Micah Warren Coombs Miller

CONTACT INFORMATION:

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EDUCATION

Ph.D. Zoology with Specialization in Ecology, August 2023
Southern Illinois University, Carbondale, Illinois.
Dissertation title: *Habitat use, nest-site suitability, and nutrient sources of Arctic sea ducks in a rapidly changing environment*.

M.S. Zoology, May 2017
Southern Illinois University, Carbondale, Illinois.
Thesis title: *Trace elements, health effects, and implications for biomonitoring in sea ducks of the northern Alaska coast.*

B.S. General Studies with minor in Wildlife Biology, August 2013
University of Alaska Fairbanks, Fairbanks, Alaska.

EXPERIENCE

Waterbird Scientist and Director of Loon and Arctic Programs
Biodiversity Research Institute, 276 Canco Road, Portland, Maine 04103
November 2023 – Present

I direct two research programs with a combined staff of six permanent employees and up to seven seasonal technicians and interns. For both programs, my time is split evenly among program management (20%) and development (20%), project oversight (20%), report and manuscript development (20%), and field research (20% overall, but the majority of my time during the summer breeding season). I also work across BRI developing or refining data management procedures for work in the US and abroad. My primary duties focus on research and conservation of loons and Arctic birds, but I work also on other programs and taxa as needed. I also serve as one of BRI's primary avian toxicologists and research scientists, helping to develop or refine interdisciplinary programs bridging field research, toxicology, wildlife health, and environmental conservation. Through these diverse capacities, I also serve as the BRI representative on the US National Bird Conservation Initiative (NABCI), working towards bird conservation on a national and international scale, and as the primary project officer for the Loon Specialist group of the IUCN Species Survival Commission.

Wildlife Research Scientist
Biodiversity Research Institute, 276 Canco Road, Portland, Maine 04103
May – October 2023

I worked as a research scientist focusing on a wide range of avian research in Maine as well as various regions of the Arctic and tropics. Approximately 40% of my time was allocated to developing and management monitoring plans for assessing impacts of offshore wind development on wildlife, primarily birds and bats. The remaining 60% of my time was working on a diverse suite of avian research and conservation projects on raptors, passerines,

waterfowl, shorebirds, and marine birds. During this period, I handled, bled, and banded over 500 birds.

Student Trainee (Biological Sciences Technician) and Graduate Assistant
US Fish and Wildlife Service, 101 12th Avenue, Room 110, Fairbanks, AK 99701
Southern Illinois University, Department of Zoology, 1125 Lincoln Drive, Room 351, Carbondale, IL 62901
March 2012 – April 2023

I was a student trainee through the USFWS Pathways program and graduate student at Southern Illinois University (as a PhD student in 2017-2023 following completion of an MS in 2017) studying two threatened (spectacled and Steller's eiders) and three non-threatened sea duck species (king and common eiders and long-tailed ducks) in northern Alaska. My duties were completing field work, including planning and logistics, supervising field crews of up to 12 technicians and 8 local high school students, and maintenance of a field house and field equipment, including pickups and ATVs (25%); and completing graduate coursework and research (75%). My Master's research focused on contaminant exposure in sea ducks by assessing (1) health metrics and environmental contaminant exposure, including lead; (2) variation in contaminant concentrations among species, sexes, age classes, and sites; and (3) establishing best management practices for future biomonitoring efforts for contaminants. My PhD work focused on climate-driven changes to habitats and prey of sea ducks, including (1) assessing each species' reliance upon freshwater versus marine foods for egg production and incubation; (2) determining how each species uses various wetland habitats and for what purpose; and (3), creating species-specific models of suitable habitat for nesting in the face of rapid landscape change.

I also successfully acquired funding for much of this work through competitive grants, for which I assisted with annual progress reports. I published four studies from this research and have multiple additional manuscripts in preparation or review. My research was conducted on privately owned Iñupiat lands near Utqiaġvik (Barrow), Alaska. Throughout my research, I have worked closely with the Alaska Native population, especially with local high school students and community members who rely upon some of my study species for subsistence. I conducted extensive outreach related to both my research and for other science-related focuses during my time as a graduate student and presented at multiple conferences and as an invited speaker.

