



On The Wing

Volume 40, Number 5

Boulder County Audubon Society Newsletter

Nov-Dec 2010

Boulder Christmas Bird Count December 19, 2010

Come out and enjoy the annual Christmas Bird Count this year. Call leader Bill Schmoker, 303-702-9589 (bill@schmoker.org) to volunteer for this all-day event.

From December 14, 2010 through January 5, 2011, tens of thousands of volunteers throughout the Americas will take part in an adventure that has become a family tradition among generations. Grandmothers and students, soccer moms and scientists, armed with binoculars, bird guides and checklists will head out on an annual mission – often before dawn. For over one hundred years, the desire to both make a difference and to experience the beauty of nature has driven dedicated people to leave the comfort of a warm house in the middle of winter.

These Citizen Scientists are taking action for conservation. By participating in Audubon's Christmas Bird Count, they help scientists understand how birds are faring amid unprecedented environmental challenges. The data they collect informs the world about the State of Birds, and provides the information we need to shape their future and ours.

Boulder has long had strong participation in the CBC. Participation in Boulder has often been among the top 50 in the country. With some help from mild and sunny weather, the 30 territories were scoured by 125 field birders and supplemented by 27 feeder watchers. These enthusiastic participants logged 213 miles on foot and 537 miles in cars to count more than 40,000 total birds.

Come out Dec 19, or watch your feeders, and help make the 2010 count another big success.

BCAS 4th Tuesday Program Series



Bill Schmoker—www.schmoker.org

November 23, 2010 7:30 p.m.

Eagles, Falcons, and Hawks: The Siren Song of the Flatirons

Rick Hatfield, Boulder OSMP Ranger

With 30 years experience monitoring raptors in the Boulder area, Rick Hatfield has not only accumulated knowledge about these birds, but also an appreciation for how the Flatirons and the birds that live there contribute to our sense of place and enrich our community. He'll concentrate on the cliff-nesting raptors and share stories of the volunteer monitoring efforts to learn more about the awesome creatures that call the Flatirons home.

The Birds of Prey Foundation will have a table with raptor information to accompany Rick's talk, possibly with a live raptor..



Looking for a Unique Gift?



Boulder County Audubon Society Annual Sale!

Come join the holiday festivities November 23

Enjoy the unique opportunity to meet local authors and artists with a wide selection of nature art and books for both enjoyment and education.

Visit the bargain table with great gifts at incredible prices.

Visit the used book table for books at reasonable prices.

“Adopt” a raptor with the Birds of Prey Foundation as a special gift.

Holiday Sale 6:00 p.m. Program 7:30 p.m.

Boulder Unitarian Universalist Church

5001 Pennsylvania Ave. (west off 55th St. between Arapahoe and Baseline)

Field Trips and Other Events

Sunday Nov 7, 9 a.m.–1 p.m.—Fall on Goshawk Ridge. The Goshawk Ridge trail winds through one of the most beautiful and pristine parts of OSMP. Its pine forests and meadows are a haven for wildlife, including elk and wild turkey, black bear and mountain lions. Explore this new trail through a Habitat Conservation Area with OSMP naturalist Dave Sutherland. We'll look for autumn's last wildflowers and remnants of fall color as the year draws to a close. Due to sensitivity of the habitat, space is limited to 15. Call Mark Ponsor, 303-530-2229 or m.ponsor@comcast.net for reservation and meeting location. 4 miles, 700' elevation gain

Wednesday, November 10, 7 p.m.— "Prairie Summer," with Steve Jones. Boulder Reynolds Branch Library

We recently experienced a bountiful growing season on the western plains, with most weather stations reporting 125-175% of average precipitation through August. One area in Nebraska's North Loup River Valley received more than 20" of rain during the month of June, alone.

We'll look at wildflowers, butterflies, and birds encountered this summer in Colorado's Comanche and Pawnee National Grasslands and the Nebraska Sandhills as Steve and other volunteers worked on the Colorado and Nebraska breeding bird atlases. Steve will provide an update on progress of both atlases, along with directions to tranquil hiking and camping destinations on the high plains.

This Boulder County Nature Association program is free and open to all. The Reynolds Branch Library is located in South Boulder on Table Mesa Drive one block west of Broadway and opposite the Table Mesa King Soopers.

