



# Cooperative Fish and Wildlife Research Units

## Directory of Expertise



## HOW TO USE THIS DOCUMENT

### INSTRUCTIONS

The following pages contain an overview of the CRU program, an explanation of the process to identify and fund needed research and a page for each scientist (by Unit) to convey their research expertise, the taxon groups they've studied, a short biography and their recent projects and publications.

You can navigate this document several ways.

### USING BOOKMARKS

Use the bookmarks panel to navigate to a Unit (in alphabetical order) and expand the bookmark to see the scientists at that Unit.

### SEARCH BY EXPERTISE OR TAXON

You can search this document using the expertise or taxon search terms on the right. Use the Find function (ctrl + f) to toggle through the scientists who have self-selected the search term of interest.

### EXPERTISE SEARCH TERMS

Adaptive Management	Human Dimensions
Anthropogenic Impacts	Hydroacoustics/Bioacoustics
Aquatic Ecology	Invasive Species
AI/Machine Learning	Landscape Ecology
Behavioral Ecology	Managed Flows/Hydrology
Biodiversity	Marine/Coastal Ecology
Biogeochemistry	Movement Ecology
Botany	Nutritional Ecology
Climate Change	Paleontology
Conservation Genetics/Genomics	Physiology
Contaminants	Policy
Decision Support/Analysis	Population and Community Ecology
Desert Ecology	Population Dynamics
Disease/Parasites	Predator-Prey Dynamics
Ecological Flows	Remote Sensing
Ecological Services	Resilience
Economic Analysis	Species Distribution Modeling
eDNA	Species Management
Energy: Development/Alternative	Species Status Assessments
Entomology	Statistics and Modelling
Epidemiology	Stream Ecology
Evolutionary Ecology	T&E Species Management
Fire Ecology	Toxicology
Fisheries Management	UAVs
Forest Ecology	Urban Ecology
GIS/Spatial Analysis	Water Quality
Grassland Ecology	Wetland Ecology
Habitat Management	Wildlife Management

### TAXON SEARCH TERMS

Amphibians	Mussels
Anadromous Fishes	Nongame Fish/Wildlife
Bats	Pollinators
Carnivores	Reptiles
Coastal/Marine Birds	Salmonids
Crayfish	Sea Turtles
Freshwater Fishes	Small Mammals
Furbearers	Songbirds
Gamebirds	Species of Greatest Conservation Need
Gamefish	Ungulates
Invertebrates/Insects	Water/Marsh Birds
Marine Fishes	Waterfowl

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## ABOUT THE CRU PROGRAM

### UNIQUE COOPERATIVE MODEL

The Cooperative Research Units program is a unique model of cooperative partnerships among Federal and State Governments, Universities, and the Wildlife Management Institute. These partnerships are maintained as one of USGS's strongest links to Federal and State land and natural resource management agencies.

### HISTORY

The Cooperative Research Units program was established in 1935 to meet the need for trained personnel in the rapidly growing field of wildlife management, and to provide better technical information for professional wildlife managers. In 1960 Congress enacted Public Law 86-686, which extended statutory recognition to the program and authorized the Secretary of the Interior to enter into cooperative agreements with universities, State fish and wildlife agencies, and non-profit organizations to coordinate fish and wildlife research and training programs.

### MISSION

The Cooperative Research Units program consists of 43 Cooperative Fish and Wildlife Research Units located on university campuses in 41 states. The three-fold mission of the Cooperative Research Units program is to:

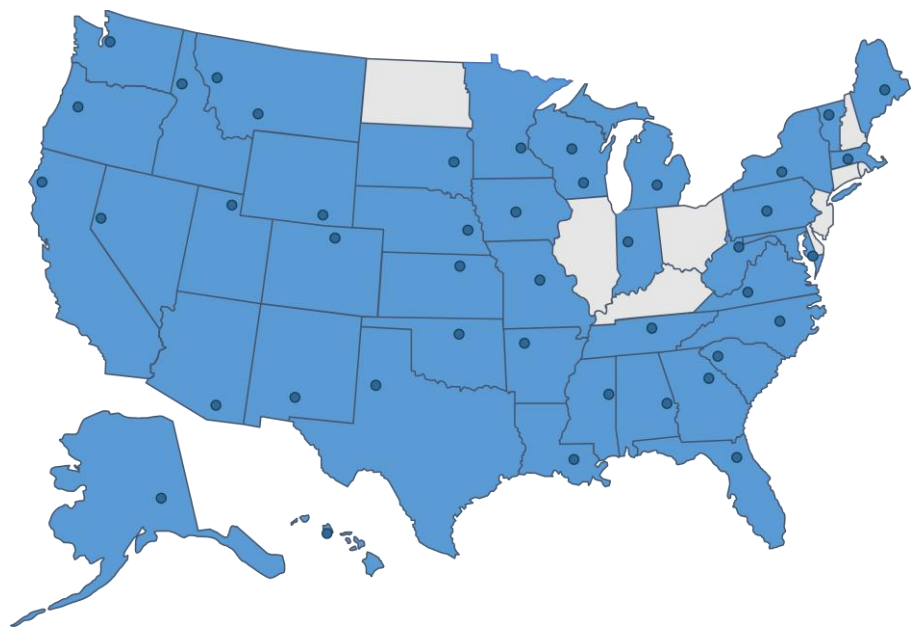
- Conduct scientific research for the management of fish, wildlife, and other natural resources
- Provide technical assistance to natural resource managers in the application of scientific information to natural resource policy and management
- Train future natural resource professionals.

### MEETING OUR MISSION

USGS funds 2 to 5 federal PhD level research scientists for each Cooperative Research Unit. Cooperating universities provide office space, administrative support, and access to university facilities. The State agencies provide base funding and logistical support for research activities. The US Fish and Wildlife Service is a formal cooperator at many Units, funding research projects and providing access to facilities. The Wildlife Management Institute provides perspective through their affiliations on regional or national issues of mutual interest. The pooling of resources from all cooperators achieves a multiplier effect for everyone, thus enhancing the program's cost-effectiveness to each Cooperator.

Through affiliations with host universities, Unit scientists advise and mentor more than 600 graduate students annually. The Unit program also sponsors undergraduate and graduate education programs for minorities including participating in the Doris Duke Scholars program at four of our Units. These efforts focus on minority student recruitment and career training in natural resources.

Coop Units provide State and Federal Agencies access to the expertise of Unit scientists and university faculty at research universities across the country. The 43 Cooperative Research Units are primarily located at land grant universities. Under the direction of Unit and other university scientists, projects typically involve graduate training and research experiences for students. Students add an enthusiastic and dedicated component to Unit projects and provide many agencies with future employees.



**Locations of Cooperative Fish and Wildlife Research Units**

## IDENTIFYING AND FUNDING RESEARCH

### IDENTIFYING RESEARCH NEEDS

Information needs of State and Federal agencies are initiated through a set of simple steps, including a needs identification and planning process and a contracting process. Unit scientists work closely with agency personnel to understand the information need and to formulate a plan to address it. Research proposals are subsequently drafted by Unit scientists at the host university and submitted for agency approval and funding.

### RESEARCH WORK ORDER

For federally funded research, approved proposals are generally funded through an interagency agreement by authority of the Economy Act. This act facilitates the transfer of funds from one Federal agency to another, to accomplish work that is outside of the capabilities of the funding agency. The USGS receives these funds for the Cooperative Research Units program.

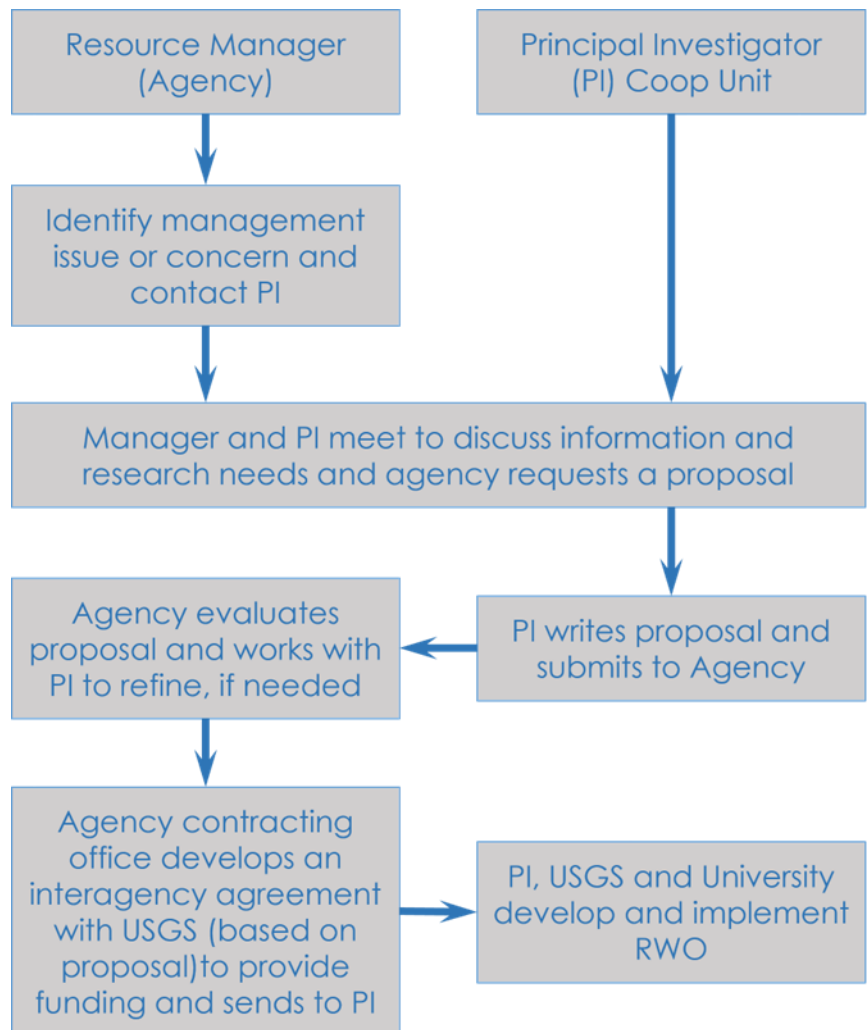
The USGS uses a separate contracting mechanism, called a Research Work Order (RWO), to obligate the funding to the Unit's host university to conduct the proposed work. The Research Work Order was recognized in the Fish and Wildlife Improvement Act of 1978 as a non-competitive mechanism for the USGS to transfer project funds to cooperating universities. This includes access to non-Unit faculty PI's at the host university.

Economies are achieved by the collective partnership, providing unequalled opportunities for sister bureaus within the Department of the Interior as well as other federal agencies such as the Department of Defense, Department of Agriculture, and the Department of Commerce to acquire quality, cost-effective research for science-based natural resource management.

### OVERHEAD COSTS

Overhead costs to the sponsoring agency vary because of differences among universities. The USGS waives a substantial portion of its overhead costs for Federal Agency transfers that support Research Work Orders through the Cooperative Research Units program. At present, USGS overhead is only 6% for new agreements. As noted, University overhead rates vary but cumulative overhead costs rarely exceed 21% of the project cost. USGS and university overhead reductions are considered contributions to the partnership effort. USGS scientists and many university faculty contribute their time and expertise at no charge to the sponsoring agency. Thus, overhead costs are often completely offset by professional salary savings.

### Research Work Order Process



## Alabama Cooperative Fish and Wildlife Research Unit

## Shannon Brewer

## Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

Shannon is a Research Fish Biologist and the Unit Leader of the Alabama Cooperative Fish and Wildlife Research Unit and a Research Professor in the School of Fisheries, Aquaculture, and Aquatic Sciences. My research questions are focused on identifying relationships and mechanisms related to rare, declining, or economically-important aquatic species for which the causes and corresponding management responses are unclear. As a researcher, I am broadly interested in the conservation and management of lotic ecosystems. Human pressures increase the threats on freshwater ecosystems and taxa. The modification of landscapes from historical land cover to agriculture and urban uses has resulted in significant physicochemical changes and water demands on rivers. I regularly engage in multidisciplinary, innovative approaches to establish organism-environmental relationships at multiple spatial scales to guide the conservation and management of stream and river ecosystems. Moreover, I regularly work to improve sampling designs. My primary research focus has been on stream fishes, but I also regularly engage in research efforts targeting crayfish and occasionally freshwater mussels.

## Areas of Expertise

Anthropogenic Impacts | Aquatic Ecology | Ecological Flows | Fisheries Management | Invasive Species | Landscape Ecology | Managed Flows/Hydrology | Movement Ecology | Species Distribution Modeling | Species Management | Species Status Assessments | Stream Ecology | T&E Species Management

## Taxon/Group Studied

Crayfish | Freshwater Fishes | Mussels | Nongame Fish/Wildlife | Species of Greatest Conservation Need

## Recently Started Projects (Top 3)

- Using environmental DNA (eDNA) and traditional sampling gears to assess the presence of non-native fishes in Alabama and Mississippi
- Population Density, Demographics, and Food consumption of largemouth bass in small impoundments managed under three different strategies
- Population Density, Demographics, and Food consumption of largemouth bass in small impoundments managed under three different strategies

## Most Recent Publications (Top 3)

- Brewer, S. K., J. B. Mouser, and R. Van Den Bussche. 2020. Using environmental DNA (eDNA) to assess the presence of cavefish and cave crayfish populations in the Ozark Highlands. U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-135-2020, Washington, D.C.
- Brewer, S.K., D. Swedberg, R. Mollenhauer, and J. Dattilo. 2020. Assessing the distribution and habitat needs of the Least Darter and sympatric species of the Ozark and Arbuckle Mountain ecoregions. U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-146-2020, Washington, D.C.
- Brewer, S. K., G. Fox, Y. Zhou, and J. Alexander. 2020. Understanding the impacts of surface-groundwater conditions on stream fishes under altered baseflow conditions. U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-136-2020, Washington, D.C.

## Alabama Cooperative Fish and Wildlife Research Unit

**Jonathon Valente****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

I am a research ecologist and statistician who uses advanced quantitative tools to answer questions at the intersection of fundamental ecology and applied conservation. My research aims to understand the factors impacting the distributions and population dynamics for individual species and whole communities, then use that information to identify populations of conservation concern and ultimately develop effective conservation and management actions. I received my Bachelor's degree from Miami University in Zoology and Environmental Science. While there, I studied trophic interactions in freshwater systems. I attended Louisiana State University to pursue a MS in wildlife studying habitat use in secretive marsh birds. I then worked as a wildlife biologist at the U.S. Army Engineer Research and Development Center addressing conservation issues on DoD properties. Eventually I returned to graduate school at Oregon State University to pursue a MS in statistics and a PhD in Forest Ecosystems and Society studying the effects of forest fragmentation on breeding birds. I then did a postdoc with at the Smithsonian Migratory Bird Center comparing land-sparing and land-sharing conservation approaches around coffee farms. In my second postdoc (Oregon State), I worked to better understand factors limiting the distribution of endangered Marbled Murrelets.

**Areas of Expertise**

AI/Machine Learning | Anthropogenic Impacts | Behavioral Ecology | Biodiversity | Forest Ecology | GIS/Spatial Analysis | Habitat Management | Invasive Species | Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Remote Sensing | Species Distribution Modeling | Species Management | Statistics and Modelling | T&E Species Management | Wetland Ecology | Wildlife Management

**Taxon/Group Studied**

Coastal/Marine Birds | Pollinators | Songbirds | Species of Greatest Conservation Need | Water/Marsh Birds

**Recently Started Projects (Top 3)**

- Coastal species conservation
- White-tailed deer integrated population modeling
- Oregon Marbled Murrelet Project

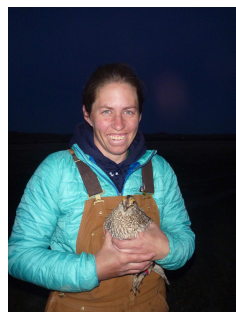
**Most Recent Publications (Top 3)**

- Cerullo, G., D. Gannon, J.A. Bailey-Guerrero, E. Conklin, A.B. Kohlberg, S.K. Nelson, J.W. Rivers, J.J. Valente, Z. Yang, and M.G. Betts. Spatially concentrating logging could mitigate climate-magnified fragmentation risks to a globally endangered bird. *Journal of Applied Ecology* 63:e70317.
- Valente, J.J., Adrean, L.J., Nelson, S.K., Betts, M.G., Roby, D.D. and Rivers, J.W. (2024). Presence-absence surveys yield spatially imprecise information about nesting sites of an endangered, forest-nesting seabird. *PLoS ONE*, 19(12), pp.e0315531–e0315531. doi:<https://doi.org/10.1371/journal.pone.0315531>. ■

## Alabama Cooperative Fish and Wildlife Research Unit

- Valente, J.J., Vitek Jirinec and Leu, M. (2024). Thinking beyond the closure assumption: Designing surveys for estimating biological truth with occupancy models. *Methods in Ecology and Evolution* , [online] 15(12), pp.2289–2300. doi:<https://doi.org/10.1111/2041-210X.14439>. ■

## Alaska Cooperative Fish and Wildlife Research Unit

**Megan Milligan****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Megan is a wildlife biologist whose research focuses on habitat ecology, movement ecology, population dynamics, and quantitative ecology. Her research combines field data with quantitative models to support science-based decision making. She is involved in basic and applied research in a variety of ecosystems across Alaska and the western United States. To date, her research has focused on birds, particularly gamebirds, and large mammals. Megan started at the Alaska Cooperative Fish and Wildlife Research Unit in 2025 as an Assistant Unit Leader - Wildlife. Prior to joining AKCFWRU, Megan worked for the USGS Western Ecological Research Center and Northern Rocky Mountain Science Center focusing on applied wildlife research in sagebrush ecosystems. Megan received a PhD from Montana State University, an MS from Humboldt State University, and a BA from Carleton College. She is involved in studies evaluating the space use and population ecology of greater sage-grouse in Nevada and California, projects evaluating the effects of free-roaming horses in sagebrush ecosystems, and studies evaluating the space use, movement ecology, and population drivers of multiple species in Alaska.

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Behavioral Ecology | Biodiversity | Environmental Change | GIS/Spatial Analysis | Habitat Management | Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Species Distribution Modeling | Species Management | Statistics and Modelling | Wildlife Management

**Taxon/Group Studied**

Coastal/Marine Birds | Gamebirds | Nongame Fish/Wildlife | Small Mammals | Songbirds | Ungulates | Water/Marsh Birds | Waterfowl

**Recently Started Projects (Top 3)**

- Strategic mapping and prioritization of mule deer habitats in Nevada
- Population trends of migratory birds in Alaska
- Ungulate movement behavior in Alaska

**Most Recent Publications (Top 3)**

- Milligan, M. C., P. S. Coates, B. E. Brussee, S. T. O'Neil, S. T. Mathews, S. Espinosa, D. Skalos, L. A. Wiechman, M. L. Casazza, S. Abele, J. Boone, K. Boatner, and H. Stone. 2024. Linking resource selection to population performance to identify species' habitat across broad spatial scales: an example of greater sage-grouse in a distinct population segment. *Ecology and Evolution* e10891. <https://doi.org/10.1002/ece3.10891>
- Beck, J. L., M. C. Milligan, K. T. Smith, P. A. Street, A. C. Pratt, C. P. Kirol, C. P. Wanner, J. D. Hennig, J. B. Dinkins, J. D. Scasta, and P. S. Coates. 2024. Free-roaming horses exceeding appropriate management levels affect multiple vital rates in greater sage-grouse. *Journal of Wildlife Management* e22669. <https://doi.org/10.1002/jwmg.22669>
- Meyerpeter, M. B., P. S. Coates, M. C. Milligan, B. G. Prochazka, K. D. Lazenby, S. Abele, J. Tull, K. Miller, J. Kolar, S. R. Mathews, D. K. Dahlgren, and D. J. Delehanty. 2025. Conservation translocation

## Alaska Cooperative Fish and Wildlife Research Unit

immediately reverses decline in imperiled sage-grouse populations. Biological Conservation  
304:110986. <https://doi.org/10.1016/j.biocon.2025.110986>

## Alaska Cooperative Fish and Wildlife Research Unit

## Jeffrey Daniel Muehlbauer

## Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

Dr. Muehlbauer received undergraduate degrees in Biology and Chemistry from Northern Arizona University and masters and doctoral degrees from the University of North Carolina at Chapel Hill. He spent several years at the USGS Grand Canyon Monitoring and Research Center prior to joining the Alaska Cooperative Fish and Wildlife Research Unit in 2021. His research is focused on linking hydrological and geomorphic conditions in rivers to the structure of aquatic communities. Most of his work focuses on aquatic insects and macroinvertebrates, salmonid fisheries and feeding ecology, and freshwater and riparian food webs. He has been involved in basic and applied research

in a variety of river ecosystems worldwide, including dam removal in Fossil Creek, Arizona, wetland mitigation in North Carolina, food web studies on the Danube River in Austria/Hungary/Serbia and glacially-fed rivers in Italy. Presently his research looks into the effects of large dam impacts on aquatic communities in the Colorado River, on stream restoration efforts related to freshwater fishes, and on the impacts of climate change, mining, and other stressors in Alaskan streams and rivers. Dr. Muehlbauer teaches courses in Aquatic Food Web Ecology, Stream Ecology, and Research and Design at the University of Alaska Fairbanks.

## Areas of Expertise

Adaptive Management | Anthropogenic Impacts | Aquatic Ecology | Biodiversity | Ecological Flows | Ecological Services | Entomology | Environmental Change | Fisheries Management | Habitat Management | Managed Flows/Hydrology | Policy | Population and Community Ecology | Statistics and Modelling | Stream Ecology | Water Quality

## Taxon/Group Studied

Anadromous Fishes | Bats | Freshwater Fishes | Gamefish | Invertebrates/Insects | Nongame Fish/Wildlife | Salmonids

## Recently Started Projects (Top 3)

- Geospatial tools to increase stream restoration efficacy
- Juvenile Chinook Salmon habitat use and movement on the Kenai River
- Science support for Coal Creek restoration: Fish, habitat, people

## Most Recent Publications (Top 3)

- Ward, N. K., A. J. Lynch, E. A. Beever, J. Booker, K. L. Bouska, H. Embke, et al. 2023. Reimagining large river management using the Resist–Accept–Direct (RAD) framework in the Upper Mississippi River. *Ecological Processes* 12:48. <https://doi.org/10.1186/s13717-023-00460-x>
- Abernethy, E.F., J.D. Muehlbauer, T.A. Kennedy, J.D. Tonkin, R. Van Driesche and D.A. Lytle. 2021. Hydropeaking intensity and dam proximity limit aquatic invertebrate diversity in the Colorado River Basin. *Ecosphere* 12: e03559, 1-12. <https://doi.org/10.1002/ecs2.3559>
- Metcalfe, A.N., T.A. Kennedy, G.A. Mendez and J.D. and Muehlbauer. 2022. Applied citizen science in freshwater research. *WIREs Water* e1578:1-11. <https://doi.org/10.1002/wat2.1578>

## Arizona Cooperative Fish and Wildlife Research Unit

**Javan M Bauder****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Bauder was born and raised in the Pacific Northwest (Washington and Idaho) and received his M.S. from Idaho State University where he studied the movement and habitat ecology of prairie rattlesnakes. He then worked for non-profit reptile conservation organization, The Oriante Society, conducting and directing research projects to guide reptile conservation efforts. Dr. Bauder received his Ph.D. from the University of Massachusetts Amherst where he studied the effects of landscape features on the spatial and habitat ecology, population viability, and genetic connectivity of the federally threatened eastern indigo snake in central Florida. Dr.

Bauder then joined the Illinois Natural History Survey as a post-doc studying population dynamics of furbearing mammals and the effects of translocation on nuisance black bear. Dr. Bauder joined the Arizona Cooperative Fish and Wildlife Research Unit as an Assistant Unit Leader in 2021 where his research blends population ecology and landscape ecology with diverse statistical modeling tools to guide wildlife management and conservation. His current research includes evaluating population viability of bald eagles in Arizona, developing tracking methods for and estimating demographic parameters of narrow-headed gartersnakes, and modeling habitat connectivity and survival for eastern indigo snakes. Dr. Bauder has assisted in teaching multiple graduate-level statistics courses and teaches a course on wildlife habitat modeling.

**Areas of Expertise**

Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Amphibians | Carnivores | Furbearers | Gamebirds | Nongame Fish/Wildlife | Reptiles | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Development of YY Bullfrogs, *Lithobates catesbeianus*, and models of their release for invasive population extirpation
- Modeling population dynamics of Mearns' Quail
- Population genomics and genetic connectivity of lowland leopard frogs in southeast Arizona

**Most Recent Publications (Top 3)**

- Roderick, T and Bauder, J.M. 2025. Population ecology of the federally threatened narrow-headed gartersnake ( *Thamnophis rufipunctatus* ) in Canyon Creek, Arizona. U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-172-2025. Washington, D.C. <https://doi.org/10.3996/10.3996/>
- Cappello, C.D., K.V. Jacobson, J.T. Driscoll, K.M. McCarty, J.M. Bauder. 2025. Using integrated step-selection analyses to map high-risk electrocution areas for a highly mobile species. *Journal of Wildlife Management* 89:e70061. <https://doi.org/10.1002/jwmg.70061>

## Arizona Cooperative Fish and Wildlife Research Unit

- Rickert, A.C., Harding, L.E., Alston, J.M, and Bauder, J.M. 2026. Gambel's quail ( *Callipepla gambelii* ) nest site selection and habitat use in Oracle Junction, Arizona. U.S. Department of the Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-177-2026. Washington, D.C.  
<https://doi.org/10.3996/css38263091>

## Arizona Cooperative Fish and Wildlife Research Unit

**Scott A. Bonar****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

I am originally from Mt. Vernon Indiana, attended University of Evansville in Indiana (BS Science Education), then Ph.D. at University of Washington in Seattle. I managed the inland fish research program at Washington Department of Fish and Wildlife for almost 10 yrs. before coming to the USGS Arizona Coop Unit. My areas of expertise are desert fish management and biology, fisheries sampling methods, communication in natural resources, management of introduced species, habitat use and instream flow requirements for fishes. I was President of the American Fisheries Society in 2019-2020; and am also Past-President of the Western Division of the American

Fisheries Society. I am lead editor and author on three books, one a North American standard fish sampling program for freshwater fishes that involved hundreds of authors, data providers and sponsors from across North America and another that is the second edition. Another was a book on skills for working with people for natural resources professionals that the journal Ecology called a "must read". I have also presented and authored numerous presentations and publications. In 2022, I won the Award of Excellence from the Fish Management Section of the American Fisheries Society. I really enjoying working with fish managers and administrators on practical problems in fisheries management or human dimensions.

**Areas of Expertise**

Anthropogenic Impacts | Aquatic Ecology | Desert Ecology | Ecological Flows | Environmental Change | Fire Ecology | Fisheries Management | Habitat Management | Human Dimensions | Invasive Species | Population and Community Ecology | Predator-Prey Dynamics | Species Management | Stream Ecology | T&E Species Management

**Taxon/Group Studied**

Crayfish | Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Methods to evaluate and increase survival of razorback sucker stocking in the Verde River and Horseshoe Reservoir Arizona.
- An Integrated Approach to Using YY Technology and Mechanical Control Methods for Invasive Fish Control
- Habitat Suitability Development for Fishes of the Middle Verde River

**Most Recent Publications (Top 3)**

- Teal, C.N., Schill, D.J., Bauder, J.M., Fogelson, S.B., Fitzsimmons, K., Stewart, W.T., Culver, M. and Bonar, S.A., 2024. The effects of estradiol $\beta$  on the sex reversal, survival, and growth of Red Shiner and its use in the development of YY individuals. *North American Journal of Aquaculture*, 86 (1), pp.110-129. <https://doi.org/10.1002/naaq.10314>
- Tracy, E. E., M. J. Brouder, A. C. Iles, C. N. Teal and S. A. Bonar. 2024. Indices for Common North American Fishes. Pages 441 to 786 in S. A. Bonar, N Mercado-Silva, and K. L. Pope, editors. *Standard methods to sample North American freshwater fishes*. American Fisheries Society, Bethesda, Maryland.

## Arizona Cooperative Fish and Wildlife Research Unit

- Bonar, S. A., N. Mercado-Silva, and K. L. Pope. 2024. Preface. Pages xxix-xxxix. in S. A. Bonar, N. Mercado-Silva and K. L. Pope, Editors. Standard methods for sampling North American Freshwater Fishes, 2nd Edition.

## Arkansas Cooperative Fish and Wildlife Research Unit

**Daniel Magoulick****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dan is from Michigan originally and received his BS from Michigan State University, MS from Eastern Michigan University and PhD from University of Pittsburgh. Dan joined the Arkansas Cooperative Fish and Wildlife Research Unit in 2000, where he is the Assistant Unit Leader and Professor in the Department of Biological Sciences. His research has focused on factors affecting population and community dynamics of freshwater fish and invertebrates, especially the role of disturbance in community dynamics, impacts of invasive species in aquatic ecosystems, and aquatic ecosystem conservation. As part of this work, Dan attempts to bridge the gap between studies

done at small spatial scales and the larger spatial scales necessary to understand how disturbance and environmental factors affect population and community dynamics in stream ecosystems. These projects and related work are carried out using a combination of observation, experimentation in the field and lab, and modeling approaches. Dan teaches Biometry, Fish Ecology and Conservation Biology as well as seminars in current topics in Ecology, Conservation Biology and Fisheries.

**Areas of Expertise**

AI/Machine Learning | Anthropogenic Impacts | Aquatic Ecology | Biodiversity | Ecological Flows | Entomology | Environmental Change | Evolutionary Ecology | Fisheries Management | GIS/Spatial Analysis | Habitat Management | Invasive Species | Landscape Ecology | Managed Flows/Hydrology | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Resilience | Species Distribution Modeling | Species Management | Species Status Assessments | Statistics and Modelling | Stream Ecology | T&E Species Management | Water Quality

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Gamefish | Invertebrates/Insects | Mussels | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Influence of environmental thresholds on trajectories of freshwater assemblages with
- Landscape- and local-scale habitat influences on distribution and abundance of the crayfish *Faxonius eupunctus*, *Faxonius wagneri* and *Faxonius roberti* in the Spring River, Strawberry River and Eleven Point River drainages
- REU: Site: assessment and sustainable management of ecosystem services at the nexus of food, energy, and water systems

**Most Recent Publications (Top 3)**

- Flinders, J.A. and D.D. Magoulick. 2026. Assimilation efficiency of rainbow trout fed natural diets. *Environmental Biology of Fishes* 109:40 <https://doi.org/10.1007/s10641-026-01804-0>
- Flinders, J.A., A. Clement and D.D. Magoulick. 2026. Effects of prey and tissue type on  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  discrimination and turnover rates of rainbow trout. *Hydrobiologia* <https://doi.org/10.1007/s10750-025-06097-5>
- Bayer, L.M. and D.D. Magoulick. 2025. Native crayfish shows high desiccation tolerance and potential to outcompete invader. *Biological Invasions* 27:216 <https://doi.org/10.1007/s10530-025-03675-5>

## Arkansas Cooperative Fish and Wildlife Research Unit

## Caleb Roberts

## Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

Dr. Roberts received graduate degrees from Texas Tech University and University of Nebraska-Lincoln, and he joined the Arkansas Cooperative Fish & Wildlife Research Unit in 2021. Dr. Roberts' research centers on how ecological resilience across populations, communities, landscapes, and continents manifests or erodes and how resilience can be maintained through management. Geographically, Dr. Roberts research covers Arkansas, the Great Plains, and the North American continent. Taxonomically, Dr. Roberts primarily uses birds, insects, mammals, and plants in his research. Topically, his research covers invasive species management in terms of

early detection and rapid response, landscape ecology, community ecology, fire ecology, examining logic behind natural resources policies, effects of climate change, and quantifying outcomes of management and restoration actions. To conduct his research, Dr. Roberts uses a variety of spatial analyses, data integration approaches, multivariate statistics, nonlinear modeling, and both Bayesian and frequentist statistical approaches. Dr. Roberts teaches two courses—Invasion Ecology and Ecosystem Monitoring and Assessment. Dr. Roberts works closely with cooperators (Arkansas Game & Fish Commission, US Fish & Wildlife Service) as well as other state and national partners (Natural Resources Conservation Service, Sage Grouse Initiative, Quail Forever, Working Lands for Wildlife).

