

BEN R. COLLISON

School for Resource and Environmental Studies | Dalhousie University | Kijipuktuk (Halifax, NS)

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RESEARCH INTERESTS

watershed science; freshwater ecology; conservation biology; fisheries; cumulative effects; mining; environmental impact assessment; natural resource management; interdisciplinary research; science policy

EDUCATION

- 2023 – PhD Interdisciplinary Studies, Dalhousie University
 Dissertation: *A mixed methods approach to understanding threats to the Atlantic salmon-bearing Napu'saqnuk (St. Mary's) River watershed.*
 Advisors: Alana Westwood (supervisor), Tony Walker, Lisa Doucette, Anthony Taylor, Peter Duinker
- 2020 – 21 Master of Resource & Environmental Management, Dalhousie University
- 2016 – 20 BSc Environmental Science, University of Lethbridge

PROFESSIONAL EXPERIENCE

- 2024 – 25 Instructor (sessional), Dalhousie University
- 2021 – 25 Integrated Planning Biologist, Fisheries and Oceans Canada
- 2019 – 20 Aquatic Invasive Species Inspector, British Columbia Conservation Officer Service
- 2018 Forest Technician, Creston Community Forest

RESEARCH CONTRIBUTIONS

Refereed journal articles

- In review* Griggs, E., Moore, J. W., Sainsbury, N., **Collison, B. R.**, Helmer, L., & Olszynski, M. O. Working toward effective cumulative effects management: A framework for policy and practice. *Journal of Environmental Management*, JEMA-D-26-10072.
- In review* Medeiros, H. R., **Collison, B. R.**, Ferris, K., Webster, T. L., Weston, A., & Halfyard, E. A. Land cover and natural riverscape heterogeneity shape in-stream thermal regimes: Implications for Atlantic salmon (*Salmo salar*) conservation. *Science of the Total Environment*, STOTEN-D-26-00392.
- In revision* Miglani, S., **Collison, B. R.**, James, P., & Westwood, A. R. Boring into groundwater impact predictions of hardrock mines in Canada reveals inconsistent modelling timelines, monitoring plans, and consideration of climate change. *Integrated Environmental Assessment and Management*, IEAM-2026-039-OA.
- 2025 Westwood, A. R., Mines, S. M., Miglani, S., Sharan, R., Legault, A., Fitzpatrick, P., Sergeant, C. J., & **Collison, B. R.** Unearthing trends in environmental impact assessments for mines and quarries across Canada. *FACETS*, 10, 1-22. <https://doi.org/10.1139/facets-2025-0114>.
 ➤ Most-read article in *FACETS* in 2025 (out of 119 articles)
- 2024 Kingsbury, S., **Collison, B. R.**, Daigle, R., Hogan, J. D., Lowen, B., Lowles, A. G., Stortini, C., Trudel, M., & Tuziak, S. M. A new tool for setting biodiversity management priorities adapted from aquatic invasive species management: A pilot using Atlantic salmon (*Salmo salar*) in Nova Scotia, Canada. *Ecological Solutions and Evidence*, 5(2), e12340. <https://doi.org/10.1002/2688-8319.12340>.
- 2022 **Collison, B. R.**, Reid, P. A., Dvorski, H., Lopez, M. J., Westwood, A. R., & Skuce, N. Undermining environmental assessment laws: post-assessment amendments for mines in British Columbia, Canada, and their potential impacts on water resources. *FACETS*, 7(1), 611-638. <https://doi.org/10.1139/facets-2021-0106>.
 ➤ Altmetric attention score: [266](#), 4th out of 605 articles in *FACETS*

- 2022 Simpson, K., & **Collison, B. R.** International law application to transboundary pollution: solutions to mitigate mining contamination in the Elk – Kootenai River watershed. *Journal of Environmental Law & Policy*, 2(2), 29-55. <https://doi.org/10.33002/jelp02.02.02>.

Non-refereed journal articles

- 2022 Green, A. R., Murphy, A., **Collison, B. R.**, Sánchez-Nivicela, M., Anderson, H., Morano, J. L., Williams, T. D., & Wilkinson, C. E. A response to Cafaro, Hansson & Götmark: Shifting the narrative from overpopulation to overconsumption. *Biological Conservation*, 273, 109698. <https://doi.org/10.1016/j.biocon.2022.109698>.