Sunday, December 19, all day—Boulder Christmas Bird Count Please see the article on page 1. Please contact coordinator Bill Schmoker at 303-702-9589 or bill@schmoker.org to sign up. New volunteers and feeder watchers with any level of experience are always welcome and very much appreciated. The more eyes the better.

Tuesday, December 21, 7–11 a.m.—Winter Solstice Sunrise Hike. Teller Farms North Trailhead, Valmont Road one-half mile west of 95th St. Join us for this friendly and illuminating holiday gathering, now in its 23rd year. We meet at the Teller Farms North parking area at 7 and walk a mile or so to the bridge crossing Boulder Creek, where we enjoy a frosty sunrise as the Indian Peaks light up to the west. If you wish, bring a poem, thought, story, or song to share during our short sun-welcoming ceremony at the bridge. Optional breakfast follows around 9 at Garden Gate Café in Niwot. RSVP for breakfast to Steve Jones (curlwejsj@comcast.net; 303-494-2468).

Tuesday January 25, 7:30 p.m.—100 Years of Boulder Autobahn Christmas Bird Counts, with Bill Schmoker. Learn about the amazing changes in our local bird populations recorded since the first Boulder count in 1911 in the January Fourth Tuesday program.

Connect with nature:

nature-net-subscribe@yahoogroups.com

For BCAS-BCNA breaking news and announcements



Follow Boulder Audubon on Facebook, too.

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Bill Schmoker (303)702-9589

Wildlife Inventory

Alex and Gillian Brown (303)494-3042

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Next issue deadline: (Jan 2011 issue) Dec 10.

Contact editor via link at: www.boulderaudubon.org/newsletter.htm

Beyond Cap and Trade

In a NY Times column, David Leonhardt¹ quotes Michael Greenstone, an environmental economist who worked in the Obama White House, concerning the failure of the cap and trade bill: "The first best hope was getting a world price for carbon, and that now looks remote in the coming years but there are ways in which the other options may be preferable to a price only in the U.S." Notably, the cap and trade bill would have done nothing about the fast-growing emissions in China and India.

Two recent articles illustrate our current situation and the challenges we face to keep warming below the 2 °C threshold that is widely regarded as a desirable goal.

Davis, et al.² have investigated the base case: What would future CO₂ levels and mean temperatures be if people built no additional CO₂-emitting devices (e.g., power plants, motor vehicles) and allowed existing devices to live out their normal lives over the next 50 years? They conclude that this obviously unrealistic scenario would limit atmospheric CO₂ to less than 430 ppm and limit mean warming to about 1.3 °C (2.3 °F) above preindustrial values.

Hoffert³ investigates the enormous challenge of making the transition to carbon-neutral sources using a realistic extrapolation of recent growth of emissions from new coal plants, etc. He concludes that maintaining world economic growth and keeping atmospheric CO₂ concentrations below 450 ppm would require generating about 30 terawatts (TW) of carbon-neutral power by mid-century. However, broad investment will be required to develop economically realistic technologies to generate even 1 TW by mid-century. Correspondingly, it will be decades before Valmont and the other Xcel coal plants can be completely replaced by renewable sources.

On Oct 13⁴, the Brookings Institution, American Enterprise Institute, and Breakthrough Institute jointly released a proposal for the government to increase federal spending on clean energy innovation to as much as \$25 billion per year. Their idea is to reward innovation through federal subsidies, reducing focus on fossil fuels:

"When it comes to deployment, today's energy policies remain disconnected from both research activities and the marketplace and provide weak incentives for commercialization because they are focused on increasing production instead of reducing price. Beyond the array of subsidies that support fossil fuel production, current federal tax incentives for wind and solar power, for example, are primarily focused on supporting the deployment of existing energy technologies at current prices, rather than on driving technology improvement to reduce their unsubsidized price."

