

UMRR
Long Term Resource Monitoring FY15 Activities (Living Document)
(Oct. 2014–March 2015)

Publications, Presentations, and Conference Attendance

First Quarter

(UMESC) Jennifer Sauer, Yao Yin, Brian Ickes, Jeff Houser, Jim Rogala, and Ben Schlifer presented a webinar October 27 on how to access Long Term Resource Monitoring (LTRM) data and how to use available data tools for addressing management questions. The LTRM is an element of the U.S. Army Corps of Engineers' Upper Mississippi River Restoration (UMRR) program. The LTRM has made considerable investments in gathering baseline data on key ecosystem components across 1200 miles of river for over 20 years. In addition, LTRM has made considerable investments to develop applications that help get these data and the information they provide into the hands of the public, program managers, natural resource managers, students, faculty, and policy makers. To make these data and applications more widely known and useful to program partners, LTRM conducted a webinar to introduce participants to the basics of database structure, access tools, processing data for analyses, and any special considerations for using LTRM data.

John Manier (UMESC) presented his Master's thesis work at a USGS invited seminar on Monday, November 10, 2014. John's presentation was Spatial and Temporal Dynamics of Phytoplankton Assemblages in Selected Reaches of the Upper Mississippi River: Navigation Pools 8, 13, And 26

(UMESC) Barry Johnson, Jennifer Sauer, and Jeff Houser will attend the meeting of the Analysis Team of the U.S. Corps of Engineers' Upper Mississippi River Restoration (UMRR) program at the U.S. Fish and Wildlife Service office in Rock Island, Illinois, 6 November 2014. The meeting will include representatives of UMRR partner agencies and will focus on discussion of research proposals for action during the FY2015.

(UMESC) Mark Gaikowski, Barry Johnson, Jennifer Sauer, and Jeff Houser will participate in the November quarterly meeting of the U.S. Army Corps of Engineers' Upper Mississippi River Restoration (UMRR) Coordinating Committee, November 19, in St. Paul, MN. The UMRR funds the Long Term Resource Monitoring Program on the Upper Mississippi River System (UMRS), which is implemented through USGS-UMESC. This partnership meeting provides a forum for the Corps, USGS, other federal agencies, and the five UMRS states to discuss and consider a range of program policy and budget issues concerning the UMRR program. Agenda includes; discussion, endorsement, and implementation of the new UMRR Strategic Plan 2015-2025; and development of the next UMRR Report to Congress (due FY 2016).

Kueter attended UMRCC fall WQ technical meeting at Fairport Fish Hatchery – October, 2014.

Bierman attended on-site visit at Sunfish Lake - Pool 12 Overwintering HREP Stage 1, with USFWS and USACE staff – November, 2014.

Kueter and Vogeler recertified on CPR and first aid training in Fairport, Iowa – December, 2014.

Levi Solomon, Rich Pendleton, and Andy Casper. Are Asian Carp Influencing the Fish Community as a whole. INHS December Newsletter

Andy Casper, Doyn Kellerhals, Rich Pendleton and Levi Solomon attended A Team meeting in Moline. Bartels participated in a conference call with WDNR, MPCA, EPA, and UMRBA staff discussing a pilot bioassessment monitoring project for the UMR along the MN/WI border.

Second Quarter

(UMESC) Jeff Houser, participated in the U.S. Army Corps of Engineers' Upper Mississippi River Restoration (UMRR) Program's operational planning meeting January 20-22, 2015, in St. Paul, MN. The Operational Plan will be a document that guides the UMRR program to help achieve its vision as documented in the UMRR Strategic Plan. The UMRR Strategic Plan is a 10-year vision for the Program. UMESC provides science leadership for the UMRR program.

(UMESC) Mark Gaikowski, Jennifer Sauer, Jeff Houser, and Nate De Jager will participate in the February quarterly meetings of the Upper Mississippi River Basin Association (UMRBA) and the Upper Mississippi River Restoration (UMRR)-Coordinating Committee (UMRR-CC), February 10-11, in Rock Island, IL. Gaikowski will present an update on detection and control methods for aquatic invasive species, as well as represent USGS in the UMRBA meeting. De Jager will present, "Upper Mississippi River Landscape Ecology—Moving toward Synthesis and Significance," at the UMRR-CC meeting. Houser will highlight recent monitoring and research done by the Long Term Resource Monitoring (LTRM) element of the UMRR. The UMRR is a U.S. Army Corps of Engineers' research and restoration program for the Upper Mississippi River System. The Upper Midwest Environmental Sciences Center (UMESC) implements the LTRM element of the UMRR, combining environmental monitoring, research, systemic data acquisition, and modeling in an effort to provide a solid scientific foundation upon which resource managers and policy makers base management actions and develop environmental policy on the Upper Mississippi River System.

