



# On The Wing

Volume 43, Number 5 Boulder County Audubon Society Newsletter

Nov-Dec 2013

## BCAS 4th Tuesday Program Series, November 26

### 7:30 P.M. — John Weller

"The Last Ocean: Saving the Ross Sea."

**THE ROSS SEA, ANTARCTICA** is special. Protected by a 500-mile-wide shield of floating sea ice, it has remained largely insulated from the depletion that has plagued the rest of the global ocean. And though it is the coldest, driest, windiest place on earth, it teems with life. But driven by global depletion into ever deeper and more remote waters, industrial vessels have come to the Ross Sea in search of its top predatory fish, the Antarctic toothfish. The last intact marine ecosystem on Earth is now at risk.

John Weller's new book, *The Last Ocean*, offers a rare glimpse into life in this most southern place, taking the reader on an in-depth journey above and below the icy ocean surface, sharing what Weller has seen and learned over nearly a decade of work. He challenges us to see that the Ross Sea story is not just that of a fish, or of the incredible creatures that live at the edge of the world. It is our story – the story of our struggle to become sustainable.

**John Weller** is an acclaimed writer and photographer, and works to promote marine protections around the world. An impassioned observer of nature, he followed a path through the Colorado desert to the waters of the Antarctic and started The Last Ocean Project with Antarctic ecologist David Ainley in 2004. Weller's photographs have become the face of the Ross Sea worldwide. He was named a Pew Fellow in Marine Conservation in 2009, and was recently named a 2013 Blue Ocean Fellow.



Adelie Penguins Hunting—John Weller

### 2013 Holiday Sale, 5:30 P.M. Celebrates Local Authors

John Weller, author of *The Last Ocean* and *Between Light and Shadow: Great Sand Dunes National Park*, will sign copies of his books. Either of these gorgeous books would make a perfect holiday gift.

Priscilla Stuckey will sign copies of *Kissed by a Fox*, recent winner of the Willa Cather Award for creative nonfiction.

Rick Adams will autograph copies of *Into the Night*, a new University of Colorado Press book about night research featuring essays by Rick, Steve Jones, and other professional scientists and naturalists.

Sarah Bexell will bring copies of her insightful and compassionate book, *Giant Pandas, Born Survivors*.

Popular local artist Ann Gifford will autograph her charming new children's book, *Spike the Dog*.

Boulder County Audubon authors featured at the sale will include Janet Chu (*Butterflies of the Colorado Front Range*), Ruth Carol Cushman and Steve Jones (*Wild Boulder County, Boulder Hiking Trails*, and *The North American Prairie*), and Calvin Whitehall (*The White-tailed Ptarmigan*, co-authored with Joyce Gellhorn).

Featured artists at this year's sale include Mary Balzer, Alexa Boyes, Ron Butler, Ann Gifford, Elena Klaver, and Bob and Ru Wing. J.D. ("Birch") Birchmeier will bring hand-crafted bluebird houses, and Pam Piombino will offer an assortment of Egyptian blown glass ornaments. We'll also have complimentary cider and cookies, live raptors from the Birds of Prey Foundation, shade grown organic coffee, and bird seed for sale.

Proceeds benefit our prairie dog puppet show and teen scholarship program to National Audubon's summer birding camp in Hog Island, Maine. And if you have something enticing and in good shape you'd like to give away—such as a nature book, field guide, or holiday ornament—we'd love to add it to one of our sale tables.

*Program Meetings at Unitarian Universalist Church of Boulder, 5001 Pennsylvania Ave. (west off 55th St. between Arapahoe and Baseline)*

## November-December Events

**Saturday, November 9, 7:30 a.m. to mid-afternoon. Boulder County Fall Lakes Trip.** Join Bill Kaempfer and John Vanderpoel as we look for scoters, loons, gulls, late shorebirds, and other waterbird migrants, stopping at Boulder Reservoir, Lagerman Reservoir, Macintosh Reservoir, and several other plains reservoirs and ponds. Meet at Niwot Park and Ride (CO 119 and Niwot Road). Bring lunch and appropriate cold-weather clothing. Contact Bill in advance at [Kaempfer@colorado.edu](mailto:Kaempfer@colorado.edu) to reserve a spot.

