

UMRR Long Term Resource Monitoring Program FY14 Activities (Living Document)  
(October 2013–September 2014)

**Publications, Presentations, and Conference Attendance**

**1<sup>st</sup> Quarter**

Bierman participated in several conference calls with LTRMP Team Leaders during the federal shutdown – October, 2013.

Bierman attended a Pool 11 HREP (Mud and Sunfish Lakes) Performance Evaluation Report Planning meeting with Iowa and Wisconsin DNR fisheries management staff and USACE staff – December, 2013.

Popp, W.\*, R. Burdis, S. DeLain, and M. Moore. Temporal trends in water quality and biota in segments of Pool 4 above and below Lake Pepin: indications of a recent ecological shift. Presentation at the St. Croix Research Rendezvous, October 15, 2013, Marine on St. Croix, MN.

Popp, W.\*, R. Burdis, S. DeLain, and M. Moore. 20+ years of monitoring the Mississippi River: indications of a recent ecological shift. Presentation at the Minnesota DNR's Ecological and Water Resources Division meeting, October 23, 2013, St. Cloud, MN.

Walt Popp attended the UMRR-EMPCC meeting in St. Paul on Nov. 20<sup>th</sup>.

Rob Burdis, Steve DeLain, Megan Moore, and Walt Popp attended the Minnesota DNR's Ecological and Water Resources Division meeting in St. Cloud, MN on Oct. 22-23.

Walt Popp participated in two field station team leader conference calls during the government shutdown.

John Chick gave a presentation about the Great Rivers Ecological Observation Network (GREON) and LTRMP at the Joint Illinois Rivers Coordinating Council meeting. 10/2013.

John Chick gave a presentation on the Great Rivers Ecological Observatory network to the US Water Alliance at NGRREC. LTRMP data was presented during this talk. 11/2013.

John Chick gave a presentation on the Great Rivers Ecological Observatory network to USACE reps from ERDC at NGRREC. LTRMP data was presented during this talk. 12/2013.

Lori Gittinger attended training provided by Yellow Springs Instruments regarding the new YSI EXO Sondes and associated GREON platform. 11/2013.

Solomon, L. E. The Expanding Influence of the Long Term Resource Monitoring Program (LTRMP). 14th Bi-Annual Governor's Conference on the Management of the Illinois River System. Platform Presentation

Houser, J.N. Increasing our understanding of the UMR: Analysis of UMRR-EMP LTRMP monitoring data as a foundation for learning about a large, complicated ecosystem. EMPCC meeting. 20 November 2013. Minneapolis, MN.

## 2nd Quarter

(UMESC) Jason Rohweder, Timothy Fox, and Nathan De Jager attended training for LANDIS-II, a forest landscape and disturbance simulation model, January 8-10 in Madison, WI. LANDIS-II will be used to model the effects of wolf management scenarios on moose population density and landscape distributions of vegetation and habitat for other species of concern, within Isle Royale National Park, using 2014 USGS/NPS Natural Resources Preservation Program funding.

(UMESC) Michael Jawson, Jeff Houser, and Barry Johnson attended the second strategic planning meeting for the U.S. Army Corps of Engineers' (USACE) Upper Mississippi River Restoration-Environmental Management Program (UMRR-EMP), at the Rock Island Arsenal in Rock Island, IL, January 6-8. The meeting is a continuation of the planning process initiated in April 2013 to develop strategies for increasing the effectiveness of the UMRR-EMP, including better integration of the Long Term Resource Monitoring Program (LTRMP) and Habitat Rehabilitation and Enhancement Projects (HREP) components of the UMRR-EMP. Organizations participating in the planning meetings included; USACE, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, USGS, Upper Mississippi River Basin Association, Illinois Natural History Survey, Iowa Department of Natural Resources (DNR), Minnesota DNR, Missouri Department of Conservation, and Wisconsin DNR.

Dr. Yao Yin presented "Detecting the lasting effects of water level drawdown on aquatic vegetation in Upper Mississippi River Pool 8" at the Annual Conference of the Wisconsin Wetlands Association, February 18-20 in La Crosse, WI.

(UMESC) John (JC) Nelson conducted a Webinar briefing session on updated GIS data and technology used by UMESC for the U.S. Army Corps of Engineers' (USACE) Upper Mississippi River Restoration-Environmental Management Program (UMRR-EMP), on March 13. The Long Term Resource Monitoring Program (LTRMP) element of the UMRR-EMP is implemented by the USGS Upper Midwest Environmental Sciences Center (UMESC), in cooperation with the five Upper Mississippi River System (UMRS) states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. The Webinar was attended by USACE/UMRR-EMP program partners in the St Paul, Rock Island, and St Louis Districts.

Houser, J.N. Revisiting the UMR Comprehensive Master Plan: Long Term Resource Monitoring and Computer Inventory and Analysis. Upper Mississippi River Conservation Committee 70th Annual Meeting. 18-20 March 2014. La Crosse, WI.

John Chick received the "Professional Paper Award" at the 2014 Annual meeting of the Illinois American Fisheries Society. John gave a talk on the LTRMP project: "Does variation in electrofishing catch per unit effort reflect variation in the abundance of fishes?"

Bowler completed and submitted "Evaluating the Effectiveness of a Mandatory Catch and Release Regulation on a Riverine Largemouth Bass Population." for the Iowa DNR's Fisheries Management Investigations 2013 Annual Report – January, 2014.

Kueter analyzed long-term trends of suspended solids, total nitrogen, total phosphorus, and turbidity by stratum in Pool 13 from 1994-2012 for the 2013 IDNR Operational Report – January, 2014.

Petersen analyzed long-term trends in the frequency of occurrence of selected submersed plant species (coontail, curly-leaf pondweed, Elodea, Eurasian water milfoil, sago pondweed, Vallisneria, and all submersed aquatic vegetation combined) by stratum in Pool 13 from 1998-2012 for the 2013 IDNR Operational Report – January, 2014.

Bowler compiled and submitted the Bellevue LTRMP Operational Report for 2012 to N.E. district supervisor – January, 2014.

Bierman, Bowler, Kueter, and Petersen attended Fisheries Statewide at Honey Creek State Lodge – March, 2014.

Bierman, Bowler, Kueter, and Petersen attended the 70<sup>th</sup> annual meeting of the UMRCC in La Crosse, Wisconsin

#### Platform Presentations

2014: Phelps, Q.E. J.R. Seibert, S.J. Tripp, and D. P. Herzog. Use of harvest simulation models for silver carp populations in several US Rivers. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: Whitley, G.W., J. Norman, and Q.E. Phelps. Recruitment sources of Asian carps in pools 20-26 of the Upper Mississippi River. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: Tripp, S.J. K. Haupt, and Q.E. Phelps. Asian carp expansion in the Mississippi River: Focusing on the leading edge of the stronghold. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: Haupt, K. S.J. Tripp, D.P. Herzog and Q.E. Phelps. Habitat use by age-0 silver carp in the Mississippi River basin. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: West, J, M. Sobotka, and Q.E. Phelps. Examining recruitment patterns of fishes in the Mississippi River. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014 Hamel, M. and several co-authors including Q. Phelps. Rangewide age and growth characteristics of shovelnose sturgeon from mark-recapture data: Implications for conservation and management. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: Herzog, D. Q. Phelps, S. Tripp, and H. Brock. Comparing Telemetry Techniques for tracking Migratory Fishes In Large Navigable Water Ways. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: Bales, K. R. and Q.E. Phelps. 2014. Age-0 Lake Sturgeon Prey Selectivity. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: Hupfeld, R. N., S. J. Tripp, D. P. Herzog, and Q.E. Phelps. 2014. Paddlefish population characteristics of large Midwestern U.S. Rivers. 74th Midwest Fish and Wildlife Conference. Kansas City, Missouri.

2014: Hupfeld, R. N., S. J. Tripp, D. P. Herzog, and Q.E. Phelps. 2014. Population characteristics of paddlefish in Missouri's large reservoirs. 74th Midwest Fish and Wildlife Conference. Kansas City, Missouri.

## Poster Presentations

2014: Phelps, Q. E., R.N. Hupfeld, and G. W. Whitley. 2014. Sturgeon environmental history in the Upper Mississippi River. 74th Midwest Fish and Wildlife Conference. Kansas City, Missouri.

2104: Simmons, S, and Q. Phelps. Comparing side channel and main channel fish diversity in the Middle Mississippi River. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: Bales, K.R., S. J. Tripp, T. L. Moore, D. P. Herzog, and Q.E. Phelps. 2014. Adult Demographics of Lake Sturgeon in the Upper Mississippi River. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

2014: Buelman, A. and Q.E. Phelps. Use of harvest simulation models for channel catfish populations in the Middle Mississippi River. 74th Midwest Fish and Wildlife Conference. Kansas City, Missouri.

