



On The Wing

Volume 40, Number 2

Boulder County Audubon Society Newsletter

Mar-Apr 2010

BCAS 4th Tuesday Program Series



Elk Bull with harem at Coal Creek—Steve Jones

March 23, 7:30 p.m.

Riparian Renaissance at Coal Creek

Steve Jones, Linda Andes-Georges,
and Paula Hansley

In 1998 Boulder County Audubon approached Boulder Open Space and Mountain Parks about fencing (to exclude cattle) and protecting a relatively natural stretch of Coal Creek south of Boulder. Aided by a generous grant from Terra Foundation, the city was able to complete fencing of 5 miles of the creek corridor in December 1999. We initiated bird monitoring within the corridor in 1998 and have carried out monthly bird counts since then. These counts have documented a threefold increase in numbers of native shrub-nesting birds and a doubling in numbers of native cavity-nesting and tree canopy-nesting birds. Elk have returned to the riparian corridor for the first time in 150 years, and a bald eagle pair has nested successfully. Boulder County Audubon financed production of a DVD, by John Vanderpoel, that chronicles some of these changes.

Steve Jones, Linda Andes-Georges, and Paula Hansley are local naturalists who have initiated and participated in a variety of bird studies, including the Indian Peaks Four-Season Bird Counts, the Boulder County Nature Association wintering raptor and small owl surveys, and the Colorado Breeding Bird Atlas.



April 27, 7:30 p.m.

Evidence for Recent Effects of Climate on the Rapidly Shrinking Distribution of the American Pika

Chris Ray

Throughout the Great Basin, pika colonies are disappearing and remaining pika colonies are retreating upslope as fast as 10 m per year. Chris Ray and her colleagues have investigated potential causes of these trends and concluded that climate change is a major contributor, forcing pikas farther and farther upslope. In the northern and southern Rocky Mountains, pikas are showing signs of being stressed by climate driven variables as well, including diminishing winter snowpacks and changes in the composition of alpine vegetation. Chris will address these threats and also enlighten us on the ecology and social life of these endearing animals. Her presentation will expand on the exceptional talk she gave at the February Boulder County Nature Association annual meeting.

Ward resident Chris Ray is a research associate at the University of Colorado. Her work focuses on developing mechanistic models for analyzing demographic, genetic, and epidemic dynamics of threatened and isolated species. She received her Ph.D. in population biology from the University of California Davis in 1997. She has been studying pikas for 22 years.



Pika—Chris Ray

Refreshments and Socializing at 7 p.m., Program at 7:30

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



Photos—Luis Alberto Matheus

Ptarmigans

so this is down, this puff of feathers
settled like clouds on the windswept tundra
where even the krummholz dare not tread
an ocean of sky laps at the never summer range
a seeming eternity of cold and wind
stream sides frozen, lichen blown bare
the alpine grocery emptied of flowers and berries
its shelves stocked now with twigs of willow
enough it seems for this approachable pair nestled in snowy peace
hidden like a surprise living like waiting
white tails and feathery toes tucked close
scarlet eye combs long faded, melatonin ebbing
patterns of antique lace tat across their napes and mantles like a veil
a bridal wing fans open, an icy gasp escapes my throat
from where this plumage, this perfection beyond perfection?
the moult, murmuring through their wings, holds
not only a thousand furious tempests but the eye of the storm as well
it is not the scent of glacial time or the collective reverence
that echoes in this wilderness but the unruffled presence of these
birds that mesmerizes me, I will leave them their dreams,
their secrets, their sea of wind, taking instead their gift
of snowy peace and with it paper the walls of my living
beverly melius 10-22-09



The Migratory Bird Hunting and Conservation Stamp, produced annually since 1934 as the official federal waterfowl-hunting license, has become far more than a ticket to shoot. For one thing, it's a free pass to enter any of the hundreds of National Wildlife Refuges

across the United States. More important, of every dollar you spend buying the stamp (just \$15 at post offices and many sporting goods stores), 98 cents goes directly to fund the purchase and restoration of wildlife habitat via the Migratory Bird Conservation Fund, administered by the U. S. Fish and Wildlife Service. In 2009 alone, \$38 million were allocated. Over its lifetime, More than three quarters of a billion dollars in stamp revenue have been spent to protect more than 5 million acres of migratory bird habitat.

