

# IMAGES

NEWS



PROPERTIES



NATURE



HISTORY



EVENTS



# 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 photo:** Mushroom, Ryan Kosmatka

**Victory Garden,** National Archives and Records Administration

**Suffragette,** Denver Public Library, Western History Photographic Collections

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**Yucca,** Lucas Ainsworth

**Yucca Moth,** U.S. Dept. of Agriculture

**Hikers,** John Reed

**Couple on Trail,** Michelle Marotti

## NATURE DETECTIVES

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Volume 42, number 2

# Improving Open Space for People with Disabilities

by Michelle Marotti

Going on a hike or enjoying a quiet moment in nature benefits people of all abilities. To provide the best service to our visitors with disabilities at parks and out on the trails, we recently conducted a study to identify opportunities for improvement.

The study helped us better understand the visitation patterns, amenity preferences, and visitor experiences of people with disabilities, as well as the family, friends, and local organizations that visit open space properties with people who have disabilities.

Seven in-depth interviews were conducted with organizations that serve people with disabilities and visit open space properties. In the interviews, participants were asked to share their experiences when visiting Boulder County Parks & Open Space or other open space properties. The results of the interviews helped inform an online survey.

The online survey was open from July through October 2019. A total of 124 surveys were completed, with 66 surveys (53 percent) filled out by people with disabilities and 58 surveys (48 percent) filled out by a family member, friend, or person who works with someone with a disability. People were asked to describe their disability in their own words, with most people reporting a mobility or physical impairment.

The following are key findings from the interviews with organizations and from the survey responses.

## VISITATION PATTERNS AND ACTIVITY PREFERENCES

- Most organizations and survey respondents report visiting open space at least once a month.
- Open space properties and trails near lakes, reservoirs, and creeks are most frequently visited by organizations.
- Properties most frequently visited by survey respondents include Walden Ponds Wildlife Habitat, Boulder Canyon Trail (a City of Boulder trail), Heil Valley Ranch, Betasso Preserve, and Caribou Ranch.
- The two most common activities organizations report are hiking and fishing. The most common activities survey respondents report include walking or hiking on trails (includes using a walker, cane, etc.), viewing wildlife, bringing a dog, and gathering with family and/or friends.

## PRIOR EXPERIENCES RELATED TO PARKS AND TRAILS

- When reflecting upon a prior experience with their organization at an open space property, participants most commonly reference the scenery. Likewise, enjoying the views, beauty, and scenery are the most common positive memories mentioned by survey respondents.
- Supportive, friendly staff and people are important to a positive experience for organizations.
- The most common problems reported by organizations are logistical issues (parking, permits, organization's staffing, etc.). Similarly, insufficient parking or problems with parking are the most common problems mentioned by survey respondents.

## DESIGN FEATURES FOR PARK AMENITIES AND TRAILS

- The three most important amenities to the organizations are restrooms, trails, and parking lots. The three most important amenities to the survey respondents are trails, parking lots, and trail signage.
- Other amenities that the organizations reported looking for when choosing specific open space properties to visit include: water fountains, gathering areas for groups of people, accessible gates, shade, good trail maintenance, and online information about accessible trails.
- Other amenities survey respondents reported looking for when choosing to visit a park or open space include: accessible trail design (smooth, handholds for inclines, easy trails), shade, accessible parking, access to parks using public transport, and places that provide easy accommodation for wheelchairs.



The accessible fishing pier at Wally Toeys Pond at Walden Ponds Wildlife Habitat.

### ONLINE SURVEYS

Please rate the importance of the following amenities to your experience at open space.

Table 19: Survey Respondent ratings of importance for park amenities ordered by overall ranking

Please rate the importance of the following amenities to your experience at open space.

	Not important at all (1)		Of little importance (2)		Of average importance (3)		Very important (4)		Absolutely essential (5)		Total	Overall Ranking
	%	#	%	#	%	#	%	#	%	#		
Trails	1%	1	2%	2	4%	4	36%	35	57%	55	97	4.5
Parking Lot	1%	1	5%	5	24%	23	33%	31	37%	35	95	4.0
Trail Signage	5%	5	3%	3	19%	18	42%	40	31%	29	95	3.9
Trash/Recycling	5%	5	8%	8	15%	15	38%	37	32%	31	96	3.8
Restroom	3%	3	15%	14	25%	24	23%	22	34%	33	96	3.7
Benches	7%	7	9%	9	21%	20	36%	35	26%	25	96	3.7
Educational Signs	5%	5	9%	9	38%	36	32%	31	16%	15	96	3.4
Trailhead Kiosk	4%	4	11%	10	40%	38	31%	29	15%	14	95	3.4
Picnic Shelter	17%	16	20%	19	32%	31	19%	18	10%	10	94	2.9
Fishing Pier	45%	41	21%	19	18%	17	7%	6	3%	3	86	2.0

Total: 99  
Skipped: 25

## NEXT STEPS

The results from the interviews and survey revealed that the needs, preferences, and experiences of individual people and groups of people may differ. The staff at Boulder County Parks & Open Space are using the results to identify potential projects and improvements in our parks, as well as ways to improve public information and engage the disability community in future planning processes. Our goal is to ensure that visitors of all abilities can enjoy the beauty of Boulder County's parks and trails.

