, recommendations and field findings to guide these programs in each region. Ecological and biological data as well as development experiences are utilized from each individual area to determine needs and prescribe treatments. Project treatments are being evaluated in terms of utilization and economic justification and this effort will continue to increase.

In order to achieve maximum resource benefits from a given treatment, a cooperative effort is often initiated with other state departments, federal agencies, county governments, corporations and private landowners to share costs and gain multiple benefits.

Tables 1 and 2 summarize the work completed during the current year as well as the total effort since the initiation of the program in 1953, a twenty-four year period. Habitat development work on state-owned or controlled lands is reported under the section Lands for Wildlife and is not included in this section.

The following narratives explain the program accomplishments by administrative regions.



Habitat Improvement for Wildlife - Northwest Region

Pasture Development for Big Game

Development of winter range for Roosevelt elk is the major project in the Northwest Region. This year most of the development work was on state owned lands in the Jewell area and on the Yachats River.

Most of the lands that become available for this project are on sites that have never been plowed or have not been worked for many years. Usually, a great deal of effort is required to prepare the land for farming. Old fences, buildings, corrals, logs, rocks, and debris must be removed and disposed of before the soil can be prepared. Pasture development work usually starts in the summer and is not completed until the following spring. A typical development is completed in the following steps:

Summer - first season

1. Clear site - remove fences, buildings, debris
2. Plow
3. Disk - at least twice
4. Apply lime and mix into top 3 inches of soil with disk

Fall - first season

1. Disk and pack
2. Drill to rye
3. Fertilize
4. Pack

Spring - second season

1. Disk (sometimes plow depending upon weed growth)
2. Pack
3. Drill - improved pasture mix
4. Fertilize
5. Pack

During the summer of 1977, 99 acres were cleared and worked followed by a fall rye planting.

In the spring of this year all but 3 acres were seeded to pasture. A 3-acre field on Fall Creek was not seeded.

A 40-acre field on Beneke Creek was cleared and plowed in preparation for a rye planting this fall.

Table One - New Pasture Development, Spring 1978

Beneke Tract	- 30 acres
Fish Hawk Tract	- 7
Humbug Tract	- 20
Meeks	- 12
Yachats	- 27
	<u>96</u>

Fertilization for Big Game

Fertilization of elk winter ranges to improve forage quality and quantity is a major project in the region. These sites fall generally into three types of range:

1. Improved pastures
2. Clear cut units
3. Natural meadows

Improved Pastures

These sites are on the same areas discussed in the section on pasture development. After a permanent pasture has been established, it is fertilized each fall, usually after hay harvest. These sites are all fertilized using tractor operated spreading equipment. This year, 691 acres of improved pasture was fertilized.

Table Two - Fertilized Pastures, 1977

Site	County	Acres	Amt. Applied
Beneke Creek	Clatsop	110	16.5 ton
Fish Hawk Tract	Clatsop	150	22.5 ton
Humbug Tract	Clatsop	150	22.5 ton
Ehlers	Clatsop	12	1.8 ton
Sports Acres	Clatsop	20	3.0 ton
Scoggins	Washington	110	16.5 ton
Meeks	Lincoln	32	4.8 ton
Yachats	Lincoln	87	13.05 ton
Cape Creek	Lane	20	3.0 ton
		691	103.65 ton

Clear Cut Units

These sites are located in the Coast Range and are units that have been logged, burned, and replanted to Douglas fir. In 1977, 477 acres of clear cut was fertilized using a helicopter to apply the material.

Table Three - Aerial Fertilization Project, 1977

Unit Name	County	Acres	Amt. Applied
Johnson	Columbia	80	10 ton
Edwards Creek	Tillamook	120	15 ton
Pitchfork Ridge	Lane	70	8.75 ton
Cascade Ridge	Lane	80	10 ton
Elk Super	Lane	40	5 ton
Elma	Lane	87	10.88 ton
		477	59.63 ton

Natural Meadows

These sites are small meadows located along streams in the Coast Range. They have not been seeded or improved except for the annual application of fertilizer and an occasional mowing to control brush. In 1977, three sites containing 40 acres were fertilized.

Waterfowl and Upland Game Seedings

A total of 433 acres of corn, sudan grass, barley and rye was planted in the region for waterfowl and upland game. Most of this work was done using sharecrop arrangements. Habitat crews planted 30 acres on the E. E. Wilson area, 40 acres at Fern Ridge, and 40 acres on the Dunes National Recreational Area near Florence. The remaining 323 acres were planted utilizing sharecrop agreements.

Table Four - Food Plantings for Waterfowl and Upland Game

<u>Site</u>	<u>County</u>	<u>Acres</u>	<u>Crop</u>
Fern Ridge 1/	Lane	140	Corn, sudan, rye
Brown-Minto	Marion	114	Corn, sudan
Luckiamute	Polk	37	Corn, sudan
Truax Island	Linn	48	Corn, sudan
Marshall Island	Lane	4	Sudan
Grande Island	Marion	7	Sudan
Dunes N. R. A.	Lane	40	Barley
E. E. Wilson WMA	Benton	30	Corn, sudan
Molalla State Park	Clackamas	13	Sudan
		433	

1/ 40 acres were seeded by helicopter

Nesting Boxes

A total of 418 nesting boxes was installed in the region this year. We continue to receive many requests each year from various youth programs and several sportsmen's clubs for nest box material. Last year, the Department provided cut out material to fifteen youth groups and two sportsmen's clubs.

Table Five - Nest Box Program, 1977

<u>County</u>	<u>Songbird</u>	<u>Woodduck</u>
Benton	156	25
Marion	60	--
Tillamook	10	--
Lane	25	25
Linn	40	--
Clatsop	--	22
Washington	40	15
	331	87

Fern Ridge Reservoir

Fern Ridge Reservoir is a Corps of Engineers impoundment located a few miles west of Eugene. The government has leased approximately 5,280 acres of land and water to the Department for wildlife management purposes. The Department has been managing portions of Fern Ridge for wildlife since 1960. This year, staff has decided to expand the program to meet recreational demands in the southern Willamette Valley.

The new project plan calls for expanding the farming program from 300 to 750 acres, development of a reliable water system, a series of drainage ditches, dikes, and construction of potholes.

The first phase of development, now underway, is to clear, level, and construct approximately fifteen dikes on the southwest portion of the area. The second phase is scheduled for summer 1979 on the southeast portion followed by grading, leveling, and diking on the northern portion of the area. When the project is completed, all of the croplands will be diked so that the fields can be flooded in the fall to improve hunting opportunity.

Habitat Evaluation Projects

Two habitat evaluation projects were submitted during the year. Both projects considered the effects of various habitat projects on wintering Roosevelt elk.

A. The Effects of Three Levels of Range Improvement on Roosevelt Elk Nutrition

This report, a first year segment report of a 2-year study, evaluated the effects of habitat development practices on the nutritional values of forage and Roosevelt elk distribution and use on the Beneke Creek Wildlife Area.

The study compared four types of pastures:

1. Untreated bentgrass
2. Fertilized and hayed bentgrass
3. Fertilized and hayed perennial ryegrass-white clover
4. Annual rye

The following observations and conclusions were made:

1. Elk on Beneke Creek obtained all of their nutrition from the pastures.
2. The amount of total standing forage was greatest all winter on untreated bentgrass pasture and lowest on the perennial ryegrass-clover pasture.
3. The perennial ryegrass-clover pasture showed the highest net increase in standing forage during the winter.
4. Digestible energy was highest in the ryegrass-clover pasture and lowest in the untreated bentgrass pasture.
5. Digestible protein and total digestibility of forage was highest in the ryegrass-clover pasture and lowest in the untreated bentgrass field.
6. Elk use was highest on the ryegrass-clover pasture and lowest on the untreated bentgrass pasture.
7. The fertilized ryegrass-clover pasture can support 1.5 elk per acre during a 6-month wintering period.
8. The fertilized bentgrass pasture can support 0.7 elk per acre during the same wintering period.
9. The untreated bentgrass pasture can support 0.4 elk per acre.

B. The Effect of Hay Removal from Improved Pastures on Roosevelt Elk

This study monitored the quality and quantity of forage produced on an unhayed improved pasture and a hayed improved pasture.

Conclusions:

1. The hayed pasture produced twice as much high quality forage as the unhayed pasture.
2. Elk used the hayed pasture twice as much as the unhayed pasture.

Habitat Improvement for Wildlife - Southwest Region

Tree and Shrub Plantings

Additional shrubs (Cotoneaster, Honeysuckle, Olive, Rose, and Winter-berry) were obtained and added to the plantations at Plat I Reservoir, as well as new plantations at the Stewart Park Wildlife Area.

Herbaceous Seeding

In Douglas County, four small plots of grain (winter oats, barley, winter wheat, Sudan) were added to the Stewart Park Wildlife Area, for demonstration and educational purposes, and another ten acres were added to the plantations at Plat I Reservoir, using winter gray oats.

Vegetation Control

A controlled burn of 88 acres of decadent wedgeleaf ceanothus and scrub oak was conducted in Jackson County, in cooperation with the Medford District, Bureau of Land Management. The purpose was to trigger germination of the ceanothus seeds in the soil by heat stratification; to improve access of animals to succulent forage; and to open the canopy to permit establishment of perennial grasses. Grasses seeded were pubescent wheatgrass, orchardgrass, fawn fescue, and intermediate wheatgrass. Both Oregon Board of Forestry and C.E.T.A. crews were employed, and forestry equipment held on standby. The results are adjudged highly rewarding, especially in the area of wedgeleaf germination.

Feeding and Watering

Four water holes were constructed in Jackson County, in cooperation with the Butte Falls Ranger District, Rogue River National Forest. Labor and equipment were supplied by the Forest Service and materials by Oregon Department of Fish and Wildlife. It is, as yet, too early to attempt to assess the results in terms of wildlife benefit.

Range Rehabilitation

Coos County

Grass and legume seed sufficient to treat 35 acres, plus sufficient fertilizer for the same area, were added to the Elliott State Forest program of mulching areas of disturbed soils. The objective of this effort is to ensure the inclusion of grass and legume species of particular value to wildlife, and to enhance its palatability and rate of production. Major use is on landings, skid trails, and road banks. Benefit is to Roosevelt elk, black-tailed deer, and Mountain quail, as well as many nongame species.

Curry County

Grass seed and fertilizers sufficient to treat 100 acres were contributed to the revegetation programs of the Chetco and Gold Beach Ranger Districts, Siskiyou National Forest. Seeding and fertilization of disturbed soils in these poorer sites offer an opportunity to provide adapted plant species that are considerably more acceptable to wildlife than much of the native flora.

Douglas County

A maintenance application of super-phosphate fertilizer was applied to the Illahee elk wintering area (35 acres). Another application was made to 15 acres of pasture at Dean Creek (see FY-'77 Annual Report). The elk use at Dean Creek shows appreciable and continuing increase as the phosphate applications stimulate legume growth. A formulated fertilizer (27-12-0) was applied to an area somewhat in excess of a mile of powerline right-of-way along the upper North Umpqua. The necessity to maintain a relatively low-growth area under and adjacent to these high tension power transmission lines affords a valuable opportunity to utilize both introduced and suitable native plant species in a program designed to increase volume of browse and enhance the palatability. Results to date have been very encouraging.

Approximately 40 acres of the Elliott State Forest seed and fertilizer contribution were located in Douglas County (see under Coos County).

Jackson County

The 88 acres of Agate Flat that were fall burned in Jackson County were treated with a formulated fertilizer at the rate of 200 pounds per acre for the purpose of promoting growth of perennial grasses and legumes and to increase the volume of forage.

Josephine County

Grass and legume seed and fertilizer sufficient to treat 500 acres in Josephine County were furnished to the Siskiyou National Forest.

Nest Structures

Nest boxes are obtained as opportunities present themselves to take advantage of donated or very low cost materials and labor. Placement of the boxes is about equally shared by Department personnel and voluntary efforts by private persons and organizations. The Department places the various nest boxes according to areas of identified need. Distribution of boxes during the year was as follows:

Coos County	-	40 duck boxes, 20 other species
Curry County	-	10 duck boxes, 40 other species
Douglas County	-	100 duck boxes, 80 other species
Jackson County	-	15 duck boxes, 40 other species
Josephine County	-	35 duck boxes, 20 other species
		200 200

Project Administration

One hundred sixteen man days were spent in the Southwest Region during Fiscal Year 1978 on tabulation, cost accounting, contracting for supplies, hiring personnel, negotiating agreements, and similar office related work.

Technical Assistance

Two hundred eight man days were spent regionwide providing assistance to all governmental agencies in the five counties of Oregon which make up the Southwest Region. This includes (but is not limited to) five National Forests, four districts of the Bureau of Land Management, two National Parks, one National Recreation Area, the U. S. Corps of Engineers, the U. S. Fish and Wildlife Service, Oregon Board of Forestry, Oregon Department of Transportation, Oregon Department of Environmental Quality, the land use planning functions of the five county governments, as well as their various other departments such as water resources, roads, etc., and the land use planning functions of all incorporated cities in the area. During the past two years, this function has undergone tremendous increase, and appears to be headed for additional increase.

Habitat Improvement for Wildlife - Central Region

Buildings

Upkeep and custodial work was performed as required throughout the period. A stairway was reconstructed to comply with safety regulations and outside security lights were installed. Shop equipment, tools, electrical, plumbing and other maintenance, trash hauling and utilities costs are included under this item. This work required six man days.

Dams, Dikes & Levees

A cooperative project involving wildlife and fisheries was completed at the Taylor Lake-Crates Point Wildlife Area. In order to stabilize the lake level, a small dam was constructed. The stabilization of the lake level provides for maintenance of diverse plant communities, habitat diversity and edges, plus fisheries habitat. The dam was fitted with a four-foot culvert and standpipe. The standpipe allows the lake to be kept at a higher level than the Columbia River. Prior to the dam construction, the lake fluctuated with the river level. The lake filled early this year and has provided a productive wildlife habitat area. As the lake filled this year, a problem with the standpipe developed. The air in the culvert and standpipe made it buoyant to the extent that it began to tilt. To counter this lifting pressure, it was necessary to pour approximately 2,000 pounds of concrete around the culvert in back of the standpipe.

Fences

Four sites totaling approximately 50 acres of riparian habitat were fenced to exclude livestock. One and four-tenths miles of fence construction was required.

Three sites fenced were inaccessible to trucks, and helicopters were used to transport materials. All construction was done by the Bureau of Land Management. The Department of Fish and Wildlife provided funding toward contract services.

One-fourth mile of livestock fence was constructed to protect wildlife habitat along the Deschutes River, upriver from Maupin. The fencing was a cooperative project between the landowner (The Dalles Rod & Gun Club) and Department of Fish and Wildlife. Labor was provided by club members. Materials and labor were provided by Department of Fish and Wildlife. Following planning, layout and agreements, .7 miles of fence was constructed with necessary walk-through access for anglers along the river side of a BLM access road. After construction, BLM concern for the location of the fence along their road right-of-way forced the removal of .4 miles and relocation of .25 miles. There remain two small areas of riparian habitat fenced, .1 and .15 respectively. The fence as originally constructed to protect a .7 mile reach of the river, required the maintenance of two fence points into the river. After alteration and relocation, four river points will require maintenance to protect .25 miles of habitat.

