
FRIENDS OF ORNITHOLOGY

Newsletter

Number 11
April 2015



Grus, The Crane (Willughby & Ray 1678)



From the Curator

Kevin Winker

It has been another good year, with some major accomplishments. But we also need to recognize that we are living through some big changes. We've just come out of a very warm winter here in the Interior of Alaska, a reminder that over the past 60 years Alaska has warmed at more than twice the rate of the lower 48 states*. Up here it is clear that climate change is a real phenomenon. We can debate how large a role humans are playing in these changes, but given the extent of visible and projected effects, it is time to plan responses. There are many changes we cannot yet predict, however, and here at America's Arctic University we're working on a lot of those questions. The bird collection is increasingly being used to understand what effects some of these changes are having on Alaska's birds. The second big change happening to us right now is that Alaska's economy, so dependent on oil, is suffering terribly with the global decline in oil prices. As individuals, we love it because heating our homes is much cheaper, but we're seeing large cuts to the university and other state services. Thus far, these cuts have not impacted the Museum's Department of Ornithology very much, but the fiscal knives are flashing furiously in Juneau. For now, there is no relief in sight. These are times when we are so glad we have you, the Friends of Ornithology, and we're very grateful for all of your support.

* Chapin, F. S., et al. 2014. Ch. 22: Alaska. Pp. 514-536, in *Climate Change Impacts in the United States: The Third National Climate Assessment*, J. M. Melillo et al., eds. U.S. Global Change Research Program.

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)

Students

Jessica McLaughlin (MS student)

Research Associates

Heinrich Springer

Johannes Erritzoe

Rose A. Z. Meier

Kevin McCracken

Christin Pruett

Daniel Gibson

Heiko Schmaljohann

Kyle Campbell

Volunteers

David Sonneborn

Luke DeCicco

Steven Heintl

Barbara Logan

Rebecca Cheek

Luis Alza

Brandi Ringgenberg

Bennett Wong

Jessica McLaughlin

Alex Lewis

Jayce Williamson

Alix Conner

Mirjam Noetzli

Erin Murray

Nick Hajdukovich

Space

The biggest event for us this year was a grant from the National Science Foundation to install a compactor

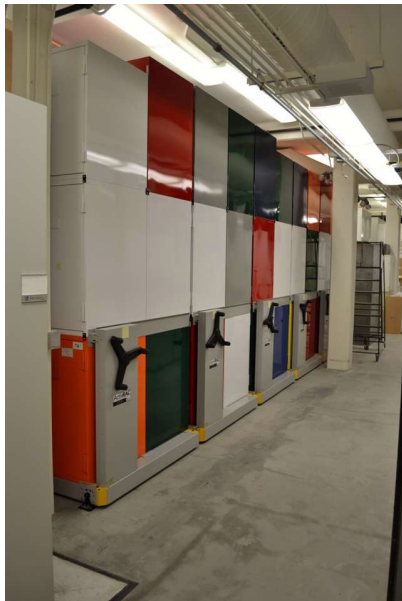


system and new specimen cabinets to house the bird collection. We had been completely out of space, to such a degree that we were forced to put some of the collection into cardboard boxes. Fortunately, we were successful with a proposal to the National Science Foundation's program Collections in Support of Biological Research (CSBR), which is funding us to move the entire collection and

install new cabinets and a compactor system. The move and installation began last December. We've completed the cabinet portion of the project, and the re-shuffling of the entire collection will be ongoing for a while as we move it into this space.



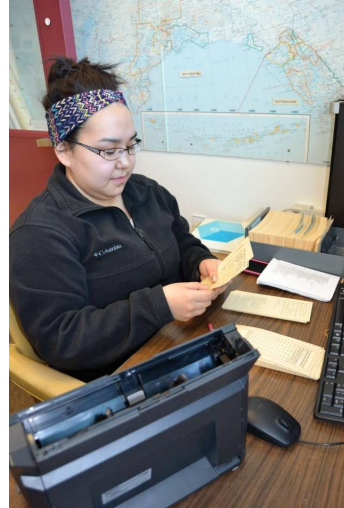
The first layer of cabinets is in place on the carriages.



