

# NATURE DETECTIVES

Fall 2016



## Sweet Dreams, Yellow-bellied Marmot

If you were a marmot, you would be going to bed about now and you wouldn't get up until at least April or maybe May! Your breathing and heartbeat would sloooooow way down and your body temperature would begin to drop. Zzzzzzzzz.

Pull Out and Save

Yellow-bellied marmots are Boulder County's largest ground squirrels. They spend about eight months of every year hibernating in their underground burrows. As they sleep through chilly days and nights, their bodies use up fat the marmots packed on during the summer.

On fair weather days during the other four months, they gorge on grasses and flowers. Marmots need to almost double the amount of fat on their bodies to survive their long hibernation. Marmots are such sleepyheads, they frequently nap between meals. If days get too hot, they may head to their burrow for a deep summer sleep.\* They better not sleep too long because they need to eat and eat before fall arrives.

\*The summer version of hibernation-like sleep or dormancy is called **estivation**.

## Marmot, Wake Up! Get Going On Your Daily Schedule!

Sunrise means it is time to get up and start the day.  
First job is eating.

Slowly amble along a flattened path to munch on flowers and grasses.

Then climb to a favorite, sunny rock for guard duty plus basking and resting.

Digging work gets done before or after a long noontime snooze down in the den.

A rain shower prompts a retreat into the den for a nap *any* time.

Eat a late afternoon meal of plants mixed with a few seeds. Delicious!

Sunset signals bedtime.

Tomorrow will be another *busy* marmot day.





## Marmots Need Boulders

Good habitat for marmots starts with a rocky slope and large boulders. Marmots tunnel under rocks because rocks are somewhat of a barrier against digging predators such as badgers. Boulders also make a perfect high perch for sunbathing and watching for danger and intruders.

The size of the boulder field and the amount and kinds of juicy plants nearby affect the numbers of marmots that live there. They are choosy about their food. Dandelions are just one of many favorites.

The best habitat is found in the mountains. A few marmots find suitable boulder fields in the foothills, but most live higher up. Montane and subalpine meadows grow lush plants and provide good habitat where there are rocky rises. Some marmots make their homes in boulder fields above treeline in high alpine areas.

## Cozy Dens

Typical tunnels head straight down beneath rocks for a couple feet then level off into a long run of 10 to 15 feet. Sleeping rooms and a toilet room branch off from the run. Sleeping rooms are lined with dry grass.

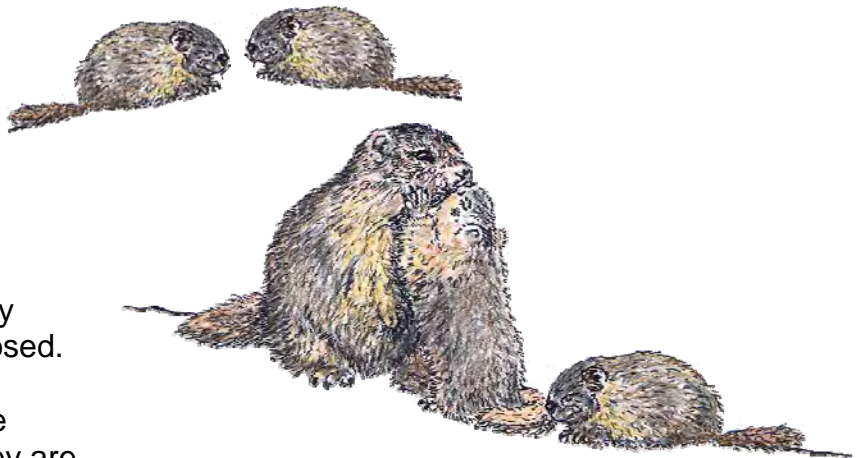
Tunnel entrances are plugged with dirt when marmots are ready to hibernate. Plugged tunnels will stop cold drafts and deter some predators looking for an easy meal.

## Baby Marmots Need Care

About a month after marmots awake from hibernation, the babies are born in the den.

There are four babies in a litter on average. They are born completely helpless, furless and with eyes closed.

Babies born in June appear above ground in July. Like the adults, they are active in the morning and afternoon. All other times they are resting in their den.



By fall young marmots are almost adult-size and look like adults. Males are larger than females. True to their name, they have yellowish-colored fur on their bellies. Their faces and feet have the shortest hair with patches of white near their nose and chin. Their underfur is thick and insulating. The long, outer hairs are edged with bands of dark and pale colors.

