

BOULDER COUNTY PARKS AND OPEN SPACE

images

news properties nature history events

Fall 2014



Images

volume 36, number 3

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: Volunteers demonstrate historical games during Heritage Day at Walker Ranch Homestead.

PHOTOGRAPHS & ILLUSTRATIONS

Volunteer photos Sally Wier and Elizabeth Etzel
Orchard photos Jennifer Kemp
Golden eagle Joe Kelly
Tree lichen Pascale Fried
Rock lichen Geoff Goss
Kids with camera Mary Olson
Cottonwood Marsh Maggie Hasemen
Butterfly training Maggie Hasemen
Aspen leaves Michael Bauer
Moose Bonnie Sheppard
Great horned owl Lisa Manners
Wild turkeys Michael Bauer

NATURE DETECTIVES

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DISCOVER BOULDER COUNTY

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A Day in the Life

of Volunteer Debris Removal Teams

Volunteers Continue Work on Flood Cleanup Efforts

As we near the anniversary of the September 2013 Flood, volunteers continue to help restore Boulder County open space properties.

The strength of the Boulder County community was obvious in the volunteer response we received on flood projects. In 2013, 28 flood debris removal projects and restoration projects took place where 709 volunteers worked for a combined total of 3,030 flood clean-up hours. People came out to support their neighbors—from the animals whose habitat was washed away, to the farmers whose livelihood was threatened and the recreation enthusiasts whose parks were destroyed.

So far this year we have sponsored over 30 flood cleanup projects and the department anticipates continuing into 2015.

Among the 2014 projects, we had a two-day project at Western Mobile property in the Hygiene area. More than 100 volunteers removed flood debris along the St. Vrain where the river first breached. As volunteers who worked at this location can tell you, the flood changed this area into a vast wasteland of sand and rocks covered with trash, as well as pieces of people's lives. Torn up teddy bears, tires, and even a couch were found, hauled, and piled up by volunteers. This project was giant—spread over several acres, and truly could not have been completed without volunteers. Now this site can return to the peaceful riparian meadow it once was. Thank you volunteers!

by Elizabeth Etzel, a seasonal employee hired to lead volunteer projects



Top photo: The author (on the left) speaks with an Americacorps NCCC FEMA Corps member about flood debris removal at Pella Crossing.

Below: Volunteers help load up debris at the Western Mobile property near Hygiene.

Quaking Aspen: Flaming Forests of Fall

by Sally Wier



An aspen grove on the Reynolds Ranch property

Forests shimmer. Leaves tremble. Branches quiver. Aspens dance. A crisp breeze courses through the forest and the sound of delicate leaves softly tapping upon one another fills the air. These are the relaxing rustlings of golden trees during a Rocky Mountain autumn. In the last weeks of September, vibrant islands of colored aspens appear in the seas of evergreen forests. Visually striking, aspens are distinctive among Rocky Mountain tree species, not only aesthetically, but ecologically too. They add bright and beautiful texture to forests that are ever in flux.

The Latin word for quaking aspen, *Populus tremuloides*, means “trembling poplar.” It is recognized as one of the most widespread native tree species in all of North America. Typically growing at elevations between 7,000 and 11,000 feet, aspens are the only broadleaf tree found in mountain forests that can grow without an immediate water source such as a stream. Though they often grow in moist sites, aspens offer the only quavering and seasonally-colored leaves amidst evergreen, needle-bearing forests of pine, spruce and fir.

Designed to Shake

The tremble, shimmer, and quake of aspen leaves are the product of how the leaves are structured. The petiole, the stalk which attaches a leaf blade to its stem, is flat on aspen leaves, allowing the petiole to act as a pivot on which the leaves can easily move, in response to even the mildest breeze.

Aspens are also distinctive due to their soft, smooth and suede-like bark. This soft bark is quite sensitive; even the smallest scrape can cause the tree to produce prominent black scars. When the bark is left alone however, it plays an important role in the survival of the tree. Like most deciduous trees, aspens produce energy through the process of photosynthesis which occurs in their leaves. But come winter time when the leaves have fallen to the ground, aspen trees keep producing fuel. Their bark, in addition to their leaves, is capable of photosynthesizing to make the sugars they need to survive. In fact, how these trees deal seasonally with photosynthesis is a large part of what gives them so much notoriety. As winter draws ever closer and less favorable growing conditions arrive, photosynthetic activities in leaves decline and chlorophyll (which gives leaves their green color) stops being produced by the trees. With no more green pigment being produced, underlying yellow pigments are revealed and the glistening gold of the Rockies appears.

One Root System—47,000 Trunks

The intense colors of autumn aspens capture our attention partly because the trees grow together in large groves. Aspens spread and reproduce largely through root suckering as opposed to spreading seeds. As a result, entire groves of aspens are often one large organism. An entire mountain hillside of aspens may contain no more than a few individual plants. In the Wasatch Mountains of Utah, one aspen clone covers 106 acres, weighs close to 6,000 tons and has around 47,000 trunks all originating from one root system!

As aspens establish themselves in an area, they give back to the earth which supports them. When the leaves turn golden in the autumn, they soon fall to the ground where they decompose and improve the quality of the soil. Over time, the presence of these trees prepares the land for the establishment of spruces, pine and firs. In the autumn air, as hillsides of umber flutter and quake, the soft tapping of aspen leaves speaks not only of the end of a season, but of renewal to come.

Related Program

Quaking Aspen Hike

Saturday, October 4; 10 a.m.-noon

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

Join volunteer naturalists on an easy 1.5 mile hike to learn about aspen—the most widely distributed tree in North America. Along the way, we'll discuss the natural history of aspen, including its importance to wildlife, varied uses, response to fire, and threats to its health. We'll also keep an eye out for signs of wildlife.

Golden Eagles Among Us

by Jake Gatton



A golden eagle nest near Lyons

While in the midst of a joyride through the foothills, have you ever caught yourself craning your neck, trying to prolong the view of a majestic bird of prey that your car is quickly passing by? Whether in graceful flight, or stoically perched on an old wooden telephone pole, our attention is often diverted from the road by the sight of these beautiful birds. Just know that you are not alone if you find yourself succumbing to this happenstance. Also know that what you may have spotted is a golden eagle. If what you happen to spy is a raptor displaying dark brown plumage that transitions into a golden color towards the back of the head and neck, complemented with some grey on the tail and inner-wing, then you have the privilege of witnessing a mature golden eagle. Another easy tell of a golden eagle is if the legs are feathered all the way to the toes—an uncommon characteristic in birds of prey of North America.

Golden eagles average about two and a half feet in length, have an average weight of 10 pounds, and yield an impressive wingspan that can reach up to seven feet. Even though a golden eagle's size allows for taking down larger animals such as deer and domestic livestock, golden eagles tend to prey on smaller mammals including prairie dogs and rabbits. Golden eagles are not above grabbing an easy meal, and sometimes feed on dead animals. And unfortunately for other birds, golden eagles don't always play nice, as they have been observed stealing food and robbing nests.

Catching a Glimpse

Your chances of seeing an untethered golden eagle are much greater if you happen to live in the western part of North America. Their preferred terrains include canyonlands and bluffs, and they also favor a more open landscape, as opposed to continuous stretches of forest. The migration of these birds is contingent on

their location. Eagles that live north of the Canadian border are much more likely to fly south during the fall than their counterparts that live in the western United States. Since golden eagles are exceptional hunters, it's unnecessary for them to migrate substantial distances in search of food during the winter.

