

Hugo de Moura Flávio

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Education:

- 2017 - 2020: PhD in Atlantic salmon migration and ecology - Technical University of Denmark, Denmark
· Dissertation: "*Bottlenecks of Atlantic salmon smolt migration in freshwater and estuarine ecosystems*"  (PDF)
- 2014 - 2016: MSc in Ecology, Environment and Territory - University of Porto, Portugal
· Dissertation: "*Reconciling Agriculture and Stream Restoration in Europe*"  (PDF)
- 2011 - 2014: BSc in Biology - University of Porto, Portugal
- 2008 - 2010: Professional course in Environmental Management - Professional School Conde S. Bento, Portugal

Professional Experience:

- 2025 - Now Academic Adjunct, Department of Biology, Dalhousie University, Canada
· Supervise undergraduate students in research or projects.
· Hold grants through Dalhousie for the purpose of collaborative research.
- 2024 - Now Post-doctoral fellow, Dalhousie University, Canada
· Lead work funded under the DFO Canada Nature Fund grants.
· Apply for additional grants that align with the lab strategic research direction.
· Develop lab culture and processes through leadership activities.
· Co-supervise MSc students and undergraduate scholars.
· Contribute to field work and laboratory work in the Aquatron.
- 2020 - 2024 Post-doctoral fellow, Wilfrid Laurier University, Canada
· Physiological effects of TFM on sea lamprey and non-target fishes (lake sturgeon and rainbow trout)
· Intermittent flow respirometry, including design and setup of respirometry equipment.
· Team coordination and student supervision.
· Initial 2 year contract extended by 2 years.
- 2017 - 2020: PhD candidate, Technical University of Denmark
· Study design for acoustic, radio and camera trap studies aiming to uncover Atlantic salmon smolt mortality rates across Europe
· Analysis of complex data and presentation of the emerging conclusions arising from the multiple studies conducted under the SMOLTRACK project
· Development of the R package actel

- 2017: Student assistant, Technical University of Denmark
- Turbot acoustic telemetry in the Roskilde Fjord.
 - Maintenance and data extraction from Thelma® and Vemco® hydrophones.
 - Maintenance and data extraction from HOBO® environmental data loggers.
- 2017: Short term researcher, Technical University of Denmark
- Conduct a review on the importance of hard-bottom reefs on commercially important fish species.
 - Conduct intermittent-flow fish respirometry on round goby.
- 2016 - 2017: Student collaborator, CIIMAR, University of Porto
- Assisting on gene expression studies.
- 2015: Supervisor of ecological conditions, EDP (Portuguese energy supplier)
- Ensuring favourable conditions to ichthyofauna during the construction phase of a hydro-power dam.
- 2010 - 2016: Student assistant, Faculty of Sciences, University of Porto
- Sampling of freshwater benthic macroinvertebrates.
 - Sampling of lentic Ichthyofauna (electric fishing and net fishing).
 - Fish (F-IBIP) and macroinvertebrate (IBMWP, IBB) biotic index calculation.

Short courses:

- Nov 2018: “Introduction to Regression Models with Spatial and Temporal Correlation”
- Provider: Highland Statistics Ltd.
 - Modelling using INLA
- Oct 2018: “Introduction to Linear Mixed Effects Models and GLMM with R - Bayesian and frequentist approaches”
- Provider: Highland Statistics Ltd.
- May 2018: “Laboratory Aquatic Animal Science Course - CAL-AQUA”
- Provider: CIIMAR, Porto University
 - FELASA Category B - "Persons carrying out animal experiments"
- Feb 2018: “Data Exploration, Regression, GLM & GAM with introduction to R”
- Provider: Highland Statistics Ltd.
- Sep 2015: “The use of trait based approaches in community ecology and stress ecology”
- Provider: IMAR - Instituto do Mar, Coimbra University
 - Module I - Key concepts and terrestrial ecosystems
 - Module II - Aquatic ecosystems

Awarded grants:

