BENJAMIN L. HLINA, PhD

CONTACT

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Ottawa, ON

EDUCATION

Doctor of Philosophy (PhD)
Biology
Spatial ecology, food web ecology, fisheries stock assessment, and bioenergetics
Teaching assistant
Carleton University, Ottawa, ON
2018 - 2023

Master of Science (MSc)
Integrative Biology (fish physiology, aquatic toxicology, invasive species management)
Teaching assistant
Wilfrid Laurier University, Waterloo, ON
2013 - 2015

Bachelor of Science (BSc)
Fisheries Management
Research assistant
University of Wisconsin-Stevens Point,
Wisconsin, USA
2009 - 2013

SKILLS

- Project management;
- Quantitative analysis using R
- Experience with Bayesian hierarchical models using Stan and JAGS in R;
- Database management using Python, R, PostgresSQL, Quarto, and Shiny;
- Experience using ESRI ArcGIS Pro, QGIS, and R for spatial analyses;
- Publishing and reviewing peer-reviewed scientific literature;
- Fish biotelemetry using acoustic, radio, and RFID telemetry;
- Fish and aquatic sampling and monitoring methods

RESEARCH EXPERIENCE

Doctorate dissertation, 2018 – 2023
Carleton University; Supervisor: Dr. Steven J. Cooke - FECPL.ca
Co-Supervisor: Dr. Micheal Power - University of Waterloo
Recipient of $25,000 in scholarships

Title: Investigations of Lake Trout *Salvelinus namaycush* ecology and behaviour in relation to fragmented thermal habitats to inform a multifaceted management strategy

Evaluating how thermal habitats drive ecological processes for a cold-water fish, using acoustic telemetry, bioenergetic models, and analyses of growth structures, length-weight relationships, and stable isotopes. Provides knowledge to inform evidence-based conservation efforts and fisheries management decisions.

Master's thesis, 2013 – 2015
Wilfrid Laurier University; Supervisor: Dr. Michael P. Wilkie
Scholarship recipient ($5,000)

Title: The influence of abiotic factors on the uptake and elimination of 3-Trifluoromethyl-4-Nitrophenol by larval Sea Lamprey (*Petromyzon marinus*)

Studied how temperature and pH affect the toxicity of a piscicide used to control invasive sea lamprey in the Great Lakes, using toxicity and enzymatic assays, and radiolabeled isotopes. Provides insight on the time of year the piscicide is most effective to improve sea lamprey control.

Bachelor's thesis, 2012 – 2013
US-Geological Survey, Hammond Bay Biological Station
University of Wisconsin-Stevens Point; Supervisor: Dr. Nick Johnson

Used RFID telemetry to assess the efficacy of sex pheromones as an alternative sea lamprey control mechanism. Resulted in a co-authored publication.

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INVOLVEMENT

Member, American Fisheries Society (AFS)
2010 – present

Member, Society of Canadian Aquatic Science
2022 - 2023
Student representative - Conference Committee

Member, International Assoc. of Great Lakes Research
2015 – 2018; 2024-Present

President, Bio. Grad. Student Assoc.
Wilfrid Laurier University
2013 - 2015

STRENGTHS

- Taking initiative, self-starting;
- Analytical skills and critical thinking;
- Leadership, interpersonal skills, teamwork;
- Problem solving;
- Written and oral communication;
- Sound judgment, values and ethics.

OTHER ACCOMPLISHMENTS

- Developer and maintainer of three R packages:
  - {trps} – Bayesian trophic position modeling in Stan
  - {nichetools} – trophic niches
  - {ecotox} – Lethal doses
- Author of an R blog
- Finalist for Best Student Paper at American Fisheries Society 2022.
- UW-Stevens Point – Chancelor's Leadership Award Recipient 2013

EXPERIENCE

Postdoctoral Fellow, Great Lakes Institute of Environmental Research
University of Windsor, Nov. 2023 – Present

- Leading data analysis, manuscript drafting, editing, and journal submission for several research projects focused on the following:
  - Understanding spatial variation in trophic dynamics in Lake Ontario; and
  - Lake whitefish movement and vertical behaviour on Lake Ontario.
- Leading an acoustic telemetry project centered on learning how native fish species respond to on-going open-cage aquaculture facilities in Parry Sound.
- Mentoring MSc students and OMNR staff on various topics including trophic dynamics, acoustic telemetry, and bioenergetics

Research Technician, Canada Centre for Inland Waters
Environment and Climate Change Canada, Feb. - May 2018

- Assessed the impacts of Alberta oil sands on reproductive capacities (e.g., gonadocorticoids) of fish using enzyme immunoassays (EIA) and enzyme-linked immunosorbent assays (ELISA).
- Created standard operating procedure for sample collection, steroid extraction, EIA, and data analysis.
- Analyzed data using R and drafted a report on the findings.

