
FRIENDS OF ORNITHOLOGY

Newsletter

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Grus, The Crane (Willughby & Ray 1678)



From the Curator

Kevin Winker

As I write this, we are just emerging from a record-setting early cold snap in Interior Alaska, with several daily lows in the -40s. It is odd to have such low temperatures when the days are still so long, relative to late December and early January. These temperatures test our homes and vehicles and serve as a sharp reminder of several things: of where we are; of the magnitude of bird migration (because of their general absence); and to keep the bird feeders stocked for the few species that don't leave. At home we have two species each of chickadees and redpolls and some northern flying squirrels that appreciate the latter. But a cold snap like this is also a good time to sit back and review a year passed and to plan for a year coming.

These continue to be busy times in the Ornithology Department, as the details of our annual report show (it appears below). One aspect of departmental activity that we've not discussed in previous newsletters is that of the work of our Research Associates. We'll begin to rectify that here, because they do some amazing and important things. Student projects continued to reach completion, which to us means publication in peer-reviewed professional journals. Our team of volunteers has made huge strides this past year, including the preparation of many specimens from salvaged birds to make up education kits for K-12 teachers to use. And support from the Friends of Ornithology remains important to our success. This year your support helped with student research expenses. As always, we thank you for your continued generosity.

The Department of Ornithology

Although our existence and many of our activities are centered around the Bird Collection, it is the people involved who make it all happen:

Residents

Kevin Winker (Curator)
Jack Withrow (Collections Manager)
Brina Kessel (Curator Emeritus)

Students

Jack Withrow (MS student)
Kyle Campbell (MS student)

Research Associates

<i>Heinrich Springer</i>	<i>Johannes Erritzoe</i>
<i>Rose A. Z. Meier</i>	<i>Kevin McCracken</i>
<i>Christin Pruett</i>	<i>Matthew Miller</i>
<i>Daniel Gibson</i>	

Volunteers

<i>David Sonneborn</i>	<i>Luke DeCicco</i>
<i>Steven Heintz</i>	<i>Michael Schwitters</i>
<i>Margaret Oliver</i>	<i>Joe Morris</i>
<i>Brittany McCraw</i>	<i>Sarah Howenstein</i>
<i>Takae Nakajima</i>	<i>Emery Bovard</i>

FROM STAFF, STUDENTS, ETC.

Jack Withrow

In October 2010 Mike Schwitters obtained a moorhen from Shemya Island in the western Aleutian Islands. The American Ornithologists'

Union split the species *Gallinula chloropus* in July 2011 into the Common Gallinule (*G. galeata*) from the New World and the Common Moorhen (*G. chloropus*) from the Old World. Most vagrant birds (of all species) in the western Aleutians are of Asian origin, and, because the Asian form of *Gallinula chloropus* had never been recorded in North America, we wanted to ascertain the origins of this bird. The specimen was an immature, and it was not possible to determine its specific identity by morphology. Thus, we used a molecular genetics approach to determine the correct species.

Using sequences of a commonly genotyped mitochondrial DNA gene (cytochrome oxidase subunit one, or COI) that are available in an online database (GenBank), we were able to compare the Shemya bird's COI sequence with a large sample of Old World and New World birds. Because the Shemya individual exhibited all of the nucleotide variations associated with Old World birds, we concluded that this bird came from that population. This confirmed our suspicion that this bird had come from Asia and was thus a new addition to the North American avifauna. A more detailed explanation of these findings will appear next year in the journal *Western Birds*.

Along with the Common Moorhen, 2010 saw the addition of two other species to the checklist of Alaska birds, both transferred from the unsubstantiated list: Laughing Gull (*Leucophaeus atricilla*), from a bird photographed at Kodiak in January by Rich A. MacIntosh, and Solitary Snipe (*Gallinago solitaria*) from a specimen collected on Attu Island and mentioned in a previous issue of this newsletter. In addition to these changes, one species was added to the unsubstantiated list of Alaska birds: Northern Gannet (*Morus bassanus*), based on two independent sight reports north of Barrow in August.

