

## Erin N. MacDonald, M.Sc.

Email: [enmacdon@ualberta.ca](mailto:enmacdon@ualberta.ca) Tel: +1 780-220-5064

### EDUCATION

---

- University of Alberta, Edmonton, AB** 2017–2020  
Master of Science in Biological Sciences – Ecology  
Thesis Research Supervisor: Dr. Suzanne Tank  
Project Title: *Composition and Biodegradation of DOM Leached from Permafrost End-members across the Western Canadian Arctic*
- University of Waterloo, Waterloo, ON**  
Bachelor of Science in Environmental Science - Ecology (*co-op*) 2011–2016  
Honours Thesis Supervisor: Dr. Roland Hall  
Project Title: *Temporal variations in hydrological conditions and metal concentrations at Lake South of Tokyo Snye in the Athabasca Delta, Canada*
- Diploma in Ecological Restoration and Rehabilitation 2014–2016

### PEER-REVIEWED SCIENTIFIC PUBLICATIONS

---

- M. Kay, Wolfe, B., Remmer, **MacDonald, E.**, Vucic, J., Wiklund, J., Thomson, K., A., Brown, K., Wesenberg, K., C., Neary, Hall R., Owca, T., and W. Klemm. 2020. Evaluating temporal patterns of metals concentrations in floodplain lakes of the Athabasca Delta (Canada) relative to pre-industrial baselines. *Sci. Total Environ.* 704:135309
- M. Kay, Wiklund, J., Remmer, C., Brown, K., **MacDonald, E.**, Neary, L., Thomson, K., Vucic, J., Wesenberg, K., Hall R., and B. Wolfe. 2019. Bi-directional hydrological changes in perched lakes of the Athabasca Delta (Canada) in recent decades caused by natural processes. *Environ. Res. Commun.* 1: 081001
- E. MacDonald**, Brummell M.E., Bieniada A., Elliott J., Engering A., Gauthier T.-L., Saraswati S., Touchette S., Turmel-Courchesne L. and M. Strack. 2018. Using the Tea Bag Index to characterize decomposition rates in restored peatlands. *Boreal Env. Res.* 23: 221–235

### MANUSCRIPTS IN PREPARATION

---

- E. MacDonald**, Tank, S., Hutchins, R., Froese, D., and S. Kokelj. Permafrost end-members show variable and unique DOM composition across the western Canadian Arctic.
- E. MacDonald**, Tank, S., Saidi-Mehrabad, A., Lanoil, B., and S. Kokelj. Variable permafrost-DOM biodegradation leached from thaw slump headwalls on the Peel Plateau, NT.

### SCIENTIFIC REPORTS

---

- T. Ensom, Morse, P.D., Kokelj, S.V., **MacDonald, E.**, Young, J., Tank, S., Subedi, R., Grozic, E., and A. Castagner. 2020. Permafrost geotechnical borehole data synthesis: 2013–2017 Inuvik-Tuktoyaktuk region, Northwest Territories; Northwest Territories Geological Survey, NWT Open Report 2019-012; Geological Survey of Canada, Open File 8652, 78 pages, geotechnical data, and appendices.

## Erin N. MacDonald, M.Sc.

Email: [enmacdon@ualberta.ca](mailto:enmacdon@ualberta.ca) Tel: +1 780-220-5064

### SCIENTIFIC PRESENTATIONS

---

- E. MacDonald**, Tank, S., Hutchins, R., Kokelj, S., Froese, D., and B. Lanoil. DOM Composition and Biodegradation from Diverse Permafrost End-Members. Poster Presentation at the *American Geophysical Union*, Moscone Center, San Francisco, December 2019.
- E. MacDonald** and S. Tank. Carbon decomposition from headwalls of thaw slumps on the Peel Plateau, NT. Oral presentation at *Northern Research Day*, University of Alberta, Edmonton, March 2019
- E. MacDonald** and S. Tank. Carbon decomposition of leached permafrost from thaw slumps on the Peel Plateau, NT. Oral presentation at the *Association of Canadian Universities for Northern Studies*, University of Alberta, Edmonton, November 2018
- S. Tank and **E. MacDonald**. Carbon cycling in northern aquatic watersheds and the influence of permafrost thaw. Oral co-presenter at the *Summer Speaker Series*, Aurora Research Institute, Inuvik, July 2018
- E. MacDonald** and S. Tank. Carbon decomposition in permafrost in Northwest Territories, Canada. Oral presentation at the *Three Minute Thesis Finals*, University of Alberta, Edmonton, April 2018
- E. MacDonald**, Froese, D., Kokelj, S., Lanoil, B. and S. Tank. Carbon composition and microbial communities in permafrost-affected terrains. Oral presentation at *Northern Research Day*, University of Alberta, Edmonton, March 2018
- E. MacDonald**, Froese, D., Kokelj, S., Lanoil, B. and S. Tank. Carbon composition and microbial communities in permafrost. Oral presentation at *R. E. Peter Biology Conference*, University of Alberta, Edmonton, March 2018
- E. MacDonald** and S. Tank. Preliminary CO<sub>2</sub> and CH<sub>4</sub> flux in the Peel Plateau. Oral presentation at the *Association of Polar Early Career Scientists*, Aurora Research Institute, Inuvik, June 2017
- E. MacDonald**, Brummell, M., Bieniada, A., Elliott, J., Engering, A., Gauthier, T., Saraswati, S., Touchette, S., Turmel-Courchesne, L. and M. Strack. The Tea Bag Index to characterize decomposition rates in restored peatlands. Oral presentation at the *Canadian Association of Geographers Ontario Conference*, Waterloo, October 2016
- E. MacDonald**, Hall, R. and B. Wolfe. Temporal variations in hydrological conditions and metal concentrations at Lake South of Tokyo Snye in the Athabasca Delta, Canada. Oral presentation at the *University of Waterloo Biol 499 Honours thesis colloquium*, Waterloo, April 2016

