
FRIENDS OF ORNITHOLOGY

Newsletter

Number 5
May 2008



Grus, The Crane (Willughby & Ray 1678)



From the Curator

Kevin Winker

Spring came more slowly than usual this year to Fairbanks, but it has burst forth with seemingly extra vigor for having been delayed. It has been another busy year, and we have many interesting things to relate. Every year we pay a lot of attention to migration—where birds are and when—in part because we’ve been so involved with the diseases that these birds might carry between far-flung places. After ten years of work with the USDA on avian influenza and Newcastle’s disease, we’ve become used to having our fieldwork spread throughout the year. These diseases were initially chosen more because of the economic consequences to the poultry industry than anything else, because that is where they have their most immediate impact.

My early proposals for funding in this area included references to the human risks of avian influenza (AI), but this was looked upon skeptically. That skepticism began to change in 2004, and when I had the chance to briefly present our work to Dr. Elias Zerhouni (Director of NIH) it was clear from his keen interest that a new era was dawning in AI research. New money was subsequently put into some large-scale AI programs. But despite our efforts, the new funding traveled down more traditional pipelines; it may be that natural history museums are not yet viewed as natural participants in such research. However, we have carried on this research with the USDA and are making good contributions to the understanding of birds as disease hosts and of the diseases they carry (for examples, see our recent publications at the end of the newsletter). As more people realize the importance of taking a comprehensive approach to this highly interdisciplinary area of research, we anticipate being able to continue our participation on the developing

front of knowledge in this important area.

Since the large Federal push on AI screening began in 2006, we have continued to sample all the birds we handle in Alaska but also have taken our limited support for field work and chosen to follow Alaska birds to their wintering areas, realizing that our impact could be greater where less sampling effort was occurring. Working with Alaska birds during the nonbreeding season and seeing them in very different places and with very different bird species than what we’re used to up here has given me an increased appreciation for birds in general. It has also given each of us involved an increased appreciation for the often profound differences of working in other countries, and, perhaps more importantly, for the very heterogeneous geopolitical landscapes across which Alaska migratory birds fly twice each year. The long-distance, round-trip movements that the majority of Alaska’s birds perform give us direct biological links to remarkably diverse parts of the globe. From the abundant wintering shorebirds in Peru, Panama, and the Philippines, to the many species we share across the North Pacific with Russia, these complex connections have yet to be fully unraveled—though we’ll continue to work on that.

Cyndie Beale, a teacher at West Valley high school, finished her second summer of research with us in the genetics lab this past year; that was fun for all of us and brings fresh research experience into Cyndie’s classroom. Tom Braile, now a Research Associate, continues his research in the Philippines. Several student-authored manuscripts have been being developed and submitted from thesis chapters, and we anticipate being able to report on more of them appearing in the coming year. Support from The

Friends of Ornithology remains a critical component of the efforts that we're able to put forward, and I thank you again 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 things happen:

Residents

- Kevin Winker* (Curator)
- Daniel Gibson* (Collections Manager)
- Brina Kessel* (Curator Emeritus)

Students

- Carrie Topp* (MS student)
- Matthew Miller* (PhD student)
- Elizabeth Humphries* (MS student)
- Michael Lelevier* (MS student)
- Jack Withrow* (MS student)
- Dara Rehder* (undergraduate)
- Jason Minné* (undergraduate)
- Alex Grantham* (undergraduate)
- Kyle Campbell* (undergraduate)

Research Associates

- Heinrich Springer*
- Johannes Erritzoe*
- Rose A. Z. Meier*
- Kevin McCracken*
- Christin Pruett*
- Thomas Braile*

Volunteers

- Robert Dickerman*
- David Sonneborn*
- Steven Heintl*
- Michael Schwitters*
- Larry Schwitters*



