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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

Wild Turkeys: Kevin Grady

Volunteer and Heil Scenery, Omer Pearlman

Cheatgrass Closeup, Patrick Morgan

Woodpecker, David Hannigan

Woodpecker Illustrations, Roger Myers

Veterans Day Parade, Carnegie Library for Local History / Museum of Boulder Collection.

**Uncredited photos from POS Collection*

NATURE DETECTIVES

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Volume 43, number 3

Following the Fire

by Ellen Harris

If you've visited Heil Valley Ranch Open Space in the past, you may be one of the many hikers, mountain bikers, bird-watchers, and general nature lovers who appreciate this special place and wonder what it looks like after the Cal-Wood Fire.

You may also be one of the visitors to the property who have noticed ongoing forestry projects to thin overgrown forests. Historically, our ponderosa pine forests were less dense than they are today; however, as fire suppression, clear cutting, mining, and cattle grazing became common in the mid-1800s, ponderosa pine forests grew denser and fire prone. Starting in the late 1990s, Boulder County Parks & Open Space (BCPOS) began forest thinning projects to improve the health of our ponderosa pine forests, help prevent fire, and reduce the severity of fires that do happen. Although these projects may have helped, they certainly did not stop last year's Cal-Wood Fire.

The 2020 Cal-Wood Fire was the largest in Boulder County's history, affecting more than 4,000 acres of Heil Valley Ranch and damaging the southern half of the park so severely that it is currently closed to visitors.

The fire burned infrastructure such as bridges and created the conditions for flash flooding. In areas where the fire burned extremely hot, the soil is now hydrophobic, meaning it repels water. With no vegetation to absorb and slow water, even short thunderstorms can cause dangerous debris flows. Fire recovery work includes hazardous tree removal, aerial mulching, erosion mitigation, and replacing damaged visitor amenities and park infrastructure, including bridges, fencing, parking stops, and signs.

VOLUNTEERING TO "FOLLOW THE FIRE"

Though the area is not open to the public, volunteers outfitted with high-visibility vests and helmets have been able to enter the park as "fire followers" in partnership with BCPOS, Lefthand Watershed Center, and the Cal-Wood Education Center. Volunteers use the "iNaturalist" app (free to download) to document the plants that are re-emerging in the burn area so that we can better understand the fire recovery process. Volunteers don't have to be plant experts, they just need to be able to upload a picture, location, and a suggestion of the plant-type if not sure of the name. Experts on iNaturalist will assist with correctly identifying the plant. If you're interested in participating in a future Fire Followers event, you can sign up on the BCPOS website: boco.org/volunteer.

RECOVERY PLAN TIMELINE

Tasks	Approx. Start	Approx. End
Access road restoration	March 2021	Jan. 2022
Bridge replacement	April 2021	Feb. 2022
Cultural resources surveys	Nov. 2021	Nov. 2022
Culvert replacement	Feb. 2021	Sept. 2021
Fencing	April 2021	Jan. 2022
Forest disease/insect control	Jan. 2021	Jan. 2024
Hazard tree removal	Nov. 2020	Oct. 2025
Mitigation & restoration measures contract	Feb. 2021	Sept. 2021
Mulching contract	Jan. 2021	Aug. 2021
Park bench replacement	March 2021	May 2021
Sign replacement	Oct. 2020	March 2022
Trail protection/restoration	April 2021	Sept. 2023
Trailheads: parking lots & amenities	March 2021	April 2022
Tree planting in critical need areas	Sept. 2021	Nov. 2023
Vegetation recovery & protection	Oct. 2020	Oct. 2023
Weed management	May 2021	Oct. 2022
Wildlife resource habitat restoration	April 2021	April 2025

Beyond allowing groups of volunteers into the burned area, the county has also been working to ensure the property is safe for visitors and will recover well from the fire. One technique that addresses both of these goals has been removing dead trees in high-traffic areas; these trees are removed by helicopter and turned into mulch. Another helicopter then lifts a load of mulch and distributes it over heavily burned areas. This mulch covers the soil and absorbs precipitation, helping with plant restoration and reducing the risk of flash flooding. The county is also working on replacing damaged and destroyed infrastructure, including rebuilding trails that have been covered in sediment.

The Picture Rock trailhead at the north end of the park remains open, and evidence of the fire can be seen along some stretches. To learn more about the restoration work going on at Heil Valley Ranch, visit boco.org/heilrecovery.



Scenes from a day of volunteering.

Volunteer fire follower uses the iNaturalist app to document plants seen in the wake of the Cal-Wood fire.

To learn more about the restoration work going on at Heil Valley Ranch, visit boco.org/heilrecovery.

To learn more about volunteering, visit website: boco.org/volunteer.

Beating the Cheater: Invasive Species

by Patrick Morgan

When looking out over the grasslands that make up about half of Boulder County, you may notice clumps of maroon and gold grasses dotting the landscape, sometimes dominating the whole area. The plant is commonly known as cheatgrass; and although it has become a familiar sight in the West, it is not native to this region. Cheatgrass is responsible for much of the destruction of native ecosystems in the western United States. Boulder County actively manages this invasive grass with the hopes of restoring our ecosystems to a healthier state.

Cheatgrass (*Bromus tectorum*), also known as downy brome, is an annual grass native to Eurasia and the Mediterranean Basin. It can grow from about eight to 24 inches in height and has a characteristic drooping appearance after it flowers. The seeds are spiky and easily attach to boots and clothes, which helps the plant spread. Seeds typically germinate in the fall. The plant's root system develops over the winter, helping it take advantage of the return of wet weather in the spring.

