

A SYNOPSIS OF CURRENT BIGHORN SHEEP MANAGEMENT AND RESEARCH IN IDAHO

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INTRODUCTION

In the following discussion I have tried to briefly cover the major management decisions, programs, and research projects concerning wild sheep in Idaho. Hopefully, this resume will give the reader some understanding of past bighorn sheep management and research in Idaho and the direction they will take in the coming years. Also, I have included some historical background.

HISTORIC DISTRIBUTION

Historically, Idaho, like other western states, had abundant populations of bighorn sheep. They inhabited most of the mountain ranges from the Salmon River drainage southward, Hells Canyon of the Snake River, and an area along the border between Montana and Idaho from a point northwest of Missoula, Montana to Yellowstone Park. Sheep inhabited the mountain ranges along the Idaho-Wyoming border from the South Fork of the Snake River to Utah.

Originally, two races of bighorn sheep, Ovis canadensis canadensis and Ovis canadensis californiana, inhabited Idaho. The California race occupied the Owyhee country of southwestern Idaho and the Rocky Mountain race ranged over the rest of the historic habitat. Several explorers, trappers, and naturalists left written and verbal accounts that indicate the historic abundance of these sheep. Captain Bonneville's party camped along the Salmon River north of Salmon, Idaho, during the winter of 1832. They found large flocks of bighorn sheep in the area, and in the 1850's, the first settlers of the Lemhi Valley found bighorns in abundance (Smith, 1954). Abe Leeds, a guide for E. Thompson Seton, saw thousands of sheep in the Lost River Mountains of Idaho in the late 1800's. Leeds saw sheep usually in small groups of 15 to 20 animals, but as many as 500 in a day. Seton received a letter from M. W. Miner reporting an estimated 2,000 to 2,500 sheep in the upper part of the Middle Fork of the Salmon River (Seton, 1929). The California variety was apparently no less numerous. Early inhabitants of the Hart Mountain area told Luther J. Goldman that at one time wild sheep occurred in greater numbers than antelope in that area (Buechner, 1960). Although this account came from Oregon, it probably applies equally to Idaho.

Major losses began to occur in Idaho sheep populations during the period from 1870 to 1880, when large numbers of them reportedly died from scabies. About 1890, a severe winter occurred and this, coupled with scabies, reputedly caused a second decline. A third decline occurred about 1910, and since then sheep numbers have remained far below historic numbers. Old-timers frequently mentioned domestic stock competition for forage and space, human activity on sheep habitat, and hunting pressure as causing heavy losses.

Scabies epidemics probably occurred as a result of habitat destruction and masked the real cause for severe sheep losses. The pneumonia complex may

have played an important part in the rapid decimation of sheep populations. George Post (1971) recounted a conversation he had with a man who had traveled Idaho's back country during the declines. After listening to Post describe pasteurellosis in sheep and looking at color photographs of gross symptoms, the gentleman said the insides of sheep supposedly dying from scabies looked like the photographs and appeared rotten inside soon after death occurred.

Sheep populations apparently reached a low of about 1,000 animals by the 1920's and early 1930's. The California bighorn completely disappeared from the state. Just 10 years ago they were brought back to their former haunts in Owyhee County. By 1954, the Rocky Mountain sheep had increased to the point that Dwight Smith estimated 2,500 head in the state at that time. History of individual populations vary with some bands disappearing, some remaining relatively stable, and others declining and rising again. Now both species occur in isolated populations on a fragment of their original habitat. At this time, no accurate estimate of statewide populations exists, but a total number of 2,500-3,000 sheep would seem a reasonable guess.

CURRENT STATUS

The greatest concentration of sheep occurs along the main Salmon River from and including Panther Creek, 26 miles west of North Fork, Idaho, down to the road end 40 miles east of Riggins, Idaho, and the Middle Fork of the Salmon River.

The most intensive population data in recent years has been collected from the Middle Fork sheep. During the winter of 1973-74, population data were collected from the Panther Creek bands. Table 1 contains a summary of this data and a comparison of the data with that collected by Smith (1954). For the present, the data appear to indicate a static population in the Middle Fork and it appears that it has been so for perhaps the last 35 years. Yearlings are hard to identify from the air. This creates a bias by inflating the ewe numbers and decreases the lamb-yearling to ewe ratios when the real lamb-yearling to ewe ratios may be higher. This same error would tend to increase the ewe to ram ratio.