**Tuesday, November 26, 5:30 p.m. Boulder County Audubon Holiday Sale.** Two dozen local authors and artists will sign books and sell holiday-appropriate wares at this annual sale at the Boulder Unitarian Universalist Church, 5001 Pennsylvania Avenue. Join us for cookies and cider, conversation, and casual shopping; then plan to stay for nature photographer extraordinaire John Weller's presentation on saving the Ross Sea (see page 1 for details).

**Sunday, December 15. 72nd Boulder Christmas Bird Count.** See article on page 5.

**Saturday, December 21, 7-9 a.m. Winter Solstice Sunrise Hike on East Boulder-White Rocks Trail.** Each winter solstice morning for more than 25 years, local tree huggers have gathered on the banks of Boulder Creek to welcome the first sunrise of the New Year. Many participants read poems or quotes to commemorate the occasion. Geese, ducks, and circling hawks provide accompaniment. Breakfast follows around 9:30 at the Garden Gate Café in Niwot. Dress warmly for this one-mile stroll down to the creek. After all, it's the cold, mist, and hoarfrost that attracted us to this location in the first place! No RSVP is necessary, but for more information, contact Steve Jones ([curlewsj@comcast.net](mailto:curlewsj@comcast.net); 303-494-2468).

## Eldora Mountain Resort Expansion Update

As many of you know, Eldora Mountain Resort in western Boulder County formally applied to the Forest Service last fall to expand their operation outside their current Special Use Boundary, adding new runs and lifts on the backside down to Middle Boulder Creek towards Hessie, as well as on their front side down towards Jenny Creek. The Draft EIS is scheduled to come out in January of 2014. It will disclose the environmental impacts of the proposal, along with several alternatives, and generally presents a preferred alternative. There will then be another public comment period.

Many of us have had concerns about the proposed expansion. There will be adverse impacts to wildlife (for example, Forest Service Sensitive Species Pine Marten, Boreal Owl, and American Three-toed Woodpecker reside in the area proposed for expansion and will be impacted by forest fragmentation caused by the creation of ski runs). The watershed of Middle Boulder Creek will be better protected by retaining the existing forest as a buffer between the creek and the existing ski runs rather than relying on "best management practices." The Hessie access to the Indian Peaks Wilderness will be adversely altered by the presence of downhill ski runs directly across the creek on the opposite hillside; the sights and sounds of a downhill ski area will be part of the experience of snowshoers and cross-country skiers heading west from the Town of Eldora through Hessie.

For more information and to sign up for alerts, go to the web site of the Middle Boulder Creek Coalition ([www.middleboulder creekcoalition.org](http://www.middleboulder creekcoalition.org)).

– Dave Hallock, Middle Boulder Creek Coalition

### Boulder County Audubon Society

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Boulder County Audubon Society

**Next issue deadline:**

**(Jan 2014 issue) Dec 10**

Contact editor via link at:

[www.boulderaudubon.org/newsletter.htm](http://www.boulderaudubon.org/newsletter.htm)

## The Flood Experience

Living in the foothills outside Lyons, we were unable to evacuate during the first few days of the flood. This gave us an unusual opportunity to observe how the rains affected local bird species. Feeder birds often got so wet that they had a hard time flying. Towards Friday a very wet Magpie, unable to get lift, resigned itself to sit under my car and wait out the rains. When they finally stopped, she dried out and flew off. A pair of Blue Jays, wet to the skin, camped out on the porch until they were dry enough to fly. On Friday, my husband and I went for a hike and saw that many insectivores — Blue Birds and Barn Swallows — were basically grounded. With no insects to feed on, they simply stopped hunting, trying to conserve valuable calories. Many birds that were already in a compromised state when the rains began probably didn't survive the adverse conditions. After evacuating Lyons, a post-flood hike in Longmont revealed many birds along the roadsides and trails that didn't make it, including a fledgling dove and a very thin Bullocks oriole. Unable to feed and soaking wet, they likely died of exposure.

