

STATUS AND MANAGEMENT OF THE  
MOUNTAIN GOAT IN WASHINGTON<sup>1</sup>

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HISTORICAL DISTRIBUTION

Mountain goats are native to the Cascade Mountains in Washington, (see Fig. 1, Johnson, these proceedings) and range over most of the same areas they occupied when white men first arrived. Reports of native mountain goat (*Oreamnos americanus*) in the Cascades were documented as early as 1805 and 1806 by Lewis and Clark (Burroughs 1961) who saw skins and blankets woven from mountain goat<sup>2</sup> wool by Indians along the Columbia River. The type locality is described as "Cascade Range near the Columbia River in Oregon or Washington". Almost certainly these goats were taken in Washington since Bailey (1936) indicated that there was no authentic record of mountain goat occurrence south of the Columbia River in Oregon. Dalquest (1948) believed that the type locality in Washington was near Mount Adams. Historic records and other references to mountain goat distribution since the turn of the century indicate that the native range of mountain goats extend throughout much of the Cascade Mountains from the Canadian border to Mount Adams except for a gap in the Snoqualmie Pass area (see Fig. 1, Johnson, these proceedings).

Goats have been reported from the Selkirks of northeastern Washington and the Blue Mountains of southeastern Washington. There is a single record for northeastern Washington (Dalquest 1948). He described this animal as "seemingly a rare wanderer from outside the state". Taylor and Shaw (1929:31) [in Hall and Kelso (1959)] and Dice (1919:21) report on the historic occurrence of mountain goat in the Blue Mountains of southeastern Washington. Dalquest (1948), however, believed that the reports of mountain goat in the Blue Mountains by Dice were based on erroneous identification. No native populations of mountain goat currently inhabit either the Blue Mountains or Selkirk Mountains of Washington.

Fossil remains of mountain goats were reported from Pleistocene deposits of Washtuckna Lake, Washington by Matthew (1902) [cited in Cowan and McCrory (1970)]. Matthew believed that these deposits represented a fauna characteristic of the first Pleistocene interglacial stage.

Historic uses of mountain goats have changed considerably from their initial exploitation by Indians. Indians killed mountain goats not only for their meat, but also for their hair and hides. Early explorers in the state found that Indians valued the wool of mountain goats for the making of blankets (Bailey 1936). Salish Indians from along the Fraser River sometimes hunted goats and traded hides on the coast. Indians of the Cascades, including the Skagits and Wenatchees gathered goat wool from hillsides during the spring and summer when goats were shedding. (Underhill 1945, Collins 1974, and Thompson 1970). Lewis and Clark discovered that Indians along the Columbia River made the skin of a goat head (with horns remaining) into a cap and valued it as an ornament (Burroughs 1961).

The fact that Indians of the Mount Baker district of Washington made a determined effort to take mountain goat was noted by Brooks (1930). Entire tribes took part in organized drives to harvest mountain goat shortly before the turn of the century in this area (Brooks 1930). Early settlers undoubtedly also took mountain goat for their meat and hides but the rugged terrain occupied by goats probably precluded utilization except in very accessible areas.

The history of mountain goat sport hunting in Washington began in 1897. At that time the hunter was limited to taking two goats during a three month season. In 1913 the hunter was restricted to one goat per hunting season. Hunting areas were restricted in 1917 and the hunting season closed completely in 1925. Mountain goat hunting resumed in 1948 after biologists determined that the goat populations were stable and had filled the carrying capacity of the range. Since that time mountain goat hunting has been sanctioned every year on a controlled permit basis.

<sup>1</sup>Editor's note. Paper not part of Symposium.

<sup>2</sup>Unfortunately Lewis and Clark used the term "goat" to refer to antelope while "sheep" referred to mountain goats.

Concentration of hunting pressure on a few goat populations resulted in overharvest of these populations, while many other goat populations were not hunted. As a result, a unit system was established in 1957. Under the unit system, goat areas were divided into management units and permit quotas established among 10 units. Since that time the goat management units have been altered to regulate hunter distribution in proportion to goat populations. The unit system also allowed for an annual evaluation of permit quotas. A total of 930 goat permits was authorized among 31 goat management units in 1976. Although most of these units were open for rifle hunters, some units were open to archery only.