## Areas of Expertise

Biodiversity | Botany | Environmental Change | Fire Ecology | Forest Ecology | GIS/Spatial Analysis | Grassland Ecology | Habitat Management | Invasive Species | Landscape Ecology | Population and Community Ecology | Remote Sensing | Resilience | Species Distribution Modeling | Species Management | Statistics and Modelling | T&E Species Management | Wetland Ecology | Wildlife Management

## Taxon/Group Studied

Carnivores | Gamebirds | Invertebrates/Insects | Nongame Fish/Wildlife | Small Mammals | Songbirds | Species of Greatest Conservation Need | Ungulates | Waterfowl

## Recently Started Projects (Top 3)

- Developing a Bioacoustic Classifier for Automated Detection of Priority Avian Species in the Lower Mississippi Valley Region
- Quantifying invasive carp range extents and impacts of invasive carp on native fish communities using environmental DNA metabarcoding
- Quantifying and communicating successes in savanna restoration on Arkansas private lands

## Most Recent Publications (Top 3)

- Wilson, K., C. Roberts, S. Chiavacci, and B.A. DeGregorio. Seasonal variation in Wild Pig revealed by DNA metabarcoding. *Wildlife Society Bulletin*.
- Cady, S.M., Fuhlendorf, S.D., Davis, C.A., Luttbeg, B. and Loss, S.R. (2025). The relative influence of climate extremes and species richness on the temporal variability of bird communities. *Ecology*, [online] 106(2). doi:<https://doi.org/10.1002/ecy.70005>. ■
- Scholtz R, Uden DR, Allred BW, Donovan VM, Maestas JD, Morford SL, Jones MO, Naugle DE, Roberts CP, Cady SM, Fogarty DT, Metcalf AL, Chaffin B, Allen CR, Rowen E, Meredith G, Nesbitt HK,

## Arkansas Cooperative Fish and Wildlife Research Unit

Williamson MA, Gulab S, Hamlin S, Lohani S, Vallury S, Banerjee S, Twidwell D. Reconciling scale using the Resist-Accept-Direct (RAD) Framework to improve management of woody encroachment in grasslands. *Journal of Environmental Management*. 387. URL: <https://doi.org/10.1016/j.jenvman.2025.125820>

## California Cooperative Fish and Wildlife Research Unit

**Nicholas A. Som****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Nicholas joined the CRU in November of 2023, as the Unit Leader of the California Cooperative Fish and Wildlife Research Unit, and faculty in the Department of Fisheries Biology at California Polytechnic University, Humboldt where he's had a long history of service and science collaboration. Nicholas' educational history includes an undergraduate mathematics degree from Regis University, a master's degree in statistics from Washington State University, and he received his Ph.D. from Oregon State University where he studied time-series and spatial statistics for data originating from stream and river networks. Prior to joining the CRU, Nicholas was a statistician

and program lead for the fish and aquatic conservation program at the Arcata US Fish and Wildlife office. Nicholas' research focuses on answering ecological questions with quantitative tools aimed to inform resource management decision makers. His main interests include water management and the ecology of pacific salmon, and his work includes both methods development and applied science projects. His applied work has ranged from the Columbia to Sacramento Rivers, but with most attention on the Klamath Basin. He frequently works on models for aquatic habitat, population dynamics, and disease dynamics. Nicholas teaches graduate courses on statistical methods common to fish and wildlife projects, such generalized linear models, applied Bayesian modeling, etc.

**Areas of Expertise**

Decision Support/Analysis | Disease/Parasites | Ecological Flows | Fisheries Management | Habitat Management | Managed Flows/Hydrology | Population Dynamics | Species Distribution Modeling | Statistics and Modelling | Stream Ecology | T&E Species Management

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Salmonids

**Recently Started Projects (Top 3)**

- Building a California State University Biodiversity and Climate Sentinel Site Network
- Managing rivers in real time: a constrained optimization method for water management
- Research and development of a suitable method for estimating weekly-stratified abundances of migrating juvenile salmonids in the absence of mark-recapture experiments

**Most Recent Publications (Top 3)**

- Denton, K., Som, N.A., Pess, G., Whelan, J., Stefankiv, O., Goodman, D.H. Klamath Iron Gate SONAR Project: Estimated Salmonid Abundance Above Prior Limits of Anadromy.
- Robinson H.E., Alexander, J. D. , Bartholomew, J. L., Hallett, S. L., Hetrick, N.J., Perry, R. W., Som, N. A. 2022. Using a mechanistic framework to model the density of an aquatic parasite *Ceratonova shasta*. PeerJ 10:e13183 <https://doi.org/10.7717/peerj.13183>.
- Lehman, B. M., et al. (including N.A. Som). 2020. Disease in Central Valley Salmon: Status and Lessons from Other Systems. San Francisco Estuary and Watershed Science 18(3). doi: <https://doi.org/10.15447/sfew.2020v18iss3art2>.

## Colorado Cooperative Fish and Wildlife Research Unit

**Brian Gerber****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

I completed a B.S. in Wildlife and Fisheries Conservation at the University of Massachusetts, an M.S. in Fish and Wildlife Conservation at Virginia Tech, and a PhD at Colorado State University. From 2017-2023 I was an assistant and then associate professor at the University of Rhode Island in the Department of Natural Resources. I joined the Cooperative Research Unit at Colorado State University in 2023. My focus is on collaborative wildlife ecology science aimed to inform conservation and management practice. I am interested in all aspects of ecological learning, often focusing on statistical modeling and inference.

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Behavioral Ecology | Biodiversity | Decision Support/Analysis | Habitat Management | Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Species Management | Statistics and Modelling | Wildlife Management

**Taxon/Group Studied**

Amphibians | Carnivores | Furbearers | Gamebirds | Nongame Fish/Wildlife | Ungulates | Waterfowl

**Recently Started Projects (Top 3)**

- Monitoring wolverines throughout the Western United States
- Identifying areas of abundance and species richness overlap to prioritize renewable energy exclusion zones.
- Designing long-term ecological research studies to understand community effects following gray wolf recovery in Colorado

**Most Recent Publications (Top 3)**

- Gerber, BD and Gilbert, N. Individual-based monitoring is critical for small populations. *Biodiversity and Conservation* 35 , 53 (2026). <https://doi.org/10.1007/s10531-025-03221-8>
- Belotti, M. C. T. D., Gerber, B. D., Zhao, W., Deng, Y., Simons, V. F., Perez, G., Kelly, J. F., Maji, S., Sheldon, D., & Horton, K. G. (2025). Aggregating three sources of long-term trends of swallows and martins to identify priority conservation areas in the Great Lakes region. *Journal of Applied Ecology* , 00, e70240. <https://doi.org/10.1111/1365-2664.70240>
- Barton, O., Gerber, B.D., Cordes, L.S., Healey, J.R. and Shannon, G. (2025), Covariates influence optimal camera-trap survey design for occupancy modelling. *Remote Sensing in Ecology and Conservation*. <https://doi.org/10.1002/rse2.70031>

## Colorado Cooperative Fish and Wildlife Research Unit

**William L Kendall****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Kendall received graduate degrees from North Carolina State University, followed by five years in population assessment with USFWS Migratory Bird Management, and then 13 years as a researcher with Patuxent Wildlife Research Center, before joining the Colorado Unit in 2010. His research is both methodological and applied, focused largely on developing models of population dynamics or species distribution that can be used to inform conservation decisions. He has worked extensively in developing and improving capture-recapture and occupancy study designs and models, and in developing structured

decision-making approaches to wildlife management. Much of his work is in population ecology, but also includes migration ecology and the spread of invasive species or disease. His research is taxonomically varied, with extensive work on migratory birds such as sandhill cranes, waterfowl, and raptors, as well as large mammals, bats, riverine fish, and marine species such as albatross, sea turtles, and manatees. Dr. Kendall regularly teaches courses and short courses in Sampling and Analysis of Vertebrate Populations, and Adaptive Fish and Wildlife Management.

**Areas of Expertise**

Adaptive Management | Decision Support/Analysis | Population Dynamics | Population and Community Ecology | Species Distribution Modeling | Species Management | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Marine Mammals | Salmonids | Sea Turtles | Ungulates | Waterfowl

**Recently Started Projects (Top 3)**

- CESU-Trends in Common Bottlenose Dolphin demography in Biscayne Bay, Florida
- Effects of Variation in Survival, Lek Attendance, Inter-lek Movement, and Detectability of Male Greater Sage-Grouse, Count Effort, and Male Age Ratio on Lek Count Monitoring Data
- Sea Turtle Demography

**Most Recent Publications (Top 3)**

- Grider, J. F.\*, B. J. Udell, B. E. Reichert, J. Foster, W. L. Kendall, T. L. Cheng, and W. F. Frick. 2025. A novel method for estimating pathogen presence, prevalence, load, and dynamics at multiple scales. *Scientific Reports* 15:9423, DOI: <https://doi.org/10.1038/s41598-025-93865-x>.
- Vanausdall, R. A., W. L. Kendall, and D. P. Collins. 2025. *Antigone canadensis* (Sandhill Crane) foraging patterns influenced by crop type, roost distance, and tillage intensity during spring and autumn migration at a primary stopover area. *Ornithological Applications* . 127:duaf027 . <https://doi.org/10.1093/ornithapp/duaf027>.
- Malachowski, C. P., W. L. Kendall, D. P. Collins, K. Kraai, J. Olszak, and L. Reynolds. 2025. Factors associated with survival, recovery, and movements in the Western Gulf Coast population of mottled ducks. *Journal of Wildlife Management*. <https://doi.org/10.1002/jwmg.70038>

## Colorado Cooperative Fish and Wildlife Research Unit

## Dana Winkelman

## Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

I received my BS degree in biology in 1984 and my MS degree in Biology in 1987 at the University of Nevada, Reno. I received my PhD in zoology from the University of Georgia in 1994. I joined the Cooperative Research Unit program in 1998 as Assistant Unit Leader at the Oklahoma Cooperative Fish and Wildlife Research Unit. In 2003 I became the Unit Leader at the Colorado Cooperative Fish and Wildlife Research Unit. I am interested in environmental effects on fish population dynamics and fish biology. My research has three major themes: disease ecology of inland salmonids, the effects of water quality on fish populations, and evaluation of endangered species populations. My lab has focused on several salmonid diseases, including whirling disease, bacterial cold-water disease, and bacterial kidney disease. Our work on water quality has focused on both contaminants and water temperature as factors effecting fish populations in the Great Plains of Colorado. My lab has also focused on assessment and management of endangered fishes utilizing mark-recapture techniques, Passive Integrated Transponders, and otolith microchemistry.

## Areas of Expertise

Anthropogenic Impacts | Contaminants | Disease/Parasites | Environmental Change | Fisheries Management | Population Dynamics | Population and Community Ecology | Species Management

## Taxon/Group Studied

Freshwater Fishes | Nongame Fish/Wildlife | Species of Greatest Conservation Need

## Recently Started Projects (Top 3)

- Effects of temperature on fisheries across Colorado
- Development of protective temperature criteria for Bluehead Sucker, Flannelmouth Sucker and Roundtail Chub Larvae
- Enhancing the population genetics capabilities of CPW's aquatic research section

## Most Recent Publications (Top 3)

- Riepe, T.B., E.R. Fetherman, K.P. Huyvaert, J.D. Drennan, R.E. McDevitt, B. Yeatts, and D.L. Winkelman. Leveraging detection uncertainty to estimate *Renibacterium salmoninarum* infection status among multiple tissues and assays. *PLoS One* 20(5):e0323010. <https://doi.org/10.1371/journal.pone.0323010>
- Firestone, T.B.R., E.R. Fetherman, and D.L. Winkelman. Non-lethal detection of *Renibacterium salmoninarum* in Cutthroat Trout *Oncorhynchus clarkii* comparing mucus, blood, and ovarian fluid samples to kidney tissues. *Journal of Aquatic Animal Health* *Journal of Aquatic Animal Health*, 2025, <https://doi.org/10.1093/jahafs/vsaf013>
- Avila, B. W., E. R. Fetherman, D. L. Winkelman, and M. Baerwald. Genetics of Wild, Whirling Disease Resistant Rainbow Trout Populations in Colorado. 2025. *Frontiers in Freshwater Science* 3:1500903 <https://doi.org/10.3389/ffwsc.2025.1500903>

## Florida Cooperative Fish and Wildlife Research Unit

**Raymond Raoul Carthy****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Raymond Carthy - Assistant Unit Leader, Florida Cooperative Fish and Wildlife Research Unit Dr. Carthy joined the Florida Unit in 1996 after receiving a Ph.D. in Zoology from the University of Florida. His previous employment included work at the Smithsonian Institution's National Museum of Natural History and volunteer and consulting work for marine conservation NGOs. Dr. Carthy's research centers on the ecology of threatened and endangered species, and his interests involve reproductive ecology and physiology of coastal and wetland herpetofauna, with a focus on marine and freshwater turtles.

Current projects include examining effects of climate change and habitat degradation on nesting and in-water marine turtle species. He is also involved in research on threatened upland species and in conservation management-oriented studies. Dr. Carthy is the Program Director of the University of Florida Uncrewed Aircraft Systems Research Program (UFUASRP), a multi-disciplinary endeavor studying the use of UAS for wildlife and habitat surveys and other natural resource conservation applications. In addition to teaching herpetology classes centered on ecology and conservation of marine chelonids, Dr. Carthy has taught courses on bioethics and critical thinking.

**Areas of Expertise**

Anthropogenic Impacts | Aquatic Ecology | Habitat Management | Marine/Coastal Ecology | Species Management | T&E Species Management | UAVs | Wetland Ecology | Wildlife Management

**Taxon/Group Studied**

Amphibians | Marine Mammals | Reptiles | Sea Turtles

**Recently Started Projects (Top 3)**

- Observing Flight Initiation Distances of Florida *Chelonia mydas* in the Crystal Bay Area
- Environmental correlates of fibropapilloma in green turtles.
- Assessing effects of anthropogenic and climate-induced change on health of coastal ecosystems.

**Most Recent Publications (Top 3)**

- Manes, C., Herren, R., Cooper, E., Lilyestrom, M., Godfrey, D., Kozuch, M., Carthy, R. and Capua, I. (2025). Disease, Environment, and Pollution: Understanding Drivers Behind Tumour Outbreaks in Sea Turtles. *One Health Cases*. doi:https://doi.org/10.1079/onehealthcases.2025.0001. ■
- Evans, Daniel R, Lemuel Pemberton, and Raymond R Carthy. 2024. "Wide-Ranging Migration of Post-Nesting Hawksbill Sea Turtles (*Eretmochelys Imbricata*) from the Caribbean Island of Nevis." *Marine Biology* 171 (9). https://doi.org/10.1007/s00227-024-04491-6. ■
- Hiram, S., B. Witherington, K. Kneifl, A. Sylvia, M. Wideroff, and R. R. Carthy. 2021. Environmental factors predicting the orientation of sea turtle hatchlings on a naturally lighted beach: A baseline for light-management goals. *Journal of Experimental Marine Biology and Ecology* 541 (2021) 151568.

## Florida Cooperative Fish and Wildlife Research Unit

**Conor P. McGowan****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Conor McGowan completed his BS at Wake Forest University, an MS at NC State University and his Ph.D. in Fisheries and Wildlife Sciences at the University of Missouri in 2008. He was a post-doc at Patuxent Wildlife Research Center for 2 years before joining the Unit Program in 2010. He was the assistant leader for 7 years and then the acting leader for 3 years at the Alabama, before moving to the Florida Unit in 2020. Dr. McGowan's research focuses population assessment and predictive modeling to support decision making for both harvested species and imperiled species. He and his students primarily work to estimate demographic rates and then design stochastic predictive simulation models, often embedded within a larger decision analysis approach to problem solving. Conor teaches courses on applied ecological modeling and decision analysis applications in wildlife conservation in the Wildlife Ecology and Conservation program at University of Florida. He enjoys bird watching, hiking, and playing guitar when not modeling animal populations.

**Areas of Expertise**

Decision Support/Analysis | Population Dynamics | Species Management | Species Status Assessments | Statistics and Modelling

**Taxon/Group Studied**

Amphibians | Nongame Fish/Wildlife | Reptiles | Species of Greatest Conservation Need | Water/Marsh Birds

**Recently Started Projects (Top 3)**

- Indigo Snake Population Modeling
- Cape Sable Seaside Sparrow assessment and recovery
- Expert elicitation methodologies and evaluation

**Most Recent Publications (Top 3)**

- Folt, B. , M. Marshall, J.A. Emanuel, M. Dziadzio, J. Cooke, L. Mena, M. Hinderliter, S. Hoffmann, N. Rankin, J. Tupy, C.P. McGowan. 2024 . Strengths and opportunities in gopher tortoise population modeling: Reply to Loope et al. *Global Ecology and Conservation* , e03093. <https://doi.org/10.1016/j.gecco.2024.e03093>
- Christensen, E.M., A.J. Lawson, E. Rivenbark, P.K. London, D. Castellanos, J.C. Culbertson, S.M. DeMay, C. Eakin, L.S. Pearson, K. Soileau, J.H. Waddle, C.P. McGowan . 2024. Accounting for multiple uncertainties in a decision-support population viability assessment. *Biological Conservation* 299:110811. doi: 10.1016/j.biocon.2024.110811
- Gregory K, McGowan CP, 2023, Modeling appendix for the northwestern and southwestern pond turtle (*A.marmorata*, *A.pallida*), a report for the Species Status assessment of the Northwestern and Southwestern pond turtle, USFWS

## Georgia Cooperative Fish and Wildlife Research Unit

**Brian Irwin****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Irwin received graduate degrees from Auburn University and Cornell University and was a post-doctoral researcher at the Quantitative Fisheries Center at Michigan State University prior to joining the Georgia Cooperative Research Unit in 2012. He currently is Unit Leader and an Adjunct Professor of the Warnell School of Forestry and Natural Resources at the University of Georgia. Brian's research interests are in areas of ecological change, fish population dynamics, and decision making linked to long-term monitoring and management of natural resources. He has worked on a number of natural-resource management problems where he has applied a "Structured Decision

Making" process to evaluate alternatives and consider the role of uncertainty. Projects have also used quantitative models to explore how populations respond to anthropogenic and natural influences. He enjoys collaborative projects, which have included federal, state, and university cooperators. At UGA, he regularly interacts with graduate students and teaches courses which introduce concepts and analyses relevant to modeling data, conservation decision making, and sustainable use of exploited natural resources.

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Aquatic Ecology | Decision Support/Analysis | Disease/Parasites | Fisheries Management | Invasive Species | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Management | Statistics and Modelling | T&E Species Management

**Taxon/Group Studied**

Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Spatial and Temporal Patterns of Caribbean Reef Fish Populations
- Statistical Support for Mammoth Cave National Park
- Statistical support for water-quality monitoring

**Most Recent Publications (Top 3)**

- Kleinhans, M., N. Nibbelink, B. J. Irwin, S. Wenger, and A. G. Fox. 2026. Climate change and water quality influence on juvenile Atlantic sturgeon aggregation in the Altamaha River, Georgia. Target journal: Environmental Biology of Fishes.
- Simon, T.N., K.F. Robinson, B.J. Irwin. Accepted. Estimating the power of a standardized monitoring program for sport fish in Georgia, USA. North American Journal of Fisheries Management. <https://doi.org/10.1093/najfmt/vqaf117>
- Wilberg, M. J., B. J. Irwin, and M. L. Jones. 2026. Participatory modeling to support evaluation of management actions for recreational fisheries. Pages 693-718 in K. L. Pope, R. Arlinghaus, L. M. Hunt, A. J. Lynch, and B. T. van Poorten, editors. Understanding Recreational Fishers: Disciplinary and Interdisciplinary Approaches for Fisheries Management. Fish & Fisheries Series, vol 45. Springer, Cham. [https://doi.org/10.1007/978-3-031-99739-6\\_22](https://doi.org/10.1007/978-3-031-99739-6_22)

## Georgia Cooperative Fish and Wildlife Research Unit

**Kelly Filer Robinson****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Kelly Robinson joined the Georgia Cooperative Fish and Wildlife Research Unit in August of 2022, where she is an Assistant Unit Leader and an Adjunct Associate Professor in the Warnell School of Forestry and Natural Resources at the University of Georgia. Dr. Robinson received her M.S. from College of Charleston and her Ph.D. from the University of Georgia, in the Georgia Unit. She was also a postdoctoral research associate at Cornell University, with the

New York Unit, and an associate professor at Michigan State University. Dr. Robinson's research focuses on fisheries ecology, conservation, and management, as well as the use of decision analysis for conservation and management of natural resources. Dr. Robinson has been working closely with management agencies, stakeholders, and rightsholders to make decisions related to invasive species control and harvest management, as well as to understand the effects of land-use change on these decisions. Most of Dr. Robinson's work focuses on fish ecology, but she has also conducted decision analytic projects for wildlife species, including white-tailed deer, turkey, and piping plover. For the past few years, Dr. Robinson has been teaching a graduate level course in Structured Decision Making and Adaptive Management for Natural Resources.

**Areas of Expertise**

Adaptive Management | Aquatic Ecology | Decision Support/Analysis | Environmental Change | Fisheries Management | Invasive Species | Marine/Coastal Ecology | Population and Community Ecology

**Taxon/Group Studied**

Freshwater Fishes | Marine Fishes | Nongame Fish/Wildlife | Salmonids

**Recently Started Projects (Top 3)**

- Exploring an emerging issue with Alligators in Georgia
- Development of a decision support tool to predict fish production in newly-opened habitat in a changing climate
- A decision analytic framework for assessing aquatic invasive species status, risk, and biosecurity measures for three units of the National Park System in the Southeastern U.S.

**Most Recent Publications (Top 3)**

- Simon, T.N., K.F. Robinson, B.J. Irwin. Accepted. Estimating the power of a standardized monitoring program for sport fish in Georgia, USA. *North American Journal of Fisheries Management*. <https://doi.org/10.1093/najfmt/vqaf117>
- Flinn, S., A.M. Muir, K.F. Robinson. 2026. Using structured decision making to evaluate the tradeoffs of selective fish passage. *Conservation Science and Practice* e70234.
- Cooke, SJ, C.L. Baker, JLM Hinderer, M Siefkes, JM Barber, TB Steeves, MF Docker, W Li, MP Wilkie, ML Jones, KF Robinson, ES Dunlop, CO Brant, NS Johnson, WP Mattes, M Gaden, AM Muir. 2025. Ten lessons for controlling invasive species: wisdom from the long-standing Sea Lamprey Control Program on the Laurentian Great Lakes. *BioScience*.

## Georgia Cooperative Fish and Wildlife Research Unit

## Claire Teitelbaum

### Assistant Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)



### Biography

Dr. Claire Teitelbaum joined the Georgia Cooperative Fish and Wildlife Research Unit in September 2024. She is an Assistant Unit Leader and Adjunct Assistant Professor in the Warnell School of Forestry and Natural Resources at the University of Georgia. Her research broadly covers movement, behavior, and population dynamics of wildlife, especially related to habitat, climate, and infectious diseases. She uses and adapts quantitative methods to analyze and combine data sets from animal telemetry, biodiversity databases, biological surveys, and remote sensing. Dr. Teitelbaum works closely with field biologists, statisticians and remote sensing scientists to collect, analyze, and interpret data. Since starting at the Georgia Unit, she has been working to understand wildlife problems in Georgia, inform study design, and provide training and assistance on quantitative methods. She is developing a new course, Data Management and Reproducible Science, in which students will build skills in programming, data sharing, and data visualization. Dr. Teitelbaum received her Ph.D. from the Odum School of Ecology at the University of Georgia and her B.A. from Pomona College. She held post-doctoral positions at the USGS's Eastern Ecological Science Center (formerly Patuxent Wildlife Research Center) and NASA's Ames Research Center before joining the Georgia Unit.

### Areas of Expertise

Biodiversity | Disease/Parasites | Epidemiology | GIS/Spatial Analysis | Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Remote Sensing | Species Distribution Modeling | Statistics and Modelling

### Taxon/Group Studied

Nongame Fish/Wildlife | Ungulates | Water/Marsh Birds | Waterfowl

### Recently Started Projects (Top 3)

- Snapshot USA in and around Athens, GA
- Quantifying habitat and populations of Southeastern bats
- Understanding movement ecology of waterfowl to inform avian influenza risk

### Most Recent Publications (Top 3)

- Teitelbaum, C.S., Prosser, D.J., Ackerman, J.T., Ahmed, S., [60 authors], Brosnan, I.G., and De La Cruz, S.E.W. Waterfowl move less in heterogeneous and human-populated landscapes, with implications for spread of avian influenza viruses. *Ecology Letters* 29(1), e70265. <https://doi.org/10.1111/ele.70265>
- Teitelbaum, C.S., Ferraz, A., De La Cruz, S.E.W., Gilmour, M.E., and Brosnan, I.G. 2025. The potential of remote sensing for improved infectious disease ecology research and practice. *Proceedings of the Royal Society B: Biological Sciences* 291(2037):20241712.
- Yin, S., Zhang, C., Teitelbaum, C.S., Si, Y., Zhang, G., Wang, X., Mao, D., Huang, Z.Y.X., de Boer, W.F., Takekawa, J.T., Prosser, D.J., and Xiao, X. Landscape changes facilitate the emergence of highly pathogenic avian influenza at the migratory bird-poultry interface in the East Asian-Australasian Flyway. *Proceedings of the National Academy of Sciences*.

## Hawaii Cooperative Fishery Research Unit

**Timothy B Grabowski****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Grabowski received graduate degrees from Texas A&M University and Clemson University before joining the Texas Unit in 2010. In 2016, he became the Unit Leader of the Hawai'i Unit and serves as faculty at both the University of Hawai'i at Hilo and University of Hawai'i at Mānoa. Dr. Grabowski conducts research on the reproductive and behavioral ecology of fishes, fish growth and early life history, aquatic landscape ecology, and the conservation and management of fishes. His past research has run the gamut from dealing with threatened and endangered riverine fishes to looking at issues related to the

sustainability of large-scale commercial fisheries and small-scale recreational fisheries to researching or providing technical assistance on issues related to the allocation of water and public access to natural resources. Dr. Grabowski's research has spanned across a wide range of taxa, latitudes, and salinities from Atlantic Cod fisheries in Iceland to the conservation of large river fishes in the southeastern and southwestern U.S. His current research focuses on the complex social and ecological interactions that influence to productivity and sustainability of nearshore and reef fisheries in Hawai'i and throughout the Pacific. Dr. Grabowski teaches courses in ichthyology, fish ecology and physiology, marine ecology, and fisheries and climate change.

**Areas of Expertise**

Anthropogenic Impacts | Aquatic Ecology | Behavioral Ecology | Biodiversity | Ecological Flows | Environmental Change | Evolutionary Ecology | Fisheries Management | Hydroacoustics/Bioacoustics | Marine/Coastal Ecology | Movement Ecology | Population and Community Ecology | Species Management | Stream Ecology

**Taxon/Group Studied**

Freshwater Fishes | Gamefish | Marine Fishes | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Kala (*Naso unicornis*) stock assessment in Maui
- Using a 20-yr time series to understand spawning dynamics and larval habitat of four billfish species in West Hawai'i's 'Kona Hotspot'
- Do Humpback Whales Provide Nutrient Subsidies to Hawaiian Nearshore Fisheries?

**Most Recent Publications (Top 3)**

- Grabowski TB, Y Tsang, D Bartz, C Yap, J Falke, JR Bellmore, & J Fellman. 2026. Flow ecology of invasive suckermouth catfish in urbanized ridge-to-reef systems on O'ahu, Hawai'i. *Frontiers in Environmental Science* 14:1754403. <https://doi.org/10.3389/fenvs.2026.1754403>
- Tuttle Raz, L. J., T. B. Grabowski, and R. Masse. 2024. Analysis and Review of Fishery-Dependent Data for Hawaiian Nearshore Noncommercial Fisheries. Report to State of Hawai'i Department of Land and Natural Resources, Division of Aquatic Resources. 97 p.

## Hawaii Cooperative Fishery Research Unit

- Grabowski TB, R Masse, D McSwain, A Larson, LJ Tuttle Raz, E Schemmel, DE Bartz, N Rodriguez. 2024. Age, growth, and reproductive biology of Achilles tang ( *Acanthurus achilles* ) around Hawai'i Island, USA. *Environmental Biology of Fishes*. 108:1-15. <https://doi.org/10.1007/s10641-024-01578-3>

## Hawaii Cooperative Fishery Research Unit

**Lillian Tuttle Raz****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Tuttle Raz is currently the Assistant Unit Leader of the Hawai'i Cooperative Fishery Research Unit. Prior to joining the Hawai'i Unit, Dr. Tuttle Raz was an Essential Fish Habitat Biologist at NOAA Fisheries' Pacific Islands Regional Office in Honolulu. She received her PhD from Oregon State University and was a postdoctoral researcher at the University of Hawai'i at Mānoa. Dr. Tuttle Raz's research quantifies the effects of local stressors -- coastal pollution, invasive species, and overfishing -- on coral-reef ecosystems. This work crosses spatial and ecological scales to address different components of fish

life history: from microscopic interactions between larval fish and their planktonic prey, to tracking fish population demographics on coral patch reefs, to regional and global thresholds for water quality that support fish habitat. She uses observational and manipulative experiments in the field and lab, combined with evidence synthesis (systematic review and meta-analysis), to investigate the behavioral and physiological mechanisms by which species interact with each other and their rapidly changing environments. She plans to develop graduate coursework in these areas of expertise as well as in biostatistics and marine resource management.

**Areas of Expertise**

Anthropogenic Impacts | Behavioral Ecology | Contaminants | Disease/Parasites | Fisheries Management | Invasive Species | Population and Community Ecology | Predator-Prey Dynamics | Resilience | Statistics and Modelling

**Taxon/Group Studied**

Invertebrates/Insects | Marine Fishes

**Recently Started Projects (Top 3)**

- Using a 20-yr time series to understand spawning dynamics and larval habitat of four billfish species in West Hawai'i's 'Kona Hotspot'
- Do Humpback Whales Provide Nutrient Subsidies to Hawaiian Nearshore Fisheries?
- Water Quality Thresholds to Improve Coral Restoration Outcomes and Ridge-to-Reef Management at Olowalu Reef, Maui

**Most Recent Publications (Top 3)**

- Tuttle Raz, L. J., T. B. Grabowski, and R. Masse. 2024. Analysis and Review of Fishery-Dependent Data for Hawaiian Nearshore Noncommercial Fisheries. Report to State of Hawai'i Department of Land and Natural Resources, Division of Aquatic Resources. 97 p.
- Grabowski TB, R Masse, D McSwain, A Larson, LJ Tuttle Raz, E Schemmel, DE Bartz, N Rodriguez. 2024. Age, growth, and reproductive biology of Achilles tang ( *Acanthurus achilles* ) around Hawai'i Island, USA. *Environmental Biology of Fishes*. 108:1-15. <https://doi.org/10.1007/s10641-024-01578-3>
- Ferreira, S. B., J. H. R. Burns, A. Fukunaga, L. J. Tuttle Raz, S. A. McKenna, K. Annandale, and R. J. Monello. 2025. 3D habitat complexity and coral morphology modulate reef fish functional structure in a Marine National Park. *Ecology & Evolution*. 15:e71992. <https://doi.org/10.1002/ece3.71992>

## Idaho Cooperative Fish and Wildlife Research Unit

**David Ausband****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Ausband received his Msc and PhD from the University of Montana and was a Senior Wildlife Research Biologist for the Idaho Department of Fish and Game before joining the Idaho Unit in 2018. He began his research career studying snowshoe hares and carnivore reintroductions such as those for swift foxes and gray wolves in the western U.S. Currently, his research program focuses largely on carnivore ecology, management, and conservation. Additionally, when sought out by collaborators, he conducts research on various topics of pressing management needs. He collaborates widely with state, federal, and tribal wildlife agencies on research that provides both

applied and basic inferences. Additionally, he provides research leadership by maintaining a long-term research program on gray wolves whose questions encompass the behavioral ecology of cooperative breeders, harvest management, population monitoring, and population ecology. Dr. Ausband teaches graduate courses in Advanced Fish and Wildlife Management and Science Communication.

