

IMAGES

The mission of the Boulder County Parks & Open Space Department is to conserve natural, cultural and agricultural resources and provide public uses that reflect sound resource management and community values.

PHOTOGRAPHS & ILLUSTRATIONS

Cover art, Lohr Property, Mike Downey Lohry the Cow, Pascale Fried Seasonal Leading Tour, Jim Drew Close up of Beans, Vanessa McCracken Beans for Community Food Share, Jennifer Kemp Bean Crop, David Bell Reseeding, Linard Cimermanis Ron Stewart Preserve at Rabbit Mountain, Pascale Fried Oriole, David Hannigan, Division of Parks and Wildlife Moose, Denny Morris Winter Scene, Rachel Gehr Volunteer Tour Guide, Jim Drew Youth Corps, Ali Hawes Aster Meadow, Michael Bauer Uncredited photos, POS collection

NATURE DETECTIVES

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DISCOVER BOULDER COUNTY

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IN CLOSING

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Day in the Life: Cultural History Seasonal

by Katie McDaniel

As a cultural history seasonal for Boulder County Parks and Open Space, each day and week is very different. Home base is usually the Agricultural Heritage Center off of Highway 66 in Longmont. However, special events and errands take me from Longmont to the Nederland Mining Museum and everywhere in between.

I devoted a large part of my time this year creating an exhibit about cows and milk products because the department has a large milkable plastic cow at the Agricultural Heritage Center. My educational background is in history and museum studies, so this was an exciting opportunity to use those skills. I also helped feed the critters on the farm, write newsletter articles, greet visitors, and give tours. Leading tours for school groups was one of the most interesting parts of my job because the students, mostly in elementary school, always had great questions. Sometime I knew the answers, and sometimes I did not; so I always was researching before the next tour. I have learned so much about the families that lived here and different types of agriculture in Boulder County, but I am still no expert.

I also spent time helping with special events at the Agricultural Heritage Center in Longmont and Walker Ranch Homestead, west of Boulder. At the Agricultural Heritage Center, I manned different stations demonstrating historical activities and leading tours of the farm house. Up at Walker Ranch Homestead, all of the staff and volunteers dress in period clothing and work stations performing chores from the late 1800s like butter churning, blacksmithing, and laundry. Getting to show our visitors how Coloradans lived over a century ago is one of the best parts of our events.

"Whether I'm greeting people at the farm or working an event, teaching people about history is my favorite part of this job."





Bean There, Doing That (Again)

By Jennifer Kemp



Several decades ago, Boulder County farmers grew dry beans, particularly pinto and kidney beans, as part of their crop rotations. Approximately 25 years ago, however, heavy weed and disease pressures led many county-based farmers to stop growing beans entirely on a large scale. In recent years, as conversations around growing local food for local institutions increased among many food advocates, Boulder County Parks and Open Space (BCPOS) Agriculture Division staff started a conversation with a number of stakeholders to explore the feasibility of once again growing dry beans for local sale and distribution.

The first round of discussions occurred in March 2012, and included representatives from local school districts, potential retail outlets, local processors, area food banks, and farm tenants. The conversation revolved around challenges such as growing a healthy crop, processing and storing the beans for potential local sales,

and marketing directly to institutions. The group also realized the opportunities of supplying local institutions after learning that Community Food Share (CFS) purchases an average of 8,000 pounds of dry beans per year, while the St. Vrain Valley School District serves 40,000 half-cup servings in its schools each week.

A ROCKY START

After this meeting, one of the farm tenants agreed to grow a small crop of pinto beans. Unfortunately, 2012 turned out to be an inadequate water supply year, and the bean crop was not successful. Following a project hiatus of two years, ag tenant Jules Van Thuyne approached BCPOS in 2015 expressing an interest in growing a new variety of pinto bean developed by Colorado

State University (CSU). Unlike older varieties of pinto beans, the CSU variety was developed to grow vertically, like soy beans, rather than on vines along the ground. Because of this innovation, Van Thuyne felt it would be easier to harvest the beans with his existing equipment, and he knew modern agricultural practices implemented on BCPOS properties had greatly reduced the previous weed pressure. Unfortunately, this crop of beans also failed.

Meanwhile, Agricultural Resources Division staff contacted a number of potential bean buyers to ascertain whether there was a local market for these beans. Over the course of many conversations, it became clear that most of these potential buyers were not in a position to buy pinto beans. Most often they did not have the storage capacity for large amounts of bagged beans or their facilities were not equipped to cook dry beans. Conversations with CFS were fruitful, however, as they distributed dry beans to their clients and had enough potential storage for large amounts of beans. They also completed construction of a dry-pack room in their facility in the fall of 2015, which would allow them to re-pack large amounts of beans into one-pound or five-pound bags for distribution to clients.

FULL OF BEANS

Van Thuyne decided to grow beans again this past season and the resulting crop was very productive. As is typical for BCPOS lease agreements on commodity crops, the Ag Division entered into a 1/3: 2/3 crop share agreement with Van Thuyne on the pinto beans. This fall, the successful harvest resulted in approximately 150,000 pounds of beans, of which 50,000 pounds belonged to BCPOS to keep or sell. In keeping with the original spirit of the project, Agricultural Resources Division staff decided to donate 10,000 pounds of beans to CFS to distribute to clients as a healthy and nutritious local food product. The beans arrived at CFS the week of Thanksgiving, and BCPOS completed the circle of giving by donating staff time to help bag pinto beans for distribution the week before Christmas.





Upper left: Pintos from the crop that went to Community Food Share

The 2015 bean crop on the Vicklund property

Parks and Open Space employees Vanessa McCracken and Steve Kirk, along with former POS employee David Bell bag beans for Community Food Share

Seed to Seed: 20 Years of a Native Seed Program

By David Hirt

The right seed, in the right place, at the right time. This phrase is emblematic of a growing field of restoration science, in the use of site specific, or ecotypic seed for restoration work. An ecotypic plant is one that is locally adapted to survive and thrive in a specific geographic area and conditions of that site. Conditions include soils, precipitation, minimum winter temperatures, maximum summer temperatures, and other factors that go along with generations of being rooted to a specific site.

