

UMRR
Long Term Resource Monitoring FY23 Activities (Living Document)
(October 2022–December 2022 currently)

Meetings, Publications, Presentations, and Conference Attendance

Dave Bierman and Seth Fopma. Participated in multiple Lower Pool 13 HREP PDT conference calls. October-December 2022.

Dave Bierman and Seth Fopma. Participated in multiple virtual meetings regarding Lower Pool 13 HREP learning opportunities and potential monitoring, hosted by Kristen Bouska and Jeff Houser (USGS). October-December 2022.

Jeff Houser and Jennie Sauer (USGS). 16Nov2022. Attended the Quarterly meeting of the Upper Mississippi River Restoration Coordinating Committee. Davenport, IA

Jennie Sauer (USGS). 16Nov2022. Presented the LTRM FY22 Highlights at the Quarterly meeting of the Upper Mississippi River Restoration Coordinating Committee. Davenport, IA

All WI DNR FS2 staff. 6Oct2022. Statewide meeting with Office of Great Waters Staff. La Crosse, WI
 Bouska, K. L., J. Rohweder, N. R. DeJager, J. DeBoer, J. Lamer, and M. Van Appledorn. Understanding scaling relationships between physical complexity and fish diversity in a large floodplain-river ecosystem. American Geophysical Union Annual Meeting. Chicago, IL. 12-15 December 2022. (Invited)

Glen, Andrew. 8Aug2022. Update on Len Small community fish sampling. RRAT meeting.

Delaney J, Larson D. "Integrating machine learning and ecosystem state transition concepts: modeling submersed plant vulnerability and restoration potential" In review, USGS and Ecology Letters

Jennie Sauer (USGS). 28Nov2022. Attended a meeting with the USGS Rolla Science Publishing Center. La Crosse, WI.

Alicia Carhart, Eric Lund, Danelle Larson, Nicole Ward. 10Nov2022. Participated in Wild Rice discussions-path forward for analyses and manuscripts, genetic discussion and future work.

Delaney, J. T., K. L. Bouska, and M. Van Appledorn. Climate change adaptation thinking: Examples from the Midwest and Upper Mississippi River. Upper Mississippi River Conference. Moline, IL. 19-20 October 2022. (Invited)

Delaney J, Larson D. Submersed plants vulnerability evaluation tool for assessing plant resilience, risk of loss, and high restoration potential. In review, USGS and Ecology Letters. An online, interactive tool summarizes all results at scales specified by the user to advance ecological understanding and assist restoration planning and priorities

Alicia Carhart, Kristen Bouska, Jeff Houser and others. 27Oct2022. Participated in discussion regarding "learning opportunities associated with planned Pool 13 HREP".

Erickson RE, Larson DM, et al. Bridging the gap between mathematical biology and undergraduate education using applicable natural resource modeling. Invited perspective paper for the journal, Natural Resource Monitoring. Submitted to IPDS 11/8/2022

Larson DM, Bungula W, Stockdill A, McKean C, Lee A, Miller F, Davis K., in prep, U.S. Geological Survey. Paper: Quantifying ecosystem states and state transitions of the Upper Mississippi River using topological data analysis. Submitted to IPDS and PLOS Computational Biology Oct 2022. DOI: XXXXXXXXX

Larson DM, Bungula W, Stockdill A, McKean C, Lee A, Miller F, Davis K., in prep, U.S. Geological Survey. Data release: Quantifying ecosystem states and state transitions of the Upper Mississippi River using topological data analysis. Submitted to IPDS and PLOS Computational Biology Oct 2022.

DOI: XXXXXXXXX Larson DM, Bungula W, Lee A, Stockdill A, McKean C, Miller F, Davis K, Erickson R, Hlavecek E. Reconstructing missing data by comparing common interpolation techniques: applications for long-term water quality data and beyond. submitted October 2022 to U.S. Geological Survey and Limnology and Oceanography: Methods

Larson DM, Bungula W, Lee A, Stockdill A, McKean C, Miller F, Davis K, Erickson R, Hlavecek E. in prep, U.S. Geological Survey and Limnology and Oceanography: Methods. Data release: Reconstructing missing data by comparing common interpolation techniques: applications for long-term water quality data and beyond. DOI: XXXXXXXXX. submitted October 2022 to U.S. Geological Survey and Limnology and Oceanography: Methods

Sherman J*, St. Clair K, Gray B, Larson DM. "Predicting a continuous causal variable given ordinal outcomes and structural zeroes with application to submersed aquatic vegetation biomass." Environmental and Ecological Statistics. Submitted 12/07/2022

Technical activities and assistance

Assisted Iowa DNR's Bellevue Research Team with sauger and walleye evaluations in Pools 11 and 13. October 2022.

Served as a member on the Iowa DNR's Fisheries Bureau Statewide 2023 planning committee. October-December 2022.

Assisted KathiJo Jankowski (USGS) with placement of continuous data loggers and cameras in select Pool 13 backwater areas for the UMRR Winter Limnology project. November 2022.

Luke Zuklic. 4-5 Oct. 2022. Visited Upper Midwest Environmental Sciences Center to meet other LTRM staff, assist with LTRM water quality field work, and to receive LTRM water quality laboratory training. La Crosse, WI.

Alicia Carhart, Deanne Drake, James Fischer, Jeffrey Houser, Kathi Jankowski, John Kalas, and Eric Lund. 2022. Intrinsic and extrinsic regulation of water clarity in a large, floodplain-river ecosystem- Discussions, writing, and review. MS in prep for submission to journal.

Kristen Bouska and Mark Gaikowski. Nov 29- Dec 1, 2022. Attended NESP Ecosystem program workshop in St. Louis.

Molly Sobotka, 2022-23, West Alton HREP planning team - advise/design on current and preferred conditions, data sources, and field trips. Luke Zuklic, 2022-2023. Representative on MDC Water Team. Luke Zuklic, 2022-2023. Representative on MDC Safety Team.

Levi Solomon. 11/22/2022. Provided LTRM data to Jeremy Tiemann, INHS, for a banded killifish catches.

Danelle Larson. Invited Guest Editor: peer reviewed scientific journal Diversity (IF: 2.4) for a special journal

Maxson, K. Provided photos of grass carp and buffalo species to Maude Tremblay, Biologist with Asian Carp Program, Fisheries and Oceans Canada

Alicia Carhart, Danelle Larson, Jason Rohweder. 2022. 22 years of aquatic plant spatiotemporal dynamics in the Upper Mississippi River- writing, review and discussion. MS in preparation for submission to Diversity Journal in 2023.

Outreach

Molly Sobotka, Andrew Glen, Luke Zuklic, Dave Herzog, 24Sep2022 MDC Day on the River - boat rides, fish touch tanks, and in-situ educational presentations about the Mississippi River.; Andrew Glen. SEP2022. Missouri Conservationist Magazine, Nature Lab, Fisheries Science: Ohio Shrimp Surveys.;

Danelle Larson. Wisconsin Public Radio podcast on the "Impacts of drought on the Upper Mississippi River's wildlife" report. Dec 2022

Maxson, K. Basic Navigation with a Map and Compass. (6Dec2022). Calvary Co-Op Homeschool, Jr-Sr High. Reach: 20 students.