

BOULDER COUNTY PARKS AND OPEN SPACE

images

news properties nature history events

Summer 2014



Images

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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: Farmers' Market in Longmont at the Boulder County Fairgrounds: Jeannie Demarinis

PHOTOGRAPHS & ILLUSTRATIONS

Flood Debris Holly Running-Rabbit and Nate McBride
Volunteer Project Fletcher Jacobs
Conservation Award Nik Brockman
Bee Lauren Golten
Mud Lake Dave Hirt
Sunset Sue Cullen
Columbine Cathy Bryarly
Walker Ranch Volunteers Pascale Fried
Horses Jim Drew
Outdoor Challenge Jason Vroman

NATURE DETECTIVES

Katherine Young and Tiffany Fourment
Illustrations: Michelle Durant

DISCOVER BOULDER COUNTY

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IN CLOSING

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A Day in the Life

of the Flood Debris Team

Months after the September flood, Boulder County Parks and Open Space continues to assess and manage the impact of flood waters on the county's waterways. To get a clear picture of the damage, a Flood Debris Assessment Team was created to record debris deposited in the creeks and streams.

In November, Project Coordinator Tim Zych pulled together a motley crew from different divisions within Parks and Open Space: Ari Addes from Historic Preservation, Chase Dryden from Agriculture, Camille Thorson from Plants, Nate McBride and Holly Running-Rabbit from Forestry, and me from Education and Outreach. As a team, we meet every morning, split up into pairs, and divvy up sections of the county to assess. After uploading maps of our target locations onto our GPS devices, we head out for a long day of hiking. Some days we are hiking hard-to-reach stretches of creeks in the foothills, other days we are walking along roadsides or through agricultural fields. Over the past few months the team has walked almost all of the creeks, streams, gulches, and other waterways in Boulder County.

Our main goal is to get a clear picture of the extent of debris in the streams and to identify jams and material that could cause further flooding during the spring melt. For each pile of debris we find, we use a GPS device to map the location and size. We also record a list of attributes, such as debris density, stream width, flood inundation width, type of debris (woody, construction material, or trash), if any hazardous materials exist, and the primary threat. Debris piles that are near roads, bridges, and homes and are likely to cause further damage are flagged as imminent threats. All this information is compiled and passed along to decision makers for long-term plans.

Sometimes the destruction is overwhelming—especially when talking with families that have lost homes and property or finding household goods scattered among the debris. But it is also encouraging seeing residents and construction companies working to rebuild washed out roads, fix damaged homes, and haul out debris. For me, there have been a lot of great experiences that have come out of this opportunity—I have been able to explore parts of the county I have never been to, get to know an awesome group of colleagues, and help with the recovery from this historic flood.

by Kate Zullo,
Debris Assessment Team Member



The author, Kate Zullo, uses GPS to track location of debris. Below, a staff member examines debris from the flood.

Coming Soon: Emerald Ash Borer

by Cathy Thiltgen

The emerald ash borer (EAB) is an invasive insect native to Asia that was introduced into the United States via wood packing material. It was first discovered in Detroit, Michigan, in 2002. The insect has spread throughout the Midwest, making its way into Colorado. It was discovered in the City of Boulder in September 2013. This detection marks the westernmost occurrence of EAB. In Asia, the insect has little impact due to the existence of native predators. However, in the United States, there are no natural predators to regulate the pest and as a result it has killed tens of millions of ash trees in the U.S. and Canada. There are an estimated 98,000 ash trees in the City of Boulder, 43,000 in the City of Longmont, and 1.45 million in the Denver metro area.

Stopping the Spread

The Colorado Department of Agriculture established an emergency quarantine in Boulder County. The quarantine prohibits the movement of all untreated ash tree material out of the quarantine area. This includes, but is not limited to:

- Logs and green lumber
- Nursery stock, scion wood, and bud wood
- Chips and mulch, either composted or uncomposted
- Stumps, roots, and branches
- Firewood of any non-coniferous (hardwood) species

Please refer to the Colorado Department of Agriculture's EAB website at www.eabcolorado.com for more information.

The EAB life cycle takes one year to complete. Adult borers emerge from ash trees from May to August, forming distinct D-shaped exit holes in the bark. They feed on leaves for about two weeks before females lay eggs. Larvae feed under the bark, girdling the tree and cutting off the flow of water and nutrients. Trees are killed within two to four years of the first symptoms. It is possible that an ash tree can be infected with EAB three to four years before visible signs of decline are noticed.

Recognizing EAB

- Sparse or thinning foliage in the upper tree canopy
- Unusual branch sprouting from the trunk, roots or tree base
- Vertical splitting bark
- D-shaped emergence holes on the trunk or branches
- Increased woodpecker activity
- Serpentine feeding galleries (tunnels) under the bark

Dead ash trees infected with EAB decompose quickly, causing limbs to fail and drop. Pesticides can be applied as a control, but are not a cure. Repeated applications will be necessary to protect ash trees from EAB. High-value ash trees may be considered for treatments. Criteria for high-value ash trees may include: large specimen trees, healthy ash that provide shade to a structure, seating area or parking lot, ash adjacent to historical



Volunteers plant ash trees that will replace those affected by the emerald ash borer.

or landmark designations, ash that provide value to the community (such as Pearl Street in Boulder), size and overall health of ash trees.

Management options will take into account all the costs of treatments balanced against the costs associated with death, removal and replacement of ash trees.

Boulder County Parks and Open Space is currently inventorying and assessing ash trees on all Parks and Open Space (POS) properties. So far, 513 trees have been evaluated and cataloged; none have been detected with EAB. Knowing the location and size of ash in our parks will allow us to make informed management and treatment decisions.

Preparing for EAB at the Fairgrounds

The Boulder County Fairgrounds in Longmont has 117 ash trees. This spring, POS planted 20 new young trees in the understory of concentrated rows of ash trees. The goal was to get the trees established prior to the anticipated loss of the ash. POS will hang six to seven baited traps to monitor EAB adult populations around the county. POS will also work with the CSU Extension Service in Longmont to provide community education. You may notice green ribbons attached to ash trees at the county fairgrounds—it identifies the tree as an ash and also displays the eabcolorado.com website. We will also continue to assess the health of county ash trees and identify potential infestations.

If you suspect your ash may be infected with EAB, contact a licensed certified arborist. You may also request estimates for treatment, removal, and replacement costs. Certified arborists are recognized by the International Society of Arboriculture as individuals trained and knowledgeable in all aspects of tree care.

2014 Parks and Open Space Land Conservation Awards

by Vivienne Jannatpour

On April 9, the Boulder County Parks and Open Space Department held the annual Land Conservation Awards ceremony. Here are highlights from the special gathering.

Land Conservation Award honors individuals, families, and organizations whose contributions demonstrate notable achievements in preserving Boulder County's agricultural lands. Rich Koopmann was recognized for his outstanding achievement in land preservation and stewardship. For over 35 years, Koopmann worked for Parks and Open Space as a water resource specialist, historic preservation specialist, planner, mentor, and persistent champion of Boulder County's open space program. Koopmann also was instrumental in the creation of the Boulder County Nature Association and the Parks and Open Space Foundation.