The complete installation. Because we study such colorful animals and the collection is in a windowless basement room, we chose to install colorful cabinets.

Alaska Nest Record Cards

Undergraduate Sonya Edwards has recently completed digitizing the Alaska Nest Record Cards, an older data set with great historic value. The data will soon be up on our online database Arctos (<http://arctos.database.museum/home.cfm>) for use by anyone, anywhere, any time.



Sonya Edwards digitizes Alaska Nest Record Cards.

About the Friends of Ornithology

Donations to the Friends of Ornithology have more impact, dollar-for-dollar, than donations to the vast majority of other nonprofits. We make the eagle on every dollar squeak as we put it to work on our mission of supporting small projects and student research. Using the criteria of Charity Navigator (the largest charity evaluator in the U.S.; www.charitynavigator.org), we get top scores for putting basically 99% of donations directly into fulfilling our mission. The national average for charities is much lower, often below 70%. That's crazy.

Here are the details: Using Charity Navigator's criteria, we achieve the following scores (the highest possible is 10): Program Expenses (score 9.9; amount spent on programs and services the charity exists to support), Administrative Expenses (score 10; ours are 1% for gift and fund management by the University of Alaska Foundation), and Fundraising Efficiency (score 10; since the establishment of the Friends, this has been covered directly by targeted donations; this includes the annual Newsletter). The Friends of Ornithology is an

endowed fund in the University of Alaska Foundation. Unless otherwise specified, donations go straight into the principal. It is possible to specify that donations go into the spendable side, which yields greater short-term impact but less long-term impact. The Foundation charges 1% of donations for gifts and 1% of the principal annually for fund management; all of the rest goes to our mission, and there is an inflation-proof spending policy so the endowment lasts in perpetuity. Finally, we're small, which means every donation makes a big difference. You won't find many nonprofits where your donations have this level of impact.

Dorothy and Bob "Sea Otter" Jones

Over a year ago I met Dorothy Jones on the telephone and we had a very pleasant conversation. She was looking for an appropriate venue to honor the memory of her late husband Bob "Sea Otter" Jones and his important work in the Aleutian Islands, and she was considering donating to the Friends of Ornithology in her will. Sadly, Dorothy passed away recently, and she did leave a gift in loving memory of Bob Jones. I did not know Bob, but by all accounts he was a legend in his passion for and knowledge of the Aleutian Islands and for navigating up and down the Aleutians in his small dory. Dorothy was a very accomplished person as well. She was a Professor of Sociology at the University of Alaska and authored several books. We deeply appreciate their many important contributions to the State of Alaska and now to the Friends of Ornithology.



Dorothy Jones



Bob "Sea Otter" Jones

FROM STAFF, ETC.

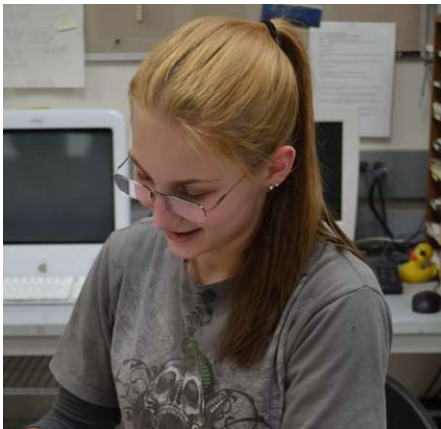
Jack Withrow

As noted above, we have nearly doubled our cabinet space with a sizable NSF grant. Since that time reorganization of the collection's specimens has progressed slowly but surely through several hours of dedicated work each day. With our relatively small collection we have the luxury of reordering the collection to reflect the latest thinking on avian relationships. Larger collections with hundreds of thousands of birds generally continue to use historical taxonomic listings, reordering in these cases being prohibitively onerous. Still, reordering, grouping, and arranging the skins and wings will take the better part of a year to accomplish. Every specimen needs to be moved, and the spread wings have never been arranged in a system allowing easy retrieval.

