

Yvonne Vadeboncoeur
Professor
Department of Biological Sciences
Wright State University
Dayton, OH 45435
yvonne.vadeboncoeur@wright.edu

EDUCATION

Ph.D. Aquatic Ecology 1998. University of Notre Dame, Notre Dame, IN.

M.A. Zoology 1988. University of Montana, Missoula, MT.

B.A. Zoology, with Honors. 1983. University of Montana, Missoula, MT.

PROFESSIONAL APPOINTMENTS

Professor (2015), Department of Biological Sciences. Wright State University, Dayton, OH.

Associate Professor (September 2008-2015). Department of Biological Sciences. Wright State University, Dayton, OH.

Assistant Professor (2003-2008). Department of Biological Sciences. Wright State University, Dayton, OH.

Assistant Scientist (2002 – 2003). Natural Resources, Ecology and Management, Iowa State University, Ames, IA.

FELLOWSHIPS

Fulbright US Scholar (2019). Cawthron Institute, New Zealand

GRIL Postdoctoral Fellow (2000 –2002). Department of Biology McGill University, Montreal, Quebec, Canada.

National Science Foundation-NATO Postdoctoral Fellow (1998 –1999). National Environmental Research Institute, Denmark.

Clare Boothe Luce Graduate Fellowship (1992-1993). University of Notre Dame, Notre Dame IN.

PEER REVIEWED PUBLICATIONS

*Katona, LR, LE Burlakova, AY Karatayev, and **Y Vadeboncoeur**. Microbial N cycling may explain progressive enrichment of benthic primary producer and dreissenid ¹⁵N with depth in lakes. In review in *Ecosystems*.

Stewart, SD, R Holmes, **Y Vadeboncoeur**, S Bury, and S Crump. Sea to the mountains: Quantifying eel and trout diet reliance on marine subsidies from īnanga in a lowland catchment. Accepted in *New Zealand Journal of Marine and Freshwater Research*.

Vadeboncoeur Y, MV Moore, SD Stewart, S Chandra, KS Atkins, JS Baron, K Bouma-Gregson, S Brothers, SN Francoeur, L Genzoli, SN Higgins, S Hilt, LR *Katona, D Kelly, IA Oleksy, T Ozersky, ME Power, D Roberts, AP Smits, F Tromboni, MJ Vander Zanden, EA Volkova, AS Waters, SA Wood, M Yamamuro. 2021. Blue waters, green bottoms: Benthic Filamentous Algal Blooms (FABs) are an emerging threat to clear lakes worldwide. *BioScience* 71:1011-1027. * This publication was the result of a major

