

ERIC B. BORTH

University of Dayton • 300 College Park Ave • Dayton, OH 45469

Education

University of Dayton Master of Science in Biology May 2019 (Expected)
Certificate: Geographic Information Systems

Overall GPA: 3.74

University of Dayton Bachelor of Science in Biology May 2017
Honors Program Minor: Sustainability, Energy, and Environment
Graduated with Honors with Distinction

Overall GPA: 3.78

Peer Reviewed Articles

- **Eric B. Borth**, Kevin W. Custer, Ryan W. McEwan (*In Press*). Lethal effects of the non-native invasive shrub Amur honeysuckle (*Lonicera maackii*) leaf leachate on a model aquatic organism (*Hyalella azteca*). *Ecoscience*.
- Kevin W. Custer, **Eric B. Borth**, Sean D. Mahoney, and Ryan W. McEwan (2017). Lethal and sublethal effects of novel terrestrial subsidies from an invasive shrub (*Lonicera maackii*) on stream macroinvertebrates. *Freshwater Science* 36(4):750–759.

Technical Reports

- Custer KW, SJ Frankenberg, **EB Borth**, SM Eisele, RW McEwan. 2015. Water quality effects of urban outfalls along sections of the Great Miami River, Mad River, and Wolf Creek – 2015. City of Dayton, Environmental Management Department, Final Report, pp 50.
- Custer KW, **EB Borth**, and RW McEwan. 2016. Monitoring water quality of urban stormwater runoff to receiving river systems in Dayton, Ohio: Wet-weather sampling, site selection, and assessment of MS4 drainage areas, City of Dayton, Environmental Management Department, Final Report, pp. 30.

Research Experience

Ecology Lab of Dr. Ryan McEwan - Project Leader; Dayton, OH

November 2014-Present

Graduate Research Project:

- *Understanding post-fire regeneration of Cajander larch (Larix cajanderi) forests of northeastern Siberia*
 - Investigating the importance of environmental factors and biological legacy effects and how these will influence the successional trajectory of future forests in light of the increasing frequency and severity of forest fires.

Undergraduate Research Projects:

- *Influence of the invasive shrub Lonicera maackii on aquatic macroinvertebrates*
 - Understanding the effects of the invasive shrub Amur Honeysuckle on the aquatic macroinvertebrate community. In order to understand the impact, macroinvertebrates were cultured in lab and used in a series toxicity tests.

Undergraduate Research Experience:

- *Riparian forest invasion by a terrestrial shrub (Lonicera maackii) impacts aquatic biota and organic matter processing in headwater streams*
 - Assisted with field work involving the removal of Amur Honeysuckle from stream banks, collecting stream data and implementing nutrient diffusing substrates.
- *Herb Richness Assessment Across a Gradient of Invasive Riparian Shrub, Lonicera maackii*
 - Understanding how herbaceous layer richness is shifting across a gradient of invasive riparian shrub, *Lonicera maackii* in the riparian zone of headwater streams.
- *City of Dayton: Storm Water Monitoring*

- Investigating how storm water runoff impacts the Great Miami Watershed and work to monitor the water quality throughout the Great Miami River.

Academic Presentations

- **Eric B. Borth**, Kevin W.Custer and Ryan W. McEwan (2017) Seasonal Toxic Effects of Amur Honeysuckle Leaf Leachate on an Aquatic Invertebrate. *University of Dayton Honors Symposium*. Dayton, Ohio. (Presentation)
- **Eric B. Borth**, Kevin W.Custer and Ryan W. McEwan (2017) Lethal effects of the invasive shrub Amur honeysuckle (*Lonicera maackii*) on an aquatic organism. *University of Dayton Stander Symposium*. Dayton, Ohio. (Presentation)
- **Eric B. Borth**, Kevin W.Custer and Ryan W. McEwan (2017) Seasonal Toxic Effects of Amur Honeysuckle Leaf Leachate on an Aquatic Invertebrate. *Ohio Natural History Conference*. Columbus, Ohio. (Poster)
- RW McEwan, KW Custer, **EB Borth**, ME Maloney (2017) Riparian forest invasion by the non-native shrub Amur honeysuckle (*Lonicera maackii*) influences the biology of headwater streams. Ecological Society of America. Portland, Oregon. (Poster)
- **EB Borth**, SJ Frankenberg, SD Mahoney, KW Custer, RW McEwan. 2016. Lethal and sub-lethal effects of the invasive shrub Amur honeysuckle (*Lonicera maackii*) on an aquatic organism, a field-to-lab experimental approach. *Ohio Invasive Plant Council Annual Meeting*, Columbus, Ohio. (Poster)
- Custer, KW, **EB Borth**, SD Mahoney, L Gaynor, RW McEwan. 2016. Amur honeysuckle berry effects on benthic macroinvertebrates: laboratory and field microcosm sediment exposures. *Ohio Invasive Plant Council Annual Meeting*, Columbus, Ohio. (Poster)
- **EB Borth**, SJ Frankenberg, SD Mahoney, KW Custer, RW McEwan. 2016. Lethal and sub-lethal effects of the invasive shrub Amur honeysuckle (*Lonicera maackii*) on an aquatic organism, a field-to-lab experimental approach. *Midwest Evolution and Ecology Conference*, Miami University, Ohio. (Poster)

