

DISTRIBUTION, ABUNDANCE AND MANAGEMENT  
STATUS OF MOUNTAIN GOATS IN NORTH AMERICA<sup>1</sup>

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**Abstract:** The current status of the mountain goat (*Oreamnos americanus*) in North America is reviewed using results of questionnaires sent to management agencies. Of the nine United States and four Canadian provinces or territories with goats, British Columbia has the largest native population. Mountain goat range including current, historic, and introduced populations is summarized by maps provided by wildlife biologists. Census techniques are described. Mountain goat management approaches are reviewed and hunting regulations summarized. Only six states and four provinces have huntable goat populations. Goat hunting regulations have become much more restrictive in recent years and nearly all management agencies have initiated some type of "permit only" hunting.

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The mountain goat (*Oreamnos americanus*) is found only in northwestern North America. Although four subspecies (*Oreamnos americanus americanus*, *O. a. columbianus*, *O. a. kennedyi*, and *O. a. missoulai*) were recognized at one time, Cowan and McCrory (1970) found no valid reasons for recognizing subspecies within *Oreamnos americanus*. Although subspecies designations occasionally occur in the literature<sup>2</sup>, most authorities (Cowan, Pers. comm.) do not split the species.

This paper is a compendium of reports solicited from all states, provinces, and territories throughout mountain goat range. The goat biologist from each of the management agencies was sent a "status-management outline" and cover letter requesting specific information on mountain goat distribution (both historic and current), census techniques, and management. I would like to express my appreciation to the following individuals who contributed much information to this paper: W. Ballard, Alaska; W. Hall, Alberta; W. Macgregor, British Columbia; R. Denney, Colorado; L. Kuck, Idaho; R. Weckweh, Montana; G. Tsukamoto, Nevada; N. Simmons, Northwest Territories; P. Ebert, Oregon; A. Richardson, South Dakota; R. John, Utah; R. Corsi, Wyoming; M. Hoefs, Yukon Territory; and K. Baker, Parks Canada.<sup>1</sup>

#### DISTRIBUTION

The historical occurrence of mountain goats of North America does not differ appreciably from current distribution. Mountain goats were found in many of the mountainous areas of western North America from southeastern Alaska to southcentral Washington in the coastal range and as far south as central Idaho in the Rocky Mountains. The present distribution of mountain goats is presented in Figure 1. More specific distributions are shown in the accompanying status reports for each province or state.

British Columbia has more native goat range than any other state, province, or territory and the largest population of mountain goats in the world. An estimated 100,000 mountain goats inhabited British Columbia in 1964 (Table 1) prior to recent declines. A program of transplanting goats has not yet been initiated in British Columbia. Currently consideration is being given to the possibilities of transplanting goats to areas where they have been extirpated or barriers prevented their establishment.

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<sup>1</sup>Editor's note. Selected specific reports for some states, provinces or territories, although not presented at the Symposium, were submitted for publication. They are included in the "Status" section of these proceedings.

<sup>2</sup>And in these proceedings (Editor).



Figure 1. Distribution of Mountain Goats in North America.

Table 1. A summary of mountain goat abundance in North America by state or province.

State or Province	Estimate of numbers based on past records	Current estimate of numbers
British Columbia	100,000 (1964)	20,000 - 60,000
Alaska	no estimate	15,000 - 25,000
Washington	10,000 (1961)	no estimate
Montana	no estimate	no estimate
Idaho	2,785 (1955)	2,200 - 2,500
Yukon Territory	no estimate	1,400
Alberta	no estimate	1,200
Colorado	(introduced 1948)	575
Northwest Territories	no estimate	400 +
South Dakota	(introduced 1924)	300 - 400
Wyoming	no estimate	70
Nevada	(introduced 1964)	30
Oregon	(introduced 1950)	28 - 30
Utah	(introduced 1967)	no estimate
Parks Canada		1,670 - 1,770

In Alaska, range of mountain goats has increased northward and inland to the Chugach, Kenai, Wrangell, and Talkeetna Mountains. The goat may also be extending its range into the Alaska Range. Recent transplants to Kodiak and Baronof Islands have further extended goat range in Alaska. Native populations began declining on the Kenai Peninsula about 1970. Since that time, it has become evident that a statewide decline has occurred. The estimated current population is between 15,000 and 25,000 animals (Table 1).

