

Nature Detectives

Fall
2008



Time to Bring in the Crops

Harvest begins when crops are ripe and ready to pick. Soon, local produce appears in the stores and at the farmers' markets. Some foods we will eat now – like leaf lettuce. Some we will store for eating later – like dry beans or sunflower seeds or wheat ground into flour. Some will be made into food products – like sugar or breakfast cereal that can keep for a long time.

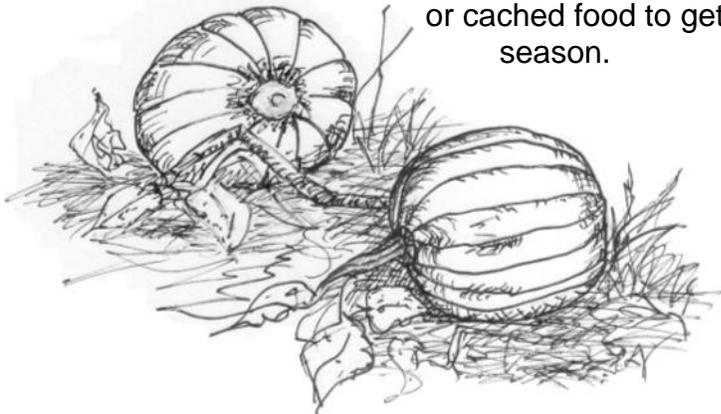
Who Are the Harvesters?

If you have ever picked a pumpkin, you've participated in a harvest. Many birds and other animals actually harvest the fruits of summer too. Some of them are experts at storing food for leaner times. Whether it is a farmer harvesting the crop or an animal collecting food from plants, most harvesting is hard work. In one case, an insect actually does the harvesting work for us. Can you guess which insect? Bees! They harvest flower nectar, turn it into honey, and we collect the honey from their hives.

When you think of apples and oats and other crops you realize that much of harvesting is simply squirreling away food for the winter, and who could be better at it than squirrels themselves. Not all squirrels store food for eating during the colder months, but the best harvester squirrel has to be the chattering pine squirrel, also called chickaree.

Pika, the little rabbit cousin, is also an energetic harvester. Like farmers cutting and drying their hay crop for winter feed, the pika spends much of its time during warm weather cutting and drying plants to store for the cold months to come.

Some birds are super harvesters too. Busy chickadees flock to good seed sources where they take away extra seeds to hide for later. Clark's nutcrackers and various jays are able to remember thousands of spots where they have stored or cached food to get them through until the next harvest season.



Hurry, Hurry Chickaree! Get Harvesting!

Pine squirrels (chickarees) hurry to gather thousands of unripe pinecones before the cones mature and the seeds fall out. A busy chickaree can collect up to 16,000 pinecones in one season by biting a cone off a tree every two or three seconds. They gather so many cones because a single squirrel may eat the seeds in 40-50 cones per day.

Some years, trees produce more cones than in other years. In a good cone-producing summer, a chickaree can gather enough cones to last two to three years. Gathering the cones is one thing; storing them and keeping your neighbors from stealing them is another challenge. Pine squirrels have a storage system that works kind of like a refrigerator.

Their “refrigerator” is called a midden. It is formed under a favorite tree branch where they sit while eating. As they nibble out the seeds, pieces of pinecone fall to the ground, forming a pile that grows bigger with every meal. Squirrels bury their freshly cut pinecones in their midden. The bigger the midden becomes, the better it keeps the cones cool and moist so they ripen slowly and stay tasty longer. After all that work, you can be sure the chickarees guard their middens from any would-be cone thieves. Other pine squirrels will readily take over an unguarded midden. If you walk near a chickaree midden you are likely to get a pinecone purposely tossed at your head and a stream of squirrel chatter that probably means “go away.”

Scurry Pika! Make Hay While the Sun Shines!



Scurrying back and forth with mouthfuls of vegetation for their haypiles, pikas make dozens of round trips each day during the growing season. It will take each pika nearly 12,000 round trips for enough food for the winter. Most round trips take two to three minutes.

The closer its burrow is to the tundra meadow, the faster and safer the foraging trips. While a pika is concentrating on haying, it could become a meal for a coyote, pine marten, red fox, weasel, or hawk.

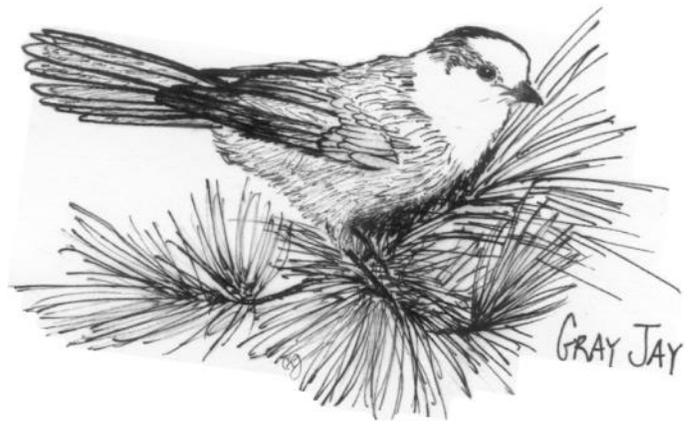
Farmers know that their hay will spoil if it is bundled while it is wet so they keep a wary eye on the clouds during haying season.

Pikas have the same concern. When summer showers sprinkle

their haypiles, they move the drying plants to their underground tunnels. Once the rain clouds retreat, the energetic pikas move the hay back into the sunshine to dry.

Hey Jay, Hide Those Seeds Away!

