

Boulder County Nature Association



"The Boulder County Nature Association is a private, non-profit membership organization committed to preserving the natural history of our region through research, documentation, and public education."

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Spring 2010

Annual Symposium Addresses Ecosystem Restoration

The 15th Boulder County Ecosystem Symposium will be held Saturday, April 3, at the University of Colorado Ramaley Auditorium, opposite the main entrance to Norlin Library. Free registration begins at 8 a.m.

This year's symposium is dedicated to the memory of raptor rehabilitator Sigrid Ueblacker. Donations collected at the symposium will benefit the Birds of Prey Rehabilitation Foundation. The annual symposium is sponsored by Boulder County Nature Association, Boulder County Audubon, Boulder County Parks and Open Space, Boulder Open Space and Mountain Parks, Colorado Native Plant Society, and the University of Colorado.

Parking (\$3 all day) is available at the University Memorial Center lot on Euclid and the lot between the library and recreation center, off University Avenue. Please bring a cup, plate, and fork to reduce waste.

Schedule

8-9 a.m.: Free registration.

9-9: 15 a.m.: Natalie Shrewsbury, Steve Jones, and Rich Koopmann. Introduction and remembrance of Sigrid.

9:15-10: David Buckner, ESCO Associates. "Perspectives on restoration, past, present, and future."

10-10:45: Clinton Francis, University of Colorado. "Cumulative consequences of noise pollution on natural communities: impacts on birds and beyond."

11-11:45: Chad Julian, Boulder County Parks and Open Space. "Front Range ponderosa pine forest restoration."

11:45-12:30: Jeff Connor, Rocky Mountain National Park. "Restoration of four high-altitude lakes inundated by dams."

12:30-1:45: Complimentary buffet lunch.

1:45-2:30: Alan Carpenter, John Giordanengo, and Ed Self, Wildland Restoration Volunteers. "Obliteration and restoration of OHV roads in Colorado: tried and true treatments."

President's Column

I have a challenge for you. Recruit a new member who is younger than you. In the membership survey of last fall, we got confirmation of what we've known for a long time. Our membership is aging. Less than 2 percent of our members are under the age of 40.

We know that Boulder County citizens value environmental protection. We need only look at the substantial tax monies that go to protecting open space or the fervor of our local governments for combating climate change. The voters who approve these taxes and actions can't *all* be retirees.

BCNA is well thought of by local government. We continue to do a number of useful studies that document our local environment, and this information gets used. In fact, we have more people volunteering in our citizen science projects than we have members. So I suspect that we simply aren't getting the word out about what BCNA does and stands for to our friends and neighbors who share our passion for the natural world. Speak up when the opportunity arises.

If we want this organization to thrive not next year but in 25 years, we need to recruit members who will carry on the tradition of the founders. They were young committed naturalists who saw a need for a local organization. The need is still there. BCNA does a great job of filling that need. But it is going to be hard to continue to fill that need, monitoring our eco-stewardship sites and cliff nesting raptors for example, when we are all using walkers instead of hiking poles.

So take a pledge. I will attempt to recruit one new member younger than myself by the end of 2010.

Thanks. I hope to see you at the annual Eco-Symposium on April 3. Bring a friend!

-Michael Delaney

2:30-3:15: Claire Deleo, Boulder County Parks and Open Space. "Going local: native seed collection and increase from Boulder County."

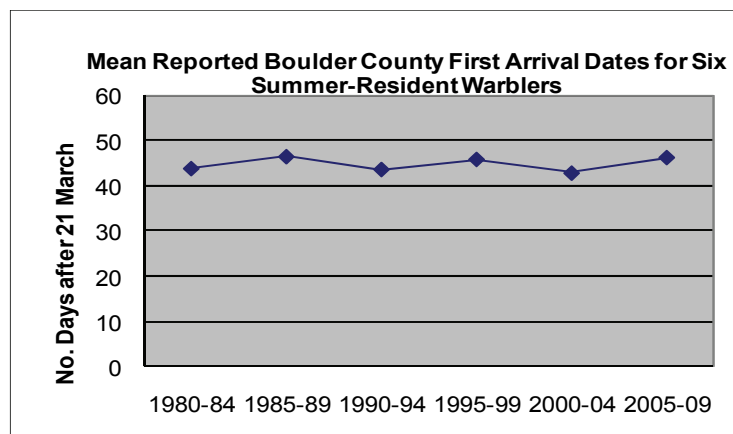
3:15-4: Tom Grant, Colorado State University. "Innovative restoration methods."