My graduate research was part of a much larger effort by the US Fish and Wildlife Service to recover populations of threatened Steller's and spectacled eiders throughout northern and western Alaska. One aspect is to assess the viability of reintroducing these species to areas where they have become extirpated. During the summer of 2015, I worked on multiple projects associated with the future reintroduction of Steller's eiders to the Yukon Delta National Wildlife Refuge. First, I helped to collect nesting data on a wide variety of tundra-nesting birds (including eiders) as a crew lead working on long-term monitoring plots (for USFWS Migratory Birds Management). I was responsible for boat operation, nest searching, and data collection, including egg candling/floating to determine initiation and hatch dates. Second, I helped to collect northern pintail eggs, hatch them artificially in a field camp, and rear these ducklings to three weeks of age, as a pilot study for rearing of Steller's eiders in future years under field conditions. I assisted with pen maintenance, nest searching, habitat sampling, and logistics (power supply maintenance, fuel runs to the nearest village 40 river miles away, and other duties as needed). Third, I coordinated and completed field sampling of spectacled eiders and other ducks nesting on the Yukon-Kuskokwim delta by collecting blood samples, morphometric data, and other information towards determining ranking criteria of potential reintroduction sites. My specific duties included: managing up to 8 people for 2 weeks at a time (10%); capturing birds using over-water mist nets (10%); collection of biological samples and field data (40%); and coordinating field efforts, sample processing, and motorboat operation (40%). In May 2018 and June 2022, I assisted with captures and satellite transmitter implant surgeries on spectacled eiders on the Yukon-Kuskokwim Delta and the Arctic Coastal Plain, respectively. I led crews of 4-10 people to capture eiders prior to nesting with overwater mist nets, transport them to surgical tents, and assist with sample collection and surgeries as needed. 75% of my time for these positions was allocated to capture efforts and the remainder split among other duties.

Graduate Teaching Assistant - Ornithology
Southern Illinois University, Department of Zoology, 1125 Lincoln Drive, Carbondale, IL 62902
January – May 2014-2020, 2022-2023

While completing graduate coursework at Southern Illinois University, I worked as a teaching assistant for ornithology. My duties include instructing groups of up to 30 undergraduates in bird identification, taxonomy, and ecology (75%); writing and grading quizzes and exams (15%), and cleaning and organizing the ornithology teaching collection (10%). During this period, I received very strong reviews from students and the supervising instructor.

Graduate Teaching Assistant – Cell Biology and Genomics
Southern Illinois University, Department of Zoology, 1125 Lincoln Drive, Carbondale, IL 62902
August 2017 – December 2017

I worked as a teaching assistant in workshops on biological sciences topics, designed to engage students in a collaborative, non-lecture setting. My duties included facilitating discussions among over 90 undergraduates (50%) and grading quizzes and writing assignments (50%). I worked closely with students to build their knowledge base and enhance their understanding of complex topics.

Fish and Wildlife Biologist (Environmental Contaminants)
US Fish and Wildlife Service, 101 12th Avenue, Room 110, Fairbanks, Alaska 99701
March 2011 – March 2012

I worked as a term biologist for the USFWS Environmental Contaminants program in Fairbanks, Alaska. My duties included: Planning and conducting field research on waterfowl and fish across interior Alaska, including supervising field crews of up to eight people, incubating and hatching eggs to study strontium and lead in waterfowl, and collecting fish for contaminants monitoring on National Park Service lands throughout northern and western Alaska (50%); drafting funding proposals and technical reports (10%); laboratory testing of blood samples for lead and health metrics (10%); necropsies of sea duck (including threatened spectacled and Steller's eiders) carcasses to collect tissue samples for ongoing contaminants monitoring (10%); and other duties as required, including serving as the field office's avian die-off response coordinator, maintenance of field equipment and boats, maintaining sample inventories, shipping sample catalogs to analytical facilities, data entry, and communicating study results and conclusions to a variety of audiences (20%). I completed all required training, including aircraft, watercraft, bear, and firearm safety; information technology, credit card use, and other administrative training; and oil spill response training (24-hour HAZWOPER and annual 8-hour refreshers).