Times are changing, and now all conservationists, not just hunters, should be doing their part to support this worthy, grassroots process. The stamp isn't just about ducks anymore, it's about protecting all manner of wildlife habitat.

Boulder County Audubon Society

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Wildlife Inventory

Alex and Gillian Brown (303)494-3042

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To contact the editor, use the link in
www.boulderaudubon.org/newsletter.htm

Next issue deadline: (May 2010 issue) Apr 13.



Nest Box Monitoring Volunteers Needed

Monitoring nest boxes offers a chance to hike in local open space areas, see birds at some of their most intriguing activities, and observe how an area changes during the season from late April to late July. We need a few new volunteers for the 2010 season.

Monitoring involves checking 10-12 boxes weekly during the season to observe and record data for nest construction, eggs laid, chicks hatched, and ultimately the empty nest. Although Western and Mountain Bluebirds are the most common box users, we record use by any species.

The national program of box construction and monitoring started in the '70s when people realized that cavity-nesting birds were suffering population declines because of a lack of nesting opportunities. One reason for cavity-nester declines is that removal of dead trees also removes old woodpecker holes and potential nests for other birds that can't make their own holes. Data we record in Boulder County are entered each year into the Cornell University database and used by scientists to track cavity nesters' breeding and population. Colorado is third nationally in number of nesting reports contributed to the database (over 7000 since 1997).

The nest boxes are generally off official trails, so monitoring may involve wading through waist-high grass in July and can be moderately strenuous. If you're interested, please contact Marti Oetzel (303-543-3712) or marti@birdhike.com.

Top: Mountain Bluebird with food for chicks.

Right: Western Bluebird chicks.

— G. Oetzel



Field Trips

Saturday, March 13—Spring Welcoming Hike: Meet leader Steve Jones (303-494-2468, curlwsj@comcast.net) at Sawhill Ponds Parking Lot, 7:30am. This will be a morning walk, done by noon. Bring portable finger food (something warm, sweet, exotic, or passionate) to share, and meet at the Sawhill Ponds parking area, west of 75th St between Valmont and Jay roads. We'll walk about 2 miles, enjoying the ducks, raptors, and other spring wildlife.

Saturday, March 20—Birding East Longmont: (With Boulder Bird Club) Meet leader Chris Owens 303-772-6048 at 8:00 a.m. at Jim Hamm Natural Area parking lot at County Line Road and 17th Ave, East Longmont, bird until 1–2 p.m. Visit hot spots to ID our winter visitors including water fowl and grebes.

Saturday, May 1—Ecosteward rendezvous in Skunk Canyon: 7-10 a.m.

Ecostewards Elaine Hill, Carol Kampert, Maureen Lawry, and Steve Jones (curlwsj@comcast.net) will host a gentle hike up lower Skunk Canyon to look for wildflowers, spring-migrating birds, and mammals. Everyone is welcome, including potential new volunteers. Bring finger food to share during a potluck breakfast in the woods at the upper end of the canyon. Meet at 7 where Deer Valley Road dead-ends into Hollyberry Lane (from South Broadway take Dartmouth three blocks west, turn left onto Kohler Drive, and follow it all the way up to the top of the hill where it merges with Deer Valley Road).

Book Review

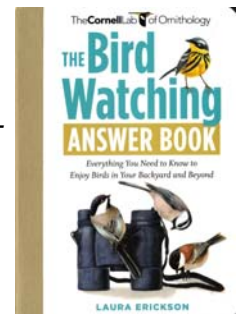
Author Laura Erickson and the Cornell Lab of Ornithology provide *Everything You Need to Know to Enjoy Birds in Your Backyard and Beyond*.

Major sections include:

1. For the Birds: Feeding, Watching, and Protecting our Feathered Friends;
2. Bird Brains: Avian Behavior and Intelligence;
3. All About Birds, Inside and Out.

There are a great many Question-Answer pairs in more than 350 small pages. Each section includes four chapters with titles that give an idea where to look if you have a specific question. Finding the specific pair that treats a question you have can be a challenge, but you're likely to find other interesting items while you're looking.

It's a useful resource for people who want to learn more about birds, but the material isn't limited to novices. I found it interesting to pick it up when I had only a few minutes, just to read a few of the Q and A's.



Boulder County Nature Association Winter-Spring Classes

For more information about these and other classes, visit www.bcna.org

Ptarmigan: Joyce Gellhorn and Calvin Whitehall

Learn about adaptations of these ghost-like birds to their snowy alpine home. Search for ptarmigan on Guanella Pass or Niwot Ridge.

