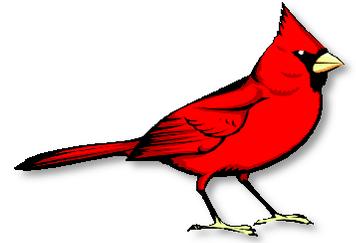


# THE OBSERVER

www.whittieraudubon.org



## Calendar

**November 14.** Beginner bird walk at Sycamore Canyon. Meet at the Sycamore Canyon trailhead at **8:00 AM**. The trail is located adjacent to Rose Hills Cemetery gate 17, but note that the trail is not in the cemetery! The entrance to Sycamore Canyon is a driveway just southwest of the entrance to the cemetery. Jeff Allison leads. Rain or recent rain cancels.

**November 19.** Monthly meeting and program 7:30 PM at the Whittier Community Center. John Hargrove presents, "My Big Year." See page 2 for details.

**November 21.** Field trip to Prado Dam. Details are TBD at press time, watch the web site for more information.



## *Earliest Beginnings Of Bird Evolution Brought Into Focus With New DNA Analysis*

The massive meteor strike that wiped out the dinosaurs 65 million years ago may have sparked a rapid evolution of bird species over just a few million years. The few bird lineages that survived the extinction bottleneck gave rise to stunning diversity, resulting in the more than 10,000 species alive today.

Now, a new study published in *Nature* provides the clearest look yet at those early evolutionary branches as birds emerged as a dominant life form on the planet—relationships that have stumped scientists since the dawn of paleontology.

"This question of understanding the deepest relationships in the bird family tree has plagued scientists for decades," says Jacob Berv, a Cornell Lab of Ornithology graduate student and an author of the study. "Some people call it the most difficult problem in dinosaur systematics."

Birds are the only living descendants of dinosaurs. They evolved from a group called the theropod dinosaurs that

included bipedal carnivores such as *Tyrannosaurus rex* and *Velociraptor*. "After the great dinosaur extinction, birds began to rapidly evolve new forms—and that's the era that our study manages to reconstruct in great detail," Berv says. "It's revolutionizing our ability to understand avian evolution."

The researchers paid particular attention to a taxonomic group known as the Neoaves, which contains about 90% of all bird species—everything except game birds, waterfowl, tinamous, and flightless birds such as the Ostrich and kiwis.

Within this group they found unexpected relationships. Virtually all landbirds diverged early on from a group that includes the vultures and hawks, raising the possibility that terrestrial birds evolved from raptor-like ancestors.

And one species, the prehistoric-looking *Hoatzin* of South America, traces its lineage back nearly 64 million years. It's the oldest bird lineage that leads to a single living species. The *Hoatzin* is a

curious bird—it's the only species that feeds by fermenting leaves in its crop and esophagus. Its relationship to other birds has been long debated by evolutionary biologists.

"This is a very exciting time in evolutionary ornithology," says coauthor Richard Prum of Yale University. "In just a few short years, we will complete the phylogeny of birds. There will always be a few branches to argue about, but the tree is taking shape rapidly."

Compared to other recent studies that have attempted to clarify evolutionary relationships among bird families, the study authors analyzed genetic markers for a much larger number of species (198 birds, 2 alligators). The large species sampling was enabled by a new technique developed by authors Alan and Emily Lemmon, of Florida State University, that efficiently targeted a few hundred key locations on each species' genome—DNA

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## November Program and Meeting LINDA OBERHOLTZER

**"you will hear and see the rest of the birds in My Big Year by John Hargrove himself."**

Please come and join the Whittier Area Audubon's November 19, 2015 general meeting at 7:30 p.m. at the Whittier Community Center, 7630 Washington Ave., Whittier, CA., where John Hargrove will present a program "My Big Year," complete with photos of his 2012 Big Year.

The Community Center is located on the corner of Washington Ave. (not to be confused with Washington Blvd.) and Mar Vista St., across the street from the Whittier Public Library, and next to a softball field. The program is free. Light refreshments will be served.

Have you ever wondered what a "Big Year" is? Did

you see the movie?

Beverly Hargrove tantalized us with her program "His Big Year" about her rendition of her husband, John's Big Year, complete with astounding photographs.

Now, you will hear and see the rest of the birds in "My Big Year" by John Hargrove himself. He will show photos that were not shown in the prior presentation, specifically pelagic photos. John will talk about the challenge of doing a Big Year, little triumphs, big frustrations, lots of travel, and living on peanut butter and jelly sandwiches.

What is a Big Year? A Big Year for birders is trying to find as many bird species as

you can identify in a geographical area within a year. No one checks your list.

YOU have to decide if you saw the bird or not. If you go for a record, someone might challenge a bird you saw in a peculiar place, but otherwise it is on the honor system.