- Jan 2026: [PI] GLFC Sea lamprey control program grant (2026.FLA.541043)
"Tracking the onset of juvenile sea lamprey parasitism: can a new, smaller micro-acoustic tag succeed where the ELAT failed."
· Value: \$96,127.50 CAD + \$13,161.00 USD over two years
· Host institution: Dalhousie University
- Jan 2025: [PI] GLFC Sea lamprey control program pilot grant (2025.FLA.541036)
"Oxygen consumption as a non-lethal proxy for determining the sensitivity of non-target fishes to TFM."
· Value: \$26,934.98 CAD
· Host institution: Dalhousie University
- Jan 2023: [PI] GLFC Sea lamprey control program grant (2023.FLA.541019)
"Physiological and behavioural effects of tagging post-metamorphic sea lamprey with a micro acoustic tag."
· Value: \$151,335.00 CAD over two years
· Host institution: Wilfrid Laurier University
- Jan 2017: STSM Research Grant - COST Action CA15121
"The importance of hard-bottom reefs for fisheries and marine conservation"
· Value: €2,400.00 (EUR)
· Location: Technical University of Denmark
- 2016: Merit Scholarship - University of Porto
· Value: €2,525.00 (EUR)

Peer-reviewed works

* denotes shared first authorship. Up to date citation statistics available at my [Scholar profile](#) ↗

- [21] Bellhouse, E.P., Xeni, J., Deng, Z.D., Wilkie, M.P., **Flávio, H.** (2026). Implantation with a novel micro-acoustic tag impairs aerobic metabolism of postmetamorphic sea lamprey. *Canadian Journal of Fisheries and Aquatic Sciences*, In press. doi: [10.1139/cjfas-2025-0333](https://doi.org/10.1139/cjfas-2025-0333)
- [20] Lawrence, M.J., Wilson, B.M., Wringe, B.F., Hawkes, J.P., Hardie, D.C., Hamoutene, D., **Flávio, H.**, English, G., McKinsey, C.W., Trudel, M., (2026). Movement patterns and predator-prey interactions of domestic Atlantic salmon (*Salmo salar*) following an experimental release in a highly dynamic marine environment. *Canadian Journal of Fisheries and Aquatic Sciences*, Accepted.
- [19] Notman-Grobler, O.D.P., Mastrodimitropoulos, P.M.B., Bevilacqua, A., Lennox R.J., **Flávio, H.**, (2025). Assessing Metabolic Rate and Post-Tagging Recovery in Juvenile Fish. *Journal of Fish Biology*, in press. doi: [10.1111/jfb.70208](https://doi.org/10.1111/jfb.70208)
- [18] Sortland, L. K., Birnie-Gauvin, K., Lennox, R. J., **Flávio, H.**, Koed, A., Aarestrup, K., (2025). Does wetland restoration create an ecological trap for migrating brown trout smolts? *Restoration Ecology*, 33(5), e70066. doi: [10.1111/rec.70066](https://doi.org/10.1111/rec.70066)

