

CURRICULUM VITAE - JONATHAN M. BOSSENBROEK

Professor
Department of Environmental Sciences
University of Toledo
Toledo, OH 43606-3390
Email: Jonathan.Bossenbroek@utoledo.edu; Tel. 419-530-8376

EDUCATION:

Ph.D. Colorado State University, Ecology 2004
Committee: Dr. John Wiens (Advisor), Drs. Boris Kondratieff, Thomas Stohlgren, & Bea Van Horne
M.S. University of Wisconsin - Green Bay, Environmental Sciences and Policy - 1999
Committee: Dr. Jeffrey C. Nekola (Advisor), Drs. Clifford Kraft & Gregory Davis
B.S. Calvin College, Environmental Sciences (emphasis in Biology) - 1996
Advisor: Dr. Uko Zylstra

PROFESSIONAL EXPERIENCE:

2017-Present Director of the Office of Undergraduate Research, University of Toledo
2016-Present Professor, Department of Environmental Sciences, University of Toledo
2013-2014 Fulbright Scholar, Department of Agricultural Economics, University of West Indies.
2011-2016 Associate Professor, Department of Environmental Sciences, University of Toledo
2005-2011 Assistant Professor, Department of Environmental Sciences, University of Toledo
2003-2005 Postdoctoral Research Associate University of Notre Dame
2002-2003 Graduate Teaching Assistant, Biology Department - Colorado State University
1999-2002 Graduate Research Assistant, Graduate Degree Program in Ecology - Colorado State University
1998-1999 Graduate Research Assistant, Institute for Land and Water Studies University of Wisconsin-Green Bay
1998 Research Assistant, University of Wisconsin - Green Bay
1998 Research Technician, Great Lakes Research Center. Milwaukee, WI
1997-1998 Graduate Teaching Assistant, University of Wisconsin - Green Bay
1996-1997 Sample Receiving/GIS Technician, FTC&H Analytical Labs/Engineering. Ada, MI
1996 Research Tech., Grand Valley State University - Water Resources Institute. Allendale, MI

TEACHING EXPERIENCE:

University of Toledo

Introduction to Environmental Studies EEES2010 (Fall 2014 to present)
General Ecology EEES 3050 (Every Fall 2006 to present, excluding 2013)
Biodiversity EEES 2150 (Every Spring 2009 to present, excluding 2014)
Landscape Ecology 4760/6760 (Spring 2012, 2017)
Special Topics in Ecology: Applied Landscape Ecology (Spring 2006, 11), Biological Invasions and Risk Assessment (Spring 2007), Confronting Models with Data (Spring 2008), Applied Spatial Ecology (Fall 2008), Bioeconomics of Invasive Species (Spring 2010), Bayesian Statistics for Ecology (Spring 2011). Ecological Issues in Toledo and Trinidad (Spring 2015), Ecology Fie31su1 Tr 36BD(Fie31ID 36BDC BT1 0 0 1 64] TJET(n Eco)12ETBT1 0 0 1 482.6200

STUDENTS

Current Graduate Students

Primary Advisor: Jessica Sherman (Ph.D.), Kristen Hebebrand (M.S.), Jake Kvistad (M.S.)

Committee Member: Mark DuFour (Ph.D.), Mathew Snyder (Ph.D.), Martin Simonson (M.S.), Jason Fischer (M.S.)

Past Graduate Students

Primary Advisor: Kamalika Ganguly (ABD), Jenn Sieracki (Ph.D. Defended 07/2014), Marc Morandi (M.S. Defended 12/2012), Maria Tumeo (M.S. Defended 5/2010), Audra Croskey (M.S. Defended 8/2009), Betsy Bodamer (M.S. Defended 8/2007)

Co-Advisor: Sara Guiher (M.S., co-advisor with Dr. Todd Crail, Defended Aug. 2017), Stephanie Nummer (M.S., co-advisor with Dr. Song Qian, Defended Aug. 2016), Nathan Manning (Ph.D with Dr. Chris Mayer, Defended June 2013), Todd Crail (Ph.D with Dr. Hans Gottgens, Defended 5/2012), Colleen Wellington (M.S. with Dr. Chris Mayer, Defended 7/2008)

