Taylor R. Stewart, Ph.D.

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Professional Experience

Aquatic Biologist 10/2022 – Present
Utah Division of Wildlife Resources

Research Fish Biologist/Postdoctoral Associate 11/2021 – 10/2022
Mississippi State University, Mississippi Cooperative Fish and Wildlife Research Unit

Fisheries Research Contractor 06/2020 – 01/2021
U.S. Geological Survey, Lake Superior Biological Station

Graduate Research Assistant 05/2016 – 10/2021
University of Vermont, Department of Biology

Fisheries Research Contractor 05/2014 – 05/2016
U.S. Geological Survey, Lake Erie Biological Station

Fisheries Research Technician 01/2012 – 05/2014
U.S. Geological Survey, Lake Superior Biological Station

Education

Ph.D. University of Vermont, Department of Biology
2021 Dissertation title: "Changing Environmental Conditions and the Response and Potential Adaptability of Freshwater Whitefishes"
Advisor: Dr. Jason D. Stockwell

B.S. Northland College, Natural Resources (Fisheries & Wildlife Ecology)
2014 Senior thesis: "Age, Growth, and Size of Lake Superior Pygmy Whitefish (*Prosopium coulterii*)"
Advisor: Dr. Derek H. Ogle

Peer-Reviewed Publications

* indicates undergraduate mentee
^ indicates awarded the Elsevier Student Author Award for Most Notable Paper in 2021 J. of Great Lakes Res.

9. **Stewart, T.R.**, M. Zucchetta, J. Karjalainen, C. Goulon, O. Anneville, M.R. Vinson, J. Wanzenböck, and J.D. Stockwell. 2024. Winter is not coming: a model to evaluate impacts of changing winter conditions on coregonine spawning and embryo incubation. International Journal of Limnology. 60(17):1-16. PDF
8. **Stewart, T.R.,** C. Brun, C. Goulon, J. Baer, J. Karjalainen, J. Guillard, and E. Lasne. 2024. Response of European whitefish embryos to thermal conditions diverges between peri-alpine populations. International Journal of Limnology. 60(19):1-11. PDF
7. **Stewart, T.R.**, M.R. Vinson, and J.D. Stockwell. 2022. Effects of warming winter embryo incubation temperatures on larval cisco (*Coregonus artedi*) survival, growth, and critical thermal maximum. J. Great Lakes Res. PDF
6. ^**Stewart, T.R.**, M.R. Vinson, and J.D. Stockwell. 2021. Shining a light on Laurentian Great Lakes cisco (*Coregonus artedi*): how ice coverage may impact embryonic development. J. Great Lakes Res. 47(5):1410-1418. PDF
5. **Stewart, T.R.**, M. Mäkinen, C. Goulon, J. Guillard, T.J. Marjomäki, E. Lasne, J. Karjalainen, and J.D. Stockwell. 2021. Influence of warming temperatures on coregonine embryogenesis within and among species. Hydrobiologia. 848(18):4363-4385. PDF
4. Lucke, V.S., **T.R. Stewart**, M.R. Vinson, J.D. Glase, and J.D. Stockwell. 2020. Spring larval *Coregonus* diets and zooplankton community patterns in the Apostle Islands, Lake Superior. J. Great Lakes Res. 46(5):1391-1401. PDF

3. *Sorrentino, M.G., **T.R. Stewart**, J.E. Marsden, and J.D. Stockwell. 2020. Stockwell. Differential Lipid Dynamics in Stocked and Wild Juvenile Lake Trout. J. Great Lakes Res. 46(2):376-381. PDF
2. Kraus, R.T., C.M. Holbrook, C.S. Vandergoot, **T.R. Stewart**, M.D. Faust, D. Watkinson, C. Charles, M. Pegg, E. Enders, and C.C. Krueger. 2018. Evaluation of Acoustic Telemetry Grids for Determining Aquatic Animal Movement and Survival. Methods Ecol. Evol. 9(6):1489–1502. PDF
1. **Stewart, T.R.**, D.H. Ogle, O.T. Gorman, and M.R. Vinson. 2016. Age, Growth, and Size of Lake Superior Pygmy Whitefish (*Prosopium coulterii*). Am. Midl. Nat. 175(1):24–36. PDF

In Preparation (drafts available upon request):

Stewart, T.R., T.L. Cox, M.E. Colvin, C.G. Dunn, M.W. Rogers, and L.E. Miranda. Simulation tools for estimating statistical power to monitor invasive carps.