Russian colleagues taking tea on the tundra

**ANNUAL REPORT - ORNITHOLOGY
FY07**

The milestone book publication *Birds of the Aleutian Islands, Alaska* by our own Daniel Gibson and his colleague Vernon Byrd appeared this year. This volume is the product of decades of work in the Aleutians by both authors and is a major achievement for Alaska ornithology and the Museum. Congratulations Dan and Vern! Staff and volunteers conducted seven field efforts this year, including expeditions to the Near Islands (Attu and Shemya), the Copper River Delta, Russia, and the Philippines. Department staff and students gave 10 scientific presentations at a variety of venues, including the International Ornithological Congress in Hamburg, Germany and the North American Ornithological Congress in Veracruz, Mexico. Our work with the U.S. Department of Agriculture continues to screen birds for avian influenza and to determine pathways of migratory transport of this emerging disease. This was our 10th year of this avian influenza screening, and one of the department's nine publications this year included an important summary of the results in the journal *Emerging Infectious Diseases*. Our collecting, salvaging, and preparation efforts resulted in the cataloguing of 1,000 new specimens into the collection. West Valley High School teacher Cyndie Beale continued to work with us this summer in the molecular genetics laboratory. Highlights of this year also included a temporary exhibit in the public gallery on the bird collection—part of an exhibit on all of the Museum's scientific collections. As in the past, we were able to field a host of stellar volunteers, and we extend our deepest appreciation to them!

Volunteer hours	1,725
Acquisitions	1,000
Grants	1
Publications	9
Reports	15
Loans	14
Data requests	88
Professional visitors	26

Student visitors	82
Public contacts	550+

Students working with collections

PhD	3
MS	4
Undergraduates	6

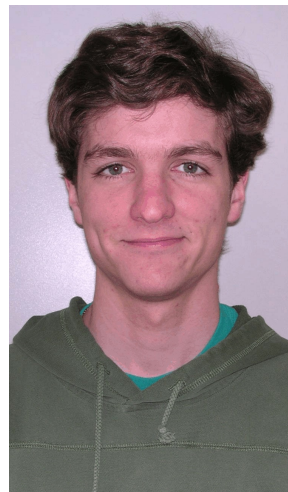
FROM STAFF & STUDENTS

Jack Withrow

I grew up in Kodiak, Alaska, and at a young age became interested in birds. Before I entered middle school I had birded with people such as Rich MacIntosh and Dave Sonneborn. Little did I know the company I had been exposed to. After high school I attended Western Washington University (WWU) in Bellingham, graduating in 2006 with a BS in biology. During those years other distractions precluded much serious thought of birds.

After a year off spent seeing as much of Kodiak Island as possible, I decided it was time to continue my education. With a keen interest in evolutionary biology developed at WWU and the latent fascination with all things avian, the University of Alaska was a logical location for pursuit of a graduate degree. And so in the fall of 2007 I started a masters program under Kevin Winker here in Fairbanks. The program was more than I could have hoped for; I was surrounded by folks that knew far more about birds than I ever thought possible. It never occurred to me that one could prepare birds as scientific study skins as a means of putting oneself through graduate school. Needless to say, I was elated when I learned that this was to be a part of my duties in the Ornithology lab. Along with specimen preparation I have been learning the intricacies of scientific collections and the value they possess for research.

For my thesis I have begun to look at the genetics of speciation in a sister-species pair that shows little morphological differentiation but has other phenotypic attributes that are vastly different, for example migration habits. Along with a genetic survey, I hope to find a way to combine different attributes of the phenotype that are not traditionally incorporated into phenotypic measures and use this measure in comparisons across taxa. I am excited about the coming year.



Jason Minné

I first heard about a job opening in the Ornithology Department from Kevin, who was at the time teaching my Ornithology class. I was looking for a job, and, having only about a year or two left of college, wasn't entirely sure what I wanted to go into when I graduated. Although I had

always had an interest in birds, I was hooked shortly after taking the job and becoming an undergrad in the Ornithology lab. The job I took to get some extra money soon became my calling.

It has now been over a year and I still love going to work in the bird lab, and it has become my future career choice to be in something Ornithology-related. When I first started working in the lab, I was put to work preparing specimens for education. Since then my responsibilities have expanded, and I have become more helpful in areas that have not been looked at in quite some time. These included things such as organizing the genetic resources collection and making flat skins of long series of specimens from the freezer (a skill I have become quite proficient in) I was also put in charge of the ATCO lab and our dermestid beetle colony there. There I work on the skeletons, where I am responsible for cleaning, storing, organizing, and basically just making sure the skeletons become clean and neat enough to be cataloged for future research.

Soon I will complete my degree. In the meantime, I have accepted a summer field position in Washington state to do nest counts on woodpeckers. This will be my first of hopefully many field jobs in Ornithology and thanks to my experiences in the lab, will hopefully make a fine career.

