

Long Term Resource Monitoring Program Quarterly Activities FY11 3rd Quarter (April-June)

Presentations:

- Burdis, R. Spatial and temporal distribution of zooplankton in main channel and backwater habitats of Pool 4, UMR". LTRMP Analysis Team meeting on April 27th in La Crosse, WI.
- Bushman, B., G.G. Sass, and M.A. McClelland. Common carp in the Illinois River response to restoration. 43rd Annual Mississippi River Research Consortium, La Crosse, Wisconsin. April 28 - April 29, 2011.
- De Jager, N.R., and J.N. Houser. Spatial clusters of total nitrogen (TN), total phosphorus (TP), and TN:TP in the Upper Mississippi River, U.S.A. U.S. International Association for Landscape Ecology Symposium, April 3-7, 2011, Portland, OR.
- De Jager, N.R., and J.N. Houser. Spatial clusters of total nitrogen (TN), total phosphorus (TP), and TN:TP in the Upper Mississippi River. 43rd Annual Mississippi River Research Consortium, La Crosse, Wisconsin. April 28 - April 29, 2011.
- De Jager, N.R., M. Thomsen, Y. Yin, and J.C. Nelson. Threshold effects of flood duration on the vegetation and soils of the Upper Mississippi River floodplain. 43rd Annual Mississippi River Research Consortium, La Crosse, Wisconsin. April 28 - April 29, 2011.
- Decker, J. K., K Truhn, JD Wehr, L. Bartsch, WB Richardson, and JN Houser. Cyanobacterial nitrogen-fixation in the Upper Mississippi River. 50th Northeast Algal Symposium. April 15-17, 2011. Woods Hole, Massachusetts.
- Houser, J.N., N.R. DeJager, and B.S. Ickes. Using hydrologic models and extensive monitoring data to understand and predict patterns in nutrients and carbon in large rivers. US Geological Survey Upper Midwest Environmental Sciences Center Science Seminar Series. 17 March 2011. La Crosse, WI.
- Ickes, B.S., J.N. Houser, Y. Yin, R. Sparks, B. Rossman, A. Pope, B. Hannon, D. Schnoebelen, T. Smith, N. Young, and C. Theiling. Towards a spatially-explicit Carbon cycle model for Great Rivers: programmatic, management, and scientific intents. Analysis Team of the Environmental Management Program, La Crosse, WI. April 2011.
- Ickes, B.S. Long Term Resource monitoring Program on the Upper Mississippi River – a model for Pennsylvania’s five large rivers? 2 hour seminar delivered at Pennsylvania Fish and Boat Commission Headquarters, Harrisburg, Pennsylvania. June 2011.
- Ickes, B.S. The potential value of international exchanges for advancing Great River science and management. Chinese Academy of Fisheries Science, Wuhan, Peoples Republic of China. May 2011.
- Ickes, B.S. The Long Term Resource Monitoring Program on the Upper Mississippi River. Chinese Academy of Fisheries Science, Wuhan, Peoples Republic of China. May 2011.
- Moore, M. A submersed macrophyte index of condition for the Upper Mississippi River. North American Benthological Society Annual Meeting, Providence, RI, May 24th, 2011
- Nelson, J.C. The LTRMP’s efforts to integrate LiDAR and Bathymetry data on the Upper Mississippi River System 2011 USGS GIS Workshop (Denver, CO May 9 - 13).
- Phelps, Q., J. Crites, D. Herzog, D. Ostendorf, J. Ridings, R. Hrabik, D. Glover, S. Tripp, and J. Garvey. Interactions between non-native and native large river planktivores. 43rd Annual Mississippi River Research Consortium, La Crosse, Wisconsin. April 28 - April 29, 2011.
- Phelps, Q., S. Tripp, J. Garvey, D. Herzog, D. Ostendorf, J. Ridings, J. Crites, and R. Hrabik. Juvenile channel catfish habitat use in the middle Mississippi River. 43rd Annual Mississippi River Research Consortium, La Crosse, Wisconsin. April 28 - April 29, 2011.

Technical activities and assistance:

In collaboration with Southern Illinois University, Michigan State University, and the ILDNR, the Illinois River Biological Station will be testing for ecosystem responses to a large-scale Asian carp reduction effort in the lower Illinois River. LTRMP fish and water quality data from the La Grange reach, Illinois River will be used to test for pre- and post-manipulation effects of the reduction effort. (Sass et al.)

