

W·I·N·G·S·P·A·N

Volume 23, Number 2

November 2014

MESSAGE FROM THE PRESIDENT

What a great meeting we had in Corpus Christi! I hope that all of you that were able to attend had a great time and got to see some of the local specialties. If you haven't had the chance, please drop Kate Davis a message congratulating her on yet another great Raptor Research Conference. The amount of work and stress that goes into these meetings cannot be understated. I know several unforeseen issues came up, all of which Kate dealt with behind the scenes with no drama. We owe her a big one!

The day before the meeting officially started was the annual meeting of the Board of Directors. Unfortunately, several officers and board members were unable to attend, but we had a very constructive meeting none-the-less. Our recent election results were announced, and I'm pleased to recognize the outgoing and incoming officers and board members. First, Ted Swem has been our Vice President for several years now and felt it was time to take a break. I personally appreciate the service Ted has given the RRF as our Vice President; he has been a stable and steady voice and a great help for me during my first year as president. But, I could not be happier that, starting 1 January, Libby Mojica will be taking over as Vice President. Brian Washburn and Jennifer Coulson were elected in as new Directors, and Fabrizio Sergio and Rob Bierregaard were re-elected to their posts. I appreciate Rick Harness and Miguel Ferrer for their service on the board, and look forward to continuing to work with them in other roles serving RRF. Finally, Miguel Saggese is our President-Elect, and will take over the reins at the end of our 2015 conference in Sacramento; I'm pleased Miguel has stepped up to take on this important role in our foundation.

There will be mention elsewhere in this volume of the Award recipients at this year's meeting. However, I want to make note of a recognition that is not part of our normal awards. The Board of Directors voted, and it was my pleasure to present, Angela Matz with a lifetime membership and plaque in recognition of her years of service to the Raptor Research Foundation as our Treasurer. This elected position is undoubtedly the most important in our organization, and Angela did a stellar job of keeping everything on track. Angela has greatly helped with the transition to Jessi Brown as our new Treasurer and I can assure you, we continue to be in good hands with Jessi.



Several other items and issues are on our horizon. A very important one is filling committees with dedicated and energetic people wanting to take an active role in this foundation. If you have the time and you care about this foundation, I ask you to contact me or any of the officers; there are a number of ways you can help keep our foundation strong and relevant.

Best,

Clint Boal



RAPTOR RESEARCH FOUNDATION, INC (Founded in 1966)

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At Large #6: Miguel Ferrer

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Editor, *Wingspan*: Brian Washburn
Website Coordinator: Libby Mojica

For more information about the Raptor Research Foundation, Inc. (founded in 1966), please visit the RRF website at: <http://www.raptorresearchfoundation.org/>.

Persons interested in birds of prey are invited to join the Raptor Research Foundation (RRF). *Wingspan* is emailed twice each year to all members of RRF and is available on the RRF website. Members also receive *The Journal of Raptor Research* (ISSN 0892-1016), which is published quarterly. For membership and subscription information, please contact: **Ornithological Societies of North America**, 5400 Bosque Boulevard, Suite 680, Waco, TX 76710, USA; 1-254-399-9636 (phone); 1-254-776-3767 (fax); business@osnabirds.org (email); <http://www.osnabirds.org> (web).

Editor's Note – The decision was made to delay the fall 2014 issue of *Wingspan* until after the 2014 RRF Conference so that many exciting and important news items and announcements could be provided in the issue.

Thanks to the following contributors for this issue of the *Wingspan*: Jim Belthoff, Clint Boal, Travis Booms, Jennifer Coulson, Cheryl Dykstra, Kate Davis, Jeff Lincer, Libby Mojica, Gary Santolo, Dan Varland, and Susan Whaley.

Wingspan welcomes contributions from RRF members and others interested in raptor biology and management. Please submit contributions via email to Brian Washburn, *Wingspan* Editor, at rrfwingspan@gmail.com. For long contributions, please send as a MS Word attachment. If you are submitting photos, please include them within the MSWord document with a caption and photo credit. Contribution deadline for the next issue is **15 February 2015**.