- [17] Lennox, R.J., Mastrodimopoulos, P.M.B., **Flávio, H.**, Kristin Cyr, K., Deng, Z.D., Cooke, S.J., and Piczak, M.L. (2025) How small can they go? Micro electronic tags for movement ecology of small aquatic organisms. *Fisheries*, 50(5), 209–218. doi: [10.1093/fshmag/vuaf002](https://doi.org/10.1093/fshmag/vuaf002)
- [16] D'Souza, L.*, **Flávio, H.***, and Wilkie, M.P. (2025) The lampricide 3-trifluoromethyl-4-nitrophenol (TFM) stimulates oxygen consumption by larval sea lamprey in a dose-dependent manner. *Journal of Great Lakes Research*, 51(2), 102536. doi: [10.1016/j.jglr.2025.102536](https://doi.org/10.1016/j.jglr.2025.102536)
- [15] Sortland, L. K., Wightman, G., **Flávio, H.**, Aarestrup, K., Roche, W. (2025). A Physical Bottleneck Increases Predation on Atlantic Salmon Smolts During Seaward Migration in an Irish Index River. *Fisheries Management and Ecology*, 32(4), 26–40. doi: [10.1111/fme.12779](https://doi.org/10.1111/fme.12779)
- [14] Casabona, E., Wilms, T., Moltesen, M., Bertelsen, J., M. Kruse, B., **Flávio, H.**, Holloway, P., Svendsen, J.C. (2024). Cobble reef restoration in the Baltic Sea: implications for life below water. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 34(8), e4216. doi: [10.1002/aqc.4216](https://doi.org/10.1002/aqc.4216)
- [13] **Flávio, H.**, Seitz, R.D., Eggleston, D.B., Svendsen, J.C., Støttrup, J.G. (2023). Hard-bottom habitats support commercially important fish species: A systematic review for the North Atlantic Ocean and Baltic Sea. *PeerJ*, 11, e14681. doi: [10.7717/peerj.14681](https://doi.org/10.7717/peerj.14681)
- [12] Baden, C., Christoffersen, M., **Flávio, H.**, Brown, E., Aarestrup, K., Svendsen, J.C. (2022) Using acoustic telemetry to locate flatfish spawning areas: Estuarine migrations of turbot *Scophthalmus maximus* and European flounder *Platichthys flesus*. *Journal of Sea Research*, 183, 102187. doi: [10.1016/j.seares.2022.102187](https://doi.org/10.1016/j.seares.2022.102187)
- [11] Gundelund, C., Arlinghaus, R., Birdsong, M., **Flávio, H.**, Skov, C. (2022) Investigating angler satisfaction: the relevance of catch, motives and contextual conditions. *Fisheries Research*, 250, 106294. doi: [10.1016/j.fishres.2022.106294](https://doi.org/10.1016/j.fishres.2022.106294)
- [10] Jiménez-Mena, B., **Flávio, H.**, Henriques, R., Manuzzi, A., Ramos, M., Meldrup, D., Edson, J., Pálsson, S., Ólafsdóttir, G. A., Ovenden, J. R., Nielsen E. (2022) Fishing for DNA? Designing baits for population genetics in target enrichment experiments: guidelines, considerations and the new tool supeRbaits. *Molecular Ecology Resources*. 22, 5, 2105-2119. doi: [10.1111/1755-0998.13598](https://doi.org/10.1111/1755-0998.13598)
- [9] **Flávio, H.**, Baktoft, H. (2021) actel: Standardised analysis of acoustic telemetry data from animals moving through receiver arrays. *Methods in Ecology and Evolution*. 12, 196-203. doi: [10.1111/2041-210X.13503](https://doi.org/10.1111/2041-210X.13503)
- [8] **Flávio, H.**, Caballero, P., Jepsen, N., Aarestrup, K. (2021). Atlantic salmon living on the edge: Smolt behaviour and survival during seaward migration in River Minho. *Ecology of Freshwater Fish*, 30(1), 61-72. doi: [10.1111/eff.12564](https://doi.org/10.1111/eff.12564)
- [7] Niella. Y., **Flávio, H.**, Smoohey, A.F., Aarestrup, K., Taylor, M.D., Peddemors, V., Harcourt, R. (2020) Refined Shortest Paths (RSP): incorporation of topography in space use estimation from node-based telemetry data. *Methods in Ecology and Evolution*, 11(12), 1733-1742. doi: [10.1111/2041-210X.13484](https://doi.org/10.1111/2041-210X.13484)