Kyle Campbell

I am a full-fledged Fairbanksan, having lived in the same house in the Goldstream Valley all my life. I first fell in love with birds at a very young age, but for some reason it took me until about a year and



Philippine friends (photo by Kyle Campbell)

a half ago to realize that ornithology was the niche for me. Despite the fact that I was a third-year biology student at UAF, and that I had volunteered with ABO since the age of ten (back when Anna-Marie Benson was head bander), I had never crossed paths with Kevin Winker, Dan Gibson, or anyone else from the Museum Ornithology crowd. Interestingly enough, I first met Kevin via email while spending the winter in Vietnam on a study abroad program. I was working on a project proposal to begin banding and screening birds in the wetlands of the Mekong Delta for bird flu when Kevin and I started corresponding. He introduced me to the world of collection-based research and encouraged me with his enthusiasm to keep building contacts while in country and open the doors for a possible future fieldwork opportunity.

Needless to say, within a week of returning to Fairbanks that spring, Kevin had me in the lab for my first hands-on introduction into the art of preparing bird specimens. I was hooked. Almost immediately I began to prefer spending my Friday and Saturday evenings in the lab with birds and electronic music over the typical Fairbanks nightlife. It didn't take long for me to realize that my life-long passion for the feathered world could continue in my academic and professional life, not just as a hobby. With this in mind, I have begun exploring my opportunities for future education and work, trying to weigh out my many fascinations in the various fields that lie before me. Thankfully I still have some time to figure out just which direction to pursue; I plan to graduate from

UAF in the spring of 2009 with Biological Sciences degree, from which point I am yet uncertain where my studies will take me, but certain that birds will be the focus.

Kevin sent me to work in the field over the Christmas vacation this past winter in the Philippines with Tom Braile in the forested mountains of Mt. Apo National Park on Mindanao Island. The experience was absolutely incredible. It was not only the experience of working with colorful and exotic birds that I benefited from, but also the experience of living and working directly with local families for extended periods of time that has left a permanent mark on me. Since the age of four or five years old, it has always been my dream to work in tropical jungles near the equator with nets and ropes and exciting tool kits, just like the photos I remember looking at with awe and excitement in National Geographic magazine. To realize that dream at such an early point in my young adult life was more than I could have possibly asked for, and the experiences I took away from the Philippines will continue to motivate and encourage me to pursue the greatest opportunities I can achieve. Currently I am living in Paris, France, taking the spring semester off from official studies to live with my girlfriend and take intensive courses in the French language. I have been fortunate enough to become involved with the Département d'Ornithologie at the French National Museum of Natural History (MNHN). I am happy that I have been able to continue working with and learning about birds and ornithology even while on leave from UAF. Along with preparing specimens from French Guiana, I am learning a great deal about the foundations of modern museum collection-based ornithology while computer cataloguing some of the enormous collections of 19th and early 20th century birds collected by famous ornithologists such as Boucard and Delacour. Although I am thoroughly enjoying my time abroad, I can't wait to return to Fairbanks this summer and begin working again with the familiar friendly faces of the ornithology department at UAF (and speak my own language again!). I would like to thank Kevin Winker, everyone at the UAF Museum, and Friends of Ornithology for helping me figure out which direction to pursue and giving me the opportunity to study what I love!

Notes on a Middleton Island Bird Observatory

Daniel D. Gibson

The only completely isolated island in the northern Gulf of Alaska, Middleton is a uniquely exciting place to study nesting and migratory birds in Alaska. For several decades it has been a particular interest of mine—though almost always relegated by other business to a back burner—to see a bird observatory established at this ‘Farallon’ island of the northern Gulf of Alaska.

U. S. Fish & Wildlife Service biologists have studied nesting seabirds on Middleton for decades (during the 1970s and 1980s, Pat Gould and Dave Nyswander and others), and long-term studies of Black-legged Kittiwakes (Scott Hatch) and Black Oystercatchers (Verena Gill) continue there today. (And there might well be other such studies I’ve inadvertently overlooked.) In the 1980s and 1990s, under the aegis of the University of Alaska Museum, a number of us visited Middleton at intervals during spring and fall migrations in an effort to assess the island’s potential as a location for studies of trans-Gulf of Alaska migration.

The 225+ species of birds recorded there over the last few decades—the tip of the iceberg—make clear how appropriate Middleton is as a focal point for studies in the Gulf of Alaska. The avifauna known from the island to date includes many species that reach or have reached the island from the east, others from the west, some unexpectedly from the adjacent mainland, some in fall but not in spring, others in spring but not in fall. And the nesting avifauna—beyond Laridae and Alcidae—provides another interesting avenue for long-term study.