All issues of *Wingspan* and content guidelines are available at:

<http://www.raptorresearchfoundation.org/publications/wingspan-newsletter/online-newsletters-pdfs>

"Hatchlings and Fledglings"

As with any dynamic organization, changes within the RRF Leadership Group occur each year. At the RRF Annual Business Meeting, the 2014 election results were announced:

- ✗ PRESIDENT-ELECT: Miguel Saggese
- ✗ VICE PRESIDENT: Libby Mojica
- ✗ DIRECTOR EURASIA: Fabrizio Sergio (Reelected)
- ✗ DIRECTOR NORTH AMERICA #3: Brian Washburn
- ✗ DIRECTOR AT LARGE #3: Rob Bierregaard (Reelected)
- ✗ DIRECTOR AT LARGE #6: Jennifer Coulson

Congratulations and huge thanks to all of those involved in these essential positions. Understanding that everyone has a "day job", the dedication and commitment of all RRF members is truly fantastic! The 2014 RRF Conference was a showcase of this.

In addition to the officers and Board of Directors, there are many opportunities to get involved with, most notably Committees (such as Awards, Conferences, Conservation, and many others). If you have the time and desire, contact an RRF officer for more information. ***And Get Involved!!!***

RAPTOR RESEARCH FOUNDATION 2014 ANNUAL CONFERENCE

Submitted by Brian Washburn

The 2014 Raptor Research Conference, held in Corpus Christi, TX was a rousing success! The event was held at the Emerald Beach Hotel, right on Corpus Christi Bay. Despite some 'blustery' weather, the field trips and bird watching excursions went off very well. Much appreciation is due to the hosting organizations, the Caesar Kleberg Wildlife Research Institute at Texas A&M University – Kingsville and HawkWatch International. A special thanks is warranted to Tom Langscheid and the staff at the King Ranch for their Texas-sized hospitality!

The conference was filled with a wide variety of presentations (talks and posters) on all things raptor-related, including such informative and important topics as: new information about the ecology of little-known species, advances in technology and techniques, important reminders of using proper terminology, raptor life history (e.g., breeding, migration, and wintering ecology), issues associated with human-raptor conflicts (e.g., wind energy development, habitat modification), and a host of other fascinating topics. An excellent series of workshops, keynote presentations by Grainger Hunt, Bill Clark, and Steve Hoffman provided all with a great sense of where the Raptor Research Foundation has come from and where we are headed. Students played an important role in the success of the conference, providing interesting and well prepared talks and posters. Of particular importance, the youngest participant at the conference was Jack Service. Jack is a high school student that gave a great poster presentation and without question discussed raptors and raptor biology with the same knowledge and ability as the rest of the conference attendees! These were good signs that the RRF has a bright future.

Make plans to attend the 2015 Raptor Research Foundation Conference to be held in Sacramento, CA! There is no better way to re-energize and be inspired to learn more about raptors than interacting with the world's foremost raptor biologists! (Who happen to be really great people!!!)



PHOTOS FROM THE 2014 RRF CONFERENCE

Graciously provided by Dan Varland



2014 James Koplin Award Winners:
Joe Eisaguirre, Jamie Wade,
and Julio Gallardo



Conference attendees enjoying the banquet.



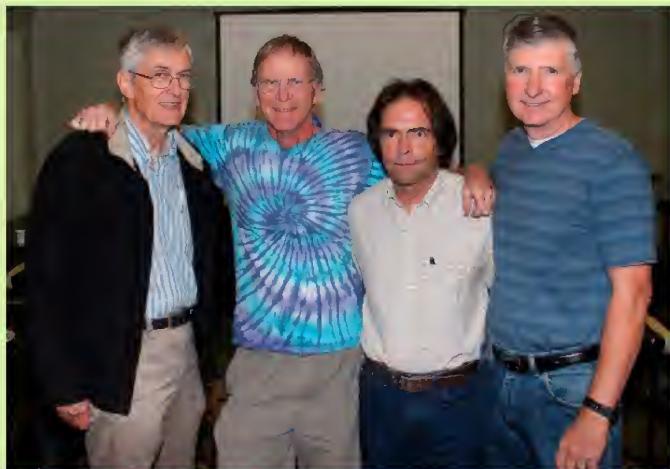
Conference Committee Chair
Kate Davis keeping things "in line...."



