Bryan M. Maitland

Research Fish Biologist

Curriculum Vitae
July 2025

USDA Forest Service, Rocky Mountain Research Station, Boise, ID, USA
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Employment

2024– **Research Fish Biologist**, Rocky Mountain Research Station, USDA Forest Service
2023–2024 **Research Associate**, Department of Civil and Environmental Engineering, University of Wisconsin-Madison

Education

EPA Postdoctoral Fellow	2022-2023	University of Wisconsin-Madison
Water Resources Fellow	2020-2022	University of Wisconsin-Madison
Ph.D. Ecology	2020	University of Wyoming
M.Sc. Conservation Biology	2015	University of Alberta
B.S. Conservation Biology	2011	SUNY: ESF

Awards and honours

2024 Outstanding Service Award, USDA FS Rocky Mountain Research Station
2021 Best Professional Presentation Award, Wisconsin Chapter American Fisheries Society
2019 Dean's Graduate Scholar Award, College of Arts and Sciences University of Wyoming
2018 Eugene Maughan Graduate Award, Western Division American Fisheries Society
2018 Hank Gardner Graduate Award, Department of Zoology and Physiology University of Wyoming
2017 Clemens-Rigler Award, Canadian Aquatic Resources Section American Fisheries Society
2017 Board of Visitors Award, College of Arts and Sciences University of Wyoming
2017 Dennis Anderson Fisheries Award, Department Zoology and Physiology University of Wyoming
2017 William Trachtenberg Scholarship, Sustainable Fisheries Foundation
2017 Vern Bressler Fisheries Award, Department of Zoology and Physiology University of Wyoming
2015 Excellence in Fisheries Award, Canadian Aquatic Resources Section American Fisheries Society
2015 Clemens-Rigler Award, Canadian Aquatic Resources Section American Fisheries Society

Research

- Since 2015 I have authored 24 papers in peer-reviewed journals on fisheries, conservation, and food web topics.
- On Google Scholar my h-index is 12 with total citations of 554 (as at 9 July 2025).
- I have coauthored 1 R package as a result of my research. There have been over 709 downloads of my packages.

Grants

- I have acquired $108,073 in research grants since 2015.

Pending	Sparks, Maitland. "Bull Trout movement using PIT tag arrays in the Boise Basin". *Funding from USFWS*	$16,620
2024	Maitland. "Chinook salmon life history and otolith microchemistry". *Funding from USDA Forest Service RMRS*	$28,000
2020	Maitland, Rahel. "Accessable underwater landscapes for non-STEM audiences". *Funding from UW Biodiversity Institute*	$19,866
2020	Maitland. "Food web responces to tiger muskie biocontrol in Wyoming". *Funding from CO-WY AFS*	$1,000
2020	Maitland. "Non-lethal methods for stable isotope analysis in fishes". *Funding from NANFA*	$1,000
2019	Maitland. "Diet specialization along stream gradients". *Funding from UW Zoology*	$22,000
2019	Maitland. "Validating fin-tissue for stable isotope studies in fishes". *Funding from CO-WY AFS*	$1,000
2018	Maitland. "Assimilation and discrimination of C and N in prairie stream fishes". *Funding from UW Biodiversity Institute*	$6,000
2017	Maitland. "Isotopic niches and fish biodiversity in Rocky Mountain streams". *Funding from UW Biodiversity Institute*	$4,000
2015	Maitland, Rahel. "Factors that influence the diversity of fish assemblages in Wyoming". *Funding from UW Biodiversity Institute*	$25,207

Publications (chronological)

Theses

1. **Maitland,** B. M. (2015). *Stream Crossings in the Western Boreal Forest: Assessing Impacts and Prioritizing Restoration for Native Freshwater Fishes* [Master's thesis]. University of Alberta.
2. **Maitland,** B. M. (2020). *Isotopic Ecology of Aquatic Communities Along the Rocky Mountains— Great Plains Ecotone* [PhD thesis]. University of Wyoming.