**Areas of Expertise**

Anthropogenic Impacts | Behavioral Ecology | Conservation Genetics/Genomics | Population and Community Ecology | Predator-Prey Dynamics | Species Management | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Carnivores

**Recently Started Projects (Top 3)**

- Caribou decision-support model
- Mexican wolf habitat modeling
- Grizzly bear habitat modeling in the Bitterroot Mountains

**Most Recent Publications (Top 3)**

- Clendenin, H.R., D.E. Ausband, J. Adams, and P.A. Hohenlohe. 2026. Genetic structure related to natural recolonization and sociality in a reintroduced population of gray wolves. *Conservation Genetics*.
- Ausband, D.E. 2026. Reproduction partially compensates for human-caused mortality in a cooperative breeder. *Ecosphere*. 17:e70555.
- Vega, K.M., A.M. Marshall, L.K. Svancara, D.E. Ausband, and T.E. Link. 2025. Detection of deer at remote camera sites in relation to snow conditions. *Journal of Wildlife Management*. 89:e70088.

## Idaho Cooperative Fish and Wildlife Research Unit

**Courtney Joseph Conway****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Conway received a B.S. from Colorado State University, a M.S. from University of Wyoming, a Ph.D. from University of Montana, and was a post-doctoral fellow at SUNY-ESF in Syracuse. He spent a year working as a Research Associate at the Smithsonian's Conservation Research Center in VA, 3 years at the University of Rhode Island, and 1 year at Washington State University. Dr. Conway joined the Arizona Unit in 2000 as Assistant Unit Leader and joined the Idaho Unit in 2011 as Unit Leader. He conducts research that bridges applied and conceptual questions in ecology primarily on birds and mammals of management or conservation concern in ecosystems throughout North America. His research has made substantive contributions to sampling designs and monitoring protocols for rare or listed species, and to our basic understanding of life history evolution, avian migration, mammal hibernation, and other iconic animal behaviors. The taxonomic breadth of his research program includes gamebirds, waterbirds, raptors, songbirds, and small mammals. He has developed and implemented numerous efforts to integrate management actions with experimental research treatments to rigorously examine the effectiveness of alternative management actions on animal populations. Dr. Conway teaches courses in Experimental Design, the Hypothetico-Deductive Method, Scientific Writing, Scientific Presentations, and a variety of graduate seminars and he mentors a large group of close-knit students and staff.

**Areas of Expertise**

Anthropogenic Impacts | Behavioral Ecology | Contaminants | Desert Ecology | Disease/Parasites | Environmental Change | Evolutionary Ecology | Fire Ecology | Habitat Management | Movement Ecology | Species Distribution Modeling | Species Management | Species Status Assessments | T&E Species Management | Wetland Ecology | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Nongame Fish/Wildlife | Small Mammals | Songbirds | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Monitoring and Management of Burrowing Owls in Coachella Valley, California
- Habitat selection and competition between sympatric Ground Squirrels in Idaho
- Latitudinal variation in natal dispersal, breeding recruitment, and survival of juvenile Burrowing Owls throughout North America

**Most Recent Publications (Top 3)**

- Vandergast, A.G., Smith, J.G., Mitelberg, A., Wood, D.A., Sawyer, K., and Conway, C., 2025. Genetic structure and diversity in wild populations of the light-footed Ridgway's rail reflect 20 years of augmentation through captive breeding and release. U.S. Geological Survey Open-File Report 2025-1011, 27 p., [https://doi.org/ 10.3133/ofr20251011](https://doi.org/10.3133/ofr20251011).
- Burak, G.S., A.R. Goldberg, J.M. Galloway, D. Evans Mack, and C.J. Conway. 2018. Partner-based research collaboration guiding on-the-ground conservation efforts for a threatened Idaho endemic - the northern Idaho ground squirrel. *The Wildlife Professional* 12(5):39-42.

## Idaho Cooperative Fish and Wildlife Research Unit

- Stevens, B. S., C. J. Conway, S. B. Roberts, and D. K. Englestead. 2025. Fitness consequences of catastrophic wildfire are mitigated by behavioral responses of an iconic bird. *Fire Ecology* 21:54. doi: 10.1186/s42408-025-00391-2

## Idaho Cooperative Fish and Wildlife Research Unit

**Matthew R Falcy****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Falcy is Assistant Unit Leader and Assistant Professor of Biometrics in the Department of Fish and Wildlife Sciences at the University of Idaho. Matt currently works on fish and wildlife problems that emphasize modeling. Using Bayesian statistics, math, and numerical simulations, Matt's research seeks to project population dynamics under future conditions. This sometimes includes modeling the interactions between behavior, environment, and other species. Matt is also interested in optimizing human decision-making around management objectives and measures of scientific evidence about the state of nature. Matt teaches graduate courses on Ecological Modeling and Bayesian Analysis in Ecology. Before becoming Assistant Unit Leader in Idaho in 2021, Matt worked for the Oregon Department of Fish and Wildlife for ten years, where he developed salmonid population models and decision support tools. Prior to that, he obtained a PhD in Ecology and Evolutionary Biology with a minor in Statistics from Iowa State University.

**Areas of Expertise**

AI/Machine Learning | Adaptive Management | Behavioral Ecology | Decision Support/Analysis | Environmental Change | Evolutionary Ecology | Fisheries Management | Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Species Status Assessments | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Anadromous Fishes | Carnivores | Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Salmonids | Small Mammals | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Methods of analyzing fish age and length data
- Steelhead ocean survival
- Juvenile steelhead survival and life history diversity in the Snake Basin, Idaho

**Most Recent Publications (Top 3)**

- Harrison, L.A., K.S. Christie, C. Brandt, M.R. Falcy, S.L. Gilbert, and J.L. Rachlow. 2025. Mechanisms influencing thermal refuges and territory occupancy by collared pikas during summer and Winter. *Arctic, Antarctic, and Alpine Research* 57(1). <https://doi.org/10.1080/15230430.2025.2502161>
- Falcy, M.R. 2023. Inferring hatchery effects using spawner-recruit data: Comment on Courter et al. (2022). *Canadian Journal of Fisheries and Aquatic Sciences* 80: 420-421. <https://doi.org/10.1139/cjfas-2022-0158>
- Johnson, M. A., M. K. Jones, M. R. Falcy, J. Spangler, R. B. Couture, and D. L. G. Noakes. 2023. Can angler-assisted broodstock collection programs improve harvest rates of hatchery-produced steelhead? *Environmental Biology of Fishes* 106: 1079-1092. <https://doi.org/10.1007/s10641-023-01401-5>

## Idaho Cooperative Fish and Wildlife Research Unit

**Michael C. Quist****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Mike received his BS in Fishery Resources from the University of Idaho, MS in Biology from Kansas State University, and a PhD in Biology from Kansas State University. Mike joined the Idaho Cooperative Fish and Wildlife Research Unit in 2010, where he is an Assistant Unit Leader and Professor in the Department of Fish and Wildlife Resources at the University of Idaho. Mike's research program focuses on answering questions related to the management and conservation of aquatic systems. The impetus for his research emerges from issues and concerns related to sport fisheries management and native fish conservation. Although Mike has interests in all aspects

of applied fisheries ecology, he has several focal research areas. These areas include research on fish assemblage structure and function, ecological thresholds, fish population dynamics, management of recreational and commercial fisheries, native species conservation, and development and evaluation of techniques for managing fishes (e.g., sampling design, age and growth analyses). In the past, Mike has taught courses focused on Fish Biology, Ichthyology, Fisheries Techniques, Fisheries Management, Community Ecology, and Applied Fish Ecology. Currently, Mike teaches a variety of graduate seminars, Advanced Fisheries Techniques, and Advanced Fish and Wildlife Management.

**Areas of Expertise**

Fisheries Management | Invasive Species | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Hybridization between Bull Trout and Brook Trout across Idaho
- Distribution, Abundance, and Population Characteristics of Yellowstone Cutthroat Trout in the Upper Blackfoot River System, Idaho
- Management and Conservation of Bear Lake Sculpin: Sampling Techniques, Population Ecology, and Food Web Dynamics

**Most Recent Publications (Top 3)**

- Ghere, C. L., R. S. Hardy, S. M. Wilson, and M. C. Quist. 2024. Evaluation of techniques for estimating the age and growth of known-age White Sturgeon. *North American Journal of Fisheries Management* 44: 880–889.
- Voss, N. S., J. L. McCormick, W. J. Lubenau, B. J. Bowersox, T. Copeland, T. and M. C. Quist. 2024. Retention of T-bar anchor tags by adult steelhead during their upstream migration. *North American Journal of Fisheries Management* 44:1385-1391.
- Frawley, S. E., M. P. Corsi, A. M. Dux, R. S. Hardy, and M. C. Quist. 2024. Food habits of nonnative Walleyes in Lake Pend Oreille, Idaho. *North American Journal of Fisheries Management* 44:1294-1324.

## Indiana Cooperative Fish and Wildlife Research Unit

**Shawn Crimmins****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Crimmins received graduate degrees from West Virginia University and the University of Montana, was a post-doctoral fellow at the USGS Upper Midwest Environmental Science Center and at the University of Wisconsin Madison, and was an assistant professor of wildlife ecology at the University of Wisconsin Stevens Point before joining the CRU system as the Assistant Unit Leader of the Alaska Coop Unit in 2020. In 2024, he moved to Indiana to accept a position as the Unit Leader for the newly formed Indiana Coop Unit, housed at Purdue University. His research focuses primarily on the management and conservation of game species including furbearers and ungulates, and on population dynamics and habitat use of carnivores, ungulates, and furbearers. He also works extensively with state and federal partner agencies to develop and optimize wildlife monitoring programs. His work is currently focused in Alaska although he is building his research program in Indiana. His work is conducted in a variety of systems including coastal rain forests, high altitude alpine systems, boreal forests, tundra, agricultural systems, and hardwood forests. Dr. Crimmins teaches a graduate course titled Quantitative Methods for Ecologists.

**Areas of Expertise**

Environmental Change | GIS/Spatial Analysis | Habitat Management | Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Statistics and Modelling | Wildlife Management

**Taxon/Group Studied**

Carnivores | Furbearers | Ungulates

**Recently Started Projects (Top 3)**

- Habitat and Density Modeling for Bears
- Validating gray fox habitat models in northern Indiana
- Assess reference condition of small-mammal population dynamics and genetic variation prior to Ambler Road development

**Most Recent Publications (Top 3)**

- Merems, J.L., Brose, A.L., Price Tack, J., Crimmins, S. and Van Deelen, T.R. (2024). Scale dependence in elk habitat selection for a reintroduced population in Wisconsin, USA. *Ecology and Evolution*, 14(10). doi:<https://doi.org/10.1002/ece3.70346>.
- Cruz, J., S. Windels, W.E. Thogmartin, S.M. Crimmins, and B. Zuckerberg. 2023. Survival of Common Loon chicks appears unaffected by Bald Eagle recovery in northern Minnesota. *Avian Ecology and Conservation* 18(1):7. <https://doi.org/10.5751/ACE-02395-180107>
- Heun, C.M., H.L. Schley, and S.M. Crimmins. 2022. River otter feeding habits in Wisconsin, USA: evidence of microbead contamination. *American Midland Naturalist* 187:279-286. <https://doi.org/10.1674/0003-0031-187.2.279>

## Iowa Cooperative Fish and Wildlife Research Unit

**Anna Maureen Tucker****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Tucker joined the Iowa Cooperative Fish and Wildlife Research Unit as Assistant Unit Leader in 2021. Prior to joining the Iowa Unit, Dr. Tucker received a M.S. degree from Virginia Commonwealth University, a Ph.D. from Auburn University, and was a postdoctoral researcher at the USGS Eastern Ecological Research Center (formerly Patuxent Wildlife Research Center). Her research themes include wildlife population ecology and demographics, population viability analysis, and wildlife-habitat associations, with an emphasis on the use of quantitative methods and hierarchical modeling to analyze demographic data. Most of her research has focused on migratory shorebirds, songbirds, and waterfowl, but she has also worked with other species of conservation concern including pollinators and herpetofauna. Her work also involves using structured decision making to assist state and federal managers with decision making in the face of uncertainty. Dr. Tucker teaches a graduate-level class on Decision-support Modeling and has led workshops on Bayesian population analysis methods.

**Areas of Expertise**

Adaptive Management | Decision Support/Analysis | Population Dynamics | Population and Community Ecology | Species Management | Species Status Assessments | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Nongame Fish/Wildlife | Songbirds | Species of Greatest Conservation Need | Waterfowl

**Recently Started Projects (Top 3)**

- Estimating waterfowl productivity in the Prairie Pothole Region
- Analysis of long-term mark-recapture dataset for monarch butterflies
- Assessing road risk for amphibians and reptiles

**Most Recent Publications (Top 3)**

- Gapinski, L.A.W., K.E. Kinkead, A.K. Janke, S.J. Dinsmore, T. Bishop, and A.M. Tucker. 2025. Stable occupancy of conservation-priority birds amid community shifts across 16 years on Iowa wetland easements. *Ornithological Applications*.
- Ford, J.M.H., A.M. Tucker, A. Janke, T. Harms, and R. Wilson. 2024. Effects of northern bobwhite habitat management on avian species of conservation concern. *Ecological Indicators*, 72: 113310. <https://doi.org/10.1016/j.ecolind.2025.113310>
- B Folt, J Goessling, AM Tucker, C Guyer, S Hermann, E Shelton-Nix, CP McGowan. 2021. Contrasting patterns of demography and population viability among gopher tortoise populations in Alabama. *Journal of Wildlife Management* 85(4): 617–630.

## Kansas Cooperative Fish and Wildlife Research Unit

**David Haukos****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

David Haukos - Unit Leader, Kansas Cooperative Fish and Wildlife Research Unit. Dr. Haukos received graduate degrees from Texas Tech University and was a migratory bird biologist with the U.S. Fish and Wildlife Service before joining the Kansas Unit as Unit Leader in 2011. He conducts research on wildlife population responses to conservation and management with a goal of directed investigations towards addressing information needs of natural resource managers. A primary focus is assessing population demography, space use, and habitat selection in response to landscape characteristics and management practices. Although much of his research centers on resident and migratory game birds and their habitats, other investigations included assessed sympatric white-tailed deer and mule deer, pollinators, control of invasive plants, grassland songbirds, and connectivity of Great Plains wetlands. Dr. Haukos teaches graduate level classes in Demographic Methods, Wildlife Study Design, and Ecology and Management of Habitat.

**Areas of Expertise**

Grassland Ecology | Habitat Management | Landscape Ecology | Movement Ecology | Nutritional Ecology | Population Dynamics | Population and Community Ecology | Species Management | Wetland Ecology | Wildlife Management

**Taxon/Group Studied**

Amphibians | Gamebirds | Nongame Fish/Wildlife | Pollinators | Songbirds | Ungulates | Water/Marsh Birds | Waterfowl

**Recently Started Projects (Top 3)**

- Effect of isolation on population genetics of greater prairie-chickens
- Balancing residual cover and woody encroachment for greater prairie-chickens in the Flint Hills
- Space Use Overlap, Direct Interactions, and Harvest Implications for Sympatric Mule Deer and White-tailed Deer Populations in Kansas

**Most Recent Publications (Top 3)**

- Whetten, A. B., T. J. Hefley, D. A. Haukos, and D. E. Brewer. 2025. Simple bagged movement models for telemetry data. *Ecology and Evolution*
- Vhay MP, Haukos DA, Sullins DS, Rice MB (2024) Broad-scale changes in lesser prairie-chicken habitat. *PLOS ONE* 19(5): e0304452. <https://doi.org/10.1371/journal.pone.0304452>
- Whetten, A.B., T.J. Hefley, and D.A. Haukos. 2025. Estimation of contact time among animals from telemetry data. *The American Statistician* 79:265–274. ■

## Kansas Cooperative Fish and Wildlife Research Unit

**Martha Mather****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

I was trained in fish ecology at Ohio State University where I obtained my Ph.D. My job experience in the Unit program includes the Massachusetts and Kansas Units. Presently, I direct a creative and productive program of integrated research, education, and outreach-extension-service that addresses basic aquatic ecology questions in order to solve applied conservation problems. Specifically, I am interested in problems related to the following: (a) Basic ecological processes that structure freshwater (river, reservoir, lake) and estuarine fish communities (b) Patterns, mechanisms, consequences of fish movements (c) Role of heterogeneity in ecological structure and function across scales (including the role of dams) (d) Integrated, interdisciplinary, bio-social approaches to sustainability (e) Translating basic science to effective natural resource conservation and fisheries decision-making (f) Human and climate impacts on aquatic ecosystems (g) New paradigms for linking spatial and temporal scales (h) Science communication that integrates traditional outreach and innovative approaches (i) Transformative approaches to resource conservation and environmental sustainability

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Aquatic Ecology | Behavioral Ecology | Biodiversity | Decision Support/Analysis | Ecological Flows | Ecological Services | Environmental Change | Fisheries Management | Habitat Management | Marine/Coastal Ecology | Movement Ecology | Population and Community Ecology | Predator-Prey Dynamics | Species Management | Stream Ecology

**Taxon/Group Studied**

Anadromous Fishes | Crayfish | Freshwater Fishes | Gamefish | Marine Fishes | Nongame Fish/Wildlife

**Recently Started Projects (Top 3)**

- C3PO - Connecting conservation culture to policy opportunity - available right now in a next-generation land grant galaxy near you.
- Guiding present and future native fish restoration using a strategic planning process, literature synthesis, database analysis, field protocol development/testing, and adaptive management. To PI: M. E. Mather, 2020-2024, \$428,358, Kansas Department of Wildlife, Parks, and Tourism – Ecological Services (Grant #: F20AF00207, Mod. #2; # T-59-R-2).
- A strategic process for fisheries management and aquatic conservation. PI: M. E. Mather, 2018-2026.

**Most Recent Publications (Top 3)**

- Rode, O., Mather, M., Oliver, D., Nelson, K., Reed, V., Moore, T. and Pratap, S. (2025). A framework tool that applies weight-of-evidence integration to the analysis of existing datasets to guide freshwater conservation. *Frontiers in Freshwater Science*, 3. doi:<https://doi.org/10.3389/ffwsc.2025.1520312>.
- Chestnut-Faull, K. C., M. Mather, Q. Phelps, D. Shoup. 2022. A Review of Empirical Evidence that Examines the Effectiveness of Harvest Regulation Evaluations in Freshwater Systems: A Systematic, Standardized Collaborative Approach. *Fisheries* 47(10) 423–434. <https://doi.org/10.1002/fsh.10808>

## Kansas Cooperative Fish and Wildlife Research Unit

- Mather, M.E., Taylor, R.B., Smith, J.M. and Boles, K.M. (2025). Integrated patterns of residence and movement create testable hypotheses about fish feeding migrations. *Scientific Reports* , 15(1). doi:<https://doi.org/10.1038/s41598-024-79627-1>. ■

## Kansas Cooperative Fish and Wildlife Research Unit

**Daniel SHELBY Sullins****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Sullins joined the Kansas Cooperative Fish and Wildlife Research Unit in Fall 2023 and has conducted wildlife research in Kansas since 2014. His research centers on how wildlife use and select resources that vary over space and time, with an emphasis on the effects of habitat availability on population dynamics. Major themes in his work include wildlife–habitat relationships, conservation of avian species throughout their annual cycle, landscape and temporal influences on wildlife populations, and the demographic consequences of resource selection. He earned a B.S. from Texas A&M University, an M.S. from Stephen F. Austin State University, and a Ph.D. from Kansas State University.

Before his current appointment, he served as a postdoctoral researcher within the Kansas unit and as an assistant professor at Kansas State University. His teaching portfolio includes graduate courses in Landscape Ecology and Resource Selection Theory and Methods, as well as prior instruction in Flora and Fauna of the Great Plains, Upland Gamebird Management, and Big Game Management. Dr. Sullins currently mentors a team of graduate students investigating topics such as wild turkey foraging ecology, piscivorous bird impacts on desert fishes, grassland monitoring using remote sensing, pronghorn habitat availability, and ecology of prairie-grouse.

**Areas of Expertise**

GIS/Spatial Analysis | Grassland Ecology | Habitat Management | Landscape Ecology | Population Dynamics | Population and Community Ecology | Species Distribution Modeling | Species Management | Statistics and Modelling | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Songbirds | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Effect of isolation on population genetics of greater prairie-chickens
- Balancing residual cover and woody encroachment for greater prairie-chickens in the Flint Hills
- Influence of the Conservation Reserve Program on Population Structure, Demography, and Space Use by Greater Prairie-Chickens in Kansas and Nebraska

**Most Recent Publications (Top 3)**

- Vhay, M. P., D. A. Haukos, D. S. Sullins, and M.B. Rice. 2024. Broad-scale changes in lesser prairie-chicken habitat. *Plos one* 19: e0304452. DOI: 10.1371/journal.pone.0304452
- Berigan, L. A., C. S. Aulicky, E. C. Teige, D. S. Sullins, K. A. Fricke, J. H. Reitz, and D. A. Haukos. 2024. Lesser prairie-chicken dispersal after translocation: Implications for restoration and population connectivity. *Ecology and Evolution*, 14: e10871. DOI: 10.1002/ece3.10871.
- Teige, E. C., L. A. Berigan, C. Aulicky, J. H. Reitz, D. A. Haukos, D. S. Sullins, K. A. Fricke, K. A. Schultz, L. G. Rossi. 2023. Assessment of lesser prairie-chicken translocation through survival and lek surveys. *Wildlife Society Bulletin* 47:e1493. DOI: 10.1002/wsb.1493.

## Louisiana Cooperative Fish and Wildlife Research Unit

**Drew Fowler****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Fowler joined the Louisiana Cooperative Fish and Wildlife Research Unit in 2022 and serves as an Assistant Unit Leader and Adjunct Assistant Professor in the School of Renewable Natural Resources at Louisiana State University. Prior to joining the Louisiana Unit, Dr. Fowler received his M.S. degree from Louisiana State University, his PhD from the University of Missouri, and was a research scientist at the Wisconsin Department of Natural Resources. His overarching research efforts focus on the ecology and management of wetland dependent birds, particularly waterfowl, as well as the management and conservation of diverse wetland systems. In addressing the effects of anthropogenic impacts to wetlands, Dr. Fowler takes a process-based approach to understand biotic and abiotic drivers that influence wetland function and how wetland dependent taxa in turn respond. Dr. Fowler has interests in teaching Wetland and wildlife ecology, Waterfowl ecology and management, and Applications of stable isotope ecology.

**Areas of Expertise**

Landscape Ecology | Wetland Ecology | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Nongame Fish/Wildlife | Waterfowl

**Recently Started Projects (Top 3)**

- Identifying factors influencing nocturnal foraging site selection by adult female mallards and northern pintails in south Louisiana
- Linking wetland inundation and habitat selection to Blue-winged teal survival throughout the full annual cycle
- Linking annual waterfowl productivity and Louisiana hunter-harvest to natal / molt origins using stable isotope ecology

**Most Recent Publications (Top 3)**

- Luukkonen, B.Z., Winterstein, S.R., Hayes, D.B., Fowler, D.N., Soulliere, G.J., Coluccy, J.M., Shipley, A.A., Simpson, J., Shirkey, B., Winiarski, J.M., O'Neal, B.J., Avers, B.A., Urquhart, G.R. and Lavretsky, P. (2024). Great Lakes mallard population dynamics. *The Journal of Wildlife Management* , 89(2). doi:<https://doi.org/10.1002/jwmg.22702>. ■
- Winiarski, J.M., Shipley, A.A., Fowler, D.N., Palumbo, M.D. and Straub, J.N. (2024). Evaluating approaches for integrating species distributions in spatial conservation planning. *Conservation Science and Practice* , 7(1). doi:<https://doi.org/10.1111/csp2.13281>. ■
- Lipford, A., Leah, Fowler, D.N. and King, S.L. (2025). Hydrologic variability and plant composition drive relative abundance of marsh birds at created and reference marshes in southeastern Louisiana, U.S.A. *Restoration Ecology* . doi:<https://doi.org/10.1111/rec.14376>. ■

## Maine Cooperative Fish and Wildlife Research Unit

**Christina Murphy****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Christina Murphy - Assistant Unit Leader, Maine Cooperative Fish and Wildlife Research Unit Originally hailing from Oregon, Dr. Murphy received her MSc from the University of Girona, Spain and her PhD from Oregon State University. She was a post-doctoral fellow at Oregon State University before joining the Maine Unit in late 2020. She holds a graduate faculty appointment as an Assistant Professor in the Department of Wildlife, Fisheries, and Conservation Biology in the College of Natural Sciences, Forestry, and Agriculture at the University of Maine. Dr. Murphy prioritizes research with the potential to

contribute to the information needs of natural resource managers. Her research interests are centered on top down and bottom up responses to disturbance, especially hydrological alteration. This includes evaluations of nutrient, light and habitat availability, phytoplankton, zooplankton, benthic insects, fish pathogens, food webs, and diverse fish assemblages. Current projects include, but are not limited to, understanding aquatic ecology in wetted forest lands, the role of introduced species in structuring aquatic food webs, and the influence of environmental flow regimes on ecological integrity. Dr. Murphy has taught Fish Ecology and Conservation and Bioenergetics and currently teaches Base R in fall.

**Areas of Expertise**

AI/Machine Learning | Aquatic Ecology | Biodiversity | Disease/Parasites | Ecological Flows | Fisheries Management | Invasive Species | Managed Flows/Hydrology | Population and Community Ecology | Species Distribution Modeling | T&E Species Management | Water Quality | Wetland Ecology

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Invertebrates/Insects | Mussels | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Building international capacity for thermal mapping of rivers in a changing climate
- MDIFW Arctic Charr
- Ecosystem responses to the interacting forces of bridge improvements and beavers

**Most Recent Publications (Top 3)**

- Murphy, C.A., Olivos, J.A., Arismendi, I., García-Berthou, E., Johnson, S.L., Dunham, J. 2026. Environment and socioeconomics predict non-imperilment in freshwater fishes. *Nature Communications* 17:1661. <https://doi.org/10.1038/s41467-025-68154-w>
- Fedarick, J., Murphy, C.A., Record, S., Roy, A.H. 2025. Museum records provide unique information about the distribution of the Yellow lampmussel (Unionidae). *Freshwater Science* 44(4): 434-442. [doi/10.1086/738615](https://doi.org/10.1086/738615)
- Romer, J., Stertz, K., Pham, K., and Murphy, C.A. 2025. Chinook Salmon *Oncorhynchus tshawytscha* (Walbaum, 1792) life-history influences how diagnostic cranial structures relate to fish length. *Journal of Fish Biology*. <https://doi.org/10.1111/jfb.70194>

## Maine Cooperative Fish and Wildlife Research Unit

## Joseph Zydlewski

## Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

Joe joined the Maine Cooperative Fish and Wildlife Research Unit in 2004 as Assistant Unit Leader, coming from the USFWS Columbia River Fisheries Program Office. He is a Professor of Fisheries Science in the Department of Wildlife, Fisheries at the University of Maine, Orono. Joe's work centers on the study of fish movements and migrations. Many vital fisheries issues in the northeast United States are dependent upon a rigorous understanding of life history expression. He has effectively addressed both basic and complex management questions in innovative ways, developing a program that includes three main themes: i) Connectivity and River Restoration ii) Physiology and Behavior of Migration, and iii) Species Interactions. As a critical part of his position, Joe's work is responsive to the requests of MCFWRU cooperators (e.g., Maine Department of Inland Fisheries and Wildlife, the University of Maine's Department of Wildlife, Fisheries, and Conservation Biology and US Fish and Wildlife Service). As part of his appointment to the graduate faculty at the University of Maine through the MCFWRU, Joe provides graduate instruction in the form of formal courses (e.g. "Movements and Migration", directing independent studies of selected topics (fisheries science, migration biology), and interacting with graduate students. Joe serves on numerous committees as degree program advisor, co-advisor, or committee member.

## Areas of Expertise

Adaptive Management | Anthropogenic Impacts | Aquatic Ecology | Behavioral Ecology | Biodiversity | Decision Support/Analysis | Evolutionary Ecology | Fisheries Management | Human Dimensions | Movement Ecology | Physiology | Policy | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Management | T&E Species Management | eDNA

## Taxon/Group Studied

Anadromous Fishes | Freshwater Fishes | Gamebirds | Gamefish | Marine Mammals | Nongame Fish/Wildlife | Salmonids

## Recently Started Projects (Top 3)

- Building international capacity for thermal mapping of rivers in a changing climate
- MDIFW Arctic Charr
- Ecosystem responses to the interacting forces of bridge improvements and beavers

## Most Recent Publications (Top 3)

- Stich D., Hardesty J., Jordan N., Roy S., Sheehan T., Snyder, S., and Zydlewski J. (2025) anadromfish : R package for modeling anadromous fish populations responses to dams. *Journal of Open-Source Software*.
- Merriam, C., Frechette, D., and Zydlewski, J. (2025) Post-release movements of captive reared adult Atlantic salmon in two Maine rivers. *North American Journal of Fisheries Management* . 00, 1–17. DOI:10.1093/najfmt/vqaf074
- Casey, A., Mensinger, M., and Zydlewski, J. (2025) Seasonal movements of non-native White Catfish ( *Ameiurus catus* ) in the Penobscot River estuary. *North American Journal of Fisheries Management*.00, 1–9 DOI: 10.1093/najfmt/vqaf079

## Massachusetts Cooperative Fish and Wildlife Research Unit

**Graziella DiRenzo****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. DiRenzo joined the MA Cooperative Research Unit in Nov 2020, where she is the Assistant Unit Leader of Wildlife and adjunct faculty in the department of Environmental Conservation at the University of Massachusetts, Amherst. Dr. DiRenzo received her PhD at the University of Maryland, College Park, and her Bachelor's degree from the University of Connecticut, Storrs. Her research emphasizes disease dynamics, community and population ecology, and species conservation. To mimic natural hierarchical systems, she develops hierarchical Bayesian models, and she uses data collected over space and time to separate

ecological and observational processes to answer ecological questions. Dr. DiRenzo's research program focuses on unifying ecological and evolutionary theory to address fundamental questions in ecology using field, experimental, and quantitative approaches. She enjoys teaching graduate courses related to quantitative ecology, disease ecology, and population/community ecology.

**Areas of Expertise**

Biodiversity | Decision Support/Analysis | Disease/Parasites | Epidemiology | Population Dynamics | Population and Community Ecology | Statistics and Modelling

**Taxon/Group Studied**

Amphibians | Reptiles

**Recently Started Projects (Top 3)**

- Population assessment, habitat use, and occupancy for multiple freshwater turtle species
- Prioritizing Actions for Restoring Connectivity and Climate Resilience in the Appalachian Highlands
- One Health frameworks and zoonotic disease initiative

**Most Recent Publications (Top 3)**

- Rogers, J. B., G.V. DiRenzo, A.H. Roy, J. Carmignani, R.S. O'Brien, R.M. Quiñones, and T. Richards. 2025. Watershed forest cover and habitat restoration can offset some negative impacts of climate change on freshwater fishes and mussels. *PLOS Climate* 4(12): e0000742. <https://doi.org/10.1371/journal.pclm.0000742>
- O'Brien R.S.M., G.V. DiRenzo, A.H. Roy, J. Carmignani, R.M. Quinones, J.B. Rogers, and B.I. Swartz. 2025. Catchment prioritization for freshwater mussel conservation in the Northeastern United States based on distribution modelling. *PLOS One* 20(9): e0324387. <https://doi.org/10.1371/journal.pone.0324387>
- DiRenzo, G. V., R. McCaffery, A. V. Longo, K. R. Zamudio, and K. R. Lips. 2025. Similar Population Dynamics before and after a Chytridiomycosis Outbreak in a Tropical Riparian Amphibian Species. *Ecosphere* e70350. <https://doi.org/10.1002/ecs2.70350>

## Massachusetts Cooperative Fish and Wildlife Research Unit

**Allison Roy****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Roy joined the Massachusetts Cooperative Fish and Wildlife Unit in 2012 as Assistant Unit Leader of Fisheries and became Unit Leader in 2020. She received her MS and PhD degrees from the University of Georgia and worked at the U.S. Environmental Protection Agency and Kutztown University before joining the U.S. Geological Survey. Her research broadly revolves around characterizing anthropogenic impacts on aquatic ecosystems and identifying conservation strategies for effectively protecting and restoring watersheds. The growing human population continues to constrain biotic assemblages in a variety of ways and

understanding the mechanisms by which urbanization and its associated stressors result in degraded fish and macroinvertebrate assemblages is an overarching challenge of her research program. She examines effects of altered hydrology, temperature, habitat, water quality, and food resources on biota (fishes, macroinvertebrates, freshwater mussels), assesses responses of aquatic ecosystems to restoration (e.g., forested riparian buffers, green infrastructure, dam removal), and develops frameworks to inform decision-making for watershed and species conservation and management. At the University of Massachusetts Amherst, Dr. Roy teaches Research Concepts for first-year graduate students and Aquatic Ecology for advanced undergraduate and graduate students.