CHEATGRASS AND THE THREATS IT POSES

Cheatgrass poses significant problems because it dominates ecosystems and increases the likelihood of wildfires. According to Steve Sauer, recently retired weed control supervisor for Parks & Open Space, the main issue with cheatgrass is that it outcompetes the desirable native grasses and forbs that provide forage for a variety of animals. One study, conducted by Sauer and his team, measured the biomass of areas that were treated for cheatgrass compared to non-treated areas. The study found that non-treated areas had about 49 lbs/acre of desirable plants, while treated areas had in excess of 1,000 lbs/acre of desirable foliage. By treating for cheatgrass, the department has helped return our open space lands to a more productive and viable natural state, which benefits plants, animals, and humans alike.

Wildfire is another threat posed by cheatgrass because it grows rapidly in the spring, but then dies off mid-May to June. Because cheatgrass grows in dense clusters, it becomes perfect fuel for the fire season. It thrives in burn areas, further out-competing native plants and creating a cycle of more common wildfires. By eliminating cheatgrass, fires may not move as quickly through an area.

MANAGEMENT STRATEGIES

Management for cheatgrass can be done several ways. Mechanical treatments involve physically removing the plant by pulling or mowing it before the seeds appear. This method can help stall the spread of cheatgrass, but given how cheatgrass can take over acres of land, this method is ultimately ineffective. Another method is

conducting a controlled burn. This tactic eliminates the grass stalks; but unless the fire burns hot enough, the seeds will remain in the soil.

Boulder County, in partnership with Colorado State University, developed a more effective means of controlling cheatgrass. Since 2014, the two agencies studied the effectiveness of different herbicides, examining them year after year. Since cheatgrass seeds can survive in the soil for three to five years, a successful herbicide must be able to target the soil seed bank in order to eliminate the species from an area. The studies found that the herbicide Rejuvra was the most successful at eliminating cheatgrass over a longer period. Rejuvra has been approved by the EPA and can be applied in areas where cattle graze and it won't show up in the meat product. With such a prolific invasive species such as cheatgrass, Rejuvra has demonstrated that it is the most efficient way to control and eliminate its spread.

Through the safe and effective application of herbicides like Rejuvra, Boulder County has controlled the spread of cheatgrass in our parks and has restored native ecosystems. However, the battle with cheatgrass is far from over. The department will continue using the latest science and management practices to stop the spread of this invasive species.



An area at Hall Ranch Open Space before treatment for cheatgrass (top photo) and after.

Billings Open Space Cultural Resource Survey Project

By Carol Beam

On March 1, 2021, History Colorado awarded Boulder County Parks & Open Space (BCPOS) a \$22,150 grant in partnership with a \$2,000 BCPOS cash match to complete an intensive-level cultural resource survey on the 326-acre Billings Open Space property located along Longmont Dam Road (County Road 80) west of the Town of Lyons.

WHAT ARE CULTURAL RESOURCES?

Cultural resources are highly valued because they represent a cultural system. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects. Archeological resources, cultural landscapes, and ethnographic resources can also be considered cultural resources.

Why conduct a cultural resource survey? The BCPOS mission statement, “To conserve natural, cultural and agricultural resources and provide public uses which reflect sound resource management and community values” ensures that BCPOS considers potential adverse effects to cultural resources prior to action that may disturb a site. In the case of the Billings Open Space, the activity that may have a potential adverse effect to cultural resources is the proposed forest thinning activities to reduce wildfire risk on the property in 2022-2023. Using mechanical tree harvesting equipment, trucks, and chippers to complete the forest thinning, BCPOS, along with its contractor, will identify and document cultural resources in advance of the forest thinning project, helping the department make informed management decisions to protect significant cultural resources from damage or destruction.

What is a cultural resource survey? A cultural resource survey combines fieldwork and post fieldwork reporting to identify and evaluate all cultural resources over 50 years in a specific project area, such as the Billings Open Space.

CULTURAL RESOURCE SURVEY FIELDWORK

The Billings Open Space cultural resource survey fieldwork will be conducted by a team consisting of a professionally qualified and Office of the State Archaeologist-permitted crew chief and two crew members. The field crew will walk the site with a maximum spacing of 50 feet to provide 100% ground coverage of the property. It is expected that the survey crew will complete

fieldwork activities in mid- to late October 2021 and complete the post fieldwork reporting by early 2022.

During fieldwork, cultural resources 50 years old or older and visible on the surface or in subsurface exposures will be documented according to the Secretary of Interior’s Standards and Guidelines for Identification and Evaluation and History Colorado’s Cultural Resource Survey Manual.

BILLINGS OPEN SPACE—A SHORT HISTORY

Boulder County is the ancestral homeland to numerous indigenous people that include, but are not limited to, the Arapaho, Cheyenne, Ute, Comanche, and Sioux. Some indigenous people were occasional visitors to the area, but others, like the Arapaho, Cheyenne, and Ute were more prominent in the area.