- [6] Rhodes, N., Wilms, T., Baktoft, H., Ramm, G., Bertelsen, J.L., **Flávio, H.**, Støtrup, J.G., Kruse, B.M., Svendsen J.C. (2020). Comparing methodologies in marine habitat monitoring research: An assessment of species-habitat relationships as revealed by baited and unbaited remote underwater video systems. *Journal of Experimental Marine Biology and Ecology*, 526, 151315. doi: [10.1016/j.jembe.2020.151315](https://doi.org/10.1016/j.jembe.2020.151315)
- [5] **Flávio, H.**, Kennedy, R., Ensing, D., Jepsen, N., Aarestrup, K. (2020). Marine mortality in the river? Atlantic salmon smolts under high predation pressure in the last kilometres of a river monitored for stock assessment. *Fisheries Management and Ecology*, 27(1) 92-101. doi: [10.1111/FME.12405](https://doi.org/10.1111/FME.12405)
- [4] **Flávio, H.**, Aarestrup, K., Jepsen, N., Koed, A. (2019). Naturalised Atlantic salmon smolts are more likely to reach the sea than wild smolts in a lowland fjord. *River Research and Applications*, 35(3) 216-223. doi: [10.1002/rra.3400](https://doi.org/10.1002/rra.3400)
- [3] Birnie-Gauvin, K., **Flávio, H.**, Kristensen, M.L., Rabideau, S.W., Cooke, S.J., Willmore, W.G., Koed, A., Aarestrup, A. (2019). Cortisol predicts migration timing and success in both Atlantic salmon and sea trout kelts. *Scientific Reports*, 9(1), 2422. doi: [10.1038/s41598-019-39153-x](https://doi.org/10.1038/s41598-019-39153-x)
- [2] Jepsen, N., **Flávio, H.**, Koed, A. (2019). The impact of Cormorant predation on Atlantic salmon and Sea trout smolt survival. *Fisheries Management and Ecology*, 26(2), 183-186. doi: [10.1111/fme.12329](https://doi.org/10.1111/fme.12329)
- [1] **Flávio, H.M.**, Ferreira, P., Formigo, N., Svendsen, J. (2017). Reconciling agriculture and stream restoration in Europe: a review relating to the EU Water Framework Directive. *Science of the Total Environment*, 596-597, 378-395. doi: [10.1016/j.scitotenv.2017.04.057](https://doi.org/10.1016/j.scitotenv.2017.04.057)

Invited appearances:

- [Invited speaker]** Flávio, H. trackyverse: A unified future for telemetry data analysis. Ocean Tracking Network International Data Management Committee meeting. Halifax, Nova Scotia, Canada. August 2025.
- [President's award finalist]** Flávio, H., Quijada-Rodriguez, A., Ferreira, P., Bellhouse, E., Seguin, A., Trzcinski, M., Alsop, D., Hall, D., Balgobin, A., Wilson, J., Kieffer, J., Jeffries, K., Wilkie, M.P. Built to last, not to race. Lake sturgeon in a warming world. Canada Society of Zoologists, annual conference 2025, Waterloo, Ontario, Canada. May 2025.
- [ECR Visiting Fellowship]** Interspecific variation in thermal habitat choice of fishes. Developing a high throughput procedure for measuring thermal habitat choice. Fellowship value: £2,850.00, by The Company of Biologists. Invited by: Dr. Andy Turko. Mar-May 2025.
- [Full day lecture/workshop]** Invited Fish Telemetry Guest / Expert Request. Part 1: Bottlenecks for Atlantic salmon smolt migration in freshwater and estuarine ecosystems. Part 2: Discussion of project plans with UNB MSc students. Part 3: An introduction to the R package actel. Part 4: The future of telemetry data analysis: the Trackyverse. Faculty of Forestry and Env. Management, University of New Brunswick. Fredericton, NB, Canada. Invited by Dr. Tommi Linnansaari. Feb 2025.
- [1h lecture]** The quest to keep the invasive sea lamprey under control in a warming world. Dalhousie University, Biology seminar. Halifax, NS, Canada. Invited by Dr. Robert Lennox. Jan 2025.

Scientific outreach presented by me:

[Talk] Bellhouse, E., Miehls, S.S., Xeni, J., Wilkie, M.P., **Flávio, H.** Implantation of a micro-acoustic tag severely alters feeding behaviour in the invasive sea lamprey. SEB Annual Conference. Antwerp, Belgium. Jul 2025.

[Poster] Notman-Grobler, O.D.P., Mastrodimitropoulos, P.M.B., Bevilacqua, A., Lennox, R.J., **Flávio, H.** Assessing metabolic rate and post-tagging recovery in juvenile brook trout. SEB Annual Conference. Antwerp, Belgium. Jul 2025.