Invited review of a report for the WDNR: Sullivan, J.F. "Continuous Dissolved oxygen and Water Temperature Monitoring in Pool 8 Backwaters of the Upper Mississippi River May-September, 2010." (Houser)

Invited review of manuscript for Aquatic Sciences journal. (Houser)

Invited review of UMRBA report entitled: Upper Mississippi River Aquatic Life Designated Uses: Improving Protection under the Clean Water Act. This report made substantial use of LTRMP data and review was needed to ensure an accurate presentation of the data. (Reviews by Houser and Johnson)

Planned and executed contingencies to ensure a full Period 1 SRS allocation in Pool 4 under a MN state shutdown; including filing for a special collectors permit, front end loading Pool 8 sampling (and providing field assistance), etc. Also discussed sampling needs for water quality and aquatic vegetation with Lake City Field Station and developed contingency plans for sampling (Ickes, Houser, Yuan, Sauer, and Kreiling)

Reviewed an abstract for a conference paper on behalf of Dr. Yuqin REN, Chinese Academy of Fisheries Science (Ickes)

Assisted Dave Heath, WI DNR, with an LTRMP statistics and data request. Dave is calculating PSD indices from LTRMP data sources as a baseline assessment for evaluating his own agency assessment efforts which attempt to describe the size structure of key game species in various Mississippi River habitats. I provided info on data sources and methods for calculating PSD statistics. (Ickes)

Assisted Dave Heath, WI DNR, with data, methods, and computer code for calculating design-based estimates of abundance (CPUE) for fishes sampled under LTRMP protocols. Dave is using LTRMP data sources (and derived abundance estimates) to assess the health of various Mississippi River habitats and areas under his management control and authority. (Ickes)

Provided assistance as an invited expert for the PA Fish and Boat Commission (invited by Dave Miko, Chief of Fisheries). Prepared and delivered a 2 hour seminar on EMP as a model integrated great river assessment and science program. PA Fish and Boat is reaching out to federal, state, NGO, and public partners in each of the Ohio, Monongahela, Allegheny, Susquehanna, and Delaware river basins. I also toured the middle and upper reaches of both the Delaware and Susquehanna Rivers and provided expert opinions on potential field assessment programs and approaches. PAF&B paid all travel expenses. (Ickes)

Provided UMESC LTRMP science staff ideas for evaluating and testing how to make discretized 2-D poolwide hydraulic solutions function as continuous solutions – important for several modeling efforts wherein we need to represent pool scale hydraulics dynamically and continuously. (Ickes)

Provided Dr. Jaiwen BA, Chinese Academy of Fisheries Science, copies of LTRMP sampling procedures, synthesis reports, web resources, historical data browsers, and assorted manuscripts. Dr. BA has been charged with documenting and evaluating on-going assessment efforts in the Yangtze River basin. His forthcoming report will serve as a crucial foundation for the forthcoming sampling procedures manual. (Ickes)

Provided technical assistance to Tom Smith, grad student at the U of Iowa at LACMRERS, on generating histograms of velocity magnitude by area in Pool 8. (Ickes)

Provided Dr. Richard Sparks technical/scientific assistance. I shared regression models developed by LTRMP and UMESC to convert LTRMP veg component abundance indices into biomass and Carbon unit equivalents. These data and conversions will be used in a study led by Dr. Anindita Chatterjee, of the India Statistical Institute in Kolkata, India. (Ickes)

Provided statistical support to WIDNR field station. I fit ANCOVA models to their assembled IBI data from LTRMP and EMAP data sources as a critical analysis in a forthcoming paper we are preparing with Mark Pearson, EPA. (Ickes)

Conducted monthly LTRMP Fish Component conference calls (Ickes and Field Station fishery specialists)

Training of two new fishery component specialists (Levi Solomon and Blake Ruebush) at Havana Field Station. Discussed LTRMP fish sampling methods, equipment, field entry data application, and data management (Ickes and Schliifer)

Developed first draft of LTRMP/HREP coordination proposal (Ickes)

Identified and fixed error in LTRMP fish sample allocation for 2011 arising from supplemental MC border samples used in 2010 (Ickes)