Committee Member: Brittani Furlong (M.S. defended 8/16), Rachel Kuhaneck (M.S. defended 8/13), Lindsey Pierce (Ph.D defended 8/13), Gwen Laughlin (M.S. defended 7/13) Jason Ross (M.S. defended 6/13), Nick Bryan (M.S. defended 3/13), Kirk Zmijewski (M.S. defended 3/13), Mark DuFour (M.S. defended 7/2012), Mary Lynn Muehleisen (M.S. defended 1/2012), Erin Spetz (M.S. defended 11/2011), Kristen DeVanna (Ph.D defended 9/2011), Ranjeet John (Ph.D. defended 11/2010), Russ Freidrich (M.S. Defended 3/2010), Audrey Bobak (M.S. Defended 12/2009), Joshua Brown (Ph.D. Defended 11/2009), Jessica Schaefer (M.S. Defended 8/2009), Jacob LaCroix (Ph.D. Defended 4/2006)

Undergraduate Research Advisor

Current:

Austin Bartos (2017)

Past:

Linnea Vicari (Winter 2017), Kailey Doherty (2016), Jeanna Meisner (Summer 2016), Wendy Stevens (summers 2015-16, REU), Rachel Johnson (summer 2013), Stephanie Schnapp (summer/fall 2012), Lindsay Vollmar (graduated Dec. 2012 with honor and senior thesis from the College of Business), Rebecca Brent (graduated May 2012 with honors and thesis), Kelsey Navarre (graduated in May 2011 with honors, DES Outstanding Student, senior thesis), Lance Olsen (NSF Undergraduate Mentoring Fellow), Kevin Keeler (Undergraduate Research Tech & Honors Thesis: Graduated 2010), Marc Morandi (Undergraduate Research Technician: Graduated 2010), Phillip Mathias (Univ. of Toledo: Undergrad. Summer Research and Creative Activity Program USR&CAP Summer 2008 & Honors Thesis and Undergrad Research Tech. Graduated 2009), Emily Heppner (Undergrad Research Technician. Graduate 2009), Jill Reighard (UT: USR&CAP 2007:(ono181.07 Tm[(20.BDC BTMCID (o)18.82 507.t)5(i)-4(v)1bhd(H)5(eppne1

