

# Blaize A. Denfeld

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## Research Interests

Global Environmental Change, Climate Change, Watershed Biogeochemistry, Arctic Ecosystems, Land-Water-Atmosphere Interactions, Human-Environment Relations, GIS/Spatial Analysis, Team Science, Science Policy

## Education

Ph.D., Limnology/Biogeochemistry, *Uppsala University, Uppsala, Sweden* 2016  
M.A., Geographical Information Science, *Clark University, MA, USA* 2011  
B.A., Earth System Science, *Clark University, MA, USA* 2010

## Professional Employment

AAAS S&T Policy Fellow at NASA HQ, *Washington DC, USA* Sept 2018–present  
Postdoctoral Researcher, *Umeå University, Umeå, Sweden* Apr 2016–Jul 2018  
Nordic Centers of Excellence Fellow, *Uppsala University, Uppsala, Sweden* Sept 2011–Mar 2016  
Environmental Outreach Coordinator, *Ecotarium, Worcester, MA, USA* Sept 2010–May 2011  
Water Quality Monitor, *Blackstone River Coalition, Worcester, MA, USA* Fall 2010  
Field Assistant, *The Polaris Project, Northeast Siberia, Russia* Summer 2009, 2010  
GIS Expert, *Department of Public Works, Lexington, MA, USA* Summer 2008

## Teaching Experience

*Course Instructor – Uppsala University*  
Limnology Seminar (*PhD level course development and implementation*) Summer 2013  
The Baltic Sea Environment (*Online course for students & professionals*) Fall 2012–2014  
Applied Ecosystem Ecology- GIS Module (*Master level course*) Fall 2011–2014

*Guest Lecturer – Umea University*  
Climate Impact on Lake Biogeochemistry (*Master/PhD level course*) Fall 2017  
Tips for Scientific Writing (*PhD level course*) Fall 2017

*Teacher Training – Uppsala University*  
Teaching Evaluation and Mentorship Program Fall 2014  
Academic Teacher Training Course Spring 2013

## Personal Achievements and Awards

Travel Fellowships (\$3,500), *Global Lake Ecological Observatory Network* 2012–2017  
Outstanding Reviewer Award, *American Geophysical Union* 2015  
Environmental Research Grant (~\$36,000), *Malméns Foundation* 2012–2014  
Anna Maria Lundins Travel Scholarship (\$1,000), *Småland Nation* 2014  
Travel and Accommodation Scholarship (\$250), *Nordflux* 2013

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IPY Accommodation Award, <i>APECS</i>	2012
Travel Award (\$500), <i>American Geophysical Union</i>	2010
Richard Fairbanks Athletic Community Service Award, <i>Clark University</i>	2010
Gamma Theta Upsilon, Geography Honor Society, <i>Clark University</i>	2009
NEWMAC Scholar Athlete, <i>Clark University Women's Basketball</i>	2006–2010
Presidential Scholar, Merit-based scholarship, <i>Clark University</i>	2006–2010

## Leadership and Community Service

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AAAS Water Affinity Group Co-chair	2018-present
Lake Site Project Scientist, Stortjärn Lake, Sweden, <i>SITES Water</i>	2016–2018
Session Chair, <i>Aquatic Sciences Meeting</i>	2017
GLEON Meeting Program Committee ( <i>South Korea, Austria, NY/USA</i> )	2015-2017
Chair/Co-chair Elect, <i>GLEON Student Association</i>	2015-2017
Representative on Graduate Student Board, <i>Uppsala University</i>	2013–2014
Program Assistant, Luxembourg May Term, <i>Clark University</i>	2010
Student-Athlete Outreach Director, <i>SAAC Clark University</i>	2008–2010
Trek Outward Bound Expedition Leader, <i>Clark University</i>	Summer 2008

## Publications

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*\*Indicates shared first authorship*

Knoll, L.B., S. Sharma, **B.A. Denfeld**, G. Flaim, Y. Hori, J.J. Magnuson, D. Straile, G.A. Weyhenmeyer. 2019. Consequences of lake and river ice loss on cultural ecosystem services. *Limnol. Oceanogr. Letters*, doi: 10.1002/lol2.10116.

