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# FRIENDS OF ORNITHOLOGY

## Newsletter

Number 16  
Dec 2020



Grus, The Crane (Willughby & Ray 1678)



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### From the Curator

*Kevin Winker*

Wow. And we thought last year was a hard one! Budget cuts one year, then still more budget cuts and a pandemic the next. These are trying times for everyone, and it seems that all we can do is cautiously move forward as best we can, looking out for others and ourselves as we wait for things to get better. News that vaccines are on the horizon gives us hope that the slow slog of the pandemic will eventually be over. One does wish that science had been better employed throughout to mitigate the virus's impacts, though, and we've got some dark months still ahead of us, literally and figuratively. Hang in there, and be safe!

Here in the Museum we've carefully continued to be active, and, fortunately, none of our group in Birds has yet become infected. Learning how to keep the university running under various levels of isolation has been a time consuming challenge, but thus far the University of Alaska and the Museum have done a pretty good job. We have been able to continue to be functional in our offices and labs, but with single-occupancy requirements and encouragement to work from home when possible, things have been moving more slowly than we're used to. With ongoing budget cuts, we've also been forced into furloughs, which slows things even further. Nevertheless, forward progress continues, with teaching, research, classes, thesis and manuscript writing, and collection use and development all moving steadily forward. Your encouragement and support have been a critical component acting side by side with us. More than ever, thank you!

### The Department of Ornithology

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

#### Residents

*Kevin Winker* (Curator)

*Jack J. Withrow* (Collections Manager)

#### Students

*Fern R. Spaulding*

*Symcha Gillette*

*Rebecca Estrada*

*Kathleen Collier*

#### Research Affiliates

*Daniel D. Gibson*

*Johannes Erritzoe*

*Rose A. Z. Meier*

*Kevin G. McCracken*

*Christin L. Pruett*

*Kyle K. Campbell*

*Matthew Miller*

#### Volunteers

*David W. Sonneborn*

*Jennifer Jolis*

*Alaska Checklist Cmte.*

*Elizabeth Schell*

#### A SAMPLING FROM STAFF

*Jack Withrow*

Eight years ago in this space I gave a sampling of the diverse projects being worked on and supported by the collection. In this time of dramatic state cutbacks and a global pandemic that has disrupted so much, including the tourism that largely sustains the museum, it is worthwhile to look again at some of the important contributions we've made to research and education. Research-related support in particular happens at many levels, but ultimately

science is a global pursuit, not a provincial one. We operate at individual, local, municipal, state, country, and international levels (see Figure 1), providing important contributions from the education of local school children to international collaborations pushing the boundaries of what we know about our world. Below I highlight through anecdotes some of the ways we do this.

Elizabeth Schell, a PhD student of Kevin McCracken (who himself is a former post-doc in this lab and former professor in biology at UAF and is now at the University of Miami), spent much of the summer collecting waterfowl in Alaska. She is studying how physiological differences in blood characteristics (e.g., hemoglobin levels) correlate with and affect the life histories (e.g., divers vs. dabblers) of several species of Alaskan ducks. This work requires immediate fixation and freezing in the field with liquid nitrogen and subsequent ultracold storage. Here in the museum we produce our own liquid nitrogen to supply our tissue collection cryovats, and we were able to provide this and some logistical support for Elizabeth's work. In return we archived a wing and tissue from each of the ducks taken. The academic lineages and connections that are made during a person's tenure here, whether as an undergraduate volunteer, a graduate student, a visiting researcher, etc., usually produce enduring relationships that often bear fruit many years hence.

Fairbanks' own Luke DeCicco, who had an association with the lab for many years, first while growing up here and then when working for the U.S. Fish and Wildlife Service in Alaska, is now pursuing a PhD at the University of Kansas. As part of that work, he is using toe pads from historic specimens of Gray-headed Chickadees archived at UAM to assess genetic divergence between Old World and New World forms of this enigmatic species. He is also exploring a contact zone between inland ("red") and coastal ("brown") subspecies of Fox Sparrow in the Anchorage bowl based on specimens housed here.

In the spring we lent tissue samples to the OpenWings project ([www.openwings.org](http://www.openwings.org)), an NSF-funded consortium that will generate millions of base pairs of DNA sequences for all 10,000+ species of birds in the world with a goal of creating the most detailed avian phylogeny yet. Drawing from our

strengths in the Arctic, but also from our work in the Neotropics and unique salvaged material, we were able to provide the best quality tissue samples in existent for several species.

Last year an artist (Leslie Sharpe) visited us to sketch Black-capped Chickadees with overgrown beaks as part of an art exhibit in Anchorage linking art and science to explore issues in conservation and ecology of Alaska's birds (see <https://www.alaskapublic.org/2019/06/26/new-anchorage-art-exhibit-connects-bird-research-to-backyards/>). While our large series of Black-capped Chickadees exhibiting avian keratin disorder have not yet been called on to help answer questions about this problem, they very well may someday.