2014: Tripp, S., K. Haupt, and Q. Phelps. Asian carp expansion in the Mississippi River: Focusing on the leading edge of the stronghold. 2014 Midwest Fish and Wildlife Meeting. January 26-29, 2014.

2014: Sinha, D., R. N. Hupfeld, S. J. Tripp, and Q.E. Phelps. 2014. Common carp population characteristics in the Middle Mississippi River. 74th Midwest Fish and Wildlife Conference. Kansas City, Missouri.

2014 Ostendorf, D. and several co-authors including Q. Phelps. A comparison in fish communities of the 2012 drought and the 2013 flood in the Middle Mississippi River. 74th Midwest Fish and Wildlife Conference, Kansas City, Missouri.

Solomon, L. E. and Casper, A. F. "Documenting the use to the Long Term Resource Monitoring Programs Fish Monitoring Methodologies throughout the Midwest" UMRRC-EMP-CC Meeting in Rock Island [Platform Presentation](#)

Pendleton, R. M., Solomon L. E., and Casper, A. F. "Long Term Changes in Fish Community Structure in Relation to Asian Carp Establishment" Illinois AFS. [Platform Presentation](#)

Solomon, L. E., Pendleton, R. M., and Casper, A. F. "Progression of the Fish Community at The Nature Conservancy's Merwin Preserve: A Restored Backwater Complex of the Illinois River" Illinois AFS, Bloomington IL. [Platform Presentation](#)

Solomon, L. E., Pendleton, R. M., and Casper, A. F. "Long Term Changes in Fish Community Structure in Relation to Asian Carp Establishment" UMRCC Fish Technical Section. [Platform Presentation](#)

Solomon, L. E. and Casper, A. F. "Documenting the use to the Long Term Resource Monitoring Programs Fish Monitoring Methodologies throughout the Midwest" UMRCC Spring Meeting. [Poster Presentation](#)

Solomon, L. E., Pendleton, R. M., and Casper, A. F. "Long Term Changes in Fish Community Structure in Relation to Asian Carp Establishment" UMRCC Spring Meeting. [Poster Presentation](#)

Rich Pendleton, Levi Solomon, and Andy Casper participated in the Asian Carp Monitoring and Response Work Group Meeting, Springfield, IL.

Walt Popp and other MN DNR Mississippi River staff met with Asst. Commissioner Naramore and other Dept. Directors and Regional Managers on Jan. 24<sup>th</sup> in St. Paul to request better coordination between St. Paul and Lake City on river issues and more staff to assist with the increasing river-related workload.

Walt Popp chaired, and Rob Burdis, Megan Moore and Steve DeLain participated, in a MN DNR Mississippi River Team meeting on Feb. 18<sup>th</sup> in Lake City.

Walt Popp attended the UMRR-EMPCC Meeting on Feb. 26<sup>th</sup> in Rock Island, IL.

Megan Moore organized the agenda and chaired the UMRCC Wildlife Technical Section meeting on Mar. 18<sup>th</sup> in La Crosse.

Megan Moore and Steve DeLain attended the UMRCC Annual Meeting on Mar. 18-20 in La Crosse. DeLain, S.\*, and W. Popp Relationship of weed shiner and young-of-year bluegill and largemouth bass abundance to submersed aquatic vegetation in Navigation Pools 4, 8, and 13 of the Upper Mississippi River, 1998–2012. Poster presentation at UMRCC Annual Meeting, Mar. 18-20, 2014, La Crosse, WI.

Giblin S.M. submitted article to UMRCC newsletter titled “How Much Green is Good?”  
<http://www.umrcc.org/Reports/Newsletters/Winter%202014%20Newsletter.pdf>

Giblin S.M. “Thresholds in the Response of Free-Floating Plant Abundance to Variation in Hydraulic Connectivity, Nutrients, and Macrophyte Abundance in a Large Floodplain River.” Science meeting-platform presentation.

Giblin S.M. “Ecological Shifts in a Large Floodplain River During a Transition From a Turbid to Clear Stable State.” UMRCC meeting- platform presentation.

Giblin S. M. attended Nitrogen Summit at UW-Madison.

Fischer J. et al., Monitoring Team meeting and work planning session, La Crosse, March 4

Fischer J. UMRCC meeting, La Crosse, March 18-20.

Fischer J. All supervisors required training, Madison, March 25.

Fischer, J. UMRR-EMP strategic planning session, Rock Island, Jan. 6-8.

Fischer, J. et al., Planning for WDNR statewide training session to be held May 2014 in La Crosse, where UMRR will be highlighted, La Crosse, Jan. 27.

Fischer, J. Mississippi River AIS partnership meeting, La Crosse, Feb. 3.

Fischer, J. All supervisors required meeting, Mosinee, WI, Feb. 4-5.

Fischer, J. Miss River Wildlife Technician interviews, La Cross Feb. 7.

Ben Lubinski attended and participated in an IL AFS Executive Committee phone conference call on 2/06/14.

John Chick gave a seminar at Saint Louis University, Department of Earth and Atmospheric Sciences, titled "Invasive species: Asian carp in the Upper Mississippi River System." 2/2014.

Culver, E.F. and J.H. Chick. Shocking results: Assessing the injury rates of fishes from pulsed-DC electrofishing. Annual Meeting of the Illinois Chapter of the American Fisheries Society, Bloomington, IL. 3/2014.

Larry Robinson participated in monthly Unmanned Aerial Systems (UAS) conference calls hosted by the National UAS Project Office.

Larry Robinson attended the annual ESRI Federal GIS Conference in Washington D.C on February 9-12, 2014.

Larry Robinson attended thermal imagery acquisition and processing training in St. Paul, MN on February 26-27, 2014 as part of a thermal camera evaluation for resource monitoring in the Upper Midwest. The US Fish & Wildlife Region 3 Office hope to evaluate the potential of thermal imagery to detect and count waterfowl, deer, heron rookeries, measure water and land surface temperatures, identify dike/levee seeps, and locate cool air slopes associated with algal talus slopes (habitat for the threatened Iowa Pleistocene snail and Northern monkshood).

Larry Robinson attended the Upper Mississippi River Conservation Committee's annual meeting on March 19-20 in La Crosse, WI.

Jennifer Sauer attended the Upper Mississippi River Conservation Committee's annual meeting on March 19-20 in La Crosse, WI. Jennifer also coordinated the poster session for the UMRCC.

Young, M. M., Solomon, L. E., Pendleton, R. M., Vanmiddlesworth, T. D. and Casper, A. F. "The status and trends of Bluegill in the La Grange Reach of the Illinois River with comparisons to a restored, disconnected floodplain" Emiquon Symposium. Poster Presentation

Levi E. Solomon, Richard M. Pendleton, and Andrew F. Casper "Progression of the Fish Community at the Nature Conservancy's Merwin Preserve: A Restored Backwater Complex of the Illinois River" Emiquon Symposium Poster Presentation

Pendleton, R., C.J. Hinz, A.F. Casper, J.A. DeBoer, M.W. Fritts. 2014. Ecosystem responses to barrier defense Asian carp removal project *in* 2013 Asian carp monitoring and rapid response plan interim summary reports. Asian Carp Region Coordinating Committee – Monitoring and Rapid Response Workgroup.

Pendleton, R., D. Hoeinghaus, L. Gomes, and A. Agostinho. 2014. Loss of rare fish species from tropical floodplain food webs affects community structure and ecosystem multifunctionality in a mesocosm experiment. PLoS ONE 9(1): e84568. doi:10.1371/journal.pone.0084568

### 3rd Quarter

Jennifer Sauer attended the Upper Mississippi River Basin Association (UMRBA) Hazardous Spills Coordination Group Meeting at UMESC, April 16-17.

(UMESC) Mike Jawson, Barry Johnson, and Jeff Houser participated in a meeting of the Strategic Planning Team for the U.S. Army Corps of Engineers' Upper Mississippi River Restoration Program (UMRR), April 8-11 in Rock Island, IL.

UMRR LTRMP scientists authored/co-authored a series of platform and poster presentations at the 46th Annual Meeting of the Mississippi River Research Consortium, April 23-25 in La Crosse, WI.

Long Term Trends in Suspended Solids, Nitrogen, and Phosphorus in Select Upper Mississippi River Tributaries, by Rebecca M. Kreiling and Jeffrey N. Houser.

Modeling and Mapping Flood Inundation along the Upper Mississippi River: Implications for the Study and Management of Floodplain Vegetation and Soil Dynamics, by Nathan R. De Jager, Jason J. Rohweder, Timothy J. Fox, and Yao Yin.

Patterns in Recruitment of Freshwater Mussels as a Function of River Discharge, by Patricia Ries, Teresa Newton, Steve Zigler (UMESC), and Roger Haro (UW-La Crosse).