To whet the appetite I offer examples of species that have reached Middleton from the east (Cinnamon Teal, Hooded Merganser, American Coot, Killdeer, Ring-billed and California gulls, Band-tailed Pigeon, Common Nighthawk, Red-breasted Sapsucker, Least Flycatcher, Eastern Kingbird, Warbling Vireo, Red-eyed Vireo, Northern Mockingbird, Cedar Waxwing, Tennessee Warbler, Nashville Warbler, Magnolia Warbler, Cape May Warbler, Palm Warbler, American Redstart, Common Yellowthroat, Chipping Sparrow, Swamp Sparrow, Harris’s Sparrow, Black-headed Grosbeak, Purple Finch). Other species have reached the island from the west (Emperor Goose, Snow Goose, Eurasian Wigeon, Garganey, Steller’s Eider, Gray-tailed Tattler, Sharp-tailed Sandpiper, Ruff, Slaty-backed Gull, Red-legged Kittiwake,



Daniel Gibson prepares an Aleutian gull specimen

Aleutian Tern, Fork-tailed Swift, Dusky Warbler, Stonechat, Eastern Yellow Wagtail, Red-throated Pipit, Brambling), from overseas to the south (Bristle-thighed Curlew, South Polar Skua), or have been unexpected visitants from the Alaska mainland (e.g., Red-faced Cormorant, Trumpeter Swan, Rock Ptarmigan, Upland Sandpiper, Stilt Sandpiper, Buff-breasted Sandpiper, Bonaparte’s Gull, Snowy Owl, Rufous Hummingbird, Olive-sided Flycatcher, Western Wood-Pewee, Alder Flycatcher, Say’s Phoebe, Black-capped Chickadee, Brown Creeper, Northern Wheatear, Mountain Bluebird, Townsend’s Solitaire, Bohemian Waxwing, Blackpoll Warbler, Gray-crowned Rosy-Finch).

Some species apparently occur annually in fall but not in spring (e.g., Great Blue Heron, Osprey, Bald Eagle, Northern Harrier, Sharp-shinned Hawk, Merlin, Red-breasted Nuthatch, Golden-crowned Kinglet, Downy Woodpecker, Northern Flicker, Northern Shrike), while others are apparently annual in spring but are unknown in fall (e.g., swallows). Some are hardly known from Alaska records beyond those at Middleton (e.g., Philadelphia Vireo, Chestnut-sided Warbler, Prairie Warbler, Mourning Warbler, Cassin’s Finch), and at least a few are in fact species that have not been recorded anywhere else in Alaska

(Great Crested Flycatcher, Northern Parula).

Among the nesting birds are several that occur at Middleton in impressive densities (Semipalmated Plover, Wilson's Snipe, Savannah Sparrow), and one reaches at Middleton its eastern limit of nesting range in the Gulf of Alaska (Lapland Longspur). Some other landbirds also have substantial nesting populations (Hermit Thrush, Fox Sparrow). Song Sparrow occurs here only as a scarce migrant, while Winter Wren nests; both are species with widespread ranges along the Alaska Pacific coast, so absence of nesting Song Sparrows seems peculiar. In recent years Bald Eagles and Northern Harriers have nested (the two nesting pairs of eagles include one ground-nesting pair and one tree-nesting pair). Nesting alcids include Common Murre, Rhinoceros Auklet, and Tufted Puffin.

In conclusion, Middleton is an ideal location for a permanent bird observatory in the Gulf of Alaska. Though isolated near the edge of the continental shelf some 45 miles south of Montague Island, it is only a 1-hr flight from Anchorage or Kenai. In the 1980s and 1990s we were often fortunate in being able to fly space-available on regularly scheduled FAA flights to the island. With the automation of their facility at Middleton, however, this might no longer exist as a possible transportation avenue. But the island is still aircraft-accessible.

Almost 20 years ago, as one of the first board members of the Alaska Bird Observatory, I tried to talk ABO founder Tom Pogson into trying to set up a field station at Middleton. The enthusiasm was there, but ABO was just getting on its feet, and it was premature to try to go so far afield from Fairbanks. Perhaps the beginning of the new century will prove to be a more auspicious time to try to put together a bird observatory at Middleton Island. I know the enthusiasm is out there.