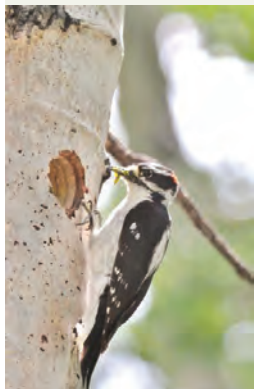
Around 1880, the Billings brothers, George, Ferdinand, Norton and Jabe, arrived by covered wagons from South Dakota to the Lyons area. The brothers, their wives, and children prospered in the area with their descendants remaining there today. BCPOS acquired the Billings Open Space in a series of acquisitions from Claire and Margaret Billings between 2000-2007. Claire and Margaret acquired the property in 1965 from Claire’s parents, William and Eugenia Billings, who owned portions of the property since the early 1940s. The property was used for livestock grazing.



The remains of a cabin on the property.

Our Smallest Woodpecker

by Ann Cooper



Sounds may first alert birders to the presence of a downy woodpecker. A sharp “pik, pik,” or a shrill, descending whinny call catches your attention. A slow and intermittent “tap-tap-tap” hints the bird is feeding. A fast (up to 20 hits a second), insistent drumming may echo from a nearby tree, power pole, or even a metal chimney pipe (to ear-shattering effect) as the bird communicates, tries to attract a mate, or claims territory. The noises suggest a large bird. But the downy, our smallest woodpecker, is only 5 ½ to 6 ½ inches,

somewhere between the size of a sparrow or robin.

These small insect eaters nimbly circle tree trunks and branches to probe for edibles in the bark—and equally nimbly vanish around the trunk when you try to look at them! When they leave for the next food tree, they move with undulating flight.

Downy woodpeckers are found in woodlands, orchards, parks, riparian areas, and leafy back yards, and although never numerous, they are year-round residents.

LOOK ALIKES

They are common feeder birds and will consume black oil sunflower seeds, peanuts, millet, and suet. While feasting, they stay put and allow watchers to study what distinguishes them from their near look-alikes, hairy woodpeckers (which are roughly 1/3 larger than downies).

Both species are black and white, males have red on the head, and both species have stiff, pointed tail feathers that help brace them as they spiral up trunks or when they hammer away to get food or chisel out nests. Both species have similar foraging behaviors, although the smaller downies seem to select smaller, slimmer, higher branches, but not always. Both have similar feet with two toes forward, two toes back, to help them climb. How do these two species differ besides size? The best clues are the bill size and shape. A downy has a small, dainty bill, about half the length of its head; a hairy has a heftier, thorn-like bill almost as long as the width of its head from front to nape.

It is said, “Birds of a feather flock together.” Downy woodpeckers don’t flock with masses of their own kind. They only pair with their mates. But in winter, downy woodpeckers do associate with other small birds as they forage, forming loose mixed flocks with chickadees and nuthatches. Many pairs of eyes are an asset in food

finding. When predators lurk, some safety comes with numbers. Mixed flocks are aware of all alarm calls—even from other species they travel with—and the whole feathered gang teams up to mob any dangerous intruder. Predators? Think domestic cats, hawks, squirrels, snakes, and rats.

Downy woodpeckers nest in tree cavities. The female lays from three to eight eggs, both parents take nest duty, and both supply food to the nestlings when they hatch and until they leave the nest some eighteen to twenty-one days later.

BUILT-IN PROTECTIVE GEAR

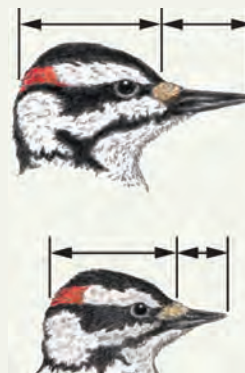
The nest is often excavated from the underside of an angled dead branch or snag and takes a lot of drilling. How can they hammer away without getting concussed? They have thickened skulls with special spongy, shock-absorbing layers around the brain and the eyes.

Anatomy-wise, that’s not the only remarkable feature that these birds have evolved to suit their unique lifestyle. They have bristly feathers around their beaks to trap flying sawdust before the birds breathe it in through their nostrils. Amazing!

That’s not all . . . a downy woodpecker’s tongue is long and barb-tipped (not as long as the flicker’s tongue, which is the bird record-holder!) The tongue wraps around inside the skull when not extending to pry out bark insects, then flicks out far beyond the bill tip when feeding.

This small, familiar bird is a champion in so many ways and it is definitely worth a second and third look!

The hairy’s beak is long relative to the head size; the downy woodpecker has a shorter beak.



The tongue of the downy woodpecker wraps inside the skull when not extended.

NATURE DETECTIVES

Fall 2021



Bam! Fall Is Ramming Time for Bighorn Sheep

The chilly air smelled like fall, and young Ramekin was confused. During the weeks since he'd joined the band of rams (male sheep), they'd spent their days calmly eating and resting. But that fall day, the mood turned tense. Ramekin saw some of the older rams in staring matches. Even though he was a young ram, he knew staring was not acceptable. Staring was rude! Yet the bigger males glared at each other and flaunted the size of their head gear. Standing majestically posed, the rams purposefully moved their heads to show off their thick, curved horns.

Ramekin had wandered into the bachelor band at the end of summer after quitting the band of ewes (females) and juveniles he'd lived with since he was a newborn. He was almost three that summer, and he'd instinctively realized he must move on. Like a human teenager, he'd grown as tall as the females. He was restless and strong. He'd started butting and kicking out at the others. One day he'd use those moves to establish his rank among the adult males, but his practicing had become an annoyance to the ewes.

Head to Head Combat

Mid-fall, the band of rams moved to a new location, and the ewes and youngsters moved into that area too. Ramekin witnessed rams sizing up each other's horns and butting shoulders. Rams with smaller horns walked away.