LOCALLY GROWN

Many plant species are native to a wide swath of territory in North America, or even beyond. The same species may grow in North Dakota and in New Mexico, or Colorado and Iowa, despite those states having vastly different climates. The hypothesis is that seed collected from plants in Colorado would do better here than seed from plants collected in Iowa. Along the Front Range, we have plants that are much more common further east, in areas of much higher precipitation and fertile soils. One of these, big bluestem (*Andropogon gerardii*), is found along some of the Front Range creeks, and into our lower foothills. Perhaps a relic of a wetter

past climate, it is more common as a component of the tallgrass prairie of Kansas, Nebraska, Iowa and beyond. Much of the seed available in the commercial market originates from these areas. The question is, will the seed from a plant accustomed to 30 to 40 inches of rain and fertile soils, survive and thrive on our rocky foothills with only 16 inches of precipitation? Our hypothesis was no, it would not survive and thrive, so we needed to collect our own seed.

PARTNERS FOR COLLECTION

Boulder County Parks and Open Space (BCPOS) has collected our own native seed since the late 1990s. That effort has ramped up in the last 10 years. Working with our volunteers, and partnering with Wildland Restoration Volunteers, we have collected seed from over 80 species of grasses, forbs, shrubs, trees, and wetland plants. However, there is a limit to how much volunteers can collect by hand, how much seed we needed to reseed larger areas, and how much seed we would feel comfortable removing from our parks while still leaving some for natural regeneration. In order to acquire more seed, we turned to agriculture. In 2006 we started





working with the Federal Plant Material Centers in Meeker, Colorado and Los Lunas, New Mexico to take a small amount of collected seed and grow it out in an agricultural setting.

In subsequent years, we branched out and started contracting with a private seed grower in eastern Washington State. This area, with a similarly dry climate to Colorado (but with much more reliable and robust irrigation due to the Columbia River Irrigation Project) grows much of the native seed available commercially. With fertile soils, dependable irrigation, weed control and other agricultural practices, the result is seed harvested in much larger quantities, and without any impact to native stands. In one instance, one pound of collected seed produced nearly 1,000 pounds of seed in return.

GROWING SEED

All along, BCPOS thought we could find a local farmer interested in growing seed here in Boulder County, possibly on some of the 20,000 acres of agricultural land that we steward. However, the small scale and special equipment required did

not exactly mesh with our large scale corn and sugar beet operations that make up a majority of agricultural lands in the county. However, when the county started to offer a few, select small parcels for market farms, we saw an opportunity. In 2012, the department started our own native seed garden at the Peck property.

The Peck property is located on the southwest corner of Longmont, sandwiched between the Diagonal Highway and Lefthand Creek. The property is approximately 22 acres, and on a small part of that field, along the LOBO trail, BCPOS has a dozen beds growing a variety of native grasses and wildflowers. Staff and volunteers tend to the planting, weeding, and harvesting, while the agricultural tenant helps with irrigation.

Next time you walk the LOBO trail in the spring or summer, take a look to the north and you might see flowering penstemon, yarrow, blanket flower, or yellow coneflower. The seed is harvested, cleaned, and then added to mixes used to restore disturbed areas on our open space, ranging from old prairie dog towns, to new trail sides, forestry or fire impacts.

HOW TO HELP Join us on a native seed collection at one of our many beautiful open space properties, come out to volunteer at the Peck Native Seed Garden itself, or help sow the seed on a restoration project. There are opportunities to participate in the complete circle of the process, seed to seed.

Visit: www.BoulderCountyOpenSpace/volunteer to learn about current and upcoming projects.



Collecting, sorting, cleaning and planting seed and revegetating are all components of the successful native seed program at Boulder County Parks and Open Space. The efforts pay off in successful revegetation projects like the photo on the far right—grasses and wildflowers from native seeds, thriving.





Behind the Name: Ron Stewart Preserve at Rabbit Mountain

by Kat Chen



On a warm summer day at Ron Stewart Preserve at Rabbit Mountain, you are just as likely to spot a prairie rattlesnake as a cottontail rabbit; this is perhaps the reason for its historical nickname, Rattlesnake Mountain. While the name Rabbit Mountain evokes images of the cottontails that have made this land their home, it is said that Ron Stewart Preserve at Rabbit Mountain was actually named for its resemblance to a sleeping rabbit, when viewed from the city of Longmont.

INDIAN MESA TRAIL

Given its location and unique position above the plains, Rabbit Mountain provided a strategic refuge for early Native Americans who hunted bison. Hike the Indian Mesa Trail, and you will see that it offers a vast view of the surrounding land allowing Native Americans to locate herds of game and identify approaching danger. Anthropologists from the University of Colorado discovered dozens of archaeological sites, including rings from former camp sites, which confirm that natives inhabited Rabbit Mountain. The name Indian Mesa Trail pays homage to this history.

EAGLE WIND LOOP TRAIL

This land provides the perfect habitat for birds of prey including prairie falcons, kestrels, hawks, and owls. When it came time to name the single trail at the property a couple of decades ago, one of Boulder County's volunteers wanted to recognize the grander wildlife that frequent the area. The Eagle Wind Loop is named for the golden eagles that soar gracefully on the winds above this property. A hike to the apex of this loop brings you to the edge of a seasonal wildlife closure that protects the nesting grounds for a pair of golden eagles.

LITTLE THOMPSON OVERLOOK TRAIL

Hike the Little Thompson Overlook Trail all the way to the end and you will see spectacular views of this property's unique

geology. You will also see the Little Thompson River just to the north. The Little Thompson River drains areas at the northern border of Boulder County, and empties into the Big Thompson River near its junction with the South Platte River. It was important to highlight the water resources at this property where diversions from the Colorado-Big Thompson Project tunnel through Rabbit Mountain.

RON STEWART PRESERVE AT RABBIT MOUNTAIN

In September 2016, Boulder County renamed this property to honor the legacy of its retiring director, Ron Stewart. Through Stewart's leadership as Parks and Open Space Director and as County Commissioner, Boulder County Parks and Open Space has become one of the most successful open space departments in the country. Rabbit Mountain was renamed the Ron Stewart Preserve at Rabbit Mountain to commemorate Ron's decadeslong commitment to public service, land preservation, and environmental stewardship, which has touched all corners of Boulder County.



As soon as the soil warms in spring, flowers begin to appear on Rabbit Mountain. All kinds come and go during March, April and May. Come and see, but please don't pick the flowers! Grab your wildflower field guide for an inspiring hike along the Eagle Wind Trail.