Thursday, March 4, 7-9 p.m.

Saturday, March 6, 7 a.m. to 4 p.m.

\$70 (\$60 for members). Joyce Gellhorn, 303-442-8123; jggellhorn@mac.com

Walking through the Seasons in the Ponderosa Pine Forest: Dianne Andrews

In this two-apart class, we will walk the same trail each season, exploring some of the stories the forest has to tell. We will each keep a journal of our observations and reflections.

Part I: Winter and Spring

Thursday, March 18, 6:30-8:30 p.m.

Saturday, March 20, 8 a.m. to 1 p.m.

Saturday, May 29, 8 a.m. to 1 p.m.

\$90 (\$80 for members). Dianne Andrews, 303-823-6779; dandrews@boulder.net

Colorado Bird Migration: Dave Leatherman

Come explore the many facets of bird migration, including the mechanics of migration, evolutionary reasons for migration, and resultant physiological adaptations. Most of all, we will observe migrants and get a feel for the wonder of it all.

Thursday, April 29, 7-9 p.m.

Saturday, May 1, 7 a.m. to noon

Sunday, May 9, 7 a.m. to 3 p.m.

\$90 (\$80 for members). Dave Leatherman, 970-416-0193; daleatherman@msn.com

Wildflower Sketching: Susie Mottashed

Using both pencils and watercolor pencils, we'll work on sketching techniques that will enable you to capture the beauty and details of flowers. Will also work on developing good observation skills in the field.

Thursday, May 13, 6:30-9 p.m.

Saturday, May 15, 8:30-11 a.m.

\$55 (\$50 for members). Susie Mottashed, 303-499-0984; susiemott@comcast.net



Boulder County Ecosystem Symposium: *Restoring Native Ecosystems*

Saturday, April 3, 8:30 a.m. to 4 p.m.

University of Colorado Ramaley Auditorium

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.

Here's a tentative schedule of presentations. For an updated schedule, visit www.bcna.org.

9:00-9:15 a.m.: Introduction, and Remembrance of Sigrid.

9:15-10:00: David Buckner, ESCO Associates. Perspectives on restoration, past, present, and future.

10-10:45: Clinton Francis, Univ. of Colorado. Cumulative consequences of noise pollution on natural communities.

11:00-11:45: Chad Julian, Boulder County Parks and Open Space. Restoring forest ecosystems.

11:45-12:30 p.m.: 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. Road obliteration and restoration techniques.

2:30-3:15: Claire Deleo, Boulder County Parks and Open Space. Restoration practices in Boulder County.

3:15-4:00: Tom Grant. Innovative restoration methods.

Copenhagen—What Meaning?

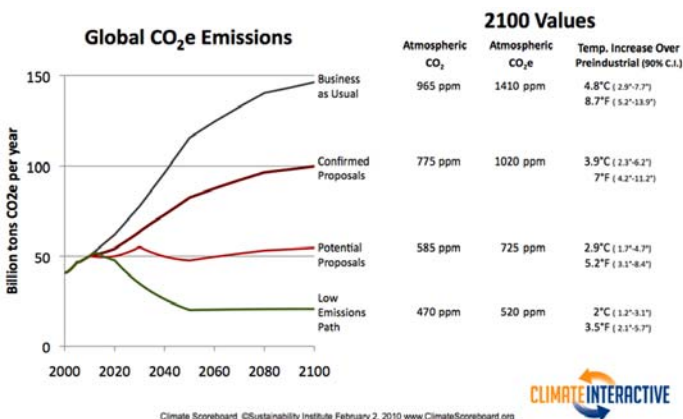
The last-minute “accord” at the Copenhagen climate-change meeting seemingly meant little, but it provided a way for countries to make public, non-binding, commitments on climate change. By the early February deadline set for this, some 90 countries had done so.

Interpreting the global results if these commitments are actually followed is very complex, because they expressed intentions in a variety of ways, and many provided two or more levels of commitment.

The Sustainability Institute, a research group based in Vermont, has assembled a team to integrate these commitments into a model that estimates what they mean for the future. Adding up the highest commitments and extrapolating to 2100, the various analyses yield a 90% chance that global temperatures would be between 1.7 and 4.7°C above the pre-industrial baseline. This suggests that there is only a slim chance of achieving the widely quoted goal of 2°C temperature increase.