While our collection focuses on Alaska birds, as a research collection and teaching resource it also contains a wide breadth of the world's avifauna, so we chose to use the taxonomic sequence represented in the two volumes of *The Howard and Moore Complete Checklist of the Birds of the World, 4th edition* (H&M4). This work has significant nomenclatural departures from the AOU's *Checklist of North and Middle American Birds*, but it has global coverage and does provide a

comprehensive sequence of avian taxa. Once the birds are rearranged, this source functions as a ready-made guide to find particular specimens. H&M4 contains many changes in orders and families from the previous edition printed in 2003 (the sequence we used previously) that have required fairly significant shuffling of the physical proximity of specimens. Two good examples of the significant developments in higher-level avian systematics are 1) that falcons are now placed next to the parrots and passerines in their own order, the hawks and eagles having been removed and left behind near ibises and pelicans; and 2) the tropicbirds have been given their own order before the goatsuckers and hummingbirds, far from the frigatebirds, pelicans, and other totipalmate waterbirds they were once thought to be closely related to. Within a genus, sequences seem to have experienced less rearrangement, though the editors of H&M4 appear fond of resurrecting old generic groups based on molecular distances (for example the separation of *Spatula*, *Sibirionetta*, and *Mareca* from *Anas*, or *Schoeniclus* from *Emberiza*).

We look forward to the greatly improved workflow and specimen access that these spacious and orderly new accommodations will provide.



Brandi Ringgenberg

There has been a large amount of circumstantial evidence suggesting that the Common Redpoll, *Acanthis flammea*, can be double brooded. However, it is currently considered a single-brooded species. The objective of my study was to look at data collected over a twenty-year span in the Fairbanks area and see when redpolls were reproductively active and having offspring and if this

allowed for more than one brood to occur. My study showed that redpolls were reproductively active for as long as four months, when the time needed to make a nest, lay eggs, and raise nestlings to fledging was only 29-34 days. We were interested to see if tundra redpolls showed similar patterns as redpolls from the Interior. Specimens as old as forty years from the museum collection were examined, and these showed that reproduction in the tundra habitats begins later than in the Interior.

Upon finding that the production of young in the Interior varied a lot from year to year, we hypothesized that tree-seed abundance, their major food source, was a determining factor. Tree-seed abundance data from the Bonanza Creek Long Term Ecological Research site was used to compare with redpoll offspring abundance. We were disappointed to find no apparent correlation between tree-seed abundance and redpoll offspring abundance. This may be due to whether tree seeds from the previous summer are still accessible to the birds during their breeding season, but the results are inconclusive.



Common Redpoll (Suzanne Britton)

In conclusion, evidence indicates that some Common Redpolls probably are double brooded in the Interior, and it is even possible that some birds breed in the Interior and then go out to the tundra habitat to raise a second brood, as has been suggested to occur in northern Europe.

My personal and academic growth at the University of Alaska Fairbanks has increased my passion for wildlife and biology. Now that I have graduated with my B.S. in Biological Sciences I am pursuing a career that will allow me to use my passion and to continue growing in the biology field.

**ANNUAL REPORT— ORNITHOLOGY
FY14**

Kodiak Island Medical Associates
Kevin Winker
Dorothy Jones (in memory of Bob Jones)

We've had another productive year. The collection grew by 1,500 specimens, and department staff, students, and research associates produced 16 publications. Kyle Campbell completed his Master of Science degree. Fieldwork took staff to Kodiak, Chirikof, and Middleton islands and to Interior Alaska. A great group of students and volunteers worked with us throughout the year. Our proposal to the National Science Foundation for new specimen cabinets was accepted, and we look forward to undertaking that large project next year. As always, we thank our students, volunteers, and the Friends of Ornithology for their ongoing support, which helps enormously in sustaining these important activities.

Volunteer hours	1,859
Acquisitions	1,500
Publications	16
Reports	11
Loans	16
Data requests	249*
Professional visitors	49
Student visitors	76
Public contacts	~100

Students working with collections

PhD	9
MS	2
Undergrad & high school	5

* Excludes 31,214 electronic database requests.