2014 William C. Anderson Award Winners:
Stephanie Szarmach and Jamie Wade



Barbara Rapstein and Ms. Rapture
working at the registration desk



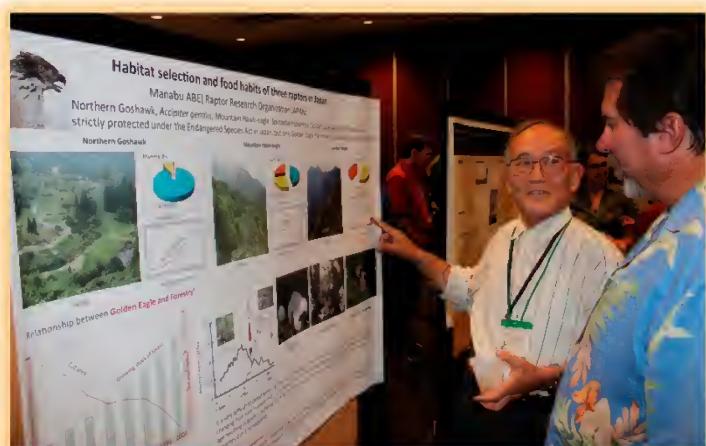
**ECRR workshop instructors Wayne Nelson,
Dan Varland, John Smallwood,
and Gene Jacobs**



**Student learning about climbing
safety and accessing raptor
nests in an ECRR workshop**



**Students learning about raptor
harnesses in an ECRR workshop**



**Manabu Abe explains his
poster to Scott Thomas**

Early Career Raptor Research Events A Highlight of the 2014 Conference!

Submitted by Travis Booms

For the third year in a row, the Raptor Research Foundation Early Career Raptor Researcher (ECRR) Committee sponsored a social mixer and a day of skills-based workshops at the 2014 annual meeting in Texas.

Workshops:

Classes were held in a small-group, intimate learning environment with a strong emphasis on hands-on learning. This included using freshly-thawed raptor carcasses; tags, transmitters, and sampling materials galore; and even hanging from ropes at a local climbing gym! Leading experts in raptor research techniques donated their time and taught half or full-day courses on the Wednesday before the conference on the following topics:

- ✗ Handling, marking, measuring, and blood-sampling raptors
- ✗ Harnessing raptors with transmitters
- ✗ Safely accessing raptor nests
- ✗ Raptor necropsy
- ✗ Raptor trapping
- ✗ Raptor ID, aging, and sexing in the hand and field

We had nearly 50 participants and many ECRRs noted that the workshops were the highlight of the conference. The workshops provided ECRRs not only a unique opportunity to advance their skills in topics rarely covered in college courses, but also a valuable opportunity to get to know their instructors and fellow ECRRs before the conference started.

Thanks to the following Workshop Instructors who donated their time, expertise, and additional travel costs to provide the highest quality learning experience to RRF's ECRRs:

Bill Clark, Raptours

Joel Pagel, U.S. Fish and Wildlife Service

Dan Varland, Coastal Raptors

Eugene Jacobs, Linwood Springs Research Station

Wayne Nelson

John Smallwood, Montclair State University

Brian Millsap, US Fish and Wildlife Service

Steve Lewis, US Fish and Wildlife Service

David Stelling, Texas State Aquarium

Pete Bloom, Western Foundation of Vertebrate Zoology

ECRR Social:

Mentors and ECRRs enjoyed an opportunity to mingle and get to know one another at the ECRR mixer held on Thursday night at the hotel's sea-side bar. A fresh breeze off the ocean, gulls and other sea birds flying overhead, and a spectacular view of Corpus Christi Bay made for a unique and memorable event. This was an unstructured chance for ECRRs and mentors to meet each other in a friendly, relaxed setting in hopes of breaking-down any perceived barriers between the new and the vanguard RRF members and ensuring newer members know that they are welcome!

What's an ECRR? (perhaps place the following in the format of a dictionary entry???)

An ECRR (pronounced E-ker... sounds like "beaker") can be either a student (high school, undergraduate, or graduate) or someone who is no longer a student but is relatively new to studying raptors. For example, an ECRR could be a biologist who recently graduated and is starting his or her first job dealing with raptors. An ECRR could also be a person who finished school years ago but is only now starting to work in the raptor field. The definition of an ECRR is by design a flexible one; we leave it up to each RRF member to decide if he or she is new enough to the field to be considered an ECRR. When in doubt, consider yourself an ECRR!

Interested in getting more involved with RRF ECRR Events? Drop an email to **Travis Booms**, travis.booms@alaska.gov, ECRR Committee Chair.

***** More workshops and another ECRR-mentor mixer are already being planned for next year's conference in California, so make plans to attend in 2015!!!**

Upcoming Conferences

RRF 2015

**4–8 November 2015
Sacramento, California, USA**

Make sure to save the week of November 3–8, 2015 for the Raptor Research Foundation Conference in Sacramento, California! The conference will be at the Double Tree hotel and hosted by the Golden Gate Raptor Observatory. Plan on attending – it's the 50th anniversary of the Madison Peregrine Conference! Contact **Kate Davis** (raptors@montana.com) to lend a hand.

