

THE DESERT BIGHORN OF ARIZONA

by

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Bighorn sightings were seldom mentioned by early travelers, explorers or settlers of Arizona. The first mention of bighorn in Arizona, and in the United States, is found in writings of Pedro de Castaneda, a soldier in Coronado's army (Hammond 1940). Castaneda, in the army following Coronado in 1540, searching for the cities of Cibola, mentioned sighting bighorns at the confluence of the Gila River and San Francisco River, near what is now Clifton in the southeastern part of Arizona. Bighorn sheep are no longer found in this area.

In 1567, a Spanish captain, Juan Mateo Mange, while escorting Padre Eusibio Francisco Kino, recorded that they had arrived at Tusonimon, a town so named for a great heap of horns from the wild sheep. Juan Mateo Mange indicates that from the numbers of horns it appeared that the wild sheep made up an important food item. (Russell and Swantson 1929).

More than two centuries lapse before there is another reference to bighorn in Arizona. Pattie (1905), in his personal narrative of Early Western Travels, relates that he and his companions saw bighorn sheep in the canyon of the San Francisco River in January 1825 at or near the New Mexico line. This may have been the same locale where sheep were first seen 285 years earlier. In 1826, Pattie also recorded bighorns along the lower Colorado River somewhere between the mouth of the Gila and Bill Williams Rivers.

The next record of bighorns in Arizona was made by the Emory expedition which found a large number of mountain sheep near the Gila River at the northern end of the Mohawk Mountains on November 19, 1846 (Emory 1848). From this herd a ewe was shot by none other than Kit Carson, then a lieutenant in the United States Army.

In 1858, the Ives expedition made the first steamboat trip up the Colorado River. During the voyage bighorn sheep were recorded at Lighthouse Rock in the upper part of what is now the Imperial National Wildlife Refuge (Ives 1861). In his report, Lt. Ives said that on January 17, 1858, a dozen desert bighorn sheep were seen scampering over a gravel hill near Lighthouse Rock.

From then until the 1930s, there is little mention of bighorns in Arizona literature. Merriam (1890), then with the U. S. Biological Survey, reported seeing bighorns on the San Francisco Mountains in August 1889, and a small herd at the Grand Canyon the following month. Cahalene (1939) quotes a lifetime resident of the Chiricahua Mountains as saying that bighorns were fairly numerous in all the lava hills of the vicinity, including the Chiricahuas. The bighorn were gradually

shot and the few remaining were thought to have succumbed during the drought of 1903-1905. Sheep no longer inhabit the San Francisco or Chiricahua Mountains.

Major E. A. Mearns (1970) of the United States Army provided a comprehensive report on the known status of desert bighorns in Arizona at the turn of the century, a result of his work for the International Boundary Commission from 1892 to 1894. Mearns found bighorns in almost every mountain range along the border, from the Pajaritos Mountains west to northern Baja, California. He either saw bighorns or found reliable evidence of their presence on San Francisco Mountain; along the Grand Canyon, especially Cataract Creek; on the Papago Indian Reservation; in the Quitobaquito vicinity; and in the Tule, Granite and Tinajas Altas Mountains. He also found evidence of their presence in the 1880s, in the general region of Camp Verde on Bill Williams Mountain, and in the Santa Rita and Santa Catalina Mountains. Sheep are now found in all these localities, except the Santa Ritas, Camp Verde, San Francisco Mountain and Bill Williams Mountain.

Information was compiled on the distribution of bighorn in Arizona by A. A. Nichol, for the National Association of Audubon Societies and the University of Arizona (Nichol 1937 & 1940). Nichol reported sheep in most mountain ranges of the southern, southwestern and western desert areas.

Arizona began a serious and intensive desert bighorn sheep management and research program in 1950 (Russo 1956). This was the first concentrated effort to investigate desert bighorn and learn something about numbers, distribution and the habitat requirements of this animal. An important phase of this study was the information to support hunt recommendations.

Bighorn hunting was in a true sense a calculated plan with a complete understanding of what we wanted to learn in research and apply to the management of the species, and what we looked for to guide us in this management. The early hunts were "experimental" only in the thought of game commission approval, sportsman acceptance, hunter participation and success. Bighorn hunting was not an experiment on the animal.

Understandably, our first hunt was viewed critically, mostly by our own administration and the Arizona Game and Fish Commission. Not too much was known about the animal, its distribution, habits and habitat. It was difficult to reconcile the sportsmen of the state, much less the commission and the department, that a hunt could be held on desert sheep. No sheep hunting had been allowed for over 50 years, even before Arizona became a state.

