STATUS OF MOUNTAIN GOATS IN BRITISH COLUMBIA

W. G. Macgregor

British Columbia Fish and Wildlife Branch
1019 Wharf Street
Victoria, British Columbia, Canada[1]

Little information is available on early populations of mountain goats in British Columbia. The earliest recorded account of this species in British Columbia was by David Thompson in 1807. The "Inventory of the Natural Resources of British Columbia" (1964) gives an estimated population of 100,000 mountain goats in the province in 1961. Since that time, declines have taken place in many herds. The current 1977 estimated population is 63,000 (Blower 1977). In several areas the declines are attributed to over-hunting and in others due to severe winters or a combination of both over-hunting and sever weather (Phelps et al. 1975).

CURRENT DISTRIBUTION

Mountain goats are found in most of the mountainous areas of the province, except for Vancouver Island. They are found from sea level along the west coast to elevations over 2500m in the Rockies. Approximately 25 percent of lands of British Columbia support mountain goats (Fig. 1 and Table 1) in at least moderate numbers (Blower 1977).

Table 1. A summary of the distribution and relative abundance of mountain goats in British Columbia (Blower 1977).

	RELATIVE ABUNDANCE CATEGORIES						Population Projection Based on Abundance Categories	
	FEW		MODERATE		PLENTIFUL			
Resource Management Region Number	Area in km^2	% of Prov. Total	Area in km^2	% of Prov. Total	Area in km^2	% of Prov. Total	Estimated Number of Animals	% of Prov. Total
1	205	1	627	2	290	4	1770	3
2	1822	10	2285	7	157	2	3200	5
3	1640	9	1774	6	543	7	4060	6
4	1279	7	3583	12	483	6	5760	9
5	1762	10	3668	12	NIL	0	4110	7
6	5068	28	10660	35	5797	76	33390	53
7	6425	33	7915	26	362	5	10440	17
TOTAL ALL REGIONS	18201	100	30512	100	7631	100	62730	100

Categories: Few - 1 goat per 1.5 - 39km^2 (Est. avg. = 1 goat/12km^2)
Moderate - 1 goat per .3km^2 (Est. avg. = 1 goat/.9km^2)
Plentiful - over 1 goat per .3km^2 (Est. avg. = 1 goat/.3km^2)

[1]Editor's note. Paper not part of Symposium.