## Social Family Life



Marmots are social animals. They live in colonies of different sizes, depending on habitat quality. A colony has at least one male, one female and their babies.

Many colonies have one male, several females, their daughters and the babies. The sons and some daughters set off on their own when they are a year old.

Colony members groom each other and youngsters play together. They recognize each other by sniffing scent glands in their cheeks and identifying the different voices of individuals.



Most marmot vocals are a variety of six different whistles with multiple meanings. Daughters listen closely for alarm calls from their mom. Marmots sometimes squeal when excited or scared. They make soft, friendly chucking sounds to their kin.

Non-colony members are intruders that are warned off the family territory by threatening postures, tail waving, whistles, teeth chattering, chases and sometimes by actual fights.



## Life in the Colony Means Safety in Numbers



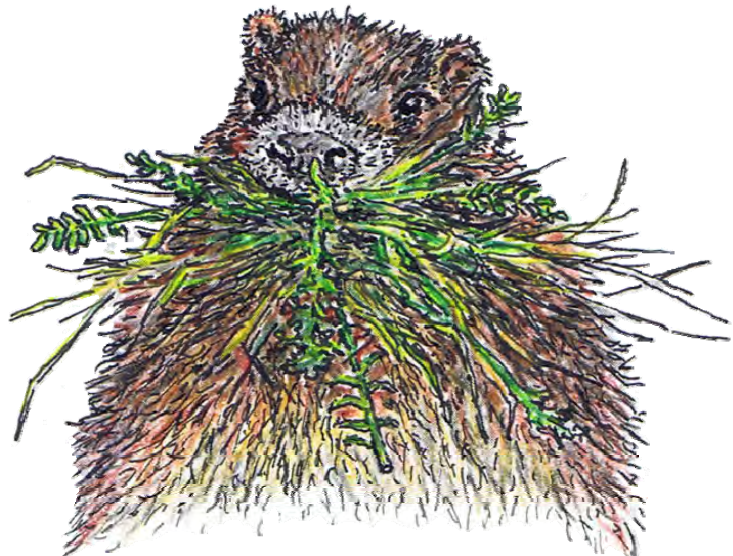
Slow-moving marmots rely on watchful colony members to warn them of danger. Living in a colony with multiple sets of eyes is safer than living alone or as a pair. A sharp-eyed relative can give family members time to dive into a burrow to escape a golden eagle flying overhead or a fox or coyote stalking nearby.

Some enemies can find marmots in their burrow. Badgers are dangerous digging predators. Weasels on the hunt for newborns are expert den raiders.

## Eating for Hibernation Survival

It is legal to hunt marmots, and they can also die of disease. But being too thin is the biggest danger for marmots.

Without adequate body fat, skinny marmots cannot survive hibernation.



## Marmot Hide-and-Seek



Marmots like to take it easy, but they have a lot of predators.

**You are a marmot!**

Go outside and hide somewhere in your backyard. One or two of your friends or siblings can be marmots with you. Find a place to rest and lie very still.

Have other friends or siblings be predators – things like a coyote, fox, badger, weasel or a golden eagle. After you have hidden, the predators can come out and move around the yard.

But you want to lie on a rock! Sneak out somewhere in open view and try to remain quiet. If one of the predators sees you, they can try to tag you. You can also make a loud whistle sound to warn the other marmots to take cover. Once you have done this a few times, switch places. Now the marmots will be predators and the predators will be marmots.



Was it difficult to be a marmot? What was it like to be a predator?

## Keep your Teeth Brushed...Oops, I Mean Sharpened

Marmots are ground squirrels, and like mice, ground squirrels are rodents. Rodents have useful front teeth (incisors) adapted to the foods they eat. Sharp incisors are good for biting off plants.



Rodent teeth keep growing all their lives, and their incisors are self-sharpening. Gnawing wears them down but also sharpens rather than dulls them.

How does that happen? Next time you lose a tooth, examine its hard enamel-coated surface. Rodents have enamel on the fronts of their incisors but the backs lack the hard coating. As rodents bite food, their top and bottom teeth come together, and continually wear down. The non-enamelled backs of the incisors wear away faster than the hard-coated fronts, keeping the tooth edges sharp.



Your teeth are not all the same shape. Look at them in the mirror. What are different shaped teeth used for?

Look at the teeth (carefully) in your dog or cat's mouth. How are the different sizes and shapes important for catching and eating food?