The current distribution of mountain goat in Washington extends throughout most of the native range in the Cascades and also occurs in the Olympic Peninsula and Selkirk Mountains as a result of transplants. Re-introductions to Mount St. Helens and Mt. Pilchuck restored goats where native populations were extirpated. Mountain goat transplants from Alberta and Alaska to the Olympic Peninsula during the 1920's have substantially increased goat range in Washington. Current distribution in the Olympic Peninsula extends throughout the eastern, mountainous half of Olympic National Park and adjacent National Forest. Transplants of goats to the Selkirk Mountains in northeastern Washington have also increased goat range in Washington State. Mountain goat populations in Washington have declined somewhat in recent years in the Cascades, but have been increasing on the Olympic Peninsula.

The distribution of mountain goat in Montana has changed dramatically since initiation of a transplanting program in 1941. Between 1941 and 1972, a total of 294 goats was transplanted to 14 new areas within the state. Most of the release areas were in isolated mountain ranges east of the Continental Divide. The present distribution of native goat populations has changed very little from historic distribution. Only a few, small isolated areas once occupied by goats are now believed to be extirpated or supporting remnant populations. These small herds are currently not being hunted. All other native herds appear either stable or are showing signs of increasing. Montana does not estimate population numbers, but rather conducts surveys to gather information on production and distribution.

Despite population declines in Idaho, the present distribution of mountain goats remains essentially the same as when white men first settled in the state, with the exception of relatively recent introductions that have expanded goat range in Idaho. Mountain goats have been successfully transplanted to the southern shores of Lake Pend Oreille, the Seven Devils mountain range in west

central Idaho, and near Palisades Reservoir near the Idaho-Wyoming border. Idaho is managerially dominated by deer and elk and most information on mountain goats is obtained secondarily while conducting aerial surveys for deer or elk. Current population trends in Idaho are down, especially in the Selkirk and Cabinet Ranges. The total statewide population is estimated at 2200 to 2500 mountain goats.

Goat ranges are limited to the southern one-third of the Yukon Territory and these ranges are marginal compared to goat ranges in British Columbia and the Alaska panhandle. The largest goat population in the Yukon Territory is found in the recently established Kluane National Park. The estimated population in this area is 900 and, naturally, they are protected. There are about 500 other goats scattered throughout the lower one-third of the Yukon in small bands. The goat population in the Yukon, including Kluane National Park, is estimated at 1400 animals (Table 1).

Historic distribution of mountain goats in Alberta extended throughout all mountain areas along the east slope of the Rocky Mountains from the United States boundary north to the Kakwa River. Their numbers were thought to be in the thousands at one time. Presently goats inhabit about 70 percent of the historic range and number around 1200 (Table 1). In 1972, a total of seven goats were transplanted to Shunda Mountains east of Nordegg. In 1975, two kids were observed, so apparently the transplant has been successful, at least initially. About half of the goat population in Alberta is hunted and the other half totally protected. The present status of the harvested population appears to be static with little or no growth taking place. The goat populations in closed areas are increasing.

Mountain goats have never occurred naturally in Colorado; however, some mis-identified sightings have been reported. Colorado has had a very successful transplant program beginning in 1948. A total of 13 translocations involving 64 goats has been responsible for Colorado's current goat population of 575 animals (Table 1). The source of these goats was Montana, Idaho, South Dakota, British Columbia, and elsewhere in Colorado.