Common flowering plants that you may see:

Blue

- · Bluemist penstemon (Penstemon virens)
- · Chiming bells (Mertensia lanceolata)
- · Common stickseed (Lappula redowskii)
- Skullcap (Scutellaria brittonii)

Orange

- Copper mallow (Sphaeralcea coccinea)
- · Orange arnica (Arnica fulgens)

Pink

- · Fremont geranium (Geranium caespitosum)
- · Lanceleaf spring beauty (Claytonia rosea)
- Mountain mahogany (Cercocarpus montanus)
- Sidebells penstemon (Penstemon secundiflorus)
- Storksbill (Erodium cicutarium)
- · Wax currant (Ribes cereum)

Purple

- Blue mustard (Chorispora tenella)
- · Lambert locoweed (Oxytropis lambertii)
- · Showy verbena (Glandularia bipinnatifida)

White

- Chokecherry (Padus virginiana ssp. melanocarpa)
- Death camas (Toxicoscordion venenosum)
- Easter daisy (Townsendia exscapa)
- Mouse-eared chickweed (Cerastium strictum)
- Salt & pepper (Lomatium orientale)
- Sand lily (Leucocrinum montanum)
- · Whiplash erigonum (Erigeron colo-mexicanus)
- White onion (Allium textile)
- · Wild plum (Prunus Americana)

RESEARCH ON OPEN SPACE

The Boulder County Parks and Open Space Department offers grants for research on county open space lands each year. All proposals are reviewed by a team of resource specialists, and awarded research projects are monitored during their activities on open space. The following is a summary of a 2016 study conducted by Colorado State University Ph.D. student Derek Sebastian. His project focused on extending the duration of annual, biennial, and perennial weed control with esplanade tank mixes.

Abstract: Invasive species management on non-crop and rangeland remains a constant challenge throughout many regions of the United States. While there are over 300 rangeland weeds, downy brome (Bromus tectorum L.), Dalmatian toadflax (Linaria dalmatica), musk thistle (Carduus nutans), Scotch thistle (Onopordum acanthium), diffuse knapweed (Centaurea diffusa), and moth mullein (Verbascum blattaria) have emerged as some of the most invasive and problematic on Boulder County Open Space properties.

Downy brome (*Bromus tectorum L.*) is a competitive winter annual grass that is considered one of the most problematic invasive species in rangeland. It has been estimated the western United States rangeland is infested with over 22 million hectares of downy brome. While glyphosate, imazapic, and rimsulfuron are the current industry standards for annual grass control, all of these restoration options provide inconsistent control or cause injury to desirable perennial species. In addition, Dalmatian toadflax, musk thistle, moth mullein, and diffuse knapweed infest over 2.8 million ha alone, and are all Colorado Noxious Weed List B species. The increasing spread of biennial species is a result of their adaptability, life cycle, and prolific seed production.

Weeds compete for moisture and can spread by seed or vegetatively into undisturbed areas, outcompeting native grass, forb and shrub species. Herbicides with both foliar and soil-residual activity (2,4-D, aminocyclopyrachlor, aminopyralid, chlorsulfuron, clopyralid, dicamba, fluroxypyr, picloram, and triclopyr) are most commonly used, yet these control options lack residual seedling control resulting in rapid re-invasions. An experiment is proposed to evaluate the efficacy of indaziflam, a new herbicide that has the potential to extend the duration of annual, biennial, and perennial invasive weed control by eliminating re-establishment from the soil seed bank. Our proposed experiment will evaluate the efficacy of currently recommended herbicides alone and in combination with indaziflam. Research at Colorado State University has shown that treatments including indaziflam resulted in significantly longer downy brome (88-94%) and Dalmation toadflax control (84-91%) four years after treatment.

Cover and control of weed species and desirable perennial grass cover evaluations will be collected after treatments are applied. All data will be analyzed in SAS by analysis of variance and by regression, to determine optimum treatments. This research could ultimately provide a new, long-term control option for controlling noxious weed species on Boulder County Parks and Open Space properties. Educational opportunities, including field tours will be made available to Boulder County Parks and Open Space employees during completion of the experiment.

To read the full report, or other funded research, visit www.BoulderCountyOpenSpace.org/research.

Smartphone Photography 101

by Ashley Hanlon







From top: The line of moose draw your eye deeper into the photo Trees create a frame around the subject Take advantage of the low angle of the sun

When we go out to hike we try to keep our pack as light as possible. We can leave our map, our iPod, and even our wallet behind because our smartphone can do it all! One of the most convenient features of these phones is quick access to a camera—but just because you frequently use the camera on your phone doesn't mean you couldn't use a few helpful hints. Here are 5 easy tricks for taking good smartphone photos:

FOLLOW LEADING LINES

Nature is full of lines, which will be great for your photographs! Trails, rivers, and even fence lines help create dimension in your photos, so utilize them whenever you can. These "lines" draw a viewer's eye into the photo.

STAY FOCUSED

It's easy to focus your picture on a smartphone, just tap the screen where you want the focus to be and voilà! The next question is where to focus your picture. When you're taking pictures of a person or animal always focus on the eyes. People have an instinct to look into the eyes of the subject, so if they're blurry the viewer is more likely to lose interest. If you are taking pictures of the landscape, just pick a point of focus in the center of the landscape.

FRAME THE PHOTO

Finding natural frames is sometimes challenging in nature, but well worth it to find one for the composition of your photo. Frames help to define edges and highlight the best parts of your photo's subject. Using bent trees over the trail or a view through a car window creates natural frames in your outdoor photograph.

BE AWARE OF LIGHTING

If you're outside, more often than not, your light will come from the sun, so it's important to be aware of where the sun is. The best time of day for outdoor photography is at dawn and dusk when the angle of the sun is fairly low. If the sun is positioned behind your subject they are 'backlit' and you can use that to your advantage. It can create a nice silhouette around your subject, helping viewers focus on your subject. It's not recommended to use your flash when you're outside because it can wash out your subject. If you want to make a dark area lighter, you can tap on your screen and it will increase the amount of light.

USE GRIDLINES

Gridlines are a great feature of smartphones. Gridlines allow you to follow the "rule of thirds" which basically means that a subject right in the middle of a photo is not visually interesting. Check the camera settings for your phone to turn on the gridlines feature.

Mak

Also, try to embrace the empty space that you create; it allows you to tell more about the environment of your subjects. This empty space is also a great time to play with reflections! If there is a lake around or even a puddle, try and incorporate the reflections.

Make it your own

Follow these steps to create a great outdoor photo, but remember to put your own spin on it. Nature is beautiful and inspiring, so use your creativity to capture what you love most about the world around you!



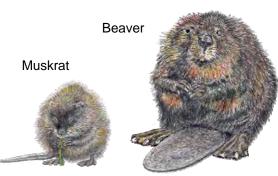
Perhaps the first thing you notice is a small, v-shaped wave and ripples on top of the water. At the tip of the wave you detect a dark body paddling across the pond, creating those ripples. Beaver?