Contract Fish and Wildlife Biologist
US Fish and Wildlife Service, 101 12th Avenue, Room 110, Fairbanks, Alaska 99701
December 2010 - March 2011

I worked under contract to the USFWS Environmental Contaminants program in Fairbanks, Alaska. My duties included: Necropsying sea ducks and raptors to collect liver, kidney, toenails and feather samples for contaminants and stable isotope analysis, determine probable cause-of-death and record any gross anomalies (50%); contaminants database creation and maintenance (20%); data entry (10%); training USFWS personnel to conduct necropsies (5%); analyzing avian blood samples using a portable analyzer for contaminants and health biomarkers (10%); and additional tasks as required, including preparing and shipping samples for laboratory testing, proofing data from other studies, preparing technical reports for law enforcement and managers regarding data collection and analysis, and logging actions in the USFWS TAILS program (5%).

Biological Sciences Technician
US Fish and Wildlife Service, Environmental Contaminants Program, 101 12th Avenue, Room 110, Fairbanks, AK 99701
May 2010 – November 2010

I was responsible for finding and collecting eggs from boreal nesting ducks (mallard, American wigeon, northern shoveler, lesser scaup, canvasback, and green-winged teal; 10%); capturing and drawing blood samples from adult and juvenile birds which I then analyzed using a portable blood lead analyzer (LeadCare II; 50%); planning and implementing a study assessing blood lead levels in dabbling and diving ducks at an illegal target range and waste disposal site in Fairbanks, Alaska (including drafting protocols; 5%); collecting whitefish muscle samples for metals and organic contaminants analysis (5%); conducting sea duck necropsies (10%); drafting protocols, reports, and editing proposals for future studies (5%); training and overseeing two other technicians during laboratory work and maintaining equipment and laboratory space to meet the needs of the contaminants program (5%).

Additionally, in June and July 2010, I took part in the USFWS response to the Deepwater Horizon oil spill in the Gulf of Mexico (10%). Based in Myrtle Grove and Hopedale, LA, I served as the local FWS point-of-contact and crew leader conducting surveys for oil and oiled wildlife by foot, boat and ATV, including capturing oiled and injured birds (pelicans, terns, gulls, shorebirds, cormorants, and roseate spoonbills), assessing effectiveness of protocols, and transferring captured birds to rehabilitation center personnel; collecting bird carcasses for the Natural Resource Damage Assessment and Recovery (NRDAR) program; leading twice daily safety and procedural briefings; data and chain-of-custody recording using ArcGIS Mobile devices; and explaining the USFWS mission and bird safety to local residents and cooperated with LA Department of Wildlife and Fisheries, NOAA, municipal government, and Audubon Society employees and volunteers.

Biological Technician - Wildlife
Natural Resources Office, Fort Wainwright, AK
May 2009 – November 2009

I worked for the Fort Wainwright Natural Resources program as a contractor through Colorado State University. I implemented a waterfowl and waterbird monitoring program by drafting protocols, conducting breeding pair and brood surveys, and monitoring cavity-nesting ducks (20%); surveyed and observed non-game wildlife, including passerine point-count surveys and osprey behavioral observations to establish an activity budget (20%); performed data management, entry, analysis, and report writing, including waterfowl reports entitled *2009 Fort Wainwright Waterfowl Productivity and Monitoring Report*, and *2009 Donnelly Training Area Waterfowl Population Monitoring Report* (20%); and other duties as needed, including habitat quality assessments for upland game birds, establishing a fish monitoring program, vegetation surveys, recreation management, wood fuels reduction, cruising timber, and ground-truthing satellite imagery data (20%). I operated four-wheel drive vehicles, ATVs, canoes, and motorboats, flew in helicopters, and hiked long distances in difficult terrain. I assisted state, federal and private agency research efforts including sampling two stream systems with USFWS personnel for evidence of use as salmon rearing habitat for the State of Alaska Anadromous Fish Database. We sampled for salmon parr using seine nets and minnow traps, documented adult salmon carcasses, recorded other fish species observed, and measured stream characteristics including flow, volume, and water chemistry. Research sites were reached by helicopter and exited using inflatable canoes to reach a road-accessible take-out. I served as a safety escort while working near possible unexploded ordinance.