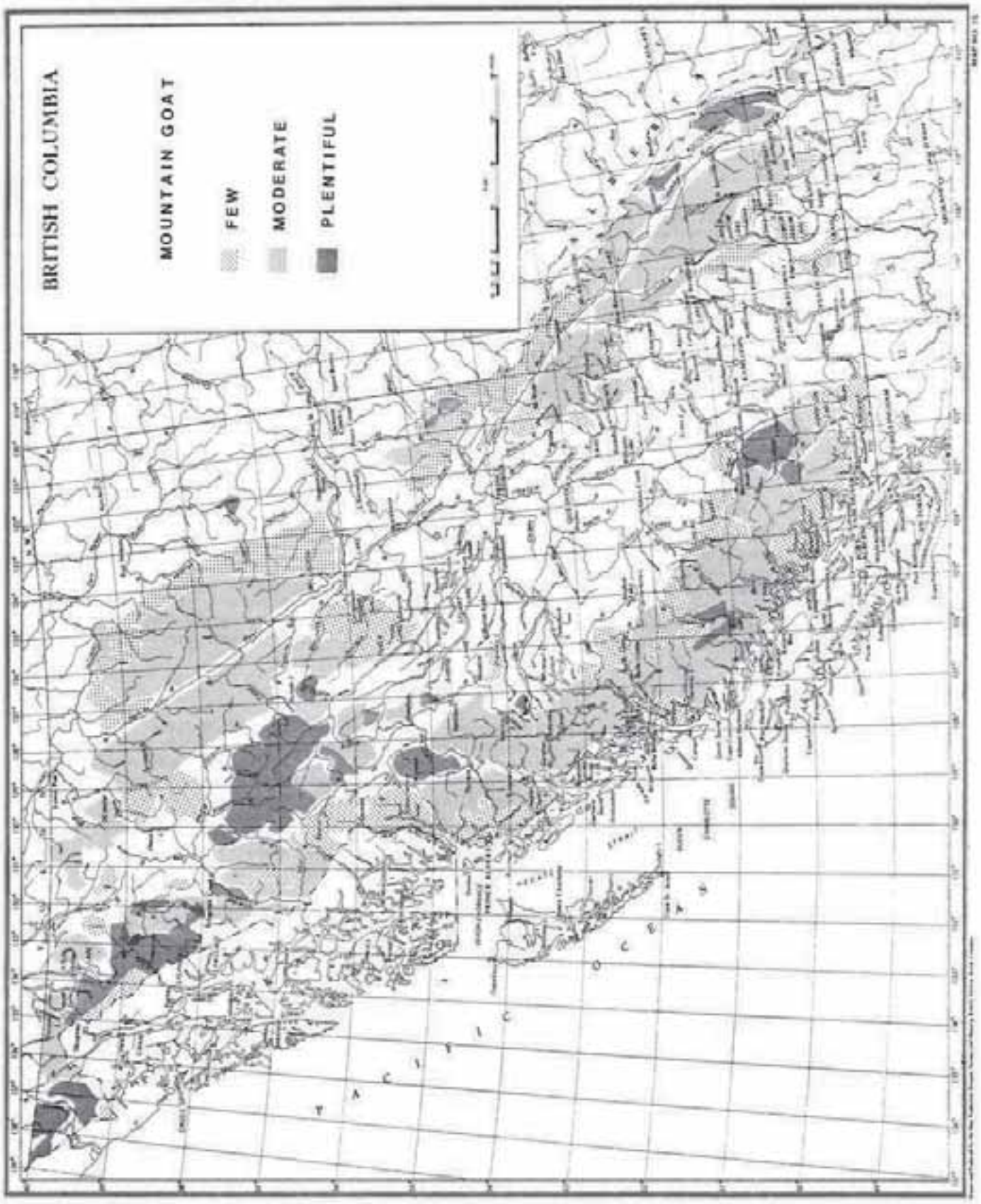

Figure 1. Mountain Goat Distribution in British Columbia.

INTRODUCTIONS

Only one introduction has been made in this province. In 1924, four mountain goats were transferred from Banff, Alberta to Vancouver Island. These animals were last reported in 1941. (British Columbia Game Comm. 1924 - 1943.) It appears that there is probably habitat that would support mountain goats on Vancouver Island. In view of the success of transplants in other areas, consideration is being given to the possibility of a transplant to this area.

CENSUS

Aerial surveys, usually by helicopter, are used to provide most of the information on goat distribution and numbers. Accessible herds are also counted from the ground. These data are supplemented by information on distribution provided by hunters and guides. The distribution information is far more reliable than the population estimates.

HABITAT

Mountain goats inhabit the roughest possible terrain in the mountain ranges of the province, from sea level to above timberline. Usually they are found within easy reach of rocky bluffs or crags for hasty retreat from any danger. They may travel short distances through forests and valleys, but will seldom linger there. Although deep snows may force them to lower elevations, they prefer to remain high in the mountains, seeking out windswept slopes of low snow depth, usually with southern or western exposures.

BREEDING BEHAVIOUR

Pre-mating activities begin when adult males slash brush with their horns and dig rut beds. Mating activity reaches a peak between November and early December. Parturition occurs from May to June. When she is about to give birth, the nannie seeks out a secluded, sheltered location, sometimes in a cave or under a large overhang of rock. Typically, it is the roughest piece of terrain in the mountain goat's habitat. Usually only one kid is born, but twins do occur. At birth, the kid is about 30cm long, weighs 2.5 to 3.5kg and is clothed in white wool. The nannie remains in this nursery area for about 10 days, until the young kid is able to follow her and join the herd.

MORTALITY

Survival of the mountain goat is greatly dependent upon the availability of suitable wintering areas. Kids and yearlings experience the greatest mortality. Deaths are attributed in part to adverse weather conditions in winter. Deep snows lower the availability of food and make the animal more susceptible to disease, parasites, predators and accidents. Mountain goats are subject to heavy infections of lungworms and intestinal parasites. These can be damaging, especially when combined with critical winter conditions of cold, snow and food shortage. Other diseases identified in mountain goats from British Columbia include: actinomycosis, pseudotuberculosis (Cowan 1951), contagious ecthyma (Samuel et al. 1975), and white muscle disease (Hebert and Cowan 1971).