They suggest that the cost of a major national commitment to energy innovation ought to be internalized within America's energy economy, which could be accom-

plished in any number of ways:

- "Phase out current subsidies for wind, solar, and fossil fuels alike, which have not created sufficiently strong incentives for innovation and price declines.
- "Increase the royalties we charge oil and gas companies.
- "Dedicate revenues from a modest carbon price to finance the necessary investments in clean energy technology. A \$5 per ton tax on carbon, about a third of what recent proposed cap and trade legislation would have cost consumers and businesses, would be more than sufficient to pay for an ambitious federal clean energy research, development, and procurement program.
- "Tailor different approaches to different sectors of America's energy economy rather than seeking a one-size-fits-all approach."

References:

1. *A Climate Proposal Beyond Cap and Trade*, David Leonhardt, NY Times Oct 13, 2010.
2. *Future CO₂ Emissions and Climate Change from Existing Energy Infrastructure*, S. J. Davis et al., Science, Sept 10, 2010, p. 1330
3. *Farewell to Fossil Fuels?*, M. J. Hoffert, Science, Sept 10, 2010, p. 1292
4. *Post-Partisan Power*, Brookings Institution, American Enterprise Institute, and Breakthrough Institute, Oct 13, 2010. Available from <http://www.aei.org/paper/100149>

Raptor Nesting in the City of Boulder Open Space and Mountain Parks, 2010

Of the 19 sites monitored by volunteers and staff for City of Boulder Open Space and Mountain Parks the following nesting activity was reported:

Historic falcon nesting sites with no activity - 4
Falcon nests failed - 2

2 sites with Peregrine Falcon fledged - 5 young
3 sites with Prairie Falcon fledged - 12 young

Historic eagle nesting sites with no activity - 1
Eagle nests failed - 1

2 sites with Golden Eagle fledged - 3 young
1 sites with Bald Eagle fledged - 2 young

Historic Osprey nesting sites with no activity - 1
Osprey nests failed - 0

3 sites with Osprey fledged - 6 young

Reported by Lisa Dierauf, Community Outreach Coordinator, City of Boulder Open Space and Mountain Parks

Evolution of Tool-using Crows

New Caledonian Crows (NC crows) are among the very few species that use tools in foraging for food. Chimpanzees use sticks to extract termites from logs, and the NC crows similarly use sticks to extract beetle larvae from candlenut trees. Crows insert a twig or leaf stem into a burrow, "teasing" the larva by repeatedly poking it with the tool until it bites the tip of the tool with its powerful mandibles and can be levered out. The crows can even improve the tools they find¹.

Controlled experiments in the laboratory have shown that basic stick tool use is heritable, observed in very young NC crows. Observations show that young birds require considerable practice before becoming proficient at larva fishing. Proficient adult birds require substantial time and effort to obtain larvae, so the behavior is potentially costly. The evolutionary origins of this behavior are difficult to trace, but the benefits must be great enough that it has evolved into a heritable trait. In a recent article, Rutz², et al. describe results from stable isotope analysis of blood and feathers to determine the contribution of the larvae to the diet of NC crows. They found that the larvae contribute about the same amount of protein to the diet as their other five primary food sources, but more than double the lipid (fat) intake.

Candlenut trees are thought to have originated in Malaysia and were spread by humans throughout the Pacific in recent prehistory. In light of their findings, it seems possible that the anthropogenic introduction of this tree species to New Caledonia created foraging opportunities (i.e., lipid-rich, but hidden, larvae) that, presumably in combination with other factors, led to the rapid evolution of tool use in NC crows.. (New Caledonia is a large island about 1000 mi northeast of Sydney, Australia.)

References:

1. *Shaping of Hooks in New Caledonian Crows*, A. A. S. Weir, et al., *Science*, 9 Aug 2002, p. 981

Movie of crow improving tool in the laboratory:
<http://www.sciencemag.org/feature/data/crow/weirmovie.mov>

2. *The Ecological Significance of Tool Use in New Caledonian Crows*, C. Rutz, et al., *Science*, 17 Sept 2010, p. 1523



Broad-winged Hawk composite

– Bill Schmoker

Book Review

Rosalie Edge, Hawk of Mercy

The Activist Who Saved Nature from the Conservationists

Dyana Z. Furmamsky, University of Georgia Press, 2009

Before reading this book, I had not appreciated that "conservation" in the 1920s meant saving game animals for hunters and forests for loggers. Gilbert Pearson, president of the National Association of Audubon Societies (NAAS), received more than half his salary from gun manufacturers. Predators were "vermin" to be eliminated. These attitudes were held by the NAAS, most ornithologists, and the heads of government departments (and haven't vanished entirely today).