Technical reports & policy commentaries

- 2026 **Collison, B. R.**, Seck, S. L., Westwood, A. R., Duinker, P. N., & Lajoie-O'Malley, A. Position paper: 'One Project, One Review'– Comments on Draft Co-operation Agreement between Nova Scotia and Canada. Submitted to the Impact Assessment Agency of Canada (12 signatories). Available [here](#).
- 2024 Fraser, M. S., Gromack, A., Wong, M. C., Blackmore, H., **Collison, B. R.**, Devred, E., Law, B. A., Stevens, H., Stewart, M., Whiteway, A., Wilson, K. L., Wu, Y., & Zions, V. Ecological and oceanographic overview of the Napu'saqnuq / St. Mary's River Estuary, Nova Scotia, an Ecologically Significant Area candidate under Canada's Fisheries Act. Canadian Technical Report of Fisheries and Aquatic Sciences. 3649: xiii + 107p. Available [here](#).
- 2024 Murray, C. A. E., **Collison, B. R.**, Gromack, A. G., Lawler, M. M., Tuziak, S. M., & Butler, S. M. M. A fine scale approach to riparian habitat classification and spatial analysis in the St. Mary's River, Nova Scotia, Canada. Canadian Technical Report of Fisheries and Aquatic Sciences. 3610: viii + 61p. Available [here](#).
- 2023 Westwood, A. R., Stewart, I. G., Mackellar, A., **Collison, B. R.** Position paper: Recommendations for modernizing environmental assessment (EA) in Nova Scotia. Submitted to the Government of Nova Scotia Department of Environment and Climate Change (10 signatories). Available [here](#).
- 2022 **Collison, B. R.**, & Gromack, A. G. Importance of riparian zone management for freshwater fish and fish habitat protection: analysis and recommendations in Nova Scotia, Canada. Canadian Technical Report of Fisheries and Aquatic Sciences. 3475: viii + 71p. Available [here](#).

CONFERENCE & LECTURE CONTRIBUTIONS

Academic conferences (presenter(s) indicated by *)

- 2025 Miglani, S., **Collison, B. R.***, James, P., & Westwood, A. R. Boring into groundwater impact predictions of hardrock mines in Canada. International Association of Impact Assessment Conference. Bologna, Italy [International, 65 participant audience].
- 2024 **Collison, B. R.***, Mines, S., & Westwood, A. R. Risks of mining scope creep in Canada from a modern mineral rush. International Association of Impact Assessment Conference. Dublin, Ireland [International, 70 participant audience].
- 2024 **Collison, B. R.*** Effects of boreal and hemiboreal forest harvest on freshwater salmonid habitat: A systematic review protocol. Society of Canadian Aquatic Sciences Conference. Fredericton, New Brunswick, Canada [National, 80 participant audience].
- 2023 **Collison, B. R.***, Westwood, A. R.*, & Horvath, C.* Cumulative effects assessment: Challenges and perspectives, and what lies ahead. Invited panelist, Cumulative Effects and Environmental Management Conference. Halifax, Nova Scotia, Canada [Regional, 100 participant audience].
- 2022 **Collison, B. R.***, Reid, P. A., Dvorski, H., Lopez, M. J., Westwood, A. R., & Skuce, N. Undermining environmental assessment laws? The potential impact of mining project amendments on water resources in British Columbia. International Association of Impact Assessment Conference. Vancouver, British Columbia, Canada [International, 60 participant audience].