Jennifer Sauer, Yao Yin, and Ben Schlifer met with the Steve Winter (USFWS), Megan Moore (MDNR) and Mike Griffin (IDNR) on developing a proposal for submittal to the Upper Mississippi River Conservation Committee (UMRCC) to organize and serve on the Internet the UMRCC aquatic vegetation data.

On 31 March 2015, Brian Ickes participated in the second annual convention of the Environmental Science Advisory Board at the University of Wisconsin (UW) – Stout, as a Board member and adviser. As a polytechnic institution, the Environmental Science program at UW-Stout provides a broad science, management, and policy foundation that includes field work and internship experiences, as well as a new \$43 million science facility. Board discussions centered on (1) core curriculum development and content; (2) pedagogical approaches; (3) practicums; and (4) skills students need in today's environmental sciences fields.

Bowler compiled and submitted the Bellevue LTRMP Operational Report for 2014 to district supervisor – January, 2015.

Bierman attended the UMRR Coordinating Committee quarterly meeting in Rock Island, Illinois – February, 2015.

Vogeler attended Fisheries Statewide at Honey Creek State Lodge – March, 2015.

Bierman hosted an informational meeting with Iowa's new UMRBA representative, Tim Hall, along with Randy Schultz and Mike Griffin (IDNR Wildlife) – March, 2015.

Bowler and Vogeler attended meeting of the Iowa Chapter of the American Fisheries Society in Ames, Iowa – March, 2015.

Bierman, Bowler, Kueter, and Vogeler attended spring district meeting at the Hurstville Interpretive Center in Maquoketa, Iowa – March, 2015.

Bowler compiled and distributed Pool 13 Fisheries Highlights, 2014 to UMRS personnel and to Manchester Research for the Rivers and Streams Technical Committee meeting and AFS NCD – March, 2015.

Bierman participated in UMRR-LTRM Team Leader conference call regarding the FY16 budget – March, 2015.

DeLain, S. Five Year Summary of LTRM Fish Data on Pool 4 of the Upper Mississippi River 2009 – 2013.

Megan Moore participated in a conference call with some members of the UMRCC Wildlife Technical Section to discuss what pool(s) to sample this year and potential funding for analysis of previous years' data.

Walt Popp participated in a MN DNR Mississippi River Team Steering Committee meeting in St. Paul on Feb. 9th with other Mississippi River staff and several regional managers.

Walt Popp participated in three conference calls (Feb. 19, Mar. 6, and Mar. 24) with ACE, USGS and other team leaders to discuss the President's 2016 budget and the budget implications and strategies.

Technical activities and assistance:

First Quarter

Jeff Houser (UMESC) met with Rob Striegl, Ted Stets (USGS Denver) to discuss a project evaluating C flux in North America. As part of that project they are interested in having samples collected at the LTRM WQ fixed sites in Pool 8 for their project.

Brian Ickes provided Andrea Ania, USFWS Fishery Biologist at Alpena FWCO in Michigan with information on LTRM fisheries data collection and efficacy of gear used in different riverine habitats.

Wisconsin LTRM Field Station will collaborate with USGS scientists from USGS in Boulder, Colorado. Rob Striegl and Ted Stets from Colorado, are part of a larger project evaluating carbon flux in North America (LandCarbon). Specifically, they are interested in better understanding carbon flux in large rivers and initiating some work in the UMR. They made two sampling trips to the Upper Mississippi in 2014 (including Pool 8) during which they worked out sampling techniques and gathered initial data. The Wisconsin field station will collect one additional water sample at eight of the Pool 8 LTRM WQ fixed sites for each sampling episode in FY2015.

Jeff Houser provided information on the LTRM data to Molly Reichert, Adjunct Faculty at the University of Minnesota--School of Architecture. Ms. Reichart is part of a team who is creating a public art piece for the new Saints Stadium in Lowertown St. Paul. Comprised of 28 sculptural objects, Meander is inspired by the Upper Mississippi River's shape, bathymetry, and the 28 locks along its course from Saint Anthony Falls, Minnesota, to St. Louis, Missouri. Each section will be artistically fabricated out of cast glass and masonry – made from silica and lime harvested from the Mississippi River Valley. Both materials have been crucial to the industrial history of Saint Paul. The glass cap of each piece will contain an embedded LED light, illustrating the changing water conditions of the river and organically reacting to viewers' presence.