## AVAILABILITY AND USABILITY OF INFORMATION

- Organizations and survey respondents most often gather information about parks and open space online.
- Four out of the seven organizations reported problems finding the information needed to plan a visit to open space. One out of five survey respondents reported problems finding the information needed.

# Victory Gardens, Then and Now

by Carol O'Meara



When you think of victory gardens, does the image of patriotic posters from World War II spring to mind? The history of victory gardens stretches back to World War I when America became embroiled in a war that took our young farmers from the fields to the front lines. Citizens across the country were encouraged to grow their own food as a means of easing shortages and providing exercise.

After the United States entered WW I on April 16, 1917, several factors caused shortages in food and fuel supplies: young men had left the farm to fight in the war, canned food, grain, and seed for crops were shipped to war-torn European ally nations, and supply chains were interrupted because of labor shortages.

## GROWING TO CONTRIBUTE

Immediately, national and local defense councils encouraged people to contribute to the war effort by saving or growing food. Charles Lathrop Pack organized the National War Garden Commission to encourage Americans to contribute by planting, harvesting, and storing their own fruits and vegetables to allow more food to be sent to our allies.

Coloradans did not face rationing as extensively as they would in WW II, but they faced rising food and fuel prices and limited supplies of food and other essentials. As a result, Colorado citizens joined the nation by tightening their belts and planting war gardens.

When the armistice in 1918 ended the war, Americans were encouraged to continue their gardening by the National War Garden Commission. Calling the effort “liberty gardens,” the federal government touted these gardens in a national

campaign as a way that citizens could contribute to America’s return to prosperity. Nationally, three million gardens were planted in 1917. By the end of 1918, more than five million gardens were being cultivated.

## THE WHITE HOUSE SETS AN EXAMPLE

Interest in liberty gardens waned a few years later, but was revived during WW II when food supplies were again strained and more extensive rationing was in place. In 1943, Eleanor Roosevelt planted a victory garden on the front lawn of the White House despite the objections of the U.S. Department of Agriculture which was concerned about the message it sent to farmers. Though largely symbolic, the victory garden on the White House lawn was the First Lady’s call to action for the national movement for home-grown food to help alleviate shortages.

The victory garden movement in WW II was successful, with more than 20 million Americans producing approximately 40 percent of our country’s produce. The City of Denver established a Victory Garden Office and in March 1943, Mayor Stapleton dedicated Denver’s first victory garden in what is now Congress Park.

Today, Americans once again face the possibility of food supply interruptions and Coloradans are planting vegetable gardens for exercise, mental well-being, and food to share with family and friends. Colorado State University Extension has helped the people of Colorado grow food in tough times, from WW I to WW II, and we are here for you now.

## ONLINE LEARNING

Master Gardeners are here to answer your questions via our email help desk or live online chats on Fridays, Saturdays, and Sundays from 10 a.m.-2 p.m. through Sunday, June 14 ([www.bococmg.org](http://www.bococmg.org)). Or you can email questions and photos to our help desk at [mggpa@bouldercounty.org](mailto:mggpa@bouldercounty.org).

Check out Grow & Give ([www.growandgivecolorado.org](http://www.growandgivecolorado.org)), our website packed with information and instructional videos for planting your vegetable garden, plus details for how to enroll in the online Vegetable Gardening course.

# Women Get the Vote in Colorado

by Pete Lundskow

August 18, 2020, will mark the centenary of the final ratification of the 19th Amendment to the United States Constitution giving all women the right to vote in all elections. Colorado was one of the first states (back then it was still a territory) to consider the women's vote—in January of 1870—just a year after Wyoming Territory became the first place to give American women the right to vote.

In a Boulder County connection, Mr. A. K. Yount made a motion to strike the word “male” in, “That every male person over the age of 21 years, possessing the necessary qualifications, shall be entitled to vote.” He insisted that justice required that women should help make the laws by which they were governed. Unfortunately, the measure lost 24 to eight that year. It was next presented on a ballot to the voters in 1877 and lost by over 50 percent. Many national suffrage leaders, such as Susan B. Anthony, spoke throughout the state to no avail.

## AHEAD OF THE TIMES

Finally, women did receive the right to vote in all Colorado state and local elections by a second referendum on November 7, 1893. This was 17 years before the ratification of the 19th Amendment. Amos Steck, a Republican from Denver was an advocate for woman's suffrage through all the intervening years. “What we insist upon is the opportunity for women to choose for themselves what they are best fitted to perform. And to that end we insist that women be clothed with the ballot, to enforce their claims to enter upon any of the labors of life for which they may deem themselves qualified equally well with man...” Other populist and progressive Republican leaders and a majority of newspapers vocally supported the measure. The main opposition came only from bar owners and brewers who feared this amendment would bring the prohibition of alcohol to the state. It did, eventually, but only a few years before national prohibition.



A young suffragette, circa 1915.

The following year, 1894, three women, Clara Cressingham, Carrie C. Holly, and Frances S. Klock, were elected to the Colorado House—the first women to be elected to a state legislature anywhere in the United States. In other legislation, women helped institute a model juvenile court system, the right to homestead property, and be considered head of their households if they were their family's main support.