** Excludes Halloween (887) and other events.

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www.universityofalaskamuseumbirds.org

RECENT PUBLICATIONS

(ANNOTATED)

(**Bold** denotes our students)

Withrow, J., and K. Winker. 2014. Genetics of a high-latitude cryptic speciation event: American and Pacific golden plovers. *Wilson Journal of Ornithology* 126:429-442. *American and Pacific golden-plovers (Pluvialis dominica and P. fulva) are morphologically very similar, and they are obligate long-distance migrants. They were only relatively recently recognized as separate species. We used mtDNA sequence data and 242 amplified fragment length polymorphisms (AFLPs) from 29 individuals of each species from sympatric and allopatric breeding populations to assess the levels of divergence, divergence date, and gene flow. They are significantly different genetically; they diverged ~1.8 million years ago, and very little gene flow was detected (effectively zero). Ecological factors and possibly sexual selection acted to limit gene flow during the divergence of these cryptic species during the Pleistocene.*

AOU Committee on Classification and Nomenclature (Winker is one of 12 members). 2014. Fifty-fifth supplement to the American Ornithologists' Union *Check-list of North American Birds*. *Auk* 131:Csi-Csxv.

Peters, J. L., K. Winker, K. C. Millam, P. Lavretsky, I.

Kulikova, R. E. Wilson, Y. N. Zhuravlev, and K. G. McCracken. 2014. Mito-nuclear discord in six congeneric lineages of Holarctic ducks (genus *Anas*). *Molecular Ecology* 23:2961–2974. *We sequenced 20 nuclear introns to test for concordant patterns of Old World–New World differentiation between mtDNA and nuclear (nu) DNA for six lineages of Holarctic ducks (genus Anas). Genetic differentiation for both marker types varied widely among these lineages (idiosyncratic population histories), but mtDNA and nuDNA divergence within lineages was not significantly correlated. OW–NW nuDNA differentiation was generally lower than mtDNA divergence, and we found higher rates of gene flow for nuDNA than mtDNA for four of the six lineages. These species show prominent mito-nuclear divergence discord, and lineage sorting cannot explain this. Male-mediated intercontinental gene flow is likely a leading contributor. mtDNA can be an unreliable indicator of stage of speciation, and more holistic approaches are needed for species delimitation.*

Rocha, L. et al. (122 more authors) 2014. Specimen collection: An essential tool. *Science* 344:814-815.

Winker, K. 2014. [Review of] *Handbook of the Birds of the World: Special Volume*. *Loon* 86:50-53.

AOU Committee on Classification and Nomenclature (Winker is one of 12 members). 2013. Fifty-fourth supplement to the American Ornithologists' Union *Check-list of North American Birds*. *Auk* 130:558-571.

Withrow, J., S. G. Sealy, and K. Winker. 2014. The genetics of divergence in the Northern Saw-whet Owl (*Aegolius acadicus*). *Auk* 131:73-85. *A migratory form (A. a. acadicus) occurs during fall migration and winter, but not at other times of the year, in the range of a sedentary, island form (A. a. brooksi) on Haida Gwaii, British Columbia. Using mtDNA sequence data and 405 amplified fragment-length polymorphisms (AFLPs), we found significant genetic divergence between these subspecies, and mtDNA gene flow between them was very low (<1 individual per generation). These subspecies likely diverged in association with the Wisconsin glacial maximum, ~16,000 years ago. The refugial history of the region, life-history traits, and the maintenance of lineage integrity despite current contact suggest that this divergence occurred or is maintained through heteropatric differentiation, probably driven by a loss of migratory behavior in brooksi accompanied by local adaptations.*

Topp, C. M., C. L. Pruett, K. G. McCracken, and K. Winker. 2013. How thrushes conquered North

America: A comparative phylogeography approach. PeerJ 1:e206 <http://dx.doi.org/10.7717/peerj.206> *Five species of migratory thrushes occupy a transcontinental range across northern North America. Using mtDNA sequence data, we found that despite their ecological similarities populations from each side of the continent exhibit perhaps as many as five different continental histories but just two broad among-species patterns: relatively deep splits (within Swainson's and Hermit thrushes and between Gray-cheeked Thrush and Veery) and relatively shallow splits (within the latter two species and in the American Robin). These differences are probably related to the ages of the lineages involved.*