As always, we appreciate any dead birds you may encounter and salvage for science. This salvaged material continues to be an important part of the collection and of our outreach program. Material is most valuable when a label is included with the specimen that describes the location, date, and circumstances of collection. Keep in mind that the future preparator may not be familiar with you or your location, and thus it is helpful to have a label that stands

by itself and does not need additional knowledge to interpret.

RESEARCH ASSOCIATES

During the past year we were able to visit two of our research associates who, in their respective retirements, are fully engaged in their passion for ornithology. Both are classic naturalists in the finest tradition and each sent an update of their recent activities:



Dr. Johannes Erritzoe (www.birdresearch.dk): I am working on many things: First I am working on the old part of the collection (I started in 1947, and all the labels were written in Danish). When necessary I am adding new labels written in English and recording coordinates of the localities. I am also working on a project studying the lenses of wild birds, the very first research on this topic to my knowledge. Many of the birds that are found dead along the roads in our area are brought to me. Thus far I have records of 502 birds, and many with cataracts have been found. It is difficult to study lenses, surely the reason why nobody else has yet done it.

A study of urban birds versus rural birds is also on its way, also using these salvaged birds. The T6 rectrix on the left side of the tail is collected, measured, and the mass is taken and the growth bars are counted to see whether the feathers of urban birds grow faster than in rural areas. Other aspects of research on this are planned, e.g., if the immune system (bursa Fabricii, spleen, and thymus) has any influence on the mass and length of the feather, how large intraspecific variation in mass and length there is, if parasitic load has any influence, etc.



Heinrich Springer (D. Sonneborn)

Heinrich Springer: I am continuing to add birds to the collection. In addition to obtaining specimens from Europe and China, I went on a field trip to Peru in June. Antique mounts from the Victorian era still come up for sale, and some remarkable species can be obtained. This year has included such species as Sunbittern, Pin-tailed Sandgrouse, Pallas's Rosefinch, Red-fronted Serin, Torrent Duck, Masked Duck, and Kelp Goose. This has required some non-productive activities connected to ornithology, such as studying laws and regulations pertaining to import/export.

Kyle Campbell



Please have a look at the video podcast (vodcast) of my research using the QR code at left or at: <http://tinyurl.com/ccdblsf>

Hurricane Iris

Kevin Winker

Back in 1997 I went to Belize to choose a study site that would accomplish two things: enable us to take the next step in extending a population genetics study southward from Mexico, and to examine migration near the Gulf of Honduras. An archaeologist acquaintance, Peter Dunham, got me in touch with Mr. Don Owen-Lewis, a British expatriate and farmer in Big Falls, Toledo District in southern Belize. It turned out that Don's farm had an ideal patch of forest ("bush") remaining on it, and soon enough I was happily at work catching birds. The capture rates were the highest I'd yet experienced in the Neotropics during the winter, and the species diversity was high in this rainforest. I began to refer to this area as "Paradise" to Don for its amazing birds, great company, and idyllic setting. The birds I banded became more and more important with each passing season. My repeated visits produced a good record of recaptures, so that when Andrew Johnson went down in August 2001 to begin a study of migration near the Gulf of Honduras, we had built up a useful baseline of individual turnover rates among resident species.

Andy ran mist nets at this site for almost two months before a major storm warning made it prudent to pull all the nets from the site. Hurricane Iris, a Category 4 hurricane, hit with tremendous force on the night of 8 October, with peak winds of 145 mph. Andy hunkered down with Don and his family in a concrete hotel room while the storm raged outside. They were all safe, but the devastation to homes, property, and crops was extreme. Fully 95% of the homes in the village were damaged. Elsewhere, lives were lost. It was a bad

storm. When I spoke to Peter Dunham the next day, he related that he'd heard from the British military that the zone of destruction looked like a lawnmower had gone over it at about 20-30 feet.