Imagine you are a little bird, plucking seeds by the mouthful and hiding them, one or a few at a time, in thousands of different hiding places around your neighborhood. Now, imagine you have to remember where those hiding places are as the weeks go by and the snow flies and the wind blows. If you can't remember, you won't eat. Jays and Clark's nutcrackers do exactly that, remembering for weeks and weeks the thousands of spots where they cached food. Now, imagine if some crafty neighbor spied on you and steals some of your food. Yikes! Better hide extra, just in case it's needed, which is precisely what the birds do.



Gray Jays Use Spit Glue

Bold gray jays often grab food from campgrounds or bird feeders, but they mostly gather seeds in the wild. They stuff food items in their throat and beak. Each item to be stored for later eating is coated with special sticky saliva. It works like glue when the jay hides the food items in tree bark crevices or among conifer needles. The saliva glue holds the food until the jay comes back for it.

Steller's Jays Prefer Digging in the Dirt

As a Steller's jay harvests its own food, it keeps a look out for any gray jays also storing next month's dinner. Apparently not put off by gray jay spit, a Steller's jay won't hesitate to steal a gray jay's hidden food.

When it does its own hard work, a Steller's jay will gather up to 20 ponderosa pine seeds in its stretchable throat. They bury the seeds one or sometimes two or three to a hole. After loosening the dirt with their bills, they will jab the seeds about an inch into the soil.

Clark's Nutcrackers Are Super Harvesters

Like the Steller's jays, Clark's nutcrackers usually dig their seeds into the dirt on the forest floor. They typically hide three or four seeds in each hole. They harvest enough seeds to make more than 10,000 caches. (What is $10,000 \times 3$?) It helps that they can stuff 100 seeds into the special pouch under their tongues.



Some seeds are cached on sunny south slopes where the snow melts earliest because there will be hungry nutcracker babies to be fed in the spring.

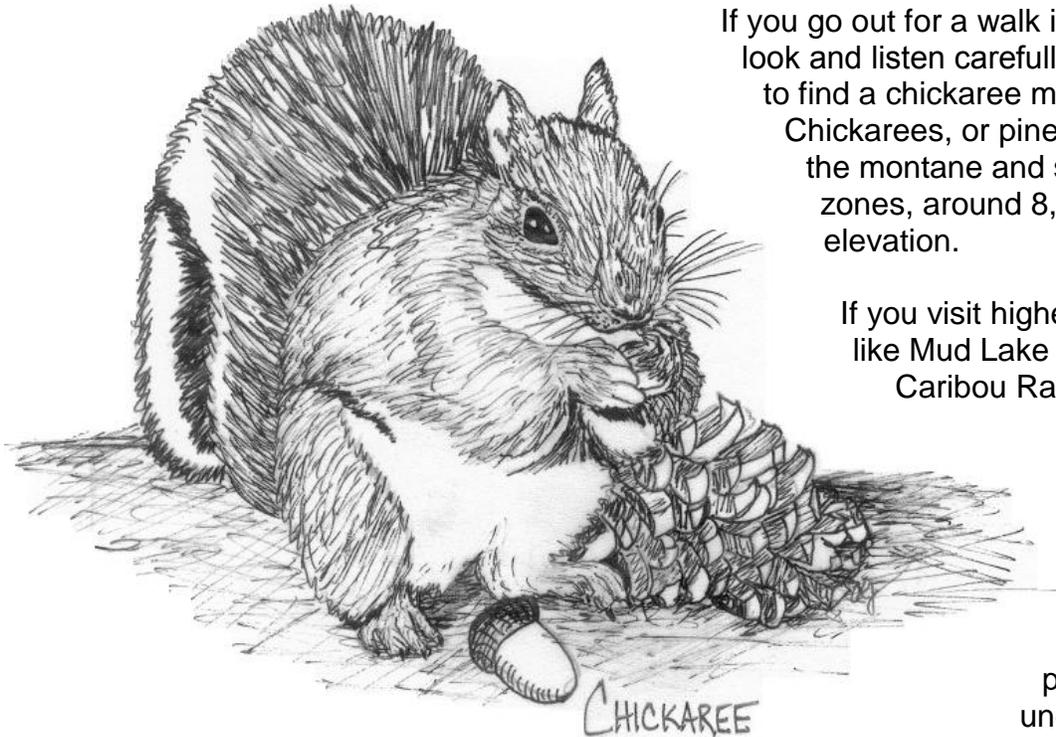
Other hiding places are high in the alpine where they will stay hidden until summer rolls around. Seeds will be needed for winter, spring and the following summer until the new crop of seeds is ripe and ready to harvest.

Watching the Harvesters

Can you think of more animal harvesters? Pocket gopher, harvest mouse, chipmunk and fox squirrel are examples of a few others that live in Boulder County.

Next time you go for a walk in a park, open space or around your neighborhood look for wild animals harvesting food. Practice being a nature detective and watch to discover if they eat the food on the spot or take it away. Maybe you will observe an animal hiding food for later.

Finding a Chickaree Midden



If you go out for a walk in the mountains, look and listen carefully and you're likely to find a chickaree midden.

Chickarees, or pine squirrels, live in the montane and subalpine life zones, around 8,000-11,000 feet in elevation.

If you visit higher-elevation parks like Mud Lake Open Space or Caribou Ranch Open Space, you are sure to find the evidence of the pine squirrels' busy harvest.

Look for piles of pinecone pieces underneath trees. If you look carefully, you

may also see the holes dug into the piles, where the squirrels bury their extra cones for later. If the chickaree is nearby while you are exploring, you can be sure you'll hear about it. Listen for the loud chattering that is probably meant to tell you "leave my pine cones alone!"

Read All About It

Many books are written about harvesting. The first book you read on the topic might have been *The Little Red Hen*. Check out books on the harvest at your local library.