News from the RRF

Announcing the Winner of the 2014 Leslie Brown Memorial Grant

Submitted by Jeff Lincer and Gary Santolo

We are happy to announce that the 2014 Leslie Brown Memorial Grant goes to Marie-Sophie Garcia-Heras who completed her BSc in Biology in France in 2009 (University of Paul-Cézanne Aix-Marseille III) and followed this up with an M.S. in Ecology (2009–2011), with a specific focus on biodiversity management and species conservation. Her M.S. research, through the Biological Station of Doñana (Sevilla, Spain), involved the study of the endangered Egyptian Vulture (*Neophron percnopterus*) population on the Canarian Archipelago. Her project, specifically, focused on the effects of supplementary feeding stations on the breeding population at the individual scale. In 2013, Marie-Sophie joined the Percy FitzPatrick Institute of African Ornithology at the University of Cape Town (South Africa) to begin her Ph.D. on Black Harrier (*Circus maurus*) conservation, under the supervision of Dr. Rob Simmons, Prof. Graeme Cumming (UCT), and Drs. François Mougeot and Beatriz Arroyo (CSIC, Spain). Her research aims to determine which factors are

responsible for the scarcity of the Black Harrier population in Southern Africa and how these factors, linked together, are influencing its population dynamics in space and time. Further, she is also looking at how environmental (e.g. habitat, prey, weather, pathogens, predators) and individual factors (e.g., behavior, condition) define breeding patterns.



Marie-Sophie holding one of her study birds, a Black Harrier.

Within that context, the Leslie Brown Memorial Award will contribute to characterize eco-physiological parameters indicative of health (pollutant and carotenoid levels) and to explore how they may be linked to diet, habitat and breeding performance in Black Harriers. The first aim will be to determine to what extent

organochlorine compounds (OC) pollutants, such as DDT/DDE and PCBs, may be affecting Black Harriers, and how contaminant levels co-vary with diet (specifically if the diet is mostly based on small birds, known to influence OC levels in raptors). Additionally, her work will investigate how contaminant levels co-vary with individual condition (birds in a state of starvation, or in poor body condition, may show higher OC concentrations), as well as with other physiological indicators of health in nestlings and adults, specifically carotenoids and carotenoid-based coloration.

The ultimate objective of Marie-Sophie's Ph.D. research will be to bring together all aspects of her study to define efficient conservation management measures and contribute to an increase of Black Harrier population size in the medium-long term in Southern Africa.

For more information on her research, read updates on the blog

(<http://blackharrierspace.blogspot.com/>) or contact her at ms.garciahervas@gmail.com (<http://www.fitzpatrick.uct.ac.za/docs/marie-sophie.html>).

Frances and Frederick Hamerstrom Award

Submitted by Jennifer Coulson

Is there a colleague you admire who has made significant contributions to raptor ecology and natural history? If so, please consider nominating this person for the Frances and Frederick Hamerstrom Award. This prestigious award was established in 1990 to recognize and honor the Hamerstroms for their contributions to our understanding of raptor natural history and ecology through their long-term ecological studies. During their lifetime of research Fran and Hammi Hamerstrom authored and co-authored over 240 scientific papers, reviews and books.

This award has no restrictions, but membership in the RRF is encouraged. A list of recipients of the Hamerstrom Award can be found at the Raptor Research Foundation website (www.raptorresearchfoundation.org). Nomination packets can be submitted at any time. Recipients will be announced at the annual meeting and on the Raptor Research Foundation website.

Nominations should include:

1. Name, title, and address of the nominee.
2. Name, title, and address of the nominator.
3. Names, titles and addresses of four persons qualified to evaluate the nominee's scientific contribution.
4. A brief summary of the nominee's scientific contribution.
5. A complete list of publications authored by the nominee.

Amount: Non-monetary award

Number of Awards Issued per Year: 1-2

Deadline: June 30

To submit a nomination or obtain more information contact:

Jennifer O. Coulson, Orleans Audubon Society, 64340 Fogg Lane, Pearl River, LA 70452, USA voice: [985-863-8516](tel:985-863-8516), jacoulson@aol.com

Raptor News

National Eagle Roost Registry Launched – Call for Roost Information Submitted by Libby Mojica

Nonbreeding Bald Eagles are extremely social and frequently roost together near rich food resources. Communal roosts may be ephemeral congregations of birds that form to exploit short-lived food resources or may be used for decades. Roosts may be used by hundreds of birds or just two or three depending on the circumstances and the surrounding landscape structure. Because communal roosts play an important role in the life cycle of Bald Eagles they are protected under the “disturb and sheltering” provisions of the federal Bald and Golden Eagle Protection Act (Eagle Act) of 1940 and their management is considered within the National Bald Eagle Management Guidelines. However, since the establishment of formal management policies during the late 1960s, communal roosts have been the red-headed stepchild of management activities.