- international collaboration that I led. It garnered popular press coverage in Japan, Germany, New Zealand, California, Montana, and Wisconsin.
- Olafsson, M. ME Power, DA Stahl, **Y Vadeboncoeur** and ME Brett. 2021. Cryptic constituents: the paradox of high flux-low concentration components of aquatic ecosystems. *Water*. 13, 2301.
- *Katona, LR, **Y Vadeboncoeur**, C Neitch, and K Hossler. 2021. A novel thin-film technique to improve accuracy of fluorescence-based estimates for periphytic biofilms. *Water*, 13, 1464.
- Brothers S and **Y Vadeboncoeur**. 2021. Shoring up the foundations of production to respiration ratios in lakes. *Limnology and Oceanography*.66:2762-2778.
- Bouma-Gregson K, ME Power, PC Furey, CJ Huckins and **Y Vadeboncoeur**. 2021. Taxon-specific photosynthetic responses of attached algal assemblages to experimental translocation between river habitats. *Freshwater Science* 40:175-190.
<https://doi.org/10.1086/713095>. (I am co-corresponding author with Keith Bouma-Gregson).
- Tran PQ, SC Bachand, PB McIntyre, BM Kraemer, **Y Vadeboncoeur**, IA Kimirei, R Tamatamah, KD McMahon, and K Anantharaman. 2021. Depth-discrete metagenomics reveals the roles of microbes in biogeochemical cycling in the tropical freshwater Lake Tanganyika. *The ISME Journal*. <https://doi.org/10.1101/834861>
- Vander Zanden, MJ and **Y Vadeboncoeur**. 2020. Putting the lake back together 20 years later: What in the benthos have we learned about habitat linkages in lakes? *Inland Waters* doi: 10.1080/20442041.2020.1712953.
- Wood SA, LT Kelly, K Bouma-Gregson, J-F Humbert, HD Laughinghouse IV, J Lazorchak, TG McAllister, A McQueen, K Pokrzywinski, J Puddick, C Quiblier, LA Reitz, KG Ryan, **Y Vadeboncoeur**, A Zastepa, TW Davis. 2020. Toxic benthic freshwater cyanobacterial proliferations: Challenges and solutions for enhancing knowledge and improving monitoring and mitigation. *Freshwater Biology* 65:1824–1842.
- Munubi, R.N., P.B. McIntyre, and **Y. Vadeboncoeur**. 2018. Do grazers respond to or control food quality? Cross-scale analysis of algivorous fish in littoral Lake Tanganyika. *Oecologia*. DOI 10.1007/s00442-018-4240-1
- Pätzig, M, **Y. Vadeboncoeur**, and Mario Brauns. 2018. Lakeshore modification reduces secondary production of macroinvertebrates in littoral but not deeper zones. *Freshwater Science* 37: DOI: 10.1086/700885.
- Vadeboncoeur Y.** and M. E. Power. 2017. Attached algae: the cryptic base of inverted trophic pyramids in fresh waters. *Annual Review of Ecology, Evolution, and Systematics*. 48:258-279.
- Brothers, S., **Y Vadeboncoeur** and P Sibley. 2017. A decline in benthic algal production may explain recent hypoxic events in Lake Erie's central basin. *Journal of Great Lakes Research*. 43:73-78.
- Kelly, B.K., E. Mtiti, P.B. McIntyre, and **Y. Vadeboncoeur**. 2017. Nitrogen stable isotopes reveal sewage contamination of Lake Tanganyika by shoreline villages. *Environmental Management* 59:264–273.

- Lukens, NR, BM Kraemer, V Constant, EJ Hamann, E Michel, AM Socci, **Y Vadeboncoeur** and PB McIntyre. 2017. Animals and their epibiota as net autotrophs: size scaling of epibiotic metabolism on snail shells. *Freshwater Science*. 36:307-315 DOI:10.1086/691438
- Brothers, S., **Y. Vadeboncoeur** and P. Sibly. 2016. Benthic algae compensate for phytoplankton losses in large aquatic systems. *Global Change Biology* 22:3865-3873.
- Drerup, S.A. and **Y. Vadeboncoeur**. 2016. Elevated specific conductance enhances productivity and biomass of periphytic cyanobacteria from Lake Tahoe and Lake Tanganyika. *Phycologia* 55: 295–298.
- Devlin, S.P., M.J. Vander Zanden, and **Y. Vadeboncoeur**. 2016. Littoral-benthic primary production estimates: sensitivity to simplifications with respect to periphyton productivity and basin morphometry. *Limnology and Oceanography Methods*. DOI: 10.1002/lom3.10080
- Kraemer, B.M, S. Hook, T. Huttula, P. Kotilainen, C. M. O'Reilly, A. Peltonen, P-D. Plisnier, J. Sarvala, R.Tamatamah, **Y. Vadeboncoeur**, B. Wehrli and P. B. McIntyre. 2015. Century-long changes in the thermal structure of Lake Tanganyika. *PLoS ONE* 10(7): e0134537. doi: 10.1371/journal.pone.0134537
- Kraemer, B.M., O. Anneville, S. Chandra, M. Dix, E. Kuusisto, D.M. Livingstone , A. Rimmer, G. Schladow, E. Silow, L.M. Sitoki, R. Tamatamah, **Y. Vadeboncoeur** and P. B. McIntyre. 2015. Morphometry and average temperature affect global lake stratification responses to climate change. *Geophysical Research Letters* 42: 4981-4988
- Higgins, S.N., B. Althouse, *S.P. Devlin, **Y. Vadeboncoeur**, and M.J. Vander Zanden. 2014. Potential for large-bodied zooplankton and dreissenids to alter the productivity and autotrophic structure of lakes. *Ecology* 95: 2257-2267.
- Vadeboncoeur, Y.**, *S.P. Devlin, P.B. McIntyre, and M.J. Vander Zanden. 2014. Is there light after depth? Distribution of periphyton chlorophyll and productivity in lake littoral zones. *Freshwater Science* 33:524-536.
- Devlin, S.P., M.J. Vander Zanden, and **Y. Vadeboncoeur**. 2013. Depth-specific variation in carbon isotopes demonstrates resource partitioning among the littoral zoobenthos. *Freshwater Biology* 58:2389-2400.
- Genkai-Kato, M., **Y. Vadeboncoeur**, L. Liboriussen, and E. Jeppesen. 2012. Benthic–planktonic coupling, regime shifts, and whole-lake primary production in shallow lakes. *Ecology* 93:619-631.
- Butkas, K.J., **Y. Vadeboncoeur**, and M.J. Vander Zanden. 2011. Estimating benthic invertebrate production in lakes: a comparison of methods and scaling from individual taxa to the whole-lake level. *Aquatic Sciences* 73:153–169.
- Higgins, S.N., M.J. Vander Zanden, L.N. Joppa, and **Y. Vadeboncoeur**. 2011. The effect of dreissenid invasions on chlorophyll and the chlorophyll : total phosphorus ratio in north-temperate lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 319-329.
- Vadeboncoeur, Y.**, P.B. McIntyre, and M. J. Vander Zanden. 2011. Borders of biodiversity: life at the edge of the world’s large lakes. *BioScience* 61:526-537.
- Vander Zanden, M.J. **Y. Vadeboncoeur**, and S. Chandra. 2011. Fish reliance on littoral-benthic resources and the distribution of primary production in lakes. *Ecosystems* 14:894-903.

