

Benjamin E. Martin, PhD

Post-Doctoral Research Fellow
Environmental Change Initiative
Department of Biological Sciences
University of Notre Dame

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EDUCATION

PhD in Freshwater and Marine Sciences 2022
University of Wisconsin- Madison, Madison, WI
Advisor: Dr. Jake Vander Zanden

Dissertation: “*Detecting and synthesizing ecological change in invaded food webs*”

BS in Environmental Science, *magna cum laude* 2018
Juniata College, Huntingdon, PA
Thesis: “*Health of Smallmouth Bass in the Juniata River basin*”

RESEARCH EXPERIENCE

2023- Post-Doctoral Research Fellow. Department of Biological Sciences. University of Notre Dame, South Bend, IN.
2023 Post-Doctoral Research Associate. Center for Limnology. University of Wisconsin, Madison, WI.
2018-2022 Doctoral Researcher. Center for Limnology. University of Wisconsin, Madison, WI.
2017 Research Assistant. Cooperative Institute for Research in Environmental Research. University of Colorado, Boulder, CO.
2014-2018 Research Assistant. Biology Department. Juniata College, Huntingdon, PA.

PUBLICATIONS

10. **Martin B**, Vander Zanden MJ. 2023. Long term analysis of body condition reveals species coupling and the impacts of an invasion. *Ecosphere*. 14(6): e4592. <https://doi.org/10.1002/ecs2.4592>
9. **Martin B**, Mrnak J, Vander Zanden MJ. 2023. Evaluating the potential role of predation by native fish regulating the abundance of invasive spiny water flea. *Journal of Freshwater Ecology* 38:1. <https://doi.org/10.1080/02705060.2023.2187470>
8. **Martin B**, O'Malley B, Eshenroder R, Kao Y, Olds C, O'Brien T, Davis C. 2023. Comparison of traditional and geometric morphometrics using Great Lakes Ciscoes. *Transactions of the American Fisheries Society*. <https://doi.org/10.1002/tafs.10403>
7. **Martin B**, Walsh J, Vander Zanden MJ. 2022. Rise of a native apex predator and an invasive zooplankton cause successive ecological regime shifts in a North Temperate Lake. *Limnology and Oceanography* 67, S163-S172. <https://doi.org/10.1002/lno.12049>
6. Mooney R, **Martin B**, Vander Zanden MJ. 2021. An inquiry-based activity to increase student motivation in college-level taxonomy courses. *The American Biology Teacher*. 83 (4): 240–246. <https://doi.org/10.1525/abt.2021.83.4.240> *NABT BioClub Recommendation*
5. **Martin B**. 2019. Differences in proportional claw size among left- and right-handed Atlantic sand fiddler crabs *Leptuca pugilator* (Bosc, 1801) (Decapoda: Brachyura: Ocypodidae). *Journal of Crustacean Biology* 39(6), 720-723. <https://doi.org/10.1093/jcbiol/ruz067>

4. **Martin B**, and Grant C. 2019. Potential Threats to Smallmouth Bass (*Micropterus dolomieu*) in the Juniata River Basin, Pennsylvania, USA. *Journal of Freshwater Ecology*. 34(1), 591–602. <https://doi.org/10.1080/02705060.2019.1642244>
3. **Martin B**. 2019. Autotomy and running performance of fiddler crabs (Decapoda, Brachyura, Ocypodidae). *Journal of Crustacean Biology* 39(5), 613-616. <https://doi.org/10.1093/jcobiol/ruz049>
2. Hall E, **Martin B**, Grant C, Brubaker K. 2018. Latitudinal variation in the geometric morphology of the Largemouth Bass (*Micropterus salmoides*). *Marine and Freshwater Research*. 69(9), 1480-1485. <https://doi.org/10.1071/MF17369>
1. Nagle R, Rowe C, Grant C, Sebastian E, **Martin B**. 2018. Carapace abnormalities in Northern Map Turtles of the Juniata River, Pennsylvania, USA. *Journal of Herpetology*, 52(1), 59-66. <https://doi.org/10.1670/17-030>

CONFERENCE PUBLICATIONS (refereed)

1. Grant C, Hall E, **Martin B**. 2017. Fracked fish? Effects of unconventional natural gas extraction on wild Brook Trout (*Salvelinus fontinalis*). *Wild Trout XII Proceedings: Science, politics, and wild trout management*. Vol. 12.