Twenty rods of fence was constructed on the south boundary of the Crates Point Wildlife Area. The fence was constructed to eliminate cattle trespass.

Fences were constructed on four sites on the Crooked River National Grassland to protect riparian communities. Three miles of fence was constructed to protect approximately 1.5 miles of Lone Pine Creek and a spring area adjacent. Two miles of fence was constructed to protect one mile of Skull Hollow. Six-tenths (.6) miles of fence was constructed to protect wet areas at Cottman and Grizzly springs. All construction, 5.6 miles, was performed by the Mainstream crew administrated by the Forest Service. Materials were supplied by Department of Fish and Wildlife.

Approximately 500 juniper fence posts were cut, hauled and stacked at the Prineville headquarters. The posts were obtained in conjunction with juniper control projects, and to be used for fencing in the district.

Approximately 2.2 miles of two-strand barbed wire fence was reclaimed from the 1971 Salt Creek juniper control and revegetation project. The fence has provided protection from livestock for the establishment of the seeding and release of native species in the 85-acre project. Twenty rolls of barbed wire, 19 steel posts and 770 twist stays were salvaged for future use.

Fivemile Creek, Fremont National Forest: In cooperation with the Klamath Country Flycasters, riparian habitat on .64 miles of stream above the WeyCo development was fenced to exclude livestock. The project required 1.3 miles of fence.

Duncan Springs-East Fork Lost River riparian habitat protection: In cooperation with BLM, approximately three miles of stream and spring area was protected. Two miles of pasture division fence was also constructed. Five miles of fence construction was required for the project.

One mile of fence was constructed to protect six cistern developments on the Winema and Deschutes Forests, Crown Z and Boise Cascade lands.

Minor maintenance was performed on fences in Sherman County protecting guzzlers and cover in conjunction with guzzler maintenance.

About five miles of fence at Prineville Reservoir was maintained (minor repairs to complete replacement).

Approximately 10 miles of fence protecting Camp Creek was maintained.

Three miles of fence protecting Pokegama pasture, springs and cisterns was maintained.

Materials for seven miles of fence construction was purchased for planned projects. This material is now stored at Prineville warehouse-headquarters.

Signs

One hundred signs were replaced in the Prineville Reservoir Management Area to protect habitat from motor vehicle impacts. Included in the signing was a winter closure area.

Tree and Shrub Planting

Approximately 375 fourwinged saltbush seedlings were dug from a nursery at Prineville headquarters and transplanted at Prineville Reservoir. Transplanting was done in March 1978 and in August about 80 percent survival was observed.

In April, 1,050 trees and shrubs were given out to agencies and the public for wildlife habitat enhancement. An interview explaining the project was taped at KRCO radio in Prineville. The public response was nearly overwhelming and planting stock was depleted by noon the first day following the announcement. Two hundred fifty Russian olive ordered for the Ochoco district were not received with the rest of the shipment. The Russian olive seedlings were received in May and the majority were planted on the National Grassland, the remainder by the local public.

A tree and shrub public planting project was also initiated at The Dalles for the Columbia district. This project and the one in the Ochoco district were patterned after the Klamath district project initiated and successfully performed in the spring of 1977. A total of 1,350 tree and shrub seedlings of eight species was given to the public. Evaluation of the projects is planned for next year. A series of willow plantings was made on the river side of old dikes at Crates Point with cuttings provided by the SCS. Later inspection revealed no survival.

Herbaceous Seedings

About 13 acres of seeding and fertilizing of grasses and forbs was accomplished on the Crates Point Wildlife Area at The Dalles.

Firelines and other burning was performed to maintain about 30 acres of grass and forbs on Department of Fish and Wildlife land near Warm Springs.

Vegetation Control

Thirty-three acres of juniper cutting was performed on three sites on the Crooked River National Grassland. Twenty-nine acres were done to release riparian communities in Lone Pine Creek and Skull Hollow. Four acres were done at Cottman Springs to release an aspen community.

Seven acres of lodgepole control for aspen release was performed on and by the Forest Service, Bly ranger district.

Feeding and Watering

Five 1,800-gallon wildlife cisterns were completed in Deschutes County on the Fort Rock RD. Storage tanks and catchment materials were purchased under project 38224. Storage tanks and catchments were installed by the Forest Service in the fall of 1977. The five units were completed by installing five float valve assemblies and 10 premix concrete drink tanks in June 1978. Total cost for the five completed units expended in 1977 and 1978 by Department of Fish and Wildlife and Forest Service was \$6,802 or approximately \$1,360 per cistern. Four and one-half man days were devoted to planning and procurement.

Two float valve units were provided the Crescent ranger district for new cistern installations. Forest Service is providing all other materials. These cisterns are to be completed in fiscal 79.

Three tons of bentonite was applied in the one-acre Horn Reservoir in cooperation with the owner Harold Williams.

Two cisterns were installed on BLM lands at Lorella and North Harpold. Department of Fish and Wildlife provided labor and equipment. BLM provided materials and some assistance in installation.

A one-acre reservoir was constructed by the livestock permittee on the North Harpold juniper chaining. Department of Fish and Wildlife provided fuel for dozer.

Two wildlife cisterns were installed on the Winema National Forest, Chemult RD.

Major materials were supplied the Deschutes National Forest, Crescent ranger district for two cistern developments. One was installed by September 1978.

One cistern installation was made on Crown Z and one on Boise Cascade lands.

Thirty fiberglass float valve tanks were purchased for \$750. Floats and plumbing were installed in the tanks by Pennington at Bend. The total cost of the completed float valve unit ready for installation with a cistern is about \$40.

Forty-two of the 160 Sherman County guzzler units were inspected and maintained. Work included cleaning the tank and trough of silt and trash, renailing the catchment roof and fence repair.

A backhoe was contracted to remove silt from a waterhole at the Prineville Reservoir Management Area. The 1977 Porfily spring development at Prineville Reservoir required minor maintenance. Both water developments are for livestock watering to eliminate the need for livestock access to the reservoir.

Four float valve units were provided the USFS for upgrading existing cisterns. Two units were used on the Sisters RD and one each on the Bend and Crescent RDs. Some lumber, roofing, nails, etc. were provided the USFS for maintenance of four cisterns. Drought conditions in the summer of '77 made it necessary to haul water to most cisterns. Nine man days were devoted to water hauling. One day was devoted to maintenance inspections.

Some rebuilding was done, new fountains and new float valve assemblies were installed on two cisterns on the Winema National Forest.

Minor maintenance was performed on 12 cisterns, two spring developments, two waterholes and two natural watering sites.

Range Rehabilitation

Seeding of logging disturbance for erosion control in Wasco County is being done by the Forest Service and no cooperative projects were performed.

About four man days were devoted to inspection and planning with the Forest Service on proposed prescribed burning.

Efforts at Prineville Reservoir were devoted to habitat protection through fencing, motor vehicle travel management and various fence and stockwater maintenance work.

Work was performed on the Ochoco Forest, Prineville RD, Maury Mt. Fifteen closure points were treated. Approximately 30 acres were revegetated and five miles of roads were closed.

Three hundred forty pounds of fourwing saltbush and about 20 pounds bitterbrush seed were provided to the USFS to drill with crested wheatgrass on the National Grassland. The seed was drilled in selected portions of a 700-acre range seeding. Emergence was considered good for those species in July with more expected through the summer.

Some 14,250 acres of habitat on the Winema National Forest were improved through reduction of roads open to travel by motor vehicles.

Physical closure and revegetation work was performed at 101 road points, reducing or eliminating motor vehicle travel on 62.5 miles of forest roads. Approximately 60 acres were revegetated through seedings at closure points. An additional 75 acres can revegetate naturally by reduction of compaction and other physical impacts of motor vehicles.

Habitat enhancement has been gained within 300,000 acres of the Chiloquin Ranger District, Winema Forest as a result of signing, enforcement and other administrative work performed on the Applegate-Fuego Mountain year round closure.

Nest Structures

Most of this year's nest structures program involved inspection of previously placed structures. The main area of inspection was along the Columbia River. It was found that 64 percent of the nest boxes were used by birds or mammals. Wood duck type boxes were cleaned and new cedar tow added. Six wood duck boxes were placed along the Columbia and around Taylor Lake.

Two hundred eighty bird nest boxes were fabricated at the Prineville headquarters. Two hundred sixty-two were placed in Crook and Jefferson Counties by DFW, USFS and the public. Seven goose nests were fabricated at Prineville headquarters not yet placed for use.

About 50 nest boxes were constructed and placed by volunteers in Deschutes County.

Construction and installation of 220 nesting structures was accomplished. Of these structures, 200 were for small birds, 5 for raptors (2 platform and 3 box), 2 for osprey, and 4 for wood duck or other birds or mammals which use that type. BLM completed topping 10 of 17 pre-marked trees for osprey use at Gerber Reservoir.

Maintenance or replacement work was done on 130 structures, 10 osprey, 70 wood duck and 50 miscellaneous nests.

Administration

Administration of wildlife habitat improvement or protection not included elsewhere in specific work items: At least 7.88 man months were devoted to this work.

Technical Assistance

Consultation and advice to agencies or individuals directly related to wildlife habitat, such as timber sales, guidelines, grazing allotments, etc. At least 5.91 man months were devoted to technical assistance.

Miscellaneous Approved Activities

Habitat work not assigned elsewhere to specific work items including records, special reports, literature review, special studies, evaluations, photography, equipment and field supplies. At least 7.42 man months were devoted to this work item.

Habitat Improvement for Wildlife - Northeast Region

Development

Fences

Grant County: Two and one-half miles of fence was constructed along the Middle Fork of the John Day River. The fence formed a streambank corridor that will protect riparian vegetation.

Morrow County: One-tenth mile of fence was constructed for administrative vehicle control on the Irrigon WMA.

Tree and Shrub Plantings

State or Federal Lands

Baker County: Four hundred trees and 420 shrubs were planted on two cooperative management areas.

Gilliam County: Three hundred fifteen trees and 245 shrubs were planted on the Willow Creek WMA. These trees replaced those trees that died during the drought of 1977.

Morrow County: Eighteen hundred forty trees and 800 shrubs were planted on the Irrigon WMA and Coyote Springs WMA. Trees and shrubs were planted for shoreline stabilization and wildlife cover.

Umatilla County: Ninety trees were planted on the Irrigon WMA extension for wildlife cover.

Private Land

Grant County: Twelve hundred sixty-five trees and 5,800 shrubs were planted along the Middle Fork of the John Day River for streambank stabilization and wildlife cover. Two thousand acres are open to public access through one landowner.

Herbaceous Feedings

State Controlled Land

Baker County: Seven acres were planted to wheat for game and nongame birds at three separate areas.

Gilliam County: Twelve acres were seeded to wheat and Sordan 70 hybrid for waterfowl, upland game and nongame wildlife food. Sordan 70 also provides winter cover for small wildlife as it produces dense vegetation.

Morrow County: Thirteen acres were seeded to Sordan 70 hybrid for waterfowl, upland game and nongame wildlife food and cover.

Umatilla County: A cooperative range seeding project treated 2,000 acres on three landowners. This seeding project improved deer and elk winter and intermediate range. The landowners have agreed to public access on 200,000 acres.

Vegetation Control

Mechanical

Baker County: Eleven acres were plowed and summer fallowed for weed control before trees, shrubs or grain were planted.

Gilliam County: Nine acres were plowed and summer fallowed to control weeds before grain is planted.

Chemical

Gilliam County: Fourteen acres were chemically treated for Russian knapweed and morning glory. Shrubs, trees and grain were planted in the treated area.

Grant County: Nineteen acres were chemically treated for thistle and knapweed control on big game winter range.

Feedings

Umatilla County: One automatic bird feeder was constructed and placed at Steelhead Park WMA.

Nest Structures

Baker County: Sixteen waterfowl nest platforms were constructed but have not been installed. Also 47 small bird houses were placed throughout the county.

Project Administration

Administration has been broken down into man days and county:

<u>County</u>	<u>Man Days</u>
Baker	56
Gilliam	50
Grant	25
Morrow	90
Umatilla	81
Union	9

Miscellaneous Approved Activities

<u>County</u>	<u>Man Days</u>
Baker	77
Gilliam	55
Morrow	8

Baker County: Three miles of nature trail was roughly constructed with the dozer and completed by the Baker CETA crew.

Gilliam County: Rubber tires were banded together for fish habitat on the Willow Creek WMA. Thirty fish attractors were constructed.

An irrigation system was developed on the Willow Creek WMA to provide water for herbaceous seedings on the Irrigon and Coyote Springs WMAs.

Maintenance

Building

Umatilla County: Maintenance was conducted on two storage sheds and the headquarters building.

Fences

Gilliam County: One mile of the Willow Creek WMA boundary fence was maintained to control trespass livestock.

Morrow County: Two miles of the Irrigon WMA boundary fence was repaired where cyclists have cut the fence.

Umatilla County: A quarter mile of the Power City WMA boundary fence was repaired for administrative control.

Signs

Morrow County: Seven "No Vehicle" signs were posted around the Irrigon WMA to restrict vehicle travel.

Umatilla County: Two signs were replaced at Power City WMA, one to identify the area and the other sign "No Vehicles".

Feedings

Baker County: Four bird feeders were maintained and filled with wheat.

Gilliam County: Two bird feeders were maintained and filled with wheat.

Morrow County: Five bird feeders were maintained and filled with wheat.

Umatilla County: Four bird feeders were maintained and filled with wheat.

Twelve guzzlers were maintained.

Nest Structures

Umatilla County: Two goose nest platforms were cleaned and refilled with sawdust.

Assessment of Projects

The Middle Fork John Day River streamside fencing project was completed during August and trees and shrubs were planted along the shoreline. Excellent tree survival was achieved and good riparian cover should be present within five years.

Vegetation has abundant growth this year making excellent nesting cover for ground nesting birds. The desert sites in Morrow and Umatilla Counties have produced 12 inches of grass growth and wetter sites through the region have produced over two feet of growth. Browse species have new leader growth exceeding six inches. Deciduous and coniferous trees have grown in excess of one foot on all sites.

High spring stream flows damaged water control devices on the Sumpter WMA, but repairs were made. No other damage resulted. A small dam was constructed so large water flows would not go through the tailing area in the future.

Considerable time was spent fencing wildlife areas to control livestock and vehicles. The sand areas are attractive to dune buggies and numerous holes have been cut in the fences giving access to vehicles.

Water levels are excellent on all WMA's this year and resulted in good waterfowl production. Goose nests were more difficult to check as water surrounds many of the platforms but 57% of the platforms checked were used. Eighty-one platforms were available for use this year.

Good control of knapweed and morning glory was achieved with "Roundup". Also, the Sordan 70 hybrid is effectively competing with these weeds and produces a good seed crop.

Habitat Improvement for Wildlife - Southeast Region

Buildings

The old Porter Island shed was damaged beyond repair, so a new shed was built to replace it. The shed is being used to store tractor and farm equipment.