Human-sized Nests

In following the Boulder County spirit of not being wasteful, golden eagles tend to reuse the same nest for several years. On the subject of nests, golden eagles typically commence with construction a few months before egg-laying. The nests they build are quite sizeable. A six-foot tall person lying down could be concealed by its two-foot high wall. The nests are preferably formed on cliffs, but occasionally will be found in trees if an adequate precipice is not available. The construction of these massive nests is undertaken by the mating pair, and the nest better be up to par to save future headaches, because a mating pair will often stay together for life.

A female golden eagle will lay one to three eggs a year, and only one or two of those young typically survive. Males bring food to the female while she incubates the eggs for an average of 43 days, and depending on how helpful the male is, he will also participate in keeping the eggs warm. Even though both parents may not share in the incubation process, both parents do contribute to the raising of their young. And if no accidents or tragedies befall them, the young golden eagles should live a full life of 15 to 20 years.

Golden eagles nest in good numbers in the foothills and montane life zones of Boulder County. Eight young fledged in 2014. It looks like we will be able to continue watching these majestic birds for quite a long time!

Research on Boulder County's Open Space

The Boulder County Parks and Open Space Department accepts proposals for research on county open space lands each year. All proposals are reviewed by a team of resource specialists, and awarded research projects are monitored during their activities on open space. The following is a summary of a 2013 study conducted by Christopher R. Halcsik at Beloit College. His project investigated late Pleistocene and Anthropocene flood deposits along North Boulder and Caribou Creek, Colorado Front Range.

Abstract:

The Lake Devlin flood occurred 14 ka following the Pinedale last glacial maximum after the moraine damming Lake Devlin failed. The flood eroded a channel through the moraine as deep as 35 m and as wide as 130 m and deposited the eroded materials near the confluence of North Boulder Creek and Caribou Creek. Another, smaller flood occurred at the same location as the Lake Devlin flood, following the failure of a man-made earthen dam in the early 20th century. This later flood is referred to as the Caribou Creek flood. These floods had long lasting, morphological impacts on the landscape of North Boulder Creek Valley, as evidenced by the vast flood deposits found near the confluence of Caribou Creek and North Boulder Creek.

The magnitude of the morphological impact brought about by each flood is inferred by mapping the extent of the flood deposits and estimating the peak discharge of each flood. Lake Devlin flood deposits are located in a fan-shaped deposit near the dam failure, and on North Boulder Creek and Caribou Creek flood plains and terraces, where they commonly are intermingled with Caribou Creek flood deposits. The Lake Devlin flood also eroded valley tills down North Boulder Creek from the fan-shaped deposit, further altering North Boulder Creek Valley. The Caribou Creek flood deposits are more contained than the Lake Devlin flood deposits, only appearing on flood plains and terraces slightly above current river stage along Caribou Creek and North Boulder Creek.

Two different methods were utilized to measure channel width for the Lake Devlin flood in order to estimate an upper and lower limit peak discharge. The resulting upper and lower limits for the Lake Devlin flood are 2900 m³/s and 1100 m³/s, respectively. Only one method for measuring width is necessary to estimate the Caribou Creek flood peak discharge. The peak discharge for the Caribou Creek flood is 180 m³/s.

Conclusions:

This study has used relative dating methods, landforms, and grain size distributions to map the geologic deposits around the confluence of North Boulder Creek and Caribou Creek and has identified the Lake Devlin flood deposits, the Caribou Creek flood deposits, and other deposits that were affected by one or both of the floods. Additionally, this study has shown how the peak discharge of the Lake Devlin and Caribou Creek floods can be estimated using field measurements of particles transported during the flood and GIS analysis with high-resolution LIDAR digital elevation models.

Mapping of deposits further down North Boulder Creek is necessary before the true extent of the Lake Devlin and Caribou Creek flood deposits can be determined, but evidence from the Lawn Lake flood suggests that damming materials are likely located in close proximity to the fan. Following this logic, any Lake Devlin flood deposits found further downstream than the mapped area would have to be materials eroded from the valley till, and not from the failed moraine. However, considering the difference in peak discharges for the Lawn Lake and Lake Devlin floods, the Lawn Lake flood should not be used as an analog for Lake Devlin flood deposit extent. Investigating soil profiles developing in the till upstream from the Lake Devlin flood deposits could provide a description of a paleosol to look for in eroded till exposures. If such a paleosol does exist in the eroded till, the overlying soil profile could be used to better describe the eroded till deposits, their origin and how they compare with young soils developing on the Lake Devlin flood deposits. Additionally, these paleosols would provide a way to measure flood deposit depth at various locations.

Interpolating between recorded depths gives the mapped deposits a third dimension, from which the volume of the flood deposits can be calculated. Discharge estimates can be enhanced by better estimating width from field observations of high water marks or determining the channel bottom based on field evidence. First, investigating the failure channel in the field for evidence of a high water mark from which to measure channel width from would provide the ideal width to use when estimating peak discharge. The high water mark will more accurately represent the maximum possible width than the first method used to determine width. The second way the width estimate can be enhanced would be to account for incision by confirming cut terraces as channel bottoms or using an average incision rate for steep, alpine channels to estimate the channel bed at the time of the flood.

Visit www.BoulderCountyOpenSpace.org/research to read the full report and other research articles.

Experimental Tree Farm Bears Fruit

by Jennifer Kemp

When one thinks of fruit production and Colorado, the orchards of the Western Slope quickly come to mind. It is easy to forget, and little evidence remains, of the massive orchards that once operated along the Front Range during the first half of the 20th century. During the 1940s and 1950s, over 10,000 acres around the Loveland area were planted in cherry trees, and many other farms in the region had small orchards that grew apples, peaches, plums and pears. This thriving fruit industry eventually faded when fruits from more climate-stable Midwestern states could be shipped quickly and cheaply in refrigerated trucks across the country and development pressures made land along the Front Range more valuable than fruit.

Learning What Grows Best

Consideration of this fruit-rich history led David Bell, Agriculture Division Manager at Boulder County Parks and Open Space (BCPOS), and Joel Reich, former CSU Extension Agent, to question why more fruit isn't grown in the region now. What they determined was that many people tend to think that fruit can't be grown here. The desire to disprove this theory led to the formation of the Peck Demonstration Fruit Tree Orchard. It is a public-private collaboration between BCPOS, which could provide land for the fruit orchard, CSU Extension, which could provide technical expertise for growing fruit trees, and Mark Guttridge of Ollin Farms, the ag tenant at Peck, who could care for and maintain the trees and eventually sell the fruit to customers to get feedback on the different varieties planted. The goal of the project is to determine what types of trees do well in a climate that can face severe droughts, extreme fluctuating winter temperatures, late spring frosts and increasing temperatures caused by climate change, and to share this information with the public.

"We are trying to take away some of the risks in decision-making for Front Range farmers," explains Bell. "It can take two to three years after planting for a tree to bear fruit, and in the last 30 years, a number of new varieties of fruit trees have been bred that may be well-suited to our area."