Two remnant herds of sheep, one on the East Fork of the Salmon River and one using Morgan Creek near Challis, Idaho, have received national attention, especially those using Morgan Creek. These sheep have suffered from severe competition with livestock and, to a lesser degree, mule deer. James K. Morgan studied these two groups of sheep during the late 1960's to define the problems and develop solutions to them. Particularly, those problems associated with the Morgan Creek area. Due to his efforts, the Forest Service, Bureau of Land Management, and Morgan Creek Range Users developed a rest-rotation grazing plan. A total of 7,500 acres of critical sheep range was fenced to exclude cattle year-round; however, 3,500 acres is currently used by cattle as a part of one pasture in the system. The deer population was substantially reduced by long seasons and two deer bag limit. Starting in 1972, livestock grazing conformed to the rotation system. Not enough time has elapsed since the start of this program for detectable results to take place. A monitoring plan was drawn up to assess the effects and value of rest-rotation grazing on the sheep winter range. Essentially, this program will measure changes or responses of the plant communities, shifts in distribution and winter range use by bighorns, and changes in the sheep and deer populations.

Table 1. A comparison of the mean ratios of sheep classified during the winter along the Middle Fork of the Salmon River and Panther Creek.*

RATIOS			
Winter	Ewe:Lamb	Ewe:Yearling	Ewe:Ram
1949- 1950	0.41	0.24	1.35
1950- 1951	0.70	0.38	1.61
1951- 1952	0.52	0.30	1.13
1972- 1973	0.51	0.23	1.70
1973- 1974	0.54	0.09	2.0
1973- 1974**	0.81	0.11	1.4

* Data for winters prior to 1972-73 taken from Smith (1954). His ratios include from the Middle Fork and central part of the main Salmon River. Ratios for the 1972-73 winter include data for the Middle Fork from the Mormon Ranch to Waterfall Creek. The data for 1973-74 covers sheep bands from the Mormon Ranch to the mouth of the Middle Fork (helicopter classification).

** Helicopter classification of Panther Creek sheep bands.

Land use planning on the East Fork of the Salmon River has given a different direction to management for the remnant herd there. These sheep summer in the White Cloud Mountains which lie in the Sawtooth National Recreation Area. Currently, the Forest Service has the administrative authority for the area and their program gives the bighorns priority over livestock grazing on land used by sheep. It also provides for future reintroduction, habitat improvement, and expansion of the sheep population. Most of the presently used winter range lies outside the Challis National Forest-NRA boundary and on BLM administered lands. Here, again, the management policy favors bighorns over all other uses and provides for habitat improvement and an expanded bighorn sheep population.

These management policies have evolved during the last year. Consequently, field personnel of the Forest Service, BLM, and Fish & Game Department have not had time to develop specific programs to implement these policies.

REINTRODUCTIONS

Idaho has reintroduced bighorns to two areas of former habitat. The first reintroduction took place in October of 1963, with 19 young California bighorns from British Columbia released in the Owyhee River Canyon. Two additional releases of 9 and 10 sheep from British Columbia were made in 1965 and 1966, at the original site. A fourth release of 12 sheep from British Columbia was made in 1967 at Jacks Creek, Owyhee County. Since then the sheep in both areas have expanded considerably with some dispersal to adjacent canyon complexes.

During the period from June 1968 through November 1969, a Master Degree candidate studied these sheep to define population size, structure, productivity, and factors favorable and unfavorable to the bighorns. Additional data collected covered distribution, behavior, and food habits. Tables 2 and 3 contain population data taken from Drewek's thesis (1970). Drewek estimated that the sheep had increased to a minimum of 80 animals by 1969. His actual population growth curve indicates a total population of a little more than 100 animals by 1970, and the theoretical curve indicates the population would reach a little more than 200 animals by the same date. The present population estimate is 325 animals for both areas; 75 in the Big and Little Jacks Creeks and 250 in the East Fork of the Owyhee River.