Mountain goats were introduced into the Black Hills of South Dakota in 1924 from Alberta, Canada (Richardson, 1971). The estimated population of 300 to 400 animals has remained stable for the last 20 years (Richardson *op. cit.*).

Mountain goats are not native to Oregon, but have been transplanted to the Eagle Cap Wilderness in the Willowa Mountains and Tanner Butte area in the Columbia Gorge. In the mid 1960's, goat numbers peaked in the Eagle Cap Wilderness about fifteen years after introduction. Low production or survival from 1967 through 1969 resulted in a decline, and numbers since 1971 have remained stable at between 25 and 30 goats. The status of the Tanner Butte population remains uncertain.

Goat populations within National Parks in western Canada are as follows:

1. Jasper National Park	500 - 600
2. Banff National Park	500
3. Yoho National Park	300
4. Kootenay National Park	200
5. Waterton Lakes National Park	100
6. Mt. Revelstoke/Glacier National Parks	70
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	1,670 - 1,770

These populations are native, relatively stable, and non-hunted except at Park borders.

Mountain goats were transplanted to Utah in 1967. The release area was in the Wasatch Mountains immediately east of Salt Lake City, and the total population in the state is still confined to this area. Goats were found for the first time last year and their current population is unknown.

In Wyoming, a winter population of 70 mountain goats inhabit the northwestern part of the state. Recent trends have been towards a slight increase in goat numbers.

Mountain goats are not native to Nevada, but were introduced to the Ruby Mountains in 1964. Based on random sightings and occasional aerial census, the mountain goat appears to have become established at low levels. The current mountain goat population is estimated at 30 animals.

The Northwest Territories has only sparsely populated goat habitat. The best goat habitat is in the southwest corner of the province on both sides of the Upper Flat River. There probably are

no more than 400 goats in this rather large area, but a few extend farther north.

#### CENSUS TECHNIQUES

Most of the states and provinces survey their goat populations with fixed-wing aircraft, helicopter, or both. The Yukon Territory conducts aerial surveys in both winter and summer, relying on summer surveys for classification and winter surveys for determining winter range. The states and provinces with annual summer surveys are: Alaska, Montana, the Yukon Territory, Alberta, Colorado, and Oregon. Only Idaho, Parks Canada, and British Columbia conduct an aerial population survey in the winter.

In recent years, Idaho, Alberta, Colorado, the Yukon Territory, and British Columbia have conducted aerial surveys by helicopter. Alaska and Montana have used helicopter surveys to a limited extent. Classification counts from helicopter are considered reliable in the Yukon Territory, but unsatisfactory in Montana. Classification by most agencies is limited to the ratio of kids:100 older goats. Other provinces and states (such as Washington) conduct annual ground surveys, but rely on aerial surveys on an irregular schedule. Ground surveys have been used to a limited extent in Alaska, but have provided more accurate age composition data than that acquired from fixed-wing aircraft.

#### MANAGEMENT

Non-consumptive Use - Many national and provincial parks attempt to preserve wilderness tracts and provide a place for outdoor enthusiasts to observe goats in a pristine setting. In some parks, interpretive hikes and evening programs by park rangers provide information on the life history and ecology of mountain goats to park visitors. Some state and provincial management agencies as well as national forests provide areas for roadside viewing and photography. As human populations continue to expand, more and more attention will be given to non-consumptive values of mountain goats.

General Hunting Regulations - In the last few years, goat hunting has become more restrictive in nearly all states and provinces. Most states and provinces regulate goat hunting by limiting the number of hunters through permits. These states and provinces are: Washington, Montana, Idaho, Colorado, Alberta, and South Dakota. Both Alaska and British Columbia initiated limited entry hunting in some areas and probably will regulate more areas by limited entry in the future. Only Yukon Territory and the Northwest Territories have not initiated a limited entry type of goat hunting.