The Experiment

Approximately 275 trees were planted on the property in 2012, including various varieties of cherries, pears, plums, peaches, apples and hazelnuts. Fruit tree varieties that may be genetically well-adapted for the region, in particular those that bloom later in the spring thus avoiding late-season frosts, were selected. Consideration was also given to the type of rootstock upon which fruit-bearing branches were grafted. All of the rootstock selected was of a dwarf variety that will not let the trees get taller than eight to 10 feet high. This will make maintenance and harvest easier for both commercial farmers and backyard enthu-



A cooperative effort between several agencies aims to learn what trees do well in the often volatile Front Range climate. Farmers can use this information to make decisions on what varieties of fruit trees will grow well for them.

siasts. The rootstock was also selected to do well in heavy clay soils and be more resistant to certain diseases such as fire blight.

On a recent tour of the orchard with Deryn Davidson, the new CSU Extension Agent for Horticulture in Boulder County, some trees were heavy with bright red apples that were close to being ripe, while other trees had no fruit at all, the result of a late May frost. Fire blight, a bacterial disease that can cause dead branches and kill entire trees, had made a small impact on some of the trees, but overall the orchard looked quite healthy. Whether enough apples will be produced to make it to market this year remains to be seen.

"By doing this, we can learn what varieties do well and are most productive," said Davidson. "And then we can get feedback from the consumer about which varieties taste best. It is a great project!"

Learning to Like Lichens

by Kate Nelson

On a recent hike, my three-year-old daughter stopped and pointed to a boulder. “What’s that yucky stuff?” She was pointing to a large, light green patch of lichen. How do you explain lichens to a three-year-old? I wanted her to realize that they are not yucky at all, but actually a very interesting, common and overlooked organism in our mountain environment. Her question also made me start to wonder if there was more to that little lichen than meets the eye.

I could explain the basics. Lichens are actually fungi and algae living together. The fungus provides the structure and shelter, and the algae make their own food through photosynthesis. Both organisms benefit from this arrangement; it is a symbiotic relationship. “They live together,” I tell my daughter, “like room-mates. The fungus is the house and the algae make the food.”

Colorful, Adaptable and . . . Edible?

Lichens grow all over the world and can be spotted on rocks, trees, stone buildings, fallen logs and the ground. In the tropics, there are more species of lichens than of flowering plants. Some lichens are flat and crusty-looking, others look like little shrubs and still others are more like powdery patches. They also grow in a rainbow of colors, from the light green my daughter and I saw, to blue and bright yellow. Growing only one centimeter or less each year, lichens can live to be 3,000 years old and may maintain their form for up to 10,000 years.

Most of us have passed by hundreds of lichens on hikes in the woods without giving them much thought, but it turns out that these unassuming life forms are quite useful. Did you know that almost all of the 20,000 species of lichens are edible? The

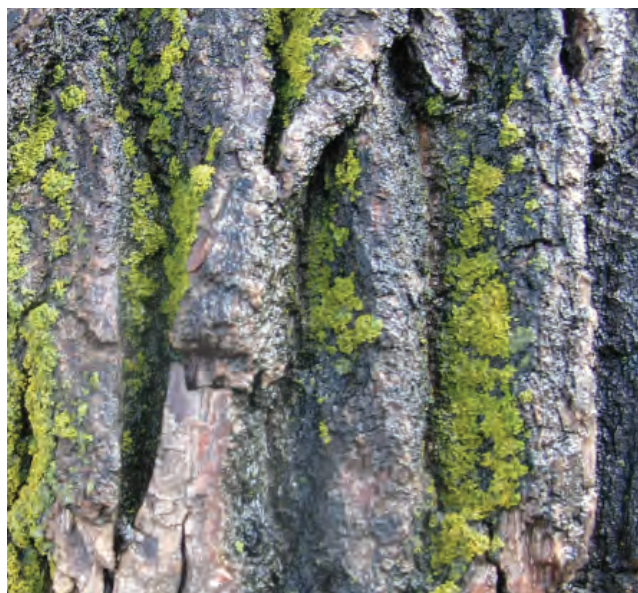
Swedes started making alcohol from them in the 1800s, and lichen brandy was a popular libation. The Russians used lichens to make molasses. That said, lichen has to be carefully prepared in order to be edible, and snacking on it straight off of a boulder is not recommended! (Unless you are a reindeer, in which case lichen is your main winter food.)

Here are a few other fun lichen facts: it is very flammable and can be used as kindling in a survival pinch; many bird species use lichen in their nests; and some types of lichen have antibiotic and antiseptic properties. Because lichens can colonize bare rock and are often the first species to establish on newly exposed surfaces, scientists use them to estimate when glaciers receded from an area. In 2005, two lichen samples were actually rocketed to space and survived a 15-day test exposed to the elements.

Environmental Measure

Since lichens are so slow-growing, and stick around for thousands of years, they play a role in air pollution science. Lichens are “air pollution sinks” and have also been used by scientists to detect metal contamination and show the depletion of ozone.

I didn’t know all this when my daughter pointed to the “yucky” lichen on our hike. You can be sure that on our *next* hike, I will be paying an awful lot more attention to the lichens along the way, and we will be budding lichenologists by the end. If you are feeling the same, consider making lichen identification a hobby. Grab a magnifying glass and a field guide (*A Rocky Mountain Lichen Primer* is available at public libraries), and hit the trails.



At a Crossroads: Kids, Technology and Nature

by Zachary Goodwin

The current generation of kids seems more technology-driven than any generation prior, and appear at times glued to their televisions, smartphones, iPods, laptops, and/or tablet computers. According to a recent Kaiser Family Foundation study, eight to 18-year-olds spend on average 49 minutes per day on their mobile devices playing games, listening to music and watching TV. To boot, they spend, on average, one hour and 35 minutes sending and receiving text messages. These numbers give the impression that youth are missing what is happening around them in the natural world, but fortunately for us, all is not lost! There are many ways we can effectively utilize mobile technology to supplement outdoor experiences.

Aliens, Planets and Missions

App developers have worked tirelessly over the past few years to produce user-friendly, informative applications that bring technology into the world of our parks. For example, the app “Plum’s Photo Hunt” is designed to engage kids in an interactive story that incorporates many real-world elements. The game follows Plum, an alien from the Planet Blorb, who sends kids on outdoor missions to photograph things like weather, plants, animals, and bugs. This is a great way to get youngsters motivated to go explore the world around them with a fictional story to supplement their experience. Another fun app that appeals to the whole family is “Project Noah.” The mission, as stated on projectnoah.org, is “... to explore and document wild-life and [provide] a platform to harness the power of citizen scientists everywhere.” You can also join missions to help a specific cause or ecological region of the world, such as Rocky Mountain Wildlife Watch. To contribute to this mission, Project Noah asks that you photograph plant and animal life from the highest mountain peaks to the lowest river valleys. This helps wildlife biologists, plant ecologists, and other specialized disciplines monitor natural resources through all of our help. The activity is a great way to introduce the idea(s) of scientific inquiry to the younger generation.