The rams' wise old leader stood near one of the ewes, then a second large ram moved close. Many of the bighorns paused to watch what would happen. The old ram kicked at the challenger with a stiff front leg. The hostile stares of the two rams intensified. The combatants moved apart a few yards. Then they turned, glaring at each other. Suddenly they reared up on their back legs, and charged at full speed. Crack! With all their weight supported on their muscular front legs, the two males bashed heads. Their curved horns crashed with an

explosive sound that echoed down the valley. With only brief rests, the rams clashed again and again.

When both rams were exhausted, the old leader stood tall and watched his rival stagger away. The victor had won the right to father most of the lambs...at least for one more season.



Winter Hardship



After the rams' drama in the fall, bighorns separate back into the all-male band and the females and youngsters band.

Winter cold kills the grasses and other plants sheep prefer. The sheep use their hooves to dig through snow for meager bites of woody shrubs. They migrate to lower mountain meadows and slopes where the sun keeps the snow cover thinner and easier to dig through.

Following Spring Growth Upslope

Forage is easier to find as new plants sprout at the edges of melting snow. Grazing the lush spring grasses in high mountain meadows, rams rebuild the strength they lost the previous fall when they waged battles rather than eat. They'd headed into winter in an already weakened state, and some didn't survive on the limited food available during the cold season.

A wise female sheep leads ewes and lambs to traditional good grazing in the alpine meadows. Spring prompts each pregnant ewe to seek a steep, rocky, predator-safe nook away from the group to have her baby.

Lambs Born Ready to Leap

Lambs are born a day or two after the ewes find their private lambing spot. The newborns are quickly ready to walk and run. They already have sharp hooves with rubbery centers. Their hooves are the climbing tools bighorns need for their rocky mountain living. Moms and babies form a strong bond in isolation, memorizing each other's voice and scent. After a week they rejoin their band. Lambs leap, playfight, and grow strong on their mom's milk. Two-week-old lambs can zigzag up the cliffs as fast as the ewes.

Lazy Summer

In their two separate bands, the bighorn sheep spend much of their day chewing. They quickly bite and swallow. Later they upchuck plant material (called cud) back into their mouth, and grind it small. They spend a lot of time lying down, chewing what they first swallowed. Chewing mixes the forage with saliva to aid digestion before the food is swallowed again.

Bighorn Migration During Ice Ages and Now

Fellow ice age dwellers such as woolly mammoths died out, but bighorns survived by living much like modern bighorn sheep and looking much the same. Bighorns likely followed retreating glaciers to find the tenderest new grasses. Today's bighorns migrate only short distances. Their choices are limited by highways and buildings, and disappearing healthy habitat.

Sensing Danger

The sheep stand or lie facing different directions so they can spot danger from all sides. When one sheep startles, the whole group scrambles upslope. Vertical mountain terrain and sheer canyon walls almost always provide escape from a mountain lion or any predator except a human. Soft-footed animals can't match the speed and agility of sheep on a rocky mountainside. Sheep can even use ledges that are only two inches wide for footholds!

Besides their climbing skills, bighorns have good eyesight. Their large, well-placed eyes provide a wide field of view, and even small movements a mile away draw their attention. Their big ears easily pick up sounds of danger.

A lucky mountain lion may take down an old or sick sheep, but healthy adult sheep have little to fear from predators. Lambs sometimes fall prey to coyotes, bobcats, and even golden eagles. Older ewes act as babysitters while moms are off grazing. It's their job to spot predators soon enough for lambs and ewes to escape.

Adults and lambs can die from accidental falls, but most deaths occur because of disease. Ewes tend to live longer than rams, but most don't live beyond ten to twelve years.



Curling Horns and Spike Horns

Horns are not shed and regrown annually like deer, moose, and elk antlers. A bighorn ram's horns keep growing every year his whole life. The horns are made of bone attached to the skull and covered with keratin. (Keratin also makes up your fingernails.) As the ram's horns grow, they get thicker and bigger around at the base. They gradually form an impressive curve.

Ram horns grow very little in winter because of poor nutrition. The seasonal growth makes a ridge each year. Counting the dark-colored ridges gives an idea of the age of the ram. It isn't exact because rams often break off the tips of their horns. The tips and whole horns can break accidentally or in battles. Some rams purposely break off the ends of their horns when the curling horns start to block their vision.



Lambs are born with little baby bumps, the start of their future horns. Ewes grow horns that are short spikes with a slight curve.

The horns on rams can grow so huge they weigh nearly thirty pounds. Imagine that on top your head!

Our State Mammal

The Rocky Mountain Bighorn sheep was named the official Colorado state mammal in 1961. Bighorn rams are also the mascot of Colorado State University. The Desert Bighorn Sheep is the official mammal of the state of Nevada. What qualities about bighorn sheep do you think are the reasons they were chosen?



Sticky Feet



Bighorn sheep have specialized rubber-like pads in the center of their hooves that help keep them from slipping when jumping up and down rock cliffs. You can see how this works by trying this:

Find a rubberized jar opener (usually a round or square rubber pad that helps make opening jars easier).

Find a smooth, slick area to walk on—this could be a floor in your house, a big slick rock outside, or a smooth cement surface (without any ridges). Walk on your surface with bare feet and notice how it feels.



Now cut out a circle from the rubberized jar opener (about 1.5 inches across). Roll up a piece of tape and put the tape on one side. Stick the rubberized piece with the tape to the ball of your foot (the front part underneath where the toes are connected to your foot). Now walk across the same surface. How does it feel different this time? That's how bighorn hooves work!