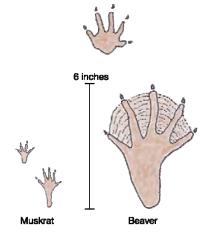
Then you get a glimpse of its tail. You might remember beavers have a roundish, flat, paddle-shaped tail, but this swimmer's tail looks almost like a snake. So it's not a beaver. What is it? Hmmmm.

Here are some hints. The animal's name means "stinky rat," and it lives the life of a beaver on a smaller scale. This furry creature was called *musquash* by the Algonquian people (who were the first Native American people encountered by settlers from England). The early white settlers called them "muskrats." **Muskrat** is the common name still used today. Muskrats are not rats, and they are not beavers either.

Quite a Big Vole!

Beavers and muskrats and rats are all **rodents**,* but the three are not close relatives. Rat family members stole aboard ships from Europe to get to the Americas. Beavers and muskrats are native rodents with very similar lifestyles, yet they too are in different families. Beavers are in the beaver family, and muskrats are voles.





Muskrats are by far the largest cousins in the **vole** family. Most voles are mouse-sized critters that are known for chewing runways through thick vegetation. Muskrats make trails through plants too, but they gnaw plants that grow in or near the water. Like all voles, muskrats have little ears, barely visible above their fur, but their watery living and their much larger size sets them apart from all other kinds of voles.

*Rodents are animals with continually growing front teeth.



Bodies Fit for a Water Life

Although muskrats are quite big for voles, they are half the length of beavers and weigh much less. An adult muskrat only measures about two feet from the tip of its blunt snout to the end of its long, scaly tail.

Muskrats are propelled through the water by their back feet. The back feet are oversized, partly webbed, and turned out at the ankles so they work like paddles. The toes have stiff hairs around the edges. Muskrats swim and dive well and can swim backwards, but they waddle awkwardly on land. Their tails have scales like beaver tails instead of fur, but where beaver tails are paddle-shaped and flat top to bottom, muskrat tails are long, thin and flattened side to side. Muskrats use their tails as rudders to steer themselves in the water and for a little extra propulsion.

Muskrat eyes, ears and noses are adapted for swimming under water, and they have a waterproof, double-layer coat. Air trapped in the underfur keeps their bodies warmly insulated and buoyant too. They can hold their breath under water for fifteen minutes or longer.

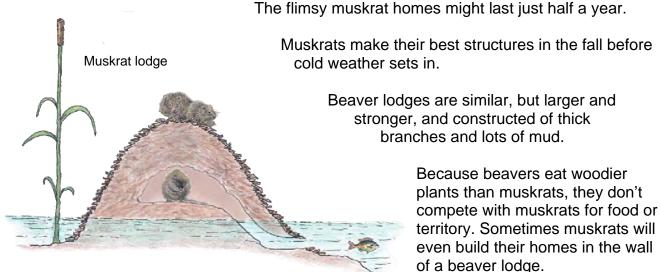
Their clawed front feet are dexterous, and good at holding plant material for eating and building. Claws are also useful for digging and for grooming their fur.

Homes with a Water Entryway

Muskrat tracks

Whether muskrats make their homes in **lodges** made of mud and plants or in **dens** tunneled in a dirt bank depends on what is available. They often tunnel into a steep bank next to a slow-moving river, stream, lake or pond. To deter predators, the tunnel entrances open underwater. They enlarge the tunnel after it rises above the waterline to make their cozy, dry living quarters.

If muskrats are living in a marsh without high banks, the muskrat builders will pile up mud, twigs and soft vegetation into a dome. Once the structure is big enough, they chew underwater entrance tunnels upward and hollow out a flat living area above the waterline.



Muskrat Dining Rooms

Muskrats will sometimes make smaller domes on top of a stump or flat ground for feeding rooms or platforms. In cold weather they will also pull plants up through cracks in the ice to make pushups. They can keep an opening in



the ice at the pushups and hide in the pulled-up plants while they eat. Muskrats will also eat shoreline plants and sometimes even garden or farm plants if they are located very near muskrat homes.

Muskrats Seek Habitats in Wetlands from the Plains to the Mountains

Muskrats never wander far from their dens or lodges so they need watery habitat with a good supply of green plants to eat. Muskrats eat trails through cattails and other rapidly spreading, shallow water plants.

Muskrat trails create good habitat for waterfowl such as ducks and for shorebirds such as herons and egrets. Without muskrats, plants can grow so thick there are no spaces left for birds. Many underwater critters, plus snakes, frogs and insects also benefit from the building and eating activities of muskrats.

Eggs, fish, frogs, crayfish and dead animals are also muskrat snacks. Muskrat lips close behind their long incisors so they can easily gnaw and carry plant material and other foods in their teeth while they are underwater.

Predators ensure that muskrats don't become so numerous that they eat up the habitat. Minks, otters and occasionally snapping turtles eat baby muskrats. Foxes, coyotes, raccoons, eagles, hawks, owls and other predators catch muskrats traveling over land.

Baby Muskrats Are Called Kits

Inside their homes, the muskrat family builds one or more nest chambers lined with plant material. Moms usually give birth to about six babies in the spring and again in the summer. Kits are born blind and almost hairless. In two weeks they have fur, open eyes and can swim.

After four weeks they can fend for themselves and after a year they are fully grown.

Fighting among muskrat family members encourages smaller and younger muskrats to leave to find their own territory.

As their name implies, muskrats mark their territory with a strong scent that comes from glands near the base of their tails.

Muskrat Neighborhood

Muskrats live in a neighborhood with many other animals. Draw these animal neighbors that share the muskrat habitat on the picture below: Duck — on the water, Goose — nesting on top of the muskrat's dome, Heron (bird with a long neck and long legs) — near the shore, Frog — in the cattails, Snake — near the water, Dragonfly — on a plant or above the water, Eagle — flying overhead.



What's for Dinner?

Muskrats are part of a food web. After you finish drawing your animals on the picture, **circle** the things in the picture that muskrats might eat. Put a **square** around the animals that eat muskrats.

(Answer key at bottom of page.)

Where are the Muskrats?

Here are a few places muskrats have been spotted in Boulder County:

- Walden Ponds Wildlife Habitat
- Dodd Reservoir, on Niwot Road west of 73rd∗
- Little Gaynor Lake on Oxford Road in south Longmont*
 - *Be sure to bring binoculars or a spotting scope at these two locations.



Sherlock fox says, "Watch for pieces of plants floating on the water or along a shoreline. They are clues to muskrat dining. Check for plant bits around a log, rock, stump or pile of matted plants. They are signs of a favored feeding spot."