Fences

Approximately 2.3 miles of fence was built to protect waterfowl habitat around Alvord Dike.

Four miles of fence on the Riverside Area was maintained as needed. Four Powder River gates were purchased, two of which were installed prior to July 1, 1978.

Additions: One mile of livestock fence was built to protect habitat near Mud Lake, Lake County.

Stream and Lake Improvement

Planting tools were furnished to Snow Mt. Ranger District to assist them in streamside willow plantings.

Tree and Shrub Plantings

Trees and shrubs were planted at the Beck-Kiwanis nature study area. A total of 5,390 plants was planted in the region.

Additional:

A 1,200-foot windbreak consisting of six species of shrubs and trees was planted in cooperation with Slash "C" Ranch.

Three thousand nine hundred seedlings were planted by various cooperators in Malheur County.

Three hundred sixty seedlings were planted in North Lake County.

Trees and shrubs were replanted at Burns Gravel Pond and at Riverside Area to replace last year's mortalities.

Herbaceous Seedings

Five acres of spring wheat and barley were planted at Riverside. Sprinkler heads and risers were replaced on the irrigation system.

Seventeen acres of spring grain was planted on Patch Island and about 20 acres were summer fallowed for a fall seeding.

Five acres of fall grain and four acres of spring grain were planted on Porter Island. One acre was summer fallowed for fall seeding.

Additional: Thirty acres of standing grain was purchased from Rex Carpenter, a private rancher near Vale.

Vegetation Control

Seventeen acres of wildlife food crops on Patch Island were treated with 2,4-D Amine to reduce weedy competition.

Feeding and Watering

Two guzzlers were installed in Lake County. Both utilized 35,000 gallon tanks.

Twenty-three existing water holes in Harney County were cleaned in cooperation with BLM and Harney County drought relief program.

Maintenance was performed on guzzlers as time allowed.

Rangeland Rehabilitation

Cooperative food habit and seeding trial studies were continued with Squaw Butte Experiment Station.

Additional:

Mixed grass and legume seed for 230 acres was provided to Paisley Ranger District to be used in conjunction with slash clearing.

Crested wheat seed was provided to Russel Emery for a 30-acre cooperative seeding in Lake County.

Crested wheat and alfalfa seed was provided to Don Sims for a 30-acre cooperative seeding project in Lake County.

Nest Structures

Four waterfowl nesting islands were built in Seiloff and Alvord Dike water impoundments. BLM paid for construction of five additional islands in the same impoundments.

Six goose nesting platforms were constructed on Porter Island.

Additional: Nineteen wood duck nest boxes were placed in Harney County.

Nest structures were periodically checked in conjunction with other regional work. Twelve goose nest platforms at Thompson Reservoir were filled with nesting materials.

Project Administration

Planning, evaluations, supervision, contract negotiations, report writing were accomplished as needed throughout the region.

Cooperation with Research

Regional personnel assisted in fawn capture on the Steens Mt. Mule Deer Study.

Silver Lake weather station maintenance and readings were accomplished as scheduled.

Technical Assistance

Consultation and advice concerning habitat preservation and development of habitat was provided to public agencies and private parties on a regionwide basis.



Table 1
1978 HABITAT IMPROVEMENT PROJECTS

County	Woody Plantings		Small Game	Big Game Range	Vegeta-	Wildlife	Rods	Water
	No. Trees	No. Shrubs	Food Plantings Acres	Rehabilitation Acres	tion Control Acres	Nesting Sites	of Fence	Develop- ments
Baker	400	420	7		11			47
Benton			30			181		
Clackamas			13					
Clatsop				481		22		
Columbia				80				
Coos				35		60		
Crook	950	725		380	33	131	1,792	
Curry				100		50		
Deschutes			30			50	640	5
Douglas			10	90		180		
Gilliam	315	245	12		23			
Grant	1,265	5,800			19		400	
Harney						23	736	
Hood River								
Jackson				88	88	55		4
Jefferson						131		
Josephine				500		55		
Klamath	2,000	600		130	7	220	2,336	8
Lake	180	180		290			320	2
Lane			184	297		50		
Lincoln				119				
Linn			48			40		
Malheur	1,950	1,950	57		17	6		
Marion			121			60		
Morrow	1,840	800	13				32	
Multnomah								
Polk			37					
Sherman								
Tillamook				120		10		
Umatilla	90			2,000				
Union								
Wallowa								
Wasco	1,100	450	13			6	576	
Washington				110		55		
Wheeler								
Yamhill								
TOTALS	10,090	11,170	575	4,820	198	1,385	6,832	66

Seven acres of lodgepole control for aspen release was performed on and by the Forest Service, Bly ranger district.

Feeding and Watering

Five 1,800-gallon wildlife cisterns were completed in Deschutes County on the Fort Rock RD. Storage tanks and catchment materials were purchased under project 38224. Storage tanks and catchments were installed by the Forest Service in the fall of 1977. The five units were completed by installing five float valve assemblies and 10 premix concrete drink tanks in June 1978. Total cost for the five completed units expended in 1977 and 1978 by Department of Fish and Wildlife and Forest Service was \$6,802 or approximately \$1,360 per cistern. Four and one-half man days were devoted to planning and procurement.

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A backhoe was contracted to remove silt from a waterhole at the Prineville Reservoir Management Area. The 1977 Porfily spring development at Prineville Reservoir required minor maintenance. Both water developments are for livestock watering to eliminate the need for livestock access to the reservoir.

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Minor maintenance was performed on 12 cisterns, two spring developments, two waterholes and two natural watering sites.

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About four man days were devoted to inspection and planning with the Forest Service on proposed prescribed burning.

Efforts at Prineville Reservoir were devoted to habitat protection through fencing, motor vehicle travel management and various fence and stockwater maintenance work.

Work was performed on the Ochoco Forest, Prineville RD, Maury Mt. Fifteen closure points were treated. Approximately 30 acres were revegetated and five miles of roads were closed.

Three hundred forty pounds of fourwing saltbush and about 20 pounds bitterbrush seed were provided to the USFS to drill with crested wheatgrass on the National Grassland. The seed was drilled in selected portions of a 700-acre range seeding. Emergence was considered good for those species in July with more expected through the summer.

Some 14,250 acres of habitat on the Winema National Forest were improved through reduction of roads open to travel by motor vehicles.

Physical closure and revegetation work was performed at 101 road points, reducing or eliminating motor vehicle travel on 62.5 miles of forest roads. Approximately 60 acres were revegetated through seedings at closure points. An additional 75 acres can revegetate naturally by reduction of compaction and other physical impacts of motor vehicles.

Habitat enhancement has been gained within 300,000 acres of the Chiloquin Ranger District, Winema Forest as a result of signing, enforcement and other administrative work performed on the Applegate-Fuego Mountain year round closure.

Nest Structures

Most of this year's nest structures program involved inspection of previously placed structures. The main area of inspection was along the Columbia River. It was found that 64 percent of the nest boxes were used by birds or mammals. Wood duck type boxes were cleaned and new cedar tow added. Six wood duck boxes were placed along the Columbia and around Taylor Lake.

Two hundred eighty bird nest boxes were fabricated at the Prineville headquarters. Two hundred sixty-two were placed in Crook and Jefferson Counties by DFW, USFS and the public. Seven goose nests were fabricated at Prineville headquarters not yet placed for use.

About 50 nest boxes were constructed and placed by volunteers in Deschutes County.

Construction and installation of 220 nesting structures was accomplished. Of these structures, 200 were for small birds, 5 for raptors (2 platform and 3 box), 2 for osprey, and 4 for wood duck or other birds or mammals which use that type. BLM completed topping 10 of 17 pre-marked trees for osprey use at Gerber Reservoir.

Maintenance or replacement work was done on 130 structures, 10 osprey, 70 wood duck and 50 miscellaneous nests.

Administration

Administration of wildlife habitat improvement or protection not included elsewhere in specific work items: At least 7.88 man months were devoted to this work.

Technical Assistance

Consultation and advice to agencies or individuals directly related to wildlife habitat, such as timber sales, guidelines, grazing allotments, etc. At least 5.91 man months were devoted to technical assistance.

Miscellaneous Approved Activities

Habitat work not assigned elsewhere to specific work items including records, special reports, literature review, special studies, evaluations, photography, equipment and field supplies. At least 7.42 man months were devoted to this work item.

Habitat Improvement for Wildlife - Northeast Region

Development

Fences

Grant County: Two and one-half miles of fence was constructed along the Middle Fork of the John Day River. The fence formed a streambank corridor that will protect riparian vegetation.

Morrow County: One-tenth mile of fence was constructed for administrative vehicle control on the Irrigon WMA.

Tree and Shrub Plantings

State or Federal Lands

Baker County: Four hundred trees and 420 shrubs were planted on two cooperative management areas.

Gilliam County: Three hundred fifteen trees and 245 shrubs were planted on the Willow Creek WMA. These trees replaced those trees that died during the drought of 1977.

Morrow County: Eighteen hundred forty trees and 800 shrubs were planted on the Irrigon WMA and Coyote Springs WMA. Trees and shrubs were planted for shoreline stabilization and wildlife cover.

Umatilla County: Ninety trees were planted on the Irrigon WMA extension for wildlife cover.

Private Land

Grant County: Twelve hundred sixty-five trees and 5,800 shrubs were planted along the Middle Fork of the John Day River for streambank stabilization and wildlife cover. Two thousand acres are open to public access through one landowner.

Herbaceous Feedings

State Controlled Land

Baker County: Seven acres were planted to wheat for game and nongame birds at three separate areas.

Gilliam County: Twelve acres were seeded to wheat and Sordan 70 hybrid for waterfowl, upland game and nongame wildlife food. Sordan 70 also provides winter cover for small wildlife as it produces dense vegetation.

Morrow County: Thirteen acres were seeded to Sordan 70 hybrid for waterfowl, upland game and nongame wildlife food and cover.

Umatilla County: A cooperative range seeding project treated 2,000 acres on three landowners. This seeding project improved deer and elk winter and intermediate range. The landowners have agreed to public access on 200,000 acres.

Vegetation Control

Mechanical

Baker County: Eleven acres were plowed and summer fallowed for weed control before trees, shrubs or grain were planted.

Gilliam County: Nine acres were plowed and summer fallowed to control weeds before grain is planted.

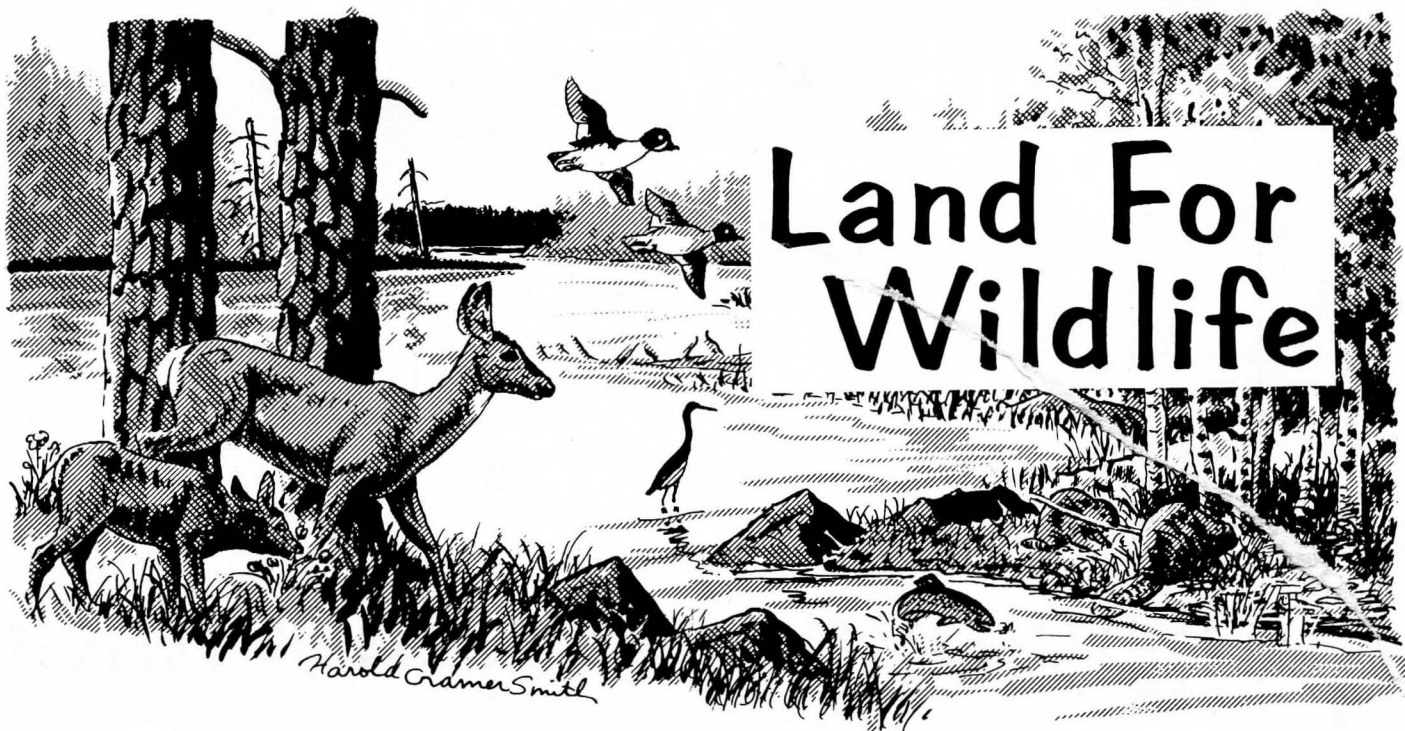
Chemical

Gilliam County: Fourteen acres were chemically treated for Russian knapweed and morning glory. Shrubs, trees and grain were planted in the treated area.

Grant County: Nineteen acres were chemically treated for thistle and knapweed control on big game winter range.

Table 2
SUMMARY
HABITAT IMPROVEMENT PROJECTS
1953-1978

County	Trees & Shrubs Planted	Acres Herbaceous Seedlings	Water Developments	Rods of Fence	Wildlife Nesting Sites	Water- fowl Impound- ments	Quail Roosts	Range Projects
Baker	41,895	160	145	2,718	706	32		9,330
Benton	64,220	1,453	16		1,805			123
Clackamas		492			66			341
Clatsop		40		224	484			6,320
Columbia		55			644			806
Coos	30	142			629			1,934
Crook	65,815	2,996	9	9,568	174			12,511
Curry		375	9		188			1,947
Deschutes	12,320	506	94	2,946	304			2,640
Douglas	1,940	889	3	1,072	1,402			1,482
Gilliam	42,105	122	57	440	175			3,000
Grant	15,500	925	41	12,213	294			11,105
Harney	558	300	129	7,222	93	3		2,768
Hood River					1			
Jackson	1,930	122	8	488	978			1,642
Jefferson	41,840	99	49	3,627	131	1	2	632
Josephine	400	46	1		175			1,405
Klamath	54,761		80	12,078	1,990			5,854
Lake	1,610	553	162	7,736	60		6	22,123
Lane	119,620	9,424	22	1,881	1,217	21		3,671
Lincoln		200			100			1,723
Linn	85,090	2,612	82	112	952			315
Malheur	7,058	1,381	12	1,280	140			6,090
Marion	29,040	836	28	20	433	1		
Morrow	318,580	245	153	3,920	232	4	3	6,456
Multnomah					117			
Polk	2,640	383	15		373			25
Sherman	697,840	576	158	9,604			81	
Tillamook		310		64	255			4,174
Umatilla	1,042,700	1,448	224	11,246	275	4		7,556
Union	127,880	59		2,334	517		91	5,819
Wallowa	13,485	1,077	12	2,640	897	1		8,724
Wasco	57,740	19	6	1,333	820			880
Washington	2,640				649		2	575
Wheeler		9,000			40			1,200
Yamhill	10,560	98		28	280			9,315
TOTALS	2,859,797	36,943	1,515	94,794	17,596	67	185	142,486



Continuing human pressures on recreation and land use emphasizes the need to assure adequate habitat for Oregon's wildlife resource. Wildlife areas scattered throughout the state serve the needs for a variety of wildlife as well as the recreationists who enjoy the land and its products.