A still-shocked Andy got through to me by telephone a day or two later. He was of course happy that he and our good friends were all alive and healthy, but he was rather despondent that his planned study had been so severely trashed right in the middle of it. We planned how he might be able to make some lemonade from this hand of lemons his research had been dealt. Because nobody had ever had a marked community of birds directly hit by a hurricane before, those two months of banding had laid the groundwork for an unprecedented study. So, after 11 days of helping Don and other community members get re-situated (the roof of Don's home had blown off and had to be retrieved from the bush and reattached), Andy and Santos Hun went back out to the site and, with considerable work to re-cut net lanes in the trashed forest, put the nets back out. What they discovered was fascinating. Although the forest was blown down, broken, and largely leafless, a remarkable number of banded birds remained. Some species had been locally extirpated, but not as many as one might have guessed given that the typical forest understory habitat they required was effectively gone.

Andy was back a year later to resample with Santos and a UAF undergraduate, Heather Moncrief, and the effects of the hurricane were still evident both in the birds and in the habitat. The response by the birds was complex and very interesting, and this past year we published the results of that work (Johnson & Winker 2010, *PLoS ONE*). The finding that still strikes me the most is that so many individual forest understory birds hunkered down on their home ranges and remained in a very different habitat type, where they stayed to be recaptured after the storm and, for many, again a year later. We've been following this site and these birds intermittently since then, and in autumn 2010 it was still not back to its former glory. Don Owen-Lewis has done better; he has a lovely home on the other side of town where he grows an amazing variety of plants – for bird and human pleasure.

ANNUAL REPORT - ORNITHOLOGY FY11

The Department of Ornithology has had another good year. Department staff, students, and research associates produced 18 publications this fiscal year, and the collection grew by 1,500 specimens. Fieldwork took us to Kodiak, Belize, and the Philippines, and Winker taught a new class on the genomics of speciation. Funding levels are lower than usual due to some declined proposals, but we continue to work on that. The positive side of this is that it is enabling us to finish up some prior projects. The Bird Lab was honored by a visit from Richard Dawkins, who was very interested in specimens and the things that we and others use them for, including studies in biodiversity and evolutionary and environmental biology. Over lunch, Dawkins led a lively discussion among museum staff and students. This reminds us that we have neglected to mention in previous reports that we've had many important visitors in the past, such as governors, senators, the Secretary of the Interior, and the Chief Justice of the Supreme Court come through the lab to see what we do. It is just that interesting! And of course we host a lot of important researchers and student visitors each year as well. Collectively, these visits provide us with the opportunity to convey to a diverse audience why the bird collection and the research and students that it exists to support are important to society. Finally, we had a stellar group of volunteers again this year, and we extend our sincerest thanks to them and to the Friends of Ornithology for their ongoing, critical support.

Volunteer hours	1,179
Acquisitions	1,500
Publications	18
Reports	11
Loans	18
Data requests	213*
Professional visitors	44
Student visitors	143
Public contacts	~200**

Students working with collections:

PhD	6
MS	8

* Excludes 4,474 electronic database requests.

** Excludes Halloween (719) and Open House (600) events.



Brittany McCraw on Halloween preparing a vulture during our public open event (K. Winker)

FRIENDS OF ORNITHOLOGY

Founders

Brina Kessel

David & Alexandra Sonneborn

Robert W. Dickerman

Benefactors

Harold F. John

Carol Juergens & Mark Withrow

Kevin Winker

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Warren David and Glenda Sue Cummings

Ed Clark & Judith E. Dearborn

Dr. & Mrs. Ronald M. Finch

Langdon R. Stevenson (In memory of Tim Schantz)

Ronald M. & Mary Kay Teel

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Anonymous

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Terry J. Doyle

Daniel Guthrie

Elizabeth F. Hardesty

William E. Krueger

Deanna MacPhail

Rose Meier

Cynthia R. Meyers

Carol McIntyre

W. Mike Ord

Catherine Pannell

Gerald Rosenband

Michael T. Schwitters

Stanley E. & Patricia K. Senner

Dr. & Mrs. Walter M. Sonneborn

Robert & Susan Spahn

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Heinrich Springer

William R. Stott, Jr.