Professional Experience

University of Dayton: Hanley Sustainability Institute- Graduate Assistant August 2017-Present

- Works with Five River Metoparks to help organize GIS data and create maps for the organization
- Works with undergraduate students on their sustainability related projects such as the Sustainability Activation Program and the Tree Map on the University of Dayton campus.

University of Dayton Biology Department- Invertebrate Zoology TA January 2017-May 2017

- Set up slides and displays with preserved invertebrate specimens
- Create displays with live invertebrate specimens
- Help with dissecting and mounting invertebrate specimens
- Teach students about the morphological features of invertebrates as well as identification.

Grants and Fellowships

University of Dayton-Honors Program January 2016

- \$1,000 for groundbreaking research in the sciences.

Ohio Invasive Plant Council- Research Grant January 2016

- \$900 dollars was awarded for outstanding research on invasive species in Ohio

Field/Lab Research Skills

- Competent in processing nutrient and water samples using Hach Kit standardized methods
- Water temperature, conductivity, turbidity, dissolved oxygen, and pH measurement of freshwater systems using a YSI Sonde probe
- Proficient in macroinvertebrate field collections following USEPA Rapid Bioassessment Protocol with D-frame kick net, Surber sampler, and kick seine
- Experience using SonTek Flow Tracker
- Proficient in water and sediment collection methods

- Proficient in aquatic habitat quality evaluations (Headwater Habitat Evaluation Index, Rapid Bioassessment Protocol)
- Identification of Northeastern deciduous trees
- Experience using the Nutrient Diffusing Substrate experimental design
- Proficient in macroinvertebrate culturing techniques (specifically *Hyaella azteca*, *Daphnia magna*, and *Lymnaea stagnalis*)
- Experience with quality assessment and quality control techniques
- Proficient in basic laboratory and sterilization techniques
- Confocal microscopy

Technical Skills

- Experience with R programming language (data analysis)
- ArcMap, ArcGIS Pro, and ArcGIS Online
- Microsoft Office

Awards and Recognition

- Honors Student August 2013-May 2017
- Presidential Merit Scholarship Recipient June 2013-May 2017
 - *Selective scholarships for students at the University of Dayton who have achieved high academic success and displayed strong leadership skills*
- Virginia W. Kettering Memorial Scholarship August 2013- May 2014
 - *This scholarship is awarded to students from southwestern Ohio who exhibit academic excellence and leadership*
- Dean's List December 2013-May 2017
- The Brother Russell A. Joly Award May 2017
 - *Award of excellence to the student who best combines excellence in biology and genuine appreciation of nature*
- Graduate Student Summer Fellowship May-August 2018

Relevant Coursework

- Research Methods in Ecology (BIO 553)
- Ecological Restoration (BIO 509)
- Evolution (BIO 301)
- Comparative Anatomy of Vertebrates (BIO 309)
- Ecology (BIO 310) and lab
- General Genetics (BIO 312H)
- Plant Biology (BIO 314)
- Analysis of Biological Data (BIO 439)
- Microbial Ecology (BIO 435)
- Ecological Mechanisms (BIO 496)
- Organic Chemistry (CHM 313 and 314) and labs
- Comparative Animal Physiology (BIO 450)
- Extreme Physiology (BIO 496 P1)
- General Microbiology (BIO 411) and lab
- Invertebrate Zoology (BIO 461) and lab
- Applied GIS (GEO 450)
- Advanced Applied GIS (GEO 560)
- GIS Capstone (GEO 598)

References