Wrote a letter of support stressing importance of maintaining standardized features of LTRMP electrofishing boats for Lake City Field Station as they seek replacement of electrofishing boat funded by salary savings from EMAP. (Ickes and DeLain)

Provided Joe Riddings, LTRMP Open River Field Station, a series of analytical reports documenting American eel observations and a copy of a synthesis presentation on American eel observed by LTRMP and that LTRMP provided to USFWS in 2005 as part of 50 CFR Part 17 90 day finding for listing American eel under ESA 1973. (Ickes)

Joe Riddings continued pilot work on American eels. Joe will remove otoliths for microchemistry analysis and record gut contents. This data will be added to the eel data collected last year and will be put into a manuscript. This is the first microchemistry work ever done on Mississippi River eels. Preliminary data suggests that most of the adult eel captured in the Middle Mississippi River have never made it up to the Upper Mississippi River and that gut content by biomass is overwhelmingly crayfish.

Larry Robinson attended the USFWS River Refuges Coordination Meeting in Winona, MN, to discuss current LTRMP aerial photography and vegetation mapping projects. June 2, 2011

The LTRMP expanded its sampling design and statistics web pages to include computer code for estimating means and temporal trends from LTRMP fisheries, macroinvertebrate, vegetation and water monitoring data. Computer code is provided for estimating means ("averages") by year, stratum, and pool, and for estimating temporal trends by stratum and pool. For further information, see www.umesc.usgs.gov/ltrmp/stats/computer_code.html or contact Brian Gray at brgray@usgs.gov.

Rob Burdis participated in the Lake Pepin TMDL Science Advisory Panel meeting in St. Paul, MN on April 4th.

Steve DeLain participated in Asian carp meeting of federal, state, and university biologists and managers in Lake City, MN on April 21st.

Rob Burdis met with staff from the Metropolitan Council Environmental Services (MCES) and the MN Pollution Control Agency (MPCA) in St. Paul, MN on June 9th to coordinate a lab comparison of total phosphorus and chlorophyll analysis from splits that he would collect on Lake Pepin and provide to the UMESC, MCES and MN Dept. of Health labs.

Megan Moore attended the UMRBA's UMR Clean Water Act Biological Assessment Implementation Project final work session in Dubuque, IA, on June 14-15.

Steve DeLain provided maximum lengths for all LTRMP fish species sampled from Pools 4 and 8 to two of the authors working on the book "Fishes of Minnesota".

Megan Moore and Rob Burdis provided analysis to the MPCA and DNR showing the relationship between total suspended solids concentrations and frequency of submersed aquatic vegetation in main and side channels of upper Pool 4.

Jason Crites began to investigate fish assemblages and diversity as well as water quality characteristics associated with different dike structures in the LTRMP study reach of the Middle Mississippi River.

Open River Field Station staff participated in field sampling for fishes, water quality, and phytoplankton in the New Madrid Floodplain after breaching of the Birds Point Levee by the US Army Corps of Engineers. Sampling was in collaboration with Southern Illinois University and complimentary to sampling by USGS (Partial support by MDC, NSF, and LTRMP).

Outreach:

Phone conversation with Shane Boring of Klienschmidt Consulting. He was looking for baseline data in the context of main channel hydropower in the river. (Houser)

Ridings, J.W. and W.S. Stearnes. The Biologist's Boat. Presentation to a group of ethnically diverse students and parents (>50). Bollinger County Library Summer Reading Program. June 29, 2011. We pulled our boat out into the grass at Marble Hill City Park and set up a series of nets and aquariums and explained to the children what we do and why it's important to everyone.

Rob Burdis presented an aquatic ecology program to middle school-age kids through the Lake City Environmental Learning Program on June 17th in Lake City, MN.

Forty students in fourth through sixth grades from Minnesota and Wisconsin participated in the eleventh annual Environmental Explorers Camp June 21-22 in La Crosse, Wisconsin. These students, under the guidance of scientists from the USGS Upper Midwest Environmental Sciences Center and Wisconsin Department of Natural Resources LTRMP Field Station, learned about the Upper Mississippi River animals, habitats, and ecological relationships during a two-day camp cosponsored by USGS and the University of Wisconsin at La Crosse. Young explorers learned how to band songbirds, radio track animals, navigate with maps and GPS, and collect samples of water, aquatic plants, amphibians, fish, and insects.