Gus van Vliet

Ward/Tedin Partnership

Jack Withrow

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Candace A. Myers, Ph.D.

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Gordon Tans
Richard Tetrault
Jeff Walters
Steven T. Zimmerman

If you know of someone else who might like to become a member, please pass along a copy of the enclosed membership materials or point them to our web page at www.universityofalaskamuseumbirds.org

RECENT PUBLICATIONS (ANNOTATED)

(**Bold** denotes our students)

- Winker, K. 2011. In scientific publishing at the article level, effort matters more than journal impact factors: hard work and coauthors overshadow journal venue in acquiring citations. *BioEssays* 33:400-402.
- Klicka, J., G. M. Spellman, K. Winker, V. Chua, and B. T. Smith. 2011. A phylogeographic and population genetic analysis of a widespread, sedentary North American bird: The Hairy Woodpecker (*Picoides villosus*). *Auk* 128:346-362.
- Winker, K. 2011. Middle America, not Mesoamerica, is the accurate term for biogeography. *Condor* 113:5-6.
- Humphries, E. M.**, and K. Winker. 2011. Discord reigns among nuclear, mitochondrial, and phenotypic estimates of divergence in nine lineages of trans-Beringian birds. *Molecular Ecology* 20:573-583. *Proposals for genetic thresholds for species delimitation assume that simple genetic datasets are correlated with speciation, accurately reflecting lineage divergence. We used taxonomically stratified phenotypic levels of differentiation (populations, subspecies, and species) among nine avian lineages using paired, trans-Beringian samples from three lineages each in three orders (Anseriformes, Charadriiformes, and Passeriformes) to test this assumption. Using mitochondrial DNA (mtDNA) sequence data and nuclear genomic data (AFLPs), we found a lack of concordance between these two genomes in their respective estimates of divergence and little or no relationship between phenotype (taxonomic relatedness) and genetic differentiation between taxon pairs. Several possible reasons for this discord exist (e.g., selection on one of the genomes or perhaps lineage sorting), but the implications are that genetic estimates of lineage divergence*
- may not be correlated with estimates from other parts of the genome, they are not well correlated with the speciation process, and they are thus not reliable indicators of species limits.*
- Withrow, J. J., and Sonneborn, D. W. 2011. Important recent bird records from Attu Island, Alaska. *Western Birds* 42:115-119.
- Johnson, A. B.**, and K. Winker. 2010. Short-term hurricane impacts on a Neotropical community of marked birds and implications for early-stage community resilience. *PLoS ONE* 5:e15109. *Populations in fragmented ecosystems risk extirpation through natural disasters, so managing communities for resilience is critical. However, in vertebrate communities details are sketchy about the capacity for resilience. We studied short-term resilience in a community of individually marked birds, following this community through the catastrophic destruction of its forest habitat by Hurricane Iris in Belize, Central America. We sampled for 58 d immediately before the storm, 28 d beginning 11 d after Hurricane Iris, and for 69 d approximately one year later. Our data showed that the initial capacity for resilience was strong. Many banded individuals remained after the storm, although lower post-hurricane recapture rates revealed increased turnover among individuals. Changes occurred in community dynamics and in abundances among species and guilds. Survivors and immigrants both were critical components of resilience, but in a heterogeneous, species-specific manner. Delayed effects, including higher fat storage and increased species losses, were evident one year later.*
- Winker, K. 2010. Is it a species? *Ibis* 152:679-682.
- Lohman, D. J., K. K. Ingram, D. M. Prawiradilaga, K. Winker, F. H. Sheldon, R. G. Moyle, P. K. L. Ng, P. S. Ong, L. K. Wang, **T. M. Braile**, D. Astuti, and R. Meier. 2010. Cryptic diversity in "widespread" southeast Asian bird species suggests that Philippine avian endemism is gravely underestimated. *Biological Conservation* 143:1885-1890.
- Winker, K. 2010. On the origin of species through heteropatric differentiation: A review and a model of speciation in migratory animals. *Ornithological Monographs* 69:1-30. *Differentiation and speciation without extended isolation appear to be common among migratory animals. Mobility among cyclic migrants makes population*