Research Aide
Institute of Arctic Biology, 311 Irving I, University of Alaska Fairbanks, Fairbanks, Alaska 99775
November 2008 – May 2009

To update and modernize historical Alaska Department of Fish and Game (ADFG) moose management data, I digitized 50 years of moose survey ADFG data using ArcGIS (75%) and Microsoft Access and Excel (25%) software. These data are currently being used to study historical moose surveys to refine subsistence and harvest management decisions in interior Alaska.

Biological Science Technician - Avian
Yukon Flats National Wildlife Refuge, 101 12th Avenue, Room 264, Fairbanks, Alaska 99701
April 2008 – October 2008

I was responsible for conducting waterfowl research on lesser scaup testing the spring condition hypothesis, which is that reduced body condition at arrival reduces productivity. I captured and marked birds and swabbed them for avian influenza (15%), resighted marked birds using spotting scopes and ground-based (daily) and aerial radio telemetry (weekly; 20%), nest searched and monitored waterfowl nests (15%), led a 3-person crew in a remote field camp capturing and banding dabbling ducks (20%), performed data management and analysis including submitting banding data to USGS using Bandit software (10%), coordinated field gear and logistics for a 3-month field season (10%), analyzed an eight-year Dall sheep satellite telemetry dataset in ArcGIS (5%), and other work as needed including capturing dragonflies for biodiversity assessment, constructing a storage building, and winterizing field equipment and machinery (5%). Access to the camp was via helicopter and float plane.

College Intern II
Alaska Department of Fish and Game, Veterinary Services, 1300 College Road, Fairbanks, Alaska 99701
February 2008 – May 2008

I analyzed gray wolf carcasses for ectoparasites such as lice, fleas, and orbatid mites to assess the prevalence of the biting dog louse in interior Alaska. Primary tasks included hide digestion using KOH solutions to dissolve hides (30%); parasites identification and collection using a dissecting microscope (30%); assisting the state veterinarian with wildlife necropsies including bear, moose, wolverine, wolf, and sheep (20%); cleaning and aging lynx skulls (10%); and data entry and management (10%). I also maintained and cleaned laboratory equipment used for this project. I also assisted ADF&G biologists with other tasks related to furbearer management as needed.

Biological Sciences Technician – Avian
Alaska Maritime National Wildlife Refuge, 95 Sterling Hwy, Suite 1, Homer, Alaska 99603
May 2007 - September 2007

At a remote field camp in the Aleutian Islands, I monitored seabird reproductive biology by determining nesting chronology, hatching rates, chick development, conducting fledgling counts, burrow occupancy surveys, chick food sample collection, and mist-netting adults to collect food (25%); censused breeding populations throughout the season by boat and foot using binoculars and spotting scopes (25%); performed data entry, analysis, and drafted a final report entitled *Biological Monitoring at Aiktak Island, Alaska in 2007* (20%); maintained boats, motors, generators, and other field equipment (20%); and conducted daily radio checks and safety briefings (10%). I used satellite phones and SSB radios for communication. Access was by ship and field work lasted four months with a single resupply.

Laboratory Research Assistant
University of Alaska Fairbanks, Alaska Cooperative Fish and Wildlife Research Unit, Room 209 Irving I, Fairbanks, Alaska 99775
January 2005 – May 2007

I worked on two laboratory projects on king eiders and common ravens. I prepared eider stable isotope samples (20%); collected and prepared contour feathers from nest materials for genetic analysis (20%); dissected regurgitated food items from raven nesting and roosting sites, including creating protocols (30%); determined nest predation rates by common ravens of tundra-nesting waterfowl (20%); and created and maintained a database for all of these data (10%).

Biological Research Aide
University of Alaska Fairbanks, Alaska Cooperative Fish and Wildlife Research Unit, Room 209 Irving I, Fairbanks, Alaska 99775
June, August 2006

I captured adult and juvenile king eiders with mist nets in the Kuparuk oil field to surgically implant satellite transmitters. I located and captured ducks on remote tundra ponds (mist-netting, banding, drawing blood, taking morphological measurements, and collecting feather samples; 75%) and assisted with surgical PTT transmitter implantation (25%). I monitored vital signs during and after surgery and later released birds at capture sites.