Environmental Stewardship Award recognizes individuals, families or organizations that make significant contributions in land protection and/or management. Dave Hallock served an essential role in the recent update of the Environmental Resources Element (ERE) of the Boulder County Comprehensive Plan. This document guides the preservation or restoration of all natural resources in the county, including wildlife species, critical wildlife habitat, environmental conservation areas, and their attendant ecosystems. Hallock collaborated with county staff to update maps, lists, and criteria. He shared a vast amount of information, updates, anecdotes, and history which allowed Boulder County to rebuild the ERE as a stronger, highly-accurate,

and applicable information source and as a planning document for wildlife and natural resources in the county.

Heritage Award honors individuals or organizations whose contributions demonstrate notable achievements in preserving Boulder County's heritage through substantially privately funded historic preservation projects. Lexie Spencer Armitage was recognized for her outstanding efforts to restore and preserve the Cardinal Town Site. Armitage's vision began in 1998 when she showed her real estate client the New Cardinal town site just outside the Town of Nederland. Instead of purchasing the property, they created the New Cardinal LLC in order to restore the town site's buildings as minimalist housing and preserve the surrounding land as open space. In 2003, Armitage moved into the Mine Assay Office without running water or heat, and began a multiple-year effort to clean up the years of debris and neglect. Without Armitage's determination, the buildings would have collapsed and the New Cardinal town site would just be another memory in Boulder County's mining history. Three buildings are now used as year-round residences, and thanks to the foresight and hard work, the population of New Cardinal is now at a healthy seven residents!

Partnership Award recognizes alliances with businesses and organizations around the county to foster a community-based stewardship ethic for the preservation and care of open space. Level 3 Communications Legal Team has been a partner with the department for five years. Level 3 participated in at least



Ron Stewart, Rich Koopmann, Sandi Betters (daughter of Lexie Spender Armitage), Sondra Smith, Mieke Schierer, Jen Lomeli, Art Roberts, Deanna Cassidy, Dave Hallock, and Cindy Domineco

two volunteer projects each year. While Level 3 is officially assigned to Heil Valley Ranch Open Space, they are always flexible, open and available to help where needed. After the 2013 flood, Level 3 organized employees in four flood clean-up projects. Since 2009, Level 3 has contributed over 1,000 volunteer hours.

Outstanding Volunteer Awards honor individuals whose leadership and support of the Parks and Open Space volunteer programs have enhanced our community partnerships and improved public service. This year, there were two recipients.

Art Roberts has been a volunteer Citizen Ranger for the past 10 years. Citizen Ranger Corps (CRC) volunteers spend their time out on the trails collecting field data and providing park visitors with information about a park's natural and cultural history, current resource management issues, and rules and regulations. Roberts has been our top patroller for many years. He is out on the trails nearly every week. For many park visitors, Roberts may be the only Boulder County representative

they meet, and his welcoming demeanor allows him to make meaningful contacts. In addition to CRC duties, Roberts helps the Agricultural Resources Division by visiting established data points to assess current resources and monitor long-term trends.

DeAnna Cassidy has contributed over 18 years to the 4-H Program by providing support and leadership for club fundraisers, projects, meetings and youth activities. She recently started a new program, the Clover Bud Club. This new program provides early youth development and life skills for children five to seven years old who learn about gardening, citizenship, fitness, pollution and dinosaurs to name a few of the recent subjects. Each of the lesson plans are packaged as a kit that is available for other clubs, school groups or young youth organizations to check out. Cassidy is the president of the Boulder County 4-H Leaders Council, serves as an advisor to the 4-H staff, and is the assistant swine superintendent for the Boulder County Fair.

Please go to www.BoulderCountyOpenSpace.org/lca for more information or to submit a nomination for 2015.

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. 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 Carol Ann Kearns and Diana Oliveras from the University of Colorado at Boulder. Their project monitored bumblebee populations in Boulder County.

Introduction: Bumblebees are crucial pollinators of both crops and native wildflowers. Thus, it is alarming that significant bumblebee declines have been documented in many parts of the world (Williams et al. 2009, Williams and Osborne 2009). Declines appear to be related to a wide variety of factors including anthropogenic habitat change, nesting site availability, loss of overwintering habitat, pesticide use, and parasites (Kearns and Thomson 1994, Goulson et al. 2005, Evans et al. 2009). We have extensive records dating from the early 1900s that indicate what species occur locally in Boulder County. However, we do not have abundance data from the past. Our research team is documenting abundance of these species through systematic sampling to evaluate the status of bumblebees at several elevations along the Front Range (see 2012 Final Report for details). Our findings will provide insight into demographic changes in bumblebee populations that then can be applied to conservation management. Not only can this population information be used as baseline data for Boulder County, but it can be compared with information from other locales throughout the US.

Summary: Bumblebees are crucial pollinators of both crops and wildflowers. Declines in bumblebees in those areas where they have been extensively monitored are a cause for concern and reflect a bigger trend of pollinator declines in



North America. Since there are minimal data on bumblebee abundance on the Front Range, this project is important in assessing the local conservation status of these important pollinators. We plan to continue monitoring bumblebee populations through 2014.

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

Outdoor Creations—Plein Air Art Exhibit

by Karen Imbierowicz

What is Plein Air Art?

En plein air is a French expression which means “in the open air,” and is used to describe the act of painting outdoors with the focus of the artwork usually being landscapes. Just as our parks and open space public land is available to all people regardless of income or social status, so is this type of art.



Painting by Elizabeth Black

Exhibit and Entry Details

This year is the Second *Plein Air* art exhibit, *Outdoor Creations—A 2014 Boulder County Juried Art Show*. This event celebrates the beautiful place we call home and strengthens the relationship between the art community and Boulder County Parks and Open Space lands. Between June 1 and August 10, artists are encouraged to visit county open space properties to create artwork for consideration in an exhibit.

Paint-Out Period: June 1 – August 10

Exhibit Venue: The Great Frame Up in Longmont, October 10 – November 7

Exhibit Opening: Friday, October 10, 6-9 p.m.
Catered by Guillaume's European Catering

Eligibility: Artists living anywhere may participate.

Visit www.BoulderCountyOpenSpace.org/paintout to view a list of suggested properties to visit and a map highlighting acceptable subject properties.

Deadline for submissions: August 14

Allowed mediums: Oil, watercolor, acrylic, ink, pastel, and pencil, as well as 3D mediums such as cloth, wood or clay. Photographs are not eligible.

Entry Fee: Submit up to four pieces for a \$30 entry fee. Youth 14 and under may submit up to four pieces for exhibition at the WOW Museum for no fee. Prizes!

Painting Events

Many artists who exhibited in the first *plein air* exhibit in 2011 will lead paint-out sessions throughout the paint out period. Some sessions will be held on properties not normally open to the public. Sign up for a session at www.BoulderCountyOpenSpace.org/paintout. Space is limited, so sign up soon.

Session dates:

- **Saturday, June 7, 8:30-11:30 a.m.**, Walden Ponds, Jeanne Hougén/Kathleen Lanzoni
- **Wednesday, June 18, 4:30-7:30 p.m.**, Alexander Dawson property, Lamya Deeb/Scott Lancashire
- **Thursday, June 26, 8-11 a.m.**, Agricultural Heritage Center, Becky Everitt
- **Wednesday, July 9, 7-10 a.m.**, former Anne U. White trail, Anne Gifford/Elizabeth Black
- **Wednesday, July 9, 1-4 p.m.**, Caribou Ranch, Jeannie DeMarinis/Valerie Meyers
- **Saturday, July 19, 5-7 p.m.**, Walker Ranch, Karen Roberts/Pat Carney. Takes place during the Summer Heritage Evening at Walker Ranch Homestead event.
- **Sunday, August 3, 8-11 a.m.**, Heil Valley Ranch, Marcio Correa

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

Switzerland Trail Winds Through History



The railroad changed its focus from industrial use to tourism, taking passengers into the mountains to view wildflowers, sightsee, picnic, and celebrate holidays along with other activities.