Acquisition by purchase has been accomplished on 16 areas totaling 104,513 acres. On most areas, "key" lands remain within project boundaries and an active acquisition program is being pursued. In addition to purchases by fee title, 24,202 acres are managed for wildlife through lease or agreement on 11 of the above 16 areas. Another 3 areas are entirely under lease or agreement and total 6,089 acres for a grand total of 134,804 acres managed specifically to benefit wildlife.

Additions were made to one existing area. Purchase by fee title added 1,828 acres with the purchase of the Martin and Bennet tracts on the Murderer's Creek Wildlife Area. An additional 640 acres were added to Murderer's Creek through a BLM lease.

A new acquisition added 104 acres by fee title through purchase of the Yachats Wildlife Area in Lincoln County.

As directed by ORS 496.340, the Department of Fish and Wildlife shall pay to the county in which the property is located an amount equal to the ad valorem taxes which would have been levied against the property of a taxable owner. This amount totaled \$126,596.27 for fiscal year 1978 compared with \$128,209.76 for the previous year. Willamette Valley waterfowl areas continue to carry major tax burdens and account for 37 percent of the tax payments and yet they represent only 10 percent of the acreage in wildlife areas.

Recreational use of all areas showed a 4 percent decrease from last year, probably a result of fuel price increases. Sauvie Island Wildlife Area continues to lead all other areas in total use because of its proximity to the Portland area. It receives 51 percent of the total recreational use of all areas.

Development practices are varied by area to meet the needs of the wildlife resource and the public. Following is a summary of development work accomplished on the major areas for the reporting period.

Jewell Meadows Wildlife Area

The Jewell Meadows wildlife project is comprised of 1,123 acres of land lying in the valleys of Beneke, Humbug and Fishhawk Creeks in Clatsop County. Initiated in 1969, the project is designed to enhance populations of Roosevelt elk, blacktailed deer and all other native wildlife. The Fishhawk tract is being developed primarily to provide an opportunity for large numbers of people to observe, photograph and study wildlife. To protect the animals from disturbance, it is closed to hunting. The Beneke and Humbug tracts are being developed as wintering areas for wildlife and are open to hunting during authorized hunting seasons.

Development and Maintenance

The major emphasis this year continued to be development of the habitat to increase the carrying capacity of the land and development and maintenance of facilities.

Cattle guards were installed on the shop and parking lot driveways on the Fishhawk tract to prevent elk getting inside the fenced grounds. A small gravel parking lot was constructed on the north end of the Fishhawk tract to reduce the hazard of people parking on the highway right-of-way. Sidewalks were poured and lawn seeded at the main Fishhawk parking lot. Several 8 to 12' evergreen trees were planted in the arboretum area and a trail was constructed from the arboretum to Fishhawk Creek.

Eight acres were seeded to permanent grass-clover pasture and 63 acres were seeded to rye in the fall of 1977. In the spring of 1978 the 63 acres of rye plus an additional 10 acres were seeded to permanent grass-clover pasture. Forty-five acres are being summer fallowed for planting to rye in the fall of 1978. One hundred twenty acres were limed and 390 acres fertilized.

An average of 223 elk per day used the area during the year. In order to keep animal numbers compatible with available forage, 32 elk (11 cows, 18 calves, and 3 bulls) were trapped and transplanted to other locations. The peak period of animal use continues to be from October through April when up to 390 individual elk were present at times.

Visitor use totaled approximately 66,355 visitor days including 8,380 days spent hunting, trapping or fishing. One buck deer and 24 bull elk are known to have been taken. No legal antlerless harvest of either species was allowed. In addition to the big game species, numerous fish, game birds and furbearers were taken. As in the past, the viewing and photographing of wildlife was the main visitor activity accounting for 56,735 visitor days this year.

Elkhorn Wildlife Area

The Elkhorn Wildlife Area was initiated in 1971. The primary purpose of the area is to provide a wintering area for big game in an area where winter range is in very short supply. The management area consists of two separate sites. The North Powder site is located on Anthony Creek approximately 10 miles west of North Powder and the Auburn site is located seven miles southwest of Baker near the old mining town of Auburn. To date, 6,240 acres are owned and 1,430 acres are managed by agreement at the two sites. No new additions were made this year.

Buildings

Development: A 100-ton capacity hay shed was constructed at the Auburn feeding site to store adequate hay and facilitate winter elk feeding.

Maintenance: Routine maintenance was conducted on existing structures as needed.

Dams, Dikes, Levees

Development: Seven new small ponds were constructed to provide drinking water and aquatic habitat for resident wildlife.

Canals and Channels

Development: Several miles of new ditch was constructed to facilitate irrigation to improved pastures.

Maintenance: Several miles of existing irrigation ditch was maintained for conservative water management.

Roads

Maintenance: Roads were maintained to provide adequate access for feeding and administration of projects.

Fences

Development: Three-quarters of a mile of take-down fence was constructed to allow elk movements during winter.

Maintenance: Thirty-nine miles of fence was maintained to control livestock. One mile of unnecessary fence was removed.

Signs

Development: One new information sign was installed at the North Powder site.

Maintenance: Several signs were replaced to control public activities.

Tree and Shrub Plantings

Development: A variety of trees, shrubs and cuttings was planted to provide food and cover for wildlife plus a visual screen between the road and elk feeding station.

Herbaceous Seedings

Development: Over 400 acres of pasture was irrigated, 120 acres fertilized and 90 acres harrowed to produce optimum big game forage.

Four acres of dryland agriculture was summer fallowed in preparation for grain plantings for birds.

Surplus forage was removed by grazing 1,200 AUMs at the North Powder site to provide new growth for wildlife.

Vegetation Control

Development: Weed control measures were carried out to produce maximum forage benefits to wildlife.

Feeding and Watering

Development: Deer and elk were fed supplemental food 113 days during the winter months. Two hundred ninety elk were fed and 18,500 elk days of use was realized.

Nest Structures

Development: Seventy-five new bird nest boxes were installed.

Maintenance: Nearly 700 nest boxes were maintained. An 80 percent use of boxes was observed.

Administration

Development: A long-range management plan was developed for the area involving the cooperation of the SCS and the State Department of Forestry. Other administrative duties were carried out to provide a successful project.

Managed Public Hunts

Development: The hunting seasons were conducted with information provided to hunters, hunter checks, and biological information on harvest.

Other: Approximately 4,500 recreational use days occurred on the area. Over 30 bull elk, 23 buck deer and one bear were harvested from or immediately adjacent to the area.

Bridge Creek Wildlife Area

The Bridge Creek Wildlife Area was initiated in 1962. Development and maintenance continues on the 13,166 acres within the Bridge Creek Wildlife

Management Area boundaries. No new lands have been acquired and Department ownership remains at 13,086 acres and 80 acres of BLM and Oregon State Park land managed under agreement. Elk and deer winter range is the primary objective, while developments beneficial to other wildlife also are being added.

Development and Maintenance

A new cross fence was completed between the Meeng and Martin pasture that will reduce total fence mileage and give better cattle distribution. Three-tenths mile of fence was constructed. Fence mileage now totals 33 miles of boundary fence and nine miles of cross fence. Twenty-four miles have been converted to a take-down type fence. Another mile of fence will be converted to the take-down type fence in the future. All the fences were maintained and the twenty-four miles of take-down fence was lowered in the fall and raised again in the spring to allow unobstructed wildlife movements through the area.

Eight information signs were placed on the area. Two signs were posted at each end of the rimroad to warn the public of dangerous road conditions. The other six signs inform the public that the area is "closed to all entry except by permit December 1 through May 1". Other signs were repaired or replaced as they deteriorated. Stock water troughs were drained in the fall to prevent freeze damage and then allowed to refill during the spring.

Twenty-four bird houses were nailed to trees for bluebirds, wrens, tree swallows, etc. The fiber pot bird houses deteriorated in two years and had to be replaced.

Biological

Range conditions declined as the result of the drought during the spring and summer of 1977. Forage production declined from 1,705 lbs/acre to 1,267 lbs/acre. Use by cattle and elk amounted to 49 percent of the total grass production. A wet 1978 spring has restored much of the plant vigor lost during 1977.

Although 1978 elk census, 1,401, did not reach the high count of 1,547 recorded in 1977, total use days reached an all time high. Elk moved onto the winter range in November and stayed through May 15. Total elk use days were 177,150 and 43,493 deer days use were also recorded. The deer census, 624 head, was the highest ever recorded. Although this is winter range, hunters enjoyed good success as thirty-eight buck deer, twelve bull elk and twenty antlerless elk were harvested on the area. This is the highest harvest ever recorded for deer or elk.

An elk trapping and tagging project was initiated and thirty-eight elk were marked with a white numbered neck band. These elk were marked to provide information as to where the Bridge Creek elk spend their summer months.

Approximately four hundred bird houses have been placed on the area and 71 percent had been used during the nesting season.

Wenaha Wildlife Area

The Wenaha Wildlife Area was initiated in 1953 to provide adequate winter forage for deer and elk, to alleviate game damage to adjacent private lands,

and to provide hunting and fishing opportunities for the public. A total of 11,374 acres is under management, of which 10,004 acres have been purchased and 1,370 acres are under lease. No new acquisitions were made during the reporting period.

Development

A mobile home pad for the project assistant was completed early in this report period. Two cattle guards were constructed and placed at driveway entrances. One culvert was installed and crushed rock was applied on the driveway. Plumbing for yard and house water was installed. DEQ approval of septic tank was obtained and the system installed. The assistant moved his mobile home to the site in August.

Seed bed preparation was completed on forty-three acres. Fertilizer (27-12-0) was applied at the rate of 95 lbs. per acre prior to seeding. A mixture of Ladak alfalfa, orchard grass and smooth brome was seeded at a rate of 4 lbs. per variety per acre. A sickle type mower was used for clipping the new seeding, preventing noxious weeds from forming seed heads.

Heavy rainfall during early and mid-summer provided ideal moisture conditions and an excellent stand has been established.

Thirty-one acres of old alfalfa was plowed and summer fallowed after harvest of one cutting of hay. A two-year grain crop rotation is presently planned for this acreage.

Fall plowing of an additional twenty acres to be seeded to improved forage in 1979 is presently in progress.

During the 1978 season hay was harvested on 194 acres. Final production figures are not available at the time of this writing. Partial records indicate a 20 percent production increase above the five-year average.

One spring was cleaned, fenced and a watering trough was installed.

Two shrub plantings (black walnut and American plum) in the camping areas were watered with a portable pumper during hot weather.

Due to mild weather last winter, emergency big game feeding was not necessary. Approximately 350 pounds of wheat was fed to valley quail.

Fifty-six songbird houses were placed on and in the vicinity of the project. Old nest material was removed from houses put up in past seasons.

Nest materials and observations indicate highest incidence of use by western bluebirds, mountain bluebirds, house wrens, and tree swallows.

Maintenance

Maintenance efforts involved 10 buildings, 12 miles of roads, 56 miles of livestock fences, 14 campgrounds and 18 spring developments.

Composition shingle roofs were installed on the headquarters residence, cellar and one small storage shed. The metal roof at one hay storage shed was repaired.

All access roads on the project area were maintained with a small bulldozer and pull grader.

Annual maintenance was conducted on 56 miles of fence. One cattle guard was removed and the pit cleaned.

Five camping areas were mowed and clippings were removed to reduce fire hazard. Periodic inspections of all camp areas were made and litter was removed.

The dams were raised and spillways cleaned at two small pond developments.

Routine maintenance and minor repairs was accomplished on all vehicles and farm equipment.

A pull grader was converted from hand control to hydraulic cylinder operation thus reducing road maintenance work from two to one man operation.

Administration

Grazing and sharecropping agreements were negotiated with cooperators.

A contract for a small timber sale on the project area was negotiated.

A long range comprehensive timber management plan for the project area is being formulated at the present time.

An agreement was also reached with the Wallowa County Road Department regarding a rock pit site. The contract will permit removal of rock for crushing from an existing pit on the project area and use of a stockpile site.

Work plans, supervision and scheduling were provided to carry out assigned tasks.

Monthly, annual and weekly reports were prepared and submitted.

Hunting seasons were regulated and information and guidance were given to recreationists.

White River Wildlife Area

The White River Wildlife Area was initiated in 1953 with the primary objective to provide black-tailed deer winter range and reduce crop damage to adjacent private lands. A total of 21,802 acres has been acquired by fee title and another 1,480 acres are controlled by agreement. Rocky Mountain elk have shown marked population increases on the area since the early 1960s. Consequently, present and future management of the area is directed at these animals. Major objectives have also been broadened in recent years to include Merriam's wild turkey, silver gray squirrels and nongame wildlife habitat. Sport hunting and fishing as well as nonconsumptive use of the White River wildlife resource continue to increase annually on the area.

Buildings

Maintenance: All buildings on the project received necessary maintenance. Considerable maintenance was performed on the Kelm residence: New floor covering in bathroom, fumigation, refinish cistern, replumb kitchen and bathroom sinks, install new toilet, pump septic tank and clean drains, and new interior paint is now on hand.

Three game feed storage buildings were cleaned and one was moved during the year.

Dams, Dikes and Levees

Development: Two small stock ponds were constructed.

Maintenance: Two impoundments damaged by high waters were repaired and one spring development was maintained. The back slopes and spill channels on seven new impoundments were seeded for soil stabilization.

Canals and Channels

Maintenance: Thirty-seven miles of primary irrigation channel was cleaned and maintained. Hand cleaning is required on about 10 miles of this system. Two wooden irrigation diversions were installed.

Roads and Trails

Development: A 0.75 mile section of new road was opened up and brushed out to facilitate winter feeding near Pine Grove.

Maintenance: Hand repairs were made to improve drainage on several roads utilized in winter feeding operations.

Fences

Development: A total of 3.25 miles of stock fence was constructed to better control livestock grazing on the area.