Jennifer Sauer, Yao Yin, Brian Ickes, Jennifer Sauer (USGS), John Chick (Illinois Natural History Survey), and Megan Moore (Minnesota Department of Natural Resources) provided information to Sandra Morrison (USGS) data for the the 2014 WRRDA Report to Congress on Asian Carp prevention in the Upper Mississippi River and Ohio River basins.

Brian Ickes and Ben Schlifer (USGS) provided information on walleye and sauger stocks in Pool 8 to Dave Heath (WDNR).

Ben Schlifer (USGS) provided fisheries data to John Kosovich (USGS). John is working on nation-wide Large River Fisheries Monitoring Forum.

Bowler collected 151 adult common carp in Pool 13 with Mike Wolf and Tyler Ham of the Missouri Department of Conservation as part of a systemic effort in Asian carp microsatellite analysis in the Upper Mississippi River – October, 2014.

Bowler and Reed collected sub-adult common carp from routine LTRM fisheries monitoring for Quinton Phelps of the Missouri Department of Conservation as part of a large-scale effort in microsatellite research in the Upper Mississippi River – October, 2014.

Bowler provided two LTRM fisheries summary reports for 2013 to Andrew Allison, curator of the National Mississippi River Museum and Aquarium in Dubuque – October, 2014.

Bowler recertified on CPR and first aid training in Elkader, Iowa – November, 2014.

Bowler sent accounts of skipjack herring in the UMR to John Olson, Central Office Biological Monitoring & Assessment Program Team for identifying species of greatest conservation need for the Iowa Wildlife Action Plan – October, 2014.

Ben Yeager was hired to track white crappie for the telemetry segment in conjunction with the Pool 12 overwintering HREP project – October 27, 2014.

Bowler reviewed and provided comments on fact sheet “Tree maps: A unique way to explore long-term fisheries data” by Ben Schlifer, Brian Ickes, and Jennifer Sauer of the USGS – October, 2014.

Yeager assisted Green Island Wildlife with collection of CWD samples from Jackson County – December, 2014.

Nathan De Jager received data from Lisa Maas (USFWS) and Bobby Jackson (USACE) from hobo water level data loggers. The loggers were installed in the Reno Bottoms area from 2010-2014 to monitor ground water levels as part of a NESP project. The data might be used to better link water levels in adjacent channels with ground water levels and better understand the role the above-ground plant community might play in modifying such relationships.

Nathan De Jager assisted Alicia Weeks with some spatial analysis of submerged vegetation and Bithynia abundance data and develop a poster. Alicia helped collect SAV data with the Wisconsin DNR in summer 2014 and is currently a graduate student at UWL studying SAV-bithynia distributions with Dr. Roger Haro. Alicia won second place for her poster at a recent UW-L geospatial poster contest.

Nathan De Jager assisted Jason Rohweder with some data analyses related to the USGS Midwest Region’s Large Rivers Initiative. Jason is working with Rob Jacobson (USGS-CERC) to conduct a geomorphic assessment of river-floodplain connectivity for the large rivers of the Midwestern United States.

Nathan De Jager assisted Patricia Reis (UMESC) with some spatial analysis of native mussel distributions.

Levi Solomon provided insight on grass carp populations in the La Grange Reach to Kevin Irons, IDNR

Levi Solomon provided information, video, and photos of jumping Asian carp to Jen Mui, INHS, for upcoming presentations and newsletters

Rich Pendleton and Levi Solomon provided stomach contents of piscivorous fishes (many collected under SOW item 2015B6) from the La Grange Reach of the Illinois River to Jim Lamer, Western Illinois University

Rich Pendleton and Levi Solomon provided fish specimens to Wen Su Liu, U of I Champaign, for stomach microbe analysis.

Rich Pendleton and Doyn Kellerhals are members of a working committee to redefine and restructure the tiles and advancement tracts for Illinois Natural History survey contract employees.

Rich Pendleton, Levi Solomon, and Andy Casper submitted a proposal (UMRR Science and Support) titled "Assessing the quality and use of existing overwintering habitat in the La Grange reach of the Illinois River."