Despite similar protections afforded under the Eagle Act for roosts and nests, most management programs have focused primarily on nesting sites. One of the primary impediments to protecting communal roosts is the lack of information on their location. Eagle roosts are often positioned within remote areas and are notoriously difficult to locate from the ground. Delineating a single roost may take multiple biologists several early morning and late evening sessions to triangulate flight lines of birds moving in or out of active roosts. Because of the high investment required to find roosts, we have very little systematic information on their distribution. However, with the increased use of satellite transmitters programmed to record night locations, information relevant to roost networks is growing rapidly.

With funding from the U.S. Fish and Wildlife Service and the American Eagle Foundation, The Center for Conservation Biology (CCB) has begun delineating and compiling roost locations throughout North America. The first phase of this project has been to use CCB’s extensive bald eagle tracking database to delineate roosts throughout eastern North America. A second phase focuses on data from other tracking projects that have information relevant to communal roosts. To date, more than 1,000 roosts have been mapped across 17 U.S. states and 5 Canadian provinces.

In early September, CCB launched an online Eagle Roost Registry <http://www.ccbbirds.org/maps> that will begin the process of removing the information barrier to roost protection. The registry is an ongoing program. We are requesting information from eagle tracking projects and individuals that want to contribute to eagle conservation by improving the state of knowledge about eagle roosts. Please contact **Libby Mojica** with roost locations to add to the National Eagle Roost Registry. Email ekmojica@wm.edu or phone 1-757-221-1680.

Research Experiences for Undergraduates (REU) Site for Raptor Research Boise State University

Boise State University has been awarded a National Science Foundation (NSF) Research Experiences for Undergraduates (REU) Site grant. This NSF grant partners the Raptor Research Center and Department of Biological Sciences at Boise State University with The Peregrine Fund, Inc., Intermountain Bird Observatory at Boise State University, College of Western Idaho, and the Morley Nelson Snake River Birds of Prey National Conservation Area to provide undergraduates from across the United States opportunity for mentored research experiences with birds of prey. Dr. Jim Belthoff is the Principal Investigator on this three-year award from NSF, which supports 8 REU students per year.



Summer 2014 REU participant
Rachel Guinea with an Osprey
nestling near Cascade, Idaho.

Through a 10-week summer research and professional development program, REU-Raptor Research participants conduct hands-on research on raptors and (1) develop self-efficacy as researchers, (2) identify as scientists, and (3) gain an understanding of the values of the scientific community. Students experience the full extent of the research process by attending a research conference to present findings, and authoring scientific publications. The core activities of REU-Raptor Research are designed to enhance students' understanding of and enthusiasm for scientific research, increase retention of students in the STEM pipeline, and help students prepare for research in graduate school or the workplace.

Students receive a \$5,000 stipend, free housing in campus residence halls, round-trip travel to Boise, and a meal supplement.

2014 participants (along with their research mentors) were:

- Jarod Armeta*, Cornell College (J. Smith, M. Arshad, and J. Belthoff)
- Michael Eastman, University of Idaho (D. Perkins and M. Bechard)
- Jilma Rachel Guinea, Humboldt State University (D. Anderson and C. McClure)

- Lauren Kruger, Humboldt State University (J. Heath)
- Patrick Niedermeyer, Pitzer College (J. Barber)
- Sara Pourzamani*, Boise State University (J. Belthoff)
- Stephanie Szarmach*, Oberlin College (R. Miller, J. Carlisle, and G. Kaltenecker)
- Skyler Wysocki, Paul Smith's College, (J. Belthoff)

Four of the 2014 participants (*) received additional travel scholarships from the National Science Foundation to make poster presentations of their research at the 2014 Annual Meeting of the Raptor Research Foundation in Corpus Christi in September 2014.



Summer 2014 REU participants Sara Pourzamani (left) and Skyler Wysocki (right) banding nestling burrowing owls in the Morley Nelson Snake River Birds of Prey National Conservation Area in Idaho.