An extremely difficult 0.8 mile section of game fence was constructed across White River canyon. A river crossing in the game fence was also erected across White River itself. The section of fence and the crossing were in extremely difficult terrain requiring air lift of all materials to the sites. The fence was constructed in seven segments which interlock with vertical rims to provide about 1.7 miles of deer migration block. This was accomplished to protect private operations from deer damage below the fence.

A newly surveyed two miles of game fence right-of-way was cleared preparatory to fall 1978 construction.

Three 16-foot gates were installed in the game fence at various locations to provide improved winter feeding access. One 8 x 16 foot cattleguard was installed in the game fence at Pine Grove.

Maintenance: Twenty-seven miles of big game fence was walked and maintained regularly throughout the winter. All gates, water crossings and stiles were maintained as needed. Substantial repairs were made on two water crossings in the game fence which were damaged by high water in January. Sixteen escape hatches (one-way game gates) were replaced with heavier material. Major repairs were made on 2.3 miles of game fence which had received heavy game damage.

One hundred fifteen miles of stock fence was walked and repaired as necessary in preparation for the spring grazing season.

Herbaceous Seedings

Development: Eight hundred acres of improved wildlife pasture and native meadows was flooded and sprinkler irrigated to provide optimum fall and winter forage for wildlife. Sixty thousand pounds of ammonium sulfate (21-0-0) was applied in mid-September to some 500 acres of irrigated lands to further stimulate production and enhance forage nutrition and palatability for wintering wildlife. Grazing by cattle was employed on most project lands, except fenced small game cover areas and wheatfields, to condition forage and remove aftermath preparatory to winter use by big game. Approximately 2,300 animal unit months of grazing was provided on the area between May 1 and August 31, 1978. Approximately \$9,200.00 was derived from grazing receipts during the 1978 season. Two hundred acres of irrigated pastureland was harrowed to distribute manure where concentrations occurred.

Twenty-five acres of burn sites, pond banks and fringes of new cultivated fields were hand broadcast seeded to grasses, forbs and shrubs. Fifteen acres were hand seeded to bitterbrush by a volunteer scout group. Approximately 700 acres of logging disturbance site was hand broadcast seeded to palatable grasses, forbs and shrubs.

Two hundred and eighty acres of green wheat was made available for fall, winter and spring use by wildlife on the area. One hundred and twenty acres of standing mature wheat was also made available for winter wildlife use.

Forty acres of decadent irrigated pasture was leveled, repeatedly farmed, and reseeded to improved wildlife forage (i.e., alfalfa, clover, orchardgrass and sainfoin).

Fire Breaks

Development: Three miles of fire trail was disked to protect extensive bitterbrush plantings on the project.

Game Feeding

Development: Supplemental feeding efforts were the greatest in history on the project this year due to drought during the 1977 growing season and a severe 77-78 winter stress period. Ninety-five tons of supplemental deer pellets and 55 tons of alfalfa hay were fed to wintering deer and elk on the area. Twenty-three feeding sites were utilized and 21 pellet dispensers employed. Pack horses were utilized heavily this year due to mud and crusted snow conditions prevailing during the feeding period. Supplemental deer feeding was conducted in the Pine Grove area this year for the first time. Feeding at that location

was necessitated by the completion of the game fence across White River canyon. Two feeder corrals were constructed in the Pine Grove area to prevent elk use of supplemental deer feed. Seven new pellet feeders were constructed for use throughout the area. Eight feeding corrals (to prevent elk use) are now in use on the area. Feeding for the 77-78 winter was terminated on March 13, 1978.

Timber Management

Development: A 558-acre timber sale area consisting of 324 mbf. of conifer timber was sold late in the year to Cody Logging Co. of Tygh Valley, Oregon. The sale will be logged under strict wildlife habitat protection and enhancement guidelines over a two-year period.

Project Administration

Development: A movie titled Care of Big Game Meat was produced by the Department on the area for use in hunter education. Numerous safety meetings and public tours were conducted.

Multiple grazing leases and sharecrop agreements were prepared and negotiated with 17 cooperators. All planning, programming and budgeting was accomplished for operation of the project from funds derived from federal assistance, matching funds, and revenues derived from timber sales on the area.

Work plans, performance appraisals and general supervision and project scheduling was provided for two Wildlife Technicians. Work plans, supervision, and project scheduling was provided for a six-man SETA crew employed on the area for a three-month period. Work contracts were negotiated and prepared for fence construction, impoundment repairs, right-of-way clearance and cattleguard installation. Guidelines were set and general supervision given to a contracted forester in the preparation and location of thinning, planting and harvest sites.

Monthly, weekly and annual reports were prepared and submitted. Cost distribution accounting was accomplished. Water, grazing and sportsmen's conservation meetings were attended.

The headquarters office was maintained as an information center for recreationists: Supplying verbal information, maps and hunter guidance to many inquirers.

Managed Public Hunts

Development: Fourteen days were spent by project personnel hazing deer from private lands experiencing game damage. Field checks of hunting pressure and success were made during scheduled seasons on the area.

Custodial Functions

Development: Four citations for road closure violations were issued by area personnel. Two old dwellings were destroyed and an open well covered to reduce public hazard. It became necessary to haul domestic water to the Kelm residence on August 8 when the hand dug well went dry. The well recovered in early December after heavy rains.

Dogs, people and wild predators killing or harassing wildlife were appropriately handled. Several deer and two elk were salvaged from illegal or accidental kills. Surveillance was maintained over the area throughout the year to preclude vandalism and poaching. All project equipment, facilities and machinery were serviced and maintained as needed.

Murderer's Creek Wildlife Area

Land acquisition of the Murderer's Creek Wildlife Area was initiated in 1972. The project area was purchased primarily to improve the big game winter range, but additional habitat improvement and development potential exists in upland bird, waterfowl and fisheries. The area is comprised of 23,516 acres of wildlife range, 30.7 miles of steelhead production water, 27 miles of trout and steelhead fishing access and 12 surface acres of fishing ponds. Recreational access to an adjoining 43,000 acres of public land has been guaranteed with the acquisition and access of the Murderer's Creek project. Land acquisition of two tracts (Martin and Bennet) added 1,828 acres to the area. An additional 640 acres were added through a BLM lease.

Buildings and Grounds

Two old surplus barns were removed, one on the north side of the John Day River at Dayville and a barn on the Martin property on Oliver Creek. There was sufficient material salvaged from the Dayville barn for future construction of an equipment storage shed at Dayville. No materials were salvaged from the Oliver Creek barn.

Building maintenance was minor, consisting of such repairs as door hinges replaced, loose boards nailed and the ramp into the Dayville barn repaired.

Canals - Irrigation Diversions

This type of work is all connected with the irrigation on the meadows. The diversion that irrigates the Ash place, South Fork, was cleaned with a dozer for 3/8 of a mile. Four 18 inch pipes were installed in this diversion for water control.

The brush was cleared from 1/2 mile of the ditch bank at the Thorpe Ranch for better access and to slow down beaver activity.

The diversion that irrigates the large meadow at Dayville was repaired where it had been damaged by livestock. This was done by hauling 16 loads of dirt to build up the weak spots.

Approximately one mile of the diversions at Murderer's Creek and Dayville were cleaned with a backhoe. Approximately five miles of small diversions were cleaned with a tractor and ditcher blade.

Two 18 inch pipes were put in at Murderer's Creek for water control and one five foot wide wooden headgate was installed at Dayville for water control.

Bridges

The planks on the Thorpe Ranch bridge, over the John Day River, were replaced. It took 76 fir 4"x12"x16' planks to completely redo the bridge.

Roads and Trails

A small bulldozer was used to remove rocks and put in water bars on 10½ miles of roads that are used frequently or had run-off damage. These were the Jackass Creek road, 3 miles; Murderer's Creek road, 2½ miles; Flat Creek road, ½ mile; Oliver Creek road, 2½ miles; and the Munjar Pasture road, 2 miles. Other road and trail maintenance consisted of cutting out downed trees and removing rocks by hand where needed.

Fences

Approximately 80 miles of boundary and cross fences were maintained. As in the past, there has been very little help from our neighbors on boundary fences. Some fences were maintained two or three times because of cattle or game pressure on them. Fence maintenance is less of a job now than three years ago because the fences are getting in better shape with yearly maintenance.

Two and one-half miles of new fence was built. One and one-half mile of this is to fence in 320 acres next to the Ochoco National Forest on Tunnel Creek (tributary of South Fork of the John Day River), one-half mile of fence was built to exclude 6 acres of the big meadow at Dayville for a bird food plot, and one-half mile was built for streambank protection from livestock on Murderer's Creek east of the Murderer's Creek meadows. One side of the stream was already fenced so this fence now excludes one-half mile of stream from livestock.

Another 2½ miles of new fence was built to replace fences that were beyond repair. These fences are ¼ mile between the upper Murderer's Creek meadow and the Big Pasture, 3/8 mile between the Sutphin Ranch and the Munjar Pasture, northeast corner, 1/8 mile along the State Highway at the Dayville headquarters, ¼ mile of National Forest boundary south of Aldrich Ponds, 1/8 mile between the pump field and the State Highway at Dayville, ¼ mile on Todd Creek next to the Wild Bunch, 7/8 mile of fence around the big meadow at Dayville and ¼ mile to replace the electric fence in the upper Murderer's Creek meadow.

Surplus fence removed consisted of one mile at Big Pasture, ½ mile at Aldrich Pasture and 5/8 mile at the Dayville base.

Stream and Lake Improvements

The senior class from the Catlin Gabel School in Portland planted 4,000+ willows along the South Fork of the John Day River for streambank cover and shade. Our major streambank improvement practice is to manipulate livestock grazing so that the streambank vegetation is not damaged. Some juniper placement on cut banks was done by the BLM on the area in the vicinity of Cougar Gulch. This practice has proven very successful in getting streambank cover established.

Signs

Most of the sign work is on road closures and property identification. As the area was already fairly well posted, most of the signs were repaired as necessary at the time they were discovered down or removed. As a portion of the Thorpe Ranch was traded to Joe Martin for property on Oliver Creek, the ownership signs

on the Thorpe Ranch were changed to show the proper ownership. As the Department retained public access through the Martin portion of the Thorpe Ranch, a public access sign was installed where the road goes through.

Stream identification signs were made and installed at the following streams: Murderer's Creek, Cow Gulch, Chickenhouse Creek, Allen Gulch and Coyote Gulch. All of these are in the Murderer's Creek Basin.

Four roads were signed to no vehicle traffic during the winter months to cut down game harassment. They are Flat Creek, Jackass Creek, and two roads in the Murderer's Creek Basin.

Tree and Shrub Plantings

One hundred forty-one seedling prune trees were planted around a bird food plot on the north side of the John Day River at Dayville, but survival is very poor. With the help of a YACC crew, 2,400 small pine trees were planted on the Tex Creek property. Survival of the pine trees appears to be good. A better evaluation will be made after the livestock grazing season. Survival of the pine trees that were planted on the Tex Creek and Maggot Springs property in 1977 appears to have a live tree every 12 to 20 feet.

Herbaceous Seedings (Wildlife Food Plots)

Seven food plots for birds were seeded. Four are on the Thorpe Ranch and three are at the Dayville base. They total 15 acres. These food plots were seeded to beardless barley and rye. Two plots on Oliver Creek were seeded to a wildlife mixture. One of these plots is 10 acres and the other is 2½ acres. These two plots were seeded to fourwing saltbrush, bitterbrush, sainfoin and pubescent wheatgrass. Three acres of the 10-acre plot were fertilized with 16-20 at the rate of 50 pounds per acre. The bird food plots have a very good stand of grain but the two wildlife mixture plots have shown poor results.

Vegetation Control

Vegetation control consisted of spraying 5 acres of Canadian thistle at Murderer's Creek, 13 acres of bird food plots at Dayville and the Thorpe Ranch (weed control), ¼ acre of Russian knapweed at the Ash place and 5 acres of Scotch thistle at the Ash place. The chemical 2-4D was used. Seven days were spent removing Scotch thistle by hand on the Ash place. This proved to be unsuccessful. One man worked three days mowing small willows that encroached on the meadows at Murderer's Creek. Five man days were used to cut small junipers that were invading an area between Flat Creek and Aldrich Creek. Only the small trees were cut, leaving the large trees for game cover.

Feeding (Waterholes and Guzzlers)

Two waterholes were built in the Chilkoot pasture with a bulldozer. One of these held water and the other one didn't. The one most needed for game and livestock use proved to be a failure.

Five guzzlers were installed; two by the Catlin Gabel School and three by the High Country School. One was installed on a ridge north of Aldrich Gulch, one east of Chickenhouse Creek and three between Flat Creek and Aldrich Creek. They are all located in waterless areas.

Rangeland Rehabilitation

Range improvement has been confined to the manipulation of livestock. The hill land is being grazed every other year, half each year, during the months of May and June. The results are very favorable. In fact, it appears that some of the pastures are being undergrazed, particularly this year when there has been an abundance of moisture.

Nest Structures

Three goose nesting platforms were put up along the South Fork of the John Day River. Two are on the Ash place and one is on the MacArthur place. There are now nine goose nesting platforms on the area, but none has been used. Six small birdhouses were put up around the headquarters and 30 more were put up in the Murderer's Creek Basin. The 30 are in an area with no trees, so posts were set to put them on.

Farming

The Black Ranch field was sharecropped to Bill Moulton of Dayville. This field contains 50 acres and it was plowed and seeded to beardless barley for hay. Three acres were left at one end for bird feed.

Approximately 45 acres of farmland that was sharecropped in 1977 was plowed and seeded to a permanent pasture mixture: Alfalfa, white clover, meadow foxtail and orchardgrass. There is a fair stand on all except the pump field where there were problems with the pump and the field didn't get enough water. Two parcels, totaling approximately 10 acres, at the east end of the big meadow at Dayville, will be harvested for hay.

The Dayville Grazing Association hires the irrigator for the Murderer's Creek and Dayville irrigated pastures, but it still takes a lot of Department personnel time to keep the diversions clean and to keep water in the diversions. Keeping water in the John Day River and South Fork diversions without permanent dams requires a lot of effort.

Dayville Grazing Association

The Association is grazing livestock on the area again this year. There will be 350 animal units on the irrigated meadows from April 24 to September 24. There were 700 animal units on the hill land during May and June. Of the 700 head, 160 went into a U. S. Forest Service allotment on June 1. The members of the Association are a very cooperative group of people to work with.

Biological

Big Game - Deer

Hunting pressure was fairly heavy on the area. Ninety-four vehicles were checked the opening day and some of the area wasn't patrolled. Bucks were plentiful on most of the area as there was a good greenup of grass and the deer had moved to the winter range in large numbers. Several parties filled

their tags the opening weekend and left. Due to the many access points to the area, it is difficult to get a total harvest count.