- Vadeboncoeur, Y.,** G. Peterson, M.J. Vander Zanden, and J. Kalff. 2008. Benthic algal production across lake-size gradients: Interactions among morphometry, nutrients and light. *Ecology* **89**:2542-2552.
- Vander Zanden, M.J., S. Chandra, S-K Park, **Y. Vadeboncoeur,** and C. R. Goldman. 2006. The relative efficiencies of benthic and pelagic trophic pathways in a subalpine lake. *Canadian Journal of Fisheries and Aquatic Sciences*. 63:2608-2620.
- Vadeboncoeur, Y.,** J. Kalff, K. Christoffersen, and E. Jeppesen. 2006. Substratum as a driver of variation in periphyton chlorophyll and productivity in lakes. *Journal of the North American Benthological Society* 25:379-392.
- Vadeboncoeur, Y.,** Kevin S. McCann, M. Jake Vander Zanden, and Joseph B. Rasmussen. 2005. Effects of multi-chain omnivory on the strength of trophic control. *Ecosystems*. **8**: 692-683.
- Vander Zanden, M. J., **Y. Vadeboncoeur,** M. W. Diebel, and E. Jeppesen. 2005. Primary consumer stable nitrogen isotopes as indicators of nutrient source. *Environmental Science and Technology* **39**:7509-7515.
- Vander Zanden, M. J., T. E. Essington, and **Y. Vadeboncoeur.** 2005. Is pelagic top-down control in lakes augmented by benthic energy pathways? *Canadian Journal of Fisheries and Aquatic Sciences* **62**:1422-1431.
- Vadeboncoeur, Y.,** E. Jeppesen, M. J. Vander Zanden, H-H. Schierup, K. Christoffersen, and D. M. Lodge. 2003. From Greenland to green lakes: cultural eutrophication and the loss of benthic energy pathways in lakes. *Limnology and Oceanography* **48**:1408-1418.
- Vadeboncoeur, Y.,** M. J. Vander Zanden, and D. M. Lodge. 2002. Putting the lake back together: reintegrating benthic pathways into lake food web models. *BioScience* 52: 44-55.
- Vander Zanden, M. J. and **Y. Vadeboncoeur.** 2002. Fish as integrators of benthic and pelagic food chains in lakes. *Ecology* 83: 2152-2161.
- Vadeboncoeur, Y.,** and A.D. Steinman. 2002. Periphyton function in lake ecosystems. *Scientific World JOURNAL* 2:1449-1468.
- Vadeboncoeur, Y.,** D. M. Lodge, and S. R. Carpenter. 2001. Whole-lake fertilization effects on the distribution of primary production between benthic and pelagic habitats. *Ecology*. 82:1065-1077.
- Vadeboncoeur, Y.,** and D. M. Lodge. 2000. Periphyton production on wood and sediments: substratum-specific response to laboratory and whole-lake nutrient manipulations. *Journal of the North American Benthological Society* 19: 68-81.
- Vadeboncoeur, Y.** and D. M. Lodge. 1998. Dissolved inorganic carbon sources for epipelagic algae: sensitivity of primary production estimates to spatial and temporal distribution of ¹⁴C. *Limnology and Oceanography* 43: 1222-1226.
- Blumenshine, S.C., **Y. Vadeboncoeur,** D.M. Lodge, K.L. Cottingham, and S.E. Knight. 1997. Benthic-Pelagic Links: responses of benthos to water-column nutrient enrichment. *Journal of the North American Benthological Society* 16: 466-479. (cited: 80)
- Vadeboncoeur, Y.** 1994. Longitudinal dynamics of seston concentration and composition in a lake outlet stream. *Journal of the North American Benthological Society* 13:181-189.