The other interesting part in the road to national suffrage was that activism had died down on the national scale. The progress in Colorado sparked a reactivation of the national suffrage movement into the 20th century. This groundswell manifested a large organized march on Washington D.C. in March 1913 which many women from Colorado attended. It equaled the dedication of the

recent women's march in the nation's capital 104 years later. It is often referred to as the turning point for the passage of the 19th Amendment.

Unfortunately, when the 19th Amendment was passed on June 4, 1919, Colorado was not as much in the forefront of getting its own ratification done quickly. It was the 22nd state out of the 36 to ratify on December 14, 1919. The House, Senate and Governorship in Colorado were held by Democrats through 1918. At the time, that party was not much of a supporter of national suffrage. In fact, President Wilson was against it until that year. It is believed he finally changed his mind when he saw how women supported the nursing and Home Front efforts of WW I. Another sidelight is that eight states didn't ratify the amendment until between 1950 and 1970.

So, in the final analysis, Colorado was an early scout on the trail to women's equal rights, but got side tracked on an undesignated trail near the end of that destination.

# Watching Wildlife Respectfully

by Karissa Courtney

If you live in Boulder County, it's likely that you enjoy the outdoors, and with that often comes watching wildlife. Whether you go up to Rocky Mountain National Park to watch the elk in rut or you live in the foothills and witness wandering black bears, there are some ways that you should be respectfully watching these animals.

The "Leave No Trace" principles are a great starting point for respectfully watching wildlife. Maintaining distance from animals is extremely important. For watching raptors, you must be at least a half-mile away from the birds and/or their nests.

For large mammals, you need to be far away as well: at least 25 yards for most wildlife, and at least 100 yards for larger animals such as bears. If you can cover the entire animal with your thumb, you're at a safe distance.

Watching from behind buffers is an even better way to view animals. Buffers are barriers—usually a car—that keep you from the animal. The buffer protects you as well as allowing the animal to behave as usual. Additionally, feeding wildlife should never be done. They become accustomed to humans bringing them food and therefore reliant on this extra sustenance instead of finding their own food. Not to mention that human food is often very bad for animals and can cause bodily issues. Additionally, it can make these animals less afraid of humans and more susceptible to harm if the wrong human comes by.

Finally, if you are driving where there is wildlife to see, make sure to keep your eyes on the road, pull over in safe designated areas, and never block traffic. If you see something of note, notify the managing agency.



Watching wildlife from a car offers a good buffer between you and the animal and allows the animal to behave as it usually would.



A class of volunteers learns to observe waterfowl from a proper distance.

## LEAVE NO TRACE

Even if you don't see any wildlife while on your hike, it's very important to leave the outdoors as you find it and to respect the habitats of the animals around you. The main principles from "Leave No Trace" include:

- **Plan Ahead and Prepare:** Consider your group size.
- **Travel and Camp on Durable Surfaces:** Create the least amount of disturbance to an area.
- **Dispose of Waste Properly:** Waste includes human waste, as well as garbage. Properly disposing of human waste prevents water pollution, minimizes the spread of disease, and maximizes the decomposition rate. Find a place at least 200 feet from water sources, dig a hole 6-8 inches deep, bury human waste, and pack out used toilet paper. Make sure that you also pack out all trash and garbage that you brought with you.
- **Leave What You Find:** Do not alter sites. Make sure you leave any antlers, petrified wood, rocks, bones, and sticks. They are utilized by the animals in the area and provide shelter, minerals, and vitamins.
- **Minimize Campfire Impacts:** Use a camp stove instead of a fire to cook food. Make sure you know the fire danger for the time of year and place you are visiting. If you do build a fire, use an existing fire ring.
- **Respect Wildlife:** Quietly observe from a distance and keep your group small. Do not touch, get close to, feed, or pick up animals.
- **Be Considerate of Other Visitors:** Do not create excessive noise, control your pets, and do not damage the surroundings.

# NATURE DETECTIVES



Summer 2020

## The Screechy Red-Winged Blackbird

A red-winged blackbird balanced on top of a swaying cattail stalk and looked around Cottonwood Marsh. His nickname was Red, and it was the second year Red had claimed part of the marsh as his territory. He spread his tail, and hunched his wings to show off vivid red shoulder patches. He called, "My territory-eee!" His voice was screechy, sounding like a squeaky machine.

Red was a mature adult male, about the size of a robin. He looked really fine with glossy black feathers. His shoulder patches were eye-catching red feathers, bordered in yellow feathers. He flashed the bright shoulder colors to advertise his vigor and his confidence as he patrolled his claim.

Weaker and younger red-winged blackbird males understood Red's signals and moved away. Red's appearance signaled to red-winged blackbird females that he'd likely be a strong protector of nests and baby birds. The females were most impressed with the territory's good nesting spots and food choices. Red's fitness and experience at finding and holding a quality territory meant at least five females had chosen to nest in his area.

Pull Out and Save

## Danger from the Sky

Red saw a hawk flying in, low and fast. Mates and babies were in danger! Calling out an alarm, Red shot off his perch and flew directly at the predator bird. Red instinctively knew he had to stay above the hawk or risk becoming its snack himself. If the hawk got above Red, it could dive down with sharp talons ready for capture.



