

BOULDER COUNTY PARKS AND OPEN SPACE

# images

news properties nature history events

**WINTER** 2015-2016



# Images

volume 37, number 4

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

**COVER ART:** Cattle on county open space by Al Hardy

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# Reflections on 40 Years

## RESOURCE MANAGEMENT

by Therese Glowacki, Resource Management Manager

In 1975, the only property Boulder County Parks and Open Space managed was Bald Mountain Scenic Area. In those days, there was not much to do to manage our natural resources. Fast forward 40 years and today we own and manage over 65,000 acres and natural resource management has changed considerably. We always knew that buying land is the natural first step in protecting it, but managing the land is a responsibility the department will have for as far into the future as we can imagine.

**Forest Resources:** One of the first three Parks and Open Space employees was a natural resource manager. The county hired Randy Coombs in 1973 to be the first county forester. His job at the time was to inspect trees for insects and disease. As the department grew, he wore many hats in addition to his forestry hard hat. He was a ranger writing tickets for dogs off leash, a Walker Ranch cultural history interpreter dressing up like a pioneer from the 1880s, and a caretaker for our first plains property, Rock Creek Farm. The department slowly added staff to take on each specific duty, allowing Randy to focus 100 percent of his time managing the forests on Boulder County's mountain properties, like Heil Valley Ranch. He retired after working for the county for 38 years.

Our first large-scale forest management project took place in the 1970s as the native mountain pine beetle population exploded in the county. In conjunction with federal and state forest services, infested trees along Magnolia Road were thinned across public and private lands. Many of us remember the more recent outbreak of the same native pest and the impact it had on the forests around Nederland. In 40 years, these insects have had two complete epidemic cycles.

We also introduced prescribed fire into our ecosystem along agricultural ditches, on grasslands, and in forests. We continue this practice today with the help of the Sheriff's Office Fire Management Officer and his staff. Recently we completed an 84-acre burn at Hall Ranch. We now collaborate with local, state, and federal fire specialists to return fire to our fire-dependent ecosystems.

Resource Management grew to include rangers and park interpreters in the 1980s. In the 1990s, weed, wildlife, and plant ecology specialists joined the team. By 1999, there were seven people working in the Resource Management Division.

**Restoration Initiatives:** Parks and Open Space began restoring grasslands as soon as we had enough property on the plains. Our agricultural resources staff started converting marginal and degraded farmland to native prairie in the late 1990s. This program continues today, and we are in the process of converting over 2,200 acres back to native plant species. This will invite the return of local wildlife such as the lark bunting, burrowing owl and northern harrier.

Creek restoration came next, with a 13 year effort on the Brewbaker property in 2000 and multiple projects along Rock Creek on Carolyn Holmberg Preserve. These projects take planning, funding, technical experts and many volunteers. We use bioengineering to help stabilize the shorelines, plant native willows and other shrubs, and control weeds. Finally, we sit under the shade of the trees to mark their success! Our recently-launched Lower Boulder Creek Project, a \$5 million project funded and co-managed by the U.S. Army Corps of Engineers, was first identified in 1998 and the earth started moving on the project this fall. Like most things in nature, man-made projects often take time, patience, and tenacity to see changes occur.

We were glad to have learned about creek restoration when the September 2013 flood hit. All streams in the county were impacted, but the worst was easily the St. Vrain River. One hundred and twenty years of ditch diversion, stream channelization, and gravel pit mining in the floodplain significantly altered the river. During the



500-year rain event, the river breached its banks and beloved “gravel-ponds-turned-wildlife-habitat” like Pella Crossing crumbled under the force of Mother Nature. For the past two years, and probably for at least the next ten, we will be working to restore Boulder County creeks to more natural systems that will again provide habitat for endangered native fish like the Johnny darter, plants like the Ute’s ladies tresses, and federally threatened Preble’s meadow jumping mouse.

**Wildlife:** Wildlife habitat protection has long been a reason for preserving open space. As early as 1992, we were mapping prairie dog colonies and creating deer exclosures to protect important plants. Today, wildlife staff continues protecting Preble’s meadow jumping mouse, burrowing owls and Abert’s squirrels by working with plant ecology, forestry, and agricultural staff to implement critical habitat restoration. They partner with Colorado Parks and Wildlife to radio-collar and monitor elk and mountain lions. And most importantly, they harness the energy of over 100 volunteers to help monitor waterfowl, breeding birds, and raptors.

**Invasive Plant Management:** Weeds came to Colorado long before our department was created, but when we purchase new properties, they invariably come with weeds. In the 2000s, we embarked on a project to remove 95 percent of the noxious (invasive weed) Russian olive trees growing on Boulder County’s Parks and Open Space land. Primarily along riparian corridors and ditches, these water-loving trees don’t provide suitable habitat for our native birds. By removing the Russian olive trees, we save valuable water for agriculture and promote native wildlife. We also open the area to allow native willows, hackberry and cottonwoods to regain their place along our streams. We accomplished our goal in 2012, but as any gardener knows, weeds may be gone one year but return the next. We continue to monitor Russian olives on open space property and remove them from properties we acquire.

**Resource Protection:** Rangers are important staff and protect the natural resources on parks and open space. It used to be that everyone in our department could write a ticket, but now we have expanded our group to 12 trained rangers, including five resident rangers and Sheriff’s Office deputies. Those smiling faces assure that our natural resources will be protected for the next 40 years and more.

**Education and Outreach:** No natural resource can be protected without the work of our education and outreach staff. Our education staff works with volunteer naturalists to conduct interpretive programs. Our volunteer coordinators lead volunteer work projects or natural resource monitoring programs on our properties. This brings the challenges and rewards of restoration to life for people in our community. Speaking of bringing things to life, volunteers and staff continue to interpret our cultural resources. They dress in 1880s costumes (the same ones that Randy Coombs used to wear) for our living history events at the historic Walker Ranch Homestead. They also demonstrate life on the farm during the turn of the last century through Critter Days and other events at the Agricultural Heritage Center.

Today the Resource Management Division employs over 40 full-time staff, with an influx of seasonal staff every spring. We are fortunate to have community support for our natural resource management projects on county open space. Our diverse wildlife and plants enhance the quality of life we enjoy here in Boulder County. Our mission remains unchanged and we will continue to protect and restore life for current and future generations.

**Note:** This is the fourth installment in a four-part series about the department’s 40th anniversary. You can read the first three articles at [www.bouldercountyopenspace.org/i](http://www.bouldercountyopenspace.org/i)



Left: Wildlife staff work on a Preble’s meadow jumping mouse study.  
Right: Forestry specialist at work.

# The Ubiquitous Bobcat

by Francesca Giongo

Rarely seen because of his crepuscular (active at dawn and dusk) habits, the bobcat (*Lynx rufus*) is actually the most abundant and widespread wild cat in North America. Long valued for its fur, this species has been hunted and trapped, but has maintained a high population. Twice the size of a domestic cat, it is smaller than the Canada Lynx, with which it shares parts of its range. It sports a gray-brown coat, whiskered face, and black-tufted ears. Distinctive characteristics are black bars on its forelegs and of course the black-tipped, stubby tail, from which it gets its name.

## Swamp to Desert—Rabbit to Chicken

The bobcat is a very adaptable predator, both in terms of habitat and prey selection. It prefers woodlands—deciduous, coniferous, or mixed—and it ranges from the humid swamps of Florida to the desert lands of Texas and up to rugged mountain areas. In Colorado, its preferred habitats are pinyon-juniper woodlands and montane forests, but it will not disdain agricultural areas if rocky ledges or forest patches are present. It may appear in backyards in “urban edge” environments, at the intersection between human development and natural habitats.