**Areas of Expertise**

Anthropogenic Impacts | Aquatic Ecology | Biodiversity | Ecological Flows | Entomology | Fisheries Management | Landscape Ecology | Managed Flows/Hydrology | Population and Community Ecology | Species Management | Stream Ecology | T&E Species Management | Urban Ecology | Water Quality

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Invertebrates/Insects | Mussels | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Assessing River Herring Habitat and Productivity in the Connecticut River
- Investigating stream conductivity and effects on benthic macroinvertebrates in the Charles River Watershed
- Population assessment, habitat use, and occupancy for multiple freshwater turtle species

**Most Recent Publications (Top 3)**

- Hopkins, K.G., R.L. Hale, K.A. Capps, J.S. Kominoski, J.L. Morse, A.H. Roy, A. Blinn, S. Chen, L. Ortiz Muñoz, A. Quick, J. Rudolph. 2025. Overcoming challenges in mapping urban hydrography and heterogeneity in urban landscapes. *Hydrologic Processes* 39: e70221. <https://doi.org/10.1002/hyp.70221>
- Hale, R.L., K.G. Hopkins, K.A. Capps, J.S. Kominoski, J.L. Morse, A.H. Roy, S. Chen, A. Quick, A.J. Blinn, L. Ortiz Muñoz, and G. Folk. 2025. Urban heterogeneity drives dissolved organic matter sources, transport, and transformation from local to macro scales. *Limnology and Oceanography* 70: 3109-3126. <https://doi.org/10.1002/lno.70201>

## Massachusetts Cooperative Fish and Wildlife Research Unit

- Fedarick, J., Murphy, C.A., Record, S., Roy, A.H. 2025. Museum records provide unique information about the distribution of the Yellow lampmussel (Unionidae). *Freshwater Science* 44(4): 434-442. doi/10.1086/738615

## Massachusetts Cooperative Fish and Wildlife Research Unit

**Tammy L. Wilson**

Assistant Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Wilson received a BA from the University of Colorado, and graduate degrees from Utah State University. Prior to joining USGS, she was a Biometrician with the National Park Service Southwest Alaska Inventory and Monitoring Program. Dr. Wilson is an applied quantitative ecologist interested in understanding wildlife-human interactions at multiple scales. Her research focuses on the application of statistical models to investigate animal space use, wildlife-human conflict, and species interactions. She applies this work to support science-based decision-making in wildlife management and conservation. Although she mainly works on birds and mammals in upland habitats, she occasionally gets her feet wet to work on fish and marine invertebrates. Dr. Wilson teaches courses that improve students understanding of nature through quantitative ecology. This includes teaching advanced topics in landscape ecology, biometrics, and spatial modeling.

**Areas of Expertise**

Landscape Ecology | Species Distribution Modeling | Statistics and Modelling | Wildlife Management

**Taxon/Group Studied**

Carnivores | Nongame Fish/Wildlife | Small Mammals | Songbirds | Ungulates

**Recently Started Projects (Top 3)**

- Mapping wildlife road crossing hotspots
- Mitigating the Effects of Prescribed Fire on Eastern Box Turtle Populations
- Using Aerial surveys to estimate trends in brown bear population dynamics at Katmai National Park and Preserve, Alaska

**Most Recent Publications (Top 3)**

- Sirén A.P.K, Hallworth, M.T., Kilborn, J.R., Bernier, C.A., Fortin, N.L., Geider, K.D., Patry, R.K., Cliché, R.M., Prout, L.S., Gifford, S.J., Wixsom, S., Morelli, T.L. and Wilson, T.L. (2024). Monitoring animal populations with cameras using open, multistate, N mixture models. *Ecology and Evolution*, 14(12):e70583. doi:<https://doi.org/10.1002/ece3.70583>.
- Clarfeld, L., K. Gieder, A. Siren, S. Webb, T.L. Morelli, T. L. Wilson, L. Kantar, J. Kilborn, C. Callahan, L. Prout, R. Cliche, R. Patry, C. Bernier, S. Staats, S. Wixsom, and T. Donovan. DeepFaune New England: A species classification model for trail camera images in northeastern North America. *Ecology and Evolution* 15, no. 11: e72174. <https://doi.org/10.1002/ece3.72174>.
- Wilson, T. L., F. P. Howe, and T. C. Edwards, Jr. 2011. Effects of sagebrush treatments on multi-scale resource selection by pygmy rabbits. *Journal of Wildlife Management* 75:393-398.<https://doi.org/10.1002/jwmg.51>

## Michigan Cooperative Fish and Wildlife Research Unit

**Michael T Booth****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Mike received his bachelor's degree in Ecology and Evolutionary Biology from the University of California Santa Cruz, where he had the opportunity to work in a variety of systems from the tidepools and estuaries of the California coast, to inland Alaska, to the Grand Canyon and greater Southwest. His PhD is from Cornell University, where he was advised by Nelson Hairston, Jr., and Alex Flecker and worked on the role of native fishes (suckers) in desert stream ecosystems. Mike served as a fisheries biologist and ecologist for United Water Conservation District, a state groundwater agency in southern California, from 2011 to 2018. He then became a Research Assistant Professor at the University of Cincinnati, working on basic science and applied management challenges in fisheries and aquatic ecology. Mike is a native of coastal California and spent much of his career working on aquatic systems of the desert southwest, but while in Cincinnati has worked on a variety of topics ranging from habitat assessment in reservoirs to stormwater management and the ecology of urban streams to the role of fish in ecosystem processes. He moved to the Michigan Cooperative Fish and Wildlife Research Unit in 2024.

**Areas of Expertise**

Aquatic Ecology | Biogeochemistry | Fisheries Management | Invasive Species | Managed Flows/Hydrology | Movement Ecology | Stream Ecology | Urban Ecology | Water Quality

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Gamefish | Invertebrates/Insects | Nongame Fish/Wildlife | Salmonids

**Recently Started Projects (Top 3)**

- eDNA Inland Lake Pilot Project
- Evaluating relationships between water withdrawals and baseflow, habitat, and fish communities in Michigan streams: improved information for river management
- Project Snapshot: USA

**Most Recent Publications (Top 3)**

- Bergman, JN; Robichaud, JA; McCutcheon, J; Booth, MT; Campbell, B; Casselberry, GA; Cooper, CR; Gillanders, BM; Griffin, LP; Hale, E; LaRochelle, L; Murchie, KJ; Peacock, P; Swanson, RG; Stewart, SD; Woodland, RJ; Zielinski, DP; Cooke, SJ; and Piczak, ML. A conceptual framework and methods for studying the connectivity of fishes. *Fish and Fisheries*. 2026 <https://doi.org/10.1111/faf.70058>
- Grap, P., Matter, S., Ward, D., Lehmann, A., Ward, D., and M. T. Booth. Evaluating large wood additions as a scalable method of urban stream restoration. <https://doi.org/10.1002/rra.70007>

## Michigan Cooperative Fish and Wildlife Research Unit

**Brett Degregorio****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

I completed a B.S. in Wildlife and Fisheries Conservation at the University of Massachusetts in Amherst in 2004, a M.S. in Biology at Purdue at Fort Wayne in 2008, and a PhD in Natural Resources at University of Illinois in 2014. I worked with the Department of Defense (ERDC-CERL) for 5 years studying wildlife conservation issues on military installations all over the country before beginning my current position with the Arkansas Cooperative Research Unit in

2019. In 2023, I was fortunate to be selected to serve as the first Unit Leader for the newly established Michigan Cooperative Fish and Wildlife Research Unit. My students and I study the movement ecology, habitat use, distribution, and behavioral responses of reptiles, birds, and mammals to anthropogenic disturbance and human activity. Many of my current projects use wildlife game cameras to monitor community level changes and behavioral responses to human activity or development. My work is adaptable and flexible as my research program is tailored to work closely with the needs of our cooperators, the Michigan Dept of Natural Resources and the Fish and Wildlife Service. My students and I endeavor to study wildlife issues all over the state of Michigan. I teach several courses including Wildlife Management and Conservation and Conservation Biology.

**Areas of Expertise**

Anthropogenic Impacts | Behavioral Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Urban Ecology | Wetland Ecology

**Taxon/Group Studied**

Carnivores | Furbearers | Gamebirds | Nongame Fish/Wildlife | Reptiles | Songbirds | Waterfowl

**Recently Started Projects (Top 3)**

- Elk Density Estimation
- Sandhill Crane response to solar development
- Chasing the deer denominator: A standardized density estimation technique for white-tailed deer

**Most Recent Publications (Top 3)**

- Wilson, K., C. Roberts, S. Chiavacci, and B.A. DeGregorio. Seasonal variation in Wild Pig revealed by DNA metabarcoding. *Wildlife Society Bulletin*.
- Massey, A.D., J.D. Willson, and B.A. DeGregorio. Freshwater turtle assemblages and densities in agricultural ditches and aquaculture ponds of eastern Arkansas. *Chelonian Conservation and Biology*. IP-140476
- DeGregorio, B.A., J.D. Willson, and A. Massey. 2021. Assessing the density, demography, and resilience to commercial harvest of aquatic turtles in the Mississippi Delta region of Arkansas. Final Technical Report to Arkansas Game and Fish Commission. DOI: 10.5281/zenodo.17992538

## Michigan Cooperative Fish and Wildlife Research Unit

**Steven Gray****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

I received my masters (2012) in Fisheries and Wildlife from Michigan State University, where I conducted research on small mammal community response to forest management in northern California. Following my masters, I obtained a dual-PhD (2019) in Fisheries and Wildlife and Ecology, Evolution, and Behavior from Michigan State University. My dissertation focused on the spatial ecology and impact of a low-density wild pig ( *Sus scrofa* ) population in Michigan. Following my graduate training, I held post-doctoral positions in the Alexander Center for Applied Population Biology at Lincoln Park Zoo and in the Applied Forest and Wildlife Ecology Laboratory at Michigan State University. I officially joined the Michigan Cooperative Fish and Wildlife Research Unit as Assistant Unit Leader in 2024. I have broad research interests that span a diversity of taxa and systems but specialize in non-invasive monitoring tools and spatial and quantitative techniques. My research is highly applied and catered to address the pressing conservation and management challenges identified by cooperators.

**Areas of Expertise**

Forest Ecology | GIS/Spatial Analysis | Movement Ecology | Species Distribution Modeling | Wildlife Management

**Taxon/Group Studied**

Carnivores | Furbearers | Nongame Fish/Wildlife | Small Mammals | Songbirds | Ungulates

**Recently Started Projects (Top 3)**

- Elk Density Estimation
- Sandhill Crane response to solar development
- Avian diversity and use of utility-scale solar developments in agricultural environments

**Most Recent Publications (Top 3)**

- Rajewski, J., S. Gray, J. Grabarkiewicz, H. Campa III, and G. J. Roloff. Detectability of eastern massasauga rattlesnakes ( *Sistrurus catenatus* ) during visual encounter surveys. *Wildlife Society Bulletin*.

## Minnesota Cooperative Fish and Wildlife Research Unit

**David Fulton****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Fulton received graduate degrees from Washington State (MS) and Colorado State (PhD) Universities and worked as a social science researcher and regional planner for the Alaska Department of Fish and Wildlife before joining the Minnesota Unit in 1998. The central focus of his research is on understanding how human held values, attitudes, norms, and perceptions of risk influence how people interact with fish and wildlife and on understanding what factors shape stakeholder preferences for conservation policies as well as individual conservation behaviors. His research draws from basic theory in the social sciences with a particular focus on social psychology, and his projects with graduate students and post docs are focused on providing applied social science information to assist agencies (federal, state, and tribal) in decision making concerning diverse environmental management strategies, policies, and regulations. He conducts qualitative and quantitative social science research, but his focus has been in using quantitative psychometric techniques to model the relationships among constructs that influence human behavior. His research efforts have spanned from the local to the international scale and include aquatic and terrestrial management issues. He teaches a graduate level course in the Human Dimensions of biological conservation as well as occasional graduate seminars addressing theoretical and methodological topics in the conservation social sciences.

**Areas of Expertise**

Anthropogenic Impacts | Decision Support/Analysis | Disease/Parasites | Environmental Change | Fisheries Management | Human Dimensions | Invasive Species | Policy | Species Management | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Freshwater Fishes | Gamebirds | Gamefish | Nongame Fish/Wildlife | Ungulates | Waterfowl

**Recently Started Projects (Top 3)**

- Attitudes toward RNAi methods for controlling invasive carp.
- Exploring the needs and opportunities around community-based CWD surveillance on Tribal Lands
- Exploring the needs and opportunities around community-based CWD surveillance on Tribal Lands

**Most Recent Publications (Top 3)**

- Faust, R., Bernstein, L.A., Fulton, D.C.....Wolf, T.M. 2025. A community-based research approach to develop chronic wasting disease outreach with tribal communities. *Society & Natural Resources*. <https://doi.org/10.1080/08941920.2025.2572062>
- Smith, K., A. Landon, E.M Walberg, D.C. Fulton, M.W. Schrage, N. McCann, and J. Forester. 2025 Stakeholders' priorities for management of a restored elk population in northeast Minnesota. *Conservation Science and Practice*. <https://conbio.onlinelibrary.wiley.com/doi/pdf/10.1111/csp2.13200>
- Landon, A.C., K. Smith, L. Cornicelli, D.C. Fulton, L.E. McInenly, S.A. Schroeder. Examining Landowners' Preferences for a Chronic Wasting Disease Management Program. *Wildlife Society Bulletin*

## Minnesota Cooperative Fish and Wildlife Research Unit

## Lynn Waterhouse

## Assistant Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

Lynn Waterhouse joined the Assistant Unit Leader, Fisheries at the Minnesota Cooperative Fish and Wildlife Research Unit (MNCFWRU) at the University of Minnesota in June of 2021. Prior to joining the MNCFWRU she was a Research Biologist with the Marine Conservation team at John G. Shedd Aquarium focusing on mesopredator research in The Bahamas. Lynn's research focuses on stock assessment, population dynamics, and developing and using eDNA for species detection - with the goal of analyzing and solving relevant, real world problems. Research is done in both marine and freshwater systems. Lynn teaches graduate courses in the Fisheries, Wildlife, and Conservation Biology program at University of Minnesota on topics related to quantitative fisheries including Sampling Design, baseR, and Environmental DNA (eDNA). Ph.D. Biological Oceanography, Scripps Institution of Oceanography, University of California San Diego, 2018 M.S. Statistics, Pennsylvania State University, 2012 M.S. Fisheries Sciences, Virginia Institute of Marine Sciences at The College of William and Mary, 2010

## Areas of Expertise

AI/Machine Learning | Fisheries Management | Invasive Species | Population Dynamics | Statistics and Modelling | eDNA

## Taxon/Group Studied

Anadromous Fishes | Freshwater Fishes | Marine Fishes | Salmonids | Species of Greatest Conservation Need

## Recently Started Projects (Top 3)

- Estimating abundances of sea cucumbers in The Bahamas
- Improving Understanding of Cisco Habitat Use and Movement
- Defining oxythermal performance metrics for use in physiologically guided abundance models of diverse coregonid ecotypes

## Most Recent Publications (Top 3)

- (submitted) Van Horn, C., A. K. Ibrahim, A. Candelmo, S.A. Heppell, C.R.M. McCoy, C.V. Pattengill-Semmens, L. Waterhouse, L.M. Cherubin, C. Taylor, W. Michaels, J. Locascio, B.X. Semmens. Hydrophone placement yields high variability in detection of *Epinephelus striatus* calls at a spawning site. submitted to *Ecological Applications*
- Sleugh, T., McCoy, C.M., Pattengill-Semmens, C.V. et al. 2023. Migratory behavior of aggregating male Tiger Grouper (*Mycteroperca tigris*) in Little Cayman, Cayman Islands. *Environ Biol Fish* 106, 1195–1206 (2023). <https://doi.org/10.1007/s10641-023-01399-w>
- Popa, D., Waterhouse, L., Duchnick, J., Neuman, T., and P. Witucki. 2021. Performance of the Uni-Vent Eagle(TM) Model 754 ventilator under hyperbaric conditions. *Undersea & Hyperbaric Medical Society, Inc.* 48(4):409-416. PMID: 34847304.

## Mississippi Cooperative Fish and Wildlife Research Unit

**Leandro Miranda****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Steve Miranda - Unit Leader, Mississippi Cooperative Fish and Wildlife Research Unit Steve is Unit Leader and Professor at Mississippi State. He is a fish ecologist with 40 years of experience and has been with the Coop Units since 1986. Prior to 1986 he was a research intern with Kentucky Department of Fish and Wildlife and research biologist with Texas Parks and Wildlife. His long-standing research interests include lentic aquatic ecosystems, natural resource conservation and management, fish population and community dynamics, and aquatic habitat management. He teaches Fisheries Science and Management of Impounded River Basins and has directed over 60 MS and PhD students. Steve's most current research has been published in journals such as *Aquatic Sciences*, *Climatic Research*, *Fish and Fisheries*, *Freshwater Biology*, *Journal of Environmental Management*, *Reviews in Fish Biology and Fisheries*, *Transactions of the American Fisheries Society*, and *Water Resources Research*. In 2017 he published a book entitled *Reservoir Fish Habitat Management*. He has held several editorial appointments, including Co-editor of the *North American Journal of Fisheries Management* and currently Chief Editor of *Frontiers in Freshwater Sciences*.

**Areas of Expertise**

[Aquatic Ecology](#) | [Fisheries Management](#) | [Habitat Management](#) | [Invasive Species](#) | [Population Dynamics](#) | [Population and Community Ecology](#)

**Taxon/Group Studied**

[Freshwater Fishes](#) | [Gamefish](#)

**Recently Started Projects (Top 3)**

- Bracing for the long term: a conceptual framework to facilitate coexistence with invasive carps
- Invasive carp distribution in MAV
- Vulnerability of reservoirs to climate change

**Most Recent Publications (Top 3)**

- Miranda, L.E., and M.A. Angulo-Valencia. 2026. Invasive carps versus native fish: A first-pass trait-based index for assessing competition threats. *Frontiers in Freshwater Science*, 4, <https://doi.org/10.3389/ffwsc.2026.1764296>
- Faucheux, N.M., W.T. Slack, L.E. Miranda. 2025. Long-term effects of low-drop grade control structures on channel evolution in the Yazoo Basin. *River Research and Applications*. <https://doi.org/10.1002/rra.70090>
- Miranda LE, Griffin F, Neal JW, Lang TJ, Goldstrohm N, and Mehlmann M. 2025. Using angler-submitted records to interpret the spatial seasonality of a large predator (Black bass, *Micropterus* spp.). *Fisheries Research* 287:107423

## Missouri Cooperative Fish and Wildlife Research Unit

**Craig Paukert****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Paukert received his degrees from Minnesota (BS), Oklahoma State (MS), and South Dakota State (PhD) and also worked at the USGS Grand Canyon Monitoring and Research Center before becoming the Assistant Leader-Fisheries at the Kansas Unit in 2003. Dr. Paukert has been the Unit Leader of the Missouri Cooperative Fish and Wildlife Research Unit since 2010. He conducts research to help agencies manage aquatic resources locally to globally. Much of the work has involved fish conservation and management in rivers and streams but also includes conservation planning at the landscape scale. More recently, Dr. Paukert's work has focused on helping agencies cope with climate change by helping them develop adaptation strategies for fishes. Although much of his work is in the Midwest US, Dr. Paukert has also been involved in national to global assessments to help managers and policy makers with their conservation challenges. Dr. Paukert has taught graduate levels courses in fisheries science and professional skills needed to be a successful natural resources manager and researcher.

**Areas of Expertise**

Anthropogenic Impacts | Aquatic Ecology | Biodiversity | Ecological Flows | Environmental Change | Fisheries Management | Habitat Management | Landscape Ecology | Managed Flows/Hydrology | Population and Community Ecology | Species Distribution Modeling | Species Management | Stream Ecology | T&E Species Management

**Taxon/Group Studied**

Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Application of Structured Decision Making and Adaptive Management for the Prevention and Control of Invasive Species
- Characterize aquatic biota and habitat for cold and cool water stream systems to enhance resource management and protection across thermal gradients
- Development of a flexible mid-sized river habitat sampling protocol to complement fish protocols

**Most Recent Publications (Top 3)**

- Xu, L., H. S. Embke, C. M. Free, G. J. A. Hansen, A. J. Lynch, C. P. Paukert, N. A. Sievert, O. P. Jensen. 2025. Disentangling the historical impacts of warming and fishing on exploited freshwater fish populations. *Science Advances*. 11, eadx5138(2025).DOI:10.1126/sciadv.adx5138
- Lynch, A. J., T. D. Douglas Beard, Jr., and C. P. Paukert. 2025. Advancing climate adaptation for inland fish and fisheries. *Fisheries*. <https://doi.org/10.1093/fshmag/vuaf095>
- Lynch, A. J., D. Bartley, T. D. Beard, Jr., G. Borba, S. J. Cooke, I. G. Cowx, V. Elliott, H. S. Embke, E. Gondwe, Z. Hogan, J. G. Low, J. Madden, S. C. Phang, E. D. Rice, N. Sievert, G. L. Stokes, L. Akwany, E. H. Allison, R. Arlinghaus, R. Arthur, V. Atkore, M. K. Badhon, C. Baigun, J. Brooks, L. Castello, S. Chanthalonnavong, S. Chea, S. Chhorn, M. S. Cooperman, K. Crisafi, J. Dalton, C. Doughty, J. Earl, W. E. Emam, R. Flitcroft, D. Gundermann, H. H. Hansen, I. Harrison, K. Hughes, K. Kangur, T. Lawrence, R. Lyach, B. J. E. Myers, M. Muruganandam, K. Q. Nguyen, V. Nguyen, E. A. Nyboer, J. D. Olden, C. P.

**Missouri Cooperative Fish and Wildlife Research Unit**

Paukert, M. L. Piczak, Y. Quintana, V. D. H. Quyen, L. A. Shehu, R. Shrestha, S. Uon, S. Uy, C. M. VanWynen. 2025 . Opportunities to better integrate inland fish and fisheries in multilateral environmental and conservation agreements. *Environmental Science & Policy*. 171(2025):104XX-XXX.IP-168310. BAO Approval 2/20/2025. <https://doi.org/10.1016/j.envsci.2025.104009>

## Missouri Cooperative Fish and Wildlife Research Unit

**Jacob Thomas Westhoff****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Westhoff earned a master's degree in Biology from Tennessee Technological University and a PhD in Fisheries and Wildlife from the University of Missouri. He worked for the Missouri Department of Conservation for five years where he conducted research on populations of rare fishes prior to joining the Missouri Coop Unit in 2021. His research focuses primarily on the conservation of non-game fish, crayfish, and mussels in the midwestern and southeastern United States. He combines laboratory and field data collection to investigate topics related to thermal ecology, aquatic invasive species, life history, movement, habitat associations, and species distributions. Much of his research focuses on rare and endangered species and provides information to state and federal partners for species listing, recovery, and monitoring efforts. He is also keenly interested in methods development and standardization related to both laboratory and field data collection. Dr. Westhoff has taught courses on Global Change Ecology, Ichthyology, Fish Ecology, Fisheries Management, Ecology of Freshwater Crayfish and Mussels, and Invasion Ecology.

**Areas of Expertise**

Aquatic Ecology | Biodiversity | Environmental Change | Fisheries Management | Invasive Species | Species Distribution Modeling | Species Management | Species Status Assessments | Stream Ecology | T&E Species Management | eDNA

**Taxon/Group Studied**

Freshwater Fishes | Invertebrates/Insects | Mussels | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Boiling in Burrows: An Assessment of the Thermal Ecology of Crayfish and the Aquatic Thermal Landscape of a Prairie System
- Bluestripe Darter Information for Species Status Assessment
- Use of Beaver Dam Analogues to Enhance Stream and Wetland Habitat in North Missouri Prairies

**Most Recent Publications (Top 3)**

- Westhoff, J. T., H. A. Abdelrahman, and J. A. Stoeckel. 2023. Upper thermal tolerance of two native and one invasive crayfish in Missouri, USA. *Freshwater Crayfish* 28:27-36. <https://doi.org/10.5869/fc.2023.v28-1.27>
- Huber, A. F., W. A. Fitzsimmons, and J. T. Westhoff. 2023. The Smaller, the Better? First evaluation of growth and mortality in crayfish internally tagged with p-Chips. *Journal of Crustacean Biology* 43: 1-10. <https://doi.org/10.1093/jcbiol/ruad071>
- Ellingsworth, E. A., R. J. DiStefano, J. T. Westhoff, and B. M. O'Brian. 2024. The endangered Caney Mountain Cave Crayfish: a preliminary study of its habitat with life history notes. *Freshwater Crayfish* 29:121-132.

## Montana Cooperative Fishery Research Unit

**Christopher Guy****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Guy received his Ph.D. from South Dakota State University in Fisheries Science before joining the Unit program in 1994. He conducts research within the broad context of fish ecology and fisheries management. A consistent research theme of his has been on native fish assemblage restoration, a prominent ecological and societal issue within the USA and globally. Within that theme, his research has two areas of emphasis—conservation of large-river fishes and suppression of invasive species (for conservation of native fishes). These areas encompass a broad diversity in ecosystem types and fish assemblages—from large warm-water rivers to alpine lakes. Given the

mission of the Cooperative Research Units program, he willingly assists natural resource agencies with their research needs. As a faculty member at Montana State University, he serves on university committees, teaches graduate courses (Fisheries Science and Communications in Ecological Sciences) and seminars, and guest lectures in a variety of graduate and undergraduate courses.

**Areas of Expertise**

Fisheries Management | Invasive Species | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Management

**Taxon/Group Studied**

Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Effects of snag and release on survival and reproductive success of paddlefish in the upper Missouri River, Montana
- Ontogenetic and spatiotemporal distribution of stable isotopes and gut content for pallid sturgeon in the Missouri River above Fort Peck Reservoir, Montana
- Historical analysis of Yellowstone cutthroat trout growth in Yellowstone Lake

**Most Recent Publications (Top 3)**

- Furey, K. M., C. S. Guy, B. W. Liermann, P. Saffel, D. A. Schmetterling. 2026. Gerrard strain rainbow trout are not piscivorous in a shallow, polymictic reservoir. *North American Journal of Fisheries Management* . <https://doi.org/10.1093/najfmt/vqaf116>
- Briggs, M. A., M. A. H. Webb, C. S. Guy, and T. M. Koel. 2026. Plasticity in the reproductive biology of Yellowstone cutthroat trout *Oncorhynchus virginalis bouvieri* in Yellowstone Lake following lake trout *Salvelinus namaycush* invasion. *Journal of Fish Biology* <https://doi.org/10.1111/jfb.70281>
- Briggs, M. A., H. C. Glassic, C. S. Guy, S. T. Opitz, J. J. Rotella, D. A. Schmetterling. 2025. Open-populations models provide an alternative trout monitoring method in the upper Yellowstone River, Montana. *North American Journal of Fisheries Management* . [doi.org/10.1093/najfmt/vqaf048](https://doi.org/10.1093/najfmt/vqaf048)

## Montana Cooperative Fishery Research Unit

## Alexander Zale

## Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

Dr. Zale began his career with the Cooperative Research Units program in 1975 as an undergraduate technician with the Massachusetts Unit before getting graduate degrees at the Virginia and Florida units. After a postdoc with the Florida Unit, he became the AUL/F at the Oklahoma Unit in 1985 and transferred to the Montana Fishery Unit in 1994, where he subsequently became UL in 2002. Dr. Zale's primary research focus is applied aquatic ecology directed at native fish assemblage restoration, a prominent and pressing ecological and societal issue in Rocky Mountain and Great Plains ecosystems as well as in similar ecosystems worldwide. Other areas of emphasis include thermal biology, especially the generation of empirical data in both the laboratory and field needed to assess the effects of climate change, movement ecology, and recreational fishery management. However, Dr. Zale's overarching research goal is to answer the applied aquatic research questions that the Unit's State and Federal Cooperators need to have answered to achieve their missions. He has therefore conducted research on a broad range of topics. His teaching focuses on preparing his students for agency positions. He also teaches a graduate course entitled Human Dimensions of Fish and Wildlife Management.

## Areas of Expertise

Anthropogenic Impacts | Aquatic Ecology | Disease/Parasites | Fisheries Management | Grassland Ecology | Habitat Management | Invasive Species | Movement Ecology | T&E Species Management

## Taxon/Group Studied

Freshwater Fishes | Gamefish | Mussels | Salmonids

## Recently Started Projects (Top 3)

- Development of an A.I. model to identify cutthroat trout and hybrids
- Quantifying Recreational Use of Montana Rivers
- Recruitment of Trout to Southwest Montana Rivers

## Most Recent Publications (Top 3)

- Triano, B., K. M. Kappenman, T. E. McMahon, M. Blank, K. C. Heim, A. E. Parker, A. V. Zale, and K. Plymesser. 2022. Attraction, entrance, and passage efficiency of Arctic Grayling, trout, and suckers at Denil fishways in the Big Hole River Basin, Montana. *Transactions of the American Fisheries Society* 151:453-473. <https://doi.org/10.1002/tafs.10362>
- Lance, M.J., t. D. Ritter, Zale, A.V., Grisak, G.G., Mullen, J.A., Walsh, S.J., Heim, K.C. and Al-Chokhachy, R. (2024). Spatial and temporal variability of movements among sympatric salmonids in an unfragmented inland watershed. *Transactions of the American Fisheries Society*, [online] 153(5), pp.611–629. doi:<https://doi.org/10.1002/tafs.10485>. ■
- Sepulveda, A., R. Al-Chokhachy, M. B. Laramie, K. Crapster, L. Knotek, B. Miller, A. V. Zale, and D. S. Pilliod. 2021. It's complicated...environmental DNA as a predictor of trout and char abundance in streams. *Canadian Journal of Fisheries and Aquatic Sciences* 78:422-432. [doi.org/10.1139/cjfas-2020-0182](https://doi.org/10.1139/cjfas-2020-0182).

## Montana Cooperative Wildlife Research Unit

**Sarah Sells****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Sells received her BS from Oregon State University and MS and PhD from the University of Montana. She was a postdoctoral research scientist before joining the Montana Cooperative Wildlife Research Unit in 2022. Dr. Sells is a basic and applied ecologist with expertise in animal behavior, spatial ecology, quantitative analyses, agency collaboration, and decision analysis. Her research aims to ask and answer questions that advance understanding of the natural world and address pressing conservation challenges. To this end, she collaborates closely with resource managers to produce research that addresses conservation needs. Over the years, Dr. Sells has worked with numerous researchers on projects spanning the alpine meadows of Olympic National Park, to canyon country of the Southwest, and to cloud forests of Central America. Most recently, she has been collaborating with Montana Fish, Wildlife and Parks to study grizzly bear connectivity among ecosystems. Prior to this, she studied wolf behavior and spatial ecology to help estimate abundance of wolves in Montana.

**Areas of Expertise**

Behavioral Ecology | Decision Support/Analysis | GIS/Spatial Analysis | Landscape Ecology | Movement Ecology | Population and Community Ecology | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Carnivores | Nongame Fish/Wildlife | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Grand Teton Wildlife Connectivity Modeling
- Human Dimensions of Grizzly Bear Recovery
- Moose Habitat on the Flathead Indian Reservation

**Most Recent Publications (Top 3)**

- Vinks, M. A., S. N. Sells, and C. M. Costello. 2025. Investigating the Influence of Forest Disturbance on Grizzly Bear Habitat Ecology and Fitness in the Northern Continental Divide Ecosystem: Annual Progress Report. Montana Fish, Wildlife and Parks, Helena, MT.
- Sipe, H., S. Sells, J. Gude, K. Podruzny, and M. Parks. 2024. Wolf Harvest Management Strategy Evaluation. Annual Report to Montana Fish, Wildlife and Parks. Missoula, Montana. <https://fwp.mt.gov/conservation/wildlife-management/wolf>
- Vinks, M. A., S. N. Sells, and C. M. Costello. 2024. Investigating the Influence of Forest Disturbance on Grizzly Bear Habitat Ecology and Fitness in the Northern Continental Divide Ecosystem: Annual Progress Report. Montana Fish, Wildlife and Parks, Helena, MT.