One encouraging development is commitment by developing countries to reduce their greenhouse gas emissions, primarily through reducing deforestation. (In the Kyoto agreement, developing countries refused to make any commitments.) Thanks to gridlock in Congress, the U.S. has made only a minimal commitment. A meaningful energy bill would not only reduce U.S. emissions and dependence on foreign energy sources, but it would likely also influence other countries to make additional commitments.

Climate Interactive has been created to disseminate both commitment data and the results of simulations in forms that are accessible to decision makers and the general public. They have provided an interactive Web “scoreboard” that is updated as new information becomes available. See it at www.boulderaudubon.org/climate_score.htm. The graph below shows the changes in emissions expected under various scenarios. (CO₂e is the CO₂ equivalent including other greenhouse gases.)



<http://ClimateInteractive.org/>; Also <http://www.economist.com/daily/columns/greenview/>

Mockingbirds in Fickle Climates Sing Fancier Tunes

Researchers at the National Evolutionary Synthesis Center (NESCent), the Cornell Lab of Ornithology, and McGill University suspect that inconsistent climates may play a role in the complexity of mockingbirds’ songs.

A large-scale study of mockingbirds in diverse habitats reveals that species in more variable climates also sing more complex tunes. “As environments become more variable or unpredictable, song displays become more elaborate,” said Carlos Botero, a postdoctoral researcher at the NESCent research center, Duke University, Durham, NC.

Local climate patterns are good indicators of how challenging life is in a given location, Botero said. “Survival and reproduction become more complicated when weather patterns are unpredictable because you don’t know when food will be available or how long it will be around,” he explains. What’s more, the consequences of picking a mediocre mate are magnified in harsher climates.

Male mockingbirds sing primarily to impress mates, said Botero. Superior singing skills are a cue that a male is a good catch. “Complexity of song display – how many song types a bird sings, how hard the songs are – is a good predictor of the quality of the individual,” said Botero. “Males that sing more complex songs tend to carry fewer parasites, and have offspring that are more likely to survive.”

To see if there was a correlation between climate and song, Botero searched sound archives around the world and embarked on a solo tour of the southern hemisphere to record bird songs in the wild. Armed with super-sensitive recording equipment, Botero trekked his way through desert, jungle, scree and scrub in search of mockingbirds in song. Back in the States, Botero and colleagues used computer programs to analyze each snippet of song and compared their patterns to a database of temperature and precipitation records. The researchers found that species subject to more variable and unpredictable climates had more elaborate song displays.

The connection between birdsong and climate is new and somewhat surprising, Botero explains. “We’re connecting two dots that were far away before.”

The team’s findings were published online in the May 21 issue of the journal *Current Biology*.

—Condensed from a Cornell Ornithology Lab press release emailed to Audubon chapter newsletter editors.

BOULDER COUNTY WILDLIFE INVENTORY, JULY - AUGUST 2009

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

July and August 2009 were relatively cool and wet months for Boulder County. Lakes and reservoirs were full with very little shoreline. Although there were signs of fall migration starting, they were not as obvious as in many years. Hummingbirds began appearing on the plains, and sparrows were moving down from the mountains. Few duck, shorebird and gull species were reported. Sometimes it is hard to know whether absence was real or due to a lack of reporting. For instance, no terns were reported in either month.

Cassin's Sparrows were found in grasslands on the plains in at least two locations. This is only the third report of these birds in the county, although they are fairly widespread in Weld County and further east. It will be interesting to see whether this species is really spreading or whether this was an anomaly. **Cassin's Sparrows** frequent undisturbed short grass prairie, a habitat which has steadily declined due to development

Few shorebirds were reported either month, partly due to the lack of shoreline. The most exciting reports were of **Upland Sandpipers** flying overhead at night during migration. This is a bird with a very distinctive flight call. We have only had two previous reports of this species in the county, both of which were observed rather than heard. Perhaps, with new techniques aiding identification, this will be a bird more regularly reported. It is also possible that the **Upland Sandpiper's** migration route is now further west.