#### CURRENT DISTRIBUTION AND STATUS

Cascade Mountains - The current distribution of mountain goat in the Cascades is nearly identical to historic range. The only exception to this is probably at the southern end of their range on Mount Adams and Mount Saint Helens where native populations were extirpated. Although the type locality for *O. americanus* described by Lewis and Clark (in Miller and Kellogg, 1955) is probably Mount Adams, no authenticated sightings of mountain goat have been recorded in that area in the last century. Mount Adams is located on the Yakima Indian Reservation and hunting has never been regulated by the State.

In 1972 and 1973 a total of eight mountain goat from the Olympic Peninsula was restocked on Mount Margaret near Mount Saint Helens. These goats, taken from Mount Angeles, originated from transplants from Alberta in 1925 and Alaska in 1927 and/or 1929.

Another transplant of goats from the Olympic Peninsula to the Cascades occurred in 1975 and 1976 with the restocking of Mount Pilchuck. Although goats are currently found east of the area, none have been seen on Pilchuck for over thirty years. The transplant was made in Pilchuck State Park and it is hoped the non-hunting outdoor recreationists will be able to once again view these animals within the state park.

Population estimates of mountain goat in the Cascade Mountains were made for the first time in 1961 (Table 1).

Table 1. Mountain goat populations for Washington, 1961 (from Watkins 1962).\*

Area No.	Area Name	Number Goats	Closed Area Name	Number Goats	Total
1	Skagit River	400			400
2	North Methow	300			300
3	Okanogan River	300			300
4	Nookaack River	250	Mt. Baker Area	650	900
5	South Methow	200			200
6	North Lake Chelan	300			300
7	South Lake Chelan	250			250
8	Chiwawa River	450	Nason Ridge Area	250	700
9	Clacier Peak	300	Whitechuck and Sauk	250	550
10	Stillaguamish River	250	Long, Dickerman and Whitehorse Mtns.	50	300
11	West Stevens Pass	400	Baring and Groto Mtns.	100	500
12	Snoqualmie	400	Mt. Si and Denny Creek	50	450
13	North Wenatchee Mtns.	225			225
14	South Wenatchee Mtns.	500	Cle Elum River Area	125	625
15	Naches Pass	750	Castle Mountain	50	800
16	Bumping River	475	Timber Wolf Mountain	80	555
17	Packwood	450			450
18	Tieton River	300			300
19	East Ross Lake	150			150
20	West Ross Lake	150			150
21	Stebekin River	150			150
State totals		6,930		1,605	8,535

\*The above populations do not include any estimate of the goats on the Yakima Indian Reservation or in Mount Rainier and Olympic National Parks.

One of the objectives of a four year goat study initiated in 1976 was to re-evaluate goat populations throughout the Cascades. While it is premature to indicate what the results of our goat population estimates will be from this study, the total Cascade population is probably lower than it was in 1961.

The North Cascades National Park was established by an act of the 90th Congress in 1968. This park consists of north and south units of the National Park as well as Ross Lake and Lake Chelan National Recreation Areas. Mountain goat hunting is permitted in the two recreation areas, but closed in the park interior. Data from a questionnaire on mountain goat revealed that substantial numbers of goats were harvested from throughout the park prior to its establishment in 1968. Slightly over 20 percent of the annual goat harvest was taken in what is now North Cascades National Park. Since 1968, of course, only the two national recreation areas have been open to goat hunting. Mountain goat populations within North Cascades National Park have declined in some areas according to park records (Bruce Smith, pers. comm.).

Mountain goats are native to Mount Rainier and have been plentiful since records have been made of the Park's wildlife. Current distribution is similar to native range. All mountain goats within Mount Rainier National Park have been protected since the park was established in 1899. Mount Rainier National Park records (Stan Schlegel, pers. comm.) indicate the mountain goat population has been relatively stable for the last 10 years. The mountain goat population with Mount Rainier National Park is about 400 animals.