Laboratory Technician
Wilfrid-Laurier University, June 2016 – Jan. 2018

- Assisted graduate students with their research in the lab of Drs. Deborah MacLatchy and Mark Servos including building toxicity exposures systems, running toxicity exposures, solid phase extraction (SPE) for hormone analysis, EIAs, and ELISAs.

PUBLICATIONS (SELECTED LIST)

Hlina, B.L., Fisk, A.T., Metcalfe, B., Johnson, T.B. (In Review). Recurring patterns of regional variation in trophic processes for Lake Ontario fishes. Ecological Applications.

Hlina, B.L., Glassman, D.M., Lédée, E.J.I., Nowell, L.B., Clauseen, J.E., Philipp, D.P., Marsden, J.E., Power, M., and Cooke, S.J. (2024). Habitat-dependent bioenergetic costs for a wild cold-water fish. Aquatic Sciences. 86 (36). https://doi.org/10.1007/s00027-024-01052-3

Hlina, B.L., Birceanu, O., Robinson, C.S., Dhiyebi, H., Wilkie, M.P. (2021). The relationship between thermal physiology and lampricide sensitivity in larval sea lamprey (*Petromyzon marinus*). Journal of Great Lakes Research 47 (Supp. 1): S272-S284. https://doi.org/10.1016/j.jglr.2021.10.002

Hlina, B.L., Glassman, D.M., Chhor, A.D., Etherington, B.S., Elvidge, C.K., Diggles, B.K., Cooke, S.J. (2021). Hook retention but not hooking injury is associated with behavioral differences in bluegill. Fisheries Research 242: 106034. https://doi.org/10.1016/j.fishres.2021.106034

Hlina, B.L., Tessier, L.R., Wilkie, M.P. (2017). Effects of water pH on the uptake and elimination of a piscicide, 3-trifluoromethyl-4-nitrophenol (TFM), by larval sea lampreys. Comparative Biochemistry and Physiology C 200: 9 - 16. https://doi.org/10.1016/j.cbpc.2017.05.005

FUNDING SOURCE

Fisk, A.T., Johnson, T.B., **Hlina, B.L..,** Ivanova, S.V., Larocque, S.M., Midwood, J.D., Brownscombe, J.W., O'Malley, B.P. 2025. Quantifying changes in spatial and temporal behaviours of alewife in Lake Ontario. Great Lakes Fisheries Commission - $418,114.20 CAD for 3 years.

Johnson, T.B., Chipps, Steve Chipps, S.R., Deslauriers, D., Kershner, M.W., Madenjian, C.P., Pothoven, S.A., **Hlina, B.L.,** Rennie, M. D. Great Lakes Biological Tissue Database. Great Lakes Fisheries Commission - $24,499.65 CAD for 1 year.

PRESENTATIONS & POSTERS (SELECTED LIST)

Estimating Detection Efficiency of Acoustic Receivers Using {glatos}

- Ocean Tracking Network – Symposium – 2024, Hallifax, CAD - *Workshop*

Spatial variation in trophic dynamics for multiple fish species in Lake Ontario

- The International Association for Great Lakes Research 2024, Windsor, CAD - *Presentation*

Habitat-dependent bioenergetic costs for a wild cold-water fish

- International Conference on Fish Telemetry 2023, Sète, France - *Poster*
- American Fisheries Society – 2022 – Annual Meeting - Spokane, USA - *Presentation (award finalist)*

Spatial ecology and niche partitioning of lake trout and smallmouth bass in a multibasin lake

- Canadian Conference for Fisheries Research 2022, Vancouver, Canada - *Presentation*
- Great Lakes Acoustic Telemetry Observation System 2020, Ann Arbor, USA - *Presentation*