Our first hunt, which took place in January 1953, allowed 20 hunters to take to the field for a ten-day season. In that memorable first season ten rams were taken. The largest ram measured 102 1/8 inches, while the average measurement was 82 1/2 inches. For our own use, measurements are found by adding the length of right and left horn and the basal circumferences.

What started out as a conservative hunt, a part of a research project study, has blossomed into an important feature of our annual hunts. Nineteen seasons later, in 1970, a total of 79 hunters took to the field for a 16-day hunt. In this season, 39 rams were taken. The largest ram measured 104 6/8 inches, and the average ram in 1970 measured 89 5/8 inches. Using the Boone and Crockett standards, at least ten of the 39 rams will measure better than the minimum 155 point score.

This may be regarded as the end product of a succession of events that has made bighorn sheep hunting what it is today. However, in order that we may appraise the hunting in Arizona, it may be well to look back to that time when hunting was first considered. It was thought that the estimated total number of sheep would not warrant a season, but it was also reasoned that the ram population could be hunted without harming the herd. To this end, the primary objectives of the bighorn sheep hunt were:

- (1) To examine the animals for disease and parasites.

It was hoped that the examination of the animals would reveal reasons for the low lamb survival. Although many desert sheep were examined for disease and parasites, not much could be learned to add to what had already been found in earlier studies. Examinations of lungs and the thoracic cavity continued to reveal adhesions, abscesses and scars. This is a subject of considerable importance, and we hope to someday interest researchers in this program. We have learned that desert sheep are subject to many "abnormal" disorders ranging from separation of the parietal suture to fractured carpal joints, and from missing teeth to broken tails. We have seen these things so often that we have come to accept them as "normal."

- (2) To spread the ram:ewe ratio and evaluate the reproduction trend if any was evident.

It was thought that, since the ram:ewe ratio approached a one to one basis, the yearly removal of a small number of rams over an extended period of time could be accomplished without damage to the sheep herds until an ideal ratio was determined. There was no reason to believe the sheep population would not continue to increase in the meantime.

Our attempt to spread the ram:ewe ratio was not a success. The original area open to hunting has been hunted for 19 seasons. We have been unable to detect any spread in the ram:ewe ratio. Are we now taking any smaller rams from the area than we did 19 hunts ago? Let us look at a few figures of average measurements taken on the first three hunts and compare them with those of the last hunt. On the first hunt, the average head measured 82.5, on the second, 87.9 and on the third, 84.3. In 1970, the average head from that area measured 93 5/8. We might conclude that it is impossible to take enough rams from this area to spread the ram:ewe ratio unless we take sub-trophy and younger rams.

- (3) To give sportsmen an opportunity to remove a number of old trophy animals, thereby generating public interest in the animal.

In this attempt we have been highly successful. It is felt that when a game animal is protected for an indefinite period with no foreseeable opportunity for hunting, the sportsman loses interest in the species. Prior to the time of the first hunt, very few people were aware of our bighorn sheep herds. Even sportsmen were ignorant of their existence, whereabouts or potential. Until recently, no value could be placed on the animal, dead or alive. The courts, in some instances, found no criteria for placing a value on this animal.

Violations dealing with illegal take or possession of bighorns were treated with token fines or dismissed. Such is not true today. People are not only aware of the bighorn sheep, but sportsmen are avid defenders of the animal and its habitat.

To go along with the original objectives, recommendations were made to hunt additional areas to determine if similar physiological conditions exist in the bighorn in other parts of the state. In 1958, additional areas were opened and 20 more permits were added. Until this time, there were no restrictions on nonresident hunters, and resident and nonresident had equal opportunities to draw a permit. Even with the increased number of permits in 1958, only four nonresidents drew permits. In 1959, permits were again increased to 65. Twenty-one nonresident applicants drew. The Commission quickly took measures to limit the number of nonresident applicants to 10 percent. The following year in 1960, permits were again increased, to 80, and the number of applicants increased to 266.

Arizona's bighorn hunting has produced some surprises and some disappointments. Most of the results and findings have been gratifying in many respects. However, each year we are disappointed with one or two hunters who take rams with insufficient horn growth, which cannot be classed as trophy animals. Probably the greatest disappointment facing Arizona sportsmen today is the loss of lands that will exclude game management of any type. This is especially true in our sheep areas where ranges are limited. The loss of land is a constant threat.

Each year an increased number of applications is received, and a growing interest for desert sheep hunting continues. Last year, 1,540 applications were received for 79 permits. This is a far cry from the 26 applications received for 20 permits on the first hunt.