Olympic Peninsula - Mountain goats were not native to the Olympic Peninsula but were introduced from two or three transplants in the vicinity of Lake Crescent between 1925 and 1929. These introductions came from Alberta in 1925 and Alaska in 1927 and/or 1929. According to Olympic National Park records (Bruce Moorhead, pers. comm.) goats dispersed in an easterly and southerly direction following release in the Olympic Mountains. Ten years after the goats were introduced, most of the Olympic Mountains were included in Olympic National Park. By 1938, when the park was created, the goat population was thinly distributed through the northern half of the Olympic Mountains.

Since about 90 percent of the mountainous terrain on the Olympic Peninsula that is suitable for mountain goat is within the national park, nearly all goats have been completely protected. Olympic National Park personnel have prepared an unpublished report on mountain goat dispersal and population data (Bruce Moorhead, pers. comm.). This report indicates the goat population in Olympic National Park now numbers about 1,000. The current estimate of 1,000 goats from an original eleven animals is a ninety-fold increase over 50 years, or a net annual increase of about 20 animals per year, or 2 percent.

Selkirk Mountains - Mountain goats probably inhabited isolated mountains in the Selkirks at various times in recorded history but at no time was their population or distribution substantial. Dalquest (1948) referred to the sighting of a mountain goat in the Selkirks as a rare wanderer from outside the state. While mountain goats from Idaho probably wander into Washington occasionally, no native populations currently inhabit the Selkirks in Washington.

In the 1960's the Washington Game Department initiated a mountain goat stocking program in the Selkirks. Three releases were made but only one was successful. The release of seven goats near Flume Creek in Pend Oreille County in 1965 increased to a population of 30 mountain goats in 1972 when a limited hunting season was initiated.

#### CENSUS TECHNIQUES

Mountain goat populations are evaluated in a variety of ways throughout the state depending on climate, topography, and accessibility. In the Lake Chelan area a goat count is made by boat during January when goats are quite visible just below snowline. Goats are counted from roads in various areas of the state in March and April. In 1976 a goat count on Mount Angeles in Olympic National Park was conducted in September. In this area summer range is somewhat limited and a team of observers counted goats on hikes through preplanned census routes. Goat counts are made from fixed wing aircraft in other areas of the state. Washington is fortunate to have quite accessible goat range (compared to goat range elsewhere) and several census techniques are employed. While a study evaluating accuracy of goat counts has not been undertaken, ground counts have been superior to aircraft surveys in the more accessible areas.

Another method used to evaluate goat populations in Washington is through a questionnaire. Every goat hunter is sent a questionnaire requesting sighting information as well as harvest data, etc. Many goat hunters document goat observations extremely well and these observations are tabulated and compared to previous years. In this way a trend in percent kids or total observations may aid in determining a stable, declining, or increasing population.

## MANAGEMENT

Mountain goat are managed both for hunting and non-hunting outdoor recreationists in Washington. The controlled permit system for limited geographical areas regulates the hunter harvest on all goat populations. In areas where goat hunting is permitted, goats are managed as a trophy animal. Goat harvest is not aimed toward a maximum sustained yield as in deer and elk management. Some areas adjacent to major highways are closed to hunting to allow motorists and non-hunters the opportunity to view these animals. Many non-hunters believe mountain goats have only aesthetic value and some areas are managed for their consideration.

While most mountain goat populations in Washington State are managed by the State Game Department, substantial goat populations are found in the North Cascades, Olympic, and Mount Rainier National Parks. Mountain goats in all three national parks and other very accessible areas are managed for non-hunting outdoor recreationists. Mountain goats in the three national parks are managed by preserving wilderness tracts and providing a place for outdoor enthusiasts to observe mountain goats in a pristine setting. Backpackers and climbers often see goats in the rugged back-country and along trails to high lakes and mountain passes. The National Parks interpretive hikes and evening programs by park rangers provide information on the life history and ecology of mountain goats to visitors. Mountain goat populations in the National Parks total about 2,000 animals.

Mountain goat hunting is extremely popular and far more hunters seek a mountain goat hunting opportunity than the resource can accommodate. As a result, the Washington Game Department has an annual drawing for a limited number of goat permits. In 1976, a total of 6,814 persons applied for 930 mountain goat permits. All mountain goat hunting in Washington, therefore, is managed on a controlled permit basis and further regulated by goat management units. The goat unit system of selected geographical areas is designed to distribute the hunting pressure and harvest throughout the state. Any person with a current Washington hunting license may apply for a goat permit in any one of 31 goat management units except those who drew a goat permit in either of the previous 2 years. Although out-of-state residents may apply for a goat permit in Washington, the requirement of a current Washington hunting license limits the number of out-of-state applications.