Tentative SUMMER 2015 dates for REU-Raptor Research: May 26 – July 31

Applications for Summer 2015 will open in December 2014 and close in late February 2015. Please visit the project web site for updates or to submit an application:

<http://biology.boisestate.edu/reu/>

We are especially interested in receiving applications from groups underrepresented in science (i.e., women and racial minorities), first generation college students, students with disabilities, those returning from military service, and students from institutions where STEM research opportunities are limited.

For additional information or if you have questions, please contact:

Dr. Jim Belthoff, REU-RR

Department of Biological Sciences and
Raptor Research Center
Boise State University
Boise, ID 83725

Email: reu-rr@boisestate.edu



8th Symposium of the Asian Raptor Research & Conservation Network

Submitted by Cheryl Dykstra,
Editor, *Journal of Raptor Research*

In February, I was privileged to represent the Raptor Research Foundation at the Asian Raptor Research & Conservation Network 8th Symposium, which brought 250 raptor researchers and students from all over Asia and throughout the world together in Pune, India. The 4-day conference was a great success and it was a pleasure to strengthen connections with many fellow raptor biologists through shared seminars, training sessions, and field visits.

The scientific program showcased a great diversity of projects on Asian raptors. We heard some encouraging reports on the status of the vulture populations in India and the efforts of scientists and citizens on their behalf. Researchers showed fascinating new data on satellite tracking of little-studied species, including Pallas's Fish-Eagles from Mongolia and Amur Falcons tagged in Nagaland, India, where over 500,000 migrate annually and illegal shooting has been successfully curtailed. Conservation endeavors in diverse regions were presented in a symposium on "Raptor conservation and culture," which was also the theme of the conference, and conservation efforts and achievements were evident throughout the conference, from vulture work to raptor rehabilitation to outreach programs to modify traditional views of owls.



© ELA Foundation

Participants of the 8th Symposium of the Asian Raptor Research Conservation Network.

Field trips included a visit to a cliff-nesting colony of Long-billed Vultures near the village of Kalat in the Pune District, where researchers cooperate with local landowners to protect the nesting sites and educate schoolchildren about conservation. Another highlight was the field excursion to a colony of tree-nesting White-rumped Vultures near Chirgao in the Raigad District; here, villagers work with researchers to study the birds, protect the forest habitat, and occasionally provide safe carcasses. Conservation groups have donated electricity and wells for the village.

The conference was organized by Ela Foundation, Pune and was held at IISER, Pune and Garud Maachi. I thank Dr. Satish Pande, Organizing Secretary, for the invitation to speak at the ARRCN and the RRF Board for their support.

The Peregrine Fund

Submitted by Susan Whaley

Decreased lead levels in California Condors leave officials cautiously optimistic

Annual trapping and testing of endangered California Condors from the Arizona and Utah flock last season revealed a substantial decrease in the percentage of birds with toxic blood-lead levels, the lowest in nearly a decade. Biologists and wildlife officials say the decline is a significant improvement over the previous year, which was the second worst year on record for lead exposure and condor deaths since condors were reintroduced to Arizona in 1996. Test results (September 2013 – February 2014) show:

- 16% of birds trapped and tested revealed blood-lead levels indicating extreme exposure, compared with 42% of birds the previous season.
- The number of birds treated with lead-reducing chelation therapy dropped to 11 birds, compared with 28 the previous season.

The Peregrine Fund said partners in the condor recovery effort feel hunters' majority use of non-lead ammunition and their other lead-reduction efforts may be one reason for the decrease in lead toxicity levels and mortalities. Other factors that could have influenced results include an unseasonably mild winter and the ability of condors to forage far and wide and consume a variety of food types.

Biologists confirm Utah's first wild-hatched condor since re-introduction began

After weeks of monitoring, Peregrine Fund biologists caught a glimpse on 25 June 2014 of a condor chick being raised by an adult pair in a nest cave in Zion National Park. It is the first documented occurrence of California Condors raising a chick in Utah. The nest, located 1,000 feet above a remote canyon floor, was found by following radio and Global Positioning System signals from transmitters mounted on the chick's parents. The adults began exhibiting nesting behavior in the spring. Chris Parish, who heads The Peregrine Fund's condor recovery program in Arizona said that Utah has great condor habitat, and this milestone could be a step toward condors reestablishing themselves in Utah.



A California Condor in flight.

Young Andean Condor released last year with transmitter is shot and killed

The first Andean Condor to be released in Ecuador with a satellite transmitter was found dead in April with several bullet wounds. The rescued condor had been released just eight months earlier and had been providing data related to flight patterns, roosting sites, and other behaviors. It was the fourth Andean condor to be shot and killed in Ecuador in 18 months, highlighting the need for education and law enforcement. A second Andean condor with a satellite transmitter was released in May.