The collection will hit 45,000 bird specimens early next year. Papers using the collections and citations to those works continue to grow at a rapid pace: our Google Scholar profile has an *h*-index of 67, which shows a sizeable scientific impact (<https://scholar.google.com/citations?user=EbOusfwAAAAJ&hl=en>).



Figure 1: Destinations of specimen loans sent out from the UAM bird collection to researchers in the last five years (2015-2020). The national and international reach of this relatively small and young collection is apparent.

### **A Harper's Index for the University of Alaska Museum**

Population of Alaska: 737,438

State portion of UAM budget: \$1,415,813

Cost per resident: \$1.92

Average cost of a gallon of milk in Fairbanks: \$5.20

*Kathleen Collier*

(Masters student)

Rank of UAM in Best Alaska Attractions: 3

Number of tourists to Alaska: 1,857,500

Average dollars spent by an Alaska tourist: \$1,057

Amount spent in the Interior: \$392,000,000

UAM admission: \$16

Store and admissions revenue: \$1,368,464

Percent coming from nonresidents: 80

Number of bird species known to Alaska in 1970: 353

In 2019: 525

Additional subspecies: 114

Institutions tracking this: 1

Scientific impact of the bird collection: 67

Of an average Nobel Laureate: 42

Of an average biology professor at UAF: 29

Number of UAM collections: 10

Average FTEs per collection: 0.9

Number of K-12 students visiting the museum: 3,425

Average number of college students working directly in

UAM collections per year: 92

Number of students necessary to keep an Alaska school

open: 10

Percent of Alaskans with a postsecondary credential: 51

Percent of Alaska jobs requiring that in 2025: 65

Economic impact of commercial salmon fishing in Alaska:

\$2.5 billion

Of the UA system: \$1.1 billion

Percent of Alaskans that consider UA important: 95%



Kathleen Collier (photo by Marc Lester, ADN)

Had you asked anyone from my undergraduate alma mater, the University of Colorado at Colorado Springs, where to find me, they would've told you to check the UCCS Wildlife Museum and Mammalogy Collection. Had you then asked where to find that room, you probably would've received a shrug—as a single classroom in an obscure corner of the Biomedical Sciences building its existence tended to take even many upper-level biology students by surprise.

As much as I loved working with mammals—skinning ground squirrels, degreasing a (donated) human leg, articulating ungulate skeletons, etc.—they were never my main passion. From the noisy Spotted Towhees at the feeders on campus, to the deceptively elegant, grey-blue Pinyon Jays around Pulpit Rock, to the enormous Sandhill Cranes I'd willingly drive halfway across the state to see on their migratory stopover in Steamboat Springs, birds were animals I found endlessly fascinating. However, at a school with a very limited focus on wildlife, mammals inevitably took the spotlight.

So to my surprise, despite having some lab experience before coming here to the University of Alaska Museum, and despite my love for them, starting work prepping bird specimens almost felt like starting entirely fresh! The delicacy of a thrush's skin as opposed to a squirrel's, and the intricate arrangement of feather tracts as opposed to solid fur—even things as silly as how long birds' necks really are! None of those were things I'd ever really thought about when just watching them.

Probably even more drastic a change was the lab itself. I had gotten used to usually being the sole wildlife person in the room, and certainly the only one who regularly worked with physical specimens. Now, I'd come to this wonderland of a museum with rooms and rooms full of specimens and people who actively prepped, catalogued, and used them for research! It was almost a little intimidating, to be honest.

But still, being in such an active community opened up new horizons, as soon as I got a bit

more used to it and started to learn some of the rules to navigating this strange new land. (And I mean that literally in some cases—it’s very hard to go work in the field when you don’t know where the animals are, or how to get there in a country of snow and taiga!) Being able not just to work with birds, but with other people who *also* work with birds, deepens all of our understandings. My research, which focuses on understanding patterns of speciation and divergence in trans-Beringian birds, underscores that to me. My work builds upon and draws directly from both the scholarly work and preparatory labor of not just the other members of the lab, but of other ornithologists and scientists of all stripes. Science is a team effort, and if, in this very unusual year, I can contribute some of what I know to that cause, I think it’s all worth it.

Here’s hoping for another year of birds!



The view NE over Columbia Bay and Terentiev Lake during field reconnaissance in June 2020. As evident by the trimline on the hillside above the lake this portion of the bay was under nearly 1,000 ft. of ice in the 1950s. Since 1980 Columbia Glacier has receded over 10 miles, one of the fastest rates of change in the world (see gif at <https://go.nasa.gov/36rddva>). (Jack Withrow)

**ANNUAL REPORT - ORNITHOLOGY, FY20**

This was a particularly brutal fiscal year, with a combination of steep budget cuts and the emergence of the COVID-19 pandemic. Kevin and Katie Collier taught Ornithology in spring semester, and because of the pandemic lockdown the course was evenly divided

between our normal, in-person delivery for the first half and then online-only in the second half. It was a scramble for everyone to make such a big change. What did the students miss most in the second half? In-person labs. Not surprising, given how important we believe them to be—how competitive on the job market would a biology student be without hands-on experience?