Important New Book: Birds of the Aleutians

Kevin Winker

As a graduate student about 20 years ago, I used to hang around the library and randomly pull issues of bird journals from the shelves to read. To some it might sound odd to read from journals with names like *The Auk*, *The Condor*, and other strange-sounding names, but then, as

now, it can be very engaging to read about the science of birds coming from far-off places with strange names and stranger species. I remember very distinctly reading papers about Aleutian birds by some obviously lucky guys named Gibson and Byrd. It is hard to describe the allure that these papers held for an ornithology graduate student (some would insert "nerd" here), but the sense of wonder might be summed up with the phrase "Who were those masked men?" Truly, things of ornithological wonder were being accomplished by these far-off strangers.

When I came to Alaska in 1997, I finally met those lucky guys, and not only do they do their great deeds without masks, they are remarkably modest about their accomplishments. But most excitingly, they graciously invited me out into their Aleutian playground, where things of ornithological wonder are a daily occurrence. Once you've been, it would be hard not to share the passion that Daniel Gibson and Vernon Byrd have for this remote region of North America. Not only do the world's largest Common Ravens and Song Sparrows reside here, but a very diverse Asian avifauna passes through twice each year. It is a remarkably dynamic region where the avifauna of two continents meet.

This past year, Gibson and Byrd completed their book on Aleutian birds. Decades in development (together the authors have over 70 years of experience with Alaska birds), this volume represents an important milestone in our knowledge of the birds of Alaska and of eastern Asia. It also represents an important publishing event, being the first joint publication between two of North America's most venerable ornithological institutions, the Nuttall Ornithological Club and the American Ornithologists' Union. If you have not yet had the chance to examine it, I encourage you to do so. Anyone with an interest in the birds of Alaska and northeastern Asia will want to own a copy.

FRIENDS OF ORNITHOLOGY

Founders

Brina Kessel

David & Alexandra Sonneborn

Robert W. Dickerman

Benefactors

Kevin Winker

Patrons

James G. King

Frederick & Patricia Winker

Donors

Warren David and Glenda Sue Cummings

Dr. & Mrs. Ronald M. Finch

Langdon R. Stevenson (In memory of Tim Schantz)

Ronald M. & Mary Kay Teel

Contributors

Anonymous

Stephen K. Carroll

Ed Clark & Judith E. Dearborn

Terry J. Doyle

Alfred Driscoll

Daniel Guthrie

Harold F. John

William E. Krueger

Deanna MacPhail

Cynthia R. Meyers

W. Mike Ord

Catherine Pannell

Gerald Rosenband

Michael T. Schwitters

Stanley E. & Patricia K. Senner

Dr. & Mrs. Walter M. Sonneborn

Richard D. Spight

Gus van Vliet

Ward/Tedin Partnership

Friends

Anonymous

Paul J. Baicich

Robert Berman & Cynthia Lippincott

Jim Blackburn

Nancy and Albert Boggess

Frank C. Buhl

Dona Coates

Phil Davis

William L. Foster

Elizabeth F. Hardesty

Ms Elizabeth Hardesty

Victorie Heart

Jennifer Johnson-Culver

Warren R. Jones

Calvin E. Keppler

Sherry Lewis & James Logan

Lenore McCullagh

Lawrence Modesitt

Sid O. & Erna F. Morgan

Harvey & Marion Mudd

Candace A. Myers, Ph.D.

Pat Pourchot

Robert Roadcap

Robert & Susan Spahn

Grace L. Steurer

Mark M. Stevenson, M.D.

William R. Stott, Jr.

Gordon Tans

Richard Tetrault

Jeff Walters

Robert C. Wei

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.uaf.edu/museum/bird

RECENT PUBLICATIONS

(ANNOTATED)

Sodhi, N. S., et al. (24 authors, including Winker). 2007. Barcoding Indo-Malayan birds. *The Raffles Bulletin of Zoology* 55:397-398. *Summarizes a meeting on generating mtDNA (COI) sequence data for this region's birds.*

Winker, K., K. G. McCracken, D. D. Gibson, C. L. Pruett, R. Meier, F. Huettmann, M. Wege, I. V. Kulikova, Y. N. Zhuravlev, M. L. Perdue, E. Spackman, D. L. Suarez, and D. E. Swayne. 2007. Movements of birds and avian influenza from Asia into Alaska. *Emerging Infectious Diseases* 13:547-552. *Asian-origin avian influenza (AI) viruses threaten humans and animals and are spread in part by migratory birds. In Alaska, diverse avian hosts from Asia and the Americas overlap in a region of intercontinental avifaunal mixing hypothesized to be an important zone of Asia-to-America virus transfer. We conducted seven years of AI virus surveillance among waterfowl and shorebirds in this region (1998-2004; 8,254 samples) and found remarkably low infection rates (0.06%), suggesting an Arctic effect on viral ecology caused perhaps by low ecosystem productivity and low host densities relative to available water. Combined with a*

synthesis of avian diversity and abundance, intercontinental host movements, and genetic analyses, our results suggest that the risk (and probably frequency) of intercontinental virus transfer in this region is relatively low.

