BRYAN B. BOZEMAN, PH.D.

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Education

Ph.D. Integrative Conservation and Forestry & Natural Resources — 2022
University of Georgia, Athens, Georgia
Dissertation: "Fish & Films: Multidimensional Conservation of Freshwater Ecosystems in Southern Appalachia, USA"

M.S. Forest Resources, Fisheries — 2017
University of Georgia, Athens, Georgia
Thesis: "Velocity, Prey Capture Success, and Microhabitat Selection in Arctic Grayling (*Thymallus arcticus*)"

B.S. Honors Geology and Environmental Studies — 2014
University of Tennessee, Knoxville, Tennessee
Thesis: "Spatial Covariation between Distance from Mining Activity and Water Chemistry on East Tennessee's Northern Cumberland Plateau"

Appointments & Research Experience

2022–pres. **Postdoctoral Research Associate**, Biodiversity and Ecosystem Health Group, Oak Ridge National Laboratory, Oak Ridge, Tennessee (advisor: P.G. Matson)

- Investigating relationships between freshwater ecosystems, flow, and hydropower to produce scientific and data resources that benefit society and the environment

2017–22 **Graduate Research Assistant**, Center for Integrative Conservation Research, University of Georgia, Athens, Georgia (advisor: G.D. Grossman)

- Led research to investigate fish-stream-human relationships in Southern Appalachia, USA, from multiple disciplinary angles across scales of time and space

2021 **Consultant**, American Rivers, Athens, Georgia

- Worked with American Rivers' communications and science teams and independent filmmakers to develop, produce, and promote compelling films about America's wild and scenic rivers and river basins

2015–17 **Graduate Research Assistant**, Warnell School of Forestry & Natural Resources, University of Georgia, Athens, Georgia (advisor: G.D. Grossman)

- Led research to investigate the foraging behaviour of Arctic Grayling (*Thymallus arcticus*) and Dolly Varden Charr (*Salvelinus malma*) from interior Alaska
- Conducted hundreds of hours of foraging trials in an experimental stream flume to assess fish foraging mechanics in relation to flow

2015 **Research Assistant**, Trout Unlimited, Knoxville, Tennessee (advisor: J.E. Williams)

- Authored both versions of *An Angler's Guide to Water Quality Monitoring*, a citizen science water quality monitoring handbook to support angler stewardship of freshwater resources

2014 **Research Assistant**, Department of Earth & Planetary Sciences, University of Tennessee, Knoxville, Tennessee (advisor: M.L. McKinney)

- Conducted research on impacted aquatic ecosystems within the greater Knoxville, TN metro area
- Projects included water quality monitoring, exploring the use of native mollusks as bioindicators, and mapping mammal activity along urban creek corridors

2013–14 **Undergraduate Research Assistant**, United Mountain Defense, Knoxville, Tennessee

- Collected and analyzed water quality data and conducted primary qualitative research to explore the impacts of acid mine drainage on Cumberland Plateau watersheds and aquatic ecosystems for undergraduate honors thesis

2013 **Undergraduate Research Assistant**, Council on International Educational Exchange, Monteverde, Costa Rica

- Studied tropical ecology and conservation throughout Costa Rica
- Conducted empirical research to investigate the effects of land use transformation on tropical hummingbird-epiphyte relationships in montane cloud forests

Publications & Data Resources

10) Matson, P.G., **Bozeman, B.B.**, & DeRolph, C.R. (2025). Overview of Fish Passage Facilities at Hydropower Developments across the Conterminous United States. HydroSource. Oak Ridge National Laboratory. Oak Ridge, Tennessee. Version 1. https://doi.org/10.21951/Fish_Passage_Webmap_Dataset_V1/2563190.

9) DeRolph, C.R., Matson, P.G., & **Bozeman, B.B.** (2025). Hydropower Fish Passage Webmap. HydroSource. Oak Ridge National Laboratory. Oak Ridge, Tennessee. Version 1. https://doi.org/10.21951/ORNL_Fish_Passage_Webmap/2563537.

8) **Bozeman, B.B.**, Pracheil, P.M., & Matson, P.G. (2024). The environmental impact of hydropower: a systematic review of the ecological effects of sub-daily flow variability on riverine fish. *Reviews in Fish Biology and Fisheries*. https://doi.org/10.1007/s11160-024-09909-4.

7) Hansen, C.H., Matson, P.G., **Bozeman, B.B.**, & Turner, S. (2024). Hydropower Infrastructure – LAkes, Reservoirs, and RIvers (HILARRI). HydroSource. Oak Ridge National Laboratory, Oak Ridge, Tennessee. Version 3. https://doi.org/10.21951/HILARRI/2474802.

6) **Bozeman, B.B.** & Grossman, G.D. (2024). The Use of Net Energy Intake Models to Predict Microhabitat Selection by Drift-Feeding Fishes: Are Common Assumptions Warranted? In: Lobon-Cervia, J., Budy, P., Gresswell, R. (eds) *Advances in the Ecology of Stream-Dwelling Salmonids*. Fish & Fisheries Series, 44. Springer: https://doi.org/10.1007/978-3-031-44389-3_8.