Useful for All Ages

Technology-driven environmental education can bring about positive outcome. The applications mentioned above are just a few of the ways technology can work in tandem with the great outdoors to educate and inform our younger generation. With that said, it is not uncommon to see people of all ages on their devices, sharing their endeavors and journeys with others via social media. On various travel web pages, there are sections where individuals can post trail condition reports and inquiring

minds can research up-to-date information regarding a planned outing. Some websites even go so far as to post cell coverage information. For example, if you are planning a backpacking trip this weekend, you can research how the trail looks, where muddy sections may exist, a fairly accurate (by Colorado standards) weather report, and if you will have cell phone coverage based on your service provider! It seems that no end exists to the possibilities technology can provide.

Screen Time and “Green” Time

The question is: in an age ripe with technology, is there any place for good old-fashioned aimless wandering? The kind of day where you pack a lunch, leave technology at home and maybe bring a bird/scat/flower field guide to supplement the experience. Of course there is! Seeing something for the first time in the great outdoors without prior knowledge of its existence is rare these days and an experience that should be cherished. The old saying “everything in moderation” applies to nutritional choices, exercise regimens, television time and now in the last 10 years, mobile phone usage. Just as kids have time designated as “screen time,” we can all, adults included, use a little unobstructed green time. The famed naturalist, forester and environmental activist John Muir once said “The mountains are calling and I must go,” and I could not agree more.



Kids use all sorts of technology while enjoying the outdoors in any setting—from an open space park to their own street.

NATURE DETECTIVES

Fall 2014



The Truth About Wild Turkeys

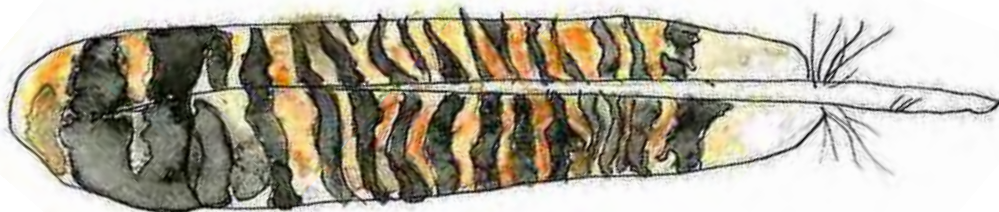
The first funny thing you may have learned about turkeys is that you can draw one by tracing around your hand placed palm down on a piece of paper. You probably added a beak and stick legs and maybe a wing. To be honest, that drawing doesn't look much like a wild turkey.

Like that handprint turkey, some information about wild turkeys has little to do with reality. Misinformation spreads when facts about farm turkeys are thought to be facts about wild turkeys.

Farm turkeys and wild turkeys are the same species, but over hundreds of years they have become very different. Generations of farmers selected turkeys for their meatiness, not their survival abilities. Farmers pick only certain turkeys to have chicks; the especially meaty ones are likely to produce meaty offspring. In the wild, turkeys with the best survival traits live long enough to have chicks. These chicks inherit wily instincts and a robust, lean body type.

Survival of the Fittest: a comparison between wild and farmed

Wild Turkeys	Farm Turkeys
Strong survival instincts	Clueless about survival
Excellent wilderness skills	Die quickly in the wild
Lean body for a fast, flying take-off	Too heavy to fly
Legs well-built for walking and running	Legs built to support big body
Woodsy-colored feathers for camouflage	White feathers on most



Turkeys Here, There and Back Again

Wild turkeys are found only in North America, and they've been here a really long time. Fossil evidence shows their existence in North America for at least 5 million years. Hundreds of years ago, tribes living in pueblos and cliff dwellings kept turkeys. Early European explorers took some of these birds home to their country's farmers. When the first European colonists came to live in America, they brought back some farm-raised turkeys on the boats with them.



Americans continued to hunt wild turkeys also. Unlimited hunting plus clearing the land of vegetation to make farms and towns soon made wild turkeys scarce. By the 1930's people wanted to bring back wild turkeys to habitats where they'd disappeared. It took twenty years of trying to figure out how, but they finally succeeded.

Habitat for Turkeys



Turkeys need habitats with high, safe places for roosting at night, and open areas for finding food. They need shrubby areas for nesting. Boulder County foothills provide great turkey habitat. Turkeys roost in ponderosa pines that border meadows or open fields and in cottonwoods along streams. They will travel up to five miles a day to find safe roosts and good feeding areas. Water from a little spring or creek nearby makes it perfect.

Watch for turkeys feeding on the ground in early morning or late evening in a meadow or by a dirt road or trail near tall trees. Walker Ranch, Heil Valley Ranch and Hall Ranch are good turkey spotting locations.

Stalking Turkeys

It is fun for hikers to see turkeys, but for predators hunting for dinner it is serious business. Mountain lions, coyotes, bobcats, golden eagles and owls will tackle adult turkeys. Raccoons, skunks, foxes, opossums, bull snakes and large birds will snatch unguarded eggs and straying chicks.

Tough Turkey Defenses

Tasty wild turkeys need good defenses from predators. It helps to have terrific eyesight for spotting danger. With eyes on the sides of their heads, turkeys can see almost completely behind as well as forward. Keen hearing helps them survive too. They will run, but they can also suddenly rocket straight up into the air. With quick wing beats they reach 35 mph in just a few seconds. They've been clocked at 50 mph for a short distance. They can also kick their feet to swim, their wings tucked against their bodies and their tails spread wide.



Turkey Day

Turkeys stir in their high roosts at sun-up. The males (toms) gobble and the females (hens) make softer sounds. Soon they glide down and walk to a good feeding place.

Unless the toms are looking for mates, the males flock together. The females without chicks are in another flock and the hens with chicks in yet another flock. The juvenile males also hang out together in their own flock. The birds spend a lot of time vocalizing to keep together. Birds in each flock squabble with each other to determine who's top bird in the flock and the pecking order for all the rest. In winter flocks may combine.

Mid-day they rest or take dust baths or hens may tend nests. Afternoons they slowly walk around feeding again. As the sun sets, they fly back to their roosts and pick a good spot to spend the night.

As they walk, they scratch and peck at tidbits on the ground and on plants. They look for tasty leaves, fruits, seeds and nuts and a few insects. During harsh, cold and snowy periods in winter, turkeys may stay in their roosts. They can survive two weeks without food. Turkeys live about three years on average.



Babies Grow Up Fast



In spring tom turkeys strut through the female flocks, gobbling loudly. Gobblers can be heard a mile away. As the four-foot-tall toms parade around, their shiny metallic-looking brown feathers reflect blue, purple and bronze. They fan their tails made of long feathers tipped in creamy white. Their bald heads blush red. Each hen chooses the tom to father her chicks, but she is on her own raising them.

Hens have sparse, short feathers on their bluish-gray heads and are half the size of males. Dull brown feathers help camouflage hens when they are sitting on the nest. Creamy feather tips on their fronts look lighter than the dark feathers of the toms.

Nests are scrapes on the ground, hidden under shrubbery.

The hen lays an egg every day for 10 to 12 days. Starting when all the eggs are in the nest, the hen sits on them for a month until they hatch. The hen calls her day-old chicks to follow her. They abandon the nest and scurry after her, pecking at everything they see but eating mostly insects.

After a month, chicks have enough feathers to fly up to the safety of the roost.

By fall they are mostly grown.