Rosalie Edge learned of the environmental destruction and risk of extinctions from a number of sources, many of whom would not speak publicly for fear of losing their jobs. With financial help from some of these people, she formed the Emergency Conservation Committee and published numerous pamphlets alerting people to the threats and damage. She needed a court order to obtain the NAAS mailing list to distribute the pamphlets.

Through the ECC, she purchased the summit of Hawk Mountain, in PA, hired a caretaker and guard, and converted people in the area to hawk watching, rather than hawk slaughter.

Ms. Furmamsky did a lot of research in producing this book about a true conservationist who deserves to be better known. I found it compelling reading and recommend it highly.

– George Oetzel

Wild Bird Center 303-442-1322

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Grocery Certificates

We are no longer able to mail grocery certificates. Certificates will still be available at the monthly meetings. BCAS receives a 5% donation from the sale of King Soopers certificates and 10% from sale of Liquormart certificates. Bring your checkbook to the meeting. Denominations:

King Soopers, \$100; Liquormart, \$25

Conservation Alert: Eldora Ski Area Proposes Expansion

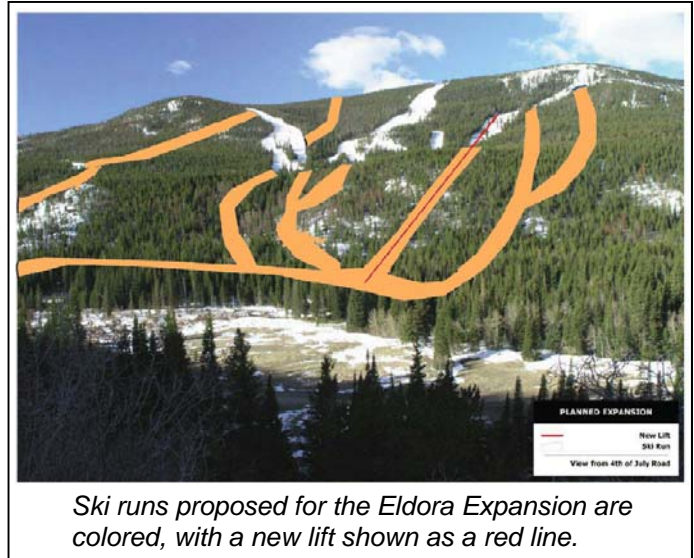
Dave Hallock

Eldora Mountain Resort (Eldora Ski Area) is proposing an update to their Master Development Plan that would expand the ski area outside their current permitted boundary. The vast majority of the expansion would occur on the north side of the ski area, also called the Corona bowl. Seven new runs and two new lifts are proposed in the area between the bases of the existing lifts and Middle Boulder Creek and Hessie. Just west of the community of Eldora a construction and emergency access road is proposed to fork off of the Fourth of July road, bridge Middle Boulder Creek, and parallel the creek on its south side.

Ecosystem and recreation information

The south side of Middle Boulder Creek from the west end of the community of Eldora up through Hessie is a densely forested area with no roads and virtually no trails. Middle Boulder Creek supports a healthy riparian ecosystem complete with extensive beaver pond wetlands. Moose reside there. Boreal owls have been documented. Black bear forage on the berry-producing shrubs along the creek and under the north-facing forest, while mink use the creek. American marten have also been seen on the north-facing hillside above the creek.

The north side of Middle Boulder Creek west of the community of Eldora is one of the major portals into the Indian Peaks Wilderness Area. Hessie is an important trailhead for summer hikers and backpackers. During the winter, cross-country skiers and snowshoers park at the end of the community of Eldora and travel on the Fourth of July road as part of their trail experience.



Ski runs proposed for the Eldora Expansion are colored, with a new lift shown as a red line.

Potential impacts

The creation of ski runs will open up a closed canopy forest and bring a human presence into an area that has had little use until now. Bringing ski runs, lifts and snowmaking down to the bottom of the valley can also change the experience for cross-country skiers and snowshoers using the Fourth of July road and Hessie.