Bucks Checked
Murderer's Creek WMA

Year	2-Pt.	3-Pt.	4-Pt.
1977	42	13	11
1976	12	6	2
1975	8	1	3

Deer Herd Composition
Murderer's Creek WMA

Year	Bucks	Does	Fawns	Total	Bucks/ 100 Does	Fawns/ 100 Does
1977	96	849	465	1,413	11	54
1976	128	636	524	1,288	20	82
1975	53	509	310	872	10	62

Antler Class of Bucks
Murderer's Creek WMA

Year	Total	Spike	2-Pt.	3-Pt.	4-Pt.
1977	96	12 - 12%	47 - 48%	24 - 25%	13 - 13%
1976	128	20 - 15%	60 - 46%	12 - 9%	36 - 28%
1975	53	4 - 7%	24 - 45%	12 - 23%	13 - 25%

Spring Herd Composition
Murderer's Creek WMA

	Adults	Fawns	Total	Fawns/ 100 Adults	% Survival
Murderer's Creek	173	58	231	34	67%
South Fork, JD River	54	18	72	44	75%
Black Ranch	92	24	116	38	68%

Deer Trend Counts
Murderer's Creek WMA

	Miles	Deer	Deer Per Mile		
			1978	1977	1976
Murderer's Creek	73	1,957	26.8	27.3	29.7
South Fork, JD River	11	312	28.6	31.9	24.3
Black Ranch	12	194	16.2	5.3	----

Antelope

Antelope numbers have continued to increase on the area. In 1975 there were 38, in 1976 there were 52 and in 1977 there were 76 in the Murderer's Creek Basin. These counts were made in October when the antelope tend to band up before leaving the area. This year there have been 68 observed, but due to their being so scattered, there could be several more. In 1977 there was one known antelope hunter with a doe tag. He was unsuccessful.

Bighorn Sheep

In February, 1978, fourteen California bighorn sheep were released on the north side of Oliver Creek. There were nine females and five males. Sightings of from 2 to 14 sheep have been made several times since, mostly in the vicinity of the release site. Three lambs were seen in June. One dead adult ewe was found. The sheep range in the area extending from Jackass Creek to North of Smokey Creek on the west side of Aldrich Mountain.

Elk

Elk are on the area in small numbers and are hunted some. However, there were none known to be taken during elk season.

Upland Game

Pheasants, quail and chukars are hunted on the area, but due to the scattered areas that are hunted and the lack of manpower, very few kill figures were obtained. There is enough hunting pressure at Dayville and the Thorpe Ranch that by the end of quail season the hunters have taken most of the quail in these two areas. Pheasant hunting is limited to stocked birds. Only a small percentage of these birds survive long enough to be hunted during the season.

Habitat Evaluation

Range conditions have improved considerably since the area was acquired. The grazing system with livestock has proven very successful on the hill land. Most of the area had very little ground cover when taken over in 1975, but now there is good ground cover. In most places the bitterbrush shows good growth, although there has been some dying out of bitterbrush in the Water Gulch pasture. Most of the vegetation improvement has been in grass and forbes, with some young bitterbrush. In a lot of juniper areas there are invasions of small junipers that need to be controlled. There are also some areas where large junipers need some management.

It may be necessary to do more livestock grazing on the area to keep some of the grass species from becoming wolfish, as some pastures are underutilized.

In the timbered areas, the grass has improved considerably, but there are very few brush type plants. If manpower were available to clean up some of the logging slash and clear out some areas, it would improve the timbered areas.

Kenneth Denman Wildlife Area

Title to 1,588 acres on the Kenneth Denman Wildlife Management Area was acquired by Public Law 537 from the Camp White Military Reservation. Current ownership by fee title totals an additional 188 acres. The area has been primarily developed for upland game but also provides many other recreational opportunities for the people of the Medford area. No new additions were made during the reporting period.

Buildings

Maintenance: A crawl space was built under the house and an inspection was made for termites. The bathroom in the residence was painted and a new carpet

was installed. Additional lights were put in the barn and boat shed. Tar was placed on the carport roof. Telephone and utilities were paid.

Dams, Dikes and Levees

Development: A pond was built in field one, Military Slough, covering one-third acre. An archeology survey was made and dirt was hauled in. Irrigation water was purchased to keep ponds full for fishing and waterfowl.

Maintenance: Three yard of rock was placed in one spillway and one water control was lowered in a control dike. Control dikes and spillways in existing ponds were repaired and maintained.

Canals and Channels

Development: A drainage ditch 850' long was dug in Whetstone meadow. Wet ground prevented further work.

Maintenance: Nine miles of drainage and irrigation ditches was maintained.

Roads and Trails

Development: One-quarter mile of trail was constructed through brush and blackberries.

Maintenance: Maintained five miles of roads and seven miles of trail.

Fences

Maintenance: Repaired sections of three miles of existing fence; thirteen gates had to be repaired.

Public Use Facilities

Development: A bridge was constructed on the trail along Little Butte Creek. Two stiles were constructed to provide better hunting and angling access.

Maintenance: Maintained existing stiles and bridges. Picked up litter, maintained and repaired all outdoor toilets and litter barrels.

Signs

Development: Sixty-one regulatory and boundary signs were placed to control public use.

Trees and Shrub Planting

Development: One hundred twelve ponderosa pine and 108 fir trees were planted along Little Butte Creek. A total of 22,040 yards of sawdust and dirt was hauled and partially leveled on the desert top for future shrub planting sites. Maintained and irrigated existing shrubs. No wedgeleaf ceanothus plants were available for planting.

Herbaceous Seeding

Development: Twenty-two acres (18 plots) were ripped and 32 acres were planted to grass on the desert top. Five and one-half acres (11 plots) were planted to corn and 36½ acres (16 plots) were planted to sudan and millet. Five acres (4 plots) were planted to wheat. Irrigation water was purchased to irrigate 77 acres of food and cover crops.

Thinning and Clearing

Development: Trails were opened up in blackberries and brush along Little Butte Creek for better hunting and wildlife movement.

Vegetation Control

Development: Noxious vegetation was controlled on 279 acres of food and cover planting, parking areas, ditches and adjacent to buildings. Twenty-eight acres were mechanically controlled and 251 acres chemically controlled.

Population Control

Development: Ground squirrels were controlled with acceptable bait to prevent damage to food crops (approximately 30 acres).

Firebreaks

Development: Five miles of trails was cleaned around food and grass plots to prevent fire damage.

Nest Structures

Development: Five wood duck boxes were built and placed on the area. Two burrowing owl nests were built and placed on the desert top.

Maintenance: Sixty-three wood duck boxes were checked with necessary repairs made. Two burrowing owl nests were rebuilt for better access.

Level Ditching

Development: Two small water areas (100' x 30' each with islands) were excavated in wet ground in Whetstone meadow for waterfowl and aquatic habitat.

Taxes

Development: Payment in lieu of taxes on 188 acres amounted to \$1,802.00.

Water Level Management

Development: Water levels were controlled on ponds and dikes to provide optimum fishing and waterfowl habitat.

Project Administration

Development: Fifty man-days were spent on supervision, planning and reporting.

Managed Public Hunts

Development: Nineteen man-days were spent providing recreational information to the public and recording hunter success.

Summer Lake Wildlife Area

Acquisition of the Summer Lake Wildlife Area was initiated in 1944 to provide waterfowl production and wintering area habitat as well as to provide a public hunting area. A total of 13,547 acres has been purchased and 4,434 acres are leased for this purpose. No new acquisitions were made during the reporting period.

Buildings

Maintenance: Res. #2: One bedroom, the bath, living room and kitchen were painted by the lady of the house.

Res. #4: One bedroom and the dining area were repainted and the living room floor was cleaned and varnished.

Checking Station Office: Locks were replaced on the two front doors. The doors were scraped and repainted. The windows on the south side were weather-stripped. The electrical wiring was checked for loose connections and several light switches replaced.

Shop and Storage Building: The large sliding door on the east side of the shop was removed and replaced with a solid wall with two windows and a glass topped door. Loose batting on the exterior of the building was renailed and the window frames were repaired and repainted as needed.

Metal Storage Buildings: The framework and braces were checked and all belts tightened in the two metal storage buildings and gas house.

Domestic Water System: The electric motor on the domestic water system was repaired and the pump house maintained. The float and automatic switch on the water storage tank were repaired.

Dams, Dikes and Levees

Development: Fifty yards of main dike was constructed with the dragline to complete a dike started under the previous segment.

Maintenance: Sixty yards of main dike east of the windbreak was rebuilt with the dragline. One arched culvert 30" x 24" x 24' with headgate was installed in rebuilt section of dike. The culvert was graveled in with 48 yards of gravel.

One hundred ten yards of gravel and 78 yards of dirt was hauled to repair and stabilize dikes in the windbreak area.

One hundred thirty-two yards of gravel was hauled to repair the crosswalks off the windbreak dike.

Eight small dams were built across existing channels in the marsh area which created eight small ponds from the barrow pits and water backed up by the dams.

All of the existing dikes that are graveled were graded to enhance future maintenance.

Nearly one-quarter mile of old established dikes was repaired in the marsh area with the dragline.

Canals and Channels

Maintenance: Approximately two miles of drain ditches and water supply ditches were cleaned and maintained to move water to and from the various areas as desired.

Bridges

Maintenance: One footbridge was replaced across a channel after it was deepened and cleaned with the dragline. All the hunter access footbridges were inspected and minor repairs made as needed. One guard rail and several planks were replaced.

Roads and Trails

Maintenance: The approaches to four cattleguards were filled and leveled with gravel.

The six miles of main access roads on the area were graded three times and the larger rocks removed. The remaining nine miles were graded at least once during this period. Thirty yards of gravel was hauled and spread on the road shoulders at points affected with water erosion.

Fences

Maintenance: Five miles of boundary and cross fences was repaired as needed by replacing posts, splicing and stretching wire. One-quarter mile of boundary fence received extensive repair with the replacement of nearly all of the posts.

Four wire gates were repaired and three were replaced. One wire gate that was repeatedly torn down was replaced with a wooden panel.

Public Use Facilities

Development: Two fiberglass toilets and two 1,000-gallon cement septic tanks were purchased, hauled to the area and placed at the parking lots for public use. The septic tanks were buried to ground level and the toilets fastened to the top of the tanks. No drain fields were provided for the tanks as they are to be used as a vault and will be pumped as needed.

Maintenance: The river and bulgate parking areas were enlarged and leveled. The windbreak parking area was rough leveled. A total of 554 yards of gravel and 25 yards of dirt was hauled and spread for a base, and 195 yards of surface gravel was hauled and spread on top of the base. The enlargement of the parking areas was necessitated by the increased number of trailer houses and campers using the area.

The parking lots were mowed prior to hunting season to reduce fire danger and improve camping. The toilets were cleaned prior to and during the hunting season and the parking areas were cleaned and garbage hauled as needed.

Litter was picked up along the various dikes, roads and the more popular hunting areas after the close of the waterfowl season.

Stream and Lake Improvement

Development: The two proposed earthen dams across wash areas were not completed as time did not permit. The area of runoff was checked during a heavy rain and two additional dam sites were located.

Maintenance: One existing small earth-filled dam was repaired after a muskrat had burrowed nearly through the base.

Signs

Maintenance: All boundary and regulatory signs were checked periodically and replacements were made where needed.

Herbaceous Seedings

Development: Following is the number of acres and the treatment of the lands under herbaceous seedings:

72 acres on the Foster tract were early spring seeded to a mixture of sainfoin, Ladah alfalfa, nomad alfalfa, orchardgrass and fall rye.

93 acres in four fields were seeded to crested wheatgrass.

70 acres of the 93 acres were sprayed to control the competition from Russian thistle.

2 acres at the middle well were cleared of brush, leveled, fertilized and planted to cereal grains. This work was done to square up a field to better utilize the irrigation system.

60 acres of alfalfa fields were dragged to break up cow manure and level rodent mounds.

14 acres of alfalfa was cultivated to control cheatgrass and annual weeds.

17 acres of alfalfa was corrugated to facilitate irrigation.

39 acres of alfalfa was fertilized to improve the vigor of the plants on poor soil.

70 acres of alfalfa was irrigated as needed.

51 acres of wild hay meadows was dragged, fertilized and irrigated.

42 acres of cereal grains was planted, fertilized and irrigated with the sprinkler systems.

13 acres of cereal grains was planted, fertilized, corrugated and irrigated by flooding.

10 acres were planted to rye-wheat mix and fertilized.

9 acres were planted to field corn, fertilized, sprayed, cultivated and irrigated.

67 acres of land not farmed was irrigated to promote the growth of vegetation for waterfowl nesting, upland bird cover and deer habitat.

220 acres of wildlife and pasture lands were irrigated.

800 acres of wildlife, hay and pasture lands were irrigated by a lessee.

5,100 bales of surplus wild hay was cut and baled.

8,140 bales of surplus alfalfa hay was cut and baled.

Due to the wet fall and spring and irrigation, the crops on the area exceed any grown in the past ten years. An excellent growth on the previous grass seedings and natural vegetation was also the best in memory.

Because of the fall and early spring moisture and the prediction of a good moisture year, 165 acres were seeded to grass and legumes instead of the planned 60 acres. Excellent growth and establishment were achieved in all the newly planted areas.

Vegetation Control

Development: 30 acres of cereal grain was sprayed to control Russian thistle, alkali weed, lambs quarter and pigweeds.

70 acres of new seeded crested wheatgrass was sprayed to control Russian thistle, rabbitbrush and greasewood.

7 acres of dense greasewood was sprayed in preparation for future grass seeding.

5 acres of cattails and hard-stem tules was sprayed to control their encroachment into potholes.

2.5 miles of ditch bank was sprayed to control wild parsnip and nettles.

2 miles of road shoulder was sprayed to control vegetation on roadway.

Patches of Russian knapweed totaling about 1 acre were sprayed.

Patches of Canadian thistles totaling 1 acre were sprayed.

Several field were checked for Mediterranean sage and all plants found were destroyed.

Bull thistles and rabbitbrush were cut in one four-acre area of heavy encroachment.

Population Control

Development: Fifty-three pocket gophers were trapped out of the alfalfa fields.

Eleven Belding ground squirrels were taken off the irrigation ditch banks.

Twenty-two acres of cereal grains was treated for the control of ants.

Fields were checked for mouse population buildups but no concentrations were found that needed control.

Nest Structures

Development: Four permanent goose nest structures were built and placed in the pothole area.

Nine goose nesting platforms of baled hay were placed in the marsh area.

Five goose nest platforms from the previous year were repaired.

All the platforms made from baled hay were used by Canada geese, but none of the permanent structures were used.

Three structures were built and placed on the area in an effort to supply nesting sites for cliff and barn swallows. They were not used.

Twenty-eight nongame nest boxes were built and placed on the management area. They received nearly 100 percent use.

Taxes

Development: A total of \$9,579.31 was paid to Lake County, Oregon in lieu of property taxes.

Irrigation assessments of \$3,154.74 were paid to Lake County, Oregon for the Summer Lake Irrigation District.

Land Rental

Development: The Penington lease was renewed for \$200.00.

Water Level Management

Development: Water distribution on the area is controlled to achieve the maximum waterfowl benefits and in preparation for development projects in the marsh and pothole areas.

Water levels are controlled differently during the year to promote nesting, resting, rearing, feeding, disease control and vegetation growth.

Project Administration

Development: The waterfowl inventories, population data, and biological data were gathered and compiled by the biologist assigned to the area and submitted in a separate report.