Bryson, R. W. Jr., J. Chaves, B. T. Smith, M. J. Miller, K. Winker, J. L. Pérez-Emán, and J. Klicka. 2013. Diversification across the New World within the "blue" cardinalids (Aves: Cardinalidae). *Journal of Biogeography* 41:587-599. doi: 10.1111/jbi.12218

Shaw, D. W., P. Escalante, J. H. Rappole, M. A. Ramos, R. J. Oehlenschläger, D. W. Warner, and K. Winker. 2013. Decadal changes and delayed avian species losses due to deforestation in the northern Neotropics. PeerJ 1:e179 <http://dx.doi.org/10.7717/peerj.179> *Using a mist-netting dataset that spans three decades, we found that our study area in the Sierra de Los Tuxtlas in southern Veracruz, Mexico has seen continued bird species losses following major deforestation that occurred mostly in the 1970s and 1980s. The delayed species losses and the heterogeneity of these apparently extirpated taxa provide substantial challenges for the successful management and conservation of tropical rainforest.*

Winker, K., K. G. McCracken, D. D. Gibson, and J. L. Peters. 2013. Heteropatric speciation in a duck, *Anas crecca*. *Molecular Ecology* 22:5922-5935. doi: 10.1111/mec.12525 *A new model of speciation is examined in duck populations that are in allopatry and sympatry at different times of the annual cycle. Green-winged Teal in the Aleutian Islands are sedentary and are passed through twice a year by migratory individuals from the Eurasian population. Data from eight nuclear introns and mtDNA supported three predictions of the heteropatric model: there is significant genetic differentiation and low gene flow between the two populations, and the sedentary Aleutian population is not especially small. We infer that adaptation to local optima in different places promotes genetic isolation despite periods of sympatry between them, as the heteropatric model predicts.*

Pruett, C. L., C. Whelan, A. Ricono, S. L. Lance, T. Glenn, B. Faircloth, and K. Winker. 2014. Development and characterization of microsatellite loci for two species of Beringian birds, rock sandpiper (*Calidris ptilocnemis*) and

Pacific wren (*Troglodytes hyemalis*). *Conservation Genetics Resources* 6:175-177. doi:10.1007/s12686-013-0040-4

Braile, T. M., and K. Winker. 2013. New distributional records of Philippine birds from Bohol, Mactan, Olango, Busuanga and Luzon islands. *Forktail* 29:140-141.

Pruett, C. L., **C. M. Topp, J. M. Maley, K. G. McCracken, S. Rohwer, S. Birks, S. G. Sealy, and K. Winker.** 2013. Evidence from the genetics of landbirds for a forested Pleistocene glacial refugium in the Haida Gwaii area. *Condor* 115:725-737. *MtDNA sequence data from 11 forest-dwelling species indicate that there was a glacial refugium in the Haida Gwaii (Queen Charlottes) area during the Pleistocene. Both a sedentary life history strategy and the presence of an endemic subspecies seemed correlated with the likelihood that a species' genetic signal indicated long-term, refugial presence.*

McCracken, K. G., R. E. Wilson, J. L. Peters, K. Winker, and A. R. Martin. 2013. Late Pleistocene colonization of South Georgia by yellow-billed pintails pre-dates the Last Glacial Maximum. *Journal of Biogeography* 40:2348-2360.

Gibson, D. D., L. H. DeCicco, R. E. Gill, Jr., S. C. Heinl, A. J. Lang, T. G. Tobish, and J. J. Withrow. 2013. Third report of the Alaska Checklist Committee, 2008-2013. *Western Birds* 44:183-195.

Gibson, D. D., L. H. DeCicco, R. E. Gill, S. C. Heinl, A. J. Lang, T. G. Tobish, Jr., and J. J. Withrow. 2014. Checklist of Alaska birds, 20th edition.

Pranty, B., J. L. Dunn, K. L. Garrett, D. D. Gibson, M. J. Iliff, M. W. Lockwood, R. Pittaway, and D. A. Sibley. 2013. 24th report of the ABA Checklist Committee, 2013. *Birding* 45(6):30-37, 75-79.

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Friends of Ornithology
The birds of Alaska have never been in better hands.