Spatial and Temporal Dynamics of Phytoplankton Assemblages in Selected Reaches of the Upper Mississippi River: Navigation Pools 8, 13, and 26, by John T. Manier (UMESC), Roger Haro (UW-La Crosse), Jeff Houser (UMESC), and Ron Rada (UW-La Crosse).

Ecological Shifts in a Large Floodplain River during a Transition from a Turbid to Clear Stable State, by Shawn M. Giblin (WI DNR), Brian Ickes (UMESC), Heidi A. Langrehr, Andrew D. Bartels, Kraig L. Hoff (WI DNR).

Ecosystem Change in Upper Mississippi River Backwaters II: Post-Dam Zooplankton Community Food Web Shift. Gerrish G.A., C.S. Belby, C. Rivera Perez and S.M. Giblin.

Efficacy of GREON Automated Sampling Buoys. Poster presented at the Mississippi River Research Consortium, La Crosse, WI. April 2014. Soeken-Gittinger, Lori, and John Chick.

Shocking Results: Assessing the Injury Rates of Fishes from Pulsed-DC Electrofishing. Mississippi River Research Consortium, La Crosse, WI. April 2014. Culver, Edward F., and John H. Chick.

Does Variation in Electrofishing Catch Per Unit Effort Reflect Variation in the Abundance of Fishes? Mississippi River Research Consortium, La Crosse, WI. April 2014. Chick, John H., Chad R. Dolan, and Greg G. Sass.

Raising the Bar of Floodplain Forest Restoration: Elevation Modification as a Restoration Strategy, by Lisa Maas (USFWS), Nathan DeJager (UMESC), Rich King (USFWS), Jason Rohweder (UMESC), Randall Urich, and Bobby Jackson (USACE). Poster presentation

Effects of Flooding and Nitrogen Addition on Nitrogen Cycling in Reed Canarygrass and Mature Silver Maple Communities in the Upper Mississippi River Floodplain, by Whitney Swanson (UW-La Crosse), Nathan De Jager (UMESC), and Eric Strauss (UW-La Crosse). Poster presentation

Barry Johnson, Jim Rogala, Yao Yin, Brian Ickes, Nate De Jager, and Jeff Houser participated in a meeting of the Analysis Team (A-Team) on April 23 in La Crosse, WI.

Jennifer Sauer gave a presentation on the UMMR program at the Rio Grande Environmental Management Meeting in Brownsville, Texas on April 22, 2014.

Bierman attended on-site visit at Sunfish Lake - Pool 12 Overwintering HREP Stage 1, with USFWS and Iowa DNR fisheries staff – April, 2014.

Bierman attended A-Team meeting in La Crosse – April, 2014.

Bierman participated in a Green Island/Maquoketa River floodplain management and science planning discussion and tour with IDNR Wildlife staff, and state and regional USGS staff – May 2014.

Bierman participated in a Joint River Resource Technical Team meeting via conference call – May, 2014.

Bierman, Bowler, Fitzpatrick, Kueter, and Miller hosted annual Iowa River Rat meeting at Bellevue State Park – June, 2014.

Bierman participated in a meeting regarding “River Floodplain Science Opportunities at the Confluence of the Maquoketa and Mississippi Rivers,” hosted in Bellevue by USGS Large River Initiative coordinator Ken Lubinski – June, 2014.

Modeling and Mapping Flood Inundation along the Upper Mississippi River: Implications for the Study and Management of Floodplain Vegetation and Soil Dynamics, by Nathan R. De Jager, Jason J. Rohweder, Timothy J. Fox, and Yao Yin. US Chapter of the International Association for Landscape Ecology in Anchorage, AK

Modeling and Mapping Flood Inundation along the Upper Mississippi River: Implications for the Study and Management of Floodplain Vegetation and Soil Dynamics, by Nathan R. De Jager, Jason J. Rohweder, Timothy J. Fox, and Yao Yin. Organizational meeting for floodplain restoration in Bellevue, IA

Houser, J.N. Nitrogen and phosphorus in the Upper Mississippi River: What we’ve learned about their patterns, processes, and effects from long-term monitoring and short-term field studies. University of Minnesota Water Resources Seminar. 19 April 2014. St. Paul, MN. Invited Presentation.

Houser, J.N. Contrasts among aquatic areas in a large, flood-plain river: testing our understanding of nutrient cycling, algal abundance, and suspended sediment dynamics. Joint Aquatic Science Meeting. 18 - 23 May 2014. NOTE: Joint meeting of Society for Freshwater Science, Association for the Sciences of Limnology and Oceanography, Phycology Society of America, Society of Wetland Scientists. Contributed Oral Presentation.

Manier, J.T., Haro R.J., Houser, J.N., Rada, R.G.: Spatial and Temporal Dynamics of Phytoplankton Assemblages in Selected Reaches of the Upper Mississippi River: Navigation Pools 8, 13, and 26. Joint Aquatic Sciences Meeting. Portland, Oregon.

Giblin S.M., B. Ickes, H. Langrehr, A. Bartels, K. Hoff. Ecological Shifts in a Large Floodplain River During a Transition from a Turbid to Clear Stable State. WI DNR New Employee Orientation Meeting. LaCrosse, WI.

On 21 April, 2014, Brian S. Ickes delivered an invited lecture at Northrup Auditorium, University of Minnesota, as part of the Institute of Advanced Studies, River Life Program. Announcement:



<http://www.northrop.umn.edu/events/irony-carp> Video of lecture and round table:  
<http://ias.umn.edu/2014/04/21/irony-of-carp/>

On 21 April, 2014, Brian S. Ickes attended the inaugural meeting of the Board of Directors charged with developing a new interdisciplinary environmental sciences program at the University of Wisconsin - Stout. The meeting included a group discussion on the goals of the program and four break-out sessions, each focusing on a major emphasis area within the interdisciplinary program. Ickes' contributions were in the "Aquatic Ecology" sub-group. We reviewed planned curricula, content, and subject matter intended for each course, and pedagogical approaches to instruction. A novel concept termed "cohorts" was advanced to foster learning teams that can develop not only individual skills and knowledge, but also teamwork skills, throughout the program. Because UW Stout is a polytechnic institute, strong emphasis was placed on practicums throughout the course of study.

On 12 June 2014, Brian S. Ickes organized and moderated a special session at the International Fish Passage Conference in Madison, WI. Additionally, Brian gave a talk titled "The situational context for fish passage issues in the Upper Mississippi River System". A pdf of the talk will be available in the near future on the conference website.

The WDNR field station staff coordinated a statewide training session for new employees in the WDNR water bureau in May. This involved planning a half-day bus tour of sites in the coulee region and a narrated, 3-hour boat tour of Pool 8 for 60 staff. Field station staff also gave several floor presentations and provided sampling demonstrations to the group. Preparation for the two-day event began in March and April and required a significant investment of time. The session was well-received, and our participation was greatly appreciated.

Ben Lubinski attended the "Day of Science" meeting featuring NGRREC research collaborators from the University of Illinois. The meeting was held at the National Great Rivers Research and Education Center in East Alton, Illinois. 6/11/2014

#### **4th Quarter**

(UMESC) Brian Gray, Yulia Gel and Vyacheslav Lyubchich presented a talk titled "Regression estimation of trends in temperature when time and date of sampling are haphazard" at the Joint Statistical Meetings in Boston on 7 August 2014. The presentation proposes a method of estimating temporal trends in water temperature from legacy datasets and from data currently collected under sampling designs that yield irregular time series. During the meeting, Brian Gray also met with other executive board members of the Section on Statistics and the Environment of the American Statistical Association.

(UMESC) Jennifer Sauer, Brian Ickes, Jeff Houser, and Larry Robinson presented an overview of the U.S. Army Corps of Engineers' Upper Mississippi River Restoration (UMRR) Long Term Resource Monitoring Program element (LTRMP), at an all-employee meeting of the Upper Mississippi River National Wildlife and Fish Refuge, July 17, 2014 in La Crosse, WI. Discussions included; using monitoring data as a foundation for learning about large, complicated ecosystems; research of, and status and trends of, large river fisheries; resource mapping, including new remote sensing techniques; and delivery of information to stakeholders.

(UMESC) Kevin Richards and Barry Johnson participated in the Upper Mississippi River Basin Association quarterly partner meetings, August 5-6, 2014, in Peoria, IL. The meeting's agenda included updates on dam repairs, habitat rehabilitation projects, river monitoring and research, strategic planning, and effects of Asian carp on growth of native fishes.

(UMESC) Barry Johnson participated in the America's Watershed Initiative (AWI) summit held in Louisville, Kentucky. AWI is made up of a diverse group of organizations committed to increasing collaboration and integrated management of resources in the entire Mississippi River watershed.