Biological Research Aide
University of Alaska Fairbanks, Alaska Cooperative Fish and Wildlife Research Unit, Room 209 Irving I, Fairbanks, Alaska 99775
May 2006-August 2006

I helped study the ecology of a non-native population of common ravens on Alaska's North Slope by capturing adults and juveniles with hand nets, mist nets, dho-gaza nets, remote-controlled bow nets, and custom modified bear dumpsters with sliding doors to trap the bird inside the dumpster (dump traps; 20%); marking birds with patagial tags, metal and plastic color bands, and measuring and recording morphology data (15%); nest monitoring (locating and mapping nest sites, recording nest success and chick development; 15%); monitoring raven family groups using radio telemetry and spotting scopes (20%); data entry (Microsoft Access, Excel and ArcGIS; 10%); speaking to oil workers as outreach and to gain local knowledge of ravens (10%); and maintaining field equipment (vehicle maintenance, repairing traps and nets; 10%). Work was often at odd hours, under inclement conditions, and took place in an oil production area with strict safety guidelines.

Forestry Consulting Technician
Dirigo Timberlands Management Company, PO Box 481, North Anson, ME, 04958
May 2005 – August 2005

I led a three-person crew maintaining over 20 miles of property boundaries (30%); managing harvest and pre-harvest assessment by stand-typing, grading timber, profitability analyses, drafting forest management plans for private woodlot owners, marking timber (25%); mapping property, inventory, and environmental data and georectifying aerial photos in ArcGIS (20%); determined Best Management Practices (BMPs), including delineating and marking special regulatory zones, water bodies, and water bar construction (15%); assessed road and bridge development options (5%); and operated heavy equipment including tractors, backhoes, bulldozers, boats, ATVS and 4WD vehicles (5%).

VOLUNTEER EXPERIENCE

Sharp-Tailed Grouse Telemetry Volunteer, Alaska Department of Fish and Game, 1300 College Road, Fairbanks, Alaska 99701. April – May 2010

Waterfowl Research Assistant, Biodiversity Research Institute, 19 Flaggy Meadow Road, Gorham, Maine 04038. January 2010 – March 2010

New England Cottontail Research Assistant, Rachel Carson National Wildlife Refuge, 321 Port Road, Wells, Maine 04090. January 2010 – March 2010

Alaska Wood Bison Reintroduction Technician, Alaska Department of Fish and Game, 1300 College Road, Fairbanks, Alaska 99701. November 2008, March 2009

Snow Goose Monitoring Volunteer, LGL Alaska Research Associates Inc., 1101 East 76th Avenue, Suite B, Anchorage, Alaska 99518, July 2006

Swan Research Volunteer, ABR Inc, PO Box 80410, Fairbanks, Alaska 99708. July 2006

Avian Influenza Volunteer, US Fish and Wildlife Service, Division of Migratory Birds, 1011 E Tudor Road, Anchorage, Alaska 99503, July 2006

Assistant Guide, Allagash Guide Incorporated, 292 River Road, Norridgewock, ME 04957. Summers 2002-2004

Field Research Assistant, Biodiversity Research Institute, 19 Flaggy Meadows Road, Gorham, Maine 04038. August 2002 – May 2004

Wildlife Technician, Maine Department of Inland Fisheries and Wildlife, Region B Office, 689 Farmington Road, Strong, Maine, 04983. January 2004

Wildlife Technician, Androscoggin Lake Improvement Corporation, PO Box 231, Wayne, Maine 04284. March 2001-June 2003

MULTICULTURAL EXPERIENCE

Proficient in Norwegian (Bokmål and Nynorsk), written and oral
Experience working with individuals from many different ethnic and cultural backgrounds, including Alaska natives and other Native Americans