A male Andean Condor.

Africa's wildlife threatened by illegal use of pesticides, lack of rules and enforcement

Chemicals that are used to poison and kill animals in Africa are cheap, easy to obtain, silent, and so effective that populations of many species, particularly vultures, are in a steep and swift decline, according to a report by Darcy Ogada, Assistant Director of The Peregrine Fund's Africa programs. Her paper, "The power of poison: pesticide poisoning of Africa's wildlife," was published by the *Annals of the New York Academy of Sciences* in April. Her research showed that laws make it illegal to hunt wildlife using poisons in 83% of African countries, yet the majority of poisonings go unreported. Lax regulation, corruption, and poor enforcement result in widespread abuse, she said. Recommended solutions include pesticide bans, regulation and control of distribution, arrest and prosecution of offenders, and increased education, training, monitoring, and reporting.

Study reveals threats to raptors from bushmeat hunting in Africa

Hornbills, vultures, and other large birds may be threatened by hunting in the tropical forests of Central and West Africa, according to a new study co-authored by Munir Virani, Director of The Peregrine fund's Africa program, and published in June by *Oryx*, the International Journal of Conservation. The study found for the first time that an unusually high number of large-bodied birds were among the discarded animal remains at remote hunting camps in Cameroon's Ebo forest. Researchers surveyed the camps over a nine-month period in 2011–2012. The remains of Palm-nut Vultures also were recorded in high numbers. The authors suggest that hunters choose to consume birds rather than more commercially valuable species such as duiker and porcupine. The study highlights the urgent need to develop a practical solution to the problem of bushmeat hunting, which threatens a diversity of wildlife across Africa.

Recent Theses on Raptors

Turrin, Courtney L. 2014. **Rise of a floater class: Behavioral adjustments by breeding Bald Eagles in a population approaching saturation.** M.S. thesis, College of William and Mary, Williamsburg, VA, USA.

The Bald Eagle (*Haliaeetus leucocephalus*) population within the Chesapeake Bay has been growing rapidly for more than 40 years and is now approaching saturation. As the population reaches capacity, density-dependent mechanisms are expected to constrain reproductive options for birds of recruitment age, leading to the formation and expansion of a floater class. Negative feedback from these non-breeding, non-territorial adults has been shown to impact reproductive success of breeders in raptor species, providing a behavioral mechanism that slows population growth. However, little is known about the nature of interactions between floaters and established breeders during the reproductive period. Despite their presence in many populations and species, floaters remain an enigmatic aspect of population biology. We estimated the growth of the floater pool from 1990 to 2013 using reproductive data from aerial surveys and a closed BIDE model. We assessed long-term changes in breeder nest guarding patterns from 1994–2002 compared to 2013 to gauge the response of breeding pairs to increasing floater numbers. We used reproductive survey data (2006–2013) to identify the period during development when Bald Eagle broods are most at risk of failure to determine when intrusion poses the greatest threat to nest success. During observation sessions conducted in the 2012 and 2013 breeding seasons, we quantified intruder pressure at Bald Eagle nests, characterized the behaviors involved in conspecific encounters, and examined nest guarding behaviors of breeders. We found that nearly 100% of newly mature birds were recruited annually into the breeding population in the early 1990's, but by 2011, less than 1 in 5 birds became breeders in their first year after attaining adult plumage. In concert with the decline in the assimilation of new breeders, the floater pool has increased over 5-fold since 1990 with an average doubling time of 2.8 years. We identified the first two to three weeks after hatching as the critical period for Bald Eagle nest success in the lower Chesapeake Bay, with the probability of nest failure steadily decreasing from 27% for 1-week-old broods to 7% of for broods beyond the three-week threshold. The average territorial intrusion rate during the reproductive period was 0.28 ± 0.32 intrusions/hr. Juvenile intrusions occurred closer to the nest than adult intrusions, but breeders showed higher response rates toward adult intruders. Breeders responded to intruders more frequently and more aggressively when in the presence of their mates. Nests in the posthatching stage were guarded significantly more often than during pre-laying or incubation periods. Aerial surveys indicated that the frequency of nest guarding by the second adult during the critical period has doubled from 1994–2002 to 2013. These findings suggest that floater pressure on breeding pairs is increasing as the population approaches saturation and that pairs are responding with behavioral adjustments.