The September flooding was certainly a disaster, but from the ecological point of view, probably not so catastrophic or unusual. Think geologic time. Flooding and erosion are part of the natural processes that continually shape and change our world. They have been at work for billions of years and are the reason our world looks the way it does today. Wildlife is sometimes harmed in the process, but more than 10,000 diverse species of birds survive. Each natural 'disaster' is just part of the order of life on earth. The species that have survived to this point have done so because of their ability, as a species, to weather such events. In terms of human time, yes, many individual animals certainly perished in the flood. Many reptiles and small mammals couldn't escape the rising waters. And some of them will become fossils in a few millennia! But in terms of geologic time, the "natural" part of this disaster wasn't so unnatural.

The part of this disaster that is harder to accept, from the ecological point of view, is our own contribution to it. Septic systems, water treatment plants, oil tanks, roads, cars, garages full of chemicals, and tons and tons of garbage all ended up in the flood waters. These contaminants changed the game significantly for the affected wildlife. They were no longer just dealing with a flood: mammals and birds were forced to drink sewage-laden water; aquatic animals were unable to extract oxygen from polluted streams and lakes; birds became oiled and lost their waterproofing, becoming susceptible to hypothermia; and all were at risk of ingesting household and industrial chemicals or becoming injured by human debris. People trying to clean up their homes and neighborhoods suffered from exposure to many of these very same risks as well. We're all in the same boat, after all.

As part of the recovery effort, I volunteered with Team Rubicon. We gutted homes of wet floorboards and dry-wall and dug out mud. At one particular job, we were removing river mud from the exterior of someone's home. I spotted a Northern Chorus frog climbing through the mud that had accumulated around a lilac tree. I had to remove him from the scene and relocate him, or else he would be chopped by a shovel or buried alive in the discarded mud pile. He had made it through the flooding event just fine and found a new home at that, only to be displaced again, this time by humans.

– Donna Nespoli

## City of Longmont 2013 Raptor Monitoring Results

Another eventful season in Longmont has passed and our baby birds have left the nest. As we prepare for winter, we would like to share some of the results for this year's raptors. City staff and volunteers monitored a total of 27 active nests this year, which included 10 newly discovered nests. The Red-tailed Hawks were by far the most prominent species with 12 nests monitored and thus had the most fledglings with a total of 18. The Red-tails also had two nests that were confirmed as active but had no chicks. The Great-horned Owl came in second with 4 nests and a total of 10 fledglings. As they are known to do, a pair took over a nest that was previously used by Red-tailed Hawks but it produced no chicks. Out of 4 nests, the Ospreys this year had three fledglings, one failure, and one nest that produced no chicks. We discovered two active Swainson's Hawk nests this year. They had a total of two fledglings and one failure. Sadly, this year the Bald Eagle comes in last in terms of fledglings with none and three failures. The Bald Eagle failures can be attributed to the brutal late snowstorms in April. Also, our famous Sandstone Ranch Barn Owls had disappointing news. Only one of the pair returned this year and hung around for a few weeks in hopes the mate would show up but to no avail. We'll keep our fingers crossed for next year.

All of this data would not be possible without the volunteers who helped make it happen. This year volunteers spent a total of just over 93 hours monitoring! A big thank you to all the volunteers, especially those from the Boulder County Audubon Society, for taking that time to help the City of Longmont. If you are interested in monitoring again or doing it for the first time, we will begin recruiting volunteers in January for the 2014 raptor monitoring season. Thanks again to the hard working volunteers that helped collect all of this data.