(UMESC) Barry Johnson and Jeff Houser participated in the Leadership Summit for the Upper Mississippi River Restoration (UMRR), 18 September 2014, in Dubuque, Iowa. The summit is intended to enhance visibility of the UMRR among the leaders of the Program's partner agencies (U.S. Army Corps of Engineers, USGS, USFWS, EPA, and state resource management agencies of Illinois, Iowa, Minnesota, Missouri, and Wisconsin), to facilitate dialogue on key river issues and opportunities, and to communicate to leaders' the role of their staffs' in improving the health of the Upper Mississippi River.

(UMESC) Barry Johnson participated in the USGS Large River Monitoring Forum Work Session, 23-24 September 2014, in Hood River, Oregon. The work session focused on cross-system analyses of fish monitoring data from the Columbia, Colorado, Illinois, Mississippi, Missouri, and Alabama, Coosa, and Talapoosa Rivers. Analyses will describe structure of fish populations and communities among rivers and attempt to compare structure and trends within and among river systems.

Bierman attended the groundbreaking ceremony for the Pool 12 Overwintering HREP hosted by the US Army Corps of Engineers in Galena, Illinois – August, 2014.

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

Bierman attended the UMRR-EMP Leadership Summit in Dubuque, Iowa – September, 2014.

Megan Moore attended the fall UMRCC Wildlife Technical Section meeting at Wyalusing State Park, Prairie du Chien, WI.

Walt Popp and Rob Burdis participated in a field tour for the MNDNR's Central Region Management Team on Pool 3 on Aug. 18th to discuss river issues and projects specific to that pool. Walt gave several talks during the tour including an introduction to LTRM.

Rob Burdis and Megan Moore spoke to a group of MPCA staff responsible for point source discharge on Sept. 23rd on two pontoon boats in Lake Pepin about LTRM and recent changes we've observed in water quality and biota.

Walt Popp participated in three MNDNR Mississippi River Team Steering Committee meetings in St. Paul on July 3rd, Aug. 4th, and Sept. 16th with Asst. Commissioner Barb Naramore and several regional managers to discuss revitalization of the Mississippi River Team after the loss of a number of team members.

Walt Popp participated in a USACE/team leader conference call on Sept. 4th to discuss field station annual summary reports.

Rich Pendleton presented "Changes in fish community structure and composition in relation to Asian carp" at the quarterly EMP-CC meeting in East Peoria, IL.

Rich Pendleton and Levi Solomon attended the fall Fish, Wildlife, and Mussel UMRCC Tech meeting in Bagley, WI.

Andy Casper, Rich Pendleton and Levi Solomon attended the annual INHS State of the Survey Platform presentation: "Status and Trends of two native planktivores in the La Grange Reach of the Illinois River in relation to the establishment of Asian carp". Chris Schwinghamer, Rich Pendleton and Levi Solomon. NGRREC 11th Annual Intern Symposium

Poster Presentation: "Status and Trends of two native planktivores in the La Grange Reach of the Illinois River in relation to the establishment of Asian carp." Chris Schwinghamer, Rich Pendleton and Levi Solomon. NGRREC 11th Annual Intern Symposium

Summary report: "Status and Trends of two native planktivores in the La Grange Reach of the Illinois River in relation to the establishment of Asian carp." Chris Schwinghamer, Rich Pendleton and Levi Solomon. NGRREC 11th Annual Intern Symposium

Platform Presentation: "Long Term Changes in Fish Community Structure in Relation to Asian Carp Establishment" Richard M. Pendleton, Levi E. Solomon and Andrew F. Casper. National AFS Quebec

Platform Presentation: "Comparing Asian Carp Between the Illinois River and its Tributaries" Clinton Morgeson, Levi Solomon, Rich Pendleton, David Wahl and Robert Colombo. National AFS Quebec

Platform Presentation: "Potential for Restoration of floodplain habitats in Large Rivers: Fish community response and the mitigating effects of invasive species, droughts and flooding." Andy Casper, TD Vanmiddlesworth, Rich Pendleton, Levi Solomon and Nerissa McClelland. National AFS Quebec.

INHS Internal Report: Changes in the Fish Community at The Nature Conservancy's Merwin Preserve at Spunky Bottoms. 2014 Solomon, Levi E, Pendleton, Richard M, Casper, Andrew F, Grider, Nathan T, and Hilsabeck, Rob B. INHS Technical Report 2014 (31)

Are Asian Carp influencing the Fish Community as a whole? UMRCC Newsletter. Levi Solomon, Andy Casper, Rich Pendleton.

Gray BR, Y Gel and V Lyubchich. 2014. Regression estimation of trends in temperature when time and date of sampling are haphazard. Joint Statistical Meetings, Boston, MA.

Gray BR, Y Gel and V Lyubchich. 2014. Hierarchical random slope approach and nonparametric inference for river temperature, under haphazard sampling. Fourth International Workshop on Climate Informatics, 24-25 Sep 2014, Boulder, CO.

Habitat Enhancement using Water Level Management on the Upper Mississippi River-A Summary of the Research and Monitoring Results from Seasonal Water Level Reductions in Navigation Pools 5, 6 and 8" was

printed, and distributed this quarter by the River Resources Forum- Water Level Management Task Force. It includes brief summaries of LTRMP work on aquatic plants, water quality and fish for Pool 8 and LTRMP data also served as a reference pool for the Pool 5 drawdown. Nissen,R.A. editor 2014 Habitat enhancement using water level management on the Upper Mississippi River. Water Level Management Task Force-River Resources Forum. May 2014. 87 pp.

Culver, E.R. and J.H. Chick. Shocking results: Assessing the injury rates of fishes from pulsed DC-Electrofishing. American Fisheries Society, Annual Meeting, August 19, Quebec, Canada.

## Technical activities and assistance

### 1st Quarter

Jennifer Sauer provided Liat Lichtman-Bonneville (Urban & Regional Planner, WisDOT) with updated information on the number of tons of cargo shipped annually between Minneapolis and the mouth of the Missouri River.

Yao Yin provided Derek Ingvalson (Corps) with Pool 8 vegetation data collected by the LTRMP.

Larry Robinson updated the LTRMP LiDAR Web pages including updating the graphic showing the LiDAR data that is available for download ([http://umesc.usgs.gov/data\\_library/gis\\_data/lidar.html](http://umesc.usgs.gov/data_library/gis_data/lidar.html))

Jennifer Sauer provided Chris Rogers of the Winona Post references to help answer his question on question about a report on projecting river levels.

B. Ickes served (1-day; Nov 8, 2013) as an invited expert to the USFWS Eastern Tallgrass/Big River LCC. Contributions included advising on fish species that should be considered as surrogate species for conservation planning activities and actions.

B. Ickes reviewed a manuscript authored by S. Crimmins, W. Thogmartin, and P. Boma (USGS/UMESC); topic – species extinction probability modeling.

B. Ickes, B. Schlifer (USGS), J. Rogala (USGS), and J. Fischer (WDNR) submitted a pre-proposal in response to an RFP from USGS Center for Data Integration (CDI). The proposal title was “Novel web-enabled data visualization applications for serially-structured time-ordered data Case study 1: Mississippi River and select tributary hydrology”.

B. Ickes accepted an invitation by the University of Minnesota to deliver an evening keynote lecture as part of the grand reopening of Northrup Auditorium. The lecture will be April 21, 2014. B. Schlifer will accompany Ickes. All resources for participation (Ickes and Schlifer) have been accorded via honorarium (U of MN).

B. Ickes reviewed a manuscript authored by Yao Yin (USGS).

B. Ickes accepted an invitation to be a member of a Board of Directors for a new Environmental Science Program at the University of Wisconsin – Stout. Duties will principally involve advising and guiding the development of the curriculum within the Aquatic Biology concentration of the new program. Four single day meetings at UW-Stout, structured quarterly, beginning April 2014.

B. Ickes shared data summaries from UMRRE-EMP LTRMP Fish component data sources, initially compiled by B. Ickes and D. Kirby (IDNR), detailing information on American eel (*Anguilla rostrata*), with the USFWS under a recent data and information call established to consider listing American eel under the 1973 Endangered Species Act.

LTRMP staff assisted Bellevue Research with fall tailwater sauger and walleye population assessments in Pool 13 – October, 2013.

Bowler completed data entry and QA/QC for Pool 12 overwintering HREP project – November, 2013.

Bowler discussed research project with Loras College student Amanda Fitzpatrick on fisheries, invertebrate, and water quality sampling in the Catfish Creek Watershed of Dubuque County, Iowa – November, 2013.

LTRMP staff extracted and catalogued 606 bluegill otoliths in conjunction with the Pool 12 overwintering HREP project – November, 2013.