Though the bobcat prefers rabbits and hares, it will hunt small rodents, foxes, minks, porcupines, small birds, insects, and

deer fawns. It will also kill chickens, young sheep, and goats. Prey selection depends on location and habitat, season, and abundance.

Bobcats use multiple strategies while hunting. They may approach stealthily, using any form of cover available between them and their prey, attempting to get close enough to pounce and strike. When pouncing, they can leap up to 10 feet. With smaller prey, they often use an ambush technique, sitting and waiting for prey to pass by. Smaller prey items such as mice and birds are consumed whole. Deer are killed when bedded down, with multiple bites to the neck and throat.

## Staking a Claim

Like most wild cats, bobcats are solitary and territorial. Different from other cats, however, the females are more territorial than the males. Female territories almost never overlap, whereas males are more tolerant of other males and their territories often overlap. Territories are established with scent markings, including deposits of urine, feces, and anal gland secretions rubbed on objects or deposited on the ground. In addition, claw marks on prominent trees may be present.

Although bobcats may breed at any time of the year, most mating happens in February and March. Both males and females are not monogamous and will mate with multiple partners. The female raises the young alone. Usually two to four kittens are born in April or May. They stay with their mother until the fall when they disperse.

Adult bobcats have few predators beside humans, namely mountain lions and coyotes. Kittens may be taken by several predators, including owls, eagles, and foxes, as well as adult male bobcats.

From 2010 to 2012, Parks and Open Space collaborated on a CSU study tracking bobcats at Betasso Preserve, Hall Ranch and Heil Valley Ranch and in more developed areas closer to Boulder. In total, 20 animals were radio-collared and 40 cameras were placed. The aim of the study was to compare habitat use, movements, and bobcat interactions with visitor trail use and vegetation type, between our natural areas and more urban-fringe areas. Data from hundreds of locations and thousands of photographs are still being compiled and analyzed.

## 17 Second Snapshot

A trail camera at Hall Ranch captures a bobcat and her kitten on a walk.





# Japanese History in Boulder County

by Cindy Maynard

Boulder County enjoys a little-known but rich Japanese legacy. The first Japanese residents in Boulder County moved here as farmers, laborers, miners, and railroad workers. Many literally left their mark on the physical landscape, helping carve Trail Ridge Road from the foot path the Arapaho Indians called the “Dog Trail.” They also blasted rocks from Middle Boulder Creek to build Barker Dam, and burrowed into coal seams in the mines of Erie and Dacono. No job seemed too difficult or dangerous for hard-working Japanese laborers.

## A Farming History: the Tanaka Family

Many Japanese immigrants in Boulder County were farmers. Issokichi (Frank) Tanaka for example, first arrived in Colorado in 1906, establishing a family farm in Brighton. He quickly expanded his holdings to Boulder County. Issokichi's seven sons and two daughters grew up following the plow and pulling weeds in the family's expanding farms. Those farms eventually grew to 5,400 acres. At one time Tanaka Farms was the largest vegetable farming operation in Colorado. Five of Frank Tanaka's sons served in World War II. After the war, five of his children died or moved away, leaving four sons—Sam, Rocky, Dick and Bobby—to run the farming enterprise. After three of the four sons died in quick succession, only Dick remained. Though he tried mightily to carry on, it was just too much for one person to handle and Tanaka Farms declared bankruptcy in 1990.

## A Legacy

The proud history of the Kanemotos dates back to two brothers, George and Jim Kanemoto. Their father moved from Hiroshima in the early 1900s and worked an 80-acre farm. Jim and George bought more land until their holdings grew to 340 acres. They were versatile, astute businessmen, who also operated a retail outlet on Main Street to market their produce. Jim patented his idea for a portable irrigation dam, and in 1960 founded Kane Manufacturing Company. With brilliant foresight they annexed their acres to the City of Longmont in 1961. The ensuing development became Southmoor Park. Ever the civic-minded businessmen, they donated 10 acres for a school, administration building, fire station, and six acres for a park. They also gave land to St. Stephens Episcopal Church.

In the midst of Kanemoto Park, in the Southmoor neighborhood in Longmont, stands the beautiful five-story Tower of Compassion. Each level of this 60-foot tall pagoda represents a virtue: love, empathy, understanding, gratitude and giving selflessly. Kanemoto's accomplishments were stellar, serving on the Water Board, Community Hospital Foundation, Economic Development Association, Board of First National Bank, Longmont Rotary, Fox Hills Country Club, Longmont Long Range Planning Commission and more. In 1996, Kanemoto was honored by inclusion in Boulder County's Business Hall of Fame.

The family's record of community service continues. Jim's son Ken, George's son Ed, and grandson Keith continue to practice real estate in Longmont.

## The Japanese Language School

The University of Colorado in Boulder (CU) also played an important role in the Japanese history of Boulder County. By the late 1930s, approximately 20 Japanese students attended the university. Though small in numbers, these students were actively involved in athletics, and various clubs and campus societies. The Japanese population at CU burgeoned during World War II, partly due to the uprooting of west coast Japanese American citizens and displacement to inland camps. As part of that effort, the U.S. Navy Japanese Language School was moved from Berkeley, California to CU.

More than 150 Japanese Americans taught in the Navy's Japanese Language School between 1942 and 1946. Eventually the language school graduated more than 1,200 students. They played important roles in the Pacific Theater of Operations as interpreters, interrogators, code breakers, and intelligence officers. They grew to greatly respect Japanese culture and people, and went on to become noted scholars, historians, linguists and intelligence officers.

Boulder's Japanese heritage continues to enliven and enrich Boulder County's unique culture today.



The Tower of Compassion in Longmont.



JLS, Univ. of Colo., summer 1942: Okamoto Sensei, Paul Farley, Robert Mandelstam, Roger Pineau, John Jago, Robert Kinsman, David Parkes

# Reflecting on the Partnership Initiative

by Karen Imbierowicz

In 2007, the County Commissioners and Parks and Open Space staff were inspired by a presentation from Brian O'Neil, the General Superintendent of Golden Gate National Park in San Francisco. O'Neil spoke about the successful Partnership Program that Golden Gate developed to help with the stewardship of that public land. His presentation motivated Boulder County Parks and Open Space to expand its community partnerships beyond one-day group volunteer projects and individual volunteer opportunities, to more long-term, ongoing involvement of businesses and organizations in the stewardship of County public lands. In 2008, the Boulder County Parks and Open Space Department's Partnership Initiative was created.

One of the Partnerships Initiative's goals is to involve local business employees and organization members in hands-on long-term stewardship of our county public lands through volunteer opportunities to increase awareness and appreciation of the Boulder County Parks and Open Space program. Today, we have 47 partner groups committed to recruiting between eight and 40 members, at least once a year, to engage in one of our rewarding volunteer projects.

The success of the Partnership Initiative depends upon our devoted partners and would not be possible without our talented and energetic Volunteer Coordinator Team which has grown from 1.5 employees in 2008 to four team members in 2015. To date, partners have contributed approximately 30,000 volunteer hours, valued at around \$700,000, but worth so much more than can be assessed in dollars.