Lupon, A., **B.A. Denfeld**, H. Laudon, J. Leach, J. Karlsson, R.A. Sponseller. 2019. Groundwater inflows control patterns and sources of greenhouse gas emissions from streams. *Limnol. Oceanogr.* doi: 10.1002/lno.11134.

Block, B.D., **B.A. Denfeld**, J.D. Stockwell, G. Flaim, H.-P. Grossart, L.B. Knoll, D. Maier, R.L. North, M. Rautio, J.A. Rusak, S. Sadro, G.A. Weyhenmeyer, A. Bramburger, D.K. Branstrator, K. Salonen, S.E. Hampton. 2018. The unique methodological challenges of winter limnology *Limnol. Oceanogr. Methods*, doi: 10.1002/lom3.10295.

Marieke A. Frassl, M.A., D.P. Hamilton, **B.A. Denfeld**, E. de Eyto, S.E. Hampton, P.S. Keller, S. Sharma, A.S.L. Lewis, G.A. Weyhenmeyer, C.M. O'Reilly, M.E. Lofton, N. Catalán. 2018. Ten simple rules for collaboratively writing a multi-authored paper. *PLoS Comput Biol* 14: doi.org/10.1371/journal.pcbi.1006508.

**Denfeld, B.A.**, M. Klaus, H. Laudon, R.A. Sponseller & J. Karlsson. 2018. Carbon dioxide and methane dynamics in a small boreal lake during winter and spring melt events. *J. of Geophys. Res. Biogeosciences*, doi: 10.1029/2018JG004622.

**Denfeld, B. A.,** H. Baulch, S.E. Hampton, P. Del Giorgio & J. Karlsson. 2018. A synthesis of carbon dioxide and methane dynamics during the ice-covered period of northern lakes. *Limnol. Oceanogr. Letters*, doi: 10.1002/lol2.10079.

Engel, F., K. Farrell, I. M. McCullough, F. Scordo, **B.A. Denfeld**, H. A. Dugan, E. de Eyto, P.C. Hanson, R.P. McClure, P. Noges, T. Noges, E. Ryder, K.C. Weathers, G.A. Weyhenmeyer. 2018. A lake classification concept for a more accurate estimate of the dissolved inorganic carbon export from terrestrial ecosystems to inland waters. *Sci. Nat.*, doi: 10.1007/s00114-018-1547-z.

**Denfeld, B.A.,** P. Kortelainen, M. Rantakari, S. Sobek, G.A. Weyhenmeyer. 2016. Regional variability and drivers of below ice  $p\text{CO}_2$  in boreal and subarctic lakes. *Ecosystems*, 19: 461-476.

**Denfeld, B.A.\***, M. Ricão Canelhas \*, G.A. Weyhenmeyer, S. Bertilsson, A. Eiler & D. Bastviken. 2016. Constraints on methane oxidation in ice-covered boreal lakes. *J. of Geophys. Res. Biogeosciences*, 121: 2016JG003382.

Ricão Canelhas, M.\*, **B.A. Denfeld\***, G.A. Weyhenmeyer, D. Bastviken & S. Bertilsson. 2016. Methane oxidation at the water-ice interface of an ice-covered lake. *Limnol. Oceanogr*, 61: 1814-25.

Chmiel, H. E., J. Kokic, **B.A. Denfeld**, K. Einarsdottir, M. Wallin, A. Isodorova, B. Koehler, D. Bastviken, M.-E. Ferland & S. Sobek. 2016. The role of lake sediments in the carbon budget of a small boreal lake. *Limnol. Oceanogr*, 61: 1814-1825.

**Denfeld, B.A.,** M. Wallin, E. Sahlée, S. Sobek, J. Kokic, H.E. Chmiel & G.A. Weyhenmeyer. 2015. Temporal and spatial carbon dioxide concentration patterns in a small boreal lake in relation to ice cover dynamics. *Boreal Environ. Res.* 20: 679-692.

Kokic, J., M. Wallin, H.E. Chmiel, **B.A. Denfeld** & S. Sobek. 2014. Carbon dioxide evasion from headwater systems strongly contributes to the total export of carbon from a small boreal lake catchment. *J. of Geophys. Res. Biogeosciences* 120: 13-28.