## Montana Cooperative Wildlife Research Unit

## Daniel P Walsh

## Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

Daniel Walsh - Unit Leader, Montana Cooperative Wildlife Research Unit. Dr. Walsh received graduate degrees in Fisheries and Wildlife and Statistics from Michigan State University and Colorado State University. He worked as a Disease Researcher with Colorado Division of Wildlife and as a Quantitative Ecologist at the USGS National Wildlife Health Center before joining the Montana Unit in 2022. He conducts applied research that develops and applies novel quantitative approaches in conjunction with field research to improve the health of wildlife populations. His research interests are broad, and he has worked on a wide array of taxonomic groups and wildlife health

issues including chronic wasting disease, bighorn sheep respiratory disease, avian influenza, white nose syndrome, New Castle disease, among others. One focus of his current research is leveraging systems modeling to inform decision-making and applying scientific principles to the implementation of management efforts to improve the likelihood of desired outcomes. Additionally, Dr. Walsh has helped develop national surveillance strategies for avian influenza and white nose syndrome and has conducted extensive work with the World Animal Health Organisation and others to build wildlife health capacity globally. Dr. Walsh will teach courses in statistical methods for population dynamics and wildlife health modeling.

## Areas of Expertise

AI/Machine Learning | Disease/Parasites | Epidemiology | GIS/Spatial Analysis | Population Dynamics | Statistics and Modelling | Wildlife Management

## Taxon/Group Studied

Bats | Ungulates | Waterfowl

## Recently Started Projects (Top 3)

- Adaptive management for bighorn sheep and mountain goats
- Assessing chronic wasting disease environmental prion reservoirs
- Application of systems modeling to identify novel approaches for wildlife health management

## Most Recent Publications (Top 3)

- Navarro, D., A. K. Tallon, E. K. Latch, C. N. Ott-Conn, R. W. DeYoung, D. P. Walsh, P. T. Euclide, C. R. G. Babu, W. A. Larson, A. S. Seetharam, A. J. Severin, J. M. Reecy, Z. Hu, J. R. Cantrell, M. Carstensen, J. N. Caudell, C. H. Killmaster, M. L. Lockwood, W. T. McKinley, A. S. Norton, K. L. Schuler, D. J. Storm, J. A. Sumners, W. David Walter, and J. A. Blanchong. 2025. Development of high-throughput genomic resources to inform white-tailed deer population and disease management. *Molecular Ecology Resources*. 26:e70085 <https://doi.org/10.1111/1755-0998.70085>
- M. Gouda, J. Powell, W. J. McClure, D. P. Walsh, and D. J. Storm. 2025. Characterization of the long-distance dispersal kernel of white-tailed deer and evaluating its impact on chronic wasting disease spread in Wisconsin. *Bulletin of Mathematical Biology* 87(4):52. doi: 10.1007/s11538-024-01394-x.
- Penk, S. R., C. Anhalt-Depies, R. E. W. Berl, T. S. Fiddaman, K. Pierson, J. L. Price Tack, B. J. Richards, E. Rieder, D. J. Storm, C. L. White and D. P. Walsh. A system dynamics model to understand the integrated ecological and human dimension aspects of wildlife health and disease management. *BioRxiv*

## Nebraska Cooperative Fish and Wildlife Research Unit

## Clinton Leach

### Assistant Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)



#### Biography

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Dr. Leach joined the Nebraska Cooperative Fish and Wildlife Research Unit as an Assistant Unit Leader in 2024. Prior to this, he was a postdoctoral researcher at Colorado State University working on modeling sea otter predator-prey relationships in Glacier Bay, Alaska, and brown treesnake movement ecology in Guam. He received his graduate degrees in statistics (M.S.) and ecology (Ph.D.) from Colorado State University, and was awarded a B.S. from Harvey Mudd College. His work focuses on statistical ecology, in particular developing and applying Bayesian hierarchical methods to address challenges that arise when making inference from complex fish and wildlife data. Specific areas of interest include incorporating mechanistic ecological models in statistical frameworks, models for animal movement and distribution, and leveraging the machinery of Bayesian inference to inform optimal monitoring. Dr. Leach teaches Ecological Statistics with a focus on Bayesian methods and multi-level models.

#### Areas of Expertise

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GIS/Spatial Analysis | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Statistics and Modelling

#### Taxon/Group Studied

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Gamefish | Marine Mammals | Reptiles | Ungulates

#### Recently Started Projects (Top 3)

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- Evaluating connectivity and identifying impediments to movement of big game in Nebraska
- Implementation of protected slot limits to manage Largemouth Bass among southeast Nebraska waterbodies

#### Most Recent Publications (Top 3)

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No Publications data.

## Nebraska Cooperative Fish and Wildlife Research Unit

**Sarah A. Sonsthagen****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Sonsthagen joined the Nebraska Cooperative Fish & Wildlife Research Unit in 2020 from the U.S. Geological Survey Alaska Science Center where she studied the evolutionary relationships among Arctic vertebrate populations. Dr. Sonsthagen was a post-doctoral fellow at the Smithsonian Institution, National Museum of Natural History and National Zoo, awarded her Ph.D. in Biological Sciences from University of Alaska Fairbanks, M.S. in Zoology from Brigham Young University, and B.S. in Biology from University of Wisconsin-Stevens Point. Her research focuses on investigating ecological drivers of connectivity and adaptive capacity of wildlife and fish species using both field- and laboratory-based methods. Movement underlies many key processes in ecology and evolution and is critical for species response to environmental change, as such, she applies population and community driven approaches to evaluate genomic and demographic connectivity across the landscape, adaptive capacity, and the influence of species biology in shaping spatial and temporal genomic diversity to inform management decisions. Dr. Sonsthagen has taught Population genetics, Application of genomics in conservation, and Ornithology.

**Areas of Expertise**

Conservation Genetics/Genomics | Evolutionary Ecology | Grassland Ecology | Landscape Ecology | Movement Ecology | Population and Community Ecology | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Marine Mammals | Nongame Fish/Wildlife | Songbirds | Species of Greatest Conservation Need | Waterfowl

**Recently Started Projects (Top 3)**

- Effect of isolation on population genetics of greater prairie-chickens
- Balancing residual cover and woody encroachment for greater prairie-chickens in the Flint Hills
- Evaluating the genetic implications of translocation effects and recolonization of river otters in Nebraska

**Most Recent Publications (Top 3)**

- Humphrey, E.K., J.J. Spurgeon, L. Bowen, R.E. Wilson, S.C. Waters-Dynes, B.M. Newkirk, and S.A. Sonsthagen. 2025. Too hot for comfort: Elevated temperatures influence gene expression and exceed thermal tolerance of bigmouth shiners, *Ericymba dorsalis*. *Journal of Fish Biology*. <https://doi.org/10.1111/jfb.70268>
- Wilson, R.E., S.A. Sonsthagen, A.J. Walsh, and A.D. Fox. Adoption of non-related goslings and intergenerational parental care among Greenland White-fronted Geese *Anser albifrons flavirostris*. *Ibis*. <https://doi.org/10.1111/ibi.13427>
- Armstrong, M.R., R.E. Wilson, J.A. Johnson, T.L. Booms, C.F. Gesmundo, Z.H. Pohlen, P.B. Leonard, and S.A. Sonsthagen. Signatures of hybridization between the gray-headed chickadee, *Poecile cinctus lathamii*, and the widespread boreal chickadee, *Poecile hudsonicus*, prior to declines in gray-headed chickadee abundance. *Ecology and Evolution* 15:7 [doi.org/10.1002/ece3.71673](https://doi.org/10.1002/ece3.71673)

## Nebraska Cooperative Fish and Wildlife Research Unit

**Jonathan Spurgeon****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Spurgeon received graduate degrees from the University of Missouri-Columbia and the University of Nebraska-Lincoln where he studied large-river ecology and conservation and management of fish populations. Before joining the Nebraska Cooperative Fish and Wildlife Research Unit in 2020, Dr. Spurgeon was an assistant professor at the University of Arkansas at Pine Bluff. A major focus of his research is quantifying the patchwork of habitat conditions needed by stream fishes across their life-history. Research outcomes are intended to inform decisions regarding habitat restoration and conservation strategies including translocation and non-native species suppression. Dr. Spurgeon uses a diversity of study designs and analytical techniques including occupancy modelling and mark-recapture methods. Dr. Spurgeon is currently working across a gradient of systems from small streams in the Nebraska Sandhills and Ouachita Mountains to the largest rivers in North America. Dr. Spurgeon teaches graduate courses in vertebrate population ecology and ecological statistics at the University of Nebraska-Lincoln.

**Areas of Expertise**

Aquatic Ecology | Ecological Flows | Fisheries Management | Habitat Management | Invasive Species | Movement Ecology | Population Dynamics | Population and Community Ecology | Species Distribution Modeling | Species Management | Statistics and Modelling | Stream Ecology | T&E Species Management

**Taxon/Group Studied**

Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Invasive carp movement and habitat use in Nebraska interior rivers
- Implementation of protected slot limits to manage Largemouth Bass among southeast Nebraska waterbodies
- Influence of environmental thresholds on trajectories of freshwater assemblages with implications for building climate resilience across prairie landscapes

**Most Recent Publications (Top 3)**

- Stevens, J.N., C.E. Barshinger, J.J. Spurgeon, M.A. Eggleton, and S.E. Lochmann. 2024 . Comparison of two otolith processing methods for Silver Carp age estimation. *Journal of the Southeastern Association of Fish and Wildlife Agencies*.
- Miller, B.T., Neely, B.C., Chance-Ossowski, C.J., Waters, M.J., Salazar, V., Kowalewski, L.K., Kramer, N.W., Lundgren, S.A. and Spurgeon, J.J. (2024). Detection Probabilities of Flathead Catfish in Small Kansas Impoundments. *Journal of Fish and Wildlife Management* . doi:<https://doi.org/10.3996/jfwm-23-057>. ■
- Althoff, A.L., Kindschuh, J.L., Lochmann, S.E., Owens, D.K., Spurgeon, J.J. and Stevens, J.N. (2024). Movements and Habitat Use of Silver Carp in the Arkansas and White Rivers. *Journal of Fish and Wildlife Management* , 15(2), pp.493–509. doi:<https://doi.org/10.3996/jfwm-23-066>. ■

## Nevada Cooperative Fish and Wildlife Research Unit

## Jeffrey Arron Falke

### Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)



### Biography

Dr. Falke received graduate degrees from Kansas State University and Colorado State University and was a post-doctoral fellow at Oregon State University and NOAA-Fisheries before joining the Alaska Unit as Assistant Unit Leader-Fisheries in 2012. Jeff became the Alaska Unit Leader in 2019 and the Nevada Unit Leader in 2023. His research program focuses on the impact of environmental stressors such as climate and land use change on fish population and assemblage dynamics, with emphases on freshwater fish ecology, management, and conservation biology, freshwater processes and habitat dynamics, climate change impacts, landscape and spatial ecology, and invasion biology.

Multidisciplinary in nature, this research includes retrospective and forecasting analyses, is carried out at fine- to broad-spatial scales, and is responsive to the needs of cooperators. Jeff's current (2024) research focuses on the resiliency of boreal and Great Basin stream ecosystems to wildfire and hydrologic disturbance (floods, drought), and interactions of these stressors with climate change. He teaches graduate courses in research design and freshwater habitat dynamics at the University of Nevada, Reno.

### Areas of Expertise

Aquatic Ecology | Desert Ecology | Ecological Flows | Environmental Change | Fire Ecology | Fisheries Management | GIS/Spatial Analysis | Grassland Ecology | Habitat Management | Invasive Species | Landscape Ecology | Managed Flows/Hydrology | Population Dynamics | Population and Community Ecology | Remote Sensing | Resilience | Species Distribution Modeling | Statistics and Modelling | Stream Ecology | T&E Species Management | eDNA

### Taxon/Group Studied

Anadromous Fishes | Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need

### Recently Started Projects (Top 3)

- Landscape Watershed Condition and Drought Vulnerability Assessment in the Western U.S.
- Integrated Monitoring Plan Development for Native and Non-Native Fishes at Ash Meadows National Wildlife Refuge, Nevada
- Mapping Ungulate Migrations in Nevada

### Most Recent Publications (Top 3)

- Grabowski TB, Y Tsang, D Bartz, C Yap, J Falke, JR Bellmore, & J Fellman. 2026. Flow ecology of invasive suckermouth catfish in urbanized ridge-to-reef systems on O'ahu, Hawai'i. *Frontiers in Environmental Science* 14:1754403. <https://doi.org/10.3389/fenvs.2026.1754403>
- Shaftel, R., M. L. Feddern, S. A. McAfee, E. R. Schoen, C. Cunningham, V. R. von Biela, J. Paul, Y. Cheng, A. Newman, M. Perdue, J. Schwenk, A. von Finster, and J. A. Falke. 2026. Integrating climate data and river modeling to reveal Chinook salmon habitat conditions in subarctic river basins. *Ecosphere*. 17:e70399. DOI: 10.1002/ecs2.70399.
- Delbecq, C., Fellman, J.B., Bellmore, R.J., Whitney, E., Fitzgerald, K., and J.A. Falke. 2026. Season and antecedent conditions impact concentration-discharge relationships for dissolved organic and inorganic

**Nevada Cooperative Fish and Wildlife Research Unit**

carbon in a Southeast Alaskan watershed. *Journal of Geophysical Research: Biogeosciences*, 131, e2025JG009090. <https://doi.org/10.1029/2025JG009090>.

## Nevada Cooperative Fish and Wildlife Research Unit

**Brian Folt****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Brian Folt is a wildlife population biologist who provides scientific information to inform decisions in natural resource management. He has degrees from Ohio University (B.S.) and Auburn University (Ph.D.) and joined the Nevada Unit as the Assistant Unit Leader of Wildlife in 2024. His work involves using field research, quantitative methods, and decision analysis approaches to help understand how landscapes influence wildlife populations and support value-based wildlife management decisions in a transparent framework. His work often estimates how habitat or landscapes influence demographic vital rates (survival, growth, reproduction, population dynamics) and builds predictive models for how populations function and might be influenced by management options being considered by agencies. Brian is interested in decision analysis, and his work seeks to support important decision problems faced by management agencies. Recent research projects include applied management problems related to wild horses (population dynamics, predictive population modeling, decision-support tools to reduce cost and benefit ecosystems, effects of predators on horses), ungulates (migration corridors, growing populations for hunting), and Mojave desert tortoises (population viability analysis, inform management for delisting) in the Great Basin region. Brian is an Associate Editor for the journal *Animal Conservation*.

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Decision Support/Analysis | Desert Ecology | Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Species Management | Species Status Assessments | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Amphibians | Carnivores | Nongame Fish/Wildlife | Reptiles | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Interactive effects of wildlife and invasive grasses on sensitive native lizards
- Evaluating the Contributions of Trace Minerals and Space Use to Seasonal Elk Mortality Syndrome in Nevada
- Mapping Ungulate Migrations in Nevada

**Most Recent Publications (Top 3)**

- Folt, B. , M. Marshall, J.A. Emanuel, M. Dziadzio, J. Cooke, L. Mena, M. Hinderliter, S. Hoffmann, N. Rankin, J. Tupy, C.P. McGowan. 2024 . Strengths and opportunities in gopher tortoise population modeling: Reply to Loope et al. *Global Ecology and Conservation* , e03093. <https://doi.org/10.1016/j.gecco.2024.e03093>
- KE Grimm, B Folt , A Collins, M Standen, M Spangler, E Olimpi, B Dickson. 2025. Applying knowledge co-production to identify Mojave desert tortoise stressors across time, space, and agency mission. *Conservation Science and Practice* 7(6):e70073. DOI

## Nevada Cooperative Fish and Wildlife Research Unit

- A Robillard, M Standen, N Giebink, M Spangler, AC Collins, B Folt , A Maguire, EM Olimpi, B Dickson. 2025. Application of computer vision for off-highway vehicle route detection: A case study in Mojave desert tortoise habitat. Remote Sensing in Ecology and Conservation. <https://doi.org/10.1002/rse2.70004>

## New Mexico Cooperative Fish and Wildlife Research Unit

**Abby Lawson****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Lawson joined the New Mexico Unit as an Assistant Unit Leader of Wildlife in 2021. She received graduate degrees from the University of Nevada, Reno and Clemson University, and later worked as a postdoc in the Alabama Cooperative Research Unit at Auburn University, followed by the USGS Patuxent Wildlife Research Center. Her research incorporates ecological theory and quantitative methods to support decision making in the face of uncertainty. Her research often involves field studies to estimate population vital rates, and to describe movement and foraging patterns. Most of her research focuses on upland game birds, waterfowl, and reptiles, though she also works with species of conservation concern including raptors, songbirds, and fishes. Another major element of her research program involves the application of structured decision making and adaptive management, as well as the development of predictive models and decision analytic tools. She has provided decision support for diverse topics including monitoring program design, harvest programs, species conservation status designations, capital investments, and research prioritization. Dr. Lawson teaches graduate-level courses in Structured Decision Making as well as Model Selection & Multimodel Inference.

**Areas of Expertise**

Adaptive Management | Behavioral Ecology | Contaminants | Decision Support/Analysis | Desert Ecology | Energy: Development/Alternative | Grassland Ecology | Population Dynamics | Population and Community Ecology | Resilience | Species Management | Species Status Assessments | Statistics and Modelling | T&E Species Management | Toxicology | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Nongame Fish/Wildlife | Reptiles | Songbirds | Species of Greatest Conservation Need | Water/Marsh Birds | Waterfowl

**Recently Started Projects (Top 3)**

- Decision support tools to guide environmental flows and habitat management in the middle Rio Grande River
- Modeling raptor population status, trends, and take rates
- Decision support for sustainable raptor take limits in a changing climate

**Most Recent Publications (Top 3)**

- Howell, P.E., A.J. Lawson, K.P. Davis, G.S. Zimmerman, O.J. Robinson, M.A. Boggie, M.J. Eaton, F. Abadi, J.L. Brown, J.A. Heath, J.A. Smallwood, K. Steenhof, T. Swem, B.W. Rolek, C.J.W. McClure, J.F. Therrien, K.E. Miller, B.A. Millsap. 2026. American kestrel population trend and vital rates at the continental scale. *Ecosphere*:e70526
- Davis, K.P., M.J. Eaton, E.R. Bjerre, H.M. White, C.W. Boal, J.H. Herner-Thogmartin, A.J. Lawson. 2026. Collaborative generation and prioritization of management-based hypotheses relevant to American kestrel population declines in the United States using constructed value of information. *Conservation Biology*:e70227

## New Mexico Cooperative Fish and Wildlife Research Unit

- Christensen, E.M., A.J. Lawson, E. Rivenbark, P.K. London, D. Castellanos, J.C. Culbertson, S.M. DeMay, C. Eakin, L.S. Pearson, K. Soileau, J.H. Waddle, C.P. McGowan . 2024. Accounting for multiple uncertainties in a decision-support population viability assessment. *Biological Conservation* 299:110811. doi: 10.1016/j.biocon.2024.110811

## New Mexico Cooperative Fish and Wildlife Research Unit

# Kasey Pregler

## Assistant Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)



### Biography

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Kasey Pregler is an Assistant Unit Leader of the U.S. Geological Survey, New Mexico Cooperative Fish and Wildlife Research Unit and Affiliate Assistant Professor in FWCE. Kasey completed her undergraduate and MS degrees at the University of Connecticut, and received their Ph.D. from Colorado State University. Prior to arriving at New Mexico State University, Kasey was a Chancellor's postdoctoral fellow at the University of California, Berkeley. Dr.

Pregler's research program uses demographic and genetic data to answer questions in ecology, evolution, and conservation biology of freshwater fishes. To that end her research centers on three main themes: (1) understanding and mitigating threats to small, fragmented populations, (2) ecological and evolutionary impacts following management interventions, & (3) environmental drivers of fish population dynamics.

### Areas of Expertise

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Aquatic Ecology | Conservation Genetics/Genomics | Evolutionary Ecology | Fisheries Management | Population Dynamics | Population and Community Ecology | Statistics and Modelling | Stream Ecology | T&E Species Management

### Taxon/Group Studied

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Anadromous Fishes | Freshwater Fishes | Salmonids

### Recently Started Projects (Top 3)

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- Estimating kinship and spawner abundance of warm-water nonnatives
- Investigations of YY fish to manage non-native fish for native species conservation
- Rio Grande cutthroat trout broodstock genomics

### Most Recent Publications (Top 3)

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- Kanno, Y., Clark, N.M., Pregler, K.C. and Kim, S. (2025). Integrated analysis of marked and count data to characterize fine-scale stream fish movement. *Oecologia*, 207(1). doi:<https://doi.org/10.1007/s00442-024-05639-3>. ■
- Carlson SM, Pregler KC, Obedzinski M, Gallagher SP, Rhoades SJ, Wolfe Hazard C, Queener N, Thompson SE, and Power ME. 2025. Anatomy of a range contraction: flow-phenology mismatches threaten salmonid fishes near their trailing edge. *PNAS*. 122 (14) e2415670122. doi: <https://doi.org/10.1073/pnas.2415670122>
- Pregler KC, Clemento A, Grill M, Adelizi P, Carlson SM, Garza JC. 2024. Reintroduction of spring-run Chinook salmon in the San Joaquin River: evaluating genetic and phenotypic effects of captive breeding. *Conservation Science & Practice*. 6:e13176. doi: <https://doi.org/10.1111/csp2.13176>

## New York Cooperative Fish and Wildlife Research Unit

**Angela K Fuller****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Fuller received graduate degrees from the University of Maine before joining the New York Unit as Assistant Unit Leader in 2009 and becoming Unit Leader in 2014. The central theme of her research program is providing information that contributes to the conservation or management of wildlife species and that has an impact on the way species are managed. A primary focus is determining how

spatial variation in the environment influences resource use, movements, and population ecology of mammals. This research typically involves non-invasive sampling of mammalian carnivores, which have many traits that make them especially susceptible to landscape change (e.g., large home ranges, relatively low population densities, and long dispersal distances). Novel analytic methods are used to derive population estimates that incorporate spatial or landscape processes to help explain the density of species across a landscape. A second focus is the application of structured decision making (SDM) and adaptive management to guide natural resource management and policy outcomes. This work integrates quantitative modeling to help predict outcomes of the management strategies that were developed to achieve stated objectives. Both research areas involve the spatial ecology of species, investigating how spatial landscape patterns influence the distribution, density, or dynamics of animal populations. Dr. Fuller teaches a graduate level class in Decision Analysis for Natural Resources.

**Areas of Expertise**

Adaptive Management | Biodiversity | Decision Support/Analysis | Landscape Ecology | Population Dynamics | Population and Community Ecology | Species Distribution Modeling | Species Management | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Carnivores | Furbearers | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Northeast Mobile Acoustic Bat Transect Data Assessment
- New York Breeding Bird Atlas
- The need for landscape scale abundance monitoring of avifauna in New York state

**Most Recent Publications (Top 3)**

- Grauer, J.A., J. L. Frair, K. L. Schuler, M. Lejeune, D. W. Kramer, and A.K. Fuller. Moose survival and habitat associated risk of endoparasites. *Ecology and Evolution*.
- Grauer, J.A., A.K. Fuller, J.L. Frair, K. Hynes, E. Behling-Kelly, and K.L. Schuler. 2026. Health status and drivers of endoparasite infection in a low-density moose (*Alces alces*) population. *Journal of Wildlife Diseases*. Jan 30:eJWD-D-24-00076. doi: 10.7589/JWD-D-24-00076.
- Clarfeld, L., K. Gieder, A. Siren, S. Webb, T.L. Morelli, T. L. Wilson, L. Kantar, J. Kilborn, C. Callahan, L. Prout, R. Cliche, R. Patry, C. Bernier, S. Staats, S. Wixsom, and T. Donovan. DeepFaune New England: A species classification model for trail camera images in northeastern North America. *Ecology and Evolution* 15, no. 11: e72174. <https://doi.org/10.1002/ece3.72174>.

## New York Cooperative Fish and Wildlife Research Unit

**Steve Grodsky****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Steve Grodsky earned his BS in Conservation and Applied Ecology from Rutgers, The State University of New Jersey, his MS in Wildlife Ecology for the University of Wisconsin - Madison, and his PhD in Wildlife and Conservation Biology from North Carolina State University. He conducted his postdoctoral research at the University of California, Davis, where he co-founded the Wild

Energy Initiative and served as its co-director from 2017 to 2022. Currently, Steve is the Assistant Unit Leader of the New York Cooperative Fish and Wildlife Research Unit and an Assistant Professor in the Department of Natural Resources and the Environment at Cornell University. Dr. Grodsky is a broadly trained, applied ecologist. He specializes in the emerging field of renewable energy ecology - the study of interactions among energy development, ecosystems, and people. His research includes diverse taxa and disciplines and spans various ecosystems from deserts to aquatic systems. Dr. Grodsky teaches seminars on renewable energy ecology and scientific writing at Cornell University and has taught courses in ecology and entomology at other institutions.

**Areas of Expertise**

Anthropogenic Impacts | Biodiversity | Desert Ecology | Ecological Services | Energy: Development/Alternative | Entomology | Habitat Management | Landscape Ecology | Movement Ecology | Species Management | Wildlife Management | eDNA

**Taxon/Group Studied**

Bats | Carnivores | Crayfish | Furbearers | Invertebrates/Insects | Nongame Fish/Wildlife | Pollinators | Small Mammals | Songbirds | Species of Greatest Conservation Need | Ungulates | Water/Marsh Birds

**Recently Started Projects (Top 3)**

- Ecologically informed development on abandoned minelands of southern Appalachia
- Big solar on abandoned agricultural lands: Testing ecosystem restoration for biodiversity, raptor conservation, and social benefits
- National Pollinator-Solar Energy Interactions Assessment

**Most Recent Publications (Top 3)**

- Binley, A. D., A. Gallaher, A. D. Rodewald, and S. M. Grodsky. 2025. Potential interactions between birds and floating photovoltaic solar energy: Spatially-informed species vulnerabilities, techno-ecological risks, and sustainability trade-offs. *Environmental Science and Technology*.
- Karban, C. C., J. E. Lovich, J. R. Ennen, S. M. Grodsky, and S. M. Munson. 2023. Predicting the Effects of Solar Energy Development on Wildlife and Plants in the Desert Southwest, USA. *Renewable and Sustainable Energy Reviews*.
- Grodsky, S.M., Campbell, J.W., Roeder, K.A., Waite, E.S., Wright, E.R. and Johnston, M.A. (2024). Mixed responses of tenebrionid beetles to solar energy development in the Mojave Desert. *Journal of Arid Environments*, 225, pp.105243–105243. doi:https://doi.org/10.1016/j.jaridenv.2024.105243. ■

## New York Cooperative Fish and Wildlife Research Unit

**Chris Sullivan****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Sullivan earned his BS degrees from Purdue University, his MS from Iowa State University, and his PhD from the University of Connecticut. He conducted his postdoctoral research at the University of Minnesota, where he focused his efforts on modeling the impacts of climate change on temperate lake fisheries across the Midwest. Chris joined the New York Cooperative Fish and Wildlife Research Unit as an Assistant Unit Leader in December 2024. Broadly speaking, Chris is a fisheries ecologist with an increasingly stronger focus on applied quantitative methods, allowing him to address complex ecological questions with practical, data-driven solutions.

Chris uses multiple approaches to research including observational field studies, data syntheses, and rigorous statistical and simulation modeling approaches. His research is directly tied to state and federal agency needs, allowing him to foster and maintain a healthy and productive relationship with practitioners throughout and outside of the country. Chris's research has recently focused on changing thermal environments in aquatic systems and understanding how these changes affect fish at multiple scales - from individual behavior to broader fish community dynamics. He is increasingly interested in quantifying physical habitat conditions using UAVs and using that information to help guide conservation strategies, particularly for species of greatest conservation need.

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Aquatic Ecology | Behavioral Ecology | Contaminants | Environmental Change | Fisheries Management | Habitat Management | Invasive Species | Landscape Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Species Management | Species Status Assessments | Statistics and Modelling | Stream Ecology | Urban Ecology | Water Quality

**Taxon/Group Studied**

Freshwater Fishes | Gamefish | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Rebuilding Lake Ontario's Atlantic salmon (*Salmo salar*): understanding juvenile habitat and demographic constraints during and immediately after stream residency
- Walleye movements and habitat use in Oneida Lake, New York
- Safe operating space for walleye: adapting inland recreational fisheries for climate change

**Most Recent Publications (Top 3)**

- Sullivan, C.J., J.C. Vokoun, A.M. Helton, M.A. Briggs, and B.L. Kurylyk. 2021. An eco-hydrological typology for thermal refuges in streams and rivers. *Ecohydrology* 14(5):e2295.
- Erickson, R.A., J.L. Kallis, A.A. Coulter, D.P. Coulter, R. MacNamara, J.T. Lamer, W.W. Bouska, K.S. Irons, L.E. Solomon, A.J. Stump, M.J. Weber, M.K. Brey, C.J. Sullivan, G.G. Sass, J.E. Garvey, and D.C. Glover. 2021. Demographic rate variability of two invasive species along an invasion gradient. *Journal of Fish and Wildlife Management* 12(2):338 – 353.

## New York Cooperative Fish and Wildlife Research Unit

- Sullivan, C. J., C. A. Camacho, M. J. Weber, and C. L. Pierce. 2017. Intra-annual variability of Silver Carp populations in the Des Moines River, USA. *North American Journal of Fisheries Management* 37:836-849. DOI: <https://doi.org/10.1080/02755947.2017.1330785>

## North Carolina Cooperative Fish and Wildlife Research Unit

**Corey G Dunn****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Originally hailing from Richmond Virginia, Dr. Dunn is the Leader of the North Carolina Cooperative Fish and Wildlife Research Unit and previously served as an Assistant Leader of the Mississippi Unit. Before joining the Cooperative Research Units program, Dr. Dunn received his B.S. and M.S. degrees from Virginia Tech, his PhD from the University of Missouri, and was a postdoctoral researcher at Mississippi State University. Growing up on the Fall-line part of

Virginia exposed him to the many species of migratory fishes that use the area's shoals for spawning habitat. Consequently, Dr. Dunn became a stream-river fisheries biologist who has worked on conservation issues spanning ephemeral headwaters to the Mississippi River. His main research area is the ecology and conservation of rivers and riverine biota. This overarching theme encompasses several research areas including ecology of large-river fishes, sport-fish and imperiled species management, invasion ecology, and riverine landscape ecology. Dr. Dunn has taught several courses, including Ecology of River Systems, Structured Decision Making, Native Species Conservation, and Fisheries Sampling Techniques.

**Areas of Expertise**

Anthropogenic Impacts | Aquatic Ecology | Biodiversity | Decision Support/Analysis | Ecological Flows | Fisheries Management | GIS/Spatial Analysis | Hydroacoustics/Bioacoustics | Invasive Species | Landscape Ecology | Movement Ecology | Population and Community Ecology | Resilience | Species Distribution Modeling | Species Status Assessments | Statistics and Modelling | Stream Ecology | T&E Species Management

**Taxon/Group Studied**

Anadromous Fishes | Crayfish | Freshwater Fishes | Gamefish | Invertebrates/Insects | Mussels | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Evaluating alternative methods for constructing habitat suitability relationships for freshwater Species Status Assessments
- Synthesizing resources to support Species Status Assessments of aquatic insects in the southeastern United States
- Advnisdigi: A Cherokee Planning Project for Conservation Across Jurisdictions

**Most Recent Publications (Top 3)**

- Neal, J.W., J.A. Moreland, C.G. Dunn, and P.J. Allen. In review. Trophic assessment of potential competition between invasive cichlids and sportfish in Puerto Rico Reservoirs.
- Ahmad, H., L.E. Miranda, C.G. Dunn, M.R. Boudreau, M.E. Colvin. 2025. Hydrologic connectivity in floodplain systems: a multiscale review of concepts, metrics, and management. *Hydrological Processes* 39(9):e70260. <https://doi.org/10.1002/hyp.70260>
- Miranda, L.E., H.G. Funk, K.W. Jones, C.G. Dunn, and K.M. Lakin. 2025. The functional traits behind fish rarity in an impounded river basin. *Reviews in Fish Biology and Fisheries*. <https://doi.org/10.1007/s11160-025-09957-4>.