Pre-prints and in-review

1. Keppeler, F. W., Giarrizzo, T., Montaña, C. G., Adite, A., Akın, Ş., Angelini, R., Arantes, C. C., Benedito, E., Bokhutlo, T., El-Sabaawi, R., Garcia, A., Gonzalez-Bergonzoni, I., Hoeinghaus, D., Hoffman, J., Jensen, O. P., Jeppesen, E., Kopf, R. K., Layman, C. A., Lopez, E. O., … Winemiller, K. O. (2025). *What determines trophic niche breadth? A global analysis of freshwater fishes using isospaces*. bioRxiv. https://doi.org/10.1101/2025.05.27.656387

Refereed research papers

1. O'Malley, B. P., & **Maitland,** B. M. (2014). Observations on the freshwater zooplankton of Dominica, West Indies, including records from the former Matthieu landslide-dam lake. *Pan-American Journal of Aquatic Sciences*, *9*(3), 228–333.
2. **Maitland,** B. M., Cooke, S. J., & Poesch, M. (2015). Finding the Path to a Successful Graduate and Research Career: Advice for Early Career Researchers. *Fisheries*, *40*(8), 399–403. https://doi.org/10.1080/03632415.2015.1065253
3. **Maitland,** B. M., Poesch, M., Anderson, A. E., & Pandit, S. N. (2016). Industrial road crossings drive changes in community structure and instream habitat for freshwater fishes in the boreal forest. *Freshwater Biology*, *61*, 1–18.
4. **Maitland,** B. M., Poesch, M., & Anderson, A. E. (2016). Prioritising culvert removals to restore habitat for at-risk salmonids in the boreal forest. *Fisheries Management and Ecology*, *23*(6), 489–502. https://doi.org/10.1111/fme.12188
5. Pandit, S. N., **Maitland,** B. M., Pandit, L. K., Poesch, M. S., & Enders, E. C. (2017). Climate change risks, extinction debt, and conservation implications for a threatened freshwater fish: Carmine shiner (Notropis percobromus). *Science of the Total Environment*, *598*, 1–11. https://doi.org/10.1016/j.scitotenv.2017.03.228
6. Craig, L. S., Olden, J. D., Arthington, A. H., Entrekin, S., Hawkins, C. P., Kelly, J. J., Kennedy, T. A., **Maitland,** B. M., Rosi, E. J., Roy, A. H., Strayer, D. L., Tank, J. L., West, A. O., & Wooten, M. S. (2017). Meeting the challenge of interacting threats in freshwater ecosystems: A call to scientists and managers. *Elementa: Science of the Anthropocene*, *5*(72), 1–15. https://doi.org/10.1525/elementa.256
7. Walker, R. H., **Maitland,** B. M., LaSharr, T. N., Rosing, M. N., & Ben-David, M. (2018). Fate of juvenile salmonids stranded in off-channel pools: Implications for nutrient transfers. *Aquatic Sciences*, *80*(1), 10. https://doi.org/10.1007/s00027-017-0562-z
8. **Maitland,** B. M., O'Malley, B. P., & Stewart, D. J. (2019). Subsurface water piping transports plankton and prevents meromixis in a deep volcanic crater lake (Dominica, West Indies). *Hydrobiologia*, *839*(1), 119–130. https://doi.org/10.1007/s10750-019-04000-7
9. Hickerson, B. T., **Maitland,** B. M., & Walters, A. W. (2019). Effects of multiple nonnative fish on an imperiled cyprinid, Hornyhead Chub Nocomis biguttatus. *Transactions of the American Fisheries Society*, *148*(6), 1132–1145. https://doi.org/10.1002/tafs.10203
10. Alston, J. M., **Maitland,** B. M., Brito, B. T., Esmaeili, S., Ford, A. T., Hays, B., Jesmer, B. R., Molina, F. J., & Goheen, J. R. (2019). Reciprocity in restoration ecology: When might large carnivore reintroduction restore ecosystems? *Biological Conservation*, *234*, 82–89. https://doi.org/10.1016/j.biocon.2019.03.021
11. Kirk, M. A., **Maitland,** B. M., & Rahel, F. J. (2020). Spatial scale, reservoirs and nonnative species influence the homogenization and differentiation of Great Plains — Rocky Mountain fish faunas. *Hydrobiologia*, *847*, 1–15. https://doi.org/10.1007/s10750-019-04129-5
12. Voter, C. B., Guerrero-Bolaño, F. J., Latzka, A. W., & Hauxwell, J. A. (2021). Adaptable university-agency early-career fellowship program creates a win-win-win for wisconsin's waters. *Journal of Contemporary Water Research and Education*, *174*, 140–155.
13. **Maitland,** B. M., Rio, C. M. del, & Rahel, F. J. (2021). Effect of temperature on ^{13}C and ^{13}C incorporation rates and discrimination factors in two North American fishes. *Canadian Journal of Fisheries and Aquatic Sciences*, *78*(12), 1833–1840. https://doi.org/10.1139/cjfas-2021-0057
14. **Maitland,** B. M., & Rahel, F. J. (2021). Nonlethal fin sampling of North American freshwater fishes for food web studies using stable isotopes. *North American Journal of Fisheries Management*, *41*(2), 410–420. https://doi.org/10.1002/nafm.10539
15. Medinski, N. A., **Maitland,** B. M., Jardine, T. D., Drake, D. A. R., & Poesch, M. S. (2022). A catastrophic coal mine spill in the Athabasca River watershed induces isotopic niche shifts in stream biota including an endangered rainbow trout ecotype. *Canadian Journal of Fisheries and Aquatic Sciences*, 1–14. https://doi.org/10.1139/cjfas-2021-0112