Hard Heads

The U.S. Air Force has studied how the bones and muscles of bighorns work to protect colliding rams from concussions. Some of the protection is due to special bones under their thick skull. The special bones act as struts to resist compression and absorb shock.

When you wear a bicycle helmet, it helps protect your head in the same way. To see how this works, see if you can protect an egg from being broken by building a protective shield around it. Use whatever you can find—foam, straws, plastic air packaging bags, etc. Wrap up your egg and drop it and see if you can get your protective “head gear” to protect the egg.

Thank goodness for helmets...and thick skulls!

Veterans Day: 1919 to Present

by Joe McBreen

On the 11th hour of the 11th day of the 11th month an armistice was called for “The War to End All Wars,” the Great War, World War I. That was Nov. 11, 1918, but the war did not end until the signing of the Treaty of Versailles on June 28, 1919.

THE “FIRSTS” OF WWI

There were a lot of firsts during WW I, including chemical warfare, gas masks, steel helmets, tanks, submarine warfare, camouflage painting of ships, artillery as a major battlefield weapon, machine guns, wireless communication in battle, military airplanes, cameras in airplanes for reconnaissance, blood banks, and ambulance trucks.

More than 10 million military were killed and almost as many civilians. Four empires disappeared: the German, Austro-Hungarian, Ottoman, and Russian empire. The Spanish Flu pandemic also killed an estimated 20 to 50 million people; more American military died of Spanish Flu than of battle wounds.

The first Armistice Day celebration was held at Buckingham Palace on Nov. 11, 1919, and included two minutes of silence to respect the war dead and those left behind. Known as Remembrance Day, it continues to be celebrated every year. President Woodrow Wilson made a proclamation commemorating the first anniversary of Armistice Day.

In the British Commonwealth, it is also known as Poppy Day. The Poppy Lady from France, Madame E. Guérin, was a teacher, lecturer, fund raiser and humanitarian during WW I. For her work she received two awards from the government of France, and the Victory Liberty Loan Medallion from the United States. The poppy was her symbol. She spoke at the American Legion Convention of 1920. The Legion adopted the poppy as their symbol of remembrance of Armistice Day.

The poem “In Flanders Fields,” written by Canadian physician Lieutenant Colonel John McCrae, references poppies. The poem was a remembrance of a fellow soldier after the Second Battle of Ypres. It was written in May 1915 shortly after the battle and published that December and was widely popular. The last line is: “We shall not sleep, though poppies grow in Flanders fields.”

After 26 states declared Nov. 11 a state holiday, the U.S. Congress passed a concurrent resolution in 1926 calling for the flag to be displayed from government buildings on Nov. 11. President Coolidge issued a proclamation calling for appropriate ceremonies to mark the day. Twelve years later, in 1938, Congress passed a law making Nov. 11 a national holiday to be known as Armistice Day, dedicated to world peace and to honor veterans of WW I.



An Armistice Day parade on Pearl Street in Boulder, Colo., in 1920.

In 1947 Raymond Weeks, a veteran of WW II, led the first “National Veterans Day” in Birmingham, Ala. Weeks lobbied Congress and presidents to expand Armistice Day to celebrate all veterans. In 1954, Congress did change the name to Veterans Day and said it was a day to honor all veterans. President Dwight Eisenhower made the first Presidential Proclamation of Veterans Day that year. For his work, Weeks is known as the Father of Veterans Day and in 1982 was awarded the Presidential Citizenship Medal by President Ronald Reagan.

In 1968 Congress passed the Uniform Holiday Act ensuring a three-day weekend for federal employees for Washington’s birthday, Memorial Day, Veterans Day, and Columbus Day. Veterans Day would be observed on the fourth Monday in October. In 1971 the first three-day-weekend Veterans Day was observed with considerable national confusion, and in 1975 President Ford signed a law moving Veterans Day back to November 11.

DAYS TO HONOR VETERANS

In the United States there are three days to honor people who served in the military:

Armed Forces Day: observed on the third Saturday in May, is a celebration of people currently on active duty.

Memorial Day: observed on the last Sunday in May, is a day to honor those who have died while serving on active duty.

Veterans Day: observed on November 11, is a celebration of people who have been discharged from active duty under conditions other than dishonorable or are currently serving on active duty.

DISCOVER BOULDER COUNTY

Calendar of Events

BATTY FOR BATS

Thursday, Sept. 9, 6:30-8 p.m.

Near Boulder. Location provided when registering.

Bats are important to our ecosystem and help control insects. Learn about bat biology, discover ways you can help bats, including how to build a bat house, and watch for bats emerging as the sun goes down on this short hike. Families welcome. Register at www.BoulderCountyOpenSpace.org/Register.

NATURE DETECTIVES IN THE FIELD: DADDY LONG-LEGS

Friday, Sept. 10, 10-11:30 a.m.

Near Boulder. Location provided when registering.

Discover more about these dangling arachnids, how they are different from spiders, and their interesting diet at this interactive program. For ages 5-10 with an accompanying adult. Register at www.BoulderCountyOpenSpace.org/Register.

ASTRONOMY: JUPITER AND SATURN

Friday, Sept. 10, 6:45-9 p.m.

Near Lyons. Location provided when registering.