Andrew Casper submitted a proposal to the Science in Support of Restoration designed to develop and conduct a pilot study of the use of fish indicator groups for communicating system wide perspective on fish response to restoration

Rich Pendleton and Levi Solomon traveled to Pool 4, Lake City, MN to assist Steve DeLain in annual LTRM monitoring. Trip was part of personnel exchange to ensure continued use of standard methods among LTRM Component Specialists.

Bartels responded to a request from WDNR staff in Milwaukee to provide printed information to a citizen seeking information on bull sharks in the Mississippi River.

Walt Popp participated in a LTRMP conference call on Oct. 6th to discuss the content of proposed annual field station summary reports for USACE management and state resource managers.

Megan Moore provided her 2014 data analysis summary figures showing vegetation trends in Pool 4 to USACE, USGS, and field station team leaders as an example of an annual field station summary report.

Walt Popp participated in a LTRMP Analysis Team meeting on Nov. 5-6 in Moline, IL.

Walt Popp participated in a MNDNR Mississippi River Team Steering Committee meetings on Dec. 8th in St. Paul to discuss river issues with the Miss. River Hydrologist and Fisheries staff, Asst. Commissioner Barb Naramore, the regional director and several regional managers.

Walt Popp participated in a UMRR conference call on Dec. 9th for Kevin Stauffer to discuss possible development of a UMRR Operating Plan to complement the Strategic Plan.

Walt Popp chaired, and Rob Burdis and Megan Moore participated, in a DNR Mississippi River Team meeting on Dec. 10th in Lake City.

Megan Moore reviewed a USGS report at the request of USGS.

Eric Ratcliff provided information regarding potential sampling locations for a Principia College student research project on microplastics in the Mississippi River 10/2014

Second Quarter

Jennifer Sauer reviewed Hazard Analysis & Critical Control Points (HACCP) plan for the USGS project "Assessing the statuses of amphibian populations relative to global change on wetland-upland 3 landscapes" HACCP planning is a management tool that provides a structured method to identify risks and focus procedures that is being successfully used in natural resource pathway activities. Understanding

pathways and developing plans to reduce non-target species and prevent biological contamination is necessary to avoid unintended spread of species.

Brian Ickes provided fisheries information to Ronald M. Koth, Senior Fisheries Ecologist (the Barr Company) which provides engineering and environmental consulting services to clients. Barr is working on the effort to re-create Hall's Island in Pool 1.

Brian Ickes provided information and guidance to the WDNR as they are looking at the potential to develop a backwater fish IBI for the Mississippi River.

Jeff Houser provided Dennis Wasley (MPCA) with information on the collection and analysis of phosphorous and chlorophyll-*a* done by the LTRM. Dennis will be looking at total phosphorus and chlorophyll-*a* data compared to their recently approved river eutrophication standards.

Yao Yin and Jennifer Sauer provided the wild rice % frequency data for 2014 data collected in Pools 4 and 8 to John Sullivan. John was drafting an article for Reggie McLeod, Big River Magazine.

Jennifer Sauer provided *Bithynia tentaculata* (faucet snail) information to Jennifer Koop, Ph.D. University of Arizona Whiteman Lab. Dr. Koop is a researcher interested in the ecology and evolution of species interactions, particularly in reference to host-parasite systems.

Jennifer Sauer provided Kim Olson, La Crosse County Emergency Management, with a list of Equipment Resources. The County asked for a listing of equipment that could potentially be utilized in the event of an emergency such as an oil spill.

Jeff Houser provided water quality information to Chuck Theiling (USACE). Chuck was gathering information for a HREP opportunity to consider nutrient dynamics at Keithsburg Refuge, Pool 18.

Jeff Houser provided LTRM water quality information to the U.S. Geological Survey's National Water-Quality Assessment Program. They would like to use data from LTRM monitoring as part of a national analysis of trends in water quality.

Bowler provided data and summaries of 2014 special projects fisheries sampling for Pools 9, 10, 16, 18 and Huron Island HREP to Guttenberg and Fairport Management – January, 2015.

Bowler provided current compilation of Iowa fish species to Fisheries Chief for the Director's Listening Sessions – January, 2015.

Bowler compiled and distributed list of current fish species collected from Pool 19 for Bob Hrabik of the Missouri Department of Conservation, John Olson of the Central Office Biological Monitoring & Assessment Program Team, Hal Schramm of the Mississippi State Cooperative Fish & Wildlife Research Unit, and various other UMR personnel – January, 2015.