Why do a Big Year? Birding has always included an element of listing. The Big Year champion, Sandy Komito, had done a Big Year in 1987. He felt he could do better. For 11 years he made plans, In 1998 El Nino returned and winter storms were forecast for the Pacific Northwest; it would be good time to do a Big Year. Many others attempted a Big Year then

*(Continued on page 3)*

## November Field Trip

Our November field trip is going to be to the Prado Dam area. Exact logistics are still up in the air as of this writing, so keep an eye on the web site for additional details.

Prado is good for gulls, waders, and songbirds. There is a \$10/vehicle charge to enter Prado Regional Park on the weekends, so carpooling will be a

good plan. Bring the usual gear — binoculars, hat, sunscreen, and a lunch. Weather can be pretty much anything this time of year, so just check the forecast.

**"Prado is good for gulls, waders, and shorebirds."**



## DNA Analysis

(Continued from page 1)

markers strategically chosen for their ability to reflect early evolutionary changes.

The researchers turned to the fossil record to calibrate the timescale of birds' evolution, by matching points on the evolutionary tree to similar forms in fossils whose ages were already known. This approach led to the finding that birds may have arisen only about 70–80 million years ago, more recently than has been reported in previous studies.

The study also finds that it may have been extremely rare for early bird species to evolve transitions between terrestrial and aquatic lifestyles. Rather than multiple lineages evolving independently to live near water, the researchers conclude that nearly all waterbirds, including loons, grebes, penguins, pelicans, gulls,

and others, share a single common ancestor, and that the switch between habitats may have happened only a few times in bird evolutionary history.

“The fact that adapting to an aquatic environment appears to have been a rare occurrence in the history of bird life is consistent with the story from dinosaurs in general,” Field says. “It seems that birds may have inherited a strong preference for terrestrial habits from their dinosaurian ancestors.”

“Bird enthusiasts will love to learn that cuckoos are closely related to bustards,” Prum adds, “and that the hummingbirds and swifts that are now active during the day actually evolved from nightjars, which are totally nocturnal. It appears that the ancestors of the highly colorful and visual-foraging hummingbirds

were predominantly nocturnal for 10 million years.”

So why does it matter which species evolved before or after another or whether one species is closely related to another?

“Living birds have a very long and complex history,” explains Berv. “Any attempt to understand their biology at a broad scale requires an understanding of this deep historical context. It’s critical to every area of bird biology. How they act, where they live, what they look like, how they communicate—it’s all linked to how they evolved in relation to each other.”

“The most exciting thing is that we can now study the mechanisms and patterns of avian evolution in greater detail,” agrees Prum. “We used genetic tools, but the study is about how the entire evolution of birds unfolded.”



Hoatzin

**“...birds may have arisen only about 70-80 million years ago, more recently than has been reported in previous studies.”**

## Big Year

(Continued from page 2)

too. Sandy came out on top. The Big Year, book and movie were broadly based on that quest.

Why did John do a Big Year in 2012? He had always wanted to do a Big Year and was inspired to do his own after seeing the movie and

reading the book. Though he was handicapped by being blind in one eye and hard of hearing, he didn't want to put it off because he wasn't getting any younger. His wife, Beverly, faithfully kept a blog of his adventures.

2012 was not a good year. There was little to no snow

up north and storms did not blow in a lot of vagrants. John was rusty on bird id and didn't have lots of contacts in the birding world, but he persevered. He took pictures of over 600 bird species and his Big Year total was 689. You will see his best bird photos and hear about the ones that got away.

## Whittier Area Audubon

Whittier Area Audubon  
PO Box 548  
Whittier, CA 90608-0548

Whittier Area Audubon's web site is located at <http://www.whittieraudubon.org>. Our Yahoo group is called whittieraudubon. And we're on Facebook...search for Whittier Area Audubon!



YAHOO!

### *Bring Your Cans!*

Reminder: Bring your aluminum cans to our monthly meetings. We can raise funds by recycling your cans.

## *Join Whittier Area Audubon Society!*

Every membership supports Audubon's vital efforts to protect birds, wildlife, and natural habitats. For \$30 per year you can support Whittier Area Audubon and our local projects and events.

To join our local chapter, make your check payable to Whittier Area Audubon and send it to Whittier Area Audubon, P.O. Box 548, Whittier, CA 90608-0548.

To join National Audubon, make your check payable to Audubon and send to National Audubon Society, PO Box 42250, Palm Coast, FL 32142-2250. Please include a letter with your name, mailing address, and any other personal contact information you wish to share (e.g., email address, phone number) along with Whittier Area Audubon Society's code, C4ZC170Z. As a member of National Audubon, you will receive Audubon's bimonthly magazine.

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