5) **Bozeman, B.B.**, Condit, C.M., & Grossman, G.D. (2022). Do Conservation Films Generate Support for Conservation? A Case Study using Transportation Theory and *Hidden Rivers*. *Science Communication*, 44(6), 814-842. https://doi.org/10.1177/10755470221141460.

4) Gerow, K.G., **Bozeman., B.B.**, & Grossman, G.D. (2021). Response Feature Analysis for Repeated Measures in Ecological Research. *The Bulletin of the Ecological Society of America*, 102(3): e01866. https://doi.org/10.1002/bes2.1866.

3) Grossman, G.D., **Bozeman, B.B.**, Sliger, R.W., Simon, T.N., & Matsumoto, G.I. (2020). Open Educational Resource Exercises for Fisheries Classes. *Fisheries*, 46(2): 76-80. https://doi.org/10.1002/fsh.10529.

2) **Bozeman, B.B.** & Grossman, G.D. (2019). Foraging behaviour and optimal microhabitat selection in Yukon River Basin nonanadromous Dolly Varden Charr (*Salvelinus malma*). *Ecology of Freshwater Fish*, 28(4): 586-601. https://doi.org/10.1111/eff.12477.

1) **Bozeman B.B.** & Grossman G.D. (2019). Mechanics of foraging success and optimal microhabitat selection in Alaskan Arctic Grayling (*Thymallus arcticus*). *Canadian Journal of Fisheries and Aquatic Sciences*, 76(5): 815-830. https://doi.org/10.1139/cjfas-2018-0115.

In review

Manuscripts

Bozeman, B.B., Hansen, C.H., Pracheil, B.M, & Matson, P.G. A regional comparison of sub-daily flow variability in regulated and unregulated rivers in the United States. In review at *Science of the Total Environment*.

Matson, P.G., **Bozeman, B.B.**, DeRolph, C.R., Singh, D., & Oladosu, G.A. A census of fish passage facilities at US hydropower developments across the conterminous United States. In review at *Journal of Environmental Management*.

In preparation

Manuscripts

Bozeman, B.B., DeRolph, C.R., Oladosu, G.A., Singh, D., & Matson, P.G. A regional comparison of fish passage infrastructure at US hydropower developments. To be submitted to *Journal of Environmental Management* (target: May).

Bozeman, B.B., Matson, P.G., DeRolph, C.R., & DeNeale, S.T. The HydroBio Dataset: a new data resource for evaluating existing and potential hydropower capacity and freshwater biodiversity in the conterminous United States. To be submitted to *Journal of Environmental Management* (target: May).

Bozeman, B.B., Oladosu, G.A., DeRolph, C.R., Singh, D., & Matson, P.G. Challenges and opportunities associated with collecting detailed information from stakeholders with online questionnaires: lessons learned from the National Hydropower Fish Passage Database. To be submitted to *Transactions of the American Fisheries Society* (target: June).

Bozeman, B.B., Wenger, S.J., Nibbelink, N.N., & Grossman, G.D. Landscape and climatic influences on trout sympatry in Southern Appalachia, USA. To be submitted to *Ecology and Evolution* (target: June).

Data resources

Matson, P.G., **Bozeman, B.B.**, DeRolph, C.R., Singh, D., & Oladosu, G.A. National Fish Passage Database: a database describing fish passage capabilities at U.S. hydropower projects containing information on fish passage facility infrastructure, cost, capabilities, and scheduling. Publicly available database to be published on *HydroSource* (target: September).

Bozeman, B.B., Matson, P.G., DeRolph, C.R., & DeNeale, S.T. The HydroBio Dataset: a new data resource for evaluating existing and potential hydropower capacity and freshwater biodiversity in the conterminous United States. Publicly available dataset to be published on *Hydrosource* (target: May).

Technical reports

Matson, P.G., **Bozeman, B.B.**, DeRolph, C.R., Oladosu, G.A., Singh, D., Pica, J., Morales, J., Sojkowski, B., Fischer, M., Ames, S., Lake, B.A., Anderson, N., & Bellerud, B. National hydropower fish passage database user's guide and methodology. ORNL Technical Report (target: September).

Bozeman, B.B., Oladosu, G.A., DeRolph, C.R., Singh, D., & Matson, P.G. Stakeholder questionnaire on fish passage facilities at US hydropower developments: lessons learned and future directions. ORNL Technical Report (target: September).

In development

Bozeman, B.B., DeRolph, C.R., Bodine, C.S., & Halmai, Á. Using consumer-grade sonar units to generate high resolution river channel bathymetry and substrate maps.

Bozeman, B.B., Pracheil, B.M., & Matson, P.G. The importance of temporal resolution of discharge data for characterizing sub-daily flow variability.

Research Proposals

Bozeman, B.B. & DeRolph, C.R. (2024). Mapping River Bathymetry and Substrate with Recreation-Grade Sonar. Water Power Technology Office FY24 Seedling Program. $50K **funded**.