The hawk circled up and up, and Red beat his wings hard to stay even higher. Finally, the hawk was well out of Red's territory. Red broke off his attack, and fled home as fast as his wings could flap. Red's luck held. The hawk didn't counter attack, and kept flying away.

Red rested at the top of a willow bush and surveyed his area in Cottonwood Marsh. He shrugged his shoulder patches wide and forward. "My territory-eee!" he sang to a neighboring male red-winged blackbird.

## It's Red-winged Blackbird Time

Red-winged blackbirds are common in marshy habitats during spring and summer nesting season. The birds prefer areas with swamp vegetation such as cattails. Other habitats include wet fields or soggy roadside ditches with tall weeds.

Females look nothing like the males, and are often mistaken for a kind of sparrow. Unlike loud, flashy males, females creep among the plants to avoid attracting the attention of hungry predators. Drab coloring helps them hide.



Female red-winged blackbird

## Males Claim Territory Loudly

Late winter marks the arrival of male red-winged blackbirds on their nesting territory. The males flaunt their red shoulder patches and call raucously. As they flit from tall plant to tall plant to stake their claim on a plot of wetland, they show off and sound off from their various perches, and while in flight.

An individual bird's claim will be respected by red-winged blackbirds that flew to the wetland with him, if he spends enough time on his plot threatening rivals with his colors and calls. The birds seldom physically fight with familiar neighboring males in their flock. If a red-winged blackbird stranger intrudes on the territory, the defense can be a fierce battle with beaks and claws. Several males may work together to chase off an intruder blackbird and other birds such as crows.

## Females Claim Nesting Space Quietly

The females arrive after the males. They seek a small nesting area with good food nearby. They sneak quietly through vegetation collecting nest materials. If another female comes near, they spread their wings and tails to signal "back off." They build their nest and raise the young with little or no male help.

Nests start with long, thin plant leaves wound around cattails or weeds to make a platform. A cup is woven on the platform, plastered with mud and lined with soft grasses. The safest nests for the eggs and nestlings are hidden, down low over water.



After hatching, three or four babies grow rapidly on a diet of flies, moths, butterflies, dragonflies, and snails. In a dozen days, nestlings become fledglings. They hide down among the marsh plants until they become strong fliers.

The male blackbirds have few rivals to chase now so they may help feed fledglings. Youngsters leave the marsh to join flocks of other juvenile blackbirds once their flying skills improve.

## Communicating by Sight and Sound

In Spanish the red-winged blackbird is called *sargento alirrojo*, which means “red-winged sergeant” because the bird’s red shoulder patches resemble an epaulet (pronounced **ep-uh-let**), a colorful patch marking the shoulder of some military jackets.

Red-winged blackbirds on patrol aggressively fluff their red and yellow feathers, but at the end of each day, they hide their colors. They fly off to a nearby location to flock together with the same male neighbors they’ve eyed with suspicion all day. Hidden red colors signal comradery among the flock while the males roost together for the night. They return to their own wetland plots each morning, with red feathers flashing and raucous calls sounding.



After the nesting season, these birds don’t migrate south. Neighboring male and female red-winged blackbirds will leave the marsh to join up with other types of blackbirds such as grackles and cowbirds. Juvenile blackbirds join the flock too. Next year, many of the same red-winged blackbirds will return to claim a territory in the same area, and the nesting cycle will begin again.

### Big Menu for Red-wing Blackbirds

Mixed blackbird flocks can number in the hundreds in fall and winter. The flocks swarm animal feedlots and farmers’ fields to find weed seeds, seed crops, and grain. They inflict lots of damage if they arrive before sunflower, wheat, and corn fields are harvested. They also walk open spaces such as lawns, gardens, and golf courses to forage for anything that might be food.

Food for the blackbirds is nearly anything they can swallow, after they manage to spear, pick up or pry it open with their tough, cone-shaped beaks. Insects are a favorite during the summer. Berries, spiders, and small animals such as worms, snakes, snails, and more are on their large menu.

### Threats and Dangers

Despite the watchful care by female birds and the marsh patrols by male birds, predators often snatch eggs, nestlings and fledglings. Snakes and minks can reach nests built over water. Raccoons, weasels, and foxes can grab fledglings and raid nests built over land. Magpies, crows, ravens, jays, owls, and hawks strike unguarded nests and wandering fledglings. People exasperated with large flocks also try to reduce the birds’ numbers in many ways.



Group nesting, roosting, and flocking increase safety from predators. Individual alarm calls warn the whole group, and birds work together to mob and chase away threats. The same camouflage colors help hide juvenile birds and females. Nevertheless, numbers of red-winged blackbirds are dropping, but for now the birds are still abundant, and individual birds can live more than 15 years.

## Spying on Red-winged Blackbirds

Head out to a marsh or pond inhabited by a lot of noisy red-winged blackbirds. A good place to find the birds is an area with lots of cattails like Walden Ponds Wildlife Habitat. Find a comfortable place where you are not too noticeable to the birds and where you can observe the whole area quietly for a while.



Listen to the blackbirds making different sounds. Besides the screechy territory call, red-wings use soft chatters, whistles, alarm calls, and more. They have a different warning call for danger from the sky than if the danger is on the land. Males even have a call to say they are about to leave their territory.

