

**Aaron C. Young, Ph.D.**

Postdoctoral Researcher  
 Department of Fish, Wildlife and Conservation Science  
 New Mexico State University  
 Las Cruces, NM 88003

**Education**

Ph.D. (Fish and Wildlife Sciences), May 2022, University of Idaho, Moscow, Idaho  
 MS (Biology), 2017, University of Nebraska Omaha, Omaha, Nebraska  
 BS (Biology), 2004, Western Michigan University, Kalamazoo, Michigan  
 BS (Environmental Studies), 2004, Western Michigan University, Kalamazoo, Michigan

**Teaching and Research Appointments**

August 2022 – December 2022 – Co-Instructor, Principles of Ecology, WLF220, University of Idaho  
 - *Lectured, created class materials and developed learning outcomes, and student advising for a class of 76 Sophomores*

August 2022 – December 2022 – Co-Instructor, Exploring Natural Resources, NR101, University of Idaho  
 - *Lectured, created class materials and developed learning outcomes, and student advising for a class of 160 freshmen*

May 2022 – August 2022 – Primary Instructor, Wildland Habitat Ecology and Assessment, WLF 411/511, University of Idaho

January 2022 – May 2022 – Primary Instructor, Environmental Project Management and Decision Making, NRS 576, University of Idaho

January 2022 – May 2022 – Primary Instructor, History of Energy, ENVS 484, University of Idaho  
 - *Responsible for managing, lecturing, and grading an online summer semester classes*

May 2021 – August 2021 – Primary Instructor, Wildlife Habitat Ecology and Assessment, WLF 411 University of Idaho  
 - *Responsible for managing, lecturing, and grading an online summer semester class*

January 2021 – May 2021 – Co-instructor, Management and Communication of Scientific Data, WLF 370, University of Idaho  
 - *Responsible for designing course material and lectures introducing students to data management and basic statistics in Program R in coordination with university faculty.*

January 2020 – May 2020: Lab Instructor Ornithology, WLF 482 University of Idaho  
 - *Responsible for creating and delivering the lab portion of the class*

2017 – present – Research Assistant, University of Idaho  
 2017 – 2019 – Teaching Assistant, University of Idaho  
 2014 – 2016 – Teaching Assistant, University of Nebraska-Omaha

### **Refereed Publications**

Young, A.C., T. Katzner, D. Shinneman, T.J. Johnson. 2021. Structural resources and generalist avian predators: implications for tree expansion in shrubland ecosystems, PLOS one; *in review*.

Young, A.C., T. Katzner, D. Shinneman, T.J. Johnson. 2021. Expanding and invading plants in sagebrush steppe affect multiple aspects of small mammal ecology, Journal of Wildlife Management, in preparation.

Young, A.C., T. Katzner, D. Shinneman, T.J. Johnson. 2021. Conifer and sagebrush songbirds: large scale restoration and community change. Restoration ecology, 2021; in preparation.

Johnson, T.N., A. Young, S.J. DeBano, and P.L. Kennedy. Grazing-induced plant responses cascade to multiple trophic levels: implications for diet quality of grassland songbirds. Biological Conservation; in preparation.

Young, A.C., W.A. Cox, J.P. McCarty, and L.L. Wolfenbarger. 2019. Habitat selection and survival of Henslow's sparrow during the post-fledging period: Management implications for a critical life stage. Avian Conservation Ecology, 14(2):10. <https://doi.org/10.5751/ACE-01418-140210>