16. **Maitland,** B. M., & Latzka, A. W. (2022). Shifting climate conditions affect recruitment in Midwestern stream trout, but depend on seasonal and spatial context. *Ecosphere*, *13*(12), e4308. https://doi.org/10.1002/ecs2.4308
17. Lapides, D. A., **Maitland,** B. M., Zipper, S. C., Latzka, A. W., Pruitt, A., & Greve, R. (2022). Advancing environmental flows approaches to streamflow depletion management. *Journal of Hydrology*, *607*, 127447. https://doi.org/10.1016/j.jhydrol.2022.127447
18. Kirk, M. A., **Maitland,** B. M., Hickerson, B. T., Walters, A. W., & Rahel, F. J. (2022). Climatic drivers and ecological impacts of a rapid range expansion by non-native smallmouth bass. *Biological Invasions*, *24*, 1311–1326. https://doi.org/10.1007/s10530-021-02724-z
19. Feiner, Z. S., Shultz, A. D., Sass, G. G., Trudeau, A., Mitro, M. G., Dassow, C. J., Latzka, A. W., Isermann, D. A., **Maitland,** B. M., Homola, J. J., Embke, H. S., & Preul, M. (2022). Resist-accept-direct (RAD) considerations for climate change adaptation in fisheries: The Wisconsin experience. *Fisheries Management and Ecology*, *29*(4), 346–363. https://doi.org/10.1111/fme.12549
20. Ward, N. K., Lynch, A. J., Beever, E. A., Booker, J., Bouska, K. L., Embke, H., Houser, J. N., Kocik, J. F., Kocik, J., Lawrence, D. J., Lemon, M. G., Limpinsel, D., Magee, M. R., **Maitland,** B. M., McKenna, O., Meier, A., Morton, J. M., Muehlbauer, J. D., Newman, R., … Wilkening, J. L. (2023). Reimagining large river management using the Resist–Accept–Direct (RAD) framework in the Upper Mississippi River. *Ecological Processes*, *12*(1), 48. https://doi.org/10.1186/s13717-023-00460-x
21. **Maitland,** B. M., & Rahel, F. J. (2023). Aquatic food web expansion and trophic redundancy along the Rocky Mountain—Great Plaines ecotone. *Ecology*, *104*(7), e4103. https://doi.org/10.1002/ecy.4103
22. **Maitland,** B. M., Bootsma, H. A., Bronte, C. R., Bunnell, D. B., Feiner, Z. S., Fenske, K. H., Fetzer, W. W., Foley, C. J., Gerig, B. S., Happel, A., Höök, T. O., Keppeler, F. W., Kornis, M. S., Lepak, R. F., McNaught, A. S., Roth, B. M., Turschak, B. A., Hoffman, J. C., & Jensen, O. P. (2024). Testing food web theory in a large lake: The role of body size in habitat coupling in Lake Michigan. *Ecology*, *105*(10), e4413. https://doi.org/10.1002/ecy.4413
23. Barrus, N. T., **Maitland,** B. M., & Rahel, F. J. (2024). Assessing a standardized method to identify optimal baselines for trophic position estimation in stable isotope studies of stream ecosystems. *Hydrobiologia*, *851*, 4673–4691. https://doi.org/10.1007/s10750-024-05618-y
24. Sparks, M. M., **Maitland,** B. M., Felts, E., Swartz, A., & Frater, P. (2025). hatchR: A toolset to predict when fish hatch and emerge. *In Press at Fisheries*.