Wallace, Zachary P. 2014. Effects of oil and natural gas development on territory occupancy of Ferruginous Hawks and Golden Eagles in Wyoming, USA. M.S. thesis, Oregon State University, Corvallis, OR, USA.

Energy development is expanding rapidly across the western US. Negative effects have been documented for some wildlife, but consequences of development are unclear for other taxa, including raptors. We had the opportunity to examine effects of oil and natural gas development on two raptor species of conservation concern, Ferruginous Hawks (*Buteo regalis*) and Golden Eagles (*Aquila chrysaetos*), in sagebrush steppe and prairie habitats of Wyoming. We surveyed nest sites of these species using fixed-wing aircraft during 2010–2011, and monitored occupancy of the resulting sample of historically active breeding territories during 2011–2013 for Ferruginous Hawks, and 2012–2013 for Golden Eagles. We used single-season occupancy models to evaluate post-construction effects of oil and natural gas development in the context of other factors predicted to influence use of territories by these species, including prey abundance, nest site characteristics, and vegetation. An additional objective was to demonstrate a monitoring protocol for raptors in Wyoming that used probabilistic sampling and accounted for imperfect detection. In support of our predictions, probability of territory occupancy by Ferruginous Hawks had a strong positive relationship to abundance of ground squirrels (*Urocitellus* spp.), a strong negative relationship to vegetative cover of sagebrush (*Artemisia* spp.), and was slightly higher for artificial nest platforms compared to other substrates; and territory occupancy for Golden Eagles had a strong positive relationship to nest height. Contrary to our predictions, density of oil and natural gas infrastructure was not strongly related to occupancy for either species, and prey abundance was not related to occupancy for Golden Eagles. The only anthropogenic factor that influenced occupancy for either species was density of improved roads not associated with oil and natural gas fields, which had a weak positive correlation with occupancy for Ferruginous Hawks, contrary to our predictions. Annual occupancy probability did not vary significantly for either species during our study, but environmental factors associated with occupancy and the strength of relationships varied among years for both species, suggesting occupancy was influenced by additional factors not included in our analysis (e.g., weather, regional dynamics). Detection probability for both species was <1, and strongly influenced by nest substrates. For Ferruginous Hawks, detection probability varied significantly between years, and was positively associated with nest height. For Golden Eagles, detection probability was significantly higher in territories with nests on trees, shrubs, and anthropogenic structures, compared to those on cliffs and rock outcrops, with a weak negative trend in detection rates across survey occasions during one year. Our results suggest Ferruginous Hawks and Golden Eagles used breeding territories that contained active oil and gas roads and well pads, and density of infrastructure in these territories did not affect their probability of use. However, we advise that limitations of our approach (i.e., post-construction, short-term, observational study) make our results most relevant as a baseline for ongoing monitoring of these species. We suggest protection efforts should be focused on Ferruginous Hawk territories with abundant ground squirrels and low natural cover of sagebrush, and Golden Eagle territories with higher nest sites. We recommend conserving populations and habitats of burrowing mammals, mitigating loss of nests using artificial platforms, and long-term monitoring of Ferruginous Hawks and Golden Eagles using robust methods that account for imperfect detection.

ANNOUNCEMENTS and BRIEF NEWS ITEMS

For Sale

RRF Publications, Pins, and Decals – Hard copies of *The Journal of Raptor Research* (Vol. 1-30), most Raptor Research Reports, and RRF pins and decals may be purchased directly from RRF (Angela Matz, 101 12th Ave., Room 110, Fairbanks, AK 99701, USA; email: angela_matz@fws.gov). See http://raptorresearchfoundation.org/back_issues_jrr.htm for details and prices. Orders for 4 or more issues receive a 30% discount. Hard copies of *The Journal of Raptor Research* (Vol. 31+) may be purchased from Ornithological Societies of North America (5400 Bosque Blvd, Suite 680, Waco, TX 76710, USA; phone: 1-254-399-9636; email: business@osnabirds.org; web: <http://www.osnabirds.org>). Some older issues are not available in hardcopy; but all issues from Vol. 1-39 are available on SORA (<http://elibrary.unm.edu/sora/jrr/>) for free download.

Announcements

Radio-transmitters Looking For New Home – Rob Bierregaard has seven 10-gram VHF transmitters (frequencies range from 150.8 to 151.8) that are looking for a research project. They are designed for backpack mounting on raptors (reinforced antennae). Three have not been deployed and four need to be refurbished. They were manufactured by Brad Mueller at American Wildlife Enterprises (<http://www.americanwildlifeenterprises.com/index.html>).

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