## Meet Our Volunteer Coordinator Team

### Carrie Cimo, Plant Ecologist Volunteer Coordinator

#### Length of time with department: One and a half years

Carrie received a Bachelor of Science in Conservation Biology from State University of New York and Environmental Science and Forestry. Carrie worked field seasons doing wetland delineation in Watertown, NY, High Desert Vegetation research in Burns, OR, and installed long-term wetland monitoring plots at the Great Sand Dunes National Park. She worked for the City

of Boulder Open Space and Mountain Parks for four years prior to joining our department. Carrie really enjoys connecting with volunteers because teaching and learning are two of her favorite activities. Carrie says, "I always learn something from volunteers. Not only do I get to work with amazing people, I am doing it in the context of plants and restoration. Blending people with nature is the perfect fit for me!"

### Zephyr McConnell, Trails Volunteer Coordinator

#### Length of time with department: three months

Zephyr began her trails career in 1998 with the California Conservation Corp Backcountry Program in Yosemite. Since then she has worked in Redwood State Park, Grand Teton, Grand Canyon, Sequoia-Kings, Rocky Mountain, and U.S. Forest Service districts throughout the Pacific Northwest. She also spent time in Antarctica as a carpenter helping construct the new South Pole Station. Zephyr loves learning new things, being in the outdoors, and working with volunteers on the trails.

### Shane Milne, Forestry Volunteer Coordinator

#### Length of time with department: Eight years

Shane received a B.S. from the University of San Diego. He worked at a Wyoming national monument studying fresh water fossil fish, followed by nine years of teaching and natural resource management at Cal-wood Education Center near Jamestown. Shane is always amazed with how many people contribute their time to care for our public lands; it reinforces that the public values the department's work and our natural resources. He loves educating volunteers while caring for our natural resources.

### Craig Sommers, Resource Management Volunteer Coordinator

#### Length of time with department: Five years

Prior to joining Boulder County, Craig worked for the City of Boulder Open Space and Mountain Parks for 10 years. Craig is interested in creating entertaining and gratifying volunteer projects whether it involves forestry, wildlife, plant ecology, weed eradication, or agriculture.



University of Colorado MBA students participate in seed collection, their annual orientation project.

## 2015 Partner Groups

**Trail Stewardship** (trail maintenance and construction two or more times a year):

Since 2008: Backpacker Magazine, Boulder Area Trails Coalition, Boulder County Horse Association, Boulder Mountainbike Alliance, Boulder Trail Runners and Redstone Cyclery; Joined after 2008: Singletrack Mountain Bike Adventures, and Ultrarunners; New partner in 2015: Zeal Optics

**Property Stewardship** (property maintenance two or more times a year):

Since 2008: Corden Pharma, Geocachers, New Vista High School and Smartwool; Joined after 2008: Boulder Climbing Community, University of Colorado–Program for Writing & Rhetoric, Level 3 Cares, Nederland Area Trail Organization,

Oncore Manufacturing, Qualcomm, vAuto Genius Labs, Volunteers for Outdoors Colorado, and Wildland Restoration Volunteers; New partners in 2015: Boulder Country Day School, NetApp, Teens Inc., Teamworks

**Foothills Partner:** (Participate in at least one trail or property project a year):

Since 2008: Boy Scouts of Boulder County, Mapleton School District, Stratus Consulting, University of Colorado-MBA Program; Joined after 2008: Alexander Dawson School, Alpha Phi Omega, Behind the Red, Defenders of Wildlife, Foothills United Way, Girl Scouts, Google, Lefthand Outdoor Challenge, Olde Columbine High School, Rally Software, Thornton Youth Volunteer Corps, University of Colorado-Upward Bound, and WILD Foundation; New partners in 2015: EMC2, Vail Resorts, Sandisk and Tetrattech

## Research on Boulder County's Open Space Lands

*The Boulder County Parks and Open Space Department offers grants for research on county open space lands each year. The following is a summary of a 2014 study conducted by Mark Easter, Amy Swan, and Stephen Williams with the Natural Resource Ecology Laboratory at Colorado State University in Fort Collins, Colorado. Their research project focused on greenhouse gas (GHG) inventory from agriculture, forestry and other land uses*

**Executive Summary:** This study was done for the Boulder County Parks and Open Space (BCPOS). There were six key tasks to accomplish:

- Quantify a baseline of GHG based on existing vegetation, use, and condition on BCPOS lands.
- Identify and quantify the inputs and outputs of GHG on BCPOS lands based on existing agricultural production on cropland, pasture and rangeland including livestock.
- Identify and quantify the inputs and outputs of GHG on BCPOS grassland restoration.
- Identify and quantify the inputs and outputs of GHG on BCPOS forestry land based on forest type and management (e.g. thinning and prescribed fire).
- Provide a forecast of carbon emissions for a 10 year period.
- Make recommendations about best management practices to reduce GHG emissions and increase carbon sinks on BCPOS lands.

We worked closely with BCPOS staff to collect GIS layers and identify land management details which affect soil and biomass carbon and greenhouse gas emissions on BCPOS lands. We utilized a combination of IPCC Tier 1, 2 and 3 methods as follows:

- For agricultural cropland, pasture and grazing land, we used the DayCent model to predict soil carbon stocks and greenhouse gas cycling in response to land management.
- For soil carbon stocks on non-agricultural lands, we used the USDA NRCS SSURGO soil database.
- For biomass carbon stocks on BCPOS non-agricultural forest, shrub, and range lands, we used a combination of

local, regional and IPCC default biomass carbon stock measurements in combination with BCPOS vegetation maps.

- On BCPOS agricultural conservation easements, we used a combination of statistical models to predict soil and biomass carbon stocks.
- For livestock, we used IPCC Tier 2 empirical models to predict annual greenhouse gas emissions.

*If you want to read the full report, including management practices recommendations, visit the department's website at [www.bouldercounty.org/os/culture/pages/posresearch.aspx](http://www.bouldercounty.org/os/culture/pages/posresearch.aspx)*

### Call for 2016 Studies

The department is currently accepting proposals for 2016 funding. Grants are awarded up to \$10,000 per project. There is no minimum amount that will be awarded for a project.

**Deadline for proposals is January 18, 2016.** Department staff have identified priority needs for research including these seven topics:

1. Use preferences of people with disabilities on Boulder County Parks and Open Space.
2. Study that demonstrate the effective benefits of using biochar or other wood fiber products in restoration efforts, revegetation, ag production, etc.
3. Inventory of Monarch butterfly breeding sites and milkweed mapping.
4. Study measuring the effects of trails on adjacent vegetation.
5. Study to determine most effective herbicides for control of invasive plants that also minimize impacts on pollinator plants.
6. Effective Habitat Analysis (fragmentation mapping) of Boulder County.
7. Study examining the attitudes of Boulder County residents to hunting on open space for resource management needs.

Other research proposals will be accepted. Visit the department's website at [www.bouldercounty.org/os/culture/pages/posresearch.aspx](http://www.bouldercounty.org/os/culture/pages/posresearch.aspx) for a full listing of research topics and proposal guidelines.



# Cold Weather Sleuth: Tracking in Winter

by Danielle Atton

As you trek through the parks of Boulder County this winter, be sure to look for signs of life in addition to the snowshoers, skiers, snowboarders, and canines exploring the plains, foothills, and mountains of the Front Range. Here's a little background on animal tracking and helpful tips to use in the backcountry and your backyard as you get tracking!

Some of the best animal trackers I've met are hunters. Animal tracking is a skill that humans used thousands of years ago to find food and animal skins. Our ancestors tracked animals to identify any potential predators or dangers that lived near their homes and camps, and also to find water and food sources. Tracking animals doesn't only mean following them, but also requires putting yourself into the mind and body of an animal to figure out "the how and why" of its movements.

