

## 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., Xenj, 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., McKindsey, 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 wet-land 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., Mastrodimitropoulos, 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.**, Smoothey, 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.**, Støttrup, 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., Miehl, S.S., Xen, 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-Groble, 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-Groble, 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. 100<sup>th</sup> 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. 100<sup>th</sup> 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 66<sup>th</sup> 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. 24<sup>th</sup> 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. 64<sup>th</sup> Annual Meeting of the Canadian Society of Zoologists, Waterloo, Ontario, Canada. May 2025.

**[Talk]** Xení, J., Bellhouse, E., Flávio, H., Wilkie, M.P. Effects of micro-acoustic tag implantation on juvenile sea lamprey (*Petromyzon marinus*) metabolism. 64<sup>th</sup> 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., Miehl, S.S., Xení, 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. 16<sup>th</sup> International Congress on the Biology of Fish. University of Michigan, Ann Arbor, MI, USA. Jun 2024.

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

**[Talk]** Xení, J., Bellhouse, E., Flávio, H., Wilkie, M.P. Effects of micro-acoustic tag implantation on juvenile sea lamprey metabolism. 16<sup>th</sup> 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*. 16<sup>th</sup> 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. 44<sup>th</sup> 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. 49<sup>th</sup> 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. 66<sup>th</sup> 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	<b>Tabitha Hafenbrak</b> - Dalhousie University Independent research project: Gill remodelling in response to TFM exposure
2025-09 - ongoing	<b>Aiden Moore</b> - Dalhousie University Honours thesis: Do non-target species modulate their oxygen consumption in response to increasing doses of TFM?
2025-09 - ongoing	<b>Laura Melina Göbel</b> - Dalhousie University Honours thesis: Does exposure to lethal TFM concentrations induce an oxygen consumption increase comparable to MMR?
2025-09 - 2026-01	<b>Boyd Pelley</b> (Completed) - Dalhousie University Directed studies: Marine Image Recognition and Data Collection Through Software Development Applications
2024-07 - 2024-12	<b>Oscar Notman-Grobler</b> (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	<b>Alicia Balgobin</b> (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	<b>Aiden Seguin</b> (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. <a href="#">Linkedin</a> 
2024-01 - 2024-04	<b>Vanessa Young</b> (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	<b>Leonard D'Souza</b> (Completed) - Wilfrid Laurier University Honours thesis: The effect of 3-trifluoromethyl-4-nitrophenol (TFM) on the oxygen consumption of larval sea lamprey ( <i>Petromyzon marinus</i> ) Last known occupation: Enrolled into paramedic school in fall 2025 <a href="#">Linkedin</a> 
2022-09 - 2022-12	<b>Wade Genter</b> (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](https://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](#) [↗](#), [supeRbait](#)s [↗](#).

#### 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:**

Malmkov, 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).