Beauties and the Beast

by Francesca Giongo

What could the colorful yellow and black Bullock's oriole and the melodious western meadowlark possibly have in common with the drab and vicious cowbird and the raucous common grackle?

It turns out all these birds are relatives! They all belong to the family icteridae, which also includes all the blackbirds, oropendolas, and the bobolink. The name, meaning "jaundiced ones" (from the prominent yellow feathers of many species) comes from the Ancient Greek "ikteros."

This family is extremely varied in size, shape, behavior and coloration. Individual species live in a variety of ecosystems, from wetlands to savannahs, and from grasslands to forests.

Some of them, like the Bullock's oriole and the oropendolas of Central and South America, build elaborate hanging nests. The

cowbirds, on the other hand, do not bother building nests at all. They are nest parasites that lay their eggs in the nests of other species. Their variability notwithstanding, all icterids share some characteristics. One is their pronounced sexual dimorphism. In most species, the males are much more brilliantly colored than the females. And in those species where male and female have similar plumage, like the grackles and the cowbirds, males are considerably larger than females.

One unusual morphological adaptation shared by all icterids is "gaping" where the muscles controlling the beak allow the bird to open it with great strength. The bird can insert its beak into soil, vegetation, bark, even mud, forcibly open it and reach otherwise inaccessible food.

Bullock 's oriole Adult males are characterized by strongly contrasting orange and black plumage, a black throat patch and a white wing bar. The underparts, breast, and face are orange or yellow; the back, wings, and tail are black. A black line extends from each eye to the black crown. Adult females, by contrast, have grey-brown upperparts, duller yellow on the breast and underparts, and an olive crown.

This oriole favors riparian corridors and open deciduous woodland with an abundance of cottonwood and willow. It feeds

on insects, berries, and nectar. The most striking feature of these birds, besides the male's plumage, is the elaborate nest they build, woven pendant baskets using plant fibers—primarily bark and fine grass, and animal hair. The nest is lined with down, hair, and moss. The female lays between three and six eggs. Both parents rear the young and defend the nest from predators and nest parasites, including the fellow described below.

Brown-headed cowbird The most distinctive characteristic of this stocky, mostly nondescript bird, is that it is a brood-parasite. The female lays her eggs in the nests of a variety of perching species, particularly those that build cup-like nests. The brownheaded cowbird eggs have been documented in nests of at least 220 host species, including hummingbirds and raptors! Baby cowbirds

hatch one to two days before the rightful nest occupants, then grow faster and are more vocal. Their gaping mouths trigger the host parents' feeding response. As a result, the baby cowbird gets most of the food, while its "siblings" starve. In some cases, the cowbird young even pushes the other baby birds out of the nest. A single cowbird female can lay up to 40 eggs in one season.

Brown-headed cowbirds prefer open or semi-open country and often travel in flocks, sometimes mixed with red-winged blackbirds, bobolinks, common grackles, and European starlings. They forage on the ground, often following grazing animals such as horses and cows to catch insects stirred up by the large animals. They mainly eat seeds and insects.

Populations of brown-headed cowbirds are increasing at an alarming rate in many regions. Before European settlement, they followed bison herds across the prairies. Their parasitic-nesting behavior probably evolved with their nomadic lifestyle. Now that humans have cleared forested areas and introduced new grazing animals across North America, these birds now follow cattle which kick-up insects etc. Brown-headed cowbirds are also now commonly seen at suburban bird feeders.

On the surface all of these birds may seem different, but when you look beyond appearances, they are all part of the same family.



Bullock's oriole with nest

Variety & Fun—Volunteer Opportunity

by Sheryl Kippen

Boulder County's history is fascinating. From the struggles of early farmers on the plains to the get-rich-quick dreams of mountain miners to the elegance of Victorian city life, the past posed great variety and challenge to those that came before us.

The cultural history programs of Boulder County Parks and Open Space began sharing historical sites and slices of life in the past with the public with the help of volunteers over 30 years ago at Walker Ranch Homestead.

If you want to dive more into local history, become a cultural history volunteer and share your passion for the past with people of all ages. Meet other like-minded history lovers. Make history relevant and valuable to future generations. Share history with and meet those new to Boulder County. Inspire an interest and attachment to this intriguing area. Last year, 97 volunteers contributed almost 3,500 hours with educational program and special event participants. Boulder County manages four historic sites.



It's vital to connect today's generations with life in the past and to foster an understanding and stewardship for our area. Leading tours, designing and leading school programs, and working at special events are just a few of the roles to play in the cultural history program.





Agricultural Heritage Center Visit the Agricultural Heritage Center in Longmont to learn the stories of the McIntosh and Lohr families and how farming was transformed with new technology. Groups from schools and community organizations can schedule a field trip anytime; the public can visit April through November on Fridays, Saturdays, and Sundays. As a volunteer, you can share that history as a tour guide or help behind the scenes caring for livestock or working in the garden. Annual events include Barnyard Critter Day and Crafts and Trades of Olden Days.

Assay Office Museum How assaying could make or break the lives of miners and the towns they created is the focus of this museum in Fourmile Canyon. The museum is open on the third Saturday of the month between May and October. Groups can book private field trips too. Museum volunteers staff open houses, sharing the community's and family history with visitors.

Nederland Mining Museum Jump into the tools of mining and milling at the Nederland Mining Museum, open June through October. School field trip and other groups are welcome in the spring and fall as well, with reservations. Volunteers act as ambassadors and tour guides while sharing history at the museum. This is also the setting for gold panning sessions and the starting point for the department's hard rock mining driving tours.

Walker Ranch Homestead The historic homestead, on Flagstaff Road west of Boulder, is open several times every year for special events where visitors can experience ranch life long ago. Volunteers dress in clothing worn in the 1880s-1900s, and share games and chores of yesteryear. Come visit us on July 15, August 4, and September 24! Local school groups visit the homestead as well, during weekday mornings in the spring and fall.

VISITORS BY THE NUMBER

Nearly 16,000 people visited our sites in 2016, with 86 percent of those visiting the Agricultural Heritage Center and Nederland Mining Museum. Learning about history with the items people used in their everyday life and work of the past lets visitors imagine how they might have lived a century ago. Field trip students from local elementary schools made up almost 70 percent of those visitors last year.

Ready to volunteer or learn more about upcoming cultural history events? Apply to volunteer online at www.BoulderCountyOpenSpace.org/volunteer or by contacting Sheryl Kippen at skippen@bouldercounty.org or 303-776-8848.