A **Little Blue Heron** at the beginning of July was a new sighting for the year. **Green Heron** was confirmed as breeding in the Walden Ponds area; this is one of the most reliable sites for observing this species in the state. **Ospreys** have continued to successfully breed and are reported in ever increasing numbers. Both **Calliope** and **Black-chinned Hummingbirds** are also becoming increasingly common in Boulder County, continuing the trend of the last few years. Evidence of breeding has now been found for both species. There were several reports of possible **Ruby-throated Hummingbird**, but these were never fully verified. A **Scissor-tailed Flycatcher** stayed in the county for only two days but was seen by many; this is the third report of this bird in the county.

The **Kentucky Warbler** first seen in June in Gregory Canyon continued to be heard and occasionally observed until the middle of August. Nearby the **Scarlet Tanager** delighted observers for the third consecutive year. **Ovenbird** and **Hooded Warbler** almost certainly bred in the foothills. A **Rose-breasted Grosbeak** was seen feeding young in the Marshall Mesa area in July. **Dickcissel** were seen in at least two locations in the plains. An **Orchard Oriole** was a new sighting for the year. Several **Townsend's Warblers** were found in August; this is a bird that is habitually commoner during fall migration than in the spring. A **Blackburnian Warbler** was also a new sighting for the year.

Altogether 171 bird species were seen in July and 129 species in August. This puts July 2009 as nearing the record of 173 species seen in July 2002, while August has the lowest total reported for several years. Many common birds, such as **Pygmy Nuthatch** and **Townsend's Solitaire**, were not reported in August. Several birders reported that the mosquitoes in such areas as Walden Ponds were particularly bad in August, causing many birders to avoid going to such areas.

For a complete listing of sighted species please go to www.boulderaudubon.org/inventory.htm.

Contributors to the July and August Inventories

Linda Andes-Georges, Alan Bell, Mike Blatchley, Ron Bolton, Dan Brooke, Alex & Gillian Brown, Steven Brown, Todd Deininger, Jessie Dulberger, Kathy Mihm Dunning, Ted Floyd, Lonny Frye, Steve Frye, Paula Hansley, Steve Jones, Tina Jones, Bill Kaempfer, Will Keeley, Nick Komar, Steve Larson, Stuart Liss, Mark Miller, Gene & Lynn Monroe, Christian Nunes, George Oetzel, Laura Osborn, Beth Partin, Mark Peterson, Peter Ruprecht, Bill Schmoker, Scott Severs, Tim Smart, Rick and Connie Steinkamp, Joyce Takamine, Cheryl Teuton, John Tumasonis, Knut Waagan, David J. Waltman, Wild Bird Center, Bob Zilly.



Bald Eagle Nest at Coal Creek in October.

—Steve Jones

Christmas Bird Count: Big 100th Anniversary Success

Bill Schmoker

Boulder's 68th Christmas Bird Count on Dec 14 was also our 100-year anniversary count. Boulder's first CBC was 24 December 1909.

As opposed to near-zero (about 5 degrees either way) temperatures in 2008, we had a sunny and mild day for counting. 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.

The count-day total was 105 species, with another 3 added during the count week. Notable birds included Mew Gull, which was recorded for the second time on count day, along with 6 other gull species. Lesser Black-backed Gull was recorded the 5th time, Glaucous Gull the 6th, and Thayer's the 12th. These were all seen at the Valmont Reservoir complex. Other noteworthy species include the 2nd count occurrence of White-winged Crossbill and the third of Chihuahuan Raven. A male Mandarin Duck on a frozen pond with wild geese and ducks caught the attention of the group that found it! Notably missing birds included Rough-legged Hawk, Evening Grosbeak, Cassin's Finch, and Clark's Nutcracker. Thanks to all of the territory leaders for lining up their teams and to all of the participants for their efforts.

Big thanks to the City and County of Boulder Open Space and to private landowners for providing access to otherwise off-limits areas, and to Boulder County Audubon Society for sponsoring the count and providing a lasagna dinner!

On the Wing Changes!

This is the first issue of *On the Wing* published primarily with electronic distribution. Only about 70 paper copies of this issue are being mailed, compared with nearly 1200 copies of the January 2010 issue. The online version has an extra page and differs from the printed version in some other minor ways.

