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STATUS OF TRANSPLANTED BIGHORN SHEEP IN COLORADO ^a

HISTORY

The early trappers and mountain men, and later the prospectors, found bighorn sheep (*Ovis canadensis canadensis*) throughout the foothills and mountains and at times even out on the plains. At a very early stage in the history of the white man in what is now Colorado, the effects of human disturbance upon bighorns were evident. Extirpation from much of their original range and forcing of remaining animals into more marginal, high-mountain habitat began in the 19th Century and has continued to the present time. Today's diminished herds, often on restricted range, is the result.

By the 1940's, many bighorn herds in Colorado were much reduced from their former size, and others had passed out of existence. The famous Tarryall herd, however, maintained high numbers in spite of human encroachment. Thus, ideal conditions existed for restoration of big-

horn sheep via the classic trapping and transplanting method: Herds which needed to be supplemented, formerly occupied areas where herds could be re-established, and a large herd which needed reduction in the interest of herd health.

In September, 1944, the then Colorado Game and Fish Department initiated a project under the Federal Aid in Wildlife Restoration Act for trapping and transplanting bighorn sheep. From 1944 to 1952, 202 bighorns were trapped out of the Tarryall herd and transplanted to other locations in Colorado. In addition, 16 bighorns were trapped and shipped to Montana in exchange for mountain goats. In 1969-70, six sheep from the Pikes Peak herd were trapped and transplanted.

The catastrophic die-off in the Tarryall herd during the winter of 1952-53, leaving only about 25 surviving sheep, put an abrupt end to the trapping and transplanting program since there were no other suitable herds from which transplant stock could be obtained. No further bighorn trapping was undertaken until 1969, when seven animals were captured from the Pikes Peak herd and donated to the Denver Zoo. The year following, an additional six sheep were taken from Pikes Peak and released on the Lake Fork of the Gunnison River, south of Blue Mesa Reservoir, near Sapinero. Table 1 lists all Colorado transplants by year, number of sheep, and release site.

This paper is a compilation of historic records and information on the current (1972) status of bighorn sheep herds now existing in these main transplant areas, provided for the most part by wildlife conservation officers and regional game biologists; and more particularly by Mr. G. W. Jones, who was in charge of the Tarryall trapping and transplanting. It must be emphasized that the following discussion concerns only those herds that were supplemented or established by transplanting. Many other bighorn herds in the state have not been thus influenced, and consequently are not considered here.

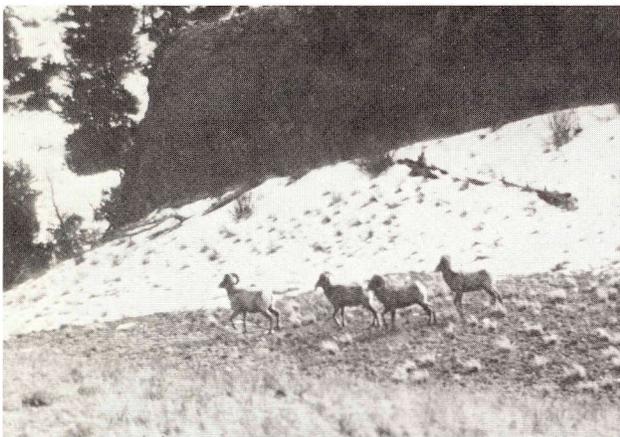


Fig. 1. A small band of rams on winter range in the Saguache Creek — Trickle Mountain area. This herd originated entirely from transplanted stock, and has become Colorado's most successful bighorn transplanting accomplishment. (Photo by W.H. Rutherford)

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Contribution from Federal Aid Project W-41-R