DISCOVER BOULDER COUNTY

Calendar of Events



BIRDS OF PREY DRIVING TOUR

Saturday March 11, 9 a.m.-noon Space is limited, meeting location will be provided to registered participants

Join volunteer naturalists for a driving tour of some of Boulder County's best areas to view birds of prey, or raptors. We will carpool from our meeting place searching for raptors, learning about habitat, and working on our observation and identification skills. Participants should dress for the weather, and bring lunch, drinking water, binoculars, a spotting scope, and a bird field guide if you have them. The tour is geared for adults and older children. To register, email lcolbenson@bouldercounty.org, or call 303-678-6214 no later than Thursday, March 9.

THE HIDDEN WORLD OF BIRD NESTS

Saturday March 18, 10 a.m.-noon Space is limited, meeting location will be provided to registered participants

Bird nests range from a scrape on the ground to intricately woven hanging baskets. Join volunteer naturalists for an easy end of winter walk in search of some of these diverse structures created by amazing avian architects. Bring binoculars and a bird field guide if you have them. To register, email lcolbenson@bouldercounty.org, or call 303-678-6214 no later than Thursday, March 16.

SPRING HAS SPRUNG!

Sunday March 19, 10 a.m.-noon

Heil Valley Ranch Open Space (south trailhead), north of Boulder off Lefthand Canyon Drive meet at group picnic shelter

What's blooming? Who's singing? Who's having babies? Join volunteer naturalists on a leisurely 2-mile hike and celebrate the beginning of spring by looking and listening for signs of new life along the trail. Learn the importance of the sun at equinox in linking and timing these vibrant displays of new beginnings.

WHOO ARE THE OWLS?

Tuesday March 21, 6-7:30 p.m.

Lafayette Public Library, 775 west Baseline Road, Lafayette

Owls have been regarded with fascination and awe throughout recorded history and across many cultures. Over half of the owls recorded in the U.S. have been seen in Boulder County, and most of those owls nest here. Join volunteer naturalists to explore these fascinating and diverse creatures, and learn about the adaptations that make them such expert hunters.

SPRING AWAKENING—BEARS IN OUR BACKYARD

Saturday March 25, 10-11:30 a.m.

Betasso Preserve, Boulder Canyon (Highway 119) to Sugarloaf Road, follow signs to Betasso Preserve, meet at group shelter

Black bears are part of our landscape. In spring, as daylight hours grow and temperatures warm, bears and their cubs emerge from winter dens. Join volunteer naturalists to explore how bears survive the winter and become active again in the spring. We'll also learn how to live safely in bear country. Please wear hiking shoes or boots if you wish to hike the trails before or after the program.

EXPLORE SPRING!

Wednesday March 29, 9:30 a.m.-12:30 p.m. Space is limited, meeting location will be provided to registered participants

Take a break from spring break and get outside! This family event will provide an opportunity to learn about birds, mammals, reptiles, animal tracks and more through hands-on activities at different stations on an exploratory walk. Designed for children ages 4-10 with adult companions. To register, email dprice@bouldercounty.org or call 303-678-6215 no later than Monday, March 27.

RATTLESNAKE HIKE

Saturday April 8, 10 a.m.-12:30 p.m.

Rabbit Mountain Open Space, NE of Lyons on north 55th Street, meet at group picnic shelter

Enjoy a moderate 2-mile spring hike at Rabbit Mountain and learn about this fascinating reptile, which can be found in the plains and foothills of Boulder County. Volunteer naturalists will share information about the prairie rattlesnake, including habitat, ecology, behavior, and how to be safe in rattlesnake country. Participants should bring water and wear closed-toe hiking shoes/boots.

Calendar of Events

LIONS AND ABERT'S AND BEARS!

Saturday April 15, 10 a.m.-noon

Bald Mountain Scenic Area, 5 miles west of Boulder on Sunshine Canyon Drive (Mapleton Ave. in Boulder city limits)

Join volunteer naturalists for a moderate one-mile hike to learn about some of the critters that call Bald Mountain home, including a squirrel that lives only in ponderosa pine forests. Also see evidence of the 2010 Fourmile Canyon fire and learn a little about the natural role of fire in this ecosystem.

A BIRDS-EYE VIEW OF BOULDER COUNTY WEATHER

Tuesday April 18, 6-7:30 p.m.

George Reynolds Branch, Boulder Public Library, 3595 Table Mesa Drive, Boulder

Join volunteer naturalist Phil Ecklund for a look at Boulder County's unique weather from the perspective of a glider pilot. From soaring thunderheads to "flying saucer" clouds and powerful winds off the Continental Divide, the weather is anything but predictable along the Front Range of Colorado. Phil will share his years of experience in observing and flying through Colorado's changeable weather with in-flight and time-lapse images.

THE MYSTERY OF BIRD MIGRATION SLIDE PROGRAM

Wednesday April 26, 7-8:30 p.m.

Longmont Public Library, Meeting Rooms A & B, 4th Avenue and Emery Street

Some birds are seen year-round in Boulder County, some only in summer or winter, and some birds visit only briefly in spring or fall. Learn why birds make seasonal journeys, how they know when and where to go, how they find their way, and what brings them back year after year? Join volunteer naturalists Larry Arp and Vicki Braunagel to explore these and other fascinating mysteries surrounding the amazing world of bird migration.

THE MYSTERY OF BIRD MIGRATION BIRD WALK

Saturday April 29, 8-10:30 a.m.

Space is limited, meeting location will be provided to registered participants

Join volunteer naturalists to explore the joys of bird watching during prime migration season! Learn tips for recognizing different types of birds, including songbirds, ducks and waterfowl, wading birds, raptors, and more. Please be prepared for a slow-paced walk of up to 2 miles. Bring water, walking shoes/boots, binoculars and a bird field guide if you have them. To register, email lcolbenson@bouldercounty.org, or call 303-678-6214 no later than Thursday, April 27.



Spring Wildflower Hikes

Wildflower Hike at Legion Park
Saturday May 6, 10 a.m.-noon
Legion Park Open Space, east Boulder on
Arapahoe Road, 0.5 mile west of 75th
Street

Wildflower hikes are open to all ages, and are geared to beginners. Please wear hiking shoes, bring water, and a wildflower guide if you have one. Join volunteer naturalists for a leisurely spring stroll through the pinyon and ponderosa pines at Legion Park. Besides having a great view of the Continental Divide, this park is a wonderful place for early season wildflowers.

Wildflower Hike at Ron Stewart
Preserve at Rabbit Mountain
Saturday May 13, 10 a.m.-noon
Rabbit Mountain Open Space, NE of Lyons on
north 55th Street, meet at group picnic shelter
Rabbit Mountain is a great place to view spring
wildflowers. The transitional foothills life zone is
home to Easter daisies, Nuttall's violets, Pasque
flowers, spring beauties, cacti, and more. Join
volunteer naturalists for a moderate 2-mile hike that
will take you from grassland to ponderosa pine and
mountain mahogany shrubland in search of early
bloomers.