-Jim Krick  
Natural Resources Specialist

## BOULDER COUNTY WILDLIFE INVENTORY, APRIL & MAY 2013

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

The most spectacular occurrence of the spring was an irruption of **Longspurs**, first seen on 16<sup>th</sup> April, and mainly found to the north of Panama Reservoir. A **Smith's Longspur** was a new sighting for the wildlife inventory. It was hard to gauge numbers for these birds, they probably numbered at least a thousand. The highest counted totals given were for 100 **McCown's Longspurs**, 100 **Lapland Longspurs** and 3 **Chestnut-collared Longspurs**. There have never been reports of longspurs in these numbers since the wildlife inventory began. The longspurs seen in April continued in lesser numbers for the first couple of days of May with both **Chestnut-collared** and **McCown's Longspurs** reported.

Shorebird migration seemed to last a long time this year – from March until mid-May - with many different species spotted. Several shorebird species were reported for the first time since 2011: in April three **Mountain Plovers**, and in May a **Black-bellied Plover**, three **Sanderlings** and three **Whimbrel**. **Short-billed Dowitcher** was reported both months. Other notable shorebirds were three **Semipalmated Plovers**, a **Black-necked Stilt**, twenty two(!) **Long-billed Curlews** spread over at least four locations in April, at least three **Dunlin**, **White-rumped Sandpiper**, **Stilt Sandpiper** and **Red-necked Phalarope**. **Glossy Ibis** was reported both months along with good numbers of **White-faced Ibis**. **Franklin's Gull** was by far the most common gull both months. The first **Forster's Terns** returned at the end of April.

Warbler migration had barely begun by the end of April with only our usual **Orange-crowned Warblers**, **Yellow Warblers** and **Yellow-rumped Warblers** reported. Unusual warblers seen in May were a **Black-throated Green Warbler** (last seen in 2009) and a **Yellow-throated Warbler** (2011). Other warblers of special note were a **Blackburnian Warbler** and a **Townsend's Warbler**, the latter being more normally seen in the fall. Flycatchers were well reported in May with **Gray Flycatcher** and **Ash-throated Flycatcher** seen for the first time since 2011. **Black Phoebe** was last seen in 2009. This made the third Phoebe species seen in May as **Eastern Phoebe**, which was once considered a rarity, is now a marginal breeder in the county. **Eastern Bluebirds** are another bird that is a marginal breeder in the county, although birds seen in April may well be migrants. Other unusual April sightings were a late **Snow Goose**, a **Short-eared Owl**, a **Northern Mockingbird**, a **Rusty Blackbird**, and one lingering **Common Redpoll**. **Wild Turkeys** are present in the county all year, but are most usually reported in the foothills and mountains. In April 49 birds were reported in seven different areas stretching from the easternmost part of the plains up into the mountains. Seen both months were **Broad-winged Hawk** and the long staying **Northern Cardinal**. Birds not previously mentioned seen in May 2013 for the first time since 2011 were **Northern Bobwhite**, and **Veery**. **Philadelphia Vireo** was last seen in 2008. Other good May sightings included **Red-necked Grebe**, and **Black-chinned Hummingbird**. **Black-chinned Hummingbirds** are more usually seen in the fall than in the spring, but are much commoner than they used to be, and could well breed in the county.

As would be expected, there were many first sightings of returning migrants. Altogether 170 bird species were reported in April, a reasonably high total but not reaching the record 179 species seen in 2008. For a really spectacular May many different factors have to work together – strong shorebird, warbler and passerine migration, exceptional overall coverage, as well as unexpected rarities. This was not the case in May 2013 as warbler migration was rather poor, and mountain birds were not well reported. Altogether 219 bird species were reported in May, a long way from the record 243 species seen in 2002.

