

Curriculum Vitae

Mark D. Rowe
Research Physical Scientist
NOAA Great Lakes Environmental Research Laboratory

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Research interests

My research is focused on development of linked hydrodynamic and biological (biophysical) models to understand and predict changes in the physical, chemical, and biological characteristics of aquatic ecosystems.

Education

Ph.D. Environmental Engineering, Michigan Technological University, 2009
M.S. Environmental Engineering, Michigan Technological University, 2009
M.S. Metallurgical and Materials Engineering, Colorado School of Mines, 1999
B.S. Welding Engineering, The Ohio State University, 1997

Appointments

Oct. 2018-present: Research Physical Scientist, NOAA GLERL, Ann Arbor, MI
June 2019-present: Adjunct Assistant Professor, U. of Michigan SEAS
Oct. 2015-Oct. 2018: Asst. Research Scientist, U. of Michigan SEAS, CIGLR, Ann Arbor, MI
Oct. 2014-Sept. 2015: Postdoc. Research Fellow, U. of Michigan, CIGLR, Ann Arbor, MI
Oct. 2012-Sept. 2014: NRC Postdoc. Research Associate, NOAA GLERL, Ann Arbor, MI
Feb. 2010-Sept. 2012: Postdoc. Research Fellow, US EPA Large Lakes Research Station, Grosse Ile, MI
July 2004-Dec. 2009: Graduate Research/Teaching Asst., Michigan Tech University, Houghton, MI
Jan. 2000-May 2004: Senior Engineer, Haynes International Inc., Kokomo, IN
July 1997-December 1999: Graduate Research Asst., Colorado School of Mines, Golden, CO

Selected recent peer-reviewed publications

(*former advisee, ORCID 0000-0002-0852-3346, Scopus:45 pubs, h-index = 15)

1. Zhou, X., **Rowe, M.**, Liu, Q., Xue, P. **2023**. Comparison of Eulerian and Lagrangian transport models for harmful algal bloom forecasts in Lake Erie. *Environmental Modelling & Software*, 162, 105641.