Wildflower Hike at Bald Mountain
Sunday May 28, 10 a.m.-noon
Bald Mountain Scenic Area, 5 miles west of
Boulder on Sunshine Canyon Drive (Mapleton Ave.
in Boulder city limits)

Join volunteer naturalists for a spring wildflower hike in the beautiful foothills west of Boulder. We will hike about 1.5-miles through forest and meadows in search of spring wildflowers, enjoying some beautiful vistas along the way.

All Programs:

All ages welcome unless otherwise noted. NO PETS PLEASE! Be prepared for cool to high temperatures and afternoon thunderstorms. Bring drinking water and dress in layers. For information about these programs, or to arrange a volunteer-led program for your group, please call 303-678-6214.



Senior Fish-off

Friday, April 21, 6:30 a.m.-10 a.m.
Wally Toevs Pond at Walden Ponds
Wildlife Habitat, 75th St, between
Valmont Road and Jay Road, Boulder

Prizes will be awarded for heaviest rainbow trout, most experienced (oldest) angler, best fishing hat, and first to catch the limit.

The trout have fattened up and are biting!

- · Open to seniors 64 years and older
- All anglers must sign in—no fishing before 6:30 a.m.
- · Valid 2017 Colorado fishing license required
- Live bait and artificial flies/lures permitted—bring your own fishing gear
- Wheelchair-accessible fishing pier is available

For more information, contact Michelle Marotti at 303-678-6219 or mmarotti@bouldercounty.org.

SUNSET PHOTOGRAPHY SESSION AT BETASSO PRESERVE

Saturday April 29, 7-10 p.m.

Join Ranger Fowler for a sunset photography session at Betasso Preserve at an ideal spot to capture the setting sun. Take photos to submit to the 2017 Land through The Lens Photography Exhibit. Registration opens one month before the event at BoulderCountyOpenSpace.org/register.

ISPY BEAKS AND FEET!

Wednesday May 3, 10-11:00 a.m.

Walden Ponds Wildlife Habitat, 75th Street between Valmont Road and Jay Road, (meet at group picnic shelter near Cottonwood Marsh)

Birds eat a lot of different foods—seeds, insects, fish, and other animals. Come join volunteer naturalists to learn how a bird's beak and feet help them find and eat their favorite foods. We will watch for local birds and find out where they live, eat, and have babies. This program is for preschool children and their families. Adults must stay for the program.



WILDFLOWERS OF BOULDER COUNTY SLIDE PROGRAM

Thursday May 4, 7-8:30 p.m.

Louisville Public Library, 951 Spruce Street, Louisville

Join volunteer naturalists for a slide program to kick off the spring wildflower season! You'll learn about the variety of wildflowers found in Boulder County, where and when to look for them, and some interesting facts about some of our native plants.

HAMMERING AT THE FARM - BLACKSMITHING DEMONSTRATION

Sunday, May 7, 10 a.m.-1 p.m.

Agricultural Heritage Center, 8348 Ute Hwy, Longmont

Watch blacksmiths forge new tools to be used at the Agricultural Heritage Center. Blacksmithing was a common trade that supported agriculture, mining and construction in creating and repairing all things iron and steel. This drop-in program is appropriate for all ages.

THE GEOLOGIC HISTORY OF BOULDER COUNTY

Tuesday May 9, 7-8:30 p.m.

Longmont Public Library, Meeting Rooms A & B, 4th Avenue and Emery Street

The geologic history of Boulder County's remarkable landscape goes back nearly two billion years! Rocks contain a record of earth's history that can be read like the pages in a book. Join volunteer naturalists for this slide program and learn how to read the story in the rocks in your backyard.

ASTRONOMY: PLUTO'S NEIGHBORHOOD

Friday May 12, 7:30-10 p.m.

Space is limited, meeting location will be provided to registered participants

Bring the family to enjoy an evening in northwest Boulder County to learn a bit about Pluto's transition from smallest planet to king of the dwarf planets, plus other fun trivia about our solar system. Afterwards, view Jupiter, Saturn, star clusters, galaxies and more with the help of the Longmont Astronomical Society. To register, email dprice@ bouldercounty.org or call 303-678-6215 no later than Wednesday, May 10.

NATURE HIKES FOR SENIORS

Enjoy a guided nature hike for seniors every month. For more information, call 303-678-6214. Programs begin at 10 a.m. and end at noon.

Thursday March 30, Walker Ranch (Meet at the Myers Homestead Trailhead, lower parking lot)

Thursday April 27, Walden Ponds Wildlife Habitat (meet at the group picnic shelter at Cottonwood Marsh)

Thursday May 25, Agricultural Heritage Center at the Lohr/ McIntosh Farm



GOATS GALORE - MEET AND GREET

Saturday May 13, 10:30 a.m.-12:30 p.m.

Agricultural Heritage Center, 8348 Ute Highway, Longmont

Join the Goats Galore 4-H club and their goats for a drop-in program all about goats. Why do people raise goats? Do goats really eat tin cans and tennis shoes? How do I get involved in 4-H with goats? Get answers and learn about raising goats, different breeds, housing and feed requirements, and see a live milking demonstration.

FOSSILS AND FLOWERS

Sunday May 14, 9:30 a.m.-noon

Space is limited, meeting location will be provided to registered participants.

Join volunteer naturalists Megan Bowes and Sue Hirschfeld for a short, moderately-strenuous hike to explore a landscape created by folding and faulting as the Rocky Mountains uplifted 65 million years ago. You will see fossilized evidence of the Cretaceous seas that once inundated this area, as well as some of the earliest blooming wildflowers in Boulder County. Bring water and hiking shoes/boots. Register by emailing lcolbenson@bouldercounty.org, or by calling 303-678-6214 no later than Thursday, May 11.

BIRDING BOULDER COUNTY THROUGH THE SEASONS

Monday May 15, 6-7:30 p.m.

Lafayette Public Library, 775 west Baseline Road, Lafayette

Join volunteer naturalists to learn about birding year-round in Boulder County. This program will explore where to find and how to identify some of our local birds, from the plains to the alpine. You will also learn about the many challenges birds face and how they adapt. This seasonal story of birds takes you through an amazing range of ecosystems and habitats, and you will also learn about some of the migratory birds that return to or pass through Boulder County during the year.

EARLY MORNING PHOTOGRAPHY SESSION AT RON STEWART PRESERVE AT RABBIT MOUNTAIN

Saturday May 20, 2017, 6-9 a.m.