[Interview] Introducing the 2025 W.S. Hoar & President's Awards Finalists! Présentation des finalistes du Prix W.S. Hoar et du Prix du Président pour l'année 2025! Outlet: CSZ blog. Available online [↗](#). May 2025.

[Talk] Notman-Grobler, O.D.P., Mastrodimitropoulos, P.M.B., Bevilacqua, A., Lennox, R.J., **Flávio, H.** Assessing metabolic rate and post-tagging recovery in juvenile brook trout. Fish talks with friends, hosted by the Nova Scotia Freshwater Fisheries Research Cooperative. Halifax, Canada. Feb 2025.

[Talk] **Flávio, H.**, Delo, B., Pye, J. Assembling a community-led framework for telemetry data analysis. OTN workshop. Halifax, Canada.

[Workshop] Comparing migration success between groups in acoustic telemetry studies. OTN workshop. Halifax, Canada. Sep 2024.

[Talk] Wilkie, M.P., Koledin, M., Sutherby, J., **Flávio, H.**, Jeffries, K.M. The importance of a broad thermal tolerance in the sea lamprey's successful invasion of the Laurentian Great Lakes. 100th Annual Meeting of the Society for Experimental Biology. Edinburgh, UK. Jul 2023.

[Poster] **Flávio, H.**, D'Souza, L., Wilkie, M.P. Exposure to an uncoupler of oxidative phosphorylation increases whole-animal consumption in the invasive larval sea lamprey. 100th Annual Meeting of the Society for Experimental Biology. Edinburgh, UK. Jul 2023.

[Talk] **Flávio, H.**, Koledin, M., D'Souza, L., Wilkie, M.P. The effect of Acclimation Temperature and TFM Concentration on the Oxygen Consumption of Larval Sea Lamprey. IAGLR's 66th Annual Conference on Great Lakes Research. Toronto, Canada. May 2023.

[Talk] **Flávio, H.**, Mitrovic, D., Koledin, M., Servos, M., Wilkie, M.P. Warmer water increases sea lamprey tolerance to TFM. 24th Sea Lamprey Annual Workshop hosted by the Great Lakes Fishery Commission. Green Bay, WI, USA. Jan 2023.

[Workshop] Data management in acoustic telemetry. Part 1: How to keep your data under control. Part 2: Navigating an ocean of data. 2022 Ocean Tracking Network Symposium. Halifax, Canada. Nov 2022.

[Poster] Flávio, H. Acoustic Data Analysis, Simplified. 2022 Ocean Tracking Network Symposium. Halifax, Canada. Nov 2022.

[Interview] Warming Waters Help Invasive Lamprey Survive Lampricide Treatments Outlet: International Joint Commission Newsletter. Available online [↗](#). Sep 2022.

[Poster] **Flávio, H.**, Koledin, M., Wilkie, M.P. Acclimation temperature affects thermal performance in larval sea lamprey. SEB Annual Conference. Montpellier, France. Jul 2022.

[Talk] **Flávio, H.**, Bell, J.C., Koledin, M., Wilkie, M.P., Larval sea lamprey don't mind the heat. Could tolerance to lampricides increase in warming climate? International Conference on the Biology Fish. Montpellier, France. Jun 2022.

[Talk] Flávio, H., Bell, J.C., Koledin, M., Wilkie, M.P., Larval sea lamprey don't mind the heat. Could tolerance to lampricides increase in warming climate? Joint Aquatic Sciences Meeting in Grand Rapids, Michigan, USA. May 2022.

[Workshop] Data Analysis Packages discussion panel (Available online [↗](#)). Ocean Tracking Network symposium, online. Nov 2021.

[Workshop] Standardized analyses of acoustic telemetry data using the R packages actel and RSP (Available online [↗](#)). European Tracking Network (ETN), online. Jan 2021.

[Interview] (in Portuguese) Conheça o cientista português que estuda o salmão do Atlântico na Dinamarca (Available online [↗](#)). Outlet: Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos. Jan 2018.

[Talk] Flávio, H., Formigo, N. Taxonomic standardisation of the benthic macroinvertebrate main sources for the calculation of the Portuguese official water quality indexes. XVII Congress of the Iberian Association of Limnology, Santander, Spain. Jul 2014.