### **Research Presentations**

9. Young, A.C. and T.N. Johnson. 2020. Removing juniper in the sagebrush ecosystem: testing the relationship between juniper and avian predators. The Idaho Chapter of the Wildlife Society Meeting, Moscow, ID
8. Young, A.C. and T. N. Johnson. 2019. Juniper expansion in the sagebrush ecosystem: avian predator occupancy patterns and implications for Sage-Grouse habitat restoration. Annual Meeting of the American Ornithological Society, Anchorage, Alaska.
7. Johnson, T.N., A.C. Young, S. DeBano, and P.L. Kennedy. 2019. Grazing-induced trophic relationships and implications for grassland songbirds. Annual Meeting of the American Ornithological Society, Anchorage, Alaska.
6. Young, A. C., T. N. Johnson, T. E. Katz, and D. J. Shinneman. 2019. Effects of juniper expansion on the functional composition and habitat use of the sagebrush small mammal community. The Idaho Chapter of The Wildlife Society meeting, Boise, ID.
5. Young, A.C. and T.N. Johnson. 2018. Songbirds and sage-grouse conservation: maximizing management. Palouse Audubon Society, Moscow, ID.
4. Young, A.C., D. Shinneman, and T.N. Johnson. 2018. Juniper removal in sagebrush communities: implications for species interactions. The Idaho Chapter of the Wildlife Society Annual Meeting, Fort Hall, Idaho.
3. Young, A.C., D. Shinneman, and T.N. Johnson. 2018. Juniper removal in sagebrush communities: implications for species interactions. Annual Meeting of the Society for Range Management, Sparks, NV.
2. Young, A.C., W.A. Cox, J.P. McCarty, and L.L. Wolfenbarger. 2018. Post fledging habitat use and seasonal productivity of Henslow's sparrow. Annual Meeting of the Society for Range Management, Sparks, NV.

1. Young, A.C., W.A. Cox, J.P. McCarty, and L.L. Wolfenbarger. 2016. Seasonal fecundity, post-fledging survival, and habitat selection of Henslow's sparrow. North American Ornithological Conference, Washington, D.C.

## **Experience**

### **Research**

2021-Present – *Invited participant in a USGS-led literature review of the effects of conifer removal in sagebrush habitat on wildlife and vegetation. The BLM requested this review as part of a proposal for categorical exclusions for conifer removal projects. My role in this review is to spatially summarize conifer removal projects across the Great Basin using the Land Treatments Digital Database and create visual data products that highlight aspects such as the size of the project (ha) and the spatial correlation between conifer removal and ecological research. The visual data products created will be used in future peer-reviewed publications.*

2017-Present – *Planned and conducted a research project for my PhD examining the effects of conifer expansion and habitat restoration in sagebrush habitat on the distribution and community composition of songbirds, density and movement of small mammals, and occupancy of avian predators of sage-grouse including ravens and red-tailed hawks. I managed six field technicians and coordinated with researchers at the Bureau of Land Management. I prepared three manuscripts for publication.*

2014-2016 – *Planned and conducted a research project for my masters examining the effects of habitat on Henslow's sparrow vital rates in southwest Missouri. I managed five field technicians and coordinated with state biologists. I developed novel approaches to capturing and radio-tagging both adult and nestling Henslow's sparrows, and extensively measured habitat characteristics such as grass and forb cover and cover of invasive sumac shrubs. This research produced a publication and presentations at the 2016 North American Ornithological Conference and Annual Conference of the Society for Range Management.*

2013 – *Designed and conducted surveys of grassland songbirds in southwest Michigan for a PhD researcher at Michigan State University. Funders had requested information about the effects of grassland restoration on the songbird community, so I was asked by the primary researcher to design a survey protocol and coordinate a group of volunteer surveyors. I implemented a point count survey design for restoration sites across southwest Michigan.*

### **Statistical Methods**

Methods implemented as PhD student:

- Bayesian multi-season occupancy model – *I used an auto-logistic model formulation to test the effects of habitat characteristics at multiple spatial scales on occupancy of ravens and red-tailed hawks in sagebrush/juniper habitat. I used leave-one out cross validation and Bayesian p-values to select the most predictive models.*
- Bayesian integrated occupancy model – *I developed a novel model that integrates single-season, single-visit presence/absence data with multi-season, multi-visit occupancy data to expand our ability to make inference on the effects of habitat on avian predator occupancy.*
- Bayesian and frequentist N-mixture models - *I developed Bayesian N-mixture and Bayesian community N-mixture models. I used frequentist N-mixture models in the final dissertation to estimate songbird abundance in relation to habitat characteristics such as shrub structure and juniper cover.*
- Spatially-explicit capture-recapture (SECR) models – *I used frequentist SECR models to*

- estimate the density and movement of uniquely marked small mammals in response to habitat characteristics.*
- Cormack-Jolly-Seber (CJR) models – *I used CJR models to estimate small mammal survival as a function of habitat characteristics.*
  - Non-linear mixed models (NLMM) – *I used NLMM models to test the effects of food resources on nestling growth.*
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Methods implemented as a Masters student:

- Survival models – *I published research that used Kaplan-Meier survival models to estimate survival of grassland bird fledglings.*
- Resource selection functions (RSF) – *I published research that used mixed effects RSFs to examine habitat selection by a fledgling grassland bird.*
- Nest survival and fledgling survival models – *I published research that used mixed effects models to examine the effects of habitat on nest and fledgling survival of a grassland bird.*

### **Statistical Training**

2019 – Bayesian Integrated Population Model workshop, University of Montana, Missoula, MT.