## North Carolina Cooperative Fish and Wildlife Research Unit

**Nathan J Hostetter****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Hostetter joined the North Carolina Cooperative Fish and Wildlife Research Unit in 2021, where he is an Assistant Unit Leader and Assistant Professor in the Department of Applied Ecology at North Carolina State University. As a quantitative population ecologist, Nathan investigates factors driving spatial and temporal variation in demography, distribution, and abundance of wild populations. His research unites principles in population ecology, movement ecology, and landscape ecology through integrated modeling approaches that link field data to population processes in terrestrial and aquatic landscapes, and across taxonomic lines (birds, mammals, reptiles, and fish). His research broadly focuses on three themes: (1) developing scientifically sound integrated sampling and analytical methods for abundance and demographic rate estimation, (2) applying modeling and decision science tools to support management and conservation actions, and (3) understanding population-level responses to climate change, land use management, and conservation efforts. Nathan's work has been critical to improving monitoring and management of species of conservation concern, invasive species, game and nongame species, and has resulted in more powerful tools for understanding fish and wildlife populations and the landscapes that support them.

**Areas of Expertise**

Invasive Species | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Species Management | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Anadromous Fishes | Carnivores | Furbearers | Marine Mammals | Nongame Fish/Wildlife | Reptiles | Salmonids | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Integrating Research and Monitoring Programs to Quantify Abundance, Occupancy, and Persistence Probability: Canada Lynx at the Edge of their Southern Range
- Connectivity for a Complex Life Cycle: Conserving the Crystal Skipper Butterfly in a Coastal Urban Environment
- Black bear abundance and density in the North Carolina Coastal Bear Management Unit

**Most Recent Publications (Top 3)**

- Goldstein B.R., K. Pacifici, J.A. Buckel, N.M. Bacheler, E.M. Schliep, B.J. Reich, K.W. Shertzer, W.F. Patterson III, J.H. Tarnecki, N.J. Hostetter. An integrated approach to estimating the effective sampling area of baited underwater camera traps. Chapter in: Estimation of Southeastern United States Atlantic Red Snapper Abundance. W.F. Patterson III et al. (editors). Available at <https://sarsrp.scseagrant.org/report/> ■
- Custer, C.A., K. Pacifici, J.A. Buckel, B.J. Reich, E.M. Schliep, N.M. Bacheler, K.W. Shertzer, B.R. Goldstein, W.J. Buble, J.H. Tarnecki, W.F. Patterson III, N.J. Hostetter. 2025. Bayesian hierarchical integrated modeling to estimate fish abundance from video survey data: an example with red snapper ( *Lutjanus campechanus* ) population size in the U.S. Atlantic. Chapter in: Estimation of Southeastern

## North Carolina Cooperative Fish and Wildlife Research Unit

United States Atlantic Red Snapper Abundance. W.F. Patterson III et al. (editors). Available at <https://sarsrp.scseagrant.org/report/>

- Hostetter NJ, NJ Lunn, ES Richardson, EV Regehr, and SJ Converse. 2021. Age-structured Jolly-Seber model expands inference and improves parameter estimation from capture-recapture data. PLOS ONE 16:e0252748. <https://doi.org/10.1371/journal.pone.0271784>.

## Oklahoma Cooperative Fish and Wildlife Research Unit

**James Long****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Long grew up in the Ozarks of southwest Missouri and received a PhD from Oklahoma State University in 2000. Afterward, he went to South Carolina as a Fisheries Research Biologist investigating fish community structure in tidal freshwater wetlands. From 2002 to 2009, Dr. Long worked with the National Park Service as the Fishery Biologist for the southeast region. In 2009, Dr. Long moved back to Oklahoma as an Assistant Unit Leader and became Unit Leader in 2016. Dr. Long's research focuses on management-driven questions related to the process of fisheries management, social dimensions, early-life history of fishes, and effects of invasive species on aquatic communities. Over the past decade, Dr. Long has been particularly engaged in issues related to black bass diversity, highlighting the conservation needs of these endemic and iconic species. Dr. Long uses Geographic Information Systems (GIS) and side-scan sonar technology to address research needs in a wide variety of aquatic ecosystems. Dr. Long is also actively engaged in applying novel tools to better understand otolith morphology and composition to elucidate age, growth, and development in fishes. Dr. Long teaches a graduate level course in Social Dimensions in Aquatic Ecology.

**Areas of Expertise**

Aquatic Ecology | Biodiversity | Fisheries Management | GIS/Spatial Analysis | Human Dimensions | Invasive Species | Policy | Population Dynamics | Population and Community Ecology | Species Management | Stream Ecology | T&E Species Management

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Gamefish | Invertebrates/Insects | Mussels | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Evaluating the thermal tolerances of endemic Neosho Bass (*Micropterus velox*) relative to Smallmouth Bass (*Micropterus dolomieu*) and known hybrids in the tributaries of Tenkiller Reservoir
- Evaluation of Channel Catfish stocking in the Blue River, Oklahoma
- Assessment of connectivity among Alligator Gar populations in the Red River

**Most Recent Publications (Top 3)**

- Torolski, H., J.M. Long, R.C. Lonsinger, and L.A. Bruckerhoff. 2025. Quantifying freshwater mussel abundance and composition in two prairie rivers of northern Oklahoma with aid of side scan sonar to identify novel habitat patches. Oklahoma Department of Wildlife Conservation Final Report F22AF01090, Oklahoma City. Available online at <https://digitalprairieok.net/>
- Long, J.M. and R.A. Snow. 2025. Summary of first daily ring formation in otoliths of freshwater fishes in the continental United States. Fisheries. <https://doi.org/10.1093/fshmag/vuaf097>
- Torolski, H.M., Long, J.M., Lonsinger, R.C. and Bruckerhoff, L.A. 2025. New distributional record of the federally threatened Rabbitsfoot ( *Theliderma cylindrica* ) mussel in Oklahoma. Southeastern Naturalist, 24. doi:<https://doi.org/10.1656/058.024.0103>. ■

## Oklahoma Cooperative Fish and Wildlife Research Unit

**Robert Lonsinger**

Assistant Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Originally from Pennsylvania, Rob earned a B.S. in Biology from Gannon University, a M.S. in Wildlife Science from New Mexico State University, and a PhD in Natural Resources from the University of Idaho. Rob is a mammalian ecologist. Research in the Lonsinger Lab uses a combination of intensive field-based research, laboratory-based methods and ecological modeling. We are broadly interested in conservation genetics, landscape ecology, community ecology, and predator-prey dynamics. We aim to confront applied problems with ecological hypotheses and to elucidate processes driving complex population dynamics. Although our research tends to utilize carnivore species as model organisms, the approaches we employ (e.g., conservation genetic analyses, capture-recapture modeling, and occupancy modeling) are amenable to many taxa and systems. We have found that working closely with management agencies and private landowners has allowed our research to guide management and make lasting contributions to the conservation of species and the habitats on which they depend. We strive to be collaborative with researchers and managers, as well as with private landowners and citizens; only through diversity in collaborators and stakeholders can we expect to tackle some of our most pressing conservation challenges. Visit Rob's website at [www.roblonsinger.com](http://www.roblonsinger.com).

**Areas of Expertise**

Biodiversity | Conservation Genetics/Genomics | Desert Ecology | Landscape Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Carnivores | Furbearers | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Adaptive resource selection and movements of pronghorn in relation to landscape in permeability and rainfall in the Chihuahuan Desert
- Urbanization mediates effects of free-ranging cats on wildlife
- Effect of Supplemental Feeding on Mammalian Nest Predators and Potential Implications to Wild Turkey

**Most Recent Publications (Top 3)**

- Torolski, H., J.M. Long, R.C. Lonsinger, and L.A. Bruckerhoff. 2025. Quantifying freshwater mussel abundance and composition in two prairie rivers of northern Oklahoma with aid of side scan sonar to identify novel habitat patches. Oklahoma Department of Wildlife Conservation Final Report F22AF01090, Oklahoma City. Available online at <https://digitalprairieok.net/>
- White, K.M., A.M. Cheeseman, J.D. Stafford, and R.C. Lonsinger. 2025. Control of a dominant predator influences the occurrence of a mesocarnivore of conservation concern. *Wildlife Research* 52(11): WR2511 . <https://doi.org/10.1071/WR25116>
- White, K.M., A.M. Cheeseman, J.D. Stafford, and R.C. Lonsinger. 2025. Fine-scale farming features drive resource selection of a small carnivore of conservation concern. *Canadian Journal of Zoology* 103:1–12. <http://dx.doi.org/10.1139/cjz-2024-0096>

## Oregon Cooperative Fish and Wildlife Research Unit

**Melanie J Davis****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Melanie Davis arrived at the Oregon Cooperative Fish and Wildlife Research Unit in Fall 2020 after almost seven years as a Project Coordinator for the USGS Western Ecological Research Center's Olympia, Washington substation. Her work is focused on ecosystem and community level responses to disturbance, landscape scale processes and their effects on target species, and the development of monitoring tools, programs, and strategies to inform management actions. Most of her research is directed toward salmonids and non-game fishes, but her lab's emphasis on habitat has allowed her to work in an array of terrestrial and aquatic ecosystems. Dr. Davis employs a variety of quantitative tools and techniques to learn about how species interact with their environment, with a particular emphasis on spatially explicit habitat models. She teaches a graduate-level course on multivariate statistical analysis and is currently developing a spatial ecology course for graduate and upper-level undergraduate students.

**Areas of Expertise**

Anthropogenic Impacts | Aquatic Ecology | Fisheries Management | GIS/Spatial Analysis | Habitat Management | Landscape Ecology | Population and Community Ecology | Remote Sensing | Statistics and Modelling

**Taxon/Group Studied**

Anadromous Fishes | Coastal/Marine Birds | Freshwater Fishes | Invertebrates/Insects | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Climate vulnerability assessment of Oregon hatchery programs
- Forecasting tools to inform the management of native fishes and their habitats in a drought sensitive endorheic basin
- Assessment of salmonid habitat improvements associated with structure placement in Wolf Creek

**Most Recent Publications (Top 3)**

- Carey, KC, A Dew, and MJ Davis. 2026. Fish assemblages in Great Basin streams: disentangling environmental effects on community structure. *Transactions of the American Fisheries Society* vnaf043. <https://doi.org/10.1093/tafafs/vnaf043>
- Barrett, H, and MJ Davis. 2024. Climate Vulnerability Assessment of Oregon Hatchery Programs. Technical Report prepared for Oregon Department of Fish and Wildlife, Salem, Oregon, USA.
- Kusaka, CM, S Stephensen, JT Peterson, and MJ Davis. 2025. Evidence for marine-driven, cyclical fluctuations in burrow-nesting seabird habitat on the Oregon Coast. *Frontiers in Marine Science*, 13:1589794. <http://doi.org/10.3389/fevo.2025.1589794>

## Oregon Cooperative Fish and Wildlife Research Unit

**Katie Dugger****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Dugger received her graduate degrees from the University of Missouri, Columbia. She was a post-doc and Assistant Professor, Senior Research in the Department of Fisheries, Wildlife and Conservation Sciences at Oregon State University before joining the Oregon Unit in 2011. She conducts research focused on population ecology and dynamics, particularly the estimation and modeling of vital rates in relation to environmental variation (habitat characteristics, climate) and anthropogenic influences as key elements in the conservation and management of species and their ecosystems. Katie models survival, reproductive success, occupancy, and population change for a wide variety of bird species, including those with threatened or endangered status, as well as important game species. She also studies the demographics of ungulates and furbearers in relation to habitat use and selection, as well as intraspecific competition between large carnivores, and predator-prey relationships in marine systems. She relies on data collected from individual animals marked with bands, tags and telemetry devices to accomplish these goals. Most of her current research is focused on species and ecosystems in Oregon, although she also has a long-term NSF-funded project studying Adélie penguins in Antarctica. Katie teaches graduate level courses in the Analysis of Animal Populations and Scientific Evidence in Ecology.

**Areas of Expertise**

Anthropogenic Impacts | Environmental Change | Habitat Management | Population Dynamics | Predator-Prey Dynamics | Species Management | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Carnivores | Furbearers | Gamebirds | Nongame Fish/Wildlife | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Black-tailed deer use of winter range in southern Oregon
- Mapping ungulate migration corridors in Oregon
- Occupancy status of Northern Spotted Owls in southern Oregon.

**Most Recent Publications (Top 3)**

- Wiens, J.D., D.B. Lesmeister, J.M.A. Jenkins, and K.M. Dugger. 2025. Forest owl community response following the removal of an intraguild invader. *Ecology* 106(11): e70241, <https://doi.org/10.1002/ecy.70241>.
- Kauffman, M., Lowrey, B., Beaupre, C., Bergen, S., Bergh, S., Blecha, K., Bundick, S., Burkett, H., Cain, J.W., III, Carl, P., Casady, D., Class, C., Courtemanch, A., Cowardin, M., Diamond, J., Dugger, K., Duvuvuei, O., Ennis, J.R., Flenner, M., Fort, J., Fralick, G., Freeman, I., Gagnon, J., Garcelon, D., Garrison, K., Gelzer, E., Greenspan, E., Hinojoza-Rood, V., Hnilicka, P., Holland, A., Hudgens, B., Kroger, B., Lawson, A., McKee, C., McKee, J.L., Merkle, J.R., Mong, T.W., Nelson, H., Oates, B., Poulin, M.-P., Reddell, C., Ritson, R., Sawyer, H., Schroeder, C., Shapiro, J., Sprague, S., Steiner, E., Steingisser, A., Stephens, S., Stringham, B., Swazo-Hinds, P.R., Tatman, N., Wallace, C.F., Whittaker,

## Oregon Cooperative Fish and Wildlife Research Unit

D., Wise, B., Wittmer, H.U., and Wood, E., 2024, Ungulate migrations of the Western United States, volume 4: U.S. Geological Survey Scientific Investigations Report 2024–5006, 86 p., 1 pl., <https://doi.org/10.3133/sir20245006>.

- Kauffman, M., Lowrey, B., McKee, J.L., Allen, T., Beaupre, C., Beck, J.L., Bergen, S., Binfet, J., Blair, S., Cain, J.W., III, Carl, P., Cornish, T., Cowardin, M., Curtis, R., DeVivo, M., Diamond, J., Dugger, K.M., Duvuvuei, O., Ellingwood, C.J., Finely, D., Fort, J., Freeman, E., Freeman, I., Gagnon, J., Gelzer, E., Gray, J., Greenspan, E., Hendricks, C., Hinojoza-Rood, V.D., Jeffress, M., Kyle, C.A., Lockyer, Z., McKee, C., Merkle, J.A., Merrell, J., Mumma, M.A., Powell, J., Reddell, C., Reinking, A.K., Ritson, R., Robatcek, S., Robb, B.S., Russo, B.M., Sawyer, H., Schroeder, C., Slezak, E., Sprague, S., Steiner, E., Steingisser, A., Stephenson, T., Tatman, N., Taylor, K.L., Whittaker, D., and Zaffarano, T. 2025. Ungulate migrations of the Western United States, volume 5: U.S. Geological Survey Scientific Investigations Report 2024–5111, 96 p., <https://doi.org/10.3133/sir20245111>.

## Oregon Cooperative Fish and Wildlife Research Unit

**Megan S Jones****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Jones received graduate degrees from Colorado State University before joining the Oregon Unit in 2022. She conducts research on natural resource communication science topics to inform public outreach and engagement. A primary focus of her research is relational organizing: how communication campaigns can support engaged audiences to not only adopt conservation behaviors, such as planting native plants or reducing attractants for bears around their home, but also to promote these actions to others in their social networks. She is particularly interested in collective action in contexts such as climate action and adaptation, habitat stewardship, and public participation in decision-making. Dr. Jones also studies organizational culture change, and has done research on women's leadership in conservation organizations. She has taught courses in public communication about natural resources and will be developing new courses related to science communication and the integration of social science into fisheries and wildlife.

**Areas of Expertise**

Environmental Change | Fisheries Management | Habitat Management | Human Dimensions | Urban Ecology | Wildlife Management

**Taxon/Group Studied**

Amphibians | Anadromous Fishes | Bats | Carnivores | Coastal/Marine Birds | Crayfish | Freshwater Fishes | Furbearers | Gamebirds | Gamefish | Invertebrates/Insects | Marine Fishes | Marine Mammals | Mussels | Nongame Fish/Wildlife | Pollinators | Reptiles | Salmonids | Sea Turtles | Small Mammals | Songbirds | Species of Greatest Conservation Need | Ungulates | Water/Marsh Birds | Waterfowl

**Recently Started Projects (Top 3)**

- The effects of team dynamics on scientific innovation
- Elucidating the practice of interdisciplinary and actionable science
- Institutionalizing inclusion in the USFWS: a research study

**Most Recent Publications (Top 3)**

- Erickson, B. D., & Jones, M. S. (2026). Synthesizing beaver coexistence messaging with the capability, opportunity, and motivation behavior model. *Conservation Biology*, e70210.
- Niemiec R, Kogan L, Jones MS, Santiago-Ávila FJ, Seacor R, Mertens A, & Crooks K. (2026). Widespread Public Support and Pluralistic Ignorance Associated with United States Animal Protection Policy. *Human-Animal Interactions*.
- Thomas-Walters L, Sparkman G, Rizzolo JB, Dillard C, Sekar S and Jones MS. (2025). Impact of messaging treatments on willingness to engage in relational organizing for the promotion of climate-friendly plant-based diets. *PLOS Climate*.

## Oregon Cooperative Fish and Wildlife Research Unit

**James T. Peterson****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Peterson received graduate degrees from the University of Illinois and University of Missouri and was a post-doctoral researcher with the USDA Forest Service, Rocky Mountain Research Station. He joined the Georgia Unit as Assistant Unit Leader in 1999 and moved to the Oregon Unit in 2011 becoming Unit Leader in 2019. Dr. Peterson has an extensive background in animal population estimation and modeling, and the application of decision theoretic methods to solving complex ecological and resource management problems. A primary focus of his research is on identifying and quantifying the effects of physical and biotic factors on animal populations at multiple scales. This includes studies of population dynamics, community production, and habitat/landscape relationships. Dr. Peterson develops unique analytic approaches to estimate population demographic parameters that integrate data collected at multiple spatial and temporal scales to provide unique insights into multiscale processes affecting animal populations. He then uses decision theoretic approaches to assist natural resource decision making and adaptive management. Dr. Peterson teaches a graduate level classed in Data Management and R computing for Fisheries and Wildlife students, Structured Decision Making in Natural Resource Management, and Quantitative Decision Analysis for Fish and Wildlife Management.

**Areas of Expertise**

AI/Machine Learning | Adaptive Management | Anthropogenic Impacts | Aquatic Ecology | Biodiversity | Decision Support/Analysis | Disease/Parasites | Ecological Flows | Ecological Services | Environmental Change | Fisheries Management | Habitat Management | Invasive Species | Landscape Ecology | Managed Flows/Hydrology | Movement Ecology | Policy | Population Dynamics | Population and Community Ecology | Species Distribution Modeling | Species Status Assessments | Statistics and Modelling | Stream Ecology | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Amphibians | Anadromous Fishes | Crayfish | Freshwater Fishes | Gamefish | Invertebrates/Insects | Mussels | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Development of an evidence-based management framework for invasive species and seabird habitat in the Oregon Coast Refuge Complex
- The development and evaluation of monitoring protocols to inform water resource decision making
- Integrating monitoring, modeling, and management for amphibian conservation in the western United States

**Most Recent Publications (Top 3)**

- Steen, V.A, J.T. Peterson, and A. Duarte. 2025. Integrated modeling for insights into spatially dynamic abundance patterns for a rare fish species. *Ecosphere* . 16 (7), p.e70326. <https://doi.org/10.1002/ecs2.70326>
- Polley, T. C.E. Couch, C. Leong, J.T. Peterson, L.M. Weiss, P.M. Takvorian, and M.L. Kent. Laboratory transmission of Adult Salmon Enteritis in juvenile Chinook salmon (*Oncorhynchus tshawytscha*) and the associated pathogens: *Enterocytozoon schreckii* and a novel enteric virus. *Journal of Fish Diseases*

## Oregon Cooperative Fish and Wildlife Research Unit

- Gardner, E. J. Romer, F. Monzyk, J. Sanders, M.E. Kent, C.B. Schreck, and J.T. Peterson. The dynamics of *Salmincola californiensis* infecting reservoir rearing juvenile Chinook salmon. Transactions of the American Fisheries Society

## Pennsylvania Cooperative Fish and Wildlife Research Unit

### Tyler Wagner

#### Assistant Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)



#### Biography

Dr. Wagner received graduate degrees from the University of Idaho (MS) and Michigan State University (PhD) and was a post-doctoral researcher at the Quantitative Fishery Center at Michigan State University before joining the Pennsylvania Unit in 2008. He conducts research that addresses key challenges facing aquatic and fisheries ecology and landscape limnology in the face of global change. He conducts both applied and basic science in collaboration with diverse research teams on problems that range from local to continental in scale. Specifically, his research fills important knowledge gaps that exist in our understanding of lake and stream ecosystem processes that include: (a) fine-scale ecological properties and processes of fishes, such as habitat use, movement dynamics, and responses to legacy and emerging contaminants, (b) macro-ecological studies of lake and stream ecosystem state, including the effects of climate and land use change on lake water quality and fish growth and distributions, and (c) conducting synthetic work to study the interactions that exists between these scales. Dr. Wagner teaches courses on the ecological application of Bayesian hierarchical models.

#### Areas of Expertise

Aquatic Ecology | Biodiversity | Contaminants | Environmental Change | Fisheries Management | Invasive Species | Movement Ecology | Population and Community Ecology | Species Distribution Modeling | Species Management | Statistics and Modelling | Stream Ecology | Water Quality

#### Taxon/Group Studied

Freshwater Fishes

#### Recently Started Projects (Top 3)

- Understanding spatiotemporal drivers of fisheries and aquatic resources in the Chesapeake Bay Watershed
- Defining oxythermal performance metrics for use in physiologically guided abundance models of diverse coregonid ecotypes
- Defining oxythermal performance metrics for use in physiologically guided abundance models of diverse coregonid ecotypes

#### Most Recent Publications (Top 3)

- Hodgson, O.C., S. Stark, M.K. Schall, G.D. Smith, K.L. Smalling, and T. Wagner. 2025. Invasive predatory fish occupies highest trophic position leading to expansion of isotopic niches in a riverine food web. *Ecology* 106, e70180. <https://doi.org/10.1002/ecy.70180>
- Collins, K.M., E.M. Schliep, T. Wagner, C.K. Wikle. Accepted. Model-based decomposition of spatially varying temporal shifts in seasonal streamflow across north temperate US Rivers. *Water Resources Research* 61:e2024WR039500. <https://doi.org/10.1029/2024WR039500>
- Stum, M.B., C. Tzilkowski, M. Marshall, F. Buderman, and T. Wagner. 2025. Decadal changes in stream fish communities and contemporary ecological drivers of species occupancy in two Appalachian U.S. National Parks. *Transactions of the American Fisheries Society* 154:17-34.

## Pennsylvania Cooperative Fish and Wildlife Research Unit

### W. David Walter

#### Assistant Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)



#### Biography

Dr. Walter received graduate degrees from University of New Hampshire and Oklahoma State University and served as a post-doctoral Researcher at the USDA-National Wildlife Research Center and Colorado Cooperative Fish and Wildlife Research Unit for nearly 5 years. He conducts research to explore spatial ecology of various species throughout the U.S. using spatial analysis at the landscape-level to further our understanding of wildlife presence/absence, nutrition, and disease. Much of his primary research interests have focused on using various modeling techniques to understand spatial ecology of disease in ungulates in various regions of North America. He also uses genetics and stable isotopes to understand movements, nutritional ecology, and effects of invasive species on native non-game species at the landscape level. He regularly teaches a graduate course in spatial ecology, movement analyses, home range estimation, and disease epidemiology. In addition to exploring genetics of species at the landscape or regional level, Dr. Walter focuses on methodologies in movements, home range, and resource selection of avian and mammalian species. New tracking and telemetry technologies with global positioning system (GPS) technology have become more readily available for a variety of avian and mammalian species of various sizes. This GPS technology allows for remote data capture from a steadily increasing number of taxa, species, and individual animals.

#### Areas of Expertise

Disease/Parasites | Epidemiology | GIS/Spatial Analysis | Landscape Ecology | Movement Ecology | Statistics and Modelling | Wildlife Management

#### Taxon/Group Studied

Furbearers | Ungulates

#### Recently Started Projects (Top 3)

- A multifaceted approach to linking movements and gene flow of wild cervids to management for chronic wasting disease
- Population models to inform management of black bear statewide in Pennsylvania
- Targeted surveillance for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in wildlife

#### Most Recent Publications (Top 3)

- Giglio, Rachel, A. Westmoreland, M. Wilber, G. Wilson-Henjum, A.N. Chan, B. Gardner, W. Horpiencharoen, R.B. Gagne, A. Corondi, A. Baker, M. Combs, J. Chandler, K. Manlove, K.M. Pepin, W.D. Walter. 2025. Viral outbreak dynamics and evolution in wildlife at the interface with humans. *Biology Letters* 21(12): 20250540; <https://doi.org/10.1098/rsbl.2025.0540>
- Navarro, D., A. K. Tallon, E. K. Latch, C. N. Ott-Conn, R. W. DeYoung, D. P. Walsh, P. T. Euclide, C. R. G. Babu, W. A. Larson, A. S. Seetharam, A. J. Severin, J. M. Reecy, Z. Hu, J. R. Cantrell, M. Carstensen, J. N. Caudell, C. H. Killmaster, M. L. Lockwood, W. T. McKinley, A. S. Norton, K. L. Schuler, D. J. Storm, J. A. Sumners, W. David Walter, and J. A. Blanchong. 2025. Development of high-throughput genomic resources to inform white-tailed deer population and disease management. *Molecular Ecology Resources*. 26:e70085 <https://doi.org/10.1111/1755-0998.70085>

## Pennsylvania Cooperative Fish and Wildlife Research Unit

- Pepin, KM, MA Combs, G Bastille-Rousseau, ME Craft, P Cross, MA Diuk-Wasser, RB Gagne, T Gallo, T Garwood, JD Heale, J Hewitt, J Høy-Petersen, J Malmberg, J Mullinax, L Plimpton, L Smith, MC VanAcker, K VerCauteren, JC Chandler, WD Walter, G Wilson-Henjum, G Wittemyer, K Manlove. 2025. Expanding national-scale wildlife disease intelligence systems with research networks. Ecology and Evolution.

## South Carolina Cooperative Fish and Wildlife Research Unit

**Luke Bower****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Bower received a MS degree from Southeastern Louisiana University and a PhD from Texas A&M University. Prior to becoming the assistant unit leader in the South Carolina Unit, he was post-doctoral fellow at Clemson University. Overall, his research focuses on understanding how changes in environmental gradients influences assemblage and functional structure of aquatic systems across multiple scales, apply community, evolutionary, and functional ecology concepts to inform the management and conservation of freshwater fishes. A primary focus of this research is to understand the roles stream flow plays in driving the ecology and evolution of fishes change across landscape gradients to better inform state flow standards. Another research focus is the use of functional traits to examine assemblage responses to environmental alteration and describe ecological patterns across levels of biological organization, niche dimensions, and spatial scales to inform the conservation and management of aquatic systems. His research encompasses several research areas including freshwater fish ecology, community ecology, flow ecology, and functional ecology. Dr. Bower teaches a graduate class in Functional Ecology.

**Areas of Expertise**

Aquatic Ecology | Biodiversity | Ecological Flows | Evolutionary Ecology | Fisheries Management | Population and Community Ecology | Statistics and Modelling | Stream Ecology

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Gamefish | Nongame Fish/Wildlife

**Recently Started Projects (Top 3)**

- Quantifying stream fish diversity in working landscapes in the southeastern United States
- Developing aquatic priority conservation areas using regional species of greatest conservation need.
- Developing a proactive conservation planning tool for stream fishes of greatest conservation need in the Carolinas

**Most Recent Publications (Top 3)**

- Cooper, C., Barrett, K., Bower, L.M., Darden, T.L., Farrae, D.J., Kubach, K., Scott, M.C., and Peoples, B.K. Using multi-state occupancy models to quantify distribution and detection of endemic Bartram's Bass and congeners. *North American Journal of Fisheries Management*.
- Ureta, J. C., Ureta, J. U., Bower, L. M., Peoples B. K, & Motallebi, M. (2024). The value of improving freshwater ecosystem services: South Carolina residents' willingness-to-pay for improved water quality. *Journal of Ecological Economics*.
- Bower, L. M., Marion, C. A., Scott, M., Kubach, K., and Gelder, A. Fish assemblage and functional trait responses to the removal of two dams on a southeastern river. *Freshwater Biology*. 2024.

## South Carolina Cooperative Fish and Wildlife Research Unit

**Erin Kathleen Buchholtz****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Buchholtz is the Assistant Unit Leader of Wildlife in the South Carolina Cooperative Fish & Wildlife Research Unit, and Assistant Professor in the Forestry and Environmental Conservation Department at Clemson University. Prior to this position, she earned degrees in Ecology & Evolutionary Biology at Princeton University (BA) and Texas A&M University (PhD) before working as an ecologist with the USGS at the Fort Collins Science Center. She studies the spatial ecology of wildlife, investigating the causes and consequences of ■wildlife movement and connectivity in human-impacted landscapes. By studying these patterns and processes, she aims to support science-based decision making for wildlife conservation and management, human-wildlife conflict mitigation, and landscape connectivity, in order to benefit both wildlife ■populations and human communities. She carries out her work through graduate student training, quantitative spatial ecology, ■and interdisciplinary collaboration, and upholds values of curiosity, respect, and kindness.

**Areas of Expertise**

Anthropogenic Impacts | Ecological Flows | GIS/Spatial Analysis | Habitat Management | Human Dimensions | Invasive Species | Landscape Ecology | Movement Ecology | Remote Sensing | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Bats | Carnivores | Nongame Fish/Wildlife | Reptiles | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Quantifying the socio-environmental landscape for red wolf translocation, movement, and connectivity
- Effects of field management on bats of Big South Fork National River and Recreation Area
- Black bear landscape use and population ecology in upstate South Carolina

**Most Recent Publications (Top 3)**

- Buchholtz, E.K., A. Jamison, & G. Yarrow. 2025. Invasive wild pig movement and space use in a mixed-use forest landscape, South Carolina. *Stacks Journal*: 25014. <https://doi.org/10.60102/stacks-25014>.
- Nettles, J.M., C. Abramowitz, W. W. Boone, S. N. Harris, C. E. Horton, M. P. Keating, D. L. Nelson, S. N. Smith, K. N. Steen, E. K. Buchholtz & D. S. Jachowski. 2025. The American black bear (*Ursus americanus*) as an apex predator: Investigating the ecological role of the world's most abundant large carnivore. *Mammal Review*. <https://doi.org/10.1111/mam.70014>
- Shyvers, J.E., B.C. Tarbox, A.P. Monroe, N.J. Van Lanen, B.S. Robb, E.K. Buchholtz, C.J. Duchardt, D.R. Edmunds, M.S. O'Donnell, N.D. Van Schmidt, J.A. Heinrichs, and C.L. Aldridge. 2025. Different data for different goals: exploring trade-offs and synergies in the use of spatial data inputs to optimize conservation action in sagebrush ecosystems. *Ecology and Evolution* , 15 (10), p.e72214. <https://doi.org/10.1002/ece3.72214>

## South Carolina Cooperative Fish and Wildlife Research Unit

**Patrick Jodice****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Jodice earned graduate degrees from the University of Florida (M.S.) and Oregon State University (Ph.D.), and his undergraduate degree (B.S.) from the University of Maine. He also was a post-doctoral fellow at Oregon State University. Dr. Jodice joined the SC Unit in 2002. His research focuses on the ecology, physiology, and conservation of marine and coastal birds, and he has conducted research on these suites of birds in the southeastern US, Caribbean, Gulf of Mexico, Pacific Northwest, and Gulf of Alaska. Current projects include Tracking Atlantic and Caribbean Seabirds (TRACS), investigating the spatial and reproductive ecology of brown pelicans in the Gulf of Mexico and Atlantic, and examining distribution, abundance, and ecological relationships of marine birds in the Gulf of Mexico. Dr. Jodice has served as Chair of the World Seabird Union and Chair of the Pacific Seabird Group. He also served as a member of the Steering Committee for the Gulf of Mexico Avian Monitoring Network and co-founded and sits on the steering committee of the Atlantic Marine Bird Cooperative. Dr. Jodice teaches courses in conservation physiology and the foundations and philosophy of ecology.