Our biggest planets in the solar system—Jupiter and Saturn—are both visible right now and what a sight they are! Discover interesting facts about these giants at a brief program at the shelter and then view the sky with telescopes provided by the Longmont Astronomical Society. Register at www.BoulderCountyOpenSpace.org/Register.

OH DEER, ELK AND MOOSE!

Tuesday Sept. 14, 10 a.m.-noon

Near Nederland. Location provided when registering.

Join volunteer naturalists for a moderate two-mile hike to learn about three members of the deer family that call Boulder County home. Register at www.BoulderCountyOpenSpace.org/Register.

YOGA ON THE FARM

Friday, Sept. 17, 9-10 a.m.

Friday, Oct. 1, 9-10 a.m. *two dates*

Agricultural Heritage Center, 8348 Ute Highway 66, Longmont



Join Andrea Van Sambeek (Certified Yoga Instructor) for a gentle yoga class and take in the views from your mat. Pause, breathe, and revitalize in this idyllic setting. After connecting with breath and movement, stay to explore all the Agricultural Heritage Center has to offer. Please bring your own yoga mat. All levels are welcome! Ages 12 and up. Register at www.bouldercountyopenspace.org/register

Play Ball! Vintage Baseball Game

Sunday, Sept. 26, noon-3 p.m.

Walker Ranch Homestead, 7001 Flagstaff Road, approximately seven miles west of Boulder

Enjoy an old fashioned vintage baseball game in the picturesque and historic setting of Walker Ranch Homestead. The Walker Ranchers, local recruits, will play the Star Base Ball Club of Colorado Territory from the Colorado Vintage Base Ball Association.



The game will be played using 19th century rules. Base ball was two words back then. Those watching the game are cranks, rooters, or bugs; players are ballists. A hurler pitches the ball to the behind, or catcher. No gloves or helmets are worn and a cloth ball and cloth bases are used. Listen for the players' nicknames and a bell ringing as players reach home plate.

Bring your own lawn chairs and blankets for seating. No food will be available on site, so please bring a picnic and drinking water for your household.

FULL MOON WALK

Sunday, Sept. 19, 6:30-8:30 p.m.

Wednesday, Oct. 20, 6-8 p.m. *two dates*

Near Boulder. Location provided when registering.

Take a 1.5 mile walk under the full moon and hear stories, facts, and fun about Earth's natural satellite, as well as wonders about nocturnal wildlife. Register at www.bouldercountyopenspace.org/register.

FALL EQUINOX SUNSET HIKE

Wednesday, Sept. 22, 5-7 p.m.

Near Nederland. Location provided when registering.

Celebrate the start of fall on this sunset hike. Look for changes in plant life, watch for signs of wildlife, and enjoy a walk in the crisp, mountain air. All ages welcome. Bring layers of clothing and sturdy footwear. Register at www.BoulderCountyOpenSpace.org/Register.

FUN ON THE FARM

Agricultural Heritage Center

8348 Ute Highway 66, Longmont

Bring your 3-6 year olds to the farm to learn about animals, plants, and agricultural life. Programs include a short story time, hands-on activities, and a take-home craft. Afterwards, explore the farm. Children must be accompanied by an adult.

Pioneer Life: Experience early 20th century Farm Life

Friday, Sept. 17, 9:30–10:15 a.m.

Worms: The Herd Below Ground

Friday, Oct. 8, 9:30–10:15 a.m.

GEOLOGY AND LANDFORMS OF HALL RANCH

Saturday, Oct. 2, 8:30 a.m.-12:30 p.m.

Near Lyons. Location provided when registering.

Join geologists and volunteer naturalists Roger Myers and David Coupland to learn about the remarkable and dramatic geology and landscape of Hall Ranch. This moderately strenuous 2.5-mile hike (round-trip) will cover igneous, metamorphic, and sedimentary rocks that span over 1.7 billion years of geologic history. Geared to adults. Register at www.BoulderCountyOpenSpace.org/Register.

NATURE DETECTIVES IN THE FIELD: BIGHORN SHEEP

Tuesday, Oct. 5, 3:30-5 p.m.

Near Lyons. Near Nederland. Location provided when registering.

Colorado's state mammal has it all: big horns, big leaps, and a variety of other great adaptations. Discover more about these mountain dwellers through stories and activities. For ages 5-10 with an accompanying adult. Register at www.BoulderCountyOpenSpace.org/Register.



BEGINNING NATURE JOURNALING

Friday, Oct. 8, 9-11:30 a.m.

Near Nederland. Location provided when registering.

Discover techniques to help you better observe nature and record it for yourself. Participants are encouraged to bring their own sketchbook and art supplies, and other supplies will be provided. No art experience necessary! Open to adults and children 12 and older accompanied by an adult. Register at www.BoulderCountyOpenSpace.org/Register.

BIG TALES ABOUT BIGHORN SHEEP

Friday, Oct. 8, 3:30-4:30 p.m.

Superior Community Center, 1500 Coalton Road, Superior

Colorado's state mammal has it all: big horns, big leaps, and a variety of other great adaptations. Discover more about these mountain dwellers through stories and activities. For ages 5-10 with an accompanying adult. Register at www.BoulderCountyOpenSpace.org/Register.

ASTRONOMY: MOON MAGIC

Friday, Oct. 15, 5:45-8 p.m.

Near Lyons. Location provided when registering.

Our natural satellite, the Moon, comes with all sorts of stories and myths. Hear some of these stories and discover cool facts about the moon at a brief program at the shelter. Then view the sky with telescopes provided by the Longmont Astronomical Society. Register at www.BoulderCountyOpenSpace.org/Register.