**Denfeld, B.A.,** K.E. Frey, W.V. Sobczak & R.M. Holmes. 2013. Summer  $\text{CO}_2$  evasion from streams and rivers in the Kolyma River basin, Northeast Siberia. *Polar Res.*, 32:1, doi: 10.3402/polar.v32i0.19704.

## **Presentations (Oral)**

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**Denfeld, B. A.,** Global Lake Ecological Observatory Network: Graduate Student Perspective (Invited). *GLEON 19 Meeting*, NY, USA (27 Nov–1 Dec 2017).

**Denfeld, B. A.,** Baulch, H., Del Giorgio, P., Hampton, S. & J. Karlsson. Winter carbon dynamics in northern lakes: Implications of a changing ice-cover. *Aquatic Sciences Meeting*. Hawaii, USA (26 Feb–3 Mar 2017)

**Denfeld, B. A.,** & G. Hong. Science of Team Science. *GLEON 17 Student Association Workshop*. Chuncheon, South Korea (12 October 2015)

**Denfeld, B. A.,** M. R. Canelhas, S. Bertilsson, D. Bastviken, & G. A. Weyhenmeyer. Methane accumulation and oxidation at the water-ice interface in an ice-covered lake. *Aquatic Sciences Meeting*. Granada, Spain (22–27 February 2015)

- Denfeld, B. A.,** P. Kortelainen, M. Rantakari, S. Sobek, & G.A. Weyhenmeyer. Dynamics and controls of CO<sub>2</sub> accumulation in ice-covered lakes of Scandinavia (Invited). *Gas Exchange Between Fresh Waters and the Atmosphere Workshop*, Hyytiälä, Finland (16–19 September 2014)
- Denfeld, B.A.,** & G. A. Weyhenmeyer. Local scale under ice CO<sub>2</sub> processes in boreal lakes. *Nordic Centers of Excellence CRAICC Annual Meeting*. Aarhus, Denmark (21–23 August 2013)
- Denfeld, B. A.** Remote Sensing of the Cryosphere. *Color of Water Workshop*. Uppsala, Sweden (14–15 June 2013)
- Denfeld, B. A.** Under ice CO<sub>2</sub> dynamics in Nordic lakes: Implications of a changing cryosphere. *National Carbon Budget within the Nordic Region Workshop*. Roskilde, Denmark (20–22 March 2013)
- Denfeld, B. A.** Implications of a changing cryosphere on lake CO<sub>2</sub> dynamics (Invited) *Nordic Centers of Excellence TRI conference*. Bergen, Norway (7–8 November 2012)
- Denfeld, B. A.,** & G. A. Weyhenmeyer. Under ice CO<sub>2</sub>: Implications of a changing cryosphere. *Nordic Centers of Excellence CRAICC Annual Meeting*. Oslo, Norway (26–28 September 2013)
- Denfeld, B. A.** Arctic Freshwater Ecology (Invited Guest Lecture) *Freshwater Ecology Undergraduate Course*, College of the Holy Cross, Worcester, MA, USA (Autumn 2010)