Next steps

The ski area has submitted its updated Master Development Plan to the Forest Service for acceptance. When accepted, the ski area will then submit more detailed plans for a portion or all of the planned improvements; then a more formal public process through the National Environmental Policy Act (NEPA) will begin. The updated Master Development Plan can be downloaded from the ski area's website: www.eldora.com/uploads/pdf/Eldora2010MasterPlan_July_DRAFT.pdf.

Organizing for in-depth comments

The Middle Boulder Creek Coalition (MBCC), of which Boulder County Audubon is a member, is a group of concerned citizens and organizations that feel that the ski area can better meet its objectives of increasing intermediate terrain, provide faster and more wind resistant lifts, and supply better skier services within the current permit boundary and not negatively impact the wildlife along Middle Boulder Creek or the experience of people accessing the Indian Peaks Wilderness. To learn more about the MBCC and its current activities, contact Dave Hallock at mbcc@rmi.net.

Birding Adventures Scholarship Program for Teens

Beginning in 2011 Boulder County Audubon will offer one or more scholarships for students age 14-17 who wish to attend a one-week summer ornithology or science camp. We are still in the process of reviewing candidate programs. Complete scholarship information was not available at OTW press time, but should be on our website by November 1. Visit www.boulderaudubon.org for information about programs and how to apply.

Mary Balzer, Sharon Daugherty, Joan Dawson, and Steve Jones, scholarship committee

BOULDER COUNTY WILDLIFE INVENTORY JANUARY - FEBRUARY 2010

Gillian and Alex Brown, 4560 Darley Avenue, Boulder, CO 80305.

January and February always seem to us like the middle of winter, but in the bird world the first signs of spring are beginning to appear. By the end of January, **Great-horned Owls** were already sitting on their nests, and **Red-tailed Hawks** had begun nest building. In February **Northern Saw-whet Owls** were heard calling in the mountains. By the end of February there was more open water and a greater variety of diving ducks. We are fortunate in Boulder County that Valmont Reservoir stays open all winter due to the warming effect of cooling water from the power plant. A field trip to Valmont in January lured over 120 birders and produced a very respectable number of species. In comparison the Indian Peaks Winter Bird Count (IP) is always hard work, but had above average numbers of birds this year with 37 species and 1453 individual birds reported.

Three very different species were reported after a gap of at least a year. **Iceland Gull** was last reported in 2008 and **Varied Thrush** in 2007. **Bohemian Waxwings** are an irruptive species which at times have been reported in the thousands and were last reported in 2008. Just two of these birds were seen on the Indian Peaks Count so is not indicative of another irruption. January and February are usually good months for gulls and this year was no exception. Species such as **Thayer's Gull**, **Lesser Black-backed Gull**, **Glaucous Gull** and even **Great Black-backed Gull** are now seen so regularly at this time of year that they barely merit special comments. It is worth mentioning that **Mew Gull** was not reported as it has been in previous years. Such an increase in gull species must be partly due to more observers willing to sift through the flocks of thousands of **Ring-billed Gulls** looking for something unusual. A **Barrow's Goldeneye** was a good sighting for February.

The Fawn Brook Inn in Allenspark continued to entice birders looking for **Rosy Finches** with varied success. **Evening Grosbeaks** were seen in the mountains in respectable numbers having been almost absent for a long time. Small numbers of bluebirds were reported both months: one **Western Bluebird** and two **Mountain Bluebirds** in January, and one **Eastern Bluebird**, five **Western Bluebirds** and one **Mountain Bluebird** in February. We know that small numbers of bluebirds do occasionally overwinter. Historically it has usually been **Mountain Bluebird** that has been reported in the middle of winter, but now it seems just as likely, and maybe more likely, to be either **Eastern** or **Western Bluebird**. The end of February is generally the time that the first migrating **Mountain Bluebirds** make an appearance so this February's sighting on the 27th would be right on target. Altogether 100 bird species were reported in January and 90 bird species in February making these very average months. Mammals were very sparsely reported both months. For the full listing of observed species go to www.boulderaudubon.org/inventory.htm

On a different note, the wildlife inventory database is finally going electronic. These will be the last months where data has been hand entered and then compiled, a very time consuming process which is resulting in a backlog. Please bear with us as we try to play catch up with the existing backlog, and help us by submitting future data electronically in the required format. Hopefully this will benefit all of us. See the article below.