Goats of either sex are legally taken in all states and provinces except in the Yukon Territory where nannies with kids are protected. British Columbia tried male-only seasons, but found them unsatisfactory. The states and provinces which prohibit the taking of kids through horn length regulation are: Washington, Colorado, Alberta, and the Yukon Territory. Compulsory inspection of harvest goats by wildlife officials has been implemented in the Yukon Territory, British Columbia, and in some areas of Alaska.

The states and provinces where mountain goats are currently hunted are: British Columbia, Alaska, Washington, Montana, Idaho, Colorado, Alberta, the Yukon Territory, Northwest Territories, and South Dakota. Respective harvest are found in Table 2.

British Columbia has implemented more restrictive regulations in recent years including: shortening the length of the season; reduction in bag limits; area closures; limited entry hunting; male-only seasons, and; compulsory inspection of goats taken. The bag limit is currently one goat. Season length varies from 22 days in some areas to six months in one limited entry area. Most of the areas have a six week season. Because of the difficulty in distinguishing males from females under field conditions, male only seasons have not been satisfactory. In 1976, compulsory inspection was instituted on mountain goat; wildlife officials now measure horn lengths and pull an incisor from harvested goats. The total estimated harvest has declined from 2,517 goats in 1965 to 1,057 goats in 1975 (Table 2).

Alaska has also implemented more restrictive regulations in recent years. Seasons and bag limits have been reduced and other regulations implemented to better manage the resource. Hunters can no longer hunt goats the same day they fly into a hunting area. In 1975, the bag limit was reduced to one goat and the Kenai Peninsula and surrounding area were placed on permit hunting in 1976. Individual areas are closed to hunting when harvest exceeds 10 percent of the most recent goat survey. Since 1972, Alaska has had a "mandatory" harvest report ticket program. Each successful hunter is required to validate a harvest ticket upon killing a goat and return a goat harvest report to Alaska Fish and Game within 15 days after harvesting the bag limit. Unsuccessful hunters are required to complete the report within 15 days after the closing date of the season. In southcentral Alaska, all successful hunters are required to bring their permit and goat horns to a Fish and Game Department office within five days after killing a goat. At that time wildlife

personnel will estimate age and determine the sex of the animal and ask hunters questions relating to their hunting success.

Table 2. A summary of the mountain goat harvest in North America from 1972 - 1976.

State or Province	1972	1973	1974	1975	1976
British Columbia	1,184	1,412	859	1,057	884
Alaska	630	822	619	569	392*
Washington	253	266	272	238	291
Montana	234	280	306	237	*
Idaho	152	128	121	102	90*
Colorado	season closed	12	18	35	34
Alberta	14	13	28	29	29
Yukon Territory	54	42	30	25	17
Northwest Territories	(5 - 10 annually by residents, 46 mcn. goats from 1965 - 1975 by non-residents)				
South Dakota	season closed	12	---season closed---		14

\*incomplete return

All mountain goat hunting in Washington occurs in goat management units on a controlled permit basis. The goat unit system of selected geographical areas and permit-only hunting was first developed in Washington and in recent years many other states and provinces have adopted a similar system. Anyone with a current Washington hunting license may apply for a goat permit in any one of the 31 goat management units except those who have drawn a permit in either of the previous two 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 the second weekend of September and lasts until the end of October. A hunter can take only one goat and hunt only in the goat unit he or she applied for in the drawing. Mountain goats of either sex with horns 10cm (4 in.) long or longer can legally be 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.

All mountain goat hunting in Montana is administered on a permit and unit basis. For the past several years, season dates have generally been from early to mid-September through late November. The bag limit is one goat of either sex per hunter. For the past seven years, males have made up 55 percent of the harvest; while kids have constituted one to two percent of the kill. Goat hunter success has remained fairly consistent for the past 10 years with the annual kill ranging from 478 to 234. During this same 10 year period, the number of permits issued statewide dropped from 1,948 to 567, which is consistent with the reduced harvest noted. A total of 276 permits was issued for 63 different areas in 1976. The trend in recent years has been to reduce the size of goat units and increase the number of units to disperse hunter pressure in proportion to available animals.