Update: Are Summer Songbirds Arriving Earlier?

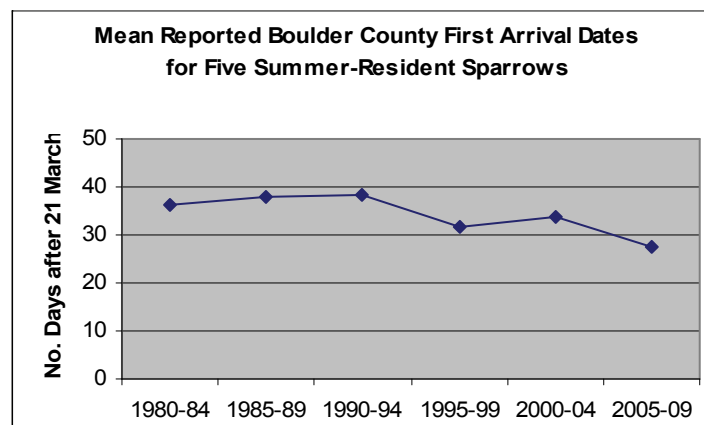
by Steve Jones

A couple of years ago I summarized reported Boulder County first arrival dates for our most common summer-resident warblers and sparrows. Here's an update of those observations from the Boulder County Wildlife Inventory (Boulder County Audubon Society 1978-2010). The Boulder County Wildlife Inventory compiles bird sightings submitted by volunteers within 48 mapped areas of Boulder County. There are no controls for observer effort, and the amount of effort within each area varies from year to year. However, this limitation is moderated by the zeal of birdwatchers. Most birdwatchers take pride in reporting first observations of migrating birds and are inclined to submit that information even if they are not regular contributors to the inventory.

I first looked at six relatively common summer-resident warblers: Virginia's warbler, yellow warbler, Wilson's warbler, McGillivray's warbler, common yellowthroat, and yellow-breasted chat. As you can see from the table below there's no apparent trend in first arrival dates. During 1995-2009, summer-resident warblers arrived in Boulder County no earlier or later than they did during 1980-94.



This surprised me, so I investigated a second group, the sparrows. With the sparrows there seems to be a clear trend toward earlier arrivals (see table below). During 1995-2009 mean reported first arrival dates averaged 6.5 days earlier than during 1980-94. Mean reporting first arrival dates from 2005-09 were nearly 10 days earlier than reported arrivals from 1980-94.



At first I was puzzled by this difference, but then I began to think about why and how birds migrate. We might envision migration as a race to get to prime northern breeding areas as fast as possible without starving. For most species, this race appears to be triggered primarily by day length (Ehrlich et. al. 1988). So especially in the tropics, where temperatures remain fairly constant throughout the year, we would expect globally rising temperatures to have little effect on bird departure dates.

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BCNA Spring Calendar

Saturday, April 3, 9-4 p.m.: *Boulder County Ecosystem Symposium: "Restoring Native Ecosystems."* Free registration for our annual symposium begins at 8 a.m. at the University of Colorado Ramaley Auditorium, directly opposite the main entrance to Norlin Library. Parking (\$3 all day) is available in the university lot between the library and the recreation center and at the University Memorial Center parking structure. See the article on page 1 for a complete schedule of speakers.

Saturday, May 1, 7-11 a.m.: *Ecosteward Rendezvous and New Volunteer Orientation.* Join ecostewards Elaine Hill, Carol Kampert, Maureen Lawry, and Steve Jones (303-494-2468) for a leisurely breakfast stroll up lower Skunk Canyon, in the Boulder Mountain Park. We will search for and code breeding birds, mammals, and recreational users, then enjoy a potluck picnic in the woods below the Mesa Trail. Bring finger food to share at the picnic. New volunteers and other curious tree huggers are most welcome. Meet at 7 a.m. at the lower Skunk Canyon trailhead, where Deer Valley Road (accessible from Dartmouth Ave. and Kohler Drive) dead ends at Hollyberry Lane.