4. Tucker, A, W.L. Chadderton, C.L. Jerde, M.A. Renshaw, K. Uy, C. Gantz, A.R. Mahon, A. Bowen, T. Strakosh, **J.M. Bossenbroek**, J. Sieracki*, D. Beletsky, J. Bergner, D.M. Lodge. 2016. A sensitive environmental DNA (eDNA) assay leads to new insights on Eurasian Ruffe (*Gymnocephalus cernua*) spread in North America. *Biological Invasions*. doi:10.1007/s10530-016-1209-z
5. DeVanna, K., **J.M. Bossenbroek**, D.W. Schloesser, C.M. Mayer. *in press*. Spatial- and temporal-density fluctuations of native burrowing mayflies: An examination of abiotic and biotic factors. *Journal of Great Lakes Research*
6. Morandi*, M.J., N.F. Manning *, **J.M. Bossenbroek**, C.L. Jerde. 2015. Assessing the Influence of Different Inland Lake Management Strategies on Human-Mediated Invasive Species Spread. *Management of Biological Invasions*. 6(1): 57–69. doi: <http://dx.doi.org/10.3391/mbi.2015.6.1.05>
7. **Bossenbroek, J.M.**, A. Croskey*, D. Finnoff, L. Iverson, S.M. McDermott, A. Prasad, C. Sims, D. Sydnor. 2015. Evaluating the Economic Costs and Benefits of Slowing the Spread of Emerald Ash Borer in Ohio and Michigan. *Invasive Species in a Globalized World* edited by R. Keller, M. Cadotte and G. Sandiford.
8. Zanatta, D., **J.M. Bossenbroek** and 13 others. 2015. Twenty-five year post-dreissenid invasion assessment of native mussel (Unionidae) assemblages in coastal Lake Erie, Lake St. Clair, and connecting channels. *Northeastern Naturalist* 22(1):223-235. doi: dx.doi.org/10.1656/045.022.0115
9. Sieracki*, J. L., **J. M. Bossenbroek**, W.L. Chadderton. 2014. A Spatial Modeling Approach to Predicting the Secondary Spread of Invasive Species Due to Ballast Water Discharge. *PLoS ONE* 9(12): e114217. doi:10.1371/journal.pone.0114217
10. Vollmar**, L., C.R. McIntosh, **J.M. Bossenbroek**. 2014. regulations: the case of virus-free bait demand. *Journal of Environmental Economics and Policy*. DOI:10.1080/21606544.2014.974677
11. Sieracki*, J. L., **J. M. Bossenbroek**, M. Faisal. 2014. Modeling the Secondary Spread of Viral Hemorrhagic Septicemia Virus (VHSV) by Commercial Shipping in the Laurentian Great Lakes. *Biological Invasions*. DOI: 10.1007/s10530-013-0556-2
12. DeVanna, K.M., D.W. Schloesser, **J.M. Bossenbroek**, and C.M. Mayer. 2014. Interactions between an exotic ecosystem engineer (*Dreissena* spp) and native burrowing mayflies (*Hexagenia* spp) in soft sediments of western Lake Erie. 2nd edition of *Quagga and Zebra Mussels: Biology, Impacts, and Control*. Edited by T.F. Nalepa and D.W. Schloesser. ISBN-13: 978-1439854365
13. Deal, M.W., J. Xua, R. John, T. Zenonea, J. Chen, H. Chua, P. Jasrotiab, K. Kahmark, **J. Bossenbroek**, and C. Mayer. 2013. Net primary production in three bioenergy crop systems following land conversion. *Journal of Plant Ecology*. doi: 10.1093/jpe/rtt057
14. Manning*, N.F., J.M. Bossenbroek, C. M. Mayer, D.B. Bunnell, J.T. Tyson, L.G. Rudstam, J.R. Jackson. 2013. Modeling plumes and blooms: Turbidity type and intensity effects on the growth and starvation mortality of yellow perch. *Canadian Journal of Fisheries and Aquatic Sciences*. 71: DOI: 10.1139/cjfas-2013-0528
15. Manning, N.F.*, C.M. Mayer, **J.M. Bossenbroek**, J.T. Tyson. 2013. Effects of water clarity on the length and abundance in August of Age-0 Yellow Perch in the Western Basin of Lake Erie. *Journal of Great Lakes Research*. 39: 295–302. DOI: 10.1016/j.jglr.2013.03.010
16. DeVanna, K.M., B.L. Bodamer*, C.G. Wellington*, E. Hammer, C.M. Mayer and **J.M. Bossenbroek**. 2011. An alternative hypothesis to invasional meltdown in the Laurentian Great Lakes: General facilitation by *Dreissena*. *Journal of Great Lakes Research*. 37:632-641. DOI: 10.1016/j.jglr.2011.07.005
17. Warziniack, T., D. Finnoff, **J.M. Bossenbroek**, J. F. Shogren, and D. Lodge. 2011. Stepping stones for biological invasion: A bioeconomic model of transferable risk. *Environmental and Resource Economics* 50: 605-627.
Awarded Best Paper in the journal of *Environmental and Resource Economics*, 2011
18. Wellington, C. G.*, C.M. Mayer, and **J.M. Bossenbroek**. 2010. Effects of turbidity and prey density on the foraging success of age zero *Perca flavescens*. *J. of Fish Biology* 76: 1729-1741.

