**[Marmots](https://onthetrailsjuneau.wordpress.com/2017/07/21/marmots-2/) by Mary Willson**

from skyline to shoreline in Southeast Alaska

Marmots belong to the large group of squirrel-like rodents that occur around the world (except Australia and Antarctica). There are over a dozen species of marmot, all in the northern hemisphere, and Alaska has three of them. The woodchuck is found only in the central Interior of Alaska, the westernmost extension of its wide North American range. The Brooks Range (and northwestern Alaska) has its own marmot species, known as Brower’s marmot, which occurs nowhere else in the world. The third species is the hoary marmot (closely related to Brower’s); it lives across southern Alaska, including Southeast, and on southward through the mountains to Montana and Idaho.

Over much of their range, hoary marmots are residents of rocky alpine areas. Hoary marmots have been studied intensively in Washington, where they are the marmot species found at the highest elevations, above the habitats of other marmots. Here we see them on Gold Ridge and the ridges on Douglas Island, for example. In Juneau and probably elsewhere in Southeast, however, marmots are not limited to alpine areas but can be found at sea level, living just above the high tide line, where they like their favorite rock piles too, but sometimes they create burrows in moraines and sandbanks underneath large trees.

Marmots spend a lot of time in their burrows, so we only see them for a limited part of the year. They hibernate for many months during the winter, going to sleep in fall and staying in their burrows until spring. They retreat to their burrows in hot summer weather too, avoiding hot weather and diving underground to avoid predators. Most hikers are familiar with their whistled alarm call, given in response to perceived threats, be they human or canine or eagle; it’s a signal saying ‘Look out! Be ready to dive for cover!”

Hoary marmots favor habitats such as rocky talus slopes, where they can create burrows that are protected from most predators and from the extremes of weather. They dig several kinds of burrows: some are used as hibernation places, some serve as residences for females with young, some are used as living quarters by juveniles or males, and other, smaller, ones serve as refuges in which to hide from sudden danger. Meadows full of tasty greens are always nearby. Burrowing sites and food availability are two important factors that determine where hoary marmots can live. Suitable habitat is limited and patchily distributed.

Burrows are also very important for winter survival. Deep burrows are sheltered from winter cold, and a thick snow cover also helps marmots survive over the winter while they hibernate. Overwinter survival of pups is also related to nutritional status: those that are born late in spring/summer have a shorter period of time in which to feed, so they enter hibernation with less fat than those born early in the season, and are less likely to survive than pups that fed all summer long.

Hoary marmots mature when they are three years old. Females generally start breeding when they reach maturity, usually bearing offspring in alternate years. Young marmots stay with their mother until they are two years old; then they may disperse to other areas. Females with pups or yearlings have residence burrows that are not shared with other individuals.

Mature males generally hold territories in suitable habitat, sharing that space with females, juveniles, and pups. After maturation, however, some males may spend a year or more as vagrants or as subordinate satellites within an established territory of a dominant male. Satellites may move up to become a territory owner when the previous owner dies.

If the territory of a mature male contains rich foraging grounds and good burrow locations for more than one female and her offspring, two (rarely three) females may settle there. Not content to have one or two females, territorial males sometimes go gallivanting to other territories, looking for casual liaisons (note that this implies the existence of willing females!). Gallivanting appears to be relatively rare, however, so presumably most of the offspring born on a territory are fathered by the resident male.

Are bigamy and monogamy equally successful in leaving offspring for the next generations? One would think that bigamous males (with two females) would father more offspring than monogamous males, in general. However, studies in the Pacific Northwest indicate that monogamous males may last longer as territory owners than bigamous males. Furthermore, females mated to a bigamous male are more likely to skip an extra year between litters. So the lifetime legacies (measured in number of descendants) of bigamous and monogamous males may not differ greatly. For females, however, the lower frequency of reproduction in a bigamous relationship probably means that they have a lower lifetime output of young than females in monogamous relationships, on average.

I would love to see a good study of marmots in Southeast. Do marmots in Southeast fit the examples revealed by studies in the Pacific Northwest? Do alpine and beach marmots differ in their social arrangements, such as the frequency of bigamy, and the effects of mating arrangements on survival and production of young? Does survival of pups or adults differ with elevation? The potential length of the summer feeding period is surely greater at low elevation….unless beach marmots have to spend more burrow time in summer, to escape hot weather (if any). Research funds are sadly scarce these days, so such questions may not be answered in the near future.