

Celebrating marmots

by John Morton



Hoary marmots live near treeline in the Kenai Mountains.

For those of you who don't know it, Marmot Day is on February 2. Celebrated in many lower 48 states as Groundhog Day, the name change was recognized by the 26th Alaska State Legislature as an official holiday. Who'd have guessed that North America's biggest squirrel and perhaps one of the laziest (hibernates 8 months of the year) would become so famous?

In a strange twisted way, this all makes sense. There are marmot researchers who call themselves marmoteers and marmot fans who call themselves marmotophiles.

A groundhog is in fact a marmot, one of 15 species found in the northern hemisphere worldwide. In Alaska, there are three marmots, the Alaska or Brower's marmot which is restricted to the Brooks Range, the woodchuck (or groundhog) which is restricted to the eastern interior north of the Alaska Range, and the hoary marmot which is found in many alpine habitats south of the Yukon River including our Kenai Mountains.

Hoary marmots (*Marmota caligata*), sometimes called "tundra bears", are mostly gray with a darker lower back and face and a dark, reddish tail. They have a white patch between their eyes. They have well-developed claws on their front feet for burrowing with 5 pats on their forepaws and 6 on their hind

paws. *Caligata*, which means "booted" in Latin, comes from their black feet. Their pelage color is adapted to help them blend with the surrounding lichen-colored rocks or rusty-brown soil.

There are two likely endemic subspecies of hoary marmots in Alaska. Montague Island marmots were last seen at the turn of the 20th century and may be extinct or close to extinction. Glacier Bay marmots are melanistic (black) and are also presumed to be an endemic population. Given the Kenai Peninsula's insularity and glacial history, and the poor dispersal ability of marmots, it wouldn't surprise me if our own hoary marmots were genetically unique.

Adult hoary marmots can weigh more than 10 pounds by late summer and exceed 30 inches in total length. Not surprisingly, wolverines, wolves, bears and eagles prey on them. The Alaska Department of Fish and Game considers the marmot a furbearer and so trapping regulations apply to harvest by humans. Indeed, hoary marmot hides were prized by northwestern Native Americans, used for clothing, in potlatch ceremonies and as a sort of currency among the Tlingit.

Hoary marmots are highly social animals, communicating by whistling, nose rubs, and tail movements. The basic social structure of a marmot colony consists of one adult male, one satellite male, one or more adult females, two-year-olds, yearlings, and young of the year. They can live for up to 15 years. Mating occurs once per year in early spring, often while still in the den. Females give birth every other year to litters of 3-8 young in late spring to early summer after a 4-week gestation period.

True hibernators, hoary marmots enter a state of torpor in winter during which body temperature and all bodily functions are reduced. They hibernate in the same burrows in which they spent the summer. Remember, these guys are the champions of hibernation, spending 8 months in a partially-suspended state. They emerge in mid-May, become lethargic by late August, and re-enter the burrows as early as early September. All members of family groups hibernate together.

I was intrigued to run across an online abstract

in the Journal of the American Medical Association of a study on hibernation and marmot physiology conducted by Carnegie Institute researchers in the 1930s. They found the basal metabolism of even non-hibernating marmots was lower than that of other warm-blooded animals of comparable size.

What do hoary marmots eat? One of the best studies of their diet was conducted by a Colorado State University researcher who analyzed marmot scat collected from Slaughter, Surprise and Crescent mountains near Cooper Landing in the early 1970s. More than 90% of their diet was plants, composed of vetches, dryas, sedges, fleabanes, fescue grass, mosses, lichens, and willows. But they will eat meat when given the chance. Hoary marmots, introduced in the 1930s to Sud Island, the smallest of the Barren Islands between the Kenai Peninsula and Kodiak, nearly wiped out the native rhino auklet population by eating its eggs.

Here on the Kenai Peninsula, hoary marmots live near treeline. Relatively accessible places to find them are along the trails to Exit Glacier in Kenai Fjords National Park and Summit Pass in Chugach National Forest.

However, treeline has risen 50 meters on average

in the Kenai Mountains in the past 50 years due to a warming climate. While that doesn't sound like a lot, it represents about 300,000 acres of alpine habitat lost. Furthermore, hoary marmots have a narrow climate niche—they're heat intolerant in summer, require insulative snow during winter, but need a rapid snowmelt in spring so they can get busy with their short reproductive season. As such, hoary marmots are good candidates as indicator species of climate change. Long-term population dynamics of hoary marmots may also indicate changes in alpine snowpack, plant phenology and abundance, or predators.

Biologists at the Kenai National Wildlife Refuge are planning on surveying the distribution of marmot colonies over the next couple of years to assess their current status. For any local marmotophiles out there, we ask your help in finding colonies. Please call 907-260-2815 or email me at john_m_morton@fws.gov if you have sightings or anecdotal observations to share.

Dr. John Morton is the supervisory biologist at Kenai National Wildlife Refuge. Find more information about the Refuge at <http://www.fws.gov/refuge/kenai/> or <http://www.facebook.com/kenainationalwildliferefuge>.