### CONTRIBUTORS TO THE APRIL & MAY INVENTORIES

Keith Alderman, Linda Andes-Georges, Alan Bell, J.D. Birchmeier, Mike Blatchley, Trevor Bonner, Kat Bradley-Bennett, Kitty Brigham, Alex & Gillian Brown, Peter Burke, Erica Christensen, John Cobb, Matt Crooks, Jan Darling, Raymond E. Davis, Eric De Fonso, Todd Deininger, K Devnandan, David Dowell, Dave Fletcher, Ted Floyd, Lonny Frye, Barry Gingrich, Bryan Guarente, Paula Hansley, Jack Harlan, Peter Hartlove, Thomas Heinrich, Elaine Hill, Chuck Hundertmark, Dave Hyde, Steve Jones, Bill Kaempfer, Elena Klaver, Jim Knopf, Jim Krick, Steve Larson, Sandra Laursen, Petrea Mah, Marcia Marvin, Beto Matheus, Carol McCasland, Mark Miller, Mark Minner-Lee, Steve Miodinow, Lynn Monroe, Michael Morton, Nina Norman, Christian Nunes, Laura Osborn, Beth Partin, Pam Piombino, Harry Price, Nancy Rynes, Ira Sanders, Cathy Sheeter, Cara Stiles, Joel Such, Russ Thompson, Oakleigh Thorne, Tully, John Tumasonis, John Vanderpoel, David J. Waltman, Wild Bird Center, Barb Woltz, Dan Zmolek.

## Join in the 72<sup>nd</sup> Boulder Audubon Christmas Bird count! December 15, 2013

Whether you are beginning birder or have been watching birds for years, everyone is welcome. The more people looking, the better. Beginners are paired with experienced birders, so it's a great chance to improve your birding skills. Often enthusiasm can make up for experience. Individuals spot birds by sight or sound and indicate a location to group members. The whole group works together to identify the bird.

Dress for the weather. Layers are the best bet for warmth, good hats and mittens are necessary and boots with warm socks will be most comfortable in cold weather. Sun screen and dark glasses protect skin and eyes. Bring water and a snack, of course. Even if temperatures are mild, remember that you will be outside for a long time.

If you participated in 2012, you will be contacted by your circle leader with details. If this is your first count contact Bill Schmoker ([bill.schmoker@gmail.com](mailto:bill.schmoker@gmail.com)), the count organizer, and he will direct you to a group you may join.

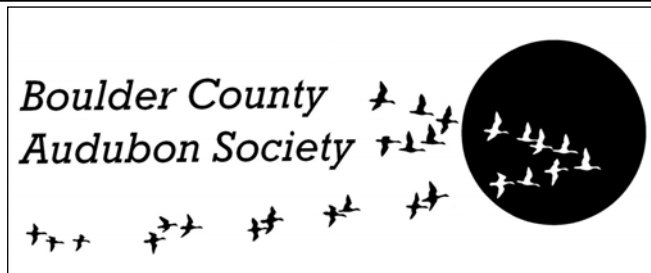
This event will be held on Dec. 15, 2013 and is held regardless of the weather. There is no cost to participate but donations are welcome.

In the evening, following the count, Boulder County Audubon will provide the main dish for a potluck and compilation party. Bring a side dish, your own place setting and join the fun at the event room at Villa del Prado, 635 Mohawk Drive, Boulder 80303.

Check out why this count is not only fun but important for conservation: <http://tinyurl.com/mruhpcv>



Bushtits on Suet seen during CBC. Feeders are often good places to find birds in December.



## BCAS may qualify for Colorado Gives Day, Tuesday Dec. 10

We ask our members to consider doing their annual "big donation gesture" on this special, state-wide giving day, in which our chapter may be a participant. We have not received official notification as of "press-time" for *On the Wing*. But we hope to be included in the Community First gathering, and ask you to look for our logo (above). Even if you do not find us this year, we'll be there next year. And in the meantime you will find many other old friends, like the Birds of Prey Rehabilitation Center, Wildlands Restoration Volunteers, Greenwood Rehabilitation Center, and many other social and environmental groups.

On your first visit to the website ([www.ColoradoGives.org](http://www.ColoradoGives.org)), the registration process requires several steps. But once you are registered, you simply browse through the names of the 1500 organizations in the collection; or you type in your favorites to see if they are included, and you follow the usual steps to donate any amount that you specify.