Kim, L. M., D. J. King, P. E. Curry, D. L. Suarez, D. E. Swayne, D. E. Stallknecht, R. D. Slemons, J. C. Pedersen, D. A. Senne, K. Winker, and C. L. Afonso. 2007. Phylogenetic diversity among low-virulence Newcastle disease viruses from waterfowl and shorebirds and comparison of genotype distributions to those of poultry-origin isolates. *Journal of Virology* 81:12641-12653. *Low-virulence Newcastle disease virus (lowNDV) isolates from wild birds (n = 249) were phylogenetically examined, revealing novel class-I genotypes and new genomic subgroups in class-II viruses. Viral transmission may occur between wild birds and poultry, and current rapid diagnostic tools do not encompass the full genetic diversity of this pathogen.*

Winker, K., **D. Rocque, T. M. Braile, and C. L. Pruett.** 2007. Vainly beating the air: Species concept debates need not impede science and conservation. *Ornithological Monographs* 63:30-44. *We briefly summarize competing species concepts and facets of the debate itself and maintain that the inherent subjectivity within all species concepts ensures continued disagreement. Empirically, neither basic nor applied science seems to have been slowed because the species concept debate remains unresolved. Similarly, continued disagreement must be placed in its proper context when considering the preservation of biodiversity. To a considerable extent this has occurred in the conservation community. The biological species concept (BSC) and its inclusion of diagnosably distinct populations as subspecies remain dominant in ornithology. This may be due in part to the seemingly infinitely fine divisions possible under phylogenetic species concepts (PSC), which, among other things, could strain public credulity over what is a species. Nevertheless, the strengths of each of these concepts are being applied to improve our understanding of biodiversity. The longstanding disagreement over species concepts should not be an impediment to responsible conservation and wildlife management.*

Bickford, D., D. Lohman, N. S. Sodhi, P. K. L. Ng, R. Meier, K. Winker, K. Ingram, and I. Das. 2007. Cryptic species as a window on diversity and conservation. *TREE* 22:148-155. *A short review of cryptic species.*

Banks, R. C., and D. D. Gibson. 2007. The correct type locality of *Spizella breweri*. *Auk* 124:1083-1085.

Miller, M. J., E. Bermingham, and R. E. Ricklefs. 2007. Historical biogeography of the New World solitaires (*Myadestes* spp.). *Auk* 124:868-885.

Spackman, E., K. G. McCracken, K. Winker, and D. E. Swayne. 2007. An avian influenza virus from waterfowl in South America contains genes from North American avian and equine lineages. *Avian Diseases* 51:273-274.

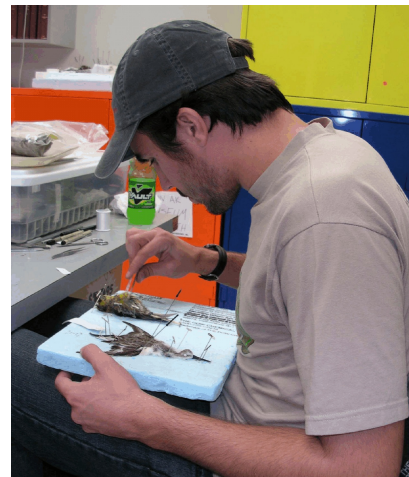
Maley, J., and K. Winker. 2007. The utility of juvenal plumage in diagnosing species limits: An example using buntings in the genus *Plectrophenax*. *Auk* 124:907-915. *Juvenal plumage differences between *Plectrophenax hyperboreus* and *P. nivalis* support species status.*

Erritzoe, J., K. Kampp, K. Winker, and C. Frith. 2007. *The Ornithologist's Dictionary*. Lynx Edicions Press.

Gibson, D. D., and G. V. Byrd. 2007. *Birds of the Aleutian Islands, Alaska*. Nuttall Ornithological Club and American Ornithologists' Union.

(Bold denotes our students)

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



Kyle Campbell practicing in the Bird Lab

University of Alaska Museum's
Friends of Ornithology

The birds of Alaska have never been in better hands.