Table 1. Bighorn sheep trapping and transplanting in Colorado, 1944-1970^a

Year	Transplanted to	Number Released				Total
		Rams	Ewes	Lambs	Yearlings	
1944-46	Geneva Creek (Mt. Evans) ^b	3	3	5	0	11
	Sangre de Cristo Range ^b	1	7	6	0	14
	Mesa Verde National Park ^c	3	7	4	0	14
1946-47	Georgetown ^b	3	20	7	3	33
	Cache la Poudre River ^b	3	6	4	3	16
	Rampart Range ^c	3	11	2	0	16
1947-48	Geneva Creek (Mt. Evans) ^b	0	5	0	0	5
	Glenwood Canyon ^c	4	9	4	0	17
	Gore Range ^c	1	6	0	0	7
	Rifle Hogback ^d	4	8	5	0	17
1948-49	Georgetown ^b	2	8	2	2	14
1949-50	Brush Creek (Eagle) ^d	2	3	3	0	8
1950-51	Saguache Creek ^b	3	8	4	0	15
1951-52	Ladore Canyon ^b	3	12	0	0	15
1952-53	Tarryall die-off (end of trapping and transplanting)					
1969-70	Sapinero (Blue Mesa Res.)	1	3	1	1	6
Totals		36	116	47	9	208

^aAll trapping through 1952 was on the Tarryall Range; trapping in 1969-70 was on Pikes Peak, involved only six sheep.

^bSuccessful

^cMarginally successful

^dUnsuccessful

RELEASE SITES

Geneva Creek

This was the release site for two separate transplants, totaling 16 animals, supplementing the Mount Evans herd. Even in the late 1940's, the herd had been in static or declining status for many years. After the transplant, through the 1950's and continuing until about 1965, the Mount Evans herd was vigorous, healthy and growing, ultimately reaching about 200 animals. Its distribution is the entire Mount Evans complex, including Mount Bierstadt and Mount Rosalie. Since 1965, however, the herd has leveled off at about 150-175 sheep, and the age-class structure has changed somewhat to a higher proportion of older animals. At the present time, it is considered to be static, with lamb survival at a high enough level to maintain stability but not growth.

Sangre de Cristo Range

This transplant also supplemented an existing, but declining, herd. During the late 1940's and the 1950's, following the transplant, the herd exhibited good reproductive vigor and growth until the early 1960's. Its distribution is generally the area lying between Medano Pass on the south and Horn Peak on the north. Since the mid-1960's, it has been in severe decline, due to nearly complete lack of lamb survival. Presently, it numbers about 40 sheep, and is composed of an excessively high percentage of old animals.

Mesa Verde National Park

This area is historic range for one of the sub-species of bighorn sheep, as indicated in the form of bones and petroglyphs associated with

ancient Indian ruins. However, no bighorns occupied the area until the transplant of 14 animals during the mid-1940's. In the ensuing years the herd increased to about 50 animals in 1960 and has since been declining in numbers. The transplant can be considered only marginally successful. At the present time, the National Park Service can account for about 25 animals, found generally near the eastern edge of the Park, on both sides of the boundary, in the vicinity of Webber Mountain.

Georgetown

Again, this transplant supplemented an existing, but declining, herd; and, again, the pattern of reproductive vigor and good growth for about 15 years, followed by another decline, was exhibited. In this herd, the recent decline from over 100 animals in the mid-1950's to the present herd of about 35 must be attributed to the combined effects of increased human harassment, four-lane highway construction, and continually decreasing quality and quantity of winter range. The distribution is generally the area lying between U. S. Highways 6 (I-70) and 40 from their junction to the Continental Divide, and north of Highway 40 to the James Peak area. Annual increment at the present time seems adequate to maintain the existing herd size and age-class structure, but the long-term outlook for this herd is continued decline, in adjustment to current winter range quality and quantity.

Cache la Poudre

It is likely that the Poudre Canyon was historic bighorn range, but no sheep were known to have been present since some time in the 19th Century. Thus, the transplant in the winter of 1946-47 was essentially an introduction into new range. The herd has experienced a general but not rapid increase in size since the transplant, and appears to be healthy with a good age-class structure. The number is estimated at about 75. Distribution is generally on the north side of the canyon from the mouth of the Big South Fork downstream to Rustic, and north from the top of the rim into Nunn Creek Basin.