Only one reintroduction of Rocky Mountain bighorns has taken place. In August 1970, Idaho obtained 24 sheep of this race from Banff National Park, Alberta. These sheep were released near Mount Borah on Mahogany Creek, a tributary to the Pahsimeroi River. The sheep occupied an area about 36 square miles in size from 1970 until the late spring of 1973. Then they moved about 13 airline miles southeast to the upper part of the Pahsimeroi River drainage. Some of the sheep moved back to the 36 square mile area by mid-October of 1973. Others stayed in the Donkey Hills on the northeast side of the drainage. If this pattern of movement and dispersal continues, these sheep will have incorporated an additional 72 square miles into their range.

The population increased from 23, the oldest ram died in October 1970, to about 43 animals including lambs of the year by August 1972. The first lambing season after the release, the adult ewes, 2.5 years and older, produced at least 5 lambs. The second lambing season, 1972, they produced a minimum of 15 lambs. The population increased by 83 percent in the first two years after release. I would expect the total population to number about 60 animals now.

Table 2. Age and sex of sheep released into the Owyhee River drainage and the age-sex classification of the minimum population in 1968 and 1969.

Date	Females				Males				Combined Total
	Adult	Yrl	Lamb	Total	Adult	Yrl	Lamb	Total	
10/31/63	8	4	2	14		2	3	5	19
11/18/65	6		1	7	1		1	2	9
11/2/66	7		1	8	1	1		2	10
Total	21	4	4	29	2	3	4	9	38

Table 3. The age and sex class of the minimum population of bighorn sheep in Owyhee River drainage in 1968 and 1969.

Year	A/Ewes	Lambs	Yrl. Ewes	A/Rams	Yrl. Rams	Total
1968	23	21	3	13	4	64
1969	26	20	9	14	11	80

Table 4. Sex and age of sheep released at Mahogany Creek, and classification of sheep in succeeding years.

Date	A/E	Lambs	Yrl/E	Yrl/R	Rams				Unclass.	Total
					I	II	III	IV		
8-26-70	15		4		2	2	1*			24
1-20-72	13	5				2	1			21
8-18-72	14	12		2	2	1	2			33
2-8-73	12	15		2		2	1			32
10-17-73	10	9		3	1	1			11	35

* This ram died in October 1970.

Jim Morgan located and surveyed 20 potential reintroduction sites. Nine of these sites have good potential for reintroduction. The cooperative agreement between the Forest Service and Idaho Fish & Game Department has been signed for the best site. The inability to obtain sheep both from within and outside the state has delayed this reintroduction.

Currently, a trapping operation, unsuccessful to date, is under way on the lower Salmon River to supply sheep for a release in Granite Creek, tributary to the Snake River, Hells Canyon area.

In addition to these areas mentioned above, we have encouraged the BLM and Forest Service personnel to plan for reintroductions in Multiple Use Planning Units that have potential reintroduction sites.

HUNTING

Like most of the western states, Idaho has a long and varied history with respect to hunting seasons and bag limits. In the early years after Idaho Territory became a state, the taking of big game was prohibited between February 1 and June 30. By the late 1800's, the season was shortened to the period of September 1 to December 30, and the bag limit allowed the taking of four sheep. During the early 1900's, the bag limit on sheep was reduced to 1 (Anonymous 1967).

In the years prior to 1947, 125 bighorn sheep were taken during open seasons. The season was closed for 5 years, until 1952. Since this time, a controlled season, general season or both, have been held on sheep.

Tables 5, 6, and 7 contain summaries of the general and controlled sheep hunts for the past 22 years. During this time, hunters have taken 777 rams at a mean rate of 35 per year and have had a mean success ratio of 22.8 percent. In Colorado, hunters took 817 sheep at an average of 48 per year with a 23.8 percent success ratio during the 18 years from 1953 to 1970 (Sandfort and Rutherford, 1971). During this same period of time, Arizona hunters took 455 rams at a mean rate of 24 per year and had a success ratio of 42 percent (Russo, 1971).

In 1971, Idaho went to control hunts in all units open to sheep hunting and increased the season length from two weeks to 30 days with the opening date falling on the second Saturday in September. This effectively reduced the harvest of rams and number of hunters in the field. Quite possibly, we have enhanced the quality of the hunt for those who participate. Sheep hunting in Idaho will probably continue on a controlled hunt basis, at least for the foreseeable future.

RESEARCH

The first research project began with Dwight Smith's study in 1949. Smith continued this study through 1954 and concluded it with "The Bighorn Sheep in Idaho, Its Status, Life History, and Management".