Sunday, May 16, 10:00 a.m. to noon: *Wildflower Hike and Picnic.* Join Jim McKee and Sue Cass for a gentle wildflower hike on the Lichen Loop at Heil Ranch Open Space. We'll take in all that "Springtime in the Rockies" has to offer and, in addition to each other's good company, we'll share a picnic lunch when we are through. Bring lunch and comfortable shoes and meet us at the picnic shelter at Heil Ranch Open Space. For additional information contact Sue Cass, (720-684-6922, suecass@comcast.net) or Jim McKee, (303-651-2414; jimmckee3@comcast.net).

Wednesday, May 26, 7 a.m. to noon. *Breeding Bird and Mammal Search at Walker Ranch.* Join ecostewards Laura Osborn and Steve Jones (303-494-2468) and Boulder County wildlife ecologist Susan Spalding for a 2.5-mile hike up the Meyer's Homestead trail. This is one of the best spots in Boulder County to see and hear foothills birds, including Williamson's sapsucker, olive-sided flycatcher, western bluebird, eastern bluebird, green-tailed towhee, vesper sparrow, and red crossbill. Expect to see puddling swallowtails and blues as well. Meet at the Meyer's Homestead lower trailhead, on the right approximately 7 miles up Flagstaff Mountain Road, at 7 a.m. Or meet to carpool at the Chautauqua Ranger Cottage parking lot at 6:30 a.m.

(Songbirds . . . continued from page 2)

As the birds move northward, however, food availability might influence the speed of their migration. If trees are leafing out earlier and more insects are available to eat, the birds might push northward more quickly. Birds who arrived early at breeding sites might fledge more young than later arrivals, thus increasing the proportion of "early arriving" genes in the gene pool.



Lark Sparrow, photo by Scott Severs

Food availability along the migration route might influence short-hop migrants (who make frequent stops) more than long-hop migrants. Many of our warblers are long-hop migrants, whereas many of our sparrows are short-hop migrants.

What happens when the long hop migrants arrive at breeding sites? With warblers, who feed on freshly emerged caterpillars and other invertebrates, late arrival could be detrimental to nesting success (Strode 2009). For example, if trees are leafing out two weeks earlier but the warblers are arriving no earlier, many of these food resources might be consumed by other birds before the warblers arrive. A study of pied flycatchers in Europe found that local populations declined up to 90% in areas where birds arrived and raised their young significantly later than the time when food availability peaked (Both et. al. 2006).

Dave Hallock has observed that warblers appear to be arriving earlier within the Indian Peaks count circle than they did a couple of decades ago. It could be that most of our mountain warblers make one or two long hops to the plains of Boulder County, then time their upslope migration based on the availability of

(Continued on page 6)

Geology and Ecosystems in the Colorado Piedmont

by Raymond Bridge

The Colorado Piedmont

Our foothills, hogbacks, and the grasslands connecting with them are part of the physiographic province known as the Colorado Piedmont, the westernmost slice of the Great Plains in our region.

As most naturalists in the Boulder area know, some ecosystems in our segment of the Colorado Piedmont are unique, including various remnant plant communities, which, in turn, can support unusual ecosystems. There are a number of reasons for the unusual biodiversity in and around Boulder, such as the fact that the Continental Divide swings farther east in the mountains above Boulder. There are also some unique geological features in our area, however, that affect our ecosystems in ways that most people don't notice. If you pay attention, you'll see many places along our mountain front where the underlying geology is clear from a distance, where a change in vegetation marks the change in the surficial or bedrock geology below.

Plant Communities and Geology

These relationships manifest themselves in different ways. Most obviously, a band of stronger rock will present an obstacle to the penetration of roots so that it interrupts vegetation. The sequence of hogbacks and valleys along our mountain front repeats regularly, because the same sequence of rock formations has been tilted up by the uplift of the Front Range 70 million year ago, so there are similarities from Wyoming to Colorado Springs. The stronger layers form hogbacks, and weaker intervening formations erode into valleys. Between the Dakota Hogback and the Flatirons (Fountain and Lyons Formations) is the valley formed by the much weaker Morrison and Lykins Formations. These two degrade into different kinds of soil, so it is not unusual for the vegetative cover to change to reflect the boundary between the two. The change in vegetation is visible

from a distance, even when the rocks are not.