The benefits of donating on Dec. 10<sup>th</sup> are considerable, "leveraging" your funds so that you have maximum impact. For example, FirstBank (the corporate sponsor) will cover all the credit card fees so that all funds go directly to the non-profits. In addition, ten \$1000 prizes and eighteen \$5000 prizes will also be awarded to non profits chosen by randomly selected participants who answer online trivia questions correctly. (These will be posted one week prior to Dec. 10<sup>th</sup> on FirstBank's Facebook page.) In order to be eligible for these prizes, we non-profits must receive a minimum of 30 donations on Colorado Gives Day. This is designed to be enjoyable for donors, and beneficial to the many worthy local causes that need your attention and support. Play the game and help us all out. We hope to meet you soon... online or at our monthly meetings.

(Thanks to Linda Andes-Georges for the huge effort she



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<http://tiny.cc/ez7v6>

## Climate-change Update 2013: IPCC (Intergovernmental Panel on Climate Change)

The IPCC recently released the summary of its Fifth Assessment Report (<http://tinyurl.com/qadtvd>). Below is a brief summary of its major conclusions.

Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased.

In the Northern Hemisphere, 1983–2012 was likely the warmest 30-year period of the last 1400 years (medium confidence).

Ocean warming dominates the increase in energy stored in the climate system, accounting for more than 90% of the energy accumulated between 1971 and 2010 (high confidence). It is virtually certain that the upper ocean (0–700 m) warmed from 1971 to 2010, and it likely warmed between the 1870s and 1971.

Over the last two decades, the Greenland and Antarctic ice sheets have been losing mass, glaciers have continued to shrink almost worldwide, and Arctic sea ice and Northern Hemisphere spring snow cover have continued to decrease in extent (high confidence).

The rate of sea level rise since the mid-19th century has been larger than the mean rate during the previous two millennia (high confidence). Over the period 1901–2010, global mean sea level rose by 0.19 [0.17 to 0.21] m.

The atmospheric concentrations of carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide have increased to levels unprecedented in at least the last 800,000 years. CO<sub>2</sub> concentrations have increased by 40% since pre-industrial times, primarily from fossil fuel emissions and secondarily from net land use change emissions. The ocean has absorbed about 30% of the emitted anthropogenic carbon dioxide, causing ocean acidification. Total radiative forcing is positive, and has led to an uptake of energy by the climate system. The largest contribution to total radiative forcing is caused by the increase in the atmospheric concentration of CO<sub>2</sub> since 1750.

Human influence on the climate system is clear. This is evident from the increasing greenhouse gas concentrations in the atmosphere, positive radiative forcing, observed warming, and understanding of the climate system. Human influence has been detected in warming of the atmosphere and the ocean, in changes in the global water cycle, in reductions in snow and ice, in global mean sea level rise, and in changes in some climate extremes. It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century.

## By 2047, Coldest Years May Be Warmer Than Hottest in Past

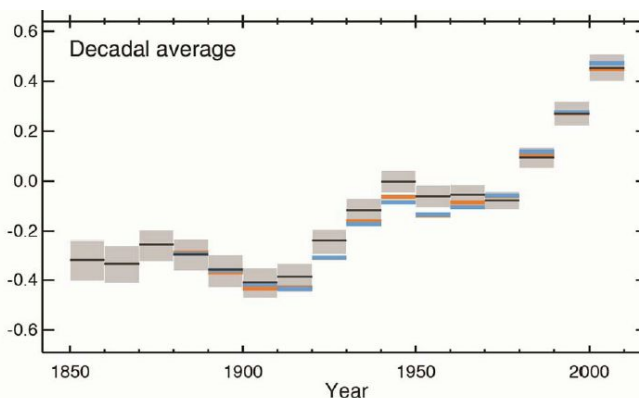
Camilo Mora, et al., published modeling results in the Oct. 9 issue of *Nature* that are summarized briefly in the title above (<http://tinyurl.com/l66nlhq>) The New York Times published a more accessible summary (<http://tinyurl.com/m2o774m>)

Their results indicate that, for a given geographic area, “the coldest year in the future will be warmer than the hottest year in the past.” Unprecedented climates will arrive even sooner in the tropics, Dr. Mora’s group predicts, putting increasing stress on human societies there, on the coral reefs that supply millions of people with fish, and on the world’s greatest forests.