The Switzerland Trail wound its way up the steep and narrow canyons connecting mountain towns. The narrow gauge railroad made mining possible and profitable and eased the isolation of many mountain communities. In 1881, railroad fever ran high in Boulder, Colorado, when the Union Pacific announced it would build a narrow gauge railroad up Boulder Canyon. The Greeley, Salt Lake & Pacific Company was incorporated in July of that year with plans to build the railroad up through Boulder and Four Mile canyons, over the Front Range, through Salt Lake and eventually to the Pacific. By November 1882 the railroad had reached Orodell and by April 1883 the first passenger trail ran to Sunset, where the railroad reached the end of its line.

The railroad reduced shipping rates and time it took to transport supplies. Mines that could not operate efficiently without the railroad began producing. The railroad also improved the supply of coal for the mills and the regular delivery of mail and food. Improved transportation changed the lives of mountain-dwellers as well by making trips into Boulder for business or pleasure an excursions that could be done in a day.

From Ruin to Rebuilding

In the spring of 1894, snows filled the canyons and warm weather and spring rains caused a torrential flood that wiped out the Greeley, Salt Lake & Pacific line. The railroad was not rebuilt. Compounding this blow was the Panic of 1893 and demonetization of silver, crushing Caribou's silver mining industry. The gold mines were quiet as well. When five Boulder citizens incorporated the Inter-Mountain Railroad Company in 1895, hope soared and gold mining picked up. Unfortunately, work on

the new railroad was never started. Then, in 1897, the Colorado & North Western Railway Company was started and eventually rebuilt up the canyons reaching Sunset and eventually Eldora.

The prospect of the success of the Wall Street Gold Extraction Company was a factor in the decision to extend the line to Eldora. The success of the new process could lead to a new boom in mining, benefiting the railroad dependent on mining and the tourist industry. The new railroad was the pride of Boulder and treated many people to scenic trips into the mountains. Unfortunately the big mill at Wall Street failed and the financial Panic of 1907 caused the sale of the railroad in 1909. Soon the railroad began operating again under the name of Denver, Boulder & Western, serving the mountain communities and the excursionists.

The Switzerland Trail of America was named such because of the scenic trips it took its passengers on through the mountains. When the Stanley Steamer made its debut in 1897 it was an immediate success. In 1911, the first Stanley Steamer intended for scenic excursions took passengers up to the mountains, adding competition to the ailing railroad. People still loved the railroad and efforts were made to keep it running. The end of World War I slowed and stopped tungsten mining in the region, hurting the railroad's ability to stay afloat. By 1919, it was operating at a loss. Then in July, a flood washed down the creeks and put an end to the famed Switzerland Trail of America.

Enjoy the Trail Today

Even though the train has long since stopped running, many people still enjoy its scenery while walking, biking, and horseback riding on this historic trail.

Cavity Nesters in Boulder County

by Cindy Maynard

Writing about cavity nesters in Boulder County seemed simple enough until I sat down to tackle the job. Unexpected complications emerged almost immediately. What is a cavity? What is a nest? Why nest in a cavity in the first place? Is a cavity a hole in the ground, a bird house, a nest box, a cave, a crevice in the rocks, a mine, a natural recess in a dead snag, a deliberately, finely-crafted hollow in a tree? *All* of these spaces are cavities.

There are so many creatures that take advantage of cavities at some time in their life cycle that it boggles the imagination of a naturalist. In a mild panic, I went back to basics. Most of us think of birds as cavity nesters, so I'll start there.

Primary and Secondary Residences

Approximately 85 North American bird species are cavity nesters. Primary cavity nesters excavate their own nests, hacking into either living or dead trees depending on species needs, and secondary cavity nesters use the cozy cavities carved out by others. Most woodpeckers carve out a horizontal entrance hole just large enough for an adult to enter. No spacious foyers for them. This leads to an interior chamber large enough to comfortably raise their brood.

Building a new home each year is hard work, consuming a lot of energy during the already busy nesting/breeding season. For this reason they prefer trees in which heart rot has already hollowed out the center of the tree. Heart rot sounds dire, but this fungus-born disease does not generally kill the tree; it leaves the sapwood alive to shield the nest from the elements.

Woodpeckers are particular about the orientation of their cavities. Most northern species place them to reduce the effects of prevailing winds and to take advantage of solar gain. Smaller species may also prefer to locate under an overhanging branch, possibly for protection from the rain.

Each of these primary cavity builders provides needed nest sites for the secondary cavity nesters. Larger cavities are reused by bufflehead, hooded merganser, American kestrel, northern pygmy owl, boreal owl, saw-whet owl. Smaller secondary cavity nesters, like the small owls, mountain bluebird, tree swallow, and sometimes chickarees and chipmunks favor smaller cavities of smaller excavators, like the hairy woodpecker.

The red-naped sapsucker is a rare example of a dual keystone species, providing insect control, sap wells that feed many other species, and reusable nesting cavities. Sapsuckers make their living by drilling sap holes in aspen trees and shrubby willows. This sap is shared by over 40 species.

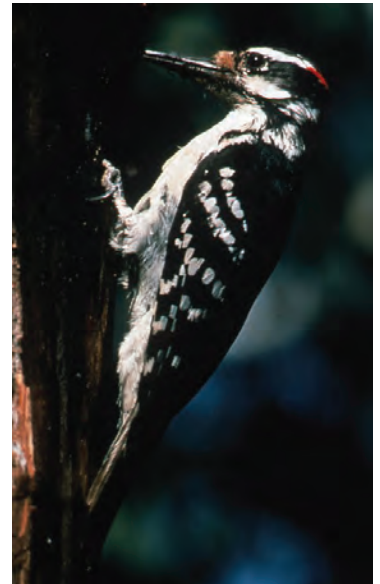
Most cavity nesters like the red-naped sapsucker are insectivores. Plants that always attract insect pests are not happy plants. Birds, including cavity nesters, have a significant role in keeping infestations in check. Birds are an efficient, highly-motivated natural work force ideally engineered by nature to control insects.

The Cavities You *Want* to Find

Cavity nesting isn't the exclusive purview of birds. Many other animals seek out the safety and comfort of cavity nests, including mammals, insects, turtles, and some snakes and lizards.

Finally, let's not forget that many human cultures have used cavities for shelter. We humans have sought out caves for the same reasons as other creatures. Cavities offer safety, security and shelter.

Woodpeckers are considered a keystone species—a species many other species depend on for survival. When they are removed from their environment, entire plant and animal communities that depend on them come tumbling down, just as the removal of a keystone in an archway causes the collapse of the entire arch. Unfortunately, keystone species are often recognized only after their absence sets off a system collapse.



Mammals, insects, turtles and some snakes and lizards also seek out cavities as homes.

NATURE DETECTIVES

Summer 2014

Mayflies, Stoneflies, Caddisflies Galore

"Eeeew," Alex yelled. "What are all these bugs? They're landing in my hair and everywhere! I don't want them to bite me. Let's get out of here, Grandpa."

