Responses of Two Groups of Mountain Goats, *Oreamnos americanus*, to a Wolf, *Canis lupus*

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Smith, Christian A. 1983. Responses of two groups of Mountain Goats, *Oreamnos americanus*, to a Wolf, *Canis lupus*. Canadian Field-Naturalist 97(1): 110.

The reaction of two small groups of Mountain Goats, *Oreamnos americanus*, to the presence of a Wolf, *Canis lupus*, illustrates the importance and effectiveness of rocky terrain to the goats, and different responses in different situations.

Key Words: Mountain Goats, *Oreamnos americanus*, Wolf, *Canis lupus*, responses, habitat.

The Rupicaprini, including Mountain Goats (*Oreamnos americanus*), are well adapted to the exploitation of steep, rugged terrain, and their anti-predator strategies rely on the distinct physical disadvantages of most mammalian predators in such habitat (Schaller 1979). A recent observation of the interactions of two groups of goats and a Wolf (*Canis lupus*) illustrates the importance of escape terrain to this ungulate species.

On 24 September 1981, two groups of Mountain Goats were being observed on a ridge in south coastal Alaska in the vicinity of Boca de Quadra, 55° 20′ N, 130° 30′ W. One group consisted of two adult females, two kids and one subadult (sex unknown), all of which were bedded in an area of broken rock interspersed with alpine vegetation on a 15-20° slope at 1100 m elevation 20 m below the ridge top. The second group consisted of a pair of adult females, each accompanied by a kid, and bedded on a smooth 30-35° slope of alpine vegetation 100 m below and 100-150 m south of the former group. About 50 m farther south was a steep rock outcrop, slope 45-50° approximately 30 m wide and 10-20 m high.

At 0942 a single adult Wolf trotted over the crest of the ridge downwind and 50 m south of the first group. The instant the Wolf appeared, the upper group bolted north along the ridge, remaining below the ridge crest in rocky terrain. The Wolf initially chased the goats, but after 100-150 m it ceased the pursuit. All five goats continued to flee at a panicked gallop, angled up along the slope and traversed 800-900 m before they crossed over the ridge out of sight onto an extremely sheer rock face.

In contrast to the first goats, the lower group rose quickly from their beds and walked at a deliberate but unhurried pace to the nearby rock outcrop. One pair climbed onto a narrow ledge approximately 5 m above the base and near the middle of the outcrop, making an approach by the Wolf difficult, if not impossible. The other pair moved to the base of the outcrop and backed up against a vertical rock face, thus preventing any flanking approach.

When the Wolf turned from the aborted chase, it briefly observed the four lower goats as they gained their positions on the rock outcrop. It then loped to the south along the ridge crest, making no attempt to approach the lower goats. It continued along the ridge until it became aware of my presence, then descended the slope into the subalpine forest and disappeared.

The different reactions of these two groups of goats may have been due to their relative positions when the Wolf appeared. The upper goats could have been effectively intercepted by the Wolf if they ran toward the rock outcrop. Their response was to flee to the nearest steep terrain, which was almost 900 m away. The lower group was able to reach adequate escape terrain before the Wolf could initiate an attack.

From an energy standpoint, the response of the lower group was obviously advantageous. This may explain why McFetridge (1977) reported 95% of all observations of nursery groups of goats in Alberta as being within 412 m of escape terrain and why studies in Alaska indicate that distance to cliffs is the single most important factor determining habitat use by goats (Schoen and Kirchoff 1982; author's unpubl. data).

Literature Cited

McFetridge, R. J. 1977. Strategy of resource use by mountain goat nursery groups. *In* Proceeding of the First International Mountain Goat Symposium. *Edited by* W. Samuel and W. G. MacGregor. British Columbia Fish and Wildlife Branch, Victoria, B.C. pp. 169-173.

Schaller, G. B. 1979. Mountain Monarchs. University of Chicago Press, Chicago. 425 pp.

Schoen, J. W., and **M. D. Kirchoff.** 1982. Habitat use by mountain goats in southeast Alaska. Alaska Department Fish and Game. Juneau. 67 pp.

Received 28 February 1982
Accepted 1 September 1982