FUNDED GRANTS

2024 – **Stewart, T.R.** and C. Brunson. Post-stocking survival and spatial ecology of tiger muskellunge in Pineview Reservoir. Utah's Watershed Restoration Initiative: **$122,400**

2020 – Vinson, M.R., **T.R. Stewart**, and J.D. Stockwell. Quantifying a potential mechanism between ice cover and cisco recruitment success: what role does light play in cisco embryonic development and larval survival? Great Lakes Restoration Initiative: **$30,250**

2019 – **Stewart, T.R.** and J.D. Stockwell. Influence of changing lake temperatures on early life stages of freshwater whitefishes at local to global scales: modeling and experimental approaches. Vermont Water Resources and Lake Studies Center: **$41,737**

2018 – Stockwell, J.D. and **T.R. Stewart**. Workshop to Establish a Collaborative Global Experiment to Understand Coregonid Adaptive Response to Changing Thermal Regimes. National Science Foundation: **$14,865**

2017 – Vinson, M.R., **T.R. Stewart**, and J.D. Stockwell. Lake Superior Larval Cisco Population Dynamics. Great Lakes Restoration Initiative: **$125,000**

2016 – Vinson, M.R., **T.R. Stewart**, and J.D. Stockwell. Lake Superior *Coregonus artedi* Egg Development and Larvae Survival Dynamics. Great Lakes Restoration Initiative: **$225,000**

SCHOLARSHIPS & AWARDS

2022 – Elsevier Student Author Award for Most Notable Paper in 2021 Journal of Great Lakes Research
2017 – 13th International Coregonid Symposium General Student Travel Award
2014 – Northland College's Natural Resources Department Merit Award
2014 – Northland College's Matthew Berg Endowed Award

PROFESSIONAL PRESENTATIONS

Oral Conference Presentation:

Stewart, T.R., T.L. Cox, M.E. Colvin, C.G. Dunn, M.W. Rogers, and L.E. Miranda. Simulation tools for estimating statistical power to monitor invasive carps. 152nd Annual Meeting of the American Fisheries Society. Spokane, WA. August 2022.

Stewart, T.R., M. Makenen, Brun, C., C. Goulon, J. Guillard, E. Lasne, J. Karjalainen, and J.D. Stockwell. Influence of changing lake temperatures on coregonine embryogenesis at local to global scales. 14th International Coregonid Symposium (WebCoregonid2020). June 2020. Video

Stewart, T.R., M. Zucchetta, J. Karjalainen, C. Goulon, O. Anneville, M.R. Vinson, J. Wanzenböck, I.J. Winfield, and J.D. Stockwell. A Modeling Approach to Better Understand Impacts of Changing Thermal Habitat on Coregonine Spawning and Egg Incubation Across Latitudes and Continents. European Large Lakes Symposium- International Association of Great Lakes Research. Evian-les-Bains, France. September 2018.

Stewart, T.R., E. Lasne, C. Goulon, J. Guillard, M.R. Vinson, J. Wanzenböck, I.J. Winfield, and J.D. Stockwell. Coregonines in the Face of Climate Change: A Collaborative Global Experiment. 148th Annual Meeting of the American Fisheries Society. Atlantic City, NJ. August 2018.

Stewart, T.R., M.R. Vinson, and J.D. Stockwell. Effect of Photoperiod Intensity on Cisco (*Coregonus artedi*) Egg Development. 13th International Coregonid Symposium. Bayfield, WI. September 2017.

Stewart, T.R., D.H. Ogle, O.T. Gorman, and M.R. Vinson. Age, Growth, and Size of Lake Superior Pygmy Whitefish. 145th Annual Meeting of the American Fisheries Society. Portland, OR. August 2015.

Poster Conference Presentation:

Stewart, T.R., M.E. Colvin, C.G. Dunn, M.W. Rogers, and L.E. Miranda. Teamwork makes the dream work: an app to standardize inter-agency invasive carps surveillance. 152nd Annual Meeting of the American Fisheries Society. Spokane, WA. August 2022.

Stewart, T.R., M.R. Vinson, and J.D. Stockwell. Effect of Photoperiod Intensity on Cisco (*Coregonus artedi*) Egg Development. University of Vermont Student Research Conference. Burlington, VT. April 2019.

Stewart, T.R., A.M. Muir, M.R. Vinson, K.R. Newman, and J.D. Stockwell. Opportunities and Constraints for Coregonid Response to a Changing Environment: A Global Assessment. 13th International Coregonid Symposium. Bayfield, WI. September 2017.