"Don't worry, Alex, they won't bite. They're mayflies. Fish find them tasty."

"Are you joking, Grandpa? Maybe flying fish eat them. Really, how can fish chomp them in the sky?"

"Well, Alex, mayflies spend most of their life growing and hiding underwater. There is a bird called a dipper that walks along stream bottoms looking for them there."

"A bird that walks underwater! That's crazy. How do dipper birds catch these bugs?"

"Like the saying goes, the early bird catches the worm. Mayflies aren't worms, but dippers catch mayflies before the insects grow wings. Do you remember how insects have several life stages? Mayflies start off as wingless nymphs. Dippers pluck them from under submerged rocks or catch them crawling around the bottom of streams.

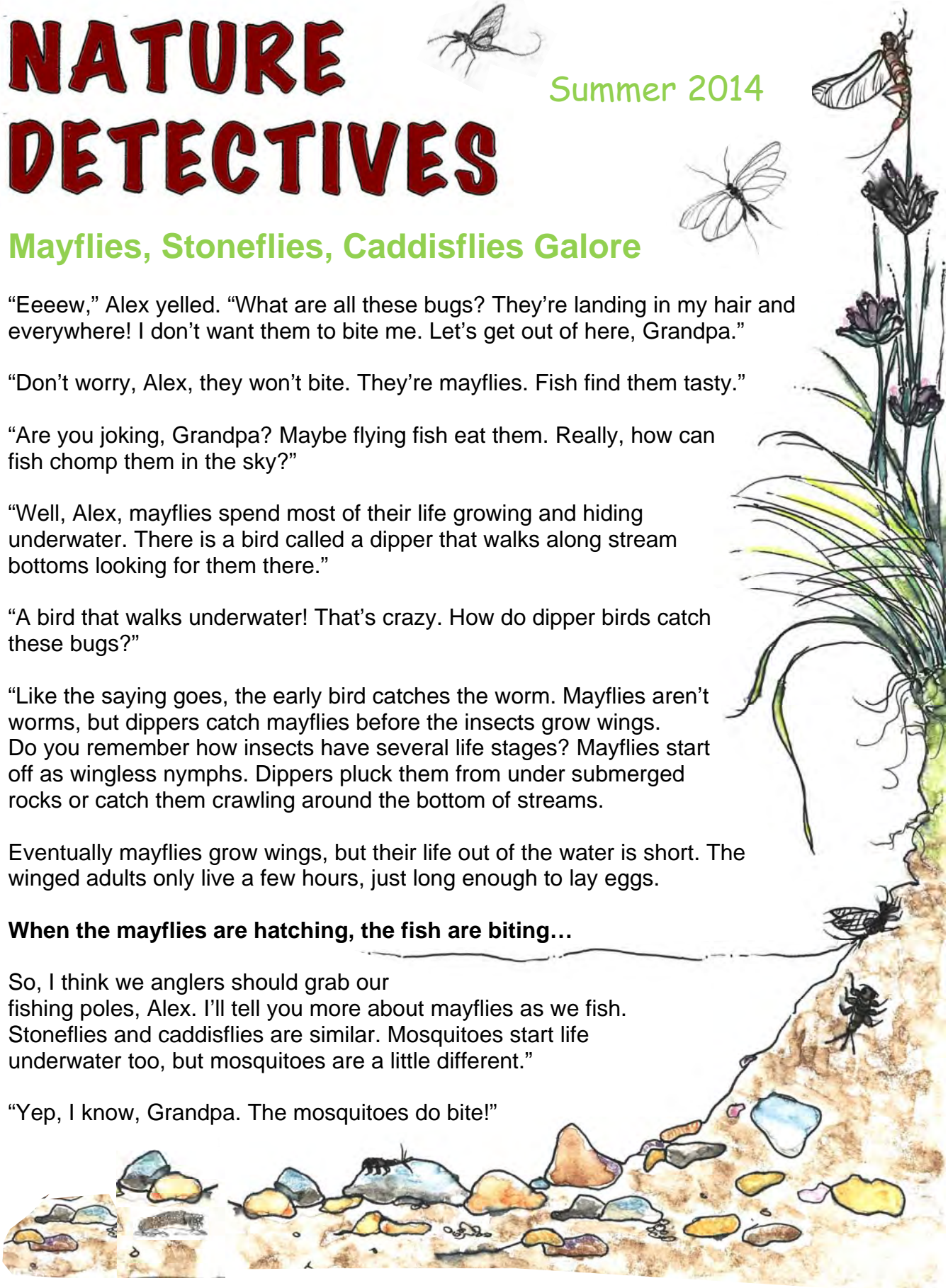
Eventually mayflies grow wings, but their life out of the water is short. The winged adults only live a few hours, just long enough to lay eggs.

When the mayflies are hatching, the fish are biting...

So, I think we anglers should grab our fishing poles, Alex. I'll tell you more about mayflies as we fish. Stoneflies and caddisflies are similar. Mosquitoes start life underwater too, but mosquitoes are a little different."

"Yep, I know, Grandpa. The mosquitoes do bite!"

Pull Out and Save





The Real Hatch

When insects like mayflies swarm out of the water to live the last part of their lives on land, anglers call it a hatch. They try to “match the hatch” with a fishhook disguised as a look-alike bug. (The fake bug hooks are called flies.) As fish gobble the live bugs, anglers hope a good-size fish will snap up their fly.



The real hatch happens when insects hatch out of their eggs as larvae. In the larval stage, they are often called nymphs. The job of nymphs is to eat and grow bigger and avoid being eaten.

Like all insects, those hatched underwater change in stages as they grow to adulthood. The change from egg to adult insect is called **metamorphosis**. As they grow they shed or molt their outside layer. The insect's outer layer splits and the insect pulls itself out of the whole skin at once.

Mayflies Are Special Insects

More than 100 different kinds of mayflies live in Colorado. Different types live in streams, rivers, ponds and lakes. Mayfly larvae look a little bit like adult mayflies without wings. Mayflies molt more times than any other underwater insect. Some mayflies possibly molt more than 40 times. After about a year of growing and molting, they leave the water with a lot of other mayflies. Some kinds float to the top of the water, quickly molt, and launch into the air off their shed skin. Others crawl out of the water onto rocks or leaves to molt and fly.



Mayflies Get Wings Twice

Oddly, even though they now have wings, mayflies will molt one more time. No other insect has a juvenile stage with wings. The sub-adult mayfly has hairy little wings. It flies to a landing spot, and within a few minutes to a few hours the outer skin, including the hairy wing covering, molts off to reveal delicate, clear and shiny wings. Finally the mayfly is an adult...for a really brief time.



Stoneflies Love Cool Streams

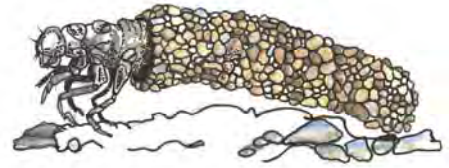
Close to 90 types of stoneflies live in Colorado, but their larvae are found only in running water, especially in high mountain streams where there are lots of rocks.

Stonefly nymphs are similar to mayfly nymphs. Adult stoneflies survive from a week to a month. They hide until dark and spend nights mostly crawling around.



Caddisflies are Talented Builders

Caddisfly eggs hatch into larvae that look a bit like caterpillars. Most species have a talent for spinning tube-shaped shelters out of silk. Larvae coat the tube with sand, gravel or plant bits, and their head pokes out the front.