CONTRIBUTORS TO THE JANUARY AND FEBRUARY 2010 INVENTORY

Chris Abrahamson, Linda Andes-Georges, J.D. Birchmeier, William Blackburn, Julia Bond, Steve Bouricius, Alex & Gillian Brown, John Cobb, Todd Deininger, Kathy Mihm Dunning, Ted Floyd, Paula Hansley, Thomas Heinrich, Chuck Hundertmark, Steve Jones, Bill Kaempfer, Elena Klaver, Connie Kogler, Nick Komar, Kathanne Lynch, Gene and Lynn Monroe, Naseem Munshi, Christian Nunes, Peter Plage, Suzi Plooster, Bill Schmoker, Scott Skinner, Debra Sparr, Susan Spaulding, Walter Szeliga, David J. Waltman, Cole Wild, Wild Bird Center.

Wildlife Inventory Goes Fully Electronic

Thanks to skilled and cheerful help of database specialist Kitty Brigham, the Boulder County Audubon Monthly Wildlife Inventory will go entirely electronic beginning in November. This will streamline data entry, which Gillian and Alex Brown have been doing by hand for 25 years, and will make it much easier for researchers to find information. Once entered on a simple spreadsheet, all monthly sightings will automatically become part of a database containing data accessible by species name, area number, or year.

Those of you who have been contributing to the inventory, please go to the Boulder County Audubon website and click on "Wildlife Inventory" to download the new form. You'll find instructions there as well. Meanwhile, thanks for your continuing contributions to the wildlife inventory. [Not yet available 10/26/10—editor]

West TSA Update

The community collaborative group (CCG) for planning in the West Trail Study Area (WTSA) of the Boulder Mountain Parks has been meeting since Sept. 2009.

Past Work Accomplished by the CCG.

Oct. 2009 through Jan. 2010 — Orientation and Introduction of relevant documents and staff presentation of existing conditions for natural resources, cultural resources and recreational resources. Introduction to WTSA highly suitable habitat models, introduction to sustainable trail building and budget issues. Begin visioning exercises. CCG field trip to Shanahan area of the WTSA.

Feb. through Oct. – CCG members presented and discussed proposals for 5 subareas of the WTSA with the goal of obtaining collaborative agreement on as many as possible..

Remaining Work to Be Accomplished by the CCG

All meetings at OSMP offices at 66 South Cherryvale from 5:30 to 9:30. These meetings are open to the public and there is time at the beginning of each meeting for each person who wants to have 3 minutes of input. Come and share your knowledge and opinions.

Meetings: Oct. 26, Nov. 9, Dec 15, 2010

Negotiate a West TSA-wide Package of Proposals, integrate public and Open Space Board of Trustees (OSBT) feedback, and prepare a final package.

January 6, 2011: Review and Finalize CCG Recommendations.

Meetings of the Open Space Board of Trustees

All meetings at City Council Chambers at 1777 Broadway at 6pm. There is a period for public comment when the West TSA is called up.

On Dec 8, the Board will review and provide feedback on the CCG's preliminary package of West TSA recommendations. On Jan 12, the CCG will present their final package of recommendations to the Board.

In an OSBT Study Session Feb 9, the draft West Trail Study Area plan will be presented to the board. There is no opportunity for public comment during OSBT Study Sessions.

Wed., February 23, 2011 - The West Trail Study Area plan will be presented to the OSBT for their consideration. There is a period for public comment during the meeting when the West TSA is called up on the agenda.

Further information or comments: Petrea Mah petrea-mah@comcast.net or 303-494-4121.

WTSA meeting Web site: <http://tinyurl.com/2e2mooy>



Tree Swallows and Eggs at Walker Ranch

Nest Box Season Summary

George & Marti Oetzel

It was a difficult year for the birds that use our nest boxes. A cold and wet spring contributed to numerous nest failures—eggs that never hatched and chicks that died in the nest. In addition, there was more nest predation than we saw in any of the five previous years that BCAS has run the monitoring program. The net result was a big decrease in the number of birds fledged compared with 2009, which was milder and very good year.