Scientific outreach presented by collaborators and students:

[Poster] Stanton, O., Flávio, H., Turko, A. Interspecific variation of thermal habitat choice in freshwater stream fishes. 64th Annual Meeting of the Canadian Society of Zoologists, Waterloo, Ontario, Canada. May 2025.

[Talk] Xeni, J., Bellhouse, E., Flávio, H., Wilkie, M.P. Effects of micro-acoustic tag implantation on juvenile sea lamprey (*Petromyzon marinus*) metabolism. 64th Annual Meeting of the Canadian Society of Zoologists, Waterloo, Ontario, Canada. May 2025.

[Talk] Stanton, O., Flávio, H., Turko, A. Interspecific variation of thermal habitat choice in freshwater stream fishes. Graduate Student Symposium, Guelph, Ontario, Canada. May 2025.

[Talk] Wilkie, M.P., Mitrovic, D., Flávio, H., Koledin, M., Servos M. Managing invasive sea lamprey in warmer waters: Challenges & prospective solutions. Annual Meeting of the American Fisheries Society. Honolulu, Hawaii, USA. Sep 2024.

[Talk] Bellhouse, E., Miehls, S.S., Xeni, J., Wilkie, M.P., Flávio, H. Implantation of a micro-acoustic tag alters feeding behaviour in juvenile sea lamprey. Ocean Tracking Network Symposium. Halifax, NS, Canada. Sep 2024.

[Talk] Wilkie, M.P., Koledin, M., Flávio, H., Sutherby, J., Jeffries, K.M. Profile of a Great Lakes invader: Importance of wide thermal tolerance in the sea lamprey. 16th International Congress on the Biology of Fish. University of Michigan, Ann Arbor, MI, USA. Jun 2024.

[Talk] Bellhouse, E., Miehls, S.S., Xeni, J., Wilkie, M.P., Flávio, H. Implantation of a micro-acoustic tag alters feeding behaviour in juvenile sea lamprey. 16th International Congress on the Biology of Fish. University of Michigan, Ann Arbor, MI, USA. Jun 2024.

[Talk] Xeni, J., Bellhouse, E., Flávio, H., Wilkie, M.P. Effects of micro-acoustic tag implantation on juvenile sea lamprey metabolism. 16th International Congress on the Biology of Fish. University of Michigan, Ann Arbor, MI, USA. Jun 2024.

[Talk] Quijada-Rodriguez, A., **Flávio, H.**, Bellhouse, E., Ferreira, P., Seguin, A., Young, V., Kieffer, J.D., Jeffries, K.M., Wilkie, M.P. Effect of acclimation temperature and acute thermal stress on energetics of 7-year-old lake sturgeon, *Acipenser fulvescens*. 16th International Congress on the Biology of Fish. University of Michigan, Ann Arbor, MI, USA. Jun 2024.

[Talk] Mitrovic. D., **Flávio, H.**, Bragg, L., Servos, M.R., Wilkie, M.P. Using lampricide and sea lamprey (*Petromyzon marinus*) to study the effects of temperature on phenol toxicity. 44th Annual Meeting - Society for Environmental Toxicology and Chemistry. Louisville, KY, USA. Nov 2023.

[Talk] Mitrovic. D., **Flávio, H.**, Bragg, L., Servos, M.R., Wilkie, M.P. Water temperature influences the sensitivity of larval sea lamprey (*Petromyzon marinus*) to lamprey-specific pesticides. 49th Annual Canadian Ecotoxicity Workshop. Ottawa, Ontario, Canada. Oct 2023.

[Talk] Koledin, M., **Flávio, H.**, Bellhouse, E., Wilkie, M.P. Wide thermal tolerance of invasive sea lamprey: Past and future implications for the Great Lakes. 61st Annual Meeting of the Canadian Society of Zoologists. University of Saskatchewan, Saskatoon, Saskatchewan. Canada. May 2023.