## Presentations (Poster)

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- Denfeld, B. A.,** J. Karlsson & H. Laudon. New site: Stortjärn Lake, Krycklan, Sweden. *GLEON 18 Meeting*. Gaming, Austria (4–8 July 2016)
- Denfeld, B. A.,** M. R. Canelhas, S. Bertilsson, D. Bastviken, & G. A. Weyhenmeyer. Constraints on CH<sub>4</sub> oxidation in ice-covered lakes of Sweden. *GLEON 17 Meeting*. Chuncheon, South Korea (12–16 October 2015)
- Denfeld, B. A.,** M. Wallin, E. Sahlée, S. Sobek, J. Kokic, H. Chmiel, & G.A. Weyhenmeyer. In-lake carbon dioxide concentration patterns in four distinct phases in relation to ice cover dynamics. *American Geophysical Union Meeting*. San Francisco, CA, USA (15–19 December 2014)
- Denfeld, B. A.,** & G. A. Weyhenmeyer. Under ice CO<sub>2</sub> dynamics in lakes across the boreal region. *GLEON 16 Meeting*. Orford, Canada (27–31 October 2014)
- Denfeld, B. A.,** & G. A. Weyhenmeyer. Under ice high frequency pCO<sub>2</sub> in a boreal lake and CO<sub>2</sub> outburst. *GLEON 15 Meeting*. Bahia Blanca, Argentina (4–8 November 2013)
- Denfeld, B. A.,** K. E. Frey, W.V. Sobczak & R. M. Holmes. Summer CO<sub>2</sub> Evasion from streams and rivers in the Kolyma River Basin, Northeast Siberia. *International Polar Year Conference*. Montréal, Canada (22–27 April 2012)
- Denfeld, B. A.,** K. E. Frey, R. M. Holmes & W. V. Sobczak. Outgassing of CO<sub>2</sub> from streams and rivers in the Kolyma River Basin, Northeast Siberia. *Association of American Geographers Meeting*. Seattle, WA, USA (12–16 April 2011)
- Denfeld, B. A.,** K. E. Frey, E. B. Bulygina, T. Drake, R. M. Holmes, J. D. Schade, W. V. Sobczak & N. Zimov. Carbon processing in the Kolyma River Watershed and the role it plays in CO<sub>2</sub> outgassing. *American Geophysical Union Meeting*. San Francisco, CA, USA (13–17 December 2010)
- Denfeld, B. A.,** & K. E. Frey. Impacts of watershed characteristics on the biogeochemistry of the Kolyma River Basin, Northeast Siberia. *Association of American Geographers Meeting*. Washington, DC, USA (14–18 April 2010)
- Denfeld, B. A.,** K. E. Frey, E. B. Bulygina, A. Bunn, S. Chandra, S. Davydov, R. M. Holmes, J. Schade, et al. Impacts of Watershed Characteristics on the Biogeochemistry of the Kolyma River Basin. *State of the Arctic Meeting*. Miami, FL, USA (16–19 March 2010)

## Scientific Features- Highlights, Multimedia, Blogs

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Featured Publication in EOS Editor's Highlight, <a href="https://eos.org/editor-highlights/what-lies-and-waits-beneath-lake-ice">https://eos.org/editor-highlights/what-lies-and-waits-beneath-lake-ice</a>	2018
Contributed to the GLEON Student Blog, <a href="http://blog.gleon.org/">http://blog.gleon.org/</a>	2015–2017
Created Multimedia Research Presentation, <a href="http://www.youtube.com/watch?v=B14vd04nfHo">http://www.youtube.com/watch?v=B14vd04nfHo</a>	2012
Featured in Student Impact Video, The Polaris Project, <a href="http://www.thepolarisproject.org/multimedia/videos/student-impact/">http://www.thepolarisproject.org/multimedia/videos/student-impact/</a>	2010
Interviewed for the New York Times Dot Earth Blog, <a href="http://dotearth.blogs.nytimes.com/2009/07/24/a-postcard-from-the-pleistocene/">http://dotearth.blogs.nytimes.com/2009/07/24/a-postcard-from-the-pleistocene/</a>	24 July 2009
Featured in Student Project Video, The Polaris Project, <a href="http://www.thepolarisproject.org/multimedia/videos/survey/">http://www.thepolarisproject.org/multimedia/videos/survey/</a>	2009
Contributed to The Polaris Project Field Notes, <a href="http://www.thepolarisproject.org/blog/">http://www.thepolarisproject.org/blog/</a>	2009–2010

## Review Services

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**Journal Reviews:** Biogeochemistry, Ecology, Global Biogeochemical Cycles, Inland Waters, Journal of Geophysical Research–Biogeosciences, Environmental Science & Technology, Freshwater Biology, Aquatic Sciences, Limnology and Oceanography Letters

## Skills

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- GIS and Remote Sensing: ArcMap (proficient), Idrisi (intermediate)
- Programming: R (intermediate), Matlab (basic)
- Organizational management: Scientific meetings/workshops, social events, liaison
- Language skills: English (native), Swedish (conversational), Spanish (basic)