Bowler entered data of catalogued bluegill otoliths – November, 2013.

Bowler entered data from the Beaver Island into the special projects database – November, 2013.

Petersen assisted Green Island Wildlife with collection of CWD samples from Jackson County – December, 2013.

Bierman compiled and submitted 2011 and 2012 data from Upper and Lower Rock Creek fixed site monitoring to Bob Drustrup, IDNR Contaminated Sites section – December, 2013.

Bowler compiled and tabulated data from the six field LTRMP stations and special projects database (1992-2012) to determine catches of age-0 and adult grass carp annual catches for Martin Konrad (Des Moines Fisheries) on potential addition of this species (diploids) to the exotic species list in Iowa – December, 2013.

LTRMP staff completed 21 pool-wide random electrofishing sites and completed 30 fyke netting samples at six different backwater complexes in conjunction with the Pool 12 overwintering HREP projects – October-November, 2013.

Bowler entered incidental turtle catches from Pool 13, 2013 into master dataset – November, 2013.

Bowler provided age assignment and age analysis of Pool 16 white bass 2013 collections to Fairport Management – December, 2013.

Bowler provided mean length at age summaries of bluegill in Pool 12, 2012 to Manchester Management for comparisons to northeast Iowa inland populations – December, 2013.

Megan Moore provided a U.S. Army Corps of Engineers St. Louis District biologist with information on how to record vegetation data collected from HREP monitoring so that it is comparable to LTRM data.

Megan Moore, as UMRCC Wildlife Technical Section chair, coordinated the funding of a graduate student to analyze eight years of UMRCC-collected vegetation data with a professor at Western Illinois University and the UMRCC Executive Board.

Steve DeLain provided technical expertise concerning LTRM electrofishing technique to five U.S. Army Corps of Engineers St. Paul District staff and they in return provided the field assistance that the Lake City Field Station needed to complete period 3 fish sampling.

Steve DeLain provided specific fish species he collected during LTRM sampling to the Minnesota DNR's mussel propagation program.

Walt Popp provided the UMRBA with a cost estimate for vegetation sampling.

Becky Kreiling reviewed a wetland restoration paper for Ecological Restoration.

Giblin provided water quality data to WDNR Fisheries Biologist, Dave Heath in response to questions regarding poor fish community statistics in the Reno Bottoms Area in Pool 9.

Giblin and Kalas conducted gear comparison study between Marsh-McBirney Flo-Mate and Hach FH950. Data were entered and analyzed. Report was submitted to Houser for review.

LTRMP data and technical reports were used extensively by MPCA to develop proposed TSS and TP criteria for MN Rivers and Lake Pepin. <http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-rulemaking/new-water-quality-standards-for-river-eutrophication-and-total-suspended-solids.html#technical-support-documents>

Giblin provided manuscript reprint and technical advice to Dr. Griselda Chapparo, University of Buenos Aires, Argentina.

Langrehr met with Megan Moore and Welby Smith (MN state botanist) to discuss wild rice identification.

Langrehr provided maps with the locations of faucet snails and bullfrogs ancillary data recorded during veg SRS sampling to Jim Nissen (USFWS).

Langrehr provided *Sagittaria* species depth maximums to Ruth Nissen (WDNR) for a technical report.

Langrehr provided Pool 11 EMAP vegetation data to Brenda Kelly and Sara Strassman (WI DNR)

Langrehr provided Pool 8 vegetation SRS bootstrapping analysis results to John Sullivan (WI DNR)

Levi Solomon was added to the INHS ad hoc web design committee as Field Station Representative

Blake Bushman, Andy Casper, Rich Pendleton, and Levi Solomon assisted with collection of fish and water quality parameters for Dr. Wen-Tso Lui, Professor of Civil and Environmental Engineering, University of Illinois. Dr. Lui is investigating gut microbiota in relation to the detection of Asian carp.

## **2nd Quarter**

Ben Schlifer provided the fixed site water temperature data for 2013 for Pool 8 to Mark Gaikowski, USGS.

Jennifer Sauer provided information on type of soybean cake used by the LTRMP fisheries component to MaxYield Cooperative. MaxYield is the historic provider of soybean cake to the LTRMP; however they will no longer be producing the cake in 2015 and had folks inquiring about alternate cake availability.

Brian Ickes provided Michael McClelland of the Illinois DNR a copy of the recent report on re-mapping of the LTRMP electrofishing rig fleet along with the current revision of the fisheries procedure manual..

Bowler adapted LTRMP SAS programs to compute fish species *c/f* and richness by year and location for Decorah and Manchester Management – January, 2014.

Bowler provided information on gizzard shad abundance (1993-2013) and bald eagles on the Upper Mississippi River to Alma Gaul for an article in the *Quad City Times* – January, 2014.

Bowler provided comparative analysis of freshwater drum *l/f* data (Kolmogorov-Smirnov; 2010-2011) for Manchester Research – January, 2014.

Kueter assisted Bellevue Research tracking radio-transmitted northern pike on Pool 13 – February, 2013.

Petersen participated in Fisheries Statewide agenda conference calls – February, 2014.

Bowler provided report “Recent Observations of the Distribution and Status of Bluntnose Darters and Crystal Darters in Iowa” to Jeremy Tiemann, Prairie Research Institute at the University of Illinois, Illinois Natural History Survey – February, 2014.

Petersen digitized 606 bluegill otoliths from Pool 12 – February, 2014.

Bowler entered all LTRMP field station’s incidental turtle catches for 2013 into master dataset in Excel – March, 2014.

Bowler downloaded special projects fisheries datasets (Pools 10, 11, 17, and 18; 2013), ran SAS error checking programs, and sent data corrections to UMESC – March, 2014.

Bierman aided U.S. Army Corps of Engineers personnel Dave Bierl and Chuck Theiling in a dye-tracing study to determine winter flow dynamics in the Mud Lake/Zollicoffer Slough HREP Project Area, Pool 11, as part of a post evaluation of project performance – March, 2014.

Kueter assisted with paddlefish collections for Bellevue Research – March, 2014.

Levi Solomon discussed Asian Carp eDNA sampling on the La Grange Reach of the Illinois River with Jeff Stewart, FWS in Carterville IL.

Levi Solomon provided Brian Henen, PhD, UCLA information and literature concerning LTRMP research and Asian Carp.

Levi Solomon provided Zach Maedagen, University of Missouri, information and literature concerning LTRMP research and Asian Carp.

Levi Solomon provided Asian Carp Age and Growth data to Clint Morgeson, graduate student at Eastern Illinois University. Data is to be used to comparison of population dynamics of major tributaries of the



Illinois River to the major strata (MCB, SCB, BWC) of the Illinois River. Data was collected under project 2014B7 of the 2014 UMRR-EMP SOW

Rich Pendleton and Levi Solomon provided LTRMP fisheries data to Mark Fritts, coordinator of the Long Term Illinois, Mississippi, Ohio, and Wabash River Fish Population Monitoring Program.

Blake Bushman, Rich Pendleton and Levi Solomon coordinated Illinois DNR Conservation Police Officer (CPO) training on the Illinois River. Included demonstration of large river fishing techniques and ID of common fishes.

Steve DeLain provided LTRMP walleye relative abundance information from Pool 4 to a WI DNR Fisheries Manager.

Steve DeLain provided LTRMP weed shiner relative abundance information to MN DNR staff reviewing the list of MN Species in Greatest Conservation Need.

Steve DeLain provided technical assistance to a MN DNR Fisheries Specialist who is planning a long-term fish monitoring effort on the Minnesota River.

Steve DeLain coordinated with Andrew Simons (Univ. of Minnesota), UMESC staff, and the UMRCC Coordinator and the chair of the Fish Tech Section regarding future funding for Simons' and his proposal to use genetic sequencing to determine distribution of mimic and channel shiners in the Upper Miss. and Illinois rivers.

Megan Moore provided a St. Louis District Corps of Engineers biologist with technical assistance related to monitoring vegetation on HREPs under various scenarios.

Megan Moore provided multiple years of Lake Pepin vegetation data to the MN DNR Lake Pepin Fisheries Specialist.

Megan Moore provided comments on the WI Vegetation Specialist's assessment report for the UMRBA Walter Quality Task Force of the optimum number of samples needed to derive the Submersed Macrophyte Index (SMI) bioassessment from LTRMP data.

Rob Burdis provided 2012-13 Pool 4 water quality data to the MN DNR Lake Pepin Fisheries Specialist.

Rob Burdis provided comments on the MN Pollution Control Agency's proposed amendments to Mississippi River water quality standards.

Xiaoli Yuan and Becky Kreiling participated in the USGS Standard Reference Sample Round Robin for laboratory quality assurance testing. They analyzed blind QC samples for ammonium, nitrate+nitrite, total nitrogen, soluble reactive phosphorus, and total phosphorus. They were well within the acceptable limits for the testing, with the majority of the reported values within 5% of the most probable value.