## Tracking for Food and Safety

An animal sign is any change or disturbance in the environment that shows evidence of an animal's presence in that particular location. Many people will look for tracks on the ground to identify an animal, the direction it was heading, and in what manner. Was it a young elk running away from the creek because it saw something that scared it off? Maybe you'll see the tracks of a large coyote that changed direction on a hiking trail. Do you think it caught the scent of a mountain lion kill nearby and wanted a bite? While tracks are extremely helpful in identifying the animals in the environment, scat can be helpful, too. (Although sometimes a little gross!)

## Clues

Other signs of life could be injury to trees or shrubs. Elk will eat the bark off of aspen during the hard winter months. Next time you are hiking around Mud Lake, see if you can find markings on the aspen from elk in the area. You can also look for digging and scraping on the ground. A mountain lion will often cover its scat with dirt and the markings are visible on the ground. You can look for disturbed vegetation that may be a subtle sign of the matted bed of a moose.

You could also come across food remains and caches. But please be careful if you ever come across a mountain lion cache. Back away and report it immediately. If you do find remains of an animal, you will find evidence of all the different animals that nibbled on it over time. You may even be lucky enough to come across the antler of an elk or mule deer this winter! Please remember to leave them where you find them, as these are important sources of nutrition for many small animals during the long winter months.

## A Tracking Challenge

As you hike this winter, see if you can find 10 signs of life every time you go on a hike with friends or family. Or you could pick one animal this winter to track each time you head out on an adventure. You could even focus on one particular location, like your backyard. See how many animals share your habitat over the course of the winter. So remember, tracking is not just for hunters, it can be for all nature lovers!



Mountain lion



Domestic dog



Ringtail



Black bear



Whitetail deer



Racoon



Fox



Mule deer



Moose



# NATURE DETECTIVES

Winter 2015



## Star Light, Star Bright, Let's Find Some Stars Tonight!

Finding specific stars in the night sky might seem overwhelming. All those stars! At a glance stars look like a million twinkling points of light that are impossible to sort out. But with a little information, you may discover hunting **some** stars is not so difficult.

Turns out we don't see a million stars. Less than a couple thousand – and usually many fewer than that – are visible to most people's unaided eyes. The brightest and nearest stars are easily found without a telescope or binoculars.

### Stars Are Not Star-shaped

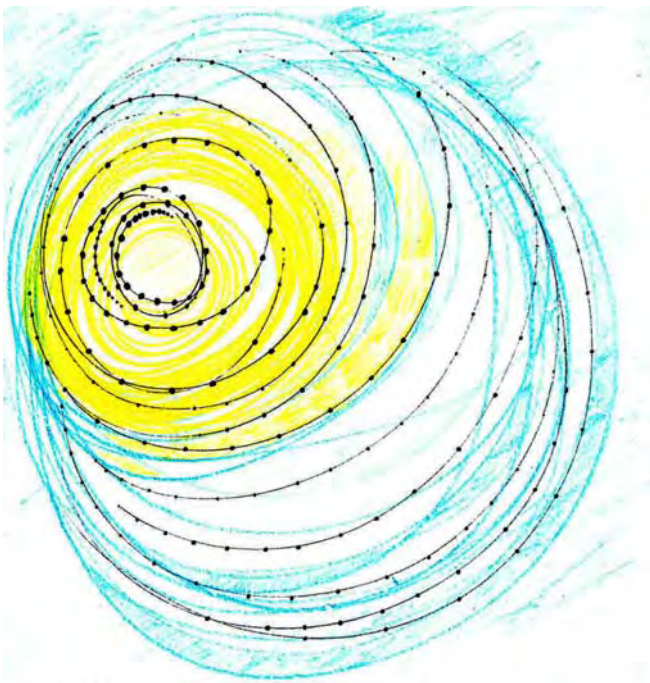
Stars are big balls of gas that give off heat and light. Sound familiar? Isn't that what our Sun does? Guess what, our Sun is a star. It seems confusing, but all stars are suns. Like our Sun, stars are also in the daytime sky. During the day, the Sun lights up the atmosphere so we can't see other suns... er... stars.

Our Sun isn't even the brightest star. In fact all the stars we see at night are bigger and brighter than the Sun. It wins the brightness contest during the day simply because it is incredibly closer than all the other stars. (At night we don't see the Sun because of Earth's rotation. Our Sun is shining on the opposite side of Earth and we are in darkness.)

### Suns or Stars Appear to Rise and Set

Our view of the stars changes through the night as Earth makes its daily rotation. Like the Sun, stars rise in the eastern sky and set in the west, day and night. The stars appear to rotate around Earth because Earth is rotating, making a complete turn approximately every 24 hours.

Pull Out and Save



## People Invented **Constellations**

Prehistoric humans saw lots of stars that our eyes cannot see in modern times. With no glare from electric lights reflecting on their atmosphere, dimmer stars were visible in the inky dark. Tall buildings never blocked their sky view. Lacking computers and TVs, the night sky was their fascination.

Ancient people imagined stars connected like dot-to-dot drawings. The dot-to-dot patterns formed animals, people and objects whose stories were dramatized in the dark sky. The tales explained the stars' existence and helped people remember patterns among the myriad of stars. In each culture, elders taught children the traditional star tales. Eventually many of the ancient star patterns came to be called constellations.

### **Constellations are the Guideposts to the Night Sky**

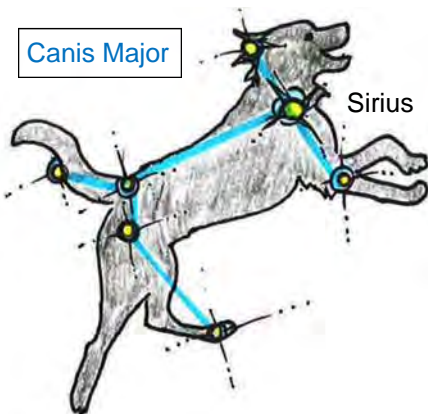
Early observers noticed that certain stars circled the sky nightly and other stars were visible only part of the year. For instance, prehistoric farmers planted their crops when they saw spring constellations overhead.

Constellations chart the location of individual stars and map directions. Long ago travelers relied on stars to guide them. Today astronauts still check star positions to make sure their modern navigational equipment is working.

Scientists who study the sky have defined 88 official constellations. Many of the 88 were named thousands of years ago and some are modern inventions. Stargazers worldwide recognize the same constellations, the same sky map. Each night where we live, only a couple dozen of the 88 are visible. Over the whole year – as Earth rotates around the Sun – we see a total of about 60 official constellations in Boulder County.

### **Appearances are Deceiving**

Stars appear crowded close together but the real distances are vast. Neighbor stars in the night sky can be spread enormously far apart. They look near each other because of the way we see them along our line of sight.



Stars are speeding through space, but they are so inconceivably far away that constellations that guided ancient Greeks or Egyptians still look the same. Over the course of human existence, the stars appear in place within their constellations.