After several molts, nymphs spin a cocoon or make their tube into a cocoon (pupa). Inside the cocoon the larvae develop into adults within a couple weeks. At last they break out of their cocoon and float to the top of the water or to the water's edge to take flight. During their month-long adulthood they fly mostly at night, and they often cluster around lights like moths. Colorado has almost 200 kinds of caddisflies.

Speed Dating

Mayflies live only about a day as adults. They don't eat. They don't even have a mouth. Their job is to find a mate and lay eggs. Mayfly swarms make pairing up easy. Each female checks out the males flying in a group swarm. If the swarm is flying in a particular mayfly dance pattern at the right time of day, the female recognizes it as her species and joins the swarm. They lay eggs in the water then the adult mayflies die.

Caddisfly males swarm in a pattern too but not as noticeably, unless you are a female caddisfly.

Stonefly females don't watch for the right dancing flight. They wait to sense the males drumming. Males drum by tapping the end of their bodies on leaves or twigs. Each species of stonefly has its own beat. The female drums back, matching the beat. They crawl toward each other, pausing to drum, until they find each other.

Nymph Feeding Frenzy

Nymphs survive by eating bits of things in the water. Some gather tiny plant bits from the water and others scrape plant pieces off rocks. A few types eat tiny animals.

Unlucky nymphs are eaten by fish such as trout, by other insects and by birds such as ducks. **Dippers** can grab a caddisfly larva by its head and shake it out of its tube. Salamanders and frogs find the insects tasty. Bats feast on the flying adults, as do swallows and other birds.



Pollution Monitors

Caddisfly, mayfly and stonefly larvae need clean water to live.

They are so sensitive to pollution in the water that scientists developed a method of measuring the health of streams by looking for nymphs of the three insects in the water.



Water World Exploration

Since every living thing needs water, there is a good chance you will see something interesting whenever you are near the water's edge. It is also fun to explore life under the water.

With the help of an adult buddy, you can make an **underwater viewer** out of a 32 oz. can or a half-gallon paper milk carton. Ask your adult to remove both ends of the container. Stretch clear plastic wrap tightly over one end and tape it all around the sides with duct tape or vinyl tape.

In shallow water, put the covered end into the water and look into the open end. You should be able to see the bottom more clearly because you are looking through less water with your underwater viewer. The viewer also eliminates the glare of light off the water.

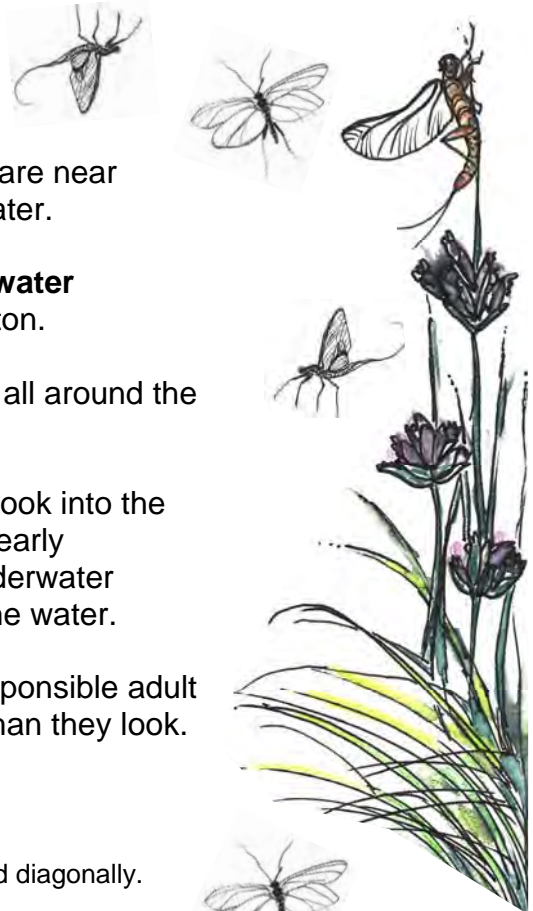
Caution: Never try to look for water critters without a responsible adult with you. Streams can be deeper and currents stronger than they look. Remember that all water can be **dangerous**.

Underwater Word Search

Find the words from the column on the right. Words go up, down and diagonally.

L	Q	A	O	O	M	T	U	C	L
M	V	N	U	F	E	P	N	O	I
R	Y	G	E	Y	T	U	D	C	N
A	L	L	M	L	A	G	E	O	S
W	F	E	A	F	M	I	R	O	E
S	E	R	Y	S	O	J	W	N	C
U	N	P	F	I	R	R	A	F	T
A	O	U	L	D	P	D	T	I	I
C	T	P	Y	D	H	I	E	S	A
X	S	A	I	A	O	P	R	H	V
F	P	I	T	C	S	P	S	F	R
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ANGLER
CADDISFLY
COCOON
DIPPER
FISH
HATCH
INSECT
LARVA
MAYFLY
METAMORPHOSIS
PUPA
SILK
STONEFLY
SWARM
UNDERWATER



A Brief History of Fishing

by Mitch Bejcek



Mabel Fox Downer fishing near Allenspark.

Photo: Carnegie Branch Library for Local History, Boulder Historical Society Collection

Early humans and ancient civilizations based their daily living around a source of fresh water: rivers, streams, or lakes. Fishing can be dated to around 40,000 years ago. In many cultures fish were a source of food for survival. Spearfishing with harpoons (barbed poles) was common as was the use of nets.

From Egyptians to Modern Times

Early cultures around the world left records of people fishing. Tomb carvings and drawings on papyrus scrolls show Egyptians fishing and preparing fish to be eaten. The ancient Egyptians used woven nets, harpoons, and hooks to catch Nile perch, catfish, and eels. Ancient Greeks and Romans wrote about fishing and recorded images on vase paintings and mosaics. Ancient Macedonians used artificial flies to catch trout. In China, writings and painted images refer to fishing with silk line, a hook, and a bamboo rod. Early peoples in India caught fish using harpoons attached to long cords. The Moche of Peru painted images of fishing on their ceramic pots. Native Americans along the California coast fished with hooks made from wood and bone and line tackle.

The use of fishing rods can be traced back to over 4,000 years ago. The first rods were made from six-foot long bamboo, hazel shoots, or sections of a thin tapered flexible wood with a horsehair line attached. A simple hook was tied to the end of the line. Commercial fishing using gill nets can be traced back as far as 3,000 years to the Edo period in Japan.

The earliest printed record of recreational fishing was Wynkyn de Worde's 1496 book the *Treatyse of Fysshynge With an Angle*.

Equipment Moves Ahead

In the 1600s, fishing tackle was improved. A wire loop was attached to the end of the rod allowing for a running line, helpful for casting and playing a hooked fish. The fishing reel was developed; a wooden spool with a metal ring that fitted over the fisherman's thumb. Rods were designed in sections so that they could be easily taken apart and carried from one place to another. Charles Kirby improved how fish hooks were designed and made, and gut string line was developed.

By 1770, a rod with guides along its length for the line and a reel was in use. The first true reel was a geared reel attached under the rod in which a turn of the handle moved the spool several revolutions. Rods also were made better with the use of tough elastic straight-grained woods such as lancewood from South America and bamboo from India.