- Drs. Marc Kery and Michael Schaub, Swiss Ornithological Institute

2019 – Intro to Bayesian Statistics, STAT 535

- Dr. Erkan Buzbas, University of Idaho

2018 – Nonparametric Statistics, STAT 514

- Dr. Erkan Buzbas, University of Idaho

2018 – Resource Selection Analysis, WLF 504, University of Idaho

- Drs. Sophie Gilbert and Ryan Long

2017 – Applied Population Analysis, WLF 504, University of Idaho

- Dr. Sophie Gilbert

2016 – Vertebrate Population Analysis, NRES 880, University of Nebraska

- Dr. Larkin Powell

2015 – Ecological Statistics, NRES 803, University of Nebraska

- Dr. Andrew Tyre

### **Spatial and Data Visualization Training**

2017 – Directed Study: Vegetation Mapping in Juniper, REM 502, University of Idaho

2015 – Environmental Remote Sensing, GEOG 8636, University of Nebraska-Omaha

2015 – GIS Applications for the Environment, BIOL 8606, University of Nebraska-Omaha

### **Technical Proficiencies**

Programs R, JAGS, WinBUGS, ArcGIS, QGIS

**Teaching**

Teaching Assistant Appointments - 2014-2019 – Principles of Biology, BIOL 1020; Flora of the Great Plains, BIOL 3530; Fish and Wildlife Applications, WLF 201; Wildland Habitat Ecology and Assessment, REM 504; Communication of Scientific Data, WLF 370; Exploring Natural Resources, NR 101; Ornithology, WLF 482

Guest lecture - Wildland Habitat Ecology and Assessment, REM 504; Riparian Ecology and Management, FISH 430

**Undergraduate Senior Thesis Students Co-Advised with faculty**

2018 - 2019: Kaleala Bass, BS, Fish and Wildlife Sciences, University of Idaho

- *Perch use by avian predators in a sagebrush-conifer ecosystem*

2015 - 2016: Keri Sherman, BS, Biology, University of Nebraska Omaha

- *Effect of shrub expansion on territory size of Henslow's sparrow*

**Awards and Fellowships**

**Graduate Committee Travel Award**, University of Idaho – May 2018 - \$500

**Graduate Research Award**, University of Idaho - Support for research activities, November 2017 - \$1,500

**Student Travel Award, North American Ornithological Conference** – Washington D.C., August 2016.

**Graduate Presentation Award, Honorable Mention** - Research and Creative Activity Fair, University of Nebraska at Omaha, March 4, 2016.

**University Committee on Research and Creative Activity Award**, University of Nebraska at Omaha - Support for research activities, February 15, 2016 - \$500

**Rhodin Biological Fellowship**, University of Nebraska at Omaha - March 2015, \$13,000

**Graduate Research and Creativity Award**, University of Nebraska at Omaha - Support for research activities, March 15, 2015 - \$5,000

**Biology Department Research Award**, University of Nebraska at Omaha - Support for research activities, February 2015 - \$500

**University Committee on Research and Creative Activity Award**, University of Nebraska at Omaha - Support for research activities, December 2014 - \$500

**Professional Service**

2019 – Faculty promotion review committee, University of Idaho, Fish and Wildlife Sciences

2018 – Search committee for spatial ecologist faculty position, University of Idaho, Fish and Wildlife Sciences

**Manuscript Review**

Ringling and Migration – British Trust for Ornithology, Wilson Journal of Ornithology, Avian Conservation and Ecology

## **References**

Dr. Tracey Johnson  
Director of Research, Rinker Creek Rock Ranch  
Assistant Professor, Department of Fish and Wildlife Sciences, University of Idaho  
Dissertation advisor  
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