Undoubtedly, one of the factors that helped increase the number of applications was the reduction of permit fees from \$50.00 to \$25.00 in 1959. The nonresident permit was also reduced from \$150.00 to \$125.00. However, much of the interest generated by nonresident hunters came about through solicitation by state guides.

Today, we are permitting approximately four times more sheep hunters in the field than we did 19 years ago. Yet, our hunts are considered to be conservative in every respect. We are hunting about

12 additional areas of which three are located on U. S. Fish and Wildlife Service lands, the Kofa and Cabeza Prieta Game Ranges and Imperial Wildlife Refuge. Some of our bighorn ranges are in part of the National Park Recreation Area. Certainly, bighorn sheep hunting is a form of recreation, and these lands are providing recreation as they were meant to do.

We are not only taking more rams each year, but we are taking larger trophy animals. Last year the average bighorn sheep trophy measured 89 5/8 inches. Some of this has come about through hunter cooperation, a better understanding of sheep hunting and a greater knowledge of the hunt in general. Possibly this was helped by an education program started several years ago by an organization made up of dedicated sheep hunters.

I think I can speak for the sportsmen of the state when I say they have confidence in our sheep management abilities and in the way our sheep program, management and hunts are being conducted. True, you will always find some discord or dissent, but in general, we have been able to work things out.

What have we learned from 19 bighorn sheep seasons? Most important, we have learned that we can successfully hunt desert bighorn on a permit basis when the hunt is controlled. Results of the hunts have given us valuable information relative to the distribution of bighorn in its habitat and considerable information contributing to life history studies. Sportsmen are spontaneous contributors of personal experiences, and with the aid of a questionnaire, or even personal contact and notes, much information is obtained.

Each year we put about 150 hours of helicopter time in desert bighorn survey work. In addition to this, wildlife personnel make counts during the summer months when the sheep are concentrated around water holes.

Arizona maintains a fenced area where sheep have been held as part of a transplanting program. The enclosure is located in historic range. Just recently three young ewes were added to the group. These animals not only represent an addition to our enclosure, but an important development to our capture technique. The three ewes were tranquilized with a drug combination and shot from a helicopter, using a capture gun and darts.

Our management objectives have changed over the past 20 years. We were once deeply involved in managing the wildlife and habitat to provide game for recreation and the future. Today, we face the task of trying to keep what we have, and in trying to save a little of the desert bighorn sheep habitat from human encroachment.

ARIZONA DESERT BIGHORN HUNT INFORMATION

Year	Number Permits	Number Hunters	Total Hunters	Largest Head	Smallest Head	Average Head	Total Harvest	Accum.	
								Total Harvest	Percent Success
1953 ^a	20	20	20	102 1/8	56 3/8	82 4/8	10	10	50.0
1953	20	17	37	100 2/8	72 3/8	87 7/8	10	20	58.8
1954	20	19	56	99	65 3/8	84 2/8	12	32	63.2
1955	20	20	76	93 6/8	85	87 5/8	5	37	25.0
1956	20	19	95	93 4/8	65 2/8	79 7/8	6	43	31.6
1957	20	20	115	90 6/8	60 6/8	76 4/8	6	49	30.0
1958	40	37	152	102 6/8	74	86 6/8	18	67	48.6
1959	65	62	214	100 2/8	73	87 1/8	19	86	30.6
1960	80	80	294	100 2/8	68 2/8	87 1/8	24	110	30.0
1961	85	84	378	110 5/8	63 2/8	84	26	136	31.0
1962	90	89	467	101 2/8	63 6/8	82 7/8	27	163	30.3
1963	81	79	546	105 4/8	56 4/8	82 4/8	31	194	39.2
1964	78	76	622	102 2/8	72 4/8	88 3/8	25	219	32.9
1965	90	83	705	113 1/8	71 4/8	88 6/8	42	261	50.6
1966	84	84	789	108 6/8	74	91 2/8	35	296	41.7
1967	84	83	872	102 3/8	76 2/8	91 2/8	31	327	37.3
1968	81	77	949	103 5/8	70 6/8	89 4/8	47	374	61.0
1969	86	84	1033	106 2/8	71	89 2/8	42	416	50.0
1970	79	76	1109	104 6/8	76 2/8	89 5/8	39	455	51.3

A total of 1143 permits was issued since hunting started.

A total of 1109 hunters participated to take 455 rams for an average 41.0 percent success.

^a First hunt in January 1953.

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