Join Ranger Fowler for an early morning photography session at an ideal spot to capture the fresh rays of a new day. Take photos to submit to the 2017 Land through The Lens Photography Exhibit. Registration opens one month before the event at BoulderCountyOpenSpace.org/register.

GEOLOGY HIKE AT RABBIT MOUNTAIN

Saturday May 20, 9 a.m.-12:30 p.m.

Rabbit Mountain Open Space, NE of Lyons on north 55th Street, meet at group picnic shelter

Join volunteer naturalist Roger Myers on a moderate 2-mile hike at Rabbit Mountain, where you will learn about the unusual geology of the area. We'll also watch for spring wildflowers, soaring raptors, and other wildlife. Bring water, sunscreen, closed-toed hiking shoes/boots, and binoculars if you have them. This program is geared for adults.

ANCIENT BEACH WALK

Saturday May 27, 9-11:00 a.m.

Space is limited, meeting location will be provided to registered participants

Visit an ancient beach in our backyard! Join geologist and volunteer naturalist Sue Hirschfeld on an easy walk to see the fossils and unusual geologic features formed in this near-shore marine environment. Please wear hiking shoes or boots—there's lots of prickly pear cactus! To register, email lcolbenson@bouldercounty.org, or call 303-678-6214 no later than Thursday, May 25.

NATURE DETECTIVES IN THE FIELD: A MUSKRAT'S NEIGHBORHOOD

Monday April 17, 10-11:30 a.m.

— and —

Tuesday April 25, 10-11:30 a.m.

Registration required, meeting location will be provided to registered participants

Muskrats may be seen as the little cousin to the beaver, but they are a very different animal! Muskrats also provide habitat for all sorts of other species. Discover some of the neighbors that share space with muskrats and find out how important they are to building a better world for animals in and near the pond. Designed for children ages 4-10 with adult companions. To register, email dprice@bouldercounty.org or call 303-678-6215 no later than Friday,

dprice@bouldercounty.org or call 303-678-6215 no later than Friday April 14 (for April 17) or by Friday, April 21 (for April 25).

Youth Corps Recruiting

Opportunity for Boulder County Youth

Spring is the time of year the Boulder County Youth Corps gears up for the busy summer season. Sponsors are planning their many projects that Corps members will be working on during the 8-week employment program for Boulder County youth ages 14-17.

Staff is recruiting to fill 160 Corps member positions and 34 Leader openings. Applications will be accepted through Friday, March 31, and girls are encouraged to apply. Leader applications from those 18 and older will be taken until all of the positions have been filled.

Challenge yourself this summer by joining the Youth Corps! Find more information online at www.BoulderCounty.org/YouthCorps.



The Boulder County Youth Corps – Improving Ourselves, Improving Our Community

Seasonal Property Closure

Caribou Ranch Closed April - June

There is a permanent spring closure April 1 through June 30, to protect spring migratory birds, overwinter elk survival, and elk calving and rearing activities. Please respect wildlife needs for solitude.

Violators can be fined up to \$300 by the resident caretaker, park rangers, and county sheriff deputies who patrol the open space. property.

THANK YOU!

More than 3,000 volunteers contributed 33,036 hours to Boulder County Parks and Open Space last year!



iNaturalist: Nature for the Modern Age

Spring is here and it's time to venture out on open space. While

you're enjoying the outdoors, would you like to help Boulder County wildlife biologists monitor the animals that live on local open space?

Well, you're in luck because Boulder County Parks and Open Space now has a wildlife sharing platform with an online application called iNaturalist. We are looking for the public to help us understand what types of wildlife are living in our parks across the county. Please read all information on the Boulder County Wildlife project site so that wildlife, and you, stay safe.

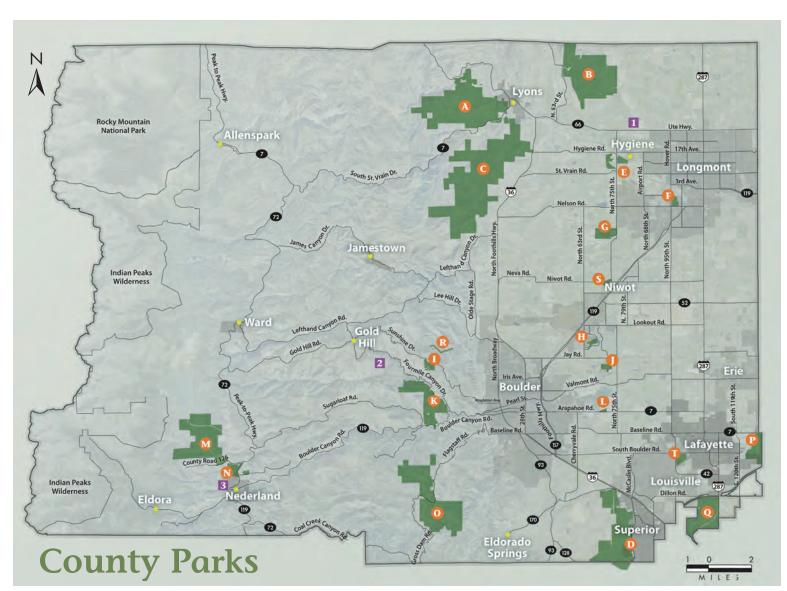
It's easy to get started:

- 1. Visit iNaturalist.org and create an account.
- 2. Click on Projects from the top menu and type in Boulder County Wildlife.
- 3. Download the iNaturalist application to Apple or Android and you can immediately start posting sightings from the comfort of your smartphone.
- 4. You can also upload photos from your desktop computer. Don't forget to add information about your sighting!



Parks & Open Space

5201 St. Vrain Road, Longmont, CO 80503 www.BoulderCountyOpenSpace.org



- A Hall Ranch
- **B** Ron Stewart Preserve at Rabbit Mountain
- C Heil Valley Ranch
- D Coalton Trailhead
- E Pella Crossing

- F Boulder County Fairgrounds
- G Lagerman Reservoir
- **H** Twin Lakes
- I Bald Mountain Scenic Area
- J Walden Ponds Wildlife Habitat
- **K** Betasso Preserve

- L Legion Park
- M Caribou Ranch
- N Mud Lake
- Walker Ranch
- P Flagg Park
- Q Carolyn Holmberg Preserve at Rock Creek Farm
- R Anne U. White
- S Dodd Lake
- T Harney Lastoka
- Agricultural Heritage Center
- 2 James F. Bailey Assay Office Museum
- 3 Nederland Mining Museum