2. Stow, C. A., **Rowe, M. D.**, Godwin, C. M., Mason, L. A., Alsip, P. J., Kraus, R. T., Johengen, T. H., Constant, S. A. **2023**. Lake Erie hypoxia spatial and temporal dynamics present challenges for assessing progress toward water quality goals. *Journal of Great Lakes Research*. [10.1016/j.jglr.2023.02.008](https://doi.org/10.1016/j.jglr.2023.02.008)
3. Kraus, R. T., Cook, H. A., Faust, M. D., Schmitt, J. D., **Rowe, M. D.**, Vandergoot, C. S. **2023**. Habitat selection of a migratory freshwater fish in response to seasonal hypoxia as revealed by acoustic telemetry. *Journal of Great Lakes Research*. [10.1016/j.jglr.2023.01.004](https://doi.org/10.1016/j.jglr.2023.01.004)
4. Stow, C. A., Stumpf, R. P., **Rowe, M. D.**, Johnson, L. T., Carrick, H. J., Yerubandi, R. **2022**. Model assumptions limit implications for nitrogen and phosphorus management. *Journal of Great Lakes Research*, 48(6), 1735-1737. [10.1016/j.jglr.2022.09.003](https://doi.org/10.1016/j.jglr.2022.09.003)
5. Qian, S.S., Stow, C.A., Rowland, F.E., Liu, Q., **Rowe, M.D.**, Anderson, E.J., Stumpf, R.P. and Johengen, T.H., 2021. Chlorophyll a as an indicator of microcystin: Short-term forecasting and risk assessment in Lake Erie. *Ecological Indicators*, 130:108055. doi:10.1016/j.ecolind.2021.108055 (IF 4.96)
6. Karatayev, A.Y., Karatayev, V.A., Burlakova, L.E., Mehler, K., **Rowe, M.D.**, Elgin, A.K. and Nalepa, T.F., 2021. Lake morphometry determines Dreissena invasion dynamics. *Biological Invasions*. 23:2489–2514. doi:10.1007/s10530-021-02518-3 (IF 2.24)
7. T. Ozersky, (**M. D. Rowe** and 23 coauthors). 2021. The Changing Face of Winter: Lessons and Questions from the Laurentian Great Lakes. *Journal of Geophysical Research – Biogeosciences*. doi:10.1029/2021JG006247 (IF 3.41)
8. P.A. Den Uyl, S. Harrison, C.M. Godwin, **M.D. Rowe**, J. R. Strickler, and H. A. Vanderploeg. 2021. Comparative Analysis of *Microcystis* Buoyancy in Western Lake Erie and Saginaw Bay of Lake Huron. *Harmful Algae*. doi:10.1016/j.hal.2021.102102.
9. **Alsip, P.J.***, Zhang, H., **Rowe, M.D.**, Rutherford, E. S., Mason, D. M., Riseng, C. M., Su, Z. 2020. Modeling the interactive effects of nutrient loads, meteorology, and invasive mussels on suitable habitat for Bighead and Silver Carp in Lake Michigan. *Biological Invasions*. <https://doi.org/10.1007/s10530-020-02296-4>.
10. **Q. Liu***, **Rowe, M. D.**, Anderson, E. J., Stow, C. A., Stumpf, R. P., & Johengen, T. H. 2020. Probabilistic forecast of microcystin toxin using satellite remote sensing, in situ observations and numerical modeling. *Environmental Modelling & Software*, 128:104705, doi: 10.1016/j.envsoft.2020.104705.
11. **M. D. Rowe**, Anderson, E. J., Beletsky, D., Stow, C. A., Moegling, S. D., Chaffin, J. D., Ackerman, J. D. 2019. Coastal upwelling influences hypoxia spatial patterns and nearshore dynamics in Lake Erie. *Journal of Geophysical Research: Oceans*. 124(8): 6154-6175
12. **Alsip, P.*** J., Zhang, H., **Rowe, M. D.**, Mason, D. M., Rutherford, E. S., Riseng, C. M., Su, Z. 2019. Lake Michigan's suitability for bigheaded carp: The importance of diet flexibility and subsurface habitat. *Freshwater Biology*, 64(11), 1921-1939.
13. A.Y. Karatayev, V.A. Karatayev, L.E. Burlakova, **M.D. Rowe**, K. Mehler, M.D. Clapsadle. 2018. Food depletion regulates the demography of invasive dreissenid mussels in a stratified lake. *Limnology & Oceanography*, 63(5), 2065-2079.
14. **D. Gill***, **M.D. Rowe**, S. Joshi. 2018. Fishing in greener waters: Understanding the impact of harmful algal blooms on Lake Erie anglers and the utility of a forecast model. *Journal of environmental management*, 227, 248-255, doi:10.1016/j.jenvman.2018.08.074.
15. **C. Weiskerger***, **M.D. Rowe**, C. Stow, D. Stuart, T. Johengen. 2018. Application of the Beer-Lambert model to attenuation of photosynthetically active radiation in a shallow, eutrophic lake. *Water Resources Research*, doi:10.1029/2018WR023024.

16. **M. D. Rowe**, E.J. Anderson, H.A. Vanderploeg, S.A. Pothoven, A.K. Elgin, J. Wang, F. Yousef. 2017. Influence of invasive quagga mussels, phosphorus loads, and climate on spatial and temporal patterns of productivity in Lake Michigan: A biophysical modeling study. *Limnology and Oceanography* (**rank #4 Oceanography, #10 Aquatic Science**), 62(6): 2629-2649, doi:10.1002/lno.10595.
17. **M.D. Rowe**, E.J. Anderson, T. T. Wynne, R. P. Stumpf, D. L. Fanslow, K. Kijanka, H. A. Vanderploeg, T. W. Davis. 2016. Vertical distribution of buoyant *Microcystis* blooms in a Lagrangian particle tracking model for short-term forecasts in Lake Erie. *Journal of Geophysical Research – Oceans* (**rank #12 Oceanography**), 121, doi:10.1002/2016JC011720.