In the late 1800s, rods made were stronger and thinner by gluing together several strips of bamboo. Line made of silk covered with coats of oxidized linseed oil replaced horsehair, allowing for longer casts. By the early 1900s, fishing rods were now made with fiberglass. Fishing reels were improved and spin casting reels became popular. In the 1930s, nylon monofilament was developed, and in the mid 1940s braided and synthetic lines were being produced. By the late 1960s, rods were being made with carbon fiber allowing them to be stronger, shorter, and lighter. Plastics began to replace wood for artificial casting lures.

Fishing has evolved from the early days of hunters and gatherers fishing for daily consumption to world-wide commercial fishing and recreational and sport fishing.

Fishing in Boulder County

Boulder County Parks and Open Space offers something for every angler. Look for the brochure *Gone Fishing* for locations, regulations, bait requirements, types of fish, and bag limits.

Two fishing areas in Boulder County are designated for special groups:

Wally Toevs Pond at Walden Pond Wildlife Habitat is for seniors and people with disabilities and their companions who are 15 years or younger. A current Colorado fishing license is required.

Cattail Pond at the Boulder County Fairgrounds in Longmont is only open to children 15 and under. This is a great place to introduce children to fishing!

Mud Lake: Water, Ore, and Shrubs

by Sally Wier

In the shadow of the Continental Divide, where mountain winds blow cool and crisp, lies Mud Lake Open Space. The property's trails offer a place to enjoy montane tranquility and escape the chaos of the modern world. Yet despite its peaceful qualities, Mud Lake was once heavily impacted by human use. Today the names of the park's trails, Tungsten and Kinnickinnick, serve as reminders of the area's destructive mining industry but also of a resilient plant and nature's ability to heal.



A summer afternoon at Mud Lake Open Space

The Meteor Myth

The most obvious remnant of human impacts is Mud Lake itself. The waters of the lake are held within a 440-foot-wide circular depression. Curiously, this depression is located on a relatively high piece of land rising above two streams. This unusual location for a lake led to speculation in 1999 that the depression was a meteorite impact crater. Two years later the Town of Nederland and the Colorado Geological Survey examined the geology beneath the lake and found no evidence to support the meteorite impact theory. However, they did find irregular piles of rock fragments at the bottom of the lake which are believed to be submerged mine tailings. The most credible explanation is that the lake is of human origin with a tie to the extractive mining industry.

Tungsten Takes Over

This mining industry played a critical role in the cultural history of the Mud Lake and Nederland areas beginning back in 1869. Silver was discovered nearby at Caribou in that year, and many prospectors and miners, including a man named Samuel Conger, flocked to the area. It was not long though, until the focus of hard-rock mining shifted to a new ore, tungsten. From Swedish meaning "heavy stone," tungsten was found in abundance near Mud Lake. This so-called "black iron" became the life blood of the region. The Conger Mine, just west of Mud Lake, became one of the largest producers of tungsten in the world in the early 1900s.

Used as an additive to harden steel, world demand for the ore skyrocketed with the outbreak of World War I, and by 1916 Nederland was in its peak as a tungsten boomtown. In the years from 1906 to 1916 the price of tungsten ore increased over

2,000 percent. But as the prices soared over a short period of time, the industry plummeted just as quickly. The spread of the great influenza epidemic in 1917 hit Nederland particularly hard and brought mining to a standstill. Mines closed and fell into disrepair. Today the Tungsten Loop trail reminds us of the ore that once made this place known around the globe.

Plants and Animals Reclaim the Land

With the end of mining and transition of Mud Lake to an open space property, humans

have lightened their pressures on the land. Plants and animals are reclaiming this portion of the earth, and the vibrancy and colors of a montane forest are returning. Beneath the shade of lodgepole pines the soil is adorned by the abundant shrub kinnickinnick for which Mud Lake's other loop trail is named.

Kinnickinnick, or bear berry, is a creeping shrub (in the *manzanita* genus) that grows between 6,000 and 11,700 feet in Colorado. It often serves as the dominant understory plant in lodgepole pine forests, like those at Mud Lake. The rocky soils, along with the impacts of mining at Mud Lake, make it prime habitat for this shrub.

In spring, the shrub's glossy evergreen leaves become accompanied by small flowers which eventually develop into deep red berries. Though rather woody and tasteless, the berries are eaten by a variety of songbirds, grouse, wild turkeys, deer, elk and small mammals, as well as by black bears. Humans usually shy away from use of the berries as food except in case of emergencies. What has appealed to people most about the plant are the leaves. These have long been used as a substitute for tobacco. In years past, it was not uncommon to combine the leaves with other plant materials to make a mixture for smoking. In fact, the name "kinnickinnick" is derived from the word for "mixture" in Unami, an Algonquian language.

Kinnickinnick is a reminder of the link between humans and the lands we live upon. It moves in where we have disturbed the soil. Once the plant is established, we take from the plant for our use. Everything in the natural world is linked together and humans are included in that chain. As you walk the trails at Mud Lake, let the names of the paths remind you of your tie to the earth—mining, plants, regeneration, time, and us.

Discover Boulder County *calendar of events*

Sunset Hikes

Every summer you can enjoy weekly nature hikes at sunset. Join your family and friends for an evening exploring your local parks. At each hike, volunteer naturalists interpret each park's history, geology, ecosystems, plants and wildlife.

- Hikes begin at 6:30 p.m. and conclude by sunset
- Consist of two miles of easy-moderate hiking
- All ages welcome. An adult must accompany children
- No pets are permitted

Thursday, June 5	Walden Ponds Wildlife Habitat Area (Meet at group picnic shelter near Cottonwood Marsh)
Friday, June 13	Rabbit Mountain Open Space
Monday, June 16	Walker Ranch Open Space (meet at the Meyers Homestead Trailhead)
Tuesday, June 24	Carolyn Holmberg Preserve at Rock Creek Farm (meet at the Stearns Lake Trailhead)
Wednesday, July 2	Betasso Preserve
Thursday, July 10	Mud Lake Open Space
Friday, July 18	Bald Mountain Scenic Area
Monday, July 21	Hall Ranch Open Space (meet at group picnic shelter near the upper parking lot)
Tuesday, July 29	Caribou Ranch Open Space
Wednesday, August 6	Betasso Preserve
Thursday, August 14	Walker Ranch Open Space (meet at Meyers Homestead Trailhead)
Friday, August 22	Bald Mountain Scenic Area

Let's Talk Chickens

Saturday, June 7; 1-3 p.m.

and

Saturday, July 9; 1-3 p.m.

Agricultural Heritage Center, 8348 Ute Hwy 66, Longmont

Join volunteer Barb Kirchner as she shares lessons learned from raising her own chickens. Learn why chickens have been popular as pets and livestock for centuries and how they are suited to your backyard today. Kids (and adults) can learn how to walk, talk, and act like a chicken. Bring your kids and questions to this informal drop-in hen party!

Fire and Flowers Hike

Saturday, June 7; 9:30-11:30 a.m.

Bald Mountain Scenic Area; five 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 role of fire in ponderosa pine ecosystems, and forest management practices that can lessen the effects and scale of wildfires. See evidence of the September 2010 Fourmile Canyon fire, and learn about rehabilitation efforts employed. Along the trail, we will watch for wildflowers and signs of wildlife.

I Spy Bones

Tuesday, June 10; 10-11 a.m.

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

The bone detectives are on the prowl! Help volunteer naturalists search for evidence, including skulls, bones, and antlers of some of the animals that live here. This program is for preschool children and their families, and will include plenty of hands-on fun for all.