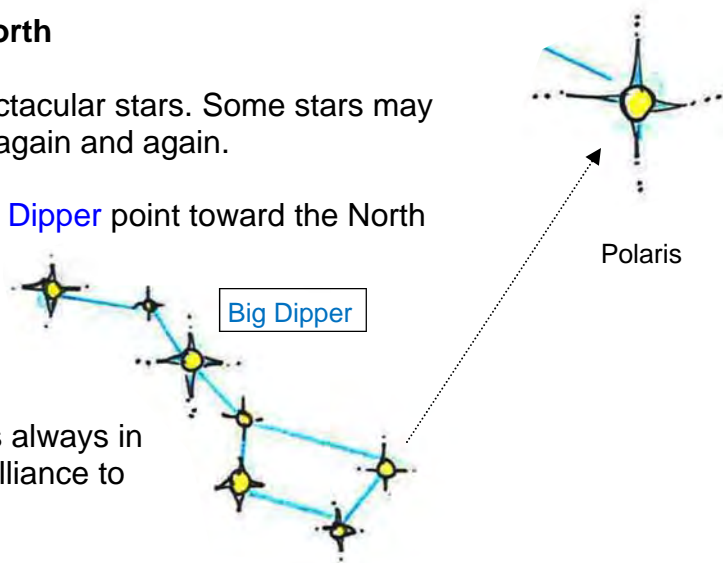




## Dip into a Favorite Star Shape to Find North

Star patterns can help point the way to spectacular stars. Some stars may become like old friends you'll enjoy seeing again and again.

Every night, two stars in the bowl of the **Big Dipper** point toward the North Star. To find north, first locate the Big Dipper. Imagine a line between the two "pointer" stars on the far side of the dipper's bowl. Imagine continuing that line five times its length to find **Polaris, the North Star**. It's not the brightest star, but it's always in place above the North Pole with enough brilliance to make it a reliable guide.



## Get Your Directions Straight

As you face Polaris, look right. That's east. Look left, that's west. Now turn around and look for the three-star belt of the famous hunter **Orion**. He hunts across our southern sky in winter.

## Find Bright Stars in Three Constellations

Below the three stars in Orion's belt is the very bright star, **Rigel**. It marks Orion's right foot and is our fifth brightest star. Look above Orion's belt to find the reddish star **Betelgeuse** in Orion's left shoulder. Betelgeuse is our seventh brightest star.

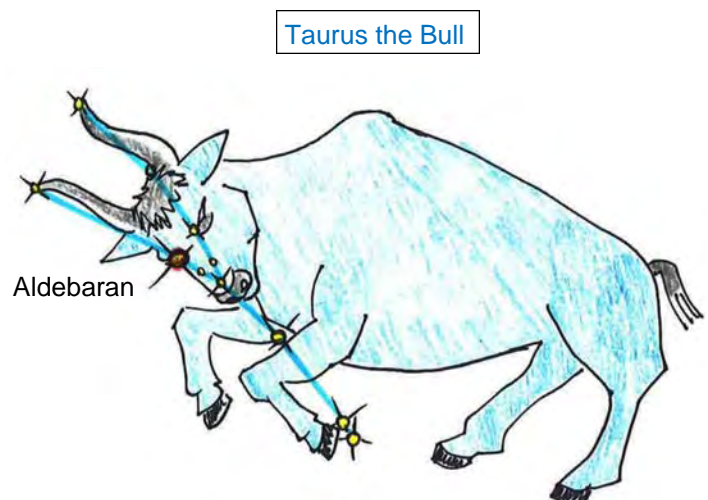
Following behind Orion is his faithful hunting dog, **Canis Major**. In the dog's neck is **Sirius**, the brightest star in the whole night sky. To find Sirius, continue the imaginary line of Orion's belt leftward until you come to the brightest star you see. Sirius is also known as The Dog Star.

Orion is hunting **Taurus the Bull**. Taurus is in front of Orion. Go back to Orion and extend his beltline to the right. Your imaginary line will lead to the ninth brightest star in our sky, **Aldebaran**. See if you can spot it's faint reddish glow, perfect for the eye of a wild bull.

## Winter Nights Bring Early Evening Star Hunting

Stargazing is best on a cloudless night when the moon is not visible or is just a sliver.

In rural areas, you will see more stars, but even in smoggy cities you can see hundreds of stars on a clear, dark night.



## Where Does Orion Go?

Orion is one of the most popular constellations, yet at times people can't find him in the night sky. What's that all about?



To find out, stand in a room with a central table and a ceiling light overhead. Pretend you are the Earth and the table is the Sun. Walk around the table and look up. No matter where you are around the table, you will see the light above you. Imagine the light is Polaris, our North Star. It just happens to be above the North Pole, and when you look to the north, you can find the Big Dipper. Now spin around as you circle the table. The room looks like it's spinning but it's really you. Just like the room, the Big Dipper and other northern constellations appear to circle slowly around the North Star.

Stand in the same place where you started, but face away from the table. (Remember you only see the stars at night, so the Earth has to be facing away from the Sun.) Look at the bottom of the wall in front of you. This is like looking toward the south from Earth. If there were stars on that wall, and if it's winter, that's where you'd find Orion. Move around to face the

opposite wall on the other side of the table, just like the Earth moves halfway around the Sun in half a year. You are now facing the pretend summer stars, and you'd see the constellation Scorpius in the southern sky. Orion is not there.



If you lived in the southern hemisphere, do you think you'd see the North Star? Would you see different constellations?

## Why Do Big Stars Look so Small?



Most of the stars in the sky are much bigger than our Sun but they look like tiny dots. The Sun is 93 million miles away from us, and that is close compared to the distance of the stars outside our Solar System. Here's an experiment you can try.

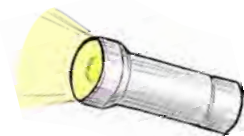
Get two flashlights – one can be bigger (or brighter) than the other. Go outside to your backyard after dark. Place the larger flashlight as far across the yard as you can. Turn it on and point it towards the other side of the yard. Walk back across the yard along the beam of light.



Now turn on the smaller flashlight and shine it close to your face. Like the Sun shining on us during the day, it glows bright! Now turn it off and look across the yard at the light from large flashlight.

Does it seem as bright? How big does it look?

Imagine if that flashlight were billions of miles away!



Text by Katherine Young and Deborah Price  
Astronomy illustrations by Michelle Durant



# Adventures with a Four-legged Friend

by Leslie Brodhead

One December day four years ago, a monstrous snowstorm hit the Nederland area. Fluffy flakes fell down from the sky like large potato chips, and the snow quickly piled up in the local parks. All told, almost two feet of snow fell over the course of two days, blanketing the ground. If you're anything like me, it can be daunting to talk yourself into going outside. But our four-legged friends feel differently. Cold temperatures and falling snow seem to energize them, and when we started to collect hats, gloves, scarves, and finally snowshoes, our dogs were jumping up and down at the door like Energizer bunnies.

## A Dog's Idea of Fun

Owning dogs during winter can be a double-edged sword. The last thing you want to do is go outside in the biting wind and cold; the idea of hanging out in your nice cozy living room with a cup of hot cocoa seems much more inviting. But man's best friend doesn't feel the same way, and wants nothing more than to go outside and frolic through the fluffy snow. This is especially true of long-haired dogs who find the hot temperatures of summer less than desirable. Just because it's cold doesn't take away their strong desire for a nice walk—they need the exercise, and the truth is, so do we.



The author demonstrates "skijoring" on a winter outing with her dogs, Simon and Shawnee.

We decided to head up to Mud Lake Open Space for a snowshoe hike with our retriever and border collie. Snowshoeing can be so magical in our county parks. When you can see animal tracks vividly, and the blankets of snow create a silent beauty, it's like being in your own private holiday greeting card. Because snowshoeing through the fresh, deep snow can throw me off balance, I like to use trekking poles. All of our county parks require dogs to be on leash, so that can be challenging when trying to cross-country ski or snowshoe with poles. What's the answer? We have found a skjoring harness to be a wonderful tool to get out in the parks and frolic with our dogs in winter.