TRAINING AND CERTIFICATIONS

US Government Training:
US Fish and Wildlife Service Region 7 IACUC training (modules 1-General, 2-Birds, 3-Mammals, 4A-Euthansia), June 2022 and prior
US Department of the Interior bear and firearm safety training, range qualification June 2022 and prior
US Fish and Wildlife Service all-terrain vehicle and utility-terrain vehicle training, May 2017 (renewed)
US Department of the Interior B3 aircraft safety training, May 2017 (renewed)
US Department of the Interior MOCC (watercraft training) course, May 2008 (renewed May 2018)
US Fish and Wildlife Service Region 7 Oil Spill Response training, October 2011
US Fish and Wildlife Service Environmental Contaminants training, November 2010
US Department of the Interior A-312 Water Ditching and Survival course, October 2010
FEMA Incident Command System modules IS-100, IS-200, IS-700, June 2010
US Army driver safety training, May 2009
US Department of Defense unexploded ordinance safety training (UXO), May 2009
US Department of Agriculture driver safety certification, May 2006

Safety training*:*
Maine driver's license
American Red Cross Adult and Pediatric CPR/AED, expires May 2023 (renewed annually since 2004)
American Red Cross Adult and Pediatric First Aid, expires May 2023 (renewed annually since 2004)
24-Hour HAZWOPER course (online at www.oshacampus.com), June 2010 (most recent 8-hour refresher March 2016)
American Red Cross Wilderness First Aid, April 2011
BP Post-Emergency Spilled Oil Cleanup training for MC252 oil spill, June 2010

ATV Safety Institute ATV operator training course, May 2009
North Slope Oil Field unescorted safety training, May 2006
Clean driving record; able to operate and maintain manual and automatic transmission vehicles including 4WD and trailering

Other applicable training:
University Institutional Animal Care and Use Committee (IACUC) certifications, May 2006 to present
Alaska Alpine Club ski mountaineering course, January 2005
Maine Guide Certification preparation course, November 2003
Maine Hunter Safety & Conservation program, September 1995

Proficiencies:
Proficient with use and maintenance of firearms
Proficient with the operation and maintenance of boats (up to 26 feet), ATVs, UTVs, and snowmobiles
Proficient with use of computing software, including MS Office, R, JMP, Primer, SigmaPlot, and ArcGIS (current and prior versions)

MEMBERSHIP IN ORGANIZATIONS

The Wildlife Society - Member since 2005; Active in UAF student chapter (President, 2007-09; Vice President 2006-07; Treasurer, 2005-06); Meetings attended: 2009 Alaska Chapter and Northwest Section meeting (Fairbanks, AK), 2008 Alaska Chapter meeting (Anchorage, AK), 2006 National Meeting (Anchorage, AK)
Ecological Society of America - Member since 2020
Ducks Unlimited - Member since 2007. Co-advisor of student chapter at Southern Illinois University 2017-2020
Zoology Graduate Student Association, Southern Illinois University Carbondale – President 2017-2018; 2015-2016, Vice-President 2014-2015
Zoology Seminar Series Student Organization, Southern Illinois University Carbondale – co-director 2017-2018
Graduate Students Assisting Science in Schools (GRASS) – Active member since 2013; lead 7-10 conservation outreach programs annually for students ranging from kindergarten through 12th grade
Backcountry Hunter and Anglers - Member since 2010
Trout Unlimited - Member since 2008
Midnight Sun Fly-casters - Member since 2005, volunteer fly-fishing and fly-tying instructor 2005-2012
The Izaak Walton League of America - Member-at-large 2004-Present; Maine Chapter Charter Board Member 2003-04

Honors societies:
University of Alaska Fairbanks Honors Program - Student Council President 2007-08; Member 2004-09, current alumnus
The National Society of Collegiate Scholars
Member since 2005, UAF Chapter President 2006-07, attended 2006 Western Regional Conference, Los Angeles, CA, January 2006
Golden Key International Honors Society - Member since 2006

PROFESSIONAL PRESENTATIONS

Oral Presentation: *PFAS exposure of Maine's loons and eagles.* **Miller, M.**, C. DeSorbo, L. Savoy, E. Fellows, H. Yurek, C. Persico, L. Route, and D. Evers. Maine Lakes Conference. June 2024.
Oral Presentation: *Vectors of PFAS exposure to predatory waterbirds.* **Miller, M.**, C. DeSorbo, L. Savoy, E. Fellows, H. Yurek, C. Persico, L. Route, and D. Evers. Maine Water and Sustainability Conference. March 2024.