Bowler aged digitized otoliths of black crappie from Pool 26 for Levi Solomon of the Illinois Natural History Survey – January, 2015.

Kueter analyzed long-term trends of suspended solids, total nitrogen, total phosphorus, and turbidity by stratum in Pool 13 from 1994-2013 for the 2014 IDNR Operational Report – January, 2015.

Bowler provided information on three Bellevue LTRMP fisheries reports to Jeff Houser of UMESC for a presentation at the UMRR Coordinating Committee quarterly meeting – February, 2015.

Bowler provided report “Evaluating the Effectiveness of a Mandatory Catch and Release Regulation on a Riverine Largemouth Bass Population” to Chuck Theiling of the USACE for the Brown's Lake HREP Performance Evaluation Review – February, 2015.

Bowler provided information on Pool 13 gizzard shad abundance (1993-2014) to Alma Gaul for an article on bald eagle declines in the Quad City Times – February, 2015.

Bierman recertified on CPR and first aid training in Bellevue, Iowa – February, 2015.

Bowler provided current compilation of Iowa fish species to Des Moines Research – March, 2015.

Bowler plotted sampling areas and sampling points in ArcView for the Pool 11 Train Derailment Mussel Survey for Guttenberg Management – March, 2015.

Bowler made heat map of Iowa’s 2014 commercial harvest of common snapping turtles for annual report for Guttenberg Management – March, 2015.

Steve DeLain provided catch-per-unit-effort trends of select fish species to a WI DNR Fisheries manager.

Steve DeLain provided specifications on an electroshocking boat to the Havana Field Station.

Steve DeLain provided data on declining river shiner numbers in Pools 4 and 8 to Jay Hatch who is working on the book, *Fishes of Minnesota*.

Rob Burdis provided technical assistance regarding habitat restoration needs on Pool 4 to the WI DNR Mississippi River Water Quality Specialist.

Rob Burdis provided Secchi data for Lake Pepin to MN DNR Fisheries Management.

Megan Moore provided technical assistance to the UMRCC Wildlife Technical Section regarding their aquatic plant list.

Megan Moore provided wild rice data from Pool 4 to the WI DNR.

Megan Moore provided multiple years of Pool 4 vegetation data to the WI DNR Mississippi River Water Quality Specialist.

Megan Moore provided LTRM vegetation protocols and photos to the WI DNR Mississippi River Wildlife Specialist.

Megan Moore provided Dave Hokanson, UMRBA Water Quality Specialist, with the submersed macrophyte index (SMI) sampling protocol that Heidi and she adapted from LTRM protocols for pools without adequate bathymetry coverage.

Megan Moore provided information on native milfoil locations on Pool 4 to a Wabasha County Soil and Water Conservation District invasive species specialist.

Outreach

First Quarter

(UMESC) Randy Hines, Shelly Bartsch, and Larry Robinson hosted over a 100 students from La Crosse's Longfellow Middle School's "School on the River," October 16, 2014. The Program's curriculum focuses on the Mississippi River's ecological systems and how these systems lead to students' understanding of how cultural, economic, political and organizational systems work in the real world. Presentations included the use of geographic information systems to map and monitor floodplain vegetation on the Upper Mississippi River System, including the use of historic aerial photos and 3D mapping technologies.

Bierman gave a tour of local HREP projects and gave an overview of UMRR-EMP to Eric Anderson, a graduate student at the University of Idaho, who is focusing on environmental restoration projects for his graduate research – November, 2014.

Steve DeLain hosted two Havana Field Station fish specialists for three days during period 3 sampling as part of a field station staff exchange.

Steve DeLain received assistance with electrofishing during period 3 sampling from two USACE St. Paul District staff.

Ben Lubinski volunteered at a fishing demonstration for approximately 10 military veterans participating in the Alton, IL Senior Services Plus, Healthy Minds Healthy Bodies Program. Ben spoke to the group about fisheries and fisheries research on the Mississippi River. 10/2014.

Ben Lubinski and Ed Culver presented information about the LTRMP and INHS to approximately 160 high school seniors attending a "Who Works on the River" career fair event at the National Great Rivers Research and Education Center. 11/2014.

Second Quarter

Jennifer Sauer gave a tour of UMESC to ACOE staff from across the nation participating in a leadership 101 intensive class.