Giblin S.M. and J. Kalas trained Havana WQ Specialist on LTRMP sampling methods and Scanlog use.

Eric Ratcliff and Ben Schliker provided LTRMP fish data to Kat McCain of the USACE to be used in a report for the Piasa-Eagle's Nest Islands HREP. 3/2014.

Eric Ratcliff provided LTRMP fish data to Mark Fritts of the Illinois Long Term Electrofishing (LTEF) program to be used in the LTEF annual summary report.

Lori Gittinger provided water quality information to Erin Hilligoss-Volkman of the USACE and Lee O'Connor of racemaker.org. 2/2014.

Brian Ickes and Jennifer Sauer provided information to Tim Schlagenhaft (Audubon). Tim was interested in the sedimentation impacts to the river downstream of Lake Pepin if the lake fills with sediment.

Jennifer Sauer provided GIS coverages to David Potter comparing Pool 9 Forests 1890 versus 1989.

Barry Johnson provided information on the LTRMP life history database for fishes in the Upper Mississippi River (developed by Brian Ickes and others) to Tim Counihan of USGS. Team is lead fisheries biologist at the Western Fisheries Research Center Columbia River Research Laboratory in Cook, Washington.

### **3rd Quarter**

Brian Ickes and Andy Bartels assisted David Heath (WDNR) with data, analytics, and interpretation of UMRR-EMP LTRMP fish component walleye data. WDNR is entertaining new walleye harvest and size limit regulations in WI waters of the UMRS.

Jeff Houser presented Edward Stets, USGS with directions on how to garner water quality information from the UMRR LTRMP web site. Edward was specifically looking for information on carbon-related sampling.

Jennifer Sauer provided Ann Runstrom (USFWS) with information on LTRMP fish sampling procedures. Ann is drafting a 2014 interagency sampling plan for invasive carp from the UMR headwaters to Pool 12.

(UMESC) Nathan De Jager, Timothy Fox, Jason Rohweder (UMESC), and Steve Buan (NOAA) discussed computer tools under development at UMESC to model and map flood inundation along the Upper Mississippi River, and how these could be linked to river forecast models created by the National Oceanic and Atmospheric Administration (NOAA), May 6, 2014. Buan works for NOAA's North Central River Forecast Center in Chanhassen, MN, one of 13 NOAA River Forecast Centers which collects, processes, and provides forecasts for major U.S. river basins. UMESC and Buan are looking into using the combined GIS toolset to examine the effects of alternative precipitation scenarios (e.g., climate change) on the spatial and temporal patterns of flood inundation along the Upper Mississippi River.

Barry Johnson provided Tim Counihan (USGS) with 4 publications that indicate the types of fish analyses conducted under the UMRR LTRMP on the Upper Mississippi River System that relate to the hypotheses presented on the call, specifically: 1) differences in fish species longitudinally and through time, 2) classification of fishes by guilds and life history characteristics, and 3) power to detect changes among years. The information was requested by the Large River Monitoring Forum.

Jennifer Sauer provided Lisa Reid (USFWS) with information on *Bithynia* snail sampling that was conducted under the LTRMP in 2007.

Brian S. Ickes assisted Dr. Dominik Halas (Department of Biology, University of Toronto Scarborough) with a request for *Carassius* (feral goldfish) specimens. Several state field station staff similarly assisted Dr. Halas. The University of Toronto Scarborough is working on project to assess feral populations of goldfish in North America for cryptic diversity.

Jeff Houser and Jennifer Sauer provided Gwen White (USFWS Science Coordinator, Eastern Tallgrass Prairie & Big Rivers LCC with information and maps of areas with low dissolved oxygen. The LCCs are working to identify the selection and siting of agricultural conservation practices across the Mississippi Basin to optimize multiple benefits for wildlife habitat, water quality and agricultural production. The LCC is interested in any information that may guide work relative to the hypoxic areas in the Upper Mississippi River (not just the Gulf of Mexico).

Jennifer Sauer and Eileen Kirsch provided Jon Duyvejonck (USFWS) with a publication titled "Control of Reed Canarygrass Promotes Wetland Herb and Tree Seedling Establishment in an Upper Mississippi River Floodplain Forest authored by Meredith Thomsen, Kurt Brownell, Matthew Groshek, Eileen Kirsch. Jon is interested in methods to control Phragmites/reed canary grass on the UMR.

Jennifer Sauer provided Eric Smith with data and maps on the distribution of *Bithynia* snails in Pools 11-13. Eric is a Master's student looking at scaup mortality in the UMR.

Jennifer Sauer provided Bradd Sims, Fisheries Biologist, Wisconsin Department of Natural Resources with information regarding the alternate fish bait study done by Brian S. Ickes, A. Bartels, and J. West with additional contributions provided by M. Bowler, S. De Lain, E. Gittinger, N. Michaels, Q. Phelps, E. Ratcliff, J. Sauer, B. Schlifer, and L. Solomon.

Petersen completed aging of 606 bluegills for the Pool 12 HREP project – April, 2014.

Bowler entered bluegill age data into the Pool 12 HREP project database – April, 2014.

Bowler applied aged bluegill data to unaged fishes via SAS routine and calculated mortality in the six backwater study lakes for the Pool 12 HREP – April, 2014.

Bowler compiled and distributed 'Pool 13 LTRMP Highlights, 2013' to UMR personnel and to Manchester Research for AFS Rivers and Streams Technical Committee meeting – April, 2014.

Bowler provided data and summaries of 2013 fisheries special projects for Pools 10, 11, 17, 18, and Huron Island to Guttenberg and Fairport Management – April, 2014.

Bowler provided identification of fish specimens from Catfish Creek watershed project with Loras College student Amanda Fitzpatrick – April, 2014.

Bierman assisted Iowa DNR management and research staff with collections of shovelnose sturgeon from the Cedar River – May, 2014.

Bowler provided graphical and tabular LTRMP fisheries data (black and white crappie and sauger; *c/f* and *l/f*) Pool 13 to Jeremiah Haas of Exelon Nuclear for comparative purpose – May, 2014.

Bowler made Special Project Outpool maps with stratified random sampling points for Pools 9, 10, 16, 18, Beaver Island HREP, and Huron Island HREP for the 2014-2019 field seasons – May, 2014.

Bierman updated all “in-house” water quality datasets to include all fixed site monitoring data collected in 2013 – May, 2014.

Bierman provided water quality data from historical fixed sites in Clinton and Camanche, Iowa to Elizabeth Bruns of the Water Quality Section of the USACE, Rock Island District for the Beaver Island HREP pre-project report – May, 2014.

Bowler completed and submitted “Sex-Specific Age Structure, Growth, and Mortality of Black and White Crappie in Pool 13 of the Upper Mississippi River.” for the Iowa DNR’s Fisheries Management Investigations 2013 Annual Report – May, 2014.

Kueter assisted Bellevue Management and Research with habitat improvement (rip-rap placement) at Greens Lake in Pool 12 – June, 2014.

Fitzpatrick and Miller pre-filled Special Project Outpool data sheets for Fairport and Guttenberg Management – June, 2014.

Bowler provided identification of fish specimens from Catfish Creek watershed project with Loras College student Amanda Fitzpatrick – June, 2014.

Bierman joined Kirk Hansen, IDNR and Chuck Theiling, USACE in developing a proposal for future pre-project centrarchid telemetry work for the Pool 12 Overwintering HREP in federal FY15 – June, 2014.

Nate De Jager held a conference call with climatologists from the National Oceanic and Atmospheric administration about linking climate, precipitation, and runoff models with flood inundation models.

Nate De Jager participated in a conference call of the Minnesota Audubon Society regarding floodplain restoration.

Nate De Jager provided peer-reviews of journal articles submitted to the journals *Ecosystems* and *Landscape Ecology*

Becky Kreiling attended USGS Leadership Intensives Training in Middleton, WI on April 2 and April 3.

Becky Kreiling reviewed a denitrification paper for *Ecological Engineering*.

Giblin provided links to LTRMP data to Dr. Peter Sorenson U of MN and Dr. Shannon Davis-Foust UW-Oshkosh.

Giblin provided zooplankton data to Dr. Gretchen Garrish for paleolimnology work on Pool 8.

Giblin provided demonstration of LTRMP water quality sampling methods to WI DNR new employees and inland water monitoring staff.

Giblin moderated two sessions at UMRCC Annual Meeting. La Crosse, WI.

Brian S. Ickes served as a blind peer reviewer on a manuscript for the Journal of Great Lakes Research (Elsevier).