Seminars & invited talks

- 2026 Westwood, A. R.*, & **Collison, B. R.*** Unpacking impact assessment policy shifts in the context of Canada’s rush for critical minerals. Invited panelist, NSERC Create - Leaders in Energy Sustainability (LES) Program Winter Seminar, Dalhousie University, Halifax, NS.
- 2026 **Collison, B. R.*** Drivers of thermal regimes in Atlantic salmon (*Salmo salar*) watersheds. Ecological Forestry Research Initiative Mid-Term Symposium, Dalhousie University, Halifax, NS.
- 2025 **Collison, B. R.*** Fires, Floods, and Hurricanes: Facing Nature’s Fury in Freshwater Ecology Research. Biology Department Seminar Series, Dalhousie University, Halifax, NS.
- 2025 Miglani, S., **Collison, B. R.***, James, P., & Westwood, A. R. Boring into groundwater impact predictions of hardrock mines in Canada. Atlantic Canada Association of Impact Assessment, Spring Speaker Series [virtual].
- 2024 **Collison, B. R.***, & Foster, D.* Applying your skills at the desktop and in the field: Lessons from the forest-freshwater interface. SRES Seminar, Dalhousie University, Halifax, NS.

SCHOLARSHIPS

2025	NSERC – Canadian Forest Sector Workforce Diversity Supplement	\$6 500
2024 – 27	NSERC Canada Graduate Scholarship (CGS) – Doctoral	\$120 000
2024	Dalhousie University – OpenThink Scholarship	\$1 500
2023 – 26	Dalhousie University – Nova Scotia Graduate Scholarship (declined)	\$60 000
2023	Dalhousie University – Faculty of Management Small Research Fund	\$900
2018 – 19	University of Lethbridge – Students’ Union Quality Initiatives Scholarships	\$3 200
2017 – 18	Pat Fletcher Foundation – Golf Scholarships	\$2 200
2016	University of Lethbridge – Entrance Scholarship	\$1 000

RESEARCH GRANTS

Investigators*	Title	Funding Source	Year(s)	Amount (CAD)
Westwood, A. (PI), & Collison, B. (co-I)	Spatio-temporal analysis of mining in Canada	Wilburforce Foundation	2023 - 2025	\$32,935
Westwood, A. (PI), Heung, B. (co-I), Taylor, A. (co-I), Cameron E. (co-I), Collison, B. (collab), + 12 collab, + 7 partners	Maximizing positive outcomes for biodiversity, recreation, and carbon market valuation through Nova Scotia’s transition to ecological forestry	Province of Nova Scotia Forestry Innovation Transition Trust	2023 - 2029	\$1,574,720

* Acronyms: PI = principal investigator, co-I = co-investigator, collab = collaborator/co-applicant; partner = external partner organizations

TEACHING * at Dalhousie University unless otherwise indicated

Instructor

- 2025 Introduction to Evidence Synthesis, 6 students [undergraduate], ENVS 3801
- 2025 Environmental Science Capstone, 35 students [undergraduate], ENVS 4100
- 2024 Management of Natural Resources and the Environment, 29 students [graduate], ENVI 5504
- 2024 Environmental Science Capstone, 42 students [undergraduate], ENVS 4100

Invited guest lectures

- 2026 Environmental Science Capstone, 35 students [undergraduate], ENVS 4100
- 2023 Environmental Studies Capstone Project, 14 students [graduate], University of Washington
- 2022 Environmental Impact Assessment, 25 students [graduate], ENVI 5001
- 2021 Environmental Impact Assessment, 27 students [graduate], ENVI 5001

Teaching assistant

- 2025 Management of Natural Resources and the Environment, 45 students [graduate], ENVI 5504
- 2023 Management of Natural Resources and the Environment, 31 students [graduate], ENVI 5504
- 2023 Global Biogeochemical Cycles, 36 students [undergraduate], ENVS 3601
- 2020 Writing for the Sciences, 16 students [undergraduate], SCIE 1111

RESEARCH SUPERVISION

Graduate supervision

- 2022 – 23 Joy Rivers, Fisheries management in Napu'saqnuq (St. Mary's River) and alignment with Atlantic salmon (*Salmo salar*) conservation through an Ecologically Significant Area case study. Master of Marine Management, Dalhousie University. Co-supervised by Aimee Gromack, Fisheries and Oceans Canada.