Wild Bird Center 303-442-1322



"Your backyard birding specialists"

www.wcboulder.com

On 28th south of Canyon
In Boulder since 1989
M-F 10-6, Sat 9-6, Sun 11-5

Grocery Certificates

We are no longer able to supply grocery certificates by mail. Certificates are still available at 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, \$25 and \$100, Liquormart, \$25

Raptor Nest Monitoring Volunteers Wanted City of Louisville

The City of Louisville Open Space Division monitored raptor nests in the City for the first time in 2009. We would like to continue the effort in 2010 and need help in doing so. We are asking for volunteers who can commit at least 30 minutes per week from late February through August per nest monitored. Volunteers will need to provide their own binoculars or spotting scopes. We identified 10 nests in 2010 of Red-tailed Hawks, Swainson's Hawks, and Great-horned Owls. We also had nests of a Long-eared Owl and a Cooper's Hawk in 2008 and are crossing our fingers that they will return in 2010. If you would like to volunteer please contact Jim Krick, City of Louisville Open Space Technician at JimK@LouisvilleCO.gov.



Advanced Birdwatching Course

Join instructors Sue Cass, Steve Jones, and Scott Severs, and other experienced birders, for this exciting new offering from Boulder Audubon!

The emphasis of this course of study will be on identifying birds by sight and song in the context of their ecosystem niches on the Front Range.

The tentative dates of the classes/field trips are:

- Wednesday or Thursday Evening, May 19 or 20
- Saturday morning, May 22
- Saturday morning, June 5
- Saturday morning, June 19

The course is \$80 for BCAS members and \$90 for non-members. To register, contact Mary Balzer (marybalzer@qwest.net) or visit the BCAS Web site for a mail-in registration form (www.boulderaudubon.org/education.htm#birding_cert)

The Traveling Birder: Florida Keys and the Western Caribbean

“Birch” Birchmeier emailed this report from Panama during the cruise. He’s a BCAS Board member and our nest box builder.

I arrived in Florida 4 days before the cruise to spend time in Key West. One great day for a boat ride to the Dry Tortugas (no rational person other than birders would want to go there). Ferry trips the following days were canceled with 12 foot waves. The two ferries take approximately the same travel time. If you want to go on deck to scan for pelagics, take the Yankee Freedom which has an outer deck. Lunch is included; take your National Park pass to save 5 bucks off the \$150 fare. About 50 Frigate birds were nesting on the adjacent island (off limits)—when they’re done, the Sooty Terns and Noddys take over. You get to watch Brown Pelicans diving; they are very good, catching fish about 5 of 6 times. Then they hold their heads under water to arrange the fish for fast swallowing, while nearby Royal Terns land on their head and peck away to try to get a released fish. Fun to watch!

Back to Miami, stopping at the several sites on the Keys: The National Key Deer Refuge to see some Key Deer, Bahia Honda State Park, Crane Point on Marathon Key for extensive mangrove swamp hiking trails and a good bird rescue center, and taking the long way at the north end of Key Largo to travel through the scrub.

Cruise report

Aruba: We booked an 11 day round trip to Panama out of Miami on the Jewel of the Seas, and since I already know what a beach looks like, I went for the birding. It always is a good topic of conversation when you’re asked “where did you go today; I went to the beach” and you admit that you spent the day at the old sewage treatment plant! On a party island like Aruba! The Bubali Birding Preserve is the usual chain of settling ponds 3 miles northwest of the port, \$15 by cab. I found all the green herons of Colorado here—there must have been 50 of them. One of them screamed to defend his territory from the invading birder. Soras, Moorhens, and Egrets were in abundance plus a few of the local birds in the trees. The observation tower is in mild disrepair; watch where you stand. When you’re done, walk to the hotel next door to flag down a return cab. Birding around the ship was productive, as I got a Bananaquit in one of the trees, then a White Crowned Pigeon working the dumpsters behind the restaurants.

Colon, Panama: Rain Forest hike on a cruise excursion, since I came mostly for the birding. Americans don’t usually go on these hikes, I notice; mostly it’s others who are interested in the woods. The tour crosses the canal

at the Gatun Locks, so we got to take pictures and watch a ship going through, no extra charge. Hiked for a mile or two in San Lorenzo National Park, then went to the park behind the closed army base next to Gatun Lake where the green berets trained for Vietnam. If you’re a birder, wear your costume so Louis will know – he’s an excellent guide. 14 Life birds on this trip made it a fun walk in the 90 degree heat and humidity. Both sloths and several monkeys were pleasant additions, the trails were loaded with butterflies, and we saw two columns of leaf-cutter ants.