Colorful Tom Turkey

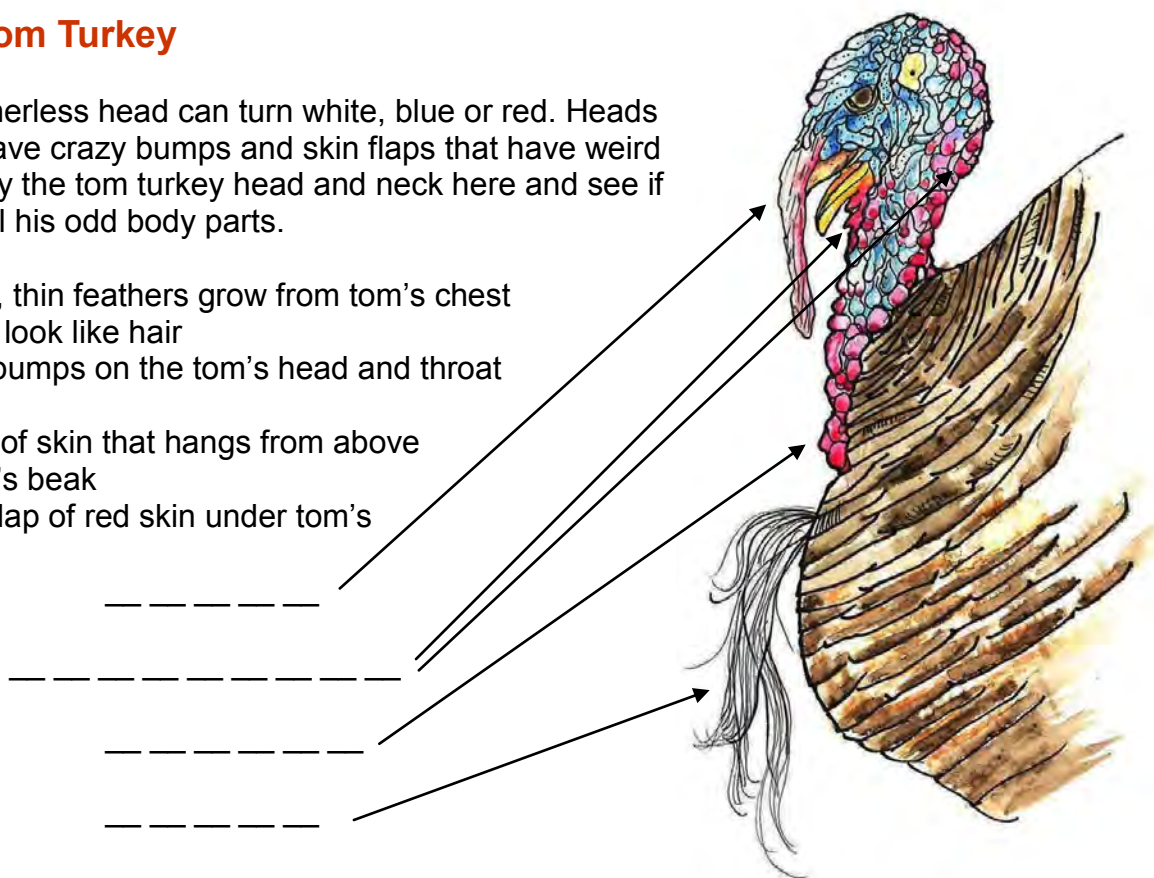
A tom's featherless head can turn white, blue or red. Heads and necks have crazy bumps and skin flaps that have weird names. Study the tom turkey head and neck here and see if you can label his odd body parts.

beard – long, thin feathers grow from tom's chest and look like hair

caruncles – bumps on the tom's head and throat

snood – flap of skin that hangs from above tom's beak

wattle – big flap of red skin under tom's chin



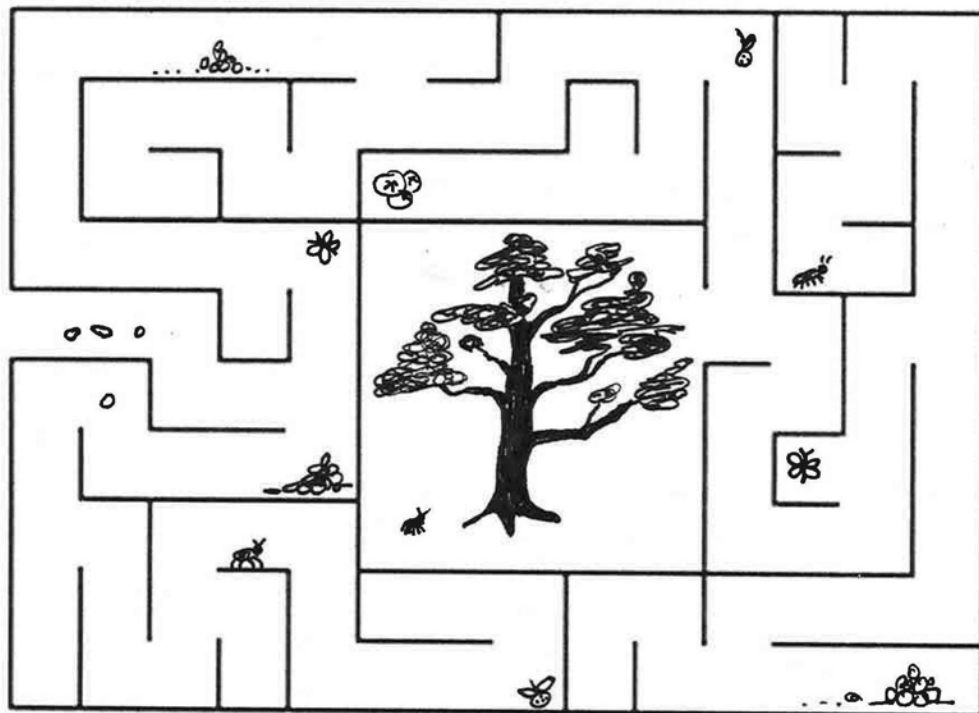
Turkey Maze

Can you color this tom turkey and help him find his way to the roost?

Of course, he will need to eat along the way.



Look on **page 13** for information on a **program** about our **wild turkeys**.



Bringing Back Walden Ponds

by Jesse Rounds

Walden Ponds Wildlife Habitat was severely damaged during the September 2013 flood event. Damage was extensive and impacted visitor facilities as well as water infrastructure. The Boulder County Parks and Open Space Department (BCPOS) has developed the following proposal for recovery at the open space to bring it back to an enjoyable place for walking, birding, fishing and watching wildlife.

Trails

Trail damage at Walden Ponds and on the Heatherwood Trail was extensive. More than 5,000 feet of trail needs to be repaired, from replacing lost crusher fines to rebuilding the bank of Boulder Creek and installing a completely new trail bed.

Pond Breaches

The flood waters created two breaches between ponds. Based on post-flood damage assessment, it seems that both banks were over-topped by water and then eroded until failure. The furthest west breach, from Bass Pond into Cottonwood Marsh, is about 90-feet wide while the breach from Cottonwood into Wally Toeys is 30-feet wide.

The two breaches impact trails, as well as water control and fisheries management. The trail system is extremely popular and our goal is to restore access to the park, where permitted in the Walden Ponds Management Plan. The breach also impacted

the movement of water between ponds which allowed staff to maintain fisheries and wildlife habitat. In the past, the department used a series of structures between ponds to regulate water depth. The separations between the ponds allowed us to stock Wally Toeys Pond for recreational fishing while keeping Cottonwood Marsh as wildlife habitat. Any restoration plan will need to address all of these services provided by the banks and water structures.