If you watch long enough you might be able to map an individual male bird's plot. Keep track of all the perches where the same bird lands and connect the places in your head with imaginary lines.

## Red-winged Blackbird Observations

Use this chart to keep track of your observations. Use tic marks to show how many times you see these signals. Just like people, birds have many signals, sounds, and movements that help them communicate with other birds.

Male perched, calling and displaying red shoulder patches	Male slowly flying over and showing red shoulders	Male landing near another male
Male chasing another blackbird (male or female?)	Male or female eating something	Male chasing a crow or hawk or other bird
Male chasing an animal that's not a bird	Female doing something—write down what she's doing	How many red-winged blackbirds do you see?
How many different calls do you hear red-winged blackbirds making? (loud “auk au leeee” or soft “chek chek” are examples)	How many other different types of birds do you recognize? List them.	Other interesting observations

# Capturing Wildlife: iNaturalist Style

by Deborah Price

There you are, hiking on a trail at Heil Valley Ranch, when a tom turkey struts into view, flashing its tail feathers and gobbling away. You whip out your cell phone, capture an amazing photo, and want to share it with the world.

Facebook and Instagram are fun places to share photos, but posting wildlife photos can go beyond regular social media. Maybe you want to learn more about wildlife in the process, or see where others have spotted critters across the county.

The website iNaturalist.org provides a platform for anyone to contribute photos of wildlife or plants. If you don't know the name of the object in your photo, other viewers help with identification. You can check out what others are seeing as well.

To get more local, communities can embed project pages into the overall iNaturalist website. Boulder County helps host such a project, called "Boulder County Wildlife." This project focuses on wildlife only, and currently displays nearly 19,000 photos. The project is also hosted by the Wild Foundation and the City of Boulder Open Space and Mountain Parks.

Boulder County is a big place—740 square miles, ranging in elevation from under 5,000 feet in the east to over 14,000 feet in the northwest corner of the county atop Longs Peak. This area encompasses many different life zones and ecosystems, and provides habitat for the diversity of wildlife we find here. Biologists, volunteers, and students all help the county document wildlife sightings, behavior, and movement, but it's difficult to be everywhere at once, and you never know when a bear or bobcat might show up.

Dave Hoerath, wildlife biologist with Parks & Open Space, sees two great benefits of participating in iNaturalist. "The first one is engagement of the public—getting them to care enough to join,



Photographs were taken by David Lawrance, who took up photography as a hobby after retiring from CU Boulder. He is one of the most prolific contributors to the Boulder County Wildlife iNaturalist project page.



post, interact, and learn about their local wildlife. The second one is the 'second set of eyes' in the field—seeing things that maybe we wouldn't or something in a place we wouldn't think there is one."

Some wonderful photographers who contribute to the Boulder County Wildlife project page on a regular basis offer a close-up glimpse of our wild neighbors. In addition, the average cell phone or casual photographer is just as important. Capturing sightings on camera and sharing them is a great way for county and city employees, as well as citizens, to learn about the wildlife that share our space.

To date, approximately 2,000 different wildlife species have been recorded on the Boulder County Wildlife project site. Boulder County also participated in the annual City Nature Challenge bioblitz through iNaturalist again this year, in cooperation with the Denver metro area. Bioblitz participants record as many plant and animal species as possible during a weekend. To see results for the 2020 challenge held in late April, visit [www.inaturalist.org/projects/city-nature-challenge-2020-denver-boulder-metro-area](http://www.inaturalist.org/projects/city-nature-challenge-2020-denver-boulder-metro-area).

## SIGN UP FOR THE BOULDER COUNTY WILDLIFE PROJECT PAGE:

- Go to [www.iNaturalist.org](http://www.iNaturalist.org) and create a login.
- Search for the Boulder County Wildlife project at [www.inaturalist.org/projects/browse](http://www.inaturalist.org/projects/browse).
- On the Boulder County Wildlife page, click the top right corner that says "Join this project."
- If you download the iNaturalist app on your phone, you can use it to directly submit photos.
- From your computer, you can upload photos to the site, and then add location and observation details. Please add as many details as possible!

# Notes from the Field

by David Hoerath



In the spring of 2018, we were watching the new plantings establish in Webster Pond at Pella Crossing. Everyone was excited to see the developing wetland take shape and fill in. Everyone except the beaver family that had taken up residence there. The beavers had taken to plugging up the outlet structure draining Webster Pond into Heron

Lake. Something about the sound of rushing water...

We couldn't allow the lake level to increase because it would begin to drown the 21,000 wetland plantings. So we began a daily struggle with the beavers of plugging and unplugging the outlet.

That was too much work (busy beavers and all that). We decided that we needed something more formidable. Something that would be too large to plug. Our initial effort of caging, chicken wire, and t-posts was easily circumvented by the beavers. Hah! So we upped our game. Enter Fort Castor! We found two chain link fence panels in the shop yard and bought some hog panel mesh for the sides, creating a 6' x 10' screen box. We added some pipes to collect water from farther out (as the beavers started blocking up the sides). Our efforts resulted in a stalemate, but we no longer had to "wader up" and slog in the pond every day to clear the outlet structure.