The mountain goat hunting season usually opens on the second weekend of September and lasts until the end of October. (In 1976 the opening and closing dates were September 11 to October 31, both dates inclusive.) A hunter may take only one goat and hunt only in the goat management unit he or she applied for in the drawing. Mountain goats of either sex with horns 10cm (4 in) long or longer can be legally taken in Washington.

The statewide goat harvest is monitored primarily by the goat harvest questionnaire sent to each person purchasing a goat tag. One follow-up questionnaire is sent to those not responding to the initial questionnaire. Goat hunters in Washington have responded extremely well to this questionnaire and the return has been consistently about 88 percent.

The mountain goat harvest has declined in recent years from peak harvest years of 1964 through 1971. Three goat units in eastern Washington have been closed the last few years, however, as a result of declining survival of kids. Over the last ten years the average harvest has been 309 mountain goats while the 1976 hunter take was about 290. Table 2 lists the mountain goat hunter success in Washington from 1948 through 1976. Nearly half of all mountain goats taken in Washington are billies. While nannies are legally taken, hunters are encouraged to avoid taking nannies with kids.

In addition to harvest information recorded on mountain goat questionnaires, many sportsmen keep very good notes on sightings and other noteworthy observations. We are pleased that comments written on the questionnaire reflect a genuine interest by our sportsmen in the resource.

While most wildlife species have suffered from loss of habitat as a result of an increasing human population, mountain goats occupy the more inaccessible areas of the state and have lost little native range as a result of human habitation. There has been a loss of good goat habitat, however, from fire control and disturbances caused by new roads and logging activity. Wildfire burns at high elevations in the past have created excellent forage supplies for goats. In recent years with more efficient fire fighting techniques, the number and size of these burns has been drastically reduced. Our experience in the past has indicated goat populations are directly related to wildfire burns and have decreased with fire suppression.

Another management problem is the distribution of hunter harvest in relation to goat population. Concentration of hunting pressure on a few goat populations has resulted in overharvest in a few areas while many populations were not cropped at all. An expanding network of roads in goat areas has contributed to a shift in hunting pressure to the more accessible areas. Annual adjustments to goat unit boundaries and permit quotas are necessary to compensate for these changes in access and goat populations.

We believe our goat management program is adequate to preserve goat populations at the present time but more good, sound data is needed. After completion of a recently initiated goat study, we

will recommend refinements in management to assure the perpetuation of healthy mountain goat populations in Washington for the enjoyment of future generations. If this involves curtailment of some hunting opportunity, so be it. The goat comes first.

Table 2. Mountain goat hunter success.

Year	Permits Issued	Tags Sold	Percent Success	Goat Harvest		
				Eastside	Westside	Total
1948	150	---	37	31	24	55
1949	400	---	21	57	25	82
1950	400	---	25	83	16	99
1951	400	---	14	32	24	56
1952	400	---	18	39	32	71
1953	400	333	14	29	16	45
1954	400	329	16	46	8	54
1955	400	325	32	78	25	103
1956	400	302	35	64	13	77
1957	600	312	40	143	63	206
1958	600	516	39	132	67	199
1959	600	502	38	122	69	191
1960	800	692	39	162	108	270
1961	800	703	38	156	114	270
1962	880	773	34	162	103	265
1963	900	791	37	175	114	289
1964	970	870	40	191	153	344
1965	1,030	934	42	206	185	391
1966	1,005	943	37	200	147	347
1967	1,060	1,000	31	154	155	309
1968	1,065	986	34	168	171	339
1969	895	850	38	164	162	326
1970	925	870	39	155	185	340
1971	936	892	43	152	164	316
1972	930	876	35	118	135	253
1973	930	889	37	127	139	266
1974	961	899	38	123	149	272
1975	905	851	36	99	139	238
1976	915	872	41	109	179	288
Total	21,057	17,510		3,477	2,884	6,361
Average	726	730	33	120	99	219



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