The breach between Cottonwood and Wally Toeys is small, but at an awkward location right at the northern edge of both ponds. The trail at this location provides a flat surface for fishing access to Wally Toeys. Future work will need to regulate water depth and block fish from moving between the ponds. Keeping in mind all these requirements, recreation and facilities staff propose a bridge across the breach with a concrete structure that could act as a spillway and an impediment to fish movement.

The second breach, between Bass Pond and Cottonwood Marsh, is large. The location and length of the bank on either side of the breach pose a different challenge. Beyond restoring trail access, the department wants to manage water movement without recreating a condition that would breach in a future flood. Department staff propose a sloped crossing made of either concrete or riprap and concrete that would lower the bank height but create an armored section that would be unlikely to fail in future flooding.

Next Steps

In concert with the Federal Emergency Management Agency (FEMA), Parks and Open Space has developed a plan to restore the trails at Walden Ponds Wildlife Habitat and the Heatherwood Trail. Repair work began this summer but it cannot be fully completed until the breaches are repaired.

The repair of the two breaches requires an additional process with FEMA. In order to change a damaged facility from pre-flood condition, we will need to prove that the change improves the facility and that the new facility will be less likely to be damaged in future flooding. This process will continue into 2015.



Top left: Damage to Bass Pond allows water to flow into Cottonwood Marsh.

Top right: Many trails were washed away in the flood. Several trails remain closed or are closed intermittently during reconstruction.

Below left: The fishing pier at Wally Toeys Pond.

Volunteer Naturalists—Sharing Nature

by Larry Colbenson

Boulder County enjoys a unique and spectacular setting along the Front Range of the Southern Rocky Mountains, rising over 9,000 feet in elevation from the western reaches of the Great Plains to the dizzying heights of 14,259-foot Longs Peak. The climatic and biological diversity reflected in our modestly-sized county (750 square miles) is analogous to a 2,500 mile journey from Boulder to Fairbanks, Alaska! Volunteer naturalists have played a significant role for almost 40 years in sharing their appreciation of this unique natural heritage with the community.

Volunteer Naturalist Program

The Volunteer Naturalist Program was created in 1975, when the Boulder County Parks and Open Space Department was founded. Over the years the program has grown from a handful of volunteers to over 100 naturalists, who present 250 to 300 natural history programs a year for children, families, seniors, and the public.

Volunteer naturalists lead nature hikes and indoor programs focusing on geology, wildlife, wildflowers, trees, birds, butterflies, and more.

The interpretive possibilities are so diverse in Boulder County that many volunteer naturalists continue to learn and volunteer for five, 10, 15, 20 years and longer. On a yearly basis, volunteer naturalists conduct about 80 percent of all natural history programs. The significant contributions made by volunteer naturalists is recognized by the department and reflected in one of the department's goals: To provide public outreach, partnerships and volunteer opportunities to increase awareness and appreciation of Boulder County's open space.

Time to Apply!

If you enjoy exploring and sharing the natural wonders of Boulder County with others, then you should consider becoming a volunteer naturalist.

We are now accepting applications for the 2015 volunteer naturalist training class. We are looking for people with a passion for nature, some knowledge of local natural history, and a strong desire to learn more and share their passion with others. This year, we are especially looking for people interested in sharing nature with children, both on the trail and in the schools. Volunteer naturalists lead interpretive nature hikes in county parks, present public natural history slide programs, and provide hands-on environmental field experiences for Boulder County schools.

Upcoming Volunteer Naturalist Training

A 10-week training program is required. Training will be held on consecutive Thursdays, January 8 through March 12, 2015, from 8:30 a.m.-4 p.m. each day. Participants must be at least 18 years old and attend all training sessions. Because many of our requested programs are scheduled Monday through Friday during daytime hours, applicants also must have some ongoing weekday availability. Following training, volunteer naturalists are asked to assist in planning and conducting six interpretive programs by the end of 2015.

To learn more or apply, visit BoulderCountyOpenSpace.org/volnat. For additional information, please contact Larry Colbenson at 303-678-6214 or lcolbenson@bouldercounty.org. The application deadline is Friday, November 21, 2014, or when the class is filled.



Above: A volunteer naturalist leads a program for first-graders.

Below: Volunteer naturalists attend an advanced training about butterflies.

Discover Boulder County *calendar of events*

Bears in our Backyard

Saturday, September 6; 10 a.m.-noon

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

As summer winds down, Boulder County's black bears are busy gorging on berries and other food in preparation for their long winter sleep. Join volunteer naturalists on a moderate one-mile hike to learn about the natural history of our local bruin and how people and bears can share our wild places.

Rattlesnake Hike

Saturday, September 13; 10 a.m.-noon

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

As fall approaches, rattlesnakes become more active as they prepare for hibernation. Join volunteer naturalists on a moderate 1.5-mile hike and learn about the western rattlesnake (*Crotalus viridis*), including habitat, ecology, behavior, and how to be safe in rattlesnake country.

Kids Gone Fishing



Saturday, September 13; 9 a.m.-noon

Sign up at: www.BoulderCountyOpenSpace.org/register

Kids Gone Fishing clinics are for children between the ages of 5 and 15 who have never fished or who want to learn more about fishing. Kids will go through stations to learn about casting, baiting a hook, and fish handling, and then get to practice their new skills.

Questions? Contact Michelle Bowie at 303-678-6219 or mbowie@bouldercounty.org

I Spy Critter Clues

Wednesday, September 17; 10-11:00 a.m.

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

The nature detectives are on the prowl! Help volunteer naturalists search for evidence of who lives in the woods. We'll look for tracks, scat, nests, bones, and antlers of some of the animals that live here. This program is geared toward preschool children, but siblings are welcome.

Grassland to Glacier Hike

Saturday, September 20; 10 a.m.-noon

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

Boulder County is a dramatic landscape, rising from the Great Plains to the Continental Divide and supporting a diversity of biological life zones. Join volunteer naturalists on an easy one-mile hike to celebrate fall and to explore the montane life zone, where you will learn how different plants and animals have adapted to this mountain landscape.



Play Ball! Vintage Baseball Clinic

Saturday, September 20; 5-7 p.m.

Walker Ranch Homestead 8999 Flagstaff Mtn. Rd. Boulder

Join the Walker Ranch Boys' practice for the big game. This will be a fun baseball skills clinic and practice game for all ages and genders. In the 19th century, ballists (players) didn't use baseball gloves, but feel free to bring yours. Register at www.BoulderCountyOpenSpace.org/register. Questions? Please contact Craig Sommers at csommers@bouldercounty.org. Youth under age 18 must be accompanied by an adult guardian.

Trains and Tribulations: Early Travel in the Mountains

Sunday, September 21; 4:30-5:30 p.m.

Nederland Mining Museum, West 2nd St, Nederland

Join storyteller Jan Tafoya for tales of early travel in the Rocky Mountains. Hear thrilling stories of traveling by train and learn about the Switzerland Trail of America, Boulder's popular and scenic railroad. Appropriate for all ages. Please contact Kate Zullo at kzullo@bouldercounty.org for more information.

Discover Boulder County *calendar of events*

Story in the Rocks—The Geologic History of Boulder County Wednesday, September 24; 7-8:30 p.m.