19. Prasad A., L.R. Iverson, M. Peters, **J.M. Bossenbroek**, D. Sydnor, M. Schwartz. 2010 Modeling the invasive emerald ash borer risk of spread using a spatially explicit cellular model. *Landscape Ecology* 25: 253-369.
20. Drake, J.M. and **J.M. Bossenbroek**. 2009. Profiling ecosystem vulnerability to invasion by zebra mussels with support vector machines. *Theoretical Ecology* 2:189-198.
21. **Bossenbroek**, J.M., D. Finnoff, J. Shogren and T.W. Warziniack. 2009. Advances in ecological and economical analysis of invasive species: dreissenid mussels as a case study. In *Bioeconomics of Invasive Species: Integrating Ecology, Economics and Management* (eds. Keller, Lodge, Lewis, and Shogren). Oxford University Press.
22. Jerde, C. and J.M. **Bossenbroek**. 2009. Uncertain Invasions: A biological perspective. In *Bioeconomics of Invasive Species: Integrating Ecology, Economics and Management* (eds. Keller, Lodge, Lewis, and Shogren). Oxford University Press.
23. Muirhead, J. R., A. M. Bobeldyk, **J. M. Bossenbroek**, K. Egan & C. Jerde. 2009. Estimating dispersal and predicting spread of nonindigenous species. In *Bioeconomics of Invasive Species: Integrating Ecology, Economics and Management* (eds. Keller, Lodge, Lewis, and Shogren). Oxford University Press.
24. Herborg, L.M., J. Drake, J. Rothlisberger & **J. M. Bossenbroek**. 2009. Forecasting suitable habitat for invasive species using ecological niche models and the policy implications of forecasts. In *Bioeconomics of Invasive Species: Integrating Ecology, Economics and Management* (eds. Keller, Lodge, Lewis, and Shogren). Oxford University Press.
25. Iverson LR, Prasad A, **Bossenbroek J**, Sydnor D, Schwartz MW. 2008. Modeling Potential Movements of the Emerald Ash Borer: the Model Framework. In *The Encyclopedia of Forest Environmental Threats* (eds. Lee, and Beatty). www.threats.forestencyclopedia.net.
26. Morzillo, A.T., J.W. Hollister, C. A. Drew, M.E. Rocca, M.E. Baker, **J.M. Bossenbroek**, and C.A. and successful strategies. *ESA Bulletin* 89:193-203.
27. Bodamer, B.L.* and **J.M. Bossenbroek**. 2008. Wetlands as barriers: Effects of vegetated waterways on downstream dispersal of zebra mussels (

Submitted

Bossenbroek, J.M., L.E. Burlakova, T.C. Crail¹, A.Y. Karateyev, R.A. Krebs, D.T. Zanatta. Using ecological niche modelling to predict the presence of unionid refuges in the Laurentian Great Lakes.

INVITED SEMINARS AND SYMPOSIA

Buffalo State Univ. Biology Department Seminar Buffalo, NY 3/15/2017

Maumee Valley Country Day School Issue Day Speaker Toledo, OH 3/4/2016

Great Lakes Environmental Center Interagency Early Detection and Rapid Response Planning Meeting. Invited Speaker and Participant. Detroit, MI 6/23-24/2015.

Calvin College: Biology Department Seminar Series Grand Rapids, MI 3/6/2015.

Christ Presbyterian Church Prime Time Lecture Series. Invited speaker. 2/04/2015

Lake Erie Center/Univ. of Toledo

Policies, Strategies and Best Practices for Managing Invasive Alien Species (IAS) in the Insular Caribbean Conference, Port of Spain, Trinidad Guest Speaker,

<http://www.ciasnet.org/2014/05/04/mtiasic-conference-2014-videos/>

Oxford University Alumni Society

University of Windsor: GLIER Research Seminar Series

Ohio Sea Grant - \$10,000 April 2014 - January 2015. PI. A Tool for Predicting the Spread of Invasive Species by Ballast Water

- NOAA Sea Grant - \$448,664 for June 1 2005 - May 31 2007. Collaborator, with P.I. David Lodge and CoPIs Jason Shogren, David Finnoff and Jennifer Nalbone. **Economic impact of ballast-mediated invasive species in the Great Lakes.**
- NOAA National Sea Grant. \$340,000 for 1 June 2003-31 May 2005. Awarded to David M. Lodge (P.I.), with the following Co-PIs or senior collaborators: Brian Leung (U Notre Dame), Jason Shogren (U. Wyoming), and David Finnoff (U. Central Florida). **Evaluating the ecological and economic value of the 100th Meridian Initiative.** *
- US Fish & Wildlife Service. \$40,000 for 2003-2005. Award to David M. Lodge (P.I.) **Evaluating the ecological and economic value of the 100th Meridian Initiative.** *
- * - Portions written by J.M. Bossenbroek and were the means of post-doc funding.