Selected Conference Presentations, Seminars, & Workshops

2024
- The ecological effects of sub-daily flow variability on riverine fishes – a systematic review. 15th International Symposium on Ecohydraulics and Fish Passage, Quebec City, Canada
- Information and engagement session for National Fish Passage Dataset and Cost Analysis Project. US DOE Water Power Technology Office Webinar Series, Virtual

2023
- The ecological effects of sub-daily flow variability on riverine fishes – a systematic review. 153rd American Fisheries Society Annual Meeting, Grand Rapids, Michigan
- The ecological effects of sub-daily flow variability on riverine fishes – a systematic review. Sustainability in Hydropower 2023 Conference, Trondheim, Norway
- Understanding the ecological effects of hydropower-driven sub-daily flow variability. **Invited speaker** for US Department of Energy Water Power Technologies Office (project sponsor), Virtual

2022
- Multidimensional Investigations of Freshwater Ecosystems. **Invited seminar** for Biodiversity and Ecosystem Health Group, Oak Ridge National Laboratory, Virtual
- Searching for Success: Coldwater futures in Southern Appalachia. **Invited speaker** for Pisgah Chapter of Trout Unlimited, Hendersonville, North Carolina

2021
- Conservation Communication Efficacy: How are films received? **Invited speaker** for Fuse Consulting Ltd., Virtual
- Freshwater Conservation in Southern Appalachia. **Invited speaker** for Oconee Chapter of Trout Unlimited, Athens, Georgia

- Assessing the Impact of Conservation Messages. **Invited speaker** for American Rivers Executive Communications Team, Virtual

2020
- Realism vs. Utility: Evaluating the assumptions of a drift-foraging energetics model for stream fishes. Integrative Conservation Conference, Athens, Georgia
- Realism vs. Utility: Evaluating the assumptions of a drift-foraging energetics model for stream fishes. Warnell Graduate Student Symposium, Athens, Georgia, **Best Oral Presentation Award**

2019
- Southern Stream Fish: Communicating Science via Audio and Web Media. Society for Freshwater Science Annual Meeting, Salt Lake City, Utah
- Social Network Analysis & Georgia Fisheries: A Closer Look at Research Collaborations in ICON 8002. Symposium on Integrative Conservation, Athens, Georgia

2018
- Storytelling in Science: Crafting your Narrative, a Science Communication Workshop. Integrative Conservation Conference, Athens, Georgia

2017
- Velocity, Prey-Capture & Microhabitat Selection in Arctic Grayling (*Thymallus arcticus*). Society for Freshwater Science Annual Meeting, Raleigh, North Carolina

Scholarships & Awards

2024
- 1st Place, Best Geospatial Program, U.S. Department of Energy Geospatial Poster Competition
- 3rd Place, Mission Alignment, U.S. Department of Energy Geospatial Poster Competition

2021
- Archie E. Patterson Scholarship, Warnell School of Forestry & Natural Resources ($3,100)
- Pisgah Trout Unlimited William L. Arbuckle Memorial Scholarship ($1,000)

2020
- Best Oral Presentation, Warnell Graduate Student Symposium ($300)

2019
- Warnell Faculty Graduate Travel Award for Society for Freshwater Science Annual Meeting ($500)
- University of Georgia Graduate School Travel Award for Society for Freshwater Science Annual Meeting ($750)

2018
- University of Georgia Graduate School Communication of Research & Scholarship Grant (inaugural recipient, $1,202)

2015–17
- University of Georgia Graduate Student Research Fellowship (est. $25,000)

2014
- University of Tennessee Ryan Edwards Environmental Service Award (inaugural recipient, $1,000)

Teaching Experience

2021
- Vertebrate Natural History (WILD/ECOL 3580L) Laboratory Instructor

2020
- Natural History of Georgia (FANR/GEOG/ECOL 1200) Teaching Assistant

2018–19
- Ecology (ECOL 3500L) Laboratory Instructor

Overall rating: 99% (94/95) students rated my instructor level as very high (84) or high (10) (1 neutral).

Outreach, Service, & Strategic Communication

2021–22
- Conference Chair, 3rd Annual Integrative Conservation Conference
- President, ICON Network and Cooperative Student Organization

2020–22
- Warnell School of Forestry and Natural Resources Teaching Effectiveness Committee

2020
- Organizer, University of Georgia Graduate School Science Communication Workshop (cancelled due to COVID-19)

2018–21
- Treasurer, ICON Network & Cooperative Student Organization

2017–18
- Vice President, University of Georgia American Fisheries Society Student Chapter

Strategic Communication

Southern Stream Fish. Multimedia science communication project that tells a story of how fish and humans fit together in a complicated Southern Appalachian landscape with the goal of making science and research more accessible and relevant to nonscientists.

Center for Integrative Conservation Research. Designed, built, and managed the website for the University of Georgia's Center for Integrative Conservation Research. Directed visual design, wrote custom CSS site elements, and implemented content production strategies for a highly trafficked university domain.

Reviewer

- *Springer Nature, Scientific Reports, North American Journal of Fisheries Management, Animal Biodiversity and Conservation*

Mentorship

- *Invited Doctoral Dissertation Committee Member, Dana Mills, University of Tennessee, Knoxville.*