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

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



Oh Deer, Elk and Moose!

Saturday, September 27; 10 a.m.-1 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 moderate three-mile hike in the high country to learn about the natural history, behavior, and ecology of the three members of the deer family that call Caribou Ranch home: mule deer, American elk, and moose. We'll also look for signs of wildlife along the trail.

Fire on the Mountain: After the Fourmile Canyon Fire

Sunday, September 28; 10 a.m.-noon

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

Join volunteer naturalists for a moderate one-mile hike to learn about the natural role of fire in ponderosa pine ecosystems, and to see evidence of the September 2010 Fourmile Canyon fire. We will observe how this ecosystem has recovered so far, and also keep an eye out for signs of wildlife along the trail.

Quaking Aspen Hike

Saturday, October 4; 10 a.m.-noon

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

Join volunteer naturalists on an easy 1.5 mile hike to observe and learn about aspen—the most widely distributed tree in North America. Along the way, we'll discuss the natural history of aspen, including its importance to wildlife, varied uses, response to fire, and threats to its health. We'll also keep an eye out for signs of wildlife.

Hard Rock Mining Tour

Saturday, October 4; 10:30 a.m.-1:30 p.m.

Meeting location will be provided to registered participants

Tap into the towns, tools and characters of local hard rock mining heritage by visiting mining sites of years gone by. The tour is free and open to ages 10 and up. Some walking required. Registration opens one month before the tour and space is limited. Register online at www.BoulderCountyOpenSpace.org/register, or call 303-776-8848.

Autumn Heritage Day at Walker Ranch Homestead

Sunday, September 28; 10 a.m.-3 p.m.

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

See how autumn was spent on a working ranch in the late 1800s. Costumed volunteers will demonstrate autumn chores such as root-cellar, sausage making and doing laundry with a washboard and wringer. Watch the blacksmith make hinges, nails, and other hardware needed around the ranch and attend a one-room school session or take a guided homestead tour. A highlight of this event is the vintage "base ball" game that will begin at noon!

For more information, contact Sheryl Kippen at skippen@bouldercounty.org or 303-776-8848.

Please note: Dogs and bicycles not permitted at the homestead.



Discover Boulder County *calendar of events*



Clever Corvids

Saturday, October 11; 10 a.m.-noon

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

Ravens, crows, jays and magpies are noisy, intelligent and gregarious birds found throughout Boulder County. They are all members of the bird family *Corvidae*, or corvids for short. Join volunteer naturalists for an easy 2-mile hike to observe and learn more about the natural history, ecology, and stories about these clever birds.

Bears in Our Backyard

Sunday, October 12; 10 a.m.-noon

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

With fall upon us, Boulder County's black bears are busy gorging on berries and other food in preparation for their long winter sleep. Join volunteer naturalists on a moderate one-mile hike to learn about the natural history of our local bruin and how people and bears can share our wild places.

All Programs

All ages are welcome unless otherwise noted. NO PETS PLEASE! Be prepared for cool, fall temperatures. Bring drinking water and wear closed-toe walking/hiking shoes.

For more information about these programs or to arrange a volunteer-led program for your group, contact Larry Colbenson at 303-678-6214 or lcolbenson@bouldercounty.org.

Who are the Owls?

Wednesday, October 15; 7-8:30 p.m.

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

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

Story in the Rocks—Our Changing Landscape

Saturday, November 1; 10 a.m.-noon

Heil Valley Ranch Open Space; North of Boulder off Lefthand Canyon Drive; meet at group picnic shelter

Join volunteer naturalists for a 1.3-mile moderate hike to learn how this scenic landscape has changed over time. The stories in the rocks span over 200 million years, from ancient sand dunes to tidal flats to riverbeds where dinosaurs roamed. The rocks also determine the landforms and ecology of the present landscape, including the plants and wildlife we find here.

Snoods and Caruncles —Wild Turkeys of Boulder County

Saturday, November 1; 10-11:30a.m.

Sandstone Ranch Open Space; south of Highway 119, one mile east of Weld County Road 1. Take the east entrance to the Sandstone Ranch area, turning south on Sandstone Drive. Follow signs to the visitor center parking lot.

Did you know there are wild turkeys in Boulder County? Join volunteer naturalists Sharon Bokan and Gene Kraning as they share information about identification, ecology, and behavior of these birds. Find out why Benjamin Franklin thought the wild turkey should be our national bird instead of the bald eagle.



Discover Boulder County *calendar of events*

Birding Boulder County through the Seasons

Tuesday, November 4; 7-8:30 p.m.

Louisville Public Library, 951 Spruce Street, Louisville

Join volunteer naturalists Vicki Braunagel and Leslie Larson to learn about birding through the seasons in Boulder County. This program will explore where to find and how to identify some of our local and migratory birds, and also introduce you to an amazing range of ecosystems and habitats.



Wildlife and Winter Hike

Saturday, November 8; 10 a.m.-noon

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

Join volunteer naturalists for an easy one-mile hike to learn about the many ways animals prepare for and survive winter in the high country. We'll talk about different wintering strategies including migration, hibernation, and other adaptations. We will also look for signs of wildlife activity, including tracks, scat, and browse marks on trees and shrubs.

Enjoy our Programs?

Maybe you would enjoy *leading* a program! We are now accepting applications for volunteer naturalists. See page 10 for more information.



Birds of Prey Slide Program

Monday, November 17; 6-7:30 p.m.

Lafayette Public Library, 775 West Baseline Road, Lafayette

Join volunteer naturalists and learn how to recognize birds of prey—hawks, eagles, falcons, and owls—in the skies above Boulder County. During this slide presentation, you'll learn how to distinguish between different raptors by identifying field marks, behavior, location, and time of year. You will also learn about the habitat requirements and ecology of these birds.

Birds of Prey Driving Tour

Saturday, November 22; 10 a.m.-1 p.m.

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

Join volunteer naturalists for a driving tour of some of the best areas to view birds of prey, or raptors. We will carpool from our meeting place searching for raptors, learning about habitat, and working on our observation and identification skills. Please bring binoculars and a bird field guide if you have them. The tour is geared to adults and older children. To register, contact Larry Colbenson at lcolbenson@bouldercounty.org or 303-678-6214 by Thursday, November 20.

Nature Hikes for Seniors

Boulder County Parks and Open Space hosts a nature hike for seniors every month. No registration is necessary, however please call in advance if you plan to bring a group so we have enough naturalists at the program. For more information, call 303-678-6214.

Programs begin at 10 a.m. and end by noon.

Thursday, September 25; Mud Lake Open Space

Thursday, October 30; Heil Valley Ranch Open Space
Meet at the group picnic shelter at the south trailhead)

Thursday, November 20; Walden Ponds Wildlife Habitat Area
(Meet at the picnic shelter at Cottonwood Marsh)

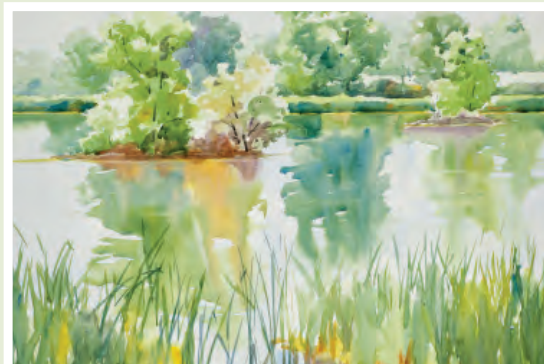
* Early due to Thanksgiving holiday

Outdoor Creations—A 2014 Boulder County Juried Art Show

Celebrate the culmination of the summer paint-out at the Great Frame Up in Longmont. Join us for the exhibit opening of selected en plein air artwork featuring Boulder County Parks and Open Space catered by Guillaume's European and Bay Window, on Friday, October 10, from 6-9 p.m. at the Great Frame Up, 430 Main Street, Longmont.