The new wetland and the post-flood water management environment told us that the east side of Pella Crossing was not really a good place for beavers. We missed the trapping window for relocating beavers in 2018. So that became a priority for 2019. We hired the best in the business: Tippiie! She worked with us in July and August to find, trap, and relocate the beavers. They were using the old lodge on an island in Heron Lake. We thought we might have a single beaver or just a pair. We started catching beavers in early August—and then we kept catching them. All the way to eight beavers!

## WETLANDS BENEFIT FROM BEAVERS

We worked with Colorado Parks and Wildlife to get a relocation permit to put them back into our empty beaver pond complex at Caribou Ranch Open Space. We hadn't had beavers there in nearly 10 years and the wetlands were missing them. Without beavers maintaining dams and full ponds the wetland areas were drying up and being reclaimed as uplands. The shrubs were suffering without water. And all of the dams had eroded, some to the point where there was no pond anymore.

So we moved six beavers one day and two more a few days later. We released them in the largest beaver pond, hoping they would stay and thrive. There was abundant vegetation for them to eat and store, but we also cut some and placed it in the big pond. Even if they decided to move along the drainage, just having them back in the area was a victory. We set up a couple of cameras to keep tabs on them.

We also went back up in October and worked to plug a hole in one of the dams and to reinforce the dam in the big pond. We used the technique that mimics how beavers build: beaver dam analogue. We wove sticks, branches, willows in between vertical wooden spikes and packed it with more sticks and mud, just as beavers do. This work basically gives the beavers a head start on patching up the place and trying to raise water levels ourselves (if the beavers don't stay).

Sadly, our spring check this year did not reveal fresh beaver sign. Dams were not being maintained in the face of melting snow. But the ponds had likely just lost their ice cover, so maybe the beavers were there, but just thinking about food. If they are still in the drainage, we hope they will settle back in and reclaim Caribou Ranch as home.



Clockwise from top:  
A beaver seen from a trail camera; Tippiie, a contractor who worked on the project, locates and sets a trap at Pella Crossing; Fort Castor is protecting the outlet structure from being plugged up by the beavers.



# Yucca and the Moth

by David Hirt

With its sharp pointed leaves and large white flowers, the yucca is one of the more ubiquitous plants of the foothills and outwash mesas of Boulder County. It is especially hard to miss if you accidentally back into one. One might imagine these spiny plants have more in common with their kin the cacti family, yet they are actually placed in the lily family.

Yuccas can be found from the plains of Canada, southward through the Great Plains, where a few species occur, to the Southwest, Texas, and into Mexico, where dozens of species reside. *Yucca glauca* is the common species found in Boulder County. Sometimes confused with their close kin, the agaves, yuccas differ by having smooth edges to their leaves, while agaves have spines along their leaf edges. Yuccas are the bane of ranchers (not to mention hikers and bikers) for their limited palatability for cattle, and are often a sign of overgrazed grassland. Their sharp defenses, however, also act as a refuge for other plants from grazing.

## JUST ONE POLLINATOR

The yucca's sharp attitude can be forgiven in May, when a flower stalk arises towering two to three feet high, adorned with dozens of large white flowers, often tinged rose. The flowers are some of the largest of any flowering plant in the county. This fact does not go unnoticed by one pollinator that has a fascinating relationship with the plant. The large white flowers, which open most fully at night, are visited by a moth in the family, *Tegeticula*. This single species of moth is the sole pollinator of our yucca. In fact, each species of yucca has a corresponding species of moth that pollinates it, and both plant and insect depend on each other for their very survival.



After a male and female moth mate, the female goes off in search of a yucca blossom. When she finds one, she gathers pollen with specialized organs near her mouth. She then visits another plant, searching for a flower to lay eggs in. Depositing her eggs into the ovary of the flower ensures the larvae can hatch sheltered from the elements and are guaranteed a food source in the ripening seed, which was fertilized by the visiting moth with pollen from other flowers.

## A STORY IN THE SEEDS

If you look at a yucca seed pod when it first begins to open, you will find a hundred or more black seeds the diameter of a pencil eraser. Like a page from the children's book, "The Hungry Caterpillar," most of the seed will have a hole bored through it. But not all. Or at least not all within a single plant. This is where things get interesting.

If the larvae ate all the seed, they would increase in numbers, which would be good for the moth, but eventually would prevent any new yuccas from establishing, thereby jeopardizing their own survival. For the yucca's part, it would do much better without any larvae eating its seeds, but without the moth it would go unpollinated and produce no viable seed at all. This obligate, mutualistic relationship means that the moth cannot survive without the yucca's food and shelter, and the yucca cannot survive without the moth's pollination.

Both species play a role in this carefully choreographed evolutionary dance. When the female moth is visiting flowers, her antennae can detect if another moth has already laid eggs in that flower. If so, she will avoid laying more eggs and visit another flower. The yucca does its part too. Studies have shown that yuccas are able to detect when there are too many eggs within a flower and abort those flowers, so as not to lose all its seed and to keep the moth population in check. Such checks and balances ensure that there is just enough seed to feed a new generation of moths but not too many larvae, to guarantee a new generation of yucca seedlings on the landscape to poke the next unsuspecting hiker.



The moth and the yucca rely on each other for survival.

# Healthy and Safe on Open Space

by Bevin Carithers

As you lace up your favorite pair of hiking boots, pump-up your bike tires, or pick out your favorite riding saddle, know that recreation in Boulder County during the coronavirus pandemic looks and feels very different.