## Leading the Way

For those of you not familiar with skjoring, it's a Norwegian winter sport where dogs are hooked up to people on Nordic skis via a tow rope—sort of like a giant bungee cord. Both dogs and owners wear a harness—the dog to allow attachment at the top of his back, and the owner wearing a hip harness on the hips, which is hooked to the cord attached to the dog. The cord is springy so it won't throw you off your skis or snowshoes as your dog leaps and bounds through the snow. It's a great way to keep your dog attached to you and safe from wildlife, but still allow them to have fun in the snow.

You don't have to become a winter skier or snowshoer to enjoy the county parks with your dog during the coldest months of the year. Many of our parks on the plains and along the foothills get plenty of sunshine and little snow, so they are often snow-free even during the winter months. Since I have mountain dogs with very thick fur coats, I very rarely take my dogs to Rabbit Mountain Open Space in summer. But winter can be an ideal time to get out and enjoy the views of Longs Peak while my dogs enjoy walking along the sunny trails of Rabbit Mountain during the cooler temperatures.

So despite the falling temperatures and fast-approaching snow, think of the season as a great opportunity to inspire you and your furry friend to get out and enjoy some fresh air, camaraderie, and exercise, and make some beautiful winter memories in our local parks.

# A Tale of Three Open Space Programs

by Zach Goodwin

As we celebrate 40 years of Parks and Open Space, it seems fitting to explore the impact of this department within Boulder County by profiling three similar open space programs. But before diving into the particulars, let us first explore why such a ripple effect occurred.

The transformation began during the late 1960s and early 1970s as Boulder County residents recognized the exponential population growth within the county. For example, the population in 1950 was 48,296 and by 1970 had nearly tripled to 131,899. Consequently, residents wanted to preserve some nearby land, so they banded together, and, in 1967, City of Boulder voters approved a 0.40 of a cent sales tax specifically to buy, manage, and maintain open space within the city limits. It was the first time citizens in any U.S. city had voted to tax themselves specifically for open space. Just a short eight years later, the Board of Boulder County Commissioners created the Parks and Open Space Department in order to acquire and manage land within Boulder County.

Land acquisitions were driven solely by county commissioner's yearly property tax allocation until county residents voted to adopt a 0.25% (2.5¢ on every \$10 purchase) sales tax in 1993 that would fund future purchases. Today, with a population exceeding 300,000 residents, Boulder County Parks and Open Space has managed to preserve approximately 100,000 acres and set an example for other city open space programs.

**City of Longmont:** Following in the footsteps of the 1993 countywide open space sales tax, the City of Longmont's residents approved their own 0.2% open space sales tax initiative in the year 2000. The city's website states that "the revenue generated from this tax is used for acquisitions, improvements and maintenance of Open Space properties, as well as trail development like the St. Vrain Greenway and Lake McIntosh Trail, in and around Longmont." Since its 2000 approval, the City of Longmont has been able to purchase 1,953 acres outright and an additional 532 acres in conservation easements for this and future generations to enjoy.

**City of Lafayette:** Instead of utilizing a combination of property tax revenue and an open space sales tax, the City of Lafayette relies solely on two open space sales tax initiatives. If a purchase is made within Lafayette, 0.25% will be contributed to the Legacy Tax for land acquisition and maintenance, and a separate 0.25% will be contributed to the POST Tax for maintenance, enhancements, and preservation. Through the combined revenue generated by these two open space sales taxes, the City of Lafayette owns or has interest in approximately 1,300 acres and manages numerous miles of open space trails.

**City of Louisville:** Louisville employs a 0.375% sales tax initiative to primarily fund land acquisitions, maintenance and improvement projects. This tax was recently extended by voters and is now set to expire in the year 2024. With the approximately \$1.5 million generated each year, Louisville has an interest in 2,000 acres of open space land. Popular parks include Coyote Run, Davidson Mesa, and Waremburg Open Space. Conveniently, these open spaces are located at various locations throughout Louisville and provide excellent connectors for the citywide trail system.

You can enjoy hiking and biking in the foothills and on regional trails, picnicking in beautiful settings, birdwatching, fishing and many other activities thanks to Boulder County and city-administered open space programs. Residents and visitors all benefit from this long-term commitment to land stewardship and preservation.





# 300 Million Years—and Counting

by Larry Colbenson



The Continental Divide

Boulder County straddles the transition zone between two great geographic regions in North America: the Front Range of the Southern Rocky Mountains and the Great Plains. The abrupt and dramatic rise from the mile-high prairie to over 14,000 feet at Longs Peak creates Boulder County's diverse landscapes, and plays a vital role in our rich hard rock mining history.

## Ancient Landscapes

Three hundred million years ago, the Ancestral Front Range uplifted about 30 miles west of where the current Front Range is today. Millions of years of weathering and erosion wore those ancient peaks away and buried them in sediment and debris thousands of feet thick. Shallow seas periodically advanced and retreated from Colorado, and dinosaurs evolved and went extinct.

## Birth of the Colorado Mineral Belt

Renewed uplift began about 65 million years ago, fracturing and tilting sedimentary rock layers and setting the stage for our hard rock mining heritage. The Colorado Mineral Belt was created during this mountain-building period, as mineral-rich solutions were injected into fractures of older

rock. These solutions hardened to form veins of precious metals, which have been mined extensively in Boulder County and throughout the mountains of Colorado. Gold, silver, lead, zinc, and tungsten have all been part of Boulder County's colorful mining history.

## Today's Rockies

About nine million years ago, the most recent episode of mountain-building began forming the present-day Rocky Mountains. The western U.S., from the Sierra Nevada Range in California to the Colorado Front Range, was uplifted by 5,000 feet or more. During this period, Colorado's 14,000 foot peaks were born. Deep valleys and canyons were cut as erosion was accelerated by the regional uplift.

## Finishing Touches

As wind, water, ice, and gravity continued to erode and transport sediment downstream, nearly two-billion-year-old rocks were exposed along the Continental Divide to the west. Within the last two million years, valley glaciers above 8,000 feet sent sands, gravels, and rocks to the plains below, carving out the high country scenery that we enjoy today. Today's landscape is only the most recent chapter in the dynamic and ongoing geologic story of Boulder County.

## 2016 NATURE HIKES FOR SENIORS

Join us the last Thursday of every month (except where noted) for a nature hike just for seniors. These hikes are enjoyable and slow-paced!

- Programs begin at 10 a.m. and end by noon.
- Hikes include information about the area's history, wildlife and resource management projects.
- Meet at the park entrance kiosk, unless noted below.
- For more information and directions, call 303-678-6214.
- Please call in advance if you plan to bring a group so we can provide enough naturalists to lead the hike.

January 28	Carolyn Holmberg Preserve at Rock Creek Farm (meet at Stearns Lake parking lot on South 104th Street)
February 25	Hall Ranch Open Space (meet at the group picnic shelter near the upper parking lot)
March 31	Walden Ponds Wildlife Habitat Area (meet at the group picnic shelter at Cottonwood Marsh)
April 28	Walker Ranch Open Space (meet at the Meyers Homestead Trailhead)
May 26	Agricultural Heritage Center at Lohr/McIntosh Farm
June 30	Betasso Preserve
July 28	Caribou Ranch Open Space
August 25	Bald Mountain Scenic Area
September 29	Mud Lake Open Space
October 27	Heil Valley Ranch Open Space (meet at the group picnic shelter near the Lichen Loop Trailhead)
November 17*	Walden Ponds Wildlife Habitat Area (meet at the picnic shelter at Cottonwood Marsh) *on the third Thursday due to Thanksgiving holiday.
December 29*	Rabbit Mountain Open Space *on the fifth Thursday due to Christmas holiday.