Exhibit hours: October 11 through November 7; 10 a.m.–6 p.m.
Monday – Saturday.

Visit: www.BoulderCountyOpenSpace.org/paintout or contact Karen Imbierowicz at 303-678-6268 for more information.



Walden Ponds, Kathleen Lanzoni

Junior & Senior Fishing Derby

Date: Saturday, October 11

Time: At your leisure from 9 a.m.-12 p.m.

Location: Wally Toevs Pond at Walden Ponds Wildlife Habitat, off of 75th Street between Jay Road and Valmont Road, Boulder

Dust off those fishing rods and invite a kid to go fishing at Boulder County's junior and senior fishing derby. The first 10 kids to arrive will receive a free fishing pole. Everyone can enjoy some snacks and there will be prizes given to the senior and junior pair who can catch the heaviest trout, have the largest age difference, and are first to catch the limit.

This event is open for fishing to all seniors 64 years and older with a valid Colorado fishing license and kids 15 years and younger, but everyone is welcome to watch and enjoy the fall weather. **Event takes place rain or shine!**

The pond is stocked with rainbow trout. Artificial and live bait are both permitted at Wally Toevs Pond. For more information contact Michelle Bowie at 303-678-6219 or mbowie@bouldercounty.org.



Public Firewood Sale



The Boulder County Parks and Open Space Department has firewood permits for sale this fall at Hall Ranch Open Space.

Permits are \$10 for a half a cord of wood for personal use only. Individuals may purchase up to five cords and will need to load and haul firewood from Hall Ranch in one trip. Loads must be safely secured per applicable Colorado's Department of Transportation regulations. Since the open space roads may be extremely adverse, 4-wheel drive vehicles are required. Trailers are not permitted.

A full cord is 128 cubic feet stacked. A standard 8-foot pickup bed will hold approximately ½ cord stacked level to the top of the bed.

The firewood will be pre-cut into lengths no longer than 8-feet long. Permit holders are allowed to use chainsaws. Depending on assigned sites, the wood will be ponderosa pine, lodgepole pine or Douglas-fir. Firewood may be green or dry. There are a limited number of permits available.

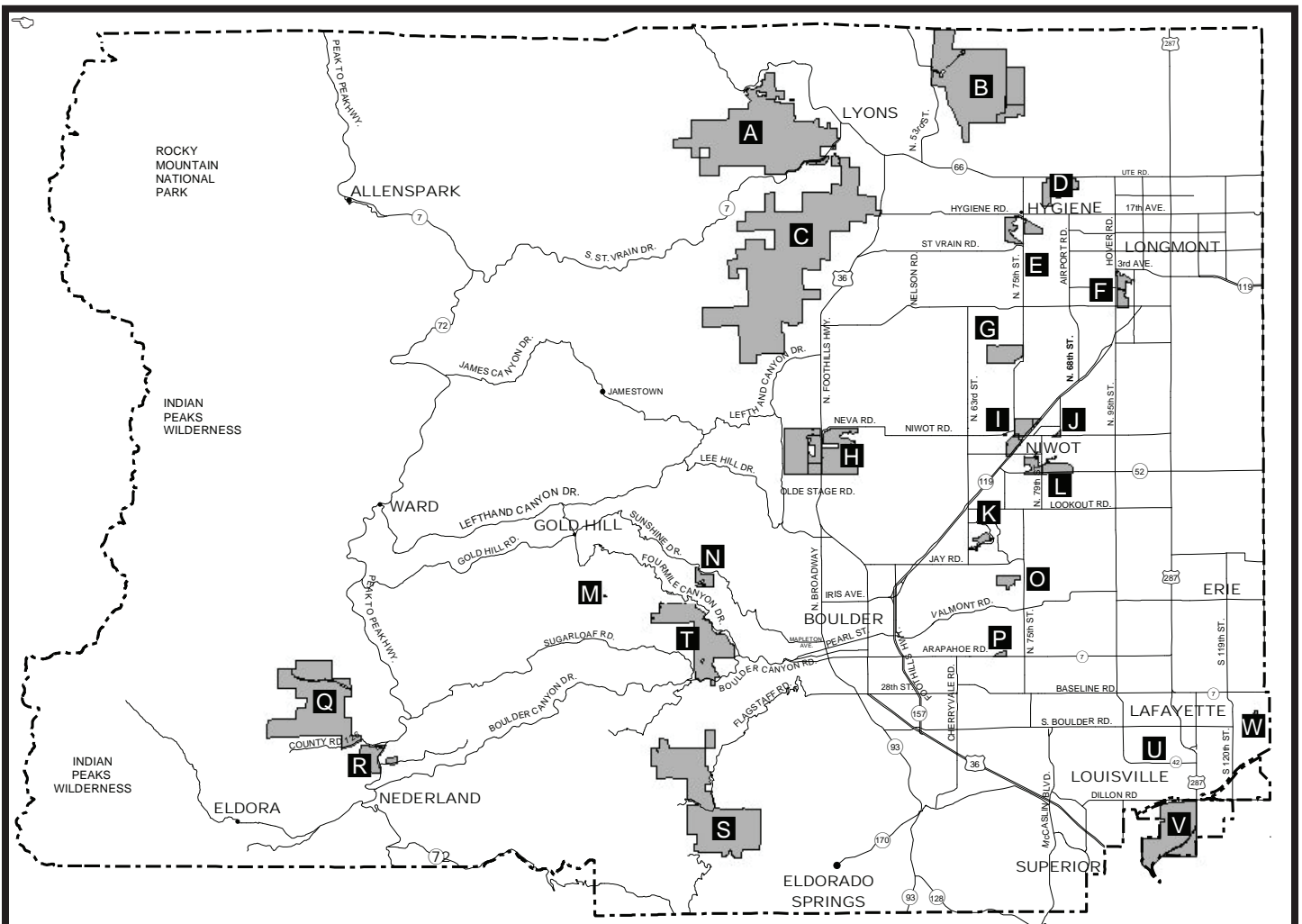
Learn more and purchase permits online at
www.BoulderCountyOpenSpace.org/firewood



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5201 St. Vrain Road
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303-678-6200

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
at Lohr/McIntosh Farm | L. Niwot Trail System | T. Betasso Preserve |
| E. Pella Crossing (closed) | M. James F. Bailey Assay Museum
Office | U. Coal Creek Trail |
| F. Boulder County Fairgrounds | N. Bald Mountain Scenic Area | V. Carolyn Holmberg Preserve
at Rock Creek Farm |
| G. Lagerman Reservoir | O. Walden Ponds Wildlife Habitat | W. Flagg Park |
| H. Beech Open Space | P. Legion Park | |