In addition to your water bottle, park map, and trail mix, remember to pack your trusty face covering and a hefty amount of patience as you navigate crowded trailheads and narrow, busy trails.

After weeks of home schooling, Netflix marathons, jigsaw puzzles, and spring cleaning, county residents have returned to Boulder County trails and open spaces in droves. Since public health stay-at-home orders were issued in mid-March, park rangers have seen record-breaking crowds, increased regulation violations, and hundreds of curious visitors new to open space.

With warmer summer temperatures and expected high visitation likely through the coming months, open space agencies along the Front Range have instituted management actions to address crowding, such as temporary closures at crowded trailheads and full parking lots. Agencies may implement additional closures to mitigate trail and natural resource damage. Parks and open space agencies request your cooperation to help maintain Front Range public lands.



## HELP KEEP PARKS AND TRAILS OPEN

### Bring a face covering.

Face coverings are required at trailheads, when passing other visitors, and when six feet of distancing cannot be maintained.

### Give space to others on the trails.

Please visit in groups of four or fewer and stay at least six feet away from people who are not from the same household.

### Follow all rules and regulations.

Park in designated spaces only and follow trail directional arrows. Rangers are issuing fines for violations.

### Stay close to home when recreating outdoors.

Consider using neighborhood trails rather than driving to a trailhead.

### Arrive early to avoid crowds.

Parks and trails are generally less crowded in the early morning.

### Shelter and picnic areas are closed.

No gatherings are permitted at this time. Most restrooms remain open, but some are closed. Restrooms are cleaned daily.



## Where Is the Calendar?

The COVID-19 pandemic has brought many changes to our lives, and Boulder County Parks & Open Space is no different. Because of the situation, we decided not to include a calendar of events, museum hours, or volunteer opportunities in this issue. In doing so, we will avoid publishing information that would be incorrect as things might change over the summer. We want to adjust programs to remain in step with health and safety guidelines.

**Where to find up to date information about hikes, special events, volunteer opportunities, and museum hours:**

- Outdoor and indoor programs and special events:  
[www.BoulderCountyOpenSpace.org/events](http://www.BoulderCountyOpenSpace.org/events)
- Museums: [www.BoulderCountyOpenSpace.org/museums](http://www.BoulderCountyOpenSpace.org/museums)
- Volunteer Opportunities:  
[www.BoulderCountyOpenSpace.org/volunteer](http://www.BoulderCountyOpenSpace.org/volunteer)
- Boulder County's response to COVID-19:  
[www.BoulderCounty.org](http://www.BoulderCounty.org)

Please continue checking these online resources since we are continually monitoring the COVID-19 guidelines and will begin adding activities as we can. We look forward to again offering a wide range of opportunities. We've missed you!



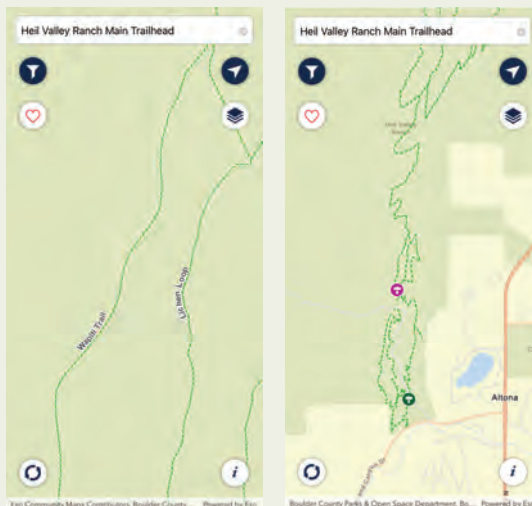
## Watch the Osprey 24/7

The osprey have returned to their nest at the Boulder County Fairgrounds, and you can watch them on live video feed provided by YouTube. Two cameras (with audio and infrared light for nights) provide a close-up look into their lives.

The osprey pair arrived in April and will leave after chicks have fledged in the fall, returning to Central or South America for the winter. Osprey nests weight an average of 400 pounds and are amended yearly. The nest is mainly used to raise young and is large enough to support six full-sized birds. This year, the first egg was laid on April 10.

The osprey camera webpage includes a timeline of this year's activities and a chat function so you can learn about these magnificent creatures. Check it out —it's fun, relaxing (and a little bit addictive) to watch life in the nest.

Follow the osprey at [boco.org/osprey](http://boco.org/osprey)



Zoom in for more detail or out for a broader view of the trail system.

## New Boulder Area Trails App

Want to explore new trails this summer? The Boulder Area Trails app provides access to all trail information in and around Boulder County.

The Boulder Area Trails app features include:

- One app for all area trails: Provides a single source for all designated public recreation trails and trailheads in and around Boulder and Broomfield counties. Includes 295 trailheads and 1,440 miles of trail.
- Real-time trail closures: Trail closures are posted as soon as they are announced by each participating agency.
- Offline maps: The app will continue to work even when there is no cellular service.
- Set favorites: Save favorite trails and trailheads for easy access.