### Wildlife and Winter Hike

**Saturday, December 12, 10 a.m.-noon**

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

Join volunteer naturalists for a late fall hike to observe seasonal changes and to discover how wildlife in the foothills prepares for winter. You'll learn about behavioral and physiological adaptations to the shortening days and cooling temperatures, and also look for signs of wildlife that are active year-round.

### Nature Detectives in the Field: Twinkle, Twinkle, BIG Star Friday, January 8, 5-6:30 p.m.

**Meeting location will be provided to registered participants**

Explore our galaxy with hands-on activities and demonstrations. Join naturalists Deborah Price and Katherine Young to learn why stars twinkle, how big and far away things really are in space, find a few constellations, and view the evening sky through telescopes. This program is for elementary-age children accompanied by an adult. Register by calling 303-678-6215, or emailing [dprice@bouldercounty.org](mailto:dprice@bouldercounty.org) by Wednesday, January 6.



### Prairie Winter Hike

**Saturday, January 9, 10 a.m.-noon**

**Carolyn Holmberg Preserve at Rock Creek Farm; Stearns Lake Trailhead, South 104th Street, ½ mile south of Dillon Road, Louisville**

Learn how grassland and wetland wildlife respond and adapt to winter on the prairie along the Colorado Front Range. Volunteer naturalists will lead this easy walk to explore and learn about the different winter strategies employed by wildlife that migrate through or live year-round in prairie ecosystems of Boulder County.



## Birds of Prey Slide Shows

**Wednesday, January 13, 6-7:30 p.m.**

**Lafayette Public Library, 775 west Baseline Road, Lafayette**  
— and —

**Monday, February 8, 6-7:30 p.m.**

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

Learn how to recognize birds of prey, or raptors—hawks, eagles, falcons, and owls—in the winter. During this slide presentation, you'll learn how to distinguish between different raptors by identifying common field marks. You will also learn about the habitat requirements, behavior, and ecology of these magnificent birds.



## Birds of Prey Driving Tours

**Saturday, December 19, 10 a.m.-1 p.m.**

**Saturday, January 16, 10 a.m.-1 p.m.**

**Saturday, January 30, 9:30 a.m.-2:30 p.m. (extended tour)**

**Saturday, February 13, 10 a.m.-1 p.m.**

**Saturday, February 27, 9:30 a.m.-2:30 p.m. (extended tour)**

**Registration is limited; meeting location will be provided to registered participants.**

Join volunteer naturalists for a driving tour of the best areas to view birds of prey. We will carpool from our meeting place, searching for raptors, learning about habitat and behavior, and working on observation and identification skills. Bring water, a snack, binoculars, spotting scopes, and a bird field guide if you have them. Older children welcome.

To register, contact Larry Colbenson at 303-678-6214 or [lcolbenson@bouldercounty.org](mailto:lcolbenson@bouldercounty.org) no later than the Thursday before each scheduled tour.

## I Spy Wildlife in Winter

**Tuesday, January 19, 4:30-5:30 p.m.**

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

Join volunteer naturalists to explore the many ways that wild animals survive winter. At this indoor program, we'll learn about animals that hibernate, migrate, and are active during winter. We will also have hands-on wildlife resources and look for signs of wildlife in winter, including tracks, scat, nests, and more. This program is for elementary-age children accompanied by an adult. Younger siblings are welcome.

## WINTER HERITAGE DAY AT THE WALKER RANCH HOMESTEAD

**Sunday, January 24, 1-3 p.m.**

**Walker Ranch Homestead; 8999 Flagstaff Road, approximately 7 miles west of Boulder on Flagstaff Road**

Pioneer settlers had a lot to do preparing for and surviving Colorado's long winters. Learn about typical winter chores when you explore the Walker Ranch Homestead. You'll see a working demonstration in the blacksmith shop and smell food being prepared on the wood stove. Be prepared for cold, windy weather, and to walk in snow. Please note: Dogs are not permitted at the site.

For more information, contact Sheryl Kippen at [kippen@bouldercounty.org](mailto:kippen@bouldercounty.org) or 303-776-8848.







## High Country Winter Ecology Hike

**Saturday, January 23, 10 a.m.-noon**

**Mud Lake Open Space; 2 miles north of Nederland on County Road 126; meet at parking lot kiosk**

Snow is an amazing substance! Join volunteer naturalists on a winter hike to explore the many properties of snow, and learn how plants and animals have adapted to life in the cold. Ski poles or hiking poles are recommended due to possible icy trail conditions.

## Signs of Life—Wildlife in Winter Hike

**Saturday, February 6, 10 a.m.-12:30 p.m.**

**Caribou Ranch Open Space; 2 miles north of Nederland on County Road 126; meet at parking lot kiosk**

Join volunteer naturalists for a hike in the high country to look for signs of wildlife activity, including tracks, scat, feathers, fur, and browse marks on trees. We will also learn about the ways that wildlife survives winter in the Rocky Mountains. Ski poles or hiking poles are recommended due to possible icy trail conditions.



## Trickster Tales

**Sunday, February 14, 10 a.m.-noon**

**Carolyn Holmberg Preserve at Rock Creek Farm; Stearns Lake Trailhead, South 104th Street, ½ mile south of Dillon Road, Louisville**

Coyotes live throughout most of North America and coyote tales are found in many native cultures. Join volunteer naturalists for a moderate 2-mile hike to learn more about this clever, adaptable character.

## The Crusty Rocks of Rabbit Mountain

**Saturday, February 20, 9:30 a.m.-noon**

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

Join volunteer naturalists Megan Bowes, Roger Myers, and Linda Boley for a moderate 2-mile hike to discover the geology and lichens of Rabbit Mountain. We'll learn about the unique location and orientation of the rock layers, as well as what lichens are made of and how the sandstone and other erosion-resistant rocks support their growth.

## JUNIOR RANGER ADVENTURES

**Saturday, February 27, 11 a.m.-1 p.m.**

**Mud Lake Open Space Park, 2034 County Road 126, Nederland, Colorado; 2 miles north of Nederland off of the Peak to Peak Highway**

Calling all snow-loving kids! Blizzards, snow drifts, frozen lakes and icy trails are all part of the wintertime outdoor experience. Boulder County Parks and Open Space rangers want to help you be safe and prepared for all the adventures the cold weather can bring. Your winter adventure day will include ice safety, building a snow shelter, and learning winter survival skills. After you complete the outdoor challenges, you will receive the title of Junior Ranger and enjoy s'mores over a warm campfire! Junior Ranger Adventures is perfect for kids aged 6 - 12, but all family members are welcome. A parent or guardian must be present.

Online pre-registration is required at [www.bouldercountyopenspace.org/register](http://www.bouldercountyopenspace.org/register).

If you have questions, contact Ranger Erin Hartnett at [ehartnett@bouldercounty.org](mailto:ehartnett@bouldercounty.org) or 720-352-7041.



## BEFORE YOU GO - BE PREPARED

All ages are welcome unless otherwise noted. Be prepared for winter temperatures. Dress in layers, wear hiking boots/shoe and hat! Bring drinking water and sunscreen.