PUBLICATIONS (in progress)

Martin B, Solomon C, Jones S, Heilveil J, Craig N, Koizumi S. *In prep*. Environmental change shapes trade-offs between growth rate and predation risk: results from a long-term ecosystem experiment

Martin B, Vander Zanden MJ, Chikaraishi Y, Blanke C, Bunnell D, Takizawa Y. *In prep*. Meta-analysis of tissue preservation effects on amino acid specific stable nitrogen isotopes in fish tissues

Martin B, Mrnak J, Vander Zanden MJ. *In prep*. Trophic ontogeny in *Coregonus artedii* in an inland lake

Martin B, Russell T, Bailey G, Jefferson E, Nagle R. *In prep*. Shell Shapes of Hatchling Northern Map Turtles Vary by Location, Incubation Substrate, and Sex-Determining Temperatures

PRESENTATIONS

Martin B, Solomon C, Jones S, Heilveil J, Craig N, Koizumi S. Testing global body size rules at the ecosystem level. College of Science Lightning Talk Competition: Department of Biological Sciences. University of Notre Dame. 19 September 2023

Bailey G, Jefferson E, Martin B, Nagle R. Morphometric analysis of hatchling Northern Map Turtle shell shapes. Liberal Arts Symposium. Juniata College. 27 April 2023

Martin B, O'Malley B, Eshenroder R, Kao Y, Olds C, O'Brien T, Davis C, Muir A. Calipers versus digital- what's best for morphometric study? Wisconsin Chapter of the American Fisheries Society Annual Meeting. 1 February 2023

Martin B, Vander Zanden M. J. Detecting and synthesizing ecological change in invaded food webs. Center for Limnology Seminar. University of Wisconsin- Madison. 14 December 2022

Vander Zanden M. J., Martin B, Chikaraishi Y, Takizawa Y, Muir A, Bunnell D. New Insights into the Trophic Ecology of Coregonine Fishes in the Laurentian Great Lakes. Joint Aquatic Sciences Meeting. 17 May 2022

20 September 2023

Martin B, Vander Zanden M. J. Long Term Body Condition Reveals Strong Species Coupling. UW-Madison's Center for Ecology and the Environment's Spring Symposium. 3 May 2022

Martin B, Vander Zanden M. J. Clean Lakes 101: Lake Mendota- the good, the bad, the present. Clean Lakes Alliance. 13 April 2022. [Recorded](#).

Martin B, Vander Zanden M. J. Lake Trout and Cisco body condition highlights strong predator/prey coupling. Wisconsin Chapter of the American Fisheries Society Annual Meeting. *Virtual*. 8 February 2022. [Recorded](#).

Martin B, Walsh J, Vander Zanden M. J. Long term regime shifts in Trout Lake. Center for Limnology Seminar. University of Wisconsin- Madison. 7 April 2021

Martin B, Mrnak J, Vander Zanden M. J. Predation by a native planktivore exceeds an invasive invertebrate's production. Wisconsin Chapter of the American Fisheries Society Annual Meeting. *Virtual*. 6 February 2021. Recorded. **Best speed presentation**

Mooney R, Martin B, Vander Zanden M. J. Is that minnow in your bait bucket an invasive species? Wisconsin Chapter of the American Fisheries Society Annual Meeting. *Virtual*. 6 February 2021

Martin B, Walsh J, Vander Zanden M. J. Piscivore stocking and an invasive zooplankton cause regime shifts in a northern temperate lake. QFC seminar series at Michigan State University. 6 October 2020

Martin B, Vander Zanden M. J. Piscivore stocking alters a historic trophic cascade. Wisconsin Chapter of the American Fisheries Society Annual Meeting. Eau Claire, WI. 5 February 2020

O'Malley B, Eshenroder R, Olds C, Kao Y, Martin B, Muir A. Comparison of size-corrected traditional and geometric morphometrics for discriminating coregonine forms. New York Chapter of the American Fisheries Society Annual Meeting. Lake Placid, NY. 7 February 2020

Martin B, Vander Zanden M.J. Spiny water flea and the Northwoods. Science in the Northwoods. Boulder Junction, WI. 11 October 2019