SERVICE

University of Toledo

- University Committee on Sabbaticals - Member (2014 -)
- NSM College Committee on Academic Personnel (2015 -), Chair (2016-2017)
- Dept. of Environmental Sciences Faculty Search Committee - Co-Chair (2014/15)
- Dept. of Environmental Sciences Undergraduate Society Mentor - (2014 -)
- Faculty Council of the College of Natural Sciences and Mathematics (2011 - 2013, 2014- 2015)
- Dept. of Environmental Sciences Honors Advisor (2014 -)
- Dept. of Environmental Sciences Assessment Committee - Member (2007 -)
- Dept. of Environmental Sciences Undergraduate Affairs Committee (2008-)
- Lake Erie Center Science Advisory Board (2005 -)
- Lake Erie Center Facilities Committee (2005 -)
- Sigma Xi - University of Toledo Chapter: Treasurer (2006-)
- Presidential Commission for Faculty Input on Institutional Transformation (2010 - 2011)

Societies/Organizations

- Great Lakes Environmental Center - Interagency Early Detection and Rapid Response Planning Meeting. Invited Speaker and Participant. - Detroit, MI 6/23-24/2015.
- Fulbright Pre-Departure Orientation for Grantees to the Western Hemisphere (Alumni Representative), Washington D.C. June 27-29, 2014.
- Mitigating the Threats of Invasive Alien Species in the Insular Caribbean Conference - Organizing Committee (Member) and Working Group - Managing Invasive Fresh Water and Marine Species (Chair), Port of Spain, Trinidad 3/31 - 4/4/2014.
- US-IALE Policy Committee - Member (2013 - present)
- The Rackham Center for Research on Learning and Teaching (Rackham-CRLT) Seminar on Preparing Future Faculty - Mentor. 5/28/2013, 5/28/2014
- IAGLR 2013 - Session Co-Chair
- Healing Our Waters Technical Advisory Committee workshop. Ann Arbor, MI 10/28/2009.
- IAGLR 2009 - Organizing Committee (Member) and Poster Committee (Chair)
- IALE -
April 2007
- National Wildlife Federation - Participant: Symposium on Aquatic Invasive Species and Food Web Disruption: A Meeting of Scientists and Policymakers - 05/02/2005
- The Nature Conservancy
11/12/2003
- Manuscript Reviewing
American Midland Naturalist, Aquatic Conservation, Aquatic Ecology, Aquatic Invasions, BioInvasions Records, Cartographica, Biological Invasions, Conservation Biology, Diversity and Distributions, Ecography, Ecological Applications, Ecological Modeling, Ecological Monographs, Environmental Management, Ecology, Frontiers in Ecology and the Environment, Global Ecology

and Biogeography, Hydrobiologia, Journal of Theoretical Biology, Landscape Ecology, Management of Biological Invasions, Molecular Ecology, PLOS One, PNAS, Restoration Ecology

Proposal Reviewing

Fulbright U.S. Scholar Program - Council for International Exchange of Scholars (CIES), National Science Foundation, Canadian Aquatic Invasive Species Network (CAISN), USDA PREISM, Ohio Invasive Plants Council Student Grant Program

MEDIA COVERAGE OF RESEARCH and Miscellaneous Publications

Interviewd by WNWO About the Status of Asian Carp, April 4, 2012.

Interviewed by WTOL Channel 11 about the Status of the Emerald Ash Borer in Our Area, July 25, 2007.

2006.

Keller, R.P., J.M. Drake, D.M. Lodge, and J.M. Bossenbroek. 2005. Submission to Department of Agriculture on proposed rules 7 CFR Part 319 Nursery Stock Regulations. Docket ID APHIS-2005-0020, Agency Docket # 03-069-2