BOOK CHAPTERS

Vadeboncoeur Y and RL Lowe. 2022. Benthic Algae and Cyanobacteria of the Littoral Zone. Chapter 25 in *Wetzel's Limnology (4th edition)*. I was commissioned to rewrite a chapter of the most widely printed Limnology textbook (*Limnology: Lake and River Ecosystems 3rd Edition* (2001)). Elsevier

Vadeboncoeur Y and LR Katona. 2022. Benthic Algae in Lake Littoral Habitats in The Encyclopedia of Inland Waters. 2nd Edition. Elsevier.

Vadeboncoeur, Y. Aquatic plants and attached algae. In: *The Encyclopedia of Inland Waters*. G.E. Likens, editor. p 52-59. Elsevier Press, Oxford UK. 2009.

Lodge, D.M., S.C. Blumenshine, and **Y. Vadeboncoeur**. 1998. Insights and application of large-scale, long-term ecological observations and experiments. In W. J. Resetarits and J. Bernardo, eds. *Issues and Perspectives in Experimental Ecology*. Oxford University Press.

REPORTS

Vadeboncoeur, Y, MV Moore, S. Chandra, and SD Stewart. 2020. Littoral Greening of Clear Lakes: The Mystery of Benthic Filamentous Algal Bloom. *Limnology and Oceanography Bulletin*. 487–497. <https://doi.org/10.1016/j.jglr.2016.02.011>.

Vadeboncoeur, Y., P.B. McIntyre, C. Apse, T. Tear and I. Kimirei. 2013. Tuungane Project Baseline Ecological Study: An Assessment of the Near-shore Biodiversity of Lake Tanganyika in Mahale Mountains National Park and Surrounding Villages. The Nature Conservancy. 61p.

PLENARY AND KEYNOTE ADDRESSES

Vadeboncoeur, Y. 2018. Clearing a way back: Illuminating the littoral in lakes and limnology. **Plenary Lecture**. New Zealand Freshwater Science Society. Nelson, New Zealand. 12 December 2018.

Vander Zanden, MJ and **Y. Vadeboncoeur**. 2018. Emerging perspectives on the role of benthic production and food web linkages in lakes. **Plenary Lecture**. 34th Congress of the International Society of Limnology, Nanjing China. August 2018.

Vadeboncoeur, Y. 2013. Paradigms of scale and the function of littoral zones in large lakes. **Plenary Lecture**, International Association of Great Lakes Research. Purdue University.

Vadeboncoeur, Y. 2010. The changing nature of habitat coupling across lake-size gradients: deep thoughts on shallow waters. **Keynote Address**, Symposium on ‘The Role of Littoral Processes in Lake Ecology’. Konstanz Germany.

Vadeboncoeur, Y. 2002. The benthic connection: integrated food webs in shallow lakes. **Plenary Lecture** - International Conference on Limnology of Shallow Lakes. Balantonsfüred, Hungary.

INVITED PUBLIC OUTREACH PRESENTATIONS

Vadeboncoeur, Y. 2022. Blue waters, green bottoms: shoreline development, nutrients, and nuisance algal blooms in clear lakes. Public presentation in Kalispell, Montana to address emerging nearshore problems associated with increased use of lakeshore cabins.