Oral Presentation (virtual): *Prey availability & foraging activity by tundra-nesting sea ducks: strong preference for specific wetland types.* **Miller, M. W. C.**, J. R. Lovvorn., N. Graff, N. Stellrecht, and S. P. Plesh. International Sea Duck Conference, virtual venue. January 2024.

Oral Presentation (virtual): *Machine learning insights into nest site selection by Arctic sea ducks: a multispecies and multiscale perspective.* **Miller, M. W. C.**, J. R. Lovvorn., N. Graff, N. Stellrecht, M. J. Lara, and C. G. Andresen. International Sea Duck Conference, virtual venue. January 2024.

Oral Presentation: *Decadal shifts in patterns and benefits of nesting near territorial predators by tundra-nesting sea ducks.* **Miller, M. W. C.**, J. R. Lovvorn., N. Graff, N. Stellrecht, L. Quakenbush, and D. Safine. American Ornithologist Union Conference, Anchorage, Alaska. June 2019.

Oral Presentation: *Sources of nutrients to incubating sea ducks: The roles of marine and freshwater inputs.* **Miller, M. W. C.**, and J. R. Lovvorn. 6th International Sea Duck Conference, Tiburon, California. February 2017.

Poster: *Assessment of bioindicator approaches for trace elements and sublethal health effects in sea ducks breeding in Arctic Alaska.* **Miller, M. W. C.**, J. R. Lovvorn, A. C. Matz, R. J. Taylor, C. J. Latty, D.E. Safine, T.E. Hollmén, and M.L. Brooks. 6th International Sea Duck Conference, Tiburon, California. February 2017.

Oral Presentation: *Trace elements in sea ducks of the Alaskan Arctic coast: Patterns of variation among species, sexes, and ages.* **Miller, M. W. C.**, J. R. Lovvorn, A. C. Matz, R. J. Taylor, C. J. Latty, and D. E. Safine. 7th North American Duck Symposium: Ecology and Integrated Management of Waterfowl, Annapolis, Maryland. February 2016.

Poster: *Comparing trace elements among five Arctic-breeding sea ducks*. **Miller, M. W. C.**, J. R. Lovvorn, R. J. Taylor, A. C. Matz, and C. J. Latty. 5th International Sea Duck Conference, Rekjavik, Iceland. September 2014.

Poster: *Metals in Alaskan Steller's and spectacled eiders*. **Miller, M. W. C.**, C. Latty, and A. Matz. 4th International Sea Duck Conference, Seward, Alaska. September 2011.

Poster: *Predicting benthic biomass in the Bering Sea using environmental data and a Random Forest modeling algorithm*. **Miller, M. W. C.**, S. Oppel, and F. Huettmann. 2008 Alaska Marine Science Symposium, Anchorage, Alaska. January 2008.

INVITED PRESENTATIONS

Habitat use of sea ducks in a changing Arctic. Biodiversity Research Institute. February 2023. Online.

Wildlife habitat in the Alaskan Arctic. University of Wisconsin Madison. March 2021. Online.

Factors influencing population change in Arctic-breeding sea ducks. Ornithology course (ZOOL 467), Southern Illinois University, February 2019. In person.

Decadal shifts in patterns and benefits of nesting near terrestrial predators: lemming cycles, fox control, and tundra-nesting sea ducks. U.S. Fish and Wildlife Service - Eider Recovery Team, February 2018. In person.

Nutrient sources for reproduction of eiders, nest habitat selection and projected changes in habitat availability on the Arctic Coastal Plain, Alaska. U.S. Fish and Wildlife Service - Eider Recovery Team, February 2018. In person.

Contaminant impacts on tundra-breeding sea ducks of northern Alaska. U.S. Fish and Wildlife Service - Eider Recovery Team, February 2018. In person.

Climate change impacts on Arctic-breeding sea ducks. Ornithology course (ZOOL 467), Southern Illinois University, January 2018. In person.