Martin B, Vander Zanden M.J. Spiny Water Flea and the Northwoods. Wisconsin Lakes Partnership Meeting. Boulder Junction, WI. 28 August 2019

Martin B, Vander Zanden M.J. Aquatic invasive species in the Northwoods. Friends of Mann Lake annual meeting. Boulder Junction, WI. 10 August 2019

Martin B, Vander Zanden M.J. Bulk and amino acid specific stable isotopes in trophic niche estimation. International Symposium on Isotope Physiology, Ecology, and Geochemistry (IsoPEG). Hokkaido University, Sapporo, Japan. 24 June 2019

Martin B, Vander Zanden M.J. A perch is a perch is a perch; the role of individual trait variation in invasive species management. Wisconsin Chapter of the American Fisheries Society Annual Meeting. Green Bay, WI. 20 February 2019. **Best student presentation award**

Martin B, Vander Zanden M.J. Implications for trophic polymorphism in Lake Mendota yellow perch. Center for Limnology Seminar. University of Wisconsin- Madison. WI. 6 February 2019

Martin B, Grant C. Endocrine Disrupting Compounds & Smallmouth Bass in the Juniata River: a new frontier in fisheries research. Liberal Arts Symposium. Juniata College, Huntingdon, PA. 19, April 2018

Martin B, Grant C. *Micropterus dolomieu* (Smallmouth Bass) health in the Juniata River basin. Liberal Arts Symposium. Juniata College, Huntingdon, PA. 20 April 2017

Hall E, Martin B, Grant C. Geographic plasticity in *Micropterus salmoides* (Largemouth Bass). Liberal Arts Symposium, Juniata College, Huntingdon, PA. 21 April 2016

POSTERS

Martin B, Vander Zanden M.J. Spiny Water Flea and Fish Planktivory in Wisconsin Lakes. Water @ UW-Madison Fall Poster Session. UW-Madison. 20 November 2019.

Martin B, Hall E, Grant C. Brook Trout restoration in the Lost Creek Watershed. Keystone Coldwater Conference. Pennsylvania State University, PA. 23 February 2018

Hall E, Martin B, Brubaker K, Grant C. Frack Attack: Impacts on native *Salvelinus fontinalis* (brook trout) streams due to Marcellus shale natural gas extraction. Liberal Arts Symposium. Juniata College, Huntingdon, PA. 20 April 2017

Martin B, Coffin C, Squire E, Yohn C. Effect of deer fences on plant communities: differences between fenced and unfenced abandoned fields in central Pennsylvania. Liberal Arts Symposium. Juniata College, Huntingdon, PA. 20 April 2017

Martin B, Hutchison A, Grant C. Food web construction in aquatic ecosystems using ^{13}C and ^{15}N isotopes. Liberal Arts Symposium. Juniata College, Huntingdon, PA. 21 April 2016

Hall E, Martin B, Grant C. Morphological response in *Micropterus salmoides* (Largemouth Bass) in response to geographic divergence. National Conference on Undergraduate Research, UNC, Asheville, NC. 7-9 April 2016

Martin B, Grant C. Mercury (Hg) levels in Pennsylvania stocked *Salvelinus fontinalis* (Brook Trout), *Salmo trutta* (Brown Trout), and *Oncorhynchus mykiss* (Rainbow Trout). Liberal Arts Symposium, Juniata College, Huntingdon, Pa. 23 April 2015

GRANTS & FELLOWSHIPS

"Does increased dissolved organic carbon reduce the resilience of Bluegill fisheries?" Joint Environmental and Water Environmental Change Initiative Post-Doctoral Fellowship at the University of Notre Dame. Martin B, Torres-Dowdall J, Jones S. 2023.

"Morphological shifts in Red Sea Rabbitfish associated with the invasion of the Mediterranean Sea." Limnology and Oceanography Research Exchange. Martin B, Holzman R, Belmaker J. 2019. Canceled due to COVID-19 Pandemic.

"Understanding Invasion Predator-Prey Dynamics to Inform Management Solutions." Anna Grant Birge Research Award. Martin B, Vander Zanden MJ. 2019. \$1260.

"Smallmouth bass health in the Juniata River." Juniata College Student Research and Fellowship Committee. Martin B. 2017. \$485.