The models show that unprecedented temperatures could be delayed by 20 to 25 years if there is a vigorous global effort to bring emissions under control. While that may not sound like many years, the scientists said the emissions cuts would buy critical time for nature and for human society to adapt, as well as for development of technologies that might help further reduce emissions.

Many people perceive climate change to be most serious at the poles, and the largest absolute changes in temperature are already occurring in the Arctic and parts of Antarctica. But the Mora paper dovetails with previous research suggesting that the biggest risks to nature and to human society, at least in the near term, may actually be in the tropics. People living in the tropics are generally poor, with less money to adapt to climate change than people in the mid-latitude rich countries that are burning the most carbon-based fuels and contributing most of the emissions. Plants and animals in the tropics also are accustomed to a narrow temperature range. Organisms that do not have the genetic capacity to adapt to rapid climatic changes will be forced to move, or will be driven to extinction, climate scientists say.

*Departure of average temperature (°C) in each decade relative to the average over 1961–1990.  
(IPCC summary)*



## Western Rivers News

(from National Audubon)

Water releases from Lake Powell to Lake Mead will be the lowest this year since the lake was filled with Colorado River water in the 1960s. The Bureau of Reclamation will release what amounts to a 750,000 acre-foot reduction in water from Lake Powell to serve southern Nevada, Arizona, Southern California and northern Mexico. This reduction spells trouble for an already stressed river system and could have serious impacts for water users in the lower Colorado River basin. The reduced water flow will surely have ripple effects further upstream with a rapidly growing population, predictions for a warming climate, and more demands on the river's decreased supply. This situation should trigger a sense of urgency and spawn water conservation efforts across the basin in a time of increased water shortages. It is with this in mind that people across the west continue to join Audubon's Western Rivers Action Network to develop common sense solutions to these challenges and have attended our recent workshops in record numbers.

Unfortunately the health of the Colorado and other western rivers and the livelihood of the people and the wildlife that depend on them are in jeopardy. A combination of drought, invasive species, over-allocation and unsustainable management are running our rivers dry. Many of the birds that depend on them, like the Western Yellow-billed Cuckoo and Bell's Vireo, are in decline, and the future of the communities and economies surrounding the rivers is uncertain.

The Audubon [Western Rivers Action Network](#) provides continuing news about activities concerning western rivers.



### Ordering your freshly-roasted, shade grown, organic coffee from Birds and Beans Coffee

([www.birdsandbeans.com](http://www.birdsandbeans.com)) not only supports small farmers, birds and the environment, it helps support BCAS! And it is so easy — for each order placed with a Boulder County zip code, Birds and Beans sets aside \$1.00 for BCAS. We get an annual check from them. Plus, there is a link to BCAS on their website alongside other Birds and Beans Conservation Partners such as Hawk Mountain Sanctuary, American Bird Conservatory and Cornell Lab of Ornithology. Choose from whole bean or freshly ground in several varieties plus a decaf—they are all delicious!

## More about Western Water

It's not only the rivers, but also the Ogallala aquifer that is an increasing concern. The aquifer runs from South Dakota to Texas and supplies water to many farms and cities. In many places water is pumped far faster than the aquifer can recharge naturally from rivers and rainfall. The consequences of overuse are not always clear. But Kansas now has an unusually detailed portrait of groundwater use and its implications for future farm production, thanks to research by academics at Kansas State University (KSU).

The researchers say that only 3% of the aquifer had been used by 1960, but that by 2010 30% had gone. In the west-central district of Kansas, which has always had less water, wells are being abandoned and some areas are being converted to dryland farming.