Waterfowl gizzards were checked for the ingestion of lead shot. The results were submitted in a special report.

Water rights and irrigation meetings were attended and reports written, maps prepared and past water levels researched for the several reviewing agencies connected with the area development work.

Individual work plans were made for the employees and an overall plan was made for the area development and maintenance. It was necessary to alter the work plan several times because of weather conditions and delays in receiving the required permits.

The overall management plans were reviewed several times and future goals and uses were established.

All physical aspects were done, such as negotiating leases, writing reports, conferring with the public and interested groups, ordering supplies and materials, interagency cooperation, and conducting a successful hunting season.

Managed Public Hunts

A successful waterfowl and upland bird season was conducted on the area even though the number of hunters and bird take was down from past years. Many hunters checked the hunting conditions and bird numbers by telephone before driving to the area. If the bird numbers had been high and the success better, we would have had a record number of hunters using the area. The snow goose buildup on the area was lower than usual and for a much shorter period of time. The large duck flights did not materialize and the numbers remained low most of the season. The weather conditions were good for hunting as a whole and cannot be blamed for the low hunter success.

Many hunters have changed their attitude and are coming to the area for an outing and are enjoying themselves even though their success is low.

Following is a summary of the hunting season.

No. Hunters	Ducks	Geese	Coot	Snipe	Pheasants	Quail
6,955	7,400	882	94	38	252	178

Nineteen arrests for game law violations were made on the area during the season.

Custodial Functions

Development: The project is continuously scrutinized and new methods and desirable area changes are balanced against past experiences and adaptability of all the conditions to the area.

As more people use the surrounding country for recreation, our problems with vandalism and violation of area regulations increase. Considerable time was spent on weekends and holidays patrolling to reduce the offenses.

Miscellaneous Approved Activities

Development: The headquarters area and the area-controlled residences and yards were maintained in an attractive condition. Modifications and repairs were made to meet required safety standards. Assistance was given the various fisheries and game activities in the vicinity of the management area. Some winter feeding of waterfowl and upland game was done during prolonged severe winter conditions. Assistance was given the local irrigation district on maintenance of the irrigation ditch. Considerable time was spent on the certification of the water rights for the local irrigation. Water measuring weirs were made and placed in the area ditches and water flows were recorded.

Small concentrations of muskrats were trapped to reduce possibility of a die-off. Four hundred five individuals were harvested, pelted and sold. A hunter signal light was purchased and installed at the headquarters site. One-quarter mile of old fence was removed and the materials salvaged. A considerable amount of maintenance and mechanical repair work was done on the area equipment. An active part was taken in all the community activities.

Sauvie Island Wildlife Area

The Sauvie Island Wildlife Area is an intensively utilized public recreation area only 10 miles from Portland. The project was initiated in 1947 to preserve public hunting opportunity and provide a major wintering area for waterfowl. The project area consists of 8,053 acres purchased by fee title and 3,490 acres leased from the Division of State Lands for a total of 11,543 acres. No new acquisitions were added to the area during the reporting period.

Buildings

Maintenance: Routine maintenance was carried out on 25 buildings as needed. Shingles were placed on the east side check station and the headquarters residence. Floor tile was placed in the Vandehey residence and purchased for the Richards residence. Exterior white latex was applied to the Richards residence. The storage shed at the Hunt place was primed and painted with rustoleum to prolong the life of the metal. Sills were replaced and the roof and doors were repaired on the Graf barn. Considerable time was spent working on the plumbing at the headquarters residence. The tub, sink and stool were replaced in the Richards residence bathroom.

Dams, Dikes and Levees

Maintenance: Blackberry vines, roses and other vegetative material on the Columbia District dike were sprayed with Banvel D and 2,4-D. Control of the woody plants was good but not excellent considering cost of material and time spent applying it.

Holes in the Columbia District dike were dug out and refilled to prevent damage to the dike structure. The dragline was used to replace some of the rip-rap in large holes along the Walton Beach area.

All gates on water control structures throughout the Columbia Drainage District were oiled and manipulated to maintain desired water levels. Water levels

within the district were high during the winter periods. The district pump was used to attempt to expel the water. Several times an hour was spent trying to prime the district pump, which is very inefficient.

Two Crisafulli pumps and four electric pumps were used to manipulate water in the hunting areas within the Columbia District dike.

Canals and Channels

Maintenance: Five hundred feet of ditch in the Dead Willow unit was cleaned. Spoils were spread in the field adjacent to the ditch to raise the corn ground above flood waters. All ditches were inspected periodically and water controls were manipulated to assure good water movement.

Bridges

Maintenance: Three floating footbridges were repaired as needed. Approach ramps were replaced on all bridges several times. Number 1 footbridge was replaced with the heavy equipment after high water had placed it parallel with the bank.

The metal footbridges have required no maintenance this period.

Roads and Trails

Maintenance: Existing roads were graded and graveled as needed to maintain adequate access for hunters and area personnel. Beach sand was placed on work roads for waterfowl grit.

During wet weather all trails were posted "Vehicles Prohibited" to prevent damage to the area. Cable gates on the east units and Oak Island were closed to prevent vehicle access until the ground dried.

The Oregon State Highway Department paved the shop area at the headquarters site.

Fences

Maintenance: Four cable gates were replaced or repaired after they were cut or stolen. The gateposts at the end of Rentenaar road were replaced after they were torn out.

Thirty miles of existing livestock fence was maintained to control trespass cattle in wildlife food crops and to control vehicle traffic.

Public Use Facilities

Development: Twenty-six outdoor chemical toilets were rented and placed in key locations throughout the management area.

Maintenance: Litter was constantly removed from the area. Disposable diapers were again one of the main litter items encountered on the area. An increase in nonreturnable cans was noted, possibly from the large numbers of Washington residents utilizing the area.

Parking lots and access stairways to recreation areas were maintained as needed. Stairways at the Laketree Kennel site and the first Walton Beach site were replaced.

Signs

Development: Boundary and area regulation signs were placed as needed to inform the public. Signs were placed requesting people not to go nude on the area. Three signs were placed at a specific location advising people of nudity behind the signs.

Maintenance: All of Sturgeon Lake, Little Sturgeon and Mouse Island refuge lines were checked and signs were replaced as needed.

Tree and Shrub Plantings

Development: Several varieties of woody plants were obtained from the Soil Conservation Service. The plants were placed in a bed on Oak Island with Multiflora rose cuttings, which will be planted next spring. Plants numbered 1,000, including Amur honeysuckle, autumn olive and crabapple.

Herbaceous Seedings

Development: Nine hundred seventy-four acres of food crops will be available for wildlife this period. They include: corn, 136 acres; wheat, 10 acres; buckwheat, 10 acres; millet, 650 acres; fall green feed, 168 acres. Adverse farming conditions of every kind were encountered during the past season. Initially, conditions were too wet, then very quick drying with continued wet problems on low farmland.

Crops look good, however, and should provide many tons of food for wildlife. During the past winter, food crops were utilized completely by waterfowl. Standing corn was chopped with a rotary mower after the waterfowl season so the remaining seed could be utilized by wildlife. Very little corn remained when chopping began.

Clearings

Development: Time did not allow for clearing 50 acres of trees and brush as planned.

Maintenance: All Sturgeon Lake refuge lines on Department property were brushed out to mark the refuge lines through the dense willow stands.

Vegetation Control

Development: Proso millet was treated with 2,4-D at a rate of $\frac{1}{2}$ lb. A.I. per acre to control broadleaf weeds.

Pasturelands were treated with 2,4-D and weedmaster to reduce tansy ragwort. Seven hundred twenty acres were sprayed and portions of 840 acres have been mowed. Corn acreage, totalling 136 acres, was treated with atrazine at the rate of 5 lbs. per acre. Weather conditions were unfavorable and 40 acres of corn ground had to be treated a second time.

Population Control

Development: Lakes normally treated to remove carp populations were not treated this year. The weather was so dry that the lakes dried completely.

Nutria were trapped and hunted over the management area to reduce damage to wildlife crops, ditchbanks and dikes. The area was divided and four trappers did an excellent job harvesting nutria, fox and opossum. Damage to crops and ditchbanks has been greatly reduced.

Nest Structures

Development: One hundred sixty-eight flower pot nests were constructed by a Y.C.C. group. These were placed on the north and east units.

Twenty-two small, wooden nest boxes and thirty-two wood duck nests were placed on the area.

Maintenance: One hundred sixty wood duck nests were inspected for use and repaired as needed. Sixty-one percent of the boxes showed use.

Taxes

Development: Taxes and assessments were paid on 8,012 acres of land.

Taxes	\$33,005
Assessments	<u>2,842</u>
	\$35,847

Land Rental

Development: Annual rent of \$1,500 was paid to Division of State Lands for use of 3,500 acres of land managed for wildlife.

Water Level Management

Development: Seal, Grassy, Big Martin, Mud, and Racetrack Lakes were all pumped in August to provide habitat for waterfowl.

Water levels on the east units were maintained by pumping and water control manipulation.

Project Administration

Development: Supervision of crews, work plans, writing reports, recreational use control and inspecting results were accomplished as required.

Managed Public Hunts

Development: Hunting seasons were administered on the area as established by state law.

Nine thousand five hundred hunters harvested 19,782 waterfowl for an average of 2.09 birds per hunter. Figures exclude the north unit. The management area

had a good season compared to most private clubs which showed a 50 percent reduction in harvest.

Custodial Functions

Development: An extreme amount of time was spent in an attempt to control public use. Parties, nudity, vandalism and off-road vehicles were the cause of the problems encountered. Litter was picked up and public use areas were maintained as needed.

Miscellaneous Approved Activities

Development: Waterfowl banding, inventories, nest box inspection, food utilization checks and other biological work was carried on during the period. Lead shot and goose species composition studies were conducted.

The past year was the driest year experienced on this area for some time. Crops were adequate but much pumping was required to fill and maintain water levels in ponds and lakes. The ability to manipulate water appears to be one of the main factors in our excellent waterfowl use and harvest on the area.

Klamath Wildlife Area

The Klamath Wildlife Management Area was initiated in 1949 to establish waterfowl habitat and to provide public recreational opportunity, particularly hunting. To date, this popular area just south of Klamath Falls includes 3,413 acres under intensive development. No new acquisitions were made during the reporting period.

Buildings

Development: One 70 x 25 foot graveled equipment storage area was constructed at headquarters to provide parking space for machinery.

Maintenance: Clutter was cleaned up in the Delamater tract barn to provide storage space for 3.5 tons of hay.

Exterior surfaces of the headquarters garage, shop and two equipment storage sheds were painted.

All ceilings and one bedroom were painted in the Largent tract residence.

Dams, Dikes and Levees

Maintenance: Two muskrat-caused holes in the Hooper dike were repaired before water could be pumped from the Hooper tract lowlands for farming.

Pacific Power and Light Company lowered the Klamath River April 22 allowing landowners to repair water control structures in the river. Nine water control structures on Klamath Wildlife Area were checked and repaired.

Canals and Channels

Development: Two 15-inch diameter culverts with water control slide gates were installed in the Largent ditch to facilitate flood irrigation of the Largent field and filling the 3.4-acre fish pond.

One 40-foot section of 16-inch diameter steel pipe was installed from the Largent ditch to the fish pond to prevent bank erosion on the fish pond when filling with water.

One 12-inch diameter by 10 foot long corrugated culvert irrigation turnout was installed on the Largent tract to improve water dispersal while flood irrigating.

Maintenance: Three and one-quarter miles of water transport canal was widened and deepened by grader on the Hamaker tract to facilitate filling 11 ponds.

Eight Klamath River intake headgates were cleaned of aquatic vegetation and floating debris.

Bridges

Development: Forty feet of 12-inch corrugated metal culvert was installed and covered with 45 cubic yards of dirt to provide an entrance to a public parking lot at the headquarters office.

One 12-inch steel culvert was installed under the public road on the Hooper tract to allow flooding of three acres and stabilize the water level on 50 acres of wetlands.

Six fence stiles were constructed and placed on the Hooper, Hamaker, Delameter and Largent tracts to facilitate public access over livestock fences.

Roads and Trails

Development: One hundred eighty feet of all weather road, including two parking lots, was constructed for public access to headquarters.

Two hundred fifty feet of gravel all weather road was constructed on the Delamater tract to facilitate winter access to a storage shed.

Maintenance: One 16 foot wide cattle guard located on the Hooper tract was removed and replaced after cleaning.

Three and one-half miles of public access road was graveled and graded to facilitate winter travel.

Snow was removed from driveways and parking lots to allow access to headquarters and residences.

Telephone and Electrical Lines

Two hundred feet of overhead electrical service line serving the headquarter buildings was replaced with triplex line.

One new fuse panel and eight surface outlets were installed in the shop to update wiring. Additional wiring was updated in the headquarters garage and pumphouse. One mercury vapor light with photoelectric sensor was erected outside the shop area.

Fences

Development: One hundred fifteen rods of five-strand barbed wire livestock fence with a 14-foot iron access gate was constructed on the Largent tract. The fence will eliminate cattle grazing on a planned 40-acre alfalfa field.

Maintenance: Relocation of six rods of livestock fence on the Boehm tract was conducted for construction of a road around the end of an irrigation canal.

Seven gate openings located on the Hooper, Hamaker, Delameter and Largent tracts were repaired by realigning gate post hinges and latches.

One brace point was replaced in the Hamaker tract boundary fence because the existing posts rotted off.

Public Use Facilities

Development: Two earthen pit type restrooms were eliminated and the buildings relocated over 300-gallon steel holding tanks.

Maintenance: Sixteen parking lot trash containers were emptied periodically throughout the report period.

Twelve cubic yards of gravel was placed off the end of the Klamath River boat ramp to eliminate a 12-inch dropoff.

Six public parking lots were mowed with rotary mower to reduce fire hazards.

Two footbridges located on the Dalmater and Hamaker tracts were planked with 2 x 10 inch lumber and provided with handrails.

One parking lot located in the northeast corner of the J. C. Hooper tract was increased in size from 2,000 square feet to 4,500 square feet.

Five public parking lots located on the Delameter and Hooper tracts were graveled and graded.

Missing and broken split rails were replaced in the Largent tract viewing trail parking lot fence.

Signs and Boundary Markers

Development: The management area sign and post were moved to a new location adjacent to the new driveway and parking lot at headquarters.

Twenty-five existing paper regulation signs were replaced with new all weather yellow plastic signs.

Twenty triangular signs were erected along 9.3 miles of the Miller Island unit boundary.

Fifteen posts and signs stating "No Vehicles Beyond This Point" were erected on the Hooper tract to control vehicle travel.

Three shooting hours signs were constructed and erected to inform hunters of legal shooting times.

Six 3 x 4 foot sign boards were constructed and erected at three access roads and three parking lots. The sign boards will serve to post area regulations for the public.

Directional signs were constructed and erected to inform the public of boat ramp and dog training locations.

Thirty-seven acres of land adjacent to the Klamath River was posted to provide a year-around dog training area.

Maintenance: Damaged and missing regulation signs were replaced prior to and during hunting season.