Stewart, T.R., M.R. Vinson, and J.D. Stockwell. Effect of Photoperiod Intensity on Cisco (*Coregonus artedi*) Egg Development. 60th Annual International Association of Great Lakes Research Meeting. Detroit, MI. May 2017.

Stewart, T.R., D.H. Ogle, and M.R. Vinson. Age and Growth of Pygmy Whitefish, *Prosopium coulterii*, in Lake Superior. Wisconsin Chapter of the American Fisheries Society Annual Meeting. Green Bay, WI. February 2013.

Invited Speaker:

2022 – *"Teamwork makes the dream work: an app to standardize inter-agency invasive carps surveillance."*, Ohio River Basin Invasive Carp Partnership

2017 – *"Physiological consequences of changes in photoperiod intensity on cisco (Coregonus artedi) recruitment"*, U.S. Geological Survey, Great Lakes Science Center

2015 – *"Online Data Reporting & Visualization Tools"*, Lake Erie Committee Meeting

2015 – *"Status and Trends of Forage Fish in Western Basin of Lake Erie"*, Lake Erie Committee, Forage Task Group Meeting

COMPUTATIONAL SKILLS

R – Statistical software for data analysis and visualization

(R)Markdown – Integrative word processing and technical reporting

GitHub – Reproducible science through version control and online notebooks

FB4 – Fish bioenergetics modeling

FAMS – Fishery Analysis and Modeling Simulator

lme4 – Fit linear and generalized linear mixed-effects models in R

RStan – C++ library for Bayesian modeling and inference

rjags – Bayesian data analysis using Markov Chain Monte Carlo simulations in R

Shiny – Interactive web-based apps for data reporting & visualization

Highcharts – JavaScript charting library

Fathom – VEMCO/Innovasea acoustic monitoring software

ArcGIS – Spatial analysis software for mapping & visualization

SAS – Statistical software for data analysis and visualization

Microsoft Office – Data preparation, organization, and word processing

SQL – Database management

HTML – Website development

Data Applications

Stewart, T.R. 2022. Tennessee and Cumberland Rivers Invasive Carps Data Application - Link
Stewart, T.R. 2019. Lake Superior Remote Sensing Data Explorer - Link
Stewart, T.R. 2015. U.S. Geological Survey Lake Erie Fish Community Data Explorer - Link

Teaching & Outreach

2021 – Graduate Teaching Assistant, University of Vermont, Biology Core 012 – Exploring Biology
2020, 19 – Graduate Teaching Assistant, University of Vermont, Biology Core 102, Ecology and Evolution
2020 – Graduate Teaching Assistant, University of Vermont, Biology 002 - Principles of Biology
2019 – Graduate Teaching Assistant, University of Vermont, Plant Biology 095 - Plants on the Move
2016 – Graduate Teaching Assistant, University of Vermont, Biology 001 - Principles of Biology
2015 – Co-Instructor, American Fisheries Society National Meeting, Age and Growth Analyses with R
2014 – Teaching Assistant, Northland College, Natural Resources 349 - Fisheries Science & Management
2013 – Teaching Assistant, Northland College, Natural Resources 225 - Fisheries & Wildlife Techniques

Student Mentoring

2025-26 – B. Christensen, Seasonal Technician, Utah Division of Wildlife Resources
2024-25 – B. Tappana, Seasonal Technician, Utah Division of Wildlife Resources
2023-24 – S. Wayment, Seasonal Technician, Utah Division of Wildlife Resources
2020 – C. Dunbar, Undergraduate Research Assistant, University of Vermont
2020 – D. McDonough, Undergraduate Research Assistant, University of Vermont
2018 – V. Giacchino, Undergraduate Research Assistant, University of Vermont
2017-19 – M. Sorrentino, Undergraduate Research Assistant & Honor's Thesis Student, University of Vermont

Professional Service

fishR Development Team Member
Journal Reviews: Ecology of Freshwater Fish; Journal of Fish Biology; Journal of Great Lakes Research; North American Journal of Aquaculture; North American Journal of Fisheries Management
Search Committees: Vermont Cooperative Fish & Wildlife Research Unit – Unit Leader (2022)

Professional Training & Workshops

2016 – Vermont Boating License
2015 – American Red Cross Lifeguarding Certification
2015 – Early Development of Four Cyprinids Native to the Yangtze River, China
2015 – Department of Interior Motorboat Operator Certification Course
2014 – American Red Cross Adult First Aid/CPR/AED with Anaphylaxis Shock
2013 – Wilderness Search & Rescue Certification
2012 – PADI Open Water Scuba Certification