Changing breeding habitats of Arctic sea ducks – adapt or die? Southern Illinois University chapter of Ducks Unlimited, November 2017. In person.

Nutrient limitation in Arctic-breeding sea ducks: An application of the spring condition hypothesis. SIU Zoology Club and Wildlife Society student chapter. Southern Illinois University. April 2017.

Waterfowl research and monitoring. Honors program in science seminar series, Central Maine Community College. January 2017. Online.

Trace elements, health effects, and implications for biomonitoring in Arctic sea ducks. Ornithology course (ZOOL 467), Southern Illinois University, January 2017. In person.

Wetland birds: Ecology, ID, and how to bring them to the classroom. Environment and Nature Training Institute for Conservation Education (ENTICE), *Illinois' Wetland Ecosystem Organisms* workshop, Cache River Wetlands Center. October 2016. In person.

Eider research in Alaska and *An overview of the US Government hiring process.* Forestry for Wildlife course (FOR 405), Southern Illinois University. April 2014-2016 (two class visits for each of three years). In person.

Breeding ecology of common loons. Handcock and Sand Ponds Association. August 2015. In person.

Lead exposure and ongoing risk to waterfowl breeding in northern Alaska. Ornithology course (ZOOL 467), Southern Illinois University, January 2015. In person.

Breeding ecology of Arctic waterfowl. Ornithology course (ZOOL 467), Southern Illinois University. February 2014. In person.

Breeding ecology of ducks in northern Alaska. Southern Illinois Audubon Society. March 2014. In person.

Strontium in Lesser Scaup. Ornithology course, Southern Illinois University. February 2013. In person.

PUBLICATIONS AND REPORTS

Peer-reviewed publications:

Miller, M. W. C., J. R. Lovvorn, N. R. Graff, N. C. Stellrecht, and S. P. Plesh (2023) *Sea duck use of tundra wetlands: strong preference for specific wetland types*. Ecology and Evolution 10.1002/ece3.10375. (lead author)

Plesh, S. P., J. R. Lovvorn, and **M. W. C. Miller** (2023) *Organic matter sources and flows in tundra pond food webs.* PlosONE. *Accepted article.* (Co-author)

Miller, M. W. C., J. R. Lovvorn, N. R. Graff, and N. C. Stellrecht (2022) *Use of marine vs. freshwater proteins for egg-laying and incubation by sea ducks breeding in Arctic tundra*. Ecosphere 10.1002/ecs2.4138.

Miller, M. W. C., J. R. Lovvorn, A. C. Matz, R. J. Taylor, M. L. Brooks, C. J. Latty, and T. Hollmén (2019) *Interspecific patterns of trace elements in sea ducks: Can surrogate species be used in contaminants monitoring?* Ecological Indicators 98: 830-839.

Miller, M. W. C., J. R. Lovvorn, A. C. Matz, R. J. Taylor, C. J. Latty, and D. E. Safine (2016) *Trace elements in sea ducks of the Alaskan Arctic coast: Patterns of variation among species, sexes, and ages*. Archives of Environmental Contamination and Toxicology 71: 297-312.

Lovvorn, J. R., M. F. Raisbeck, L. W. Cooper, G. A. Cutter, **M. W. Miller**, M. L. Brooks, J.M. Grebmeier, A.C. Matz, and C. M. Schaefer (2013) *Wintering eiders acquire exceptional Se and Cd burdens in the Bering Sea: physiological and oceanographic factors.* Marine Ecology Progress Series 489: 245-261. (Co-author)

Peer-reviewed publications in review:

Miller, M. W. C., J. R. Lovvorn, C. M. Andresen, M. J. Lara, J. Brown, N. R. Graff, and N. C. Stellrecht. *Machine learning insights into nest site selection by Arctic sea ducks: a multispecies and multiscale perspective*. Ecological Monographs. *In review*.

Dittmer, E. M., J. R. O'Connell, M. W. Eichholz, and **M. W. C. Miller**. *Evaluating hunter surveys at Oakwood Bottoms Greentree Reservoir in Southern Illinois.* Human Dimensions of Wildlife. *In review.* (Co-author)

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