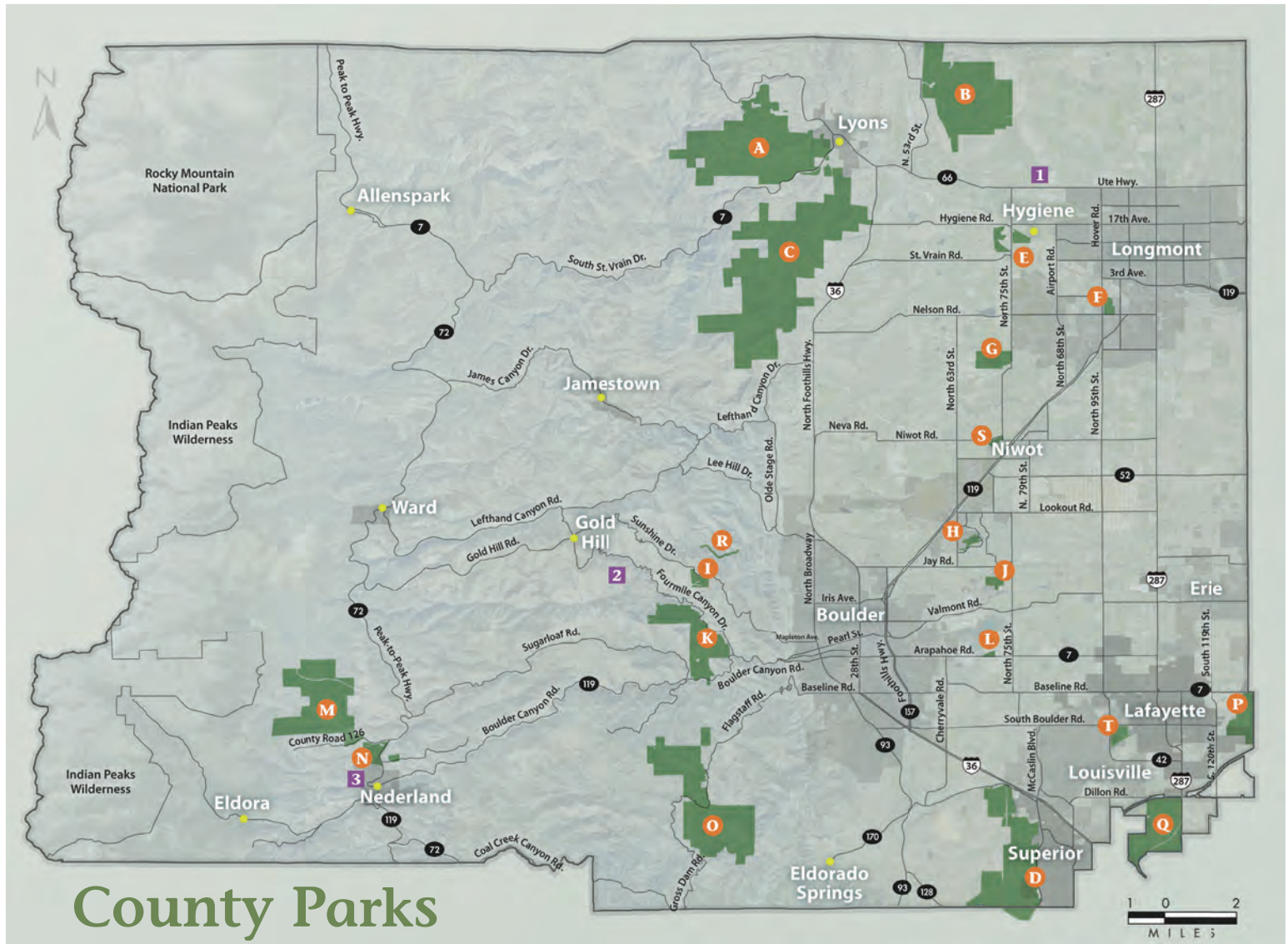
Download it today to start your local summer adventures!



## Parks & Open Space

5201 St. Vrain Road, Longmont, CO 80503

[www.BoulderCountyOpenSpace.org](http://www.BoulderCountyOpenSpace.org)



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|--|---|---|--|
| <b>A</b> Hall Ranch                              | <b>F</b> Boulder County Fairgrounds     | <b>L</b> Legion Park                                  | <b>R</b> Anne U. White                       |
| <b>B</b> Ron Stewart Preserve at Rabbit Mountain | <b>G</b> Lagerman Agricultural Preserve | <b>M</b> Caribou Ranch                                | <b>S</b> Dodd Lake                           |
| <b>C</b> Heil Valley Ranch                       | <b>H</b> Twin Lakes                     | <b>N</b> Mud Lake                                     | <b>T</b> Harney Lastoka                      |
| <b>D</b> Coalton Trailhead                       | <b>I</b> Bald Mountain Scenic Area      | <b>O</b> Walker Ranch                                 | <b>1</b> Agricultural Heritage Center        |
| <b>E</b> Pella Crossing                          | <b>J</b> Walden Ponds Wildlife Habitat  | <b>P</b> Flagstaff Park                               | <b>2</b> James F. Bailey Assay Office Museum |
|  | <b>K</b> Betasso Preserve               | <b>Q</b> Carolyn Holmberg Preserve at Rock Creek Farm | <b>3</b> Nederland Mining Museum             |