Jim Morgan began the next research project in 1966 to define the causes for declines in the Morgan Creek and East Fork of the Salmon River bands. As a result of his work, a rest-rotation grazing system, referred to earlier, was initiated in the Morgan Creek drainage as a solution to the winter range problem. It will take several years before we can determine the success or failure of this program.

Table 5. A summary of general bighorn sheep hunt tag sales and harvest in Idaho.

Year	General Season Permits			Tags Sold	Minimum No. Participating Hunters	Total Kill	% Participating Hunter Success
	Reg.	Non-reg.	Total				
1956	64	11	75	75		1	
1957	147	46	193	193		23	
1958	Lic. & tag summary sheet		255	255		29	
1959	250	129	379	379	364	59	16
1960	301	116	417	417		62	
1961	333	222	555	555	455	51	11
1962	343	179	522	522	336	58	17
1963	324	228	552	552	436	49	11
1964	288	143	431	431	397	35	9
1965	328	123	451	451	406	53	13
1966	279	175	454	454	420	14	3
1967	338	178	516	516	452	32	7
1968	350	249	599	599	525	47	9
1969	334	251	585	585	585	43	7
1970	374	322	696	696	469	61	13
Total 15	4053	2372	6680	6680	4845	617	
\bar{x}	290	169	445	445	441	41	11

Table 6. A summary of controlled bighorn sheep seasons and harvest in Idaho.

Year	Controlled Hunt Permits	Res.	Non-Res.	Tags Sold	Number Participating Hunters	Total Kill	% Success of Participating Hunters
1952	45			45	44	13	30
1953	50			50	47	18	38
1954	50			50	41	15	37
1955	50			50	48	22	46
1956	60			55	45	19	42
1957	40			40		6	
1958	40			40		10	
1962	5	4	1	5	5	1	20
1964	5	5		5	5		0
1965	5	4	1	5	5		0
1966	5	3	2	5	5		0
1968	2	1	1	2	2	1	50
1969	7	7		7	7	3	43
1970	9	8	1	9	9	3	33
1971	67	61	6	67	64	13	20
1972	89	79	10	89	81	21	26
1973	86	70	8	78	65	15	23
Total	17	615	242	30	602	473	160
\bar{x}	36	24	4	35	32	12	34

Table 7. Summary of sheep harvest by year for general and control hunts.*

	YEARS																					
	1952	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73
General Hunts					1	23	29	59	62	51	58	49	35	53	14	32	47	43	61			
Control Hunts	13	18	15	22	19	6	10				1					1	3	3	13	21	15	
Total	13	18	15	22	20	29	39	59	62	51	59	49	35	53	14	32	48	46	64	13	21	15
Grand Total:	777; \bar{x} 35 sheep/yr.																					

* Prior to 1952 approximately 125 rams were taken on legal hunts.

The current research program has several facets aimed at refining our understanding of movements, migrations, and seasonal ranges; defining the type of habitat preferred by sheep during different seasons; assessing the physiological condition of individual animals through blood constituent analysis as conducted by Franzmann and Thorne (1970), Franzmann (1971, 1972), and correlate the health of the animals with the quality of ranges, and defining the population dynamics and recruitment rates. These studies have centered on the Middle Fork sheep because they exist under nearly pristine conditions and the reintroduced population of sheep near Mount Borah.

The current research program also includes trapping and reintroduction and an appraisal of hunter harvest and general public opinion concerning bighorn sheep hunting and management in Idaho.

Dr. Ables, Professor of Wildlife Management at the University of Idaho, has proposed to define the effects of ram removal on the productivity and survival of a bighorn population. More specifically, he proposes a two-phased study of at least six years' duration. In the first phase the population structure, social organization, reproductive behavior, herd productivity, movement patterns and daily activity patterns will be defined for a specific sheep population. During the second phase, selective removal of dominant rams would take place and then define the effect this removal has on social organization and stability, breeding efficiency and physical condition of both sexes during the rut, natality and survival of young, and home-ranging and migratory behavior.

The population of bighorn sheep in Big Creek, tributary to the Middle Fork of the Salmon River has been selected for this study. The project should begin within the year. Adequate funding has temporarily delayed the initiation date set for this summer, 1974.

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