**Areas of Expertise**

Marine/Coastal Ecology | Movement Ecology | Nutritional Ecology | Physiology | T&E Species Management

**Taxon/Group Studied**

Coastal/Marine Birds | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Migration routes and stopover sites of Red Knots in the Southeastern US
- Movement ecology of Black-capped Petrels in the western North Atlantic: Informing planning for offshore energy
- PFAS Bioaccumulation in Coastal Seabirds

**Most Recent Publications (Top 3)**

- Satgé, Y.G., B. Patteson, B. Keitt, C. Gaskin, P.G.R. Jodice. Satellite tracking supports hypotheses of breeding allochryony and allopatry in the endangered Black-capped Petrel (*Diablotin*, *Pterodroma hasitata*). *Caribbean Journal of Ornithology*
- Thompson, H.L., A.E. Lacey, R.F. Baldwin, P.G.R. Jodice. In Revision . Differential habitat use of wintering Whooping Cranes (*Grus americana*) throughout the range of the Eastern Migratory Population. *Waterbirds*.
- Satge, Y.G., S.E. Janssen, G. Clucas. E. Rupp, B. Patteson, and P.G.R. Jodice. 2024. Mesopelagic diet as pathway of high mercury levels in body feathers of the endangered Black-capped Petrel (*Diablotin*) *Pterodroma hasitata*.. *Marine Ornithology* 52: 261-274. <http://doi.org/10.5038/2074-1235.52.2.1591>

## South Dakota Cooperative Fish and Wildlife Research Unit

**Steven R. Chipps****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Chipps joined the South Dakota Cooperative Fish & Wildlife Research Unit in 1999, where he currently serves as Unit Leader and Professor in the Department of Natural Resource Management at South Dakota State University. Steve's research interests include feeding ecology and bioenergetics of fishes, endangered species biology & management, and food web interactions in freshwater ecosystems. Much of his work incorporates quantitative tools that include development and application of energy budgets, the use of individual-based modeling approaches, and application of coupled foraging-bioenergetics models to help address fisheries management

questions. Steve's current research projects are focused on salmonid management in the Black Hills, predator-prey interactions in glacial lakes, ecology of larval Pallid Sturgeon in the Missouri River, and spawning ecology of invasive carps in South Dakota. Dr. Chipps teaches graduate-level courses in Aquatic Trophic Ecology, Fish Bioenergetics, and Aquatic Invertebrate Ecology at South Dakota State University.

**Areas of Expertise**

Aquatic Ecology | Behavioral Ecology | Contaminants | Fisheries Management | Habitat Management | Human Dimensions | Invasive Species | Physiology | Predator-Prey Dynamics | Species Distribution Modeling | Species Management | T&E Species Management | Water Quality

**Taxon/Group Studied**

Freshwater Fishes | Gamefish | Invertebrates/Insects | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Lake Sturgeon in Big Stone Lake and beyond: Population status, maturity, habitat use, and movement
- Are South Dakota community fisheries making a difference in the recruitment and reactivation of anglers: can they be improved"
- Quantifying the response of in-stream habitat restoration in Gary Creek, South Dakota

**Most Recent Publications (Top 3)**

- Sturtz, J.M., B.J. Schall, M.J. Ward, C.E. Treft, S.R. Chipps, and C.A. Cheek. Using eye lens stable isotopes to identify rearing origin of Fall age-0 Walleye (*Sander vitreus*) walleye.<https://doi.org/10.1111/fme.70057>
- Pfaff, P.J., A.A. Coulter, B.J. Schall, T. Davis, S.R. Chipps, D.P. Coulter. 2025. Predicting aquatic habitat connectivity across watershed boundaries: implications for interbasin spread of nonindigenous aquatic species. *Front. Environ. Sci.* 13:1646017. doi:10.3389/fenvs.2025.1646017
- Sacco, L.H., M.J. Fincel, C.W. Goble, T. Davis and S.R. Chipps. 2024. Effects of exploitation and emigration on apparent survival of Walleye in Lake Sharpe, South Dakota. *North American Journal of Fisheries Management* 44(6):1476-1488.

## South Dakota Cooperative Fish and Wildlife Research Unit

**Quinton Phelps****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

In 2024, Dr. Quinton Phelps was selected as the Assistant Unit Leader at the South Dakota Cooperative Fish and Wildlife Research Unit. Quinton will work closely with cooperators to help them identify their research and management needs while ensuring that all research conducted is aligned with the USGS mission. Dr. Phelps grew up in Southeast Kansas and developed an obsession for hunting and fishing. This passion to provide back to the hunting and fishing community led his career path. Quinton received undergraduate degrees from Coffeyville Community College and South Dakota State University coupled with graduate degrees from South Dakota State University and Southern Illinois University – Carbondale. Prior to joining the CRU, Quinton worked as a state fisheries biologist and most recently was an Associate Professor of fisheries and wildlife biology. In his current role, Quinton and his team of students concentrate their efforts in traditional fisheries management, invasive species (carp and snakehead) suppression and eradication, population dynamics modeling, animal movement patterns, and innovative technologies (e.g., artificial intelligence, live-view sonar). Quinton is excited to join the South Dakota unit where he will work with alongside partner agencies to bolster opportunities for hunters and anglers.

**Areas of Expertise**

Fisheries Management | Invasive Species | Population Dynamics

**Taxon/Group Studied**

Freshwater Fishes | Gamefish

**Recently Started Projects (Top 3)**

- Seasonal movement and habitat use of invasive carp in the Neosho River Grand Lake system to inform removal

**Most Recent Publications (Top 3)**

- Chestnut- Faull, K. C., M. Mather, Q. Phelps, D. Shoup. 2022. A Review of Empirical Evidence that Examines the Effectiveness of Harvest Regulation Evaluations in Freshwater Systems: A Systematic, Standardized Collaborative Approach. *Fisheries* 47(10) 423–434. <https://doi.org/10.1002/fsh.10808>
- Siegel, J.V., Welsh, S., Taylor, N. and Phelps, Q.E. (2023). Size Structure, Age, Growth, and Mortality of Flathead Catfish in the Robert C. Byrd Pool of the Ohio and Kanawha Rivers. *Journal of the Southeastern Association of Fish and Wildlife Agencies*, [online] 10, pp.10–16. Available at: <https://seafwa.org/journal/2023/size-structure-age-growth-and-mortality-flathead-catfish-robert-c-byrd-pool-ohio-and>



## South Dakota Cooperative Fish and Wildlife Research Unit

**Joshua Stafford****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

I received a B.S. in Wildlife Science from Oregon State University (1997), and M.S. in Wildlife Science from South Dakota State University (2000), and a Ph.D. in Forest Resources (Wildlife) from Mississippi State University (2004). I served as the Director of the Illinois Natural History Survey's Forbes Biological Station from 2004-2011, where I was Director of the Bellrose Waterfowl Research Center. I have been with the South Dakota Cooperative Fish and Wildlife Research Unit since 2011, during which I have built important research partnerships with agencies and organizations including: South Dakota Game, Fish and Parks, North Dakota Game and Fish, the U.S. Fish and Wildlife Service, Ducks Unlimited, Inc., and the Delta Waterfowl Foundation. Most of my research has focused on ecology and management of Breeding and Migrating Waterfowl and other Waterbirds, with an emphasis on agro-ecosystems. I have advised or co-advised 20 graduate students and published 58 peer-reviewed journal articles as of June 2022. At South Dakota State University I teach Wildlife Research Design, a graduate course, at SDSU in Spring of odd years. In even years my graduate course varies, from reading special topics courses to behavioral ecology. Ecology and Management of Waterfowl and Wetlands, Foraging Ecology, Habitat and Food Selection, and Biometrics.

**Areas of Expertise**

Habitat Management | Movement Ecology | Wetland Ecology | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Nongame Fish/Wildlife | Songbirds | Waterfowl

**Recently Started Projects (Top 3)**

- Development of an Ecological Monitoring and Assessment Framework for the ACEP-WRE Program
- Quantifying restorable wetlands in the Prairie Pothole Region of Eastern South Dakota
- Distribution, habitat selection, and survival of plains spotted skunks in South Dakota

**Most Recent Publications (Top 3)**

- Batzer, D., V. Harrison-Day, S.R. Kucia, W.J. Severud, L.L. Smith, J.D. Stafford, and Y. Zhang. 2025. Module 4: Basic Biology of Wetland Animals. *Wetland Science and Practice*: October 307-320.
- White, K.M., A.M. Cheeseman, J.D. Stafford, and R.C. Lonsinger. 2025. Control of a dominant predator influences the occurrence of a mesocarnivore of conservation concern. *Wildlife Research* 52(11): WR2511 . <https://doi.org/10.1071/WR25116>
- White, K.M., A.M. Cheeseman, J.D. Stafford, and R.C. Lonsinger. 2025. Fine-scale farming features drive resource selection of a small carnivore of conservation concern. *Canadian Journal of Zoology* 103:1–12. <http://dx.doi.org/10.1139/cjz-2024-0096>

## Tennessee Cooperative Fishery Research Unit

## Mark W. Rogers

## Unit Leader

[Email](#) | [ORCID](#) | [Webpage](#)

## Biography

I spent six years as a Fishery Research Biologist at the USGS Great Lakes Science Center after earning my PhD at the University of Florida. I started as the Unit Leader for the Tennessee Cooperative Fishery Research Unit in December 2015. As Unit Leader, I work closely with partners to deliver products that support their needs as well as advance the science field. I mentor graduate students and Post-docs to help them grow in their science confidence and capability with the ultimate goal of supporting them on their career pathways. My research interests include fisheries ecology and management, population dynamics, and ecological modeling. My research in

Tennessee focuses on invasive carps, food web ecology, and fisheries management. I use a combination of field studies and experimental studies to address hypotheses. I have worked on multiple global inland fisheries projects and have studied fisheries in sub-tropical and temperate lakes and reservoirs, the Laurentian Great Lakes, and Australian rivers.

## Areas of Expertise

Aquatic Ecology | Fisheries Management | Population Dynamics | Statistics and Modelling

## Taxon/Group Studied

Freshwater Fishes | Gamefish

## Recently Started Projects (Top 3)

- Evaluating Tennessee Sport Fisheries
- Environmental DNA (eDNA) surveillance of the federally threatened Slender Chub (*Erimystax cahni*) in the Clinch River and Powell River
- Tennessee-Cumberland rivers invasive carps data management application

## Most Recent Publications (Top 3)

- Paine, R.T.R., Rogers, M.W., and Rosenberger, A.E. 2024. Environmental DNA reveals invasion of Puerto Rican waterways by non-native *Clarias catfish*. U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-164-2024, Washington, D.C. <https://doi.org/10.3996/css20629765>
- Paine, R.T.R., Rogers, M.W. and Rosenberger, A.E. (2025). Looking for Lazarus: Environmental DNA (eDNA) Surveillance of the Federally Threatened Slender Chub (*Erimystax cahni*) in the Clinch and Powell Rivers. *Southeastern Naturalist*, 24(1). doi:<https://doi.org/10.1656/058.024.0104>. ■
- Paine, R.T.R., M.W. Rogers, and A. E. Rosenberger. 2024. Environmental DNA (eDNA) surveillance of the federally threatened Slender Chub (*Erimystax cahni*) in the Clinch River and Powell River. U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-156-2024, Washington, D.C. <https://doi.org/10.3996/css55463605> (IP-156546)

## Tennessee Cooperative Fishery Research Unit

**Amanda Rosenberger****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Rosenberger's research interests are in the ecology and conservation of freshwater species, including fish, crayfish, and mussels, with an emphasis on the role of ecological processes in shaping aquatic species' distributions, population characteristics, and community structure. Conservation problems are best addressed at multiple scales; therefore, she is interested in the spatial and temporal dynamics of these patterns at both local and landscape scales. She is particularly interested in investigating mechanistic relationships between aquatic organisms and physical and biotic features of the environment and how human intervention, nonnative species, and climate change can alter those relationships. Underlying all of the research she has pursued is a strong drive to inform management decision-making geared towards conservation of threatened aquatic populations.

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Aquatic Ecology | Behavioral Ecology | Biodiversity | Conservation Genetics/Genomics | Decision Support/Analysis | Ecological Flows | Ecological Services | Evolutionary Ecology | Fire Ecology | Fisheries Management | Habitat Management | Invasive Species | Landscape Ecology | Managed Flows/Hydrology | Movement Ecology | Population and Community Ecology | Species Distribution Modeling | Species Management | Species Status Assessments | Stream Ecology | T&E Species Management | Water Quality | eDNA

**Taxon/Group Studied**

Anadromous Fishes | Crayfish | Freshwater Fishes | Invertebrates/Insects | Mussels | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Filling in the Gaps for the Federally Endangered Cracking Pearlymussel *Hemistena lata*: Habitat Use, Life History, Distribution, and Validation of Sampling Approaches
- Assessment and Modeling of the Freshwater Mussel Distributions and Habitat Preferences in the Hatchie River, Tennessee
- Understanding the responses of freshwater systems to ongoing restoration in West Tennessee rivers

**Most Recent Publications (Top 3)**

- Paine, R.T.R., H. Swain-Menzel, A.E. Rosenberger, and A. Velasquez. 2025. O Romeo! Environmental DNA could prevent a tragedy for the elusive Chucky Madtom (*Noturus crypticus*). U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-169-2025, Washington, D.C. <https://doi.org/10.3996/css69379551>
- Womble, K.I. and A.E. Rosenberger. 2025. A comprehensive freshwater mussel database for the Duck River Drainage, Tennessee. U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-166-2025, Washington, D.C. <https://doi.org/10.3996/css36499787> (IP-174003)

## Tennessee Cooperative Fishery Research Unit

- Paine, R.T.R., Rogers, M.W., and Rosenberger, A.E. 2024. Environmental DNA reveals invasion of Puerto Rican waterways by non-native *Clarias* catfish. U.S. Department of Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-164-2024, Washington, D.C.  
<https://doi.org/10.3996/css20629765>

## Texas Cooperative Fish and Wildlife Research Unit

**Clint Boal****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Boal is the Leader of the Texas Cooperative Fish and Wildlife Research Unit. He received his BS, MS, and PhD degrees from the University of Arizona, and conducted post-doctoral research at the University of Minnesota. He joined the Texas Cooperative Fish and Wildlife Research Unit in 2000 as the Assistant Leader - Wildlife, and became Unit Leader in 2024. Dr. Boal's research addresses the applied management information needs of natural resource managers while also building on the basic understanding of species and systems. This requires adaptability within a research lab to be responsive in addressing a variety of changing information needs.

His foundational research interest is conservation of avian species and communities in a changing landscape. However, he has also directed research on a variety of wildlife species of conservation need, and across multiple ecoregions, including the Sonoran and Chihuahuan Deserts, Southern Great Plains, the Caribbean, and southern Rocky Mountains. Dr. Boal teaches classes on Raptor Ecology and Conservation and on Field Safety and Skills, and has taught classes in Nongame Ecology, Tropical Ornithology, and Structured Decision Making.

**Areas of Expertise**

Desert Ecology | Habitat Management | Population and Community Ecology | Predator-Prey Dynamics | Species Management | Species Status Assessments | T&E Species Management | Urban Ecology | Wildlife Management

**Taxon/Group Studied**

Carnivores | Nongame Fish/Wildlife | Songbirds | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- TPW 53: Filling Knowledge Gaps for Texas Raptors of GCN
- TPW 52: Experimental Approaches to Improve Survival and Conservation of Swift Fox
- OA 109: Distribution and Habitat Associations of the Federally Threatened Mexican Spotted Owl (*Strix occidentalis lucida*) in Texas

**Most Recent Publications (Top 3)**

- Davis, K.P., M.J. Eaton, E.R. Bjerre, H.M. White, C.W. Boal, J.H. Herner-Thogmartin, A.J. Lawson. 2026. Collaborative generation and prioritization of management-based hypotheses relevant to American kestrel population declines in the United States using constructed value of information. *Conservation Biology*:e70227
- Boal, C.W., and B.D. Bibles. Final Report: Distribution and Habitat Associations of the Federally Threatened Mexican Spotted Owl (*Strix occidentalis lucida*) in Texas. TXCFWRU Final report to the Texas Comptrollers Office.
- Skidmore, C., Boal, C., Skipper, B. and Martin, R. (2025). Daily Survival Rate and Nest-site Selection of Zone-tailed Hawks (*Buteo albonotatus*) in the Chihuahuan Desert Ecoregion of Texas. *Journal of Raptor Research* , 59(2):jrr2436 (1-9). doi:<https://doi.org/10.3356/jrr2436>. ■

## Texas Cooperative Fish and Wildlife Research Unit

**Jane Rogosch****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Rogosch received her PhD from the University of Washington and was a post-doctoral fellow at the University of Missouri before joining the Texas Unit in 2020. Her research is centered around the ecology and conservation of freshwater fishes with emphasis on the influence of altered flow conditions, invasive species, and other aspects of environmental change. She has worked on topics that include the management and recovery of endangered fishes in dryland rivers of the desert Southwest, the effects of low-head dams on stream habitat and fish community composition in the Great Plains, and the dynamics of fish communities in response to nonnative species and increasing hydrologic drought across the southwestern United States. Her research aims to inform conservation and management of freshwater fishes with a strong emphasis on the application of quantitative approaches to data analysis. Dr. Rogosch's lab uses a variety of quantitative methods for building models of populations, spatial and compositional analysis of communities, and applying innovative techniques for exploring food-web structure, invasive species distributions, and environmental gradients across riverine landscapes.

**Areas of Expertise**

Aquatic Ecology | GIS/Spatial Analysis | Invasive Species | Population Dynamics | Population and Community Ecology | Species Distribution Modeling | Stream Ecology | T&E Species Management

**Taxon/Group Studied**

Freshwater Fishes | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- TCU 478: Evaluating resilience and vulnerability of fish assemblage structure to intermittent flow
- TCU 470: Influence of environmental thresholds on trajectories of freshwater assemblages with implications for building climate resilience across prairie landscapes
- OA 107: Improving institutional diversity in professional society participation through virtual and hybrid conferencing

**Most Recent Publications (Top 3)**

- Walters, A.W., N.G. Clancy\*, T.P. Archdeacon, S. Yu, J.S. Rogosch, and E.A. Rieger\*. 2024. Development of a refuge identification framework that promotes fish persistence during climate-related drought. *Fish and Fisheries* <https://doi.org/10.1111/faf.12860>
- Wilson, W.M., J.S. Rogosch, S.F. Collins, B.W. Durham, K.B. Mayes, and S.M. Robertson, S.M. 2025. Application of fin tissue for nonlethal stable isotope analysis of small-bodied fishes. *Environmental Biology of Fishes*. <https://doi.org/10.1007/s10641-025-01755-y>
- Krabbenhoft, C.A., J.S. Rogosch, and F.E. Rowland. 2025. Long-term regime shifts in xeric ecoregion freshwater fish assemblages due to anthropogenic and climate stressors. *Ecology and Evolution*. <http://dx.doi.org/10.1002/ece3.72067>

## Utah Cooperative Fish and Wildlife Research Unit

**Phaedra Budy****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Phaedra Budy is the Unit Leader of the U.S. Geological Society, Utah Cooperative Fish and Wildlife Unit, a Professor of fisheries management and aquatic ecology in the Department of Watershed Sciences at Utah State University (USU) and a faculty member of The Ecology Center at USU. She holds a B.S. in Limnology from the University of California, Davis and a PhD in Aquatic Ecology from Utah State University. She does research that fits into an overall framework of evaluating the factors that structure and limit fish populations and communities in both lentic and lotic systems, and also works broadly in the conservation biology, invasion ecology, and food web dynamics of aquatic systems. Her current research covers a wide geographical range including almost all of Utah (from the south of the state up to high elevation points in the Bear River drainage), Nevada, New Mexico, and northern, arctic Alaska and includes many species of salmonids, imperiled native desert fishes (e.g., the "three species"), and numerous warm water lentic fishes. She also dabbles in experimental and adaptive stream restoration and large river management. Dr. Budy currently teaches advanced graduate level classes in Fish Ecology and most recently Big Ideas in Watershed Sciences.

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Aquatic Ecology | Desert Ecology | Fisheries Management | Habitat Management | Invasive Species | Managed Flows/Hydrology | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Resilience

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Furbearers | Nongame Fish/Wildlife | Salmonids | Small Mammals | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Decision support to meet objectives for water and fisheries management in large river and estuarine systems.
- Wood and Beaver low tech process based restoration of ephemeral streams at Camp Williams.
- White River Conservation and Restoration: Using large wood piles for beaver mimicry and investigating novel methods for determining beaver carrying capacity, to inform future phases of restoration.

**Most Recent Publications (Top 3)**

- Clancy, N.G., D.J. Isaak, P. Budy, and A.W. Walters. 2025. Ice age biogeography corresponds with current climate vulnerability of freshwater fishes. *Freshwater Biology*. 2025; 70:e70098. <https://doi.org/10.1111/fwb.70098>. USGS FSP: IP-160661.
- Budy, C.A. Pennock, S. Messenger, H. Pehrson, E. Adler, G.P. Thiede, B. Crump, A. Giblin, and G. Kling. 2025. Rapid recovery of an arctic lake ecosystem from a pulse disturbance caused by thermokarst failure. *Oecologia* (2025) 207:82. <https://doi.org/10.1007/s00442-025-05681-9>. USGS FSP IP- 162860, BOA 14 February, 2024.
- Clancy, N.G., Peoples, B. K., Rahel, F.J., Walters, A.W., Budy, P.E., Mandrak, N.E., Lyons, J., Frimpong, E.A., and Cross, W.F. 2025. On the importance and practical conservation of nongame fishes. *Fisheries* vuaf040. <https://doi.org/10.1093/fshmag/vuaf040>

## Utah Cooperative Fish and Wildlife Research Unit

**Erica Stuber****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Stuber received graduate degrees from the Pennsylvania State University and the Max Planck Institute for Ornithology, and was a Research Scientist with the University of Nebraska-Lincoln, Yale University, and Cornell Lab of Ornithology before joining the Utah Unit in 2021. The central theme of her research revolves around spatial ecology of wildlife - from individuals to populations and communities. Much of her research investigates the spatial scales at which organisms respond to their environment to inform spatial 'precision conservation' and management. She is also interested in individual variation in spatial behaviors, and the consequences of that variation on population distributions and dynamics. Dr. Stuber is active in multi-scale analytics development, Bayesian data integration, and incorporation of citizen science information within management decision-making contexts. Dr. Stuber has taught graduate-level courses on Spatial Ecology, and Global Biodiversity Change, and currently teaches Landscape Ecology.

**Areas of Expertise**

Behavioral Ecology | GIS/Spatial Analysis | Habitat Management | Population and Community Ecology | Species Distribution Modeling | Statistics and Modelling | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Songbirds | Ungulates

**Recently Started Projects (Top 3)**

- Evaluating drivers of Great Salt Lake waterbird populations to facilitate future management strategies
- Shifting frontiers: understanding species' abundance range shifts for informed conservation strategies.
- CAREER: Defining drivers and scaling algorithms for multi-scale species-environment relationships

**Most Recent Publications (Top 3)**

- Van Tatenhove, A.M., Neill, J., Norvell, R.E., Stuber, E.F. and Rushing, C.S. (2024). Scale dependent population drivers inform avian management in a declining saline lake ecosystem. *Ecological Applications*, 34(7). doi:<https://doi.org/10.1002/eap.3021>. ■
- Stillman, A.N., P.E. Howell, G.S. Zimmerman, E.R. Bjerre, B.A. Millsap, O.J. Robinson, D. Fink, E.F. Stuber, V. Ruiz-Gutierrez. 2023. Leveraging the strengths of citizen science and structured surveys to achieve scalable inference on population size. *Journal of Applied Ecology*, 60, 2389–2399. <https://doi.org/10.1111/1365-2664.14512>
- N.A. Pershyn, E.M. Gese, E.F. Stuber, and B.M. Kluever. Coyotes in the Great Basin Desert Do Not Exhibit a Spatial Response Following Removal of Anthropogenic Water Sources. *Journal of Arid Environments* – 220:105097

## Utah Cooperative Fish and Wildlife Research Unit

**Chad Teal****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

**Education Background:** I received my PhD at the University of Arizona where I investigated the development of YY Red Shiner *Cyprinella lutrensis* and Green Sunfish *Lepomis cyanellus* for means of invasive population eradication in the Southwest. Before coming to Arizona, I received my Master's degree from the University of Miami where I researched aquaculture techniques of novel marine finfishes (*Cobia Rachycentron canadum*, Mahi Mahi *Coryphaena hippurus*, and Florida Pompano *Trachinotus carolinus*) for commercial enterprises. I then went onto build and become the Lead Educator and Technical Director of an off-grid floating environmental education center

called the Miami Science Barge. **Research Emphasis:** My lab's research focuses on fishes' biology for the development and implementation of novel technologies and techniques for fisheries management and aquaculture. This includes exploiting the sexual biology and specific life histories of invasive species to assist traditional removal efforts, investigating sustainable aquaculture technologies and practices, and utilizing genomic methods to eradicate aquatic invasives and conserve threatened species. We often investigate fundamental biological and ecological questions to understand life history and demographic processes in native and invasive fish species. We conduct applied research which can be useful for natural resource agencies and private industries alike.

**Areas of Expertise**

Fisheries Management | Invasive Species

**Taxon/Group Studied**

Freshwater Fishes | Gamefish | Marine Fishes

**Recently Started Projects (Top 3)**

- Invasive Red Shiner Population Connectivity and Dispersal Capabilities in Southwestern Rivers and Implications for YY Eradication Strategies
- Investigations into Environmental Influences on Green Sunfish *Lepomis cyanellus* Sex Ratios and the Uncovering of their Sex Determination System for use in their Invasive Population Control and Sportfish Management
- Development of YY Bullfrogs, *Lithobates catesbeianus*, and models of their release for invasive population extirpation

**Most Recent Publications (Top 3)**

- Teal, C.N., Schill, D.J., Bauder, J.M., Fogelson, S.B., Fitzsimmons, K., Stewart, W.T., Culver, M. and Bonar, S.A., 2024. The effects of estradiol $\beta$  on the sex reversal, survival, and growth of Red Shiner and its use in the development of YY individuals. *North American Journal of Aquaculture*, 86 (1), pp.110-129. <https://doi.org/10.1002/naaq.10314>
- Tracy, E. E., M. J. Brouder, A. C. Iles, C. N. Teal and S. A. Bonar. 2024. Indices for Common North American Fishes. Pages 441 to 786 in S. A. Bonar, N Mercado-Silva, and K. L. Pope, editors. *Standard methods to sample North American freshwater fishes*. American Fisheries Society, Bethesda, Maryland.
- Teal, C. N., D. Katharine Coykendall, Matthew R. Campbell, Thomas A. Delomas, Daniel L. Eardley, John A. Erwin, Daniel J. Schill, Javan M. Bauder, Scott A. Bonar and Melanie Culver. 2023. The

## Utah Cooperative Fish and Wildlife Research Unit

development of genetic sex identification markers and evidence of a male heterogametic sex determination system in Red Shiner *Cyprinella lutrensis*. North American Journal of Aquaculture 85:(1)74-86.

## Vermont Cooperative Fish and Wildlife Research Unit

**Therese M. Donovan****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Terri joined the Vermont Cooperative Fish and Wildlife Research Unit in 2000, where she is the Assistant Unit Leader and Associate Research Professor in the Rubenstein School of Environment and Natural Resources at the University of Vermont. Terri's research emphases include population dynamics, population modeling and structured decision making, landscape ecology, and conservation biology. Current research efforts focus on adaptive management for both game and non-game species, including population dynamics of moose and ecosystem monitoring with remote devices such as trail cameras and recording units. With a background in education,

Terri is an avid teacher and enjoys working with all age groups. Current teaching efforts include an on-line Principles of Modeling course and an on-line Occupancy Modeling course, both geared for graduate students and professionals. Terri also directs the Spreadsheet/R Project, a suite of tutorials on quantitative data analysis and modeling in ecology, and oversees the development of the Adaptive Management Toolkit, a suite of R packages to enable adaptive management.

**Areas of Expertise**

AI/Machine Learning | Biodiversity | Decision Support/Analysis | Hydroacoustics/Bioacoustics | Population Dynamics | Population and Community Ecology | Species Distribution Modeling | Statistics and Modelling | Wildlife Management

**Taxon/Group Studied**

Amphibians | Bats | Carnivores | Furbearers | Gamebirds | Nongame Fish/Wildlife | Songbirds | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Early Successional Habitat Management for Moose and Ruffed Grouse in Vermont
- Effects of habitat, density, and climate on moose and winter tick ecology in the northeast US
- Adaptive Management with AMMonitor

**Most Recent Publications (Top 3)**

- Clarfeld, L., K. Gieder, A. Siren, S. Webb, T.L. Morelli, T. L. Wilson, L. Kantar, J. Kilborn, C. Callahan, L. Prout, R. Cliche, R. Patry, C. Bernier, S. Staats, S. Wixsom, and T. Donovan. DeepFaune New England: A species classification model for trail camera images in northeastern North America. *Ecology and Evolution* 15, no. 11: e72174. <https://doi.org/10.1002/ece3.72174>.
- Clarfeld, L. A., K. D. Gieder, and T. M. Donovan. 2025. Observations of Tear-Drinking by Lepidopterans on Moose ( *Alces Americanus Americanus* ) in Northeastern North America. *Ecosphere* 16(11): e70422. <https://doi.org/10.1002/ecs2.70422>
- Clarfeld, L., C. Tang, C. Balantic, K. Huber, and T. Donovan. 2025. AMMonitor 2.0: Remote monitoring of biodiversity in an adaptive framework in R. *Methods in Ecology and Evolution*. DOI: 10.1111/2041-210X.14487

## Vermont Cooperative Fish and Wildlife Research Unit

**Mark J. Henderson****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Mark Henderson recently started as the Unit Leader for the USGS Vermont Cooperative Fish and Wildlife Research Unit at the University of Vermont. Prior to joining the Vermont Cooperative Research Unit, he was the acting unit leader at the California Cooperative Research Unit for six years. Mark's overarching research interests are how the physical, and biological, environment influences fish population dynamics (e.g., movements, growth, and mortality) on different spatial and temporal scales. He is a quantitative ecologist that uses various modeling approaches to answer applied research questions related to fisheries management. Research in his

lab group primarily focuses on the interactions between fishes and their environment, and how our changing climate will affect species distributions, habitat availability, and population dynamics. Prior to coming to Vermont, the majority of the research in Mark's lab focused on using population dynamics and species distribution models to understand the causes of salmonid mortality. Many of the salmonid populations in California are ESA listed as threatened or endangered, thus identifying the causes of mortality and what management and restoration actions may aid in population recovery is critical. In Vermont, Mark will apply similar quantitative methods to understand the population dynamics and management of Lake Champlain and inland fishes in Vermont.

**Areas of Expertise**

AI/Machine Learning | Adaptive Management | Aquatic Ecology | Behavioral Ecology | Decision Support/Analysis | Fisheries Management | GIS/Spatial Analysis | Hydroacoustics/Bioacoustics | Marine/Coastal Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Statistics and Modelling | Stream Ecology | eDNA

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Gamefish | Salmonids

**Recently Started Projects (Top 3)**

- Not just a needle in a haystack: using models to understand the potential impact of a round goby invasion on the Lake Champlain ecosystem
- Survival and habitat use of Atlantic Salmon in Lake Champlain
- Genomic forensics: using bioinformatics to investigate the causes of melanistic lesions in Brown Bullhead

**Most Recent Publications (Top 3)**

- Dick, C., Larson, W.A., Karpan, K., Baetscher, D.S., Shi, Y., Sethi, S., Fanguie, N.A., Henderson, M.J. Prey ration, temperature, and predator species influence digestion rates of prey DNA inferred from qPCR and metabarcoding. Submitted to Molecular Ecology Resources.
- Shi, Y., Dick, C.M., Karpan, K., Baetscher, D., Henderson, M.J., Sethi, S.A., McPhee, M.V., Larson, W.A. Towards absolute abundance for conservation applications: estimating the number of contributors via microhaplotype genotyping of mixed-DNA samples. submitted to Molecular Ecology Resources.