isolation difficult, and diminished levels of intraspecific differentiation occur in avian migrants (I term this “Montgomery’s rule”). Nevertheless, many lineages have differentiated despite increased mobility and a high propensity for gene flow, conditions that speciation theory has not addressed adequately. Populations of seasonal migrants usually occur in allopatry and sympatry during a migratory cycle, and this distributional pattern (heteropatry) is the focus of a model empirically developed to explain differentiation in migratory lineages. Divergence arises through disruptive selection from resource competition and heterogeneously distributed cyclic resources. Heteropatric speciation is a type of ecological speciation in which reproductive isolation increases between populations as a byproduct of adaptation to different environments that enhances breeding allopatry and allochrony despite degrees of sympatry that occur during the nonbreeding period in migration cycles. Mating or pair bonding in nonbreeding areas is rare. Patterns such as leapfrog migration and limited morphological divergence suggest that differentiation is driven by these ecological factors rather than by sexual selection or nontemporal changes in the resource base itself, although the additional presence of either of the latter would have additive divergent effects. Migratory lineages provide a largely neglected series of natural experiments in speciation in which to test predictions stemming from this model and others focusing on ecological speciation.

Winker, K., J. M. Reed, P. Escalante, R. A. Askins, C. Cicero, G. E. Hough, and J. Bates. 2010. The importance, effects, and ethics of bird collecting. *Auk* 127:690-695. *The specimens and data that come from bird collecting benefit a wide variety of scientific studies and often serve as the basis for successful management and conservation of populations, species, and ecosystems. Thus, bird collecting should be supported by permitting agencies, institutional committees, the public, and nongovernmental organizations. However, a bird should be collected only when available information provides reasonable assurance that doing so will not imperil the species or biologically defined population, considering the life-history characteristics of that species or closely related ones.*

Winker, K. 2010. [Review of] Handbook of the birds of the world, Vol. 15: Weavers to New World Warblers. *Loon* 82:190-191.

AOU Committee on Classification and Nomenclature (one of 12 members). 2010. Fifty-first supplement to the American Ornithologists’ Union *Check-list of North American Birds*. *Auk* 127:726-744.

Winker, K. 2010. [Review of] Handbook of the birds of the world, Vol. 14: Bush-shrikes to Old World sparrows. *Loon* 82:41-42.

Guay, P.-J., R. T. Chesser, R. A. Mulder, A. D. Afton, D. C. Paton, and K. G. McCracken. 2010. East-west genetic differentiation in Musk Ducks (*Biziura lobata*) of Australia suggests late Pleistocene divergence at the Nullarbor Plain. *Conservation Genetics* 11:2105-2120.

McCracken, K. G., C. P. Barger, and M. D. Sorenson. 2010. Phylogenetic and structural analysis of the HbA (alpha-A/beta-A) and HbD (alpha-D/beta-A) hemoglobin genes in two high-altitude waterfowl from the Himalayas and the Andes: Bar-headed Goose (*Anser indicus*) and Andean Goose (*Chloephaga melanoptera*). *Molecular Phylogenetics and Evolution* 56:649-658.

Bulgarella, M., M. D. Sorenson, J. L. Peters, R. E. Wilson, and K. G. McCracken. 2010. Phylogenetic relationships of *Amazonetta*, *Specularnas*, *Lophonetta*, and *Tachyeres*: Four morphologically divergent duck genera endemic to South America. *Journal of Avian Biology* 41:186-199.

Wilson, R. E., M. Eaton, T. H. Valqui, and K. G. McCracken. 2010. Ecogeographic variation in Cinnamon Teal (*Anas cyanoptera*) along elevational and latitudinal gradients. *Ornithological Monographs* 67:141-161.

Gibson, D. D., S. C. Heinl, A. J. Lang, T. G. Tobish, Jr., and J. J. Withrow. 2011. Checklist of Alaska birds, 17th edition.

If you are interested in reading these papers, most can be found on our web site (Winker’s CV site).



Check out our new program for undergraduates:
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