## 2016 ARTIST-IN-RESIDENCE PROGRAM ONLINE APPLICATION IS OPEN

The Boulder County Parks and Open Space Department is accepting applications for the 2016 Artist-in-Residence Program at Caribou Ranch Open Space. The program provides an opportunity for artists to pursue their work in the inspiring landscape and history of Caribou Ranch. Musicians, painters, illustrators, photographers, visual/film artists, sculptors, performers, poets, writers, composers and crafts/artisans are all welcome to apply.

The property offers a variety of landscapes to explore including streams, waterfalls, forests, and beautiful vistas. Moose, elk, black bears, beavers, bats and nearly 90 species of birds live within or pass through the area. Also found on the property is the Blue Bird Mine complex. **The application deadline is February 15, 2016.** For more information and an online application, visit the department's webpage at [www.BoulderCountyOpenSpace.org](http://www.BoulderCountyOpenSpace.org) or contact Pascale Fried at 303-678-6201.

## Winter Hours

### AGRICULTURAL HERITAGE CENTER

8348 Ute Highway 66 west of Longmont  
Open from 10 a.m.-5 p.m. the first  
Saturday of each month November  
through March

Come to the farm and learn about the rich agricultural history of Boulder County.

**The farm includes:** two barns with interactive exhibits, a milk house, blacksmith shop, and a furnished 1909 farmhouse.

Contact Jim Drew at 303-776-8688 or [jdrew@bouldercounty.org](mailto:jdrew@bouldercounty.org) for more information.



Boulder County Parks and Open Space



Fly Agaric at Hall Valley Ranch

2016 Calendar

## 2016 CALENDARS NOW AVAILABLE

Get them while supplies last!

These first-rate calendars feature 14 beautiful photos highlighting some of Boulder County's most significant natural and historical areas.

Each calendar comes in a 4.75" x 5.5" standing CD display case. They make memorable holiday and birthday gifts for your family, teachers and coaches, friends, coworkers, and neighbors.

### To purchase, visit:

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

You must pay for your order when you place your PayPal order. If you don't have a PayPal account, you may pay using a PayPal guest account.

### There are two ordering options:

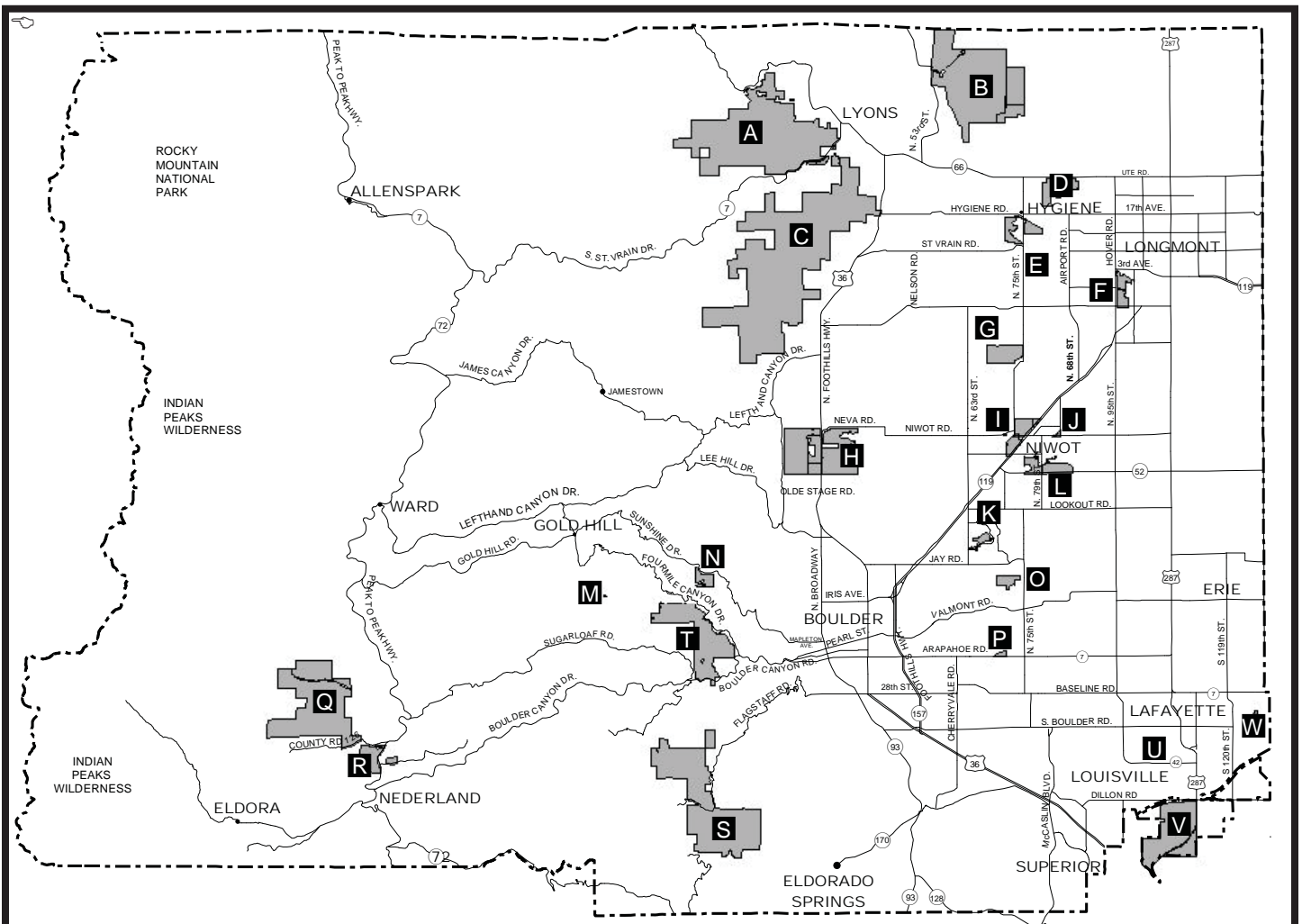
- Pay and Ship - \$4.00 per calendar: Purchase your calendars online and specify where they should be mailed. Calendars are mailed in a padded mailer using U.S. Postal Service
- Pay and Pick Up - \$2.00 per calendar: Purchase your calendars online and pick up your calendar at the Parks and Open Space office in Longmont.



PARKS & OPEN SPACE DEPARTMENT  
5201 St. Vrain Road  
Longmont, CO 80503  
303-678-6200

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

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| A. Hall Ranch  | I. Dodd Lake                              | Q. Caribou Ranch                                   |
| B. Rabbit Mountain                                       | J. Lefthand Valley Grange                 | R. Mud Lake  |
| C. Heil Valley Ranch                                     | K. Twin Lakes                             | S. Walker Ranch                                    |
| D. Agricultural Heritage Center<br>at Lohr/McIntosh Farm | L. Niwot Trail System                     | T. Betasso Preserve                                |
| E. Pella Crossing (closed)                               | M. James F. Bailey Assay Museum<br>Office | U. Coal Creek Trail                                |
| F. Boulder County Fairgrounds                            | N. Bald Mountain Scenic Area              | V. Carolyn Holmberg Preserve<br>at Rock Creek Farm |
| G. Lagerman Reservoir                                    | O. Walden Ponds Wildlife Habitat          | W. Flagg Park                                      |
| H. Beech Open Space                                      | P. Legion Park                            |  |