## Vermont Cooperative Fish and Wildlife Research Unit

- Kreidler, N, Buchheister, A., Huff, D.D., Fiechter, J., Yoklavich, M, Henderson, M.J. Direction of ocean currents is associated with habitat suitability for three deep-sea coral and sponge taxa in the Southern California Bight. Deep Sea Research Part II. <https://doi.org/10.1016/j.dsr2.2025.105546>

## Virginia Cooperative Fish and Wildlife Research Unit

**William Mark Ford****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Ford received graduate degrees from Mississippi State University and the University of Georgia. Prior to the U.S. Geological Survey, he was a wildlife biologist for the Westvaco Corporation Appalachian Division, a research wildlife biologist for the USDA Forest Service Northern Research Station and a research wildlife biologist for the U.S. Army Engineer Research Development Center. He conducts research on distribution, habitat associations and sampling methodologies for threatened, endangered and sensitive species, primarily bats (Indiana bat and northern long-eared bat), the Appalachian northern flying squirrel subspecies, and Allegheny woodrats, Cervids (white-tailed deer and elk)-habitat relationships in managed forest systems, prescribed fire and wildlife, energy production (wind, coal, and natural gas) and wildlife, and high elevation spruce-fir restoration ecology. He serves as a member of the U.S. Fish and Wildlife Indiana and northern long-eared bat monitoring guidance development team assisting with survey level of effort determinations for acoustic and mist-net sampling and automated bat identification software use. His work spans many eco-regions: the Atlantic Coastal Plain, Piedmont, Appalachians and Interior Low Plateau. Dr. Ford teaches a course on Wildlife Habitat Relationships in the Appalachians and Piedmont at Virginia Tech and he co-teaches Evaluating Acoustic Bat Surveys for ESA Compliance through the National Conservation Training Center.

**Areas of Expertise**

Biodiversity | Energy: Development/Alternative | Environmental Change | Fire Ecology | Forest Ecology | Habitat Management | Species Distribution Modeling | Species Management | T&E Species Management | Urban Ecology | Wildlife Management

**Taxon/Group Studied**

Amphibians | Bats | Furbearers | Nongame Fish/Wildlife | Small Mammals | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Demonstrating technologies to monitor sublethal responses of eagles to military activities on Department of Defense Installations
- Using the Sentinel Virginia Northern Flying Squirrel to Guide Red Spruce Restoration in the Central Appalachians
- Assessing Population Viability and WNS-exposure of Northern Long-eared Bats along the I-95 Corridor

**Most Recent Publications (Top 3)**

- Litterer, A.S., S.R. Freeze and W.M. Ford. 2024. Acoustic response of bats to the Brood X periodical cicada (*Magicicada* spp.) emergence. *Journal of North American Bat Research* 10:1-18.
- Guill, M.H., J. De La Cruz, K.M. Puckett and W.M. Ford. 2024. Resource selection of the Southern Fox Squirrel (*Sciurus niger niger*) in the Piedmont and Coastal Plain of Virginia. *Virginia Journal of Science*. Volume 75, Issue 3 & 4 doi: 10.25778/ P 2 AD J 877.
- Freeze, S.R., Deeley, S.M., Litterer, A.S., Freeze, J.M. and Ford, W.M., 2025. The Bat Signal: An Ultraviolet Light Lure to Increase Acoustic Detection of Bats. *Animals*, 15 (16), p.2458.

## Virginia Cooperative Fish and Wildlife Research Unit

**Elizabeth A Hunter****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Hunter received her M.S. degree from the State University of New York College of Environmental Science and Forestry, and her PhD from the University of Georgia. She joined the Virginia Unit as an Assistant Unit Leader in 2021. Her research program focuses on developing management strategies for at-risk species in the face of global change, with a primary taxonomic focus on birds and reptiles. Her research is centered around two main themes: the conservation and management of species in the face of climate change, and ecosystem restoration through species reintroductions and habitat management. She has expertise in population estimation through Bayesian hierarchical population models used in wildlife ecology (e.g., spatial mark-recapture models, occupancy, and density models), but uses a variety of quantitative techniques regularly (e.g., generalized linear and additive [mixed] models, individual-based simulation models, and machine learning methods such as random forests). She teaches graduate courses in research design and careers in conservation.

**Areas of Expertise**

Decision Support/Analysis | Environmental Change | Fire Ecology | GIS/Spatial Analysis | Habitat Management | Landscape Ecology | Marine/Coastal Ecology | Population Dynamics | Population and Community Ecology | Remote Sensing | Species Distribution Modeling | Species Management | Species Status Assessments | Statistics and Modelling | T&E Species Management | Wetland Ecology | Wildlife Management

**Taxon/Group Studied**

Gamebirds | Reptiles | Sea Turtles | Songbirds | Species of Greatest Conservation Need | Water/Marsh Birds

**Recently Started Projects (Top 3)**

- Assessing at-risk turtle species' population status to inform conservation and management
- Bird population and species distribution modeling to understand causes of population declines
- Remote sensing of habitat for at-risk disturbance-dependent bird species

**Most Recent Publications (Top 3)**

- Ubbelohde, M.A., D.B. Breakfield, E.A. Hunter, and K.J. Loope. Improving welfare of captured gopher tortoises: reducing trap time and temperature. *Herpetological Review*.
- Re, B., S.M. Karpanty, and E.A. Hunter. 2025. Nest predator community profile for breeding Saltmarsh Sparrows (*Ammodramus caudacuta*) in Virginia. *Wilson Journal of Ornithology* 137: 647-654.
- De La Cruz, J.L., S.M. Deeley, E.A. Hunter, and W.M. Ford. 2025. Spatial occupancy patterns of the endangered northern long-eared bat in New England. *Diversity and Distributions*. 2025; 31:e70122

## Washington Cooperative Fish and Wildlife Research Unit

**Sarah J. Converse****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Converse received graduate degrees from the University of Nebraska and Colorado State University. She then completed a postdoctoral position at Patuxent Wildlife Research Center before accepting a permanent position with USGS at Patuxent, where she led a research program for 10 years focused on endangered species conservation, decision science, and quantitative ecology. In 2017 she became the Unit Leader of the Washington Unit at University of Washington, where she serves as an Associate Professor. Her research focuses on the development and application of methods to understand the

functioning of populations and to improve their management. She works across a broad variety of taxa: terrestrial birds, seabirds, marine mammals, amphibians, and others. Her research projects tend to reflect two primary themes: (1) development and application of quantitative methods in population ecology, particularly for small and declining populations; and (2) development and application of decision-analytic methods to inform management of populations. Sarah collaborates extensively with managers in federal and state agencies, and she works internationally, with current research projects located in Europe, New Zealand, French Polynesia, and the Arctic. Sarah teaches graduate courses in statistics and demographic analysis, and teaches professional and graduate courses on decision analysis.

**Areas of Expertise**

Adaptive Management | Decision Support/Analysis | Invasive Species | Movement Ecology | Population Dynamics | Population and Community Ecology | Species Management | Species Status Assessments | Statistics and Modelling | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Amphibians | Coastal/Marine Birds | Marine Mammals | Nongame Fish/Wildlife | Songbirds | Species of Greatest Conservation Need | Water/Marsh Birds | Waterfowl

**Recently Started Projects (Top 3)**

- Washington seaduck survival, movements, and distribution
- Effects of habitat and predation on subalpine endemic mammals in Olympic National Park
- Washington pygmy rabbit conservation planning process

**Most Recent Publications (Top 3)**

- Petracca LS, SJ Converse, BT Maletzke, and B Gardner. 2026. Forecasting dynamics of a recolonizing wolf population under different management strategies. *Animal Conservation* 29:21-33. <https://doi.org/10.1111/acv.70019>
- Rand ZR, TA Branch, and SJ Converse. 2025. Longer rorqual whale mothers produce more female offspring. *Proceedings of the Royal Society of London, B* 292:20251437. <https://doi.org/10.1098/rspb.2025.1437>.
- Converse SJ, CT Moore, and DP Armstrong. 2013. Demographics of reintroduced populations: estimation, modeling, and decision analysis. *Journal of Wildlife Management* 77(6):1081-1093. <https://doi.org/10.1002/jwmg.590>.

## Washington Cooperative Fish and Wildlife Research Unit

**Michael McInturff****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. McInturff received graduate degrees from Stanford University and the University of California Berkeley and was a post-doctoral fellow at the University California Santa Barbara before joining the Washington Unit in 2021. He conducts research linking social and ecological dimensions of wildlife conservation and management. Broadly, Dr. McInturff studies how values and attitudes inform human behavioral interactions with wildlife. His research gives particular attention to mapping social phenomena, such as tolerance for wildlife species, so that they might be better linked with ecological patterns. Much of Dr. McInturff's work focuses on large carnivores and ungulates, especially in the American West. Dr. McInturff teaches courses in Social-Ecological Systems and Decision Science.

**Areas of Expertise**

Adaptive Management | Anthropogenic Impacts | Decision Support/Analysis | GIS/Spatial Analysis | Habitat Management | Human Dimensions | Landscape Ecology | Movement Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Species Management | Wildlife Management

**Taxon/Group Studied**

Carnivores | Furbearers | Ungulates

**Recently Started Projects (Top 3)**

- Stillaguamish Watershed Social Science
- Resilience of subsistence harvest portfolios, institutional arrangements, and pathways of public participation in the world's largest temperate rainforest
- Linking deer behavior to forest health on Tribal lands

**Most Recent Publications (Top 3)**

- Callahan, M., M. Devivo, B. Kertson, D. Martorello, A. McInturff. "Chronic Wasting Disease Management: A Survey of Washington State's Cervid Hunters." 94 pages. Washington Dept. of Fish and Wildlife. 2024.
- McInturff, Alex, Peter Alagona, Clare Cannon, and David Pellow. "The Social-Ecological Niche." intended for People and Nature
- E. Pero, A. McInturff, and P. Alagona. "Logistics." in California Grizzly Reintroduction Feasibility Study

## Washington Cooperative Fish and Wildlife Research Unit

**Mark Scheuerell****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Scheuerell received his M.S. from Cornell University and his Ph.D. from the University of Washington. Prior to joining the Washington Cooperative Fish and Wildlife Research Unit in 2019, he was a research biologist with the National Marine Fisheries Service for 16 years. He is an applied ecologist who works largely in aquatic environments, particularly along the west coast of North America. Much of his research is focused on the development and application of statistical methods for analyzing temporal and spatial data, with the goal of supporting conservation and management of exploited species. Recent foci include integrated population models

for Pacific salmon, status assessments for threatened and endangered salmonids, and examining food web dynamics in freshwater and coastal ecosystems. He is also a strong proponent of open and reproducible science. Dr. Scheuerell teaches graduate courses in Analysis of Ecological and Environmental Data, Applied Time Series Analysis, and Best Practices in Environmental Data Science. Dr. Scheuerell grew up on the banks of the Mississippi River in central Minnesota, which had a profound influence on his career trajectory.

**Areas of Expertise**

Aquatic Ecology | Ecological Services | Environmental Change | Fisheries Management | Marine/Coastal Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Management | Species Status Assessments | Statistics and Modelling | T&E Species Management

**Taxon/Group Studied**

Anadromous Fishes | Freshwater Fishes | Invertebrates/Insects | Marine Fishes | Nongame Fish/Wildlife | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Examining spatiotemporal patterns of marine debris in Puget Sound, Washington
- Evaluating the carrying capacity of pink salmon in Sitka National Historical Park
- Maximizing returns on investing in barrier culvert removal in Washington State

**Most Recent Publications (Top 3)**

- Harms, T. K., J. Hood, M. D. Scheuerell, I. Creed, J. L. Campbell, I. Fernandez, S. N. Higgins, S. L. Johnson, J. B. Shanley, S. Sebestyen, K. L. Webster, H. Yao. Temporal variation in stream chemistry reveals long-term stability and recovery of ecosystems in the northern temperate zone. *Biogeochemistry*
- Webster AJ, Douglas TA, Regier P, Scheuerell MD, Harms TK. Multi-scale temporal patterns in stream biogeochemistry indicate linked permafrost and ecological dynamics of boreal catchments. *Ecosystems* 25: 1189–1206
- Sorel MH, AR Murdoch, RW Zabel, CM Kamphaus, ER Buhle, MD Scheuerell, and SJ Converse. 2023. Effects of population density and environmental conditions on life-history prevalence in a migratory fish. *Ecology and Evolution* 13:e11087.

## West Virginia Cooperative Fish and Wildlife Research Unit

**Laura Gigliotti****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Gigliotti joined the West Virginia Cooperative Fish & Wildlife Research Unit at West Virginia University as an Assistant Unit Leader in August 2022. Prior to joining the WV Unit, Dr. Gigliotti received an MS from the Pennsylvania State University, a PhD from Clemson University, and worked as a postdoctoral researcher at U.C. Berkeley. She uses a combination of long-term datasets, targeted field studies, and spatial and demographic modelling to test ecological hypotheses and answer questions relevant to management needs. In particular, she conducts research related to three research themes: 1) ecology and conservation of restored wildlife populations and communities, 2) wildlife responses to anthropogenic disturbance and habitat management, and 3) predator-prey ecology. She focuses her research on a variety of mammalian species both nationally and internationally (in South Africa), with a particular focus on carnivores and large game species. She teaches a graduate-level class on animal movement and spatial ecology at WVU.

**Areas of Expertise**

Anthropogenic Impacts | Behavioral Ecology | Fire Ecology | Habitat Management | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Statistics and Modelling | Wildlife Management

**Taxon/Group Studied**

Carnivores | Furbearers | Nongame Fish/Wildlife | Small Mammals | Species of Greatest Conservation Need | Ungulates

**Recently Started Projects (Top 3)**

- Effects of Habitat Management and Environmental Conditions on the Abundance of Gastropods and the Prevalence of Meningeal Brainworm
- Spatial Ecology and Monitoring of a Reintroduced Elk Herd
- Developing a Regional Deer Monitoring Protocol for the National Park Service

**Most Recent Publications (Top 3)**

- Curveria-Santos, G., G. Dupont, C. Sutherland, C. Pretorius, S. Naylor, K. Allan, and L.C. Gigliotti. 2026. Optimizing camera trap survey designs for multi-species density estimation using capture-recapture models. *Journal of Applied Ecology* 63(1): e70261.
- Diefenbach, D. R., F. E. Buderman, M. J. Casalena, M. Dye, R. Gates, L. C. Gigliotti, B. Long, K. Martin, M. Muthersbaugh, M. L. Peters, J. Sloan, J. Stiller, and M. Wiley. 2025. A Framework for Analyzing Wild Turkey Summer Sighting Data. *Wildlife Society Bulletin*
- Gigliotti, L.C., E.S. Boyd, and D.R. Diefenbach. 2025. Atypical winter coat coloration of snowshoe hares near the southern extent of their range. *Ecosphere* 16(3): e70217. <https://doi.org/10.1002/ecs2.70217>

## West Virginia Cooperative Fish and Wildlife Research Unit

**Stuart A Welsh**

Assistant Unit Leader

[Email](#) | [ORCID](#)**Biography**

Stuart serves as Assistant Unit Leader at the West Virginia Cooperative Fish and Wildlife Research Unit, West Virginia University, Morgantown, WV, where he conducts research involving graduate students, with an emphasis on mentorship and development of future fisheries professionals. His research informs management decisions of the state cooperator (West Virginia Division of Natural Resources), where project results have provided population dynamics and management implications for Blue Catfish, Channel Catfish, Flathead Catfish, Smallmouth Bass, Yellow Perch, and Walleye. Research projects on fishes or crayfishes also focus on systematic studies for biodiversity recognition, habitat use, movement ecology, species distribution modeling, endangered species, and invasive species. Biodiversity studies have included new species descriptions for four freshwater fishes and six crayfishes. Movement ecology studies have addressed dam passage of the American eel. Species distributions have been modeled for approximately 190 species for an upcoming book on West Virginia fishes. Research on the endangered Candy Darter and Diamond Darter have focused on habitat use and the impacts of invasive species. Stuart serves the Atlantic States Marine Fisheries Commission with analyses of tagging data relative to management of Atlantic Coast Striped Bass. International research has focused on fishes of Australia, including descriptions of two new species of eel-tailed catfishes.

**Areas of Expertise**

Aquatic Ecology | Biodiversity | Fisheries Management | Habitat Management | Invasive Species | Movement Ecology | Population Dynamics | Population and Community Ecology | Predator-Prey Dynamics | Species Distribution Modeling | Species Management | Species Status Assessments | Statistics and Modelling | Stream Ecology | T&E Species Management

**Taxon/Group Studied**

Crayfish | Freshwater Fishes | Gamefish | Invertebrates/Insects | Nongame Fish/Wildlife | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Identifying the genetic marker for Diamond Darter eDNA applications and conducting an evaluation of its effectiveness
- Corridor H stream monitoring project
- Candy Darter status assessment of the lower Gauley River

**Most Recent Publications (Top 3)**

- Ebner, B. C., Morris, S, St Vincent Welsh, J., Turner, M., Cameron, L., Poitras, N., Coonrod, B., Welsh, S., McLennan, M., Jess, L., Vidler, S. Ingram, B., Thurstan, S., Rowland, S. J., Blake, S., and Butler, G.L. In review. Blueprints for riverine cod nest boxes draw from multiple design considerations. *Restoration Ecology*
- Kinziger, A.P., C.M. Layne, S.A. Welsh. Quantitative PCR detection of endangered diamond darter *Crystallaria cincotta* in environmental DNA: Employing locked nucleic acids and blocking probe for specificity. *Conservation Genetics Resources*

## West Virginia Cooperative Fish and Wildlife Research Unit

- Siegel, J.V., Welsh, S., Taylor, N. and Phelps, Q.E. (2023). Size Structure, Age, Growth, and Mortality of Flathead Catfish in the Robert C. Byrd Pool of the Ohio and Kanawha Rivers. *Journal of the Southeastern Association of Fish and Wildlife Agencies* , [online] 10, pp.10–16. Available at: <https://seafwa.org/journal/2023/size-structure-age-growth-and-mortality-flathead-catfish-robert-c-byrd-pool-ohio-and>



## Wisconsin Cooperative Fishery Research Unit

**Dan Isermann****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

I serve as Unit Leader of the Wisconsin Cooperative Fishery Research Unit. I earned my degrees from Southern Illinois University (BS), Tennessee Tech University (MS), and South Dakota State University (PhD). Before my employment with USGS, I was an assistant professor of fisheries at the University of Wisconsin-Stevens Point and worked as a fisheries biologist and research scientist with the Ohio and Minnesota Department of Natural Resources.. My research focuses on the population dynamics and management of exploited fish populations. My research endeavors are direct collaborations with state and federal resource agencies that are designed to address

agency questions related to management of recreational and commercial fisheries. My current research projects are focused on: 1) recruitment of walleye and yellow perch in northern Wisconsin lakes; 2) movement of walleye, lake whitefish, and muskellunge in and around Green Bay; 3) spawning habitat and harvest management of lake sturgeon in the Lake Winnebago system; 4) effects of climate change on walleye stocking success and bluegill population dynamics and demographics in the Midwest region; 5) lake whitefish recruitment in Lake Michigan and 6) harvest management of muskellunge in northern Wisconsin lakes.. I teach a graduate level course covering fish population dynamics, fisheries management, and analytical methods frequently used in the assessment of fish populations.

**Areas of Expertise**

Aquatic Ecology | Fisheries Management | Population Dynamics

**Taxon/Group Studied**

Freshwater Fishes

**Recently Started Projects (Top 3)**

- Population Characteristics of Buffalo in Wisconsin: Contribution and Resiliency to Bowfishing Harvest
- Walleye fisheries bright spots in a changing climate
- Understanding smallmouth bass recruitment in relation to nest fishing along Wisconsin's Door Peninsula

**Most Recent Publications (Top 3)**

- Coppola, G., Kelling, C.J., Dembkowski, D.J. and Isermann, D.A. (2024). Hatch timing of largemouth bass: implications for recruitment at the Northern edge of their native range. *Journal of Freshwater Ecology*, 39(1). doi:<https://doi.org/10.1080/02705060.2024.2403360>
- Krebs, J. E., R.J. Sheffer, D.J. Dembkowski, R. Eastman, S.R. Hogler, J.K. Raabe, and D.A. Isermann. Submitted. Muskellunge *Esox masquinongy* Spawning Habitat Characteristics and Availability in Green Bay, Lake Michigan. *North American Journal of Fisheries Management*.
- Isermann, D.A., H. Embke, J. Vander Zanden, S. Carpenter, D. Dembkowski, G. Coppola, and C. Sullivan. 2022. A Safe Operating Space for Walleye: Adapting Inland Recreational Fisheries for Climate Change. Final Report.

## Wisconsin Cooperative Wildlife Research Unit

**Christian Che-Castaldo****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Che-Castaldo received his Ph.D. in Behavior, Ecology, Evolution and Systematics from the University of Maryland, College Park. He was an IACS Postdoctoral Fellow at Stony Brook University's Institute for Advanced Computational Science, a Research Scientist at the Mount St. Helens Institute and a Postdoctoral Associate in the Department of Ecology and Evolution at Stony Brook University, before joining the Wisconsin Cooperative Wildlife Research Unit in 2023. Dr. Che-Castaldo is a quantitative ecologist interested in population and community ecology, primary succession, and building pipelines to facilitate species conservation. His research focuses on combining remote sensing with long-term ecological data using Bayesian hierarchical models, with an emphasis on high-performance computing, forecasting, and reproducible science. Dr. Che-Castaldo is a co-developer of the Antarctic Penguin Biogeography Project, an open-access decision support tool designed for Southern Ocean managers, scientists, and the public. He also has a long-standing interest in the ecological recovery of Mount St. Helens following its 1980 volcanic eruption.

**Areas of Expertise**

Entomology | GIS/Spatial Analysis | Landscape Ecology | Managed Flows/Hydrology | Marine/Coastal Ecology | Movement Ecology | Population Dynamics | Population and Community Ecology | Remote Sensing | Species Distribution Modeling | Statistics and Modelling

**Taxon/Group Studied**

Amphibians | Coastal/Marine Birds | Invertebrates/Insects | Mussels

**Recently Started Projects (Top 3)**

- Leveraging commercial satellite data to characterize Pacific walrus responses to a changing Arctic
- Advancing Trail Camera Monitoring Through Simulation
- Building Ecological Data Pipelines for Listed Species Permit Data

**Most Recent Publications (Top 3)**

- Jen, B., C. Che-Castaldo, H. J. Lynch, F. Ventura, M. A. LaRue, and S. Jenouvrier. 2024. Detecting stochasticity in population time series using a nonparametric test of intrinsic predictability. *Methods in Ecology and Evolution* , 15(10): 1834-1846. <https://doi.org/10.1111/2041-210x.14423>
- Jen, B, C. Che-Castaldo, and H. R. Akçakaya. 2024. The potential for species distribution models to distinguish source populations from sinks. *Journal of Animal Ecology* , 93(12): 1924-1934. <https://doi.org/10.1111/1365-2656.14201>
- Wu, H., C. Flynn, C. Hall, C. Che-Castaldo, D. Samaras, M. Schwaller, and H. J. Lynch. 2024. Penguin colony georegistration using camera pose estimation and phototourism. *PLoS ONE* , 19(10): e0311038. <https://doi.org/10.1371/journal.pone.0311038>

## Wisconsin Cooperative Wildlife Research Unit

**Wendy Turner****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Turner received graduate degrees from University of the Witwatersrand in South Africa and University of California, Berkeley. She was an NSF International Postdoctoral Fellow at the University of Oslo, Norway, and an Assistant Professor at the University of Albany, State University of New York before joining the Wisconsin Unit in 2020. Dr. Turner specializes in wildlife disease ecology, currently studying disease transmission dynamics for chronic wasting disease in white-tailed deer in the Midwest, anthrax in mammalian herbivores in Namibia and South Africa, and white-nose syndrome in coastal Northern long-eared bats in the northeastern United States.

Dr. Turner's research aims to fill critical gaps in our knowledge of disease transmission and variation in disease outbreaks over space and time. She takes a broad approach to investigating disease systems from the three sides of the "disease triangle" incorporating how variation in hosts, pathogens and the environment modulate host-pathogen contact, disease transmission, and ultimately disease outbreaks in host populations or communities. Dr. Turner focuses on disease systems with environmental transmission, specifically pathogens that can survive for extensive periods in the off-host environment. Dr. Turner has taught courses on ecology, the ecology and evolution of wildlife diseases, graduate research approaches, and Namibian conservation.

**Areas of Expertise**

Behavioral Ecology | Disease/Parasites | Epidemiology | Movement Ecology

**Taxon/Group Studied**

Bats | Ungulates

**Recently Started Projects (Top 3)**

- Mechanisms of chronic wasting disease transmission
- Wolf Predation and Chronic Wasting Disease in Wisconsin
- Assessing chronic wasting disease environmental prion reservoirs

**Most Recent Publications (Top 3)**

- Mokgokong, S.P., A. Hassim, T. Mafuna, W.C. Turner, H. van Heerden, K.E. Lekota. Comparative genomics of *Bacillus anthracis* A and B-clades reveals genetic variation in genes responsible for spore germination. *Genomics*, 117(5):111074. <https://doi.org/10.1016/j.ygeno.2025.111074>
- Gilbertson, M.L.J., A.C. Ketz, M.A. Hunsaker, D.P. Walsh, D.J. Storm, W.C. Turner. White-tailed deer (*Odocoileus virginianus*) habitat use and implications for chronic wasting disease transmission, *Wildlife Monographs*, 1–47. <https://doi.org/10.1002/wmon.70001>
- Hunsaker, M., M.L.J. Gilbertson, D.J. Storm, W.C. Turner. 2025. The breeding season and movement ecology of male white-tailed deer in southwest Wisconsin. *Ecology and Evolution*, 15(7):e71589. <https://doi.org/10.1002/ece3.71589>

## Wyoming Cooperative Fish and Wildlife Research Unit

**Anna D. Chalfoun****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Chalfoun holds a BA degree in Biology from Smith College, an MS in Wildlife Biology and Conservation Biology from the University of Missouri, and a PhD in Wildlife Biology from the Montana CRU at the University of Montana. She joined the faculty at the University of Wyoming as a Research Scientist in 2008, and was hired as the Assistant Unit Leader for Wildlife at the Wyoming Unit in 2011. Dr. Chalfoun's work has focused on understanding the mechanisms underlying habitat selection at multiple spatial scales, the contexts under which habitat choices are adaptive or maladaptive, nest predation dynamics, life history strategies including parental care behaviors, and the influence of anthropogenic habitat change on non-game wildlife. Dr. Chalfoun and her graduate students conduct research on songbirds, raptors, small mammals, and herpetofauna in a wide variety of habitats in Wyoming and beyond. The common threads woven throughout the lab's projects include wildlife-habitat relationships and the influence of human-induced habitat changes such as loss, fragmentation and degradation on sensitive species. Projects in the Chalfoun lab have included the effects of energy development, roads, and a changing climate. Dr. Chalfoun is the co-Chair of the Conservation Committee for the American Ornithological Society.

**Areas of Expertise**

Behavioral Ecology | Biodiversity | Energy: Development/Alternative | Environmental Change | Evolutionary Ecology | Habitat Management | Landscape Ecology | Population and Community Ecology | Predator-Prey Dynamics | Species Management | T&E Species Management | Wildlife Management

**Taxon/Group Studied**

Amphibians | Nongame Fish/Wildlife | Reptiles | Small Mammals | Songbirds | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Mechanisms underlying forest songbird declines in Wyoming
- Habitat and Climatic Factors Influencing Pygmy Rabbit Distribution in Wyoming
- Clarifying the finer-scale landscape elements critical to support the breeding activities of non-game, sagebrush-associated birds

**Most Recent Publications (Top 3)**

- Barrile, G. M.\*, Chalfoun, A. D, Estes-Zumpf, W., and Walters, A. W. 2022. Wildfire influences individual growth and breeding dispersal, but not survival and recruitment in a montane amphibian. *Ecosphere*, 13(8), e4212. <https://doi.org/10.1002/ecs2.4212>
- Barrile, G.M., A.D. Chalfoun, A.W. Walters, and J.A. Merkle. 2025. Density as a mechanism linking habitat disturbance to increased disease prevalence: evidence from a natural experiment. *Ecology* 106:e70265.[doi.org/10.1002/ecy.70265](https://doi.org/10.1002/ecy.70265)
- Gura, K. G., B. Bedrosian, S. Patla, and A. D. Chalfoun . Key habitat for male *Strix nebulosa* (Great Gray Owls) varies across the diurnal cycle and reflects sex-specific role. *Ornithology*.

## Wyoming Cooperative Fish and Wildlife Research Unit

**Matthew Kauffman****Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Kauffman grew up in rural southern Oregon, the son of a horse logger and an elementary schoolteacher. He received his B.S. in Biology from the University of Oregon in 1992 and his Ph.D. in Environmental Studies from the University of California, Santa Cruz in 2003. Since 2006, Matt has worked as a USGS researcher with the Wyoming Cooperative Fish and Wildlife Research

Unit and as faculty in the Department of Zoology and Physiology at the University of Wyoming; in 2010 he assumed leadership of the Wyoming Coop Unit. Matt leads a scientific team at the University of Wyoming that studies the long-distance migrations of large ungulates and communicates their importance to the public. His research seeks to understand how and why ungulates migrate, by evaluating the role of forage, movement, fat dynamics, reproduction and survival. Increasingly, he has sought to understand how the persistence of ungulate migration is threatened by landscape change. In 2012, Matt co-founded (and now directs) the Wyoming Migration Initiative ([migrationinitiative.org](http://migrationinitiative.org)), whose mission is to advance the understanding, appreciation, and conservation of Wyoming's migratory ungulates. He teaches graduate seminars in quantitative analysis of spatial wildlife data, community ecology of wildlife, and migration ecology.

**Areas of Expertise**

Anthropogenic Impacts | Behavioral Ecology | Energy: Development/Alternative | Environmental Change | GIS/Spatial Analysis | Habitat Management | Landscape Ecology | Movement Ecology | Population Dynamics | Predator-Prey Dynamics | Wildlife Management

**Taxon/Group Studied**

Ungulates

**Recently Started Projects (Top 3)**

- How do elk learn to migrate?
- Jackson Moose Calf Survival and Development of Migration Patterns
- How do ungulates learn to migrate? A century-long case study with Yellowstone bison

**Most Recent Publications (Top 3)**

- Kauffman, M., et al. (2026). Ungulate migrations of the Western United States, volume 6 (Scientific Investigations Report No. 2025–xxxx). U.S. Geological Survey.
- Verzuh et al. Beyond habitat: memory versus environment in shaping animal space use
- Sévêque et al. From fences to roads: changes in barrier behaviour of Mongolian gazelle across different types of linear infrastructure in Mongolia. for Proceedings of the Royal Society B

## Wyoming Cooperative Fish and Wildlife Research Unit

**Annika Walters****Assistant Unit Leader**[Email](#) | [ORCID](#) | [Webpage](#)**Biography**

Dr. Walters received graduate degrees from Yale University and was a post-doctoral researcher at the Northwest Fisheries Science Center and at the University of Washington in Seattle before joining the Wyoming Unit as Assistant Unit Leader of Fisheries in 2011. Her research addresses basic questions in population and community ecology and applied questions in conservation biology and fisheries management. Her focus is aquatic ecosystems and how these ecosystems are altered by natural and anthropogenic disturbance. Major research themes include multiple stressors, fish movement patterns, and native fish conservation. Most of her research is motivated by conservation concerns and has implications for management and restoration efforts. She works closely with agency cooperators across Wyoming and the region to address questions that can help inform the management of fishes and aquatic ecosystems. She currently teaches advanced fisheries management and seminars on topics of interest at University of Wyoming.

**Areas of Expertise**

Aquatic Ecology | Ecological Flows | Environmental Change | Fisheries Management | Population and Community Ecology | Stream Ecology

**Taxon/Group Studied**

Amphibians | Freshwater Fishes | Salmonids | Species of Greatest Conservation Need

**Recently Started Projects (Top 3)**

- Habitat associations for native aquatic species in a spring-fed prairie system
- Implications of Stream Fragmentation for Climate Change Resilience of Northern Prairie Fishes
- How will methods to suppress an invasive fish affect Yellowstone Lake water quality?

**Most Recent Publications (Top 3)**

- Boyle LJ, Wagner CE, Walters A, Krist AC. Fish introductions cause strong and diversifying effects on zooplankton assemblages in high elevation mountain lakes
- Walters, A.W., N.G. Clancy\*, T.P. Archdeacon, S. Yu, J.S. Rogosch, and E.A. Rieger\*. 2024. Development of a refuge identification framework that promotes fish persistence during climate-related drought. *Fish and Fisheries* <https://doi.org/10.1111/faf.12860>
- Barrile, G. M.\*, Chalfoun, A. D, Estes-Zumpf, W., and Walters, A. W. 2022. Wildfire influences individual growth and breeding dispersal, but not survival and recruitment in a montane amphibian. *Ecosphere*, 13(8), e4212. <https://doi.org/10.1002/ecs2.4212>