Fish Hawks of Boulder County

Sunday, June 15; 9-10:30 a.m.

Boulder County Fairgrounds, Cattail Pond, North Entrance off Boston Avenue, Longmont

What hawk-like bird has a white head, eats fish, spends the summer and nests here and is not a bald eagle? The answer is osprey! Join volunteer naturalists to learn about this bird of prey. An osprey pair has nested at Cattail Pond for several years, and with some luck, we may see adults and young looking for food and trying out new wings. We will also keep our eyes out for other birds frequenting the area. Bring a bird field guide and binoculars if you have them.



Discover Boulder County *calendar of events*



Kids Gone Fishing

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.

Dates for 2014:

Clinics take place from 9 a.m.-noon

Saturdays; June 7, August 9 and September 13

Sign up at: www.BoulderCountyOpenSpace.org/register

Got questions? Contact Michelle Bowie at mbowie@bouldercounty.org

Night Hike at Bald Mountain

Wednesday, June 18; 8:30-10:30 p.m.

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

Join volunteer naturalists for an evening of exploring under cover of darkness. We'll hike about one mile round-trip, on a moderately-strenuous trail, enjoying the starlight, listening for night sounds, and learning about some of the nocturnal habits of the critters that live here. Bring a flashlight!

All That Glistens Is Not GOLD

Saturday, June 21; 11 a.m.-1 p.m.

Meeting location provided to registered participants

There is gold in these hills! Try your hand at an activity that led to the settlement of Boulder County—gold panning! Will all your hard work 'pan out?' Programs are open to ages 5 and older. Register by June 19 at www.BoulderCountyOpenSpace.org/register or call 303-776-8848.

Celebrate Summer Hike at Mud Lake

Sunday, June 22; 10 a.m.-noon

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

Join volunteer naturalists to celebrate the coming of summer to the high country! On this easy one-mile hike we will explore the natural history of the area including wildflowers, wildlife, and forest ecology. We will also talk about summer weather patterns and safety in the mountains. Wear hiking shoes, be prepared to hike at an elevation of about 8,500 feet, and bring rain gear.

The Wonder of Walden: Nature Journaling at the Marsh

Saturday, June 28; 9:30-11:30 a.m.

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

Nature journaling is about asking questions, seeing details, and experiencing nature more deeply. Volunteer naturalist Ellen Orleans introduces how and why to keep a nature journal. We will discuss sensory-building and drawing techniques as we walk while sketching anything that catches our eye. All ages and experiences welcome. Bring pencils and unlined paper.

Hard Rock Mining Tour

July 5; 10:30 a.m.-1:30 p.m.

Meeting location provided to registered participants

Tap into the towns, tools, and characters of local hard rock mining heritage on a driving tour of Boulder County mining sites. Tour itinerary will be available one to two weeks before each tour for registered participants. The tour is free and open to ages 10 and up. Some walking required. Register by July 3 online at www.BoulderCountyOpenSpace/register or call 303-776-8848.

Wildflowers of Caribou Ranch

Saturday, July 5; 9 a.m.-noon

Caribou Ranch Open Space; two miles north of Nederland on County Road 126

Escape the summer heat and enjoy beautiful wildflowers. Volunteer naturalists will be available along the 4.2 miles (roundtrip) of easy-moderate trails to help you identify and learn about the wildflowers as you explore the beautiful montane forest, meadows, and wetland landscape. Be prepared to hike at an elevation of about 8,500 feet and bring rain gear.



Geology and Landforms of Hall Ranch

Wednesday, July 9; 6:30-9 p.m.

Hall Ranch Open Space; one mile west of Lyons on Highway 7; meet at the group picnic shelter near the upper parking lot

Join volunteer naturalists Dick Pratt and Roger Myers to explore and learn about the remarkable and dramatic geology and landscape of Hall Ranch. This moderately strenuous two-mile hike (roundtrip) will cover over 1.7 billion years of geologic history. This hike is geared to adults.

Discover Boulder County *calendar of events*

Old-Fashioned Carpenter Tools: Their Ways & Workings

Saturday, July 12; 1-2:30 p.m.

Meeting location provided to registered participants

Join historic preservationist Don Burd as he shares mysteries of how pioneer settlers got carpenter tools to work without batteries or electricity. Hands-on activities include how to use a woodworking plane, a 'post hole' drill and how to sharpen 'edge' tools with a 'whet' stone. Bring work gloves. Register by July 10 at www.BoulderCountyOpenSpace.org/register or call 303-776-8848.

Night Hike at Walker Ranch

Tuesday, July 15; 8-10 p.m.

Walker Ranch; approximately seven miles west of Boulder on Flagstaff Road; meet at the Meyers Homestead Trailhead

Join Boulder County volunteer naturalists for an evening of exploring under cover of darkness. We'll hike about two miles round-trip on an easy trail, enjoying the starlight, listening for night sounds, and learning about the nocturnal habits of the critters that live here. Bring a flashlight!

Fabulous Flora and Fauna of Montane Wetlands and Forests

Saturday, July 19; 10 a.m.-noon

Mud Lake Open Space; two miles north of Nederland on County Road 126; meet at the parking lot/trailhead

Escape the summer heat and join volunteer naturalists Therese Pieper, Roger Myers, and Leslie Larson to enjoy a moderate two-mile hike through open space while learning about the plants and trees and the critters that depend upon them. We'll discuss how animals survive and thrive, identify trees, shrubs, and wildflowers, and observe geologic features that affect this ecosystem. We'll end our hike at a spectacular site for a picnic! Bring rain gear and binoculars if you have them.

A Butterfly's Life

Wednesday, July 30; 7-8:30 p.m.

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

Join volunteer naturalists for a beginner's guide to Boulder County butterflies. This program will cover the life cycle of butterflies, behavior, host plants, identification tips, and the monarch migration. We'll share facts about the connection between plants and butterflies and talk about when and where to look for those "flying flowers."

All Programs

All ages are welcome unless otherwise noted. NO PETS PLEASE! Be prepared for summer temperatures. For information about these programs, or to arrange a volunteer-led program for your group, please call 303-678-6214.

Hard Rock Mining Tour

August 2; 10:30 a.m.-1:30 p.m.

Meeting location provided to registered participants

Tap into the towns, tools and characters of local hard rock mining heritage on a driving tour of Boulder County mining sites. Tour itinerary will be available one to two weeks before each tour for registered participants. The tour is free and open to ages 10 and up. Some walking required. Register online by July 31 at www.BoulderCountyOpenSpace.org/register or call 303-776-8848.

Butterflies and Other Flying Creatures

Sunday, August 3; 9:30 a.m.-12:30 p.m.

Meyers Homestead Trail at Walker Ranch; meet at the trail-head picnic table (below the rest room)

Volunteer naturalist Jan Chu and others will lead this slow-paced 1.5-mile hike along trails and meadows in search of mid-summer butterflies, birds, and other flying insects. See how creatures in the foothills find the food, water, shelter, and space needed to survive. We'll talk about butterfly behavior and life cycles, and learn some tips on identification. We'll also look for interesting butterfly behavior, including taking nectar, puddling, courtship, and perhaps depositing eggs on host plants. Bring field guides, binoculars, and a snack if you'd like.

Summer Heritage Evening at Walker Ranch Homestead

Saturday, July 19; 5-7:30 p.m.