WHOO ARE THE OWLS?

Saturday, Oct. 23, 2-3:30 p.m.

Louisville Public Library, 951 Spruce St., Louisville

Over half of the owls recorded in the United States have been seen in Boulder County, and most of those owls nest here. Join volunteer naturalists for this slide program to explore these fascinating and diverse creatures, and learn about the adaptations that make them such expert hunters. Register through the library at <https://www.eventbrite.com/e/whooo-are-the-owls-tickets-165366338169>.

BIRDS OF PREY SLIDE PROGRAM

Wednesday, November 10, 6:30-7:30 p.m.

Superior Community Center, 1500 Coalton Rd., Superior

Learn to recognize birds of prey, including hawks, eagles, falcons, and owls in the skies above Boulder County. Tips will be shared on how to distinguish among different raptors by identifying field marks, behavior, location, and time of year. Also discover the habitat requirements and ecology of these magnificent birds. Register at www.BoulderCountyOpenSpace.org/Register.

Junior & Senior Fishing Derby

Saturday, Oct. 16, 9 a.m.-noon

Wally Toeys Pond at Walden Ponds Wildlife Habitat off of 75th St. between Jay Rd. and Valmont Rd. Boulder

Create your fishing dream team of one senior and one junior angler. The annual Junior & Senior Fishing Derby returns this year! You are invited to come enjoy a beautiful fall morning fishing together for prizes and fun. Participants need one senior (65 or older) and one junior (15 or younger) to fish together as a team. Prizes will be awarded to the team that catches the heaviest trout, has the largest age difference, and are first to catch the limit.

- The pond is stocked with rainbow trout—artificial and live bait are permitted.
- Bring your own fishing gear and lawn chairs for seating.
- Seniors must have a valid Colorado fishing license.
- A wheelchair-accessible pier is available.

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



Hikes for Seniors

Join volunteer naturalists for a moderate hike to explore and learn about the unique geology, history, plants, and wildlife of these beautiful properties.

Registration required at www.bouldercountyopenspace.org/register.

Foothills Hike for Seniors

Wednesday, Sept. 29, 10 a.m.-noon

Near Boulder. Location provided when registering.

Bird and Wildlife Hike for Seniors

Thursday, Oct. 28, 10 a.m.-noon

Near Broomfield. Location provided when registering.



WONDER OF WILDLIFE SLIDE PROGRAM

Saturday, Nov. 13, 2-3:30 p.m.

Louisville Public Library, 951 Spruce St., Louisville

Winter is a great time to explore the natural wonders of Boulder County! Join volunteer naturalists to learn about the many wonders of winter and how plants and animals adapt to snow and cold—from the Great Plains to the Continental Divide. Register through the library at : <https://www.eventbrite.com/e/wonder-of-wildlife-slide-program-tickets-165366645087>

BIRDS OF PREY DRIVING TOUR

Saturday, Nov. 20, 9 a.m.-noon

Location provided when registering.

Join volunteer naturalists for a driving tour of some of the best areas to view birds of prey. We will carpool and search for raptors, learn about habitat, and work on identification skills. Bring binoculars and a bird field guide if available. Ages 10 and above with accompanying adult. Register at www.BoulderCountyOpenSpace.org/Register.

ALL PROGRAMS:

All ages welcome unless otherwise noted. NO PETS, PLEASE! Be prepared for cool to warm temperatures. Bring water and dress in layers. For information about these programs or to arrange a private program, please call 303-678-6215.

Museums to Explore

Three Boulder County Parks & Open Space museums are open this fall. All are free!

THE NEDERLAND MINING MUSEUM

Get a glimpse into the world of hard rock mining days. Displays of trams, ore carts, engines, historic photographs, and rare mining claim maps show how miners lived and how hard rock mining played a part in Colorado's history.

- Hours: Friday, Saturday, and Sunday; 11 a.m. to 5 p.m.
- Location: 200 N. Bridge St., Nederland, 303-258-7332
- Closes Oct. 31 for 2021 season.

AGRICULTURAL HERITAGE CENTER AT LOHR/MCINTOSH FARM

Learn about the rich agricultural history of Boulder County while enjoying the rural setting and mountain views. Farm animals are on site, including chickens, pigs, draft horses, and sheep. Please note: although visitors are free to explore the site and observe the animals, interactive exhibits inside the barns and farmhouse are currently unavailable because of site upgrades and safety protocols.

- Hours: Friday, Saturday, and Sunday; 10 a.m. to 5 p.m.
- Location: 8348 Ute Highway 66, northwest of Longmont.
- Contact: Jim Drew at jdrew@bouldercounty.org or 303-776-8688.
- Closes Oct. 31 for 2021 season.

THE JAMES F. BAILEY WALL STREET ASSAY OFFICE MUSEUM

At the turn of the 20th century, hard rock mining in Boulder County was in full swing. Prospectors took their ore samples to The Wall Street Assay to find out whether they had "struck it rich."

The building at this site served as both an assay office and family residence, and the museum depicts both functions. Visitors can tour the assay office and family residence.

- Hours: 11 a.m. to 3 p.m. every third Saturday of the month through October.
- Location: 6352 Fourmile Canyon Dr., Boulder
- Closes Oct. 16 for 2021 season.
- Contact: Sheryl Kippen at 303-776-8848 or skippen@bouldercounty.org.