[Talk] Trzcinski, M., Koledin, M., **Flávio, H.**, Wilkie, M.P. Post-exercise oxygen consumption and recovery of post-metamorphic juvenile sea lamprey following a prolonged non-trophic period. 61st Annual Meeting of the Canadian Society of Zoologists. University of Saskatchewan, Saskatoon, Saskatchewan. Canada. May 2023.

[Poster] Mitrovic, D., **Flávio, H.**, Bragg L.M., Servos M., Wilkie M.P. Water temperature influences the sensitivity of larval sea lamprey (*Petromyzon marinus*) to lampricides. IAGLR. 66th Annual Conference on Great Lakes Research. Toronto. Canada. May 2023.

[Poster] D'Souza, L., **Flávio, H.**, Wilkie, M.P., TFM Exposure leads to increased oxygen consumption in larval sea lamprey. Ontario Biology Day, Brock University, St. Catharines, Canada. Mar 2023.

[Talk] D'Souza, L., **Flávio, H.**, Wilkie, M.P. TFM Exposure leads to increased oxygen consumption in larval sea lamprey. Biochemistry workshop, Keene ON, Canada. Feb 2023.

[Poster] Genter W., **Flávio, H.**, Bellhouse, E., Wilkie, M.P. Feeding Temporarily Reduces Brain Water Content in Rainbow Trout. Comparative Physiology and Biochemistry workshop, Keene ON, Canada. Feb 2023.

[Poster] Koledin, M., **Flávio, H.**, Wilkie, M.P. Acclimation temperature affects thermal performance in larval sea lamprey. Comparative Physiology and Biochemistry workshop, Keene ON, Canada. Feb 2023.

[Poster] Mitrovic, D., **Flávio, H.**, Bragg, L., Servos, M., Wilkie, M.P. How does water temperature influence TFM toxicity in sea lamprey (*Petromyzon marinus*)? Comparative Physiology and Biochemistry workshop, Keene ON, Canada. Feb 2023.

[Poster] Mitrovic D., **Flávio H.**, Bragg L.M., Servos M., Wilkie M.P., Some like it hot - warmer water temperatures improve sea lamprey's (*Petromyzon marinus*) survival to lampricide exposures. SETAC North America 43rd Annual Meeting. Pittsburgh PA, USA. Nov 2022.

Teaching Experience:

2022 & 2024: Coordinator/Lecturer of BI358 - Animals: Form and function

2022 - 2024: Coordinator of weekly study group "R hour"

Earlier teaching contributions: Macroinvertebrate collection and identification field classes (Technical University of Denmark, Denmark). "Universidade Junior" workshops (University of Porto, Portugal). Local community outreach workshops (Vila do Conde, Portugal).

Mentorship:**Undergrad Students [n = 10]**

2026-01 - ongoing	Tabitha Hafenbrak - Dalhousie University Independent research project: Gill remodelling in response to TFM exposure
2025-09 - ongoing	Aiden Moore - Dalhousie University Honours thesis: Do non-target species modulate their oxygen consumption in response to increasing doses of TFM?
2025-09 - ongoing	Laura Melina Göbel - Dalhousie University Honours thesis: Does exposure to lethal TFM concentrations induce an oxygen consumption increase comparable to MMR?
2025-09 - 2026-01	Boyd Pelley (Completed) - Dalhousie University Directed studies: Marine Image Recognition and Data Collection Through Software Development Applications
2024-07 - 2024-12	Oscar Notman-Grobler (Completed) - Dalhousie University Independent research project: Building and validating an intermittent-flow respirometry system. Last known occupation: Marine scientist, Bermuda Department of Environment and Natural Resources.
2024-01 - 2024-04	Alicia Balgobin (Completed) - Wilfrid Laurier University Directed studies: Assessment of Temperature-Induced Genetic Damage in The Red Blood Cells of Lake Sturgeon (<i>Acipenser fluvescens</i>) Last known occupation: Graduate student, University of Calgary.
2024-01 - 2024-04	Aiden Seguin (Completed) - Wilfrid Laurier University Directed studies: Thermal stress influence on the energetic capacity of tissue involved in locomotion and behavioral responses in lake sturgeon. Last known occupation: Graduate student, Wilfrid Laurier University. Linkedin ↗
2024-01 - 2024-04	Vanessa Young (Completed) - Wilfrid Laurier University Directed studies: Energetics of ionoregulatory and metabolic waste excretory tissues of juvenile lake sturgeon (<i>Acipenser fluvescens</i>) under thermal stress Last known occupation: Undergraduate student, Wilfrid Laurier University.
2022-07 - 2023-04	Leonard D'Souza (Completed) - Wilfrid Laurier University Honours thesis: The effect of 3-trifluoromethyl-4nitrophenol (TFM) on the oxygen consumption of larval sea lamprey (<i>Petromyzon marinus</i>) Last known occupation: Enrolled into paramedic school in fall 2025 Linkedin ↗
2022-09 - 2022-12	Wade Genter (Completed) - Wilfrid Laurier University