The study suggests that in many areas it may be worth cutting back on extraction because of improving efficiency. With efficiency improvements, a gallon used tomorrow will be more productive than one used today. This will also push back the date of peak production and slow the eventual rate of decline.

Water has seeped into Kansas politics, too. In recent years Governor Sam Brownback, has approved a series of laws intended to help farmers preserve water. One eliminated a requirement that they pump a minimum amount each year to retain their extraction rights. Another created multi-year water accounts, to encourage conservation in wet years so there is more in dry ones.

The KSU paper also spells out a bleaker point: that unthinkable cuts of about 80% are needed to make groundwater use in Kansas truly sustainable.

(See <http://tinyurl.com/n3vgndn>)



Emperor Penguins—John Weller

## Monarchs: Another Species at Risk

Monarchs are extraordinary butterflies. They have evolved an unbelievably complex life cycle, in which they migrate long distances to overwinter in large clusters in Mexico and California.

For the past 15 years, scientists have been watching monarch numbers plummet, as much as 81 percent between 1999 and 2010. They reached nearly catastrophic lows in the winter of 2009-2010 and have barely recovered since. Scientists believe that the long-time survival of the species is in doubt.

Nearly every link in the monarchs' chain of being is at risk. Illegal logging in Mexico has reduced their winter habitat, an already vanishingly small area that is being altered by the warming climate. Ecotourists who come to witness the congregation of so many butterflies disturb the creatures they have come to see. But perhaps most damaging is the demise of milkweed.

Monarchs have the misfortune to rely exclusively on a plant that farmers all across the Midwest and Northeast consider a weed. There is a direct parallel between the demise of milkweeds — killed by the herbicide glyphosate, which is sprayed by the millions of gallons on fields where genetically modified crops are growing — and the steady drop in monarch numbers.

To anyone who has grown up in the Midwest, the result seems very strange. After decades of trying to eradicate milkweed, gardeners are being encouraged to plant it in their gardens, and townships and counties are being asked to let it thrive in the roadside ditches. What looks like agricultural success, purging bean and corn fields of milkweed (among other weeds), turns out to be butterfly disaster. This is the great puzzle of species conservation — it has to be effective at nearly every stage of a species' life cycle. And this, too, is the dilemma of human behavior. We live in a world of unintended consequences of our own making, which can never be easily undone.

Some of the above edited from an article in the NY Times Sunday Review. (<http://tinyurl.com/k3m5mj9>)

The website for the Pismo Beach, CA Monarch Butterfly Grove is also an interesting reference. (<http://www.monarchbutterfly.org/>)



Monarch Butterfly—from *Butterflies of the Front Range*, by Janet Chu and Stephen Jones. The BCNA publication is available in area bookstores and from Amazon.

## Wildlife in a Warming World

The National Wildlife Federation has recently released a report on the effects of warming climate on plants and wildlife already visible. (<http://tinyurl.com/cnzppd7>)

Pine trees in the Rocky Mountains are being jeopardized by beetle infestations, while new forests are encroaching on the Alaskan tundra. East coast beaches and marshes are succumbing to rising seas, especially in places where development prevents their natural migration landward. Polar bears, seals, and walrus are struggling to survive in a world of dwindling sea ice, which is their required habitat. Birds and butterflies have had to shift their breeding season and the timing of their seasonal migrations. Fish are dying by the thousands during intense and lengthy droughts and heat waves. Many plant and wildlife species are shifting their entire ranges to colder locales, in many cases two- to three-times faster than scientists anticipated.

Because of the warming already underway and the time it will take to transform our energy systems, we will be unable to avoid many of the impacts of climate change. Our approaches to wildlife conservation and natural resource management need to account for the new challenges posed by climate change. We must embrace forward-looking goals, take steps to make our ecosystems more resilient, and ensure that species are able to shift ranges in response to changing conditions.

## 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, Jan-Feb, and Mar-Apr issues of *On the Wing* are mailed only to BCAS Supporting Members who request them. The electronic edition, available online, has color pictures and usually includes extra articles.