Predation of mountain goats seems to be a minor factor in limiting goat populations. Cougars and coyotes have both been observed to prey on mountain goats and some reports credit eagles with taking kids, but the latter is probably a rare occurrence. Wolves, bears, bobcats, and wolverine also prey on them if given the opportunity. Although mountain goats choose to seek safety in retreating to escape terrain, they will meet an aggressor, and if necessary, will use their stilletto-like horns to inflict injury on the predator (Wright, undated).

Accidents are a major cause of death. Although they have been observed to fall short distances without apparent injury, many accidents do occur through fighting or slipping. Avalanches have been known to take several goats at a time (Wright, undated).

MANAGEMENT

Non-hunted populations - Hunting closures were established in British Columbia by authority of the Wildlife Act in 1963. Closures have increased in number and area since that time but often have been instituted after the goat populations had been reduced. Over-hunting of populations was often masked by the lack of detailed information on hunter take by area. The total kill in several large areas remained stable only because as one population declined from over-hunting a new population was made accessible to hunters (Phelps et al. 1975).

Since 1970, several accessible areas have been set aside by the Fish and Wildlife Branch for non-consumptive utilization. In addition to these areas, several National and Provincial Parks as well as Ecological Reserves have goat populations which are unhunted.

Hunted Populations - Seasons have become more and more restrictive to protect goat populations from over-harvesting. These restriction have consisted of: shortening the length of the season; reduction in bag limits; area closures; limited entry hunting; males only seasons; and, compulsory inspection of goat taken. Bag limits are now one goat of any age or sex per season. Most of the areas have a six week season. However, season length varies from 22 days to six months on one limited entry area. Because of the difficulty in distinguishing males from females under field conditions, male only seasons have not been satisfactory.

Hunting Pressure and Goat Harvests - In 1965, a maximum of 4340 resident goat hunters, plus and unknown number of non-resident goat hunters took an estimated 2517 goats. By 1975, the number of resident hunters had dropped to 2066, a 52% decline. During this period, the total harvest dropped to 1057 goats, a decline of 58%.

Table 2. Shows the harvest by residents and non-residents from 1965 - 1976.

Provincial Hunting Pressure and Harvest

1965 - 1976

Year	Resident Hunters	Resident Harvest	Non-resident Harvest	Total Estimated Harvest
1965	4340	1967	550	2517
1966	3501	1762	679	2441
1967	3438	1577	567	2144
1968	3681	1661	620	2281
1969	3995	1557	695	2252
1970	3991	1386	605	1991
1971	2355	921	557	1478
1972	5240	737	447	1184
1973	5791	965	537	1412
1974	2069	487	372	859
1975	2066	623	434	1057
1976	2131	498	386	884

The reported ratios in the kill as reported by hunters has averaged 57% adult males, 39% adult females and 4% juveniles.

Information From Hunters - Hunters are asked to report age, sex, location and date of each goat killed. Compulsory inspection was instituted in 1976. Successful hunters must bring the horns and lower jaw from any mountain goat killed to an employee of the Fish and Wildlife Branch. Horn measurements are made and an incisor tooth is removed for aging. Hunting effort by time and area is also recorded.

MANAGEMENT PROBLEMS

Overhunting - Increased access has resulted in many of British Columbia's mountain goat populations being overhunted. Maintaining an acceptable level of harvest without depleting the base breeding population is difficult. Goats utilize cliffs and bluffs for escape cover. This in addition to their low productivity make them particularly vulnerable to overhunting.

POPULATION INFORMATION

Obtaining the information necessary for sound management is often costly and difficult. Reliable information on herd size, composition, recruitment, and mortality is often lacking. Analysis of sex and age data obtained from compulsory inspections of hunter killed animals by the Fish and Wildlife personnel should yield valuable data on the sex and age composition of the harvest. This will be useful in regulating the take to prevent overharvesting.

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