Directed studies: Feeding temporarily reduces brain water content in rainbow trout (*Oncorhynchus mykiss*)

Last known occupation: Research Assistant at the Ontario Aquaculture Research Centre. LinkedIn [↗](#)

Master Students [n = 3]

2023 - 2025

Evan Bellhouse - Wilfrid Laurier University

Thesis title: Implantation of Eel and Lamprey Acoustic Tag (ELAT) Alters Metabolic Rate & Feeding Behaviour in Juvenile Sea Lamprey. [↗](#)

2023 - Paused

Julia Xeni - Wilfrid Laurier University

Thesis title (tentative): Stress responses to tagging juvenile sea lamprey with a micro-acoustic tag.

Paused due to illness.

2020 - 2021

Olga Trela - Technical University of Denmark (IMBRSea)

Thesis title: Using fish telemetry to compare migration and survival of juvenile brown trout (*Salmo trutta*) released at different times of day into the Roskilde Fjord, Denmark. [↗](#)

Last known occupation: Aquatic Science Technician at Fisheries and Oceans Canada.

LinkedIn [↗](#)

Service:

Software development

Coordinator of the telemetry-coding group [trackyverse.org](#) [↗](#)

Member of the [OTN study hall](#) [↗](#)

Developer and maintainer of the R packages [actel](#) [↗](#), [ATO](#) [↗](#), [atools](#) [↗](#), [pyroresp](#) [↗](#).

Co-developer of the R packages [RSP](#) [↗](#), [supeRbaits](#) [↗](#).

Reviewer for:

- Animal Biotelemetry
- Aquatic Conservation: Marine and Freshwater Ecosystems
- Canadian Journal of Fisheries and Aquatic Sciences
- Fisheries Management and Ecology
- Fisheries Research
- Freshwater Biology
- Hydrobiologia
- ICES Journal of Marine Science
- Journal of Environmental Management
- Journal of Fish Biology
- Journal of Great Lakes Research

- North American Journal of Fisheries Management
- Royal Society Open Science

More details available at in my [Web of Science profile](#).

Professional affiliations:

- Canadian Society for Ecology and Evolution
- Canadian Society of Zoologists
- Society for Experimental Biology
- Incoming member of the Ocean Tracking Network's International Data Management Committee

Popular science publications and reports:

Malmskov, M. A., Ramskov, J., Hauge, F. H., Williams, E., **Flávio, H.**, Payne, M., ..., Svendsen, J. C. (2019). Ørreder med hedeslag i Roskilde Fjord: Kan fiskene klare ændringer i klimaet. *Habitat*, 20, 35-41 (in Danish).

Almeida, A.R., Novais, A.T., **Flávio, H.**, Oliveira, S.S., Pereira, R., Santos, P.T. (2016), Madeira morta, mas cheia de vida: uma proposta de educação ambiental. *Captar*, v6, 2:44-55 (in Portuguese).

Almeida, A.R., Novais, A.T., **Flávio, H.**, Oliveira, S.S., Pereira, R., Santos, P.T. (2016), Madeira morta: uma revisão da importância da sua conservação. *Captar*, v6, 2:32-43 (in Portuguese).