Brian S. Ickes submitted a book chapter, co-authored with Dr. Hal Schramm, titled "The Mississippi River: a place for fish past, present and future". The chapter will be published as part of an edited book deriving from a special symposium at the 2014 American Fisheries Society Conference in Little Rock, Arkansas that focused on large rivers.

On 27 May 2014, Jennifer Sauer and Brian S. Ickes submitted a proposal (USGS Innovation Fund) titled "Faster, better, cheaper: A preliminary evaluation on the use of canines for monitoring the distribution of Asian Carp".

On 3 June 2014, Brian S. Ickes and Dr. Stephen Winter (USFWS) submitted an SSP proposal titled "Long-term datasets and large-scale management actions: Assessing the effect of pool-scale water level management on fisheries resources of the Upper Mississippi River".

On 3 June 2014, Jennifer Sauer and Brian S. Ickes submitted a proposal (USFWS SSP) titled "Faster, better, cheaper: A preliminary evaluation on the use of canines for monitoring the distribution of Asian Carp".

#### **4th Quarter**

Jennifer Sauer provided Christopher Jacques, Assistant Professor at Western Illinois University, with information on waterbird (primarily LESC) die-offs due to trematode infection on the UMR and faucet snail distributions.

Nate De Jager and Tim Fox have responded to a number of requests on the Curve Fit tool they developed. Pls/projects requesting information include: Global Changes in Decomposition, NPP and Soil Carbon; William Parton, Colorado State University, Natural Resource Ecology Laboratory; Whendee Silver, University of California – Berkeley; MODIS-derived snow cover climatology of Alaska; Chuck Lindsay and Amy Miller, National Park Service Inventory and Monitoring Program; and Jiang Zhu, University of Alaska Fairbanks and Geographic Information Network of Alaska.

(UMESC) Jennifer Sauer provided Shelby Fire Department with UMRS maps overlaying the National Grid to river aerial photos taken by UMRR LTRMP in 2010. The maps will be used for search and rescue operations on the UMRS.

(UMESC) Jennifer Sauer provided Rylee Main, project manager of the Lake Pepin Legacy Alliance with information on how to access UMRR LTRMP water quality, aquatic vegetation, and fisheries data. Rylee is working on a problem appraisal report for Lake Pepin and I was wondering if you have a current annual summary of fish data on Pool 4.

(UMESC) Brian Ickes and Ben Schlifer provided Dave Hokenson (UMRBA) with information on catch rate of various species of fish captured through UMRR LTRMP fish sampling. Dave was interested likelihood of catching various species in regards to a study sampling fish tissue as they continue developing a monitoring strategy for the Clean Water Act.

(UMESC) Jeff Houser provided Michael Brennan, a water quality outreach specialist with NGRREC and the Illinois-Indiana Sea Grant, with instructions on how to access the LTRMP water quality data. Michael is working on a geospatial interface that displays water quality monitoring data (<http://www.ngrrec.org/GLTG/>).

(UMESC) Jeff Houser provided Chris Ellison, USGS Hydrologist/Sediment Specialist with instructions on how to access the LTRMP water quality data. Chris is especially interested in the data from Pool 4.

(UMESC) Jeff Houser provided Richard Carlson, Oraven Industries LLC with instructions on how to access the LTRMP water quality data. Richard is interested in conductivity measures near Pool 20.

(UMESC) Brian Ickes provided information to Sara Strassman (WDNR) with information on fish IBI. Sara was assisting in providing information to John Lyons, John Lyons, WDNR Fisheries Research Supervisor. John's research noted that a single year of sampling may not be adequate to characterize a large-river sites. Brian also provided the report that compared LTRMP, EMAP, and Lyon's sampling to the group. Dukerschein, J. T., Bartels, A. D., Ickes, B. S. and Pearson, M. S. 2011. Are Two Systemic Fish Assemblage Sampling Programmes on the Upper Mississippi River Telling Us The Same Thing?. River Research and Applications. doi: 10.1002/rra.1575

(UMESC) Jeff Houser provided Karen Hagerty and Marvin Hubbell (Corps) with a documenting listing 2014 UMRR LTRMP accomplishments.

Bowler, Miller, and Reed collected sub-adult common carp from routine LTRMP 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 – July-September, 2014.

Bowler, Miller, and Reed collected crayfish specimens from routine LTRMP fish collections for Charlie Jordan of the Aquatic Nuisance Species Program – July-September, 2014.

Bowler sent rotation schedule and effort allocations for the Outpool Sampling special projects to Karen Hagerty of the USACE for inclusion to the UMRR-EMP-LTRMP Scope of Work for FY 2015 – July, 2014.

Bierman assisted Mike Griffin, IDNR Wildlife, with roadside survey in Jackson County – August, 2014.

Bowler identified fish specimens from Pool 18 special projects sampling – August, 2014.

Miller and Reed entered fisheries data from Pools 16 and Huron Island into special projects application database – September, 2014.

Bowler provided summary report and graphical data summaries of largemouth bass abundance indices from Brown's Lake (1993-2006) to Jeff Janvrin of the Wisconsin DNR for a presentation at the UMRRC-EMP Leadership Summit – September, 2014.

Bowler compiled and distributed a current list of the number of native and non-native fish species in Iowa to statewide personnel and Central Office Fisheries – September, 2014.

Megan Moore provided LTRM Pool 4 aquatic vegetation trend figures updated with 2014 data to MN, WI, and IA DNRs, MPCA, USFWS, USACE, USGS, and Audubon managers and biologists.

Megan Moore provided analysis of the UMRCC's 2008 Pool 3 aquatic vegetation sampling effort to the UMRCC Wildlife Technical Section.

Megan Moore participated in the UMRCC Wildlife Technical Section's aquatic vegetation sampling of Pool 3 on Aug. 5th.

Megan Moore provided light penetration estimates on Pool 3 and upper Pool 4 to the WI DNR's Mississippi River Water Quality Specialist.

Megan Moore provided UMESC's Brian Gray with data from a rake comparison study done by field station staff in 1995.

Rob Burdis provided Secchi data for the inlet and outlet of Lake Pepin to Tim Schlagenhaft at Audubon.

Rob Burdis provided mayfly information to the USFWS.

IRBS staff continued to provide Asian carp specimens to Illinois State University and The University of Illinois-Springfield for their ongoing research and restoration projects

Rich Pendleton and Levi Solomon demonstrated the LTRMP FishApp program to Mike McClelland of the IDNR and Bob Illyes of the INHS. Purpose of demo was to assist IDNR and INHS partners as they attempt to create a similar electronic data entry app for the IDNR Fisheries Division  
Levi Solomon provided Gary Bale, commercial fisherman, Havana IL, with information and data about Asian carp abundance in the La Grange Reach of the Illinois River.

Rich Pendleton and Levi Solomon provided fish specimens to Alison Price and Sarah Douglass, Illinois Natural History Survey. The study seeks to investigate glochidial infection and transformation on several common fish species within the Illinois River including bighead and silver carp.

Rich Pendleton provided Becky Fuller, University of Illinois, gambusia specimens for a genetic study.

Rich Pendleton provided Camila Carlos, Ph.D. student of the University of Illinois, LTRMP fish data for Oct 2013 for an ongoing gut microbial study.

Levi Solomon provided Robert Hrabik, MDC, with documents relating to past LTRMP outreach activities including information exchanges with foreign scientists.

Rich Pendleton provided slides and data relating to Asian carp and native planktivores to Kevin Irons, IDNR, for upcoming presentation at joint meeting of Gulf/South Atlantic and Western Regional ANS Panels

Eric Ratcliff assisted with electrofishing boat troubleshooting and provided LTRMP electrofishing boat wiring diagrams for Jerrod Parker of the Long-term Illinois, Mississippi, Wabash and Ohio Rivers Fish Monitoring Program. 8/2014.

Eric Ratcliff provided a data summary to the USACE Riverlands office including information about the fish community of Teal Pond. 8/2014



## Outreach

### 1st Quarter

UMESC staff visited with Anne Kinsinger (USGS Associate Director for the Ecosystem Mission Area), Bill Lellis (USGS Deputy Associate Director for the Ecosystem Mission Area) and Mark Hudy (Senior Science Adviser for Fisheries) and Bill Guertal, Midwest Region Deputy Director for Science on December 4-5. They were visiting the Center primarily to gain a better understanding of our program, particularly our fisheries and aquatic resources activities including LTRMP.

Senator Tammy Baldwin and staffers visited UMESC on December 6 to learn about the Center programs including the UMRR LTRMP. This was the first visit to the Center by Senator Baldwin.

Megan Moore organized the agenda and chaired the UMRCC Wildlife Technical Section meeting at the Kibbe Research Station, Warsaw, IL, on Oct. 1-3.

Giblin provided interview for WI Public Radio regarding water quality trends and challenges on the UMR.