### WORK EXPERIENCE

---

#### Research Assistant

Arctic Carbon Monitoring Project  
Woods Hole Research Center

June 2020–present

## Erin N. MacDonald, M.Sc.

Email: [enmacdon@ualberta.ca](mailto:enmacdon@ualberta.ca) Tel: +1 780-220-5064

- I synthesize data for use in the development of a circumpolar model that will predict how fires, permafrost thaw, and associated carbon emissions may respond to, and also contribute towards, future warming from climate change.

### Peer Writing Consultant

September 2018–March 2020

Center for Writers  
University of Alberta

- I provided one-on-one writing consultations on a variety of subjects and formats, ranging from English essays to post-doctoral teaching philosophies.
- I led multiple workshops on academic writing for a range of audiences, and previously ran a four-month writing group for international graduate science students.

### Research Assistant

May–August 2017

Aquatic Biogeochemistry Lab  
University of Alberta

- I completed field work for multiple projects collecting gas, stream, and soil samples from sites across the Northwest Territories, and assisted with sample processing and data entry.

### Research Assistant

May–December 2016

Greenhouse Gas Peatlands Lab  
University of Waterloo

- I synthesized decomposition data, producing a peer-reviewed scientific publication.
- I collected gas samples using flux chambers from peatlands across Ontario, Manitoba, and Alberta, and analyzed them on a gas chromatograph.
- I maintained the laboratory and trained new employees to use analytical equipment.

### Research Assistant

January–April 2015

National Guidelines and Standards Office  
Environment Canada – Science and Technology Branch

- I processed and analyzed data, and wrote the background information for the Scientific Supporting Document for the National Water Quality Guideline on Manganese.

### AWARDS AND SCHOLARSHIPS

---

University of Alberta, Dept. of Biological Sciences <b>Graduate Fellowship</b> (\$8,000)	2019
University of Alberta, Bill Samuel <b>Graduate Student Service Award</b> (\$400)	2019
UAlberta North, <i>Northern Research Day</i> , <b>Oral Presentation Winner</b> (\$200)	2019
University of Alberta, <b>Queen Elizabeth II Graduate Scholarship Award</b> (\$10,800)	2018
UAlberta North, <i>Northern Research Day</i> , <b>Oral Presentation Finalist</b> (\$100)	2018
Dept. of Biological Sciences, <i>Three Minute Thesis</i> , <b>Oral Presentation Finalist</b> (\$50)	2018
Steve and Elaine Antoniuk <b>Graduate Scholarship in Arctic Research</b> (\$7,500)	2017
National Science and Engineering Research Council (NSERC) <b>CGS-M</b> (\$17,500)	2017
University of Alberta, Walter H. Johns <b>Graduate Fellowship</b> (\$5,900)	2017

## Erin N. MacDonald, M.Sc.

Email: [enmacdon@ualberta.ca](mailto:enmacdon@ualberta.ca) Tel: +1 780-220-5064

University of Alberta, Dean's Excellence <b>Recruitment Scholarship Award</b> (\$5,000)	2017
University of Alberta, <b>Faculty of Science Scholarship</b> (\$2,000)	2017
University of Waterloo, <b>Faculty of Science Entrance Scholarship</b> (\$1,000)	2011

### RESEARCH FUNDING

Aurora Research Institute <b>Research Fellowship Program</b> (\$6,000)	2018
Northern Scientific <b>Training Program</b> (\$3,800)	2018
University of Alberta <b>Northern Research Award</b> (\$4,000)	2018

### LEADERSHIP AND OUTREACH

**President** of *Circumpolar Students' Association* (University of Alberta) 2018–2019

- I oversaw all student group activities, including planning a student research conference.
- We successfully recruited an esteemed Inuit activist (Aayu Peter) to travel from Iqaluit, NU, to be our conference keynote and speak at a public screening of *Angry Inuk*.

*Grad Student Showcase*, Telus Science Centre, Edmonton May 2018

- I created scientific demonstrations and interactive models to teach people (both children and adults) about carbon cycling and processing within streams.