More interesting are specialized plant communities that rely on a specific geologic substrate. Plant ecologists working with Open Space and Mountain Parks have distinguished a "shale barren" plant community on the east side of the Dakota Hogback north of Wonderland Lake. It grows on the poorly drained Benton Shale. Among the plants found there is dwarf leadplant (*Amorpha nana*), which requires the selenium that is present in the shale.

Resistant Gravel and Boulder's Mesas

One of my favorite examples of ecosystems linked to geology in our area is the mesa tops, like Enchanted Mesa, Shanahan Ridge, and the NCAR hill. As you hike on the nearby trails, you can typically see a steep, largely treeless, slope, supporting mixed grasses and a few forbs. Just at the top of the slope, you see ponderosas start. This is because the mesa is topped by a gravel cap, composed of gravel clasts ranging in size from sand to massive boulders. This gravel cap retains sufficient moisture to support the pines, whereas the steep slopes below have only a thin veneer of cobbles and soil that has fallen from the cap above. Ponderosas typically appear on the slopes below only in gullies and other locations where gravel making its way down the slope has collected.

Note that the gravel caps on Boulder's mesas are far from accidental. They are the reason the mesas are there. During the glacial-interglacial cycles of the Pleistocene, flooding carried large volumes of gravel out of the canyon mouths to the mountain front. The entire flood plain during each of these intervals was at approximately the same elevation (Rocky Flats, NCAR, and Table Mountain are at the same topographic level), but the thickest gravel was deposited at canyon mouths. This gravel is, in turn, far more resistant to erosion than the platform of weak Pierre Shale below, and as long as it lasts, the resistant gravel protects the shale from erosion.



Mother with Pup, photo by Steve Jones

Prairie Dog Adventures: A Special Field Trip for Families

Date: Saturday, May 15, 8 – 11 am

How do prairie dogs spend their days? What do their underground tunnel systems look like? How many other animals depend on prairie dog towns? Join naturalists Joyce Gellhorn and Carol Kampert as we observe and record the activities of these fascinating social mammals in field journals and on data sheets. We'll watch them excavate burrows, sunbathe, bark warning calls, "kiss" and preen each other, and nibble on fresh plants. We'll also learn about the status and management of prairie dogs in Boulder County and Colorado.

Open to families with children 7 – 12 years old (children must be accompanied by an adult). Limited to 12 participants.

Meet at the South Boulder Creek trailhead, Marshall Road and South Broadway (on the east side of Broadway just south of the mobile home park) at 8 AM. Bring something to sit or lie on, along with binoculars, camera, warm clothing, water, and snack. It's a short walk from the trailhead to the prairie dog colony.

Please contact Carol Kampert at 303-499-3049 or kampert@comcast.net to sign up for the field trip or to ask any questions you might have.

Fur-ioso

*Fox the debutante
Insouciant in elbow-
Length black gloves
Trails her extravagant
Fur behind, flirts
Coyly with admirers
And (de)parts the crowd*

*Fox the surgeon scalpel
Nose probes adroitly
'Neath the skin of snow
Deftly excises vole
No collateral damage
Lip-licking mouth and case
Both neatly closed*

*Fox the try-athlete long-
Distance runner lean and lithe
Ounce for ounce powerhouse
Up and over the high privacy
Fence no break in stride a ripple
Flow of fur across finish line
Sporting near-feline grace*

*Fox the diva elegant
And wholly self-sufficient
Implied bow and graceful
Exit her audience rises
Applauding shouting
More more to no avail
Performance done—no encore*

- Ann Cooper



Red Fox, photo by Ann Cooper

(Songbirds. . . Continued from page 3)

food and perhaps the severity of nighttime temperatures.