Eric Ratcliff and Ben Lubinski 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. 11/2013.

Andy Casper and Levi Solomon were interviewed concerning biology of Asian carp and their effects on native ecosystems by Summer Nettles, graduate student in Journalism at Northwestern University.

Andy Casper and Levi Solomon hosted a delegation of Chinese engineers from the Three Gorges Corporation. Included tour of the field station, discussion of mission and sampling techniques of LTRMP and other IRBS programs along with dissemination of past publications, telemetry equipment, and general information. Tour facilitated by Doug Blodgett of The Nature Conservancy.

### 2nd Quarter

Brian Ickes and Barry Johnson, Our Mississippi article "Exporting river science to the world yields benefits for all"

Andy Casper and Brian Ickes, Our Mississippi article "Counting Carp".

Brian Ickes and Jennifer Sauer provided a figure Our Mississippi article an estimate of the river's fish biomass, expressed as the mass of silver carp relative to the mass of all native species as captured using standardized scientific sampling protocols from 1993-2012

John Manier was highlighted in Our Mississippi article. John is a graduate student in aquatic studies at University of Wisconsin-La Crosse

(UMESC) General Frank DeLuca, commanding officer of the U.S. Army Corps of Engineers' (USACE) Mississippi Valley Division, will visit the Upper Midwest Environmental Sciences Center on February 5, to

learn about the Center's research projects on the Mississippi River, Mississippi River and Great Lakes invasive species projects, and the Center's role as science and research lead for the Long Term Resource Monitoring Program (LTRMP) element of the USACE Upper Mississippi River Restoration-Environmental Management Program (UMRR-EMP).

Jeff Houser and Shawn Giblin were interviewed by Maureen McCollum of Wisconsin Public Radio in regards to their recent papers on Upper Mississippi River nutrients.

Jeff Houser and Shawn Giblin were interviewed by Allison Geyer of the Winona Daily News in regards to their recent papers on Upper Mississippi River nutrients.

Rich Pendleton, Levi Solomon, Blake Bushman and Andy Casper hosted a Wetlands and Wildlife class from the University of Illinois. Included discussion of LTRMP fisheries and water quality techniques with field demonstration of boat electrofishing.

Levi Solomon and Rich Pendleton awarded the National Great Rivers Research and Education Center Undergraduate Internship to investigate "Status and Trends of Smallmouth Buffalo".

Rich Pendleton awarded funding from the University of Illinois's Academic Professional Development Fund for travel to present at the National American Fisheries Society Meeting.

Fischer J. Interview with reporter/writer for "Our Mississippi article" Jan. 31.

Ben Lubinski organized and coordinated a workshop sponsored by the Continuing Education section of the Illinois Chapter of the American Fisheries Society titled "Using GIS Software for Fisheries Science," The workshop will be held at Western Illinois University on 4/17/14.

### **3rd Quarter**

Jennifer Sauer was tweeted on the USGS Twitter page. USGS was highlighting "Women in Science"

Petersen gave presentation "About the LTRMP and the Mississippi River" to Bellevue Grade School students – May, 2014.

Bowler provided information and historic reports on LTRMP fisheries, vegetation, and water quality sampling in Pools 12 and 13 to Lowell Carlson for articles in the *Anamosa Journal-Eureka*, *Bellevue Herald Leader*, and the *Maquoketa Sentinel Press* – April, 2014.

Giblin S.M., K. Hoff, J. Kalas and R. Nissen. Water quality sampling methods on main channel and backwater habitat. La Crosse Logan Middle School and UW-Oshkosh students attended session.

Fitzpatrick assisted Manchester Management with the Hy-Vee fishing derby at Bergfeld pond in Dubuque – June, 2014.

Ben Lubinski organized and coordinated a continuing education workshop sponsored by the Continuing Education section of the Illinois Chapter of the American Fisheries Society titled: Using GIS Software for Fisheries Science. The workshop was held at Western Illinois University. 4/17/2014

John Chick, Eric Ratcliff, Eric Gittinger, and Ben Lubinski demonstrated LTRMP fish sampling techniques, fish identification, and ecology of fishes of the Mississippi River as well as LTRMP water quality sampling techniques to approximately 30 National Great Rivers Research and Education Center (NGRREC) college interns during NGRREC intern week. The demonstration was held at the USACE's Riverlands Environmental Demonstration Area, West Alton, MO. 5/29/2014

John Chick gave a lecture to approximately 30 National Great Rivers Research and Education Center (NGRREC) college interns, titled: What Makes a River Great? 5/27/2014

John Chick gave a seminar at Saint Louis University, Department of Earth and Atmospheric Sciences, titled: Invasive Species in the Mississippi River with an Emphasis on Asian Carp. April 30, 2014

Ben Lubinski and Eric Gittinger presented fish identification, ecology, and biology to attendees of the Two Rivers Family Fishing Fair at Pere Marquette State Park in Grafton, Illinois. 6/07/2014

Eric Ratcliff, Eric Gittinger and Ed Culver gave a presentation about fishes of the Mississippi River and LTRMP fish sampling for a group of 40 eighth grade students and adults participating in the National Audubon Society's River Visions Program. May 2014

#### **4th Quarter**

(UMESC) Individuals at the Upper Midwest Environmental Sciences Center recently hosted visits from Anne Castle (DOI Assistant Secretary for Water and Science), Leon Carl (USGS, Regional Director, Midwest Region), and Alan Thornhill (USGS Director of the Office of Science Quality and Integrity). Castle and Thornhill visited UMESC to learn more about the Center and its research projects including the UMRR LTRMP, and to interact with the Center's scientists. Castle and Carl visited on August 7, 2014, Thornhill visited July 28, 2014.

(UMESC) Jennifer Sauer and Yao Yin participated in a river tour on Friday, August 15 with Jim Nissen (USFWS), Gretchen Benjamin (TNC) and Arnaldo Carneiro, Director of the Tapajos River Program for TNC in Brazil. Discussions on the tour included the UMRR LTRMP and HREP specifically the phase III islands and their effect on the river.

Bowler, Miller, and Reed gave electrofishing demonstration at the UMRR-EMP Leadership Summit in Dubuque, Iowa – September, 2014.

Levi Solomon hosted group of Chinese investors interested in opening an Asian carp processing plant in Havana area. This facility would process carp for human consumption

Levi Solomon hosted Cristian Dimitrius, freelance Brazilian film producer working with Globo TV of Brazil, for an Asian carp tour and interview about biology of the species. I also provided stock video for their documentary.

Levi Solomon provided images of jumping Asian carp to the City of Havana to give to delegation of Chinese investors seeking to build Asian carp processing plant in Havana.

Rich Pendleton and Andy Casper provided a field station tour, description of projects, and a river tour for University of Illinois visiting scientist Fei Xiong, Associate Professor, School of Life Sciences, Jiangnan University.

Levi Solomon and Rich Pendleton participated in "Tot Time" at Dickson Mounds Museum. Included 1 hour show and tell of river fish to group of local parents and children

Levi Solomon provided photos of LTRMP sampling to Danielle Ruffato of the INHS for Director Brian Anderson's presentation to the INDR Fisheries Division  
IRBS staff provided photos, a hoop net and a minifyke net to the new Emiquon Exhibit at the Dickson Mound Museum.

Rich Pendleton and Levi Solomon hosted a University of Illinois ichthyology class, including tour of station facilities, discussion of ongoing and research, and electrofishing demonstration in the IL River.

Levi Solomon assisted with the Menard County Ag Discovery Day.

Levi Solomon and Rich Pendleton hosted the BBC's Nature's "Weirdest Events". Included interviews about Asian carp biology and impact on invaded rivers and examples of jumping Asian carp on the Illinois River.

Rich Pendleton and Levi Solomon hosted Paddle4ward.com. Group was paddling entire IL River; we provided a field station tour, description of projects, and talk about Asian Carp biology and impacts on invaded rivers.

Ed Culver presented information about Mississippi River ecology, LTRMP fish sampling, and fish and mussel identification at the Alton, Illinois' It's Our River Day event called the Earthtones Festival. It's Our River Day is an annual state recognized celebration of Illinois Rivers including more than 60 education, recreation and conservation events throughout the state. 9/2014.

John Chick gave an invited presentation to the Illinois Department of Natural Resources Fisheries Division at their annual meeting. Dr. Chick discussed the value of long-term monitoring data and used examples from the Long Term Resource Monitoring Program and Long-term Illinois, Mississippi, Wabash and Ohio Rivers Fish Monitoring Program. 7/2014.

Eric Ratcliff, Eric Gittinger, Ben Lubinski, and Ed Culver presented Mississippi River fish and freshwater mussel ecology and identification to approximately 250 fifth-grade students attending the Water Festival 2014 event at Lewis and Clark Community College. 9/2014.