Undergraduate supervision

- 2025 – 26 Rebeca Pietrosanu, Finding connection: Environmental drivers of Atlantic salmon (*Salmo salar*) predicted distribution in Napu'saqnuq (St. Mary's River). BSc Honours thesis, Dalhousie University. Co-supervised by Dr. Alana Westwood.
 - 'Best Oral Presentation' Award at Science Atlantic Environment Conference
- 2024 – 25 Mary Legorburu, Investigating the effects of forestry road crossings on stream health and benthic macroinvertebrate communities in Napu'saqnuq (St. Mary's River) in Mi'kmaki (Nova Scotia). BSc Honours thesis, Dalhousie University. Co-supervised by Dr. Alana Westwood.
- 2025 Ava Claypool, Samuel Bohan, Taylor Reece, Spencer Wilson, Influence of road crossings on Atlantic salmon habitat. Integrated Science (DISP) Research Project, Dalhousie University.
- 2023 – 24 Rosie Bleyer, Identifying and prioritizing barriers to Atlantic salmon habitat connectivity in Napu'saqnuq (St. Mary's River), Mi'kma'ki (Nova Scotia, Canada). BSc Honours thesis, Dalhousie University. Co-supervised by Dr. Alana Westwood.
 - 'Best Thesis' Award in Environmental Science

SCIENCE COMMUNICATION & OUTREACH

Written Pieces

- 2025 What 50 years of buried data tell us about Canada's mining oversight. *Policy Options*. Available [here](#).
- 2024 Ecological forestry brings hope to the Wabanaki forest. *Saltwire*. Available [here](#).
- 2024 Groundwater: The unsung hero. *OpenThink Blog Series*, Dalhousie University. Available [here](#).
- 2024 Fining big polluters can reduce environmental damage, but only if the fines match the crimes. *The Conversation Canada*. Available [here](#).
- 2023 Canada risks falling behind in aquatic science research when graduate students and postdocs aren't paid a living wage. *The Current*, 2. Available [here](#).

Interview features

- 2026 'Alarm bells' ring over new 'one project, one review' agreement between Ottawa and NS for environmental assessments. *Halifax Examiner*. Available [here](#).
- 2025 Researchers find gaps in environmental impact assessments of Canadian mining projects. *The Canadian Press*. Available [here](#).
- 2024 Does Canada fine industrial polluters enough to make a difference? *The Big Story Podcast*. Available [here](#).
- 2023 A community transformed from mining town to resort destination. It doesn't want to go back. *The Narwhal*. Available [here](#).
- 2022 Environmental safeguards at B.C. mines are being eroded by amendments, study says. *The Canadian Press*. Available [here](#).
- 2022 Western mining boom puts salmon species at risk, study warns. *Globe & Mail*. Available [here](#).

PROFESSIONAL / VOLUNTEER SERVICE

Journal referee (ad hoc)

2022 – *Nature Scientific Reports, Biological Conservation, Aquatic Ecosystem Health & Management*

Professional service

2022 – Member, Environmental Planning & Assessment Caucus, Canadian Environmental Network
2023 – 26 Co-chair, Forest Biodiversity & Management Committee, Ecological Forestry Research Initiative
2023 – 25 Member, Core Team, Ecological Forestry Research Initiative
2022 – 24 Member, Student and Early-Career Research Committee, Society of Canadian Aquatic Sciences
2021 – 22 Technical Advisor, Wildsight and Elk Valley Regional Land Trust
2020 – 21 Vice President of Communications, Dalhousie University Student Energy Chapter

CERTIFICATIONS AND TRAINING

2024 Canadian Aquatic Biomonitoring Network (CABIN) Field Protocol Certification
2023 Tri-Council Policy Statement: Core II on Research Ethics Certification
2023 Chainsaw Safety Certification
2022 Red Cross Swiftwater Rescue – Level 2
2022 Red Cross Wilderness and Remote First Aid / CPR
2018 Class 5 Driver's License

OTHER SKILLS / ACTIVITIES

Athletics

2020 – Member, Dalhousie University Tigers Golf Team. Competed in the 2025, 2024, and 2023 Nova Scotia Men's Amateur Championship, and 2021 and 2025 Nova Scotia University Golf Championships.
2017 – 20 Team Captain, University of Lethbridge Pronghorns Golf Team. Competed in numerous team and individual golf events including the 2020 British Columbia Men's Amateur Championship, 2019 Alberta Men's Amateur Championship, and 2018 Canadian University Golf Championship.