Technical Reports

1. Roseman, E. F., Riley, S. C., Farha, S. A., **Maitland,** B. M., Tucker, T. R., Provo, S. A., & McLean, M. W. (2013). *Status and Trends of the Lake Huron Offshore Demersal Fish Community, 1976-2012*. USGS Great Lakes Science Center.
2. Mitro, M., Feiner, Z. S., Latzka, A. W., Embke, H. S., Homola, J. J., Isermann, D. A., **Maitland,** B. M., Sass, G. G., Shaw, S., Shultz, A. D., Tsyehaye, I., & Vander Zanden, J. (2021). *Wisconsin Initiative on Climate Change Impacts: Fisheries Working Group Report*. Nelson Institute for Environmental Studies, University of Wisconsin-Madison.
3. **Maitland,** B. M., Sparks, M. M., Felts, E., Swartz, A., & Frater, P. (2025). *hatchR: Predict Fish Hatch and Emergence Timing* (Version 0.3.2) [Computer software]. https://github.com/bmait101/hatchR
4. **Maitland,** B. M., & Loheide, S. P. (2025). *Pumped storage hydropower in California: Environmental effects and opportunities for co-benefits*. University of Wisconsin-Madison.

Unpublished working papers

1. Thurow, R., **Maitland,** B. M., Sparks, M.M, Isaak, D., & Buffington, J. (2025). *Habitat heterogeneity and phenotypic diversity: The influence of stream attributes on timing of Chinook Salmon spawning*. https://github.com/morgan-sparks/mfsr_phenology
2. Sparks, M. M., & **Maitland,** B. M. (2025). *A generalizable tool for predicting developmental phenology for wild poikilotherms*. https://github.com/morgan-sparks/hatchR_nonfish
3. Hall, C. A. S., **Maitland,** B. M., & Woodwell, G. M. (2025). *Spatial and seasonal patterns of standing crop, productivity, and diversity of fishes in Flax Pond, a Long Island tidal pond*.
4. **Maitland,** B. M., & Loheide, S. P. (2025). *Pumped storage hydropower in the renewable energy transition: Environmental co-benefits and opportunities in California and beyond*.
5. Kleve, L., Daly, A., **Maitland,** B. M., Rosinski, C., & Fetzer, W. (2025). *Stable isotope trophic discrimination factors of hatchery fish-eye lenses and other tissues*.

Software

1. **Maitland,** B. M., Sparks, M. M., Felts, E., Swartz, A., & Frater, P. N. (2025). *hatchR: Predict Fish Hatch and Emergence Timing*. https://github.com/bmait101/hatchR

Specialized Skills and Certifications

Field Skills

Fish Sampling	Electrofishing, netting, seining, trawling, angling
Aquatic Ecology	Water quality sampling, invertebrate sampling, aquatic vegetation sampling, habitat assessment
Identification	Fish (freshwater and marine), amphibians, reptiles, aquatic invertebrates, aquatic plants
Operations	Piloting and trailering small vessels, rafting, helicopters experience, orienteering
Misc	Light machinery operation, small power equipment repair, minor electrical repair, handiwork

Lab Skills

Fisheries	Fish aging (scales, otoliths), fish dissection, fish tissue processing
Aquatic Ecology	Water quality analysis (nutrients, chlorophyll a, turbidity), invertebrate processing, aquatic vegetation
Stable Isotopes	Sample preparation, ligh (C, N, O, S) and heavy (Sr) stable isotope analysis
Molecular	DNA extraction, PCR, qPCR

Computer Skills

Operating Systems	Linux, MacOS, Windows
Programming Languages	R, Python, BASH, JavaScript
Markup Languages	Markdown, RMarkdown, CSS, HTML, LaTeX
Data Interchange Formats	CSV, JSON, XML
Other Languages	YAML
Version Control	Git
Text Editors	RStudio, SQL Server Management Studio, Visual Studio, Visual Studio Code
Microsoft Office	Excel, Outlook, OneNote, PowerPoint, Word

Certifications

2025	Wilderness First Aid	Wilderness Medicine Institute
2025	Advanced CPR and First Aid	American Red Cross
2014	Defensive Driving	USDA Forest Service
2018	Avalanche Safety Level 1	National Ski Patrol
2013	Electrofishing Safety	University of Alberta
2013	MOCC Federal Motor Boat Operator	US Department of the Interior

Professional Service

Ad-hoc reviewer

➤ I have served as an ad-hoc reviewer for 49 manuscripts from 15 journals since 2016 ($\sim$ 5.4 per year): including: *Oecologia*, *Global Change Biology*, *Ecological Applications*, *Freshwater Biology*, *Freshwater Science*, *Frontiers in Ecology and Evolution*, *Hydrobiologia*, *Fisheries Research*, *Environmental Biology of Fishes*, *Restoration Ecology*, and *River Research and Applications*.