Activities in the museum Bird Lab were on hiatus or conducted remotely during the lockdown, but we were busy before it came and we have been again, though with limited occupancy, since it ended. Staff and students were able to get into the field while practicing mandated COVID safety procedures. Collectively, we sampled birds on the Yukon River, Kodiak Island, Prince William Sound, the North Slope, the Talkeetna area, and various locations in Interior and Southcentral Alaska. We also made progress on older projects and data that were already in hand. This was not straw-into-gold stuff, but rather reaping the harvest from prior efforts. We look forward to seeing some of these projects being published in the coming year.

The collection saw diminished activity with the pandemic, but its growth and use have been steady. Student activity has also been excellent. Katie Collier began with us in Fall 2019 as a Masters student. Our meeting presentations were cancelled this year, but together we produced five publications and have quite a few more pending. Many thanks, as always, to our students, volunteers, and the Friends of Ornithology for their ongoing support.

Volunteer hours	675
Acquisitions	1,361
Publications	5
Reports	10
Loans	13
Data requests	218*
Professional visitors	6
Student visitors	4
Public contacts	few**
Students working with collections	
PhD	9
MS	1

\* Excludes > 14,000 electronic database requests  
downloading >34 million records.  
\*\* Excludes Halloween event (457).



A mixed Glaucous-winged and Herring Gull pair at a colony in Heather Bay, Columbia Bay. These two gulls hybridize regularly where they come into contact in south-central Alaska, usually at the mouths of major rivers (e.g., Susitna, Copper, Alsek) or in recently deglaciated fjords (e.g., Columbia, Yakutat, and Glacier bays). The observation of mixed pairs at Heather Bay and a pair of intergrades among an otherwise pure colony of Glaucous-winged Gulls at Shoup Bay near Valdez in June 2020 mirrors the pioneering findings of S. M. Patten on this phenomenon from the 1970 and 1980s. (Jack Withrow)

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*If you know of someone who might like to become a member, please pass along a copy of the enclosed membership materials or point them to our web page:*

[www.universityofalaskamuseumbirds.org](http://www.universityofalaskamuseumbirds.org)

## RECENT PUBLICATIONS

(FY20)

Louha, S., D. A. Ray, K. Winker, and T. C. Glenn. 2020. A high-quality assembly of the North American Song Sparrow, *Melospiza melodia*. G3 10:1159-1166; <https://doi.org/10.1534/g3.119.400929>

*Here we publish the first high-quality genome of this common but fascinating North American songbird. (See figure at right.)*

Song, S.J., J. Sanders, F. Delsuc, J. Metcalf, K. Amato, M. W. Taylor, F. Mazel, H. L. Lutz, K. Winker, G. R. Graves, G. Humphrey, J. A. Gilbert, S. J. Hackett, K. P. White, H. R. Skeen, S. M. Kurtis, J. Withrow, T. Braile, M. J. Miller, K. McCracken, J. M. Maley, J. M. Blanton, V. J. McKenzie, R. Knight. 2020. Comparative analyses of vertebrate gut microbiomes reveal convergence between birds and bats. mBio11:e 02901-19; DOI: 10.1128/mBio.02901-19

*Assays of the gut microbiomes of birds and bats indicate that these microbial communities are only weakly associated with diet or phylogeny, unlike non-flying mammals. Among birds, there is little host specificity for microbiome taxa. Adaptations to flight appear to strongly affect host-microbiome evolution and community ecology.*

Chesser, R.T., K. J. Burns, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen Jr., D. F. Stotz, and K. Winker. 2019. Sixtieth supplement to the American Ornithologists' Union *Check-list of North American Birds*. Auk 136: <https://doi.org/10.1093/auk/ukz042>

Robinson, B. W., J. J. Withrow, R. M. Richardson, S. M. Matsuoka, R. E. Gill, Jr., A. S. Johnson, I. J. Lovette, J. A. Johnson, A. R. DeGange, and M. D. Romano. 2020. Further information on the birds of St. Matthew and Hall islands, Bering Sea, Alaska. *Western Birds* 51:78-91.

Withrow, J. J. 2019. A sublingual pouch in Townsend's Solitaire (*Myadestes townsendi*). *Northwestern Naturalist* 100:214-218.



An important voucher specimen from the UAM bird collection: tissue from this bird was used for the first Song Sparrow genome (Louha et al. 2020). It is a male collected by D. W. Sonneborn at Attu Island, Alaska in Sep 2003. For technical reasons, it's best to use genomically simple representatives of a species for a first high-coverage genome. Male birds are homogametic (unlike humans), and this isolated population is genetically very homozygous. (Jack Withrow)

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University of Alaska Museum's  
*Friends of Ornithology*  
*The birds of Alaska have never been in better hands.*

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