Learn about all the museums of Boulder County Parks & Open Space at BoulderCountyOpenSpace.org/museums.



Assay Office
Museum

Be a Volunteer Naturalist!

If you enjoy nature and sharing your knowledge with others, apply to be a volunteer naturalist.

Volunteer naturalists lead hikes, present slide programs, and provide hands-on experiences to people of all ages. We are especially looking for people interested in sharing nature with school groups, both on trails and in the classroom. Topics range from wildlife and plants to ecology and geology. You will learn about interpretive techniques to connect with audiences.

TRAINING INFORMATION: Training classes take place on Fridays, Jan. 7 through March 11, 2022, from 8:30 a.m. to 4 p.m. in Longmont.

PLEASE CONTACT: Deborah Price, at dprice@bouldercounty.org for information and an application. **Application deadline is Nov. 7, 2021 or until class is filled.** Since there is limited space, all applicants will be interviewed.



Art Exhibit Celebrates Open Space

2021 Outdoor Creations – A Boulder County Plein Air Art Show

Celebrate our county public lands at The Great Frame Up Longmont, Nov. 12–Dec. 30.

Gallery hours: Saturday, Nov. 13–Thursday, Dec. 30, 10 a.m.–5 p.m., Monday–Saturday.

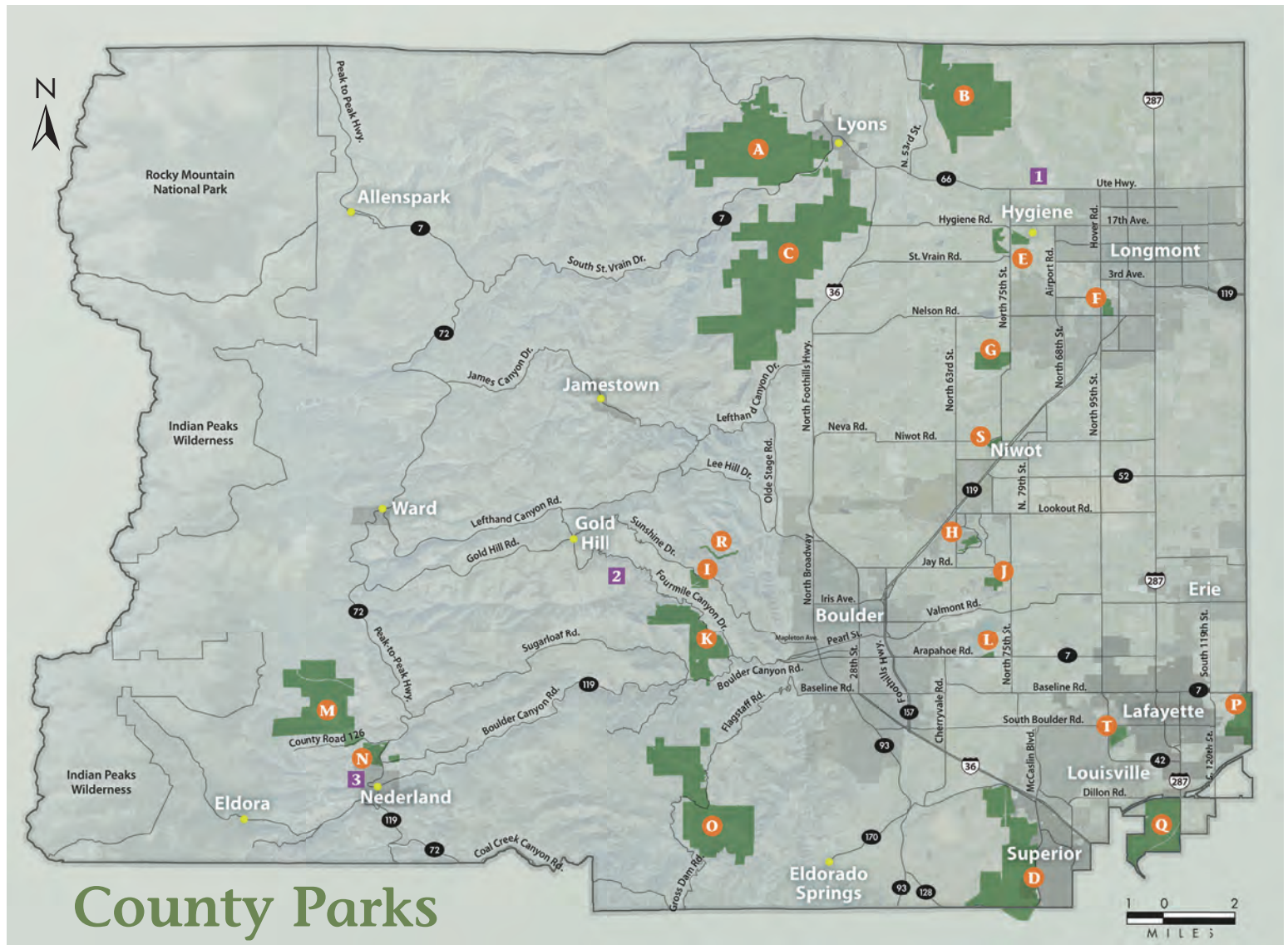
For more information visit: boco.org/artshow or contact Karen Imbierowicz at kimbierowicz@bouldercounty.org or 303-678-6268.



Parks & Open Space

5201 St. Vrain Road, Longmont, CO 80503

www.BoulderCountyOpenSpace.org



County Parks

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