Puerto Limon, Costa Rica: Bocuare Jungle tour via a ship excursion to a private nature reserve. 1½ hours there, the last 20 minutes over a really lousy road crossing single lane bridges with no side rails. Hints for birders: Xavier was the guide, but when you get there, stay near Sebastian – he speaks no English, so you’ll have him all to yourself. He’s got a good ear for the local birds and will point to a picture of the birds for you. I figure a buck a bird for Sebastian at the end is about right. My favorite was the Montezuma Oropendola; it weaves a grass hanging nest like an oriole, but being larger, the nest is often 6 feet long and a foot in diameter. (Heck of a lot easier to find than an oriole nest, too.) I only got another dozen lifers here, with a measly 3 hummingbirds of the 60 or so in Costa Rica. Xavier will do some guiding — costaricatravelinfo.com will get to him. He’s based in San Jose.

Grand Cayman Island: Walked to the right of the dock to the shack labeled “Taxi Dispatch”. A taxi for 4 people, 4 hours cost \$240 US to tour the island. Went to the Queen Elizabeth Botanical Park and roamed around a couple of hours birding (best is the flower garden, and the Rose-throated Parrots are splendid). I noticed the Bird Sanctuary sign near the airport on the way back, but not enough time to stop.



Oropendola and nests
Costa Rica & Belize
— G. Oetzel

Feathered Dinosaurs

Birds and dinosaurs are similar in many ways, not least in their ability to capture the human imagination. The evolutionary links between birds and dinosaurs are well known, and so people often wonder if the American Crow in their backyard, and the Eastern Kingbird dive-bombing it, are both modern-day dinosaurs.

The answer is yes: all birds are indeed dinosaurs. In fact, birds are the sole remaining descendants of the so-called theropod dinosaurs, a group that included *Tyrannosaurus rex* and a diversity of other dinosaurs, large and small. The theropod ancestry of birds was hotly debated in scientific circles in the 1970s and '80s, and that controversy garnered a lot of attention in the popular press, but the origin of birds from theropod ancestors has since been supported by many new lines of evidence and is now nearly universally accepted by scientists who study bird and dinosaur evolution.

Many shared attributes link birds and theropods, from their brooding of eggs in nests to specialized features of their bone structure. But the most spectacular recent evidence for the dinosaur origins of birds is a series of exceptionally well-preserved dinosaur fossils discovered in China over the past decade or so. These 150-million-year-old fossils clearly show that some theropod dinosaurs had feathers, previously thought to be unique in birds. Other features of these fossils have allowed researchers to pinpoint the ancestry of birds in a subgroup of theropod dinosaurs called the *maniraptors*.

Even without DNA, it has been possible to study dinosaur genetics indirectly. In 2007, a group of researchers used scans of both dinosaur and bird bones to show that the bone cells of birds and the dinosaurs most closely related to them were similarly small in size. Previous work had revealed that the size of these particular cells is related to the size of an animal's genome (the overall amount of DNA in each of its cells). Smaller cells mean smaller genomes. Birds have unusually small genomes

compared with other animals, and the small cell size seen in their dinosaur relatives is another feature that birds share with these dinosaurs.

Varricchio *et al.** have shown that fatherhood in theropods was about more than just looking macho and gnashing teeth. Compelling evidence from three theropods closely related to birds—*Troodon*, *Oviraptor*, and *Citipati*—shows that the individuals caring for those clutches of eggs were males. Because the basal lineage of living birds, or the earliest branch in the avian phylogenetic tree, also has predominantly male-only nest care, their discovery may have uncovered the dinosaurian origins of the breeding biology of living birds.

They base their conclusion on two lines of evidence. First, the theropod clutch sizes were very large relative to the body size. This is also the case with current birds in which the male builds the nest and cares for the eggs (e.g., Ostrich, Emu, Cassowary). Second, male-female differences in bone structure allowed them to determine that the theropods found in nests were male. (When discovered in 1924, the *Oviraptor* was assumed to be robbing a nest, hence its name as "egg seizer.")

Dinosaurs are still, of course, considered reptiles, leading to a natural follow-up question: if birds are really dinosaurs, and dinosaurs are reptiles, should birds be considered reptiles? The answer again is yes: herpetologists, the scientists who specialize in the study of amphibians and reptiles, take great pleasure in reminding their ornithologist colleagues that birds might correctly be thought of as "avian reptiles."

Thanks to Cornell University for permission to use text from www.birds.cornell.edu/Publications/Birdscope/Autumn2008/feathered_dinosaurs.html

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