Walker Ranch Homestead; 8999 Flagstaff Mountain Road, approximately seven miles west of Boulder

Bring your family, a picnic supper and enjoy an evening at the homestead. (Please bring a blanket if you plan to picnic since there are no tables at the homestead). Visit with costumed volunteers as they demonstrate late 1800s rural games and chores such as doing laundry the old-fashioned way, woodworking, meal preparation, and blacksmithing. All visitors can participate in chores and games!



Discover Boulder County *calendar of events*

Mining Unrest Nearby: The Hecla Mine Conflict of 1914

Monday, August 4; noon-1:30 p.m.

**Boulder County Courthouse, 1325 Pearl Street in Boulder;
meet in the Commissioners' Hearing Room**

Louisville historian Ron Buffo leads audience members through the labor unrest in Boulder County coal mines between 1910 and 1914. Learn about the issues that impacted the mines, workers, and local communities during this difficult time. This event is open to all ages. For more information, email skippen@boulder-county.org or call 303-776-8848.

A Ride Out of History Along the Oregon Trail

Sunday, August 10; 11 a.m.-12:30 p.m.

Agricultural Heritage Center, 8348 Ute Hwy 66, Longmont

Enjoy the re-creation of a mid-1800s frontiersman's experience. Inspired by Kit Carson and the US Cavalry, Fred Thrall accomplished a three-week, mostly-solo and unsupported horseback ride across some of the most remote open range in the continental U.S. He rode along a portion of the Oregon Trail, following original ruts in the prairie much of the way. For more information, email skippen@bouldercounty.org or call 303-776-8848.

Night Hike at Mud Lake

Monday, August 11; 8-10p.m.

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

Join volunteer naturalists for an evening of exploring under cover of darkness. We'll hike about one mile roundtrip on an easy trail, enjoy starlight, listen for night sounds, and learn about nocturnal habits of the critters that live here. Bring a flashlight!

All That Glistens Is Not Gold

Saturday August 16; 11 a.m.-1 p.m.

Meeting location provided to registered participants

There is gold in these hills! Try your hand at an activity that led to the settlement of Boulder County—gold panning! Will all your hard work 'pan out'? Programs are open to ages 5 and older. Register by August 14 at www.BoulderCountyOpenSpace.org/register or call 303-776-8848.

High Peaks and Silver Dreams -- The History of Caribou Ranch

Saturday, August 16; 9 a.m.-1 p.m.

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

Join volunteer naturalists for a hike through geologic and historical time to explore ancient mountain-building, alpine glaciation, and the history of hard rock mining in the area. We will identify plant and animal communities on this moderate 4.2 mile (round-trip) hike. Wear hiking shoes, bring lunch, water, rain gear and clothing for changeable weather above 8,500 feet.



Barnyard Critter Day

Sunday, June 22; 10 a.m. to 3 p.m.

**Agricultural Heritage Center
8348 Highway 66, between Lyons and Longmont**

Animals have always been part of our lives. Come learn about the roles of chickens, pigs, horses and other animals on a farm. See demonstrations of sheep herding and horseshoeing, visit with chickens and pigs, and ride on a horse-drawn wagon.

Please leave pets at home so our working animals will not be disturbed.

For more information, call 303-776-8688 or email jdrew@bouldercounty.org.

Living in Lion and Bear Country

Saturday, August 23; 9-11 a.m.

Hall Ranch Open Space; One mile west of Lyons on Highway 7; meet at group picnic shelter near the upper parking lot

Join volunteer naturalists for a moderate 1.5-mile hike and learn about the ecology and behavior of mountain lions and black bears. We'll talk about why the foothills are good habitat for lions and bears. We'll also discuss hunting and feeding habits, and what to do if you meet a lion or bear.

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 at noon.

Thursday, June 26; Betasso Preserve

Thursday, July 31; Caribou Ranch Open Space

Thursday, August 28; Bald Mountain Scenic Area

Teens Can Apply Now: Left Hand Outdoor Challenge

The award-winning Left Hand Outdoor Challenge teaches Boulder County teens to be stewards of our open space lands. The program, which runs from September to May, focuses on the development of outdoor leadership skills, understanding and knowledge of natural resources, and environmental ethics through a series of monthly challenges and workshops.

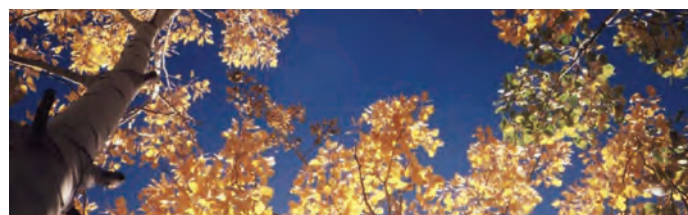
Teen participants learn wildland firefighting skills, navigate the backcountry with map and compass, lead junior ranger programs, and learn winter survival skills.

The deadline to apply for the 2014/2015 school year Left Hand Outdoor Challenge session is August 30.

For more information visit:

www.BoulderCountyOpenSpace.org/challenge or contact Ranger Jason Vroman, 303-678-6350.

Check out photos and challenges from last year:
www.facebook.com/lefthandchallenge



Caribou Ranch Reopens

Caribou Ranch Open Space will reopen on July 1. Escape the sizzling summer days on the plains, and discover the diverse vegetation and beautiful scenery at this property.

The current trail system is open to hikers and equestrians only. Mountain biking is not permitted. Dogs are not permitted for wildlife habitat and water-quality protection.

Junior Rangers Summer Challenge Begins!



Hey kids!

Become a Nomad, an Explorer, an Adventurer and a Champion by completing fun outdoor challenges. Challenges range in difficulty from planning a “no technology day” at home to learning outdoor safety and survival skills with the rangers.

Who's It For? The Junior Ranger Adventures Summer Challenge is perfect for kids aged 5-12, but the whole family is welcome to participate.

Dates: Complete challenges from May 31 to September 1, 2014.

How does it work? Create an account using only an email address. Why do we need your email? If you want, you can track your progress as a family using one account. Track your progress throughout the summer. If you earn 1,000 points, we will send you an invitation to the celebration ceremony.

Prizes & lunch with the rangers Earn 1,000 points and you'll be invited to celebrate your success at the Junior Ranger Graduation. At the graduation you'll earn a Junior Ranger badge and have the chance to win awesome prizes. The graduation will be held on September 13.

Sign up or learn more:

Visit: www.BoulderCountyOpenSpace.org/jr or contact Ranger Erin Hartnett at ehartnett@bouldercounty.org

Dougherty Museum Opens

Opening day is Friday, June 6.

In 1927, Ray G. Dougherty bought a circa 1900 reed organ from a music store in Longmont. That was the first item of a collection that grew large enough to fill a 29,000 sq. ft. museum.

The collection of beautifully restored and original automobiles—most in running condition—includes models powered by steam, electricity, and early internal combustion types. The museum also houses various tractors, a stage coach, music antiques, and more.

Museum hours: Open June, July and August on Friday, Saturday, and Sunday from 11 a.m.-5 p.m.

Location: 8306 N 107th Street, Longmont

For more information call 303-776-2520 or visit www.BoulderCountyOpenSpace.org/dougherty



PARKS & OPEN SPACE DEPARTMENT
5201 St. Vrain Road
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303-678-6200

www.BoulderCountyOpenSpace.org

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NOTE: Please visit www.BoulderCountyOpenSpace.org/trails for information about properties that may be closed due to the 2013 flood.