Tree and Shrub Plantings

Development: Twenty-five Siberian elm, 25 cottonwood and 25 sandcherry were planted on the Largent and Delameter tracts to provide cover, food and perching areas for wildlife.

Maintenance: Two hundred fifty May planted trees and shrubs were watered by hand in an attempt to improve survival.

Herbaceous Seedings

Development: Eighty-five acres of annual ryegrass was mowed by rotary mower and disked under for reseeding to provide goose forage.

Two hundred seventy-five acres of cereal grains were fertilized with 16-20-0 at 270 pounds per acre to encourage grain production for wildlife benefits.

Standing cereal grain stalks were removed from 210 acres of cropland by flail mowing and burning.

Two hundred fifty-six acres of pasture was harrowed to spread livestock manure and increase forage production for spring migrating geese.

Grazing agreement holders conducted 2,890 animal unit months of grazing on Klamath Wildlife Area to increase desirable green forage production for spring migrating waterfowl and resident Great Basin Canada geese.

One sharecropping agreement holder harvested 179.4 tons of hay from Klamath Wildlife Area with 94.2 tons going to the agreement holder and 85.2 tons belonging to the area which was purchased by the sharecropper at local market value.

A nine-acre field on the Rayson tract was land leveled, summer fallowed and seeded to Schylar barley.

Five hundred acres of pastureland was irrigated by grazing agreement holders as part of their contract.

Two hundred seventy-five acres was planted to four varieties of spring seeded barley and two varieties of wheat. Approximately 120 acres of the total was irrigated.

Vegetation Control

Development: Hand hoeing and rotary mowing was accomplished on 500 acres of pastureland to control thistles.

One-fourth mile of irrigation intake canal was treated with Megacide H to remove aquatic vegetation and increase water flows for pasture irrigation.

Heavy goose consumption of alfalfa eliminated development of alfalfa growth and allowed excessive mustard weed growth. Competitive weed growth in 37 acres of alfalfa was curtailed by mowing.

Nest Structures

Development: Two nesting islands constructed of baled hay were established in the seven-acre alkali pond on the Boehm tract.

Maintenance: Twelve goose nest structures located on the Hinzeling, Hooper and Largent tracts were repaired and nesting material replaced.

Taxes

Development: Klamath County received \$5,366.53 payment in lieu of taxes.

Water Level Management

Development: Water levels were maintained in 900 acres of marshland, waterways and ponds for optimum use by wildlife.

Thirty-two feet of 12-inch culvert was installed through a dike on the lower J. C. Hooper tract to facilitate drainage of 17 acres for early farming operations.

Two hundred eighty acres of lowlands on the Hooper and Hamkaer tracts were flooded prior to waterfowl hunting season for increased hunting area.

The Hooper, Delamater and Hamaker drain pumps were operated 4,100 hours to eliminate excess water.

A pump on the Largent tract was activated 416 hours to fill a 3.4-acre fish pond located on the Largent tract.

Project Administration

Development: One hundred fifty-six man days were utilized attending meetings, negotiating agreements, assisting with cooperative projects, planning and administering project activities.

Managed Public Hunts

Development: Thirty-one man days of effort were expended to assist hunters and gather hunter success information.

Three thousand five hundred sixty waterfowl hunters harvested 3,382 ducks and 214 geese during the 1977-1978 waterfowl season.

Trapping season consumed 1½ man days for issuing trapping permits. Trappers expended 400 man days to trap 828 muskrat valued at approximately \$3,535 during the 1977-1978 trapping season.

Nine hundred fifty-five pheasant hunters harvested 248 cock pheasants of which approximately 210 were stocked for the hunter under a separately funded program.

Custodial Functions

Development: Eleven man days were spent conducting periodic surveillance for protection of property and environmental conditions.

Miscellaneous Approved Activities

Development: The Rayson tract storage shed, granary and pumphouse were dismantled and materials salvaged for future use on Klamath Wildlife Area. The pump and suction pipe were removed from the Rayson tract domestic well and the well capped.

The Gregory tract residence and pumphouse were dismantled and materials salvaged for future use. The well was beyond use so gravel and dirt were used to fill it in.

A new irrigation wheel line, mainline and pump were purchased and placed on the Largent tract to irrigate 40 acres of cereal grain and alfalfa crops for wildlife.

Seven rods of deteriorated fence line was removed from the Gregory tract.

Air lines and fittings were attached to a new 3 horsepower air compressor for use in the shop.

All trailer couplers were standardized to fit two-inch ball hitches on vehicles and tractors.

Revision of the Klamath Wildlife map was started and is approximately 35 percent completed.

Five hundred eighty-five feet of 1½-inch diameter PVC pipe was buried three feet deep across the Largent tract to provide an irrigation system for the Largent tract residence.

Five hundred eighty-five feet of ditch was excavated 20 inches deep by rental ditcher and backhoe. PVC pipe 1½ inches in diameter was buried to provide water at 12 faucets for irrigation of the headquarters buildings.

One thousand one hundred twenty lineal feet of 18 inch wide by two feet deep ditch was excavated by backhoe along the public road on the Hooper tract to eliminate vehicle trespass.

Four hundred twenty feet of 12-inch PVC pipe was covered with 250 cubic yards of dirt and 440 feet of 16-inch steel pipe attached to the PVC to complete 860 feet of water transport pipe to flood irrigate 40 acres of pasture on the Largent tract.

Maintenance: Three equipment and utility trailers were painted.

Ladd Marsh Wildlife Area

Project acquisition began as early as 1949 when it was obvious that if left unprotected one of the largest remaining tule marshes in northeastern Oregon would be lost through drainage and farming. In 1959 the project received approval under the Pittman-Robertson Wildlife Restoration Act and a more active acquisition program was begun.

Although its primary purpose is to provide a wintering and nesting area for waterfowl, upland game habitat and public recreation through hunting and viewing is emphasized. Of the 3,000 acres within the project boundaries, 2,418 acres have been acquired.

Situated five miles south of La Grande, the area is bisected by Interstate 80-N and furnishes primary recreation benefits to northeast Oregon residents.

Buildings

Maintenance: Routine maintenance was conducted on existing buildings and grounds as required.

Dams, Dikes and Levees

Maintenance: A seep was enlarged to create a larger pond on the Peebles tract along a nature trail and the Triangle Pond was cleaned on the Pierce tract.

Canals and Channels

Maintenance: One-half mile of the middle and west forks of Ladd Creek were cleaned to facilitate the flow of water.

Bridges

Development: A machinery crossing was installed on the Pierce tract canal.

Maintenance on existing bridges was not required.

Roads and Trails

Maintenance: One-fourth mile of road was graded to the Ladd Marsh viewpoint.

Telephone and Electric Lines

Maintenance: Two new powerpoles were installed and an electrical contractor hired to rewire the system to the Counsell barn and pumphouse.

Fences

Development: Eighteen rods of rail fence was installed on the Counsell tract to protect upland cover from grazing.

Public Use Facilities

Maintenance: Fence stiles and hunter access footbridges were maintained as needed during the reporting period.

Soil sterilant was used along the Peebles nature trail to discourage growth of vegetation along the three-quarter mile route.

Signs

Development: The large management area sign was not constructed as planned as a result of a busy work schedule. It will be carried over into the next segment.

The area was reposted with appropriate signs to control access and public use as required.

Fifteen new plastic triangular boundary signs were purchased and will be installed during the next segment.

Tree and Shrub Plantings

Development: Russian olive and Hanson's hedge rose were used to replace dead trees and shrubs within the existing plantings.

Poplar trees were planted along Ladd Creek on the Pierce, Powell and Hill tracts to establish and improve riparian cover.

One and one-half miles of existing plantings were disced, harrowed, rod-weeded and hoed by hand to control weed competition.

Herbaceous Seeding

Development: Four acres was seeded to Lodak alfalfa on the Peebles tract. A six-acre field was planned to seed alfalfa on the Pierce tract but sod development made it desirable to seed to barley and postpone the alfalfa seeding for another year.

Approximately 50 acres of standing grain was rotary mowed prior to spring plowing.

Five meadows were harrowed in the early spring to scatter manure accumulated there from late fall grazing.

Six sites were mowed, disced, harrowed and summer fallowed for fall seeding to food and cover plots on the Counsell, Evans, Smutz and Grandy tracts.

Irrigation was accomplished on approximately 30 acres of alfalfa and meadow haylands with sprinklers and flooding.

Vegetation Control

Development: Time did not permit tule mowing as planned.

Approximately 1,000 acres of ground was spot sprayed with 2,4-D to control thistle, burdock, morning glory, water hemlock and whitetop.

Nest Structures

Maintenance: Thirty-two goose nesting platforms were serviced with new nesting materials prior to the goose nesting season.

Payment in Lieu of Taxes

Development: County assessments totaled \$6,484.65 with a fire patrol assessment of \$29.41.

Water Level Management

Development: Water levels were manipulated to the best advantage throughout the reporting period.

Project Administration

Development: Report writing, supervision of land use agreements, planning and the overseeing of development and maintenance projects were conducted as required throughout the project.

Biological

A drought occurred throughout the summer of 1977 and adversely affected vegetation growth and crop production. Although a good portion of the marsh went dry, adequate water was available for waterfowl and 261,798 duck days of use occurred during the December 1 through April 15 period. Peak use was in December with 119,966 days of use.

Over 368 Canada geese were observed on the marsh unit early in the nesting season. Twenty-three of the 32 elevated platforms were used for nesting. Only 25 broods of goslings were counted during brood survey but cover was already extremely dense and made observations difficult. Twenty-three geese were banded during the reporting period in hopes of finding out more information on the fall and winter whereabouts of this population. Two pairs of sandhill cranes nested on the area with one pair bringing off two surviving young.

Upland game released on the area during pheasant season included 700 pheasants and 388 chukars. Upland game hunting pressure was comparable to last year. Duck hunting pressure was up an estimated 10 percent with some excellent hunting success. Three white-tailed deer inhabit the area and an excess of 100 mule deer come into the area nightly through the winter months.



Table 1
WILDLIFE LANDS
July 1, 1978

Name of Area	County	Year Project Initiated	Acres Acquired		Total Land Acquired	1977-78 Taxes and Assessments	Acquisition Cost To Date
			By Purchase	By Lease or Agreement			
Bridge Creek	Umatilla	1962	13,086	80	13,166	\$ 6,955.72	\$ 396,851
Camas Swale	Lane	1942	1,301	-	1,301	13,774.96	100,000*
Denman	Jackson	1953	188	1,588	1,776	2,629.47	557,667
Elkhorn	Union-Baker	1971	6,240	1,430	7,670	5,703.62	487,380
Fern Ridge	Lane	1949	15	5,047	5,062		4,425
Jewell Meadows	Clatsop	1969	1,123	-	1,123	1,932.10	510,565
Klamath	Klamath	1949	3,413	3,045	6,458	5,190.37	557,667
Ladd Marsh	Union	1949	2,418	-	2,418	6,514.06	589,145
John Day Pool	Morrow-Gilliam	1971		1,151	1,151	-	-
Murderer's Cr.	Grant	1972	22,876	640	23,516	9,273.50	870,960
Prineville Res.	Crook	1962	-	3,360	3,360	-	-
Sauvie Island	Mult.-Columbia	1946	8,053	3,490	11,543	33,383.65	1,210,132
Snake R. Islands	Malheur	1959	218	-	218	-	-
Summer Lake	Lake	1944	13,547	4,434	17,981	13,073.74	452,126
Sumpster Valley	Baker	1974	-	1,578	1,578	-	-
Wenaha	Wallowa	1953	10,004	1,370	11,374	7,640.84	292,260
White River	Wasco	1953	21,842	1,480	23,322	20,304.31	716,900
E. E. Wilson	Benton	1950	85	1,598	1,683	-	50,000
Yachats	Lincoln	1977	104	-	104	219.93	160,000
TOTALS			104,513	30,291	134,804	\$126,596.27	\$6,956,078

*Acquisition costs do not reflect income from 965 acres sold in 1974 for \$435,212 or 253 acres sold in 1977 for \$112,500.

Table 2

1977-78 RECREATIONAL USE OF WILDLIFE AREAS
in Recreation Days

Area	Hunting				Trapping	Fishing	Photog- raphy & Viewing	Dog Trials & Training	Other	Total
	Big Game	Waterfowl	Upland Game	Nongame						
Bridge Creek	950		125	50		100	420		100	1,745
Coyote Springs		100	125		20				50	295
Denman	260	1,390	3,550	80	140	7,940	1,590	8,380	18,633	41,963
Elkhorn	1,750	10	50	150	20	300	1,640		750	4,670
Fern Ridge	110	1,540	1,100	110	55	275	880	90	990	5,150
Irrigon		1,880	750	50	200	800	250		1,100	5,030
Jewell Meadows	7,535	65	60		300	420	56,735		1,240	66,355
Klamath	10	3,560	955	120	275	440	5,770	1,375	11,185	23,690
Ladd Marsh	40	1,100	4,000		30		3,350	100	5,325	13,945
Murderer's Creek	3,935	260	1,050	260	130	3,935	1,705		1,840	13,115
Power City		1,400	300		200	20	70		200	2,190
Prineville Res.		180	40	50	30	103,500	700		10,245	114,745
Riverside	50	70	160	25	5	400	35		140	885
Sauvie Island	320	12,690	1,475	610	160	128,210	41,140	10,500	174,395	369,500
Snake R. Islands		250	550	20	150	100	45	10	30	1,155
Summer Lake		6,900	2,250			1,475	635		420	11,680
Sumpter Valley	400	100		10		150	450		100	1,210
Wenaha	3,900		1,100	150	100	300	400		2,450	8,400
White River	15,800	350	2,200	1,900	200	3,600	950		5,180	30,180
Willow Creek	10	940	500	50	40	3,000	150		570	5,260
E. E. Wilson	10		1,160	1,000	120		3,900	600	3,410	10,200
TOTALS	35,080	32,785	21,500	4,635	2,175	254,965	120,815	21,055	239,253	731,363

Table 3
1977-78 PERCENT OF RECREATIONAL USE BY MAJOR ACTIVITIES
Wildlife Areas

Area	Recreational Days	Hunting	Fishing	Photography Viewing	Other
Bridge Creek	1,745	64%	6%	24%	6%
Coyote Springs	295	83	-	-	17
Denman	41,963	13	19	4	64
Elkhorn	4,670	42	6	35	17
Fern Ridge	5,150	56	5	17	22
Irrigon	5,030	53	16	5	26
Jewell Meadows	66,355	12	1	86	1
Klamath	23,690	20	2	24	54
Ladd Marsh	13,945	37	-	24	39
Murderer's Creek	13,115	42	30	13	15
Power City	2,190	78	1	3	18
Prineville Res.	114,745	-	90	1	9
Riverside	885	34	45	4	17
Sauvie Island	369,500	4	35	11	50
Snake River Islands	1,155	71	8	4	17
Summer Lake	11,680	78	13	5	4
Sumpter Valley	1,210	42	12	37	9
Wenaha	8,400	61	4	5	30
White River	30,180	60	12	3	75
Willow Creek	5,260	29	57	3	11
E. E. Wilson	10,200	21	-	38	41