Vadeboncoeur, Y. 2021. Nearshore attached Filamentous Algal Blooms (FABs): A new and growing problem. *This online presentation was for the Algal Bloom Action Network Webinar Series.* <https://www.youtube.com/watch?v=vr9zOwtbVas>

INVITED PRESENTATIONS

- Vadeboncoeur Y** and LR *Katona. Benthic algal distribution, abundance, and ecology across Lake Erie's basins. Invited Presentation for Lake Erie Special Session at the Joint Aquatic Sciences Meeting (JASM), Grand Rapids, MI, May 2022. JASM is a combined meeting of national and international aquatic sciences and fisheries societies.
- Vadeboncoeur, Y.** 2017. Algae should be eaten and not seen: linking land-use to healthy aquatic food webs. Ohio State University Stone Laboratory. Guest Lecturer. 29 June 2017. https://www.youtube.com/watch?v=eWBU8EU_3RQ
- Vadeboncoeur, Y.** 2014. Algae are meant to be eaten and not seen: interactive controls on a cryptic basal resource in lake ecosystems. Departmental Seminar, Ohio University. February 2014.
- Vadeboncoeur, Y.** 2010. Borders of Biodiversity: Life at the edge of the world's large lakes. Invited presentation, Leibniz-Institute of Freshwater Ecology and Inland Fisheries. Berlin Germany.
- Vadeboncoeur, Y.** 2010. Paradigms of the plankton and the spatial variation of periphyton in lakes. Invited seminar, Umeå University, Umeå Sweden.
- McIntyre, P.B. **Y Vadeboncoeur**, and M. Jake Vander Zanden. 2008. Aquatic animal diversity in the world's great lakes. Society for Conservation Biology.
- Vadeboncoeur, Y.** 2006. Life on the edge: integrating littoral zones into models of nutrient and energy dynamics in lakes. Cornell University Biogeochemistry and Environmental Biocomplexity Seminar Series. Ithaca, New York.
- Vadeboncoeur, Y.** 2005. Littoral-pelagic links in lakes: does size matter? Tanzanian Fisheries Research Institute and Nyanza Project, Kigoma, Tanzania.
- Vadeboncoeur, Y.** 2005. Littoral-pelagic links in lakes: does size matter? University of Wisconsin Trout Lake Station, Summer Seminar Series.
- Vadeboncoeur, Y.** 2005. Does size matter? Morphometry, nutrients, and the strength of littoral-pelagic links in lakes. Invited speaker for the Utah State University Water Initiative Seminar Series. Logan, Utah.
- Vadeboncoeur, Y.** 2004. Life on the edge: Putting the littoral zone back in limnology. Visiting scientist lecture series. Nyanza Project. Kigoma, Tanzania.
- Vadeboncoeur, Y.** 2003. Eutrophication and the loss of littoral function in lakes: linking energy flow pathways and top down control. Departmental Seminar. Illinois State University, Normal, Illinois.
- Vadeboncoeur, Y.** 2002. Reciprocal relationships between benthic and pelagic primary producers: energetic consequences for littoral fishes. Special Session: Habitat coupling in lakes. American Society of Limnology and Oceanography. Victoria, British Columbia.

- Vadeboncoeur, Y.** 2002. From Greenland to green lakes: Cultural eutrophication and the loss of benthic energy pathways in lakes. Department of Animal Ecology, Iowa State University, Ames, Iowa, USA.
- Vadeboncoeur, Y.** 2001. From Greenland to green lakes: Shifts in production and consumption of benthic versus pelagic algae across a eutrophication gradient in northern lakes. University of Saskatchewan, Saskatoon, Saskatchewan, Canada.
- Vadeboncoeur, Y.** 1999. Whole-lake fertilization effects on production and consumption of benthic versus pelagic algae. Department of Biology, McGill University, Montreal, Quebec, Canada.
- Vadeboncoeur, Y., D.M. Lodge, S.R. Carpenter.** 1999. Whole-lake fertilization effects on benthic vs. pelagic primary production. American Society of Limnology and Oceanography. Santa Fe, New Mexico.
- Vadeboncoeur, Y.** 1998. Effect of whole-lake fertilization on the distribution of benthic and pelagic primary production in north temperate lakes. Max Planck Institute, Schlitz, Germany.
- Vadeboncoeur, Y.** 1997. Effect of whole-lake fertilization on the distribution of benthic and pelagic primary production in north temperate lakes. Valparaiso University, Indiana, USA.
- Lodge, D.M., **Y. Vadeboncoeur**, and S.C. Blumenshine. 1995. Scale of experimentation and multiple causality in freshwater communities: challenges for applying ecological research. American Society of Zoologists.