We might conclude from all this that impacts of climate change are complex and have different consequences for different species. We will need multi-decade data streams to document these often subtle effects. We're fortunate in Boulder County to have at least two databases, the Boulder County Wildlife Inventory and the Indian Peaks Four Season Bird Counts, that have documented bird population trends over three decades.

Literature Cited

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Strode, P. K. 2009. Spring tree species use by migrating yellow-rumped warblers in relation to phenology and food availability. *Wilson Journal of Ornithology* 121 (3): 457-68.



Mourning Dove nest, photo by Scott Severs

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Visit Boulder County Nature Association online at:

www.bcna.org

The New Buzz

by Ann Cooper

I wonder the new word, staycation, coined during the last high point of fuel prices, as in a close-to-home jaunt that uses little gas—will stick? Gas prices may not be as high as they were, but the current state of the economy combined with my green conscience, may continue to influence travel plans.

I've found a pastime that I can indulge easily from home. I've discovered "charismatic mini-fauna"—fascinating tiny critters such as dragonflies and damselflies that have dazzling beauty and astonishing behavior.

When it comes to wildlife watching, it's common to focus on big, furry animals, especially the babies of the species. (Aw, so cute!) Other people go for the zip and flash of the feathered flocks, considering a good day to be one when they add a new bird species to their life list. I'm thrilled if I can find a perching dot-tailed whiteface or a lurking blue dasher. I'm content to watch these insects as they bask, feed and mate, guard their females, or lay eggs. It's quite a pond soap opera!

Dragonfly names are exotic and often expressive. Blue-eyed darners are long and thin, like sewing needles. Halloween pennants have pumpkin-colored wing stripes and flutter about like flags in the breeze. Western pondhawks are every bit as predatory as ferruginous hawks hunting prairie dogs.

When I meet dragonflies up close, their lives seem exotic, too. They whizz past me, stop and turn on a dime, or hover like miniature helicopters. Many males patrol territories, darting out to send off rivals before returning to a favorite perch. When mating, a male dragonfly transfers sperm to his second abdominal segment. Then he grabs a female by the back of her head. (Ouch!) She curves her abdomen around to collect his sperm and in this way the two make a heart-shaped mating wheel, often in mid air. Afterwards, she may dip her tail in the water to release the eggs—while he still guards her.

Of all the behaviors, the most admirable from my point of view has got to be the dragonflies' appetite for mosquitoes and other pesky biters!

Since I discovered dragonflies, I've begun to know the local wetlands, even the rather scummy midsummer ones, in a new way for their living dramas. I value them more than before for all the magic moments I

experience when watching for dragonflies. My newest passion slows me down and opens up a wealth of small worlds to explore that are easily reached from the local bike trails. That's the kind of Colorado staycation I'm planning in the heat of next summer.



Eastern Amberwing, photo by Ann Cooper

Boulder County Releases New Video

The Boulder County Parks & Open Space department has released a new video, "Bringing Back Nature's Balance, Boulder County Parks and Open Space and Ecological Restoration."

Boulder County Parks & Open Space is dedicated to preserving and restoring natural resources for the benefit of the environment, wildlife, and the public. Open space that's in good shape improves air quality and water quality; it decreases erosion, provides wildlife habitat and protects the aesthetics of these beautiful places.

The video highlights different restoration projects on Boulder County Open Space land including riparian, grassland, forest, and wildlife habitat restoration projects that protect and preserve natural ecosystems and wildlife habitat. The video can be seen at www.BoulderCountyOpenSpace.org.

It will also air on Boulder Channel 8 on Mondays at 9 p.m., Thursdays and Fridays at 8 p.m., and Saturday afternoons at 12:30 p.m. Lafayette Channel 8 and Longmont Channel 3 will also air the program at dates and times to be determined.

For more information, contact Vivienne Jannatpour at 303-678-6277 or vjannatpour@bouldercounty.org.

Support the Boulder County Nature Association

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The membership year is January 1 to December 31. Those who join after October 1 are considered members in good standing through the following year. All members receive this quarterly newsletter. Supporter-level members and higher also receive a complimentary copy of each BCNA publication.

Please make checks payable to "Boulder County Nature Association" or "BCNA" and mail to:
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