The table below compares the number of chicks of each species fledged in the two years in nearly identical box locations.

Species	2010	2009
Western Bluebird	104	262
Mountain Bluebird	59	67
Violet-green Swallow	9	27
Tree Swallow	12	7
White-breasted Nuthatch	19	0
Pygmy Nuthatch	11	10
Mountain Chickadee	10	8

Thanks to Susan Spaulding, BCPOS coordinator for enabling this project. Special thanks to all monitors for persevering through this challenging season. Monitors identified and resolved some problems, helping more chicks to fledge than without their attention.

Chris and Deb Abrahamson, J.D. Birchmeier, Cathy Comstock, Dave Lucas, Ron Baird, Ann Tagawa, Jim Guerin, Elain and Neal Thielen, Curtis Williams, George Mah, Sue Olmsted, Dick Pratt, BCPOS seasonal Preston Bernard

Thanksgiving Bird Count?

For the past 2 years, we have received a request to publicize a low-key Thanksgiving Bird Count from Dr. John Hewston of Humboldt State Univ., CA, but didn't feel that it rated publication in the limited space of our standard newsletter. However, space is less limited in the online edition.

The idea is to count birds in a 15-foot circle for one hour during the day at the location of your choosing. That means that you can produce the tally looking out a window into the back yard during a period when there are no urgent dinner-preparation tasks. 15 feet is a pretty small circle, in our yard, about the distance from feeder pole to birdbath.

[Get Dr. Hewston's descriptive letter \(PDF\).](#)

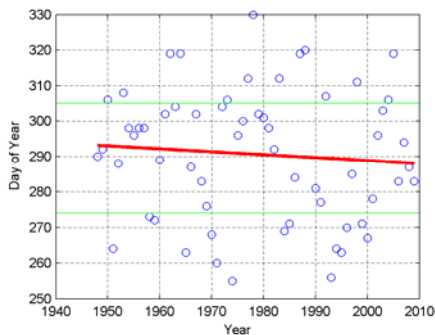
[Get the data reporting form \(PDF\).](#)

– George Oetzel

Warm Fall

George Oetzel

As the warm weather extended into late October, I began to wonder what really constitutes a late date for the first snow in Boulder. Fortunately, NOAA has provided online statistics that give some insight. Snowfall data are only available from 1948, with 1989 missing. For those years, the average date of the first snowfall is Oct 18. As a mathematical exercise, I calculated the best linear fit to the points. This shows a "trend" from Oct 20 at the beginning to Oct 15 at the end of the period. Because there is so much scatter and only 61 years of data, that trend should not be considered significant. The graph below shows the results; the green lines represent Oct 1 and Nov 1 (non-leap year).



Become a Supporting Member of Boulder Audubon

We get very little return from National Audubon dues and have to rely primarily on local funding to support Boulder County Audubon Society activities. Supporting memberships are just \$20 annually. You can join online or download a printable form to send with your check. **Visit <http://www.boulderaudubon.org/about.htm#membership>.**

Paper copies of the Nov-Dec and Mar-Apr issues of *On the Wing* are mailed only to BCAS Supporting Members who request them. All issues are available online.



Folklore Confirmed: The Moon's Phase Affects Rainfall

George Oetzel

If you've ever lived where rain is more frequent than it is in Boulder, perhaps you've wondered why it so often rains around the time of the full moon. (I have.) Folklore associates the phase of the moon with rain in a number of cultures around the world. Now scientists have found evidence for another adage: Rain follows the full and new phases of the moon.

A team of researchers from the Arizona State University and the National Climate Data Center stumbled across a link between stream runoff measurements and the phase of the moon and decided to check rainfall records to see if there was a link.

They checked the U.S. Historical Climatology Network, a database with daily precipitation information from 1200 stations extending as early as 1895. In agreement with the folklore, precipitation tended to increase a few days after the full and new moon.

It's not a strong link, one that might explain floods, for example. However, the lunar phases do seem to account for 1% to 2% of the total changes in rainfall or stream runoff.

The researchers can't say how the moon exerts this effect. A number of guesses have been made, none of them convincing.

<http://news.sciencemag.org/sciencenow/2010/10/folklore-confirmed-the-moons-pha.html>