Rampart Range

This herd originated from a transplant at Green Mountain Falls intended to supplement the Pikes Peak herd. The release location was not well chosen, and the sheep drifted north to the Rampart Range. This area is probably historic bighorn range, but none were known to have been present before the transplant. The herd increased to about 60 or 70 animals in 1958, then declined to the present estimated size of about 20. Distribution is in the areas immediately south and west of the Air Force Academy. At present, the herd is still in a period of decline,

lamb survival is poor, and most of the herd members are old animals.

Glenwood Canyon

Historically, Glenwood Canyon was probably part of the general range inhabited by bighorn sheep on the north side of the Colorado River. The transplant in the winter of 1947-48 was a re-introduction, as an existing herd was no longer present at that time. The herd increased to about 40 animals in 1960, and then declined rapidly. Only nine could be accounted for in 1969, and these were semi-tame, spending most of their time in the orchard at the mouth of Grizzly Creek where they were extremely vulnerable to traffic on U. S. Highway 6. In fact, traffic mortality seems to have been a considerable factor in their decline, although disease was also involved. In the winter of 1970-71, five sheep were removed and were taken to Piceance Creek southwest of Meeker. At the present time, there may be a small band (10 or 12) of wilder sheep in the rimrocks above the canyon, and 3 or 4 that still frequent the Grizzly Creek area.

Gore Range

The transplant at this location numbered only seven animals, and probably had no noticeable effect on the population structure of the existing herd. The Gore Range herd has never been particularly large, but during the 1950's it did exhibit good vigor and a good age-class structure. In recent years it has declined, and currently appears to be composed of a high percentage of older animals. It numbers about 40 individuals, distributed generally from the Gore Creek area on the south to Eagles Nest Peak on the north.

Rifle Hogback

A small herd of bighorns occupied the area at the head of Rifle Creek during recent historic times. In the winter of 1947-48, 14 animals could be accounted for; thus the transplant of 17 sheep that winter supplemented an existing herd. By the winter of 1951-52 the herd was causing damage to haystacks on a Rifle Creek ranch. At the rancher's request, most of the herd was trapped and moved to an area near Ladore Canyon, Dinosaur National Monument. Not more than six sheep were left, and these gradually disappeared through the 1950's. A lone ewe was seen in 1960, and no bighorns have been seen on the Hogback since that time.

Brush Creek

The transplant of eight animals in 1950 supplemented a small but thrifty herd (35-50 sheep)

native to the area. During the winter and spring of 1951-52 an unusually heavy snowfall trapped many sheep, resulting in death by starvation. The remnants of the herd continued to decline and were no longer seen by 1960. At the present time, no sheep exist in the area.

Saguache Creek

This is unquestionably the most successful bighorn transplant ever accomplished in Colorado. A herd was present north of this area in alpine habitat on Mount Antero, Mount Ouray, and Mount Chipeta, and another herd existed to the southwest in the San Luis Peak area, but there was apparently no movement from either of these herds into the low elevation, ponderosa pine-bunchgrass range interspersed with rocky bluffs and cliffs along Saguache Creek. The original transplant of 15 sheep has grown into a herd of over 200. Distribution is generally eastward and northeastward from old Cochetopa Pass, along the north side of Saguache Creek. The herd is healthy and vigorous, the age-class structure shows good representation of young animals, and the trend in population is still upward.

Ladore Canyon

This transplant, made in the hope of building a bighorn herd in historic range unoccupied for many years, was just outside the boundary of Dinosaur National Monument. The transplant, made in 1952, consisted of 15 animals direct from the Tarryall area, and 17 animals that had been transplanted from Tarryall to Rifle Hogback in 1948. Very shortly, the major range of the transplanted herd became confined to Ladore Canyon proper, within the Monument. By 1959, National Park Service personnel estimated the herd size to be about 140 sheep. No detailed census has been made in recent years, but sheep are commonly seen by people making float-trips through the canyon. It is likely that the population has stabilized or decreased somewhat during the last decade. Data on age-class structure and lamb survival are not available.

Sapinero

It must be assumed that all six of the bighorns released at this site during the winter of 1969-70 and the summer of 1970 are still present; and in addition, two lambs were observed during the spring and summer of 1971. It is still too early to comment on the success or failure of the transplant.

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April, 1972