Mountain goat hunting in Idaho is also completely on a permit basis and has been since 1966. In 1975, a total of 102 goats was taken in Idaho for a 40 percent hunter success. Although goats of either sex and age can be legally taken, each hunter is mailed instructions prior to the season encouraging the hunter to avoid taking nannies with kids. Idaho utilizes a voluntary hunter report card system to determine kill information on mountain goats. This report card, attached to each goat tag, requests information on harvest success and hunting effort.

Colorado regulates goat hunting by issuing a limited number of goat hunting licenses each year. Since goat hunting was initiated in Colorado in 1964, the number of licenses issued has increased from six to 48 in 1976. Colorado goat hunters have had an average success rate of 80

percent. Goat hunters attend hunter-orientation schools and are encouraged to take billies rather than nannies. The harvest has averaged 63 percent billies. A regulation prohibits the taking of kids. The prevalence of wounding loss and irretrievable kills is believed to be so low as to be insignificant. Mountain goats are classified as a once-in-a-lifetime trophy and future management regulations may require a mandatory check-in of the head and return of the questionnaire.

Those areas open to hunting in Alberta are situated in the northern portion of Alberta's goat range. A total of 50 goat permits was issued in 1976; 29 goats were harvested (Table 2). The hunting season was limited to the first two weeks of October. Since 1972, when Alberta first went to a permit system, the harvest has varied from 13 to 29 animals. The success rate has ranged from 33 to 65 percent. Alberta sets permit quotas at approximately 10 percent of the known goats inhabiting an area. The present level of harvest with 50 percent success is at the five percent level. Alberta has a 10cm (4 in) horn rule and a bag limit of one goat of either sex.

Since 1965, only 46 mountain goats have been taken by non-resident hunters in the Northwest Territories. Approximately 5 to 10 goats are killed by resident hunters annually. Goats are presently being taken as an "incidental" trophy. There is no lottery for goat permits in the Northwest Territories, but the holder of a big game hunting license can take one goat of either sex per year.

As a result of over-harvest of some goat populations, hunting in the Yukon has become the most restrictive of all states and provinces. In 1974, the following regulations were implemented: protection of female goats accompanied by a kid; protection of all goats with a horn length of less than 20cm (8 in); reduction of the hunting season to one month (September), and; submission of all heads of goats taken to the Game Branch for inspection and measuring. As a result of these regulations, the annual harvest during the past three years has been less than 50 percent of what it had been during the early 1970's (table 2). Prior to 1974, the sex ratio of the harvest was around 50/50, while during the past three years, it has been 65/35 in favor of billies. Although the Yukon does not have a permit system, non-resident hunters can hunt only with a registered outfitter. During 1975, the success rate was only six percent for non-residents.

Management Problems - Although no single management problem is universal to all states and provinces with mountain goats, most management agencies expressed concern with: accessibility, harassment, and habitat destruction as a result of a spreading network of roads associated with logging and mining. Accessibility has been a problem in many areas because new roads in goat habitat concentrates goat hunting, leading to over-harvest in localized areas. Logging and mining activities tend to harass goats. The result is a movement away from traditional ranges. Strip-mining and logging have contributed to habitat destruction. The impact of these activities has not yet been fully evaluated. Fire suppression in goat range has also been implicated in habitat deterioration and a reduction in carrying capacity. Most states and provinces indicated they lacked good information on mountain goat population dynamics as well as movement and migration patterns. Hopefully this paper fulfills one of the objectives of this symposium; that is, to collate some basic information on goats from many areas so that all states and provinces could better manage their respective goat populations.

#### LITERATURE CITED

- Richardson, A. 1971. The Rocky Mountain Goat in the Black Hills. South Dakota Dept. Game, Fish and Parks. Pierre, South Dakota. 25pp.