“Assessing Pennsylvania streams for the presence of wild brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta*) populations.” The National Fish and Wildlife Foundation: Unassessed Waters Initiative. Grant CJ, Martin B. 2017. \$5,864.

TEACHING EXPERIENCE

University of Wisconsin- Madison, Department of Zoology, Madison, WI, January 2019- May 2019, January 2020- May 2020 (lead)

- *Teaching Assistant*: Ecology of Fishes Lab (Zoo-511)

Juniata College, Biology Department, Huntingdon, PA, August 2017- May 2018

- *Teaching Assistant*: Toxicology module of first year biology lab (BI-126)
- *Teaching Assistant*: Ecology module of first year biology lab (BI-121)
- *Discussion Leader*: Biological Diversity and Ecology (BI-105)

Juniata College, Academic Support, Huntingdon, PA, August 2015- May 2018

- *Tutor*: Biological Diversity and Ecology (BI-105) and Calculus I (MA-130)

UNDERGRADUATE ADVISING

- Yichen Li (2019-2020), Matt Chotlos (2020), Haley Trecker (2020), Mallory Dragt (2019-2020), Sydney Blaskowski (2019), Jake Cavaiani (2018-2019)

HONORS & AWARDS

Carroll Norden Memorial Scholarship (WI AFS) (2020)

Association Students of Madison (ASM) Travel Award (2020)

Limnology and Oceanography Research Exchange (LOREX-ASLO) (2019)

John Jefferson Davis Travel Award (2019)

Steve Yao Best Student Presentation at the WI AFS meeting (2019)

Associate Fisheries Professional of American Fisheries Society (2018)

Juniata College's Bailey Oratorical Finalist (2018)

Ron Remmick Undergraduate Scholarship at Wild Trout Symposium XVII (2017)

Dr. Homer & Ethel Will Endowed Scholarship in Biology (2017)

Juniata College Environmental Science Fellow (2015-2018)

Calvert Ellis Scholarship (2014-2018)

Juniata College Alumni Scholarship (2014-2018)

Landmark Conference & ECAC Scholarly Athlete (2014-2018)

Juniata College Deans List (2014-2018)

MEDIA COVERAGE

[“Big Fish, Little Fish: Decades’ Worth of Basic Measurements Tell a Complex Tale in One Wisconsin Lake.”](#) UW-Madison’s Center for Limnology. 25 June 2023.

[“Beneath the Surface, Long-Term Lake Monitoring Reveals the Drama of a Food Web in Flux.”](#) UW-Madison’s Center for Limnology. 14 March 2022.

[“Past, Present and Future Ciscos: Wisconsin Sea Grant research.”](#) Wisconsin Sea Grant. 20 November 2020.

“Mendota’s zooplankton.” *Holding History*. 11 August 2020.

“Food web ecology and science communication with Ben Martin.” *The Fisheries Podcast*. 3 August 2020.

“The ones that live in your house.” *Introduced*. 3 June 2020

“When being big, strong, and sexy comes at a cost.” *Hakai Magazine*. 22 November 2019.

20 September 2023

“Plum Lake has spiny water flea- now what.” *The Lakeland Times*. 16 August 2019.

“[CFL Grad Student finds spiny water flea in northern Wisconsin's Plum Lake](#).” UW-Madison's Center for Limnology. 7 August 2019.

“Spiny water flea verified in Plum Lake: Research underway for impact on food web.” *Vilas County News- Review*. 6 August 2019.

“New aquatic invasive species found in Plum Lake.” *WJFW News Watch 12*. 5 August 2019.

“Harmful chemicals in the Juniata.” *The Daily News*. Huntingdon, PA. 25 July 2019.

AD HOC REVIEWER

Ecology and Evolution, Scientific Reports, Molecular Ecology, Journal of Great Lakes Research, Aquatic Living Resources, Fisheries Research, International Review of Hydrobiology, Journal of Crustacean Biology

ORGANIZATIONS

- Association for the Sciences of Limnology and Oceanography (ASLO)
- Ecological Society of America (ESA)
- UW-Madison American Fisheries Society Subunit (Founder) (2018-2023)
- Wisconsin Chapter of the American Fisheries Society (2018-2023)
- Juniata College American Fisheries Society (2016-2018)