



BRITISH COLUMBIA MOUNTAIN GOAT SOCIETY

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Newsletter #31

December 3, 2023

Greetings to All

Smithers Method

Attached is the latest news on our proposal to add a camera to mountain goat population survey flights. We hope to have all testing complete by March of 2024. We include a sample camera image for you to look at. A link to our Google Drive account is provided in the attached paper. The first image you will see on Google is reduced in size. Be sure to click on the download icon to see the original photo (61 MB). Good luck finding the goat in the photo.

Philopatry, Love of Place

In our Newsletter #30, while discussing chronic stress, we stated the following:

“Chronic stress builds so much that the goats may abandon old habitat and move to new.”

The word “new” was misleading, sorry about that. Our decades of field observations show that mountain goats usually do not move to completely new habitat if displaced. They simply move to a portion of their existing habitat. The herd’s situation may be new but the habitat is still the same.



Twins on China Knows - photo credit Ed Thompson

We have been monitoring one of our local mountain goat herds for 20 years. The population of the herd is approximately 25

goats. The herd wanders over a land area of 18 sq km, measuring 6 km by 3 km. This herd is separated from another herd of 23 goats by a subalpine valley that either herd can cross easily in an hour. The two herds can literally see each other, some herd members visit, but the herds don't cross over. The populations of the two herds have stayed roughly the same since 2003. In August of 2018, we were lucky enough to view and count both herds at exactly the same time, from the same location.



Winter on China Knows - photo credit Ed Thompson

Billies will move between herds during the rut but then they usually move back to their home after the rut. According to the literature and our field observations, a few juvenile mountain goats disperse from their home and travel to other mountains during summer, but many move back in a week, a month or a year. So the basic herd stays in place. The bedrock members of each herd are the mature females, especially those with kids. They stay on their home range no matter what, along with the kids and juveniles.

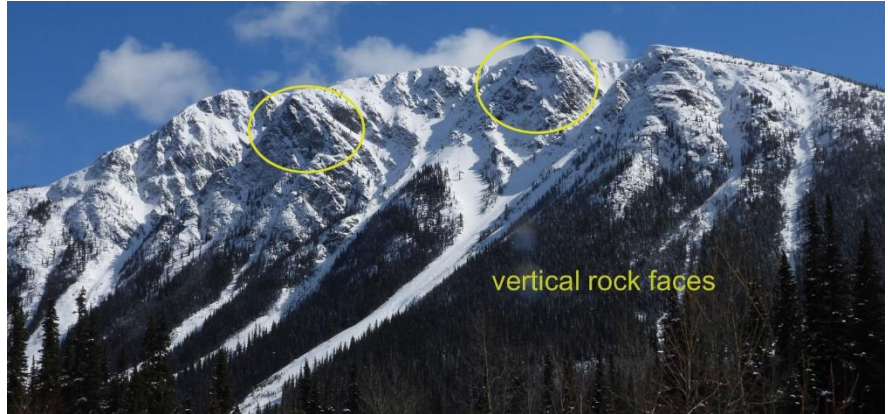
Two new hiking trails were established at one end of the herd's territory. The herd no longer wanders across that area and the herd's territory is now reduced from 18 sq km to 15 sq km. The lost area lacks good escape terrain, so it was marginal for the herd anyway. But it's still a loss. If more hiking trails are created that cross the herd's range, the goats will avoid those paths and the total habitat takes another reduction.

It's very safe to say, reduce effective habitat and you reduce population. Another neighboring herd population went from 26 to 5 as a result of hiking trails carving the habitat into small pieces. The herd could no longer easily access vital forage and mineral licks without encountering hikers and dogs.

This tendency to stay on a home range is known as philopatry, "love of place". Kevin White refers to it as "range fidelity" in the paper he co-authored with Yasaman Shakeri and Jason Waite [Staying close to home: Ecological constraints on space use and range fidelity in a mountain ungulate \(nih.gov\)](#)

What drives philopatry? Mountain goats can climb across very steep rock but there is lots of rock that is too steep. When escaping from a predator, they must make quick decisions about where they can go and where they can't go. Mountain goats must know every ledge and scree slope in their escape terrain.

On McKendrick Mountain, middle parts of the cliff are vertical and too steep for goats. They must develop a mental map of the paths on either side of each sheer rock face. When escaping a predator, goats move quickly with no time to look before they leap. Make a mistake and the goat is stranded between injury from a fall and a predator. There are other drivers of philopatry but first and foremost for mountain goats is knowledge enough to escape from predators.



The mental map of the mountain is passed from nanny to kid and from senior male to juvenile in a male group. Mountain goats are explorers. In summer, we see nannies roam across extremely steep rock, places they would never go in winter. We have also seen individual goats challenging themselves by intentionally climbing across steep rock when there was an easy route meters away. We watched one male try to get across one slope only to back up and try again numerous times for over an hour. Then he tired of the game and walked away. That fearless curiosity builds mental maps.

If mountain goats move to a new habitat, they have to start all over again with a new mental map. Until the map is complete, they are at risk of falling from ledges that end abruptly, or being caught by a predator if the rock is not steep enough. So philopatry is very much a matter of feeling safe with the familiar.

Until the next time and best wishes for the Holiday season,

Jim

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