Other peer review

2025 Lake Champlain Fisheries Research Program, full proposal review
2023 NSF, Division of Environmental Biology, CAREER, full proposal review

Society membership

2010–	American Fisheries Society
2010–	Society for Conservation Biology
2015–	Ecological Society of America
2016–	Society for Freshwater Science
2019–	Galápagos Conservancy
2016–2019	Association for the Science of Limnology and Oceanography
2010–2016	International Association of Great Lakes Research

Society service

2015–	**Member**, Freshwater Working Group, Society for Conservation Biology
2021–2022	**Member**, Fisheries Working Group, Wisconsin Initiative on Climate Change Impacts
2020–2022	**Member**, Trout Species Team, Wisconsin Department of Natural Resources
2016–2017	**President**, UWyo Student Chapter, American Fisheries Society
2016–2018	**Excom member**, CO-WY State Chapter, American Fisheries Society

Conference organization and service

2024 Abstract reviewer, American Geophysical Union, Fall Meeting

University service

Committees, Groups, and Councils

2022–2024	Field Operation Facilitation and Boat Committee, Center for Limnology, UW-Madison
2019–2020	Faculty Search Committee, Department of Zoology and Physiology, University of Wyoming
2016–2020	Social Media Coordinator, Program in Ecology, University of Wyoming
2016–2017	Graduate Council, student representative, University of Wyoming
2016–2017	President, Program in Ecology, University of Wyoming

Teching

2020	ZOO 4330 - Ichthyology	Instructor	University of Wyoming
2019	ZOO 4330 - Ichthyology	Lab Instructor	University of Wyoming
2018	ZOO 4330 - Ichthyology	Lab Instructor	University of Wyoming
2017	ZOO 4330 - Ichthyology	Lab Instructor	University of Wyoming
2016	ZOO 4330 - Ichthyology	Lab Instructor	University of Wyoming
2015	ZOO 4310 - Fisheries Management	Lab Instructor	University of Wyoming
2014	RENR 460 - Fisheries Management	Lab Instructor	University of Alberta
2013	RENR 460 - Fisheries Management	Lab Instructor	University of Alberta

Mentoring

Undergraduate Students (Research Assistants, lab and field)

2023	2023	Jonathan Martin	University of Wisconsin-Madison
2018	2020	Nathan Barrus	University of Wyoming
2019	2020	Russell Brubaker	University of Wyoming
2018	2019	Reilly Davis	University of Wyoming
2017	2017	Brynn Hirschman	University of Wyoming
2017	2017	Austin Jacobson	University of Wyoming
2016	2016	Shaun Helsper	University of Wyoming
2016	2017	Travis Allison	University of Wyoming
2016	2016	Andrew Annear	University of Wyoming
2015	2015	Jake Werner	University of Wyoming

Selected Media

- Milwaukee Journal Sentinel, Jan 2023. “Climate change is making Wisconsin trout more vulnerable to floods and heat”. (Also covered in separate stories on WPR Public Radio)
- Water Blogged, Dec 2022. “A Tale of Two Fishes: Study Maps the Future of Trout Populations in Wisconsin”
- UW-Madison News, Dec 2022. “Study maps uneasy future of Wisconsin trout populations”
- The Tributary, Nov 2017. “Stuck in a rut in Anaconda? Crash a cutthroat spawning party!”

Community Service and Outreach

2022–2023	Food service volunteer	Ronald McDonald House, Madison, WI
2016–2020	Science outreach and stream ecology field trips	Laramie High School, Laramie, WY
2016–2019	Group leader, Wyoming Bio-Blitz	Biodiversity Institute, University of Wyoming
2016–2018	Big Brother	Big Brothers Big Sisters of Wyoming
2017–2018	Habitat restoration projects	Girl Scouts of America
2016–2017	Science judge	Wyoming State Science Fair